



1. Out of band rejection

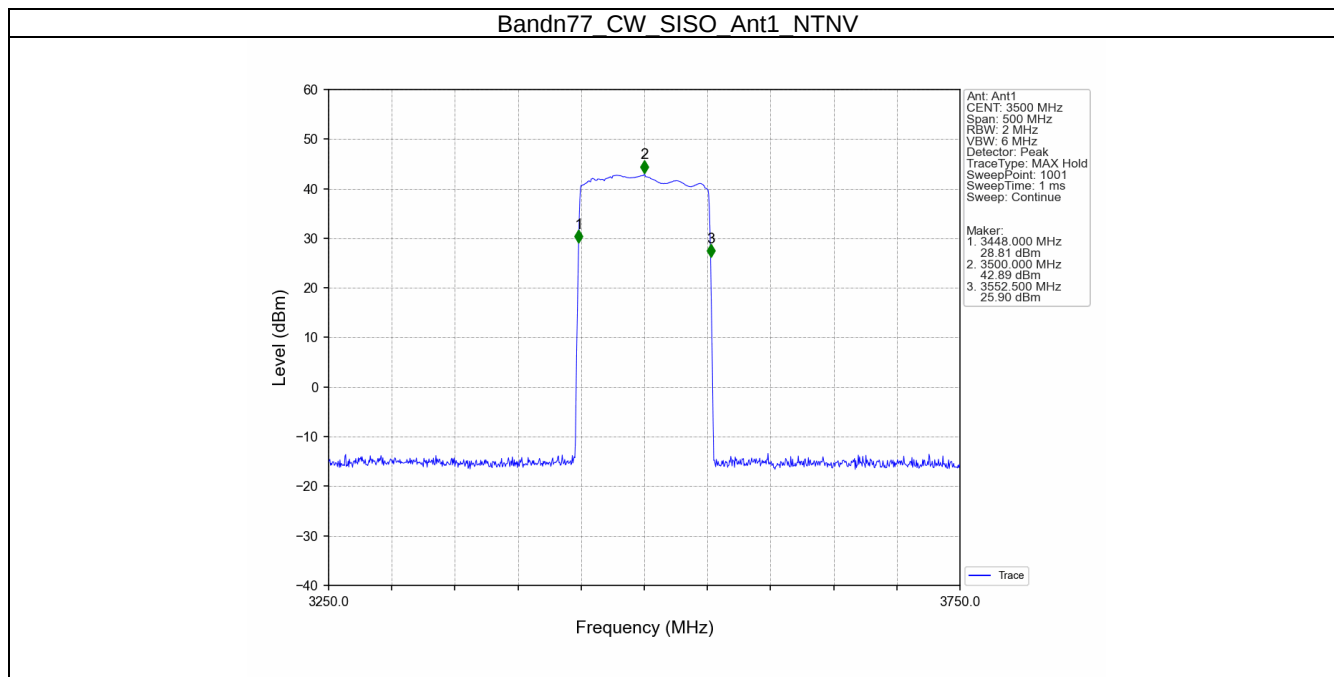
1.1 Test Result

1.1.1 Bandn77

Band: n77 / NTNV							
Signal	Sweep Frequency Range (MHz)	TX Type	ANT	F0 (MHz)	FL (MHz)	FH (MHz)	Verdict
CW	3250 - 3750	SISO	1	3500.000	3448.000	3552.500	Pass

1.2 Test Graph

1.2.1 Bandn77





2. AGC threshold

2.1 Test Result

2.1.1 Bandn77

Band: n77 / NTNV					
Signal	Frequency (MHz)	TX Type	ANT	AGC Threshold (dBm)	Verdict
GMSK 0.2MHz	3500	SISO	1	0.00	Pass
AWGN 5MHz	3500	SISO	1	0.00	Pass
AWGN 100MHz	3500	SISO	1	0.00	Pass



3. Input-versus-output signal comparison

3.1 Test Result

3.1.1 Bandn77_OBW

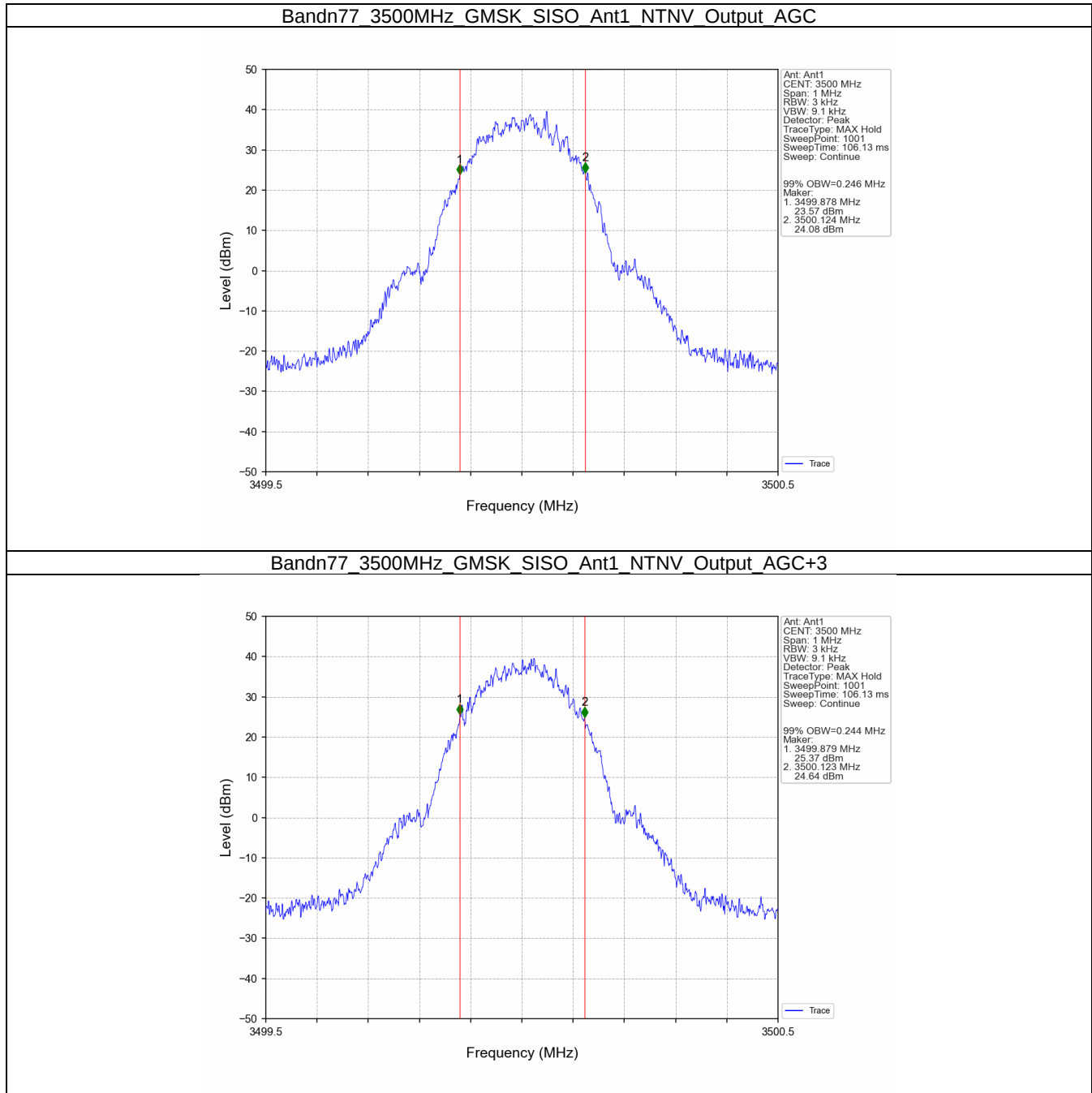
Band: n77 / NTNV							
Signal			TX Type	ANT	99% OBW (MHz)		Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	
GMSK 0.2MHz	0	3500	SISO	1	0.246	0.246	Pass
	3	3500	SISO	1	0.244	0.245	Pass
AWGN 5MHz	0	3500	SISO	1	4.526	4.548	Pass
	3	3500	SISO	1	4.555	4.550	Pass
AWGN 100MHz	0	3500	SISO	1	97.424	97.377	Pass
	3	3500	SISO	1	97.477	97.319	Pass

3.1.2 Bandn77_EBW

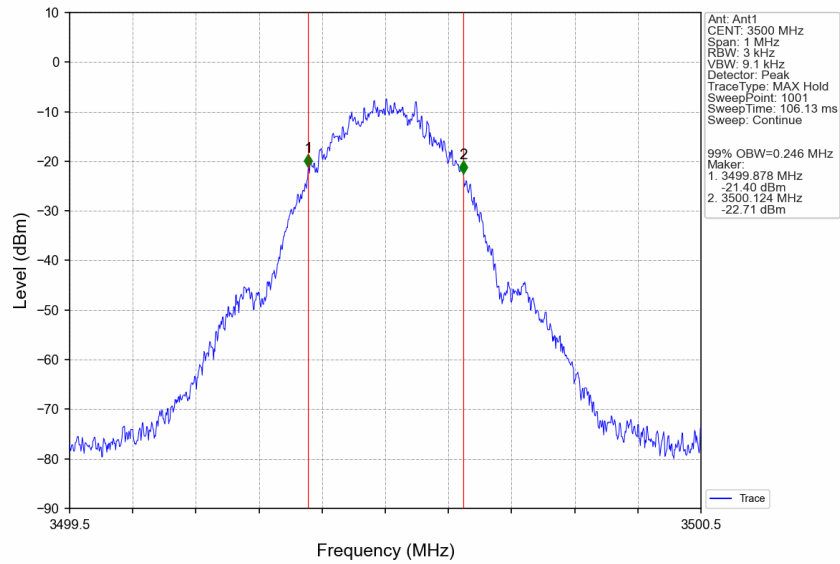
Band: n77 / NTNV							
Signal			TX Type	ANT	26dB EBW (MHz)		Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	
GMSK 0.2MHz	0	3500	SISO	1	0.315	0.314	Pass
	3	3500	SISO	1	0.313	0.314	Pass
AWGN 5MHz	0	3500	SISO	1	5.137	5.122	Pass
	3	3500	SISO	1	5.124	5.132	Pass
AWGN 100MHz	0	3500	SISO	1	100.701	100.729	Pass
	3	3500	SISO	1	100.698	100.650	Pass

3.2 Test Graph

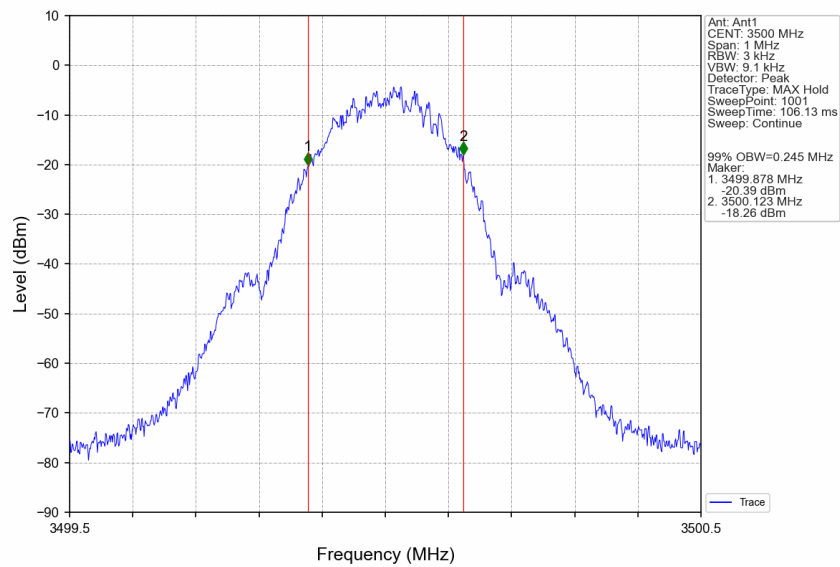
3.2.1 Bandn77_OBW



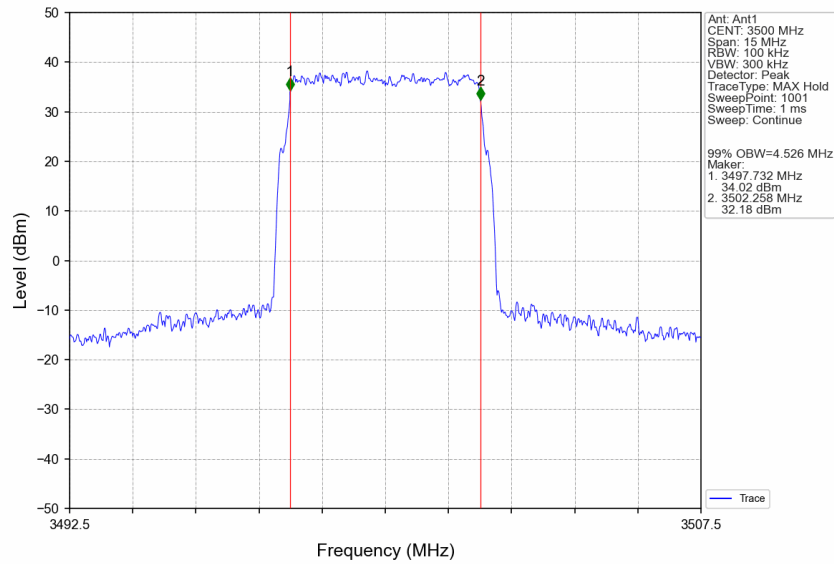
Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



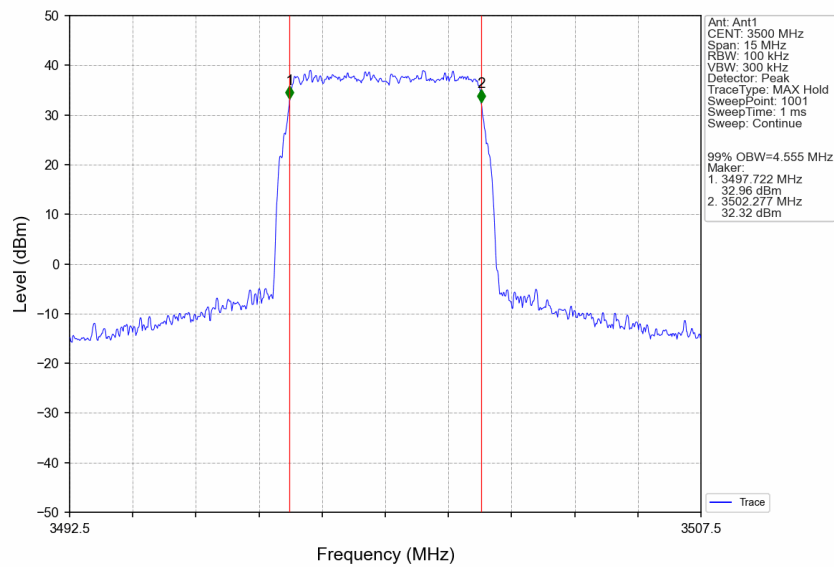
Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



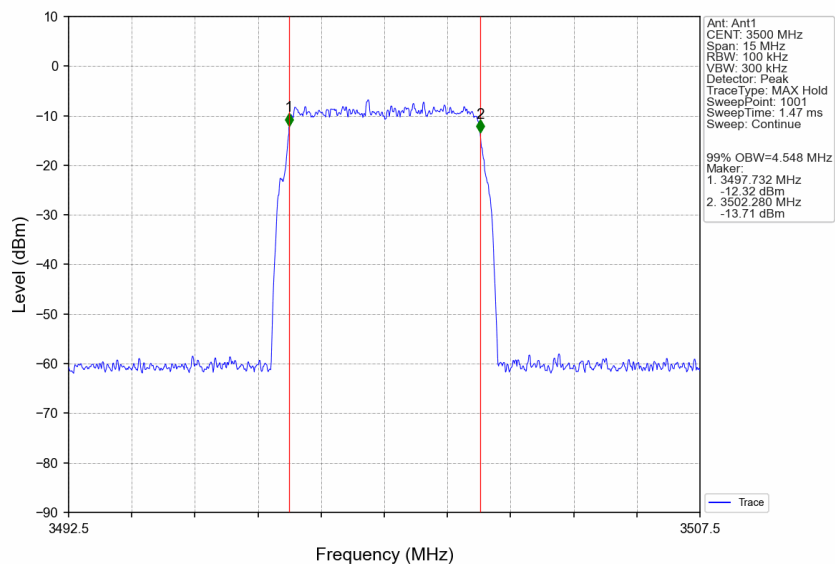
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



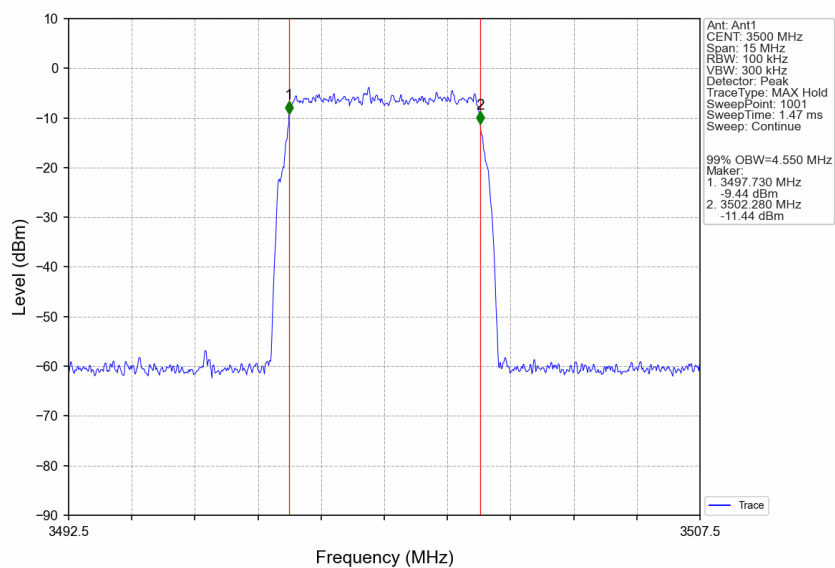
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Input_AGC

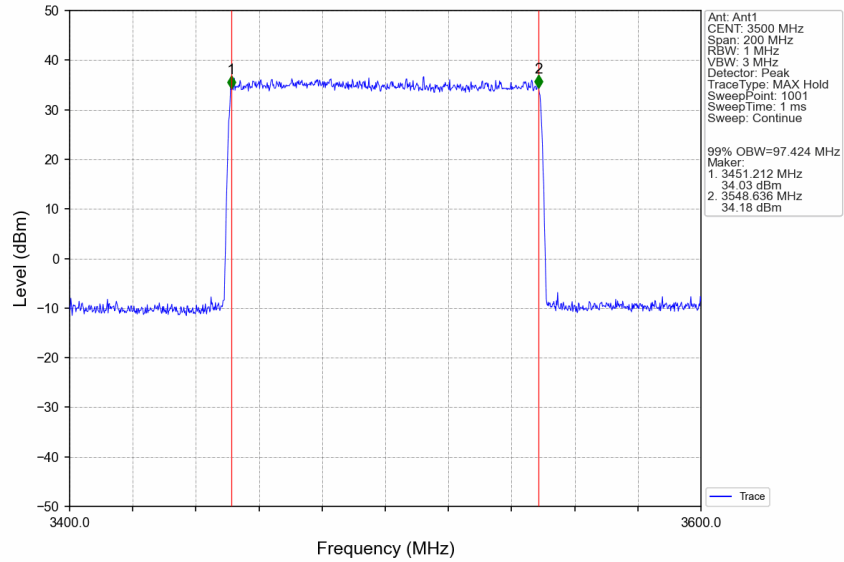


Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3

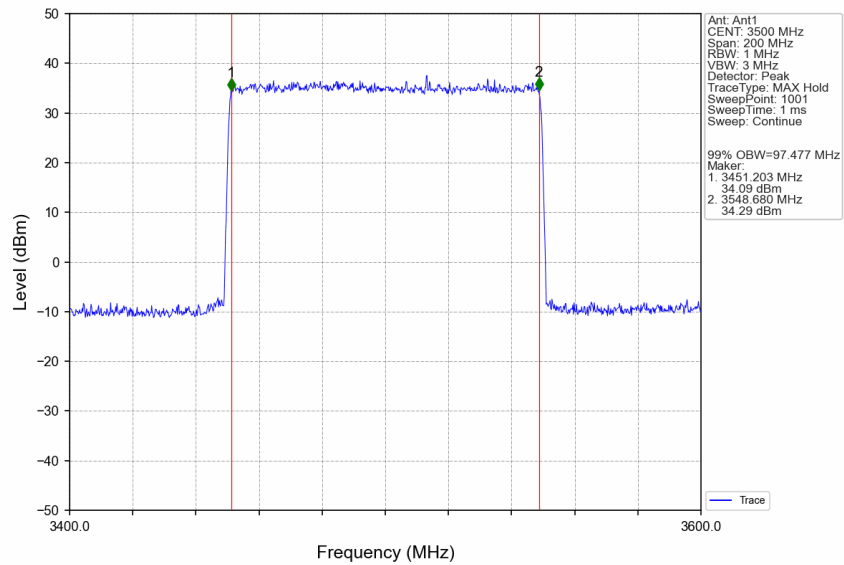




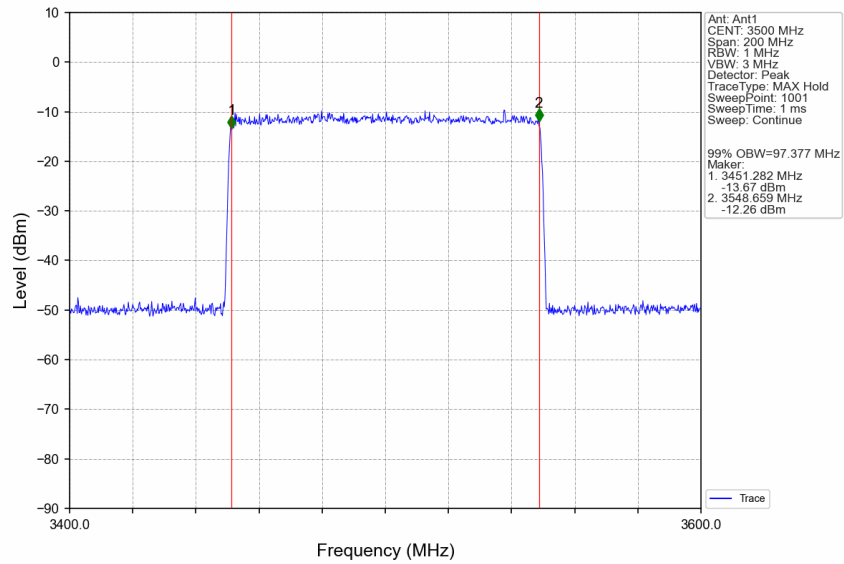
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_Output_AGC



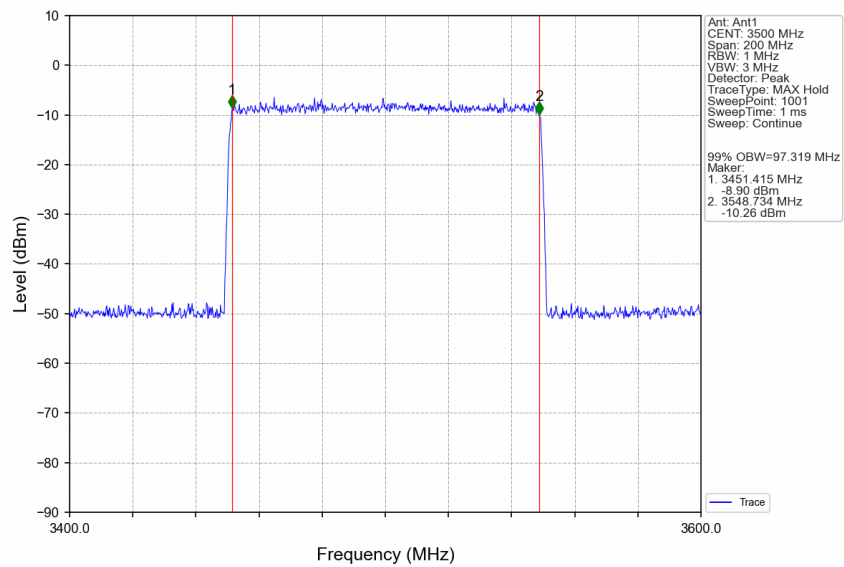
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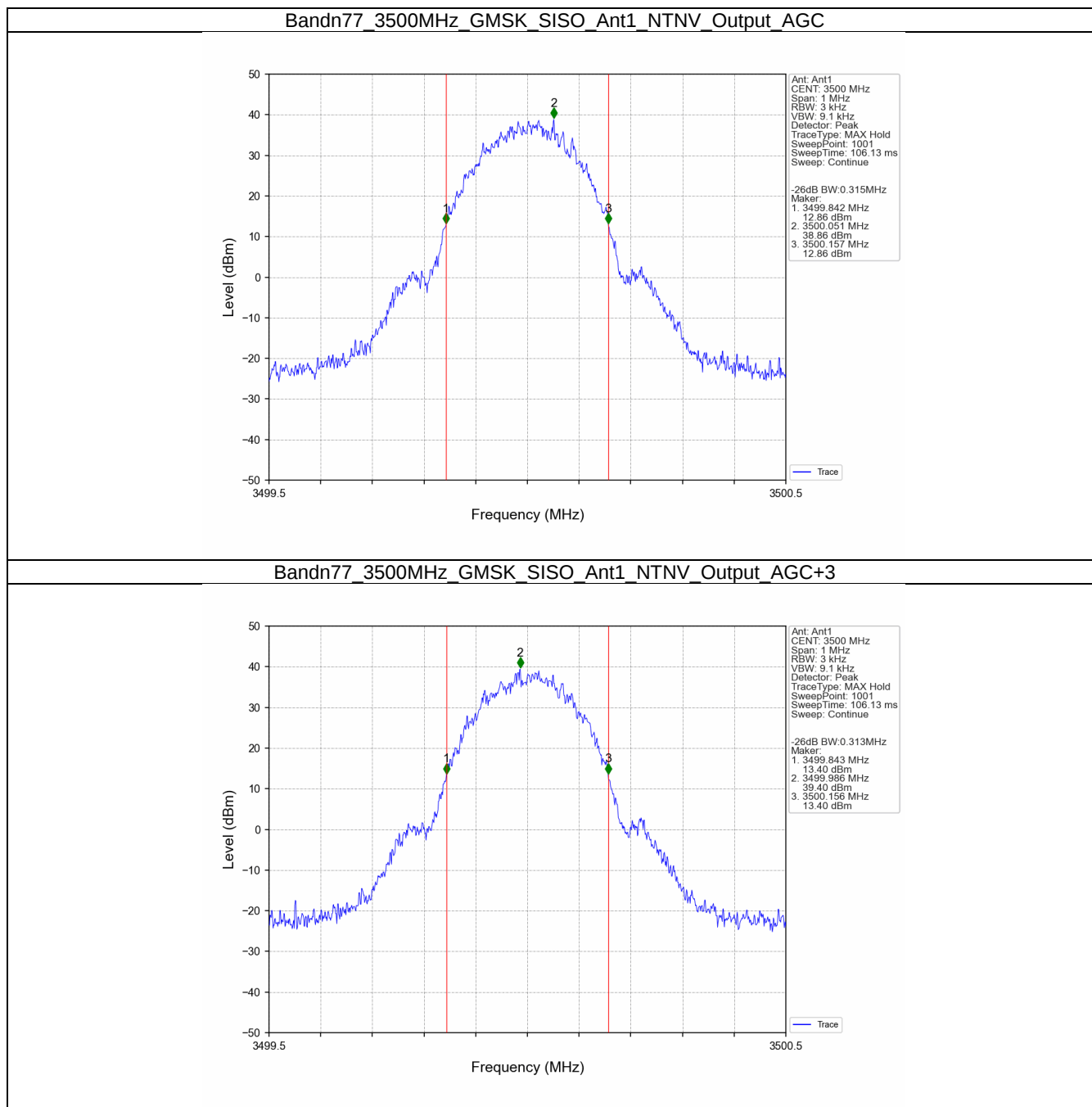
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC



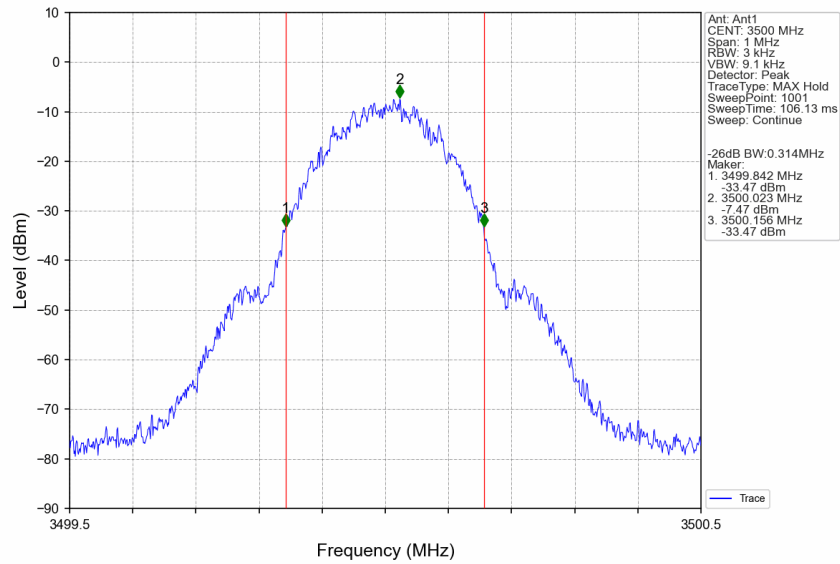
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC+3



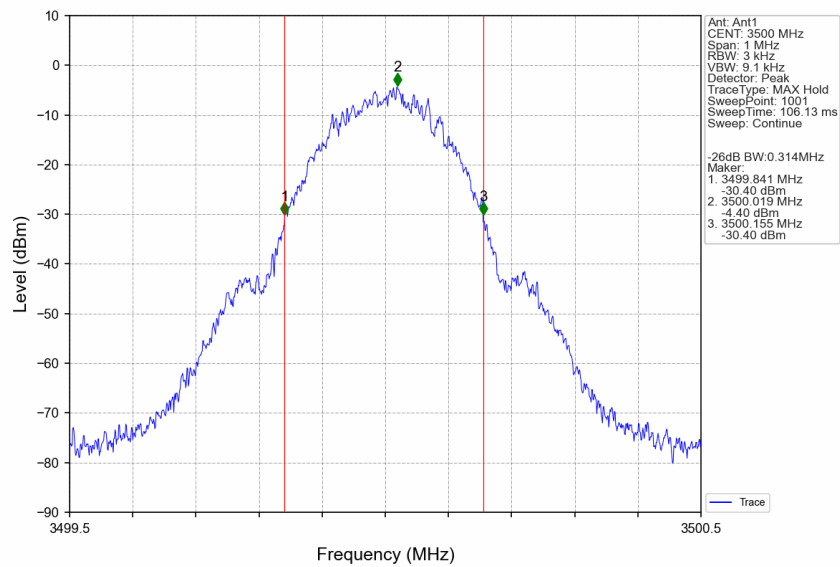
3.2.2 Bandn77_EBW



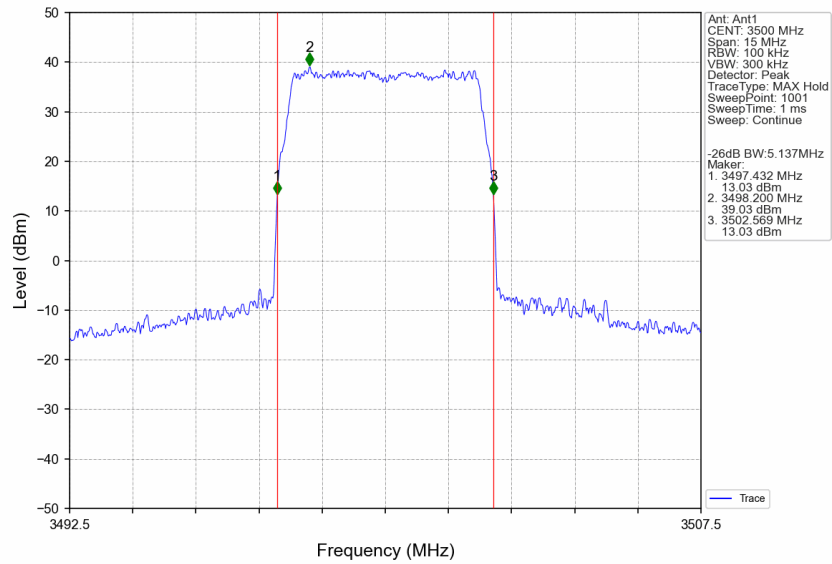
Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



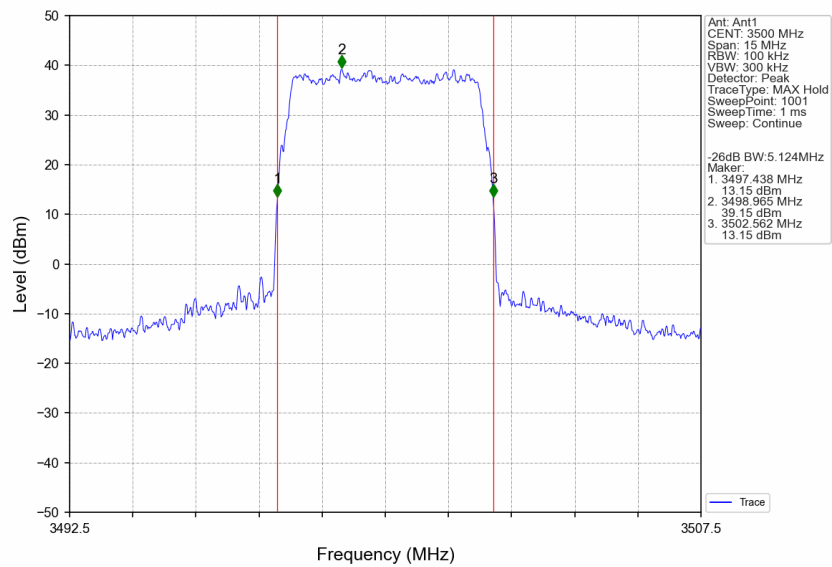
Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



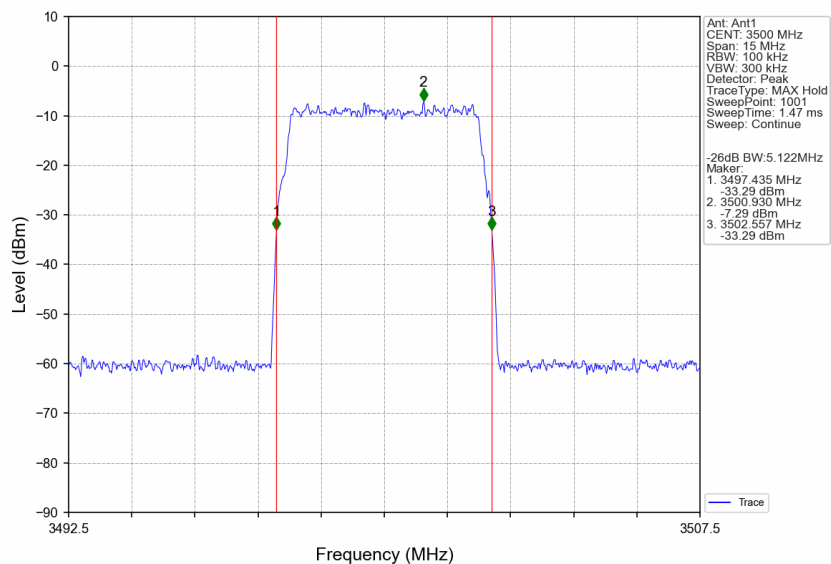
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



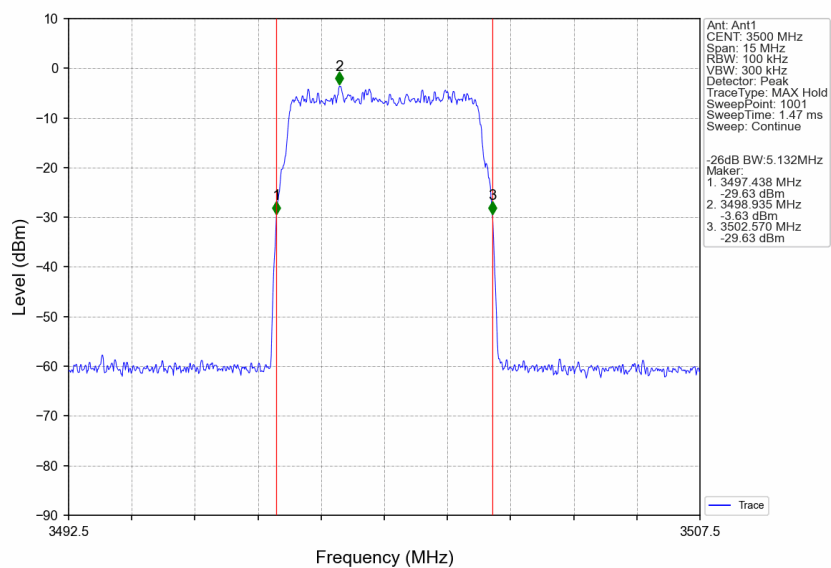
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



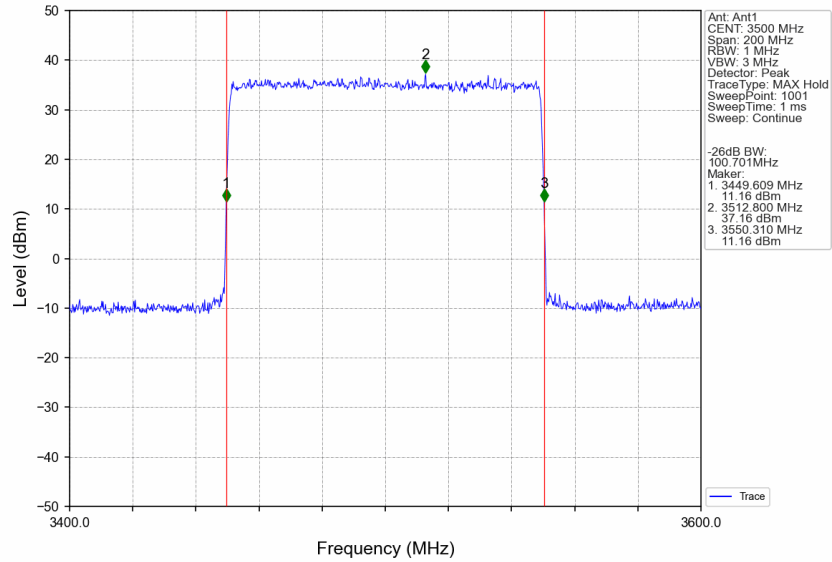
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Input_AGC



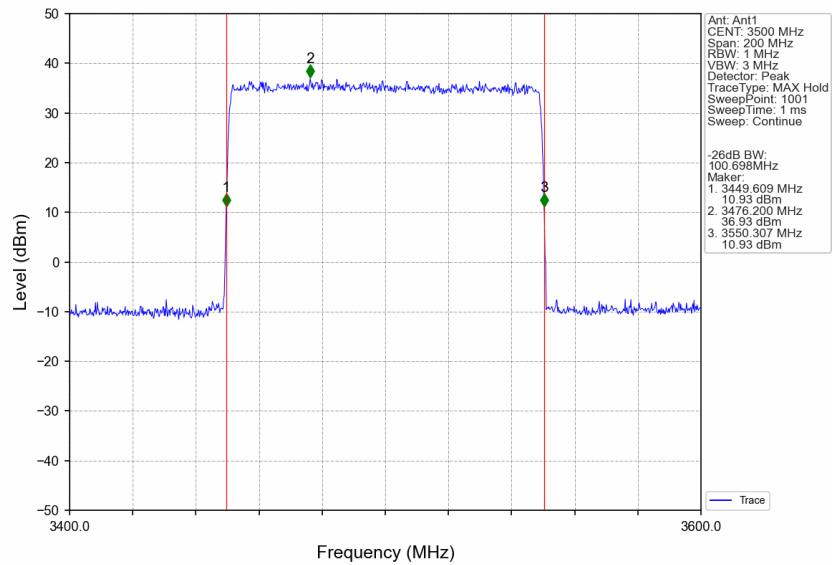
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3



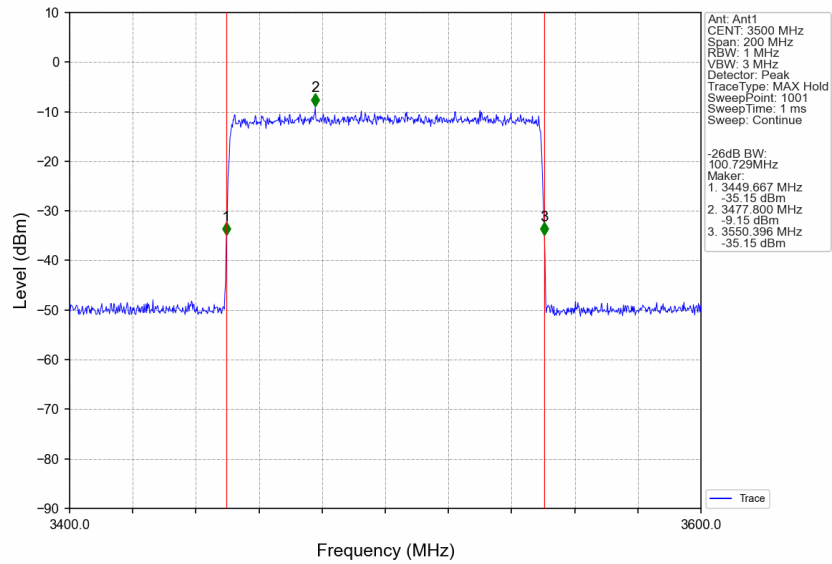
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_Output_AGC



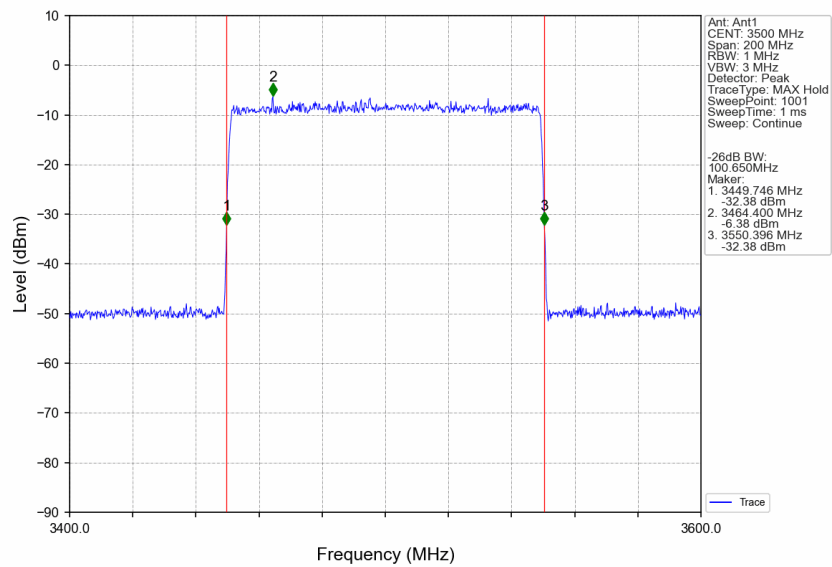
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_Output_AGC+3



Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC



Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_Input_AGC+3



4. Input/output power and amplifier/booster gain

4.1 Test Result

4.1.1 Bandn77_EIRP

Band: n77 / NTNV											
Signal			TX Type	ANT	Conducted Power (dBm/MHz)		EIRP (dBm/MHz)		Booster Gain (dB)	Nominal Gain (dB)	Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	Result	Limit			
GMSK 0.2MHz	0	3500	SISO	1	46.25	0.10	57.25	<=65.16	46.15	46.00	Pass
	3	3500	SISO	1	46.35	3.19	57.35	<=65.16	/	/	Pass
AWGN 5MHz	0	3500	SISO	1	38.98	-7.05	49.98	<=65.16	46.03	46.00	Pass
	3	3500	SISO	1	39.52	-4.02	50.52	<=65.16	/	/	Pass
AWGN 100MHz	0	3500	SISO	1	25.87	-20.15	36.87	<=65.16	46.02	46.00	Pass
	3	3500	SISO	1	26.08	-17.18	37.08	<=65.16	/	/	Pass

Band: n77 / NTNV								
Signal			Conducted Power (dBm/MHz)		EIRP (dBm/MHz)		Limit (dBm/MHz)	Verdict
Type	Level (dBm)	Frequency (MHz)	SISO	2X2 MIMO	SISO	2X2 MIMO		
GMSK 0.2MHz	0	3500	46.25	49.26	57.25	60.26	<=65.16	Pass
	3	3500	46.35	49.36	57.35	60.36	<=65.16	Pass
AWGN 5MHz	0	3500	38.98	41.99	49.98	52.99	<=65.16	Pass
	3	3500	39.52	42.53	50.52	53.53	<=65.16	Pass
AWGN 100MHz	0	3500	25.87	28.88	36.87	39.88	<=65.16	Pass
	3	3500	26.08	29.09	37.08	40.09	<=65.16	Pass

Band: n77 / NTNV								
Signal			Conducted Power (dBm)		EIRP (dBm)		Limit(dBm)	Verdict
Type	Level (dBm)	Frequency (MHz)	SISO	2X2 MIMO	SISO	2X2 MIMO		
GMSK 0.2MHz	0	3500	46.25	49.26	57.25	60.26	/	Pass
	3	3500	46.35	49.36	57.35	60.36	/	Pass
AWGN 5MHz	0	3500	45.97	48.98	56.97	59.98	/	Pass
	3	3500	46.51	49.52	57.51	60.52	/	Pass
AWGN 100MHz	0	3500	45.87	48.88	56.87	59.88	/	Pass
	3	3500	46.08	49.09	57.08	60.09	/	Pass

Note1: Antenna Gain=11dBi, EIRP=Conducted Power + Antenna Gain.

Note2: EUT supports MIMO and each antenna port is the same, according to C63.26 6.4, a coefficient is added to the single antenna port power to calculate the total power. 2x2 MIMO add 10lg(2)=3.01dB.

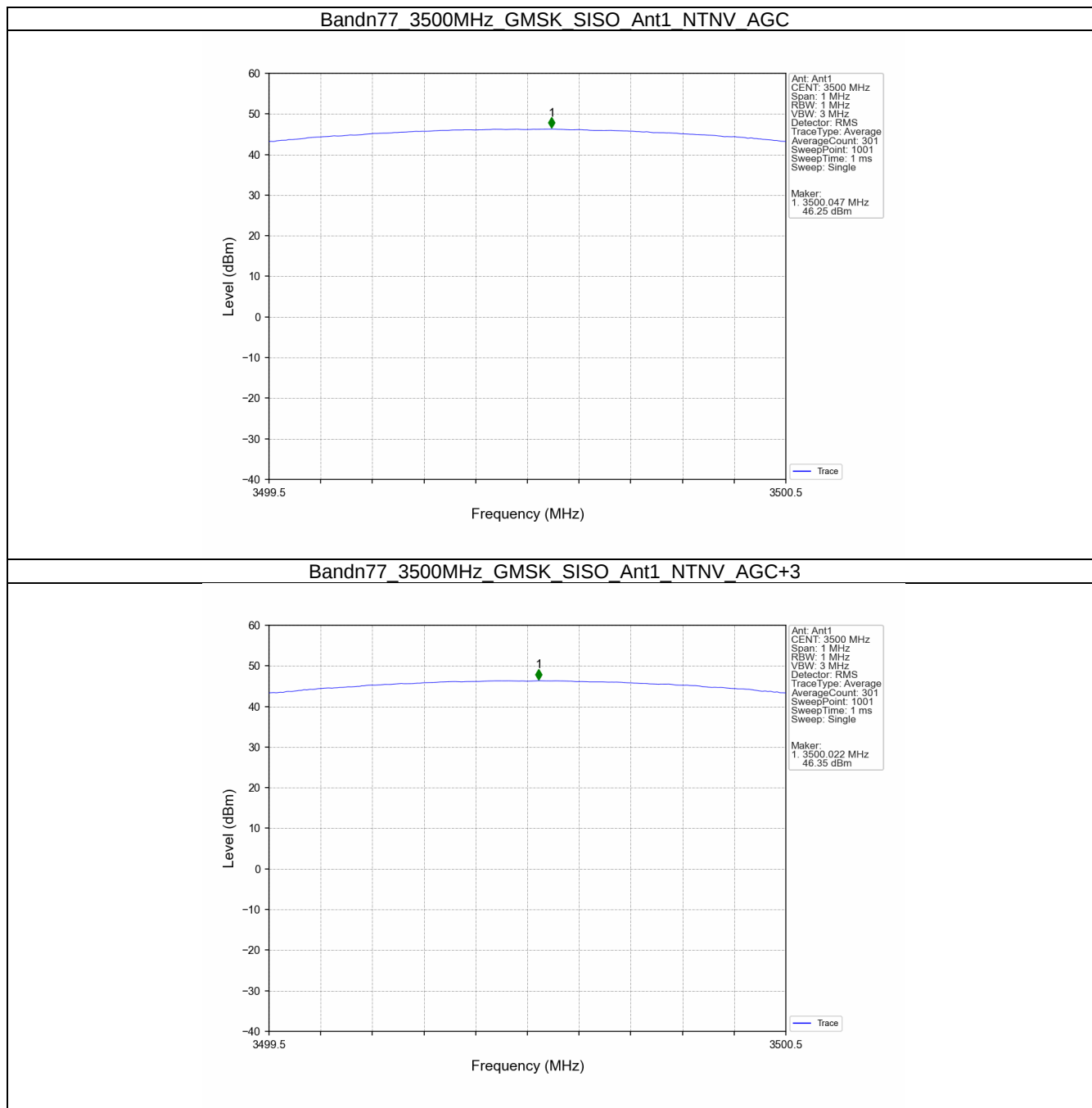


4.1.2 Bandn77_PAPR

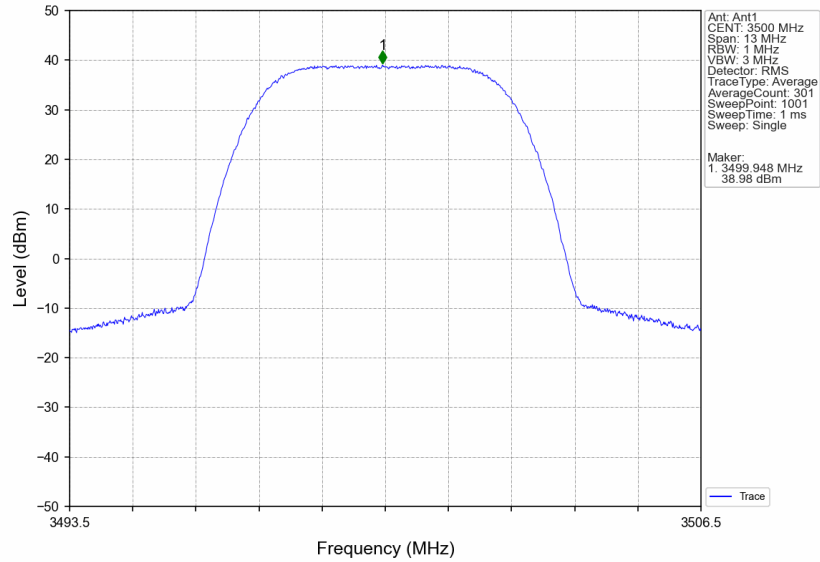
Band: n77 / NTNV							
Signal			TX Type	ANT	PAPR (dB)		Verdict
Type	Level (dBm)	Frequency (MHz)			Result	Limit	
GMSK 0.2MHz	0	3500	SISO	1	0.41	<=13	Pass
	3	3500	SISO	1	0.26	<=13	Pass
AWGN 5MHz	0	3500	SISO	1	7.15	<=13	Pass
	3	3500	SISO	1	6.93	<=13	Pass
AWGN 100MHz	0	3500	SISO	1	8.19	<=13	Pass
	3	3500	SISO	1	8.14	<=13	Pass

4.2 Test Graph

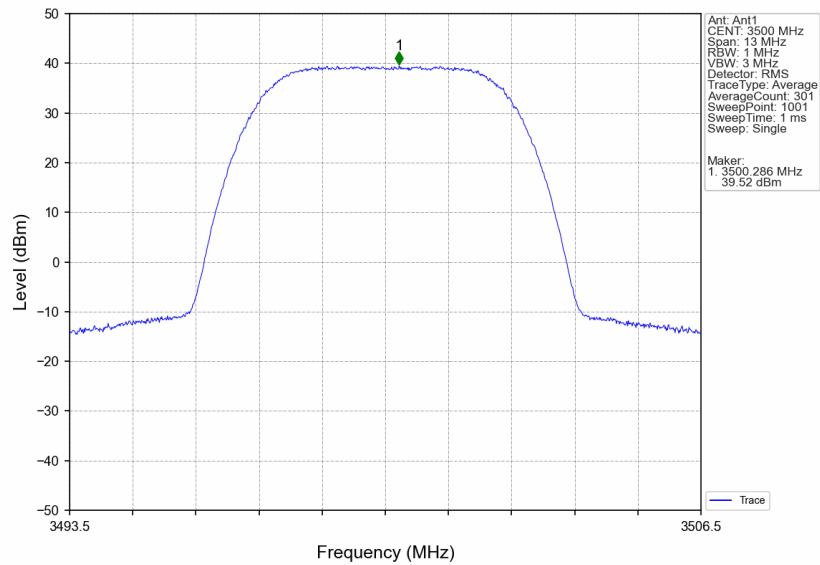
4.2.1 Bandn77_EIRP



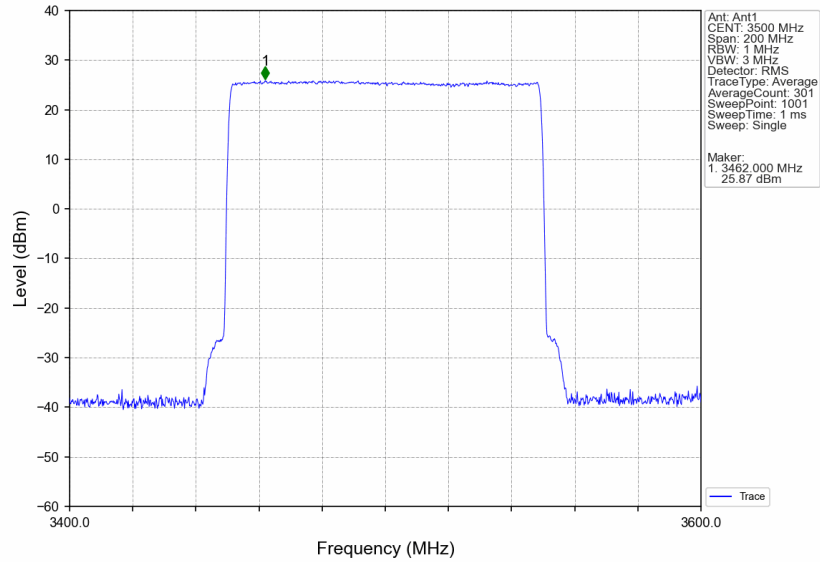
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_AGC



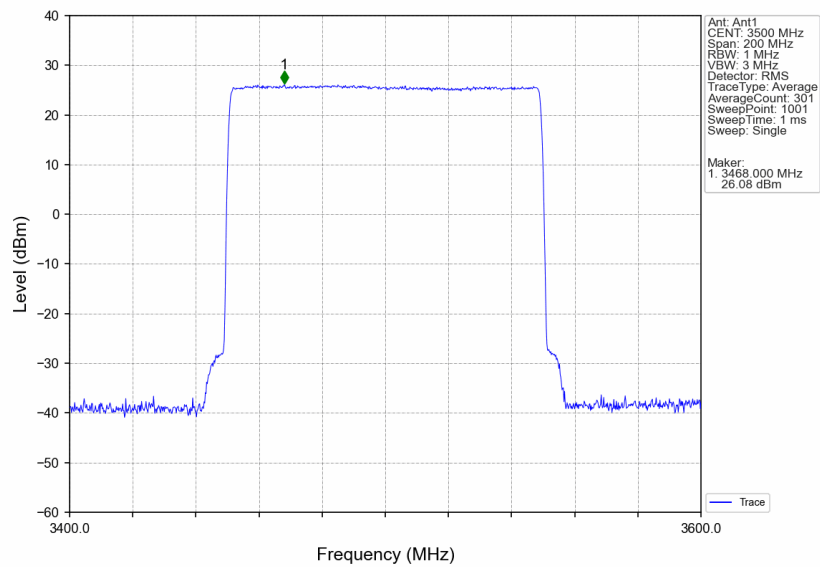
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_AGC+3



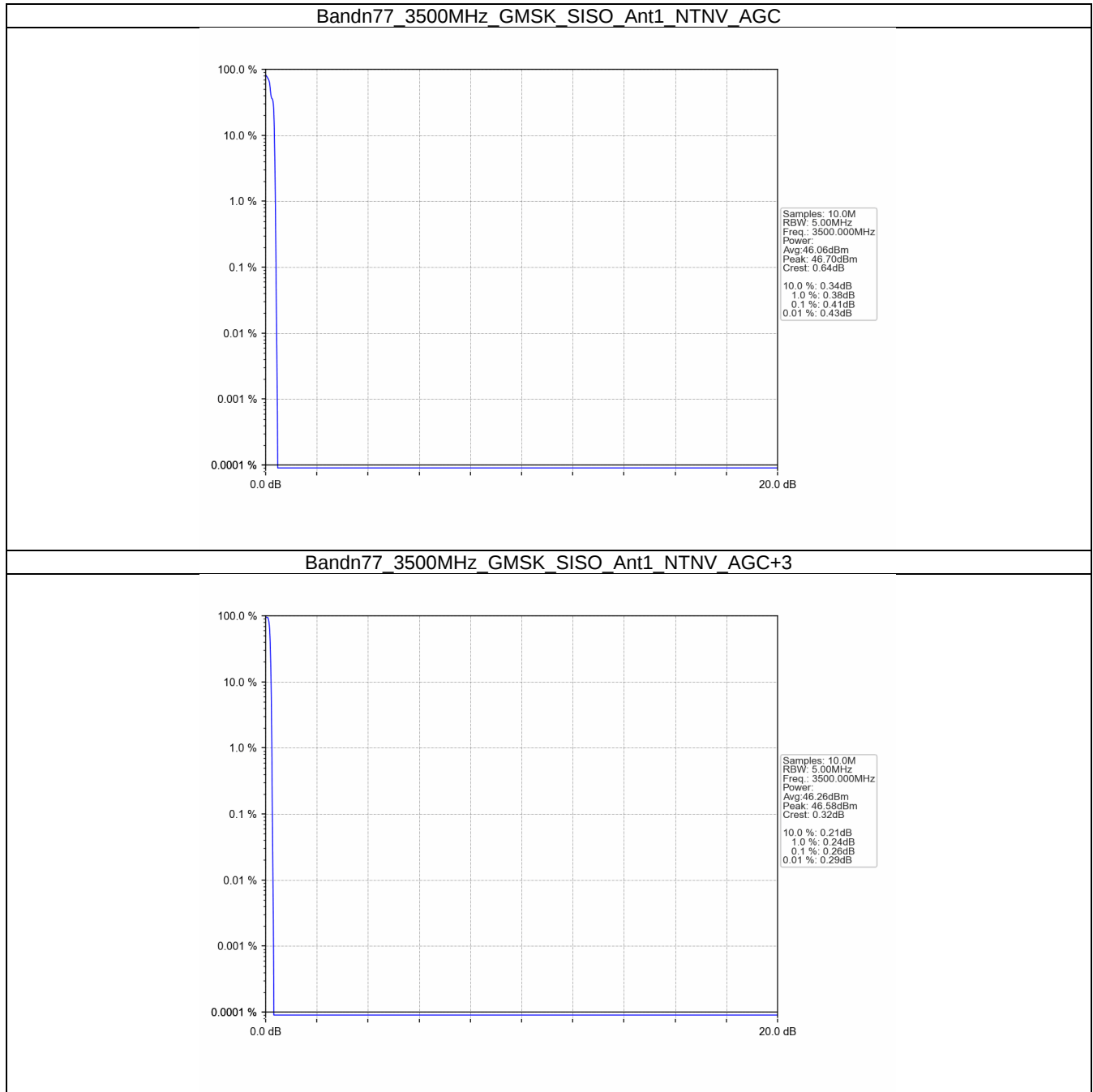
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



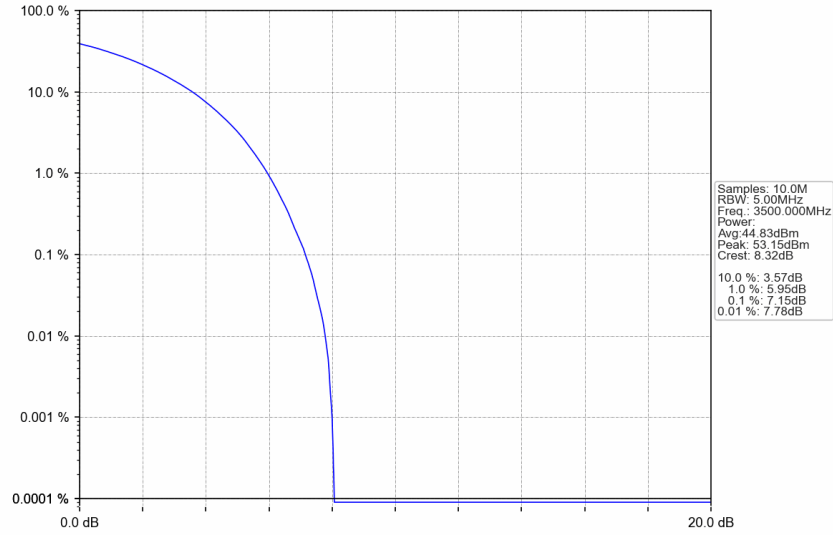
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



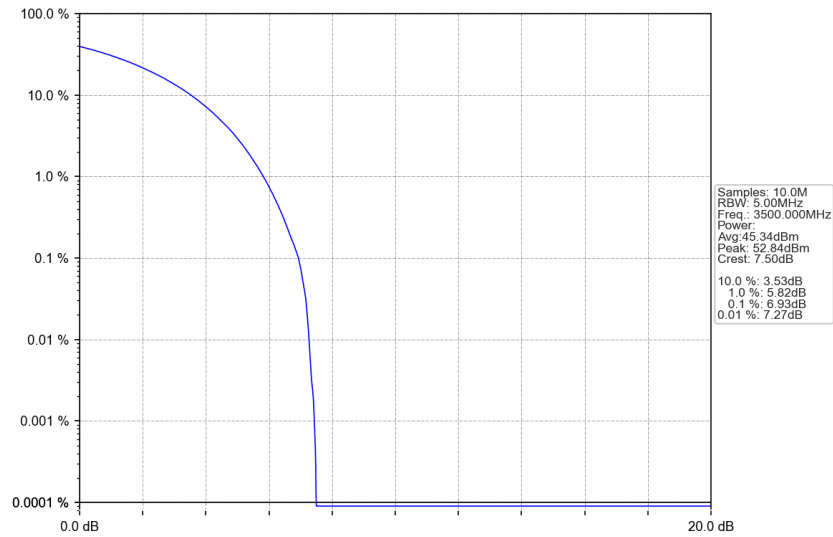
4.2.2 Bandn77_PAPR



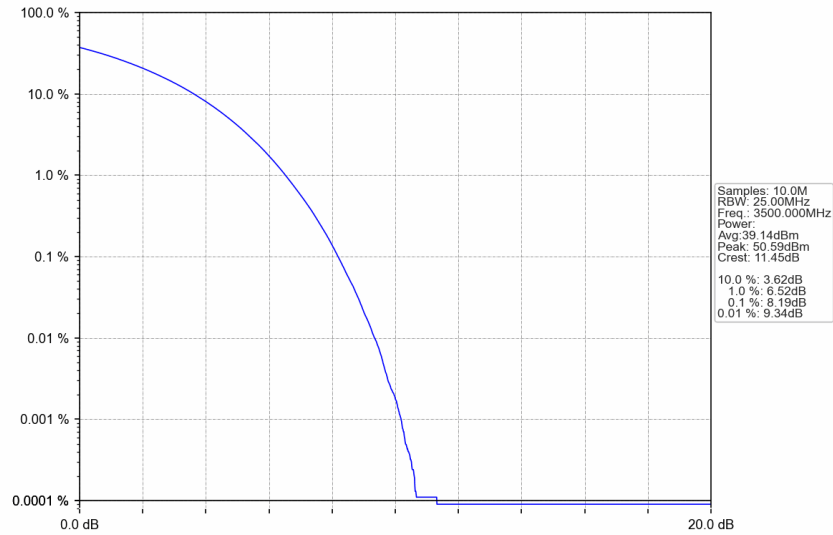
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_AGC



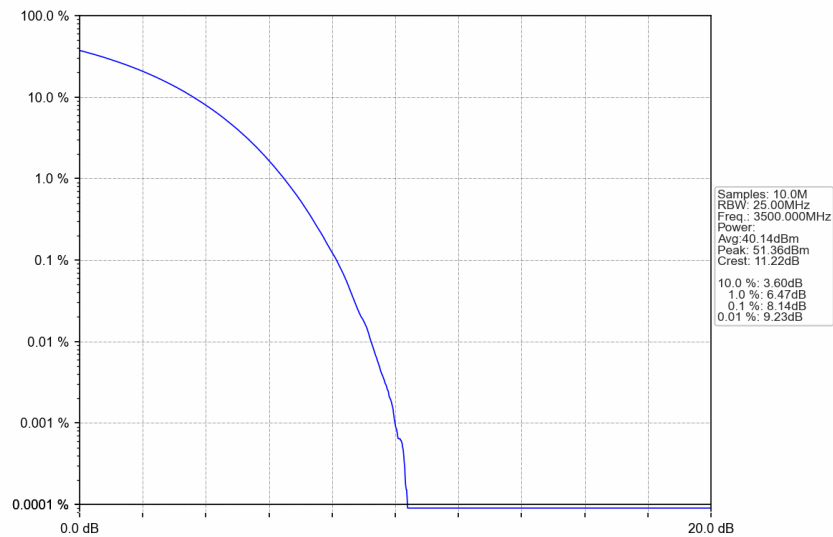
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV_AGC+3



Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



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

5.1 Test Result

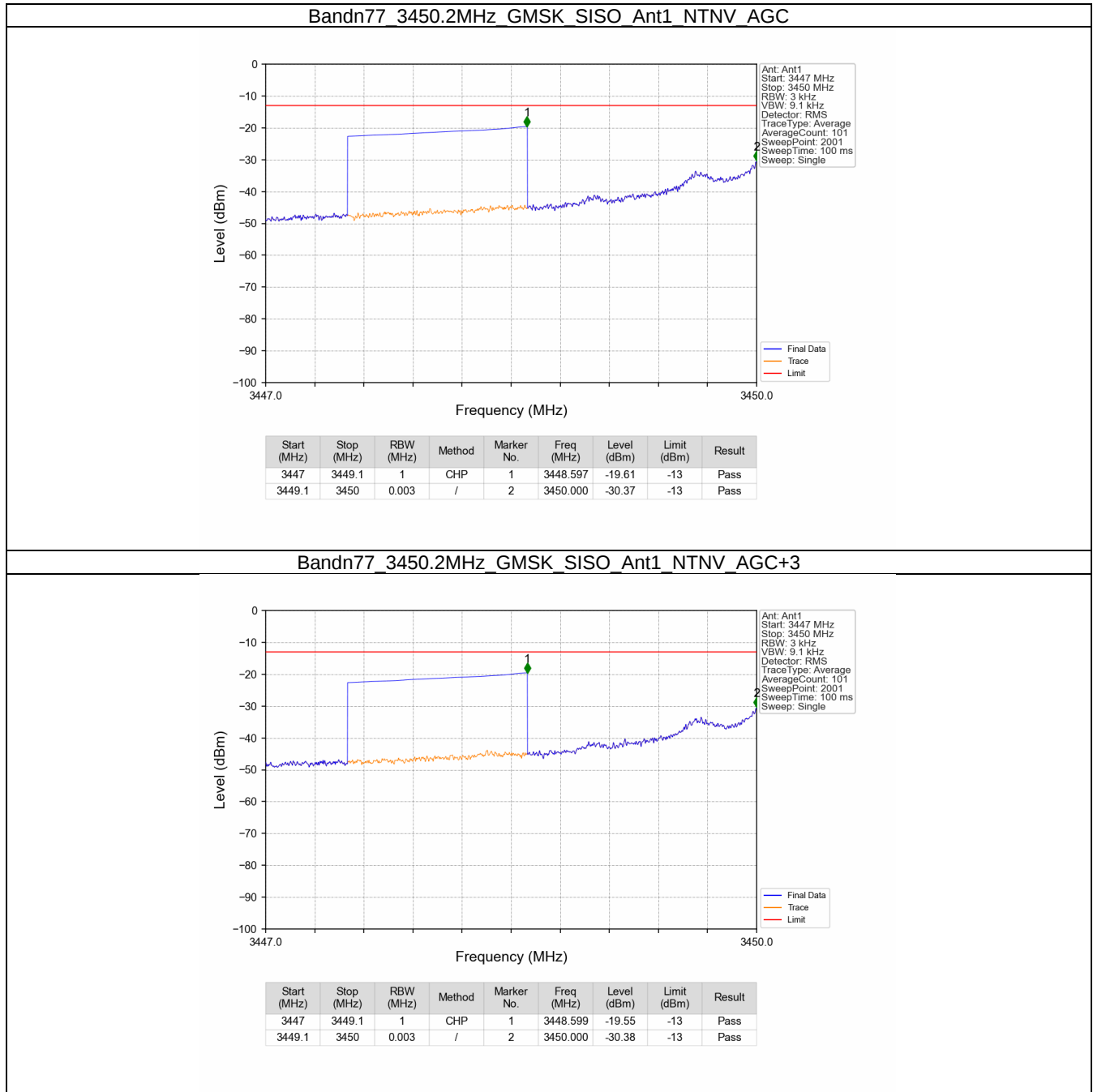
5.1.1 Bandn77

Band: n77 / NTNV									
Signal				Channel	TX Type	ANT	OOB (dBm)		Verdict
Input	Type	Level (dBm)	Frequency (MHz)				Result	Limit	
Two	GMSK 0.2MHz	0	3450.2	LCH	SISO	1	-19.61	Refer To Test Graph	Pass
		3	3450.2	LCH	SISO	1	-19.55	Refer To Test Graph	Pass
One	GMSK 0.2MHz	0	3450.2	LCH	SISO	1	-19.06	Refer To Test Graph	Pass
		3	3450.2	LCH	SISO	1	-18.87	Refer To Test Graph	Pass
Two	GMSK 0.2MHz	0	3549.8	HCH	SISO	1	-18.94	Refer To Test Graph	Pass
		3	3549.8	HCH	SISO	1	-18.14	Refer To Test Graph	Pass
One	GMSK 0.2MHz	0	3549.8	HCH	SISO	1	-18.87	Refer To Test Graph	Pass
		3	3549.8	HCH	SISO	1	-18.23	Refer To Test Graph	Pass
Two	AWGN 5MHz	0	3452.5	LCH	SISO	1	-17.99	Refer To Test Graph	Pass
		3	3452.5	LCH	SISO	1	-17.31	Refer To Test Graph	Pass
One	AWGN 5MHz	0	3452.5	LCH	SISO	1	-17.64	Refer To Test Graph	Pass
		3	3452.5	LCH	SISO	1	-17.40	Refer To Test Graph	Pass
Two	AWGN 5MHz	0	3547.5	HCH	SISO	1	-17.79	Refer To Test Graph	Pass
		3	3547.5	HCH	SISO	1	-16.89	Refer To Test Graph	Pass
One	AWGN 5MHz	0	3547.5	HCH	SISO	1	-17.48	Refer To Test Graph	Pass
		3	3547.5	HCH	SISO	1	-17.02	Refer To Test Graph	Pass
Two	AWGN 100MHz	0	3500	LCH	SISO	1	-22.69	Refer To Test Graph	Pass
		3	3500	LCH	SISO	1	-21.21	Refer To Test Graph	Pass
One	AWGN 100MHz	0	3500	LCH	SISO	1	-21.29	Refer To Test Graph	Pass
		3	3500	LCH	SISO	1	-21.06	Refer To Test Graph	Pass

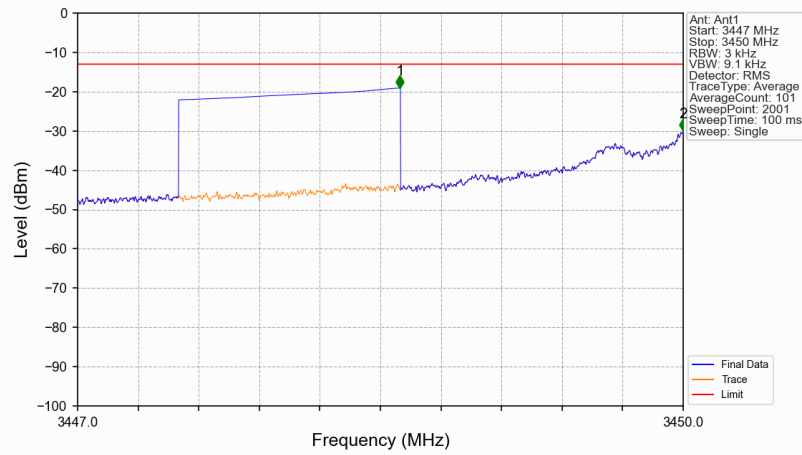
Note: According to ANSI C63.26:2015 section 5.2.5.3: For MIMO mode, Conducted Band Edge and Conducted Spurious Emission are tested on a single output port and then adjusted according to $10 \cdot \lg(N_{\text{ANT}})$ rule. MIMO $2 \times 2 = \text{SISO} + 3.01\text{dB}$. (The worst mode is Ant1, all test results have a margin of at least 3.01dB from the limit values within the corresponding test range, so the test result is pass.)

5.2 Test Graph

5.2.1 Bandn77

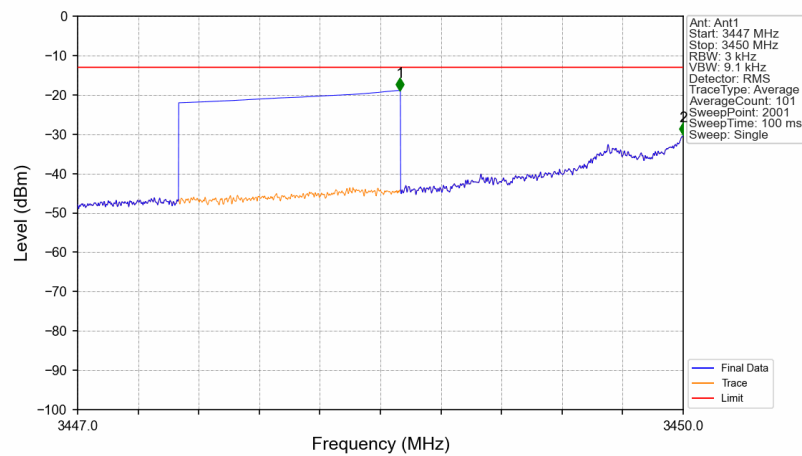


Bandn77_3450.2MHz_GMSK_SISO_Ant1_NTNV_AGC



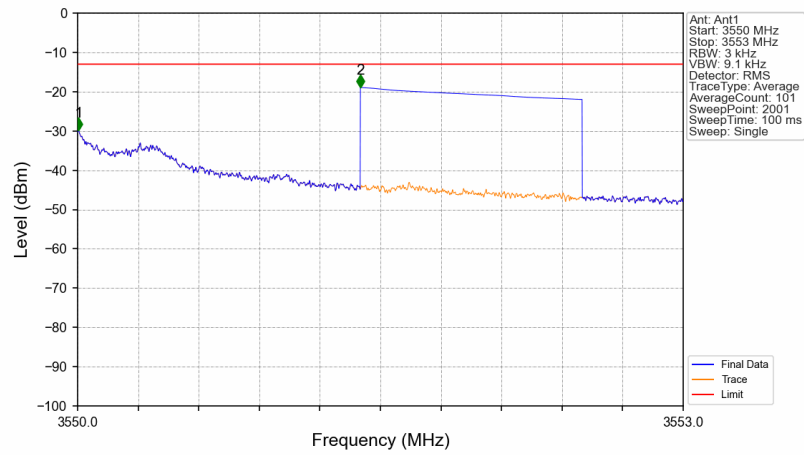
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449.1	1	CHP	1	3448.597	-19.06	-13	Pass
3449.1	3450	0.003	/	2	3450.000	-29.99	-13	Pass

Bandn77_3450.2MHz_GMSK_SISO_Ant1_NTNV_AGC+3



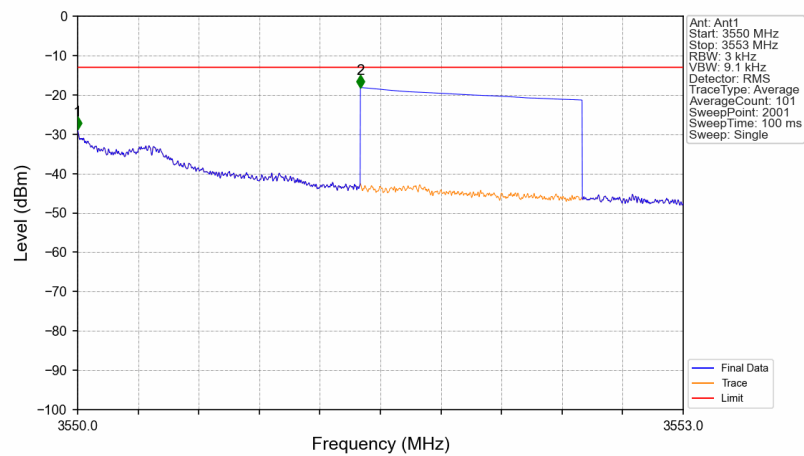
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449.1	1	CHP	1	3448.597	-18.87	-13	Pass
3449.1	3450	0.003	/	2	3450.000	-30.16	-13	Pass

Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV_AGC



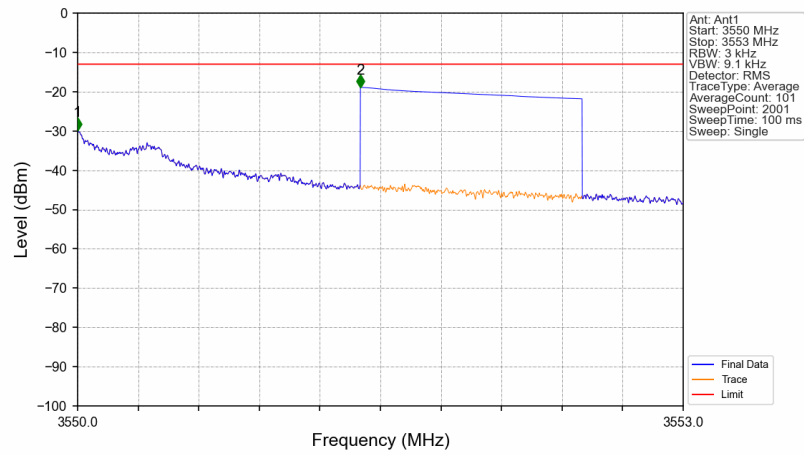
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3550.9	0.003	/	1	3550.005	-29.74	-13	Pass
3550.9	3553	1	CHP	2	3551.401	-18.94	-13	Pass

Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV_AGC+3



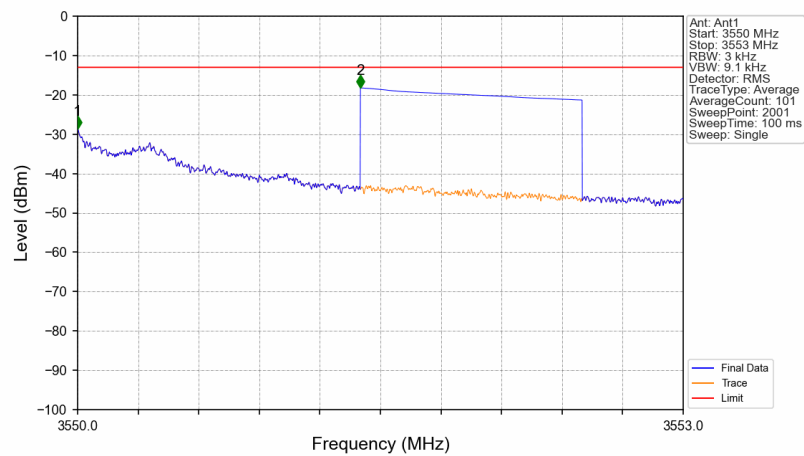
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3550.9	0.003	/	1	3550.000	-28.69	-13	Pass
3550.9	3553	1	CHP	2	3551.401	-18.14	-13	Pass

Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV_AGC



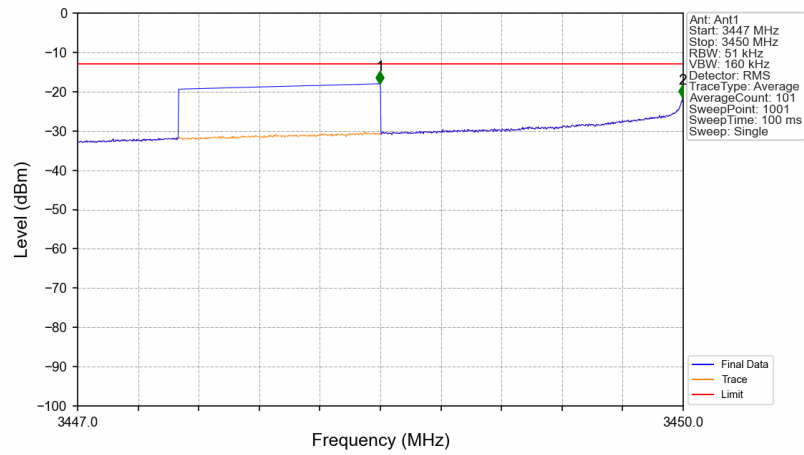
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3550.9	0.003	/	1	3550.000	-29.73	-13	Pass
3550.9	3553	1	CHP	2	3551.401	-18.87	-13	Pass

Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV_AGC+3



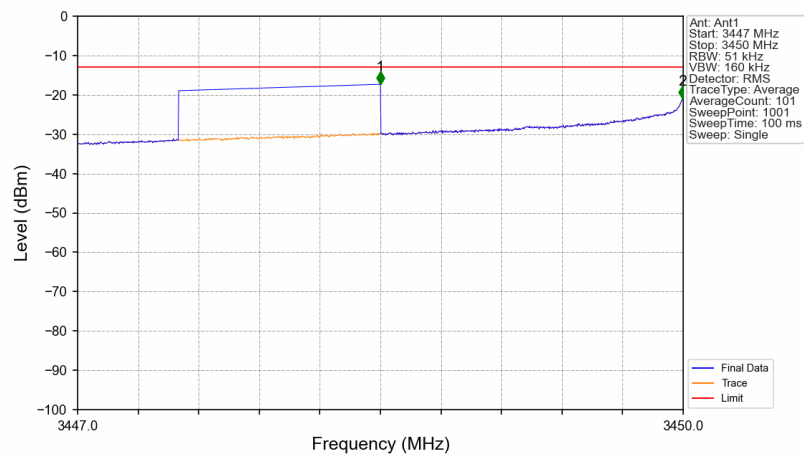
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3550.9	0.003	/	1	3550.000	-28.58	-13	Pass
3550.9	3553	1	CHP	2	3551.401	-18.23	-13	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV_AGC



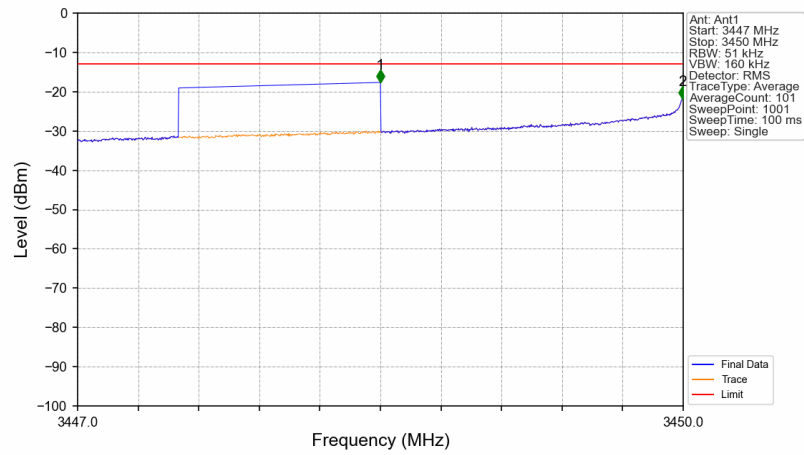
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.497	-17.99	-13	Pass
3449	3450	0.051	/	2	3449.997	-21.49	-13	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



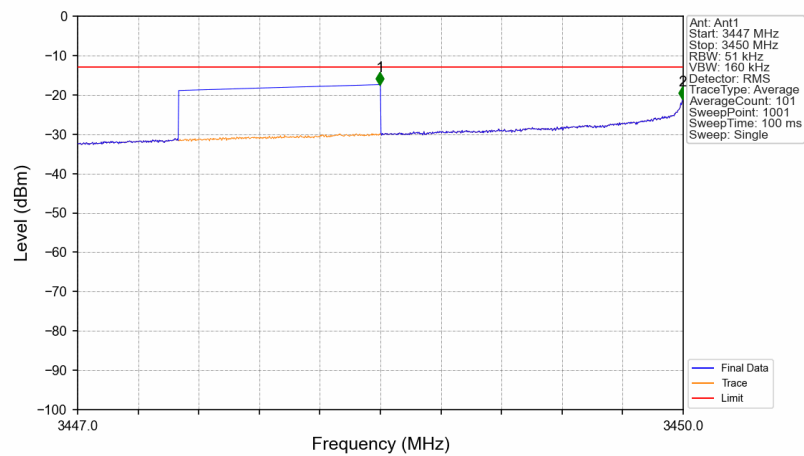
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.500	-17.31	-13	Pass
3449	3450	0.051	/	2	3449.997	-20.87	-13	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV_AGC



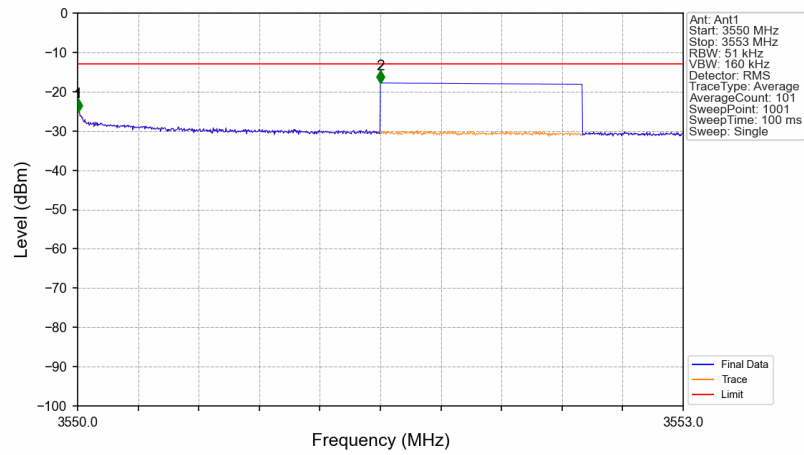
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.500	-17.64	-13	Pass
3449	3450	0.051	/	2	3449.997	-21.87	-13	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



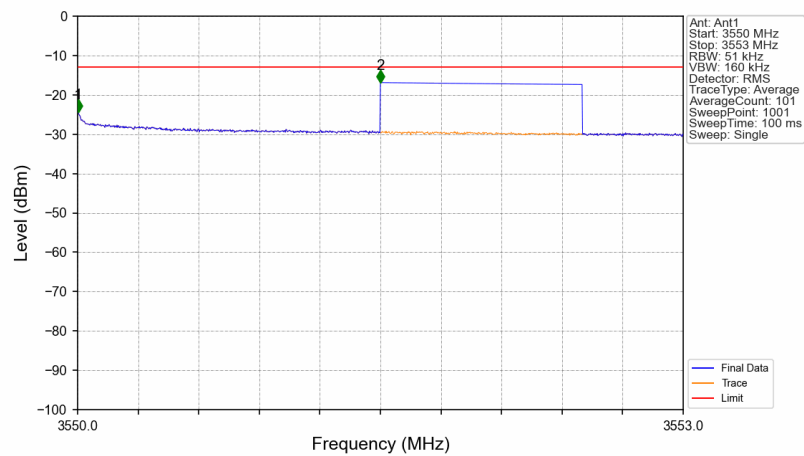
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.497	-17.40	-13	Pass
3449	3450	0.051	/	2	3449.997	-21.14	-13	Pass

Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV_AGC



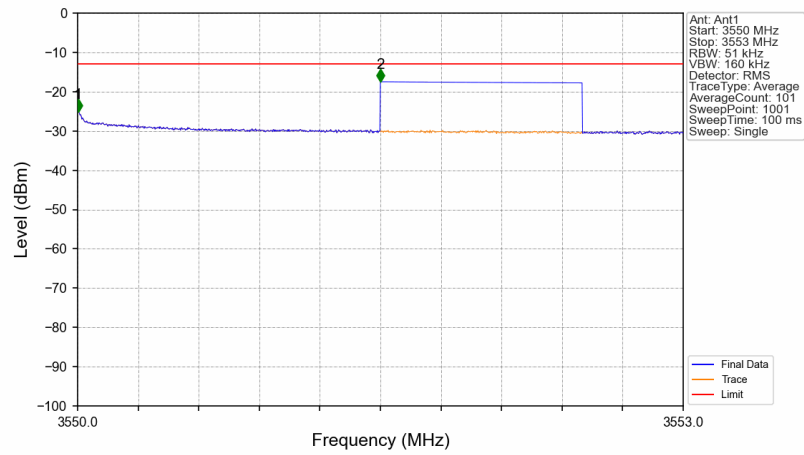
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.051	/	1	3550.003	-24.99	-13	Pass
3551	3553	1	CHP	2	3551.500	-17.79	-13	Pass

Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



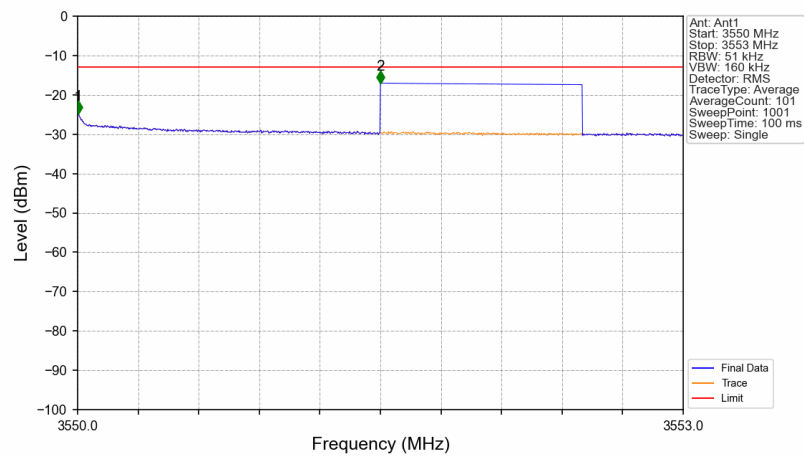
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.051	/	1	3550.003	-24.36	-13	Pass
3551	3553	1	CHP	2	3551.500	-16.89	-13	Pass

Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV_AGC



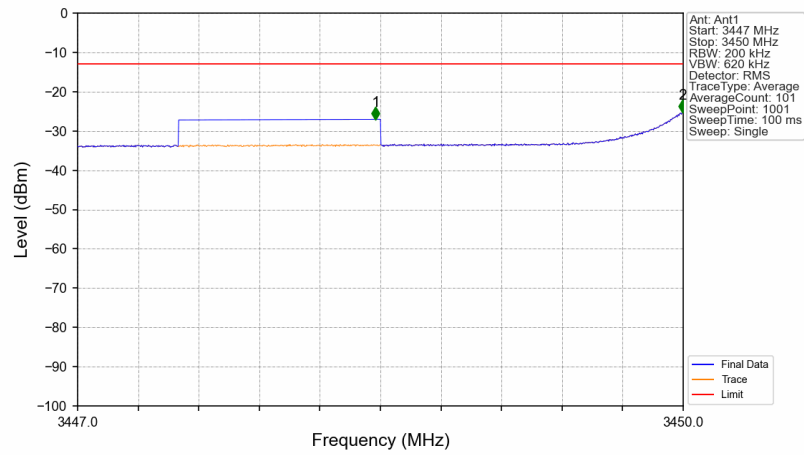
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.051	/	1	3550.003	-25.11	-13	Pass
3551	3553	1	CHP	2	3551.500	-17.48	-13	Pass

Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



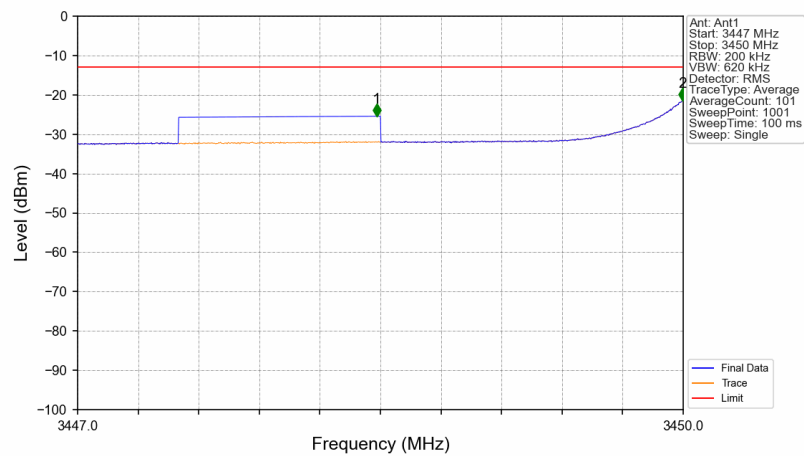
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.051	/	1	3550.003	-24.71	-13	Pass
3551	3553	1	CHP	2	3551.500	-17.02	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



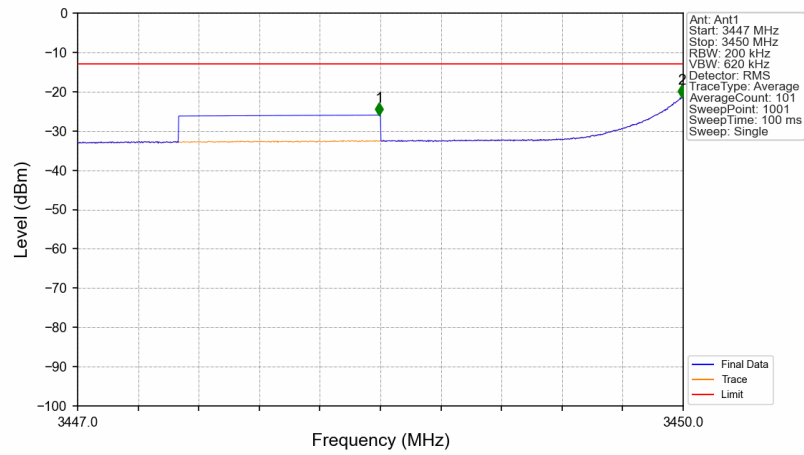
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.476	-27.03	-13	Pass
3449	3450	0.2	/	2	3449.997	-25.25	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



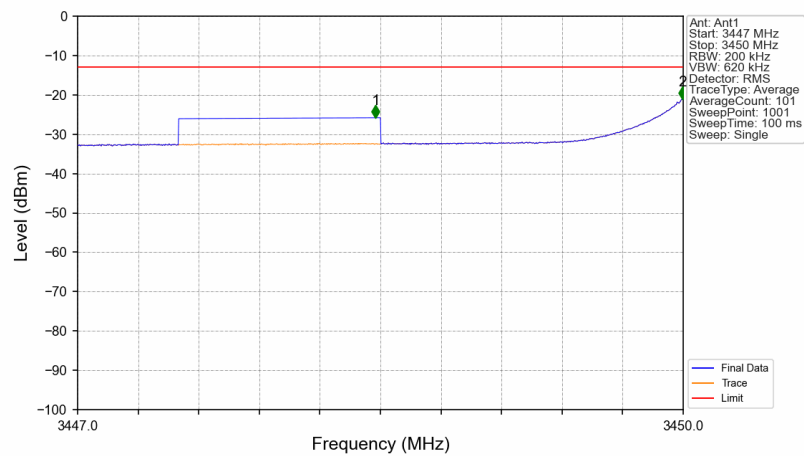
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.482	-25.43	-13	Pass
3449	3450	0.2	/	2	3449.997	-21.40	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



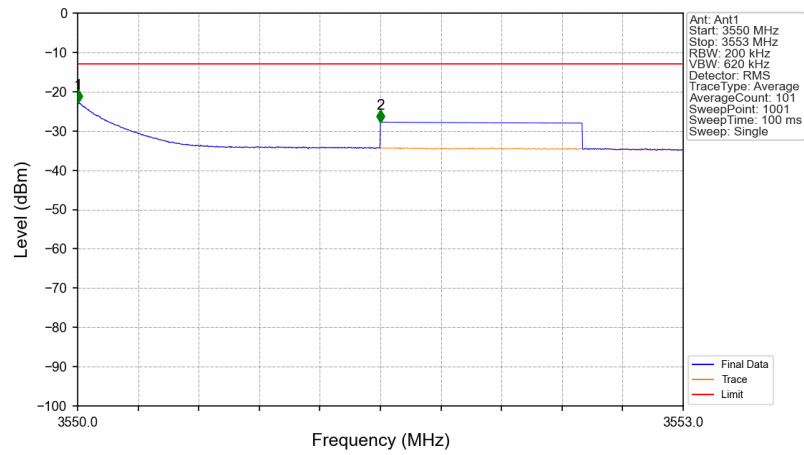
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.494	-25.96	-13	Pass
3449	3450	0.2	/	2	3449.994	-21.44	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



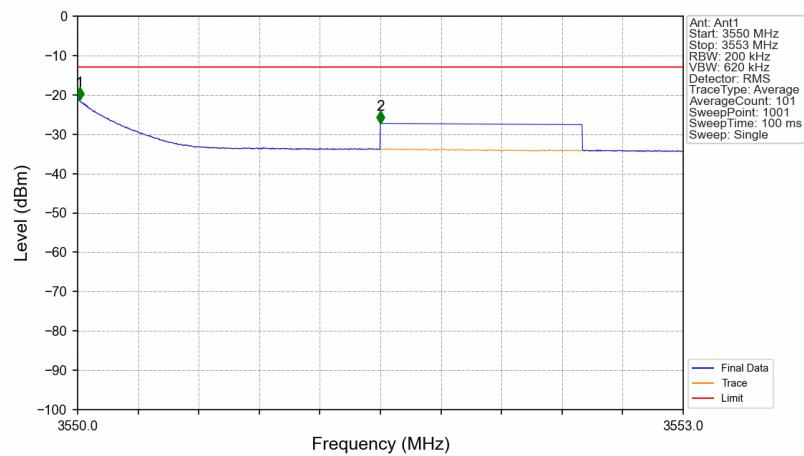
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3447	3449	1	CHP	1	3448.476	-25.82	-13	Pass
3449	3450	0.2	/	2	3449.997	-21.16	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



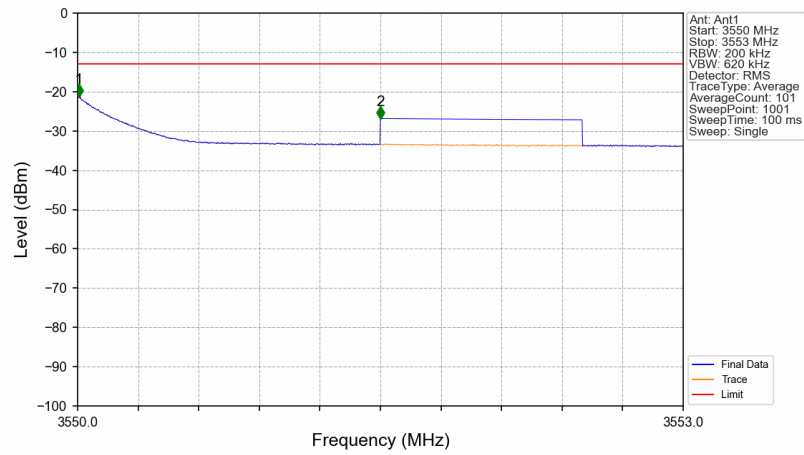
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.2	/	1	3550.003	-22.69	-13	Pass
3551	3553	1	CHP	2	3551.500	-27.76	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



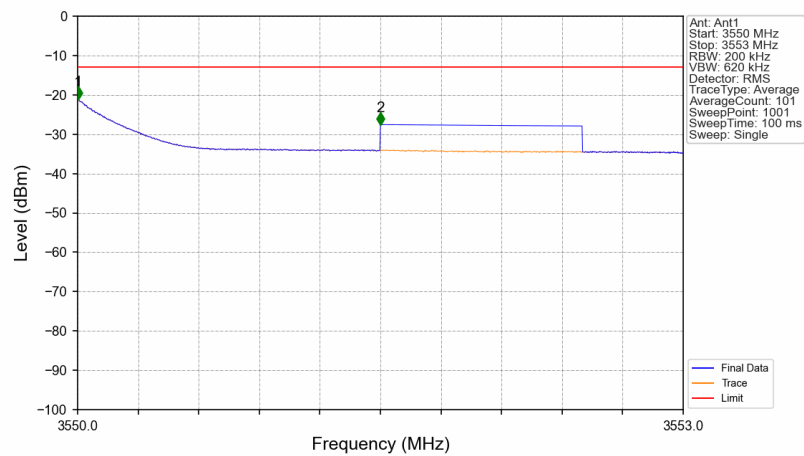
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.2	/	1	3550.009	-21.21	-13	Pass
3551	3553	1	CHP	2	3551.500	-27.25	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.2	/	1	3550.006	-21.29	-13	Pass
3551	3553	1	CHP	2	3551.500	-26.85	-13	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV_AGC+3



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
3550	3551	0.2	/	1	3550.003	-21.06	-13	Pass
3551	3553	1	CHP	2	3551.500	-27.57	-13	Pass



6. Spurious emissions

6.1 Test Result

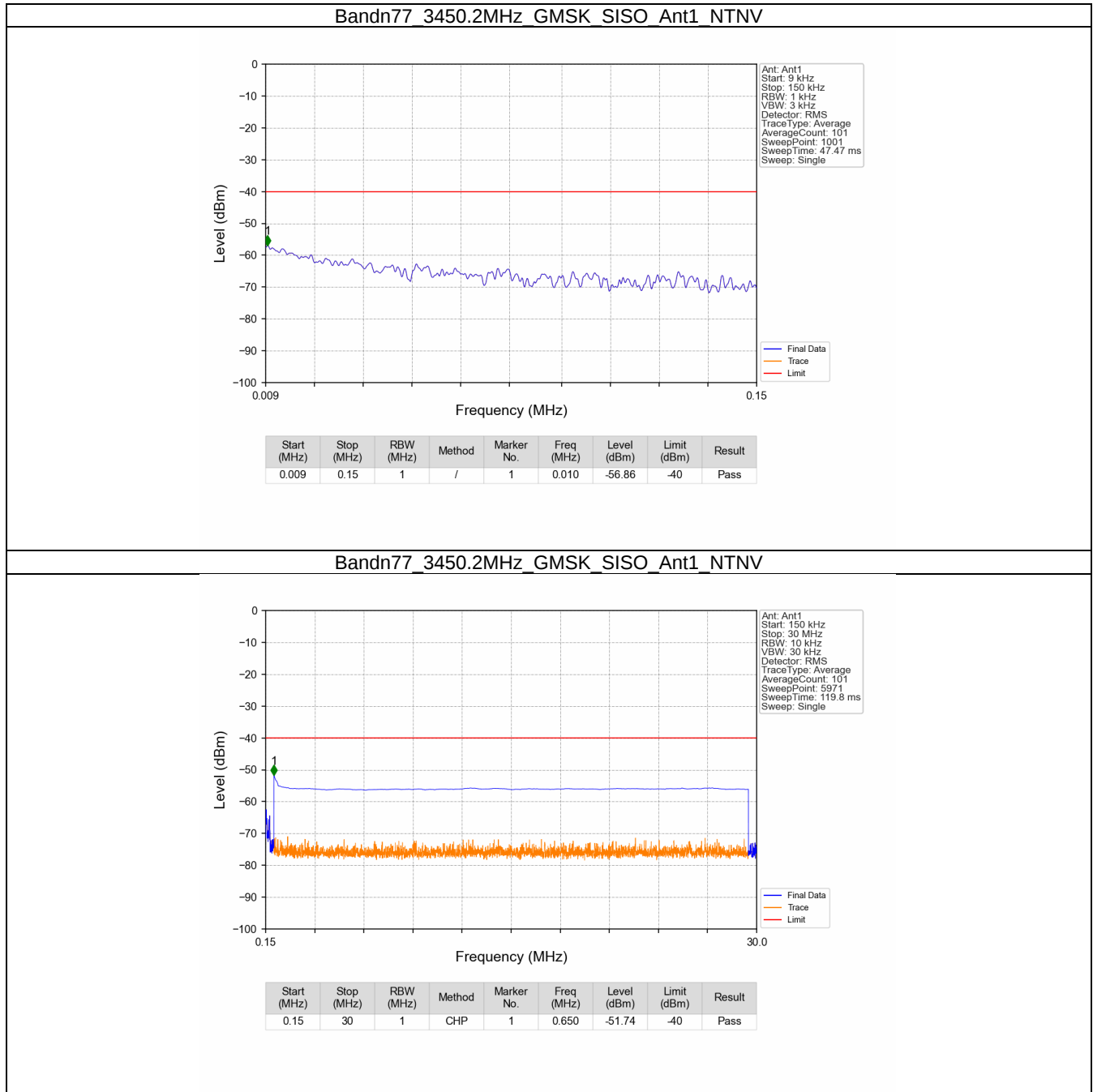
6.1.1 Bandn77

Band: n77 / NTNV								
Signal			Channel	TX Type	ANT	SE (dBm)		Verdict
Type	Level (dBm)	Frequency (MHz)				Result	Limit	
GMSK 0.2MHz	0	3450.2	LCH	SISO	1	Refer To Test Graph		Pass
		3500	MCH	SISO	1	Refer To Test Graph		Pass
		3549.8	HCH	SISO	1	Refer To Test Graph		Pass
AWGN 5MHz	0	3452.5	LCH	SISO	1	Refer To Test Graph		Pass
		3500	MCH	SISO	1	Refer To Test Graph		Pass
		3547.5	HCH	SISO	1	Refer To Test Graph		Pass
AWGN 100MHz	0	3500	LCH	SISO	1	Refer To Test Graph		Pass

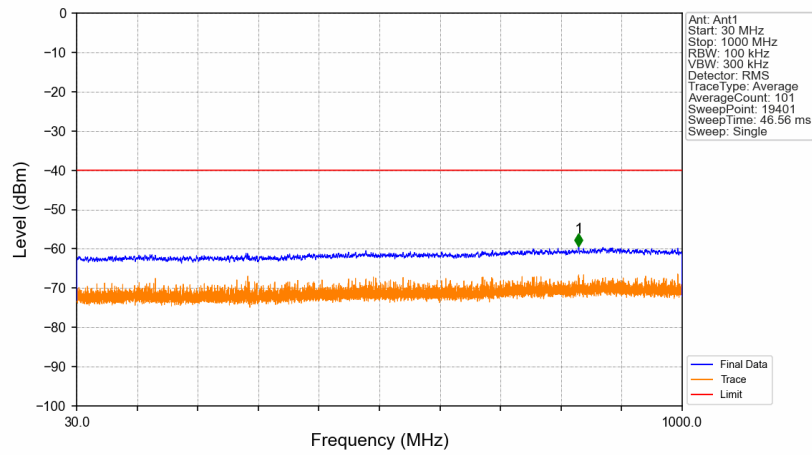
Note: According to ANSI C63.26:2015 section 5.2.5.3: For MIMO mode, Conducted Band Edge and Conducted Spurious Emission are tested on a single output port and then adjusted according to $10 \cdot \lg(N_{\text{ANT}})$ rule. MIMO $2 \times 2 = \text{SISO} + 3.01\text{dB}$. (The worst mode is Ant1, all test results have a margin of at least 3.01dB from the limit values within the corresponding test range, so the test result is pass.)

6.2 Test Graph

6.2.1 Bandn77

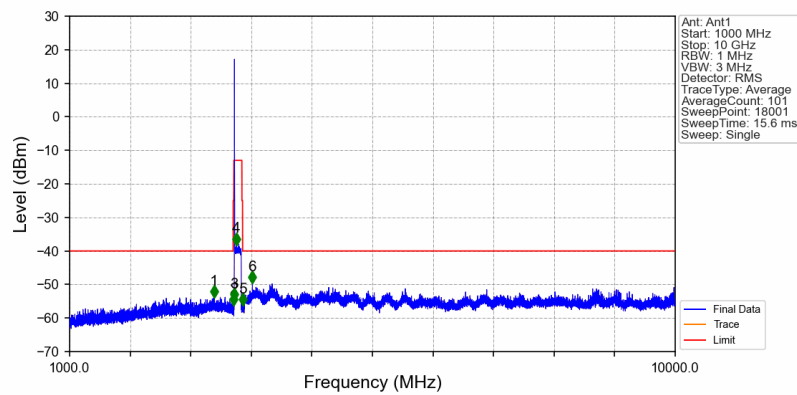


Bandn77_3450.2MHz_GMSK_SISO_Ant1_NTNV



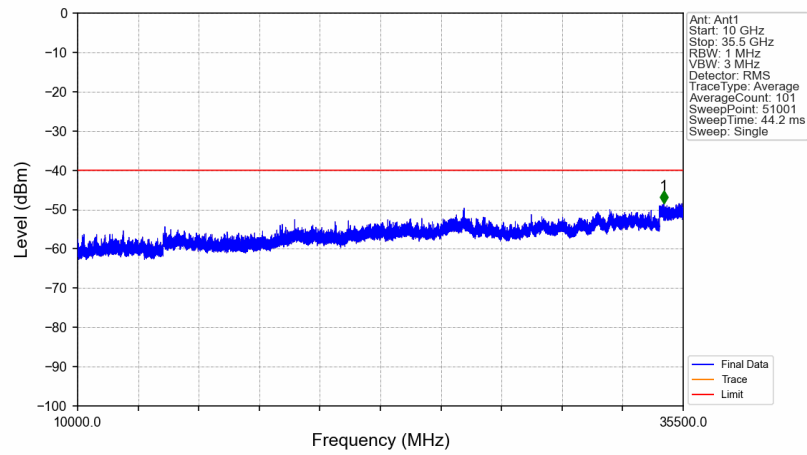
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	833.950	-59.40	-40	Pass

Bandn77_3450.2MHz_GMSK_SISO_Ant1_NTNV



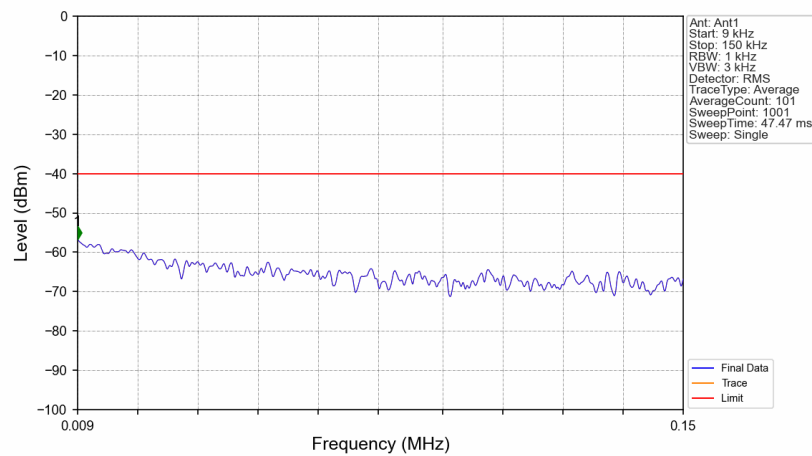
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3430	1	/	1	3147.000	-53.70	-40	Pass
3430	3440	1	/	2	3436.500	-56.08	-25	Pass
3440	3449.1	1	/	3	3444.000	-54.59	-13	Pass
3449.1	3456.3	1	/	/	/	/	/	/
3456.3	3560	1	/	4	3479.000	-37.99	-13	Pass
3560	3570	1	/	5	3569.500	-55.97	-25	Pass
3570	10000	1	/	6	3718.000	-49.40	-40	Pass

Bandn77_3450.2MHz_GMSK_SISO_Ant1_NTNV



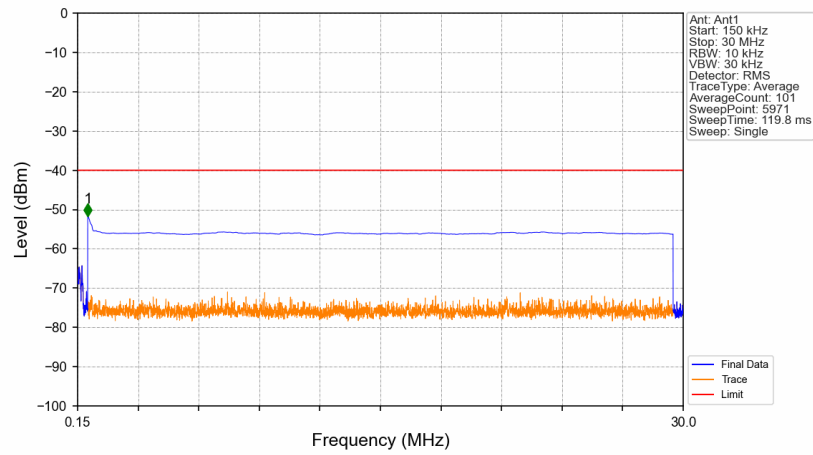
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	34683.000	-48.38	-40	Pass

Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV



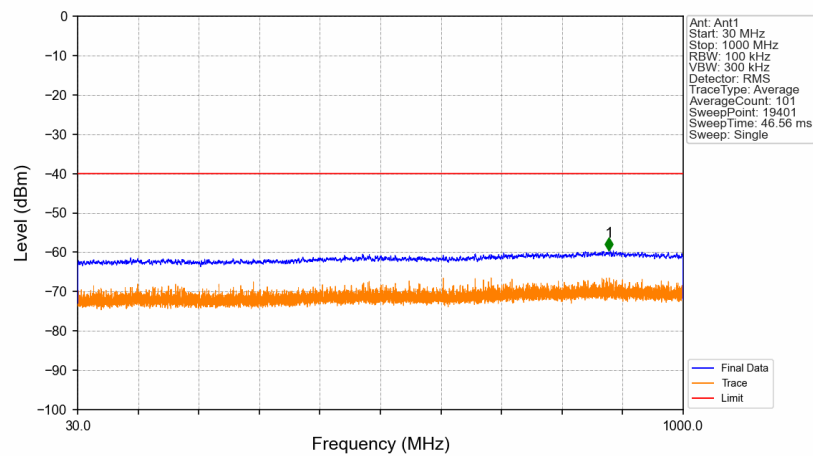
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.009	-56.55	-40	Pass

Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV



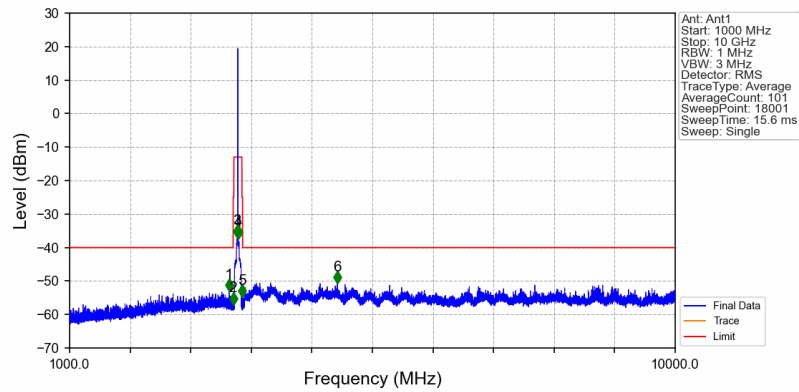
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.15	30	1	CHP	1	0.650	-51.65	-40	Pass

Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV



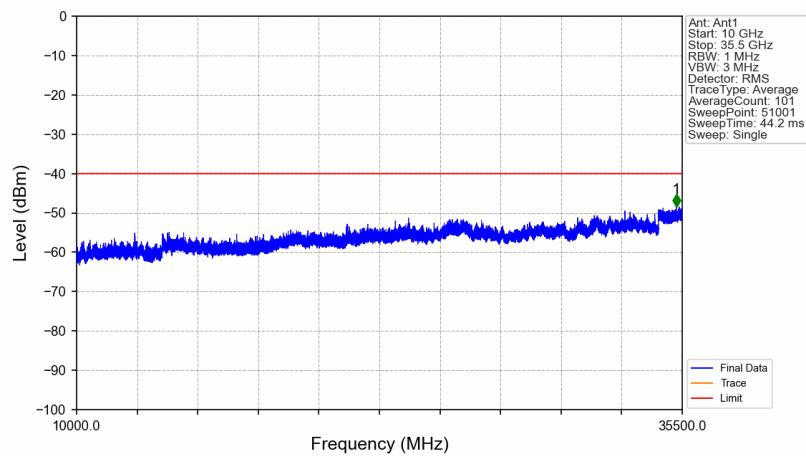
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	881.200	-59.57	-40	Pass

Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV



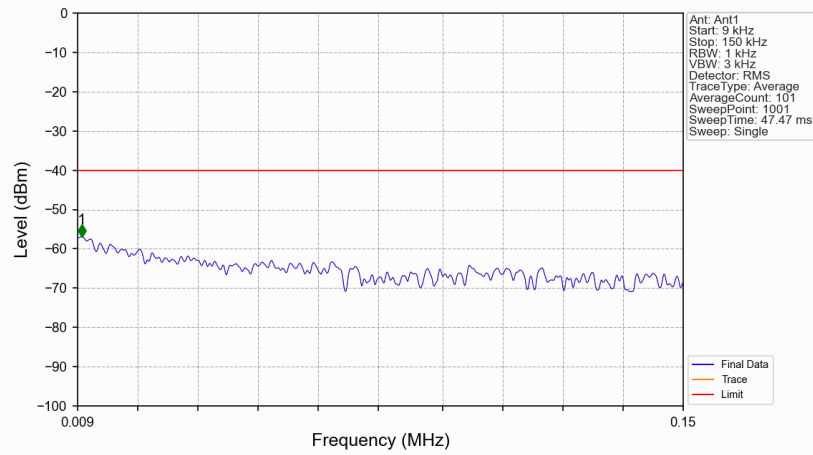
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3430	1	/	1	3370.000	-52.83	-40	Pass
3430	3440	1	/	2	3431.000	-56.75	-25	Pass
3440	3498.9	1	/	3	3492.500	-36.65	-13	Pass
3498.9	3506.1	1	/	/	/	/	/	/
3506.1	3560	1	/	4	3506.500	-37.05	-13	Pass
3560	3570	1	/	5	3561.000	-54.49	-25	Pass
3570	10000	1	/	6	4979.500	-50.48	-40	Pass

Bandn77_3500MHz_GMSK_SISO_Ant1_NTNV

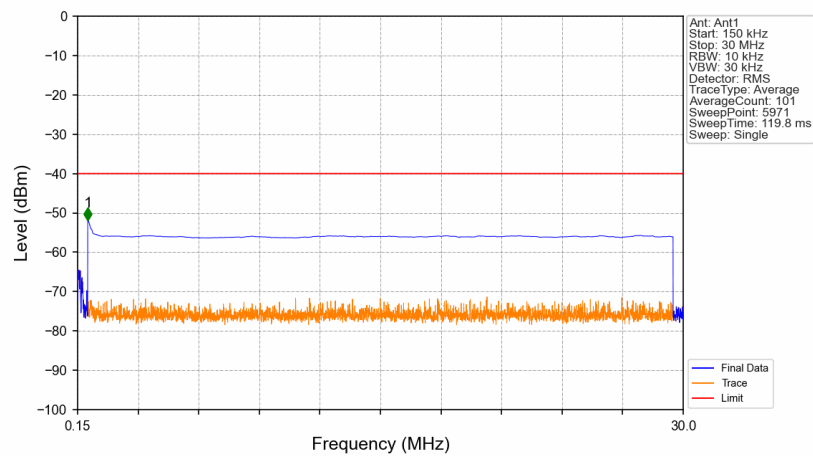


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	35251.500	-48.34	-40	Pass

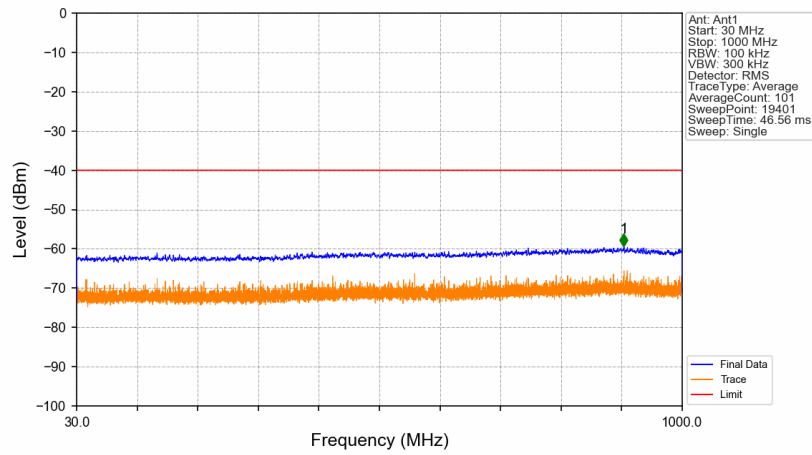
Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV



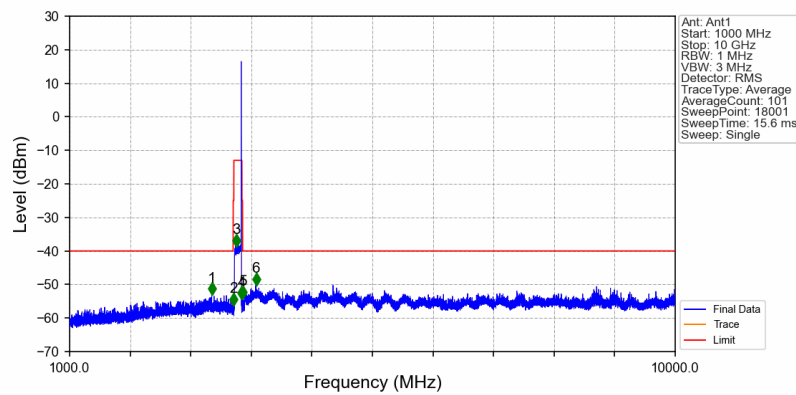
Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV



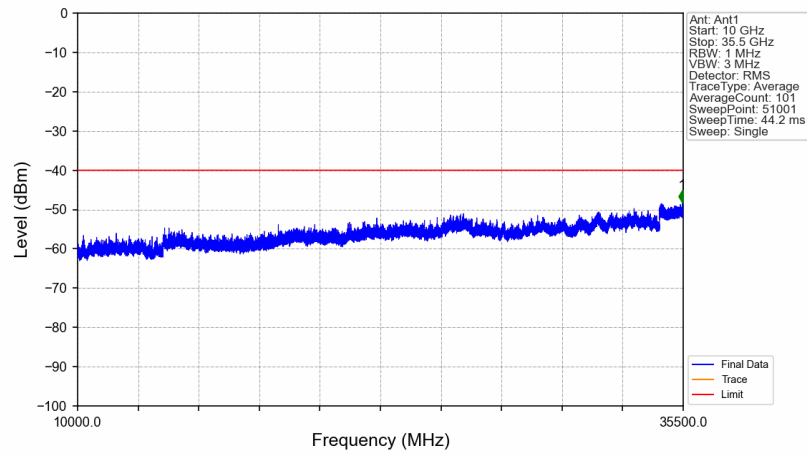
Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV



Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV

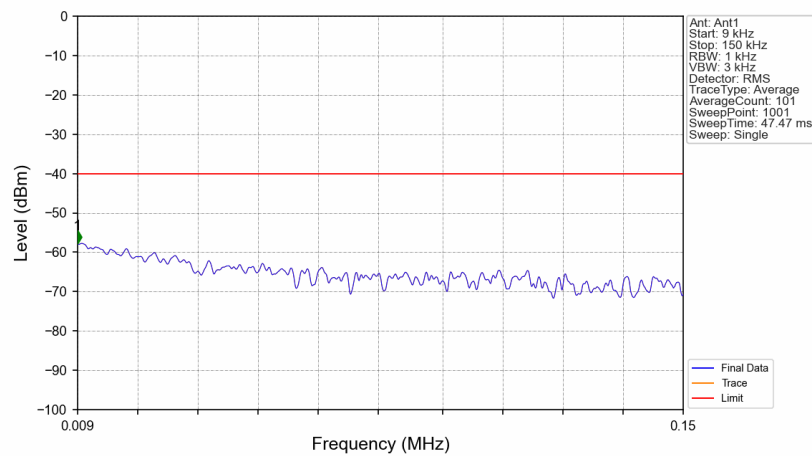


Bandn77_3549.8MHz_GMSK_SISO_Ant1_NTNV



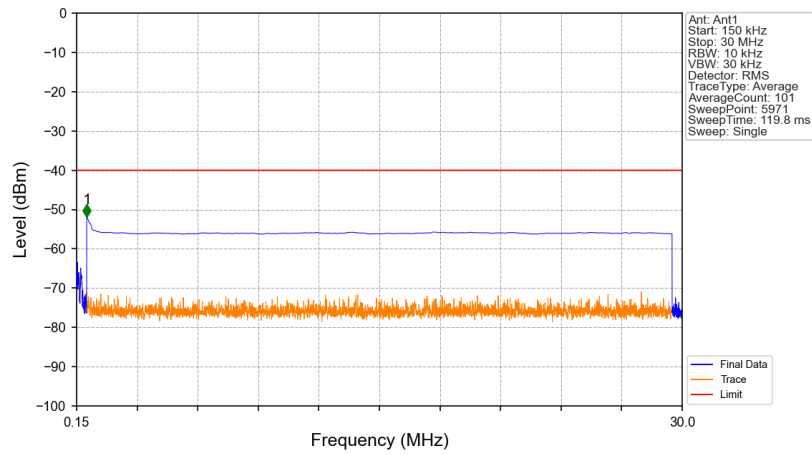
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	35464.500	-48.27	-40	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV



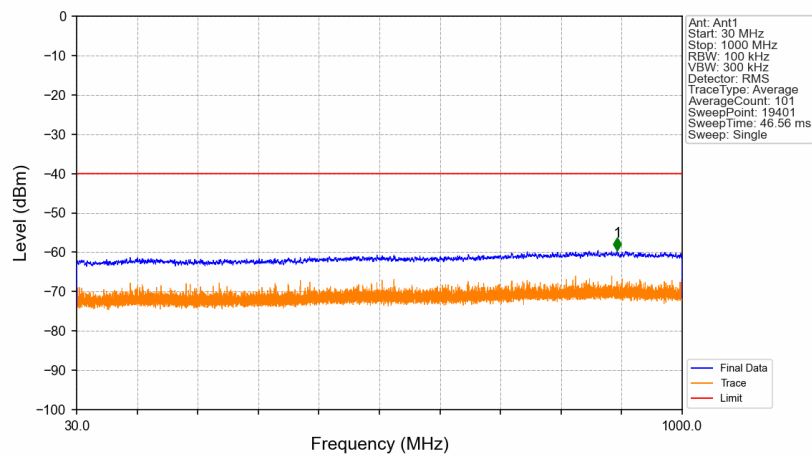
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.009	-57.62	-40	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV



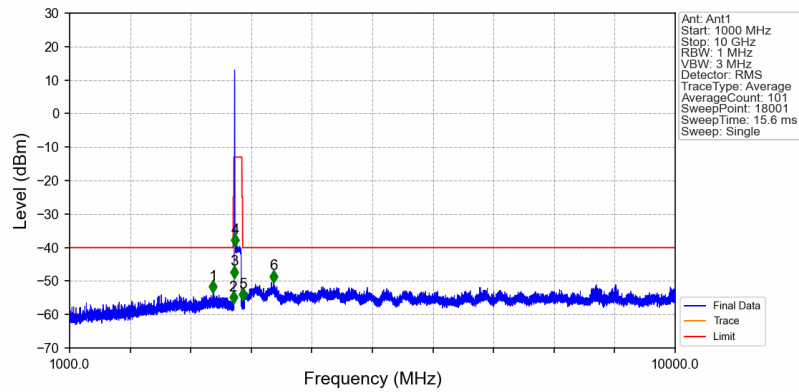
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.15	30	1	CHP	1	0.650	-51.85	-40	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV



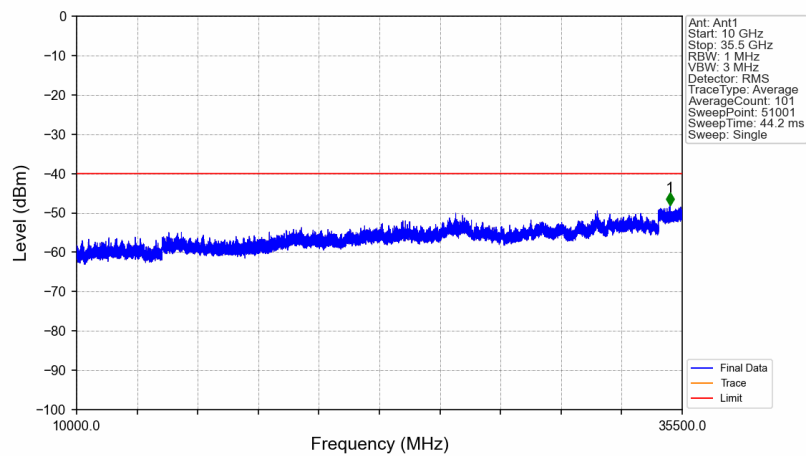
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	895.850	-59.45	-40	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV



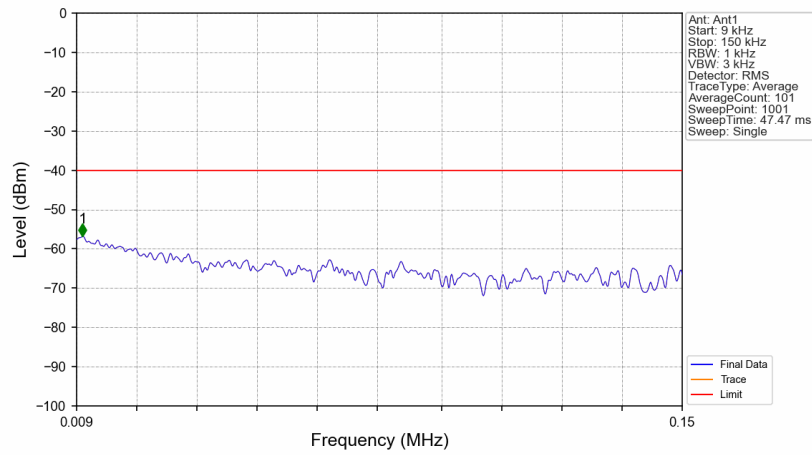
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3430	1	/	1	3132.000	-53.17	-40	Pass
3430	3440	1	/	2	3432.500	-56.39	-25	Pass
3440	3449	1	/	3	3443.500	-48.84	-13	Pass
3449	3461	1	/	/	/	/	/	/
3461	3560	1	/	4	3461.500	-39.33	-13	Pass
3560	3570	1	/	5	3570.000	-55.59	-25	Pass
3570	10000	1	/	6	4030.000	-50.11	-40	Pass

Bandn77_3452.5MHz_AWGN_SISO_Ant1_NTNV

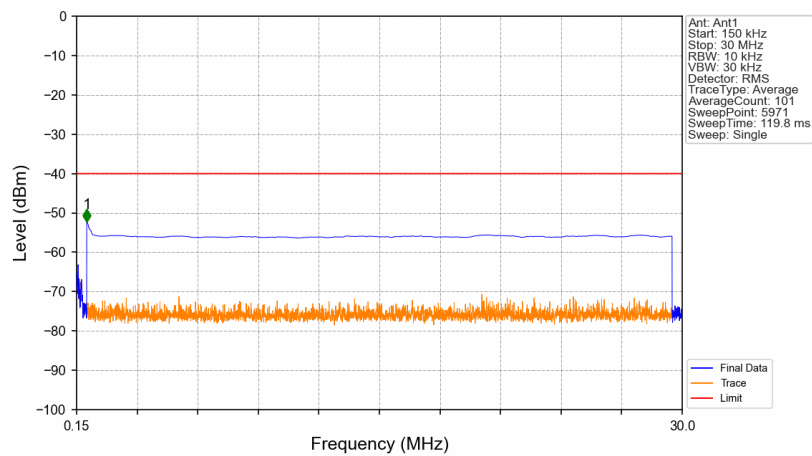


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	34987.500	-48.08	-40	Pass

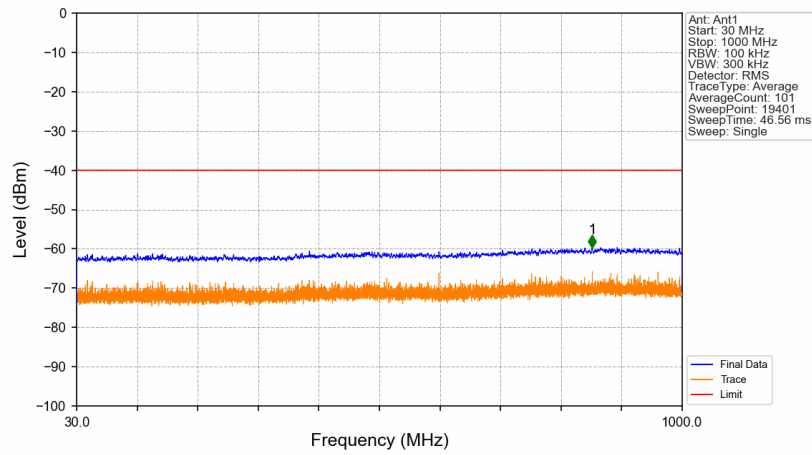
Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV



Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV

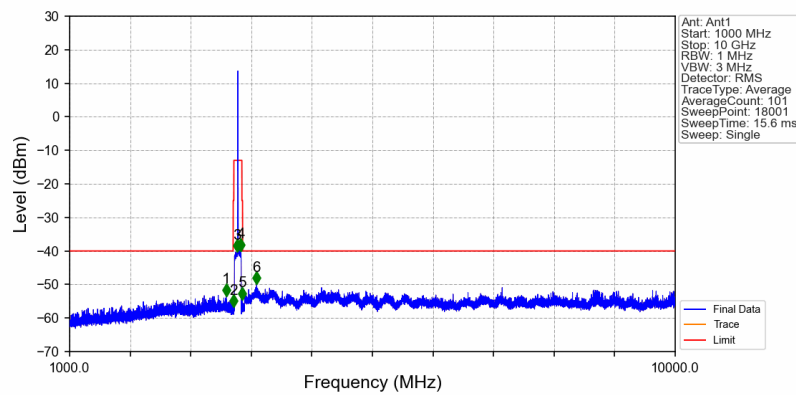


Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV



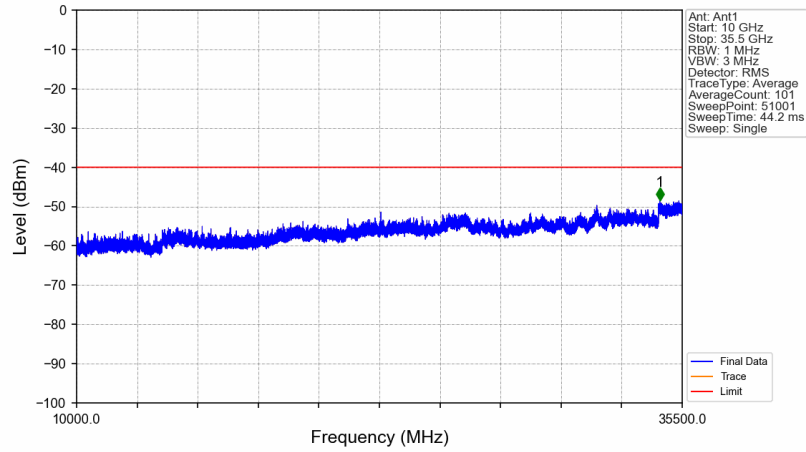
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	855.650	-59.60	-40	Pass

Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV



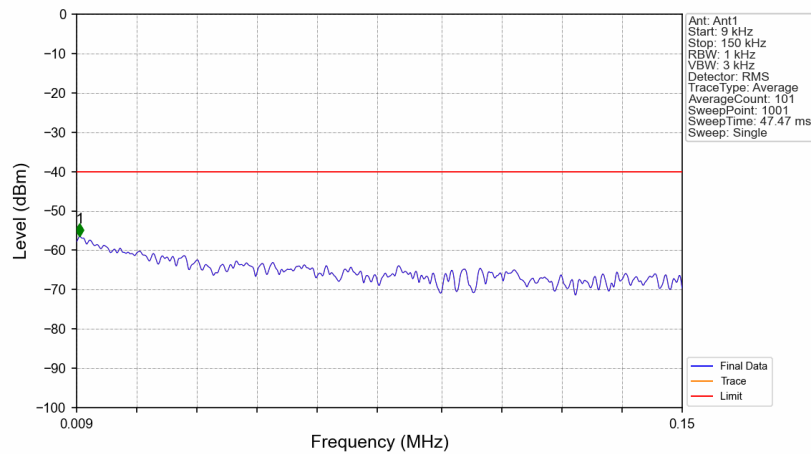
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3430	1	/	1	3326.500	-53.12	-40	Pass
3430	3440	1	/	2	3435.500	-56.50	-25	Pass
3440	3496.5	1	/	3	3491.000	-39.96	-13	Pass
3496.5	3508.5	1	/	/	/	/	/	/
3508.5	3560	1	/	4	3547.500	-39.68	-13	Pass
3560	3570	1	/	5	3564.000	-54.19	-25	Pass
3570	10000	1	/	6	3779.000	-49.55	-40	Pass

Bandn77_3500MHz_AWGN_SISO_Ant1_NTNV



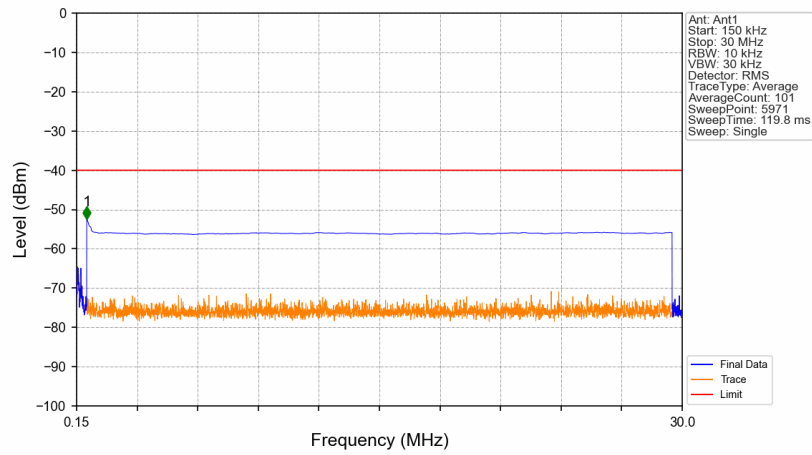
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	34559.500	-48.31	-40	Pass

Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV

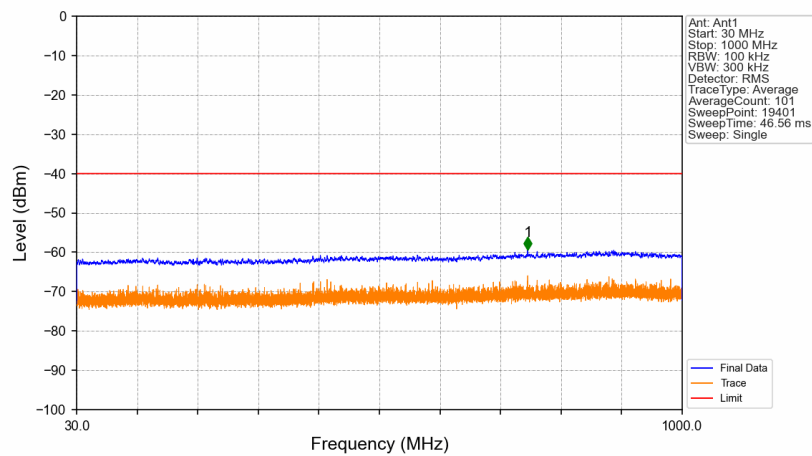


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.010	-56.45	-40	Pass

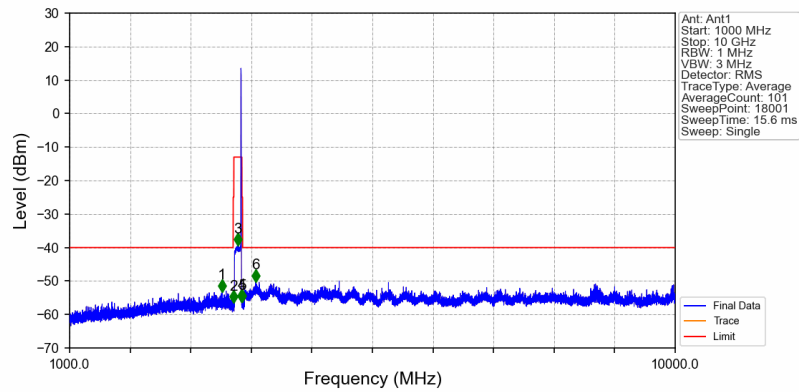
Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV



Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV

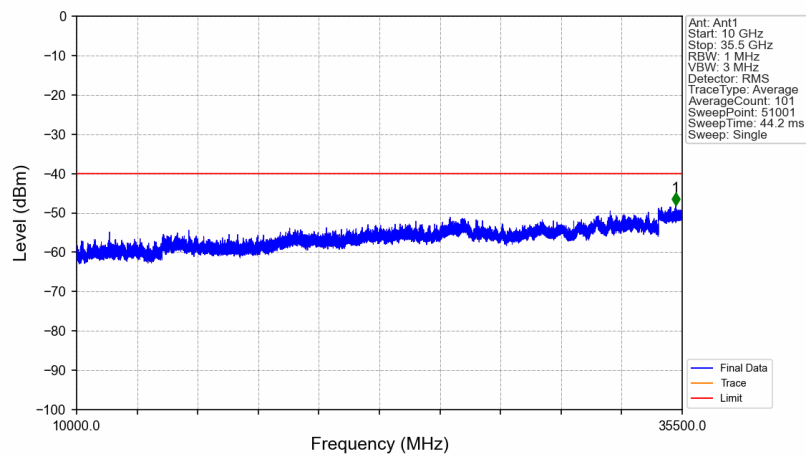


Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV



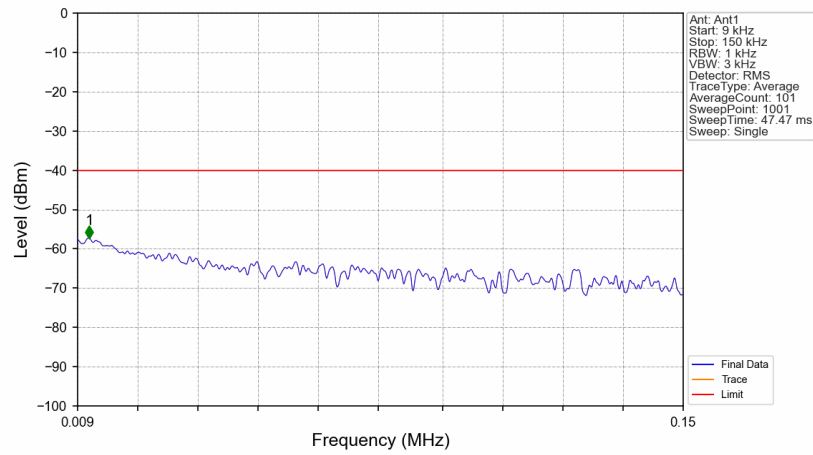
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3430	1	/	1	3265.500	-52.93	-40	Pass
3430	3440	1	/	2	3438.500	-56.20	-25	Pass
3440	3544	1	/	3	3503.500	-39.12	-13	Pass
3544	3556	1	/	/	/	/	/	/
3556	3560	1	/	4	3557.000	-55.90	-13	Pass
3560	3570	1	/	5	3567.000	-56.07	-25	Pass
3570	10000	1	/	6	3764.500	-49.95	-40	Pass

Bandn77_3547.5MHz_AWGN_SISO_Ant1_NTNV

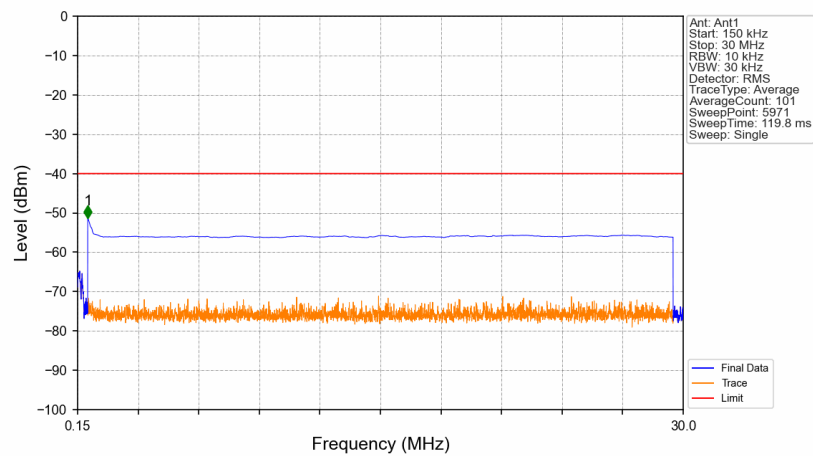


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	35226.500	-47.97	-40	Pass

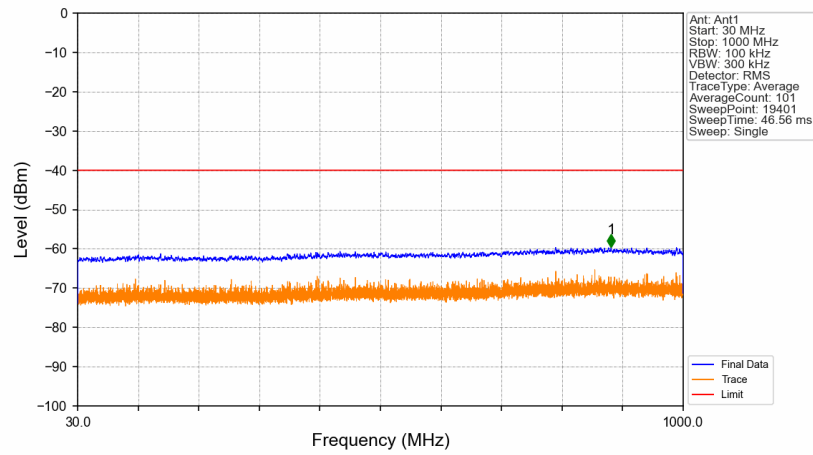
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



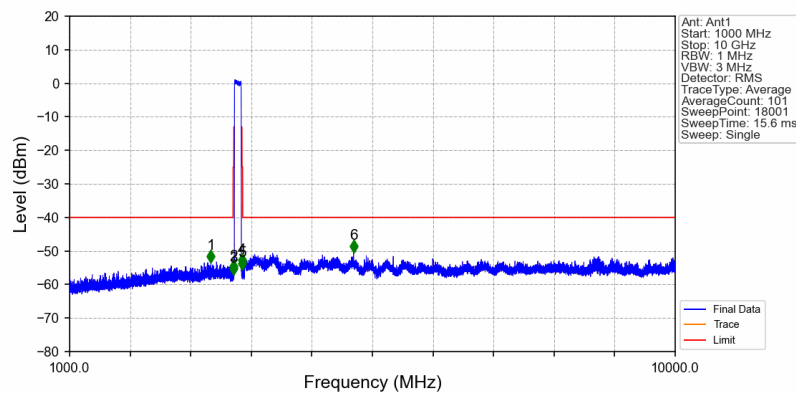
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



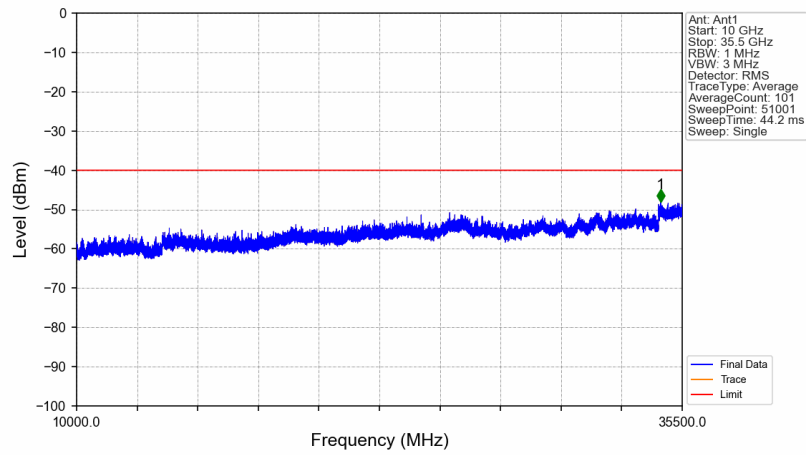
Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV

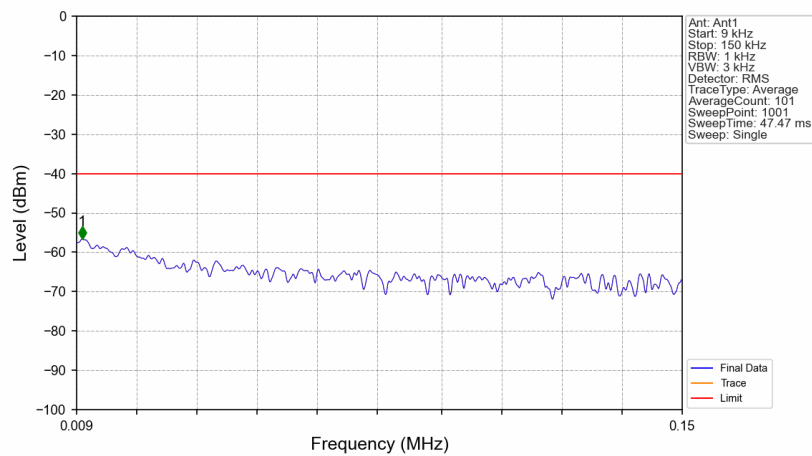


Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



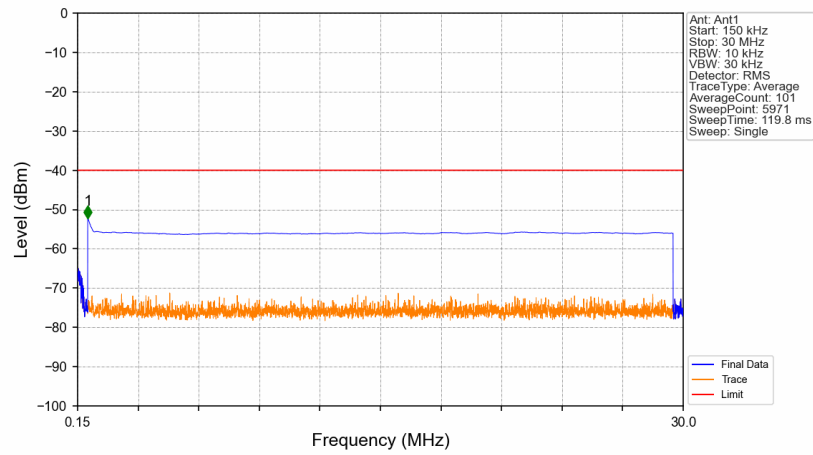
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	34597.500	-48.10	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



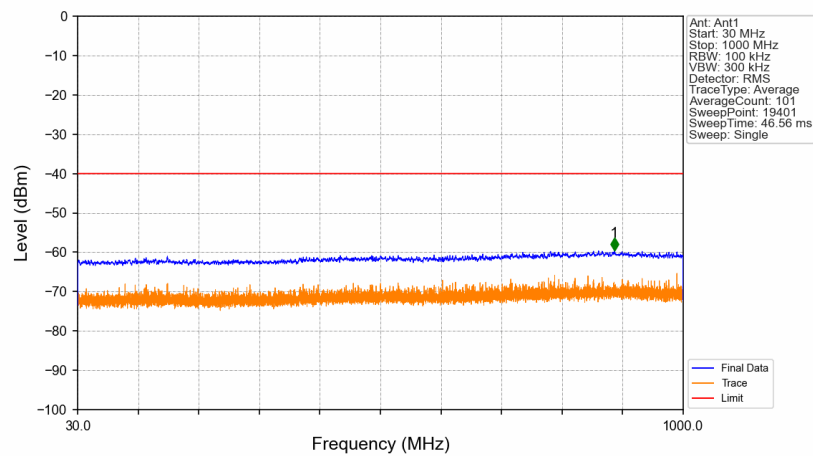
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.010	-56.62	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



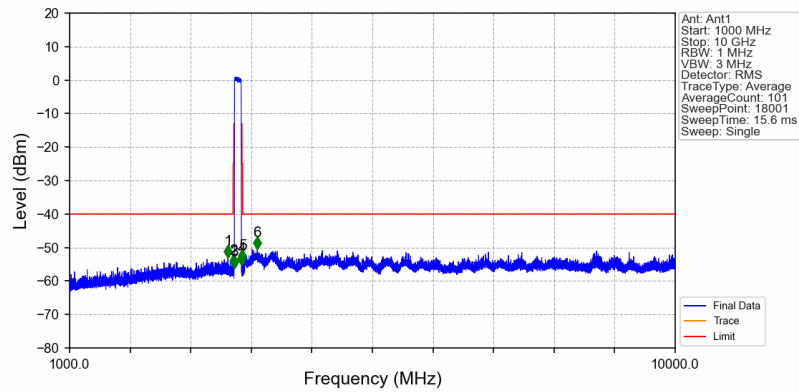
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.15	30	1	CHP	1	0.650	-52.15	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



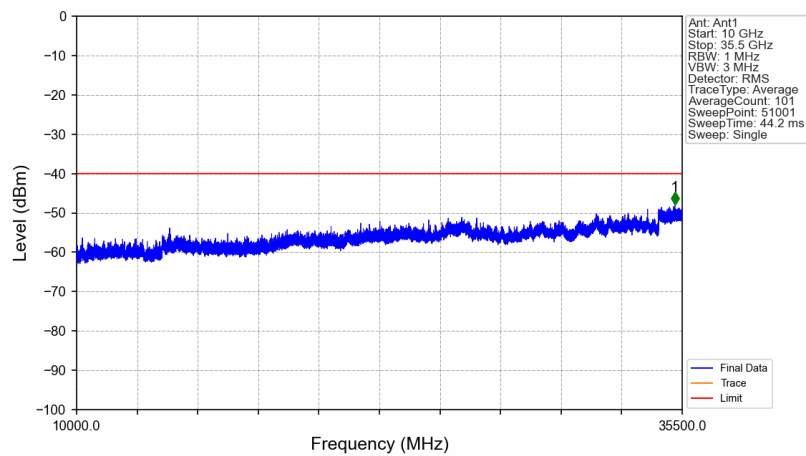
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	889.750	-59.58	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



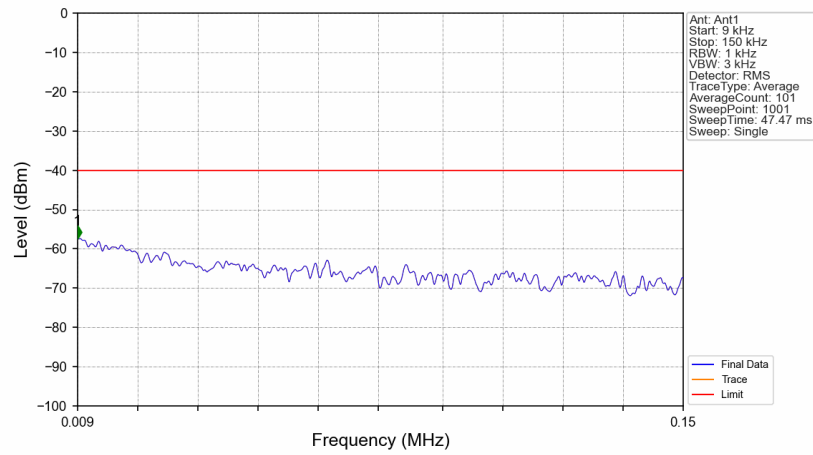
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3430	1	/	1	3353.000	-52.79	-40	Pass
3430	3440	1	/	2	3436.000	-55.47	-25	Pass
3440	3449	1	/	3	3443.500	-55.97	-13	Pass
3449	3556	1	/	/	/	/	/	/
3556	3560	1	/	4	3558.500	-54.97	-13	Pass
3560	3570	1	/	5	3568.000	-53.99	-25	Pass
3570	10000	1	/	6	3789.500	-50.25	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



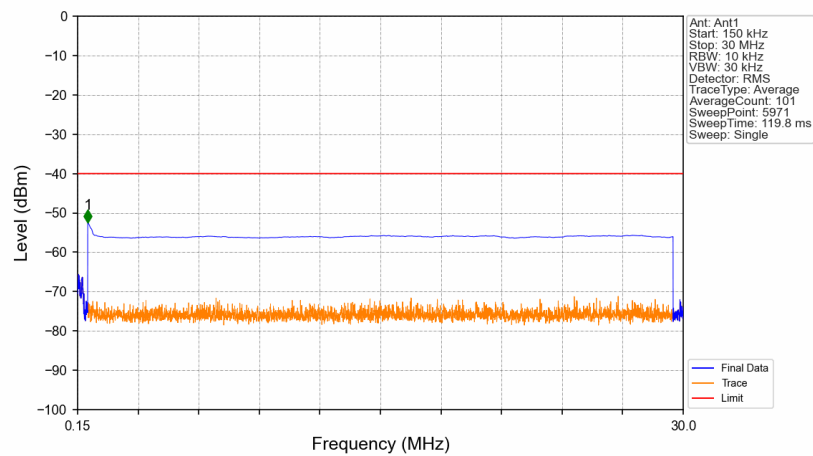
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
10000	35500	1	/	1	35191.000	-47.87	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



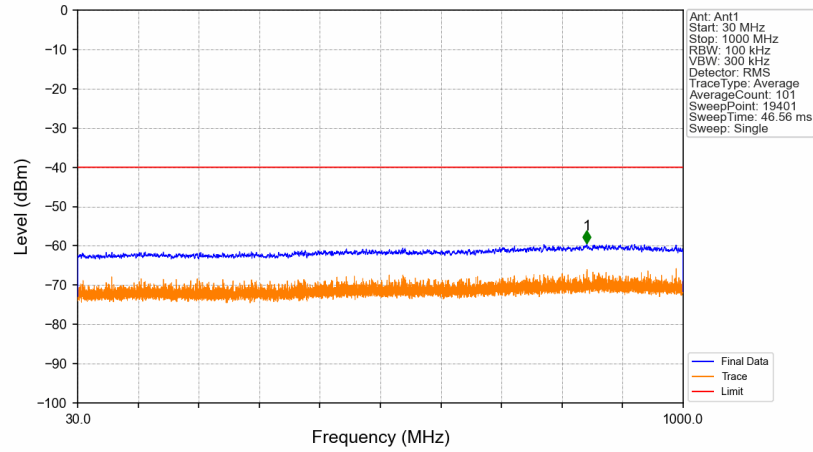
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.009	0.15	1	/	1	0.009	-57.36	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



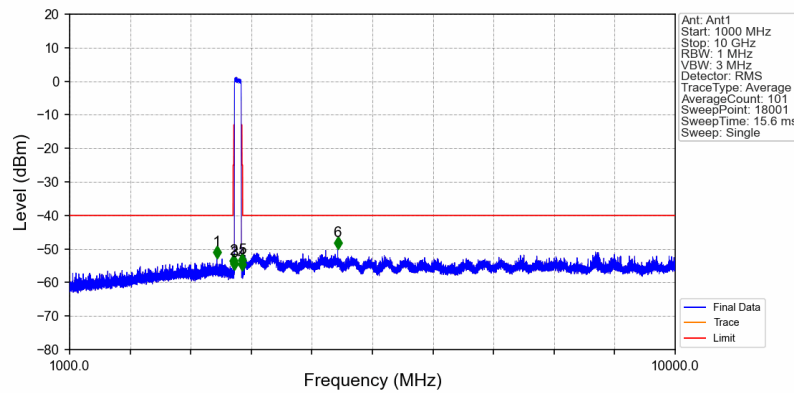
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
0.15	30	1	CHP	1	0.650	-52.34	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV

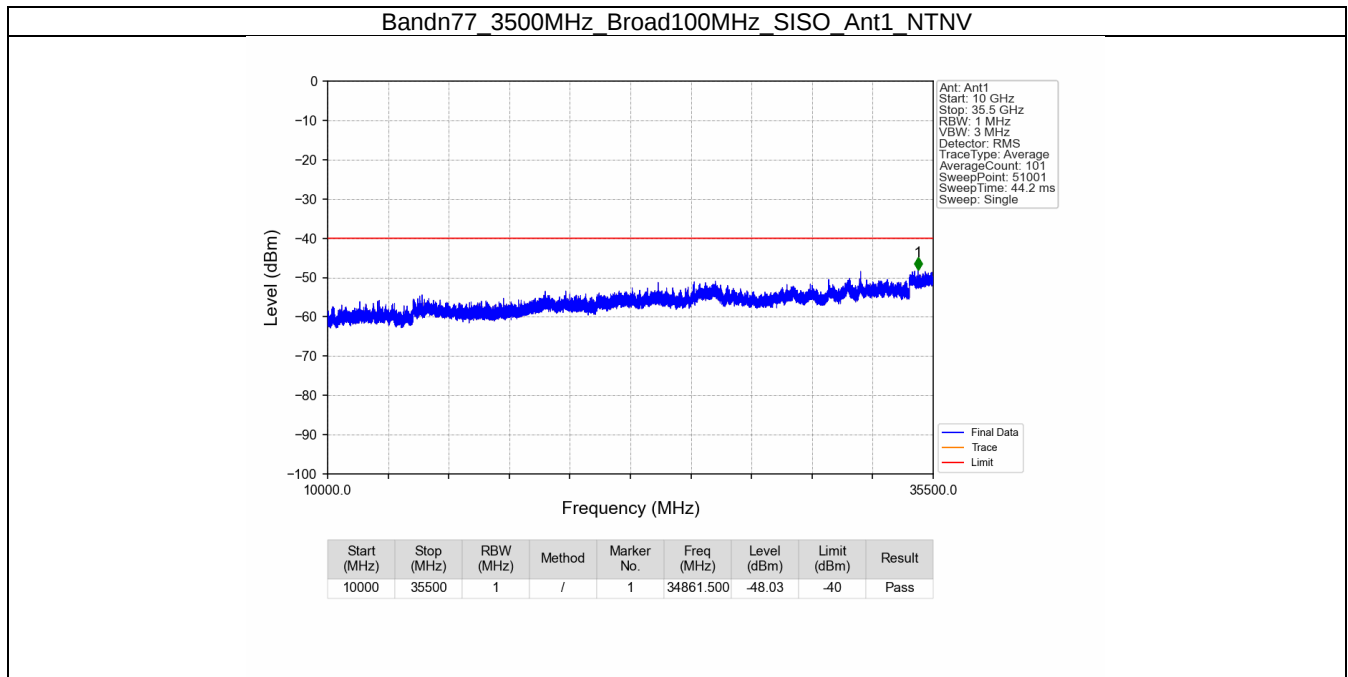


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
30	1000	1	CHP	1	845.700	-59.27	-40	Pass

Bandn77_3500MHz_Broad100MHz_SISO_Ant1_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1000	3430	1	/	1	3188.500	-52.56	-40	Pass
3430	3440	1	/	2	3436.000	-55.14	-25	Pass
3440	3449	1	/	3	3442.500	-55.87	-13	Pass
3449	3556	1	/	/	/	/	/	/
3556	3560	1	/	4	3560.000	-56.26	-13	Pass
3560	3570	1	/	5	3565.000	-54.85	-25	Pass
3570	10000	1	/	6	4984.500	-49.80	-40	Pass



7. Frequency stability measurements

7.1 Test Result

7.1.1 Bandn77_Ant1

Band: 77 / NTNV							
Signal			Temp (°C)	Voltage (VAC)	Result (MHz)	Limit (MHz)	Verdict
Type	Level (dBm)	Frequency (MHz)					
GMSK 0.2MHz	0	3450.2	20	102	3450.093	>3450	Pass
				120	3450.076	>3450	Pass
				138	3450.078	>3450	Pass
			-40	120	3450.081	>3450	Pass
			-30	120	3450.081	>3450	Pass
			-20	120	3450.074	>3450	Pass
			-10	120	3450.088	>3450	Pass
			0	120	3450.080	>3450	Pass
			10	120	3450.078	>3450	Pass
			30	120	3450.085	>3450	Pass
			40	120	3450.086	>3450	Pass
			50	120	3450.081	>3450	Pass
			55	120	3450.083	>3450	Pass
		3549.8	20	102	3549.941	<3550	Pass
				120	3549.933	<3550	Pass
				138	3549.929	<3550	Pass
			-40	120	3549.945	<3550	Pass
			-30	120	3549.932	<3550	Pass
			-20	120	3549.932	<3550	Pass
			-10	120	3549.933	<3550	Pass
			0	120	3549.934	<3550	Pass
			10	120	3549.925	<3550	Pass
			30	120	3549.938	<3550	Pass
			40	120	3549.941	<3550	Pass
			50	120	3549.928	<3550	Pass
			55	120	3549.933	<3550	Pass
AWGN 5MHz	0	3452.5	20	102	3450.239	>3450	Pass
				120	3450.225	>3450	Pass
				138	3450.272	>3450	Pass
			-40	120	3450.224	>3450	Pass
			-30	120	3450.252	>3450	Pass
			-20	120	3450.239	>3450	Pass
			-10	120	3450.227	>3450	Pass
			0	120	3450.250	>3450	Pass
			10	120	3450.231	>3450	Pass
			30	120	3450.271	>3450	Pass
			40	120	3450.246	>3450	Pass
			50	120	3450.240	>3450	Pass
			55	120	3450.226	>3450	Pass
		3547.5	20	102	3549.728	<3550	Pass
				120	3549.734	<3550	Pass
				138	3549.739	<3550	Pass
			-40	120	3549.724	<3550	Pass
			-30	120	3549.717	<3550	Pass
			-20	120	3549.740	<3550	Pass



AWGN 100MHz	0		-10	120	3549.738	<3550	Pass
			0	120	3549.746	<3550	Pass
			10	120	3549.755	<3550	Pass
			30	120	3549.730	<3550	Pass
			40	120	3549.724	<3550	Pass
			50	120	3549.748	<3550	Pass
			55	120	3549.753	<3550	Pass
		3500	20	102	3451.348	>3450	Pass
				120	3451.385	>3450	Pass
				138	3451.374	>3450	Pass
			-40	120	3451.377	>3450	Pass
			-30	120	3451.338	>3450	Pass
			-20	120	3451.334	>3450	Pass
			-10	120	3451.340	>3450	Pass
			0	120	3451.371	>3450	Pass
			10	120	3451.336	>3450	Pass
			30	120	3451.347	>3450	Pass
			40	120	3451.363	>3450	Pass
			50	120	3451.363	>3450	Pass
			55	120	3451.371	>3450	Pass
		3500	20	102	3548.786	<3550	Pass
				120	3548.751	<3550	Pass
				138	3548.801	<3550	Pass
			-40	120	3548.781	<3550	Pass
			-30	120	3548.761	<3550	Pass
			-20	120	3548.768	<3550	Pass
			-10	120	3548.732	<3550	Pass
			0	120	3548.749	<3550	Pass
			10	120	3548.737	<3550	Pass
			30	120	3548.764	<3550	Pass
			40	120	3548.762	<3550	Pass
			50	120	3548.774	<3550	Pass
			55	120	3548.768	<3550	Pass

8. Radiated Spurious Emissions

8.1 Test Result

8.1.1 Bandn77

GMSK 3450.2MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
193.00	Horizontal	-67.14	-40.00	-27.14	Pass
540.28	Horizontal	-71.89	-40.00	-31.89	Pass
621.90	Horizontal	-72.54	-40.00	-32.54	Pass
3923.16	Horizontal	-57.70	-40.00	-17.70	Pass
4169.93	Horizontal	-53.94	-40.00	-13.94	Pass
9578.21	Horizontal	-54.83	-40.00	-14.83	Pass
250.90	Vertical	-73.12	-40.00	-33.12	Pass
444.41	Vertical	-74.71	-40.00	-34.71	Pass
917.67	Vertical	-69.44	-40.00	-29.44	Pass
2472.20	Vertical	-55.07	-40.00	-15.07	Pass
6474.58	Vertical	-56.18	-40.00	-16.18	Pass
9590.39	Vertical	-60.26	-40.00	-20.26	Pass

GMSK 3500MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
265.76	Horizontal	-67.43	-40.00	-27.43	Pass
572.73	Horizontal	-70.54	-40.00	-30.54	Pass
682.16	Horizontal	-73.56	-40.00	-33.56	Pass
2483.35	Horizontal	-53.91	-40.00	-13.91	Pass
4177.35	Horizontal	-53.69	-40.00	-13.69	Pass
9792.11	Horizontal	-61.69	-40.00	-21.69	Pass
153.01	Vertical	-72.81	-40.00	-32.81	Pass
534.69	Vertical	-68.08	-40.00	-28.08	Pass
657.65	Vertical	-72.67	-40.00	-32.67	Pass
1986.92	Vertical	-56.31	-40.00	-16.31	Pass
6479.90	Vertical	-58.51	-40.00	-18.51	Pass
7339.52	Vertical	-53.72	-40.00	-13.72	Pass

GMSK 3549.8MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
287.31	Horizontal	-72.56	-40.00	-32.56	Pass
408.57	Horizontal	-67.82	-40.00	-27.82	Pass
600.50	Horizontal	-72.85	-40.00	-32.85	Pass
1993.36	Horizontal	-54.53	-40.00	-14.53	Pass
6442.73	Horizontal	-61.02	-40.00	-21.02	Pass
7958.83	Horizontal	-57.44	-40.00	-17.44	Pass
141.55	Vertical	-71.13	-40.00	-31.13	Pass
309.25	Vertical	-72.63	-40.00	-32.63	Pass
857.88	Vertical	-69.54	-40.00	-29.54	Pass
3739.54	Vertical	-57.05	-40.00	-17.05	Pass
4373.33	Vertical	-55.97	-40.00	-15.97	Pass
8083.17	Vertical	-53.36	-40.00	-13.36	Pass

AWGN_5M 3452.5MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
201.43	Horizontal	-69.28	-40.00	-29.28	Pass
385.00	Horizontal	-69.69	-40.00	-29.69	Pass
929.88	Horizontal	-73.91	-40.00	-33.91	Pass
2234.60	Horizontal	-55.24	-40.00	-15.24	Pass
5863.51	Horizontal	-55.30	-40.00	-15.30	Pass
9214.19	Horizontal	-57.85	-40.00	-17.85	Pass
293.79	Vertical	-68.24	-40.00	-28.24	Pass
538.08	Vertical	-71.87	-40.00	-31.87	Pass
616.50	Vertical	-70.93	-40.00	-30.93	Pass
3885.44	Vertical	-60.68	-40.00	-20.68	Pass
4496.59	Vertical	-55.14	-40.00	-15.14	Pass
9995.29	Vertical	-59.56	-40.00	-19.56	Pass

AWGN_5M 3500MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
201.90	Horizontal	-67.84	-40.00	-27.84	Pass
542.31	Horizontal	-70.09	-40.00	-30.09	Pass
640.31	Horizontal	-70.29	-40.00	-30.29	Pass
3148.51	Horizontal	-57.04	-40.00	-17.04	Pass
6327.66	Horizontal	-55.08	-40.00	-15.08	Pass
10202.16	Horizontal	-54.79	-40.00	-14.79	Pass
261.99	Vertical	-73.02	-40.00	-33.02	Pass
380.86	Vertical	-69.26	-40.00	-29.26	Pass
812.01	Vertical	-69.00	-40.00	-29.00	Pass
1820.79	Vertical	-58.06	-40.00	-18.06	Pass
5031.58	Vertical	-61.08	-40.00	-21.08	Pass
9482.47	Vertical	-59.62	-40.00	-19.62	Pass

AWGN_5M 3547.5MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
265.83	Horizontal	-67.64	-40.00	-27.64	Pass
464.66	Horizontal	-70.28	-40.00	-30.28	Pass
734.43	Horizontal	-72.86	-40.00	-32.86	Pass
3755.10	Horizontal	-59.29	-40.00	-19.29	Pass
5666.30	Horizontal	-59.67	-40.00	-19.67	Pass
8050.50	Horizontal	-55.56	-40.00	-15.56	Pass
239.74	Vertical	-72.16	-40.00	-32.16	Pass
472.61	Vertical	-72.56	-40.00	-32.56	Pass
908.90	Vertical	-73.18	-40.00	-33.18	Pass
3803.05	Vertical	-54.04	-40.00	-14.04	Pass
6209.49	Vertical	-60.22	-40.00	-20.22	Pass
9128.99	Vertical	-57.60	-40.00	-17.60	Pass



AWGN_100M 3500MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
173.49	Horizontal	-70.28	-40.00	-30.28	Pass
394.33	Horizontal	-68.92	-40.00	-28.92	Pass
675.66	Horizontal	-74.13	-40.00	-34.13	Pass
2518.03	Horizontal	-59.50	-40.00	-19.50	Pass
4918.47	Horizontal	-54.52	-40.00	-14.52	Pass
8229.05	Horizontal	-57.74	-40.00	-17.74	Pass
255.71	Vertical	-70.14	-40.00	-30.14	Pass
374.26	Vertical	-70.97	-40.00	-30.97	Pass
626.23	Vertical	-68.45	-40.00	-28.45	Pass
3278.84	Vertical	-54.08	-40.00	-14.08	Pass
4821.68	Vertical	-56.42	-40.00	-16.42	Pass
10511.50	Vertical	-57.79	-40.00	-17.79	Pass