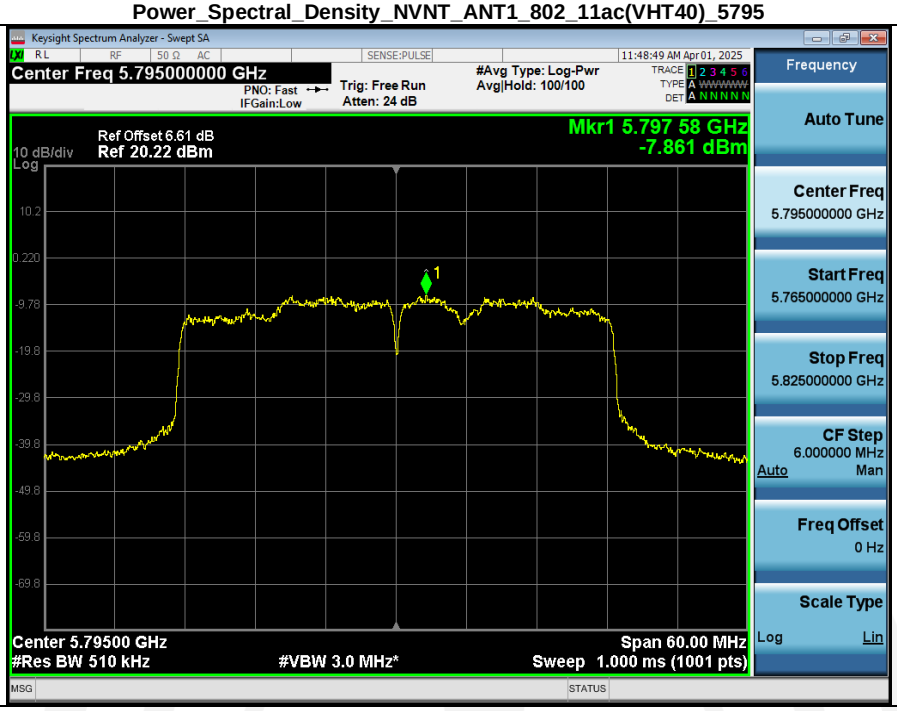
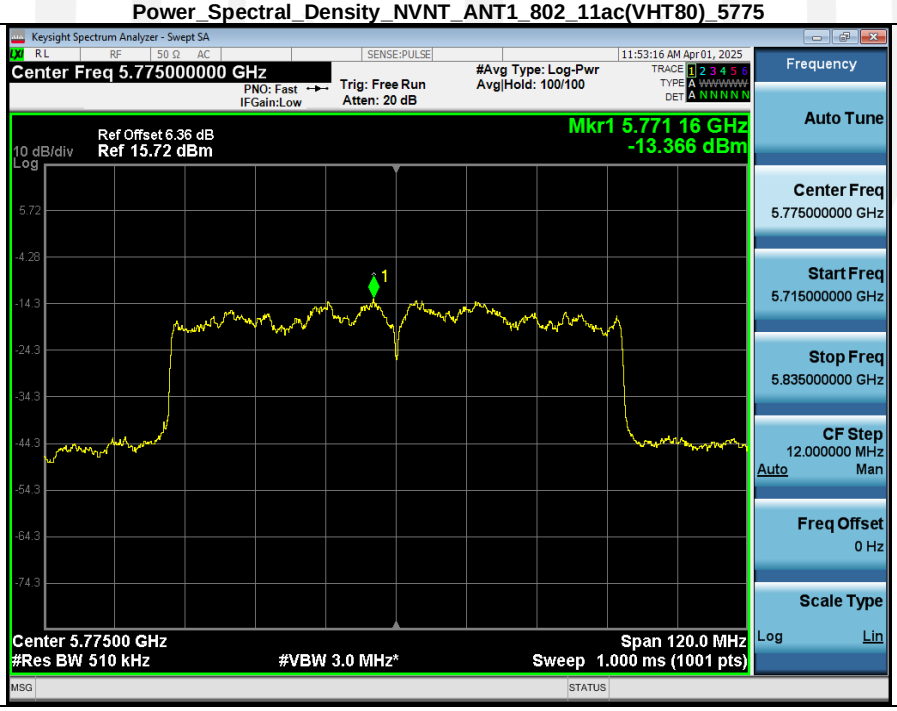
Power_Spectral_Density_NVNT_ANT1_802_11ac(VHT40)_5795

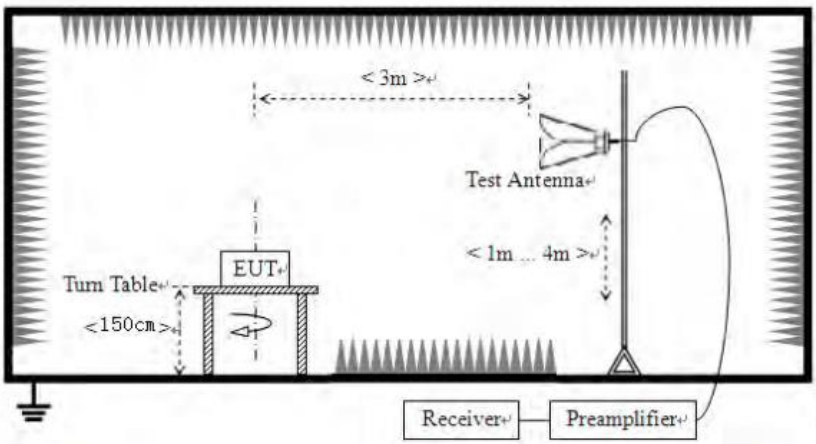


Power_Spectral_Density_NVNT_ANT1_802_11ac(VHT80)_5775



4.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407 and 15.205, RSS-Gen §8.9</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>68.2</td><td>Peak Value</td></tr>
</table>
Undesirable emission limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
</td></tr>
<tr><td>Test Procedure:</td><td>
a. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values
</td></tr>
</table>

	of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test setup:	Above 1GHz 
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Remark:

According to KDB 789033 D02 v02r01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:

E[dBuV/m] = EIRP[dBm] + 95.2,

For example, if EIRP = -27dBm

E[dBuV/m] = -27 + 95.2 = 68.2dBuV/m.

Measurement Data:

Band1

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	53.66	-13.16	40.50	68.20	-27.70	PK
V	5150.00	57.16	-13.16	44.00	68.20	-24.20	PK
Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	44.30	-13.16	31.14	54.00	-22.86	AV
V	5150.00	46.13	-13.16	32.97	54.00	-21.03	AV
Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	55.69	-12.62	43.07	68.20	-25.13	PK
V	5350.00	56.14	-12.62	43.52	68.20	-24.68	PK
Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	46.38	-12.62	33.76	54.00	-20.24	AV
V	5350.00	45.37	-12.62	32.75	54.00	-21.25	AV

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	56.05	-13.16	42.89	68.20	-25.31	PK
V	5150.00	58.24	-13.16	45.08	68.20	-23.12	PK
Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	47.19	-13.16	34.03	54.00	-19.97	AV
V	5150.00	48.08	-13.16	34.92	54.00	-19.08	AV
Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	54.17	-12.62	41.55	68.20	-26.65	PK
V	5350.00	58.51	-12.62	45.89	68.20	-22.31	PK
Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	45.08	-12.62	32.46	54.00	-21.54	AV
V	5350.00	48.57	-12.62	35.95	54.00	-18.05	AV

Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	55.20	-13.16	42.04	68.20	-26.16	PK
V	5150.00	56.51	-13.16	43.35	68.20	-24.85	PK
Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	46.18	-13.16	33.02	54.00	-20.98	AV
V	5150.00	48.47	-13.16	35.31	54.00	-18.69	AV
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	57.36	-12.62	44.74	68.20	-23.46	PK
V	5350.00	55.71	-12.62	43.09	68.20	-25.11	PK
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	45.73	-12.62	33.11	54.00	-20.89	AV
V	5350.00	46.14	-12.62	33.52	54.00	-20.48	AV

Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	55.88	-13.16	42.72	68.20	-25.48	PK
V	5150.00	57.53	-13.16	44.37	68.20	-23.83	PK
Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	47.88	-13.16	34.72	54.00	-19.28	AV
V	5150.00	48.71	-13.16	35.55	54.00	-18.45	AV
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	54.22	-12.62	41.60	68.20	-26.60	PK
V	5350.00	57.29	-12.62	44.67	68.20	-23.53	PK
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	45.06	-12.62	32.44	54.00	-21.56	AV
V	5350.00	46.58	-12.62	33.96	54.00	-20.04	AV

Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	55.03	-13.16	41.87	68.20	-26.33	PK
V	5150.00	57.29	-13.16	44.13	68.20	-24.07	PK
Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	47.28	-13.16	34.12	54.00	-19.88	AV
V	5150.00	45.57	-13.16	32.41	54.00	-21.59	AV
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	54.49	-12.62	41.87	68.20	-26.33	PK
V	5350.00	55.02	-12.62	42.40	68.20	-25.80	PK
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	44.59	-12.62	31.97	54.00	-22.03	AV
V	5350.00	45.88	-12.62	33.26	54.00	-20.74	AV

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	57.23	-13.16	44.07	68.20	-24.13	PK
V	5150.00	57.30	-13.16	44.14	68.20	-24.06	PK

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	44.83	-13.16	31.67	54.00	-22.33	AV
V	5150.00	46.07	-13.16	32.91	54.00	-21.09	AV

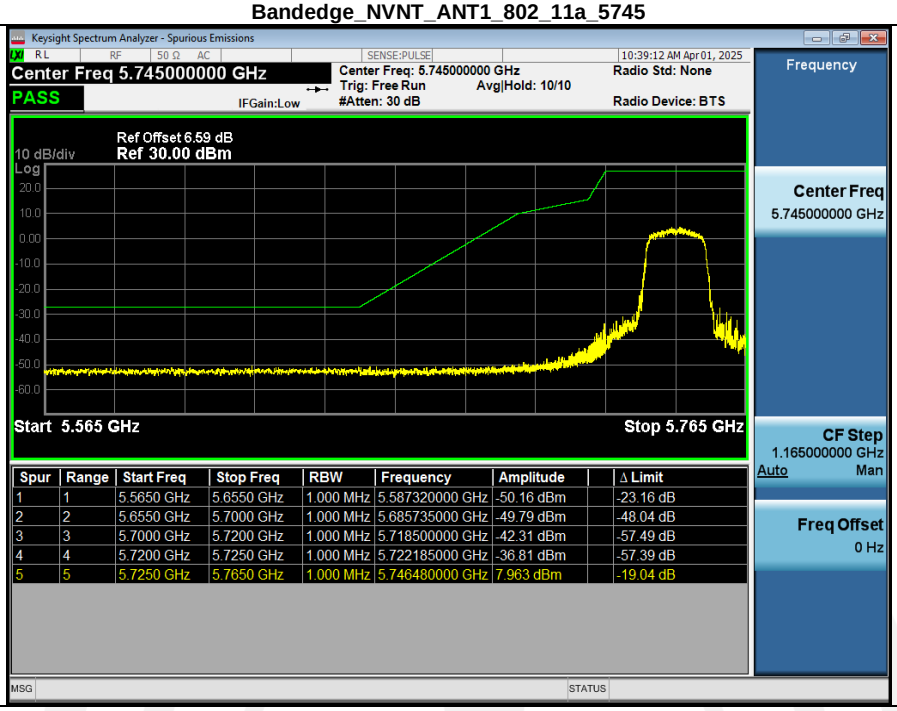
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	56.78	-12.62	44.16	68.20	-24.04	PK
V	5350.00	60.41	-12.62	47.79	68.20	-20.41	PK

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	47.27	-12.62	34.65	54.00	-19.35	AV
V	5350.00	48.94	-12.62	36.32	54.00	-17.68	AV

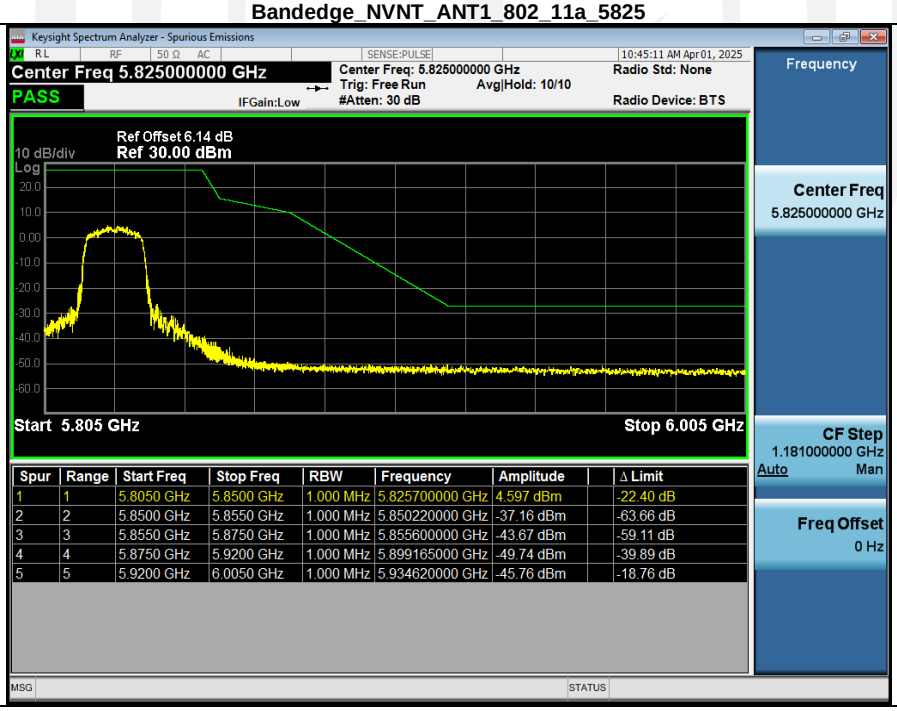
Band4

Condition	Antenna	Modulation	TX_Frequency (MHz)	Frequency Area(MHz)	Frequency(MHz)	Amplitude(dBm)	Limit(dBm)	Result
NVNT	ANT1	802.11a	LCH	5565-5655	5587.320	-50.16	-27.00	Pass
NVNT	ANT1	802.11a	LCH	5655-5700	5685.735	-49.79	-1.73	Pass
NVNT	ANT1	802.11a	LCH	5700-5720	5718.500	-42.31	15.18	Pass
NVNT	ANT1	802.11a	LCH	5720-5725	5722.185	-36.81	20.58	Pass
NVNT	ANT1	802.11a	HCH	5850-5855	5850.220	-37.16	26.50	Pass
NVNT	ANT1	802.11a	HCH	5855-5875	5855.600	-43.67	15.43	Pass
NVNT	ANT1	802.11a	HCH	5875-5920	5899.165	-49.74	-9.87	Pass
NVNT	ANT1	802.11a	HCH	5920-6005	5934.620	-45.76	-27.00	Pass
NVNT	ANT1	802.11n(HT20)	LCH	5565-5655	5635.290	-50.28	-27.00	Pass
NVNT	ANT1	802.11n(HT20)	LCH	5655-5700	5681.055	-49.56	-5.58	Pass
NVNT	ANT1	802.11n(HT20)	LCH	5700-5720	5717.280	-36.91	14.84	Pass
NVNT	ANT1	802.11n(HT20)	LCH	5720-5725	5722.480	-33.37	21.25	Pass
NVNT	ANT1	802.11n(HT20)	HCH	5850-5855	5851.915	-36.40	22.63	Pass
NVNT	ANT1	802.11n(HT20)	HCH	5855-5875	5857.500	-39.55	14.90	Pass
NVNT	ANT1	802.11n(HT20)	HCH	5875-5920	5892.865	-49.42	-4.69	Pass
NVNT	ANT1	802.11n(HT20)	HCH	5920-6005	5930.710	-44.75	-27.00	Pass
NVNT	ANT1	802.11ac(VHT20)	LCH	5565-5655	5645.730	-49.96	-27.00	Pass
NVNT	ANT1	802.11ac(VHT20)	LCH	5655-5700	5681.775	-49.76	-4.99	Pass
NVNT	ANT1	802.11ac(VHT20)	LCH	5700-5720	5715.980	-39.16	14.47	Pass
NVNT	ANT1	802.11ac(VHT20)	LCH	5720-5725	5722.595	-31.19	21.52	Pass
NVNT	ANT1	802.11ac(VHT20)	HCH	5850-5855	5853.420	-37.21	19.20	Pass
NVNT	ANT1	802.11ac(VHT20)	HCH	5855-5875	5858.580	-41.00	14.60	Pass
NVNT	ANT1	802.11ac(VHT20)	HCH	5875-5920	5903.035	-49.40	-13.05	Pass
NVNT	ANT1	802.11ac(VHT20)	HCH	5920-6005	5984.855	-47.00	-27.00	Pass
NVNT	ANT1	802.11n(HT40)	LCH	5595-5655	5606.940	-50.74	-27.00	Pass
NVNT	ANT1	802.11n(HT40)	LCH	5655-5700	5695.140	-41.57	6.00	Pass
NVNT	ANT1	802.11n(HT40)	LCH	5700-5720	5719.880	-27.89	15.57	Pass
NVNT	ANT1	802.11n(HT40)	LCH	5720-5725	5721.955	-27.40	20.06	Pass
NVNT	ANT1	802.11n(HT40)	HCH	5850-5855	5853.815	-39.64	18.30	Pass
NVNT	ANT1	802.11n(HT40)	HCH	5855-5875	5864.920	-43.07	12.82	Pass
NVNT	ANT1	802.11n(HT40)	HCH	5875-5920	5891.335	-48.80	-3.43	Pass
NVNT	ANT1	802.11n(HT40)	HCH	5920-5955	5920.525	-45.72	-27.00	Pass
NVNT	ANT1	802.11ac(VHT40)	LCH	5595-5655	5613.780	-50.56	-27.00	Pass
NVNT	ANT1	802.11ac(VHT40)	LCH	5655-5700	5690.145	-44.27	1.90	Pass
NVNT	ANT1	802.11ac(VHT40)	LCH	5700-5720	5719.060	-31.15	15.34	Pass
NVNT	ANT1	802.11ac(VHT40)	LCH	5720-5725	5722.140	-28.84	20.48	Pass
NVNT	ANT1	802.11ac(VHT40)	HCH	5850-5855	5853.695	-42.15	18.58	Pass
NVNT	ANT1	802.11ac(VHT40)	HCH	5855-5875	5856.780	-42.11	15.10	Pass
NVNT	ANT1	802.11ac(VHT40)	HCH	5875-5920	5890.615	-48.54	-2.84	Pass
NVNT	ANT1	802.11ac(VHT40)	HCH	5920-5955	5943.590	-46.01	-27.00	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5650-5655	5652.920	-44.26	-27.00	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5655-5700	5684.835	-35.02	-2.47	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5700-5720	5710.480	-32.17	12.93	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5720-5725	5721.355	-29.81	18.69	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5850-5855	5854.435	-30.74	16.89	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5855-5875	5861.220	-33.04	13.86	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5875-5920	5879.140	-40.99	6.60	Pass
NVNT	ANT1	802.11ac(VHT80)	MCH	5920-5925	5923.005	-40.35	-27.00	Pass

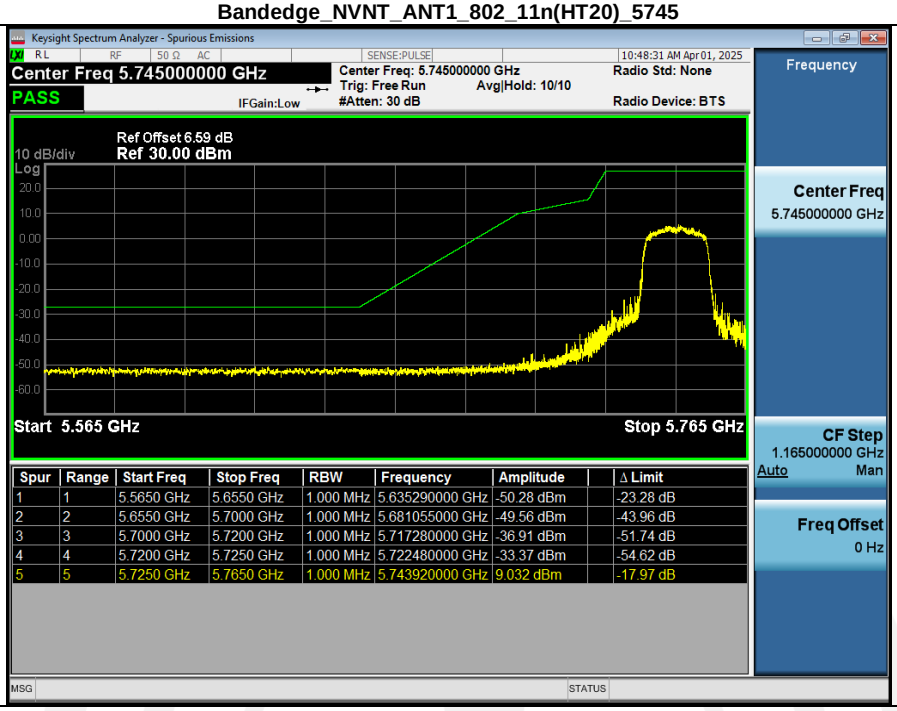
Bandedge_NVNT_ANT1_802_11a_5745



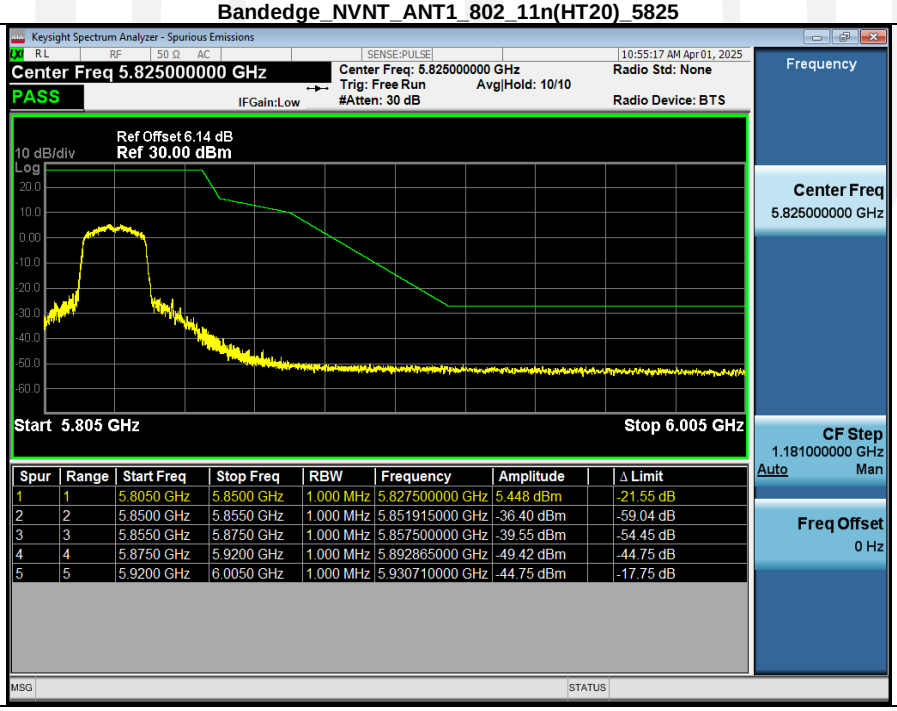
Bandedge_NVNT_ANT1_802_11a_5825



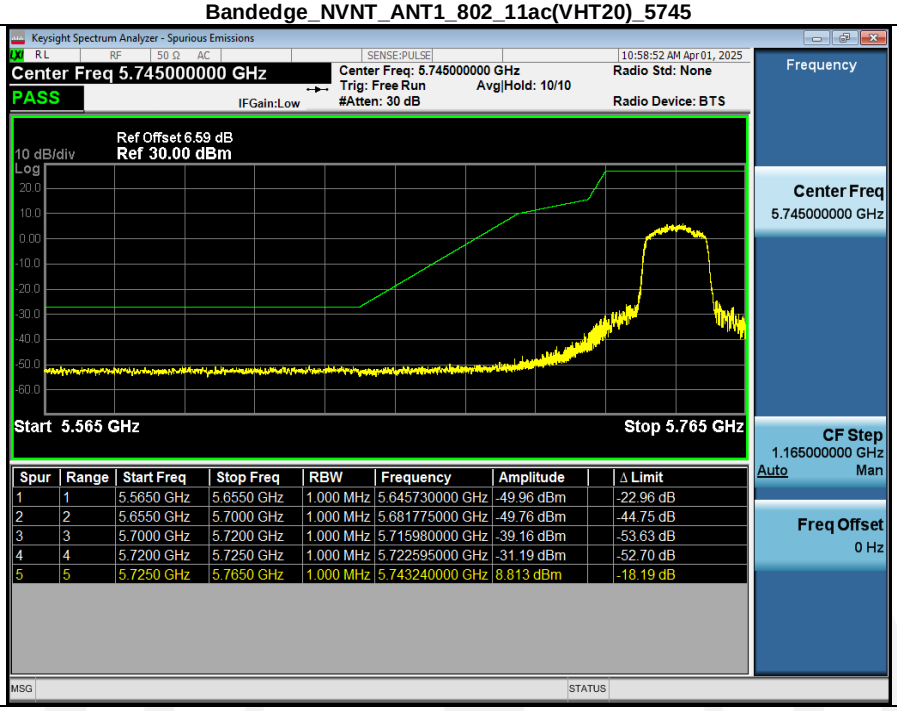
Bandedge_NVNT_ANT1_802_11n(HT20)_5745



Bandedge_NVNT_ANT1_802_11n(HT20)_5825

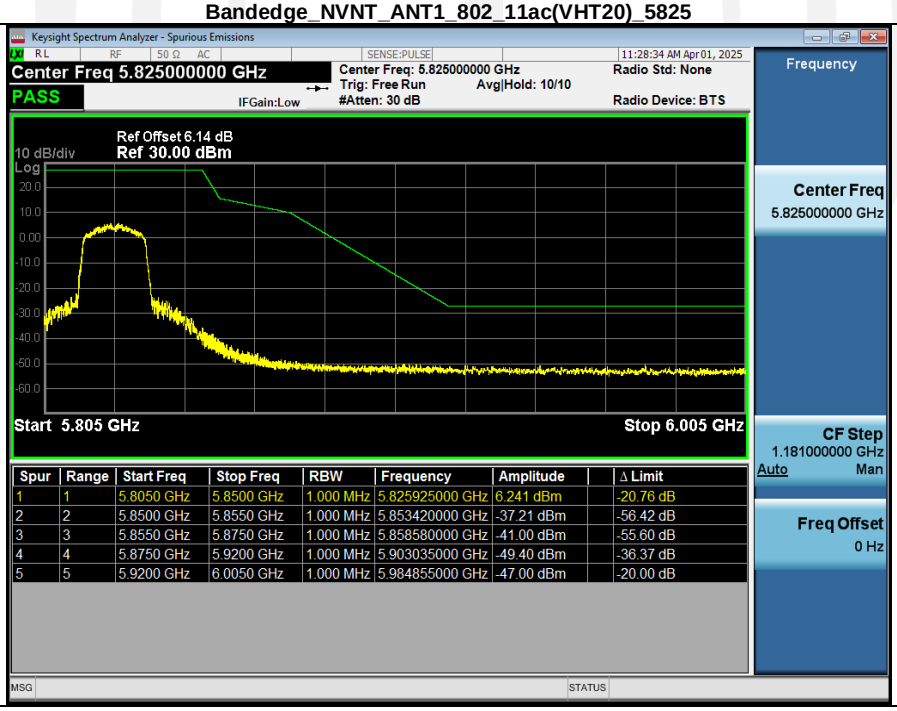


Bandedge_NVNT_ANT1_802_11ac(VHT20)_5745



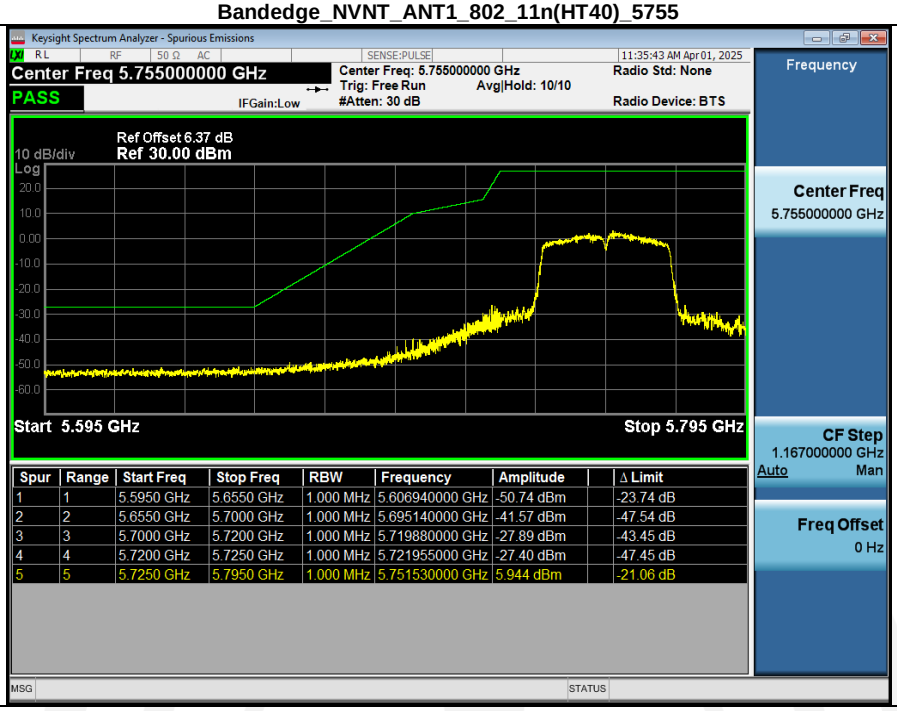
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	5.5650 GHz	5.6550 GHz	1.000 MHz	5.645730000 GHz	-49.96 dBm	-22.96 dB
2	2	5.6550 GHz	5.7000 GHz	1.000 MHz	5.681775000 GHz	-49.76 dBm	-44.75 dB
3	3	5.7000 GHz	5.7200 GHz	1.000 MHz	5.715980000 GHz	-39.16 dBm	-53.63 dB
4	4	5.7200 GHz	5.7250 GHz	1.000 MHz	5.722595000 GHz	-31.19 dBm	-52.70 dB
5	5	5.7250 GHz	5.7650 GHz	1.000 MHz	5.743240000 GHz	8.813 dBm	-18.19 dB

Bandedge_NVNT_ANT1_802_11ac(VHT20)_5825

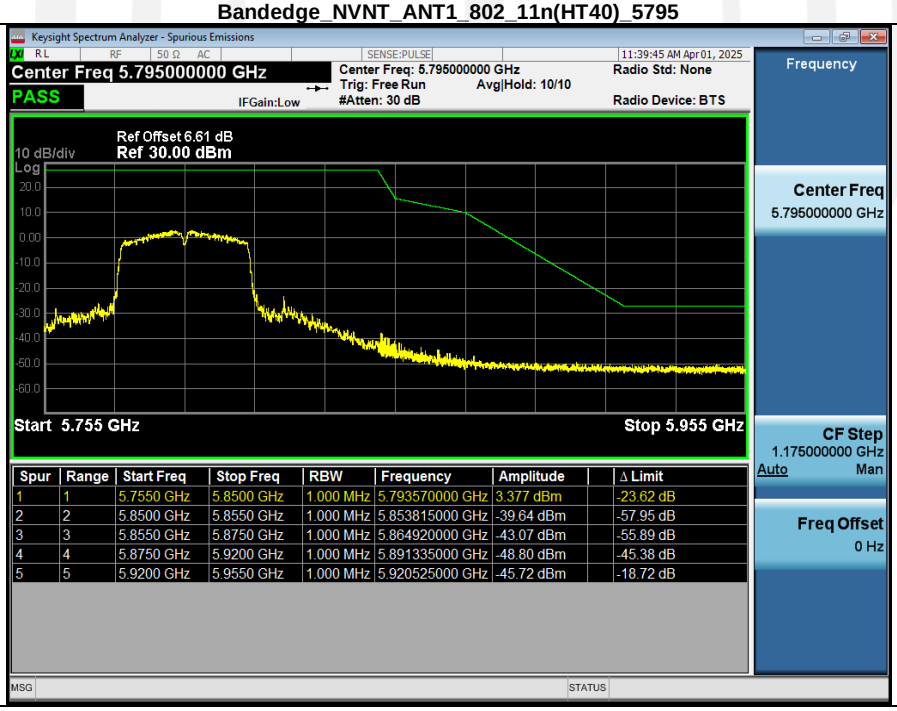


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	5.8050 GHz	5.8500 GHz	1.000 MHz	5.825925000 GHz	6.241 dBm	-20.76 dB
2	2	5.8500 GHz	5.8550 GHz	1.000 MHz	5.853420000 GHz	-37.21 dBm	-56.42 dB
3	3	5.8550 GHz	5.8750 GHz	1.000 MHz	5.858580000 GHz	-41.00 dBm	-55.60 dB
4	4	5.8750 GHz	5.9200 GHz	1.000 MHz	5.903035000 GHz	-49.40 dBm	-36.37 dB
5	5	5.9200 GHz	6.0050 GHz	1.000 MHz	5.984855000 GHz	-47.00 dBm	-20.00 dB

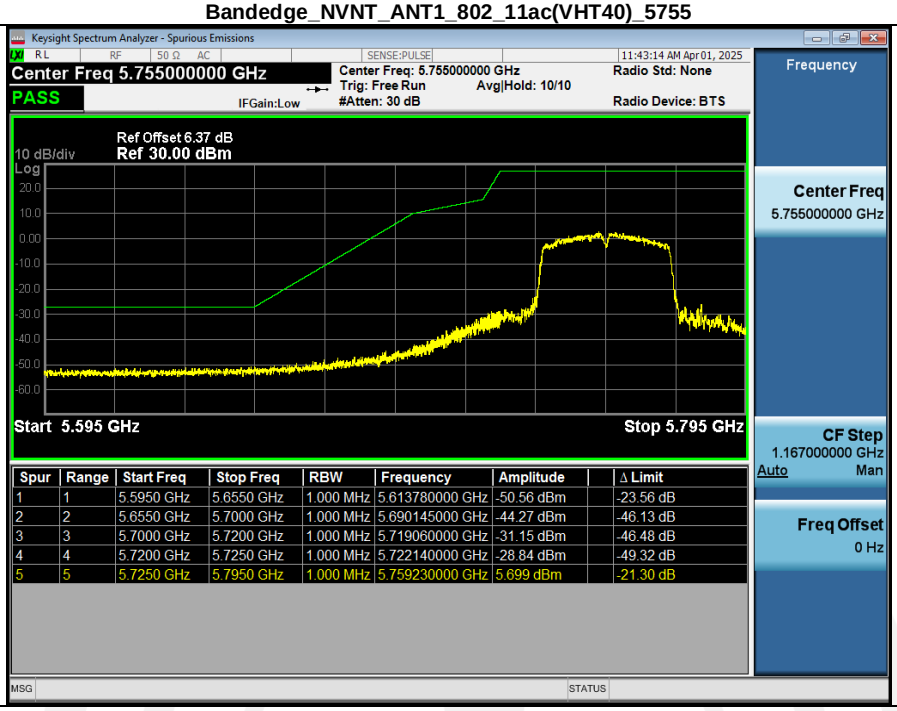
Bandedge_NVNT_ANT1_802_11n(HT40)_5755



Bandedge_NVNT_ANT1_802_11n(HT40)_5795

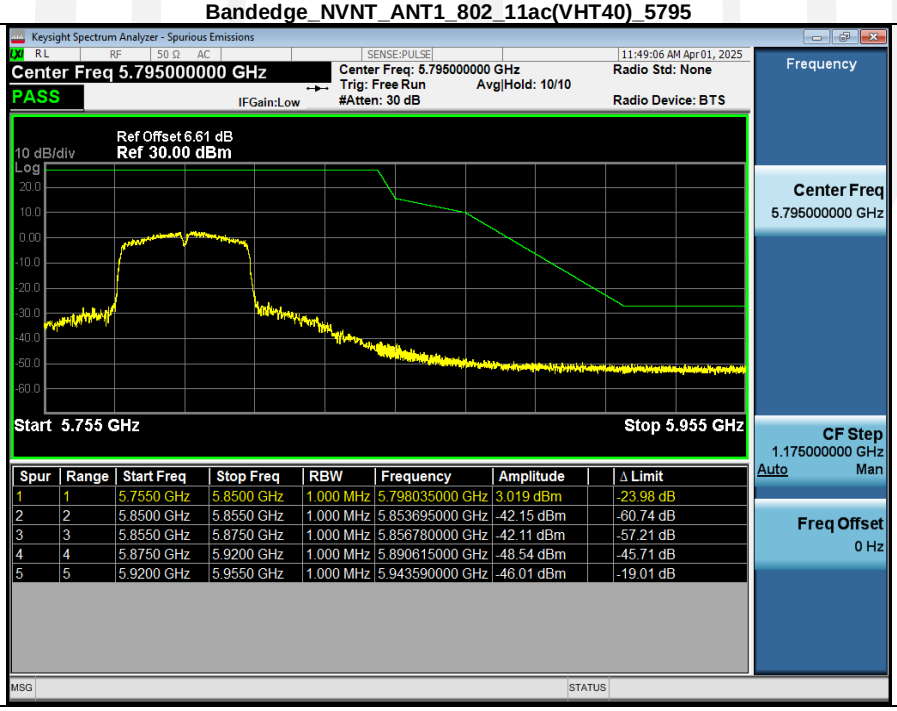


Bandedge_NVNT_ANT1_802_11ac(VHT40)_5755



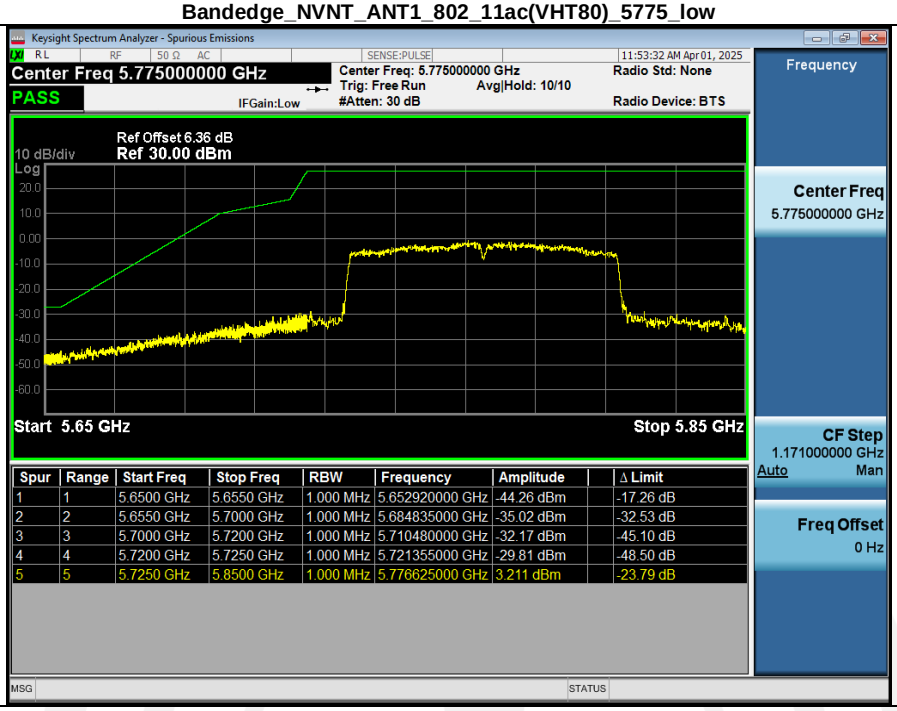
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	5.5950 GHz	5.6550 GHz	1.000 MHz	5.613780000 GHz	-50.56 dBm	-23.56 dB
2	2	5.6550 GHz	5.7000 GHz	1.000 MHz	5.690145000 GHz	-44.27 dBm	-46.13 dB
3	3	5.7000 GHz	5.7200 GHz	1.000 MHz	5.719060000 GHz	-31.15 dBm	-46.48 dB
4	4	5.7200 GHz	5.7250 GHz	1.000 MHz	5.722140000 GHz	-28.84 dBm	-49.32 dB
5	5	5.7250 GHz	5.7950 GHz	1.000 MHz	5.759230000 GHz	5.699 dBm	-21.30 dB

Bandedge_NVNT_ANT1_802_11ac(VHT40)_5795



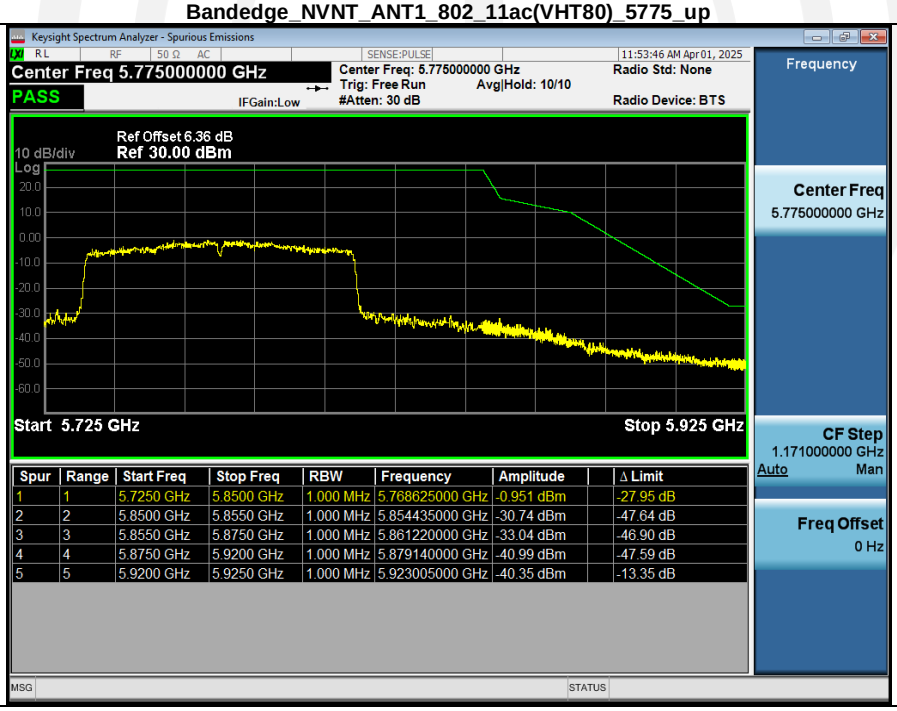
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	5.7550 GHz	5.8500 GHz	1.000 MHz	5.798035000 GHz	3.019 dBm	-23.98 dB
2	2	5.8500 GHz	5.8550 GHz	1.000 MHz	5.853695000 GHz	-42.15 dBm	-60.74 dB
3	3	5.8550 GHz	5.8750 GHz	1.000 MHz	5.856780000 GHz	-42.11 dBm	-57.21 dB
4	4	5.8750 GHz	5.9200 GHz	1.000 MHz	5.890615000 GHz	-48.54 dBm	-45.71 dB
5	5	5.9200 GHz	5.9550 GHz	1.000 MHz	5.943590000 GHz	-46.01 dBm	-19.01 dB

Bandedge_NVNT_ANT1_802_11ac(VHT80)_5775_low



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	5.6500 GHz	5.6550 GHz	1.000 MHz	5.652920000 GHz	-44.26 dBm	-17.26 dB
2	2	5.6550 GHz	5.7000 GHz	1.000 MHz	5.684835000 GHz	-35.02 dBm	-32.53 dB
3	3	5.7000 GHz	5.7200 GHz	1.000 MHz	5.710480000 GHz	-32.17 dBm	-45.10 dB
4	4	5.7200 GHz	5.7250 GHz	1.000 MHz	5.721355000 GHz	-29.81 dBm	-48.50 dB
5	5	5.7250 GHz	5.8500 GHz	1.000 MHz	5.776625000 GHz	3.211 dBm	-23.79 dB

Bandedge_NVNT_ANT1_802_11ac(VHT80)_5775_up



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	5.7250 GHz	5.8500 GHz	1.000 MHz	5.768625000 GHz	-0.951 dBm	-27.95 dB
2	2	5.8500 GHz	5.8550 GHz	1.000 MHz	5.854435000 GHz	-30.74 dBm	-47.64 dB
3	3	5.8550 GHz	5.8750 GHz	1.000 MHz	5.861220000 GHz	-33.04 dBm	-46.90 dB
4	4	5.8750 GHz	5.9200 GHz	1.000 MHz	5.879140000 GHz	-40.99 dBm	-47.59 dB
5	5	5.9200 GHz	5.9250 GHz	1.000 MHz	5.923005000 GHz	-40.35 dBm	-13.35 dB

Note:

1. Except for mode b/g, other modes test the MIMO status.

4.7 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.209 and 15.205, RSS-Gen §8.9
Test Method:	ANSI C63.10:2013
Test Frequency Range:	30MHz to 40GHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	AV	1MHz	3MHz	Average Value

Limit:

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	74.0	Peak Value
	54.0	Average Value

Test Procedure:

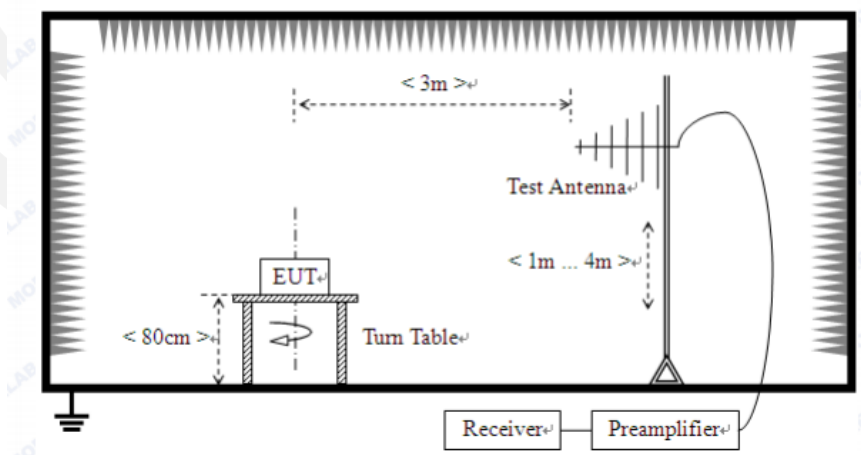
Substitution method was performed to determine the actual ERP emission levels of the EUT.
The following test procedure as below:

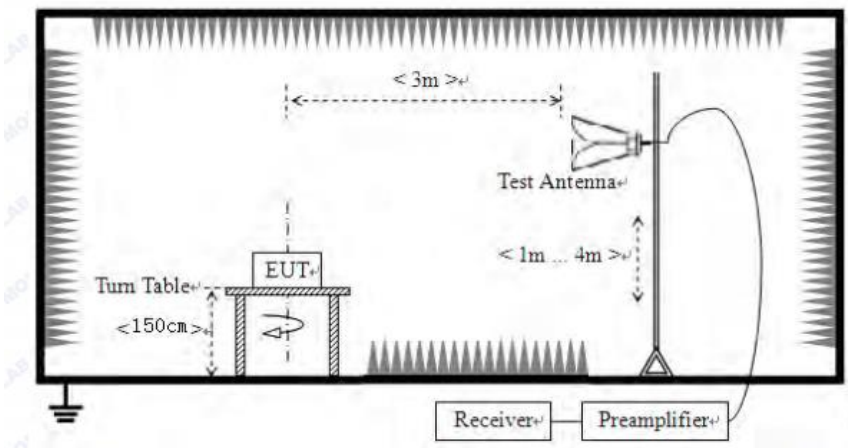
1>.Below 1GHz test procedure:

1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

2>.Above 1GHz test procedure:

1. On the test site as test setup graph above,the EUT shall be placed at the 1.5m support on the turntable and in the position closest to normal use as declared by the provider.
2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter.The output of the test antenna shall be connected to the measuring receiver.
3. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the

	transmitter under test. 4. The test antenna shall be raised and lowered from 1m to 4m until a maximum signal level is detected by the measuring receiver. Then the turntable should be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver. 5. Repeat step 4 for test frequency with the test antenna polarized horizontally. 6. Remove the transmitter and replace it with a substitution antenna 7. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends vertically polarized, and with the signal generator tuned to a particular test frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output. 8. Repeat step 7 with both antennas horizontally polarized for each test frequency. 9. Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps 7 and 8 by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula: EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi) where: Pg is the generator output power into the substitution antenna.
Test setup:	Below 1GHz  Above 1GHz

	
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Measurement Data:

Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
33.15	48.24	11.55	0.89	30.38	30.30	40	-9.70	Vertical
54.96	41.13	12.43	1.31	30.46	24.41	40	-15.59	Vertical
120.95	46.94	9.51	1.47	29.68	28.24	43.5	-15.26	Vertical
172.76	43.00	8.63	1.83	29.44	24.02	43.5	-19.48	Vertical
440.37	36.84	16.71	3.47	29.83	27.18	46	-18.82	Vertical
860.57	32.83	22.14	5.00	29.45	30.53	46	-15.47	Vertical
64.33	36.02	9.14	1.31	30.30	16.17	40	-23.83	Horizontal
99.99	34.36	12.12	1.58	30.09	17.98	43.5	-25.52	Horizontal
269.50	45.92	12.74	2.43	30.00	31.09	46	-14.91	Horizontal
350.88	37.04	14.64	2.76	29.87	24.57	46	-21.43	Horizontal
627.43	36.43	19.74	4.14	29.58	30.73	46	-15.27	Horizontal
955.49	40.92	22.79	5.31	29.35	39.67	46	-6.33	Horizontal

Above 1GHz:

802.11a 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.29	50.25	11.33	14.94	32.98	43.54	68.2	-24.66	Vertical
15540.10	51.98	12.37	18.03	34.69	47.69	74	-26.31	Vertical
10360.04	52.12	9.73	15.04	32.74	44.15	68.2	-24.05	Horizontal
15540.19	53.81	8.90	18.09	34.47	46.34	74	-27.66	Horizontal

802.11a 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.11	50.11	11.43	14.83	32.89	43.48	68.2	-24.72	Vertical
15540.99	51.22	11.97	17.99	34.56	46.61	74	-27.39	Vertical
10360.17	52.93	9.52	15.06	33.11	44.40	68.2	-23.80	Horizontal
15540.65	53.60	8.75	18.03	34.92	45.46	74	-28.54	Horizontal

802.11a 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.89	50.14	11.36	14.64	32.96	43.18	68.2	-25.02	Vertical
15540.36	51.02	11.94	17.67	34.54	46.09	74	-27.91	Vertical
10360.36	52.11	9.76	14.64	32.81	43.69	68.2	-24.51	Horizontal
15540.71	53.24	8.94	17.77	34.58	45.37	74	-28.63	Horizontal

802.11n(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.26	50.93	11.59	14.82	32.95	44.39	68.2	-23.81	Vertical
15540.09	51.90	12.10	17.99	34.50	47.48	74	-26.52	Vertical
10360.73	52.96	9.63	14.98	33.11	44.46	68.2	-23.74	Horizontal
15540.97	53.83	8.74	17.92	34.87	45.62	74	-28.38	Horizontal

802.11n(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.24	50.89	11.73	14.97	32.74	44.85	68.2	-23.35	Vertical
15540.39	51.24	12.16	17.84	34.64	46.60	74	-27.40	Vertical
10360.78	52.55	9.74	14.81	33.00	44.10	68.2	-24.10	Horizontal
15540.24	53.31	8.81	17.80	34.73	45.18	74	-28.82	Horizontal

802.11n(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.38	50.72	11.51	14.96	32.92	44.28	68.2	-23.92	Vertical
15540.38	51.84	12.34	17.75	34.73	47.19	74	-26.81	Vertical
10360.10	52.82	9.69	15.02	33.08	44.45	68.2	-23.75	Horizontal
15540.53	53.35	8.87	17.77	34.95	45.05	74	-28.95	Horizontal

802.11ac(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.86	50.74	11.27	14.98	32.69	44.31	68.2	-23.89	Vertical
15540.18	51.79	12.37	17.91	34.80	47.27	74	-26.73	Vertical
10360.15	52.11	9.45	14.67	32.95	43.28	68.2	-24.92	Horizontal
15540.79	53.32	8.59	18.02	34.95	44.98	74	-29.02	Horizontal

802.11ac(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.40	50.71	11.30	14.94	33.05	43.90	68.2	-24.30	Vertical
15540.20	51.11	12.01	17.93	34.48	46.57	74	-27.43	Vertical
10360.26	52.41	9.54	14.63	32.73	43.84	68.2	-24.36	Horizontal
15540.81	53.21	8.55	17.92	34.89	44.80	74	-29.20	Horizontal

802.11ac(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.96	50.07	11.56	14.81	33.02	43.41	68.2	-24.79	Vertical
15540.64	51.98	12.05	17.97	34.90	47.09	74	-26.91	Vertical
10360.16	52.23	9.54	14.87	33.15	43.49	68.2	-24.71	Horizontal
15540.95	53.22	8.54	17.87	34.60	45.02	74	-28.98	Horizontal

802.11n(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.26	50.24	11.70	14.77	32.79	43.92	68.2	-24.28	Vertical
15540.58	51.62	12.32	17.91	34.48	47.37	74	-26.63	Vertical
10360.94	52.32	9.58	14.77	33.07	43.60	68.2	-24.60	Horizontal
15540.21	53.77	8.81	18.15	34.53	46.19	74	-27.81	Horizontal

802.11n(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.21	50.40	11.52	15.06	33.13	43.84	68.2	-24.36	Vertical
15540.35	51.82	12.41	17.88	34.48	47.63	74	-26.37	Vertical
10360.11	52.79	9.58	14.82	32.78	44.41	68.2	-23.79	Horizontal
15540.31	53.12	8.65	17.75	34.56	44.96	74	-29.04	Horizontal

802.11ac(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.40	50.92	11.23	14.87	32.73	44.29	68.2	-23.91	Vertical
15540.81	51.25	11.99	17.69	34.89	46.05	74	-27.95	Vertical
10360.46	52.04	9.55	14.80	32.99	43.41	68.2	-24.79	Horizontal
15540.65	53.78	8.60	17.66	34.61	45.43	74	-28.57	Horizontal

802.11ac(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.72	50.33	11.39	14.76	33.11	43.37	68.2	-24.83	Vertical
15540.23	51.22	12.24	17.79	34.49	46.75	74	-27.25	Vertical
10360.53	52.59	9.65	15.04	32.66	44.61	68.2	-23.59	Horizontal
15540.97	53.75	8.66	18.08	34.84	45.65	74	-28.35	Horizontal

802.11ac(HT80) 5210MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.36	50.15	11.42	15.08	33.10	43.54	68.2	-24.66	Vertical
15540.23	51.30	11.98	17.94	34.46	46.75	74	-27.25	Vertical
10360.97	52.96	9.77	14.86	32.73	44.86	68.2	-23.34	Horizontal
15540.52	53.07	8.90	18.07	34.89	45.16	74	-28.84	Horizontal

Note:

1. Level = Read Level + Antenna Factor+ Cable loss- Preamp Factor.
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. This Report only show the test plots of the worst case (U-NII-1).

4.8 Frequency stability

Test Standard	15.407(f), RSS-Gen §6.11
Test 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.
Test results:	Pass

Measurement Data:

Mode	Voltage (V)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	DC 10.8V	5179.999	1	5239.996	4
	DC 12.0V	5179.996	4	5239.992	8
	DC 13.2V	5179.991	9	5239.997	3
Mode	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	DC 10.8V	5744.993	7	5824.995	5
	DC 12.0V	5744.995	5	5824.997	3
	DC 13.2V	5744.995	5	5824.992	8

Mode	Temperature (℃)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	-10℃	5179.997	3	5239.995	5
	0℃	5179.991	9	5239.991	9
	+10℃	5179.997	3	5239.993	7
	+20℃	5179.999	1	5239.991	9
	+30℃	5179.992	8	5239.998	2
	+40℃	5179.996	4	5239.991	9
	+50℃	5179.992	8	5239.993	7
Mode	Temperature (℃)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	-10℃	5744.993	7	5824.998	2
	0℃	5744.993	7	5824.996	4
	+10℃	5744.996	4	5824.991	9
	+20℃	5744.997	3	5824.991	9
	+30℃	5744.997	3	5824.997	3
	+40℃	5744.996	4	5824.999	1
	+50℃	5744.991	9	5824.995	5

5 Photos Of Test Setup

Reference to the **appendix I Test Setup Photo** for details.

6 Photos Of EUT

Reference to the **appendix II external photos** and **appendix III internal photos** for details.

--------END OF REPORT-------