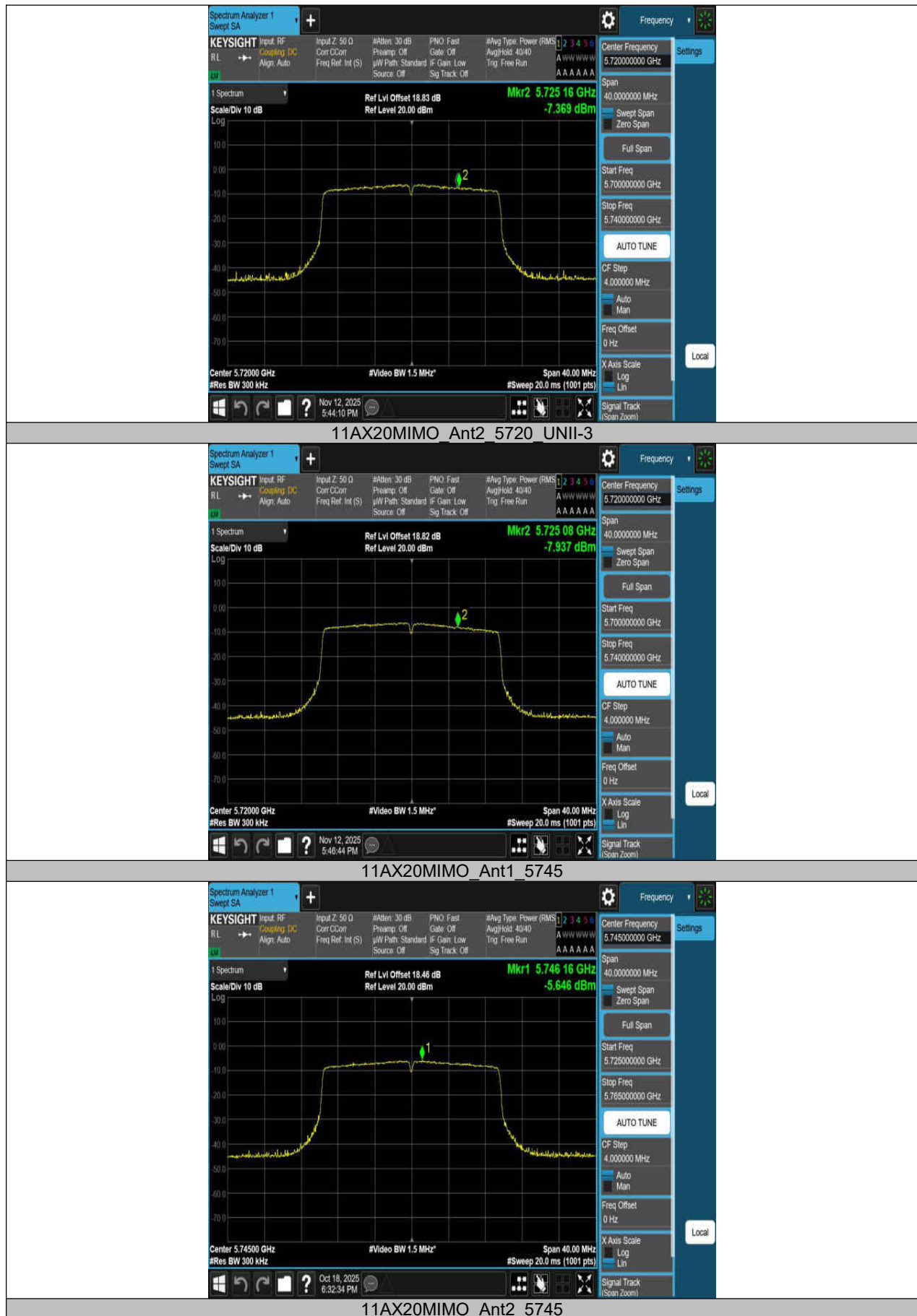
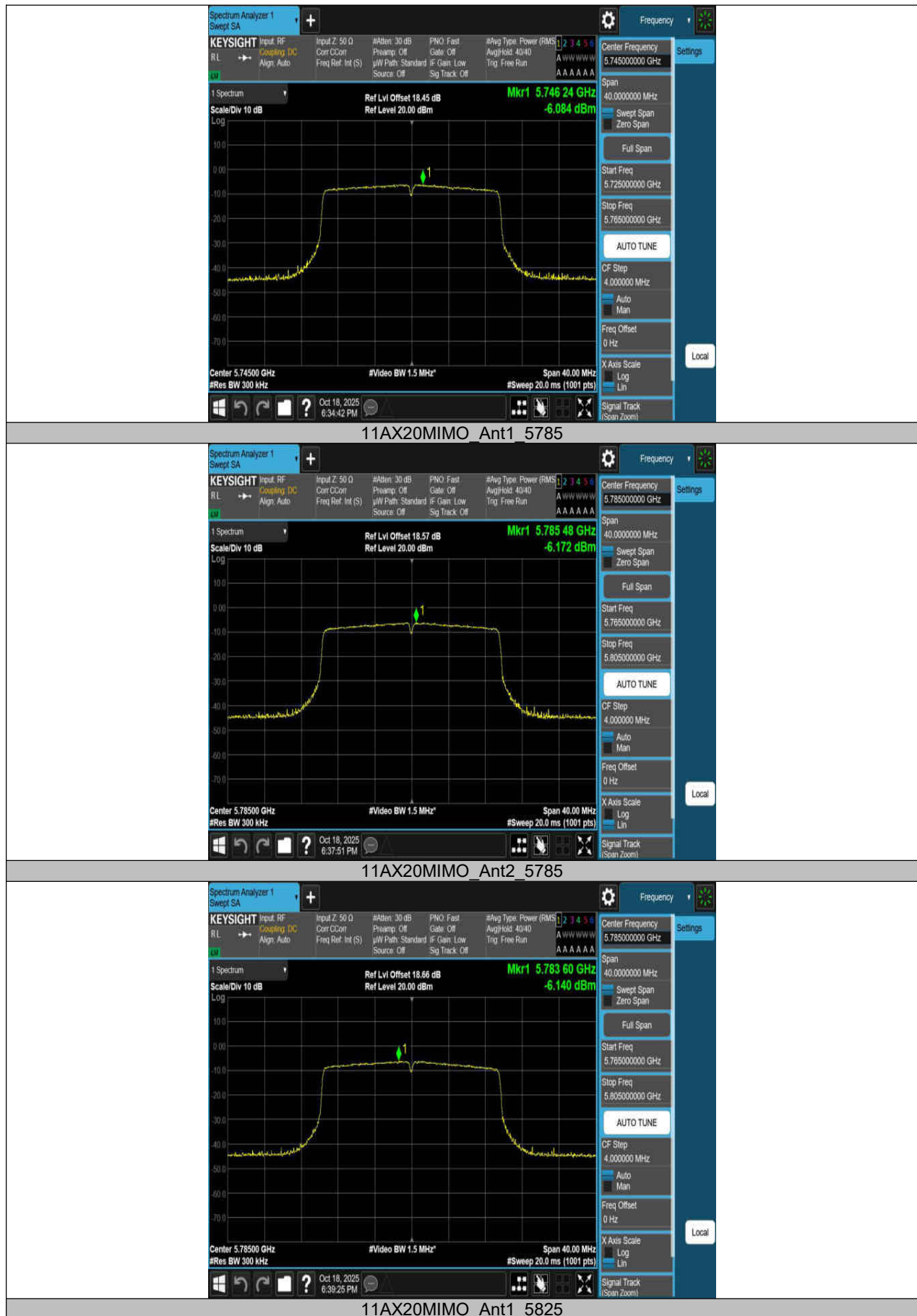
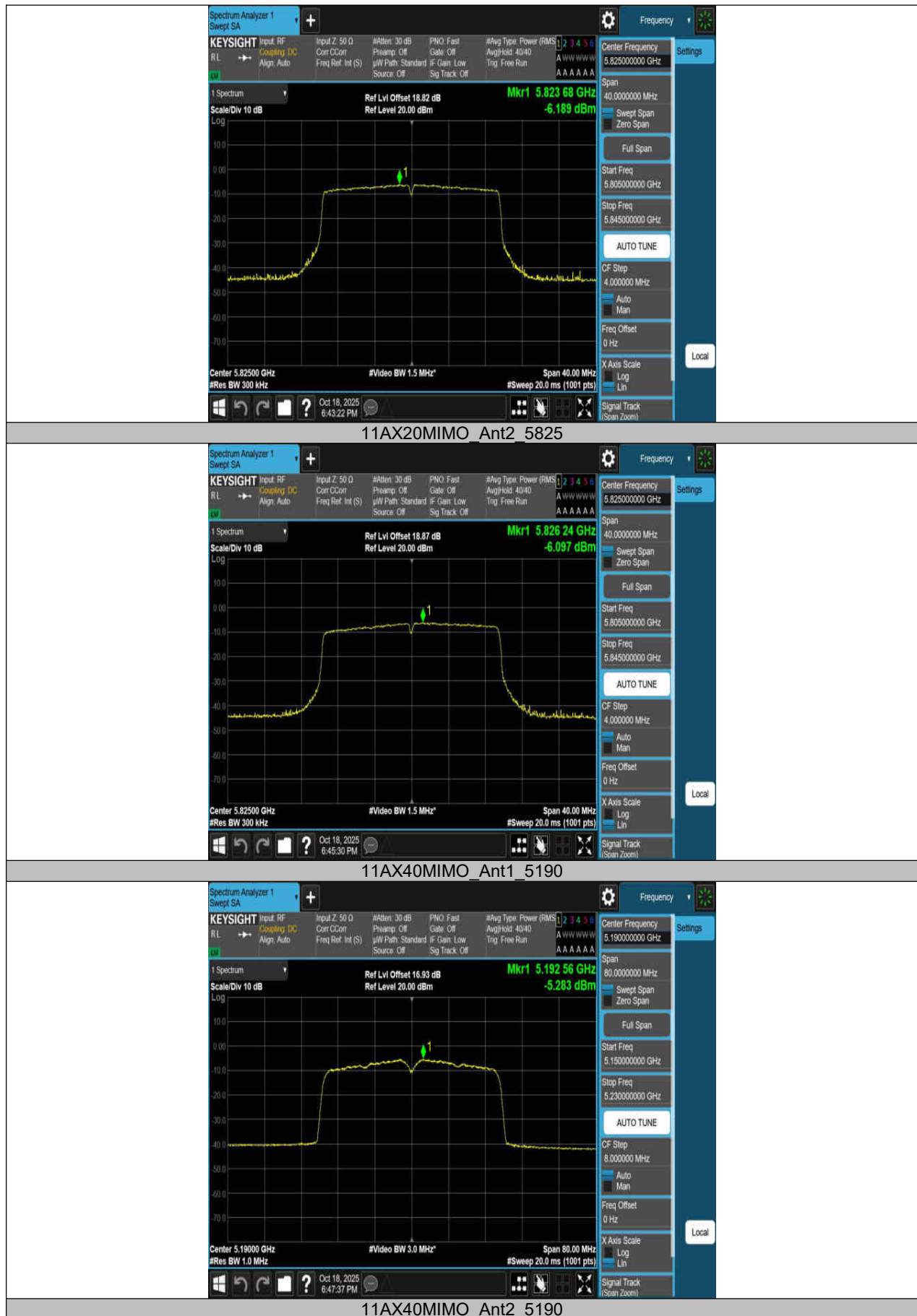




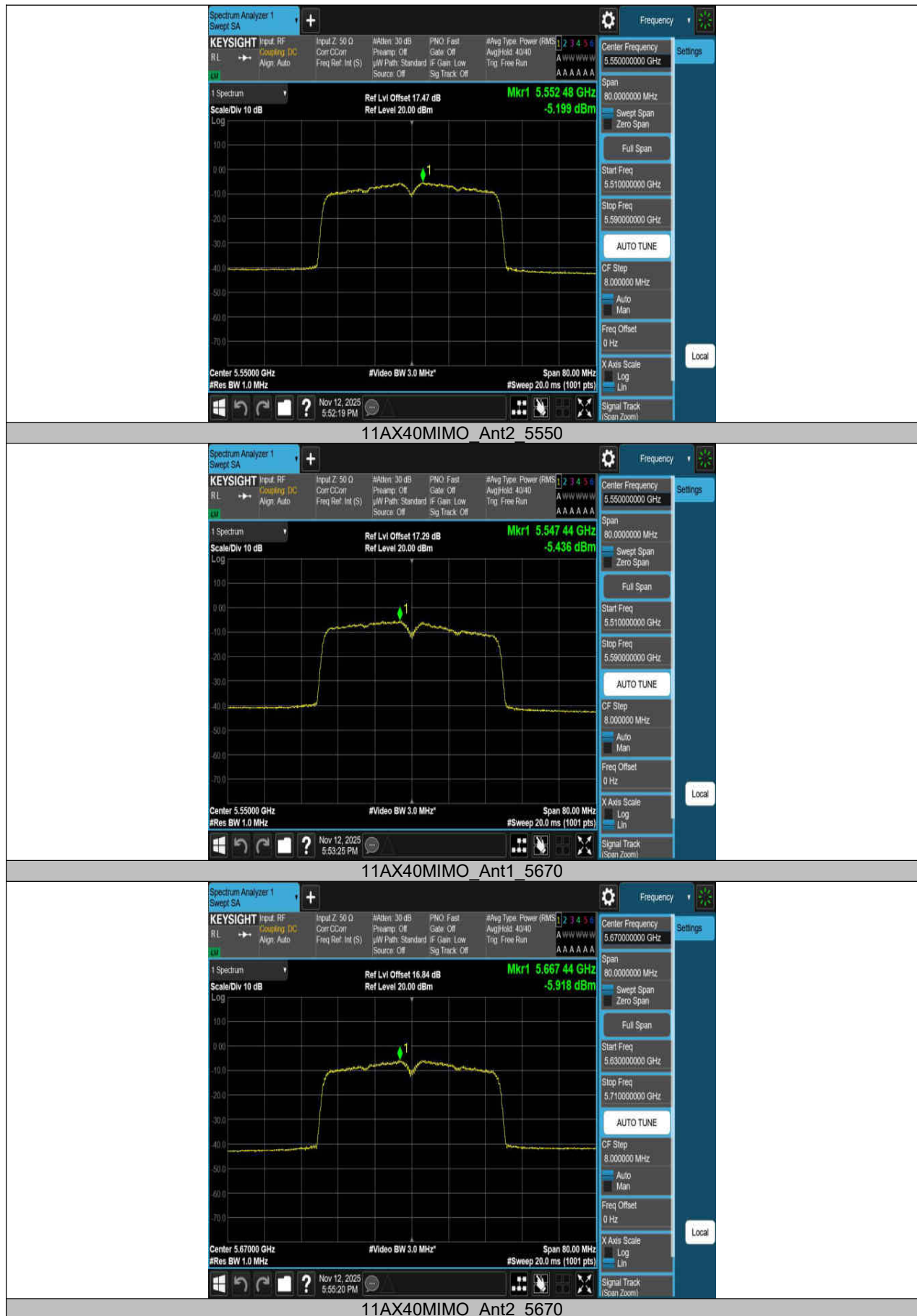




























12. Frequency Stability Measurement

12.1. Block Diagram of Test Setup

Same as section 8.1

12.2. Limit of Frequency Stability

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 Procedures

(1) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.

(2) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.

(3) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

12.4. Test Result

Voltage								
Test Mode	Ant.	Freq. (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20M IMO	Ant1	5180	NV	NT	-48000.00	-9.266409	20	PASS
			LV	NT	-48000.00	-9.266409	20	PASS
			HV	NT	-49000.00	-9.459459	20	PASS
		5200	NV	NT	-48000.00	-9.230769	20	PASS
			LV	NT	-48000.00	-9.230769	20	PASS
			HV	NT	-48000.00	-9.230769	20	PASS
		5240	NV	NT	-50000.00	-9.541985	20	PASS
			LV	NT	-50000.00	-9.541985	20	PASS
			HV	NT	-49000.00	-9.351145	20	PASS
		5260	NV	NT	-50000.00	-9.505703	20	PASS
			LV	NT	-50000.00	-9.505703	20	PASS
			HV	NT	-50000.00	-9.505703	20	PASS
		5280	NV	NT	-50000.00	-9.469697	20	PASS
			LV	NT	-50000.00	-9.469697	20	PASS
			HV	NT	-50000.00	-9.469697	20	PASS
		5320	NV	NT	-50000.00	-9.398496	20	PASS
			LV	NT	-50000.00	-9.398496	20	PASS
			HV	NT	-50000.00	-9.398496	20	PASS
		5500	NV	NT	-51000.00	-9.272727	20	PASS
			LV	NT	-51000.00	-9.272727	20	PASS
			HV	NT	-51000.00	-9.272727	20	PASS
		5580	NV	NT	-51000.00	-9.139785	20	PASS
			LV	NT	-51000.00	-9.139785	20	PASS
			HV	NT	-51000.00	-9.139785	20	PASS
		5700	NV	NT	-51000.00	-8.947368	20	PASS
			LV	NT	-51000.00	-8.947368	20	PASS
			HV	NT	-51000.00	-8.947368	20	PASS
		5720	NV	NT	-52000.00	-9.090909	20	PASS
			LV	NT	-51000.00	-8.916084	20	PASS
			HV	NT	-52000.00	-9.090909	20	PASS
		5745	NV	NT	-54000.00	-9.399478	20	PASS
			LV	NT	-54000.00	-9.399478	20	PASS
			HV	NT	-54000.00	-9.399478	20	PASS
		5785	NV	NT	-54000.00	-9.334486	20	PASS
			LV	NT	-53000.00	-9.161625	20	PASS

		5825	HV	NT	-54000.00	-9.334486	20	PASS
			NV	NT	-54000.00	-9.270386	20	PASS
			LV	NT	-54000.00	-9.270386	20	PASS
			HV	NT	-54000.00	-9.270386	20	PASS
11AC40M IMO	Ant1	5190	NV	NT	-48000.00	-9.248555	20	PASS
			LV	NT	-48000.00	-9.248555	20	PASS
			HV	NT	-48000.00	-9.248555	20	PASS
		5230	NV	NT	-50000.00	-9.560229	20	PASS
			LV	NT	-50000.00	-9.560229	20	PASS
			HV	NT	-50000.00	-9.560229	20	PASS
		5270	NV	NT	-50000.00	-9.487666	20	PASS
			LV	NT	-50000.00	-9.487666	20	PASS
			HV	NT	-51000.00	-9.677419	20	PASS
		5310	NV	NT	-50000.00	-9.416196	20	PASS
			LV	NT	-51000.00	-9.604520	20	PASS
			HV	NT	-50000.00	-9.416196	20	PASS
		5510	NV	NT	-51000.00	-9.255898	20	PASS
			LV	NT	-50000.00	-9.074410	20	PASS
			HV	NT	-51000.00	-9.255898	20	PASS
		5550	NV	NT	-53000.00	-9.549550	20	PASS
			LV	NT	-52000.00	-9.369369	20	PASS
			HV	NT	-53000.00	-9.549550	20	PASS
		5670	NV	NT	-53000.00	-9.347443	20	PASS
			LV	NT	-53000.00	-9.347443	20	PASS
			HV	NT	-53000.00	-9.347443	20	PASS
		5710	NV	NT	-53000.00	-9.281961	20	PASS
			LV	NT	-53000.00	-9.281961	20	PASS
			HV	NT	-53000.00	-9.281961	20	PASS
		5755	NV	NT	-54000.00	-9.383145	20	PASS
			LV	NT	-54000.00	-9.383145	20	PASS
			HV	NT	-54000.00	-9.383145	20	PASS
		5795	NV	NT	-54000.00	-9.318378	20	PASS
			LV	NT	-54000.00	-9.318378	20	PASS
			HV	NT	-54000.00	-9.318378	20	PASS
11AC80M IMO	Ant1	5210	NV	NT	-49000.00	-9.404990	20	PASS
			LV	NT	-49000.00	-9.404990	20	PASS
			HV	NT	-50000.00	-9.596929	20	PASS
		5290	NV	NT	-50000.00	-9.451796	20	PASS
			LV	NT	-50000.00	-9.451796	20	PASS
			HV	NT	-50000.00	-9.451796	20	PASS
		5530	NV	NT	-52000.00	-9.403255	20	PASS
			LV	NT	-51000.00	-9.222423	20	PASS
			HV	NT	-52000.00	-9.403255	20	PASS
		5610	NV	NT	-53000.00	-9.447415	20	PASS
			LV	NT	-52000.00	-9.269162	20	PASS
			HV	NT	-53000.00	-9.447415	20	PASS
		5690	NV	NT	-53000.00	-9.314587	20	PASS
			LV	NT	-53000.00	-9.314587	20	PASS
			HV	NT	-53000.00	-9.314587	20	PASS
		5775	NV	NT	-55000.00	-9.523810	20	PASS
			LV	NT	-55000.00	-9.523810	20	PASS
			HV	NT	-54000.00	-9.350649	20	PASS

Temperature								
Test Mode	Antenna	Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20MIMO	Ant1	5180	NV	-20	-48000.00	-9.266409	20	PASS
			NV	-10	-48000.00	-9.266409	20	PASS
			NV	0	-49000.00	-9.459459	20	PASS
			NV	10	-49000.00	-9.459459	20	PASS
			NV	20	-49000.00	-9.459459	20	PASS
			NV	30	-49000.00	-9.459459	20	PASS
			NV	40	-49000.00	-9.459459	20	PASS
			NV	50	-49000.00	-9.459459	20	PASS
		5200	NV	-20	-48000.00	-9.230769	20	PASS
			NV	-10	-49000.00	-9.423077	20	PASS

			NV	0	-49000.00	-9.423077	20	PASS
			NV	10	-49000.00	-9.423077	20	PASS
			NV	20	-49000.00	-9.423077	20	PASS
			NV	30	-49000.00	-9.423077	20	PASS
			NV	40	-49000.00	-9.423077	20	PASS
			NV	50	-49000.00	-9.423077	20	PASS
		5240	NV	-20	-50000.00	-9.541985	20	PASS
			NV	-10	-50000.00	-9.541985	20	PASS
			NV	0	-50000.00	-9.541985	20	PASS
			NV	10	-49000.00	-9.351145	20	PASS
			NV	20	-50000.00	-9.541985	20	PASS
			NV	30	-49000.00	-9.351145	20	PASS
		5260	NV	40	-50000.00	-9.541985	20	PASS
			NV	50	-50000.00	-9.541985	20	PASS
			NV	-20	-50000.00	-9.505703	20	PASS
			NV	-10	-50000.00	-9.505703	20	PASS
			NV	0	-50000.00	-9.505703	20	PASS
			NV	10	-50000.00	-9.505703	20	PASS
		5280	NV	20	-50000.00	-9.505703	20	PASS
			NV	30	-50000.00	-9.505703	20	PASS
			NV	40	-50000.00	-9.505703	20	PASS
			NV	50	-50000.00	-9.505703	20	PASS
			NV	-20	-50000.00	-9.469697	20	PASS
			NV	-10	-50000.00	-9.469697	20	PASS
		5320	NV	0	-50000.00	-9.469697	20	PASS
			NV	10	-50000.00	-9.469697	20	PASS
			NV	20	-50000.00	-9.469697	20	PASS
			NV	30	-50000.00	-9.469697	20	PASS
			NV	40	-50000.00	-9.469697	20	PASS
			NV	50	-50000.00	-9.469697	20	PASS
		5500	NV	-20	-50000.00	-9.398496	20	PASS
			NV	-10	-50000.00	-9.398496	20	PASS
			NV	0	-50000.00	-9.398496	20	PASS
			NV	10	-50000.00	-9.398496	20	PASS
			NV	20	-50000.00	-9.398496	20	PASS
			NV	30	-50000.00	-9.398496	20	PASS
		5580	NV	40	-50000.00	-9.398496	20	PASS
			NV	50	-50000.00	-9.398496	20	PASS
			NV	-20	-51000.00	-9.272727	20	PASS
			NV	-10	-51000.00	-9.272727	20	PASS
			NV	0	-51000.00	-9.272727	20	PASS
			NV	10	-51000.00	-9.272727	20	PASS
		5700	NV	20	-51000.00	-9.272727	20	PASS
			NV	30	-51000.00	-9.272727	20	PASS
			NV	40	-51000.00	-9.272727	20	PASS
			NV	50	-51000.00	-9.272727	20	PASS
			NV	-20	-51000.00	-9.139785	20	PASS
			NV	-10	-51000.00	-9.139785	20	PASS
		5720	NV	0	-51000.00	-9.139785	20	PASS
			NV	10	-51000.00	-9.139785	20	PASS
			NV	20	-51000.00	-9.139785	20	PASS
			NV	30	-51000.00	-9.139785	20	PASS
			NV	40	-51000.00	-9.139785	20	PASS
			NV	50	-51000.00	-9.139785	20	PASS
		5720	NV	-20	-52000.00	-8.947368	20	PASS
			NV	-10	-52000.00	-8.947368	20	PASS
			NV	0	-52000.00	-8.947368	20	PASS
			NV	10	-52000.00	-8.947368	20	PASS
			NV	20	-52000.00	-8.947368	20	PASS
			NV	30	-51000.00	-8.947368	20	PASS
		5720	NV	40	-51000.00	-8.947368	20	PASS
			NV	50	-52000.00	-9.122807	20	PASS
			NV	-20	-52000.00	-9.090909	20	PASS
			NV	-10	-52000.00	-9.090909	20	PASS
			NV	0	-52000.00	-9.090909	20	PASS
			NV	10	-52000.00	-9.090909	20	PASS
			NV	20	-52000.00	-9.090909	20	PASS

			NV	30	-52000.00	-9.090909	20	PASS
			NV	40	-52000.00	-9.090909	20	PASS
			NV	50	-52000.00	-9.090909	20	PASS
		5745	NV	-20	-53000.00	-9.225413	20	PASS
			NV	-10	-53000.00	-9.225413	20	PASS
			NV	0	-53000.00	-9.225413	20	PASS
			NV	10	-53000.00	-9.225413	20	PASS
			NV	20	-53000.00	-9.225413	20	PASS
			NV	30	-53000.00	-9.225413	20	PASS
			NV	40	-53000.00	-9.225413	20	PASS
			NV	50	-53000.00	-9.225413	20	PASS
		5785	NV	-20	-54000.00	-9.334486	20	PASS
			NV	-10	-54000.00	-9.334486	20	PASS
			NV	0	-54000.00	-9.334486	20	PASS
			NV	10	-54000.00	-9.334486	20	PASS
			NV	20	-54000.00	-9.334486	20	PASS
			NV	30	-54000.00	-9.334486	20	PASS
			NV	40	-54000.00	-9.334486	20	PASS
			NV	50	-54000.00	-9.334486	20	PASS
		5825	NV	-20	-54000.00	-9.270386	20	PASS
			NV	-10	-54000.00	-9.270386	20	PASS
			NV	0	-54000.00	-9.270386	20	PASS
			NV	10	-54000.00	-9.270386	20	PASS
			NV	20	-54000.00	-9.270386	20	PASS
			NV	30	-54000.00	-9.270386	20	PASS
			NV	40	-54000.00	-9.270386	20	PASS
			NV	50	-53000.00	-9.098712	20	PASS
11AC40MIMO	Ant1	5190	NV	-20	-49000.00	-9.441233	20	PASS
			NV	-10	-49000.00	-9.441233	20	PASS
			NV	0	-49000.00	-9.441233	20	PASS
			NV	10	-49000.00	-9.441233	20	PASS
			NV	20	-49000.00	-9.441233	20	PASS
			NV	30	-49000.00	-9.441233	20	PASS
			NV	40	-49000.00	-9.441233	20	PASS
			NV	50	-49000.00	-9.441233	20	PASS
		5230	NV	-20	-50000.00	-9.560229	20	PASS
			NV	-10	-50000.00	-9.560229	20	PASS
			NV	0	-50000.00	-9.560229	20	PASS
			NV	10	-50000.00	-9.560229	20	PASS
			NV	20	-50000.00	-9.560229	20	PASS
			NV	30	-50000.00	-9.560229	20	PASS
			NV	40	-50000.00	-9.560229	20	PASS
			NV	50	-50000.00	-9.560229	20	PASS
		5270	NV	-20	-51000.00	-9.677419	20	PASS
			NV	-10	-51000.00	-9.677419	20	PASS
			NV	0	-51000.00	-9.677419	20	PASS
			NV	10	-51000.00	-9.677419	20	PASS
			NV	20	-51000.00	-9.677419	20	PASS
			NV	30	-51000.00	-9.677419	20	PASS
			NV	40	-51000.00	-9.677419	20	PASS
			NV	50	-51000.00	-9.677419	20	PASS
		5310	NV	-20	-50000.00	-9.416196	20	PASS
			NV	-10	-50000.00	-9.416196	20	PASS
			NV	0	-50000.00	-9.416196	20	PASS
			NV	10	-50000.00	-9.416196	20	PASS
			NV	20	-50000.00	-9.416196	20	PASS
			NV	30	-50000.00	-9.416196	20	PASS
			NV	40	-50000.00	-9.416196	20	PASS
			NV	50	-50000.00	-9.416196	20	PASS
		5510	NV	-20	-51000.00	-9.255898	20	PASS
			NV	-10	-51000.00	-9.255898	20	PASS
			NV	0	-51000.00	-9.255898	20	PASS
			NV	10	-52000.00	-9.437387	20	PASS
			NV	20	-52000.00	-9.437387	20	PASS
			NV	30	-52000.00	-9.437387	20	PASS
			NV	40	-52000.00	-9.437387	20	PASS
			NV	50	-52000.00	-9.437387	20	PASS

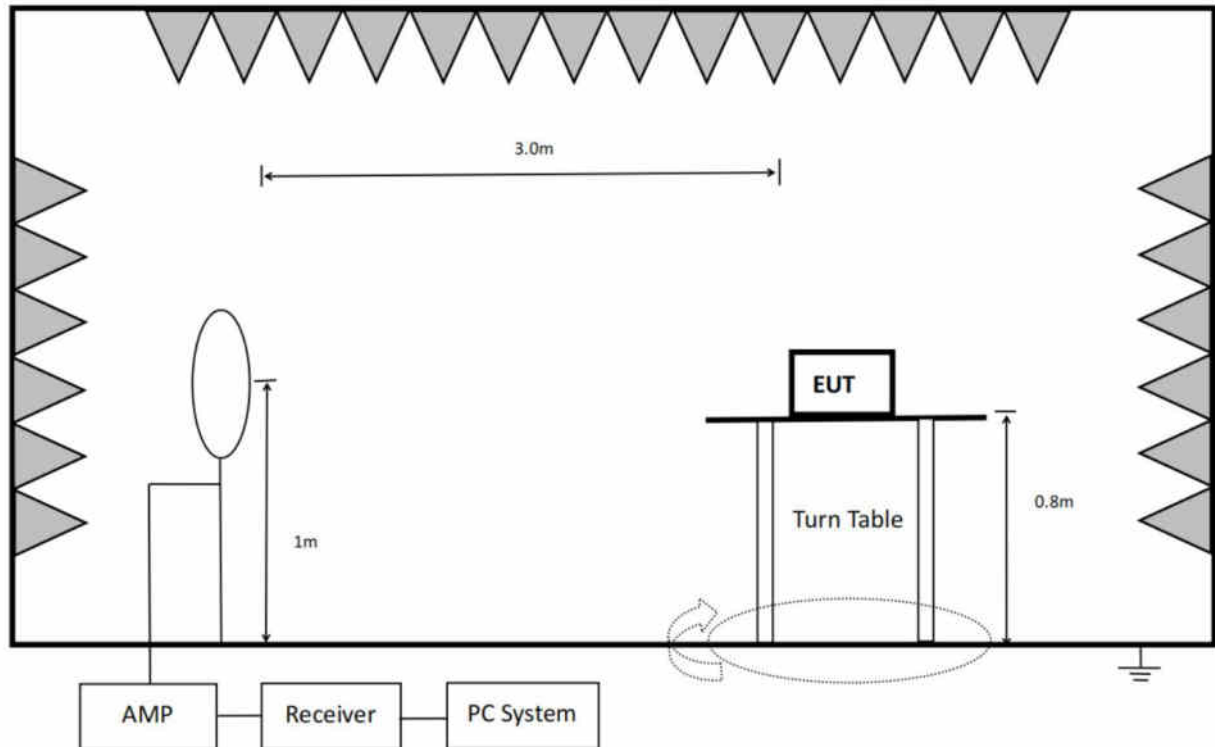
		5550	NV	-20	-53000.00	-9.549550	20	PASS
			NV	-10	-53000.00	-9.549550	20	PASS
			NV	0	-53000.00	-9.549550	20	PASS
			NV	10	-53000.00	-9.549550	20	PASS
			NV	20	-53000.00	-9.549550	20	PASS
			NV	30	-53000.00	-9.549550	20	PASS
			NV	40	-53000.00	-9.549550	20	PASS
			NV	50	-53000.00	-9.549550	20	PASS
		5670	NV	-20	-53000.00	-9.347443	20	PASS
			NV	-10	-53000.00	-9.347443	20	PASS
			NV	0	-53000.00	-9.347443	20	PASS
			NV	10	-53000.00	-9.347443	20	PASS
			NV	20	-53000.00	-9.347443	20	PASS
			NV	30	-53000.00	-9.347443	20	PASS
			NV	40	-53000.00	-9.347443	20	PASS
			NV	50	-53000.00	-9.347443	20	PASS
		5710	NV	-20	-53000.00	-9.281961	20	PASS
			NV	-10	-53000.00	-9.281961	20	PASS
			NV	0	-53000.00	-9.281961	20	PASS
			NV	10	-53000.00	-9.281961	20	PASS
			NV	20	-53000.00	-9.281961	20	PASS
			NV	30	-53000.00	-9.281961	20	PASS
			NV	40	-53000.00	-9.281961	20	PASS
			NV	50	-53000.00	-9.281961	20	PASS
		5755	NV	-20	-54000.00	-9.383145	20	PASS
			NV	-10	-54000.00	-9.383145	20	PASS
			NV	0	-54000.00	-9.383145	20	PASS
			NV	10	-54000.00	-9.383145	20	PASS
			NV	20	-54000.00	-9.383145	20	PASS
			NV	30	-54000.00	-9.383145	20	PASS
			NV	40	-54000.00	-9.383145	20	PASS
			NV	50	-54000.00	-9.383145	20	PASS
		5795	NV	-20	-54000.00	-9.318378	20	PASS
			NV	-10	-54000.00	-9.318378	20	PASS
			NV	0	-54000.00	-9.318378	20	PASS
			NV	10	-55000.00	-9.490940	20	PASS
			NV	20	-54000.00	-9.318378	20	PASS
			NV	30	-55000.00	-9.490940	20	PASS
			NV	40	-54000.00	-9.318378	20	PASS
			NV	50	-54000.00	-9.318378	20	PASS
11AC80MIMO	Ant1	5210	NV	-20	-49000.00	-9.404990	20	PASS
			NV	-10	-50000.00	-9.596929	20	PASS
			NV	0	-50000.00	-9.596929	20	PASS
			NV	10	-50000.00	-9.596929	20	PASS
			NV	20	-49000.00	-9.404990	20	PASS
			NV	30	-49000.00	-9.404990	20	PASS
			NV	40	-49000.00	-9.404990	20	PASS
			NV	50	-49000.00	-9.404990	20	PASS
		5290	NV	-20	-50000.00	-9.451796	20	PASS
			NV	-10	-50000.00	-9.451796	20	PASS
			NV	0	-50000.00	-9.451796	20	PASS
			NV	10	-50000.00	-9.451796	20	PASS
			NV	20	-51000.00	-9.640832	20	PASS
			NV	30	-50000.00	-9.451796	20	PASS
			NV	40	-51000.00	-9.640832	20	PASS
			NV	50	-50000.00	-9.451796	20	PASS
		5530	NV	-20	-52000.00	-9.403255	20	PASS
			NV	-10	-52000.00	-9.403255	20	PASS
			NV	0	-52000.00	-9.403255	20	PASS
			NV	10	-52000.00	-9.403255	20	PASS
			NV	20	-52000.00	-9.403255	20	PASS
			NV	30	-52000.00	-9.403255	20	PASS
			NV	40	-52000.00	-9.403255	20	PASS
			NV	50	-52000.00	-9.403255	20	PASS
		5610	NV	-20	-53000.00	-9.447415	20	PASS
			NV	-10	-53000.00	-9.447415	20	PASS
			NV	0	-53000.00	-9.447415	20	PASS

			NV	10	-53000.00	-9.447415	20	PASS
			NV	20	-53000.00	-9.447415	20	PASS
			NV	30	-53000.00	-9.447415	20	PASS
			NV	40	-53000.00	-9.447415	20	PASS
			NV	50	-53000.00	-9.447415	20	PASS
		5690	NV	-20	-53000.00	-9.314587	20	PASS
			NV	-10	-53000.00	-9.314587	20	PASS
			NV	0	-53000.00	-9.314587	20	PASS
			NV	10	-53000.00	-9.314587	20	PASS
			NV	20	-53000.00	-9.314587	20	PASS
			NV	30	-53000.00	-9.314587	20	PASS
			NV	40	-52000.00	-9.138840	20	PASS
			NV	50	-52000.00	-9.138840	20	PASS
		5775	NV	-20	-54000.00	-9.350649	20	PASS
			NV	-10	-54000.00	-9.350649	20	PASS
			NV	0	-54000.00	-9.350649	20	PASS
			NV	10	-54000.00	-9.350649	20	PASS
			NV	20	-54000.00	-9.350649	20	PASS
			NV	30	-54000.00	-9.350649	20	PASS
			NV	40	-54000.00	-9.350649	20	PASS
			NV	50	-54000.00	-9.350649	20	PASS

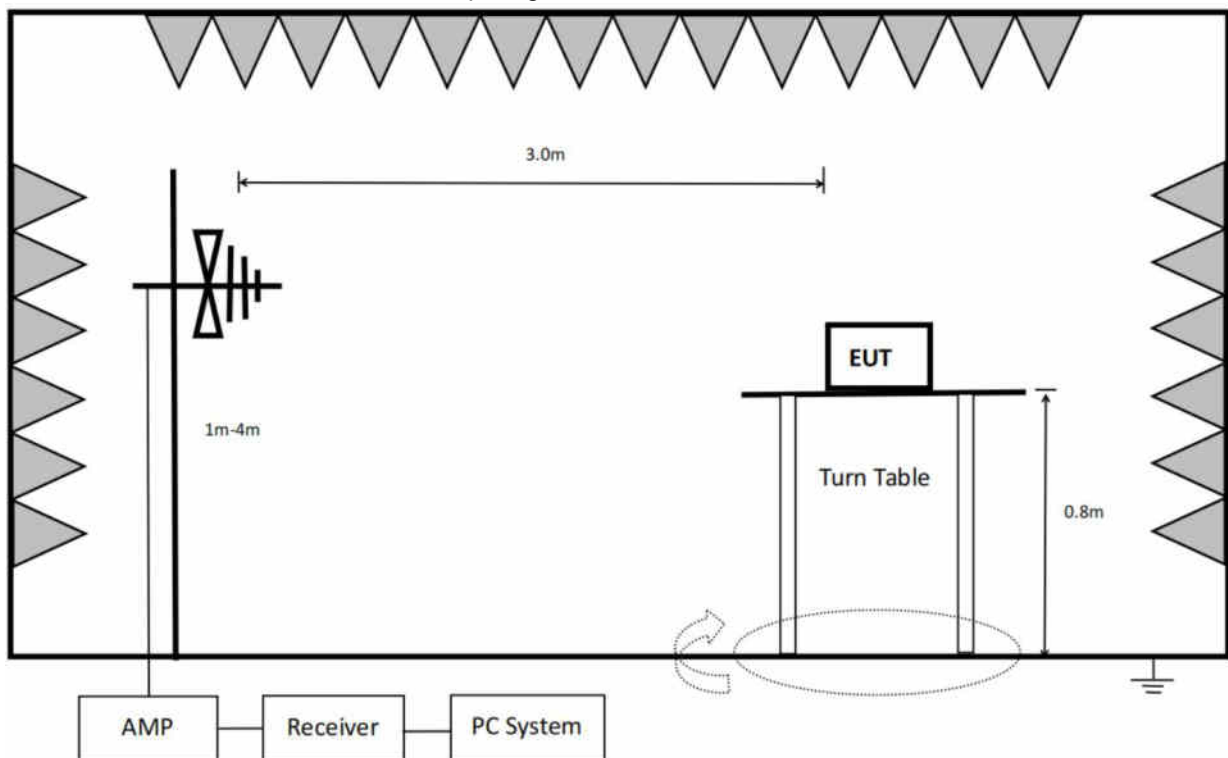
13. Radiated Emission

13.1. Block Diagram of Test Setup

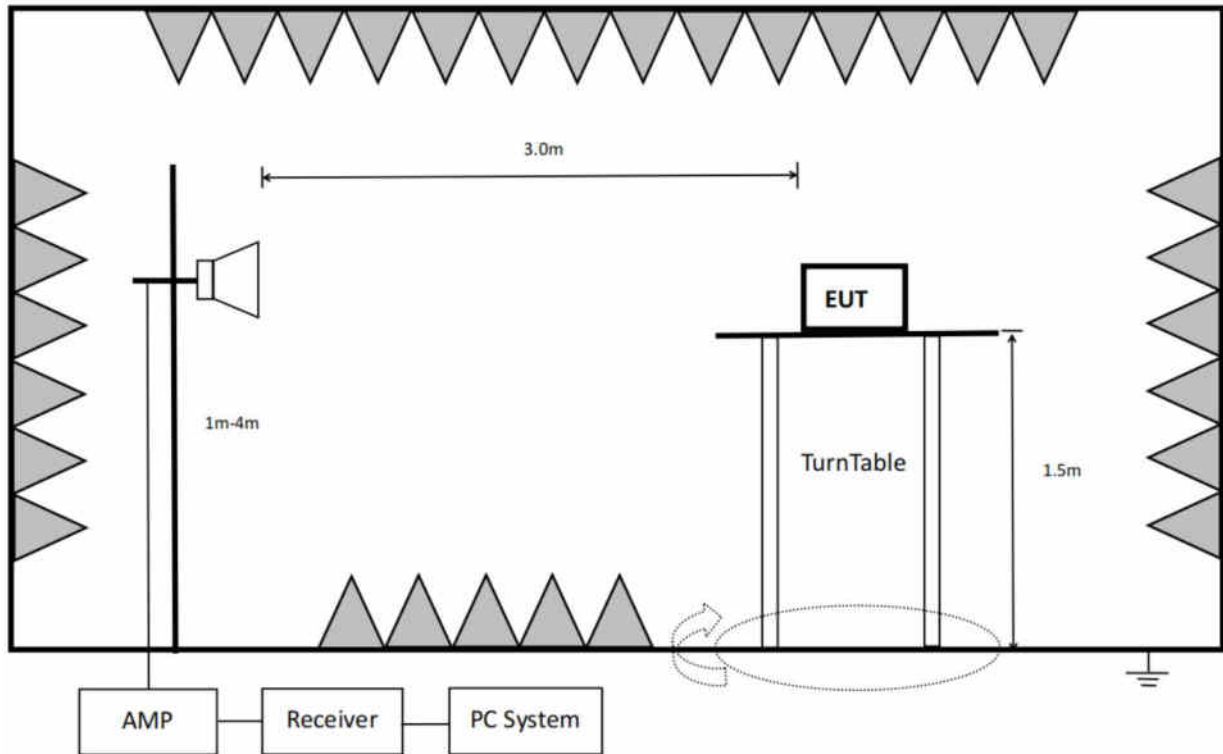
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz - 1 GHz:



In 3 m Anechoic Chamber, test setup diagram for frequency above 1 GHz:



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

13.2. Limit

- (1) FCC 15.205 Restricted frequency band.
- (2) RSS-Gen section 8.10 Restricted frequency band.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

²Above 38.6

(3) FCC 15.209 Limit.

(4) RSS-Gen section 8.9 Limit.

Frequency MHz	Distance Meters	Field strengths limit	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	$2400/\text{F}(\text{kHz})$	$67.6-20\log(\text{F})$
0.490 ~ 1.705	30	$24000/\text{F}(\text{kHz})$	$87.6-20\log(\text{F})$
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

(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 e.i.r.p. of $-27 \text{ dBm} / \text{MHz}$.

(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 e.i.r.p. of $-27 \text{ dBm} / \text{MHz}$.

(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 e.i.r.p. of $-27 \text{ dBm} / \text{MHz}$.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz ; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of $-27 \text{ dBm} / \text{MHz}$.

(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(6) The provisions of §15.205 apply to intentional radiators operating under this section.

$-27 \text{ dBm/MHz Limit} = 95.2 + \text{EIRP (dBm)} = 95.2 - 27 = 68.2 \text{ dB}\mu\text{V/m}$

Note:

(1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V/m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V/m}) + 40\log(30\text{m}/3\text{m})$$

(3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions or comply with 15.209 limits.

13.3. Test Procedure

Below 30 MHz:

The setting of the spectrum Analyzer

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2020/Cor1-2023

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of 1 meter height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KdB 414788.

Below 1 GHz and above 30 MHz:

The setting of the spectrum Analyzer

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2020/Cor1-2023.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz:

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2020/Cor1-2023.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 1.5m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video

bandwidth with peak detector for AVG measurements. For the Duty Cycle please refer to clause 8.1.ON TIME AND DUTY CYCLE.

7. Restriction band: Investigated frequency range from 5.15-5.25 GHz, 5250-5350 GHz, 5470-5725 GHz, 5.725-5.85 GHz.

All restriction band should comply with 15.209, other emission should be at least 20 dB below the fundamental.

Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT does not support simultaneous transmission.

Note 3: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

13.4. Test Result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9kHz to 40GHz were comply with 15.209 limit.

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

Note2: For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in 11ac mode.

Note3: For below test data, when the limit tabular marked “/” means this frequency point is the fundamental emission and no need comply with this limit.

Note 4: As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit

Note 5: For emissions Above 1 GHz, all mode have been tested, 11ac mode of ANT1 is worse case and recorded in report.

Band edge measurements
5250-5350MHz

Test Mode	Ant.	Freq. (MHz)	Ref Level(dBm)	Result(dBm)	Limit (dBm)	Verdict
11A	Ant1	5240	9.03	-40.60	-16.97	PASS
11A	Ant2	5240	8.44	-45.10	-17.56	PASS
11N20MIMO	Ant1	5240	4.60	-45.36	-21.40	PASS
11N20MIMO	Ant2	5240	3.64	-47.31	-22.36	PASS
11N40MIMO	Ant1	5230	4.34	-44.59	-21.66	PASS
11N40MIMO	Ant2	5230	6.27	-44.28	-19.73	PASS
11AC20MIMO	Ant1	5240	3.44	-46.11	-22.56	PASS
11AC20MIMO	Ant2	5240	3.70	-45.85	-22.30	PASS
11AC40MIMO	Ant1	5230	4.29	-44.91	-21.71	PASS
11AC40MIMO	Ant2	5230	5.98	-44.16	-20.02	PASS
11AC80MIMO	Ant1	5210	4.00	-41.49	-22.00	PASS
11AC80MIMO	Ant2	5210	4.25	-37.57	-21.75	PASS
11AX20MIMO	Ant1	5240	5.49	-46.33	-20.51	PASS
11AX20MIMO	Ant2	5240	4.52	-46.40	-21.48	PASS
11AX40MIMO	Ant1	5230	5.87	-33.12	-20.13	PASS
11AX40MIMO	Ant2	5230	5.33	-33.39	-20.67	PASS
11AX80MIMO	Ant1	5210	3.48	-34.53	-22.52	PASS
11AX80MIMO	Ant2	5210	3.81	-36.06	-22.19	PASS

13.5. Original Test Data

Below 1 GHz and above 30 MHz test data Refer to appendix A

Above 1 GHz test data Refer to appendix B

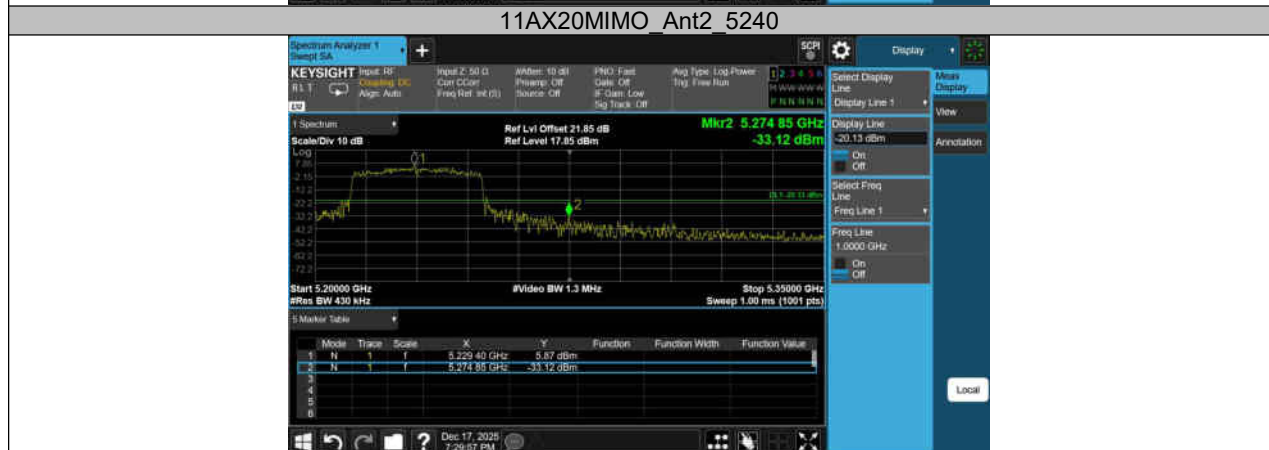
Note: Offset=cable loss+antenna gain

5250-5350MHz









11AX40MIMO_Ant2_5230