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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:
April 10, 2020

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

Report No.: HCT-RF-2004-FC007

FCC ID:	**A3LSMA217M**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model:	SM-A217M/DS
Additional Model	SM-A217M
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.

Report prepared by : Jung Ki Lim
Engineer of Telecommunication testing center

Approved by : Jong Seok Lee
Manager of Telecommunication testing center

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2004-FC007	April 10, 2020	- First Approval Report

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 KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

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1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-A217M/DS	
Additional Model	SM-A217M	
EUT Type	Mobile Phone	
Power Supply	DC 3.85 V	
Battery Information	Model: EB-BA217ABY Type: Li-ion Battery	
Travel Adapter Information	Model : EP-TA200 Manufacture: SOLUM	
Data Cable Information	Model : EP-DR140ABE Manufacture: RFTech	
Ear-jack Information	Model : EHS61ASFBE Manufacture: Almus	
Modulation Type	OFDM : 802.11a, 802.11n, 802.11ac	
Frequency Range (MHz)	U-NII-1	20MHz BW : 5180 - 5240 40MHz BW : 5190 - 5230 80MHz BW : 5210
	U-NII-2A	20MHz BW : 5260 - 5320 40MHz BW : 5270 - 5310 80MHz BW : 5290
	U-NII-2C	20MHz BW : 5500 - 5720 40MHz BW : 5510 - 5710 80MHz BW : 5530 – 5690
	U-NII-3	20MHz BW : 5745 - 5825 40MHz BW : 5755 - 5795 80MHz BW : 5775
Antenna Specification	Antenna type: MFA Peak Gain : -5.24 dBi(UNII 1), -4.92 dBi(UNII 2A), -4.88 dBi(UNII 2C), -5.24 dBi(UNII 3)	
Straddle channel	Supported	
TDWR Band	Supported	
Dynamic Frequency Selection	Slave without radar detection	
Date(s) of Tests	March 05, 2020 ~ April 07, 2020	

2. MAXIMUM OUTPUT POWER

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

Band	Mode	RF Output Power	
		(dBm)	(W)
UNII1	802.11a	14.67	0.029
	802.11n (HT20)	14.56	0.029
	802.11n (HT40)	13.88	0.024
	802.11ac (VHT20)	14.73	0.030
	802.11ac (VHT40)	13.76	0.024
	802.11ac (VHT80)	11.51	0.014
UNII2A	802.11a	15.01	0.032
	802.11n (HT20)	15.08	0.032
	802.11n (HT40)	14.16	0.026
	802.11ac (VHT20)	15.11	0.032
	802.11ac (VHT40)	14.04	0.025
	802.11ac (VHT80)	11.32	0.014
UNII2C	802.11a	14.48	0.028
	802.11n (HT20)	14.61	0.029
	802.11n (HT40)	13.53	0.023
	802.11ac (VHT20)	14.43	0.028
	802.11ac (VHT40)	13.68	0.023
	802.11ac (VHT80)	11.34	0.014
UNII3	802.11a	14.61	0.029
	802.11n (HT20)	14.61	0.029
	802.11n (HT40)	13.34	0.022
	802.11ac (VHT20)	14.48	0.028
	802.11ac (VHT40)	13.36	0.022
	802.11ac (VHT80)	10.74	0.012

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 30MHz 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 1GHz. Above 1GHz with 1.5m 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 3.75 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.

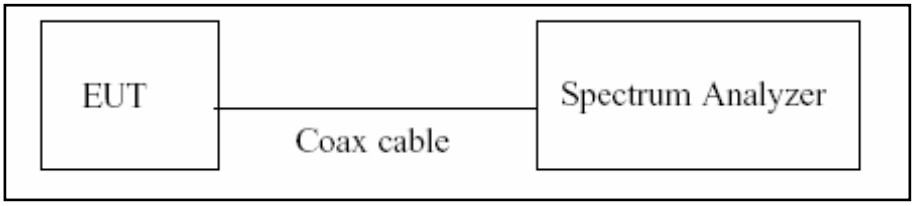
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05

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.

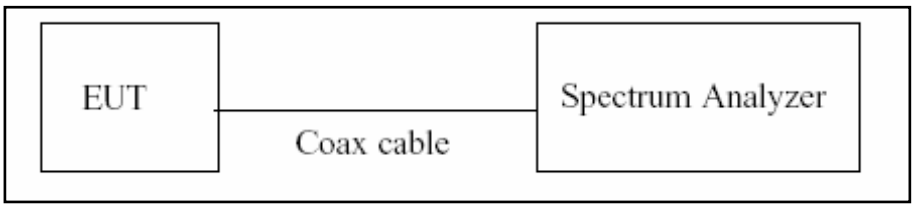
1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

8.2. 6dB Bandwidth & 26dB Bandwidth

Limit

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Configuration



Test Procedure(26dB 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 (6dB 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.

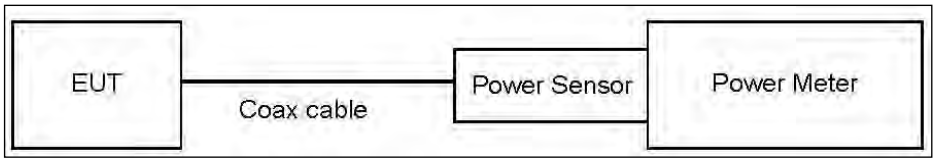
8.3. Output Power Measurement

Limit

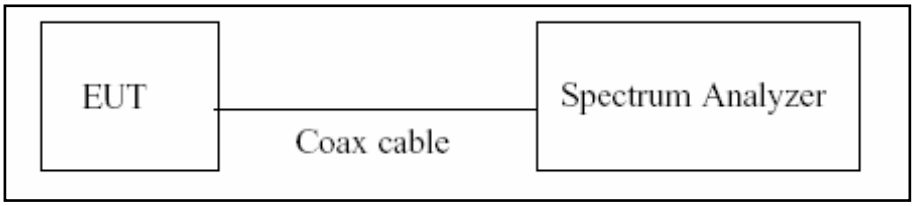
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30dBm)

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) = Reading Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum reading values 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 = Attenuator loss(10 dB) + Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	10.73
UNII 2A	10.73
UNII 2C	10.73
UNII 3	10.73

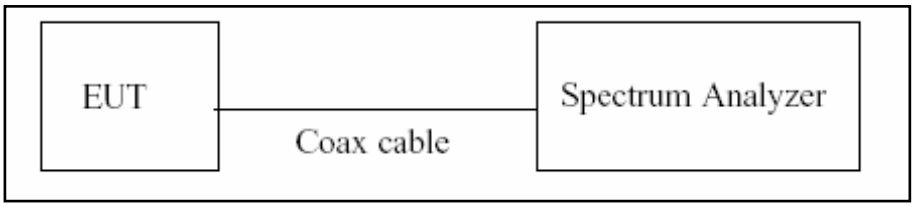
(Actual value of loss for the attenuator and cable combination)

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) = Reading Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum reading values 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 = Attenuator loss(10 dB) + Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	10.73
UNII 2A	10.73
UNII 2C	10.73
UNII 3	10.73

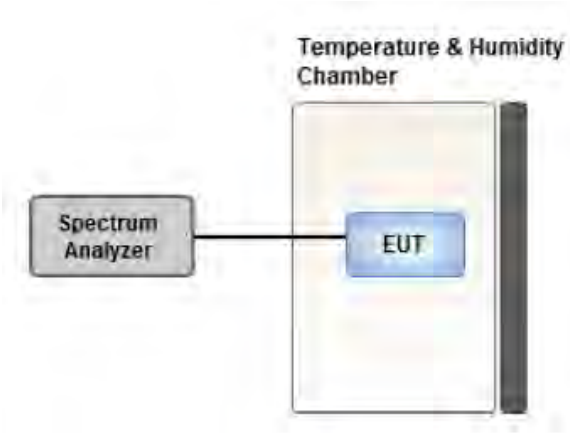
(Actual value of loss for the attenuator and cable combination)

8.5. Frequency Stability

Limit

Maintained within the band

Test Configuration



Test Procedure

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

8.6. AC Power line Conducted Emissions

Limit

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).

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

[(a)]Decreases with the logarithm of the frequency.

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

Test Configuration

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

Test Procedure

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

Sample Calculation

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

8.7. Radiated Test

Limit

1. UNII 1: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of −27 dBm/MHz.

2. UNII 2A, 2C: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.

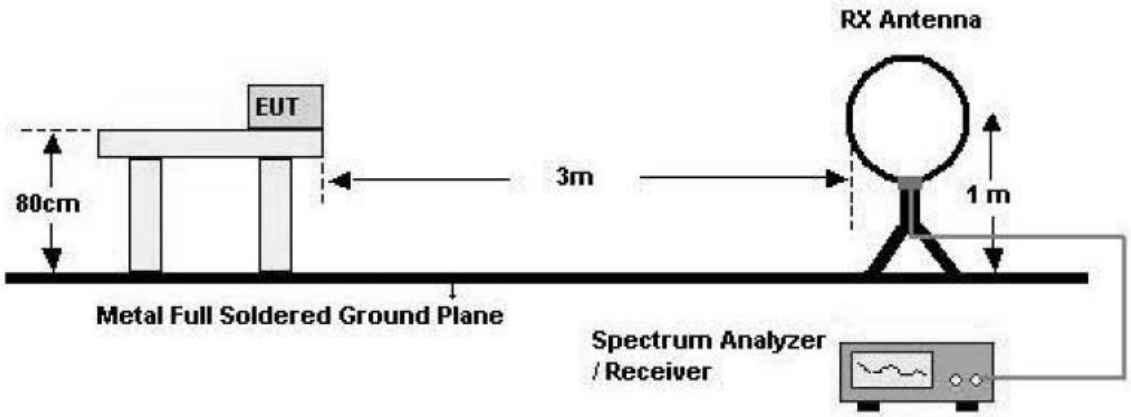
3. UNII 3: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

4. 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.

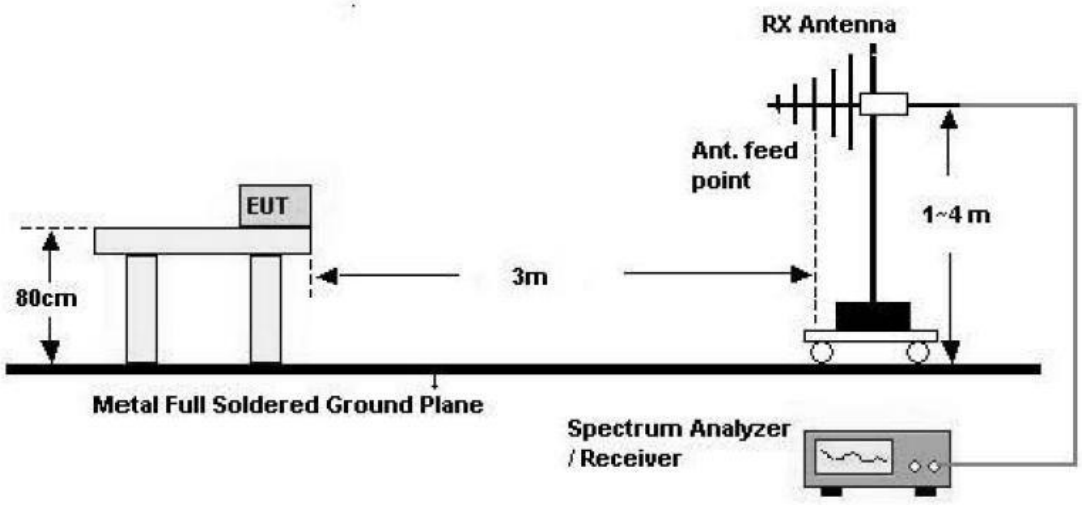
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

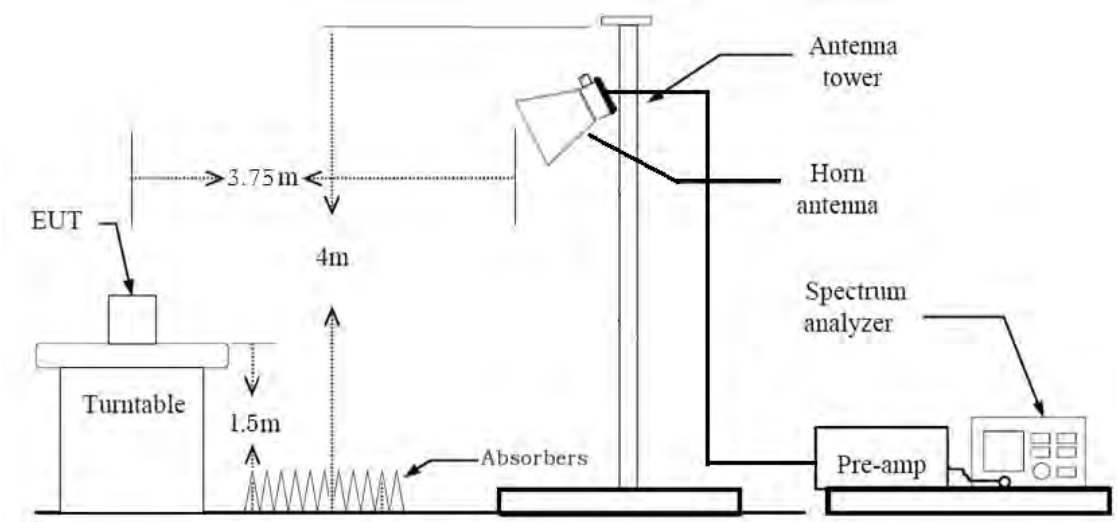
Below 30 MHz



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 3m from the EUT
3. The EUT is placed on a turntable, which is 0.8m 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 = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
10. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

KDB 414788 OFS and Chamber Correlation Justification

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making
measurements in the near field.
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Test Procedure of Radiated spurious emissions(Below 1GHz)

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 0.8m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. 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
6. Total = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L)
7. 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 3.75 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
5. According to SVSWR requirement in ANSI 63.4-2014, We performed the radiated test at 3.75 m distance from center of turn table. So, we applied the distance factor(reference distance : 3 m).
   - ◆ Distance extrapolation factor = 20log (test distance / specific distance) (dB)
6. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
7. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
8. The unit was tested with its standard battery.
9. 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 percent) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
   - VBW(Duty cycle is < 98 percent) = 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 percent duty cycle. For lower duty cycles, increase the minimym number of traces by a factor of 1/x, where x is the duty cycle.

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
11. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency
12. Total = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(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 3.75 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
5. According to SVSWR requirement in ANSI 63.4-2014, We performed the radiated test at 3.75 m distance from center of turn table. So, we applied the distance factor(reference distance : 3 m).
   - ◆ Distance extrapolation factor = 20log (test distance / specific distance) (dB)
6. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
7. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
8. The unit was tested with its standard battery.
9. 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 percent) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
   - VBW(Duty cycle is < 98 percent) = 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 percent duty cycle. For lower duty cycles, increase the minimym number of traces by a factor of 1/x, where x is the duty cycle.

10. Measured Frequency Range :
- 4500MHz ~ 5150MHz
- 5350MHz ~ 5460MHz
- 5460MHz ~ 5470MHz
- (75 MHz or more below the 5725MHz) ~ 5725MHz
- 5850MHz ~ (75 MHz or more above the 5850MHz)

11. Total = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G) + Attenuator + 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	0.925	0.339	1000
802.11n(HT20)	MCS 0	0.919	0.365	1000
802.11n(HT40)	MCS 0	0.850	0.704	2000
802.11ac(VHT20)	MCS 0	0.919	0.365	1000
802.11ac(VHT40)	MCS 0	0.851	0.701	2000
802.11ac(VHT80)	MCS 0	0.853	0.693	5000

8.8. Worst case configuration and mode

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone, Stand alone + External accessories(Earphone, etc)
   - Worstcase : Stand alone
2. EUT Axis
   - Radiated Spurious Emissions : Z
   - Radiated Restricted Band Edge : Y
3. All datarate of operation were investigated and the worst case datarate results are reported
   - 802.11a : 6Mbps
   - 802.11n : MCS0
   - 802.11ac : MCS0
4. 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
5. SM-A217M/DS, SM-A217M were tested and the worst case results are reported.

(Worst case : SM-A217M/DS)

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone + External accessories(Earphone, etc)+Travel Adapter,
     Stand alone + Travel Adapter
   - Worstcase : Stand alone + Travel Adapter
2. SM-A217M/DS, SM-A217M were tested and the worst case results are reported.

(Worst case : SM-A217M/DS)

Conducted test

1. All datarate of operation were investigated and the worst case datarate results are reported
2. SM-A217M/DS, SM-A217M were tested and the worst case results are reported.

(Worst case : SM-A217M/DS)

9. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26dB Bandwidth	§15.407 (for Power Measurement)	N/A	Conducted	PASS
6 dB Bandwidth	§15.407(e)	>500 kHz (5725-5850 MHz)		PASS
Maximum Conducted Output Power	§15.407(a)(1)	< 250 mW(5150-5250 MHz) < 250 mW or 11+10 log log $_{10}$ (BW) dBm (5250-5350 MHz) < 250 mW or 11+10 log log $_{10}$ (BW) dBm (5470-5725 MHz) <1 W(5725-5850 MHz)		PASS
Peak Power Spectral Density	§15.407(a)(1),(5)	<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
Frequency Stability	§15.407(g) §2.1055	Maintained within the band		PASS
AC Conducted Emissions 150 kHz-30 MHz	15.207	<FCC 15.207 limits		PASS
Undesirable Emissions	§15.407(b)	<-27 dBm/MHz EIRP (UNII1, 2A, 2C) cf. Section 8.7 (UNII 3)	Radiated	PASS
General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	15.205, 15.407(b)(5), (6)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS

10. TEST RESULT

10.1 DUTY CYCLE

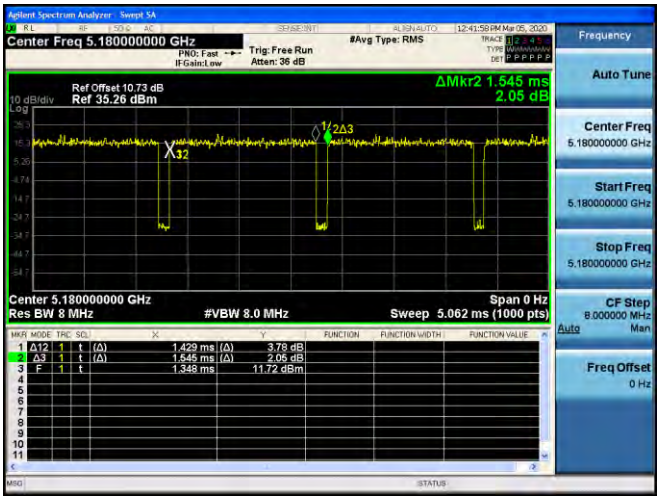
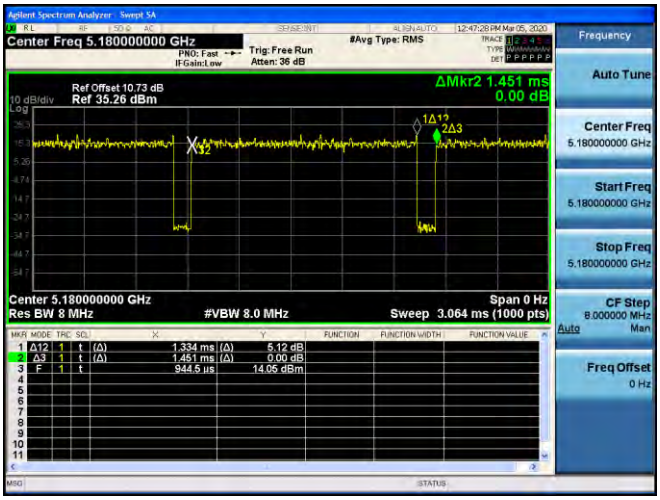
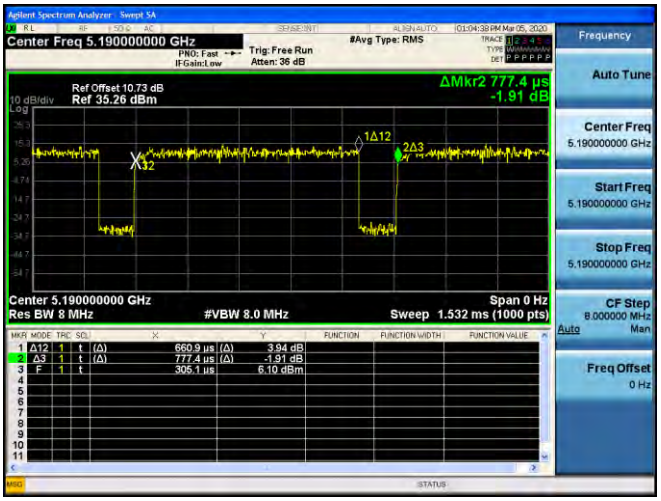
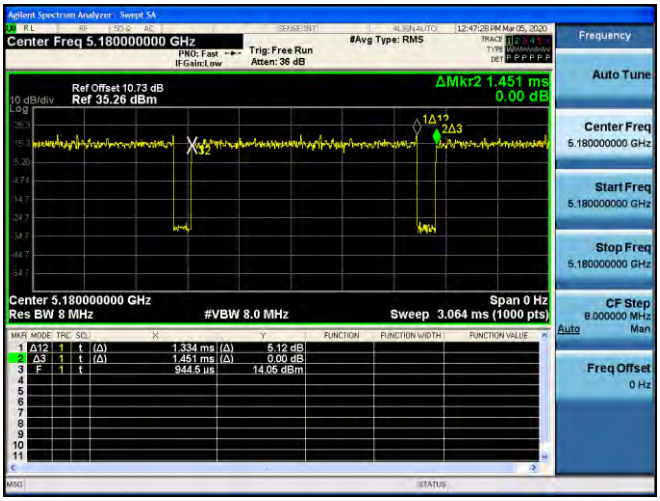
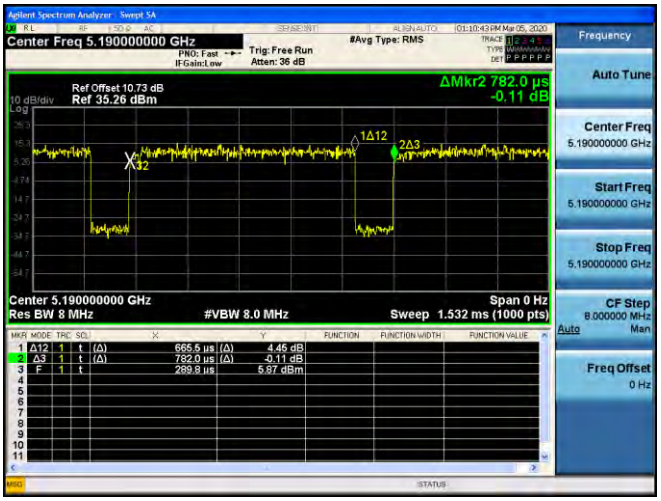
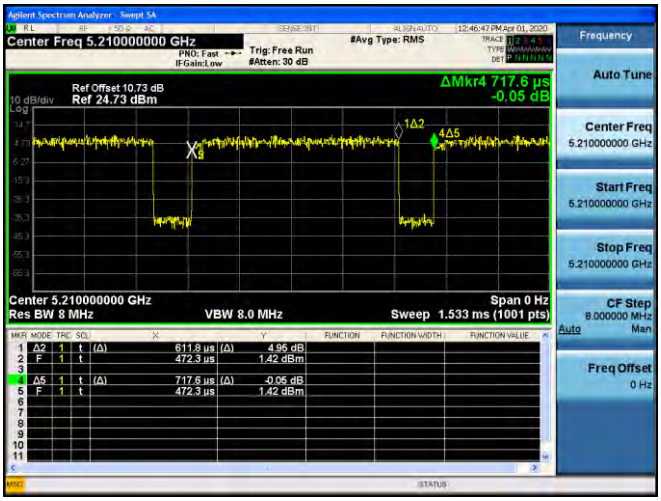
Mode	Data Rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11a	6	1.429	1.545	0.925	0.339
	9	0.957	1.064	0.899	0.460
	12	0.719	0.841	0.855	0.681
	18	0.491	0.597	0.822	0.849
	24	0.369	0.491	0.752	1.241
	36	0.253	0.371	0.682	1.663
	48	0.193	0.310	0.623	2.058
	54	0.177	0.292	0.606	2.174

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11n (HT20)	0	1.334	1.451	0.919	0.365
	1	0.686	0.800	0.858	0.668
	2	0.469	0.588	0.798	0.982
	3	0.361	0.478	0.755	1.219
	4	0.251	0.368	0.682	1.662
	5	0.199	0.315	0.632	1.995
	6	0.184	0.297	0.620	2.079
	7	0.165	0.282	0.585	2.328
802.11n (HT40)	0	0.661	0.777	0.850	0.704
	1	0.349	0.467	0.747	1.265
	2	0.246	0.361	0.681	1.666
	3	0.194	0.302	0.642	1.922
	4	0.141	0.257	0.549	2.607
	5	0.115	0.230	0.500	3.010
	6	0.107	0.223	0.480	3.189
	7	0.100	0.215	0.464	3.333

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT20)	0	1.334	1.451	0.919	0.365
	1	0.690	0.797	0.866	0.626
	2	0.475	0.582	0.816	0.882
	3	0.364	0.472	0.771	1.128
	4	0.257	0.374	0.687	1.629
	5	0.202	0.318	0.635	1.971
	6	0.187	0.303	0.617	2.096
	7	0.168	0.276	0.609	2.156
	8	0.150	0.266	0.564	2.488
802.11ac (VHT40)	0	0.666	0.782	0.851	0.701
	1	0.354	0.470	0.753	1.231
	2	0.249	0.357	0.697	1.565
	3	0.197	0.314	0.627	2.025
	4	0.147	0.263	0.559	2.526
	5	0.118	0.234	0.504	2.973
	6	0.110	0.225	0.489	3.108
	7	0.102	0.216	0.472	3.259
	8	0.095	0.202	0.470	3.276
	9	0.086	0.202	0.424	3.724
802.11ac (VHT80)	0	0.612	0.718	0.853	0.693
	1	0.328	0.434	0.756	1.215
	2	0.231	0.346	0.668	1.755
	3	0.184	0.299	0.615	2.109
	4	0.134	0.252	0.533	2.734
	5	0.112	0.227	0.494	3.066
	6	0.104	0.219	0.475	3.234
	7	0.099	0.214	0.463	3.348
	8	0.087	0.202	0.431	3.658
	9	0.082	0.198	0.414	3.829

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		26dB Bandwidth [MHz]	99% bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	23.07	16.622
5200	40	22.20	16.591
5240	48	21.05	16.550
5260	52	21.49	16.576
5300	60	21.37	16.573
5320	64	21.78	16.628
5500	100	21.15	16.586
5600	120	21.97	16.566
5720	144	22.39	16.621
5745	149	22.56	16.620
5785	157	24.14	16.654
5825	165	22.70	16.561

802.11n(HT20) Mode		26dB Bandwidth [MHz]	99% bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	21.99	17.715
5200	40	23.18	17.685
5240	48	21.59	17.683
5260	52	21.70	17.657
5300	60	22.03	17.671
5320	64	21.64	17.697
5500	100	22.17	17.697
5600	120	22.14	17.692
5720	144	22.16	17.686
5745	149	22.59	17.701
5785	157	22.48	17.715
5825	165	22.06	17.718

802.11n(HT40) Mode		26dB Bandwidth [MHz]	99% bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	76.12	37.165
5230	46	71.47	37.065
5270	54	73.19	37.157
5310	62	71.49	37.249
5510	102	67.96	37.281
5590	118	70.90	37.236
5710	142	71.39	37.161
5755	151	71.38	37.270
5795	159	71.40	37.173

802.11ac(VHT20) Mode		26dB Bandwidth [MHz]	99% bandwidth [MHz]
Frequency [MHz]	Channel No.		
5180	36	22.14	17.723
5200	40	23.28	17.686
5240	48	21.54	17.672
5260	52	21.43	17.676
5300	60	23.09	17.685
5320	64	23.20	17.694
5500	100	21.95	17.687
5600	120	23.68	17.663
5720	144	23.61	17.705
5745	149	23.35	17.704
5785	157	23.98	17.684
5825	165	23.42	17.683

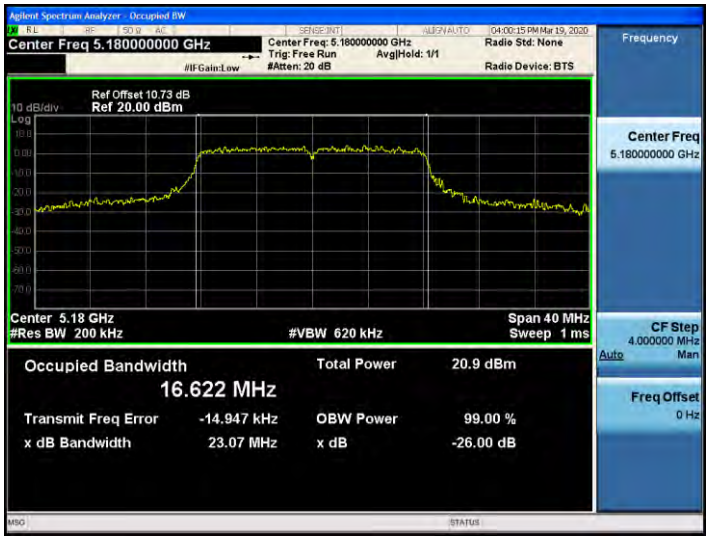
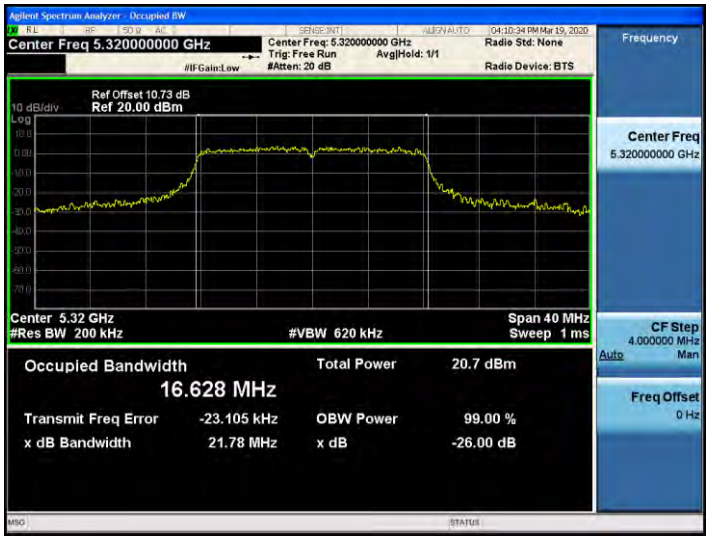
802.11ac(VHT40) Mode		26dB Bandwidth [MHz]	99% bandwidth [MHz]
Frequency [MHz]	Channel No.		
5190	38	73.59	37.224
5230	46	61.73	36.990
5270	54	61.74	36.901
5310	62	63.31	36.927
5510	102	61.01	36.957
5590	118	61.28	36.850
5710	142	62.06	36.982
5755	151	63.74	37.232
5795	159	62.00	37.014

802.11ac(VHT80) Mode		26dB Bandwidth [MHz]	99% bandwidth [MHz]
Frequency [MHz]	Channel No.		
5210	42	80.21	75.248
5290	58	80.24	74.889
5530	106	80.63	74.877
5610	122	80.23	74.845
5690	138	80.13	74.841
5775	155	80.42	74.928

▣ Test Plots(802.11a)

Note:

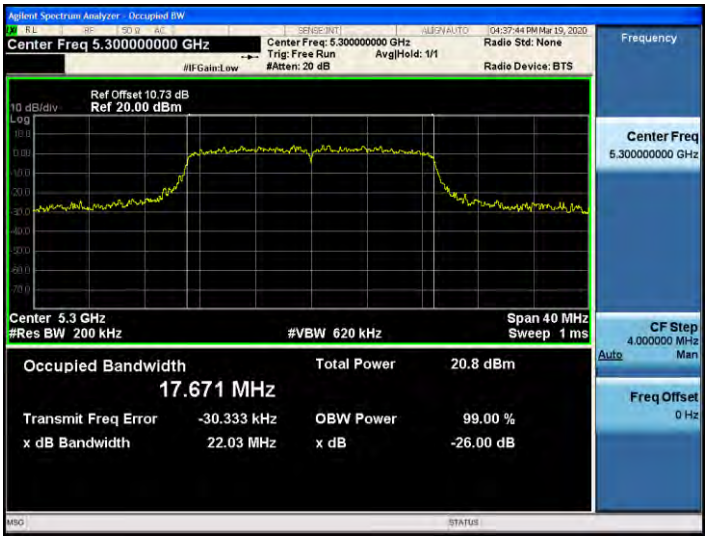
In order to simplify the report, attached plots were only the most wide channel.

802.11a UNII 1 BAND 26dB Bandwidth (CH 36)	802.11a UNII 2A BAND 26dB Bandwidth (CH 64)
	
802.11a UNII 2C BAND 26dB Bandwidth (CH 144)	**802.11a UNII 3 BAND 26dB Bandwidth (CH 157)**
	

▣ Test Plots(802.11n(HT20))

Note:

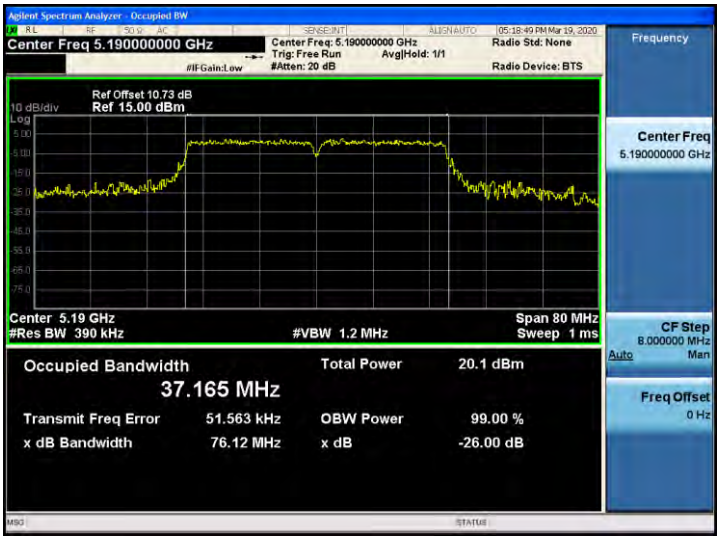
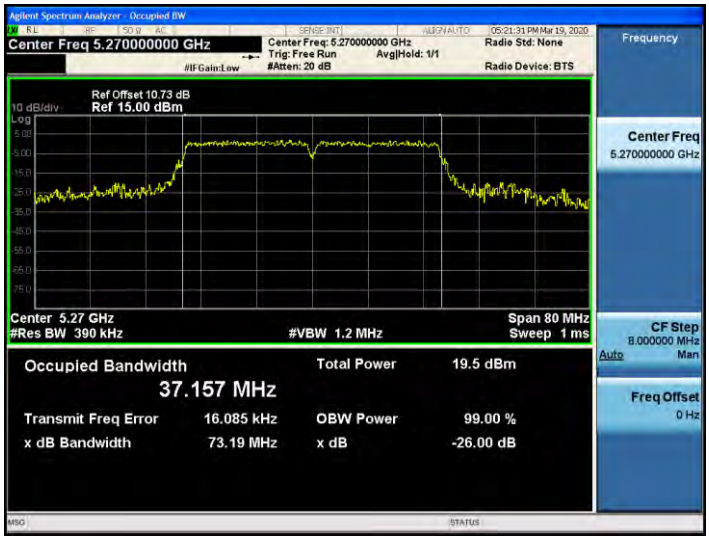
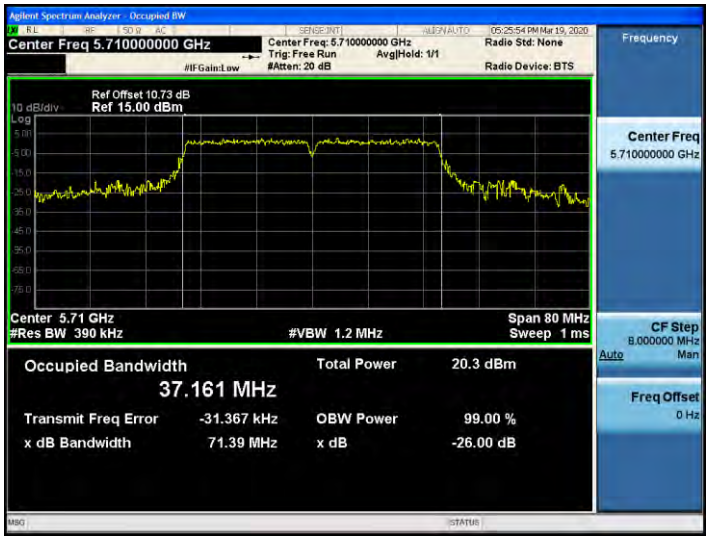
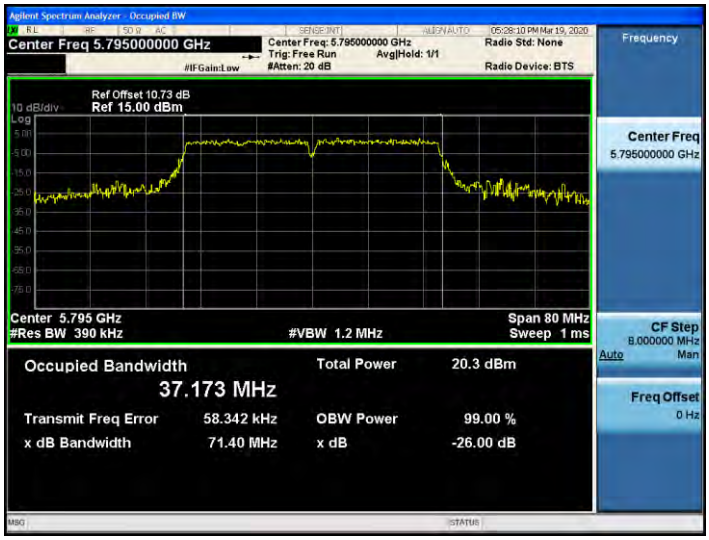
In order to simplify the report, attached plots were only the most wide channel.

802.11n_HT20 UNII 1 BAND 26dB Bandwidth(CH 40)	802.11n_HT20 UNII 2A BAND 26dB Bandwidth(CH 60)
	
802.11n_HT20 UNII 2C BAND 26dB Bandwidth(CH 100)	**802.11n_HT20 UNII 3 BAND 26dB Bandwidth(CH 149)**
	

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

▣ Test Plots(802.11ac(VHT20))

Note:

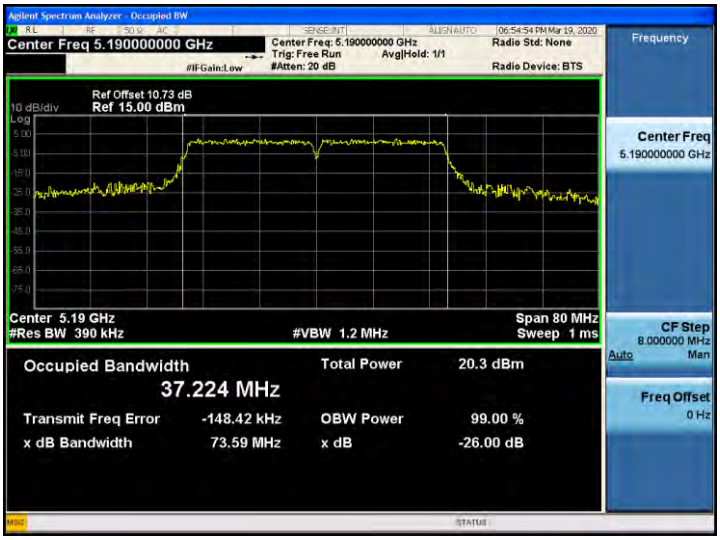
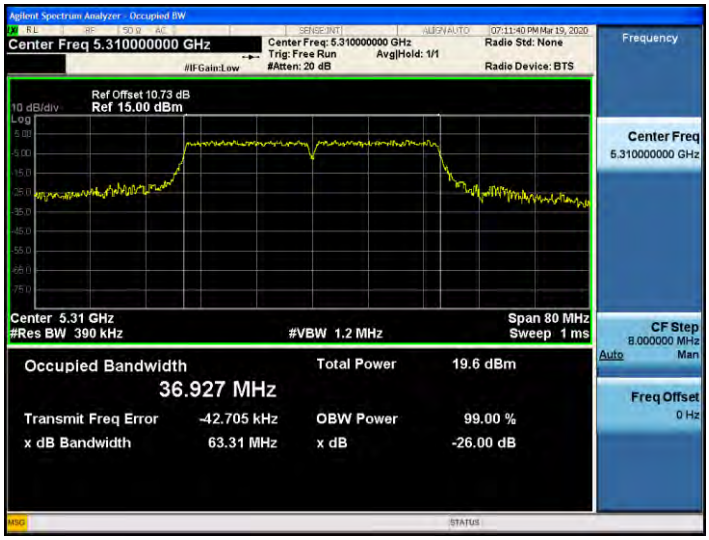
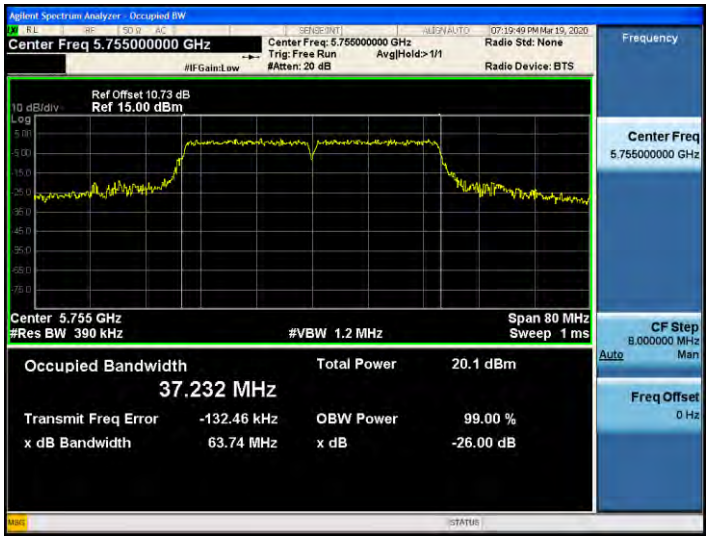
In order to simplify the report, attached plots were only the most wide channel.

802.11ac_VHT20 UNII 1 BAND 26dB Bandwidth(CH 40)	802.11ac_VHT20 UNII 2A BAND 26dB Bandwidth(CH 64)
	
802.11ac_VHT20 UNII 2C BAND 26dB Bandwidth(CH 120)	**802.11ac_VHT20 UNII 3 BAND 26dB Bandwidth(CH 157)**
	

▣ Test Plots(802.11ac(VHT40))

Note:

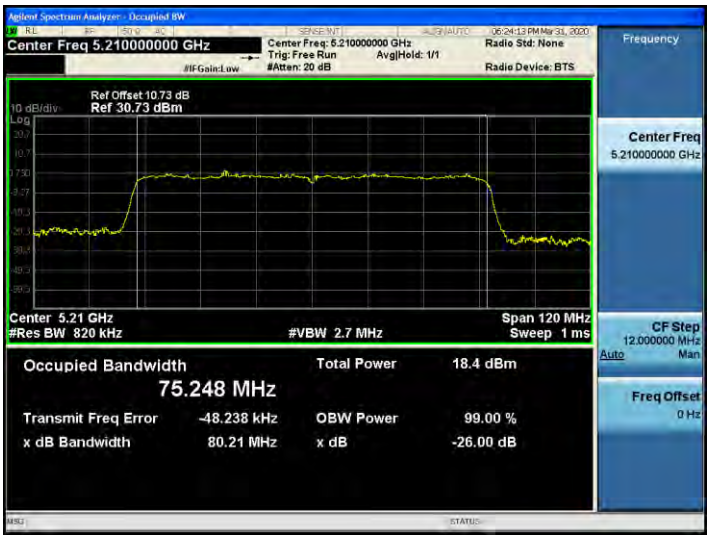
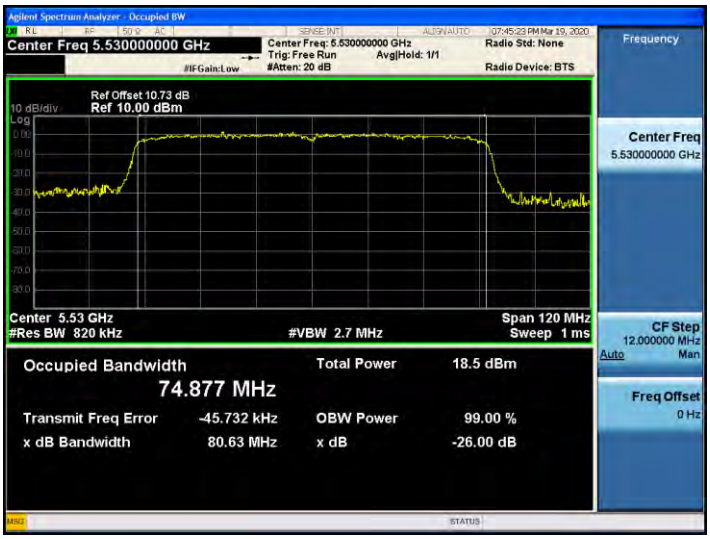
In order to simplify the report, attached plots were only the most wide channel.

802.11ac_VHT40 UNII 1 BAND 26dB Bandwidth(CH 38)	802.11ac_VHT40 UNII 2A BAND 26dB Bandwidth (CH 62)
	
802.11ac_VHT40 UNII 2C BAND 26dB Bandwidth(CH 142)	**802.11ac_VHT40 UNII 3 BAND 26dB Bandwidth (CH 151)**
	

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

10.3 6dB BANDWIDTH

802.11a Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	16.32	> 0.5	Pass
5785	157	16.35	> 0.5	Pass
5825	165	16.30	> 0.5	Pass

802.11n(HT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	16.58	> 0.5	Pass
5785	157	16.79	> 0.5	Pass
5825	165	16.31	> 0.5	Pass

802.11n(HT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	36.36	> 0.5	Pass
5795	159	36.38	> 0.5	Pass

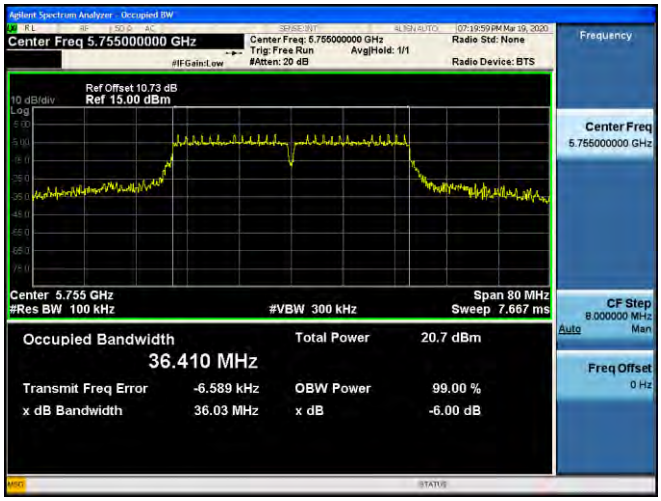
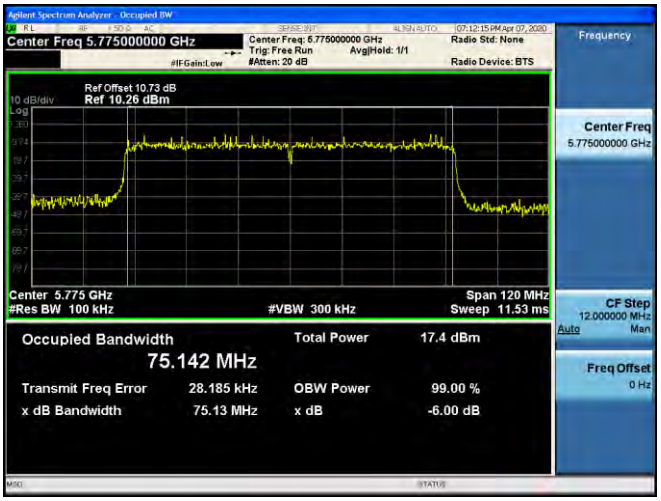
802.11ac(VHT20) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5745	149	17.11	> 0.5	Pass
5785	157	16.39	> 0.5	Pass
5825	165	17.01	> 0.5	Pass

802.11ac(VHT40) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5755	151	36.03	> 0.5	Pass
5795	159	36.37	> 0.5	Pass

802.11ac(VHT80) Mode		Measured Bandwidth [MHz]	Limit [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
5775	155	75.13	> 0.5	Pass

▣ Test Plots

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

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

802.11a Mode		Power Level Setting	Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	14	11.55	1.663	13.21	23.98
5200	40	15	12.77	1.663	14.43	23.98
5240	48	15	13.01	1.663	14.67	23.98
5260	52	15	13.23	1.663	14.89	23.98
5300	60	15	13.35	1.663	15.01	23.98
5320	64	15	13.20	1.663	14.86	23.98
5500	100	14	11.57	1.663	13.23	23.98
5600	120	14	11.48	1.663	13.14	23.98
5720	144	15	12.82	1.663	14.48	23.98
5745	149	15	12.62	1.663	14.28	30.00
5785	157	15	12.32	1.663	13.98	30.00
5825	165	15	12.95	1.663	14.61	30.00

802.11n(20MHz) Mode		Power Level Setting	Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	14	11.30	1.662	12.96	23.98
5200	40	15	12.69	1.662	14.35	23.98
5240	48	15	12.90	1.662	14.56	23.98
5260	52	15	13.01	1.662	14.67	23.98
5300	60	15	13.42	1.662	15.08	23.98
5320	64	15	13.24	1.662	14.90	23.98
5500	100	14	11.48	1.662	13.14	23.98
5600	120	15	12.24	1.662	13.90	23.98
5720	144	15	12.95	1.662	14.61	23.98
5745	149	15	12.62	1.662	14.28	30.00
5785	157	15	12.58	1.662	14.24	30.00
5825	165	15	12.95	1.662	14.61	30.00

802.11n(40MHz) Mode		Power Level Setting	Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	14	10.96	2.607	13.57	23.98
5230	46	14	11.27	2.607	13.88	23.98
5270	54	14	11.55	2.607	14.16	23.98
5310	62	12	9.87	2.607	12.48	23.98
5510	102	11	8.08	2.607	10.69	23.98
5590	118	14	10.57	2.607	13.18	23.98
5710	142	14	10.92	2.607	13.53	23.98
5755	151	14	10.73	2.607	13.34	30.00
5795	159	14	10.52	2.607	13.13	30.00

802.11ac(20MHz) Mode		Power Level Setting	Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)
Frequency [MHz]	Channel No.					
5180	36	14	11.48	1.629	13.11	23.98
5200	40	15	12.76	1.629	14.39	23.98
5240	48	15	13.10	1.629	14.73	23.98
5260	52	15	13.15	1.629	14.78	23.98
5300	60	15	13.48	1.629	15.11	23.98
5320	64	15	13.22	1.629	14.85	23.98
5500	100	14	11.52	1.629	13.15	23.98
5600	120	15	12.29	1.629	13.92	23.98
5720	144	15	12.80	1.629	14.43	23.98
5745	149	15	12.48	1.629	14.11	30.00
5785	157	15	12.55	1.629	14.18	30.00
5825	165	15	12.85	1.629	14.48	30.00

802.11ac(40MHz) Mode		Power Level Setting	Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)
Frequency [MHz]	Channel No.					
5190	38	14	10.85	2.526	13.38	23.98
5230	46	14	11.23	2.526	13.76	23.98
5270	54	14	11.51	2.526	14.04	23.98
5310	62	12	9.95	2.526	12.48	23.98
5510	102	11	7.82	2.526	10.35	23.98
5590	118	14	10.62	2.526	13.15	23.98
5710	142	14	11.15	2.526	13.68	23.98
5755	151	14	10.83	2.526	13.36	30.00
5795	159	14	10.62	2.526	13.15	30.00

802.11ac(80MHz) Mode		Power Level Setting	Measured Power [dBm]	Duty Cycle Factor (dB)	Total Power [dBm]	Limit (dBm)
Frequency [MHz]	Channel No.					
5210	42	12	8.78	2.734	11.51	23.98
5290	58	11	8.59	2.734	11.32	23.98
5530	106	11	7.56	2.734	10.29	23.98
5610	122	12	8.28	2.734	11.01	23.98
5690	138	12	8.61	2.734	11.34	23.98
5775	155	12	8.01	2.734	10.74	30.00

10.5 POWER SPECTRAL DENSITY

802.11a Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Limit
Frequency [MHz]	Channel No.				
5180	36	2.571	1.663	4.234	11 dBm/MHz
5200	40	2.121	1.663	3.784	
5240	48	2.278	1.663	3.941	
5260	52	2.161	1.663	3.824	
5300	60	2.732	1.663	4.395	
5320	64	2.733	1.663	4.396	
5500	100	2.289	1.663	3.952	
5600	120	2.609	1.663	4.272	
5720	144	2.715	1.663	4.378	
5745	149	0.106	1.663	1.769	30 dBm/500kHz
5785	157	0.240	1.663	1.903	
5825	165	0.235	1.663	1.898	

802.11n(20MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Limit
Frequency [MHz]	Channel No.				
5180	36	2.664	1.662	4.326	11 dBm/MHz
5200	40	2.136	1.662	3.798	
5240	48	2.114	1.662	3.776	
5260	52	2.097	1.662	3.759	
5300	60	2.178	1.662	3.840	
5320	64	2.574	1.662	4.236	
5500	100	2.304	1.662	3.966	
5600	120	2.643	1.662	4.305	
5720	144	2.626	1.662	4.288	
5745	149	0.209	1.662	1.871	30 dBm/500kHz
5785	157	0.308	1.662	1.970	
5825	165	0.190	1.662	1.852	

802.11n(40MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Limit
Frequency [MHz]	Channel No.				
5190	38	-2.156	2.607	0.451	11 dBm/MHz
5230	46	-2.397	2.607	0.210	
5270	54	-2.613	2.607	-0.006	
5310	62	-2.251	2.607	0.356	
5510	102	-2.727	2.607	-0.120	
5590	118	-2.507	2.607	0.100	
5710	142	-2.211	2.607	0.396	
5755	151	-4.477	2.607	-1.870	30 dBm /500kHz
5795	159	-4.504	2.607	-1.897	

802.11ac(20MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Limit
Frequency [MHz]	Channel No.				
5180	36	2.624	1.629	4.253	11 dBm/MHz
5200	40	2.303	1.629	3.932	
5240	48	2.040	1.629	3.669	
5260	52	2.083	1.629	3.712	
5300	60	2.279	1.629	3.908	
5320	64	2.478	1.629	4.107	
5500	100	2.126	1.629	3.755	
5600	120	2.560	1.629	4.189	
5720	144	2.692	1.629	4.321	
5745	149	0.120	1.629	1.749	30 dBm/500kHz
5785	157	0.241	1.629	1.870	
5825	165	0.109	1.629	1.738	

802.11ac(40MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Limit
Frequency [MHz]	Channel No.				
5190	38	-2.022	2.526	0.504	11 dBm/MHz
5230	46	-2.530	2.526	-0.004	
5270	54	-2.168	2.526	0.358	
5310	62	-2.213	2.526	0.313	
5510	102	-2.541	2.526	-0.015	
5590	118	-2.238	2.526	0.288	
5710	142	-2.524	2.526	0.002	
5755	151	-4.606	2.526	-2.080	30 dBm/500kHz
5795	159	-4.864	2.526	-2.338	

802.11ac(80MHz) Mode		Measured PSD [dBm]	Duty Cycle Factor (dB)	Total PSD [dBm]	Limit
Frequency [MHz]	Channel No.				
5210	42	-7.678	2.734	-4.944	11 dBm/MHz
5290	58	-7.853	2.734	-5.119	
5530	106	-7.714	2.734	-4.980	
5610	122	-8.154	2.734	-5.420	
5690	138	-8.180	2.734	-5.446	
5775	155	-10.343	2.734	-7.609	30 dBm/500kHz

▣ Test Plots(802.11a)

Note:

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

UNII 1 (Ch. 36)	UNII 2A (Ch. 64)
	

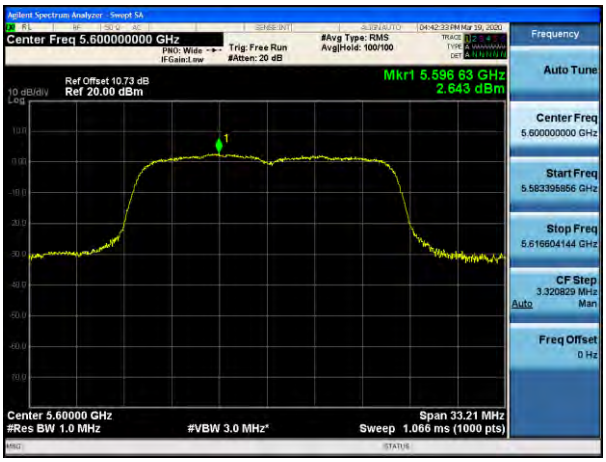
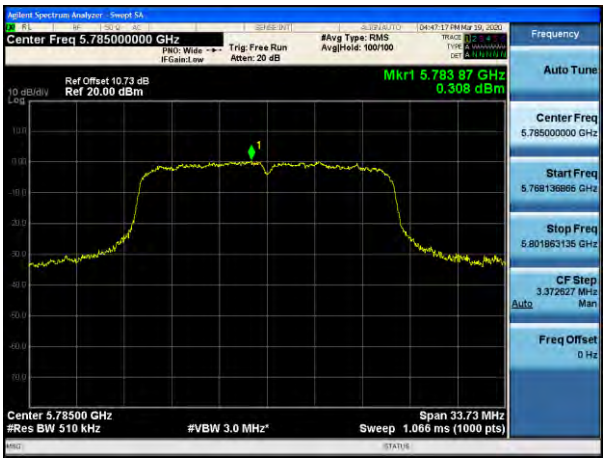
UNII 2C (Ch. 144)	UNII 3 (Ch. 157)
	

▣ Test Plots(802.11n(HT20))

Note:

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

UNII 1 (Ch. 36)	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. 38)	UNII 2A (Ch. 62)
	

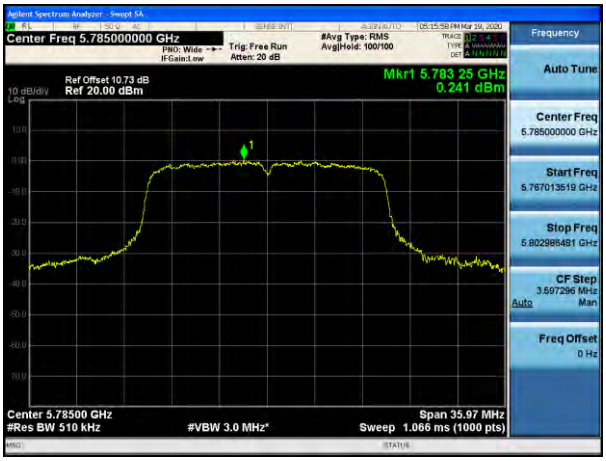
UNII 2C (Ch. 142)	UNII 3 (Ch. 151)
	

▣ Test Plots(802.11ac(VHT20))

Note:

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

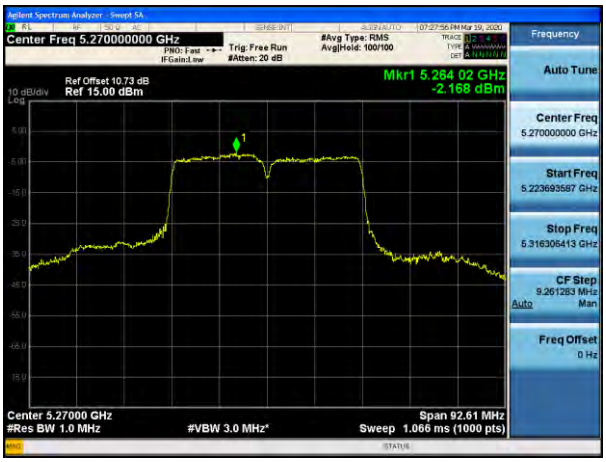
UNII 1 (Ch. 36)	UNII 2A (Ch. 64)
	

UNII 2C (Ch. 144)	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. 38)	UNII 2A (Ch. 54)
	

UNII 2C (Ch. 118)	UNII 3 (Ch. 151)
	

▣ Test Plots(802.11ac(VHT80))

Note:

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

UNII 1 (Ch. 42)	UNII 2A (Ch. 58)
	

UNII 2C (Ch. 106)	UNII 3 (Ch. 155)
	

10.6 FREQUENCY STABILITY.

10.6.1 80MHz BW

Startup after the EUT is energized

OPERATING BAND: UNII Band 1
OPERATING FREQUENCY: 5,210,000,000 Hz
CHANNEL: 42
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210006.77	6.77
100%		-30	5210080.81	80.81
100%		-20	5210028.43	28.43
100%		-10	5210090.84	90.84
100%		0	5210060.85	60.85
100%		+10	5210096.69	96.69
100%		+30	5210057.32	57.32
100%		+40	5210096.13	96.13
100%		+50	5210024.77	24.77
End point	3.55	+20	5210013.54	13.54

Note:

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

OPERATING BAND: UNII Band 2A
OPERATING FREQUENCY: 5,290,000,000 Hz
CHANNEL: 58
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290057.68	57.68
100%		-30	5290038.79	38.79
100%		-20	5290013.33	13.33
100%		-10	5290096.56	96.56
100%		0	5290089.85	89.85
100%		+10	5290061.94	61.94
100%		+30	5290066.97	66.97
100%		+40	5290018.23	18.23
100%		+50	5290045.55	45.55
End point	3.55	+20	5290082.70	82.7

Note:

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

OPERATING BAND: UNII Band 2C
OPERATING FREQUENCY: 5,530,000,000 Hz
CHANNEL: 106
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5530033.48	33.48
100%		-30	5530034.38	34.38
100%		-20	5530012.20	12.2
100%		-10	5530018.22	18.22
100%		0	5530060.31	60.31
100%		+10	5530039.84	39.84
100%		+30	5530005.24	5.24
100%		+40	5530068.66	68.66
100%		+50	5530099.99	99.99
End point	3.55	+20	5530068.35	68.35

Note:

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

OPERATING BAND: UNII Band 3
OPERATING FREQUENCY: 5,775,000,000 Hz
CHANNEL: 155
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775014.43	14.43
100%		-30	5775002.42	2.42
100%		-20	5775009.98	9.98
100%		-10	5775044.26	44.26
100%		0	5775001.03	1.03
100%		+10	5775007.33	7.33
100%		+30	5775086.05	86.05
100%		+40	5775027.31	27.31
100%		+50	5775098.77	98.77
End point	3.55	+20	5775061.60	61.6

Note:

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

2 minutes after the EUT is energized

OPERATING BAND: UNII Band 1
OPERATING FREQUENCY: 5,210,000,000 Hz
CHANNEL: 42
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210023.33	23.33
100%		-30	5210034.52	34.52
100%		-20	5210008.88	8.88
100%		-10	5210093.50	93.50
100%		0	5210099.37	99.37
100%		+10	5210006.34	6.34
100%		+30	5210042.45	42.45
100%		+40	5210052.29	52.29
100%		+50	5210082.71	82.71
End point	3.55	+20	5210039.72	39.72

Note:

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

OPERATING BAND: UNII Band 2A
OPERATING FREQUENCY: 5,290,000,000 Hz
CHANNEL: 58
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290052.86	52.86
100%		-30	5290033.40	33.40
100%		-20	5290014.51	14.51
100%		-10	5290066.53	66.53
100%		0	5290029.40	29.4
100%		+10	5290039.17	39.17
100%		+30	5290083.02	83.02
100%		+40	5290084.55	84.55
100%		+50	5290073.05	73.05
End point	3.55	+20	5290023.10	23.1

Note:

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

OPERATING BAND: UNII Band 2C
OPERATING FREQUENCY: 5,530,000,000 Hz
CHANNEL: 106
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5530007.73	7.73
100%		-30	5530085.12	85.12
100%		-20	5530017.34	17.34
100%		-10	5530068.10	68.1
100%		0	5530066.69	66.69
100%		+10	5530065.78	65.78
100%		+30	5530098.32	98.32
100%		+40	5530067.58	67.58
100%		+50	5530008.18	8.18
End point	3.55	+20	5530075.22	75.22

Note:

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

OPERATING BAND: UNII Band 3
OPERATING FREQUENCY: 5,775,000,000 Hz
CHANNEL: 155
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775033.54	33.54
100%		-30	5775020.60	20.60
100%		-20	5775036.90	36.9
100%		-10	5775069.20	69.2
100%		0	5775080.63	80.63
100%		+10	5775078.60	78.6
100%		+30	5775080.50	80.5
100%		+40	5775089.72	89.72
100%		+50	5775031.87	31.87
End point	3.55	+20	5775022.67	22.67

Note:

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

5 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210069.28	69.28
100%		-30	5210024.39	24.39
100%		-20	5210048.72	48.72
100%		-10	5210097.76	97.76
100%		0	5210004.31	4.31
100%		+10	5210043.45	43.45
100%		+30	5210011.37	11.37
100%		+40	5210005.84	5.84
100%		+50	5210019.66	19.66
End point	3.55	+20	5210015.41	15.41

Note:

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

OPERATING BAND: UNII Band 2A
OPERATING FREQUENCY: 5,290,000,000 Hz
CHANNEL: 58
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290094.84	94.84
100%		-30	5290030.88	30.88
100%		-20	5290035.64	35.64
100%		-10	5290083.08	83.08
100%		0	5290073.25	73.25
100%		+10	5290075.85	75.85
100%		+30	5290084.67	84.67
100%		+40	5290061.69	61.69
100%		+50	5290016.91	16.91
End point	3.55	+20	5290059.58	59.58

Note:

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

OPERATING BAND: UNII Band 2C
OPERATING FREQUENCY: 5,530,000,000 Hz
CHANNEL: 106
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5530056.22	56.22
100%		-30	5530027.31	27.31
100%		-20	5530030.54	30.54
100%		-10	5530021.48	21.48
100%		0	5530017.44	17.44
100%		+10	5530083.60	83.6
100%		+30	5530003.85	3.85
100%		+40	5530026.74	26.74
100%		+50	5530049.78	49.78
End point	3.55	+20	5530084.32	84.32

Note:

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

OPERATING BAND: UNII Band 3
OPERATING FREQUENCY: 5,775,000,000 Hz
CHANNEL: 155
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775014.93	14.93
100%		-30	5775077.81	77.81
100%		-20	5775092.11	92.11
100%		-10	5775039.02	39.02
100%		0	5775085.05	85.05
100%		+10	5775088.79	88.79
100%		+30	5775005.94	5.94
100%		+40	5775038.49	38.49
100%		+50	5775025.73	25.73
End point	3.55	+20	5775033.62	33.62

Note:

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

10 minutes after the EUT is energized

OPERATING BAND:	UNII Band 1
OPERATING FREQUENCY:	5,210,000,000 Hz
CHANNEL:	42
REFERENCE VOLTAGE:	3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210099.96	99.96
100%		-30	5210065.09	65.09
100%		-20	5210073.81	73.81
100%		-10	5210032.36	32.36
100%		0	5210004.71	4.71
100%		+10	5210062.06	62.06
100%		+30	5210035.50	35.50
100%		+40	5210080.46	80.46
100%		+50	5210090.86	90.86
End point	3.55	+20	5210065.10	65.10

Note:

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

OPERATING BAND: UNII Band 2A
OPERATING FREQUENCY: 5,290,000,000 Hz
CHANNEL: 58
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290012.33	12.33
100%		-30	5290041.09	41.09
100%		-20	5290049.19	49.19
100%		-10	5290091.62	91.62
100%		0	5290060.07	60.07
100%		+10	5290083.34	83.34
100%		+30	5290048.69	48.69
100%		+40	5290093.98	93.98
100%		+50	5290052.62	52.62
End point	3.55	+20	5290009.38	9.38

Note:

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

OPERATING BAND: UNII Band 2C
OPERATING FREQUENCY: 5,530,000,000 Hz
CHANNEL: 106
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5530065.14	65.14
100%		-30	5530051.69	51.69
100%		-20	5530032.63	32.63
100%		-10	5530094.43	94.43
100%		0	5530045.07	45.07
100%		+10	5530053.80	53.8
100%		+30	5530013.53	13.53
100%		+40	5530070.55	70.55
100%		+50	5530009.99	9.99
End point	3.55	+20	5530082.57	82.57

Note:

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

OPERATING BAND: UNII Band 3
OPERATING FREQUENCY: 5,775,000,000 Hz
CHANNEL: 155
REFERENCE VOLTAGE: 3.85 VDC

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775096.89	96.89
100%		-30	5775096.63	96.63
100%		-20	5775049.72	49.72
100%		-10	5775066.88	66.88
100%		0	5775023.47	23.47
100%		+10	5775054.53	54.53
100%		+30	5775072.16	72.16
100%		+40	5775058.02	58.02
100%		+50	5775079.65	79.65
End point	3.55	+20	5775016.50	16.5

Note:

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

10.7 STRADDLE CHANNEL

10.7.1 26dB Bandwidth

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26dB Bandwidth [MHz]
802.11a	UNII 2C	5720	144	5709.88	15.12
802.11n(HT20)				5709.72	15.28
802.11ac(VHT20)				5709.88	15.12
802.11a	UNII 3	5720	144	5729.68	4.68
802.11n(HT20)				5730.00	5.00
802.11ac(VHT20)				5730.04	5.04

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5688.96	36.04
802.11ac(VHT40)				5687.84	37.16
802.11n(HT40)	UNII 3	5710	142	5730.64	5.64
802.11ac(VHT40)				5731.04	6.04

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5649.80	75.20
	UNII 3	5690	138	5730.44	5.44

Note:

[UNII 2C] 26dB Bandwidth = 5725MHz - Measured Frequency[MHz]

[UNII 3C] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz

▣ Test Plots (26dB Bandwidth)

802.11a UNII Band	802.11n(HT20) UNII Band
	

802.11ac(VHT20) UNII Band


▣ Test Plots (26dB Bandwidth)

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

802.11ac(VHT80) UNII Band


10.7.2 6dB Bandwidth

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11a	UNII 3	5720	144	5728.20	3.20	> 0.5
802.11n(HT20)				5728.48	3.48	> 0.5
802.11ac(VHT20)				5728.48	3.48	> 0.5

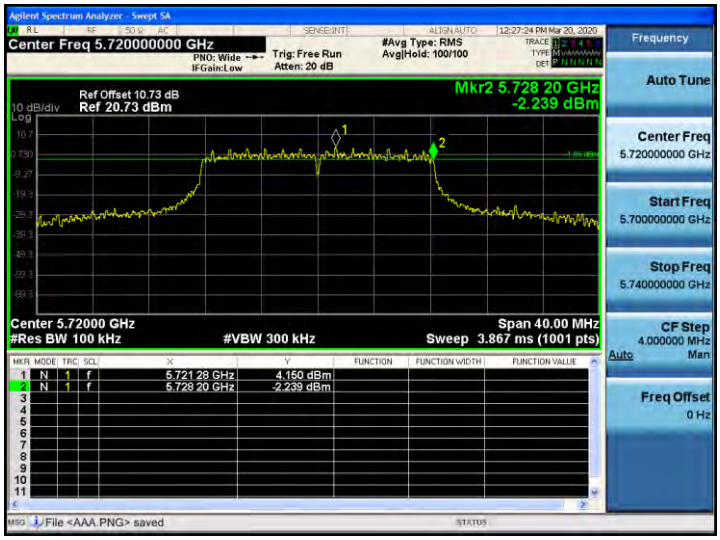
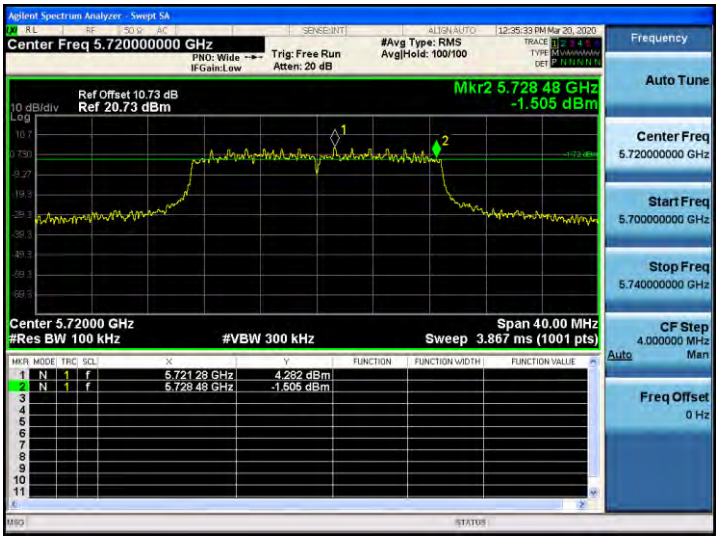
Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT40)	UNII 3	5710	142	5728.24	3.24	> 0.5
802.11ac(VHT40)				5728.24	3.24	> 0.5

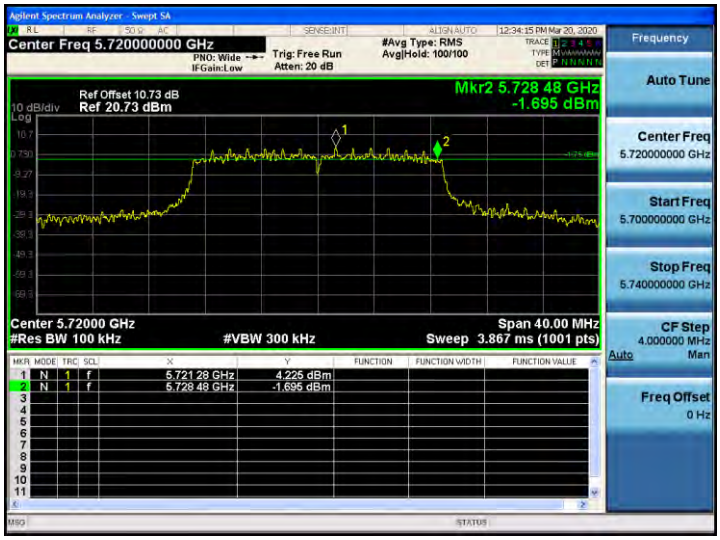
Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT80)	UNII 3	5690	138	5727.76	2.76	> 0.5

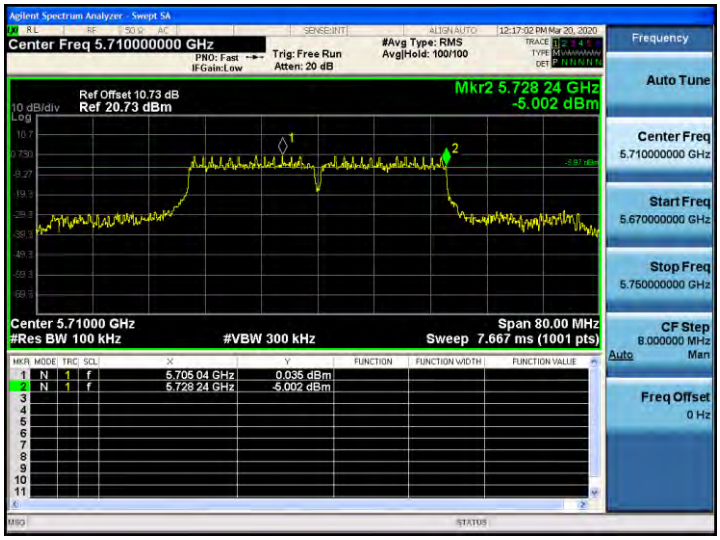
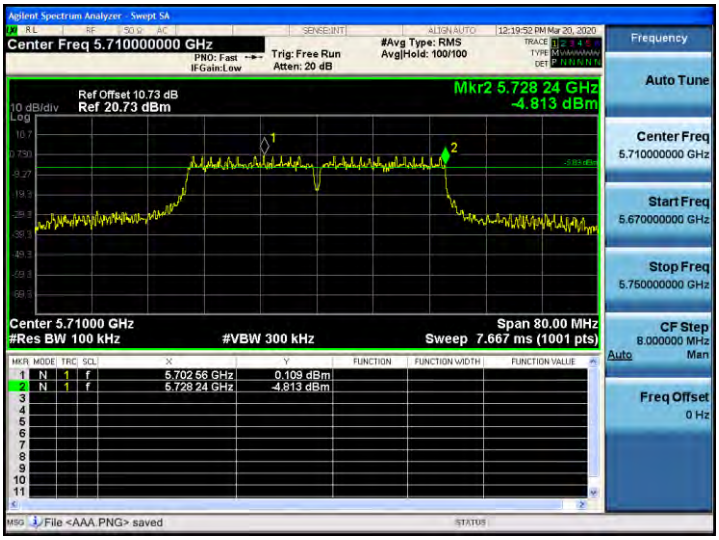
Note:

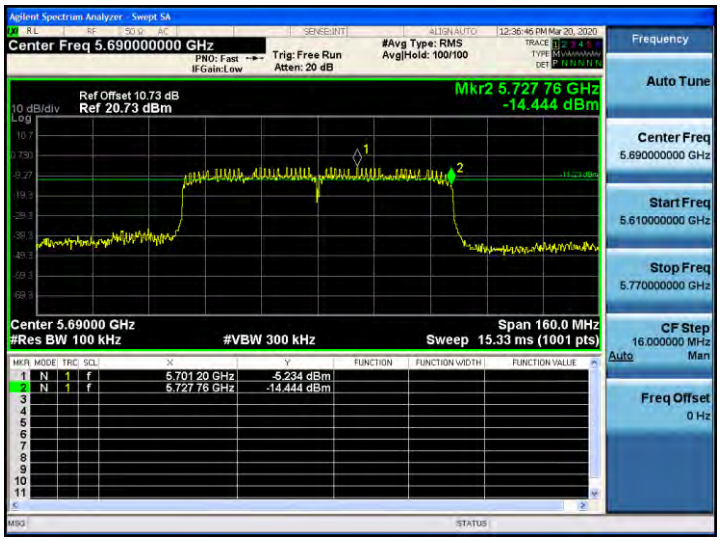
6dB Bandwidth = Measured Frequency[MHz] – 5725MHz

▣ Test Plots(UNII 3 Band 6dB Bandwidth)

802.11a CH.144	802.11n_HT20 CH.144
	

802.11ac_VHT20 CH.144


802.11n_HT40 CH.142	802.11ac_VHT40 CH.142
	

802.11ac_VHT80 CH.138


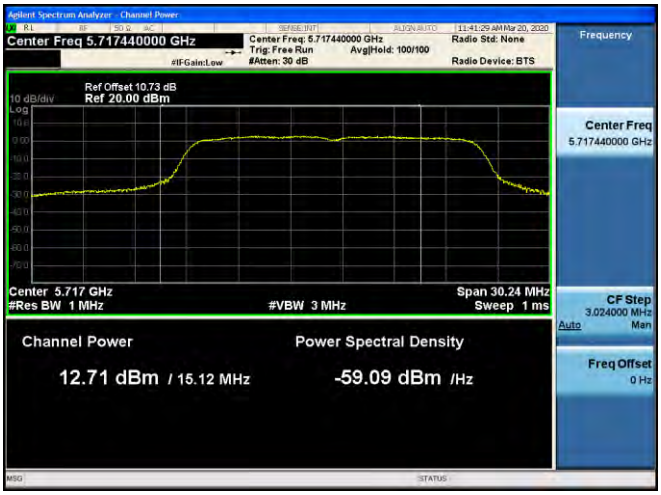
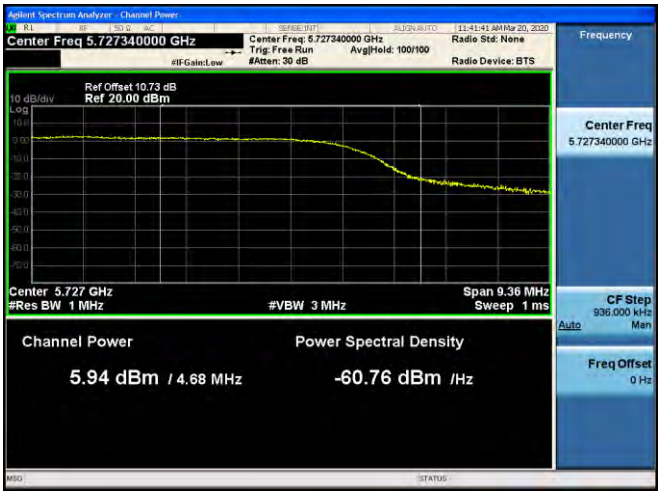
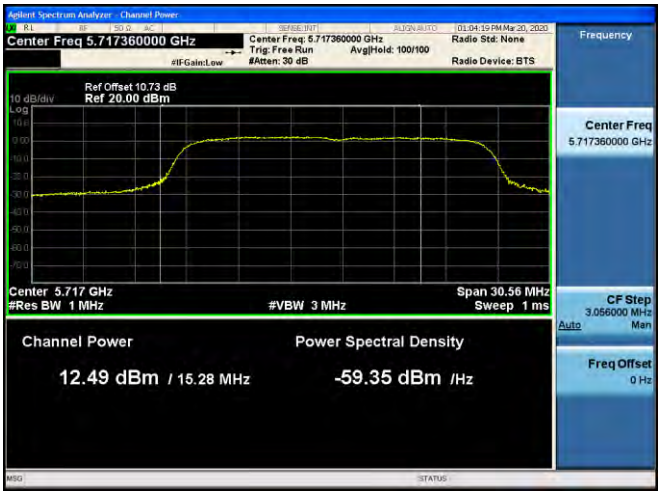
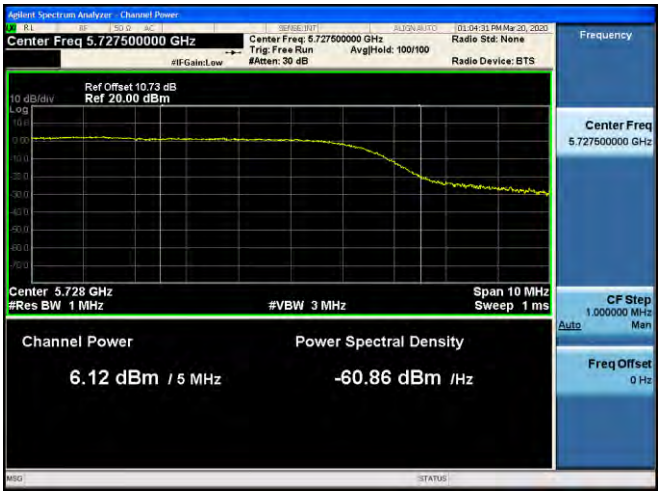
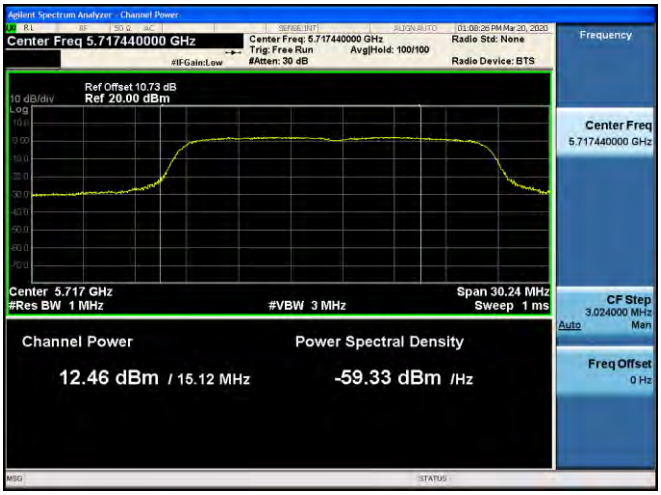
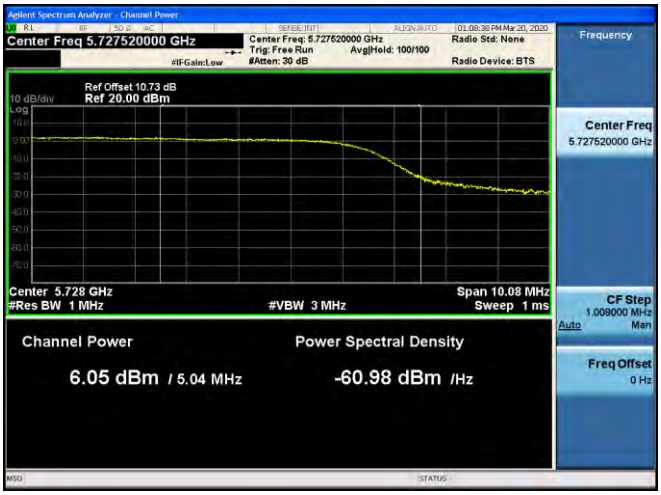
10.7.3 Output Power

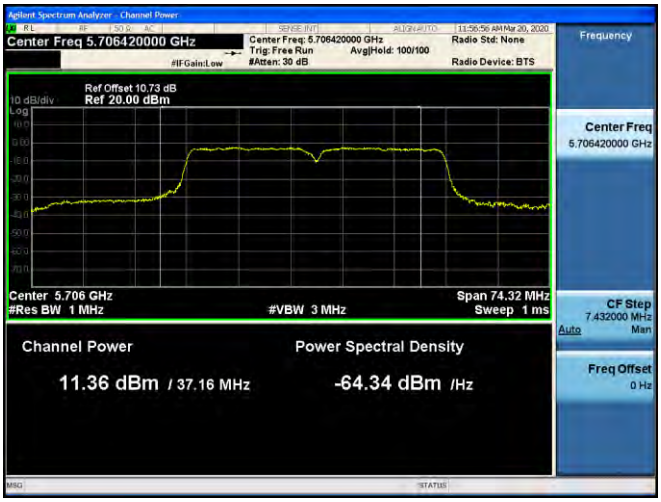
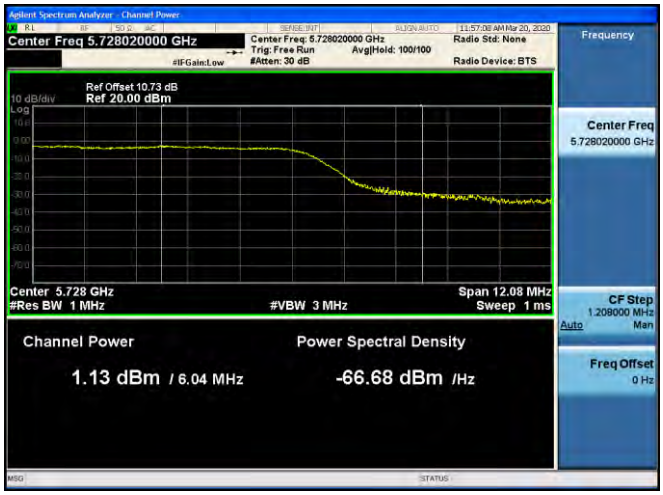
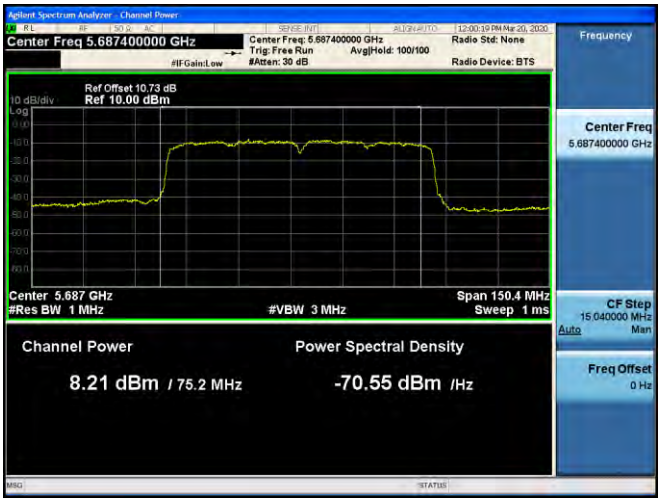
Mode	Frequency [MHz]	Channel	Measured Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Limit (dBm)
802.11a	5720 (UNII 2C Band)	144	12.71	1.663	14.37	22.80
802.11n(HT20)			12.49	1.662	14.15	22.84
802.11ac(VHT20)			12.46	1.629	14.09	22.80
802.11a	5720 (UNII 3 Band)	144	5.94	1.663	7.60	30.00
802.11n(HT20)			6.12	1.662	7.78	30.00
802.11ac(VHT20)			6.05	1.629	7.68	30.00

Mode	Frequency [MHz]	Channel	Measured Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Limit (dBm)
802.11n(HT40)	5710 (UNII 2C Band)	142	11.23	2.607	13.84	23.98
802.11ac(VHT40)			11.36	2.526	13.89	23.98
802.11n(HT40)	5710 (UNII 3 Band)	142	1.07	2.607	3.68	30.00
802.11ac(VHT40)			1.13	2.526	3.66	30.00

Mode	Frequency [MHz]	Channel	Measured Power (dBm)	Duty Cycle Factor (dB)	Total Power (dBm)	Limit (dBm)
802.11ac(VHT80)	5690 (UNII 2C Band)	138	8.21	2.734	10.94	23.98
	5690 (UNII 3 Band)	138	-7.73	2.734	-5.00	30.00

▣ Test Plots_

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

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

10.7.4 Power Spectral Density

Mode	Frequency [MHz]	Channel	Measured Density (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)
802.11a	5720 (UNII 2C Band)	144	2.788	1.663	4.451	11dBm/ MHz
802.11n(HT20)			2.480	1.662	4.142	
802.11ac(VHT20)			2.629	1.629	4.258	
802.11a	5720 (UNII 3 Band)	144	-0.601	1.663	1.062	30 dBm/ 500kHz
802.11n(HT20)			-0.712	1.662	0.950	
802.11ac(VHT20)			-0.850	1.629	0.779	

Mode	Frequency [MHz]	Channel	Measured Density (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)
802.11n(HT40)	5710 (UNII 2C Band)	142	-2.498	2.607	0.109	11dBm/ MHz
802.11ac(VHT40)			-2.407	2.526	0.119	
802.11n(HT40)	5710 (UNII 3 Band)	142	-5.816	2.607	-3.209	30 dBm/ 500kHz
802.11ac(VHT40)			-5.841	2.526	-3.315	

Mode	Frequency [MHz]	Channel	Measured Density (dBm)	Duty Cycle Factor (dB)	Total PSD (dBm)	Limit (dBm)
802.11ac(VHT80)	5690 (UNII 2C Band)	138	-8.117	2.734	-5.383	11dBm/ MHz
	5690 (UNII 3 Band)	138	-13.908	2.734	-11.174	30 dBm/ 500kHz

▣ Test Plots

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

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

10.8 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30MHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/m	dB
No Critical peaks found							

Note:

1. The reading 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 (dBuV) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/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]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	50.88	0.49	V	51.37	68.20	16.83	PK
15540	59.92	2.62	V	62.54	73.98	11.44	PK
15540	45.71	2.62	V	48.33	53.98	5.65	AV
10360	51.03	0.49	H	51.52	68.20	16.68	PK
15540	62.55	2.62	H	65.17	73.98	8.81	PK
15540	47.80	2.62	H	50.42	53.98	3.56	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	50.76	1.38	V	52.14	68.20	16.06	PK
15600	62.55	1.50	V	64.05	73.98	9.93	PK
15600	48.59	1.50	V	50.09	53.98	3.89	AV
10400	51.86	1.38	H	53.24	68.20	14.96	PK
15600	63.75	1.50	H	65.25	73.98	8.73	PK
15600	48.94	1.50	H	50.44	53.98	3.54	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	51.34	-0.33	V	51.01	68.20	17.19	PK
15720	62.99	0.56	V	63.55	73.98	10.43	PK
15720	48.67	0.56	V	49.23	53.98	4.75	AV
10480	52.09	-0.33	H	51.76	68.20	16.44	PK
15720	63.54	0.56	H	64.10	73.98	9.88	PK
15720	49.30	0.56	H	49.86	53.98	4.12	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	51.54	-0.06	V	51.48	68.20	16.72	PK
15780	62.18	0.96	V	63.14	73.98	10.84	PK
15780	47.55	0.96	V	48.51	53.98	5.47	AV
10520	52.08	-0.06	H	52.02	68.20	16.18	PK
15780	63.84	0.96	H	64.80	73.98	9.18	PK
15780	49.15	0.96	H	50.11	53.98	3.87	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	51.12	-0.18	V	50.94	73.98	23.04	PK
10600	38.97	-0.18	V	38.79	53.98	15.19	AV
15900	63.20	-0.13	V	63.07	73.98	10.91	PK
15900	48.04	-0.13	V	47.91	53.98	6.07	AV
10600	51.59	-0.18	H	51.41	73.98	22.57	PK
10600	39.24	-0.18	H	39.06	53.98	14.92	AV
15900	64.69	-0.13	H	64.56	73.98	9.42	PK
15900	49.79	-0.13	H	49.66	53.98	4.32	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	50.57	-0.04	V	50.53	73.98	23.45	PK
10640	39.44	-0.04	V	39.40	53.98	14.58	AV
15960	62.61	-0.36	V	62.25	73.98	11.73	PK
15960	48.97	-0.36	V	48.61	53.98	5.37	AV
10640	51.91	-0.04	H	51.87	73.98	22.11	PK
10640	39.68	-0.04	H	39.64	53.98	14.34	AV
15960	63.67	-0.36	H	63.31	73.98	10.67	PK
15960	49.57	-0.36	H	49.21	53.98	4.77	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	50.81	1.75	V	52.56	73.98	21.42	PK
11000	39.00	1.75	V	40.75	53.98	13.23	AV
16500	62.11	1.06	V	63.17	68.20	5.03	PK
11000	51.37	1.75	H	53.12	73.98	20.86	PK
11000	39.22	1.75	H	40.97	53.98	13.01	AV
16500	62.91	1.06	H	63.97	68.20	4.23	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11200	50.65	0.26	V	50.91	73.98	23.07	PK
11200	39.20	0.26	V	39.46	53.98	14.52	AV
16800	60.01	3.41	V	63.42	68.20	4.78	PK
11200	51.20	0.26	H	51.46	73.98	22.52	PK
11200	39.37	0.26	H	39.63	53.98	14.35	AV
16800	60.76	3.41	H	64.17	68.20	4.03	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	51.77	0.74	V	52.51	73.98	21.47	PK
11440	39.48	0.74	V	40.22	53.98	13.76	AV
17160	58.46	5.47	V	63.93	68.20	4.27	PK
11440	52.38	0.74	H	53.12	73.98	20.86	PK
11440	39.61	0.74	H	40.35	53.98	13.63	AV
17160	59.05	5.47	H	64.52	68.20	3.68	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	51.85	0.57	V	52.42	73.98	21.56	PK
11490	38.29	0.57	V	38.86	53.98	15.12	AV
17235	56.91	5.22	V	62.13	68.20	6.07	PK
11490	52.21	0.57	H	52.78	73.98	21.20	PK
11490	38.58	0.57	H	39.15	53.98	14.83	AV
17235	57.98	5.22	H	63.20	68.20	5.00	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	50.68	0.73	V	51.41	73.98	22.57	PK
11570	38.49	0.73	V	39.22	53.98	14.76	AV
17355	56.01	6.04	V	62.05	68.20	6.15	PK
11570	51.29	0.73	H	52.02	73.98	21.96	PK
11570	38.55	0.73	H	39.28	53.98	14.70	AV
17355	56.87	6.04	H	62.91	68.20	5.29	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	52.78	-0.65	V	52.13	73.98	21.85	PK
11650	39.44	-0.65	V	38.79	53.98	15.19	AV
17475	55.65	7.62	V	63.27	68.20	4.93	PK
11650	53.14	-0.65	H	52.49	73.98	21.49	PK
11650	39.64	-0.65	H	38.99	53.98	14.99	AV
17475	56.67	7.62	H	64.29	68.20	3.91	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	50.32	0.49	V	50.81	68.20	17.39	PK
15540	60.59	2.62	V	63.21	73.98	10.77	PK
15540	46.85	2.62	V	49.47	53.98	4.51	AV
10360	51.64	0.49	H	52.13	68.20	16.07	PK
15540	61.91	2.62	H	64.53	73.98	9.45	PK
15540	47.16	2.62	H	49.78	53.98	4.20	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	50.50	1.38	V	51.88	68.20	16.32	PK
15600	63.49	1.50	V	64.99	73.98	8.99	PK
15600	48.78	1.50	V	50.28	53.98	3.70	AV
10400	51.13	1.38	H	52.51	68.20	15.69	PK
15600	63.48	1.50	H	64.98	73.98	9.00	PK
15600	48.42	1.50	H	49.92	53.98	4.06	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	50.98	-0.33	V	50.65	68.20	17.55	PK
15720	63.58	0.56	V	64.14	73.98	9.84	PK
15720	48.44	0.56	V	49.00	53.98	4.98	AV
10480	52.09	-0.33	H	51.76	68.20	16.44	PK
15720	63.99	0.56	H	64.55	73.98	9.43	PK
15720	48.81	0.56	H	49.37	53.98	4.61	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	51.48	-0.06	V	51.42	68.20	16.78	PK
15780	63.66	0.96	V	64.62	73.98	9.36	PK
15780	48.14	0.96	V	49.10	53.98	4.88	AV
10520	51.55	-0.06	H	51.49	68.20	16.71	PK
15780	64.28	0.96	H	65.24	73.98	8.74	PK
15780	48.90	0.96	H	49.86	53.98	4.12	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	50.61	-0.18	V	50.43	73.98	23.55	PK
10600	38.85	-0.18	V	38.67	53.98	15.31	AV
15900	63.59	-0.13	V	63.46	73.98	10.52	PK
15900	48.79	-0.13	V	48.66	53.98	5.32	AV
10600	51.10	-0.18	H	50.92	73.98	23.06	PK
10600	39.02	-0.18	H	38.84	53.98	15.14	AV
15900	64.65	-0.13	H	64.52	73.98	9.46	PK
15900	49.53	-0.13	H	49.40	53.98	4.58	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	50.48	-0.04	V	50.44	73.98	23.54	PK
10640	39.08	-0.04	V	39.04	53.98	14.94	AV
15960	63.30	-0.36	V	62.94	73.98	11.04	PK
15960	48.52	-0.36	V	48.16	53.98	5.82	AV
10640	50.69	-0.04	H	50.65	73.98	23.33	PK
10640	39.12	-0.04	H	39.08	53.98	14.90	AV
15960	64.04	-0.36	H	63.68	73.98	10.30	PK
15960	49.24	-0.36	H	48.88	53.98	5.10	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	50.74	1.75	V	52.49	73.98	21.49	PK
11000	39.06	1.75	V	40.81	53.98	13.17	AV
16500	62.75	1.06	V	63.81	68.20	4.39	PK
11000	50.93	1.75	H	52.68	73.98	21.30	PK
11000	39.19	1.75	H	40.94	53.98	13.04	AV
16500	63.04	1.06	H	64.10	68.20	4.10	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11200	50.92	0.26	V	51.18	73.98	22.80	PK
11200	39.05	0.26	V	39.31	53.98	14.67	AV
16800	60.53	3.41	V	63.94	68.20	4.26	PK
11200	51.11	0.26	H	51.37	73.98	22.61	PK
11200	39.19	0.26	H	39.45	53.98	14.53	AV
16800	61.13	3.41	H	64.54	68.20	3.66	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	51.85	0.74	V	52.59	73.98	21.39	PK
11440	39.25	0.74	V	39.99	53.98	13.99	AV
17160	58.18	5.47	V	63.65	68.20	4.55	PK
11440	52.17	0.74	H	52.91	73.98	21.07	PK
11440	39.55	0.74	H	40.29	53.98	13.69	AV
17160	58.96	5.47	H	64.43	68.20	3.77	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	51.85	0.57	V	52.42	73.98	21.56	PK
11490	38.58	0.57	V	39.15	53.98	14.83	AV
17235	57.01	5.22	V	62.23	68.20	5.97	PK
11490	51.94	0.57	H	52.51	73.98	21.47	PK
11490	38.64	0.57	H	39.21	53.98	14.77	AV
17235	57.94	5.22	H	63.16	68.20	5.04	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	50.74	0.73	V	51.47	73.98	22.51	PK
11570	38.41	0.73	V	39.14	53.98	14.84	AV
17355	54.81	6.04	V	60.85	68.20	7.35	PK
11570	50.92	0.73	H	51.65	73.98	22.33	PK
11570	38.59	0.73	H	39.32	53.98	14.66	AV
17355	55.52	6.04	H	61.56	68.20	6.64	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	52.72	-0.65	V	52.07	73.98	21.91	PK
11650	39.65	-0.65	V	39.00	53.98	14.98	AV
17475	54.58	7.62	V	62.20	68.20	6.00	PK
11650	53.25	-0.65	H	52.60	73.98	21.38	PK
11650	39.71	-0.65	H	39.06	53.98	14.92	AV
17475	55.82	7.62	H	63.44	68.20	4.76	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	51.11	0.49	V	51.60	68.20	16.60	PK
15540	60.68	2.62	V	63.30	73.98	10.68	PK
15540	46.14	2.62	V	48.76	53.98	5.22	AV
10360	51.74	0.49	H	52.23	68.20	15.97	PK
15540	61.23	2.62	H	63.85	73.98	10.13	PK
15540	46.55	2.62	H	49.17	53.98	4.81	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	50.54	1.38	V	51.92	68.20	16.28	PK
15600	63.16	1.50	V	64.66	73.98	9.32	PK
15600	48.05	1.50	V	49.55	53.98	4.43	AV
10400	51.43	1.38	H	52.81	68.20	15.39	PK
15600	63.83	1.50	H	65.33	73.98	8.65	PK
15600	48.58	1.50	H	50.08	53.98	3.90	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	52.25	-0.33	V	51.92	68.20	16.28	PK
15720	62.85	0.56	V	63.41	73.98	10.57	PK
15720	48.07	0.56	V	48.63	53.98	5.35	AV
10480	52.30	-0.33	H	51.97	68.20	16.23	PK
15720	63.33	0.56	H	63.89	73.98	10.09	PK
15720	48.42	0.56	H	48.98	53.98	5.00	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	50.99	-0.06	V	50.93	68.20	17.27	PK
15780	63.49	0.96	V	64.45	73.98	9.53	PK
15780	48.20	0.96	V	49.16	53.98	4.82	AV
10520	51.74	-0.06	H	51.68	68.20	16.52	PK
15780	64.09	0.96	H	65.05	73.98	8.93	PK
15780	48.61	0.96	H	49.57	53.98	4.41	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10600	51.03	-0.18	V	50.85	73.98	23.13	PK
10600	39.05	-0.18	V	38.87	53.98	15.11	AV
15900	63.59	-0.13	V	63.46	73.98	10.52	PK
15900	48.67	-0.13	V	48.54	53.98	5.44	AV
10600	51.46	-0.18	H	51.28	73.98	22.70	PK
10600	39.21	-0.18	H	39.03	53.98	14.95	AV
15900	64.52	-0.13	H	64.39	73.98	9.59	PK
15900	49.25	-0.13	H	49.12	53.98	4.86	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	51.11	-0.04	V	51.07	73.98	22.91	PK
10640	39.05	-0.04	V	39.01	53.98	14.97	AV
15960	63.50	-0.36	V	63.14	73.98	10.84	PK
15960	48.19	-0.36	V	47.83	53.98	6.15	AV
10640	51.58	-0.04	H	51.54	73.98	22.44	PK
10640	39.20	-0.04	H	39.16	53.98	14.82	AV
15960	64.18	-0.36	H	63.82	73.98	10.16	PK
15960	48.67	-0.36	H	48.31	53.98	5.67	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	50.61	1.75	V	52.36	73.98	21.62	PK
11000	38.79	1.75	V	40.54	53.98	13.44	AV
16500	61.18	1.06	V	62.24	68.20	5.96	PK
11000	51.34	1.75	H	53.09	73.98	20.89	PK
11000	38.88	1.75	H	40.63	53.98	13.35	AV
16500	62.02	1.06	H	63.08	68.20	5.12	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11200	51.35	0.26	V	51.61	73.98	22.37	PK
11200	39.11	0.26	V	39.37	53.98	14.61	AV
16800	59.77	3.41	V	63.18	68.20	5.02	PK
11200	52.84	0.26	H	53.10	73.98	20.88	PK
11200	39.32	0.26	H	39.58	53.98	14.40	AV
16800	60.48	3.41	H	63.89	68.20	4.31	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	51.72	0.74	V	52.46	73.98	21.52	PK
11440	39.15	0.74	V	39.89	53.98	14.09	AV
17160	58.16	5.47	V	63.63	68.20	4.57	PK
11440	52.38	0.74	H	53.12	73.98	20.86	PK
11440	39.48	0.74	H	40.22	53.98	13.76	AV
17160	58.77	5.47	H	64.24	68.20	3.96	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	50.89	0.57	V	51.46	73.98	22.52	PK
11490	38.49	0.57	V	39.06	53.98	14.92	AV
17235	57.69	5.22	V	62.91	68.20	5.29	PK
11490	50.95	0.57	H	51.52	73.98	22.46	PK
11490	38.78	0.57	H	39.35	53.98	14.63	AV
17235	58.21	5.22	H	63.43	68.20	4.77	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	50.34	0.73	V	51.07	73.98	22.91	PK
11570	38.65	0.73	V	39.38	53.98	14.60	AV
17355	54.89	6.04	V	60.93	68.20	7.27	PK
11570	50.92	0.73	H	51.65	73.98	22.33	PK
11570	38.70	0.73	H	39.43	53.98	14.55	AV
17355	55.20	6.04	H	61.24	68.20	6.96	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	51.95	-0.65	V	51.30	73.98	22.68	PK
11650	39.68	-0.65	V	39.03	53.98	14.95	AV
17475	56.07	7.62	V	63.69	68.20	4.51	PK
11650	52.55	-0.65	H	51.90	73.98	22.08	PK
11650	39.84	-0.65	H	39.19	53.98	14.79	AV
17475	56.74	7.62	H	64.36	68.20	3.84	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	51.43	1.24	V	52.67	68.20	15.53	PK
15570	57.64	0.88	V	58.52	73.98	15.46	PK
15570	43.33	0.88	V	44.21	53.98	9.77	AV
10380	51.58	1.24	H	52.82	68.20	15.38	PK
15570	58.23	0.88	H	59.11	73.98	14.87	PK
15570	43.85	0.88	H	44.73	53.98	9.25	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	51.66	0.14	V	51.80	68.20	16.40	PK
15690	59.36	1.35	V	60.71	73.98	13.27	PK
15690	44.98	1.35	V	46.33	53.98	7.65	AV
10460	52.10	0.14	H	52.24	68.20	15.96	PK
15690	59.95	1.35	H	61.30	73.98	12.68	PK
15690	45.32	1.35	H	46.67	53.98	7.31	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	51.11	-0.38	V	50.73	68.20	17.47	PK
15810	58.35	0.58	V	58.93	73.98	15.05	PK
15810	45.14	0.58	V	45.72	53.98	8.26	AV
10540	51.89	-0.38	H	51.51	68.20	16.69	PK
15810	59.20	0.58	H	59.78	73.98	14.20	PK
15810	45.42	0.58	H	46.00	53.98	7.98	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	50.85	-0.15	V	50.70	73.98	23.28	PK
10620	39.76	-0.15	V	39.61	53.98	14.37	AV
15930	58.14	-0.07	V	58.07	73.98	15.91	PK
15930	42.85	-0.07	V	42.78	53.98	11.20	AV
10620	51.56	-0.15	H	51.41	73.98	22.57	PK
10620	40.09	-0.15	H	39.94	53.98	14.04	AV
15930	58.92	-0.07	H	58.85	73.98	15.13	PK
15930	43.08	-0.07	H	43.01	53.98	10.97	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	50.74	1.96	V	52.70	73.98	21.28	PK
11020	39.08	1.96	V	41.04	53.98	12.94	AV
16530	54.55	1.52	V	56.07	68.20	12.13	PK
11020	51.33	1.96	H	53.29	73.98	20.69	PK
11020	39.28	1.96	H	41.24	53.98	12.74	AV
16530	55.52	1.52	H	57.04	68.20	11.16	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11180	50.46	0.43	V	50.89	73.98	23.09	PK
11180	38.73	0.43	V	39.16	53.98	14.82	AV
16770	54.55	2.60	V	57.15	68.20	11.05	PK
11180	52.27	0.43	H	52.70	73.98	21.28	PK
11180	39.27	0.43	H	39.70	53.98	14.28	AV
16770	57.23	2.60	H	59.83	68.20	8.37	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11420	51.85	0.92	V	52.77	73.98	21.21	PK
11420	39.68	0.92	V	40.60	53.98	13.38	AV
17130	54.76	4.98	V	59.74	68.20	8.46	PK
11420	52.55	0.92	H	53.47	73.98	20.51	PK
11420	40.05	0.92	H	40.97	53.98	13.01	AV
17130	55.56	4.98	H	60.54	68.20	7.66	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	50.82	0.42	V	51.24	73.98	22.74	PK
11510	38.92	0.42	V	39.34	53.98	14.64	AV
17265	55.38	5.34	V	60.72	68.20	7.48	PK
11510	51.24	0.42	H	51.66	73.98	22.32	PK
11510	39.13	0.42	H	39.55	53.98	14.43	AV
17265	55.45	5.34	H	60.79	68.20	7.41	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	49.82	0.49	V	50.31	73.98	23.67	PK
11590	38.64	0.49	V	39.13	53.98	14.85	AV
17385	53.25	3.54	V	56.79	68.20	11.41	PK
11590	50.79	0.49	H	51.28	73.98	22.70	PK
11590	38.80	0.49	H	39.29	53.98	14.69	AV
17385	54.24	3.54	H	57.78	68.20	10.42	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10380	51.75	1.24	V	52.99	68.20	15.21	PK
15570	57.68	0.88	V	58.56	73.98	15.42	PK
15570	43.77	0.88	V	44.65	53.98	9.33	AV
10380	51.38	1.24	H	52.62	68.20	15.58	PK
15570	58.43	0.88	H	59.31	73.98	14.67	PK
15570	44.27	0.88	H	45.15	53.98	8.83	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10460	51.30	0.14	V	51.44	68.20	16.76	PK
15690	58.01	1.35	V	59.36	73.98	14.62	PK
15690	45.14	1.35	V	46.49	53.98	7.49	AV
10460	51.77	0.14	H	51.91	68.20	16.29	PK
15690	59.35	1.35	H	60.70	73.98	13.28	PK
15690	45.40	1.35	H	46.75	53.98	7.23	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10540	50.79	-0.38	V	50.41	68.20	17.79	PK
15810	56.82	0.58	V	57.40	73.98	16.58	PK
15810	44.89	0.58	V	45.47	53.98	8.51	AV
10540	51.11	-0.38	H	50.73	68.20	17.47	PK
15810	57.83	0.58	H	58.41	73.98	15.57	PK
15810	45.26	0.58	H	45.84	53.98	8.14	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10620	51.33	-0.15	V	51.18	73.98	22.80	PK
10620	40.09	-0.15	V	39.94	53.98	14.04	AV
15930	56.19	-0.07	V	56.12	73.98	17.86	PK
15930	42.85	-0.07	V	42.78	53.98	11.20	AV
10620	51.98	-0.15	H	51.83	73.98	22.15	PK
10620	40.50	-0.15	H	40.35	53.98	13.63	AV
15930	57.17	-0.07	H	57.10	73.98	16.88	PK
15930	43.07	-0.07	H	43.00	53.98	10.98	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11020	50.92	1.96	V	52.88	73.98	21.10	PK
11020	39.33	1.96	V	41.29	53.98	12.69	AV
16530	53.85	1.52	V	55.37	68.20	12.83	PK
11020	51.56	1.96	H	53.52	73.98	20.46	PK
11020	39.41	1.96	H	41.37	53.98	12.61	AV
16530	54.72	1.52	H	56.24	68.20	11.96	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11180	51.29	0.43	V	51.72	73.98	22.26	PK
11180	39.13	0.43	V	39.56	53.98	14.42	AV
16770	54.44	2.60	V	57.04	68.20	11.16	PK
11180	51.94	0.43	H	52.37	73.98	21.61	PK
11180	39.41	0.43	H	39.84	53.98	14.14	AV
16770	55.50	2.60	H	58.10	68.20	10.10	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11420	51.92	0.92	V	52.84	73.98	21.14	PK
11420	39.97	0.92	V	40.89	53.98	13.09	AV
17130	52.13	4.98	V	57.11	68.20	11.09	PK
11420	52.72	0.92	H	53.64	73.98	20.34	PK
11420	40.10	0.92	H	41.02	53.98	12.96	AV
17130	53.41	4.98	H	58.39	68.20	9.81	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11510	50.55	0.42	V	50.97	73.98	23.01	PK
11510	38.78	0.42	V	39.20	53.98	14.78	AV
17265	51.89	5.34	V	57.23	68.20	10.97	PK
11510	50.91	0.42	H	51.33	73.98	22.65	PK
11510	38.95	0.42	H	39.37	53.98	14.61	AV
17265	52.99	5.34	H	58.33	68.20	9.87	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L.-A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11590	50.89	0.49	V	51.38	73.98	22.60	PK
11590	39.05	0.49	V	39.54	53.98	14.44	AV
17385	54.14	3.54	V	57.68	68.20	10.52	PK
11590	51.59	0.49	H	52.08	73.98	21.90	PK
11590	39.23	0.49	H	39.72	53.98	14.26	AV
17385	54.78	3.54	H	58.32	68.20	9.88	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10420	51.22	0.14	V	51.36	68.20	16.84	PK
15630	52.25	1.53	V	53.78	73.98	20.20	PK
15630	40.90	1.53	V	42.43	53.98	11.55	AV
10420	51.64	0.14	H	51.78	68.20	16.42	PK
15630	52.57	1.53	H	54.10	73.98	19.88	PK
15630	41.30	1.53	H	42.83	53.98	11.15	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10580	51.38	0.14	V	51.52	68.20	16.68	PK
15870	52.84	0.72	V	53.56	73.98	20.42	PK
15870	40.51	0.72	V	41.23	53.98	12.75	AV
10580	52.42	0.14	H	52.56	68.20	15.64	PK
15870	53.13	0.72	H	53.85	73.98	20.13	PK
15870	40.97	0.72	H	41.69	53.98	12.29	AV

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11060	50.06	0.31	V	50.37	73.98	23.61	PK
11060	40.08	0.31	V	40.39	53.98	13.59	AV
16590	52.58	2.95	V	55.53	68.20	12.67	PK
11060	51.33	0.31	H	51.64	73.98	22.34	PK
11060	40.30	0.31	H	40.61	53.98	13.37	AV
16590	53.41	2.95	H	56.36	68.20	11.84	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11220	51.35	0.53	V	51.88	73.98	22.10	PK
11220	39.95	0.53	V	40.48	53.98	13.50	AV
16830	51.90	3.44	V	55.34	68.20	12.86	PK
11220	51.97	0.53	H	52.50	73.98	21.48	PK
11220	40.03	0.53	H	40.56	53.98	13.42	AV
16830	52.36	3.44	H	55.80	68.20	12.40	PK

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

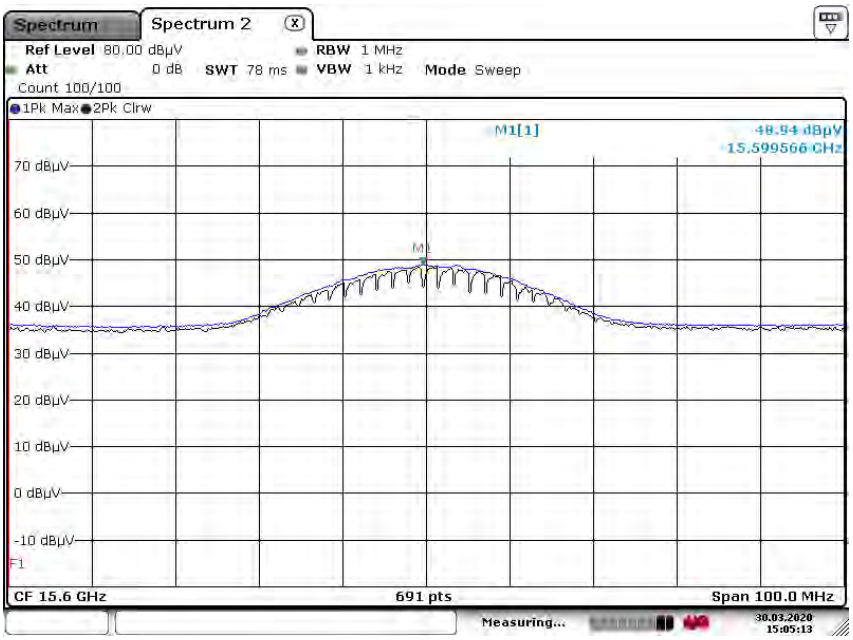
Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11380	50.59	0.20	V	50.79	73.98	23.19	PK
11380	40.77	0.20	V	40.97	53.98	13.01	AV
17070	49.61	4.81	V	54.42	68.20	13.78	PK
11380	51.49	0.20	H	51.69	73.98	22.29	PK
11380	40.95	0.20	H	41.15	53.98	12.83	AV
17070	50.36	4.81	H	55.17	68.20	13.03	PK

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

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11550	49.79	0.55	V	50.34	73.98	23.64	PK
11550	39.45	0.55	V	40.00	53.98	13.98	AV
17325	50.64	5.18	V	55.82	68.20	12.38	PK
11550	51.84	0.55	H	52.39	73.98	21.59	PK
11550	39.67	0.55	H	40.22	53.98	13.76	AV
17325	51.11	5.18	H	56.29	68.20	11.91	PK

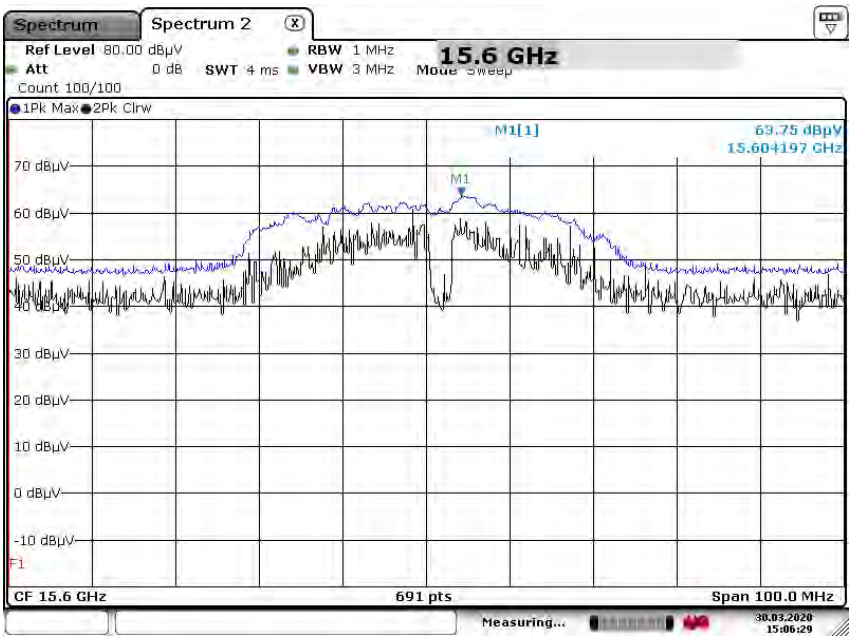
▣ Test Plots

Average Reading (802.11a, Ch.40 3rd Harmonic, Z-H)



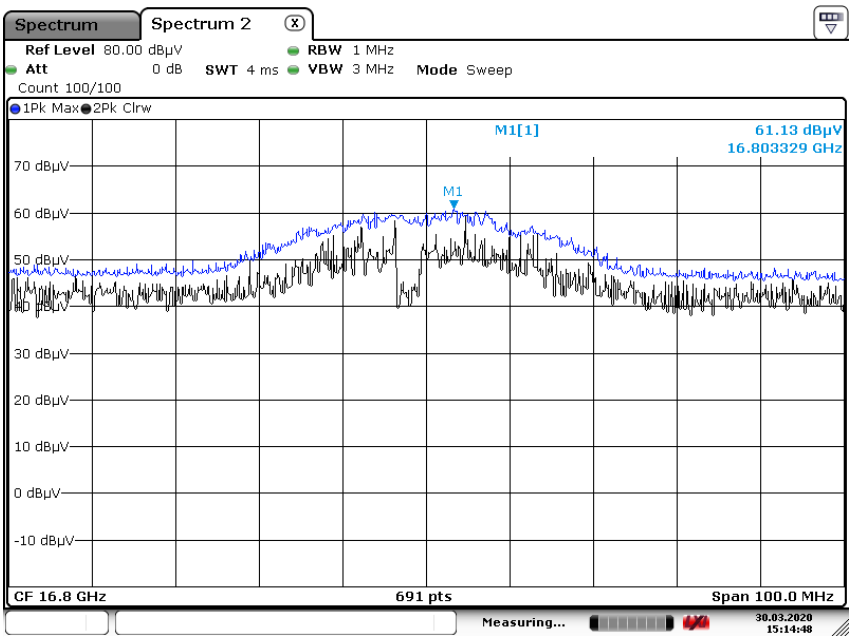
Date: 30.MAR.2020 15:05:13

Peak Reading (802.11a, Ch.40 3rd Harmonic, Z-H)



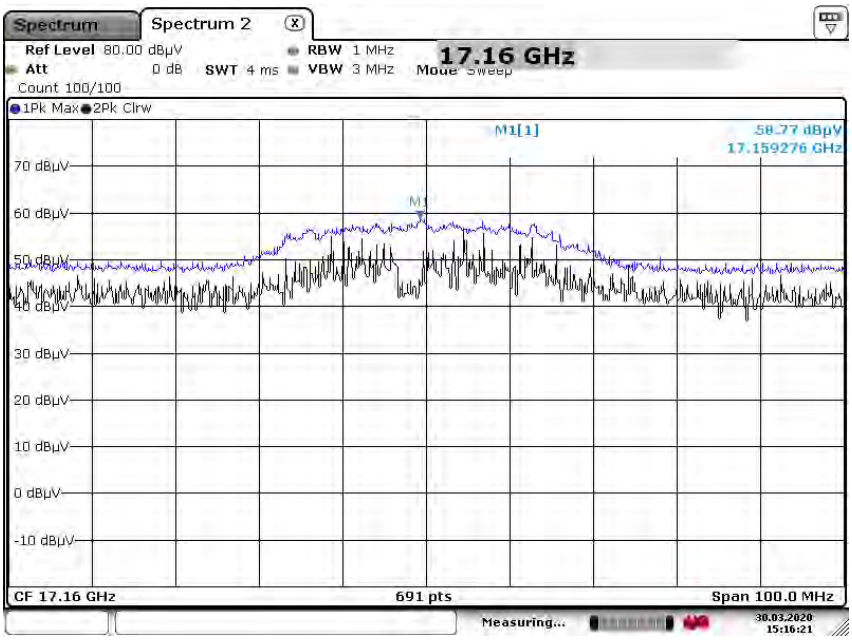
Date: 30.MAR.2020 15:06:29

Peak Reading (802.11n_HT20, Ch.120 3rd Harmonic, Z-H)



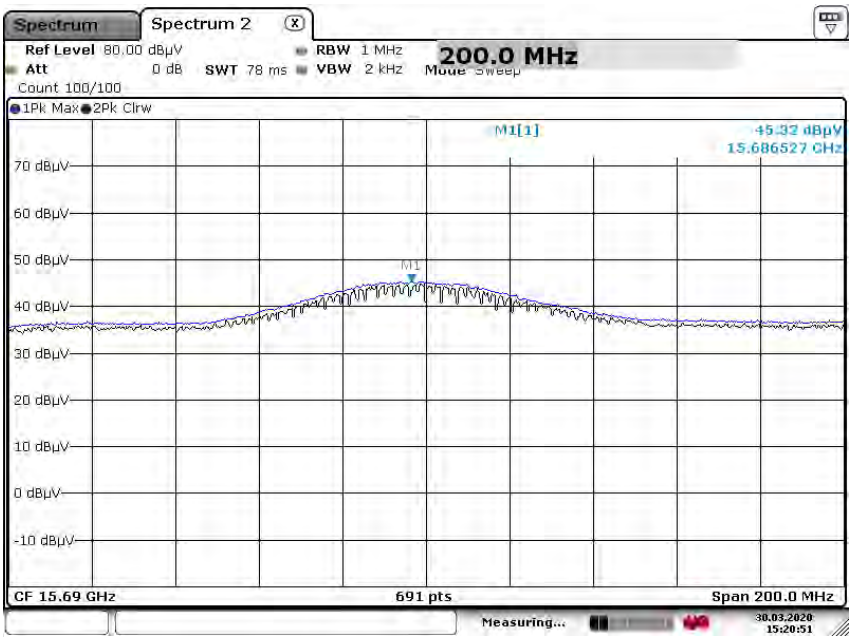
Date: 30.MAR.2020 15:14:48

Peak Reading (802.11ac_VHT20, Ch.144 3rd Harmonic, Z-H)



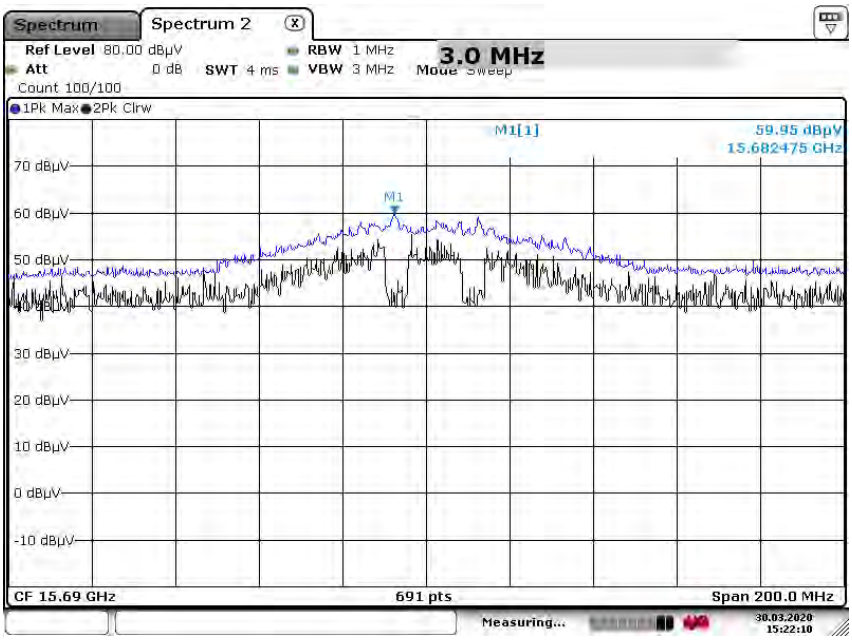
Date: 30.MAR.2020 15:16:21

Average Reading (802.11n_HT40, Ch.46 3rd Harmonic, Z-H)



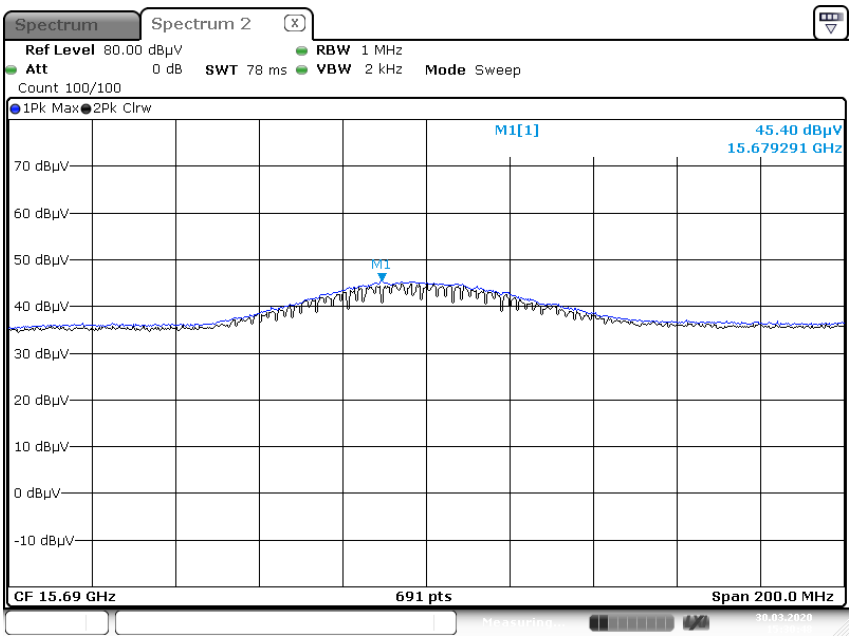
Date: 30.MAR.2020 15:20:51

Peak Reading (802.11n_HT40, Ch.46 3rd Harmonic, H)



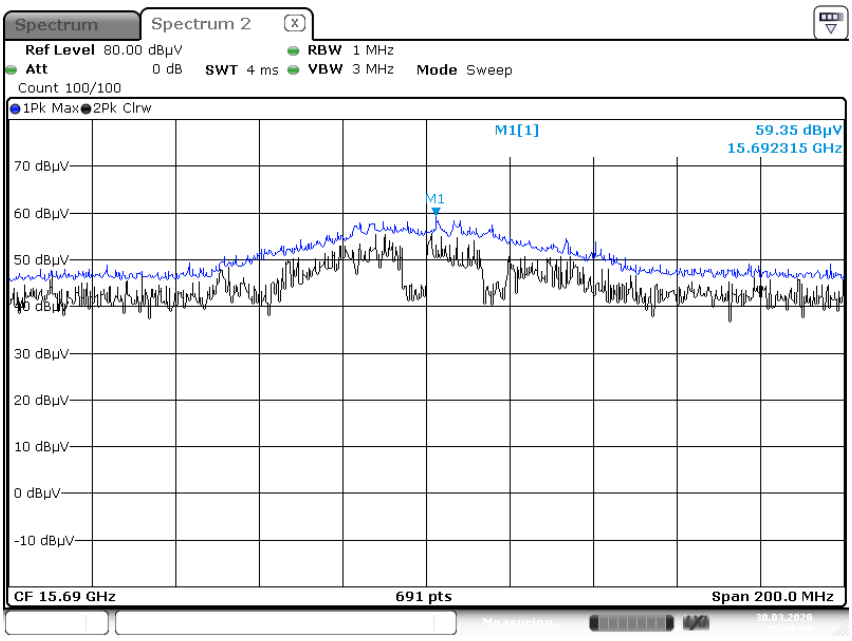
Date: 30.MAR.2020 15:22:10

Average Reading (802.11ac_VHT40, Ch.46 3rd Harmonic, Z-H)



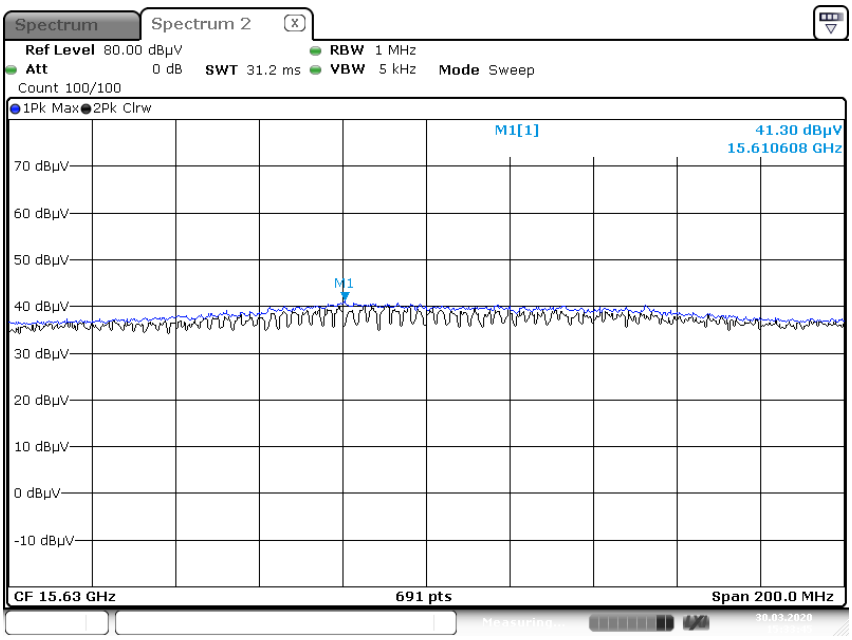
Date: 30.MAR.2020 15:30:47

Peak Reading (802.11ac_VHT40, Ch.46 3rd Harmonic, H)



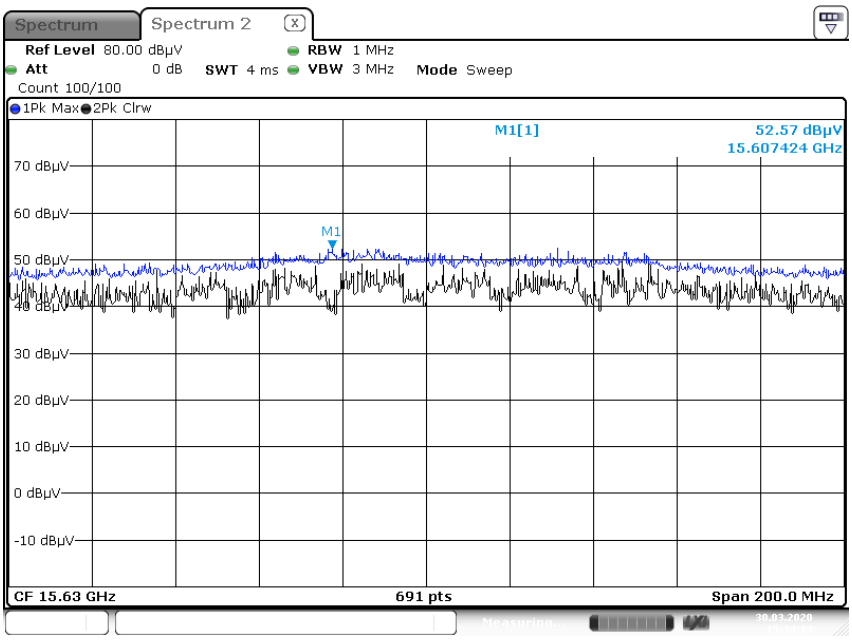
Date: 30.MAR.2020 15:31:46

Average Reading (802.11ac_VHT80, Ch.42 3rd Harmonic, Z-H)



Date: 30.MAR.2020 15:33:45

Peak Reading (802.11ac_VHT80, Ch.42 3rd Harmonic, H)



Date: 30.MAR.2020 15:34:14

Note:

Only the worst case plots for Radiated Spurious Emissions.

10.9 RADIATED RESTRICTED BAND EDGE

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	50.52	5.75	H	56.27	73.98	17.71	PK
5150	36.54	5.75	H	42.29	53.98	11.69	AV
5150	49.85	5.75	V	55.6	73.98	18.38	PK
5150	36.08	5.75	V	41.83	53.98	12.15	AV

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	55.12	5.52	H	60.64	73.98	13.34	PK
5350	40.11	5.52	H	45.63	53.98	8.35	AV
5350	54.25	5.52	V	59.77	73.98	14.21	PK
5350	39.64	5.52	V	45.16	53.98	8.82	AV

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

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	49.38	7.05	H	56.43	73.98	17.55	PK
5460	35.11	7.05	H	42.16	53.98	11.82	AV
5470	58.17	6.59	H	64.76	68.20	3.44	PK
5460	44.60	7.05	V	51.65	73.98	22.33	PK
5460	32.08	7.05	V	39.13	53.98	14.85	AV
5470	51.85	6.59	V	58.44	68.20	9.76	PK

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	56.27	5.75	H	62.02	73.98	11.96	PK
5150	36.36	5.75	H	42.11	53.98	11.87	AV
5150	55.27	5.75	V	61.02	73.98	12.96	PK
5150	36.16	5.75	V	41.91	53.98	12.07	AV

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	59.66	5.52	H	65.18	73.98	8.80	PK
5350	40.24	5.52	H	45.76	53.98	8.22	AV
5350	58.31	5.52	V	63.83	73.98	10.15	PK
5350	39.99	5.52	V	45.51	53.98	8.47	AV

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

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	48.74	7.05	H	55.79	73.98	18.19	PK
5460	34.62	7.05	H	41.67	53.98	12.31	AV
5470	58.92	6.59	H	65.51	68.20	2.69	PK
5460	48.55	7.05	V	55.6	73.98	18.38	PK
5460	34.18	7.05	V	41.23	53.98	12.75	AV
5470	58.34	6.59	V	64.93	68.20	3.27	PK

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	51.41	5.75	H	57.16	73.98	16.82	PK
5150	37.03	5.75	H	42.78	53.98	11.20	AV
5150	50.76	5.75	V	56.51	73.98	17.47	PK
5150	36.55	5.75	V	42.3	53.98	11.68	AV

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	60.21	5.52	H	65.73	73.98	8.25	PK
5350	40.71	5.52	H	46.23	53.98	7.75	AV
5350	58.94	5.52	V	64.46	73.98	9.52	PK
5350	40.35	5.52	V	45.87	53.98	8.11	AV

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

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	50.59	7.05	H	57.64	73.98	16.34	PK
5460	35.25	7.05	H	42.3	53.98	11.68	AV
5470	58.73	6.59	H	65.32	68.20	2.88	PK
5460	49.35	7.05	V	56.4	73.98	17.58	PK
5460	35.02	7.05	V	42.07	53.98	11.91	AV
5470	58.07	6.59	V	64.66	68.20	3.54	PK

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	59.70	5.75	H	65.45	73.98	8.53	PK
5150	44.81	5.75	H	50.56	53.98	3.42	AV
5150	58.69	5.75	V	64.44	73.98	9.54	PK
5150	44.55	5.75	V	50.3	53.98	3.68	AV

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	62.80	5.52	H	68.32	73.98	5.66	PK
5350	45.23	5.52	H	50.75	53.98	3.23	AV
5350	61.54	5.52	V	67.06	73.98	6.92	PK
5350	44.62	5.52	V	50.14	53.98	3.84	AV

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

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	53.84	7.05	H	60.89	73.98	13.09	PK
5460	38.59	7.05	H	45.64	53.98	8.34	AV
5470	58.37	6.59	H	64.96	68.20	3.24	PK
5460	53.56	7.05	V	60.61	73.98	13.37	PK
5460	38.11	7.05	V	45.16	53.98	8.82	AV
5470	57.85	6.59	V	64.44	68.20	3.76	PK

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	58.35	5.75	H	64.10	73.98	9.88	PK
5150	44.91	5.75	H	50.66	53.98	3.32	AV
5150	57.49	5.75	V	63.24	73.98	10.74	PK
5150	44.76	5.75	V	50.51	53.98	3.47	AV

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	62.29	5.52	H	67.81	73.98	6.17	PK
5350	45.42	5.52	H	50.94	53.98	3.04	AV
5350	61.01	5.52	V	66.53	73.98	7.45	PK
5350	45.19	5.52	V	50.71	53.98	3.27	AV

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

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	52.31	7.05	H	59.36	73.98	14.62	PK
5460	38.53	7.05	H	45.58	53.98	8.40	AV
5470	58.15	6.59	H	64.74	68.20	3.46	PK
5460	51.95	7.05	V	59	73.98	14.98	PK
5460	38.44	7.05	V	45.49	53.98	8.49	AV
5470	57.37	6.59	V	63.96	68.20	4.24	PK

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

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	54.83	5.75	H	60.58	73.98	13.40	PK
5150	43.84	5.75	H	49.59	53.98	4.39	AV
5150	54.28	5.75	V	60.03	73.98	13.95	PK
5150	43.20	5.75	V	48.95	53.98	5.03	AV

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

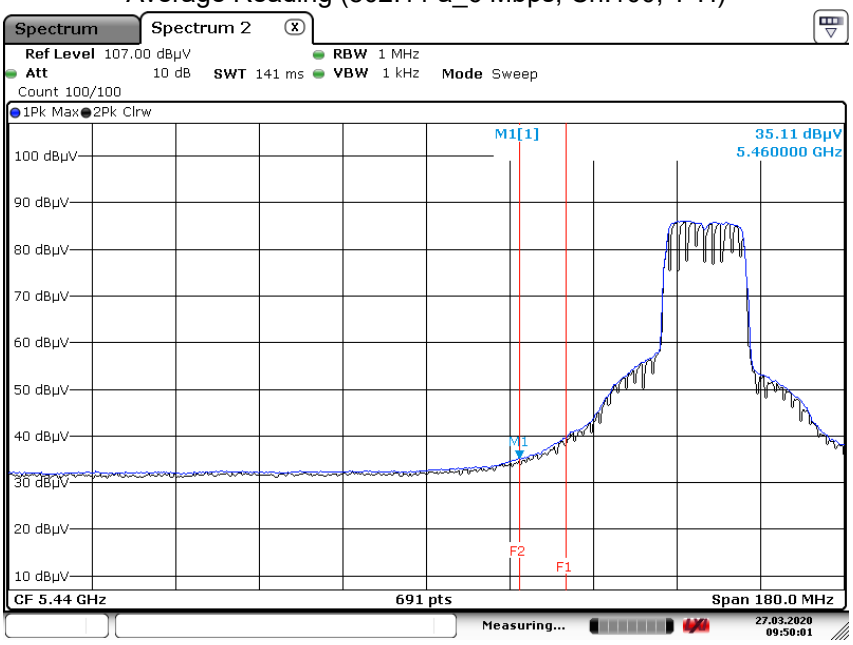
Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	58.78	5.52	H	64.30	73.98	9.68	PK
5350	45.76	5.52	H	51.28	53.98	2.70	AV
5350	57.30	5.52	V	62.82	73.98	11.16	PK
5350	45.49	5.52	V	51.01	53.98	2.97	AV

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

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	58.70	7.05	H	65.75	73.98	8.23	PK
5460	43.88	7.05	H	50.93	53.98	3.05	AV
5470	57.90	6.59	H	64.49	68.20	3.71	PK
5460	56.82	7.05	V	63.87	73.98	10.11	PK
5460	43.60	7.05	V	50.65	53.98	3.33	AV
5470	56.34	6.59	V	62.93	68.20	5.27	PK

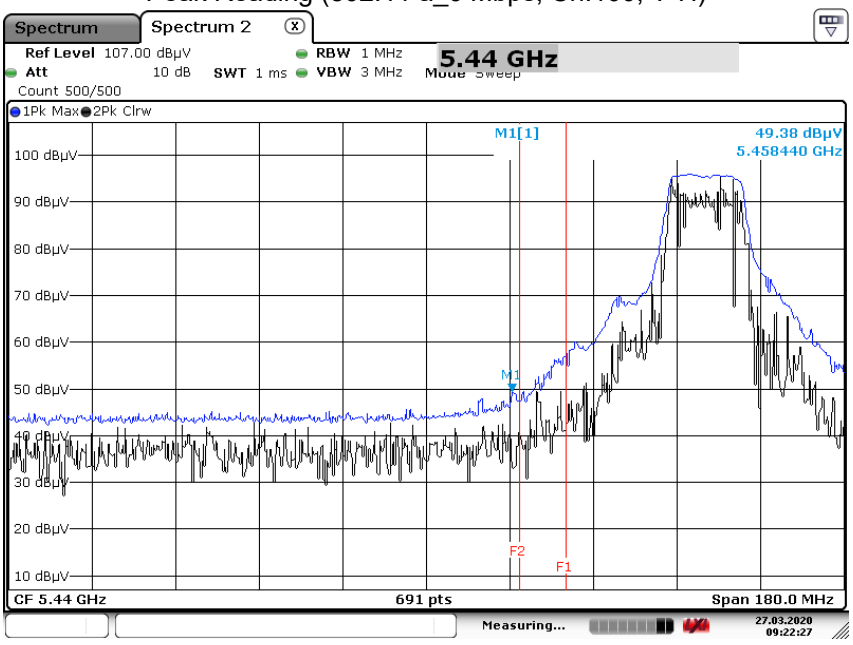
▣ Test Plots(UNII 1, 2A, 2C)

Average Reading (802.11 a_6 Mbps, Ch.100, Y-H)



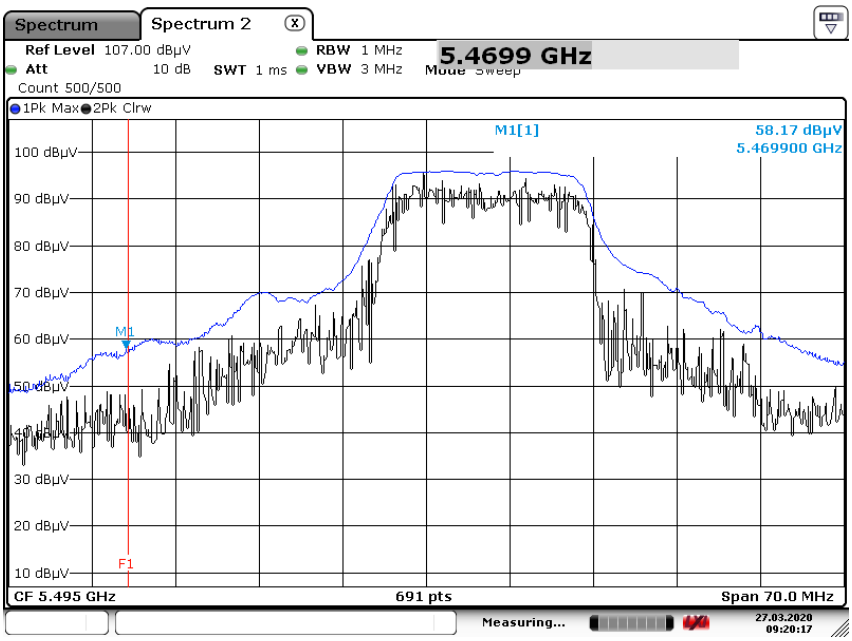
Date: 27.MAR.2020 09:50:01

Peak Reading (802.11 a_6 Mbps, Ch.100, Y-H)



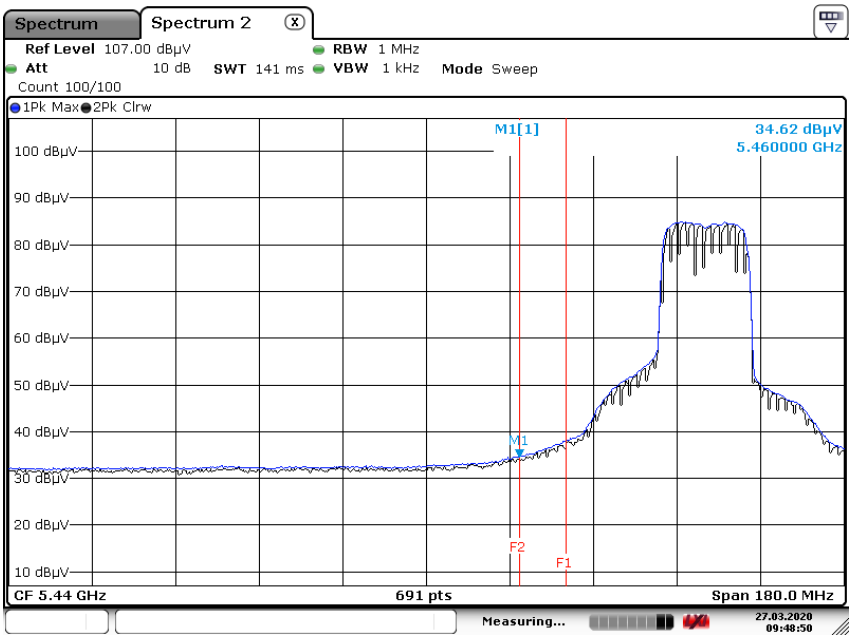
Date: 27.MAR.2020 09:22:26

Peak Reading (802.11 a_6 Mbps, Ch.100, Y-H)



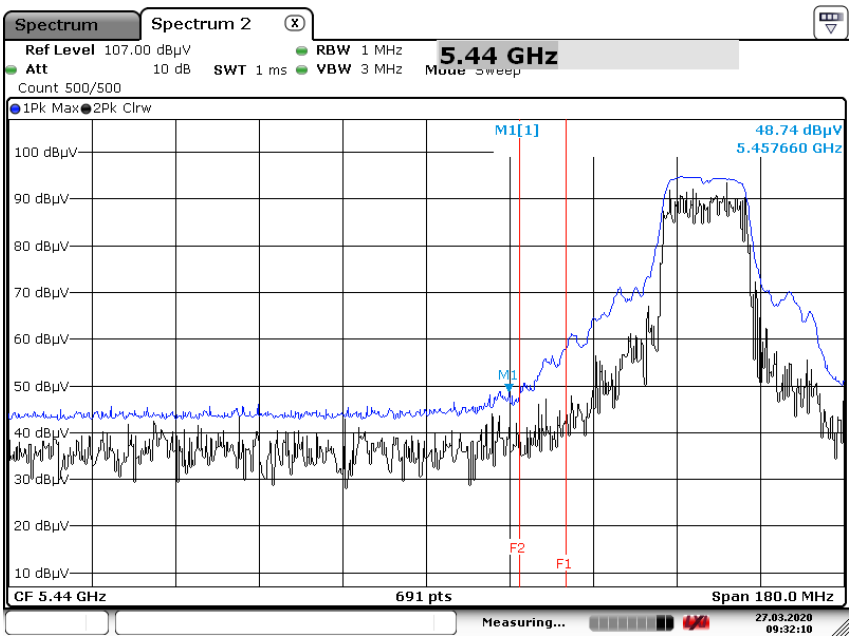
Date: 27.MAR.2020 09:20:17

Average Reading (802.11 n(HT20)_MCS0, Ch.100, Y-H)



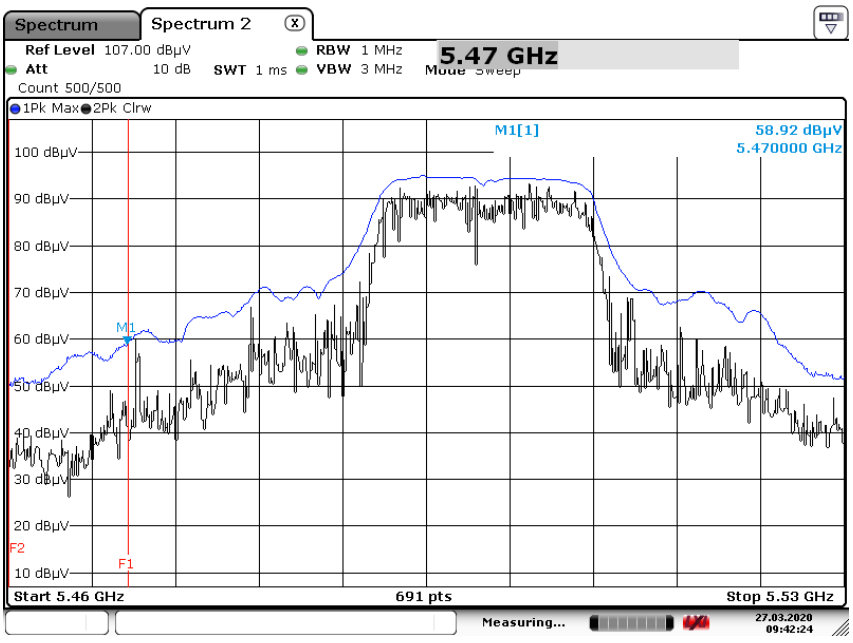
Date: 27.MAR.2020 09:48:50

Peak Reading (802.11 n(HT20)_MCS0, Ch.100, Y-H)



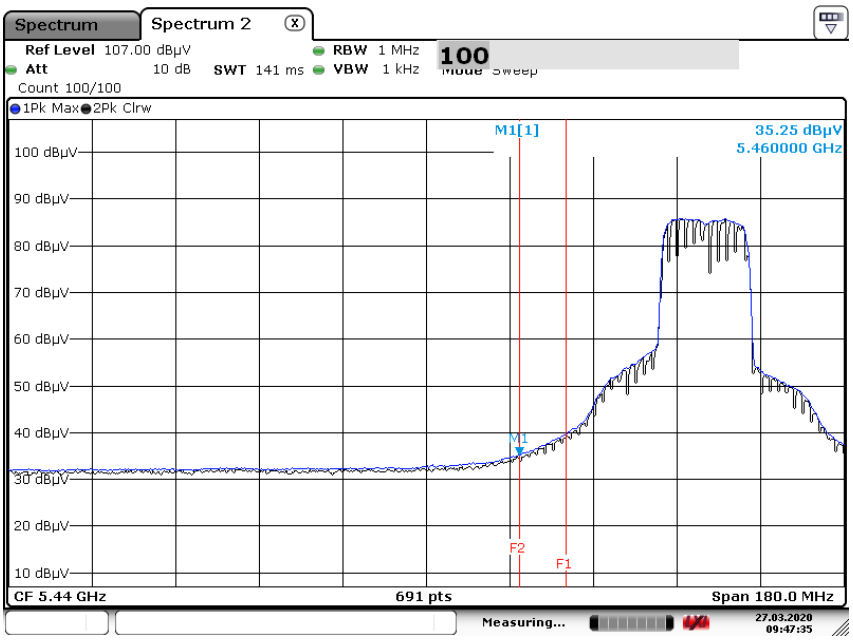
Date: 27.MAR.2020 09:32:10

Peak Reading (802.11 n(HT20)_MCS0, Ch.100, Y-H)



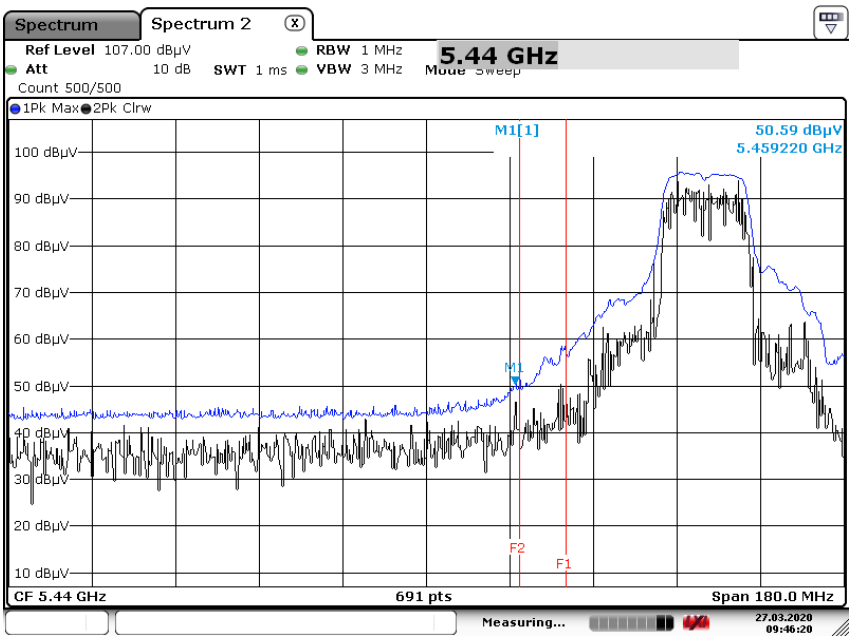
Date: 27.MAR.2020 09:42:24

Average Reading (802.11 ac(VHT20)_MCS0, Ch.100, Y-H)



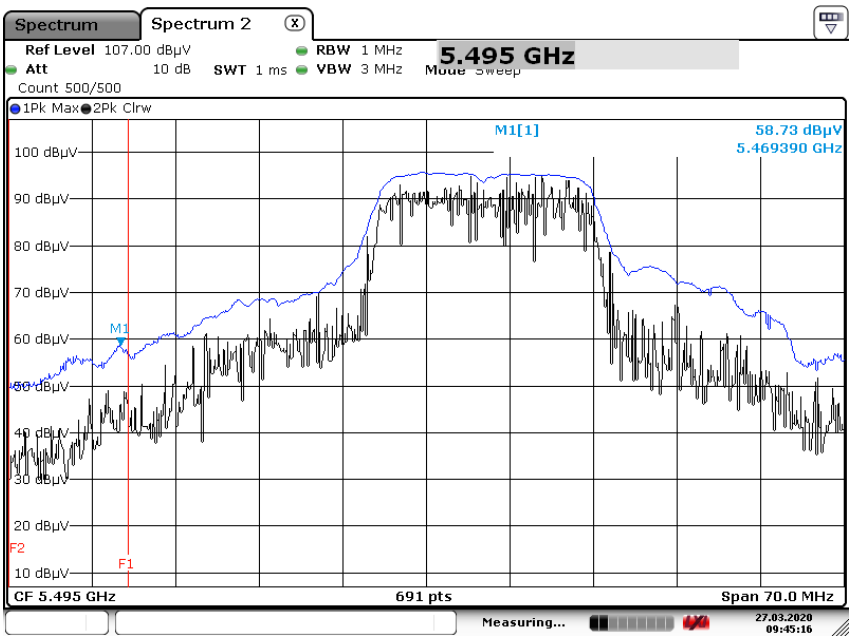
Date: 27.MAR.2020 09:47:35

Peak Reading (802.11 ac(VHT20)_MCS0, Ch.100, Y-H)



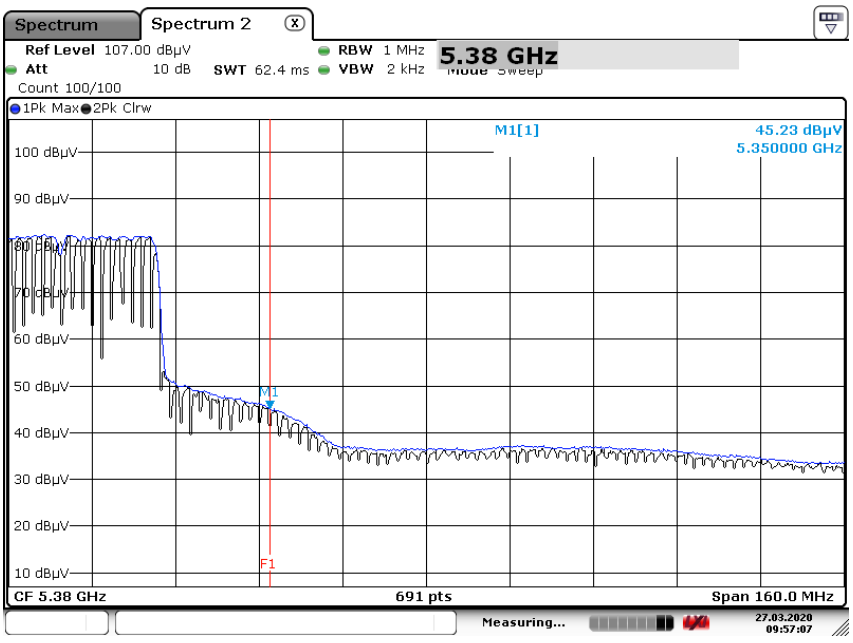
Date: 27.MAR.2020 09:46:20

Peak Reading (802.11 ac(VHT20)_MCS0, Ch.100, Y-H)



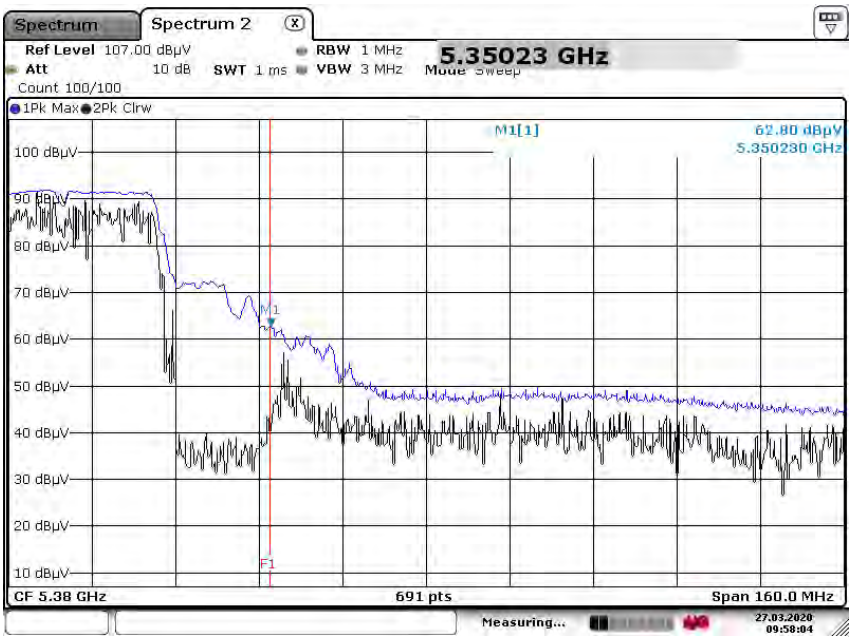
Date: 27.MAR.2020 09:45:16

Average Reading (802.11 n(HT40)_MCS0, Ch.62, Y-H)



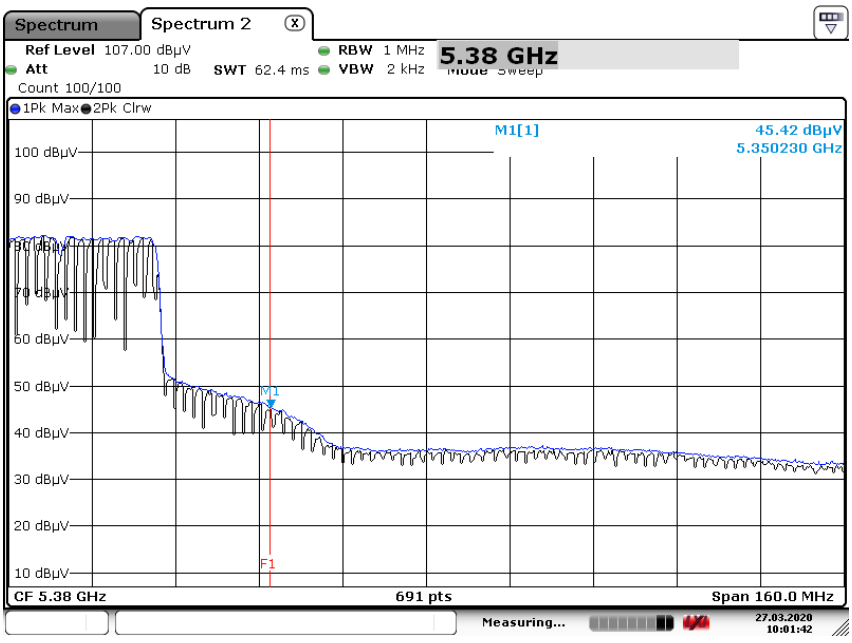
Date: 27.MAR.2020 09:57:08

Peak Reading (802.11 n(HT40)_MCS0, Ch.62, Y-H)



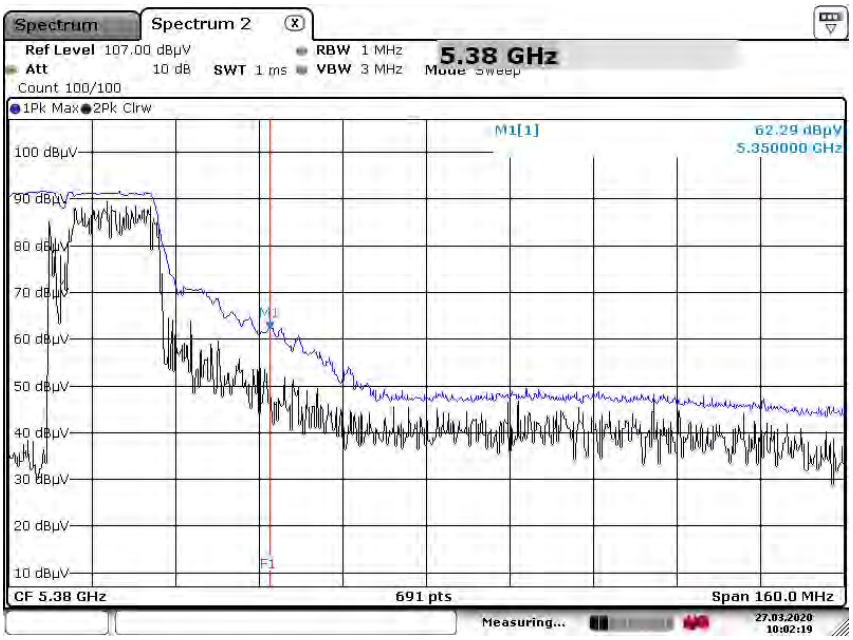
Date: 27.MAR.2020 09:58:04

Peak Reading (802.11 ac(VHT40)_MCS0, Ch.62, Y-H)



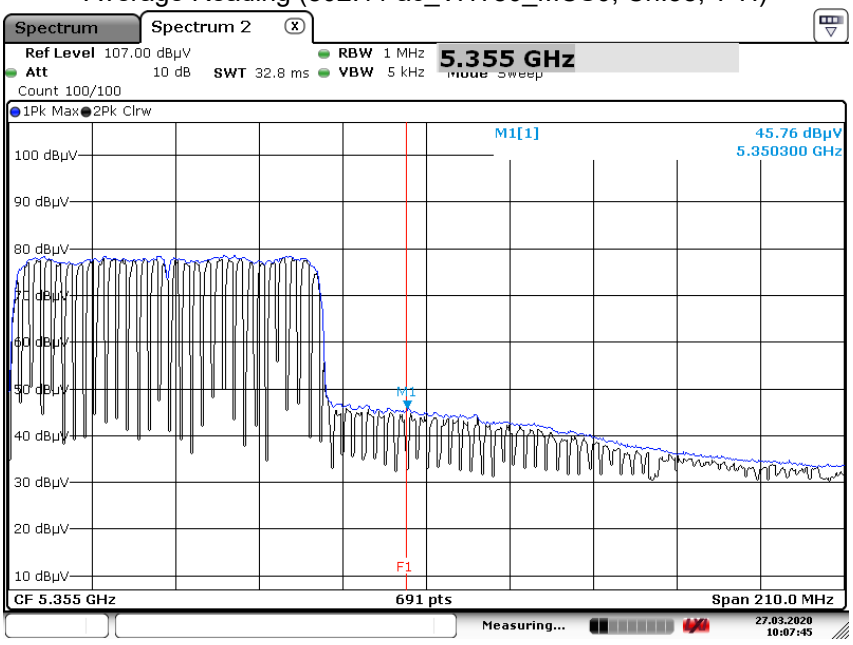
Date: 27.MAR.2020 10:01:42

Average Reading (802.11 ac(VHT40)_MCS0, Ch.62, Y-H)



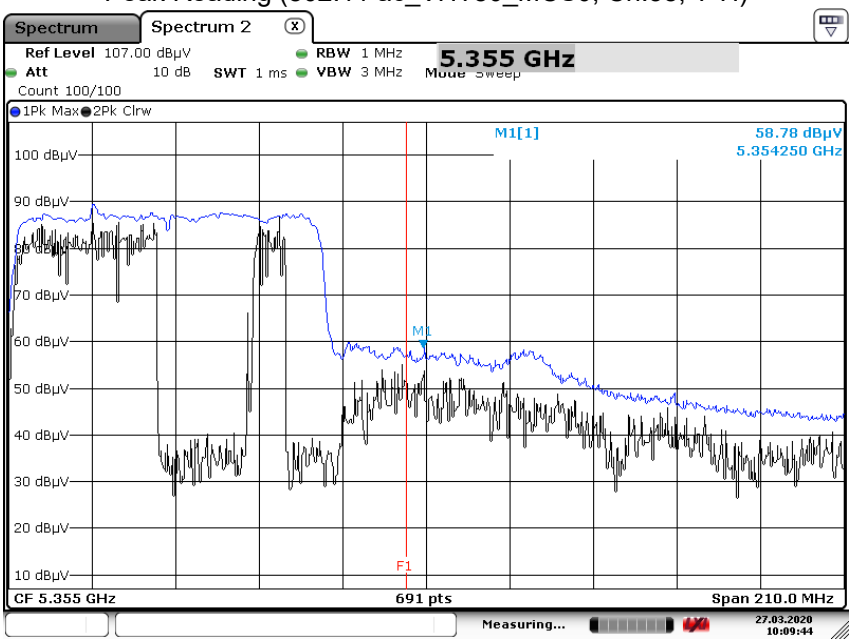
Date: 27.MAR.2020 10:02:20

Average Reading (802.11 ac_VHT80_MCS0, Ch.58, Y-H)



Date: 27.MAR.2020 10:07:44

Peak Reading (802.11 ac_VHT80_MCS0, Ch.58, Y-H)



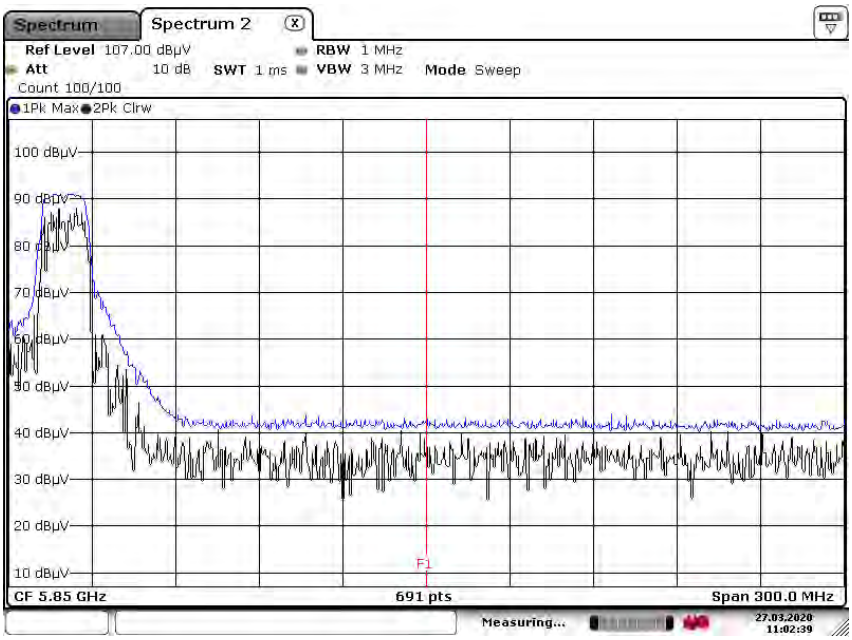
Date: 27.MAR.2020 10:09:43

Note:

Only the worst case plots for Radiated Restricted Band Edge.

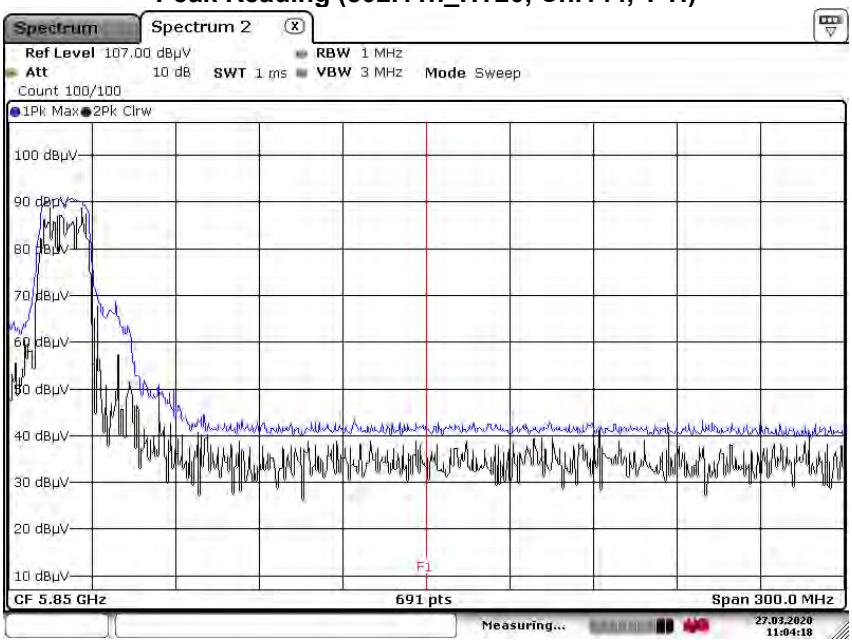
▣ Test Plots(Staraddle Channel)

Peak Reading (802.11a, Ch.144, Y-H)



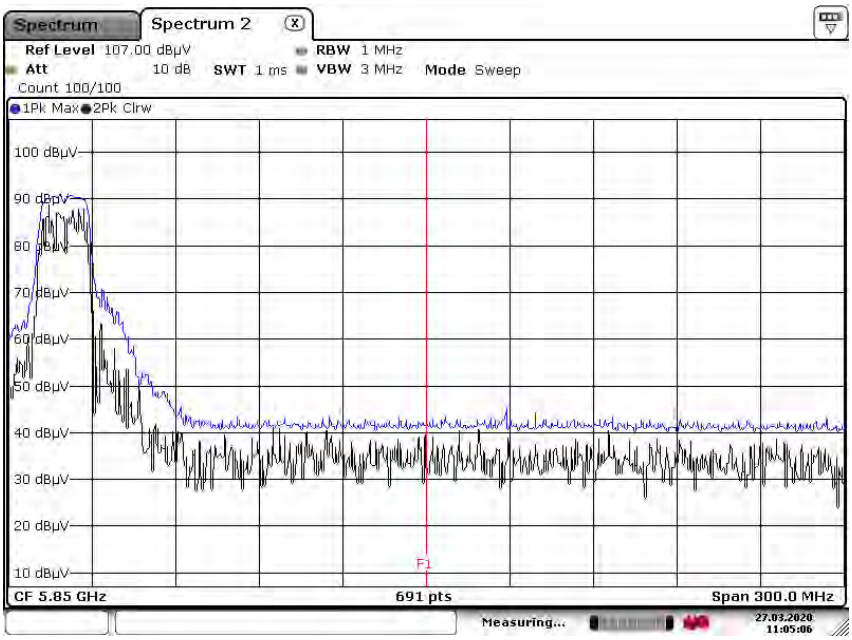
Date: 27.MAR.2020 11:02:39

Peak Reading (802.11n_HT20, Ch.144, Y-H)



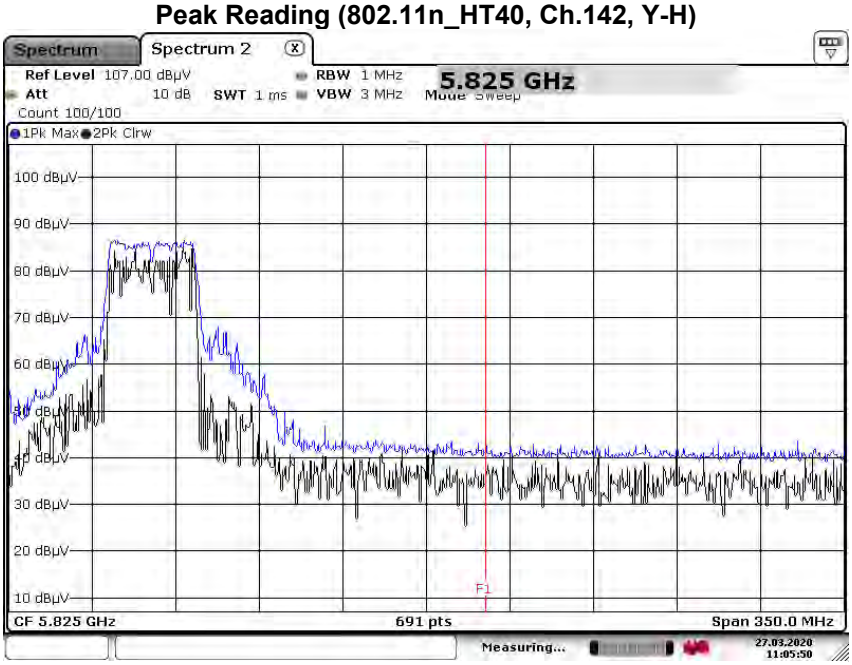
Date: 27.MAR.2020 11:04:17

Peak Reading (802.11ac_VHT20, Ch.144, Y-H)



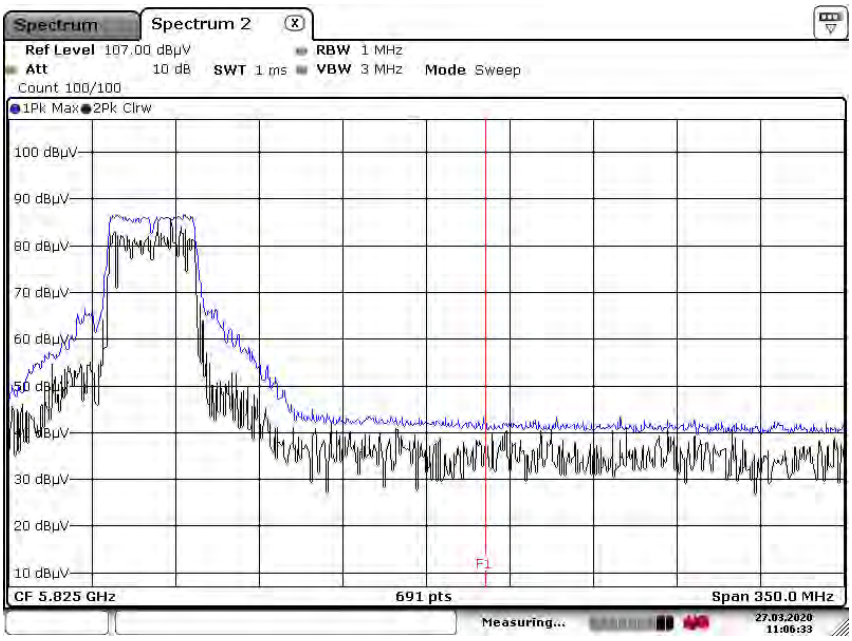
Date: 27.MAR.2020 11:05:06

Peak Reading (802.11n_HT40, Ch.142, Y-H)



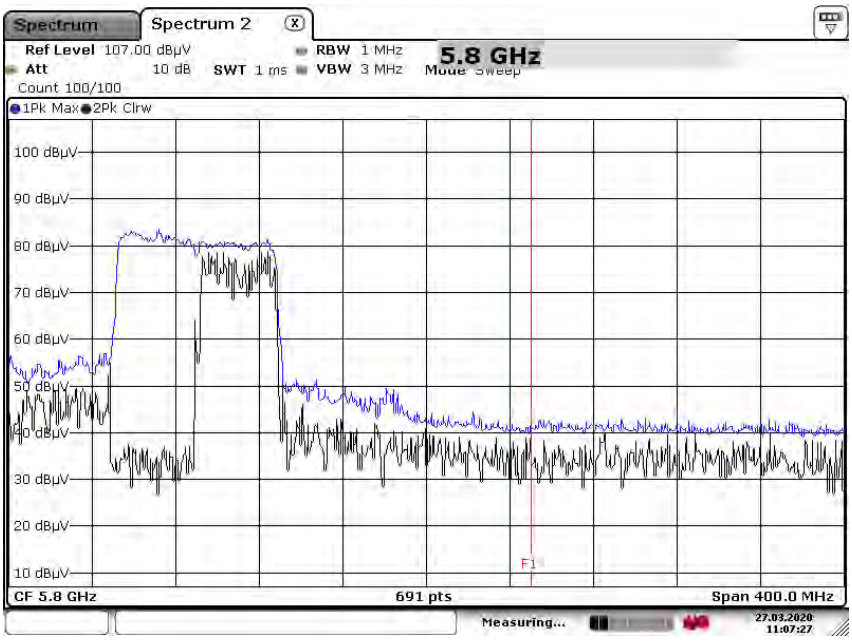
Date: 27.MAR.2020 11:05:49

Peak Reading (802.11ac_VHT40, Ch.142, Y-H)



Date: 27.MAR.2020 11:06:33

Peak Reading (802.11ac_VHT80), Ch.138, Y-H)



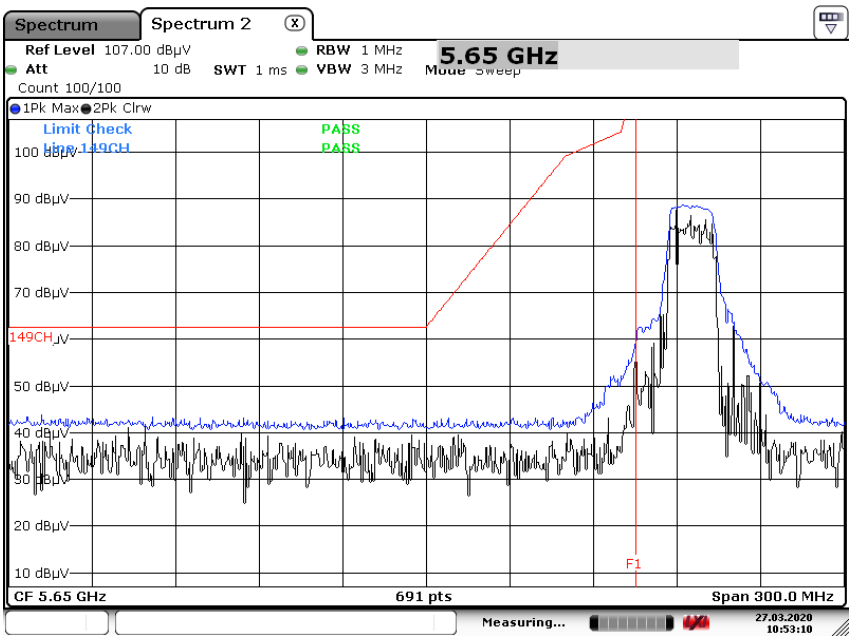
Date: 27.MAR.2020 11:07:27

Note :

1. Only the worst case plots for Radiated Restricted Band Edge.
2. Red line : 5 850 MHz
3. Ambient Noise (Because of ambient noise, We attached only the worst plot without a data table)

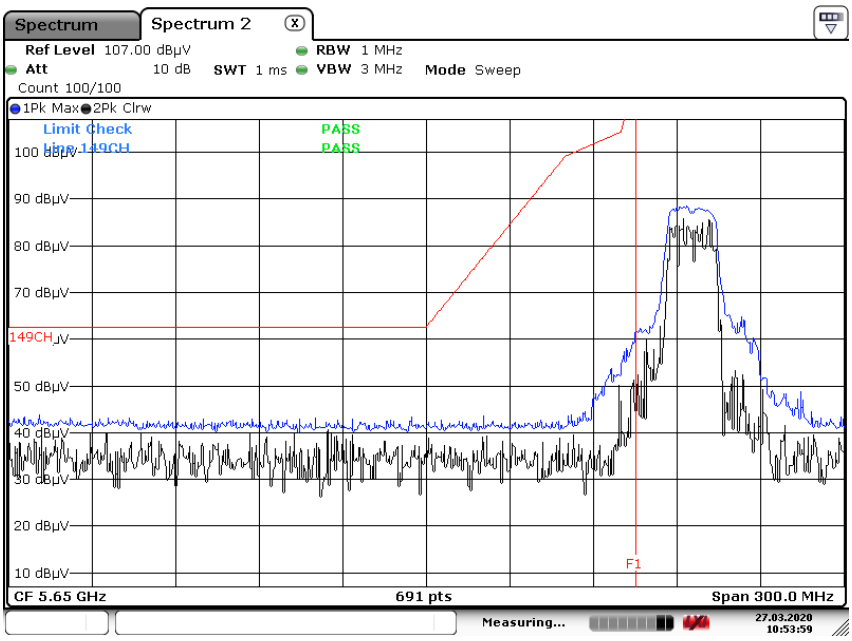
▣ Test Plots(UNII 3)

Peak Reading (802.11a, Ch.149, Y-H)



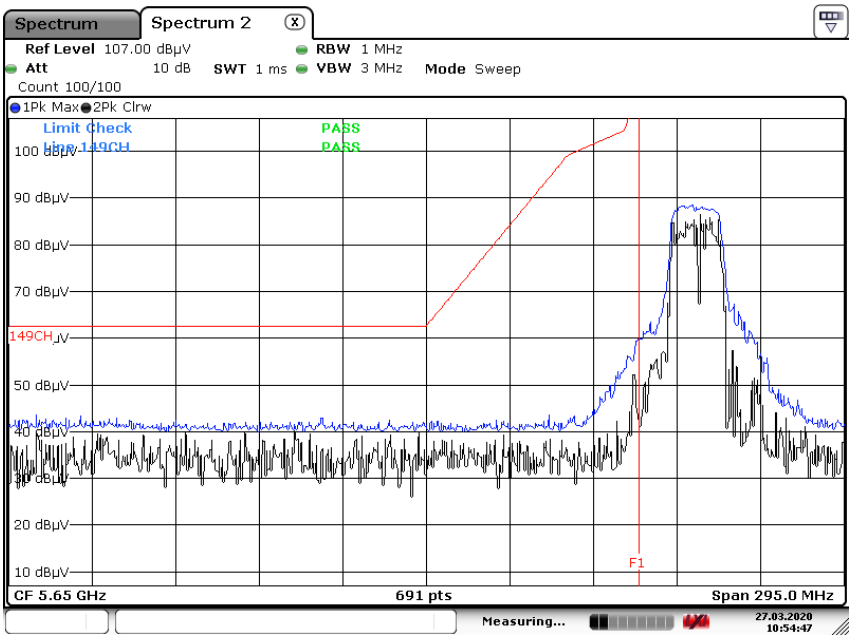
Date: 27.MAR.2020 10:54:00

Peak Reading (802.11n_HT20, Ch.149, Y-H)



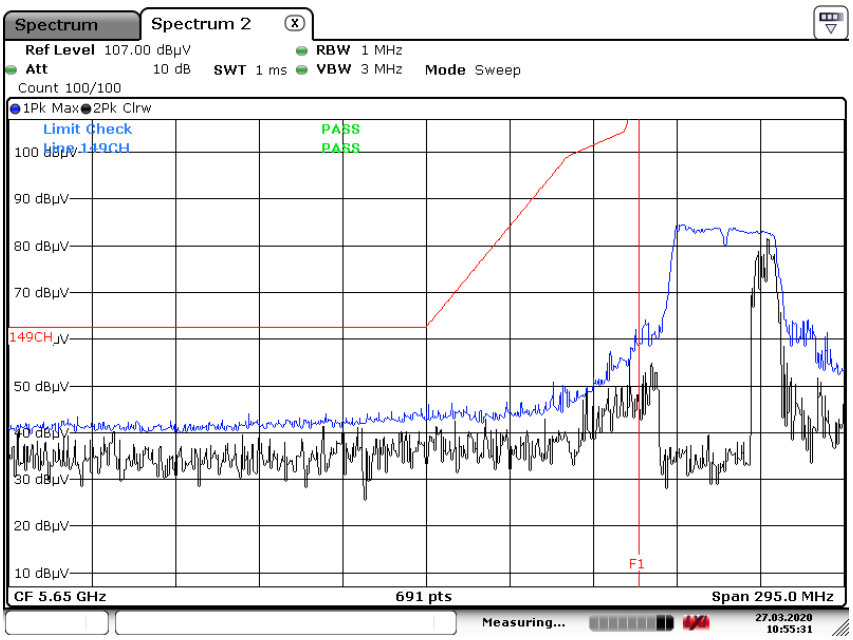
Date: 27.MAR.2020 10:54:00

Peak Reading (802.11ac_VHT20, Ch.149, Y-H)



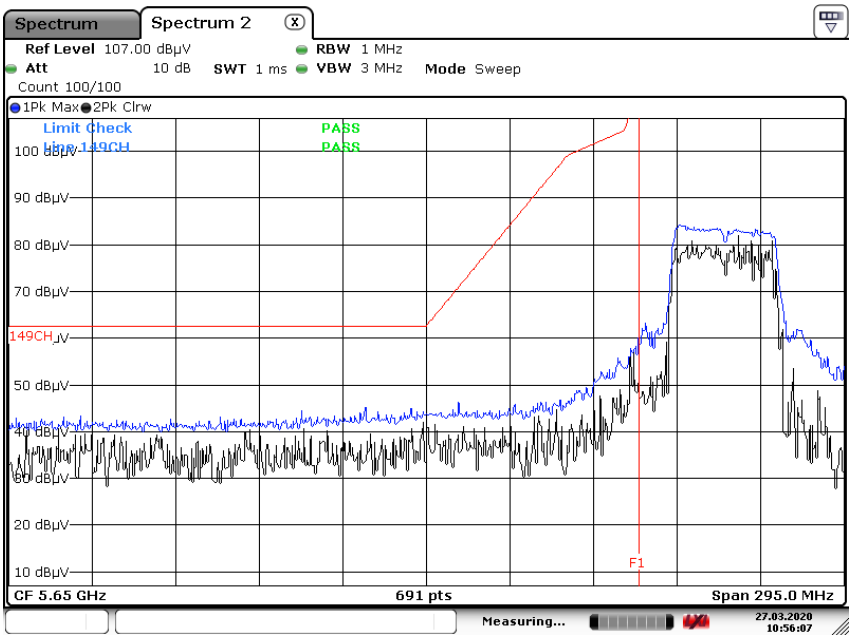
Date: 27.MAR.2020 10:54:48

Peak Reading (802.11n_HT40, Ch.151, Y-H)



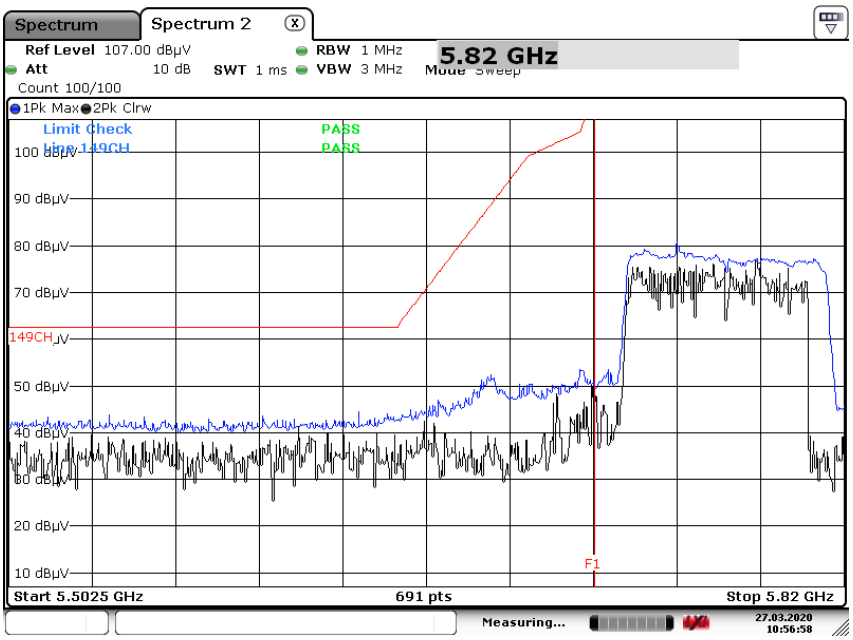
Date: 27.MAR.2020 10:55:31

Peak Reading (802.11ac_VHT40, Ch.151, Y-H)



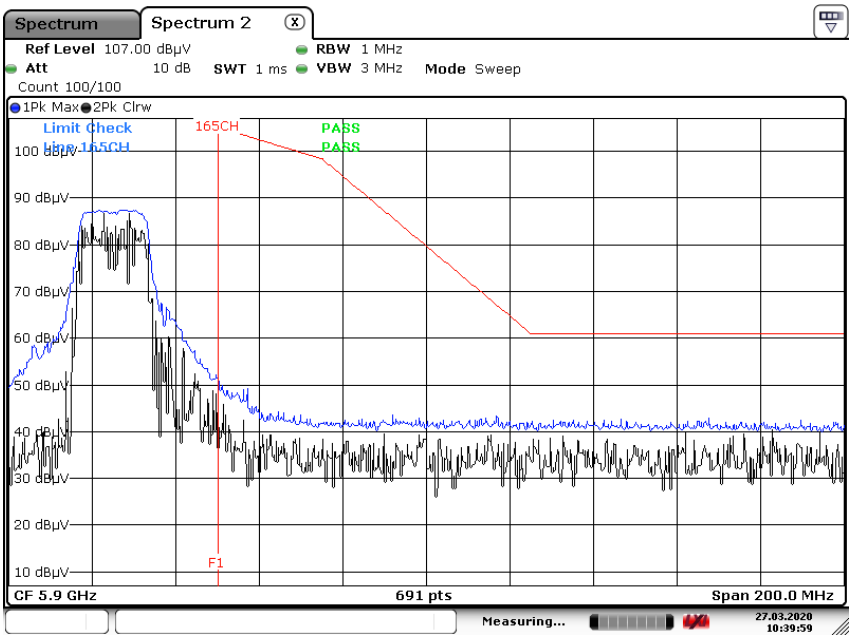
Date: 27.MAR.2020 10:56:07

Peak Reading (802.11ac_VHT80, Ch.155, Y-H)



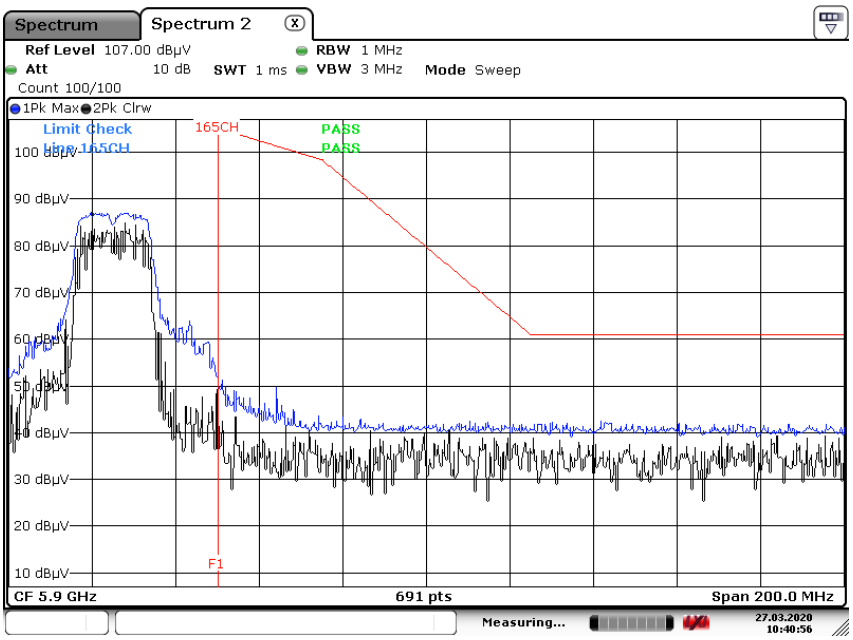
Date: 27.MAR.2020 10:56:59

Peak Reading (802.11a, Ch.165, Y-H)



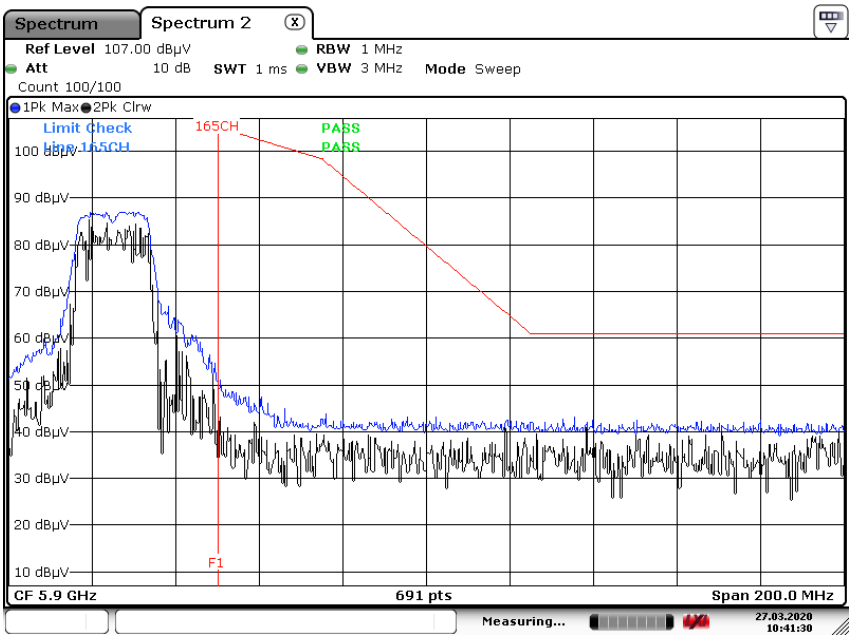
Date: 27.MAR.2020 10:39:59

Peak Reading (802.11n_HT20, Ch.165, Y-H)



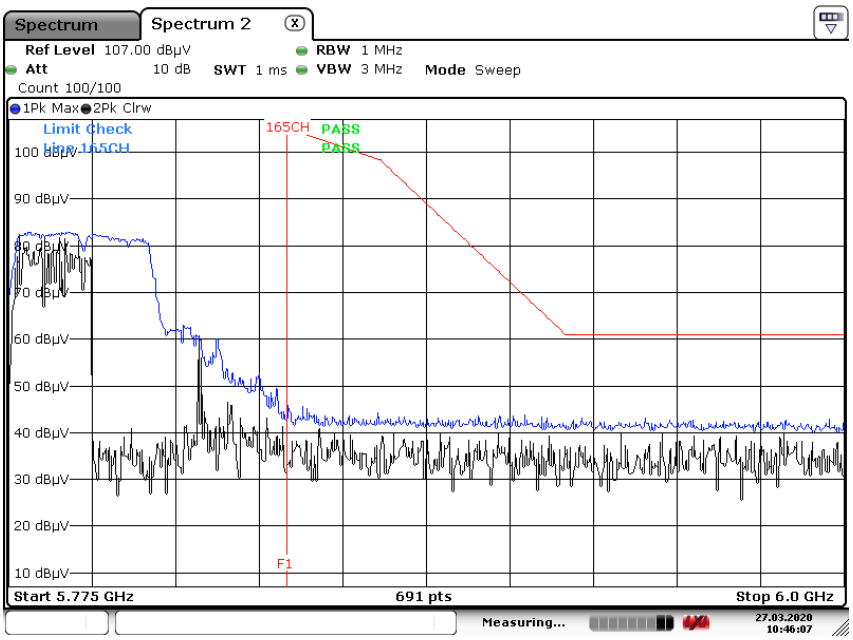
Date: 27.MAR.2020 10:40:56

Peak Reading (802.11ac_VHT20, Ch.165, Y-H)



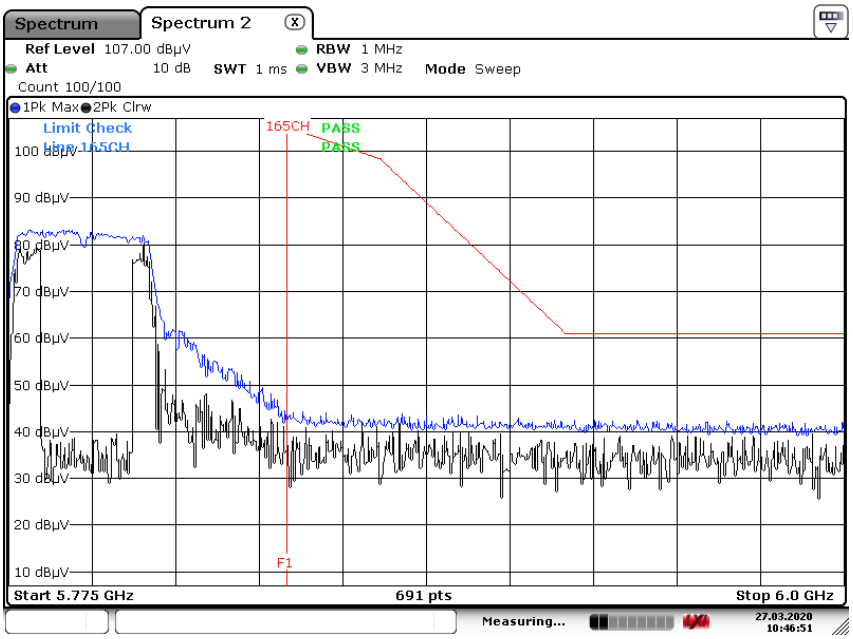
Date: 27.MAR.2020 10:41:30

Peak Reading (802.11n_HT40, Ch.159, Y-H)



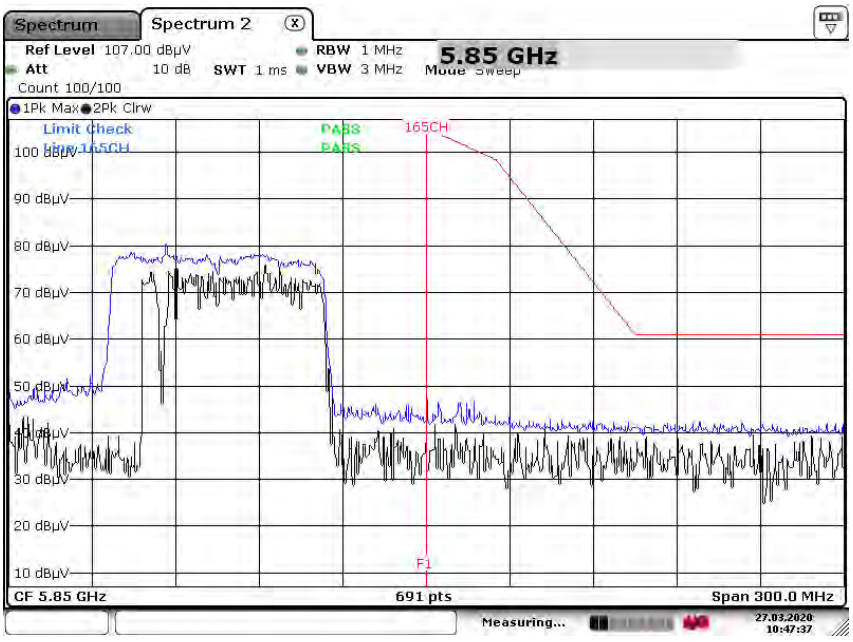
Date: 27.MAR.2020 10:46:07

Peak Reading (802.11ac_VHT40, Ch.159, Y-H)



Date: 27.MAR.2020 10:46:51

Peak Reading (802.11ac_VHT80, Ch.155, Y-H)



Date: 27.MAR.2020 10:47:37

10.10 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions (Line 1)

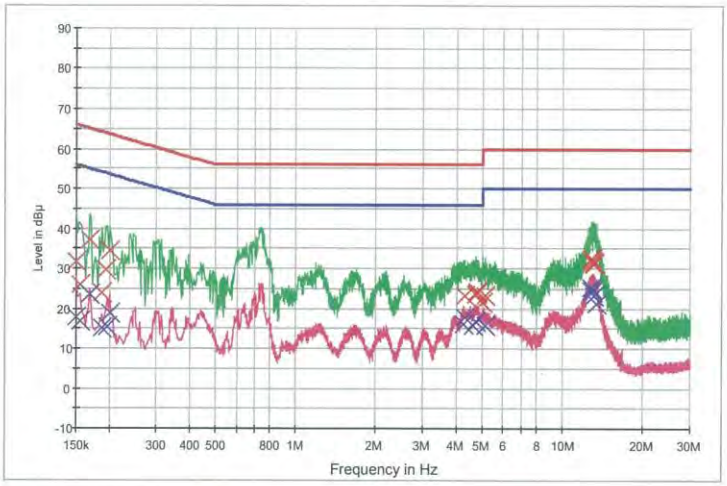
5G WLAN MODE L1 1 / 2

HCT TEST Report

Common Information

EUT:	SM-A217M/DS
Manufacturer:	SAMSUNG
Test Site:	SHIELD ROOM
Operating Conditions:	5G WLAN MODE L1

FCC CLASS B_Exten Cable



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	31.9	9.000	Off	L1	9.8	34.1	66.0
0.156000	26.1	9.000	Off	L1	9.8	39.6	65.7
0.168000	37.0	9.000	Off	L1	9.8	28.1	65.1
0.188000	23.8	9.000	Off	L1	9.8	40.3	64.1
0.194000	29.6	9.000	Off	L1	9.8	34.3	63.9
0.200000	34.4	9.000	Off	L1	9.8	29.2	63.6
4.314000	23.4	9.000	Off	L1	10.0	32.6	56.0
4.738000	23.5	9.000	Off	L1	10.0	32.5	56.0
4.764000	24.0	9.000	Off	L1	10.0	32.0	56.0
4.782000	24.2	9.000	Off	L1	10.0	31.8	56.0
5.004000	21.5	9.000	Off	L1	10.0	38.6	60.0
5.118000	23.3	9.000	Off	L1	10.0	36.7	60.0
12.788000	32.3	9.000	Off	L1	10.3	27.7	60.0
12.868000	32.3	9.000	Off	L1	10.3	27.7	60.0
12.940000	31.7	9.000	Off	L1	10.3	28.3	60.0
13.060000	31.1	9.000	Off	L1	10.3	28.9	60.0
13.076000	31.1	9.000	Off	L1	10.3	28.9	60.0
13.094000	31.5	9.000	Off	L1	10.3	28.5	60.0

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5G WLAN MODE L1 2 / 2

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	17.8	9.000	Off	L1	9.8	38.2	56.0
0.156000	16.7	9.000	Off	L1	9.8	39.0	55.7
0.168000	23.6	9.000	Off	L1	9.8	31.5	55.1
0.188000	15.1	9.000	Off	L1	9.8	39.0	54.1
0.196000	15.5	9.000	Off	L1	9.8	38.2	53.8
0.200000	18.7	9.000	Off	L1	9.8	35.0	53.6
4.254000	16.0	9.000	Off	L1	10.0	30.0	46.0
4.278000	16.3	9.000	Off	L1	10.0	29.7	46.0
4.314000	17.9	9.000	Off	L1	10.0	28.1	46.0
4.612000	15.8	9.000	Off	L1	10.0	30.2	46.0
4.738000	16.7	9.000	Off	L1	10.0	29.3	46.0
5.118000	15.7	9.000	Off	L1	10.0	34.3	50.0
12.788000	25.3	9.000	Off	L1	10.3	24.7	50.0
12.826000	24.6	9.000	Off	L1	10.3	25.4	50.0
12.888000	24.3	9.000	Off	L1	10.3	25.7	50.0
13.076000	23.2	9.000	Off	L1	10.3	26.8	50.0
13.094000	23.2	9.000	Off	L1	10.3	26.8	50.0
13.330000	21.1	9.000	Off	L1	10.3	28.9	50.0

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Conducted Emissions (Line 2)

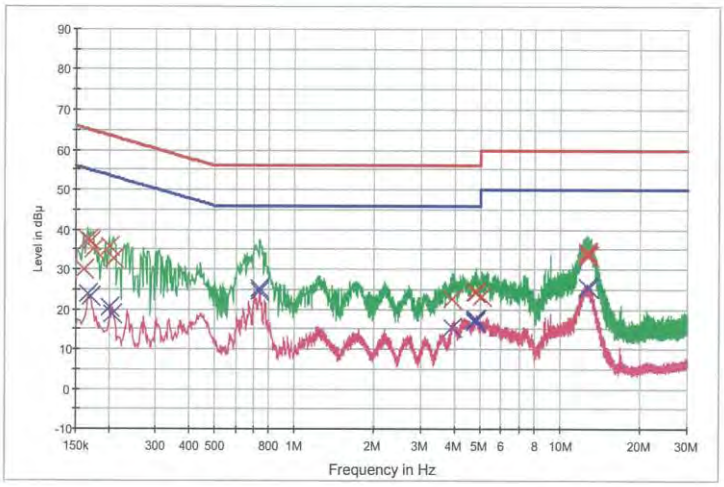
5G WLAN MODE N 1 / 2

HCT TEST Report

Common Information

EUT:	SM-A217M/DS
Manufacturer:	SAMSUNG
Test Site:	SHIELD ROOM
Operating Conditions:	5G WLAN MODE N

FCC CLASS B_Exten Cable



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.160000	30.0	9.000	Off	N	9.8	35.4	65.5
0.166000	37.5	9.000	Off	N	9.8	27.6	65.2
0.170000	37.1	9.000	Off	N	9.8	27.9	65.0
0.174000	35.1	9.000	Off	N	9.8	29.7	64.8
0.200000	35.6	9.000	Off	N	9.8	28.0	63.6
0.208000	32.7	9.000	Off	N	9.8	30.6	63.3
3.940000	22.5	9.000	Off	N	10.0	33.5	56.0
4.760000	24.1	9.000	Off	N	10.0	31.9	56.0
4.766000	24.2	9.000	Off	N	10.0	31.8	56.0
4.784000	24.4	9.000	Off	N	10.0	31.6	56.0
4.832000	24.3	9.000	Off	N	10.0	31.7	56.0
5.084000	23.1	9.000	Off	N	10.0	36.9	60.0
12.562000	33.5	9.000	Off	N	10.4	26.5	60.0
12.572000	33.4	9.000	Off	N	10.4	26.6	60.0
12.598000	33.9	9.000	Off	N	10.4	26.1	60.0
12.634000	33.9	9.000	Off	N	10.4	26.1	60.0
12.680000	34.3	9.000	Off	N	10.4	25.7	60.0
12.704000	33.3	9.000	Off	N	10.4	26.7	60.0

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5G WLAN MODE N

2 / 2

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.166000	23.9	9.000	Off	N	9.8	31.3	55.2
0.170000	23.1	9.000	Off	N	9.8	31.9	55.0
0.202000	20.4	9.000	Off	N	9.8	33.1	53.5
0.206000	18.8	9.000	Off	N	9.8	34.5	53.4
0.736000	25.1	9.000	Off	N	9.8	20.9	46.0
0.740000	24.6	9.000	Off	N	9.8	21.4	46.0
3.940000	15.3	9.000	Off	N	10.0	30.7	46.0
4.760000	16.8	9.000	Off	N	10.0	29.2	46.0
4.784000	17.3	9.000	Off	N	10.0	28.7	46.0
4.802000	17.4	9.000	Off	N	10.0	28.6	46.0
4.812000	17.5	9.000	Off	N	10.0	28.5	46.0
4.840000	17.5	9.000	Off	N	10.0	28.5	46.0
12.554000	25.5	9.000	Off	N	10.4	24.5	50.0
12.562000	25.5	9.000	Off	N	10.4	24.5	50.0
12.572000	25.5	9.000	Off	N	10.4	24.5	50.0
12.598000	25.6	9.000	Off	N	10.4	24.4	50.0
12.618000	25.6	9.000	Off	N	10.4	24.4	50.0
12.704000	25.2	9.000	Off	N	10.4	24.8	50.0

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11. LIST OF TEST EQUIPMENT

Conducted Test

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216 / LISN	09/11/2019	Annual	102245
Rohde & Schwarz	ESCI / Test Receiver	06/18/2019	Annual	100033
ESPAC	SU-642 /Temperature Chamber	03/18/2020	Annual	0093008124
Agilent	N9030A / Signal Analyzer	01/13/2020	Annual	MY49431210
Rohde & Schwarz	OSP 120 / Power Measurement Set	07/24/2019	Annual	101231
Agilent	N1911A / Power Meter	09/10/2019	Annual	MY45101406
Agilent	N1921A / Power Sensor	09/06/2019	Annual	MY55220026
Agilent	87300B / Directional Coupler	11/11/2019	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	05/24/2019	Annual	05001
Hewlett Packard	E3632A / DC Power Supply	06/18/2019	Annual	KR75303960
Agilent	8493C / Attenuator(10 dB)	07/02/2019	Annual	07560
Rohde & Schwarz	EMC32 / Software	N/A	N/A	N/A
HCT CO., LTD.	FCC WLAN&BT&BLE Conducted Test Software v3.0	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

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	04/26/2019	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	03/22/2019	Biennial	760
Schwarzbeck	VULB 9160 / TRILOG Antenna	08/09/2018	Biennial	9160-3368
Schwarzbeck	BBHA 9120D / Horn Antenna	04/29/2019	Biennial	9120D-937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	11/29/2019	Biennial	BBHA9170541
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	07/31/2019	Annual	102168
Agilent	N9030A / Signal Analyzer	01/13/2020	Annual	MY49431210
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	06/19/2019	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	02/10/2020	Annual	1
Api tech.	18B-03 / Attenuator (3 dB)	03/02/2020	Annual	1
Agilent	8493C-10 / Attenuator(10 dB)	03/02/2020	Annual	08285
CERNEX	CBLU1183540 / Power Amplifier	03/02/2020	Annual	22964
CERNEX	CBL06185030 / Power Amplifier	03/02/2020	Annual	22965
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	03/02/2020	Annual	8
Wainwright Instruments	WHKX7.0/18G-8SS / High Pass Filter	03/02/2020	Annual	25
CERNEX	CBL18265035 / Power Amplifier	12/26/2019	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	06/18/2019	Annual	25956

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-2004-FC007-P