

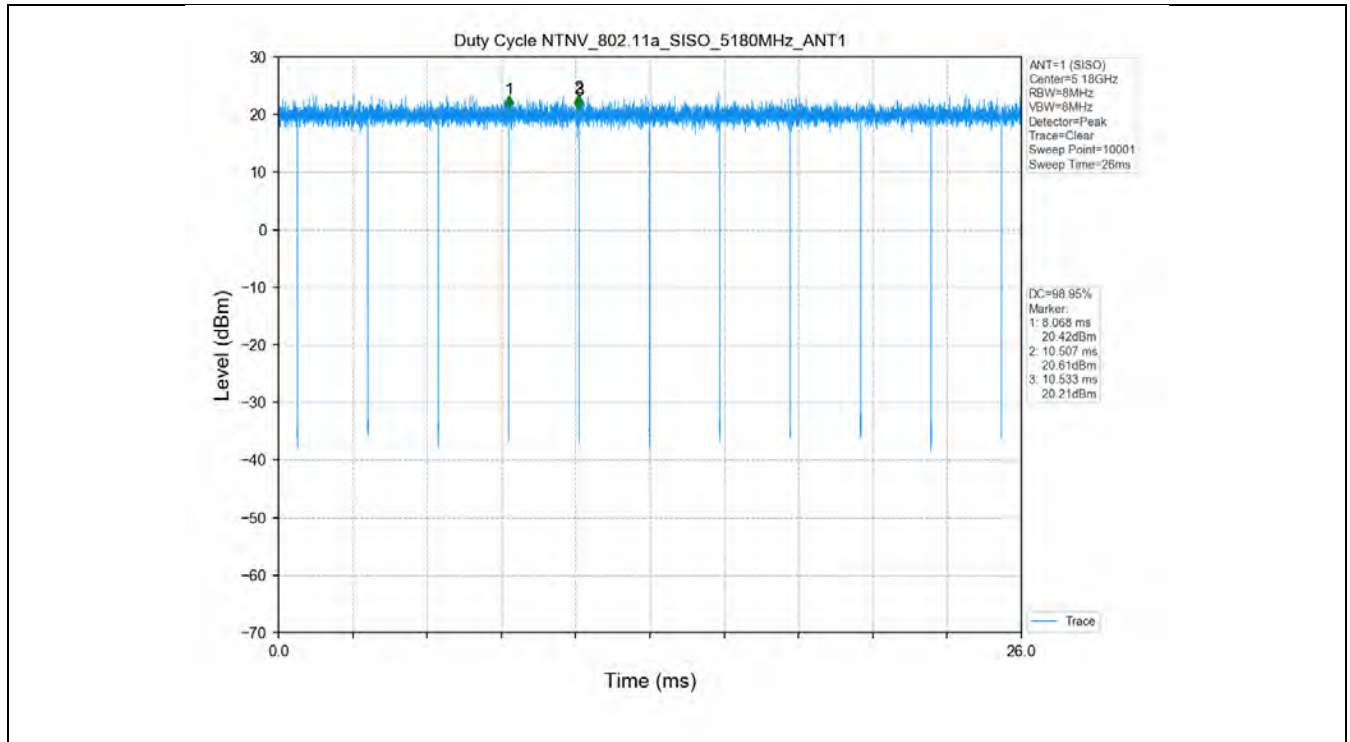
Appendix J for KSEM200900114502

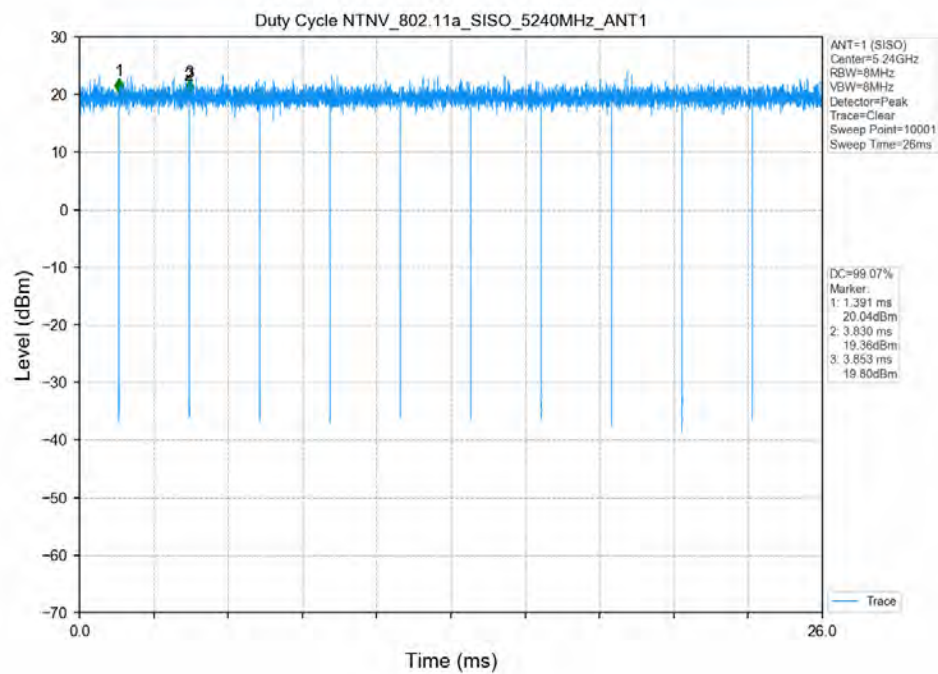
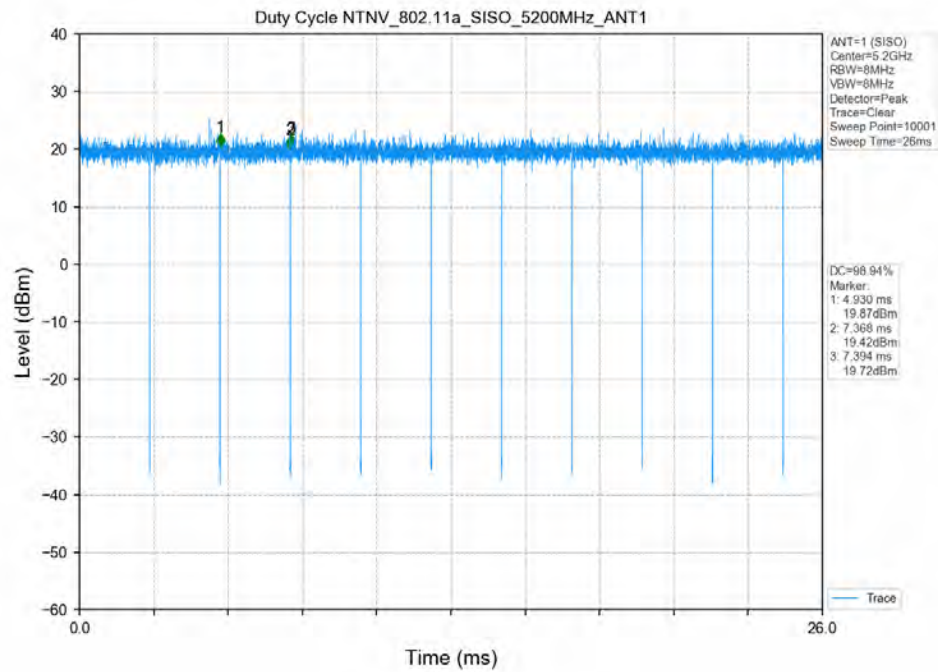
1. Duty Cycle

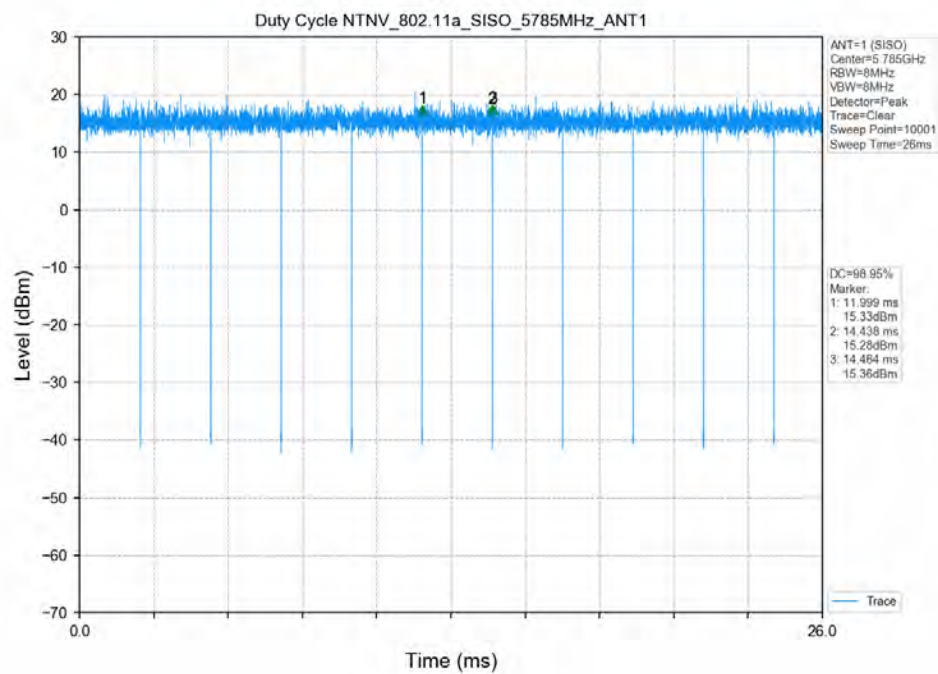
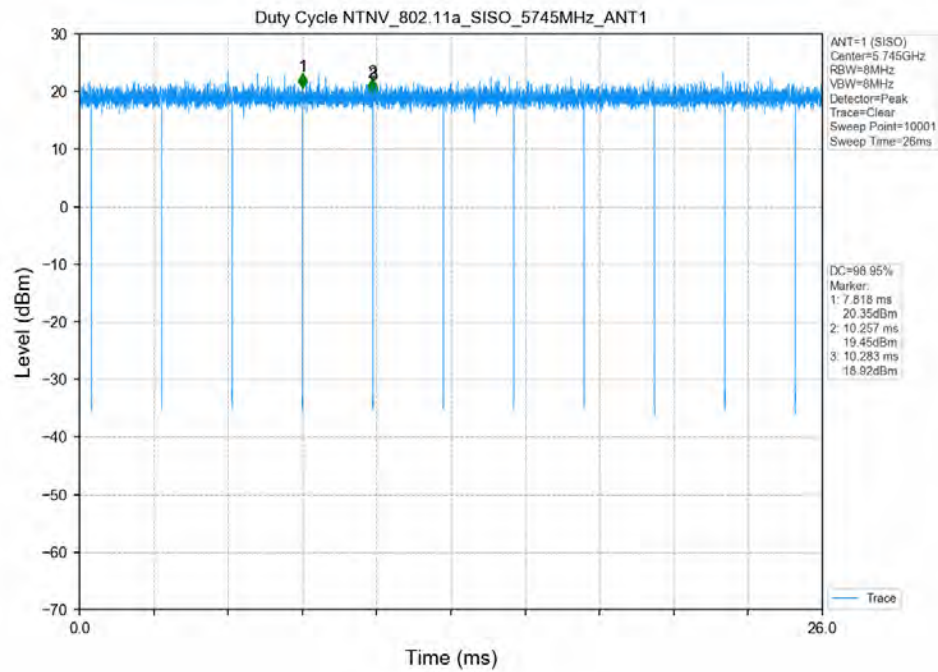
1.1 Test Result

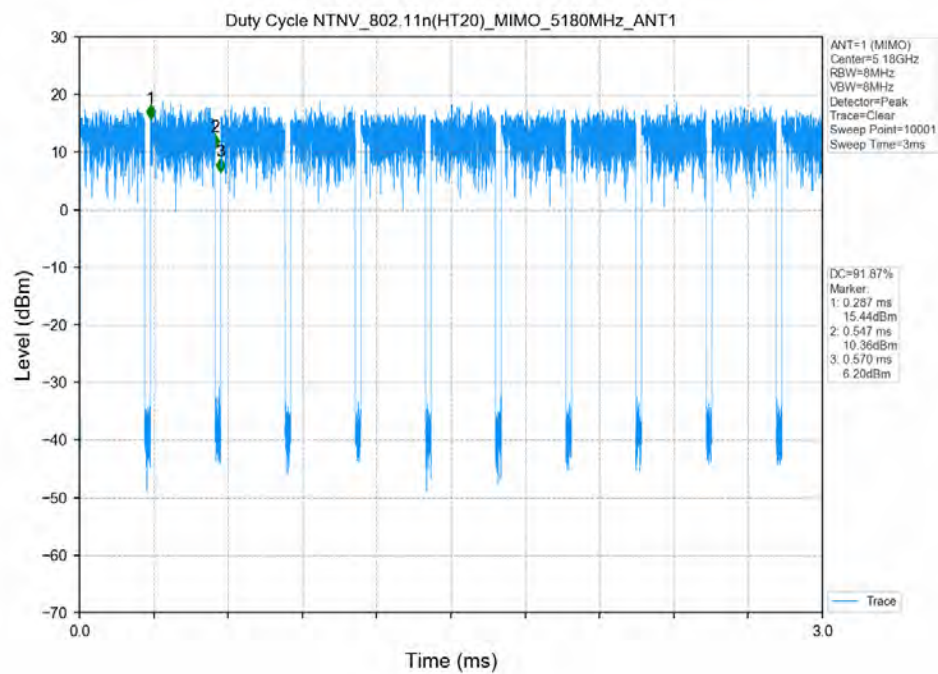
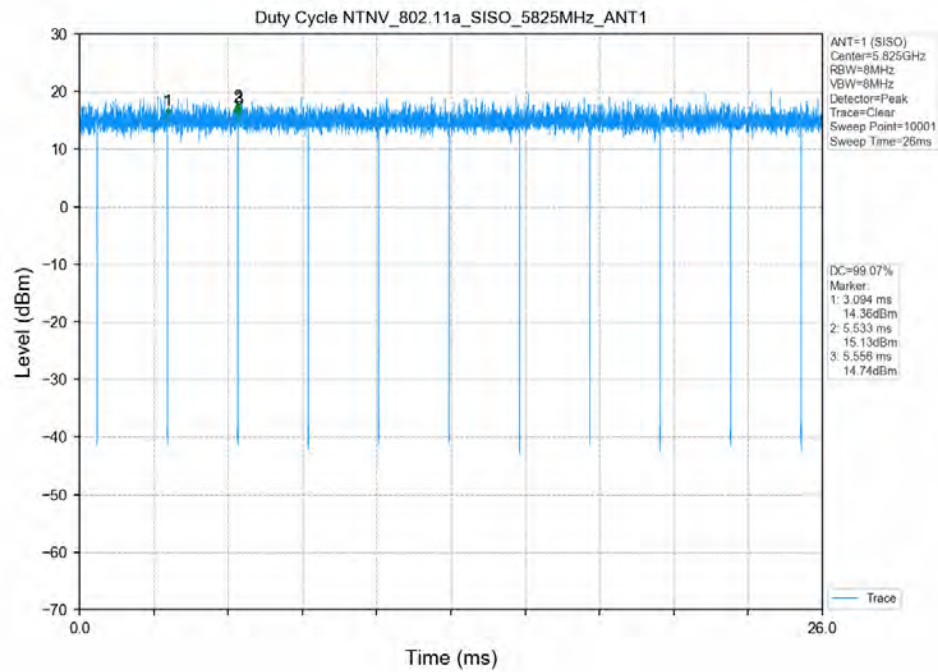
Test Mode	Channel Frequency (MHz)	TX Type	ANT No.	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11a	5180	SISO	1	2.439	2.465	98.95	0.05
	5200	SISO	1	2.438	2.464	98.94	0.05
	5240	SISO	1	2.439	2.462	99.07	0.04
	5745	SISO	1	2.439	2.465	98.95	0.05
	5785	SISO	1	2.439	2.465	98.95	0.05
	5825	SISO	1	2.439	2.462	99.07	0.04
802.11n(HT20)	5180	MIMO	1	0.260	0.283	91.87	0.37
	5200	MIMO	1	0.260	0.283	91.87	0.37
	5240	MIMO	1	0.259	0.283	91.52	0.38
	5745	MIMO	1	0.260	0.283	91.87	0.37
	5785	MIMO	1	0.259	0.283	91.52	0.38
	5825	MIMO	1	0.260	0.284	91.55	0.38
802.11n(HT40)	5190	MIMO	1	0.312	0.334	93.41	0.30
	5230	MIMO	1	0.311	0.334	93.11	0.31
	5755	MIMO	1	0.312	0.334	93.41	0.30
	5795	MIMO	1	0.312	0.334	93.41	0.30

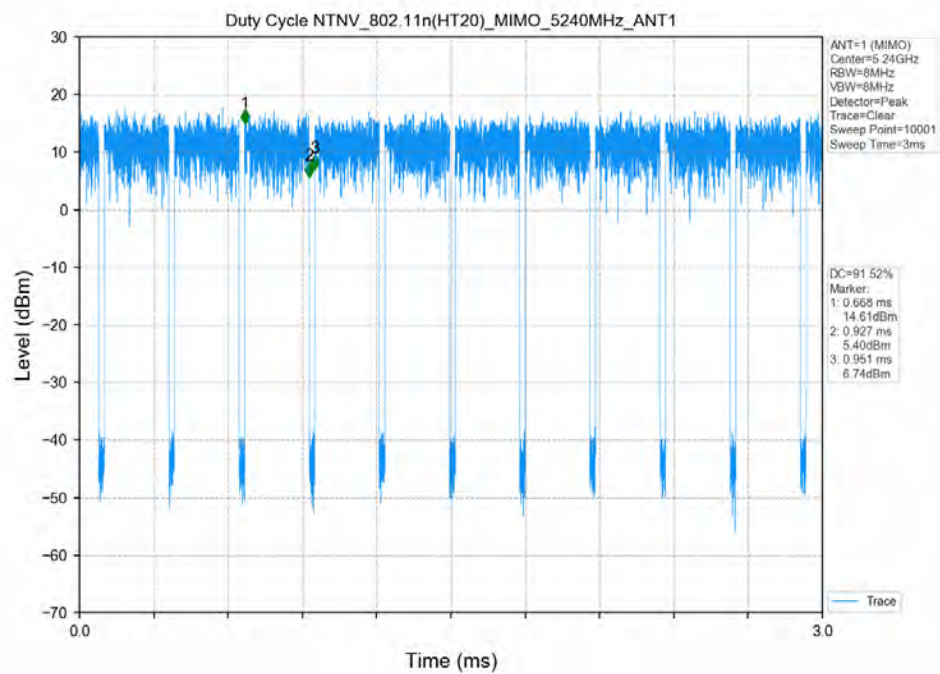
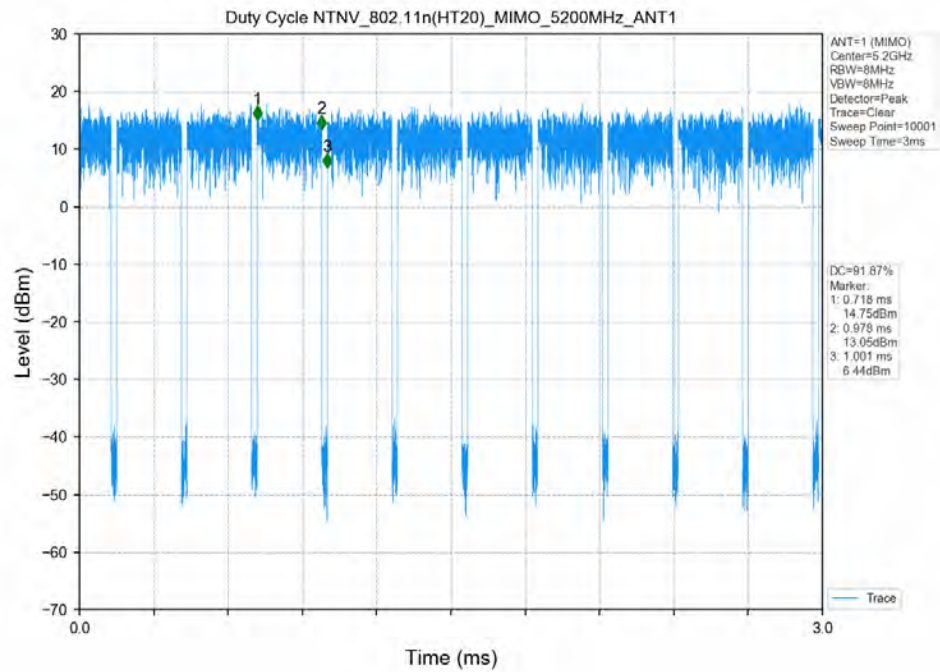
1.2 Test Graph

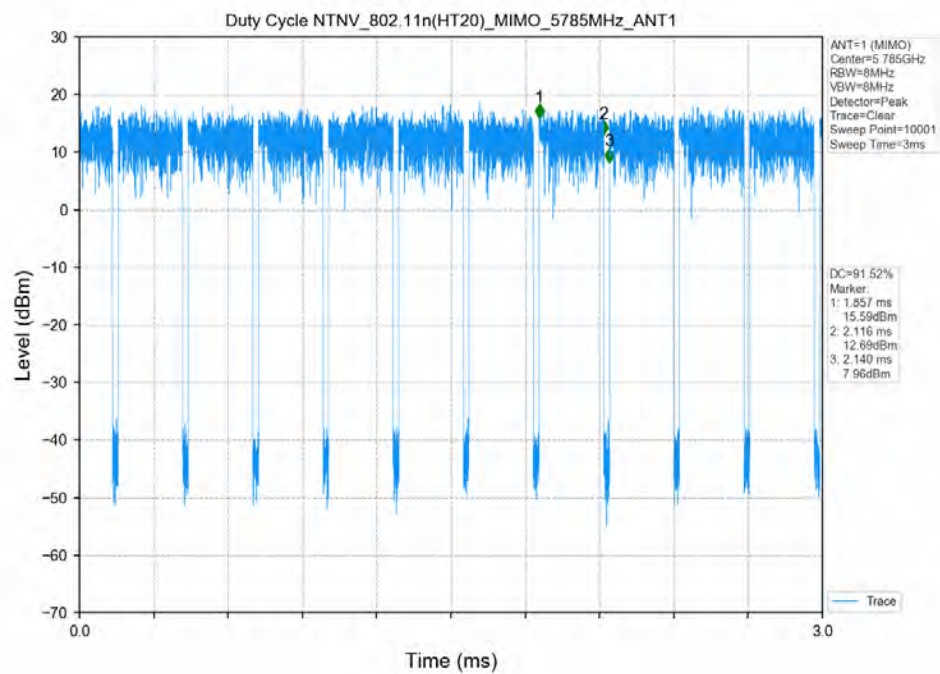
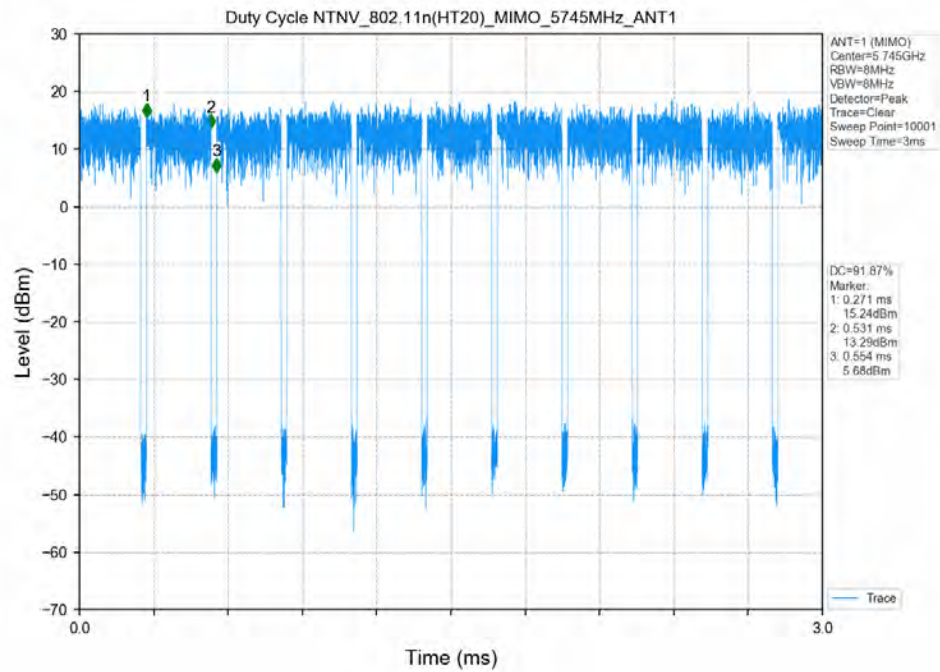


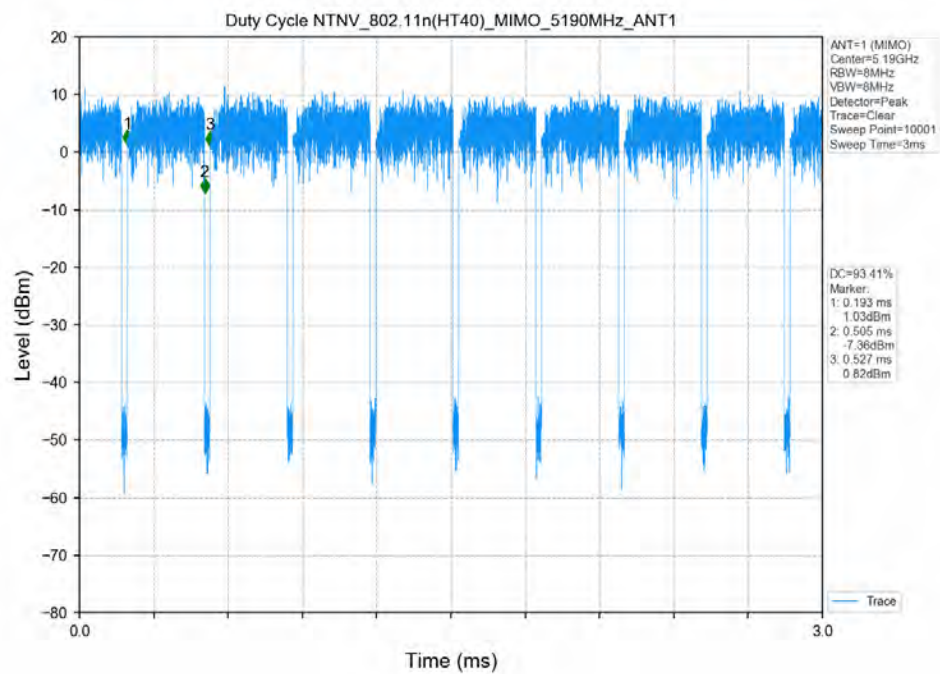
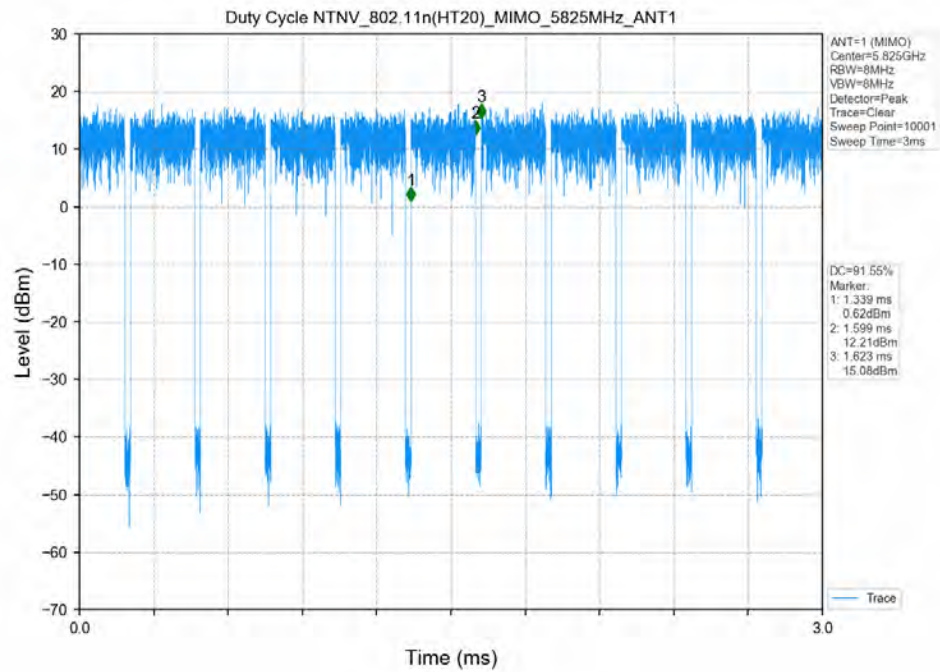


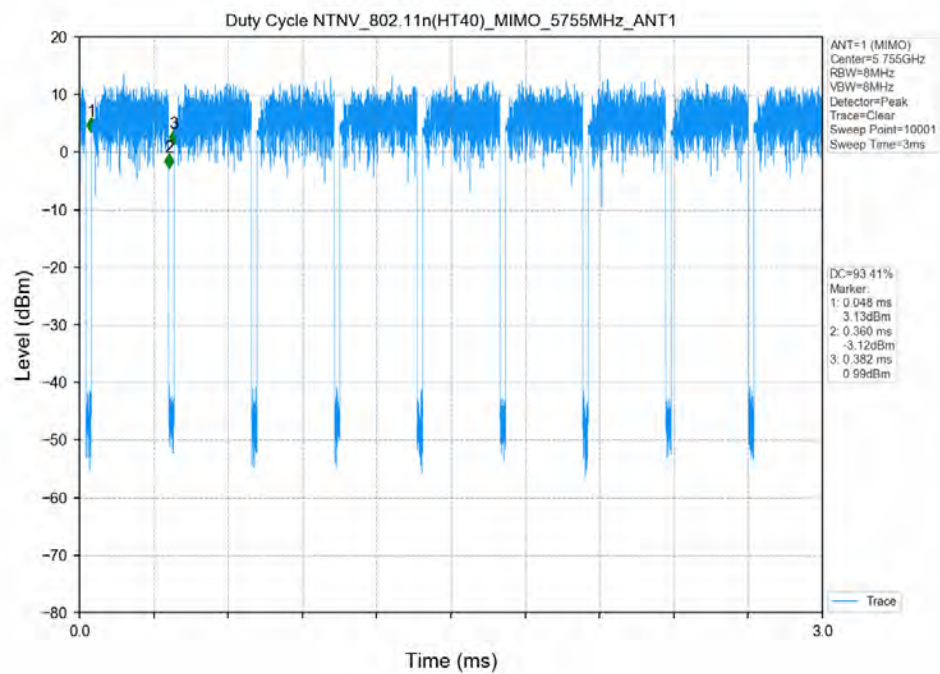
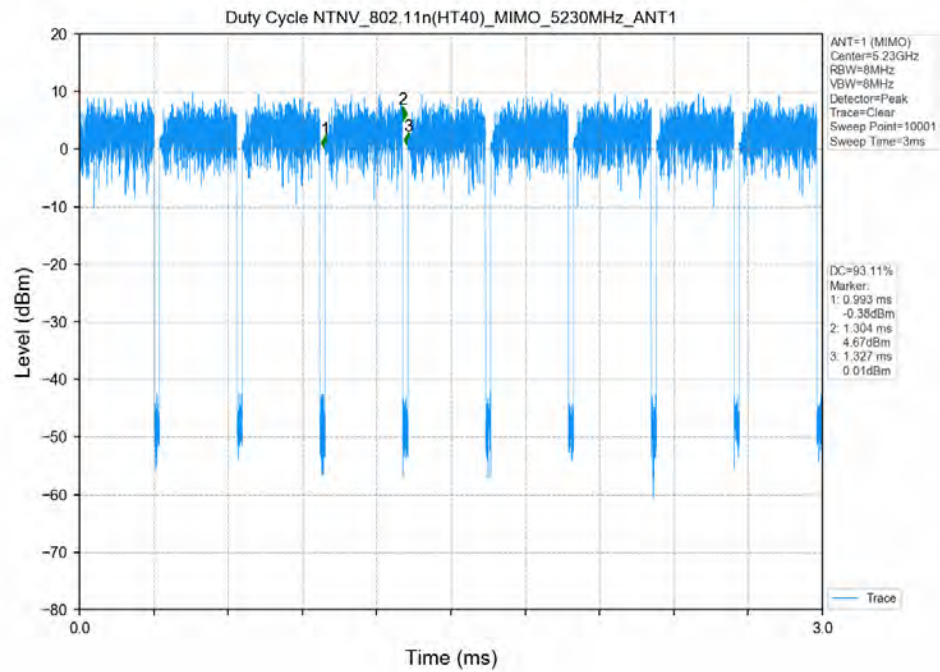


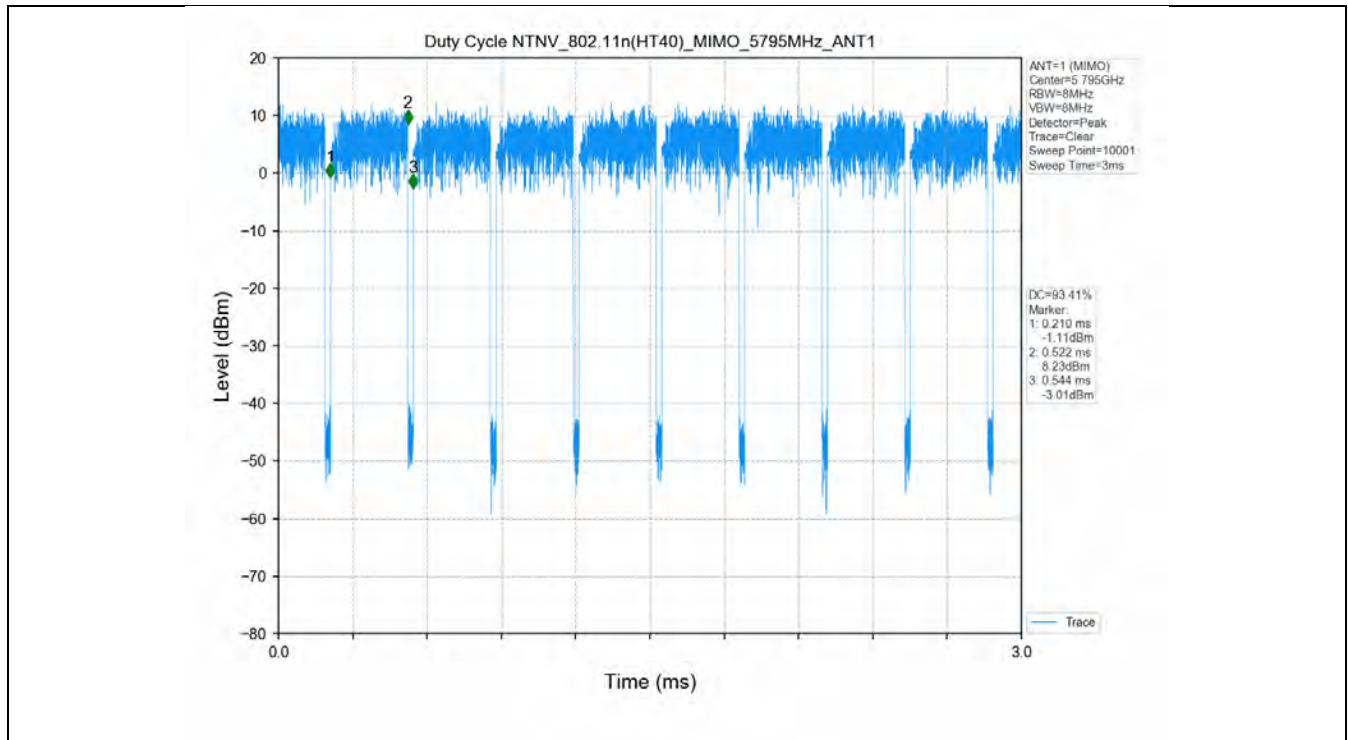












2. Bandwidth

2.1 Test Result

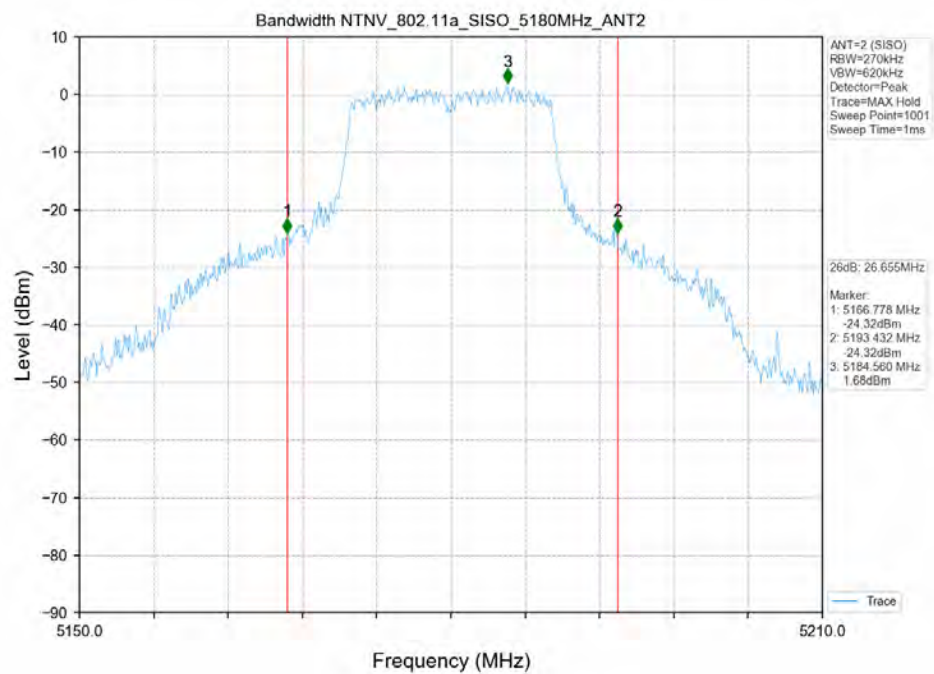
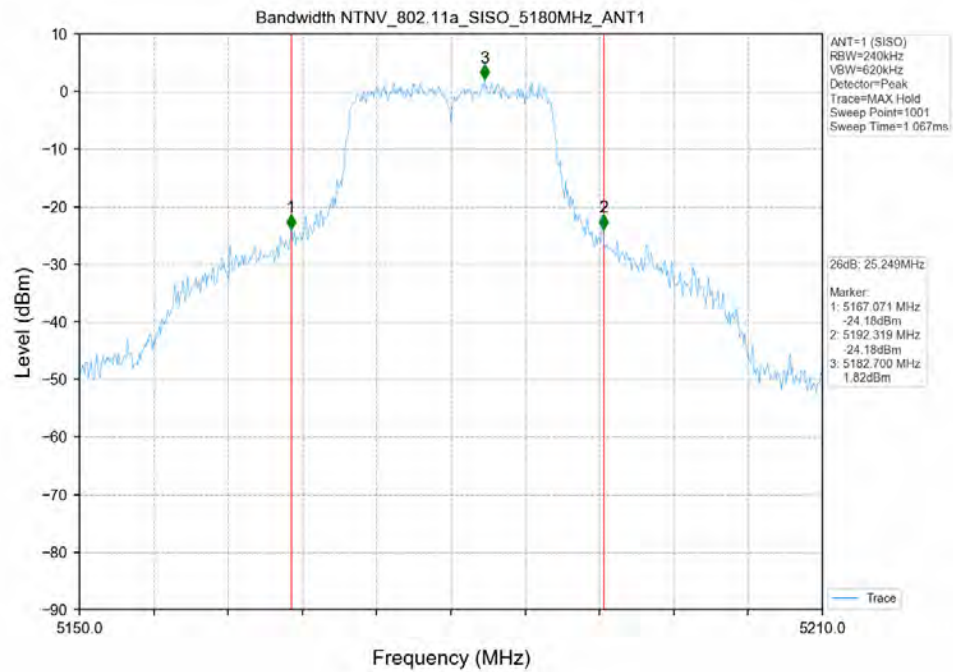
Test Mode	Frequency (MHz)	TX Type	ANT No.	-26dB Occupied Bandwidth		Verdict
				Test Result (MHz)	Limits (MHz)	
802.11a	5180	SISO	1	25.249	Only for Report Use	PASS
			2	26.655	Only for Report Use	PASS
	5200	SISO	1	25.229	Only for Report Use	PASS
			2	26.317	Only for Report Use	PASS
	5240	SISO	1	25.715	Only for Report Use	PASS
			2	28.335	Only for Report Use	PASS
802.11n(HT20)	5180	MIMO	1	22.880	Only for Report Use	PASS
			2	24.844	Only for Report Use	PASS
	5200	MIMO	1	22.389	Only for Report Use	PASS
			2	22.228	Only for Report Use	PASS
	5240	MIMO	1	22.612	Only for Report Use	PASS
			2	26.116	Only for Report Use	PASS
802.11n(HT40)	5190	MIMO	1	43.107	Only for Report Use	PASS
			2	43.300	Only for Report Use	PASS
	5230	MIMO	1	45.053	Only for Report Use	PASS
			2	44.216	Only for Report Use	PASS

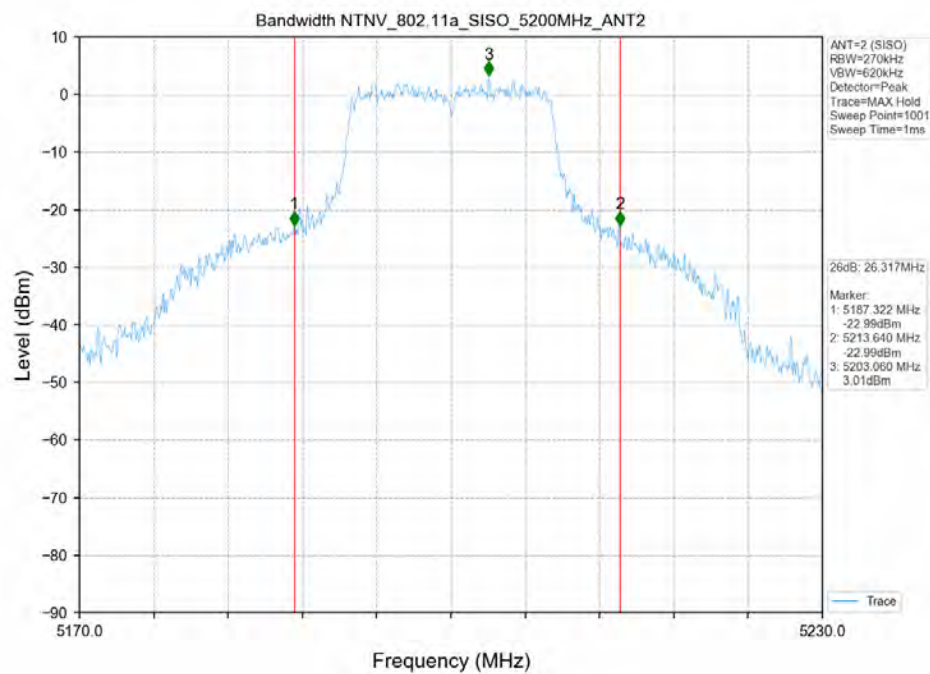
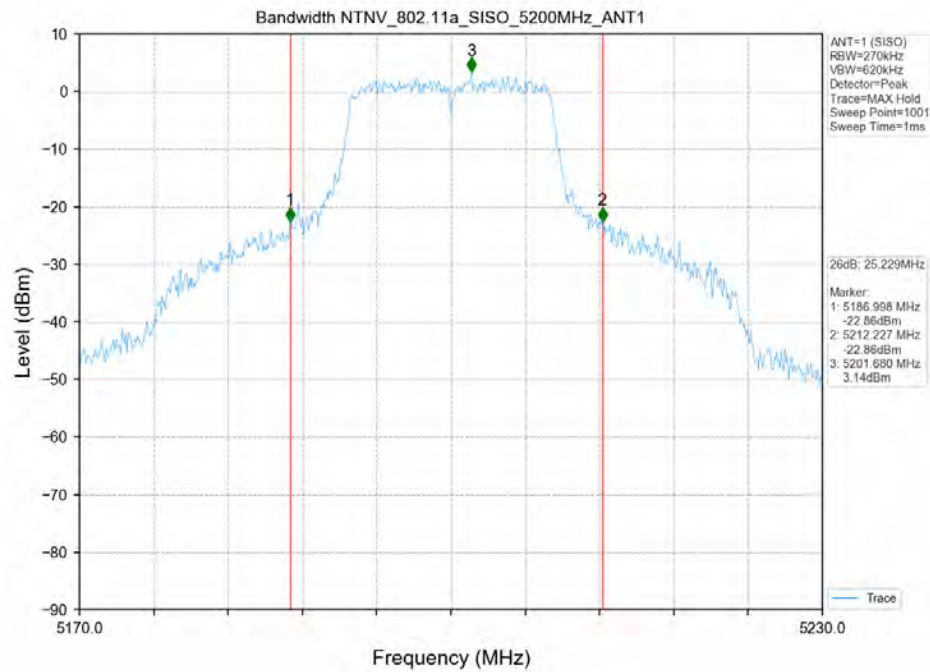
Test Mode	Frequency (MHz)	TX Type	ANT No.	-6dB Occupied Bandwidth		Verdict
				Test Result (MHz)	Limits (MHz)	
802.11a	5745	SISO	1	16.366	≥0.5	PASS
			2	16.374	≥0.5	PASS
	5785	SISO	1	16.338	≥0.5	PASS
			2	16.033	≥0.5	PASS
	5825	SISO	1	15.985	≥0.5	PASS

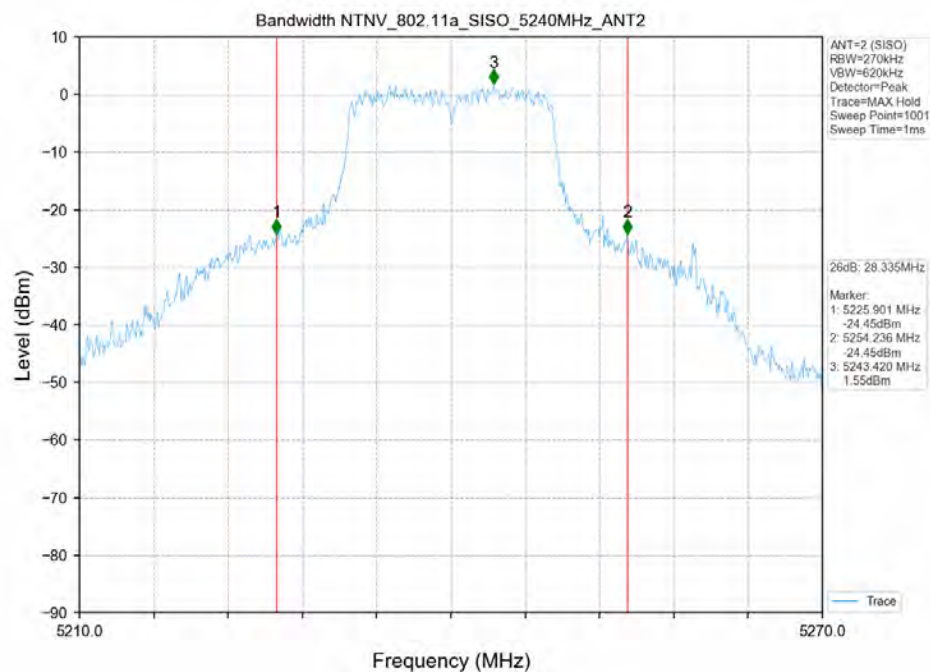
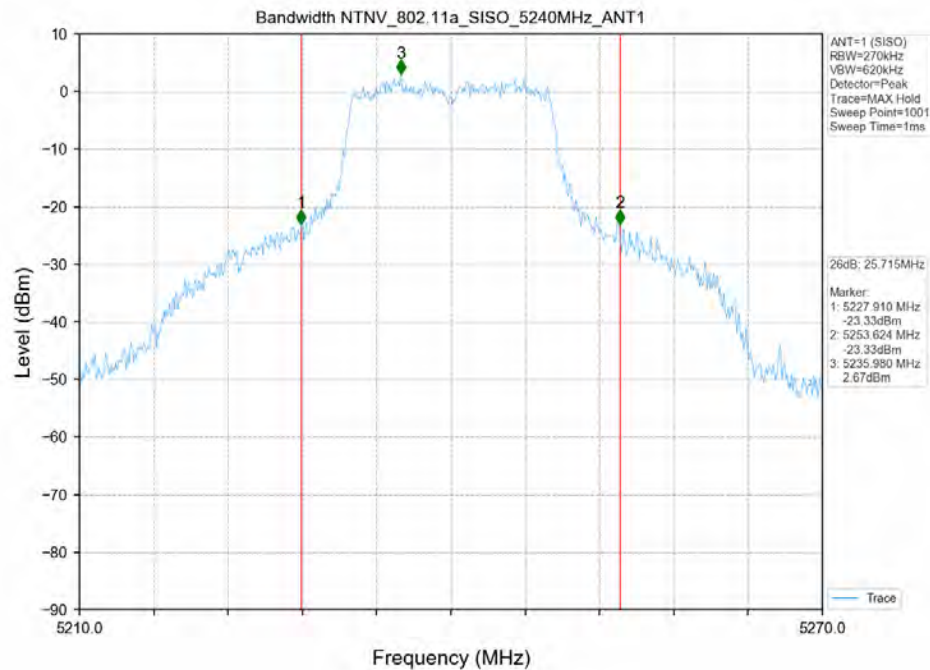
			2	16.373	≥0.5	PASS
802.11n(HT20)	5745	MIMO	1	17.493	≥0.5	PASS
			2	17.019	≥0.5	PASS
	5785	MIMO	1	17.464	≥0.5	PASS
			2	17.596	≥0.5	PASS
	5825	MIMO	1	17.316	≥0.5	PASS
			2	17.338	≥0.5	PASS
802.11n(HT40)	5755	MIMO	1	35.695	≥0.5	PASS
			2	35.507	≥0.5	PASS
	5795	MIMO	1	35.625	≥0.5	PASS
			2	35.577	≥0.5	PASS

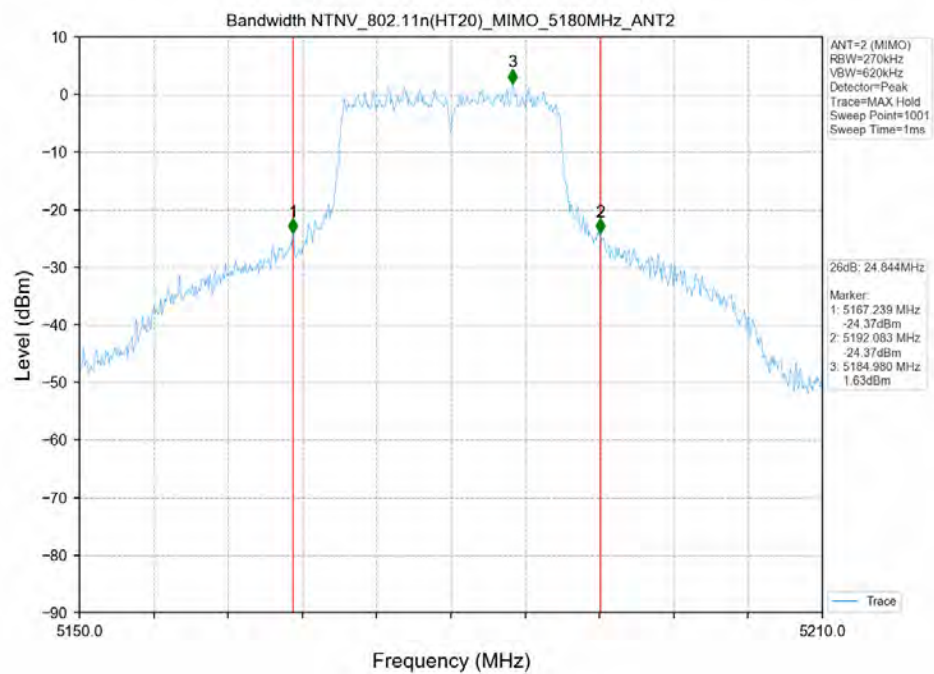
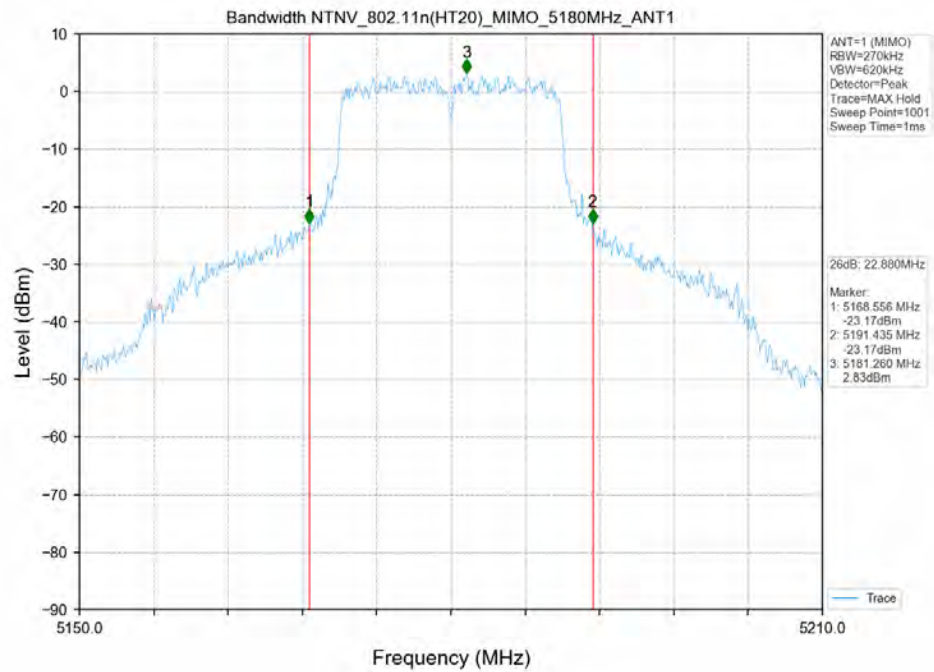
Test Mode	Frequency (MHz)	TX Type	ANT No.	99% Occupied Bandwidth	
				Test Result (MHz)	
802.11a	5180	SISO	1	16.947	Only for Report Use
			2	16.912	Only for Report Use
	5200	SISO	1	17.123	Only for Report Use
			2	16.915	Only for Report Use
	5240	SISO	1	16.935	Only for Report Use
			2	17.023	Only for Report Use
	5745	SISO	1	17.065	Only for Report Use
			2	17.499	Only for Report Use
	5785	SISO	1	17.067	Only for Report Use
			2	17.602	Only for Report Use
	5825	SISO	1	18.181	Only for Report Use
			2	18.859	Only for Report Use
802.11n(HT20)	5180	MIMO	1	17.869	Only for Report Use
			2	17.907	Only for Report Use
	5200	MIMO	1	17.908	Only for Report Use
			2	17.892	Only for Report Use
	5240	MIMO	1	17.854	Only for Report Use
			2	17.993	Only for Report Use
	5745	MIMO	1	17.909	Only for Report Use
			2	18.274	Only for Report Use
	5785	MIMO	1	17.968	Only for Report Use
			2	18.986	Only for Report Use
	5825	MIMO	1	18.014	Only for Report Use
			2	18.621	Only for Report Use
802.11n(HT40)	5190	MIMO	1	37.226	Only for Report Use
			2	36.919	Only for Report Use
	5230	MIMO	1	37.200	Only for Report Use
			2	36.843	Only for Report Use
	5755	MIMO	1	37.362	Only for Report Use
			2	37.451	Only for Report Use
	5795	MIMO	1	37.464	Only for Report Use
			2	37.903	Only for Report Use

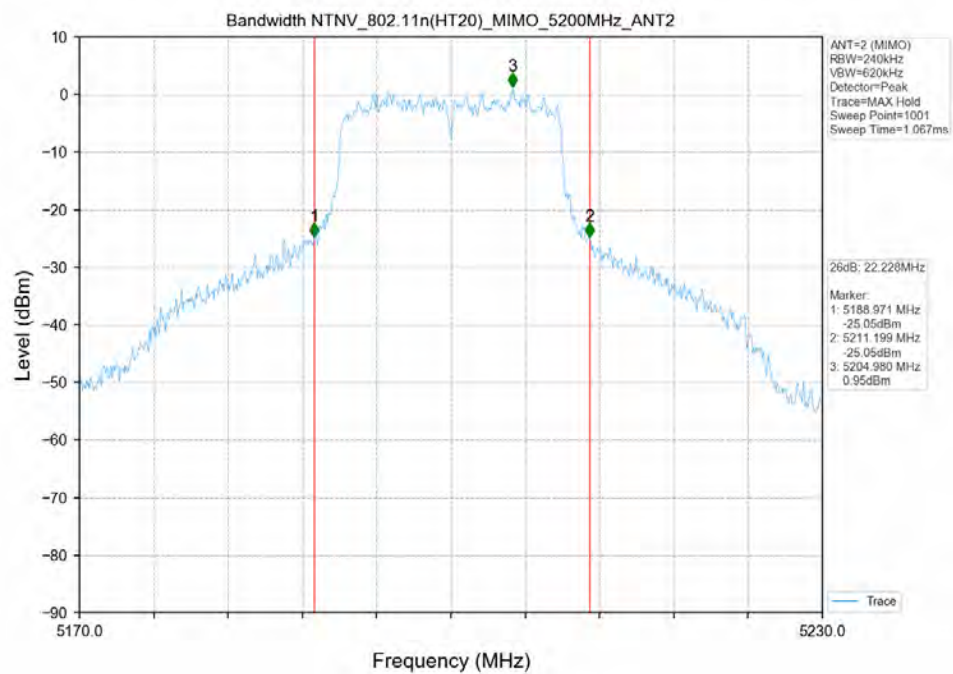
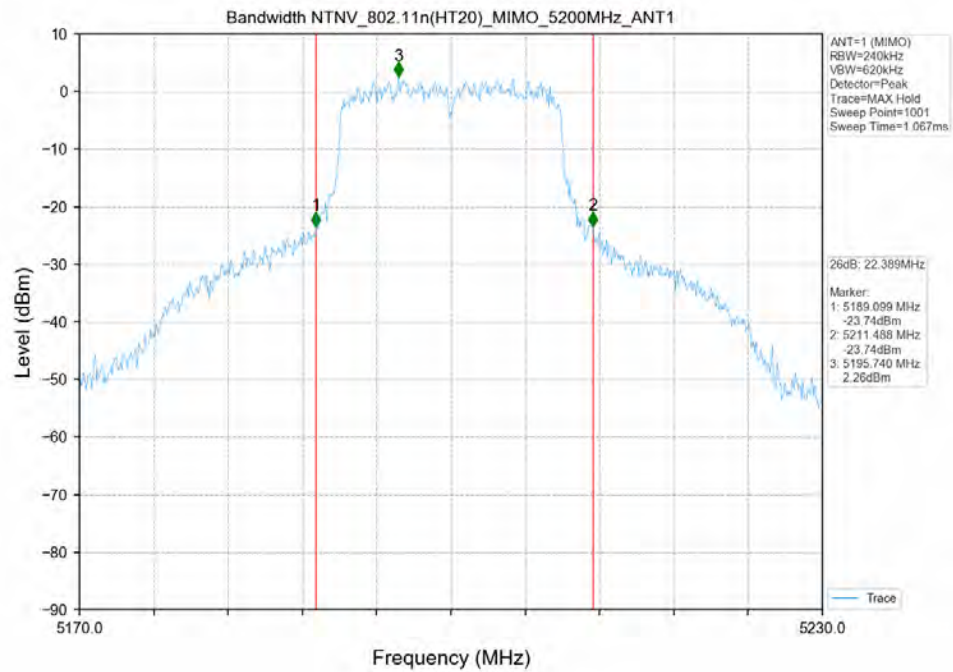
2.2 Test Graph - Emission Bandwidth

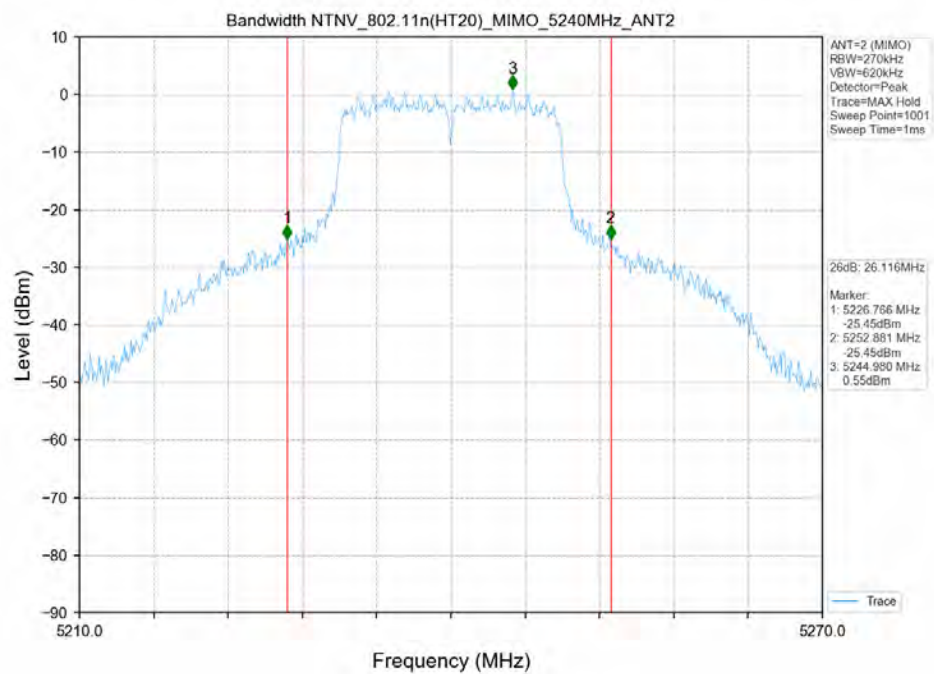
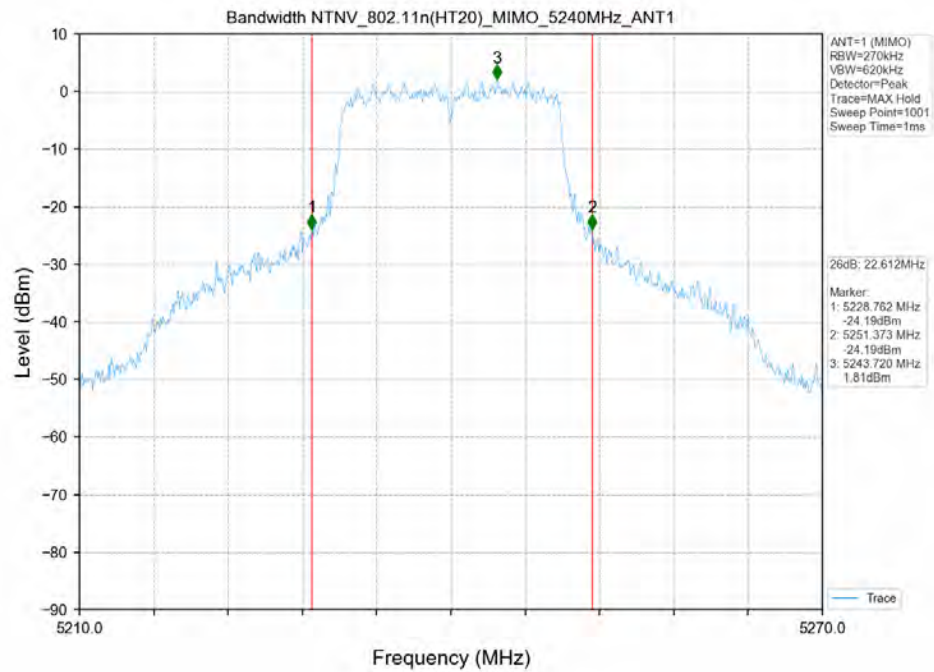


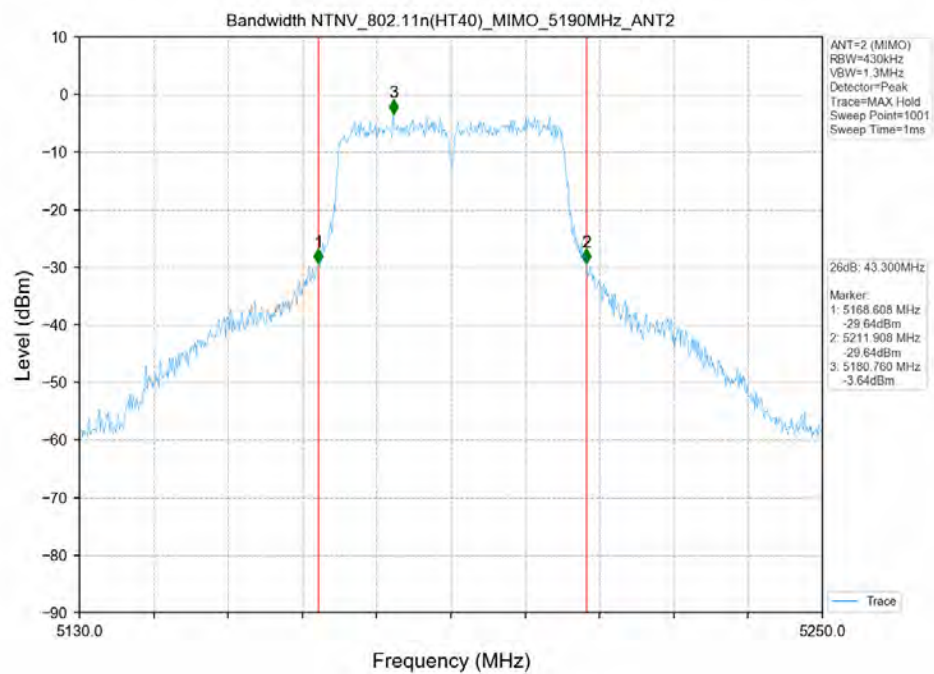
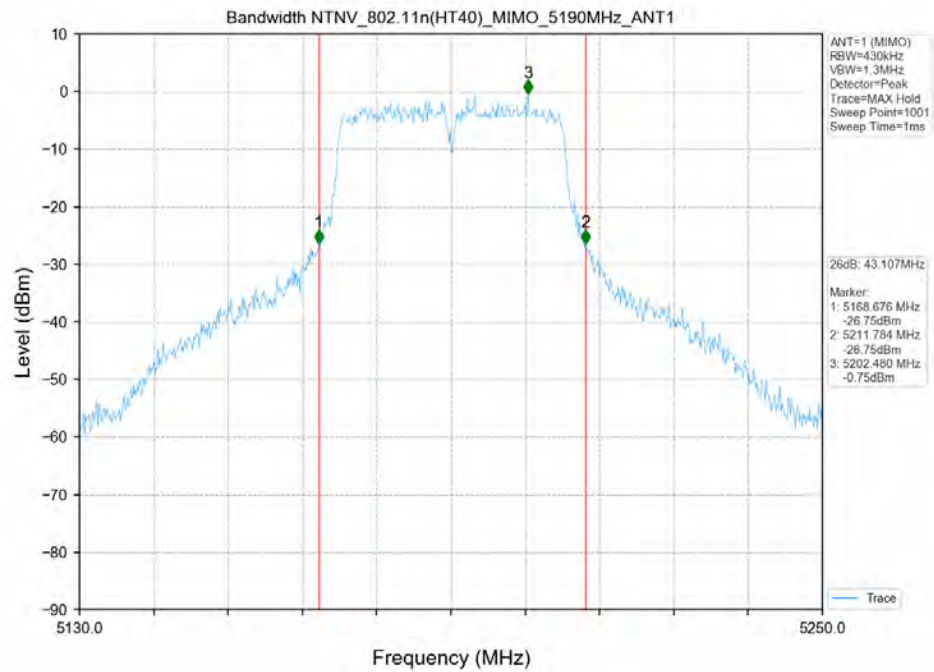


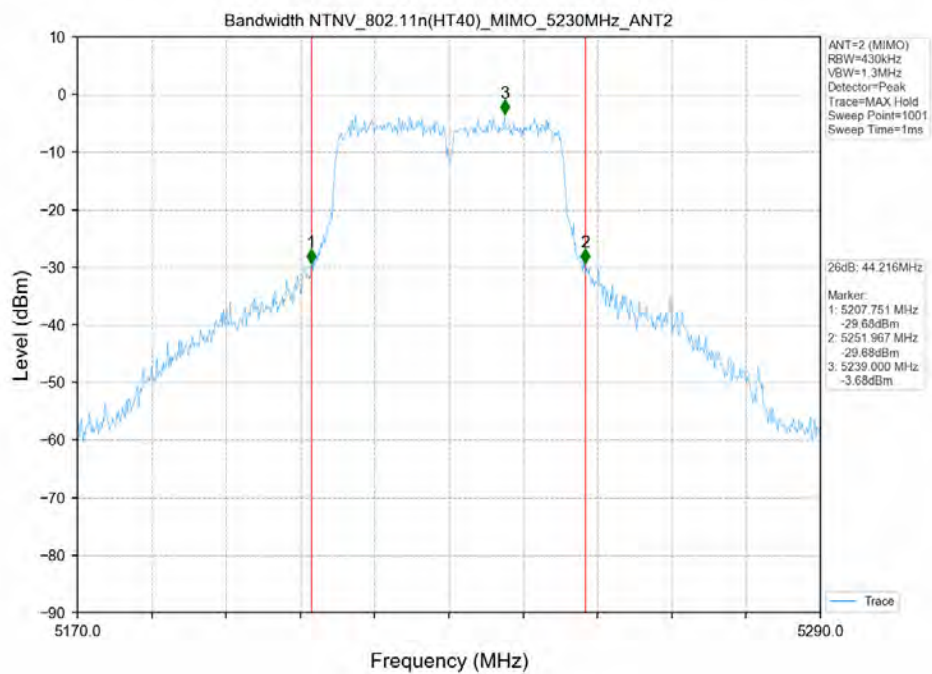
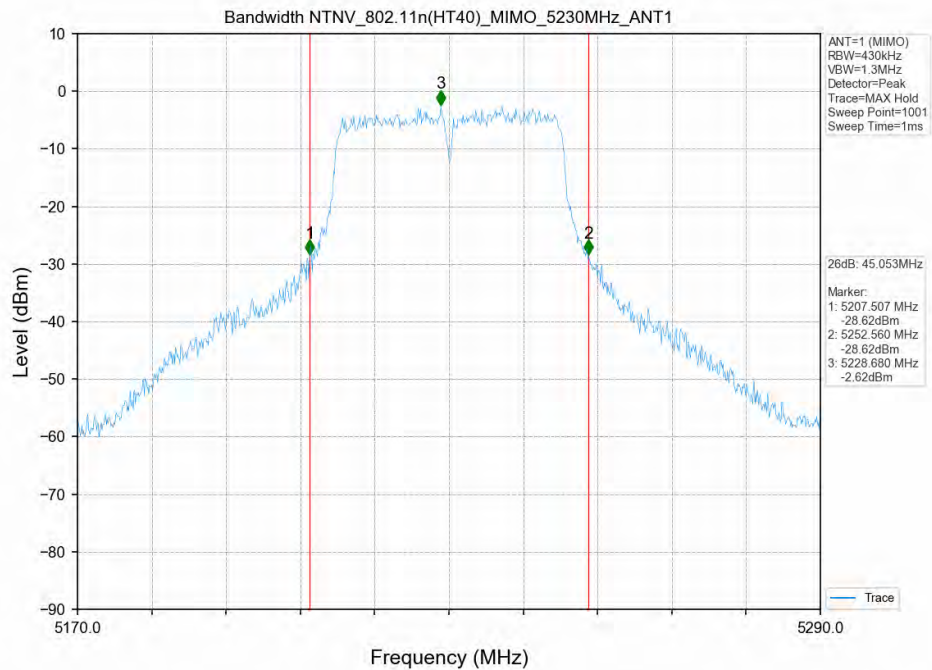


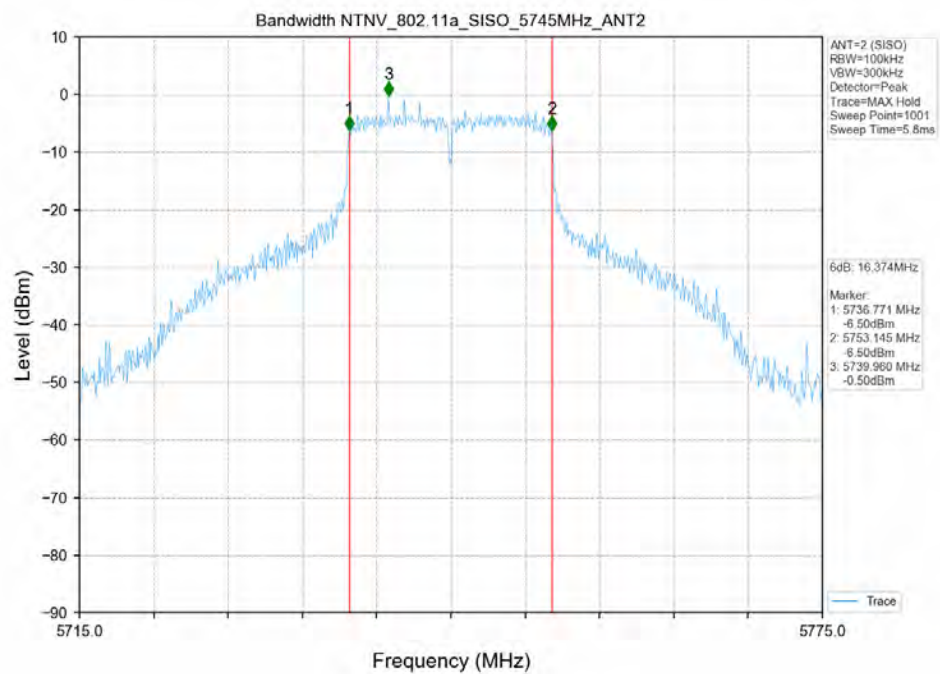
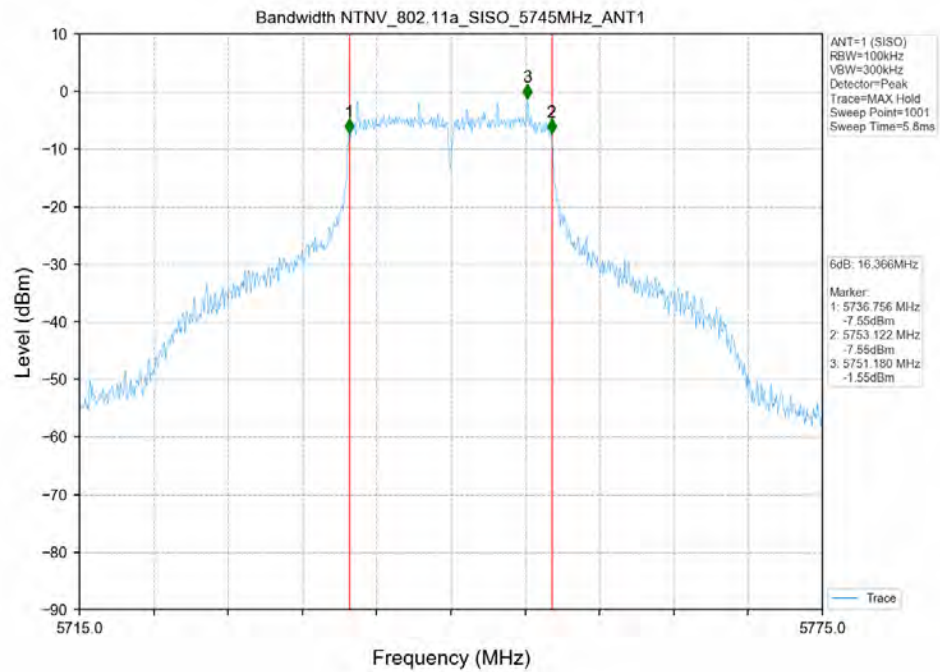


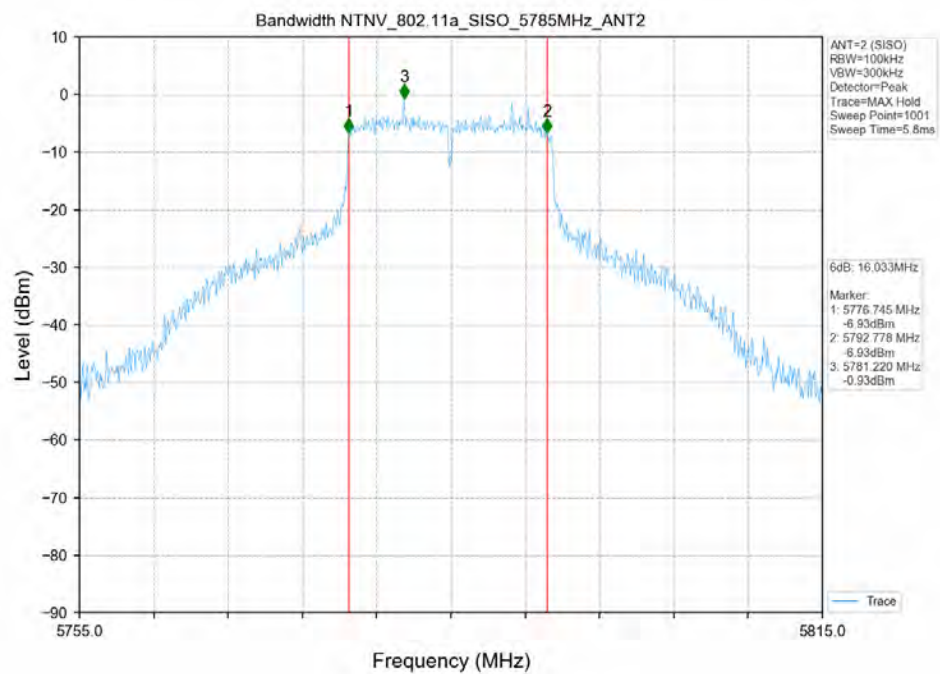
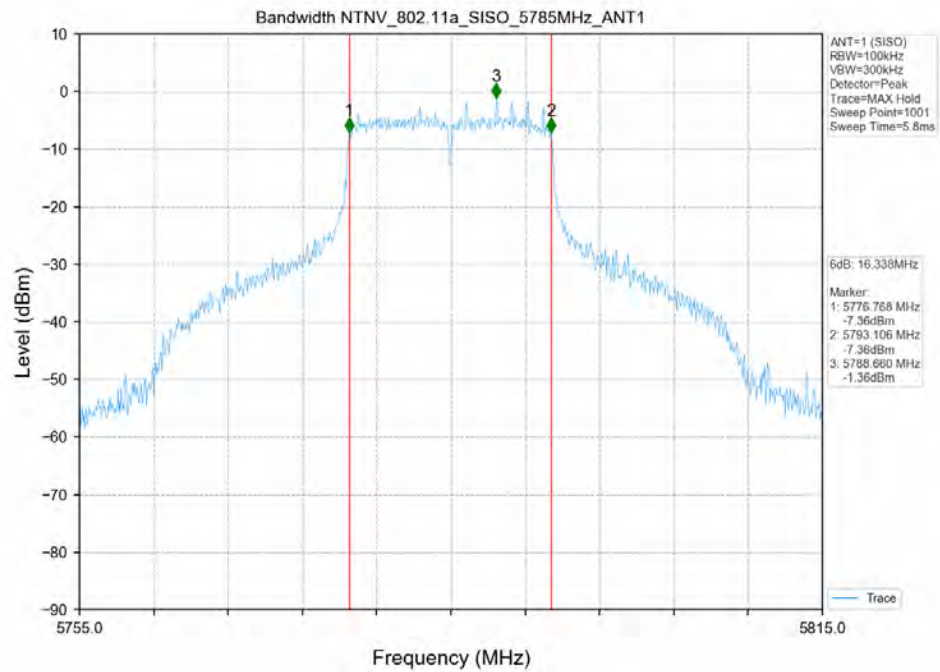


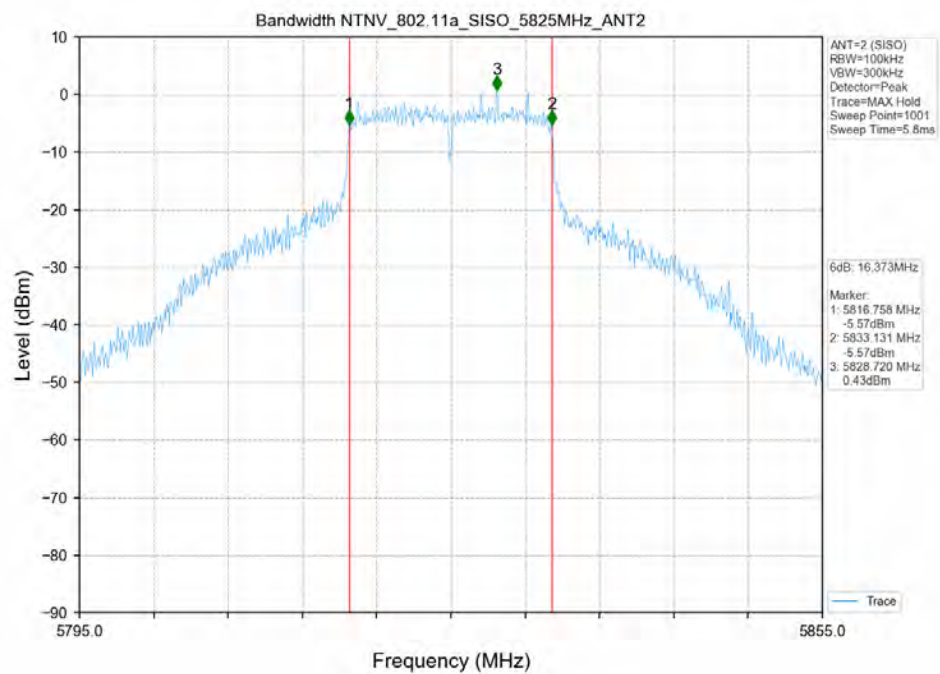
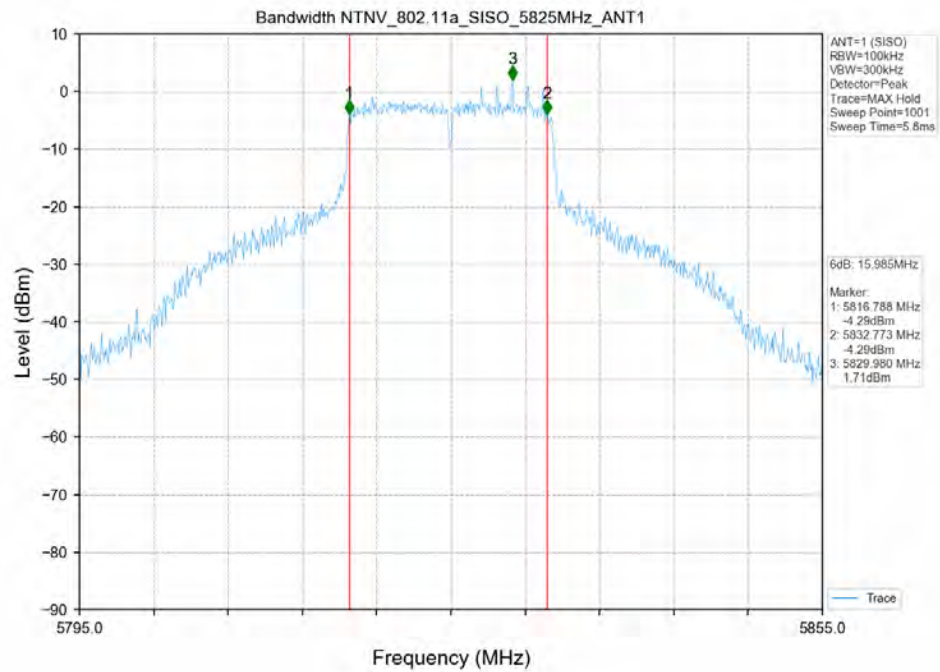


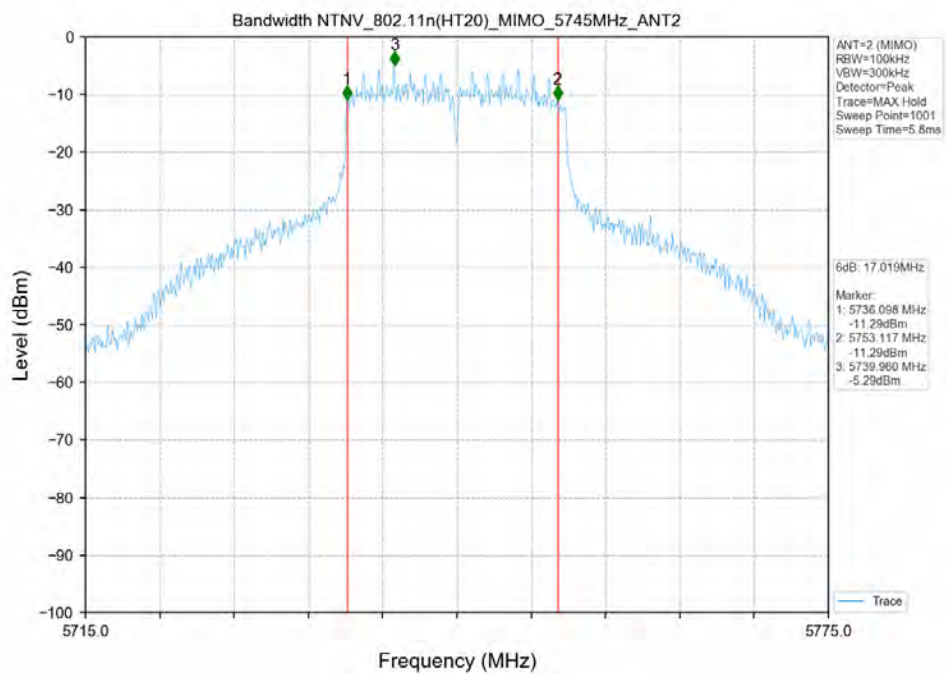
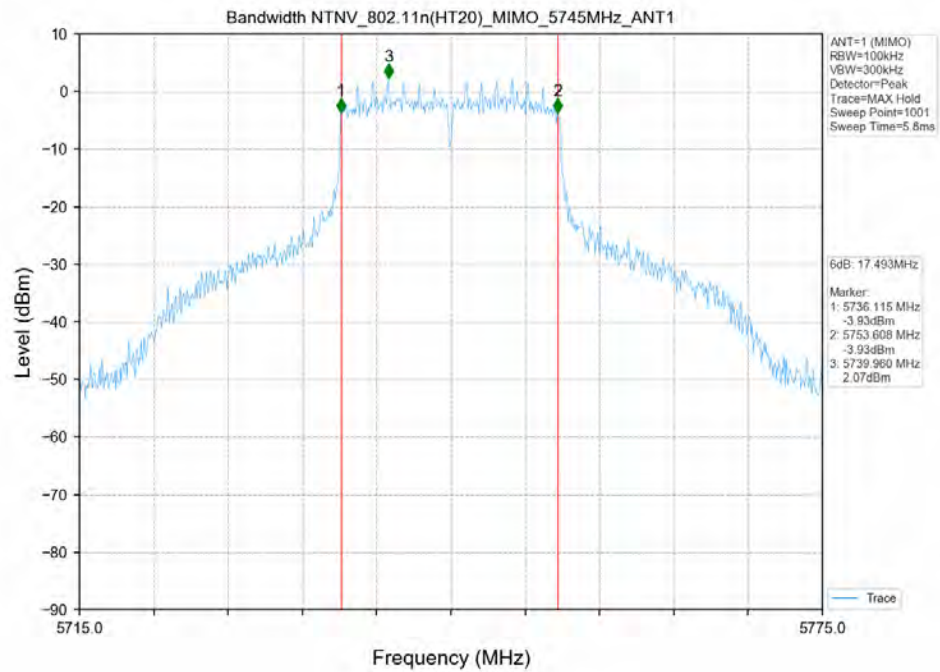


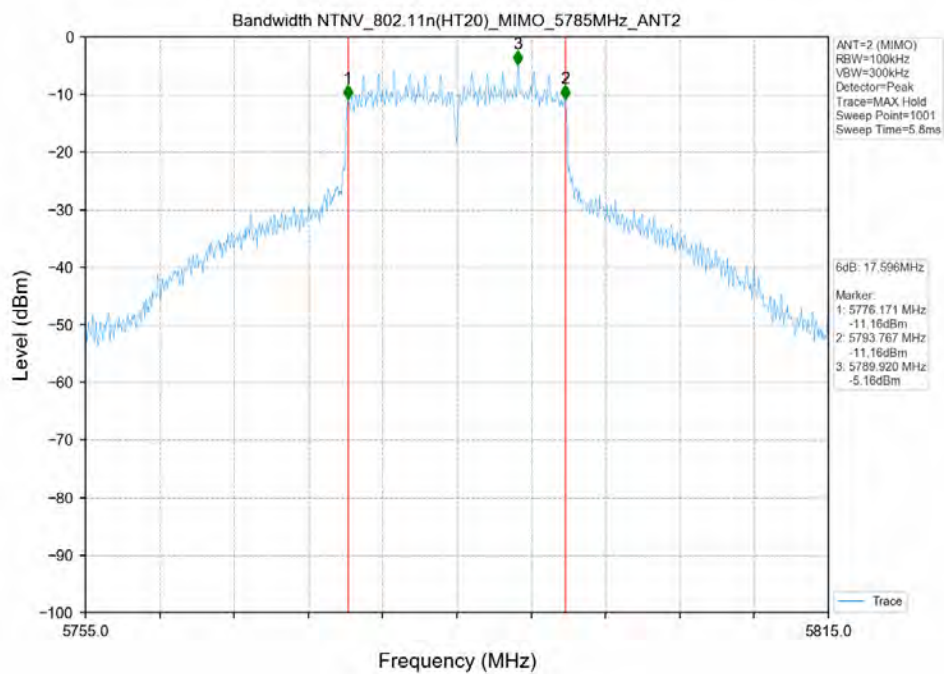
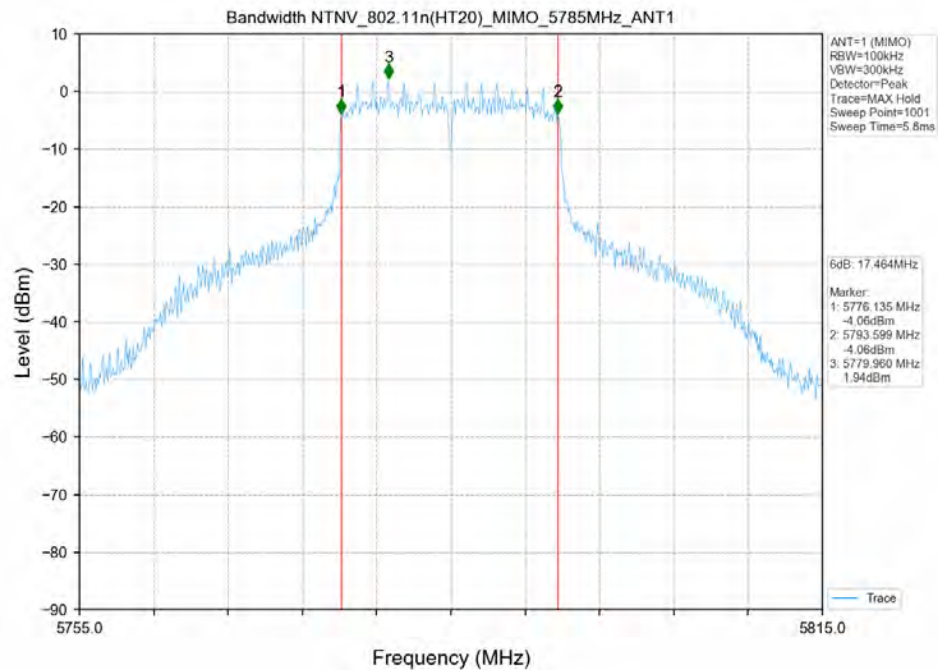


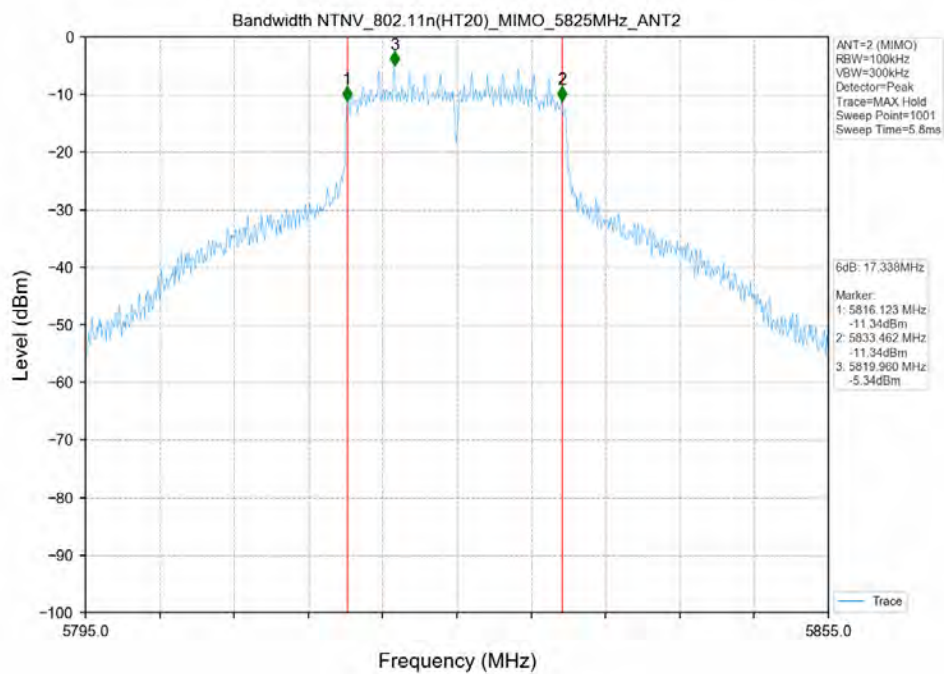
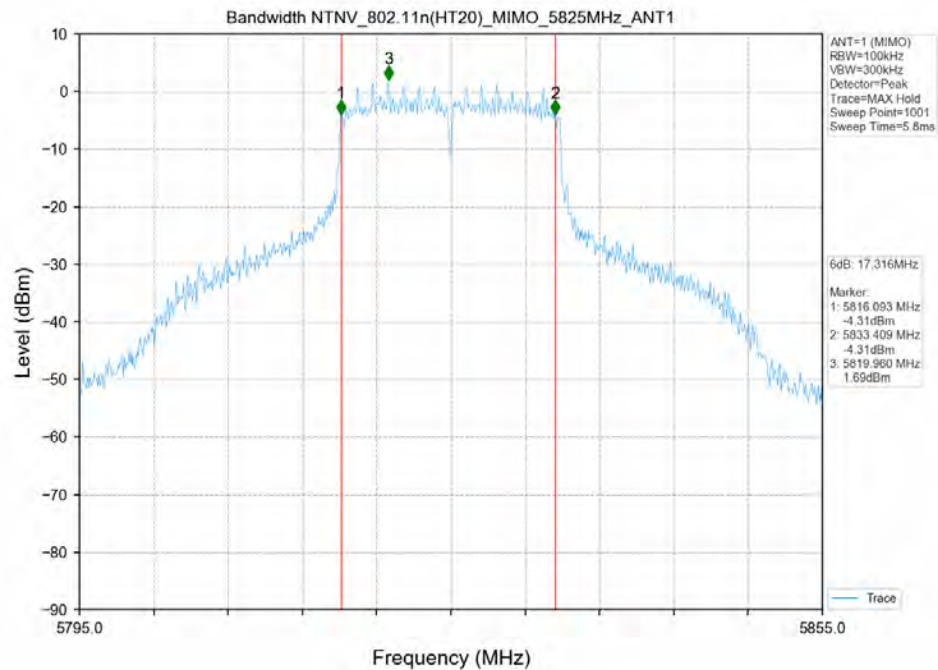


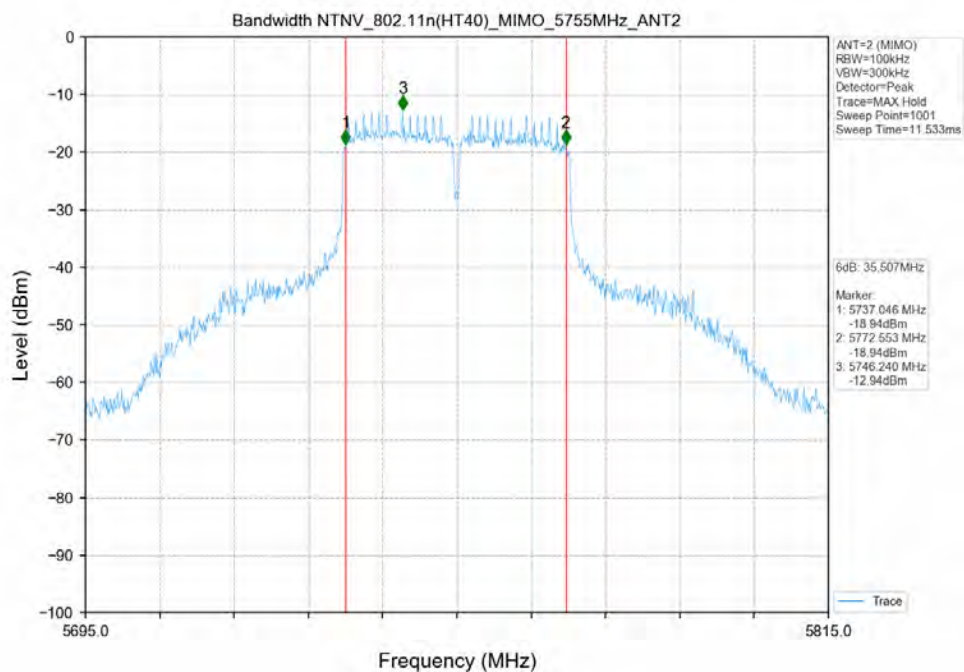
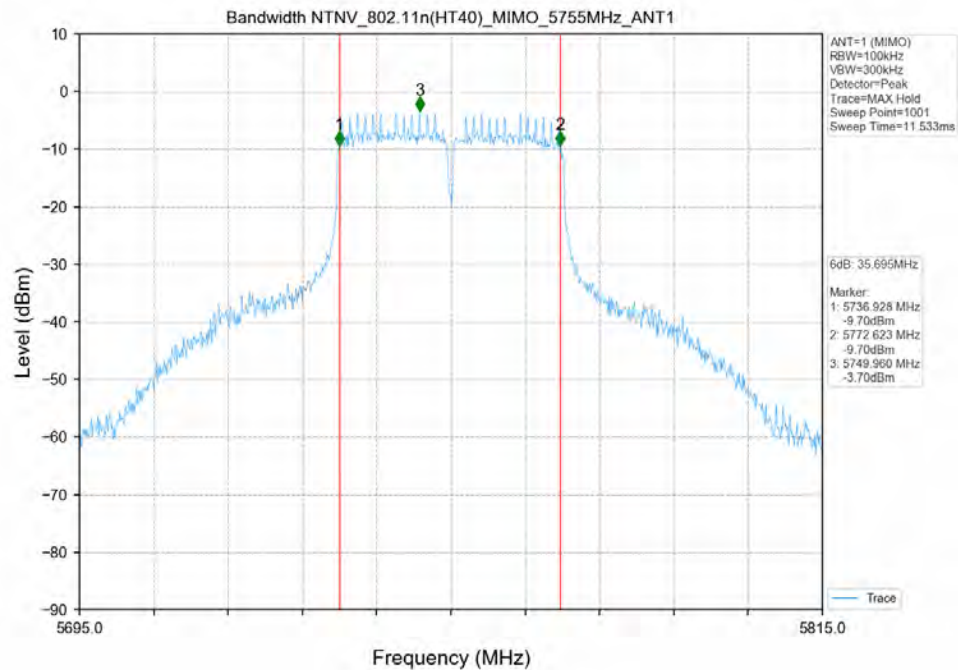


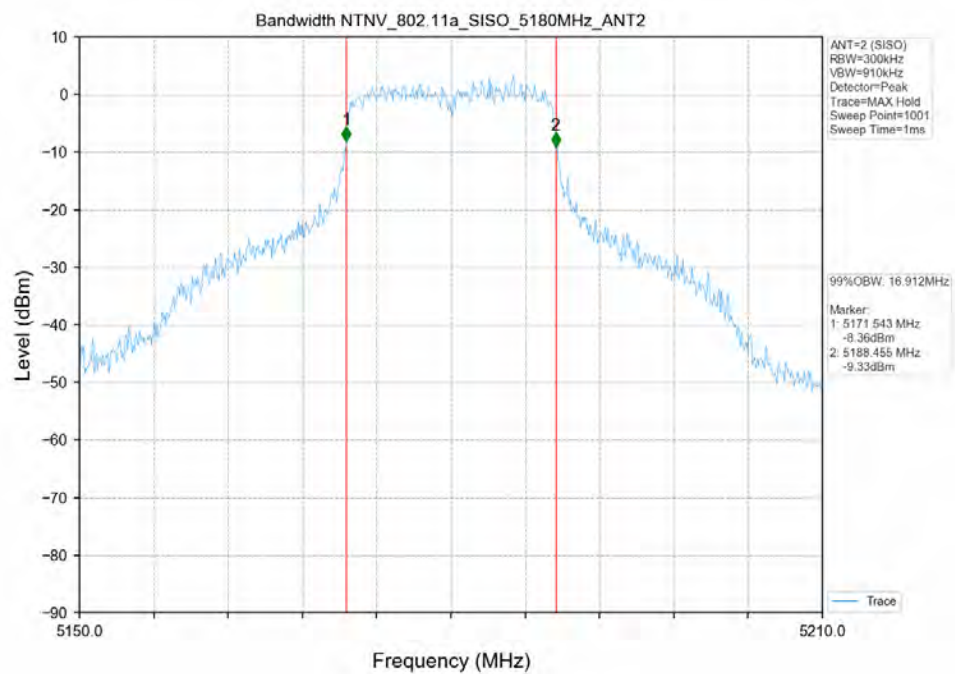
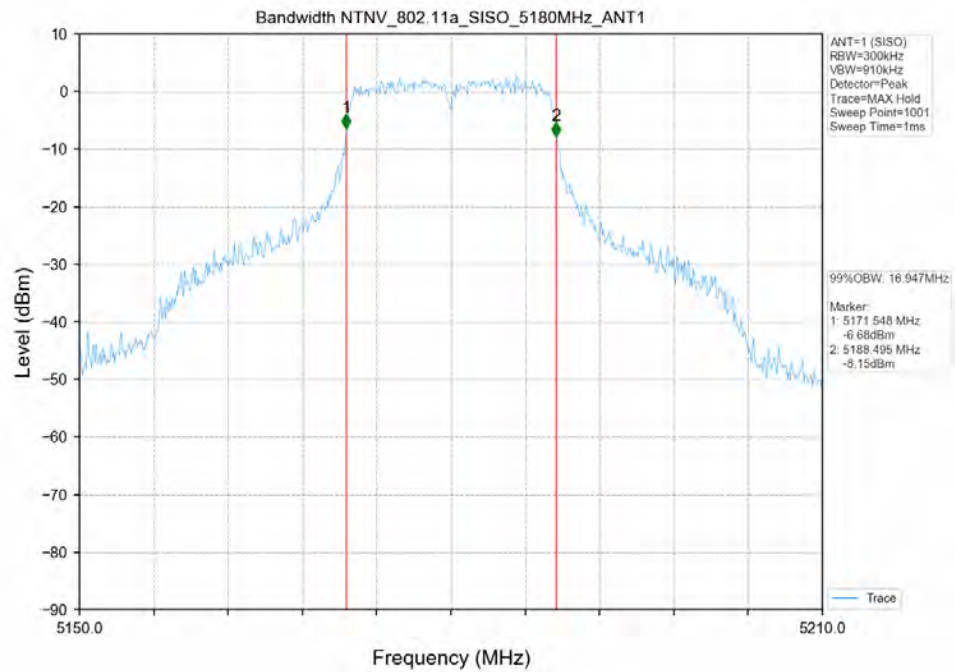


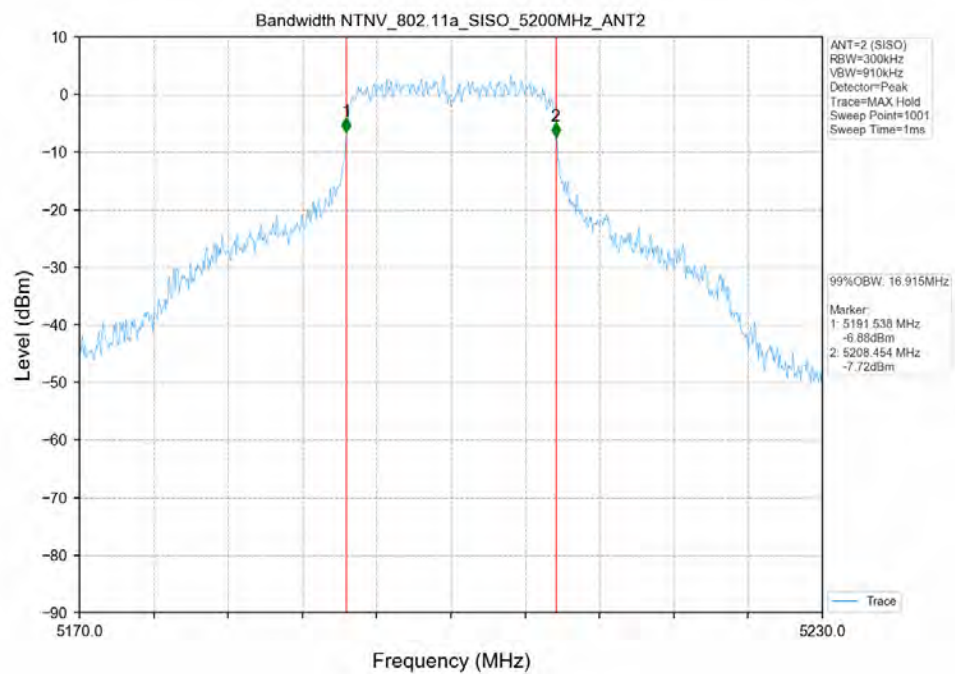
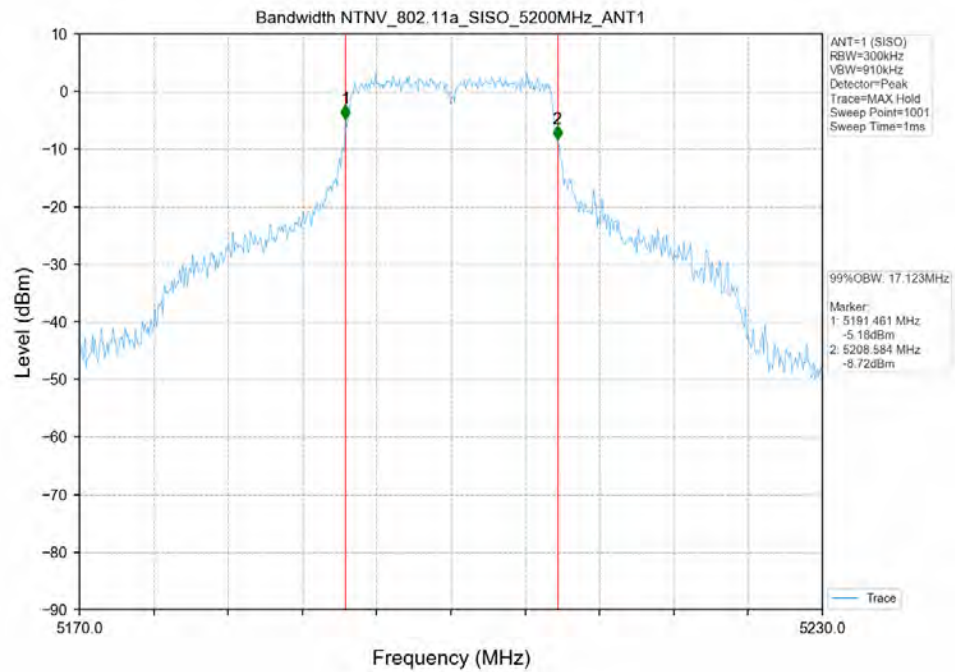


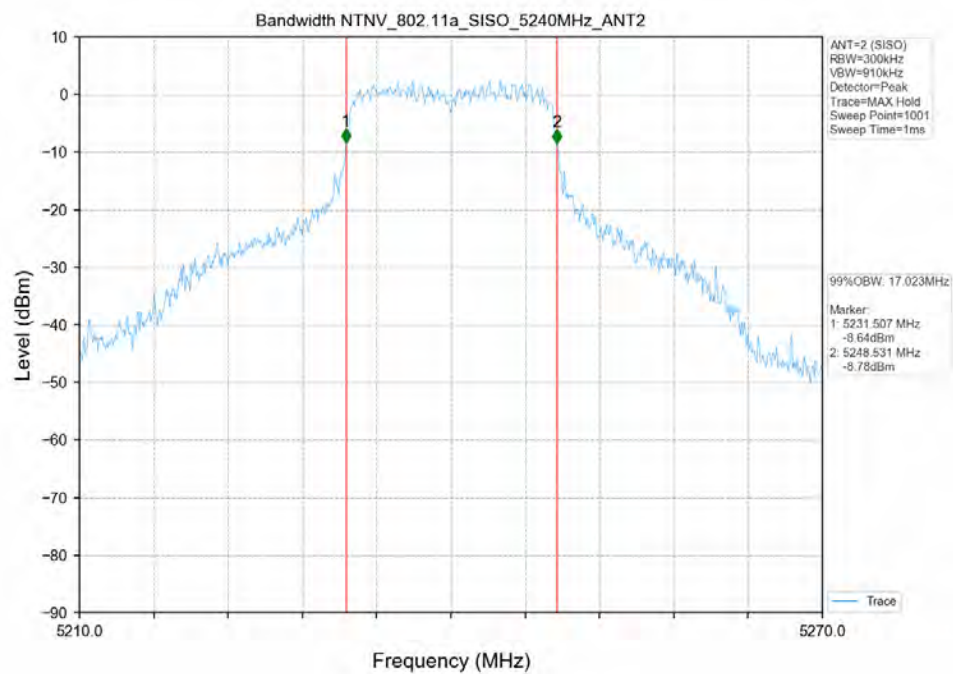
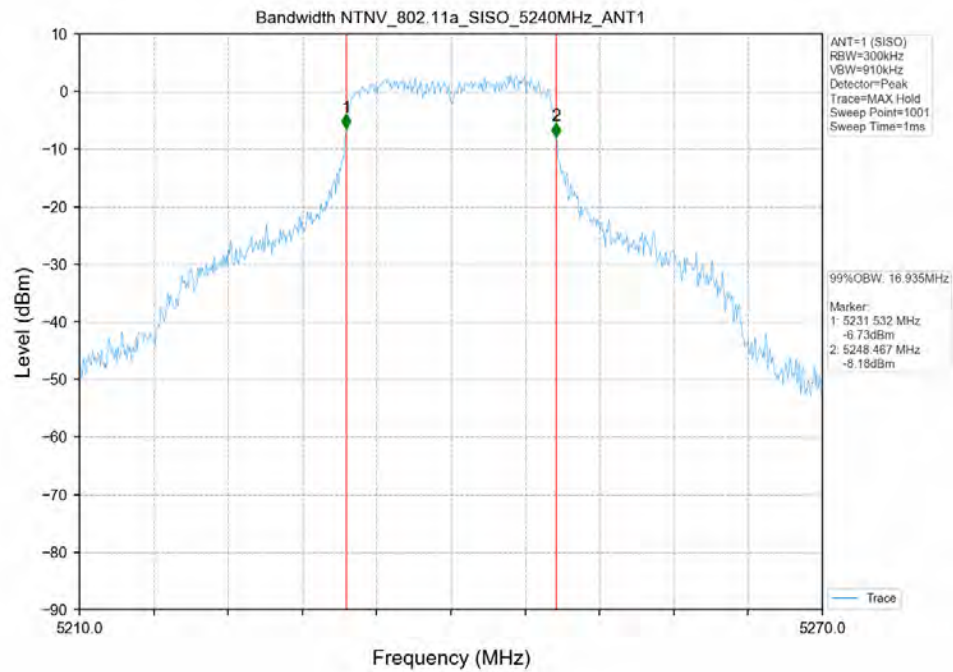


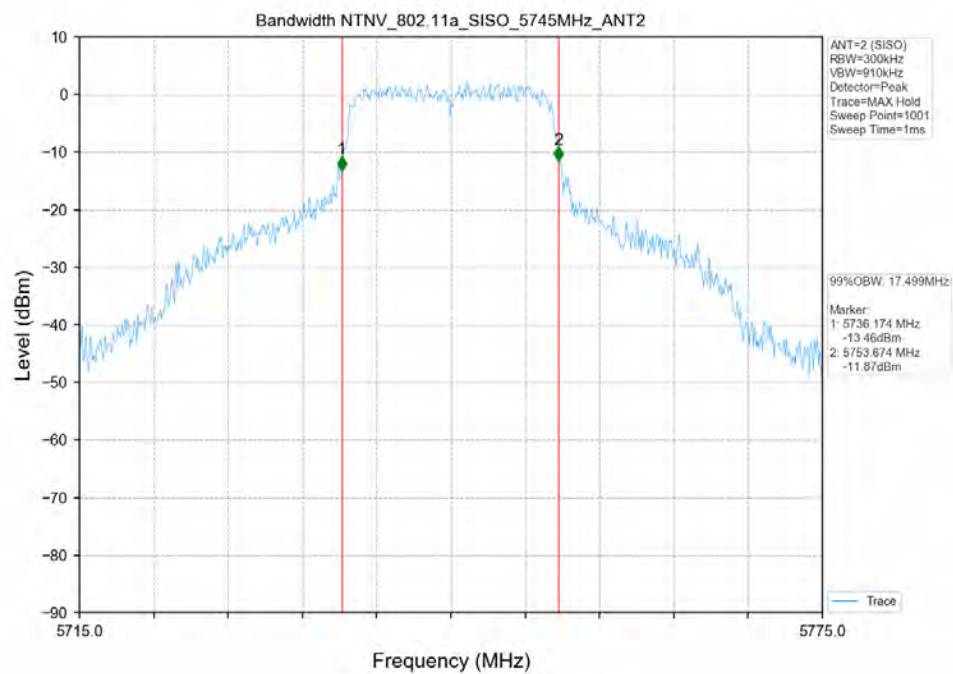
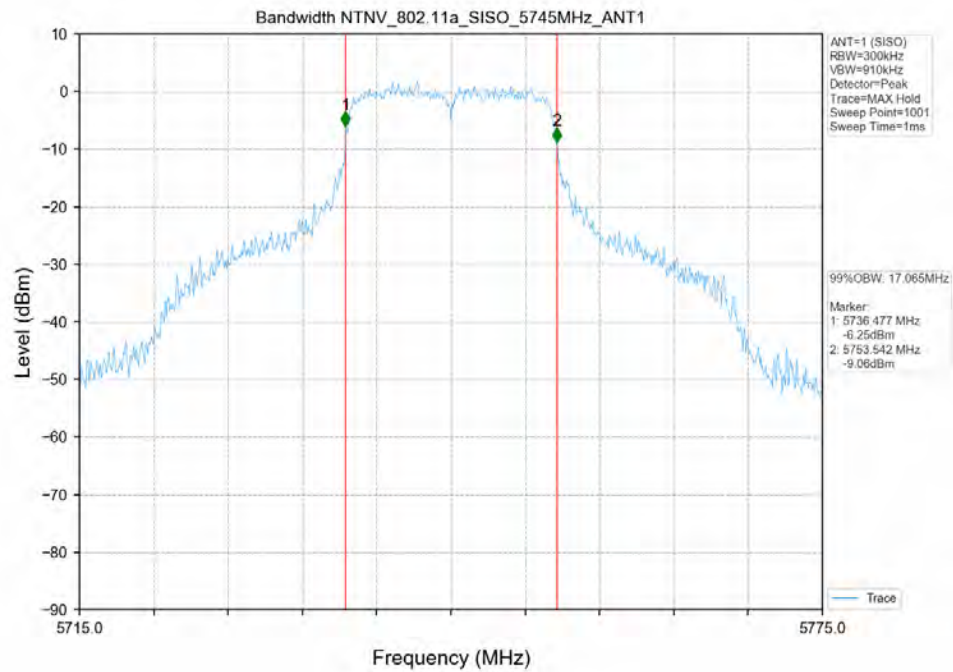


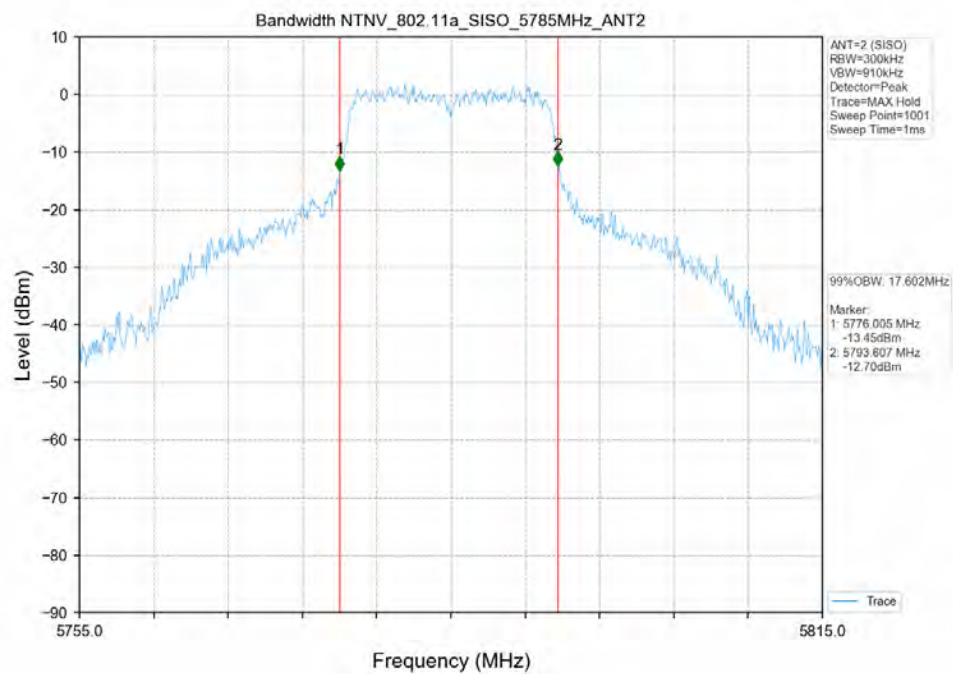
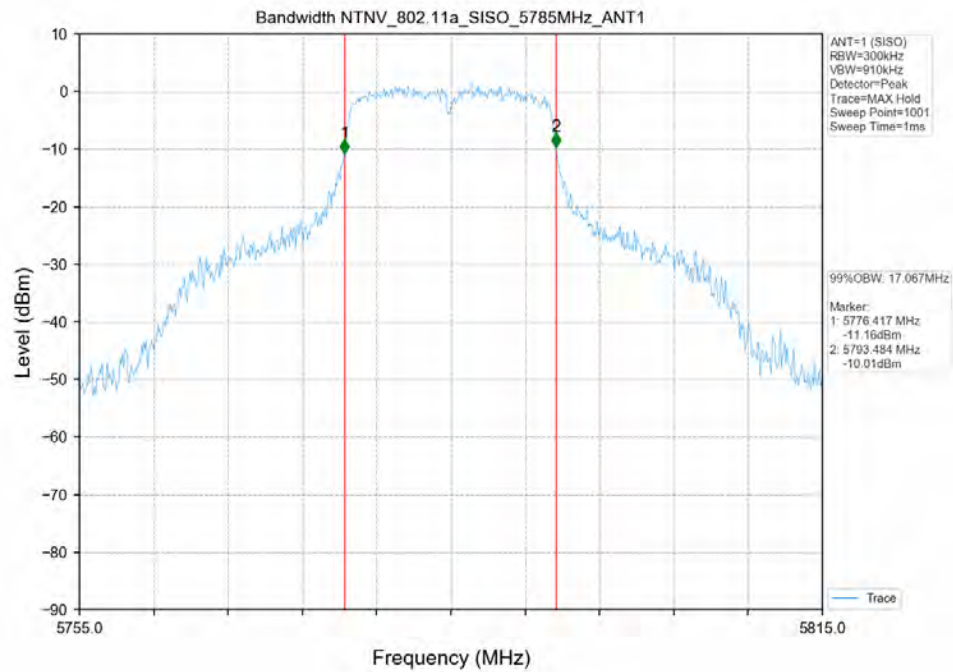


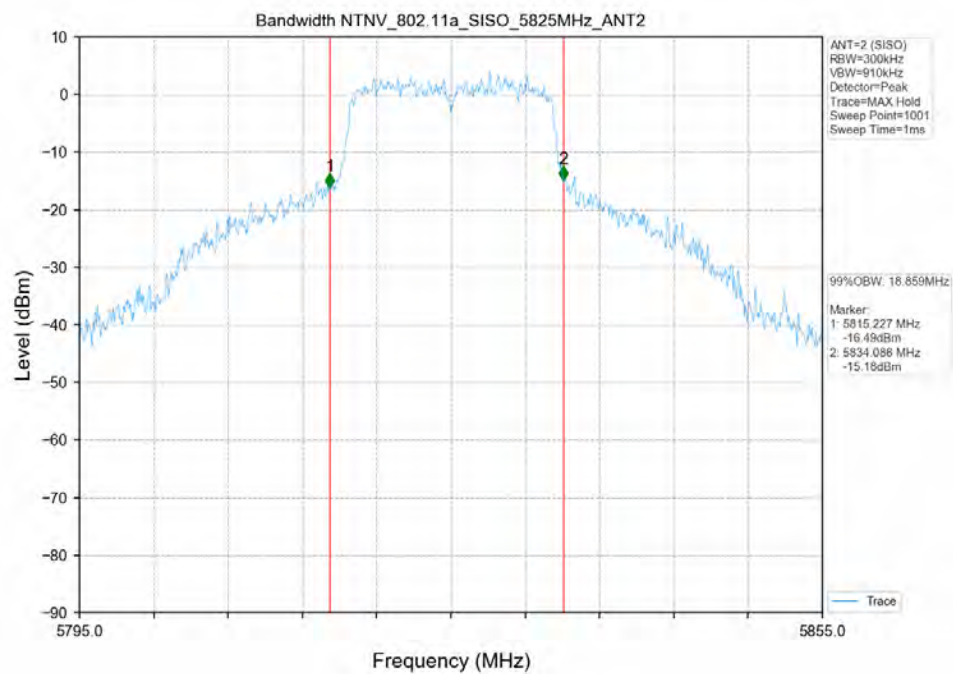
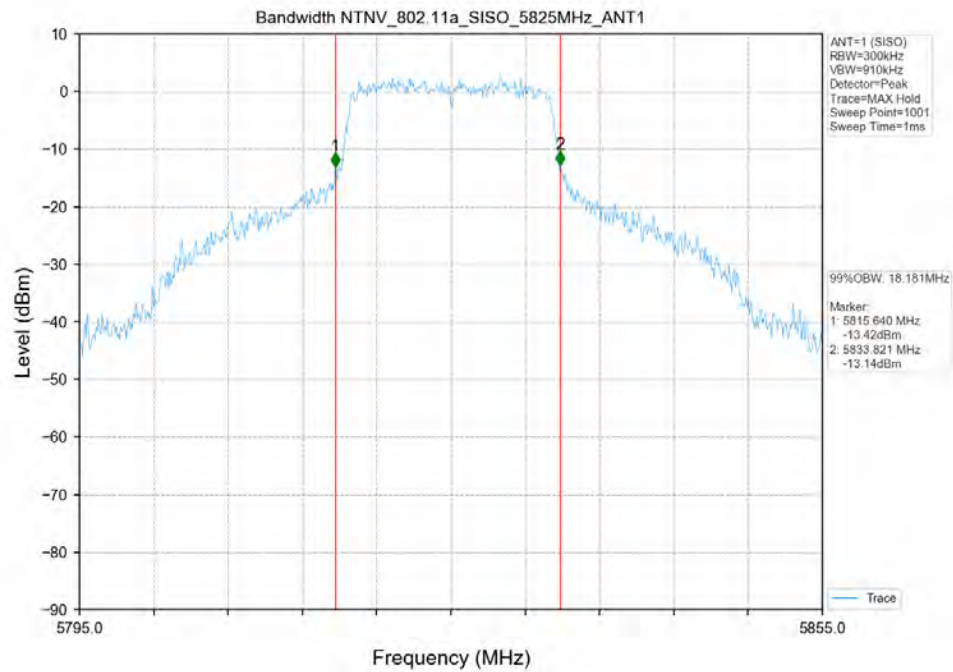


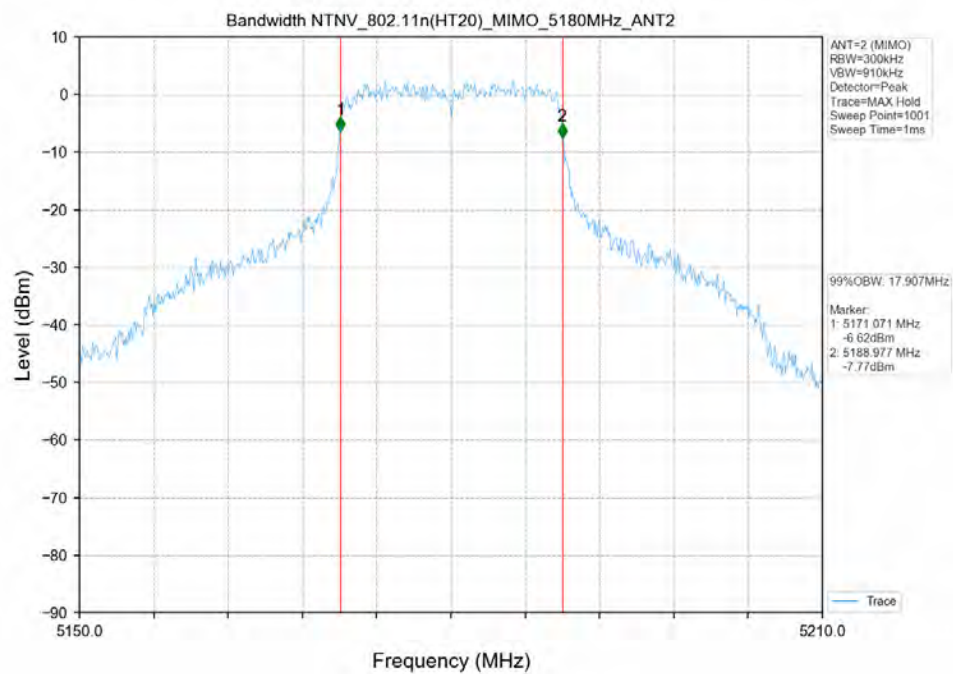
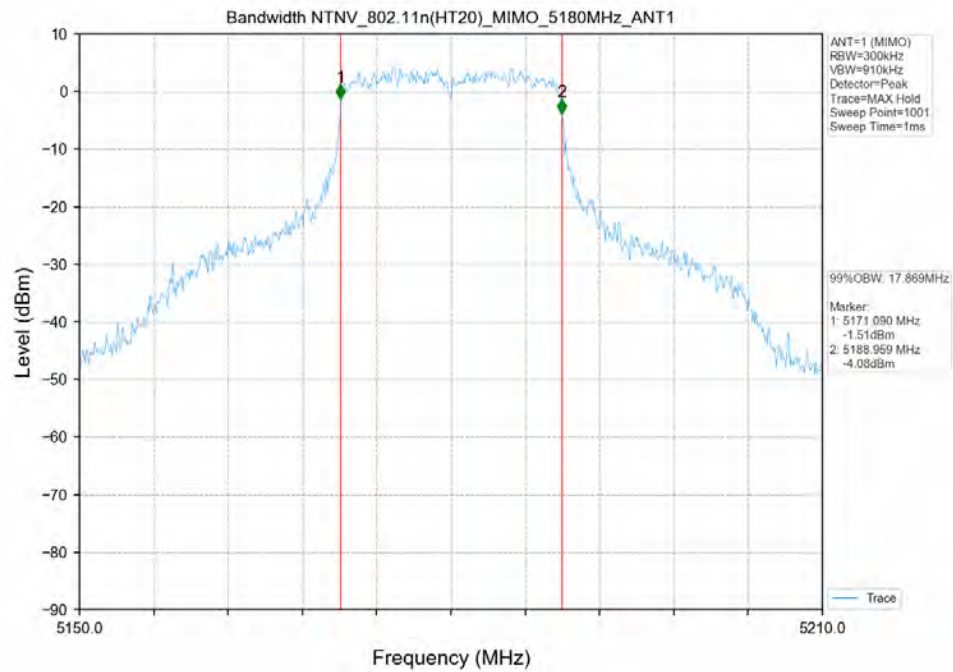


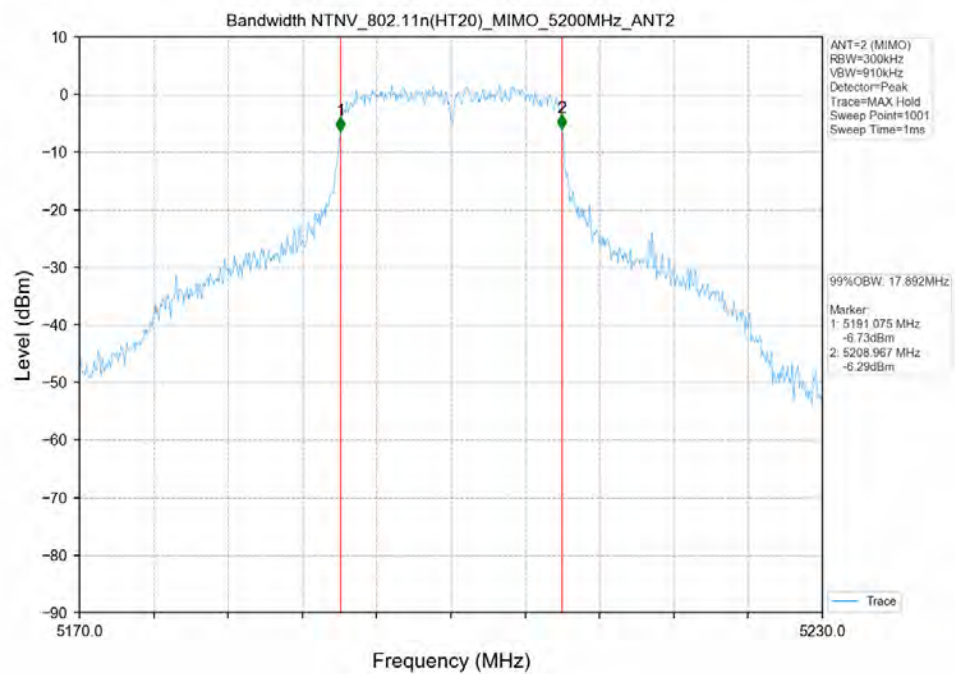
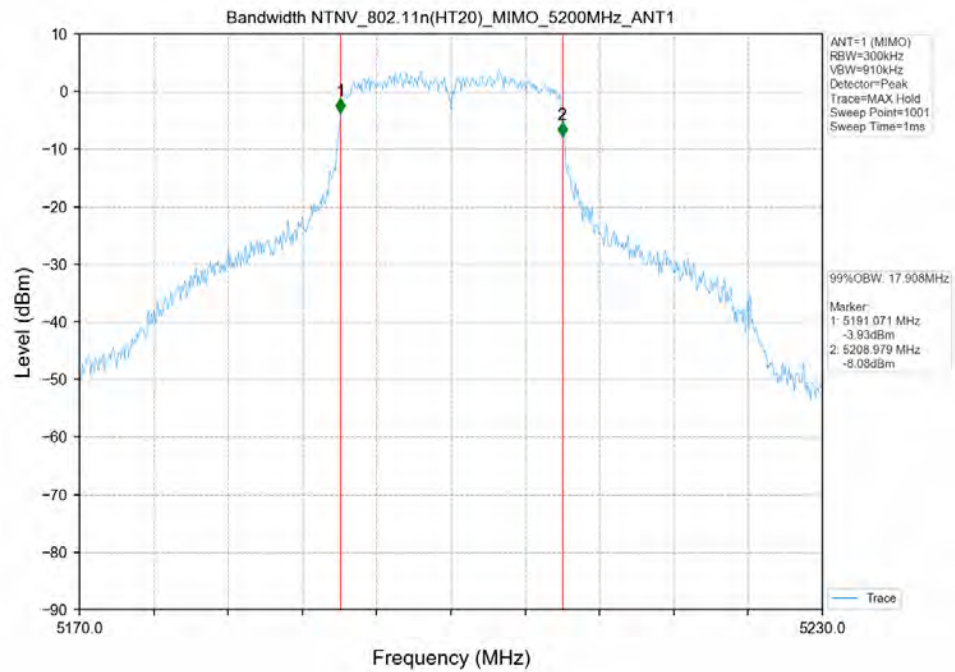


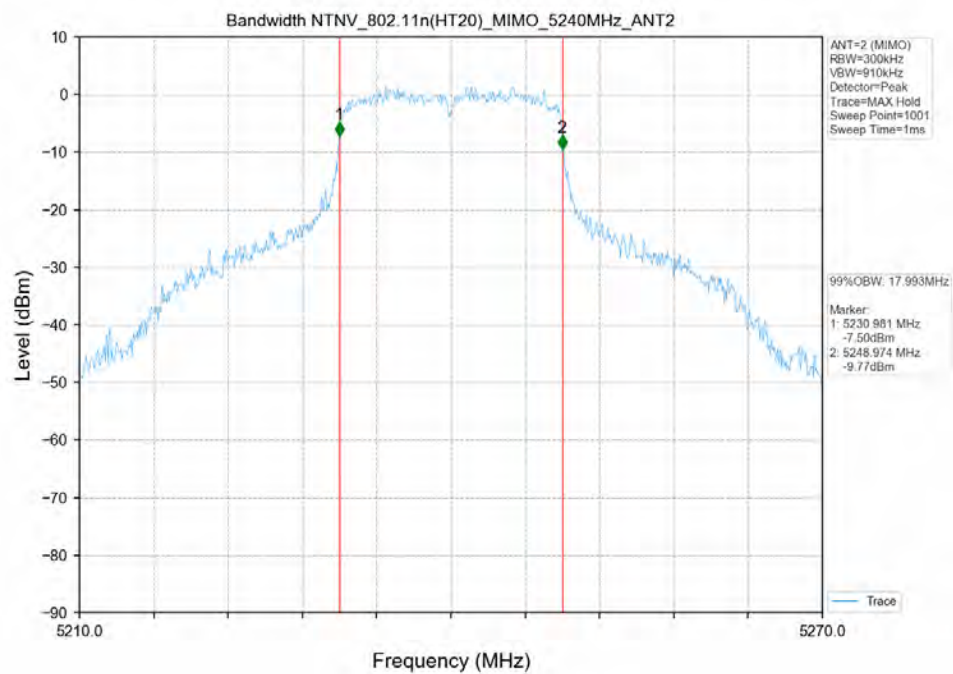
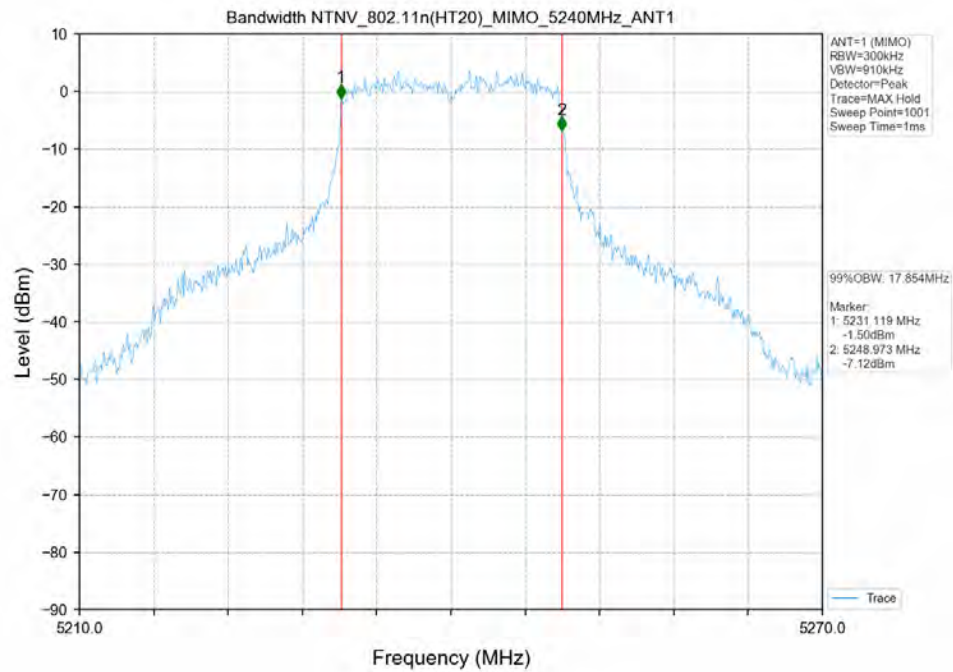


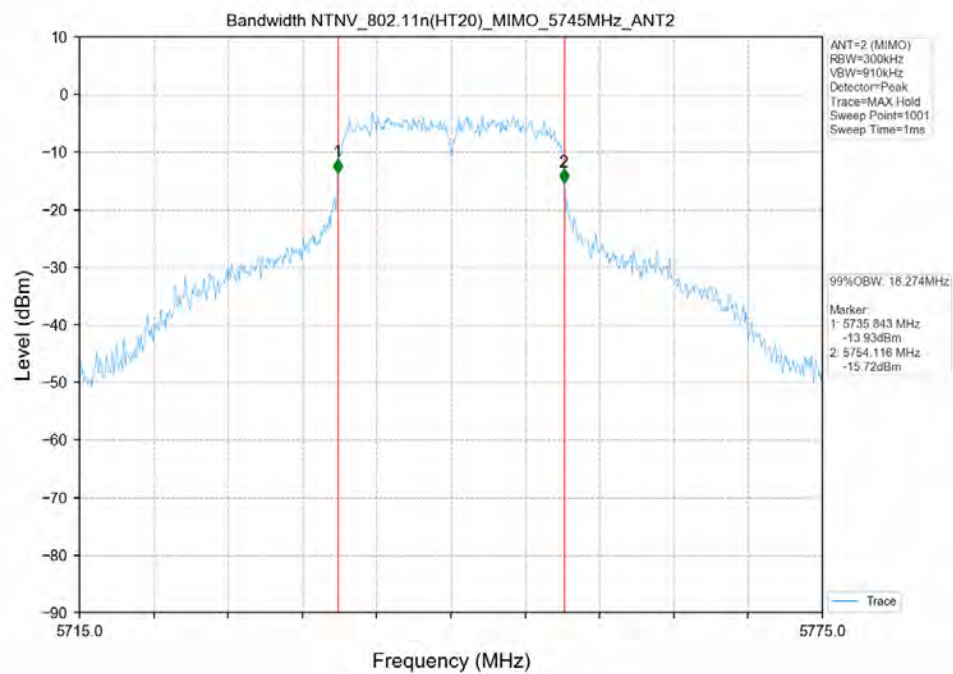
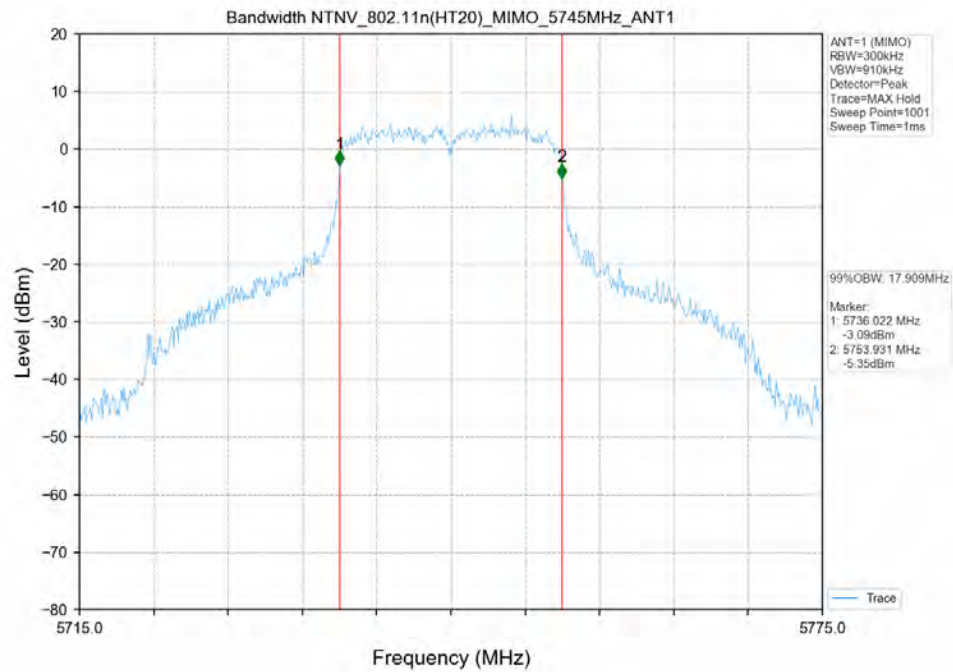


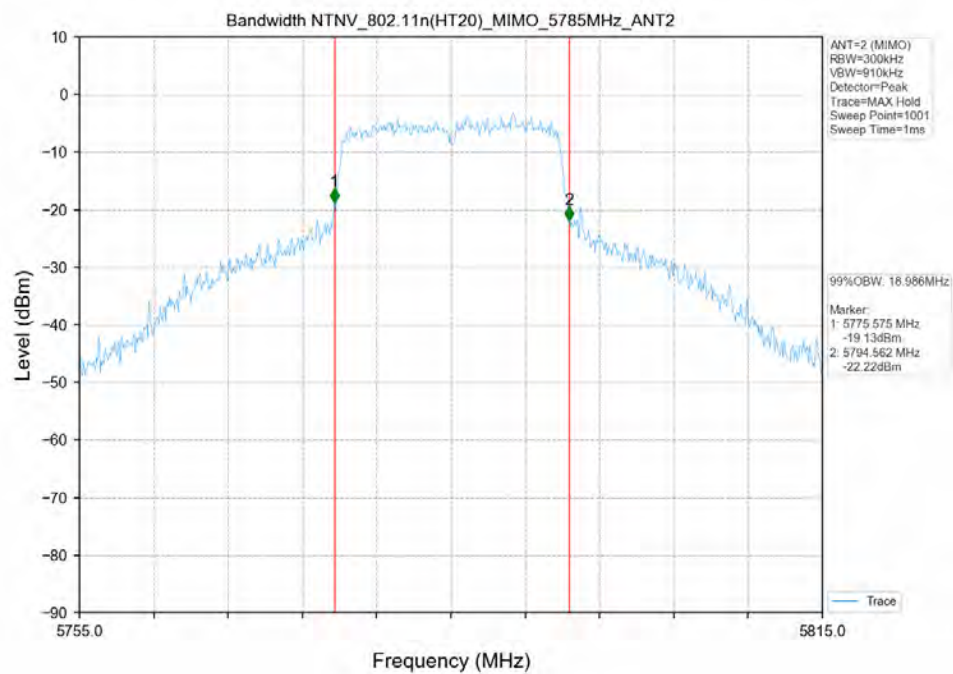
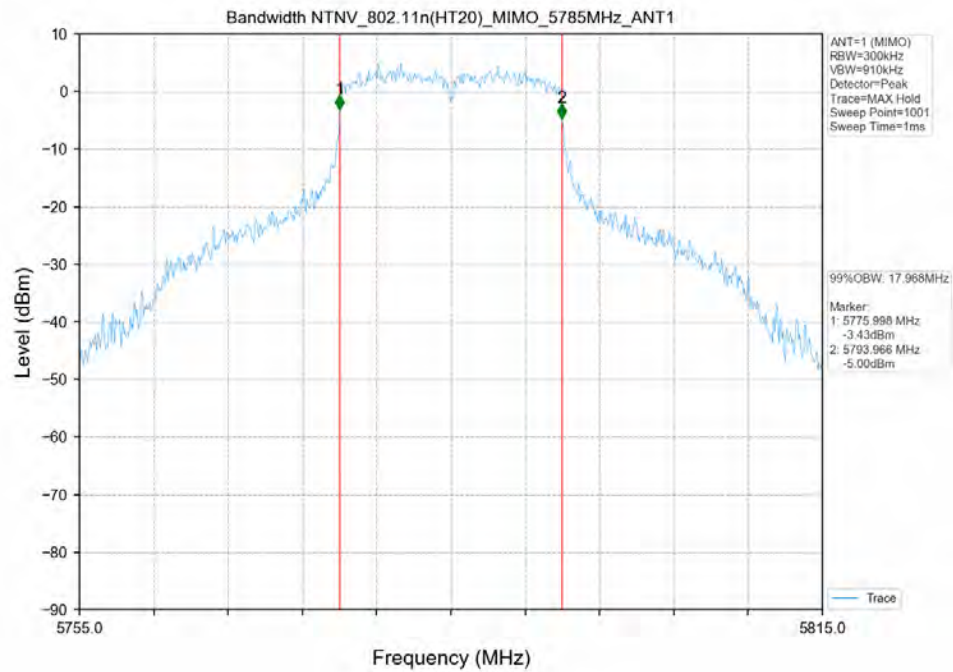


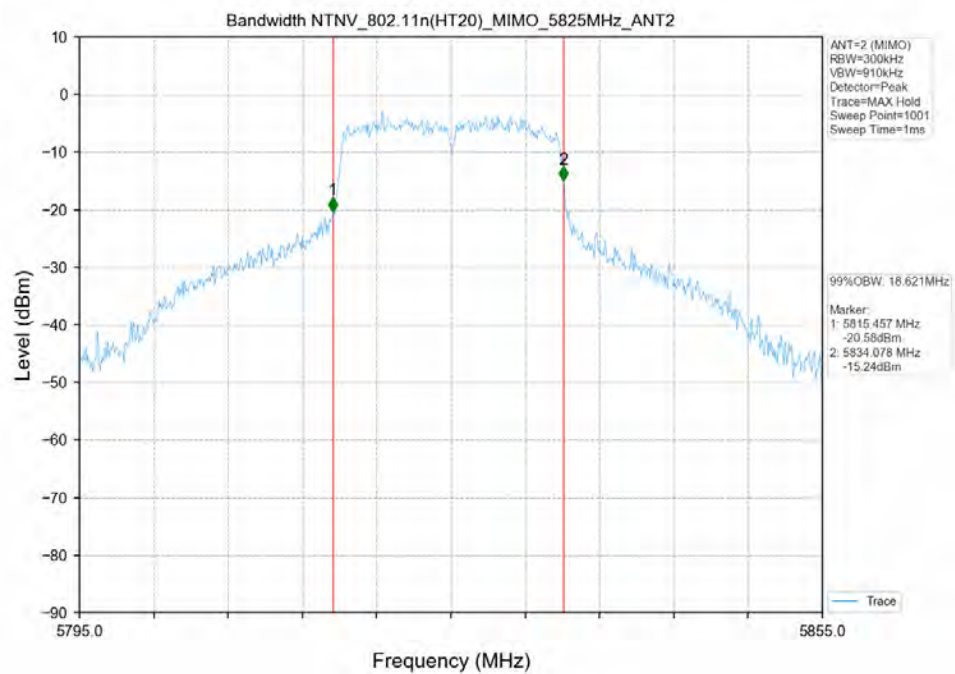
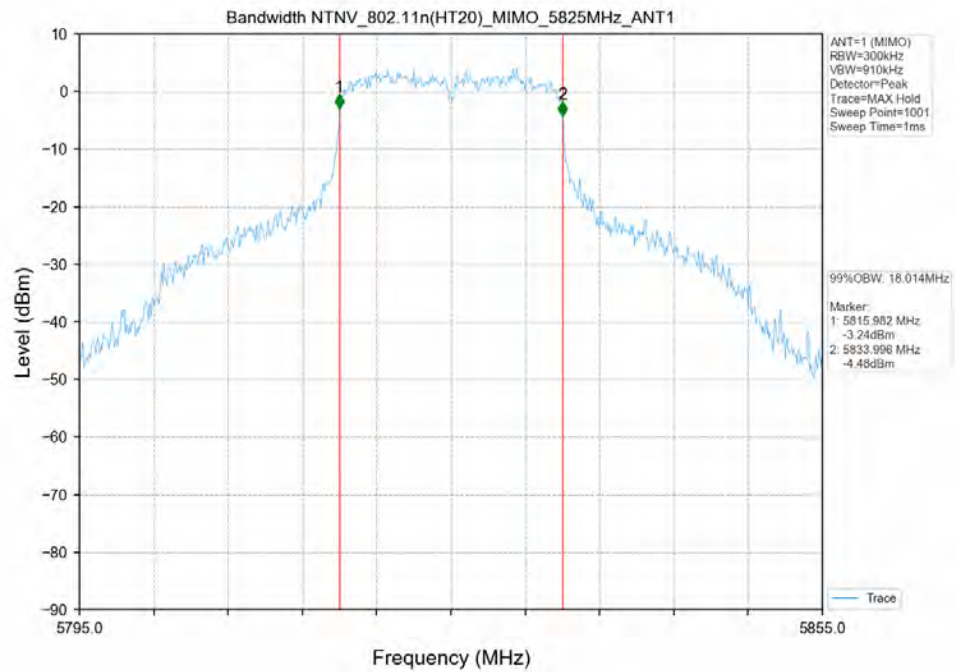


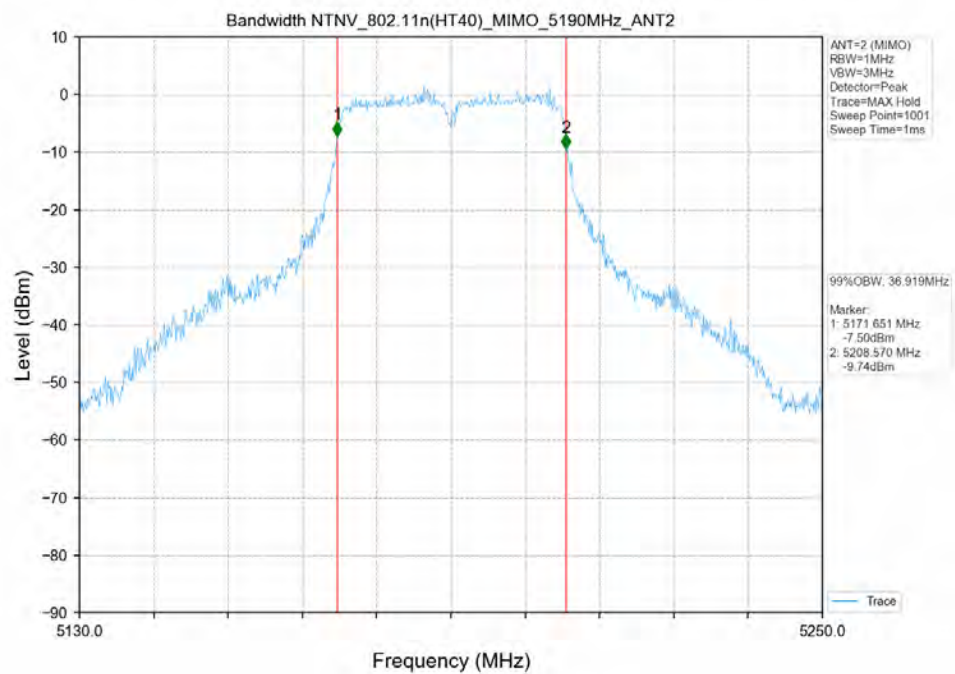
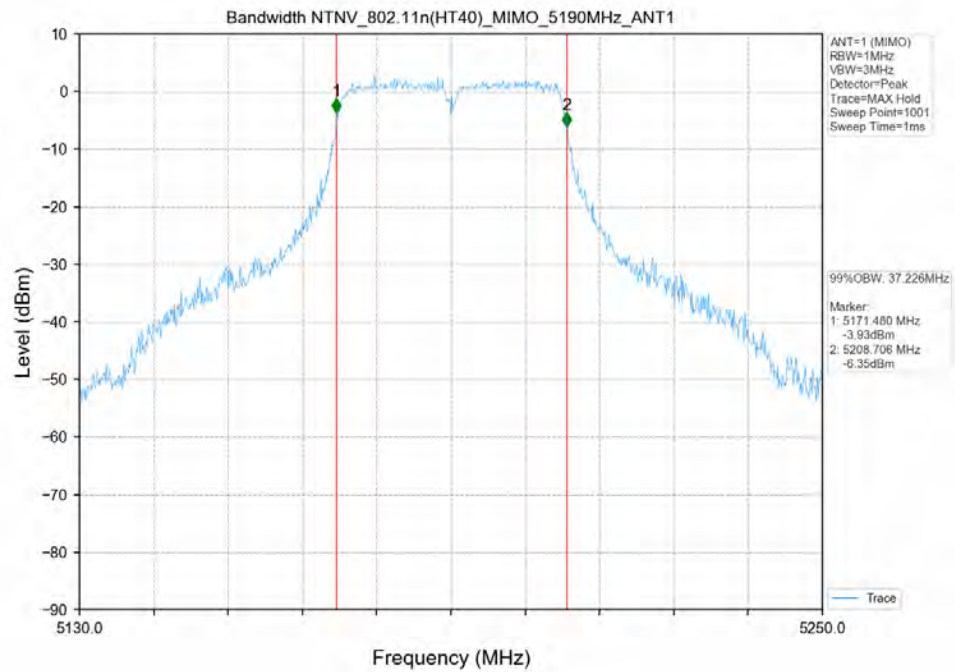


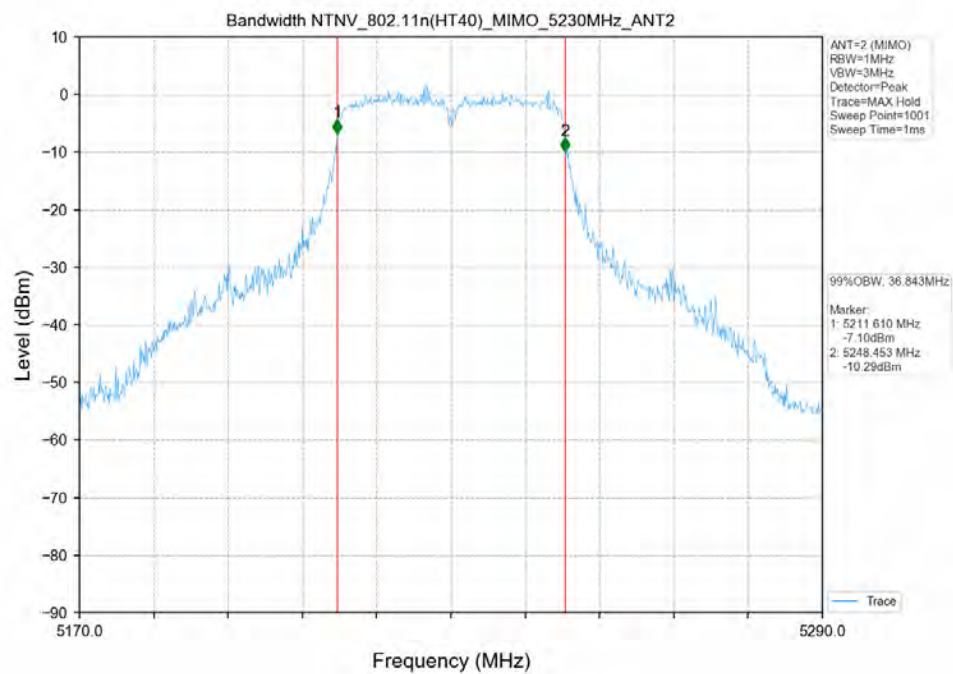
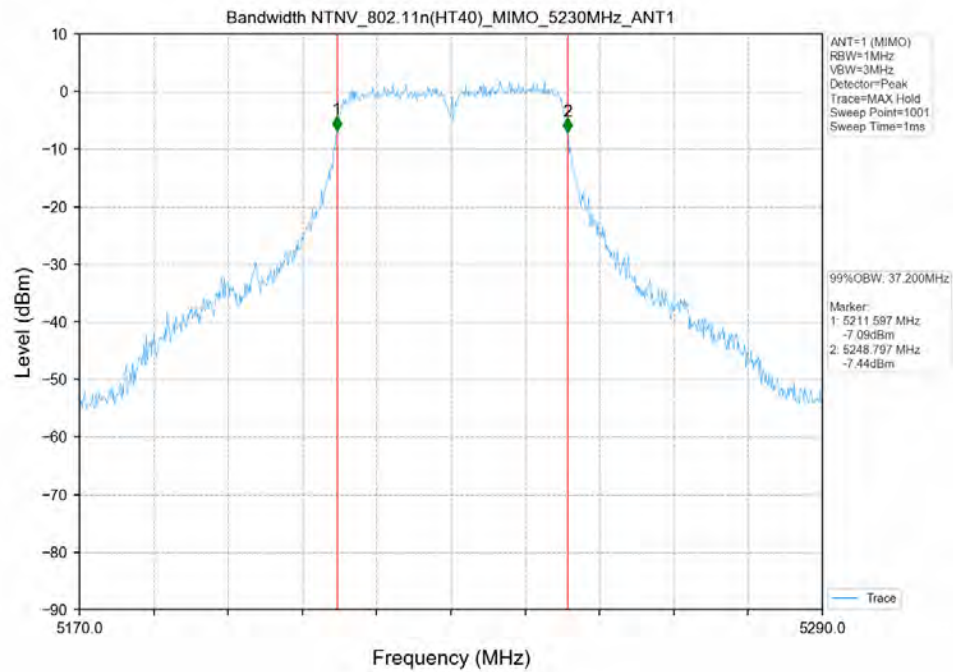


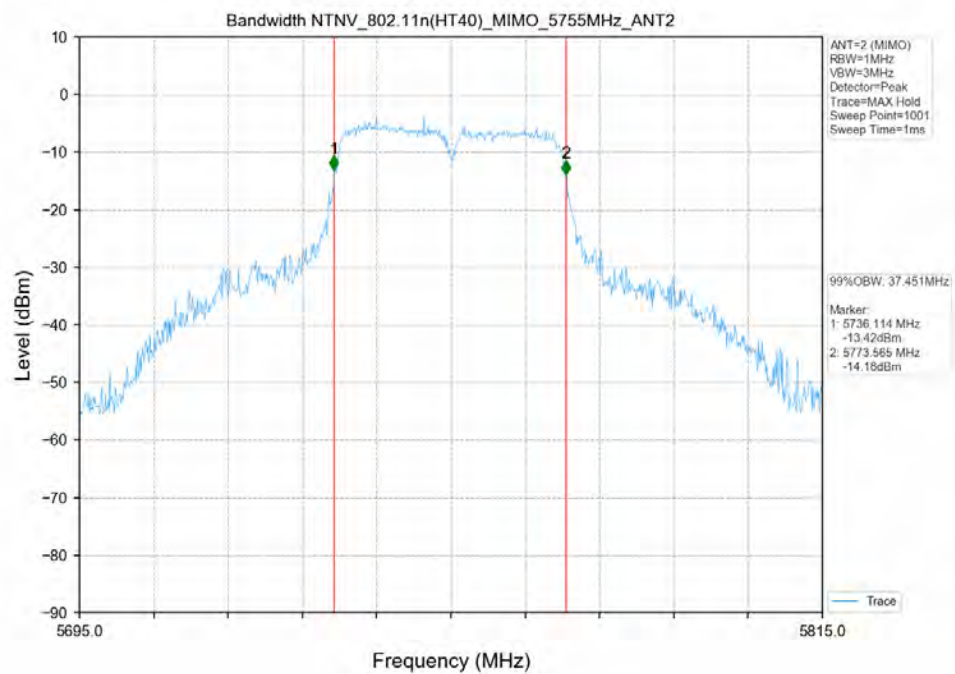
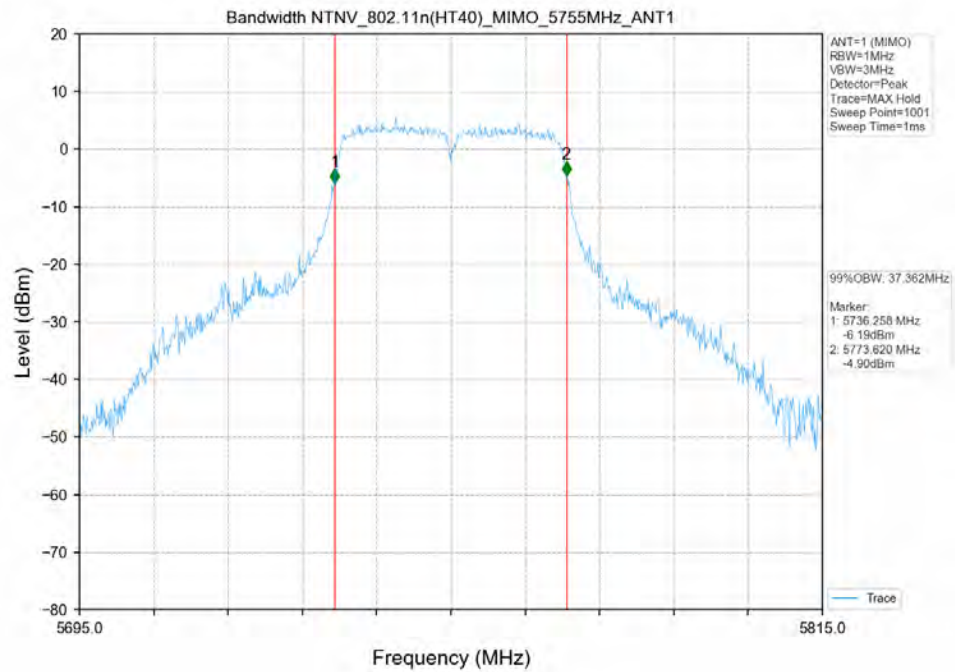


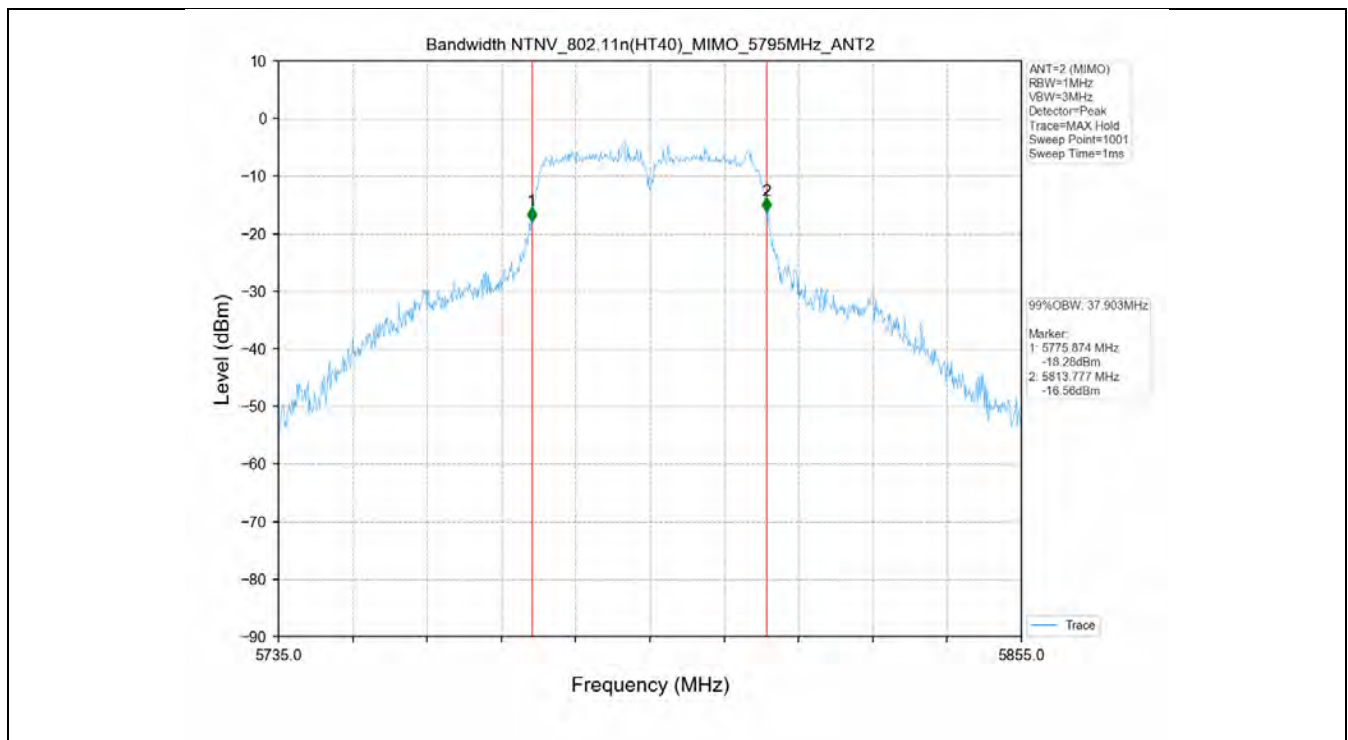
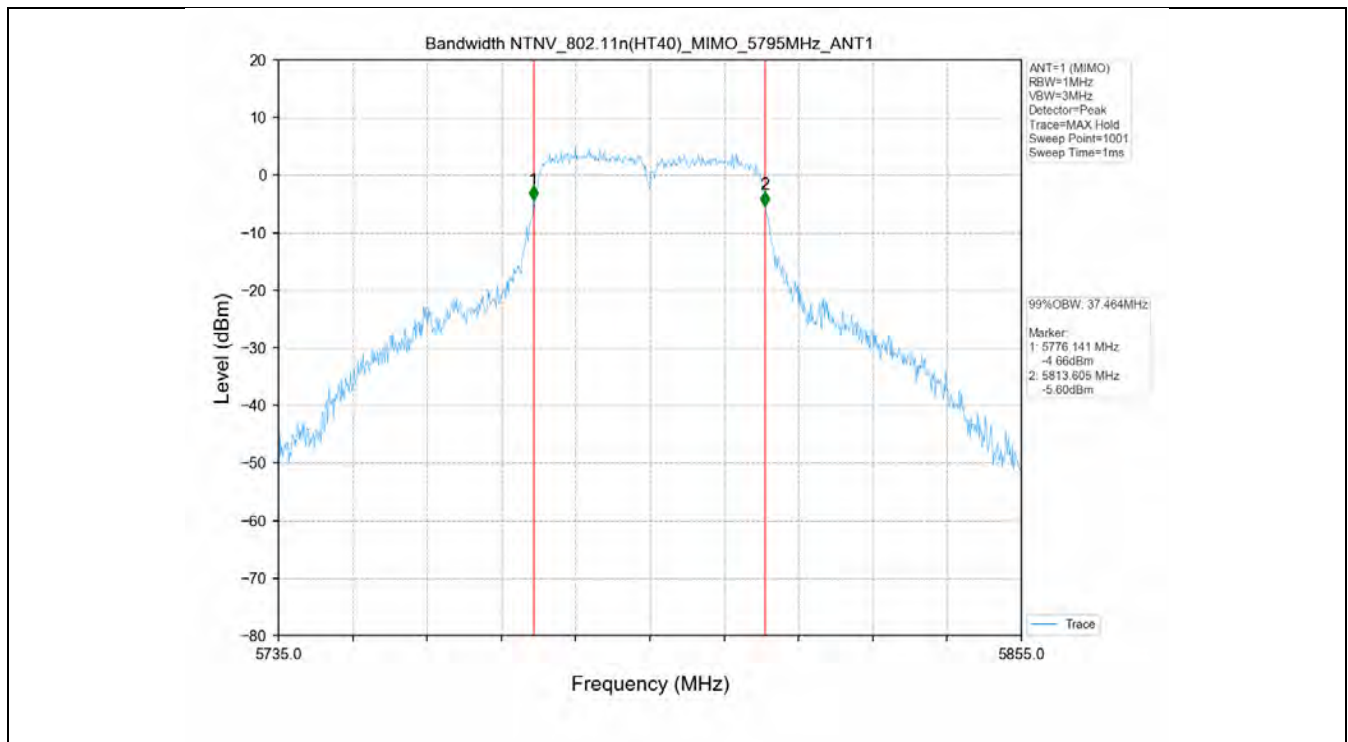










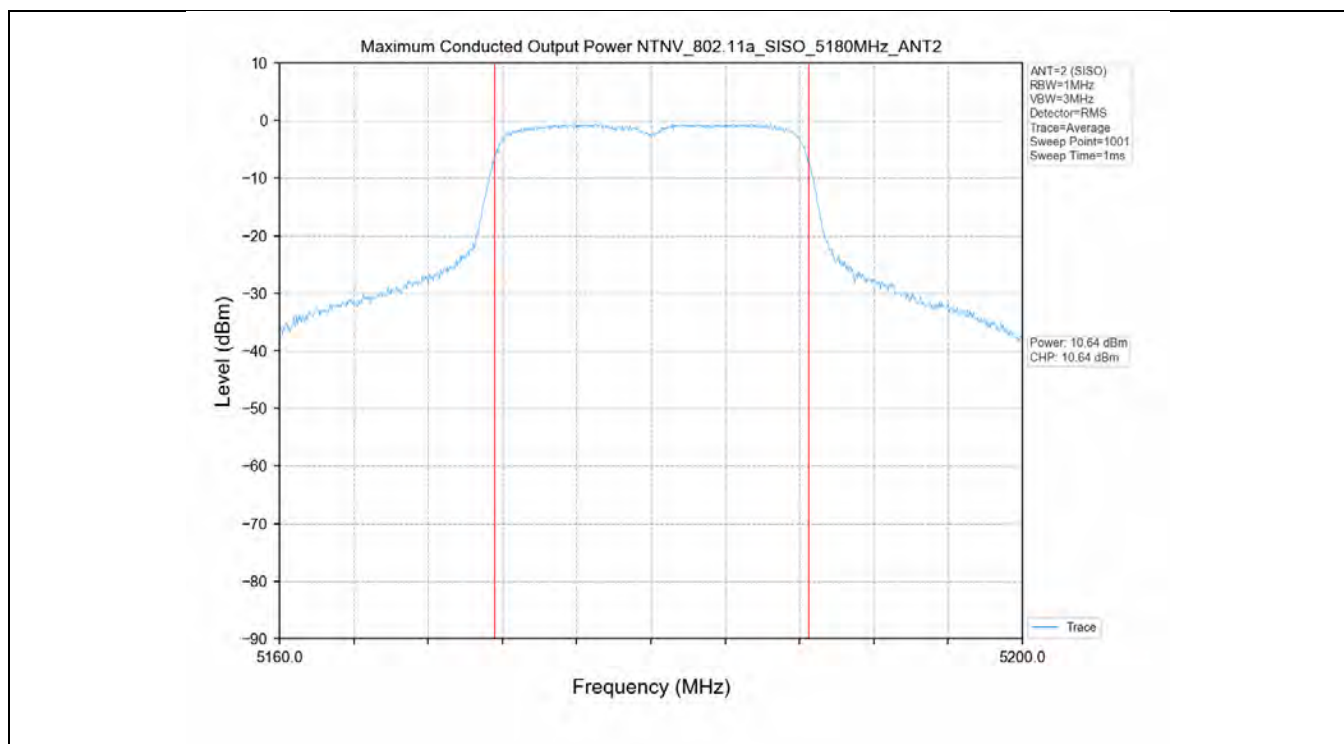


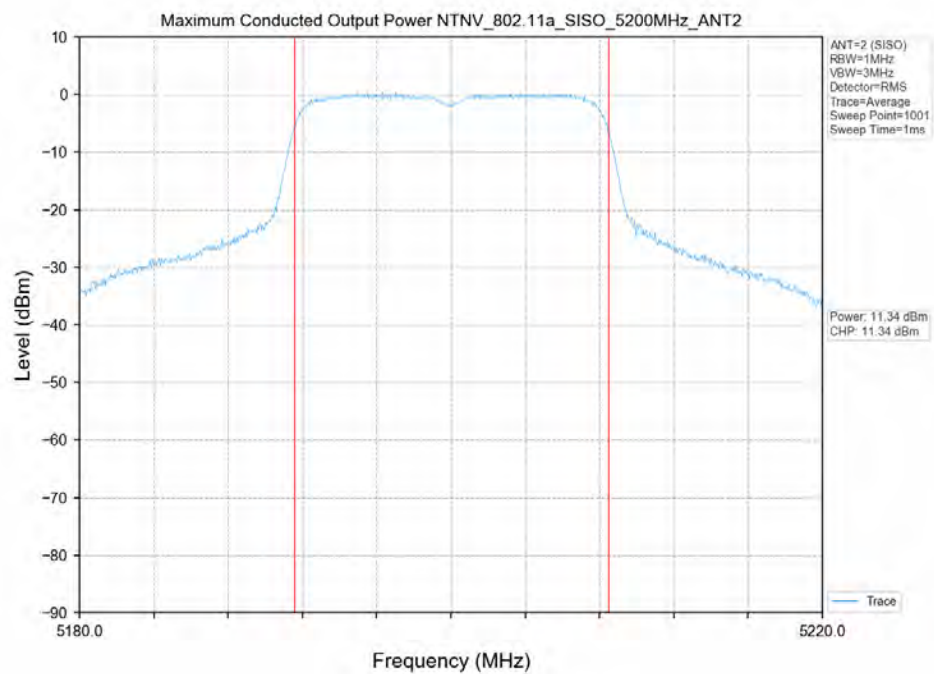
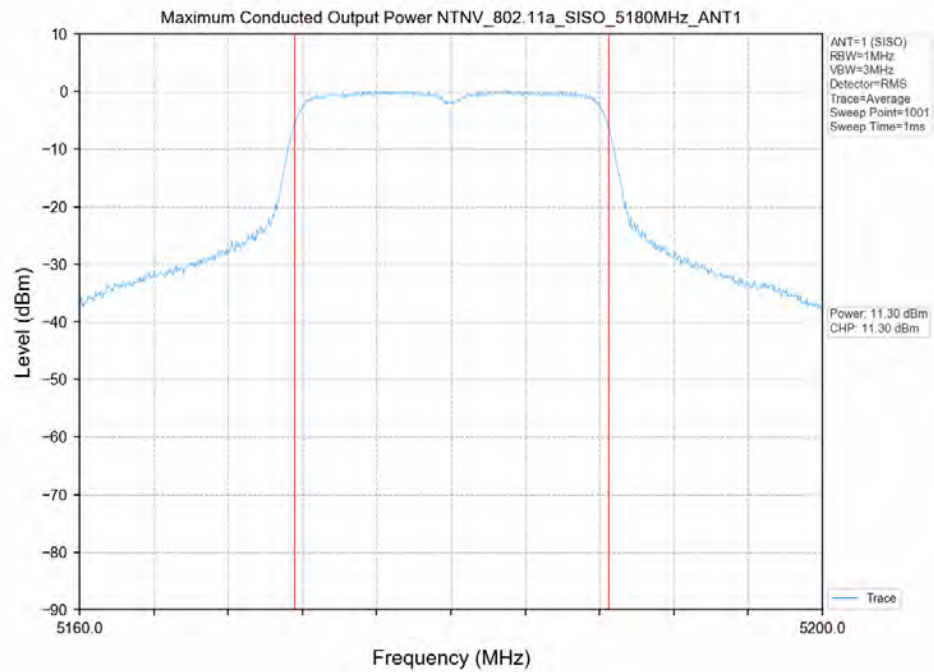
3. Maximum Conducted Output Power

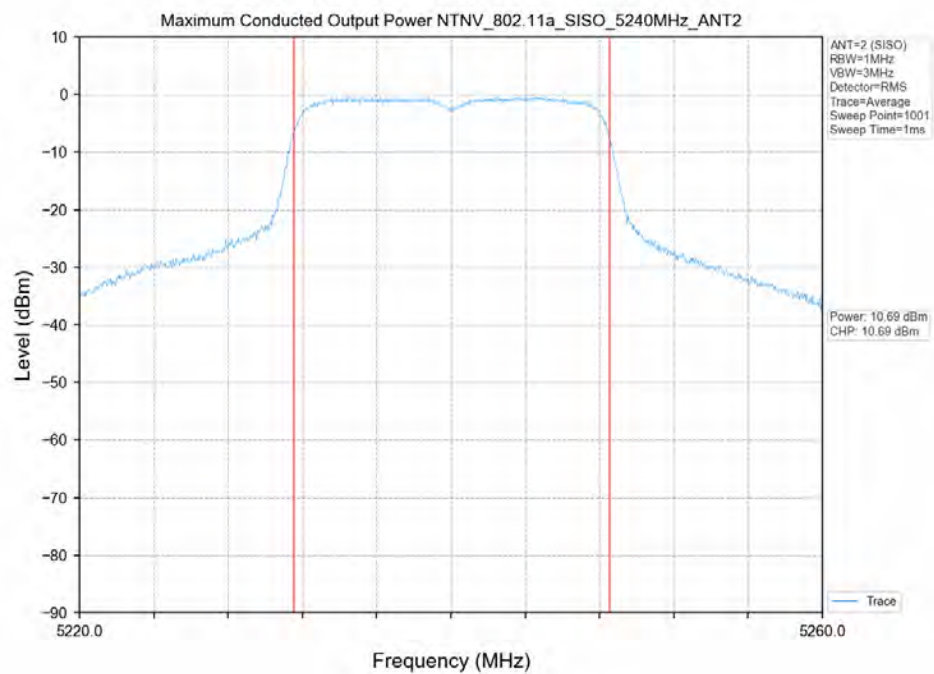
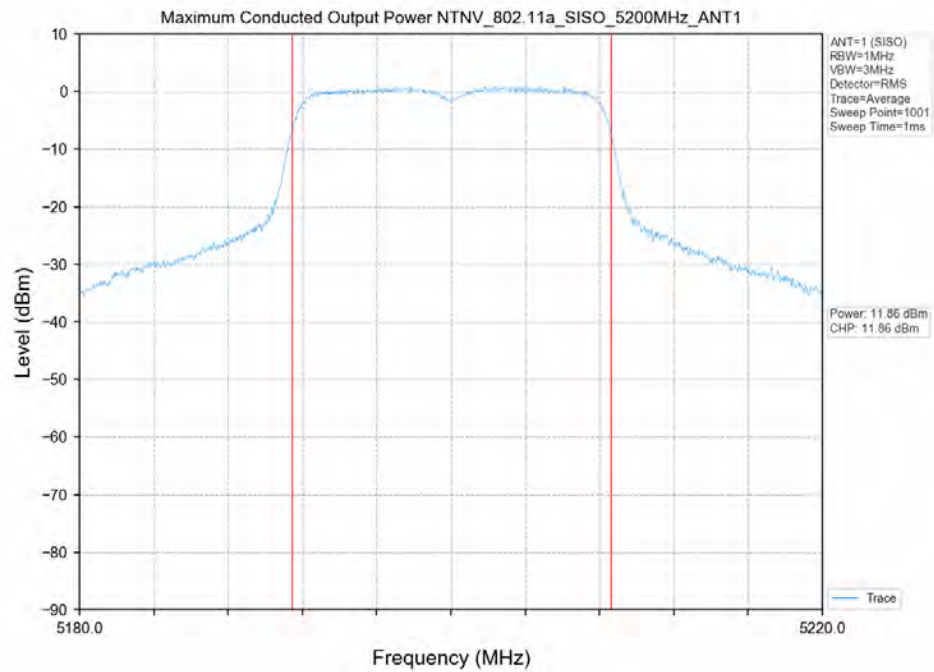
3.1 Test Result

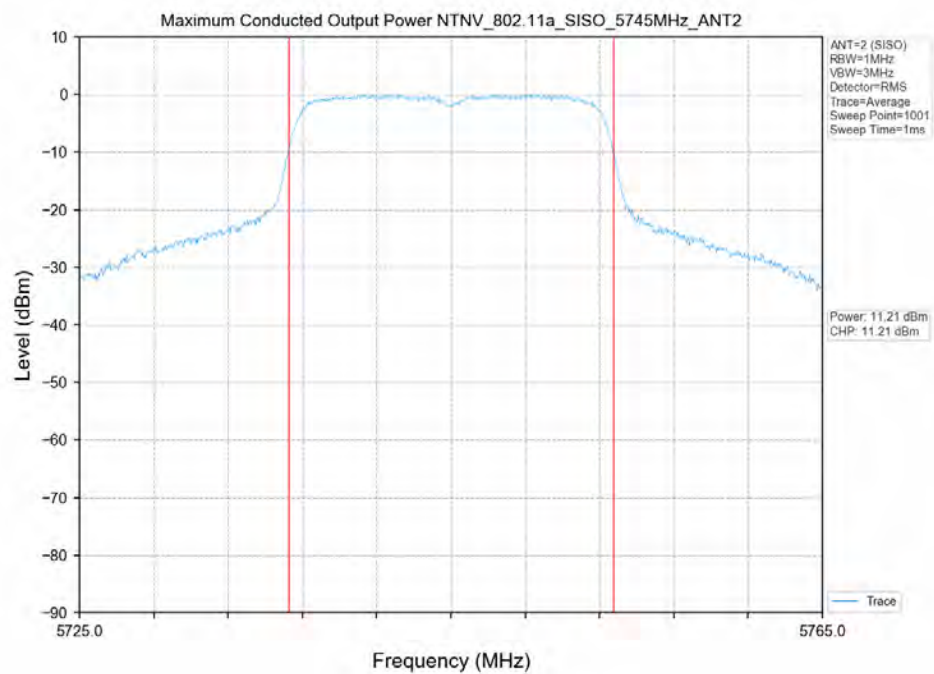
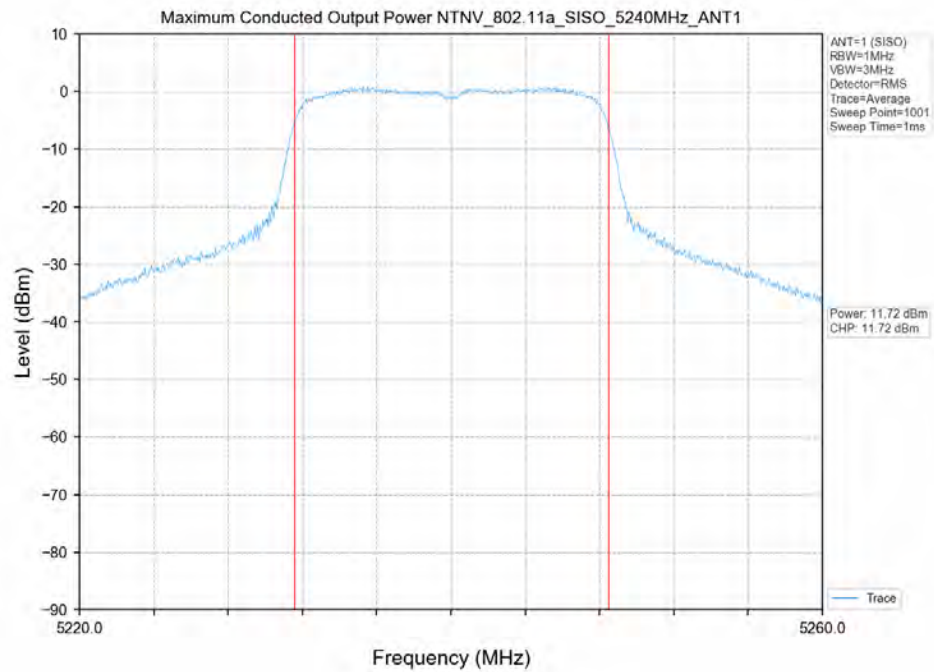
Test Mode	Frequency (MHz)	Tx Type	Measured Output Power (dBm)			Limit (dBm)	Verdict
			Ant 2	Ant 1	Total		
802.11a	5180	SISO	10.64	11.30	/	≤23.98	PASS
	5200	SISO	11.34	11.86	/	≤23.98	PASS
	5240	SISO	10.69	11.72	/	≤23.98	PASS
	5745	SISO	11.21	11.76	/	≤30.00	PASS
	5785	SISO	10.83	12.08	/	≤30.00	PASS
	5825	SISO	11.47	11.88	/	≤30.00	PASS
802.11n(HT20)	5180	MIMO	10.23	10.31	13.28	≤23.98	PASS
	5200	MIMO	14.62	10.05	15.92	≤23.98	PASS
	5240	MIMO	9.65	10.67	13.20	≤23.98	PASS
	5745	MIMO	12.06	12.53	15.31	≤30.00	PASS
	5785	MIMO	12.00	12.45	15.24	≤30.00	PASS
	5825	MIMO	11.43	12.03	14.75	≤30.00	PASS
802.11n(HT40)	5190	MIMO	9.73	9.68	12.72	≤23.98	PASS
	5230	MIMO	11.65	10.44	14.10	≤23.98	PASS
	5755	MIMO	11.60	11.82	14.72	≤30.00	PASS
	5795	MIMO	11.30	11.78	14.56	≤30.00	PASS

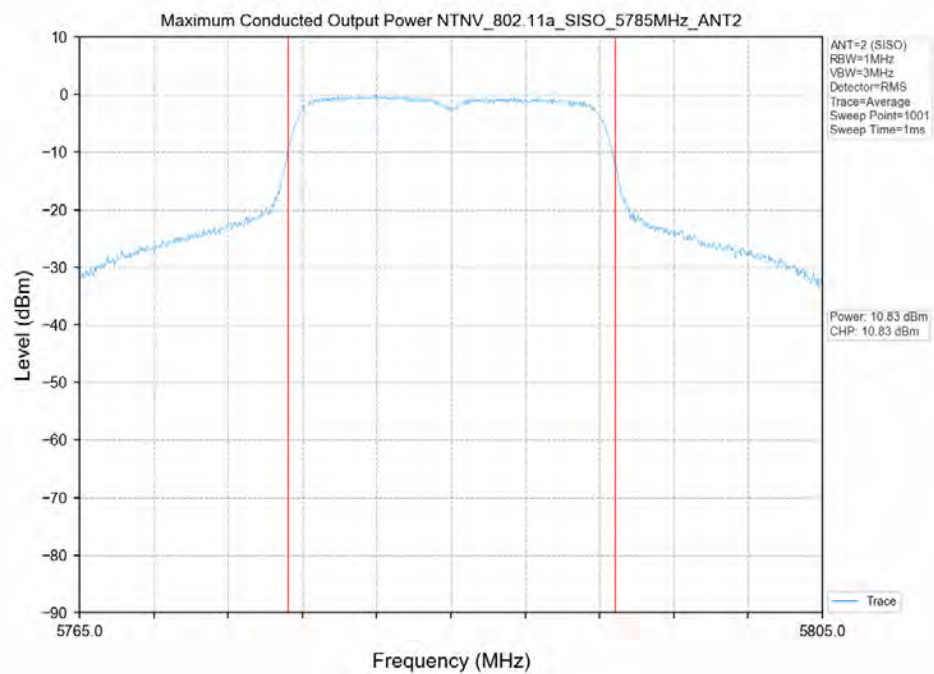
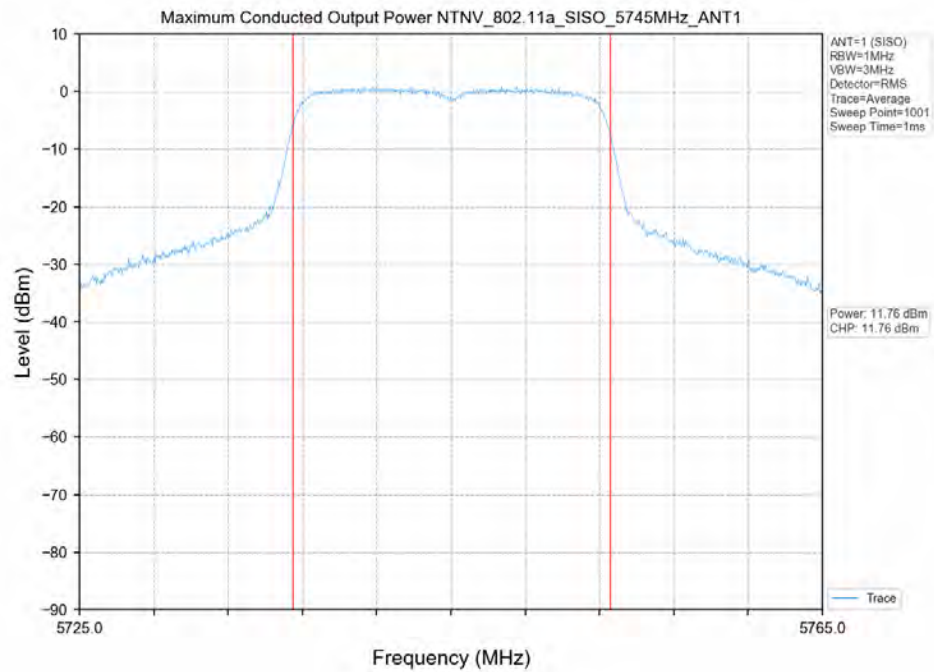
3.2 Test Graph

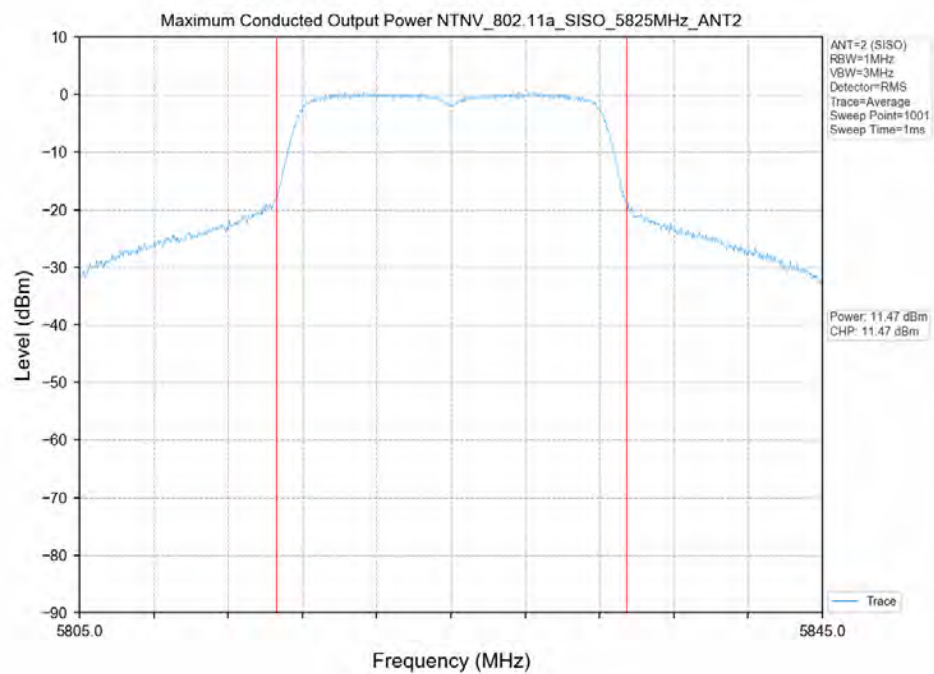
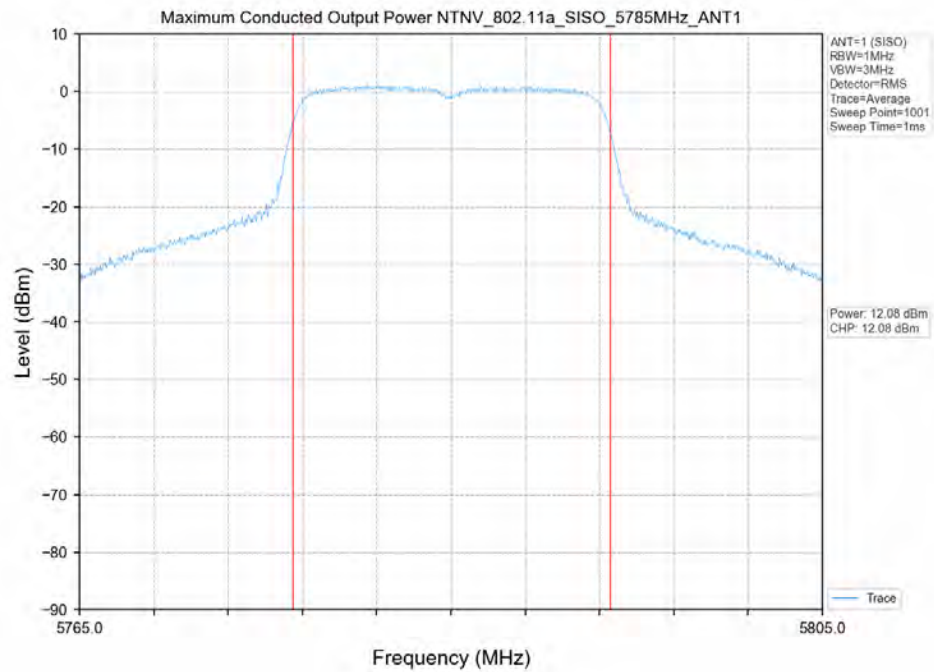


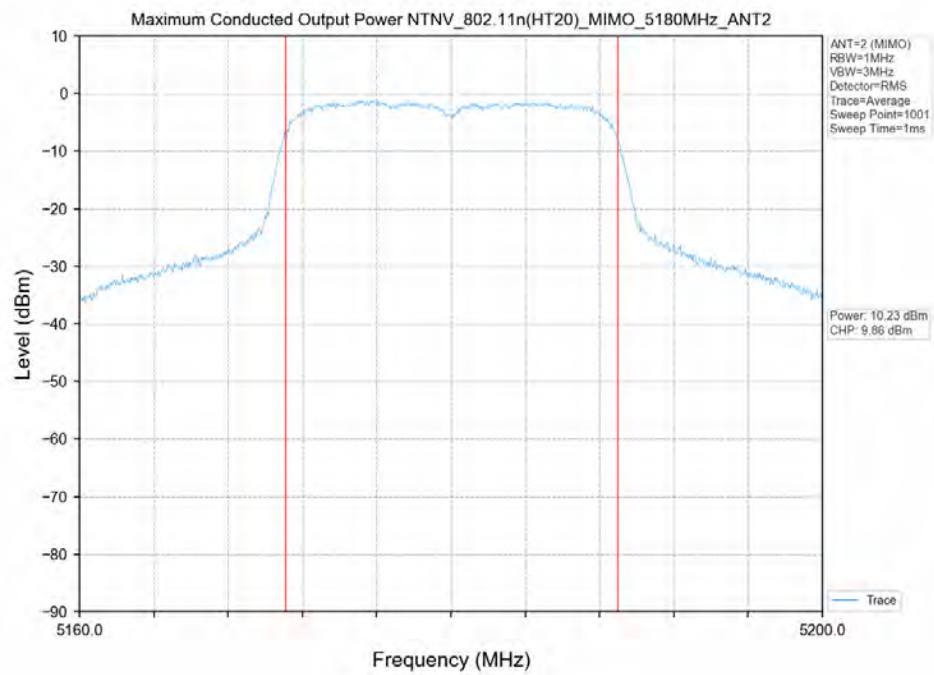
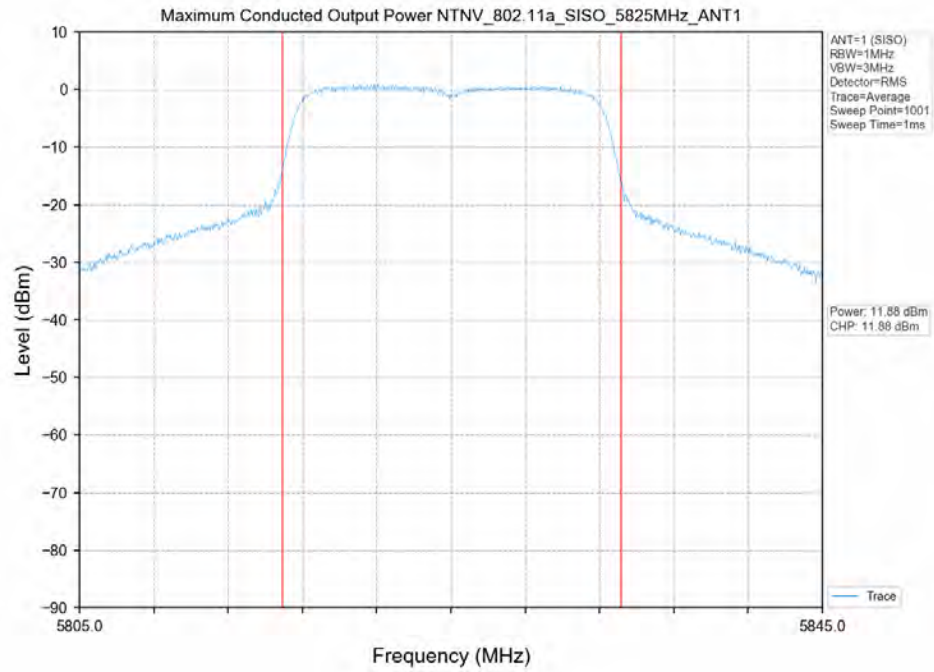


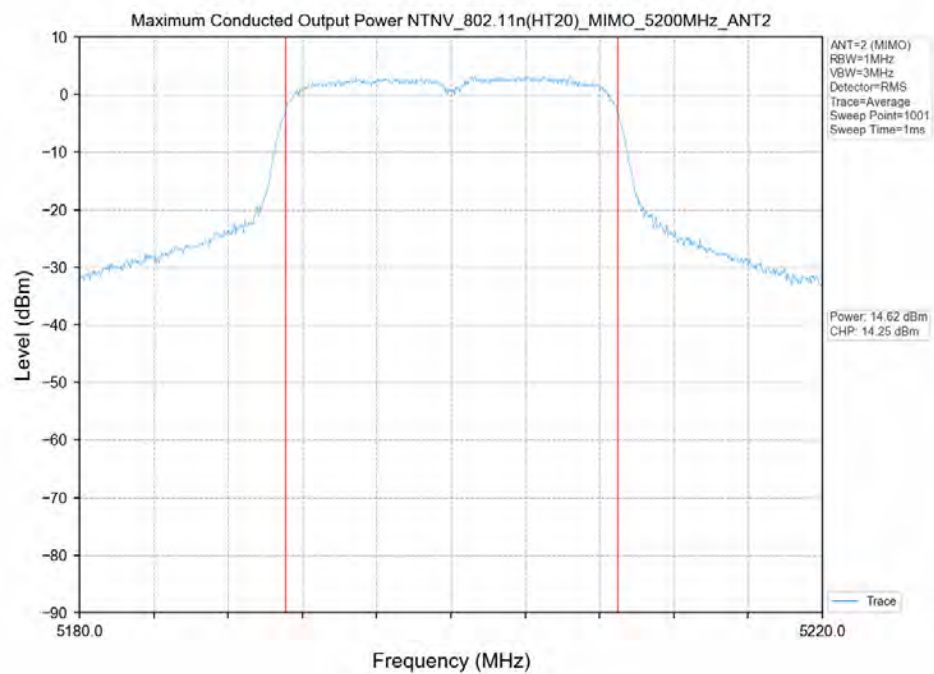
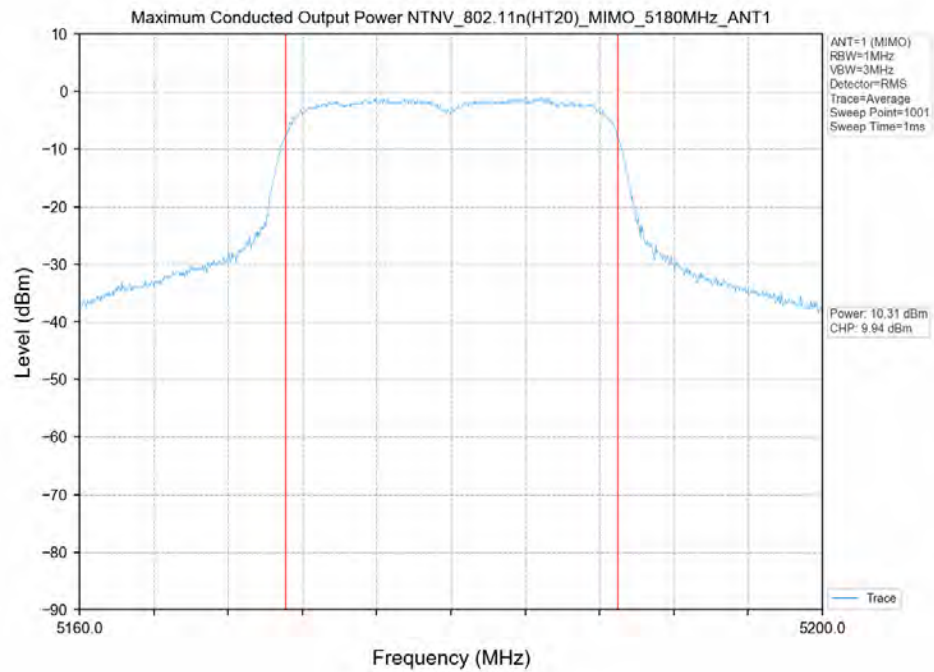


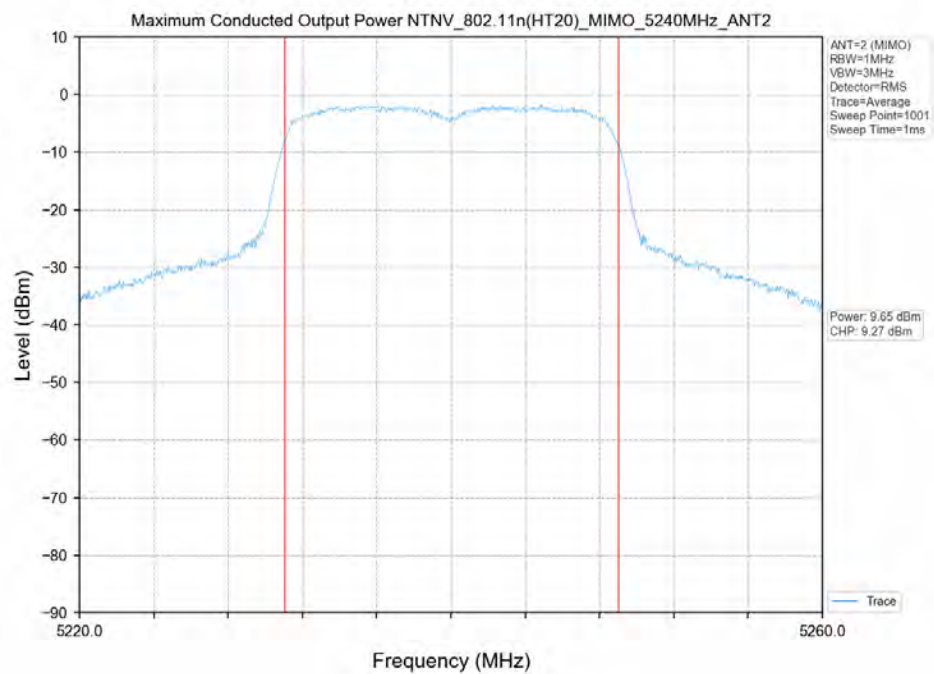
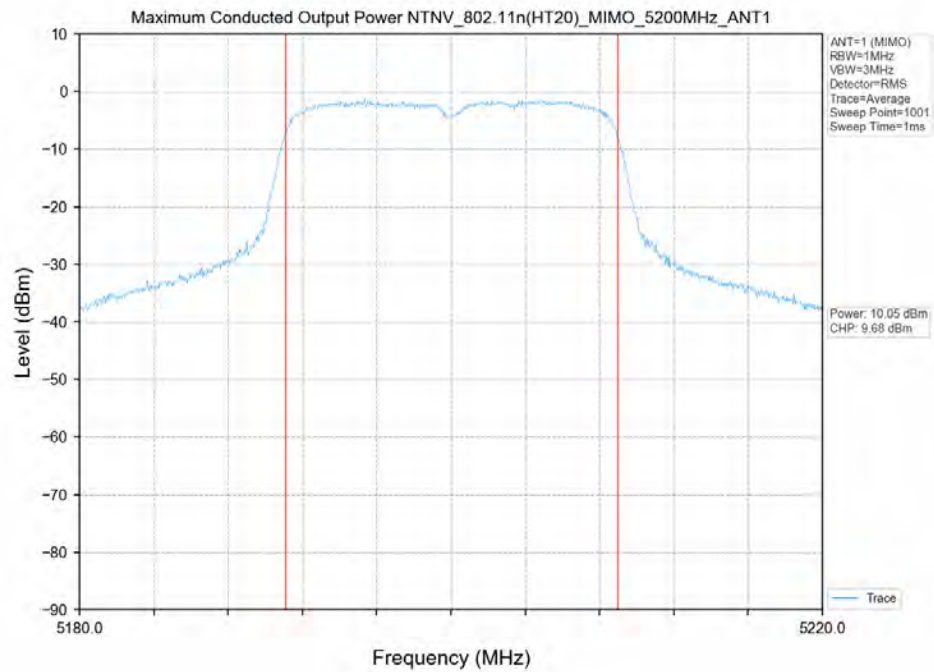


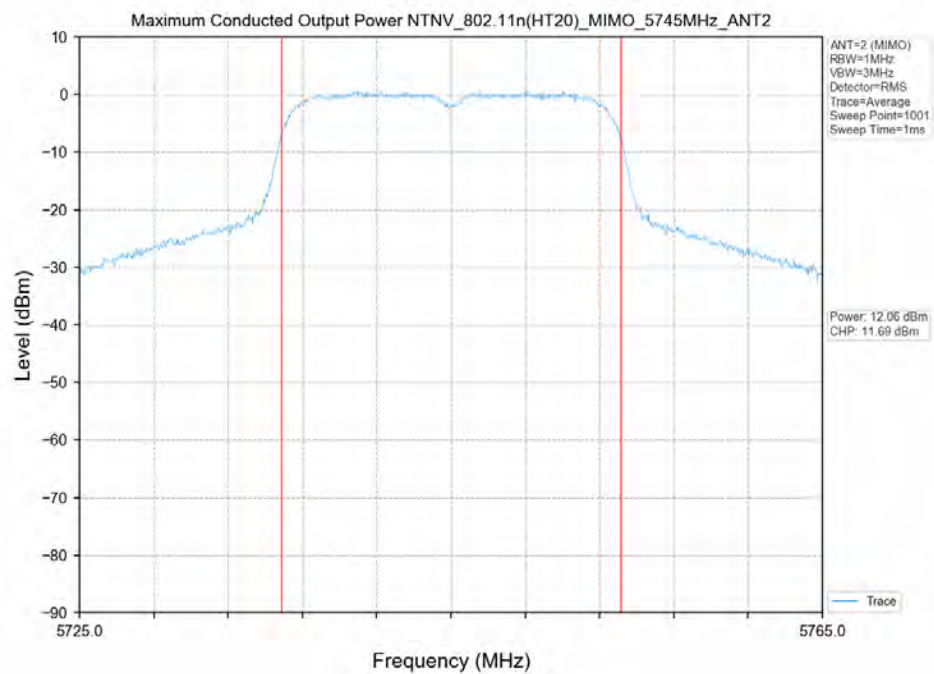
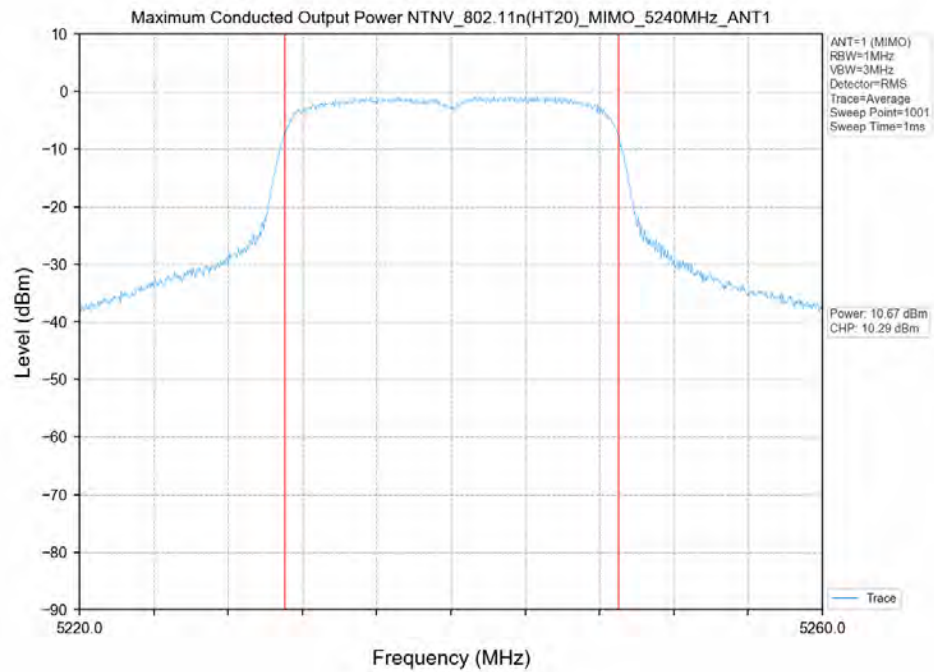


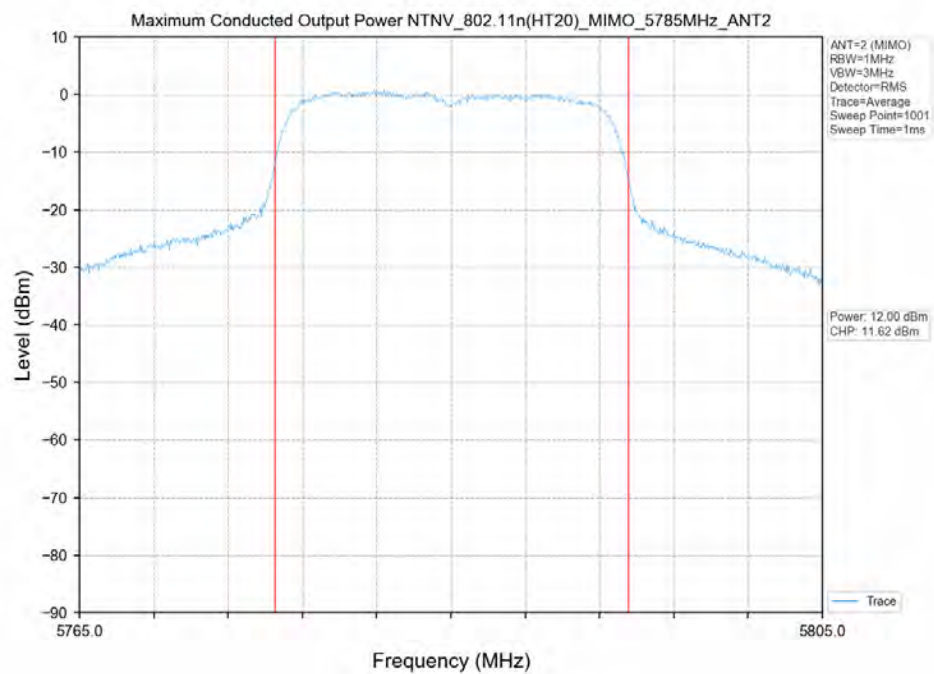
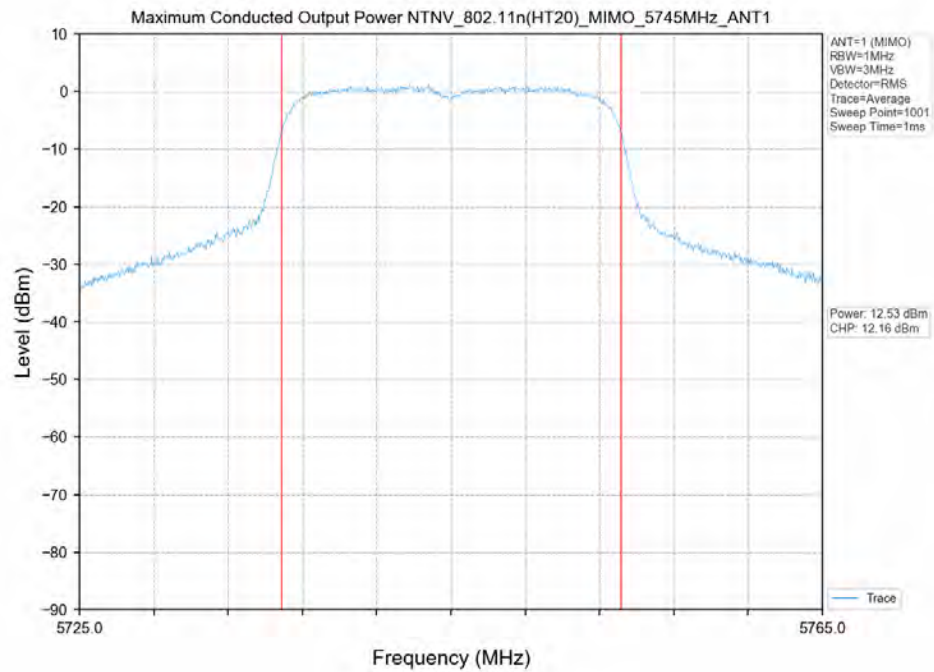


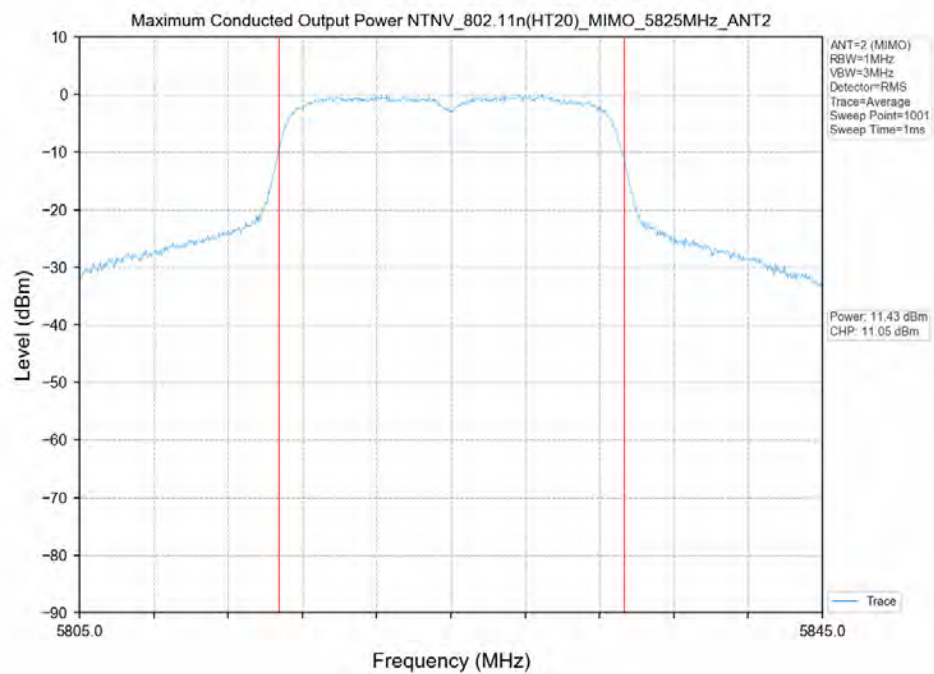
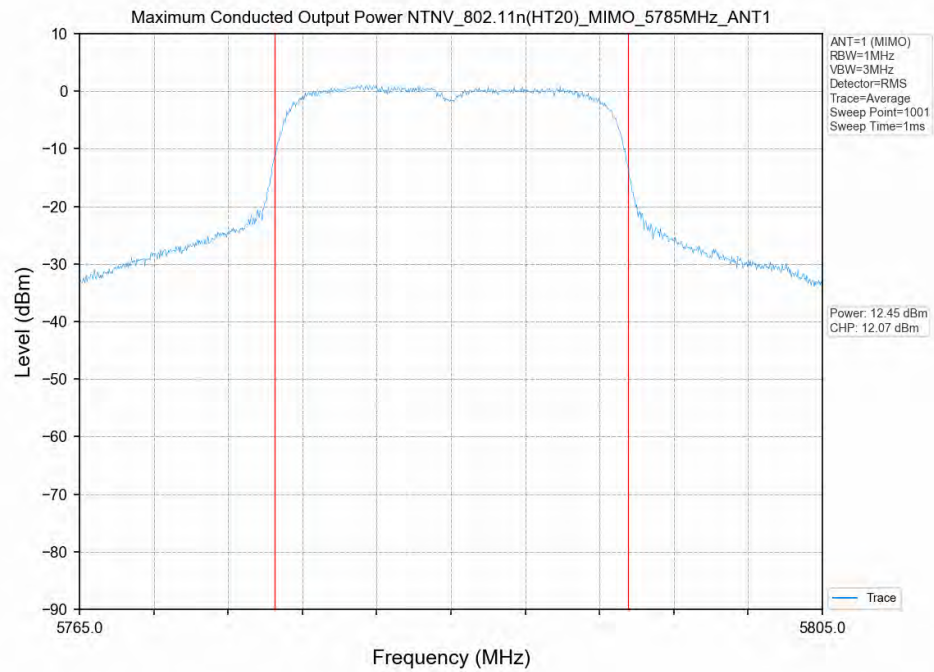


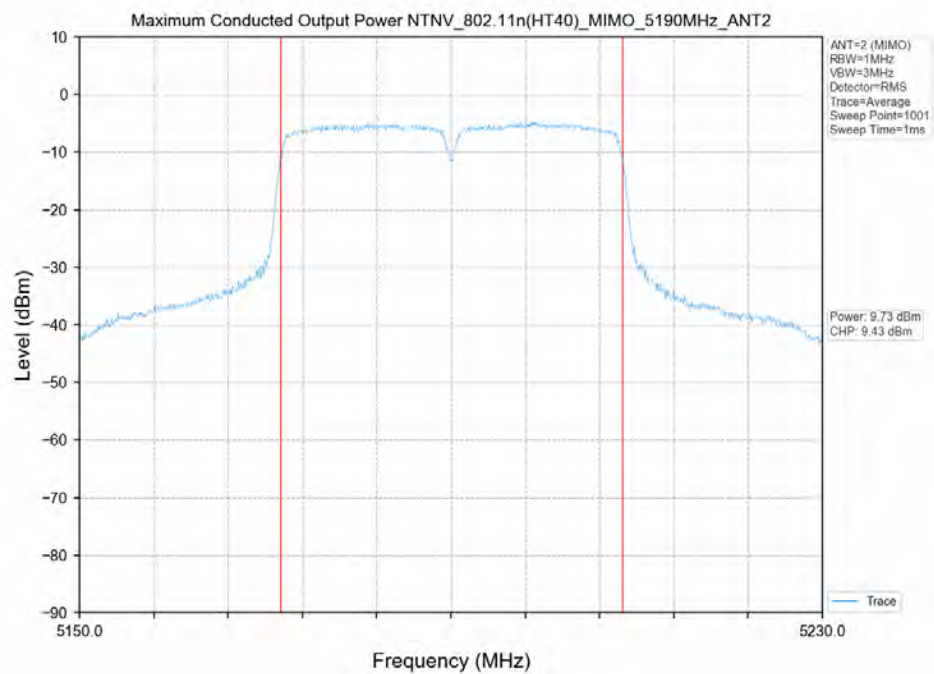
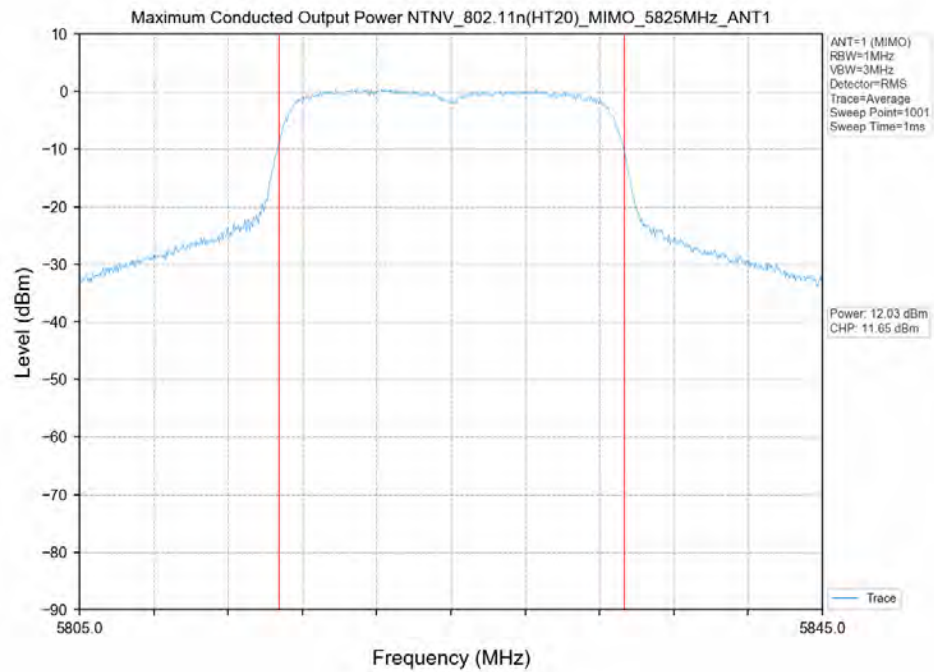


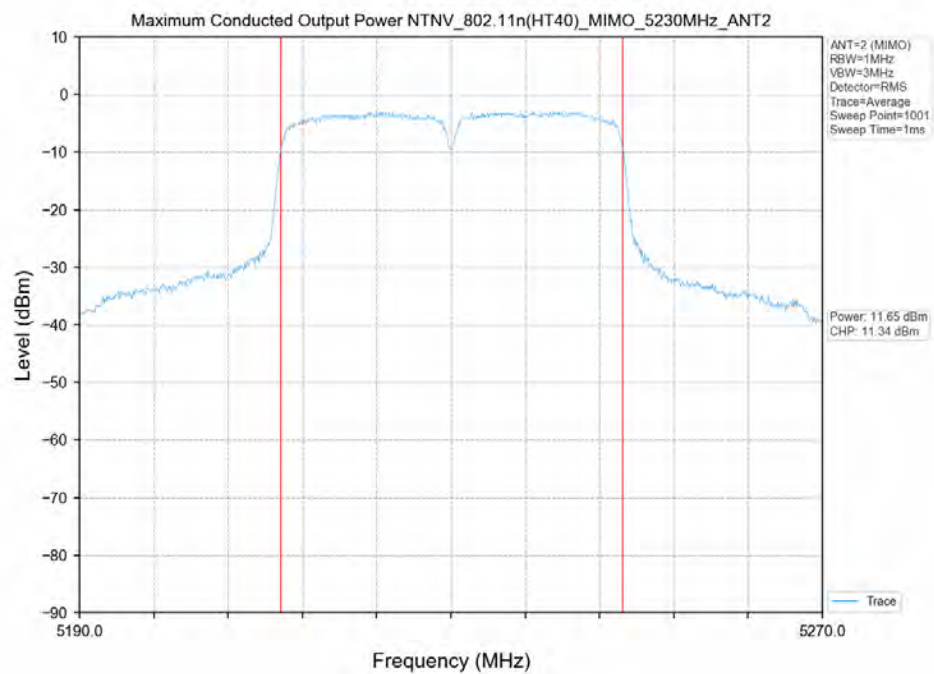
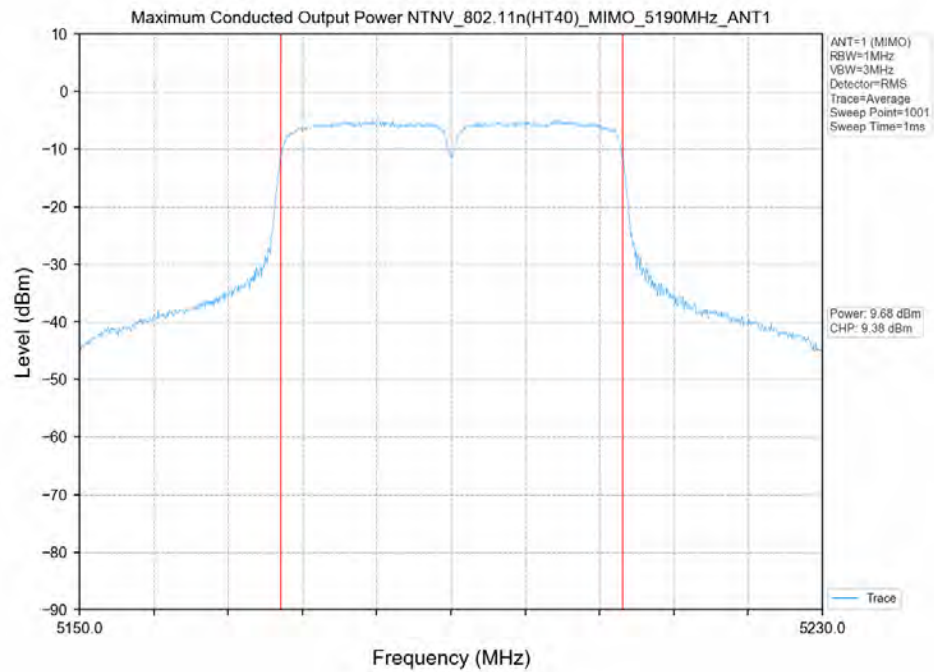


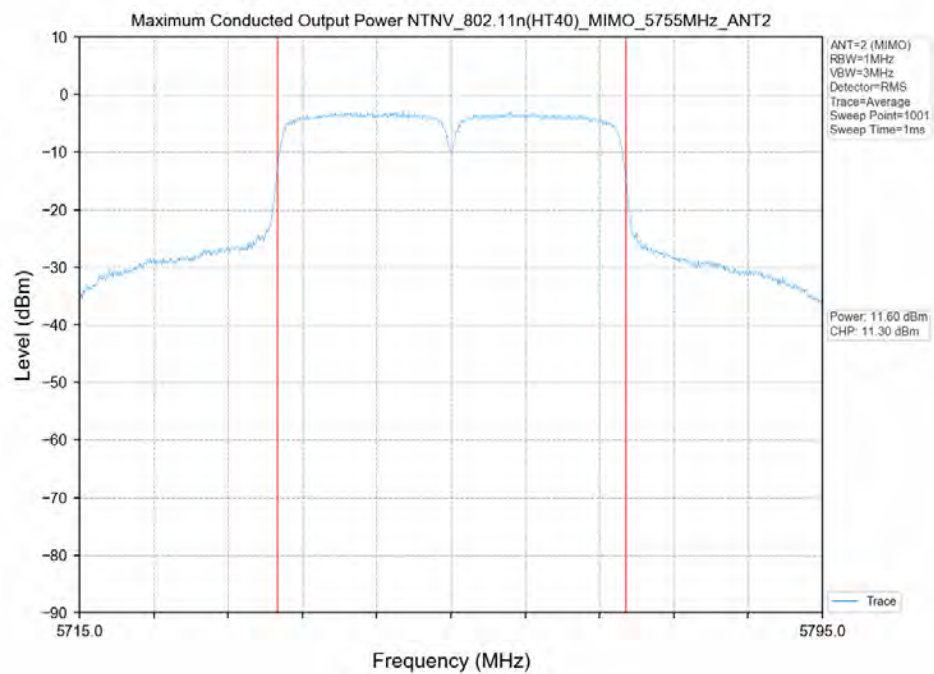
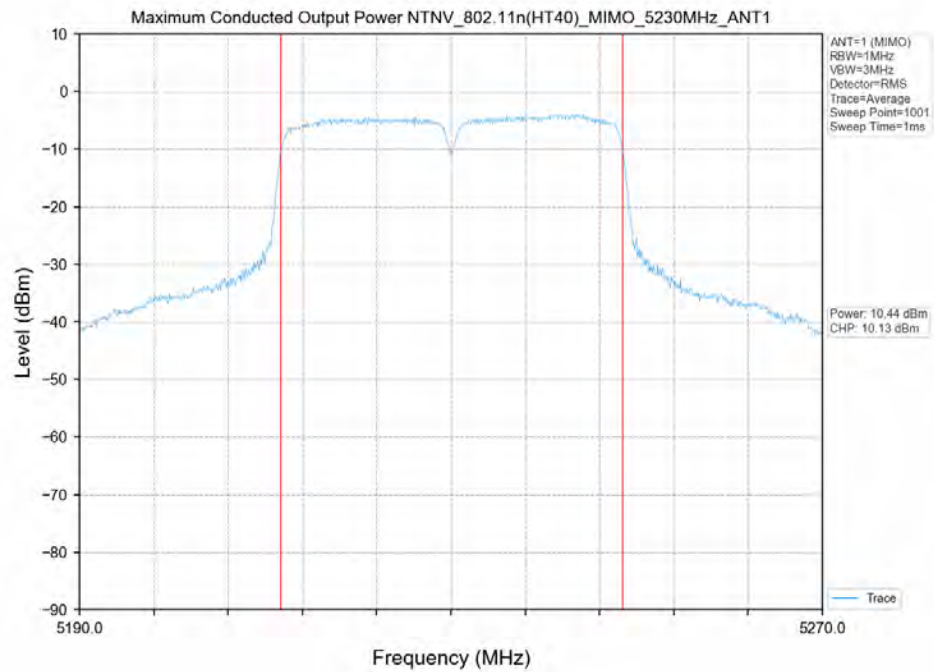


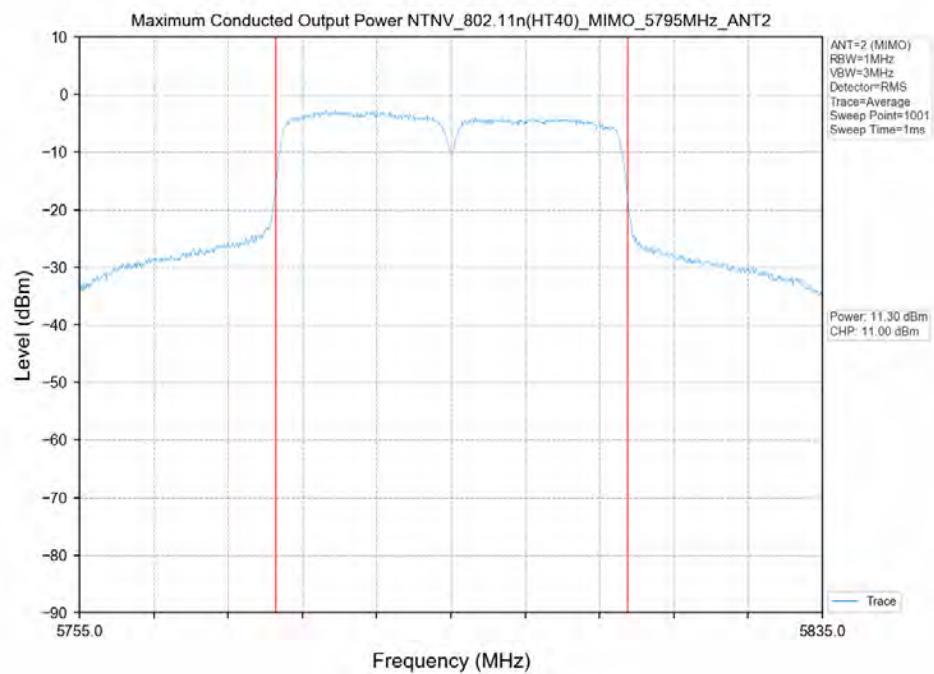
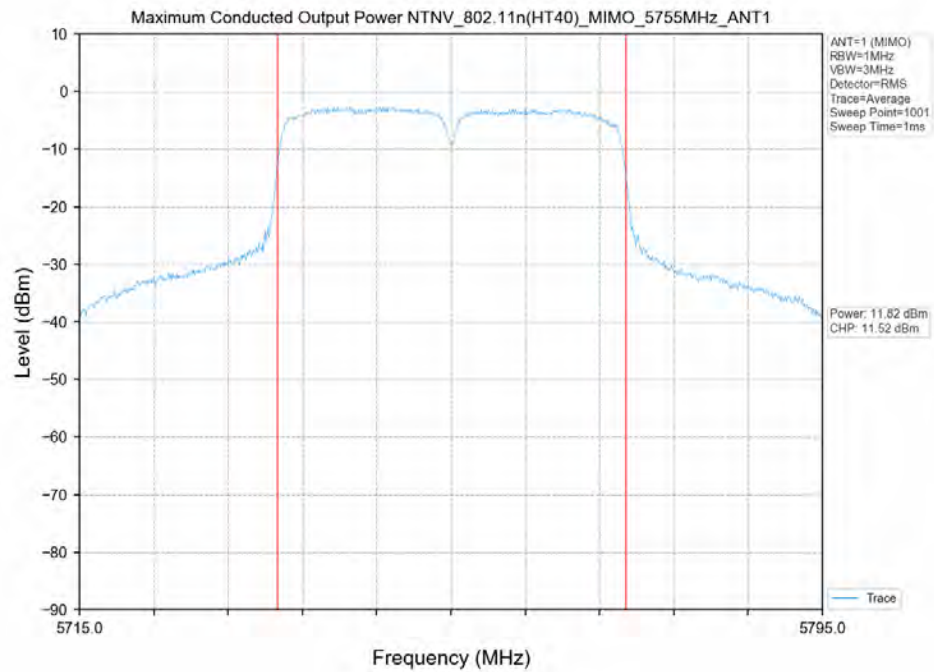


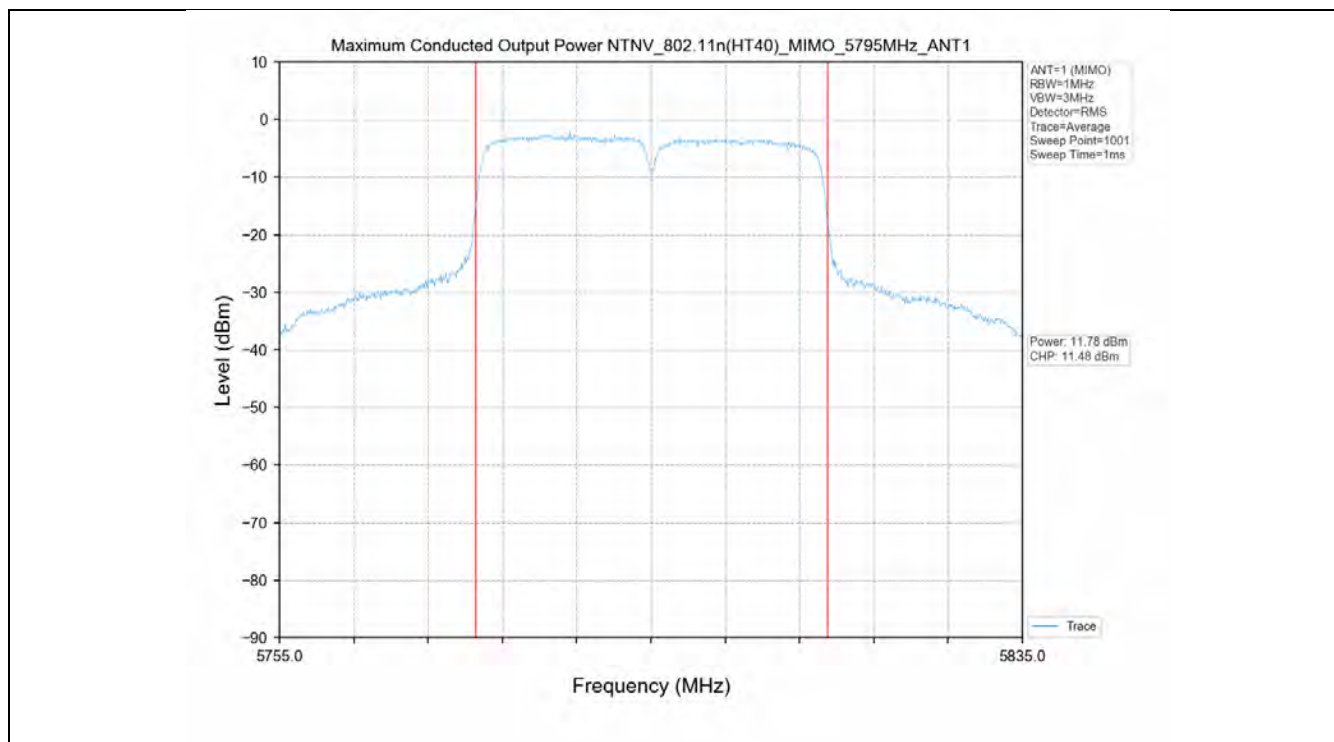












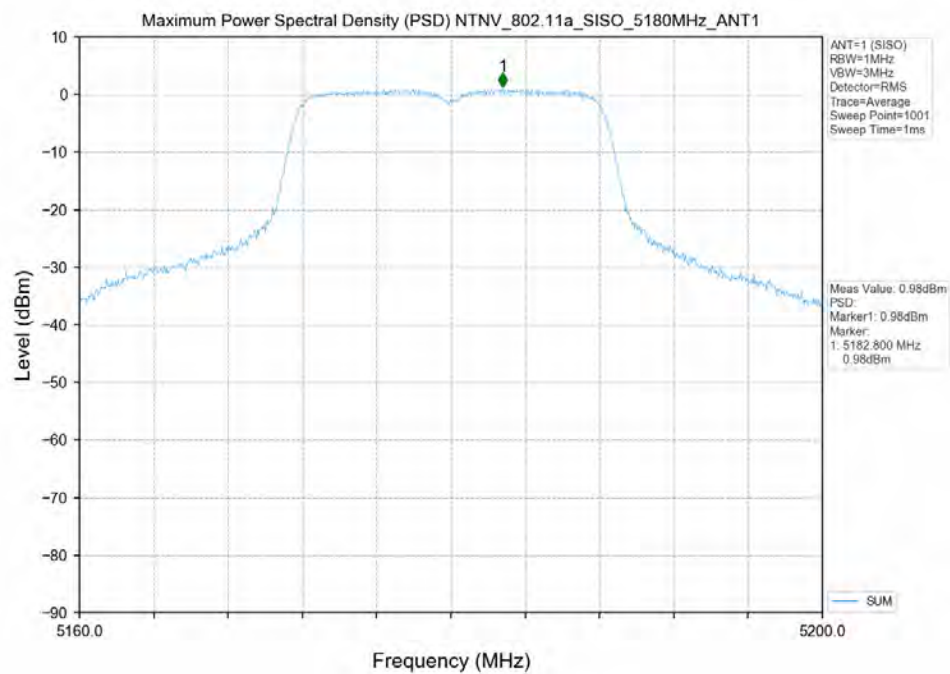
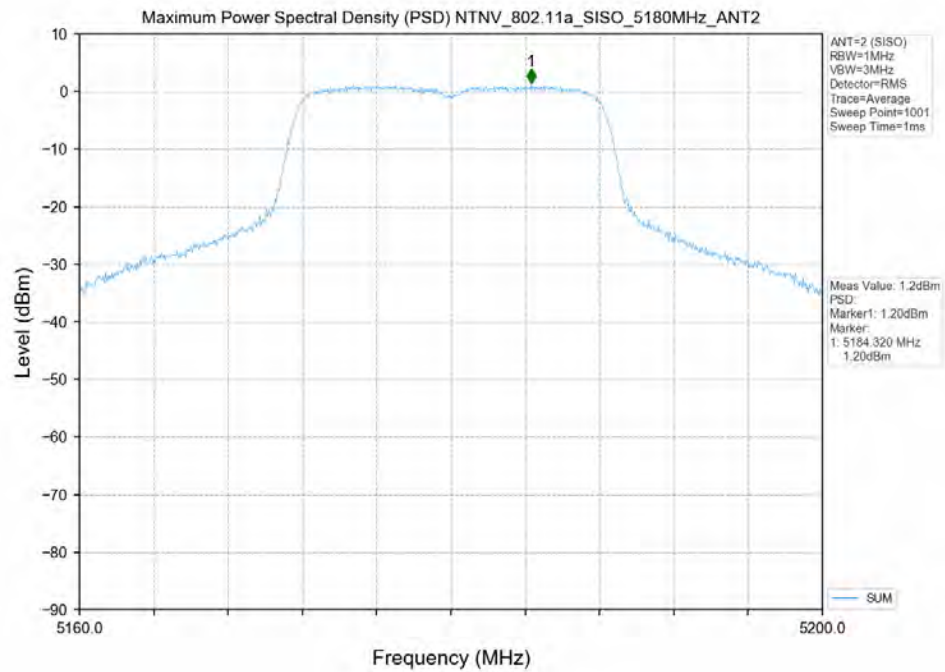
4. Maximum Power Spectral Density (PSD)

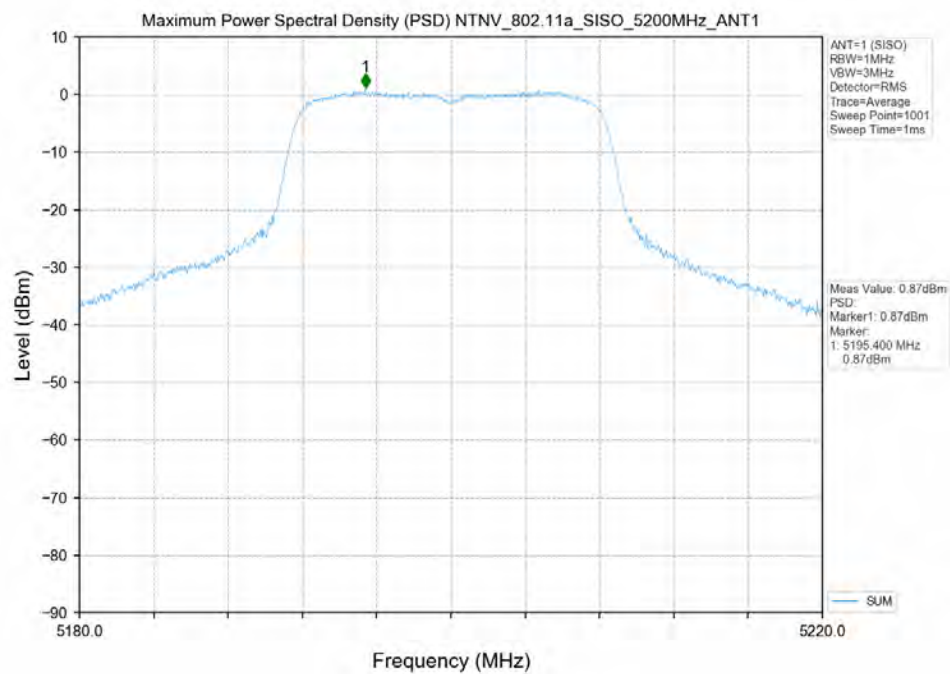
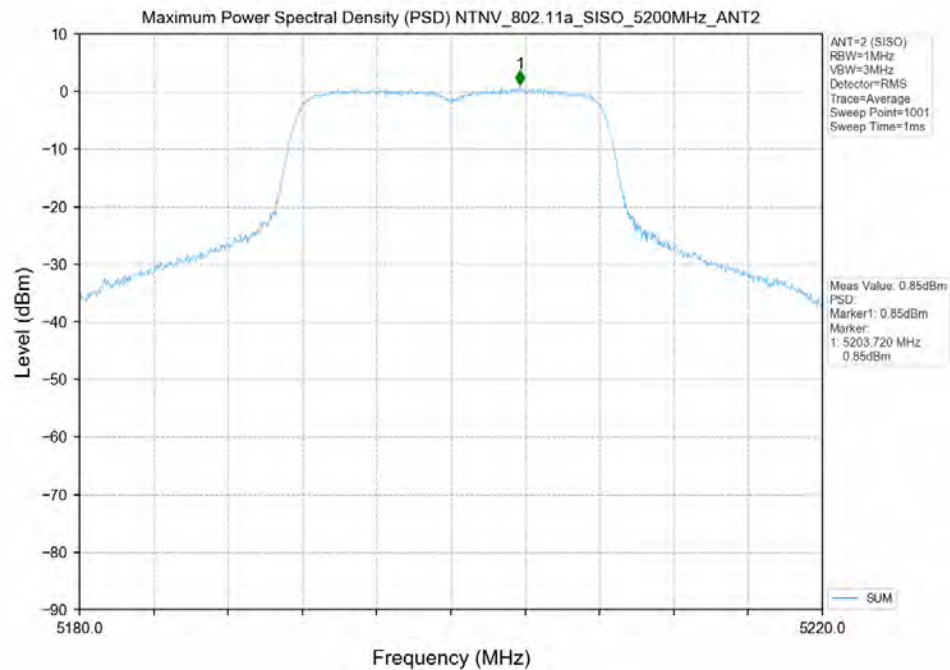
4.1 Test Result

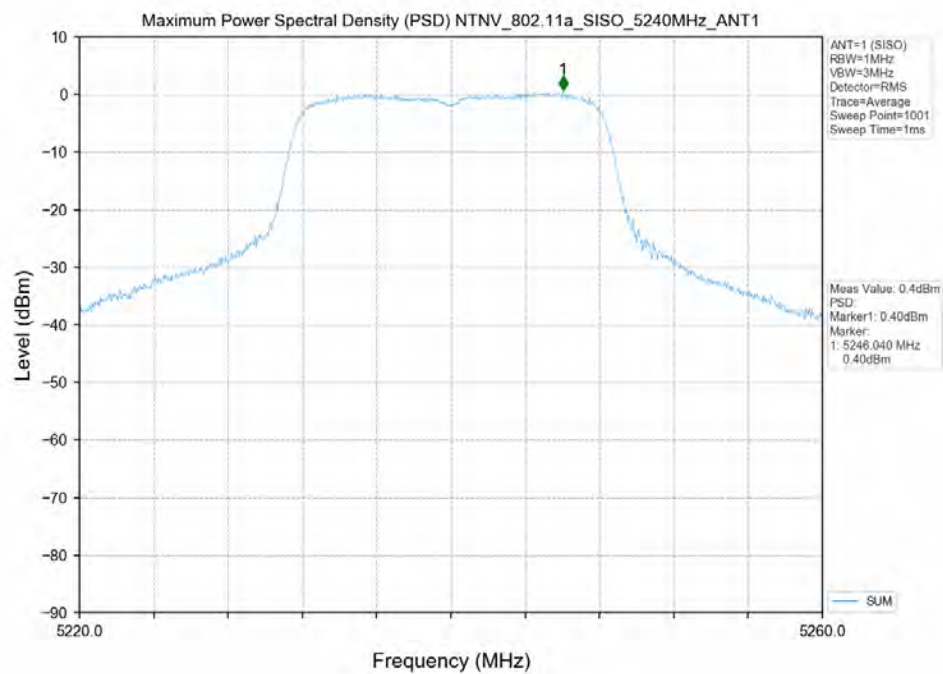
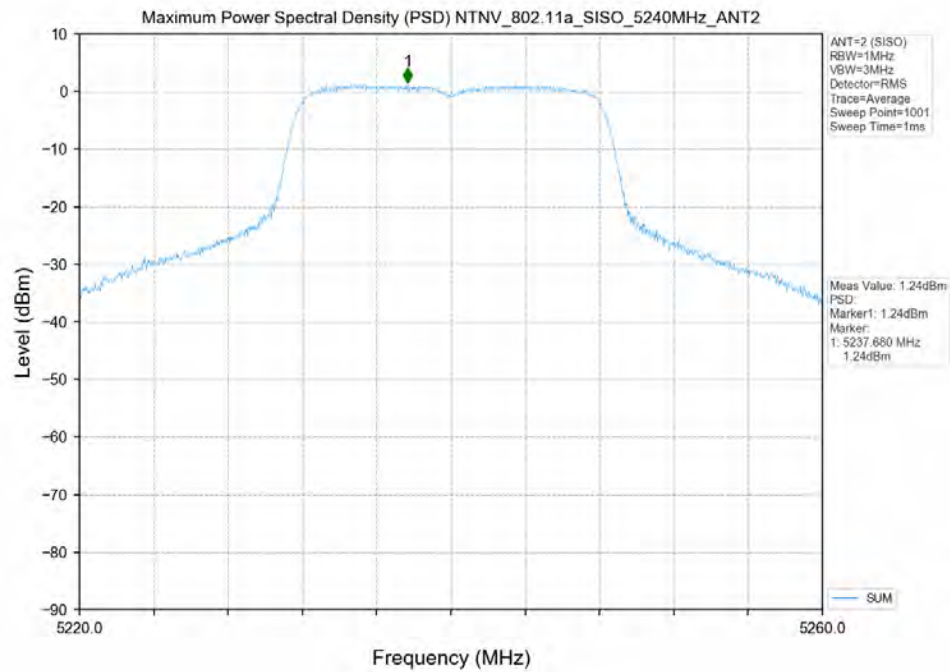
Test Mode	Frequency (MHz)	Tx Type	Maximum Power Spectral Density (dBm/MHz)			Limits (dBm/MHz)	Verdict
			Ant 2	Ant 1	Total		
802.11a	5180	SISO	1.20	0.98	/	≤17	PASS
	5200	SISO	0.85	0.87	/	≤17	PASS
	5240	SISO	1.24	0.40	/	≤17	PASS
802.11n(HT20)	5180	MIMO	-0.51	-0.30	2.31	≤17	PASS
	5200	MIMO	-0.80	-0.18	2.44	≤17	PASS
	5240	MIMO	-0.89	-0.41	2.27	≤17	PASS
802.11n(HT40)	5190	MIMO	-4.55	-4.41	-1.51	≤17	PASS
	5230	MIMO	-2.26	-3.60	-0.12	≤17	PASS

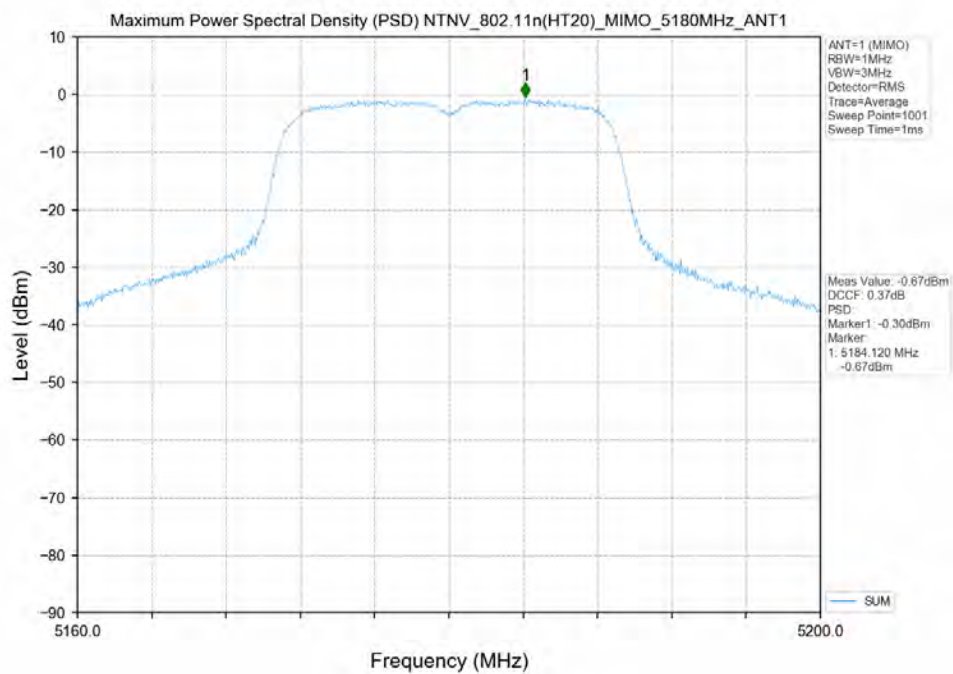
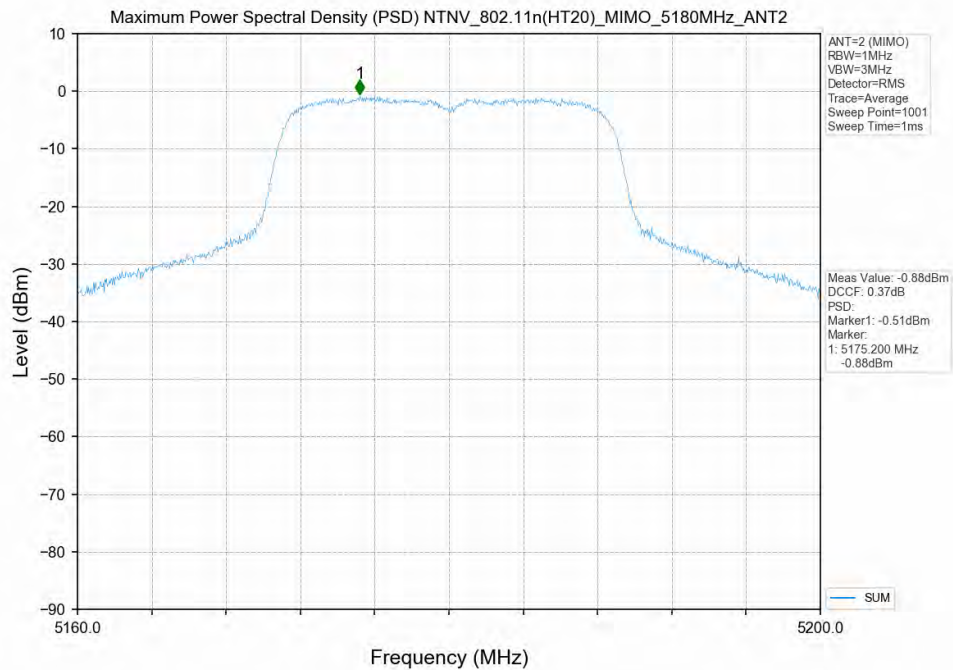
Test Mode	Frequency (MHz)	Tx Type	Maximum Power Spectral Density (dBm/500kHz)			Limits (dBm/500kHz)	Verdict
			Ant 2	Ant 1	Total		
802.11a	5745	SISO	-2.13	-1.57	/	≤30	PASS
	5785	SISO	-1.87	-1.52	/	≤30	PASS
	5825	SISO	-2.42	-1.67	/	≤30	PASS
802.11n(HT20)	5745	MIMO	-1.35	-0.56	2.00	≤30	PASS
	5785	MIMO	-1.50	-1.32	1.43	≤30	PASS
	5825	MIMO	-2.12	-1.52	1.17	≤30	PASS
802.11n(HT40)	5755	MIMO	-4.74	-5.00	-2.12	≤30	PASS
	5795	MIMO	-4.99	-4.60	-2.10	≤30	PASS

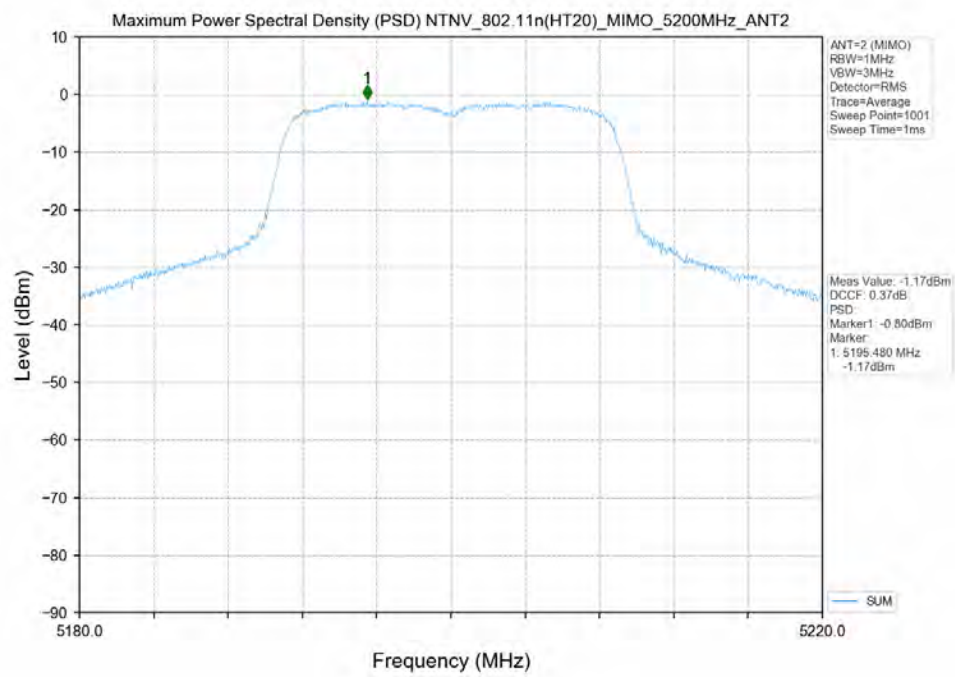
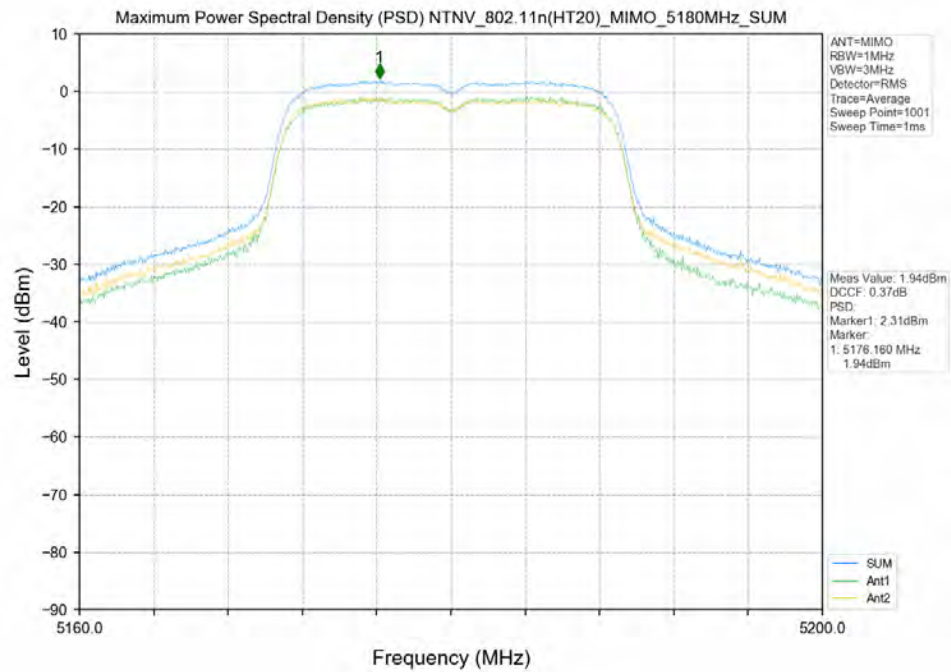
4.2 Test Graph

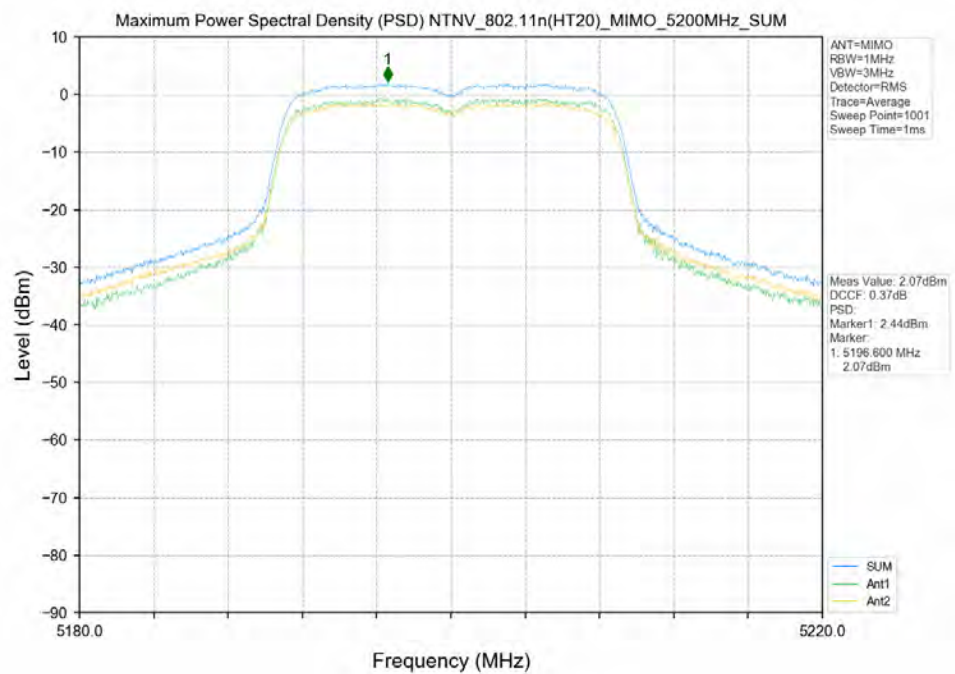
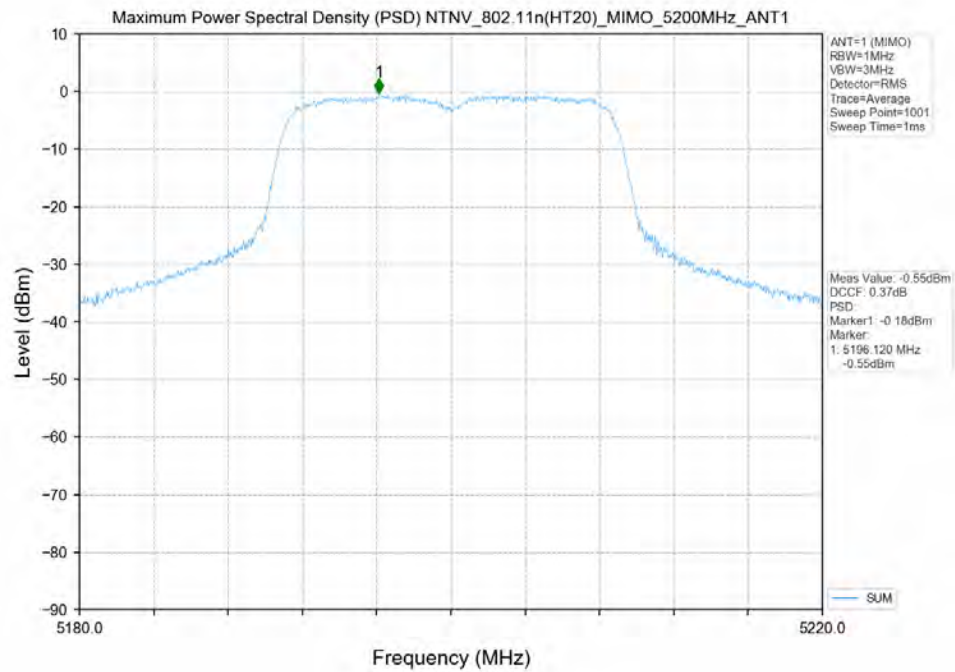


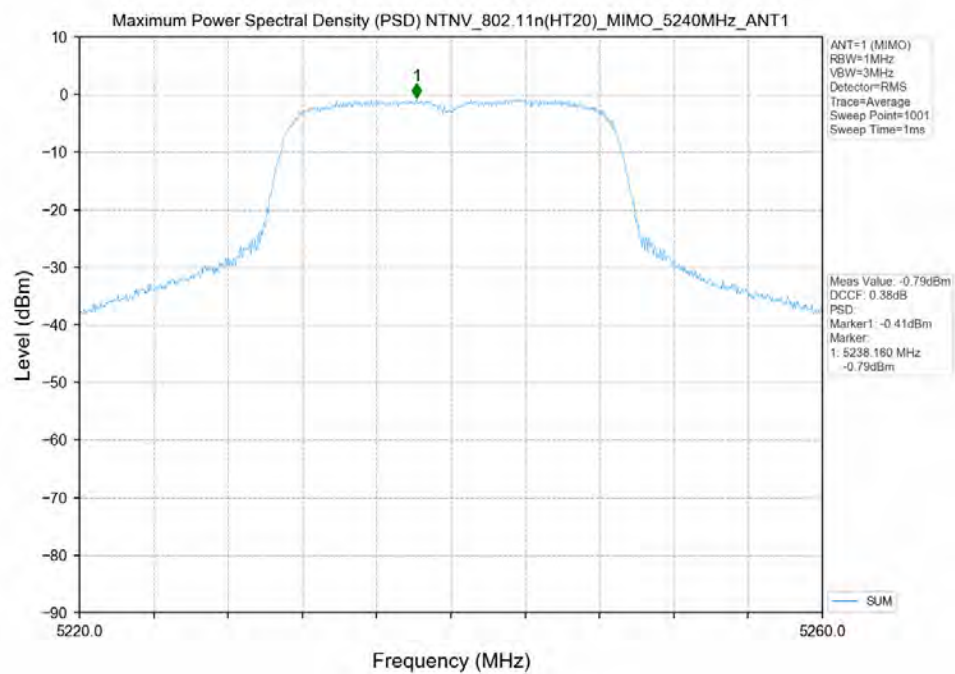
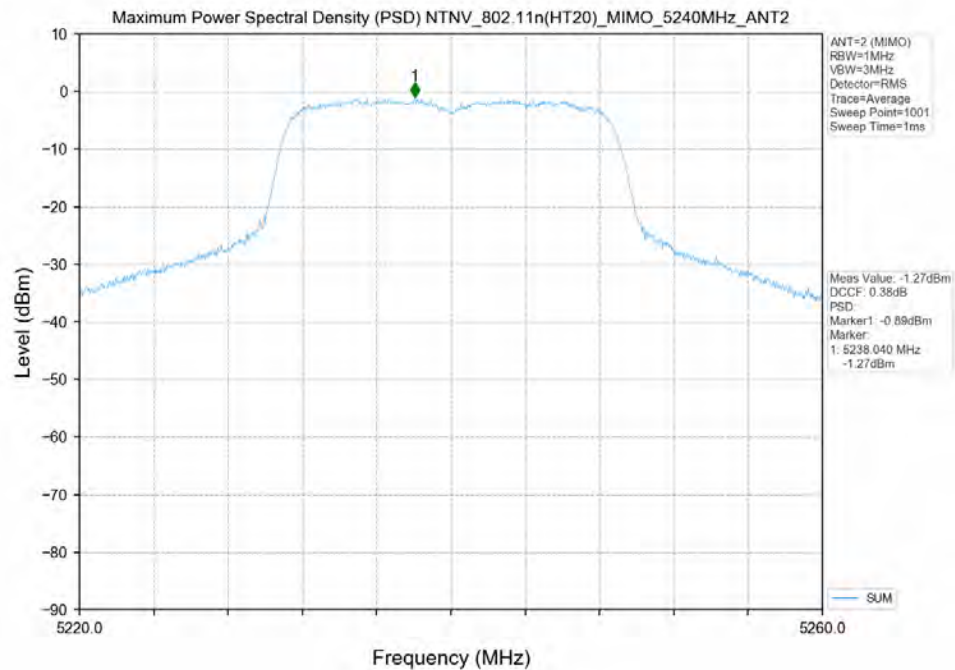


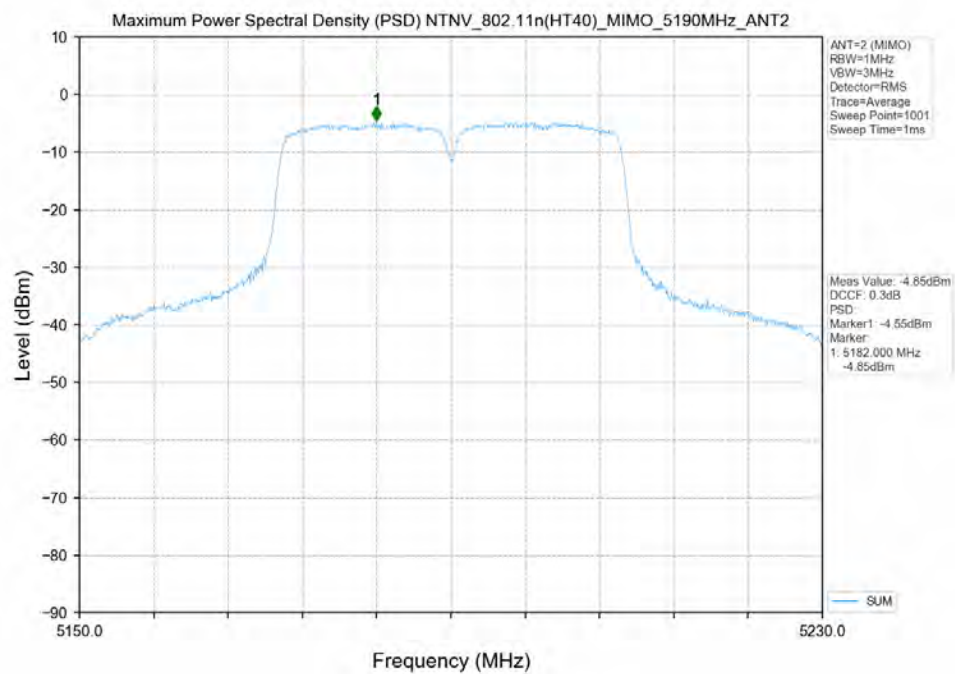
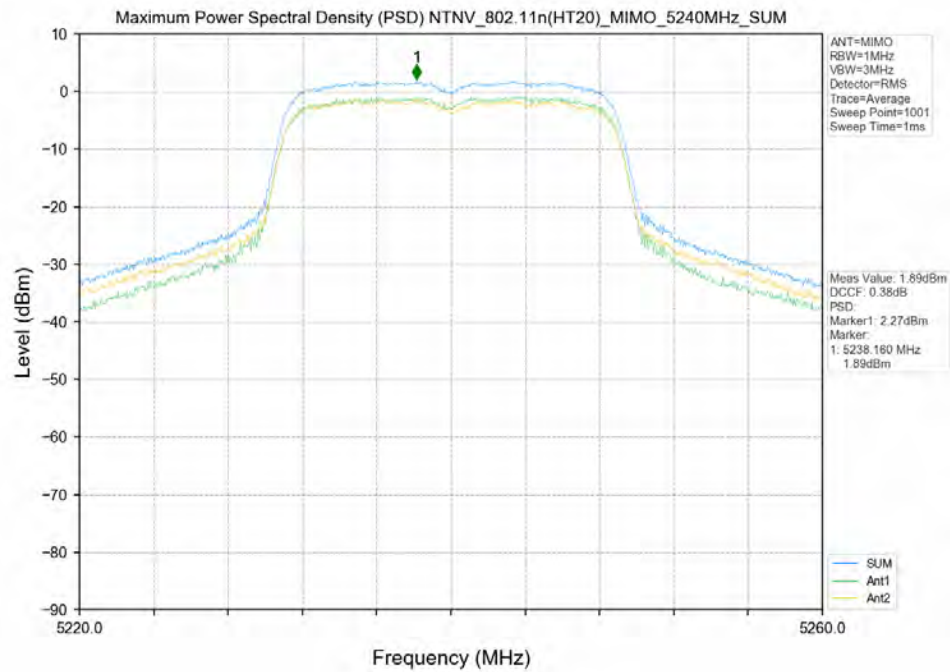


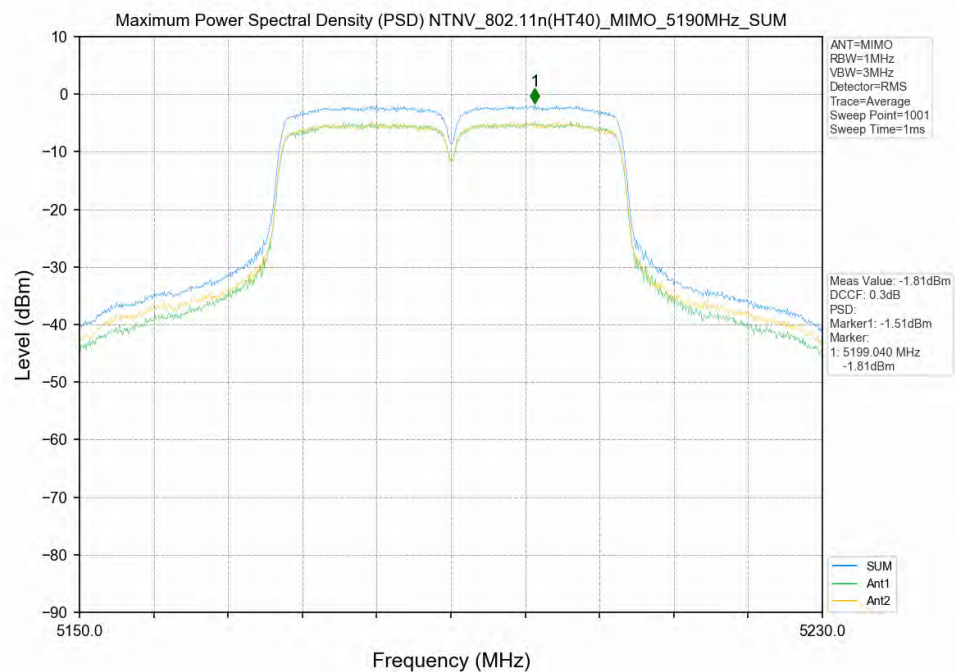
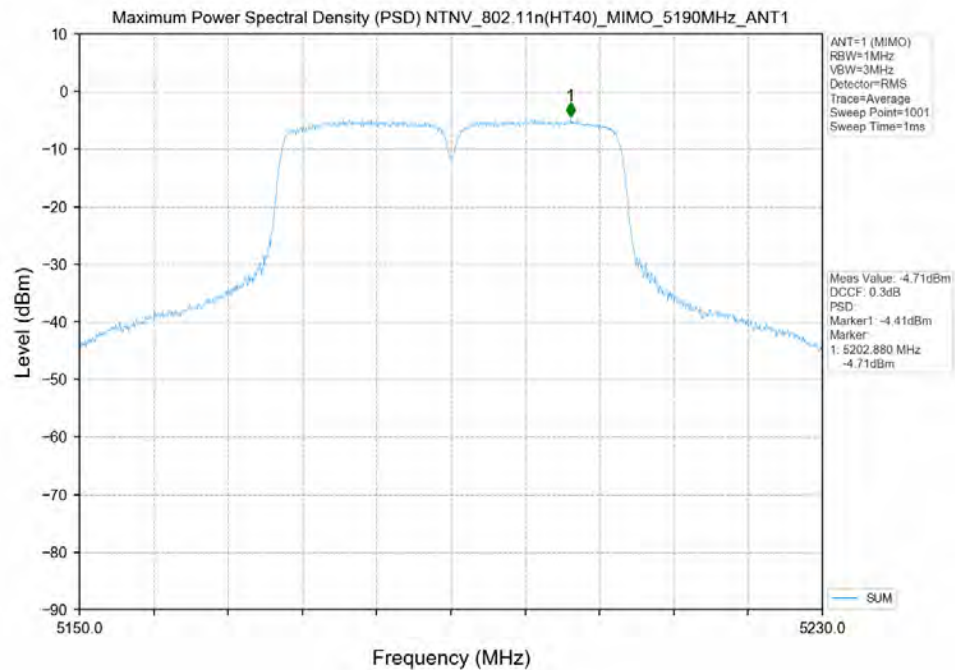


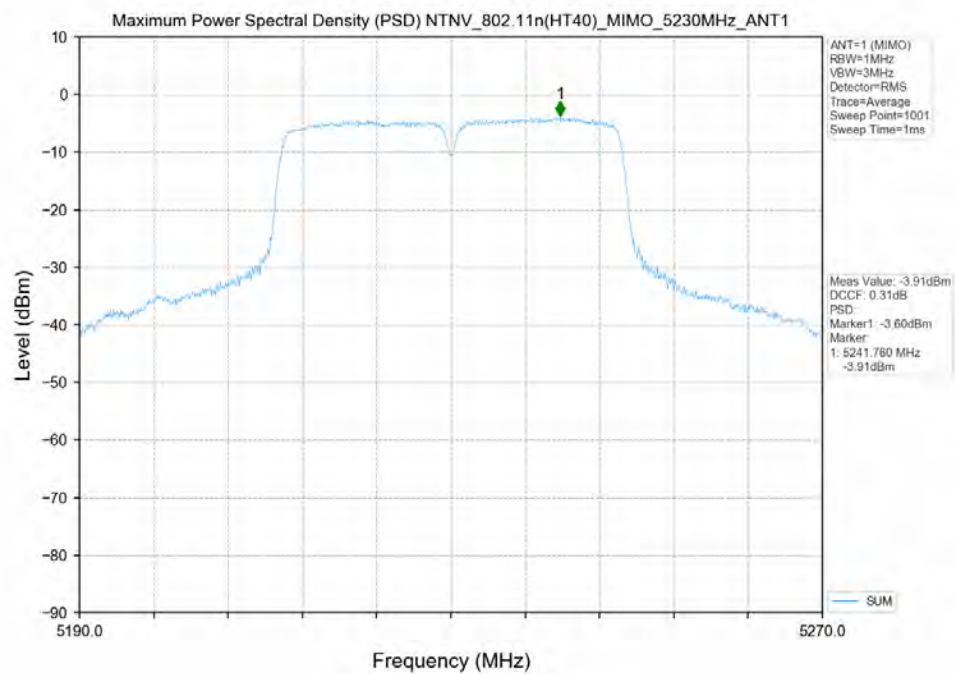
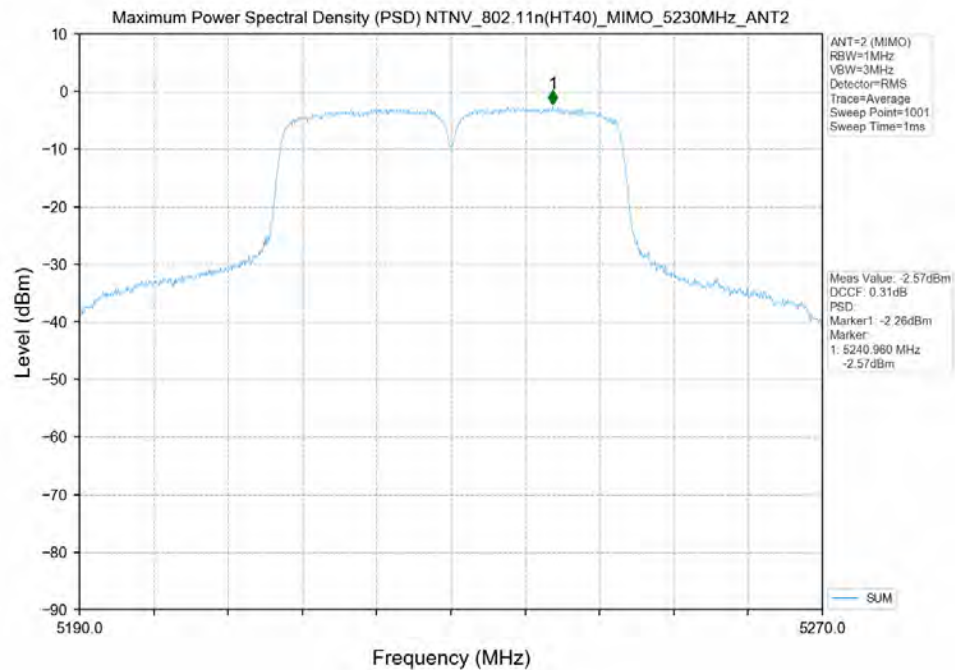


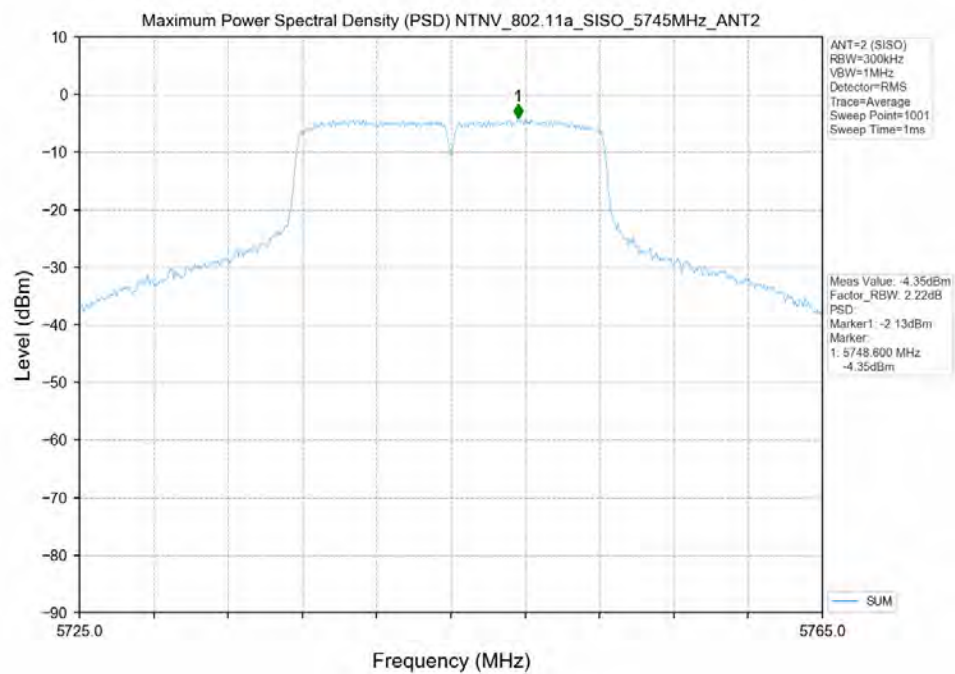
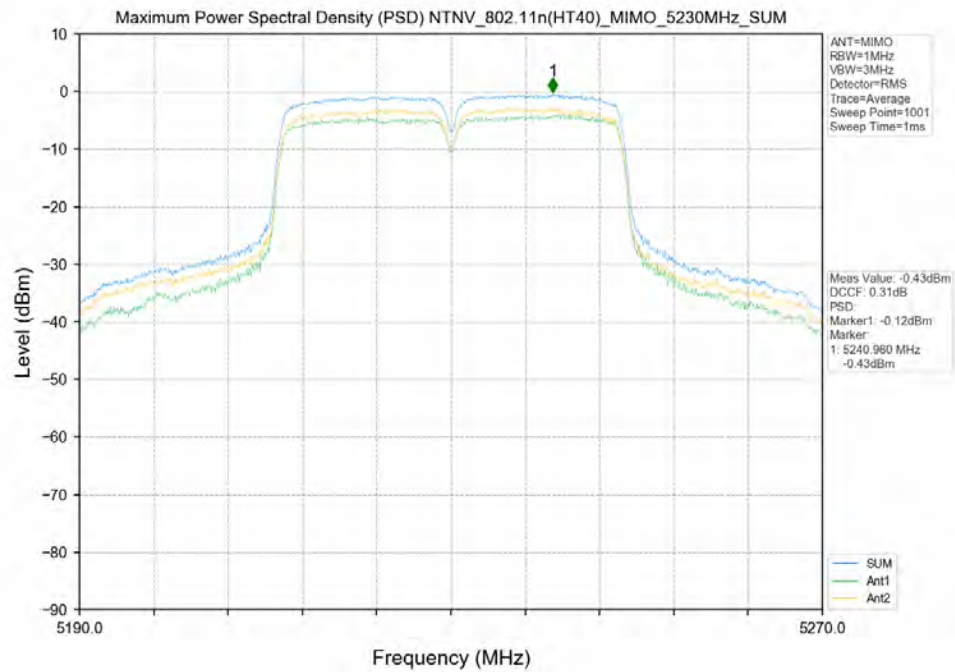


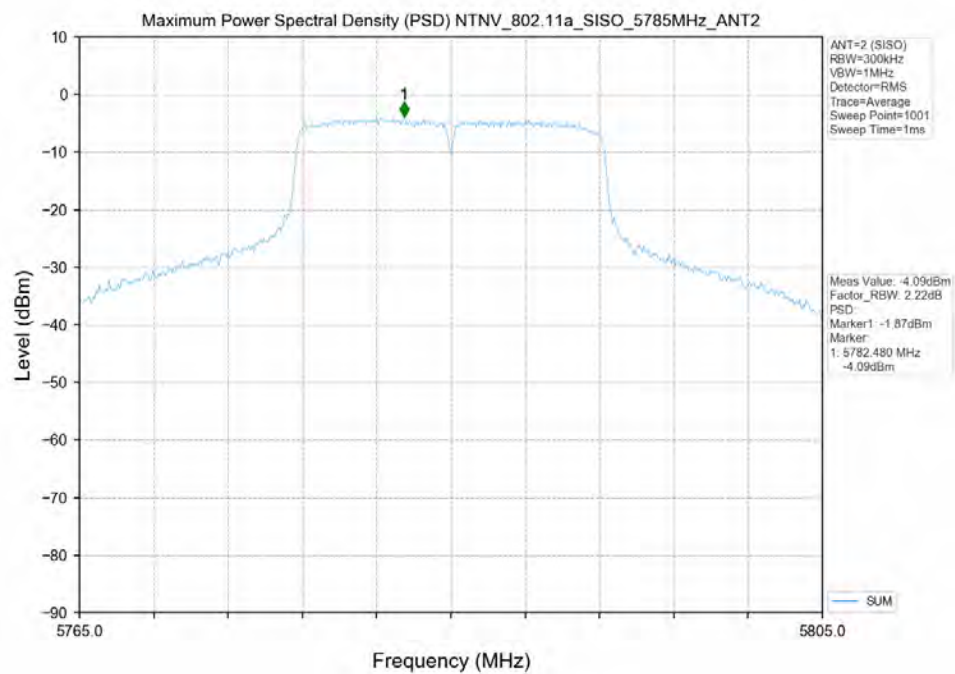
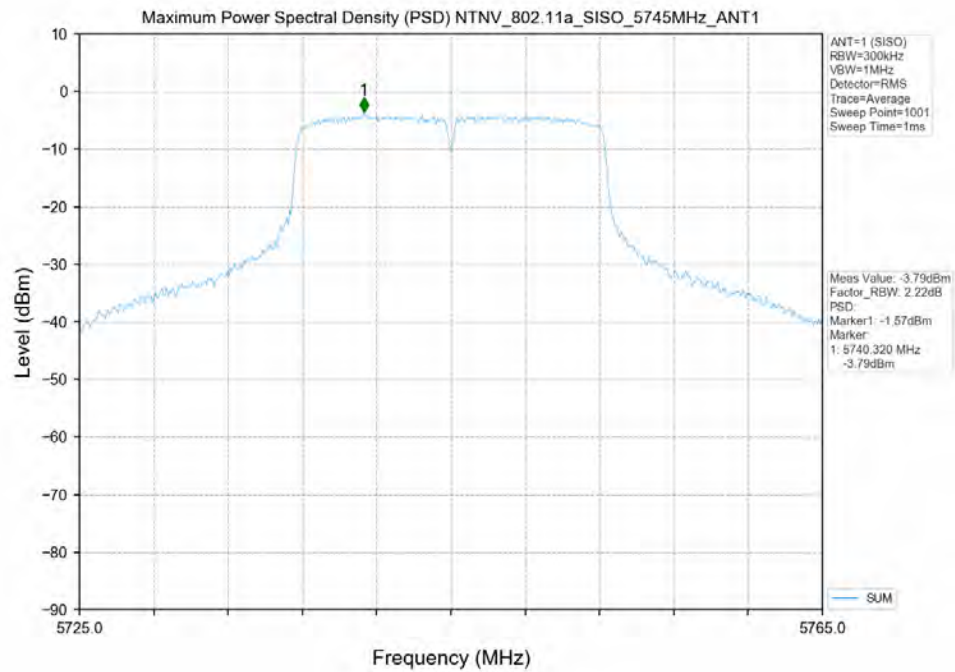


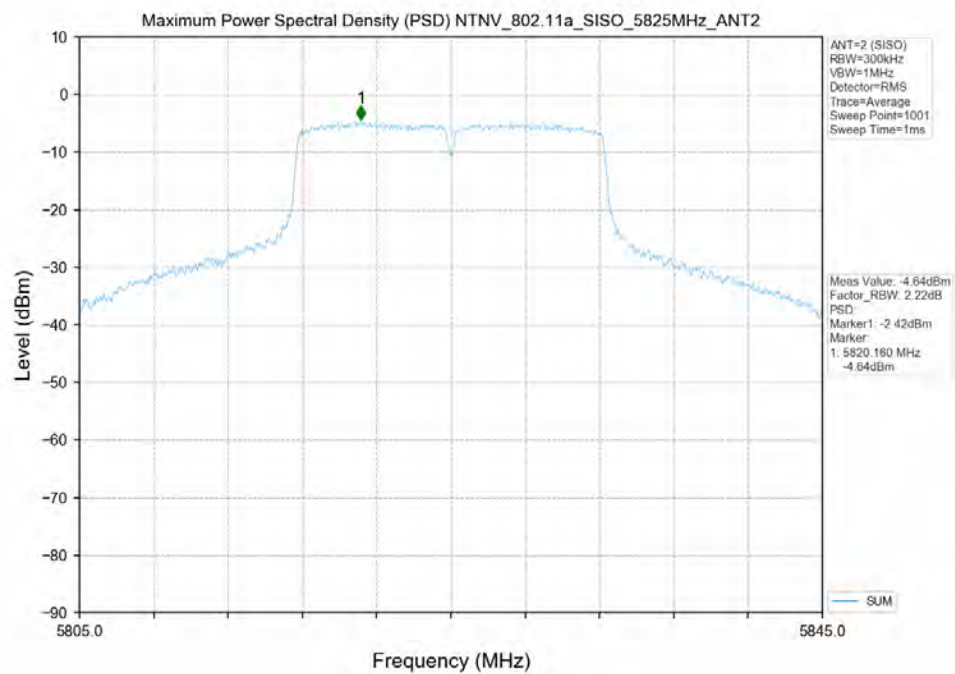
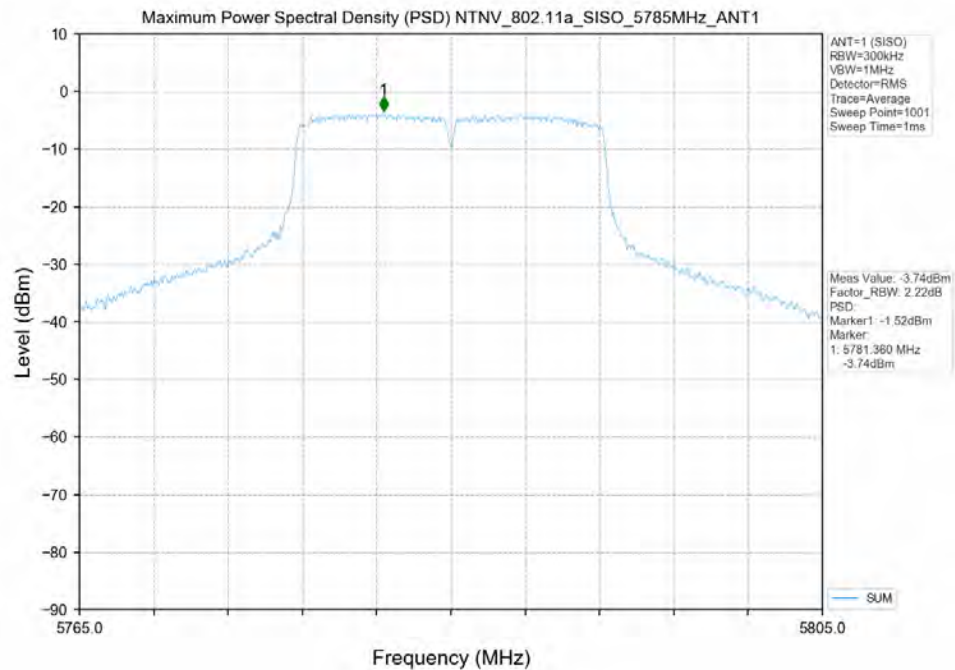


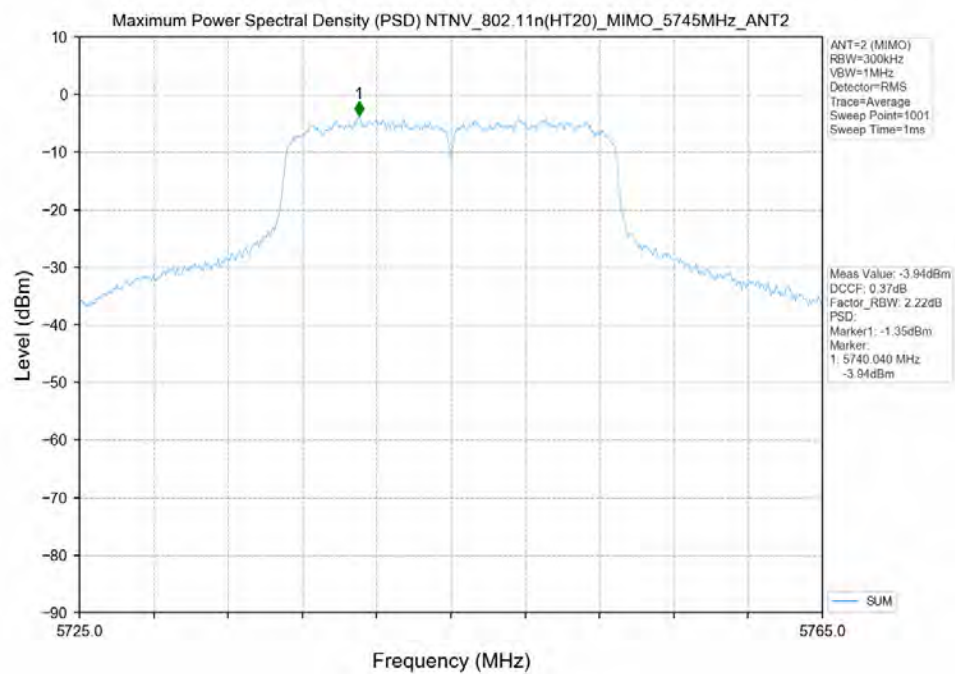
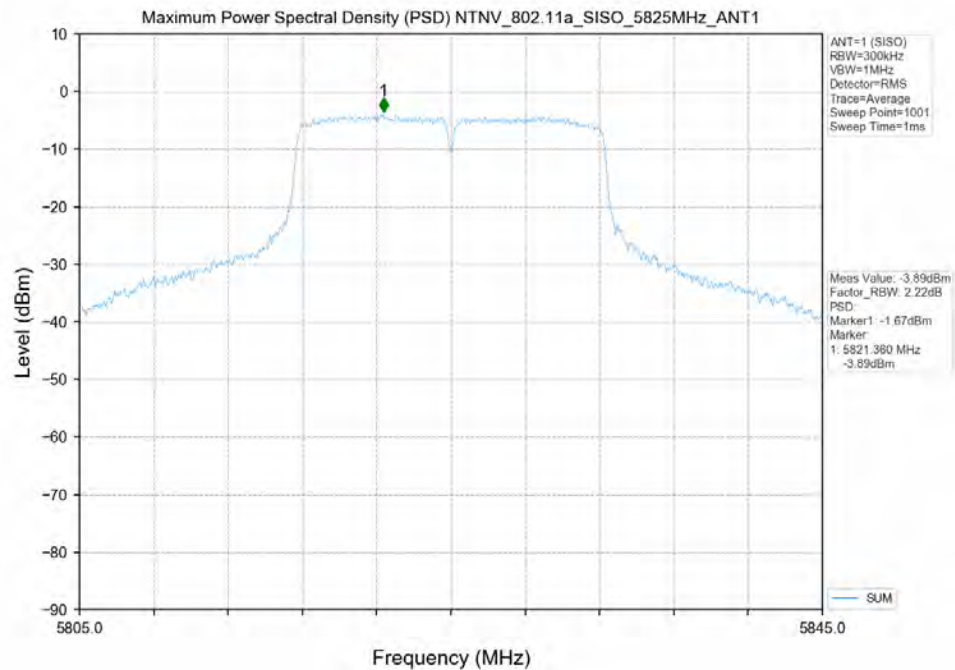


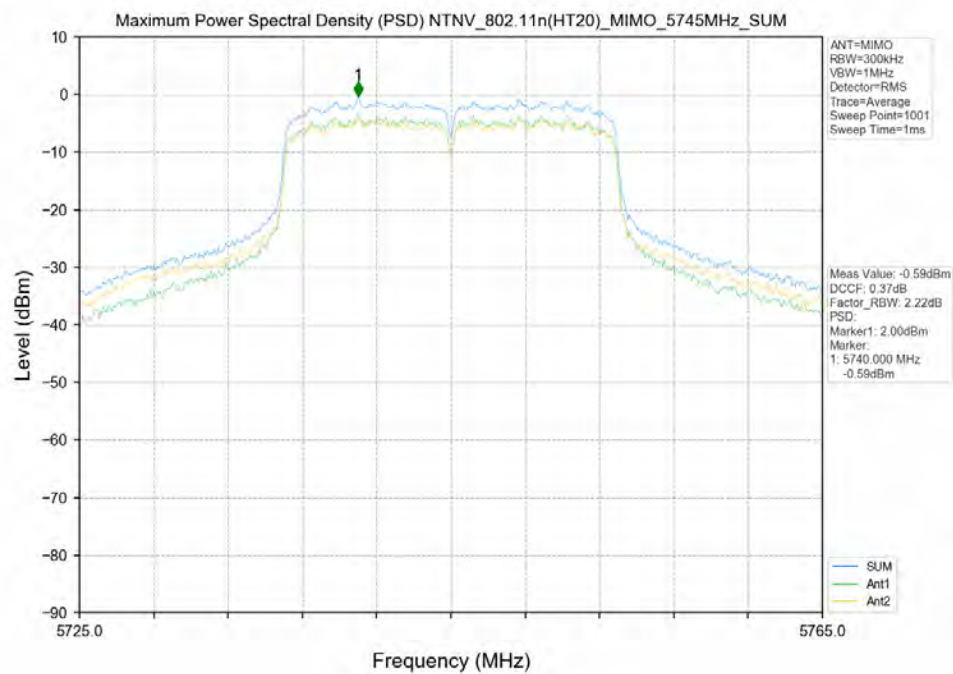
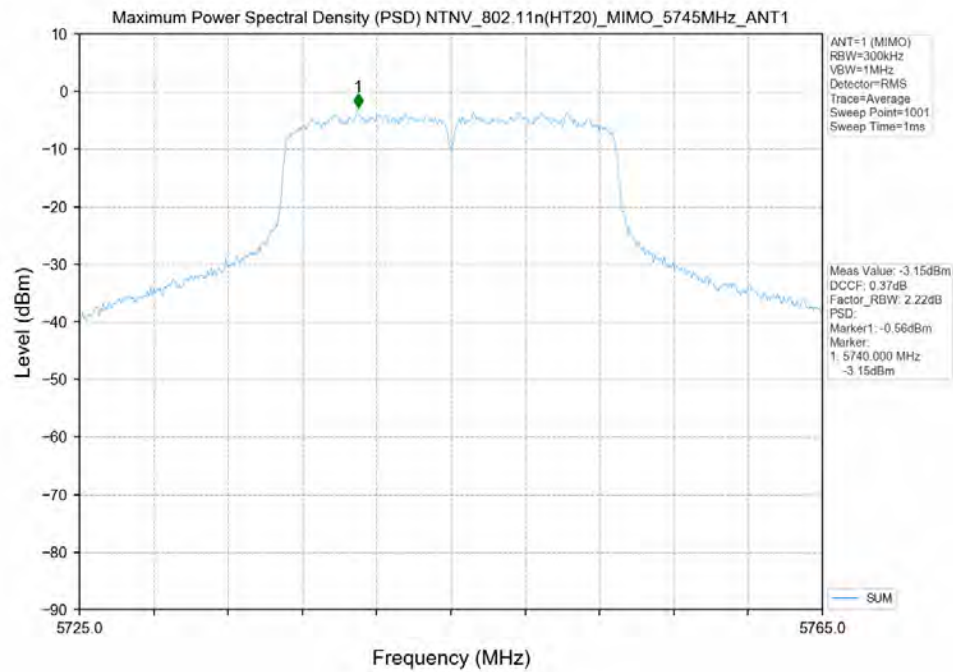


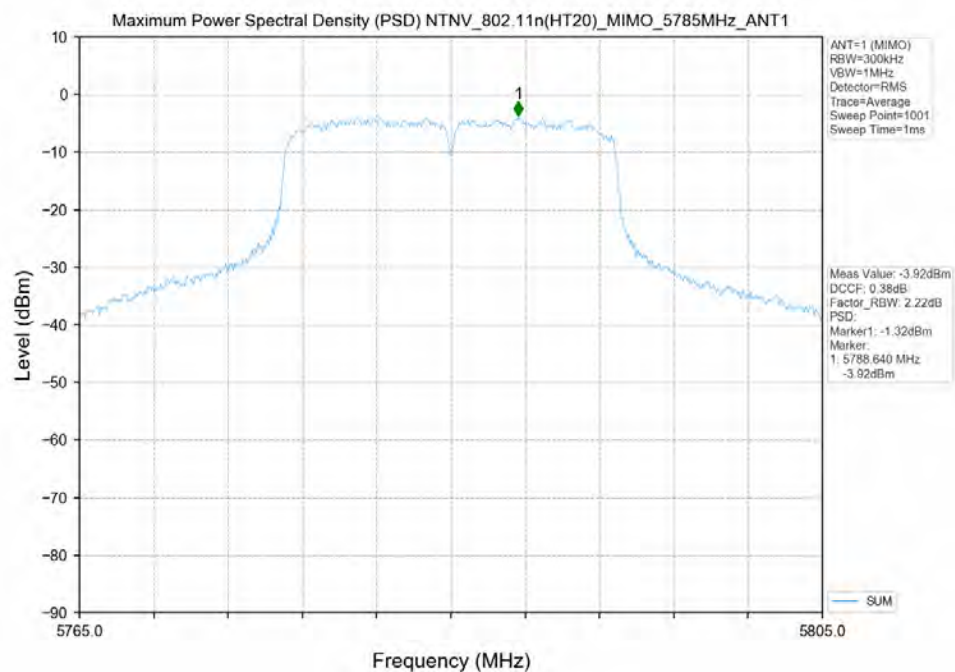
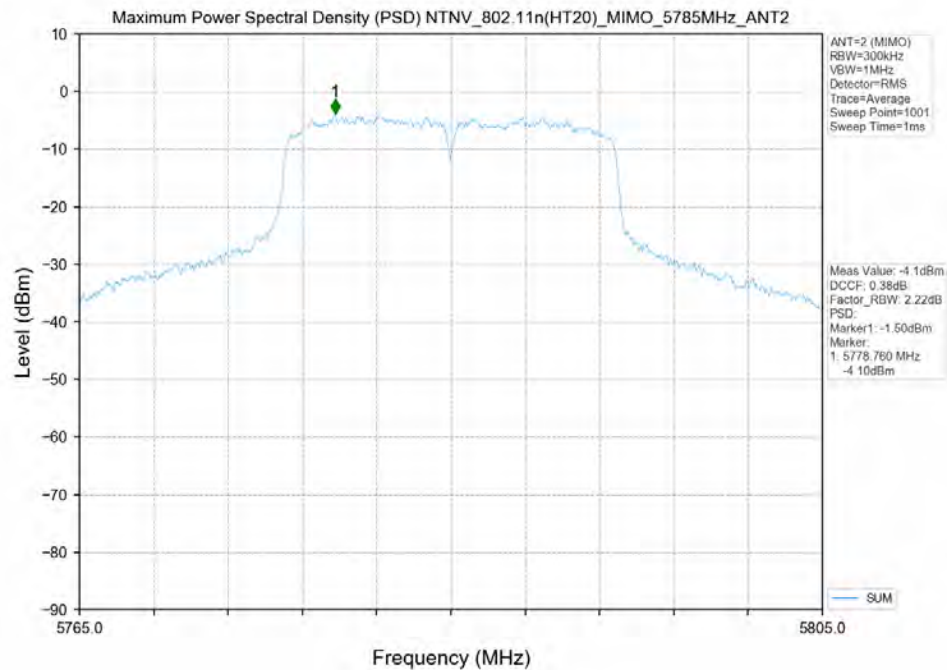


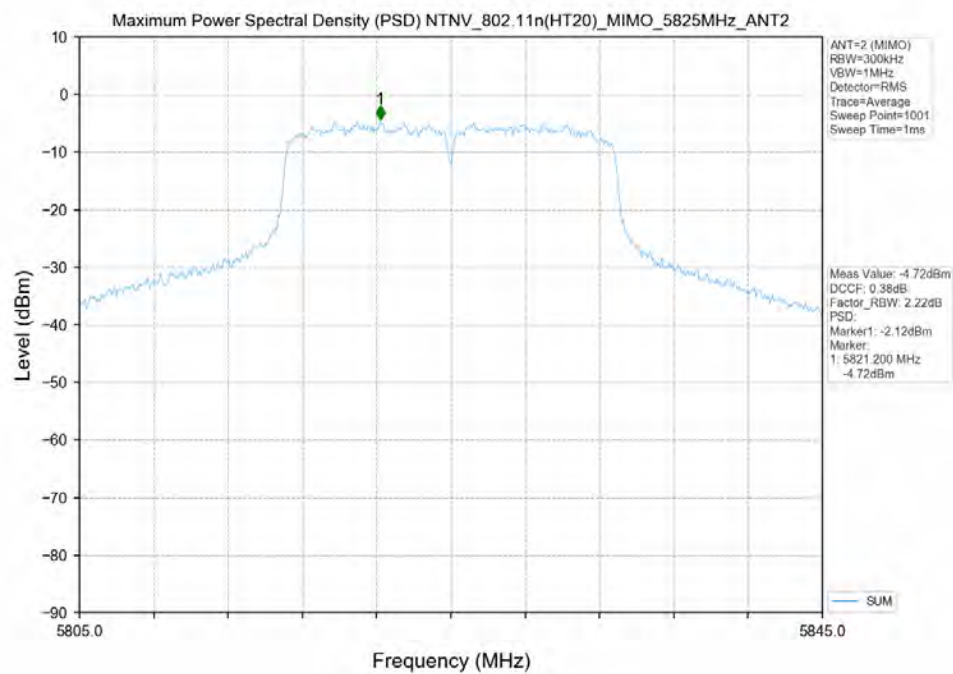
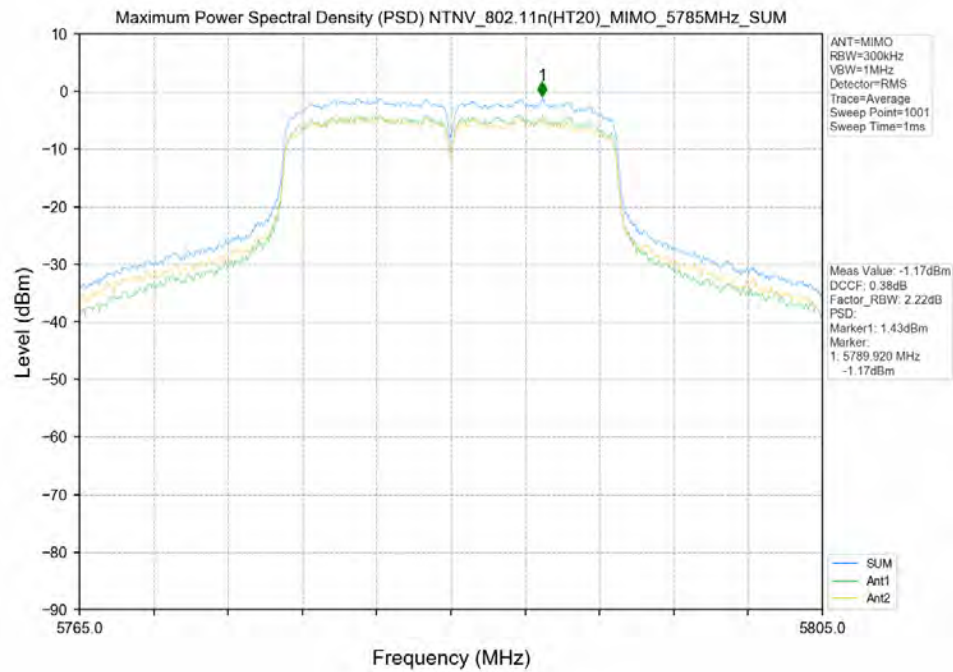


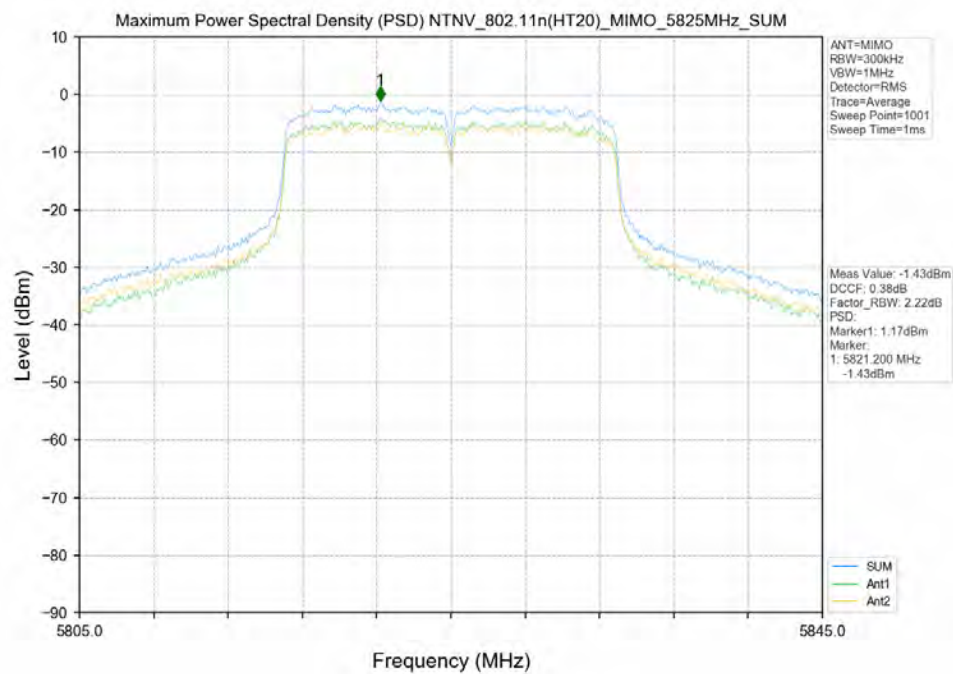
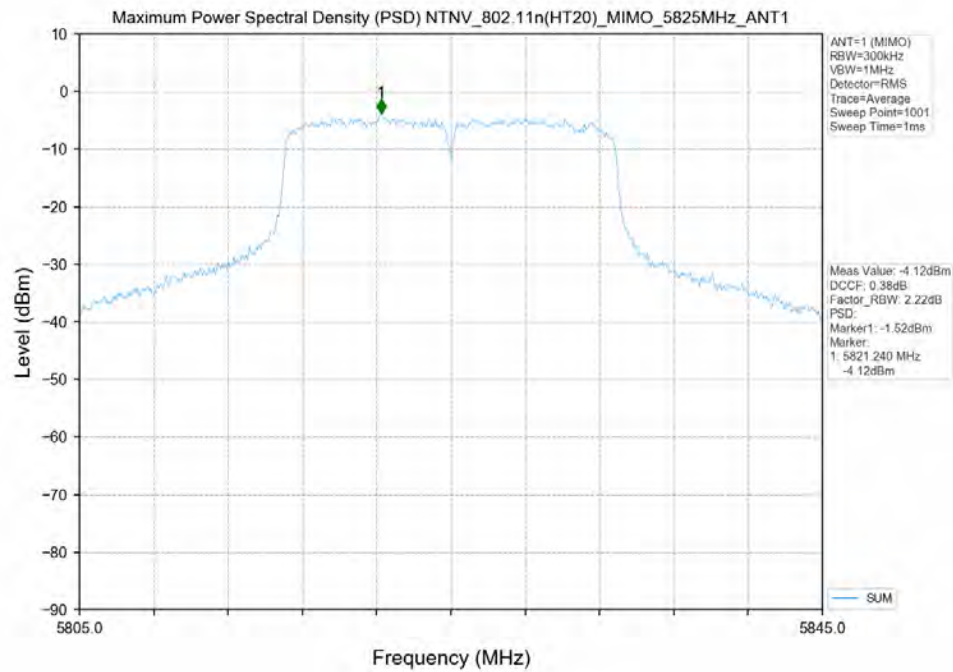


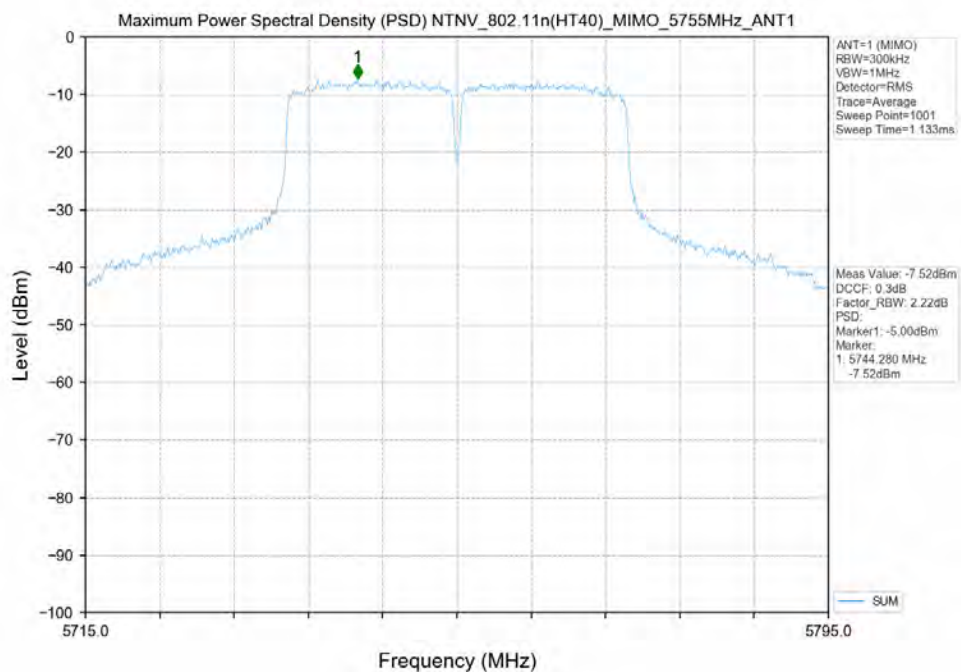
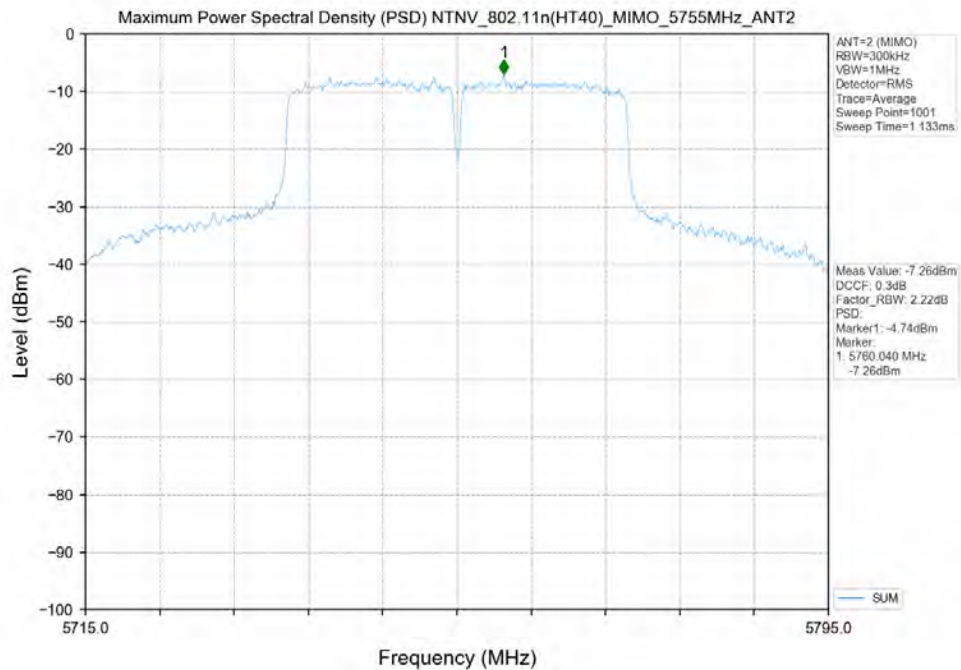


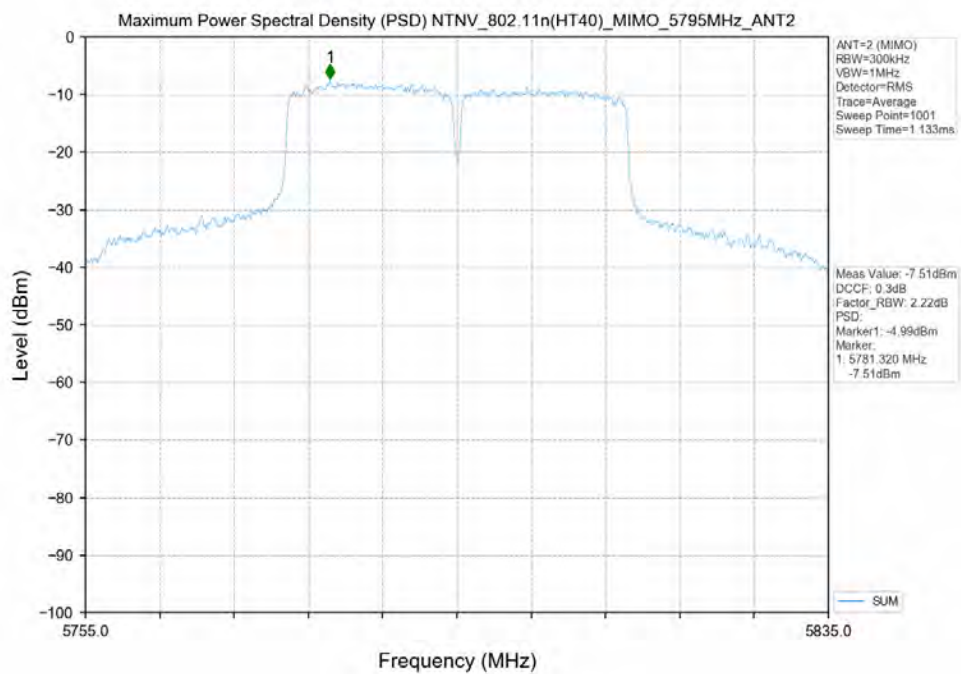
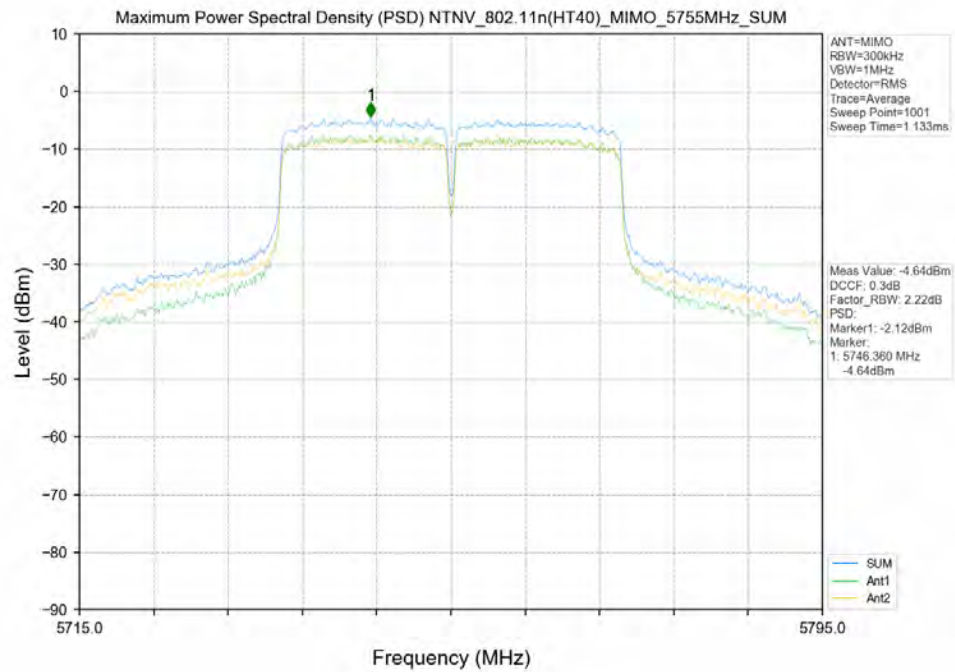


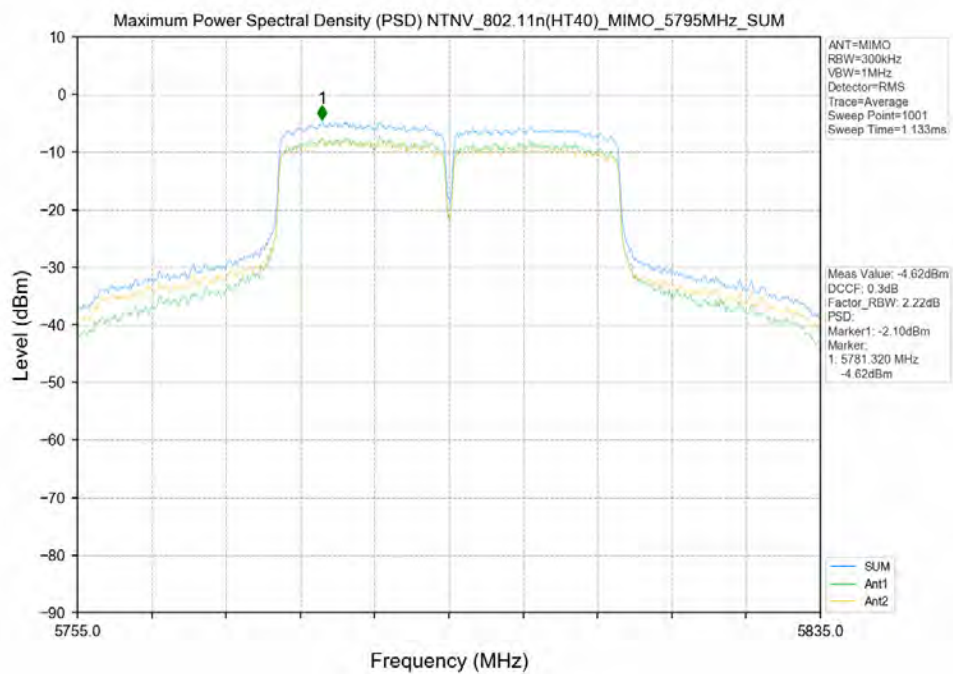
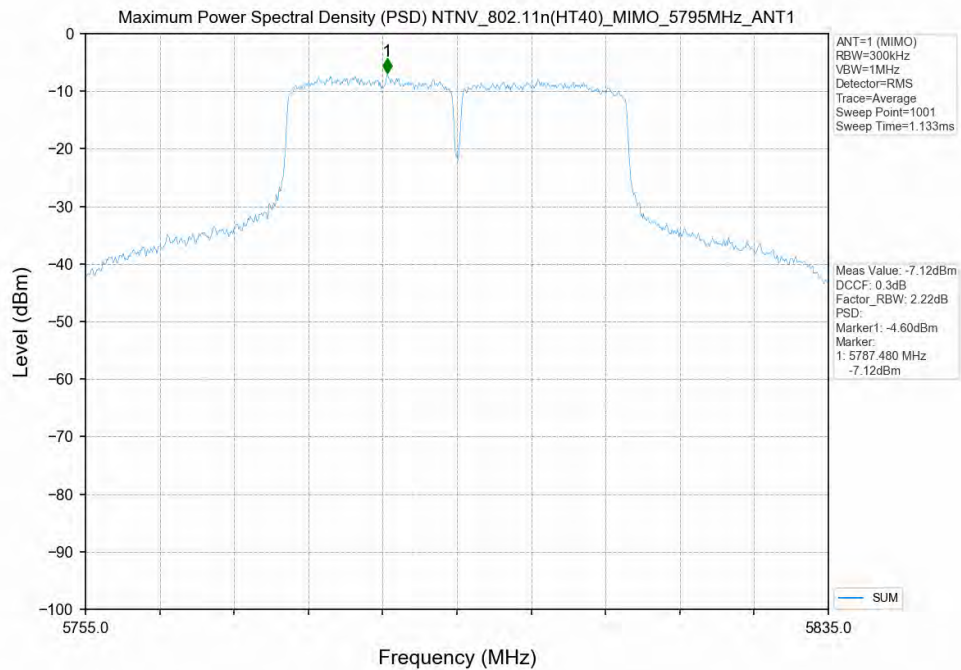












5. Frequency Stability

5.1 Test result

Band	Test Conditions		Operation Frequency (MHz)	Test Frequency (MHz)	Freq. Dev. (MHz)	Limit (GHz)	Result
	Volt (V VC)	Temp (°C)		ANT1	ANT1		
Band U-NII 1	Normal(120)	Extreme(-20)	5180	5180.0543	0.0543	5.150- 5.250	pass
		Extreme(-10)		5180.0667	0.0667		pass
		Extreme(0)		5180.1291	0.1291		pass
		Extreme(+10)		5180.0774	0.0774		pass
		Extreme(+20)		5180.0498	0.0498		pass
		Extreme(+30)		5180.0703	0.0703		pass
		Extreme(+40)		5180.0484	0.0484		pass
		Extreme(+50)		5180.1484	0.1484		pass
		Extreme(+60)		5180.1000	0.1000		pass
		Extreme(+70)		5180.0154	0.0154		pass
	Extreme(102)	Extreme(+20)	5180.0904	0.0904	pass		
	Extreme(138)		5180.0683	0.0683	pass		
	Normal(120)	5240	Extreme(-20)	5240.0548	0.0548		pass
			Extreme(-10)	5240.0558	0.0558		pass
			Extreme(0)	5240.1368	0.1368		pass
			Extreme(+10)	5240.0400	0.0400		pass
			Extreme(+20)	5240.0559	0.0559		pass
			Extreme(+30)	5240.0438	0.0438		pass
			Extreme(+40)	5240.1173	0.1173		pass
			Extreme(+50)	5240.1314	0.1314		pass
			Extreme(+60)	5240.1373	0.1373		pass
			Extreme(+70)	5240.1263	0.1263		pass
	Extreme(102)	Extreme(+20)	5240.0626	0.0626	pass		
	Extreme(138)		5240.0821	0.0821	pass		

Band	Test Conditions		Operation Frequency (MHz)	Test Frequency (MHz)	Freq. Dev. (MHz)	Limit (GHz)	Result
	Volt (V VC)	Temp (°C)		ANT1	ANT1		
Band U-NII 3	Normal(120)	Extreme(-20)	5745	5745.0710	0.0710	5.725- 5.850	pass
		Extreme(-10)		5745.0973	0.0973		pass
		Extreme(0)		5745.1114	0.1114		pass
		Extreme(+10)		5745.0543	0.0543		pass
		Extreme(+20)		5745.1006	0.1006		pass
		Extreme(+30)		5745.0847	0.0847		pass
		Extreme(+40)		5745.0651	0.0651		pass
		Extreme(+50)		5745.1339	0.1339		pass
		Extreme(+60)		5745.0937	0.0937		pass
		Extreme(+70)		5745.0494	0.0494		pass
	Extreme(102)	Extreme(+20)	5745.0662	0.0662	pass		
	Extreme(138)		5745.0357	0.0357	pass		
	Normal(120)	5825	Extreme(-20)	5825.0452	0.0452		pass
			Extreme(-10)	5825.0951	0.0951		pass
			Extreme(0)	5825.1323	0.1323		pass
			Extreme(+10)	5825.0637	0.0637		pass
			Extreme(+20)	5825.0867	0.0867		pass
			Extreme(+30)	5825.1174	0.1174		pass
			Extreme(+40)	5825.1411	0.1411		pass
			Extreme(+50)	5825.0748	0.0748		pass
			Extreme(+60)	5825.0885	0.0885		pass
			Extreme(+70)	5825.0714	0.0714		pass
	Extreme(102)	Extreme(+20)	5825.0475	0.0475	pass		
	Extreme(138)		5825.0438	0.0438	pass		

Remark: Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested