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FCC UNII REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
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Date of Issue:
January 06, 2022

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

Report No.: HCT-RF-2201-FC036

FCC ID:	**A3LSMA336M**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model:	SM-A336M/DSN
Additional Model:	SM-A336M
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-2201-FC036	January 06, 2022	- First Approval Report

Table of Contents

REVIEWED BY 2
1. GENERAL INFORMATION 5
EUT DESCRIPTION 5
2. MAXIMUM OUTPUT POWER 6
3. TEST METHODOLOGY 7
EUT CONFIGURATION 7
EUT EXERCISE 7
GENERAL TEST PROCEDURES 7
DESCRIPTION OF TEST MODES 7
4. INSTRUMENT CALIBRATION 8
5. FACILITIES AND ACCREDITATIONS 8
5.1 FACILITIES 8
5.2 EQUIPMENT 8
6. ANTENNA REQUIREMENTS 8
7. MEASUREMENT UNCERTAINTY 9
8. DESCRIPTION OF TESTS 10
9. SUMMARY OF TEST RESULTS 26
10. TEST RESULT 27
10.1 DUTY CYCLE 27
10.2 26 dB Bandwidth 30
10.3 6 dB BANDWIDTH 39
10.4 OUTPUT POWER MEASUREMENT 41
10.5 POWER SPECTRAL DENSITY 45
10.6 FREQUENCY STABILITY. 54
10.6.1 80 MHz BW 54
10.7 STRADDLE CHANNEL 70
10.7.1 26 dB Bandwidth 70
10.7.2 6 dB Bandwidth 73
10.7.3 Output Power 76
10.7.4 Power Spectral Density 79
10.8 RADIATED SPURIOUS EMISSIONS 82
10.9 RADIATED RESTRICTED BAND EDGE 117
10.10 POWERLINE CONDUCTED EMISSIONS 146
11. LIST OF TEST EQUIPMENT 154
12. ANNEX A_ TEST SETUP PHOTO 156

1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-A336M/DSN	
Additional Model	SM-A336M	
EUT Type	Mobile Phone	
Power Supply	DC 3.86 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
	U-NII-2A	20 MHz BW : 5260 - 5320 40 MHz BW : 5270 - 5310 80 MHz BW : 5290
	U-NII-2C	20 MHz BW : 5500 - 5720 40 MHz BW : 5510 - 5710 80 MHz BW : 5530 – 5690
	U-NII-3	20 MHz BW : 5745 - 5825 40 MHz BW : 5755 - 5795 80 MHz BW : 5775
Straddle channel	Supported	
TDWR Band	Supported	
Dynamic Frequency Selection	Slave without radar detection	
Date(s) of Tests	December 08, 2021 ~ January 06, 2022	
Serial number	Radiated : R3CRA0RB7BR Conducted: R3CRA0R8R0M	

2. MAXIMUM OUTPUT POWER

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

Band	Mode	Power	
		(dBm)	(W)
UNII1	802.11a	16.48	0.044
	802.11n (HT20)	16.44	0.044
	802.11n (HT40)	14.46	0.028
	802.11ac (VHT20)	16.42	0.044
	802.11ac (VHT40)	14.28	0.027
	802.11ac (VHT80)	7.84	0.006
UNII2A	802.11a	15.95	0.039
	802.11n (HT20)	15.89	0.039
	802.11n (HT40)	14.45	0.028
	802.11ac (VHT20)	15.92	0.039
	802.11ac (VHT40)	14.21	0.026
	802.11ac (VHT80)	6.20	0.004
UNII2C	802.11a	14.51	0.028
	802.11n (HT20)	14.67	0.029
	802.11n (HT40)	14.30	0.027
	802.11ac (VHT20)	14.65	0.029
	802.11ac (VHT40)	13.98	0.025
	802.11ac (VHT80)	12.08	0.016
UNII3	802.11a	15.48	0.035
	802.11n (HT20)	15.87	0.039
	802.11n (HT40)	14.64	0.029
	802.11ac (VHT20)	15.72	0.037
	802.11ac (VHT40)	14.14	0.026
	802.11ac (VHT80)	11.24	0.013

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.

EUT CONFIGURATION

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

EUT EXERCISE

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

GENERAL TEST PROCEDURES

Conducted Emissions

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

Radiated Emissions

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

DESCRIPTION OF TEST MODES

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

4. INSTRUMENT CALIBRATION

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

5.2 EQUIPMENT

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

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203, §15.407:

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

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

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

7. MEASUREMENT UNCERTAINTY

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

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

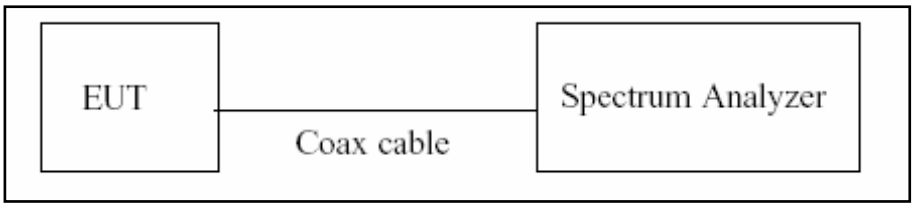
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05 (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.

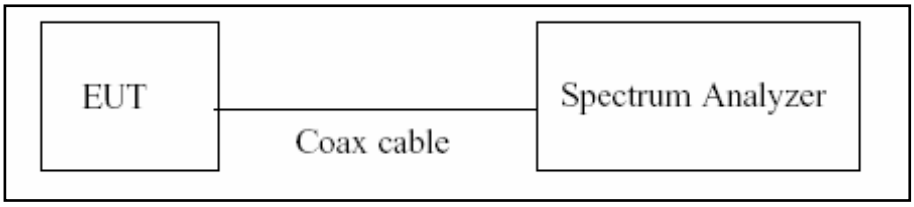
1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

8.2. 6 dB Bandwidth & 26 dB Bandwidth

Limit

Within the 5.725-5.85 GHz(NII-3) 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.

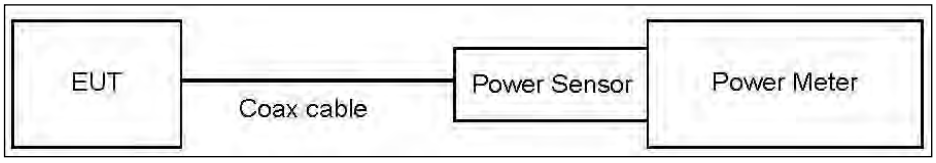
8.3. Output Power Measurement

Limit

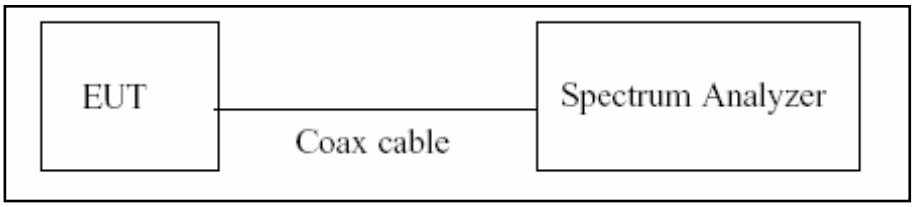
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30 dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30 dBm)

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 Level(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

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

Band	Loss(dB)
UNII 1	20.82
UNII 2A	20.82
UNII 2C	20.82
UNII 3	20.82

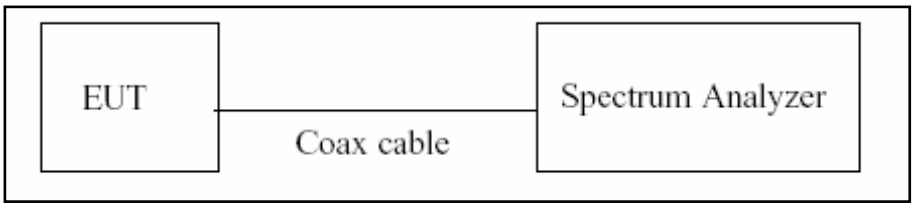
(Actual value of loss for the attenuator and cable combination)

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

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
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 Level(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

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

Band	Loss(dB)
UNII 1	20.82
UNII 2A	20.82
UNII 2C	20.82
UNII 3	20.82

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

8.5. 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 Level + Correction Factor

8.6. Radiated Test

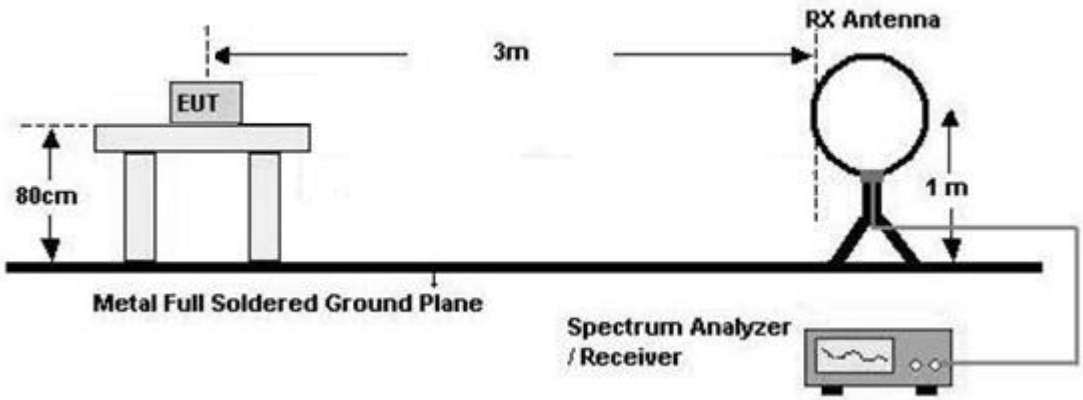
Limit

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. 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.

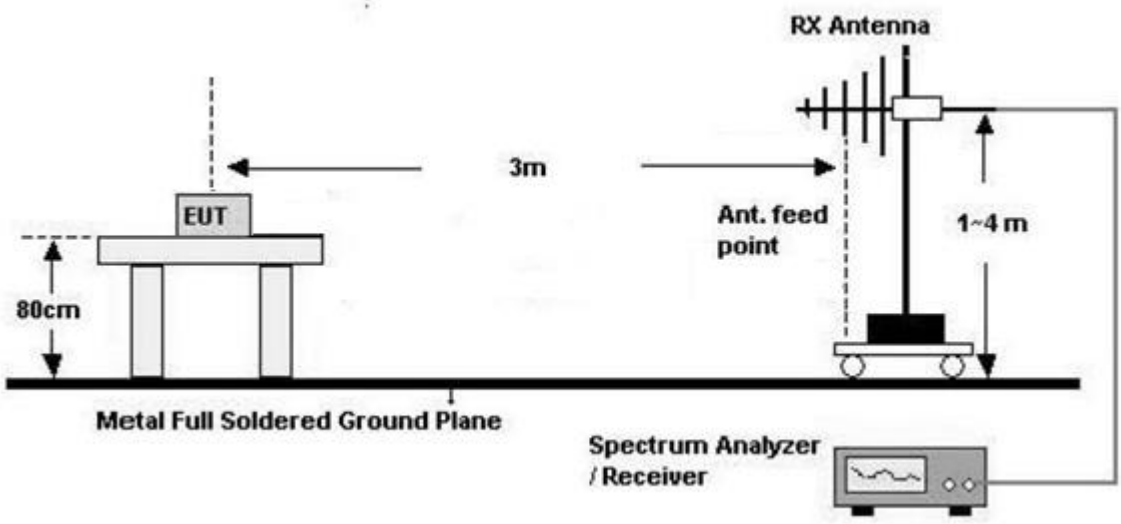
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

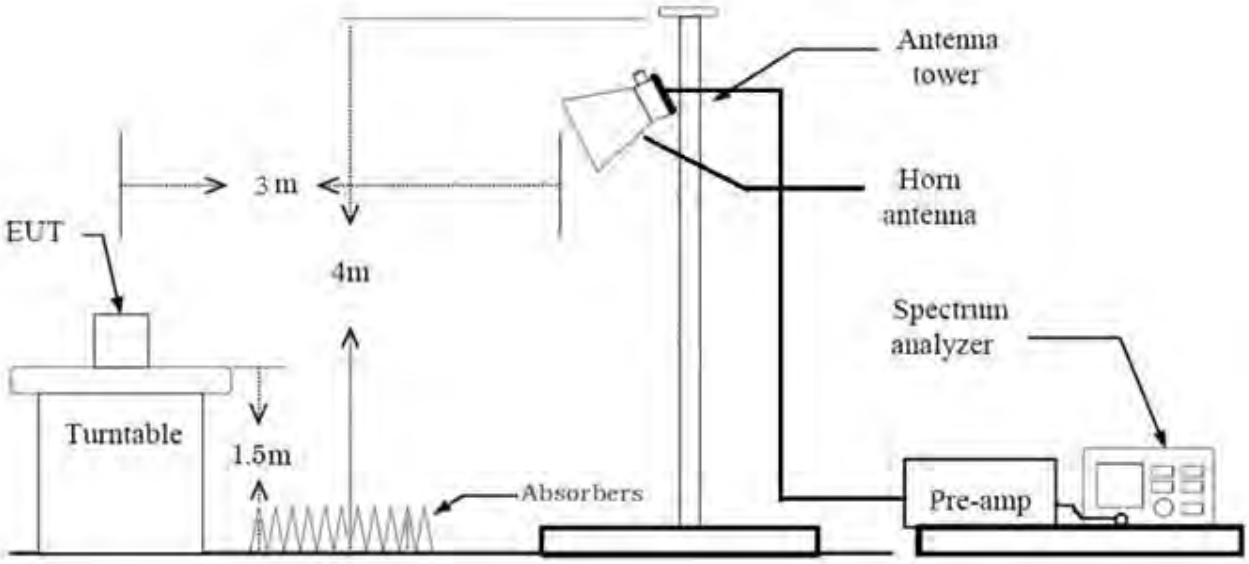
Below 30 MHz



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 Level + 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 Level + 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 Level + 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 Level + 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	0.895	0.482	1000
802.11n(HT20)	MCS0	0.904	0.438	1000
802.11n(HT40)	MCS0	0.815	0.889	3000
802.11ac(VHT20)	MCS0	0.892	0.495	1000
802.11ac(VHT40)	MCS0	0.805	0.943	3000
802.11ac(VHT80)	MCS0	0.747	1.266	5000

8.7. 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.
   - 802.11a : 6 Mbps
   - 802.11n_HT20 : MCS0
   - 802.11n_HT40 : MCS0
   - 802.11ac_VHT20 : MCS0
   - 802.11ac_VHT40 : MCS0
   - 802.11ac_VHT80 : MCS0
4. Radiated Spurious Emission
   - All modulation of operation were investigated and the worst case modulation results are reported.
     (Worstcase : 802.11n(HT20)_MCS0)
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-A336M/DSN, SM-A336M were tested and the worst case results are reported.

(Worst case : SM-A336M/DSN)

Radiated test(DBS)

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone, Stand alone + External accessories(Earphone, etc)
   - Worstcase : Stand alone
2. EUT Axis
   - Radiated Spurious Emissions : Y
3. The following tables show the worst case configurations determined during testing.

Description	Bluetooth Emission	5 GHz Emission
Antenna	WIFI/BT	WIFI/BT
Channel	0	165
Data Rate	1 Mbps	MCS 0
Mode	GFSK : DH5	802.11n(HT20)

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone + External accessories(Earphone, etc) + Travel Adapter, Stand alone + Travel Adapter
   - Worstcase : Stand alone + Travel Adapter
2. SM-A336M/DSN, SM-A336M were tested and the worst case results are reported.

(Worst case : SM-A336M/DSN)

Conducted test

1. All datarate of operation were investigated and the worst case datarate results are reported.
2. SM-A336M/DSN, SM-A336M were tested and the worst case results are reported.

(Worst case : SM-A336M/DSN)

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)		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 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)		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)	<-27 dBm/MHz EIRP (UNII1, 2A, 2C) cf. Section 8.6 (UNII 3)	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

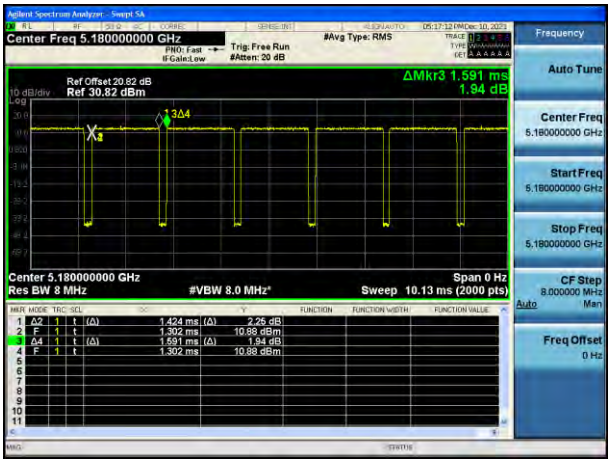
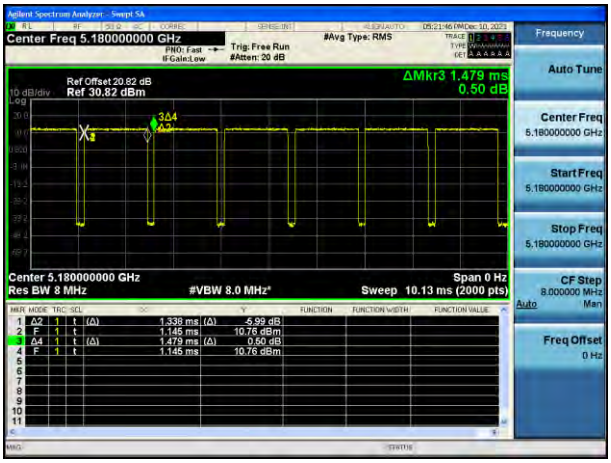
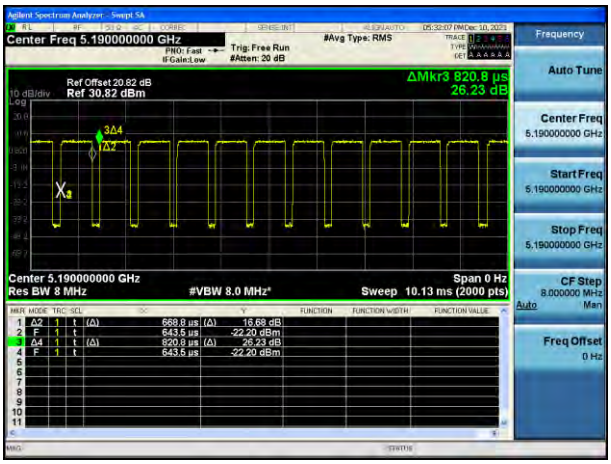
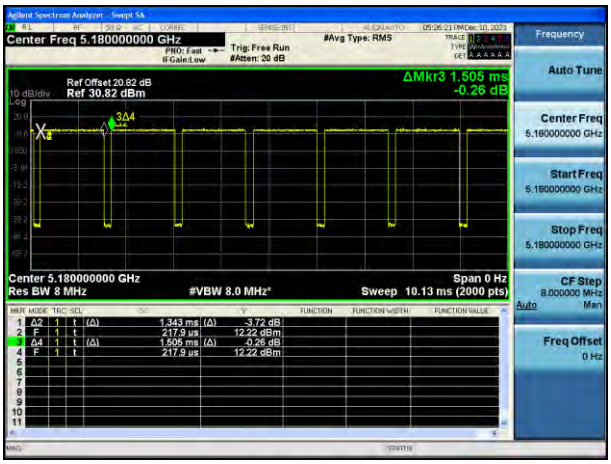
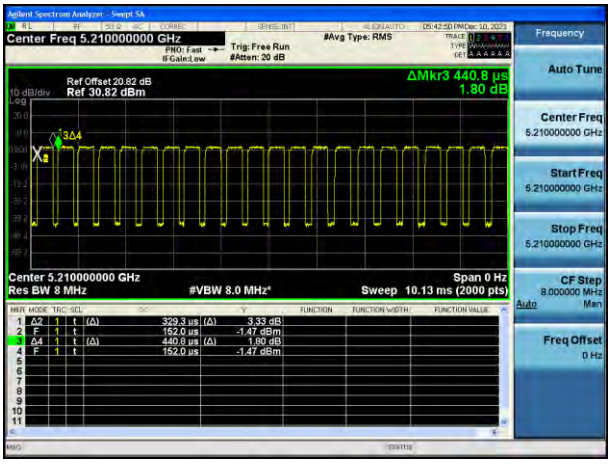
Mode	Data Rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11a	6	1.424	1.591	0.895	0.482
	9	0.963	1.105	0.872	0.597
	12	0.725	0.887	0.817	0.877
	18	0.491	0.608	0.808	0.924
	24	0.370	0.471	0.785	1.052
	36	0.253	0.370	0.685	1.644
	48	0.193	0.301	0.640	1.941
	54	0.180	0.297	0.606	2.175

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11n (HT20)	0	1.338	1.479	0.904	0.438
	1	0.689	0.841	0.819	0.866
	2	0.476	0.628	0.758	1.203
	3	0.365	0.517	0.706	1.513
	4	0.258	0.421	0.614	2.115
	5	0.198	0.355	0.557	2.540
	6	0.182	0.334	0.545	2.632
	7	0.167	0.314	0.532	2.739
802.11n (HT40)	0	0.669	0.821	0.815	0.889
	1	0.355	0.517	0.686	1.635
	2	0.248	0.400	0.620	2.074
	3	0.198	0.365	0.542	2.663
	4	0.142	0.314	0.452	3.452
	5	0.117	0.279	0.418	3.786
	6	0.111	0.289	0.386	4.135
	7	0.101	0.269	0.377	4.232

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT20)	0	1.343	1.505	0.892	0.495
	1	0.689	0.836	0.824	0.839
	2	0.476	0.623	0.764	1.168
	3	0.365	0.517	0.706	1.513
	4	0.258	0.421	0.614	2.115
	5	0.208	0.339	0.612	2.133
	6	0.188	0.322	0.584	2.337
	7	0.170	0.306	0.556	2.553
	8	0.151	0.287	0.526	2.789
802.11ac (VHT40)	0	0.669	0.831	0.805	0.943
	1	0.355	0.517	0.686	1.635
	2	0.253	0.385	0.658	1.818
	3	0.198	0.355	0.557	2.540
	4	0.147	0.274	0.537	2.700
	5	0.120	0.254	0.472	3.257
	6	0.112	0.228	0.491	3.087
	7	0.104	0.212	0.491	3.093
	8	0.096	0.212	0.453	3.441
	9	0.082	0.212	0.387	4.125
802.11ac (VHT80)	0	0.329	0.441	0.747	1.266
	1	0.187	0.329	0.569	2.447
	2	0.142	0.284	0.500	3.010
	3	0.110	0.240	0.458	3.388
	4	0.090	0.214	0.421	3.762
	5	0.080	0.206	0.388	4.108
	6	0.076	0.210	0.362	4.414
	7	0.070	0.196	0.357	4.472
	8	0.066	0.192	0.344	4.638
	9	0.064	0.188	0.340	4.680

Note:

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

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

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.

802.11a Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	19.95	16.371
5200	40	19.83	16.351
5240	48	20.11	16.330
5260	52	20.13	16.355
5300	60	19.65	16.294
5320	64	19.63	16.330
5500	100	20.11	16.343
5600	120	19.98	16.367
5720	144	19.41	16.330
5745	149	19.76	16.363
5785	157	20.26	16.350
5825	165	20.25	16.373

802.11n(HT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.82	17.430
5200	40	20.51	17.442
5240	48	21.11	17.474
5260	52	21.09	17.482
5300	60	20.91	17.434
5320	64	20.71	17.442
5500	100	20.25	17.432
5600	120	21.04	17.499
5720	144	20.51	17.402
5745	149	20.55	17.445
5785	157	20.66	17.443
5825	165	20.99	17.504

802.11n(HT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	40.61	36.031
5230	46	41.02	36.054
5270	54	40.80	35.983
5310	62	41.04	36.054
5510	102	41.72	36.090
5590	118	40.45	35.930
5710	142	41.36	35.947
5755	151	41.25	36.075
5795	159	41.07	35.967

802.11ac(VHT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	21.02	17.449
5200	40	20.87	17.483
5240	48	20.20	17.462
5260	52	21.08	17.464
5300	60	21.04	17.431
5320	64	20.86	17.418
5500	100	20.48	17.468
5600	120	20.70	17.474
5720	144	20.51	17.436
5745	149	21.31	17.405
5785	157	20.89	17.450
5825	165	20.69	17.449

802.11ac(VHT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	40.62	35.926
5230	46	40.66	35.988
5270	54	40.30	35.987
5310	62	40.37	36.004
5510	102	41.37	36.018
5590	118	41.08	36.059
5710	142	40.46	36.006
5755	151	40.23	36.072
5795	159	40.78	35.953

802.11ac(VHT80) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5210	42	81.21	75.239
5290	58	82.28	75.346
5530	106	80.95	75.374
5610	122	81.10	75.155
5690	138	80.59	75.099
5775	155	81.40	75.116

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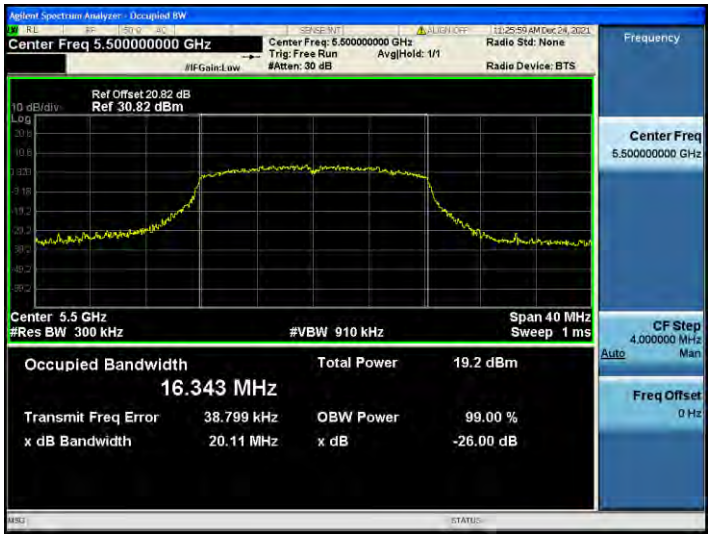
▣ Test Plots(802.11a)

Note:

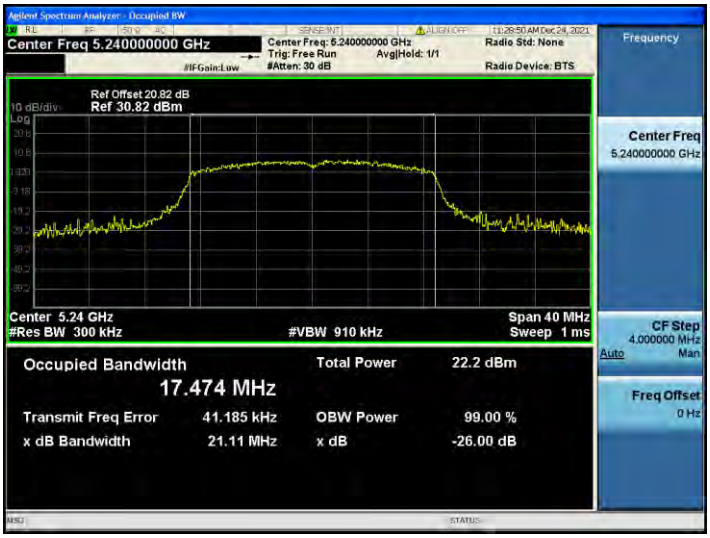
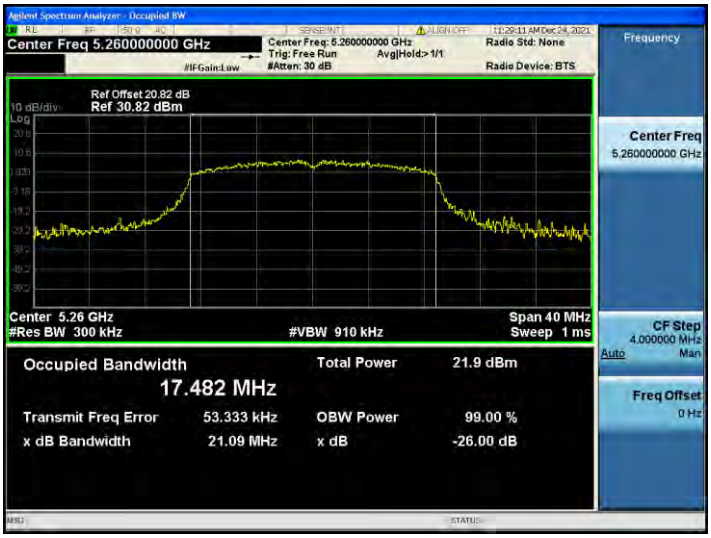
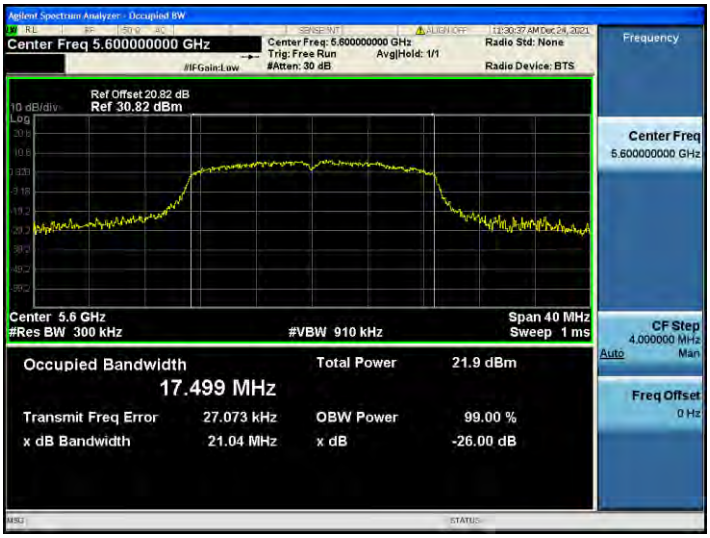
In order to simplify the report, attached plots were only the most wide channel.

802.11a UNII 1 BAND 26 dB Bandwidth (CH 48)	802.11a UNII 2A BAND 26 dB Bandwidth (CH 52)
	
802.11a UNII 2C BAND 26 dB Bandwidth (CH 100)	**802.11a UNII 3 BAND 26 dB Bandwidth (CH 157)**
	

▣ Test Plots(802.11n(HT20))

Note:

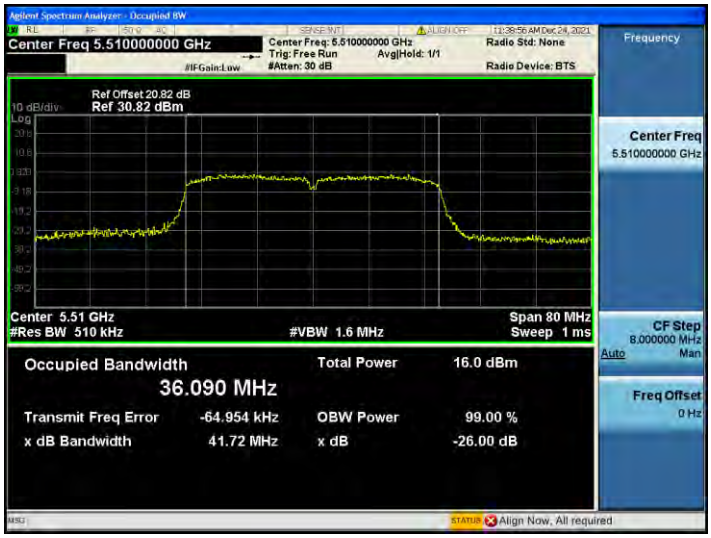
In order to simplify the report, attached plots were only the most wide channel.

802.11n_HT20 UNII 1 BAND 26 dB Bandwidth(CH 48)	802.11n_HT20 UNII 2A BAND 26 dB Bandwidth(CH 52)
	
802.11n_HT20 UNII 2C BAND 26 dB Bandwidth(CH 120)	**802.11n_HT20 UNII 3 BAND 26 dB Bandwidth (CH 165)**
	

▣ Test Plots(802.11n(HT40))

Note:

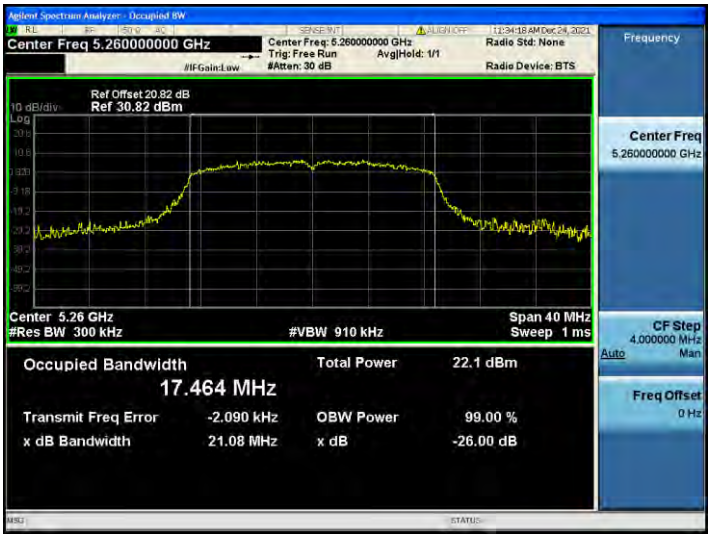
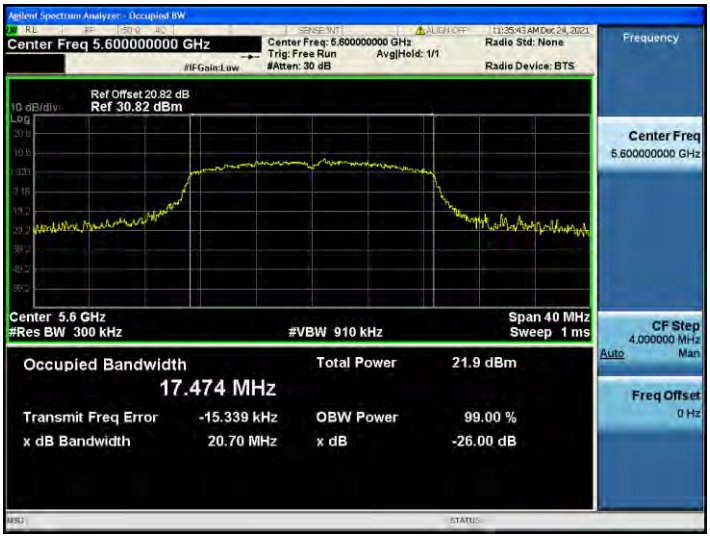
In order to simplify the report, attached plots were only the most wide channel.

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)**
	

▣ Test Plots(802.11ac(VHT20))

Note:

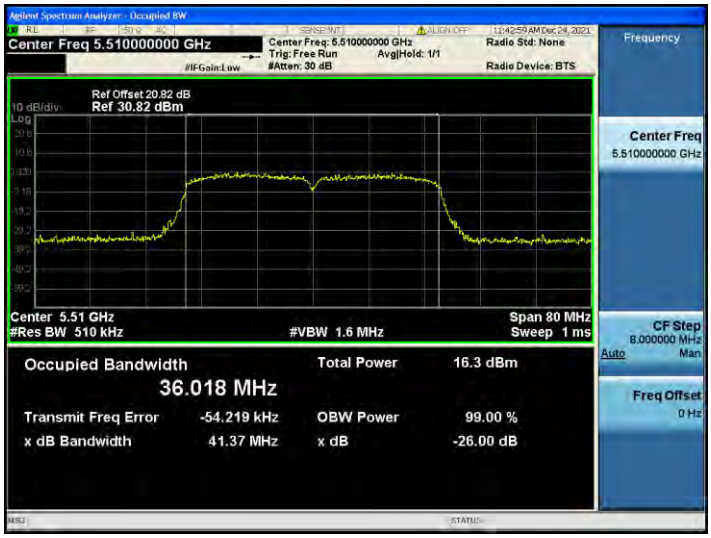
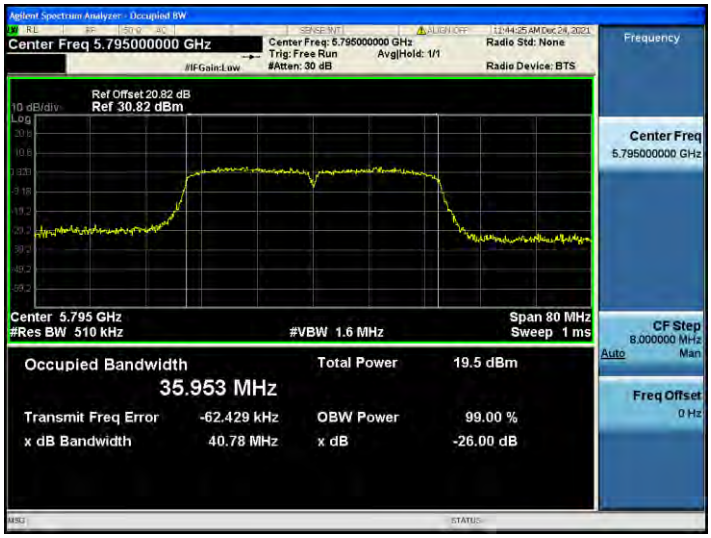
In order to simplify the report, attached plots were only the most wide channel.

802.11ac_VHT20 UNII 1 BAND 26 dB Bandwidth(CH 36)	802.11ac_VHT20 UNII 2A BAND 26 dB Bandwidth(CH 52)
	
802.11ac_VHT20 UNII 2C BAND 26 dB Bandwidth(CH 120)	**802.11ac_VHT20 UNII 3 BAND 26 dB Bandwidth(CH 149)**
	

▣ Test Plots(802.11ac(VHT40))

Note:

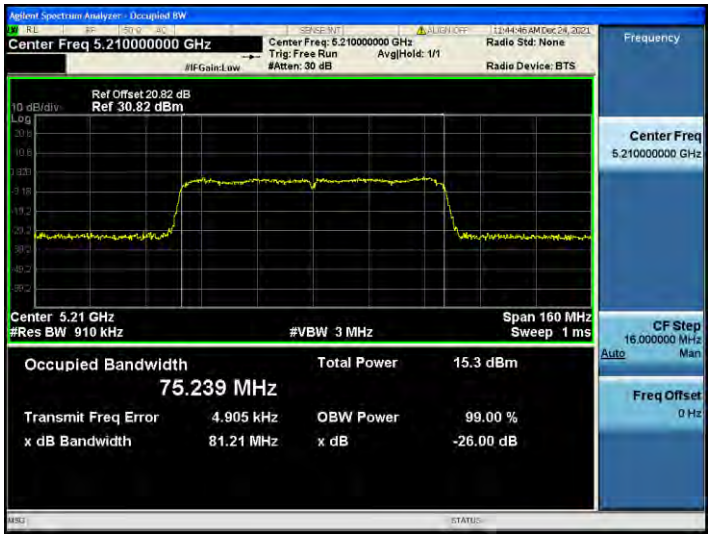
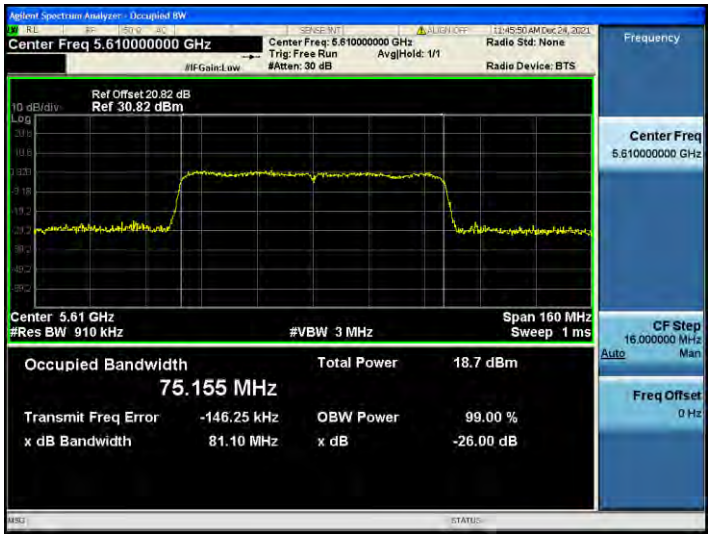
In order to simplify the report, attached plots were only the most wide channel.

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)**
	

▣ Test Plots(802.11ac(VHT80))

Note:

In order to simplify the report, attached plots were only the most wide 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)**
	

10.3 6 dB BANDWIDTH

802.11a Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	13.26	> 0.5	Pass
5785	157	15.12	> 0.5	Pass
5825	165	15.11	> 0.5	Pass

802.11n(HT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	13.84	> 0.5	Pass
5785	157	15.14	> 0.5	Pass
5825	165	13.82	> 0.5	Pass

802.11n(HT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.16	> 0.5	Pass
5795	159	35.18	> 0.5	Pass

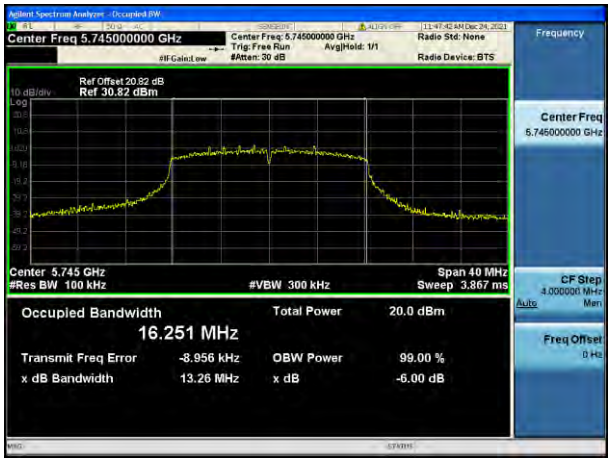
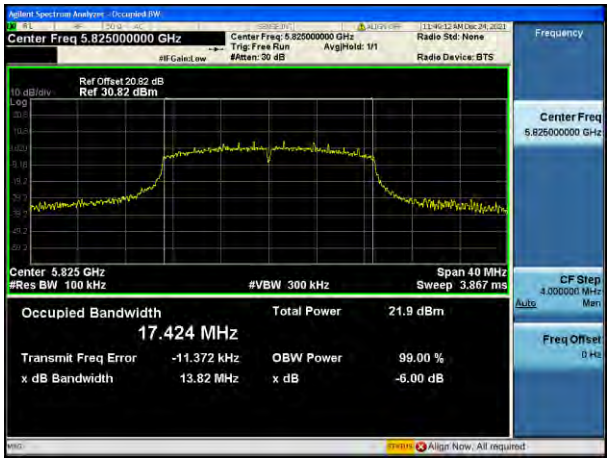
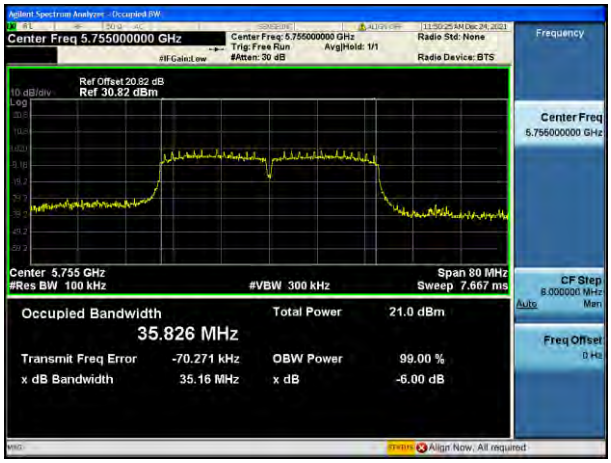
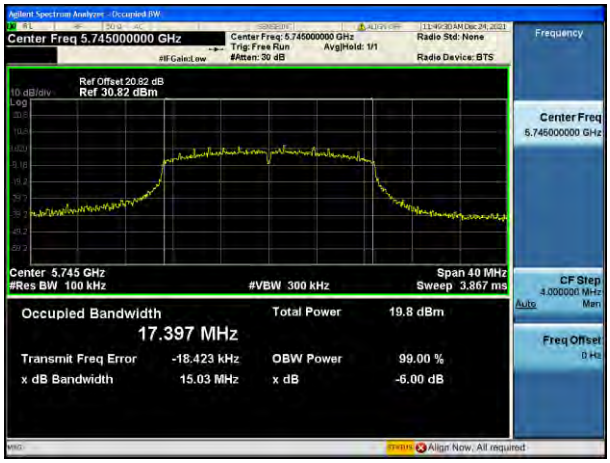
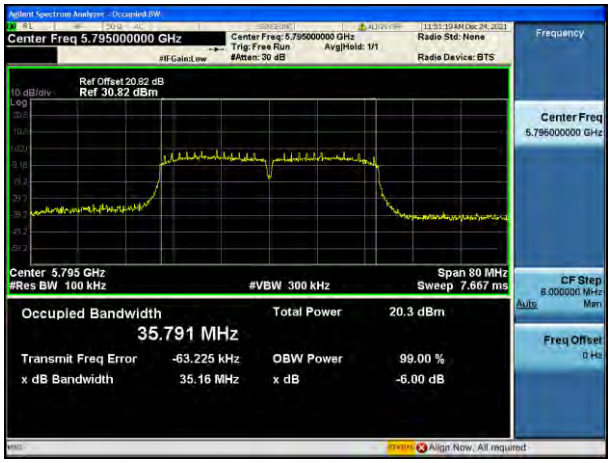
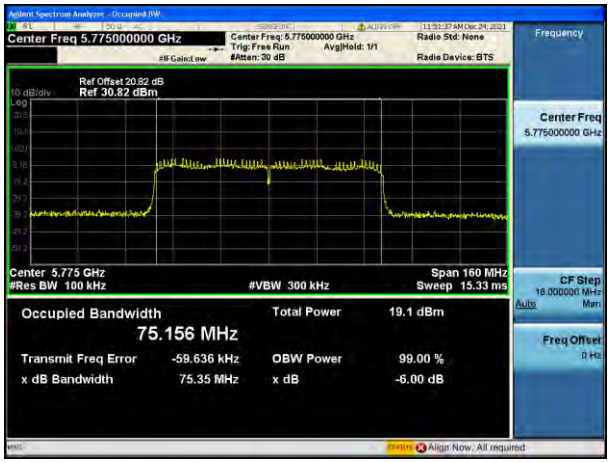
802.11ac(VHT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	15.03	> 0.5	Pass
5785	157	15.13	> 0.5	Pass
5825	165	15.14	> 0.5	Pass

802.11ac(VHT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.20	> 0.5	Pass
5795	159	35.16	> 0.5	Pass

802.11ac(VHT80) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.35	> 0.5	Pass

▣ Test Plots

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

802.11a (CH.149)	802.11n(HT20) (CH.165)
	
802.11n(HT40) (CH.151)	**802.11ac(VHT20) (CH.149)**
	
802.11ac(VHT40) (CH.159)	**802.11ac(VHT80) (CH.155)**
	

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

802.11a Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase Datarate (Mbps)
Frequency [MHz]	Channel No.					
5180	36	15.35	0.877	16.23	23.98	12M
5200	40	15.42	0.877	16.30	23.98	12M
5240	48	15.60	0.877	16.48	23.98	12M
5260	52	15.07	0.877	15.95	23.93	12M
5300	60	14.18	0.877	15.05	23.93	12M
5320	64	14.19	0.877	15.06	23.93	12M
5500	100	12.30	0.877	13.17	23.88	12M
5600	120	13.63	0.877	14.51	23.88	12M
5720	144	12.73	0.877	13.60	23.88	12M
5745	149	12.54	0.877	13.42	30.00	12M
5785	157	12.84	0.877	13.72	30.00	12M
5825	165	14.60	0.877	15.48	30.00	12M

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	14.21	2.115	16.32	23.98	MCS4
5200	40	14.33	2.115	16.44	23.98	MCS4
5240	48	14.20	2.115	16.32	23.98	MCS4
5260	52	13.77	2.115	15.89	23.98	MCS4
5300	60	13.07	2.115	15.18	23.98	MCS4
5320	64	12.98	2.115	15.10	23.98	MCS4
5500	100	10.40	2.115	12.52	23.98	MCS4
5600	120	12.55	2.115	14.67	23.98	MCS4
5720	144	11.60	2.115	13.72	23.98	MCS4
5745	149	11.78	2.115	13.89	30.00	MCS4
5785	157	11.88	2.115	14.00	30.00	MCS4
5825	165	13.75	2.115	15.87	30.00	MCS4

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	8.00	3.452	11.45	23.98	MCS4
5230	46	11.01	3.452	14.46	23.98	MCS4
5270	54	11.00	3.452	14.45	23.98	MCS4
5310	62	4.98	3.452	8.44	23.98	MCS4
5510	102	6.65	3.452	10.11	23.98	MCS4
5590	118	10.85	3.452	14.30	23.98	MCS4
5710	142	10.61	3.452	14.06	23.98	MCS4
5755	151	11.19	3.452	14.64	30.00	MCS4
5795	159	10.42	3.452	13.87	30.00	MCS4

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	14.17	2.115	16.28	23.98	MCS4
5200	40	14.30	2.115	16.42	23.98	MCS4
5240	48	14.10	2.115	16.21	23.98	MCS4
5260	52	13.80	2.115	15.92	23.98	MCS4
5300	60	13.00	2.115	15.12	23.98	MCS4
5320	64	12.92	2.115	15.03	23.98	MCS4
5500	100	10.21	2.115	12.32	23.98	MCS4
5600	120	12.53	2.115	14.65	23.98	MCS4
5720	144	11.60	2.115	13.72	23.98	MCS4
5745	149	11.58	2.115	13.70	30.00	MCS4
5785	157	11.84	2.115	13.95	30.00	MCS4
5825	165	13.60	2.115	15.72	30.00	MCS4

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	8.58	2.540	11.12	23.98	MCS3
5230	46	12.64	1.635	14.28	23.98	MCS1
5270	54	11.67	2.540	14.21	23.98	MCS3
5310	62	4.57	2.540	7.11	23.98	MCS3
5510	102	7.68	2.540	10.22	23.98	MCS3
5590	118	11.44	2.540	13.98	23.98	MCS3
5710	142	11.33	2.540	13.87	23.98	MCS3
5755	151	11.60	2.540	14.14	30.00	MCS3
5795	159	10.95	2.540	13.49	30.00	MCS3

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	4.83	3.010	7.84	23.98	MCS2
5290	58	3.19	3.010	6.20	23.98	MCS2
5530	106	6.03	2.447	8.48	23.98	MCS1
5610	122	8.14	3.388	11.53	23.98	MCS3
5690	138	8.70	3.388	12.08	23.98	MCS3
5775	155	8.23	3.010	11.24	30.00	MCS2

10.5 POWER SPECTRAL DENSITY

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Worstcase Datarate (Mbps)	Limit
Frequency [MHz]	Channel No.					
5180	36	5.584	0.877	6.461	12M	11 dBm/MHz
5200	40	5.948	0.877	6.825	12M	
5240	48	5.735	0.877	6.612	12M	
5260	52	5.124	0.877	6.001	12M	
5300	60	4.309	0.877	5.186	12M	
5320	64	4.275	0.877	5.152	12M	
5500	100	2.589	0.877	3.466	12M	
5600	120	3.713	0.877	4.590	12M	
5720	144	2.895	0.877	3.772	12M	
5745	149	-0.162	0.877	0.715	12M	30 dBm/500 kHz
5785	157	0.456	0.877	1.333	12M	
5825	165	2.082	0.877	2.959	12M	

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	4.400	2.115	6.515	MCS4	11 dBm/MHz
5200	40	4.432	2.115	6.547	MCS4	
5240	48	4.466	2.115	6.581	MCS4	
5260	52	4.353	2.115	6.468	MCS4	
5300	60	3.565	2.115	5.680	MCS4	
5320	64	3.486	2.115	5.601	MCS4	
5500	100	0.715	2.115	2.830	MCS4	
5600	120	2.651	2.115	4.766	MCS4	
5720	144	1.778	2.115	3.893	MCS4	
5745	149	-1.166	2.115	0.949	MCS4	30 dBm/500 kHz
5785	157	-0.137	2.115	1.978	MCS4	
5825	165	1.297	2.115	3.412	MCS4	

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	-5.494	3.452	-2.042	MCS4	11 dBm/MHz
5230	46	-1.930	3.452	1.522	MCS4	
5270	54	-2.413	3.452	1.039	MCS4	
5310	62	-8.115	3.452	-4.663	MCS4	
5510	102	-6.405	3.452	-2.953	MCS4	
5590	118	-1.934	3.452	1.518	MCS4	
5710	142	-2.291	3.452	1.161	MCS4	
5755	151	-4.328	3.452	-0.876	MCS4	30 dBm /500 kHz
5795	159	-5.290	3.452	-1.838	MCS4	

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	4.606	2.115	6.721	MCS4	11 dBm/MHz
5200	40	4.830	2.115	6.945	MCS4	
5240	48	4.328	2.115	6.443	MCS4	
5260	52	4.450	2.115	6.565	MCS4	
5300	60	3.988	2.115	6.103	MCS4	
5320	64	3.349	2.115	5.464	MCS4	
5500	100	0.780	2.115	2.895	MCS4	
5600	120	2.685	2.115	4.800	MCS4	
5720	144	1.986	2.115	4.101	MCS4	
5745	149	-0.813	2.115	1.302	MCS4	30 dBm/500 kHz
5785	157	-0.114	2.115	2.001	MCS4	
5825	165	1.131	2.115	3.246	MCS4	

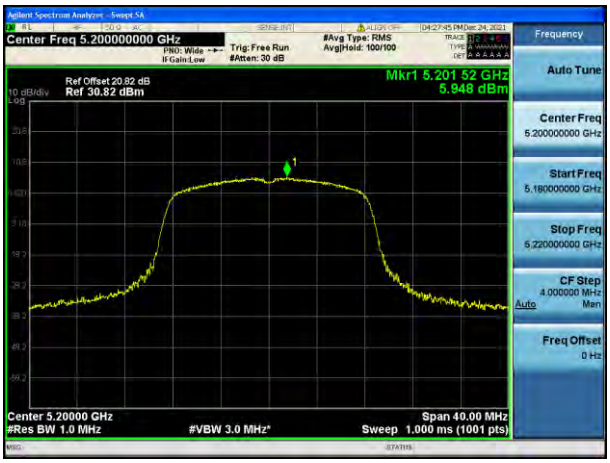
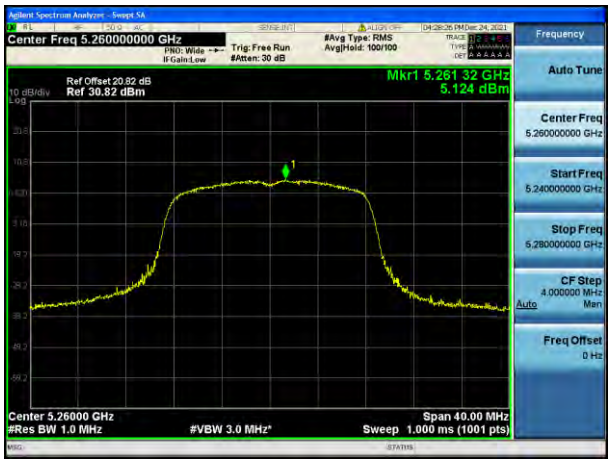
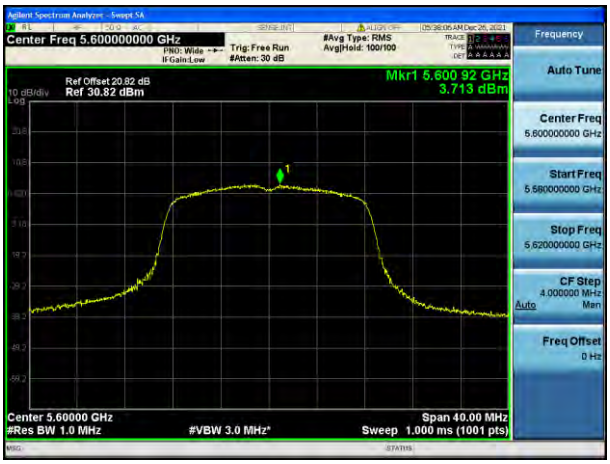
802.11ac(40 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	-4.555	2.540	-2.015	MCS3	11 dBm/MHz
5230	46	-0.913	1.635	0.722	MCS1	
5270	54	-1.392	2.540	1.148	MCS3	
5310	62	-8.410	2.540	-5.870	MCS3	
5510	102	-5.544	2.540	-3.004	MCS3	
5590	118	-2.215	2.540	0.325	MCS3	
5710	142	-1.789	2.540	0.751	MCS3	
5755	151	-4.296	2.540	-1.756	MCS3	30 dBm/500 kHz
5795	159	-4.915	2.540	-2.375	MCS3	

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	-11.786	3.010	-8.776	MCS2	11 dBm/MHz
5290	58	-12.823	3.010	-9.813	MCS2	
5530	106	-10.438	2.447	-7.991	MCS1	
5610	122	-8.359	3.388	-4.971	MCS3	
5690	138	-7.282	3.388	-3.894	MCS3	
5775	155	-10.847	3.010	-7.837	MCS2	30 dBm/500 kHz

▣ Test Plots(802.11a)

Note:

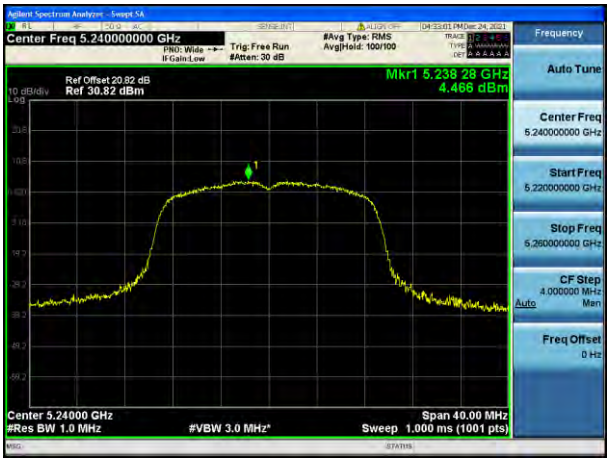
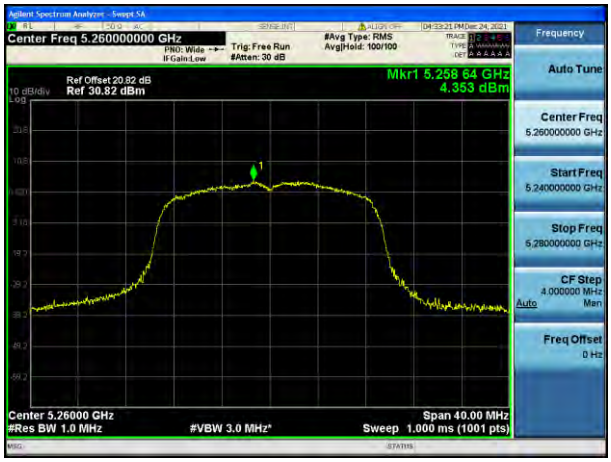
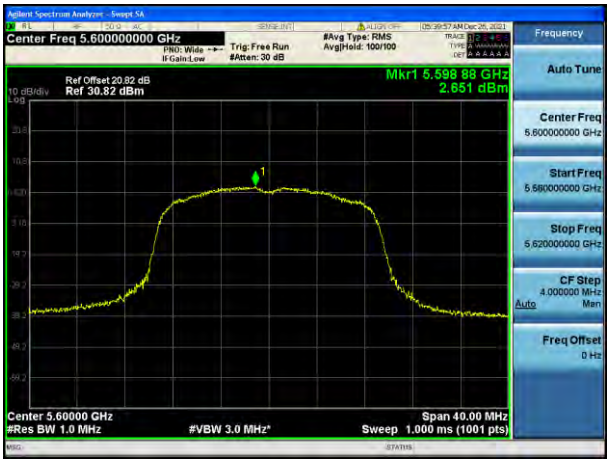
In order to simplify the report, attached plots were only channel of highest power.

UNII 1 (Ch. 40)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 120)	**UNII 3 (Ch. 165)**
	

▣ Test Plots(802.11n(HT20))

Note:

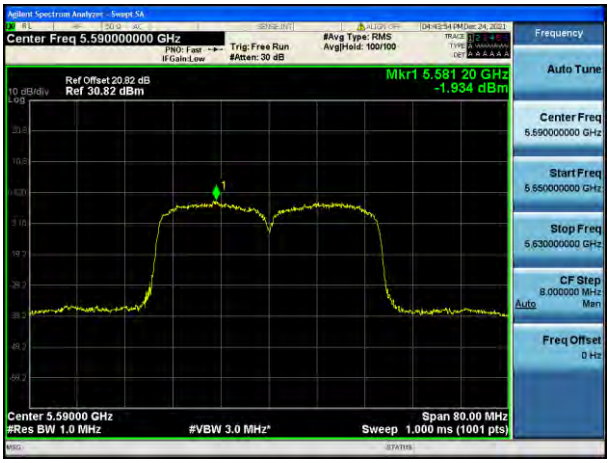
In order to simplify the report, attached plots were only channel of highest power.

UNII 1 (Ch. 48)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 120)	**UNII 3 (Ch. 165)**
	

▣ Test Plots(802.11n(HT40))

Note:

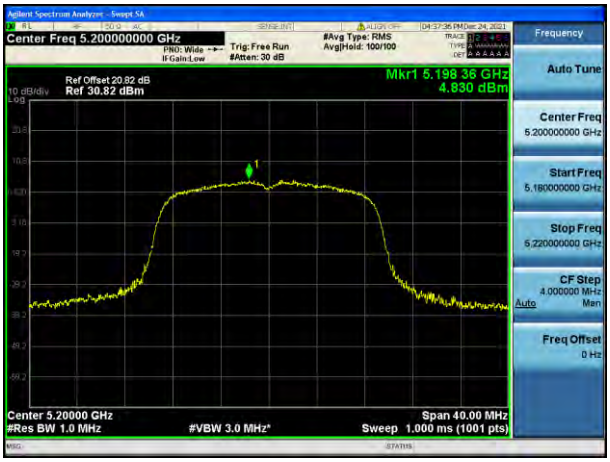
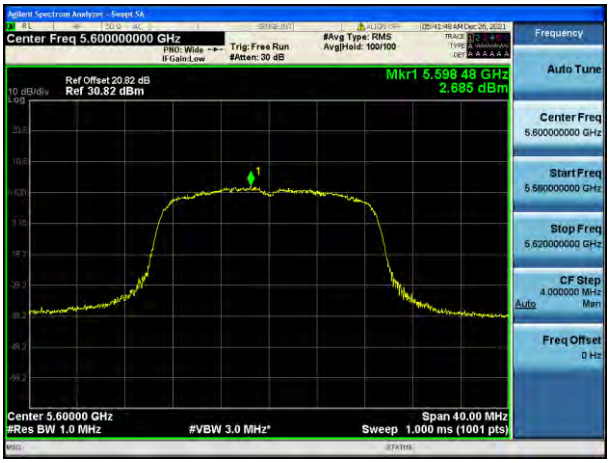
In order to simplify the report, attached plots were only channel of highest power.

UNII 1 (Ch. 46)	UNII 2A (Ch. 54)
	
UNII 2C (Ch. 118)	**UNII 3 (Ch. 151)**
	

▣ Test Plots(802.11ac(VHT20))

Note:

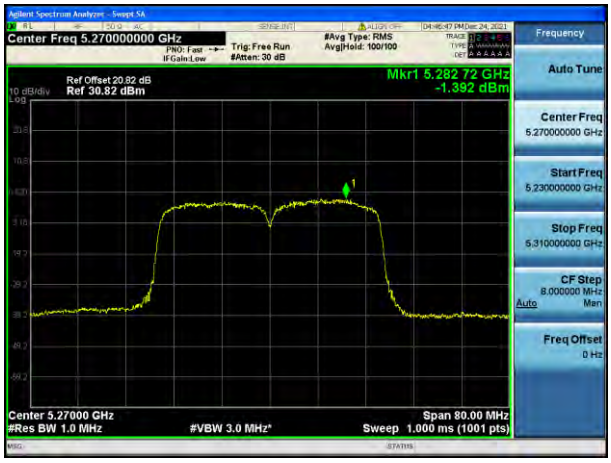
In order to simplify the report, attached plots were only channel of highest power.

UNII 1 (Ch. 40)	UNII 2A (Ch. 52)
	
UNII 2C (Ch. 120)	**UNII 3 (Ch. 165)**
	

▣ Test Plots(802.11ac(VHT40))

Note:

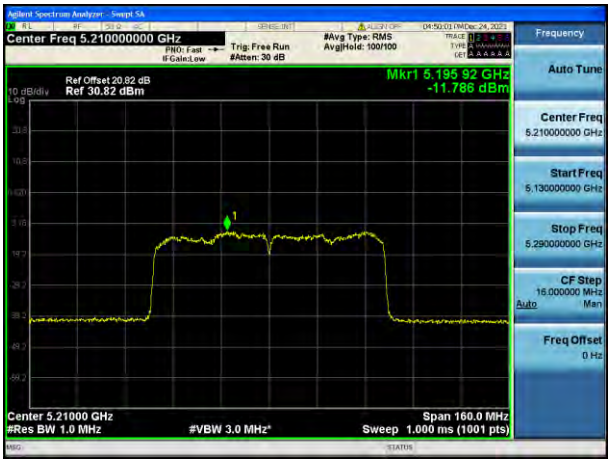
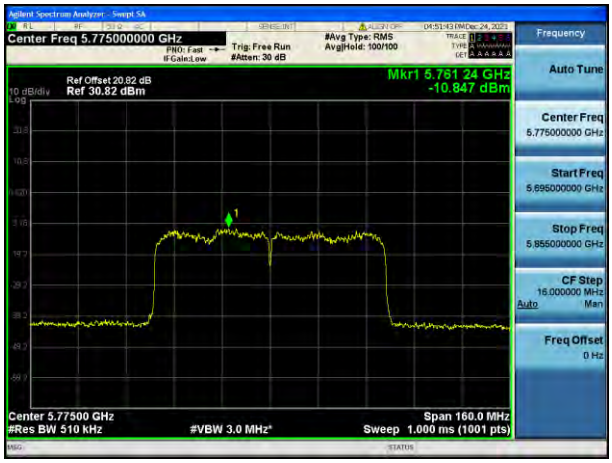
In order to simplify the report, attached plots were only channel of highest power.

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

▣ Test Plots(802.11ac(VHT80))

Note:

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

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

10.6 FREQUENCY STABILITY.

10.6.1 80 MHz BW

Startup after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5210038.79	38.79
100%		-30	5210059.39	59.39
100%		-20	5210056.74	56.74
100%		-10	5210051.34	51.34
100%		0	5210046.90	46.90
100%		+10	5210044.21	44.21
100%		+30	5210042.18	42.18
100%		+40	5210050.49	50.49
100%		+50	5210055.22	55.22
High	4.40	+20	5210057.52	57.52
Low	3.65	+20	5210057.91	57.91

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.

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5290038.65	38.65
100%		-30	5290058.15	58.15
100%		-20	5290054.88	54.88
100%		-10	5290047.80	47.8
100%		0	5290044.09	44.09
100%		+10	5290041.78	41.78
100%		+30	5290041.87	41.87
100%		+40	5290050.53	50.53
100%		+50	5290056.62	56.62
High	4.40	+20	5290058.74	58.74
Low	3.65	+20	5290056.68	56.68

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:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5530036.54	36.54
100%		-30	5530056.85	56.85
100%		-20	5530053.52	53.52
100%		-10	5530047.70	47.70
100%		0	5530043.87	43.87
100%		+10	5530040.07	40.07
100%		+30	5530039.40	39.40
100%		+40	5530048.55	48.55
100%		+50	5530052.44	52.44
High	4.40	+20	5530054.43	54.43
Low	3.65	+20	5530056.30	56.30

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 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5775039.44	39.44
100%		-30	5775060.07	60.07
100%		-20	5775056.37	56.37
100%		-10	5775049.95	49.95
100%		0	5775045.12	45.12
100%		+10	5775042.34	42.34
100%		+30	5775041.70	41.70
100%		+40	5775049.88	49.88
100%		+50	5775054.91	54.91
High	4.40	+20	5775058.47	58.47
Low	3.65	+20	5775056.75	56.75

Note:

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

2 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5210042.84	42.84
100%		-30	5210063.05	63.05
100%		-20	5210059.25	59.25
100%		-10	5210052.67	52.67
100%		0	5210048.24	48.24
100%		+10	5210046.10	46.10
100%		+30	5210046.31	46.31
100%		+40	5210054.34	54.34
100%		+50	5210058.26	58.26
High	4.40	+20	5210060.76	60.76
Low	3.65	+20	5210062.01	62.01

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:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5290041.55	41.55
100%		-30	5290062.13	62.13
100%		-20	5290058.08	58.08
100%		-10	5290052.00	52.00
100%		0	5290048.15	48.15
100%		+10	5290045.20	45.20
100%		+30	5290045.36	45.36
100%		+40	5290054.72	54.72
100%		+50	5290059.11	59.11
High	4.40	+20	5290059.94	59.94
Low	3.65	+20	5290060.56	60.56

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:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5530043.18	43.18
100%		-30	5530063.11	63.11
100%		-20	5530059.14	59.14
100%		-10	5530053.72	53.72
100%		0	5530050.13	50.13
100%		+10	5530046.30	46.30
100%		+30	5530045.29	45.29
100%		+40	5530055.29	55.29
100%		+50	5530061.04	61.04
High	4.40	+20	5530062.93	62.93
Low	3.65	+20	5530060.61	60.61

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:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5775041.09	41.09
100%		-30	5775061.44	61.44
100%		-20	5775058.84	58.84
100%		-10	5775053.13	53.13
100%		0	5775048.58	48.58
100%		+10	5775045.49	45.49
100%		+30	5775043.71	43.71
100%		+40	5775054.11	54.11
100%		+50	5775059.03	59.03
High	4.40	+20	5775060.01	60.01
Low	3.65	+20	5775058.08	58.08

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.

5 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5210044.57	44.57
100%		-30	5210064.58	64.58
100%		-20	5210062.28	62.28
100%		-10	5210055.20	55.20
100%		0	5210050.25	50.25
100%		+10	5210047.19	47.19
100%		+30	5210048.62	48.62
100%		+40	5210057.69	57.69
100%		+50	5210062.66	62.66
High	4.40	+20	5210063.54	63.54
Low	3.65	+20	5210061.75	61.75

Note:

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

OPERATING BAND:	UNII Band 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5290043.51	43.51
100%		-30	5290062.46	62.46
100%		-20	5290059.97	59.97
100%		-10	5290054.15	54.15
100%		0	5290050.94	50.94
100%		+10	5290046.98	46.98
100%		+30	5290046.79	46.79
100%		+40	5290056.65	56.65
100%		+50	5290062.56	62.56
High	4.40	+20	5290063.42	63.42
Low	3.65	+20	5290060.67	60.67

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:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5530041.63	41.63
100%		-30	5530062.31	62.31
100%		-20	5530059.54	59.54
100%		-10	5530053.31	53.31
100%		0	5530049.64	49.64
100%		+10	5530047.44	47.44
100%		+30	5530044.29	44.29
100%		+40	5530053.75	53.75
100%		+50	5530058.42	58.42
High	4.40	+20	5530060.30	60.30
Low	3.65	+20	5530061.08	61.08

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 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5775043.28	43.28
100%		-30	5775062.89	62.89
100%		-20	5775059.94	59.94
100%		-10	5775054.41	54.41
100%		0	5775050.22	50.22
100%		+10	5775046.86	46.86
100%		+30	5775046.95	46.95
100%		+40	5775056.94	56.94
100%		+50	5775061.56	61.56
High	4.40	+20	5775061.90	61.90
Low	3.65	+20	5775060.92	60.92

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:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5210046.93	46.93
100%		-30	5210066.70	66.70
100%		-20	5210064.33	64.33
100%		-10	5210058.22	58.22
100%		0	5210053.26	53.26
100%		+10	5210050.68	50.68
100%		+30	5210050.29	50.29
100%		+40	5210058.92	58.92
100%		+50	5210064.47	64.47
High	4.40	+20	5210066.48	66.48
Low	3.65	+20	5210066.52	66.52

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 2A
OPERATING FREQUENCY:	5,290,000,000 Hz
CHANNEL:	58
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5290045.70	45.70
100%		-30	5290065.82	65.82
100%		-20	5290063.15	63.15
100%		-10	5290057.34	57.34
100%		0	5290053.61	53.61
100%		+10	5290049.66	49.66
100%		+30	5290048.17	48.17
100%		+40	5290055.86	55.86
100%		+50	5290059.93	59.93
High	4.40	+20	5290063.77	63.77
Low	3.65	+20	5290064.53	64.53

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:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5530046.03	46.03
100%		-30	5530066.07	66.07
100%		-20	5530062.25	62.25
100%		-10	5530055.54	55.54
100%		0	5530050.66	50.66
100%		+10	5530047.97	47.97
100%		+30	5530048.38	48.38
100%		+40	5530058.57	58.57
100%		+50	5530064.56	64.56
High	4.40	+20	5530066.02	66.02
Low	3.65	+20	5530063.56	63.56

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 3
OPERATING FREQUENCY:	5,775,000,000 Hz
CHANNEL:	155
REFERENCE VOLTAGE:	3.86 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.86	+20(Ref)	5775045.46	45.46
100%		-30	5775064.75	64.75
100%		-20	5775061.27	61.27
100%		-10	5775054.50	54.5
100%		0	5775050.81	50.81
100%		+10	5775047.46	47.46
100%		+30	5775048.79	48.79
100%		+40	5775057.88	57.88
100%		+50	5775061.44	61.44
High	4.40	+20	5775063.02	63.02
Low	3.65	+20	5775064.85	64.85

Note:

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

10.7 STRADDLE CHANNEL

10.7.1 26 dB Bandwidth

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11a	UNII 2C	5720	144	5710.52	14.48
802.11n(HT20)				5710.24	14.76
802.11ac(VHT20)				5710.00	15.00
802.11a	UNII 3	5720	144	5729.68	4.68
802.11n(HT20)				5729.76	4.76
802.11ac(VHT20)				5729.76	4.76

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)				5690.08	34.92
802.11n(HT40)	UNII 3	5710	142	5730.16	5.16
802.11ac(VHT40)				5730.08	5.08

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5650.32	74.68
	UNII 3	5690	138	5730.48	5.48

Note:

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

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

▣ Test Plots (26 dB Bandwidth)

802.11a UNII Band	802.11n(HT20) UNII Band
	

802.11ac(VHT20) UNII Band


▣ Test Plots (26 dB Bandwidth)

802.11n(HT40) UNII Band	802.11ac(VHT40) UNII Band
	

802.11ac(VHT80) UNII Band


10.7.2 6 dB Bandwidth

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
802.11a	UNII 3	5720	144	5727.88	2.88	> 0.5
802.11n(HT20)				5727.56	2.56	> 0.5
802.11ac(VHT20)				5727.56	2.56	> 0.5

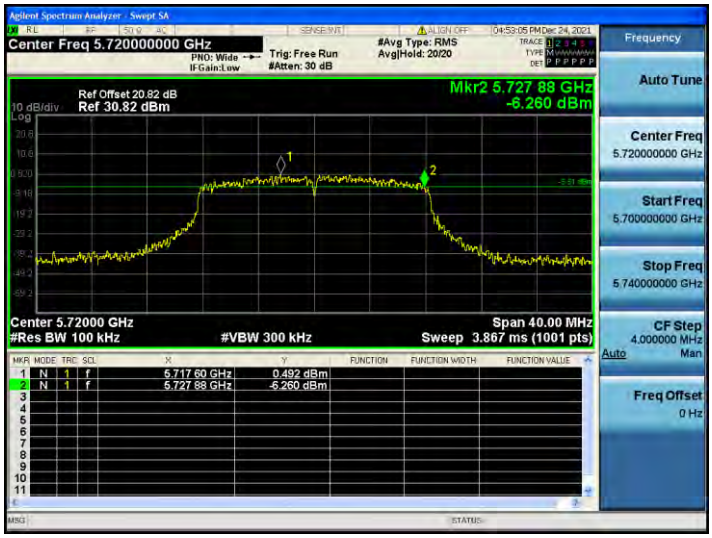
Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT40)	UNII 3	5710	142	5727.60	2.60	> 0.5
802.11ac(VHT40)				5727.60	2.60	> 0.5

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT80)	UNII 3	5690	138	5727.76	2.76	> 0.5

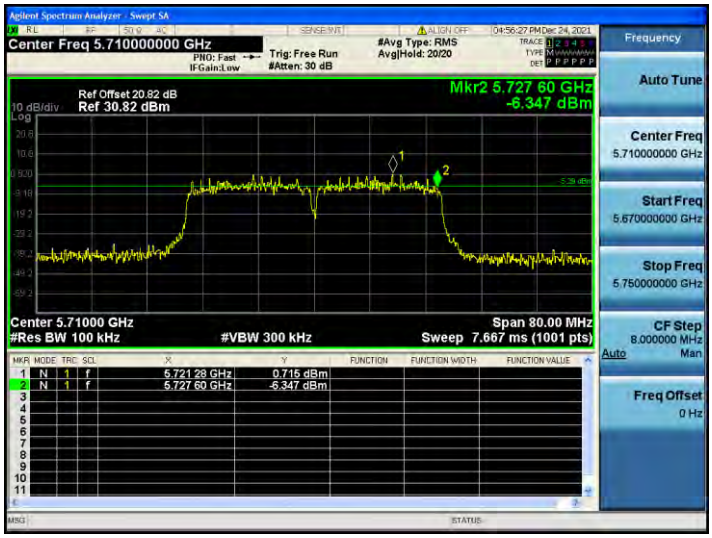
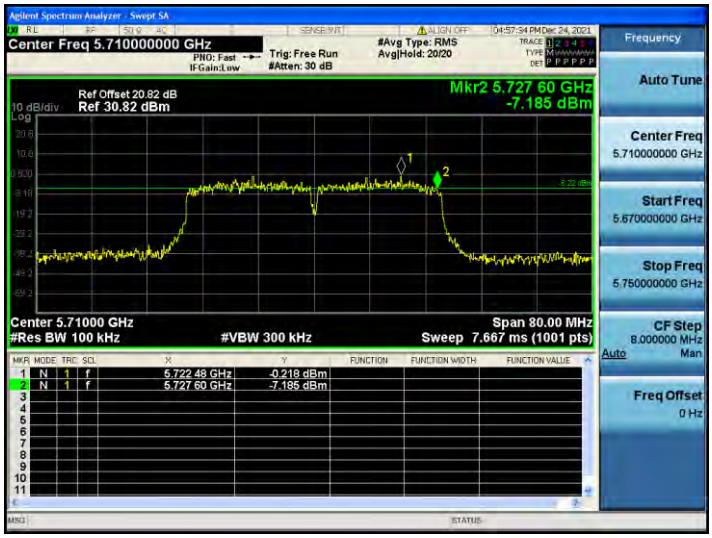
Note:

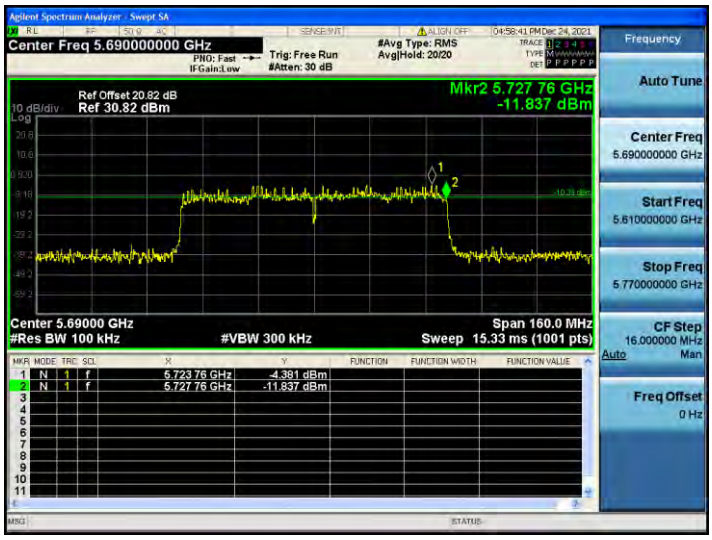
6 dB Bandwidth = Measured Frequency[MHz] – 5 725MHz

▣ Test Plots(UNII 3 Band 6 dB Bandwidth)

802.11a CH.144	802.11n_HT20 CH.144
	

802.11ac_VHT20 CH.144


802.11n_HT40 CH.142	802.11ac_VHT40 CH.142
	

802.11ac_VHT80 CH.138


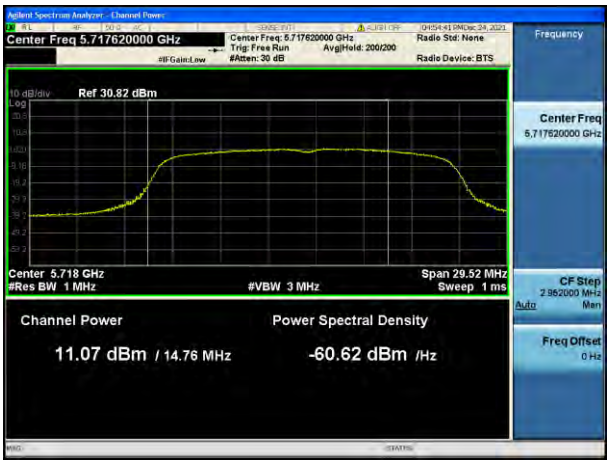
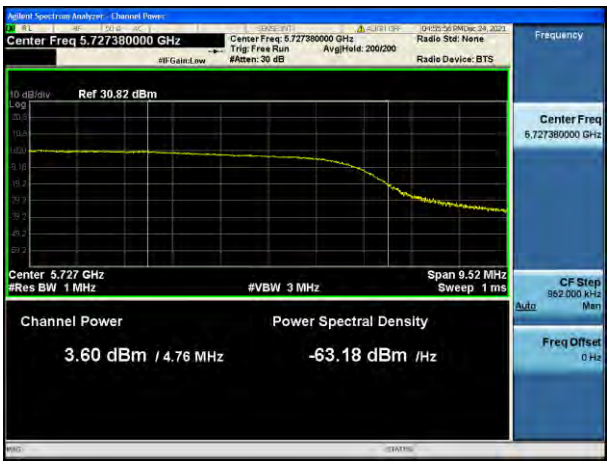
10.7.3 Output Power

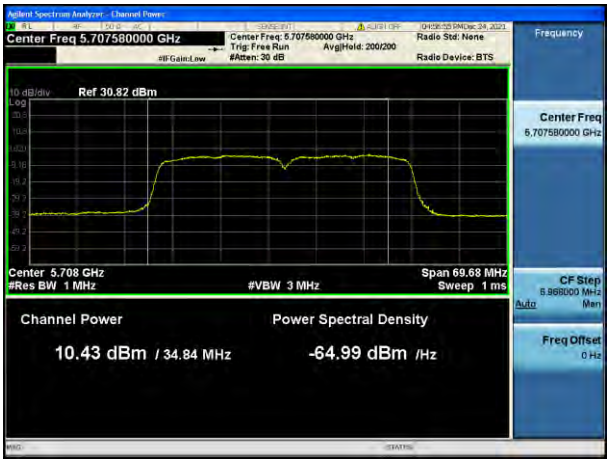
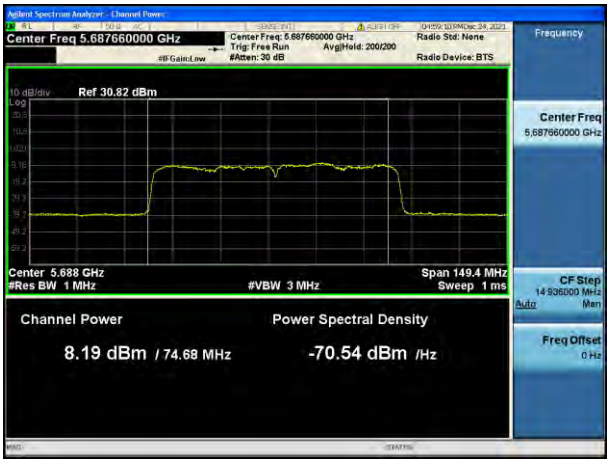
Mode	Frequency [MHz]	Channel	Measured Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Limit (dBm)	Worstcase Datarate
802.11a	5720 (UNII 2C Band)	144	12.24	0.877	13.11	22.61	12 Mbps
802.11n(HT20)			11.07	2.115	13.19	22.69	MCS4
802.11ac(VHT20)			11.04	2.115	13.15	22.76	MCS4
802.11a	5720 (UNII 3 Band)	144	4.56	0.877	5.43	30.00	12 Mbps
802.11n(HT20)			3.92	2.115	6.04	30.00	MCS4
802.11ac(VHT20)			3.60	2.115	5.72	30.00	MCS4

Mode	Frequency [MHz]	Channel	Measured Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Limit (dBm)	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	10.43	3.452	13.88	23.98	MCS4
802.11ac(VHT40)			11.06	2.540	13.60	23.98	MCS3
802.11n(HT40)	5710 (UNII 3 Band)	142	0.00	3.452	3.46	30.00	MCS4
802.11ac(VHT40)			-0.01	2.540	2.53	30.00	MCS3

Mode	Frequency [MHz]	Channel	Measured Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Limit (dBm)	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	8.19	3.388	11.58	23.98	MCS3
	5690 (UNII 3 Band)	138	-5.52	3.388	-2.13	30.00	MCS3

▣ Test Plots_

802.11a UNII 2C Band	802.11a UNII 3 Band
	
802.11n(HT20) UNII 2C Band	**802.11n(HT20) UNII 3 Band**
	
802.11ac(VHT20) UNII 2C Band	**802.11ac(VHT20) UNII 3 Band**
	

802.11n(HT40) UNII 2C Band	802.11n(HT40) UNII 3 Band
	
802.11ac(VHT40) UNII 2C Band	**802.11ac(VHT40) UNII 3 Band**
	
802.11ac(VHT80) UNII 2C Band	**802.11ac(VHT80) UNII 3 Band**
	

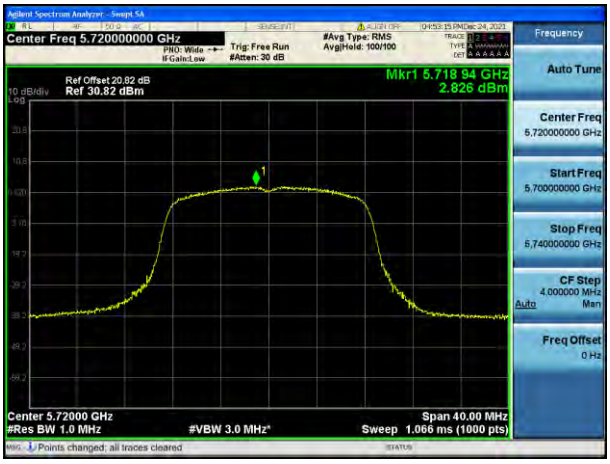
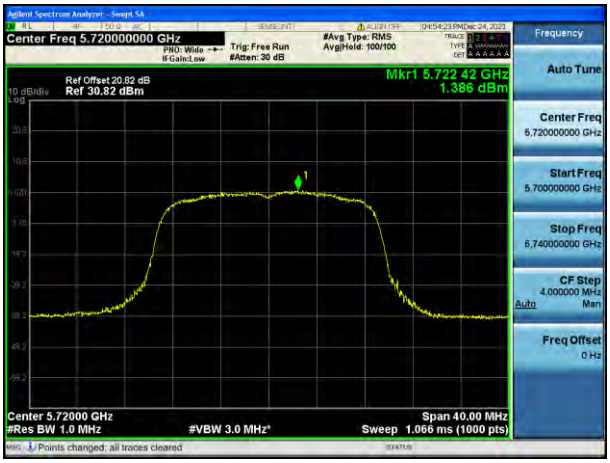
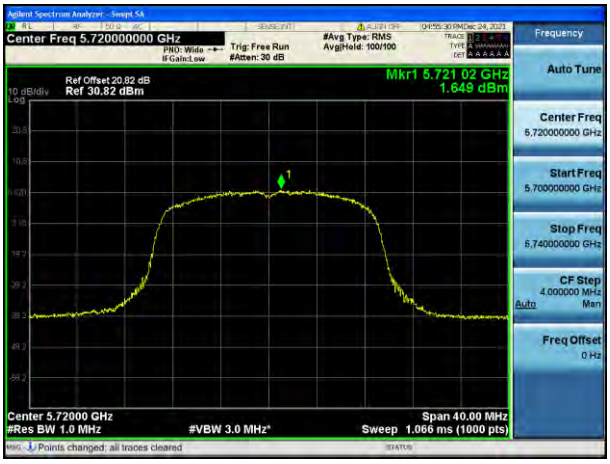
10.7.4 Power Spectral Density

Mode	Frequency [MHz]	Channel	Measured Density (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)	Worstcase Datarate
802.11a	5720 (UNII 2C Band)	144	2.826	0.877	3.703	11dBm/ MHz	12 Mbps
802.11n(HT20)			1.386	2.115	3.501		MCS4
802.11ac(VHT20)			1.649	2.115	3.764		MCS4
802.11a	5720 (UNII 3 Band)	144	-1.983	0.877	-1.106	30 dB/ 500 kHz	12 Mbps
802.11n(HT20)			-2.987	2.115	-0.872		MCS4
802.11ac(VHT20)			-3.071	2.115	-0.956		MCS4

Mode	Frequency [MHz]	Channel	Measured Density (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	-2.773	3.452	0.680	11dBm/ MHz	MCS4
802.11ac(VHT40)			-2.053	2.540	0.487		MCS3
802.11n(HT40)	5710 (UNII 3 Band)	142	-6.626	3.452	-3.173	30 dBm/ 500 kHz	MCS4
802.11ac(VHT40)			-6.806	2.540	-4.265		MCS3

Mode	Frequency [MHz]	Channel	Measured Density (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	-6.866	3.388	-3.477	11dBm/ MHz	MCS3
	5690 (UNII 3 Band)	138	-12.234	3.388	-8.846	30 dBm/ 500 kHz	MCS3

▣ Test Plots

802.11a UNII 2C Band	802.11a UNII 3 Band
	
802.11n(HT20) UNII 2C Band	**802.11n(HT20) UNII 3 Band**
	
802.11ac(VHT20) UNII 2C Band	**802.11ac(VHT20) UNII 3 Band**
	

802.11n(HT40) UNII 2C Band	802.11n(HT40) UNII 3 Band
	
802.11ac(VHT40) UNII 2C Band	**802.11ac(VHT40) UNII 3 Band**
	
802.11ac(VHT80) UNII 2C Band	**802.11ac(VHT80) UNII 3 Band**
	

10.8 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

Frequency	Measured Level	A.F+C.L+D.F	POL	Total	Limit	Margin
[MHz]	[dBμV/m]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. The Measured of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
2. Distance extrapolation factor = 40log (specific distance / test distance) (dB)
3. Limit line = specific Limits (dBμV) + Distance extrapolation factor
4. Radiated test is performed with hopping off.

Frequency Range : Below 1 GHz

Frequency	Measured Level	A.F+C.L	ANT. POL	Total	Limit	Margin
[MHz]	[dBμV/m]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
2. Radiated test is performed with hopping off.

Frequency Range : Above 1 GHz

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10360	48.22	8.05	V	56.27	68.20	11.93	PK
15540	41.19	12.94	V	54.13	73.98	19.85	PK
15540	27.19	12.94	V	40.13	53.98	13.85	AV
10360	47.40	8.05	H	55.45	68.20	12.75	PK
15540	42.07	12.94	H	55.01	73.98	18.97	PK
15540	28.24	12.94	H	41.18	53.98	12.80	AV

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10400	48.20	8.21	V	56.41	68.20	11.79	PK
15600	40.13	13.31	V	53.44	73.98	20.54	PK
15600	26.99	13.31	V	40.30	53.98	13.68	AV
10400	47.07	8.21	H	55.28	68.20	12.92	PK
15600	41.70	13.31	H	55.01	73.98	18.97	PK
15600	27.96	13.31	H	41.27	53.98	12.71	AV

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10480	48.74	8.55	V	57.29	68.20	10.91	PK
15720	40.04	13.22	V	53.26	73.98	20.72	PK
15720	26.75	13.22	V	39.97	53.98	14.01	AV
10480	46.35	8.55	H	54.90	68.20	13.30	PK
15720	41.25	13.22	H	54.47	73.98	19.51	PK
15720	27.68	13.22	H	40.90	53.98	13.08	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10520	48.34	8.95	V	57.29	68.20	10.91	PK
15780	40.70	13.89	V	54.59	73.98	19.39	PK
15780	27.22	13.89	V	41.11	53.98	12.87	AV
10520	45.81	8.95	H	54.76	68.20	13.44	PK
15780	41.05	13.89	H	54.94	73.98	19.04	PK
15780	27.81	13.89	H	41.70	53.98	12.28	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10600	48.07	9.57	V	57.64	73.98	16.34	PK
10600	35.80	9.57	V	45.37	53.98	8.61	AV
15900	41.18	13.31	V	54.49	73.98	19.49	PK
15900	28.05	13.31	V	41.36	53.98	12.62	AV
10600	45.13	9.57	H	54.70	73.98	19.28	PK
10600	32.26	9.57	H	41.83	53.98	12.15	AV
15900	41.77	13.31	H	55.08	73.98	18.90	PK
15900	28.64	13.31	H	41.95	53.98	12.03	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10640	48.07	9.71	V	57.78	73.98	16.20	PK
10640	35.28	9.71	V	44.99	53.98	8.99	AV
15960	41.23	12.93	V	54.16	73.98	19.82	PK
15960	27.79	12.93	V	40.72	53.98	13.26	AV
10640	44.67	9.71	H	54.38	73.98	19.60	PK
10640	31.51	9.71	H	41.22	53.98	12.76	AV
15960	41.19	12.93	H	54.12	73.98	19.86	PK
15960	28.43	12.93	H	41.36	53.98	12.62	AV

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11000	50.39	9.69	V	60.08	73.98	13.90	PK
11000	37.36	9.69	V	47.05	53.98	6.93	AV
16500	42.93	12.08	V	55.01	68.20	13.19	PK
11000	44.97	9.69	H	54.66	73.98	19.32	PK
11000	32.12	9.69	H	41.81	53.98	12.17	AV
16500	44.49	12.08	H	56.57	68.20	11.63	PK

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5600 MHz
Channel No.	120 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11200	42.86	10.27	V	53.13	73.98	20.85	PK
11200	29.49	10.27	V	39.76	53.98	14.22	AV
16800	51.12	11.78	V	62.90	68.20	5.30	PK
11200	43.39	10.27	H	53.66	73.98	20.32	PK
11200	29.53	10.27	H	39.80	53.98	14.18	AV
16800	51.36	11.78	H	63.14	68.20	5.06	PK

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F. [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11440	42.65	10.57	V	53.22	73.98	20.76	PK
11440	29.04	10.57	V	39.61	53.98	14.37	AV
17160	51.92	12.01	V	63.93	68.20	4.27	PK
11440	42.49	10.57	H	53.06	73.98	20.92	PK
11440	28.97	10.57	H	39.54	53.98	14.44	AV
17160	51.83	12.01	H	63.84	68.20	4.36	PK

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5745MHz
Channel No.	149 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11490	43.23	10.49	V	53.72	73.98	20.26	PK
11490	28.84	10.49	V	39.33	53.98	14.65	AV
17235	51.71	12.22	V	63.93	68.20	4.27	PK
11490	42.17	10.49	H	52.66	73.98	21.32	PK
11490	28.70	10.49	H	39.19	53.98	14.79	AV
17235	51.67	12.22	H	63.89	68.20	4.31	PK

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11570	42.41	9.92	V	52.33	73.98	21.65	PK
11570	29.10	9.92	V	39.02	53.98	14.96	AV
17355	49.37	13.11	V	62.48	68.20	5.72	PK
11570	42.33	9.92	H	52.25	73.98	21.73	PK
11570	29.09	9.92	H	39.01	53.98	14.97	AV
17355	49.25	13.11	H	62.36	68.20	5.84	PK

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11650	43.61	9.60	V	53.21	73.98	20.77	PK
11650	29.83	9.60	V	39.43	53.98	14.55	AV
17475	49.39	14.27	V	63.66	68.20	4.54	PK
11650	43.47	9.60	H	53.07	73.98	20.91	PK
11650	29.74	9.60	H	39.34	53.98	14.64	AV
17475	49.23	14.27	H	63.50	68.20	4.70	PK

Band :	UNII 1
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10360	48.07	8.05	V	56.12	68.20	12.08	PK
15540	40.59	12.94	V	53.53	73.98	20.45	PK
15540	27.13	12.94	V	40.07	53.98	13.91	AV
10360	46.82	8.05	H	54.87	68.20	13.33	PK
15540	41.28	12.94	H	54.22	73.98	19.76	PK
15540	28.03	12.94	H	40.97	53.98	13.01	AV

Band :	UNII 1
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10400	47.78	8.21	V	55.99	68.20	12.21	PK
15600	40.16	13.31	V	53.47	73.98	20.51	PK
15600	26.92	13.31	V	40.23	53.98	13.75	AV
10400	47.82	8.21	H	56.03	68.20	12.17	PK
15600	41.38	13.31	H	54.69	73.98	19.29	PK
15600	27.86	13.31	H	41.17	53.98	12.81	AV

Band :	UNII 1
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10480	48.43	8.55	V	56.98	68.20	11.22	PK
15720	40.37	13.22	V	53.59	73.98	20.39	PK
15720	26.75	13.22	V	39.97	53.98	14.01	AV
10480	46.43	8.55	H	54.98	68.20	13.22	PK
15720	40.96	13.22	H	54.18	73.98	19.80	PK
15720	27.57	13.22	H	40.79	53.98	13.19	AV

Band :	UNII 2A
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10520	48.24	8.95	V	57.19	68.20	11.01	PK
15780	40.25	13.89	V	54.14	73.98	19.84	PK
15780	27.21	13.89	V	41.10	53.98	12.88	AV
10520	45.95	8.95	H	54.90	68.20	13.30	PK
15780	41.08	13.89	H	54.97	73.98	19.01	PK
15780	27.81	13.89	H	41.70	53.98	12.28	AV

Band :	UNII 2A
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10600	48.58	9.57	V	58.15	73.98	15.83	PK
10600	35.42	9.57	V	44.99	53.98	8.99	AV
15900	41.90	13.31	V	55.21	73.98	18.77	PK
15900	27.97	13.31	V	41.28	53.98	12.70	AV
10600	44.28	9.57	H	53.85	73.98	20.13	PK
10600	31.68	9.57	H	41.25	53.98	12.73	AV
15900	41.74	13.31	H	55.05	73.98	18.93	PK
15900	28.53	13.31	H	41.84	53.98	12.14	AV

Band :	UNII 2A
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10640	47.47	9.71	V	57.18	73.98	16.80	PK
10640	34.92	9.71	V	44.63	53.98	9.35	AV
15960	41.35	12.93	V	54.28	73.98	19.70	PK
15960	27.72	12.93	V	40.65	53.98	13.33	AV
10640	44.66	9.71	H	54.37	73.98	19.61	PK
10640	31.17	9.71	H	40.88	53.98	13.10	AV
15960	42.09	12.93	H	55.02	73.98	18.96	PK
15960	28.27	12.93	H	41.20	53.98	12.78	AV

Band :	UNII 2C
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11000	49.71	9.69	V	59.40	73.98	14.58	PK
11000	37.24	9.69	V	46.93	53.98	7.05	AV
16500	43.46	12.08	V	55.54	68.20	12.66	PK
11000	45.01	9.69	H	54.70	73.98	19.28	PK
11000	32.04	9.69	H	41.73	53.98	12.25	AV
16500	44.99	12.08	H	57.07	68.20	11.13	PK

Band :	UNII 2C
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5600 MHz
Channel No.	120 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11200	43.02	10.27	V	53.29	73.98	20.69	PK
11200	29.37	10.27	V	39.64	53.98	14.34	AV
16800	51.02	11.78	V	62.80	68.20	5.40	PK
11200	43.16	10.27	H	53.43	73.98	20.55	PK
11200	29.43	10.27	H	39.70	53.98	14.28	AV
16800	51.28	11.78	H	63.06	68.20	5.14	PK

Band :	UNII 2C
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F. [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11440	43.75	10.57	V	54.32	73.98	19.66	PK
11440	32.06	10.57	V	42.63	53.98	11.35	AV
17160	52.01	12.01	V	64.02	68.20	4.18	PK
11440	44.54	10.57	H	55.11	73.98	18.87	PK
11440	32.15	10.57	H	42.72	53.98	11.26	AV
17160	52.24	12.01	H	64.25	68.20	3.95	PK

Band :	UNII 3
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5745MHz
Channel No.	149 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11490	42.58	10.49	V	53.07	73.98	20.91	PK
11490	28.69	10.49	V	39.18	53.98	14.80	AV
17235	51.46	12.22	V	63.68	68.20	4.52	PK
11490	41.99	10.49	H	52.48	73.98	21.50	PK
11490	28.57	10.49	H	39.06	53.98	14.92	AV
17235	51.23	12.22	H	63.45	68.20	4.75	PK

Band :	UNII 3
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11570	42.82	9.92	V	52.74	73.98	21.24	PK
11570	29.03	9.92	V	38.95	53.98	15.03	AV
17355	49.47	13.11	V	62.58	68.20	5.62	PK
11570	42.18	9.92	H	52.10	73.98	21.88	PK
11570	29.00	9.92	H	38.92	53.98	15.06	AV
17355	49.32	13.11	H	62.43	68.20	5.77	PK

Band :	UNII 3
Operation Mode:	802.11n(HT20)
Transfer Rate:	MCS0
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11650	43.89	9.60	V	53.49	73.98	20.49	PK
11650	29.61	9.60	V	39.21	53.98	14.77	AV
17475	**50.26**	**14.27**	**V**	**64.53**	**68.20**	**3.67**	**PK**
11650	43.78	9.60	H	53.38	73.98	20.60	PK
11650	29.55	9.60	H	39.15	53.98	14.83	AV
17475	50.19	14.27	H	64.46	68.20	3.74	PK

Band :	UNII 1
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10360	47.77	8.05	V	55.82	68.20	12.38	PK
15540	40.83	12.94	V	53.77	73.98	20.21	PK
15540	27.13	12.94	V	40.07	53.98	13.91	AV
10360	46.26	8.05	H	54.31	68.20	13.89	PK
15540	41.56	12.94	H	54.50	73.98	19.48	PK
15540	28.05	12.94	H	40.99	53.98	12.99	AV

Band :	UNII 1
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10400	48.04	8.21	V	56.25	68.20	11.95	PK
15600	41.22	13.31	V	54.53	73.98	19.45	PK
15600	27.09	13.31	V	40.40	53.98	13.58	AV
10400	46.70	8.21	H	54.91	68.20	13.29	PK
15600	41.10	13.31	H	54.41	73.98	19.57	PK
15600	27.84	13.31	H	41.15	53.98	12.83	AV

Band :	UNII 1
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10480	48.58	8.55	V	57.13	68.20	11.07	PK
15720	40.16	13.22	V	53.38	73.98	20.60	PK
15720	26.63	13.22	V	39.85	53.98	14.13	AV
10480	46.43	8.55	H	54.98	68.20	13.22	PK
15720	41.54	13.22	H	54.76	73.98	19.22	PK
15720	27.57	13.22	H	40.79	53.98	13.19	AV

Band :	UNII 2A
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10520	48.61	8.95	V	57.56	68.20	10.64	PK
15780	40.86	13.89	V	54.75	73.98	19.23	PK
15780	27.26	13.89	V	41.15	53.98	12.83	AV
10520	45.55	8.95	H	54.50	68.20	13.70	PK
15780	40.88	13.89	H	54.77	73.98	19.21	PK
15780	27.76	13.89	H	41.65	53.98	12.33	AV

Band :	UNII 2A
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10600	47.88	9.57	V	57.45	73.98	16.53	PK
10600	35.19	9.57	V	44.76	53.98	9.22	AV
15900	41.05	13.31	V	54.36	73.98	19.62	PK
15900	27.98	13.31	V	41.29	53.98	12.69	AV
10600	44.63	9.57	H	54.20	73.98	19.78	PK
10600	32.02	9.57	H	41.59	53.98	12.39	AV
15900	42.30	13.31	H	55.61	73.98	18.37	PK
15900	28.56	13.31	H	41.87	53.98	12.11	AV

Band :	UNII 2A
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10640	47.77	9.71	V	57.48	73.98	16.50	PK
10640	34.91	9.71	V	44.62	53.98	9.36	AV
15960	41.12	12.93	V	54.05	73.98	19.93	PK
15960	27.90	12.93	V	40.83	53.98	13.15	AV
10640	44.13	9.71	H	53.84	73.98	20.14	PK
10640	31.21	9.71	H	40.92	53.98	13.06	AV
15960	41.61	12.93	H	54.54	73.98	19.44	PK
15960	28.36	12.93	H	41.29	53.98	12.69	AV

Band :	UNII 2C
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11000	50.35	9.69	V	60.04	73.98	13.94	PK
11000	37.08	9.69	V	46.77	53.98	7.21	AV
16500	43.05	12.08	V	55.13	68.20	13.07	PK
11000	44.55	9.69	H	54.24	73.98	19.74	PK
11000	31.83	9.69	H	41.52	53.98	12.46	AV
16500	44.59	12.08	H	56.67	68.20	11.53	PK

Band :	UNII 2C
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5600 MHz
Channel No.	120 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11200	43.28	10.27	V	53.55	73.98	20.43	PK
11200	29.28	10.27	V	39.55	53.98	14.43	AV
16800	51.65	11.78	V	63.43	68.20	4.77	PK
11200	43.36	10.27	H	53.63	73.98	20.35	PK
11200	29.39	10.27	H	39.66	53.98	14.32	AV
16800	51.71	11.78	H	63.49	68.20	4.71	PK

Band :	UNII 2C
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F. [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11440	43.39	10.57	V	53.96	73.98	20.02	PK
11440	31.83	10.57	V	42.40	53.98	11.58	AV
17160	51.65	12.01	V	63.66	68.20	4.54	PK
11440	44.15	10.57	H	54.72	73.98	19.26	PK
11440	31.88	10.57	H	42.45	53.98	11.53	AV
17160	52.21	12.01	H	64.22	68.20	3.98	PK

Band :	UNII 3
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5745MHz
Channel No.	149 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11490	42.84	10.49	V	53.33	73.98	20.65	PK
11490	28.68	10.49	V	39.17	53.98	14.81	AV
17235	51.65	12.22	V	63.87	68.20	4.33	PK
11490	42.60	10.49	H	53.09	73.98	20.89	PK
11490	28.46	10.49	H	38.95	53.98	15.03	AV
17235	51.61	12.22	H	63.83	68.20	4.37	PK

Band :	UNII 3
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11570	42.60	9.92	V	52.52	73.98	21.46	PK
11570	29.17	9.92	V	39.09	53.98	14.89	AV
17355	50.07	13.11	V	63.18	68.20	5.02	PK
11570	42.32	9.92	H	52.24	73.98	21.74	PK
11570	28.94	9.92	H	38.86	53.98	15.12	AV
17355	49.56	13.11	H	62.67	68.20	5.53	PK

Band :	UNII 3
Operation Mode:	802.11ac(VHT20)
Transfer Rate:	MCS0
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11650	43.55	9.60	V	53.15	73.98	20.83	PK
11650	29.68	9.60	V	39.28	53.98	14.70	AV
17475	49.91	14.27	V	64.18	68.20	4.02	PK
11650	43.43	9.60	H	53.03	73.98	20.95	PK
11650	29.52	9.60	H	39.12	53.98	14.86	AV
17475	49.74	14.27	H	64.01	68.20	4.19	PK

Band :	UNII 1
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10380	46.51	8.19	V	54.70	68.20	13.50	PK
15570	40.10	13.31	V	53.41	73.98	20.57	PK
15570	27.71	13.31	V	41.02	53.98	12.96	AV
10380	45.41	8.19	H	53.60	68.20	14.60	PK
15570	40.55	13.31	H	53.86	73.98	20.12	PK
15570	27.92	13.31	H	41.23	53.98	12.75	AV

Band :	UNII 1
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10460	45.64	8.47	V	54.11	68.20	14.09	PK
15690	39.44	13.28	V	52.72	73.98	21.26	PK
15690	27.42	13.28	V	40.70	53.98	13.28	AV
10460	45.44	8.47	H	53.91	68.20	14.29	PK
15690	39.96	13.28	H	53.24	73.98	20.74	PK
15690	27.66	13.28	H	40.94	53.98	13.04	AV

Band :	UNII 2A
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10540	45.78	8.96	V	54.74	68.20	13.46	PK
15810	41.45	13.42	V	54.87	73.98	19.11	PK
15810	28.43	13.42	V	41.85	53.98	12.13	AV
10540	43.94	8.96	H	52.90	68.20	15.30	PK
15810	41.09	13.42	H	54.51	73.98	19.47	PK
15810	28.75	13.42	H	42.17	53.98	11.81	AV

Band :	UNII 2A
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10620	45.56	9.64	V	55.20	73.98	18.78	PK
10620	33.01	9.64	V	42.65	53.98	11.33	AV
15930	41.07	12.85	V	53.92	73.98	20.06	PK
15930	28.43	12.85	V	41.28	53.98	12.70	AV
10620	43.66	9.64	H	53.30	73.98	20.68	PK
10620	31.07	9.64	H	40.71	53.98	13.27	AV
15930	40.67	12.85	H	53.52	73.98	20.46	PK
15930	28.65	12.85	H	41.50	53.98	12.48	AV

Band :	UNII 2C
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11020	47.46	9.60	V	57.06	73.98	16.92	PK
11020	34.43	9.60	V	44.03	53.98	9.95	AV
16530	42.18	12.02	V	54.20	68.20	14.00	PK
11020	42.91	9.60	H	52.51	73.98	21.47	PK
11020	30.87	9.60	H	40.47	53.98	13.51	AV
16530	42.40	12.02	H	54.42	68.20	13.78	PK

Band :	UNII 2C
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11180	46.27	10.18	V	56.45	73.98	17.53	PK
11180	33.52	10.18	V	43.70	53.98	10.28	AV
16770	45.46	11.62	V	57.08	68.20	11.12	PK
11180	43.03	10.18	H	53.21	73.98	20.77	PK
11180	30.61	10.18	H	40.79	53.98	13.19	AV
16770	46.67	11.62	H	58.29	68.20	9.91	PK

Band :	UNII 2C
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F. [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11420	43.08	10.53	V	53.61	73.98	20.37	PK
11420	32.34	10.53	V	42.87	53.98	11.11	AV
17130	49.48	11.60	V	61.08	68.20	7.12	PK
11420	43.79	10.53	H	54.32	73.98	19.66	PK
11420	32.23	10.53	H	42.76	53.98	11.22	AV
17130	50.09	11.60	H	61.69	68.20	6.51	PK

Band :	UNII 3
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11510	43.45	10.34	V	53.79	73.98	20.19	PK
11510	30.89	10.34	V	41.23	53.98	12.75	AV
17265	49.41	12.43	V	61.84	68.20	6.36	PK
11510	43.57	10.34	H	53.91	73.98	20.07	PK
11510	31.36	10.34	H	41.70	53.98	12.28	AV
17265	49.44	12.43	H	61.87	68.20	6.33	PK

Band :	UNII 3
Operation Mode:	802.11n(HT40)
Transfer Rate:	MCS0
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11590	43.29	9.75	V	53.04	73.98	20.94	PK
11590	30.87	9.75	V	40.62	53.98	13.36	AV
17385	46.73	13.20	V	59.93	68.20	8.27	PK
11590	44.48	9.75	H	54.23	73.98	19.75	PK
11590	31.48	9.75	H	41.23	53.98	12.75	AV
17385	46.96	13.20	H	60.16	68.20	8.04	PK

Band :	UNII 1
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10380	46.36	8.19	V	54.55	68.20	13.65	PK
15570	40.50	13.31	V	53.81	73.98	20.17	PK
15570	27.74	13.31	V	41.05	53.98	12.93	AV
10380	45.37	8.19	H	53.56	68.20	14.64	PK
15570	40.70	13.31	H	54.01	73.98	19.97	PK
15570	27.83	13.31	H	41.14	53.98	12.84	AV

Band :	UNII 1
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10460	46.38	8.47	V	54.85	68.20	13.35	PK
15690	39.84	13.28	V	53.12	73.98	20.86	PK
15690	27.41	13.28	V	40.69	53.98	13.29	AV
10460	45.41	8.47	H	53.88	68.20	14.32	PK
15690	40.04	13.28	H	53.32	73.98	20.66	PK
15690	27.61	13.28	H	40.89	53.98	13.09	AV

Band :	UNII 2A
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10540	45.72	8.96	V	54.68	68.20	13.52	PK
15810	40.96	13.42	V	54.38	73.98	19.60	PK
15810	28.54	13.42	V	41.96	53.98	12.02	AV
10540	43.86	8.96	H	52.82	68.20	15.38	PK
15810	41.42	13.42	H	54.84	73.98	19.14	PK
15810	28.66	13.42	H	42.08	53.98	11.90	AV

Band :	UNII 2A
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10620	45.05	9.64	V	54.69	73.98	19.29	PK
10620	32.64	9.64	V	42.28	53.98	11.70	AV
15930	40.85	12.85	V	53.70	73.98	20.28	PK
15930	28.39	12.85	V	41.24	53.98	12.74	AV
10620	42.86	9.64	H	52.50	73.98	21.48	PK
10620	31.12	9.64	H	40.76	53.98	13.22	AV
15930	41.28	12.85	H	54.13	73.98	19.85	PK
15930	28.75	12.85	H	41.60	53.98	12.38	AV

Band :	UNII 2C
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11020	47.12	9.60	V	56.72	73.98	17.26	PK
11020	34.74	9.60	V	44.34	53.98	9.64	AV
16530	42.03	12.02	V	54.05	68.20	14.15	PK
11020	42.85	9.60	H	52.45	73.98	21.53	PK
11020	30.36	9.60	H	39.96	53.98	14.02	AV
16530	42.60	12.02	H	54.62	68.20	13.58	PK

Band :	UNII 2C
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5590 MHz
Channel No.	118 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11180	46.99	10.18	V	57.17	73.98	16.81	PK
11180	33.66	10.18	V	43.84	53.98	10.14	AV
16770	44.48	11.62	V	56.10	68.20	12.10	PK
11180	43.93	10.18	H	54.11	73.98	19.87	PK
11180	30.46	10.18	H	40.64	53.98	13.34	AV
16770	47.02	11.62	H	58.64	68.20	9.56	PK

Band :	UNII 2C
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5710 MHz
Channel No.	142 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F. [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11420	43.78	10.53	V	54.31	73.98	19.67	PK
11420	32.17	10.53	V	42.70	53.98	11.28	AV
17130	49.46	11.60	V	61.06	68.20	7.14	PK
11420	42.76	10.53	H	53.29	73.98	20.69	PK
11420	32.30	10.53	H	42.83	53.98	11.15	AV
17130	49.83	11.60	H	61.43	68.20	6.77	PK

Band :	UNII 3
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11510	43.09	10.34	V	53.43	73.98	20.55	PK
11510	30.99	10.34	V	41.33	53.98	12.65	AV
17265	49.69	12.43	V	62.12	68.20	6.08	PK
11510	43.68	10.34	H	54.02	73.98	19.96	PK
11510	31.55	10.34	H	41.89	53.98	12.09	AV
17265	49.35	12.43	H	61.78	68.20	6.42	PK

Band :	UNII 3
Operation Mode:	802.11ac(VHT40)
Transfer Rate:	MCS0
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11590	43.39	9.75	V	53.14	73.98	20.84	PK
11590	31.19	9.75	V	40.94	53.98	13.04	AV
17385	45.72	13.20	V	58.92	68.20	9.28	PK
11590	43.21	9.75	H	52.96	73.98	21.02	PK
11590	30.82	9.75	H	40.57	53.98	13.41	AV
17385	46.56	13.20	H	59.76	68.20	8.44	PK

Band :	UNII 1
Operation Mode:	802.11ac(VHT80)
Transfer Rate:	MCS0
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10420	44.54	8.31	V	52.85	68.20	15.35	PK
15630	39.79	13.20	V	52.99	73.98	20.99	PK
15630	27.84	13.20	V	41.04	53.98	12.94	AV
10420	44.32	8.31	H	52.63	68.20	15.57	PK
15630	40.00	13.20	H	53.20	73.98	20.78	PK
15630	28.00	13.20	H	41.20	53.98	12.78	AV

Band :	UNII 2A
Operation Mode:	802.11ac(VHT80)
Transfer Rate:	MCS0
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10580	43.80	9.39	V	53.19	68.20	15.01	PK
15870	41.59	13.57	V	55.16	73.98	18.82	PK
15870	29.20	13.57	V	42.77	53.98	11.21	AV
10580	43.57	9.39	H	52.96	68.20	15.24	PK
15870	41.37	13.57	H	54.94	73.98	19.04	PK
15870	29.20	13.57	H	42.77	53.98	11.21	AV

Band :	UNII 2C
Operation Mode:	802.11ac(VHT80)
Transfer Rate:	MCS0
Operating Frequency	5530 MHz
Channel No.	106 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11060	44.77	9.89	V	54.66	73.98	19.32	PK
11060	32.33	9.89	V	42.22	53.98	11.76	AV
16590	41.65	11.76	V	53.41	68.20	14.79	PK
11060	42.51	9.89	H	52.40	73.98	21.58	PK
11060	30.32	9.89	H	40.21	53.98	13.77	AV
16590	41.60	11.76	H	53.36	68.20	14.84	PK

Band :	UNII 2C
Operation Mode:	802.11ac(VHT80)
Transfer Rate:	MCS0
Operating Frequency	5610 MHz
Channel No.	122 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11220	43.86	10.21	V	54.07	73.98	19.91	PK
11220	32.20	10.21	V	42.41	53.98	11.57	AV
16830	45.18	11.80	V	56.98	68.20	11.22	PK
11220	43.06	10.21	H	53.27	73.98	20.71	PK
11220	30.69	10.21	H	40.90	53.98	13.08	AV
16830	44.71	11.80	H	56.51	68.20	11.69	PK

Band :	UNII 2C
Operation Mode:	802.11ac(VHT80)
Transfer Rate:	MCS0
Operating Frequency	5690 MHz
Channel No.	138 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11380	42.82	10.42	V	53.24	73.98	20.74	PK
11380	32.73	10.42	V	43.15	53.98	10.83	AV
17070	47.86	11.74	V	59.60	68.20	8.60	PK
11380	42.59	10.42	H	53.01	73.98	20.97	PK
11380	33.07	10.42	H	43.49	53.98	10.49	AV
17070	48.12	11.74	H	59.86	68.20	8.34	PK

Band :	UNII 3
Operation Mode:	802.11ac(VHT80)
Transfer Rate:	MCS0
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L -A.G+D.F. [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11550	42.13	9.98	V	52.11	73.98	21.87	PK
11550	30.62	9.98	V	40.60	53.98	13.38	AV
17325	43.12	12.90	V	56.02	68.20	12.18	PK
11550	42.24	9.98	H	52.22	73.98	21.76	PK
11550	30.48	9.98	H	40.46	53.98	13.52	AV
17325	43.13	12.90	H	56.03	68.20	12.17	PK

[DBS Mode]

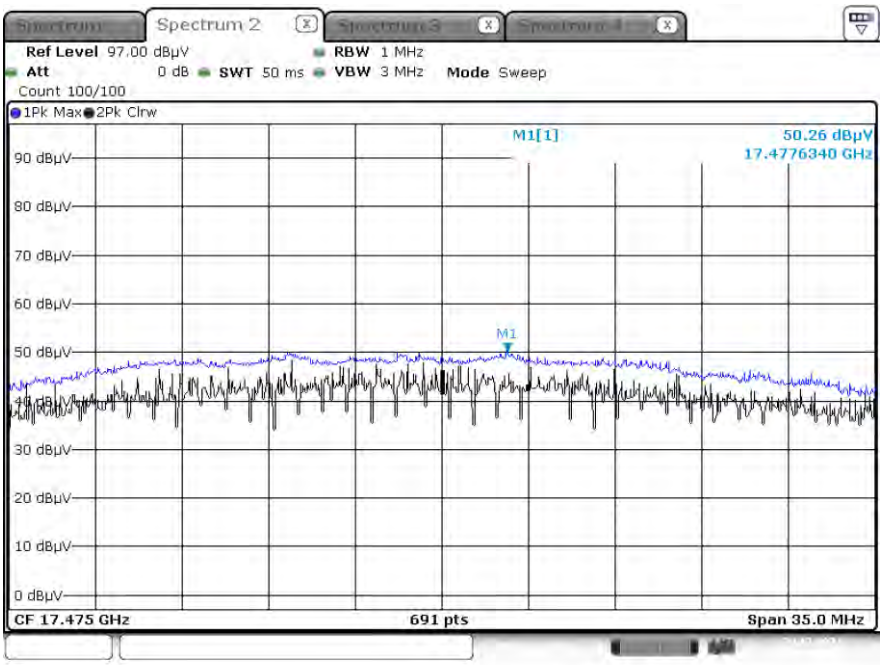
WLAN/BT Ant : 802.11n(HT20) ch. 165 & Bluetooth Ch. 0 (GFSK)

Frequency [MHz]	Measured Level [dBµV]	A.F.+C.L. -A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11650	44.60	9.60	V	54.20	73.98	19.78	PK
11650	30.61	9.60	V	40.21	53.98	13.77	AV
17475	49.03	14.27	V	63.30	68.20	4.90	PK
11650	44.39	9.60	H	53.99	73.98	19.99	PK
11650	30.49	9.60	H	40.09	53.98	13.89	AV
17475	**49.72**	**14.27**	**H**	**63.99**	**68.20**	**4.21**	**PK**

Note : Bluetooth DBS Data refer to [BT] Test Report.

▣ Test Plots

Peak Result (802.11n(HT20), Ch.165 2nd Harmonic, Z-V)



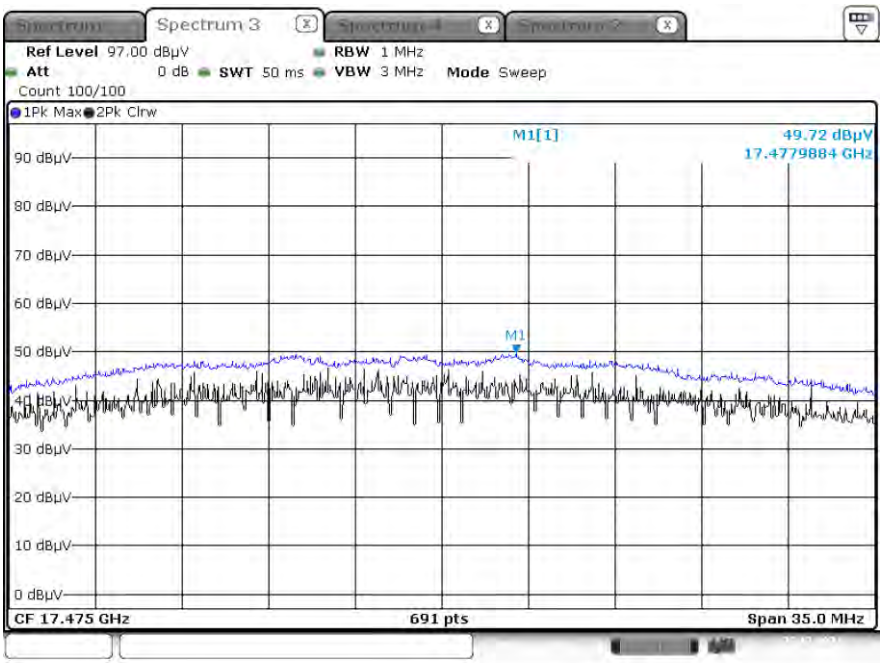
Note:

Only the worst case plots for Radiated Spurious Emissions.

▣ Test Plots (DBS)

WLAN/BT Ant : 802.11n(HT20) ch. 165 & Bluetooth Ch. 0 (GFSK)

Radiated Spurious Emissions plot – Peak Result (3rd Harmonic, Y-H)



Note:

Only the worst case plots for Radiated Spurious Emissions.

10.9 RADIATED RESTRICTED BAND EDGE

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	52.30	9.11	H	61.41	73.98	12.57	PK
5150	39.99	9.11	H	49.10	53.98	4.88	AV
5150	51.81	9.11	V	60.92	73.98	13.06	PK
5150	38.55	9.11	V	47.66	53.98	6.32	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5280 MHz
Channel No.	56 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	55.32	8.71	H	64.03	73.98	9.95	PK
5350	41.93	8.71	H	50.64	53.98	3.34	AV
5350	54.87	8.71	V	63.58	73.98	10.40	PK
5350	41.40	8.71	V	50.11	53.98	3.87	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350	54.85	8.71	H	63.56	73.98	10.42	PK
5350	41.76	8.71	H	50.47	53.98	3.51	AV
5350	54.27	8.71	V	62.98	73.98	11.00	PK
5350	41.19	8.71	V	49.90	53.98	4.08	AV

Band :	UNII 2A
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350	55.76	8.71	H	64.47	73.98	9.51	PK
5350	42.12	8.71	H	50.83	53.98	3.15	AV
5350	55.27	8.71	V	63.98	73.98	10.00	PK
5350	41.63	8.71	V	50.34	53.98	3.64	AV

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	52.08	9.30	H	61.38	73.98	12.60	PK
5460	36.43	9.30	H	45.73	53.98	8.25	AV
5470	52.96	9.34	H	62.30	68.20	5.90	PK
5460	52.85	9.30	V	62.15	73.98	11.83	PK
5460	36.90	9.30	V	46.20	53.98	7.78	AV
5470	53.73	9.34	V	63.07	68.20	5.13	PK

Band :	UNII 2C
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5520 MHz
Channel No.	104 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	51.31	9.30	H	60.61	73.98	13.37	PK
5460	35.88	9.30	H	45.18	53.98	8.80	AV
5470	54.62	9.34	H	63.96	68.20	4.24	PK
5460	52.18	9.30	V	61.48	73.98	12.50	PK
5460	36.74	9.30	V	46.04	53.98	7.94	AV
5470	55.48	9.34	V	64.82	68.20	3.38	PK

Band :	UNII 1
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	55.04	9.11	H	64.15	73.98	9.83	PK
5150	40.49	9.11	H	49.60	53.98	4.38	AV
5150	53.64	9.11	V	62.75	73.98	11.23	PK
5150	38.72	9.11	V	47.83	53.98	6.15	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5280 MHz
Channel No.	56 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	55.47	8.71	H	64.18	73.98	9.80	PK
5350	42.03	8.71	H	50.74	53.98	3.24	AV
5350	54.96	8.71	V	63.67	73.98	10.31	PK
5350	41.51	8.71	V	50.22	53.98	3.76	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	55.03	8.71	H	63.74	73.98	10.24	PK
5350	41.71	8.71	H	50.42	53.98	3.56	AV
5350	54.61	8.71	V	63.32	73.98	10.66	PK
5350	41.25	8.71	V	49.96	53.98	4.02	AV

Band :	UNII 2A
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	55.48	8.71	H	64.19	73.98	9.79	PK
5350	41.29	8.71	H	50.00	53.98	3.98	AV
5350	54.96	8.71	V	63.67	73.98	10.31	PK
5350	40.73	8.71	V	49.44	53.98	4.54	AV

Band :	UNII 2C
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	51.06	9.30	H	60.36	73.98	13.62	PK
5460	35.52	9.30	H	44.82	53.98	9.16	AV
5470	54.33	9.34	H	63.67	68.20	4.53	PK
5460	51.88	9.30	V	61.18	73.98	12.80	PK
5460	36.39	9.30	V	45.69	53.98	8.29	AV
5470	55.21	9.34	V	64.55	68.20	3.65	PK

Band :	UNII 2C
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5520 MHz
Channel No.	104 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	51.26	9.30	H	60.56	73.98	13.42	PK
5460	35.84	9.30	H	45.14	53.98	8.84	AV
5470	52.76	9.34	H	62.10	68.20	6.10	PK
5460	51.92	9.30	V	61.22	73.98	12.76	PK
5460	36.50	9.30	V	45.80	53.98	8.18	AV
5470	53.30	9.34	V	62.64	68.20	5.56	PK

Band :	UNII 2C
Operation Mode:	802.11 n_HT20
Transfer MCS Index:	0
Operating Frequency	5540 MHz
Channel No.	108 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	50.86	9.30	H	60.16	73.98	13.82	PK
5460	35.95	9.30	H	45.25	53.98	8.73	AV
5470	53.12	9.34	H	62.46	68.20	5.74	PK
5460	51.47	9.30	V	60.77	73.98	13.21	PK
5460	36.48	9.30	V	45.78	53.98	8.20	AV
5470	53.98	9.34	V	63.32	68.20	4.88	PK

Band :	UNII 1
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	53.29	9.11	H	62.40	73.98	11.58	PK
5150	40.47	9.11	H	49.58	53.98	4.40	AV
5150	52.24	9.11	V	61.35	73.98	12.63	PK
5150	38.54	9.11	V	47.65	53.98	6.33	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5280 MHz
Channel No.	56 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	54.96	8.71	H	63.67	73.98	10.31	PK
5350	41.71	8.71	H	50.42	53.98	3.56	AV
5350	54.48	8.71	V	63.19	73.98	10.79	PK
5350	41.32	8.71	V	50.03	53.98	3.95	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	55.45	8.71	H	64.16	73.98	9.82	PK
5350	41.71	8.71	H	50.42	53.98	3.56	AV
5350	54.92	8.71	V	63.63	73.98	10.35	PK
5350	41.18	8.71	V	49.89	53.98	4.09	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	55.82	8.71	H	64.53	73.98	9.45	PK
5350	**42.23**	**8.71**	**H**	**50.94**	**53.98**	**3.04**	**AV**
5350	55.19	8.71	V	63.90	73.98	10.08	PK
5350	41.78	8.71	V	50.49	53.98	3.49	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	52.58	9.30	H	61.88	73.98	12.10	PK
5460	39.10	9.30	H	48.40	53.98	5.58	AV
5470	54.76	9.34	H	64.10	68.20	4.10	PK
5460	53.34	9.30	V	62.64	73.98	11.34	PK
5460	36.91	9.30	V	46.21	53.98	7.77	AV
5470	**55.54**	**9.34**	**V**	**64.88**	**68.20**	**3.32**	**PK**

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5520 MHz
Channel No.	104 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	51.27	9.30	H	60.57	73.98	13.41	PK
5460	35.88	9.30	H	45.18	53.98	8.80	AV
5470	53.76	9.34	H	63.10	68.20	5.10	PK
5460	52.09	9.30	V	61.39	73.98	12.59	PK
5460	36.35	9.30	V	45.65	53.98	8.33	AV
5470	54.42	9.34	V	63.76	68.20	4.44	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT20
Transfer MCS Index:	0
Operating Frequency	5540 MHz
Channel No.	108 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5460	51.63	9.30	H	60.93	73.98	13.05	PK
5460	35.92	9.30	H	45.22	53.98	8.76	AV
5470	52.28	9.34	H	61.62	68.20	6.58	PK
5460	52.22	9.30	V	61.52	73.98	12.46	PK
5460	36.35	9.30	V	45.65	53.98	8.33	AV
5470	53.00	9.34	V	62.34	68.20	5.86	PK

Band :	UNII 1
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	56.07	9.11	H	65.18	73.98	8.80	PK
5150	41.40	9.11	H	50.51	53.98	3.47	AV
5150	55.31	9.11	V	64.42	73.98	9.56	PK
5150	40.56	9.11	V	49.67	53.98	4.31	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	50.56	9.11	H	59.67	73.98	14.31	PK
5150	37.53	9.11	H	46.64	53.98	7.34	AV
5150	40.67	9.11	V	49.78	73.98	24.20	PK
5150	36.78	9.11	V	45.89	53.98	8.09	AV

Band :	UNII 1
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350	56.58	8.71	H	65.29	73.98	8.69	PK
5350	41.81	8.71	H	50.52	53.98	3.46	AV
5350	53.24	8.71	V	61.95	73.98	12.03	PK
5350	38.85	8.71	V	47.56	53.98	6.42	AV

Band :	UNII 2A
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350	59.04	8.71	H	67.75	73.98	6.23	PK
5350	42.22	8.71	H	50.93	53.98	3.05	AV
5350	56.53	8.71	V	65.24	73.98	8.74	PK
5350	39.03	8.71	V	47.74	53.98	6.24	AV

Band :	UNII 2C
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	52.76	9.30	H	62.06	73.98	11.92	PK
5460	34.45	9.30	H	43.75	53.98	10.23	AV
5470	54.14	9.34	H	63.48	68.20	4.72	PK
5460	52.93	9.30	V	62.23	73.98	11.75	PK
5460	34.80	9.30	V	44.10	53.98	9.88	AV
5470	54.38	9.34	V	63.72	68.20	4.48	PK

Band :	UNII 2C
Operation Mode:	802.11 n_HT40
Transfer MCS Index:	0
Operating Frequency	5550 MHz
Channel No.	110 Ch

Frequency [MHz]	Measured Level [dBμV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5460	52.34	9.30	H	61.64	73.98	12.34	PK
5460	35.81	9.30	H	45.11	53.98	8.87	AV
5470	52.16	9.34	H	61.50	68.20	6.70	PK
5460	52.74	9.30	V	62.04	73.98	11.94	PK
5460	35.99	9.30	V	45.29	53.98	8.69	AV
5470	52.32	9.34	V	61.66	68.20	6.54	PK

Band :	UNII 1
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	55.21	9.11	H	64.32	73.98	9.66	PK
5150	41.00	9.11	H	50.11	53.98	3.87	AV
5150	54.66	9.11	V	63.77	73.98	10.21	PK
5150	40.17	9.11	V	49.28	53.98	4.70	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	50.14	9.11	H	59.25	73.98	14.73	PK
5150	37.36	9.11	H	46.47	53.98	7.51	AV
5150	49.45	9.11	V	58.56	73.98	15.42	PK
5150	36.59	9.11	V	45.70	53.98	8.28	AV

Band :	UNII 1
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5720 MHz
Channel No.	54 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	55.31	8.71	H	64.02	73.98	9.96	PK
5350	41.37	8.71	H	50.08	53.98	3.90	AV
5350	52.16	8.71	V	60.87	73.98	13.11	PK
5350	38.49	8.71	V	47.20	53.98	6.78	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	59.54	8.71	H	68.25	73.98	5.73	PK
5350	41.23	8.71	H	49.94	53.98	4.04	AV
5350	56.10	8.71	V	64.81	73.98	9.17	PK
5350	38.52	8.71	V	47.23	53.98	6.75	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5460	51.12	9.30	H	60.42	73.98	13.56	PK
5460	36.03	9.30	H	45.33	53.98	8.65	AV
5470	55.28	9.34	H	64.62	68.20	3.58	PK
5460	51.40	9.30	V	60.70	73.98	13.28	PK
5460	36.25	9.30	V	45.55	53.98	8.43	AV
5470	55.45	9.34	V	64.79	68.20	3.41	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT40
Transfer MCS Index:	0
Operating Frequency	5550 MHz
Channel No.	110 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5460	51.96	9.30	H	61.26	73.98	12.72	PK
5460	36.18	9.30	H	45.48	53.98	8.50	AV
5470	52.09	9.34	H	61.43	68.20	6.77	PK
5460	52.21	9.30	V	61.51	73.98	12.47	PK
5460	36.30	9.30	V	45.60	53.98	8.38	AV
5470	52.36	9.34	V	61.70	68.20	6.50	PK

Band :	UNII 1
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5150	55.10	9.11	H	64.21	73.98	9.77	PK
5150	41.45	9.11	H	50.56	53.98	3.42	AV
5150	54.36	9.11	V	63.47	73.98	10.51	PK
5150	40.62	9.11	V	49.73	53.98	4.25	AV

Band :	UNII 2A
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5350	51.73	8.71	H	60.44	73.98	13.54	PK
5350	37.76	8.71	H	46.47	53.98	7.51	AV
5350	50.86	8.71	V	59.57	73.98	14.41	PK
5350	36.89	8.71	V	45.60	53.98	8.38	AV

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5530 MHz
Channel No.	106 Ch

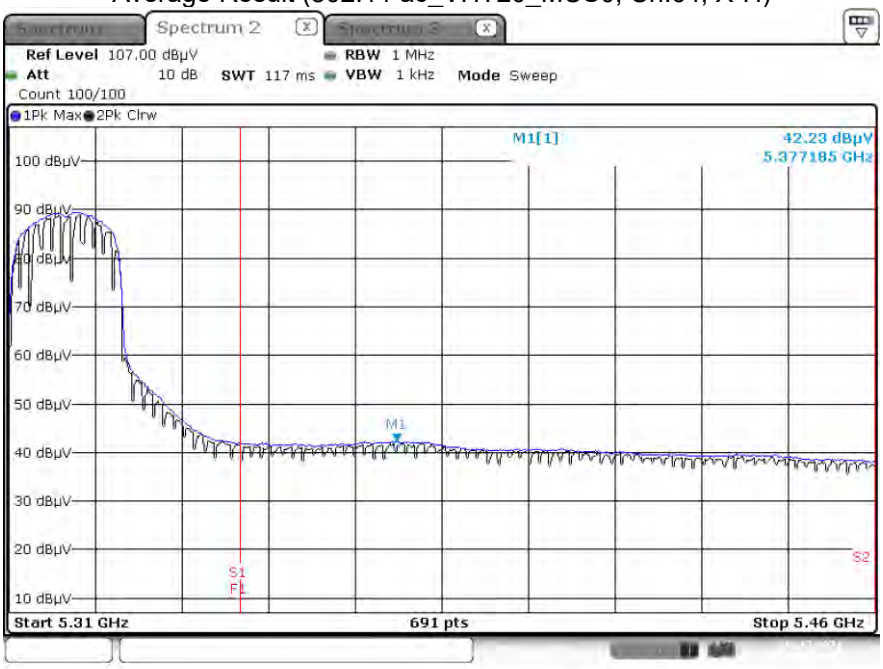
Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5460	52.93	9.30	H	62.23	73.98	11.75	PK
5460	37.62	9.30	H	46.92	53.98	7.06	AV
5470	53.32	9.34	H	62.66	68.20	5.54	PK
5460	52.81	9.30	V	62.11	73.98	11.87	PK
5460	37.50	9.30	V	46.80	53.98	7.18	AV
5470	53.23	9.34	V	62.57	68.20	5.63	PK

Band :	UNII 2C
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5610 MHz
Channel No.	122 Ch

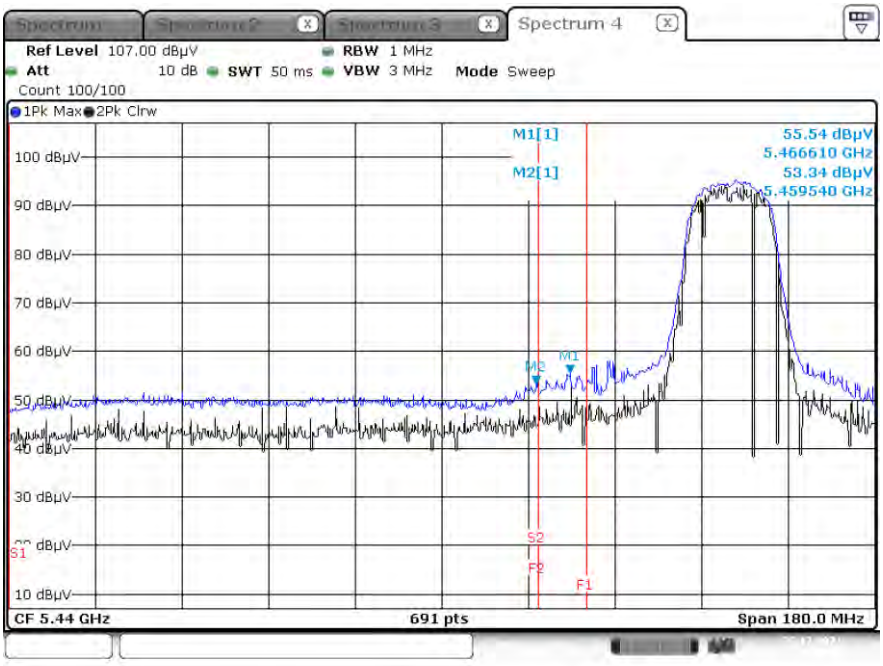
Frequency [MHz]	Measured Level [dBµV]	A.F+C.L-A.G+ATT+D.F [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
5460	49.54	9.30	H	58.84	73.98	15.14	PK
5460	35.44	9.30	H	44.74	53.98	9.24	AV
5470	52.17	9.34	H	61.51	68.20	6.69	PK
5460	49.42	9.30	V	58.72	73.98	15.26	PK
5460	35.28	9.30	V	44.58	53.98	9.40	AV
5470	52.09	9.34	V	61.43	68.20	6.77	PK

▣ Test Plots(UNII 1, 2A, 2C)

Average Result (802.11 ac_VHT20_MCS0, Ch.64, X-H)



Peak Result (802.11 ac_VHT20_ MCS0, Ch.100, Y-V)

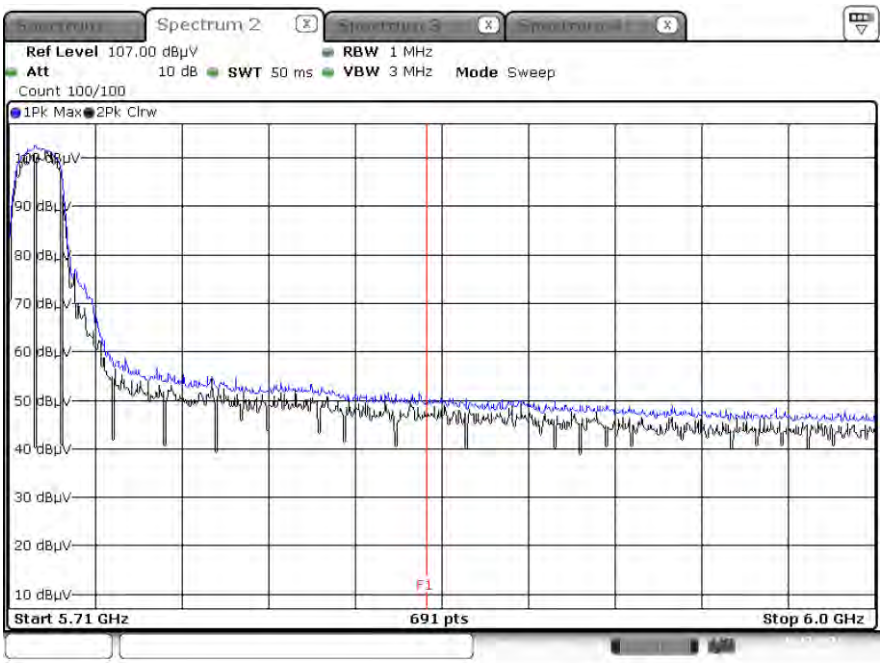


Note:

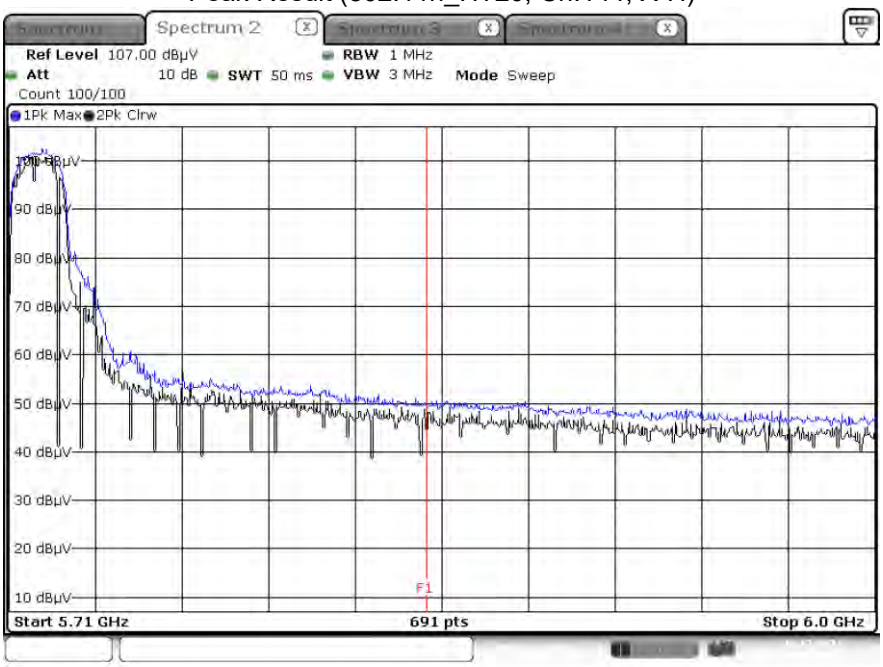
Only the worst case plots for Radiated Restricted Band Edge.

▣ Test Plots(Straddle Channel)

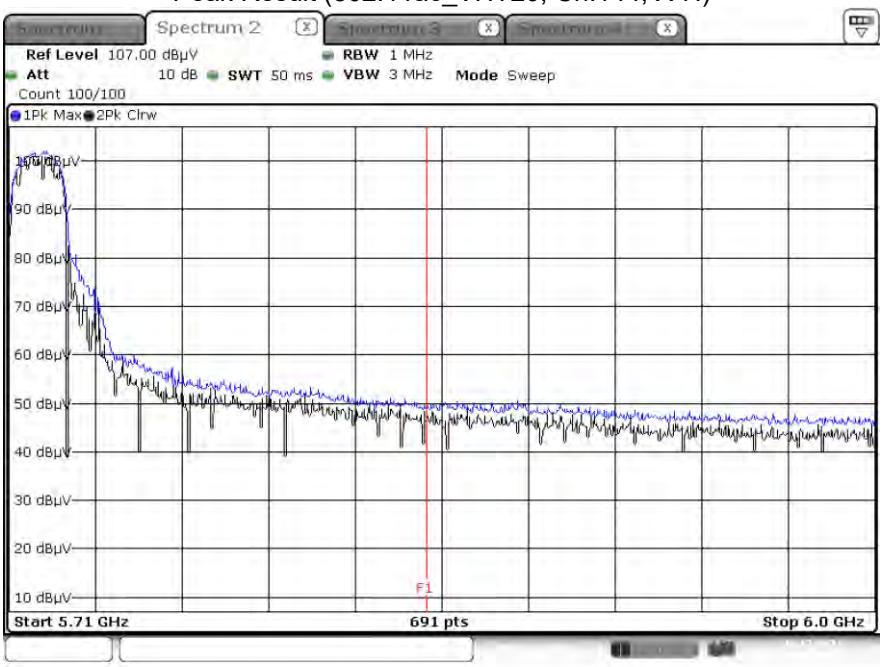
Peak Result (802.11a, Ch.144, X-H)



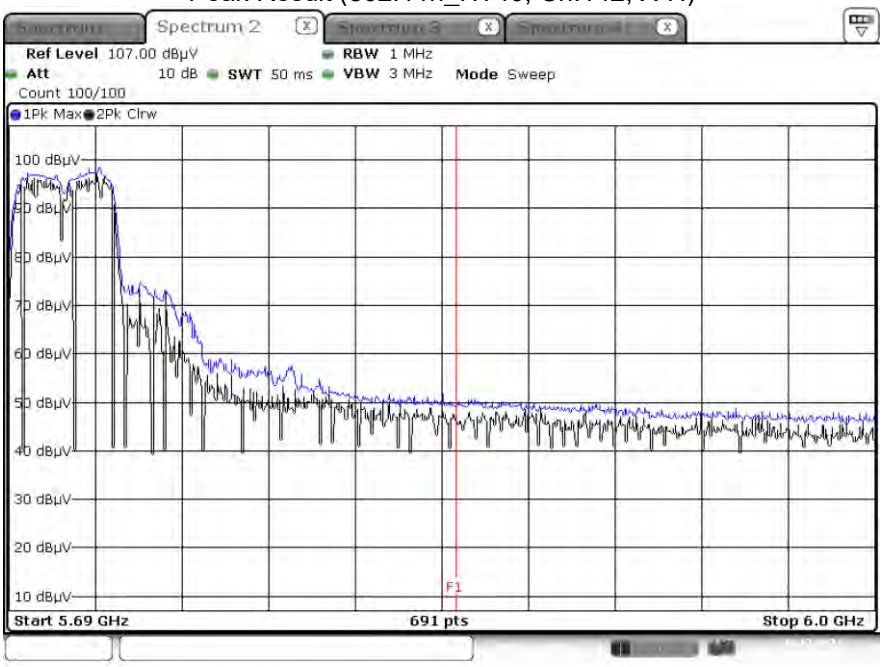
Peak Result (802.11n_HT20, Ch.144, X-H)



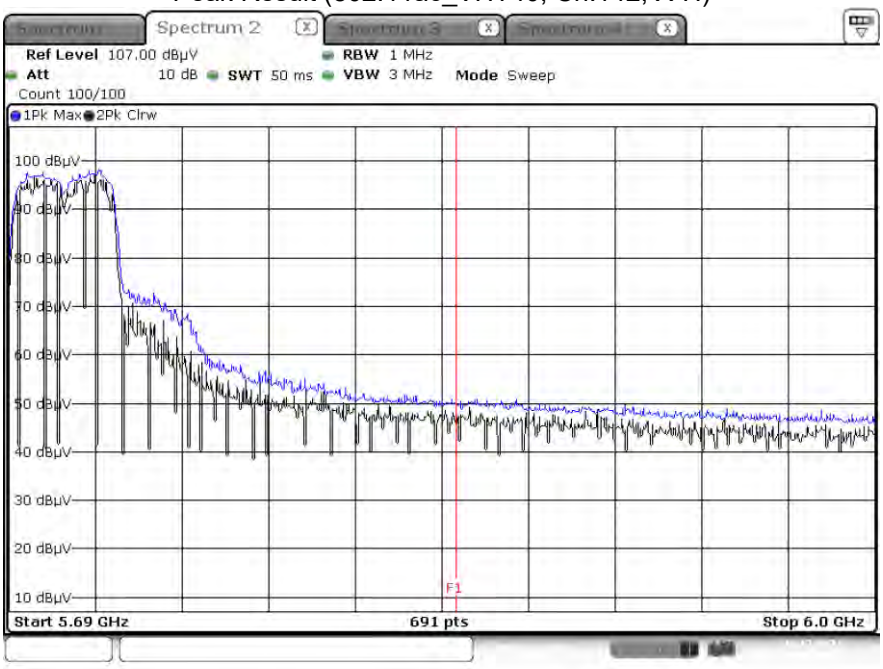
Peak Result (802.11ac_VHT20, Ch.144, X-H)



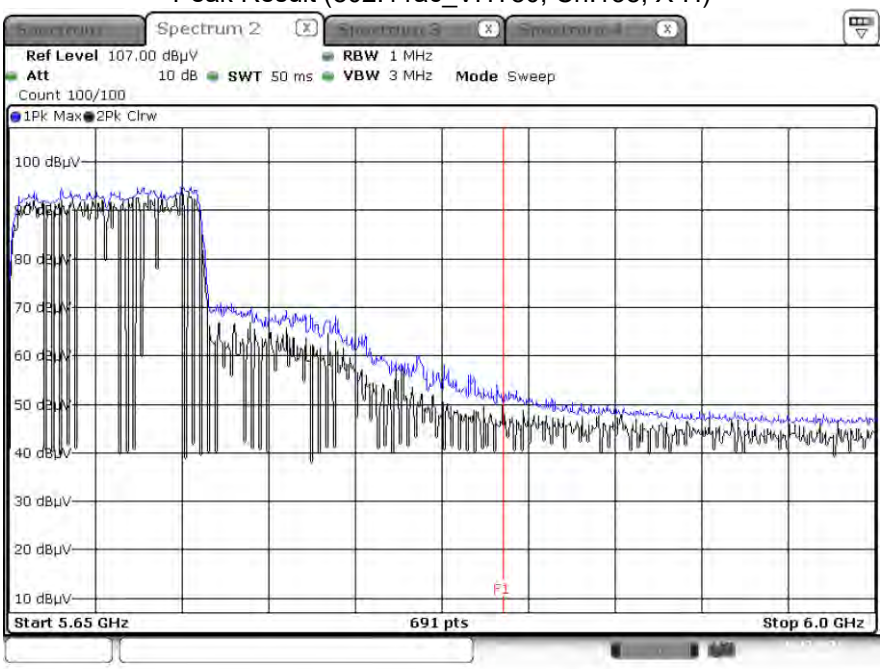
Peak Result (802.11n_HT40, Ch.142, X-H)



Peak Result (802.11ac_VHT40, Ch.142, X-H)



Peak Result (802.11ac_VHT80, Ch.138, X-H)

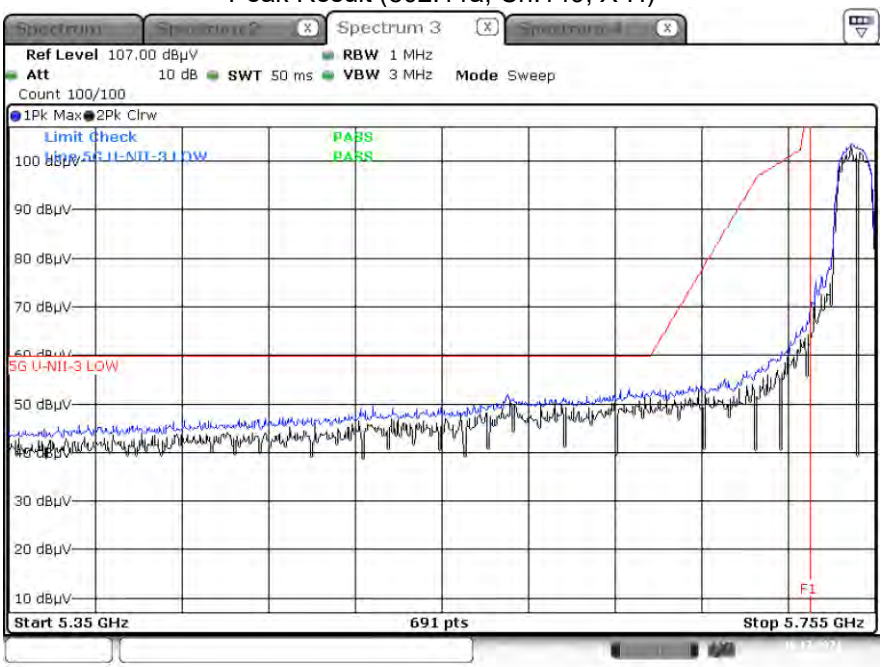


Note :

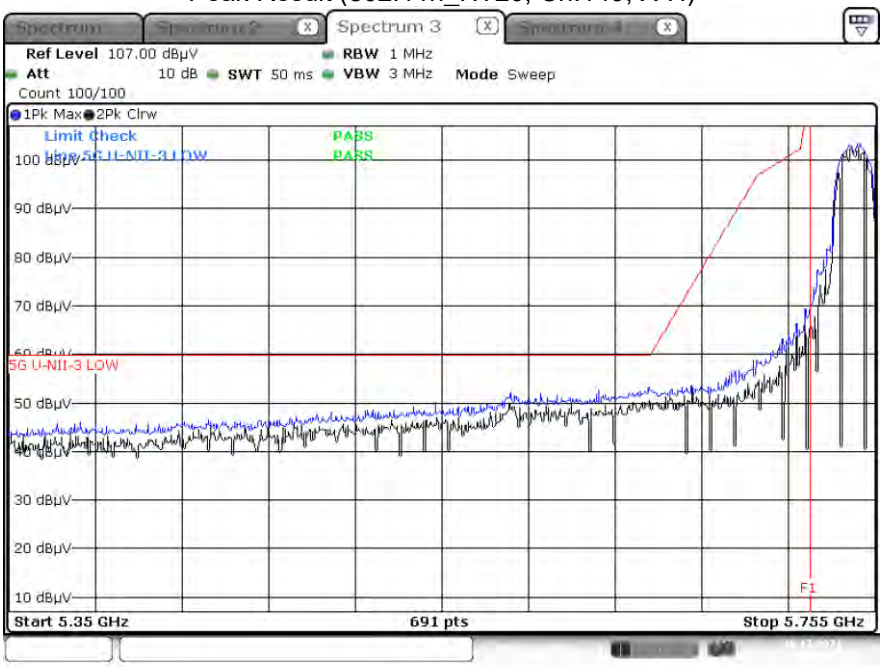
1. Only the worst case plots for Radiated Restricted Band Edge.
2. Red line : 5850 MHz
3. Ambient Noise (Because of ambient noise, We attached only the worst plot without a data table)

▣ Test Plots(UNII 3)

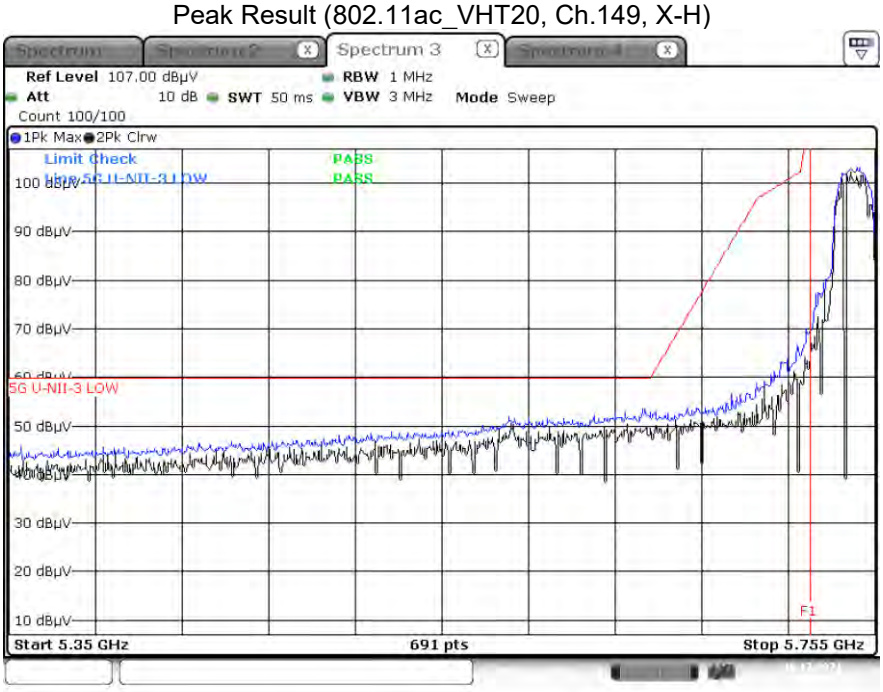
Peak Result (802.11a, Ch.149, X-H)



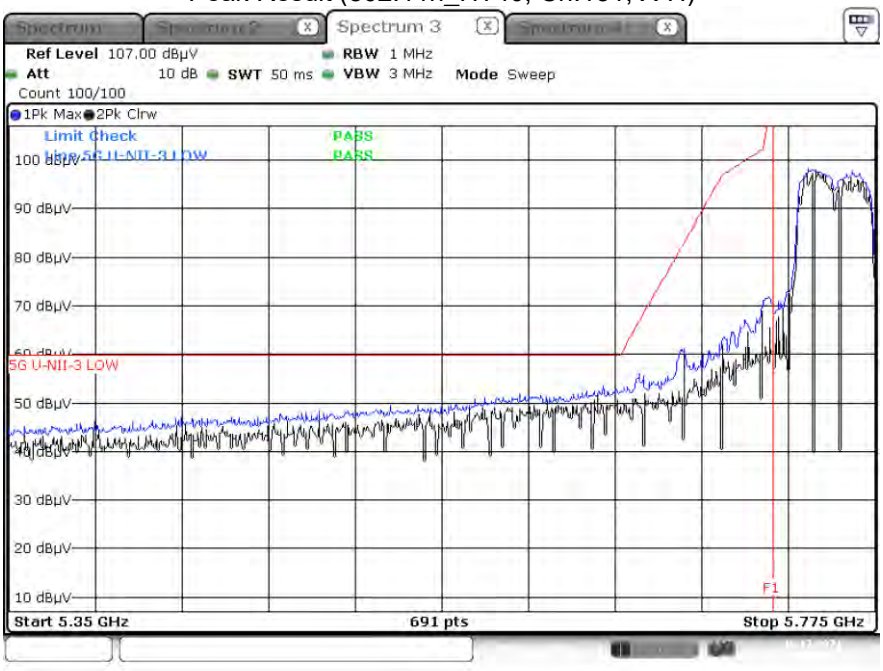
Peak Result (802.11n_HT20, Ch.149, X-H)



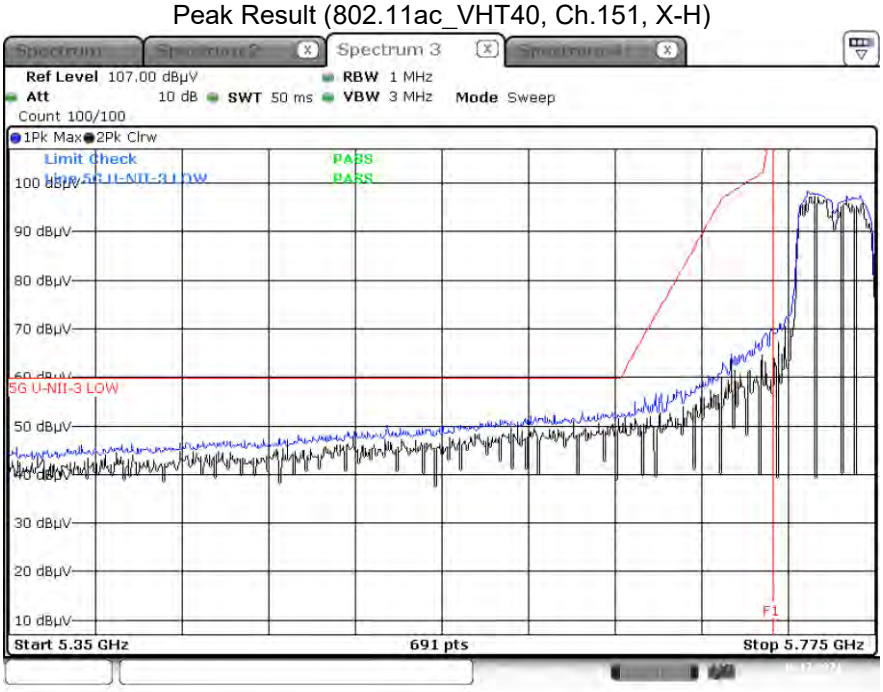
Peak Result (802.11ac_VHT20, Ch.149, X-H)



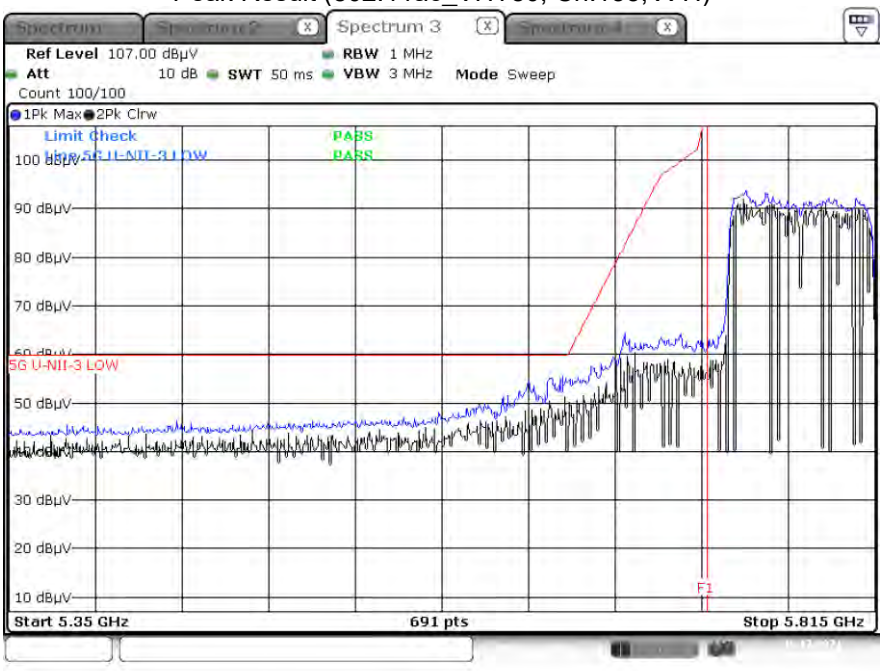
Peak Result (802.11n_HT40, Ch.151, X-H)



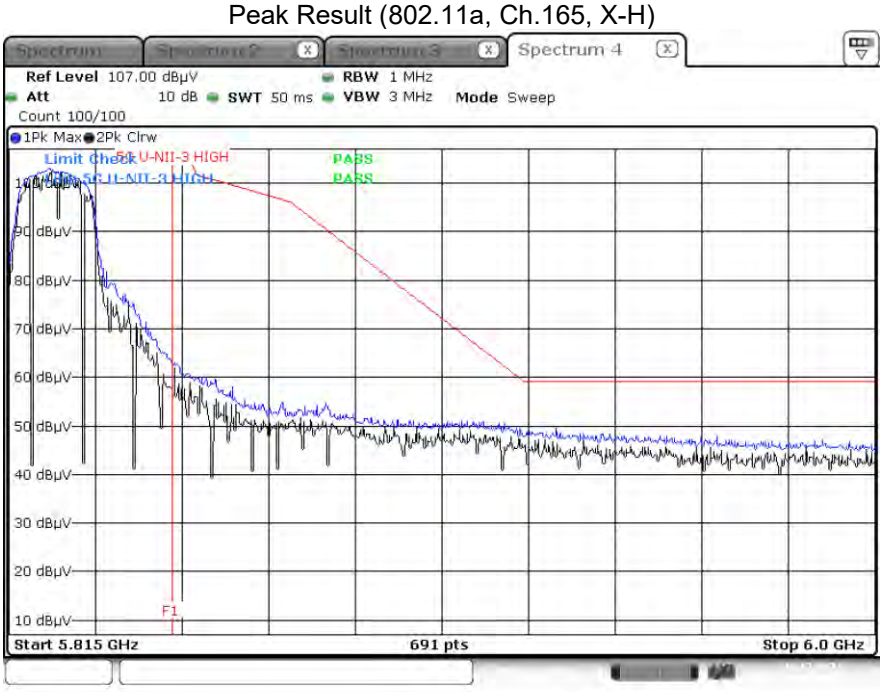
Peak Result (802.11ac_VHT40, Ch.151, X-H)



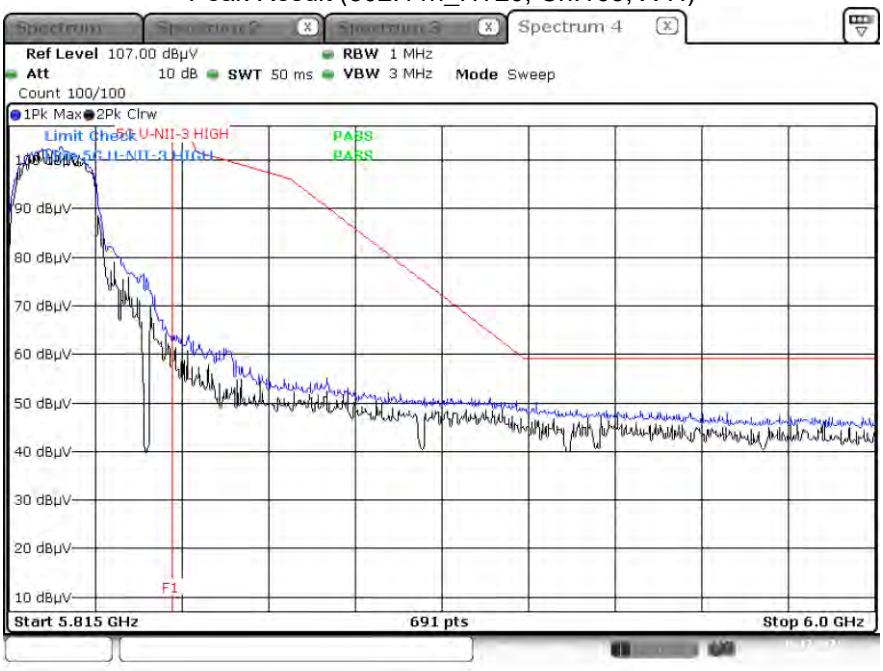
Peak Result (802.11ac_VHT80, Ch.155, X-H)



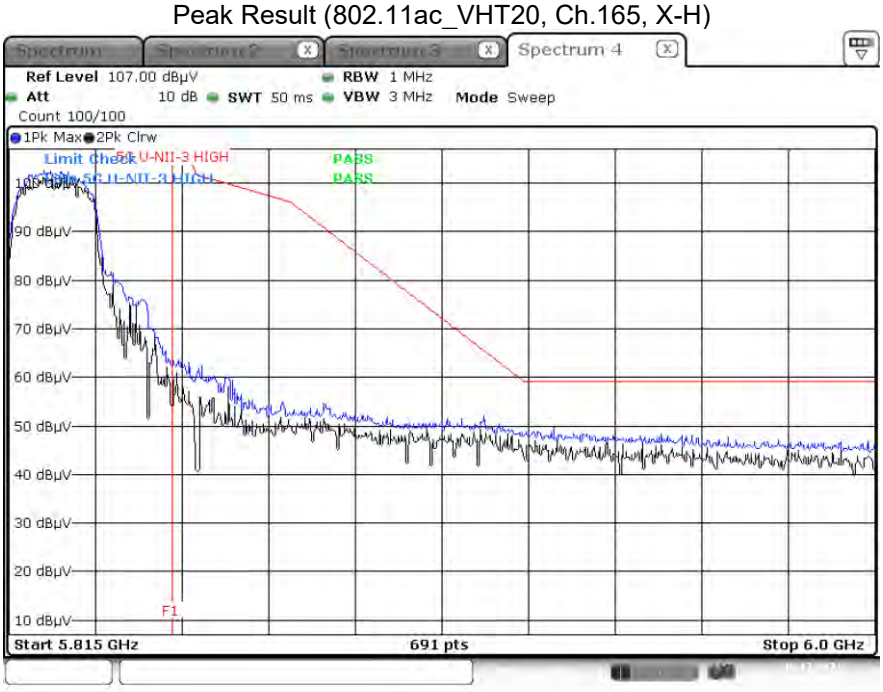
Peak Result (802.11a, Ch.165, X-H)



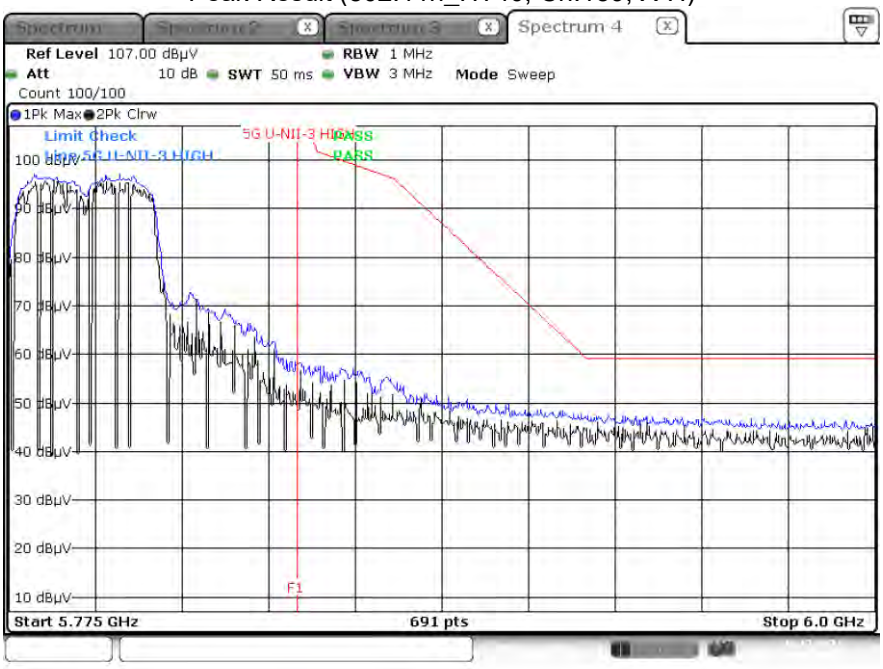
Peak Result (802.11n_HT20, Ch.165, X-H)



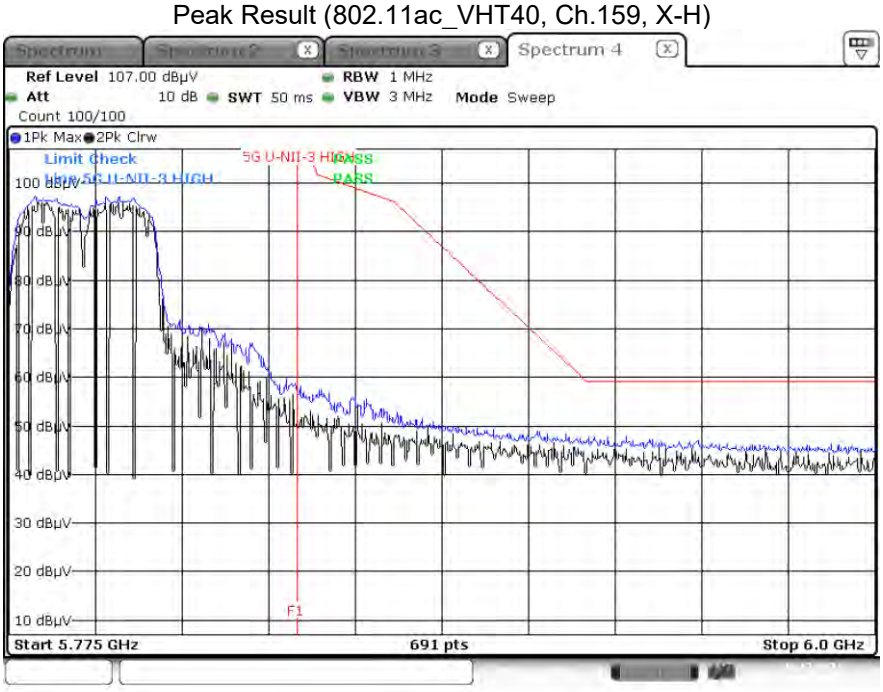
Peak Result (802.11ac_VHT20, Ch.165, X-H)



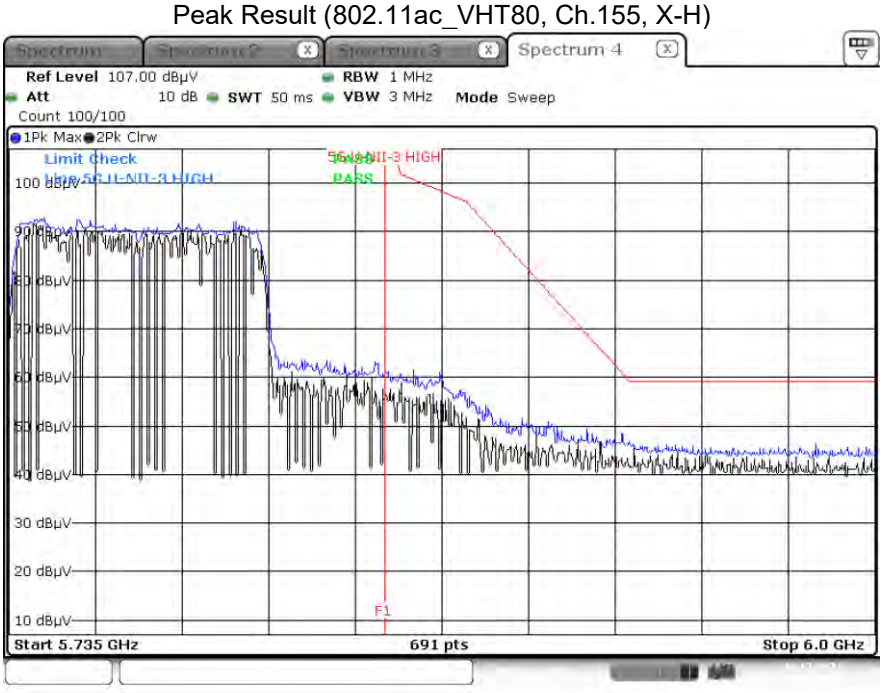
Peak Result (802.11n_HT40, Ch.159, X-H)



Peak Result (802.11ac_VHT40, Ch.159, X-H)



Peak Result (802.11ac_VHT80, Ch.155, X-H)



Note :

1. Only the worst case plots for U-NII-3 Out of Band e.i.r.p Emission.
2. U-NII-3 Low & High Band Edge RedLine is Final Test Limit about factor value compensation.

10.10 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions (Line 1)

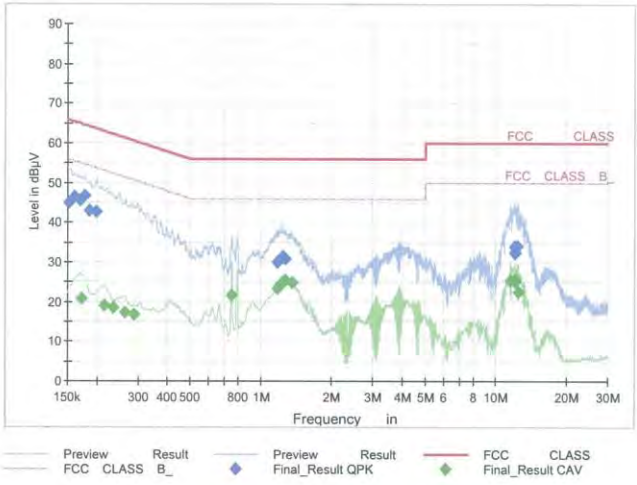
WLAN 5G MODE_L1 1 / 2

Test Report

Common Information

EUT :	SM-A336M/DSN
Manufacturer :	SAMSUNG
Test Site:	SHIELD ROOM
Operating Conditions :	WLAN 5G MODE_L1

Full Spectrum



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1523	44.87	65.88	21.00	9.000	L1	OFF	9.6
0.1613	46.44	65.40	18.96	9.000	L1	OFF	9.6
0.1703	45.44	64.95	19.51	9.000	L1	OFF	9.6
0.1770	46.83	64.63	17.79	9.000	L1	OFF	9.6
0.1860	43.12	64.21	21.09	9.000	L1	OFF	9.6
0.1995	42.73	63.63	20.90	9.000	L1	OFF	9.6
1.1705	30.08	56.00	25.92	9.000	L1	OFF	9.7
1.2088	30.78	56.00	25.22	9.000	L1	OFF	9.7
1.2155	30.94	56.00	25.06	9.000	L1	OFF	9.7
1.2335	31.28	56.00	24.72	9.000	L1	OFF	9.7
1.2403	31.32	56.00	24.68	9.000	L1	OFF	9.7
1.2785	31.00	56.00	25.00	9.000	L1	OFF	9.7
12.0065	32.25	60.00	27.75	9.000	L1	OFF	10.1
12.0133	32.56	60.00	27.44	9.000	L1	OFF	10.1
12.0380	33.70	60.00	26.30	9.000	L1	OFF	10.1
12.0605	33.87	60.00	26.13	9.000	L1	OFF	10.1
12.0650	33.90	60.00	26.10	9.000	L1	OFF	10.1
12.2788	33.93	60.00	26.07	9.000	L1	OFF	10.1

2021-12-18 오전 3:46:27

WLAN 5G MODE_L1 2 / 2

Final_Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1725	20.88	54.84	33.96	9.000	L1	OFF	9.6
0.2153	19.05	53.00	33.95	9.000	L1	OFF	9.6
0.2355	18.37	52.25	33.89	9.000	L1	OFF	9.6
0.2625	17.42	51.35	33.94	9.000	L1	OFF	9.6
0.2895	16.87	50.54	33.67	9.000	L1	OFF	9.6
0.7520	21.51	46.00	24.49	9.000	L1	OFF	9.7
1.1705	23.26	46.00	22.74	9.000	L1	OFF	9.7
1.2088	24.44	46.00	21.56	9.000	L1	OFF	9.7
1.2178	24.56	46.00	21.44	9.000	L1	OFF	9.7
1.2403	25.01	46.00	20.99	9.000	L1	OFF	9.7
1.2785	25.25	46.00	20.75	9.000	L1	OFF	9.7
1.3618	24.72	46.00	21.29	9.000	L1	OFF	9.7
11.5520	25.33	50.00	24.67	9.000	L1	OFF	10.1
11.9953	25.24	50.00	24.76	9.000	L1	OFF	10.1
12.0380	25.81	50.00	24.19	9.000	L1	OFF	10.1
12.0628	25.74	50.00	24.26	9.000	L1	OFF	10.1
12.0785	25.61	50.00	24.39	9.000	L1	OFF	10.1
12.4340	22.62	50.00	27.38	9.000	L1	OFF	10.1

2021-12-18 오전 3:46:27

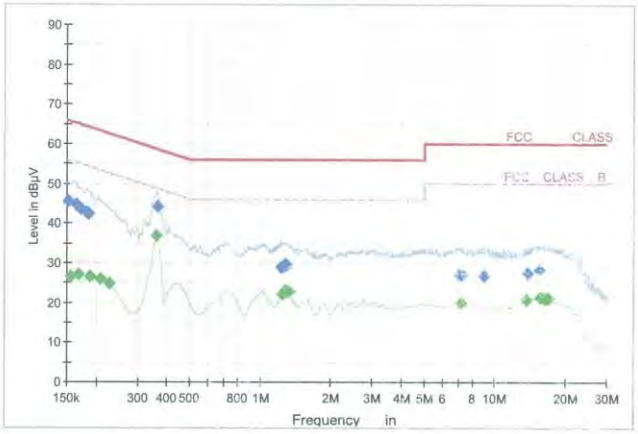
WLAN 5G 45W MODE_L1 1 / 2

Test Report

Common Information

EUT :	SM-A336M/DSN
Manufacturer :	SAMSUNG
Test Site:	SHIELD ROOM
Operating Conditions :	WLAN 5G 45W MODE_L1

Full Spectrum



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1523	45.51	65.88	20.37	9.000	L1	OFF	9.6
0.1635	44.66	65.28	20.62	9.000	L1	OFF	9.6
0.1725	43.55	64.84	21.29	9.000	L1	OFF	9.6
0.1815	42.60	64.42	21.82	9.000	L1	OFF	9.6
0.1860	42.53	64.21	21.68	9.000	L1	OFF	9.6
0.3638	44.15	58.64	14.49	9.000	L1	OFF	9.6
1.2268	28.83	56.00	27.17	9.000	L1	OFF	9.7
1.2515	29.22	56.00	26.78	9.000	L1	OFF	9.7
1.2740	29.50	56.00	26.50	9.000	L1	OFF	9.7
1.2808	29.64	56.00	26.36	9.000	L1	OFF	9.7
1.2898	29.41	56.00	26.59	9.000	L1	OFF	9.7
1.3010	29.42	56.00	26.58	9.000	L1	OFF	9.7
7.1465	27.23	60.00	32.77	9.000	L1	OFF	9.9
7.1690	27.08	60.00	32.92	9.000	L1	OFF	9.9
7.2680	27.04	60.00	32.96	9.000	L1	OFF	9.9
8.9668	26.81	60.00	33.19	9.000	L1	OFF	10.0
13.7885	27.47	60.00	32.53	9.000	L1	OFF	10.2
15.4918	28.34	60.00	31.66	9.000	L1	OFF	10.2

2021-12-26 오전 5:36:19

WLAN 5G 45W MODE_L1 2 / 2

Final_Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1545	26.44	55.75	29.31	9.000	L1	OFF	9.6
0.1680	27.08	55.06	27.97	9.000	L1	OFF	9.6
0.1883	26.47	54.11	27.64	9.000	L1	OFF	9.6
0.2085	26.07	53.27	27.19	9.000	L1	OFF	9.6
0.2265	24.75	52.58	27.83	9.000	L1	OFF	9.6
0.3615	36.91	48.69	11.78	9.000	L1	OFF	9.6
1.2425	22.29	46.00	23.71	9.000	L1	OFF	9.7
1.2673	22.87	46.00	23.13	9.000	L1	OFF	9.7
1.2785	22.87	46.00	23.13	9.000	L1	OFF	9.7
1.2898	22.94	46.00	23.06	9.000	L1	OFF	9.7
1.3033	22.88	46.00	23.12	9.000	L1	OFF	9.7
1.3258	22.68	46.00	23.32	9.000	L1	OFF	9.7
7.1690	19.85	50.00	30.15	9.000	L1	OFF	9.9
13.6783	20.66	50.00	29.34	9.000	L1	OFF	10.2
15.6403	21.39	50.00	28.61	9.000	L1	OFF	10.2
16.2613	21.15	50.00	28.85	9.000	L1	OFF	10.3
16.6618	21.15	50.00	28.35	9.000	L1	OFF	10.3
16.9453	21.12	50.00	28.88	9.000	L1	OFF	10.3

2021-12-26 오전 5:36:19

Conducted Emissions (Line 2)

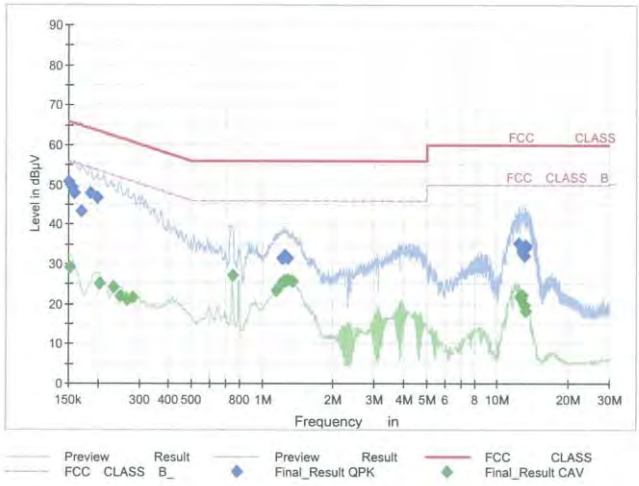
WLAN 5G MODE_N 1 / 2

Test Report

Common Information

EUT :	SM-A336M/DSN
Manufacturer :	SAMSUNG
Test Site:	SHIELD ROOM
Operating Conditions :	WLAN 5G MODE_N

Full Spectrum



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1500	50.84	66.00	15.16	9.000	N	OFF	9.6
0.1545	49.30	65.75	16.46	9.000	N	OFF	9.6
0.1590	47.82	65.52	17.70	9.000	N	OFF	9.6
0.1703	43.36	64.95	21.58	9.000	N	OFF	9.6
0.1860	47.79	64.21	16.42	9.000	N	OFF	9.6
0.1995	46.66	63.63	16.97	9.000	N	OFF	9.6
1.2133	31.42	56.00	24.58	9.000	N	OFF	9.7
1.2290	31.54	56.00	24.46	9.000	N	OFF	9.7
1.2335	31.80	56.00	24.20	9.000	N	OFF	9.7
1.2425	31.92	56.00	24.08	9.000	N	OFF	9.7
1.2628	31.94	56.00	24.06	9.000	N	OFF	9.7
1.2808	31.56	56.00	24.44	9.000	N	OFF	9.7
12.3845	35.13	60.00	24.87	9.000	N	OFF	10.2
12.7198	32.88	60.00	27.12	9.000	N	OFF	10.2
12.7760	33.55	60.00	26.45	9.000	N	OFF	10.2
13.1068	31.96	60.00	28.04	9.000	N	OFF	10.2
13.1698	34.11	60.00	25.89	9.000	N	OFF	10.2
13.1788	34.54	60.00	25.46	9.000	N	OFF	10.2

2021-12-18 오전 3:40:12

WLAN 5G MODE_N 2 / 2

Final_Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1523	29.25	55.88	26.63	9.000	N	OFF	9.6
0.2040	25.04	53.45	28.41	9.000	N	OFF	9.6
0.2333	24.21	52.33	28.13	9.000	N	OFF	9.6
0.2490	21.93	51.79	29.86	9.000	N	OFF	9.6
0.2648	20.99	51.28	30.29	9.000	N	OFF	9.6
0.2828	21.74	50.74	29.00	9.000	N	OFF	9.6
0.7475	27.13	46.00	18.87	9.000	N	OFF	9.7
1.1480	23.35	46.00	22.65	9.000	N	OFF	9.7
1.2178	25.30	46.00	20.70	9.000	N	OFF	9.7
1.2403	25.78	46.00	20.22	9.000	N	OFF	9.7
1.2538	25.75	46.00	20.25	9.000	N	OFF	9.7
1.2898	26.10	46.00	19.90	9.000	N	OFF	9.7
1.3505	25.69	46.00	20.31	9.000	N	OFF	9.7
12.4475	21.83	50.00	28.17	9.000	N	OFF	10.2
12.6860	21.38	50.00	28.62	9.000	N	OFF	10.2
12.7490	22.27	50.00	27.73	9.000	N	OFF	10.2
13.0438	19.49	50.00	30.51	9.000	N	OFF	10.2
13.2418	18.18	50.00	31.82	9.000	N	OFF	10.2

2021-12-18 오전 3:40:12

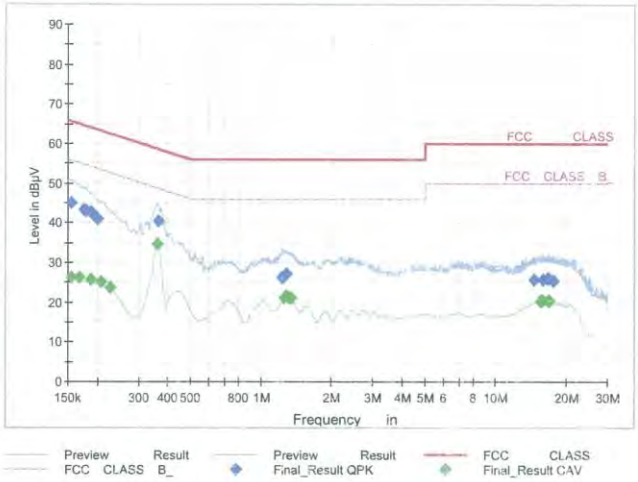
WLAN 5G 45W MODE_N 1 / 2

Test Report

Common Information

EUT :	SM-A336M/DSN
Manufacturer :	SAMSUNG
Test Site:	SHIELD ROOM
Operating Conditions :	WLAN 5G 45W MODE_N

Full Spectrum



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Linc	Filter	Corr. (dB)
0.1545	45.14	65.75	20.61	9.000	N	OFF	9.6
0.1748	43.39	64.73	21.34	9.000	N	OFF	9.6
0.1793	42.98	64.52	21.54	9.000	N	OFF	9.6
0.1883	42.82	64.11	21.29	9.000	N	OFF	9.6
0.1950	41.69	63.82	22.14	9.000	N	OFF	9.6
0.2018	41.07	63.54	22.47	9.000	N	OFF	9.6
0.3638	40.26	58.64	18.39	9.000	N	OFF	9.6
1.2290	26.23	56.00	29.77	9.000	N	OFF	9.7
1.2380	26.28	56.00	29.72	9.000	N	OFF	9.7
1.2470	26.23	56.00	29.77	9.000	N	OFF	9.7
1.2650	26.83	56.00	29.17	9.000	N	OFF	9.7
1.2785	26.88	56.00	29.12	9.000	N	OFF	9.7
1.2898	27.01	56.00	28.99	9.000	N	OFF	9.7
14.5400	25.69	60.00	34.31	9.000	N	OFF	10.3
15.9620	25.73	60.00	34.27	9.000	N	OFF	10.3
16.7675	25.88	60.00	34.12	9.000	N	OFF	10.3
16.8845	25.86	60.00	34.14	9.000	N	OFF	10.3
17.7035	25.45	60.00	34.55	9.000	N	OFF	10.4

2021-12-26 오전 5:31:00

WLAN 5G 45W MODE_N 2 / 2

Final_Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1545	26.26	55.75	29.49	9.000	N	OFF	9.6
0.1680	26.30	55.06	28.76	9.000	N	OFF	9.6
0.1883	25.61	54.11	28.50	9.000	N	OFF	9.6
0.2085	25.07	53.27	28.20	9.000	N	OFF	9.6
0.2265	23.76	52.58	28.82	9.000	N	OFF	9.6
0.3615	34.58	48.69	14.12	9.000	N	OFF	9.6
1.2538	21.08	46.00	24.92	9.000	N	OFF	9.7
1.2785	21.42	46.00	24.58	9.000	N	OFF	9.7
1.2898	21.58	46.00	24.42	9.000	N	OFF	9.7
1.3033	21.48	46.00	24.52	9.000	N	OFF	9.7
1.3370	21.18	46.00	24.82	9.000	N	OFF	9.7
1.3505	20.98	46.00	25.02	9.000	N	OFF	9.7
15.6583	20.41	50.00	29.59	9.000	N	OFF	10.3
15.6898	20.31	50.00	29.69	9.000	N	OFF	10.3
15.7055	20.32	50.00	29.68	9.000	N	OFF	10.3
15.9620	20.34	50.00	29.66	9.000	N	OFF	10.3
16.8845	20.33	50.00	29.67	9.000	N	OFF	10.3
16.9048	20.35	50.00	29.65	9.000	N	OFF	10.3

2021-12-26 오전 5:31:00

11. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	08/23/2022	Annual
EMI Test Receiver	ESR	Rohde & Schwarz	101910	06/17/2022	Annual
Temperature Chamber	SU-642	ESPEC	0093008124	03/15/2022	Annual
Signal Analyzer	N9030A	Agilent	MY49432108	03/09/2022	Annual
Power Meter	N1911A	Agilent	MY45100523	04/08/2022	Annual
Power Sensor	N1921A	Agilent	MY57820067	04/08/2022	Annual
Power Splitter	11667B	Hewlett Packard	10545	02/09/2022	Annual
DC Power Supply	E3632A	HP	MY50360067	02/26/2022	Annual
Attenuator(10 dB)(DC-26.5 GHz)	8493C	HP	07560	06/18/2022	Annual
Attenuator(10 dB)(DC-26.5 GHz)	8493C	HP	08285	06/28/2022	Annual
Attenuator(20 dB)	18N-20dB	Rohde & Schwarz	8	03/08/2022	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	HCT CO., LTD.	N/A	N/A	N/A

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller(Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	N/A	N/A	N/A
Controller	EM1000	Audix	060520	N/A	N/A
Turn Table	N/A	Audix	N/A	N/A	N/A
Amp & Filter Bank Switch Controller	FBSM-01B	TNM system	TM19050002	N/A	N/A
Loop Antenna	1513	Schwarzbeck	1513-333	03/19/2022	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-0895	09/04/2022	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	02296	05/19/2022	Biennial
Horn Antenna(15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170124	04/12/2023	Biennial
Spectrum Analyzer	FSV(10 Hz ~ 40 GHz)	Rohde & Schwarz	101055	05/14/2022	Annual
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments	2	01/06/2022	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	5	06/24/2022	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	6	06/24/2022	Annual
Power Amplifier	CBL18265035	CERNEX	22966	12/02/2022	Annual
Power Amplifier	CBL26405040	CERNEX	25956	03/23/2022	Annual
HPF(3~18GHz) + LNA1(1~18GHz)	FMSR-05B	TNM system	F6	01/20/2022	Annual
ATT(10dB) + LNA1(1~18GHz)	FMSR -05B	TNM system	None	01/20/2022	Annual
ATT(3dB) + LNA1(1~18GHz)	FMSR -05B	TNM system	None	01/20/2022	Annual
LNA1(1~18GHz)	FMSR -05B	TNM system	25540	01/20/2022	Annual
HPF(7~18GHz) + LNA2(6~18GHz)	FMSR -05B	TNM system	28550	01/20/2022	Annual
Thru(30MHz ~ 18GHz)	FMSR -05B	TNM system	None	01/20/2022	Annual

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
3. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5(Version : 2017).

12. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2201-FC036-P