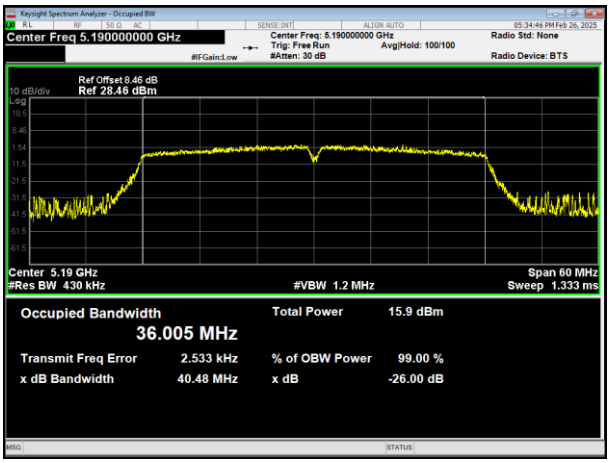
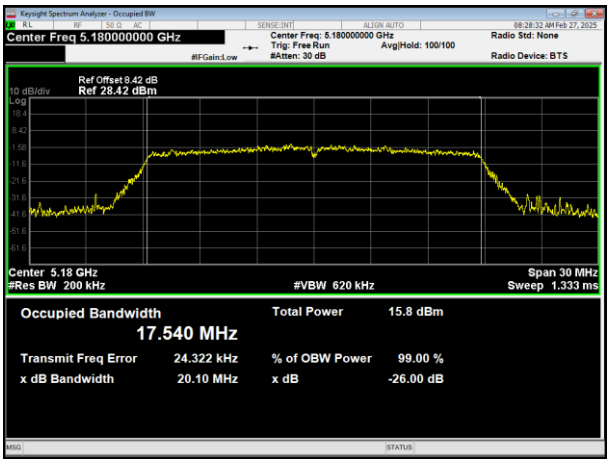
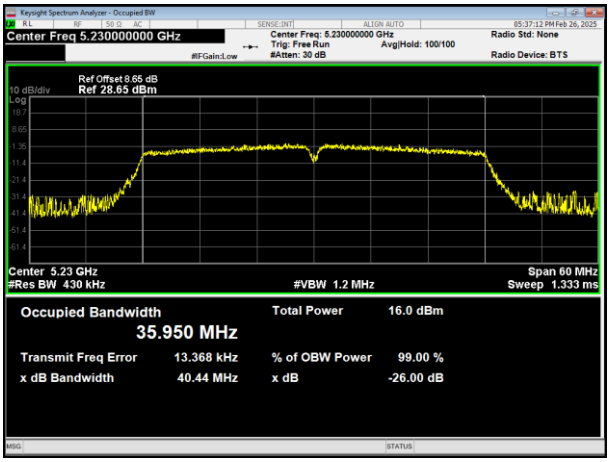
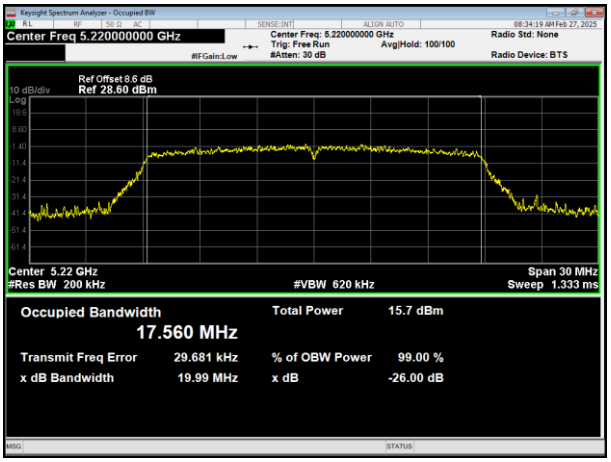
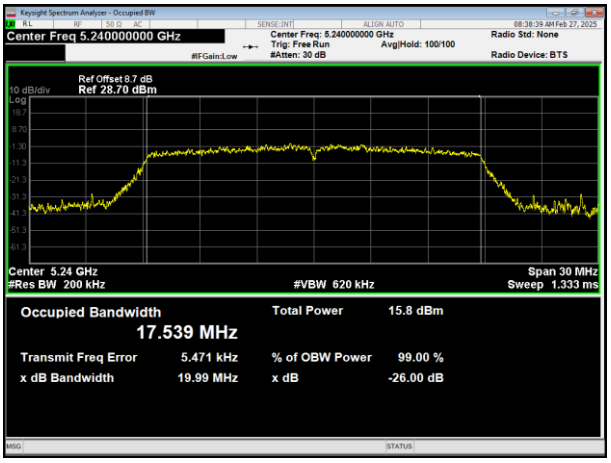
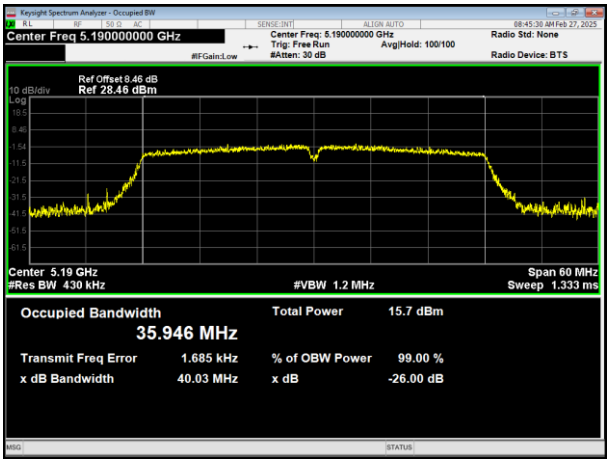
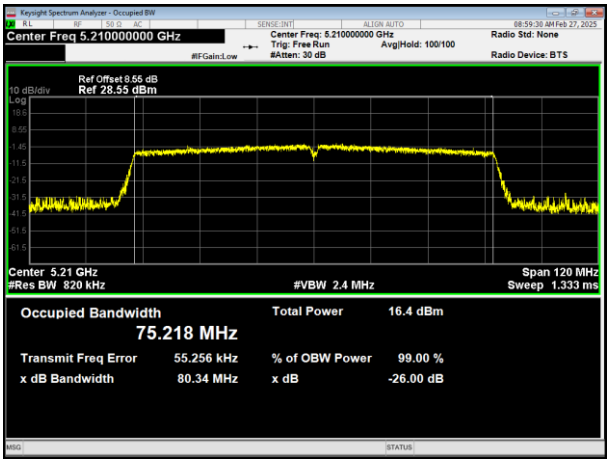
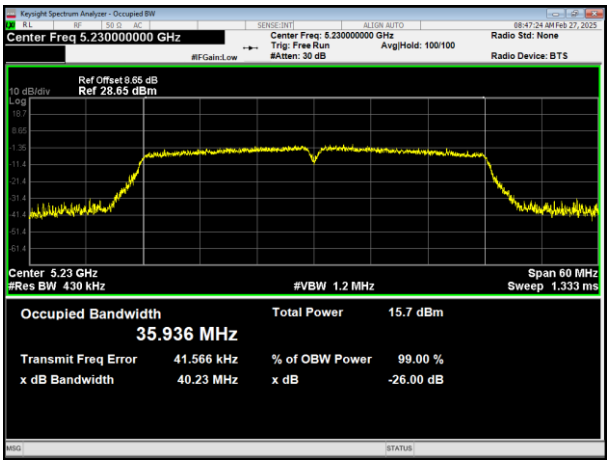
802.11n HT40	802.11ac HT20
	
5190MHz	5180MHz
	
5230MHz	5200MHz
	
	5240MHz

802.11ac HT40	802.11ac HT80
	
5190MHz	5210MHz
	
5230MHz	

7.. DUTY CYCLE TEST SIGNAL

7.1. APPLIED PROCEDURES / LIMIT

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

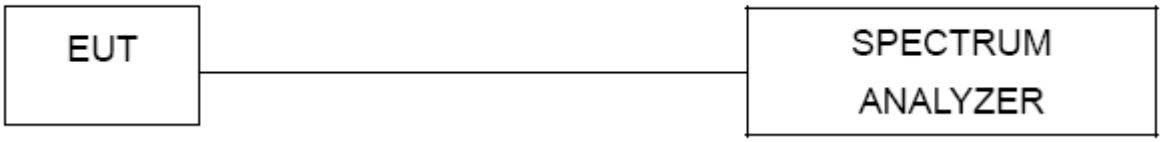
7.1.1. TEST PROCEDURE

1. Set RBW = 1 MHz.
2. Set the video bandwidth (VBW) ≥RBW.
3. Detector = Peak.
4. Sweep = auto couple.
5. Allow the trace to stabilize.
6. Span=0

7.1.2. DEVIATION FROM STANDARD

No deviation.

7.1.3. TEST SETUP

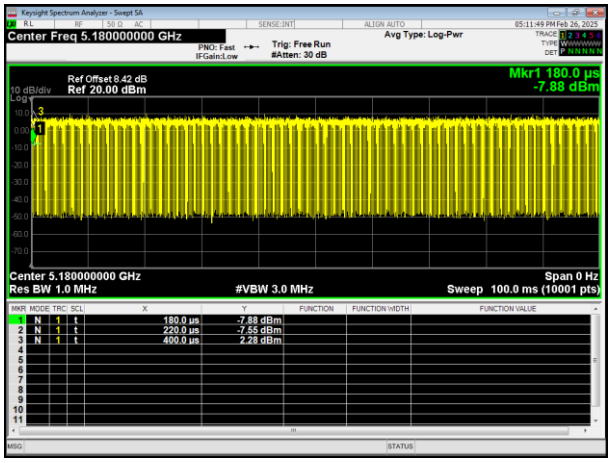
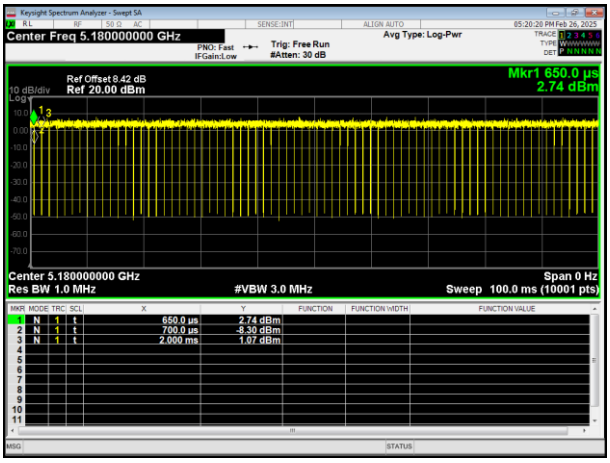
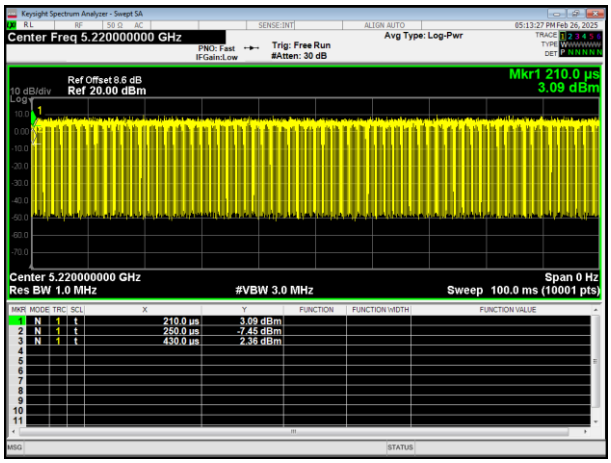
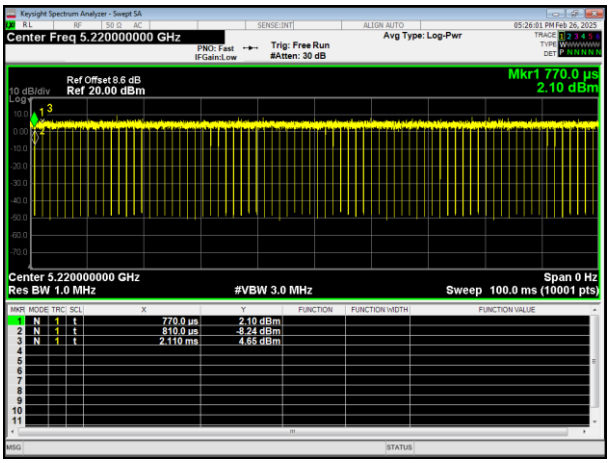
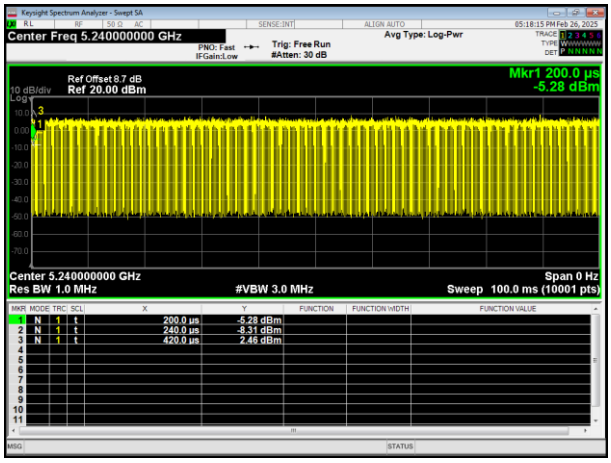
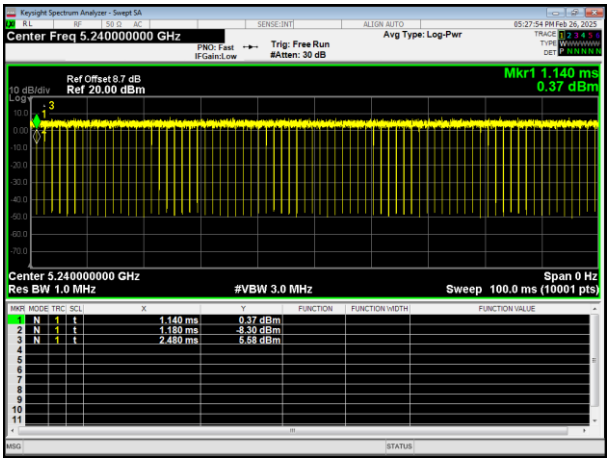


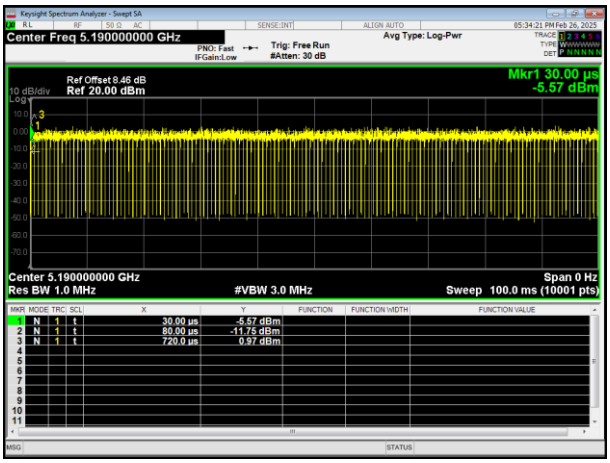
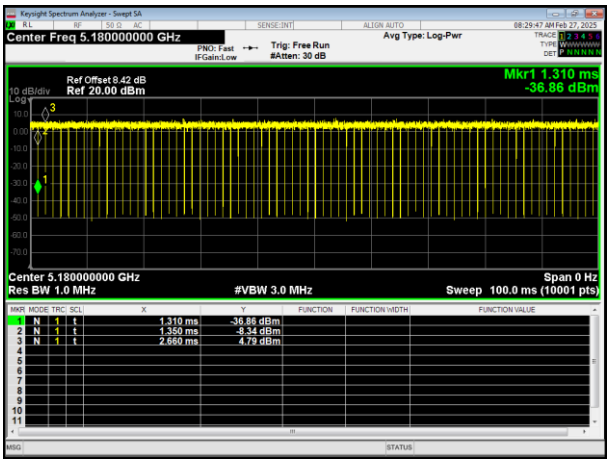
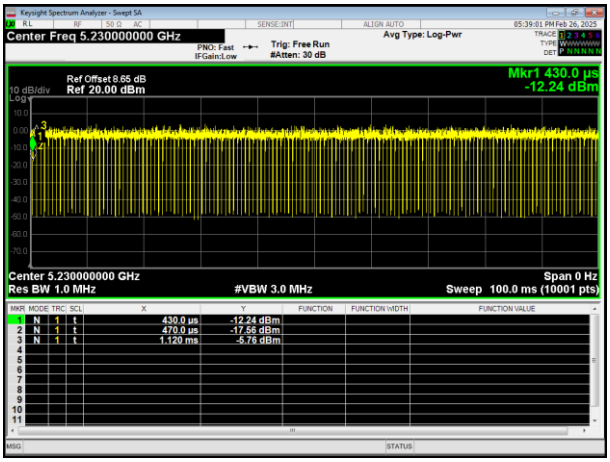
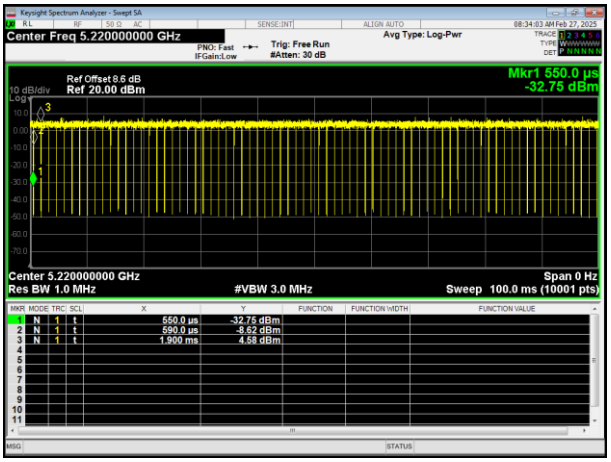
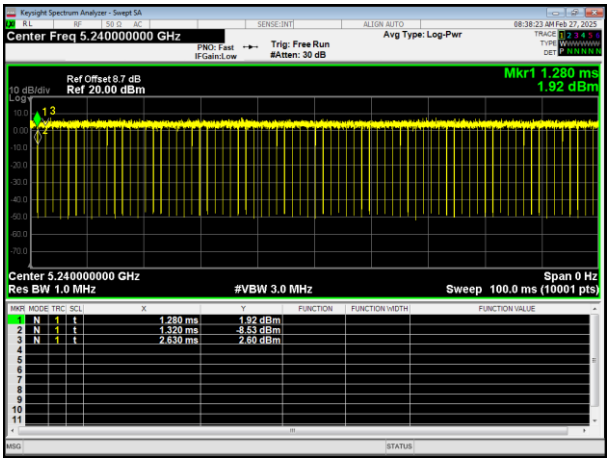
7.1.4. EUT OPERATION CONDITIONS

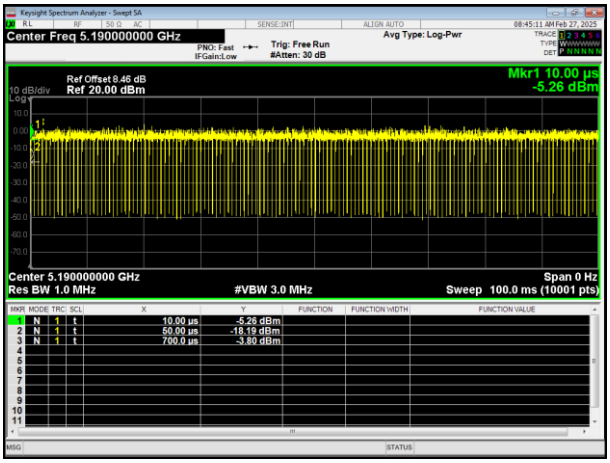
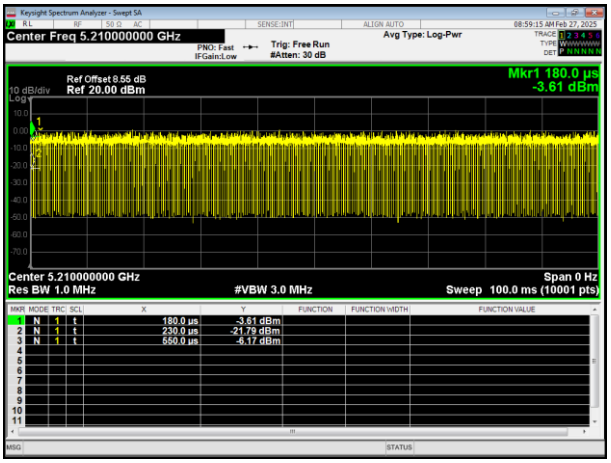
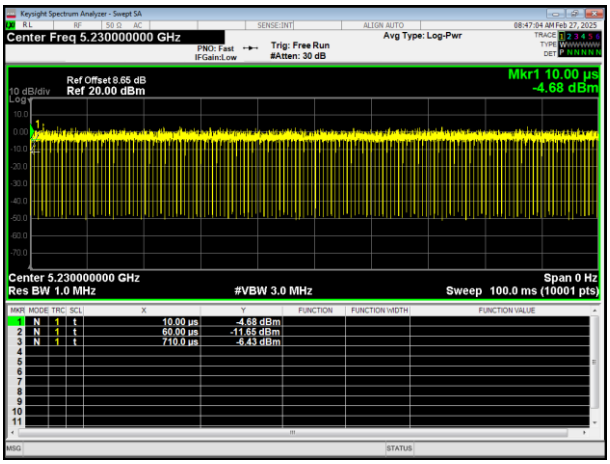
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5. TEST RESULTS

		Test Channel	Duty Cycle(%)	Duty Fator (dB) 10 * log (1/ Duty cycle)
Band 1	802.11a	Low	81.82	0.87
		Middle	81.82	0.87
		High	81.82	0.87
	802.11ac HT20	Low	97.04	0.13
		Middle	97.04	0.13
		High	97.04	0.13
	802.11ac HT40	Low	94.2	0.26
		High	92.86	0.32
	802.11ac HT80	/	86.49	0.63
	802.11n HT20	Low	96.3	0.16
		Middle	97.01	0.13
		High	97.01	0.13
	802.11n HT40	Low	92.75	0.33
		High	94.2	0.26

802.11a	802.11n HT20
	
5180MHz	5180MHz
	
5200MHz	5200MHz
	
5240MHz	5240MHz

802.11n HT40	802.11ac HT20
	
5190MHz	5180MHz
	
5230MHz	5200MHz
	
	5240MHz

802.11ac HT40	802.11ac HT80
	
5190MHz	5210MHz
	
5230MHz	

8.. FREQUENCY STABILITY

8.1. APPLIED PROCEDURES / LIMIT

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

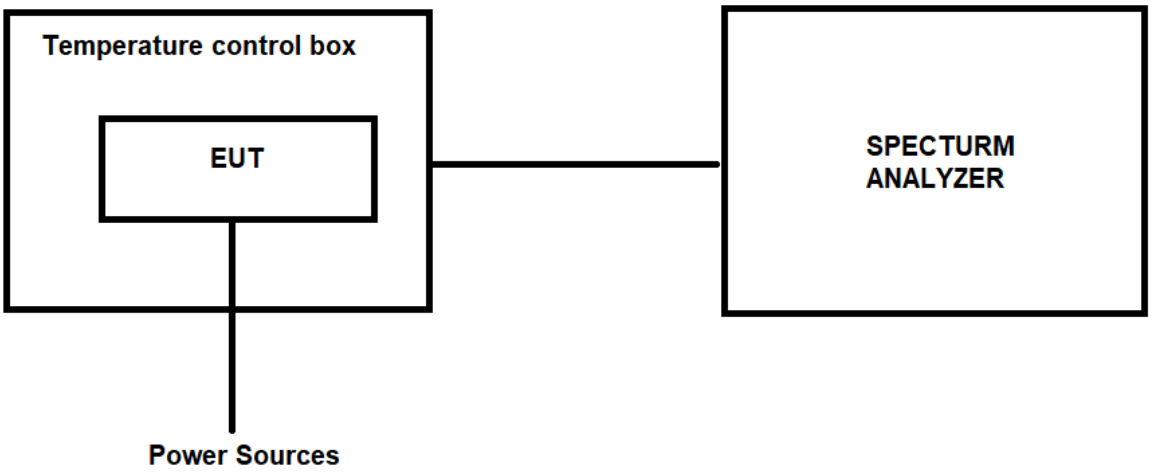
8.1.1. TEST PROCEDURE

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
2. Set EUT as normal operation.
3. Turn the EUT on and couple its output to spectrum.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
6. Repeat step with the temperature chamber set to the lowest temperature.

8.1.2. DEVIATION FROM STANDARD

No deviation.

8.1.3. TEST SETUP



8.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.5. TEST RESULTS

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)			Δ Frequency (PPM)		
			802.11a	802.11n HT20	802.11ac HT20	802.11a	802.11n HT20	802.11ac HT20
132V	-20℃	5180	5180.0325	5180.0363	5180.0352	6.2741	7.0077	6.7954
		5220	5220.0336	5220.0325	5220.0336	6.4368	6.2261	6.4368
		5240	5240.0215	5240.0263	5240.0252	4.1031	5.0191	4.8092
108V		5180	5180.0241	5180.0247	5180.0211	4.6525	4.7683	4.0734
		5220	5220.0316	5220.0346	5220.0336	6.0536	6.6284	6.4368
		5240	5240.0297	5240.0252	5240.0235	5.6679	4.8092	4.4847
120V	25℃	5180	5180.0552	5180.0551	5180.0546	10.6564	10.6371	10.5405
		5220	5220.0261	5220.0234	5220.0228	5.0000	4.4828	4.3678
		5240	5240.0316	5240.0369	5240.0336	6.0305	7.0420	6.4122
132V	50℃	5180	5180.0321	5180.0355	5180.0329	6.1969	6.8533	6.3514
		5220	5220.0263	5220.0225	5220.0222	5.0383	4.3103	4.2529
		5240	5240.0341	5240.0336	5240.0344	6.5076	6.4122	6.5649
108V	50℃	5180	5180.0336	5180.0352	5180.0359	6.4865	6.7954	6.9305
		5220	5220.0252	5220.0263	5220.0244	4.8276	5.0383	4.6743
		5240	5240.0314	5240.0325	5240.0366	5.9924	6.2023	6.9847

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (PPM)	
			802.11n HT40	802.11ac HT40	802.11n HT40	802.11ac HT40
132V	-20℃	5190	5190.0252	5190.0222	4.8555	4.2775
		5230	5230.0314	5230.0336	6.0038	6.4245
108V		5190	5190.0263	5190.0225	5.0674	4.3353
		5230	5230.0382	5230.0361	7.3040	6.9025
120V	25℃	5190	5190.0254	5190.0263	4.8940	5.0674
		5230	5230.0654	5230.0552	12.5048	10.5545
132V	50℃	5190	5190.0613	5190.0636	11.8112	12.2543
		5230	5230.0584	5230.0559	11.1663	10.6883
108V	50℃	5190	5190.0551	5190.0555	10.6166	10.6936
		5230	5230.0345	5230.0368	6.5966	7.0363

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)	Δ Frequency (PPM)
			802.11ac HT80	802.11ac HT80
132V	-20℃	5210	5210.0112	2.1497
108V		5210	5210.0263	5.0480
120V	25℃	5210	5210.0414	7.9463
132V	50℃	5210	5210.0364	6.9866
108V	50℃	5210	5210.0324	6.2188

9.. TRANSMISSION IN THE ABSENCE OF DATA

9.1. STANDARD REQUIREMENT

According to §15.407(c)
The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

9.2. TEST RESULT

Pass.
Note:
■ Antenna use a permanently attached antenna which is not replaceable.
☐ Not using a standard antenna jack or electrical connector for antenna replacement
☐ The antenna has to be professionally installed (please provide method of installation)
Please refer to the attached document Internal Photos to show the antenna connector.

10.. ANTENNA REQUIREMENT

10.1. STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

10.2. EUT ANTENNA

The EUT antenna is Internal antenna, It comply with the standard requirement.

11.. TEST SEUUP PHOTO

Reference to the appendix I for details.

12.. EUT PHOTO

Reference to the appendix II for details.

※※※※※ **END OF REPORT** ※※※※※