

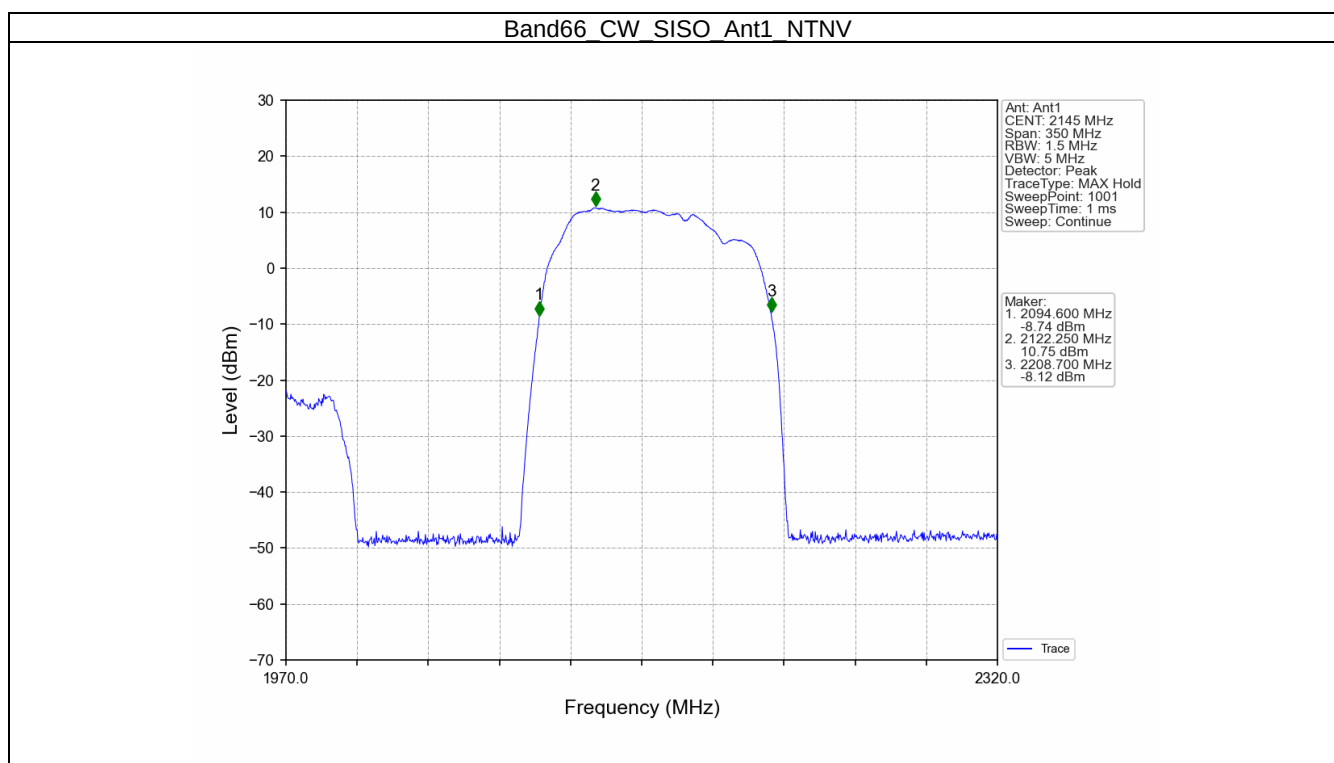
1. Out of band rejection

1.1 Band66

1.1.1 Test Result

Band: 66 / NTNV							
Signal	Sweep Frequency Range (MHz)	TX Type	ANT	F0 (MHz)	FL (MHz)	FH (MHz)	Verdict
CW	1970 - 2320	SISO	1	2122.250	2094.600	2208.700	Pass

1.1.2 Test Graph





2. AGC threshold

2.1 Band66

2.1.1 Test Result

Band: 66 / NTNV					
Signal	Frequency (MHz)	TX Type	ANT	AGC Threshold (dBm)	Verdict
GMSK 0.2MHz	2122.25	SISO	1	-3.20	Pass
AWGN 5MHz	2122.25	SISO	1	-3.20	Pass

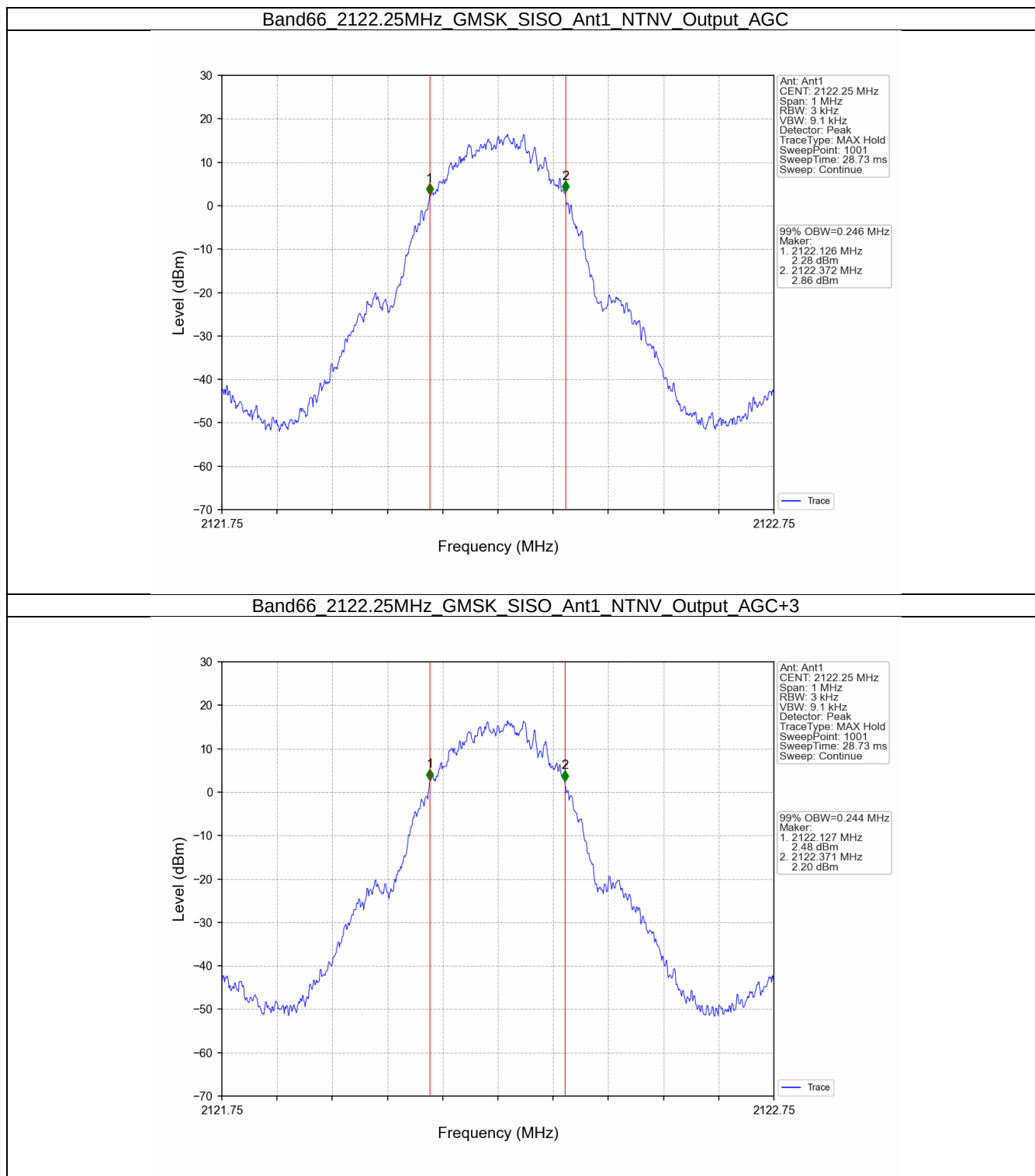
3. Input-versus-output signal comparison

3.1 Band66_OBW

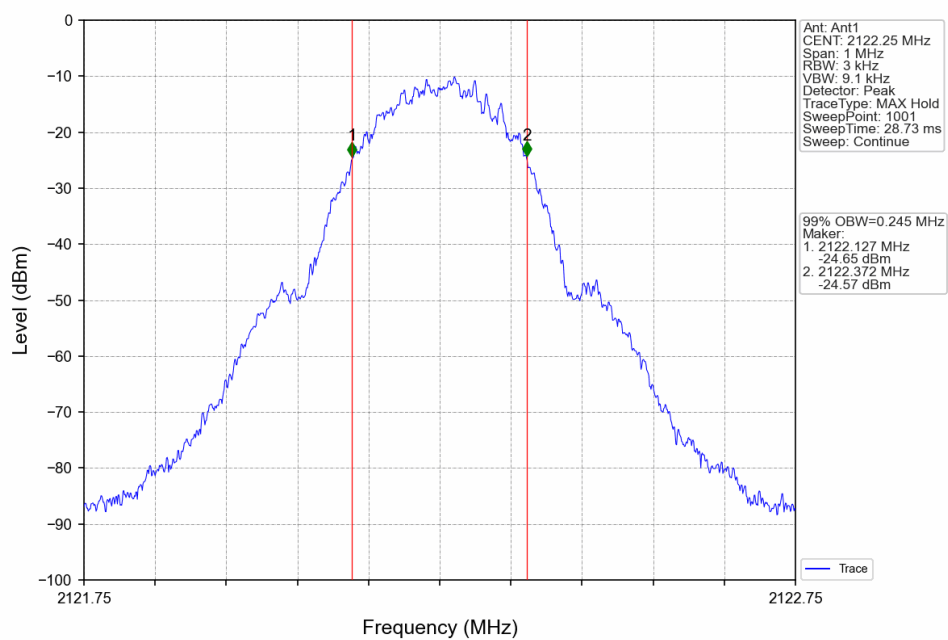
3.1.1 Test Result

Band: 66 / NTNV							
Signal			TX Type	ANT	99% OBW (MHz)		Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	
GMSK 0.2MHz	-0.2	2122.25	SISO	1	0.246	0.245	Pass
	-3.2	2122.25	SISO	1	0.244	0.245	Pass
AWGN 5MHz	-0.2	2122.25	SISO	1	4.538	4.530	Pass
	-3.2	2122.25	SISO	1	4.523	4.550	Pass

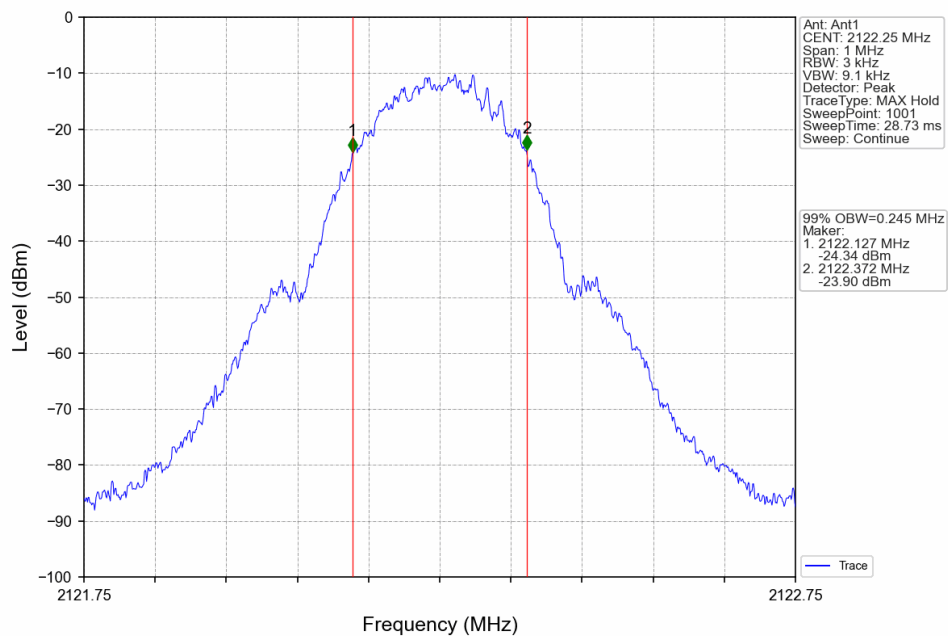
3.1.2 Test Graph



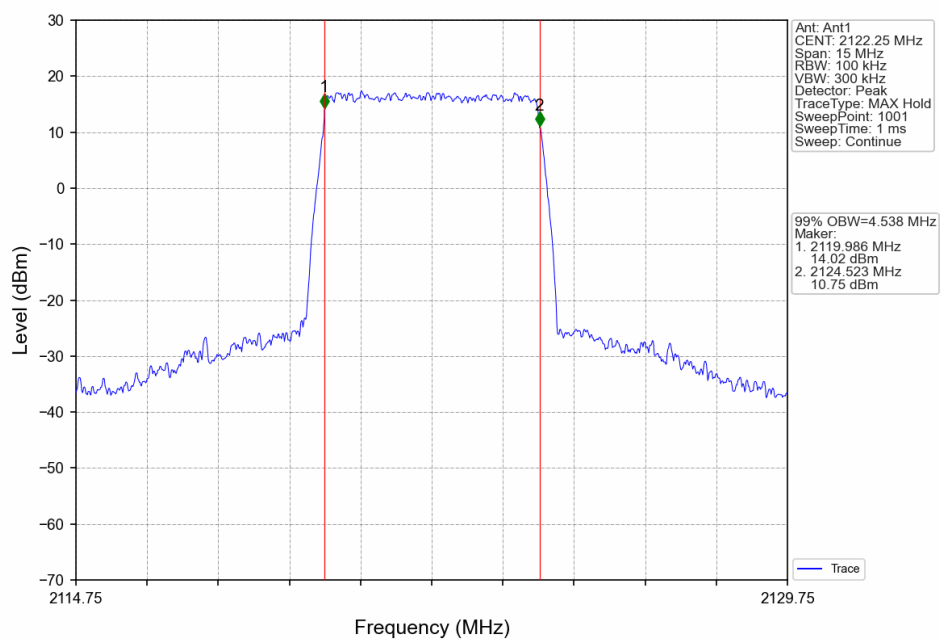
Band66_2122.25MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



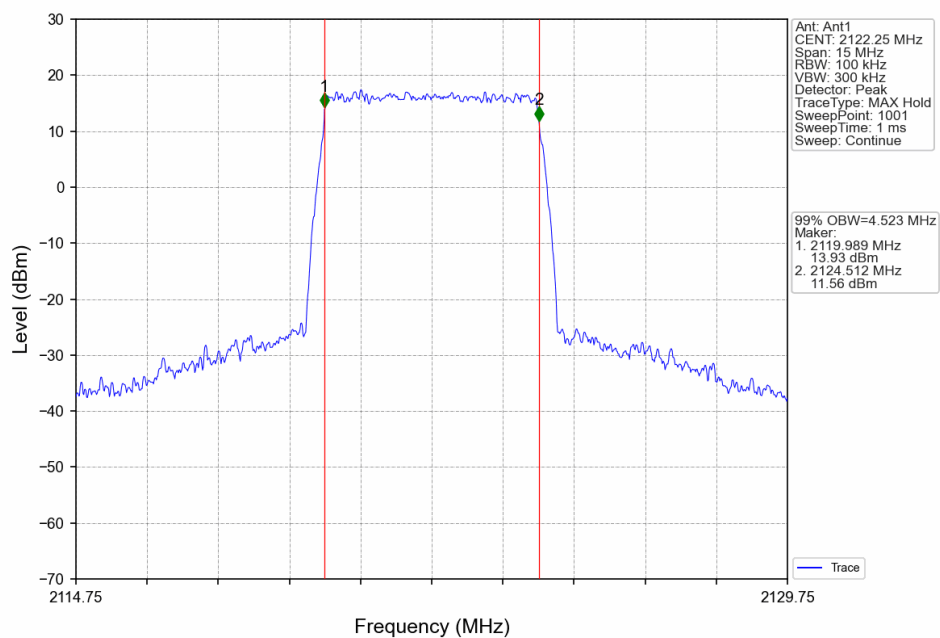
Band66_2122.25MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



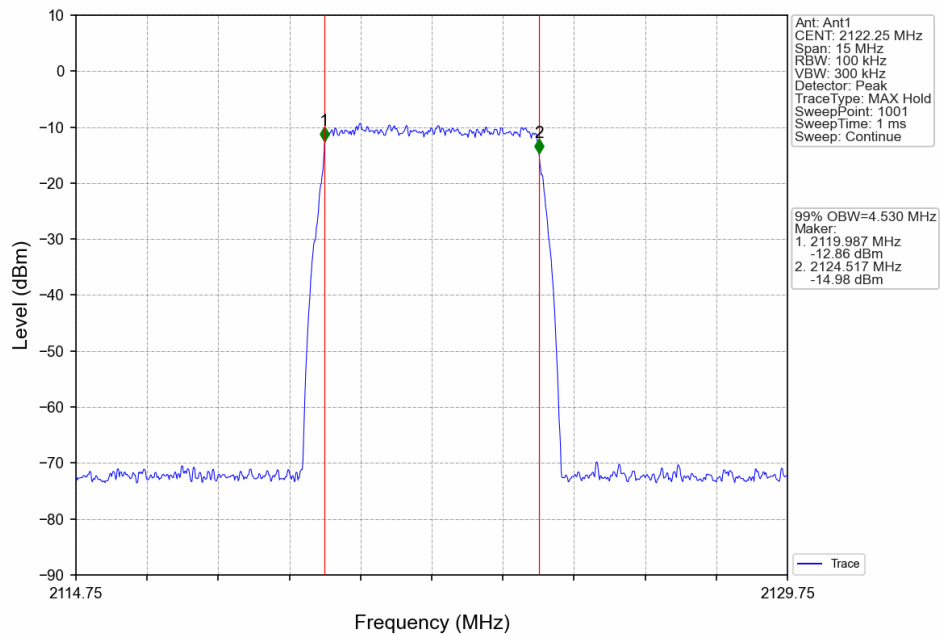
Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



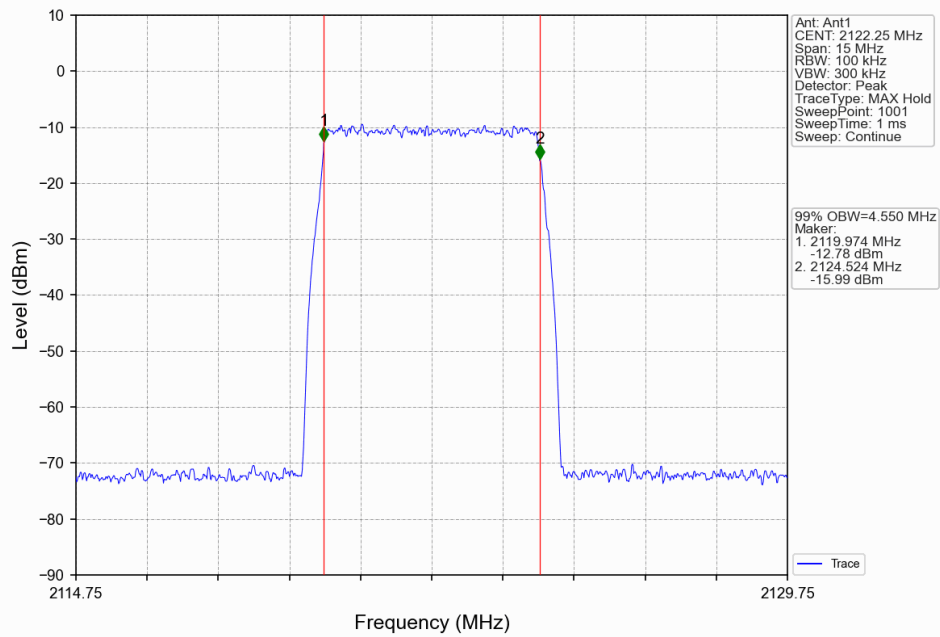
Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Input_AGC



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3

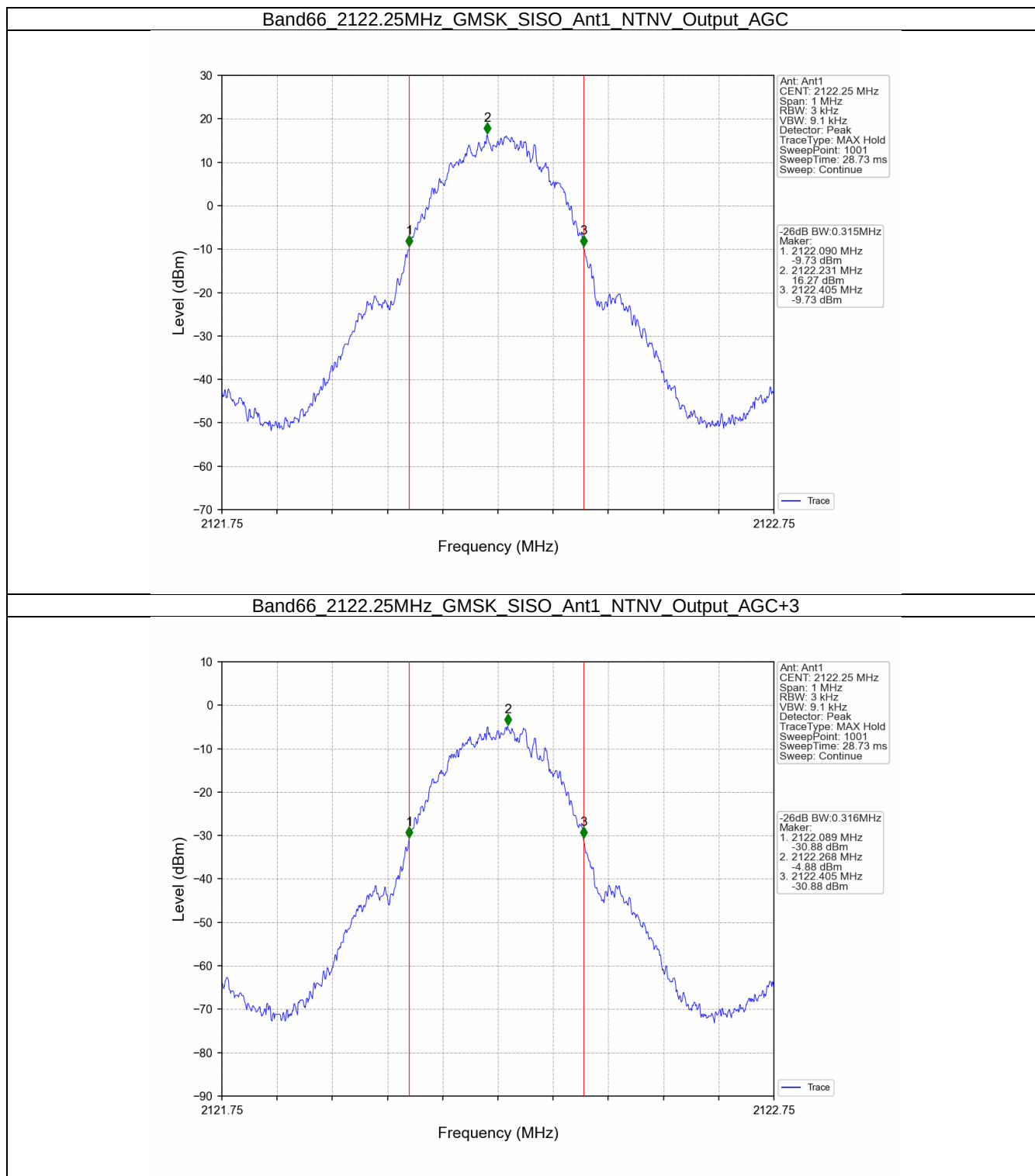


3.2 Band66_EBW

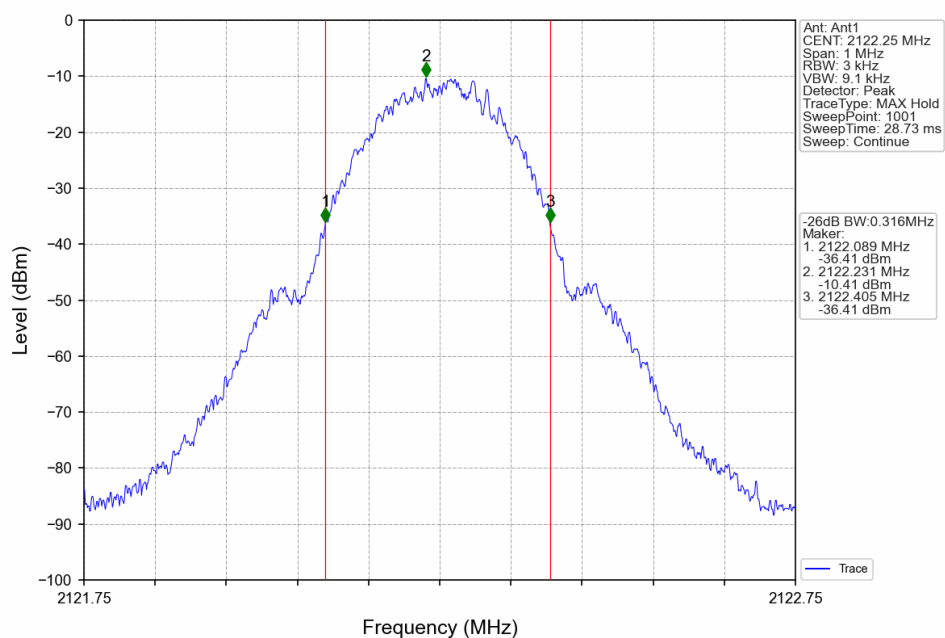
3.2.1 Test Result

Band: 66 / NTNV							
Signal			TX Type	ANT	26dB EBW (MHz)		Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	
GMSK 0.2MHz	-0.2	2122.25	SISO	1	0.315	0.316	Pass
	-3.2	2122.25	SISO	1	0.316	0.316	Pass
AWGN 5MHz	-0.2	2122.25	SISO	1	5.059	5.067	Pass
	-3.2	2122.25	SISO	1	5.054	5.053	Pass

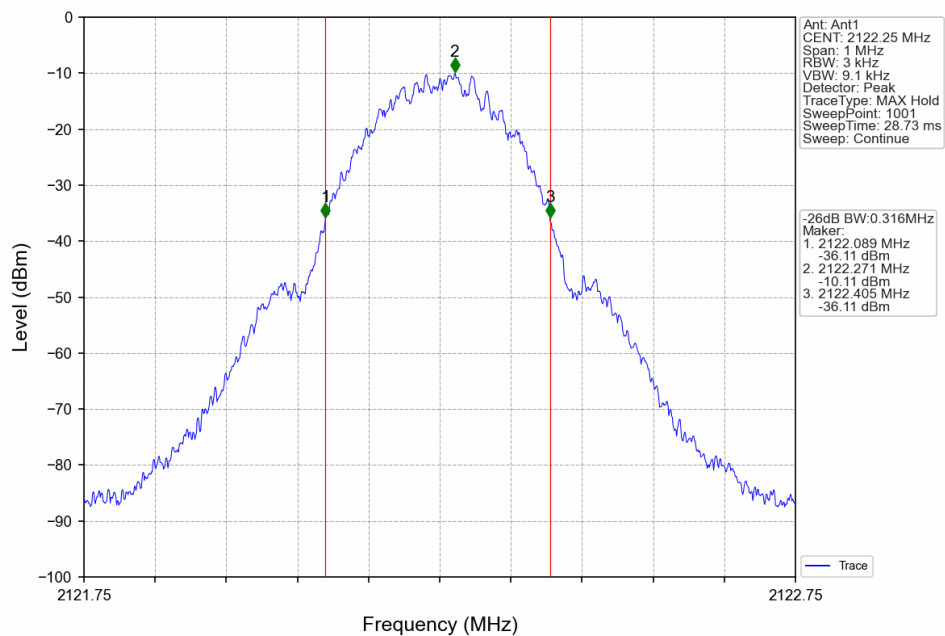
3.2.2 Test Graph



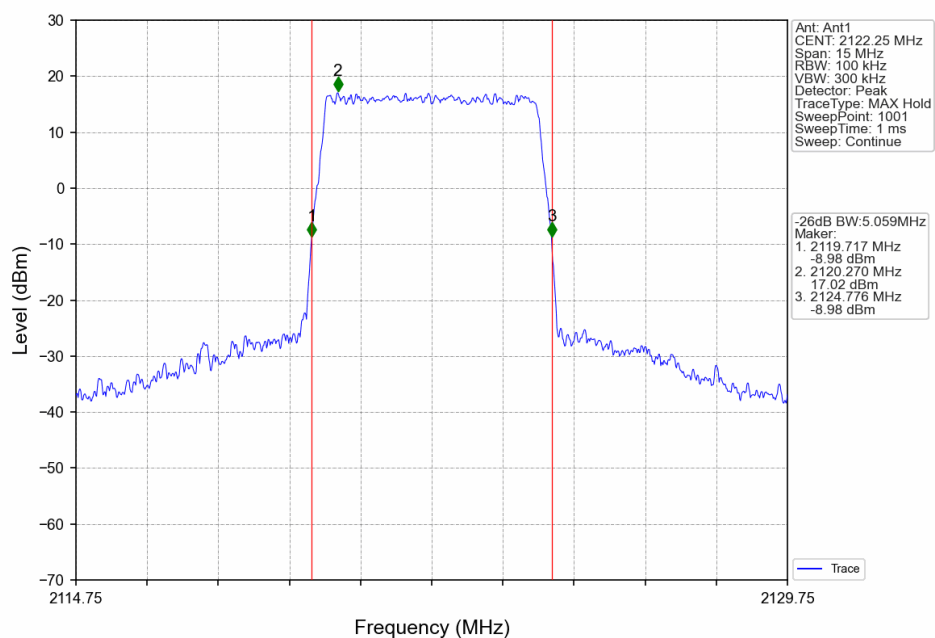
Band66_2122.25MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



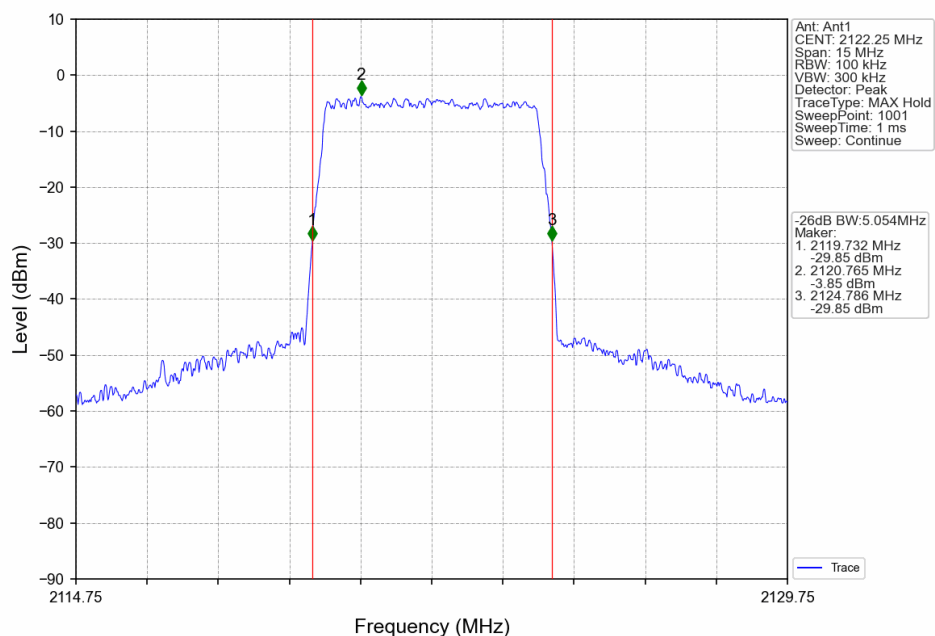
Band66_2122.25MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



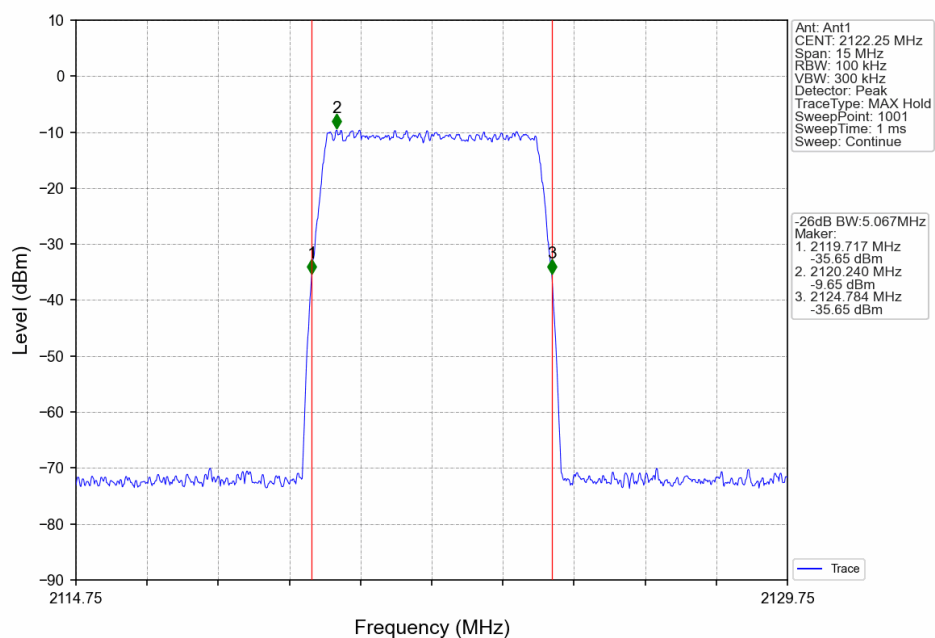
Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



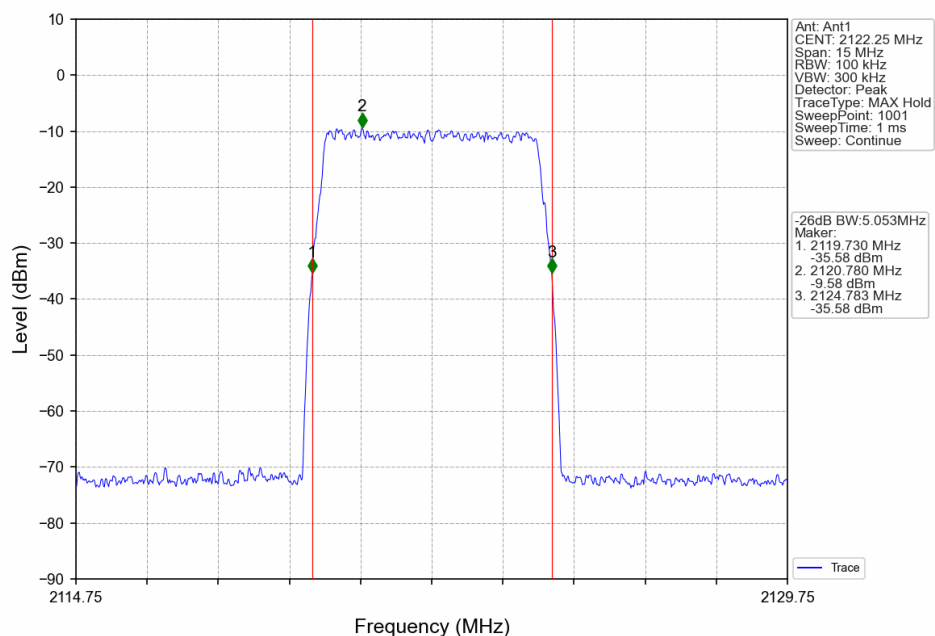
Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Input_AGC



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3



4. Input/output power and amplifier/booster gain

4.1 Band66_EIRP

4.1.1 Test Result

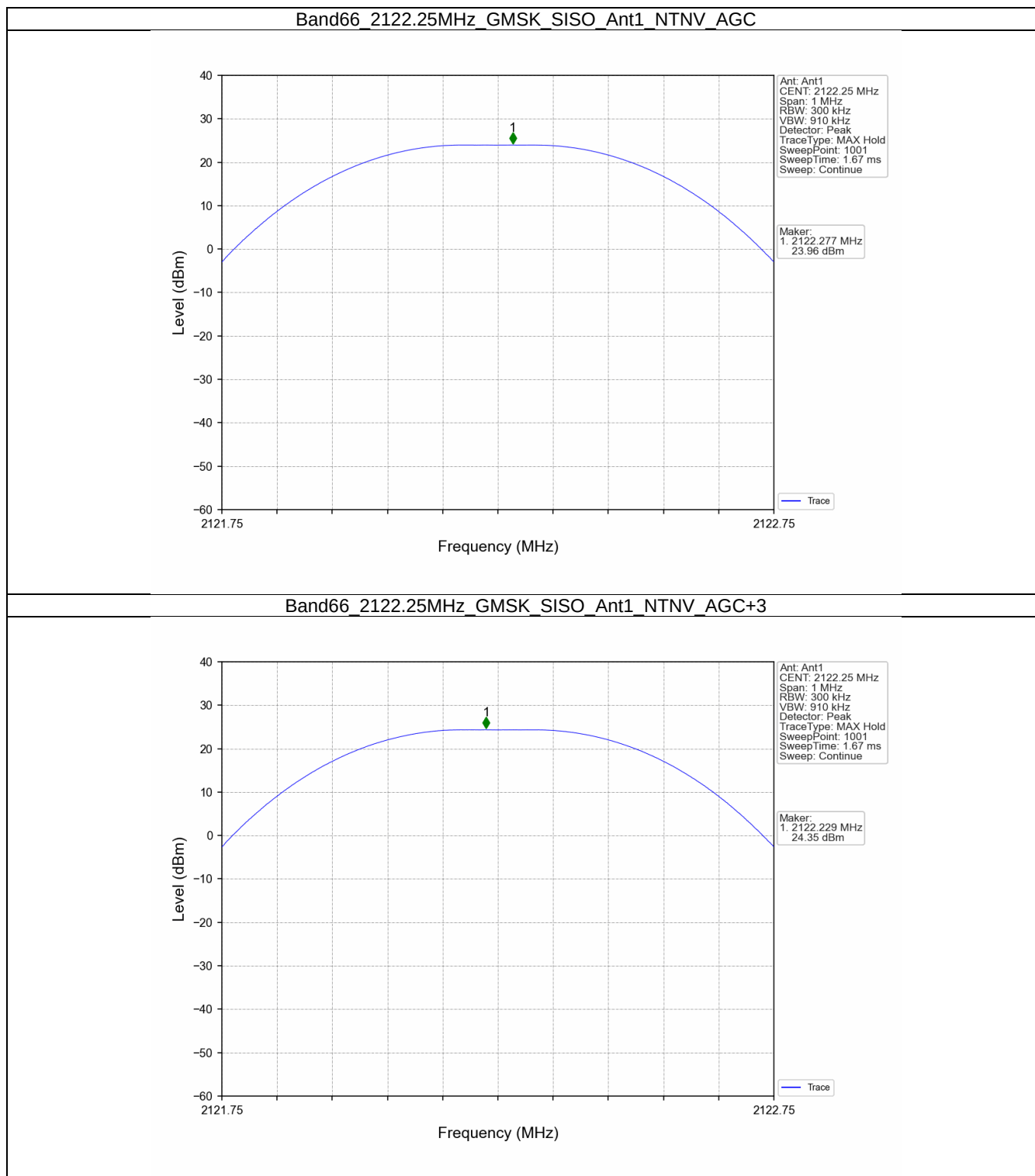
Band: 66 / NTNV										
Signal			TX Type	ANT	Conducted Power (dBm/MHz)		EIRP (dBm/MHz)		Booster Gain (dB)	Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	Result	Limit		
GMSK 0.2MHz	-3.2	2122.25	SISO	1	23.96	-3.36	30.96	<=62.15	27.31	Pass
	-0.2	2122.25	SISO	1	24.35	-0.35	31.35	<=62.15	/	Pass
AWGN 5MHz	-3.2	2122.25	SISO	1	18.21	-9.32	25.21	<=62.15	27.53	Pass
	-0.2	2122.25	SISO	1	18.55	-6.31	25.55	<=62.15	/	Pass

Band: B66 / NTNV								
Signal			Conducted Power (dBm/MHz)		EIRP (dBm/MHz)		Limit (dBm)	Verdict
Type	Level (dBm)	Frequency (MHz)	SISO	2*2	SISO	2*2		
GMSK 0.2MHz	-3.2	2122.25	23.96	26.98	30.96	33.98	/	Pass
	-0.2	2122.25	24.35	27.37	31.35	34.37	/	Pass
AWGN 5MHz	-3.2	2122.25	18.21	21.23	25.21	28.23	/	Pass
	-0.2	2122.25	18.55	21.57	25.55	28.57	/	Pass

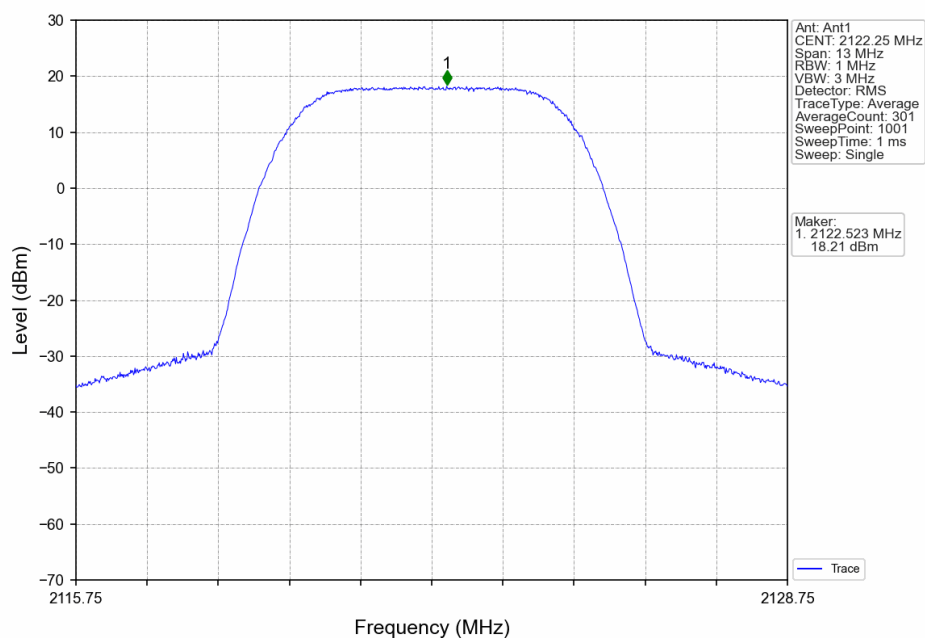
Band: B66 / NTNV					
Operation Band	Level (dBm)	Frequency (MHz)	Total Output Power (dBm)	EIRP (dBm)	Gain (dB)
GMSK 0.2MHz	-3.2	2122.25	23.93	30.93	/
	-0.2	2122.25	23.98	30.98	/
AWGN 5MHz	-3.2	2122.25	23.95	30.95	/
	-0.2	2122.25	23.99	30.99	/

Band: B66 / NTNV								
Signal			Conducted Power (dBm)		EIRP (dBm)		Limit (dBm)	Verdict
Type	Level (dBm)	Frequency (MHz)	SISO	2*2	SISO	2*2		
GMSK 0.2MHz	-3.2	2122.25	23.93	26.95	30.93	33.95	/	Pass
	-0.2	2122.25	23.98	27.00	30.98	34.00	/	Pass
AWGN 5MHz	-3.2	2122.25	23.95	26.97	30.95	33.97	/	Pass
	-0.2	2122.25	23.99	27.01	30.99	34.01	/	Pass

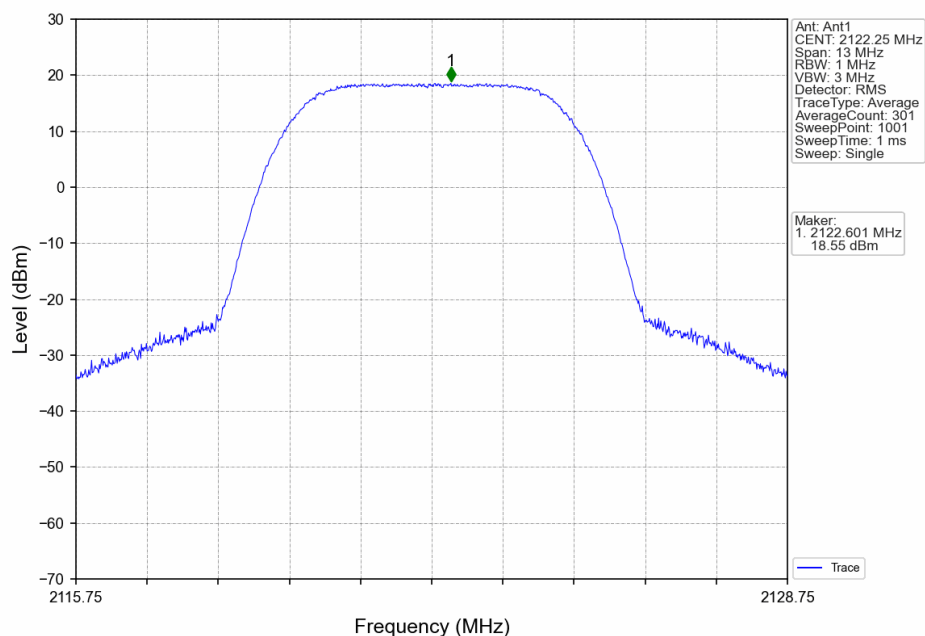
4.1.2 Test Graph



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_AGC



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_AGC+3

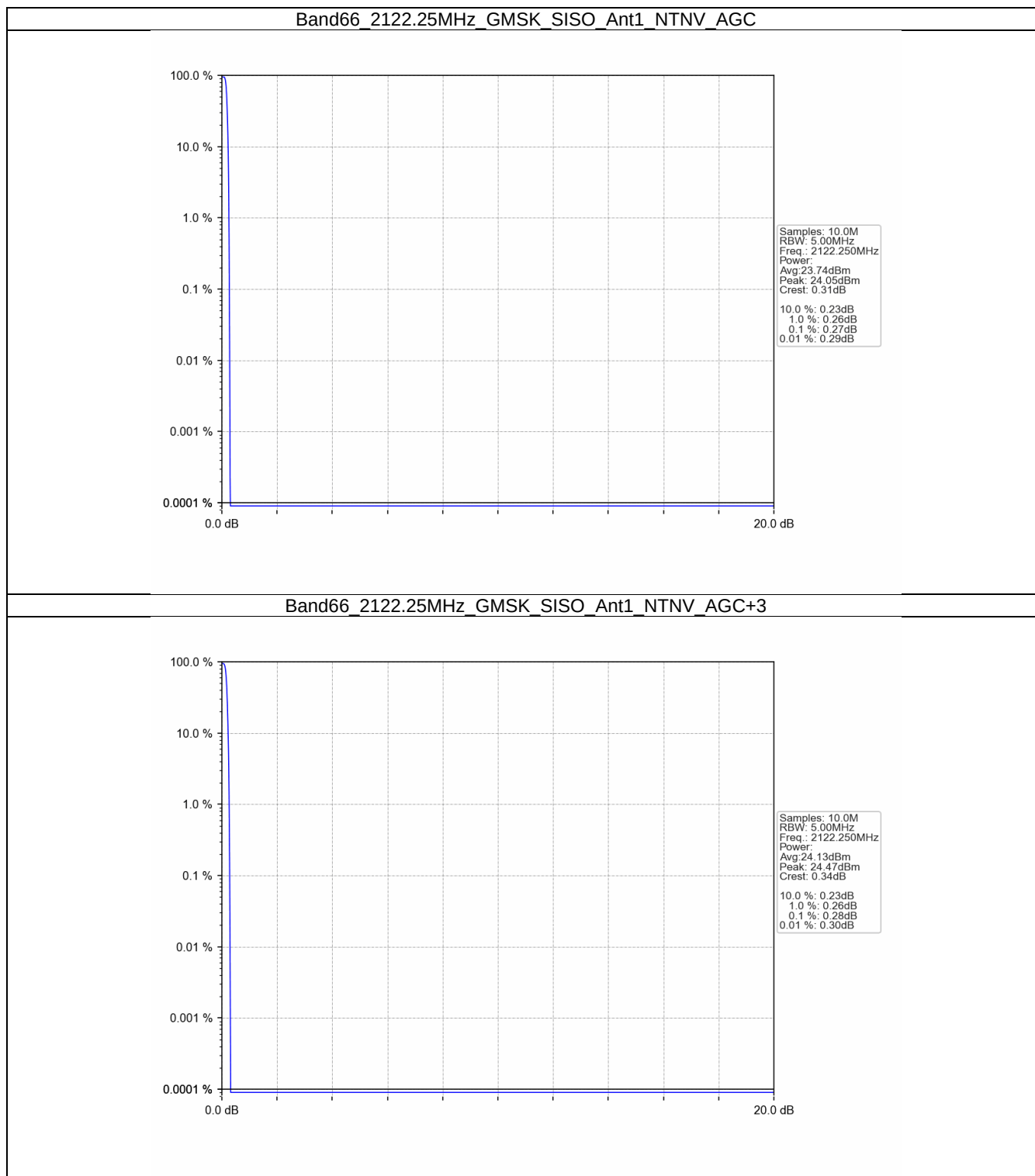


4.2 Band66_PAPR

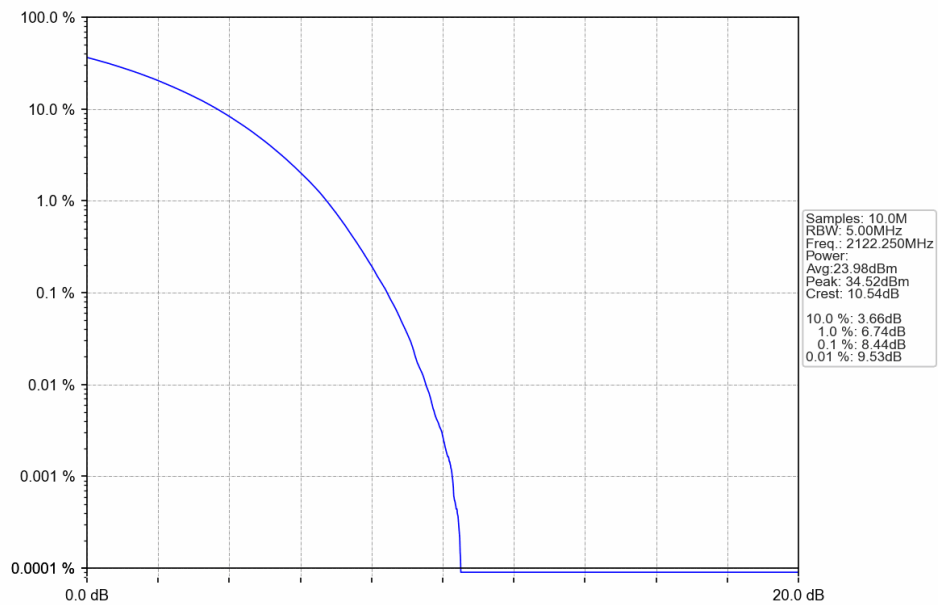
4.2.1 Test Result

Band: 66 / NTNV							
Signal			TX Type	ANT	PAPR (dB)		Verdict
Type	Level (dBm)	Frequency (MHz)			Result	Limit	
GMSK 0.2MHz	-3.2	2122.25	SISO	1	0.27	<=13	Pass
	-0.2	2122.25	SISO	1	0.28	<=13	Pass
AWGN 5MHz	-3.2	2122.25	SISO	1	8.44	<=13	Pass
	-0.2	2122.25	SISO	1	8.43	<=13	Pass

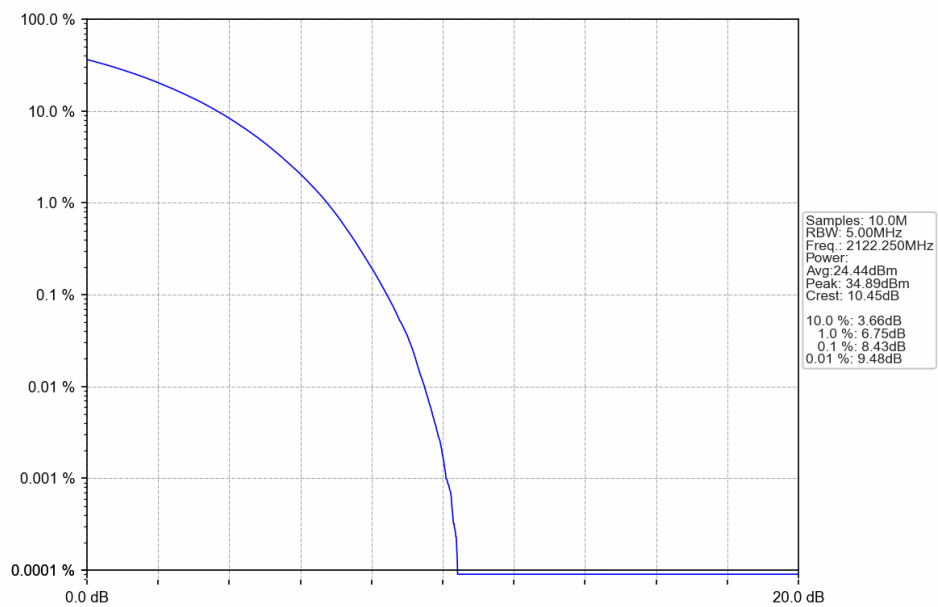
4.2.2 Test Graph



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_AGC



Band66_2122.25MHz_AWGN_SISO_Ant1_NTNV_AGC+3



5. Out-of-band/out-of-block (including intermodulation) emissions

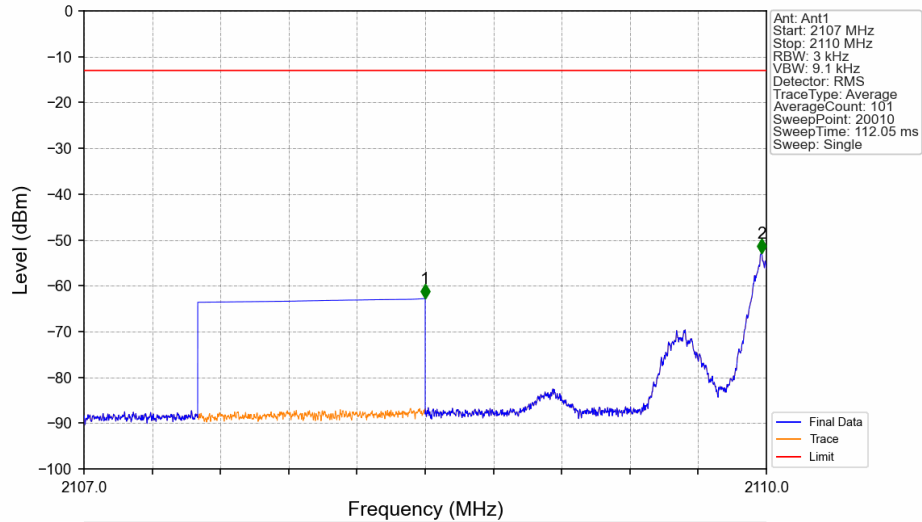
5.1 Band66

5.1.1 Test Result

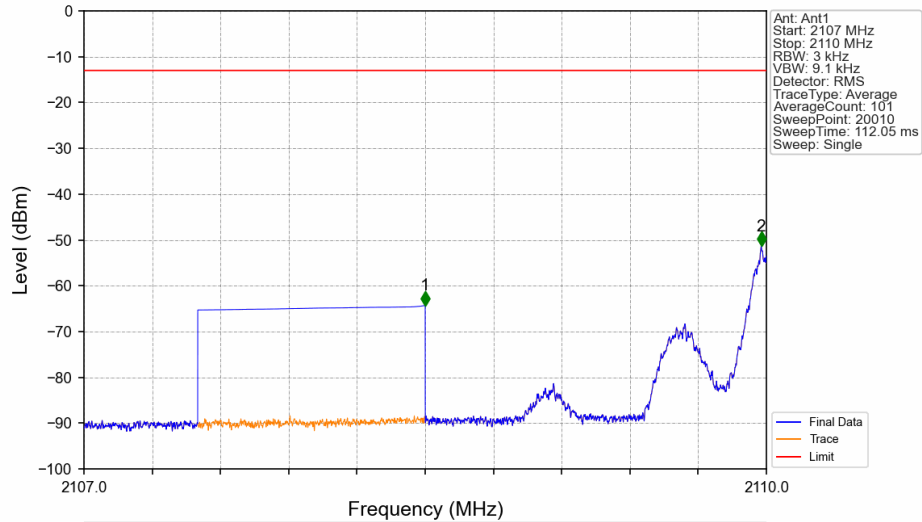
Band: 66 / NTNV									
Signal				Channel	TX Type	ANT	OOB (dBm)		Verdict
Input	Type	Level (dBm)	Frequency (MHz)				Result	Limit	
Two	GMSK 0.2MHz	-3.2	2110.2	LCH	SISO	1	-52.85	Refer To Test Graph	Pass
		-0.2	2110.2	LCH	SISO	1	-51.32	Refer To Test Graph	Pass
One	GMSK 0.2MHz	-3.2	2110.2	LCH	SISO	1	-52.97	Refer To Test Graph	Pass
		-0.2	2110.2	LCH	SISO	1	-51.45	Refer To Test Graph	Pass
Two	GMSK 0.2MHz	-3.2	2179.8	HCH	SISO	1	-54.08	Refer To Test Graph	Pass
		-0.2	2179.8	HCH	SISO	1	-51.74	Refer To Test Graph	Pass
One	GMSK 0.2MHz	-3.2	2179.8	HCH	SISO	1	-54.19	Refer To Test Graph	Pass
		-0.2	2179.8	HCH	SISO	1	-50.25	Refer To Test Graph	Pass
Two	AWGN 5MHz	-3.2	2112.5	LCH	SISO	1	-51.34	Refer To Test Graph	Pass
		-0.2	2112.5	LCH	SISO	1	-50.05	Refer To Test Graph	Pass
One	AWGN 5MHz	-3.2	2112.5	LCH	SISO	1	-51.41	Refer To Test Graph	Pass
		-0.2	2112.5	LCH	SISO	1	-51.06	Refer To Test Graph	Pass
Two	AWGN 5MHz	-3.2	2177.5	HCH	SISO	1	-55.27	Refer To Test Graph	Pass
		-0.2	2177.5	HCH	SISO	1	-48.71	Refer To Test Graph	Pass
One	AWGN 5MHz	-3.2	2177.5	HCH	SISO	1	-54.14	Refer To Test Graph	Pass
		-0.2	2177.5	HCH	SISO	1	-48.36	Refer To Test Graph	Pass

5.1.2 Test Graph

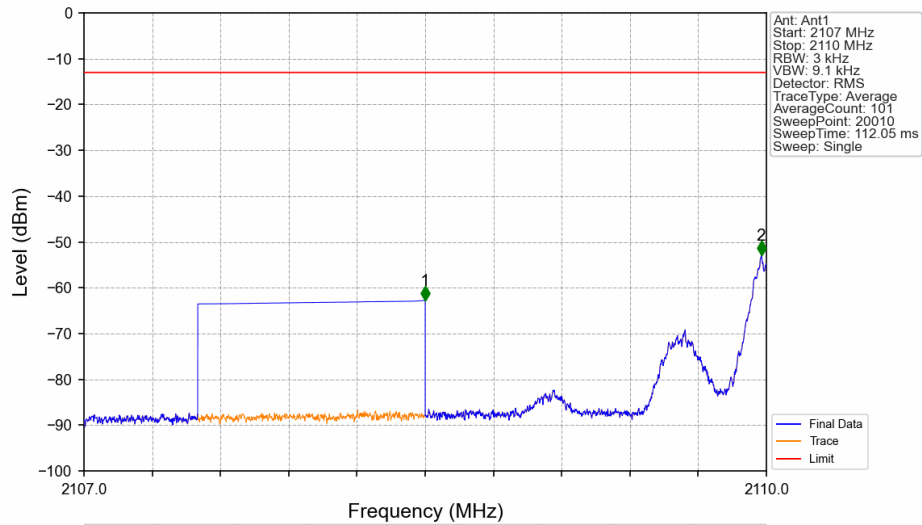
Band66_2110.2MHz_GMSK_SISO_Ant1_NTNV_AGC



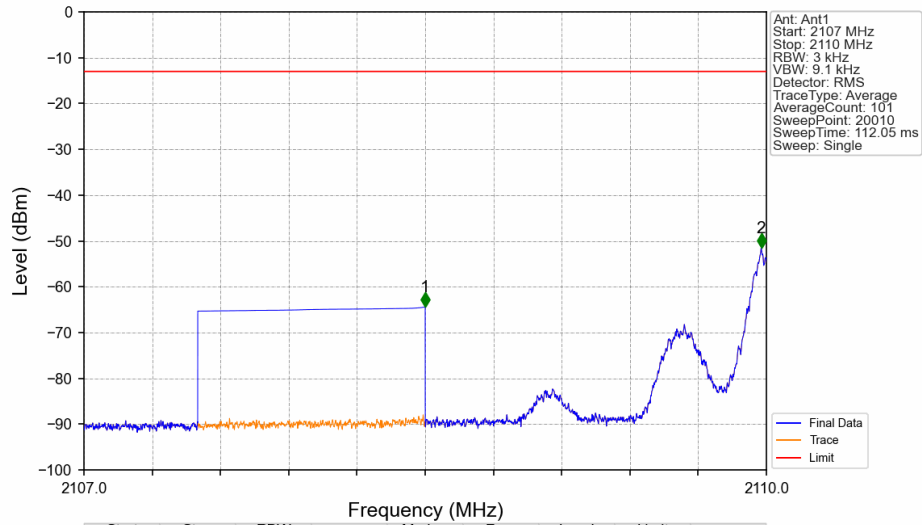
Band66_2110.2MHz_GMSK_SISO_Ant1_NTNV_AGC+3

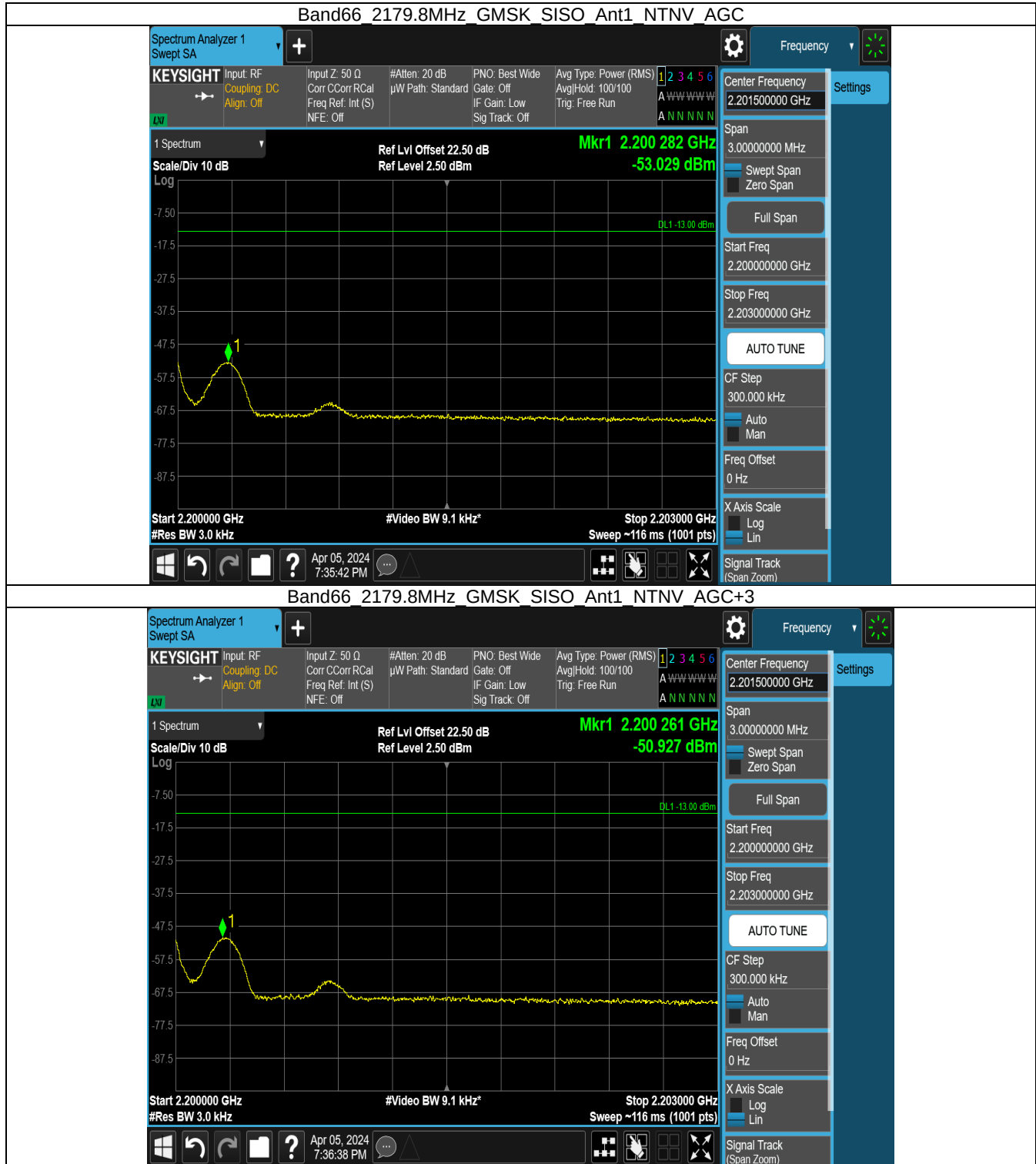


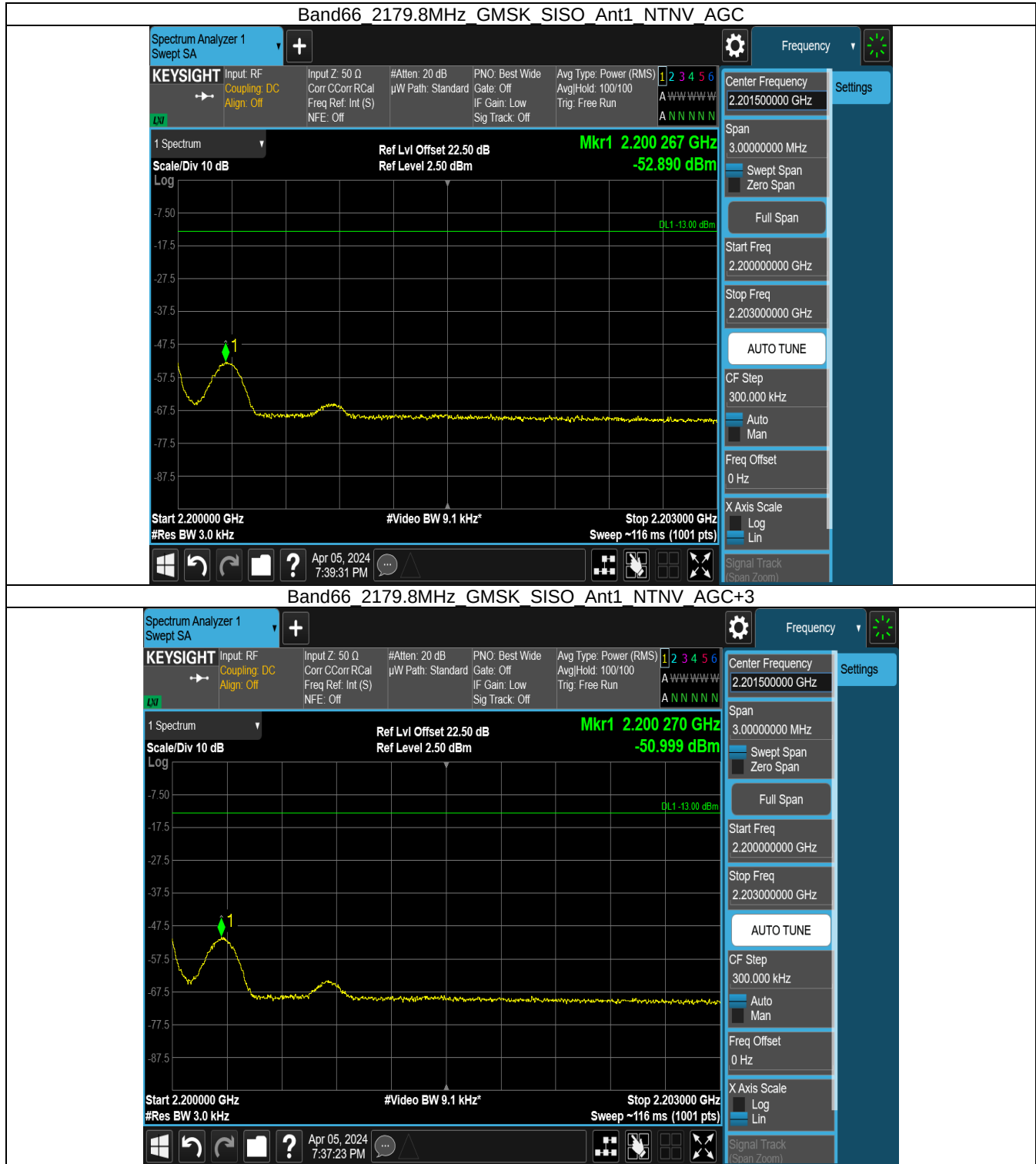
Band66_2110.2MHz_GMSK_SISO_Ant1_NTNV_AGC



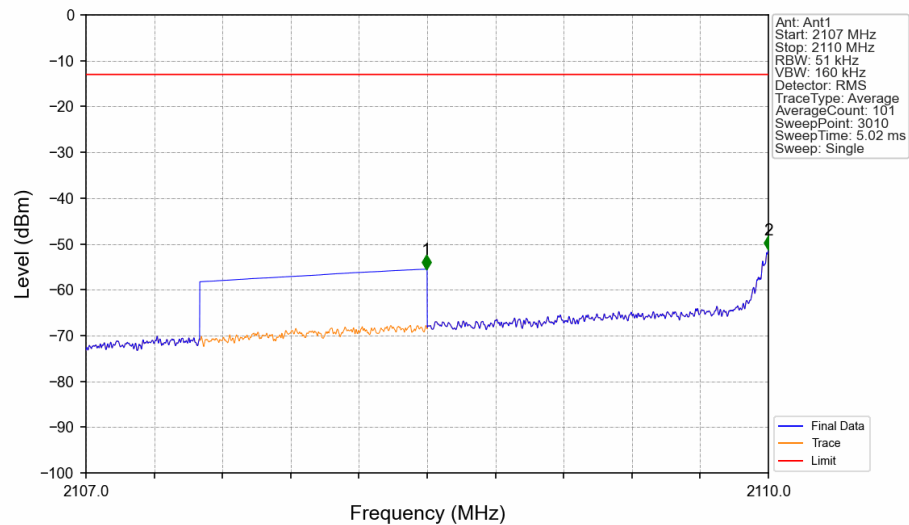
Band66_2110.2MHz_GMSK_SISO_Ant1_NTNV_AGC+3



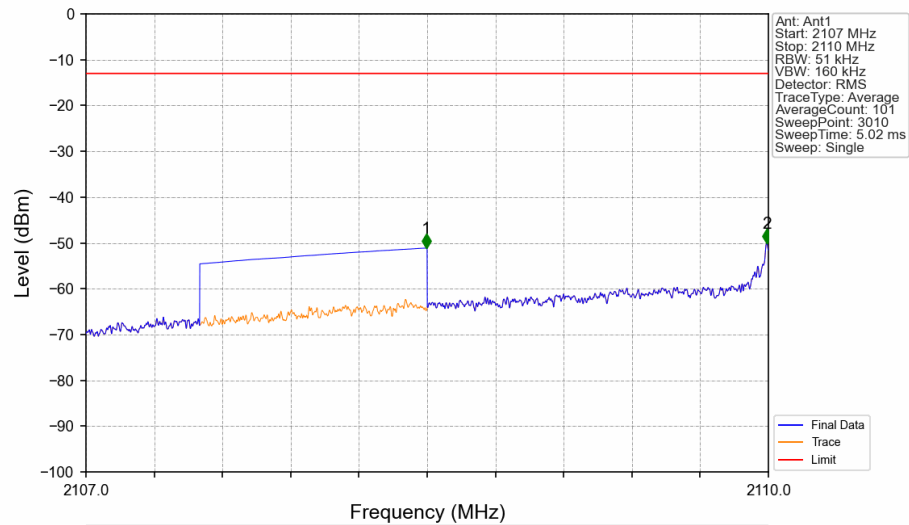




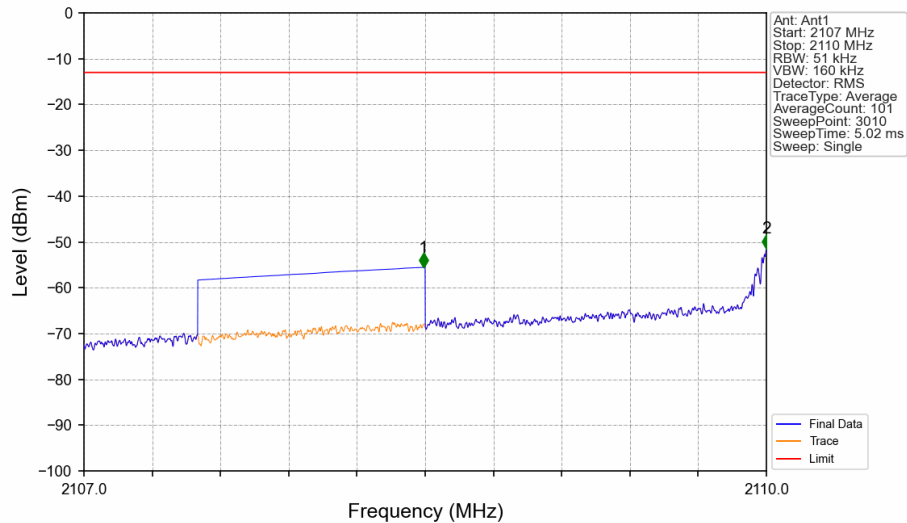
Band66_2112.5MHz_AWGN_SISO_Ant1_NTNV_AGC



Band66_2112.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3

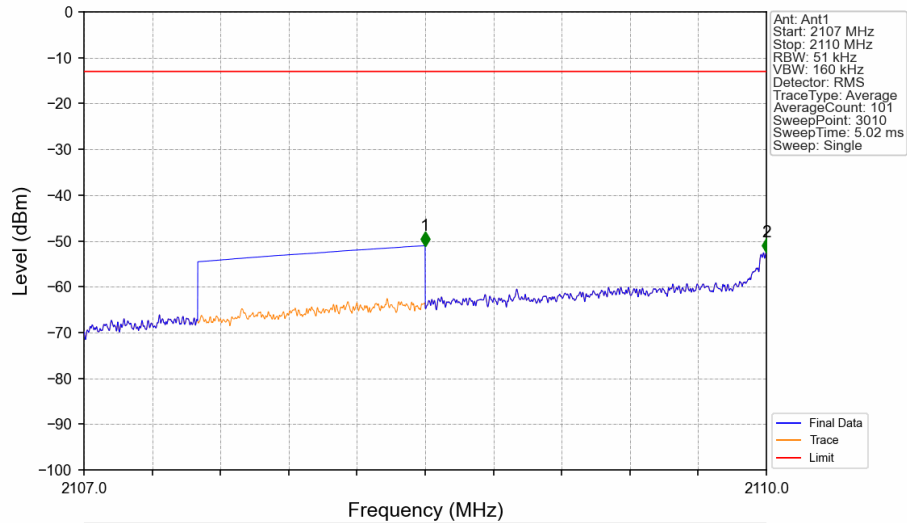


Band66_2112.5MHz_AWGN_SISO_Ant1_NTNV_AGC

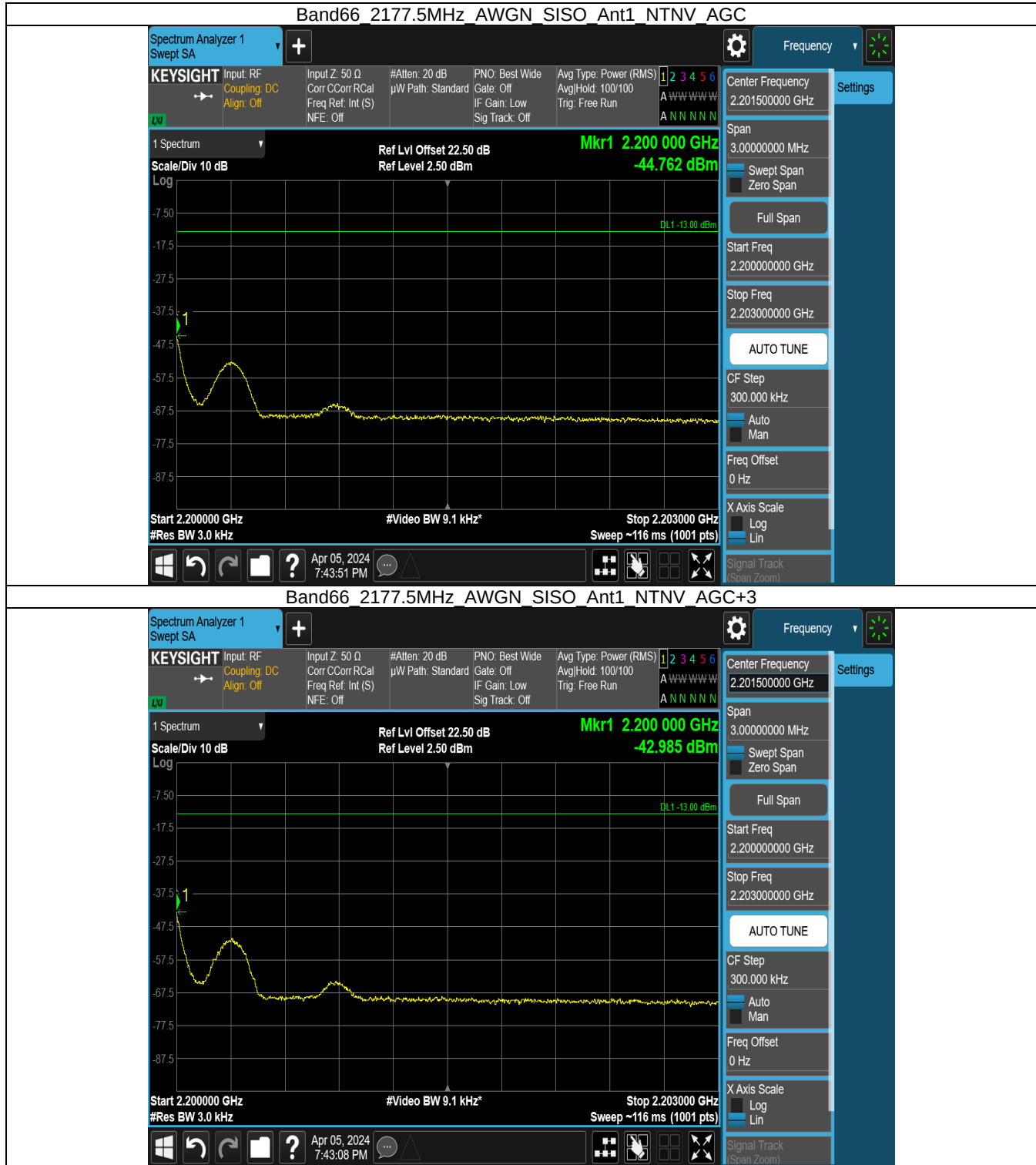


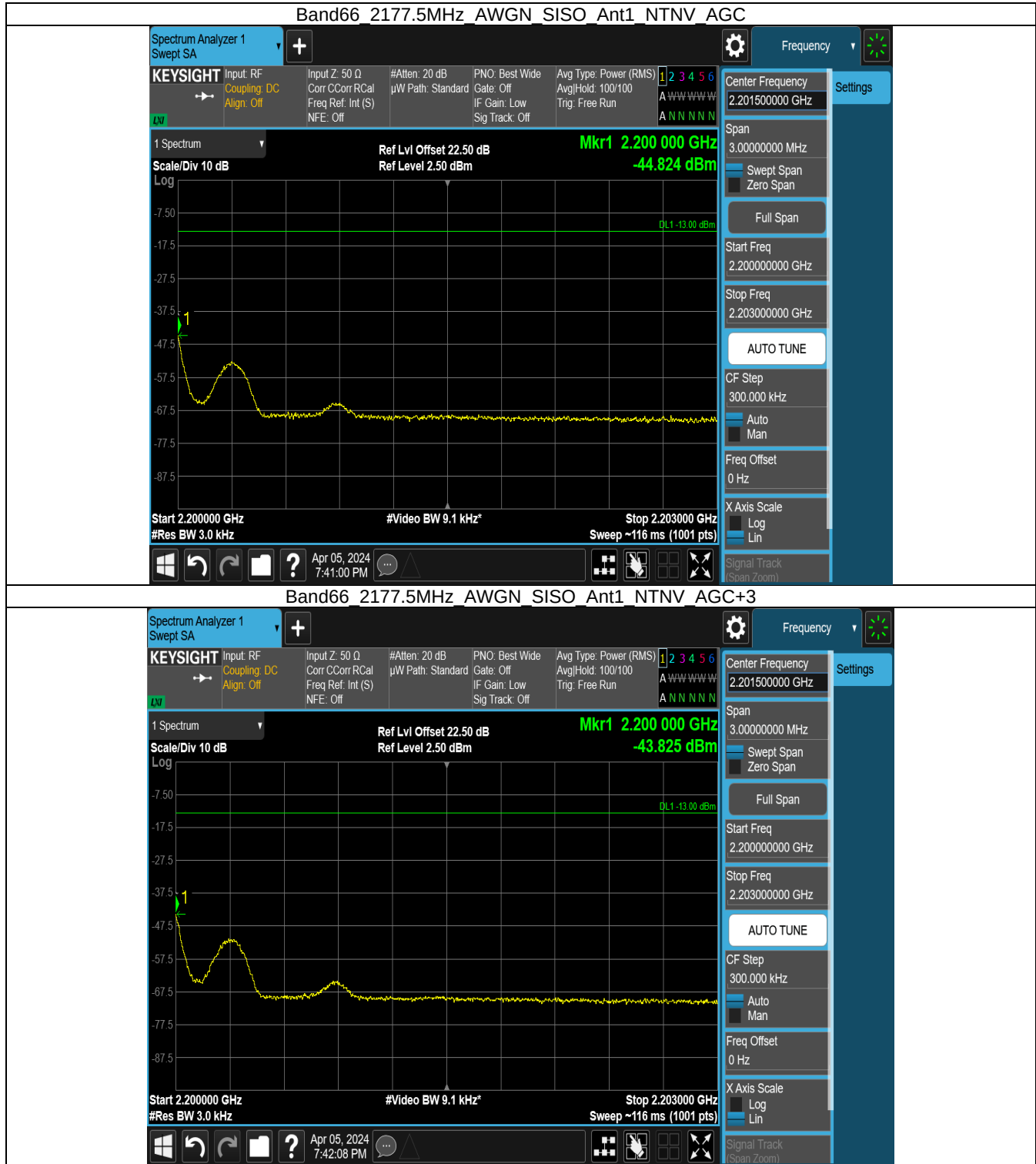
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
2107	2109	1	CHP	1	2108.493	-55.56	-13	Pass
2109	2110	0.051	/	2	2110.000	-51.41	-13	Pass

Band66_2112.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
2107	2109	1	CHP	1	2108.500	-51.06	-13	Pass
2109	2110	0.051	/	2	2109.999	-52.48	-13	Pass





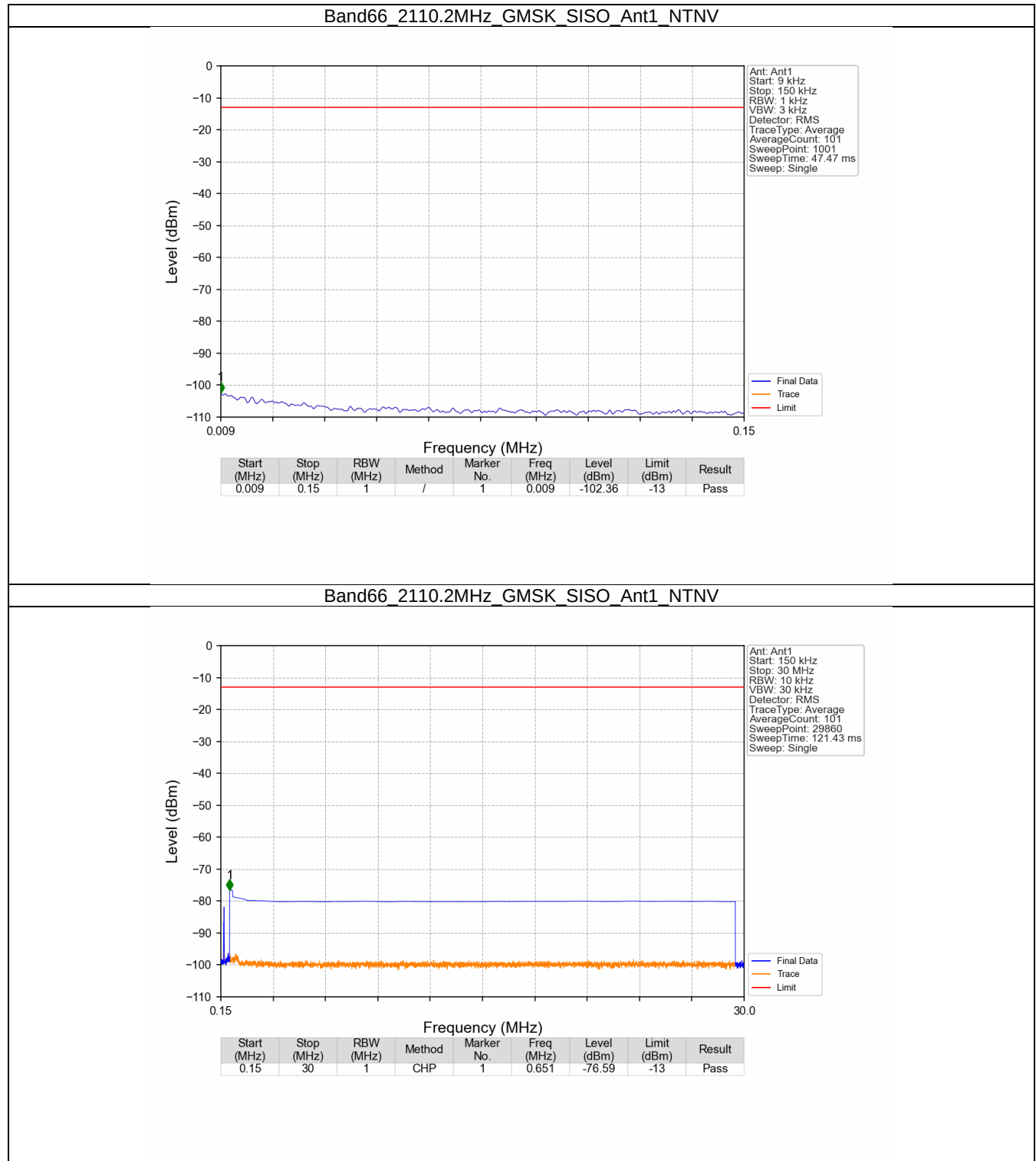
6. Spurious emissions

6.1 Band66

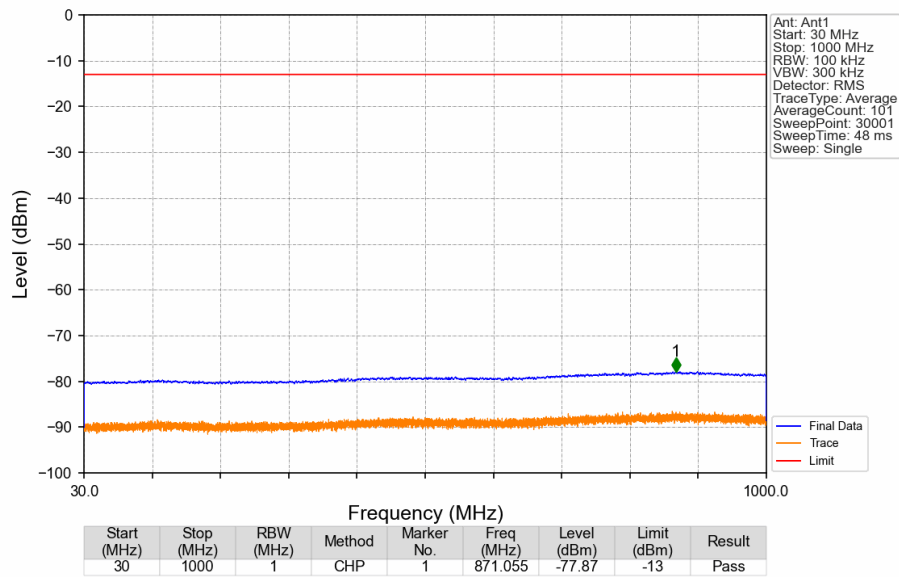
6.1.1 Test Result

Band: 66 / NTNV								
Signal			Channel	TX Type	ANT	SE (dBm)		Verdict
Type	Level (dBm)	Frequency (MHz)				Result	Limit	
GMSK 0.2MHz	-3.2	2110.2	LCH	SISO	1	Refer To Test Graph		Pass
		2145	MCH	SISO	1	Refer To Test Graph		Pass
		2179.8	HCH	SISO	1	Refer To Test Graph		Pass
AWGN 5MHz	-3.2	2112.5	LCH	SISO	1	Refer To Test Graph		Pass
		2145	MCH	SISO	1	Refer To Test Graph		Pass
		2177.5	HCH	SISO	1	Refer To Test Graph		Pass

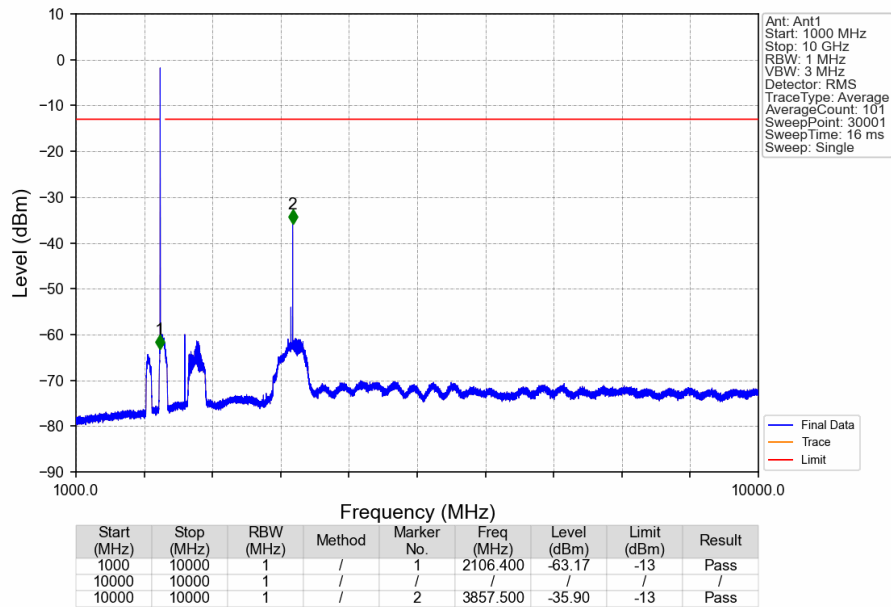
6.1.2 Test Graph



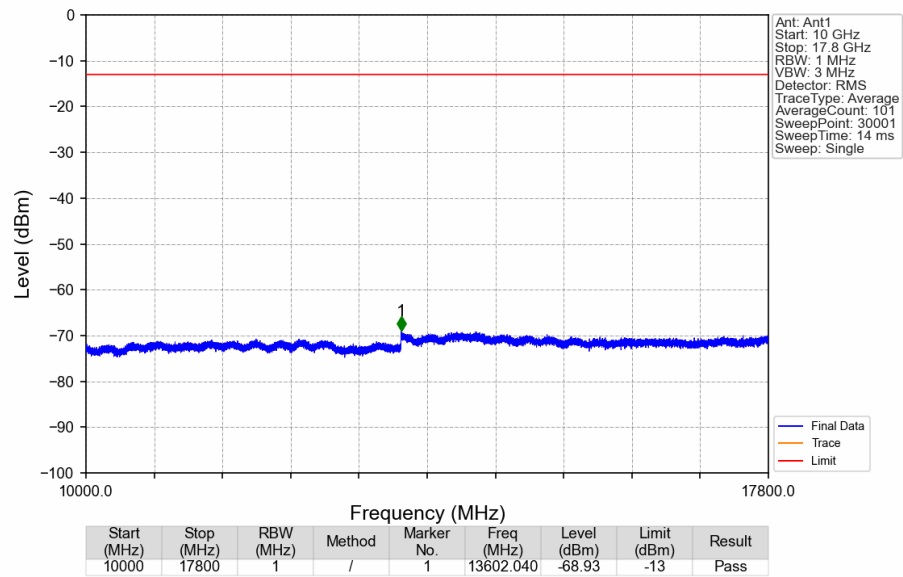
Band66_2110.2MHz_GMSK_SISO_Ant1_NTNV



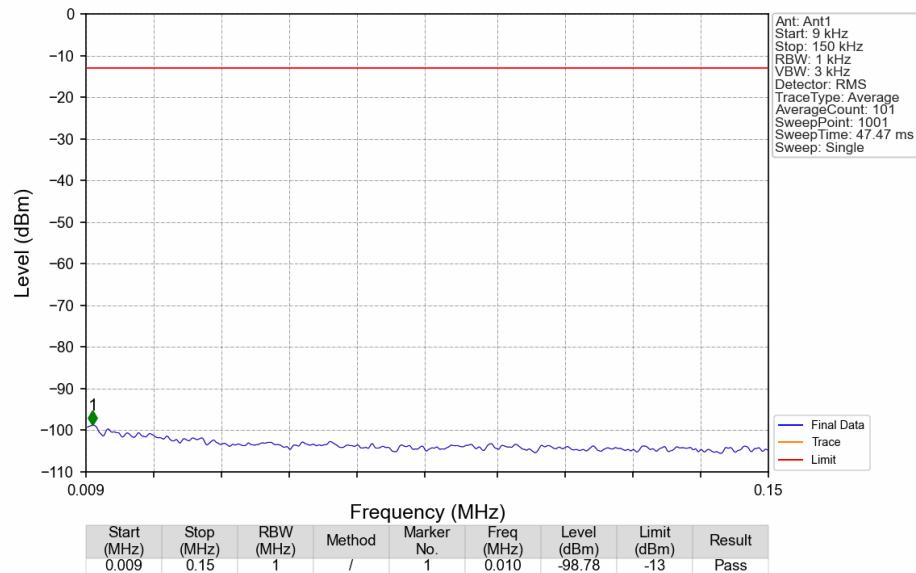
Band66_2110.2MHz_GMSK_SISO_Ant1_NTNV



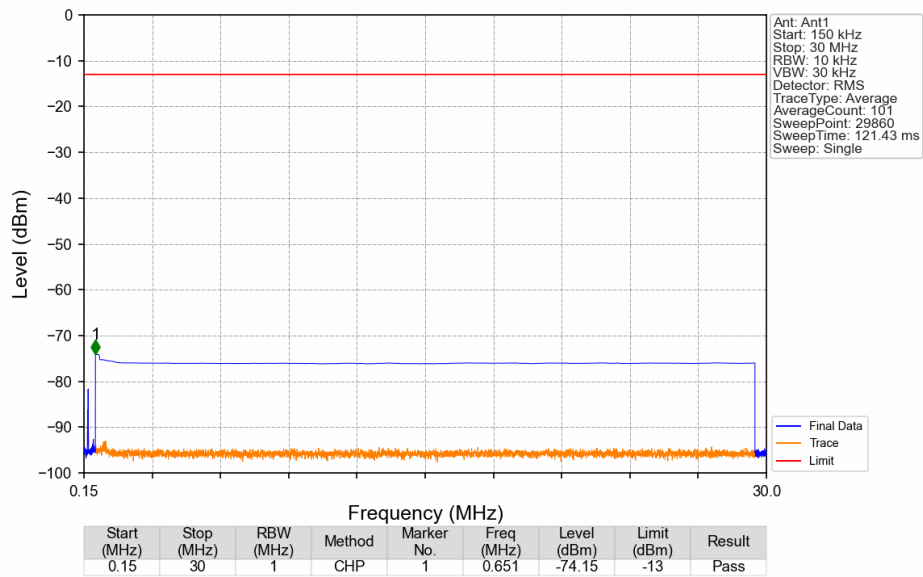
Band66_2110.2MHz_GMSK_SISO_Ant1_NTNV



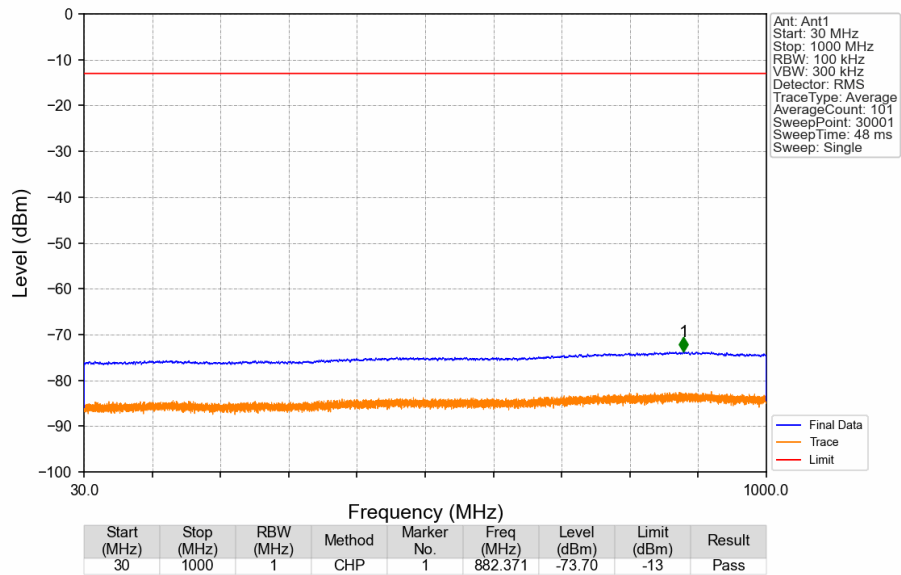
Band66_2145MHz_GMSK_SISO_Ant1_NTNV



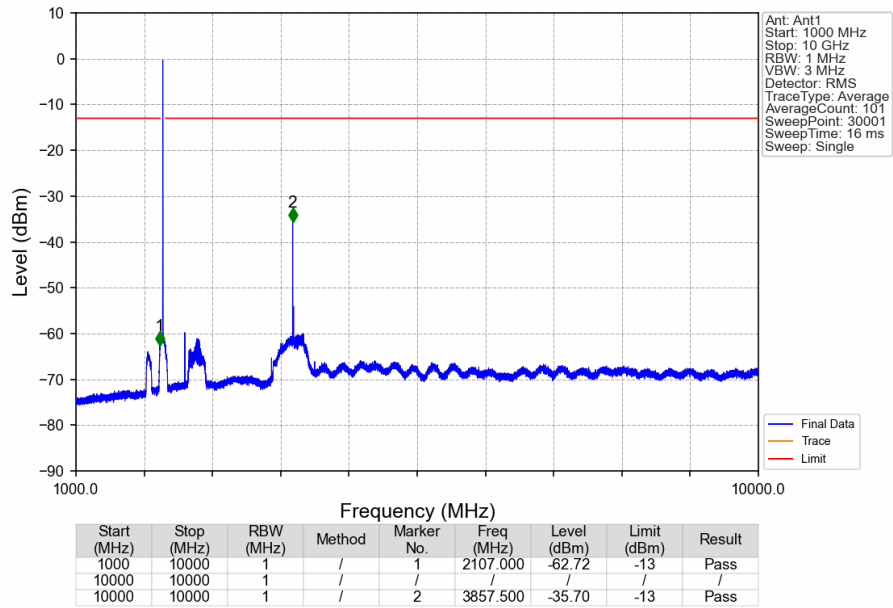
Band66_2145MHz_GMSK_SISO_Ant1_NTNV



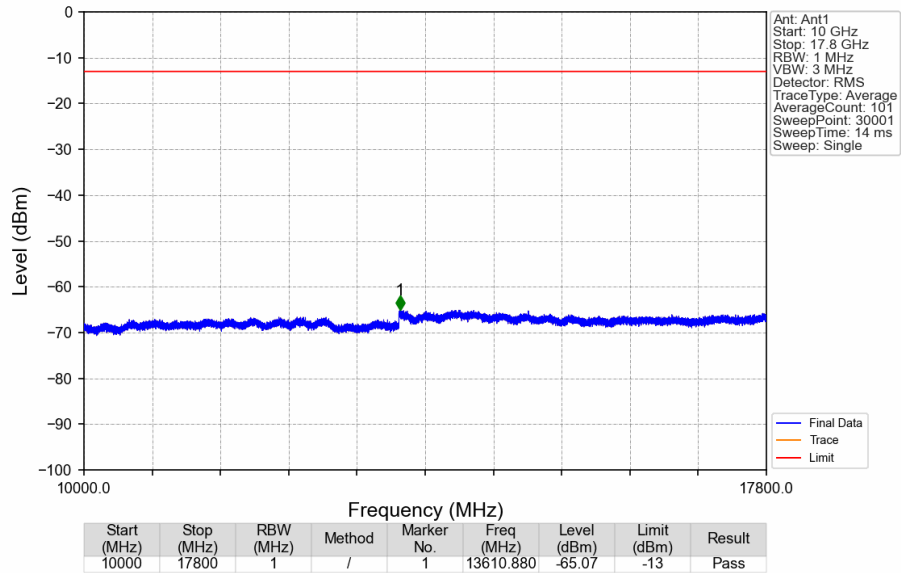
Band66_2145MHz_GMSK_SISO_Ant1_NTNV



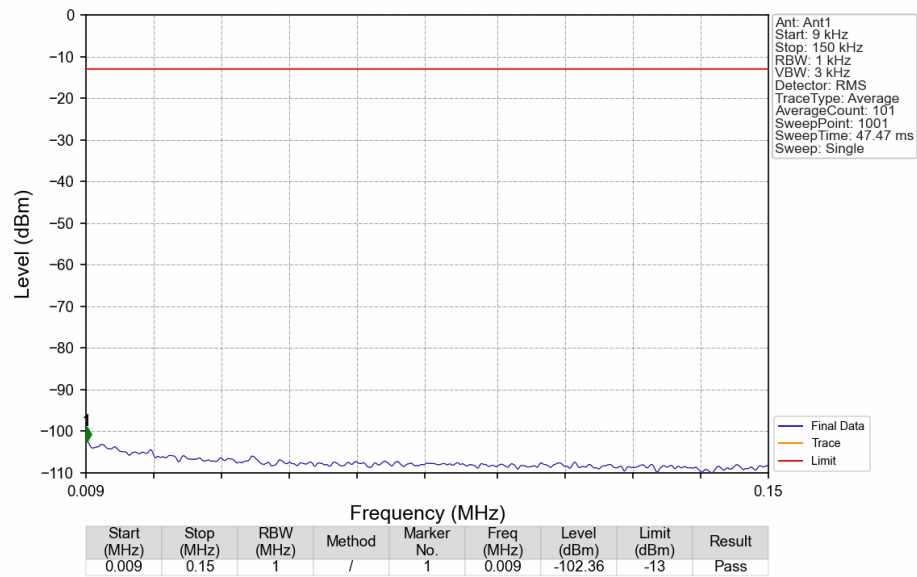
Band66_2145MHz_GMSK_SISO_Ant1_NTNV



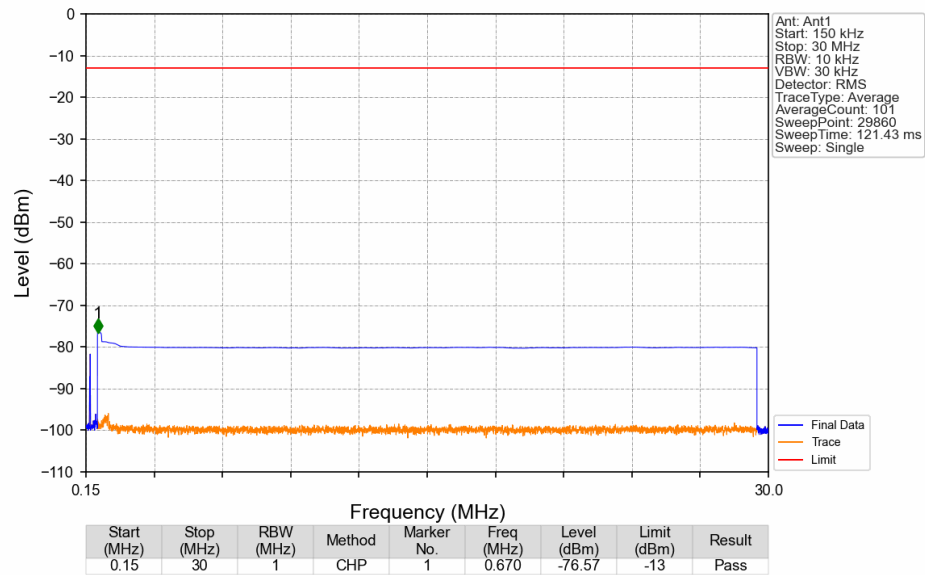
Band66_2145MHz_GMSK_SISO_Ant1_NTNV



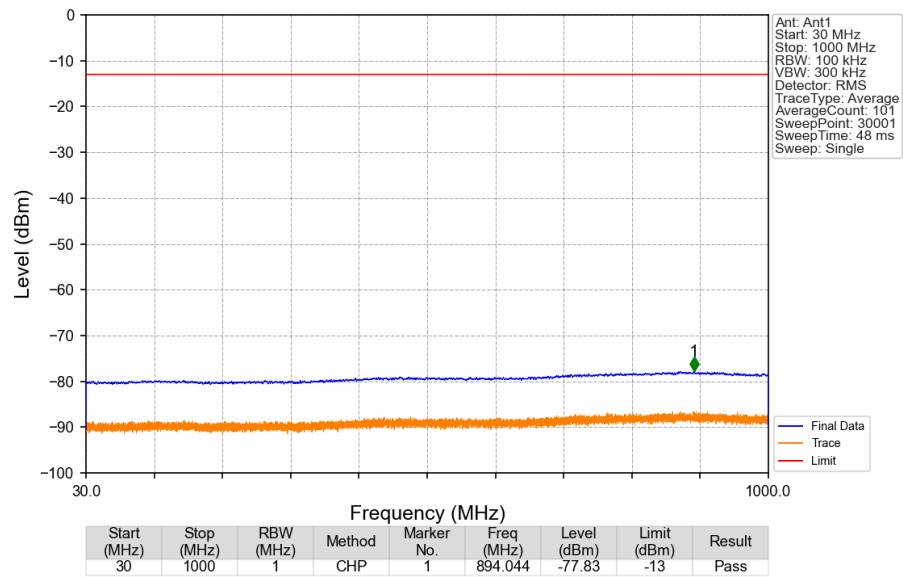
Band66_2179.8MHz_GMSK_SISO_Ant1_NTNV



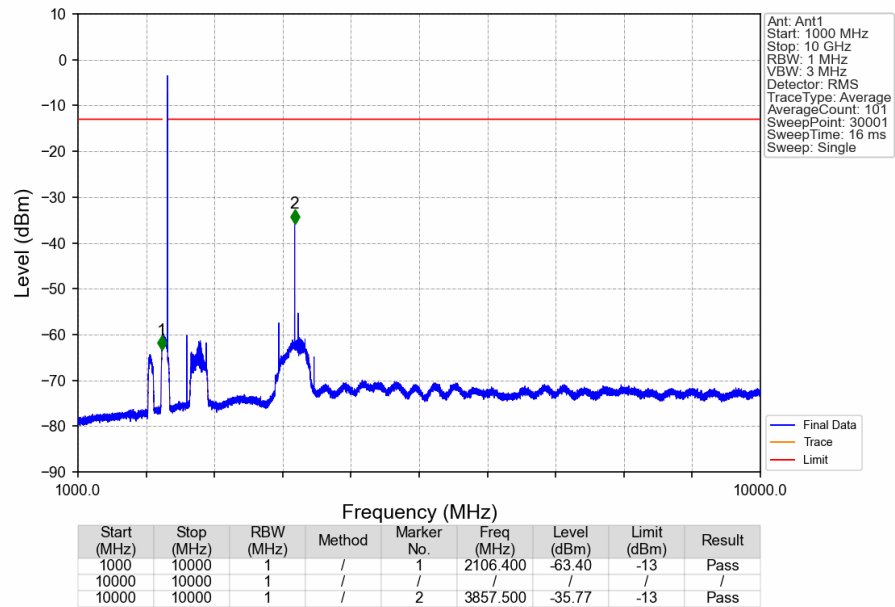
Band66_2179.8MHz_GMSK_SISO_Ant1_NTNV



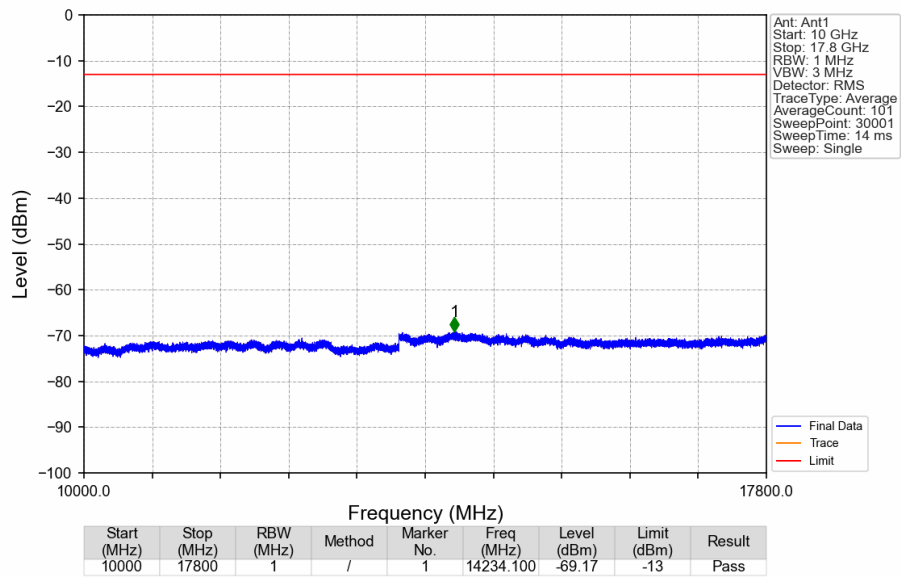
Band66_2179.8MHz_GMSK_SISO_Ant1_NTNV



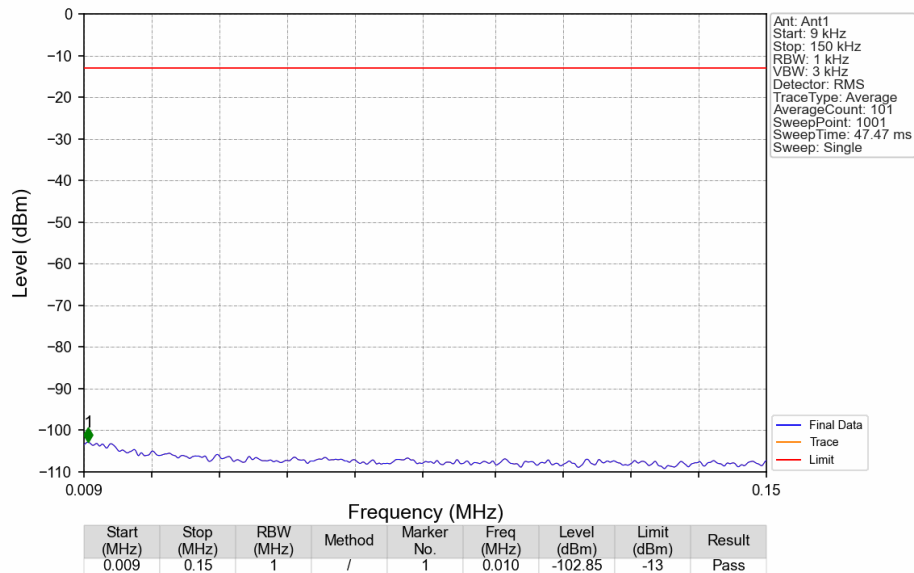
Band66_2179.8MHz_GMSK_SISO_Ant1_NTNV



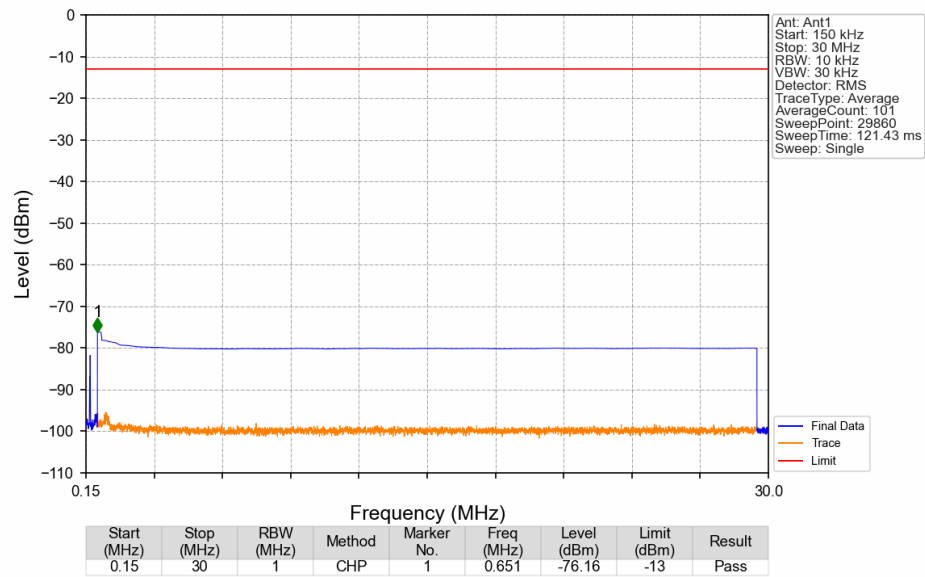
Band66_2179.8MHz_GMSK_SISO_Ant1_NTNV



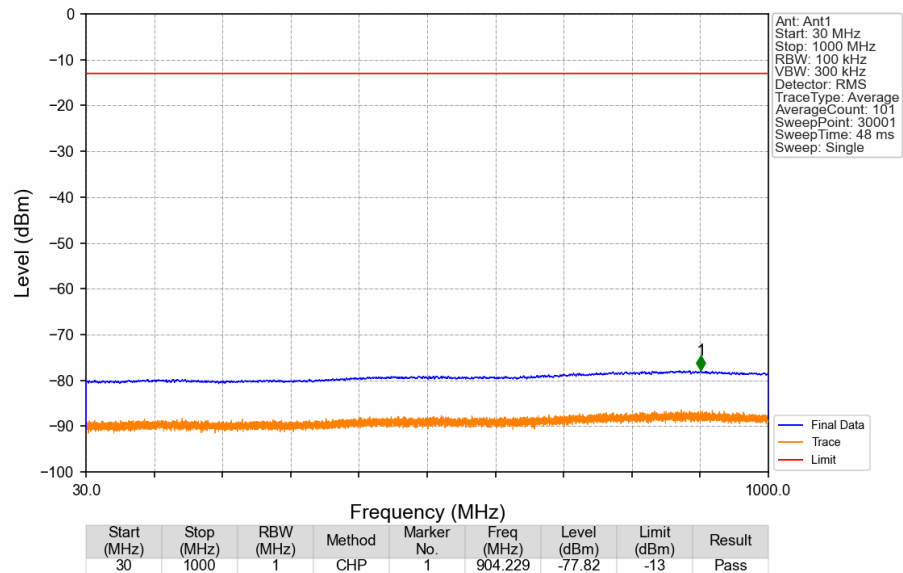
Band66_2112.5MHz_AWGN_SISO_Ant1_NTNV



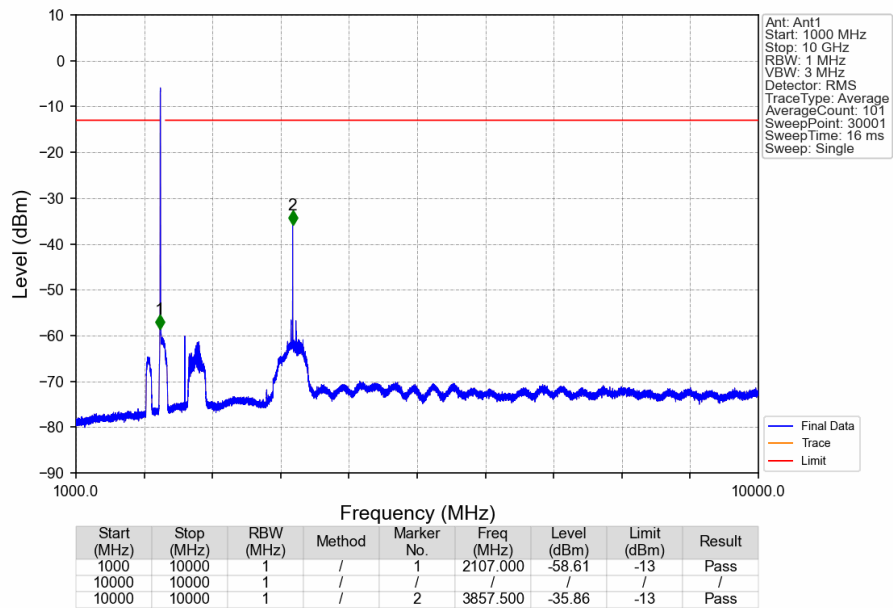
Band66_2112.5MHz_AWGN_SISO_Ant1_NTNV



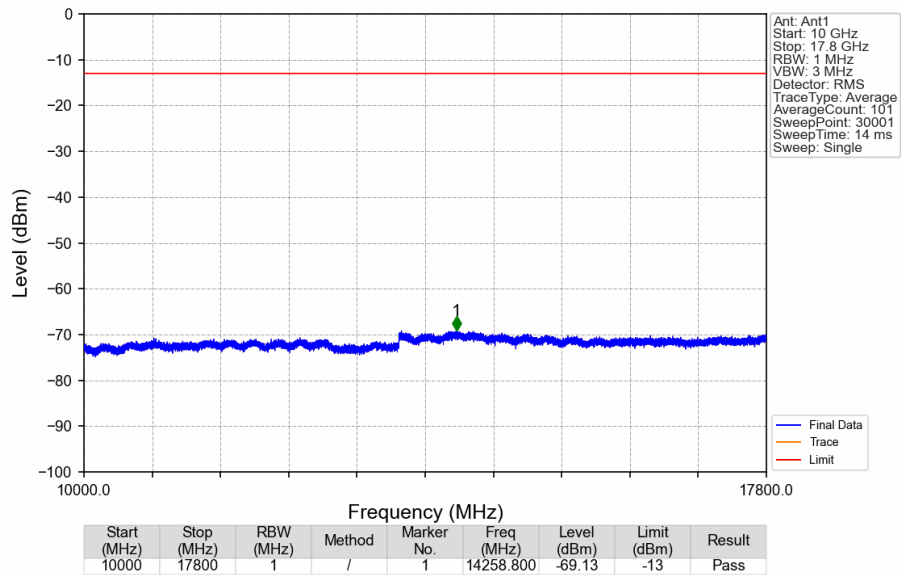
Band66_2112.5MHz_AWGN_SISO_Ant1_NTNV



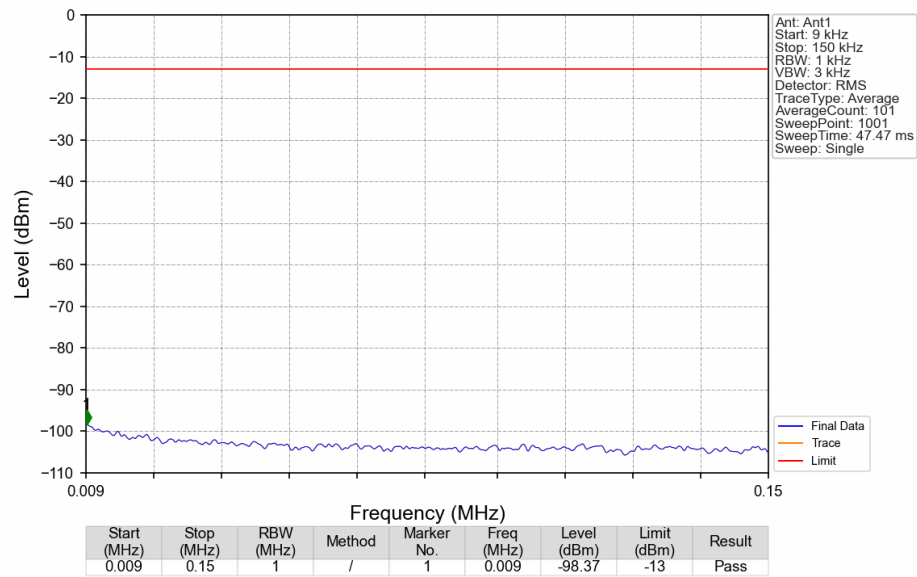
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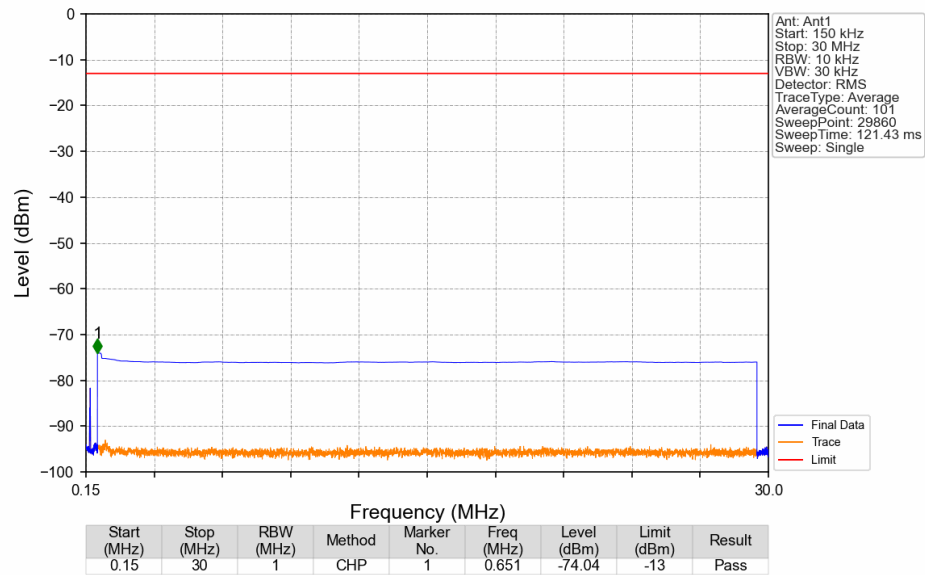
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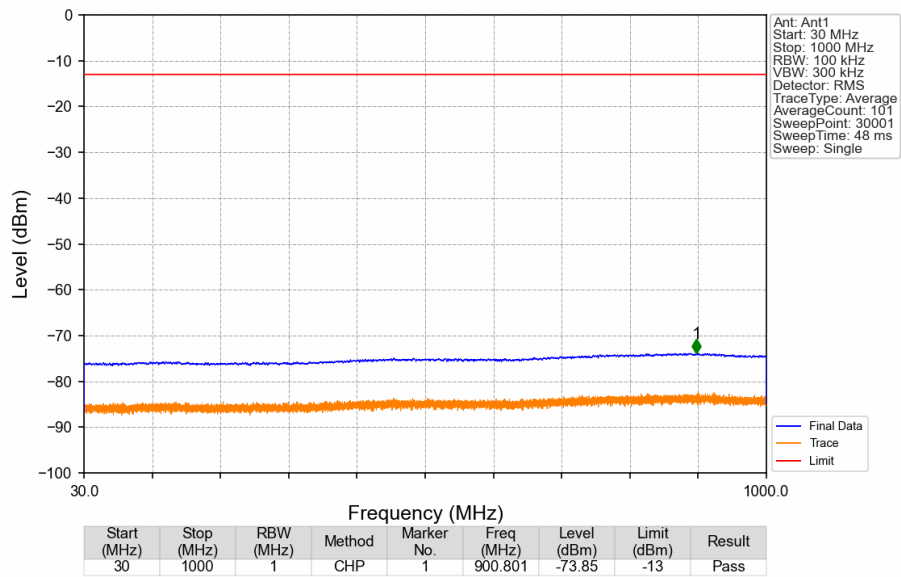
Band66_2145MHz_AWGN_SISO_Ant1_NTNV



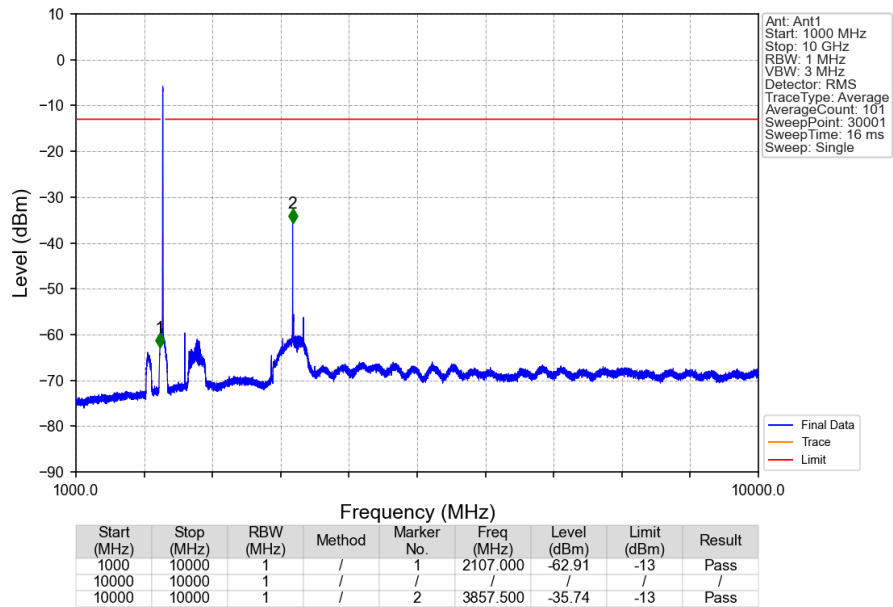
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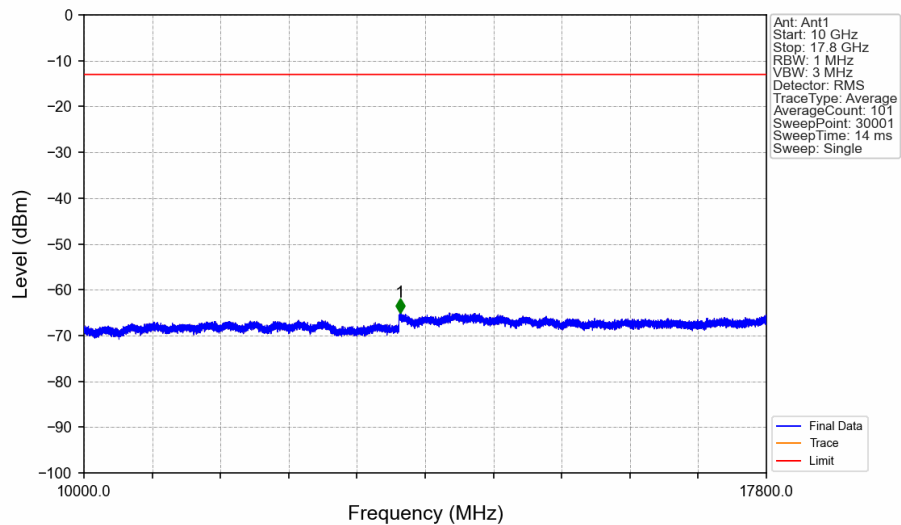
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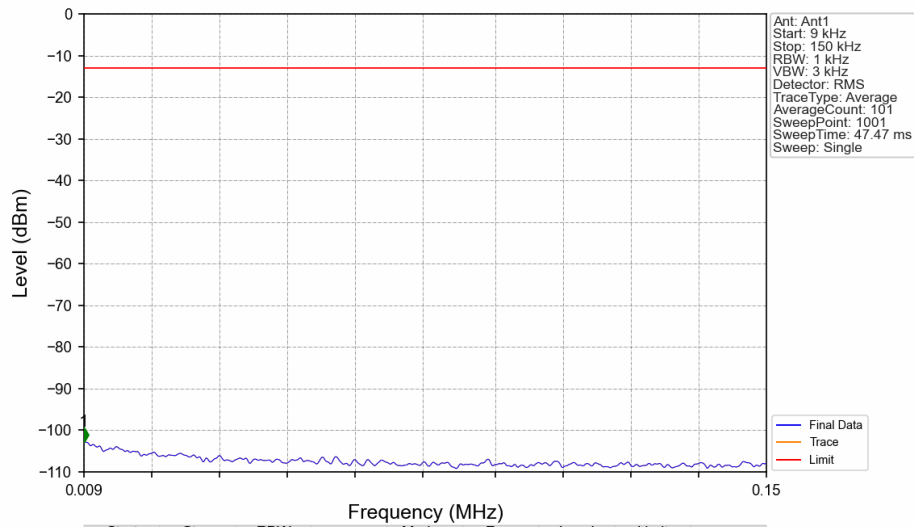
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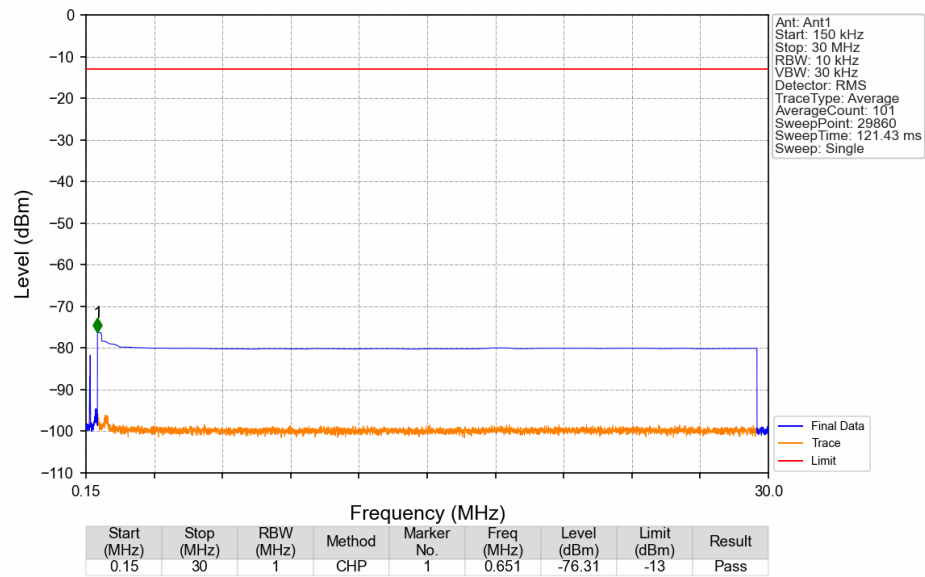
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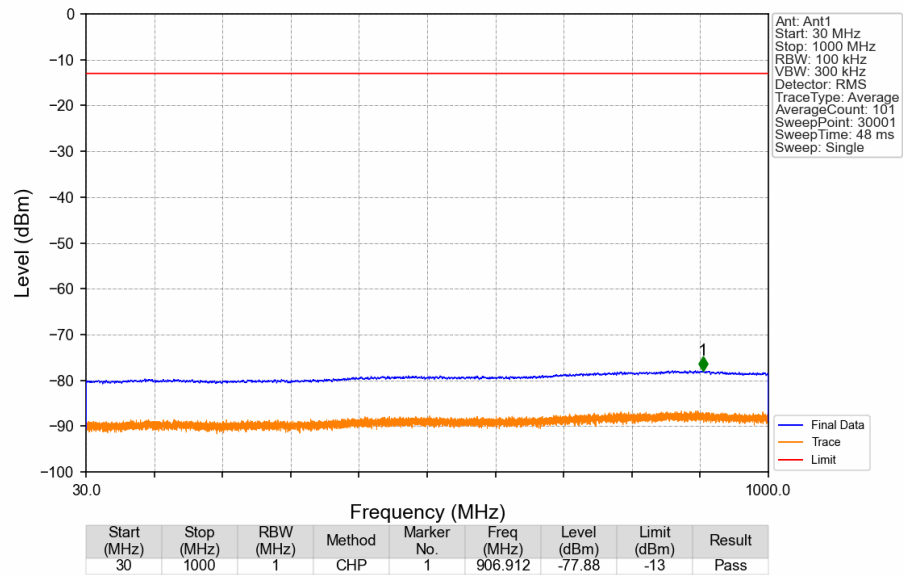
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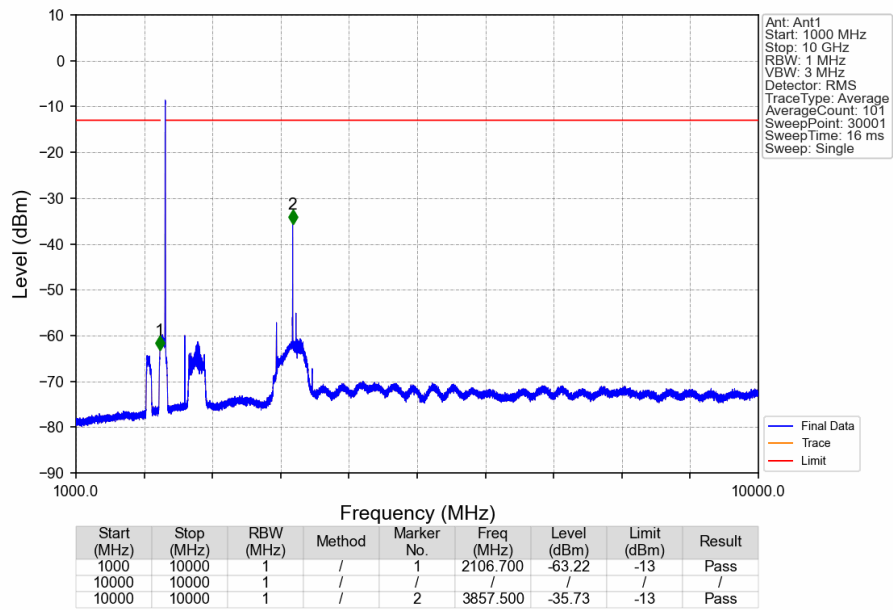
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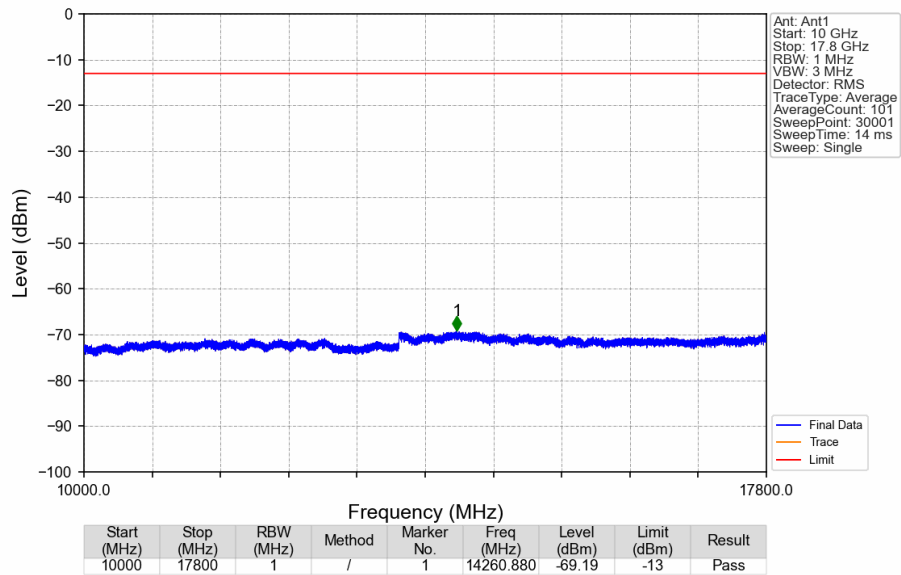
Band66_2177.5MHz_AWGN_SISO_Ant1_NTNV



Band66_2177.5MHz_AWGN_SISO_Ant1_NTNV



Band66_2177.5MHz_AWGN_SISO_Ant1_NTNV



7. Frequency stability measurements

7.1 Band66_Ant1

7.1.1 Test Result

Band: 66 / NTNV							
Signal			Temp (°C)	Voltage (VAC)	Freq. Error (Hz)	Tolerance (ppm)	Verdict
Type	Level (dBm)	Frequency (MHz)					
CW	-3.2	2110.1	20	102	-161	-0.076	Pass
				120	-167	-0.079	Pass
				138	-166	-0.079	Pass
			-20	120	-165	-0.078	Pass
			-10	120	-164	-0.078	Pass
			0	120	-160	-0.076	Pass
			10	120	-164	-0.078	Pass
			30	120	-165	-0.078	Pass
			40	120	-166	-0.079	Pass
			50	120	-163	-0.077	Pass
		2145	20	102	-160	-0.075	Pass
				120	-164	-0.076	Pass
				138	-169	-0.079	Pass
			-20	120	-171	-0.080	Pass
			-10	120	-174	-0.081	Pass
			0	120	-184	-0.086	Pass
			10	120	-180	-0.084	Pass
			30	120	-173	-0.081	Pass
			40	120	-174	-0.081	Pass
			50	120	-178	-0.083	Pass
		2199.9	20	102	-179	-0.081	Pass
				120	-175	-0.080	Pass
				138	-184	-0.084	Pass
			-20	120	-178	-0.081	Pass
			-10	120	-176	-0.080	Pass
			0	120	-173	-0.079	Pass
			10	120	-169	-0.077	Pass
			30	120	-170	-0.077	Pass
			40	120	-178	-0.081	Pass
			50	120	-176	-0.080	Pass

8. Radiated Spurious Emissions

8.1 Band66_Ant1

8.1.1 Test Result

AWGN_Low channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over limit	Result
MHz	polarization	dBm	dBm	dB	
93.81	Horizontal	-62.51	-13	-49.51	pass
258.61	Horizontal	-59.04	-13	-46.04	pass
729.22	Horizontal	-58.82	-13	-45.82	pass
2344.14	Horizontal	-55.46	-13	-42.46	pass
8146.75	Horizontal	-44.93	-13	-31.93	pass
17708.40	Horizontal	-32.41	-13	-19.41	pass
92.76	Vertical	-62.04	-13	-49.04	pass
219.77	Vertical	-58.75	-13	-45.75	pass
651.72	Vertical	-59.67	-13	-46.67	pass
2477.55	Vertical	-49.47	-13	-36.47	pass
8397.11	Vertical	-41.42	-13	-28.42	pass
17730.73	Vertical	-38.77	-13	-25.77	pass

AWGN_Middle channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over limit	Result
MHz	polarization	dBm	dBm	dB	
92.75	Horizontal	-62.99	-13	-49.99	pass
265.99	Horizontal	-59.13	-13	-46.13	pass
712.72	Horizontal	-57.72	-13	-44.72	pass
2383.82	Horizontal	-54.92	-13	-41.92	pass
8108.21	Horizontal	-44.60	-13	-31.60	pass
17659.20	Horizontal	-40.24	-13	-27.24	pass
79.01	Vertical	-63.27	-13	-50.27	pass
239.77	Vertical	-58.29	-13	-45.29	pass
675.08	Vertical	-58.45	-13	-45.45	pass
2459.61	Vertical	-49.43	-13	-36.43	pass
8415.85	Vertical	-43.78	-13	-30.78	pass
17808.73	Vertical	-44.27	-13	-31.27	pass

AWGN_High channel					
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Frequency	Spurious Emission Polarization and Level		Limit	Over limit	Result
MHz	polarization	dBm	dBm	dB	
116.78	Horizontal	-61.85	-13	-48.85	pass
249.81	Horizontal	-60.56	-13	-47.56	pass
723.76	Horizontal	-59.60	-13	-46.60	pass
2377.76	Horizontal	-50.19	-13	-37.19	pass
8122.09	Horizontal	-46.20	-13	-33.20	pass
17731.40	Horizontal	-38.81	-13	-25.81	pass
80.50	Vertical	-63.23	-13	-50.23	pass
258.37	Vertical	-60.98	-13	-47.98	pass
651.08	Vertical	-58.64	-13	-45.64	pass
2538.87	Vertical	-46.47	-13	-33.47	pass
8406.73	Vertical	-43.08	-13	-30.08	pass
17757.47	Vertical	-35.07	-13	-22.07	pass

GMSK_Low channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over limit	Result
MHz	polarization	dBm	dBm	dB	
93.82	Horizontal	-61.74	-13	-48.74	pass
253.00	Horizontal	-61.84	-13	-48.84	pass
720.27	Horizontal	-56.31	-13	-43.31	pass
2399.66	Horizontal	-53.76	-13	-40.76	pass
8134.41	Horizontal	-47.23	-13	-34.23	pass
17700.30	Horizontal	-33.41	-13	-20.41	pass
115.15	Vertical	-61.61	-13	-48.61	pass
225.92	Vertical	-60.42	-13	-47.42	pass
677.36	Vertical	-58.60	-13	-45.60	pass
2551.53	Vertical	-55.53	-13	-42.53	pass
8416.27	Vertical	-49.75	-13	-36.75	pass
17742.35	Vertical	-38.90	-13	-25.90	pass

GMSK_Middle channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over limit	Result
MHz	polarization	dBm	dBm	dB	
121.76	Horizontal	-59.84	-13	-46.84	pass
256.69	Horizontal	-59.62	-13	-46.62	pass
707.83	Horizontal	-58.37	-13	-45.37	pass
2323.12	Horizontal	-52.52	-13	-39.52	pass
8068.73	Horizontal	-40.53	-13	-27.53	pass
17657.74	Horizontal	-38.34	-13	-25.34	pass
108.96	Vertical	-63.20	-13	-50.20	pass
228.46	Vertical	-58.78	-13	-45.78	pass
655.70	Vertical	-57.34	-13	-44.34	pass
2479.23	Vertical	-48.13	-13	-35.13	pass
8426.63	Vertical	-44.95	-13	-31.95	pass
17733.31	Vertical	-36.14	-13	-23.14	pass

GMSK_High channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over limit	Result
MHz	polarization	dBm	dBm	dB	
120.79	Horizontal	-61.21	-13	-48.21	pass
255.72	Horizontal	-58.34	-13	-45.34	pass
693.41	Horizontal	-58.44	-13	-45.44	pass
2406.80	Horizontal	-46.69	-13	-33.69	pass
8076.15	Horizontal	-45.83	-13	-32.83	pass
17725.18	Horizontal	-30.51	-13	-17.51	pass
97.03	Vertical	-59.54	-13	-46.54	pass
240.18	Vertical	-58.32	-13	-45.32	pass
635.22	Vertical	-58.72	-13	-45.72	pass
2476.29	Vertical	-51.63	-13	-38.63	pass
8418.53	Vertical	-41.15	-13	-28.15	pass
17718.95	Vertical	-37.47	-13	-24.47	pass