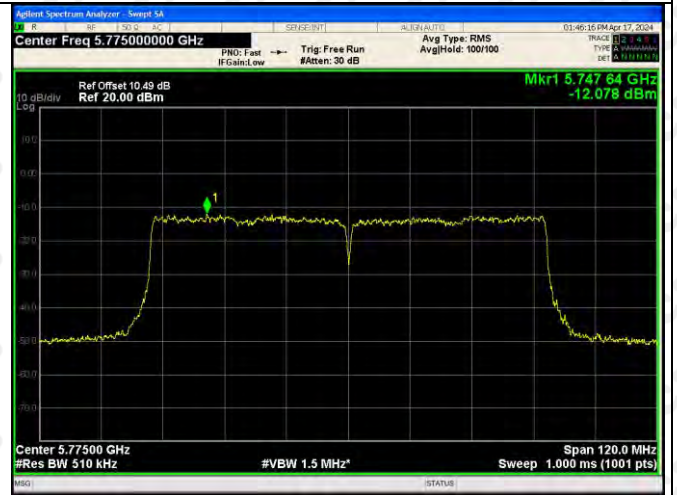




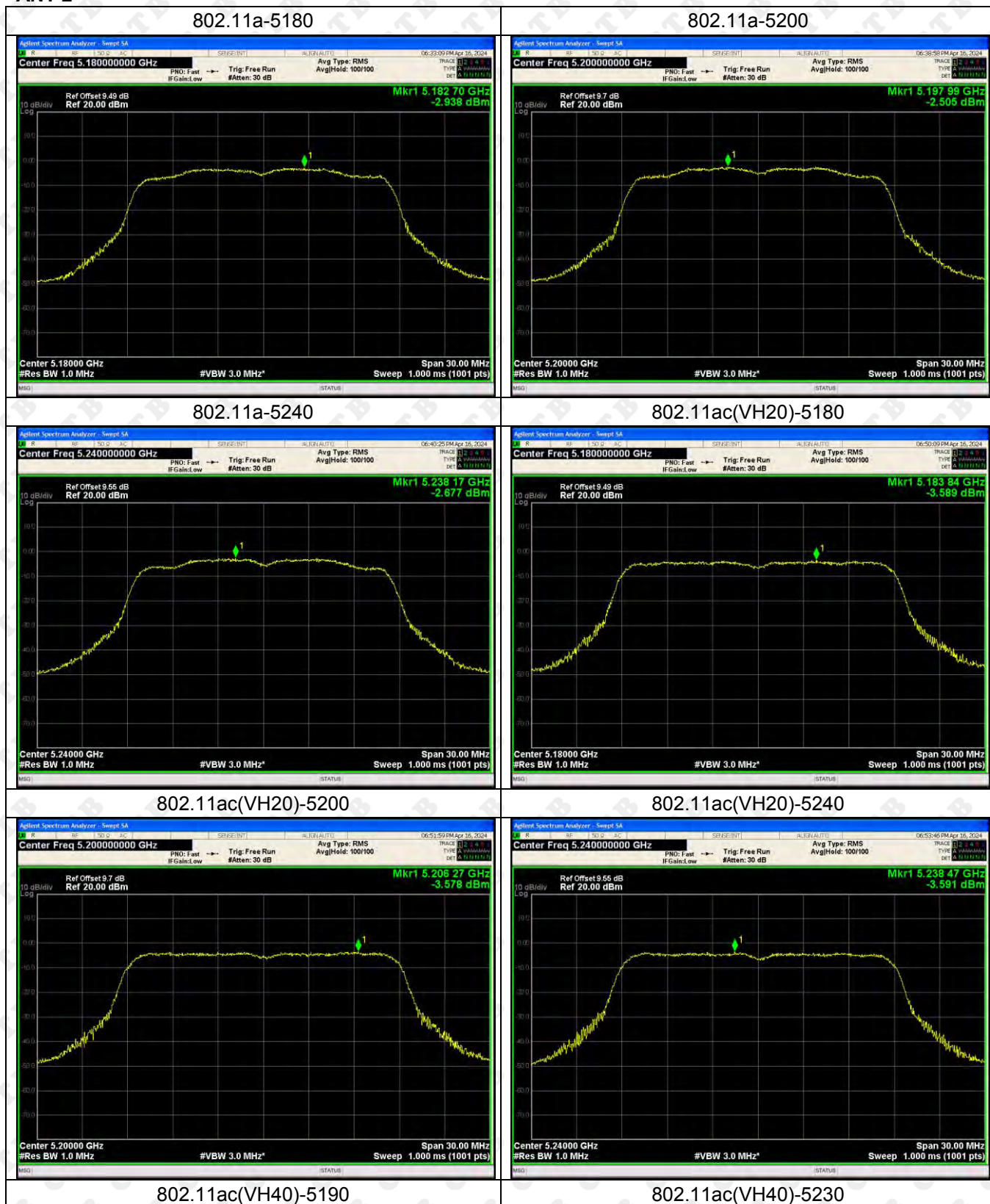
802.11ax(VH40)-5795



802.11ax(VH80)-5775



ANT 2





802.11ac(VH80)-5210



802.11n(HT20)-5180



802.11n(HT20)-5200



802.11n(HT20)-5240



802.11n(HT40)-5190



802.11n(HT40)-5230



802.11ax(VH20)-5180



802.11ax(VH20)-5200



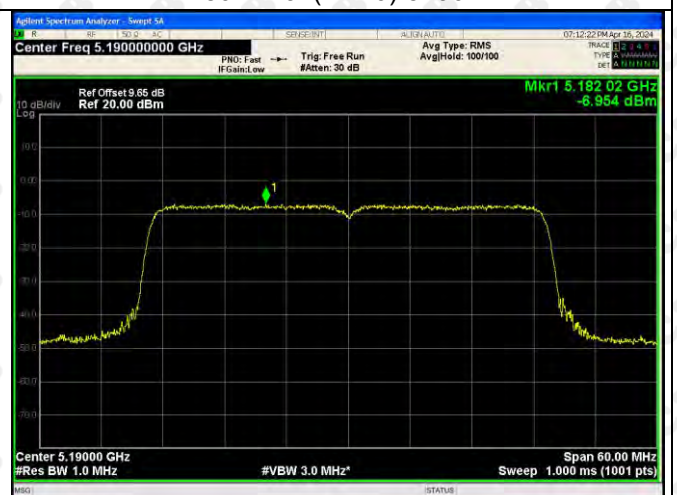
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802.11ax(VH40)-5190



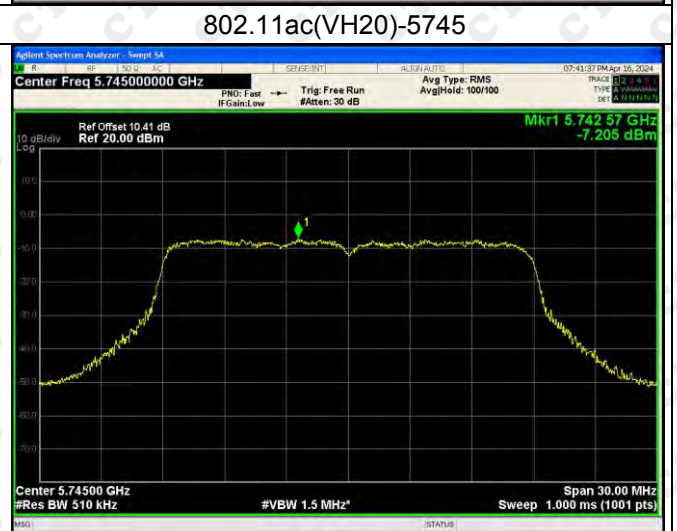
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802.11ax(VH80)-5210



ANT2:



802.11ac(VH20)-5785

802.11ac(VH20)-5825



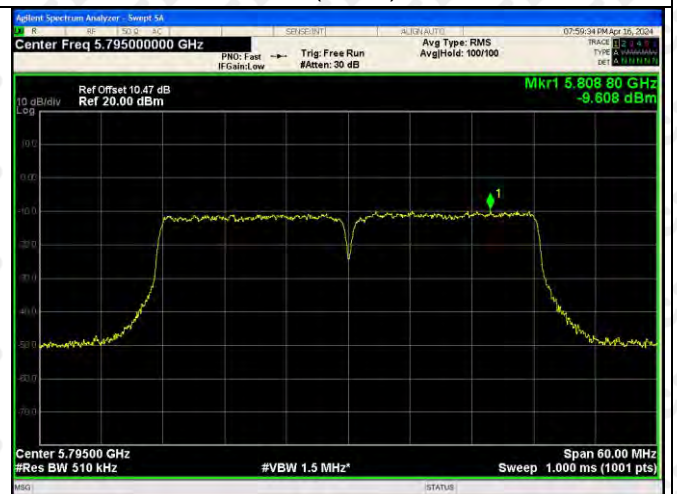
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802.11ac(VH40)-5795



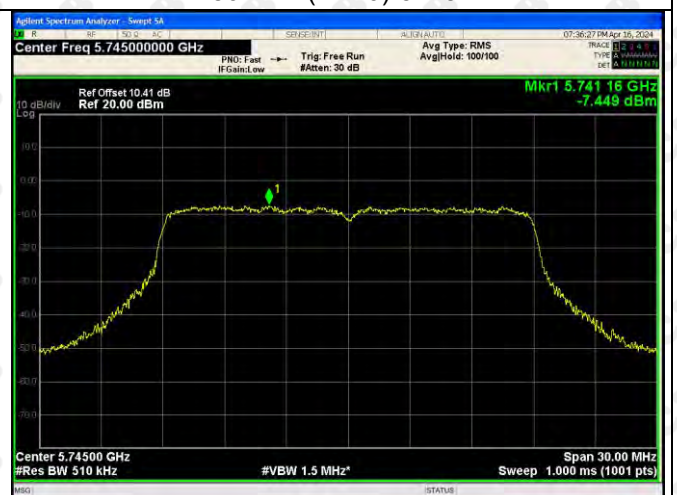
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802.11n(HT20)-5745



802.11n(HT20)-5785



802.11n(HT20)-5825



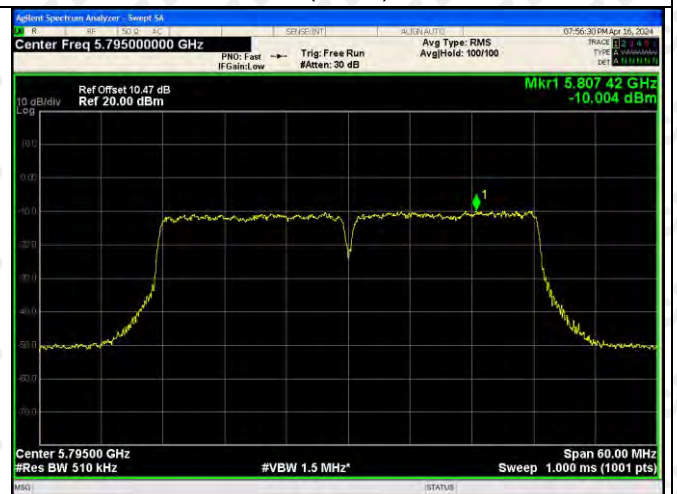
5802.11n(HT40)-5755



802.11n(HT40)-5795



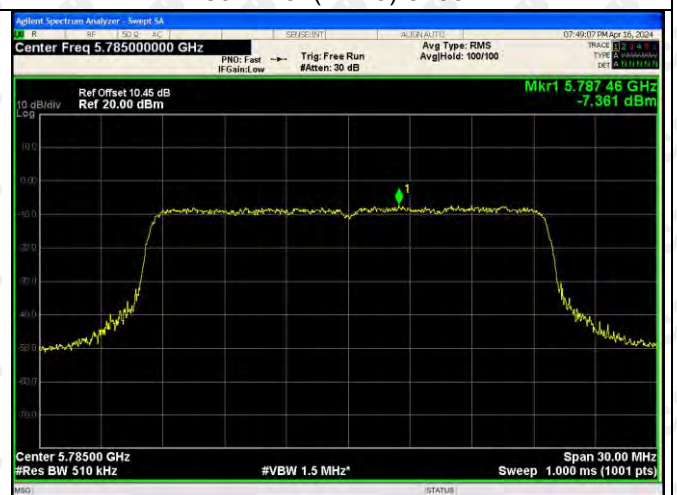
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802.11ax(VH20)-5785



802.11ax(VH20)-5825



802.11ax(VH40)-5755



802.11ax(VH40)-5795

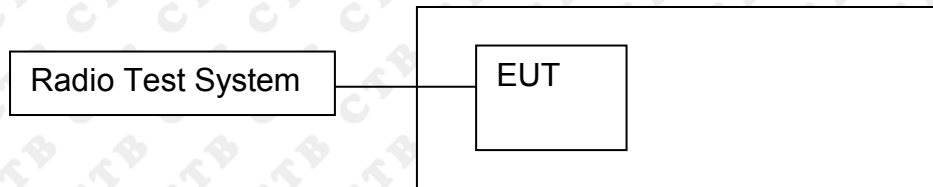


802.11ax(VH80)-5775



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

TX Frequency (5150-5250MHz)

ANT1

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.60	5180.0699	5180	0.0699	13.4872
		V max (V)	8.36	5180.0376	5180	0.0376	7.2557
		V min (V)	6.84	5180.0678	5180	0.0678	13.0827
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5180.0311	5180	0.0311	6.0049
		T (°C)	10	5180.0454	5180	0.0454	8.7609
		T (°C)	20	5180.0019	5180	0.0019	0.3700
		T (°C)	30	5180.0268	5180	0.0268	5.1763
		T (°C)	40	5180.0446	5180	0.0446	8.6029
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)	7.60	5200.0431	5200	0.0431	8.2951
		V max (V)	8.36	5200.0293	5200	0.0293	5.6373
		V min (V)	6.84	5200.0350	5200	0.0350	6.7288
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5200.0025	5200	0.0025	0.4888
		T (°C)	10	5200.0093	5200	0.0093	1.7801
		T (°C)	20	5200.0063	5200	0.0063	1.2158
		T (°C)	30	5200.0082	5200	0.0082	1.5830
		T (°C)	40	5200.0159	5200	0.0159	3.0561
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)	7.60	5240.0345	5240	0.0345	6.5784
		V max (V)	8.36	5240.0378	5240	0.0378	7.2087
		V min (V)	6.84	5240.0515	5240	0.0515	9.8253
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5240.0086	5240	0.0086	1.6449
		T (°C)	10	5240.0265	5240	0.0265	5.0661
		T (°C)	20	5240.0352	5240	0.0352	6.7191
		T (°C)	30	5240.0295	5240	0.0295	5.6251
		T (°C)	40	5240.0397	5240	0.0397	7.5857
Limits				±20ppm			
Result				Complies			

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)	7.60	5745.0563	5745	0.0563	9.7932
		V max (V)	8.36	5745.0593	5745	0.0593	10.3168
		V min (V)	6.84	5745.0563	5745	0.0563	9.7932
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5745.0524	5745	0.0524	9.1262
		T (°C)	10	5745.0674	5745	0.0674	11.7406
		T (°C)	20	5745.0377	5745	0.0377	6.5680
		T (°C)	30	5745.0846	5745	0.0846	14.7222
		T (°C)	40	5745.0268	5745	0.0268	4.6600
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)	7.60	5785.0057	5785	0.0057	0.9881
		V max (V)	8.36	5785.0151	5785	0.0151	2.6026
		V min (V)	7.84	5785.0298	5785	0.0298	5.1448
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5785.0169	5785	0.0169	2.9228
		T (°C)	10	5785.0308	5785	0.0308	5.3261
		T (°C)	20	5785.0187	5785	0.0187	3.2264
		T (°C)	30	5785.0110	5785	0.0110	1.8995
		T (°C)	40	5785.0699	5785	0.0699	12.0783
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)	7.60	5825.0159	5825	0.0159	2.7361
		V max (V)	8.36	5825.0259	5825	0.0259	4.4462
		V min (V)	6.84	5825.0549	5825	0.0549	9.4196
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5825.0135	5825	0.0135	2.3251
		T (°C)	10	5825.0680	5825	0.0680	11.6723
		T (°C)	20	5825.0793	5825	0.0793	13.6063
		T (°C)	30	5825.0412	5825	0.0412	7.0664
		T (°C)	40	5825.0539	5825	0.0539	9.2498
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)	7.60	5180.0598	5180	0.0598	11.5528
		V max (V)	8.36	5180.0499	5180	0.0499	9.6372
		V min (V)	6.84	5180.0068	5180	0.0068	1.3188
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5180.0780	5180	0.0780	15.0526
		T (°C)	10	5180.0090	5180	0.0090	1.7350
		T (°C)	20	5180.0425	5180	0.0425	8.2127
		T (°C)	30	5180.0192	5180	0.0192	3.7089
		T (°C)	40	5180.0536	5180	0.0536	10.3433
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)	7.60	5200.0313	5200	0.0313	6.0255
		V max (V)	8.36	5200.0876	5200	0.0876	16.8473
		V min (V)	6.84	5200.0110	5200	0.0110	2.1195
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5200.0932	5200	0.0932	17.9190
		T (°C)	10	5200.0416	5200	0.0416	8.0080
		T (°C)	20	5200.0049	5200	0.0049	0.9446
		T (°C)	30	5200.0858	5200	0.0858	16.4998
		T (°C)	40	5200.0599	5200	0.0599	11.5118
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)	7.60	5240.0807	5240	0.0807	15.4052
		V max (V)	8.36	5240.0065	5240	0.0065	1.2366
		V min (V)	6.84	5240.0676	5240	0.0676	12.8985
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5240.0158	5240	0.0158	3.0061
		T (°C)	10	5240.0845	5240	0.0845	16.1184
		T (°C)	20	5240.0026	5240	0.0026	0.4986
		T (°C)	30	5240.0039	5240	0.0039	0.7473
		T (°C)	40	5240.0247	5240	0.0247	4.7130
Limits				±20ppm			
Result				Complies			

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)	7.60	5745.0152	5745	0.0152	2.6418
		V max (V)	8.36	5745.0146	5745	0.0146	2.5419
		V min (V)	6.84	5745.0191	5745	0.0191	3.3260
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5745.0734	5745	0.0734	12.7762
		T (°C)	10	5745.0897	5745	0.0897	15.6191
		T (°C)	20	5745.0732	5745	0.0732	12.7347
		T (°C)	30	5745.0503	5745	0.0503	8.7504
		T (°C)	40	5745.0443	5745	0.0443	7.7039
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)	7.60	5785.0067	5785	0.0067	1.1628
		V max (V)	8.36	5785.0436	5785	0.0436	7.5402
		V min (V)	6.84	5785.0660	5785	0.0660	11.4154
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5785.0627	5785	0.0627	10.8319
		T (°C)	10	5785.0248	5785	0.0248	4.2885
		T (°C)	20	5785.0139	5785	0.0139	2.4083
		T (°C)	30	5785.0841	5785	0.0841	14.5308
		T (°C)	40	5785.0023	5785	0.0023	0.4056
		T (°C)	50	5785.0865	5785	0.0865	14.9564
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)	7.60	5825.0840	5825	0.0840	14.4161
		V max (V)	8.36	5825.0626	5825	0.0626	10.7469
		V min (V)	6.84	5825.0889	5825	0.0889	15.2572
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	0	5825.0569	5825	0.0569	9.7676
		T (°C)	10	5825.0535	5825	0.0535	9.1867
		T (°C)	20	5825.0316	5825	0.0316	5.4212
		T (°C)	30	5825.0846	5825	0.0846	14.5276
		T (°C)	40	5825.0545	5825	0.0545	9.3496
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 ASK message transmitting from remote device and verify whether it shall resend or discontinue transmission. (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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

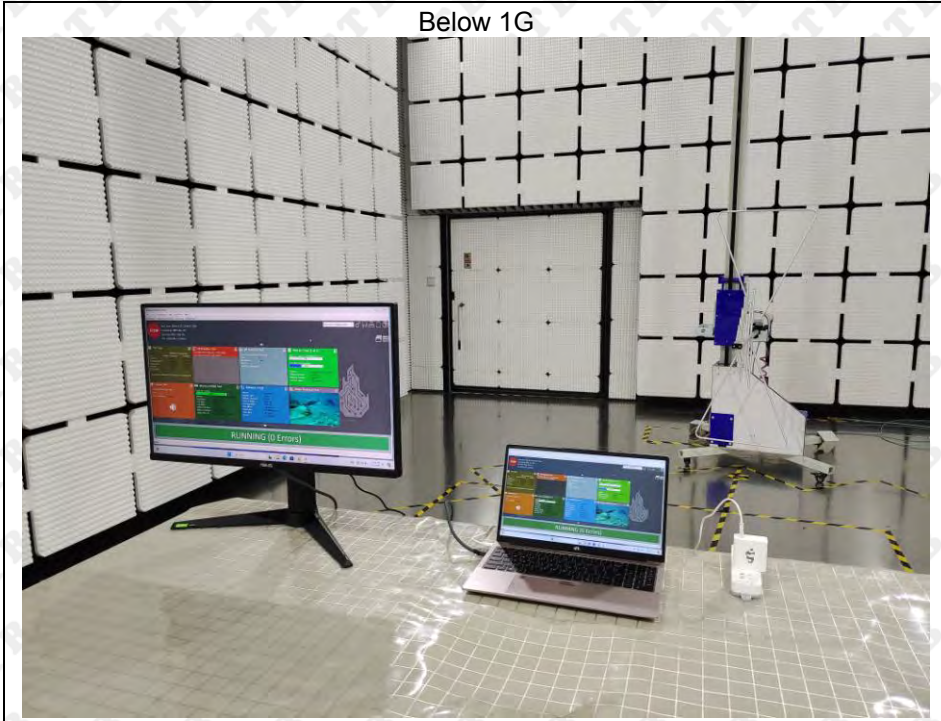
EUT Antenna:

The antenna is FPC antenna and no consideration of replacement. The best case gain of the antenna is WiFi (5.2G): ANT1: 4.01dBi, ANT2: 3.33dBi, WiFi (5.8G): ANT1:2.31dBi, ANT2:3.61dBi

15. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G



Above 1G



Conducted Emission



***** END OF REPORT *****