HCT CO.,LTD.

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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:
November 08, 2022

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

Report No.: HCT-RF-2210-FC037-R3

FCC ID:	**A3LSMS911B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**
Model:	SM-S911B/DS
Additional Model:	SM-S911B
EUT Type:	Mobile Phone
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-2210-FC037	October 24, 2022	- First Approval Report
HCT-RF-2210-FC037-R1	November 04, 2022	- Revised Maximum Output Power(Page.8~9)
HCT-RF-2210-FC037-R2	November 07, 2022	- Updated Output Power & P.S.D Contents
HCT-RF-2210-FC037-R3	November 08, 2022	- Revised the Sample Calculation (Page.7)

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1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-S911B/DS	
Additional Model	SM-S911B	
EUT Type	Mobile Phone	
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	September 06, 2022 ~ October 21, 2022	
Serial number	Radiated: R3CT90BE5CR Conducted : R3CT706PENK	

ANTENNA CONFIGURATIONS

1. Antenna configuration

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

(5) SISO test was performed for the MIMO test result.

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 6GHz 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
2.4 GHz WiFi MIMO + 6 GHz WiFi MIMO	on	on			on	on		
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	on	on	on	on				
Bluetooth ANT.1 + 2.4 GHz WiFi ANT.2 + 5 GHz WiFi MIMO		on	on	on			on	
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)
UNII 1	ANT1	-4.84	2 / 2	-0.89
	ANT2	-3.05		
UNII 2A	ANT1	-3.14	2 / 2	0.40
	ANT2	-2.12		
UNII 2C	ANT1	-2.69	2 / 2	-0.81
	ANT2	-5.11		
UNII 3	ANT1	-2.32	2 / 2	-0.58
	ANT2	-5.07		
UNII 4	ANT1	-3.14	2 / 2	-0.91
	ANT2	-4.77		

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 = $10 \cdot \log(((10^{(\text{ANT1 Gain}/20)}+10^{(\text{ANT2 Gain}/20)})^2)/2)$ 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	16.60	0.046	15.87	0.039	19.26	0.084
	802.11n (HT20)	16.70	0.047	15.89	0.039	19.32	0.086
	802.11n (HT40)	16.25	0.042	15.01	0.032	18.68	0.074
	802.11ac (VHT20)	16.61	0.046	15.90	0.039	19.28	0.085
	802.11ac (VHT40)	16.24	0.042	15.04	0.032	18.69	0.074
	802.11ac (VHT80)	15.13	0.033	14.23	0.026	17.71	0.059
UNII2A	802.11a	16.98	0.050	15.62	0.036	19.36	0.086
	802.11n (HT20)	17.17	0.052	15.58	0.036	19.46	0.088
	802.11n (HT40)	16.47	0.044	14.80	0.030	18.73	0.075
	802.11ac (VHT20)	17.18	0.052	15.59	0.036	19.47	0.089
	802.11ac (VHT40)	16.49	0.045	14.91	0.031	18.78	0.076
	802.11ac (VHT80)	15.24	0.033	13.13	0.021	17.32	0.054
UNII1-2A	802.11ac (VHT160)	13.27	0.021	11.89	0.015	15.64	0.037
UNII2C	802.11a	16.77	0.048	15.71	0.037	19.29	0.085
	802.11n (HT20)	16.84	0.048	15.78	0.038	19.35	0.086
	802.11n (HT40)	16.32	0.043	14.52	0.028	18.52	0.071
	802.11ac (VHT20)	16.78	0.048	15.78	0.038	19.32	0.085
	802.11ac (VHT40)	16.25	0.042	14.65	0.029	18.53	0.071
	802.11ac (VHT80)	15.06	0.032	13.82	0.024	17.49	0.056
UNII2C	802.11ac (VHT160)	12.85	0.019	12.23	0.017	15.56	0.036
UNII3	802.11a	16.97	0.050	16.21	0.042	19.62	0.092
	802.11n (HT20)	17.16	0.052	16.20	0.042	19.72	0.094
	802.11n (HT40)	15.97	0.040	15.32	0.034	18.66	0.074
	802.11ac (VHT20)	17.09	0.051	16.25	0.042	19.70	0.093
	802.11ac (VHT40)	15.97	0.040	15.43	0.035	18.72	0.074
	802.11ac (VHT80)	15.28	0.034	14.50	0.028	17.92	0.062
UNII4 (Conducted For inf.)	802.11a	16.66	0.046	16.00	0.040	19.36	0.086
	802.11n (HT20)	16.72	0.047	15.97	0.040	19.37	0.086
	802.11n (HT40)	15.98	0.040	14.74	0.030	18.41	0.069
	802.11ac (VHT20)	16.68	0.047	15.99	0.040	19.36	0.086
	802.11ac (VHT40)	15.98	0.040	14.80	0.030	18.44	0.070
	802.11ac (VHT80)	15.04	0.032	14.14	0.026	17.62	0.058
UNII3&4	802.11ac (VHT160)	12.59	0.018	13.30	0.021	15.97	0.040

Band	Mode	MIMO											
		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	16.66	-0.910	15.75	0.038	16.00	-0.910	15.09	0.032	19.36	-0.910	18.45	0.070
	802.11n (HT20)	16.72	-0.910	15.81	0.038	15.97	-0.910	15.06	0.032	19.37	-0.910	18.46	0.070
	802.11n (HT40)	15.98	-0.910	15.07	0.032	14.74	-0.910	13.83	0.024	18.41	-0.910	17.50	0.056
	802.11ac (VHT20)	16.68	-0.910	15.77	0.038	15.99	-0.910	15.08	0.032	19.36	-0.910	18.45	0.070
	802.11ac (VHT40)	15.98	-0.910	15.07	0.032	14.80	-0.910	13.89	0.024	18.44	-0.910	17.53	0.057
	802.11ac (VHT80)	15.04	-0.910	14.13	0.026	14.14	-0.910	13.23	0.021	17.62	-0.910	16.71	0.047
	802.11ac (VHT160)	12.59	-0.910	11.68	0.015	13.30	-0.910	12.39	0.017	15.97	-0.910	15.06	0.032

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.

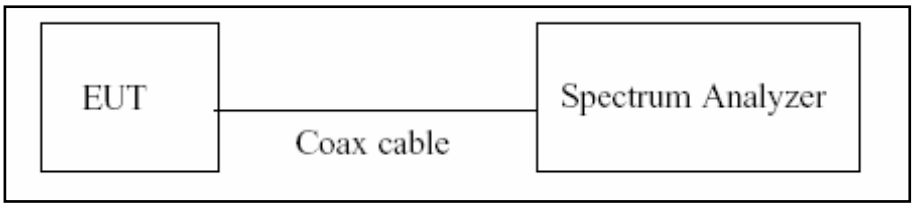
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	2.00 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.40 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.51 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.92 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.48 (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.

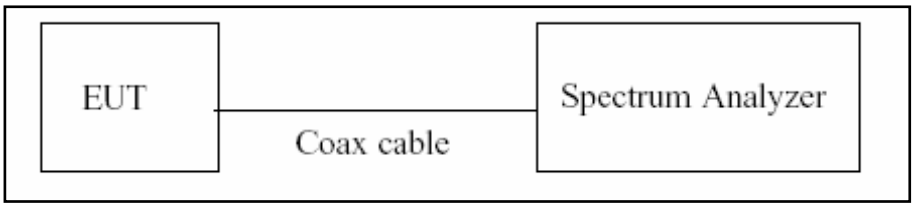
1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

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.

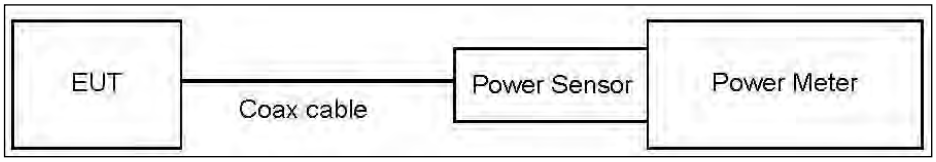
8.3. Output Power Measurement

Limit

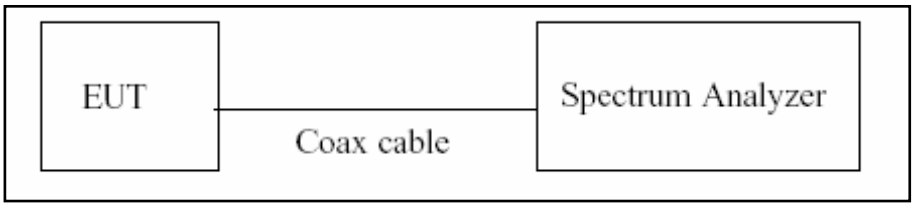
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30 dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30 dBm)
UNII 4	EIRP 30 dBm

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
   ANT1 : Attenuator loss(20 dB) + Cable loss + EUT Cable loss
   ANT2 : Attenuator loss(20 dB) + Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Ant.1 Loss(dB)	Ant.2 Loss(dB)
UNII 1	21.40	20.82
UNII 2A	21.40	20.82
UNII 2C	21.40	20.82
UNII 3&4	21.40	20.82

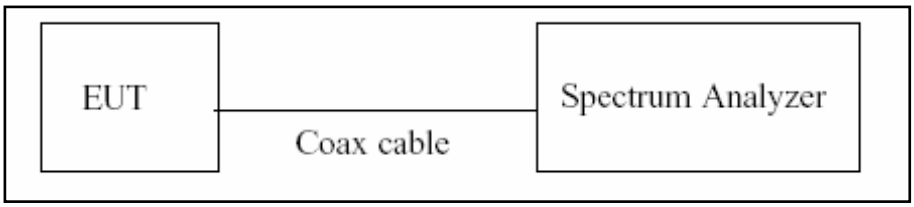
(Actual value of loss for the attenuator and cable combination)

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
   ANT1 : Attenuator loss(20 dB) + Cable loss + EUT Cable loss
   ANT2 : Attenuator loss(20 dB) + Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Ant.1 Loss(dB)	Ant.2 Loss(dB)
UNII 1	21.40	20.82
UNII 2A	21.40	20.82
UNII 2C	21.40	20.82
UNII 3&4	21.40	20.82

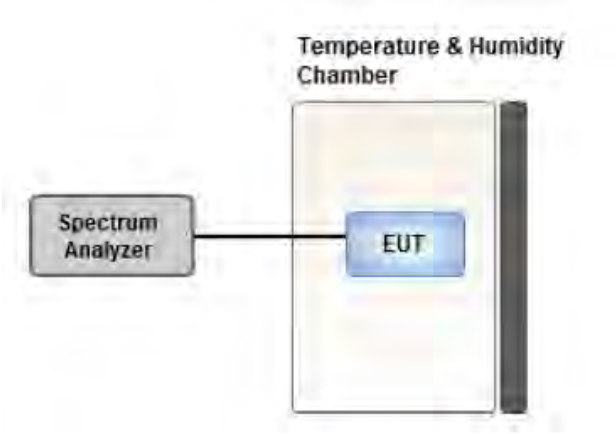
(Actual value of loss for the attenuator and cable combination)

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.

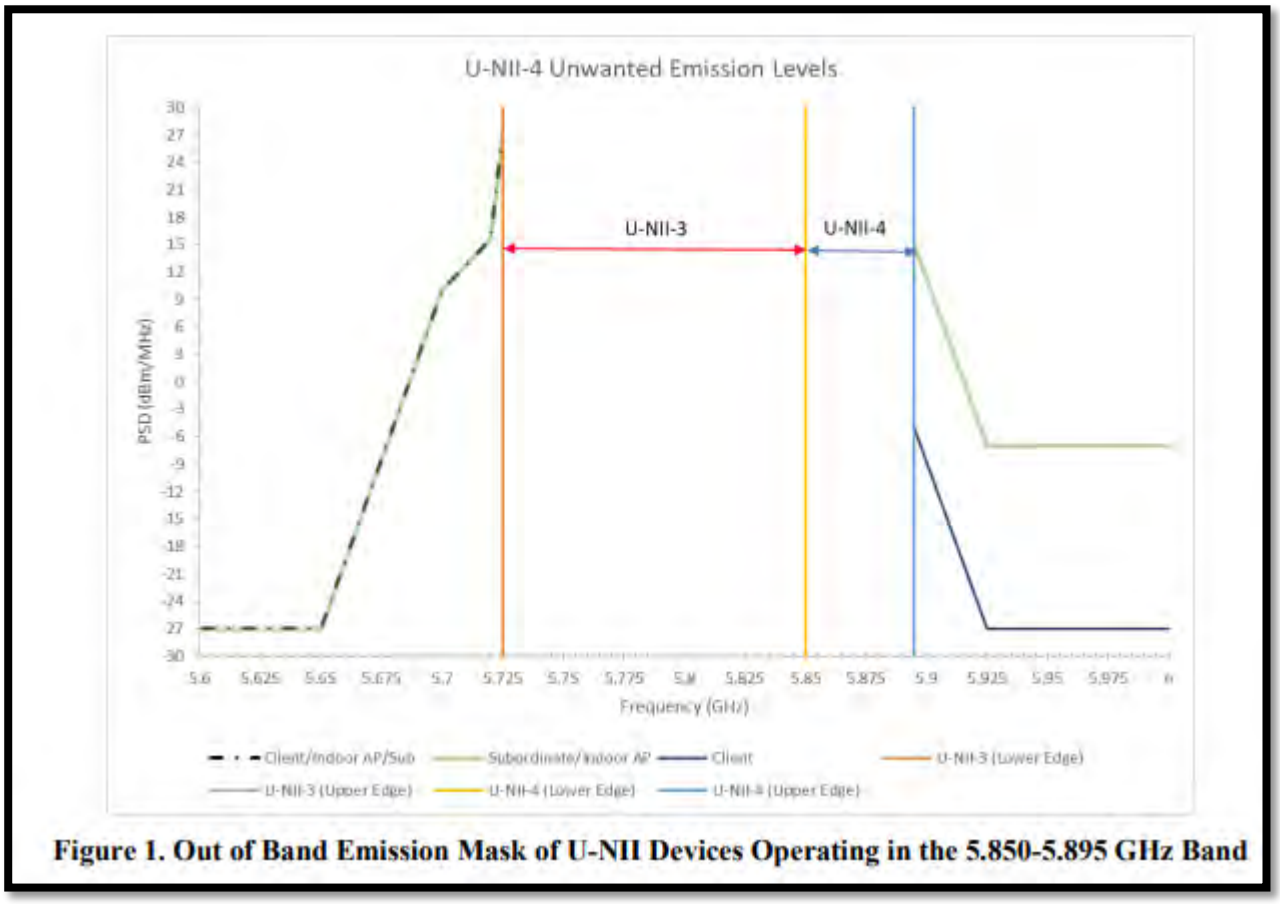


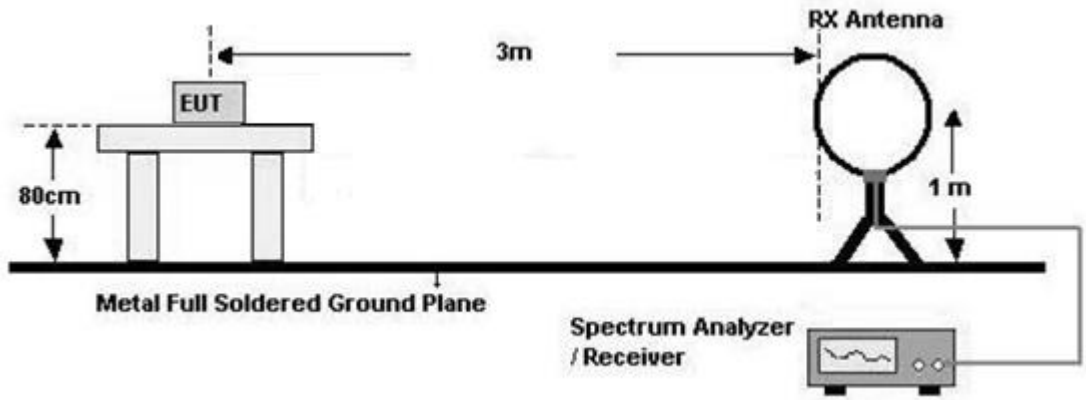
Figure 1. Out of Band Emission Mask of U-NII Devices Operating in the 5.850-5.895 GHz Band

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.

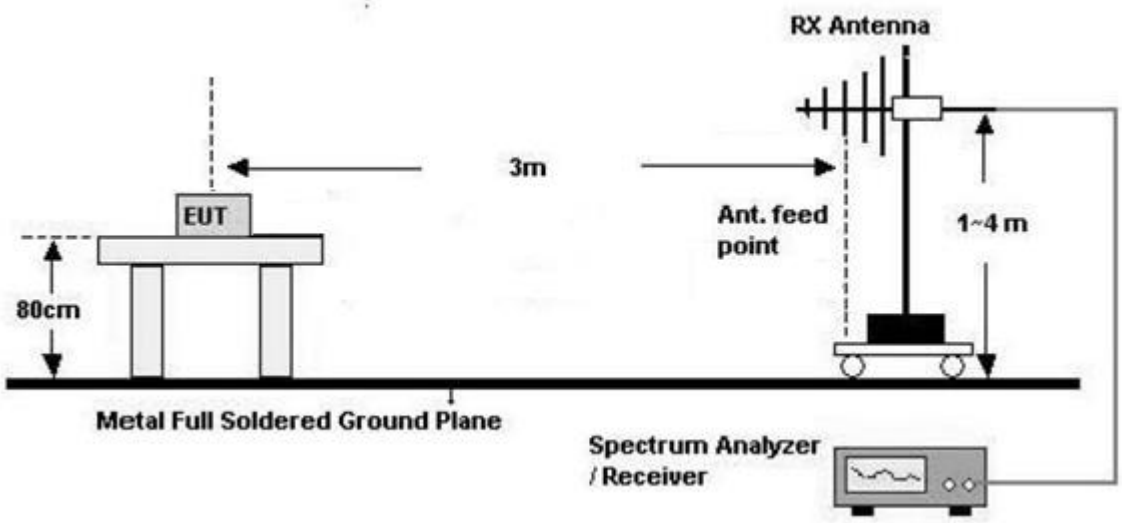
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

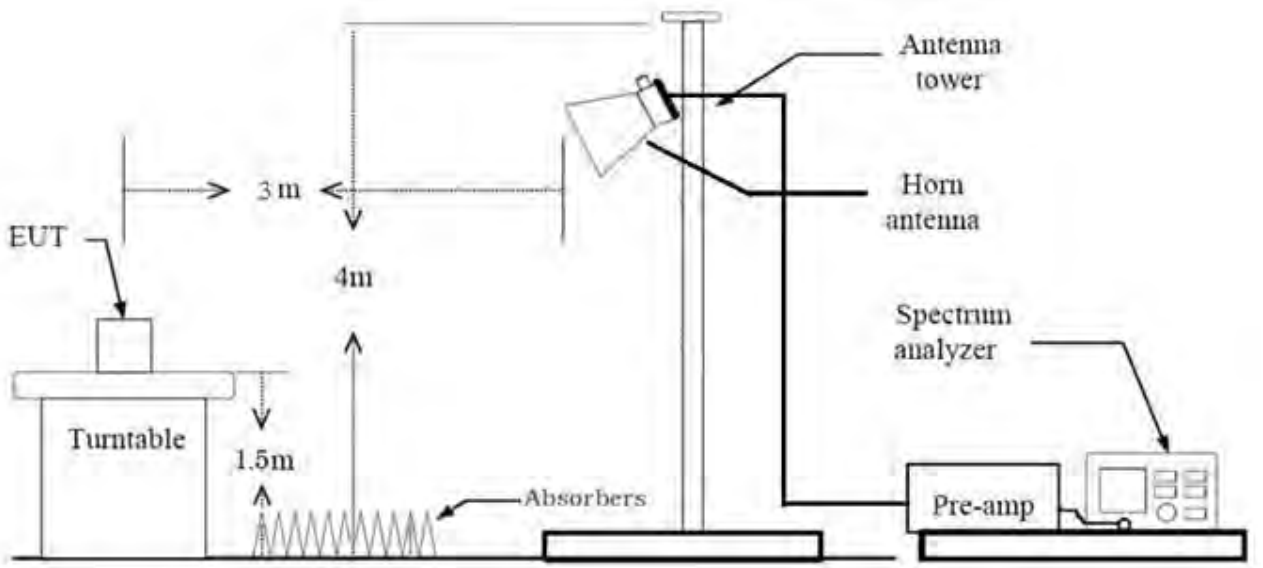
Below 30 MHz



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)	MCS0	0.928	0.323	1000
802.11n(HT40)	MCS0	0.866	0.624	3000
802.11ac(VHT20)	MCS0	0.925	0.338	1000
802.11ac(VHT40)	MCS0	0.860	0.654	3000
802.11ac(VHT80)	MCS0	0.763	1.178	5000
802.11ac(VHT160)	MCS0	0.644	1.909	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 : Z
   - Radiated Restricted Band Edge : X
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.
     (Worstcase : 802.11a_6Mbps, UNII1&2A HT20 ~ VHT160)
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
6. SM-S911B/DS, SM-S911B were tested and the worst case results are reported.

(Worst case : SM-S911B/DS)

Radiated test(RSDB)

1. Please refer to the UNII ax Test Report.
2. SM-S911B/DS, SM-S911B were tested and the worst case results are reported.

(Worst case : SM-S911B/DS)

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 + Tr avel Adapter
   - Worstcase : Stand alone + Travel Adapter
2. SM-S911B/DS, SM-S911B were tested and the worst case results are reported.

(Worst case : SM-S911B/DS)

Conducted test

1. All datarate of operation were investigated and the worst case datarate results are reported.
2. SM-S911B/DS, SM-S911B were tested and the worst case results are reported.

(Worst case : SM-S911B/DS)

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
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	1.079	0.911	0.406
	12	0.745	0.841	0.886	0.528
	18	0.507	0.603	0.840	0.755
	24	0.385	0.481	0.800	0.969
	36	0.263	0.360	0.732	1.353
	48	0.208	0.304	0.683	1.654
	54	0.187	0.284	0.661	1.800

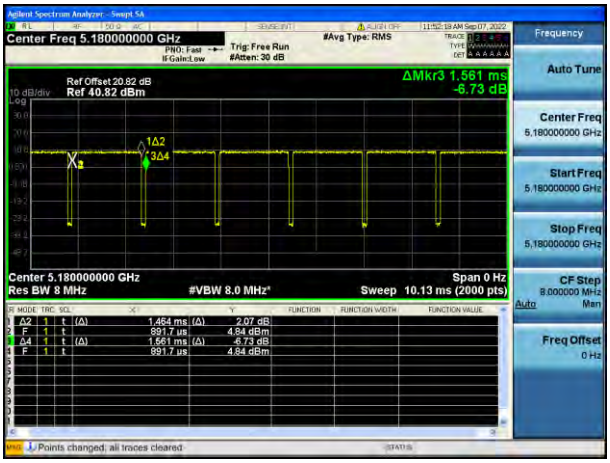
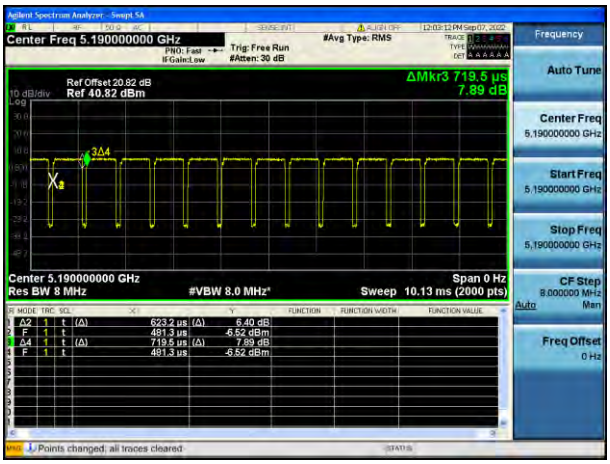
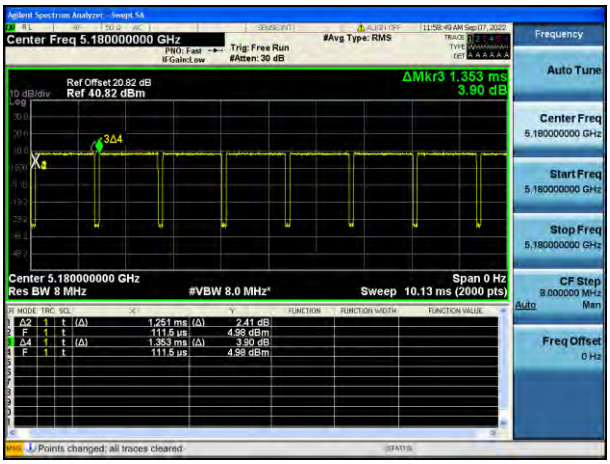
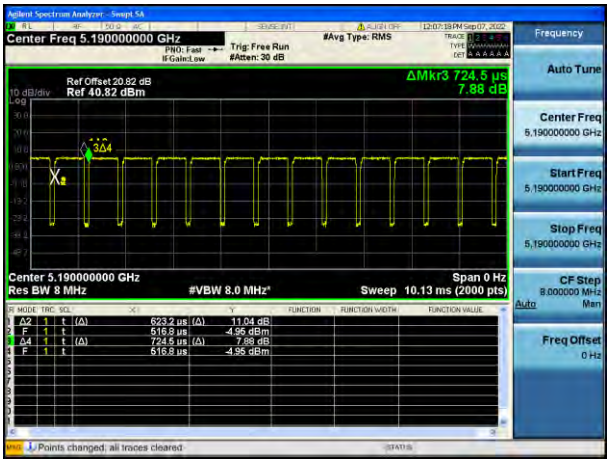
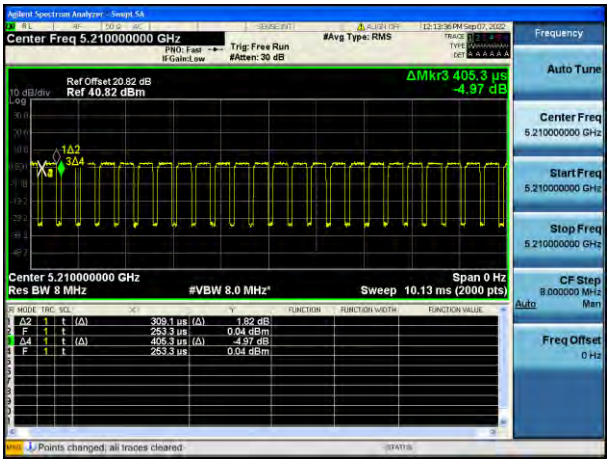
Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11n (HT20)	0	1.246	1.343	0.928	0.323
	1	0.643	0.740	0.870	0.605
	2	0.441	0.537	0.821	0.858
	3	0.339	0.441	0.770	1.134
	4	0.243	0.339	0.716	1.448
	5	0.187	0.284	0.661	1.800
	6	0.172	0.269	0.642	1.928
	7	0.162	0.284	0.571	2.430
802.11n (HT40)	0	0.623	0.719	0.866	0.624
	1	0.329	0.426	0.774	1.114
	2	0.233	0.329	0.708	1.502
	3	0.182	0.294	0.620	2.073
	4	0.132	0.291	0.453	3.442
	5	0.111	0.288	0.387	4.122
	6	0.106	0.287	0.371	4.309
	7	0.096	0.287	0.335	4.744

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT20)	0	1.251	1.353	0.925	0.338
	1	0.643	0.745	0.864	0.635
	2	0.441	0.542	0.813	0.899
	3	0.345	0.441	0.782	1.070
	4	0.243	0.339	0.716	1.448
	5	0.193	0.289	0.667	1.761
	6	0.177	0.279	0.636	1.963
	7	0.162	0.269	0.604	2.191
	8	0.142	0.269	0.527	2.779
802.11ac (VHT40)	0	0.623	0.725	0.860	0.654
	1	0.334	0.431	0.776	1.099
	2	0.233	0.334	0.697	1.568
	3	0.187	0.295	0.635	1.969
	4	0.141	0.295	0.478	3.206
	5	0.117	0.294	0.396	4.023
	6	0.106	0.294	0.362	4.412
	7	0.096	0.288	0.334	4.758
	8	0.091	0.288	0.317	4.991
	9	0.086	0.288	0.299	5.239
802.11ac (VHT80)	0	0.309	0.405	0.763	1.178
	1	0.177	0.363	0.489	3.111
	2	0.132	0.358	0.368	4.342
	3	0.106	0.355	0.300	5.229
	4	0.086	0.354	0.243	6.138
	5	0.076	0.349	0.218	6.620
	6	0.071	0.336	0.211	6.755
	7	0.066	0.324	0.203	6.919
	8	0.063	0.323	0.195	7.108
	9	0.063	0.322	0.195	7.094

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT160)	0	0.176	0.273	0.644	1.909
	1	0.108	0.269	0.400	3.975
	2	0.087	0.267	0.328	4.840
	3	0.076	0.265	0.285	5.445
	4	0.062	0.265	0.233	6.319
	5	0.059	0.264	0.222	6.538
	6	0.057	0.261	0.216	6.647
	7	0.054	0.261	0.208	6.814
	8	0.051	0.260	0.197	7.060
	9	0.051	0.260	0.197	7.060

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	29.50	16.740
5200	40	30.36	16.739
5240	48	30.69	16.695
5260	52	30.26	16.751
5300	60	33.26	17.345
5320	64	33.79	17.425
5500	100	26.62	16.698
5600	120	19.26	16.408
5720	144	19.24	16.381
5745	149	19.81	16.378
5785	157	19.88	16.390
5825	165	19.34	16.395
5845	169	19.16	16.404
5865	173	19.17	16.394
5885	177	19.08	16.390

802.11n(HT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	28.26	17.847
5200	40	27.70	17.808
5240	48	28.25	17.790
5260	52	26.93	17.837
5300	60	31.30	18.052
5320	64	31.65	18.050
5500	100	26.76	17.781
5600	120	20.44	17.576
5720	144	20.17	17.595
5745	149	20.15	17.572
5785	157	20.12	17.586
5825	165	20.26	17.570
5845	169	20.15	17.585
5865	173	20.20	17.587
5885	177	20.42	17.581

802.11n(HT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	39.68	36.074
5230	46	43.87	36.209
5270	54	41.52	36.182
5310	62	63.38	36.375
5510	102	40.39	36.145
5590	118	39.57	36.042
5710	142	39.69	36.065
5755	151	39.79	36.038
5795	159	39.61	36.032
5835	167	39.19	36.023
5875	175	39.72	36.016

802.11ac(VHT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	27.58	17.790
5200	40	28.69	17.821
5240	48	27.70	17.797
5260	52	26.73	17.835
5300	60	30.81	18.010
5320	64	31.11	18.076
5500	100	25.45	17.783
5600	120	20.24	17.579
5720	144	20.02	17.588
5745	149	20.31	17.579
5785	157	20.53	17.593
5825	165	20.56	17.578
5845	169	20.13	17.573
5865	173	20.16	17.594
5885	177	20.54	17.584

802.11ac(VHT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	39.72	36.089
5230	46	40.70	36.159
5270	54	41.84	36.208
5310	62	61.96	36.362
5510	102	40.06	36.137
5590	118	39.41	36.032
5710	142	39.55	36.053
5755	151	39.39	36.019
5795	159	39.48	36.087
5835	167	39.54	36.030
5875	175	39.66	36.054

802.11ac(VHT80) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5210	42	81.44	75.497
5290	58	81.67	75.555
5530	106	81.17	75.603
5610	122	81.95	75.537
5690	138	81.58	75.493
5775	155	81.43	75.490
5855	171	81.15	75.508

802.11ac(VHT160) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5250	50	164.6	154.63
5570	114	165.6	154.72
5815	163	165.0	154.67

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	18.99	16.368
5200	40	19.03	16.388
5240	48	19.09	16.380
5260	52	18.92	16.368
5300	60	18.98	16.399
5320	64	19.20	16.386
5500	100	19.14	16.386
5600	120	18.79	16.399
5720	144	19.26	16.392
5745	149	19.26	16.379
5785	157	19.02	16.384
5825	165	19.17	16.379
5845	169	19.20	16.354
5865	173	19.05	16.361
5885	177	19.19	16.388

802.11n(HT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.04	17.578
5200	40	20.26	17.577
5240	48	19.94	17.571
5260	52	19.98	17.576
5300	60	20.05	17.593
5320	64	19.95	17.585
5500	100	20.17	17.574
5600	120	19.72	17.591
5720	144	20.41	17.583
5745	149	20.20	17.570
5785	157	20.23	17.575
5825	165	20.53	17.589
5845	169	20.23	17.569
5865	173	20.35	17.562
5885	177	20.34	17.584

802.11n(HT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	39.71	36.043
5230	46	39.43	35.999
5270	54	39.50	36.064
5310	62	39.31	36.011
5510	102	39.41	36.047
5590	118	39.72	36.075
5710	142	39.80	36.041
5755	151	39.48	36.061
5795	159	39.61	36.075
5835	167	39.50	36.038
5875	175	39.68	36.048

802.11ac(VHT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.04	17.590
5200	40	20.08	17.589
5240	48	20.08	17.583
5260	52	20.07	17.585
5300	60	20.10	17.569
5320	64	19.90	17.569
5500	100	20.10	17.584
5600	120	20.13	17.588
5720	144	20.40	17.575
5745	149	20.32	17.576
5785	157	20.42	17.590
5825	165	20.30	17.572
5845	169	20.21	17.588
5865	173	20.01	17.581
5885	177	20.26	17.588

802.11ac(VHT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	39.60	36.063
5230	46	39.44	36.060
5270	54	39.83	36.035
5310	62	39.56	36.016
5510	102	39.84	36.024
5590	118	39.46	36.044
5710	142	39.85	36.071
5755	151	39.53	36.038
5795	159	39.63	36.073
5835	167	39.72	36.020
5875	175	39.75	36.042

802.11ac(VHT80) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5210	42	81.89	75.543
5290	58	81.78	75.524
5530	106	81.63	75.530
5610	122	81.36	75.593
5690	138	80.99	75.515
5775	155	81.62	75.421
5855	171	82.07	75.550

802.11ac(VHT160) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5250	50	165.6	154.70
5570	114	165.6	154.59
5815	163	164.5	154.45

Note:

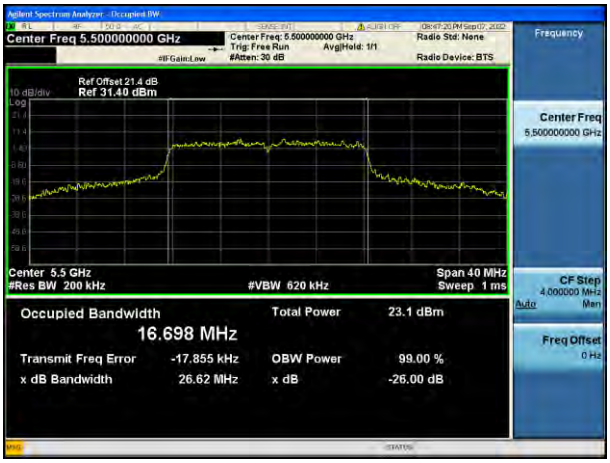
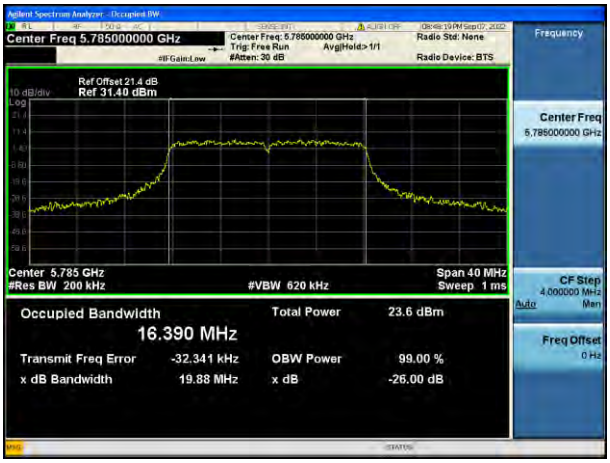
For channels 169/167/171 included in U-NII3&4, please refer to the table below.

[Ant.1]

▣ Test Plots(802.11a)

Note:

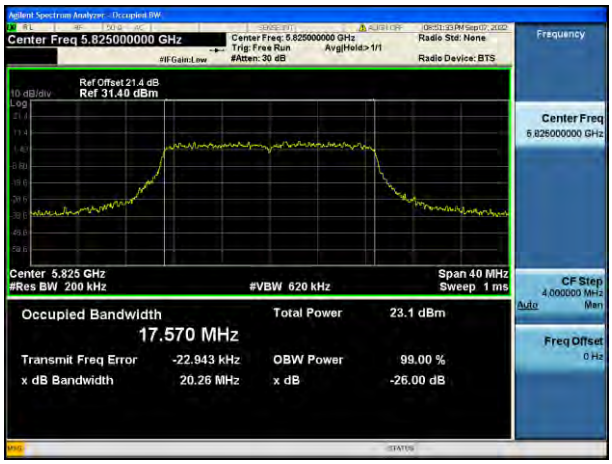
In order to simplify the report, attached plots were only the widest channel.

802.11a UNII 1 BAND 26 dB Bandwidth (CH 48)	802.11a UNII 2A BAND 26 dB Bandwidth (CH 64)
	
802.11a UNII 2C BAND 26 dB Bandwidth (CH 100)	**802.11a UNII 3 BAND 26 dB Bandwidth (CH 157)**
	
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 64)
	
802.11n_HT20 UNII 2C BAND 26 dB Bandwidth(CH 100)	**802.11n_HT20 UNII 3 BAND 26 dB Bandwidth(CH 165)**
	
802.11n_HT20 UNII 4 BAND 26 dB Bandwidth(CH 177)	
	

▣ Test Plots(802.11n(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 62)
	
802.11n_HT40 UNII 2C BAND 26 dB Bandwidth(CH 102)	**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(VHT20))

Note:

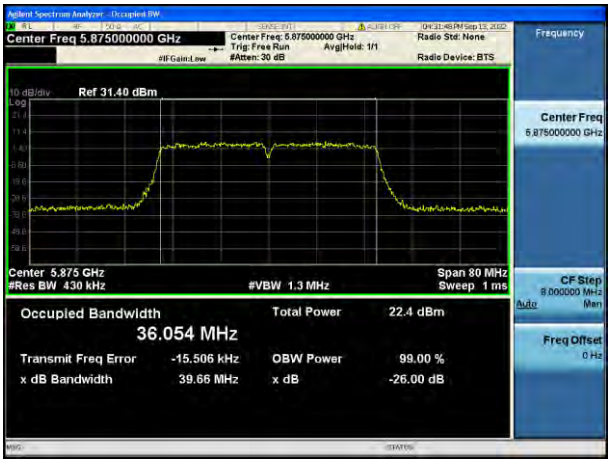
In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT20 UNII 1 BAND 26 dB Bandwidth(CH 40)	802.11ac_VHT20 UNII 2A BAND 26 dB Bandwidth(CH 64)
	
802.11ac_VHT20 UNII 2C BAND 26 dB Bandwidth(CH 100)	**802.11ac_VHT20 UNII 3 BAND 26 dB Bandwidth(CH 165)**
	
802.11ac_VHT20 UNII 4 BAND 26 dB Bandwidth(CH 177)	
	

▣ 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 62)
	
802.11ac_VHT40 UNII 2C BAND 26 dB Bandwidth(CH 102)	**802.11ac_VHT40 UNII 3 BAND 26 dB Bandwidth (CH 159)**
	
802.11ac_VHT40 UNII 4 BAND 26 dB Bandwidth (CH 175)	
	

▣ Test Plots(802.11ac(VHT80))

Note:

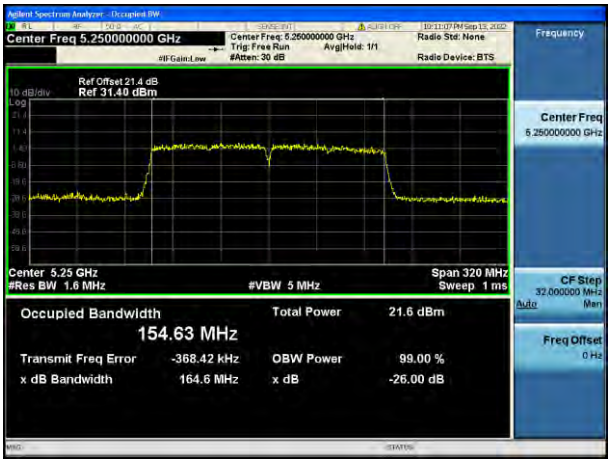
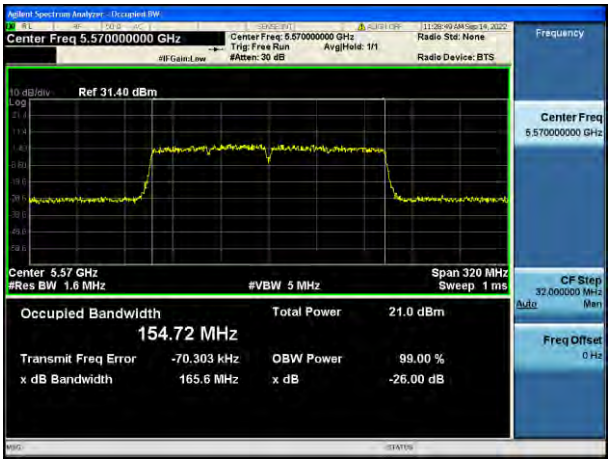
In order to simplify the report, attached plots were only the widest channel.

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 122)	**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.

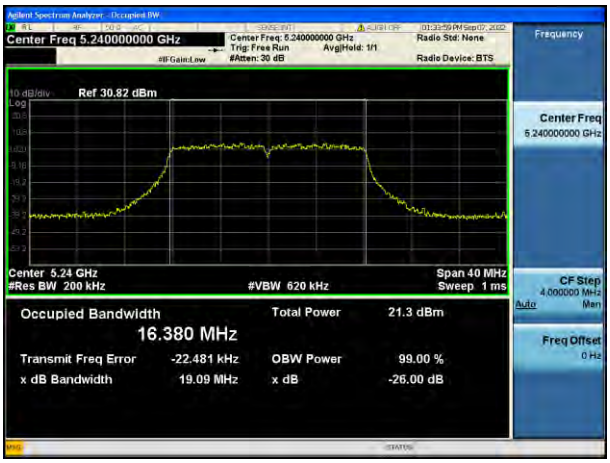
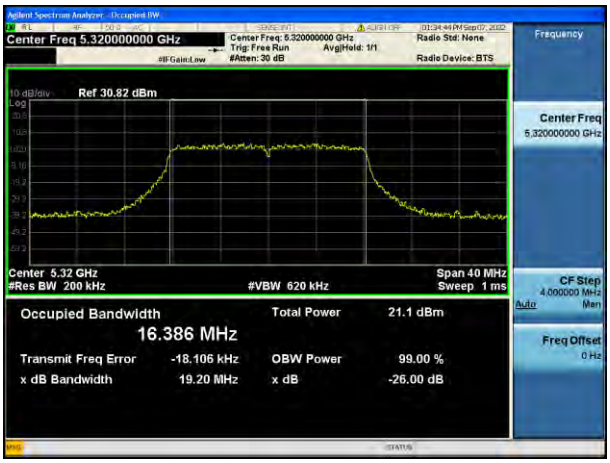
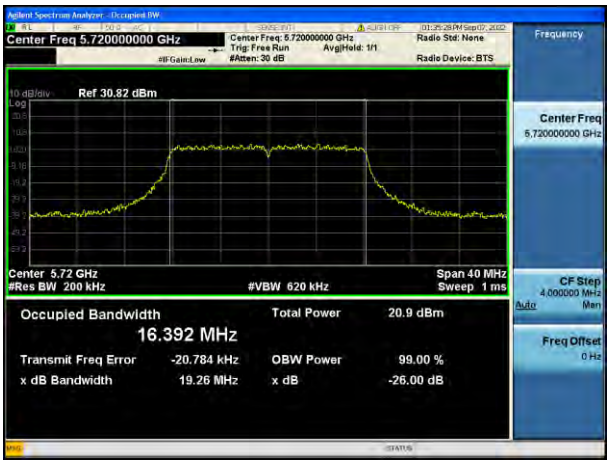
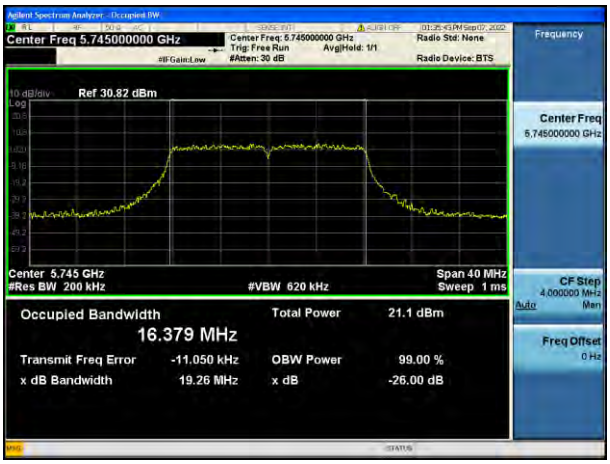
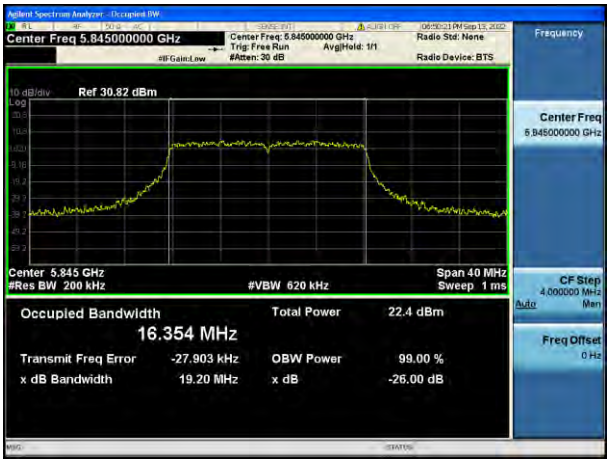
802.11ac_VHT160 UNII 1 BAND 26 dB Bandwidth(CH 50)	802.11ac_VHT160 UNII 2A BAND 26 dB Bandwidth (CH 114)
	
802.11ac_VHT160 UNII 4 BAND 26 dB Bandwidth(CH 163)	
	

[Ant.2]

▣ Test Plots(802.11a)

Note:

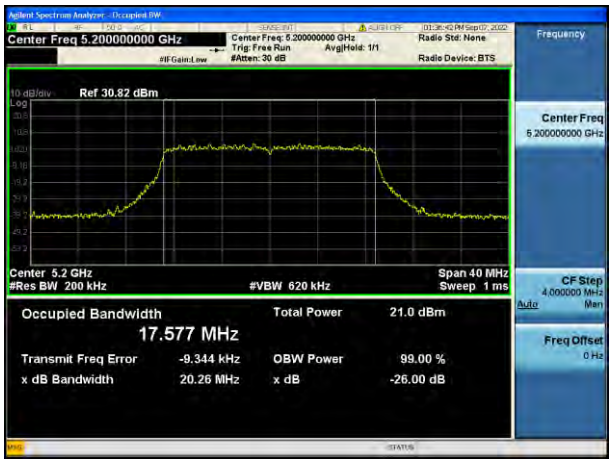
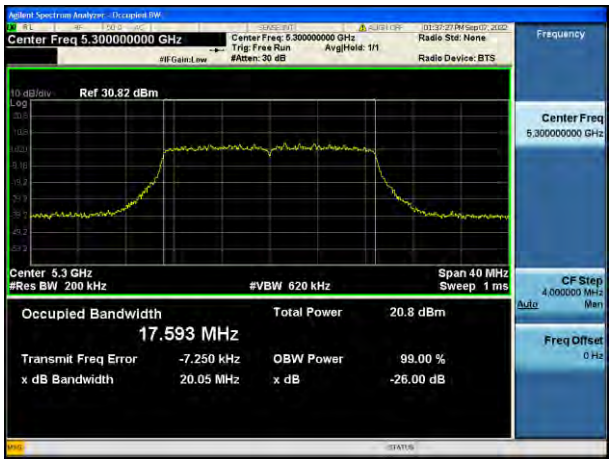
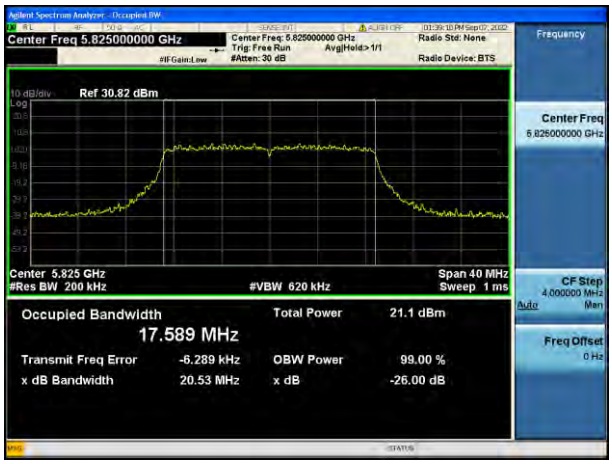
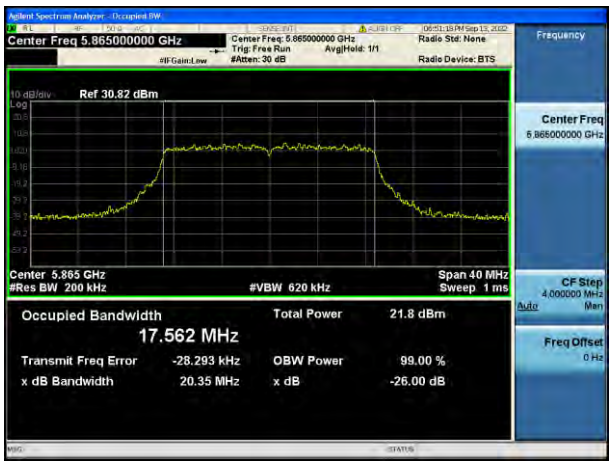
In order to simplify the report, attached plots were only the widest channel.

802.11a UNII 1 BAND 26 dB Bandwidth (CH 48)	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 149)**
	
802.11a UNII 4 BAND 26 dB Bandwidth (CH 169)	
	

▣ Test Plots(802.11n(HT20))

Note:

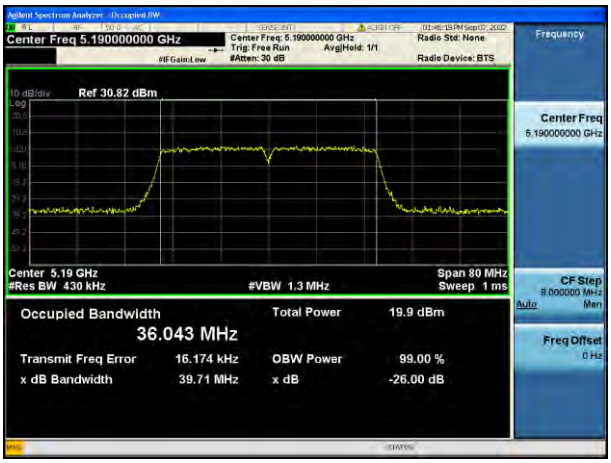
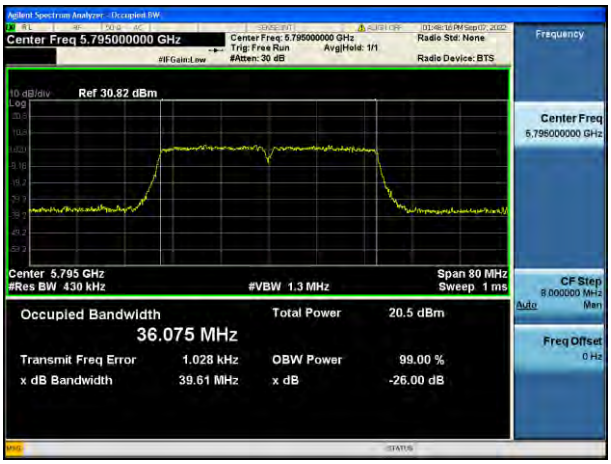
In order to simplify the report, attached plots were only the widest channel.

802.11n_HT20 UNII 1 BAND 26 dB Bandwidth(CH 40)	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 173)	
	

▣ Test Plots(802.11n(HT40))

Note:

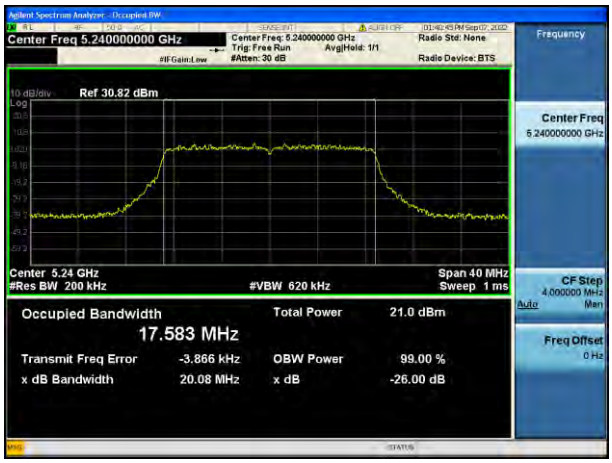
In order to simplify the report, attached plots were only the widest channel.

802.11n_HT40 UNII 1 BAND 26 dB Bandwidth(CH 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 175)	
	

▣ Test Plots(802.11ac(VHT20))

Note:

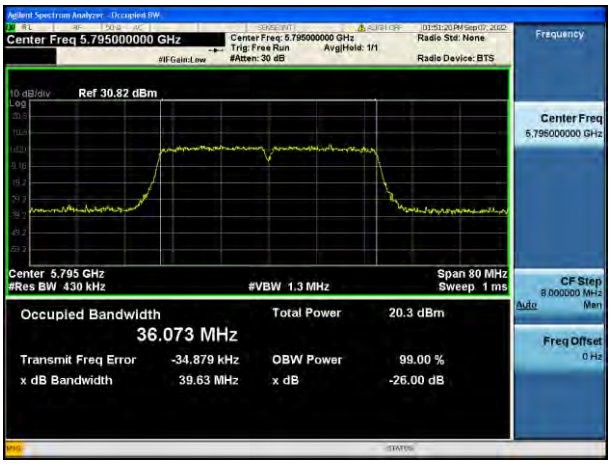
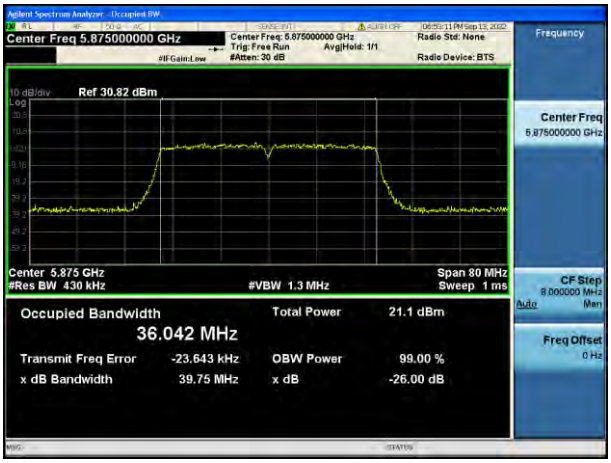
In order to simplify the report, attached plots were only the widest channel.

802.11ac_VHT20 UNII 1 BAND 26 dB Bandwidth(CH 48)	802.11ac_VHT20 UNII 2A BAND 26 dB Bandwidth(CH 60)
	
802.11ac_VHT20 UNII 2C BAND 26 dB Bandwidth(CH 144)	**802.11ac_VHT20 UNII 3 BAND 26 dB Bandwidth(CH 157)**
	
802.11ac_VHT20 UNII 4 BAND 26 dB Bandwidth(CH 177)	
	

▣ 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 54)
	
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 175)	
	

▣ Test Plots(802.11ac(VHT80))

Note:

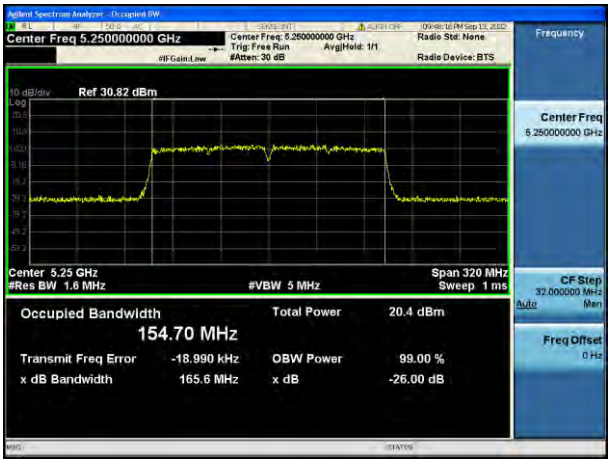
In order to simplify the report, attached plots were only the widest channel.

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	16.32	> 0.5	Pass
5785	157	16.32	> 0.5	Pass
5825	165	16.34	> 0.5	Pass
5845	169	16.33	> 0.5	Pass
5865	173	16.37	> 0.5	Pass
5885	177	16.36	> 0.5	Pass

802.11n(HT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.18	> 0.5	Pass
5785	157	16.88	> 0.5	Pass
5825	165	17.07	> 0.5	Pass
5845	169	17.58	> 0.5	Pass
5865	173	16.86	> 0.5	Pass
5885	177	17.29	> 0.5	Pass

802.11n(HT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.55	> 0.5	Pass
5795	159	35.98	> 0.5	Pass
5835	167	35.79	> 0.5	Pass
5875	175	35.94	> 0.5	Pass

802.11ac(VHT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.09	> 0.5	Pass
5785	157	17.25	> 0.5	Pass
5825	165	16.94	> 0.5	Pass
5845	169	17.12	> 0.5	Pass
5865	173	16.96	> 0.5	Pass
5885	177	16.91	> 0.5	Pass

802.11ac(VHT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.58	> 0.5	Pass
5795	159	35.60	> 0.5	Pass
5835	167	35.55	> 0.5	Pass
5875	175	35.56	> 0.5	Pass

802.11ac(VHT80) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.49	> 0.5	Pass
5855	171	75.55	> 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.2]

802.11a Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	16.36	> 0.5	Pass
5785	157	16.34	> 0.5	Pass
5825	165	16.36	> 0.5	Pass
5845	169	16.35	> 0.5	Pass
5865	173	16.33	> 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	17.58	> 0.5	Pass
5825	165	17.55	> 0.5	Pass
5845	169	17.58	> 0.5	Pass
5865	173	17.00	> 0.5	Pass
5885	177	17.09	> 0.5	Pass

802.11n(HT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.41	> 0.5	Pass
5795	159	35.47	> 0.5	Pass
5835	167	35.68	> 0.5	Pass
5875	175	36.25	> 0.5	Pass

802.11ac(VHT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.01	> 0.5	Pass
5785	157	17.34	> 0.5	Pass
5825	165	17.55	> 0.5	Pass
5845	169	16.96	> 0.5	Pass
5865	173	17.03	> 0.5	Pass
5885	177	17.01	> 0.5	Pass

802.11ac(VHT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.46	> 0.5	Pass
5795	159	35.82	> 0.5	Pass
5835	167	35.42	> 0.5	Pass
5875	175	35.61	> 0.5	Pass

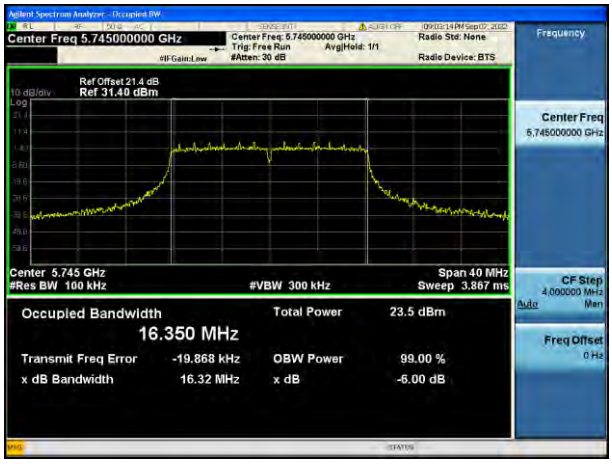
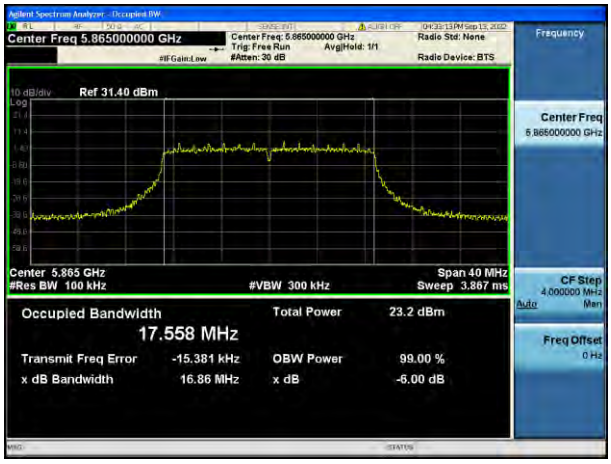
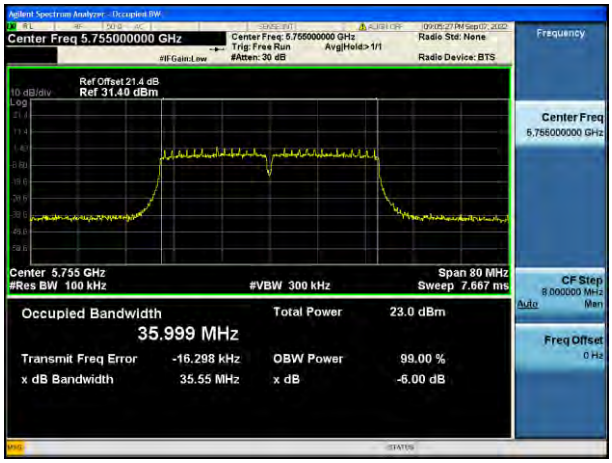
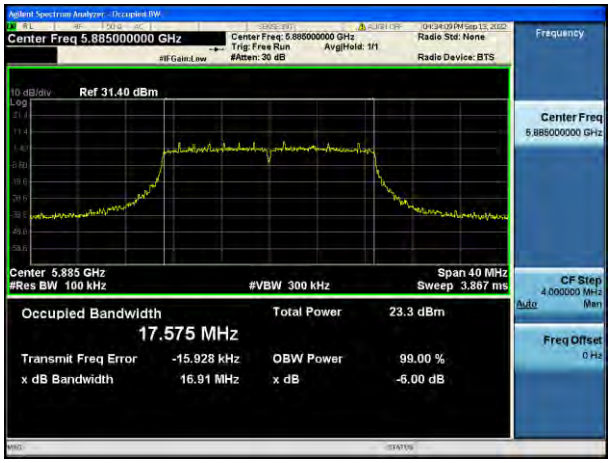
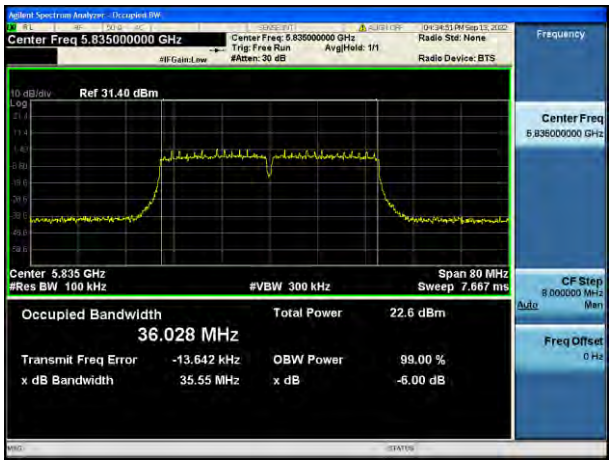
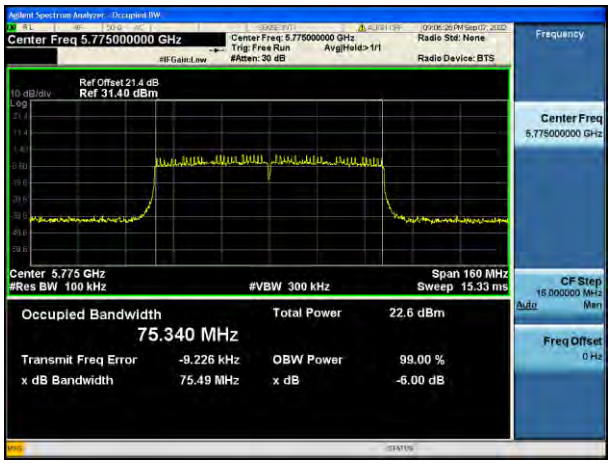
802.11ac(VHT80) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.46	> 0.5	Pass
5855	171	75.33	> 0.5	Pass

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.

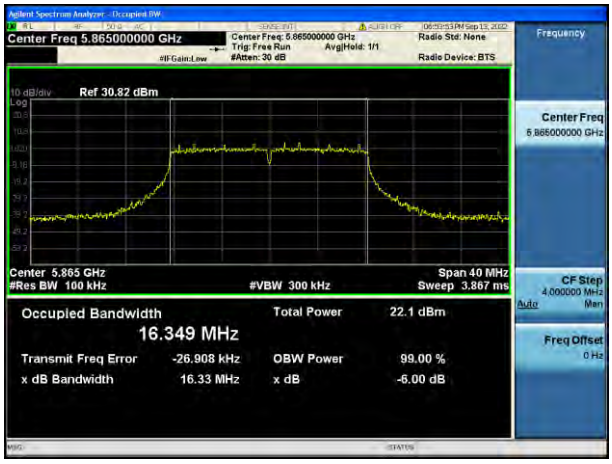
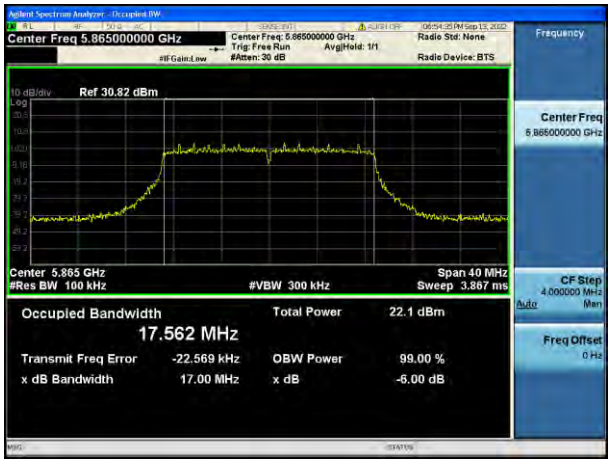
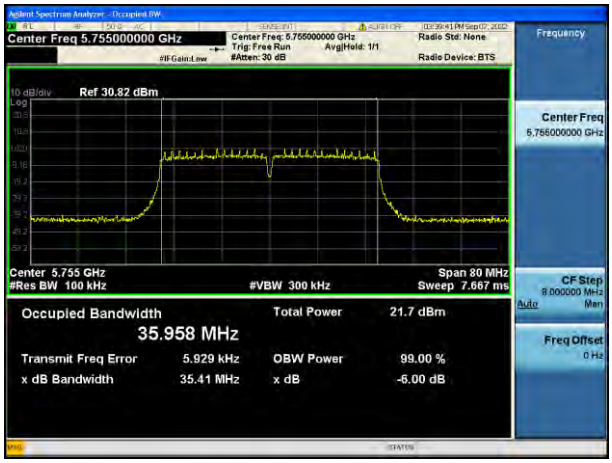
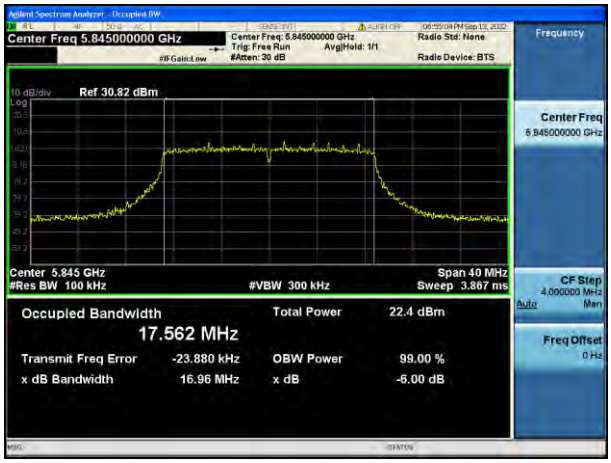
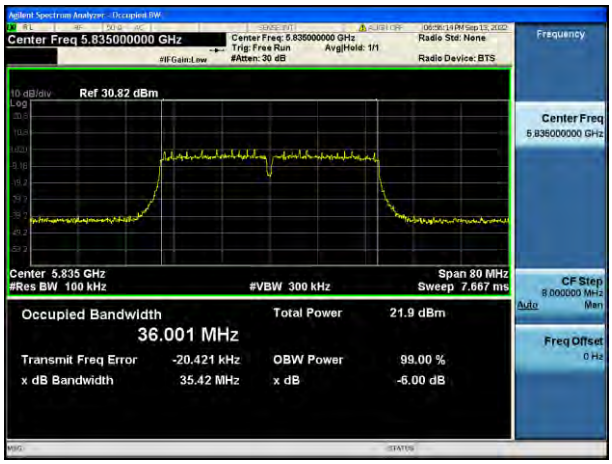
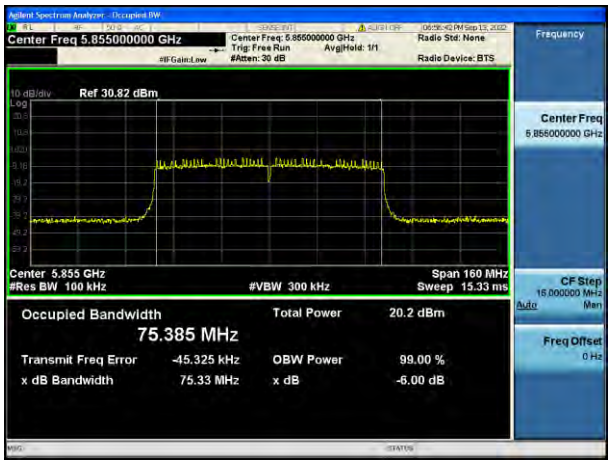
802.11a (CH.149)	802.11n(HT20) (CH.173)
	
802.11n(HT40) (CH.151)	**802.11ac(VHT20) (CH.177)**
	
802.11ac(VHT40) (CH.167)	**802.11ac(VHT80) (CH.155)**
	

802.11ac(VHT160) (CH.163)

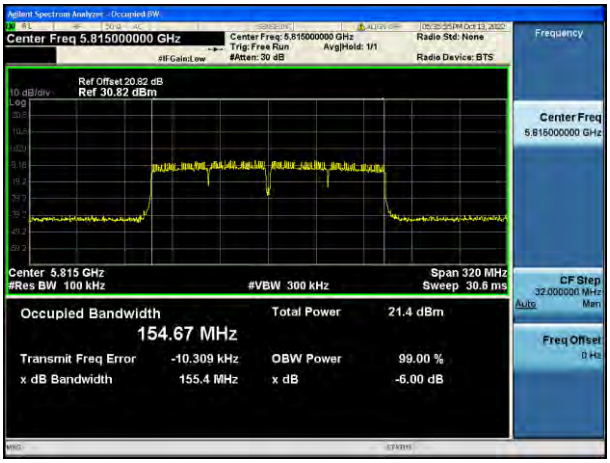
[Ant.2]

▣ Test Plots

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

802.11a (CH.173)	802.11n(HT20) (CH.173)
	
802.11n(HT40) (CH.151)	**802.11ac(VHT20) (CH.169)**
	
802.11ac(VHT40) (CH.167)	**802.11ac(VHT80) (CH.171)**
	

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

[SISO(ANT1)]

802.11a Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5180	36	15.91	0.755	16.67	23.98	18M
5200	40	15.91	0.755	16.66	23.98	18M
5240	48	15.84	0.755	16.60	23.98	18M
5260	52	16.10	0.755	16.85	23.98	18M
5300	60	16.22	0.755	16.98	23.98	18M
5320	64	15.71	0.755	16.47	23.98	18M
5500	100	15.40	0.755	16.16	23.98	18M
5600	120	15.60	0.755	16.36	23.85	18M
5720	144	16.02	0.755	16.77	23.84	18M
5745	149	16.08	0.755	16.84	30.00	18M
5785	157	16.21	0.755	16.97	30.00	18M
5825	165	15.90	0.755	16.66	30.00	18M
5845	169	15.91	0.755	16.66	EIRP ≤ 30dBm	18M
5865	173	15.94	0.755	16.70	EIRP ≤ 30dBm	18M
5885	177	16.05	0.755	16.80	EIRP ≤ 30dBm	18M

[MIMO(ANT1)]

802.11a Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5180	36	15.91	0.755	16.67	23.98	18M
5200	40	15.91	0.755	16.66	23.98	18M
5240	48	15.84	0.755	16.60	23.98	18M
5260	52	16.10	0.755	16.85	23.98	18M
5300	60	16.22	0.755	16.98	23.98	18M
5320	64	15.71	0.755	16.47	23.98	18M
5500	100	15.40	0.755	16.16	23.98	18M
5600	120	15.60	0.755	16.36	23.85	18M
5720	144	16.02	0.755	16.77	23.84	18M
5745	149	16.08	0.755	16.84	30.00	18M
5785	157	16.21	0.755	16.97	30.00	18M
5825	165	15.90	0.755	16.66	30.00	18M
5845	169	15.91	0.755	16.66	EIRP ≤ 30dBm	18M
5865	173	15.94	0.755	16.70	EIRP ≤ 30dBm	18M
5885	177	16.05	0.755	16.80	EIRP ≤ 30dBm	18M

802.11n(20 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit [dBm]	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5180	36	14.91	1.800	16.71	23.98	MCS5
5200	40	14.94	1.800	16.73	23.98	MCS5
5240	48	14.90	1.800	16.70	23.98	MCS5
5260	52	15.13	1.800	16.93	23.98	MCS5
5300	60	15.37	1.800	17.17	23.98	MCS5
5320	64	15.24	1.800	17.04	23.98	MCS5
5500	100	14.33	1.800	16.13	23.98	MCS5
5600	120	14.59	1.800	16.39	23.98	MCS5
5720	144	15.04	1.800	16.84	23.98	MCS5
5745	149	15.08	1.800	16.88	30.00	MCS5
5785	157	15.36	1.800	17.16	30.00	MCS5
5825	165	14.84	1.800	16.64	30.00	MCS5
5845	169	14.92	1.800	16.72	EIRP ≤ 30dBm	MCS5
5865	173	14.94	1.800	16.74	EIRP ≤ 30dBm	MCS5
5885	177	15.02	1.800	16.82	EIRP ≤ 30dBm	MCS5

802.11n(40 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5190	38	15.10	1.114	16.22	23.98	MCS1
5230	46	15.14	1.114	16.25	23.98	MCS1
5270	54	15.36	1.114	16.47	23.98	MCS1
5310	62	14.89	1.114	16.00	23.98	MCS1
5510	102	15.20	1.114	16.32	23.98	MCS1
5590	118	14.62	1.114	15.73	23.98	MCS1
5710	142	14.64	1.114	15.75	23.98	MCS1
5755	151	14.80	1.114	15.91	30.00	MCS1
5795	159	14.85	1.114	15.97	30.00	MCS1
5835	167	14.58	1.114	15.69	EIRP ≤ 30dBm	MCS1
5875	175	14.86	1.114	15.98	EIRP ≤ 30dBm	MCS1

802.11ac(20 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5180	36	14.88	1.761	16.64	23.98	MCS5
5200	40	14.90	1.761	16.66	23.98	MCS5
5240	48	14.85	1.761	16.61	23.98	MCS5
5260	52	15.17	1.761	16.93	23.98	MCS5
5300	60	15.42	1.761	17.18	23.98	MCS5
5320	64	15.26	1.761	17.02	23.98	MCS5
5500	100	14.36	1.761	16.12	23.98	MCS5
5600	120	14.61	1.761	16.37	23.98	MCS5
5720	144	15.02	1.761	16.78	23.98	MCS5
5745	149	15.10	1.761	16.86	30.00	MCS5
5785	157	15.33	1.761	17.09	30.00	MCS5
5825	165	14.89	1.761	16.65	30.00	MCS5
5845	169	14.92	1.761	16.68	EIRP ≤ 30dBm	MCS5
5865	173	14.91	1.761	16.67	EIRP ≤ 30dBm	MCS5
5885	177	15.02	1.761	16.78	EIRP ≤ 30dBm	MCS5

802.11ac(40 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5190	38	14.67	1.568	16.24	23.98	MCS2
5230	46	14.67	1.568	16.24	23.98	MCS2
5270	54	14.92	1.568	16.49	23.98	MCS2
5310	62	14.60	1.568	16.16	23.98	MCS2
5510	102	14.68	1.568	16.25	23.98	MCS2
5590	118	14.17	1.568	15.74	23.98	MCS2
5710	142	14.25	1.568	15.81	23.98	MCS2
5755	151	14.32	1.568	15.89	30.00	MCS2
5795	159	14.40	1.568	15.97	30.00	MCS2
5835	167	14.14	1.568	15.71	EIRP ≤ 30dBm	MCS2
5875	175	14.41	1.568	15.98	EIRP ≤ 30dBm	MCS2

802.11ac(80 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5210	42	8.99	6.138	15.13	23.98	MCS4
5290	58	9.10	6.138	15.24	23.98	MCS4
5530	106	8.63	6.138	14.77	23.98	MCS4
5610	122	8.62	6.138	14.76	23.98	MCS4
5690	138	8.92	6.138	15.06	23.98	MCS4
5775	155	9.14	6.138	15.28	30.00	MCS4
5855	171	8.84	6.138	14.98	EIRP ≤ 30dBm	MCS4

802.11ac(160 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5250	50	6.95	6.319	13.27	23.98	MCS4
5570	114	6.53	6.319	12.85	23.98	MCS4
5815	163	6.28	6.319	12.59	EIRP ≤ 30dBm	MCS4

[MIMO(ANT2)]

802.11a Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5180	36	14.81	0.755	15.57	23.98	18M
5200	40	14.80	0.755	15.56	23.98	18M
5240	48	15.12	0.755	15.87	23.98	18M
5260	52	15.00	0.755	15.76	23.77	18M
5300	60	14.87	0.755	15.62	23.78	18M
5320	64	13.81	0.755	14.56	23.83	18M
5500	100	13.83	0.755	14.59	23.82	18M
5600	120	15.01	0.755	15.76	23.74	18M
5720	144	14.96	0.755	15.71	23.85	18M
5745	149	14.90	0.755	15.65	30.00	18M
5785	157	15.46	0.755	16.21	30.00	18M
5825	165	15.38	0.755	16.14	30.00	18M
5845	169	15.25	0.755	16.00	EIRP ≤ 30dBm	18M
5865	173	14.76	0.755	15.52	EIRP ≤ 30dBm	18M
5885	177	14.86	0.755	15.61	EIRP ≤ 30dBm	18M

802.11n(20 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5180	36	13.80	1.800	15.60	23.98	MCS5
5200	40	13.77	1.800	15.57	23.98	MCS5
5240	48	14.09	1.800	15.89	23.98	MCS5
5260	52	13.99	1.800	15.79	23.98	MCS5
5300	60	13.78	1.800	15.58	23.98	MCS5
5320	64	13.70	1.800	15.50	23.98	MCS5
5500	100	12.66	1.800	14.46	23.98	MCS5
5600	120	13.94	1.800	15.74	23.95	MCS5
5720	144	13.98	1.800	15.78	23.98	MCS5
5745	149	13.85	1.800	15.65	30.00	MCS5
5785	157	14.40	1.800	16.20	30.00	MCS5
5825	165	14.17	1.800	15.97	30.00	MCS5
5845	169	14.17	1.800	15.97	EIRP ≤ 30dBm	MCS5
5865	173	13.73	1.800	15.53	EIRP ≤ 30dBm	MCS5
5885	177	13.80	1.800	15.60	EIRP ≤ 30dBm	MCS5

802.11n(40 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5190	38	13.59	1.114	14.70	23.98	MCS1
5230	46	13.90	1.114	15.01	23.98	MCS1
5270	54	13.69	1.114	14.80	23.98	MCS1
5310	62	12.35	1.114	13.46	23.98	MCS1
5510	102	13.41	1.114	14.52	23.98	MCS1
5590	118	13.67	1.114	14.78	23.98	MCS1
5710	142	13.75	1.114	14.86	23.98	MCS1
5755	151	14.23	1.114	15.34	30.00	MCS1
5795	159	14.20	1.114	15.32	30.00	MCS1
5835	167	13.96	1.114	15.07	EIRP ≤ 30dBm	MCS1
5875	175	13.62	1.114	14.74	EIRP ≤ 30dBm	MCS1

802.11ac(20 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5180	36	13.78	1.761	15.54	23.98	MCS5
5200	40	13.80	1.761	15.57	23.98	MCS5
5240	48	14.14	1.761	15.90	23.98	MCS5
5260	52	13.98	1.761	15.74	23.98	MCS5
5300	60	13.83	1.761	15.59	23.98	MCS5
5320	64	13.79	1.761	15.55	23.98	MCS5
5500	100	12.73	1.761	14.49	23.98	MCS5
5600	120	13.98	1.761	15.74	23.98	MCS5
5720	144	14.02	1.761	15.78	23.98	MCS5
5745	149	13.93	1.761	15.69	30.00	MCS5
5785	157	14.49	1.761	16.25	30.00	MCS5
5825	165	14.36	1.761	16.12	30.00	MCS5
5845	169	14.23	1.761	15.99	EIRP ≤ 30dBm	MCS5
5865	173	13.77	1.761	15.54	EIRP ≤ 30dBm	MCS5
5885	177	13.86	1.761	15.62	EIRP ≤ 30dBm	MCS5

802.11ac(40 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5190	38	13.19	1.568	14.76	23.98	MCS2
5230	46	13.48	1.568	15.04	23.98	MCS2
5270	54	13.34	1.568	14.91	23.98	MCS2
5310	62	11.97	1.568	13.54	23.98	MCS2
5510	102	13.08	1.568	14.65	23.98	MCS2
5590	118	13.26	1.568	14.82	23.98	MCS2
5710	142	13.46	1.568	15.03	23.98	MCS2
5755	151	13.88	1.568	15.45	30.00	MCS2
5795	159	13.86	1.568	15.43	30.00	MCS2
5835	167	13.48	1.568	15.05	EIRP ≤ 30dBm	MCS2
5875	175	13.23	1.568	14.80	EIRP ≤ 30dBm	MCS2

802.11ac(80 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5210	42	8.09	6.138	14.23	23.98	MCS4
5290	58	6.99	6.138	13.13	23.98	MCS4
5530	106	6.87	6.138	13.01	23.98	MCS4
5610	122	7.86	6.138	14.00	23.98	MCS4
5690	138	7.68	6.138	13.82	23.98	MCS4
5775	155	8.36	6.138	14.50	30.00	MCS4
5855	171	8.01	6.138	14.14	EIRP ≤ 30dBm	MCS4

802.11ac(160 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5250	50	5.57	6.319	11.89	23.98	MCS4
5570	114	5.91	6.319	12.23	23.98	MCS4
5815	163	6.98	6.319	13.30	EIRP ≤ 30dBm	MCS4

[MIMO(ANT1+ANT2)]

802.11a Mode		Ant.1 Measured Power (dBm) + Duty Cycle Factor	Ant.2 Measured Power (dBm) + Duty Cycle Factor	MIMO Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5180	36	16.67	15.57	19.16	23.98	18M
5200	40	16.66	15.56	19.15	23.98	18M
5240	48	16.60	15.87	19.26	23.98	18M
5260	52	16.85	15.76	19.35	23.98	18M
5300	60	16.98	15.62	19.36	23.98	18M
5320	64	16.47	14.56	18.63	23.98	18M
5500	100	16.16	14.59	18.45	23.98	18M
5600	120	16.36	15.76	19.08	23.98	18M
5720	144	16.77	15.71	19.28	23.98	18M
5745	149	16.84	15.65	19.30	30.00	18M
5785	157	16.97	16.21	19.62	30.00	18M
5825	165	16.66	16.14	19.42	30.00	18M
5845	169	16.66	16.00	19.35	EIRP ≤ 30dBm	18M
5865	173	16.70	15.52	19.16	EIRP ≤ 30dBm	18M
5885	177	16.80	15.61	19.26	EIRP ≤ 30dBm	18M

802.11n(20 MHz) Mode		Ant.1 Measured Power (dBm) + Duty Cycle Factor	Ant.2 Measured Power (dBm) + Duty Cycle Factor	MIMO Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5180	36	16.71	15.60	19.20	23.98	MCS5
5200	40	16.73	15.57	19.20	23.98	MCS5
5240	48	16.70	15.89	19.32	23.98	MCS5
5260	52	16.93	15.79	19.41	23.98	MCS5
5300	60	17.17	15.58	19.46	23.98	MCS5
5320	64	17.04	15.50	19.35	23.98	MCS5
5500	100	16.13	14.46	18.39	23.98	MCS5
5600	120	16.39	15.74	19.09	23.98	MCS5
5720	144	16.84	15.78	19.35	23.98	MCS5
5745	149	16.88	15.65	19.32	30.00	MCS5
5785	157	17.16	16.20	19.72	30.00	MCS5
5825	165	16.64	15.97	19.33	30.00	MCS5
5845	169	16.72	15.97	19.37	EIRP ≤ 30dBm	MCS5
5865	173	16.74	15.53	19.19	EIRP ≤ 30dBm	MCS5
5885	177	16.82	15.60	19.26	EIRP ≤ 30dBm	MCS5

802.11n(40 MHz) Mode		Ant.1 Measured Power (dBm) + Duty Cycle Factor	Ant.2 Measured Power (dBm) + Duty Cycle Factor	MIMO Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5190	38	16.22	14.70	18.54	23.98	MCS1
5230	46	16.25	15.01	18.68	23.98	MCS1
5270	54	16.47	14.80	18.73	23.98	MCS1
5310	62	16.00	13.46	17.92	23.98	MCS1
5510	102	16.32	14.52	18.52	23.98	MCS1
5590	118	15.73	14.78	18.29	23.98	MCS1
5710	142	15.75	14.86	18.34	23.98	MCS1
5755	151	15.91	15.34	18.64	30.00	MCS1
5795	159	15.97	15.32	18.67	30.00	MCS1
5835	167	15.69	15.07	18.40	EIRP ≤ 30dBm	MCS1
5875	175	15.98	14.74	18.41	EIRP ≤ 30dBm	MCS1

802.11ac(20 MHz) Mode		Ant.1 Measured Power (dBm) + Duty Cycle Factor	Ant.2 Measured Power (dBm) + Duty Cycle Factor	MIMO Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5180	36	16.64	15.54	19.14	23.98	MCS5
5200	40	16.66	15.57	19.16	23.98	MCS5
5240	48	16.61	15.90	19.28	23.98	MCS5
5260	52	16.93	15.74	19.39	23.98	MCS5
5300	60	17.18	15.59	19.47	23.98	MCS5
5320	64	17.02	15.55	19.36	23.98	MCS5
5500	100	16.12	14.49	18.39	23.98	MCS5
5600	120	16.37	15.74	19.08	23.98	MCS5
5720	144	16.78	15.78	19.32	23.98	MCS5
5745	149	16.86	15.69	19.32	30.00	MCS5
5785	157	17.09	16.25	19.70	30.00	MCS5
5825	165	16.65	16.12	19.40	30.00	MCS5
5845	169	16.68	15.99	19.36	EIRP ≤ 30dBm	MCS5
5865	173	16.67	15.54	19.15	EIRP ≤ 30dBm	MCS5
5885	177	16.78	15.62	19.25	EIRP ≤ 30dBm	MCS5

802.11ac(40 MHz) Mode		Ant.1 Measured Power (dBm) + Duty Cycle Factor	Ant.2 Measured Power (dBm) + Duty Cycle Factor	MIMO Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5190	38	16.24	14.76	18.57	23.98	MCS2
5230	46	16.24	15.04	18.69	23.98	MCS2
5270	54	16.49	14.91	18.78	23.98	MCS2
5310	62	16.16	13.54	18.05	23.98	MCS2
5510	102	16.25	14.65	18.53	23.98	MCS2
5590	118	15.74	14.82	18.31	23.98	MCS2
5710	142	15.81	15.03	18.45	23.98	MCS2
5755	151	15.89	15.45	18.69	30.00	MCS2
5795	159	15.97	15.43	18.72	30.00	MCS2
5835	167	15.71	15.05	18.40	EIRP ≤ 30dBm	MCS2
5875	175	15.98	14.80	18.44	EIRP ≤ 30dBm	MCS2

802.11ac(80 MHz) Mode		Ant.1 Measured Power (dBm) + Duty Cycle Factor	Ant.2 Measured Power (dBm) + Duty Cycle Factor	MIMO Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5210	42	15.13	14.23	17.71	23.98	MCS4
5290	58	15.24	13.13	17.32	23.98	MCS4
5530	106	14.77	13.01	16.99	23.98	MCS4
5610	122	14.76	14.00	17.41	23.98	MCS4
5690	138	15.06	13.82	17.49	23.98	MCS4
5775	155	15.28	14.50	17.92	30.00	MCS4
5855	171	14.98	14.14	17.59	EIRP ≤ 30dBm	MCS4

802.11ac(160 MHz) Mode		Ant.1 Measured Power [dBm] + Duty Cycle Factor[dB]	Ant.2 Measured Power (dBm) + Duty Cycle Factor[dB]	MIMO Total Power [dBm]	Limit [dBm]	Worstcase MCS INDEX
Frequency [MHz]	Channel No.					
5250	50	13.27	11.89	15.64	23.98	MCS4
5570	114	12.85	12.23	15.56	23.98	MCS4
5815	163	12.59	13.30	15.97	EIRP ≤ 30dBm	MCS4

10.5 POWER SPECTRAL DENSITY

[SISO(ANT1)] UNII1 ~ 3

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase Datarate [Mbps]	Limit
Frequency [MHz]	Channel No.					
5180	36	4.902	0.755	5.657	18M	11 dBm/MHz
5200	40	5.097	0.755	5.852	18M	
5240	48	4.884	0.755	5.639	18M	
5260	52	5.079	0.755	5.834	18M	
5300	60	5.358	0.755	6.113	18M	
5320	64	4.603	0.755	5.358	18M	
5500	100	4.562	0.755	5.317	18M	
5580	116	4.788	0.755	5.543	18M	
5720	144	4.929	0.755	5.684	18M	
5745	149	2.233	0.755	2.988	18M	30 dBm/500 kHz
5785	157	2.756	0.755	3.511	18M	
5825	165	2.261	0.755	3.016	18M	

[SISO(ANT1)] UNII4

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase Datarate [Mbps]
Frequency [MHz]	Channel No.							
5845	169	5.078	0.755	5.833	-3.140	2.693	14	18M
5865	173	5.121	0.755	5.876	-3.140	2.736	14	18M
5885	177	5.052	0.755	5.807	-3.140	2.667	14	18M

[MIMO(ANT1)] UNII1 ~ 3

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase Datarate [Mbps]	Limit
Frequency [MHz]	Channel No.					
5180	36	4.902	0.755	5.657	18M	11 dBm/MHz
5200	40	5.097	0.755	5.852	18M	
5240	48	4.884	0.755	5.639	18M	
5260	52	5.079	0.755	5.834	18M	
5300	60	5.358	0.755	6.113	18M	
5320	64	4.603	0.755	5.358	18M	
5500	100	4.562	0.755	5.317	18M	
5580	116	4.788	0.755	5.543	18M	
5720	144	4.929	0.755	5.684	18M	
5745	149	2.233	0.755	2.988	18M	30 dBm/500 kHz
5785	157	2.756	0.755	3.511	18M	
5825	165	2.261	0.755	3.016	18M	

802.11n(20 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5180	36	3.786	1.800	5.586	MCS5	11 dBm/MHz
5200	40	4.263	1.800	6.063	MCS5	
5240	48	3.981	1.800	5.781	MCS5	
5260	52	3.898	1.800	5.698	MCS5	
5300	60	4.587	1.800	6.387	MCS5	
5320	64	4.092	1.800	5.892	MCS5	
5500	100	3.312	1.800	5.112	MCS5	
5580	116	3.540	1.800	5.340	MCS5	
5720	144	4.145	1.800	5.945	MCS5	
5745	149	1.271	1.800	3.071	MCS5	30 dBm/500 kHz
5785	157	1.551	1.800	3.351	MCS5	
5825	165	1.411	1.800	3.211	MCS5	

802.11n(40 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	1.022	1.114	2.136	MCS1	11 dBm/MHz
5230	46	1.173	1.114	2.287	MCS1	
5270	54	1.506	1.114	2.620	MCS1	
5310	62	1.128	1.114	2.242	MCS1	
5510	102	1.038	1.114	2.152	MCS1	
5550	110	0.687	1.114	1.801	MCS1	
5710	142	0.659	1.114	1.773	MCS1	
5755	151	-1.871	1.114	-0.757	MCS1	30 dBm /500 kHz
5795	159	-1.914	1.114	-0.800	MCS1	

802.11ac(20 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5180	36	3.838	1.761	5.599	MCS5	11 dBm/MHz
5200	40	3.915	1.761	5.676	MCS5	
5240	48	3.833	1.761	5.594	MCS5	
5260	52	4.439	1.761	6.200	MCS5	
5300	60	4.139	1.761	5.900	MCS5	
5320	64	4.295	1.761	6.056	MCS5	
5500	100	3.359	1.761	5.120	MCS5	
5580	116	3.736	1.761	5.497	MCS5	
5720	144	4.112	1.761	5.873	MCS5	
5745	149	1.677	1.761	3.438	MCS5	30 dBm/500 kHz
5785	157	1.564	1.761	3.325	MCS5	
5825	165	1.237	1.761	2.998	MCS5	

802.11ac(40 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	0.645	1.568	2.213	MCS2	11 dBm/MHz
5230	46	0.722	1.568	2.290	MCS2	
5270	54	1.100	1.568	2.668	MCS2	
5310	62	0.353	1.568	1.921	MCS2	
5510	102	0.828	1.568	2.396	MCS2	
5550	110	0.401	1.568	1.969	MCS2	
5710	142	0.618	1.568	2.186	MCS2	
5755	151	-2.491	1.568	-0.923	MCS2	30 dBm/500 kHz
5795	159	-2.388	1.568	-0.820	MCS2	

802.11ac(80 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5210	42	-7.467	6.138	-1.329	MCS4	11 dBm/MHz
5290	58	-7.104	6.138	-0.966	MCS4	
5530	106	-7.931	6.138	-1.793	MCS4	
5610	122	-7.504	6.138	-1.366	MCS4	
5690	138	-7.029	6.138	-0.891	MCS4	
5775	155	-9.719	6.138	-3.581	MCS4	30 dBm/500 kHz

802.11ac(160 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm/MHz]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5250	50	-11.517	6.319	-5.198	MCS4	11 dBm/MHz
5570	114	-12.382	6.319	-6.063	MCS4	

[MIMO(ANT1)] UNII4

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase Datarate [Mbps]
Frequency [MHz]	Channel No.							
5845	169	5.078	0.755	5.833	-3.140	2.693	14	18M
5865	173	5.121	0.755	5.876	-3.140	2.736	14	18M
5885	177	5.052	0.755	5.807	-3.140	2.667	14	18M

802.11n(20MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5845	169	3.508	1.800	5.308	-3.140	2.168	14	MCS5
5865	173	3.786	1.800	5.586	-3.140	2.446	14	MCS5
5885	177	4.011	1.800	5.811	-3.140	2.671	14	MCS5

802.11n(40MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5835	167	0.466	1.114	1.580	-3.140	-1.560	14	MCS1
5875	175	0.712	1.114	1.826	-3.140	-1.314	14	MCS1

802.11ac(20MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5845	169	3.920	1.761	5.681	-3.140	2.541	14	MCS5
5865	173	4.139	1.761	5.900	-3.140	2.760	14	MCS5
5885	177	4.004	1.761	5.765	-3.140	2.625	14	MCS5

802.11ac(40MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5835	167	0.184	1.568	1.752	-3.140	-1.388	14	MCS2
5875	175	0.316	1.568	1.884	-3.140	-1.256	14	MCS2

802.11ac(80MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5855	171	-7.011	6.138	-0.873	-3.140	-4.013	14	MCS4

802.11ac(160MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5815	163	-11.824	6.319	-5.505	-3.140	-8.645	14	MCS4

[MIMO(ANT2)] UNII1 ~ 3

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase Datarate (Mbps)	Limit
Frequency [MHz]	Channel No.					
5180	36	4.358	0.755	5.113	18M	11 dBm/MHz
5200	40	4.019	0.755	4.774	18M	
5240	48	4.408	0.755	5.163	18M	
5260	52	4.396	0.755	5.151	18M	
5300	60	4.106	0.755	4.861	18M	
5320	64	3.199	0.755	3.954	18M	
5500	100	3.634	0.755	4.389	18M	
5580	116	4.172	0.755	4.927	18M	
5720	144	4.418	0.755	5.173	18M	
5745	149	1.436	0.755	2.191	18M	30 dBm/500 kHz
5785	157	1.900	0.755	2.655	18M	
5825	165	1.787	0.755	2.542	18M	

802.11n(20 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5180	36	3.398	1.800	5.198	MCS5	11 dBm/MHz
5200	40	3.079	1.800	4.879	MCS5	
5240	48	3.517	1.800	5.317	MCS5	
5260	52	2.935	1.800	4.735	MCS5	
5300	60	3.278	1.800	5.078	MCS5	
5320	64	2.423	1.800	4.223	MCS5	
5500	100	1.994	1.800	3.794	MCS5	
5580	116	3.004	1.800	4.804	MCS5	
5720	144	3.380	1.800	5.180	MCS5	
5745	149	0.992	1.800	2.792	MCS5	30 dBm/500 kHz
5785	157	1.167	1.800	2.967	MCS5	
5825	165	1.092	1.800	2.892	MCS5	

802.11n(40 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	-0.639	1.114	0.475	MCS1	11 dBm/MHz
5230	46	-0.145	1.114	0.969	MCS1	
5270	54	-0.314	1.114	0.800	MCS1	
5310	62	-1.713	1.114	-0.599	MCS1	
5510	102	-0.629	1.114	0.485	MCS1	
5550	110	-0.304	1.114	0.810	MCS1	
5710	142	-0.139	1.114	0.975	MCS1	
5755	151	-2.614	1.114	-1.500	MCS1	30 dBm /500 kHz
5795	159	-2.502	1.114	-1.388	MCS1	

802.11ac(20 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5180	36	3.083	1.761	4.844	MCS5	11 dBm/MHz
5200	40	2.786	1.761	4.547	MCS5	
5240	48	2.984	1.761	4.745	MCS5	
5260	52	3.298	1.761	5.059	MCS5	
5300	60	3.111	1.761	4.872	MCS5	
5320	64	2.892	1.761	4.653	MCS5	
5500	100	2.024	1.761	3.785	MCS5	
5580	116	3.249	1.761	5.010	MCS5	
5720	144	3.059	1.761	4.820	MCS5	
5745	149	0.315	1.761	2.076	MCS5	30 dBm/500 kHz
5785	157	1.099	1.761	2.860	MCS5	
5825	165	0.778	1.761	2.539	MCS5	

802.11ac(40 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	-0.872	1.568	0.696	MCS2	11 dBm/MHz
5230	46	-0.399	1.568	1.169	MCS2	
5270	54	-0.746	1.568	0.822	MCS2	
5310	62	-1.927	1.568	-0.359	MCS2	
5510	102	-0.416	1.568	1.152	MCS2	
5550	110	-0.739	1.568	0.829	MCS2	
5710	142	-0.506	1.568	1.062	MCS2	
5755	151	-2.485	1.568	-0.917	MCS2	30 dBm/500 kHz
5795	159	-2.491	1.568	-0.923	MCS2	

802.11ac(80 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5210	42	-8.595	6.138	-2.457	MCS4	11 dBm/MHz
5290	58	-9.301	6.138	-3.163	MCS4	
5530	106	-9.433	6.138	-3.295	MCS4	
5610	122	-8.507	6.138	-2.369	MCS4	
5690	138	-8.537	6.138	-2.399	MCS4	
5775	155	-9.347	6.138	-3.209	MCS4	30 dBm/500 kHz

802.11ac(160 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm/MHz]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5250	50	-14.247	6.319	-7.928	MCS4	11 dBm/MHz
5570	114	-13.023	6.319	-6.704	MCS4	

[MIMO(ANT2)] UNII4

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase Datarate [Mbps]
Frequency [MHz]	Channel No.							
5845	169	4.730	0.755	5.485	-4.770	0.715	14	18M
5865	173	4.114	0.755	4.869	-4.770	0.099	14	18M
5885	177	4.392	0.755	5.147	-4.770	0.377	14	18M

802.11n(20MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5845	169	3.058	1.800	4.858	-4.770	0.088	14	MCS5
5865	173	2.710	1.800	4.510	-4.770	-0.260	14	MCS5
5885	177	2.889	1.800	4.689	-4.770	-0.081	14	MCS5

802.11n(40MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5835	167	-0.311	1.114	0.803	-4.770	-3.967	14	MCS1
5875	175	0.015	1.114	1.129	-4.770	-3.641	14	MCS1

802.11ac(20MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5845	169	3.027	1.761	4.788	-4.770	0.018	14	MCS5
5865	173	2.868	1.761	4.629	-4.770	-0.141	14	MCS5
5885	177	3.081	1.761	4.842	-4.770	0.072	14	MCS5

802.11ac(40MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5835	167	-0.495	1.568	1.073	-4.770	-3.697	14	MCS2
5875	175	-0.214	1.568	1.354	-4.770	-3.416	14	MCS2

802.11ac(80MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5855	171	-8.591	6.138	-2.453	-4.770	-7.223	14	MCS4

802.11ac(160MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Ant Gain [dBi]	E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5815	163	-12.020	6.319	-5.701	-3.140	-10.471	14	MCS4

[MIMO(ANT1+ANT2)] UNII1 ~ 3

802.11a Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Worstcase Datarate [Mbps]	Limit
Frequency [MHz]	Channel No.					
5180	36	5.657	5.113	8.404	18M	11 dBm/MHz
5200	40	5.852	4.774	8.357	18M	
5240	48	5.639	5.163	8.418	18M	
5260	52	5.834	5.151	8.517	18M	
5300	60	6.113	4.861	8.543	18M	
5320	64	5.358	3.954	7.723	18M	
5500	100	5.317	4.389	7.889	18M	
5580	116	5.543	4.927	8.257	18M	
5720	144	5.684	5.173	8.447	18M	
5745	149	2.988	2.191	5.619	18M	30 dBm/500 kHz
5785	157	3.511	2.655	6.115	18M	
5825	165	3.016	2.542	5.796	18M	

802.11n(20 MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5180	36	5.586	5.198	8.406	MCS5	11 dBm/MHz
5200	40	6.063	4.879	8.521	MCS5	
5240	48	5.781	5.317	8.565	MCS5	
5260	52	5.698	4.735	8.253	MCS5	
5300	60	6.387	5.078	8.792	MCS5	
5320	64	5.892	4.223	8.147	MCS5	
5500	100	5.112	3.794	7.513	MCS5	
5580	116	5.340	4.804	8.090	MCS5	
5720	144	5.945	5.180	8.589	MCS5	
5745	149	3.071	2.792	5.944	MCS5	30 dBm/500 kHz
5785	157	3.351	2.967	6.173	MCS5	
5825	165	3.211	2.892	6.065	MCS5	

802.11n(40 MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	2.136	0.475	4.394	MCS1	11 dBm/MHz
5230	46	2.287	0.969	4.688	MCS1	
5270	54	2.620	0.800	4.815	MCS1	
5310	62	2.242	-0.599	4.060	MCS1	
5510	102	2.152	0.485	4.408	MCS1	
5550	110	1.801	0.810	4.344	MCS1	
5710	142	1.773	0.975	4.402	MCS1	
5755	151	-0.757	-1.500	1.897	MCS1	30 dBm/500 kHz
5795	159	-0.800	-1.388	1.926	MCS1	

802.11ac(20 MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5180	36	5.599	4.844	8.248	MCS5	11 dBm/MHz
5200	40	5.676	4.547	8.158	MCS5	
5240	48	5.594	4.745	8.200	MCS5	
5260	52	6.200	5.059	8.677	MCS5	
5300	60	5.900	4.872	8.427	MCS5	
5320	64	6.056	4.653	8.421	MCS5	
5500	100	5.120	3.785	7.514	MCS5	
5580	116	5.497	5.010	8.271	MCS5	
5720	144	5.873	4.820	8.389	MCS5	
5745	149	3.438	2.076	5.820	MCS5	30 dBm/500 kHz
5785	157	3.325	2.860	6.109	MCS5	
5825	165	2.998	2.539	5.785	MCS5	

802.11ac(40 MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	2.213	0.696	4.531	MCS2	11 dBm/MHz
5230	46	2.290	1.169	4.776	MCS2	
5270	54	2.668	0.822	4.853	MCS2	
5310	62	1.921	-0.359	3.939	MCS2	
5510	102	2.396	1.152	4.829	MCS2	
5550	110	1.969	0.829	4.446	MCS2	
5710	142	2.186	1.062	4.670	MCS2	
5755	151	-0.923	-0.917	2.090	MCS2	30 dBm/500 kHz
5795	159	-0.820	-0.923	2.139	MCS2	

802.11ac(80 MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5210	42	-1.329	-2.457	1.154	MCS4	11 dBm/MHz
5290	58	-0.966	-3.163	1.084	MCS4	
5530	106	-1.793	-3.295	0.531	MCS4	
5610	122	-1.366	-2.369	1.172	MCS4	
5690	138	-0.891	-2.399	1.431	MCS4	
5775	155	-3.581	-3.209	-0.380	MCS4	30 dBm/500 kHz

802.11ac(160 MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm/MHz]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5250	50	-5.198	-7.928	-3.341	MCS4	11 dBm/MHz
5570	114	-6.063	-6.704	-3.361	MCS4	

[MIMO(ANT1+ANT2)] UNII4

802.11a Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Ant Gain [dBi]	MIMO Total E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase Datarate [Mbps]
Frequency [MHz]	Channel No.							
5845	169	5.833	5.485	8.673	-0.907	7.767	14	18M
5865	173	5.876	4.869	8.412	-0.907	7.506	14	18M
5885	177	5.807	5.147	8.500	-0.907	7.594	14	18M

802.11n(20MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Ant Gain [dBi]	MIMO Total E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5845	169	5.308	4.858	8.099	-0.907	7.192	14	MCS5
5865	173	5.586	4.510	8.091	-0.907	7.185	14	MCS5
5885	177	5.811	4.689	8.296	-0.907	7.390	14	MCS5

802.11n(40MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Ant Gain [dBi]	MIMO Total E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5865	173	1.580	0.803	4.219	-0.907	3.312	14	MCS1
5885	177	1.826	1.129	4.501	-0.907	3.595	14	MCS1

802.11ac(20MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Ant Gain [dBi]	MIMO Total E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5845	169	5.681	4.788	8.268	-0.907	7.361	14	MCS5
5865	173	5.900	4.629	8.321	-0.907	7.415	14	MCS5
5885	177	5.765	4.842	8.338	-0.907	7.432	14	MCS5

802.11ac(40MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Ant Gain [dBi]	MIMO Total E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5865	173	1.752	1.073	4.436	-0.907	3.529	14	MCS2
5885	177	1.884	1.354	4.637	-0.907	3.731	14	MCS2

802.11ac(80MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Ant Gain [dBi]	MIMO Total E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5855	171	-0.873	-2.453	1.419	-0.907	0.513	14	MCS4

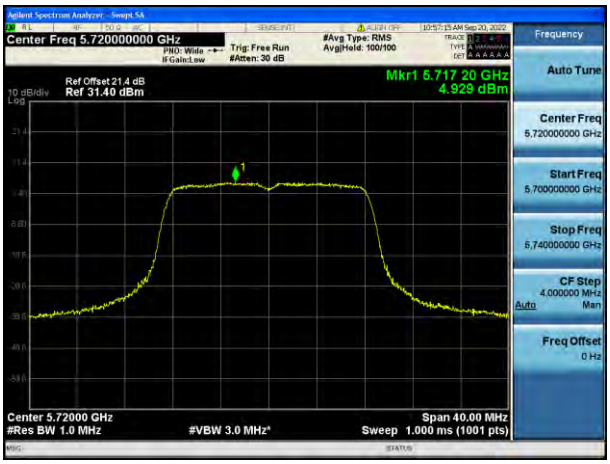
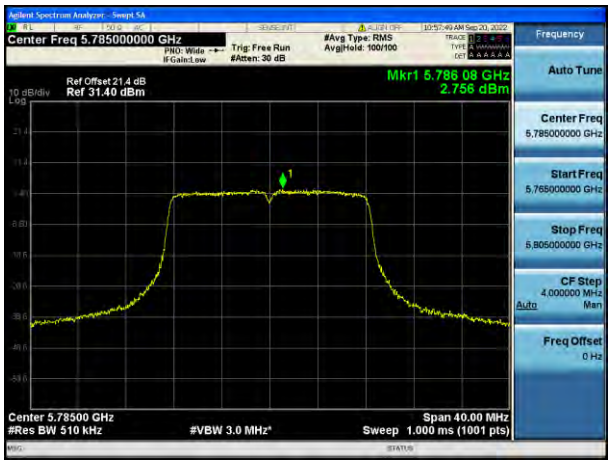
802.11ac(160MHz) Mode		ANT.1 Measured PSD[dBm] + Duty Cycle Factor [dB]	ANT.2 Measured PSD[dBm] + Duty Cycle Factor [dB]	MIMO Total PSD [dBm]	Ant Gain [dBi]	MIMO Total E.I.R.P PSD [dBm/MHz]	Limit [dBm/MHz]	Worstcase MCS Index
Frequency [MHz]	Channel No.							
5815	163	-5.505	-5.701	-2.591	-0.907	-3.498	14	MCS4

[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. 40)	UNII 2A (Ch. 60)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 157)**
	
UNII 4 (Ch. 173)	
	

▣ Test Plots(802.11n(HT20))

Note:

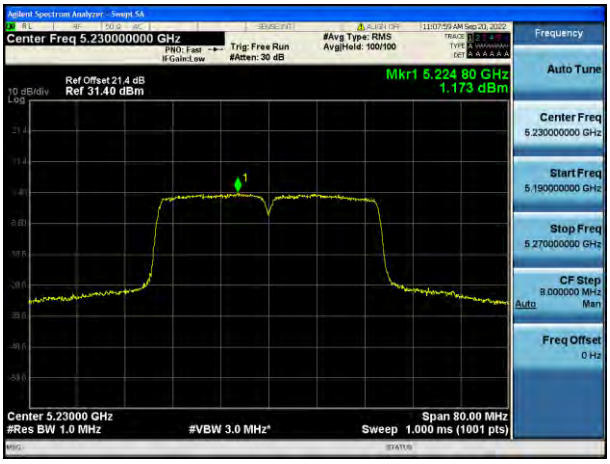
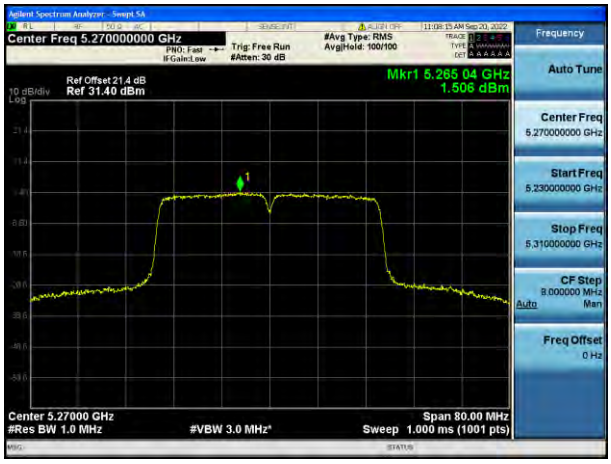
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 40)	UNII 2A (Ch. 60)
	
UNII 2C (Ch. 144)	**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. 102)	**UNII 3 (Ch. 151)**
	
UNII 4 (Ch. 175)	
	

▣ Test Plots(802.11ac(VHT20))

Note:

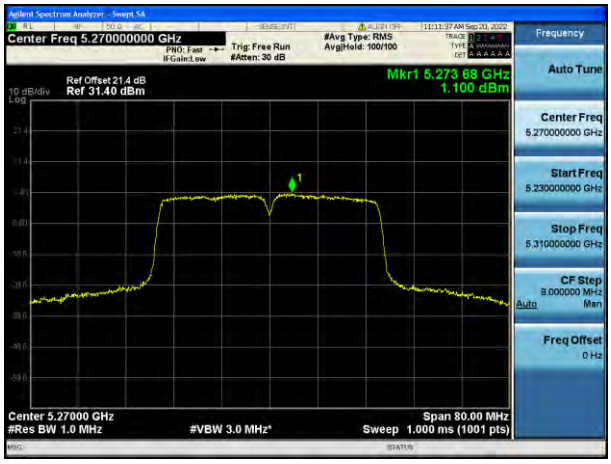
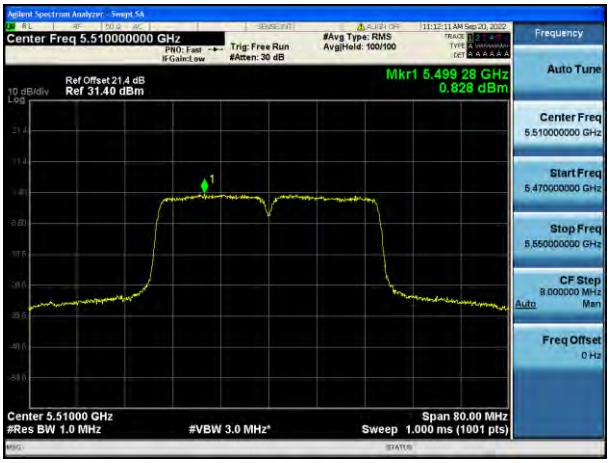
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 40)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 149)**
	
UNII 4 (Ch. 173)	
	

▣ 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. 102)	**UNII 3 (Ch. 159)**
	
UNII 4 (Ch. 175)	
	

▣ 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.

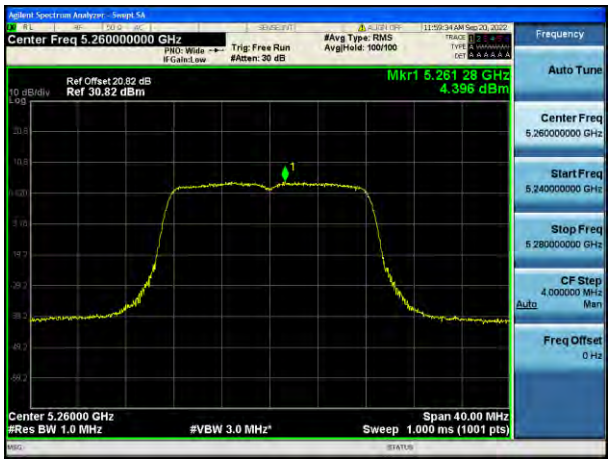
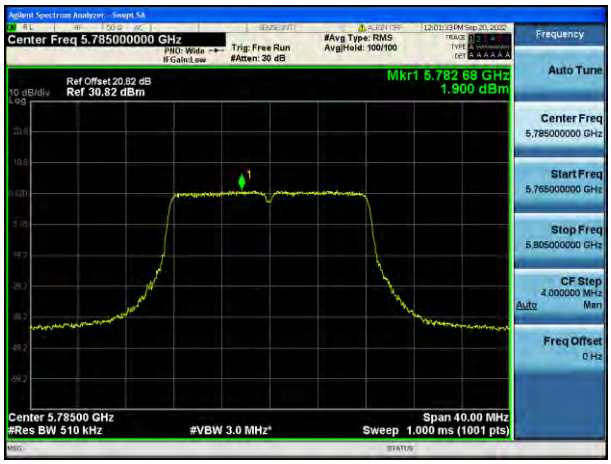
UNII 1 (Ch. 50)	UNII 2C (Ch. 114)
	
UNII 4 (Ch. 163)	
	

[Ant.2]

▣ Test Plots(802.11a)

Note:

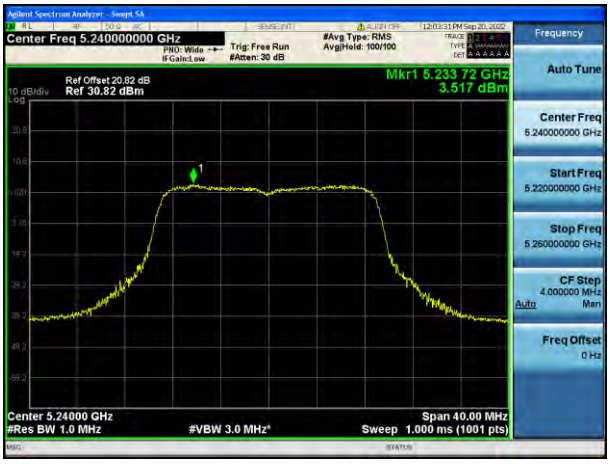
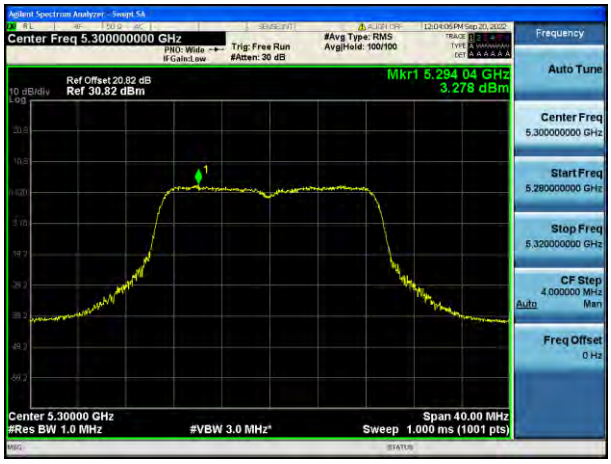
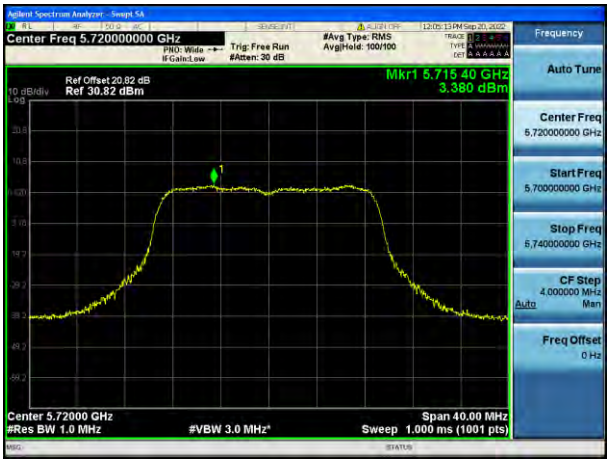
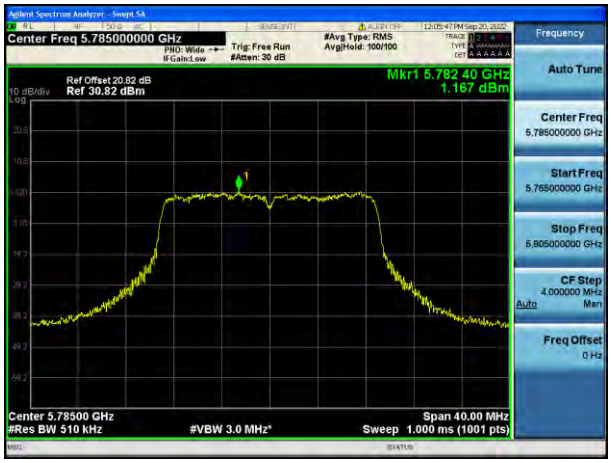
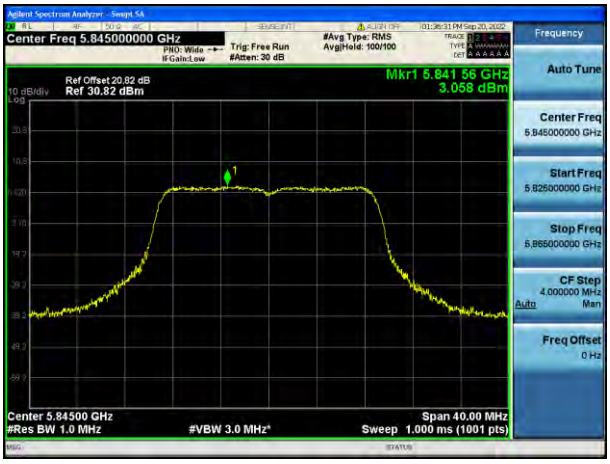
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 48)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 157)**
	
UNII 4 (Ch. 169)	
	

▣ Test Plots(802.11n(HT20))

Note:

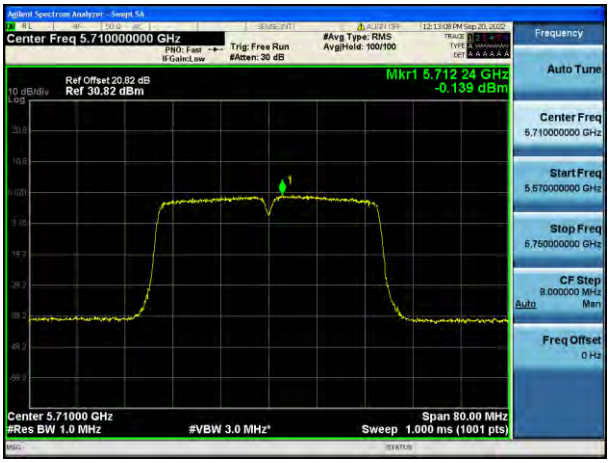
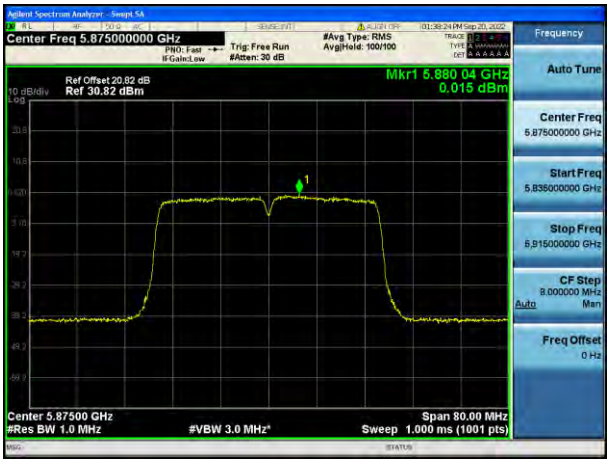
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 48)	UNII 2A (Ch. 60)
	
UNII 2C (Ch. 144)	**UNII 3 (Ch. 157)**
	
UNII 4 (Ch. 169)	
	

▣ Test Plots(802.11n(HT40))

Note:

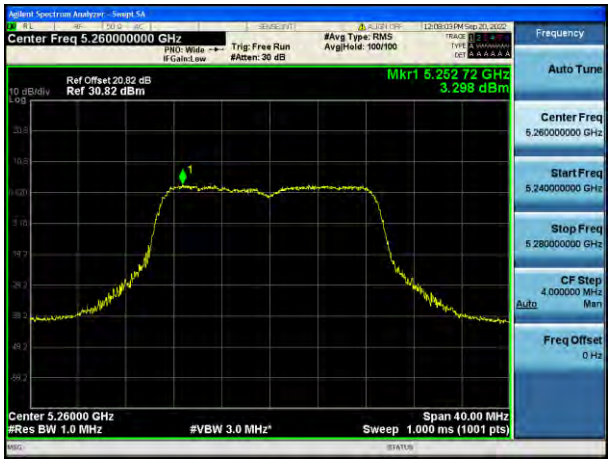
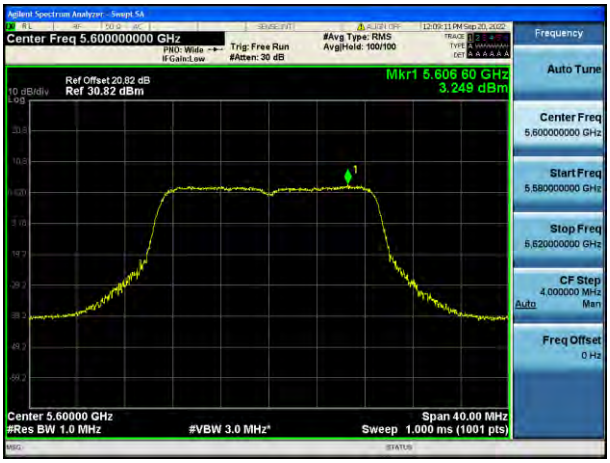
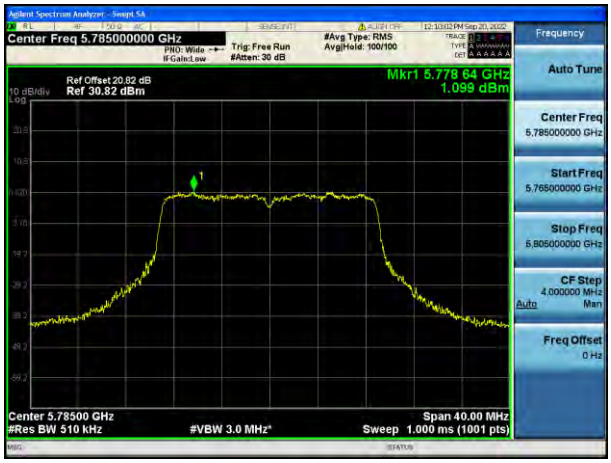
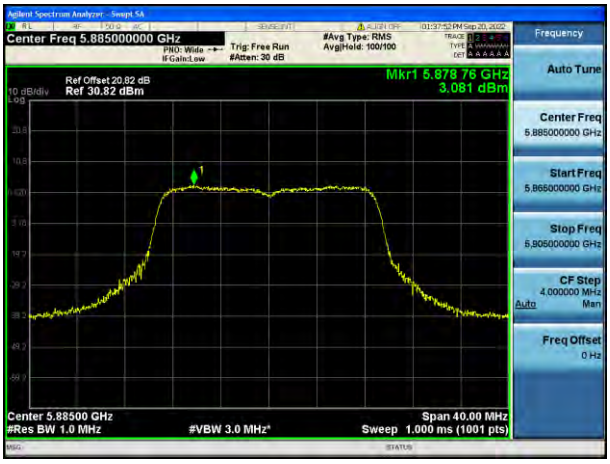
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 46)	UNII 2A (Ch. 54)
	
UNII 2C (Ch. 142)	**UNII 3 (Ch. 159)**
	
UNII 4 (Ch. 175)	
	

▣ Test Plots(802.11ac(VHT20))

Note:

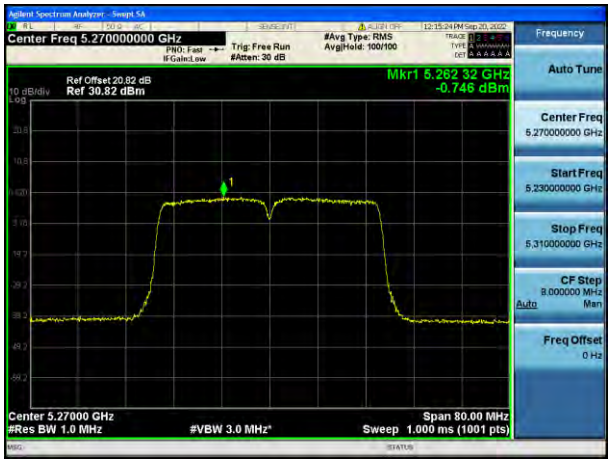
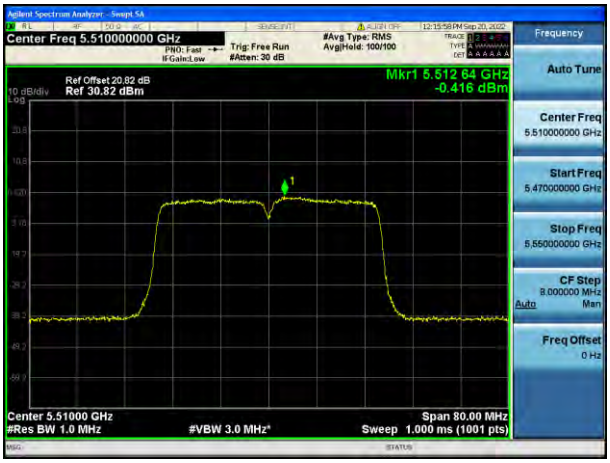
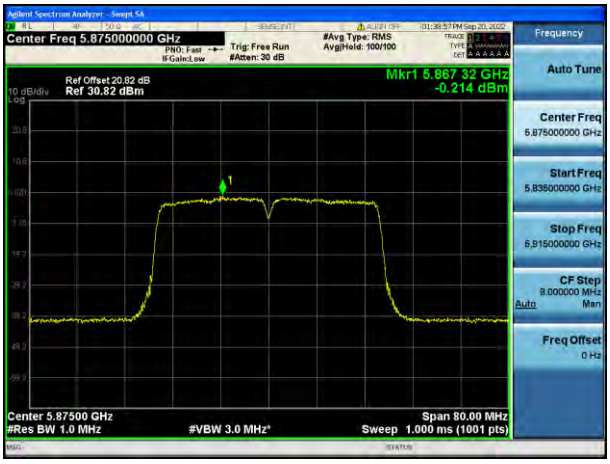
In order to simplify the report, attached plots were only channel of the highest power.

UNII 1 (Ch. 36)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 120)	**UNII 3 (Ch. 157)**
	
UNII 4 (Ch. 177)	
	

▣ 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. 102)	**UNII 3 (Ch. 151)**
	
UNII 4 (Ch. 175)	
	

▣ 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. 122)	**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)	5210059.68	59.68
100%		-30	5210078.91	78.91
100%		-20	5210076.53	76.53
100%		-10	5210071.32	71.32
100%		0	5210067.02	67.02
100%		+10	5210064.00	64.00
100%		+30	5210062.85	62.85
100%		+40	5210071.31	71.31
100%		+50	5210076.65	76.65
High	4.40	+20	5210079.02	79.02
Low	3.70	+20	5210078.51	78.51

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 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)	5290058.25	58.25
100%		-30	5290078.94	78.94
100%		-20	5290076.04	76.04
100%		-10	5290070.25	70.25
100%		0	5290066.97	66.97
100%		+10	5290064.54	64.54
100%		+30	5290061.37	61.37
100%		+40	5290070.08	70.08
100%		+50	5290075.20	75.20
High	4.40	+20	5290077.37	77.37
Low	3.70	+20	5290077.97	77.97

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)	5530060.13	60.13
100%		-30	5530080.89	80.89
100%		-20	5530077.55	77.55
100%		-10	5530070.94	70.94
100%		0	5530066.35	66.35
100%		+10	5530064.02	64.02
100%		+30	5530063.96	63.96
100%		+40	5530073.38	73.38
100%		+50	5530077.29	77.29
High	4.40	+20	5530078.04	78.04
Low	3.70	+20	5530077.52	77.52

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)	5775056.09	56.09
100%		-30	5775075.26	75.26
100%		-20	5775071.88	71.88
100%		-10	5775066.41	66.41
100%		0	5775062.53	62.53
100%		+10	5775059.24	59.24
100%		+30	5775060.18	60.18
100%		+40	5775069.39	69.39
100%		+50	5775073.94	73.94
High	4.40	+20	5775074.64	74.64
Low	3.70	+20	5775074.20	74.20

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.

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)	5210061.24	61.24
100%		-30	5210081.86	81.86
100%		-20	5210078.60	78.60
100%		-10	5210073.47	73.47
100%		0	5210069.18	69.18
100%		+10	5210065.39	65.39
100%		+30	5210064.13	64.13
100%		+40	5210073.20	73.20
100%		+50	5210076.72	76.72
High	4.40	+20	5210078.76	78.76
Low	3.70	+20	5210080.57	80.57

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)	5290063.62	63.62
100%		-30	5290083.13	83.13
100%		-20	5290079.76	79.76
100%		-10	5290072.69	72.69
100%		0	5290069.12	69.12
100%		+10	5290066.13	66.13
100%		+30	5290066.61	66.61
100%		+40	5290075.98	75.98
100%		+50	5290079.64	79.64
High	4.40	+20	5290081.28	81.28
Low	3.70	+20	5290082.18	82.18

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)	5530060.78	60.78
100%		-30	5530079.98	79.98
100%		-20	5530077.07	77.07
100%		-10	5530071.56	71.56
100%		0	5530067.76	67.76
100%		+10	5530065.54	65.54
100%		+30	5530063.82	63.82
100%		+40	5530074.05	74.05
100%		+50	5530078.36	78.36
High	4.40	+20	5530079.09	79.09
Low	3.70	+20	5530079.01	79.01

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.

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)	5775062.67	62.67
100%		-30	5775082.21	82.21
100%		-20	5775079.09	79.09
100%		-10	5775073.47	73.47
100%		0	5775069.53	69.53
100%		+10	5775067.38	67.38
100%		+30	5775065.83	65.83
100%		+40	5775075.62	75.62
100%		+50	5775080.23	80.23
High	4.40	+20	5775081.28	81.28
Low	3.70	+20	5775080.99	80.99

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)	5210066.96	66.96
100%		-30	5210086.11	86.11
100%		-20	5210083.36	83.36
100%		-10	5210077.56	77.56
100%		0	5210072.67	72.67
100%		+10	5210068.94	68.94
100%		+30	5210069.70	69.70
100%		+40	5210077.01	77.01
100%		+50	5210080.90	80.90
High	4.40	+20	5210084.85	84.85
Low	3.70	+20	5210084.39	84.39

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)	5290066.21	66.21
100%		-30	5290085.72	85.72
100%		-20	5290082.16	82.16
100%		-10	5290075.57	75.57
100%		0	5290071.77	71.77
100%		+10	5290069.12	69.12
100%		+30	5290068.38	68.38
100%		+40	5290077.63	77.63
100%		+50	5290081.43	81.43
High	4.40	+20	5290084.01	84.01
Low	3.70	+20	5290083.56	83.56

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)	5530068.65	68.65
100%		-30	5530088.32	88.32
100%		-20	5530084.66	84.66
100%		-10	5530079.39	79.39
100%		0	5530074.76	74.76
100%		+10	5530071.00	71.00
100%		+30	5530071.03	71.03
100%		+40	5530079.50	79.50
100%		+50	5530084.50	84.50
High	4.40	+20	5530087.65	87.65
Low	3.70	+20	5530088.19	88.19

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)	5775067.94	67.94
100%		-30	5775087.74	87.74
100%		-20	5775084.75	84.75
100%		-10	5775077.90	77.90
100%		0	5775074.27	74.27
100%		+10	5775070.51	70.51
100%		+30	5775070.43	70.43
100%		+40	5775079.55	79.55
100%		+50	5775084.55	84.55
High	4.40	+20	5775086.94	86.94
Low	3.70	+20	5775086.38	86.38

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)	5210065.98	65.98
100%		-30	5210085.20	85.20
100%		-20	5210081.43	81.43
100%		-10	5210075.93	75.93
100%		0	5210072.41	72.41
100%		+10	5210069.56	69.56
100%		+30	5210068.77	68.77
100%		+40	5210078.02	78.02
100%		+50	5210083.34	83.34
High	4.40	+20	5210085.30	85.30
Low	3.70	+20	5210083.66	83.66

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)	5290067.24	67.24
100%		-30	5290086.70	86.70
100%		-20	5290083.86	83.86
100%		-10	5290078.03	78.03
100%		0	5290073.48	73.48
100%		+10	5290069.90	69.90
100%		+30	5290069.55	69.55
100%		+40	5290078.66	78.66
100%		+50	5290082.26	82.26
High	4.40	+20	5290084.84	84.84
Low	3.70	+20	5290086.08	86.08

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)	5530070.31	70.31
100%		-30	5530091.01	91.01
100%		-20	5530088.18	88.18
100%		-10	5530082.59	82.59
100%		0	5530079.44	79.44
100%		+10	5530076.35	76.35
100%		+30	5530072.64	72.64
100%		+40	5530080.61	80.61
100%		+50	5530085.65	85.65
High	4.40	+20	5530089.35	89.35
Low	3.70	+20	5530087.81	87.81

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 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)	5775072.58	72.58
100%		-30	5775093.46	93.46
100%		-20	5775089.54	89.54
100%		-10	5775082.61	82.61
100%		0	5775078.18	78.18
100%		+10	5775075.14	75.14
100%		+30	5775075.79	75.79
100%		+40	5775085.46	85.46
100%		+50	5775088.98	88.98
High	4.40	+20	5775090.10	90.10
Low	3.70	+20	5775089.73	89.73

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.

[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)	5210060.78	60.78
100%		-30	5210080.62	80.62
100%		-20	5210078.00	78.00
100%		-10	5210071.68	71.68
100%		0	5210066.59	66.59
100%		+10	5210063.50	63.50
100%		+30	5210063.16	63.16
100%		+40	5210072.78	72.78
100%		+50	5210076.37	76.37
High	4.40	+20	5210078.37	78.37
Low	3.70	+20	5210077.89	77.89

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)	5290061.50	61.50
100%		-30	5290081.61	81.61
100%		-20	5290078.88	78.88
100%		-10	5290071.95	71.95
100%		0	5290068.29	68.29
100%		+10	5290064.84	64.84
100%		+30	5290064.07	64.07
100%		+40	5290072.37	72.37
100%		+50	5290077.06	77.06
High	4.40	+20	5290080.19	80.19
Low	3.70	+20	5290080.30	80.30

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 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)	5530063.64	63.64
100%		-30	5530083.42	83.42
100%		-20	5530081.19	81.19
100%		-10	5530074.18	74.18
100%		0	5530069.56	69.56
100%		+10	5530066.24	66.24
100%		+30	5530066.19	66.19
100%		+40	5530076.38	76.38
100%		+50	5530082.30	82.30
High	4.40	+20	5530083.56	83.56
Low	3.70	+20	5530083.40	83.40

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)	5775065.81	65.81
100%		-30	5775085.75	85.75
100%		-20	5775082.57	82.57
100%		-10	5775076.06	76.06
100%		0	5775071.74	71.74
100%		+10	5775068.31	68.31
100%		+30	5775067.92	67.92
100%		+40	5775076.07	76.07
100%		+50	5775079.93	79.93
High	4.40	+20	5775083.67	83.67
Low	3.70	+20	5775082.91	82.91

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.

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)	5210062.45	62.45
100%		-30	5210082.80	82.80
100%		-20	5210079.07	79.07
100%		-10	5210072.99	72.99
100%		0	5210067.91	67.91
100%		+10	5210065.24	65.24
100%		+30	5210064.81	64.81
100%		+40	5210073.66	73.66
100%		+50	5210077.73	77.73
High	4.40	+20	5210080.52	80.52
Low	3.70	+20	5210080.63	80.63

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)	5290066.91	66.91
100%		-30	5290086.43	86.43
100%		-20	5290082.43	82.43
100%		-10	5290076.33	76.33
100%		0	5290073.21	73.21
100%		+10	5290069.13	69.13
100%		+30	5290070.26	70.26
100%		+40	5290077.79	77.79
100%		+50	5290081.36	81.36
High	4.40	+20	5290084.48	84.48
Low	3.70	+20	5290085.63	85.63

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)	5530067.00	67.00
100%		-30	5530087.72	87.72
100%		-20	5530084.71	84.71
100%		-10	5530078.40	78.40
100%		0	5530074.02	74.02
100%		+10	5530070.47	70.47
100%		+30	5530069.96	69.96
100%		+40	5530077.97	77.97
100%		+50	5530082.80	82.80
High	4.40	+20	5530085.83	85.83
Low	3.70	+20	5530086.50	86.50

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)	5775066.33	66.33
100%		-30	5775086.99	86.99
100%		-20	5775083.61	83.61
100%		-10	5775076.73	76.73
100%		0	5775073.39	73.39
100%		+10	5775070.40	70.40
100%		+30	5775070.13	70.13
100%		+40	5775080.09	80.09
100%		+50	5775086.17	86.17
High	4.40	+20	5775086.41	86.41
Low	3.70	+20	5775083.83	83.83

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)	5210067.25	67.25
100%		-30	5210087.56	87.56
100%		-20	5210084.81	84.81
100%		-10	5210079.69	79.69
100%		0	5210076.48	76.48
100%		+10	5210072.65	72.65
100%		+30	5210070.01	70.01
100%		+40	5210079.11	79.11
100%		+50	5210082.24	82.24
High	4.40	+20	5210084.38	84.38
Low	3.70	+20	5210087.01	87.01

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.

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)	5290069.08	69.08
100%		-30	5290089.50	89.50
100%		-20	5290086.32	86.32
100%		-10	5290080.23	80.23
100%		0	5290077.06	77.06
100%		+10	5290073.63	73.63
100%		+30	5290072.00	72.00
100%		+40	5290080.20	80.20
100%		+50	5290085.01	85.01
High	4.40	+20	5290087.89	87.89
Low	3.70	+20	5290088.70	88.70

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.

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)	5530070.29	70.29
100%		-30	5530090.50	90.50
100%		-20	5530086.67	86.67
100%		-10	5530080.29	80.29
100%		0	5530075.60	75.60
100%		+10	5530072.23	72.23
100%		+30	5530074.03	74.03
100%		+40	5530084.11	84.11
100%		+50	5530090.18	90.18
High	4.40	+20	5530090.36	90.36
Low	3.70	+20	5530088.25	88.25

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.

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)	5775067.32	67.32
100%		-30	5775086.55	86.55
100%		-20	5775082.93	82.93
100%		-10	5775077.76	77.76
100%		0	5775073.24	73.24
100%		+10	5775069.16	69.16
100%		+30	5775071.42	71.42
100%		+40	5775081.28	81.28
100%		+50	5775087.28	87.28
High	4.40	+20	5775087.32	87.32
Low	3.70	+20	5775087.10	87.10

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)	5210068.49	68.49
100%		-30	5210087.40	87.40
100%		-20	5210084.37	84.37
100%		-10	5210078.80	78.80
100%		0	5210075.60	75.60
100%		+10	5210071.95	71.95
100%		+30	5210072.36	72.36
100%		+40	5210081.75	81.75
100%		+50	5210085.63	85.63
High	4.40	+20	5210086.37	86.37
Low	3.70	+20	5210085.40	85.40

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)	5290070.98	70.98
100%		-30	5290090.35	90.35
100%		-20	5290087.44	87.44
100%		-10	5290082.00	82.00
100%		0	5290077.66	77.66
100%		+10	5290073.92	73.92
100%		+30	5290073.91	73.91
100%		+40	5290082.34	82.34
100%		+50	5290087.44	87.44
High	4.40	+20	5290090.08	90.08
Low	3.70	+20	5290089.10	89.10

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)	5530073.51	73.51
100%		-30	5530092.51	92.51
100%		-20	5530088.88	88.88
100%		-10	5530082.27	82.27
100%		0	5530078.87	78.87
100%		+10	5530075.50	75.50
100%		+30	5530076.64	76.64
100%		+40	5530084.70	84.70
100%		+50	5530088.87	88.87
High	4.40	+20	5530091.68	91.68
Low	3.70	+20	5530091.62	91.62

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 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)	5775068.77	68.77
100%		-30	5775088.83	88.83
100%		-20	5775086.23	86.23
100%		-10	5775080.94	80.94
100%		0	5775077.40	77.40
100%		+10	5775074.08	74.08
100%		+30	5775071.06	71.06
100%		+40	5775079.62	79.62
100%		+50	5775083.15	83.15
High	4.40	+20	5775086.30	86.30
Low	3.70	+20	5775087.74	87.74

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.

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	5710.48	14.52
802.11n(HT20)				5708.96	16.04
802.11ac(VHT20)				5709.08	15.92
802.11a	UNII 3	5720	144	5729.48	4.48
802.11n(HT20)				5730.72	5.72
802.11ac(VHT20)				5730.80	5.80

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5690.40	34.60
802.11ac(VHT40)				5690.32	34.68
802.11n(HT40)	UNII 3	5710	142	5729.68	4.68
802.11ac(VHT40)				5729.52	4.52

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5645.68	79.32
	UNII 3	5690	138	5735.76	10.76

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	5710.48	14.52
802.11n(HT20)				5708.80	16.20
802.11ac(VHT20)				5708.72	16.28
802.11a	UNII 3	5720	144	5729.40	4.40
802.11n(HT20)				5730.76	5.76
802.11ac(VHT20)				5730.88	5.88

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5690.16	34.84
802.11ac(VHT40)				5690.40	34.60
802.11n(HT40)	UNII 3	5710	142	5729.52	4.52
802.11ac(VHT40)				5729.52	4.52

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5642.64	82.36
	UNII 3	5690	138	5735.60	10.60

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