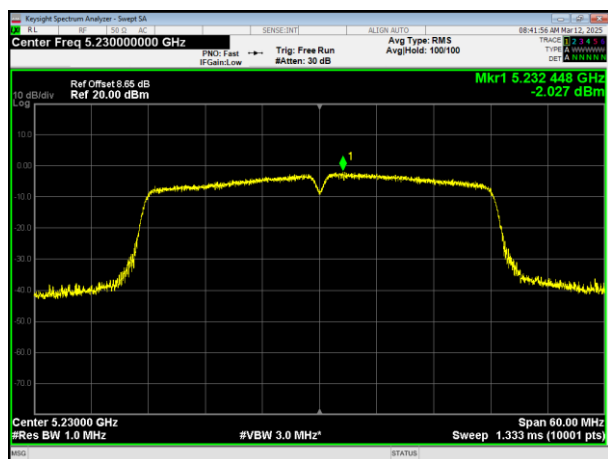




802.11n HT40



5190MHz



5230MHz



802.11a



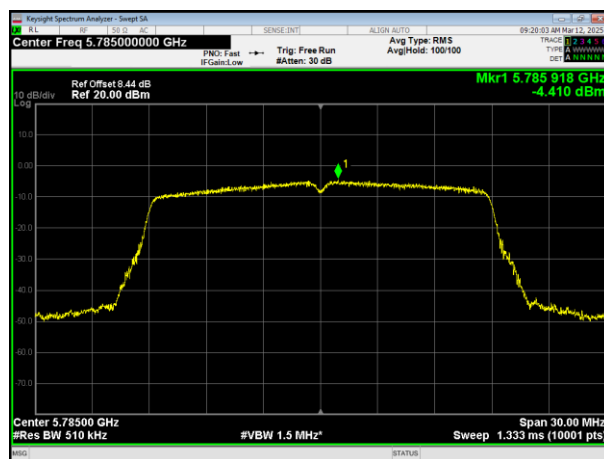
802.11ac HT20



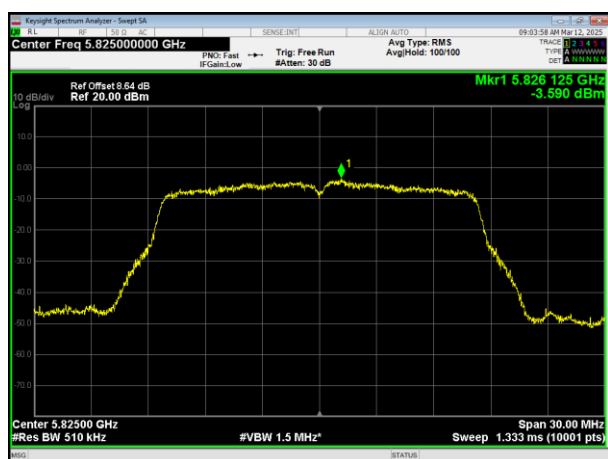
5745MHz



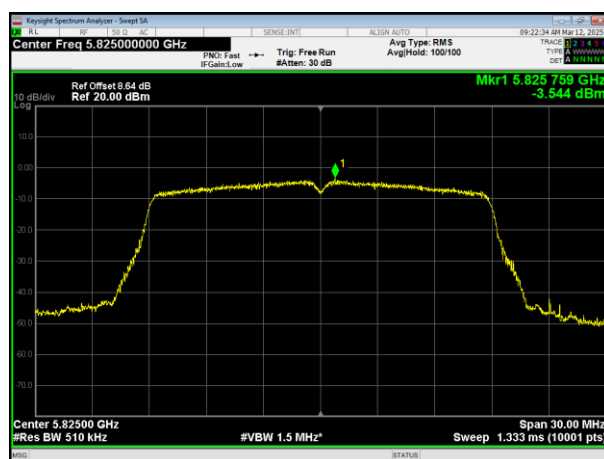
5745MHz



5785MHz



5785MHz

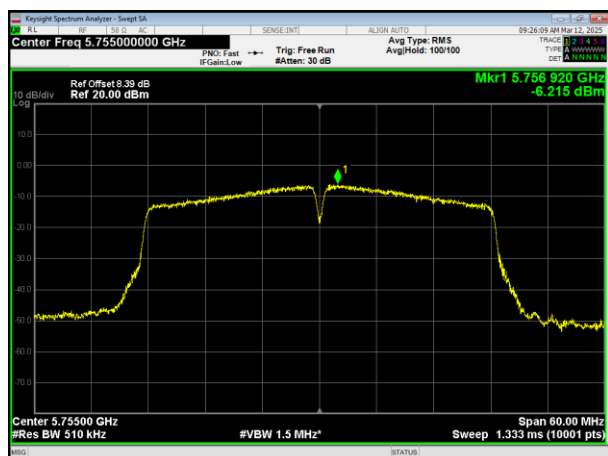


5825MHz

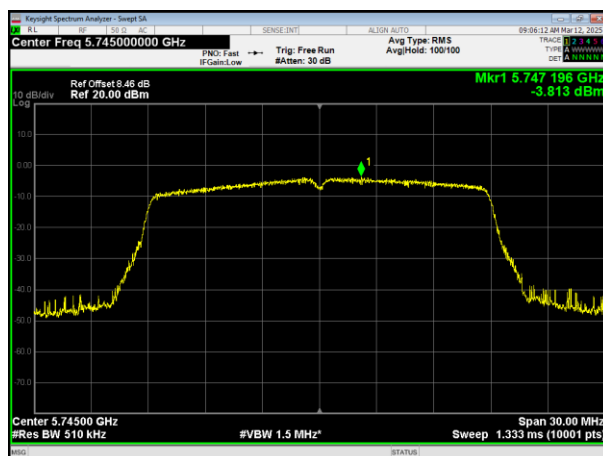
5825MHz



802.11ac HT40



802.11n HT20



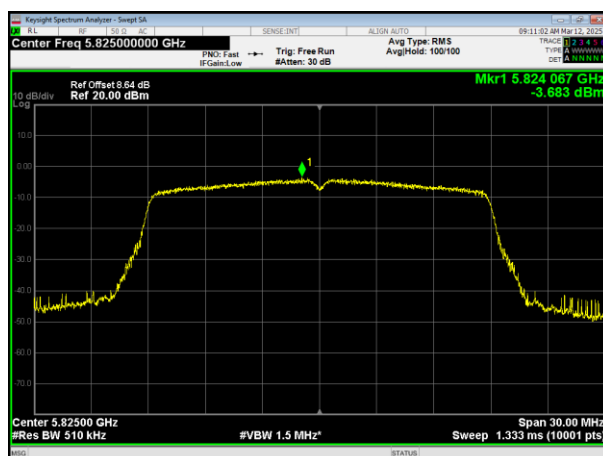
5755MHz



5745MHz



5795MHz

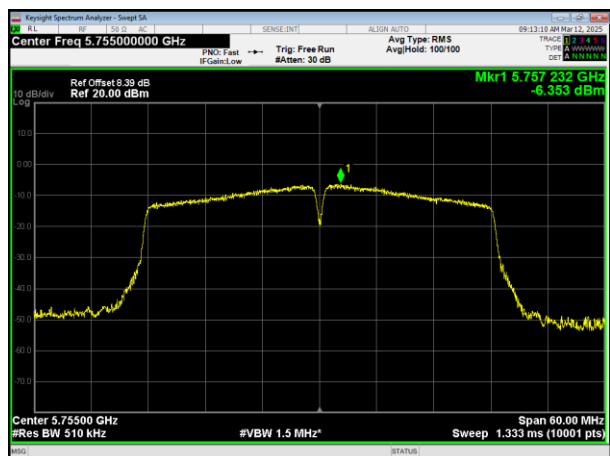


5785MHz

5825MHz



802.11n HT40



5755MHz



5795MHz



6. 6DB&26DB&99% BANDWIDTH TEST

6.1 APPLIED PROCEDURES / LIMIT

The 26 dB bandwidth is used to determine the conducted power limits.

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.

The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

6.1.1 TEST PROCEDURE

6dB Bandwidth	
Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Span	30MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

26dB Bandwidth	
Spectrum Parameters	Setting
RBW	approximately 1% of the emission bandwidth
VBW	>RBW
Span	30MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

99% Occupied Bandwidth	
Spectrum Parameters	Setting
RBW	1% to 5% of the OBW
VBW	Approximately three times the RBW
Span	between 1.5 times and 5.0 times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP





6.1.4 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.

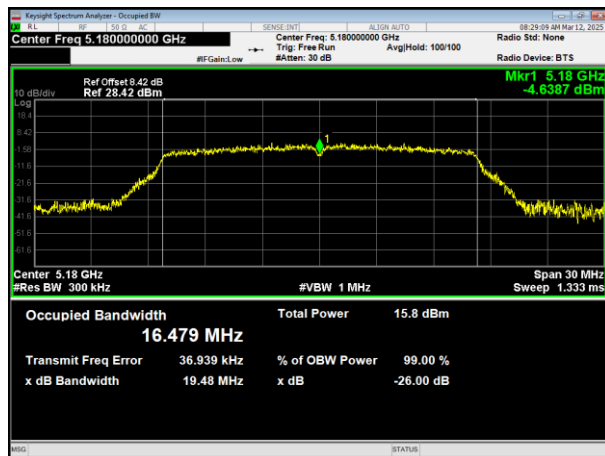
6.1.5 TEST RESULTS

		Test Channel	26dB Bandwidth (MHz)	Result
Band 1	802.11a	Low	19.484	Pass
		Middle	19.533	Pass
		High	19.576	Pass
	802.11ac HT20	Low	20.227	Pass
		Middle	20.388	Pass
		High	20.235	Pass
	802.11ac HT40	Low	40.14	Pass
		High	40.295	Pass
	802.11n HT20	Low	20.539	Pass
		Middle	21.388	Pass
		High	20.245	Pass
	802.11n HT40	Low	39.694	Pass
		High	41.158	Pass

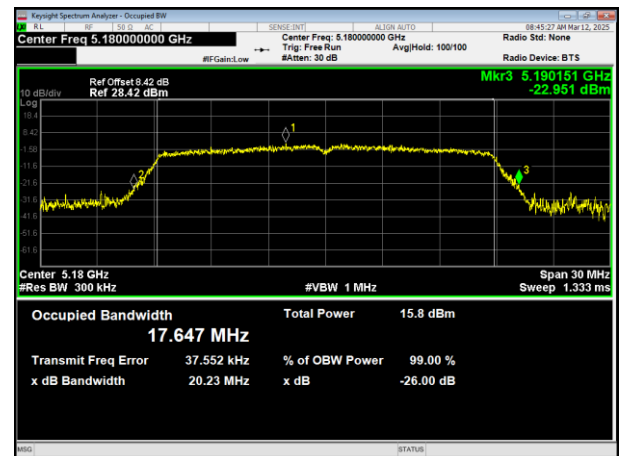
		Test Channel	6dB Bandwidth (MHz)	6dB Bandwidth Limit (MHz)	Result
Band 4	802.11a	Low	15.621	>0.5	Pass
		Middle	15.703	>0.5	Pass
		High	16.349	>0.5	Pass
	802.11ac HT20	Low	16.21	>0.5	Pass
		Middle	14.181	>0.5	Pass
		High	14.666	>0.5	Pass
	802.11ac HT40	Low	26.327	>0.5	Pass
		High	28.788	>0.5	Pass
	802.11n HT20	Low	16.656	>0.5	Pass
		Middle	15.23	>0.5	Pass
		High	16.438	>0.5	Pass
	802.11n HT40	Low	30.006	>0.5	Pass
		High	32.528	>0.5	Pass



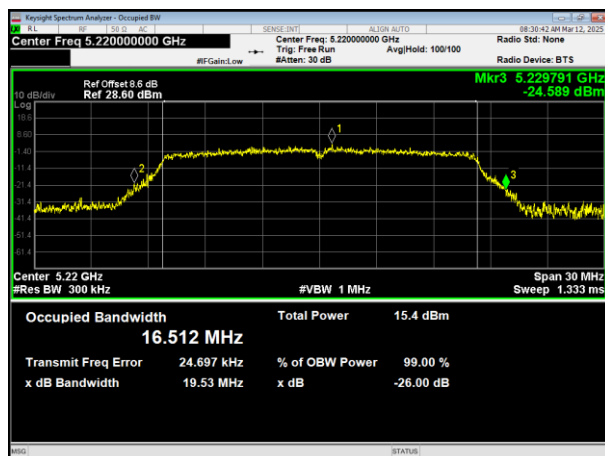
802.11a



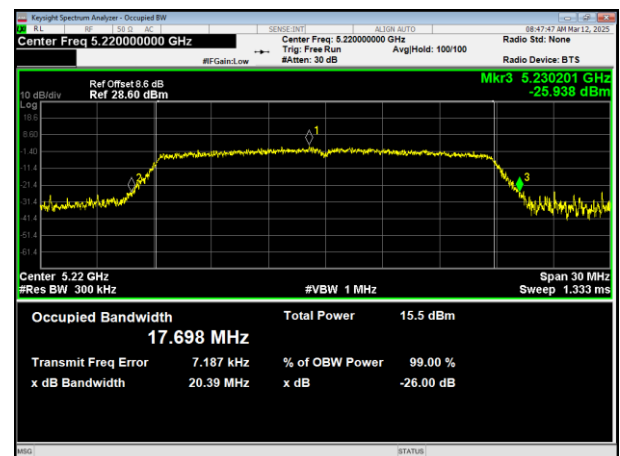
802.11ac HT20



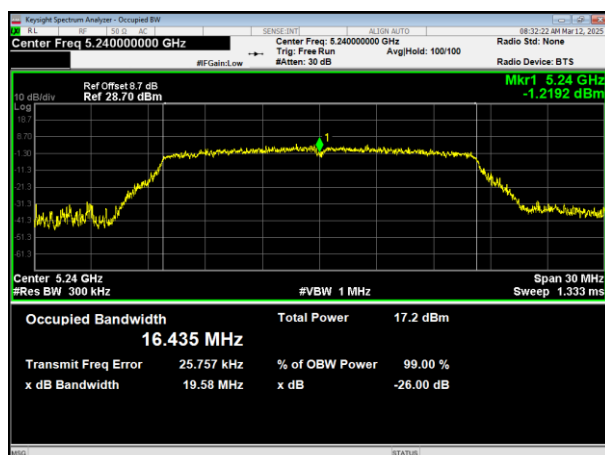
5180MHz



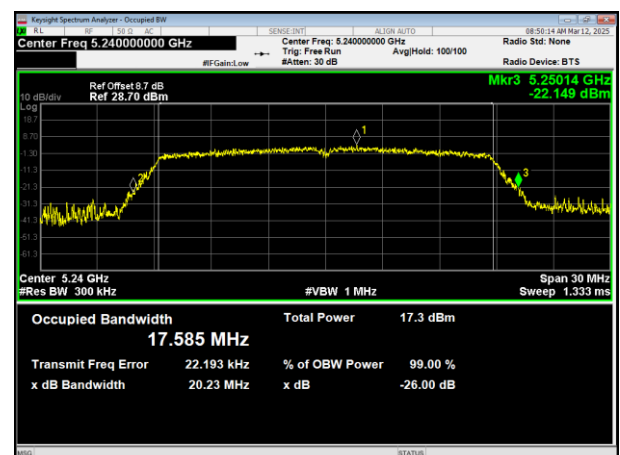
5180MHz



5200MHz



5200MHz

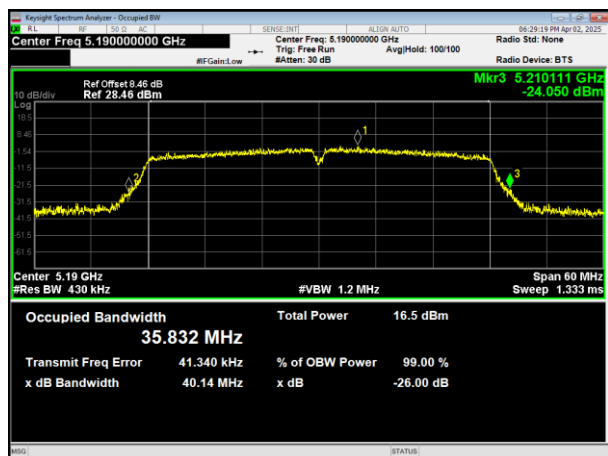


5240MHz

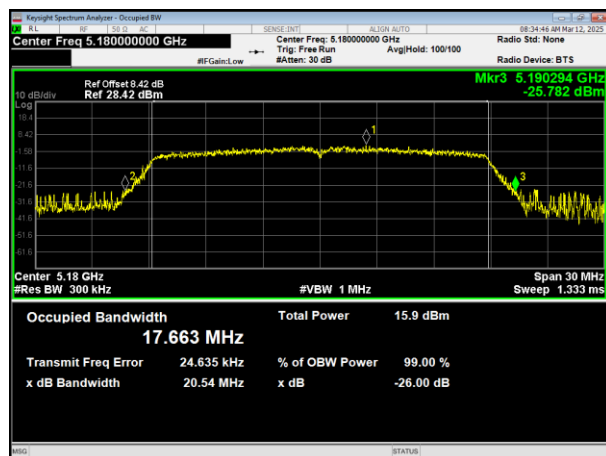
5240MHz



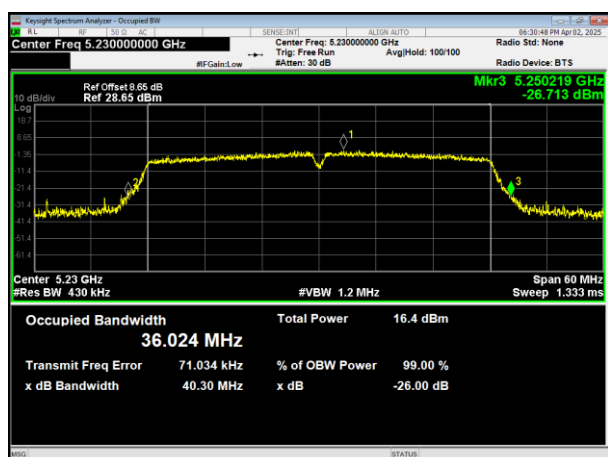
802.11ac HT40



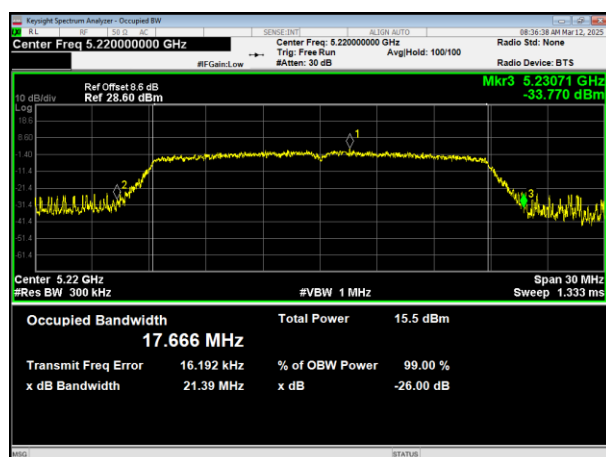
802.11n HT20



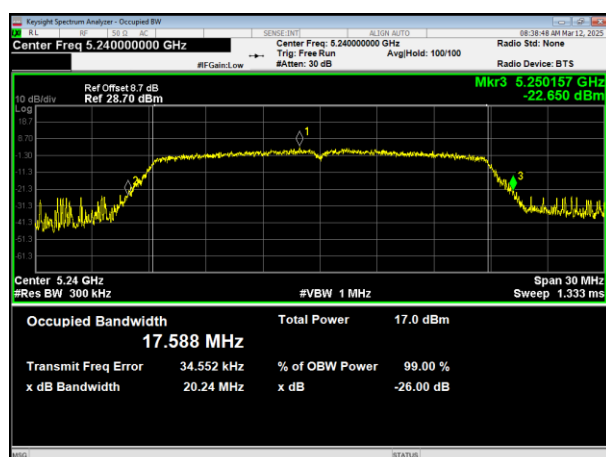
5190MHz



5180MHz



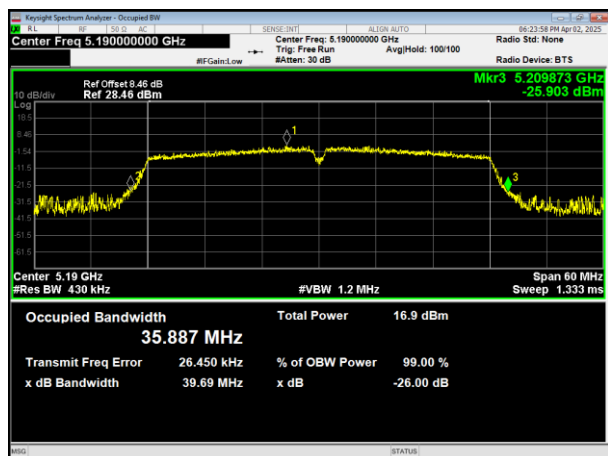
5230MHz



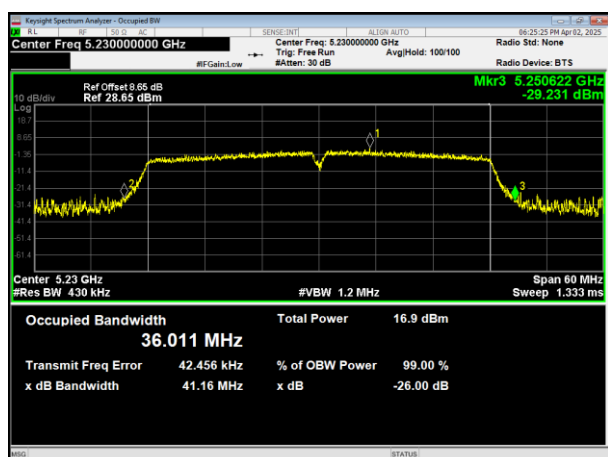
5240MHz



802.11n HT40



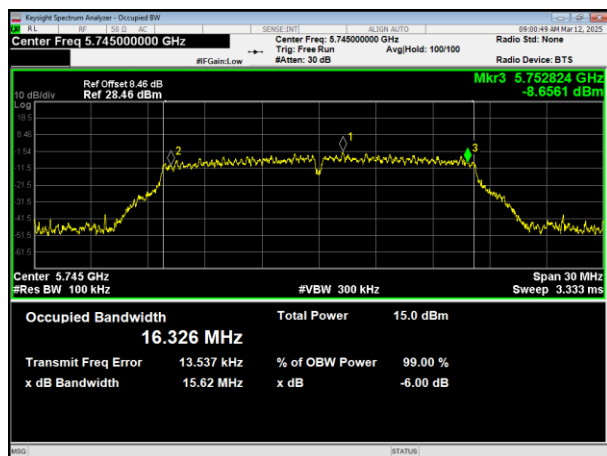
5190MHz



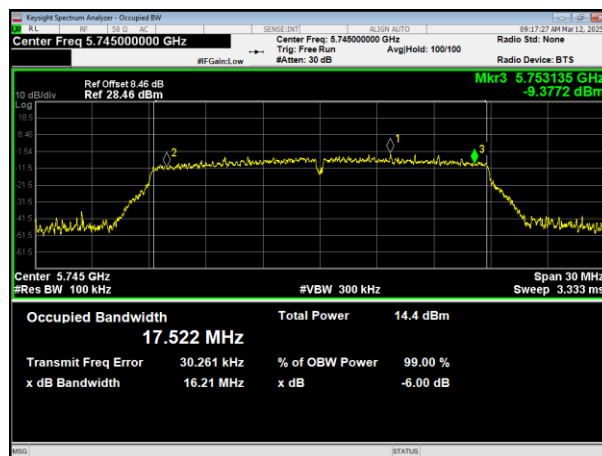
5230MHz



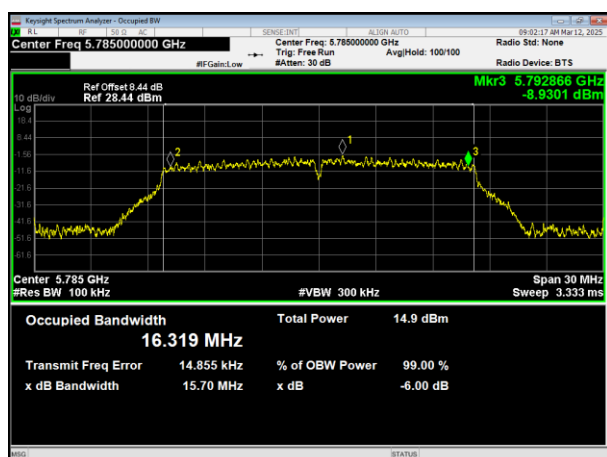
802.11a



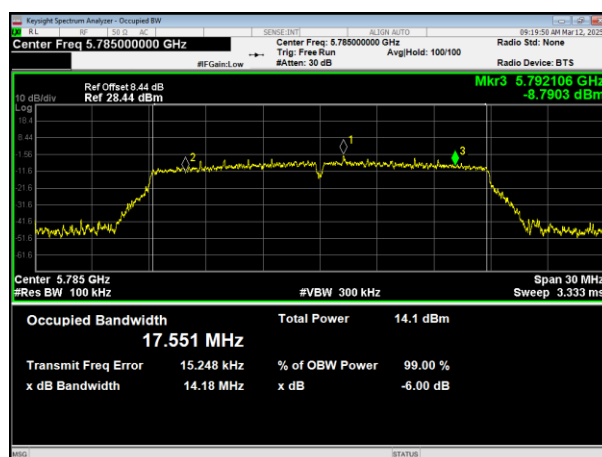
802.11ac HT20



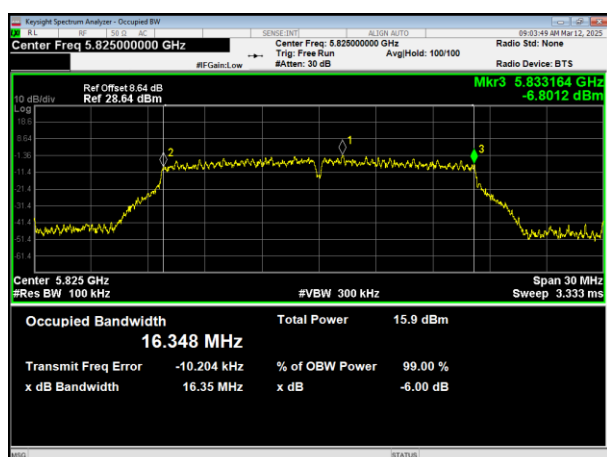
5745MHz



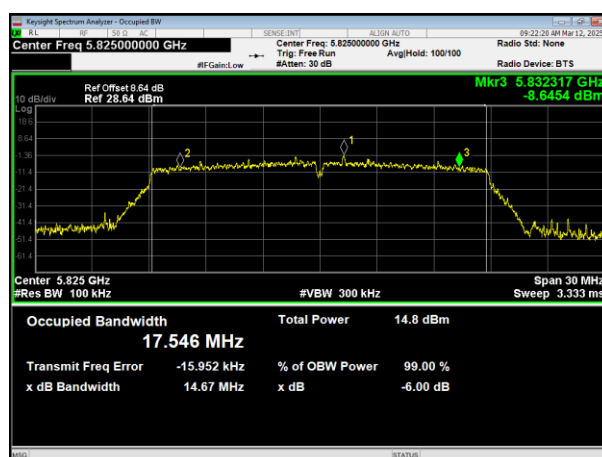
5745MHz



5785MHz



5785MHz

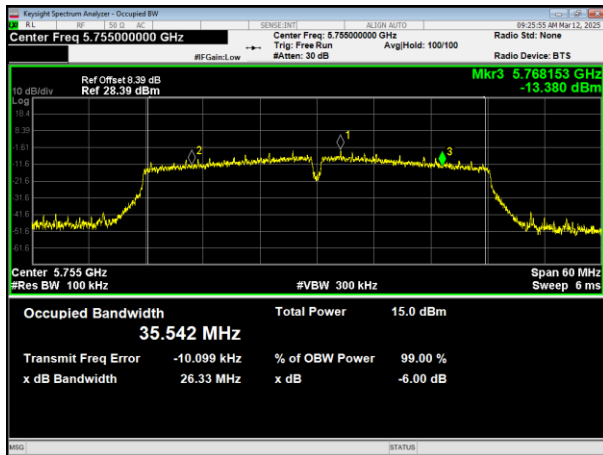


5825MHz

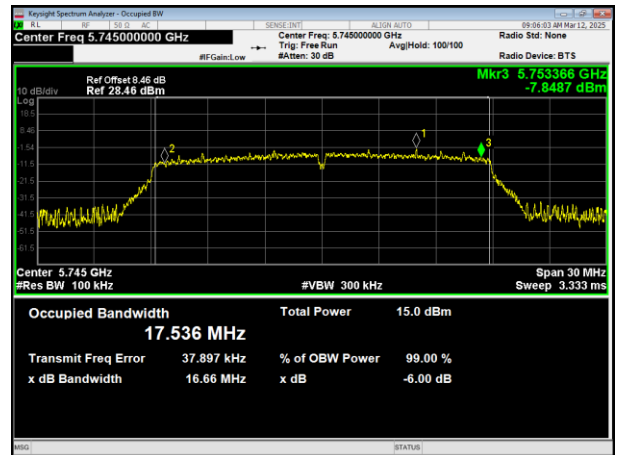
5825MHz



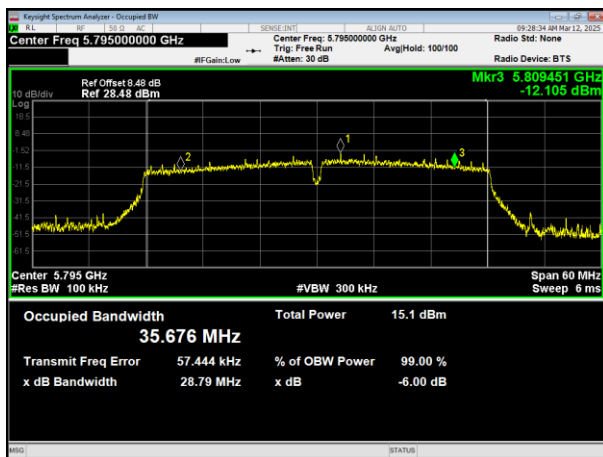
802.11ac HT40



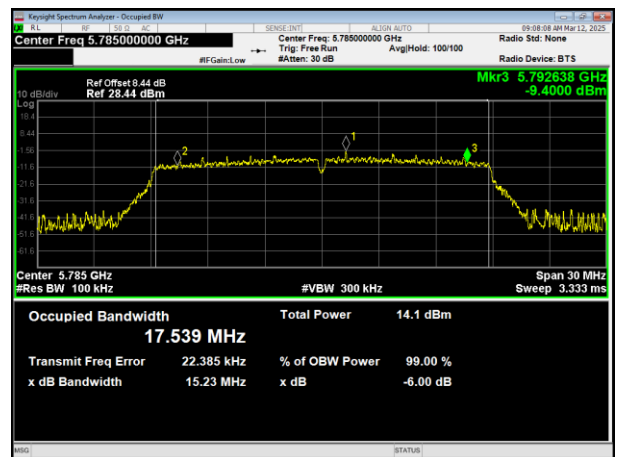
802.11n HT20



5755MHz



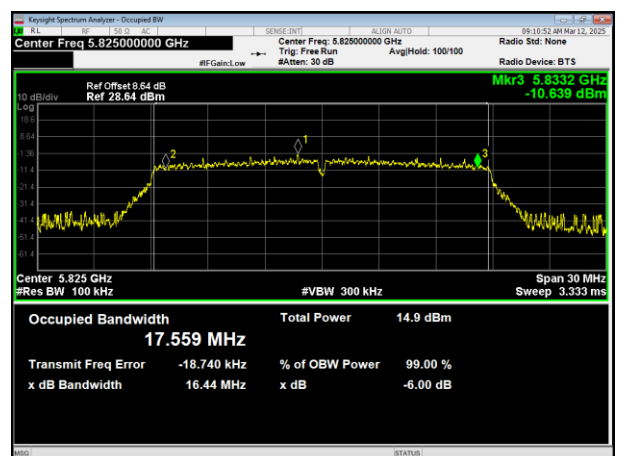
5745MHz



5795MHz



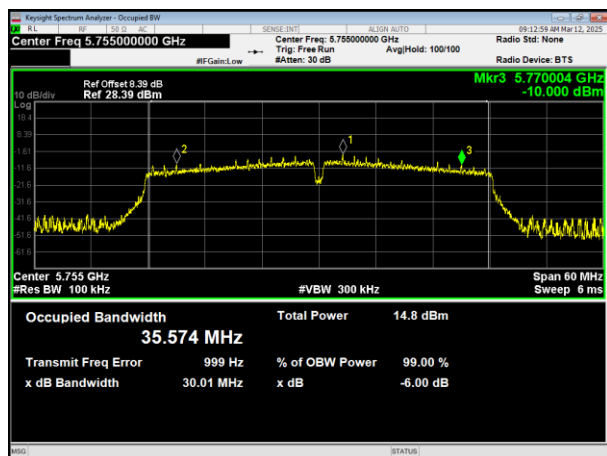
5785MHz



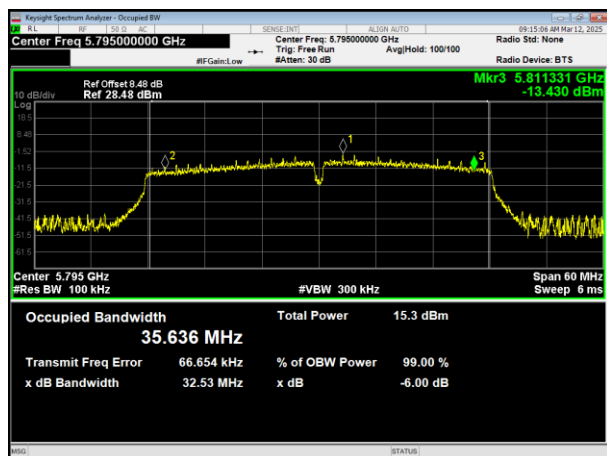
5825MHz



802.11n HT40



5755MHz



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.

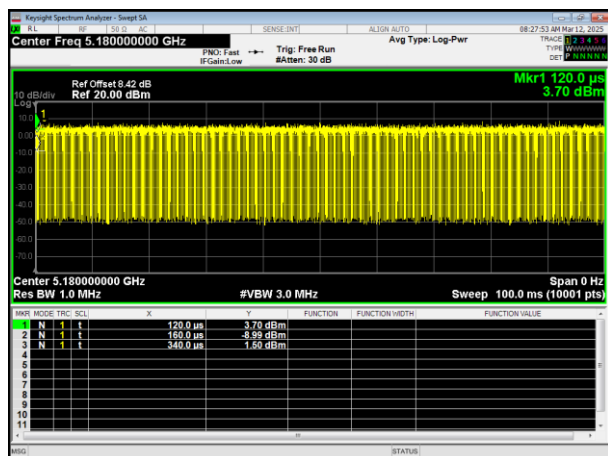
**7.1.5 TEST RESULTS**

		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	97.06	0.13
		Middle	97.04	0.13
		High	97.06	0.13
	802.11ac HT40	Low	94.29	0.26
		High	94.2	0.26
	802.11n HT20	Low	97.01	0.13
		Middle	97.01	0.13
		High	97.01	0.13
	802.11n HT40	Low	92.86	0.32
		High	94.2	0.26

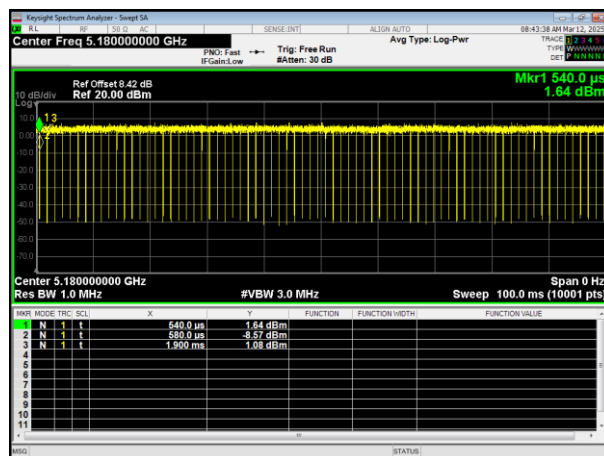
		Test Channel	Duty Cycle(%)	Duty Fator (dB) 10 * log (1/ Duty cycle)
Band 4	802.11a	Low	81.82	0.87
		Middle	81.82	0.87
		High	77.27	1.12
	802.11ac HT20	Low	97.06	0.13
		Middle	97.04	0.13
		High	97.04	0.13
	802.11ac HT40	Low	94.29	0.26
		High	92.86	0.32
	802.11n HT20	Low	96.3	0.16
		Middle	96.3	0.16
		High	97.01	0.13
	802.11n HT40	Low	94.2	0.26
		High	94.2	0.26



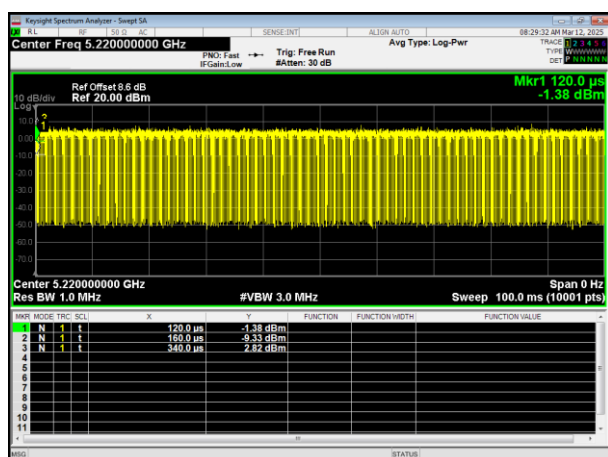
802.11a



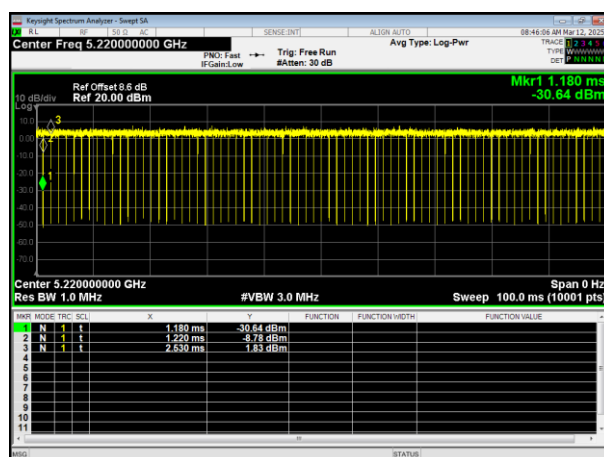
802.11ac HT20



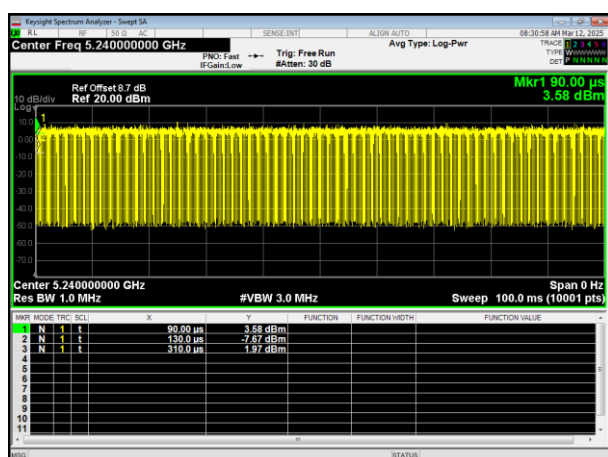
5180MHz



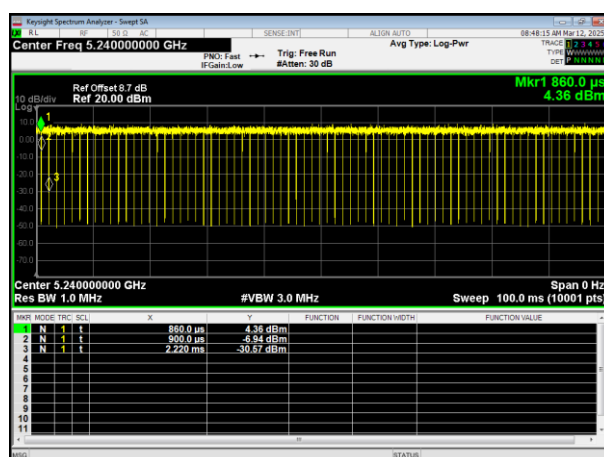
5180MHz



5200MHz



5200MHz

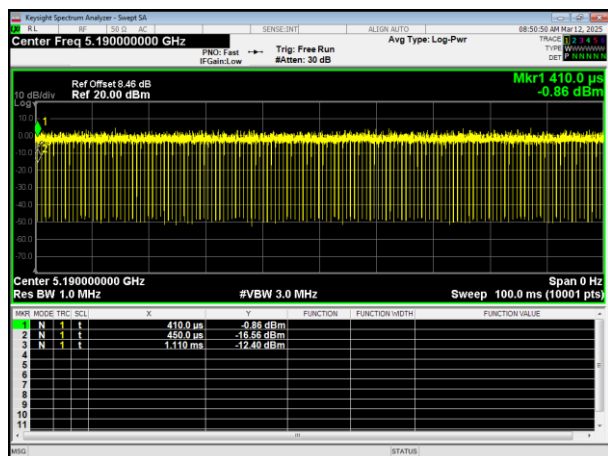


5240MHz

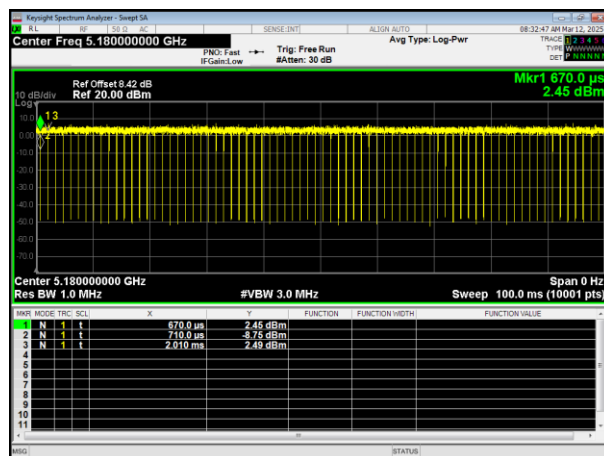
5240MHz



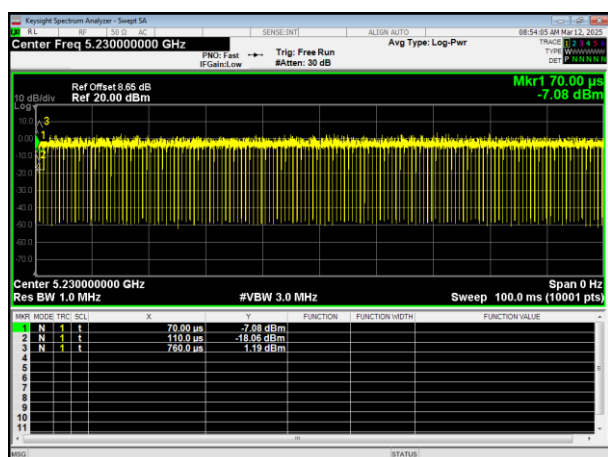
802.11ac HT40



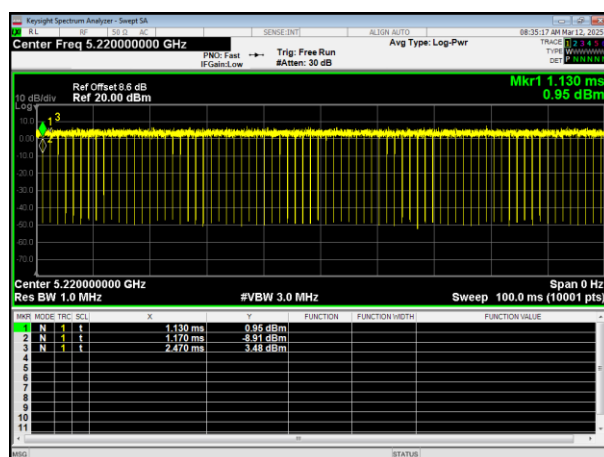
802.11n HT20



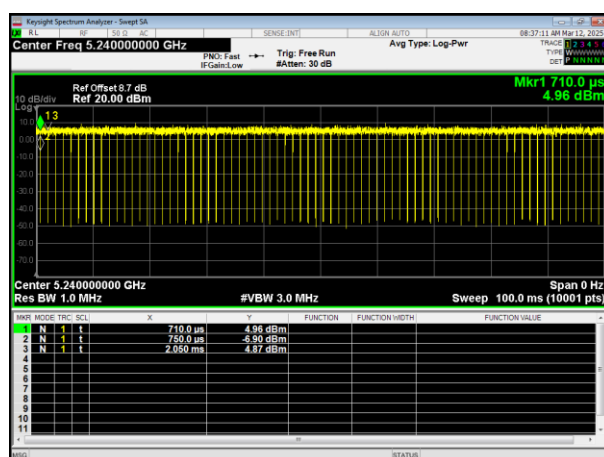
5190MHz



5180MHz



5230MHz

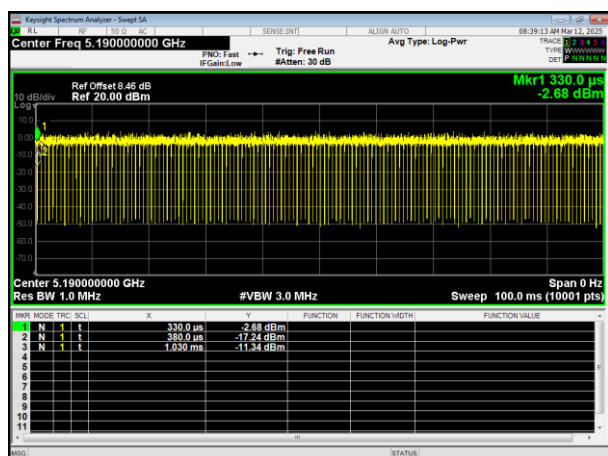


5200MHz

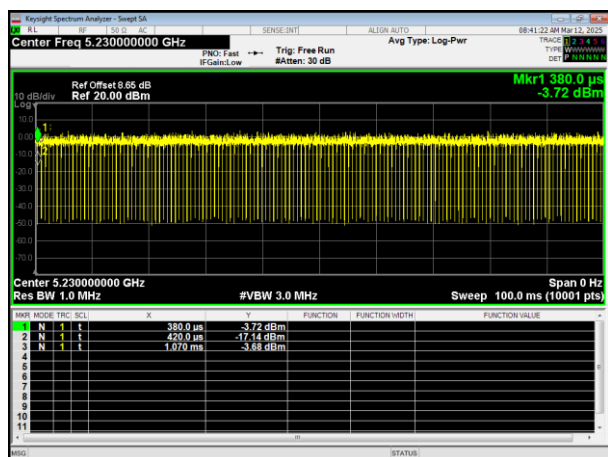
5240MHz



802.11n HT40



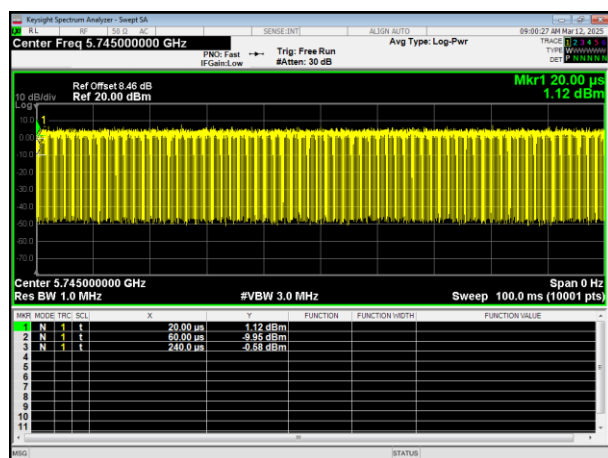
5190MHz



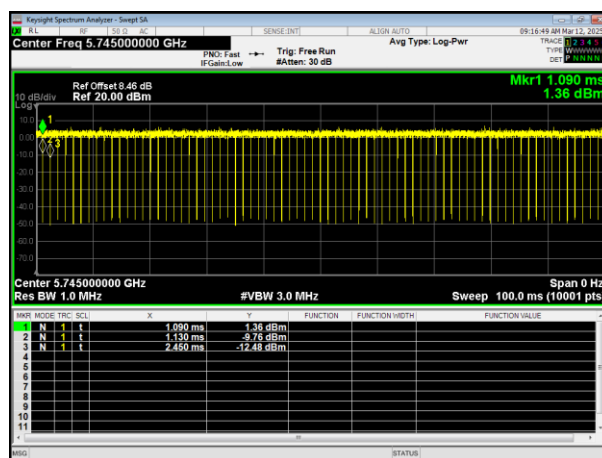
5230MHz



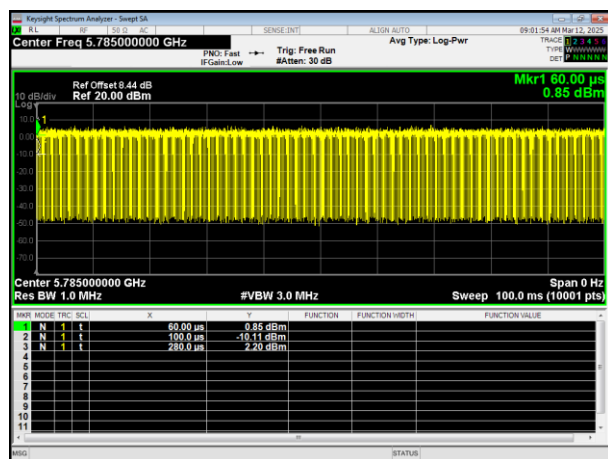
802.11a



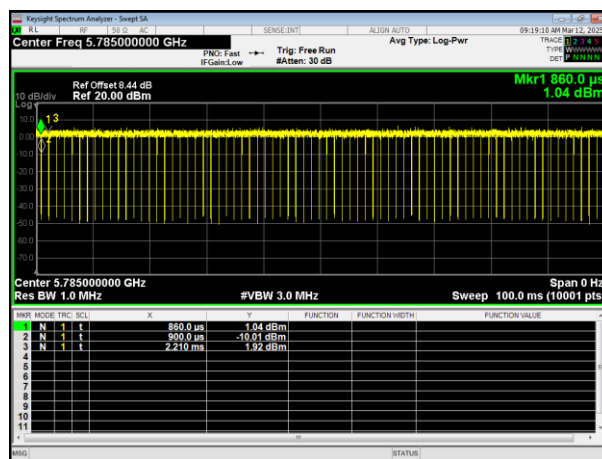
802.11ac HT20



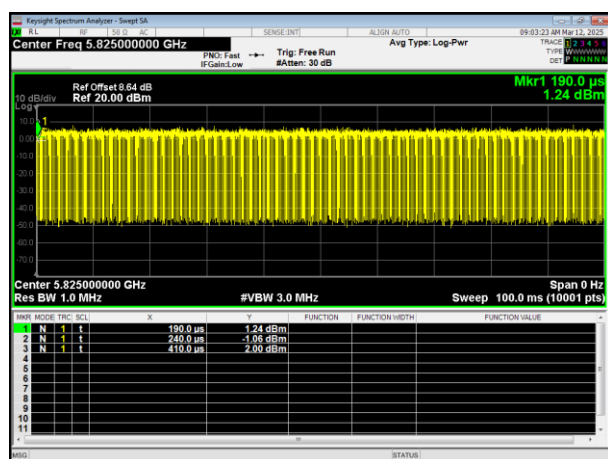
5745MHz



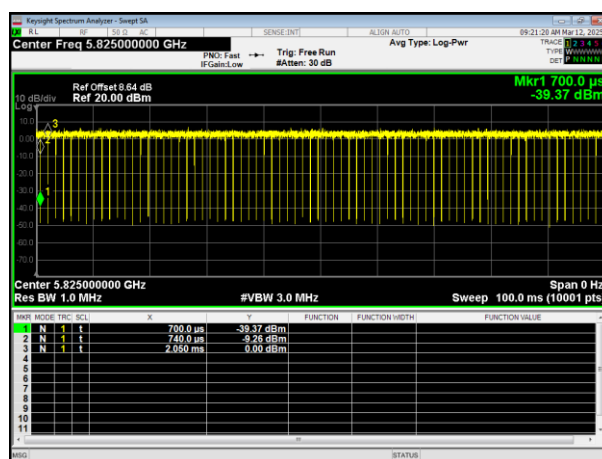
5745MHz



5785MHz



5785MHz

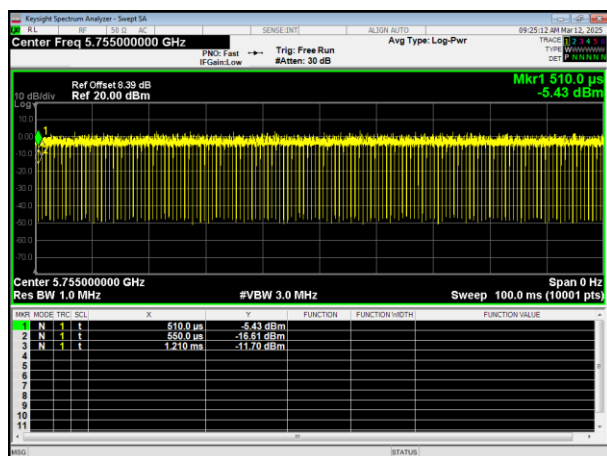


5825MHz

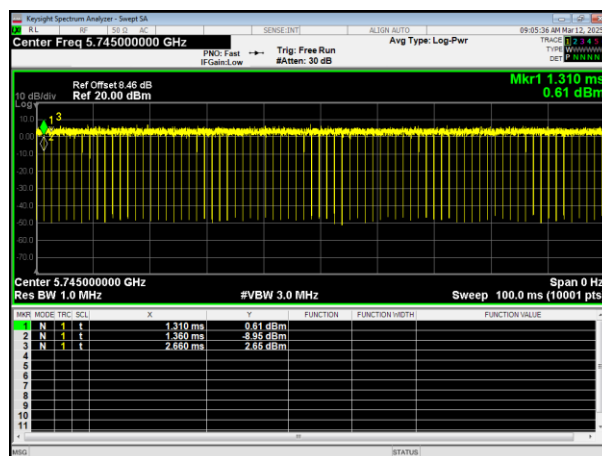
5825MHz



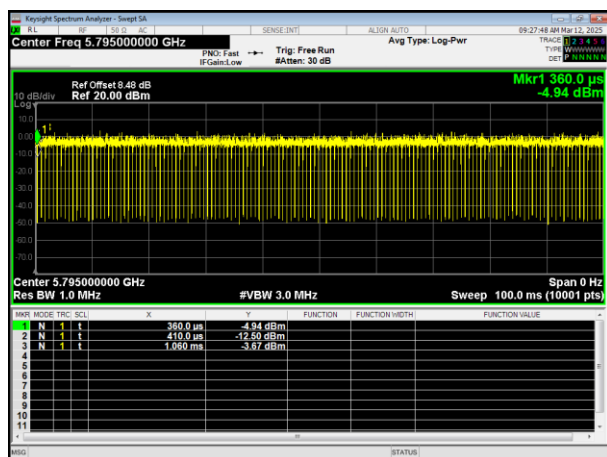
802.11ac HT40



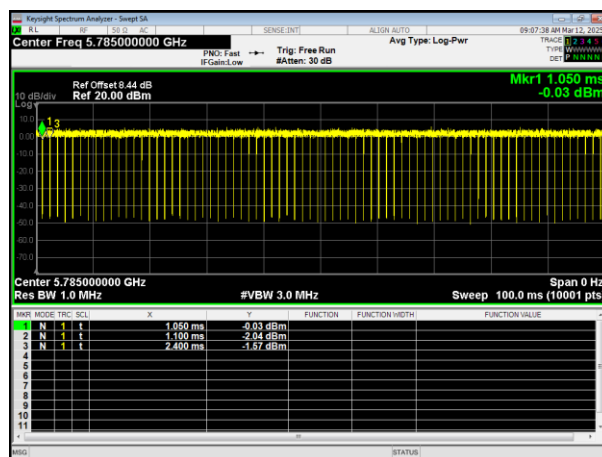
802.11n HT20



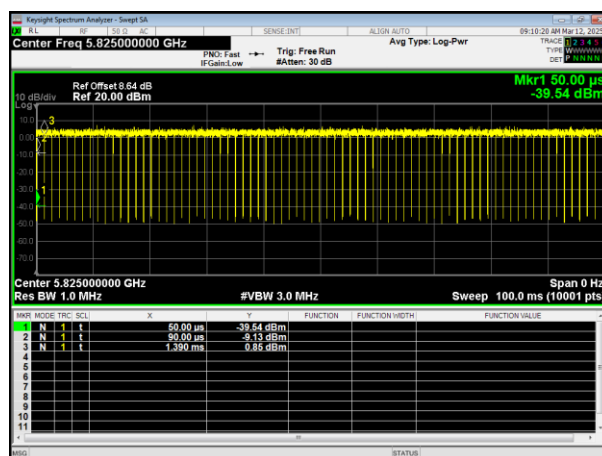
5755MHz



5745MHz



5795MHz

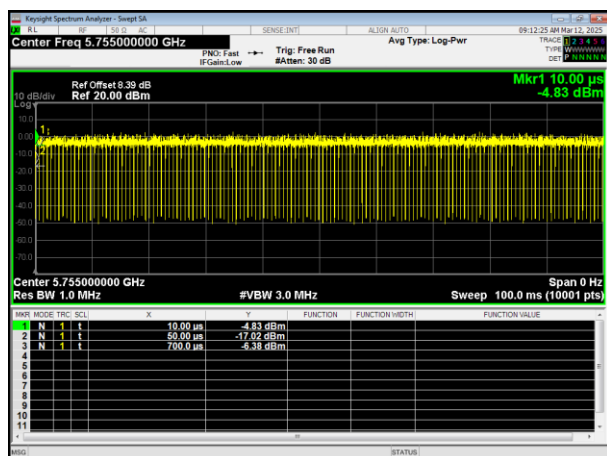


5785MHz

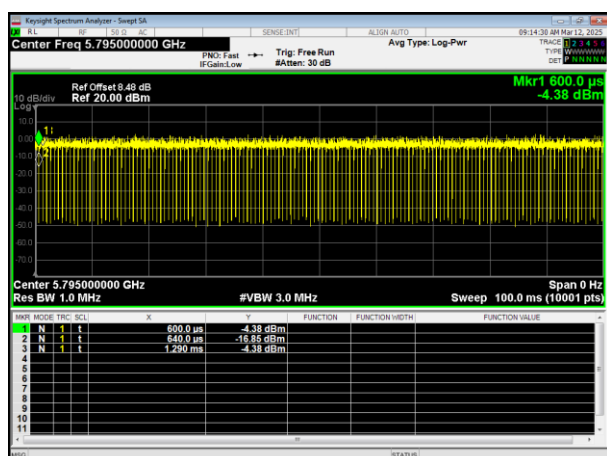
5825MHz



802.11n HT40



5755MHz



5795MHz



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.

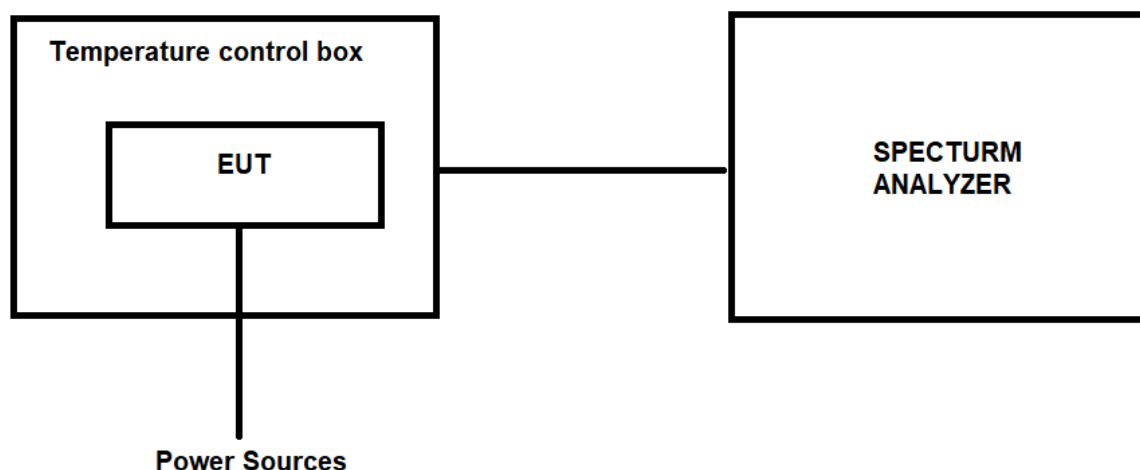
8.1.1 TEST PROCEDURE

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	5180.0386	5180.0450	5180.0368	7.4517	8.6873	7.1042
		5220	5220.0420	5220.0378	5220.0390	8.0460	7.2414	7.4713
		5240	5240.0301	5240.0276	5240.0268	5.7443	5.2672	5.1145
		5745	5745.0456	5745.0456	5745.0387	7.9373	7.9373	6.7363
		5785	5785.0380	5785.0373	5785.0415	6.5687	6.4477	7.1737
		5825	5825.0392	5825.0412	5825.0425	6.7296	7.0730	7.2961
108V	-20℃	5180	5180.0265	5180.0298	5180.0308	5.1158	5.7529	5.9459
		5220	5220.0423	5220.0417	5220.0406	8.1034	7.9885	7.7778
		5240	5240.0287	5240.0299	5240.0281	5.4771	5.7061	5.3626
		5745	5745.0349	5745.0285	5745.0323	6.0748	4.9608	5.6223
		5785	5785.0410	5785.0422	5785.0414	7.0873	7.2947	7.1564
		5825	5825.0542	5825.0501	5825.0472	9.3047	8.6009	8.1030
120V	25℃	5180	5180.0643	5180.0567	5180.0617	12.4131	10.9459	11.9112
		5220	5220.0290	5220.0293	5220.0298	5.5556	5.6130	5.7088
		5240	5240.0432	5240.0368	5240.0421	8.2443	7.0229	8.0344
		5745	5745.0381	5745.0382	5745.0385	6.6319	6.6493	6.7015
		5785	5785.0481	5785.0495	5785.0525	8.3146	8.5566	9.0752
		5825	5825.0349	5825.0283	5825.0284	5.9914	4.8584	4.8755
132V	50℃	5180	5180.0375	5180.0368	5180.0421	7.2394	7.1042	8.1274
		5220	5220.0257	5220.0298	5220.0326	4.9234	5.7088	6.2452
		5240	5240.0443	5240.0406	5240.0407	8.4542	7.7481	7.7672
		5745	5745.0681	5745.0718	5745.0701	11.8538	12.4978	12.2019
		5785	5785.0490	5785.0485	5785.0502	8.4702	8.3838	8.6776
		5825	5825.0662	5825.0685	5825.0727	11.3648	11.7597	12.4807
108V	50℃	5180	5180.0371	5180.0376	5180.0398	7.1622	7.2587	7.6834
		5220	5220.0316	5220.0321	5220.0307	6.0536	6.1494	5.8812
		5240	5240.0375	5240.0407	5240.0378	7.1565	7.7672	7.2137
		5745	5745.0481	5745.0484	5745.0522	8.3725	8.4247	9.0862
		5785	5785.0358	5785.0316	5785.0307	6.1884	5.4624	5.3068
		5825	5825.0821	5825.0796	5825.0823	14.0944	13.6652	14.1288



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	5190.0268	5190.0331	5.1638	6.3776
		5230	5230.0417	5230.0399	7.9732	7.6291
		5755	5755.0562	5755.0576	9.7654	10.0087
		5795	5795.0677	5795.0674	11.6825	11.6307
108V		5190	5190.0258	5190.0316	4.9711	6.0886
		5230	5230.0410	5230.0369	7.8394	7.0554
		5755	5755.0292	5755.0728	5.0738	12.6499
		5795	5795.0521	5795.0537	8.9905	9.2666
120V	25℃	5190	5190.0268	5190.0258	5.1638	4.9711
		5230	5230.0736	5230.0703	14.0727	13.4417
		5755	5755.0265	5755.0329	4.6047	5.7168
		5795	5795.0648	5795.0585	11.1821	10.0949
132V	50℃	5190	5190.0675	5190.0694	13.0058	13.3719
		5230	5230.0562	5230.0569	10.7457	10.8795
		5755	5755.0550	5755.0473	9.5569	8.2189
		5795	5795.0373	5795.0441	6.4366	7.6100
108V	50℃	5190	5190.0634	5190.0568	12.2158	10.9441
		5230	5230.0437	5230.0425	8.3556	8.1262
		5755	5755.0428	5755.0432	7.4370	7.5065
		5795	5795.0510	5795.0501	8.8007	8.6454



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 *******