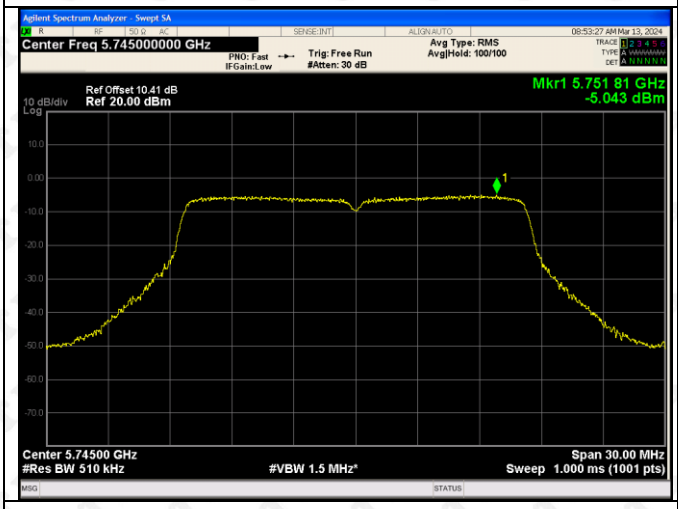
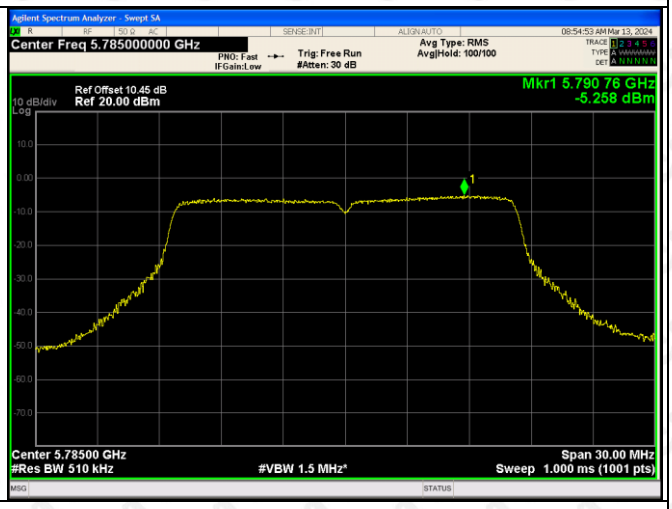
ANT1:
5745-5825MHz

802.11a-5745



802.11a-5785



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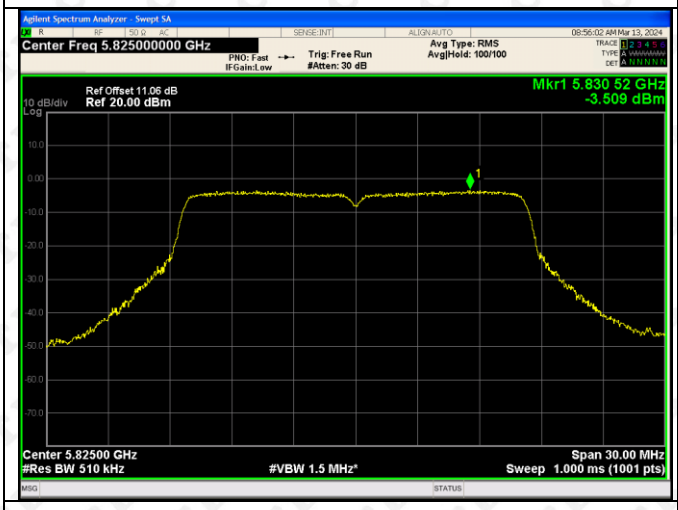

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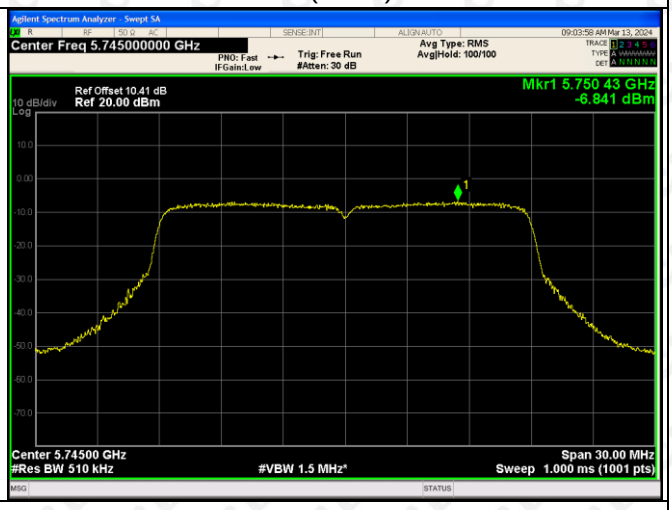

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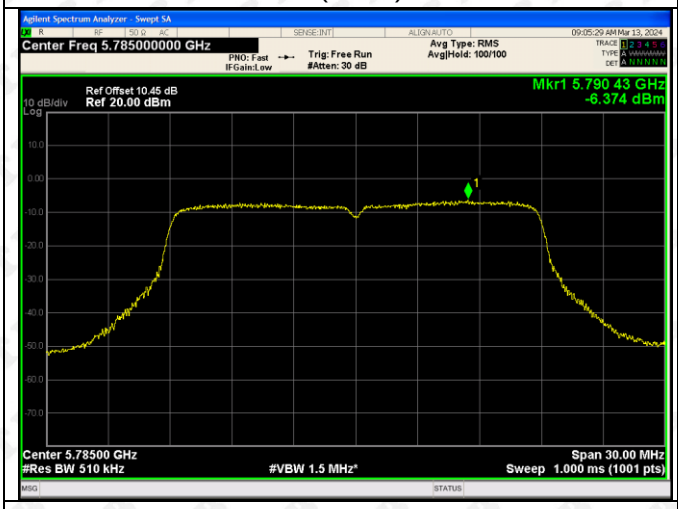

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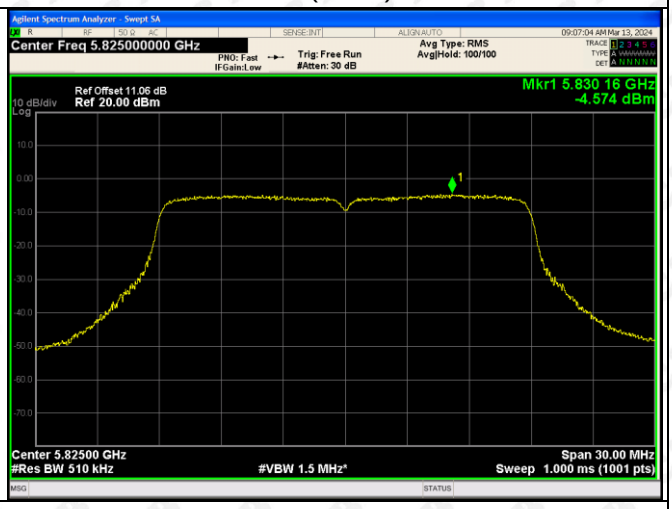

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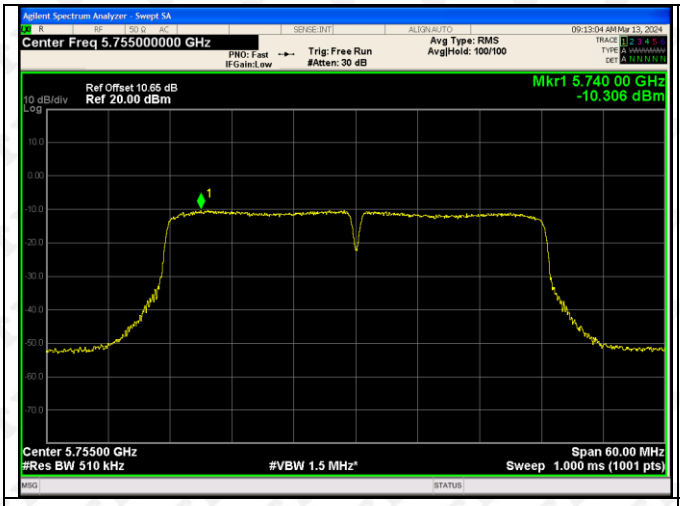
802.11ac(VH40)-5795



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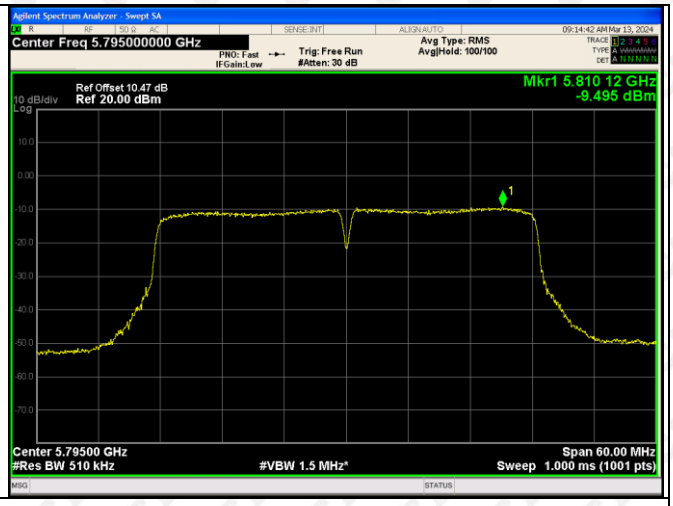

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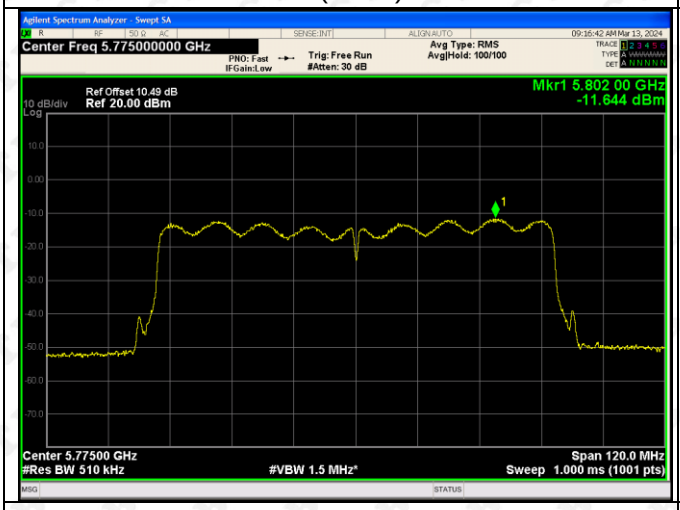

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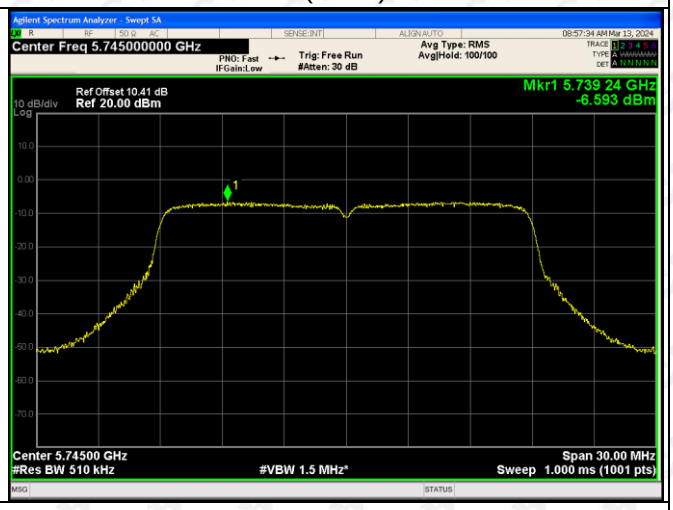

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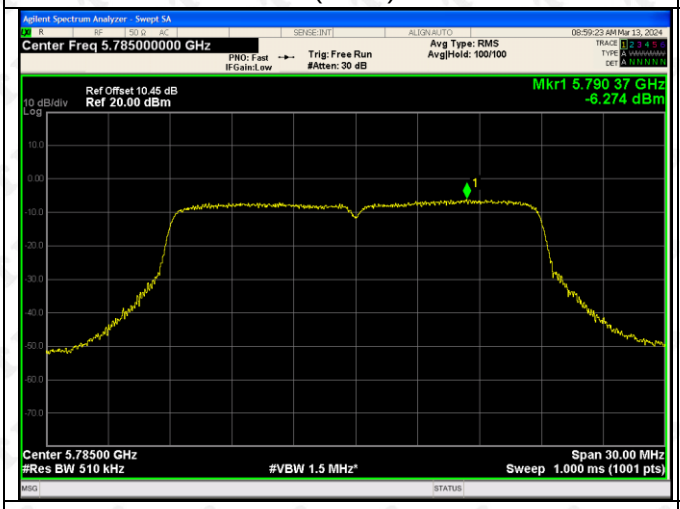

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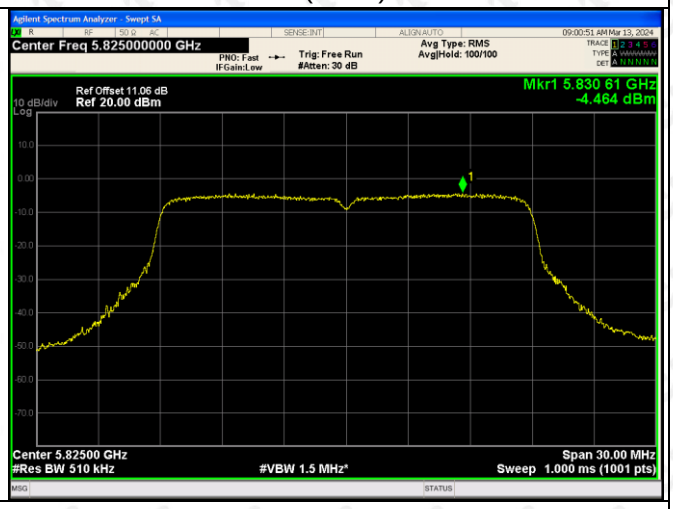

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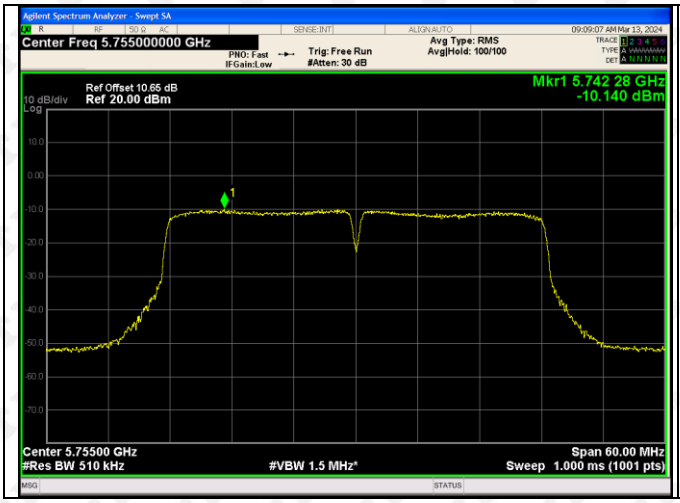
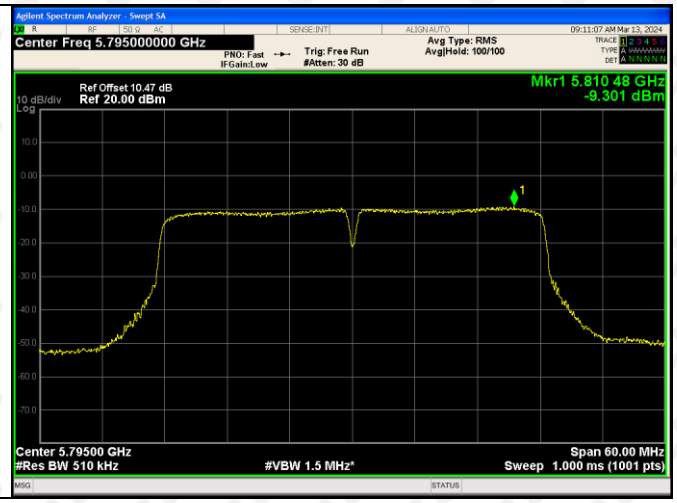
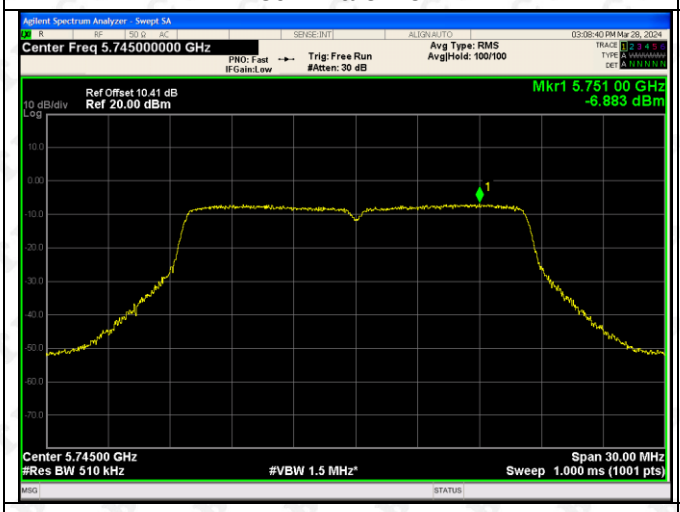




ANT2:
5745-5825MHz

802.11a-5745



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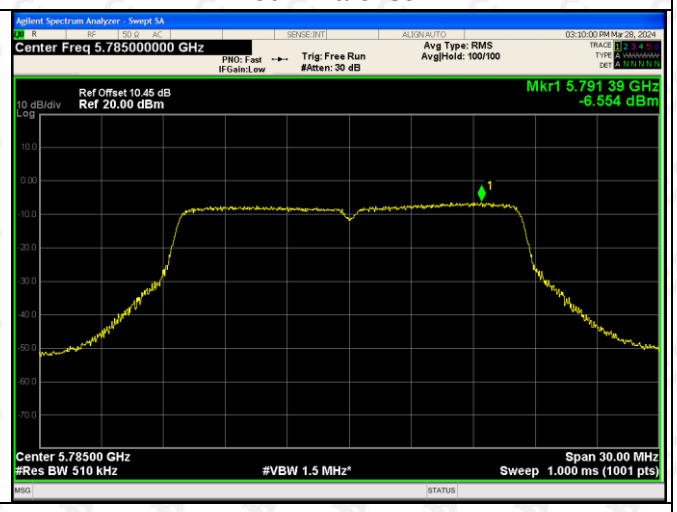

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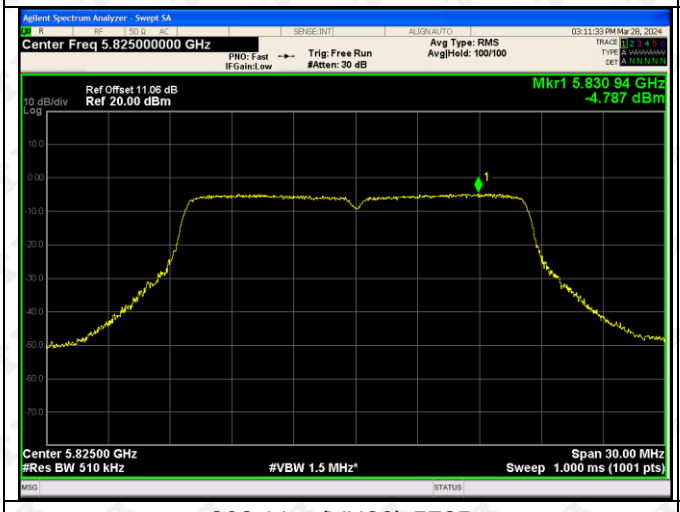

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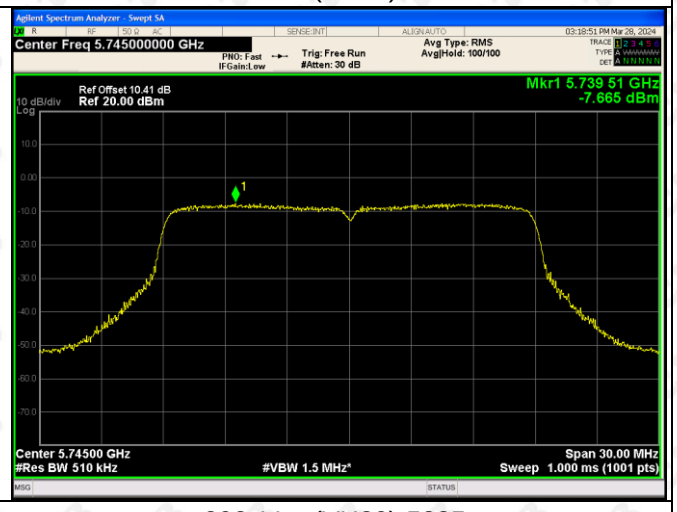

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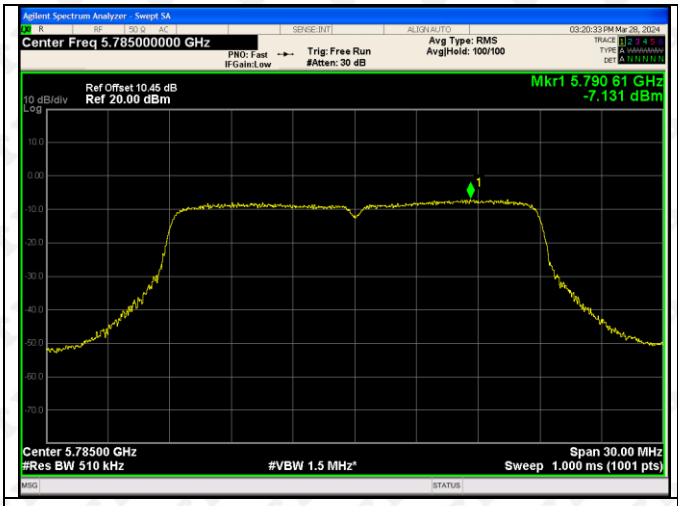
802.11ac(VH20)-5825



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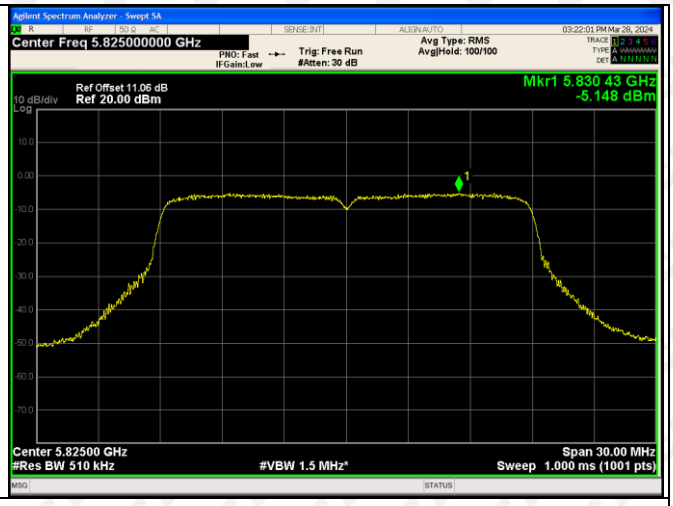

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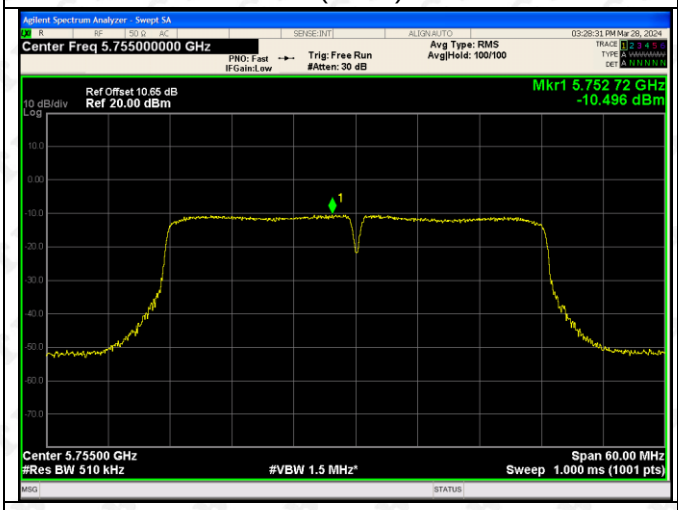

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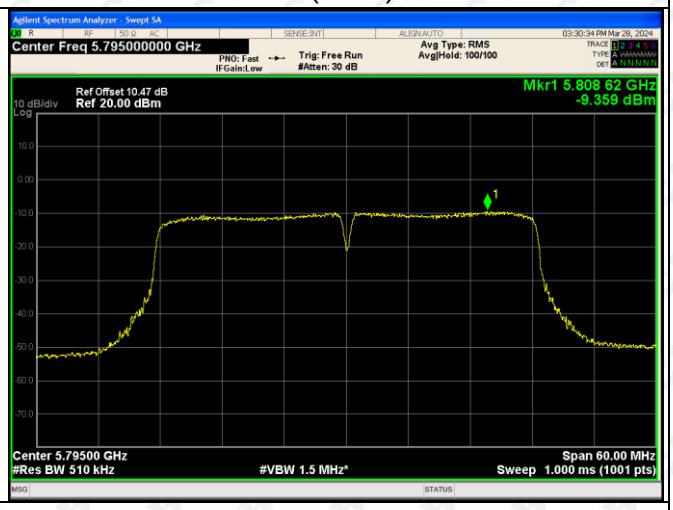

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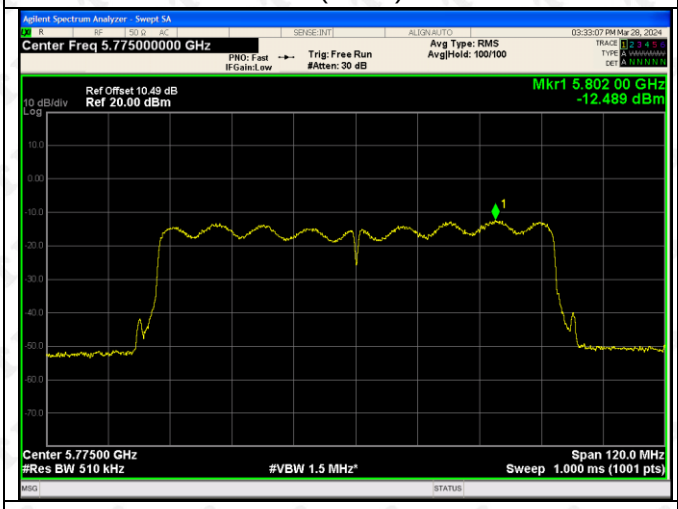

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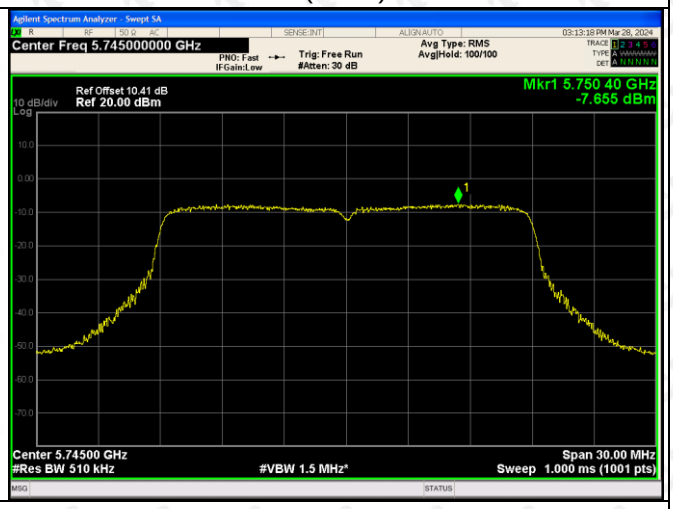

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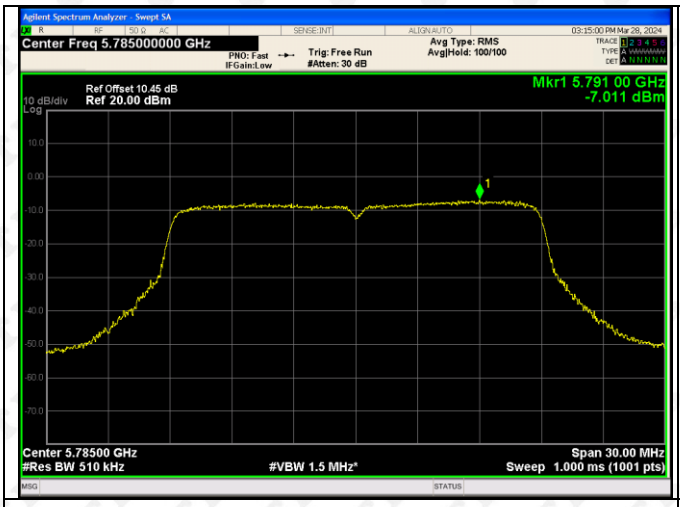
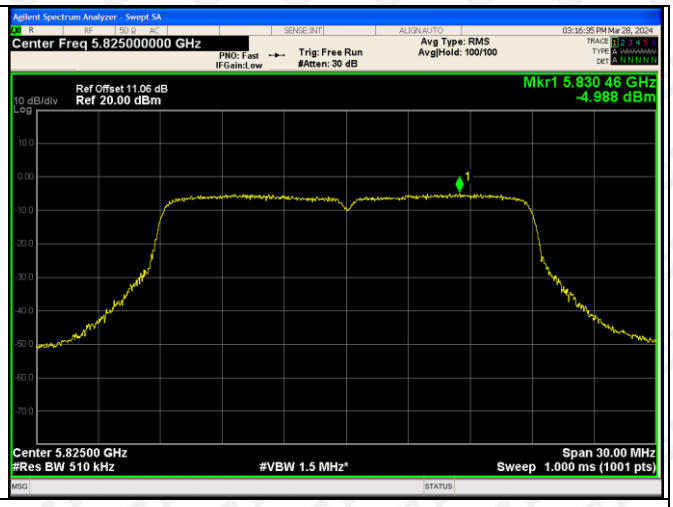


5802.11n(HT40)-5755



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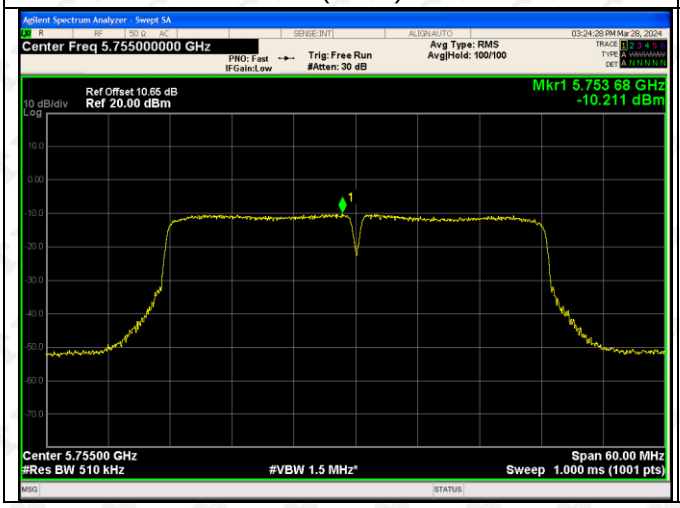
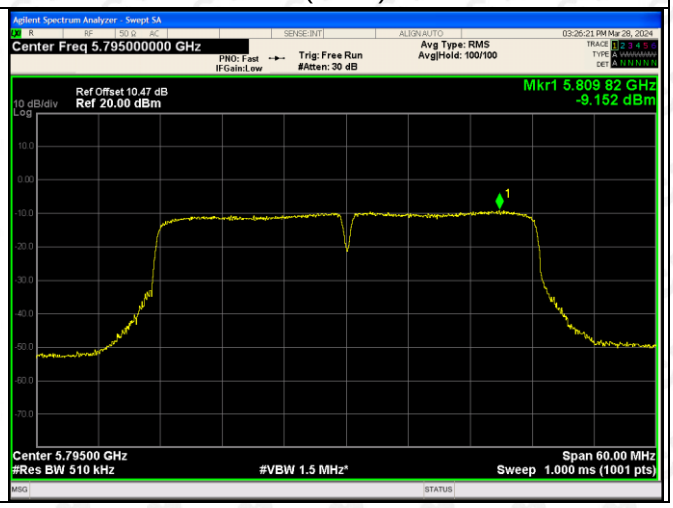
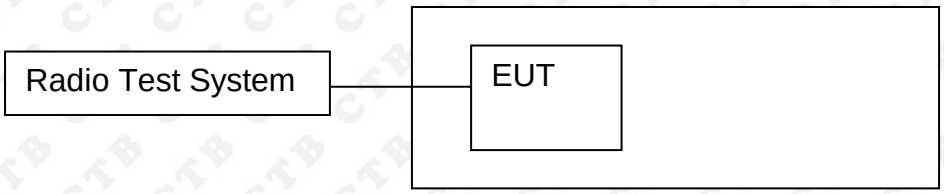




12. FREQUENCY STABILITY

12.1 Block Diagram Of Test Setup



12.2 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.

12.3 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.

12.4 Test Result

ANT1:

TX Frequency (5150-5250MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5180.1183	5180	0.1183	22.8367
		V max (V)	13.2	5180.1017	5180	0.1017	19.6299
		V min (V)	10.8	5180.0988	5180	0.0988	19.0677
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5180.0226	5180	0.0226	4.3544
		T (°C)	10	5180.0207	5180	0.0207	3.9877
		T (°C)	20	5180.0220	5180	0.0220	4.2391
		T (°C)	30	5180.0163	5180	0.0163	3.1540
		T (°C)	40	5180.0321	5180	0.0321	6.1987
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5200.0315	5200	0.0315	6.0627
		V max (V)	13.2	5200.0225	5200	0.0225	4.3247
		V min (V)	10.8	5200.0109	5200	0.0109	2.1008
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5200.0092	5200	0.0092	1.7668
		T (°C)	10	5200.0266	5200	0.0266	5.1172
		T (°C)	20	5200.0389	5200	0.0389	7.4724
		T (°C)	30	5200.0233	5200	0.0233	4.4768
		T (°C)	40	5200.0139	5200	0.0139	2.6762
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5240.0053	5240	0.0053	1.0080
		V max (V)	13.2	5240.0121	5240	0.0121	2.3156
		V min (V)	10.8	5240.0008	5240	0.0008	0.1540
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5240.0446	5240	0.0446	8.5162
		T (°C)	10	5240.0502	5240	0.0502	9.5855
		T (°C)	20	5240.0012	5240	0.0012	0.2202
		T (°C)	30	5240.0201	5240	0.0201	3.8311
		T (°C)	40	5240.0456	5240	0.0456	8.7014
Limits				±20ppm			
Result				Complies			

ANT2:

TX Frequency (5150-5250MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5180.0652	5180	0.0652	12.5946
		V max (V)	13.2	5180.0709	5180	0.0709	13.6881
		V min (V)	10.8	5180.0362	5180	0.0362	6.9801
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5180.0919	5180	0.0919	17.7351
		T (°C)	10	5180.0046	5180	0.0046	0.8860
		T (°C)	20	5180.0473	5180	0.0473	9.1350
		T (°C)	30	5180.0067	5180	0.0067	1.2925
		T (°C)	40	5180.0530	5180	0.0530	10.2346
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5200.0447	5200	0.0447	8.5961
		V max (V)	13.2	5200.0523	5200	0.0523	10.0552
		V min (V)	10.8	5200.0508	5200	0.0508	9.7724
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5200.0626	5200	0.0626	12.0427
		T (°C)	10	5200.0454	5200	0.0454	8.7337
		T (°C)	20	5200.0227	5200	0.0227	4.3685
		T (°C)	30	5200.0894	5200	0.0894	17.1986
		T (°C)	40	5200.0569	5200	0.0569	10.9407
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5240.0856	5240	0.0856	16.3280
		V max (V)	13.2	5240.0079	5240	0.0079	1.5071
		V min (V)	10.8	5240.0305	5240	0.0305	5.8163
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5240.0329	5240	0.0329	6.2749
		T (°C)	10	5240.0346	5240	0.0346	6.6099
		T (°C)	20	5240.0203	5240	0.0203	3.8733
		T (°C)	30	5240.0477	5240	0.0477	9.1056
		T (°C)	40	5240.0584	5240	0.0584	11.1426
Limits				±20ppm			
Result				Complies			

ANT1:

TX Frequency (5725-5850MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (° C)	20	V nom (V)	12.0	5745.0507	5745	0.0507	8.8261
		V max (V)	13.2	5745.0353	5745	0.0353	6.1408
		V min (V)	10.8	5745.0507	5745	0.0507	8.8261
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5745.0728	5745	0.0728	12.6751
		T (°C)	10	5745.0423	5745	0.0423	7.3702
		T (°C)	20	5745.0861	5745	0.0861	14.9858
		T (°C)	30	5745.0340	5745	0.0340	5.9254
		T (°C)	40	5745.0136	5745	0.0136	2.3654
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5785.0575	5785	0.0575	9.9351
		V max (V)	13.2	5785.0316	5785	0.0316	5.4620
		V min (V)	10.8	5785.0690	5785	0.0690	11.9286
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5785.0413	5785	0.0413	7.1347
		T (°C)	10	5785.0525	5785	0.0525	9.0817
		T (°C)	20	5785.0536	5785	0.0536	9.2731
		T (°C)	30	5785.0827	5785	0.0827	14.3003
		T (°C)	40	5785.0016	5785	0.0016	0.2784
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5825.0801	5825	0.0801	13.7439
		V max (V)	13.2	5825.0123	5825	0.0123	2.1167
		V min (V)	10.8	5825.0892	5825	0.0892	15.3199
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5825.0325	5825	0.0325	5.5741
		T (°C)	10	5825.0517	5825	0.0517	8.8762
		T (°C)	20	5825.0367	5825	0.0367	6.2996
		T (°C)	30	5825.0051	5825	0.0051	0.8779
		T (°C)	40	5825.0678	5825	0.0678	11.6438
Limits				±20ppm			
Result				Complies			

ANT2:

TX Frequency (5725-5850MHz)

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (° C)	20	V nom (V)	12.0	5745.0460	5745	0.0460	8.0101
		V max (V)	13.2	5745.0620	5745	0.0620	10.7896
		V min (V)	10.8	5745.0280	5745	0.0280	4.8666
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5745.0098	5745	0.0098	1.7108
		T (°C)	10	5745.0353	5745	0.0353	6.1509
		T (°C)	20	5745.0476	5745	0.0476	8.2808
		T (°C)	30	5745.0811	5745	0.0811	14.1110
		T (°C)	40	5745.0598	5745	0.0598	10.4140
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5785.0827	5785	0.0827	14.3005
		V max (V)	13.2	5785.0649	5785	0.0649	11.2256
		V min (V)	10.8	5785.0251	5785	0.0251	4.3347
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5785.0021	5785	0.0021	0.3586
		T (°C)	10	5785.0729	5785	0.0729	12.6079
		T (°C)	20	5785.0744	5785	0.0744	12.8622
		T (°C)	30	5785.0697	5785	0.0697	12.0466
		T (°C)	40	5785.0781	5785	0.0781	13.4922
		T (°C)	50	5785.0354	5785	0.0354	6.1167
Limits				±20ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.0	5825.0439	5825	0.0439	7.5298
		V max (V)	13.2	5825.0235	5825	0.0235	4.0316
		V min (V)	10.8	5825.0039	5825	0.0039	0.6672
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	0	5825.0283	5825	0.0283	4.8542
		T (°C)	10	5825.0426	5825	0.0426	7.3079
		T (°C)	20	5825.0842	5825	0.0842	14.4599
		T (°C)	30	5825.0843	5825	0.0843	14.4795
		T (°C)	40	5825.0051	5825	0.0051	0.8829
Limits				±20ppm			
Result				Complies			

13. OPERATION IN THE ABSENCE OF INFORMATION TO THE TRANSMIT

13.1 Requirement

15.407(c) requirement:
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 signal ling 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.

13.2 Test Results

Operation in the absence of information to the transmit:

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of WLAN message transmitting from remote device and verify whether it shall reconnect. (manufacturer declare)

14. ANTENNA REQUIREMENT

15.203 requirement:
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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

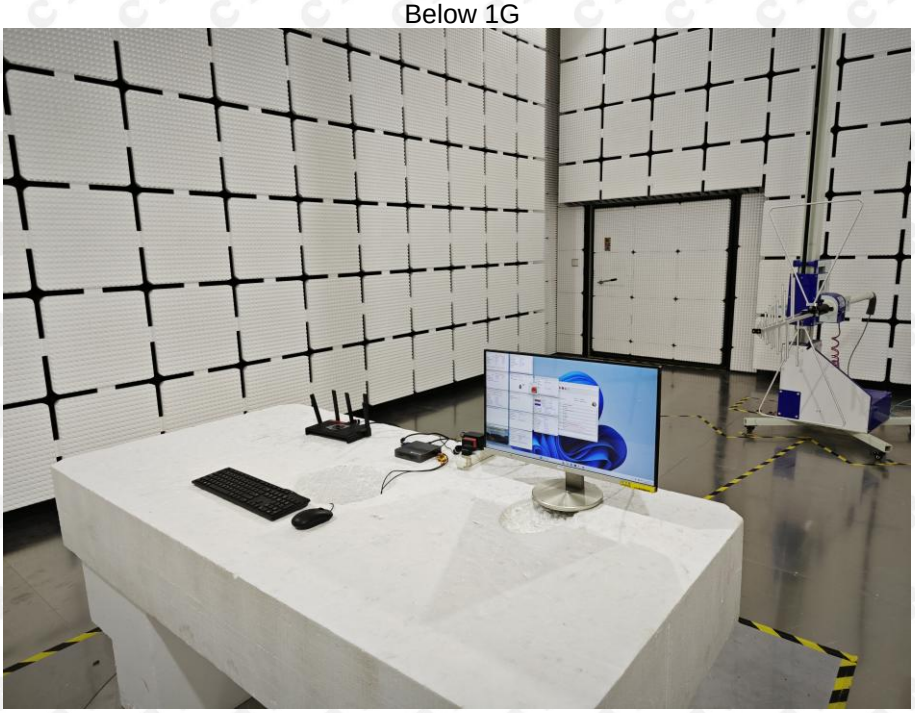
EUT Antenna:

The antenna is FPC antenna and no consideration of replacement. The best case gain of the antenna is WIFI(5.2G): 3.51dBi,WIFI(5.8G): 3.85dBi.

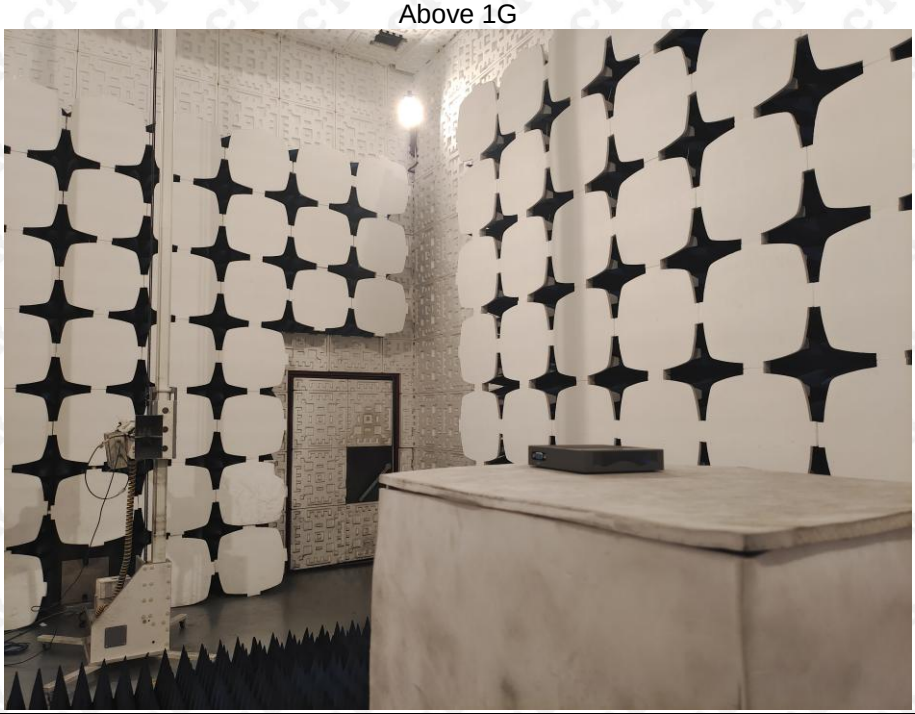
15. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G



Above 1G



Conducted Emission

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