

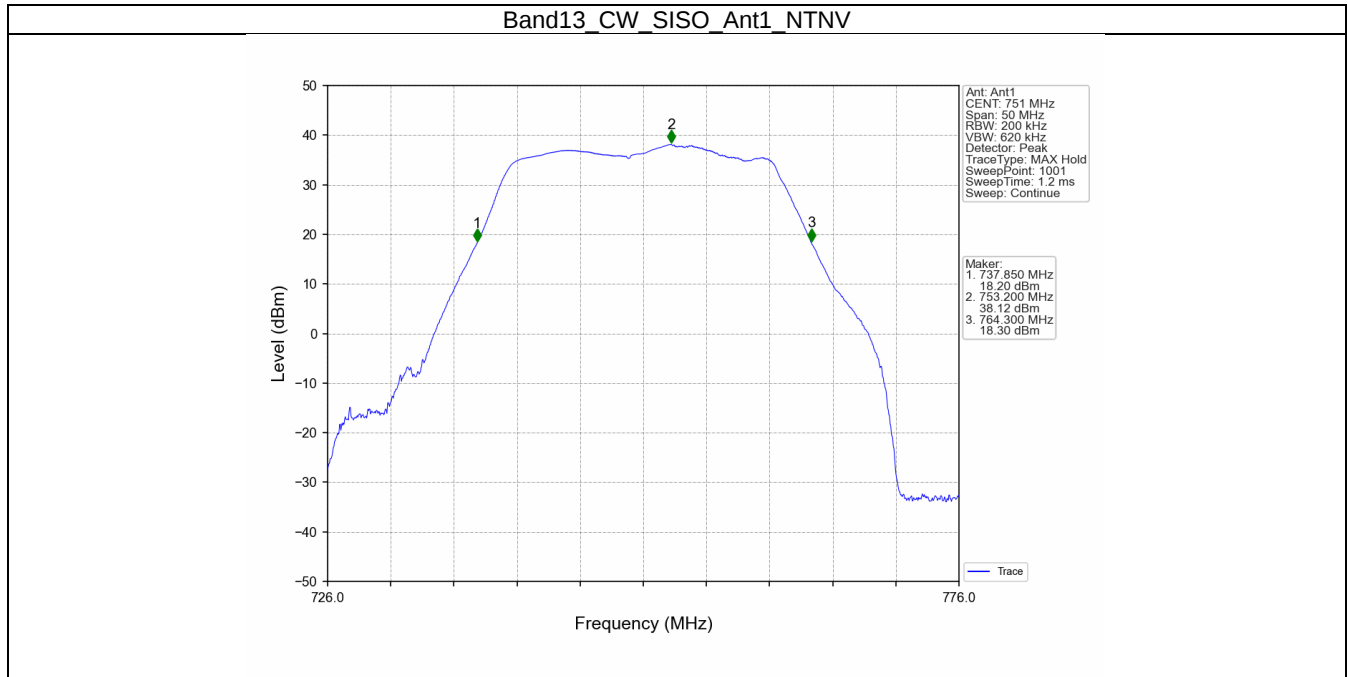
1. Out of band rejection

1.1 Band13

1.1.1 Test Result

Band: 13 / NTNV							
Signal	Sweep Frequency Range (MHz)	TX Type	ANT	F0 (MHz)	FL (MHz)	FH (MHz)	Verdict
CW	726 - 776	SISO	1	753.200	737.850	764.300	Pass

1.1.2 Test Graph



2. AGC threshold

2.1 Band13

2.1.1 Test Result

Band: 13 / NTNV					
Signal	Frequency (MHz)	TX Type	ANT	AGC Threshold (dBm)	Verdict
GMSK 0.2MHz	753.2	SISO	1	-3.40	Pass
AWGN 5MHz	753.2	SISO	1	-3.40	Pass

3. Input-versus-output signal comparison

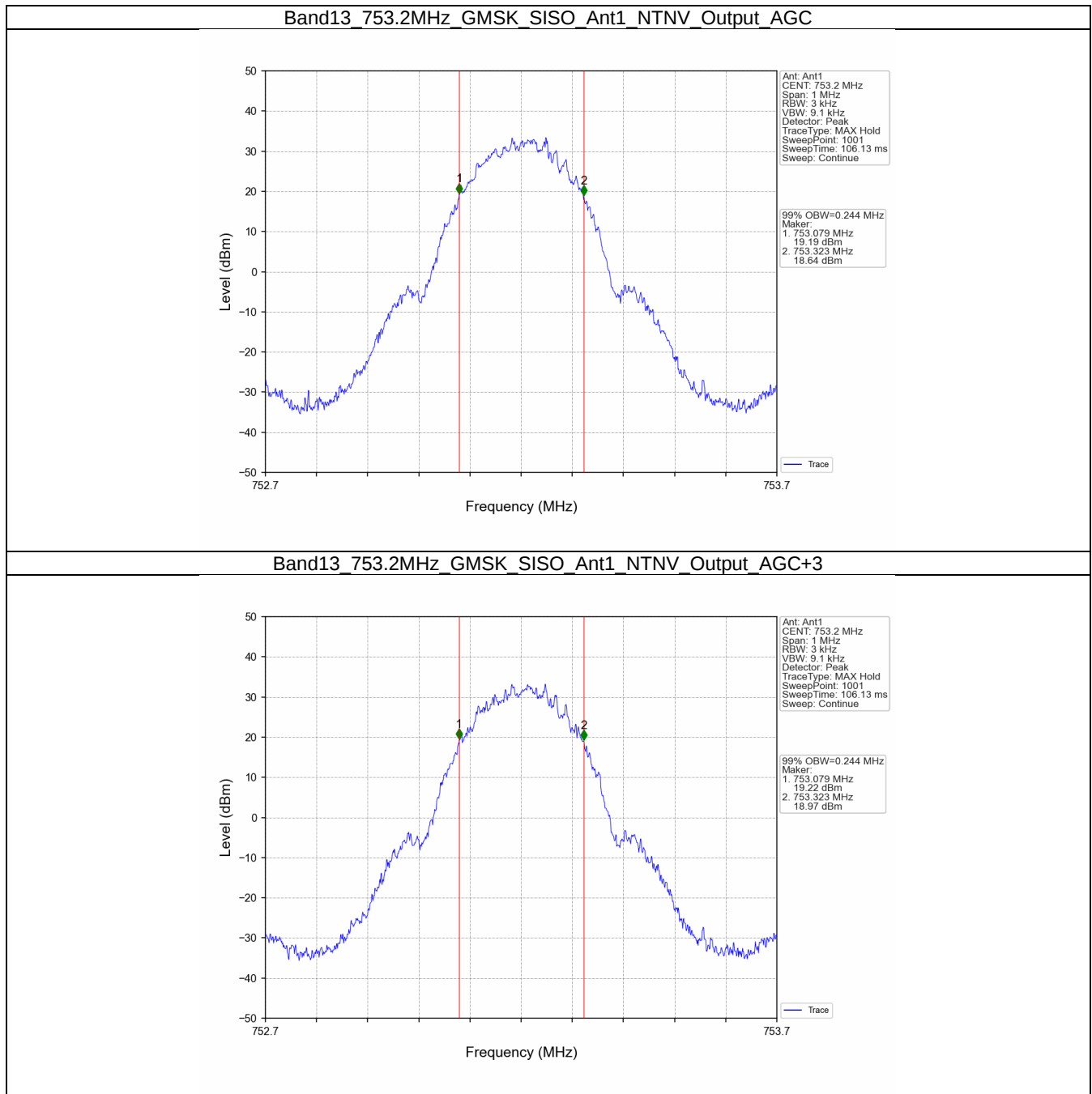
3.1 Band13_OBW

3.1.1 Test Result

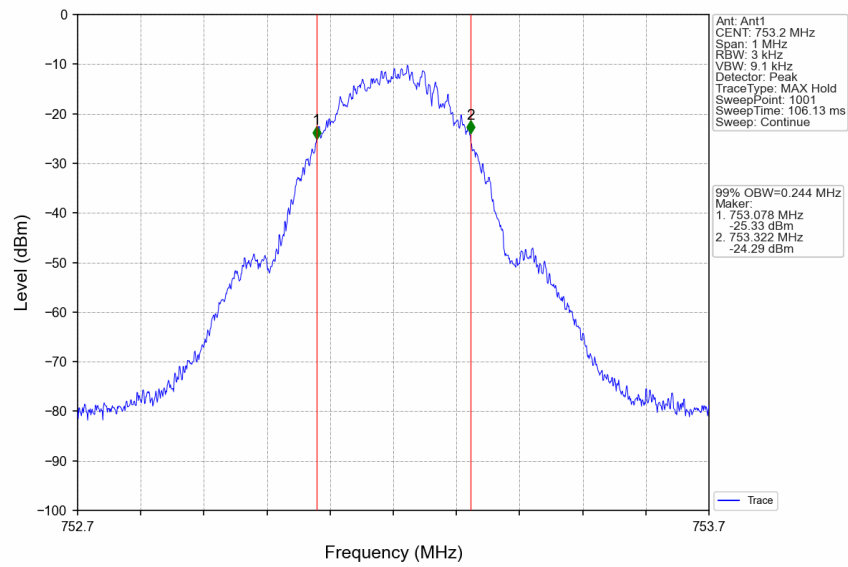
Band: 13 / NTNV									
Signal			TX Type	ANT	99% OBW (MHz)		Deviation (%)	Limit (%)	Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input			
GMSK	-3.4	753.2	SISO	1	0.244	0.244	0.00	<5.00	Pass
0.2MHz	-0.4	753.2	SISO	1	0.244	0.244	0.00	<5.00	Pass
AWGN	-3.4	753.2	SISO	1	4.533	4.534	0.02	<5.00	Pass
5MHz	-0.4	753.2	SISO	1	4.520	4.530	0.22	<5.00	Pass

Deviation= [(Output - Input)/ Input] * 100

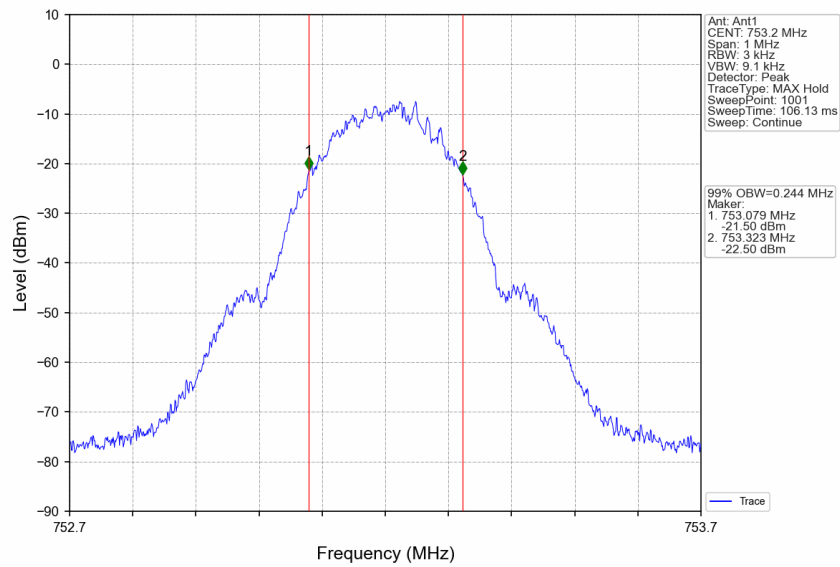
3.1.2 Test Graph



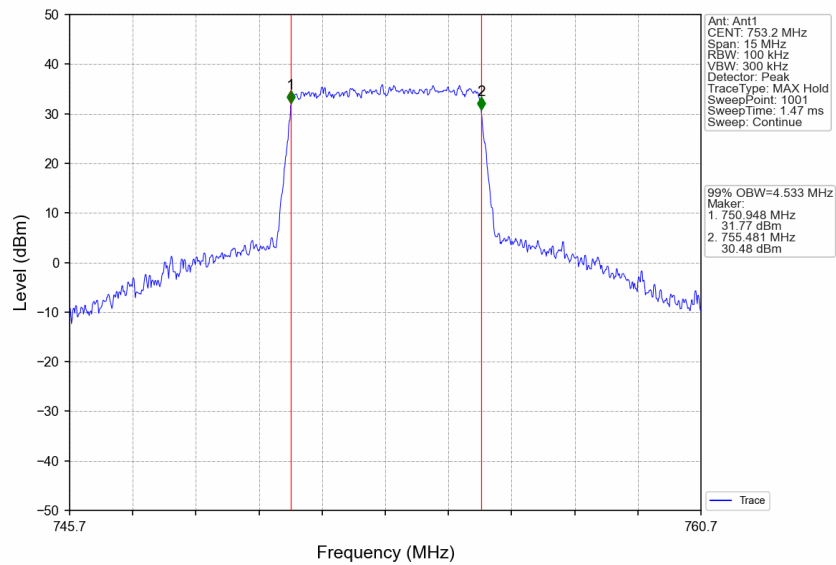
Band13_753.2MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



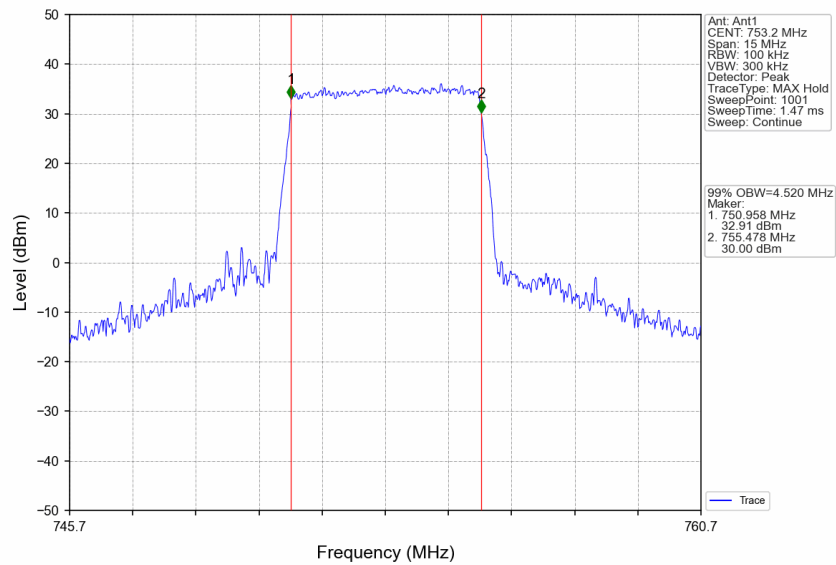
Band13_753.2MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



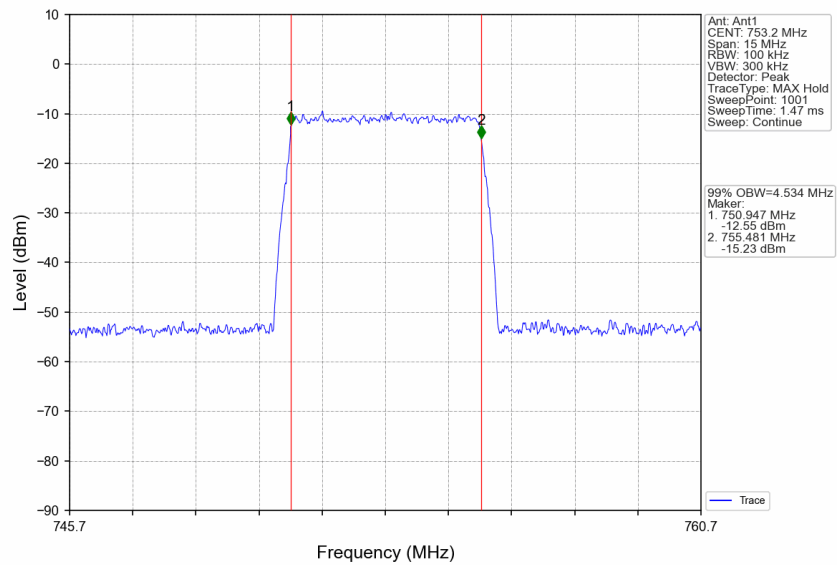
Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



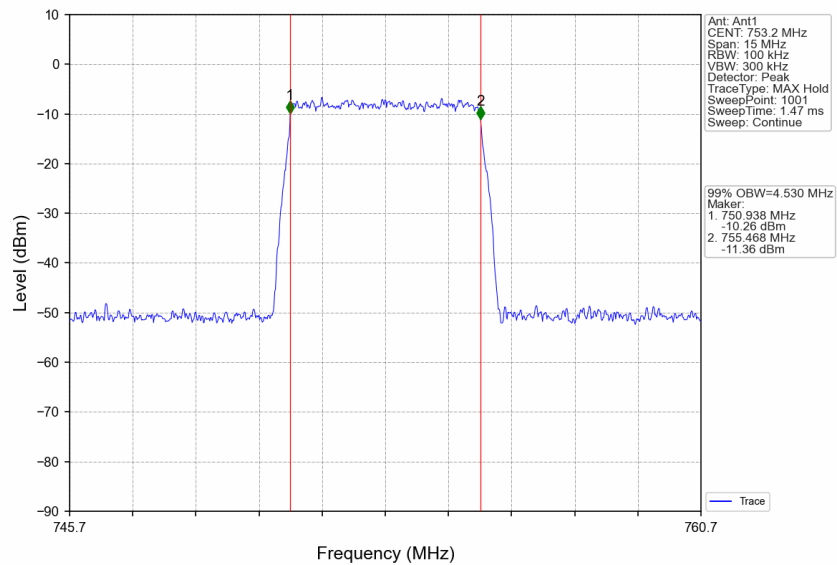
Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Input_AGC



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3



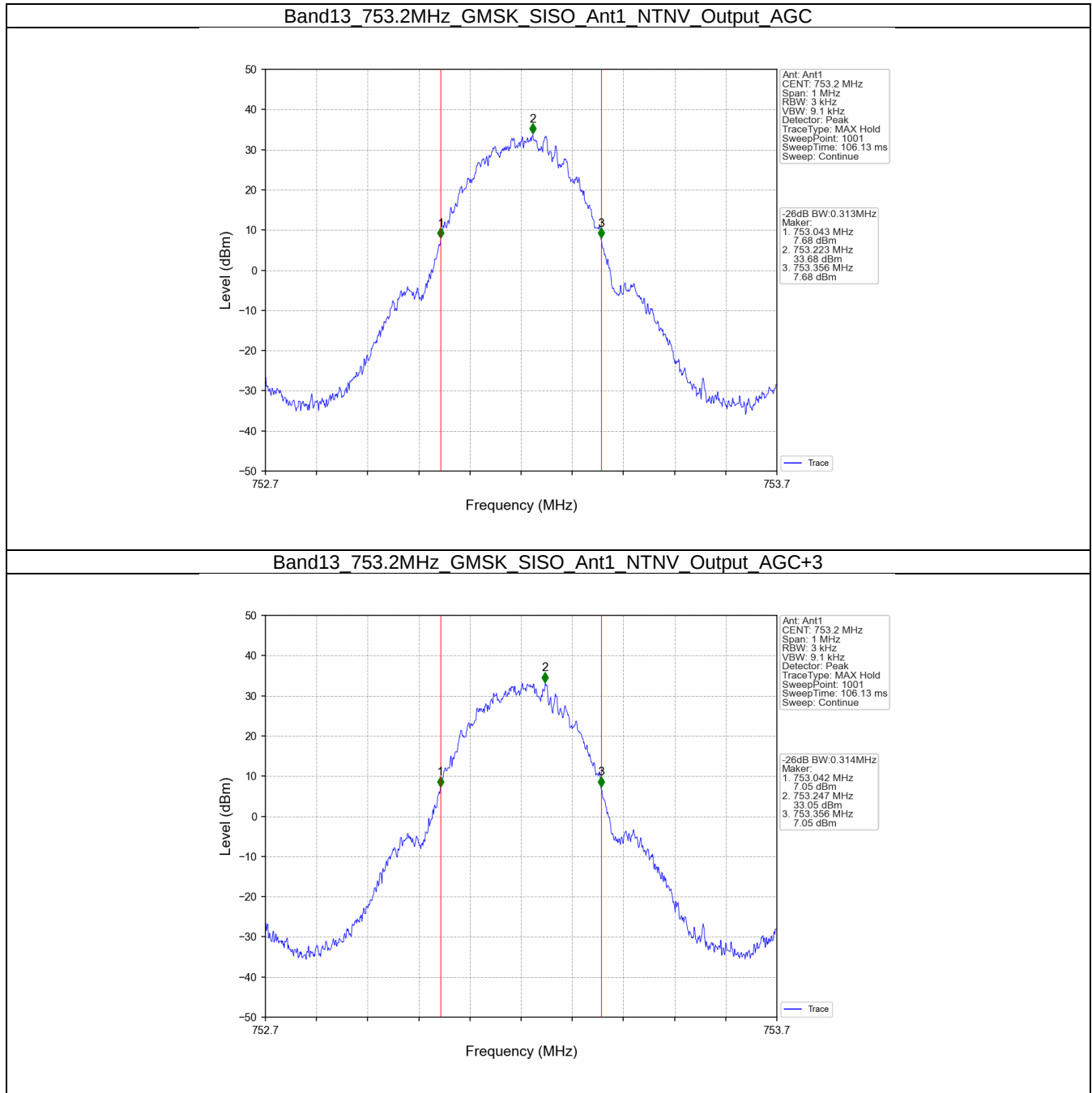
3.2 Band13_EBW

3.2.1 Test Result

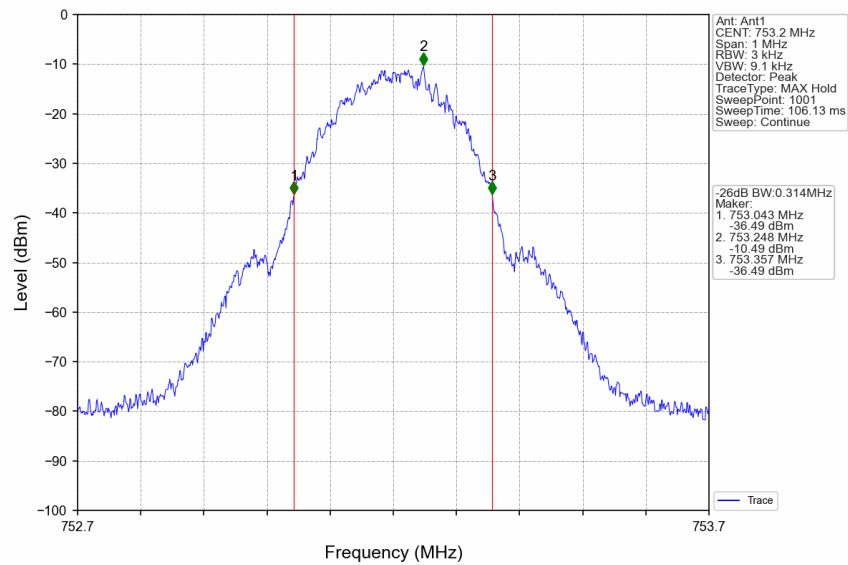
Band: 13 / NTNV									
Signal			TX Type	ANT	26dB EBW (MHz)		Deviation (%)	Limit (%)	Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input			
GMSK 0.2MHz	-3.4	753.2	SISO	1	0.313	0.314	0.32	<5.00	Pass
	-0.4	753.2	SISO	1	0.314	0.313	0.32	<5.00	Pass
AWGN 5MHz	-3.4	753.2	SISO	1	5.054	5.053	0.02	<5.00	Pass
	-0.4	753.2	SISO	1	5.046	5.049	0.06	<5.00	Pass

Deviation= [(Output - Input)/ Input] * 100

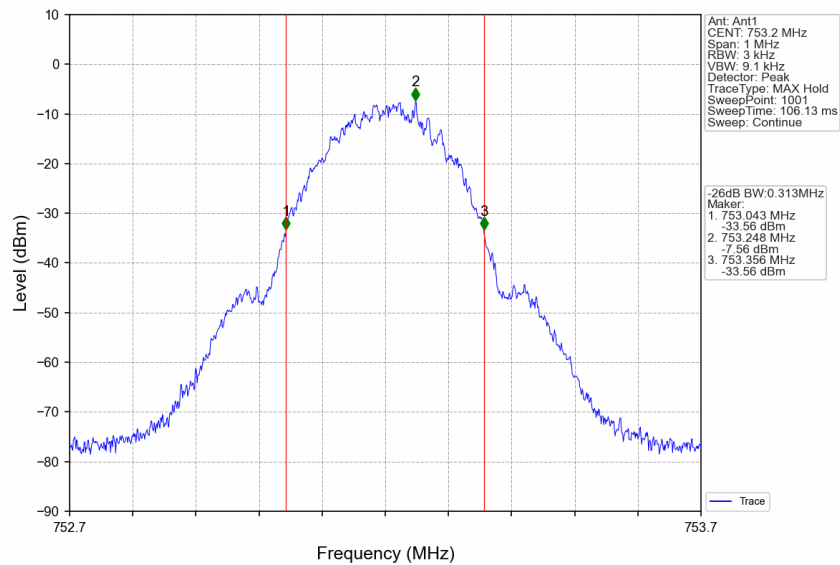
3.2.2 Test Graph



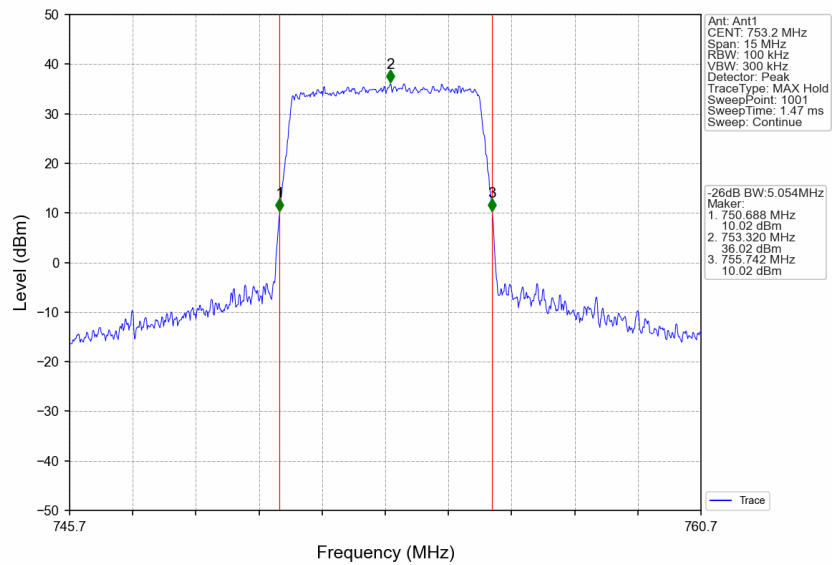
Band13_753.2MHz_GMSK_SISO_Ant1_NTNV_Input_AGC



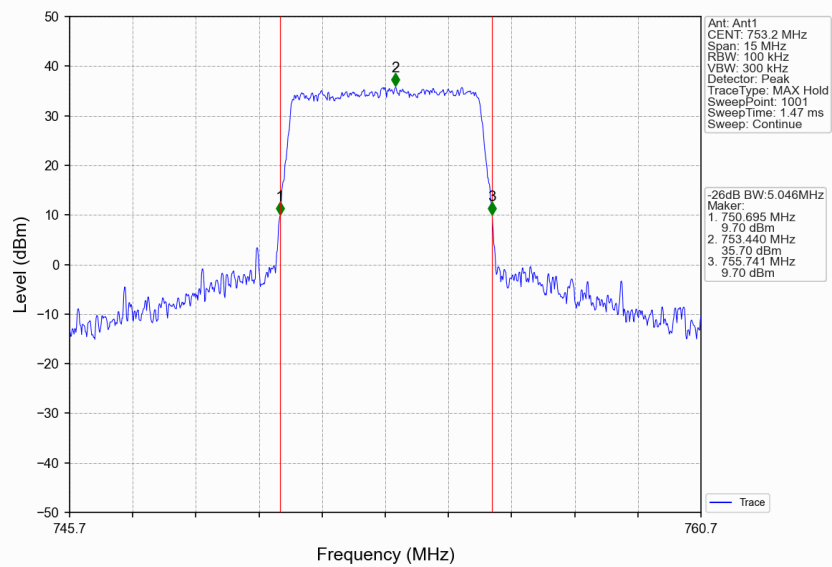
Band13_753.2MHz_GMSK_SISO_Ant1_NTNV_Input_AGC+3



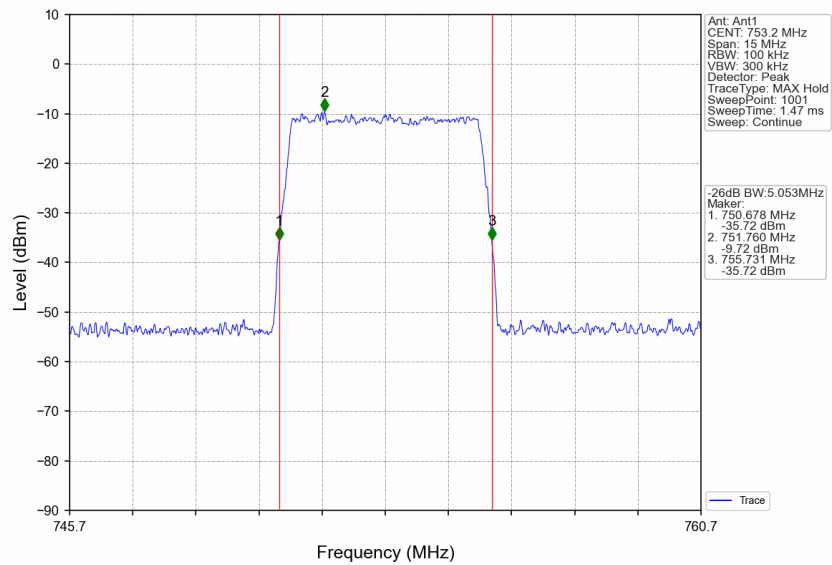
Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Output_AGC



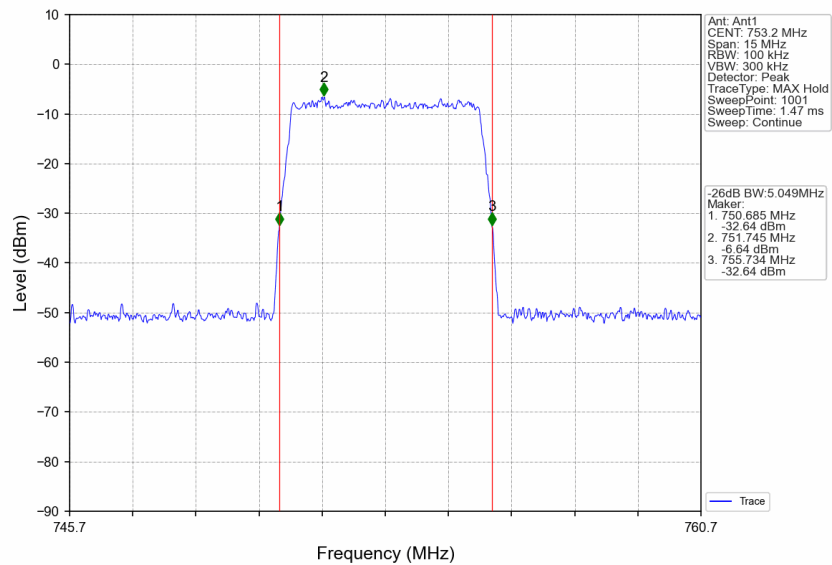
Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Output_AGC+3



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Input_AGC



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_Input_AGC+3



4. Input/output power and amplifier/booster gain

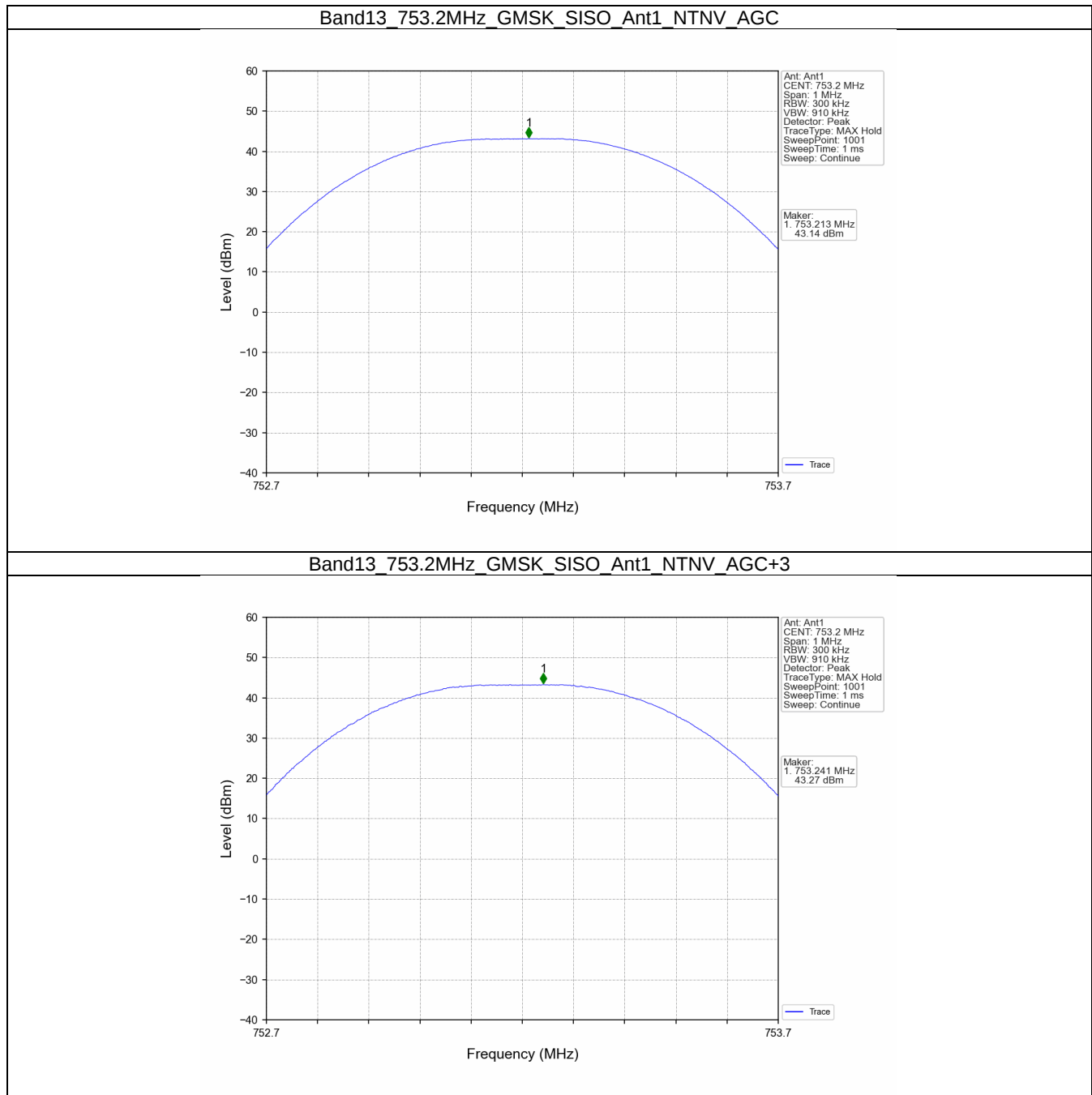
4.1 Band13_ERP

4.1.1 Test Result

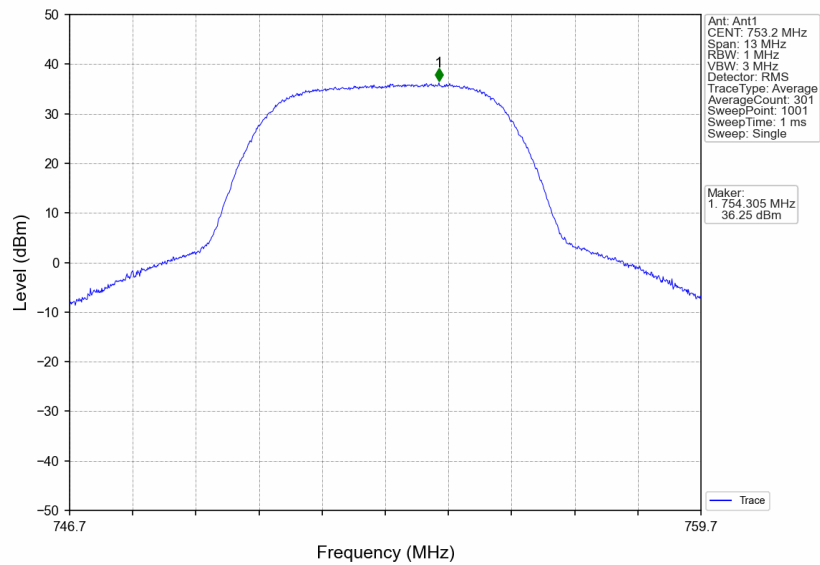
Band: 13 / NTNV										
Signal			TX Type	ANT	Conducted Power (dBm/MHz)		ERP (dBm/MHz)		Booster Gain (dB)	Verdict
Type	Level (dBm)	Frequency (MHz)			Output	Input	Result	Limit		
GMSK	-3.4	753.2	SISO	1	43.14	-3.39	55.99	<=63.01	46.53	Pass
0.2MHz	-0.4	753.2	SISO	1	43.27	-0.37	56.12	<=63.01	/	Pass
AWGN	-3.4	753.2	SISO	1	36.25	-10.36	49.10	<=63.01	46.61	Pass
5MHz	-0.4	753.2	SISO	1	36.34	-7.38	49.19	<=63.01	/	Pass

Band: 13 / NTNV						
Signal			Conducted Power (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Type	Level (dBm)	Frequency (MHz)	SISO	SISO		
GMSK	-3.4	753.2	43.14	55.99	/	Pass
0.2MHz	-0.4	753.2	43.27	56.12	/	Pass
AWGN	-3.4	753.2	43.24	56.09	/	Pass
5MHz	-0.4	753.2	43.33	56.18	/	Pass

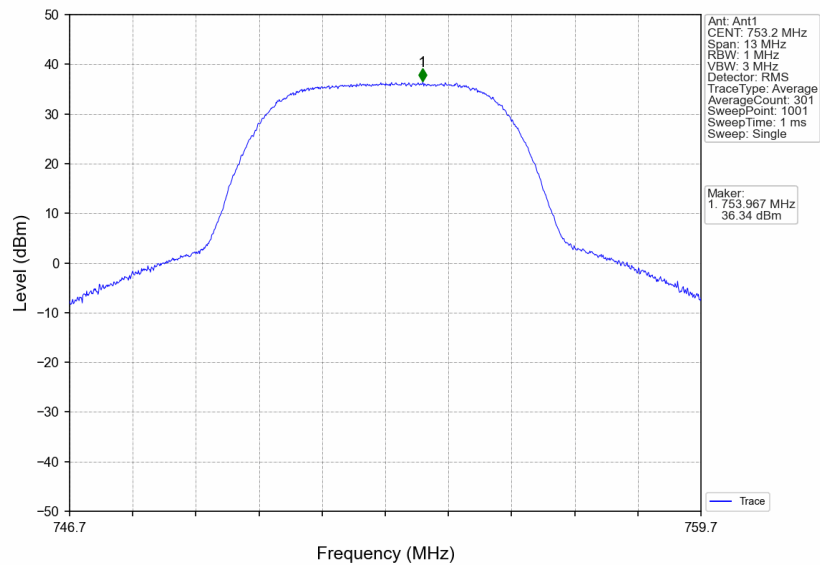
4.1.2 Test Graph



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_AGC



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_AGC+3



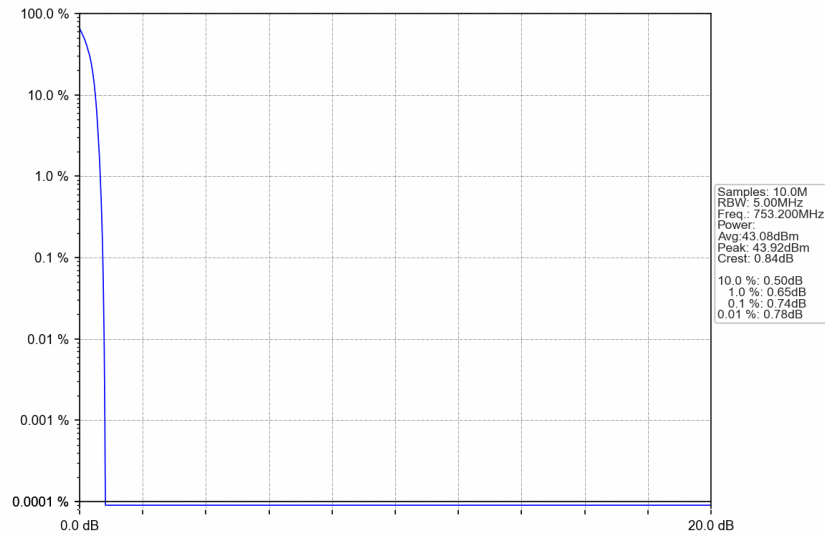
4.2 Band13_PAPR

4.2.1 Test Result

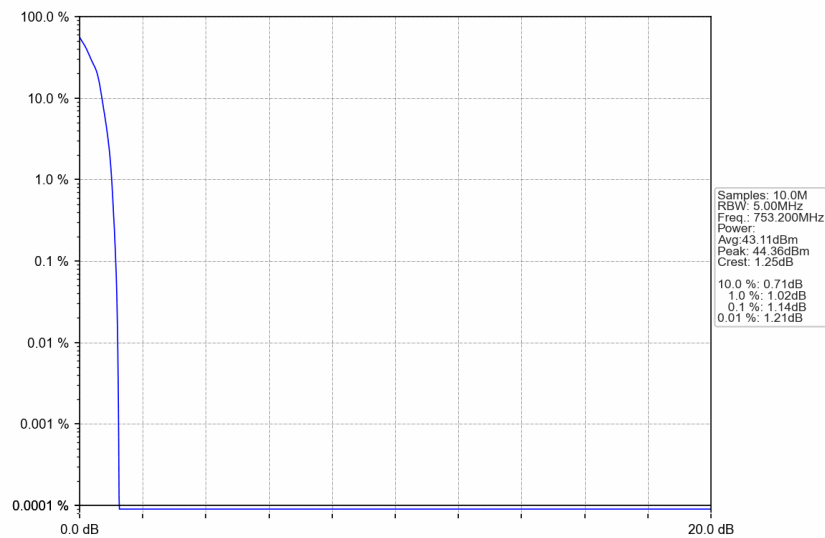
Band: 13 / NTNV							
Signal			TX Type	ANT	PAPR (dB)		Verdict
Type	Level (dBm)	Frequency (MHz)			Result	Limit	
GMSK 0.2MHz	-3.4	753.2	SISO	1	0.74	<=13	Pass
	-0.4	753.2	SISO	1	1.14	<=13	Pass
AWGN 5MHz	-3.4	753.2	SISO	1	8.33	<=13	Pass
	-0.4	753.2	SISO	1	8.32	<=13	Pass

4.2.2 Test Graph

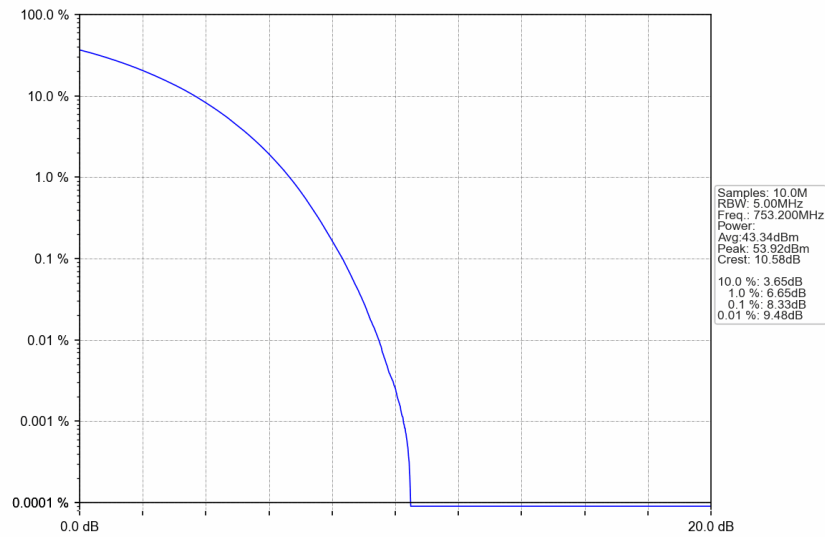
Band13_753.2MHz_GMSK_SISO_Ant1_NTNV_AGC



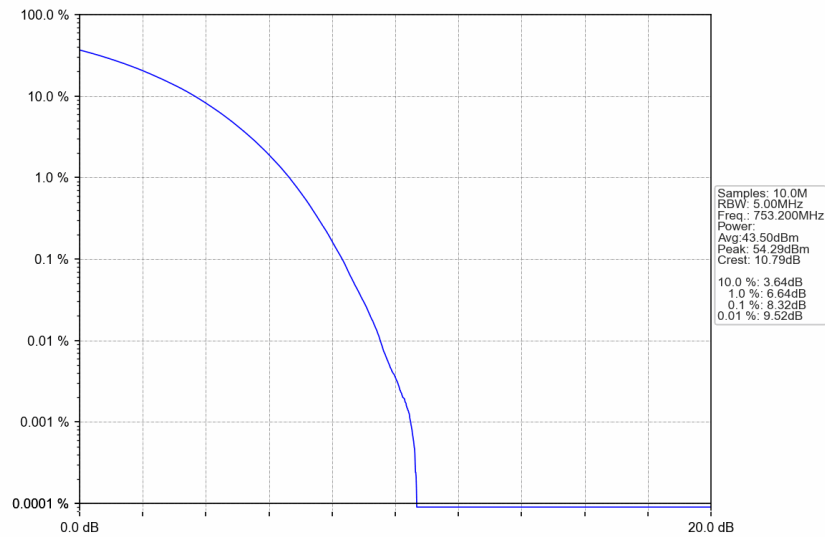
Band13_753.2MHz_GMSK_SISO_Ant1_NTNV_AGC+3



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_AGC



Band13_753.2MHz_AWGN_SISO_Ant1_NTNV_AGC+3



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

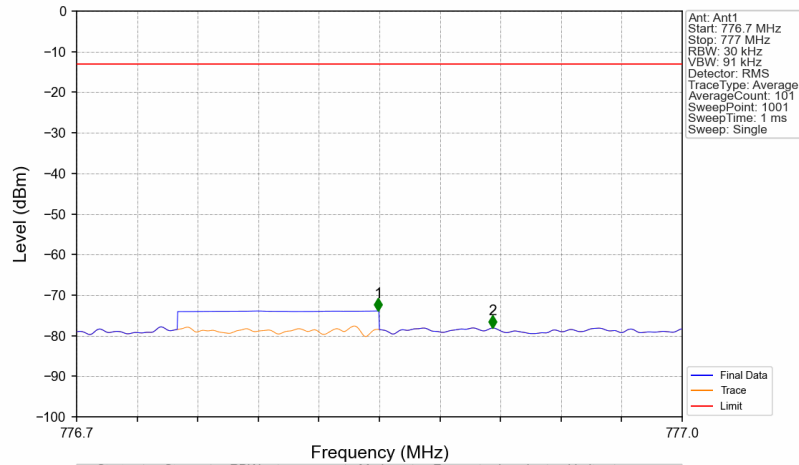
5.1 Band13

5.1.1 Test Result

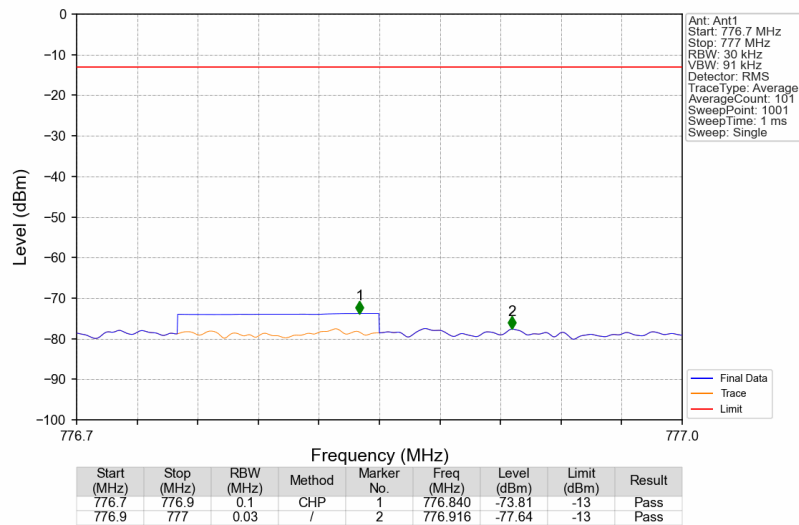
Band: 13 / NTNV									
Signal				Channel	TX Type	ANT	OOB (dBm)		Verdict
Input	Type	Level (dBm)	Frequency (MHz)				Result	Limit	
Two	GMSK 0.2MHz	-3.4	746.2	LCH	SISO	1	-73.91	Refer To Test Graph	Pass
		-0.4	746.2	LCH	SISO	1	-73.81	Refer To Test Graph	Pass
One	GMSK 0.2MHz	-3.4	746.2	LCH	SISO	1	-73.93	Refer To Test Graph	Pass
		-0.4	746.2	LCH	SISO	1	-73.91	Refer To Test Graph	Pass
Two	GMSK 0.2MHz	-3.4	755.8	HCH	SISO	1	-73.78	Refer To Test Graph	Pass
		-0.4	755.8	HCH	SISO	1	-73.93	Refer To Test Graph	Pass
One	GMSK 0.2MHz	-3.4	755.8	HCH	SISO	1	-73.63	Refer To Test Graph	Pass
		-0.4	755.8	HCH	SISO	1	-73.76	Refer To Test Graph	Pass
Two	AWGN 5MHz	-3.4	748.5	LCH	SISO	1	-73.66	Refer To Test Graph	Pass
		-0.4	748.5	LCH	SISO	1	-73.89	Refer To Test Graph	Pass
One	AWGN 5MHz	-3.4	748.5	LCH	SISO	1	-73.93	Refer To Test Graph	Pass
		-0.4	748.5	LCH	SISO	1	-73.87	Refer To Test Graph	Pass
Two	AWGN 5MHz	-3.4	753.5	HCH	SISO	1	-73.60	Refer To Test Graph	Pass
		-0.4	753.5	HCH	SISO	1	-73.84	Refer To Test Graph	Pass
One	AWGN 5MHz	-3.4	753.5	HCH	SISO	1	-73.77	Refer To Test Graph	Pass
		-0.4	753.5	HCH	SISO	1	-73.89	Refer To Test Graph	Pass

5.1.2 Test Graph

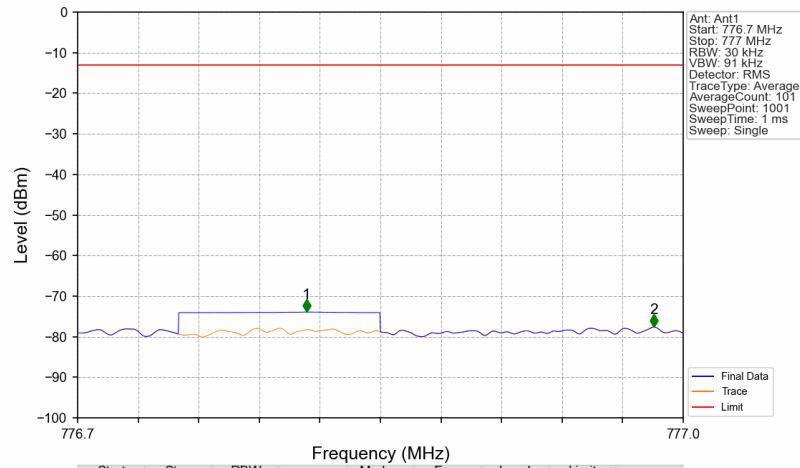
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV_AGC



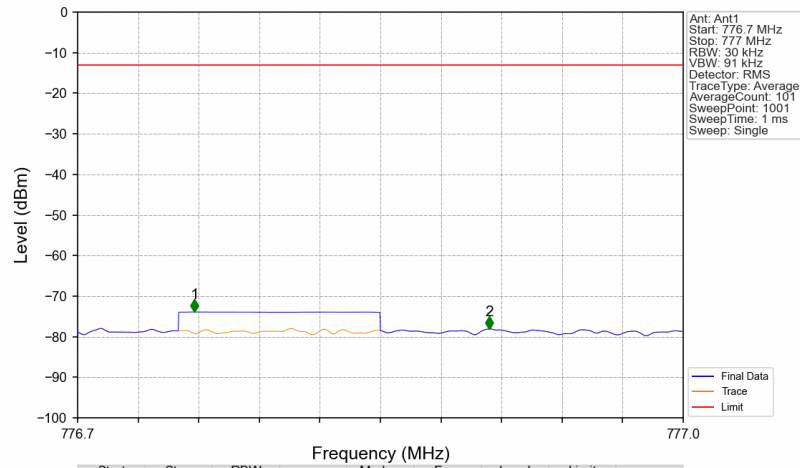
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV_AGC+3



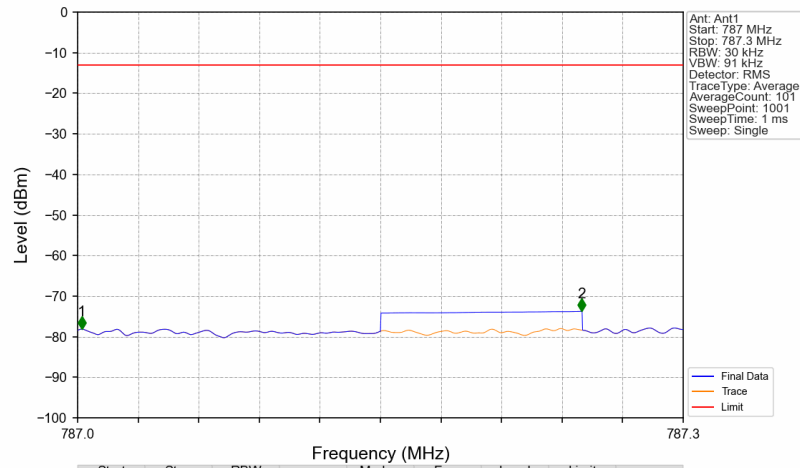
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV_AGC



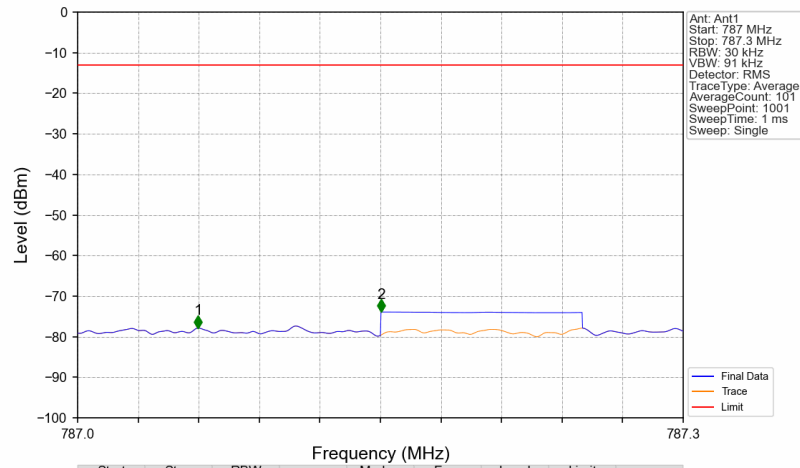
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV_AGC+3



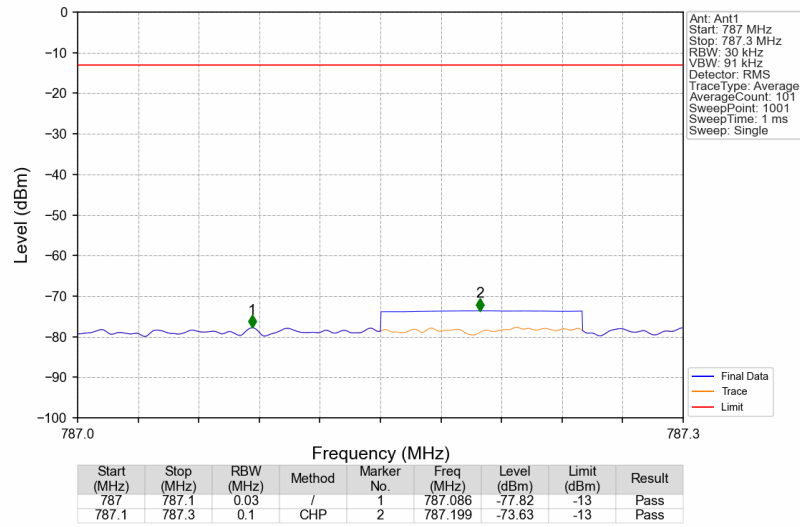
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV_AGC



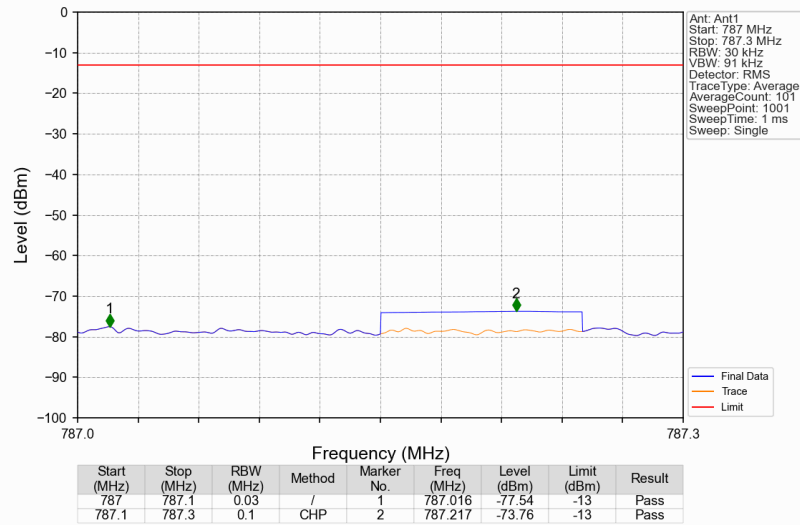
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV_AGC+3



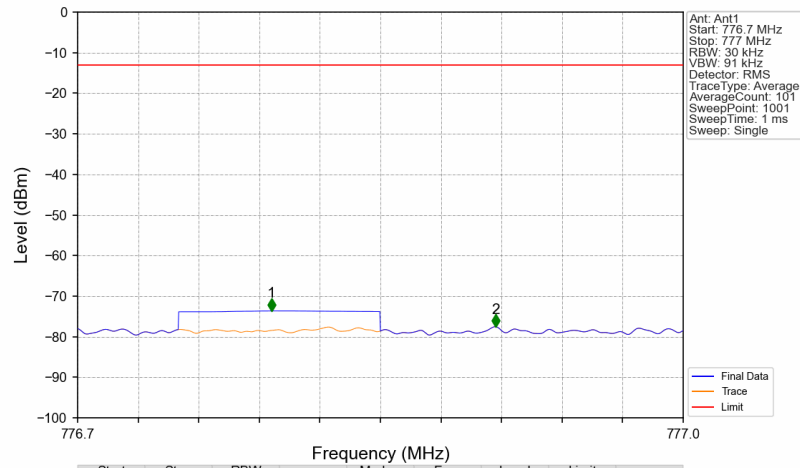
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV_AGC



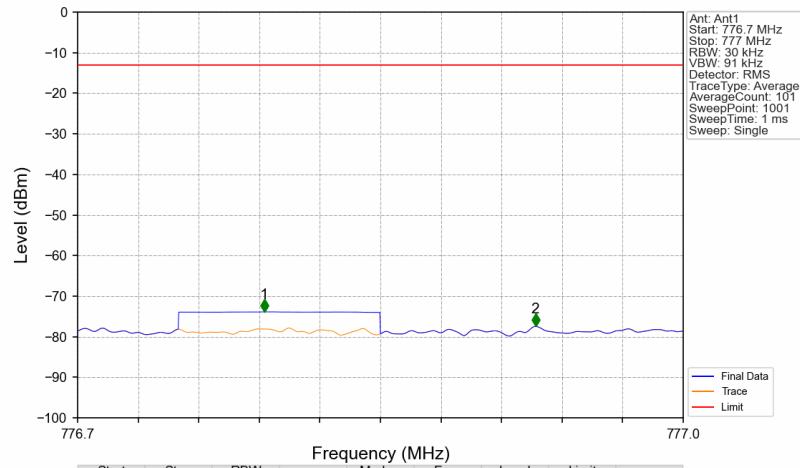
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV_AGC+3



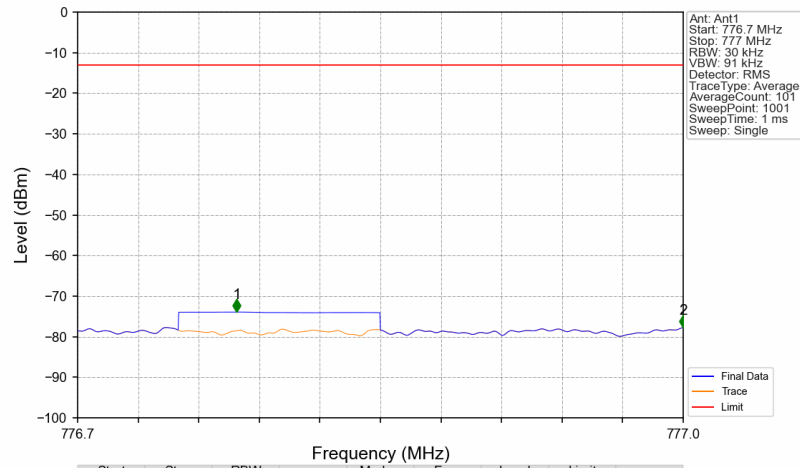
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV_AGC



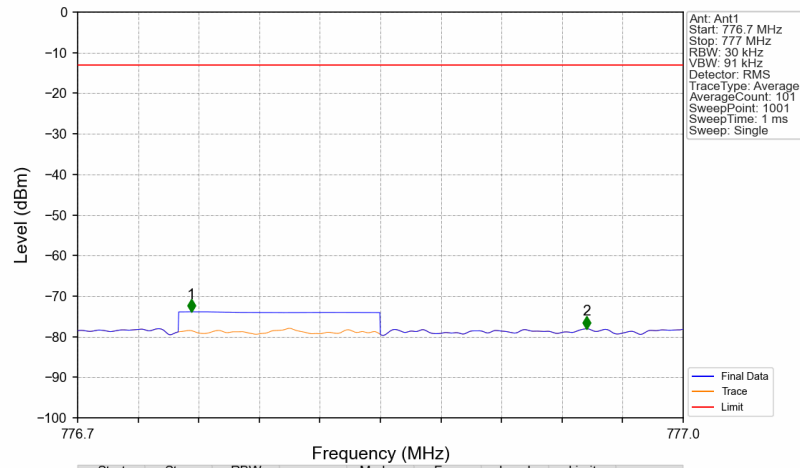
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



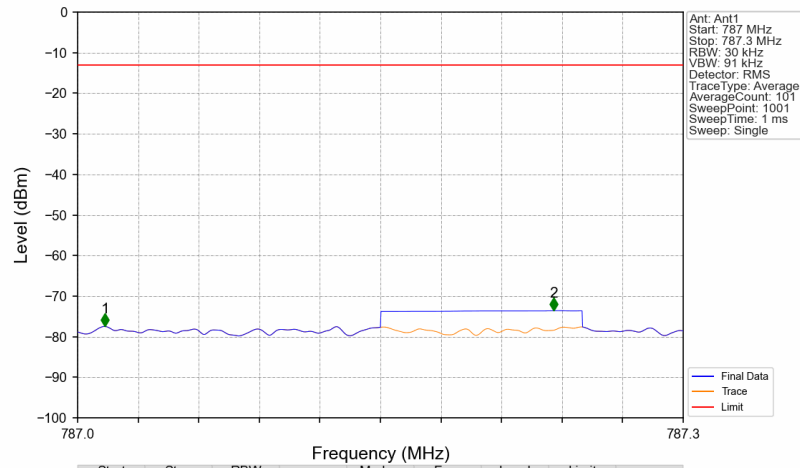
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV_AGC



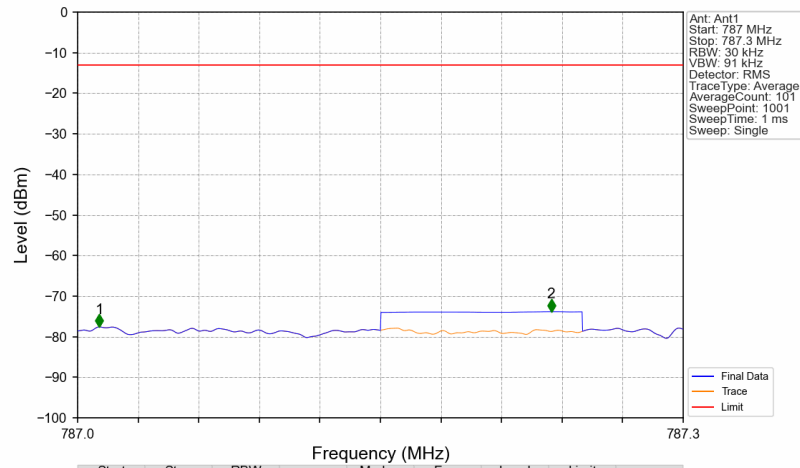
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



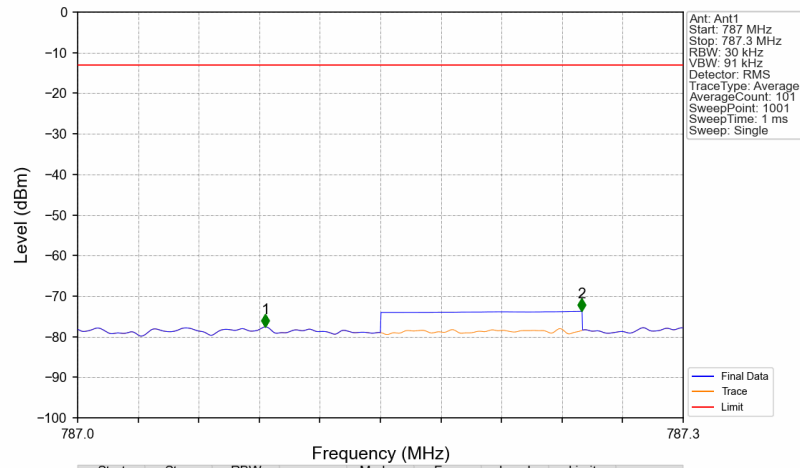
Band13_753.5MHz_AWGN_SISO_Ant1_NTNV_AGC



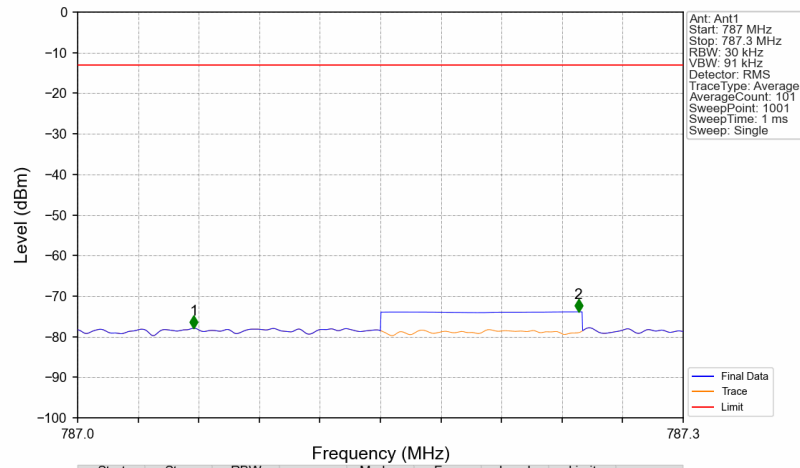
Band13_753.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



Band13_753.5MHz_AWGN_SISO_Ant1_NTNV_AGC



Band13_753.5MHz_AWGN_SISO_Ant1_NTNV_AGC+3



6. Spurious emissions

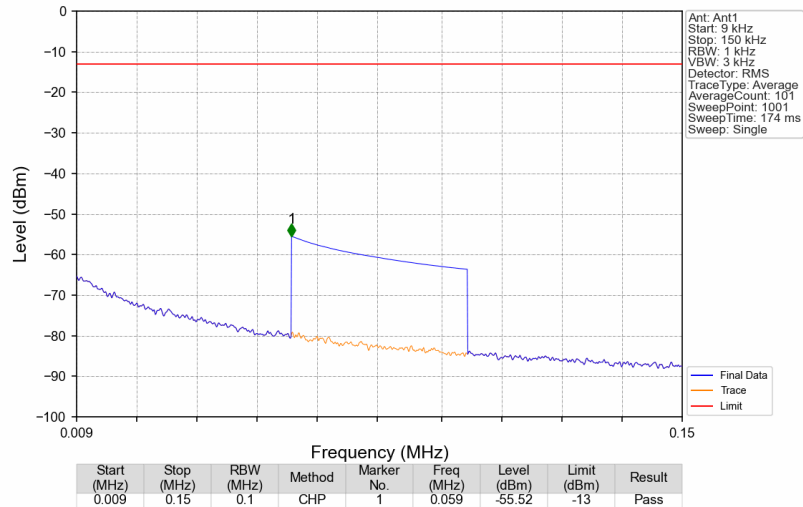
6.1 Band13

6.1.1 Test Result

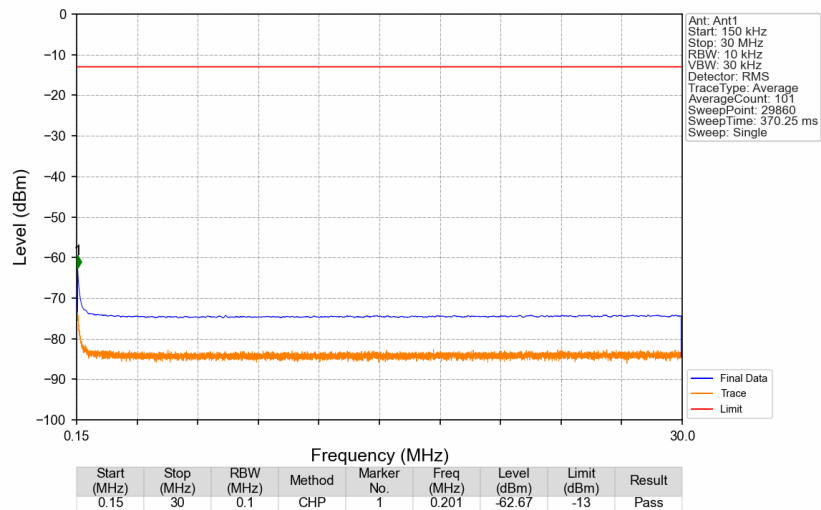
Band: 13 / NTNV								
Signal			Channel	TX Type	ANT	SE (dBm)		Verdict
Type	Level (dBm)	Frequency (MHz)				Result	Limit	
GMSK 0.2MHz	-3.4	746.2	LCH	SISO	1	Refer To Test Graph		Pass
		751	MCH	SISO	1	Refer To Test Graph		Pass
		755.8	HCH	SISO	1	Refer To Test Graph		Pass
AWGN 5MHz	-3.4	748.5	LCH	SISO	1	Refer To Test Graph		Pass
		751	MCH	SISO	1	Refer To Test Graph		Pass
		753.5	HCH	SISO	1	Refer To Test Graph		Pass

6.1.2 Test Graph

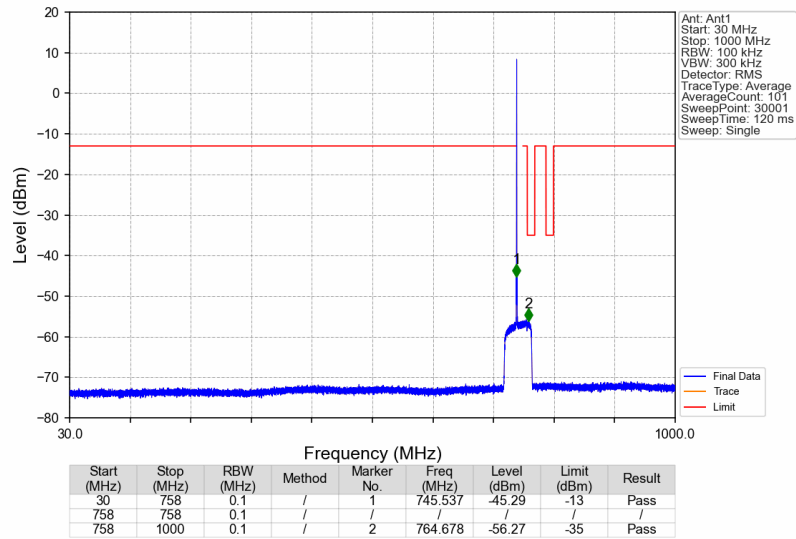
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV



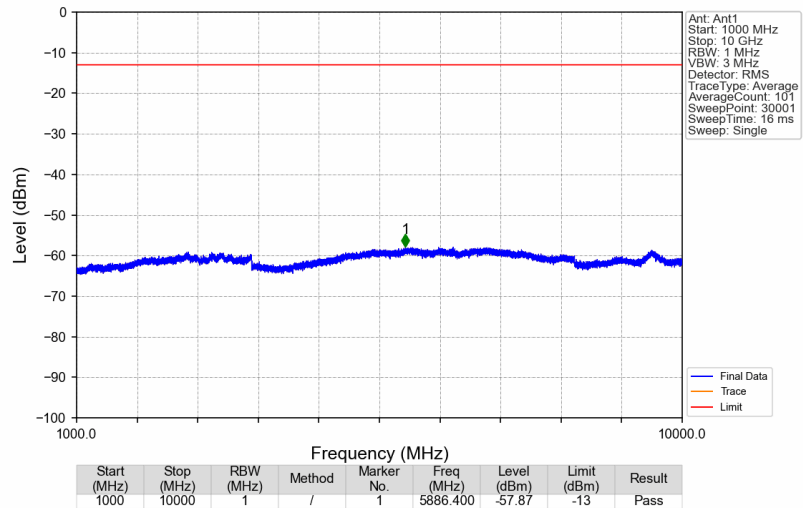
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV



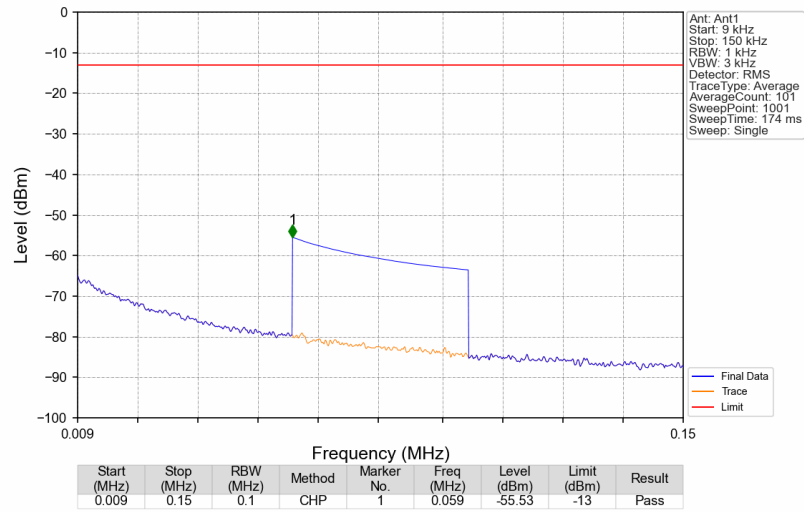
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV



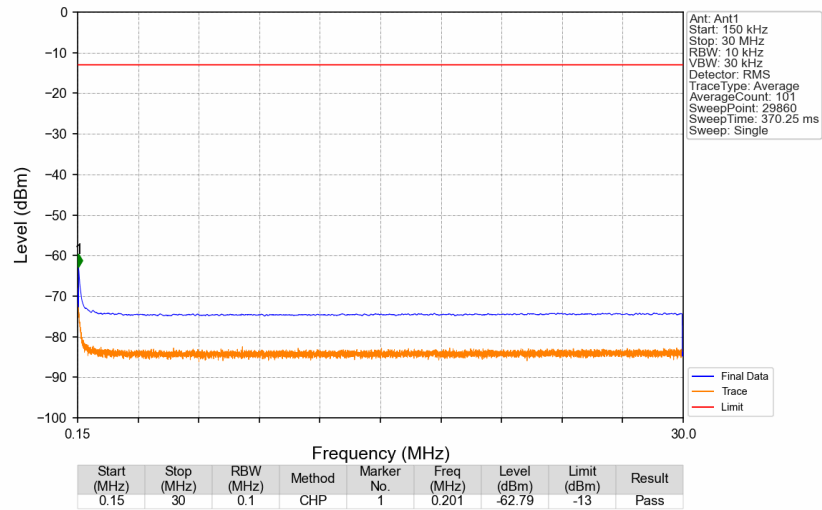
Band13_746.2MHz_GMSK_SISO_Ant1_NTNV



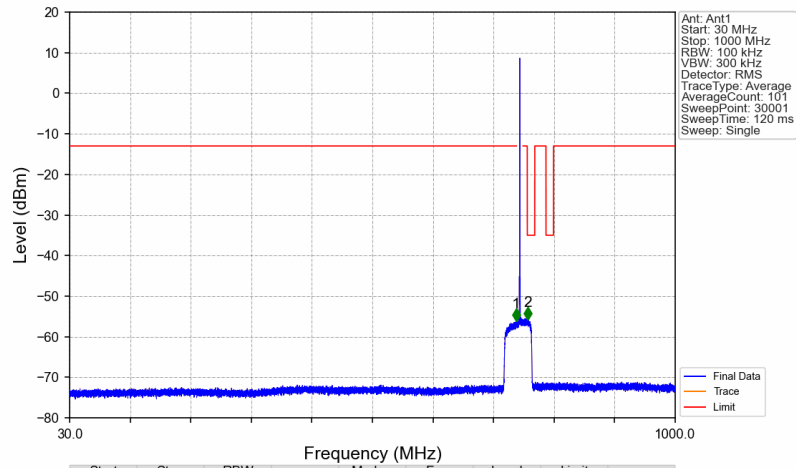
Band13_751MHz_GMSK_SISO_Ant1_NTNV



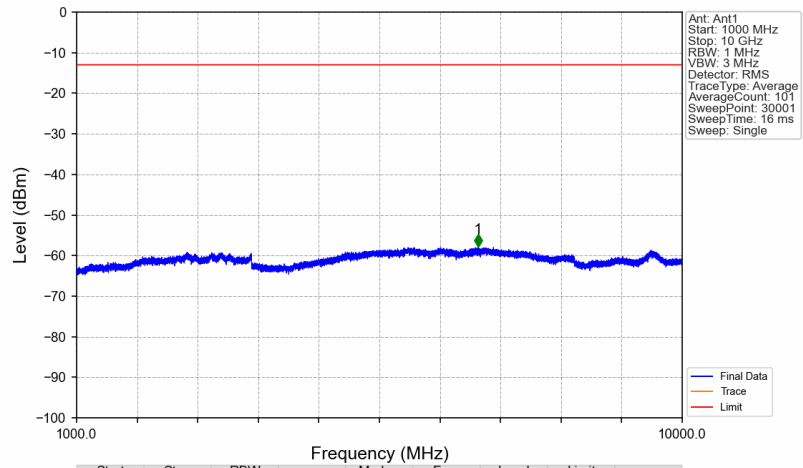
Band13_751MHz_GMSK_SISO_Ant1_NTNV



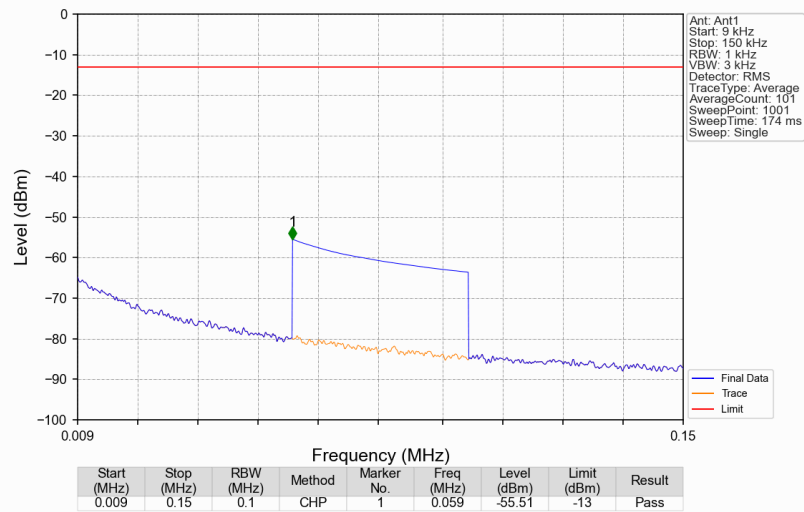
Band13_751MHz_GMSK_SISO_Ant1_NTNV



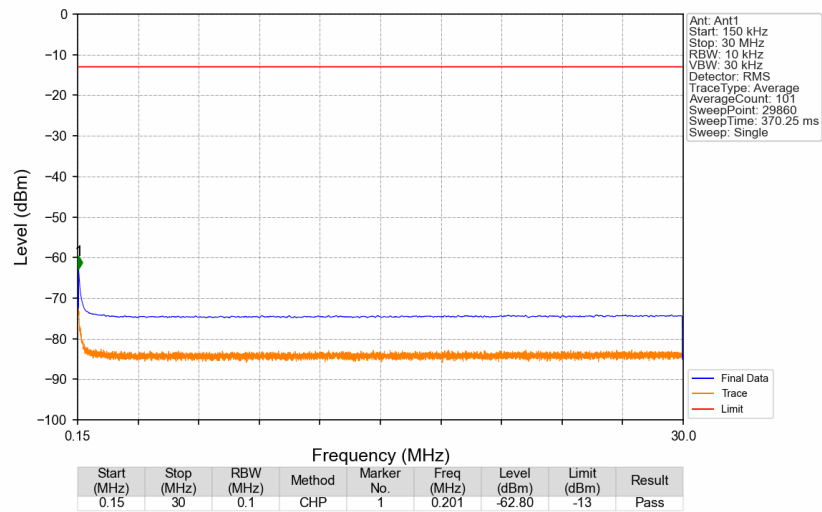
Band13_751MHz_GMSK_SISO_Ant1_NTNV



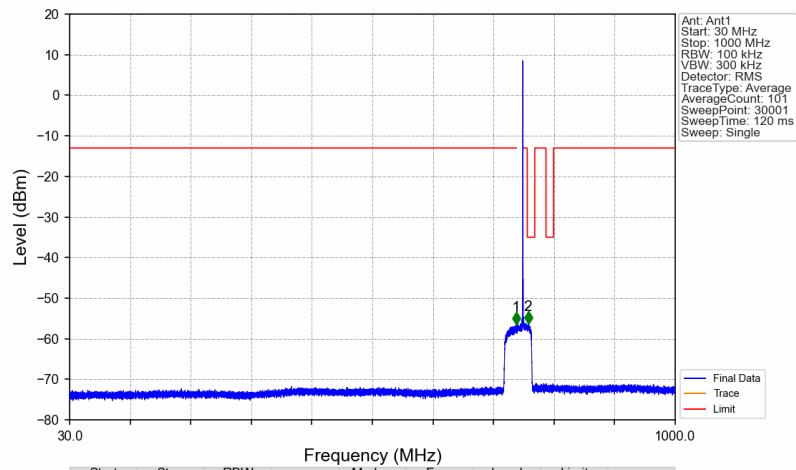
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV



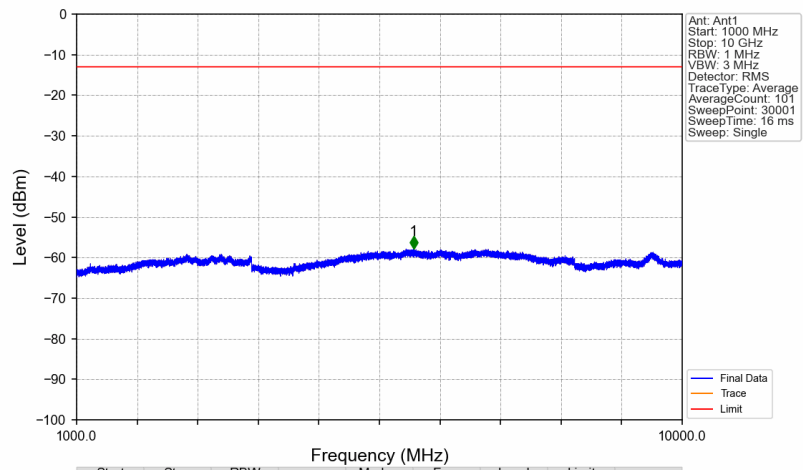
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV



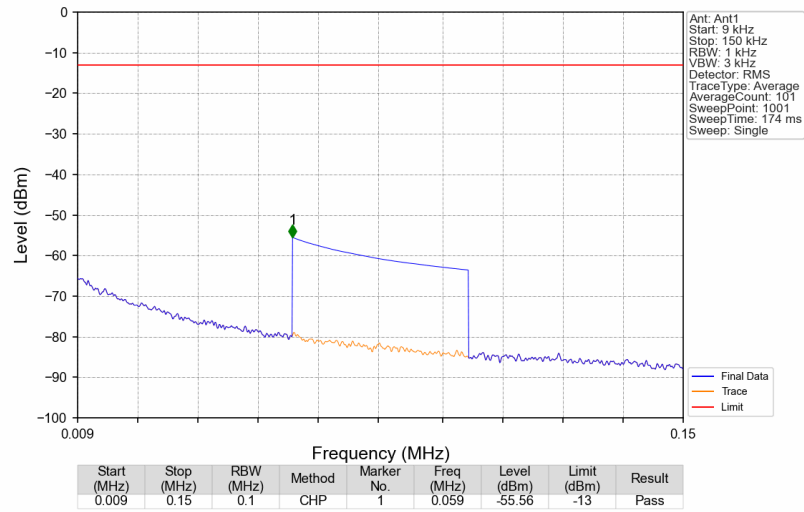
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV



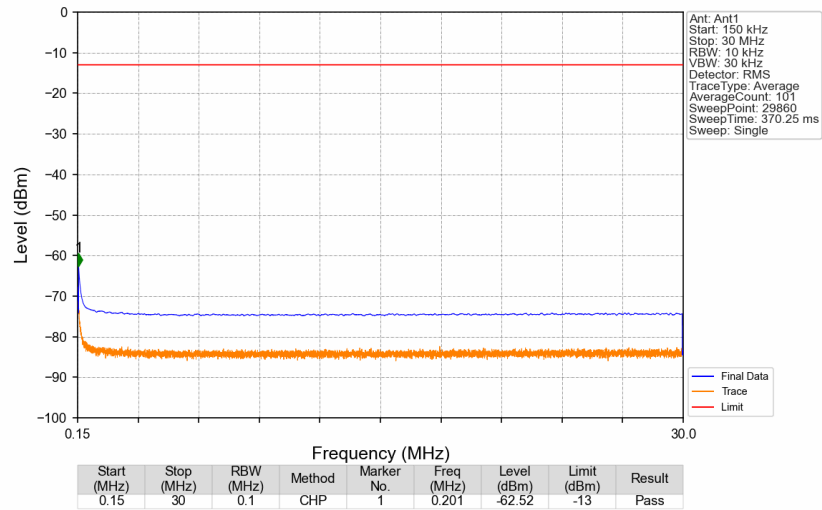
Band13_755.8MHz_GMSK_SISO_Ant1_NTNV



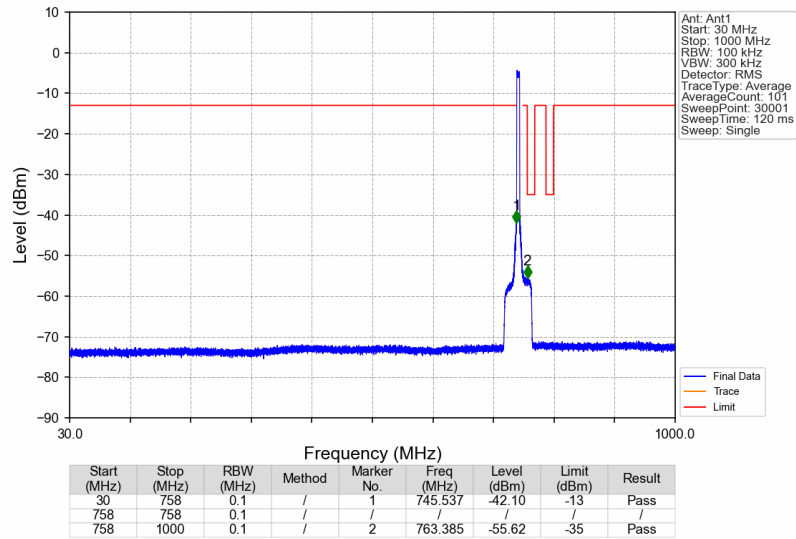
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV



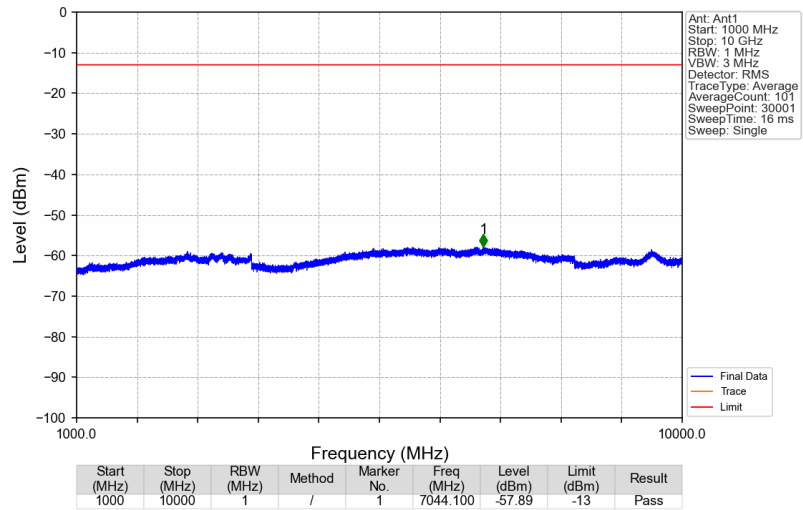
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV



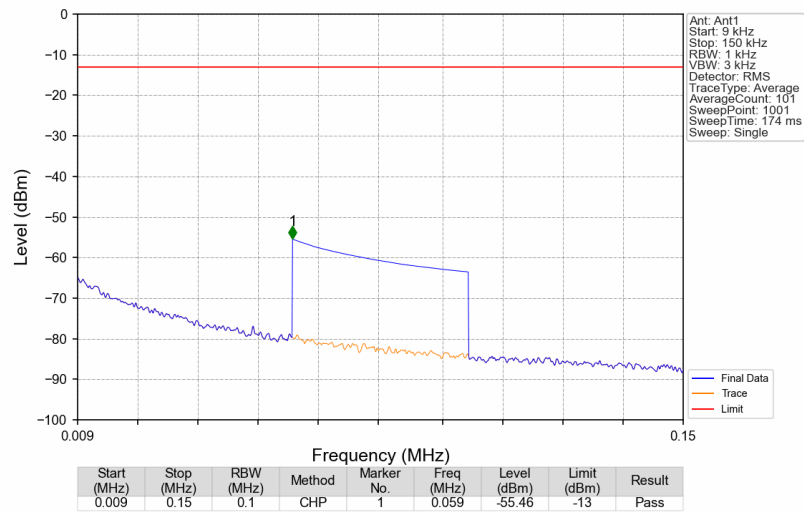
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV



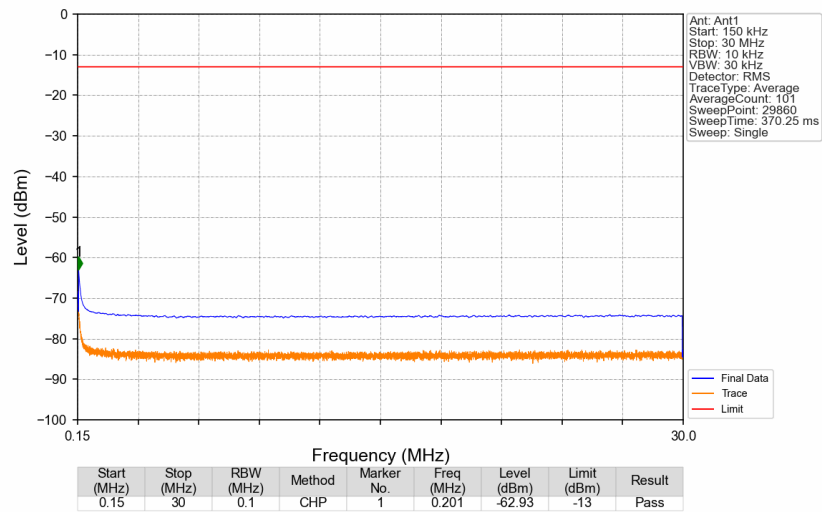
Band13_748.5MHz_AWGN_SISO_Ant1_NTNV



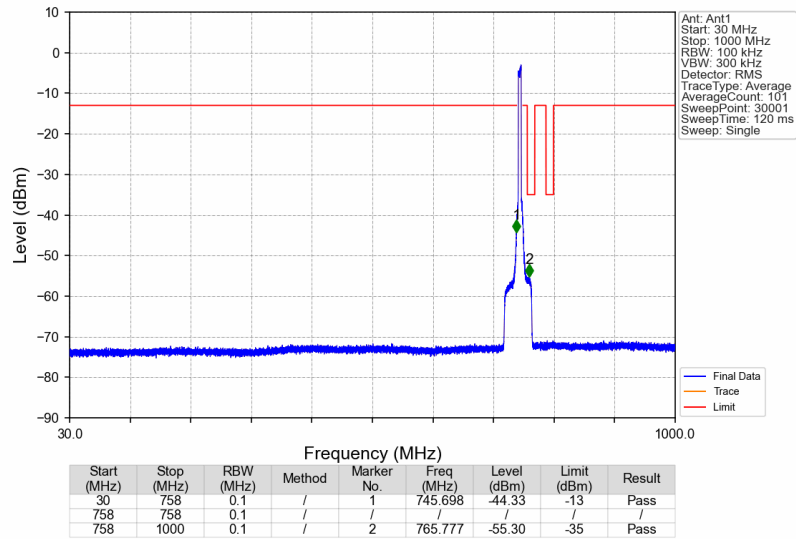
Band13_751MHz_AWGN_SISO_Ant1_NTNV



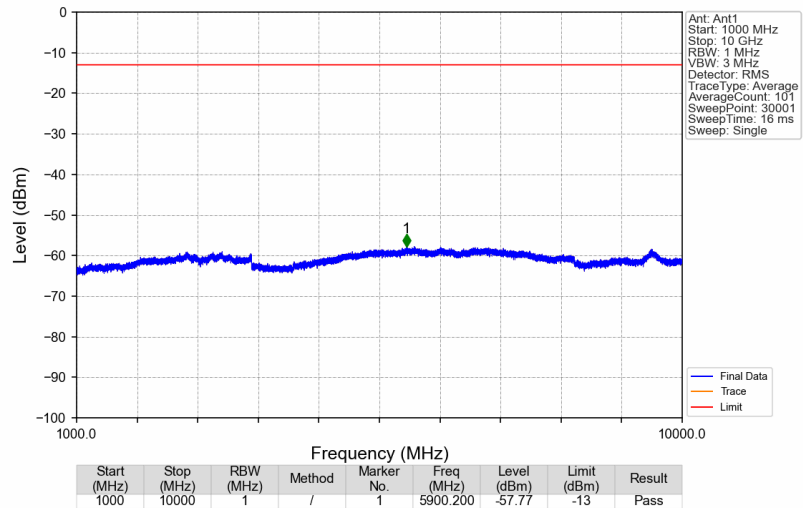
Band13_751MHz_AWGN_SISO_Ant1_NTNV



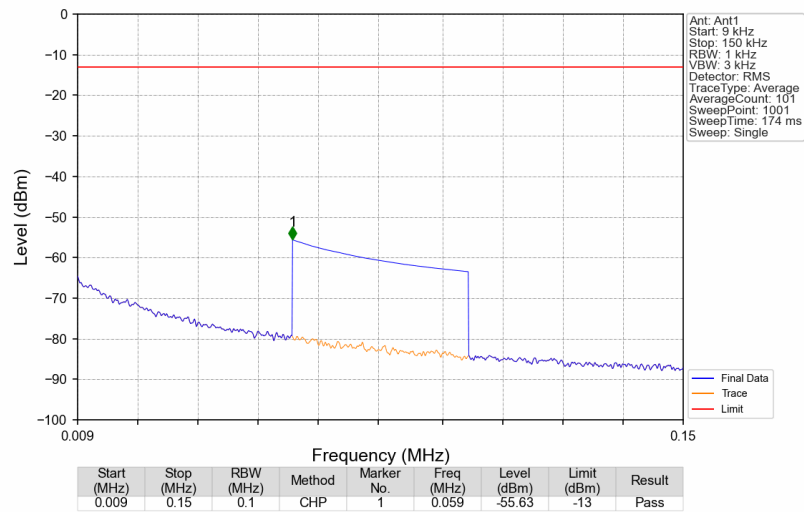
Band13_751MHz_AWGN_SISO_Ant1_NTNV



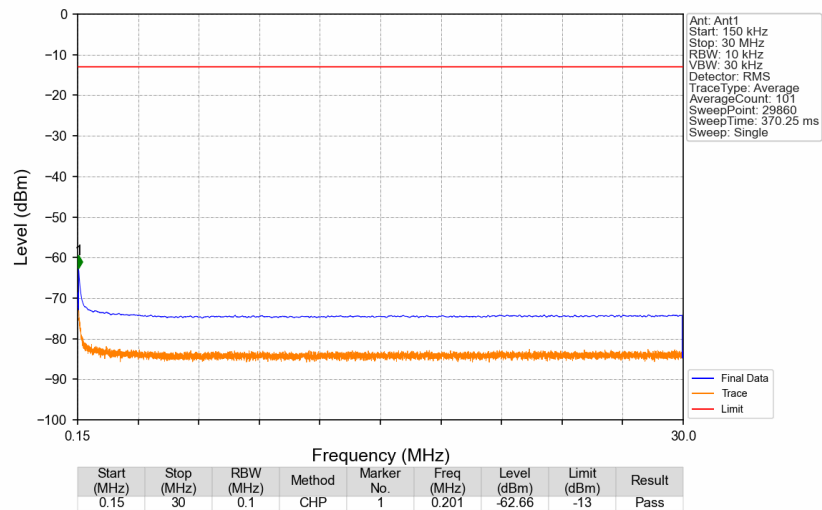
Band13_751MHz_AWGN_SISO_Ant1_NTNV



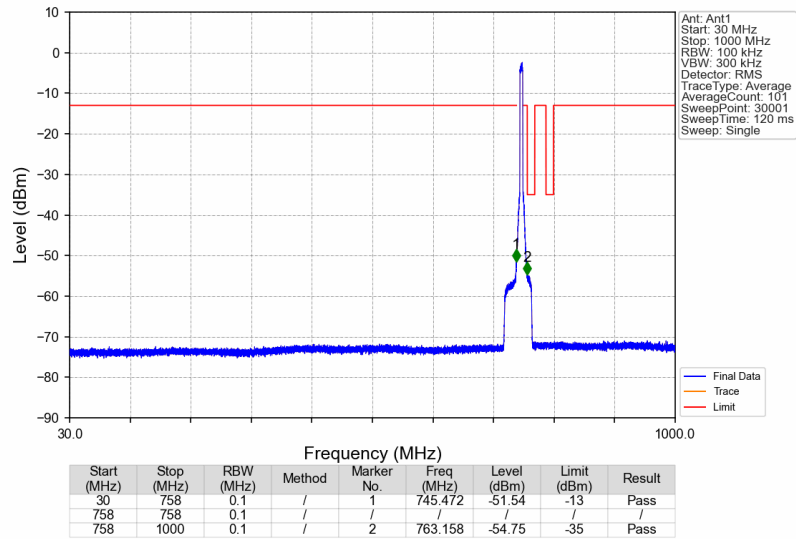
Band13_753.5MHz_AWGN_SISO_Ant1_NTNV



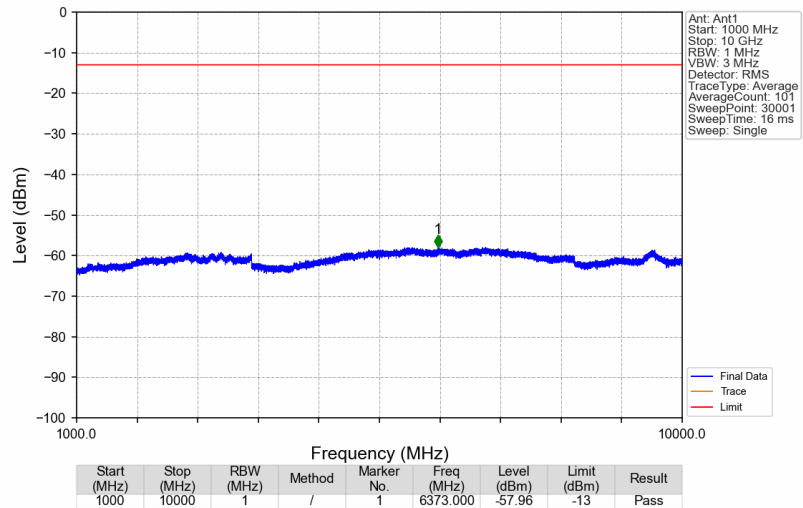
Band13_753.5MHz_AWGN_SISO_Ant1_NTNV



Band13_753.5MHz_AWGN_SISO_Ant1_NTNV



Band13_753.5MHz_AWGN_SISO_Ant1_NTNV



7. Frequency stability measurements

7.1 Band13_Ant1

7.1.1 Test Result

Band: 13 / NTNV							
Signal			Temp (°C)	Voltage (VDC)	Freq. Error (Hz)	Tolerance (ppm)	Verdict
Type	Level (dBm)	Frequency (MHz)					
CW	-3.4	746.1	20	27.5	9	0.0121	Pass
				28.0	10	0.0134	Pass
				28.5	11	0.0147	Pass
			-40	28.0	10	0.0134	Pass
			-30	28.0	9	0.0121	Pass
			-20	28.0	8	0.0107	Pass
			-10	28.0	13	0.0174	Pass
			0	28.0	10	0.0134	Pass
			10	28.0	7	0.0094	Pass
			30	28.0	9	0.0121	Pass
			40	28.0	11	0.0147	Pass
			55	28.0	12	0.0161	Pass
		751	20	27.5	8	0.0107	Pass
				28.0	12	0.0160	Pass
				28.5	10	0.0133	Pass
			-40	28.0	8	0.0107	Pass
			-30	28.0	11	0.0146	Pass
			-20	28.0	9	0.0120	Pass
			-10	28.0	8	0.0107	Pass
			0	28.0	10	0.0133	Pass
			10	28.0	7	0.0093	Pass
			30	28.0	14	0.0186	Pass
			40	28.0	12	0.0160	Pass
			55	28.0	10	0.0133	Pass
		755.9	20	27.5	7	0.0093	Pass
				28.0	10	0.0132	Pass
				28.5	11	0.0146	Pass
			-40	28.0	10	0.0132	Pass
			-30	28.0	13	0.0172	Pass
			-20	28.0	12	0.0159	Pass
			-10	28.0	14	0.0185	Pass
			0	28.0	10	0.0132	Pass
			10	28.0	11	0.0146	Pass
			30	28.0	7	0.0093	Pass
			40	28.0	13	0.0172	Pass
			55	28.0	12	0.0159	Pass

8. Radiated Spurious Emissions

8.1 Band13_Ant1

8.1.1 Test Result

GMSK 746.2MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
408.2	Horizontal	-69.00	-13	-56.00	Pass
594.1	Horizontal	-64.88	-13	-51.88	Pass
946.8	Horizontal	-60.07	-13	-47.07	Pass
1332.6	Horizontal	-58.49	-13	-45.49	Pass
2737.5	Horizontal	-51.28	-13	-38.28	Pass
6506.2	Horizontal	-47.66	-13	-34.66	Pass
397.5	Vertical	-69.44	-13	-56.44	Pass
567.7	Vertical	-63.27	-13	-50.27	Pass
958.8	Vertical	-57.34	-13	-44.34	Pass
1351.9	Vertical	-60.05	-13	-47.05	Pass
2756.5	Vertical	-55.29	-13	-42.29	Pass
6495.7	Vertical	-49.23	-13	-36.23	Pass

GMSK 751MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
374.6	Horizontal	-69.13	-13	-56.13	Pass
607.7	Horizontal	-63.09	-13	-50.09	Pass
973.7	Horizontal	-60.12	-13	-47.12	Pass
1361.6	Horizontal	-59.46	-13	-46.46	Pass
2765.7	Horizontal	-53.07	-13	-40.07	Pass
6496.5	Horizontal	-47.77	-13	-34.77	Pass
355.5	Vertical	-68.46	-13	-55.46	Pass
603.8	Vertical	-65.19	-13	-52.19	Pass
945.3	Vertical	-61.95	-13	-48.95	Pass
1369.1	Vertical	-56.21	-13	-43.21	Pass
2756.4	Vertical	-53.64	-13	-40.64	Pass
6479.4	Vertical	-46.77	-13	-33.77	Pass

GMSK 755.8MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
382.2	Horizontal	-66.94	-13	-53.94	Pass
564.8	Horizontal	-62.20	-13	-49.20	Pass
942.1	Horizontal	-59.33	-13	-46.33	Pass
1355.6	Horizontal	-61.98	-13	-48.98	Pass
2767.7	Horizontal	-53.99	-13	-40.99	Pass
6511.1	Horizontal	-46.92	-13	-33.92	Pass
386.6	Vertical	-71.09	-13	-58.09	Pass
563.3	Vertical	-66.34	-13	-53.34	Pass
953.3	Vertical	-58.21	-13	-45.21	Pass
1366.0	Vertical	-59.65	-13	-46.65	Pass
2732.6	Vertical	-52.95	-13	-39.95	Pass
6486.5	Vertical	-50.23	-13	-37.23	Pass

AWGN 748.5MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
386.6	Horizontal	-68.13	-13	-55.13	Pass
601.6	Horizontal	-65.01	-13	-52.01	Pass
962.8	Horizontal	-61.75	-13	-48.75	Pass
1357.1	Horizontal	-61.53	-13	-48.53	Pass
2734.4	Horizontal	-56.86	-13	-43.86	Pass
6512.9	Horizontal	-48.13	-13	-35.13	Pass
385.4	Vertical	-70.65	-13	-57.65	Pass
596.6	Vertical	-63.75	-13	-50.75	Pass
938.4	Vertical	-57.87	-13	-44.87	Pass
1325.4	Vertical	-58.04	-13	-45.04	Pass
2751.6	Vertical	-51.20	-13	-38.20	Pass
6483.0	Vertical	-46.02	-13	-33.02	Pass

AWGN 751MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
390.5	Horizontal	-69.40	-13	-56.40	Pass
577.0	Horizontal	-66.61	-13	-53.61	Pass
944.1	Horizontal	-58.00	-13	-45.00	Pass
1362.0	Horizontal	-57.71	-13	-44.71	Pass
2759.4	Horizontal	-51.94	-13	-38.94	Pass
6491.7	Horizontal	-48.21	-13	-35.21	Pass
390.9	Vertical	-69.01	-13	-56.01	Pass
584.7	Vertical	-65.33	-13	-52.33	Pass
963.1	Vertical	-56.21	-13	-43.21	Pass
1356.9	Vertical	-58.98	-13	-45.98	Pass
2736.2	Vertical	-51.28	-13	-38.28	Pass
6514.8	Vertical	-47.30	-13	-34.30	Pass

AWGN 753.5MHz					
Frequency	Spurious Emission Polarization and Level		Limit	Over Limit	Verdict
MHz	Polarization	dBm	dBm	dB	
402.8	Horizontal	-70.08	-13	-57.08	Pass
567.6	Horizontal	-61.28	-13	-48.28	Pass
926.6	Horizontal	-58.69	-13	-45.69	Pass
1371.9	Horizontal	-57.71	-13	-44.71	Pass
2730.8	Horizontal	-53.94	-13	-40.94	Pass
6479.8	Horizontal	-50.51	-13	-37.51	Pass
397.3	Vertical	-71.79	-13	-58.79	Pass
573.2	Vertical	-61.45	-13	-48.45	Pass
935.9	Vertical	-58.25	-13	-45.25	Pass
1342.5	Vertical	-61.75	-13	-48.75	Pass
2770.9	Vertical	-55.13	-13	-42.13	Pass
6508.0	Vertical	-46.34	-13	-33.34	Pass