



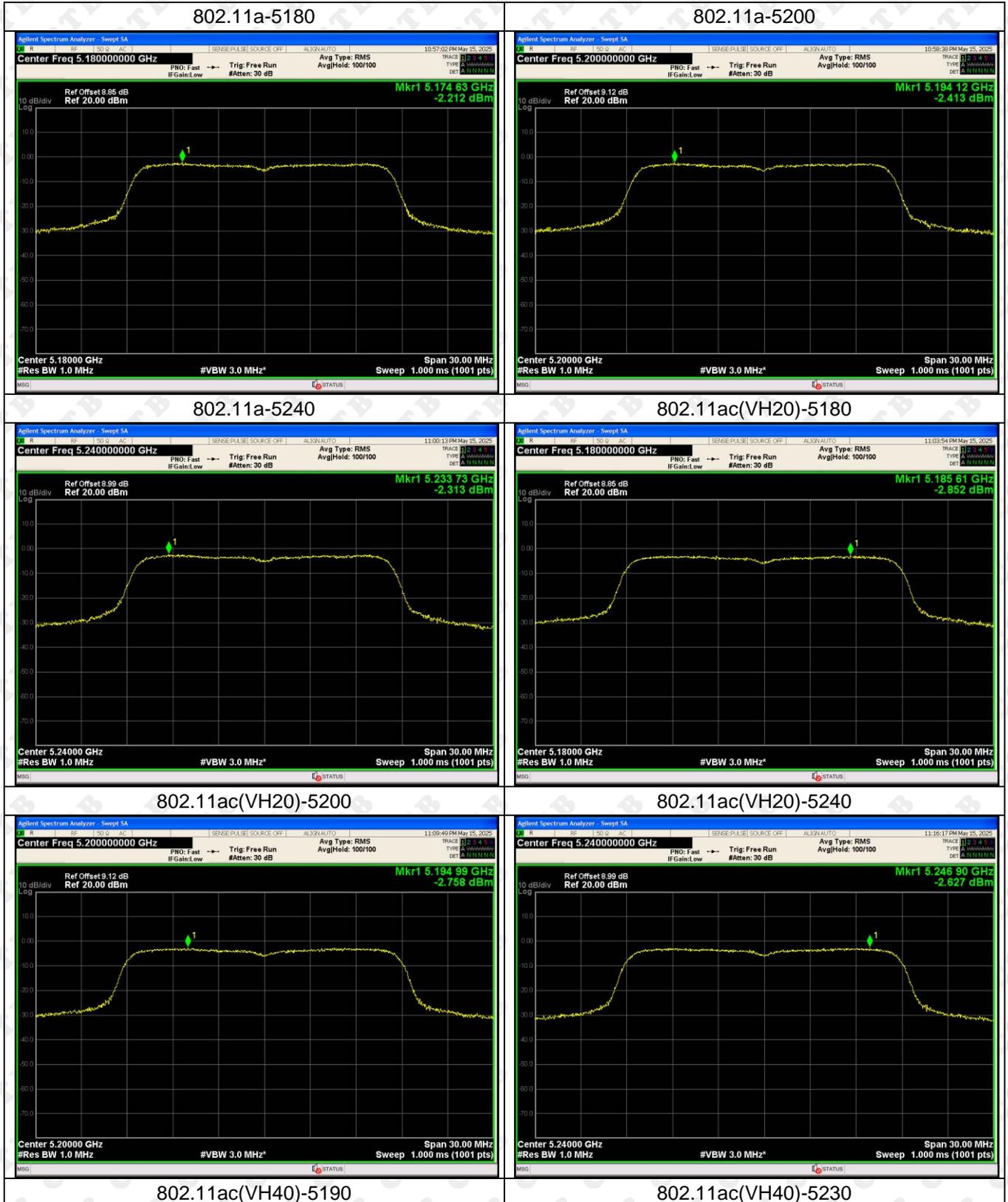
802.11ax(VH40)-5795



802.11ax(VH80)-5775



ANT 2:





802.11ac(VH80)-5210



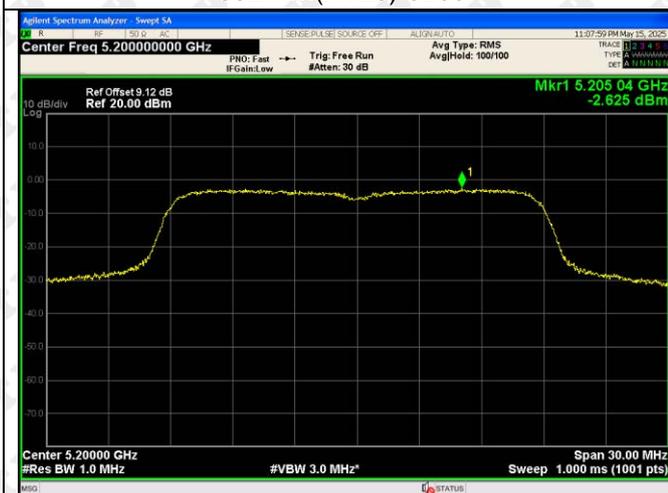
802.11n(HT20)-5180



802.11n(HT20)-5200



802.11n(HT20)-5240



802.11n(HT40)-5190



802.11n(HT40)-5230



802.11ax(VH20)-5180



802.11ax(VH20)-5200



802.11ax(VH20)-5240



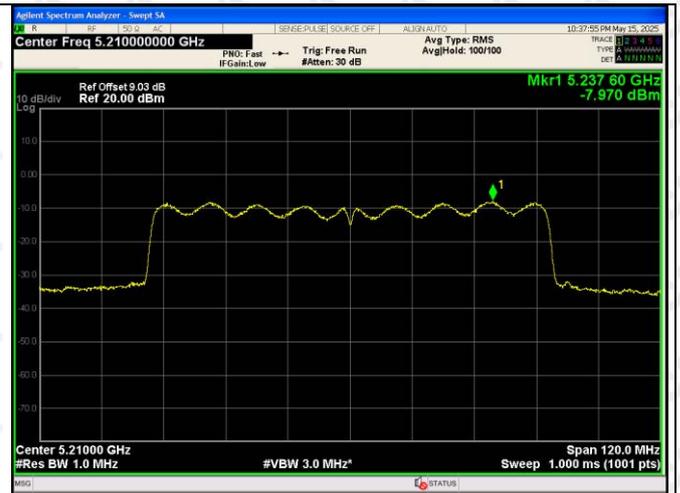
802.11ax(VH40)-5190



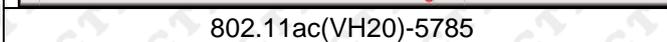
802.11ax(VH40)-5230



802.11ax(VH80)-5210



ANT2:





802.11ac(VH40)-5755



802.11ac(VH40)-5795



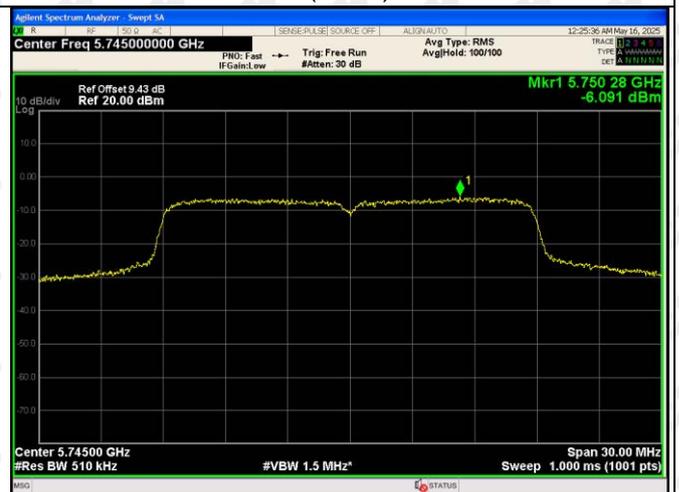
802.11ac(VH80)-5775



802.11n(HT20)-5745



802.11n(HT20)-5785



802.11n(HT20)-5825



5802.11n(HT40)-5755



802.11n(HT40)-5795



802.11ax(VH20)-5745



802.11ax(VH20)-5785



802.11ax(VH20)-5825



802.11ax(VH40)-5755



802.11ax(VH40)-5795

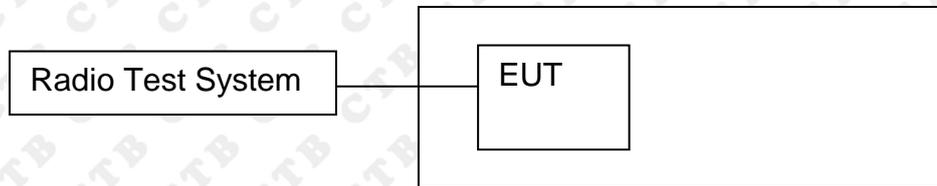


802.11ax(VH80)-5775



## 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)	120	5180.0176	5180	0.0176	3.3972
		V max (V)	132	5180.0260	5180	0.0260	5.0264
		V min (V)	108	5180.1079	5180	0.1079	20.8324
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5180.0165	5180	0.0165	3.1786
		T (°C)	10	5180.0122	5180	0.0122	2.3579
		T (°C)	20	5180.0200	5180	0.0200	3.8674
		T (°C)	30	5180.0281	5180	0.0281	5.4174
		T (°C)	40	5180.0071	5180	0.0071	1.3662
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)	120	5200.0402	5200	0.0402	7.7349
		V max (V)	132	5200.0151	5200	0.0151	2.9118
		V min (V)	108	5200.0250	5200	0.0250	4.8143
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5200.0016	5200	0.0016	0.3104
		T (°C)	10	5200.0376	5200	0.0376	7.2250
		T (°C)	20	5200.0193	5200	0.0193	3.7137
		T (°C)	30	5200.0261	5200	0.0261	5.0221
		T (°C)	40	5200.0038	5200	0.0038	0.7358
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)	120	5240.0096	5240	0.0096	1.8373
		V max (V)	132	5240.0376	5240	0.0376	7.1737
		V min (V)	108	5240.0522	5240	0.0522	9.9649
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5240.0429	5240	0.0429	8.1929
		T (°C)	10	5240.0233	5240	0.0233	4.4416
		T (°C)	20	5240.0008	5240	0.0008	0.1527
		T (°C)	30	5240.0428	5240	0.0428	8.1711
		T (°C)	40	5240.0479	5240	0.0479	9.1424
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)	120	5745.0274	5745	0.0274	4.7739
		V max (V)	132	5745.0397	5745	0.0397	6.9137
		V min (V)	108	5745.0274	5745	0.0274	4.7739
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5745.0042	5745	0.0042	0.7275
		T (°C)	10	5745.0244	5745	0.0244	4.2407
		T (°C)	20	5745.0198	5745	0.0198	3.4522
		T (°C)	30	5745.0676	5745	0.0676	11.7708
		T (°C)	40	5745.0173	5745	0.0173	3.0063
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)	120	5785.0615	5785	0.0615	10.6328
		V max (V)	132	5785.0603	5785	0.0603	10.4168
		V min (V)	108	5785.0719	5785	0.0719	12.4302
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5785.0761	5785	0.0761	13.1626
		T (°C)	10	5785.0549	5785	0.0549	9.4929
		T (°C)	20	5785.0136	5785	0.0136	2.3551
		T (°C)	30	5785.0200	5785	0.0200	3.4654
		T (°C)	40	5785.0203	5785	0.0203	3.5125
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)	120	5825.0001	5825	0.0001	0.0170
		V max (V)	132	5825.0918	5825	0.0918	15.7634
		V min (V)	108	5825.0507	5825	0.0507	8.6990
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5825.0530	5825	0.0530	9.0955
		T (°C)	10	5825.0429	5825	0.0429	7.3615
		T (°C)	20	5825.0246	5825	0.0246	4.2235
		T (°C)	30	5825.0165	5825	0.0165	2.8241
		T (°C)	40	5825.0577	5825	0.0577	9.9105
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)	120	5180.0365	5180	0.0365	7.0517
		V max (V)	132	5180.0646	5180	0.0646	12.4658
		V min (V)	108	5180.0164	5180	0.0164	3.1611
Limits				±20ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5180.0577	5180	0.0577	11.1396
		T (°C)	10	5180.0469	5180	0.0469	9.0558
		T (°C)	20	5180.0879	5180	0.0879	16.9773
		T (°C)	30	5180.0082	5180	0.0082	1.5878
		T (°C)	40	5180.0110	5180	0.0110	2.1179
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)	120	5200.0760	5200	0.0760	14.6132
		V max (V)	132	5200.0017	5200	0.0017	0.3261
		V min (V)	108	5200.0169	5200	0.0169	3.2461
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5200.0354	5200	0.0354	6.8139
		T (°C)	10	5200.0459	5200	0.0459	8.8197
		T (°C)	20	5200.0088	5200	0.0088	1.6974
		T (°C)	30	5200.0296	5200	0.0296	5.7003
		T (°C)	40	5200.0654	5200	0.0654	12.5674
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)	120	5240.0693	5240	0.0693	13.2300
		V max (V)	132	5240.0502	5240	0.0502	9.5894
		V min (V)	108	5240.0673	5240	0.0673	12.8355
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5240.0584	5240	0.0584	11.1365
		T (°C)	10	5240.0655	5240	0.0655	12.5045
		T (°C)	20	5240.0674	5240	0.0674	12.8711
		T (°C)	30	5240.0600	5240	0.0600	11.4497
		T (°C)	40	5240.0814	5240	0.0814	15.5378
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)	120	5745.0342	5745	0.0342	5.9468
		V max (V)	132	5745.0918	5745	0.0918	15.9803
		V min (V)	108	5745.0061	5745	0.0061	1.0637
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5745.0186	5745	0.0186	3.2382
		T (°C)	10	5745.0513	5745	0.0513	8.9360
		T (°C)	20	5745.0770	5745	0.0770	13.4072
		T (°C)	30	5745.0360	5745	0.0360	6.2725
		T (°C)	40	5745.0691	5745	0.0691	12.0361
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)	120	5785.0382	5785	0.0382	6.5995
		V max (V)	132	5785.0377	5785	0.0377	6.5136
		V min (V)	108	5785.0076	5785	0.0076	1.3053
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5785.0848	5785	0.0848	14.6502
		T (°C)	10	5785.0328	5785	0.0328	5.6666
		T (°C)	20	5785.0168	5785	0.0168	2.8979
		T (°C)	30	5785.0267	5785	0.0267	4.6206
		T (°C)	40	5785.0394	5785	0.0394	6.8190
		T (°C)	50	5785.0546	5785	0.0546	9.4468
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)	120	5825.0444	5825	0.0444	7.6161
		V max (V)	132	5825.0496	5825	0.0496	8.5202
		V min (V)	108	5825.0667	5825	0.0667	11.4561
Limits				±20ppm			
Result				Complies			

## Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120	T (°C)	0	5825.0518	5825	0.0518	8.8973
		T (°C)	10	5825.0248	5825	0.0248	4.2559
		T (°C)	20	5825.0589	5825	0.0589	10.1123
		T (°C)	30	5825.0927	5825	0.0927	15.9181
		T (°C)	40	5825.0582	5825	0.0582	9.9863
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.

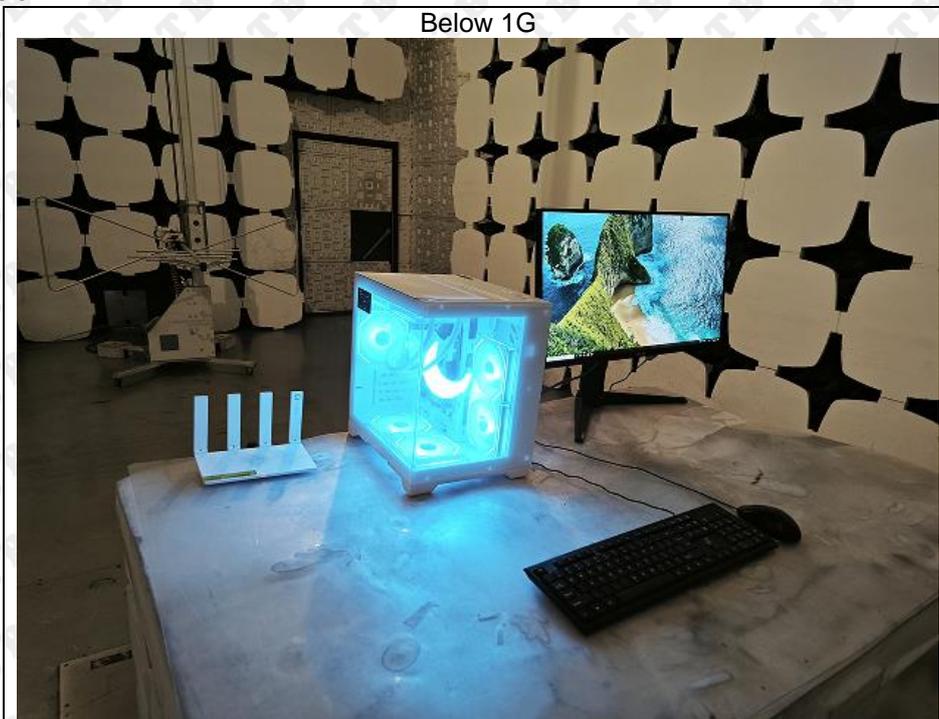
##### EUT Antenna:

The antenna is Internal antenna and no consideration of replacement. The best case gain of the antenna is WiFi (5.2G):Ant1: -2.07dBi, Ant2: -2.07dBi, WiFi (5.8G):Ant1: 1.12dBi, Ant2: 1.12dBi

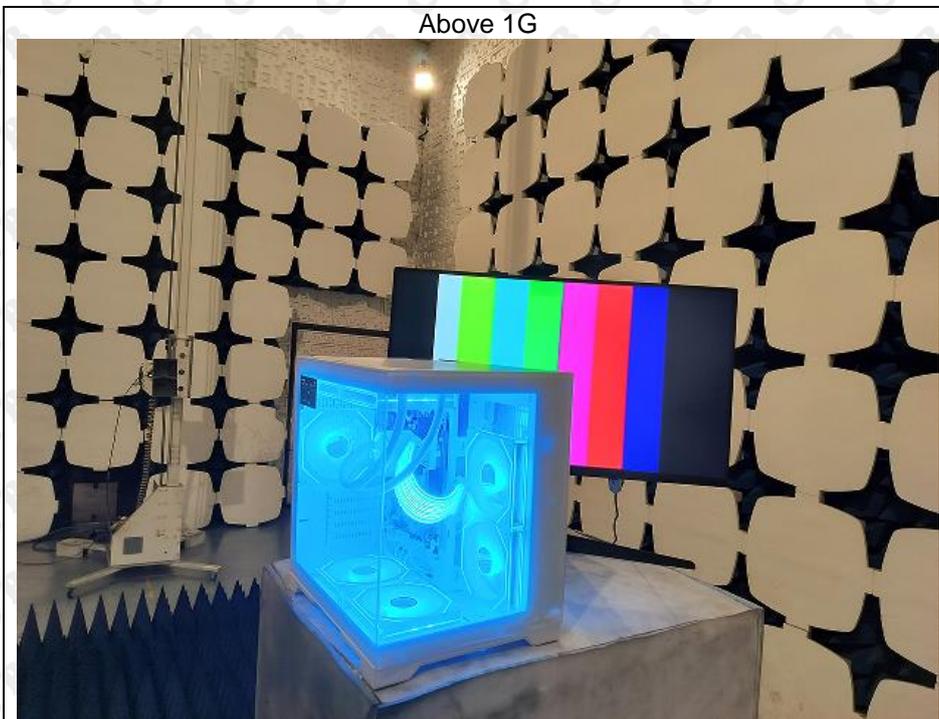
## 15. EUT TEST SETUP PHOTOGRAPHS

### Radiated Emission

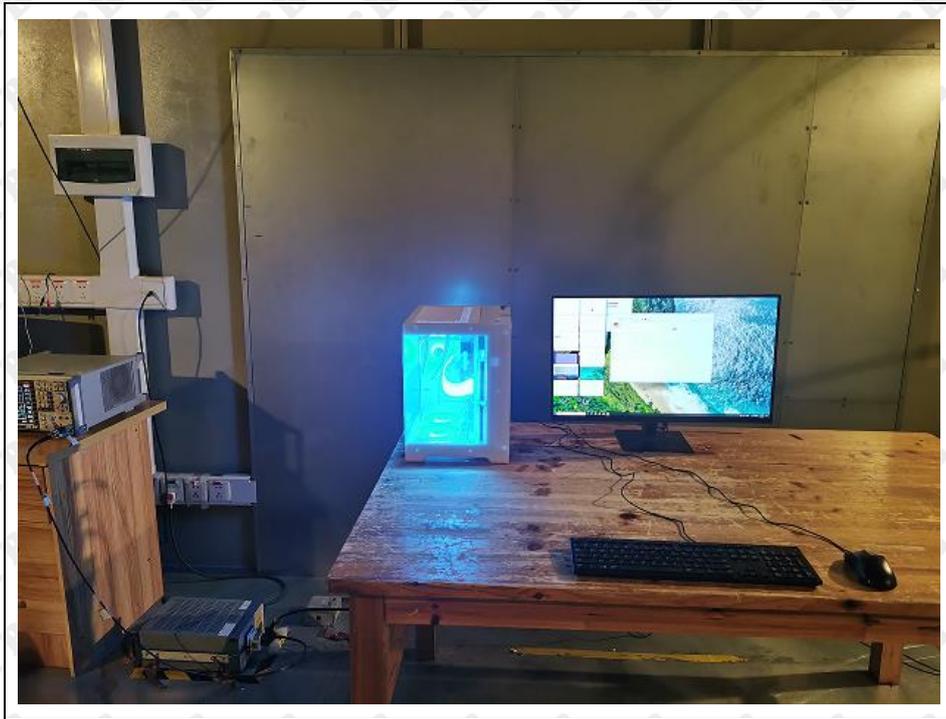
Below 1G



Above 1G



## Conducted Emission



※※※※ END OF REPORT ※※※※