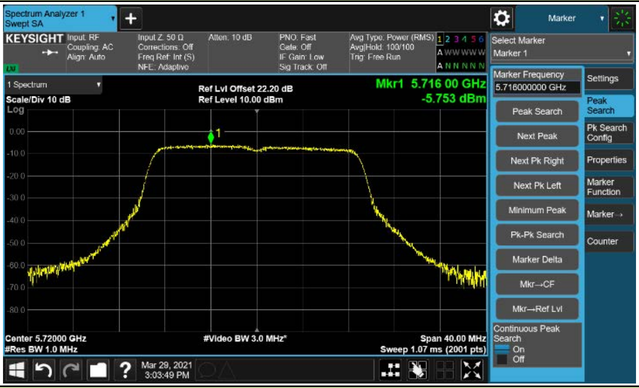
802.11ac-VHT20 Power Spectral Density - High Band Ant 6/Ant 0+1+2+3+4+5+6+7

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)

Channel 144 (5720MHz)



Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

802.11ac-VHT40 Power Spectral Density - High Band Ant 6/Ant 0+1+2+3+4+5+6+7

Channel 102 (5510MHz)

Channel 110 (5550MHz)

Channel 134 (5670MHz)

Channel 142 (5710MHz)

Channel 151 (5755MHz)

Channel 159 (5795MHz)

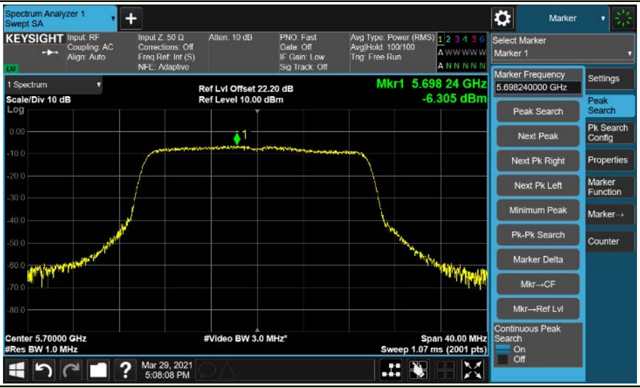
802.11ac-VHT80 Power Spectral Density - High Band Ant 6/Ant 0+1+2+3+4+5+6+7	
Channel 106 (5530MHz)	Channel 122 (5610MHz)
Channel 138 (5690MHz)	Channel 155 (5775MHz)

802.11ax-HE20 Power Spectral Density - High Band Ant 6/Ant 0+1+2+3+4+5+6+7

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)



Channel 144 (5720MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

<table>
<tr><th colspan="2">802.11ax-HE40 Power Spectral Density - High Band Ant 6/Ant 0+1+2+3+4+5+6+7</th></tr>
<tr><td>Channel 102 (5510MHz)</td><td>Channel 110 (5550MHz)</td></tr>
<tr><td>
</td><td>
</td></tr>
<tr><td>Channel 134 (5670MHz)</td><td>Channel 142 (5710MHz)</td></tr>
<tr><td>
</td><td>
</td></tr>
<tr><td>Channel 151 (5755MHz)</td><td>Channel 159 (5795MHz)</td></tr>
<tr><td>
</td><td>
</td></tr>
</table>

802.11ax-HE80 Power Spectral Density - High Band Ant 6/Ant 0+1+2+3+4+5+6+7	
Channel 106 (5530MHz)	Channel 122 (5610MHz)
	
Channel 138 (5690MHz)	Channel 155 (5775MHz)
	

802.11a Power Spectral Density - High Band Ant 7/Ant 0+1+2+3+4+5+6+7	
Channel 100 (5500MHz)	Channel 116 (5580MHz)
	
Channel 140 (5700MHz)	Channel 144 (5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ac-VHT20 Power Spectral Density - High Band Ant 7/Ant 0+1+2+3+4+5+6+7

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)

Channel 144 (5720MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

<table>
<tr><th colspan="2">802.11ac-VHT40 Power Spectral Density - High Band Ant 7/Ant 0+1+2+3+4+5+6+7</th></tr>
<tr><td>Channel 102 (5510MHz)</td><td>Channel 110 (5550MHz)</td></tr>
<tr><td>
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<tr><td>Channel 134 (5670MHz)</td><td>Channel 142 (5710MHz)</td></tr>
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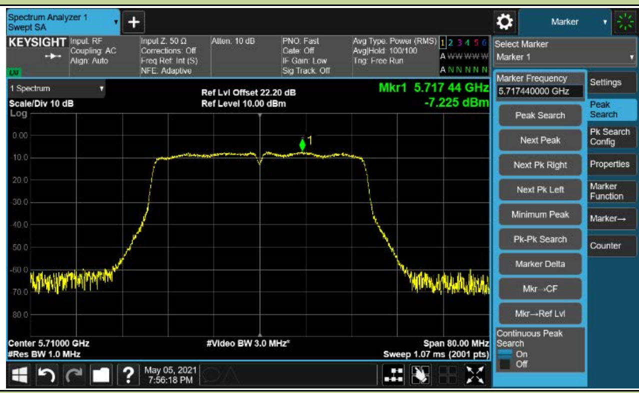
</td><td>
</td></tr>
<tr><td>Channel 151 (5755MHz)</td><td>Channel 159 (5795MHz)</td></tr>
<tr><td>
</td><td>
</td></tr>
</table>

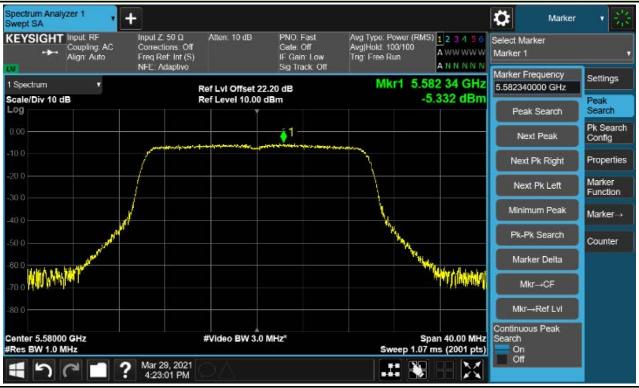
802.11ac-VHT80 Power Spectral Density - High Band Ant 7/Ant 0+1+2+3+4+5+6+7

Channel 106 (5530MHz)

Channel 122 (5610MHz)

Channel 138 (5690MHz)

Channel 155 (5775MHz)

802.11ax-HE20 Power Spectral Density - High Band Ant 7/Ant 0+1+2+3+4+5+6+7	
Channel 100 (5500MHz)	Channel 116 (5580MHz)
	
Channel 140 (5700MHz)	Channel 144 (5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ax-HE40 Power Spectral Density - High Band Ant 7/Ant 0+1+2+3+4+5+6+7	
Channel 102 (5510MHz)	Channel 110 (5550MHz)
	
Channel 134 (5670MHz)	Channel 142 (5710MHz)
	
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

802.11ax-HE80 Power Spectral Density - High Band Ant 7/Ant 0+1+2+3+4+5+6+7

Channel 106 (5530MHz)

Channel 122 (5610MHz)

Channel 138 (5690MHz)

Channel 155 (5775MHz)

802.11a Power Spectral Density – Scan Antenna

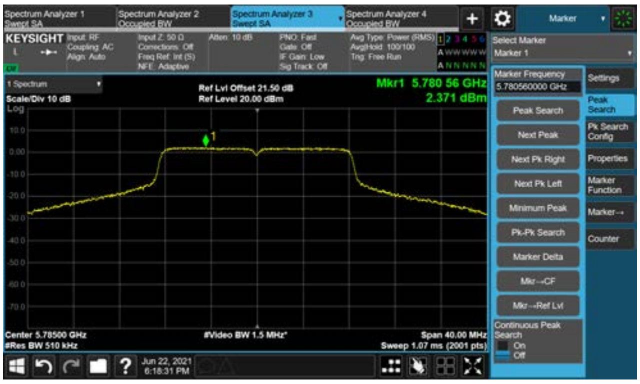
Channel 36 (5180MHz)

Channel 44 (5220MHz)

Channel 48 (5240MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)



Channel 165 (5825MHz)

802.11ac-VHT20 Power Spectral Density – Scan Antenna

Channel 36 (5180MHz)

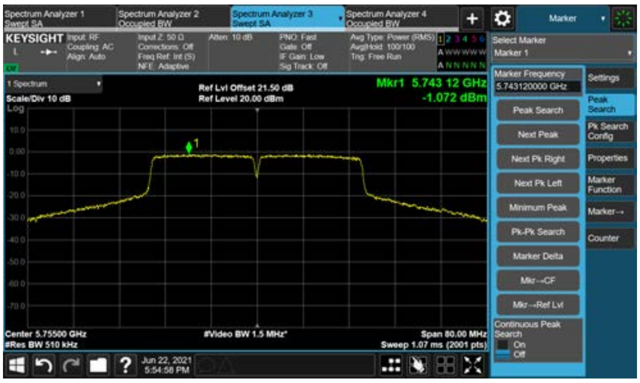
Channel 44 (5220MHz)

Channel 48 (5240MHz)

Channel 149 (5745MHz)

Channel 157 (5785MHz)

Channel 165 (5825MHz)

<table>
<tr><th colspan="2">802.11ac-VHT40 Power Spectral Density – Scan Antenna</th></tr>
<tr><th>Channel 38 (5190MHz)</th><th>Channel 46 (5230MHz)</th></tr>
<tr><td>
</td>
<td>
</td></tr>
<tr><th>Channel 151 (5755MHz)</th><th>Channel 159 (5795MHz)</th></tr>
<tr><td>
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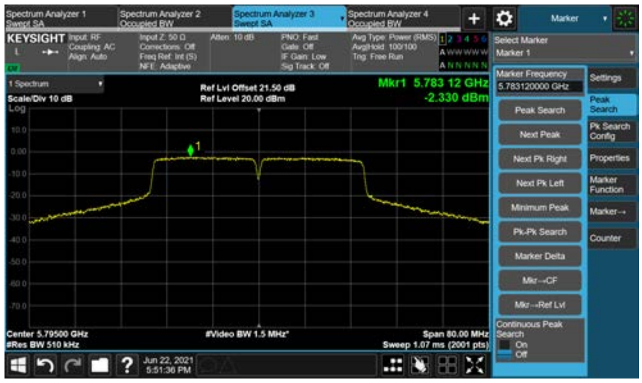
<td>
</td></tr>
</table>

802.11ac-VHT80 Power Spectral Density – Scan Antenna	
Channel 42 (5210MHz)	Channel 155 (5775MHz)
	

6.7. Frequency Stability Measurement

6.7.1.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.

The transmitter center frequency tolerance shall be ±20 ppm maximum for the 5GHz band (IEEE 802.11 specification).

6.7.2.Test Procedure Used

Frequency Stability Under Temperature Variations:

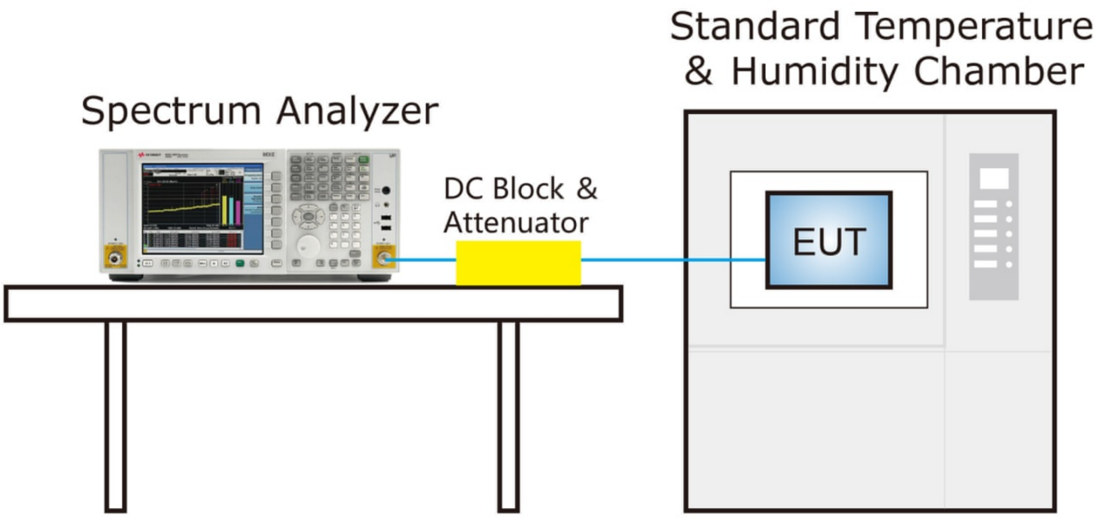
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain 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.

6.7.3.Test Setup



6.7.4. Test Result

Test Site	SR2	Test Engineer	Peter
Test Date	2021/05/05	Test Mode	5500MHz (Carrier Mode)

Voltage (%)	Power (VAC)	Temp (°C)	Frequency Tolerance (ppm)
100%	120	- 30	-6.21
		- 20	-6.19
		- 10	-6.16
		0	-6.15
		+ 10	-6.15
		+ 20(Ref)	-6.14
		+ 30	-6.13
		+ 40	-6.12
		+ 50	-6.11
115%	138	+ 20	-6.10
85%	102	+ 20	-6.12

Note: Frequency Tolerance (ppm) = {[Measured Frequency (Hz) - Declared Frequency (Hz)] / Declared Frequency (Hz)} $*10^6$.

Test Site	SR2	Test Engineer	Peter
Test Time	2021/05/07	Test Mode	5180MHz (Carrier Mode)
Test Mode	Scan Antenna		

Voltage (%)	Power (VAC)	Temp (°C)	Frequency Tolerance (ppm)
100%	120	- 30	-8.83
		- 20	-8.85
		- 10	-8.85
		0	-8.86
		+ 10	-8.82
		+ 20 (Ref)	-8.77
		+ 30	-8.77
		+ 40	-8.78
		+ 50	-8.79
115%	138	+ 20	-8.79
85%	102	+ 20	-8.79

Note: Frequency Tolerance (ppm) = {[Measured Frequency (Hz) - Declared Frequency (Hz)] / Declared Frequency (Hz)} $*10^6$.