HCT CO.,LTD.

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FCC UNII REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

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

Date of Issue:
February 07, 2022

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

Report No.: HCT-RF-2201-FC088-R1

FCC ID:	**A3LSMM236B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model:	SM-M236B/DS
Additional Model:	-
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 : Jeong Ho Kim
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-FC088	January 26, 2022	- First Approval Report
HCT-RF-2201-FC088-R1	February 07, 2022	- Revised output power section10.4 - Revised straddle channel result section 10.6

Table of Contents

1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-M236B/DS	
Additional Model	-	
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 13, 2021 ~ February 07, 2022	
Serial number	Radiated : R3CRB0HNWVT Conducted : R3CRB0HPHPA	

2. MAXIMUM OUTPUT POWER

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

Band	Mode	Power	
		(dBm)	(W)
UNII1	802.11a	15.88	0.039
	802.11n (HT20)	15.79	0.038
	802.11n (HT40)	14.83	0.030
	802.11ac (VHT20)	15.76	0.038
	802.11ac (VHT40)	14.77	0.030
	802.11ac (VHT80)	11.85	0.015
UNII2A	802.11a	17.28	0.053
	802.11n (HT20)	17.30	0.054
	802.11n (HT40)	15.04	0.032
	802.11ac (VHT20)	16.21	0.042
	802.11ac (VHT40)	14.93	0.031
	802.11ac (VHT80)	10.99	0.013
UNII2C	802.11a	17.10	0.051
	802.11n (HT20)	16.43	0.044
	802.11n (HT40)	15.47	0.035
	802.11ac (VHT20)	16.21	0.042
	802.11ac (VHT40)	15.43	0.035
	802.11ac (VHT80)	13.15	0.021
UNII3	802.11a	17.78	0.060
	802.11n (HT20)	17.22	0.053
	802.11n (HT40)	15.71	0.037
	802.11ac (VHT20)	16.70	0.047
	802.11ac (VHT40)	15.70	0.037
	802.11ac (VHT80)	12.83	0.019

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.

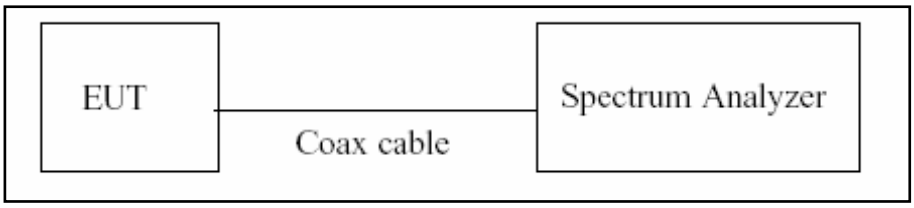
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

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.

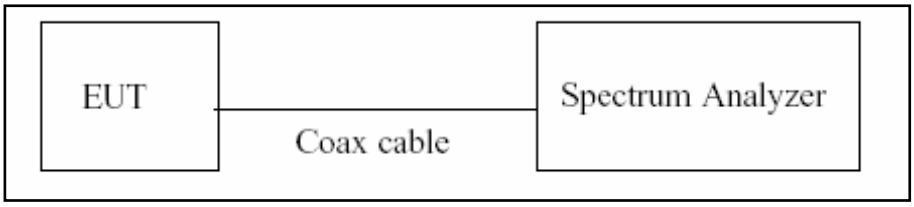
1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

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.

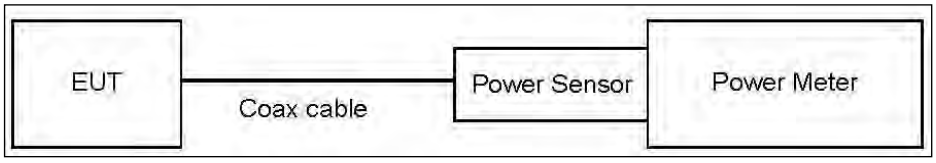
8.3. Output Power Measurement

Limit

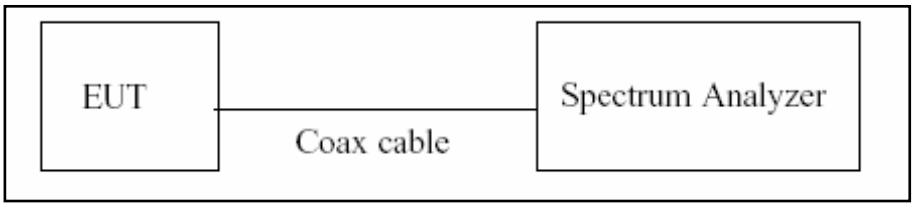
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30 dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30 dBm)

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

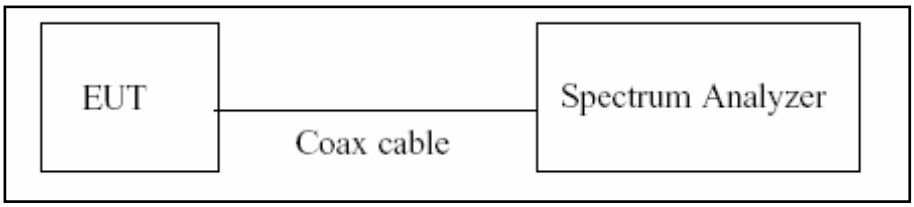
(Actual value of loss for the attenuator and cable combination)

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 (510 kHz for UNII 3)
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
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

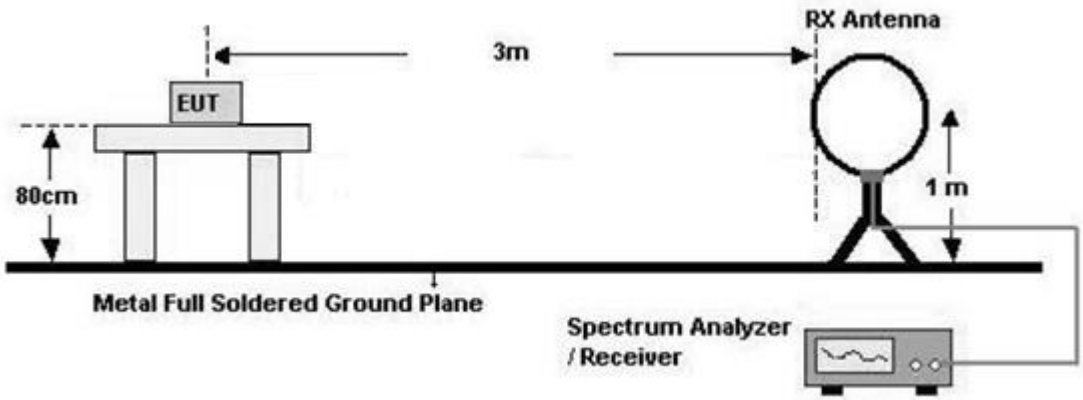
Limit

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.

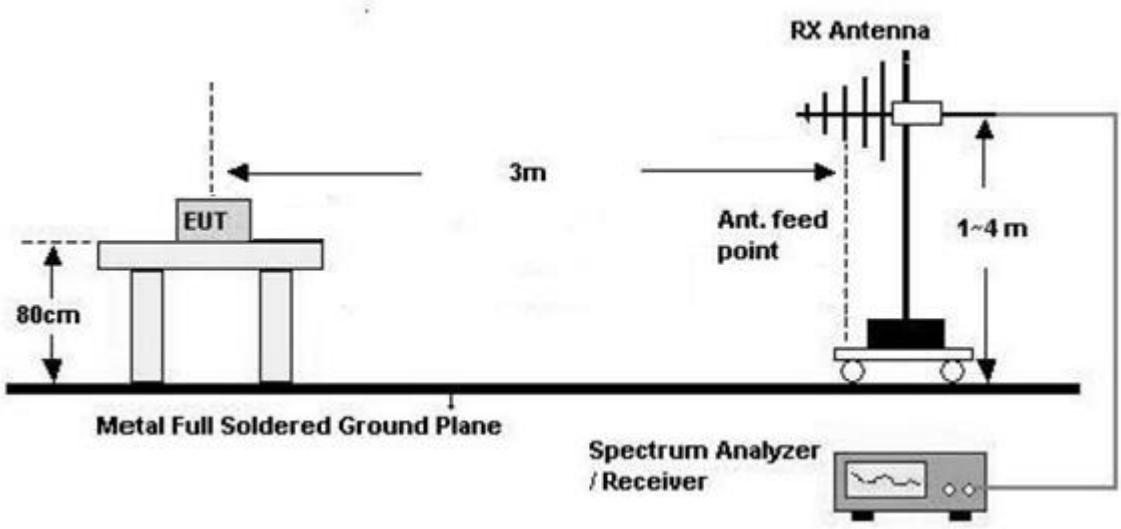
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

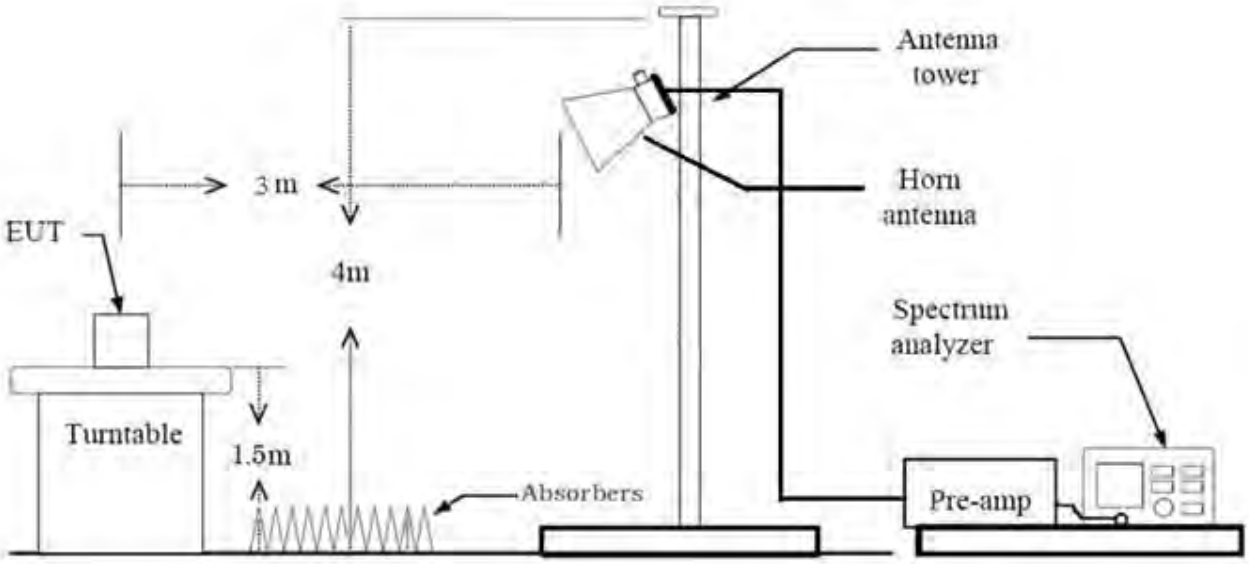
Below 30 MHz



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	0.975	0.110	1000
802.11n(HT20)	MCS0	0.972	0.122	1000
802.11n(HT40)	MCS0	0.950	0.224	3000
802.11ac(VHT20)	MCS0	0.974	0.113	1000
802.11ac(VHT40)	MCS0	0.951	0.220	3000
802.11ac(VHT80)	MCS0	0.904	0.436	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 : X
   - 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 : 802.11a_6 Mbps)
5. All position of loop antenna were investigated and the test result is a no critical peak found at all positions.
   - Position : Horizontal, Vertical, Parallel to the ground plane

Radiated test(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 : X
3. The following tables show the worst case configurations determined during testing.

Description	Bluetooth Emission	5 GHz Emission
Antenna	WIFI/BT	WIFI/BT
Channel	39	40
Data Rate	1 Mbps	6 Mbps
Mode	GFSK : 2-DH5	802.11a

AC Power line Conducted Emissions

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

Conducted test

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

9. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26 dB Bandwidth	§15.407 (for Power Measurement)	N/A	Conducted	PASS
6 dB Bandwidth	§15.407(e)	>500 kHz (5725-5850 MHz)(UNII-3)		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

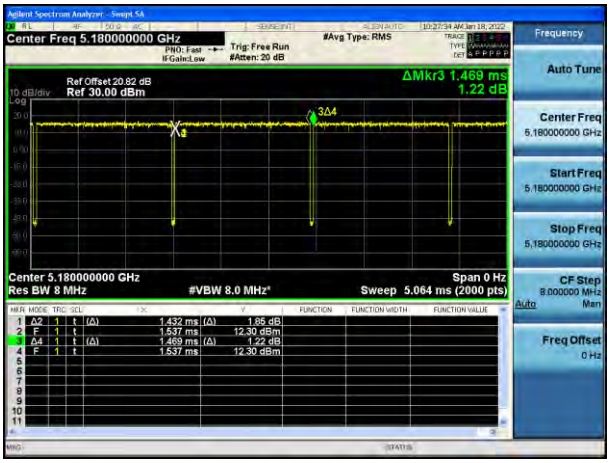
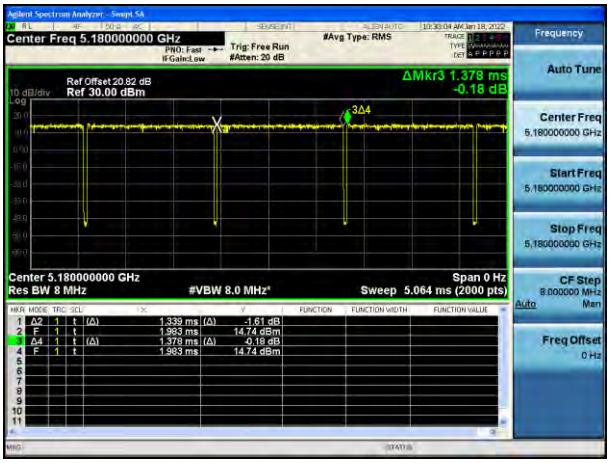
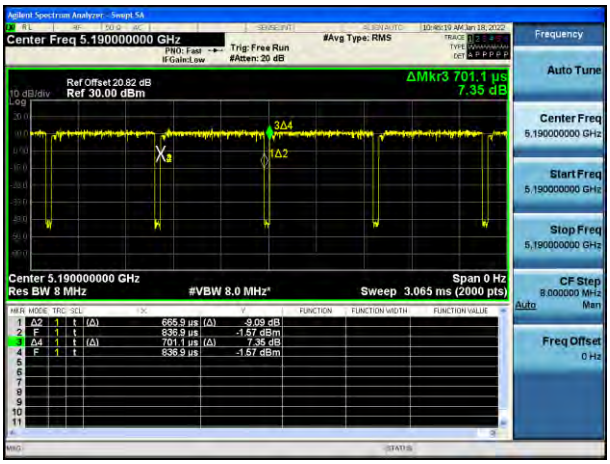
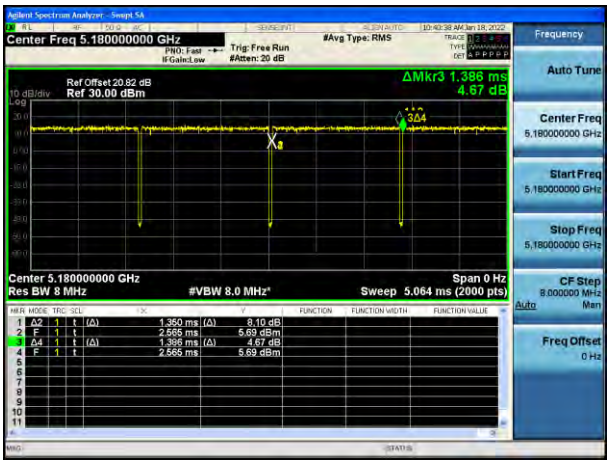
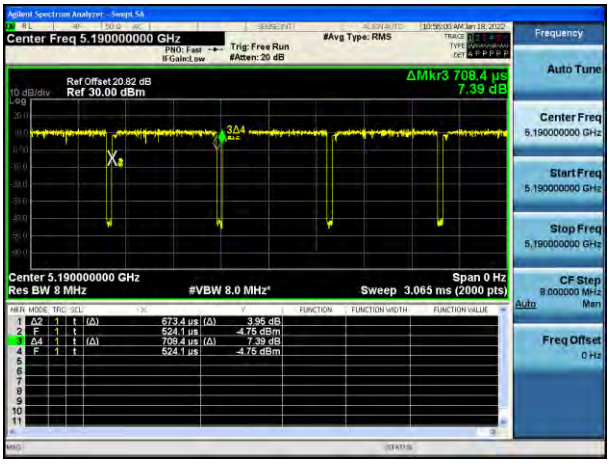
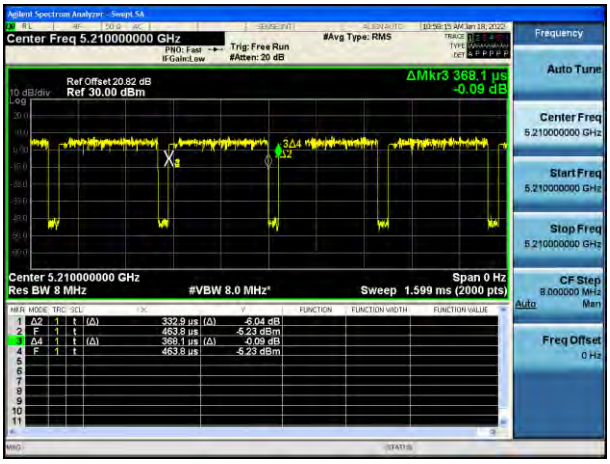
Mode	Data Rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11a	6	1.432	1.469	0.975	0.110
	9	0.961	0.998	0.963	0.165
	12	0.729	0.764	0.954	0.204
	18	0.493	0.528	0.934	0.298
	24	0.377	0.413	0.913	0.395
	36	0.257	0.292	0.879	0.558
	48	0.201	0.236	0.851	0.700
	54	0.181	0.216	0.835	0.781

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11n (HT20)	0	1.339	1.378	0.972	0.122
	1	0.689	0.725	0.950	0.224
	2	0.473	0.509	0.930	0.314
	3	0.365	0.401	0.909	0.413
	4	0.256	0.292	0.878	0.567
	5	0.201	0.236	0.851	0.699
	6	0.185	0.220	0.840	0.757
	7	0.169	0.204	0.828	0.821
802.11n (HT40)	0	0.666	0.701	0.950	0.224
	1	0.353	0.388	0.909	0.413
	2	0.249	0.284	0.879	0.562
	3	0.197	0.232	0.848	0.716
	4	0.145	0.180	0.806	0.937
	5	0.117	0.152	0.768	1.145
	6	0.109	0.144	0.756	1.218
	7	0.101	0.136	0.741	1.300

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT20)	0	1.350	1.386	0.974	0.113
	1	0.698	0.733	0.952	0.215
	2	0.478	0.513	0.931	0.311
	3	0.369	0.406	0.910	0.408
	4	0.261	0.296	0.880	0.555
	5	0.205	0.240	0.852	0.696
	6	0.189	0.224	0.843	0.742
	7	0.173	0.208	0.832	0.796
	8	0.153	0.188	0.813	0.899
802.11ac (VHT40)	0	0.673	0.708	0.951	0.220
	1	0.357	0.392	0.910	0.412
	2	0.253	0.288	0.879	0.560
	3	0.201	0.236	0.852	0.693
	4	0.149	0.184	0.808	0.924
	5	0.121	0.156	0.776	1.104
	6	0.113	0.148	0.762	1.182
	7	0.105	0.140	0.748	1.260
	8	0.097	0.132	0.736	1.331
	9	0.089	0.124	0.719	1.434
802.11ac (VHT80)	0	0.333	0.368	0.904	0.436
	1	0.189	0.224	0.843	0.741
	2	0.141	0.176	0.799	0.977
	3	0.116	0.152	0.767	1.154
	4	0.093	0.128	0.725	1.394
	5	0.081	0.116	0.697	1.566
	6	0.077	0.112	0.685	1.645
	7	0.073	0.108	0.675	1.709
	8	0.069	0.104	0.661	1.799
	9	0.065	0.100	0.648	1.886

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	19.87	16.467
5200	40	19.98	16.465
5240	48	19.84	16.443
5260	52	19.67	16.469
5300	60	19.72	16.478
5320	64	20.13	16.491
5500	100	21.99	16.525
5600	120	21.25	16.569
5720	144	22.30	16.541
5745	149	21.51	16.565
5785	157	21.42	16.518
5825	165	22.70	16.578

802.11n(HT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.38	17.625
5200	40	20.53	17.606
5240	48	20.62	17.655
5260	52	20.54	17.628
5300	60	20.48	17.609
5320	64	20.77	17.644
5500	100	22.22	17.697
5600	120	22.82	17.745
5720	144	22.31	17.716
5745	149	22.36	17.703
5785	157	23.01	17.725
5825	165	22.53	17.748

802.11n(HT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	40.47	36.161
5230	46	40.19	35.994
5270	54	39.92	36.100
5310	62	40.35	36.094
5510	102	40.42	36.049
5590	118	39.85	36.054
5710	142	40.61	35.949
5755	151	39.82	36.049
5795	159	40.15	36.036

802.11ac(VHT20) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	20.45	17.600
5200	40	20.55	17.599
5240	48	20.43	17.621
5260	52	20.62	17.643
5300	60	20.67	17.608
5320	64	20.60	17.643
5500	100	22.43	17.678
5600	120	23.13	17.659
5720	144	23.49	17.701
5745	149	22.58	17.761
5785	157	22.97	17.709
5825	165	22.78	17.751

802.11ac(VHT40) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	41.01	36.174
5230	46	40.31	36.034
5270	54	40.09	36.119
5310	62	40.39	36.073
5510	102	40.23	36.046
5590	118	39.94	36.003
5710	142	40.34	36.051
5755	151	40.08	35.999
5795	159	40.33	36.123

802.11ac(VHT80) Mode		26 dB Bandwidth [MHz]	99 % bandwidth [MHz]
Frequency [MHz]	Channel No.		
5210	42	82.05	75.139
5290	58	81.15	75.279
5530	106	82.45	75.112
5610	122	81.97	75.058
5690	138	80.71	75.110
5775	155	81.27	75.090

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

▣ 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 64)
	
802.11n_HT20 UNII 2C BAND 26 dB Bandwidth(CH 120)	**802.11n_HT20 UNII 3 BAND 26 dB Bandwidth (CH 157)**
	

▣ 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 38)	802.11n_HT40 UNII 2A BAND 26 dB Bandwidth (CH 62)
	
802.11n_HT40 UNII 2C BAND 26 dB Bandwidth(CH 142)	**802.11n_HT40 UNII 3 BAND 26 dB Bandwidth (CH 159)**
	

▣ Test Plots(802.11ac(VHT20))

Note:

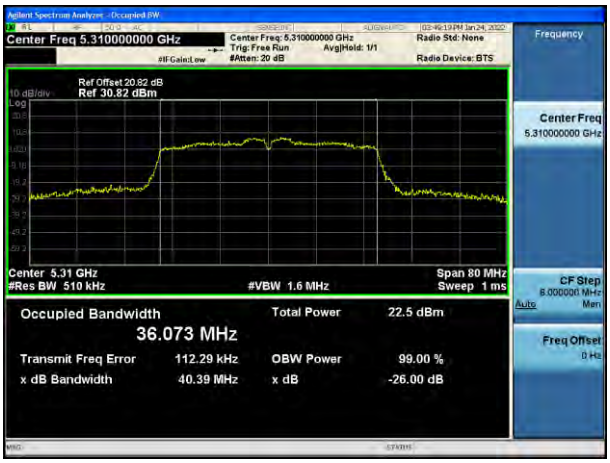
In order to simplify the report, attached plots were only the most wide channel.

802.11ac_VHT20 UNII 1 BAND 26 dB Bandwidth(CH 40)	802.11ac_VHT20 UNII 2A BAND 26 dB Bandwidth(CH 60)
	
802.11ac_VHT20 UNII 2C BAND 26 dB Bandwidth(CH 144)	**802.11ac_VHT20 UNII 3 BAND 26 dB Bandwidth(CH 157)**
	

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

▣ 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 106)	**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	15.09	> 0.5	Pass
5785	157	11.37	> 0.5	Pass
5825	165	11.40	> 0.5	Pass

802.11n(HT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	12.62	> 0.5	Pass
5785	157	12.62	> 0.5	Pass
5825	165	14.97	> 0.5	Pass

802.11n(HT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	31.32	> 0.5	Pass
5795	159	33.80	> 0.5	Pass

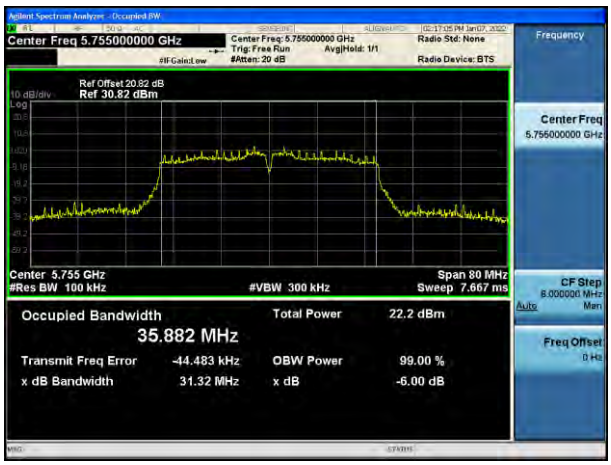
802.11ac(VHT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	15.08	> 0.5	Pass
5785	157	13.85	> 0.5	Pass
5825	165	12.66	> 0.5	Pass

802.11ac(VHT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	35.00	> 0.5	Pass
5795	159	33.78	> 0.5	Pass

802.11ac(VHT80) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	60.21	> 0.5	Pass

▣ Test Plots

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

802.11a (CH.157)	802.11n(HT20) (CH.149)
	
802.11n(HT40) (CH.151)	**802.11ac(VHT20) (CH.165)**
	
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	13.07	0.395	13.47	23.98	24M
5200	40	12.96	0.395	13.35	23.98	24M
5240	48	15.59	0.395	15.98	23.98	18M
5260	52	15.42	0.298	15.72	23.94	18M
5300	60	15.79	0.298	16.09	23.94	18M
5320	64	16.98	0.298	17.28	23.94	18M
5500	100	16.45	0.298	16.75	23.98	18M
5600	120	16.80	0.298	17.10	23.98	18M
5720	144	16.44	0.298	16.74	23.98	18M
5745	149	16.63	0.298	16.92	30.00	18M
5785	157	17.48	0.298	17.78	30.00	18M
5825	165	16.70	0.298	17.00	30.00	18M

802.11n(20 MHz) Mode		Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)	Worstcase MCS Index
Frequency [MHz]	Channel No.					
5180	36	12.90	0.567	13.47	23.98	MCS4
5200	40	12.48	0.821	13.30	23.98	MCS7
5240	48	15.38	0.413	15.79	23.98	MCS3
5260	52	15.24	0.314	15.55	23.98	MCS2
5300	60	15.65	0.413	16.06	23.98	MCS3
5320	64	16.89	0.413	17.30	23.98	MCS3
5500	100	15.94	0.122	16.06	23.98	MCS0
5600	120	16.21	0.224	16.43	23.98	MCS1
5720	144	15.90	0.224	16.12	23.98	MCS1
5745	149	16.06	0.122	16.18	30.00	MCS0
5785	157	17.00	0.224	17.22	30.00	MCS1
5825	165	16.26	0.224	16.48	30.00	MCS1

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	11.97	0.716	12.69	23.98	MCS3
5230	46	14.27	0.562	14.83	23.98	MCS2
5270	54	14.33	0.716	15.04	23.98	MCS3
5310	62	11.13	0.716	11.84	23.98	MCS3
5510	102	12.30	0.716	13.02	23.98	MCS3
5590	118	14.76	0.716	15.47	23.98	MCS3
5710	142	14.70	0.562	15.26	23.98	MCS2
5755	151	14.18	0.562	14.74	30.00	MCS2
5795	159	14.99	0.716	15.71	30.00	MCS3

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	12.87	0.555	13.43	23.98	MCS4
5200	40	12.38	0.899	13.28	23.98	MCS8
5240	48	15.35	0.408	15.76	23.98	MCS3
5260	52	15.21	0.408	15.62	23.98	MCS3
5300	60	15.54	0.408	15.95	23.98	MCS3
5320	64	15.80	0.408	16.21	23.98	MCS3
5500	100	15.35	0.311	15.66	23.98	MCS2
5600	120	15.80	0.408	16.21	23.98	MCS3
5720	144	15.39	0.408	15.80	23.98	MCS3
5745	149	15.40	0.408	15.81	30.00	MCS3
5785	157	16.29	0.408	16.70	30.00	MCS3
5825	165	15.66	0.408	16.07	30.00	MCS3

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	11.95	0.693	12.65	23.98	MCS3
5230	46	14.21	0.560	14.77	23.98	MCS2
5270	54	14.24	0.693	14.93	23.98	MCS3
5310	62	12.11	0.693	12.80	23.98	MCS3
5510	102	12.33	0.693	13.02	23.98	MCS3
5590	118	14.73	0.693	15.43	23.98	MCS3
5710	142	14.54	0.693	15.23	23.98	MCS3
5755	151	14.04	0.693	14.73	30.00	MCS3
5795	159	15.01	0.693	15.70	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	10.45	1.394	11.85	23.98	MCS4
5290	58	9.19	1.799	10.99	23.98	MCS8
5530	106	11.34	1.394	12.74	23.98	MCS4
5610	122	11.75	1.394	13.15	23.98	MCS4
5690	138	11.65	1.394	13.05	23.98	MCS4
5775	155	11.43	1.394	12.83	30.00	MCS4

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	4.127	0.395	4.522	24M	11 dBm/MHz
5200	40	4.016	0.395	4.411	24M	
5240	48	6.476	0.395	6.871	24M	
5260	52	6.404	0.395	6.799	24M	
5300	60	4.313	0.781	5.094	54M	
5320	64	8.187	0.395	8.582	24M	
5500	100	7.707	0.298	8.005	18M	
5600	120	8.038	0.298	8.336	18M	
5720	144	7.661	0.298	7.959	18M	
5745	149	5.209	0.298	5.507	18M	30 dBm/500 kHz
5785	157	6.216	0.298	6.514	18M	
5825	165	5.349	0.298	5.647	18M	

802.11n(20 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5180	36	2.087	0.567	2.654	MCS4	11 dBm/MHz
5200	40	1.497	0.821	2.318	MCS7	
5240	48	4.340	0.567	4.907	MCS4	
5260	52	3.857	0.821	4.678	MCS7	
5300	60	4.512	0.699	5.211	MCS5	
5320	64	5.341	0.821	6.162	MCS7	
5500	100	6.836	0.122	6.958	MCS0	
5600	120	7.126	0.224	7.350	MCS1	
5720	144	6.781	0.224	7.005	MCS1	
5745	149	4.351	0.122	4.473	MCS0	30 dBm/500 kHz
5785	157	5.404	0.224	5.628	MCS1	
5825	165	5.209	0.224	5.433	MCS1	

802.11n(40 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	0.442	0.716	1.158	MCS3	11 dBm/MHz
5230	46	2.360	0.562	2.922	MCS2	
5270	54	2.546	0.716	3.262	MCS3	
5310	62	-0.653	0.716	0.063	MCS3	
5510	102	0.815	0.716	1.531	MCS3	
5590	118	2.861	0.716	3.577	MCS3	
5710	142	3.029	0.562	3.591	MCS2	
5755	151	0.072	0.562	0.634	MCS2	30 dBm /500 kHz
5795	159	0.607	0.716	1.323	MCS3	

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	1.696	0.555	2.251	MCS4	11 dBm/MHz
5200	40	1.294	0.899	2.193	MCS8	
5240	48	6.370	0.408	6.778	MCS3	
5260	52	3.837	0.899	4.736	MCS8	
5300	60	4.255	0.742	4.997	MCS6	
5320	64	5.311	0.899	6.210	MCS8	
5500	100	6.142	0.311	6.453	MCS2	
5600	120	6.590	0.408	6.998	MCS3	
5720	144	6.478	0.408	6.886	MCS3	
5745	149	3.868	0.408	4.276	MCS3	30 dBm/500 kHz
5785	157	4.778	0.408	5.186	MCS3	
5825	165	4.017	0.408	4.425	MCS3	

802.11ac(40 MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Worstcase MCS Index	Limit
Frequency [MHz]	Channel No.					
5190	38	0.370	0.693	1.063	MCS3	11 dBm/MHz
5230	46	2.129	0.560	2.689	MCS2	
5270	54	2.160	0.693	2.853	MCS3	
5310	62	0.090	0.693	0.783	MCS3	
5510	102	0.586	0.693	1.279	MCS3	
5590	118	2.894	0.693	3.587	MCS3	
5710	142	2.622	0.693	3.315	MCS3	
5755	151	-0.047	0.693	0.646	MCS3	30 dBm/500 kHz
5795	159	0.982	0.693	1.675	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	-4.355	1.394	-2.961	MCS4	11 dBm/MHz
5290	58	-7.517	1.799	-5.718	MCS8	
5530	106	-5.817	1.394	-4.423	MCS4	
5610	122	-5.234	1.394	-3.840	MCS4	
5690	138	-5.572	1.394	-4.178	MCS4	
5775	155	-7.399	1.394	-6.005	MCS4	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. 48)	UNII 2A (Ch. 64)
	
UNII 2C (Ch. 120)	**UNII 3 (Ch. 157)**
	

▣ 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. 64)
	
UNII 2C (Ch. 120)	**UNII 3 (Ch. 157)**
	

▣ Test Plots(802.11n(HT40))

Note:

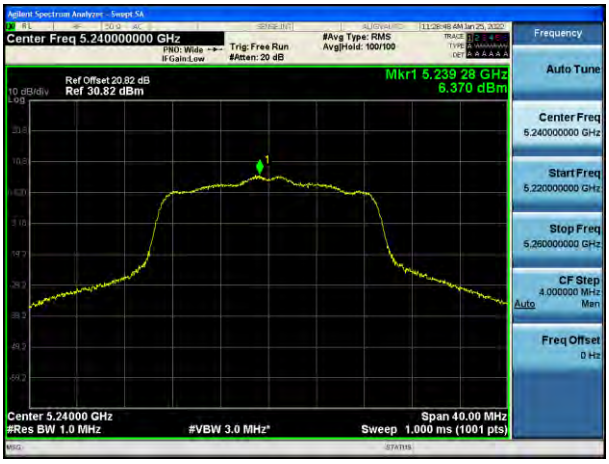
In order to simplify the report, attached plots were only channel of highest power.

UNII 1 (Ch. 46)	UNII 2A (Ch. 54)
	
UNII 2C (Ch. 142)	**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. 48)	UNII 2A (Ch. 64)
	
UNII 2C (Ch. 120)	**UNII 3 (Ch. 157)**
	

▣ 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. 118)	**UNII 3 (Ch. 159)**
	

▣ 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. 122)	**UNII 3 (Ch. 155)**
	

10.6 STRADDLE CHANNEL

10.6.1 26 dB Bandwidth

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11a	UNII 2C	5720	144	5710.44	14.56
802.11n(HT20)				5709.72	15.28
802.11ac(VHT20)				5709.92	15.08
802.11a	UNII 3	5720	144	5729.88	4.88
802.11n(HT20)				5730.36	5.36
802.11ac(VHT20)				5729.96	4.96

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5690.32	34.68
802.11ac(VHT40)				5690.24	34.76
802.11n(HT40)	UNII 3	5710	142	5729.84	4.84
802.11ac(VHT40)				5729.68	4.68

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5645.84	79.16
	UNII 3	5690	138	5736.08	11.08

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	
	

10.6.2 6 dB Bandwidth

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
802.11a	UNII 3	5720	144	5727.56	2.56	> 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

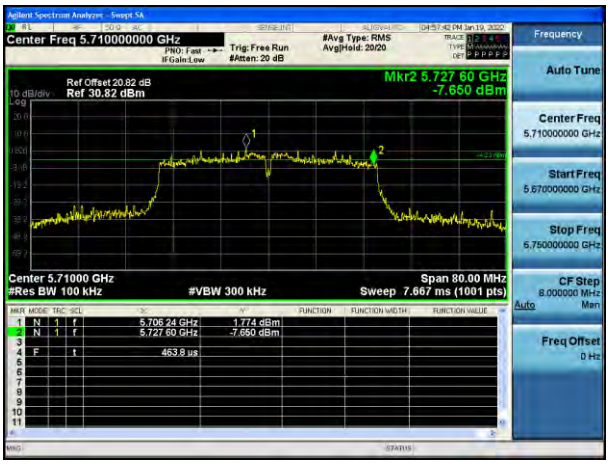
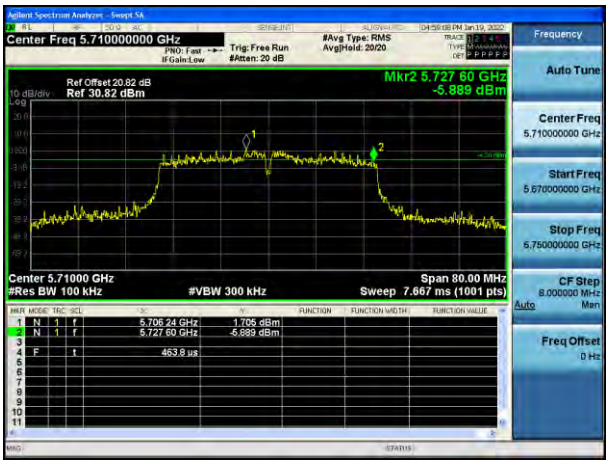
Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT80)	UNII 3	5690	138	5727.92	2.92	> 0.5

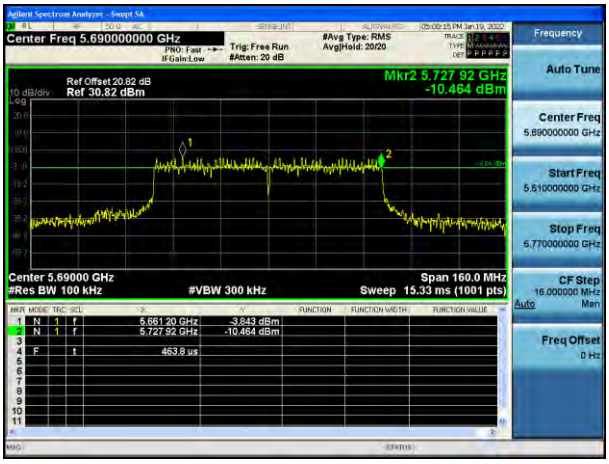
Note:

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


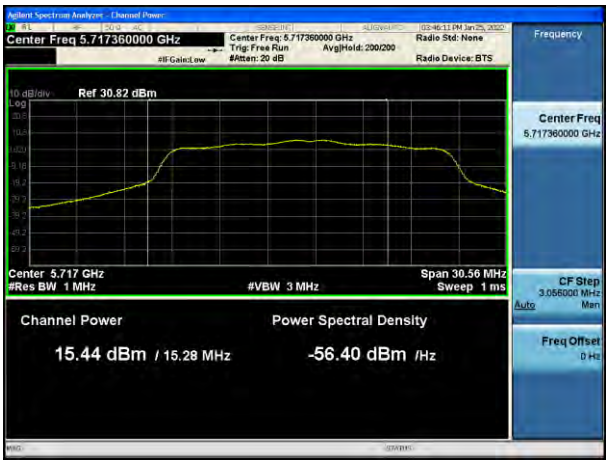
10.6.3 Output Power

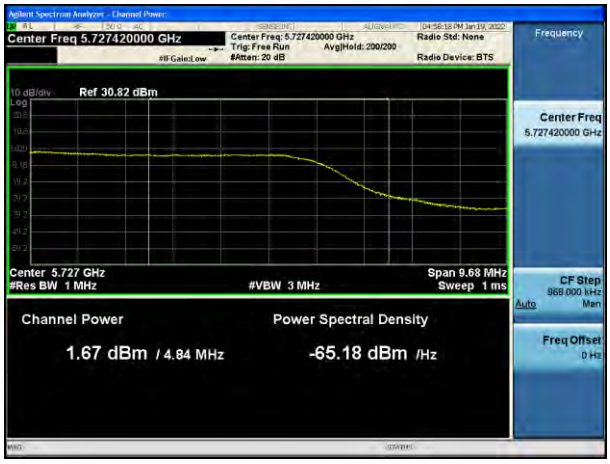
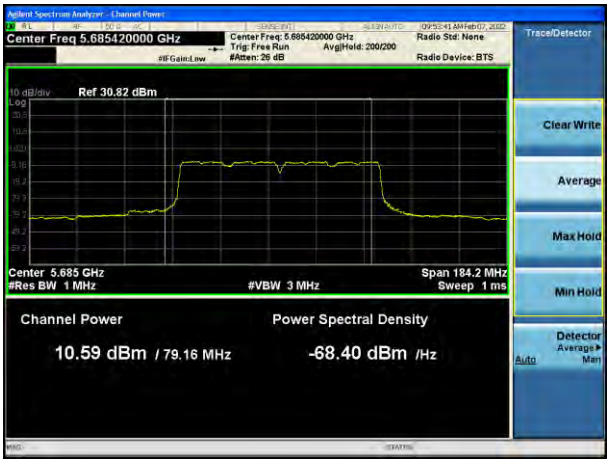
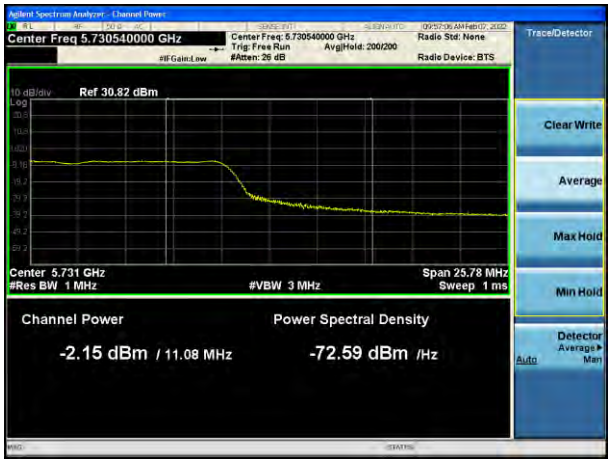
Mode	Frequency [MHz]	Channel	Measured Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Limit (dBm)	Worstcase Datarate
802.11a	5720 (UNII 2C Band)	144	15.85	0.298	16.15	22.63	18 Mbps
802.11n(HT20)			15.44	0.224	15.67	22.84	MCS1
802.11ac(VHT20)			14.82	0.408	15.23	22.78	MCS3
802.11a	5720 (UNII 3 Band)	144	7.52	0.298	7.82	30.00	18 Mbps
802.11n(HT20)			7.65	0.224	7.87	30.00	MCS1
802.11ac(VHT20)			6.99	0.408	7.40	30.00	MCS3

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	14.44	0.562	15.00	23.98	MCS2
802.11ac(VHT40)			14.30	0.693	14.99	23.98	MCS3
802.11n(HT40)	5710 (UNII 3 Band)	142	1.67	0.562	2.23	30.00	MCS2
802.11ac(VHT40)			1.45	0.693	2.14	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	10.59	1.394	11.98	23.98	MCS4
	5690 (UNII 3 Band)	138	-2.15	1.394	-0.76	30.00	MCS4

▣ 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**
	

10.6.4 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	7.454	0.298	7.752	11 dBm/ MHz	18 Mbps
802.11n(HT20)			6.862	0.224	7.085		MCS1
802.11ac(VHT20)			6.240	0.408	6.648		MCS3
802.11a	5720 (UNII 3 Band)	144	1.895	0.298	2.193	30 dBm/ 500 kHz	18 Mbps
802.11n(HT20)			1.728	0.224	1.952		MCS1
802.11ac(VHT20)			1.095	0.408	1.503		MCS3

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	2.758	0.562	3.320	11 dBm/ MHz	MCS2
802.11ac(VHT40)			2.699	0.693	3.392		MCS3
802.11n(HT40)	5710 (UNII 3 Band)	142	-5.630	0.562	-5.068	30 dBm/ 500 kHz	MCS2
802.11ac(VHT40)			-5.714	0.693	-5.021		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	-5.649	1.394	-4.255	11 dBm/ MHz	MCS4
	5690 (UNII 3 Band)	138	-9.086	1.394	-7.692	30 dBm/ 500 kHz	MCS4

▣ 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 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

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.

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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10360	56.13	8.05	V	64.18	68.20	4.02	PK
15540	40.57	12.94	V	53.51	73.98	20.47	PK
15540	27.27	12.94	V	40.21	53.98	13.77	AV
10360	55.35	8.05	H	63.40	68.20	4.80	PK
15540	40.24	12.94	H	53.18	73.98	20.80	PK
15540	27.21	12.94	H	40.15	53.98	13.83	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10400	56.89	8.21	V	65.10	68.20	3.10	PK
15600	40.18	13.31	V	53.49	73.98	20.49	PK
15600	26.78	13.31	V	40.09	53.98	13.89	AV
10400	55.47	8.21	H	63.68	68.20	4.52	PK
15600	40.29	13.31	H	53.60	73.98	20.38	PK
15600	26.88	13.31	H	40.19	53.98	13.79	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10480	56.33	8.55	V	64.88	68.20	3.32	PK
15720	40.16	13.22	V	53.38	73.98	20.60	PK
15720	26.54	13.22	V	39.76	53.98	14.22	AV
10480	56.13	8.55	H	64.68	68.20	3.52	PK
15720	39.94	13.22	H	53.16	73.98	20.82	PK
15720	26.49	13.22	H	39.71	53.98	14.27	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10520	55.49	8.95	V	64.44	68.20	3.76	PK
15780	40.65	13.89	V	54.54	73.98	19.44	PK
15780	27.19	13.89	V	41.08	53.98	12.90	AV
10520	54.73	8.95	H	63.68	68.20	4.52	PK
15780	40.47	13.89	H	54.36	73.98	19.62	PK
15780	27.22	13.89	H	41.11	53.98	12.87	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10600	53.04	9.57	V	62.61	73.98	11.37	PK
10600	38.86	9.57	V	48.43	53.98	5.55	AV
15900	41.23	13.31	V	54.54	73.98	19.44	PK
15900	27.84	13.31	V	41.15	53.98	12.83	AV
10600	52.22	9.57	H	61.79	73.98	12.19	PK
10600	38.06	9.57	H	47.63	53.98	6.35	AV
15900	40.98	13.31	H	54.29	73.98	19.69	PK
15900	27.93	13.31	H	41.24	53.98	12.74	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10640	53.21	9.71	V	62.92	73.98	11.06	PK
10640	38.36	9.71	V	48.07	53.98	5.91	AV
15960	41.02	12.93	V	53.95	73.98	20.03	PK
15960	27.70	12.93	V	40.63	53.98	13.35	AV
10640	52.45	9.71	H	62.16	73.98	11.82	PK
10640	37.84	9.71	H	47.55	53.98	6.43	AV
15960	41.10	12.93	H	54.03	73.98	19.95	PK
15960	27.74	12.93	H	40.67	53.98	13.31	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11000	48.14	9.69	V	57.83	73.98	16.15	PK
11000	34.68	9.69	V	44.37	53.98	9.61	AV
16500	41.70	12.08	V	53.78	68.20	14.42	PK
11000	47.13	9.69	H	56.82	73.98	17.16	PK
11000	33.58	9.69	H	43.27	53.98	10.71	AV
16500	41.91	12.08	H	53.99	68.20	14.21	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11200	46.98	10.27	V	57.25	73.98	16.73	PK
11200	33.20	10.27	V	43.47	53.98	10.51	AV
16800	41.36	11.78	V	53.14	68.20	15.06	PK
11200	45.10	10.27	H	55.37	73.98	18.61	PK
11200	31.88	10.27	H	42.15	53.98	11.83	AV
16800	42.13	11.78	H	53.91	68.20	14.29	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11440	46.68	10.57	V	57.25	73.98	16.73	PK
11440	33.44	10.57	V	44.01	53.98	9.97	AV
17160	41.15	12.01	V	53.16	68.20	15.04	PK
11440	44.81	10.57	H	55.38	73.98	18.60	PK
11440	30.94	10.57	H	41.51	53.98	12.47	AV
17160	41.10	12.01	H	53.11	68.20	15.09	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11490	45.97	10.49	V	56.46	73.98	17.52	PK
11490	33.33	10.49	V	43.82	53.98	10.16	AV
17235	41.18	12.22	V	53.40	68.20	14.80	PK
11490	44.26	10.49	H	54.75	73.98	19.23	PK
11490	31.02	10.49	H	41.51	53.98	12.47	AV
17235	41.59	12.22	H	53.81	68.20	14.39	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11570	48.33	9.92	V	58.25	73.98	15.73	PK
11570	35.31	9.92	V	45.23	53.98	8.75	AV
17355	41.08	13.11	V	54.19	68.20	14.01	PK
11570	45.02	9.92	H	54.94	73.98	19.04	PK
11570	32.22	9.92	H	42.14	53.98	11.84	AV
17355	41.35	13.11	H	54.46	68.20	13.74	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11650	48.90	9.60	V	58.50	73.98	15.48	PK
11650	35.33	9.60	V	44.93	53.98	9.05	AV
17475	41.05	14.27	V	55.32	68.20	12.88	PK
11650	45.46	9.60	H	55.06	73.98	18.92	PK
11650	32.49	9.60	H	42.09	53.98	11.89	AV
17475	40.70	14.27	H	54.97	68.20	13.23	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10360	55.63	8.05	V	63.68	68.20	4.52	PK
15540	41.01	12.94	V	53.95	73.98	20.03	PK
15540	27.32	12.94	V	40.26	53.98	13.72	AV
10360	54.29	8.05	H	62.34	68.20	5.86	PK
15540	40.49	12.94	H	53.43	73.98	20.55	PK
15540	27.09	12.94	H	40.03	53.98	13.95	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10400	55.94	8.21	V	64.15	68.20	4.05	PK
15600	40.14	13.31	V	53.45	73.98	20.53	PK
15600	26.80	13.31	V	40.11	53.98	13.87	AV
10400	54.81	8.21	H	63.02	68.20	5.18	PK
15600	40.41	13.31	H	53.72	73.98	20.26	PK
15600	26.87	13.31	H	40.18	53.98	13.80	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10480	56.23	8.55	V	64.78	68.20	3.42	PK
15720	39.91	13.22	V	53.13	73.98	20.85	PK
15720	26.60	13.22	V	39.82	53.98	14.16	AV
10480	55.18	8.55	H	63.73	68.20	4.47	PK
15720	39.69	13.22	H	52.91	73.98	21.07	PK
15720	26.51	13.22	H	39.73	53.98	14.25	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10520	55.40	8.95	V	64.35	68.20	3.85	PK
15780	40.54	13.89	V	54.43	73.98	19.55	PK
15780	27.21	13.89	V	41.10	53.98	12.88	AV
10520	54.56	8.95	H	63.51	68.20	4.69	PK
15780	40.35	13.89	H	54.24	73.98	19.74	PK
15780	27.32	13.89	H	41.21	53.98	12.77	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10600	52.65	9.57	V	62.22	73.98	11.76	PK
10600	38.40	9.57	V	47.97	53.98	6.01	AV
15900	41.56	13.31	V	54.87	73.98	19.11	PK
15900	27.91	13.31	V	41.22	53.98	12.76	AV
10600	51.70	9.57	H	61.27	73.98	12.71	PK
10600	37.96	9.57	H	47.53	53.98	6.45	AV
15900	41.07	13.31	H	54.38	73.98	19.60	PK
15900	27.93	13.31	H	41.24	53.98	12.74	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10640	52.66	9.71	V	62.37	73.98	11.61	PK
10640	38.16	9.71	V	47.87	53.98	6.11	AV
15960	41.11	12.93	V	54.04	73.98	19.94	PK
15960	27.69	12.93	V	40.62	53.98	13.36	AV
10640	51.83	9.71	H	61.54	73.98	12.44	PK
10640	37.62	9.71	H	47.33	53.98	6.65	AV
15960	41.26	12.93	H	54.19	73.98	19.79	PK
15960	27.66	12.93	H	40.59	53.98	13.39	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11000	47.33	9.69	V	57.02	73.98	16.96	PK
11000	33.81	9.69	V	43.50	53.98	10.48	AV
16500	41.59	12.08	V	53.67	68.20	14.53	PK
11000	47.37	9.69	H	57.06	73.98	16.92	PK
11000	33.40	9.69	H	43.09	53.98	10.89	AV
16500	41.89	12.08	H	53.97	68.20	14.23	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11200	45.73	10.27	V	56.00	73.98	17.98	PK
11200	33.13	10.27	V	43.40	53.98	10.58	AV
16800	41.95	11.78	V	53.73	68.20	14.47	PK
11200	44.37	10.27	H	54.64	73.98	19.34	PK
11200	31.61	10.27	H	41.88	53.98	12.10	AV
16800	41.85	11.78	H	53.63	68.20	14.57	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11440	46.13	10.57	V	56.70	73.98	17.28	PK
11440	33.10	10.57	V	43.67	53.98	10.31	AV
17160	40.81	12.01	V	52.82	68.20	15.38	PK
11440	44.18	10.57	H	54.75	73.98	19.23	PK
11440	31.32	10.57	H	41.89	53.98	12.09	AV
17160	41.76	12.01	H	53.77	68.20	14.43	PK

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

Frequency [MHz]	Measured Level [dBμV]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11490	45.95	10.49	V	56.44	73.98	17.54	PK
11490	32.99	10.49	V	43.48	53.98	10.50	AV
17235	41.46	12.22	V	53.68	68.20	14.52	PK
11490	44.13	10.49	H	54.62	73.98	19.36	PK
11490	30.95	10.49	H	41.44	53.98	12.54	AV
17235	40.97	12.22	H	53.19	68.20	15.01	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11570	48.52	9.92	V	58.44	73.98	15.54	PK
11570	34.81	9.92	V	44.73	53.98	9.25	AV
17355	40.81	13.11	V	53.92	68.20	14.28	PK
11570	45.27	9.92	H	55.19	73.98	18.79	PK
11570	32.17	9.92	H	42.09	53.98	11.89	AV
17355	40.82	13.11	H	53.93	68.20	14.27	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11650	48.37	9.60	V	57.97	73.98	16.01	PK
11650	35.01	9.60	V	44.61	53.98	9.37	AV
17475	41.03	14.27	V	55.30	68.20	12.90	PK
11650	45.91	9.60	H	55.51	73.98	18.47	PK
11650	32.13	9.60	H	41.73	53.98	12.25	AV
17475	40.52	14.27	H	54.79	68.20	13.41	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10360	56.22	8.05	V	64.27	68.20	3.93	PK
15540	40.64	12.94	V	53.58	73.98	20.40	PK
15540	27.09	12.94	V	40.03	53.98	13.95	AV
10360	55.45	8.05	H	63.50	68.20	4.70	PK
15540	40.23	12.94	H	53.17	73.98	20.81	PK
15540	27.10	12.94	H	40.04	53.98	13.94	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10400	56.23	8.21	V	64.44	68.20	3.76	PK
15600	40.19	13.31	V	53.50	73.98	20.48	PK
15600	26.77	13.31	V	40.08	53.98	13.90	AV
10400	54.23	8.21	H	62.44	68.20	5.76	PK
15600	40.12	13.31	H	53.43	73.98	20.55	PK
15600	26.80	13.31	H	40.11	53.98	13.87	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10480	56.16	8.55	V	64.71	68.20	3.49	PK
15720	40.32	13.22	V	53.54	73.98	20.44	PK
15720	26.50	13.22	V	39.72	53.98	14.26	AV
10480	55.22	8.55	H	63.77	68.20	4.43	PK
15720	39.63	13.22	H	52.85	73.98	21.13	PK
15720	26.54	13.22	H	39.76	53.98	14.22	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10520	55.58	8.95	V	64.53	68.20	3.67	PK
15780	40.81	13.89	V	54.70	73.98	19.28	PK
15780	27.20	13.89	V	41.09	53.98	12.89	AV
10520	54.90	8.95	H	63.85	68.20	4.35	PK
15780	40.52	13.89	H	54.41	73.98	19.57	PK
15780	27.35	13.89	H	41.24	53.98	12.74	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10600	53.70	9.57	V	63.27	73.98	10.71	PK
10600	39.63	9.57	V	49.20	53.98	4.78	AV
15900	41.37	13.31	V	54.68	73.98	19.30	PK
15900	27.79	13.31	V	41.10	53.98	12.88	AV
10600	52.05	9.57	H	61.62	73.98	12.36	PK
10600	40.83	9.57	H	50.40	53.98	3.58	AV
15900	41.71	13.31	H	55.02	73.98	18.96	PK
15900	27.95	13.31	H	41.26	53.98	12.72	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10640	53.57	9.71	V	63.28	73.98	10.70	PK
10640	39.87	9.71	V	49.58	53.98	4.40	AV
15960	41.07	12.93	V	54.00	73.98	19.98	PK
15960	27.72	12.93	V	40.65	53.98	13.33	AV
10640	52.17	9.71	H	61.88	73.98	12.10	PK
10640	38.61	9.71	H	48.32	53.98	5.66	AV
15960	41.06	12.93	H	53.99	73.98	19.99	PK
15960	27.70	12.93	H	40.63	53.98	13.35	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11000	48.43	9.69	V	58.12	73.98	15.86	PK
11000	33.28	9.69	V	42.97	53.98	11.01	AV
16500	41.61	12.08	V	53.69	68.20	14.51	PK
11000	45.46	9.69	H	55.15	73.98	18.83	PK
11000	32.43	9.69	H	42.12	53.98	11.86	AV
16500	42.64	12.08	H	54.72	68.20	13.48	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11200	44.02	10.27	V	54.29	73.98	19.69	PK
11200	30.79	10.27	V	41.06	53.98	12.92	AV
16800	42.39	11.78	V	54.17	68.20	14.03	PK
11200	44.57	10.27	H	54.84	73.98	19.14	PK
11200	31.08	10.27	H	41.35	53.98	12.63	AV
16800	41.45	11.78	H	53.23	68.20	14.97	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11440	45.42	10.57	V	55.99	73.98	17.99	PK
11440	32.26	10.57	V	42.83	53.98	11.15	AV
17160	41.74	12.01	V	53.75	68.20	14.45	PK
11440	43.34	10.57	H	53.91	73.98	20.07	PK
11440	30.46	10.57	H	41.03	53.98	12.95	AV
17160	40.97	12.01	H	52.98	68.20	15.22	PK

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

Frequency [MHz]	Measured Level [dBμV]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11490	45.77	10.49	V	56.26	73.98	17.72	PK
11490	32.11	10.49	V	42.60	53.98	11.38	AV
17235	41.12	12.22	V	53.34	68.20	14.86	PK
11490	43.80	10.49	H	54.29	73.98	19.69	PK
11490	30.44	10.49	H	40.93	53.98	13.05	AV
17235	41.64	12.22	H	53.86	68.20	14.34	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11570	46.91	9.92	V	56.83	73.98	17.15	PK
11570	33.64	9.92	V	43.56	53.98	10.42	AV
17355	41.04	13.11	V	54.15	68.20	14.05	PK
11570	45.53	9.92	H	55.45	73.98	18.53	PK
11570	32.10	9.92	H	42.02	53.98	11.96	AV
17355	40.77	13.11	H	53.88	68.20	14.32	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11650	47.31	9.60	V	56.91	73.98	17.07	PK
11650	34.04	9.60	V	43.64	53.98	10.34	AV
17475	40.34	14.27	V	54.61	68.20	13.59	PK
11650	44.42	9.60	H	54.02	73.98	19.96	PK
11650	31.60	9.60	H	41.20	53.98	12.78	AV
17475	40.43	14.27	H	54.70	68.20	13.50	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10380	55.15	8.19	V	63.34	68.20	4.86	PK
15570	40.50	13.31	V	53.81	73.98	20.17	PK
15570	27.60	13.31	V	40.91	53.98	13.07	AV
10380	54.28	8.19	H	62.47	68.20	5.73	PK
15570	40.78	13.31	H	54.09	73.98	19.89	PK
15570	27.70	13.31	H	41.01	53.98	12.97	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10460	52.08	8.47	V	60.55	68.20	7.65	PK
15690	40.19	13.28	V	53.47	73.98	20.51	PK
15690	27.49	13.28	V	40.77	53.98	13.21	AV
10460	53.26	8.47	H	61.73	68.20	6.47	PK
15690	39.84	13.28	H	53.12	73.98	20.86	PK
15690	27.61	13.28	H	40.89	53.98	13.09	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10540	50.23	8.96	V	59.19	68.20	9.01	PK
15810	41.29	13.42	V	54.71	73.98	19.27	PK
15810	28.29	13.42	V	41.71	53.98	12.27	AV
10540	51.20	8.96	H	60.16	68.20	8.04	PK
15810	41.29	13.42	H	54.71	73.98	19.27	PK
15810	28.41	13.42	H	41.83	53.98	12.15	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10620	50.08	9.64	V	59.72	73.98	14.26	PK
10620	37.27	9.64	V	46.91	53.98	7.07	AV
15930	40.67	12.85	V	53.52	73.98	20.46	PK
15930	28.38	12.85	V	41.23	53.98	12.75	AV
10620	49.47	9.64	H	59.11	73.98	14.87	PK
10620	36.44	9.64	H	46.08	53.98	7.90	AV
15930	41.66	12.85	H	54.51	73.98	19.47	PK
15930	28.59	12.85	H	41.44	53.98	12.54	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11020	44.15	9.60	V	53.75	73.98	20.23	PK
11020	32.01	9.60	V	41.61	53.98	12.37	AV
16530	42.20	12.02	V	54.22	68.20	13.98	PK
11020	44.49	9.60	H	54.09	73.98	19.89	PK
11020	31.50	9.60	H	41.10	53.98	12.88	AV
16530	41.40	12.02	H	53.42	68.20	14.78	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11180	44.48	10.18	V	54.66	73.98	19.32	PK
11180	31.50	10.18	V	41.68	53.98	12.30	AV
16770	41.47	11.62	V	53.09	68.20	15.11	PK
11180	43.48	10.18	H	53.66	73.98	20.32	PK
11180	30.69	10.18	H	40.87	53.98	13.11	AV
16770	41.65	11.62	H	53.27	68.20	14.93	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11420	44.14	10.53	V	54.67	73.98	19.31	PK
11420	31.14	10.53	V	41.67	53.98	12.31	AV
17130	41.45	11.60	V	53.05	68.20	15.15	PK
11420	42.52	10.53	H	53.05	73.98	20.93	PK
11420	30.20	10.53	H	40.73	53.98	13.25	AV
17130	41.41	11.60	H	53.01	68.20	15.19	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11510	43.73	10.34	V	54.07	73.98	19.91	PK
11510	31.42	10.34	V	41.76	53.98	12.22	AV
17265	41.08	12.43	V	53.51	68.20	14.69	PK
11510	43.29	10.34	H	53.63	73.98	20.35	PK
11510	30.60	10.34	H	40.94	53.98	13.04	AV
17265	41.85	12.43	H	54.28	68.20	13.92	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11590	45.79	9.75	V	55.54	73.98	18.44	PK
11590	32.92	9.75	V	42.67	53.98	11.31	AV
17385	40.74	13.20	V	53.94	68.20	14.26	PK
11590	43.41	9.75	H	53.16	73.98	20.82	PK
11590	30.80	9.75	H	40.55	53.98	13.43	AV
17385	40.60	13.20	H	53.80	68.20	14.40	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10380	55.66	8.19	V	63.85	68.20	4.35	PK
15570	40.04	13.31	V	53.35	73.98	20.63	PK
15570	27.88	13.31	V	41.19	53.98	12.79	AV
10380	54.10	8.19	H	62.29	68.20	5.91	PK
15570	40.28	13.31	H	53.59	73.98	20.39	PK
15570	27.75	13.31	H	41.06	53.98	12.92	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10460	51.86	8.47	V	60.33	68.20	7.87	PK
15690	40.07	13.28	V	53.35	73.98	20.63	PK
15690	27.46	13.28	V	40.74	53.98	13.24	AV
10460	53.28	8.47	H	61.75	68.20	6.45	PK
15690	39.79	13.28	H	53.07	73.98	20.91	PK
15690	27.31	13.28	H	40.59	53.98	13.39	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10540	50.01	8.96	V	58.97	68.20	9.23	PK
15810	41.06	13.42	V	54.48	73.98	19.50	PK
15810	28.32	13.42	V	41.74	53.98	12.24	AV
10540	50.95	8.96	H	59.91	68.20	8.29	PK
15810	41.35	13.42	H	54.77	73.98	19.21	PK
15810	28.35	13.42	H	41.77	53.98	12.21	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10620	49.72	9.64	V	59.36	73.98	14.62	PK
10620	37.42	9.64	V	47.06	53.98	6.92	AV
15930	40.76	12.85	V	53.61	73.98	20.37	PK
15930	28.50	12.85	V	41.35	53.98	12.63	AV
10620	49.11	9.64	H	58.75	73.98	15.23	PK
10620	36.63	9.64	H	46.27	53.98	7.71	AV
15930	41.05	12.85	H	53.90	73.98	20.08	PK
15930	28.64	12.85	H	41.49	53.98	12.49	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11020	44.66	9.60	V	54.26	73.98	19.72	PK
11020	31.96	9.60	V	41.56	53.98	12.42	AV
16530	41.75	12.02	V	53.77	68.20	14.43	PK
11020	43.71	9.60	H	53.31	73.98	20.67	PK
11020	31.59	9.60	H	41.19	53.98	12.79	AV
16530	41.60	12.02	H	53.62	68.20	14.58	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11180	43.55	10.18	V	53.73	73.98	20.25	PK
11180	31.45	10.18	V	41.63	53.98	12.35	AV
16770	41.56	11.62	V	53.18	68.20	15.02	PK
11180	43.43	10.18	H	53.61	73.98	20.37	PK
11180	30.56	10.18	H	40.74	53.98	13.24	AV
16770	41.91	11.62	H	53.53	68.20	14.67	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11420	43.42	10.53	V	53.95	73.98	20.03	PK
11420	31.33	10.53	V	41.86	53.98	12.12	AV
17130	41.78	11.60	V	53.38	68.20	14.82	PK
11420	43.07	10.53	H	53.60	73.98	20.38	PK
11420	30.08	10.53	H	40.61	53.98	13.37	AV
17130	41.40	11.60	H	53.00	68.20	15.20	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11510	43.60	10.34	V	53.94	73.98	20.04	PK
11510	31.21	10.34	V	41.55	53.98	12.43	AV
17265	41.54	12.43	V	53.97	68.20	14.23	PK
11510	42.91	10.34	H	53.25	73.98	20.73	PK
11510	30.70	10.34	H	41.04	53.98	12.94	AV
17265	41.64	12.43	H	54.07	68.20	14.13	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11590	44.85	9.75	V	54.60	73.98	19.38	PK
11590	32.85	9.75	V	42.60	53.98	11.38	AV
17385	40.51	13.20	V	53.71	68.20	14.49	PK
11590	43.57	9.75	H	53.32	73.98	20.66	PK
11590	31.19	9.75	H	40.94	53.98	13.04	AV
17385	40.79	13.20	H	53.99	68.20	14.21	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10420	49.62	8.31	V	57.93	68.20	10.27	PK
15630	40.08	13.20	V	53.28	73.98	20.70	PK
15630	27.74	13.20	V	40.94	53.98	13.04	AV
10420	48.32	8.31	H	56.63	68.20	11.57	PK
15630	40.07	13.20	H	53.27	73.98	20.71	PK
15630	27.92	13.20	H	41.12	53.98	12.86	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10580	45.98	9.39	V	55.37	68.20	12.83	PK
15870	41.12	13.57	V	54.69	73.98	19.29	PK
15870	29.37	13.57	V	42.94	53.98	11.04	AV
10580	46.88	9.39	H	56.27	68.20	11.93	PK
15870	41.56	13.57	H	55.13	73.98	18.85	PK
15870	29.48	13.57	H	43.05	53.98	10.93	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11060	42.50	9.89	V	52.39	73.98	21.59	PK
11060	30.36	9.89	V	40.25	53.98	13.73	AV
16590	41.90	11.76	V	53.66	68.20	14.54	PK
11060	42.33	9.89	H	52.22	73.98	21.76	PK
11060	30.63	9.89	H	40.52	53.98	13.46	AV
16590	41.65	11.76	H	53.41	68.20	14.79	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11220	43.27	10.21	V	53.48	73.98	20.50	PK
11220	30.42	10.21	V	40.63	53.98	13.35	AV
16830	41.94	11.80	V	53.74	68.20	14.46	PK
11220	42.54	10.21	H	52.75	73.98	21.23	PK
11220	30.62	10.21	H	40.83	53.98	13.15	AV
16830	42.08	11.80	H	53.88	68.20	14.32	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11380	42.65	10.42	V	53.07	73.98	20.91	PK
11380	30.77	10.42	V	41.19	53.98	12.79	AV
17070	41.57	11.74	V	53.31	68.20	14.89	PK
11380	42.21	10.42	H	52.63	73.98	21.35	PK
11380	30.41	10.42	H	40.83	53.98	13.15	AV
17070	40.88	11.74	H	52.62	68.20	15.58	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]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
11550	42.37	9.98	V	52.35	73.98	21.63	PK
11550	30.46	9.98	V	40.44	53.98	13.54	AV
17325	41.84	12.90	V	54.74	68.20	13.46	PK
11550	41.93	9.98	H	51.91	73.98	22.07	PK
11550	30.05	9.98	H	40.03	53.98	13.95	AV
17325	40.99	12.90	H	53.89	68.20	14.31	PK

[DBS Mode]

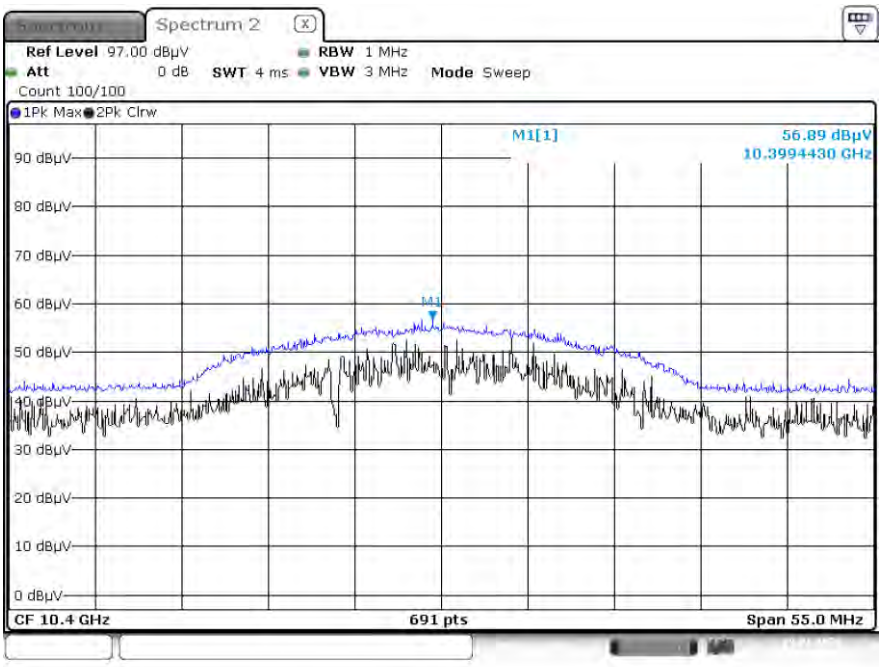
WLAN/BT Ant : 802.11a 6 Mbps ch. 40 & Bluetooth Ch. 39 (π/4DQPSK)

Frequency [MHz]	Measured Level [dBμV]	C.L+A.F +D.F-A.G [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10400	56.23	8.21	V	64.44	68.20	3.76	PK
15600	40.58	13.31	V	53.89	73.98	20.09	PK
15600	27.96	13.31	V	41.27	53.98	12.71	AV
10400	55.51	8.21	H	63.72	68.20	4.48	PK
15600	40.64	13.31	H	53.95	73.98	20.03	PK
15600	27.99	13.31	H	41.30	53.98	12.68	AV

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

▣ Test Plots

Peak Result (802.11a 6 Mbps, Ch.40 2nd Harmonic, X-V)



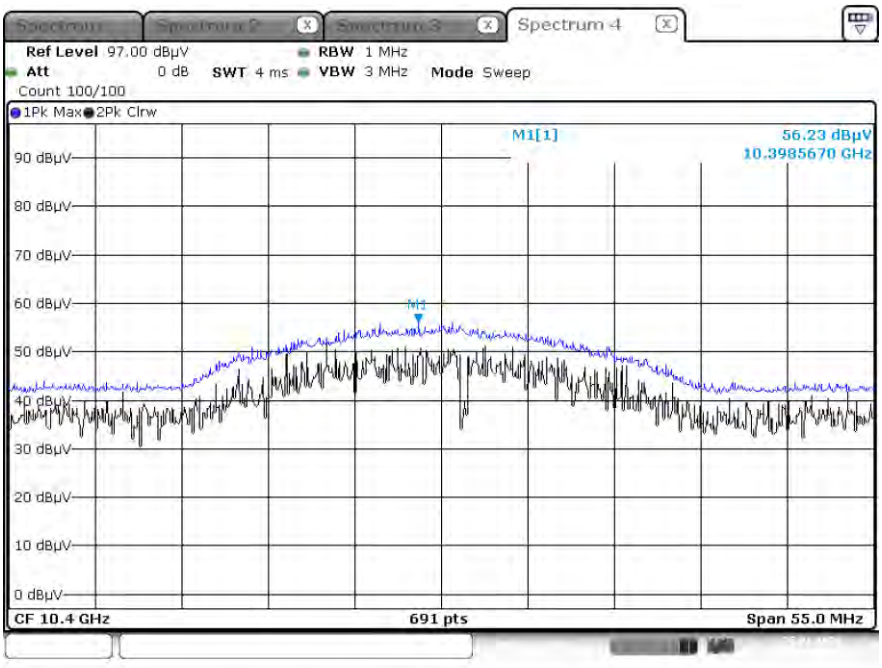
Note:

Only the worst case plots for Radiated Spurious Emissions.

▣ Test Plots (DBS)

WLAN/BT Ant : 802.11a 6 Mbps ch. 40 & Bluetooth Ch. 39 (π/4DQPSK)

Radiated Spurious Emissions plot – Peak Result (2nd Harmonic, X-V)



Note:

Only the worst case plots for Radiated Spurious Emissions.

10.8 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	51.73	9.11	H	60.84	73.98	13.14	PK
5150	38.00	9.11	H	47.11	53.98	6.87	AV
5150	51.52	9.11	V	60.63	73.98	13.35	PK
5150	37.79	9.11	V	46.90	53.98	7.08	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	42.07	8.71	H	50.78	53.98	3.20	AV
5350	55.39	8.71	V	64.10	73.98	9.88	PK
5350	40.54	8.71	V	49.25	53.98	4.73	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	44.73	9.30	H	54.03	73.98	19.95	PK
5460	32.37	9.30	H	41.67	53.98	12.31	AV
5470	48.01	9.34	H	57.35	68.20	10.85	PK
5460	43.85	9.30	V	53.15	73.98	20.83	PK
5460	31.59	9.30	V	40.89	53.98	13.09	AV
5470	46.97	9.34	V	56.31	68.20	11.89	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	50.91	9.11	H	60.02	73.98	13.96	PK
5150	38.10	9.11	H	47.21	53.98	6.77	AV
5150	50.78	9.11	V	59.89	73.98	14.09	PK
5150	37.88	9.11	V	46.99	53.98	6.99	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	53.99	8.71	H	62.70	73.98	11.28	PK
5350	40.10	8.71	H	48.81	53.98	5.17	AV
5350	52.42	8.71	V	61.13	73.98	12.85	PK
5350	39.93	8.71	V	48.64	53.98	5.34	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	44.97	9.30	H	54.27	73.98	19.71	PK
5460	32.43	9.30	H	41.73	53.98	12.25	AV
5470	47.97	9.34	H	57.31	68.20	10.89	PK
5460	44.02	9.30	V	53.32	73.98	20.66	PK
5460	31.55	9.30	V	40.85	53.98	13.13	AV
5470	47.16	9.34	V	56.50	68.20	11.70	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	49.26	9.11	H	58.37	73.98	15.61	PK
5150	35.77	9.11	H	44.88	53.98	9.10	AV
5150	49.18	9.11	V	58.29	73.98	15.69	PK
5150	35.67	9.11	V	44.78	53.98	9.20	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	51.46	8.71	H	60.17	73.98	13.81	PK
5350	38.70	8.71	H	47.41	53.98	6.57	AV
5350	50.78	8.71	V	59.49	73.98	14.49	PK
5350	37.91	8.71	V	46.62	53.98	7.36	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	45.24	9.30	H	54.54	73.98	19.44	PK
5460	32.36	9.30	H	41.66	53.98	12.32	AV
5470	48.84	9.34	H	58.18	68.20	10.02	PK
5460	44.46	9.30	V	53.76	73.98	20.22	PK
5460	31.74	9.30	V	41.04	53.98	12.94	AV
5470	48.21	9.34	V	57.55	68.20	10.65	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	51.67	9.11	H	60.78	73.98	13.20	PK
5150	40.01	9.11	H	49.12	53.98	4.86	AV
5150	50.88	9.11	V	59.99	73.98	13.99	PK
5150	39.13	9.11	V	48.24	53.98	5.74	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	57.58	8.71	H	66.29	73.98	7.69	PK
5350	41.16	8.71	H	49.87	53.98	4.11	AV
5350	56.27	8.71	V	64.98	73.98	9.00	PK
5350	40.92	8.71	V	49.63	53.98	4.35	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	47.39	9.30	H	56.69	73.98	17.29	PK
5460	35.33	9.30	H	44.63	53.98	9.35	AV
5470	53.73	9.34	H	63.07	68.20	5.13	PK
5460	46.54	9.30	V	55.84	73.98	18.14	PK
5460	34.67	9.30	V	43.97	53.98	10.01	AV
5470	53.22	9.34	V	62.56	68.20	5.64	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	52.55	9.11	H	61.66	73.98	12.32	PK
5150	40.29	9.11	H	49.40	53.98	4.58	AV
5150	51.47	9.11	V	60.58	73.98	13.40	PK
5150	39.68	9.11	V	48.79	53.98	5.19	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	60.65	8.71	H	69.36	73.98	4.62	PK
5350	42.87	8.71	H	51.58	53.98	2.40	AV
5350	59.87	8.71	V	68.58	73.98	5.40	PK
5350	42.56	8.71	V	51.27	53.98	2.71	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	48.03	9.30	H	57.33	73.98	16.65	PK
5460	35.24	9.30	H	44.54	53.98	9.44	AV
5470	53.66	9.34	H	63.00	68.20	5.20	PK
5460	47.21	9.30	V	56.51	73.98	17.47	PK
5460	34.49	9.30	V	43.79	53.98	10.19	AV
5470	52.83	9.34	V	62.17	68.20	6.03	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	48.20	9.11	H	57.31	73.98	16.67	PK
5150	38.27	9.11	H	47.38	53.98	6.60	AV
5150	47.79	9.11	V	56.90	73.98	17.08	PK
5150	37.60	9.11	V	46.71	53.98	7.27	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	54.86	8.71	H	63.57	73.98	10.41	PK
5350	42.91	8.71	H	51.62	53.98	2.36	AV
5350	53.02	8.71	V	61.73	73.98	12.25	PK
5350	41.63	8.71	V	50.34	53.98	3.64	AV

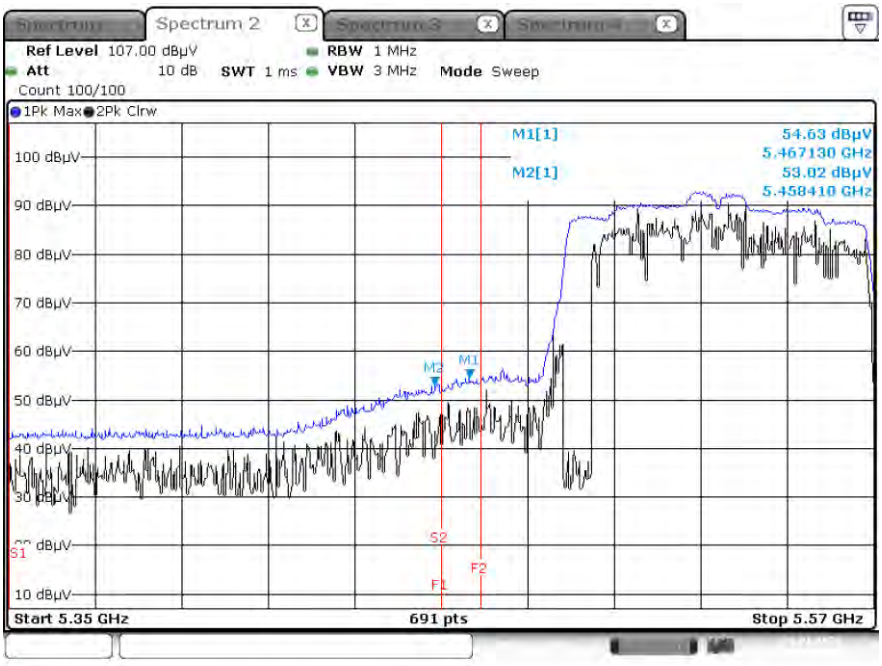
Band :	UNII 2C
Operation Mode:	802.11 ac_VHT80
Transfer MCS Index:	0
Operating Frequency	5530 MHz
Channel No.	106 Ch

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	53.02	9.30	H	62.32	73.98	11.66	PK
5460	41.34	9.30	H	50.64	53.98	3.34	AV
5470	54.63	9.34	H	63.97	68.20	4.23	PK
5460	52.25	9.30	V	61.55	73.98	12.43	PK
5460	40.97	9.30	V	50.27	53.98	3.71	AV
5470	53.86	9.34	V	63.20	68.20	5.00	PK

▣ Test Plots(UNII 1, 2A, 2C)

Average Result (802.11 ac_VHT80_MCS0, Ch.58, X-H)

Peak Result (802.11 ac_VHT80_ MCS0, Ch.106, X-H)

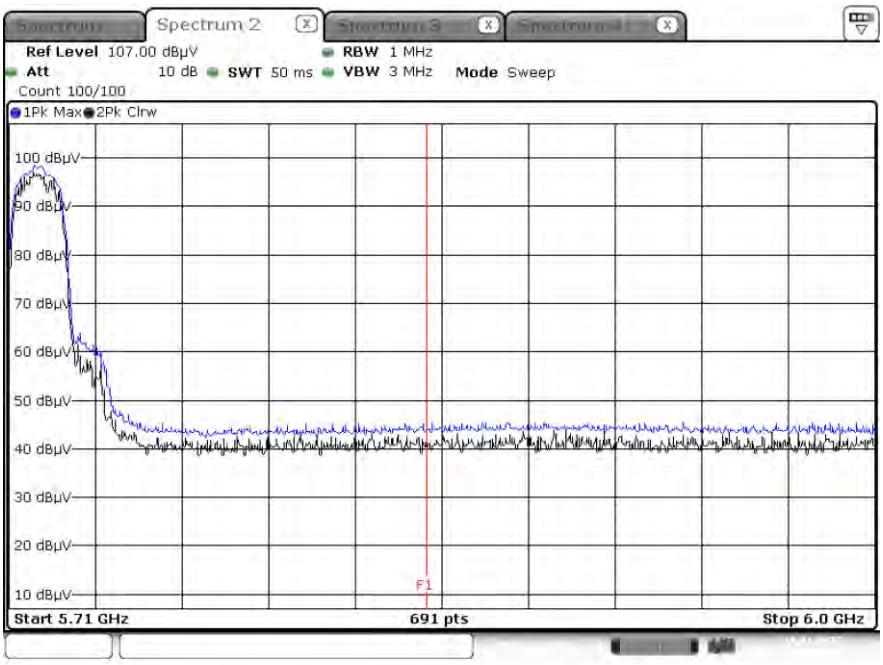


Note:

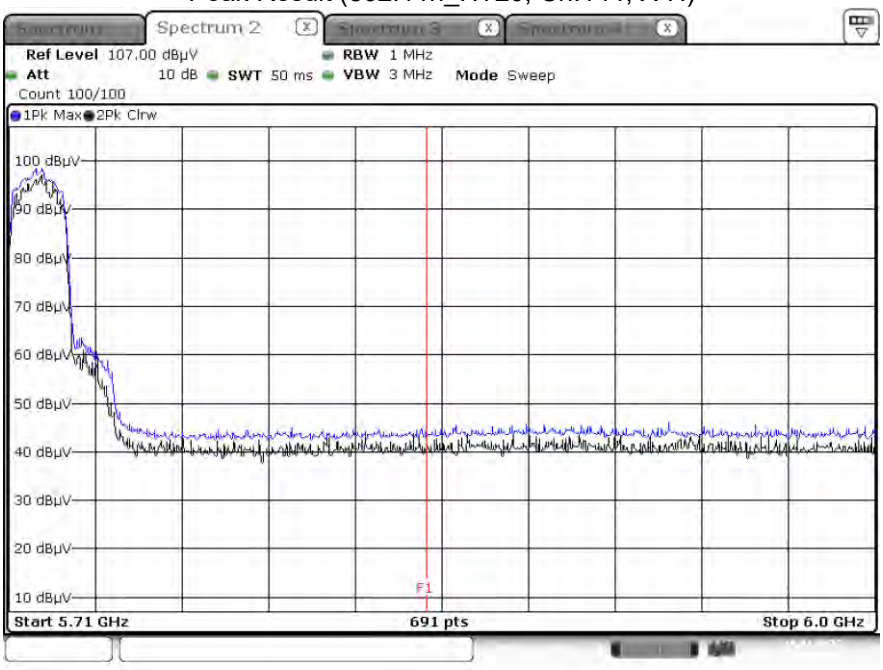
Only the worst case plots for Radiated Restricted Band Edge.

▣ Test Plots(Straddle Channel)

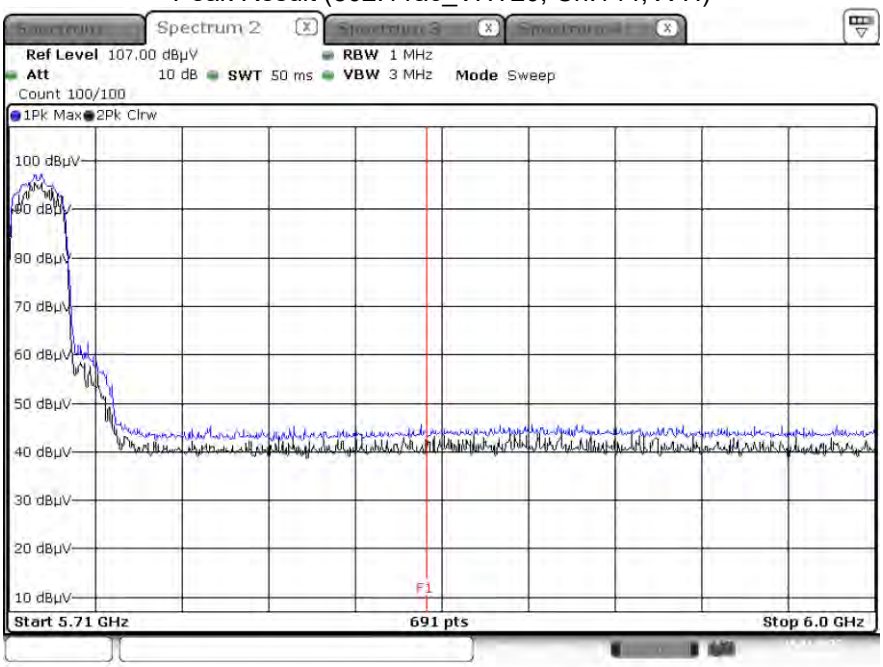
Peak Result (802.11a, Ch.144, X-H)



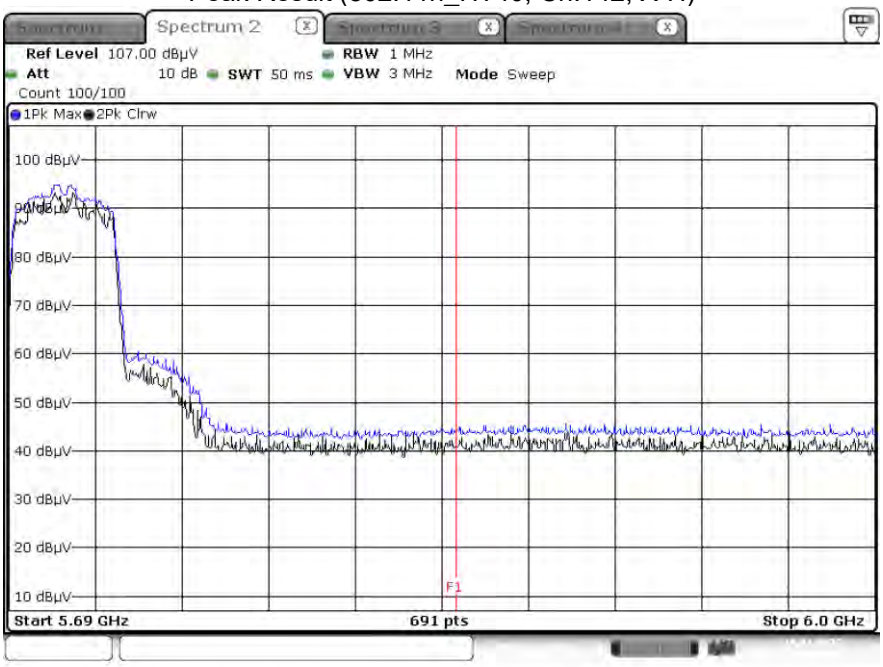
Peak Result (802.11n_HT20, Ch.144, X-H)



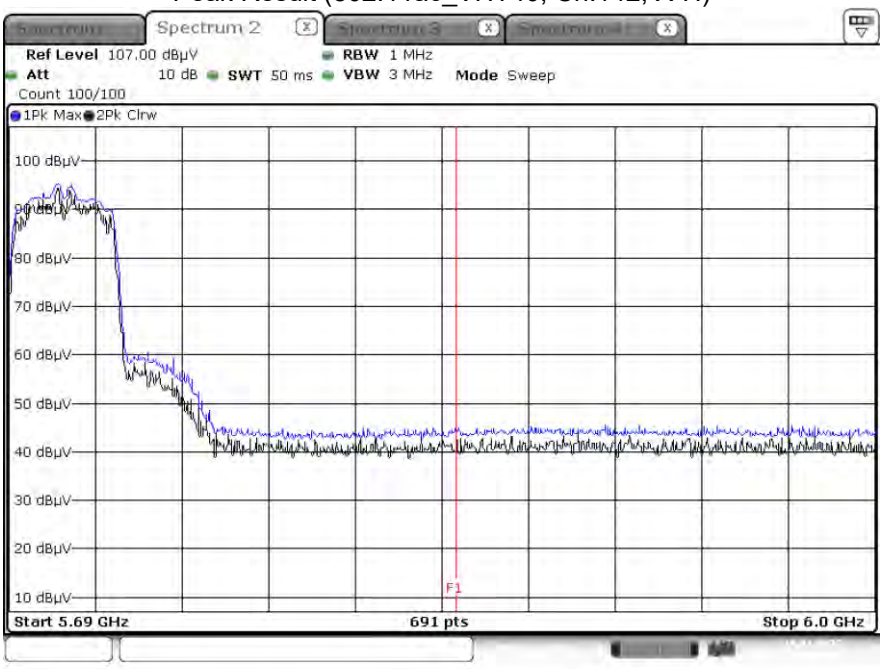
Peak Result (802.11ac_VHT20, Ch.144, X-H)



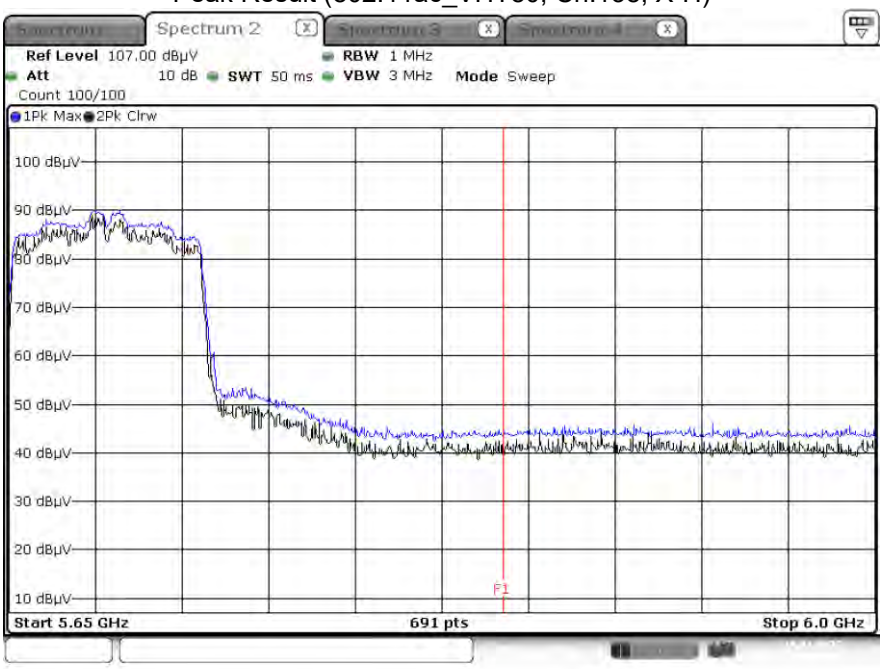
Peak Result (802.11n_HT40, Ch.142, X-H)



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



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

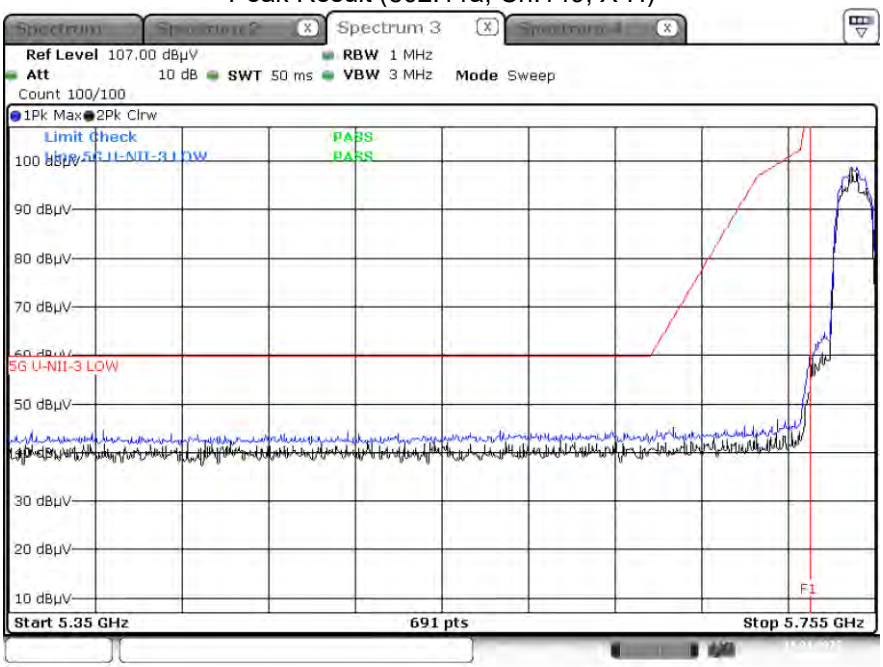


Note :

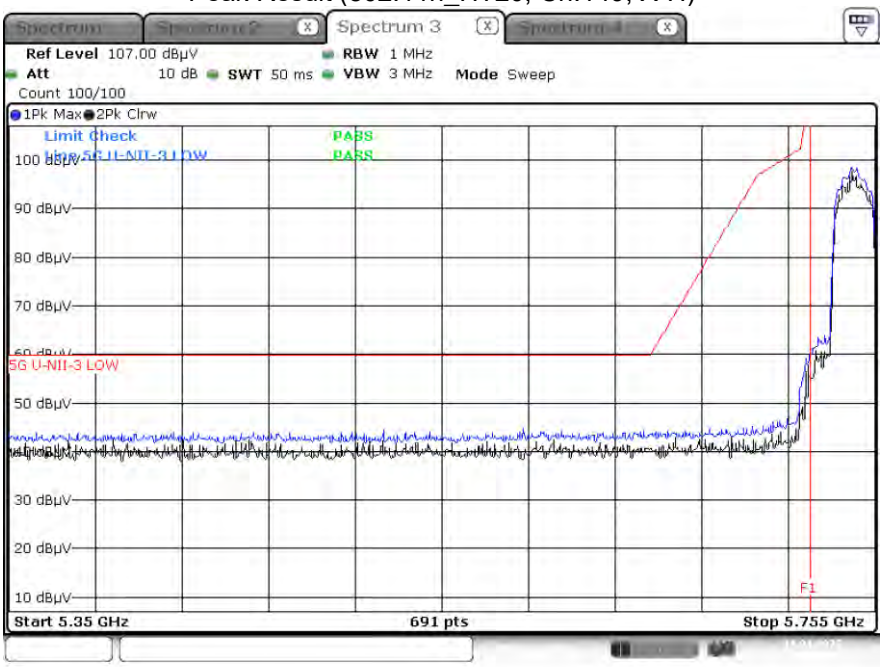
1. Only the worst case plots for Radiated Restricted Band Edge.
2. Red line : 5850 MHz
3. Ambient Noise (Because of ambient noise, We attached only the worst plot without a data table)

▣ Test Plots(UNII 3)

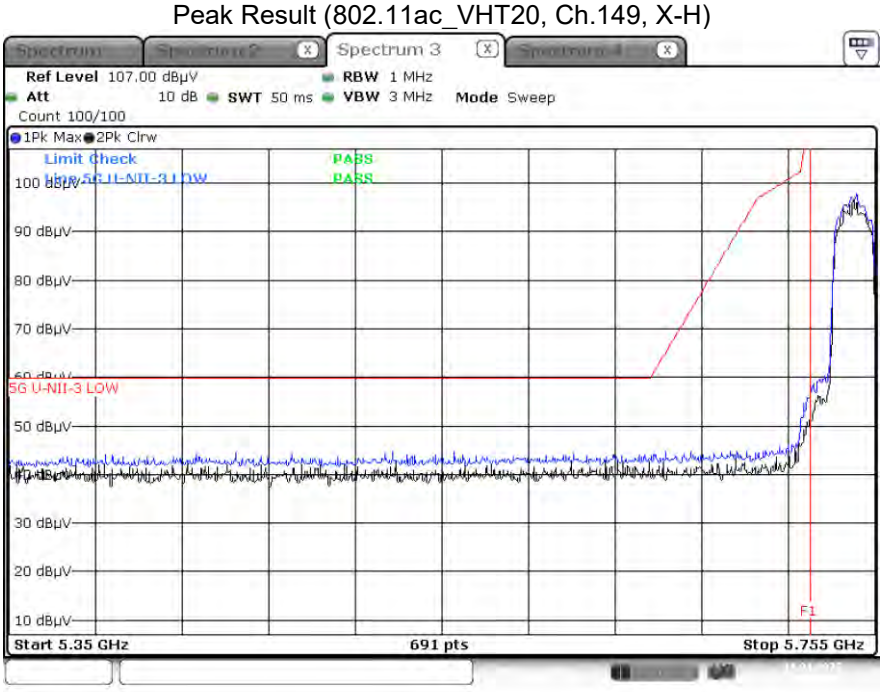
Peak Result (802.11a, Ch.149, X-H)



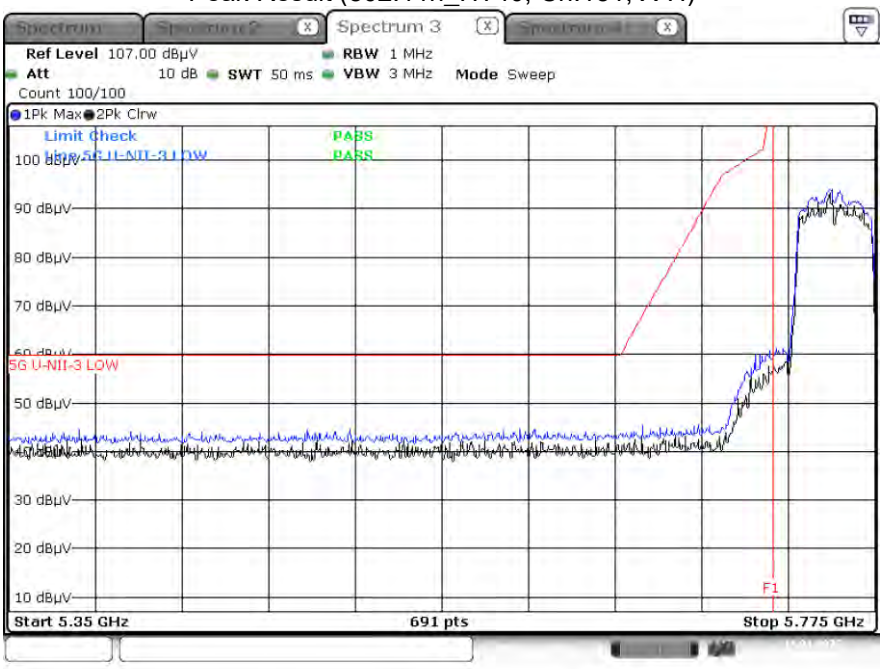
Peak Result (802.11n_HT20, Ch.149, X-H)



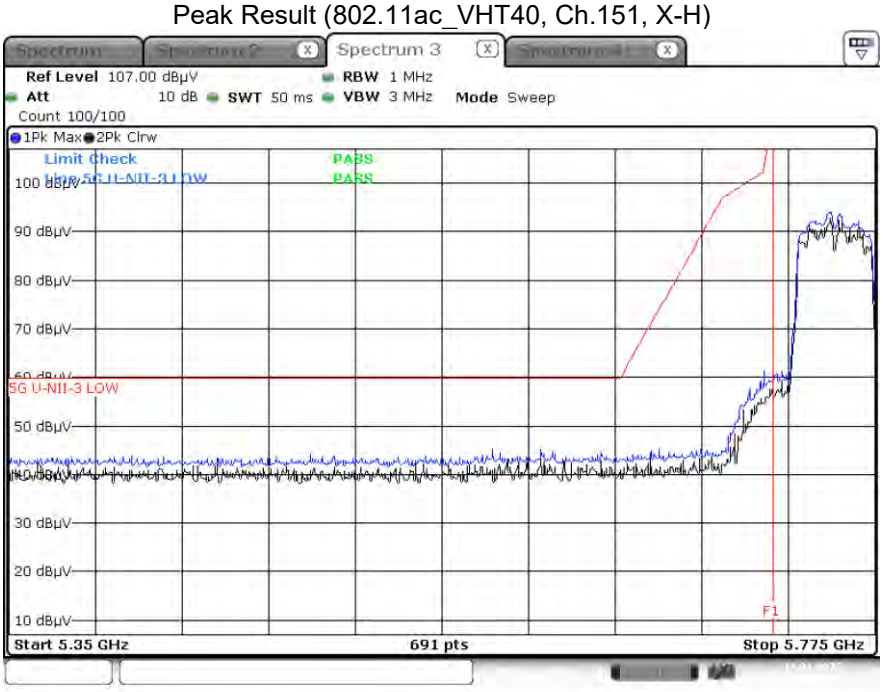
Peak Result (802.11ac_VHT20, Ch.149, X-H)



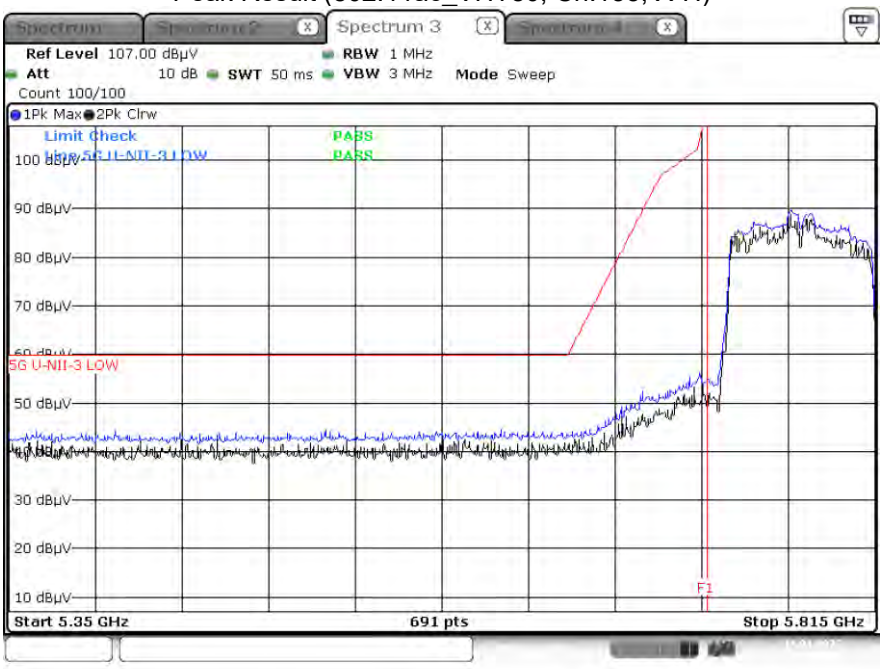
Peak Result (802.11n_HT40, Ch.151, X-H)



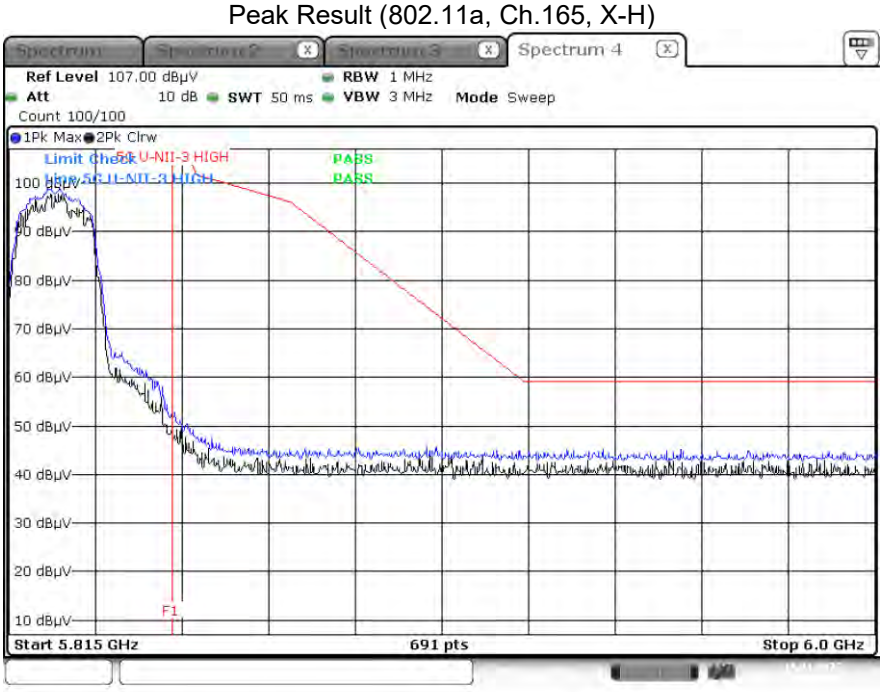
Peak Result (802.11ac_VHT40, Ch.151, X-H)



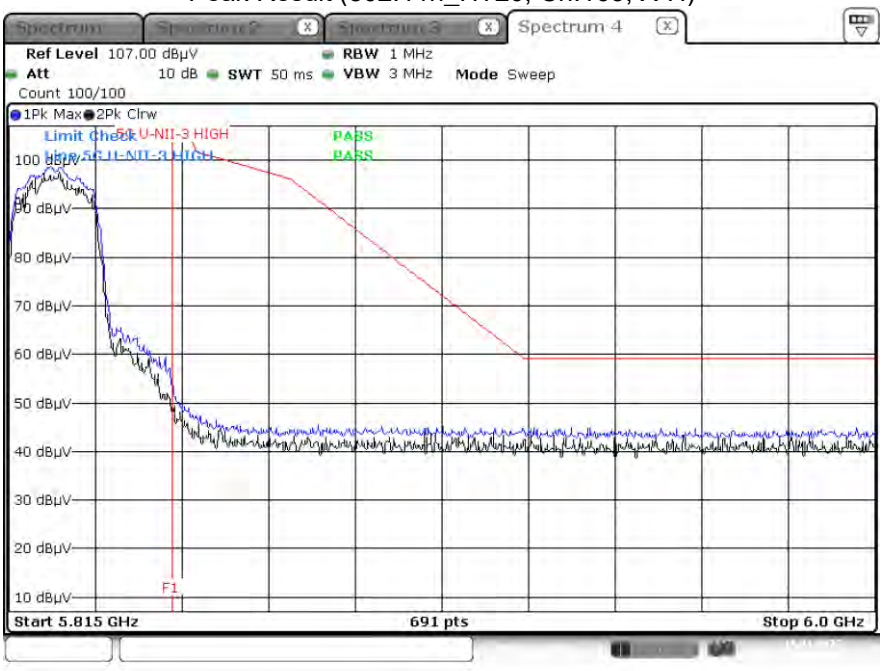
Peak Result (802.11ac_VHT80, Ch.155, X-H)



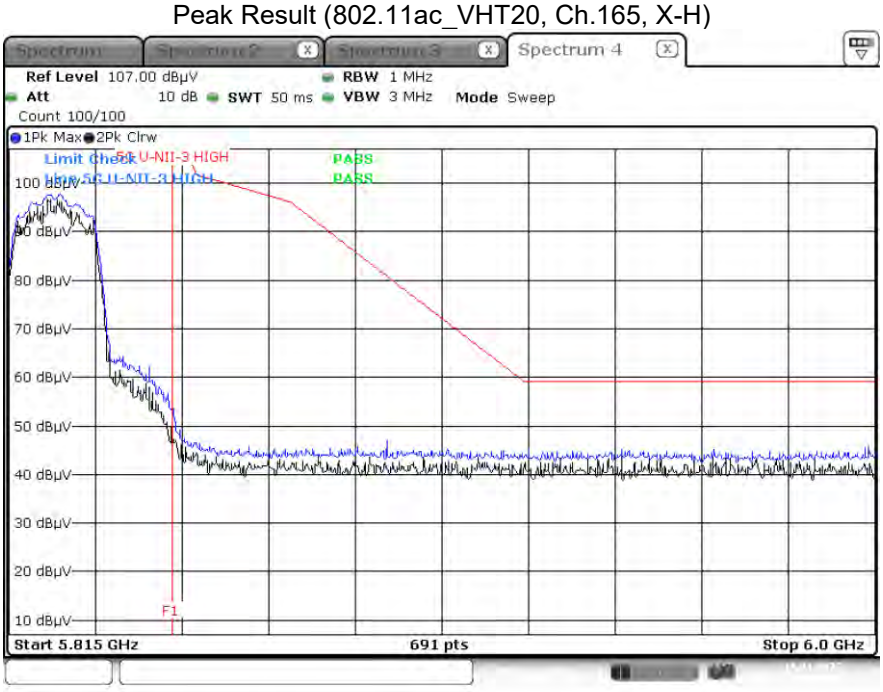
Peak Result (802.11a, Ch.165, X-H)



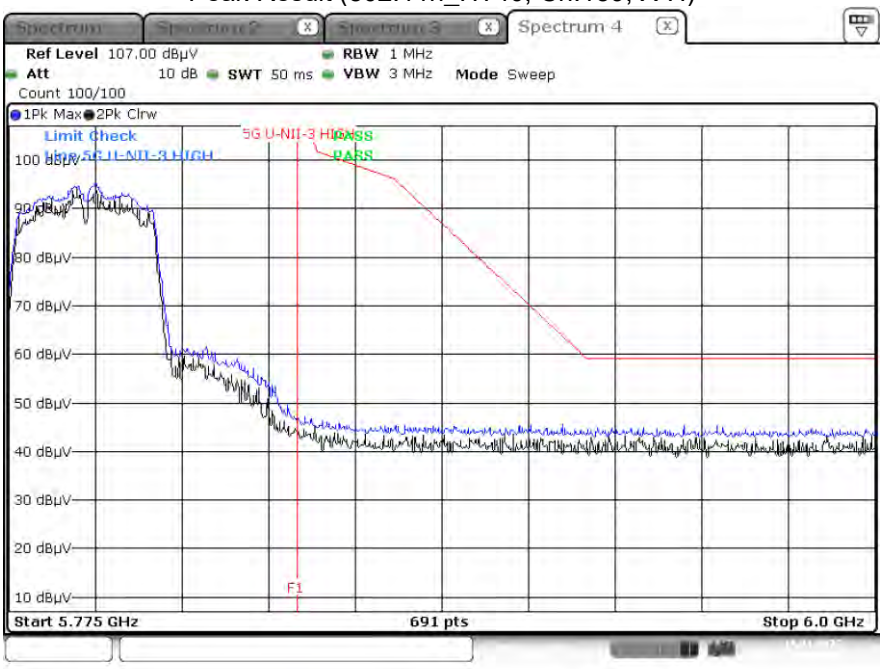
Peak Result (802.11n_HT20, Ch.165, X-H)



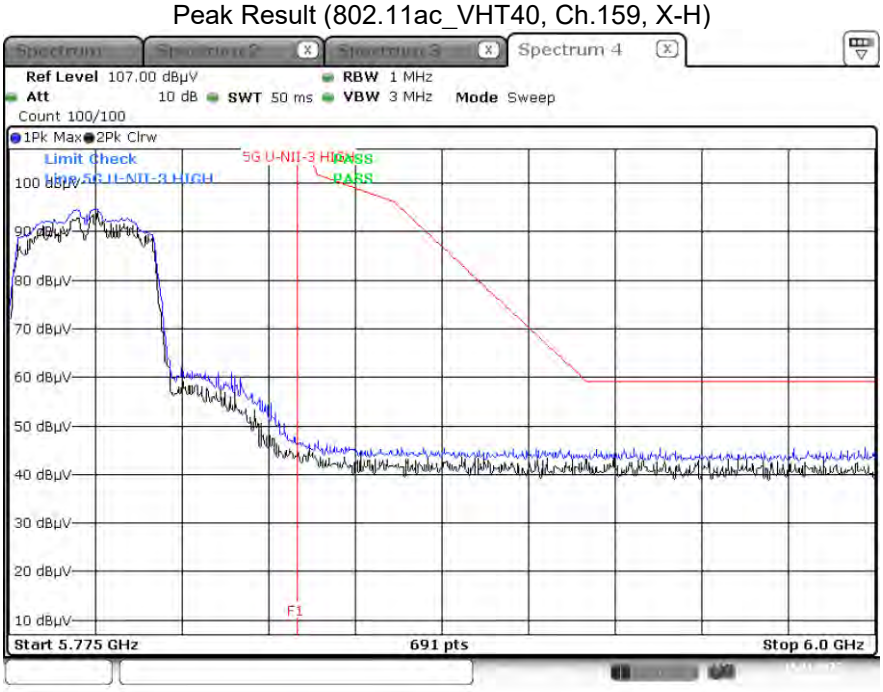
Peak Result (802.11ac_VHT20, Ch.165, X-H)



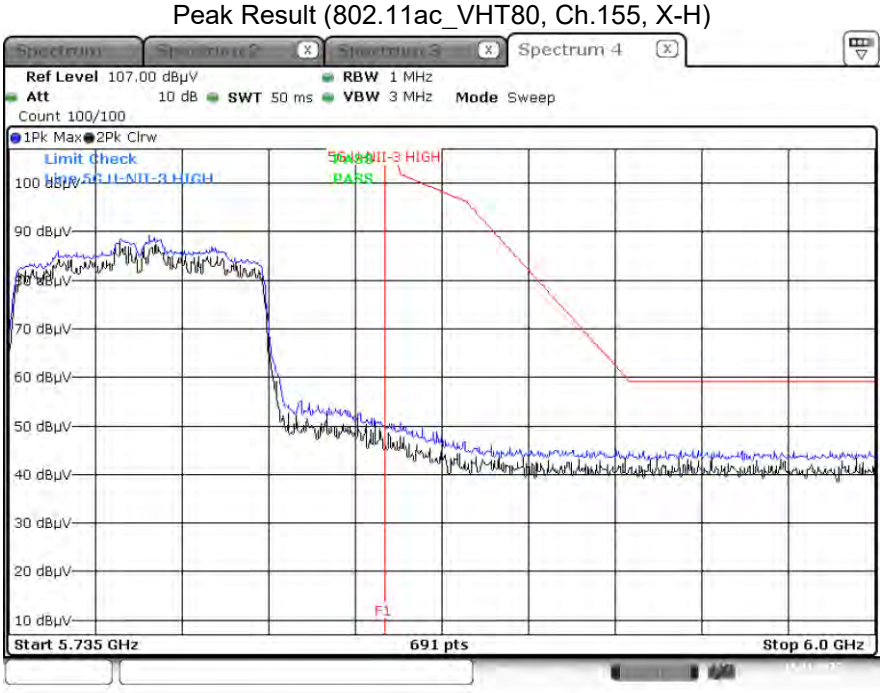
Peak Result (802.11n_HT40, Ch.159, X-H)



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.

10.9 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions (Line 1)

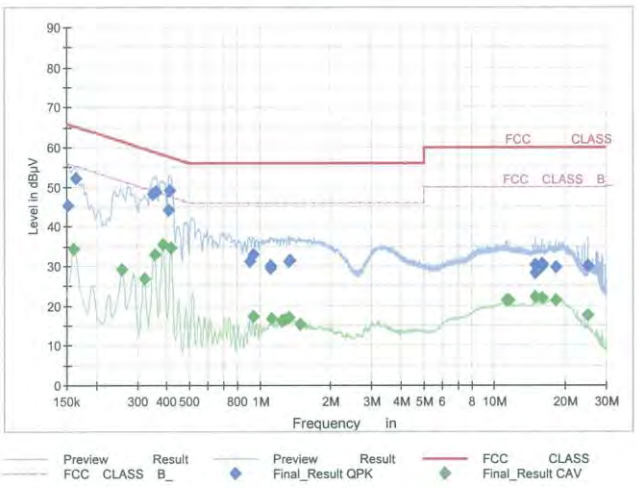
WLAN 5G MODE_L1 1 / 2

Test Report

Common Information

EUT :	SM-M236B/DS
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	45.31	65.88	20.57	9.000	L1	OFF	9.6
0.1635	52.25	65.28	13.04	9.000	L1	OFF	9.6
0.3503	48.08	58.96	10.87	9.000	L1	OFF	9.6
0.3593	48.67	58.75	10.07	9.000	L1	OFF	9.6
0.4088	44.04	57.67	13.64	9.000	L1	OFF	9.7
0.4133	49.18	57.58	8.40	9.000	L1	OFF	9.7
0.9073	31.15	56.00	24.85	9.000	L1	OFF	9.7
0.9365	32.94	56.00	23.06	9.000	L1	OFF	9.7
1.1098	29.42	56.00	26.58	9.000	L1	OFF	9.7
1.1143	30.05	56.00	25.95	9.000	L1	OFF	9.7
1.3258	31.18	56.00	24.82	9.000	L1	OFF	9.7
1.3505	31.31	56.00	24.69	9.000	L1	OFF	9.7
14.9428	28.22	60.00	31.78	9.000	L1	OFF	10.2
14.9495	30.20	60.00	29.80	9.000	L1	OFF	10.2
15.9643	30.46	60.00	29.54	9.000	L1	OFF	10.2
15.9710	29.92	60.00	30.08	9.000	L1	OFF	10.2
18.3425	29.65	60.00	30.35	9.000	L1	OFF	10.3
25.1375	30.04	60.00	29.96	9.000	L1	OFF	10.5

2022-01-21 오전 8:54:33

WLAN 5G MODE_L1 2 / 2

Final_Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1613	34.20	55.40	21.20	9.000	L1	OFF	9.6
0.2580	29.24	51.50	22.25	9.000	L1	OFF	9.6
0.3210	26.84	49.68	22.84	9.000	L1	OFF	9.6
0.3548	33.01	48.85	15.84	9.000	L1	OFF	9.6
0.3863	35.47	48.14	12.67	9.000	L1	OFF	9.6
0.4178	34.50	47.49	12.99	9.000	L1	OFF	9.7
0.9343	17.42	46.00	28.58	9.000	L1	OFF	9.7
1.1255	16.74	46.00	29.26	9.000	L1	OFF	9.7
1.2403	16.25	46.00	29.75	9.000	L1	OFF	9.7
1.2785	16.38	46.00	29.62	9.000	L1	OFF	9.7
1.3235	16.94	46.00	29.06	9.000	L1	OFF	9.7
1.4968	15.42	46.00	30.58	9.000	L1	OFF	9.7
11.2123	21.36	50.00	28.64	9.000	L1	OFF	10.1
11.5520	21.47	50.00	28.53	9.000	L1	OFF	10.1
14.9473	22.20	50.00	27.80	9.000	L1	OFF	10.2
15.9665	22.02	50.00	27.98	9.000	L1	OFF	10.2
18.3448	21.40	50.00	28.60	9.000	L1	OFF	10.3
25.1398	17.53	50.00	32.47	9.000	L1	OFF	10.5

2022-01-21 오전 8:54:33

Conducted Emissions (Line 2)

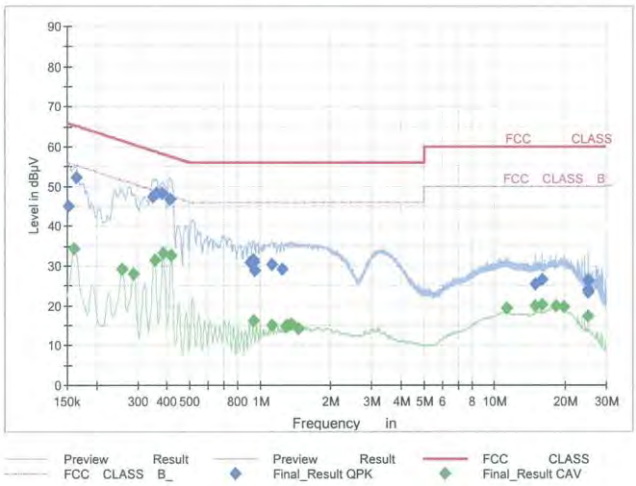
WLAN 5G MODE_N 1 / 2

Test Report

Common Information

EUT :	SM-M236B/DS
Manufacturer :	SAMSUNG
Test Site:	SHIELD ROOM
Operating Conditions :	WLAN 5G MODE_N

Full Spectrum



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1523	45.03	65.88	20.84	9.000	N	OFF	9.6
0.1635	52.20	65.28	13.08	9.000	N	OFF	9.6
0.3503	47.21	58.96	11.75	9.000	N	OFF	9.6
0.3593	48.07	58.75	10.67	9.000	N	OFF	9.6
0.3818	48.14	58.24	10.10	9.000	N	OFF	9.6
0.4110	46.87	57.63	10.76	9.000	N	OFF	9.7
0.9028	30.86	56.00	25.14	9.000	N	OFF	9.7
0.9343	31.58	56.00	24.42	9.000	N	OFF	9.7
0.9433	30.87	56.00	25.13	9.000	N	OFF	9.7
0.9478	28.85	56.00	27.15	9.000	N	OFF	9.7
1.1233	30.24	56.00	25.76	9.000	N	OFF	9.7
1.2425	29.12	56.00	26.88	9.000	N	OFF	9.7
14.9563	25.26	60.00	34.74	9.000	N	OFF	10.3
15.9688	26.56	60.00	33.44	9.000	N	OFF	10.3
25.1330	23.94	60.00	36.06	9.000	N	OFF	10.6
25.1398	26.27	60.00	33.73	9.000	N	OFF	10.6
25.1443	26.20	60.00	33.80	9.000	N	OFF	10.6
25.1555	23.33	60.00	36.67	9.000	N	OFF	10.6

2022-01-21 오전 8:49:24

WLAN 5G MODE_N 2 / 2

Final_Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1613	34.25	55.40	21.15	9.000	N	OFF	9.6
0.2580	29.08	51.50	22.42	9.000	N	OFF	9.6
0.2895	28.10	50.54	22.44	9.000	N	OFF	9.6
0.3548	31.38	48.85	17.47	9.000	N	OFF	9.6
0.3863	33.13	48.14	15.02	9.000	N	OFF	9.6
0.4178	32.54	47.49	14.95	9.000	N	OFF	9.7
0.9343	16.07	46.00	29.93	9.000	N	OFF	9.7
1.1255	15.09	46.00	30.91	9.000	N	OFF	9.7
1.2875	14.68	46.00	31.32	9.000	N	OFF	9.7
1.3190	14.98	46.00	31.02	9.000	N	OFF	9.7
1.3528	15.17	46.00	30.83	9.000	N	OFF	9.7
1.4563	14.01	46.00	31.99	9.000	N	OFF	9.7
11.2145	19.24	50.00	30.76	9.000	N	OFF	10.1
14.9518	19.90	50.00	30.10	9.000	N	OFF	10.3
15.9710	20.26	50.00	29.74	9.000	N	OFF	10.3
18.3493	19.85	50.00	30.15	9.000	N	OFF	10.4
19.7105	19.52	50.00	30.48	9.000	N	OFF	10.4
25.1465	17.18	50.00	32.82	9.000	N	OFF	10.6

2022-01-21 오전 8:49:24

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	01/06/2023	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	01/19/2023	Annual
ATT(10dB) + LNA1(1~18GHz)	FMSR -05B	TNM system	None	01/19/2023	Annual
ATT(3dB) + LNA1(1~18GHz)	FMSR -05B	TNM system	None	01/19/2023	Annual
LNA1(1~18GHz)	FMSR -05B	TNM system	25540	01/19/2023	Annual
HPF(7~18GHz) + LNA2(6~18GHz)	FMSR -05B	TNM system	28550	01/19/2023	Annual
Thru(30MHz ~ 18GHz)	FMSR -05B	TNM system	None	01/19/2023	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-FC088-P