TEST REPORT

FCC UNII Test for SM-M356B/DS
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2403-FC014

DATE OF ISSUE
March 21, 2024

Tested by
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Applicant	**SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Product Name Model Name	Mobile Phone SM-M356B/DS
FCC ID	A3LSMM356B
FCC Classification	Unlicensed National Information Infrastructure(NII)
Test Standard Used	FCC Rule Part(s): Part 15.407
Test Results	PASS
Location of Test	■ Permanent Testing Lab ☐ On Site Testing Lab (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	March 21, 2024	Initial Release

Notice

Content
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. The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). When confirmation of authenticity of this test report is required, please contact www.hct.co.kr The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

CONTENTS

1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-M356B/DS	
Additional Model	-	
EUT Type	Mobile Phone	
Power Supply	DC 3.85 V	
Modulation Type	OFDM : 802.11a, 802.11n, 802.11ac	
Frequency Range (MHz)	U-NII-1	20 MHz BW : 5180 - 5240 40 MHz BW : 5190 - 5230 80 MHz BW : 5210
	U-NII-2A	20 MHz BW : 5260 - 5320 40 MHz BW : 5270 - 5310 80 MHz BW : 5290
	U-NII-2C	20 MHz BW : 5500 - 5720 40 MHz BW : 5510 - 5710 80 MHz BW : 5530 – 5690
	U-NII-3	20 MHz BW : 5745 - 5825 40 MHz BW : 5755 - 5795 80 MHz BW : 5775
Straddle channel	Supported	
TDWR Band	Supported	
Dynamic Frequency Selection	Slave without radar Measurement Typeion	
Antenna Specification	Type: PIFA	
Date(s) of Tests	February 16, 2024 ~ March 21, 2024	
Serial number	Conducted : R3CX2042SRT Radiated : R3CX20420GF	

ANTENNA CONFIGURATIONS

1. Antenna configuration

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

Note:

(1) O = Support, X = Not Support

(2) SISO = Single Input Single Output

(3) SDM = Spatial Diversity Multiplexing

(4) CDD = Cyclic Delay Diversity

3. Directional Gain Calculation

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

Directional gain(CDD) =

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

Directional gain(SDM) = Gmax + 10 · log(N_{Ant}/ N_{ss}),

Band	Ant Gain (dBi)		N_{Ant}/ N_{ss}	Directional Gain CDD (dBi)	Directional Gain SDM (dBi)
	Ant.1	Ant.2			
UNII 1	-5.27	-5.45	2 / 2	-2.35	-5.27
UNII 2A	-4.10	-4.96		-1.51	-4.10
UNII 2C	-4.00	-4.78		-1.37	-4.00
UNII 3	-5.37	-5.02		-2.19	-5.02

Note

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

Directional gain(CDD) = $10 \cdot \log(((10^{(\text{Ant.1 Gain}/20)}+10^{(\text{Ant.2 Gain}/20)})^2)/2)$ dBi

Directional gain(SDM) = Gmax + $10 \cdot \log(N_{Ant}/ N_{ss})$,

Sample Calculation (Conducted Power, MIMO):

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

Ant.1 + Ant.2 = MIMO

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

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

Ex) Ant.1 : 15.35 dBm , Ant.2 : 15.12 dBm, Directional Gain : 3 dBi

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

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

2. MAXIMUM OUTPUT POWER

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

Band	Mode	SISO		MIMO_CDD		MIMO_SDM	
		Ant.2 Power		Ant.1 + Ant.2 Power			
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
UNII1	802.11a	15.61	0.036	18.27	0.067	-	-
	802.11n (HT20)	15.75	0.038	-	-	17.84	0.061
	802.11n (HT40)	14.54	0.028	-	-	16.87	0.049
	802.11ac (VHT20)	15.73	0.037	-	-	17.83	0.061
	802.11ac (VHT40)	14.62	0.029	-	-	16.85	0.048
	802.11ac (VHT80)	12.36	0.017	-	-	14.02	0.025
UNII2A	802.11a	15.88	0.039	18.71	0.074	-	-
	802.11n (HT20)	15.86	0.039	-	-	18.19	0.066
	802.11n (HT40)	14.85	0.031	-	-	17.23	0.053
	802.11ac (VHT20)	15.86	0.039	-	-	18.18	0.066
	802.11ac (VHT40)	14.81	0.030	-	-	17.26	0.053
	802.11ac (VHT80)	13.65	0.023	-	-	15.78	0.038
UNII2C	802.11a	15.61	0.036	18.26	0.067	-	-
	802.11n (HT20)	15.46	0.035	-	-	17.69	0.059
	802.11n (HT40)	14.55	0.029	-	-	16.86	0.049
	802.11ac (VHT20)	15.47	0.035	-	-	17.89	0.062
	802.11ac (VHT40)	14.53	0.028	-	-	16.82	0.048
	802.11ac (VHT80)	13.27	0.021	-	-	15.51	0.036
UNII3	802.11a	15.38	0.034	18.40	0.069	-	-
	802.11n (HT20)	15.43	0.035	-	-	17.89	0.062
	802.11n (HT40)	14.35	0.027	-	-	16.95	0.050
	802.11ac (VHT20)	15.55	0.036	-	-	17.81	0.060
	802.11ac (VHT40)	14.24	0.027	-	-	16.85	0.048
	802.11ac (VHT80)	13.20	0.021	-	-	15.43	0.035

3. TEST METHODOLOGY

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

EUT CONFIGURATION

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

EUT EXERCISE

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

GENERAL TEST PROCEDURES

Conducted Emissions

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

Radiated Emissions

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

DESCRIPTION OF TEST MODES

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

4. INSTRUMENT CALIBRATION

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication22.
Detailed description of test facility was submitted to the Commission and accepted dated March 11, 2024 (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 Measurement Typeors 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.

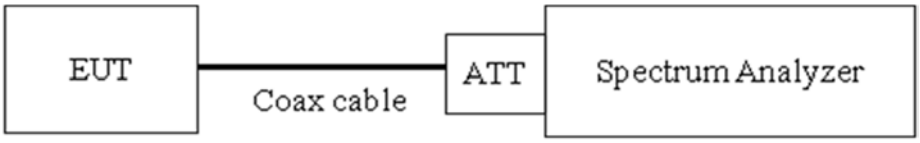
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.98 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.70 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.52 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.66 (Confidence level about 95 %, k=2)
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, k=2)

8. DESCRIPTION OF TESTS

8.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

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

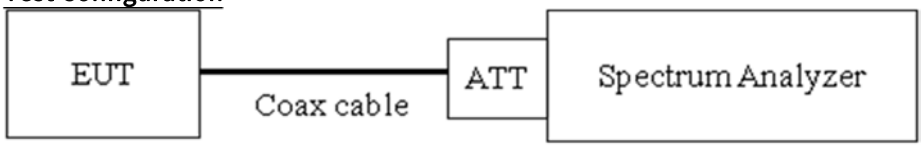
1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Measurement Typeor = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

8.2. 6 dB Bandwidth & 26 dB Bandwidth

Limit

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

Test Configuration



Test Procedure(26 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.
We tested according to Procedure C.1 in KDB 789033 D02 v02r01.

1. RBW = approximately 1 % of the emission bandwidth
2. VBW > RBW
3. Measurement Type= Peak
4. Trace mode = max hold
5. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

Test Procedure (6 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.
We tested according to Procedure C.2 in KDB 789033 D02 v02r01.

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

Note:

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

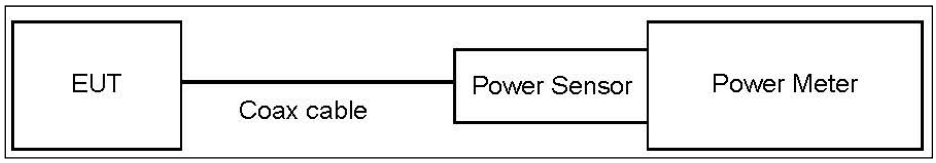
8.3. Output Power Measurement

Limit

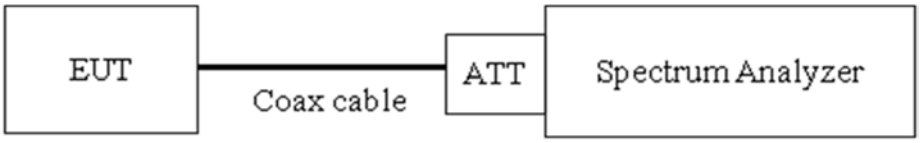
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30 dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30 dBm)

Test Configuration

Power Meter



Spectrum Analyzer(Only Straddle Channel)



Test Procedure(Power Meter)

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

1. Measure the duty cycle.
2. Measure the average powr 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. Measurement Typeor = 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 = EBW
11. Add 10log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Sample Calculation

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

Note

1. Spectrum Measured Levels are not plot data.

   The power results in plot is already including the actual values of loss for the attenuator and cable combination.

2. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	11.87
UNII 2A	11.87
UNII 2C	11.87
UNII 3	11.87

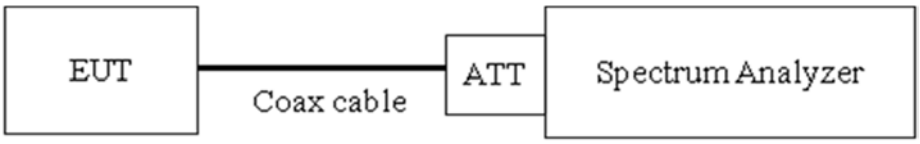
(Actual value of loss for the attenuator and cable combination)

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

Sample Calculation

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

Note

1. Spectrum Measured Levels are not plot data.
   The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	11.87
UNII 2A	11.87
UNII 2C	11.87
UNII 3	11.87

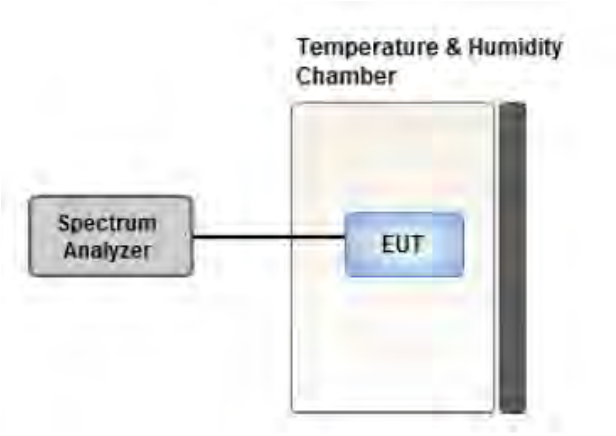
(Actual value of loss for the attenuator and cable combination)

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 °C and 50 °C.
2. The temperature was incremented by 10 °C 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. Measurement Typeors : Quasi Peak and Average Measurement Typeor.

Sample Calculation

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

8.7. Radiated Test

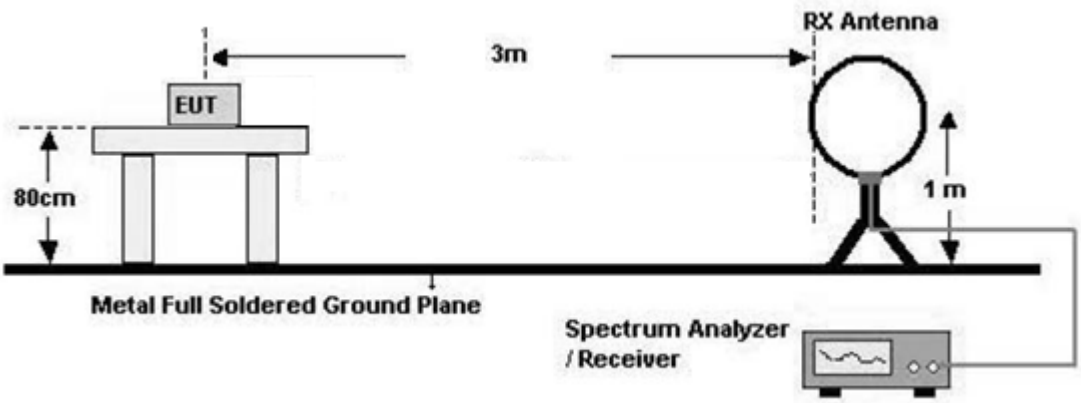
Limit

1. UNII 1: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of −27 dBm/MHz.
2. UNII 2A, 2C: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.
3. UNII 3: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
4. All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Section 15.209.

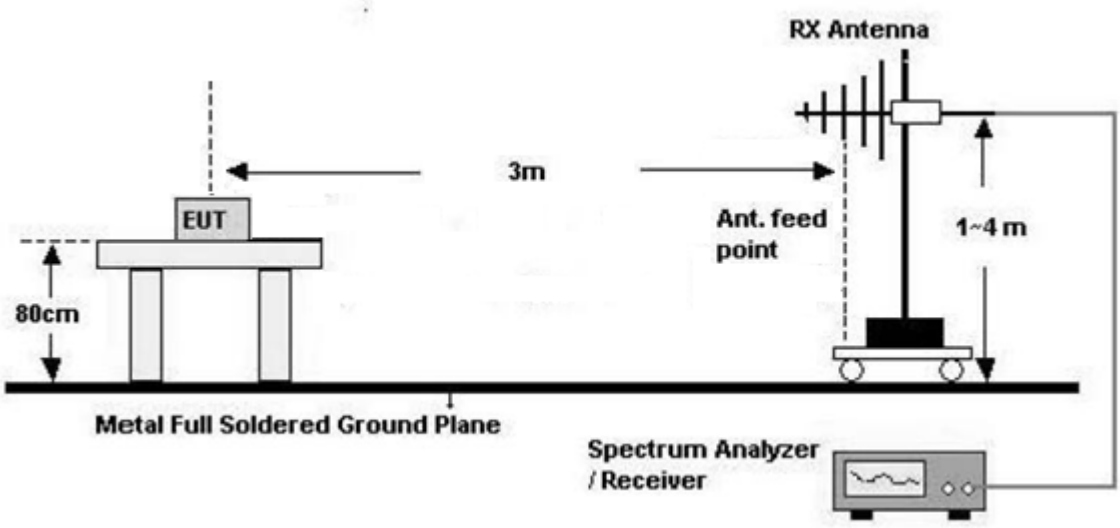
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

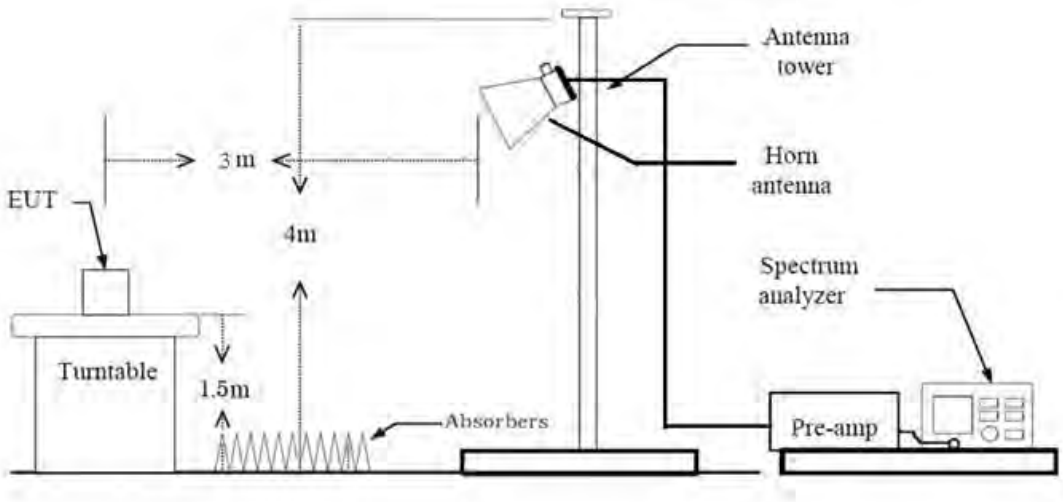
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions(Below 30 MHz)

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

KDB 414788 OFS and Chamber Correlation Justification

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

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

Test Procedure of Radiated spurious emissions(Below 1 GHz)

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

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

Test Procedure of Radiated spurious emissions (Above 1 GHz)

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

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

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

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

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

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

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

Test Procedure of Radiated Restricted Band Edge

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting
   (1) Measurement Type(Peak, G.5 in KDB 789033 v02r01):
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep Time = auto
   - Trace mode = max hold
   - Allow sweeps to continue until the trace stabilizes.
     Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

   (2) Measurement Type(Average, G.6.d in KDB 789033 v02r01):
   - RBW = 1 MHz
   - VBW(Duty cycle ≥ 98 %) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
   - VBW(Duty cycle is < 98 %) = VBW ≥ 1/T, where T is the minimum transmission duration.
   - The analyzer is set to linear detector mode.
   - Detector = Peak.
   - Sweep time = auto.
   - Trace mode = max hold.
   - Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 % duty cycle. For lower duty cycles, increase the minimym number of traces by a factor of 1/x, where x is the duty cycle.
9. Measured Frequency Range :
   - 4 500 MHz ~ 5 150 MHz
   - 5 350 MHz ~ 5 460 MHz

- 5 460 MHz ~ 5 470 MHz
- (75 MHz or more below the 5 725 MHz) ~ 5 725 MHz
- 5 850 MHz ~ (75 MHz or more above the 5 850 MHz)

10. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
11. Total

(1)Measurement(Peak)

= Measured Value(Peak)

(2)Measurement(Avg)

= Measured Value (Avg)

- We apply to the offset in the range 1 GHz - 18 GHz.
- The offset = Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F) – Amp. Gain(A.G) + Attenuator(ATT)

The actual setting value of VBW(SISO)

Mode	Worst Data rate	Duty Cycle	Duty Cycle Factor (dB)	The actual setting value of VBW (Hz)
802.11n(HT20)	MCS0	0.923	0.350	2 000
802.11n(HT40)	MCS0	0.857	0.671	3 000
802.11ac(VHT20)	MCS0	0.923	0.348	2 000
802.11ac(VHT40)	MCS0	0.859	0.661	3 000
802.11ac(VHT80)	MCS0	0.752	1.240	5 000

The actual setting value of VBW(SISO, MIMO_CDD(Ant.1+Ant.2))

Mode	Worst Data rate	Duty Cycle	Duty Cycle Factor (dB)	The actual setting value of VBW (Hz)
802.11a	6 Mbps	0.927	0.328	1 000

The actual setting value of VBW(MIMO_SDM(Ant.1+Ant.2))

Mode	Worst Data rate	Duty Cycle	Duty Cycle Factor (dB)	The actual setting value of VBW (Hz)
802.11n(HT20)	MCS8	0.865	0.630	2 000
802.11n(HT40)	MCS8	0.766	1.160	3 000
802.11ac(VHT20)	MCS0	0.873	0.589	2 000
802.11ac(VHT40)	MCS0	0.765	1.164	3 000
802.11ac(VHT80)	MCS0	0.678	1.688	10 000

8.8. Worst case configuration and mode

Conducted test

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

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone, Stand alone + External accessories (Earphone, etc)
   - Worstcase : Stand alone
2. EUT Axis
   - Radiated Spurious Emissions : Y
   - Radiated Restricted Band Edge : Y
3. All datarate of operation were investigated and the worst case datarate results are reported.
   - Worstcase :
     802.11a : 6 Mbps [MIMO_CDD(Ant.1+Ant.2)]
     802.11n_HT20 : MCS8 [MIMO_SDM(Ant.1+Ant.2)]
     802.11ac_VHT20 : MCS0 [MIMO_SDM(Ant.1+Ant.2)]
     802.11n_HT40 : MCS8 [MIMO_SDM(Ant.1+Ant.2)]
     802.11ac_VHT40 : MCS0 [MIMO_SDM(Ant.1+Ant.2)]
     802.11ac_VHT80 : MCS0 [MIMO_SDM(Ant.1+Ant.2)]
4. Radiated Spurious Emission
   - All modulation of operation were investigated and the worst case modulation results are reported.
   - Worstcase :
     802.11a : 6 Mbps [MIMO_CDD(Ant.1+Ant.2)]
5. All position of loop antenna were investigated and the test result is a no critical peak found at all positions.
   - Position : Horizontal, Vertical, Parallel to the ground plane

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

9. SUMMARY OF TEST RESULTS

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

10. TEST RESULT

10.1 DUTY CYCLE

[SISO_Ant.2]

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11n (HT20)	0	1.334	1.446	0.923	0.350
	1	0.687	0.798	0.860	0.653
	2	0.471	0.562	0.838	0.768
	3	0.362	0.471	0.769	1.142
	4	0.256	0.365	0.701	1.540
	5	0.200	0.309	0.647	1.893
	6	0.185	0.294	0.629	2.011
	7	0.167	0.269	0.623	2.058
802.11n (HT40)	0	0.663	0.773	0.857	0.671
	1	0.352	0.461	0.764	1.171
	2	0.248	0.347	0.715	1.455
	3	0.198	0.314	0.629	2.013
	4	0.142	0.251	0.566	2.474
	5	0.116	0.216	0.535	2.719
	6	0.109	0.215	0.506	2.960
	7	0.101	0.208	0.488	3.118
802.11ac (VHT20)	0	1.341	1.453	0.923	0.348
	1	0.694	0.793	0.875	0.578
	2	0.474	0.585	0.810	0.918
	3	0.367	0.476	0.771	1.128
	4	0.258	0.360	0.718	1.437
	5	0.204	0.312	0.652	1.856
	6	0.187	0.307	0.612	2.136
	7	0.172	0.285	0.604	2.186
	8	0.151	0.251	0.602	2.205

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11ac (VHT40)	0	0.667	0.777	0.859	0.661
	1	0.357	0.466	0.766	1.156
	2	0.253	0.352	0.719	1.430
	3	0.200	0.301	0.664	1.779
	4	0.147	0.246	0.598	2.233
	5	0.120	0.229	0.522	2.825
	6	0.111	0.220	0.507	2.953
	7	0.104	0.208	0.499	3.016
	8	0.096	0.196	0.488	3.111
	9	0.089	0.187	0.473	3.252
802.11ac (VHT80)	0	0.332	0.441	0.752	1.240
	1	0.187	0.304	0.617	2.099
	2	0.139	0.248	0.561	2.509
	3	0.116	0.216	0.536	2.709
	4	0.091	0.200	0.456	3.413
	5	0.079	0.171	0.466	3.314
	6	0.076	0.185	0.411	3.862
	7	0.073	0.182	0.403	3.949
	8	0.068	0.177	0.385	4.140
	9	0.063	0.165	0.385	4.150

[SISO_Ant.2, MIMO_CDD(Ant.1+Ant.2)]

Mode	Data Rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11a	6	1.428	1.540	0.927	0.328
	9	0.960	1.069	0.898	0.467
	12	0.725	0.823	0.880	0.555
	18	0.491	0.593	0.829	0.814
	24	0.370	0.471	0.785	1.052
	36	0.256	0.365	0.701	1.540
	48	0.195	0.294	0.661	1.796
	54	0.180	0.289	0.623	2.056

[MIMO_SDM(Ant.1+Ant.2)]

Mode	MCS Index	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11n(HT20)	MCS8	0.692	0.800	0.865	0.630
	MCS9	0.367	0.476	0.771	1.128
	MCS10	0.258	0.367	0.703	1.528
	MCS11	0.205	0.314	0.653	1.849
	MCS12	0.149	0.261	0.573	2.420
	MCS13	0.124	0.233	0.533	2.736
	MCS14	0.114	0.225	0.506	2.962
	MCS15	0.109	0.218	0.500	3.010
802.11n(HT40)	MCS8	0.355	0.464	0.766	1.160
	MCS9	0.200	0.309	0.648	1.887
	MCS10	0.149	0.258	0.578	2.377
	MCS11	0.122	0.228	0.533	2.730
	MCS12	0.096	0.205	0.469	3.287
	MCS13	0.081	0.198	0.410	3.873
	MCS14	0.076	0.190	0.400	3.982
	MCS15	0.071	0.180	0.394	4.041
802.11ac(VHT20)	MCS0	0.696	0.797	0.873	0.589
	MCS1	0.372	0.471	0.790	1.022
	MCS2	0.263	0.362	0.727	1.383
	MCS3	0.208	0.307	0.678	1.690
	MCS4	0.157	0.266	0.590	2.288
	MCS5	0.128	0.237	0.540	2.679
	MCS6	0.119	0.228	0.522	2.821
	MCS7	0.114	0.223	0.511	2.913
	MCS8	0.101	0.209	0.482	3.169
802.11ac(VHT40)	MCS0	0.359	0.470	0.765	1.164
	MCS1	0.205	0.322	0.638	1.953
	MCS2	0.152	0.261	0.583	2.347
	MCS3	0.124	0.241	0.516	2.875
	MCS4	0.101	0.218	0.465	3.324
	MCS5	0.084	0.202	0.415	3.817
	MCS6	0.081	0.190	0.427	3.699
	MCS7	0.076	0.185	0.411	3.862
	MCS8	0.071	0.181	0.395	4.034
	MCS9	0.068	0.187	0.365	4.379
802.11ac(VHT80)	MCS0	0.192	0.283	0.678	1.688
	MCS1	0.119	0.236	0.505	2.964
	MCS2	0.096	0.205	0.469	3.287
	MCS3	0.084	0.192	0.437	3.599
	MCS4	0.071	0.190	0.373	4.279
	MCS5	0.064	0.182	0.352	4.533
	MCS6	0.063	0.181	0.345	4.618
	MCS7	0.062	0.181	0.343	4.653
	MCS8	0.060	0.178	0.335	4.743
	MCS9	0.056	0.175	0.319	4.964

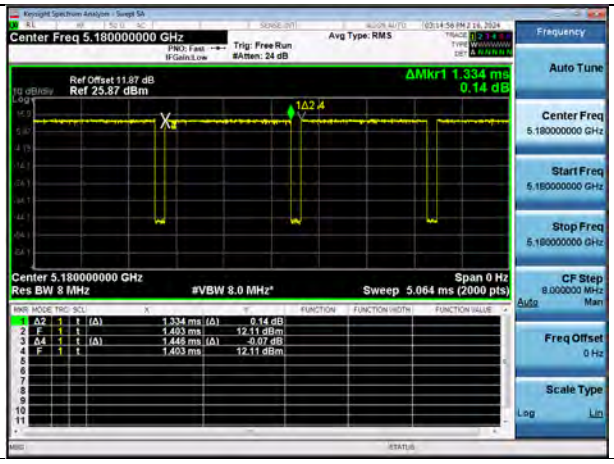
▣ Test Plots

Note:

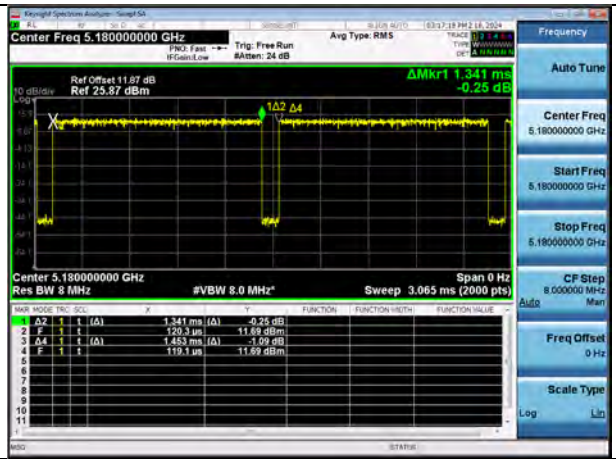
In order to simplify the report, attached plots were only the lowest datarate.

[SISO_Ant.2]

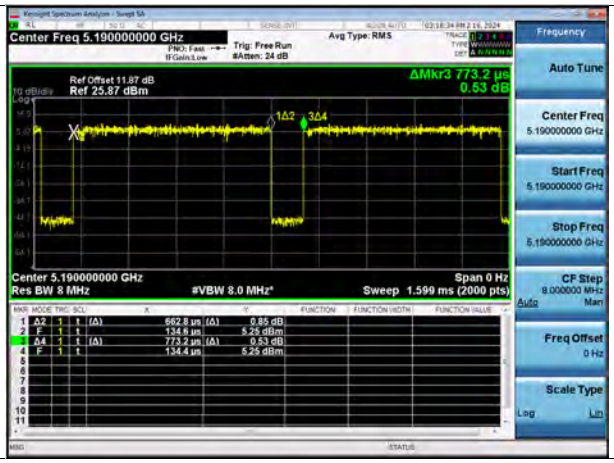
802.11n(HT20)



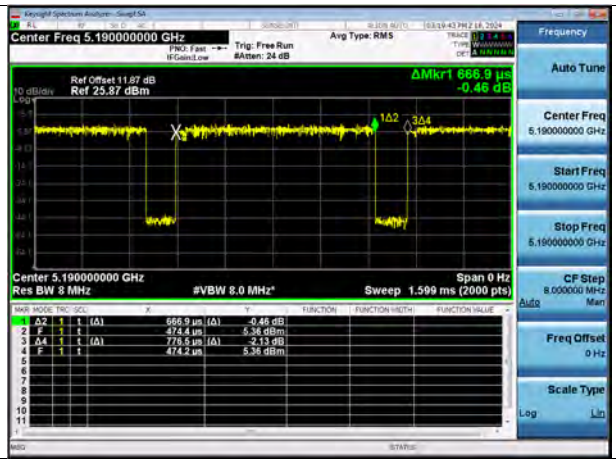
802.11ac(VHT20)



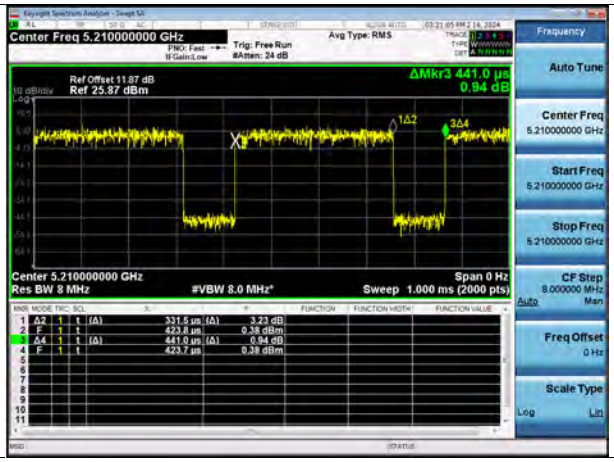
802.11n(HT40)



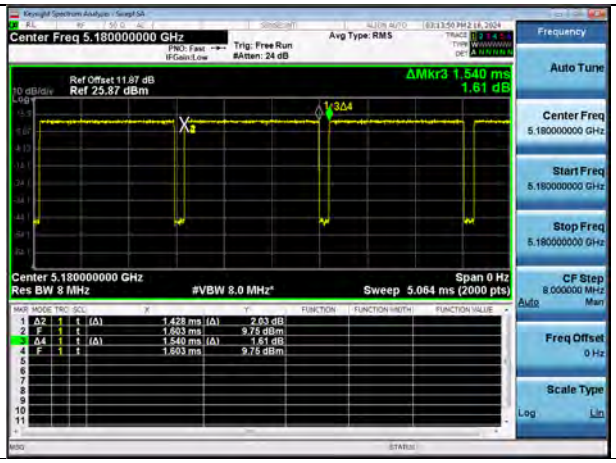
802.11ac(VHT40)



802.11ac(VHT80)

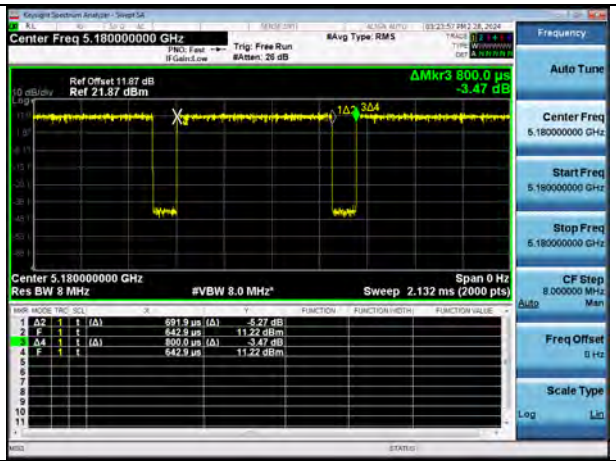


[SISO, MIMO_CDD(Ant.1+Ant.2)]

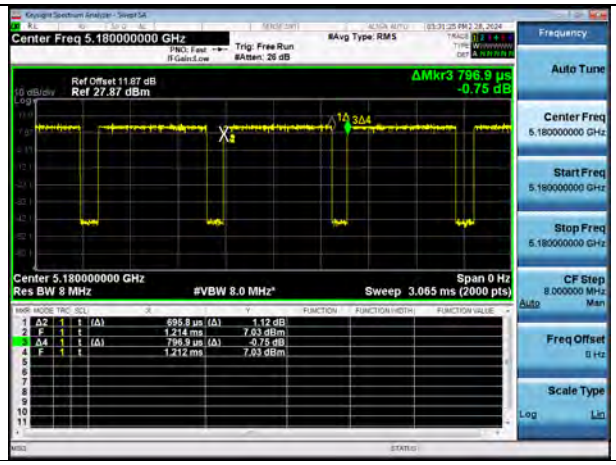
802.11a (SISO, MIMO_CDD)


[MIMO_SDM(Ant.1+Ant.2)]

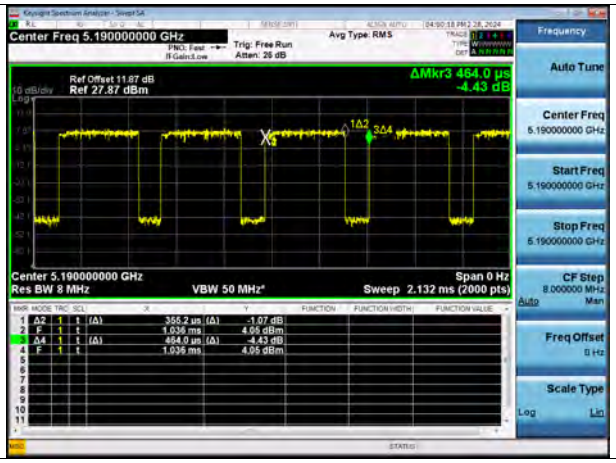
802.11n(HT20)



802.11ac(VHT20)

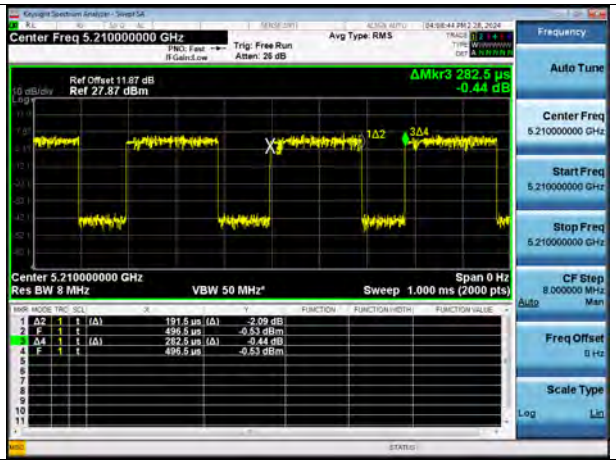


802.11n(HT40)



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.

[SISO_Ant.2]

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11n (HT20)	5180	36	27.85	19.175
	5200	40	25.74	18.512
	5240	48	26.02	18.825
	5260	52	26.30	19.090
	5300	60	26.49	19.013
	5320	64	26.25	18.956
	5500	100	26.14	18.878
	5600	120	26.09	18.854
	5720	144	26.10	18.735
	5745	149	24.89	18.730
	5785	157	26.56	18.822
	5825	165	26.83	18.804

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT20)	5180	36	26.13	18.813
	5200	40	25.68	18.715
	5240	48	25.85	18.797
	5260	52	26.67	18.989
	5300	60	26.05	18.857
	5320	64	26.11	18.910
	5500	100	25.95	18.824
	5600	120	26.08	18.899
	5720	144	26.12	18.579
	5745	149	25.98	18.683
	5785	157	26.56	18.864
	5825	165	26.11	18.830

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11n (HT40)	5190	38	46.14	37.039
	5230	46	46.27	36.988
	5270	54	46.80	36.982
	5310	62	46.65	37.038
	5510	102	46.22	36.929
	5590	118	45.88	37.001
	5710	142	45.69	37.024
	5755	151	45.88	36.994
	5795	159	46.00	37.037

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT40)	5190	38	46.29	36.988
	5230	46	46.26	36.988
	5270	54	46.11	36.924
	5310	62	46.05	36.984
	5510	102	46.35	36.949
	5590	118	46.21	36.937
	5710	142	46.15	36.970
	5755	151	45.85	37.025
	5795	159	46.28	37.016

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT80)	5210	42	86.74	76.310
	5290	58	87.04	76.524
	5530	106	86.70	76.557
	5610	122	94.31	76.676
	5690	138	86.86	76.553
	5775	155	96.04	76.638

[MIMO_CDD(Ant.1)]

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11a	5180	36	21.18	17.052
	5200	40	21.27	17.029
	5240	48	20.95	16.992
	5260	52	21.39	17.134
	5300	60	21.38	17.115
	5320	64	21.33	17.093
	5500	100	21.19	17.117
	5600	120	21.76	17.154
	5720	144	21.17	17.038
	5745	149	21.09	16.996
	5785	157	21.29	17.120
	5825	165	21.41	17.206

[MIMO_SDM(Ant.1)]

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11n (HT20)	5180	36	22.22	18.138
	5200	40	22.22	18.131
	5240	48	22.53	18.166
	5260	52	22.92	18.217
	5300	60	22.92	18.191
	5320	64	22.63	18.218
	5500	100	22.75	18.183
	5600	120	22.66	18.171
	5720	144	22.23	18.182
	5745	149	22.22	18.188
	5785	157	22.83	18.236
	5825	165	24.20	18.324

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT20)	5180	36	22.64	18.023
	5200	40	21.96	18.030
	5240	48	22.29	18.075
	5260	52	22.46	18.084
	5300	60	22.57	17.997
	5320	64	22.36	18.129
	5500	100	22.15	18.072
	5600	120	22.60	18.040
	5720	144	22.59	18.062
	5745	149	22.33	18.068
	5785	157	22.83	18.140
	5825	165	23.02	18.287

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11n (HT40)	5190	38	45.78	36.878
	5230	46	45.13	36.863
	5270	54	45.68	36.849
	5310	62	45.60	36.954
	5510	102	45.78	36.925
	5590	118	45.78	36.955
	5710	142	45.73	36.911
	5755	151	45.62	36.885
	5795	159	45.59	36.969

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT40)	5190	38	45.45	36.920
	5230	46	45.90	36.895
	5270	54	45.86	36.951
	5310	62	46.33	36.970
	5510	102	45.99	36.875
	5590	118	45.94	36.923
	5710	142	46.11	36.913
	5755	151	45.70	36.840
	5795	159	45.85	36.978

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT80)	5210	42	86.24	76.344
	5290	58	86.08	76.232
	5530	106	85.45	76.189
	5610	122	86.11	76.277
	5690	138	85.97	76.316
	5775	155	85.85	76.347

[MIMO_CDD(Ant.2)]

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11a	5180	36	24.46	17.636
	5200	40	22.78	17.305
	5240	48	22.82	17.286
	5260	52	24.39	17.662
	5300	60	24.13	17.574
	5320	64	24.27	17.574
	5500	100	22.80	17.400
	5600	120	22.89	17.491
	5720	144	22.87	17.272
	5745	149	23.00	17.383
	5785	157	23.10	17.411
	5825	165	24.61	17.593

[MIMO_SDM(Ant.2)]

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11n (HT20)	5180	36	22.90	18.113
	5200	40	23.10	18.199
	5240	48	22.95	18.252
	5260	52	24.86	18.335
	5300	60	24.41	18.391
	5320	64	23.41	18.243
	5500	100	23.24	18.201
	5600	120	23.15	18.228
	5720	144	22.00	18.036
	5745	149	22.14	17.993
	5785	157	25.89	18.168
	5825	165	24.44	18.356

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT20)	5180	36	24.82	18.343
	5200	40	24.95	18.353
	5240	48	23.35	18.244
	5260	52	24.68	18.314
	5300	60	24.38	18.253
	5320	64	24.86	18.275
	5500	100	24.77	18.321
	5600	120	23.51	18.326
	5720	144	23.25	18.163
	5745	149	24.67	18.030
	5785	157	26.29	18.543
	5825	165	26.07	18.408

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11n (HT40)	5190	38	44.28	36.579
	5230	46	44.23	36.562
	5270	54	44.32	36.555
	5310	62	44.33	36.571
	5510	102	43.90	36.574
	5590	118	44.56	36.559
	5710	142	44.43	36.562
	5755	151	43.97	36.570
	5795	159	44.01	36.579

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT40)	5190	38	44.14	36.591
	5230	46	43.59	36.517
	5270	54	44.31	36.528
	5310	62	43.93	36.550
	5510	102	44.00	36.576
	5590	118	44.60	36.572
	5710	142	43.68	36.541
	5755	151	43.74	36.573
	5795	159	44.76	36.613

Mode	Frequency [MHz]	Channel No.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
802.11ac (VHT80)	5210	42	86.16	76.253
	5290	58	86.94	76.171
	5530	106	86.20	76.126
	5610	122	85.92	76.146
	5690	138	86.37	76.126
	5775	155	85.96	76.246

▣ Test Plots

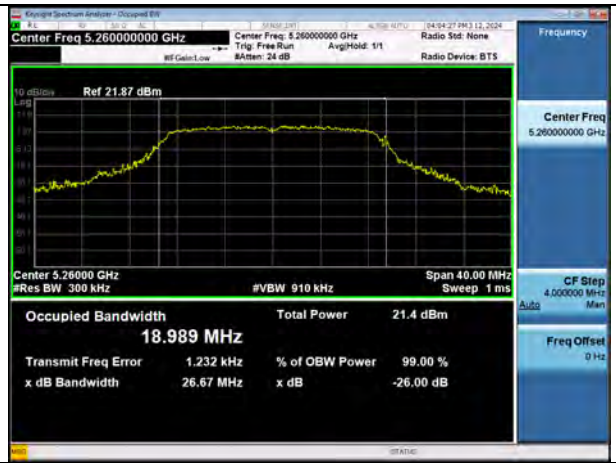
Note:

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

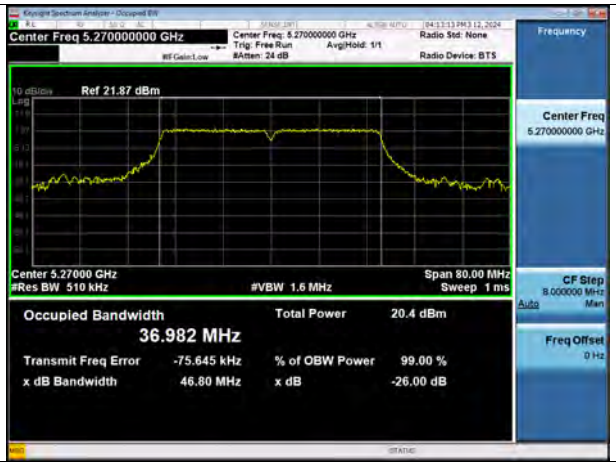
[SISO_Ant.2]

802.11n(HT20) 26 dB Bandwidth (CH 36)

802.11ac(VHT20) 26 dB Bandwidth (CH 52)



802.11n(HT40) 26 dB Bandwidth (CH 54)

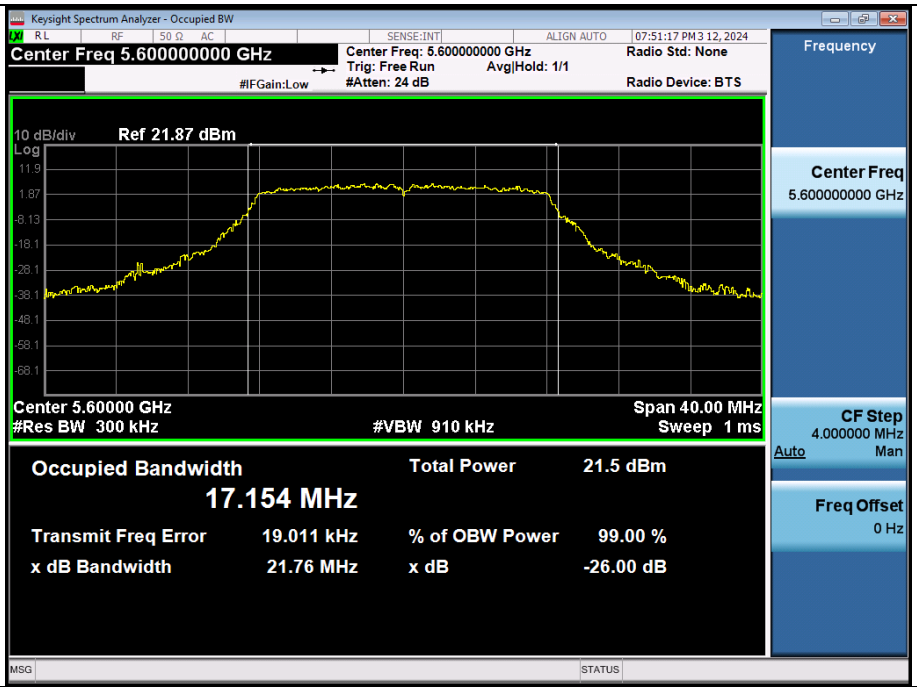


802.11ac(VHT40) 26 dB Bandwidth (CH 102)

802.11ac(VHT80) 26 dB Bandwidth (CH 155)

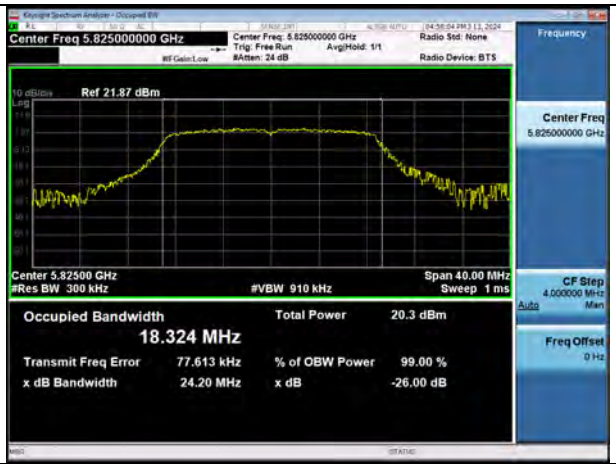
[MIMO_CDD(Ant.1)]

802.11a 26 dB Bandwidth (CH 120)

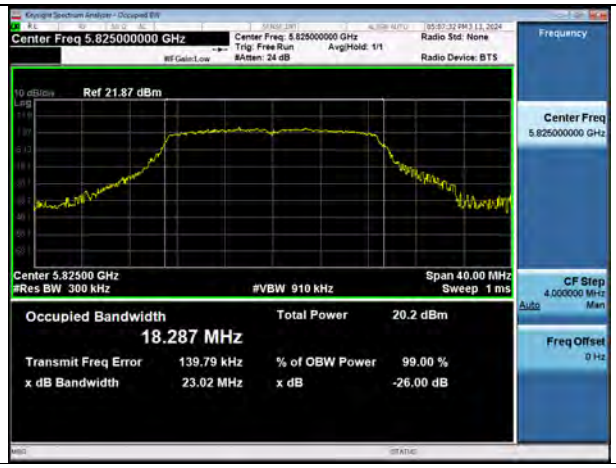


[MIMO_SDM(Ant.1)]

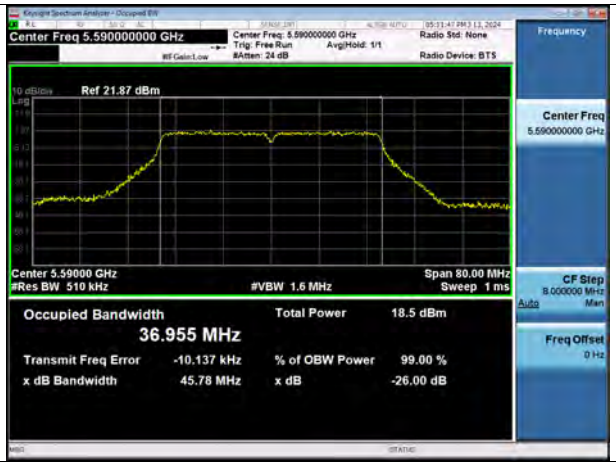
802.11n(HT20) 26 dB Bandwidth (CH 165)



802.11ac(VHT20) 26 dB Bandwidth (CH 165)

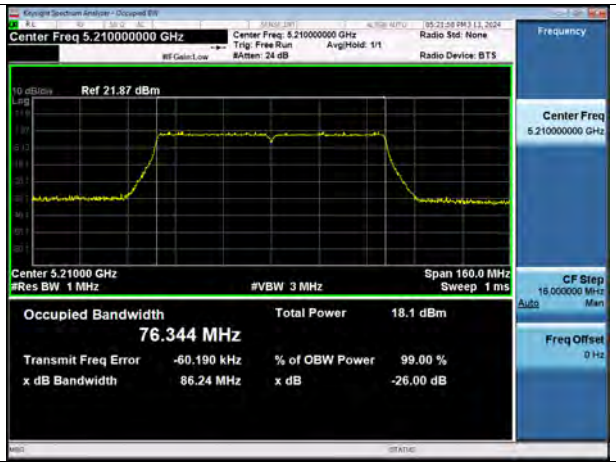


802.11n(HT40) 26 dB Bandwidth (CH 118)



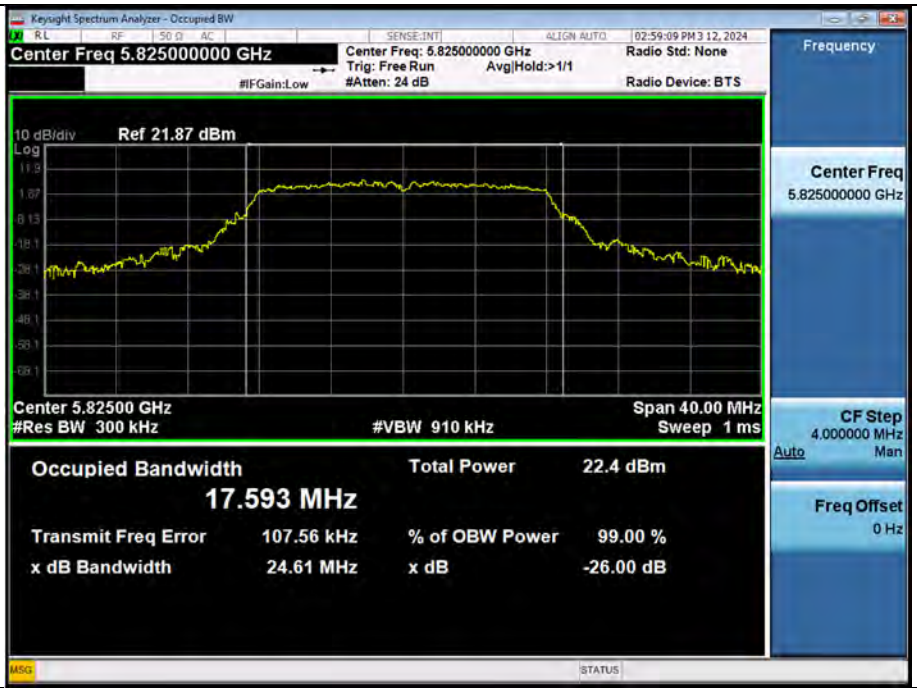
802.11ac(VHT40) 26 dB Bandwidth (CH 62)

802.11ac(VHT80) 26 dB Bandwidth (CH 42)



[MIMO_CDD(Ant.2)]

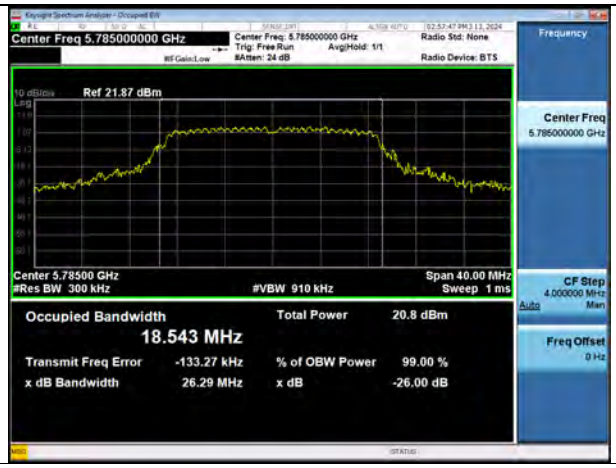
802.11a 26 dB Bandwidth (CH 165)



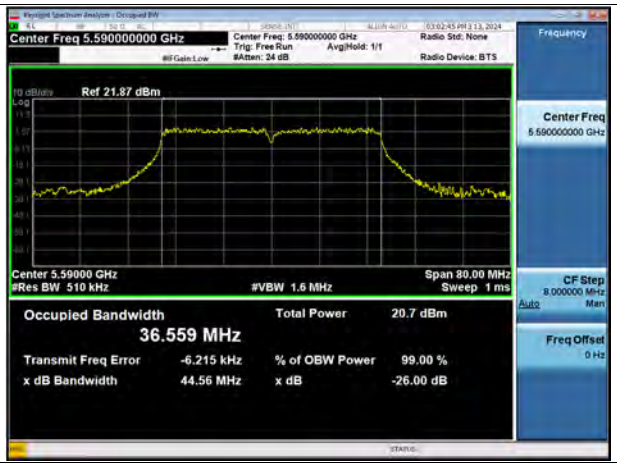
[MIMO_SDM(Ant.2)]

802.11n(HT20) 26 dB Bandwidth (CH 157)

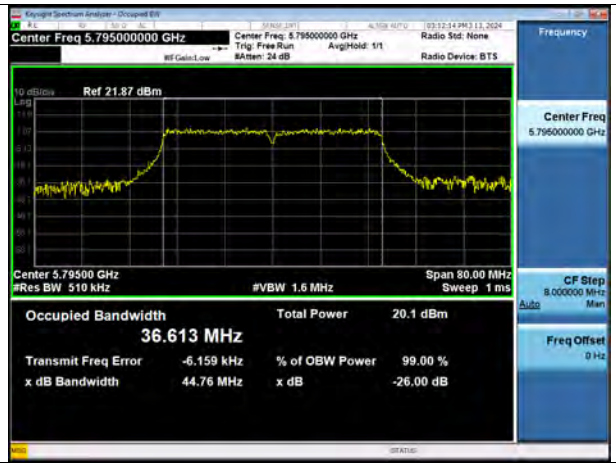
802.11ac(VHT20) 26 dB Bandwidth (CH 157)



802.11n(HT40) 26 dB Bandwidth (CH 118)



802.11ac(VHT40) 26 dB Bandwidth (CH 159)



802.11ac(VHT80) 26 dB Bandwidth (CH 58)

10.3 6 dB BANDWIDTH

[SISO_Ant.2]

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT20)	5745	149	15.79	0.500
	5785	157	15.71	0.500
	5825	165	16.29	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT20)	5745	149	15.73	0.500
	5785	157	16.30	0.500
	5825	165	16.02	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT40)	5755	151	36.41	0.500
	5795	159	36.44	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT40)	5755	151	36.42	0.500
	5795	159	36.43	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT80)	5775	155	76.50	0.500

[MIMO_CDD(Ant.1)]

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11a	5745	149	15.94	0.500
	5785	157	16.06	0.500
	5825	165	15.48	0.500

[MIMO_SDM(Ant.1)]

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT20)	5745	149	15.64	0.500
	5785	157	16.30	0.500
	5825	165	16.29	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT20)	5745	149	15.95	0.500
	5785	157	15.96	0.500
	5825	165	16.55	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT40)	5755	151	36.41	0.500
	5795	159	36.42	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT40)	5755	151	36.42	0.500
	5795	159	36.42	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT80)	5775	155	76.48	0.500

[MIMO_CDD(Ant.2)]

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11a	5745	149	16.05	0.500
	5785	157	15.70	0.500
	5825	165	15.79	0.500

[MIMO_SDM(Ant.2)]

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT20)	5745	149	16.70	0.500
	5785	157	16.57	0.500
	5825	165	16.36	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT20)	5745	149	16.10	0.500
	5785	157	16.70	0.500
	5825	165	16.56	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT40)	5755	151	36.43	0.500
	5795	159	36.45	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT40)	5755	151	36.44	0.500
	5795	159	36.47	0.500

Mode	Frequency [MHz]	Channel No.	6 dB Bandwidth [MHz]	Limit [MHz]
802.11ac(VHT80)	5775	155	76.51	0.500

▣ Test Plots

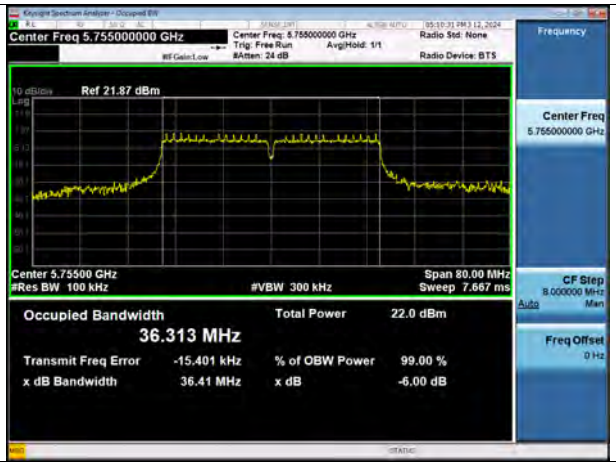
Note: In order to simplify the report, attached plots were only the narrowest channel

[SISO_Ant.2].

802.11n(HT20) (CH 157)

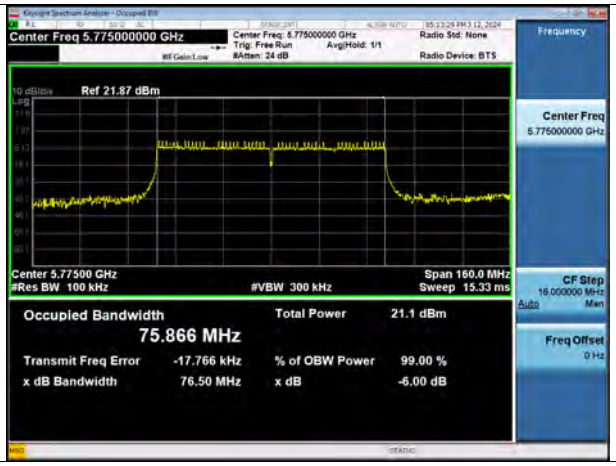
802.11ac(VHT20) (CH 149)

802.11n(HT40) (CH 151)



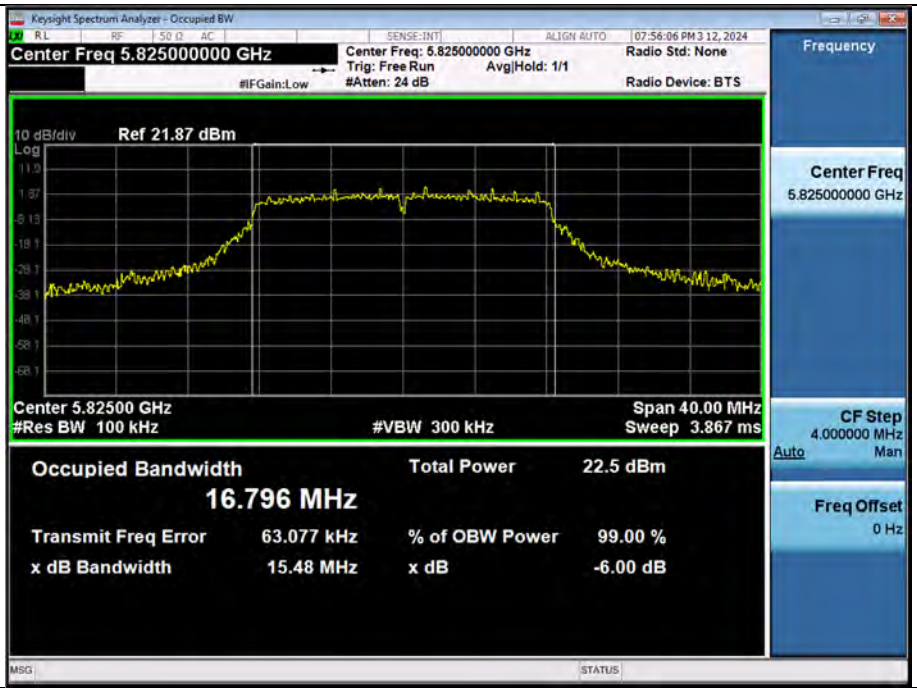
802.11ac(VHT40) (CH 151)

802.11ac(VHT80) (CH 155)



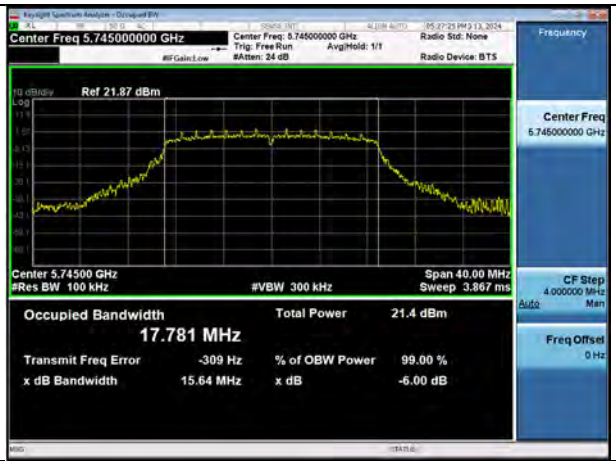
[MIMO_CDD(Ant.1)]

802.11a (CH.165)



[MIMO_SDM(Ant.1)]

802.11n(HT20) (CH 149)

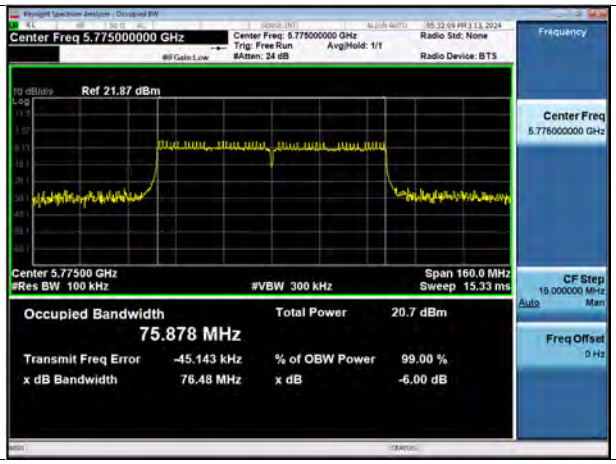


802.11ac(VHT20) (CH 149)

802.11n(HT40) (CH 151)

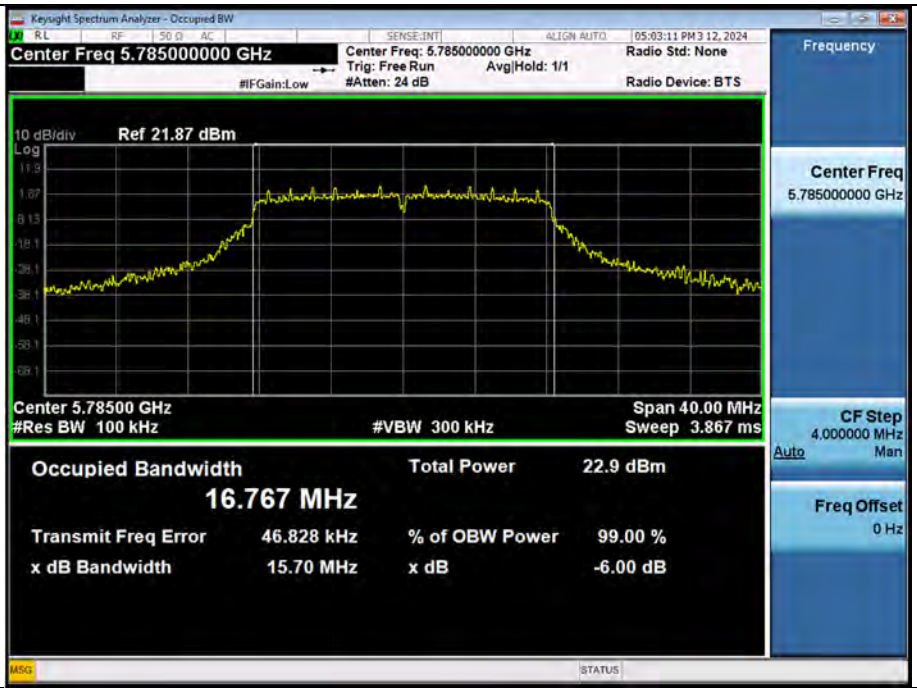
802.11ac(VHT40) (CH 151)

802.11ac(VHT80) (CH 155)



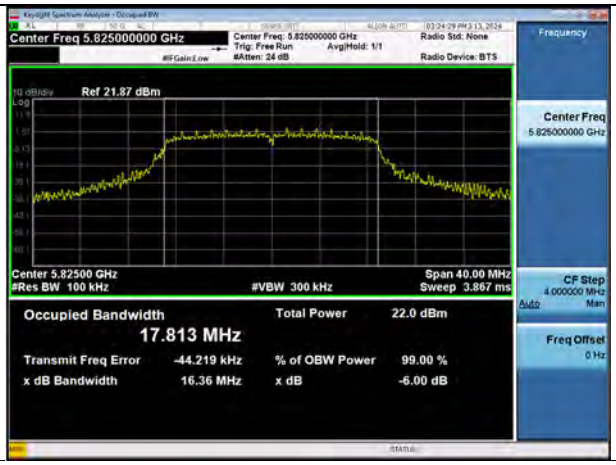
[MIMO_CDD(Ant.2)]

802.11a (CH.157)

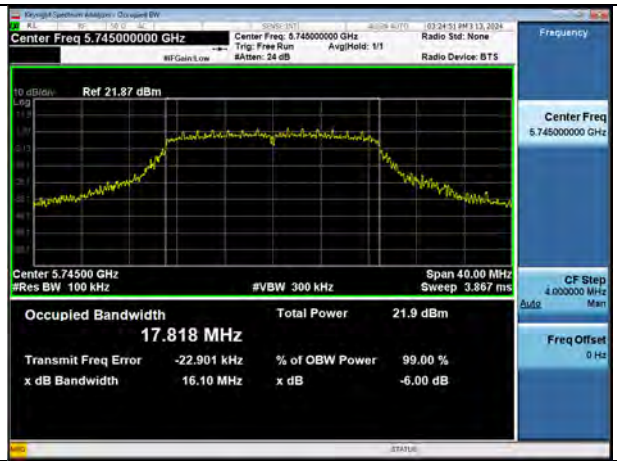


[MIMO_SDM(Ant.2)]

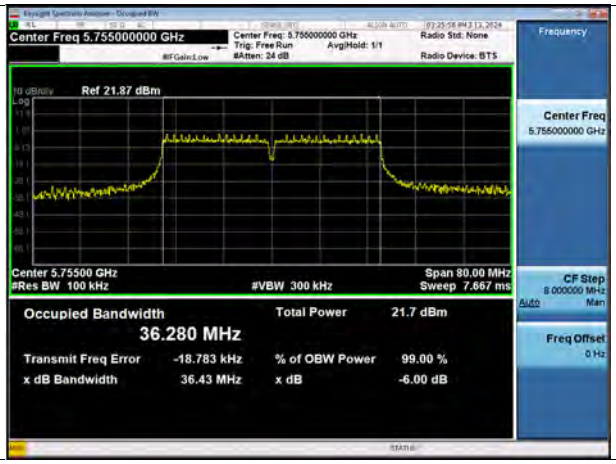
802.11n(HT20) (CH 165)



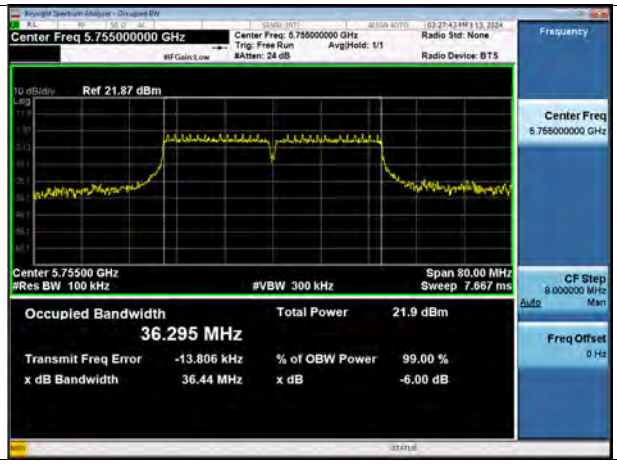
802.11ac(VHT20) (CH 149)



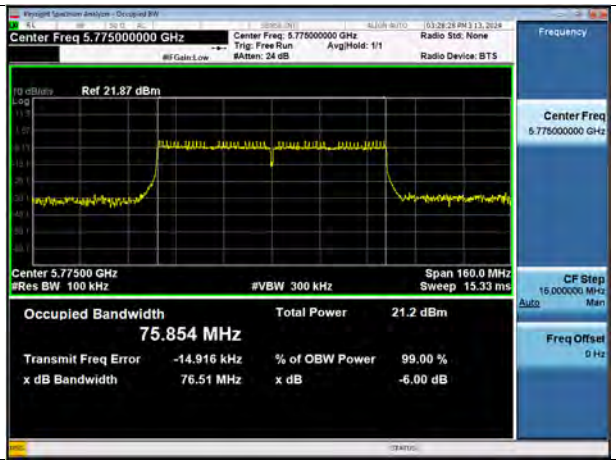
802.11n(HT40) (CH 151)



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.

Note:

1. Limit

(UNII 1) : 23.98 dBm

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

(UNII 3) : 30.00 dBm

2. Ant Total Power [dBm] = Measured Power [dBm] + Duty Cycle Factor [dB]

3. MIMO Total Power [dBm] = Ant.1 Total Power [dBm] + Ant.2 Total Power [dBm]

[SISO_Ant.2]

Mode	Frequency [MHz]	Channel No.	Datarate	Conducted Average Power [dBm]			Limit (dBm)
				Measured Value	D.C.F	Summed	
802.11n 20 (HT20)	5180	36	MCS 0	15.12	0.35	15.47	23.98
	5200	40	MCS 0	15.14	0.35	15.49	23.98
	5240	48	MCS 0	15.40	0.35	15.75	23.98
	5260	52	MCS 0	15.41	0.35	15.76	23.98
	5300	60	MCS 0	15.51	0.35	15.86	23.98
	5320	64	MCS 0	15.22	0.35	15.57	23.98
	5500	100	MCS 0	15.11	0.35	15.46	23.98
	5600	120	MCS 0	14.98	0.35	15.33	23.98
	5720	144	MCS 0	15.09	0.35	15.44	23.98
	5745	149	MCS 0	15.05	0.35	15.40	30.00
	5785	157	MCS 0	15.08	0.35	15.43	30.00
	5825	165	MCS 0	15.01	0.35	15.36	30.00
802.11ac 20 (VHT20)	5180	36	MCS 0	15.26	0.35	15.61	23.98
	5200	40	MCS 0	15.16	0.35	15.51	23.98
	5240	48	MCS 0	15.38	0.35	15.73	23.98
	5260	52	MCS 0	15.40	0.35	15.75	23.98
	5300	60	MCS 0	15.51	0.35	15.86	23.98
	5320	64	MCS 0	15.37	0.35	15.72	23.98
	5500	100	MCS 0	15.12	0.35	15.47	23.98
	5600	120	MCS 0	14.85	0.35	15.20	23.98
	5720	144	MCS 0	15.05	0.35	15.40	23.98
	5745	149	MCS 0	15.12	0.35	15.47	30.00
	5785	157	MCS 0	15.19	0.35	15.54	30.00
	5825	165	MCS 0	15.20	0.35	15.55	30.00
802.11n 40 (HT40)	5190	38	MCS 0	13.75	0.67	14.42	23.98
	5230	46	MCS 0	13.87	0.67	14.54	23.98
	5270	54	MCS 0	14.14	0.67	14.81	23.98
	5310	62	MCS 0	14.18	0.67	14.85	23.98
	5510	102	MCS 0	13.85	0.67	14.52	23.98
	5590	118	MCS 0	13.88	0.67	14.55	23.98
	5710	142	MCS 0	13.60	0.67	14.27	23.98
	5755	151	MCS 0	13.63	0.67	14.30	30.00
	5795	159	MCS 0	13.68	0.67	14.35	30.00

Mode	Frequency [MHz]	Channel No.	Datarate	Conducted Average Power [dBm]			Limit (dBm)
				Measured Value	D.C.F	Summed	
802.11ac 40 (VHT40)	5190	38	MCS 0	13.72	0.66	14.38	23.98
	5230	46	MCS 0	13.96	0.66	14.62	23.98
	5270	54	MCS 0	14.13	0.66	14.79	23.98
	5310	62	MCS 0	14.15	0.66	14.81	23.98
	5510	102	MCS 0	13.87	0.66	14.53	23.98
	5590	118	MCS 0	13.78	0.66	14.44	23.98
	5710	142	MCS 0	13.57	0.66	14.23	23.98
	5755	151	MCS 0	13.55	0.66	14.21	30.00
	5795	159	MCS 0	13.58	0.66	14.24	30.00
802.11ac 80 (VHT80)	5210	42	MCS 0	11.12	1.24	12.36	23.98
	5290	58	MCS 0	12.41	1.24	13.65	23.98
	5530	106	MCS 0	12.03	1.24	13.27	23.98
	5610	122	MCS 0	12.00	1.24	13.24	23.98
	5690	138	MCS 0	11.70	1.24	12.94	23.98
	5775	155	MCS 0	11.96	1.24	13.20	30.00

[MIMO_CDD(Ant.1+Ant.2)]

Mode	Frequency [MHz]	Channel No.	Datarate	Conducted Average Power [dBm]			Limit (dBm)
				ANT.1	ANT.2	MIMO	
802.11a	5180	36	6 M	14.71	15.25	18.00	23.98
	5200	40	6 M	14.95	15.33	18.15	23.98
	5240	48	6 M	14.89	15.61	18.27	23.98
	5260	52	6 M	15.19	15.65	18.43	23.98
	5300	60	6 M	15.54	15.86	18.71	23.98
	5320	64	6 M	15.08	15.88	18.51	23.98
	5500	100	6 M	14.84	15.40	18.14	23.98
	5600	120	6 M	14.86	15.61	18.26	23.98
	5720	144	6 M	14.64	15.30	17.99	23.98
	5745	149	6 M	14.90	15.38	18.15	30.00
	5785	157	6 M	15.24	15.31	18.28	30.00
	5825	165	6 M	15.44	15.34	18.40	30.00

[MIMO_SDM(Ant.1+Ant.2)]

Mode	Frequency [MHz]	Channel No.	Datarate	Conducted Average Power [dBm]			Limit (dBm)
				ANT.1	ANT.2	MIMO	
802.11n 20 (HT20)	5180	36	MCS 8	13.92	14.66	17.32	23.98
	5200	40	MCS 8	14.68	14.63	17.67	23.98
	5240	48	MCS 8	14.39	15.22	17.84	23.98
	5260	52	MCS 8	14.63	15.24	17.96	23.98
	5300	60	MCS 8	14.82	15.52	18.19	23.98
	5320	64	MCS 8	14.89	15.33	18.13	23.98
	5500	100	MCS 8	14.43	14.79	17.62	23.98
	5600	120	MCS 8	14.44	14.91	17.69	23.98
	5720	144	MCS 8	14.25	14.84	17.57	23.98
	5745	149	MCS 8	14.74	14.85	17.81	30.00
	5785	157	MCS 8	15.03	14.65	17.85	30.00
	5825	165	MCS 8	15.32	14.39	17.89	30.00
802.11ac 20 (VHT20)	5180	36	MCS 0	14.17	14.94	17.58	23.98
	5200	40	MCS 0	14.50	14.86	17.69	23.98
	5240	48	MCS 0	14.39	15.22	17.83	23.98
	5260	52	MCS 0	14.71	15.28	18.01	23.98
	5300	60	MCS 0	14.87	15.45	18.18	23.98
	5320	64	MCS 0	14.58	15.47	18.06	23.98
	5500	100	MCS 0	14.59	15.08	17.85	23.98
	5600	120	MCS 0	14.61	15.14	17.89	23.98
	5720	144	MCS 0	14.31	14.91	17.63	23.98
	5745	149	MCS 0	14.63	14.89	17.77	30.00
	5785	157	MCS 0	14.87	14.73	17.81	30.00
	5825	165	MCS 0	15.25	14.22	17.77	30.00
802.11n 40 (HT40)	5190	38	MCS 8	11.94	12.35	15.16	23.98
	5230	46	MCS 8	13.78	13.93	16.87	23.98
	5270	54	MCS 8	13.94	14.18	17.07	23.98
	5310	62	MCS 8	14.03	14.40	17.23	23.98
	5510	102	MCS 8	13.49	14.08	16.81	23.98
	5590	118	MCS 8	13.44	14.02	16.75	23.98
	5710	142	MCS 8	13.66	14.04	16.86	23.98
	5755	151	MCS 8	13.75	13.70	16.74	23.98
	5795	159	MCS 8	13.98	13.90	16.95	23.98

Mode	Frequency [MHz]	Channel No.	Datarate	Conducted Average Power [dBm]			Limit (dBm)
				ANT.1	ANT.2	MIMO	
802.11ac 40 (VHT40)	5190	38	MCS 0	12.64	13.79	16.27	23.98
	5230	46	MCS 0	13.63	14.04	16.85	23.98
	5270	54	MCS 0	13.86	13.97	16.93	23.98
	5310	62	MCS 0	14.03	14.45	17.26	23.98
	5510	102	MCS 0	13.31	14.20	16.79	23.98
	5590	118	MCS 0	13.29	13.99	16.67	23.98
	5710	142	MCS 0	13.63	13.97	16.82	23.98
	5755	151	MCS 0	13.73	13.78	16.77	30.00
	5795	159	MCS 0	13.91	13.76	16.85	30.00
802.11ac 80 (VHT80)	5210	42	MCS 0	10.93	11.10	14.02	23.98
	5290	58	MCS 0	12.31	13.18	15.78	23.98
	5530	106	MCS 0	12.17	12.65	15.43	23.98
	5610	122	MCS 0	12.28	12.53	15.42	23.98
	5690	138	MCS 0	12.60	12.40	15.51	23.98
	5775	155	MCS 0	12.51	12.34	15.43	30.00

10.5 POWER SPECTRAL DENSITY

Note:

1. Ant Total PSD [dBm] = Measured PSD [dBm] + Duty Cycle Factor [dB]
2. MIMO(Ant.1+Ant.2) Total PSD [dBm] = Ant.1 Total PSD [dBm] + Ant.2 Total PSD [dB]

[SISO_Ant.2]

Mode	Frequency [MHz]	Channel No.	Datarate	Power Spectral Density [dBm]			Limit
				Measured Value	D.C.F	Summed	
802.11n 20 (HT20)	5180	36	MCS 0	3.824	0.350	4.174	11 dBm/MHz
	5200	40	MCS 0	3.571	0.350	3.921	11 dBm/MHz
	5240	48	MCS 0	4.111	0.350	4.461	11 dBm/MHz
	5260	52	MCS 0	4.343	0.350	4.693	11 dBm/MHz
	5300	60	MCS 0	4.507	0.350	4.857	11 dBm/MHz
	5320	64	MCS 0	4.125	0.350	4.475	11 dBm/MHz
	5500	100	MCS 0	3.736	0.350	4.086	11 dBm/MHz
	5600	120	MCS 0	3.979	0.350	4.329	11 dBm/MHz
	5720	144	MCS 0	3.735	0.350	4.085	11 dBm/MHz
	5745	149	MCS 0	0.935	0.350	1.285	30 dBm/500 kHz
	5785	157	MCS 0	1.220	0.350	1.570	30 dBm/500 kHz
	5825	165	MCS 0	0.886	0.350	1.236	30 dBm/500 kHz
802.11ac 20 (VHT20)	5180	36	MCS 0	3.729	0.348	4.077	11 dBm/MHz
	5200	40	MCS 0	3.665	0.348	4.013	11 dBm/MHz
	5240	48	MCS 0	4.134	0.348	4.482	11 dBm/MHz
	5260	52	MCS 0	3.976	0.348	4.324	11 dBm/MHz
	5300	60	MCS 0	4.351	0.348	4.699	11 dBm/MHz
	5320	64	MCS 0	4.200	0.348	4.548	11 dBm/MHz
	5500	100	MCS 0	3.755	0.348	4.103	11 dBm/MHz
	5600	120	MCS 0	3.896	0.348	4.244	11 dBm/MHz
	5720	144	MCS 0	3.778	0.348	4.126	11 dBm/MHz
	5745	149	MCS 0	0.848	0.348	1.196	30 dBm/500 kHz
	5785	157	MCS 0	1.164	0.348	1.512	30 dBm/500 kHz
	5825	165	MCS 0	0.845	0.348	1.193	30 dBm/500 kHz
802.11n 40 (HT40)	5190	38	MCS 0	-1.056	0.671	-0.385	11 dBm/MHz
	5230	46	MCS 0	-0.890	0.671	-0.219	11 dBm/MHz
	5270	54	MCS 0	-0.709	0.671	-0.038	11 dBm/MHz
	5310	62	MCS 0	-0.650	0.671	0.021	11 dBm/MHz
	5510	102	MCS 0	-1.093	0.671	-0.422	11 dBm/MHz
	5590	118	MCS 0	-1.064	0.671	-0.393	11 dBm/MHz
	5710	142	MCS 0	-1.445	0.671	-0.774	11 dBm/MHz
	5755	151	MCS 0	-3.851	0.671	-3.180	30 dBm/500 kHz
	5795	159	MCS 0	-4.005	0.671	-3.334	30 dBm/500 kHz
802.11ac 40	5190	38	MCS 0	-1.128	0.661	-0.467	11 dBm/MHz

Mode	Frequency [MHz]	Channel No.	Datarate	Power Spectral Density [dBm]			Limit
				Measured Value	D.C.F	Summed	
(VHT40)	5230	46	MCS 0	-1.032	0.661	-0.371	11 dBm/MHz
	5270	54	MCS 0	-1.015	0.661	-0.354	11 dBm/MHz
	5310	62	MCS 0	-0.569	0.661	0.092	11 dBm/MHz
	5510	102	MCS 0	-0.985	0.661	-0.324	11 dBm/MHz
	5590	118	MCS 0	-0.949	0.661	-0.288	11 dBm/MHz
	5710	142	MCS 0	-1.399	0.661	-0.738	11 dBm/MHz
	5755	151	MCS 0	-3.765	0.661	-3.104	30 dBm/500 kHz
	5795	159	MCS 0	-3.916	0.661	-3.255	30 dBm/500 kHz
802.11ac 80 (VHT80)	5210	42	MCS 0	-6.766	1.240	-5.526	11 dBm/MHz
	5290	58	MCS 0	-5.278	1.240	-4.038	11 dBm/MHz
	5530	106	MCS 0	-5.836	1.240	-4.596	11 dBm/MHz
	5610	122	MCS 0	-5.939	1.240	-4.699	11 dBm/MHz
	5690	138	MCS 0	-5.765	1.240	-4.525	11 dBm/MHz
	5775	155	MCS 0	-8.535	1.240	-7.295	30 dBm/500 kHz

[MIMO_CDD(Ant.1+Ant.2)]

Mode	Frequency [MHz]	Channel No.	Datarate	Power Spectral Density [dBm]			Limit
				ANT.1	ANT.2	MIMO	
802.11a	5180	36	6 M	3.366	5.290	7.444	11 dBm/MHz
	5200	40	6 M	3.749	4.188	6.984	11 dBm/MHz
	5240	48	6 M	4.023	4.770	7.423	11 dBm/MHz
	5260	52	6 M	4.120	4.595	7.374	11 dBm/MHz
	5300	60	6 M	3.926	4.989	7.500	11 dBm/MHz
	5320	64	6 M	3.736	4.841	7.334	11 dBm/MHz
	5500	100	6 M	3.788	4.423	7.127	11 dBm/MHz
	5600	120	6 M	3.986	4.631	7.331	11 dBm/MHz
	5720	144	6 M	3.644	4.484	7.095	11 dBm/MHz
	5745	149	6 M	0.976	1.465	4.238	30 dBm/500 kHz
	5785	157	6 M	1.044	1.816	4.457	30 dBm/500 kHz
	5825	165	6 M	1.769	1.473	4.634	30 dBm/500 kHz

[MIMO_SDM(Ant.1+Ant.2)]

Mode	Frequency [MHz]	Channel No.	Datarate	Power Spectral Density [dBm]			Limit
				ANT.1	ANT.2	MIMO	
802.11n 20 (HT20)	5180	36	MCS 8	2.279	3.632	6.019	11 dBm/MHz
	5200	40	MCS 8	2.899	3.358	6.145	11 dBm/MHz
	5240	48	MCS 8	2.756	4.069	6.473	11 dBm/MHz
	5260	52	MCS 8	3.192	4.128	6.696	11 dBm/MHz
	5300	60	MCS 8	2.961	4.226	6.650	11 dBm/MHz
	5320	64	MCS 8	2.687	4.187	6.512	11 dBm/MHz
	5500	100	MCS 8	2.605	3.967	6.350	11 dBm/MHz
	5600	120	MCS 8	2.985	3.930	6.494	11 dBm/MHz
	5720	144	MCS 8	2.914	3.581	6.271	11 dBm/MHz
	5745	149	MCS 8	0.188	0.905	3.572	30 dBm/500 kHz
	5785	157	MCS 8	0.787	0.772	3.790	30 dBm/500 kHz
	5825	165	MCS 8	0.856	0.200	3.551	30 dBm/500 kHz
802.11ac 20 (VHT20)	5180	36	MCS 0	2.448	3.645	6.098	11 dBm/MHz
	5200	40	MCS 0	3.137	3.407	6.285	11 dBm/MHz
	5240	48	MCS 0	2.627	3.906	6.324	11 dBm/MHz
	5260	52	MCS 0	3.186	3.912	6.575	11 dBm/MHz
	5300	60	MCS 0	2.898	4.021	6.506	11 dBm/MHz
	5320	64	MCS 0	2.549	4.162	6.440	11 dBm/MHz
	5500	100	MCS 0	2.512	3.940	6.295	11 dBm/MHz
	5600	120	MCS 0	2.975	3.668	6.346	11 dBm/MHz
	5720	144	MCS 0	2.864	3.393	6.147	11 dBm/MHz
	5745	149	MCS 0	0.235	0.842	3.560	30 dBm/500 kHz
	5785	157	MCS 0	0.774	0.572	3.685	30 dBm/500 kHz
	5825	165	MCS 0	0.727	0.248	3.505	30 dBm/500 kHz
802.11n 40 (HT40)	5190	38	MCS 8	-1.414	-0.805	1.912	11 dBm/MHz
	5230	46	MCS 8	-1.747	-0.913	1.701	11 dBm/MHz
	5270	54	MCS 8	-1.371	-0.426	2.138	11 dBm/MHz
	5310	62	MCS 8	-1.266	-0.125	2.353	11 dBm/MHz
	5510	102	MCS 8	-1.305	-0.815	1.958	11 dBm/MHz
	5590	118	MCS 8	-1.237	-0.564	2.123	11 dBm/MHz
	5710	142	MCS 8	-1.446	-1.020	1.783	11 dBm/MHz
	5755	151	MCS 8	-3.668	-3.275	-0.456	30 dBm/500 kHz
	5795	159	MCS 8	-3.422	-3.639	-0.518	30 dBm/500 kHz
802.11ac 40 (VHT40)	5190	38	MCS 0	-1.536	-0.768	1.875	11 dBm/MHz
	5230	46	MCS 0	-1.259	-0.564	2.113	11 dBm/MHz
	5270	54	MCS 0	-1.249	-0.388	2.213	11 dBm/MHz
	5310	62	MCS 0	-1.234	-0.143	2.356	11 dBm/MHz
	5510	102	MCS 0	-1.369	-0.743	1.965	11 dBm/MHz
	5590	118	MCS 0	-1.323	-0.561	2.085	11 dBm/MHz
	5710	142	MCS 0	-1.386	-0.942	1.852	11 dBm/MHz
	5755	151	MCS 0	-3.717	-3.636	-0.666	30 dBm/500 kHz
	5795	159	MCS 0	-3.581	-3.509	-0.535	30 dBm/500 kHz

Mode	Frequency [MHz]	Channel No.	Datarate	Power Spectral Density [dBm]			Limit
				ANT.1	ANT.2	MIMO	
802.11ac 80 (VHT80)	5210	42	MCS 0	-6.543	-6.013	-3.259	11 dBm/MHz
	5290	58	MCS 0	-5.989	-4.673	-2.271	11 dBm/MHz
	5530	106	MCS 0	-5.766	-4.889	-2.295	11 dBm/MHz
	5610	122	MCS 0	-5.518	-4.892	-2.183	11 dBm/MHz
	5690	138	MCS 0	-5.150	-4.991	-2.059	11 dBm/MHz
	5775	155	MCS 0	-7.425	-7.550	-4.476	30 dBm/500 kHz

▣ Test Plots

Note:

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

[SISO_Ant.2]

802.11n(HT20) UNII 1-2C (Ch.60)

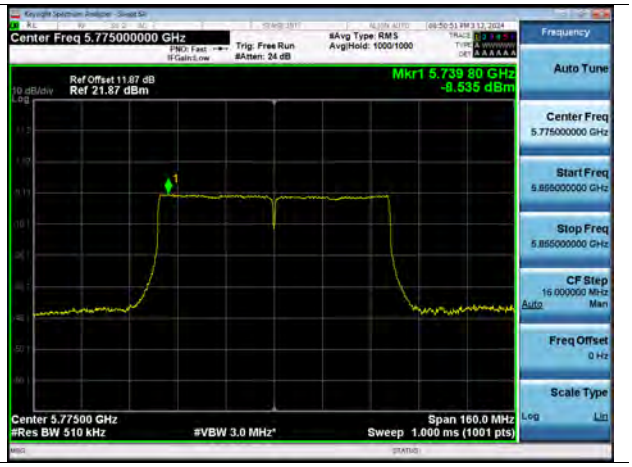
802.11 n(HT20) UNII 3 (Ch.157)

802.11ac(VHT20) UNII 1-2C (Ch.60)

802.11 ac(VHT20) UNII 3 (Ch.157)

802.11n(HT40) UNII 1-2C (Ch.62)

802.11n(HT40) UNII 3 (Ch.151)

802.11ac(VHT40) UNII 1-2C (Ch.62)	802.11 ac(VHT40) UNII 3 (Ch.151)
	
802.11ac(VHT80) UNII 1-2C (Ch.58)	802.11 ac(VHT80) UNII 3 (Ch.155)
	

[MIMO_CDD(Ant.1+Ant.2)]

802.11a UNII 1-2C (Ch.60)

Ant.1	Ant.2
	

802.11a UNII 3 (Ch.165)

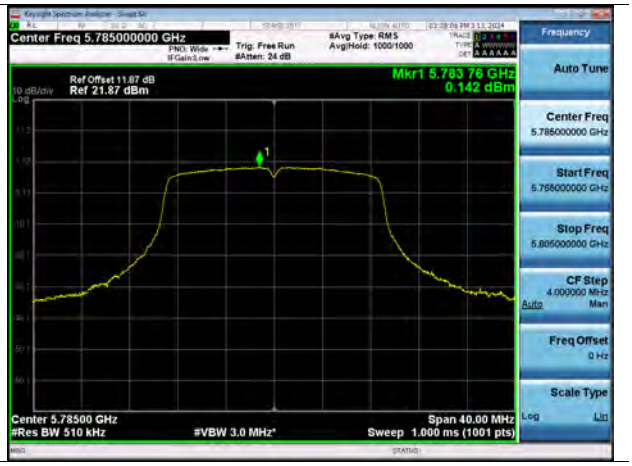
Ant.1	Ant.2
	

[MIMO_SDM(Ant.1+Ant.2)]

802.11n(HT20) UNII 1-2C (Ch.52)

Ant.1	Ant.2
	

802.11 n(HT20) UNII 3 (Ch.157)

Ant.1	Ant.2
	

802.11ac(VHT20) UNII 1-2C (Ch.52)	
Ant.1	Ant.2
	

802.11 ac(VHT20) UNII 3 (Ch.157)	
Ant.1	Ant.2
	

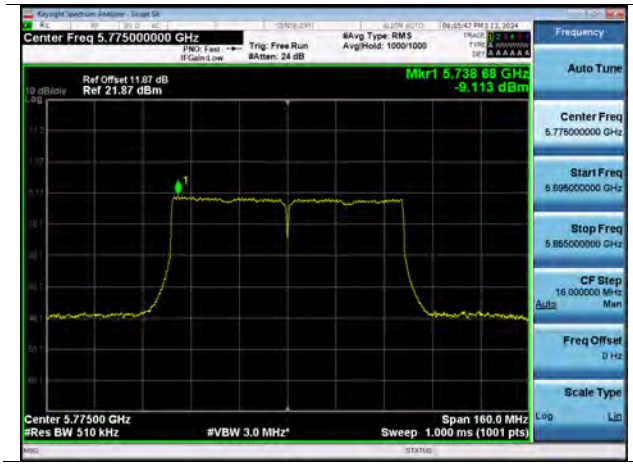
802.11n(HT40) UNII 1-2C (Ch.62)	
Ant.1	Ant.2
	

802.11 n(HT40) UNII 3 (Ch.151)	
Ant.1	Ant.2
	

802.11ac(VHT40) UNII 1-2C (Ch.62)	
Ant.1	Ant.2
	

802.11 ac(VHT40) UNII 3 (Ch.159)	
Ant.1	Ant.2
	

802.11ac(VHT80) UNII 1-2C (Ch.138)	
Ant.1	Ant.2
	

802.11 ac(VHT80) UNII 3 (Ch.155)	
Ant.1	Ant.2
	

10.6 FREQUENCY STABILITY

Note:

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

2. 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.

10.6.1 80 MHz BW

Worst Case : [MIMO_SDM(Ant.2)]

Startup after the EUT is energized

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210002.19	2.19
100%		-30	5210002.34	2.34
100%		-20	5210037.67	37.67
100%		-10	5210034.52	34.52
100%		0	5210045.52	45.52
100%		+10	5210071.59	71.59
100%		+30	5210022.47	22.47
100%		+40	5210011.30	11.30
100%		+50	5210028.55	28.55
High	4.4	+20	5210059.95	59.95
Low	3.65	+20	5210030.07	30.07

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290026.07	26.07
100%		-30	5290094.46	94.46
100%		-20	5290071.21	71.21
100%		-10	5290080.46	80.46
100%		0	5290086.70	86.7
100%		+10	5290072.23	72.23
100%		+30	5290086.43	86.43
100%		+40	5290004.35	4.35
100%		+50	5290056.83	56.83
High	4.4	+20	5290049.50	49.50
Low	3.65	+20	5290043.80	43.80

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5690089.58	89.58
100%		-30	5690069.65	69.65
100%		-20	5690031.18	31.18
100%		-10	5690025.08	25.08
100%		0	5690069.19	69.19
100%		+10	5690097.11	97.11
100%		+30	5690074.07	74.07
100%		+40	5690077.07	77.07
100%		+50	5690062.80	62.80
High	4.4	+20	5690007.29	7.29
Low	3.65	+20	5690039.66	39.66

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775090.79	90.79
100%		-30	5775079.80	79.80
100%		-20	5775092.08	92.08
100%		-10	5775032.41	32.41
100%		0	5775051.31	51.31
100%		+10	5775023.15	23.15
100%		+30	5775011.65	11.65
100%		+40	5775090.28	90.28
100%		+50	5775012.63	12.63
High	4.4	+20	5210058.50	58.50
Low	3.65	+20	5210097.90	97.90

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. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210020.58	20.58
100%		-30	5210093.28	93.28
100%		-20	5210056.09	56.09
100%		-10	5210017.37	17.37
100%		0	5210020.33	20.33
100%		+10	5210065.24	65.24
100%		+30	5210038.74	38.74
100%		+40	5210001.80	1.80
100%		+50	5210050.10	50.10
High	4.4	+20	5210080.64	80.64
Low	3.65	+20	5210039.74	39.74

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290044.08	44.08
100%		-30	5290089.43	89.43
100%		-20	5290088.86	88.86
100%		-10	5290088.54	88.54
100%		0	5290018.71	18.71
100%		+10	5290053.74	53.74
100%		+30	5290025.24	25.24
100%		+40	5290049.41	49.41
100%		+50	5290089.38	89.38
High	4.4	+20	5290028.57	28.57
Low	3.65	+20	5290034.02	34.02

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5690062.37	62.37
100%		-30	5690099.10	99.10
100%		-20	5690064.07	64.07
100%		-10	5690030.69	30.69
100%		0	5690022.23	22.23
100%		+10	5690005.64	5.64
100%		+30	5690099.80	99.8
100%		+40	5690027.02	27.02
100%		+50	5690086.56	86.56
High	4.4	+20	5690081.49	81.49
Low	3.65	+20	5690092.99	92.99

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775019.68	19.68
100%		-30	5775056.96	56.96
100%		-20	5775088.44	88.44
100%		-10	5775073.52	73.52
100%		0	5775039.73	39.73
100%		+10	5775022.76	22.76
100%		+30	5775019.65	19.65
100%		+40	5775049.67	49.67
100%		+50	5775038.08	38.08
High	4.4	+20	5210057.50	57.50
Low	3.65	+20	5210097.18	97.18

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. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210023.61	23.61
100%		-30	5210040.74	40.74
100%		-20	5210044.23	44.23
100%		-10	5210089.51	89.51
100%		0	5210082.95	82.95
100%		+10	5210036.81	36.81
100%		+30	5210033.14	33.14
100%		+40	5210053.96	53.96
100%		+50	5210031.36	31.36
High	4.4	+20	5210054.86	54.86
Low	3.65	+20	5210088.59	88.59

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290037.34	37.34
100%		-30	5290001.47	1.47
100%		-20	5290043.62	43.62
100%		-10	5290056.95	56.95
100%		0	5290016.57	16.57
100%		+10	5290021.68	21.68
100%		+30	5290021.54	21.54
100%		+40	5290088.29	88.29
100%		+50	5290096.98	96.98
High	4.4	+20	5290056.69	56.69
Low	3.65	+20	5290088.66	88.66

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5690001.67	1.67
100%		-30	5690077.37	77.37
100%		-20	5690066.45	66.45
100%		-10	5690065.93	65.93
100%		0	5690053.94	53.94
100%		+10	5690039.29	39.29
100%		+30	5690033.92	33.92
100%		+40	5690048.93	48.93
100%		+50	5690058.84	58.84
High	4.4	+20	5690003.68	3.68
Low	3.65	+20	5690096.84	96.84

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775039.51	39.51
100%		-30	5775013.88	13.88
100%		-20	5775032.19	32.19
100%		-10	5775098.63	98.63
100%		0	5775016.24	16.24
100%		+10	5775045.27	45.27
100%		+30	5775013.71	13.71
100%		+40	5775004.75	4.75
100%		+50	5775071.28	71.28
High	4.4	+20	5210069.23	69.23
Low	3.65	+20	5210011.16	11.16

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. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5210068.33	68.33
100%		-30	5210053.89	53.89
100%		-20	5210001.91	1.91
100%		-10	5210053.23	53.23
100%		0	5210003.31	3.31
100%		+10	5210029.05	29.05
100%		+30	5210081.05	81.05
100%		+40	5210019.51	19.51
100%		+50	5210018.81	18.81
High	4.4	+20	5210004.95	4.95
Low	3.65	+20	5210027.53	27.53

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5290068.54	68.54
100%		-30	5290021.55	21.55
100%		-20	5290039.62	39.62
100%		-10	5290018.95	18.95
100%		0	5290081.33	81.33
100%		+10	5290070.58	70.58
100%		+30	5290077.57	77.57
100%		+40	5290033.79	33.79
100%		+50	5290040.85	40.85
High	4.4	+20	5210017.36	17.36
Low	3.65	+20	5210007.85	7.85

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5690025.39	25.39
100%		-30	5690018.26	18.26
100%		-20	5690084.78	84.78
100%		-10	5690018.82	18.82
100%		0	5690014.68	14.68
100%		+10	5690038.10	38.1
100%		+30	5690002.47	2.47
100%		+40	5690079.21	79.21
100%		+50	5690011.82	11.82
High	4.4	+20	5210080.05	80.05
Low	3.65	+20	5210069.03	69.03

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

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.85	+20(Ref)	5775017.06	17.06
100%		-30	5775004.92	4.92
100%		-20	5775054.73	54.73
100%		-10	5775099.32	99.32
100%		0	5775007.45	7.45
100%		+10	5775001.06	1.06
100%		+30	5775077.39	77.39
100%		+40	5775014.53	14.53
100%		+50	5775005.85	5.85
High	4.4	+20	5210085.25	85.25
Low	3.65	+20	5210030.24	30.24

10.7 STRADDLE CHANNEL

10.7.1 26 dB Bandwidth

[SISO_Ant.2]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT20)	UNII 2C	5720	144	5707.84	17.16
802.11ac(VHT20)				5707.24	17.76
802.11n(HT20)	UNII 3	5720	144	5733.48	8.48
802.11ac(VHT20)				5733.20	8.20

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5687.44	37.56
802.11ac(VHT40)				5687.28	37.72
802.11n(HT40)	UNII 3	5710	142	5732.48	7.48
802.11ac(VHT40)				5732.96	7.96

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5646.32	78.68
	UNII 3	5690	138	5733.20	8.20

Note:

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

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

[MIMO_CDD(Ant.1)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11a	UNII 2C	5720	144	5709.36	15.64
802.11a	UNII 3	5720	144	5730.52	5.52

[MIMO_SDM(Ant.1)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT20)	UNII 2C	5720	144	5708.68	16.32
802.11ac(VHT20)				5708.92	16.08
802.11n(HT20)	UNII 3	5720	144	5731.52	6.52
802.11ac(VHT20)				5731.48	6.48

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5687.12	37.88
802.11ac(VHT40)				5687.44	37.56
802.11n(HT40)	UNII 3	5710	142	5733.20	8.20
802.11ac(VHT40)				5732.80	7.80

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5646.64	78.36
	UNII 3	5690	138	5732.56	7.56

Note:

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

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

[MIMO_CDD(Ant.2)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11a	UNII 2C	5720	144	5709.24	15.76
802.11a	UNII 3	5720	144	5730.56	5.56

[MIMO_SDM(Ant.2)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT20)	UNII 2C	5720	144	5708.80	16.20
802.11ac(VHT20)				5709.00	16.00
802.11n(HT20)	UNII 3	5720	144	5730.72	5.72
802.11ac(VHT20)				5731.92	6.92

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11n(HT40)	UNII 2C	5710	142	5688.24	36.76
802.11ac(VHT40)				5688.24	36.76
802.11n(HT40)	UNII 3	5710	142	5732.56	7.56
802.11ac(VHT40)				5732.00	7.00

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	26 dB Bandwidth [MHz]
802.11ac(VHT80)	UNII 2C	5690	138	5647.12	77.88
	UNII 3	5690	138	5733.20	8.20

Note:

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

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

[SISO_Ant.2]

▣ Test Plots (26 dB Bandwidth)

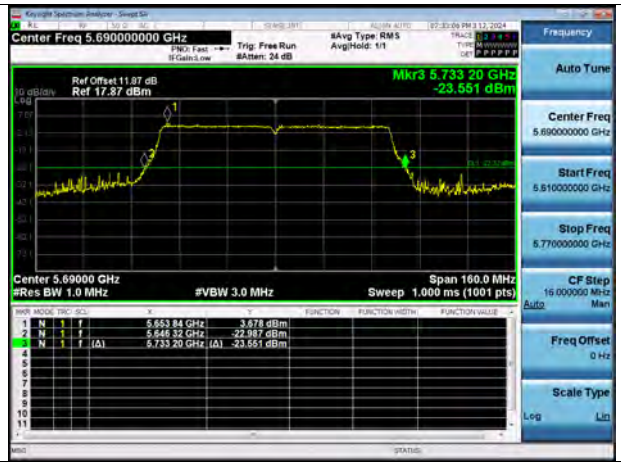
802.11n(HT20) UNII Band

802.11ac(VHT20) UNII Band

802.11n(HT40) UNII Band

802.11ac(VHT40) UNII Band

802.11ac(VHT80) UNII Band



▣ Test Plots (26 dB Bandwidth)

[MIMO_CDD(Ant.1)]

802.11a UNII Band

[MIMO_SDM(Ant.1)]

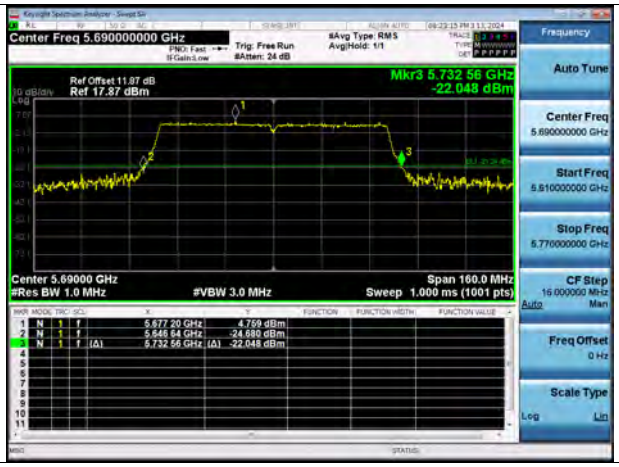
802.11n(HT20) UNII Band

802.11ac(VHT20) UNII Band

802.11n(HT40) UNII Band

802.11ac(VHT40) UNII Band

802.11ac(VHT80) UNII Band



[MIMO_CDD(Ant.2)]

802.11a UNII Band

[MIMO_SDM(Ant.2)]

802.11n(HT20) UNII Band

802.11ac(VHT20) UNII Band

802.11n(HT40) UNII Band

802.11ac(VHT40) UNII Band

802.11ac(VHT80) UNII Band

10.7.2 6 dB Bandwidth

[SISO_Ant.2]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT20)	UNII3	5720	144	5727.80	2.80	> 0.5
802.11ac(VHT20)				5727.92	2.92	> 0.5
802.11n(HT40)	UNII3	5710	142	5728.24	3.24	> 0.5
802.11ac(VHT40)				5728.24	3.24	> 0.5
802.11ac(VHT80)	UNII3	5690	138	5728.24	3.24	> 0.5

[MIMO_CDD(Ant.1)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11a	UNII3	5720	144	5728.16	3.16	> 0.5

[MIMO_SDM(Ant.1)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT20)	UNII3	5720	144	5728.16	3.16	> 0.5
802.11ac(VHT20)				5728.16	3.16	> 0.5
802.11n(HT40)	UNII3	5710	142	5728.24	3.24	> 0.5
802.11ac(VHT40)				5728.24	3.24	> 0.5
802.11ac(VHT80)	UNII3	5690	138	5728.24	3.24	> 0.5

[MIMO_CDD(Ant.2)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11a	UNII3	5720	144	5727.80	2.80	> 0.5

[MIMO_SDM(Ant.2)]

Mode	Band	Frequency [MHz]	Channel	Measured Frequency [MHz]	6dB Bandwidth [MHz]	Limit [MHz]
802.11n(HT20)	UNII3	5720	144	5728.40	3.40	> 0.5
802.11ac(VHT20)				5728.40	3.40	> 0.5
802.11n(HT40)	UNII3	5710	142	5728.24	3.24	> 0.5
802.11ac(VHT40)				5728.24	3.24	> 0.5
802.11ac(VHT80)	UNII3	5690	138	5728.24	3.24	> 0.5

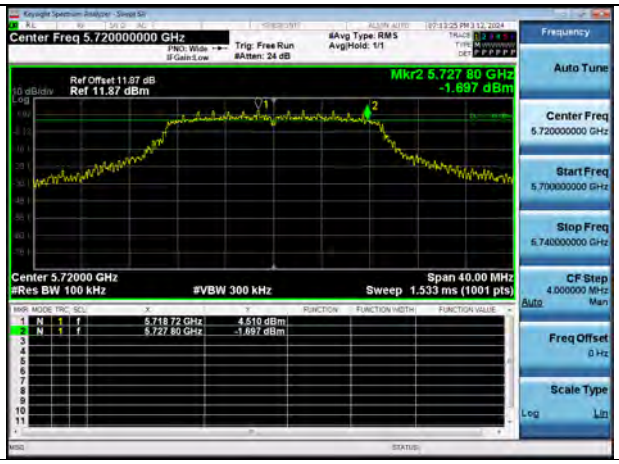
Note:

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

▣ Test Plots(UNII 3 Band 6 dB Bandwidth)

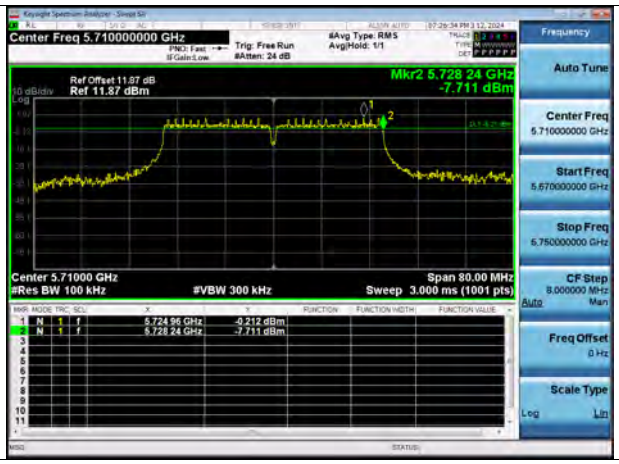
[SISO_Ant.2]

802.11n(HT20) UNII Band



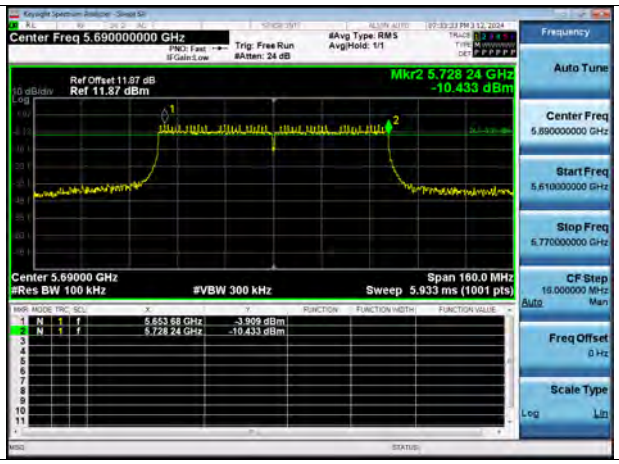
802.11ac(VHT20) UNII Band

802.11n(HT40) UNII Band



802.11ac(VHT40) UNII Band

802.11ac(VHT80) UNII Band

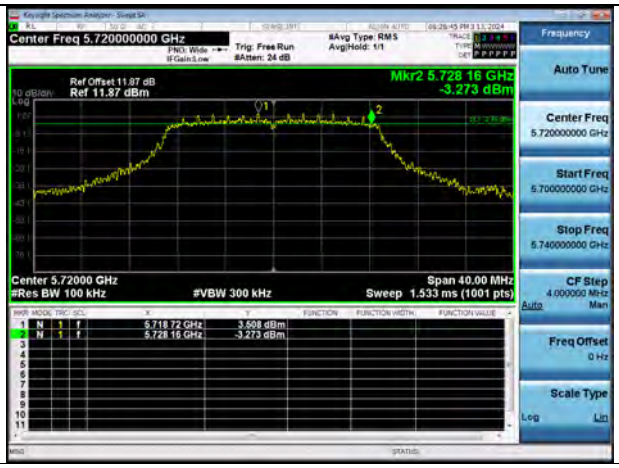


[MIMO_CDD(Ant.1)]

802.11a UNII Band

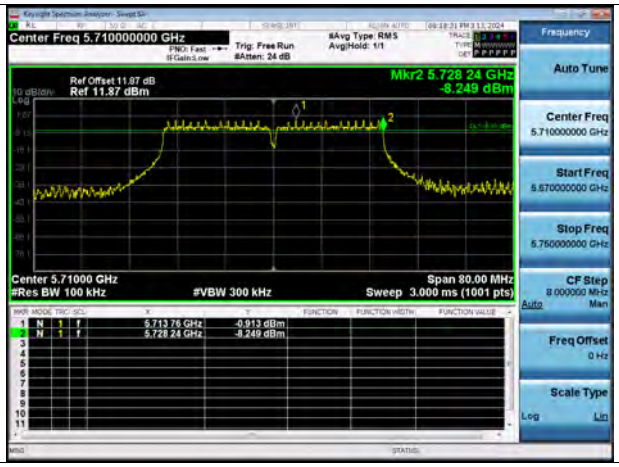
[MIMO_SDM(Ant.1)]

802.11n(HT20) UNII Band



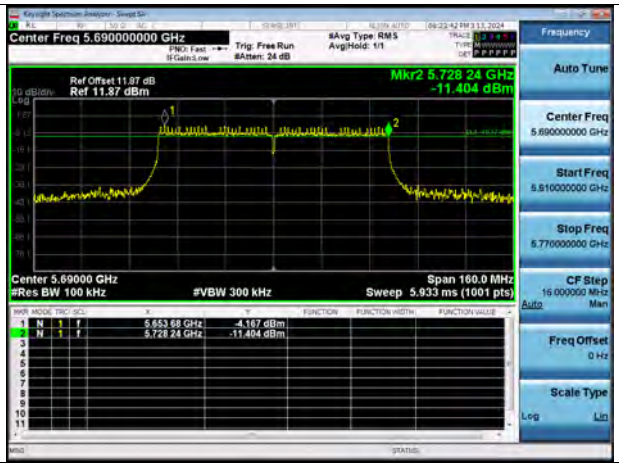
802.11ac(VHT20) UNII Band

802.11n(HT40) UNII Band



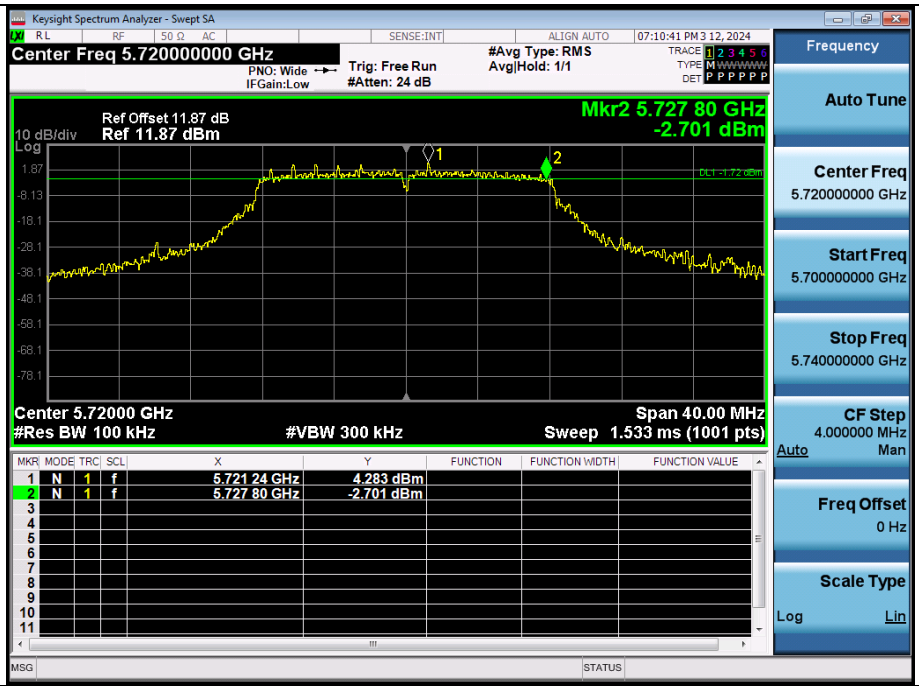
802.11ac(VHT40) UNII Band

802.11ac(VHT80) UNII Band



[MIMO_CDD(Ant.2)]

802.11a UNII Band

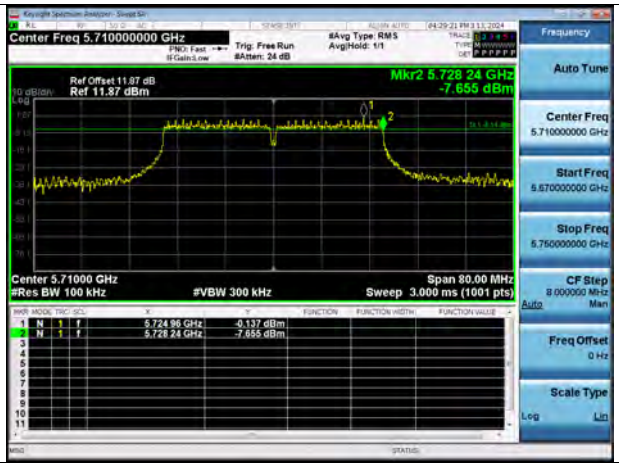


[MIMO_SDM(Ant.2)]

802.11n(HT20) UNII Band

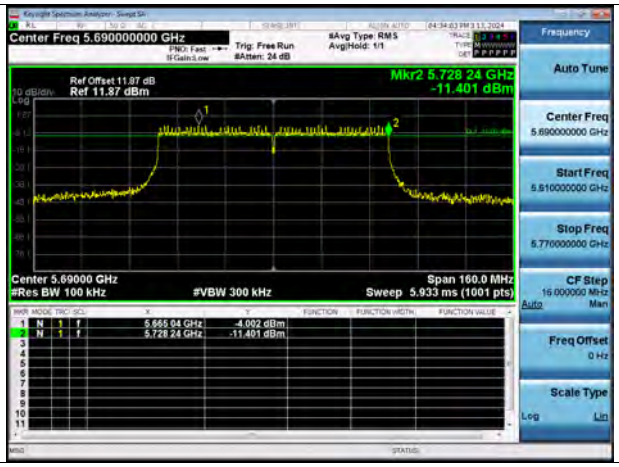
802.11ac(VHT20) UNII Band

802.11n(HT40) UNII Band



802.11ac(VHT40) UNII Band

802.11ac(VHT80) UNII Band



10.7.3 Output Power

[SISO_Ant.2]

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT20)	5720 (UNII 2C Band)	144	14.13	0.350	14.48	23.35	MCS0
802.11ac(VHT20)			14.14	0.348	14.49	23.49	MCS0
802.11n(HT20)	5720 (UNII 3 Band)	144	7.60	0.350	7.95	30.00	MCS0
802.11ac(VHT20)			7.61	0.348	7.96	30.00	MCS0

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	12.95	0.671	13.63	23.98	MCS0
802.11ac(VHT40)			13.12	0.661	13.78	23.98	MCS0
802.11n(HT40)	5710 (UNII 3 Band)	142	3.04	0.671	3.71	30.00	MCS0
802.11ac(VHT40)			3.22	0.661	3.88	30.00	MCS0

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	11.82	1.240	13.06	23.98	MCS0
	5690 (UNII 3 Band)	138	-1.44	1.240	-0.20	30.00	MCS0

[MIMO_CDD(Ant.1)]

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11a	5720(UNII 2C Band)	144	13.56	0.328	13.88	22.94	6 Mbps
802.11a	5720(UNII 3 Band)	144	6.67	0.328	7.00	30.00	6 Mbps

[MIMO_SDM(Ant.1)]

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT20)	5720 (UNII 2C Band)	144	12.62	0.630	13.25	23.13	MCS8
802.11ac(VHT20)			12.62	0.589	13.21	23.06	MCS0
802.11n(HT20)	5720 (UNII 3 Band)	144	6.13	0.630	6.77	30.00	MCS8
802.11ac(VHT20)			6.15	0.589	6.74	30.00	MCS0

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	11.82	1.160	12.98	23.98	MCS8
802.11ac(VHT40)			11.98	1.164	13.15	23.98	MCS0
802.11n(HT40)	5710 (UNII 3 Band)	142	1.89	1.160	3.05	30.00	MCS8
802.11ac(VHT40)			2.14	1.164	3.30	30.00	MCS0

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	10.69	1.688	12.38	23.98	MCS0
	5690 (UNII 3 Band)	138	-2.78	1.688	-1.10	30.00	MCS0

[MIMO_CDD(Ant.2)]

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11a	5720(UNII 2C Band)	144	14.33	0.328	14.66	22.98	6 Mbps
802.11a	5720(UNII 3 Band)	144	7.41	0.328	7.73	30.00	6 Mbps

[MIMO_SDM(Ant.2)]

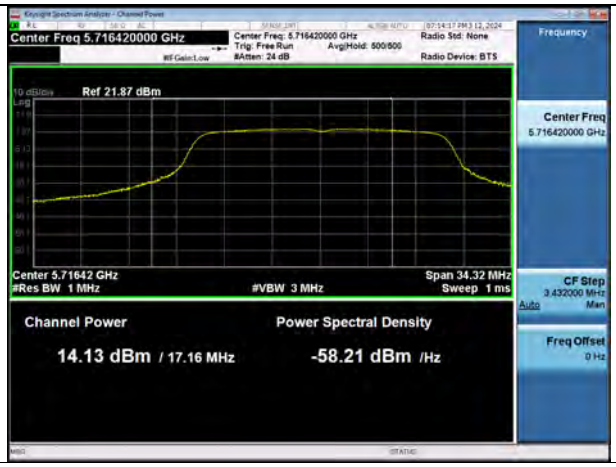
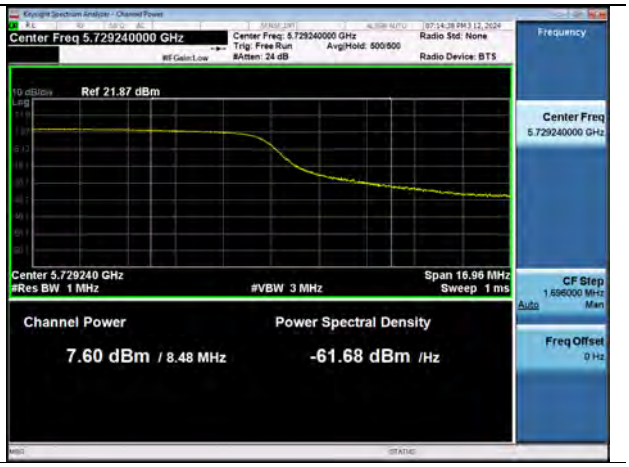
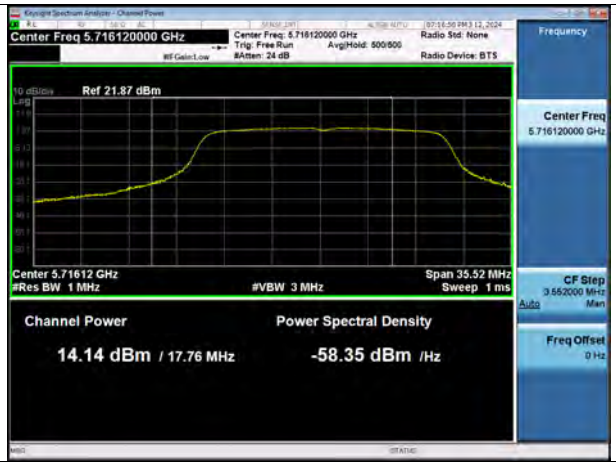
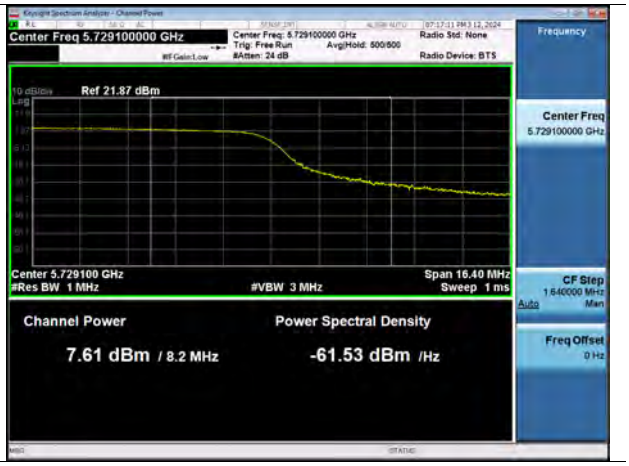
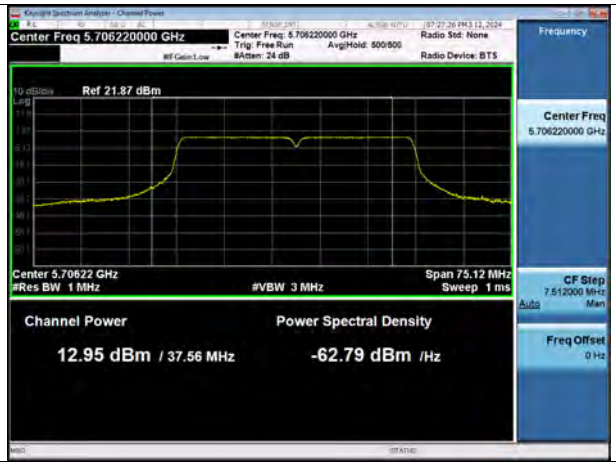
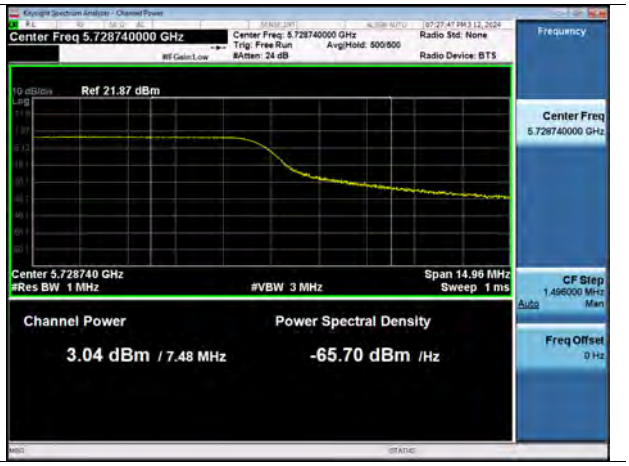
Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT20)	5720 (UNII 2C Band)	144	13.10	0.630	13.73	23.10	MCS8
802.11ac(VHT20)			13.09	0.589	13.68	23.04	MCS0
802.11n(HT20)	5720 (UNII 3 Band)	144	6.57	0.630	7.20	30.00	MCS8
802.11ac(VHT20)			6.48	0.589	7.07	30.00	MCS0

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	12.22	1.160	13.38	23.98	MCS8
802.11ac(VHT40)			12.20	1.164	13.37	23.98	MCS0
802.11n(HT40)	5710 (UNII 3 Band)	142	2.32	1.160	3.48	30.00	MCS8
802.11ac(VHT40)			2.22	1.164	3.38	30.00	MCS0

Mode	Frequency [MHz]	Channel	Measured Power [dBm]	Duty Cycle Factor [dB]	Total Power [dBm]	Limit [dBm]	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	10.82	1.688	12.50	23.98	MCS0
	5690 (UNII 3 Band)	138	-2.46	1.688	-0.77	30.00	MCS0

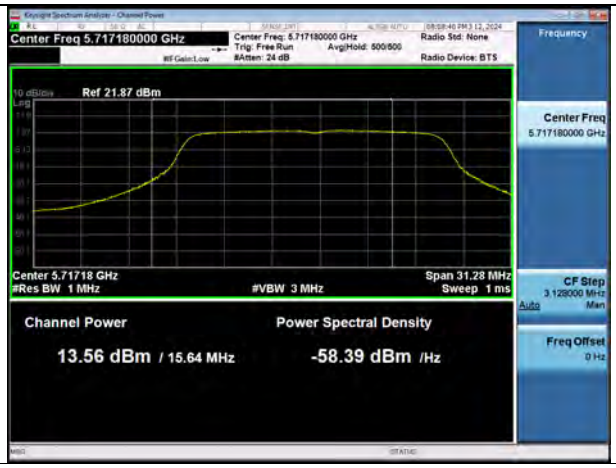
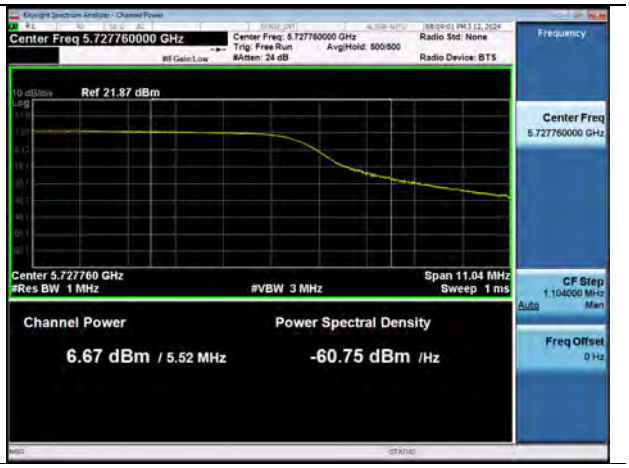
▣ Test Plots(Straddle Ouput Power)

[SISO_Ant.2]

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**
	

[MIMO_CDD(Ant.1)]

802.11a UNII 2C Band	802.11a UNII 3 Band
	

[MIMO_SDM(Ant.1)]

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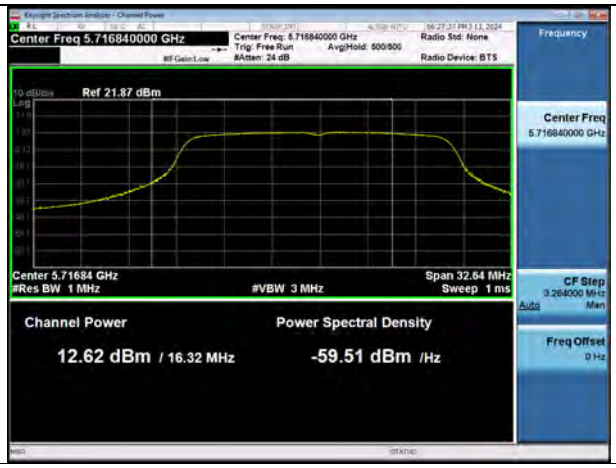
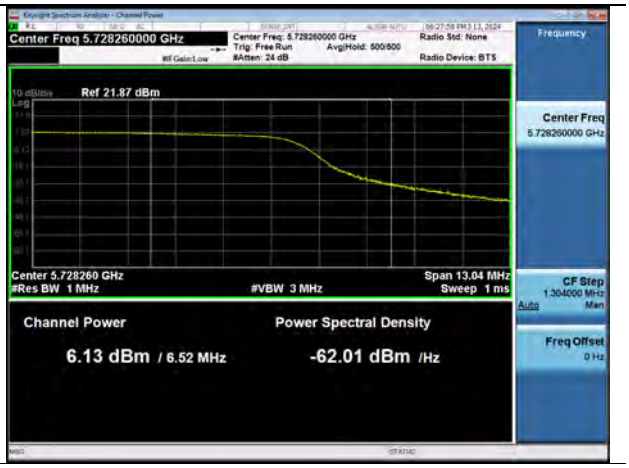
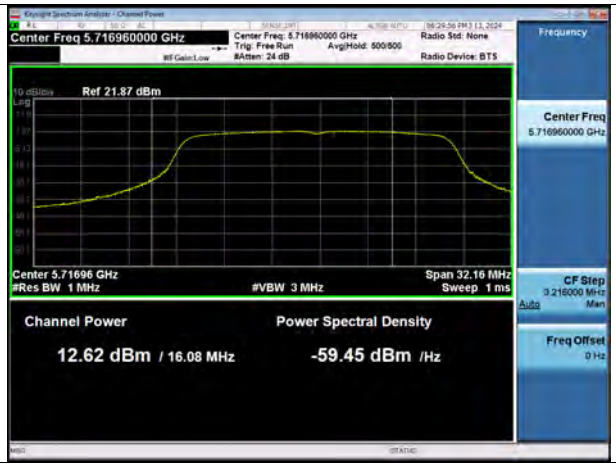
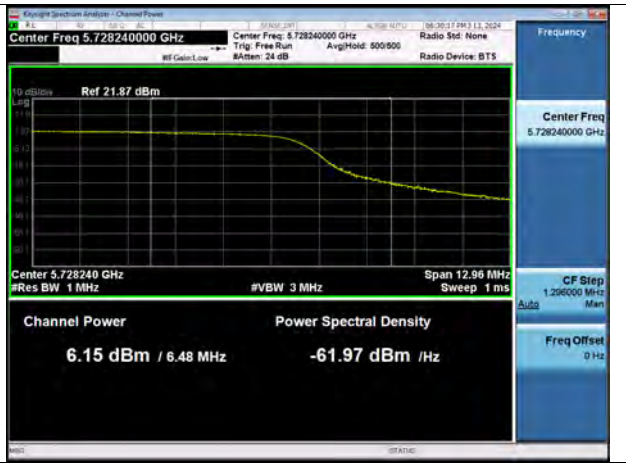
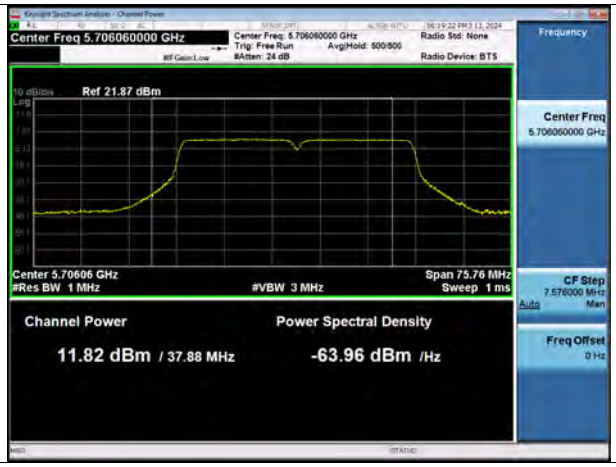
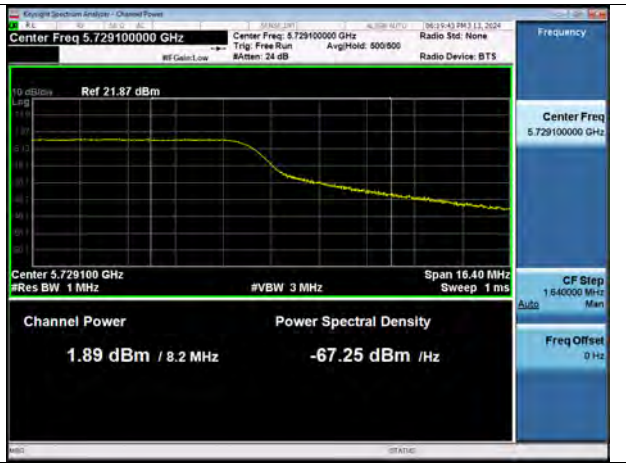
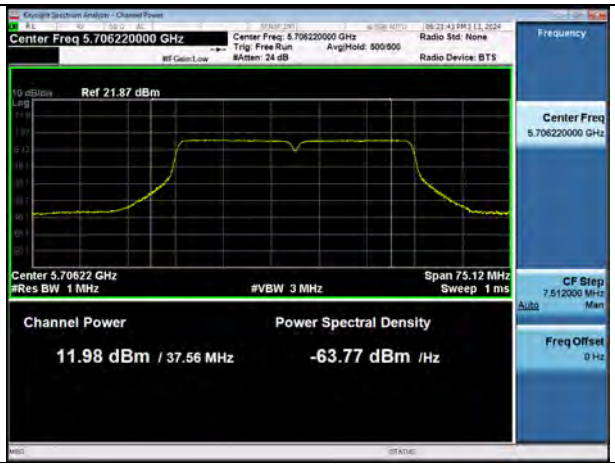
	
802.11ac(VHT20) UNII 2C Band	802.11ac(VHT20) UNII 3 Band
	
802.11n(HT40) UNII 2C Band	802.11n(HT40) UNII 3 Band
	

802.11ac(VHT40) UNII 2C Band	802.11ac(VHT40) UNII 3 Band
	
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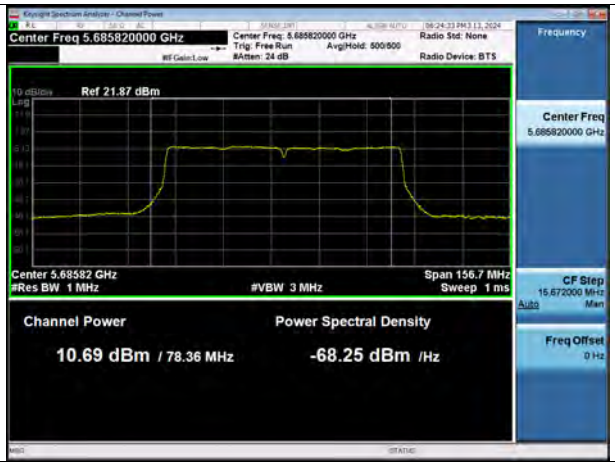
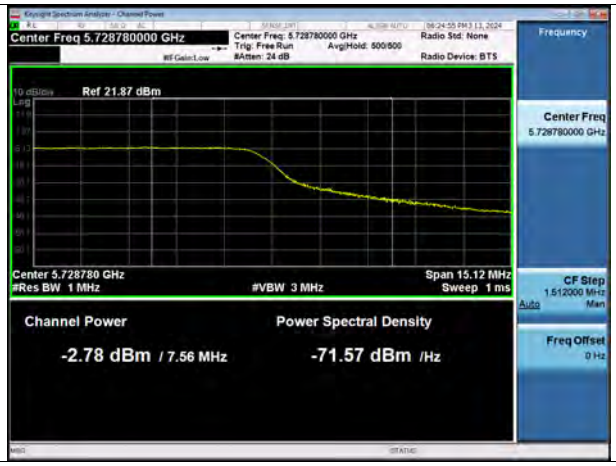
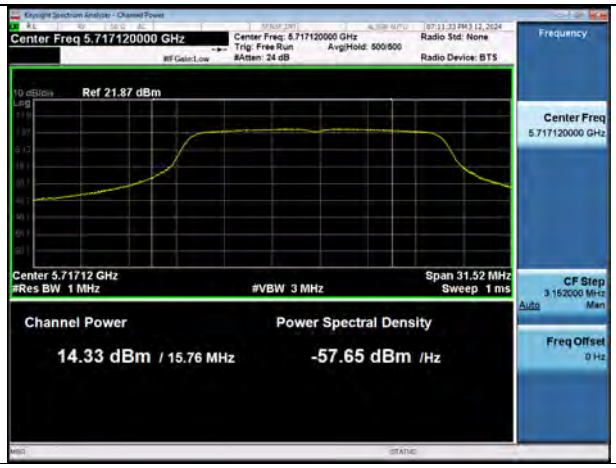
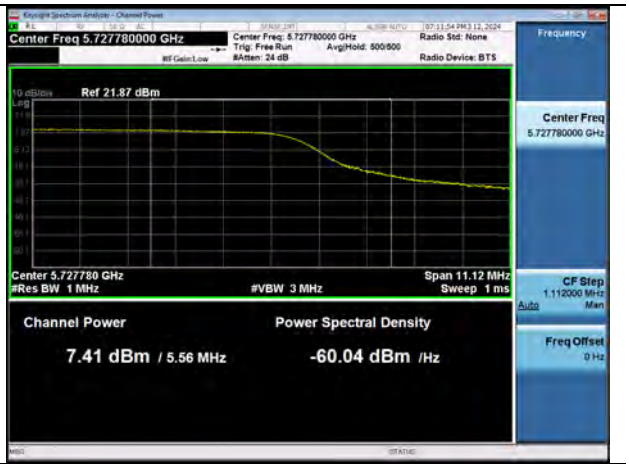
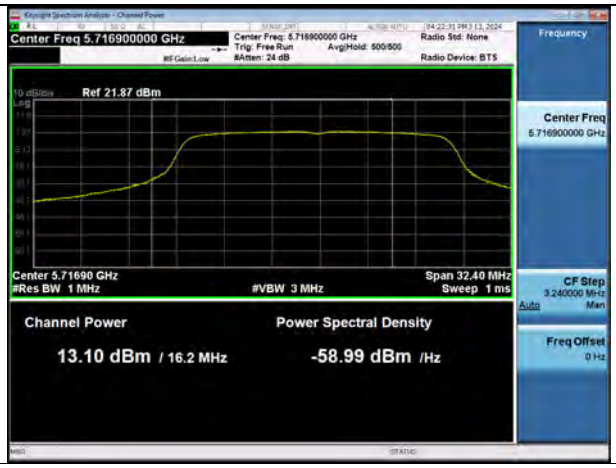
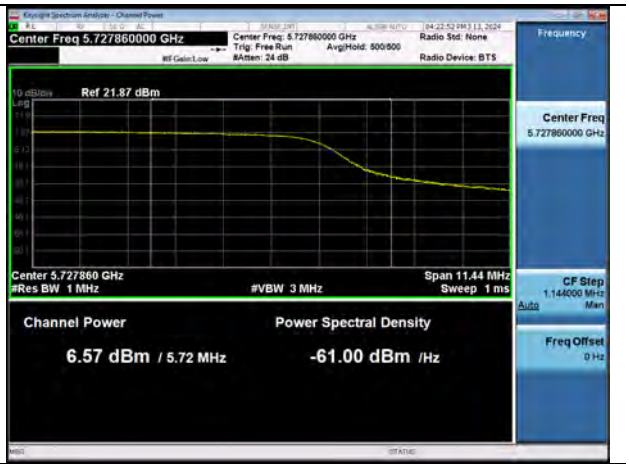
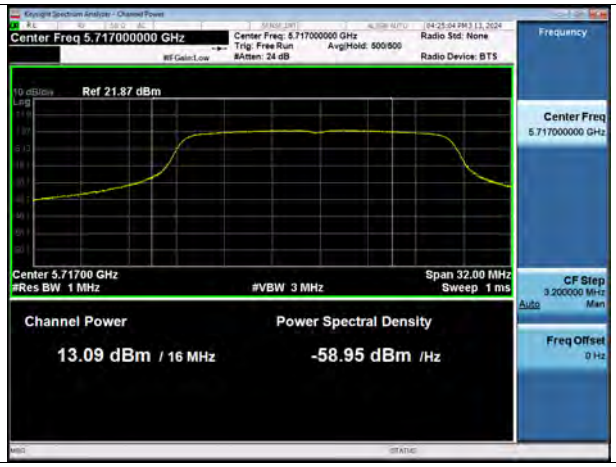
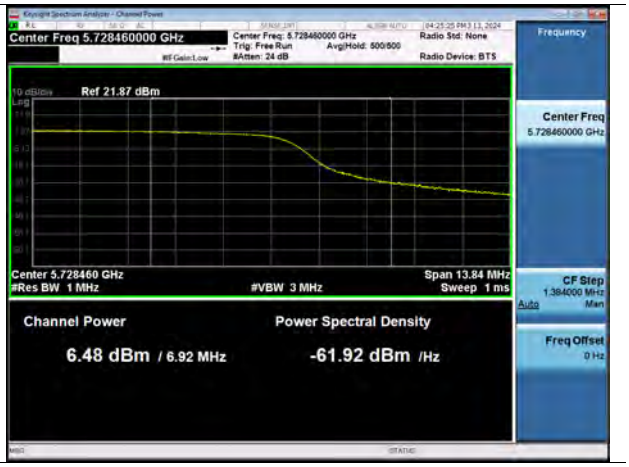
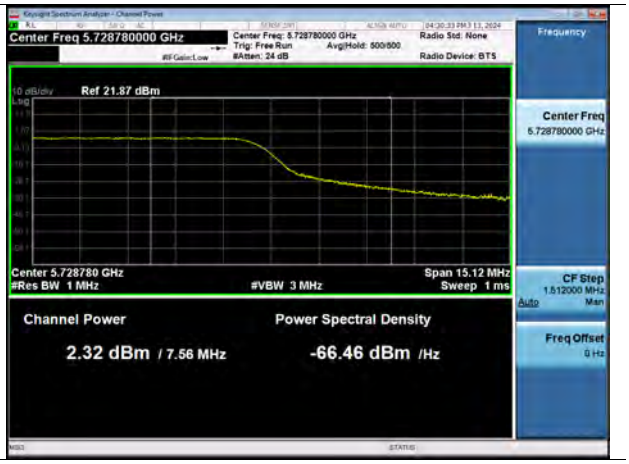
	

[MIMO_CDD(Ant.2)]

802.11a UNII 2C Band	802.11a UNII 3 Band
	

[MIMO_SDM(Ant.2)]

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

[SISO_Ant.2]

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit	Worstcase Datarate
802.11n(HT20)	5720 (UNII 2C Band)	144	4.108	0.350	4.458	11 dBm/ MHz	MCS0
802.11ac(VHT20)			3.990	0.348	4.338		MCS0
802.11n(HT20)	5720 (UNII 3 Band)	144	0.309	0.350	0.659	30 dBm/ 500 kHz	MCS0
802.11ac(VHT20)			0.288	0.348	0.636		MCS0

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	-1.221	0.671	-0.550	11 dBm/ MHz	MCS0
802.11ac(VHT40)			-0.868	0.661	-0.207		MCS0
802.11n(HT40)	5710 (UNII 3 Band)	142	-4.309	0.671	-3.638	30 dB m/500 kHz	MCS0
802.11ac(VHT40)			-3.871	0.661	-3.210		MCS0

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	-5.717	1.240	-4.477	11 dBm/ MHz	MCS0
	5690 (UNII 3 Band)	138	-8.710	1.240	-7.470	30 dB m/500 kHz	MCS0

[MIMO_CDD(Ant.1)]

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11a	5720 (UNII 2C Band)	144	3.607	0.328	3.935	11 dBm/ MHz	6 Mbps
802.11a	5720 (UNII 3 Band)	144	-0.158	0.328	0.170	30 dBm/ 500 kHz	6 Mbps

[MIMO_SDM(Ant.1)]

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT20)	5720 (UNII 2C Band)	144	2.538	0.630	3.169	11 dBm/ MHz	MCS8
802.11ac(VHT20)			2.532	0.589	3.121		MCS0
802.11n(HT20)	5720 (UNII 3 Band)	144	-1.389	0.630	-0.759	30 dBm/ 500 kHz	MCS8
802.11ac(VHT20)			-0.884	0.589	-0.295		MCS0

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	-2.247	1.160	-1.087	11 dBm/ MHz	MCS8
802.11ac(VHT40)			-2.205	1.164	-1.041		MCS0
802.11n(HT40)	5710 (UNII 3 Band)	142	-5.372	1.160	-4.212	30 dBm/500 kHz	MCS8
802.11ac(VHT40)			-5.043	1.164	-3.879		MCS0

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	-6.413	1.688	-4.725	11 dBm/ MHz	MCS0
	5690 (UNII 3 Band)	138	-10.066	1.688	-8.378	30 dB m/500 kHz	MCS0

[MIMO_CDD(Ant.2)]

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11a	5720 (UNII 2C Band)	144	4.181	0.328	4.509	11 dBm/ MHz	6 Mbps
802.11a	5720 (UNII 3 Band)	144	0.595	0.328	0.923	30 dBm/ 500 kHz	6 Mbps

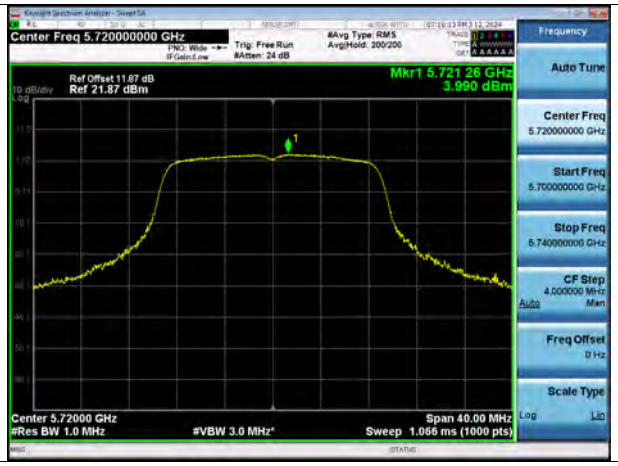
[MIMO_SDM(Ant.2)]

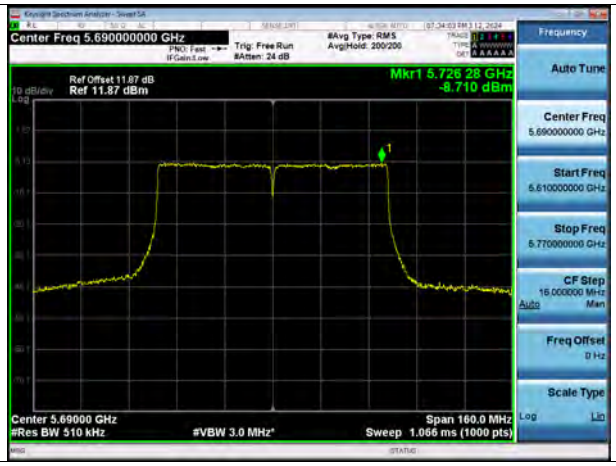
Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT20)	5720 (UNII 2C Band)	144	3.000	0.630	3.631	11 dBm/ MHz	MCS8
802.11ac(VHT20)			3.085	0.589	3.675		MCS0
802.11n(HT20)	5720 (UNII 3 Band)	144	-0.686	0.630	-0.055	30 dBm/ 500 kHz	MCS8
802.11ac(VHT20)			-0.627	0.589	-0.038		MCS0

Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11n(HT40)	5710 (UNII 2C Band)	142	-1.862	1.160	-0.702	11 dBm/ MHz	MCS8
802.11ac(VHT40)			-1.970	1.164	-0.806		MCS0
802.11n(HT40)	5710 (UNII 3 Band)	142	-5.059	1.160	-3.898	30 dB m/500 kHz	MCS8
802.11ac(VHT40)			-4.925	1.164	-3.761		MCS0

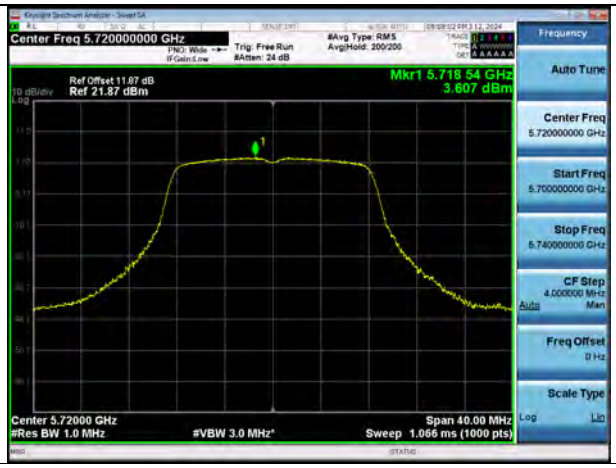
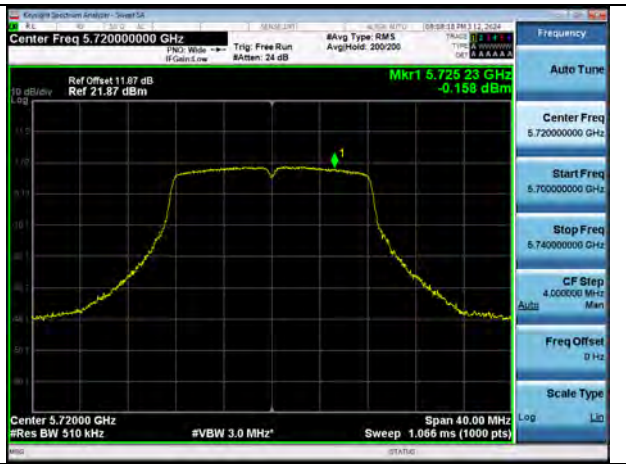
Mode	Frequency [MHz]	Channel	Measured Density [dBm]	Duty Cycle Factor [dB]	Total PSD [dBm]	Limit [dBm]	Worstcase Datarate
802.11ac(VHT80)	5690 (UNII 2C Band)	138	-6.114	1.688	-4.425	11 dBm/ MHz	MCS0
	5690 (UNII 3 Band)	138	-9.614	1.688	-7.925	30 dB m/500 kHz	MCS0

[SISO_Ant.2]

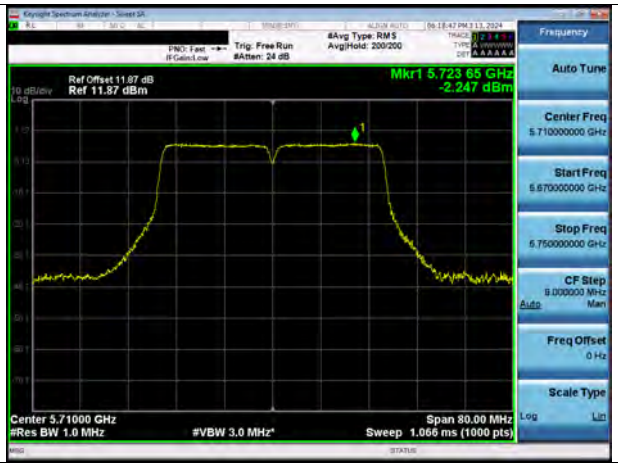
802.11n(HT20) UNII 2C Band	802.11n(HT20) UNII 3 Band
	
802.11ac(VHT20) UNII 2C Band	**802.11ac(VHT20) UNII 3 Band**
	
802.11n(HT40) UNII 2C Band	**802.11n(HT40) UNII 3 Band**
	

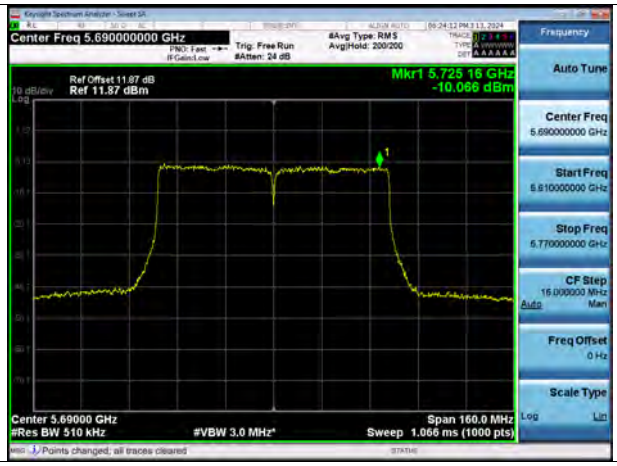
802.11ac(VHT40) UNII 2C Band	802.11ac(VHT40) UNII 3 Band
	
802.11ac(VHT80) UNII 2C Band	**802.11ac(VHT80) UNII 3 Band**
	

[MIMO_CDD(Ant.1)]

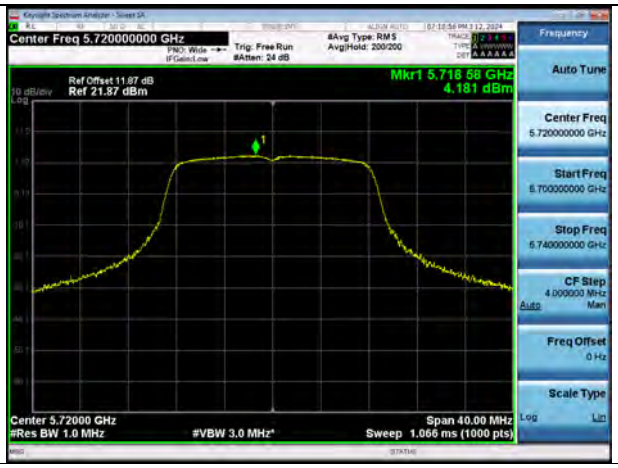
802.11a UNII 2C Band	802.11a UNII 3 Band
	

[MIMO_SDM(Ant.1)]

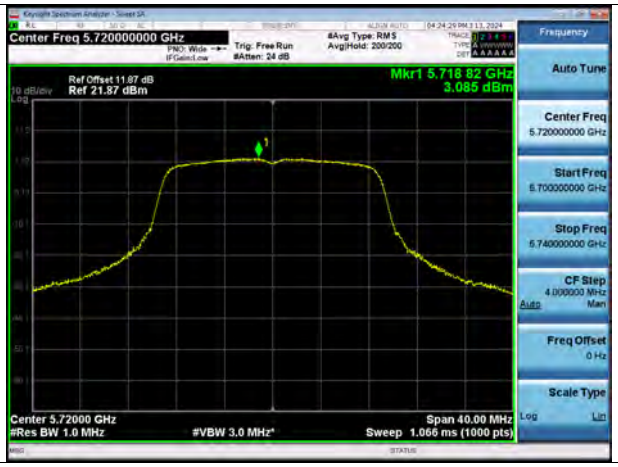
802.11n(HT20) UNII 2C Band	802.11n(HT20) UNII 3 Band
	
802.11ac(VHT20) UNII 2C Band	802.11ac(VHT20) UNII 3 Band
	
802.11n(HT40) UNII 2C Band	802.11n(HT40) UNII 3 Band
	

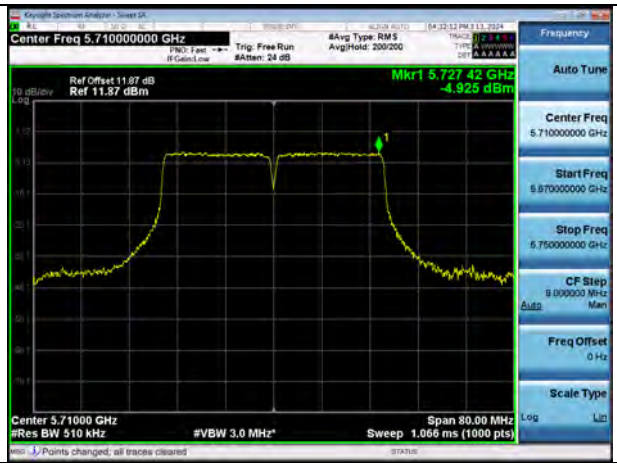
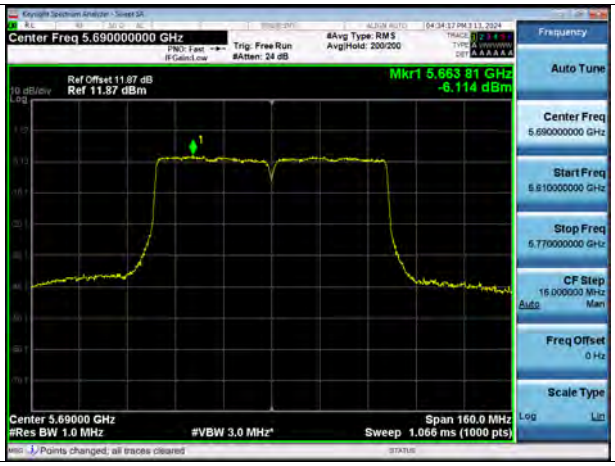
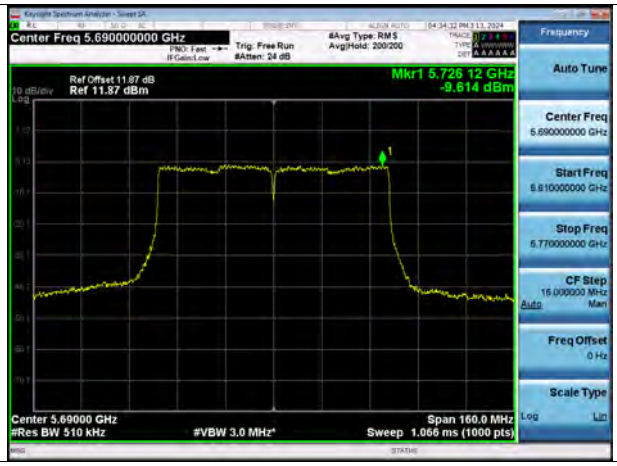
802.11ac(VHT40) UNII 2C Band	802.11ac(VHT40) UNII 3 Band
	
802.11ac(VHT80) UNII 2C Band	**802.11ac(VHT80) UNII 3 Band**
	

[MIMO_CDD(Ant.2)]

802.11a UNII 2C Band	802.11a UNII 3 Band
	

[MIMO_SDM(Ant.2)]

802.11n(HT20) UNII 2C Band	802.11n(HT20) UNII 3 Band
	
802.11ac(VHT20) UNII 2C Band	802.11ac(VHT20) UNII 3 Band
	
802.11n(HT40) UNII 2C Band	802.11n(HT40) UNII 3 Band
	

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

10.8 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

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

Note:

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

Frequency Range : Below 1 GHz

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

Note:

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode

Frequency Range : Above 1 GHz

[MIMO_CDD(Ant.1+Ant.2)]

Band :	UNII 1		Operation Mode : 802.11a				
CH.36	5180 MHz		Transfer Rate : 6 Mbps				
Frequency [MHz]	Measured value [dBµV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10360	51.63	6.13	V	57.76	68.20	10.44	PK
15540	50.10	6.58	V	56.68	73.98	17.30	PK
15540	36.36	6.58	V	42.94	53.98	11.04	AV
10360	50.87	6.13	H	57.00	68.20	11.20	PK
15540	51.15	6.58	H	57.73	73.98	16.25	PK
15540	37.34	6.58	H	43.92	53.98	10.06	AV

Band :	UNII 1		Operation Mode : 802.11a				
CH.40	5200 MHz		Transfer Rate : 6 Mbps				
Frequency [MHz]	Measured value [dBµV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10400	50.67	5.41	V	56.08	68.20	12.12	PK
15600	51.45	6.11	V	57.56	73.98	16.42	PK
15600	37.27	6.11	V	43.38	53.98	10.60	AV
10400	50.83	5.41	H	56.24	68.20	11.96	PK
15600	51.49	6.11	H	57.60	73.98	16.38	PK
15600	37.14	6.11	H	43.25	53.98	10.73	AV

Band :	UNII 1		Operation Mode : 802.11a				
CH.48	5240 MHz		Transfer Rate : 6 Mbps				
Frequency [MHz]	Measured value [dBµV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Measurement Type
10480	50.65	6.43	V	57.08	68.20	11.12	PK
15720	50.95	5.50	V	56.45	73.98	17.53	PK
15720	37.45	5.50	V	42.95	53.98	11.03	AV
10480	49.78	6.43	H	56.21	68.20	11.99	PK
15720	50.89	5.50	H	56.39	73.98	17.59	PK
15720	37.12	5.50	H	42.62	53.98	11.36	AV

Band :	UNII 2A		Operation Mode : 802.11a				
CH.52	5260 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10520	49.53	5.80	V	55.33	68.20	12.87	PK
15780	52.56	5.84	V	58.40	73.98	15.58	PK
15780	37.24	5.84	V	43.08	53.98	10.90	AV
10520	50.09	5.80	H	55.89	68.20	12.31	PK
15780	48.13	5.84	H	53.97	73.98	20.01	PK
15780	35.17	5.84	H	41.01	53.98	12.97	AV

Band :	UNII 2A		Operation Mode : 802.11a				
CH.60	5300 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10600	49.55	5.96	V	55.51	73.98	18.47	PK
10600	40.28	5.96	V	46.24	53.98	7.74	AV
15900	48.57	6.96	V	55.53	73.98	18.45	PK
15900	35.17	6.96	V	42.13	53.98	11.85	AV
10600	49.83	5.96	H	55.79	73.98	18.19	PK
10600	40.03	5.96	H	45.99	53.98	7.99	AV
15900	48.24	6.96	H	55.20	73.98	18.78	PK
15900	34.60	6.96	H	41.56	53.98	12.42	AV

Band :	UNII 2A		Operation Mode : 802.11a				
CH.64	5320 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10640	50.76	5.85	V	56.61	73.98	17.37	PK
10640	42.21	5.85	V	48.06	53.98	5.92	AV
15960	49.48	6.67	V	56.15	73.98	17.83	PK
15960	35.53	6.67	V	42.20	53.98	11.78	AV
10640	49.90	5.85	H	55.75	73.98	18.23	PK
10640	40.69	5.85	H	46.54	53.98	7.44	AV
15960	47.79	6.67	H	54.46	73.98	19.52	PK
15960	35.03	6.67	H	41.70	53.98	12.28	AV

Band :	UNII 2C		Operation Mode : 802.11a				
CH.100	5500 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11000	49.45	6.46	V	55.91	73.98	18.07	PK
11000	38.81	6.46	V	45.27	53.98	8.71	AV
16500	49.16	8.21	V	57.37	68.20	10.83	PK
11000	49.72	6.46	H	56.18	73.98	17.80	PK
11000	39.05	6.46	H	45.51	53.98	8.47	AV
16500	50.34	8.21	H	58.55	68.20	9.65	PK

Band :	UNII 2C		Operation Mode : 802.11a				
CH.120	5600 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11200	49.40	4.94	V	54.34	73.98	19.64	PK
11200	38.83	4.94	V	43.77	53.98	10.21	AV
16800	48.01	9.34	V	57.35	68.20	10.85	PK
11200	51.16	4.94	H	56.10	73.98	17.88	PK
11200	38.93	4.94	H	43.87	53.98	10.11	AV
16800	51.69	9.34	H	61.03	68.20	7.17	PK

Band :	UNII 2C		Operation Mode : 802.11a				
CH.144	5720 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11440	49.78	5.45	V	55.23	73.98	18.75	PK
11440	41.45	5.45	V	46.90	53.98	7.08	AV
17160	47.11	9.47	V	56.58	68.20	11.62	PK
11440	50.58	5.45	H	56.03	73.98	17.95	PK
11440	40.36	5.45	H	45.81	53.98	8.17	AV
17160	46.97	9.47	H	56.44	68.20	11.76	PK

Band :	UNII 3		Operation Mode : 802.11a				
CH.149	5745 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect
11490	49.57	5.98	V	55.55	73.98	18.43	PK
11490	40.73	5.98	V	46.71	53.98	7.27	AV
17235	46.17	10.37	V	56.54	68.20	11.66	PK
11490	49.05	5.98	H	55.03	73.98	18.95	PK
11490	40.00	5.98	H	45.98	53.98	8.00	AV
17235	46.10	10.37	H	56.47	68.20	11.73	PK

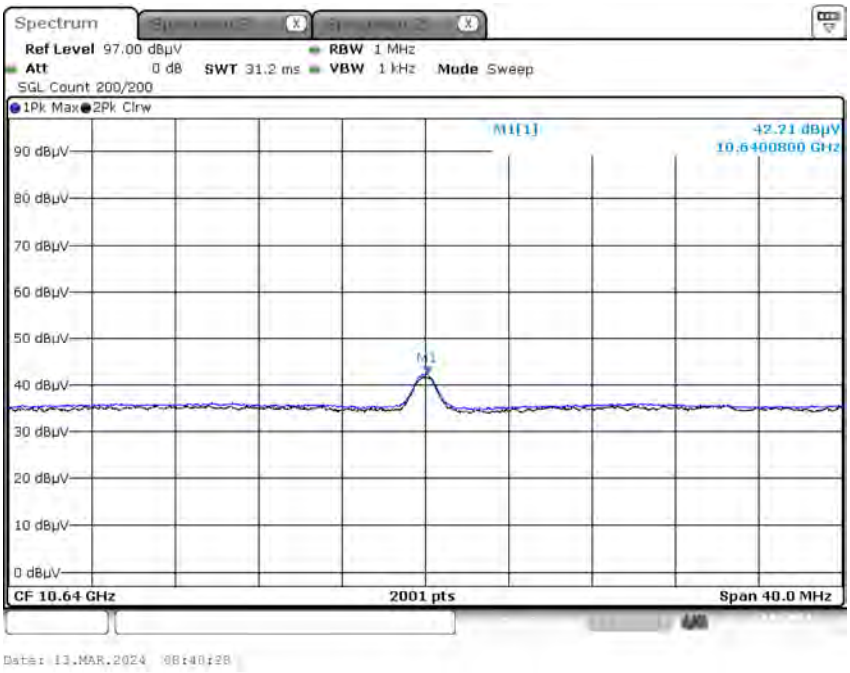
Band :	UNII 3		Operation Mode : 802.11a				
CH.157	5785 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect
11570	50.00	5.78	V	55.78	73.98	18.20	PK
11570	40.31	5.78	V	46.09	53.98	7.89	AV
17355	46.45	11.29	V	57.74	68.20	10.46	PK
11570	50.09	5.78	H	55.87	73.98	18.11	PK
11570	41.13	5.78	H	46.91	53.98	7.07	AV
17355	46.54	11.29	H	57.83	68.20	10.37	PK

Band :	UNII 3		Operation Mode : 802.11a				
CH.165	5825 MHz		Transfer Rate : 6Mbps				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detect
11650	50.12	4.99	V	55.11	73.98	18.87	PK
11650	42.68	4.99	V	47.67	53.98	6.31	AV
17475	46.94	11.54	V	58.48	68.20	9.72	PK
11650	50.37	4.99	H	55.36	73.98	18.62	PK
11650	41.57	4.99	H	46.56	53.98	7.42	AV
17475	47.17	11.54	H	58.71	68.20	9.49	PK

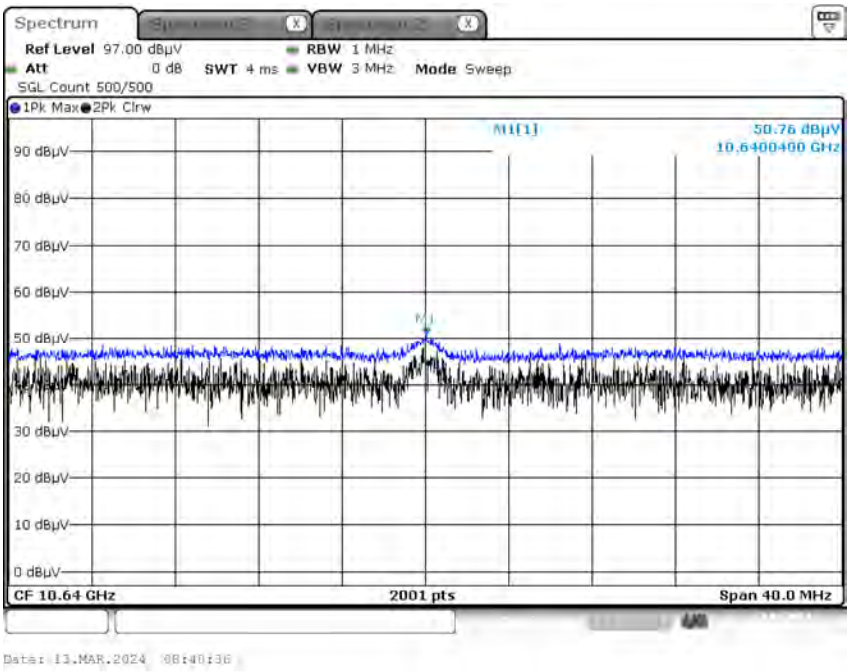
▣ Test Plots

[MIMO_CDD(Ant.1+Ant.2)]

Radiated Spurious Emissions plot – Average Result (802.11a, Ch.64 Spurious Emissions, 2nd, Y-V)



Radiated Spurious Emissions plot – Peak Result (802. 11a, Ch.64 Spurious Emissions, 2nd, Y-V)



Note:

Only the worst case plots for Radiated Spurious Emissions.

10.9 RADIATED RESTRICTED BAND EDGE

[MIMO_CDD(Ant.1+Ant.2)]

Operation Mode: 802.11a

Band	UNII 1
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	62.64	H	62.64	73.98	11.34	PK
5150	45.82	H	45.82	53.98	8.16	AV
5150	61.86	V	61.86	73.98	12.12	PK
5150	45.33	V	45.33	53.98	8.65	AV

Band	UNII 2A
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	60.88	H	60.88	73.98	13.10	PK
5350	47.08	H	47.08	53.98	6.90	AV
5350	58.93	V	58.93	73.98	15.05	PK
5350	45.97	V	45.97	53.98	8.01	AV

Band	UNII 2C
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5460	64.42	H	64.42	73.98	9.56	PK
5460	50.04	H	50.04	53.98	3.94	AV
#5470	61.13	H	61.13	68.20	7.07	PK
5460	63.82	V	63.82	73.98	10.16	PK
5460	48.94	V	48.94	53.98	5.04	AV
#5470	60.75	V	60.75	68.20	7.45	PK

Note : # Integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

[MIMO_SDM(Ant.1+Ant.2)]

Operation Mode: 802.11n (HT20)

Band	UNII 1
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	63.96	H	63.96	73.98	10.02	PK
5150	46.01	H	46.01	53.98	7.97	AV
5150	61.78	V	61.78	73.98	12.20	PK
5150	46.93	V	46.93	53.98	7.05	AV

Band	UNII 2A
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	62.35	H	62.35	73.98	11.63	PK
5350	47.66	H	47.66	53.98	6.32	AV
5350	61.08	V	61.08	73.98	12.90	PK
5350	46.76	V	46.76	53.98	7.22	AV

Band	UNII 2C
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	63.36	H	63.36	73.98	10.62	PK
5460	50.57	H	50.57	53.98	3.41	AV
#5470	61.00	H	61.00	68.20	7.20	PK
5460	62.17	V	62.17	73.98	11.81	PK
5460	48.64	V	48.64	53.98	5.34	AV
#5470	59.94	V	59.94	68.20	8.26	PK

Note : # Integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

Operation Mode: 802.11ac (VHT20)

Band	UNII 1
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	63.29	H	63.29	73.98	10.69	PK
5150	46.22	H	46.22	53.98	7.76	AV
5150	61.13	V	61.13	73.98	12.85	PK
5150	45.84	V	45.84	53.98	8.14	AV

Band	UNII 2A
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	61.40	H	61.40	73.98	12.58	PK
5350	47.57	H	47.57	53.98	6.41	AV
5350	60.28	V	60.28	73.98	13.70	PK
5350	46.51	V	46.51	53.98	7.47	AV

Band	UNII 2C
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	64.78	H	64.78	73.98	9.20	PK
5460	50.73	H	50.73	53.98	3.25	AV
#5470	61.09	H	61.09	68.20	7.11	PK
5460	63.44	V	63.44	73.98	10.54	PK
5460	48.90	V	48.90	53.98	5.08	AV
#5470	60.05	V	60.05	68.20	8.15	PK

Note : # Integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

Operation Mode: 802.11n (HT40) (MCS8)

Band	UNII 1
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
#5150	64.00	H	64.00	73.98	9.98	PK
5150	49.50	H	49.50	53.98	4.48	AV
#5150	63.84	V	63.84	73.98	10.14	PK
5150	48.72	V	48.72	53.98	5.26	AV

Note : # Integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

Band	UNII 2A
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5350	62.64	H	62.64	73.98	11.34	PK
5350	48.79	H	48.79	53.98	5.19	AV
5350	61.42	V	61.42	73.98	12.56	PK
5350	48.45	V	48.45	53.98	5.53	AV

Band	UNII 2C
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5460	63.34	H	63.34	73.98	10.64	PK
5460	49.42	H	49.42	53.98	4.56	AV
#5470	63.01	H	63.01	68.20	5.19	PK
5460	62.07	V	62.07	73.98	11.91	PK
5460	48.95	V	48.95	53.98	5.03	AV
#5470	62.33	V	62.33	68.20	5.87	PK

Note : # Integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

Operation Mode: 802.11ac (VHT40) (MCS0)

Band	UNII 1
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5150	64.61	H	64.61	73.98	9.37	PK
5150	49.78	H	49.78	53.98	4.20	AV
5150	62.89	V	62.89	73.98	11.09	PK
5150	48.37	V	48.37	53.98	5.61	AV

Band	UNII 2A
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5350	62.40	H	62.40	73.98	11.58	PK
5350	48.85	H	48.85	53.98	5.13	AV
5350	61.37	V	61.37	73.98	12.61	PK
5350	48.25	V	48.25	53.98	5.73	AV

Band	UNII 2C
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5460	63.01	H	63.01	73.98	10.97	PK
5460	50.01	H	50.01	53.98	3.97	AV
#5470	62.44	H	62.44	68.20	5.76	PK
5460	62.08	V	62.08	73.98	11.90	PK
5460	49.64	V	49.64	53.98	4.34	AV
#5470	61.66	V	61.66	68.20	6.54	PK

Note : # Integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

Operation Mode: 802.11ac (VHT80) (MCS0)

Band	UNII 1
Operating Frequency	5210 MHz
Channel No.	42 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
#5150	64.02	H	64.02	73.98	9.96	PK
5150	51.53	H	51.53	53.98	2.45	AV
#5150	62.83	V	62.83	73.98	11.15	PK
5150	50.97	V	50.97	53.98	3.01	AV

Band	UNII 2A
Operating Frequency	5290 MHz
Channel No.	58 Ch

Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5350	61.14	H	61.14	73.98	12.84	PK
5350	46.27	H	46.27	53.98	7.71	AV
5350	60.18	V	60.18	73.98	13.80	PK
5350	46.11	V	46.11	53.98	7.87	AV

Band	UNII 2C
Operating Frequency	5530 MHz
Channel No.	106 Ch

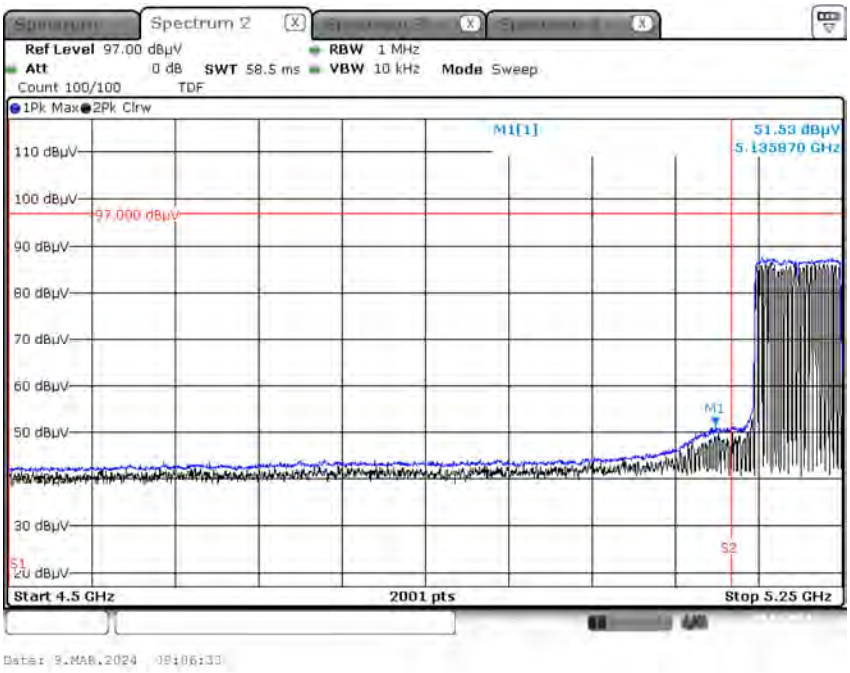
Frequency	Measured Value	Ant. POL	Total	Limit	Margin	Measurement
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	Type
5460	63.26	H	63.26	73.98	10.72	PK
5460	50.76	H	50.76	53.98	3.22	AV
#5470	61.11	H	61.11	68.20	7.09	PK
5460	62.67	V	62.67	73.98	11.31	PK
5460	49.97	V	49.97	53.98	4.01	AV
#5470	61.21	V	61.21	68.20	6.99	PK

Note : # Integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

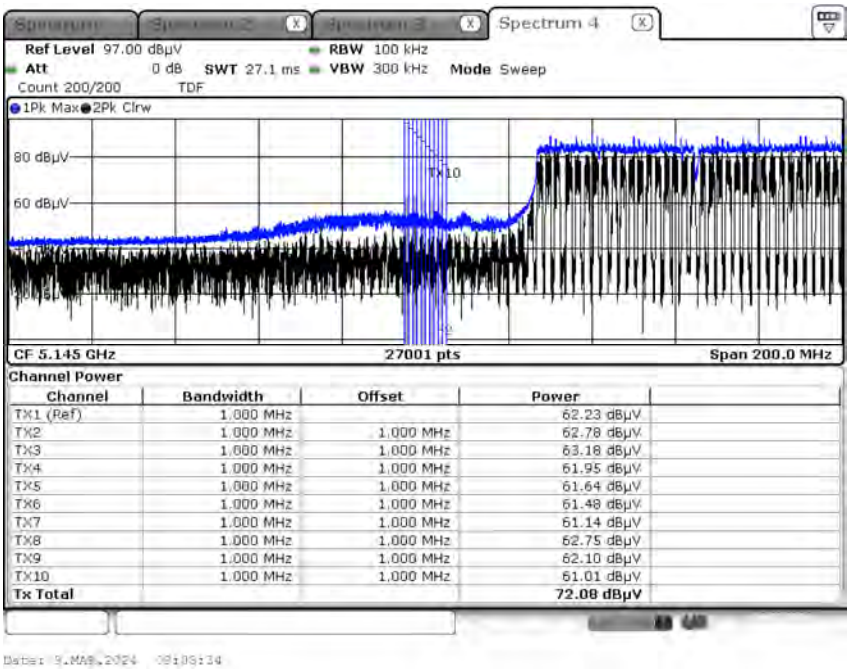
[MIMO_ SDM(Ant.1+Ant.2)]

▣ Test Plots(UNII 1, 2A, 2C)

Average Result (802.11 ac_VHT80_ MCS0, Ch.42, Y-H)

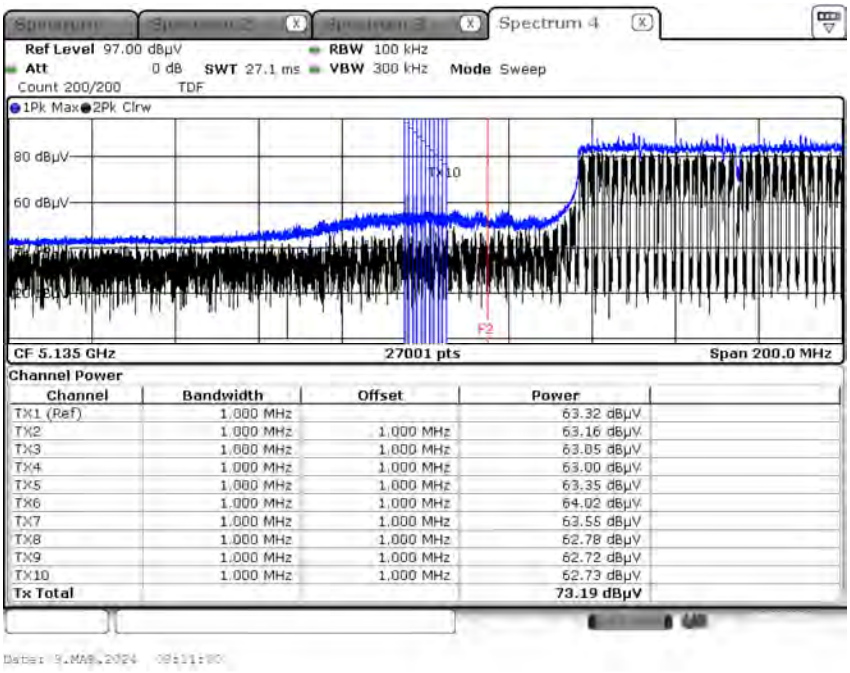


Peak Result (802.11 ac_VHT80_ MCS0, Ch.42, Y-H)



Channel	Bandwidth	Offset	Power
TX1 (Ref)	1.000 MHz		62.23 dBµV
TX2	1.000 MHz	1.000 MHz	62.78 dBµV
TX3	1.000 MHz	1.000 MHz	63.18 dBµV
TX4	1.000 MHz	1.000 MHz	61.95 dBµV
TX5	1.000 MHz	1.000 MHz	61.64 dBµV
TX6	1.000 MHz	1.000 MHz	61.48 dBµV
TX7	1.000 MHz	1.000 MHz	61.14 dBµV
TX8	1.000 MHz	1.000 MHz	62.75 dBµV
TX9	1.000 MHz	1.000 MHz	62.10 dBµV
TX10	1.000 MHz	1.000 MHz	61.01 dBµV
Tx Total			**72.08 dBµV**

Peak Result (802.11 ac_VHT80_ MCS0, Ch.42, Y-H)



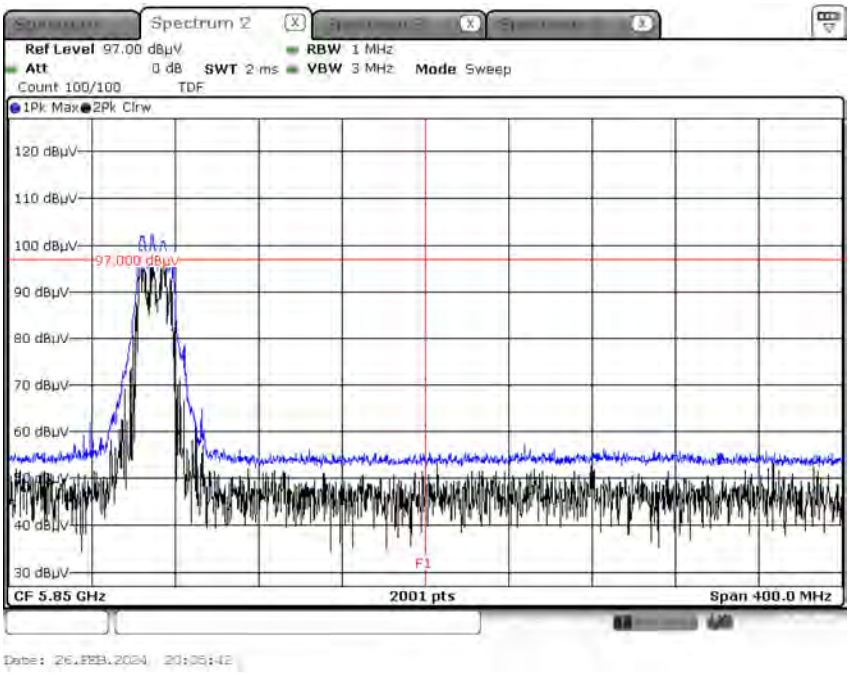
Note:

Only the worst case plots for Radiated Restricted Band Edge.

▣ Test Plots(Straddle Channel)

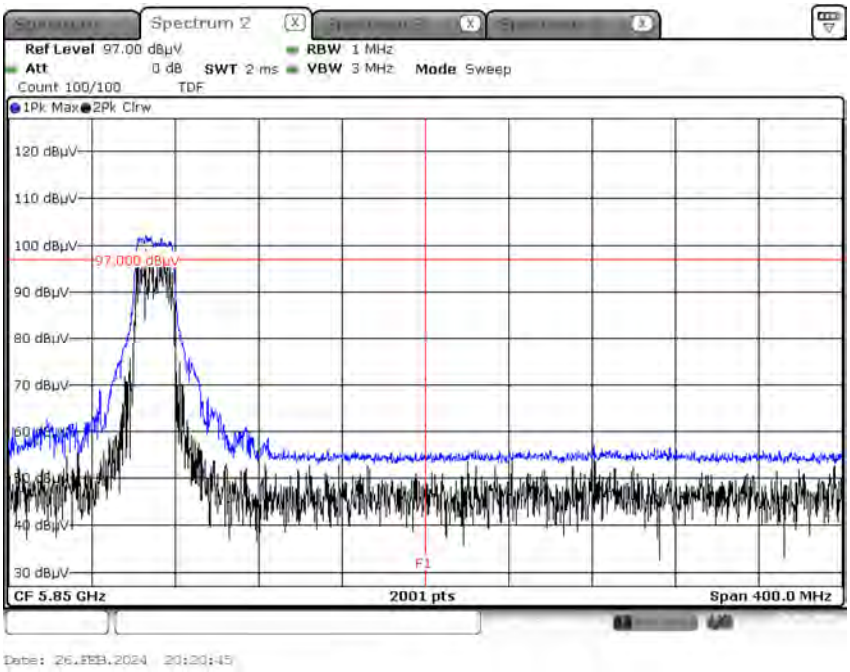
[MIMO_CDD(Ant.1+Ant.2)]

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

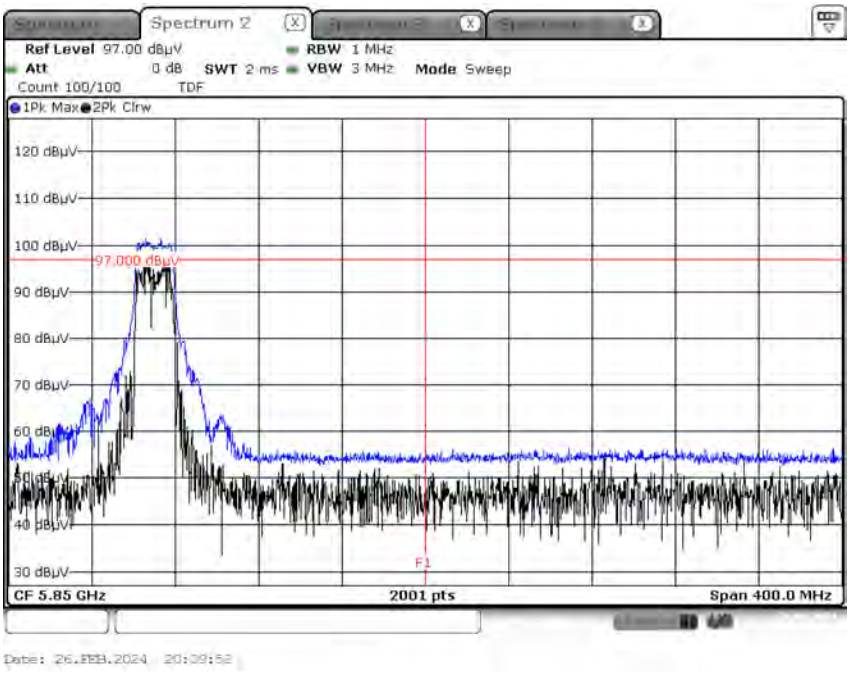


[MIMO_SDM(Ant.1+Ant.2)]

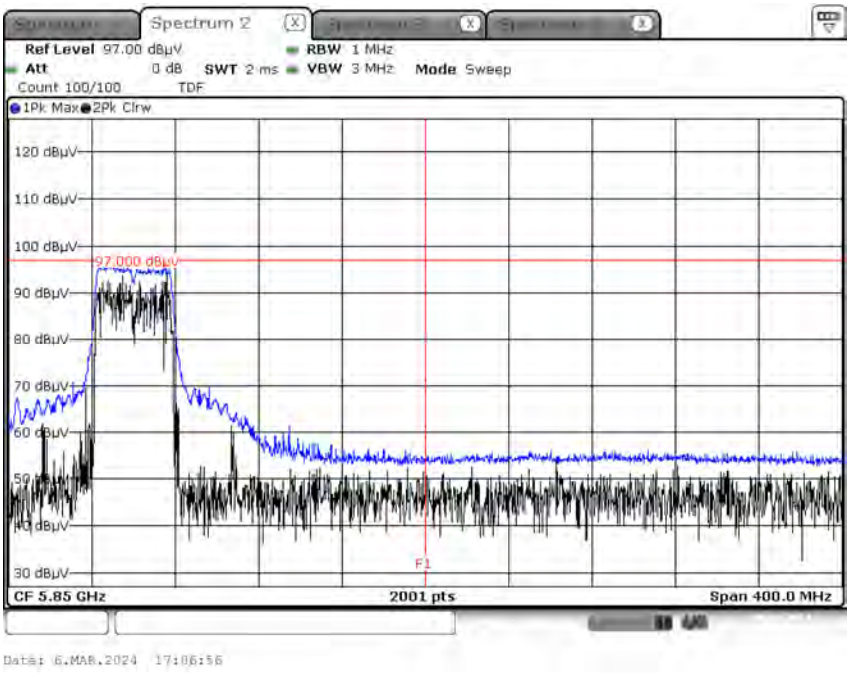
Peak Result (802.11n_HT20, Ch.144, Y-H)



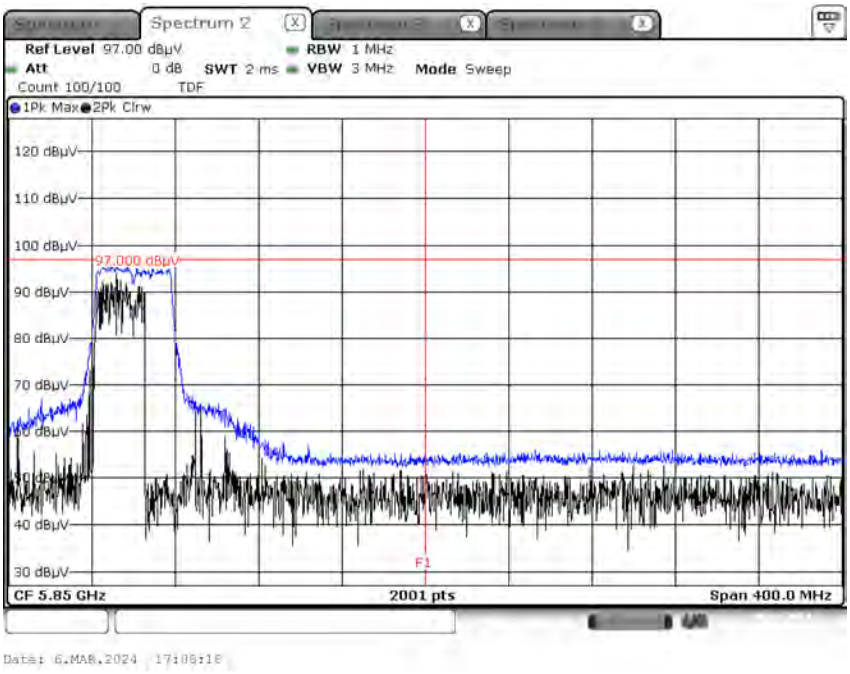
Peak Result (802.11ac_VHT20, Ch.144, Y-H)



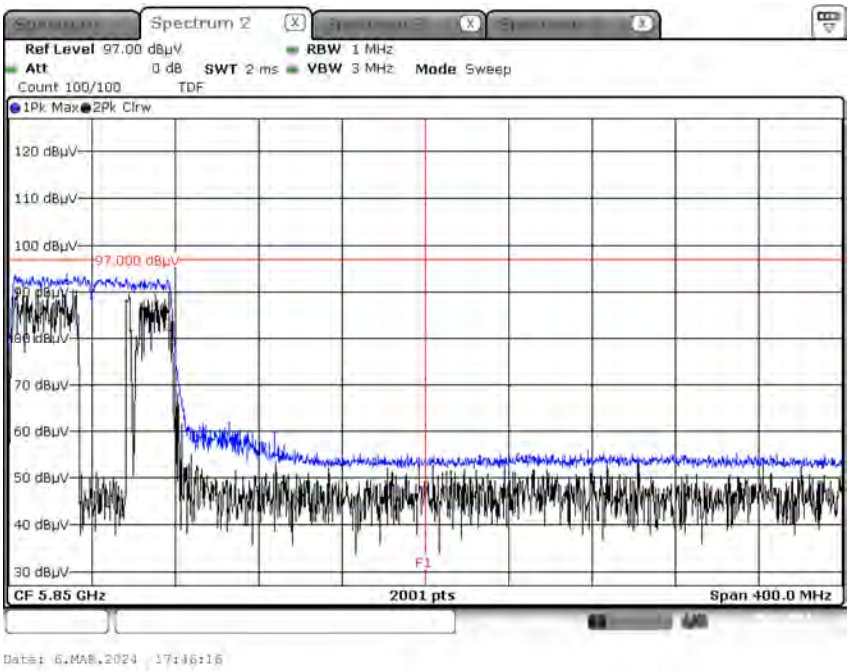
Peak Result (802.11n_HT40, Ch.142, Y-H)



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



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



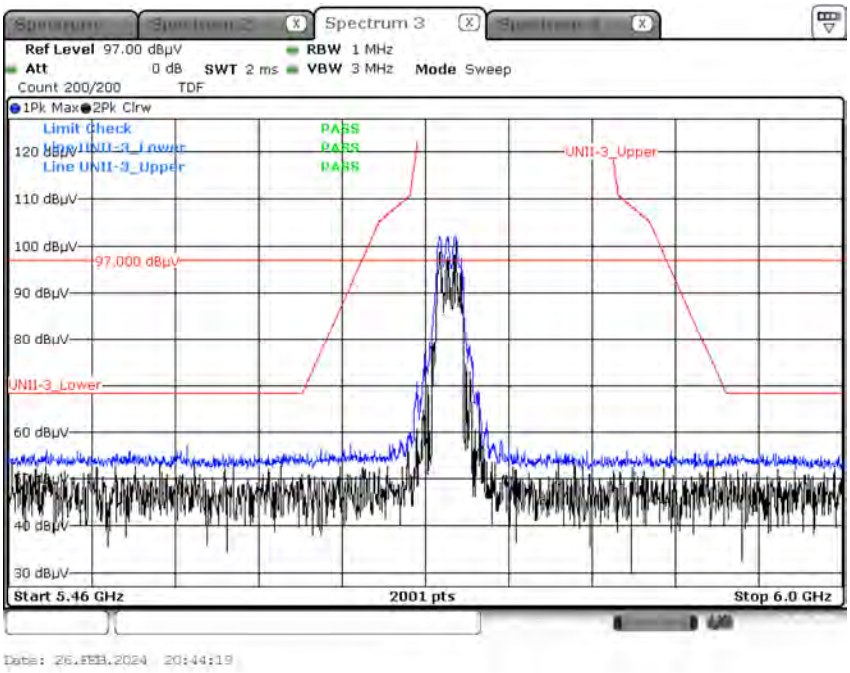
Note :

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)

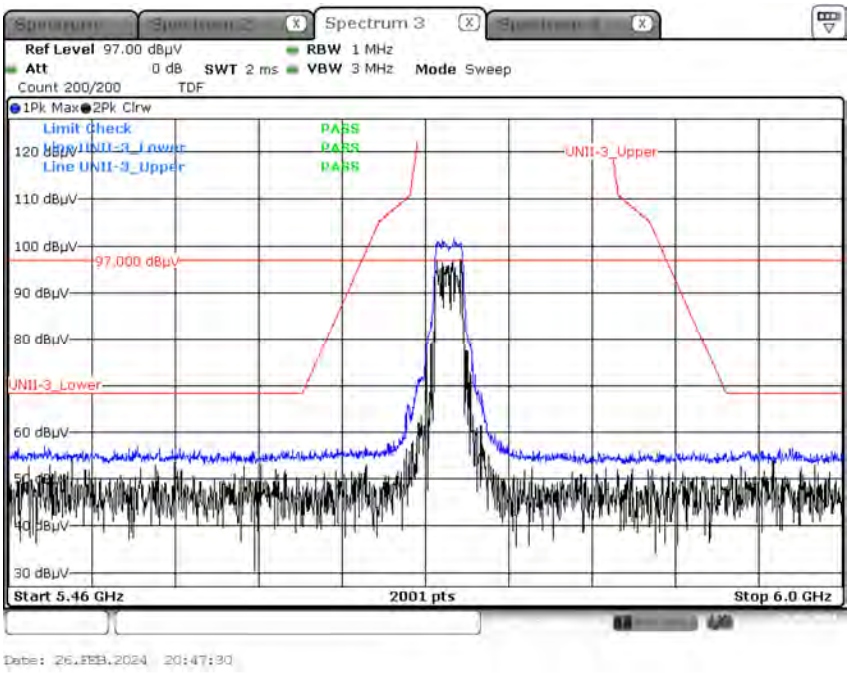
[MIMO_CDD(Ant.1+Ant.2)]

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

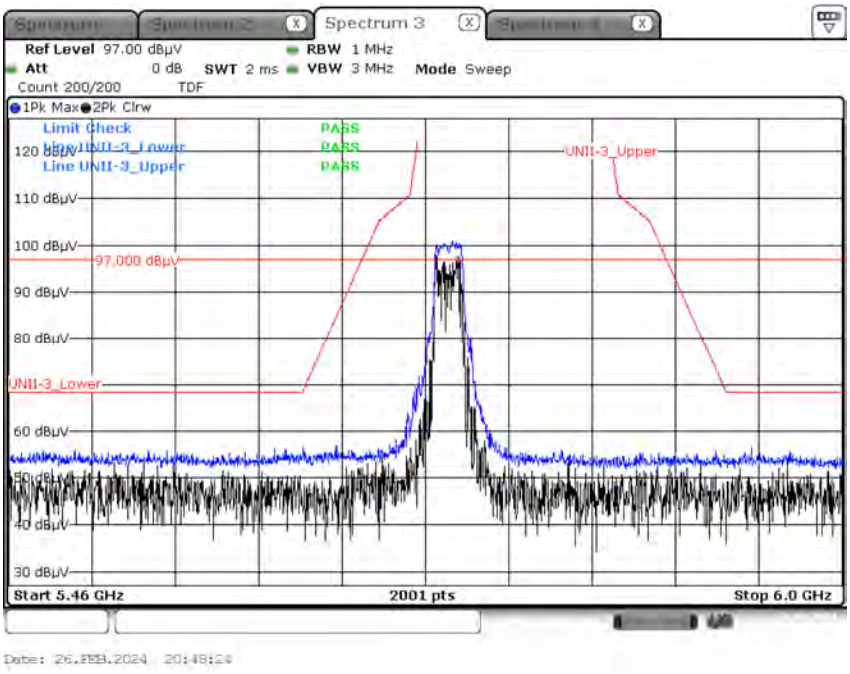


[MIMO_SDM(Ant.1+Ant.2)]

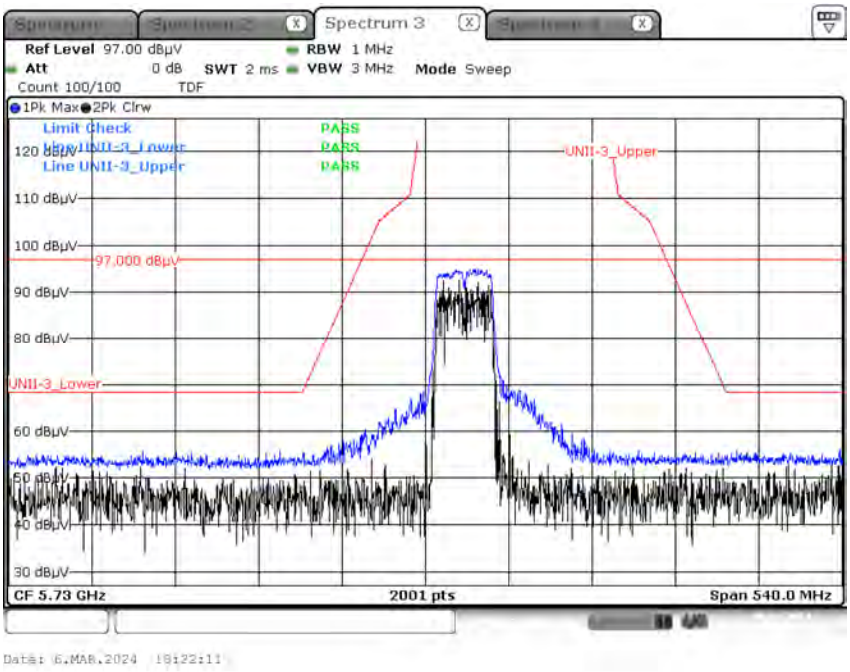
Peak Result (802.11n_HT20, Ch.149, Y-H)



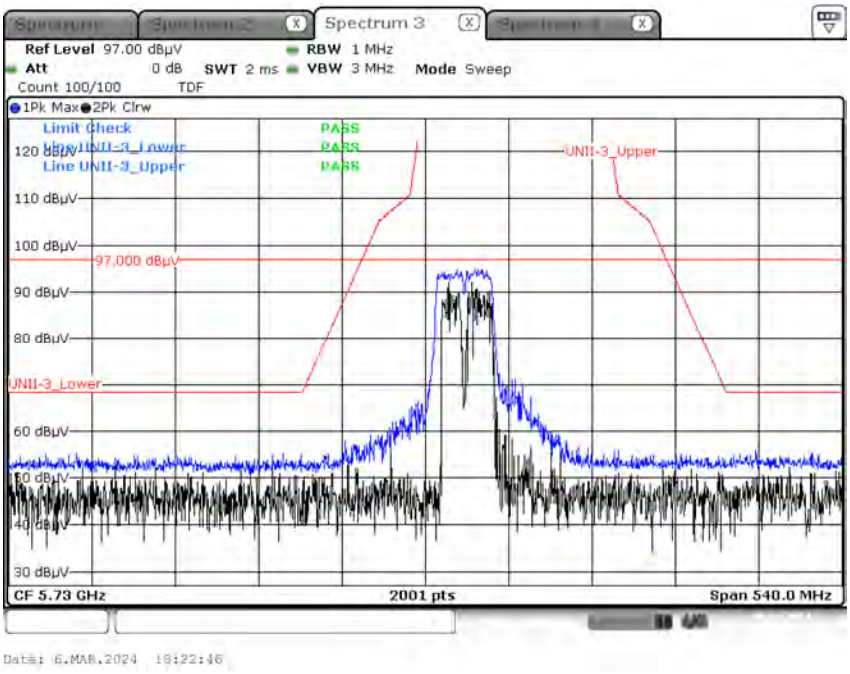
Peak Result (802.11ac_VHT20, Ch.149, Y-H)



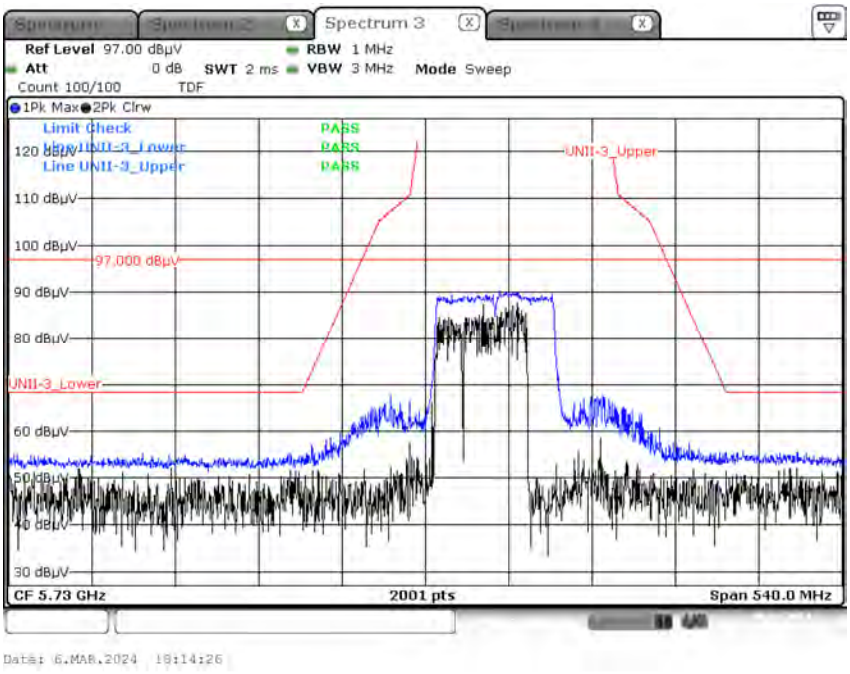
Peak Result (802.11n_HT40, Ch.151, Y-H)



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

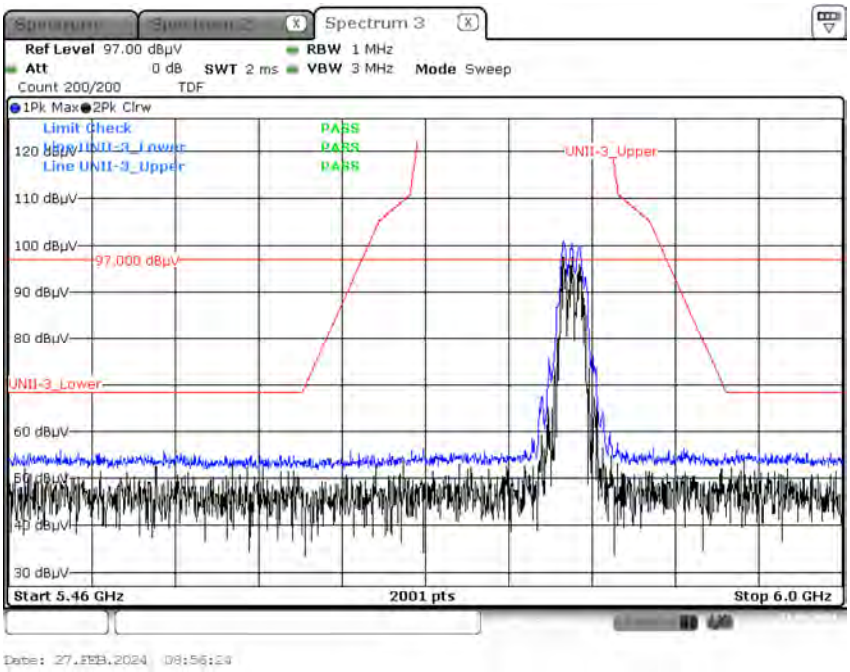


Peak Result (802.11ac_VHT80, Ch.155, Y-H)



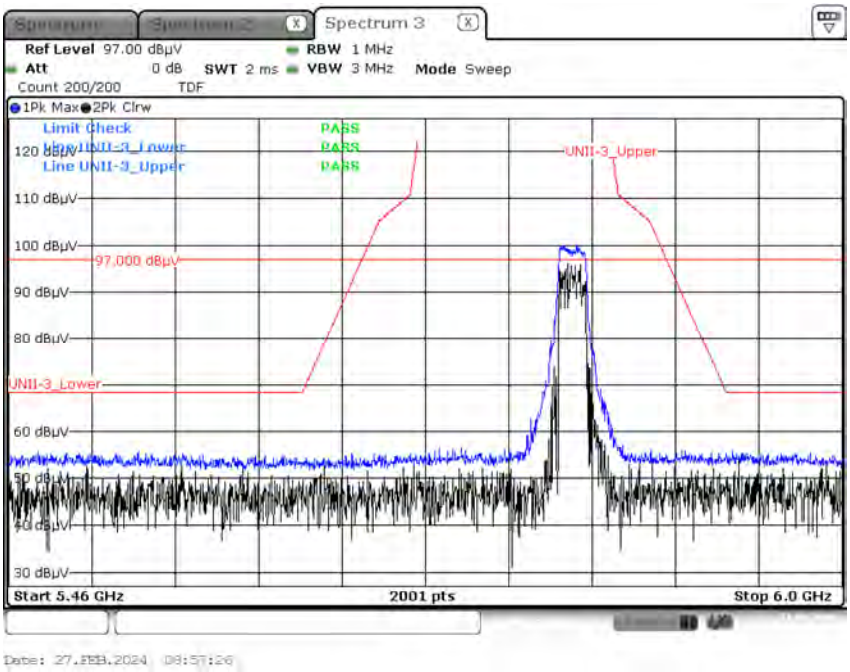
[MIMO_CDD(Ant.1+Ant.2)]

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

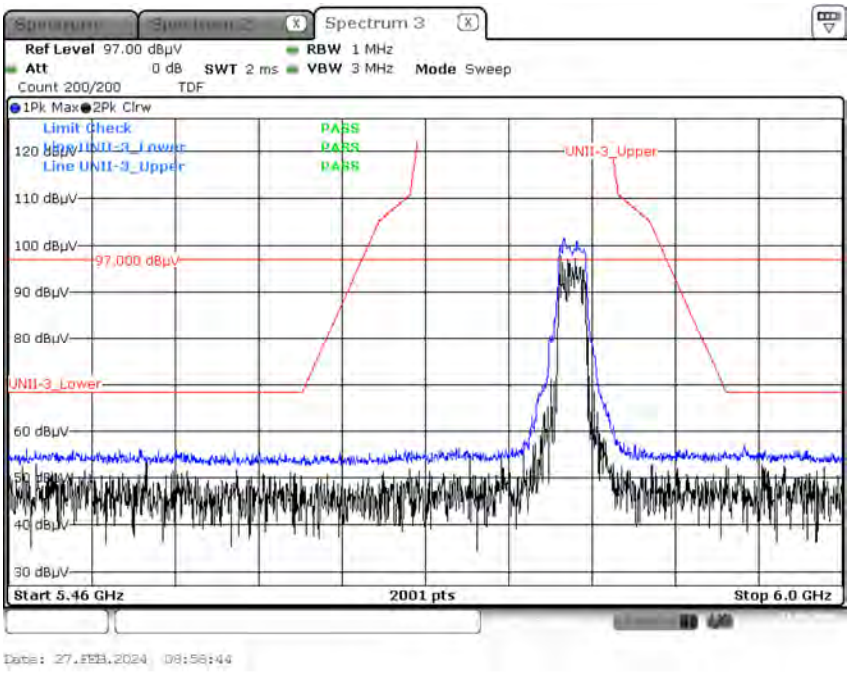


[MIMO_SDM(Ant.1+Ant.2)]

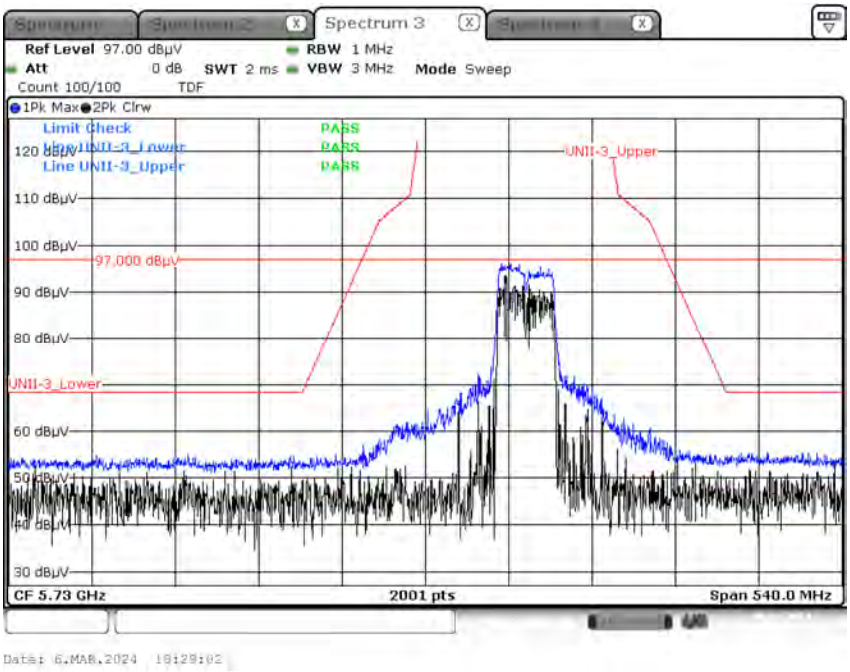
Peak Result (802.11n_HT20, Ch.165, Y-H)



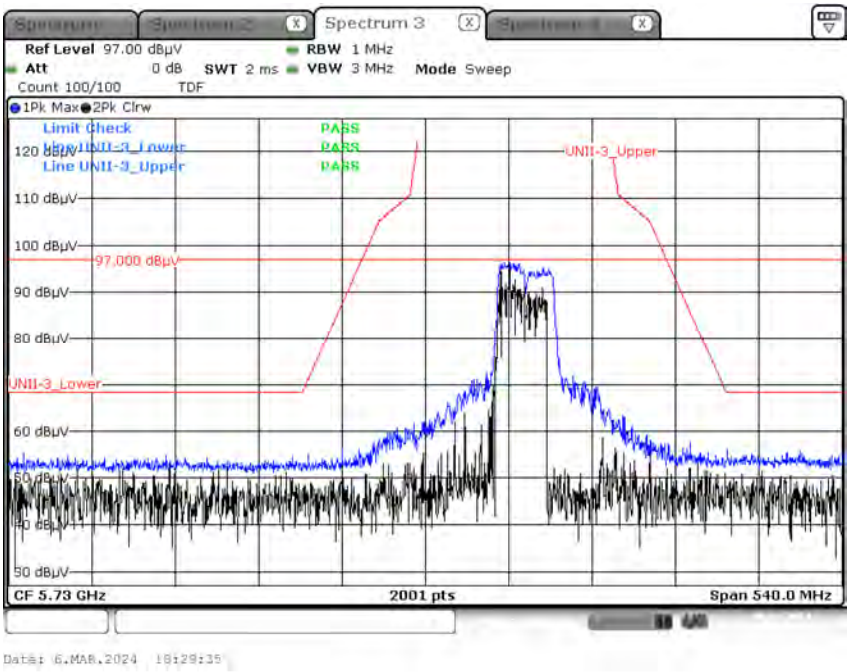
Peak Result (802.11ac_VHT20, Ch.165, Y-H)



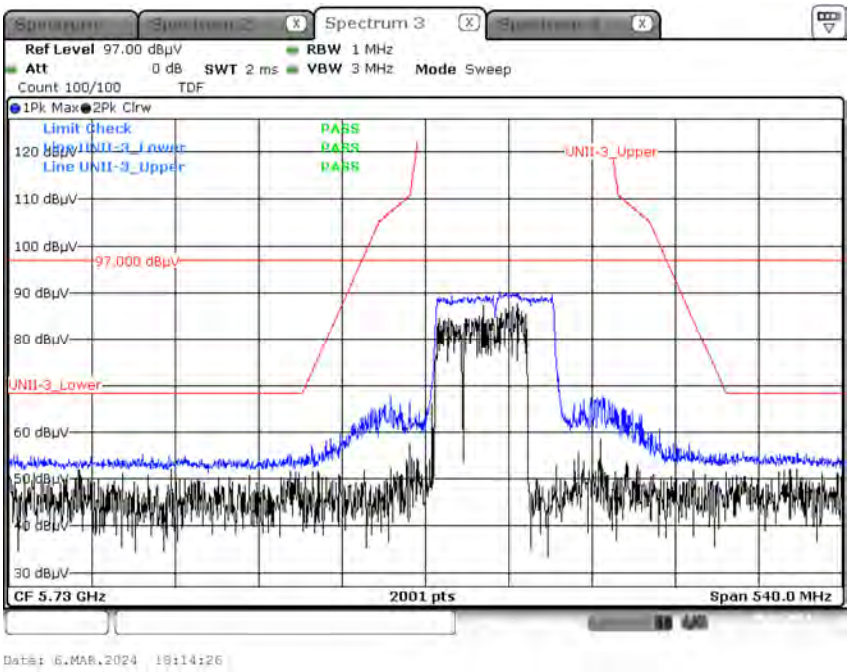
Peak Result (802.11n_HT40, Ch.159, Y-H)



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



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



Note :

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

10.10 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions

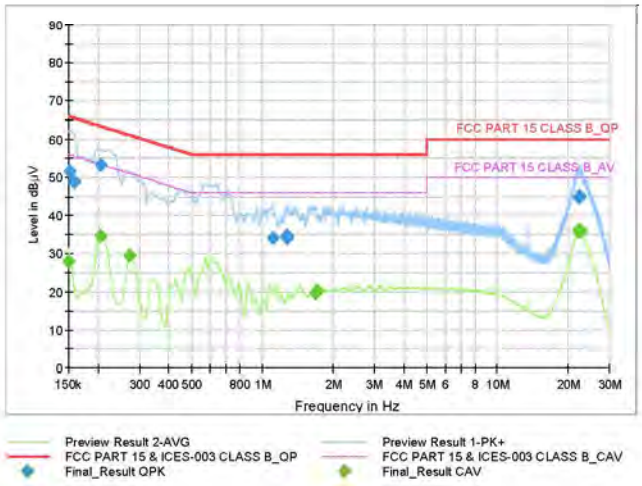
Test 1 / 2

Test Report

Common Information

EUT : SM-M356B/DS
Operating Conditions : 5G WLAN Mode
Comment :

Full Spectrum



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1523	51.34	65.88	14.54	9.000	N	9.6
0.1590	48.81	65.52	16.71	9.000	N	9.6
0.2063	53.22	63.36	10.13	9.000	N	9.6
1.1098	34.06	56.00	21.94	9.000	L1	9.7
1.2718	34.10	56.00	21.90	9.000	L1	9.7
1.2763	34.66	56.00	21.34	9.000	L1	9.7
22.0955	44.87	60.00	15.13	9.000	L1	10.5
22.3160	45.28	60.00	14.72	9.000	L1	10.5
22.3903	44.82	60.00	15.18	9.000	L1	10.5

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Test 2 / 2

Final_Result_CAV

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1500	28.06	56.00	27.94	9.000	N	9.6
0.2063	34.59	53.36	18.77	9.000	L1	9.6
0.2738	29.45	51.00	21.55	9.000	L1	9.6
1.6880	19.69	46.00	26.31	9.000	L1	9.7
1.6970	20.12	46.00	25.88	9.000	L1	9.7
22.0933	35.91	50.00	14.09	9.000	L1	10.5
22.2103	35.97	50.00	14.03	9.000	L1	10.5
22.2620	36.09	50.00	13.91	9.000	L1	10.5
22.5388	35.89	50.00	14.11	9.000	L1	10.5

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11. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	08/02/2024	Annual
EMI Test Receiver	ESR	Rohde & Schwarz	101910	05/26/2024	Annual
Temperature Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Signal Analyzer	N9030A	Keysight	MY55410508	09/04/2024	Annual
Power Meter	N1911A	Agilent	MY45100523	02/28/2025	Annual
Power Sensor	N1921A	Agilent	MY57820067	02/22/2025	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/30/2024	Annual
Power Splitter	11667B	Hewlett Packard	10545	02/06/2025	Annual
DC Power Supply	E3632A	Agilent	KR75305528	01/02/2025	Annual
Attenuator(10 dB)(DC-26.5 GHz)	8493C-010	Agilent	08285	06/02/2024	Annual
Attenuator(20 dB)	18N-20dB	Rohde & Schwarz	8	02/20/2025	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	HCT CO., LTD.	N/A	N/A	N/A
Bluetooth Tester	CBT	Rohde & Schwarz	100808	02/15/2025	Annual

Note:

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

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller(Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	S3AM	08/03/2025	Biennial
Controller	EM2090	Emco	060520	N/A	N/A
Turn Table	N/A	Ets	N/A	N/A	N/A
Loop Antenna	FMZB 1513	Rohde & Schwarz	1513-333	03/07/2026	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-0895	08/16/2024	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1191	11/07/2025	Biennial
Horn Antenna(15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Amp & Filter Bank Switch Controller	FBSM-01A	TNM system	0	N/A	N/A
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments	2	01/02/2025	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	5	06/12/2024	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	6	06/12/2024	Annual
Band Reject Filter	WRCJV5100/5850-40/50-8EEK	Wainwright Instruments	1	02/14/2025	Annual
RF Switching System	FBSR-03A (3G HPF+LNA)	T&M SYSTEM	S3L1	11/17/2024	Annual
RF Switching System	FBSR-03A (10dB ATT+LNA)	T&M SYSTEM	S3L2	11/17/2024	Annual
RF Switching System	FBSR-03A (7G HPF+LNA)	T&M SYSTEM	S3L3	11/17/2024	Annual
RF Switching System	FBSR-03A (3dB ATT+LNA)	T&M SYSTEM	S3L4	11/17/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/17/2024	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/28/2024	Annual
Spectrum Analyzer	FSV40 (9 kHz ~ 40 GHz)	Rohde & Schwarz	100900	12/06/2024	Annual

Note:

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

12. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2403-FC014-P