

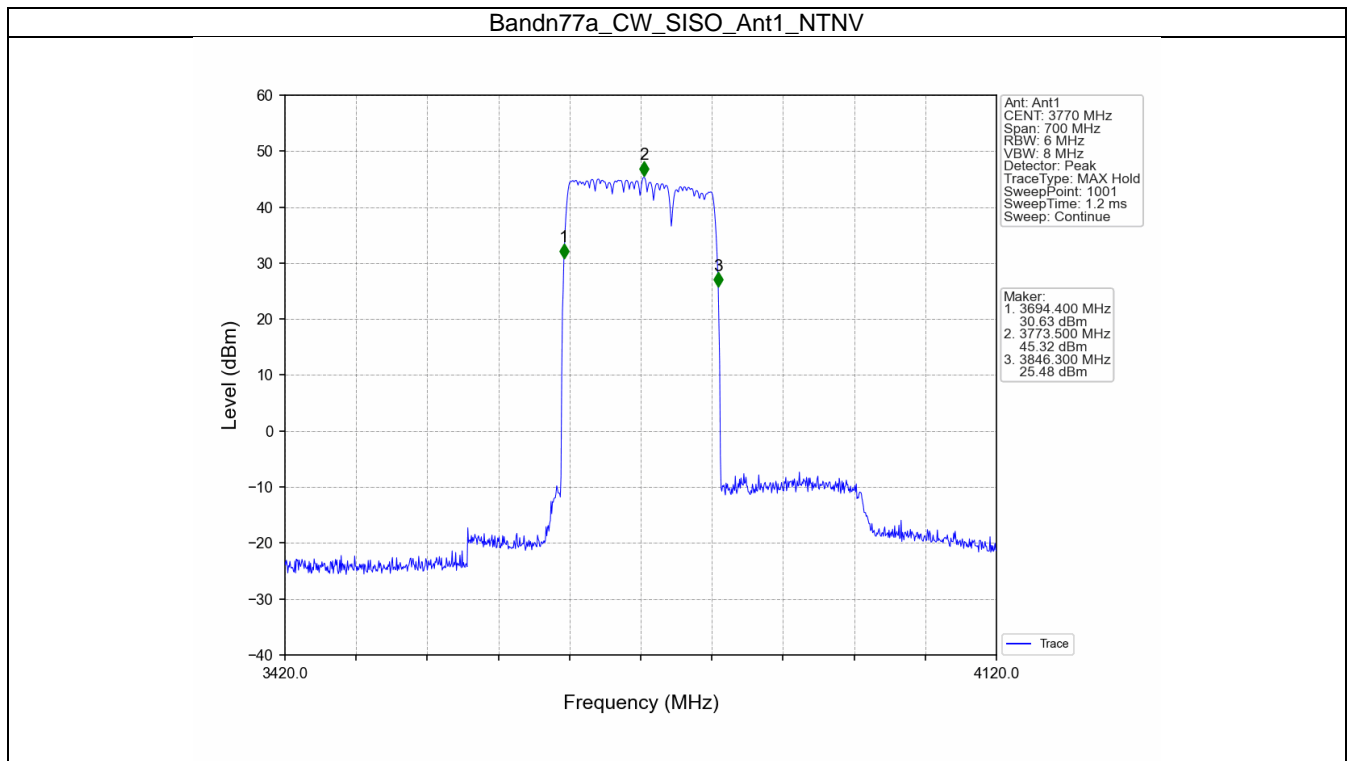
1. Out of band rejection

1.1 Bandn77

1.1.1 Test Result

Band: n77a / NTV							
Signal	Sweep Frequency Range (MHz)	TX Type	ANT	F0 (MHz)	FL (MHz)	FH (MHz)	Verdict
CW	3420 - 4120	SISO	1	3773.500	3694.400	3846.300	Pass

1.1.2 Test Graph



2. AGC threshold

2.1 Bandn77a

2.1.1 Test Result

Band: n77a / NTV					
Signal	Frequency (MHz)	TX Type	ANT	AGC Threshold (dBm)	Verdict
GMSK 0.2MHz	3773.5	SISO	1	-3.50	Pass
AWGN 5MHz	3773.5	SISO	1	-3.50	Pass
AWGN 100MHz	3773.5	SISO	1	-3.50	Pass

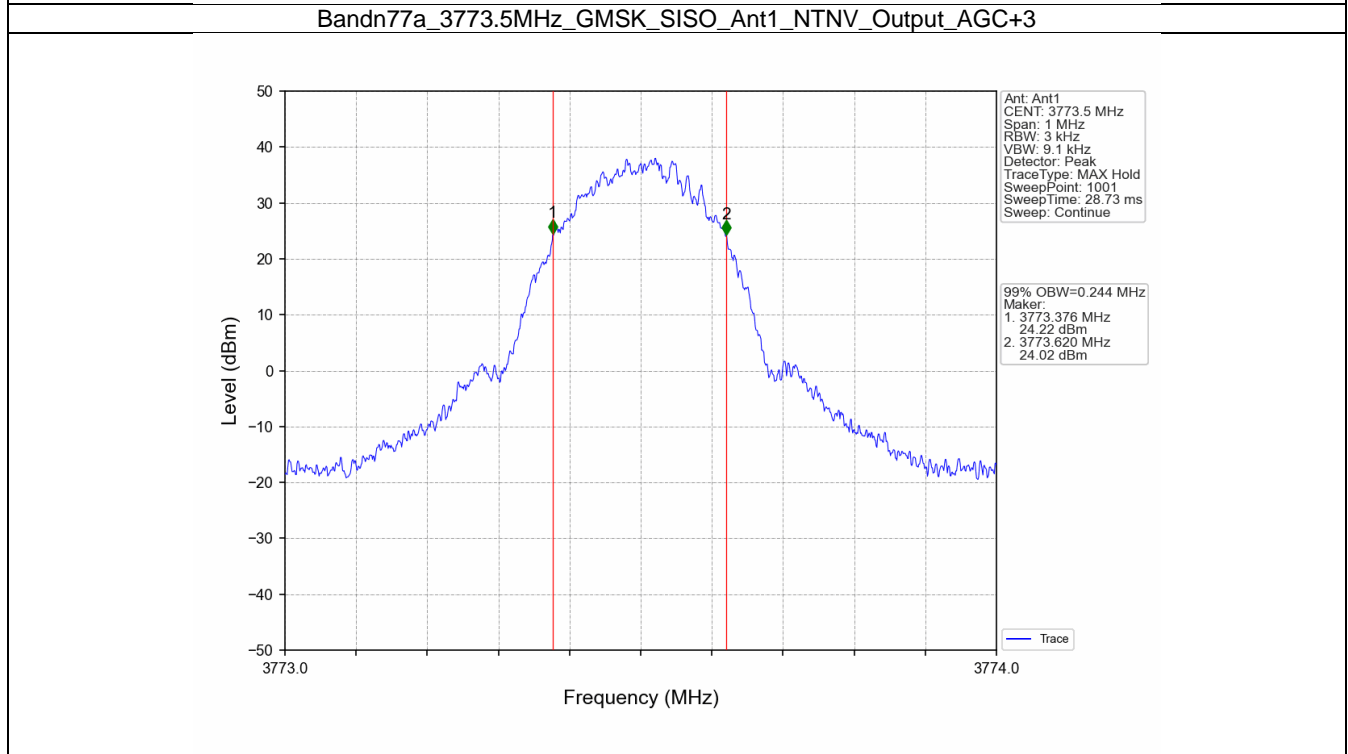
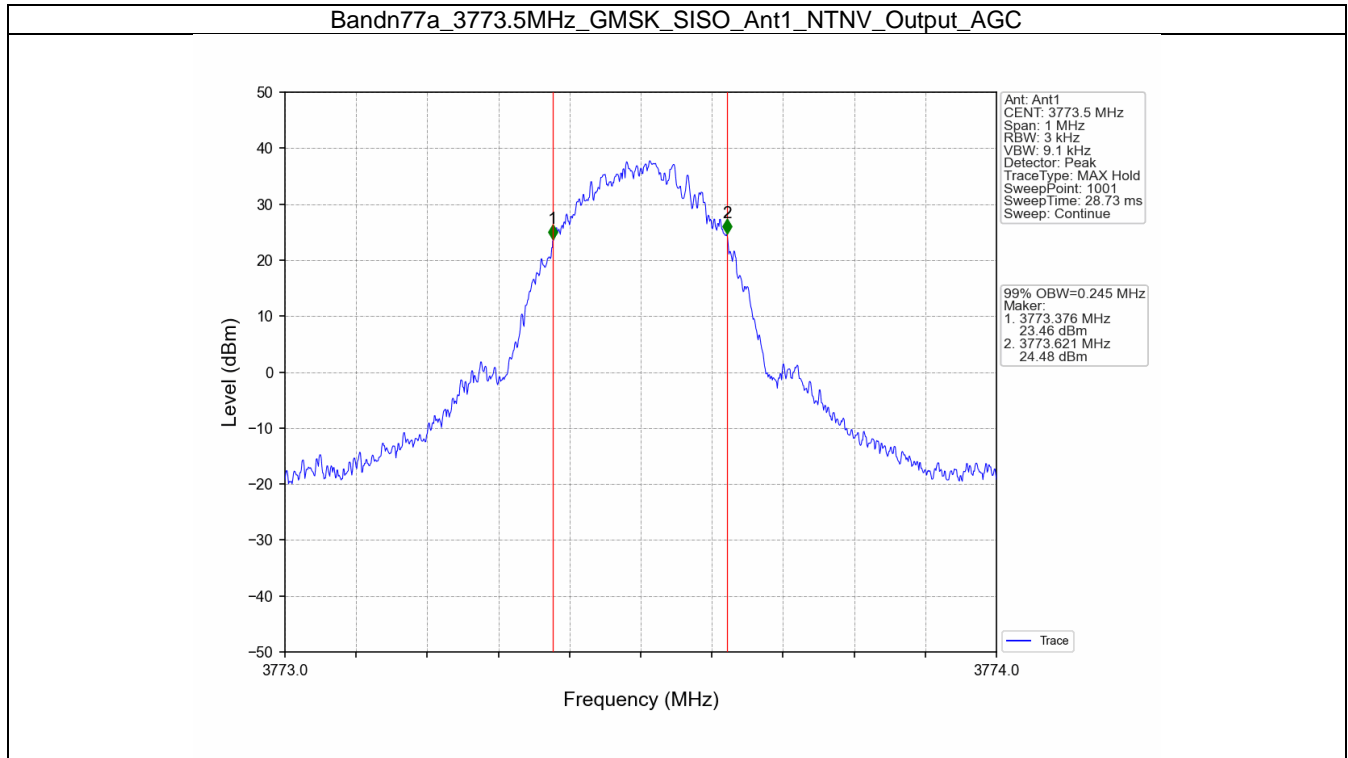
3. Input-versus-output signal comparison

3.1 Bandn77a_OBW

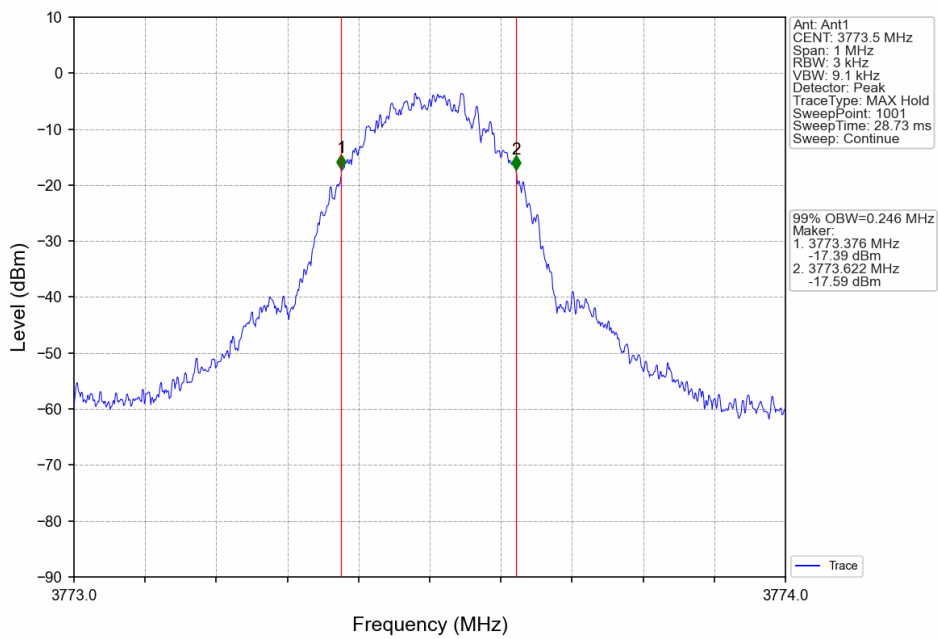
3.1.1 Test Result

Band: n77a / NTV							
Signal			TX Type	ANT	99% OBW (MHz)		Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	
GMSK 0.2MHz	-0.5	3773.5	SISO	1	0.245	0.246	Pass
	-3.5	3773.5	SISO	1	0.244	0.246	Pass
AWGN 5MHz	-0.5	3773.5	SISO	1	4.513	4.529	Pass
	-3.5	3773.5	SISO	1	4.528	4.532	Pass
AWGN 100MHz	-0.5	3773.5	SISO	1	97.453	96.997	Pass
	-3.5	3773.5	SISO	1	97.406	97.171	Pass

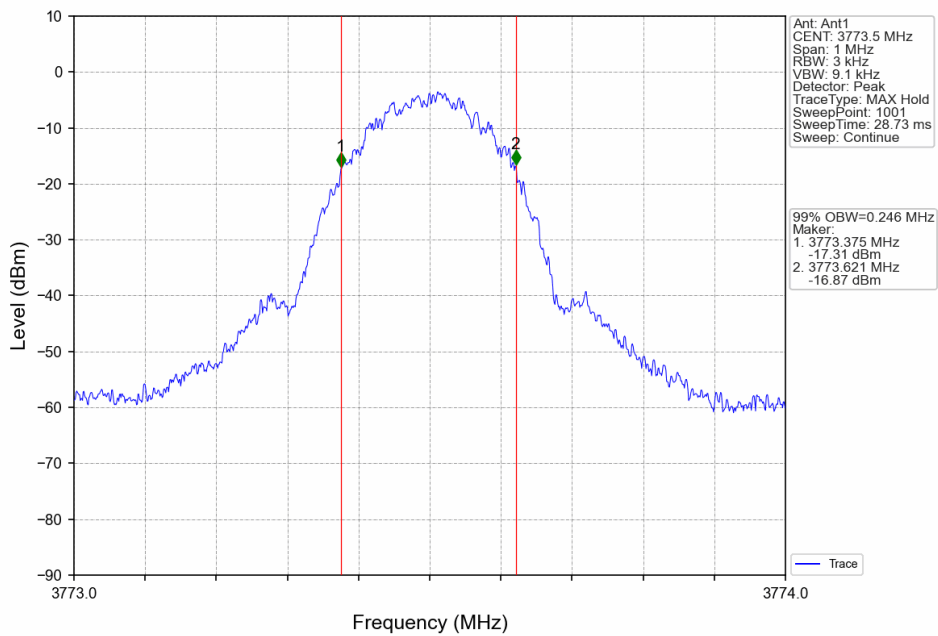
3.1.2 Test Graph



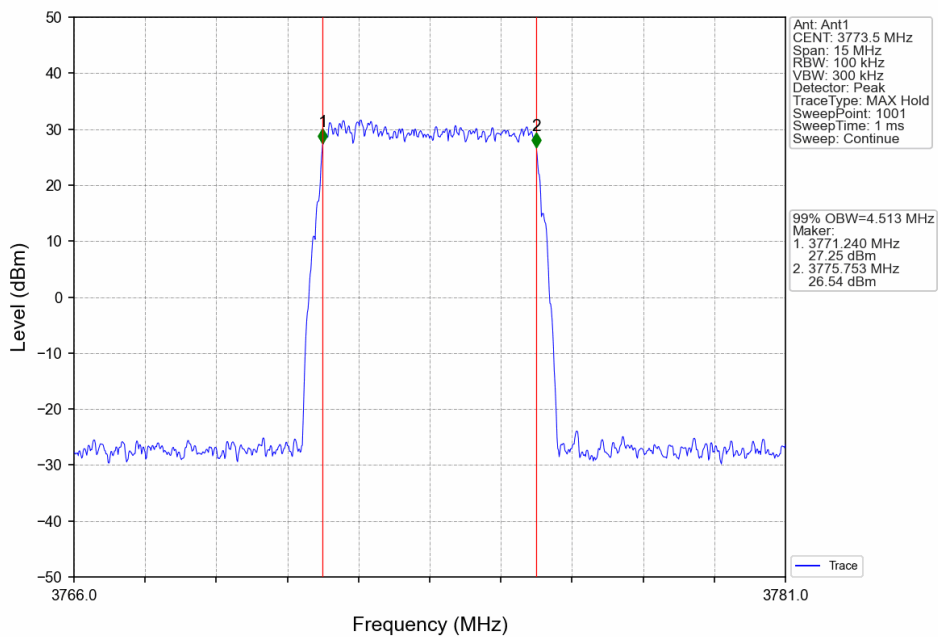
Bandn77a_3773.5MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



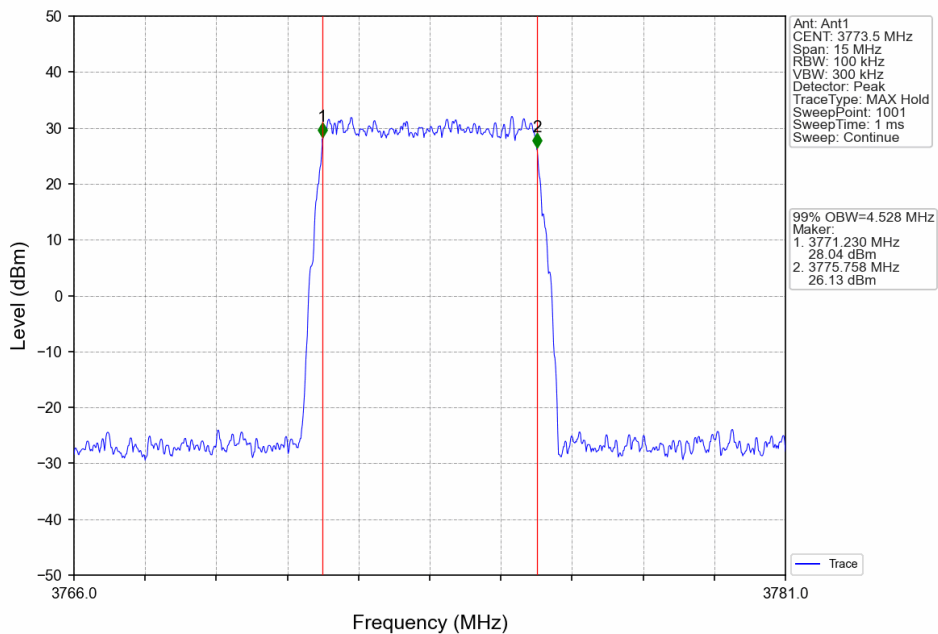
Bandn77a_3773.5MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



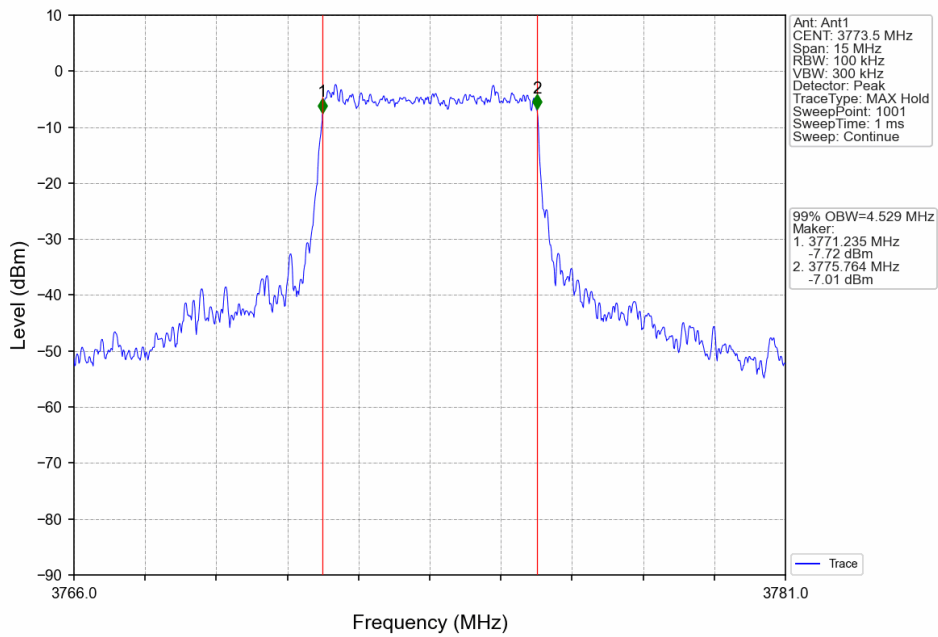
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



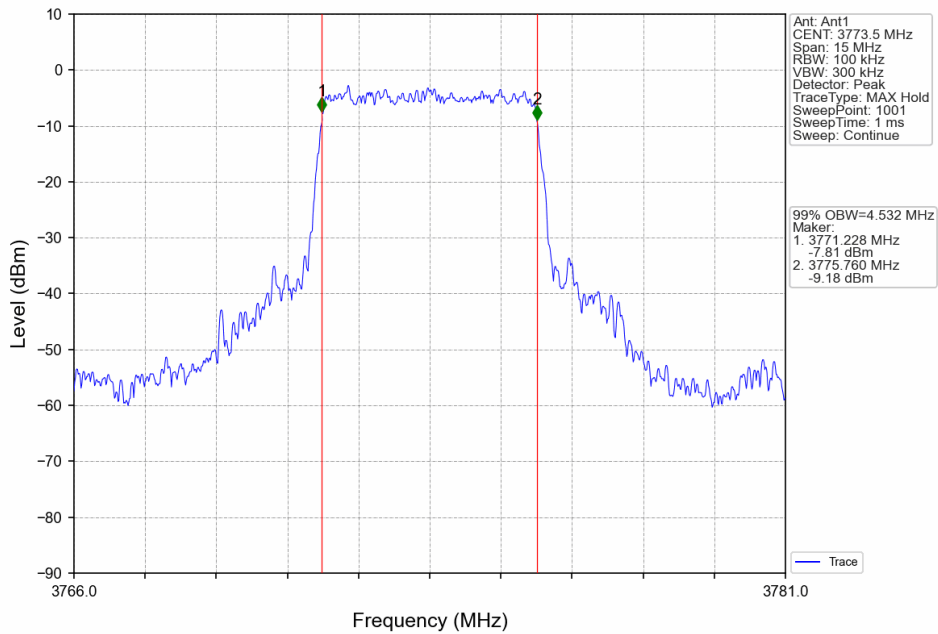
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



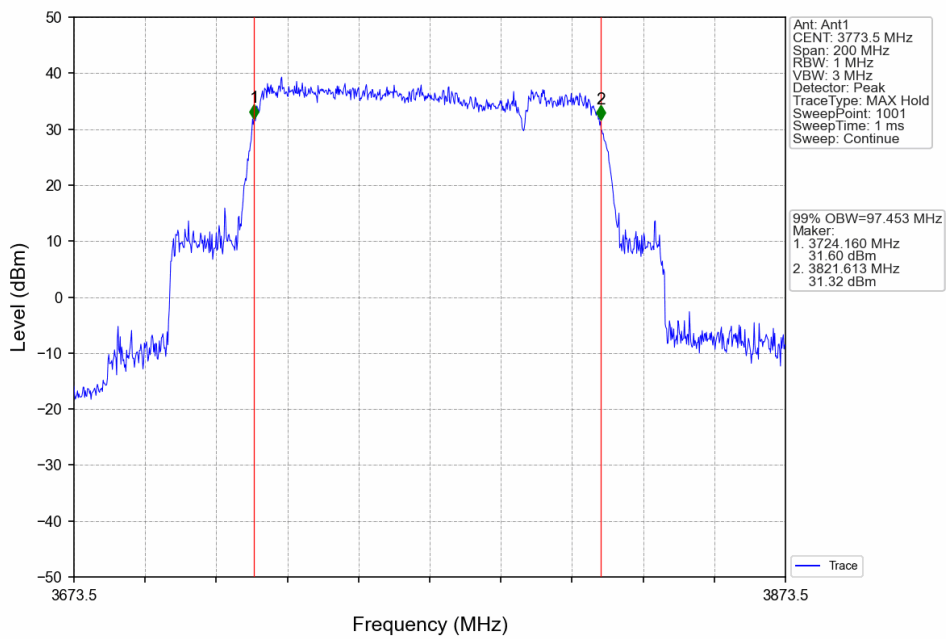
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Input_AGC



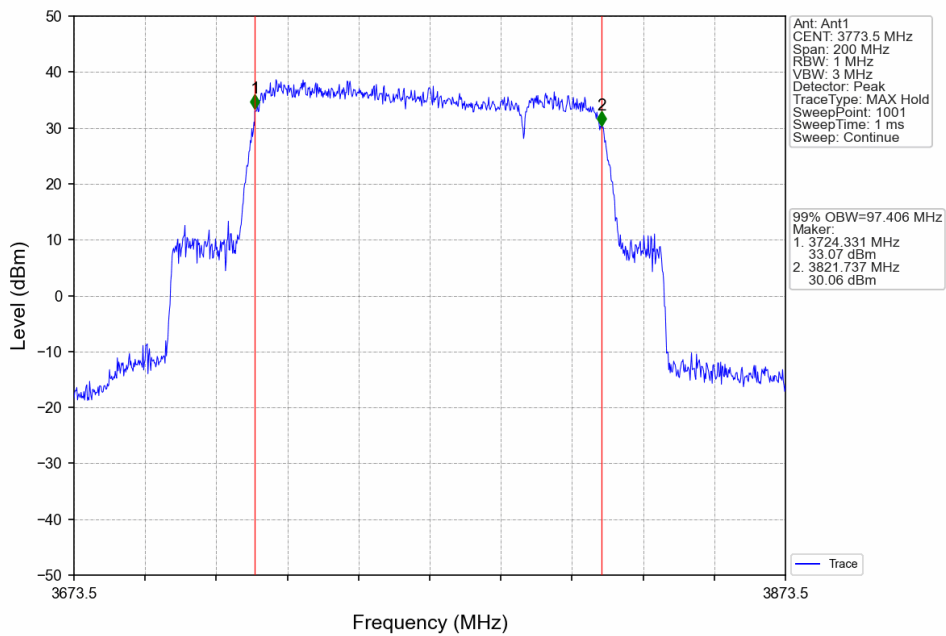
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3



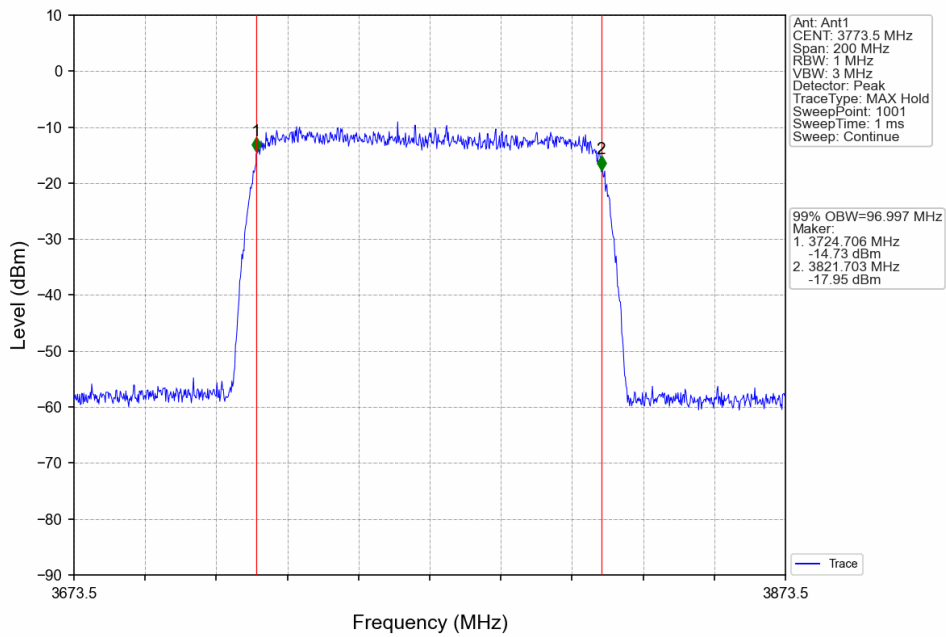
Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Output_AGC



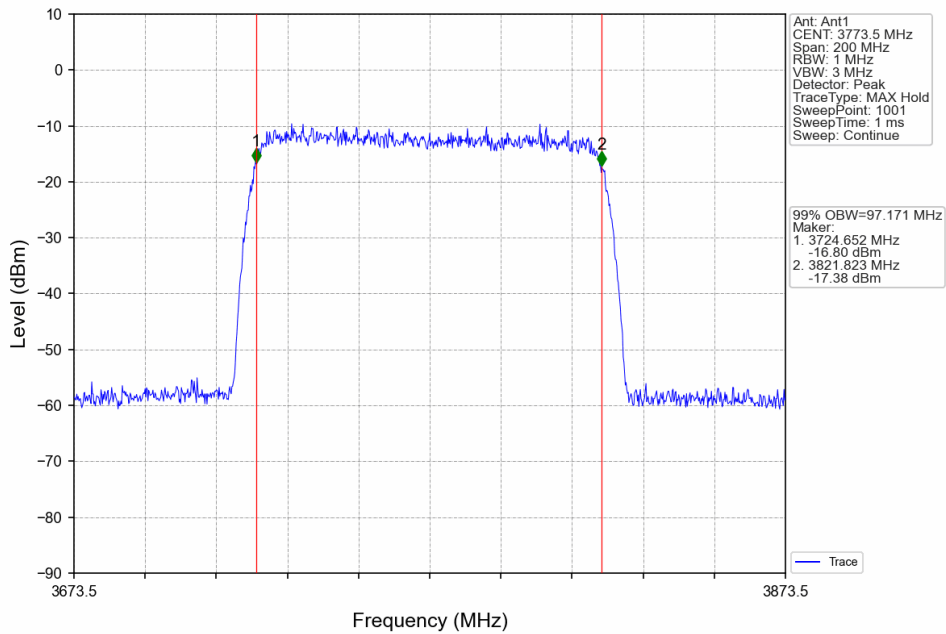
Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Output_AGC+3



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC+3

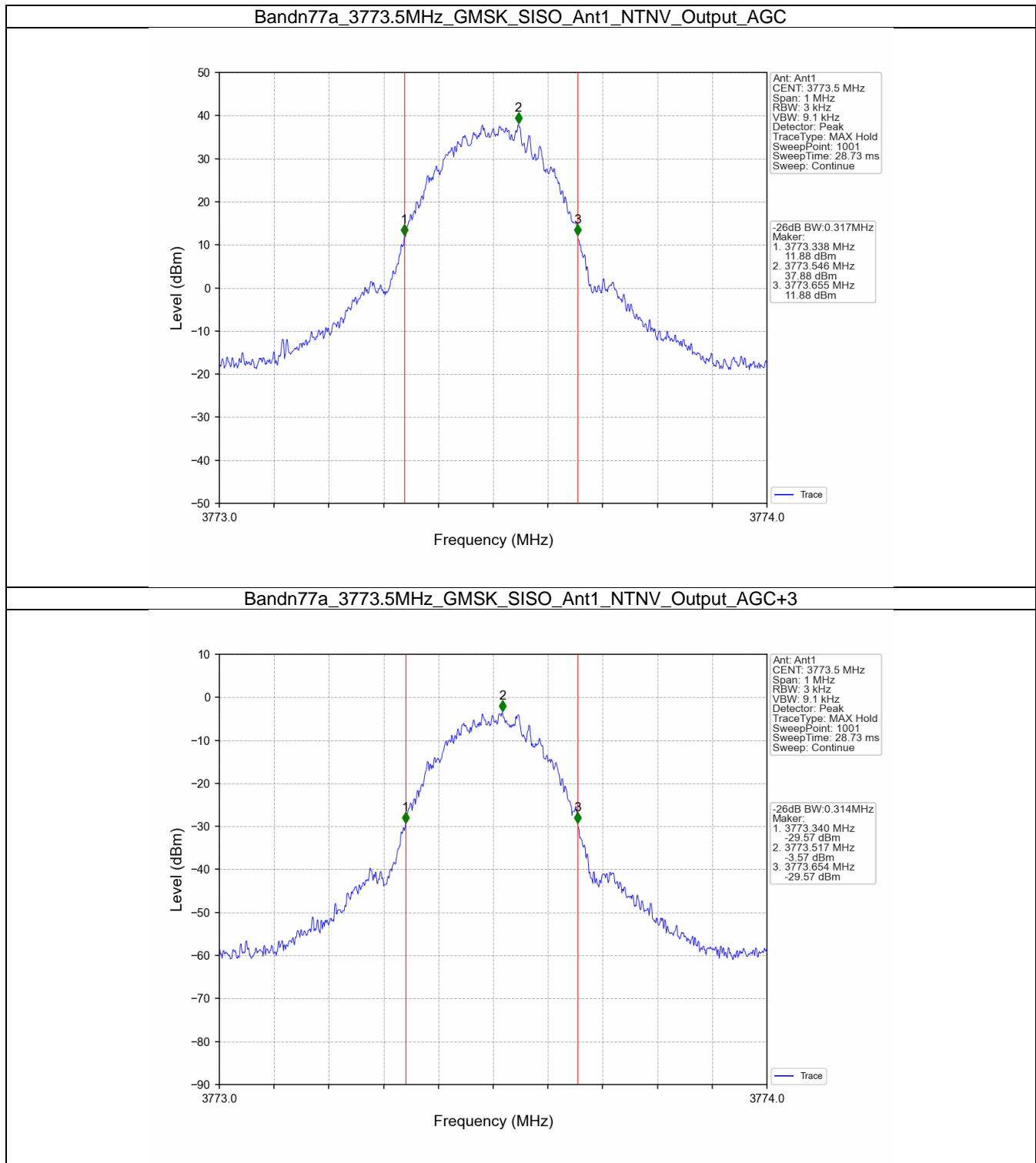


3.2 Bandn77a_EBW

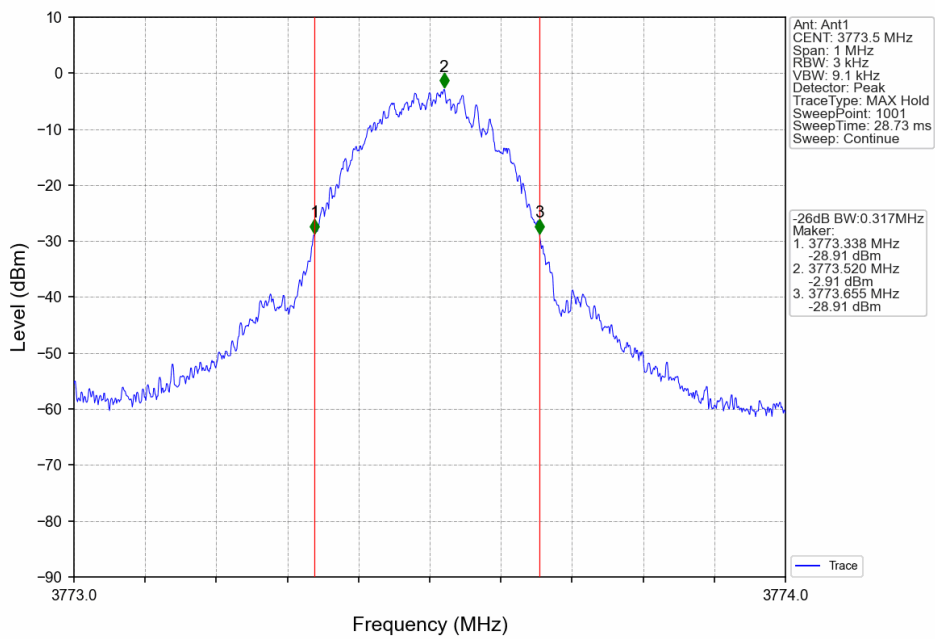
3.2.1 Test Result

Band: n77a / NTV							
Signal			TX Type	ANT	26dB EBW (MHz)		Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	
GMSK 0.2MHz	-0.5	3773.5	SISO	1	0.317	0.317	Pass
	-3.5	3773.5	SISO	1	0.314	0.316	Pass
AWGN 5MHz	-0.5	3773.5	SISO	1	4.986	5.006	Pass
	-3.5	3773.5	SISO	1	5.024	4.964	Pass
AWGN 100MHz	-0.5	3773.5	SISO	1	105.215	105.774	Pass
	-3.5	3773.5	SISO	1	105.193	105.768	Pass

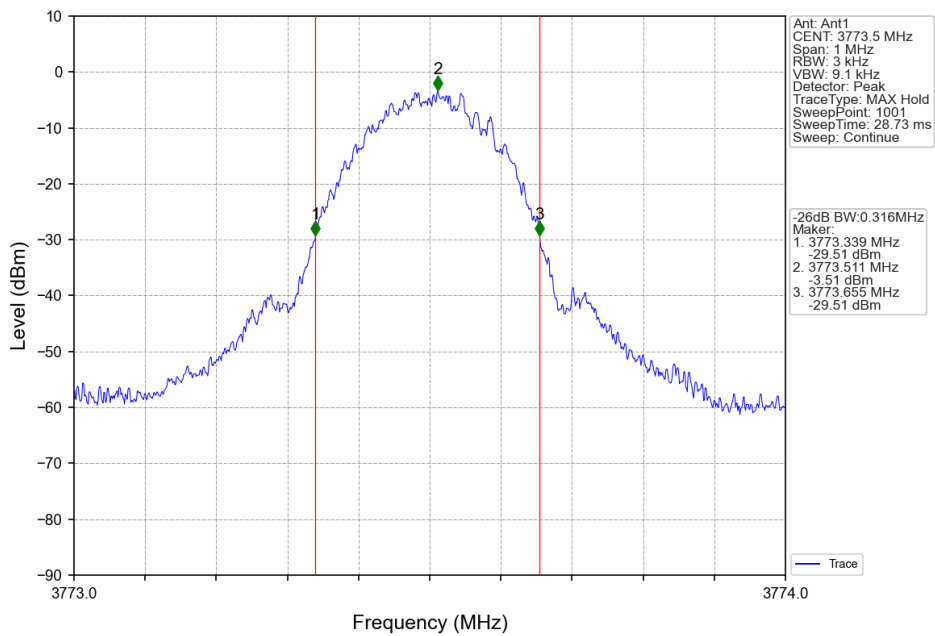
3.2.2 Test Graph



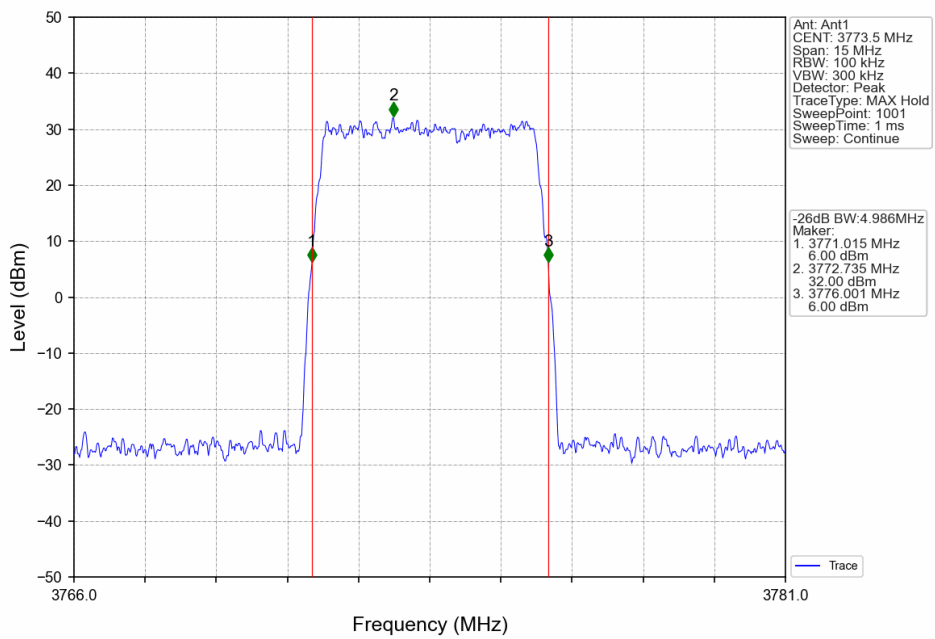
Bandn77a_3773.5MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



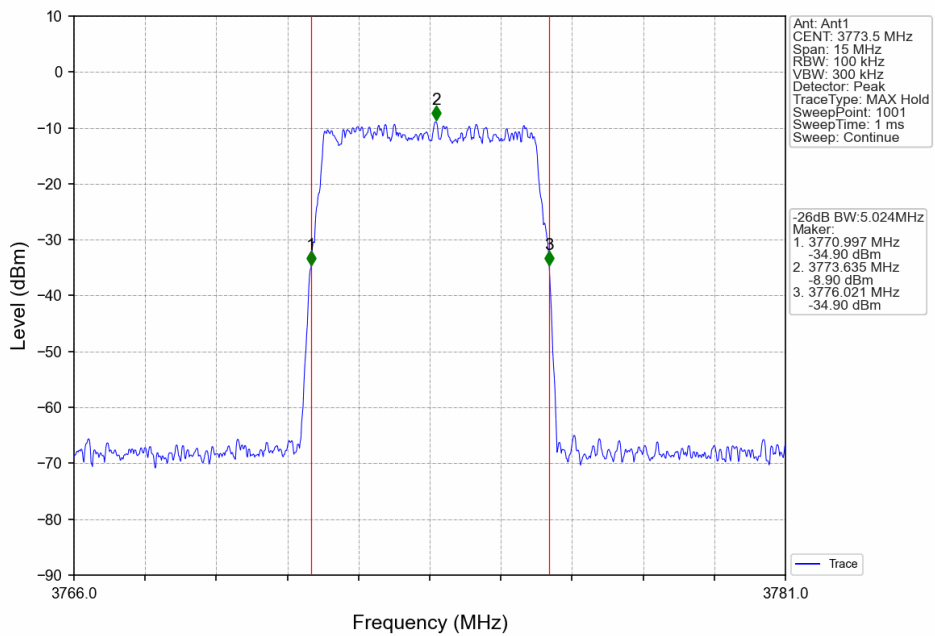
Bandn77a_3773.5MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



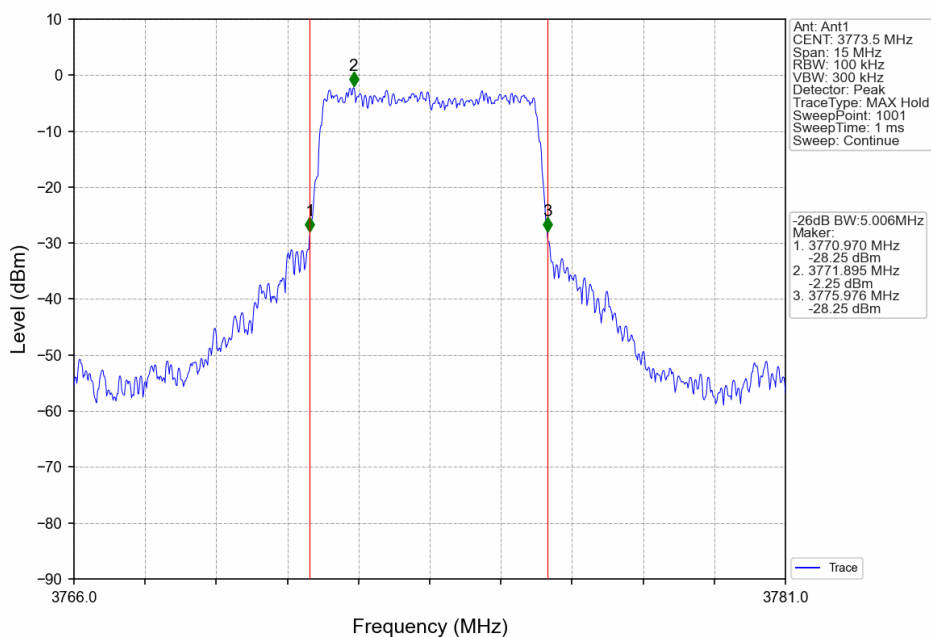
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



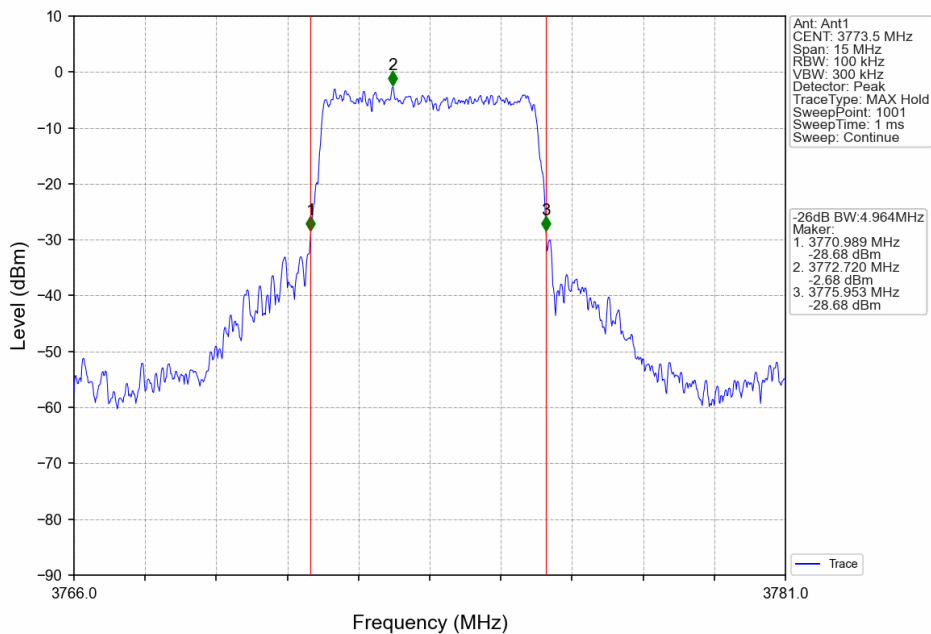
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



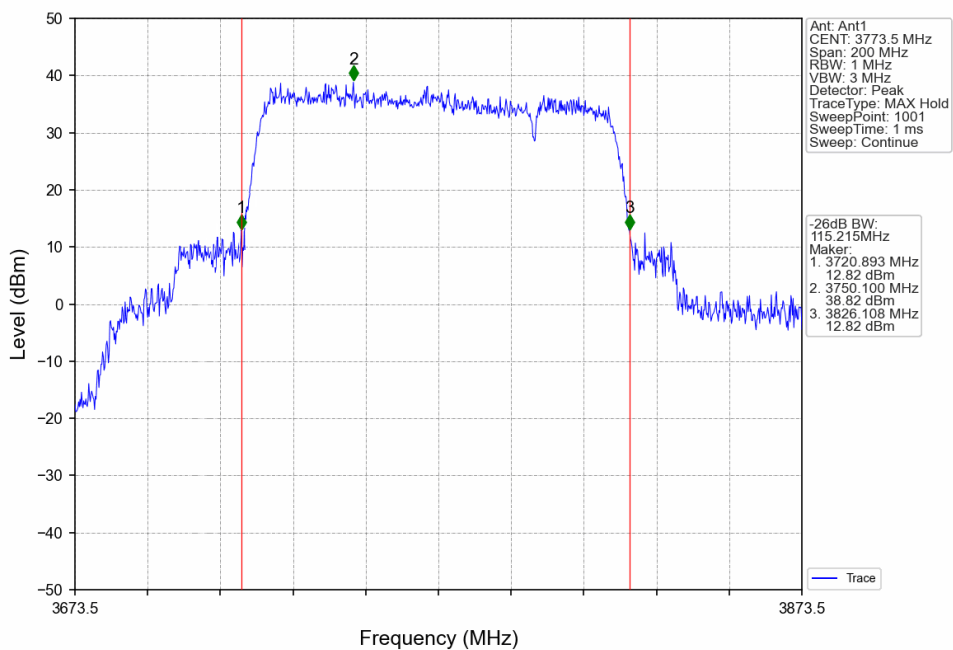
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Input_AGC



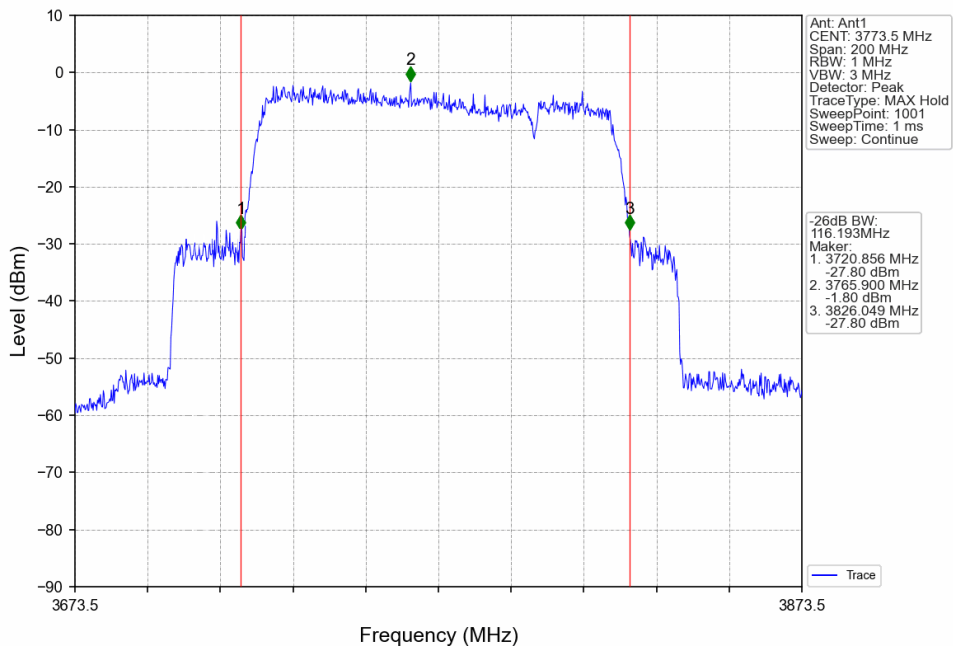
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3



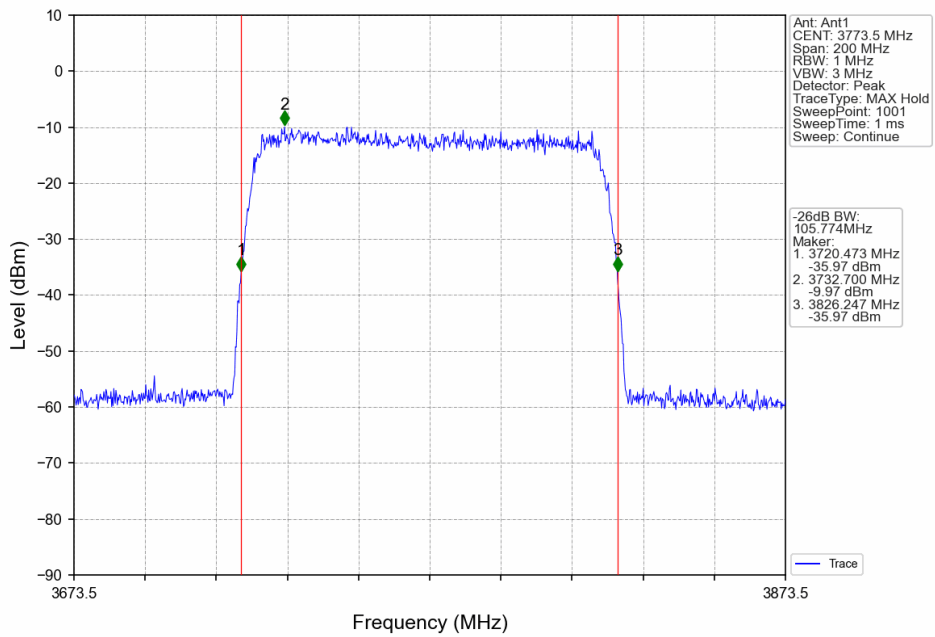
Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Output_AGC



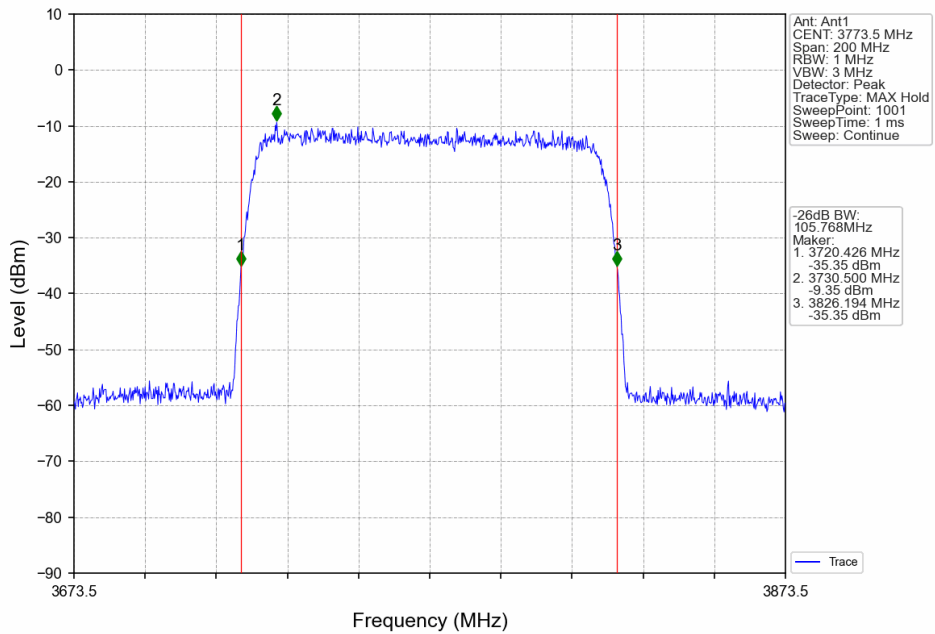
Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Output_AGC+3



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC+3



4. Input/output power and amplifier/booster gain

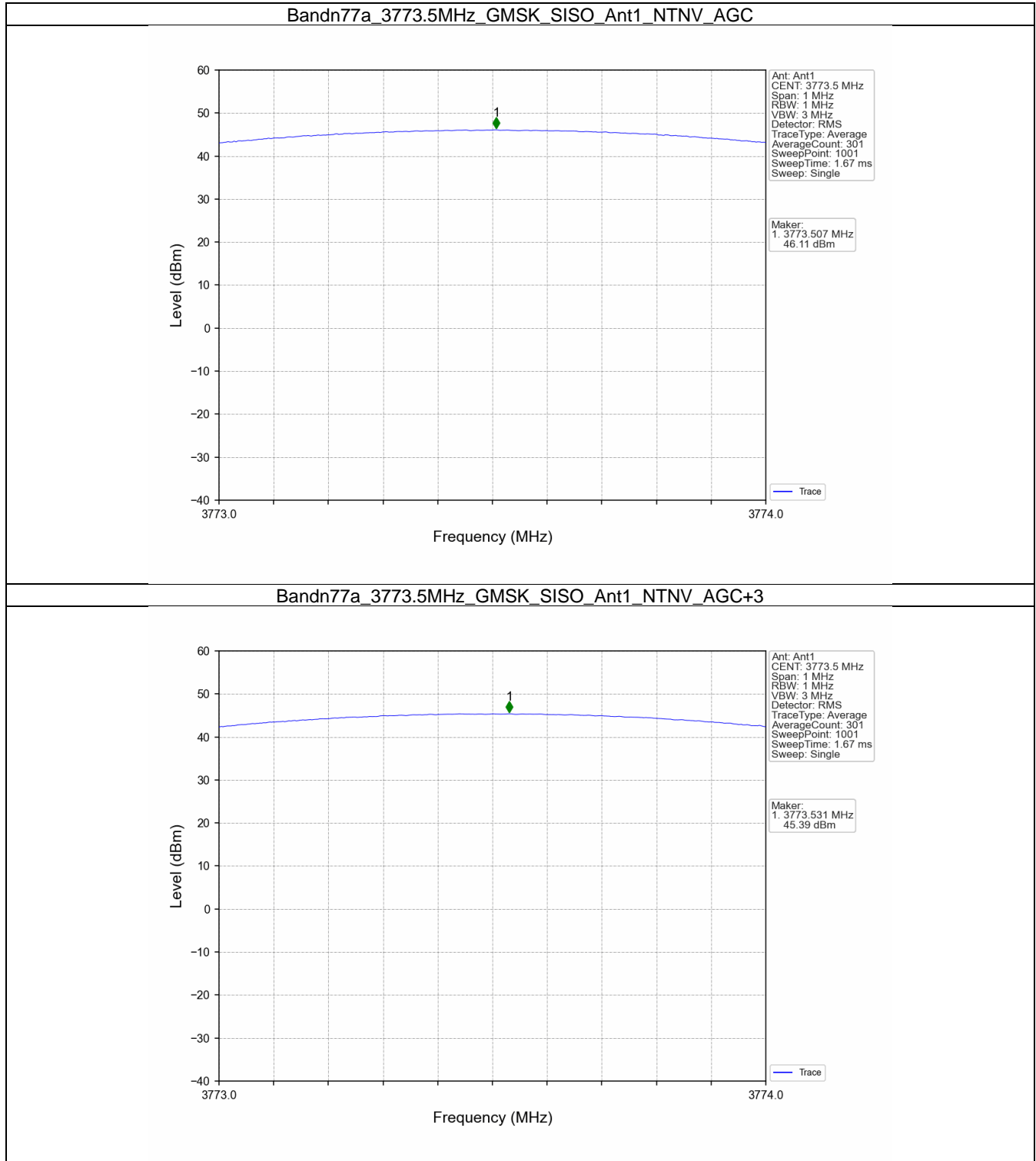
4.1 Bandn77a_EIRP

4.1.1 Test Result

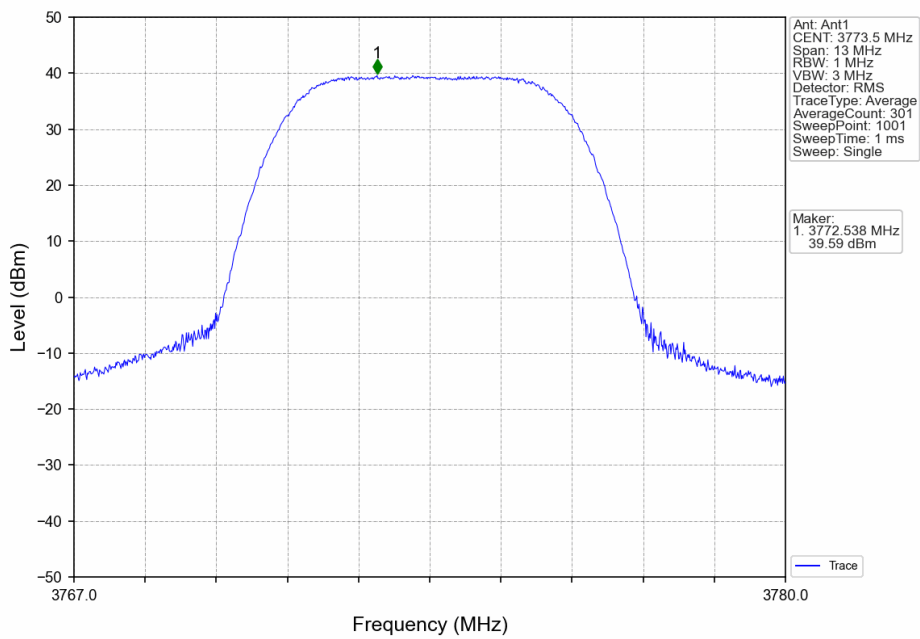
Band: n77a / NTV											
Signal			TX Type	ANT	Conducted Power (dBm/MHz)		EIRP (dBm/MHz)		Limit	Booster Gain (dB)	Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	SISO	2*2MIMO			
GMSK 0.2MHz	-3.5	3773.5	SISO	1	46.11	-3.20	58.11	61.12	<=62.15	49.32	Pass
	-0.5	3773.5	SISO	1	45.39	-0.15	57.39	60.40	<=62.15	/	Pass
AWGN 5MHz	-3.5	3773.5	SISO	1	39.59	-9.24	51.59	54.60	<=62.15	48.83	Pass
	-0.5	3773.5	SISO	1	39.44	-6.14	51.44	54.45	<=62.15	/	Pass
AWGN 100MHz	-3.5	3773.5	SISO	1	28.99	-20.82	40.99	44.00	<=62.15	49.80	Pass
	-0.5	3773.5	SISO	1	28.81	-17.79	40.81	43.82	<=62.15	/	Pass

Band: N77a / NTV									
Operation Band	Frequency (MHz)	Signal	Signal Level	Input Power (dBm)	Total Output Power (dBm)		EIRP(dBm)		Booster Gain (dB)
					SISO	2*2MIMO	SISO	2*2MIMO	
3700MHz-3840MHz	3773.5	GMSK 0.2MHz	Pre-AGC	-3.5	46.15	49.17	58.15	61.16	/
			3dB Above AGC	-0.5	46.17	49.19	58.17	61.18	/
	3773.5	AWGN 5MHz	Pre-AGC	-3.5	46.22	49.24	58.22	61.23	/
			3dB Above AGC	-0.5	46.18	49.20	58.18	61.19	/
	3773.5	AWGN 100MHz	Pre-AGC	-3.5	46.19	49.21	58.19	61.20	
			3dB Above AGC	-0.5	46.21	49.23	58.21	61.22	

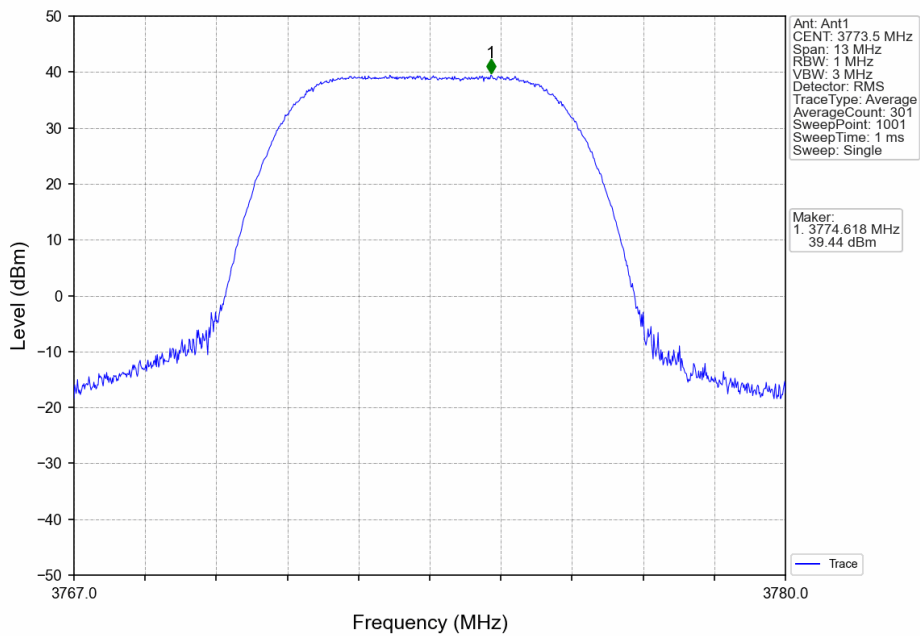
4.1.2 Test Graph



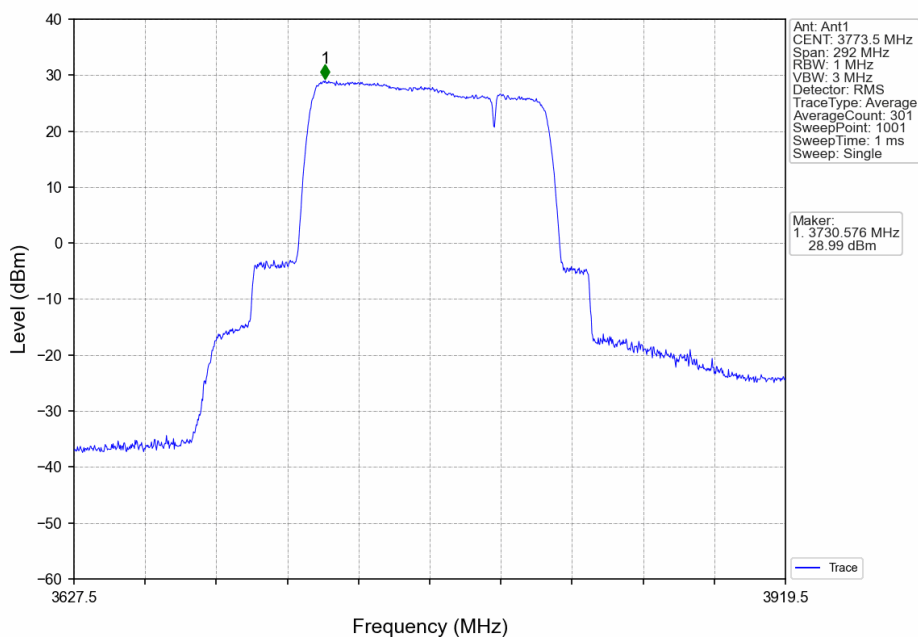
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_AGC



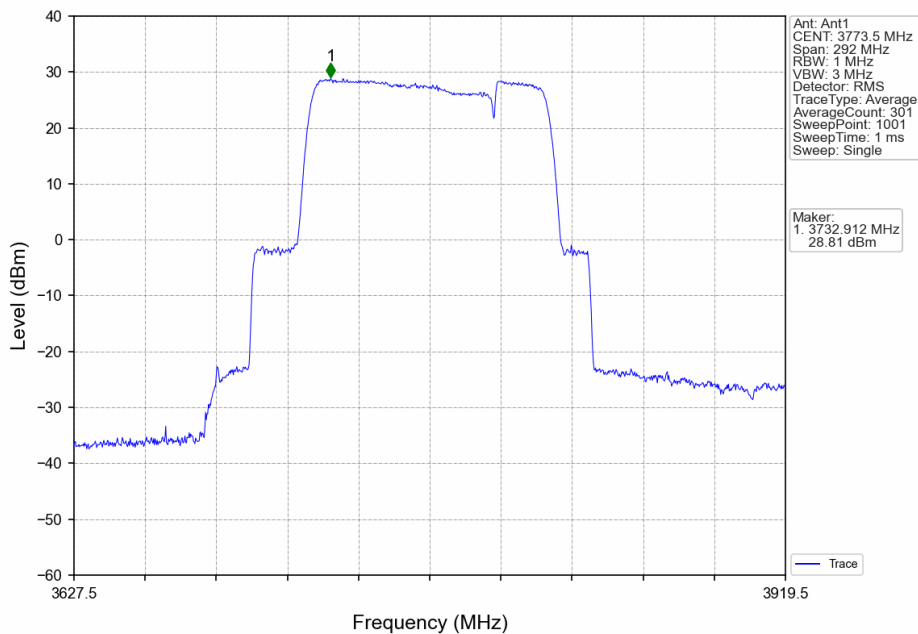
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3

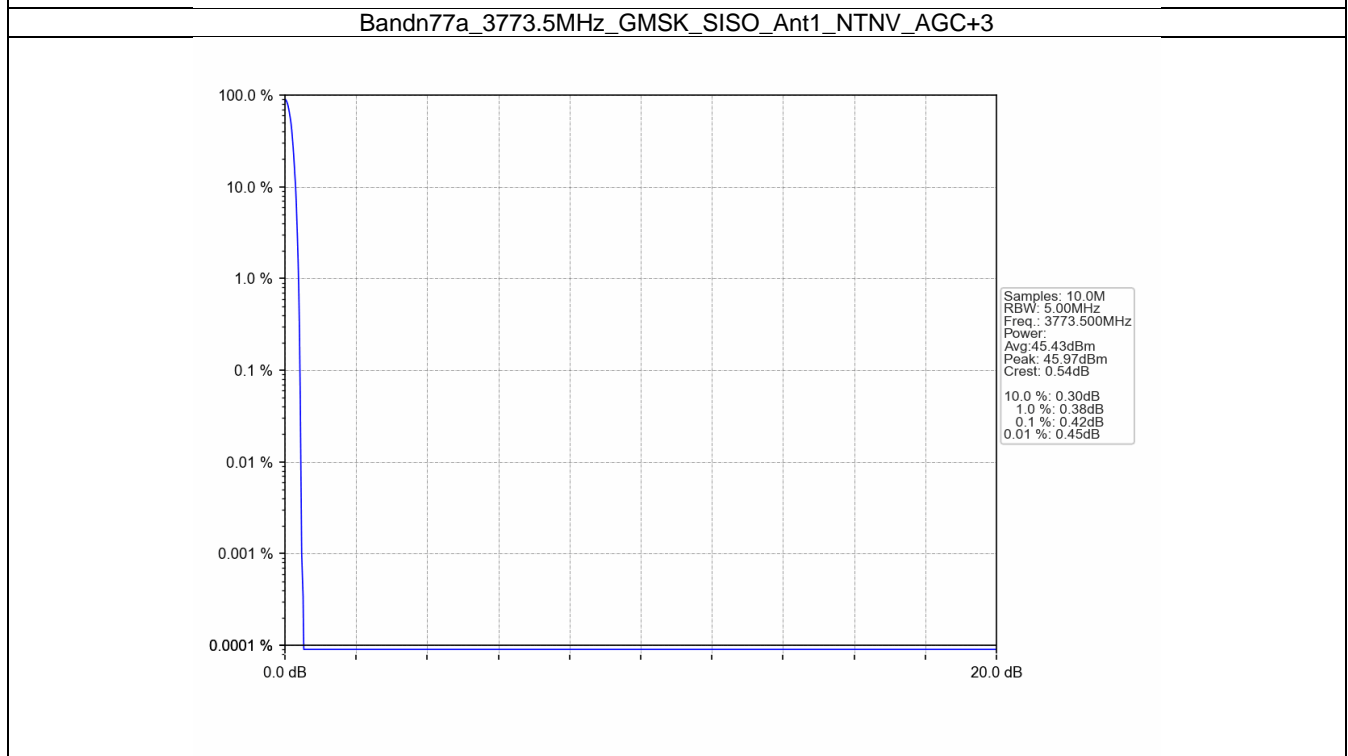
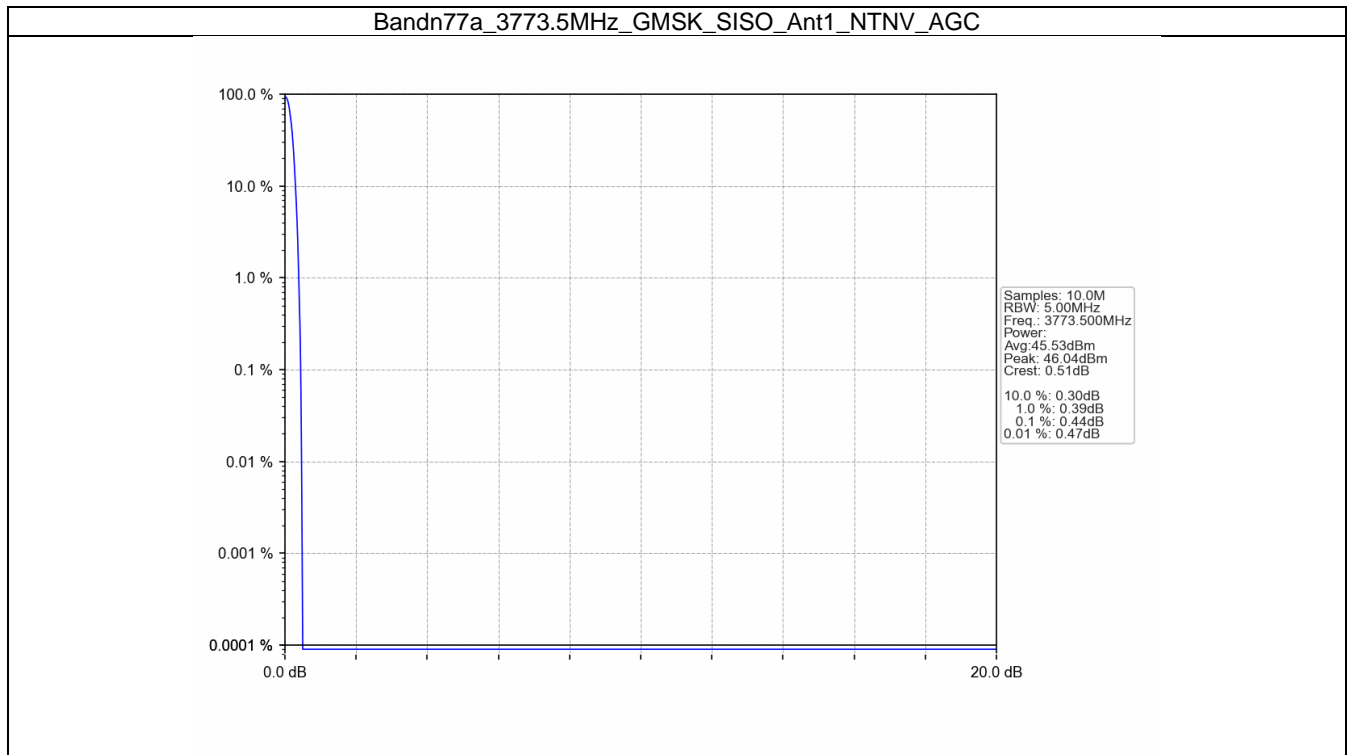


4.2 Bandn77a_PAPR

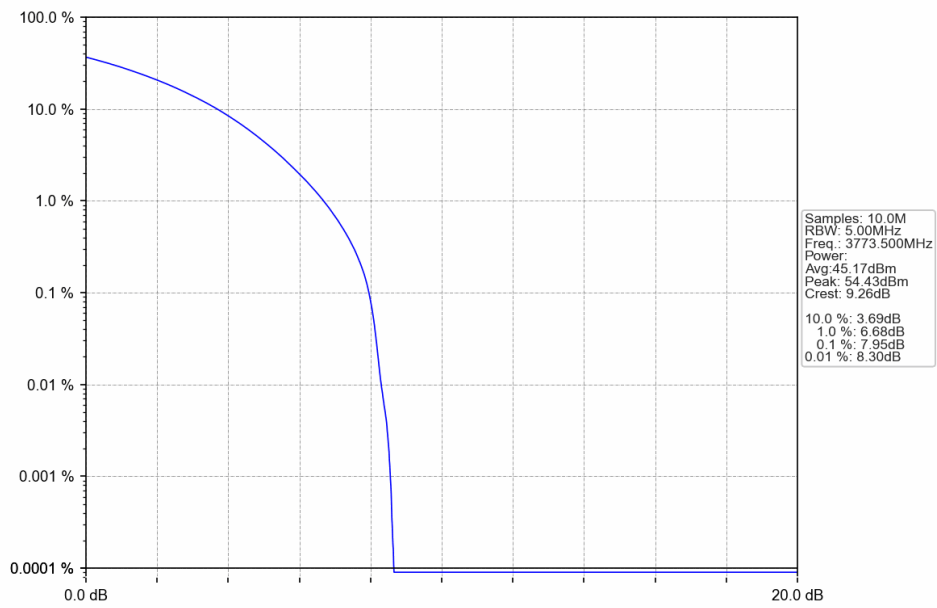
4.2.1 Test Result

Band: n77a / NTNV							
Signal			TX Type	ANT	PAPR (dB)		Verdict
Type	Level (dBm)	Frequency (MHz)			Result	Limit	
GMSK 0.2MHz	-3.5	3773.5	SISO	1	0.44	<=13	Pass
	-0.5	3773.5	SISO	1	0.42	<=13	Pass
AWGN 5MHz	-3.5	3773.5	SISO	1	7.95	<=13	Pass
	-0.5	3773.5	SISO	1	7.73	<=13	Pass
AWGN 100MHz	-3.5	3773.5	SISO	1	8.40	<=13	Pass
	-0.5	3773.5	SISO	1	8.39	<=13	Pass

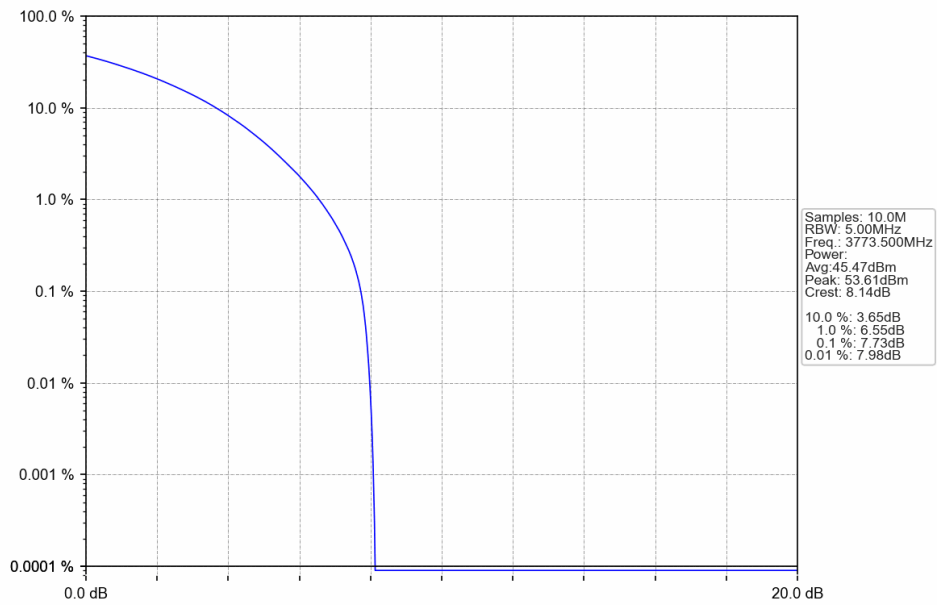
4.2.2 Test Graph



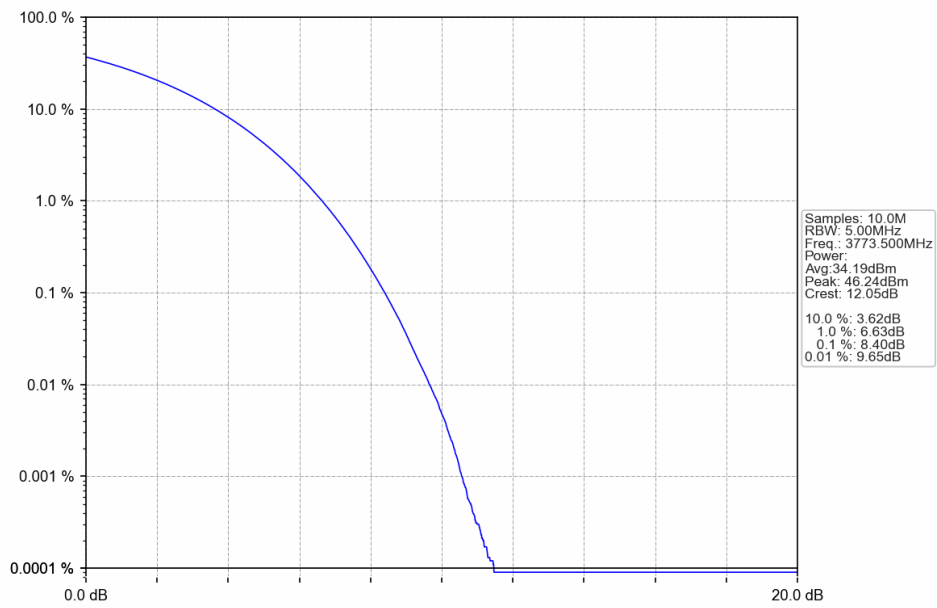
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_AGC



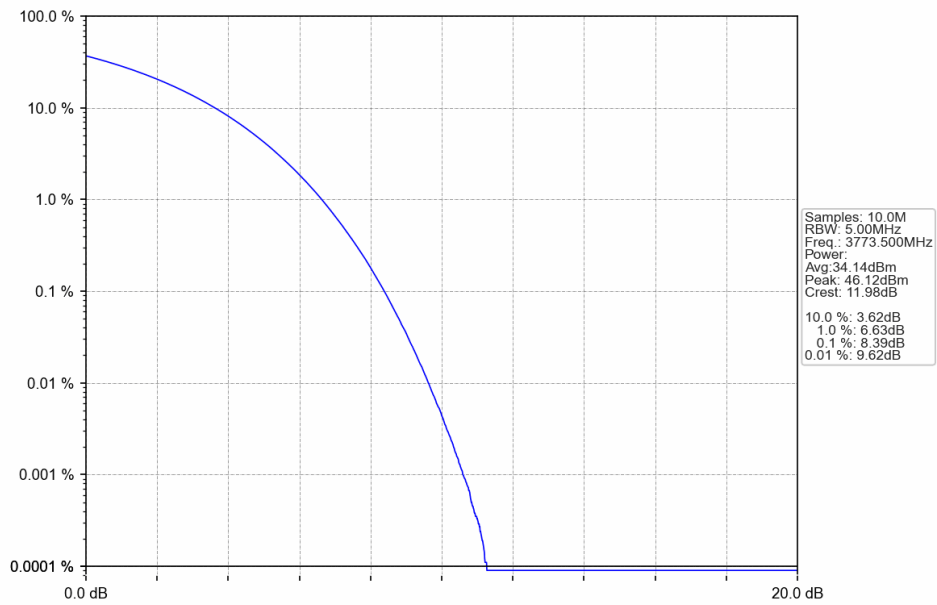
Bandn77a_3773.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



Bandn77a_3773.5MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



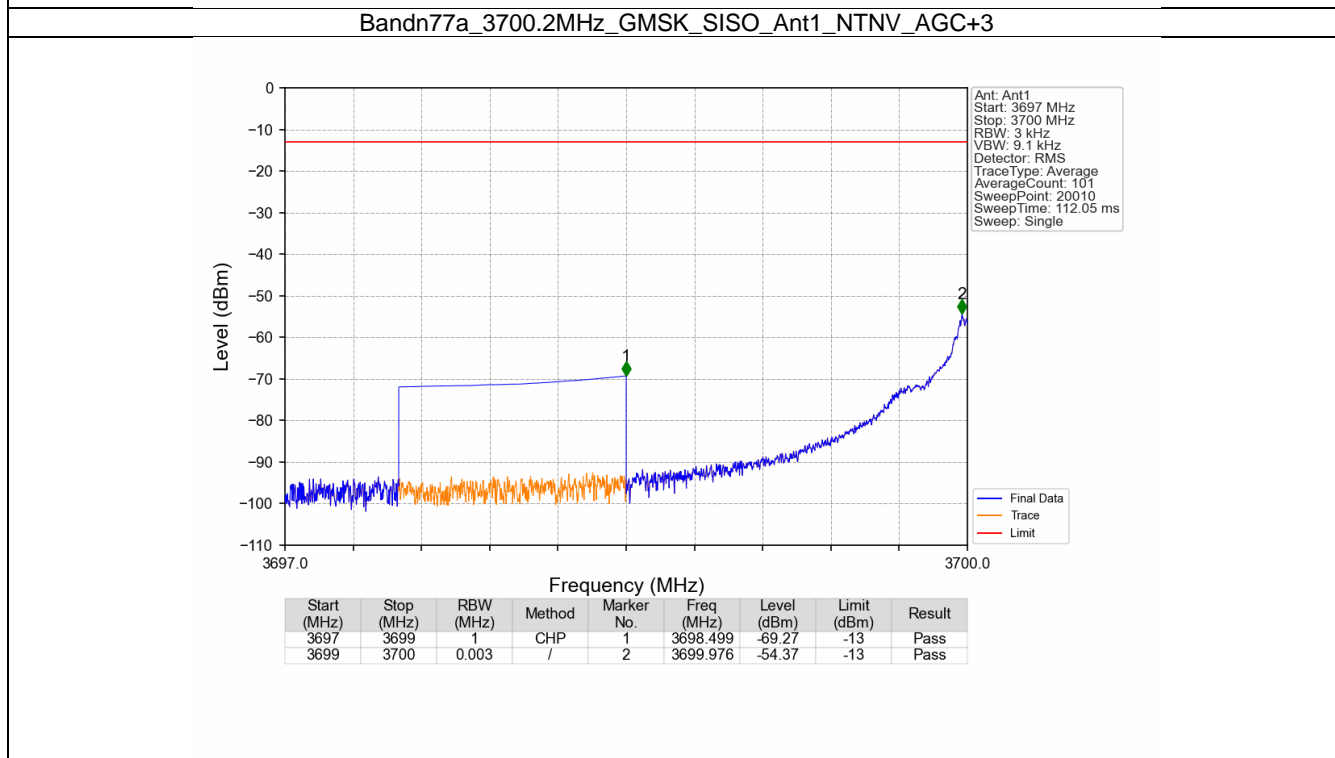
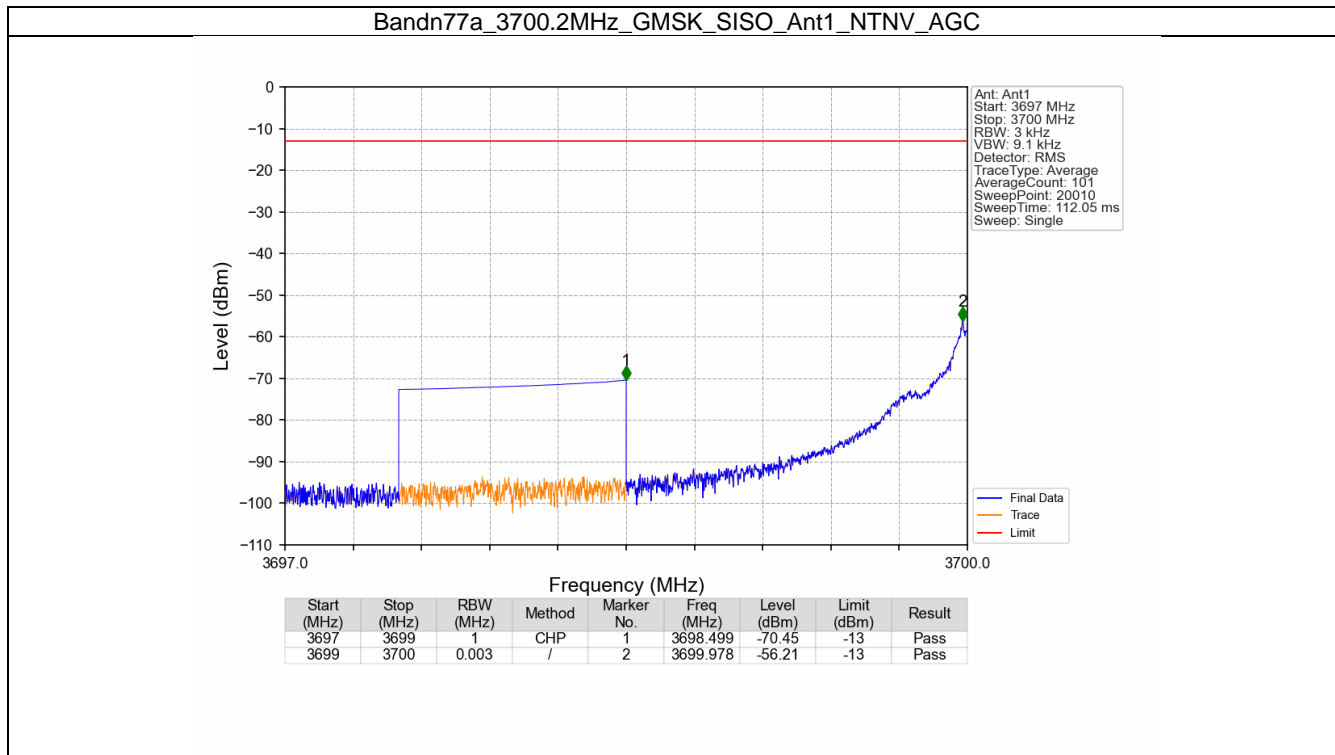
5. Out-of-band/out-of-block (including intermodulation) emissions

5.1 Bandn77a

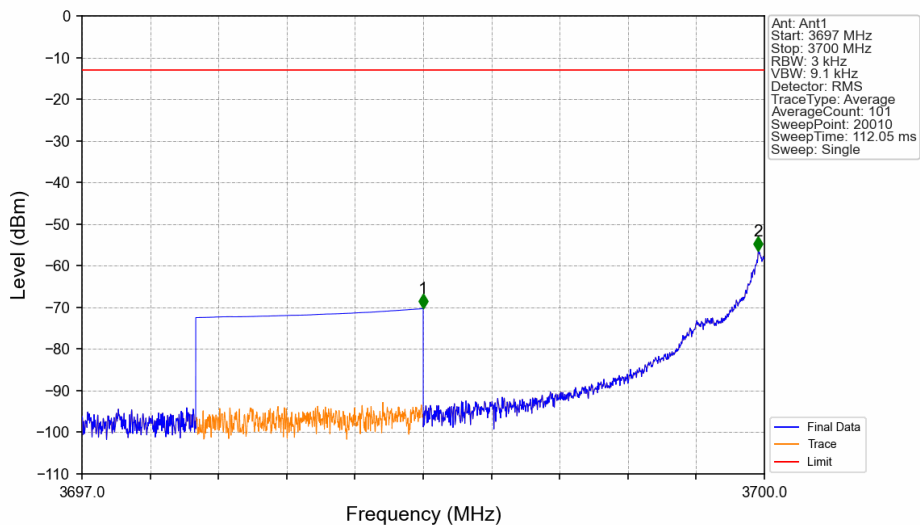
5.1.1 Test Result

Band: n77a / NTNV									
Input	Signal			Channel	TX Type	ANT	OOB (dBm)		Verdict
	Type	Level (dBm)	Frequency (MHz)				Result	Limit	
Two	GMSK 0.2MHz	-3.5	3700.2	LCH	SISO	1	-56.21	Refer To Test Graph	Pass
		-0.5	3700.2	LCH	SISO	1	-54.37	Refer To Test Graph	Pass
One	GMSK 0.2MHz	-3.5	3700.2	LCH	SISO	1	-56.52	Refer To Test Graph	Pass
		-0.5	3700.2	LCH	SISO	1	-53.65	Refer To Test Graph	Pass
Two	GMSK 0.2MHz	-3.5	3839.8	HCH	SISO	1	-74.63	Refer To Test Graph	Pass
		-0.5	3839.8	HCH	SISO	1	-75.08	Refer To Test Graph	Pass
One	GMSK 0.2MHz	-3.5	3839.8	HCH	SISO	1	-74.24	Refer To Test Graph	Pass
		-0.5	3839.8	HCH	SISO	1	-75.10	Refer To Test Graph	Pass
Two	AWGN 5MHz	-3.5	3702.5	LCH	SISO	1	-43.66	Refer To Test Graph	Pass
		-0.5	3702.5	LCH	SISO	1	-56.31	Refer To Test Graph	Pass
One	AWGN 5MHz	-3.5	3702.5	LCH	SISO	1	-53.51	Refer To Test Graph	Pass
		-0.5	3702.5	LCH	SISO	1	-55.56	Refer To Test Graph	Pass
Two	AWGN 5MHz	-3.5	3837.5	HCH	SISO	1	-74.94	Refer To Test Graph	Pass
		-0.5	3837.5	HCH	SISO	1	-75.26	Refer To Test Graph	Pass
One	AWGN 5MHz	-3.5	3837.5	HCH	SISO	1	-75.29	Refer To Test Graph	Pass
		-0.5	3837.5	HCH	SISO	1	-75.48	Refer To Test Graph	Pass
Two	AWGN 100MHz	-3.5	3750	LCH	SISO	1	-21.15	Refer To Test Graph	Pass
		-0.5	3750	LCH	SISO	1	-21.07	Refer To Test Graph	Pass
One	AWGN 100MHz	-3.5	3750	LCH	SISO	1	-21.38	Refer To Test Graph	Pass
		-0.5	3750	LCH	SISO	1	-20.98	Refer To Test Graph	Pass
Two	AWGN 100MHz	-3.5	3790	HCH	SISO	1	-70.81	Refer To Test Graph	Pass
		-0.5	3790	HCH	SISO	1	-69.24	Refer To Test Graph	Pass
One	AWGN 100MHz	-3.5	3790	HCH	SISO	1	-70.83	Refer To Test Graph	Pass
		-0.5	3790	HCH	SISO	1	-69.33	Refer To Test Graph	Pass

5.1.2 Test Graph

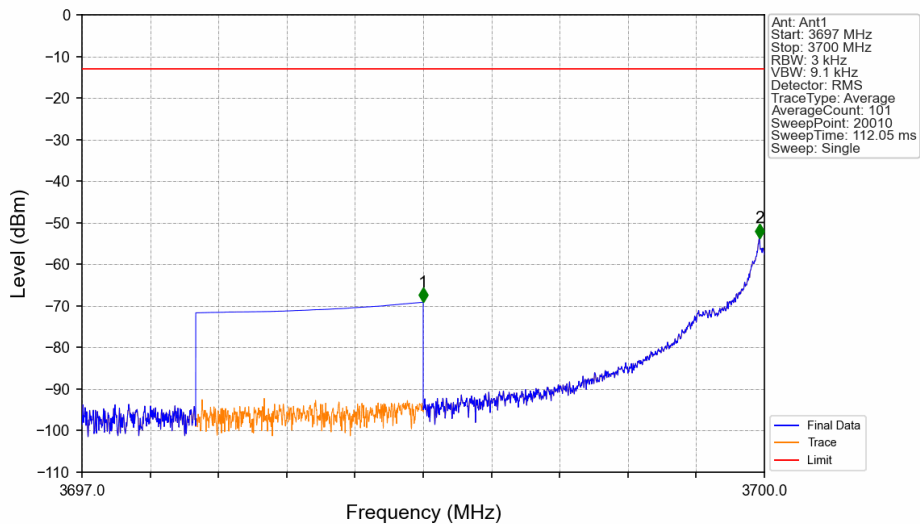


Bandn77a_3700.2MHz_GMSK_SISO_Ant1_NTNV_AGC



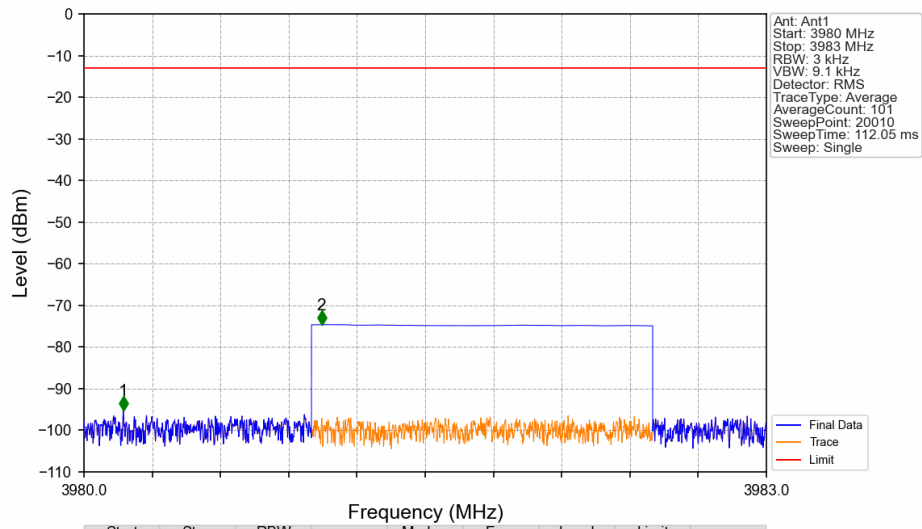
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	CHP	1	3698.499	-70.30	-13	Pass
3699	3700	0.003	/	2	3699.973	-56.52	-13	Pass

Bandn77a_3700.2MHz_GMSK_SISO_Ant1_NTNV_AGC+3



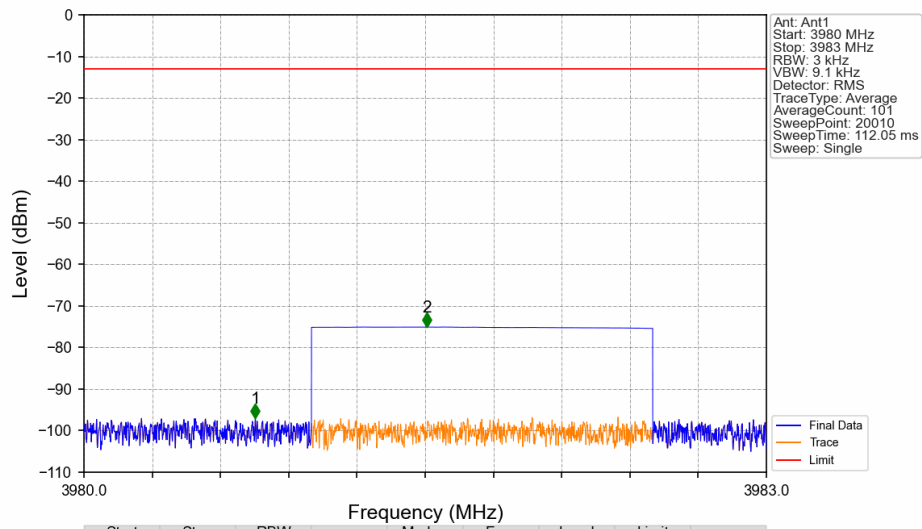
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	CHP	1	3698.499	-69.11	-13	Pass
3699	3700	0.003	/	2	3699.978	-53.65	-13	Pass

Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV_AGC



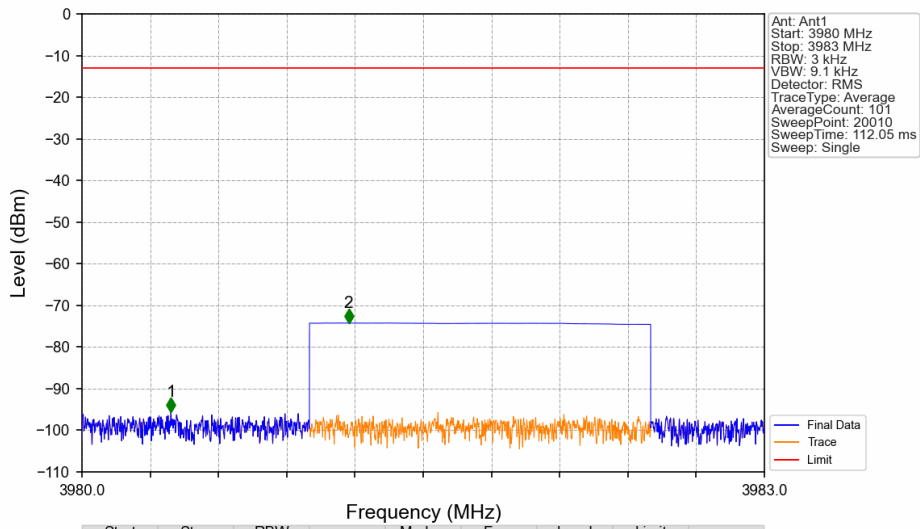
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.003	/	1	3980.173	-95.20	-13	Pass
3981	3983	1	CHP	2	3981.045	-74.63	-13	Pass

Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV_AGC+3



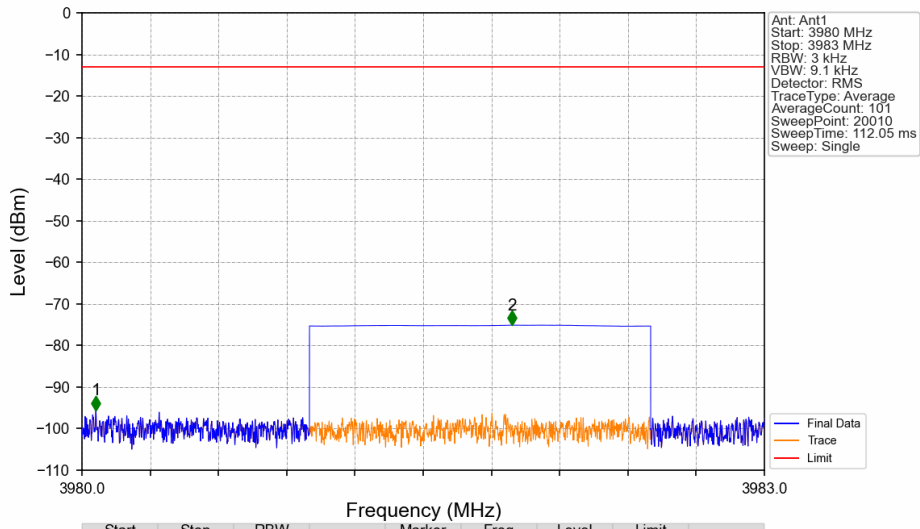
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.003	/	1	3980.753	-97.04	-13	Pass
3981	3983	1	CHP	2	3981.508	-75.08	-13	Pass

Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV_AGC



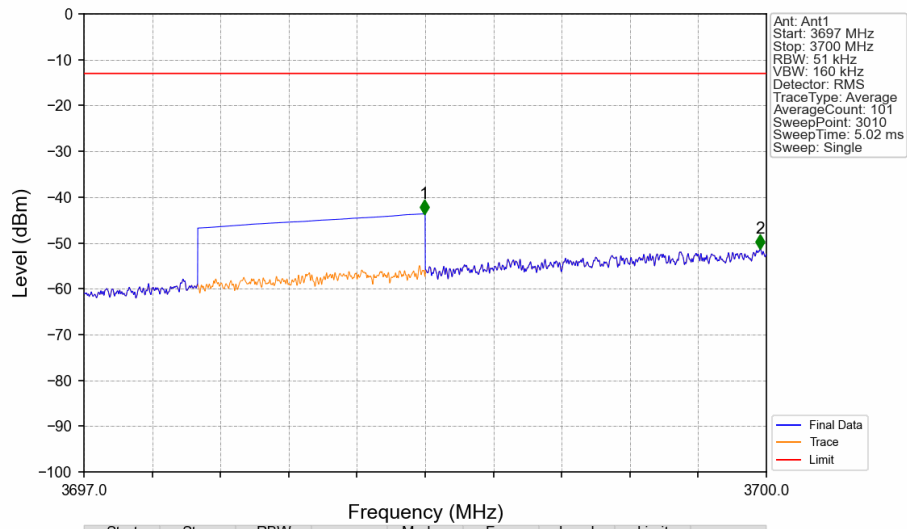
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.003	/	1	3980.391	-95.55	-13	Pass
3981	3983	1	CHP	2	3981.172	-74.24	-13	Pass

Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV_AGC+3



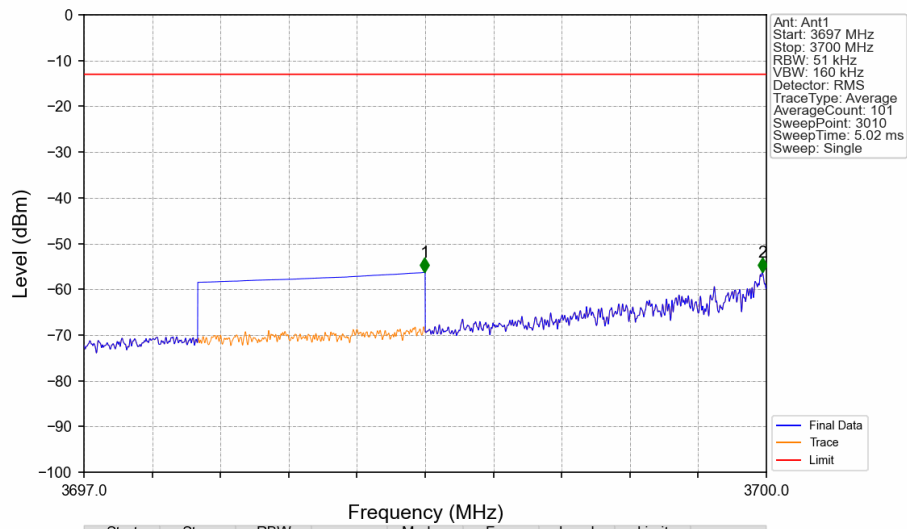
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.003	/	1	3980.061	-95.56	-13	Pass
3981	3983	1	CHP	2	3981.891	-75.10	-13	Pass

Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV_AGC



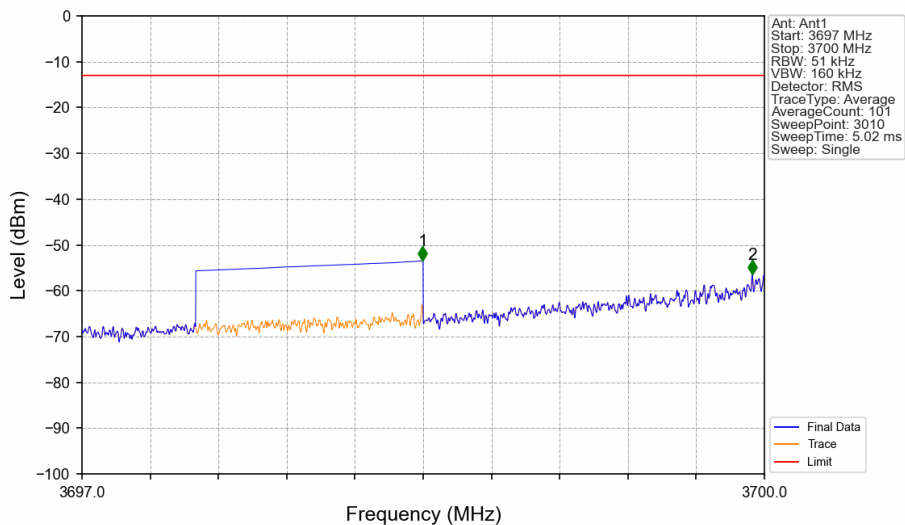
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	CHP	1	3698.497	-43.66	-13	Pass
3699	3700	0.051	/	2	3699.973	-51.23	-13	Pass

Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



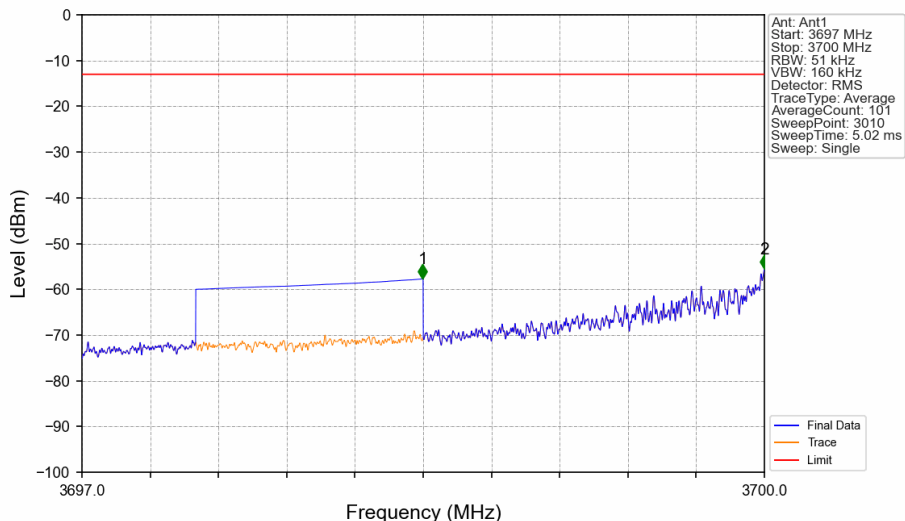
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	CHP	1	3698.498	-56.33	-13	Pass
3699	3700	0.051	/	2	3699.982	-56.31	-13	Pass

Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV_AGC



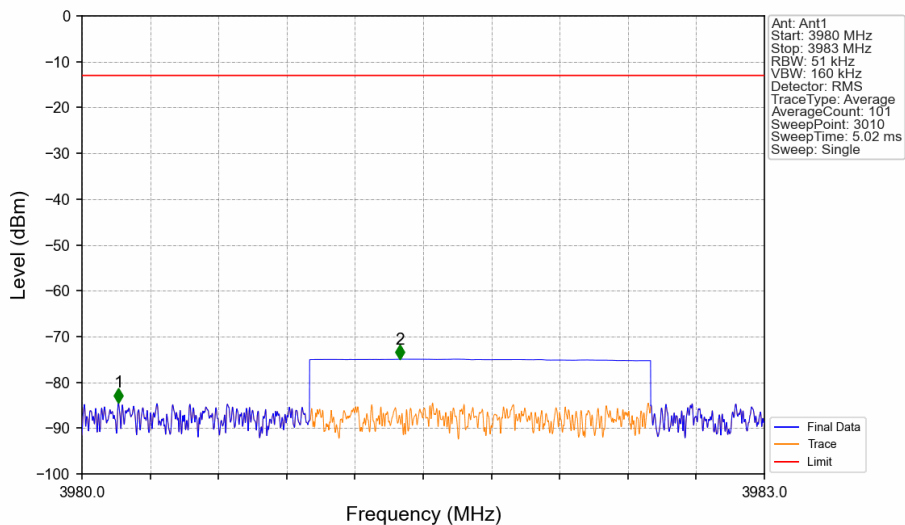
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	CHP	1	3698.498	-53.51	-13	Pass
3699	3700	0.051	/	2	3699.946	-56.44	-13	Pass

Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



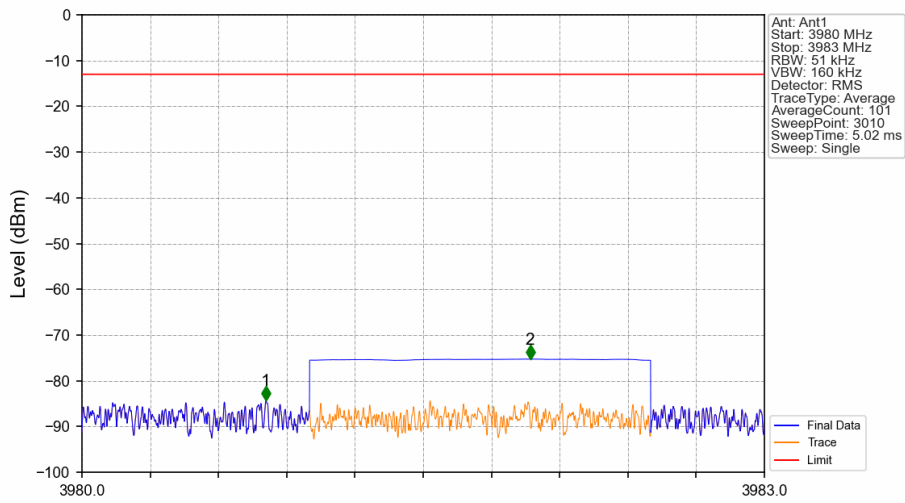
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	CHP	1	3698.498	-57.74	-13	Pass
3699	3700	0.051	/	2	3700.000	-55.56	-13	Pass

Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV_AGC



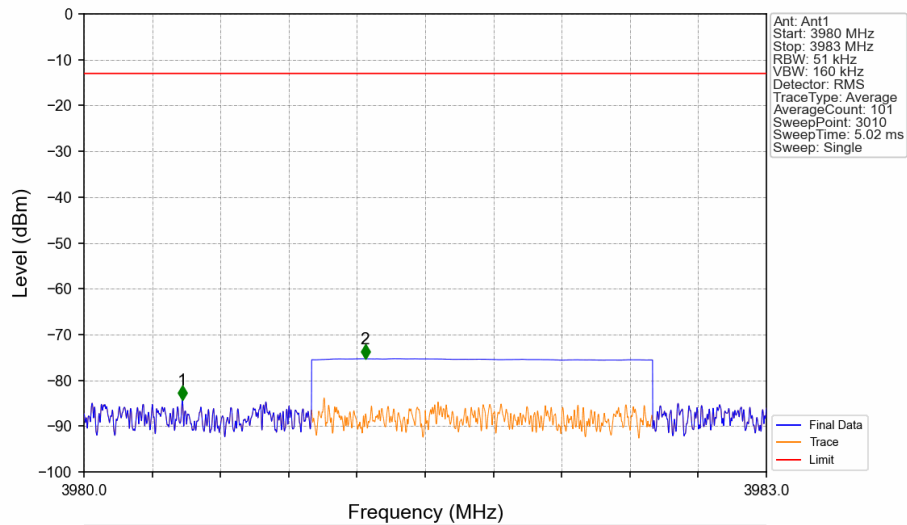
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.051	/	1	3980.161	-84.40	-13	Pass
3981	3983	1	CHP	2	3981.398	-74.94	-13	Pass

Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



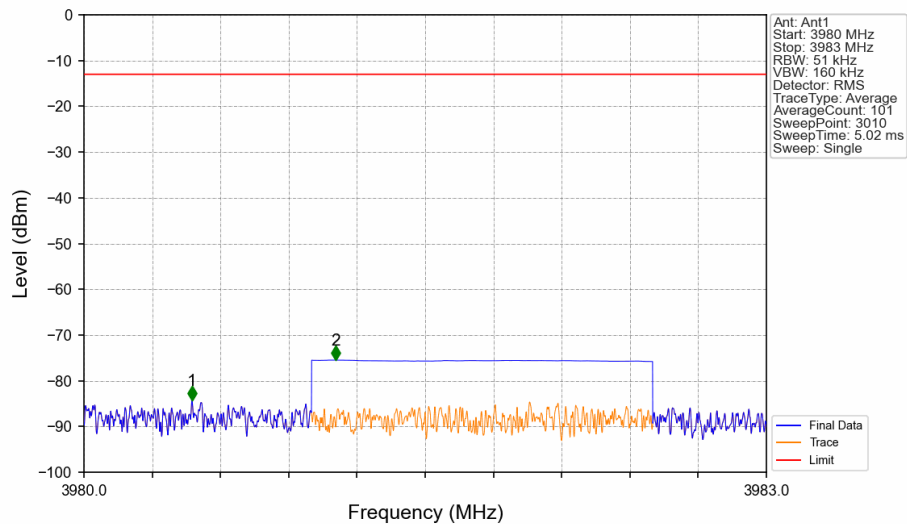
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.051	/	1	3980.809	-84.38	-13	Pass
3981	3983	1	CHP	2	3981.970	-75.26	-13	Pass

Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV_AGC



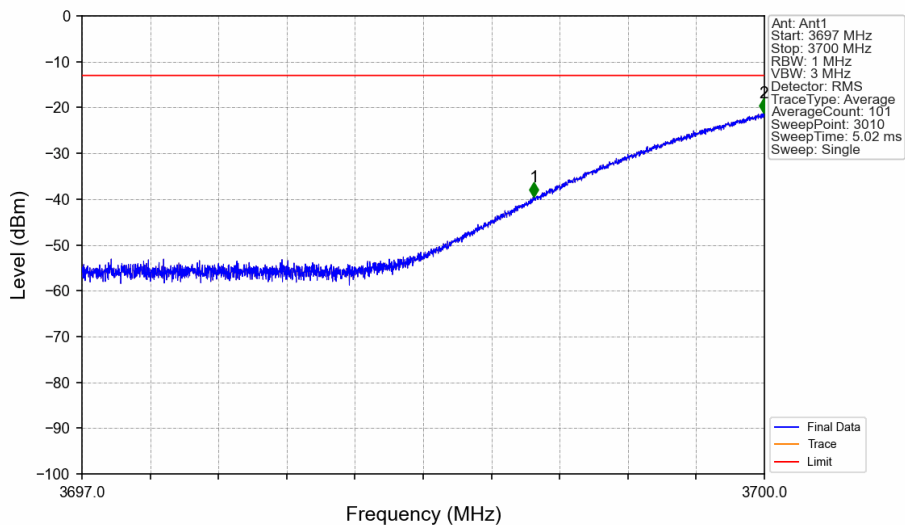
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.051	/	1	3980.433	-84.29	-13	Pass
3981	3983	1	CHP	2	3981.236	-75.29	-13	Pass

Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



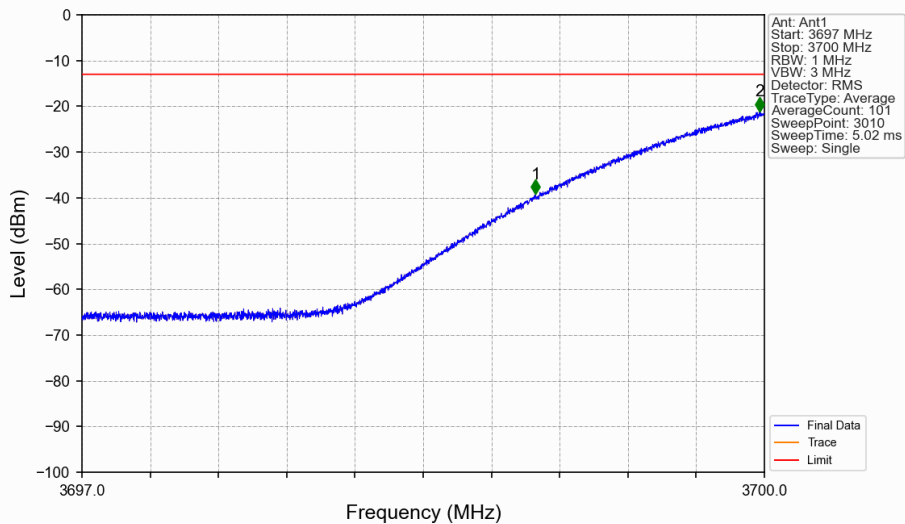
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	0.051	/	1	3980.475	-84.37	-13	Pass
3981	3983	1	CHP	2	3981.108	-75.48	-13	Pass

Bandn77a_3750MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



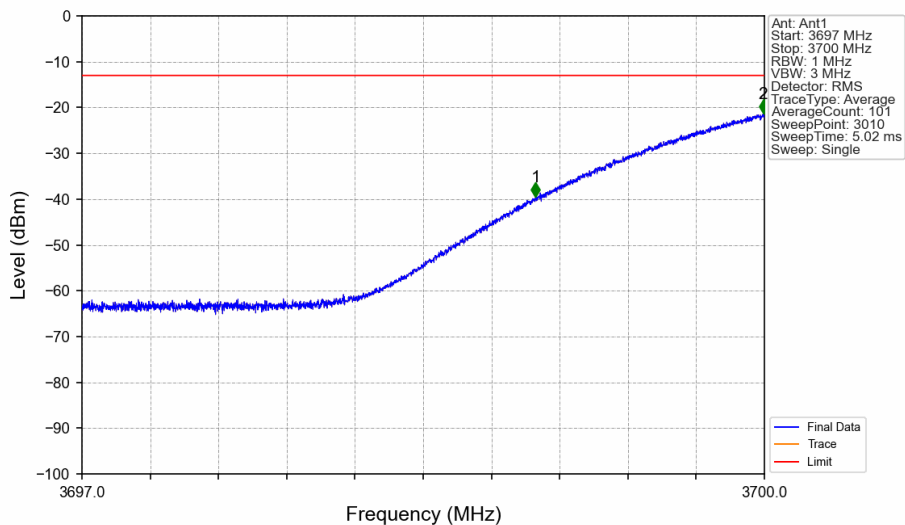
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	/	1	3698.987	-39.48	-13	Pass
3699	3700	1.058	/	2	3699.996	-21.15	-13	Pass

Bandn77a_3750MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



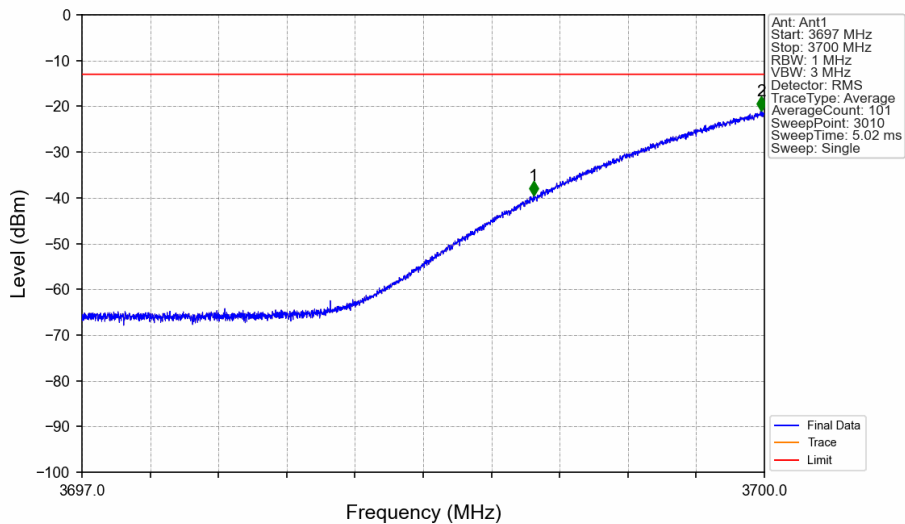
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	/	1	3698.994	-39.20	-13	Pass
3699	3700	1.058	/	2	3699.979	-21.07	-13	Pass

Bandn77a_3750MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



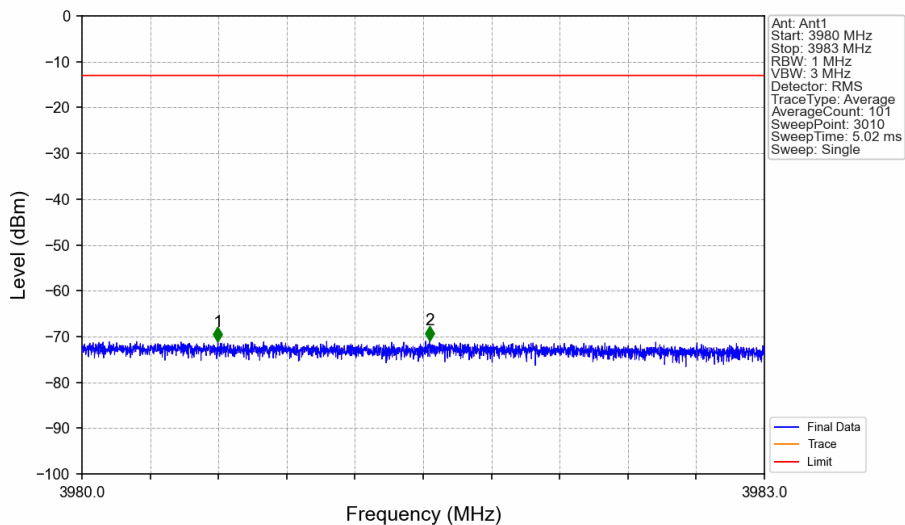
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	/	1	3698.994	-39.58	-13	Pass
3699	3700	1.058	/	2	3699.995	-21.38	-13	Pass

Bandn77a_3750MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



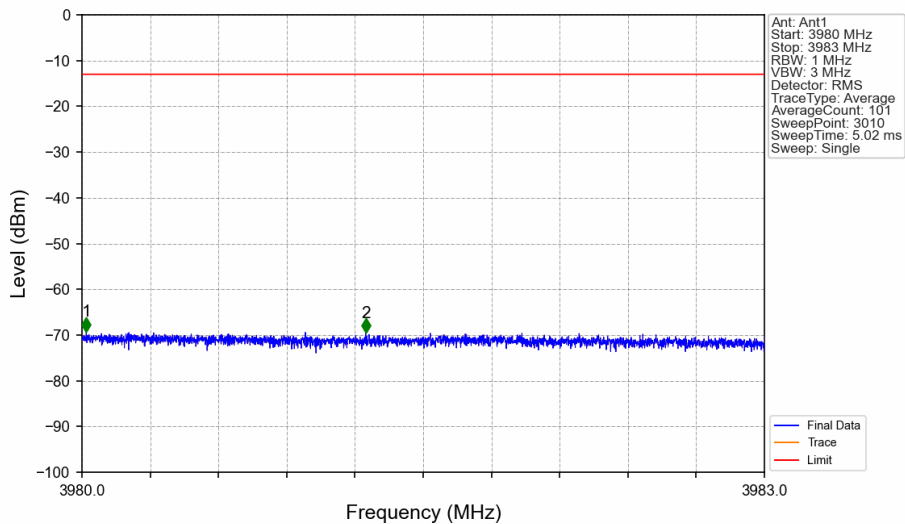
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3697	3699	1	/	1	3698.984	-39.48	-13	Pass
3699	3700	1.058	/	2	3699.985	-20.98	-13	Pass

Bandn77a_3790MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



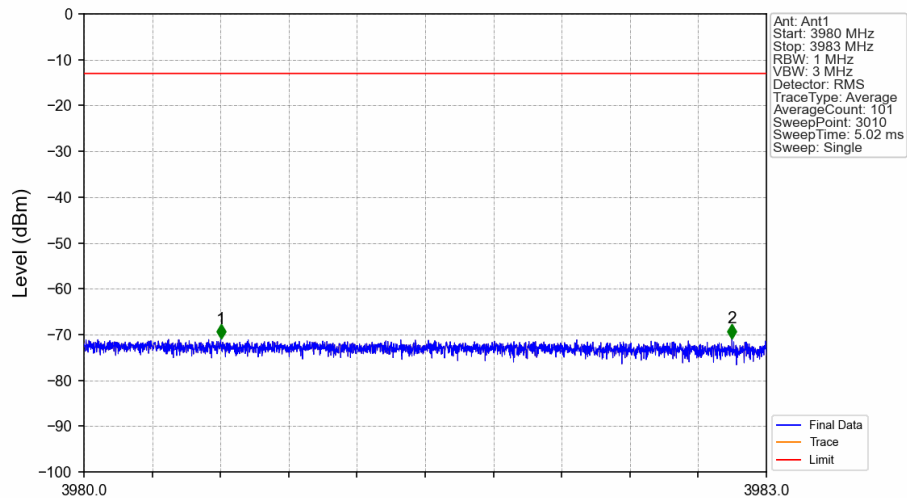
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	1.058	/	1	3980.597	-71.08	-13	Pass
3981	3983	1	/	2	3981.527	-70.81	-13	Pass

Bandn77a_3790MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



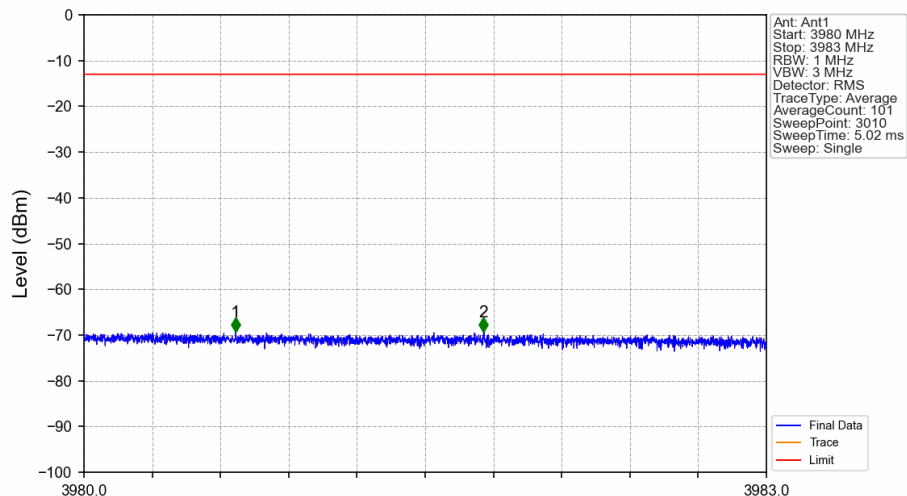
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	1.058	/	1	3980.019	-69.24	-13	Pass
3981	3983	1	/	2	3981.247	-69.53	-13	Pass

Bandn77a_3790MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	1.058	/	1	3980.601	-70.93	-13	Pass
3981	3983	1	/	2	3982.848	-70.83	-13	Pass

Bandn77a_3790MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3980	3981	1.058	/	1	3980.666	-69.33	-13	Pass
3981	3983	1	/	2	3981.757	-69.35	-13	Pass

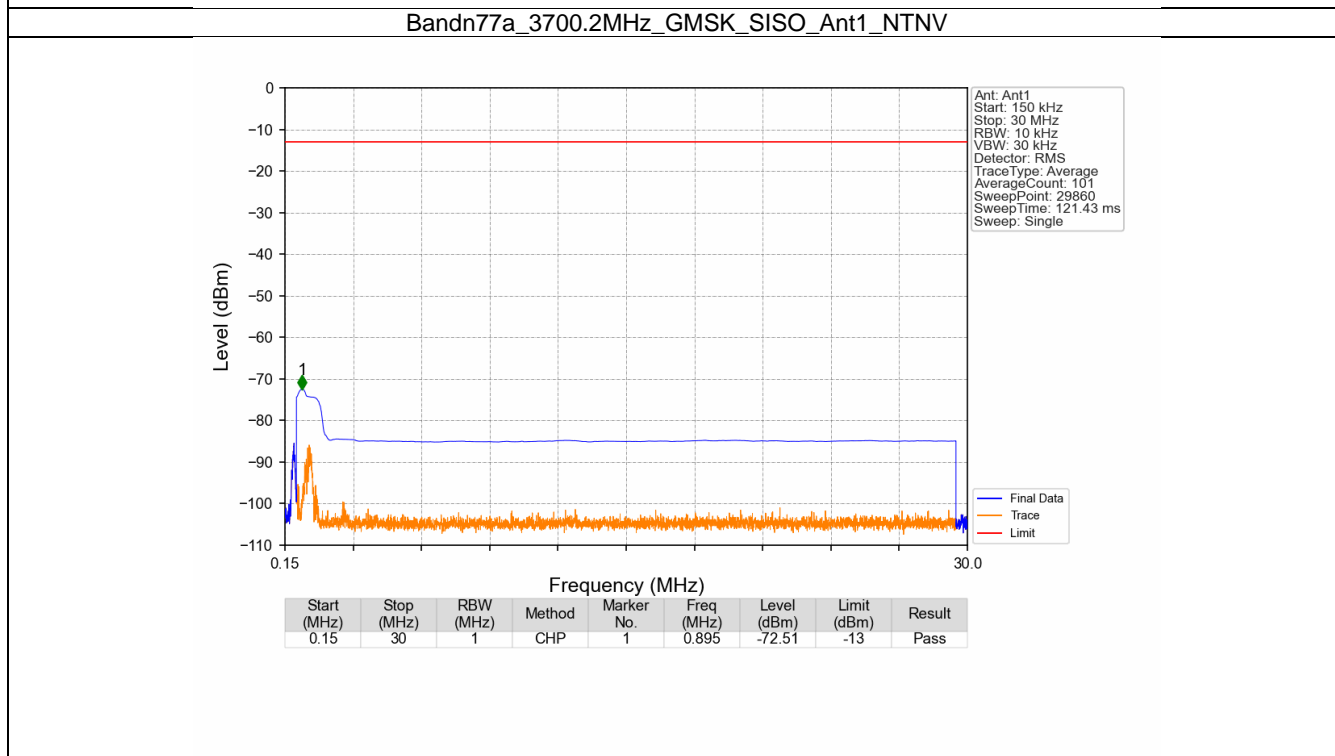
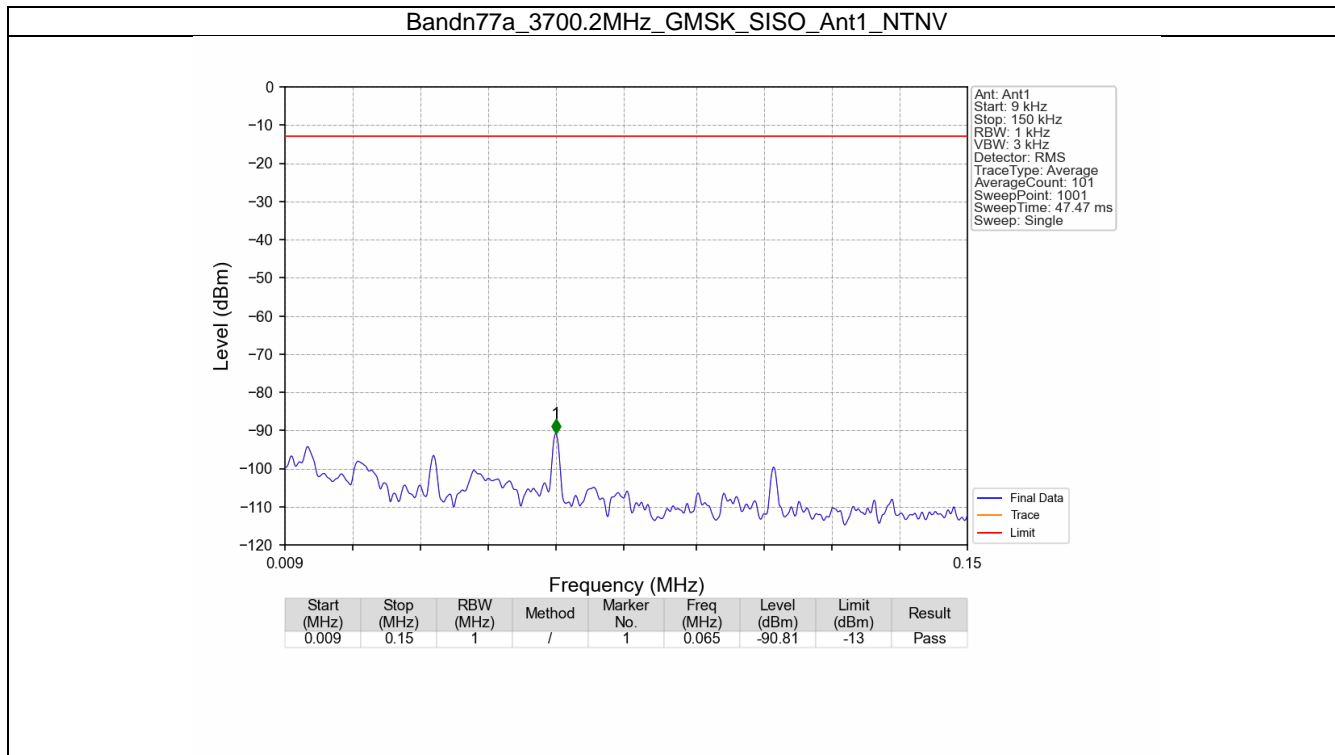
6. Spurious emissions

6.1 Bandn77a

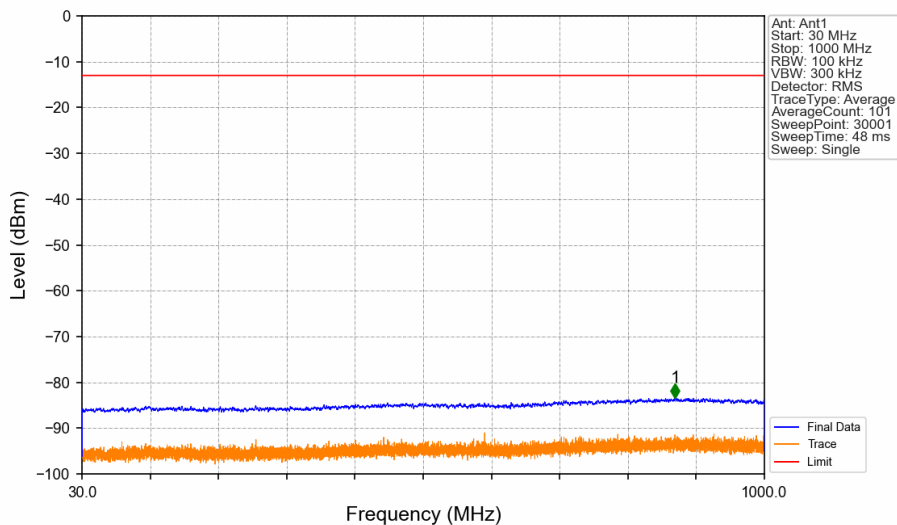
6.1.1 Test Result

Band: n77a / NTNV								
Signal			Channel	TX Type	ANT	SE (dBm)		Verdict
Type	Level (dBm)	Frequency (MHz)				Result	Limit	
GMSK 0.2MHz	-3.5	3700.2	LCH	SISO	1	Refer To Test Graph		Pass
		3770	MCH	SISO	1	Refer To Test Graph		Pass
		3839.8	HCH	SISO	1	Refer To Test Graph		Pass
AWGN 5MHz	-3.5	3702.5	LCH	SISO	1	Refer To Test Graph		Pass
		3770	MCH	SISO	1	Refer To Test Graph		Pass
		3837.5	HCH	SISO	1	Refer To Test Graph		Pass
AWGN 100MHz	-3.5	3750	LCH	SISO	1	Refer To Test Graph		Pass
		3770	MCH	SISO	1	Refer To Test Graph		Pass
		3790	HCH	SISO	1	Refer To Test Graph		Pass

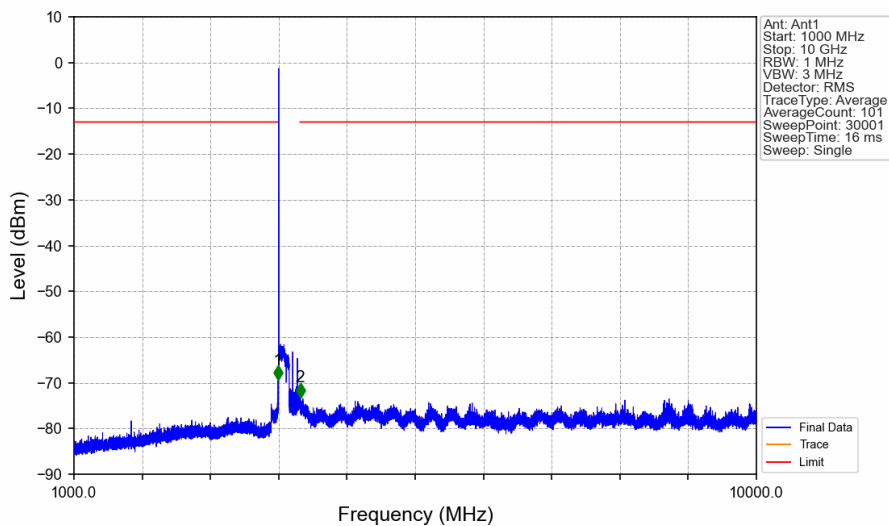
6.1.2 Test Graph



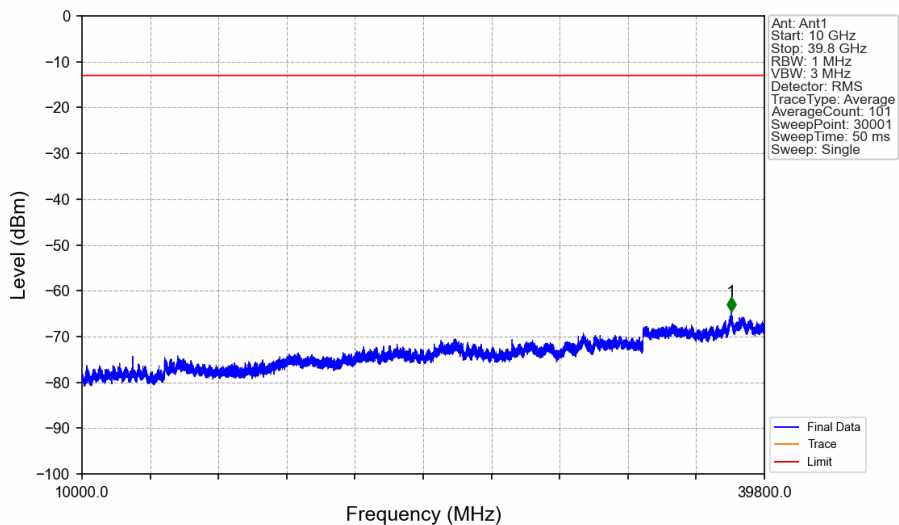
Bandn77a_3700.2MHz_GMSK_SISO_Ant1_NTNV



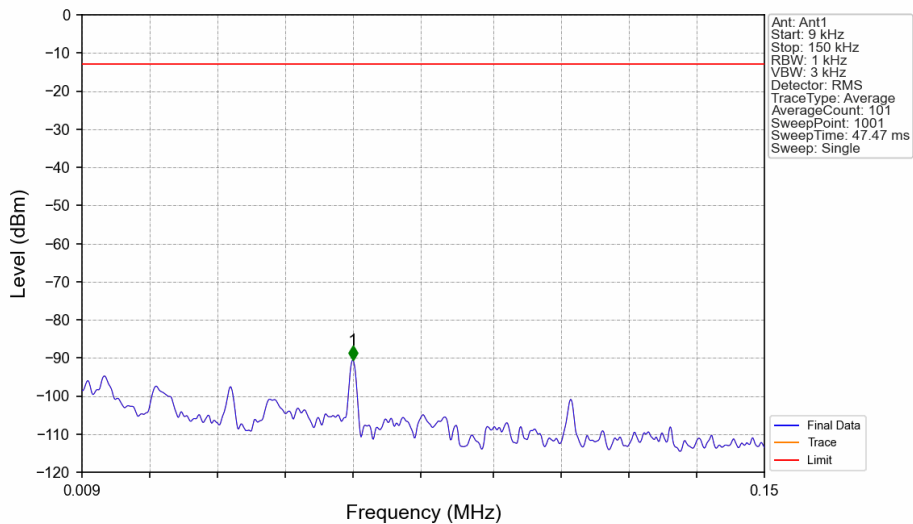
Bandn77a_3700.2MHz_GMSK_SISO_Ant1_NTNV



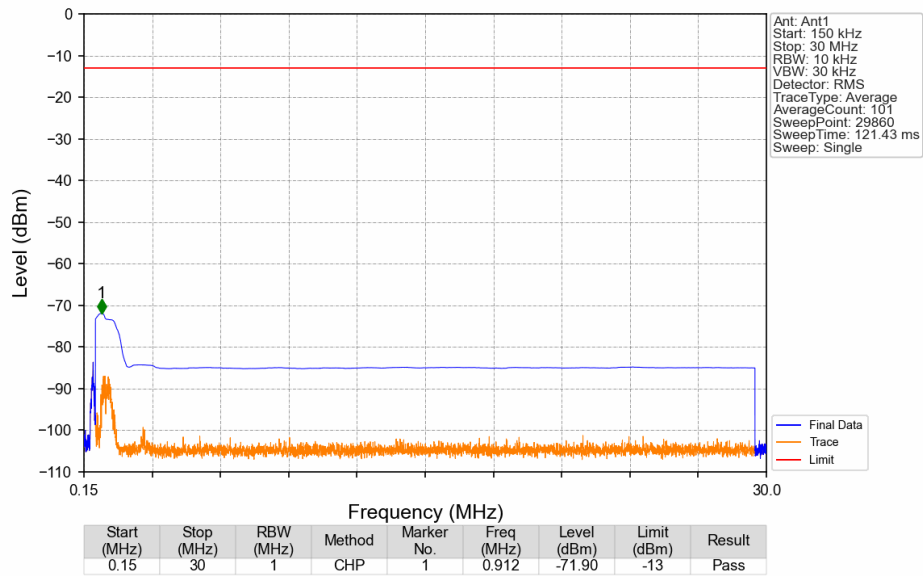
Bandn77a_3700.2MHz_GMSK_SISO_Ant1_NTNV



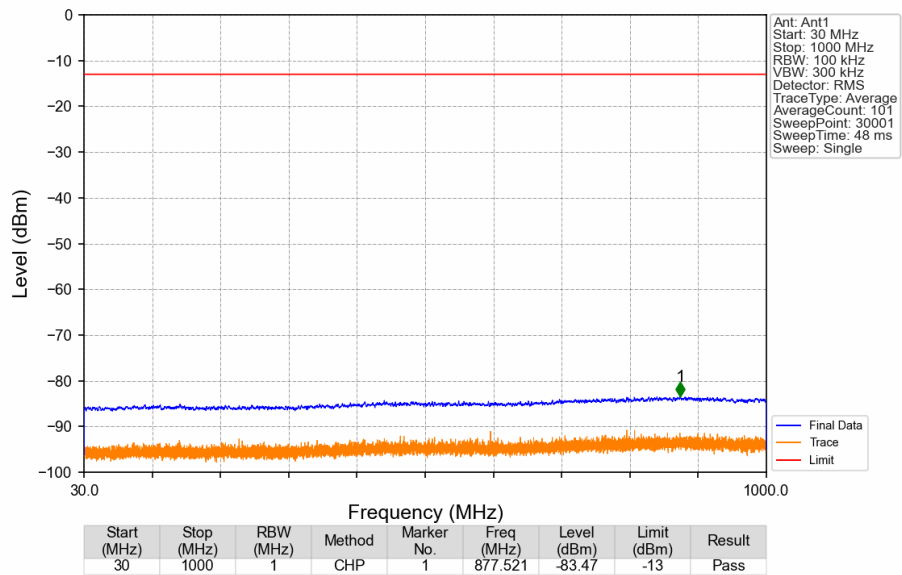
Bandn77a_3770MHz_GMSK_SISO_Ant1_NTNV



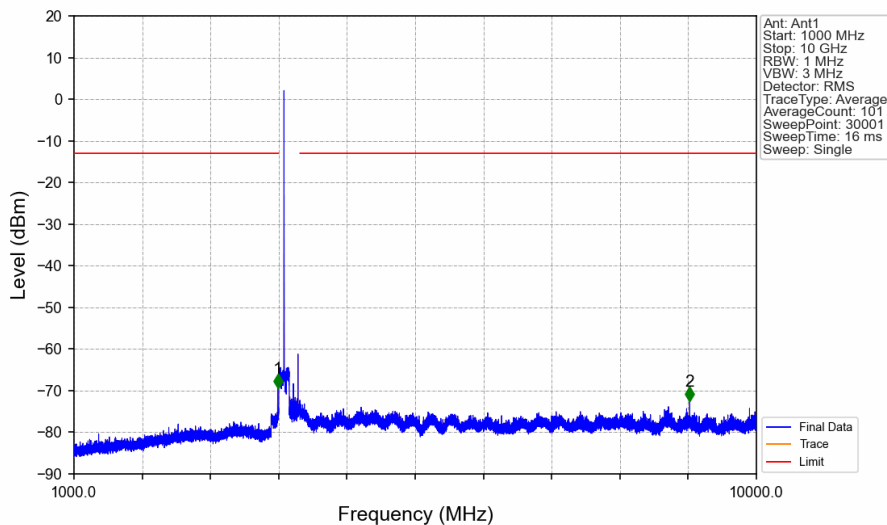
Bandn77a_3770MHz_GMSK_SISO_Ant1_NTNV



Bandn77a_3770MHz_GMSK_SISO_Ant1_NTNV

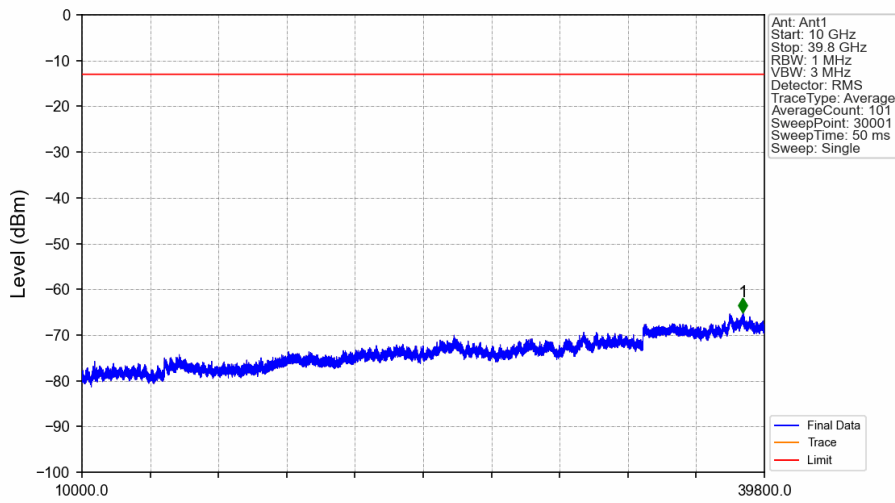


Bandn77a_3770MHz_GMSK_SISO_Ant1_NTNV



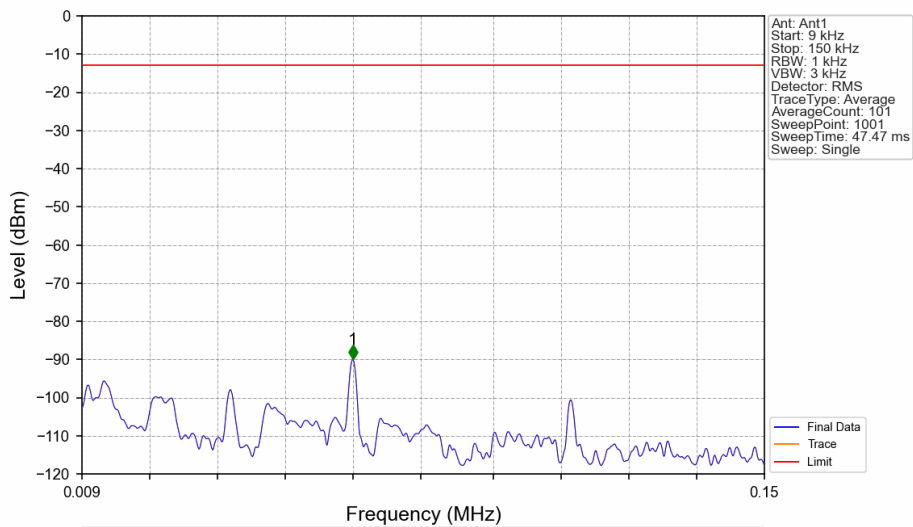
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3986	1	/	1	3686.500	-69.47	-13	Pass
3986	3986	1	/	/	/	/	/	/
3986	10000	1	/	2	9120.400	-72.57	-13	Pass

Bandn77a_3770MHz_GMSK_SISO_Ant1_NTNV

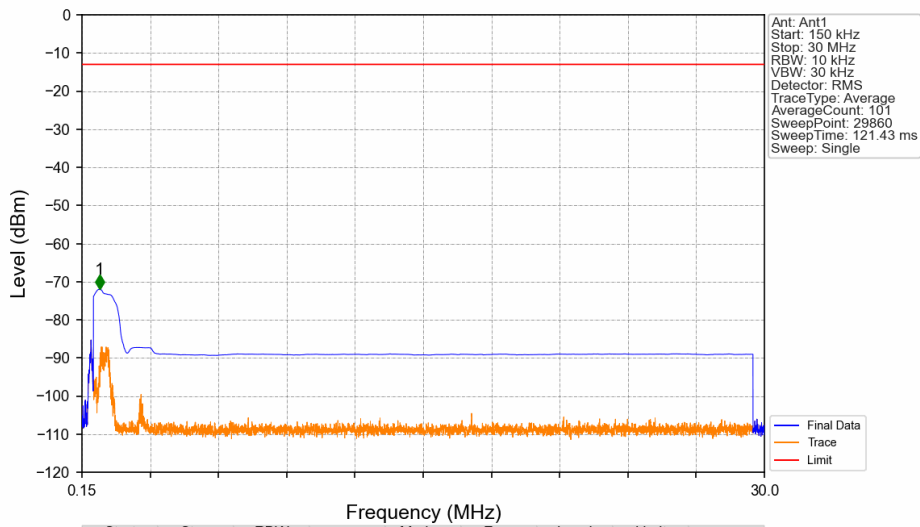


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	39800	1	/	1	38865.273	-65.00	-13	Pass

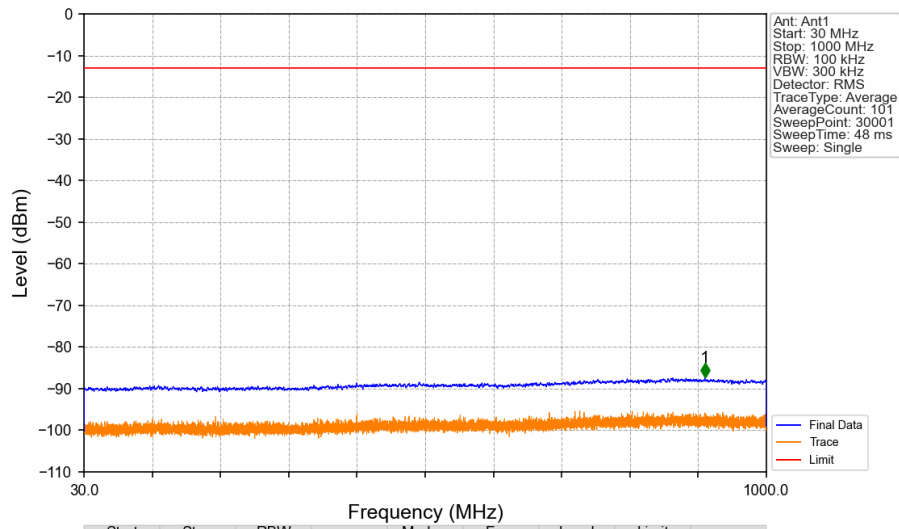
Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV



Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV

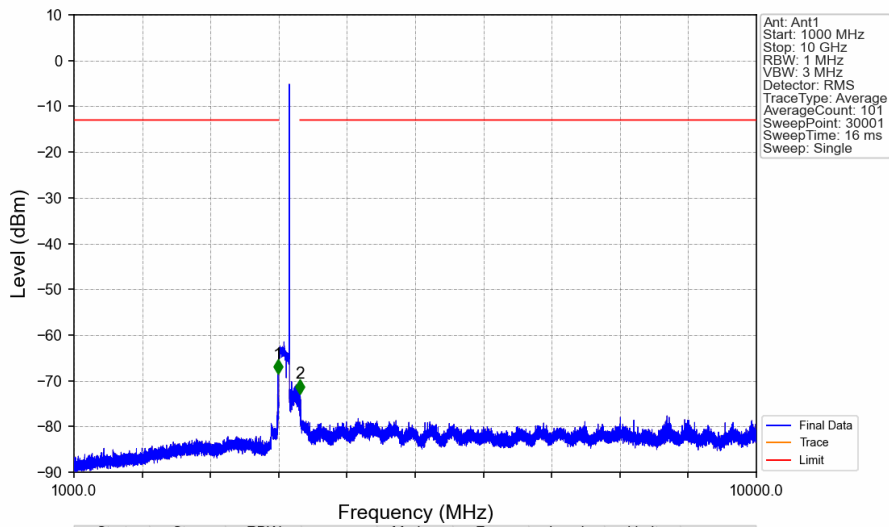


Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV



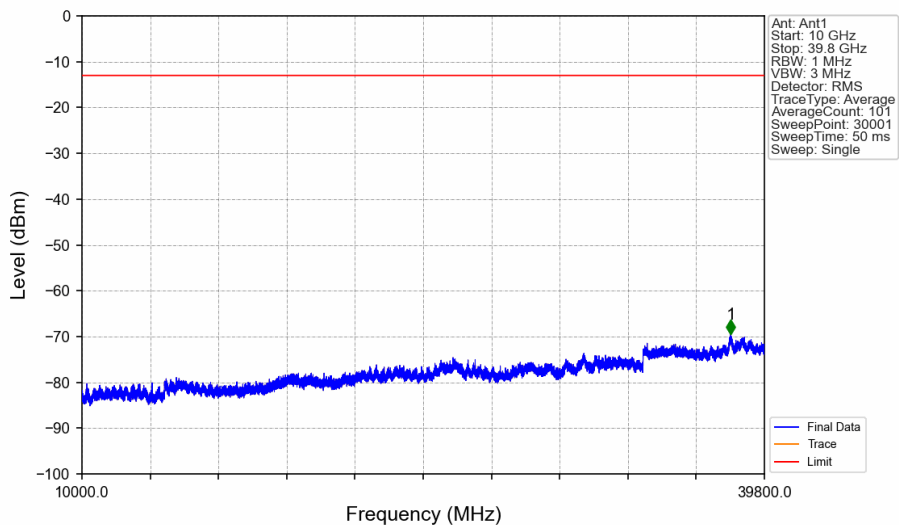
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	912.603	-87.33	-13	Pass

Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV



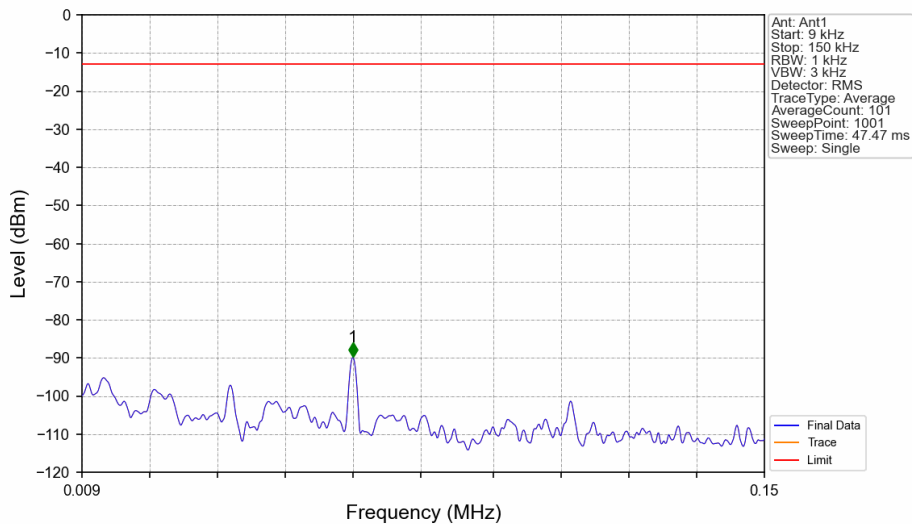
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3986	1	/	1	3686.500	-68.48	-13	Pass
3986	3986	1	/	/	/	/	/	/
3986	10000	1	/	2	3983.200	-72.81	-13	Pass

Bandn77a_3839.8MHz_GMSK_SISO_Ant1_NTNV



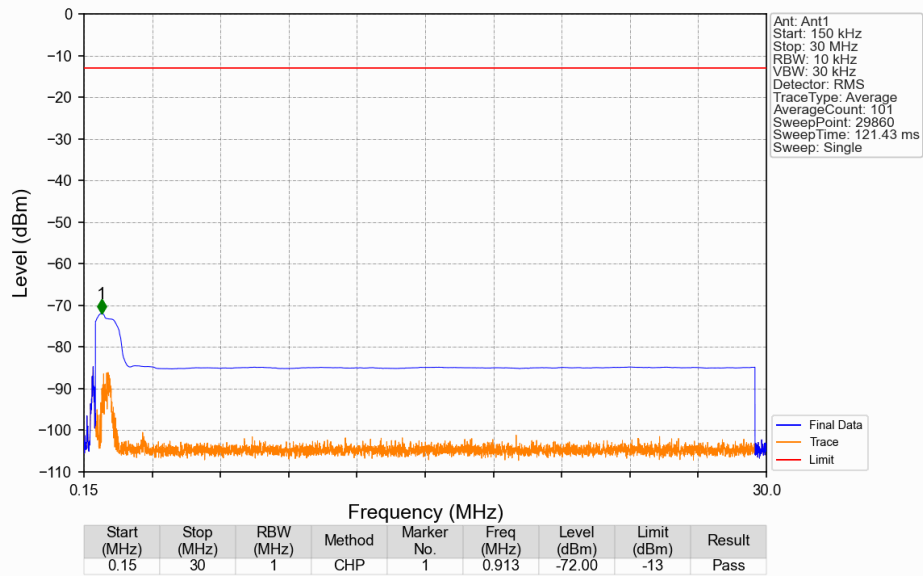
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	39800	1	/	1	38326.887	-69.50	-13	Pass

Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV

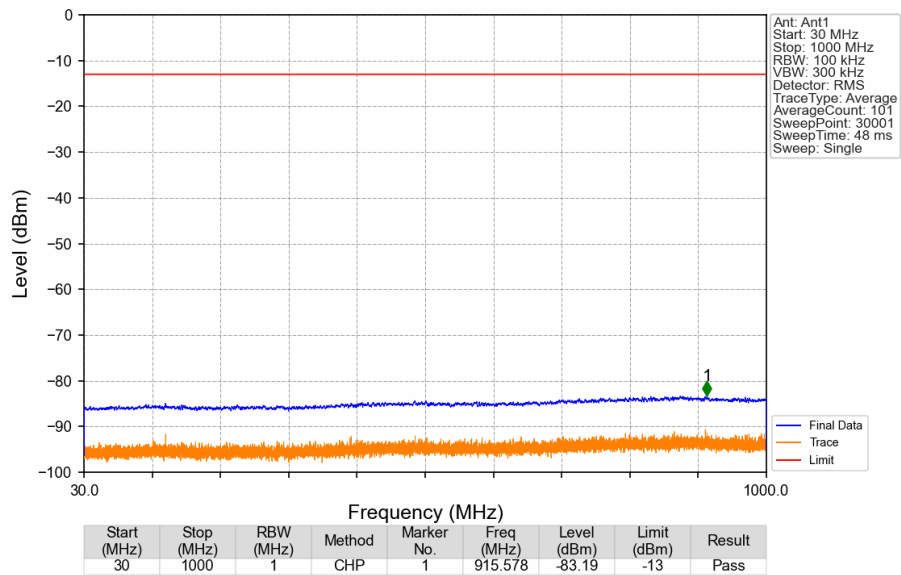


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.065	-89.84	-13	Pass

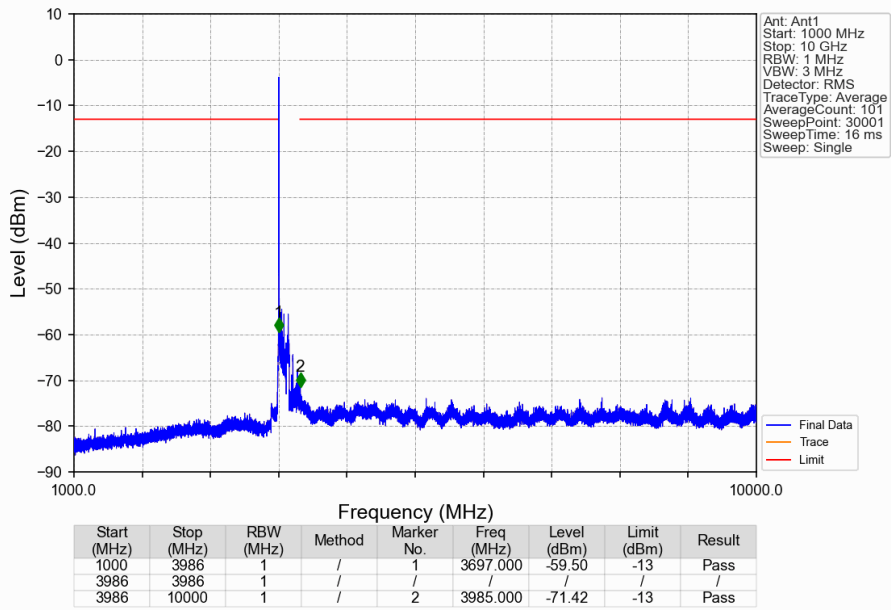
Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV



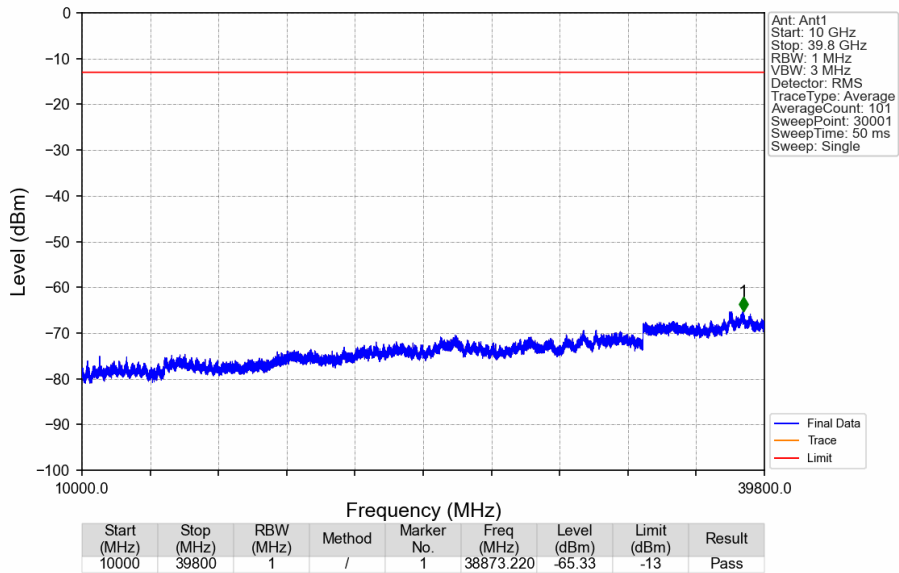
Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV



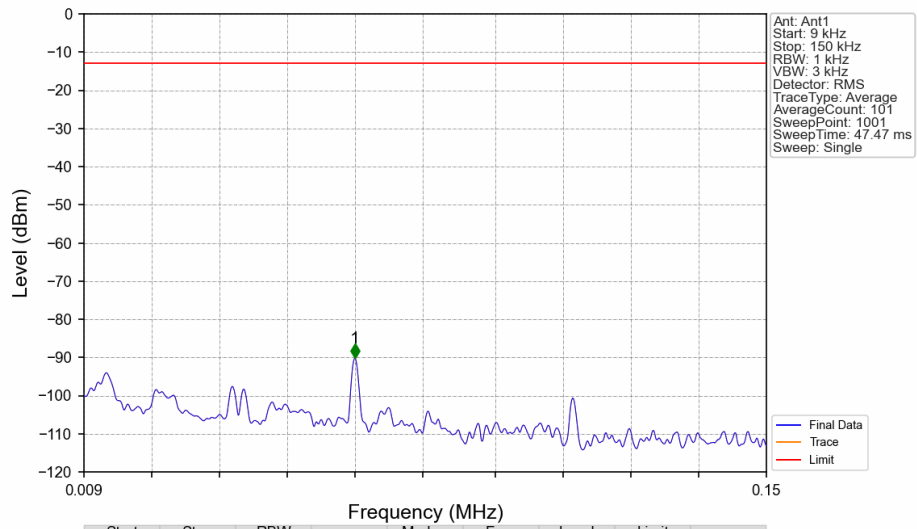
Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV



Bandn77a_3702.5MHz_AWGN_SISO_Ant1_NTNV

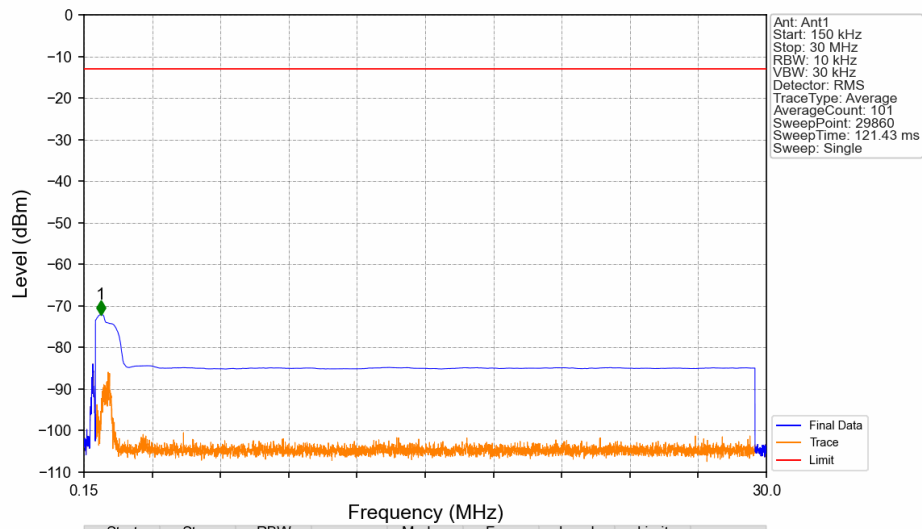


Bandn77a_3770MHz_AWGN_SISO_Ant1_NTNV



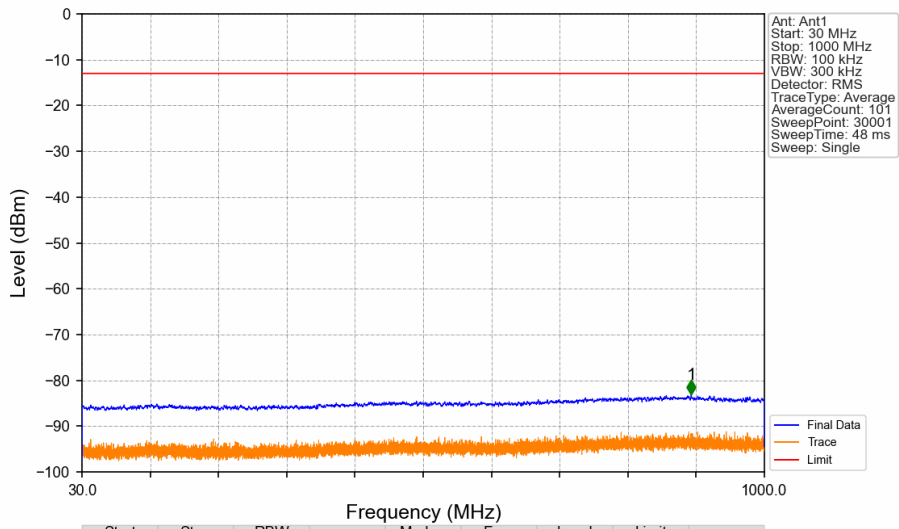
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.065	-90.18	-13	Pass

Bandn77a_3770MHz_AWGN_SISO_Ant1_NTNV

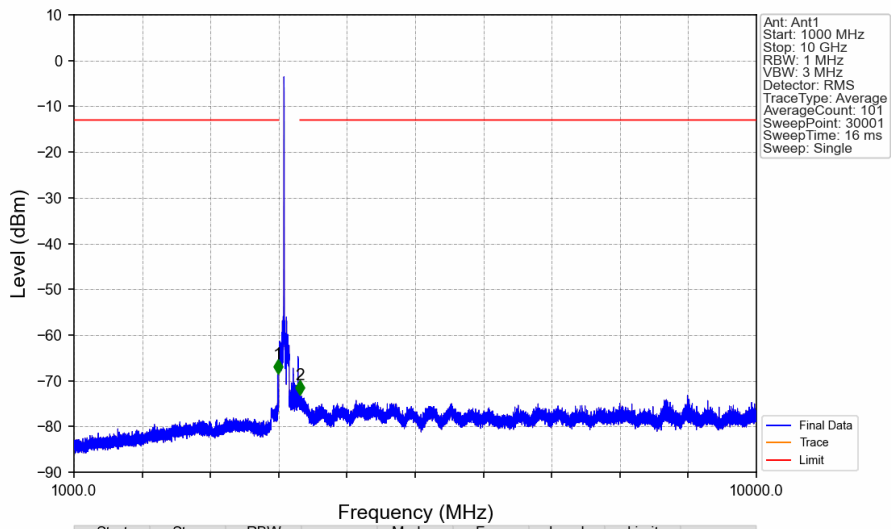


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.15	30	1	CHP	1	0.892	-72.07	-13	Pass

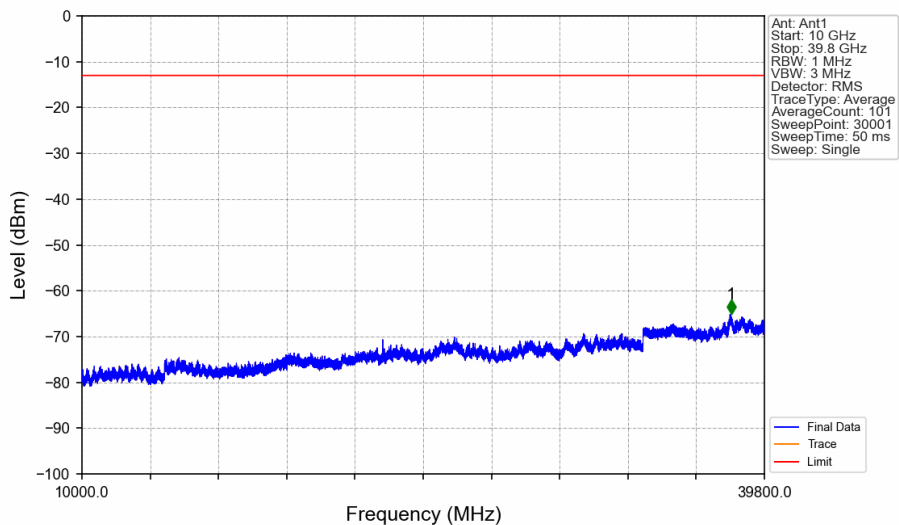
Bandn77a_3770MHz_AWGN_SISO_Ant1_NTNV



Bandn77a_3770MHz_AWGN_SISO_Ant1_NTNV

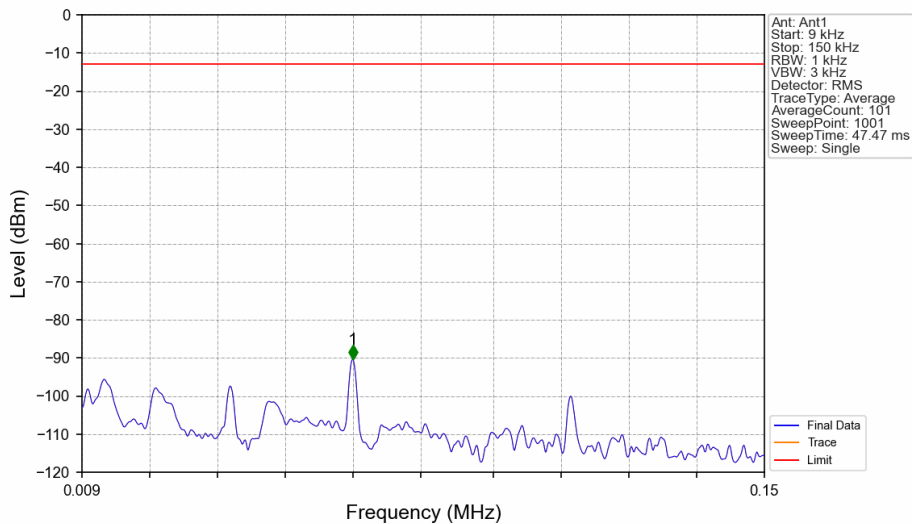


Bandn77a_3770MHz_AWGN_SISO_Ant1_NTNV



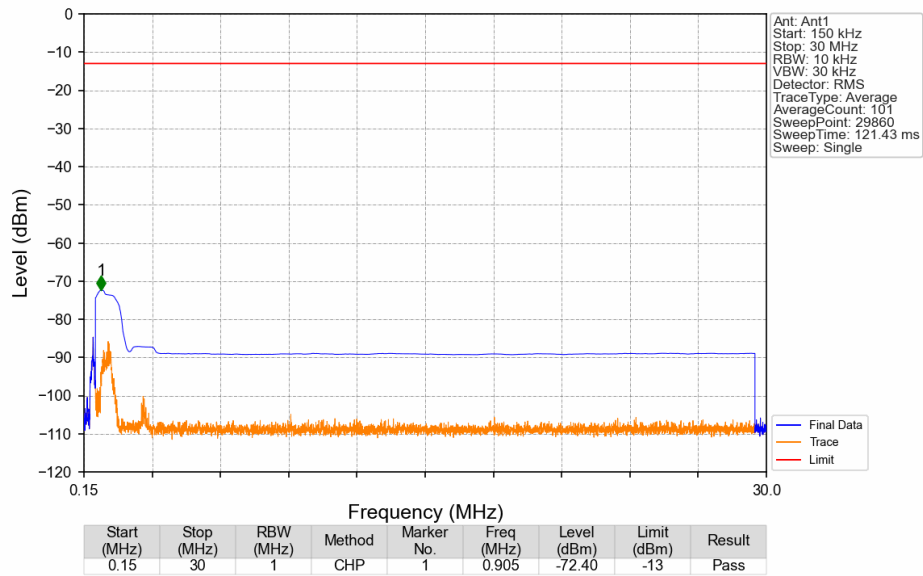
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	39800	1	/	1	38338.807	-65.02	-13	Pass

Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV

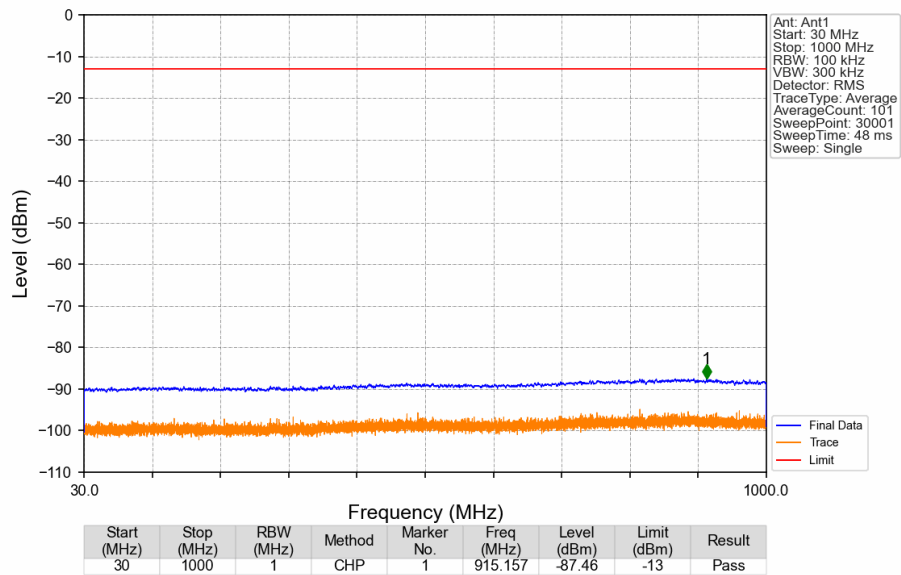


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.065	-90.40	-13	Pass

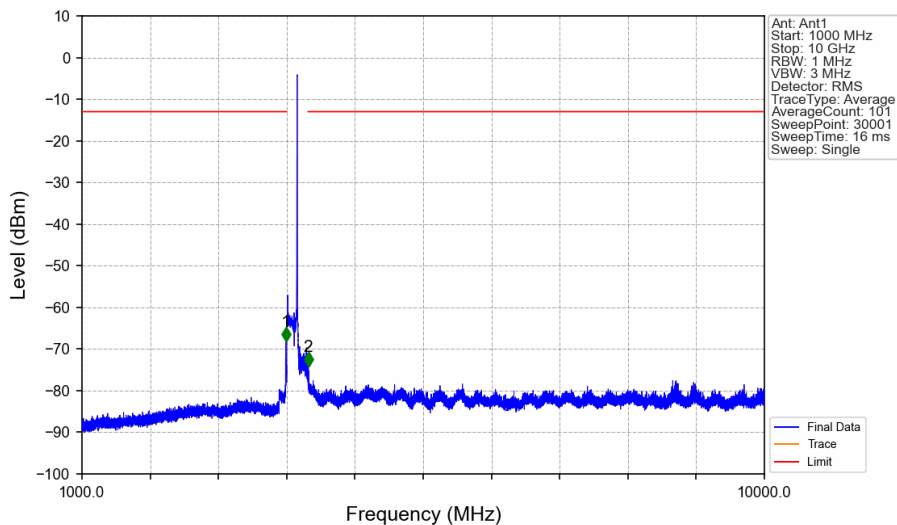
Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV



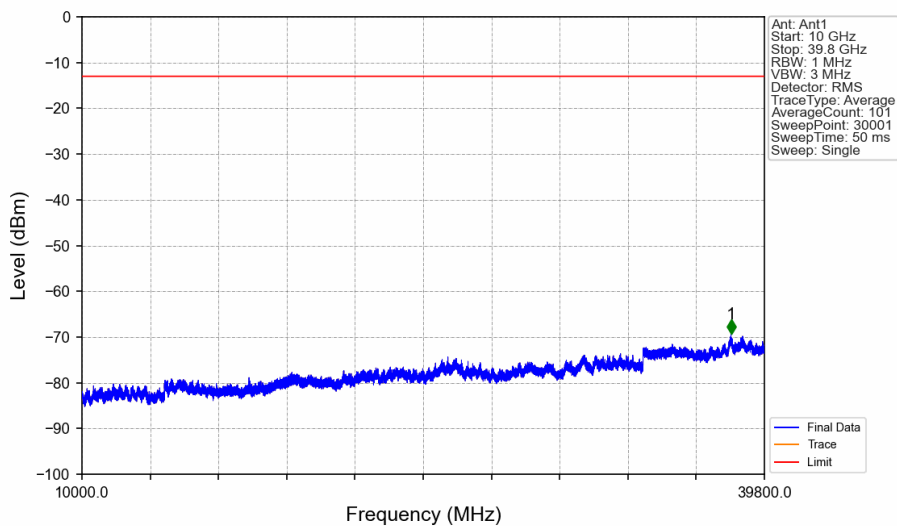
Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV



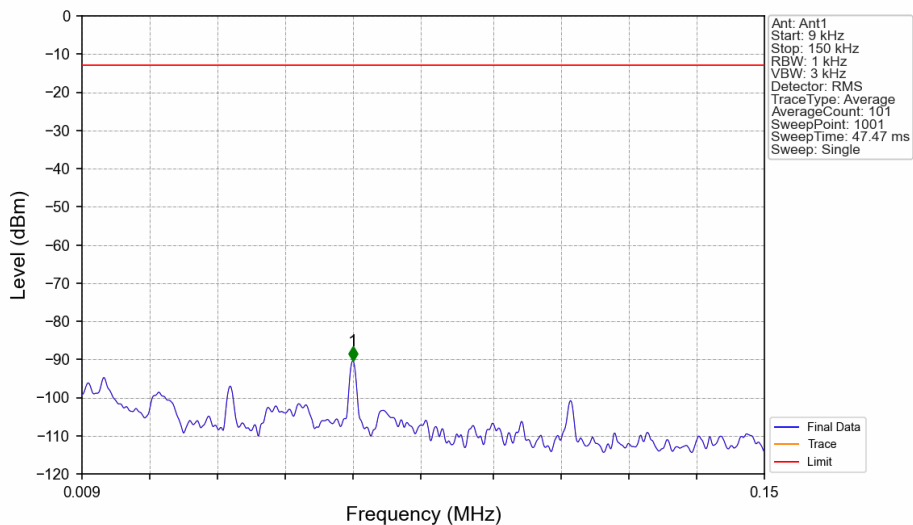
Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV



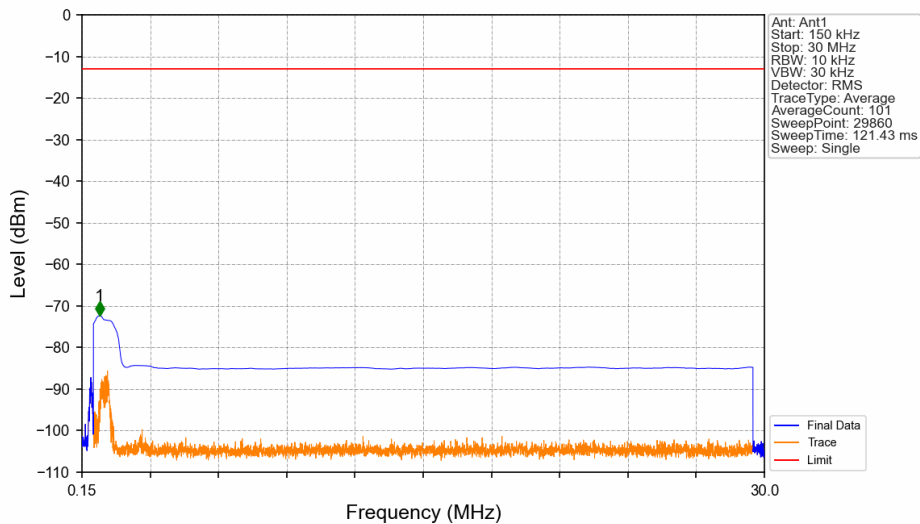
Bandn77a_3837.5MHz_AWGN_SISO_Ant1_NTNV



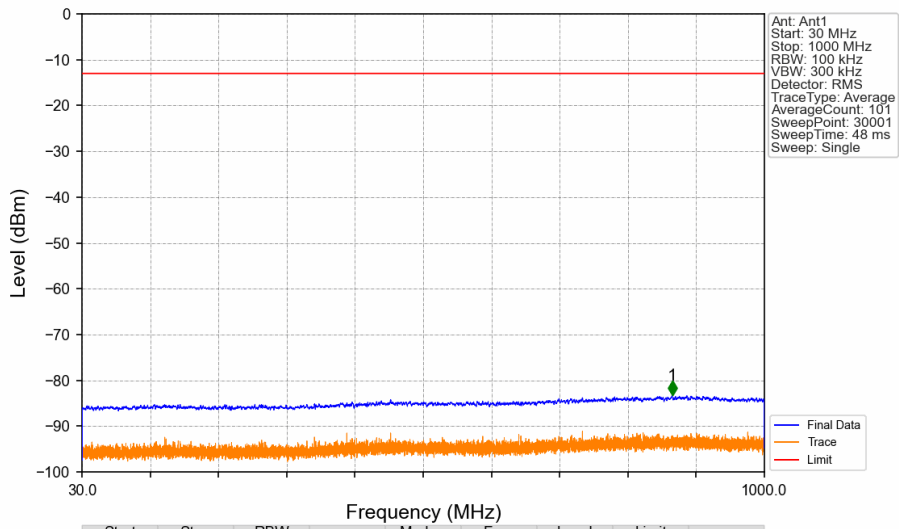
Bandn77a_3700.8MHz_Broad100MHz_SISO_Ant1_NTNV



Bandn77a_3700.8MHz_Broad100MHz_SISO_Ant1_NTNV

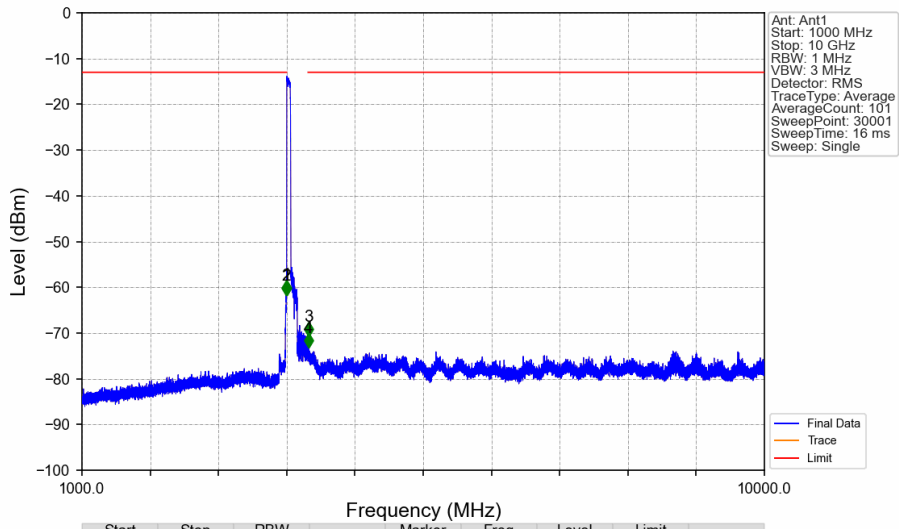


Bandn77a_3700.8MHz_Broad100MHz_SISO_Ant1_NTNV



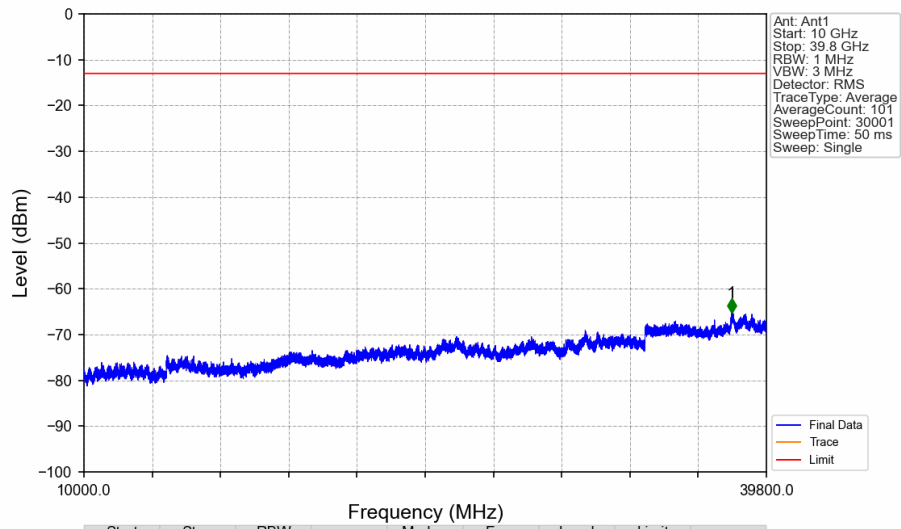
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	868.985	-83.32	-13	Pass

Bandn77a_3700.8MHz_Broad100MHz_SISO_Ant1_NTNV



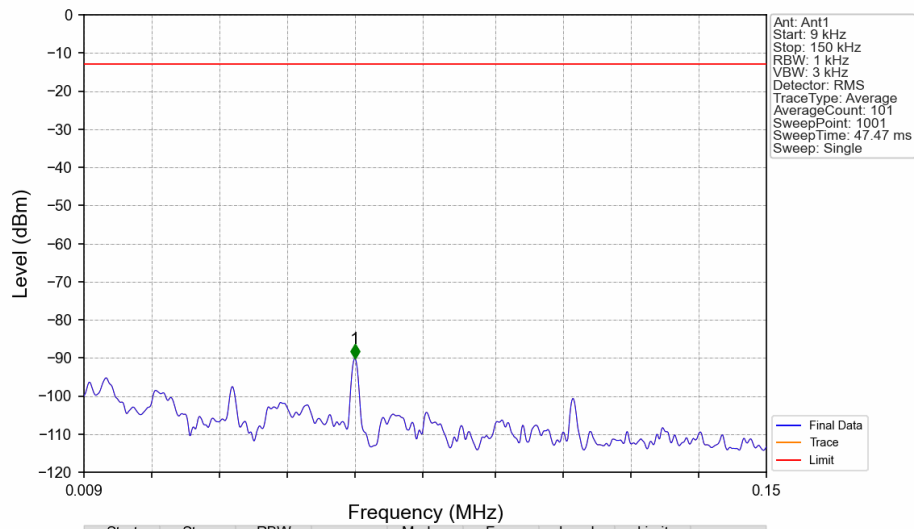
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3694	1	/	1	3693.400	-61.66	-13	Pass
3694	3986	1.058	/	2	3697.000	-61.79	-13	Pass
3986	3986	1.058	/	/	/	/	/	/
3986	3986	1.058	/	3	3985.000	-70.71	-13	Pass
3986	10000	1	/	4	3989.200	-73.20	-13	Pass

Bandn77a_3700.8MHz_Broad100MHz_SISO_Ant1_NTNV



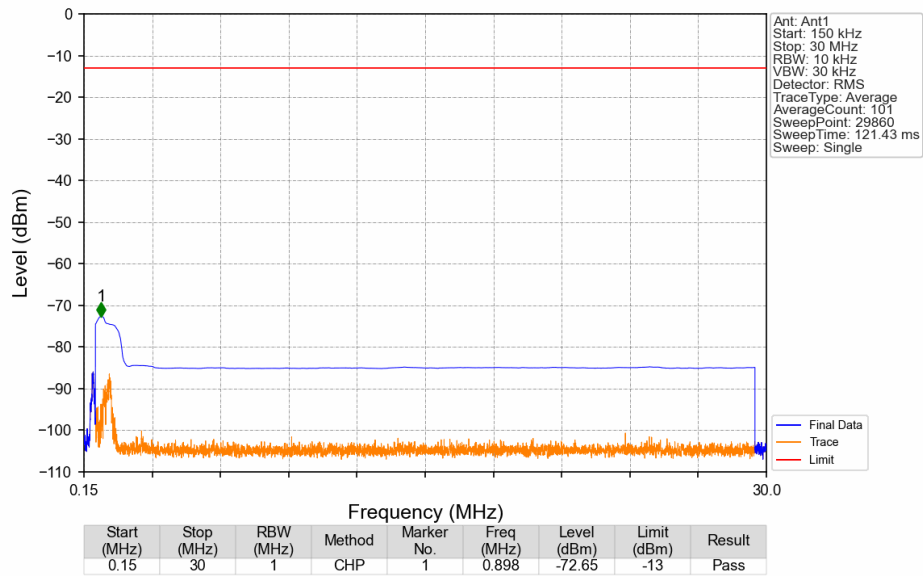
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	39800	1	/	1	38287.153	-65.26	-13	Pass

Bandn77a_3770MHz_Broad100MHz_SISO_Ant1_NTNV

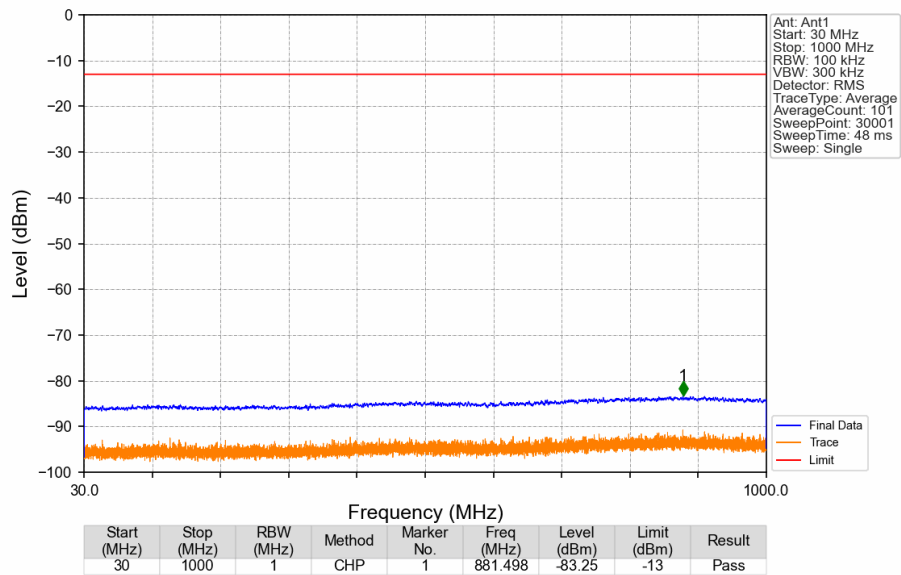


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.065	-90.13	-13	Pass

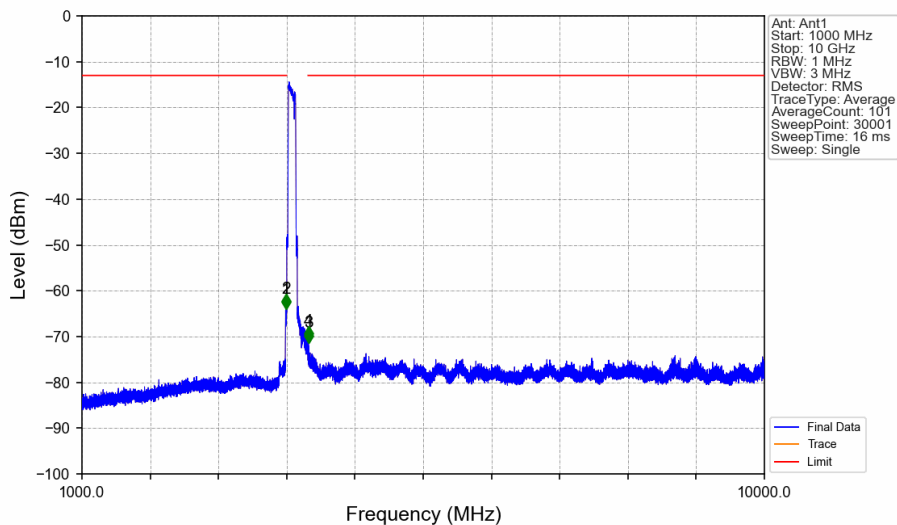
Bandn77a_3770MHz_Broad100MHz_SISO_Ant1_NTNV



Bandn77a_3770MHz_Broad100MHz_SISO_Ant1_NTNV

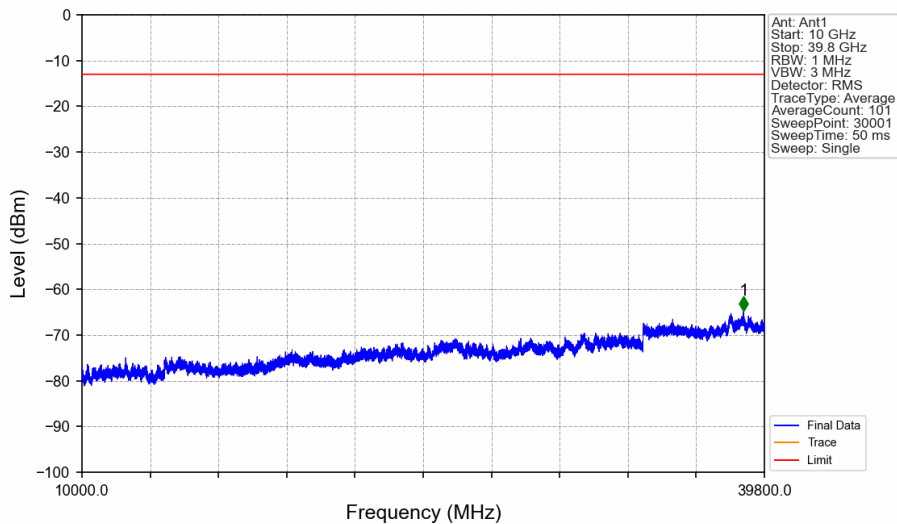


Bandn77a_3770MHz_Broad100MHz_SISO_Ant1_NTNV



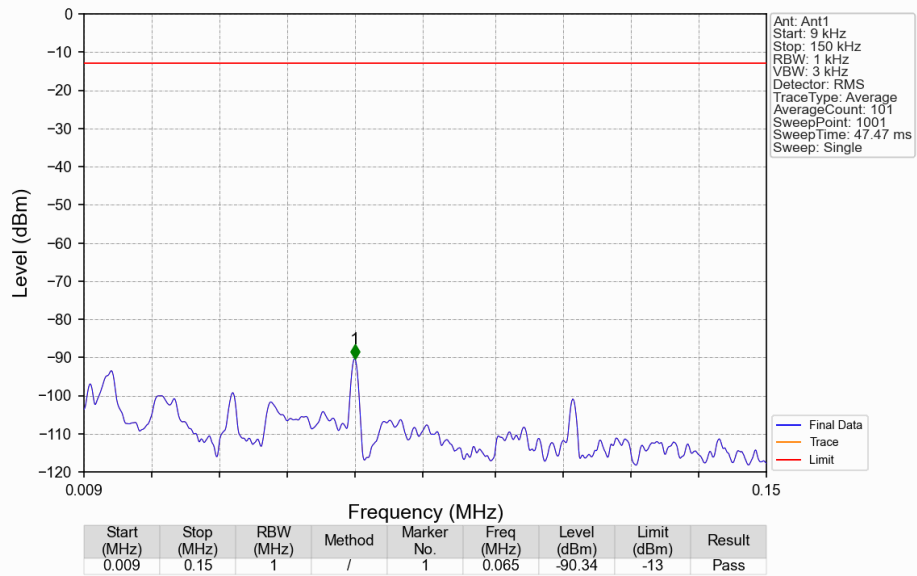
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3694	1	/	1	3686.200	-64.06	-13	Pass
3694	3986	1.152	/	2	3695.500	-63.82	-13	Pass
3986	3986	1.152	/	/	/	/	/	/
3986	3986	1.152	/	3	3985.600	-71.37	-13	Pass
3986	10000	1	/	4	3986.800	-70.98	-13	Pass

Bandn77a_3770MHz_Broad100MHz_SISO_Ant1_NTNV

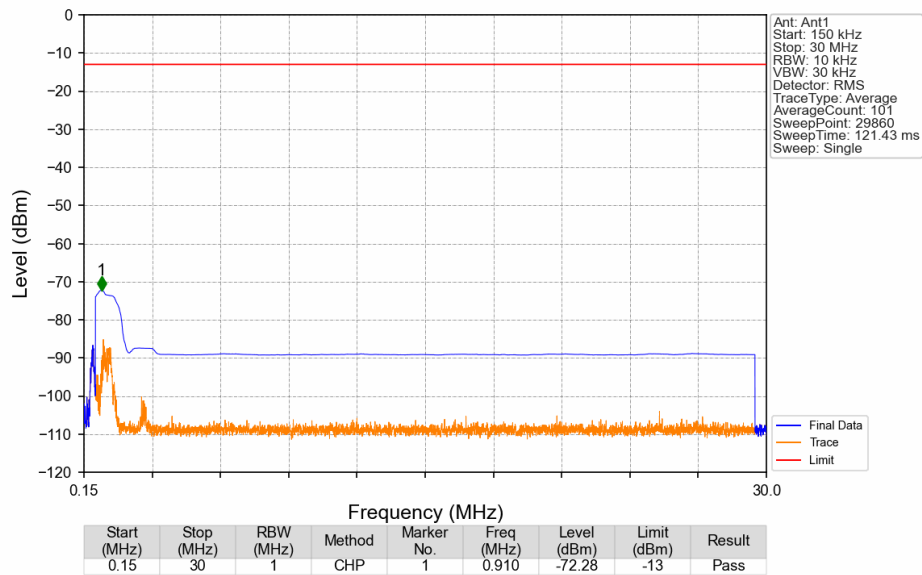


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	39800	1	/	1	3888.127	-64.64	-13	Pass

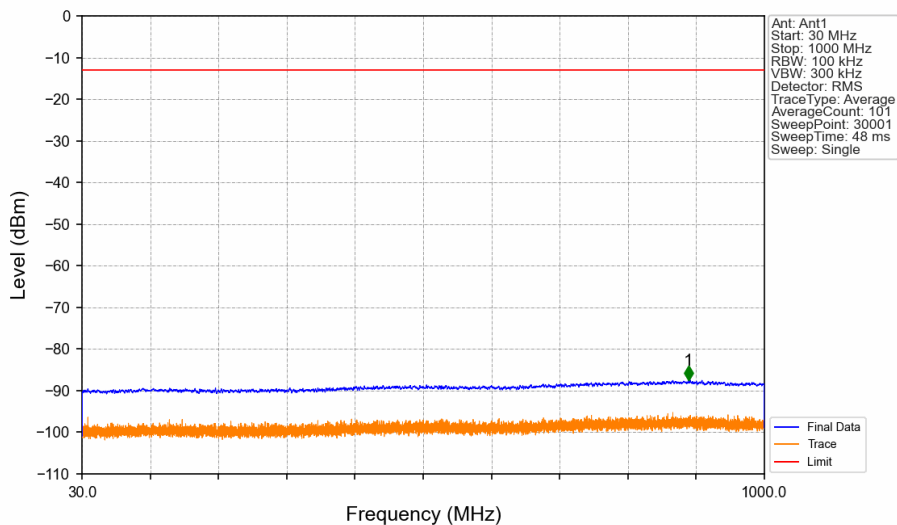
Bandn77a_3839.2MHz_Broad100MHz_SISO_Ant1_NTNV



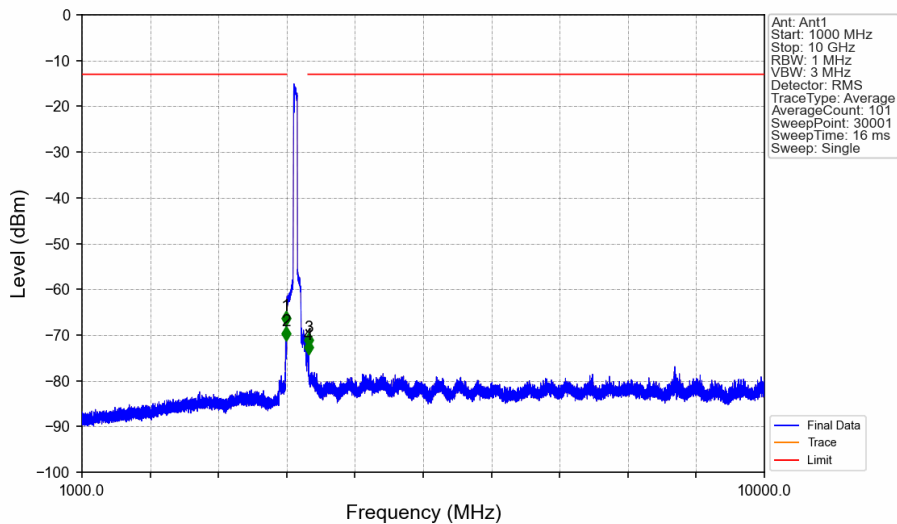
Bandn77a_3839.2MHz_Broad100MHz_SISO_Ant1_NTNV



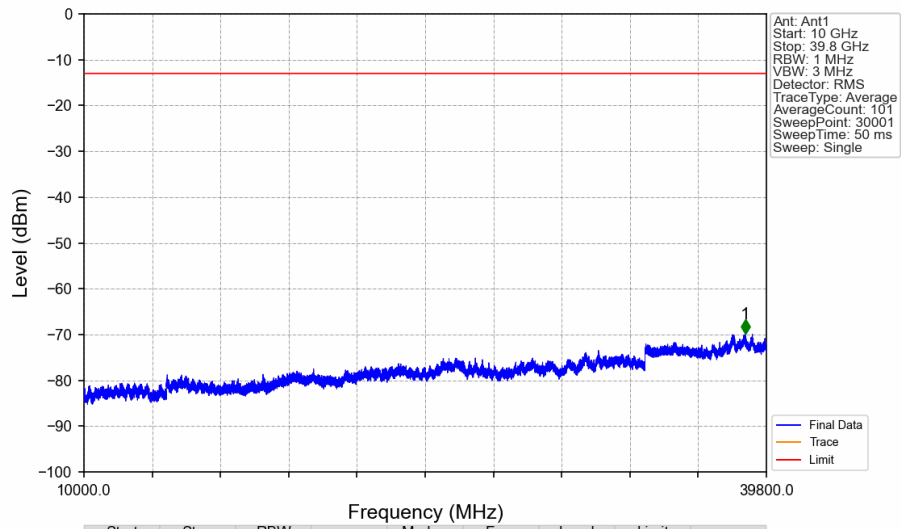
Bandn77a_3839.2MHz_Broad100MHz_SISO_Ant1_NTNV



Bandn77a_3839.2MHz_Broad100MHz_SISO_Ant1_NTNV



Bandn77a_3839.2MHz_Broad100MHz_SISO_Ant1_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	39800	1	/	1	38870.240	-69.81	-13	Pass

Ant: Ant1
 Start: 10 GHz
 Stop: 39.8 GHz
 RBW: 1 MHz
 VBW: 3 MHz
 Detector: RMS
 Trace Type: Average
 Average Count: 101
 Sweep Point: 30001
 Sweep Time: 50 ms
 Sweep: Single

Final Data
 Trace
 Limit

7. Frequency stability measurements

7.1 Bandn77a_Ant1

7.1.1 Test Result

Band: n77a / NTV							
Signal			Temp (°C)	Voltage (VAC)	Freq. Error (Hz)	Tolerance (ppm)	Verdict
Type	Level (dBm)	Frequency (MHz)					
CW	-3.5	3700.1	20	102	-21	-0.00568	Pass
				120	-22	-0.00595	Pass
				138	-21	-0.00568	Pass
			-30	120	-21	-0.00568	Pass
			-20	120	-24	-0.00649	Pass
			-10	120	-25	-0.00676	Pass
			0	120	-22	-0.00595	Pass
			10	120	-22	-0.00595	Pass
			30	120	-21	-0.00568	Pass
			40	120	-22	-0.00595	Pass
		55	120	-21	-0.00568	Pass	
		3770	20	102	-21	-0.00557	Pass
				120	-22	-0.00584	Pass
				138	-22	-0.00584	Pass
			-30	120	-21	-0.00557	Pass
			-20	120	-20	-0.00531	Pass
			-10	120	-22	-0.00584	Pass
			0	120	-23	-0.00610	Pass
			10	120	-21	-0.00557	Pass
			30	120	-21	-0.00557	Pass
			40	120	-22	-0.00584	Pass
		55	120	-23	-0.00610	Pass	
		3839.9	20	102	-21	-0.00547	Pass
				120	-21	-0.00547	Pass
				138	-23	-0.00599	Pass
			-30	120	-20	-0.00521	Pass
			-20	120	-21	-0.00547	Pass
			-10	120	-21	-0.00547	Pass
			0	120	-23	-0.00599	Pass
			10	120	-22	-0.00573	Pass
30	120	-22	-0.00573	Pass			

			40	120	-22	-0.00573	Pass
			55	120	-20	-0.00521	Pass

8. Radiated Spurious Emissions

8.1 Bandn77_Ant1

8.1.1 Test Result

GMSK_Low Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
125.35	Horizontal	-65.93	-13	-52.93	Pass
263.83	Horizontal	-62.92	-13	-49.92	Pass
767.42	Horizontal	-60.23	-13	-47.23	Pass
1994.33	Horizontal	-45.60	-13	-32.60	Pass
9219.77	Horizontal	-44.79	-13	-31.79	Pass
15940.13	Horizontal	-38.43	-13	-25.43	Pass
111.27	Vertical	-61.81	-13	-48.81	Pass
220.50	Vertical	-61.40	-13	-48.40	Pass
686.87	Vertical	-58.46	-13	-45.46	Pass
1861.47	Vertical	-51.74	-13	-38.74	Pass
8398.89	Vertical	-49.59	-13	-36.59	Pass
15873.08	Vertical	-39.13	-13	-26.13	Pass

GMSK_Middle Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
107.66	Horizontal	-66.20	-13	-53.2	Pass
284.60	Horizontal	-62.36	-13	-49.36	Pass
773.32	Horizontal	-57.98	-13	-44.98	Pass
2001.14	Horizontal	-48.51	-13	-35.51	Pass
9210.26	Horizontal	-45.52	-13	-32.52	Pass
15941.89	Horizontal	-40.78	-13	-27.78	Pass
102.69	Vertical	-65.10	-13	-52.10	Pass
229.42	Vertical	-59.50	-13	-46.50	Pass
698.50	Vertical	-60.22	-13	-47.22	Pass
1861.04	Vertical	-51.08	-13	-38.08	Pass

8687.45	Vertical	-52.21	-13	-39.21	Pass
15903.98	Vertical	-38.67	-13	-25.67	Pass

GMSK_High Channel					
Frequency	Spurious Emission		Limit	Over Limit	Verdict
	Polarization and Level				
MHz	Polarization	dBm	dBm	dB	
96.18	Horizontal	-67.02	-13	-54.02	Pass
285.03	Horizontal	-62.61	-13	-49.61	Pass
783.99	Horizontal	-59.25	-13	-46.25	Pass
1986.00	Horizontal	-45.54	-13	-32.54	Pass
9215.02	Horizontal	-44.27	-13	-31.27	Pass
15934.69	Horizontal	-41.53	-13	-28.53	Pass
100.72	Vertical	-63.35	-13	-50.35	Pass
436.27	Vertical	-60.39	-13	-47.39	Pass
702.22	Vertical	-59.91	-13	-46.91	Pass
1849.09	Vertical	-49.75	-13	-36.75	Pass
9677.74	Vertical	-50.01	-13	-37.01	Pass
15903.52	Vertical	-42.33	-13	-29.33	Pass

AWGN_Low Channel					
Frequency	Spurious Emission		Limit	Over Limit	Verdict
	Polarization and Level				
MHz	Polarization	dBm	dBm	dB	
87.23	Horizontal	-65.21	-13	-52.21	Pass
288.83	Horizontal	-61.18	-13	-48.18	Pass
770.74	Horizontal	-59.56	-13	-46.56	Pass
2295.31	Horizontal	-47.57	-13	-34.57	Pass
8899.08	Horizontal	-45.96	-13	-32.96	Pass
13729.19	Horizontal	-39.45	-13	-26.45	Pass
97.50	Vertical	-61.18	-13	-48.18	Pass
221.37	Vertical	-62.14	-13	-49.14	Pass
696.34	Vertical	-60.59	-13	-47.59	Pass
2052.55	Vertical	-52.10	-13	-39.10	Pass
8688.93	Vertical	-51.41	-13	-38.41	Pass



13783.94	Vertical	-38.94	-13	-25.94	Pass
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AWGN_Middle Channel					
Frequency	Spurious Emission		Limit	Over Limit	Verdict
	Polarization and Level				
MHz	Polarization	dBm	dBm	dB	
98.91	Horizontal	-66.47	-13	-53.47	Pass
270.19	Horizontal	-63.62	-13	-50.62	Pass
780.61	Horizontal	-59.12	-13	-46.12	Pass
2295.65	Horizontal	-46.50	-13	-33.50	Pass
8909.95	Horizontal	-45.40	-13	-32.40	Pass
13730.20	Horizontal	-41.14	-13	-28.14	Pass
96.09	Vertical	-62.04	-13	-49.04	Pass
223.41	Vertical	-58.86	-13	-45.86	Pass
704.23	Vertical	-61.10	-13	-48.10	Pass
2047.85	Vertical	-52.34	-13	-39.34	Pass
8684.17	Vertical	-51.41	-13	-38.41	Pass
13805.20	Vertical	-39.96	-13	-26.96	Pass

AWGN_High Channel					
Frequency	Spurious Emission		Limit	Over Limit	Verdict
	Polarization and Level				
MHz	Polarization	dBm	dBm	dB	
102.22	Horizontal	-65.37	-13	-52.37	Pass
474.74	Horizontal	-64.33	-13	-51.33	Pass
788.62	Horizontal	-59.38	-13	-46.38	Pass
2290.69	Horizontal	-45.62	-13	-32.62	Pass
8903.97	Horizontal	-43.09	-13	-30.09	Pass
13726.06	Horizontal	-42.01	-13	-29.01	Pass
85.24	Vertical	-64.66	-13	-51.66	Pass
217.07	Vertical	-60.15	-13	-47.15	Pass
712.66	Vertical	-59.96	-13	-46.96	Pass
2046.87	Vertical	-52.18	-13	-39.18	Pass
8669.71	Vertical	-53.20	-13	-40.20	Pass
13792.64	Vertical	-40.12	-13	-27.12	Pass

AWGN_100M_Low Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
	MHz	Polarization	dBm	dB	
89.70	Horizontal	-65.53	-13	-52.53	Pass
272.11	Horizontal	-62.09	-13	-49.09	Pass
697.47	Horizontal	-59.78	-13	-46.78	Pass
2585.59	Horizontal	-45.62	-13	-32.62	Pass
8476.58	Horizontal	-45.66	-13	-32.66	Pass
16722.13	Horizontal	-38.53	-13	-25.53	Pass
105.01	Vertical	-62.73	-13	-49.73	Pass
375.20	Vertical	-62.30	-13	-49.30	Pass
627.35	Vertical	-58.84	-13	-45.84	Pass
2038.64	Vertical	-50.43	-13	-37.43	Pass
9175.15	Vertical	-50.71	-13	-37.71	Pass
16802.89	Vertical	-39.15	-13	-26.15	Pass

AWGN_100M_Middle Channel					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
	MHz	Polarization	dBm	dB	
93.04	Horizontal	-67.11	-13	-54.11	Pass
280.74	Horizontal	-62.54	-13	-49.54	Pass
699.68	Horizontal	-59.95	-13	-46.95	Pass
2596.30	Horizontal	-47.93	-13	-34.93	Pass
8481.29	Horizontal	-44.14	-13	-31.14	Pass
16717.16	Horizontal	-39.11	-13	-26.11	Pass
100.27	Vertical	-65.00	-13	-52.00	Pass
490.41	Vertical	-58.53	-13	-45.53	Pass
635.12	Vertical	-61.25	-13	-48.25	Pass
2038.37	Vertical	-51.29	-13	-38.29	Pass
9180.24	Vertical	-52.94	-13	-39.94	Pass
16807.50	Vertical	-39.96	-13	-26.96	Pass

AWGN_100M_High Channel					
Frequency	Spurious Emission		Limit	Over Limit	Verdict
	Polarization and Level				
MHz	Polarization	dBm	dBm	dB	
101.18	Horizontal	-66.29	-13	-53.29	Pass
285.77	Horizontal	-63.18	-13	-50.18	Pass
708.67	Horizontal	-58.47	-13	-45.47	Pass
2583.26	Horizontal	-47.41	-13	-34.41	Pass
8485.92	Horizontal	-44.00	-13	-31.00	Pass
16700.99	Horizontal	-38.40	-13	-25.40	Pass
92.52	Vertical	-64.33	-13	-51.33	Pass
379.87	Vertical	-61.36	-13	-48.36	Pass
638.23	Vertical	-59.90	-13	-46.90	Pass
20316.44	Vertical	-52.58	-13	-39.58	Pass
9169.54	Vertical	-49.90	-13	-36.90	Pass
16785.46	Vertical	-40.82	-13	-27.82	Pass