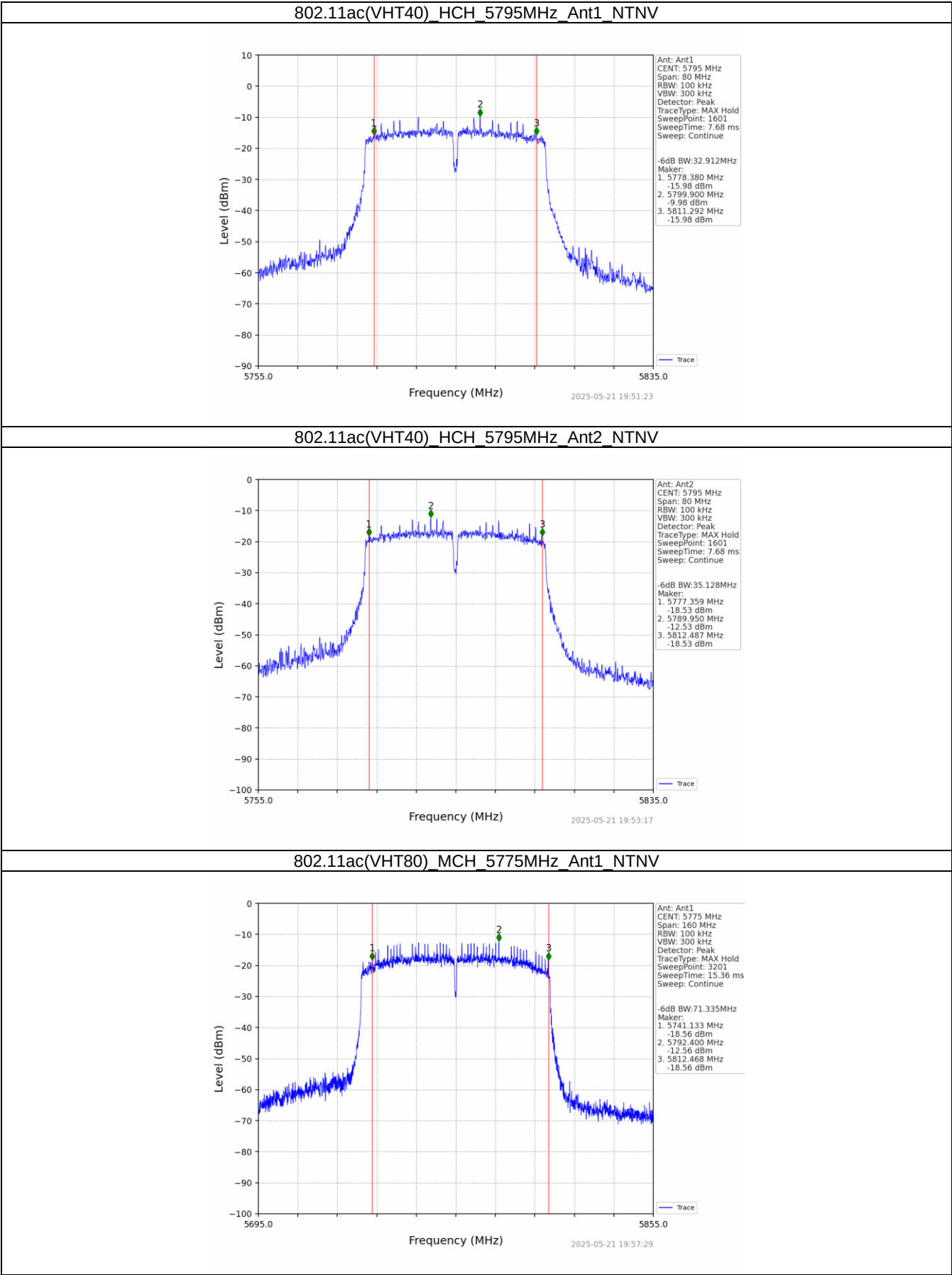
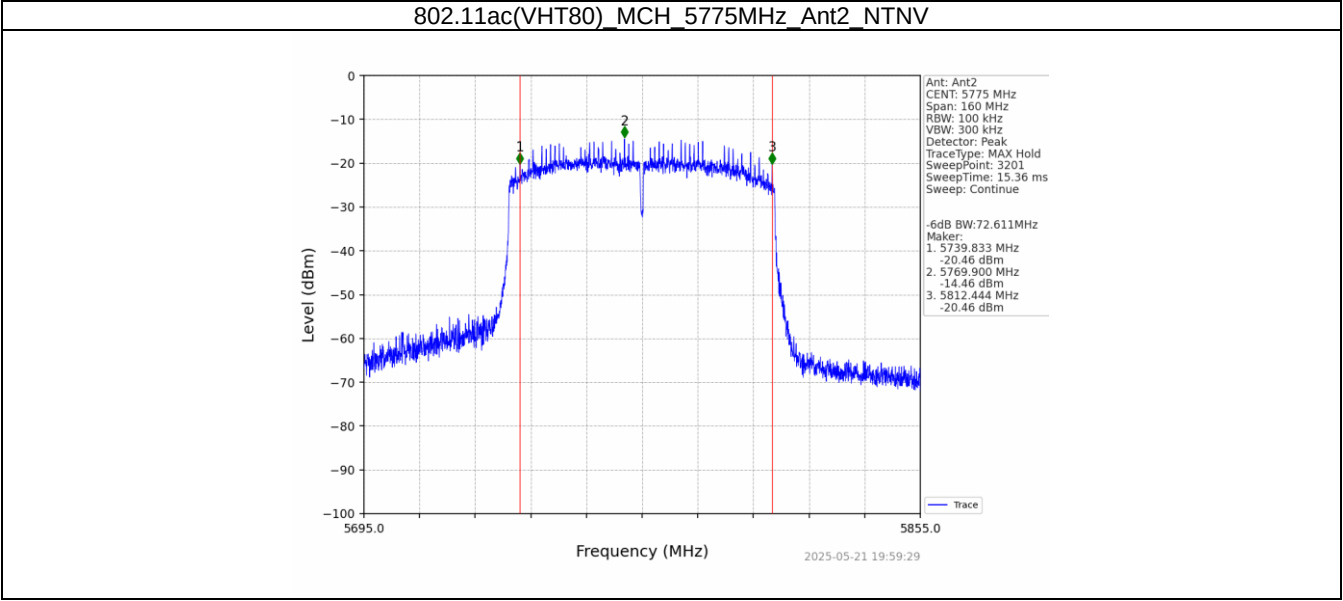




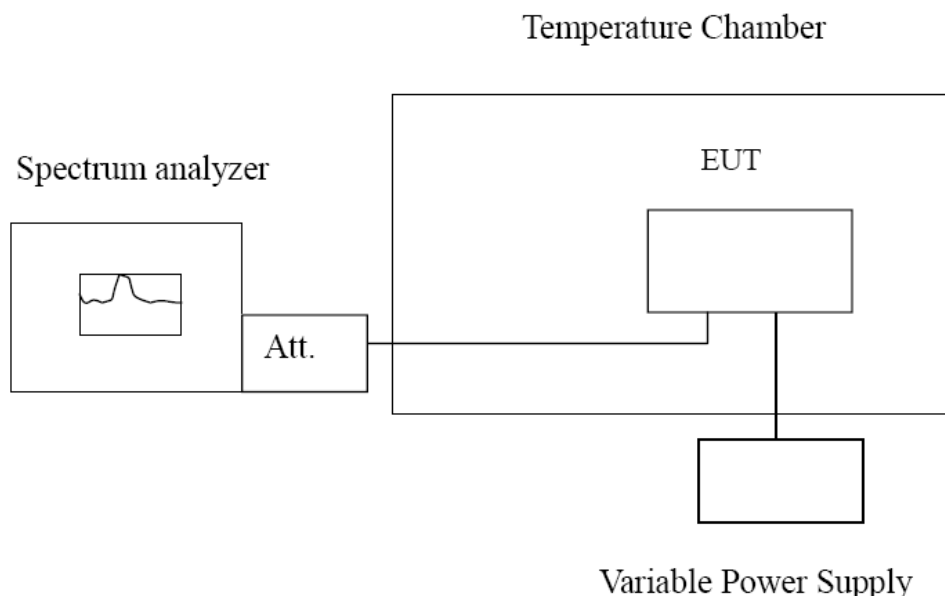


4.7 Frequency Stability

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 users manual.

TEST CONFIGURATION



TEST PROCEDURE

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 -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C 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 ($\pm 15\%$) and endpoint, record the maximum frequency change.

TEST RESULTS

Mode	TX Type	Frequency (MHz)	Temperature (°C)	Voltage (VAC)	Measured Frequency (MHz)	Limit (MHz)	Verdict
802.11a	SISO	5180	20	102	5179.960	5150 to 5250	Pass
				120	5180.000	5150 to 5250	Pass
				138	5180.000	5150 to 5250	Pass
			-30	120	5179.980	5150 to 5250	Pass
			-20	120	5180.000	5150 to 5250	Pass
			-10	120	5179.960	5150 to 5250	Pass
			0	120	5180.000	5150 to 5250	Pass
			10	120	5180.000	5150 to 5250	Pass
			30	120	5179.980	5150 to 5250	Pass
			40	120	5179.980	5150 to 5250	Pass
			50	120	5180.000	5150 to 5250	Pass

		5200	20	102	5200.000	5150 to 5250	Pass
				120	5200.000	5150 to 5250	Pass
				138	5199.960	5150 to 5250	Pass
			-30	120	5199.980	5150 to 5250	Pass
			-20	120	5199.980	5150 to 5250	Pass
			-10	120	5200.000	5150 to 5250	Pass
			0	120	5199.960	5150 to 5250	Pass
			10	120	5199.980	5150 to 5250	Pass
			30	120	5199.980	5150 to 5250	Pass
			40	120	5199.960	5150 to 5250	Pass
			50	120	5200.020	5150 to 5250	Pass
		5240	20	102	5239.960	5150 to 5250	Pass
				120	5239.960	5150 to 5250	Pass
				138	5239.960	5150 to 5250	Pass
			-30	120	5239.960	5150 to 5250	Pass
			-20	120	5239.980	5150 to 5250	Pass
			-10	120	5239.980	5150 to 5250	Pass
			0	120	5239.960	5150 to 5250	Pass
			10	120	5239.960	5150 to 5250	Pass
			30	120	5239.980	5150 to 5250	Pass
			40	120	5239.920	5150 to 5250	Pass
			50	120	5239.960	5150 to 5250	Pass
		5745	20	102	5744.980	5725 to 5850	Pass
				120	5744.960	5725 to 5850	Pass
				138	5744.980	5725 to 5850	Pass
			-30	120	5744.920	5725 to 5850	Pass
			-20	120	5744.960	5725 to 5850	Pass
			-10	120	5744.960	5725 to 5850	Pass
			0	120	5744.940	5725 to 5850	Pass
			10	120	5744.920	5725 to 5850	Pass
			30	120	5744.940	5725 to 5850	Pass
			40	120	5744.940	5725 to 5850	Pass
			50	120	5744.980	5725 to 5850	Pass
		5785	20	102	5784.980	5725 to 5850	Pass
				120	5785.000	5725 to 5850	Pass
				138	5785.000	5725 to 5850	Pass
			-30	120	5784.920	5725 to 5850	Pass
			-20	120	5784.960	5725 to 5850	Pass
			-10	120	5784.960	5725 to 5850	Pass
			0	120	5784.940	5725 to 5850	Pass
			10	120	5784.960	5725 to 5850	Pass
			30	120	5784.980	5725 to 5850	Pass
			40	120	5784.940	5725 to 5850	Pass
			50	120	5784.940	5725 to 5850	Pass
		5825	20	102	5824.980	5725 to 5850	Pass
				120	5824.980	5725 to 5850	Pass
				138	5824.980	5725 to 5850	Pass
			-30	120	5824.940	5725 to 5850	Pass
			-20	120	5824.980	5725 to 5850	Pass
			-10	120	5824.960	5725 to 5850	Pass
			0	120	5824.940	5725 to 5850	Pass
			10	120	5824.980	5725 to 5850	Pass
			30	120	5824.980	5725 to 5850	Pass
			40	120	5824.940	5725 to 5850	Pass
			50	120	5824.980	5725 to 5850	Pass
802.11n (HT20)	MIMO	5180	20	102	5180.000	5150 to 5250	Pass
				120	5179.960	5150 to 5250	Pass
				138	5179.980	5150 to 5250	Pass
			-30	120	5179.980	5150 to 5250	Pass
			-20	120	5179.980	5150 to 5250	Pass
			-10	120	5179.940	5150 to 5250	Pass
			0	120	5179.980	5150 to 5250	Pass
			10	120	5179.980	5150 to 5250	Pass
			30	120	5179.960	5150 to 5250	Pass
			40	120	5179.980	5150 to 5250	Pass
			50	120	5179.980	5150 to 5250	Pass
		5200	20	102	5199.960	5150 to 5250	Pass

				120	5200.000	5150 to 5250	Pass	
				138	5199.980	5150 to 5250	Pass	
				-30	120	5199.960	5150 to 5250	Pass
				-20	120	5199.980	5150 to 5250	Pass
				-10	120	5199.960	5150 to 5250	Pass
				0	120	5199.980	5150 to 5250	Pass
				10	120	5200.000	5150 to 5250	Pass
				30	120	5199.980	5150 to 5250	Pass
				40	120	5199.980	5150 to 5250	Pass
				50	120	5199.980	5150 to 5250	Pass
		5240	20	102	5239.940	5150 to 5250	Pass	
				120	5239.960	5150 to 5250	Pass	
				138	5239.960	5150 to 5250	Pass	
				-30	120	5239.960	5150 to 5250	Pass
				-20	120	5239.980	5150 to 5250	Pass
				-10	120	5239.920	5150 to 5250	Pass
				0	120	5239.960	5150 to 5250	Pass
				10	120	5239.940	5150 to 5250	Pass
				30	120	5239.960	5150 to 5250	Pass
				40	120	5239.940	5150 to 5250	Pass
		50	120	5239.960	5150 to 5250	Pass		
		5745	20	102	5744.940	5725 to 5850	Pass	
				120	5744.940	5725 to 5850	Pass	
				138	5744.940	5725 to 5850	Pass	
				-30	120	5744.920	5725 to 5850	Pass
				-20	120	5744.920	5725 to 5850	Pass
				-10	120	5744.940	5725 to 5850	Pass
				0	120	5744.940	5725 to 5850	Pass
				10	120	5744.940	5725 to 5850	Pass
				30	120	5744.960	5725 to 5850	Pass
				40	120	5744.940	5725 to 5850	Pass
		50	120	5744.980	5725 to 5850	Pass		
		5785	20	102	5784.920	5725 to 5850	Pass	
				120	5784.960	5725 to 5850	Pass	
				138	5784.940	5725 to 5850	Pass	
				-30	120	5784.900	5725 to 5850	Pass
				-20	120	5784.960	5725 to 5850	Pass
				-10	120	5784.920	5725 to 5850	Pass
				0	120	5784.980	5725 to 5850	Pass
				10	120	5784.920	5725 to 5850	Pass
				30	120	5784.960	5725 to 5850	Pass
				40	120	5784.940	5725 to 5850	Pass
		50	120	5784.960	5725 to 5850	Pass		
		5825	20	102	5824.940	5725 to 5850	Pass	
				120	5824.960	5725 to 5850	Pass	
				138	5824.960	5725 to 5850	Pass	
				-30	120	5824.980	5725 to 5850	Pass
				-20	120	5824.960	5725 to 5850	Pass
				-10	120	5824.960	5725 to 5850	Pass
				0	120	5824.960	5725 to 5850	Pass
				10	120	5824.920	5725 to 5850	Pass
				30	120	5824.980	5725 to 5850	Pass
				40	120	5824.940	5725 to 5850	Pass
		50	120	5824.960	5725 to 5850	Pass		
802.11n (HT40)	MIMO	5190	20	102	5189.960	5150 to 5250	Pass	
				120	5190.000	5150 to 5250	Pass	
				138	5190.000	5150 to 5250	Pass	
				-30	120	5190.040	5150 to 5250	Pass
				-20	120	5190.000	5150 to 5250	Pass
				-10	120	5190.000	5150 to 5250	Pass
				0	120	5190.040	5150 to 5250	Pass
				10	120	5190.000	5150 to 5250	Pass
				30	120	5190.040	5150 to 5250	Pass
				40	120	5189.920	5150 to 5250	Pass
		50	120	5190.040	5150 to 5250	Pass		
		5230	20	102	5230.040	5150 to 5250	Pass	
				120	5230.000	5150 to 5250	Pass	

				138	5230.000	5150 to 5250	Pass
			-30	120	5230.000	5150 to 5250	Pass
			-20	120	5230.000	5150 to 5250	Pass
			-10	120	5229.960	5150 to 5250	Pass
			0	120	5230.000	5150 to 5250	Pass
			10	120	5230.000	5150 to 5250	Pass
			30	120	5230.000	5150 to 5250	Pass
			40	120	5230.000	5150 to 5250	Pass
			50	120	5229.960	5150 to 5250	Pass
		5755	20	102	5755.000	5725 to 5850	Pass
				120	5754.920	5725 to 5850	Pass
				138	5755.000	5725 to 5850	Pass
			-30	120	5754.920	5725 to 5850	Pass
			-20	120	5754.960	5725 to 5850	Pass
			-10	120	5754.960	5725 to 5850	Pass
			0	120	5754.960	5725 to 5850	Pass
			10	120	5754.920	5725 to 5850	Pass
			30	120	5755.000	5725 to 5850	Pass
			40	120	5755.000	5725 to 5850	Pass
			50	120	5754.920	5725 to 5850	Pass
		5795	20	102	5794.960	5725 to 5850	Pass
				120	5795.000	5725 to 5850	Pass
				138	5795.000	5725 to 5850	Pass
			-30	120	5794.960	5725 to 5850	Pass
			-20	120	5794.960	5725 to 5850	Pass
			-10	120	5794.960	5725 to 5850	Pass
			0	120	5794.960	5725 to 5850	Pass
			10	120	5795.000	5725 to 5850	Pass
			30	120	5795.000	5725 to 5850	Pass
			40	120	5794.960	5725 to 5850	Pass
			50	120	5794.920	5725 to 5850	Pass
802.11ac (VHT20)	MIMO	5180	20	102	5179.980	5150 to 5250	Pass
				120	5179.960	5150 to 5250	Pass
				138	5180.000	5150 to 5250	Pass
			-30	120	5180.000	5150 to 5250	Pass
			-20	120	5179.980	5150 to 5250	Pass
			-10	120	5179.980	5150 to 5250	Pass
			0	120	5179.980	5150 to 5250	Pass
			10	120	5180.000	5150 to 5250	Pass
			30	120	5179.960	5150 to 5250	Pass
			40	120	5179.940	5150 to 5250	Pass
			50	120	5179.940	5150 to 5250	Pass
		5200	20	102	5199.980	5150 to 5250	Pass
				120	5199.960	5150 to 5250	Pass
				138	5199.960	5150 to 5250	Pass
			-30	120	5199.980	5150 to 5250	Pass
			-20	120	5199.980	5150 to 5250	Pass
			-10	120	5199.960	5150 to 5250	Pass
			0	120	5199.960	5150 to 5250	Pass
			10	120	5199.980	5150 to 5250	Pass
			30	120	5199.960	5150 to 5250	Pass
			40	120	5199.980	5150 to 5250	Pass
			50	120	5199.980	5150 to 5250	Pass
		5240	20	102	5239.960	5150 to 5250	Pass
				120	5239.960	5150 to 5250	Pass
				138	5239.940	5150 to 5250	Pass
			-30	120	5239.980	5150 to 5250	Pass
			-20	120	5239.920	5150 to 5250	Pass
			-10	120	5240.000	5150 to 5250	Pass
			0	120	5239.920	5150 to 5250	Pass
			10	120	5239.940	5150 to 5250	Pass
			30	120	5239.960	5150 to 5250	Pass
			40	120	5239.980	5150 to 5250	Pass
			50	120	5239.980	5150 to 5250	Pass
		5745	20	102	5744.960	5725 to 5850	Pass
				120	5744.960	5725 to 5850	Pass
				138	5744.960	5725 to 5850	Pass

802.11ac (VHT40)	MIMO		-30	120	5744.960	5725 to 5850	Pass
			-20	120	5744.920	5725 to 5850	Pass
			-10	120	5744.960	5725 to 5850	Pass
			0	120	5744.900	5725 to 5850	Pass
			10	120	5744.940	5725 to 5850	Pass
			30	120	5744.920	5725 to 5850	Pass
			40	120	5744.880	5725 to 5850	Pass
			50	120	5744.940	5725 to 5850	Pass
		5785	20	102	5784.940	5725 to 5850	Pass
				120	5784.920	5725 to 5850	Pass
				138	5784.900	5725 to 5850	Pass
			-30	120	5784.940	5725 to 5850	Pass
			-20	120	5784.960	5725 to 5850	Pass
			-10	120	5784.960	5725 to 5850	Pass
			0	120	5784.920	5725 to 5850	Pass
			10	120	5784.920	5725 to 5850	Pass
			30	120	5784.920	5725 to 5850	Pass
			40	120	5784.960	5725 to 5850	Pass
			50	120	5784.880	5725 to 5850	Pass
		5825	20	102	5824.960	5725 to 5850	Pass
				120	5824.960	5725 to 5850	Pass
				138	5824.960	5725 to 5850	Pass
			-30	120	5824.940	5725 to 5850	Pass
			-20	120	5825.000	5725 to 5850	Pass
			-10	120	5824.920	5725 to 5850	Pass
			0	120	5824.940	5725 to 5850	Pass
			10	120	5824.940	5725 to 5850	Pass
			30	120	5824.940	5725 to 5850	Pass
			40	120	5824.880	5725 to 5850	Pass
			50	120	5824.960	5725 to 5850	Pass
		5190	20	102	5190.040	5150 to 5250	Pass
				120	5190.040	5150 to 5250	Pass
				138	5190.040	5150 to 5250	Pass
			-30	120	5190.080	5150 to 5250	Pass
			-20	120	5190.040	5150 to 5250	Pass
			-10	120	5190.040	5150 to 5250	Pass
			0	120	5190.000	5150 to 5250	Pass
			10	120	5190.040	5150 to 5250	Pass
			30	120	5190.080	5150 to 5250	Pass
			40	120	5190.080	5150 to 5250	Pass
			50	120	5190.000	5150 to 5250	Pass
		5230	20	102	5229.960	5150 to 5250	Pass
				120	5229.960	5150 to 5250	Pass
				138	5230.000	5150 to 5250	Pass
			-30	120	5230.000	5150 to 5250	Pass
			-20	120	5229.960	5150 to 5250	Pass
			-10	120	5230.000	5150 to 5250	Pass
			0	120	5230.000	5150 to 5250	Pass
			10	120	5230.000	5150 to 5250	Pass
			30	120	5229.960	5150 to 5250	Pass
			40	120	5230.000	5150 to 5250	Pass
			50	120	5230.040	5150 to 5250	Pass
		5755	20	102	5754.960	5725 to 5850	Pass
				120	5755.000	5725 to 5850	Pass
				138	5755.000	5725 to 5850	Pass
			-30	120	5754.960	5725 to 5850	Pass
			-20	120	5755.000	5725 to 5850	Pass
			-10	120	5755.000	5725 to 5850	Pass
			0	120	5754.960	5725 to 5850	Pass
			10	120	5754.960	5725 to 5850	Pass
			30	120	5754.960	5725 to 5850	Pass
			40	120	5754.960	5725 to 5850	Pass
			50	120	5755.000	5725 to 5850	Pass
		5795	20	102	5794.960	5725 to 5850	Pass
				120	5795.000	5725 to 5850	Pass
				138	5794.960	5725 to 5850	Pass
			-30	120	5794.960	5725 to 5850	Pass

			-20	120	5794.960	5725 to 5850	Pass
			-10	120	5795.040	5725 to 5850	Pass
			0	120	5794.960	5725 to 5850	Pass
			10	120	5795.000	5725 to 5850	Pass
			30	120	5795.000	5725 to 5850	Pass
			40	120	5794.960	5725 to 5850	Pass
			50	120	5794.960	5725 to 5850	Pass
802.11ac (VHT80)	MIMO	5210	20	102	5210.075	5150 to 5250	Pass
				120	5210.075	5150 to 5250	Pass
				138	5210.075	5150 to 5250	Pass
			-30	120	5210.075	5150 to 5250	Pass
			-20	120	5210.150	5150 to 5250	Pass
			-10	120	5210.075	5150 to 5250	Pass
			0	120	5210.075	5150 to 5250	Pass
			10	120	5210.075	5150 to 5250	Pass
			30	120	5210.075	5150 to 5250	Pass
			40	120	5210.075	5150 to 5250	Pass
			50	120	5210.075	5150 to 5250	Pass
		5775	20	102	5775.000	5725 to 5850	Pass
				120	5775.075	5725 to 5850	Pass
				138	5775.000	5725 to 5850	Pass
			-30	120	5774.925	5725 to 5850	Pass
			-20	120	5775.000	5725 to 5850	Pass
			-10	120	5774.925	5725 to 5850	Pass
			0	120	5775.000	5725 to 5850	Pass
			10	120	5774.925	5725 to 5850	Pass
			30	120	5775.000	5725 to 5850	Pass
			40	120	5775.000	5725 to 5850	Pass
			50	120	5775.000	5725 to 5850	Pass

5 Test Setup Photos of the EUT

Reference to the **appendix I** for details.

6 Photos of the EUT

Reference to the **appendix II** for details.

******* End of Report *******