

TEST REPORT

FCC UNII Test for SM-S731B/DS
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2507-FC050-R1

DATE OF ISSUE
July 16, 2025

Tested by
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TEST REPORT

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Additional Model

SM-S731B

Applicant

SAMSUNG Electronics Co., Ltd.
129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Product Name

Mobile Phone

Model Name

SM-S731B/DS

FCC ID

A3LSMS731B

Date of Test

May 26, 2025 ~ July 14, 2025

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	July 15, 2025	Initial Release
1	July 16, 2025	Revised the Ant Gain and EIRP on page 53.

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).

Data referencing : UNII Report (FCC ID: A3LSMS731U, Report No. HCT-RF-2507-FC013)

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1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-S731B/DS	
Additional Model	SM-S731B	
EUT Type	Mobile Phone	
Power Supply	DC 3.88 V	
Modulation Type	OFDM : 802.11a, 802.11n, 802.11ac	
Frequency Range (MHz)	U-NII-1	20 MHz BW : 5180 - 5240 40 MHz BW : 5190 - 5230 80 MHz BW : 5210 160 MHz BW : 5250
	U-NII-2A	20 MHz BW : 5260 - 5320 40 MHz BW : 5270 - 5310 80 MHz BW : 5290 160 MHz BW : 5250
	U-NII-2C	20 MHz BW : 5500 - 5720 40 MHz BW : 5510 - 5710 80 MHz BW : 5530 - 5690 160 MHz BW : 5570
	U-NII-3	20 MHz BW : 5745 - 5825 40 MHz BW : 5755 - 5795 80 MHz BW : 5775 160 MHz BW : 5815
	U-NII-4	20 MHz BW : 5845 - 5885 40 MHz BW : 5835 - 5875 80 MHz BW : 5855 160 MHz BW : 5815
Straddle channel	Supported	
TDWR Band	Supported	
Dynamic Frequency Selection	Slave without radar detection	
Antenna Specification	Type: Metal	
Serial number	Conducted : R3CY40XC7ET	
	Radiated : R3CY40DEF7H	

ANTENNA CONFIGURATIONS

1. Antenna configuration

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

Note:

- (1) O = Support, X = Not Support
- (2) SISO = Single Input Single Output
- (3) SDM = Spatial Diversity Multiplexing
- (4) CDD = Cyclic Delay Diversity

2.This device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the 2.4 GHz and 5 GHz or 6GHz Bands simultaneously on each antenna.

Simultaneous transmission Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	6 GHz WiFi Ant.1	6 GHz WiFi Ant.2	BTLE Ant.1	BTLE Ant.2	Test Case
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	on	on	on	on	-	-	-	-	Scenario 1
2.4 GHz WiFi MIMO + 6 GHz WiFi MIMO	on	on	-	-	on	on	-	-	
BTLE ANT.1 + 5 GHz WiFi MIMO	-	-	on	on	-	-	on	-	Scenario 2
BTLE ANT.1 + 6 GHz WiFi MIMO	-	-			on	on	on	-	Scenario 3

3. Directional Gain Calculation

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

$$\text{Directional Gain(CDD)} = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$$

$$\text{Directional gain(SDM)} = G_{\max} + 10 \cdot \text{LOG}(N_{ANT}/N_{SS})$$

Band	Ant Gain (dBi)		N _{ANT} / N _{SS}	Directional Gain (dBi)	
	ANT1	ANT2		CDD	SDM
UNII 1	-7.25	-7.25	2 / 2	-4.24	-7.25
UNII 2A	-7.25	-7.05		-4.14	-7.05
UNII 2C	-7.01	-7.51		-4.25	-7.01
UNII 3	-7.09	-8.14		-4.59	-7.09
UNII 4	-7.09	-8.74		-4.87	-7.09

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.

$$\text{Directional gain(CDD)} = 10 \cdot \log \left(\left(10^{(\text{ANT1 Gain}/20)} + 10^{(\text{ANT2 Gain}/20)} \right)^2 / 2 \right) \text{ dBi}$$

$$\text{Directional gain(SDM)} = G_{\max} + 10 \cdot \text{LOG}(N_{ANT}/N_{SS})$$

Sample Calculation (Conducted Power, MIMO):

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

$$\text{Ant1} + \text{Ant 2} = \text{MIMO}$$

$$(11.58 \text{ dBm} + 12.08 \text{ dBm}) = (14.387 \text{ mW} + 16.143 \text{ mW}) = 30.53 \text{ mW} = 14.88 \text{ dBm}$$

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

Ex) ANT1 : 15.35 dBm , ANT2 : 15.12 dBm, Directional Gain : 3 dBi

$$\text{Conducted Power} = (15.35 \text{ dBm} + 15.12 \text{ dBm}) = (34.276 \text{ mW} + 32.508 \text{ mW}) = 66.784 \text{ mW} = 18.25 \text{ dBm}$$

$$\text{E.I.R.P} = 18.25 \text{ dBm} + 3 \text{ dBi} = 21.25 \text{ dBm}$$

2. MAXIMUM OUTPUT POWER

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

Band	Mode	MIMO_CDD(Ant.1+ Ant.2)					
		Ant.1 Power		Ant.2 Power		Ant.1 + Ant.2 Power	
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
UNII1	802.11a	14.81	0.030	15.10	0.032	17.96	0.063
	802.11n (HT20)	14.80	0.030	15.30	0.034	18.06	0.064
	802.11n (HT40)	13.99	0.025	13.60	0.023	16.81	0.048
	802.11ac (VHT20)	14.67	0.029	15.03	0.032	17.87	0.061
	802.11ac (VHT40)	13.83	0.024	13.84	0.024	16.84	0.048
	802.11ac (VHT80)	12.54	0.018	11.31	0.014	14.98	0.031
UNII2A	802.11a	15.39	0.035	15.90	0.039	18.66	0.073
	802.11n (HT20)	15.49	0.035	15.90	0.039	18.71	0.074
	802.11n (HT40)	14.00	0.025	14.02	0.025	17.02	0.050
	802.11ac (VHT20)	15.32	0.034	15.88	0.039	18.62	0.073
	802.11ac (VHT40)	14.03	0.025	14.10	0.026	17.07	0.051
	802.11ac (VHT80)	14.27	0.027	14.72	0.030	17.51	0.056
UNII2C	802.11a	17.51	0.056	18.51	0.071	21.05	0.127
	802.11n (HT20)	17.28	0.053	18.85	0.077	21.14	0.130
	802.11n (HT40)	14.18	0.026	13.80	0.024	17.00	0.050
	802.11ac (VHT20)	17.57	0.057	18.72	0.075	21.20	0.132
	802.11ac (VHT40)	13.43	0.022	14.52	0.028	17.01	0.050
	802.11ac (VHT80)	13.86	0.024	14.89	0.031	17.41	0.055
UNII3	802.11a	17.79	0.060	18.75	0.075	21.30	0.135
	802.11n (HT20)	17.82	0.061	18.84	0.077	21.37	0.137
	802.11n (HT40)	13.49	0.022	14.88	0.031	17.25	0.053
	802.11ac (VHT20)	18.00	0.063	18.88	0.077	21.48	0.141
	802.11ac (VHT40)	13.96	0.025	14.74	0.030	17.37	0.055
	802.11ac (VHT80)	13.23	0.021	14.88	0.031	17.14	0.052
UNII4 (Conducted For inf.)	802.11a	17.83	0.061	18.76	0.075	21.33	0.136
	802.11n (HT20)	17.92	0.062	18.76	0.075	21.37	0.137
	802.11n (HT40)	13.86	0.024	14.86	0.031	17.40	0.055
	802.11ac (VHT20)	17.99	0.063	18.83	0.076	21.54	0.143
	802.11ac (VHT40)	13.92	0.025	14.87	0.031	17.43	0.055
	802.11ac (VHT80)	13.55	0.023	14.79	0.030	17.22	0.053
UNII1-2A	802.11ac (VHT160)	10.48	0.011	10.52	0.011	13.51	0.022
UNII2C	802.11ac (VHT160)	12.35	0.017	13.49	0.022	15.97	0.040
UNII3&4	802.11ac (VHT160)	12.37	0.017	13.73	0.024	16.11	0.041

Band	Mode	MIMO_CDD(Ant.1+ Ant.2) (EIRP)											
		Ant.1 Power				Ant.2 Power				(Ant.1 + Ant.2) Power			
		(dBm)	ANT Gain(dBi)	EIRP (dBm)	(W)	(dBm)	ANT Gain(dBi)	EIRP (dBm)	(W)	(dBm)	ANT Gain(dBi)	EIRP (dBm)	(W)
UNII4 (EIRP)	802.11a	17.83	-7.09	10.74	0.012	18.76	-8.74	10.02	0.010	21.33	-4.87	16.46	0.044
	802.11n (HT20)	17.92	-7.09	10.83	0.012	18.76	-8.74	10.02	0.010	21.37	-4.87	16.50	0.045
	802.11n (HT40)	13.86	-7.09	6.77	0.005	14.86	-8.74	6.12	0.004	17.40	-4.87	12.53	0.018
	802.11ac (VHT20)	17.99	-7.09	10.90	0.012	18.83	-8.74	10.09	0.010	21.54	-4.87	16.67	0.046
	802.11ac (VHT40)	13.92	-7.09	6.83	0.005	14.87	-8.74	6.13	0.004	17.43	-4.87	12.57	0.018
	802.11ac (VHT80)	13.55	-7.09	6.46	0.004	14.79	-8.74	6.05	0.004	17.22	-4.87	12.36	0.017
	802.11ac (VHT160)	12.37	-7.09	5.28	0.003	13.73	-8.74	4.99	0.003	16.11	-4.87	11.25	0.013

3. TEST METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated December 14, 2017 entitled “Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part15, Subpart E” and ANSI C63.10(Version : 2013) ‘the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices’ were used in the measurement. Additionally, for U-NII-4 band, use the following measurement procedure KDB 291074 D02 EMC Measurement v01

EUT CONFIGURATION

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

EUT EXERCISE

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

GENERAL TEST PROCEDURES

Conducted Emissions

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

Radiated Emissions

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

DESCRIPTION OF TEST MODES

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

4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment's, which is traceable to recognized national standards.

Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4.

(Version :2014) and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated 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.

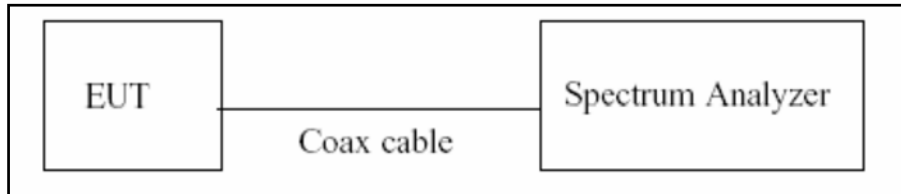
Parameter	Expanded Uncertainty ($\pm$ kHz)
X dB, 99% Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Power Meter)	0.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Signal Analyzer)	0.68 (Confidence level about 95 %, $k=2$)
Power Spectral Density	1.03 (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)	5.68 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.75 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.82 (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.

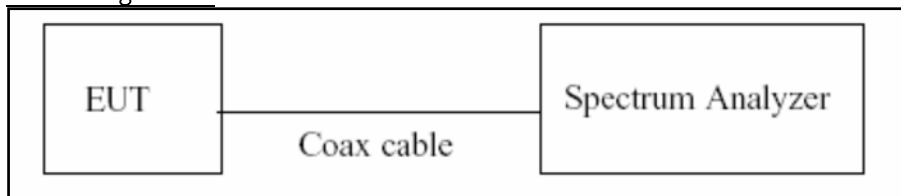
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Average
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = $T_{\text{on}} / T_{\text{total}}$ and Duty Cycle Factor = $10\log(1/\text{Duty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

8.2. 6 dB Bandwidth & 26 dB Bandwidth

Limit

Within the 5.725-5.85 GHz(NII-3) & 5.85-5.925 GHz(NII-4) band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Configuration



Test Procedure (26 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure C.1 in KDB 789033 D02 v02r01.

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

Test Procedure (6 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

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

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

Note:

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

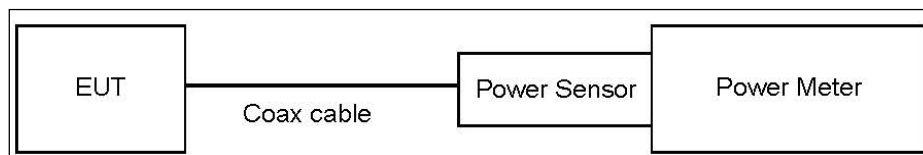
8.3. Output Power Measurement

Limit

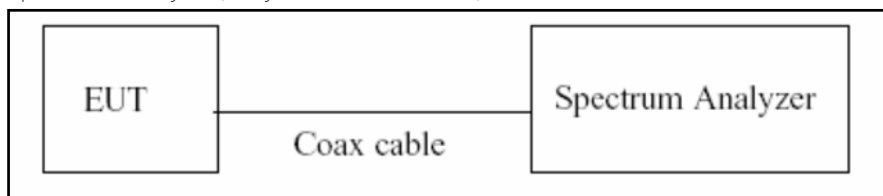
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30 dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30 dBm)
UNII 4	EIRP 30 dBm

Test Configuration

Power Meter



Spectrum Analyzer(Only Straddle Channel)



Test Procedure(Power Meter)

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

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test Procedure (Spectrum Analyzer)

The transmitter output is connected to the Spectrum Analyzer.

We use the spectrum analyzer's integrated band power measurement function.

We tested according to Procedure E.2.d) in KDB 789033 D02 v02r01.

1. Measure the duty cycle.
2. Set span to encompass the 26 dB EBW of the signal.
3. RBW = 1 MHz.
4. VBW $\geq$ 3 MHz.
5. Number of points in sweep $\geq 2 \times \text{span/RBW}$.
6. Sweep time = auto.
7. Measurement Type or = RMS.
8. Do not use sweep triggering. Allow the sweep to "free run".
9. Trace average at least 100 traces in power averaging(RMS) mode
10. Integrated bandwidth = OBW
11. Add $10\log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

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	12.02
UNII 2A	12.02
UNII 2C	12.02
UNII 3&4	12.02

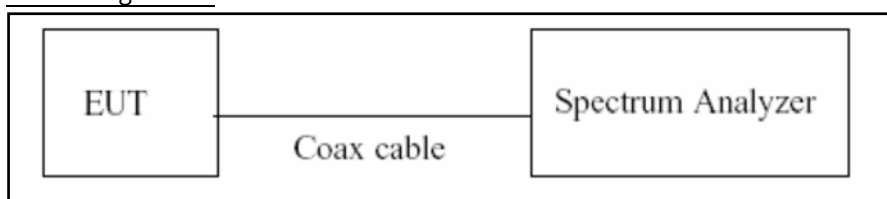
(Actual value of loss for the attenuator and cable combination)

8.4. Power Spectral Density

Limit

Band	Limit
UNII 1	11 dBm/MHz
UNII 2A, 2C	11 dBm/MHz
UNII 3	30 dBm/500 kHz
UNII 4	EIRP 14 dBm/MHz

Test Configuration



Test Procedure

We tested according to Procedure F in KDB 789033 D02 v02r01.

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz(510 kHz for UNII 3)
 ➔ For portion within the NII-3 be used RBW 510kHz
3. VBW $\geq$ 3 MHz
4. Number of points in sweep $\geq$ 2 x span/RBW.
5. Sweep time = auto.
6. Measurement Typeor = RMS(i.e., power averaging), if available. Otherwise, use sample Measurement Typeor 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	12.02
UNII 2A	12.02
UNII 2C	12.02
UNII 3&4	12.02

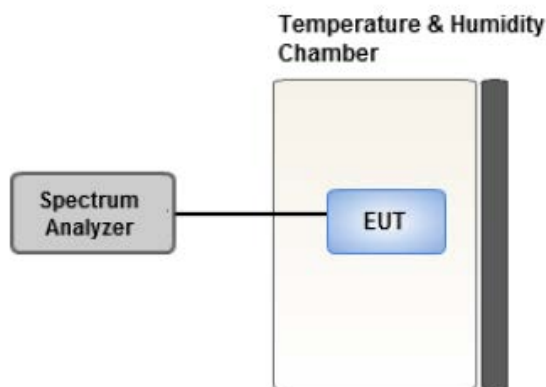
(Actual value of loss for the attenuator and cable combination)

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 battery 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 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	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. UNII 4: [Low Channel O.O.B.E] measured with a Peak detector
For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.
[High Channel O.O.B.E] measured with an RMS detector
For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz.

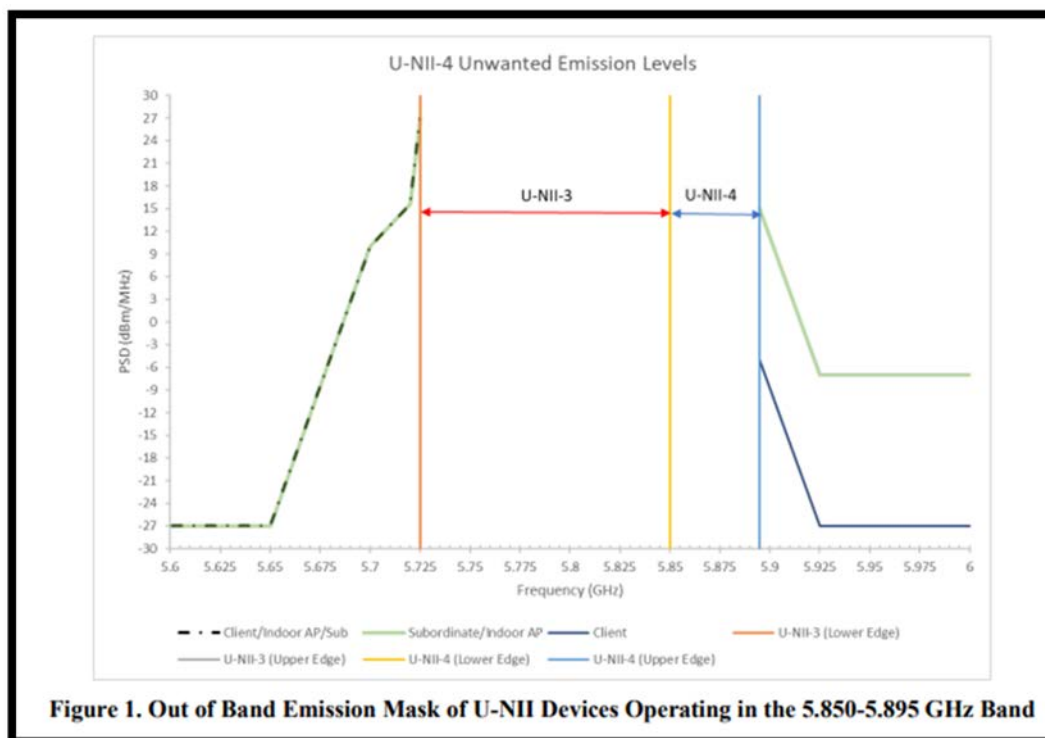


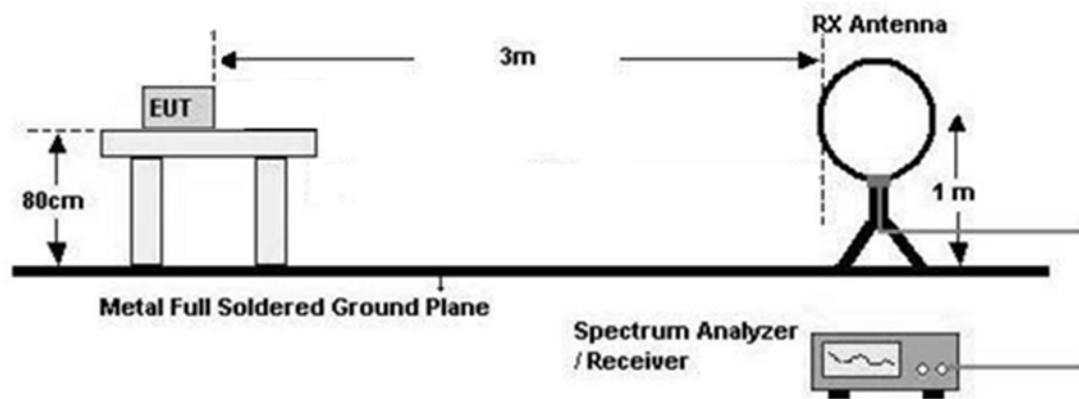
Figure 1. Out of Band Emission Mask of U-NII Devices Operating in the 5.850-5.895 GHz Band

5. All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Section 15.209.

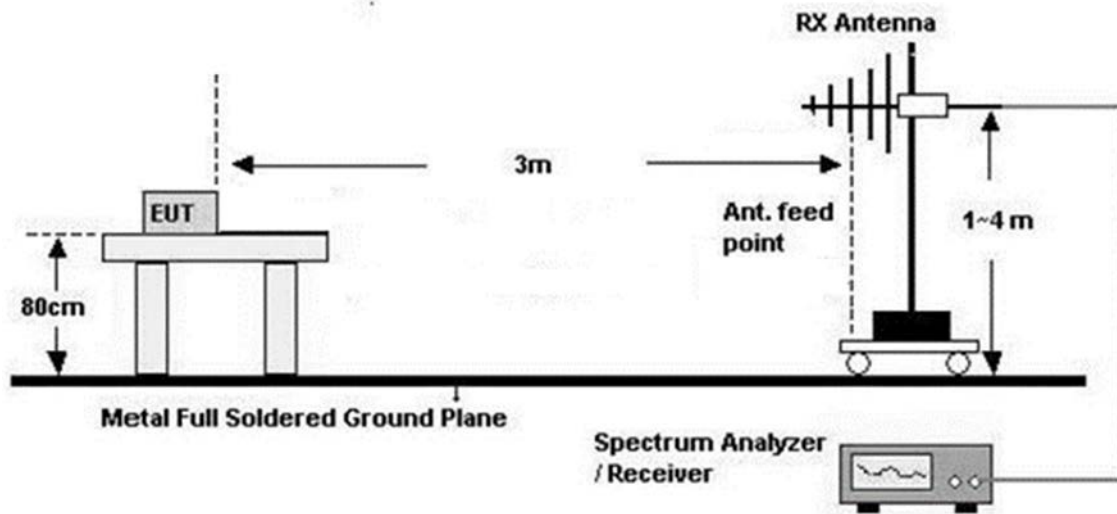
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

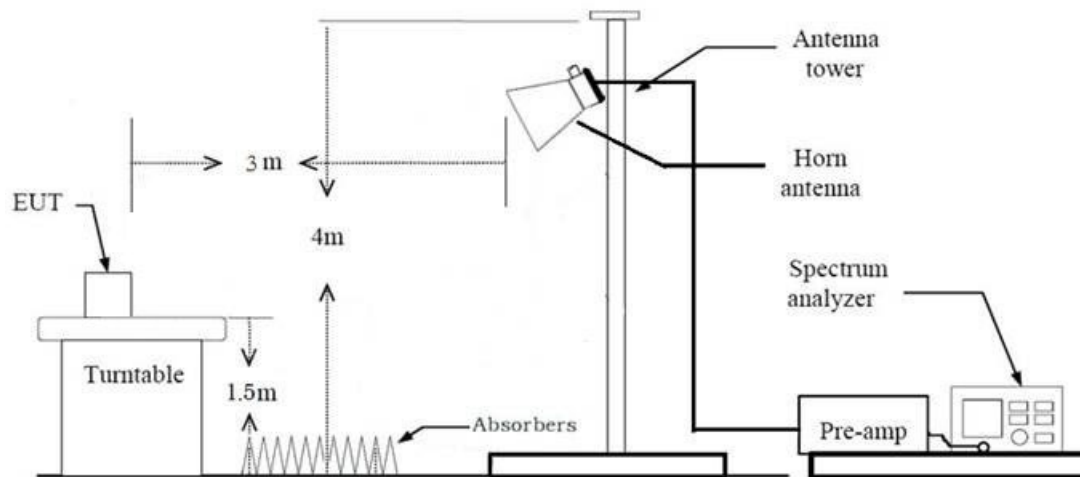
Below 30 MHz



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 0.8m above ground plane.
4. .We have done x, y, z planes in EUT and horizontal and vertical polarization and Parallel to the ground plane in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor(0.009 MHz – 0.490 MHz) = $40\log(3\text{ m}/300\text{ m}) = -80\text{ dB}$
Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = $40\log(3\text{ m}/30\text{ m}) = -40\text{ dB}$
Measurement Distance : 3 m
8. Spectrum Setting
 - Frequency Range = 9 kHz ~ 30 MHz
 - Detector = Peak
 - Trace = Max Hold
 - RBW = 9 kHz
 - VBW $\geq 3 \times$ 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 0.8m 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 = Max Hold
- RBW = 100 kHz
- VBW $\geq$ 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 $\geq$ 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 $\geq$ 98 percent) = VBW $\leq$ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
 - VBW(Duty cycle is < 98 percent) = VBW $\geq$ 1/T, where T is the minimum transmission duration.
 - The analyzer is set to linear detector mode.
 - Detector = Peak.
 - Sweep time = auto.
 - Trace mode = Max Hold.
 - Allow Max Hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum 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 = $20\log(\text{test distance} / \text{specific distance})$ (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 $\geq$ 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 $\geq$ 98 percent) = VBW $\leq$ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 percent) = VBW $\geq$ $1/T$, where T is the minimum transmission duration.
- The analyzer is set to linear detector mode.
- Detector = Peak.
- Sweep time = auto.
- Trace mode = Max Hold.
- Allow Max Hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum 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 = $20\log(\text{test distance} / \text{specific distance})$ (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

Mode	Worst Data rate (Mbps)	Duty Cycle	Duty Cycle Factor (dB)	The actual setting value of VBW (Hz)
802.11a	6	0.938	0.277	1 000
802.11n(HT20)	MCS0	0.934	0.296	1 000
802.11n(HT40)	MCS0	0.879	0.558	2 000
802.11ac(VHT20)	MCS0	0.937	0.285	1 000
802.11ac(VHT40)	MCS0	0.880	0.555	2 000
802.11ac(VHT80)	MCS0	0.784	1.059	3 000
802.11ac(VHT160)	MCS0	0.670	1.742	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.
2. SM-S731B/DS, SM-S731B were tested and the worst case results are reported.
(Worst case: SM-S731B/DS)

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone, Stand alone + External accessories
 - Worstcase : Stand alone
2. All Antennas of operation were investigated and the worst case results are reported
 - Antenna Operation Type : SISO, MIMO_CDD(Ant.1+Ant.2), MIMO_SDM(Ant.1+Ant.2)
 - Worstcase : MIMO_CDD(Ant.1+Ant.2)
3. EUT Axis
 - Radiated Spurious Emissions : X
 - Radiated Restricted Band Edge : X
4. All datarate of operation were investigated and the worst case datarate results are reported.
 - 802.11a : 6 Mbps
 - 802.11n_HT20 : MCS0
 - 802.11n_HT40 : MCS0
 - 802.11ac_VHT20 : MCS0
 - 802.11ac_VHT40 : MCS0
 - 802.11ac_VHT80 : MCS0
 - 802.11ac_VHT160: MCS0
5. Radiated Spurious Emission
 - All modulations of operation were investigated and the worst case modulation results are reported.
 - Worst-case : 802.11a_6 Mbps
6. 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
7. SM-S731B/DS, SM-S731B were tested and the worst case results are reported.
(Worst case: SM-S731B/DS)

Radiated test(Simultaneous transmission Scenario)

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

- Mode : Stand alone, Stand alone + External accessories
- Worstcase : Stand alone

2. EUT Axis

- Radiated Spurious Emissions : X

3. All of Simultaneous transmission Scenario were investigated and the worst case configuration results are reported.

Simultaneous transmission Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	6 GHz WiFi Ant.1	6 GHz WiFi Ant.2	BTLE Ant.1	BTLE Ant.2	Test Case
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	on	on	on	on	-	-	-	-	Scenario 1
2.4 GHz WiFi MIMO + 6 GHz WiFi MIMO	on	on	-	-	on	on	-	-	
BTLE ANT.1 + 5 GHz WiFi MIMO	-	-	on	on	-	-	on	-	Scenario 2
BTLE ANT.1 + 6 GHz WiFi MIMO	-	-			on	on	on	-	Scenario 3

4. The Simultaneous transmission Scenario mode test investigated both intermodulation and radiated spurious emissions.

- Worst result: Radiated spurious emissions
- Intermodulation: No signals are generated.
- Radiated spurious emissions: cf. Section 10.8

5. The following tables show the worst cases configurations determined during testing.

(Worst case: The lowest margin condition the channels and modes were selected for test.)

Scenario 1	Description	2.4GHz Emission	5 GHz Emission
2.4 GHz WiFi MIMO + 5 GHz WiFi MIMO	Antenna	ANT ALL	ANT ALL
	Channel	11	36
	Data Rate	1 Mbps	6 Mbps
	Mode	802.11b	802.11a

Note : DTS Simultaneous transmission Data refer to [DTS] Test Report

Scenario 2	Description	BTLE Emission	5 GHz Emission
BTLE ANT.1 + 5 GHz WiFi MIMO	Antenna	ANT 1	ANT ALL
	Channel	39	36
	Data Rate	1 Mbps	6 Mbps
	Mode	1M 37 Bytes	802.11a

Note : BT LE Simultaneous transmission Data refer to [BT LE] Test Report

6. SM-S731B/DS, SM-S731B were tested and the worst case results are reported.

(Worst case: SM-S731B/DS)

AC Power line Conducted Emissions

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

- Mode : Stand alone + External accessories + Travel Adapter,

Stand alone + Travel Adapter

- Worstcase : Stand alone + Travel Adapter

2. SM-S731B/DS, SM-S731B were tested and the worst case results are reported.

(Worst case: SM-S731B/DS)

9. SUMMARY OF TEST RESULTS & DATA REFERENCING

9.1. Test result

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26 dB Bandwidth	§ 15.407 (for Power Measurement)	N/A	Conducted	PASS
6 dB Bandwidth	§ 15.407(e)	>500 kHz (5725-5850 MHz)(UNII-3) (5850-5895 MHz)(UNII-4)		PASS
Maximum Conducted Output Power	§ 15.407(a)(1),(2),(3)	< 250 mW(5150-5250 MHz) < 250 mW or 11+10log ₁₀ (BW) dBm (5250-5350 MHz) < 250 mW or 11+10log ₁₀ (BW) dBm (5470-5725 MHz) <1 W (5725-5850 MHz)		PASS
Maximum EIRP Output Power	§ 15.407(a)(3)(iii)	< EIRP 30dBm (5850-5895 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) < EIRP 14 dBm/MHz(5850-5895 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&4)	Radiated	PASS
General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	15.205, 15.407(b)(9),(10)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS

Note:

- UNII 2A, 2C: TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.
- The decision rule applies 'simple acceptance'

9.2. Data Referencing

Equipment Class	Rule Part	Test item	Data Referencing	Comments
UNII (WLAN 5GHz)	§ 15.407 (for Power)	26 dB Bandwidth	Y	-
	15.407(e)	6 dB Bandwidth	Y	-
	§ 15.407(a)(1),(2),(3)	Maximum Conducted output power	Y	Spot-check
	§ 15.407(a)(3)(iii)	Maximum EIRP Output Power	Y	-
	§ 15.407(a)(1),(2),(3)	Maximum Power Spectral Density	Y	-
	15.207 15.407(b)(8)	AC conducted Emission	Y	-
	§ 15.407(g) § 2.1055	Frequency Stability	Y	-
	§ 15.407(b) (1),(2),(3),(4) § 15.407(b)(5)(ii),(iii) § 15.35(b)	Undesirable Emissions	Y	Spot-check
	15.205, 15.407(b)(9),(10)	General Field Strength (Restricted bands and Radiated emission)	Y	Spot-check
	15.407(h)	DFS	Y	-

Spot-Check Result

1. Data was leveraged from model SM-S731U for the certification of SM-S731B/DS.
2. Please refer to the [FCC Evaluation] Report.

10. TEST RESULT

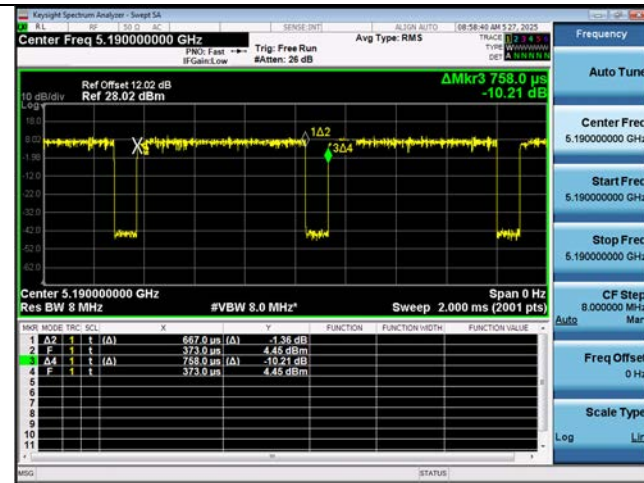
10.1 DUTY CYCLE

Mode	Data Rate (Mbps)	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11a	6M	1.426	1.520	0.938	0.277
802.11n(HT20)	MCS0	1.335	1.429	0.934	0.296
802.11n(HT40)	MCS0	0.664	0.755	0.879	0.558
802.11ac(VHT20)	MCS0	1.343	1.434	0.937	0.285
802.11ac(VHT40)	MCS0	0.667	0.758	0.880	0.555
802.11ac(VHT80)	MCS0	0.335	0.428	0.784	1.059
802.11ac(VHT160)	MCS0	0.187	0.279	0.670	1.742

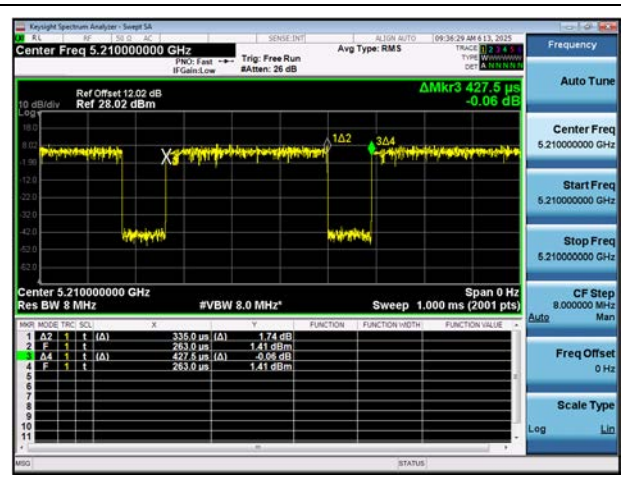
Note:In order to simplify the report, attached plots were only the lowest data rate.



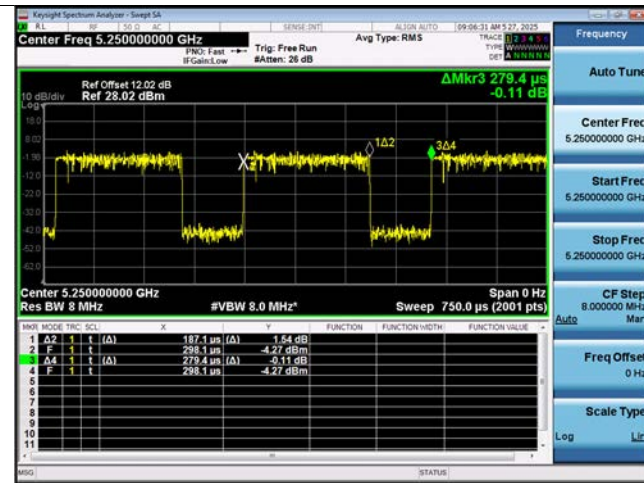
802.11ac(VHT40)



802.11ac(VHT80)



802.11ac(VHT160)



10.2 26 dB Bandwidth

Note:

Straddle channel data in the table below are for reporting purposes only. Straddle channel data were added in section 10.7.1.

[Ant.1]

Mode : 802.11a				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	23.22	16.797
	5200	40	23.51	16.804
	5240	48	22.92	16.797
UNII2A	5260	52	23.39	16.784
	5300	60	22.39	16.799
	5320	64	23.16	16.817
UNII2C	5500	100	24.26	16.813
	5580	116	24.09	16.814
	5720	144	24.34	16.841
UNII3	5745	149	23.20	16.789
	5785	157	22.97	16.810
	5825	165	22.94	16.833
UNII4	5845	169	22.71	16.804
	5865	173	23.14	16.769
	5885	177	23.17	16.785
Mode : 802.11n(HT20)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	24.64	17.988
	5200	40	28.13	18.131
	5240	48	26.24	18.043
UNII2A	5260	52	24.86	17.977
	5300	60	24.53	18.001
	5320	64	25.78	17.984
UNII2C	5500	100	27.21	18.085
	5580	116	27.14	18.037
	5720	144	25.55	18.036
UNII3	5745	149	24.51	18.014
	5785	157	24.32	17.979
	5825	165	23.97	17.973
UNII4	5845	169	26.05	17.962
	5865	173	24.45	17.949
	5885	177	26.28	17.956

Mode : 802.11ac(VHT20)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	24.37	17.997
	5200	40	26.58	18.013
	5240	48	26.99	18.020
UNII2A	5260	52	26.31	17.958
	5300	60	24.60	17.978
	5320	64	24.17	17.979
UNII2C	5500	100	29.58	18.096
	5580	116	25.52	18.068
	5720	144	26.42	18.031
UNII3	5745	149	24.41	18.031
	5785	157	24.47	17.993
	5825	165	26.12	17.976
UNII4	5845	169	24.87	17.977
	5865	173	28.57	17.967
	5885	177	24.45	18.010

Mode : 802.11n(HT40)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5190	38	44.57	36.557
	5230	46	45.32	36.607
UNII2A	5270	54	44.84	36.677
	5310	62	44.86	36.582
UNII2C	5510	102	44.78	36.627
	5550	110	44.95	36.635
	5710	142	44.83	36.593
UNII3	5755	151	44.39	36.513
	5795	159	45.00	36.635
UNII4	5835	167	44.95	36.596
	5875	175	44.81	36.624

Mode : 802.11ac(VHT40)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5190	38	44.96	36.619
	5230	46	44.83	36.632
UNII2A	5270	54	45.87	36.573
	5310	62	44.78	36.595
UNII2C	5510	102	44.43	36.590
	5550	110	44.77	36.676
	5710	142	44.30	36.598
UNII3	5755	151	44.89	36.651
	5795	159	45.10	36.604
UNII4	5835	167	44.31	36.607
	5875	175	44.89	36.593

Mode : 802.11ac(VHT80)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5210	42	85.79	76.218
UNII2A	5290	58	85.19	76.157
UNII2C	5530	106	85.44	76.233
	5610	122	84.90	76.016
	5690	138	86.49	76.160
UNII3	5775	155	85.34	76.224
UNII4	5855	171	84.41	75.990

Mode : 802.11ac(VHT160)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII 1-2A	5250	50	167.1	155.25
UNII 2C	5570	114	167.2	155.35
UNII 3-4	5815	163	167.3	155.44

[Ant.2]

Mode : 802.11a				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	23.00	16.802
	5200	40	24.03	16.865
	5240	48	25.93	16.876
UNII2A	5260	52	26.20	16.871
	5300	60	27.38	16.913
	5320	64	24.00	16.839
UNII2C	5500	100	25.24	16.833
	5580	116	28.47	16.943
	5720	144	23.53	16.798
UNII3	5745	149	26.06	16.855
	5785	157	24.04	16.859
	5825	165	23.47	16.818
UNII4	5845	169	24.68	16.799
	5865	173	23.30	16.804
	5885	177	23.08	16.822

Mode : 802.11n(HT20)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	24.44	17.988
	5200	40	29.07	18.044
	5240	48	29.58	18.099
UNII2A	5260	52	28.57	18.116
	5300	60	28.33	18.128
	5320	64	26.05	18.038
UNII2C	5500	100	27.78	18.029
	5580	116	30.04	18.162
	5720	144	29.36	18.071
UNII3	5745	149	29.23	18.067
	5785	157	27.02	18.028
	5825	165	26.09	18.028
UNII4	5845	169	25.09	18.005
	5865	173	24.19	17.992
	5885	177	23.92	17.974

Mode : 802.11ac(VHT20)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	24.92	17.956
	5200	40	26.50	18.059
	5240	48	27.92	18.121
UNII2A	5260	52	27.50	18.100
	5300	60	27.79	18.087
	5320	64	26.53	17.990
UNII2C	5500	100	25.93	18.057
	5580	116	30.06	18.105
	5720	144	26.82	18.038
UNII3	5745	149	28.08	18.091
	5785	157	27.91	18.048
	5825	165	25.44	17.995
UNII4	5845	169	25.89	18.034
	5865	173	24.81	17.973
	5885	177	26.78	17.990

Mode : 802.11n(HT40)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5190	38	45.10	36.614
	5230	46	44.63	36.629
UNII2A	5270	54	45.71	36.603
	5310	62	45.00	36.568
UNII2C	5510	102	45.56	36.632
	5550	110	44.54	36.579
	5710	142	44.77	36.579
UNII3	5755	151	44.70	36.638
	5795	159	44.53	36.634
UNII4	5835	167	45.22	36.591
	5875	175	44.30	36.588

Mode : 802.11ac(VHT40)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5190	38	44.89	36.669
	5230	46	45.19	36.663
UNII2A	5270	54	44.91	36.588
	5310	62	45.15	36.621
UNII2C	5510	102	44.71	36.625
	5550	110	44.48	36.575
	5710	142	43.83	36.583
UNII3	5755	151	45.34	36.633
	5795	159	45.24	36.612
UNII4	5835	167	43.80	36.584
	5875	175	44.19	36.589

Mode : 802.11ac(VHT80)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5210	42	86.79	76.148
UNII2A	5290	58	86.30	76.166
UNII2C	5530	106	85.56	76.067
	5610	122	85.07	76.123
	5690	138	85.92	76.159
UNII3	5775	155	85.54	76.116
UNII4	5855	171	85.30	76.064

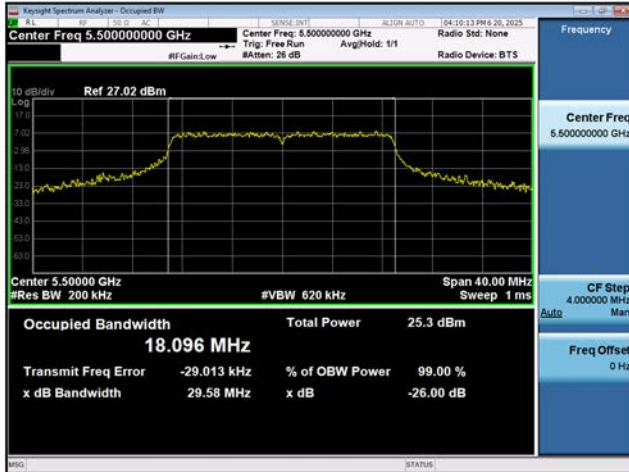
Mode : 802.11ac(VHT160)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII 1-2A	5250	50	165.5	154.76
UNII 2C	5570	114	165.1	154.95
UNII 3-4	5815	163	164.9	154.36

[ANT. 1]

Test Plots

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

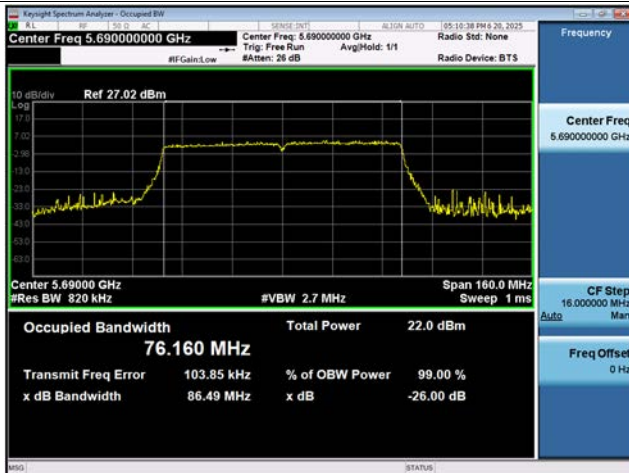
Bandwidth 20M, 802.11ac(VHT20) Ch.100



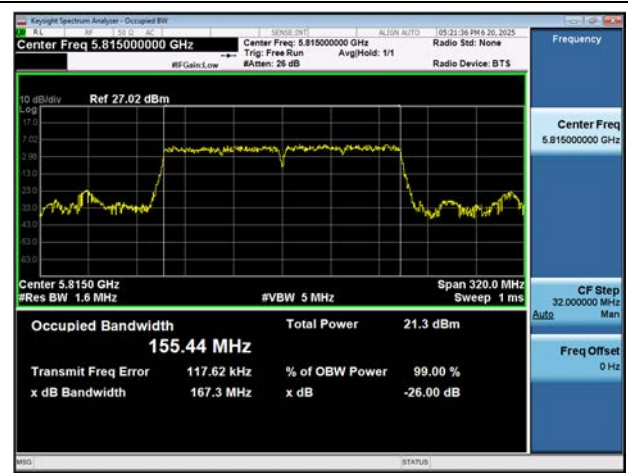
Bandwidth 40M, 802.11ac(VHT40) Ch.54



Bandwidth 80M, 802.11ac(VHT80) Ch.138



Bandwidth 160M, 802.11ac(VHT160) Ch.163



[ANT. 2]

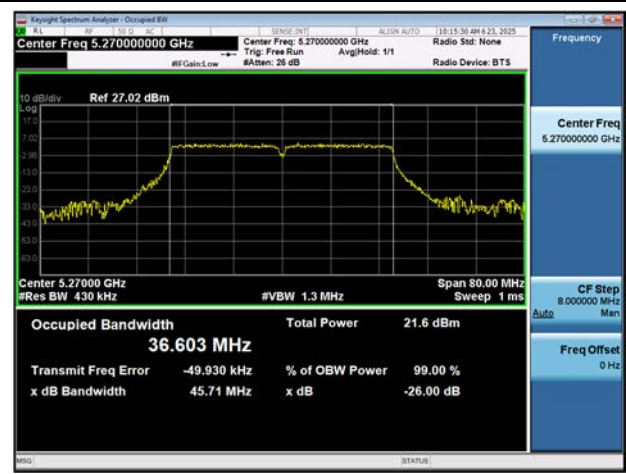
Test Plots

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

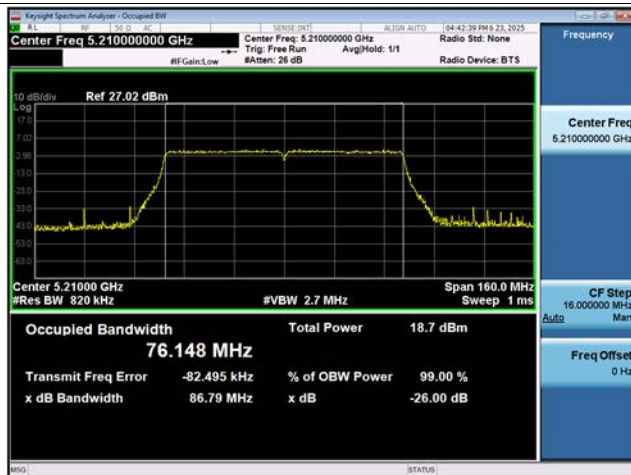
Bandwidth 20M, 802.11ac(VHT20) Ch.116



Bandwidth 40M, 802.11n(HT40) Ch.54



Bandwidth 80M, 802.11ac(VHT80) Ch.42



Bandwidth 160M, 802.11ac(VHT160) Ch.50



10.3 6 dB BANDWIDTH

[Ant.1]

Mode : 802.11a				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	16.46	> 0.5
	5785	157	16.44	> 0.5
	5825	165	16.42	> 0.5
UNII4	5845	169	16.43	> 0.5
	5865	173	16.45	> 0.5
	5885	177	16.43	> 0.5
Mode : 802.11n(HT20)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	17.67	> 0.5
	5785	157	17.67	> 0.5
	5825	165	17.67	> 0.5
UNII4	5845	169	17.68	> 0.5
	5865	173	17.66	> 0.5
	5885	177	17.67	> 0.5
Mode : 802.11ac(VHT20)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	17.66	> 0.5
	5785	157	17.66	> 0.5
	5825	165	17.65	> 0.5
UNII4	5845	169	17.67	> 0.5
	5865	173	17.66	> 0.5
	5885	177	17.67	> 0.5
Mode : 802.11n(HT40)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5755	151	36.44	> 0.5
	5795	159	36.42	> 0.5
UNII4	5835	167	36.42	> 0.5
	5875	175	36.44	> 0.5
Mode : 802.11ac(VHT40)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5755	151	36.43	> 0.5
	5795	159	36.43	> 0.5
UNII4	5835	167	36.44	> 0.5
	5875	175	36.46	> 0.5

Mode : 802.11ac(VHT80)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5775	155	76.36	> 0.5
UNII4	5855	171	76.36	> 0.5
Mode : 802.11ac(VHT160)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3-4	5815	163	156.2	> 0.5

[Ant.2]

Mode : 802.11a				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	16.43	> 0.5
	5785	157	16.41	> 0.5
	5825	165	16.42	> 0.5
UNII4	5845	169	16.41	> 0.5
	5865	173	16.42	> 0.5
	5885	177	16.44	> 0.5

Mode : 802.11n(HT20)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	17.65	> 0.5
	5785	157	17.66	> 0.5
	5825	165	17.67	> 0.5
UNII4	5845	169	17.69	> 0.5
	5865	173	17.67	> 0.5
	5885	177	17.66	> 0.5

Mode : 802.11ac(VHT20)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	17.66	> 0.5
	5785	157	17.68	> 0.5
	5825	165	17.68	> 0.5
UNII4	5845	169	17.68	> 0.5
	5865	173	17.68	> 0.5
	5885	177	17.68	> 0.5

Mode : 802.11n(HT40)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5755	151	36.42	> 0.5
	5795	159	36.43	> 0.5
UNII4	5835	167	36.41	> 0.5
	5875	175	36.44	> 0.5

Mode : 802.11ac(VHT40)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5755	151	36.39	> 0.5
	5795	159	36.43	> 0.5
UNII4	5835	167	36.41	> 0.5
	5875	175	36.44	> 0.5

Mode : 802.11ac(VHT80)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5775	155	76.00	> 0.5
UNII4	5855	171	76.25	> 0.5

Mode : 802.11ac(VHT160)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3-4	5815	163	155.6	> 0.5

[ANT. 1]

Test Plots

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

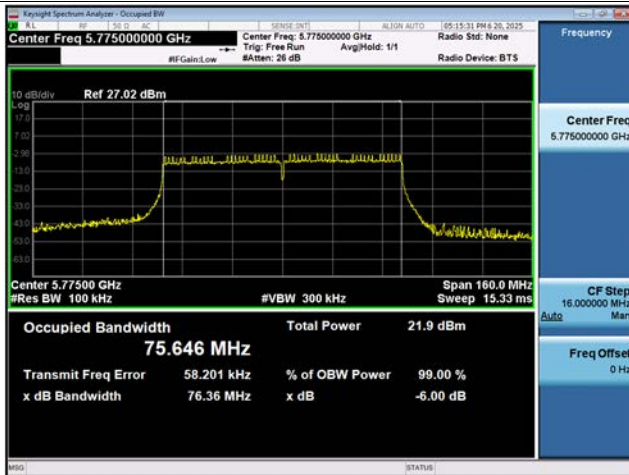
Bandwidth 20M, 802.11a Ch.165



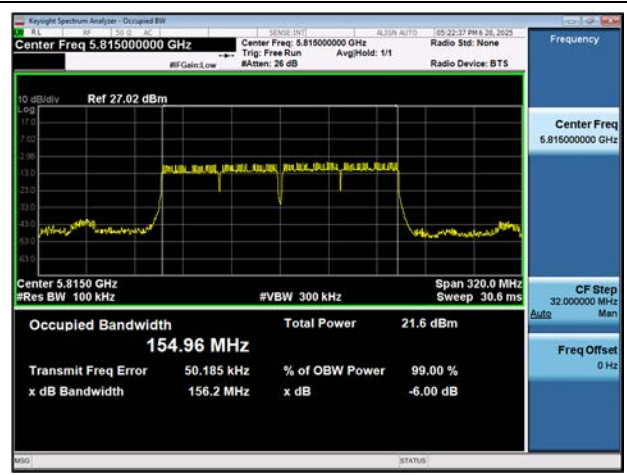
Bandwidth 40M, 802.11n(HT40) Ch.167



Bandwidth 80M, 802.11ac(VHT80) Ch.155



Bandwidth 160M, 802.11ac(VHT160) Ch.163



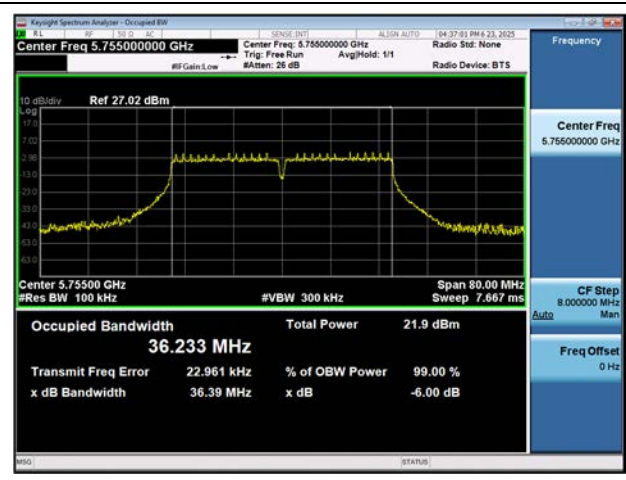
[ANT. 2]

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

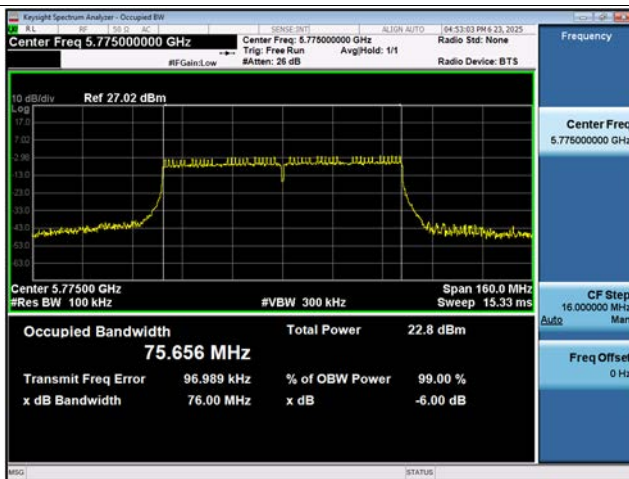
Bandwidth 20M, 802.11a Ch.157



Bandwidth 40M, 802.11ac(VHT40) Ch.151



Bandwidth 80M, 802.11ac(VHT80) Ch.155



Bandwidth 160M, 802.11ac(VHT160) Ch.163



10.4 OUTPUT POWER MEASUREMENT

Straddle channel data in the table below are for reporting purposes only.

Straddle channel data were added in section 10.7.3.

Limit

(UNII 1) : 23.98 dBm

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

(UNII 3) : 30.00 dBm

(UNII 4) : EIRP 30.0 dBm/MHz

(UNII 3&4) : Worst limit 30.00 dBm → UNII 4 Band Antenna Gain Negative

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

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

MIMO_CDD(Ant.1+ Ant.2) Total Power [dBm] = Ant.1 Total Power [dBm] + Ant.2 Total Power [dBm]

Max EIRP = MIMO Total Power [dBm] + Directional Gain [dBi]

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Average Power [dBm]			Ant.1 Gain [dBi]	Ant.2 Gain [dBi]	Directional Gain [dBi]	Max EIRP [dBm]	Limit [dBm]
				ANT1	ANT2	MIMO					
5180	36	6M	a	14.63	14.36	17.50	-	-	-	-	23.98
5200	40	6M	a	14.33	14.30	17.32	-	-	-	-	23.98
5240	48	6M	a	14.81	15.10	17.96	-	-	-	-	23.98
5260	52	6M	a	14.73	15.48	18.13	-	-	-	-	23.98
5300	60	6M	a	15.39	15.90	18.66	-	-	-	-	23.98
5320	64	6M	a	14.98	15.63	18.32	-	-	-	-	23.98
5500	100	6M	a	17.51	18.51	21.05	-	-	-	-	23.98
5580	116	6M	a	17.18	18.54	20.92	-	-	-	-	23.98
5720	144	6M	a	17.95	17.71	20.84	-	-	-	-	23.98
5745	149	6M	a	17.72	18.30	21.03	-	-	-	-	30.00
5785	157	6M	a	17.50	18.43	21.00	-	-	-	-	30.00
5825	165	6M	a	17.79	18.75	21.30	-	-	-	-	30.00
5845	169	6M	a	17.83	18.76	21.33	-7.09	-8.74	-4.87	16.46	30 EIRP
5865	173	6M	a	17.78	18.74	21.29	-7.09	-8.74	-4.87	16.43	30 EIRP
5885	177	6M	a	17.70	18.47	21.11	-7.09	-8.74	-4.87	16.25	30 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Average Power [dBm]			Ant.1 Gain [dBi]	Ant.2 Gain [dBi]	Directional Gain [dBi]	Max EIRP [dBm]	Limit [dBm]
				ANT1	ANT2	MIMO					
5180	36	MCS0	n20	14.95	14.01	17.51	-	-	-	-	23.98
5200	40	MCS0	n20	14.42	14.48	17.46	-	-	-	-	23.98
5240	48	MCS0	n20	14.80	15.30	18.06	-	-	-	-	23.98
5260	52	MCS0	n20	14.84	15.60	18.24	-	-	-	-	23.98
5300	60	MCS0	n20	15.49	15.90	18.71	-	-	-	-	23.98
5320	64	MCS0	n20	15.23	15.57	18.41	-	-	-	-	23.98
5500	100	MCS0	n20	17.56	18.57	21.10	-	-	-	-	23.98
5580	116	MCS0	n20	17.28	18.85	21.14	-	-	-	-	23.98
5720	144	MCS0	n20	18.11	17.73	20.93	-	-	-	-	23.98
5745	149	MCS0	n20	17.61	18.57	21.12	-	-	-	-	30.00
5785	157	MCS0	n20	17.28	18.63	21.01	-	-	-	-	30.00
5825	165	MCS0	n20	17.82	18.84	21.37	-	-	-	-	30.00
5845	169	MCS0	n20	17.92	18.76	21.37	-7.09	-8.74	-4.87	16.50	30 EIRP
5865	173	MCS0	n20	17.77	18.71	21.27	-7.09	-8.74	-4.87	16.41	30 EIRP
5885	177	MCS0	n20	17.73	18.49	21.13	-7.09	-8.74	-4.87	16.27	30 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Average Power [dBm]			Ant.1 Gain	Ant.2 Gain	Directional Gain	Max EIRP	Limit
				ANT1	ANT2	MIMO	[dBi]	[dBi]	[dBi]	[dBm]	[dBm]
5180	36	MCS0	ac20	14.86	14.00	17.47	-	-	-	-	23.98
5200	40	MCS0	ac20	14.21	14.42	17.33	-	-	-	-	23.98
5240	48	MCS0	ac20	14.67	15.03	17.87	-	-	-	-	23.98
5260	52	MCS0	ac20	14.69	15.35	18.05	-	-	-	-	23.98
5300	60	MCS0	ac20	15.32	15.88	18.62	-	-	-	-	23.98
5320	64	MCS0	ac20	15.00	15.40	18.22	-	-	-	-	23.98
5500	100	MCS0	ac20	17.57	18.72	21.20	-	-	-	-	23.98
5580	116	MCS0	ac20	17.29	18.81	21.13	-	-	-	-	23.98
5720	144	MCS0	ac20	18.02	18.00	21.03	-	-	-	-	23.98
5745	149	MCS0	ac20	17.94	18.58	21.29	-	-	-	-	30.00
5785	157	MCS0	ac20	17.39	18.64	21.07	-	-	-	-	30.00
5825	165	MCS0	ac20	18.00	18.88	21.48	-	-	-	-	30.00
5845	169	MCS0	ac20	18.16	18.86	21.54	-7.09	-8.74	-4.87	16.67	30 EIRP
5865	173	MCS0	ac20	17.99	18.83	21.45	-7.09	-8.74	-4.87	16.58	30 EIRP
5885	177	MCS0	ac20	17.95	18.54	21.27	-7.09	-8.74	-4.87	16.40	30 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Average Power [dBm]			Ant.1 Gain	Ant.2 Gain	Directional Gain	Max EIRP	Limit
				ANT1	ANT2	MIMO	[dBi]	[dBi]	[dBi]	[dBm]	[dBm]
5190	38	MCS0	n40	13.39	12.49	15.97	-	-	-	-	23.98
5230	46	MCS0	n40	13.99	13.60	16.81	-	-	-	-	23.98
5270	54	MCS0	n40	13.38	14.09	16.76	-	-	-	-	23.98
5310	62	MCS0	n40	14.00	14.02	17.02	-	-	-	-	23.98
5510	102	MCS0	n40	13.36	14.41	16.92	-	-	-	-	23.98
5550	110	MCS0	n40	13.02	14.02	16.56	-	-	-	-	23.98
5710	142	MCS0	n40	14.18	13.80	17.00	-	-	-	-	23.98
5755	151	MCS0	n40	13.92	14.50	17.23	-	-	-	-	30.00
5795	159	MCS0	n40	13.49	14.88	17.25	-	-	-	-	30.00
5835	167	MCS0	n40	13.86	14.86	17.40	-7.09	-8.74	-4.87	12.53	30 EIRP
5875	175	MCS0	n40	13.84	14.42	17.15	-7.09	-8.74	-4.87	12.28	30 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Average Power [dBm]			Ant.1 Gain	Ant.2 Gain	Directional Gain	Max EIRP	Limit
				ANT1	ANT2	MIMO	[dBi]	[dBi]	[dBi]	[dBm]	[dBm]
5190	38	MCS0	ac40	13.34	12.47	15.93	-	-	-	-	23.98
5230	46	MCS0	ac40	13.83	13.84	16.84	-	-	-	-	23.98
5270	54	MCS0	ac40	13.49	14.23	16.88	-	-	-	-	23.98
5310	62	MCS0	ac40	14.03	14.10	17.07	-	-	-	-	23.98
5510	102	MCS0	ac40	13.43	14.52	17.01	-	-	-	-	23.98
5550	110	MCS0	ac40	13.15	14.16	16.69	-	-	-	-	23.98
5710	142	MCS0	ac40	14.22	13.66	16.95	-	-	-	-	23.98
5755	151	MCS0	ac40	13.96	14.74	17.37	-	-	-	-	30.00
5795	159	MCS0	ac40	13.50	14.89	17.26	-	-	-	-	30.00
5835	167	MCS0	ac40	13.92	14.87	17.43	-7.09	-8.74	-4.87	12.57	30 EIRP
5875	175	MCS0	ac40	13.88	14.60	17.26	-7.09	-8.74	-4.87	12.39	30 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Average Power [dBm]			Ant.1 Gain	Ant.2 Gain	Directional Gain	Max EIRP	Limit
				ANT1	ANT2	MIMO	[dBi]	[dBi]	[dBi]	[dBm]	[dBm]
5210	42	MCS0	ac80	12.54	11.31	14.98	-	-	-	-	23.98
5290	58	MCS0	ac80	14.27	14.72	17.51	-	-	-	-	23.98
5530	106	MCS0	ac80	13.72	14.31	17.03	-	-	-	-	23.98
5610	122	MCS0	ac80	13.86	14.89	17.41	-	-	-	-	23.98
5690	138	MCS0	ac80	13.75	14.04	16.91	-	-	-	-	23.98
5775	155	MCS0	ac80	13.23	14.88	17.14	-	-	-	-	30.00
5855	171	MCS0	ac80	13.55	14.79	17.22	-7.09	-8.74	-4.87	12.36	30 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Average Power [dBm]			Ant.1 Gain	Ant.2 Gain	Directional Gain	Max EIRP	Limit
				ANT1	ANT2	MIMO	[dBi]	[dBi]	[dBi]	[dBm]	[dBm]
5250	50	MCS0	ac160	10.48	10.52	13.51	-	-	-	-	23.98
5570	114	MCS0	ac160	12.35	13.49	15.97	-	-	-	-	23.98
5815	163	MCS0	ac160	12.37	13.73	16.11	-7.09	-8.74	-4.87	11.25	30 EIRP

10.5 POWER SPECTRAL DENSITY

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

Ant Total PSD [dBm] = Measured PSD [dBm/MHz] + Duty Cycle Factor [dB]

MIMO_CDD(Ant.1+ Ant.2) Total PSD [dBm/MHz] = Ant.1 Total PSD [dBm/MHz] + Ant.2 Total PSD [dB]

Max EIRP = MIMO Total PSD [dBm/MHz] + Directional Gain [dBi]

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Power Spectral Density [dBm/MHz]			Ant.1 Gain [dBi]	Ant.2 Gain [dBi]	Directional Gain [dBi]	Max EIRP [dBm/MHz]	Limit [dBm/MHz]
				ANT1	ANT2	MIMO					
5180	36	6M	a	3.158	2.097	5.670	-	-	-	-	11.00
5200	40	6M	a	2.938	2.652	5.808	-	-	-	-	11.00
5240	48	6M	a	3.161	3.629	6.412	-	-	-	-	11.00
5260	52	6M	a	2.986	3.736	6.388	-	-	-	-	11.00
5300	60	6M	a	3.521	4.584	7.095	-	-	-	-	11.00
5320	64	6M	a	3.364	3.842	6.620	-	-	-	-	11.00
5500	100	6M	a	6.050	7.011	9.568	-	-	-	-	11.00
5580	116	6M	a	6.033	7.305	9.726	-	-	-	-	11.00
5720	144	6M	a	6.538	6.316	9.439	-	-	-	-	11.00
5745	149	6M	a	3.059	4.193	6.673	-	-	-	-	30 dBm/500kHz
5785	157	6M	a	2.976	4.572	6.857	-	-	-	-	30 dBm/500kHz
5825	165	6M	a	3.233	4.650	7.010	-	-	-	-	30 dBm/500kHz
5845	169	6M	a	6.314	7.459	9.935	-7.09	-8.74	-4.87	5.069	14 EIRP
5865	173	6M	a	6.050	7.094	9.614	-7.09	-8.74	-4.87	4.748	14 EIRP
5885	177	6M	a	6.002	6.728	9.391	-7.09	-8.74	-4.87	4.525	14 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Power Spectral Density [dBm/MHz]			Ant.1 Gain [dBi]	Ant.2 Gain [dBi]	Directional Gain [dBi]	Max EIRP [dBm/MHz]	Limit [dBm/MHz]
				ANT1	ANT2	MIMO					
5180	36	MCS0	n20	2.722	2.001	5.386	-	-	-	-	11.00
5200	40	MCS0	n20	2.493	2.458	5.485	-	-	-	-	11.00
5240	48	MCS0	n20	2.961	3.152	6.067	-	-	-	-	11.00
5260	52	MCS0	n20	2.779	3.476	6.151	-	-	-	-	11.00
5300	60	MCS0	n20	3.313	4.276	6.831	-	-	-	-	11.00
5320	64	MCS0	n20	3.132	3.507	6.333	-	-	-	-	11.00
5500	100	MCS0	n20	6.351	6.856	9.621	-	-	-	-	11.00
5580	116	MCS0	n20	5.857	6.964	9.455	-	-	-	-	11.00
5720	144	MCS0	n20	6.357	6.341	9.359	-	-	-	-	11.00
5745	149	MCS0	n20	2.878	4.070	6.525	-	-	-	-	30 dBm/500kHz
5785	157	MCS0	n20	2.669	4.259	6.546	-	-	-	-	30 dBm/500kHz
5825	165	MCS0	n20	3.054	4.548	6.875	-	-	-	-	30 dBm/500kHz
5845	169	MCS0	n20	5.915	7.409	9.736	-7.09	-8.74	-4.87	4.870	14 EIRP
5865	173	MCS0	n20	5.828	7.041	9.487	-7.09	-8.74	-4.87	4.621	14 EIRP
5885	177	MCS0	n20	5.826	6.410	9.138	-7.09	-8.74	-4.87	4.272	14 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Power Spectral Density [dBm/MHz]			Ant.1 Gain [dBi]	Ant.2 Gain [dBi]	Directional Gain [dBi]	Max EIRP [dBm/MHz]	Limit [dBm/MHz]
				ANT1	ANT2	MIMO					
5180	36	MCS0	ac20	2.687	2.143	5.434	-	-	-	-	11.00
5200	40	MCS0	ac20	2.838	2.677	5.768	-	-	-	-	11.00
5240	48	MCS0	ac20	2.857	3.358	6.125	-	-	-	-	11.00
5260	52	MCS0	ac20	2.799	3.723	6.296	-	-	-	-	11.00
5300	60	MCS0	ac20	3.360	4.233	6.828	-	-	-	-	11.00
5320	64	MCS0	ac20	3.148	3.727	6.457	-	-	-	-	11.00
5500	100	MCS0	ac20	6.511	6.796	9.666	-	-	-	-	11.00
5580	116	MCS0	ac20	6.021	7.008	9.553	-	-	-	-	11.00
5720	144	MCS0	ac20	6.638	6.320	9.492	-	-	-	-	11.00
5745	149	MCS0	ac20	3.143	4.094	6.655	-	-	-	-	30 dBm/500kHz
5785	157	MCS0	ac20	2.763	4.412	6.675	-	-	-	-	30 dBm/500kHz
5825	165	MCS0	ac20	3.245	4.567	6.966	-	-	-	-	30 dBm/500kHz
5845	169	MCS0	ac20	6.043	7.436	9.805	-7.09	-8.74	-4.87	4.940	14 EIRP
5865	173	MCS0	ac20	5.885	6.884	9.423	-7.09	-8.74	-4.87	4.558	14 EIRP
5885	177	MCS0	ac20	5.894	6.447	9.189	-7.09	-8.74	-4.87	4.324	14 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Power Spectral Density [dBm/MHz]			Ant.1 Gain [dBi]	Ant.2 Gain [dBi]	Directional Gain [dBi]	Max EIRP [dBm/MHz]	Limit [dBm/MHz]
				ANT1	ANT2	MIMO					
5190	38	MCS0	n40	-1.175	-1.940	1.469	-	-	-	-	11.00
5230	46	MCS0	n40	-1.062	-0.746	2.109	-	-	-	-	11.00
5270	54	MCS0	n40	-1.097	-0.265	2.349	-	-	-	-	11.00
5310	62	MCS0	n40	-0.537	-0.425	2.529	-	-	-	-	11.00
5510	102	MCS0	n40	-0.687	-0.303	2.519	-	-	-	-	11.00
5550	110	MCS0	n40	-1.376	-0.502	2.093	-	-	-	-	11.00
5710	142	MCS0	n40	0.147	-0.760	2.727	-	-	-	-	11.00
5755	151	MCS0	n40	-3.359	-2.812	-0.067	-	-	-	-	30 dBm/500kHz
5795	159	MCS0	n40	-3.649	-2.093	0.208	-	-	-	-	30 dBm/500kHz
5835	167	MCS0	n40	-0.406	0.419	3.036	-7.09	-8.74	-4.87	-1.829	14 EIRP
5875	175	MCS0	n40	-0.979	-0.700	2.173	-7.09	-8.74	-4.87	-2.693	14 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Power Spectral Density [dBm/MHz]			Ant.1 Gain [dBi]	Ant.2 Gain [dBi]	Directional Gain [dBi]	Max EIRP [dBm/MHz]	Limit [dBm/MHz]
				ANT1	ANT2	MIMO					
5190	38	MCS0	ac40	-1.153	-1.926	1.488	-	-	-	-	11.00
5230	46	MCS0	ac40	-1.158	-0.689	2.094	-	-	-	-	11.00
5270	54	MCS0	ac40	-0.852	-0.482	2.348	-	-	-	-	11.00
5310	62	MCS0	ac40	-0.614	-0.812	2.299	-	-	-	-	11.00
5510	102	MCS0	ac40	-0.994	-0.446	2.299	-	-	-	-	11.00
5550	110	MCS0	ac40	-1.337	-0.824	1.938	-	-	-	-	11.00
5710	142	MCS0	ac40	-0.066	-1.157	2.433	-	-	-	-	11.00
5755	151	MCS0	ac40	-3.542	-2.904	-0.201	-	-	-	-	30 dBm/500kHz
5795	159	MCS0	ac40	-3.703	-2.389	0.014	-	-	-	-	30 dBm/500kHz
5835	167	MCS0	ac40	-0.360	0.139	2.907	-7.09	-8.74	-4.87	-1.958	14 EIRP
5875	175	MCS0	ac40	-0.707	-0.704	2.305	-7.09	-8.74	-4.87	-2.560	14 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Power Spectral Density [dBm/MHz]			Ant.1 Gain	Ant.2 Gain	Directional Gain	Max EIRP	Limit
				ANT1	ANT2	MIMO	[dBi]	[dBi]	[dBi]	[dBm/MHz]	[dBm/MHz]
5210	42	MCS0	ac80	-5.271	-6.611	-2.879	-	-	-	-	11.00
5290	58	MCS0	ac80	-3.251	-3.108	-0.169	-	-	-	-	11.00
5530	106	MCS0	ac80	-3.303	-3.443	-0.362	-	-	-	-	11.00
5610	122	MCS0	ac80	-3.086	-3.077	-0.071	-	-	-	-	11.00
5690	138	MCS0	ac80	-3.010	-3.826	-0.389	-	-	-	-	11.00
5775	155	MCS0	ac80	-6.575	-5.318	-2.891	-	-	-	-	30 dBm/500kHz
5855	171	MCS0	ac80	-3.932	-3.329	-0.610	-7.09	-8.74	-4.87	-5.475	14 EIRP

Freq. [MHz]	CH.	Datarate	Mode (802.11)	Total Power Spectral Density [dBm/MHz]			Ant.1 Gain	Ant.2 Gain	Directional Gain	Max EIRP	Limit
				ANT1	ANT2	MIMO	[dBi]	[dBi]	[dBi]	[dBm/MHz]	[dBm/MHz]
5250	50	MCS0	ac160	-9.200	-10.002	-6.573	-	-	-	-	11.00
5570	114	MCS0	ac160	-6.592	-6.361	-3.465	-	-	-	-	11.00
5815	163	MCS0	ac160	-7.638	-6.478	-4.010	-7.09	-8.74	-4.87	-8.875	14 EIRP

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

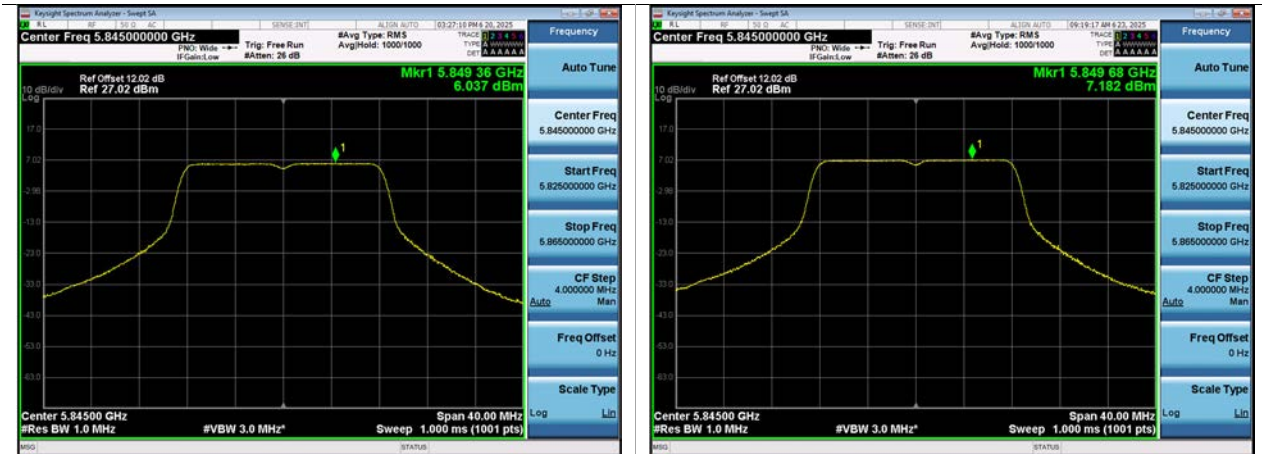
Test Plots

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

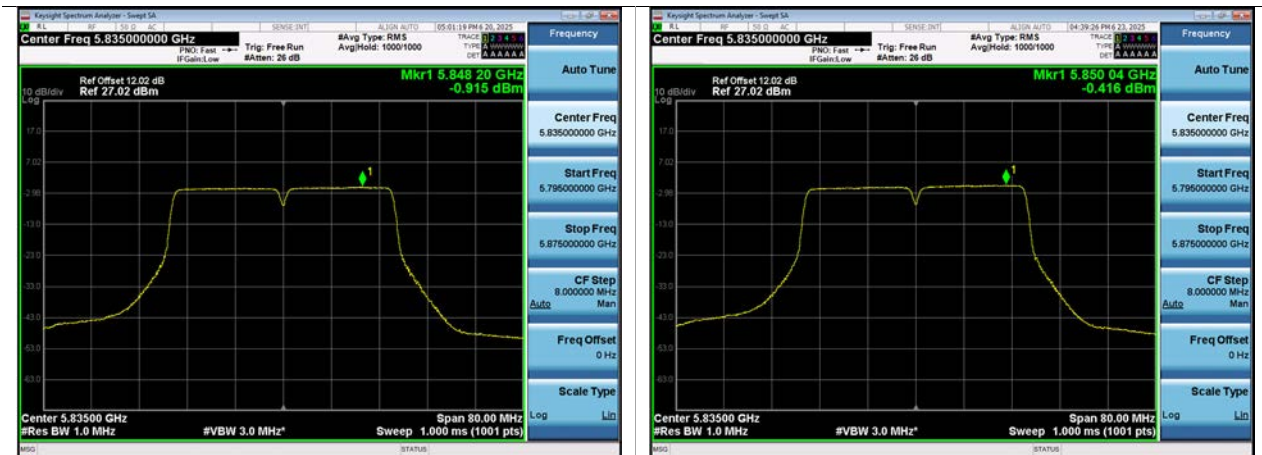
ANT. 1

ANT. 2

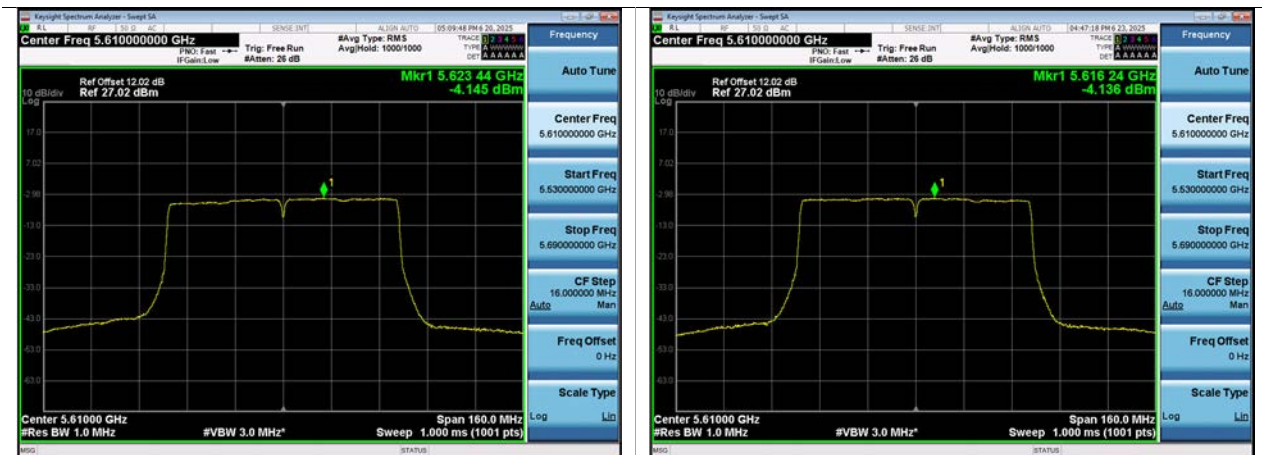
Bandwidth 20M, 802.11a(Ch. 169)



Bandwidth 40M, 802.11ac(VHT40) (Ch. 167)



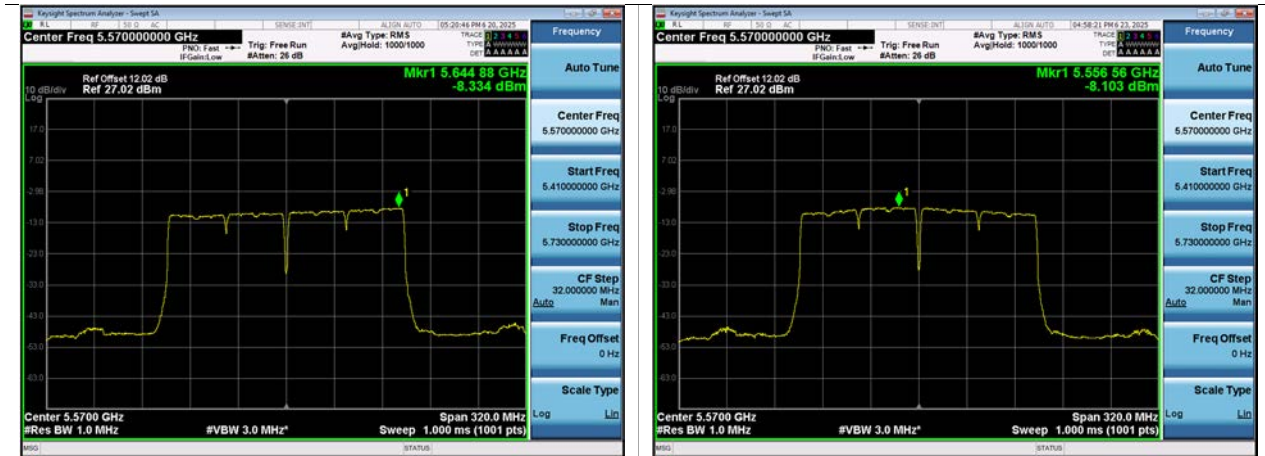
Bandwidth 80M, 802.11ac(VHT80) (Ch. 122)



ANT. 1

ANT. 2

Bandwidth 160M, 802.11ac(VHT160) (Ch. 114)



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.

10.6.1 802.11ac 160 MHz BW

[MIMO_CDD(Ant1+Ant2)]

REFERENCE VOLTAGE: 3.88 VDC

Startup after the EUT is energized

OPERATING BAND:			UNII Band 1 & 2A		UNII Band 2C		UNII Band 3 & 4	
OPERATING FREQUENCY:			5,250,000,000 Hz		5,570,000,000 Hz		5,815,000,000 Hz	
CHANNEL:			50		114		163	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100%	3.88	+20(Ref)	5250040.16	40.16	5570030.83	30.83	5815030.74	30.74
100%		-30	5250032.73	32.73	5570035.14	35.14	5815038.30	38.30
100%		-20	5250030.36	30.36	5570030.48	30.48	5815036.37	36.37
100%		-10	5250031.02	31.02	5570033.13	33.13	5815030.94	30.94
100%		0	5250040.64	40.64	5570043.98	43.98	5815049.30	49.30
100%		+10	5250040.16	40.16	5570043.03	43.03	5815048.04	48.04
100%		+30	5250047.28	47.28	5570044.39	44.39	5815041.26	41.26
100%		+40	5250051.36	51.36	5570050.44	50.44	5815053.83	53.83
100%		+50	5250057.13	57.13	5570058.12	58.12	5815056.52	56.52
High	4.45	+20	5250058.30	58.30	5570050.10	50.10	5815058.23	58.23
End Point	3.30	+20	5250053.39	53.39	5570050.33	50.33	5815053.26	53.26

2 minutes after the EUT is energized

OPERATING BAND:			UNII Band 1 & 2A		UNII Band 2C		UNII Band 3 & 4	
OPERATING FREQUENCY:			5,250,000,000 Hz		5,570,000,000 Hz		5,815,000,000 Hz	
CHANNEL:			50		114		163	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100%	3.88	+20(Ref)	5250035.71	35.71	5570037.57	37.57	5815035.41	35.41
100%		-30	5250035.48	35.48	5570032.18	32.18	5815031.73	31.73
100%		-20	5250039.11	39.11	5570039.46	39.46	5815036.20	36.20
100%		-10	5250038.96	38.96	5570038.32	38.32	5815035.61	35.61
100%		0	5250046.64	46.64	5570040.37	40.37	5815049.66	49.66
100%		+10	5250042.18	42.18	5570044.64	44.64	5815040.21	40.21
100%		+30	5250048.85	48.85	5570047.59	47.59	5815043.73	43.73
100%		+40	5250054.68	54.68	5570059.97	59.97	5815050.45	50.45
100%		+50	5250053.11	53.11	5570053.36	53.36	5815055.30	55.30
High	4.45	+20	5250056.92	56.92	5570055.91	55.91	5815051.03	51.03
End Point	3.30	+20	5250054.13	54.13	5570054.23	54.23	5815053.18	53.18

5 minutes after the EUT is energized

OPERATING BAND:			UNII Band 1 & 2A		UNII Band 2C		UNII Band 3 & 4	
OPERATING FREQUENCY:			5,250,000,000 Hz		5,570,000,000 Hz		5,815,000,000 Hz	
CHANNEL:			50		114		163	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100%	3.88	+20(Ref)	5250030.75	30.75	5570038.27	38.27	5815031.85	31.85
100%		-30	5250033.79	33.79	5570037.39	37.39	5815030.55	30.55
100%		-20	5250035.05	35.05	5570034.66	34.66	5815030.42	30.42
100%		-10	5250035.10	35.10	5570036.07	36.07	5815036.65	36.65
100%		0	5250047.39	47.39	5570045.74	45.74	5815044.26	44.26
100%		+10	5250049.03	49.03	5570049.18	49.18	5815040.60	40.60
100%		+30	5250046.30	46.30	5570048.52	48.52	5815044.05	44.05
100%		+40	5250056.72	56.72	5570053.83	53.83	5815050.40	50.40
100%		+50	5250056.04	56.04	5570050.45	50.45	5815057.46	57.46
High	4.45	+20	5250056.50	56.50	5570050.59	50.59	5815050.52	50.52
End Point	3.30	+20	5250059.02	59.02	5570052.28	52.28	5815055.78	55.78

10 minutes after the EUT is energized

OPERATING BAND:			UNII Band 1 & 2A		UNII Band 2C		UNII Band 3 & 4	
OPERATING FREQUENCY:			5,250,000,000 Hz		5,570,000,000 Hz		5,815,000,000 Hz	
CHANNEL:			50		114		163	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100%	3.88	+20(Ref)	5250038.87	38.87	5570038.32	38.32	5815030.66	30.66
100%		-30	5250036.92	36.92	5570030.87	30.87	5815039.72	39.72
100%		-20	5250032.00	32.00	5570033.81	33.81	5815034.80	34.80
100%		-10	5250033.52	33.52	5570037.84	37.84	5815030.95	30.95
100%		0	5250040.77	40.77	5570045.04	45.04	5815040.87	40.87
100%		+10	5250040.96	40.96	5570046.39	46.39	5815045.00	45.00
100%		+30	5250040.12	40.12	5570045.59	45.59	5815045.13	45.13
100%		+40	5250051.71	51.71	5570053.19	53.19	5815050.97	50.97
100%		+50	5250056.97	56.97	5570051.60	51.60	5815050.44	50.44
High	4.45	+20	5250058.83	58.83	5570056.26	56.26	5815057.48	57.48
End Point	3.30	+20	5250052.39	52.39	5570059.61	59.61	5815058.36	58.36

10.7 STRADDLE CHANNEL

Test Description	Note
26 dB Bandwidth	[UNII 2C] 26 dB Bandwidth = 5725 MHz - Measured Frequency[MHz] [UNII 3] 26 dB Bandwidth = Measured Frequency[MHz] -5725 MHz
6 dB Bandwidth	6 dB Bandwidth = Measured Frequency[MHz] – 5725 MHz - Limit : > 0.5 MHz
Output Power	- Limit(UNII2C) : 23.98 dBm or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.) - Limit(UNII 3) : 30.00 dBm - Total Power (dBm) = Measured Value (dBm) + Duty Cycle Factor (dB)
Power Spectral Density	- Limit(UNII 2C) : 11.0 dBm/MHz - Limit(UNII 3) : 30.0 dBm/500kHz - Total PSD (dBm/MHz) = Measured Value (dBm/MHz) + Duty Cycle Factor (dB)

[ANT. 1]

Mode	Band	Freq. [MHz]	CH.	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Limit [dBm]	Total PSD [dBm]	Limit [dBm/MHz]
802.11a	UNII2C	5720	144	17.16	-	17.09	23.35	6.795	11
802.11n(HT20)				19.80	-	17.02	23.97	6.528	11
802.11ac(VHT20)				19.76	-	17.16	23.96	6.681	11
802.11a	UNII3	5720	144	7.28	3.20	11.35	30.00	3.996	30 dBm/500kHz
802.11n(HT20)				8.56	3.84	11.75	30.00	3.668	30 dBm/500kHz
802.11ac(VHT20)				8.56	3.84	11.95	30.00	3.932	30 dBm/500kHz

Mode	Band	Freq. [MHz]	Channel	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Limit [dBm]	Total PSD [dBm]	Limit [dBm/MHz]
802.11n(HT40)	UNII2C	5710	142	37.48	-	13.59	23.98	-0.304	11
802.11ac(VHT40)				37.32	-	14.12	23.98	0.073	11
802.11n(HT40)	UNII3	5710	142	7.48	3.24	4.03	30.00	-3.439	30 dBm/500kHz
802.11ac(VHT40)				7.56	3.24	4.58	30.00	-2.992	30 dBm/500kHz

Mode	Band	Freq. [MHz]	Channel	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Limit [dBm]	Total PSD [dBm]	Limit [dBm/MHz]
802.11ac(VHT80)	UNII2C	5690	138	77.56	-	14.27	23.98	-2.682	11
802.11ac(VHT80)	UNII3	5690	138	8.68	3.24	1.57	30.00	-5.790	30 dBm/500kHz

[ANT. 2]

Mode	Band	Freq. [MHz]	CH.	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Limit [dBm]	Total PSD [dBm]	Limit [dBm/MHz]
802.11a	UNII2C	5720	144	16.44	-	16.66	23.16	6.372	11
802.11n(HT20)				19.52	-	16.92	23.90	6.372	11
802.11ac(VHT20)				19.80	-	16.96	23.97	6.431	11
802.11a	UNII3	5720	144	6.48	3.20	10.93	30.00	3.479	30 dBm/500kHz
802.11n(HT20)				7.68	3.84	11.74	30.00	3.647	30 dBm/500kHz
802.11ac(VHT20)				8.24	3.80	11.76	30.00	3.661	30 dBm/500kHz

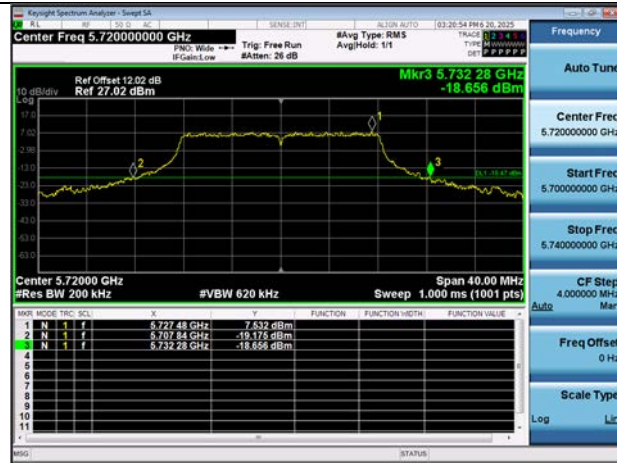
Mode	Band	Freq. [MHz]	Channel	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Limit [dBm]	Total PSD [dBm]	Limit [dBm/MHz]
802.11n(HT40)	UNII2C	5710	142	37.80	-	13.50	23.98	-0.616	11
802.11ac(VHT40)				37.56	-	12.94	23.98	-0.841	11
802.11n(HT40)	UNII3	5710	142	7.40	3.24	3.97	30.00	-3.324	30 dBm/500kHz
802.11ac(VHT40)				7.96	3.24	3.51	30.00	-3.797	30 dBm/500kHz

Mode	Band	Freq. [MHz]	Channel	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Limit [dBm]	Total PSD [dBm]	Limit [dBm/MHz]
802.11ac(VHT80)	UNII2C	5690	138	77.72	-	13.47	23.98	-3.605	11
802.11ac(VHT80)	UNII3	5690	138	8.36	3.24	0.79	30.00	-6.655	30 dBm/500kHz

□ Test Plots (26 dB Bandwidth)

[ANT. 1]

802.11a UNII Band



802.11n(HT20) UNII Band



802.11ac(VHT20) UNII Band



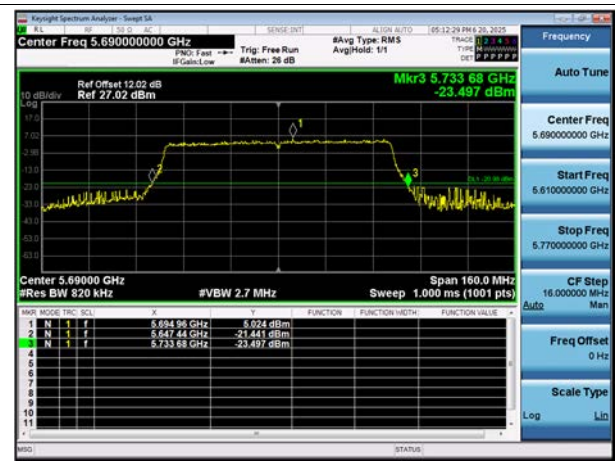
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802.11ac(VHT40) UNII Band

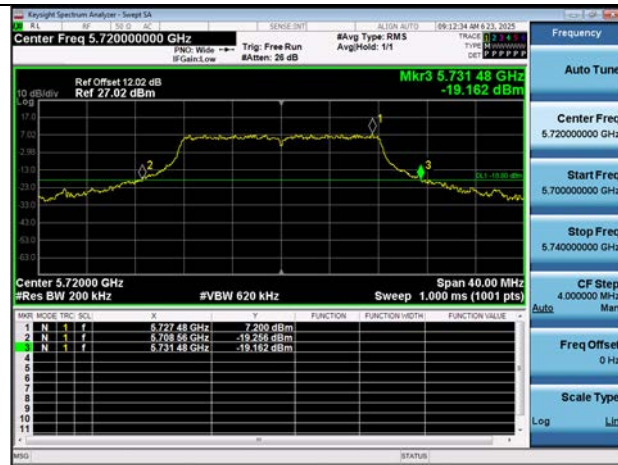


802.11ac(VHT80) UNII Band



[ANT. 2]

802.11a UNII Band



802.11n(HT20) UNII Band



802.11ac(VHT20) UNII Band



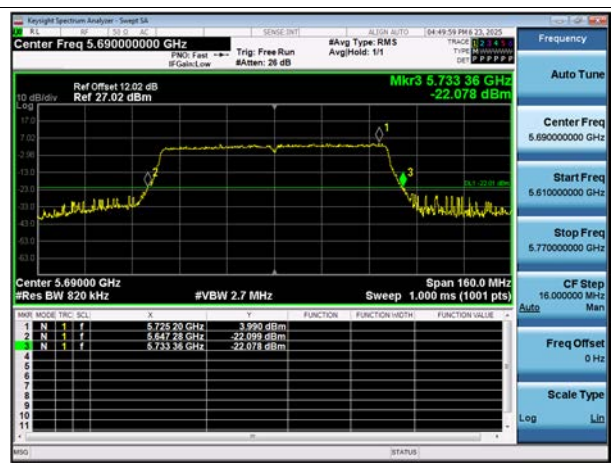
802.11n(HT40) UNII Band



802.11ac(VHT40) UNII Band

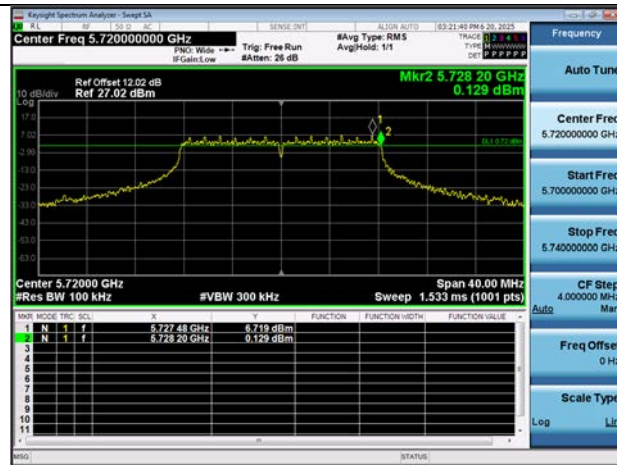


802.11ac(VHT80) UNII Band

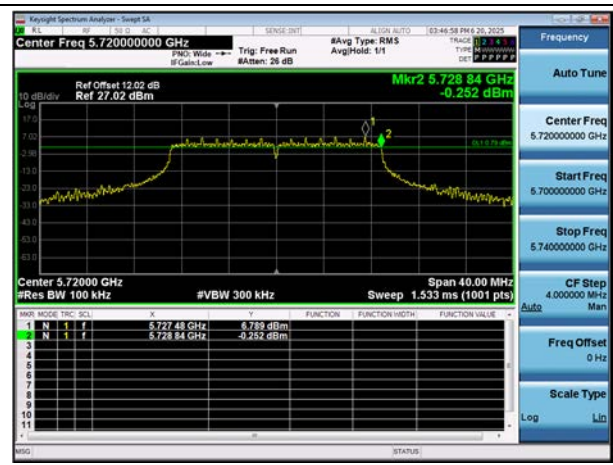


Test Plots(UNII 3 Band 6 dB Bandwidth)
[ANT. 1]

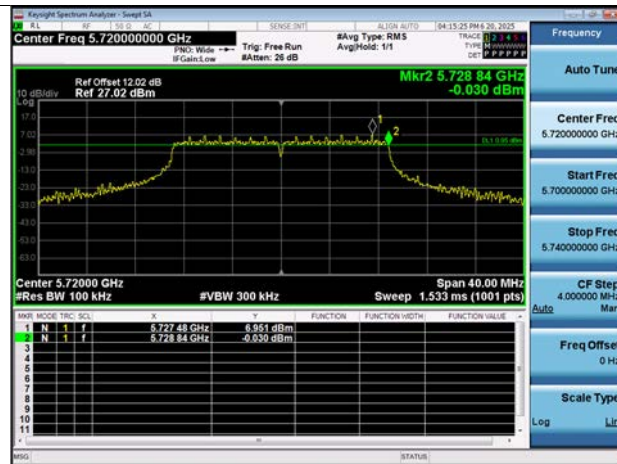
802.11a UNII Band



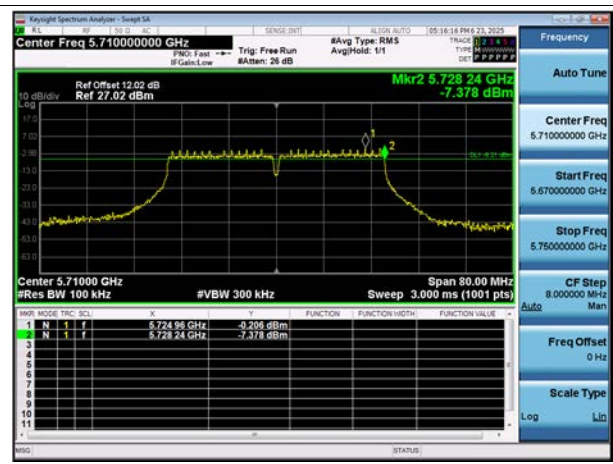
802.11n(HT20) UNII Band



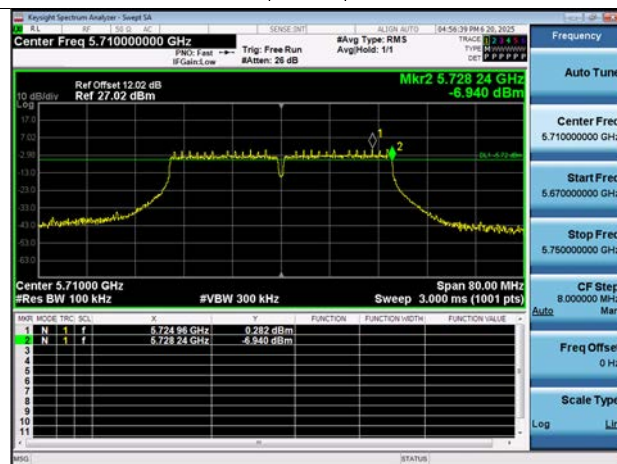
802.11ac(VHT20) UNII Band



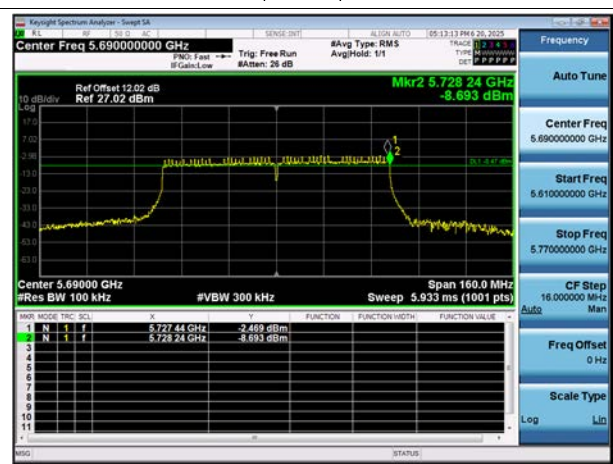
802.11n(HT40) UNII Band



802.11ac(VHT40) UNII Band



802.11ac(VHT80) UNII Band

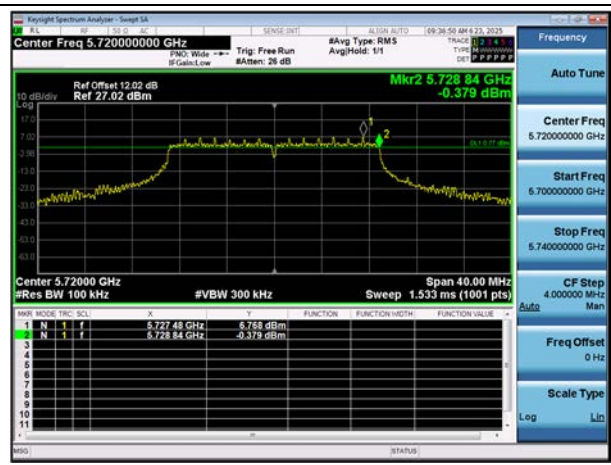


[ANT. 2]

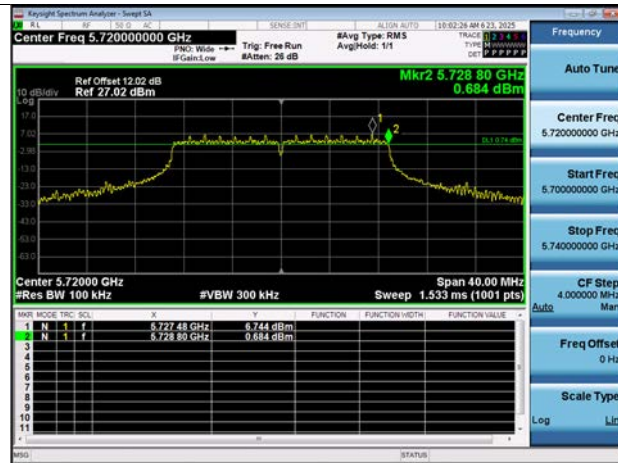
802.11a UNII Band



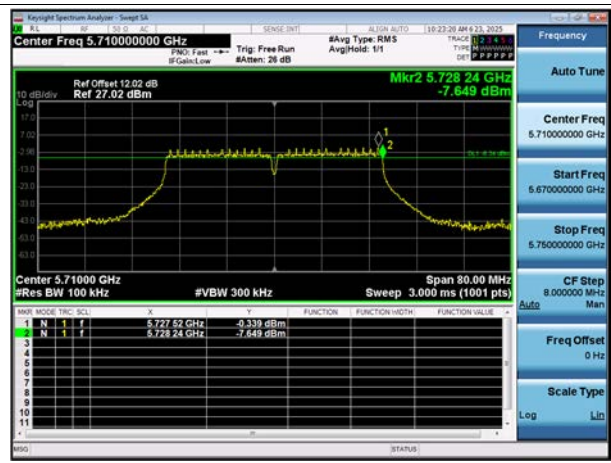
802.11n(HT20) UNII Band



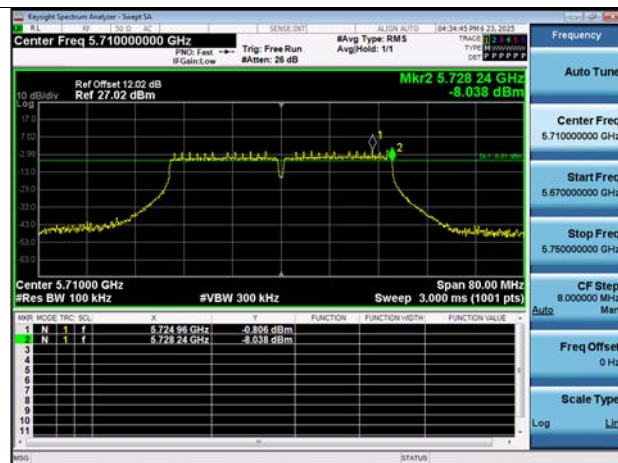
802.11ac(VHT20) UNII Band



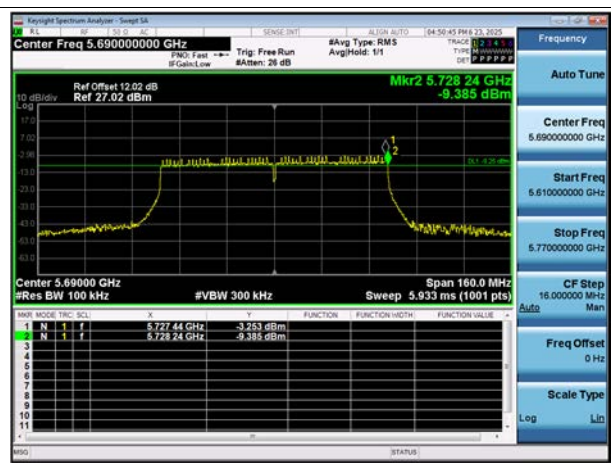
802.11n(HT40) UNII Band



802.11ac(VHT40) UNII Band

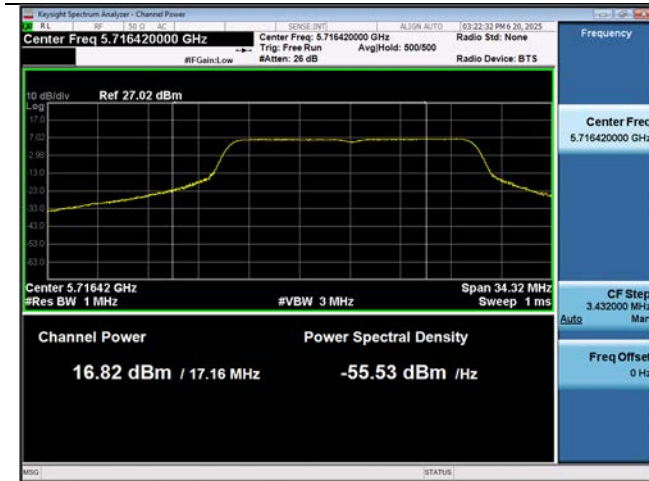


802.11ac(VHT80) UNII Band



□ Test Plots(Output Power)
[ANT. 1]

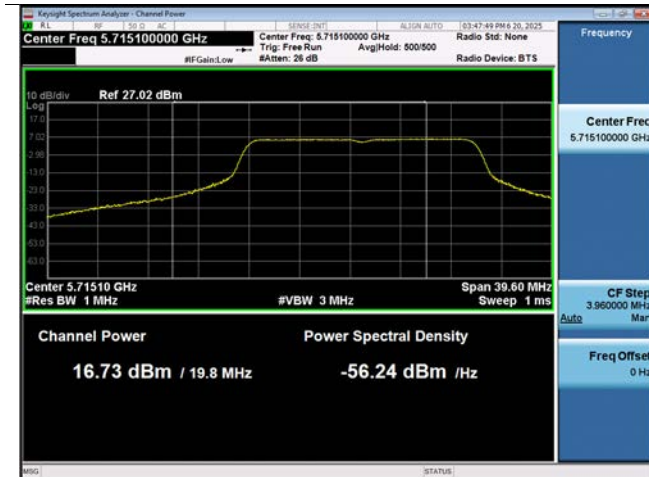
802.11a UNII 2C Band



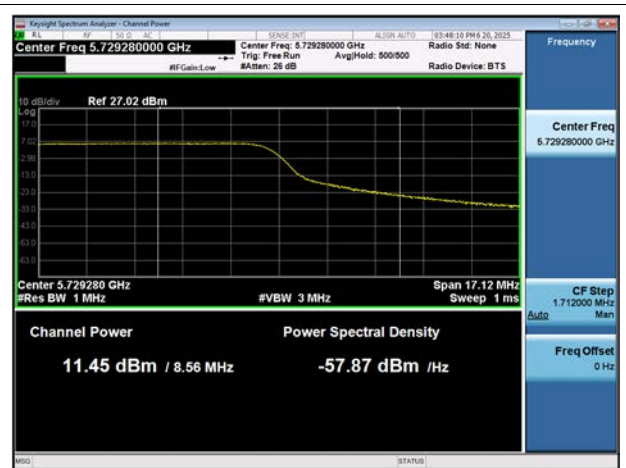
802.11a UNII 3 Band



802.11n(HT20) UNII 2C Band



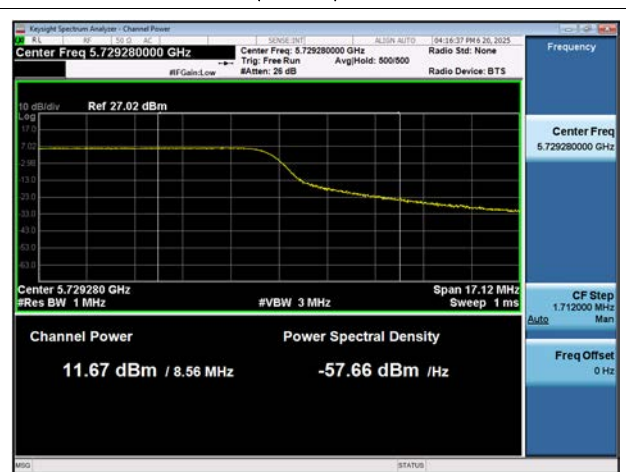
802.11n(HT20) UNII 3 Band



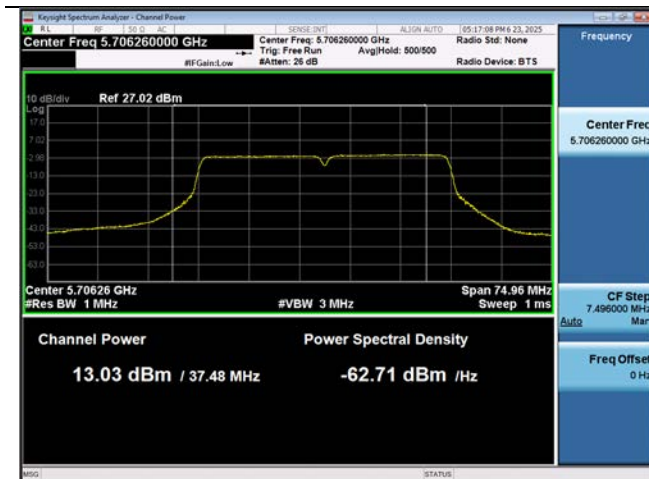
802.11ac(VHT20) UNII 2C Band



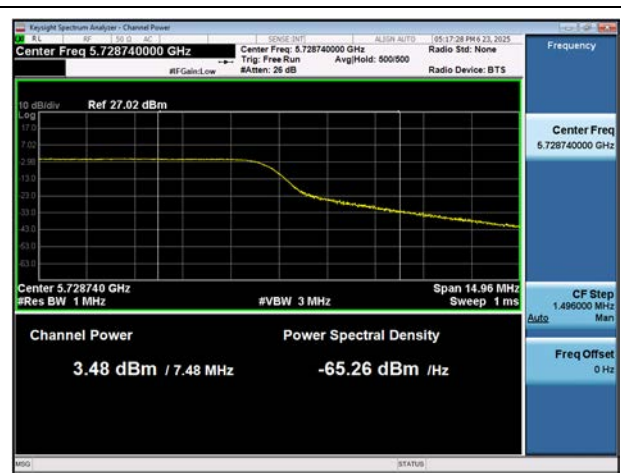
802.11ac(VHT20) UNII 3 Band



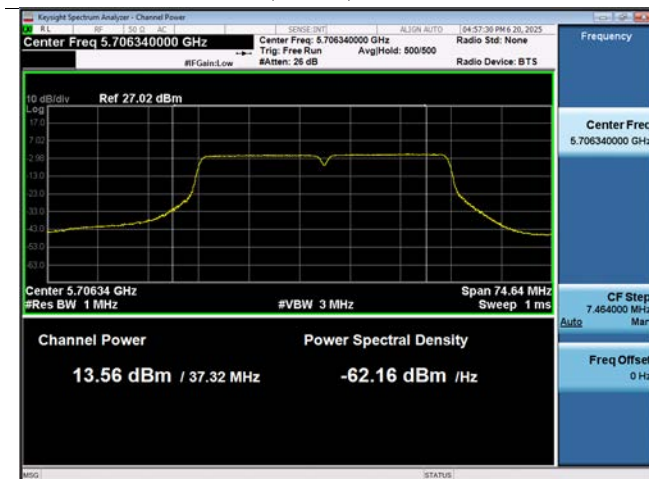
802.11n(HT40) UNII 2C Band



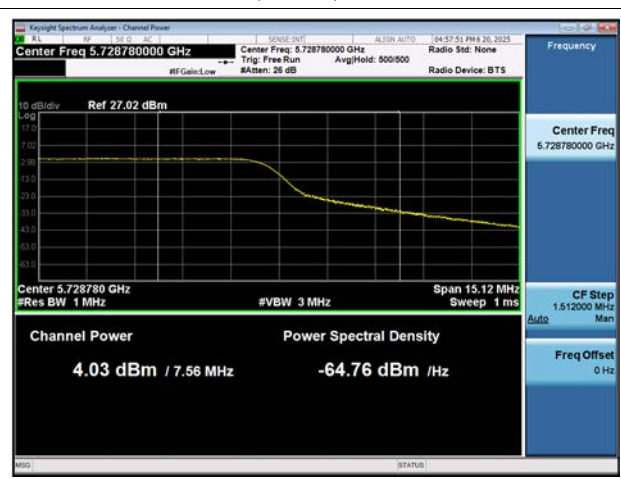
802.11n(HT40) UNII 3 Band



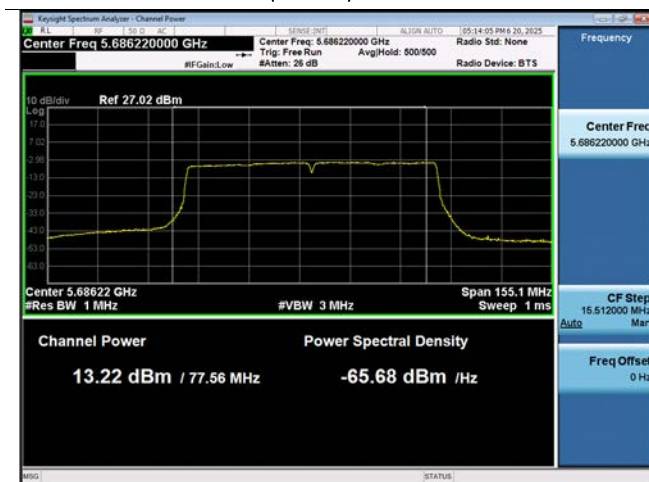
802.11ac(VHT40) UNII 2C Band



802.11ac(VHT40) UNII 3 Band



802.11ac(VHT80) UNII 2C Band

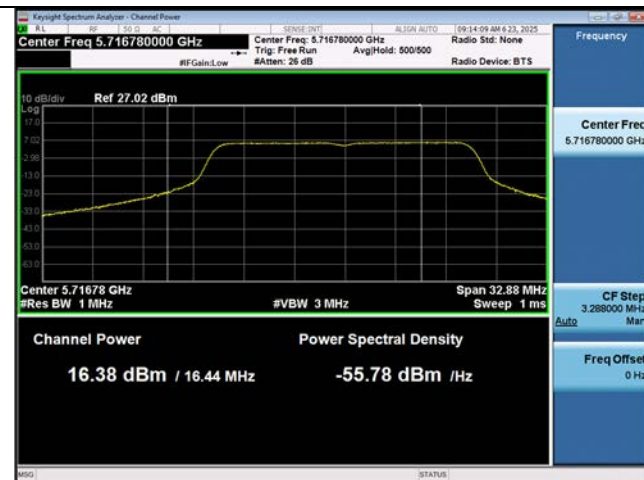


802.11ac(VHT80) UNII 3 Band

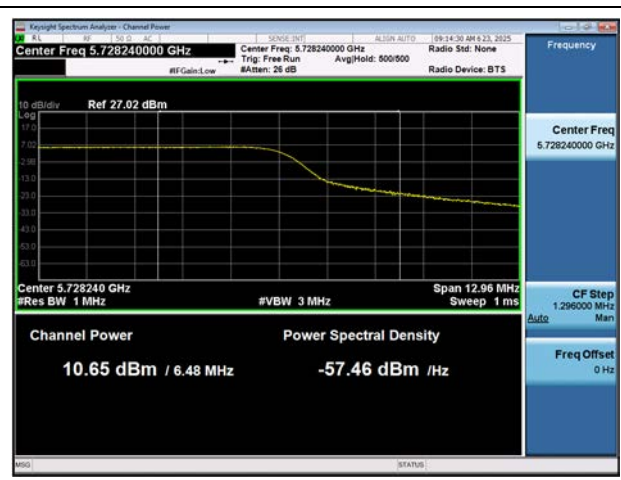


[ANT. 2]

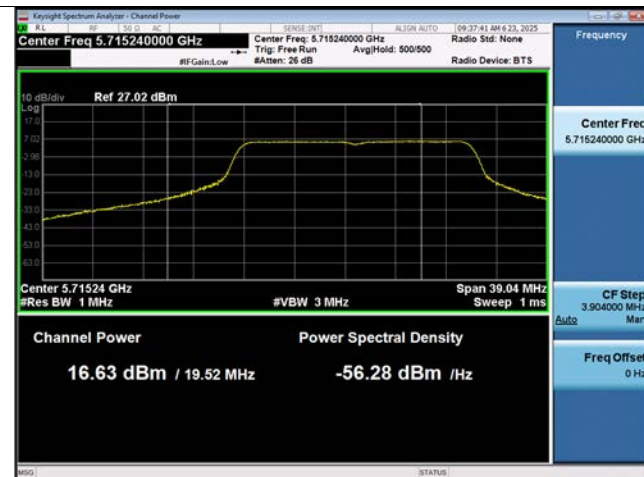
802.11a UNII 2C Band



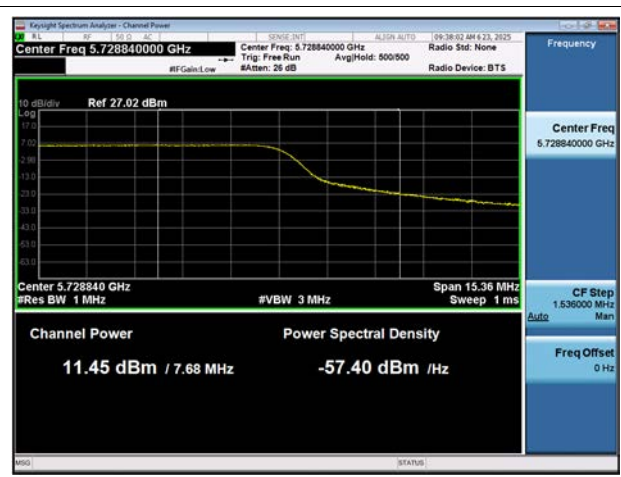
802.11a UNII 3 Band



802.11n(HT20) UNII 2C Band



802.11n(HT20) UNII 3 Band



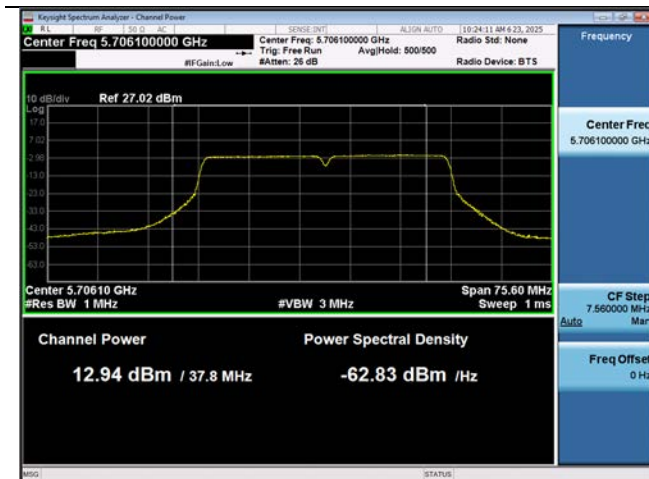
802.11ac(VHT20) UNII 2C Band



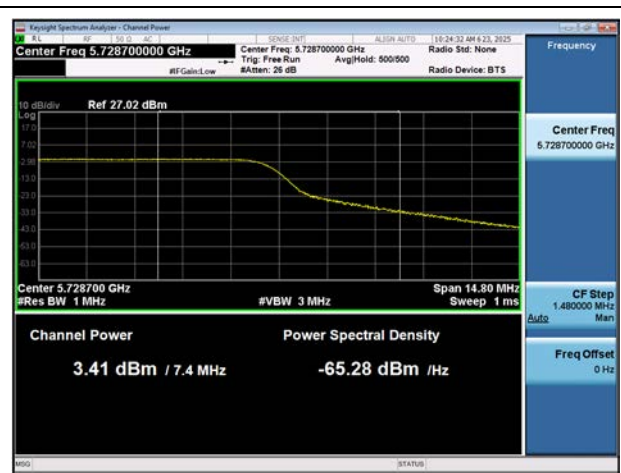
802.11ac(VHT20) UNII 3 Band



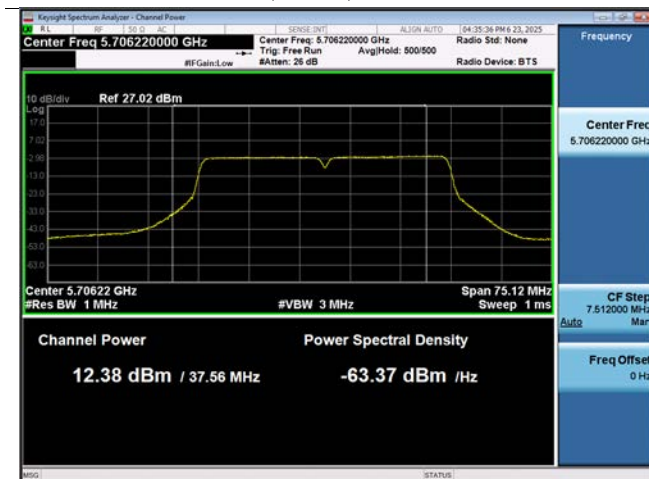
802.11n(HT40) UNII 2C Band



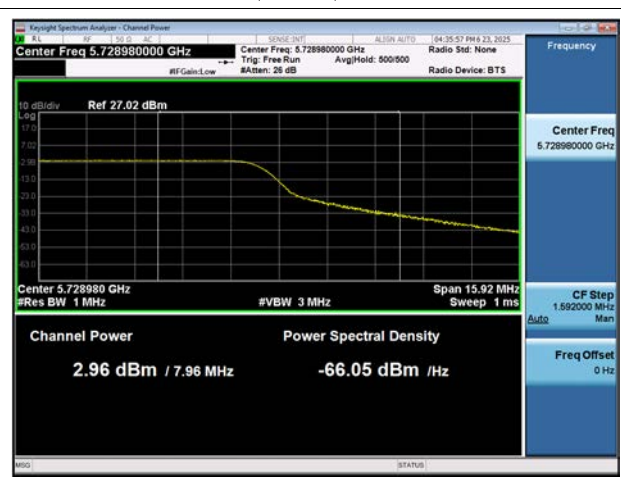
802.11n(HT40) UNII 3 Band



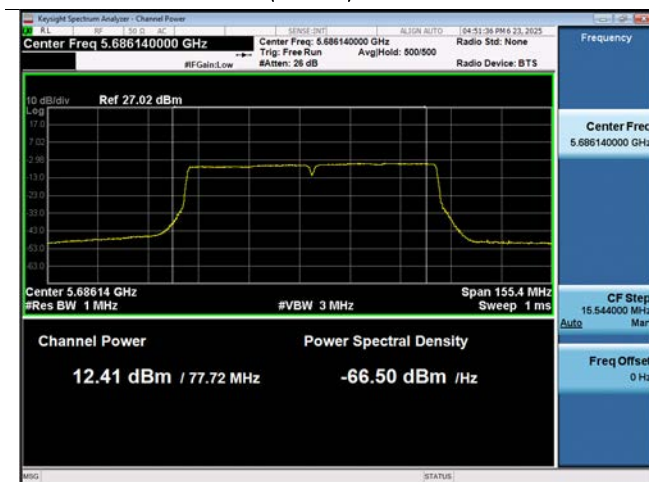
802.11ac(VHT40) UNII 2C Band



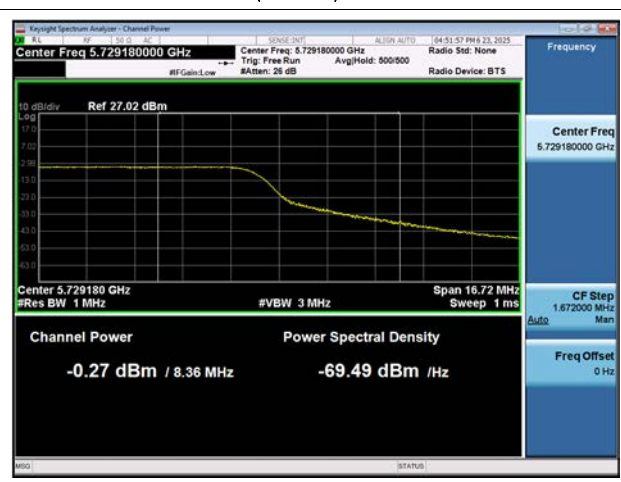
802.11ac(VHT40) UNII 3 Band



802.11ac(VHT80) UNII 2C Band

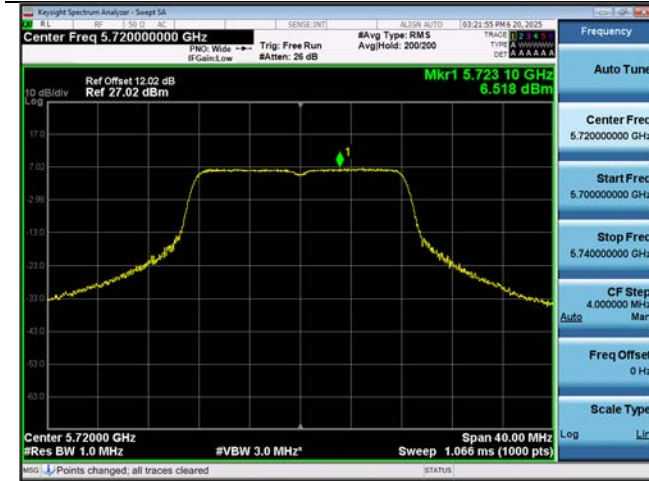


802.11ac(VHT80) UNII 3 Band



▣ Test Plots(Power Spectral Density)
[ANT. 1]

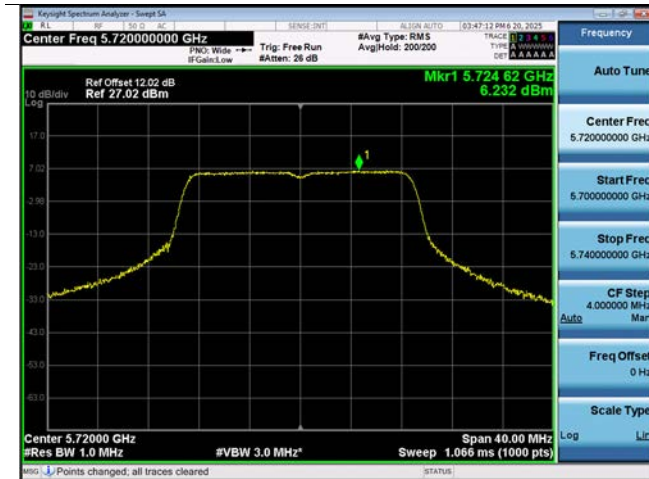
802.11a UNII 2C Band



802.11a UNII 3 Band



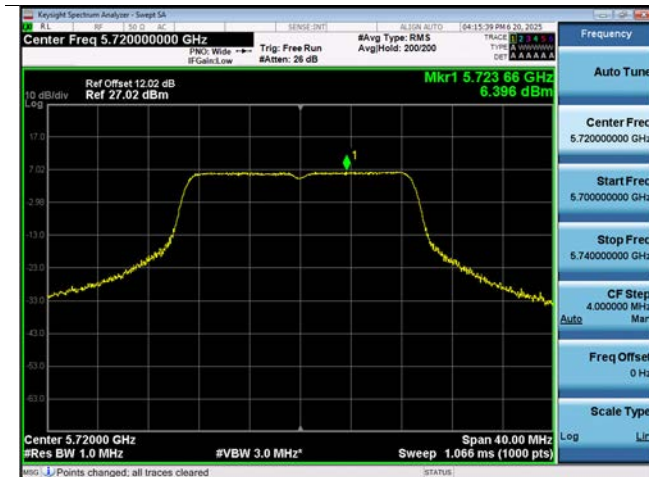
802.11n(HT20) UNII 2C Band



802.11n(HT20) UNII 3 Band



802.11ac(VHT20) UNII 2C Band



802.11ac(VHT20) UNII 3 Band



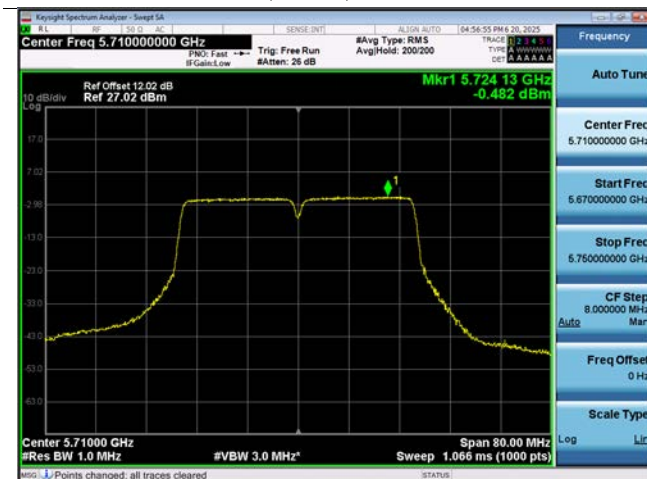
802.11n(HT40) UNII 2C Band



802.11n(HT40) UNII 3 Band



802.11ac(VHT40) UNII 2C Band



802.11ac(VHT40) UNII 3 Band



802.11ac(VHT80) UNII 2C Band



802.11ac(VHT80) UNII 3 Band

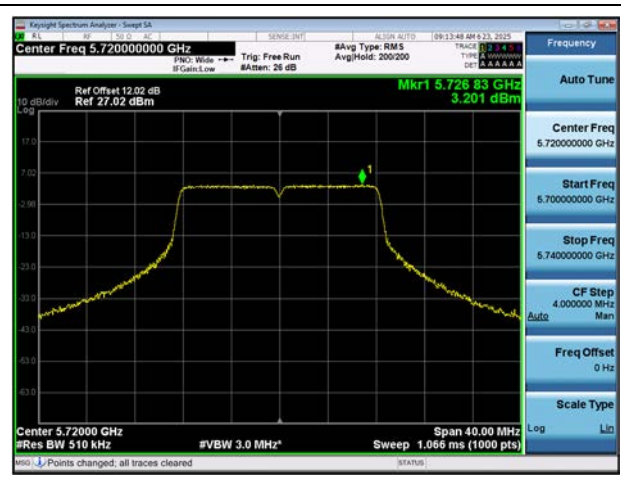


[ANT. 2]

802.11a UNII 2C Band



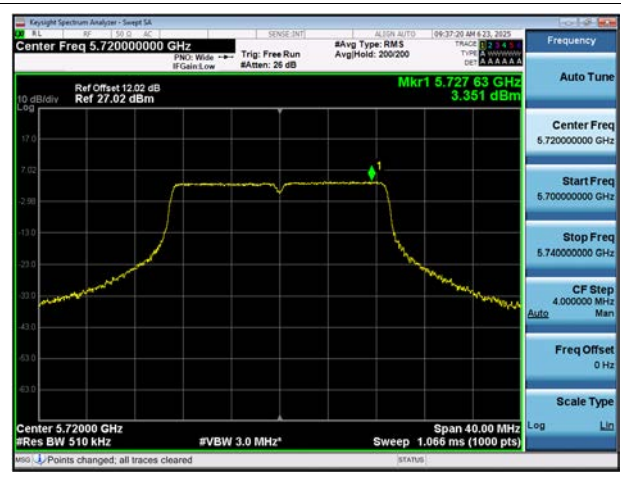
802.11a UNII 3 Band



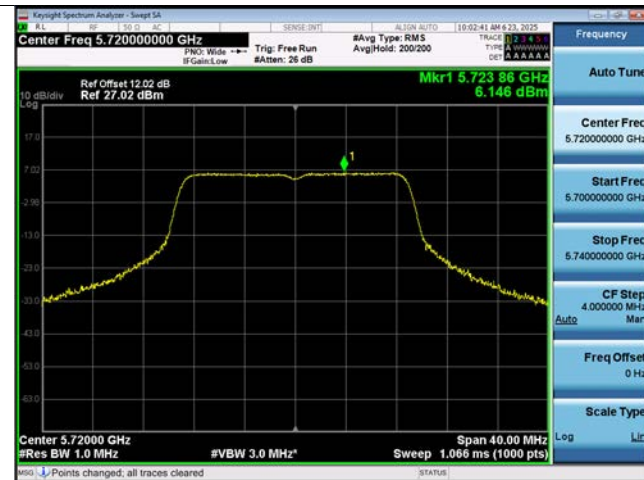
802.11n(HT20) UNII 2C Band



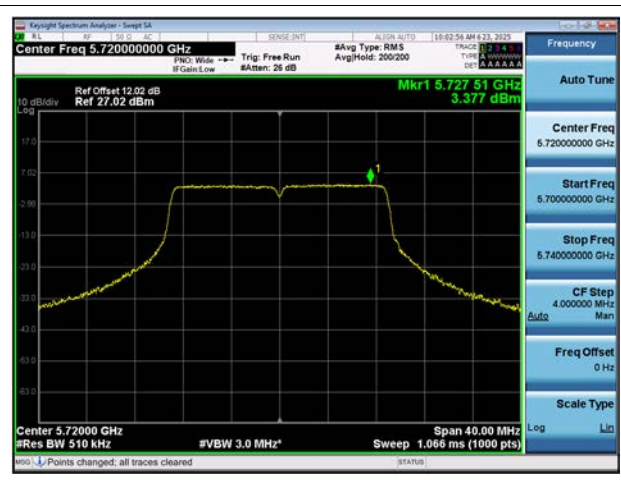
802.11n(HT20) UNII 3 Band



802.11ac(VHT20) UNII 2C Band



802.11ac(VHT20) UNII 3 Band



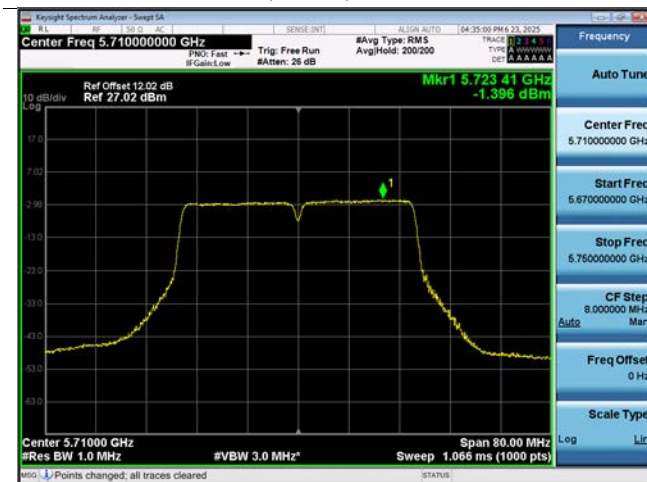
802.11n(HT40) UNII 2C Band



802.11n(HT40) UNII 3 Band



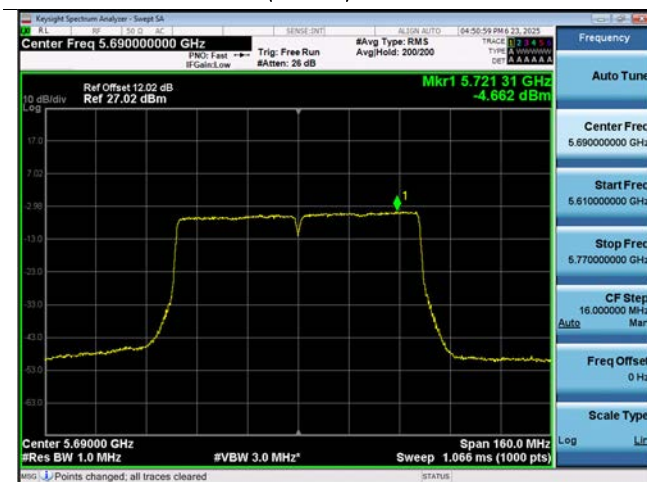
802.11ac(VHT40) UNII 2C Band



802.11ac(VHT40) UNII 3 Band



802.11ac(VHT80) UNII 2C Band



802.11ac(VHT80) UNII 3 Band



10.8 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

Frequency	Measured Value	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin
[MHz]	[dB μ V]	[dB/m]	[H/V]	[dB μ V/m]	[dB μ V/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 = $40\log(\text{specific distance} / \text{test distance})$ (dB)
3. Limit line = specific Limits (dB μ V) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	ANT. POL	Total	Limit	Margin
[MHz]	[dB μ V]	[dB/m]	[H/V]	[dB μ V/m]	[dB μ V/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(Ant1+Ant2)]

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	59.27	5.79	V	65.06	68.20	3.14	PK
15540	47.37	6.58	V	53.95	73.98	20.03	PK
15540	34.04	6.58	V	40.62	53.98	13.36	AV
10360	59.15	5.79	H	64.94	68.20	3.26	PK
15540	47.32	6.58	H	53.90	73.98	20.08	PK
15540	33.90	6.58	H	40.48	53.98	13.50	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	59.03	5.60	V	64.63	68.20	3.57	PK
15600	47.32	6.35	V	53.67	73.98	20.31	PK
15600	33.25	6.35	V	39.60	53.98	14.38	AV
10400	58.97	5.60	H	64.57	68.20	3.63	PK
15600	47.18	6.35	H	53.53	73.98	20.45	PK
15600	33.18	6.35	H	39.53	53.98	14.45	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	58.83	6.05	V	64.88	68.20	3.32	PK
15720	47.99	5.76	V	53.75	73.98	20.23	PK
15720	34.03	5.76	V	39.79	53.98	14.19	AV
10480	58.76	6.05	H	64.81	68.20	3.39	PK
15720	47.84	5.76	H	53.60	73.98	20.38	PK
15720	33.98	5.76	H	39.74	53.98	14.24	AV

Band : UNII 2A			Operation Mode : 802.11a				
CH.52 5260 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
10520	58.12	6.25	V	64.37	68.20	3.83	PK
15780	48.13	6.05	V	54.18	73.98	19.80	PK
15780	34.21	6.05	V	40.26	53.98	13.72	AV
10520	58.06	6.25	H	64.31	68.20	3.89	PK
15780	48.00	6.05	H	54.05	73.98	19.93	PK
15780	34.11	6.05	H	40.16	53.98	13.82	AV

Band : UNII 2A			Operation Mode : 802.11a				
CH.60 5300 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
10600	58.39	6.31	V	64.70	73.98	9.28	PK
10600	43.42	6.31	V	49.73	53.98	4.25	AV
15900	47.58	7.24	V	54.82	73.98	19.16	PK
15900	33.73	7.24	V	40.97	53.98	13.01	AV
10600	58.21	6.31	H	64.52	73.98	9.46	PK
10600	43.25	6.31	H	49.56	53.98	4.42	AV
15900	47.46	7.24	H	54.70	73.98	19.28	PK
15900	33.63	7.24	H	40.87	53.98	13.11	AV

Band : UNII 2A			Operation Mode : 802.11a				
CH.64 5320 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
10640	57.93	5.89	V	63.82	73.98	10.16	PK
10640	43.07	5.89	V	48.96	53.98	5.02	AV
15960	48.23	6.54	V	54.77	73.98	19.21	PK
15960	33.63	6.54	V	40.17	53.98	13.81	AV
10640	57.76	5.89	H	63.65	73.98	10.33	PK
10640	42.91	5.89	H	48.80	53.98	5.18	AV
15960	48.03	6.54	H	54.57	73.98	19.41	PK
15960	33.43	6.54	H	39.97	53.98	14.01	AV

Band : UNII 2C			Operation Mode : 802.11a				
CH.100 5500 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
11000	53.97	6.36	V	60.33	73.98	13.65	PK
11000	39.74	6.36	V	46.10	53.98	7.88	AV
16500	47.74	8.54	V	56.28	68.20	11.92	PK
11000	53.86	6.36	H	60.22	73.98	13.76	PK
11000	39.69	6.36	H	46.05	53.98	7.93	AV
16500	47.61	8.54	H	56.15	68.20	12.05	PK

Band : UNII 2C			Operation Mode : 802.11a				
CH.120 5600 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
11200	50.74	5.70	V	56.44	73.98	17.54	PK
11200	37.10	5.70	V	42.80	53.98	11.18	AV
16800	46.93	9.99	V	56.92	68.20	11.28	PK
11200	50.66	5.70	H	56.36	73.98	17.62	PK
11200	36.99	5.70	H	42.69	53.98	11.29	AV
16800	46.77	9.99	H	56.76	68.20	11.44	PK

Band : UNII 2C			Operation Mode : 802.11a				
CH.144 5720 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
11440	52.37	5.92	V	58.29	73.98	15.69	PK
11440	37.75	5.92	V	43.67	53.98	10.31	AV
17160	48.16	9.69	V	57.85	68.20	10.35	PK
11440	52.28	5.92	H	58.20	73.98	15.78	PK
11440	37.63	5.92	H	43.55	53.98	10.43	AV
17160	47.96	9.69	H	57.65	68.20	10.55	PK

Band : UNII 3			Operation Mode : 802.11a				
CH.149 5745 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
11490	51.26	5.88	V	57.14	73.98	16.84	PK
11490	37.92	5.88	V	43.80	53.98	10.18	AV
17235	46.95	10.22	V	57.17	68.20	11.03	PK
11490	51.10	5.88	H	56.98	73.98	17.00	PK
11490	37.85	5.88	H	43.73	53.98	10.25	AV
17235	46.88	10.22	H	57.10	68.20	11.10	PK

Band : UNII 3			Operation Mode : 802.11a				
CH.157 5785 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
11570	52.64	6.03	V	58.67	73.98	15.31	PK
11570	38.97	6.03	V	45.00	53.98	8.98	AV
17355	46.27	11.36	V	57.63	68.20	10.57	PK
11570	52.52	6.03	H	58.55	73.98	15.43	PK
11570	38.87	6.03	H	44.90	53.98	9.08	AV
17355	46.07	11.36	H	57.43	68.20	10.77	PK

Band : UNII 3			Operation Mode : 802.11a				
CH.165 5825 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
11650	53.23	5.42	V	58.65	73.98	15.33	PK
11650	39.79	5.42	V	45.21	53.98	8.77	AV
17475	47.77	11.65	V	59.42	68.20	8.78	PK
11650	53.08	5.42	H	58.50	73.98	15.48	PK
11650	39.63	5.42	H	45.05	53.98	8.93	AV
17475	47.65	11.65	H	59.30	68.20	8.90	PK

Band : UNII 4			Operation Mode : 802.11a				
CH.169 5845 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
11690	53.26	5.75	V	59.01	73.98	14.97	PK
11690	40.00	5.75	V	45.75	53.98	8.23	AV
17535	47.25	12.08	V	59.33	68.20	8.87	PK
11690	53.16	5.75	H	58.91	73.98	15.07	PK
11690	39.86	5.75	H	45.61	53.98	8.37	AV
17535	47.10	12.08	H	59.18	68.20	9.02	PK

Band : UNII 4			Operation Mode : 802.11a				
CH.173 5865 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
11730	52.33	5.44	V	57.77	73.98	16.21	PK
11730	39.66	5.44	V	45.10	53.98	8.88	AV
17595	48.03	12.20	V	60.23	68.20	7.97	PK
11730	52.14	5.44	H	57.58	73.98	16.40	PK
11730	39.51	5.44	H	44.95	53.98	9.03	AV
17595	47.86	12.20	H	60.06	68.20	8.14	PK

Band : UNII 4			Operation Mode : 802.11a				
CH.177 5885 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
11770	52.65	5.11	V	57.76	73.98	16.22	PK
11770	38.93	5.11	V	44.04	53.98	9.94	AV
17655	47.85	12.20	V	60.05	68.20	8.15	PK
11770	52.48	5.11	H	57.59	73.98	16.39	PK
11770	38.76	5.11	H	43.87	53.98	10.11	AV
17655	47.76	12.20	H	59.96	68.20	8.24	PK

[Simultaneous transmission Scenario]

Scenario 1

ANT ALL(MIMO)_2.4 GHz 802.11b Ch. 11_1 Mbps + ANT ALL(MIMO) 5 GHz 802.11a Ch. 36_6 Mbps

Frequency	Measured value	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
10360	58.94	5.79	V	64.73	68.20	3.47	PK
15540	47.90	6.58	V	54.48	73.98	19.50	PK
15540	33.93	6.58	V	40.51	53.98	13.47	AV
10360	58.26	5.79	H	64.05	68.20	4.15	PK
15540	47.60	6.58	H	54.18	73.98	19.80	PK
15540	33.48	6.58	H	40.06	53.98	13.92	AV

Scenario 2

ANT1_BTLE 1M 37 Bytes Ch. 39 + ANT ALL(MIMO) 5 GHz 802.11a Ch. 36_6 Mbps

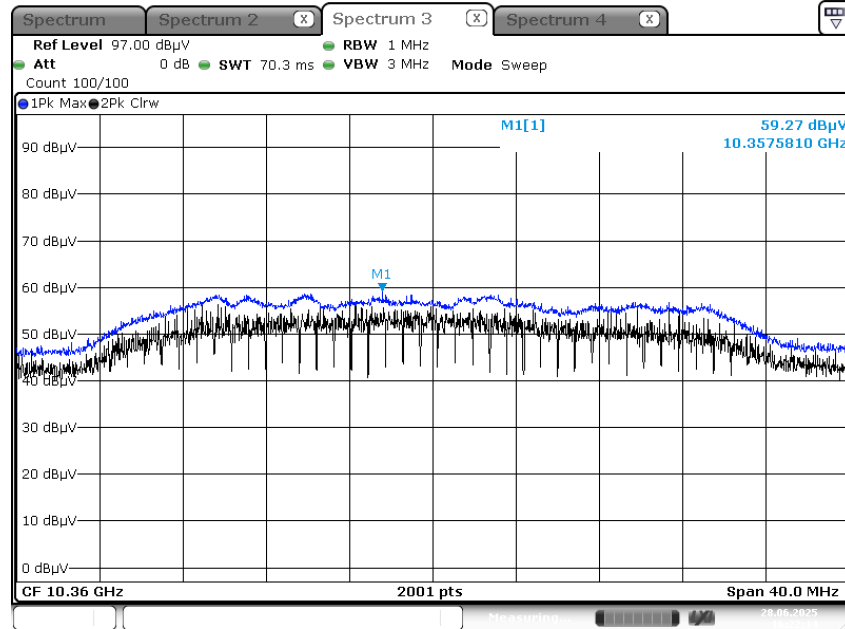
Frequency	Measured value	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
10360	58.95	5.79	V	64.74	68.20	3.46	PK
15540	47.64	6.58	V	54.22	73.98	19.76	PK
15540	33.73	6.58	V	40.31	53.98	13.67	AV
10360	58.27	5.79	H	64.06	68.20	4.14	PK
15540	47.29	6.58	H	53.87	73.98	20.11	PK
15540	33.51	6.58	H	40.09	53.98	13.89	AV

Test Plots

Note: Only the worst case plot for Radiated Spurious Emissions.

[MIMO_CDD(Ant1+Ant2)]

Radiated Spurious Emissions plot – Peak Result (802.11a, Ch.36 Spurious Emissions, X-V)



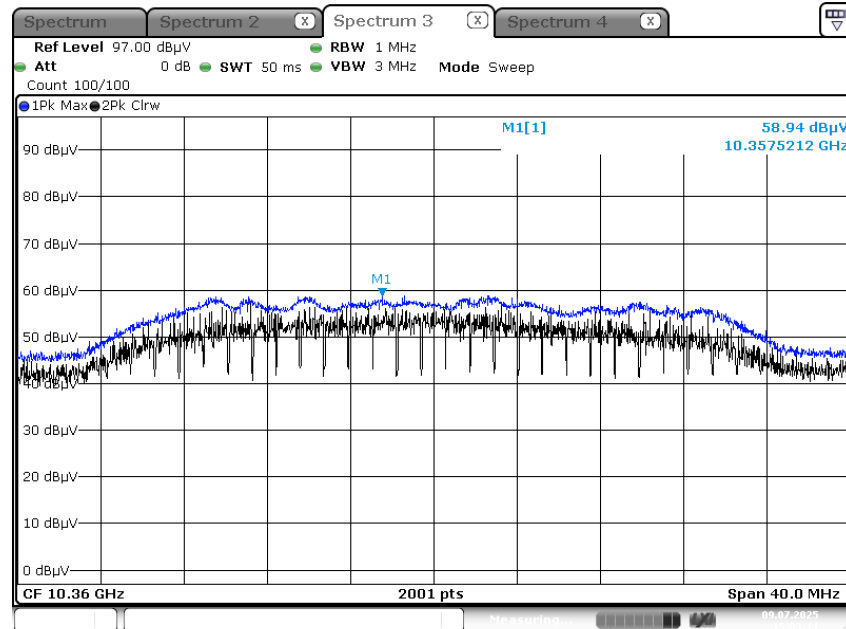
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[Simultaneous transmission Scenario]

Scenario 1

ANT ALL(MIMO)_2.4 GHz 802.11b Ch. 11_1 Mbps + ANT ALL(MIMO) 5 GHz 802.11a Ch. 36_6 Mbps

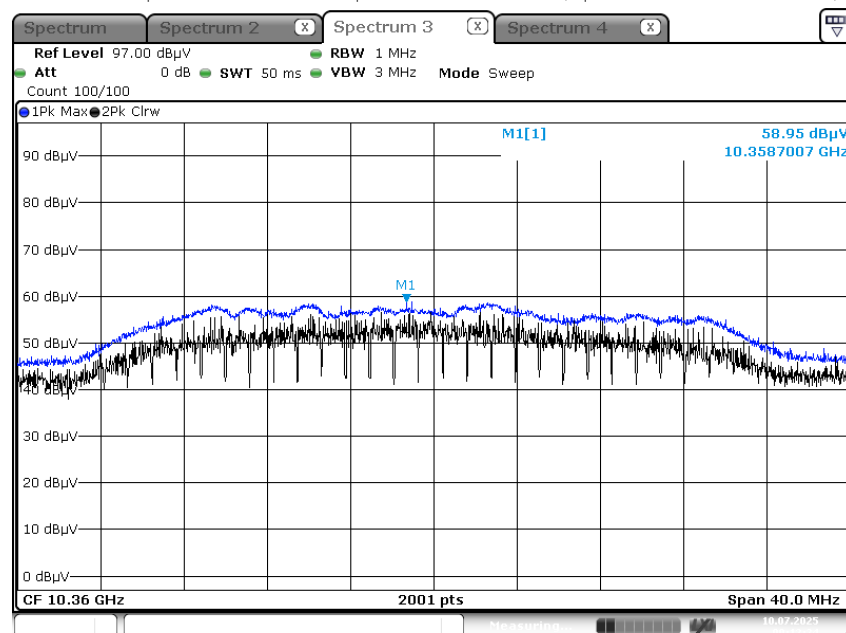
Radiated Spurious Emissions plot – Peak Result (Spurious Emissions, X-V)



Scenario 2

ANT1_BTLE 1M 37 Bytes Ch. 39 + ANT ALL(MIMO) 5 GHz 802.11a Ch. 36_6 Mbps

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



10.9 RADIATED RESTRICTED BAND EDGE

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

[MIMO_CDD(Ant1+Ant2)]

802.11 a		6 Mbps					
Channel	Ch.36	5180 MHz	UNII 1				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	61.69	-	H	61.69	73.98	12.29	PK
5150	45.88	-	H	45.88	53.98	8.10	AV

802.11 a		6 Mbps					
Channel	Ch. 64	5320 MHz	UNII 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	60.66	-	H	60.66	73.98	13.32	PK
5350	45.89	-	H	45.89	53.98	8.09	AV

802.11 a		6 Mbps					
Channel	Ch. 100	5500 MHz	UNII 2C				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	61.87	-	H	61.87	73.98	12.11	PK
5460	47.94	-	H	47.94	53.98	6.04	AV
5470	62.18	-	H	62.18	68.20	6.02	PK

802.11 n_HT20		MCS 0					
Channel	Ch. 36	5180 MHz	UNII 1				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	63.64	-	H	63.64	73.98	10.34	PK
5150	45.96	-	H	45.96	53.98	8.02	AV

802.11 n_HT20		MCS 0					
Channel	Ch. 64	5320 MHz	UNII 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	67.83	-	H	67.83	73.98	6.15	PK
5350	47.02	-	H	47.02	53.98	6.96	AV

802.11 n_HT20		MCS 0					
Channel	Ch. 100	5500 MHz	UNII 2C				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	66.47	-	H	66.47	73.98	7.51	PK
5460	47.32	-	H	47.32	53.98	6.66	AV
5470	62.50	-	H	62.50	68.20	5.70	PK

802.11 ac_VHT20		MCS 0					
Channel	Ch. 36	5180 MHz	UNII 1				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	63.74	-	H	63.74	73.98	10.24	PK
5150	45.91	-	H	45.91	53.98	8.07	AV

802.11 ac_VHT20		MCS 0					
Channel	Ch. 64	5320 MHz	UNII 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	67.42	-	H	67.42	73.98	6.56	PK
5350	47.37	-	H	47.37	53.98	6.61	AV

802.11 ac_VHT20		MCS 0					
Channel	Ch. 100	5500 MHz	UNII 2C				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	63.85	-	H	63.85	73.98	10.13	PK
5460	46.88	-	H	46.88	53.98	7.10	AV
5470	62.03	-	H	62.03	68.20	6.17	PK

802.11 n_HT40		MCS 0					
Channel	Ch. 38	5190 MHz	UNII 1				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	66.42	-	H	66.42	73.98	7.56	PK
5150	50.84	-	H	50.84	53.98	3.14	AV

802.11 n_HT40		MCS 0					
Channel	Ch. 62	5310 MHz	UNII 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	68.74	-	H	68.74	73.98	5.24	PK
5350	50.35	-	H	50.35	53.98	3.63	AV

802.11 n_HT40		MCS 0					
Channel	Ch. 102	5510 MHz	UNII 2C				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	62.06	-	H	62.06	73.98	11.92	PK
5460	46.43	-	H	46.43	53.98	7.55	AV
#5470	61.40	-	H	61.40	68.20	6.80	PK

802.11 ac_VHT40		MCS 0					
Channel	Ch. 38	5190 MHz	UNII 1				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	65.52	-	H	65.52	73.98	8.46	PK
5150	50.47	-	H	50.47	53.98	3.51	AV

802.11 ac_VHT40		MCS 0					
Channel	Ch. 62	5310 MHz	UNII 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	67.13	-	H	67.13	73.98	6.85	PK
5350	50.18	-	H	50.18	53.98	3.80	AV

802.11 ac_VHT40		MCS 0					
Channel	Ch. 102	5510 MHz	UNII 2C				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	61.18	-	H	61.18	73.98	12.80	PK
5460	46.14	-	H	46.14	53.98	7.84	AV
#5470	59.83	-	H	59.83	68.20	8.37	PK

802.11 ac_VHT80		MCS 0					
Channel	Ch. 42	5210 MHz	UNII 1				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	65.35	-	H	65.35	73.98	8.63	PK
5150	51.72	-	H	51.72	53.98	2.26	AV

802.11 ac_VHT80		MCS 0					
Channel	Ch. 58	5290 MHz	UNII 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	66.19	-	H	66.19	73.98	7.79	PK
5350	51.45	-	H	51.45	53.98	2.53	AV

802.11 ac_VHT80		MCS 0					
Channel	Ch. 106	5530 MHz	UNII 2C				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	67.04	-	H	67.04	73.98	6.94	PK
5460	50.10	-	H	50.10	53.98	3.88	AV
#5470	62.21	-	H	62.21	68.20	5.99	PK

802.11 ac_VHT160(Lower)		MCS 0					
Channel	Ch. 50	5250 MHz	UNII 1 & 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5150	64.57	-	H	64.57	73.98	9.41	PK
5150	51.44	-	H	51.44	53.98	2.54	AV

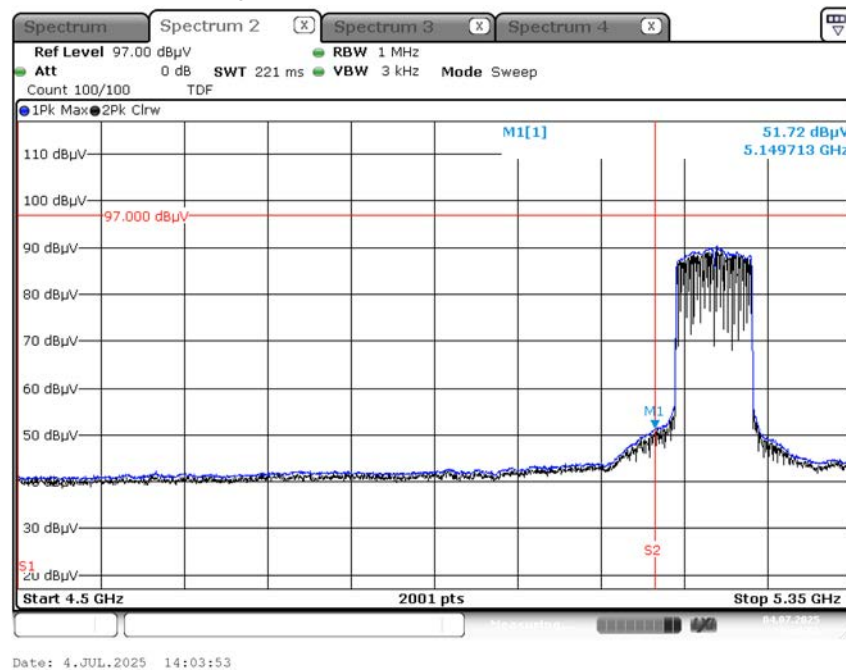
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Channel	Ch. 50	5250 MHz	UNII 1 & 2A				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5350	61.31	-	H	61.31	73.98	12.67	PK
5350	48.38	-	H	48.38	53.98	5.60	AV

802.11 ac_VHT160		MCS 0					
Channel	Ch. 114	5570 MHz	UNII 2C				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5460	65.18	-	H	65.18	73.98	8.80	PK
5460	51.30	-	H	51.30	53.98	2.68	AV
5470	63.10	-	H	63.10	68.20	5.10	PK

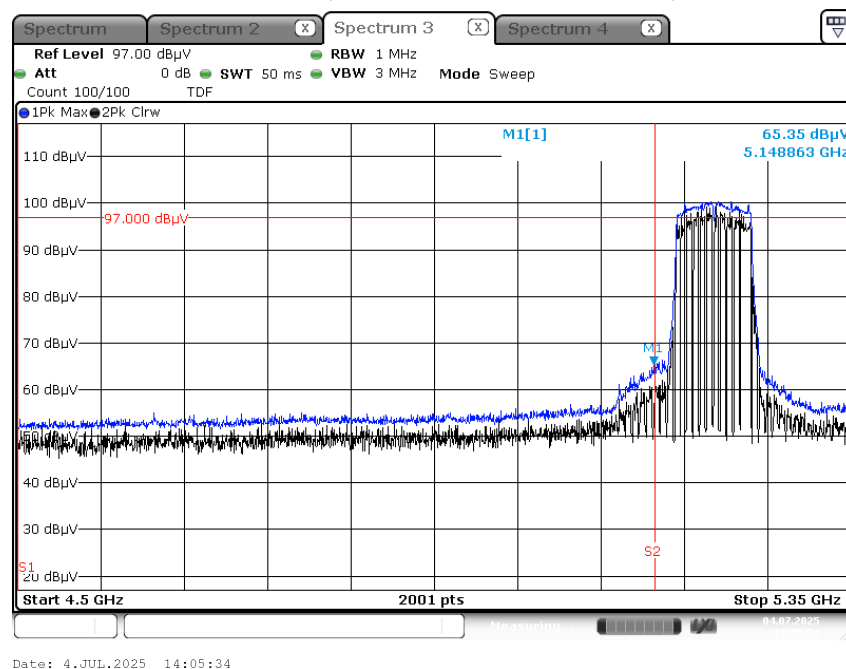
[MIMO_CDD(Ant1+Ant2)]

▣ Test Plots(UNII 1, 2A, 2C)

Average Result (802.11ac80_ MCS0, Ch. 42, X-H)



Peak Result (802.11ac80_ MCS0, Ch. 42, X-H)



Note: Only the worst case plots for Radiated Restricted Band Edge.

Straddle Channel[MIMO_CDD(Ant1+Ant2)]

Channel	Ch. 144	5720 MHz	802.11a 6 Mbps				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5850	62.39	-	H	62.39	68.2	5.81	PK

Channel	Ch. 144	5720 MHz	802.11n(HT20) MCS 0				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5850	62.98	-	H	62.98	68.2	5.22	PK

Channel	Ch. 144	5720 MHz	802.11ac(VHT20) MCS 0				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5850	61.62	-	H	61.62	68.2	6.58	PK

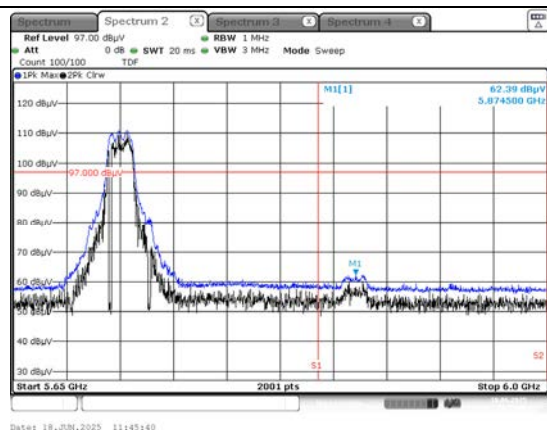
Channel	Ch. 142	5710 MHz	802.11n(HT40) MCS 0				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5850	59.49	-	H	59.49	68.2	8.71	PK

Channel	Ch. 142	5710 MHz	802.11ac(VHT40) MCS 0				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5850	59.83	-	H	59.83	68.2	8.37	PK

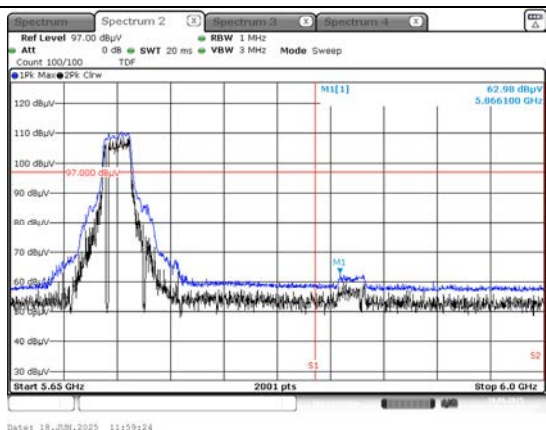
Channel	Ch. 138	5690 MHz	802.11ac(VHT80) MCS 0				
Frequency	Measured Value	C.L+A.F+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
5850	59.74	-	H	59.74	68.2	8.46	PK

■ Test Plots(Straddle Channel)

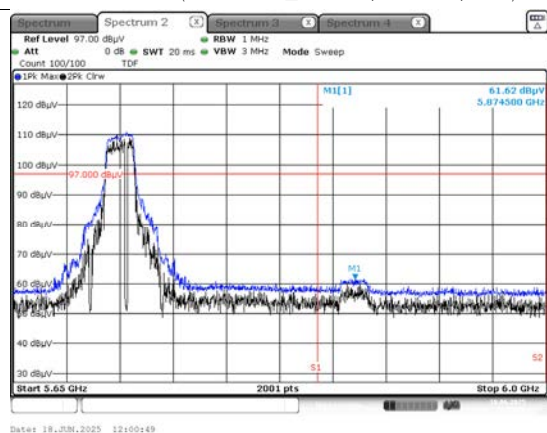
Peak Result (802.11a, Ch.144, X-H)



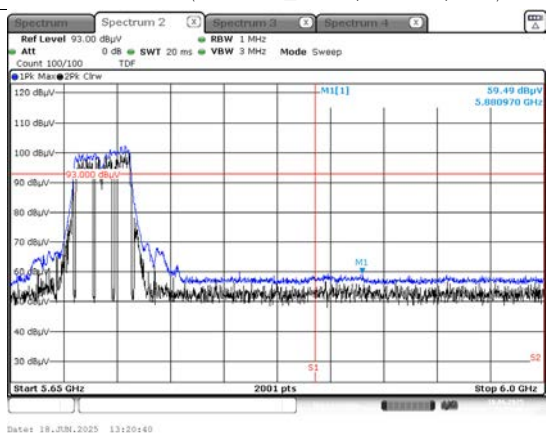
Peak Result (802.11n_HT20, Ch.144, X-H)



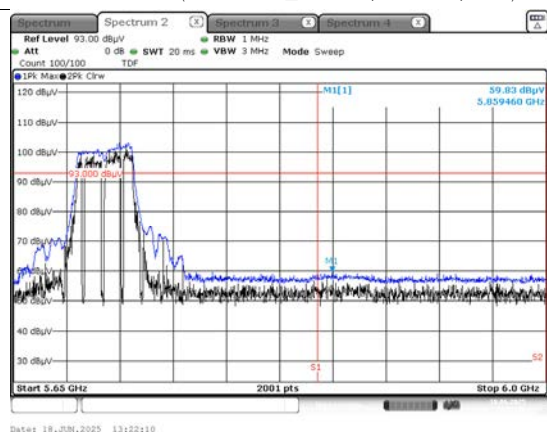
Peak Result (802.11ac_VHT20, Ch.144, X-H)



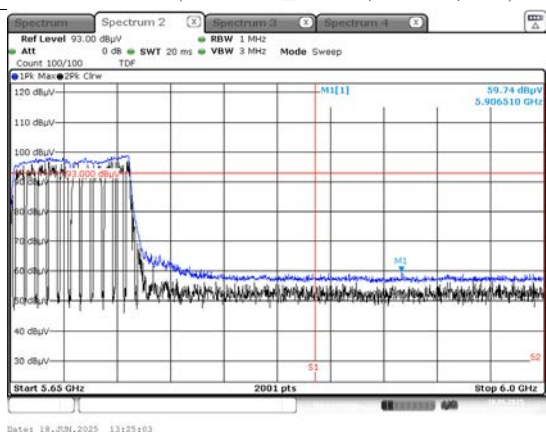
Peak Result (802.11n_HT40, Ch.142, X-H)



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



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

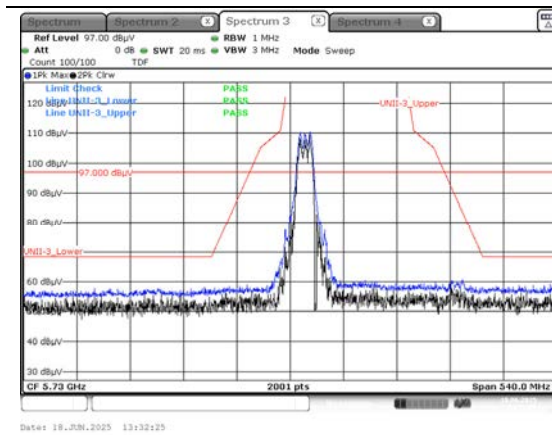


Note :

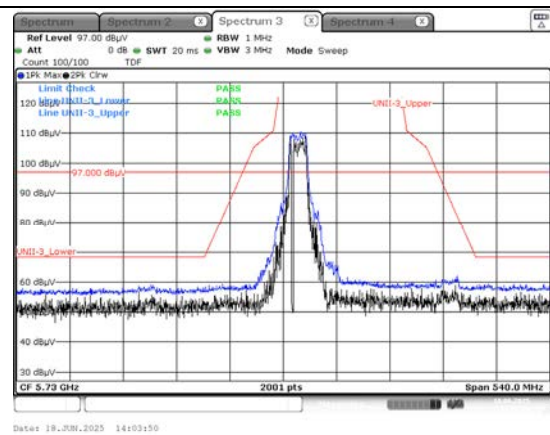
1. Only the worst case plots for Radiated Restricted Band Edge.
2. Red line : 5 850 MHz

■ Test Plots(UNII 3)

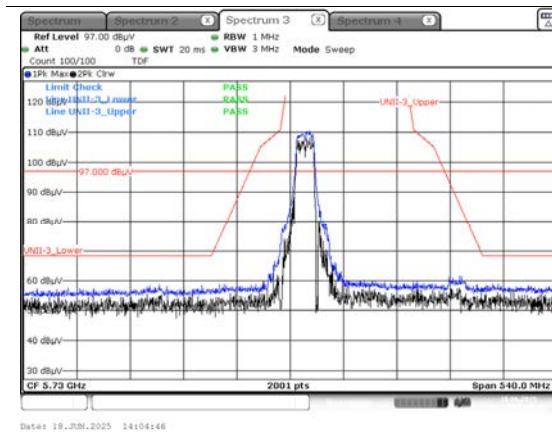
Peak Result (802.11a, Ch.149, X-H)



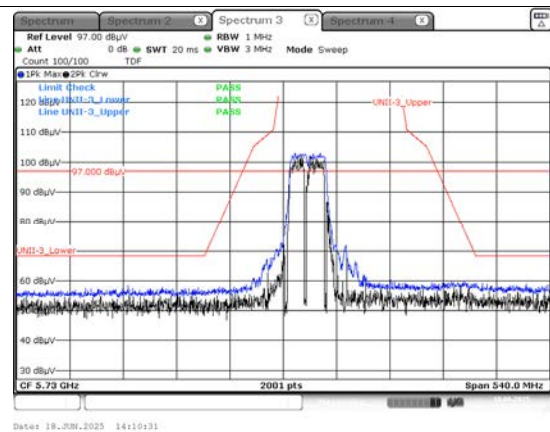
Peak Result (802.11n_HT20, Ch.149, X-H)



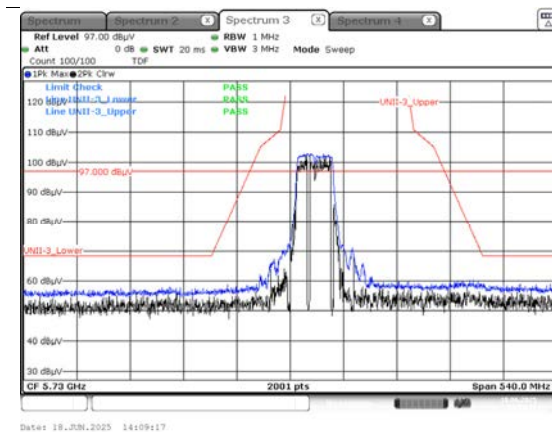
Peak Result (802.11ac_VHT20, Ch.149, X-H)



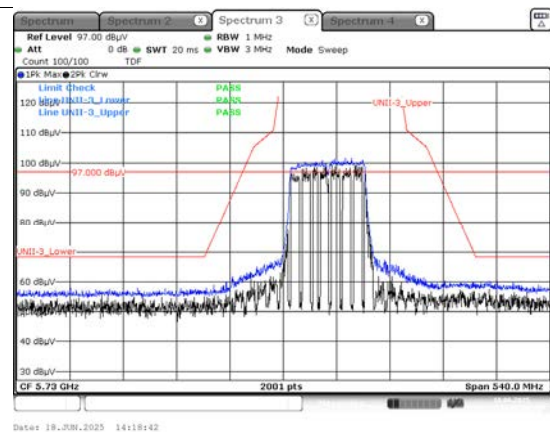
Peak Result (802.11n_HT40, Ch.151, X-H)



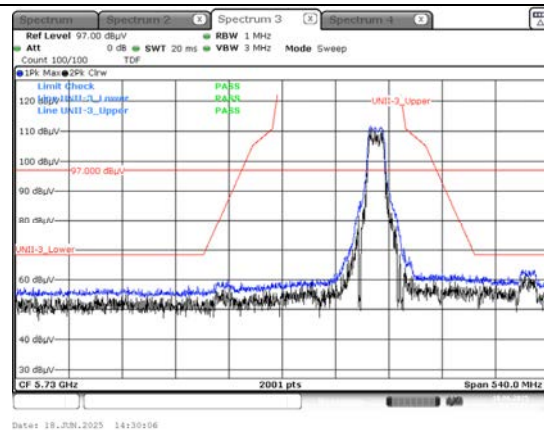
Peak Result (802.11ac_VHT40, Ch.151, X-H)



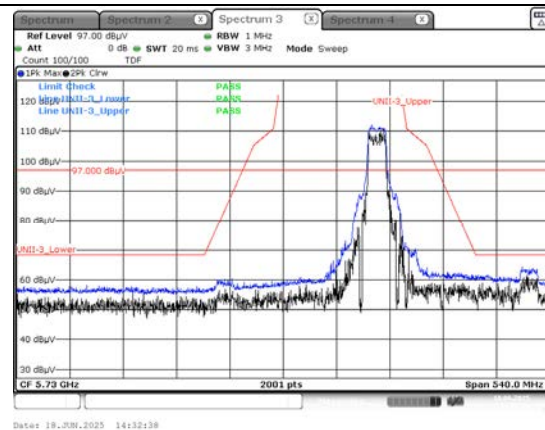
Peak Result (802.11ac_VHT80, Ch.155, X-H)



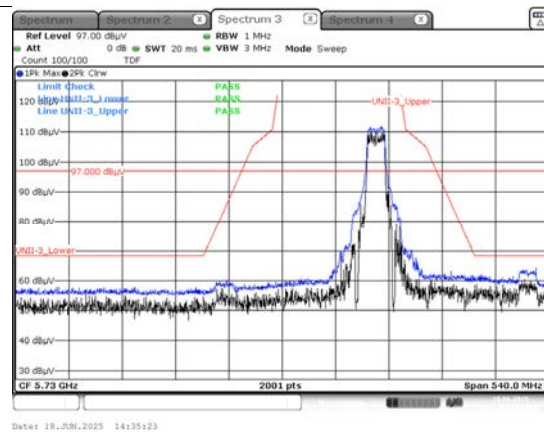
Peak Result (802.11a, Ch.165, X-H)



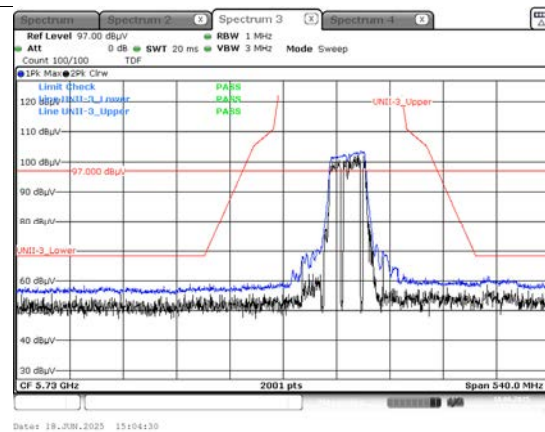
Peak Result (802.11n_HT20, Ch.165, X-H)



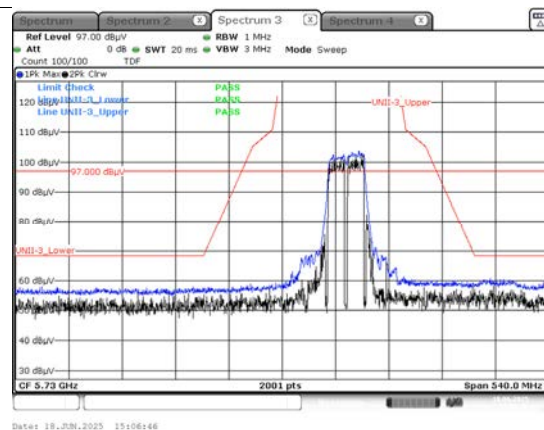
Peak Result (802.11ac_VHT20, Ch.165, X-H)



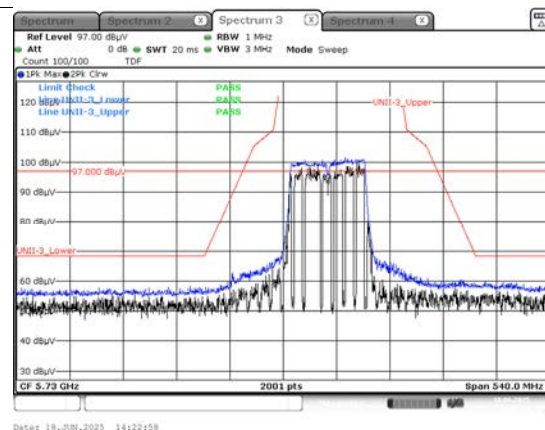
Peak Result (802.11n_HT40, Ch.159, X-H)



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



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



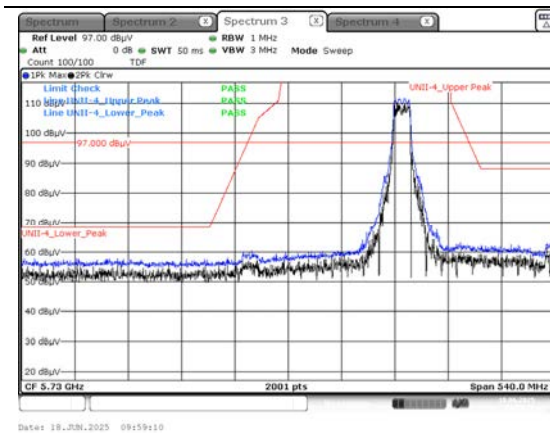
Note :

1. Only the worst case plots for U-NII-3 Out of Band e.i.r.p Emission.

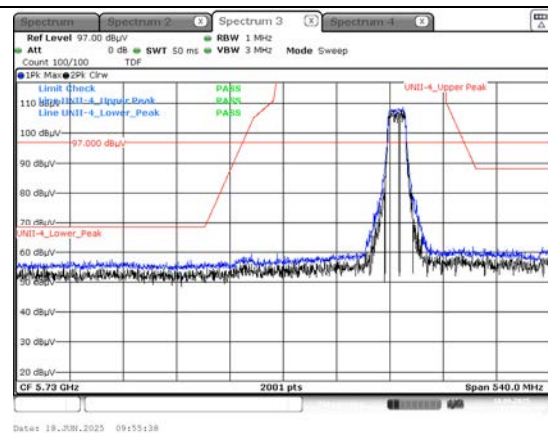
Test Plots(UNII 4) – O.O.B.E

Peak Result

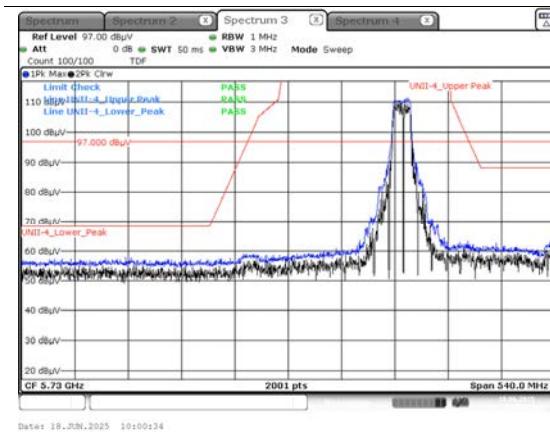
Peak Result (802.11a, Ch.169, X-H)



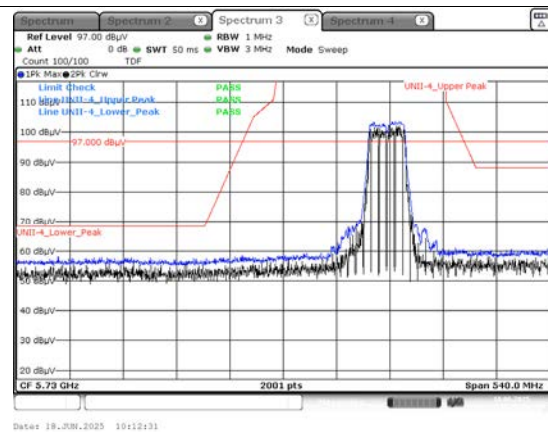
Peak Result (802.11n_HT20, Ch.169, X-H)



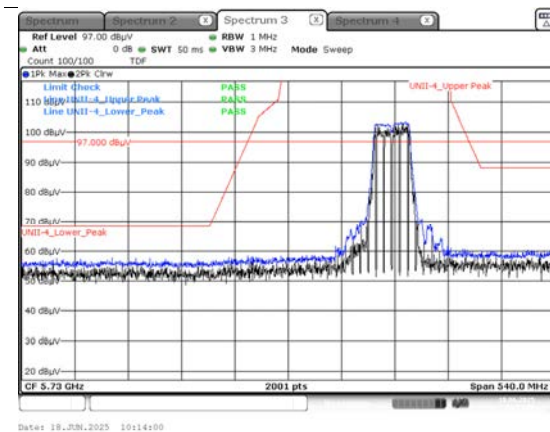
Peak Result (802.11ac_VHT20, Ch.169, X-H)



Peak Result (802.11n_HT40, Ch.167, X-H)



Peak Result (802.11ac_VHT40, Ch.167, X-H)



Peak Result (802.11ac_VHT80, Ch.171, X-H)

