



802.11a



802.11ac HT20



5180MHz



5180MHz



5200MHz



5200MHz



5240MHz

5240MHz



802.11ac HT40



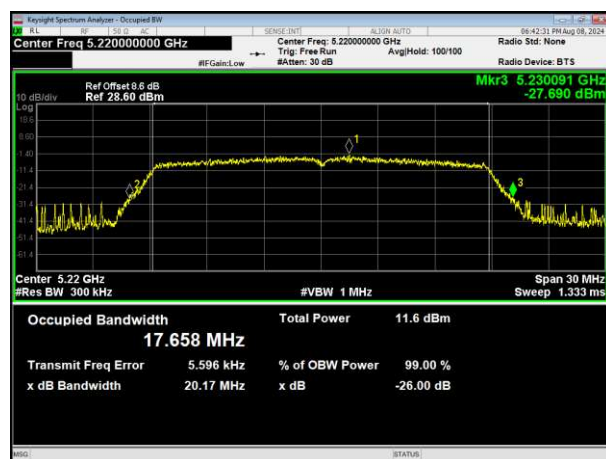
802.11n HT20



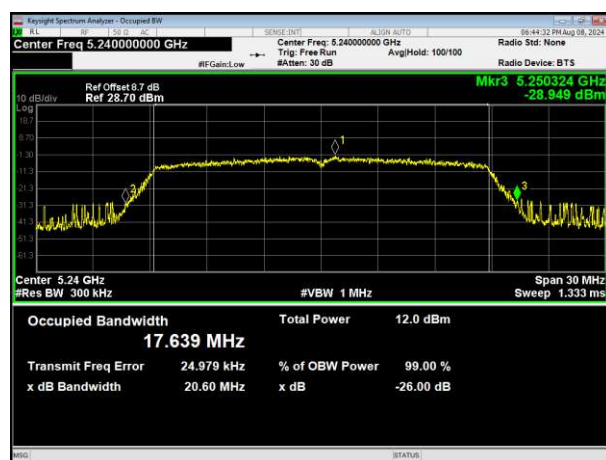
5190MHz



5180MHz



5230MHz



5200MHz

5240MHz



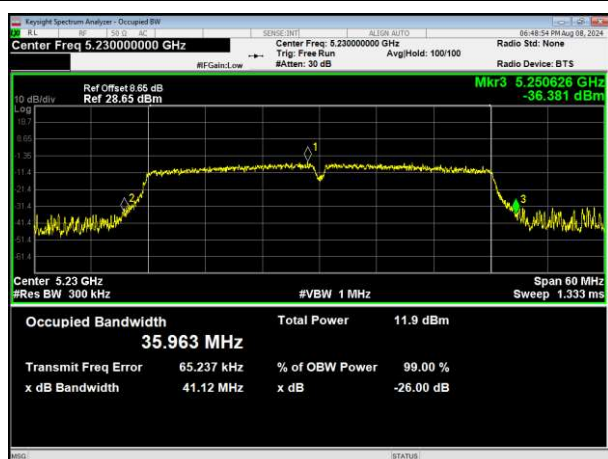
802.11n HT40



802.11ac HT80



5190MHz

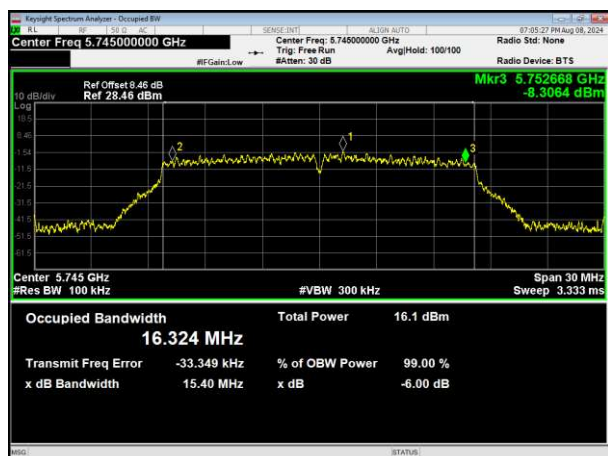


5210MHz

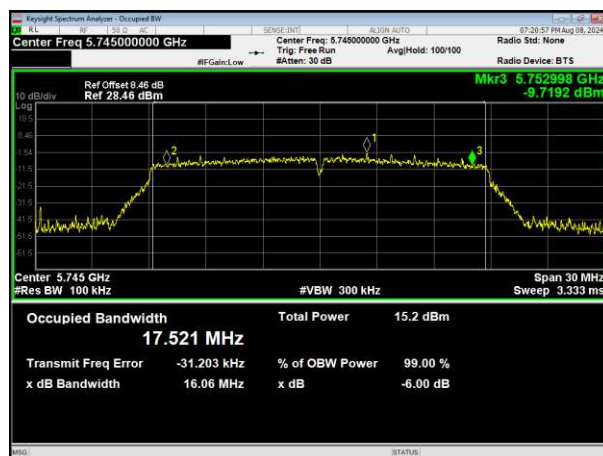
5230MHz



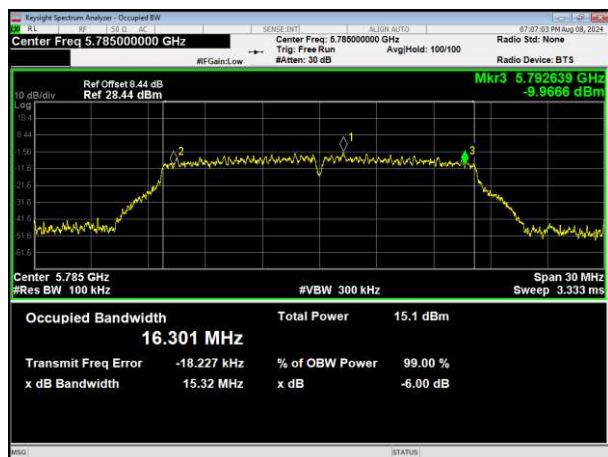
802.11a



802.11ac HT20



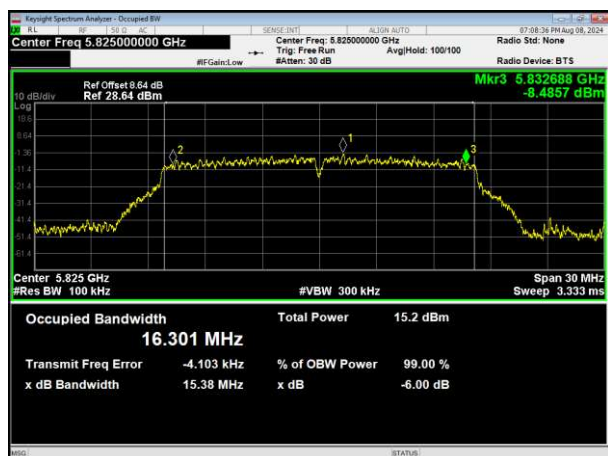
5745MHz



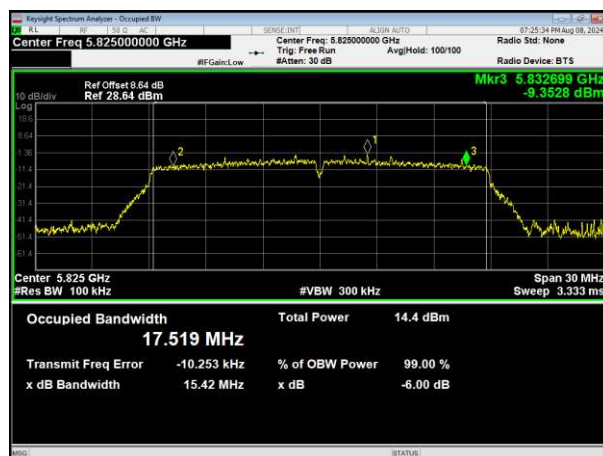
5745MHz



5785MHz



5785MHz



5825MHz

5825MHz



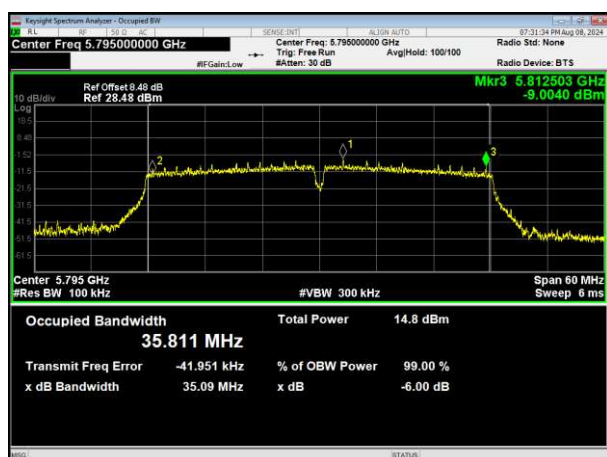
802.11ac HT40



802.11n HT20



5755MHz



5745MHz



5795MHz



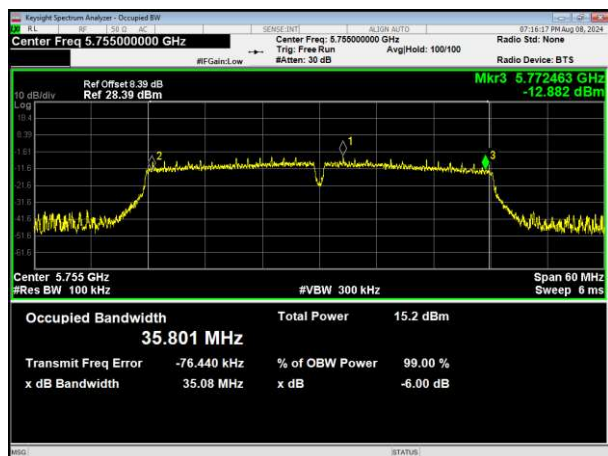
5785MHz



5825MHz



802.11n HT40



802.11ac HT80



5755MHz



5775MHz

5795MHz



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) $\geq$ 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.

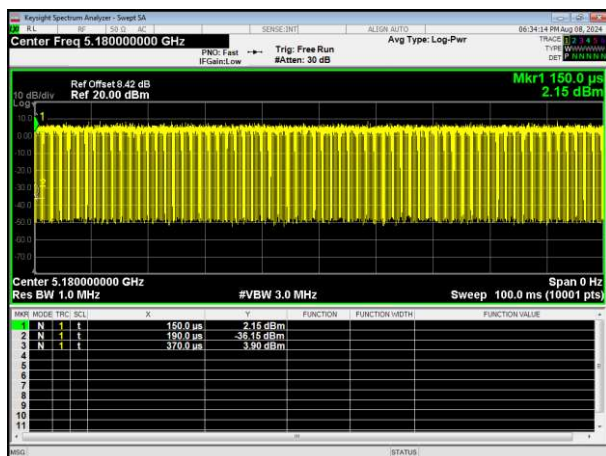
**7.1.5 TEST RESULTS**

Operation Mode		Duty Cycle(%)	Duty Fator (dB) 10 * log (1/ Duty cycle)
Band 1	802.11a	81.82	0.87
	802.11ac(HT20)	96.32	0.16
	802.11ac(HT40)	96.32	0.16
	802.11ac(HT80)	89.19	0.5
	802.11n(HT20)	97.01	0.13
	802.11n(HT40)	94.2	0.26

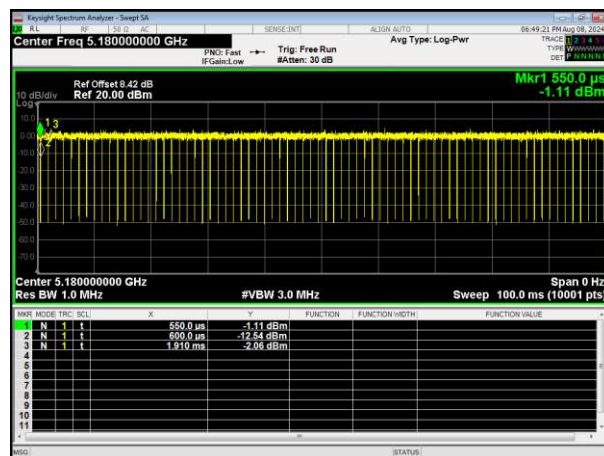
Operation Mode		Duty Cycle(%)	Duty Fator (dB) 10 * log (1/ Duty cycle)
Band 4	802.11a	81.82	0.87
	802.11ac(HT20)	97.04	0.13
	802.11ac(HT40)	94.2	0.26
	802.11ac(HT80)	89.19	0.5
	802.11n(HT20)	97.01	0.13
	802.11n(HT40)	94.2	0.26



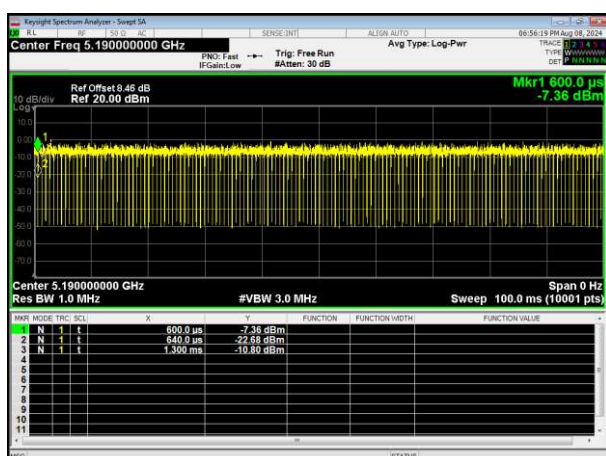
802.11a



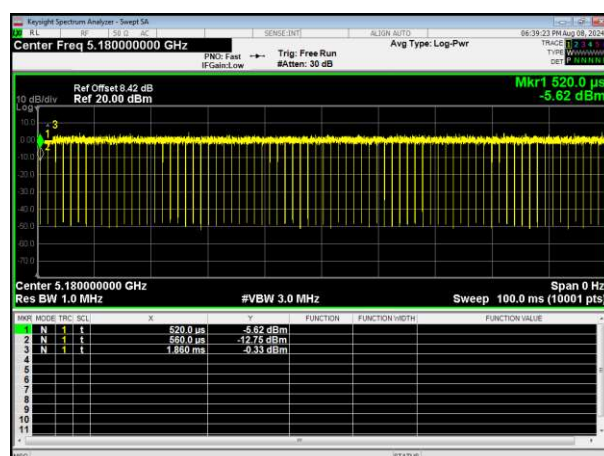
802.11ac HT20



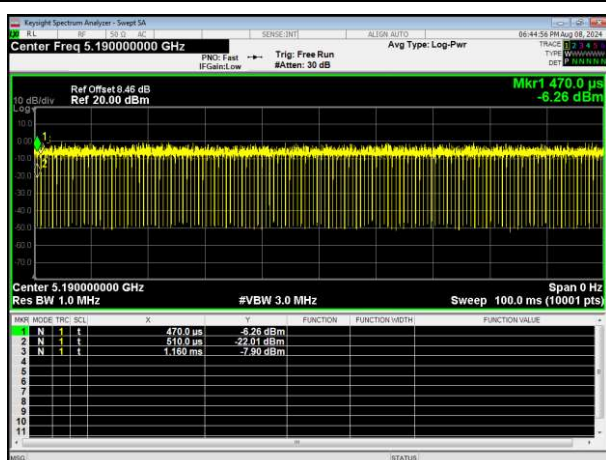
802.11ac HT40



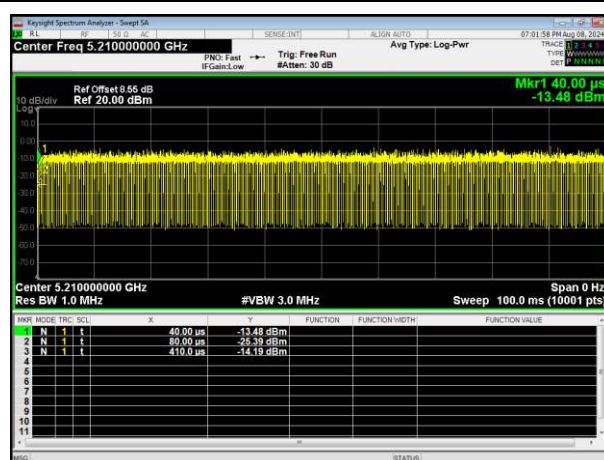
802.11n HT20



802.11n HT40

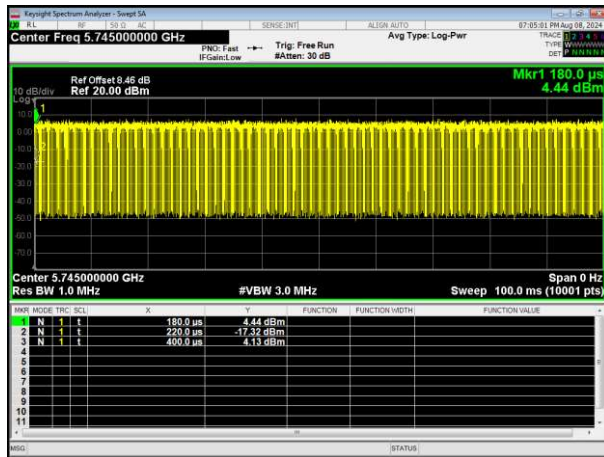


802.11ac HT80

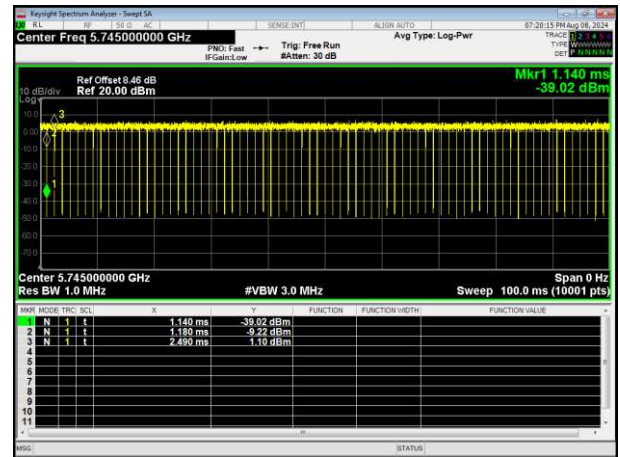




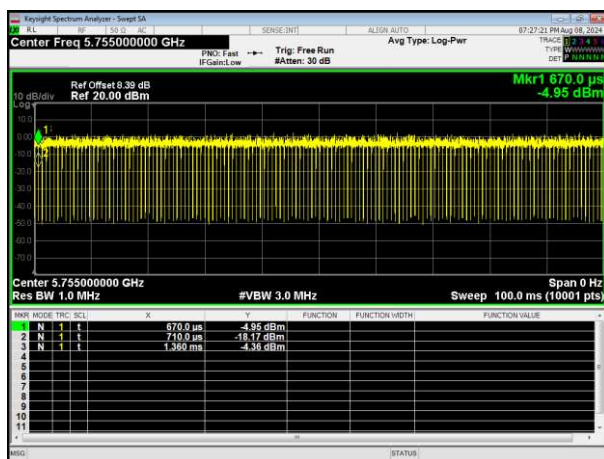
802.11a



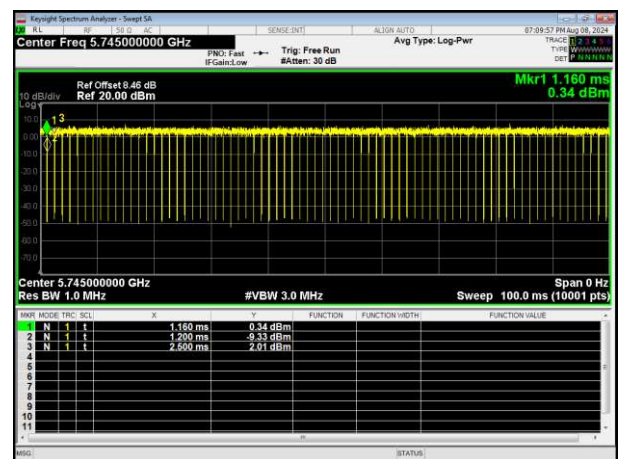
802.11ac HT20



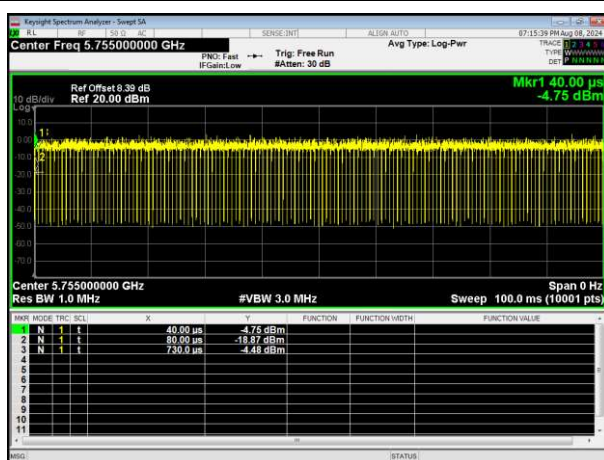
802.11ac HT40



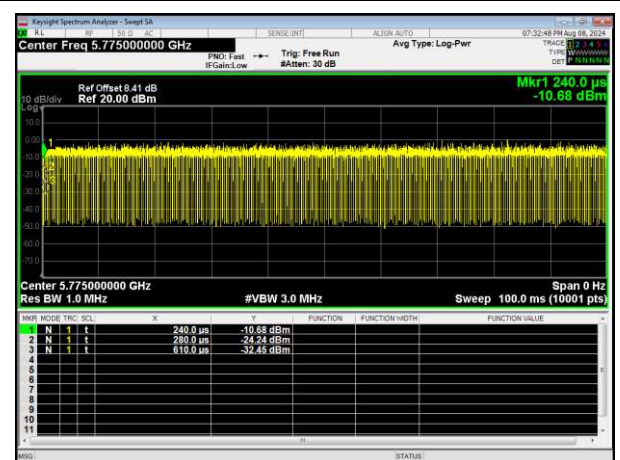
802.11n HT20



802.11n HT40



802.11ac HT80





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.

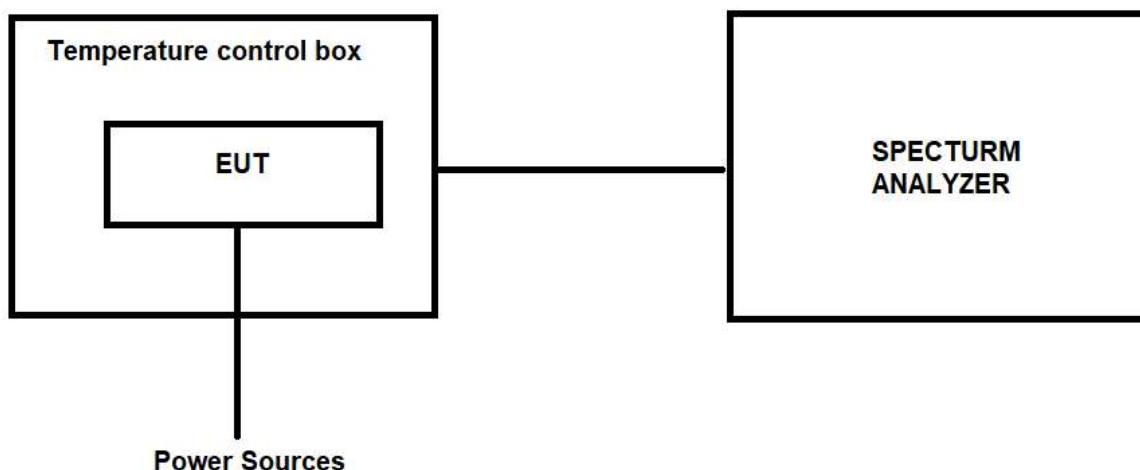
8.1.1 TEST PROCEDURE

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	Spectrum Frequency (MHz)			Δ Frequency (MHz)		
		(MHz)	802.11a	802.11n HT20	802.11ac HT20	802.11a	802.11n HT20	802.11ac HT20
132V	-20℃	5180	5180.0369	5180.0396	5180.0314	-7.1236	-7.6448	-6.0618
		5220	5220.0352	5220.0324	5220.0336	-6.7433	-6.2069	-6.4368
		5240	5240.0214	5240.0222	5240.0214	-4.0840	-4.2366	-4.0840
		5745	5745.0354	5745.0396	5745.0327	-6.1619	-6.8930	-5.6919
		5785	5785.0396	5785.0314	5785.0356	-6.8453	-5.4278	-6.1538
		5825	5825.0314	5825.0352	5825.0365	-5.3906	-6.0429	-6.2661
108V	-20℃	5180	5180.0252	5180.0244	5180.0254	-4.8649	-4.7104	-4.9035
		5220	5220.0318	5220.0363	5220.0352	-6.0920	-6.9540	-6.7433
		5240	5240.0241	5240.0245	5240.0227	-4.5992	-4.6756	-4.3321
		5745	5745.0269	5745.0225	5745.0263	-4.6823	-3.9164	-4.5779
		5785	5785.0341	5785.0363	5785.0355	-5.8946	-6.2748	-6.1366
		5825	5825.0417	5825.0441	5825.0412	-7.1588	-7.5708	-7.0730
120V	25℃	5180	5180.0526	5180.0513	5180.0563	-10.1544	-9.9035	-10.8687
		5220	5220.0268	5220.0239	5220.0244	-5.1341	-4.5785	-4.6743
		5240	5240.0352	5240.0314	5240.0367	-6.7176	-5.9924	-7.0038
		5745	5745.0354	5745.0322	5745.0325	-6.1619	-5.6049	-5.6571
		5785	5785.0436	5785.0436	5785.0466	-7.5367	-7.5367	-8.0553
		5825	5825.0218	5825.0223	5825.0224	-3.7425	-3.8283	-3.8455
132V	50℃	5180	5180.0352	5180.0314	5180.0367	-6.7954	-6.0618	-7.0849
		5220	5220.0245	5220.0244	5220.0272	-4.6935	-4.6743	-5.2107
		5240	5240.0396	5240.0352	5240.0353	-7.5573	-6.7176	-6.7366
		5745	5745.0614	5745.0658	5745.0641	-10.6876	-11.4534	-11.1575
		5785	5785.0428	5785.0426	5785.0443	-7.3984	-7.3639	-7.6577
		5825	5825.0644	5825.0625	5825.0667	-11.0558	-10.7296	-11.4506
108V	50℃	5180	5180.0336	5180.0322	5180.0344	-6.4865	-6.2162	-6.6409
		5220	5220.0251	5220.0267	5220.0253	-4.8084	-5.1149	-4.8467
		5240	5240.0317	5240.0353	5240.0324	-6.0496	-6.7366	-6.1832
		5745	5745.0463	5745.0424	5745.0462	-8.0592	-7.3803	-8.0418
		5785	5785.0254	5785.0257	5785.0248	-4.3907	-4.4425	-4.2869
		5825	5825.0739	5825.0736	5825.0763	-12.6867	-12.6352	-13.0987



Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (MHz)	
			802.11n HT40	802.11ac HT40	802.11n HT40	802.11ac HT40
132V	-20℃	5190	5190.0225	5190.0254	-4.3353	-4.8940
		5230	5230.0336	5230.0336	-6.4245	-6.4245
		5755	5755.0574	5755.0585	-9.9739	-10.1651
		5795	5795.0652	5795.0664	-11.2511	-11.4582
108V		5190	5190.0264	5190.0256	-5.0867	-4.9326
		5230	5230.0346	5230.0348	-6.6157	-6.6539
		5755	5755.0233	5755.0663	-4.0487	-11.5204
		5795	5795.0451	5795.0444	-7.7826	-7.6618
120V	25℃	5190	5190.0252	5190.0223	-4.8555	-4.2967
		5230	5230.0676	5230.0655	-12.9254	-12.5239
		5755	5755.0255	5755.0214	-4.4309	-3.7185
		5795	5795.0568	5795.0534	-9.8016	-9.2148
132V	50℃	5190	5190.0663	5190.0656	-12.7746	-12.6397
		5230	5230.0564	5230.0585	-10.7839	-11.1855
		5755	5755.0467	5755.0484	-8.1147	-8.4101
		5795	5795.0326	5795.0335	-5.6255	-5.7808
108V	50℃	5190	5190.0584	5190.0565	-11.2524	-10.8863
		5230	5230.0352	5230.0349	-6.7304	-6.6730
		5755	5755.0358	5755.0363	-6.2207	-6.3076
		5795	5795.0485	5795.0488	-8.3693	-8.4211



Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)	Δ Frequency (MHz)
			802.11ac HT80	802.11ac HT80
132V	-20℃	5210	5210.0156	-2.9942
		5775	5775.0168	-2.9091
108V		5210	5210.0274	-5.2591
		5775	5775.0343	-5.9394
120V	25℃	5210	5210.0465	-8.9251
		5775	5775.0364	-6.3030
132V	50℃	5210	5210.0347	-6.6603
		5775	5775.0265	-4.5887
108V	50℃	5210	5210.0336	-6.4491
		5775	5775.0547	-9.4719



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

No non-compliance noted:
Refer to the theory of operation.

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 *******