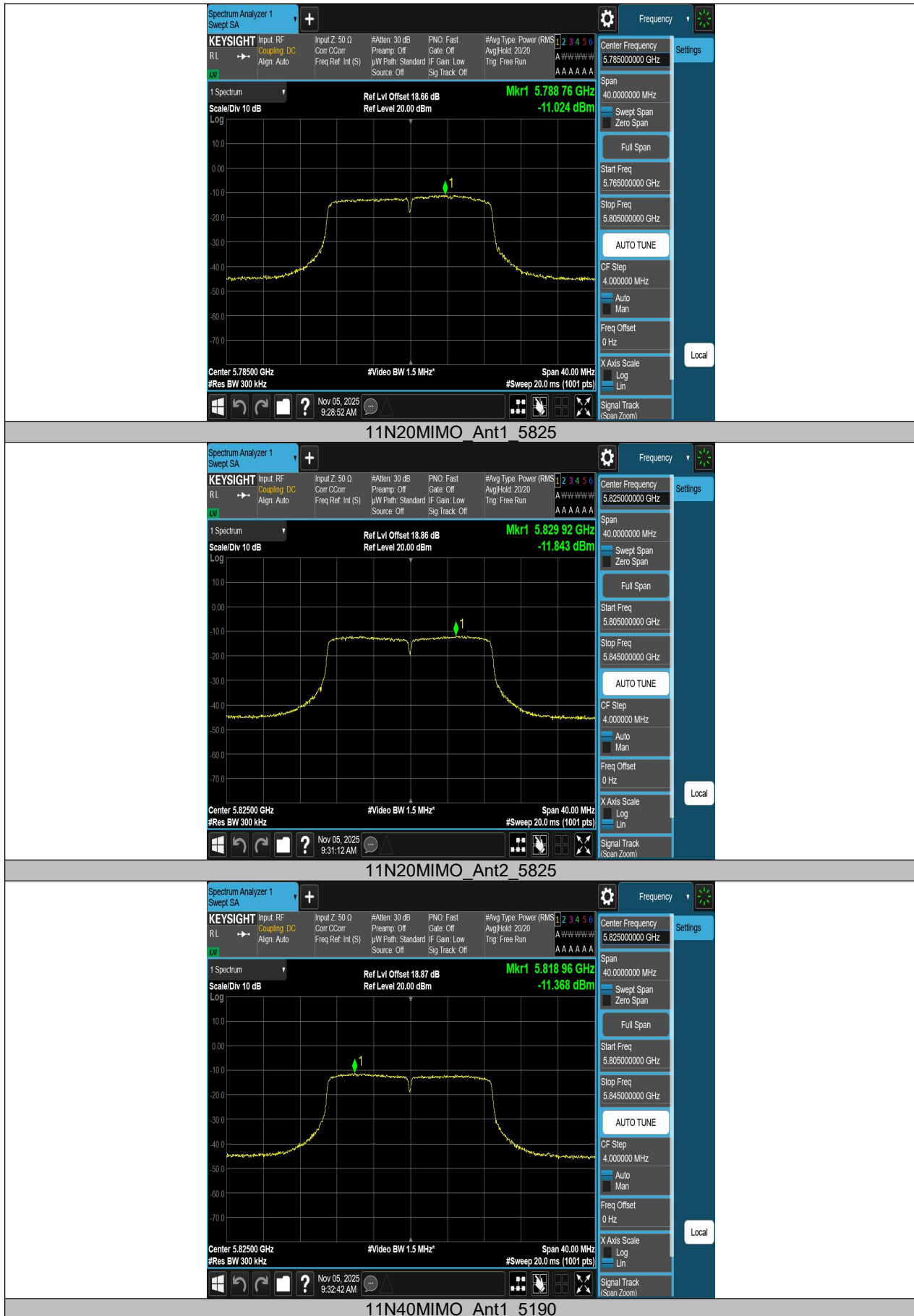
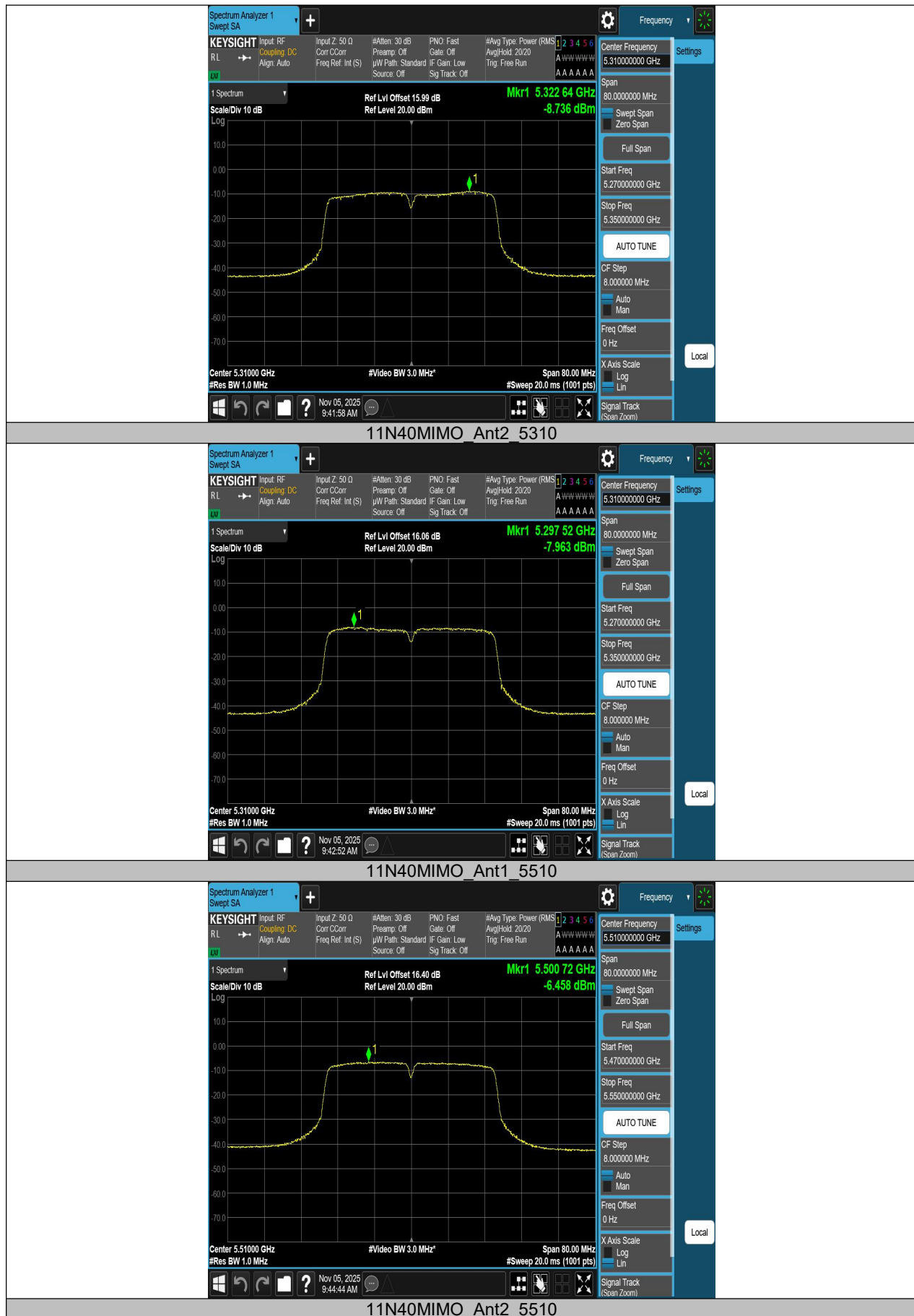
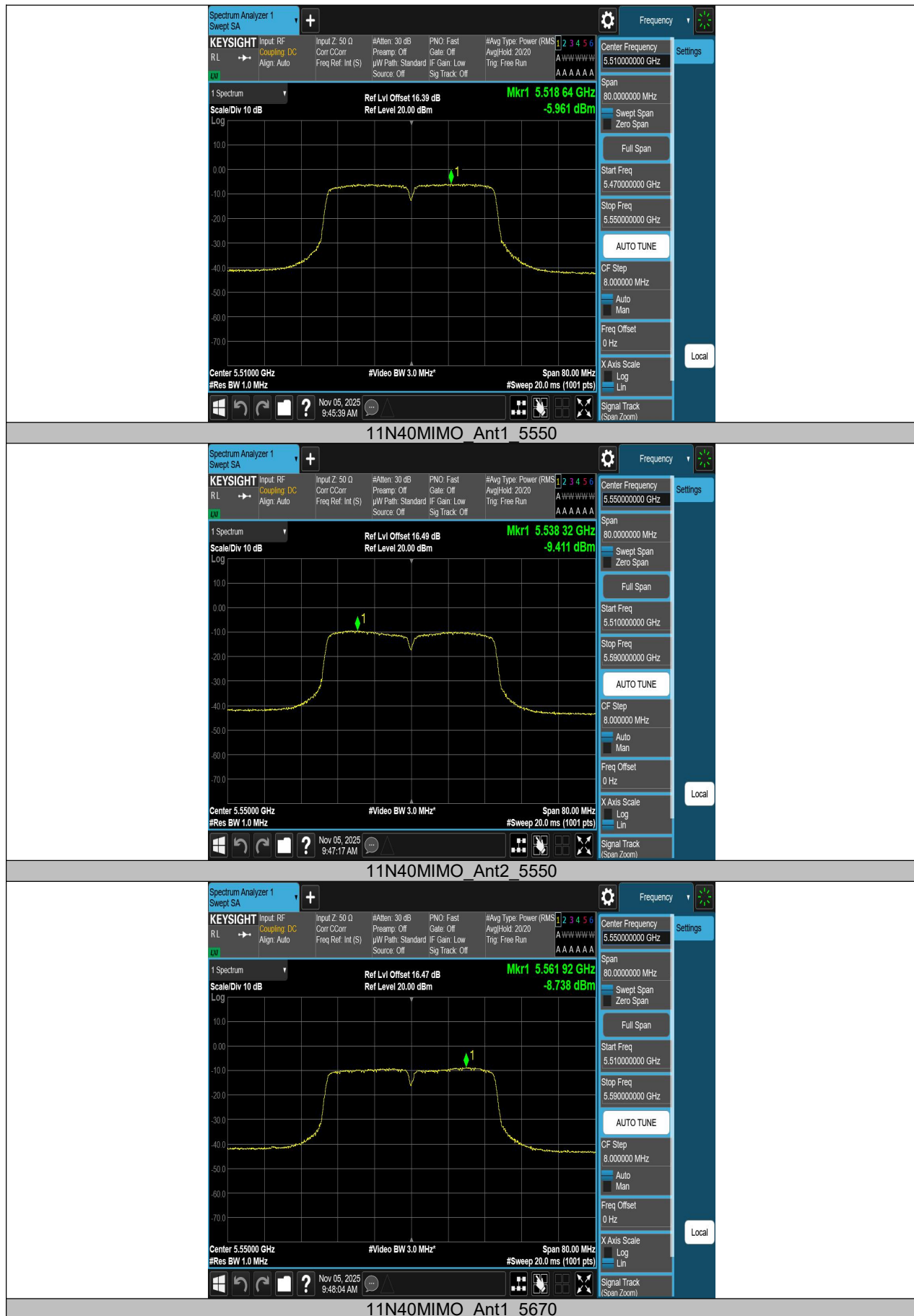




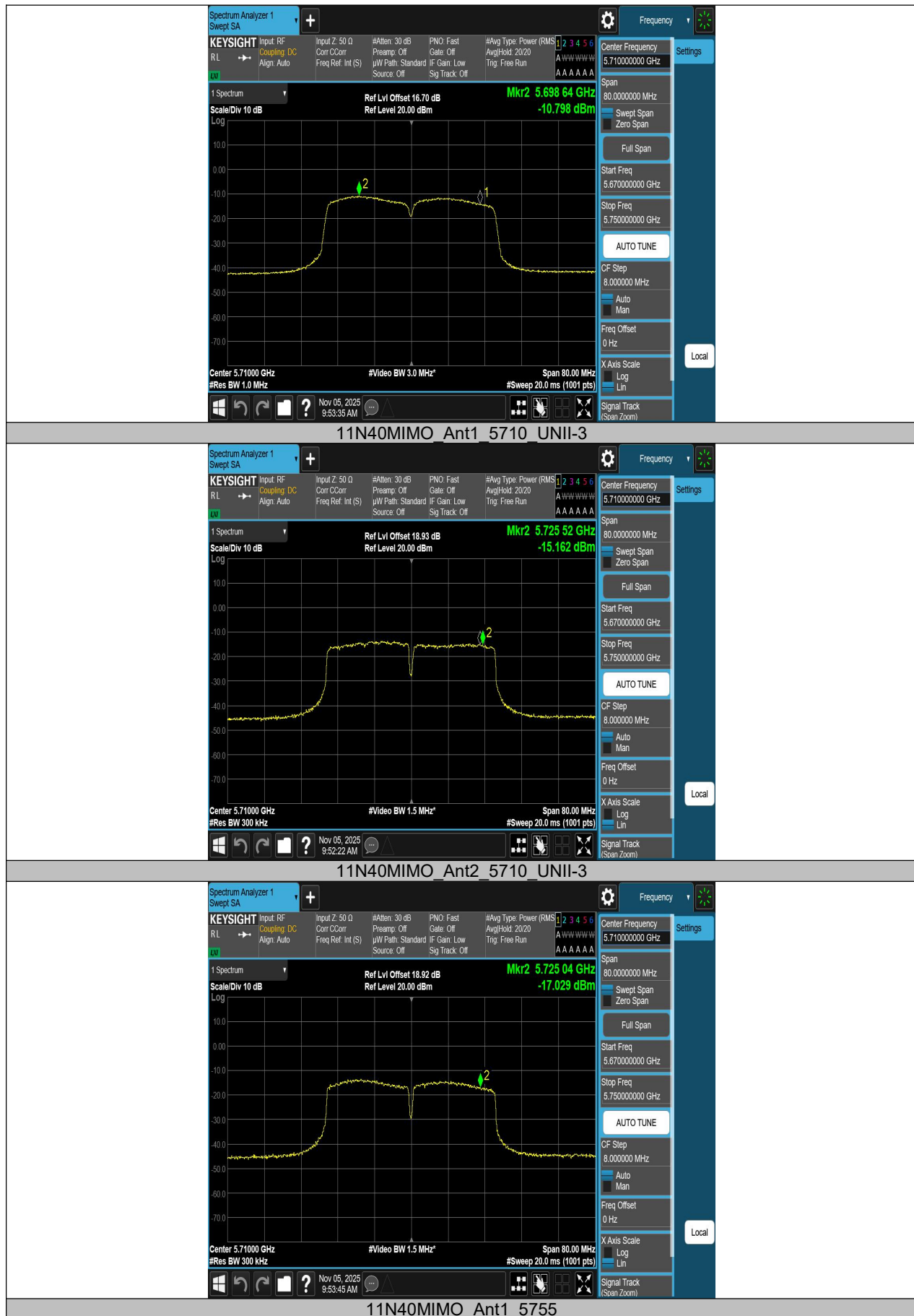




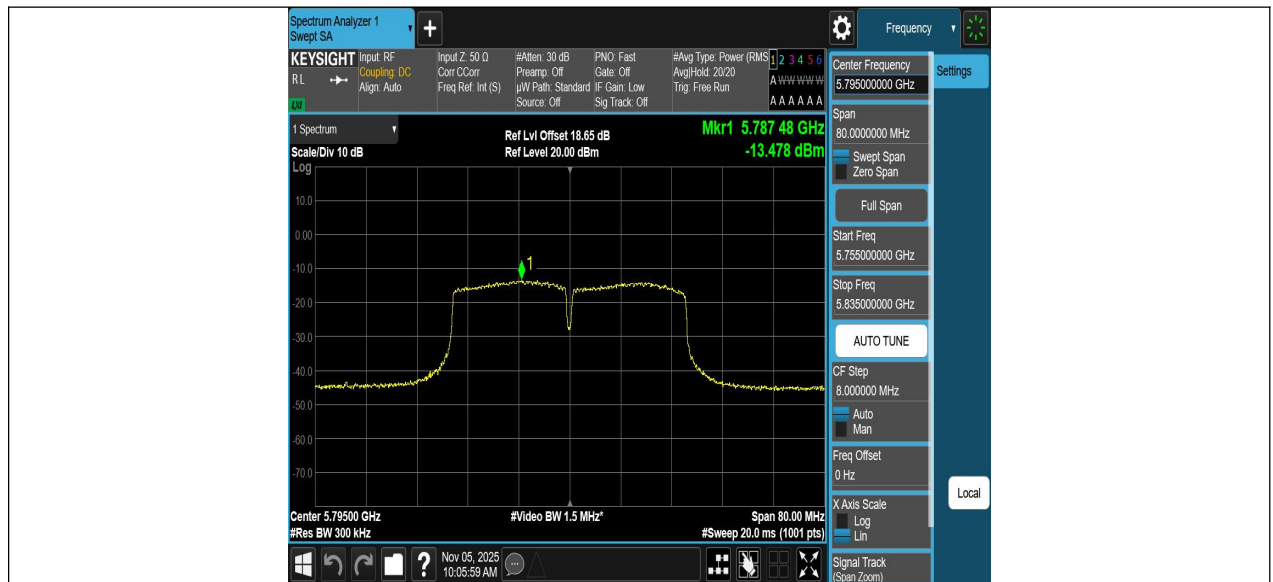












12. Frequency Stability Measurement

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
11N20MI MO	Ant1	5180	NV	NT	52000.00	10.038610	20	PASS
			LV	NT	53000.00	10.231660	20	PASS
			HV	NT	53000.00	10.231660	20	PASS
		5200	NV	NT	26000.00	5.000000	20	PASS
			LV	NT	22000.00	4.230769	20	PASS
			HV	NT	21000.00	4.038462	20	PASS
		5240	NV	NT	-6000.00	-1.145038	20	PASS
			LV	NT	-3000.00	-0.572519	20	PASS
			HV	NT	1000.00	0.190840	20	PASS
		5260	NV	NT	-34000.00	-6.463878	20	PASS
			LV	NT	-33000.00	-6.273764	20	PASS
			HV	NT	-31000.00	-5.893536	20	PASS
		5280	NV	NT	-8000.00	-1.515152	20	PASS
			LV	NT	-10000.00	-1.893939	20	PASS
			HV	NT	-10000.00	-1.893939	20	PASS
		5320	NV	NT	-60000.00	-11.278195	20	PASS
			LV	NT	-62000.00	-11.654135	20	PASS
			HV	NT	-64000.00	-12.030075	20	PASS
		5500	NV	NT	-38000.00	-6.909091	20	PASS
			LV	NT	-39000.00	-7.090909	20	PASS
			HV	NT	-38000.00	-6.909091	20	PASS
		5580	NV	NT	28000.00	5.017921	20	PASS
			LV	NT	29000.00	5.197133	20	PASS
			HV	NT	30000.00	5.376344	20	PASS
		5700	NV	NT	16000.00	2.807018	20	PASS
			LV	NT	12000.00	2.105263	20	PASS
			HV	NT	11000.00	1.929825	20	PASS
		5720	NV	NT	-19000.00	-3.321678	20	PASS
			LV	NT	-21000.00	-3.671329	20	PASS
			HV	NT	-21000.00	-3.671329	20	PASS
		5745	NV	NT	-56000.00	-9.747607	20	PASS
			LV	NT	-55000.00	-9.573542	20	PASS
			HV	NT	-54000.00	-9.399478	20	PASS
		5785	NV	NT	7000.00	1.210026	20	PASS
			LV	NT	8000.00	1.382887	20	PASS

		5825	HV	NT	10000.00	1.728608	20	PASS
			NV	NT	-22000.00	-3.776824	20	PASS
			LV	NT	-21000.00	-3.605150	20	PASS
			HV	NT	-18000.00	-3.090129	20	PASS
11N40MI MO	Ant1	5190	NV	NT	-52000.00	-10.019268	20	PASS
			LV	NT	-52000.00	-10.019268	20	PASS
			HV	NT	-52000.00	-10.019268	20	PASS
		5230	NV	NT	-53000.00	-10.133843	20	PASS
			LV	NT	-53000.00	-10.133843	20	PASS
			HV	NT	-54000.00	-10.325048	20	PASS
		5270	NV	NT	-53000.00	-10.056926	20	PASS
			LV	NT	-54000.00	-10.246679	20	PASS
			HV	NT	-54000.00	-10.246679	20	PASS
		5310	NV	NT	-54000.00	-10.169492	20	PASS
			LV	NT	-54000.00	-10.169492	20	PASS
			HV	NT	-54000.00	-10.169492	20	PASS
		5510	NV	NT	-56000.00	-10.163339	20	PASS
			LV	NT	-56000.00	-10.163339	20	PASS
			HV	NT	-56000.00	-10.163339	20	PASS
		5550	NV	NT	-56000.00	-10.090090	20	PASS
			LV	NT	-57000.00	-10.270270	20	PASS
			HV	NT	-57000.00	-10.270270	20	PASS
		5670	NV	NT	-58000.00	-10.229277	20	PASS
			LV	NT	-58000.00	-10.229277	20	PASS
			HV	NT	-58000.00	-10.229277	20	PASS
		5710	NV	NT	-59000.00	-10.332750	20	PASS
			LV	NT	-59000.00	-10.332750	20	PASS
			HV	NT	-59000.00	-10.332750	20	PASS
		5755	NV	NT	-60000.00	-10.425717	20	PASS
			LV	NT	-60000.00	-10.425717	20	PASS
			HV	NT	-60000.00	-10.425717	20	PASS
		5795	NV	NT	-62000.00	-10.698878	20	PASS
			LV	NT	-63000.00	-10.871441	20	PASS
			HV	NT	-63000.00	-10.871441	20	PASS

Temperature								
Test Mode	Antenna	Frequency (MHz)	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11N20MIMO	Ant1	5180	NV	-30	53000.00	10.231660	20	PASS
			NV	-20	54000.00	10.424710	20	PASS
			NV	-10	54000.00	10.424710	20	PASS
			NV	0	54000.00	10.424710	20	PASS
			NV	10	54000.00	10.424710	20	PASS
			NV	20	55000.00	10.617761	20	PASS
			NV	25	7000.00	1.351351	20	PASS
			NV	30	55000.00	10.617761	20	PASS
			NV	40	55000.00	10.617761	20	PASS
		5200	NV	50	55000.00	10.617761	20	PASS
			NV	-30	22000.00	4.230769	20	PASS
			NV	-20	24000.00	4.615385	20	PASS
			NV	-10	27000.00	5.192308	20	PASS
			NV	0	29000.00	5.576923	20	PASS
			NV	10	31000.00	5.961538	20	PASS
			NV	20	34000.00	6.538462	20	PASS
			NV	30	36000.00	6.923077	20	PASS
			NV	40	38000.00	7.307692	20	PASS
			NV	50	41000.00	7.884615	20	PASS
		5240	NV	-30	4000.00	0.763359	20	PASS
			NV	-20	7000.00	1.335878	20	PASS
			NV	-10	10000.00	1.908397	20	PASS
			NV	0	13000.00	2.480916	20	PASS
			NV	10	16000.00	3.053435	20	PASS
			NV	20	18000.00	3.435115	20	PASS
			NV	30	21000.00	4.007634	20	PASS
			NV	40	23000.00	4.389313	20	PASS
			NV	50	25000.00	4.770992	20	PASS

		5260	NV	-30	-28000.00	-5.323194	20	PASS
			NV	-20	-24000.00	-4.562738	20	PASS
			NV	-10	-20000.00	-3.802281	20	PASS
			NV	0	-16000.00	-3.041825	20	PASS
			NV	10	-12000.00	-2.281369	20	PASS
			NV	20	-9000.00	-1.711027	20	PASS
			NV	30	-5000.00	-0.950570	20	PASS
			NV	40	-2000.00	-0.380228	20	PASS
			NV	50	1000.00	0.190114	20	PASS
		5280	NV	-30	-8000.00	-1.515152	20	PASS
			NV	-20	-5000.00	-0.946970	20	PASS
			NV	-10	-2000.00	-0.378788	20	PASS
			NV	0	2000.00	0.378788	20	PASS
			NV	10	5000.00	0.946970	20	PASS
			NV	20	11000.00	2.083333	20	PASS
			NV	30	12000.00	2.272727	20	PASS
			NV	40	15000.00	2.840909	20	PASS
			NV	50	18000.00	3.409091	20	PASS
		5320	NV	-30	-66000.00	-12.406015	20	PASS
			NV	-20	-67000.00	-12.593985	20	PASS
			NV	-10	-68000.00	-12.781955	20	PASS
			NV	0	-69000.00	-12.969925	20	PASS
			NV	10	-70000.00	-13.157895	20	PASS
			NV	20	-70000.00	-13.157895	20	PASS
			NV	30	-70000.00	-13.157895	20	PASS
			NV	40	-70000.00	-13.157895	20	PASS
			NV	50	-70000.00	-13.157895	20	PASS
		5500	NV	-30	-37000.00	-6.727273	20	PASS
			NV	-20	-35000.00	-6.363636	20	PASS
			NV	-10	-33000.00	-6.000000	20	PASS
			NV	0	-31000.00	-5.636364	20	PASS
			NV	10	-28000.00	-5.090909	20	PASS
			NV	20	-26000.00	-4.727273	20	PASS
			NV	30	-24000.00	-4.363636	20	PASS
			NV	40	-21000.00	-3.818182	20	PASS
			NV	50	-19000.00	-3.454545	20	PASS
		5580	NV	-30	30000.00	5.376344	20	PASS
			NV	-20	31000.00	5.555556	20	PASS
			NV	-10	33000.00	5.913978	20	PASS
			NV	0	34000.00	6.093190	20	PASS
			NV	10	35000.00	6.272401	20	PASS
			NV	20	36000.00	6.451613	20	PASS
			NV	30	37000.00	6.630824	20	PASS
			NV	40	38000.00	6.810036	20	PASS
			NV	50	39000.00	6.989247	20	PASS
		5700	NV	-30	11000.00	1.929825	20	PASS
			NV	-20	12000.00	2.105263	20	PASS
			NV	-10	14000.00	2.456140	20	PASS
			NV	0	16000.00	2.807018	20	PASS
			NV	10	18000.00	3.157895	20	PASS
			NV	20	20000.00	3.508772	20	PASS
			NV	30	22000.00	3.859649	20	PASS
			NV	40	24000.00	4.210526	20	PASS
			NV	50	26000.00	4.561404	20	PASS
		5720	NV	-30	-19000.00	-3.321678	20	PASS
			NV	-20	-16000.00	-2.797203	20	PASS
			NV	-10	-13000.00	-2.272727	20	PASS
			NV	0	-10000.00	-1.748252	20	PASS
			NV	10	-6000.00	-1.048951	20	PASS
			NV	20	-3000.00	-0.524476	20	PASS
			NV	30	1000.00	0.174825	20	PASS
			NV	40	4000.00	0.699301	20	PASS
			NV	50	7000.00	1.223776	20	PASS
		5745	NV	-30	-53000.00	-9.225413	20	PASS
			NV	-20	-50000.00	-8.703220	20	PASS
			NV	-10	-47000.00	-8.181027	20	PASS
			NV	0	-45000.00	-7.832898	20	PASS

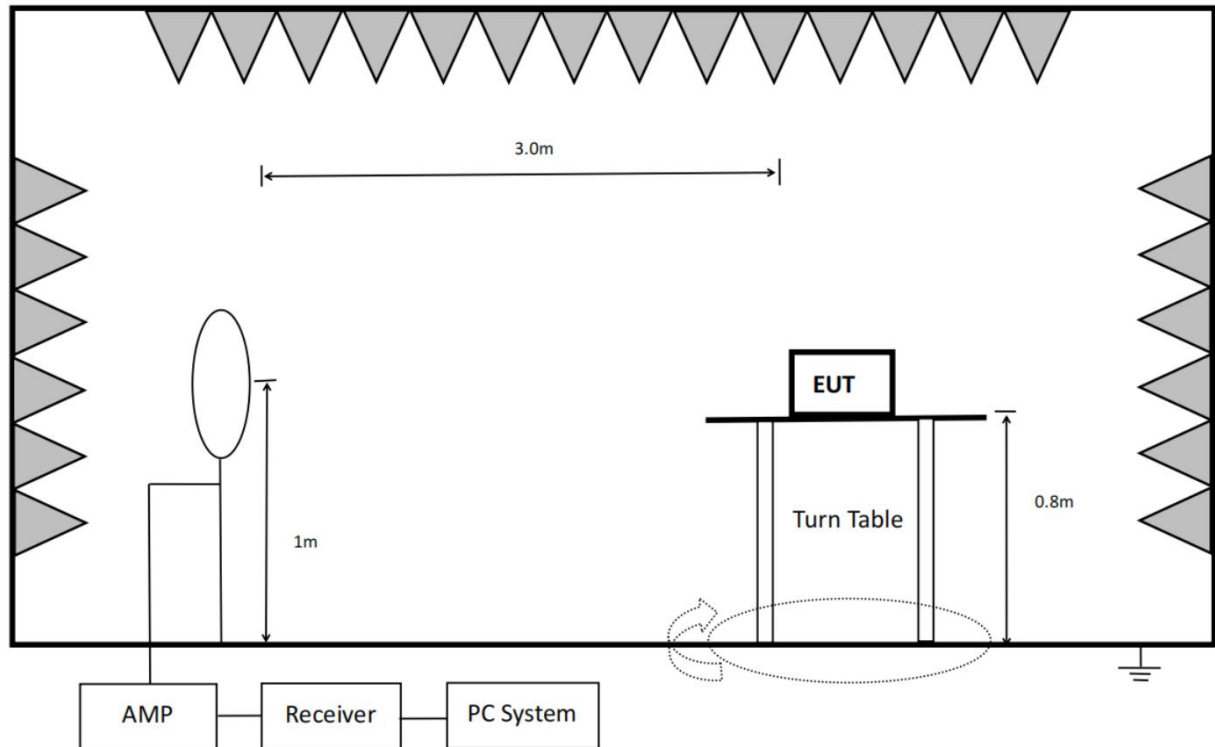
			NV	10	-42000.00	-7.310705	20	PASS
			NV	20	-38000.00	-6.614447	20	PASS
			NV	30	-35000.00	-6.092254	20	PASS
			NV	40	-32000.00	-5.570061	20	PASS
			NV	50	-29000.00	-5.047868	20	PASS
		5785	NV	-30	12000.00	2.074330	20	PASS
			NV	-20	13000.00	2.247191	20	PASS
			NV	-10	15000.00	2.592913	20	PASS
			NV	0	16000.00	2.765774	20	PASS
			NV	10	18000.00	3.111495	20	PASS
			NV	20	19000.00	3.284356	20	PASS
			NV	30	21000.00	3.630078	20	PASS
			NV	40	22000.00	3.802939	20	PASS
			NV	50	23000.00	3.975799	20	PASS
		5825	NV	-30	-17000.00	-2.918455	20	PASS
			NV	-20	-14000.00	-2.403433	20	PASS
			NV	-10	-12000.00	-2.060086	20	PASS
			NV	0	-10000.00	-1.716738	20	PASS
			NV	10	-8000.00	-1.373391	20	PASS
			NV	20	-6000.00	-1.030043	20	PASS
			NV	30	-5000.00	-0.858369	20	PASS
			NV	40	-3000.00	-0.515021	20	PASS
			NV	50	-2000.00	-0.343348	20	PASS
11N40MIMO	Ant1	5190	NV	-30	-52000.00	-10.019268	20	PASS
			NV	-20	-52000.00	-10.019268	20	PASS
			NV	-10	-52000.00	-10.019268	20	PASS
			NV	0	-52000.00	-10.019268	20	PASS
			NV	10	-52000.00	-10.019268	20	PASS
			NV	20	-52000.00	-10.019268	20	PASS
			NV	30	-52000.00	-10.019268	20	PASS
			NV	40	-52000.00	-10.019268	20	PASS
			NV	50	-52000.00	-10.019268	20	PASS
		5230	NV	-30	-54000.00	-10.325048	20	PASS
			NV	-20	-54000.00	-10.325048	20	PASS
			NV	-10	-54000.00	-10.325048	20	PASS
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			NV	30	-54000.00	-10.325048	20	PASS
			NV	40	-54000.00	-10.325048	20	PASS
			NV	50	-54000.00	-10.325048	20	PASS
		5270	NV	-30	-54000.00	-10.246679	20	PASS
			NV	-20	-54000.00	-10.246679	20	PASS
			NV	-10	-54000.00	-10.246679	20	PASS
			NV	0	-54000.00	-10.246679	20	PASS
			NV	10	-54000.00	-10.246679	20	PASS
			NV	20	-54000.00	-10.246679	20	PASS
			NV	30	-54000.00	-10.246679	20	PASS
			NV	40	-54000.00	-10.246679	20	PASS
			NV	50	-54000.00	-10.246679	20	PASS
		5310	NV	-30	-54000.00	-10.169492	20	PASS
			NV	-20	-54000.00	-10.169492	20	PASS
			NV	-10	-54000.00	-10.169492	20	PASS
			NV	0	-54000.00	-10.169492	20	PASS
			NV	10	-54000.00	-10.169492	20	PASS
			NV	20	-54000.00	-10.169492	20	PASS
			NV	30	-54000.00	-10.169492	20	PASS
			NV	40	-54000.00	-10.169492	20	PASS
			NV	50	-54000.00	-10.169492	20	PASS
		5510	NV	-30	-56000.00	-10.163339	20	PASS
			NV	-20	-56000.00	-10.163339	20	PASS
			NV	-10	-56000.00	-10.163339	20	PASS
			NV	0	-57000.00	-10.344828	20	PASS
			NV	10	-57000.00	-10.344828	20	PASS
			NV	20	-57000.00	-10.344828	20	PASS
			NV	30	-56000.00	-10.163339	20	PASS
			NV	40	-57000.00	-10.344828	20	PASS

		5550	NV	50	-56000.00	-10.163339	20	PASS
			NV	-30	-57000.00	-10.270270	20	PASS
			NV	-20	-57000.00	-10.270270	20	PASS
			NV	-10	-57000.00	-10.270270	20	PASS
			NV	0	-57000.00	-10.270270	20	PASS
			NV	10	-57000.00	-10.270270	20	PASS
			NV	20	-57000.00	-10.270270	20	PASS
			NV	30	-57000.00	-10.270270	20	PASS
			NV	40	-57000.00	-10.270270	20	PASS
		5670	NV	50	-57000.00	-10.270270	20	PASS
			NV	-30	-58000.00	-10.229277	20	PASS
			NV	-20	-59000.00	-10.405644	20	PASS
			NV	-10	-58000.00	-10.229277	20	PASS
			NV	0	-58000.00	-10.229277	20	PASS
			NV	10	-58000.00	-10.229277	20	PASS
			NV	20	-58000.00	-10.229277	20	PASS
			NV	30	-58000.00	-10.229277	20	PASS
			NV	40	-58000.00	-10.229277	20	PASS
		5710	NV	50	-58000.00	-10.229277	20	PASS
			NV	-30	-59000.00	-10.332750	20	PASS
			NV	-20	-60000.00	-10.507881	20	PASS
			NV	-10	-60000.00	-10.507881	20	PASS
			NV	0	-60000.00	-10.507881	20	PASS
			NV	10	-60000.00	-10.507881	20	PASS
			NV	20	-60000.00	-10.507881	20	PASS
			NV	30	-60000.00	-10.507881	20	PASS
			NV	40	-60000.00	-10.507881	20	PASS
		5755	NV	50	-59000.00	-10.332750	20	PASS
			NV	-30	-61000.00	-10.599479	20	PASS
			NV	-20	-61000.00	-10.599479	20	PASS
			NV	-10	-61000.00	-10.599479	20	PASS
			NV	0	-61000.00	-10.599479	20	PASS
			NV	10	-61000.00	-10.599479	20	PASS
			NV	20	-61000.00	-10.599479	20	PASS
			NV	30	-61000.00	-10.599479	20	PASS
			NV	40	-61000.00	-10.599479	20	PASS
		5795	NV	50	-61000.00	-10.599479	20	PASS
			NV	-30	-63000.00	-10.871441	20	PASS
			NV	-20	-63000.00	-10.871441	20	PASS
			NV	-10	-63000.00	-10.871441	20	PASS
			NV	0	-64000.00	-11.044003	20	PASS
			NV	10	-63000.00	-10.871441	20	PASS
			NV	20	-63000.00	-10.871441	20	PASS
			NV	30	-63000.00	-10.871441	20	PASS
			NV	40	-63000.00	-10.871441	20	PASS
			NV	50	-63000.00	-10.871441	20	PASS

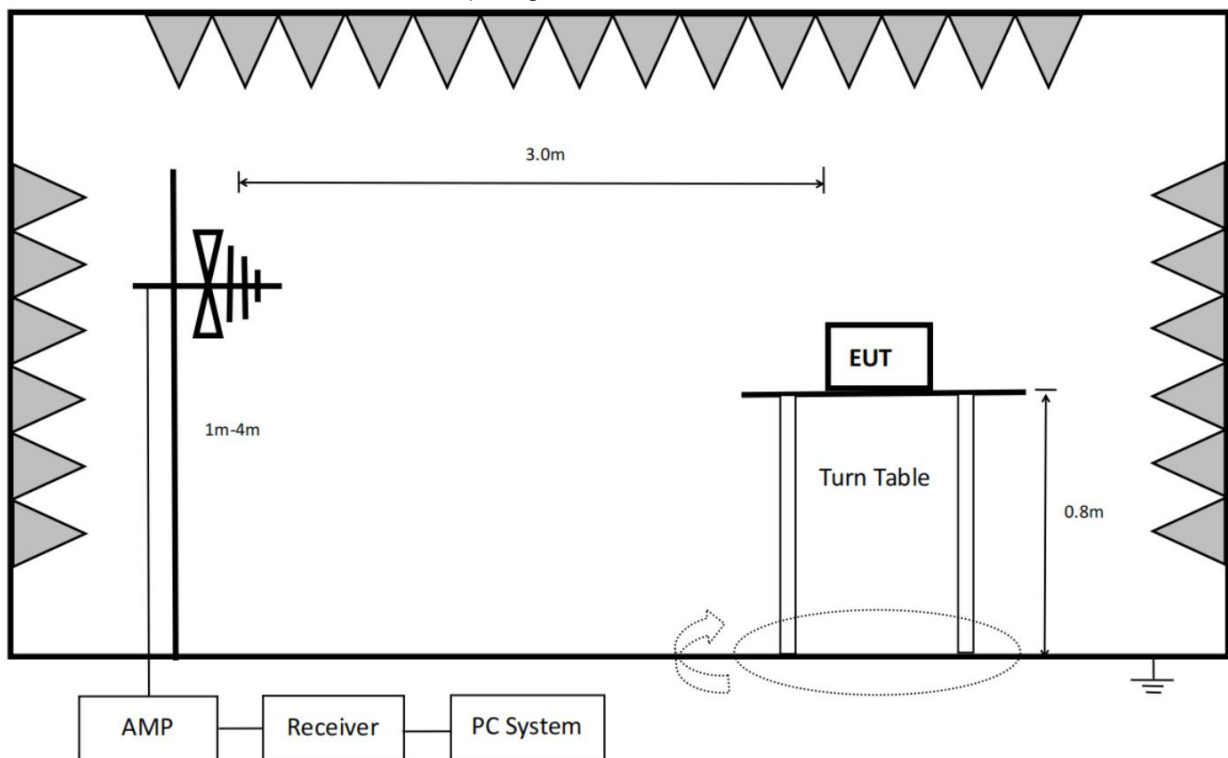
13. Radiated Emission

13.1. Block Diagram of Test Setup

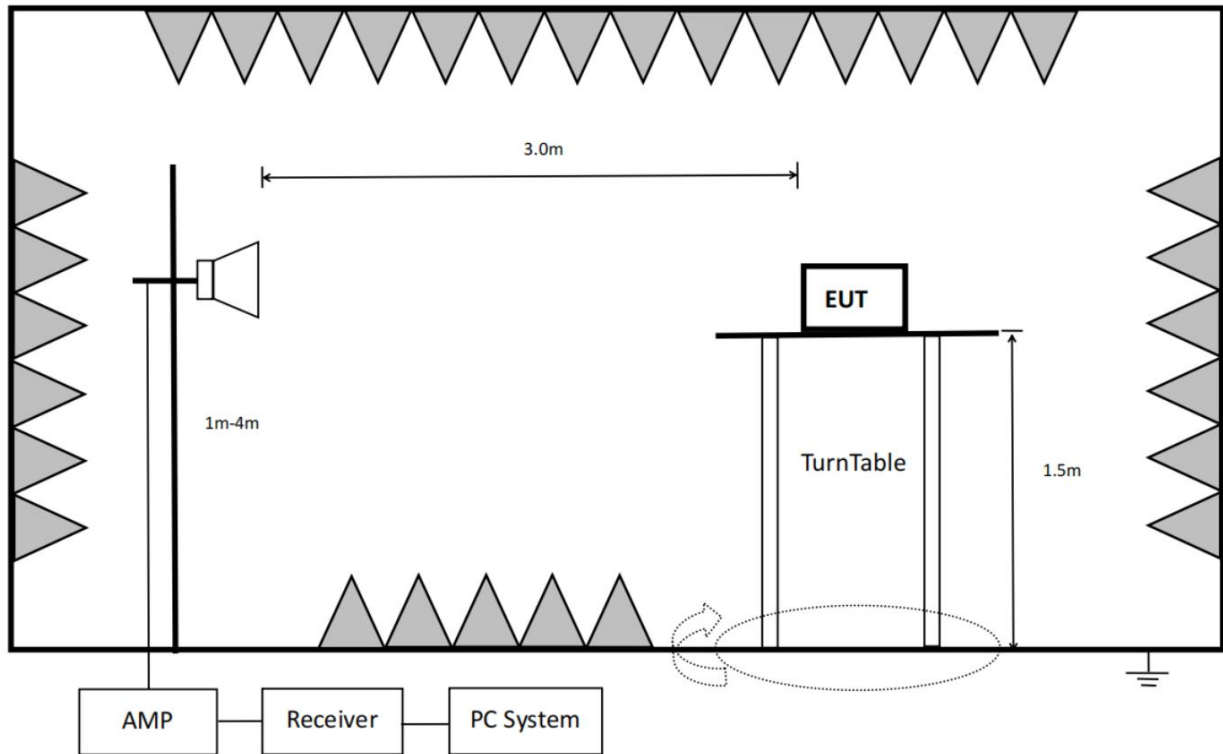
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



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.

Test block diagram of Test Setup for Band edge measurements of 5250MHz - 5350MHz:
Same as section 8.1

13.2. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	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

(2) FCC 15.209 Limit.

Frequency MHz	Distance Meters	Field strengths limit	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	$2400/F(\text{kHz})$	$67.6-20\log(F)$
0.490 ~ 1.705	30	$24000/F(\text{kHz})$	$87.6-20\log(F)$
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 $-17 \text{ dBm}/\text{MHz}$; 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.

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

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:

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

(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 band rejection 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, so the final test was performed with frequency range from 30 MHz to 40 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 11a 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, 11N20 mode is worse case and recorded in report.

Note 6: For emissions Above 18 GHz, the all the emission is ambient noise, so only show the worse case channel 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	-2.30	-46.81	-28.30	PASS
11A	Ant2	5240	-1.23	-43.09	-27.23	PASS
11N20MIMO	Ant1	5240	-2.61	-45.94	-28.61	PASS
11N20MIMO	Ant2	5240	-1.06	-43.05	-27.06	PASS
11N40MIMO	Ant1	5230	-2.77	-42.74	-28.77	PASS
11N40MIMO	Ant2	5230	-1.48	-40.91	-27.48	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

