



## 7.7. Frequency Stability Measurement

#### 7.7.1.Test Limit

Manufactures 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.

#### 7.7.2.Test Limit

#### **Frequency Stability Under Temperature Variations:**

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

#### **Frequency Stability Under Voltage Variations:**

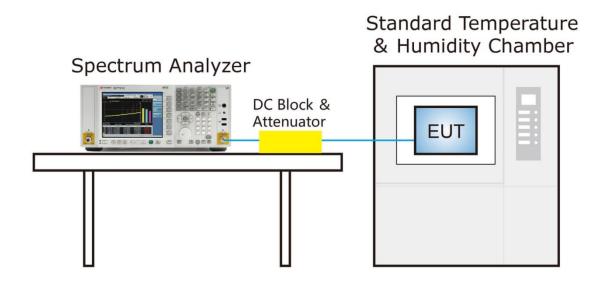
Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

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### 7.7.3.Test Setup



### 7.7.4.Test Result

Grantee ensure that the product meets e-CFR Title 47 section 15.407(g) and KDB 789033 D02v02r01 frequency stability such that the emissions are maintained within the band of operation under all conditions of normal operation as specified in the user's manual.



# 7.8. Radiated Spurious Emission Measurement

### 7.8.1.Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209						
Frequency	Field Strength	Measured Distance				
[MHz]	[uV/m]	[Meters]				
0.009 - 0.490	2400/F (kHz)	300				
0.490 - 1.705	24000/F (kHz)	30				
1.705 - 30	30	30				
30 - 88	100	3				
88 - 216	150	3				
216 - 960	200	3				
Above 960	500	3				

### 7.8.2.Test Procedure Used

KDB 789033 D02v02r01- Section G

### 7.8.3.Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW		
9 ~ 150 kHz	200 ~ 300 Hz		
0.15 ~ 30 MHz	9 ~ 10 kHz		
30 ~ 1000 MHz	100 ~ 120 kHz		
>1000 MHz	1 MHz		

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### **Quasi-Peak Measurements below 1GHz**

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = as specified in Table 1
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

### Peak Measurements above 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

### Average Measurements above 1GHz (Method VB)

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

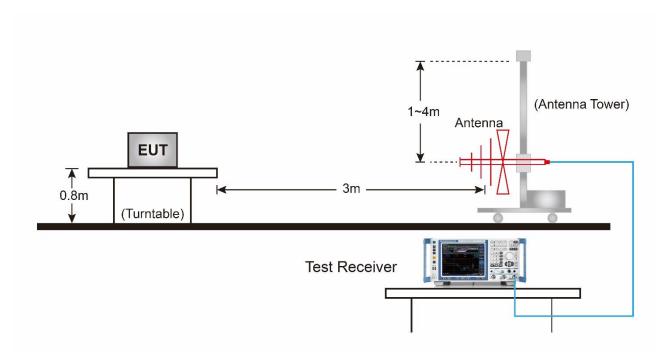
If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.

- 4. Detector = Peak
- 5. Sweep time = auto
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

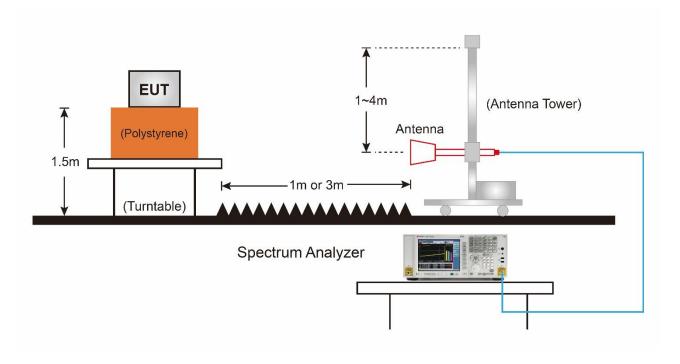


# 7.8.4.Test Setup

# Below 1GHz Test Setup:



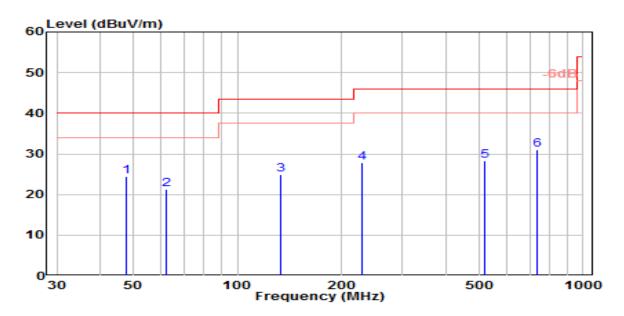
# Above 1GHz Test Setup:





### 7.8.5.Test Result

	EUT	BE3600 Whole Home Mesh Wi-Fi 7 System	Date of Test	2024-12-15	
	Factor	VULB 9162	Temp. / Humidity	21°C /49%	
	Polarity	Horizontal	Site / Test Engineer	AC1 / Tim	
٦	Test Mode	802.11ac-VHT20MHz_TX_Band1_CH 40_ANT 0+1	Test Voltage	AC 120V/60Hz	



No	Frequency	Reading	C.F	Measurement	Margin	Limit	Height	Angle	Remark
No	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dB)	(dBuV/m)	(cm)	(deg)	(QP/PK/AV)
1	47.460	3.35	21.13	24.47	-15.53	40.00	100	330	QP
2	61.950	1.98	19.20	21.18	-18.82	40.00	150	230	QP
3	133.302	9.30	15.70	24.99	-18.51	43.50	150	340	QP
4	229.412	8.30	19.52	27.82	-18.18	46.00	150	80	QP
5	518.591	2.63	25.71	28.34	-17.66	46.00	150	185	QP
6	* 733.494	1.64	29.30	30.94	-15.06	46.00	100	65	QP

#### Note:

- 1. " \*", means this data is the worst emission level.
- 2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- 3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20dB below the permissible value. Therefore, the data is not presented in the report.