

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

1.1.1 B13_5MHz_ERP

Band: 13 / Bandwidth: 5MHz / NTV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
64QAM	779.5	1	0	22.46	3.00	23.31	<=34.77	Pass
			13	22.56	3.00	23.41	<=34.77	Pass
			24	22.58	3.00	23.43	<=34.77	Pass
		12	0	21.51	3.00	22.36	<=34.77	Pass
			6	21.56	3.00	22.41	<=34.77	Pass
			13	21.61	3.00	22.46	<=34.77	Pass
		25	0	21.69	3.00	22.54	<=34.77	Pass
	782	1	0	22.67	3.00	23.52	<=34.77	Pass
			13	22.85	3.00	23.70	<=34.77	Pass
			24	22.65	3.00	23.50	<=34.77	Pass
		12	0	21.71	3.00	22.56	<=34.77	Pass
			6	21.74	3.00	22.59	<=34.77	Pass
			13	21.72	3.00	22.57	<=34.77	Pass
		25	0	21.74	3.00	22.59	<=34.77	Pass
	784.5	1	0	22.80	3.00	23.65	<=34.77	Pass
			13	22.78	3.00	23.63	<=34.77	Pass
			24	22.70	3.00	23.55	<=34.77	Pass
		12	0	21.84	3.00	22.69	<=34.77	Pass
			6	21.74	3.00	22.59	<=34.77	Pass
			13	21.73	3.00	22.58	<=34.77	Pass
		25	0	21.70	3.00	22.55	<=34.77	Pass

Note1: ERP=Conducted Power+Antenna Gain-2.15

1.1.2 B13_10MHz_ERP

Band: 13 / Bandwidth: 10MHz / NTV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
64QAM	782	1	0	22.74	3.00	23.59	<=34.77	Pass
			25	22.85	3.00	23.70	<=34.77	Pass
			49	22.73	3.00	23.58	<=34.77	Pass
		25	0	21.76	3.00	22.61	<=34.77	Pass
			13	21.75	3.00	22.60	<=34.77	Pass
			25	21.78	3.00	22.63	<=34.77	Pass
		50	0	21.77	3.00	22.62	<=34.77	Pass

Note1: ERP=Conducted Power+Antenna Gain-2.15

2. Frequency Stability

2.1 Test Result

2.1.1 B13_5MHz

Band: 13 / Bandwidth: 5MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
64QAM	779.5	25	0	20	3.27	1.216	0.0016	-2.5 to 2.5	Pass
					3.85	3.476	0.0045	-2.5 to 2.5	Pass
					4.43	0.329	0.0004	-2.5 to 2.5	Pass
				-30	3.85	0.730	0.0009	-2.5 to 2.5	Pass
				-20	3.85	-1.659	-0.0021	-2.5 to 2.5	Pass
				-10	3.85	1.588	0.0020	-2.5 to 2.5	Pass
				0	3.85	-1.659	-0.0021	-2.5 to 2.5	Pass
				10	3.85	-0.644	-0.0008	-2.5 to 2.5	Pass
				30	3.85	-1.087	-0.0014	-2.5 to 2.5	Pass
				40	3.85	2.117	0.0027	-2.5 to 2.5	Pass
				50	3.85	1.745	0.0022	-2.5 to 2.5	Pass
	782	25	0	20	3.27	-6.938	-0.0089	-2.5 to 2.5	Pass
					3.85	-6.323	-0.0081	-2.5 to 2.5	Pass
					4.43	-5.121	-0.0065	-2.5 to 2.5	Pass
				-30	3.85	-2.403	-0.0031	-2.5 to 2.5	Pass
				-20	3.85	-3.548	-0.0045	-2.5 to 2.5	Pass
				-10	3.85	-3.705	-0.0047	-2.5 to 2.5	Pass
				0	3.85	-3.219	-0.0041	-2.5 to 2.5	Pass
				10	3.85	1.116	0.0014	-2.5 to 2.5	Pass
				30	3.85	2.003	0.0026	-2.5 to 2.5	Pass
				40	3.85	0.372	0.0005	-2.5 to 2.5	Pass
				50	3.85	0.987	0.0013	-2.5 to 2.5	Pass
	784.5	25	0	20	3.27	3.934	0.0050	-2.5 to 2.5	Pass
					3.85	2.604	0.0033	-2.5 to 2.5	Pass
					4.43	8.955	0.0114	-2.5 to 2.5	Pass
				-30	3.85	3.304	0.0042	-2.5 to 2.5	Pass
				-20	3.85	-0.472	-0.0006	-2.5 to 2.5	Pass
				-10	3.85	6.623	0.0084	-2.5 to 2.5	Pass
				0	3.85	0.072	0.0001	-2.5 to 2.5	Pass
				10	3.85	1.945	0.0025	-2.5 to 2.5	Pass
				30	3.85	6.680	0.0085	-2.5 to 2.5	Pass
				40	3.85	7.410	0.0094	-2.5 to 2.5	Pass
				50	3.85	3.963	0.0051	-2.5 to 2.5	Pass

2.1.2 B13_10MHz

Band: 13 / Bandwidth: 10MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
64QAM	782	50	0	20	3.27	-2.089	-0.0027	-2.5 to 2.5	Pass
					3.85	0.815	0.0010	-2.5 to 2.5	Pass
					4.43	-0.515	-0.0007	-2.5 to 2.5	Pass
				-30	3.85	-2.346	-0.0030	-2.5 to 2.5	Pass
				-20	3.85	-5.322	-0.0068	-2.5 to 2.5	Pass
				-10	3.85	-3.748	-0.0048	-2.5 to 2.5	Pass
				0	3.85	-4.492	-0.0057	-2.5 to 2.5	Pass
				10	3.85	-2.446	-0.0031	-2.5 to 2.5	Pass
				30	3.85	-0.243	-0.0003	-2.5 to 2.5	Pass
				40	3.85	-1.373	-0.0018	-2.5 to 2.5	Pass
				50	3.85	-1.988	-0.0025	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band13_OBW

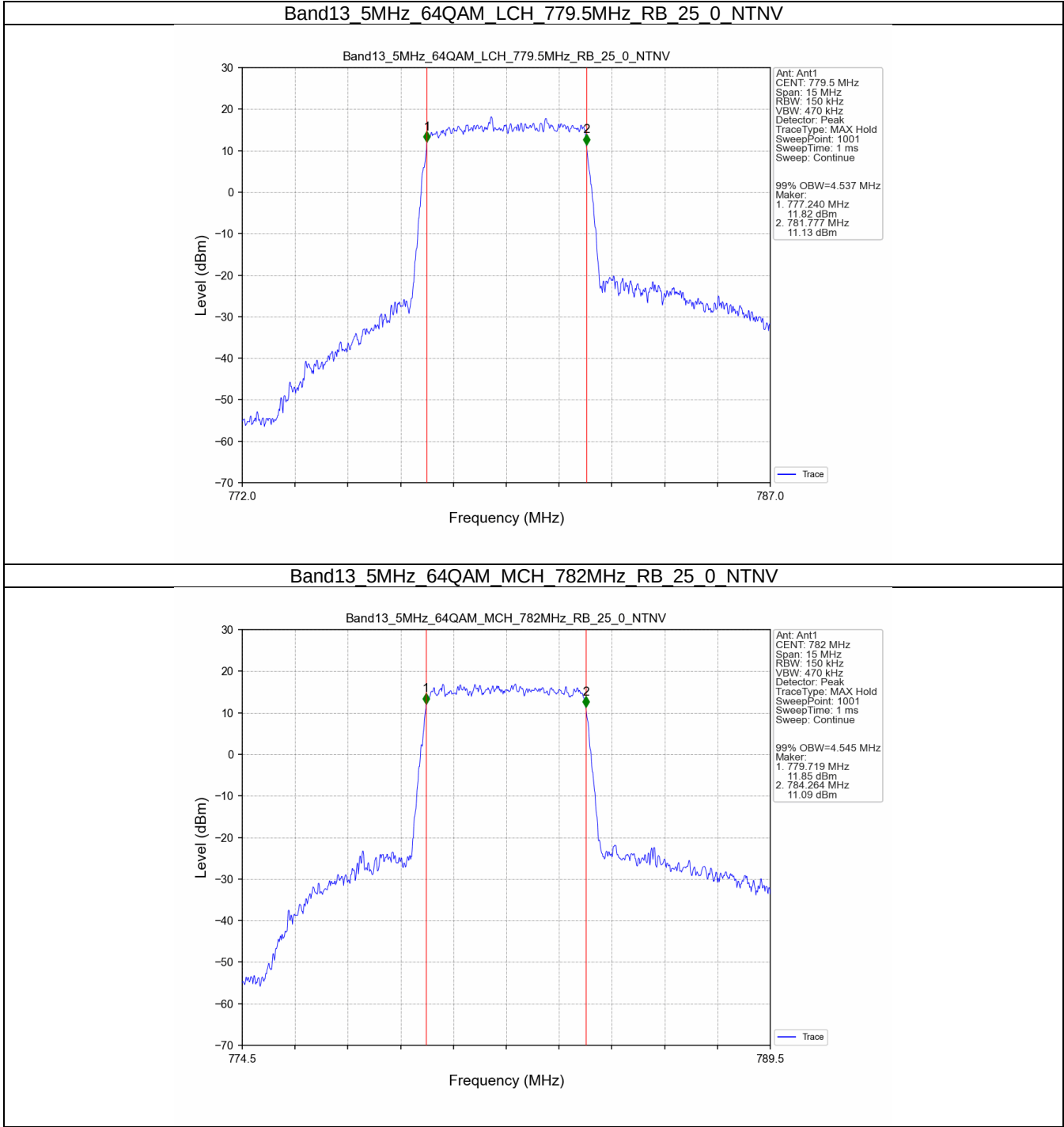
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	64QAM	779.5	25	0	4.537	/	Pass
		782	25	0	4.545	/	Pass
		784.5	25	0	4.547	/	Pass
10	64QAM	782	50	0	9.007	/	Pass

3.1.2 Band13_XDB

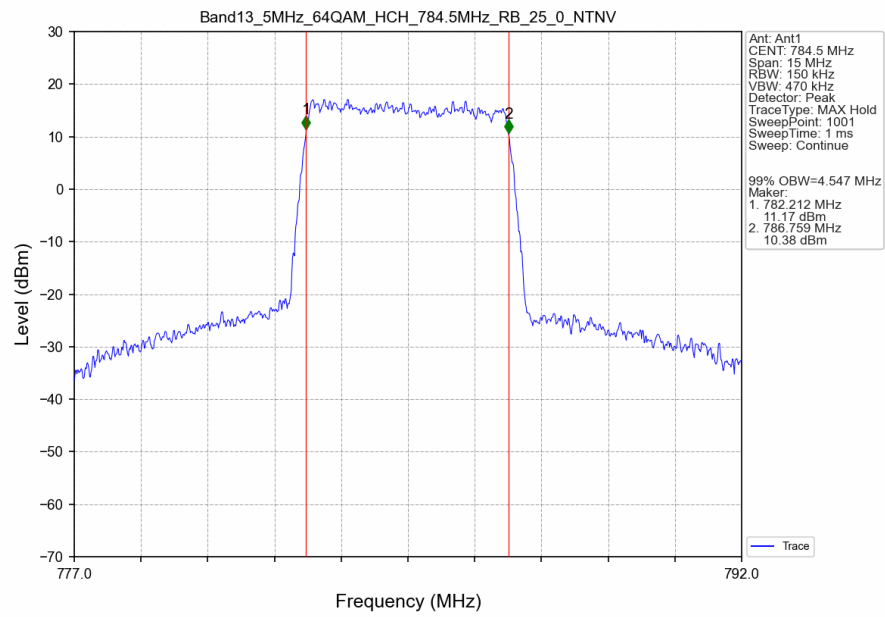
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	64QAM	779.5	25	0	5.020	/	Pass
		782	25	0	5.055	/	Pass
		784.5	25	0	5.055	/	Pass
10	64QAM	782	50	0	9.956	/	Pass

3.2 Test Graph

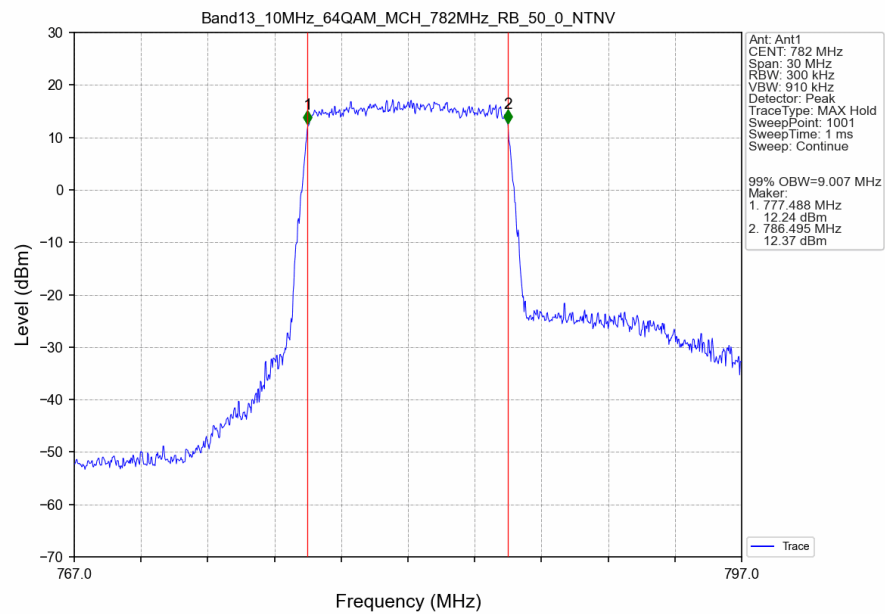
3.2.1 Band13_OBW



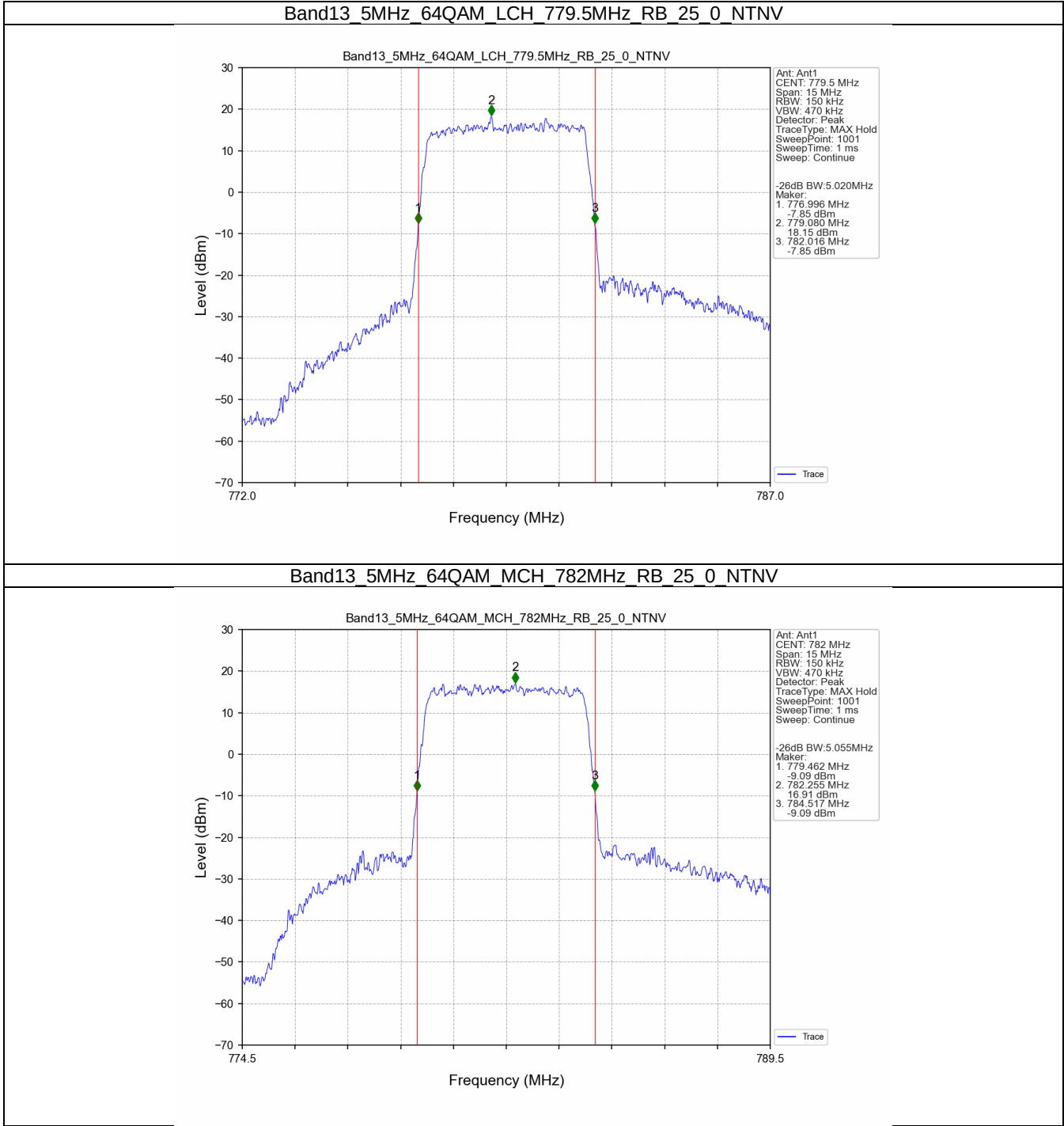
Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV



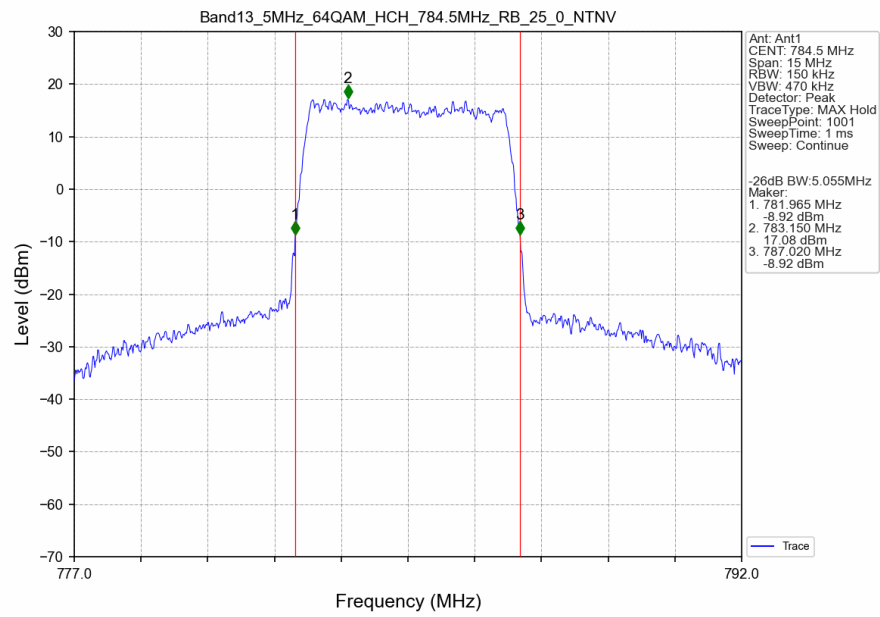
Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



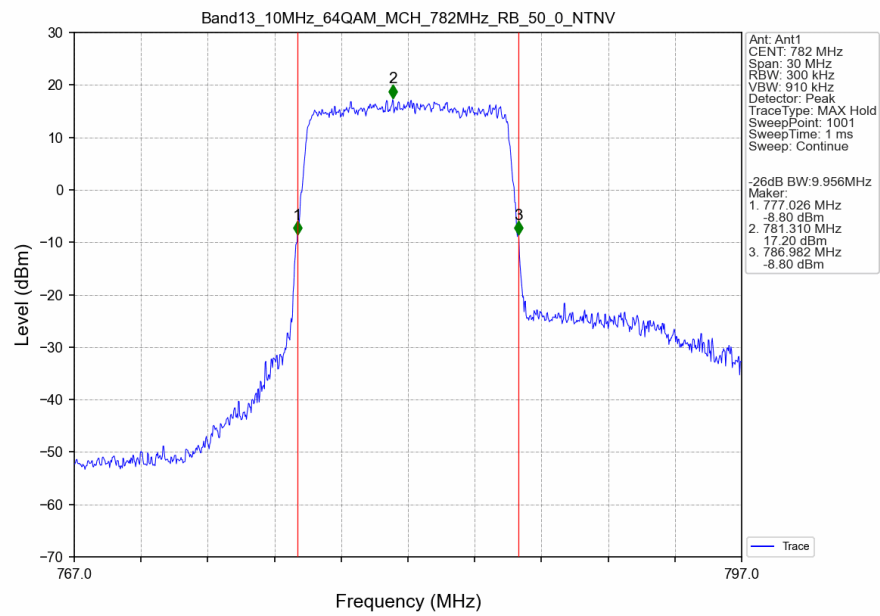
3.2.2 Band13_XDB



Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



4. Peak-Average Ratio

4.1 Test Result

4.1.1 B13_5MHz

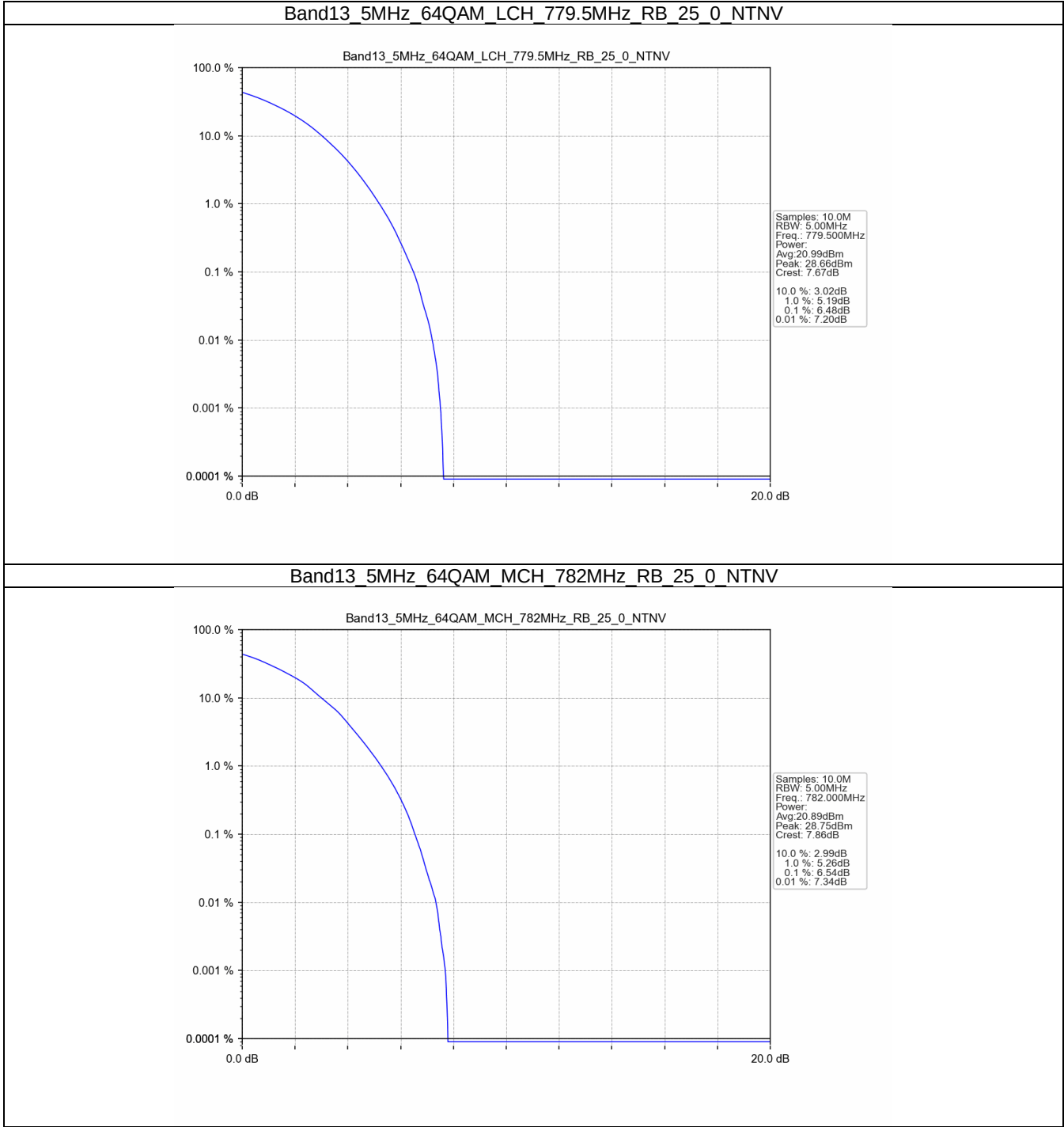
Band: 13 / Bandwidth: 5MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
64QAM	779.5	25	0	6.48	<=13	Pass
	782	25	0	6.54	<=13	Pass
	784.5	25	0	6.64	<=13	Pass

4.1.2 B13_10MHz

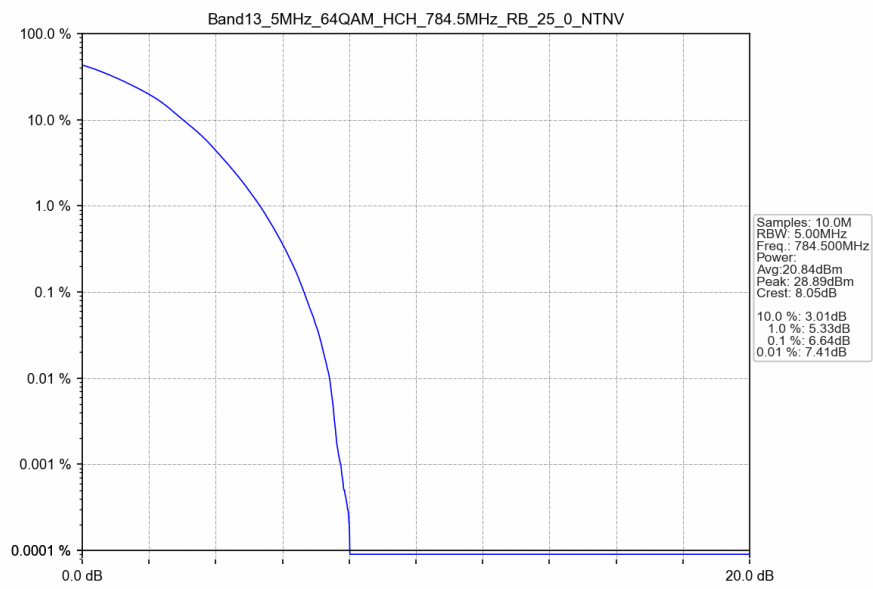
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
64QAM	782	50	0	6.53	<=13	Pass

4.2 Test Graph

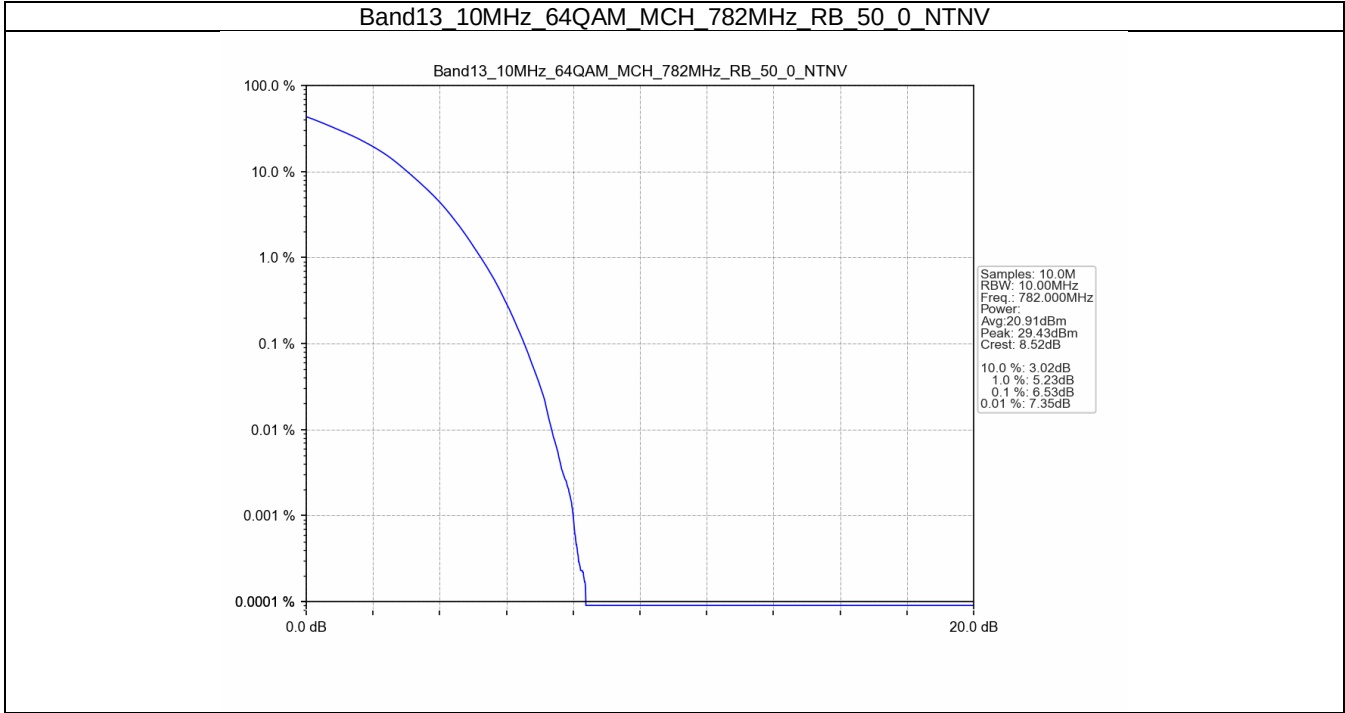
4.2.1 B13_5MHz



Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV



4.2.2 B13_10MHz



5. Spurious Emission

5.1 Test Result

5.1.1 B13_5MHz

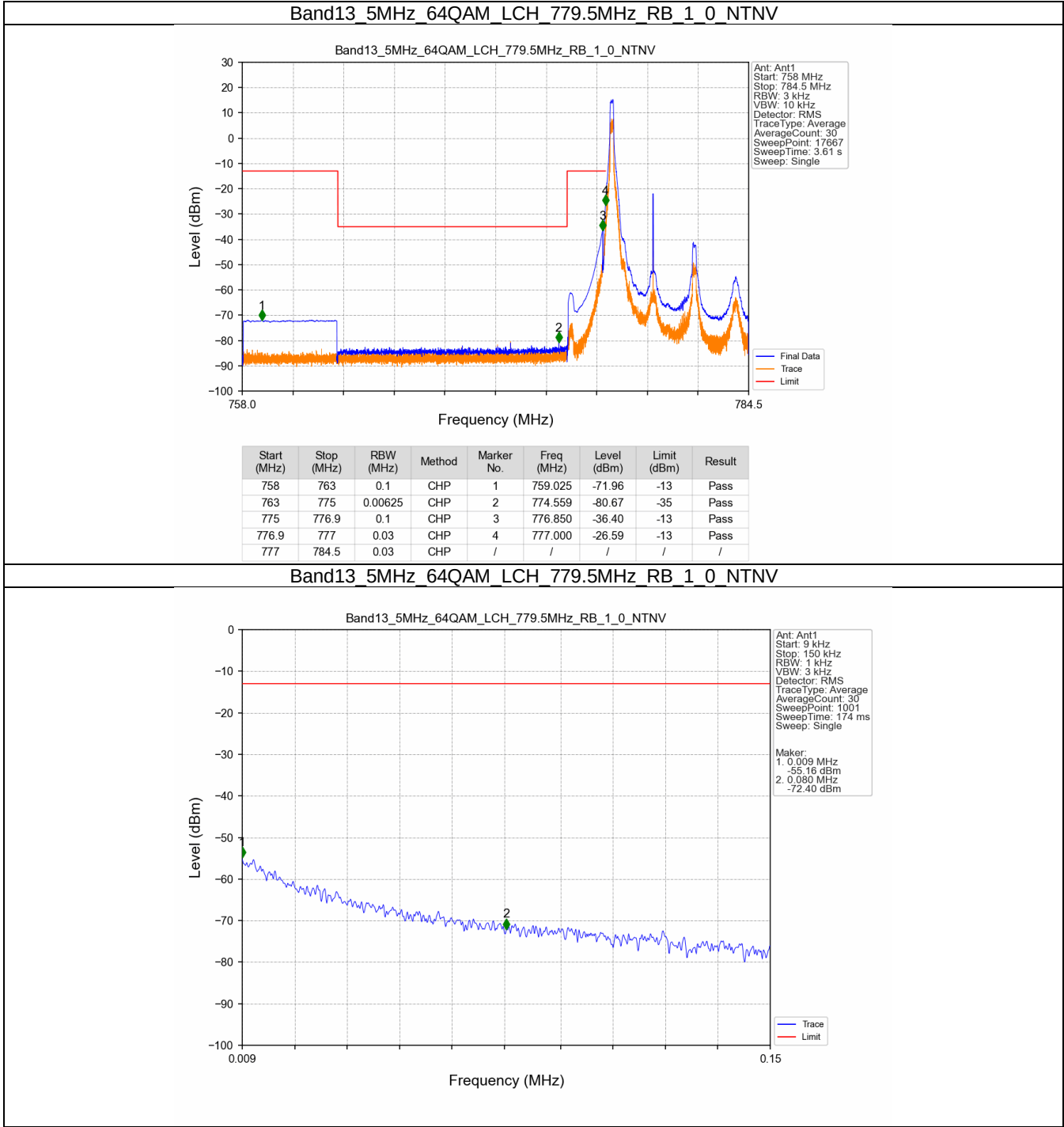
Band: 13 / Bandwidth: 5MHz / NTVN						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
64QAM	779.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	782	1	0	Refer To Test Graph		Pass
		784.5	1	0	Refer To Test Graph	
	24			Refer To Test Graph		Pass
	25		0	Refer To Test Graph		Pass

5.1.2 B13_10MHz

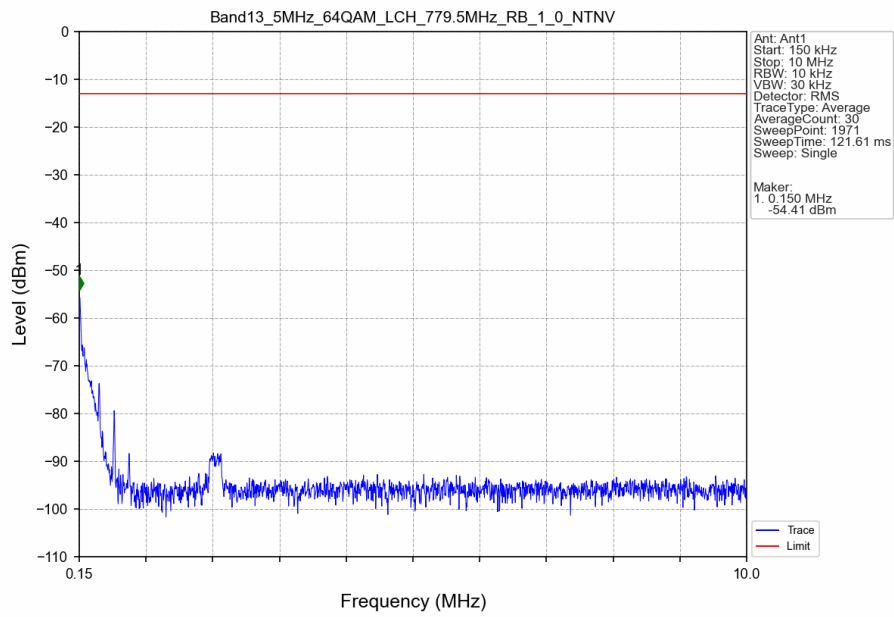
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
64QAM	782	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	782	1	49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

5.2 Test Graph

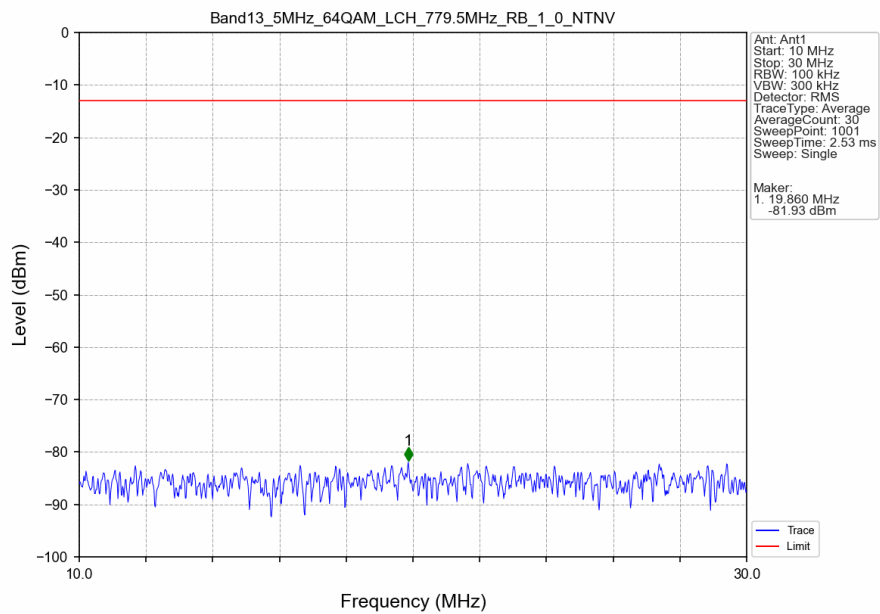
5.2.1 B13_5MHz



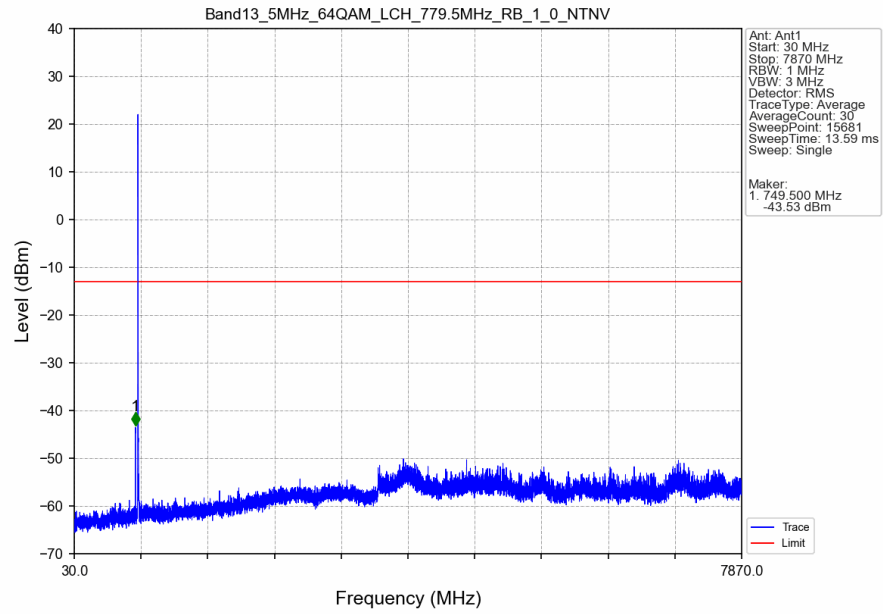
Band13_5MHz_64QAM_LCH_779.5MHz_RB_1_0_NTNV



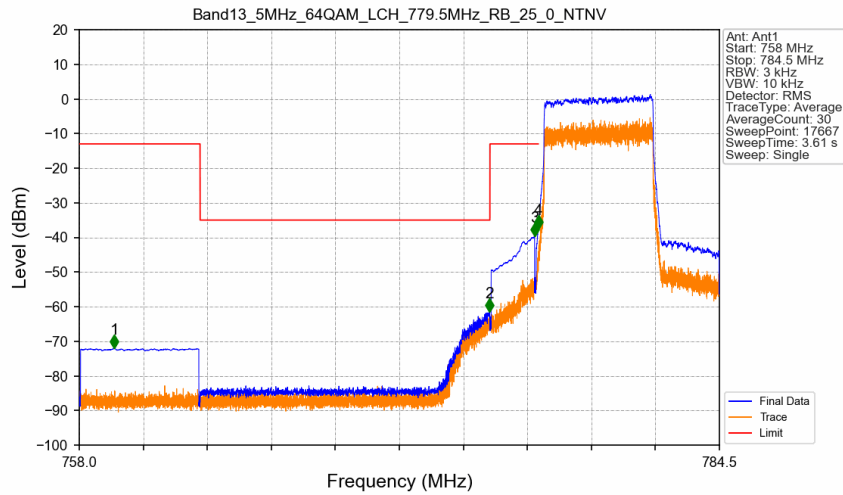
Band13_5MHz_64QAM_LCH_779.5MHz_RB_1_0_NTNV



Band13_5MHz_64QAM_LCH_779.5MHz_RB_1_0_NTNV

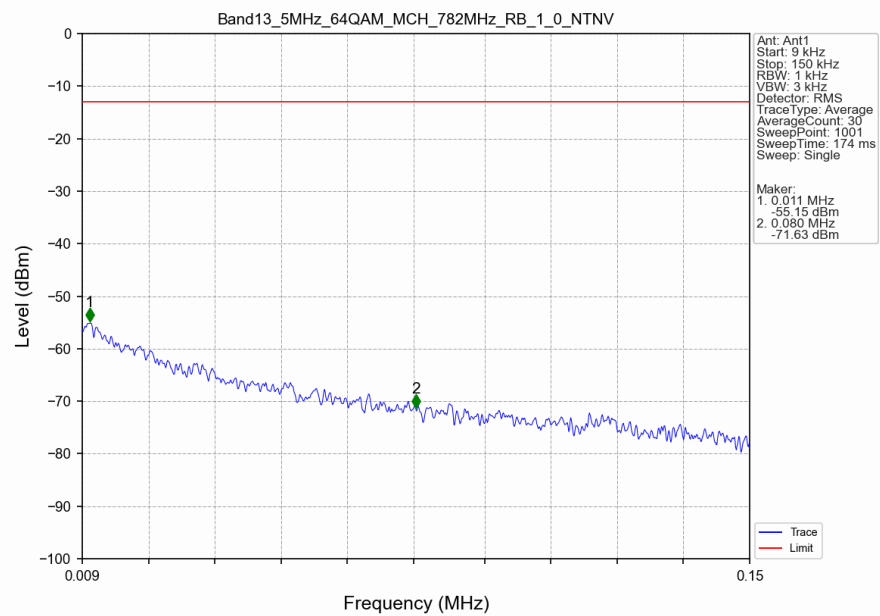


Band13_5MHz_64QAM_LCH_779.5MHz_RB_25_0_NTNV

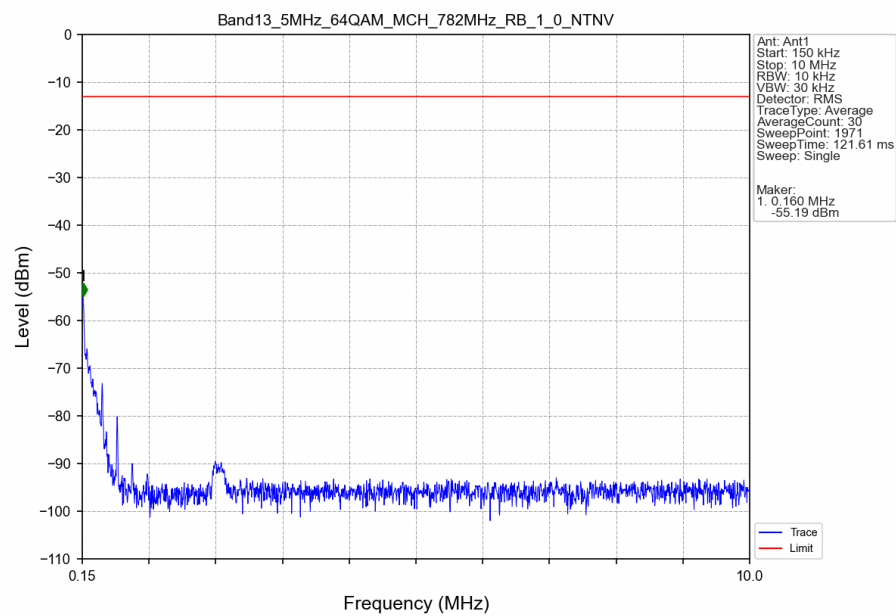


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	759.445	-72.03	-13	Pass
763	775	0.00625	CHP	2	774.973	-61.57	-35	Pass
775	776.9	0.1	CHP	3	776.850	-39.65	-13	Pass
776.9	777	0.03	CHP	4	777.000	-37.37	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

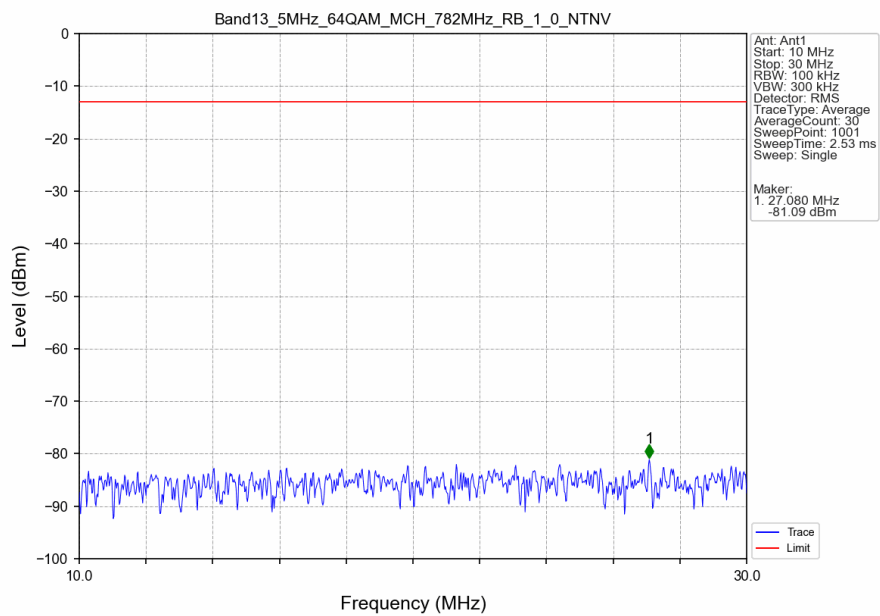
Band13_5MHz_64QAM_MCH_782MHz_RB_1_0_NTNV



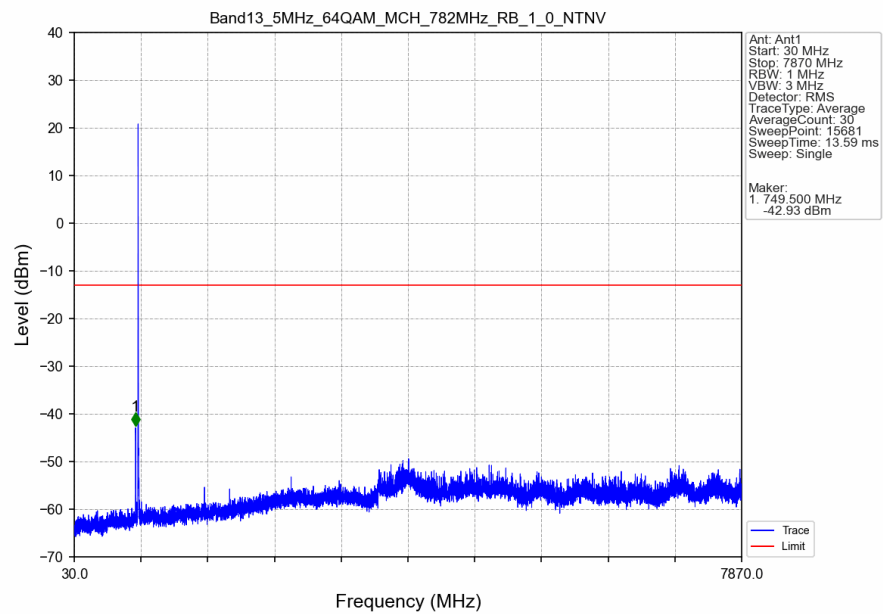
Band13_5MHz_64QAM_MCH_782MHz_RB_1_0_NTNV



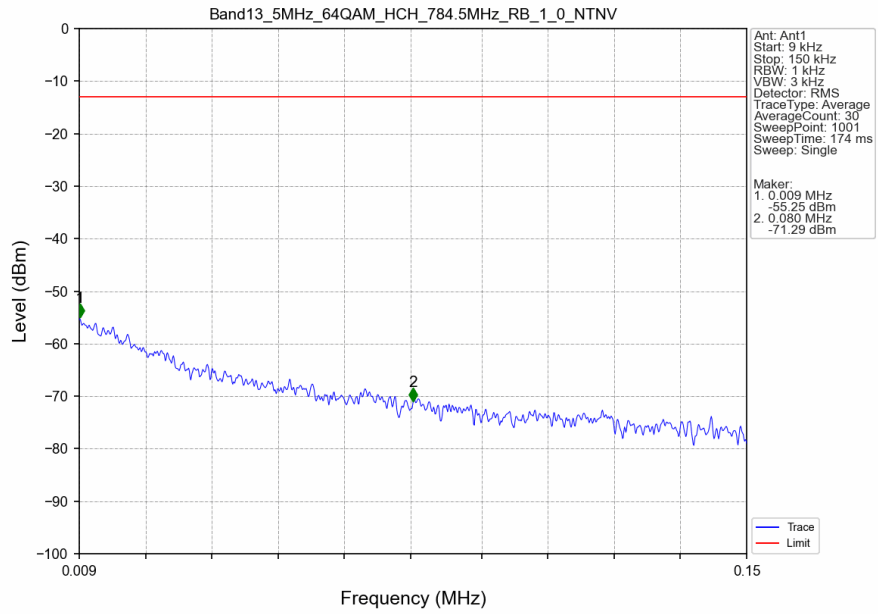
Band13_5MHz_64QAM_MCH_782MHz_RB_1_0_NTNV



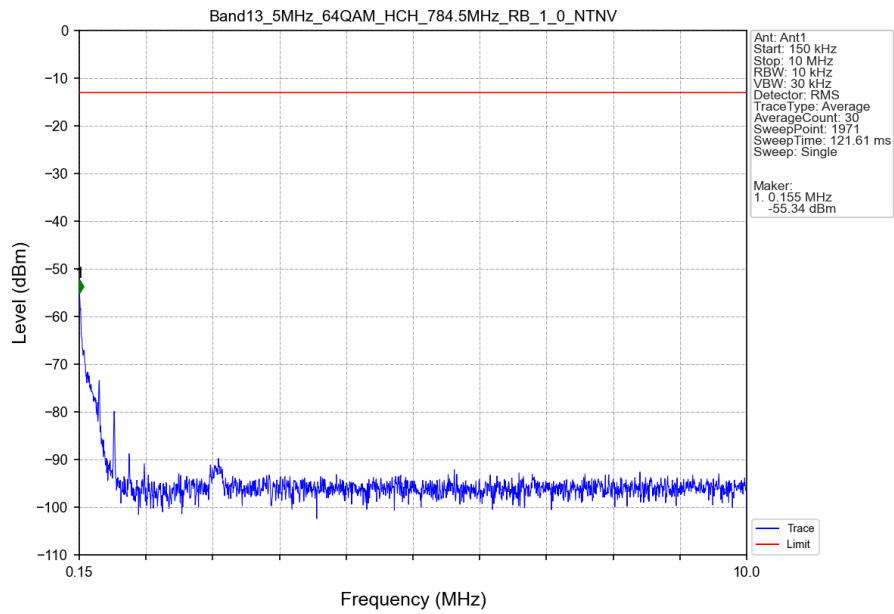
Band13_5MHz_64QAM_MCH_782MHz_RB_1_0_NTNV



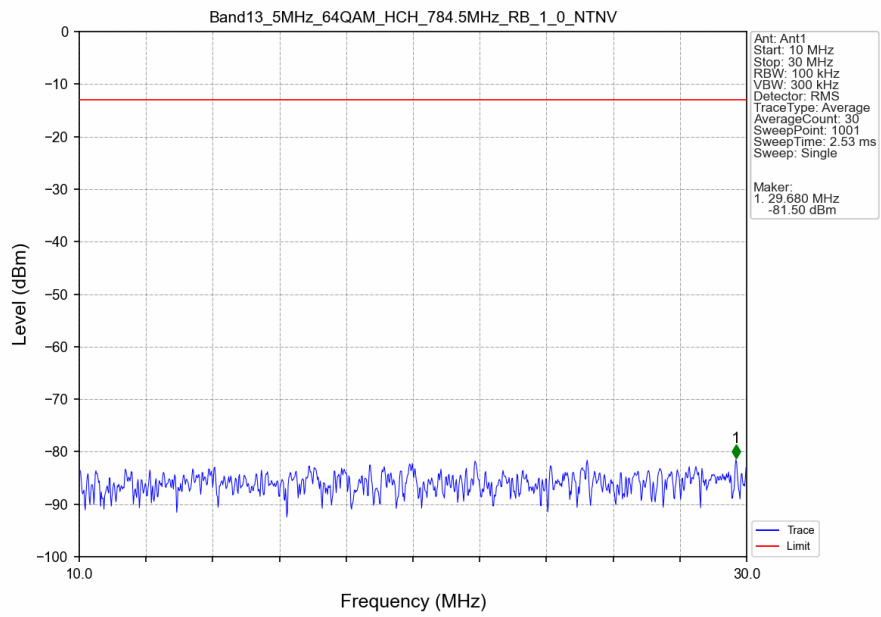
Band13_5MHz_64QAM_HCH_784.5MHz_RB_1_0_NTNV



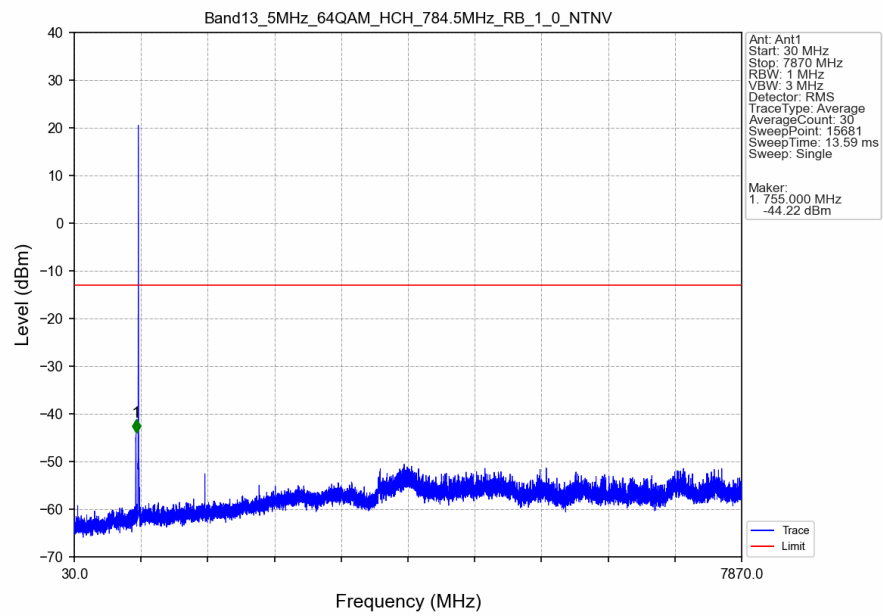
Band13_5MHz_64QAM_HCH_784.5MHz_RB_1_0_NTNV



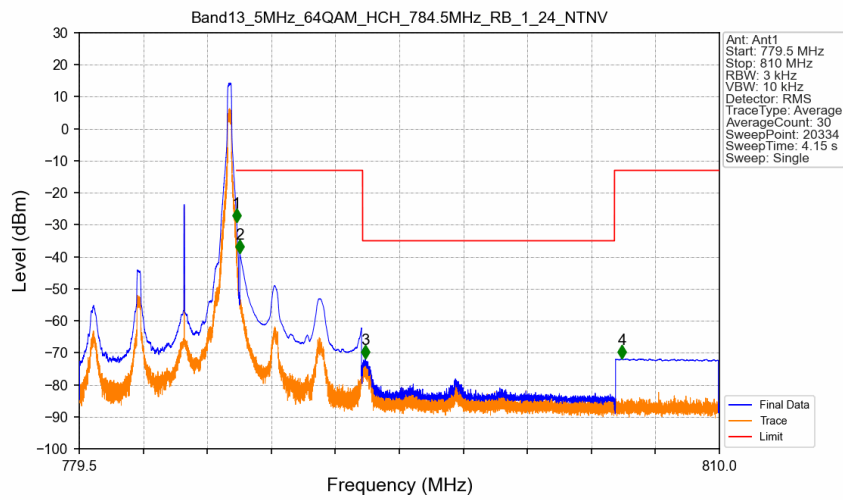
Band13_5MHz_64QAM_HCH_784.5MHz_RB_1_0_NTNV



Band13_5MHz_64QAM_HCH_784.5MHz_RB_1_0_NTNV

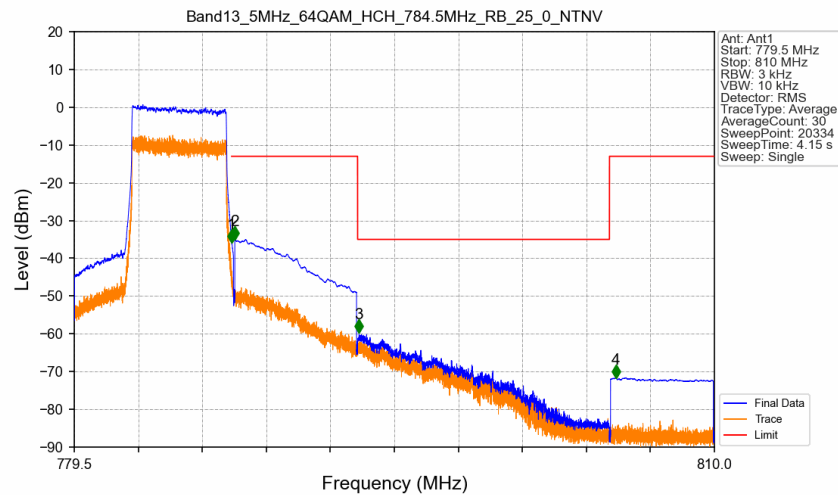


Band13_5MHz_64QAM_HCH_784.5MHz_RB_1_24_NTNV



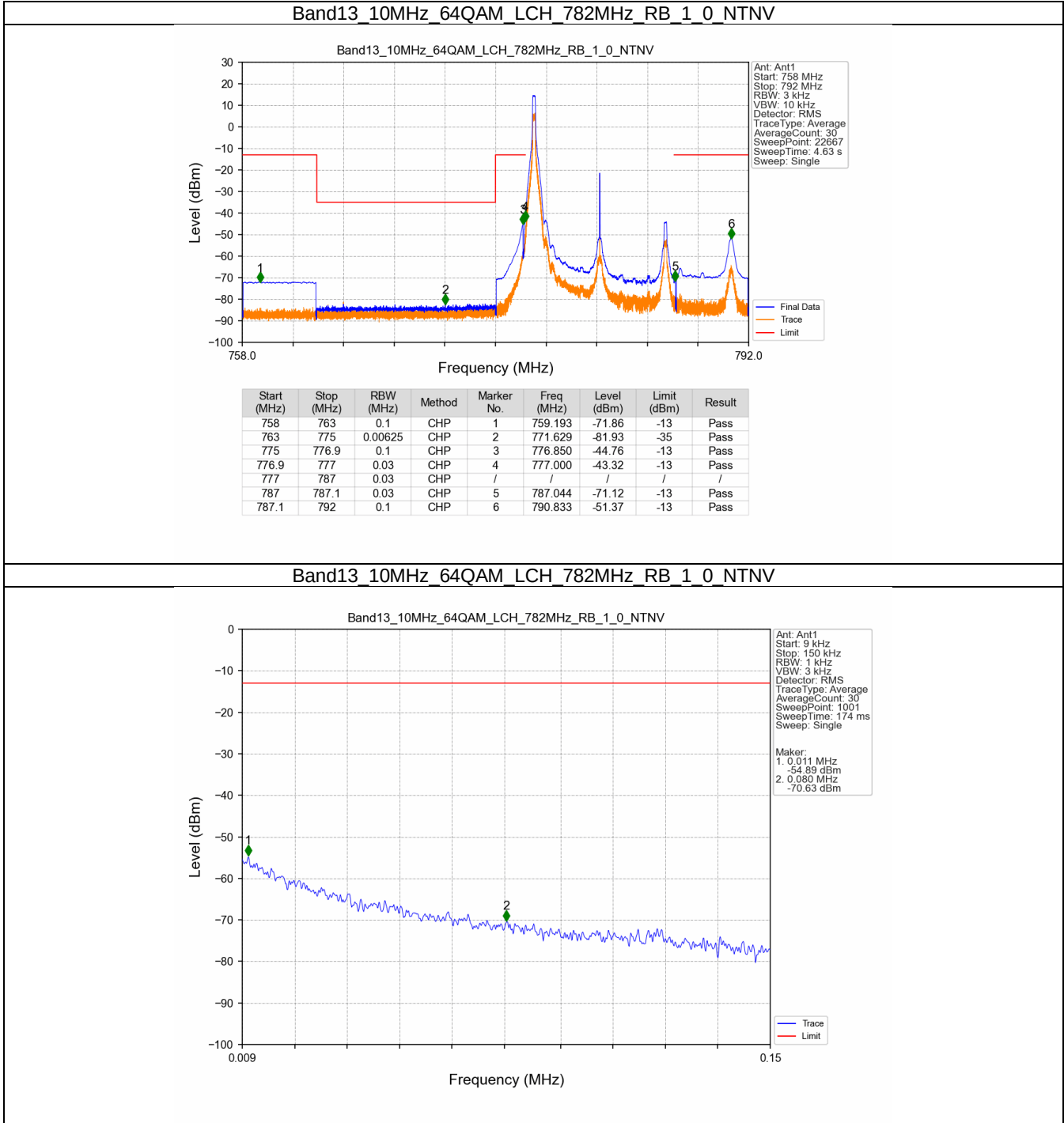
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-29.24	-13	Pass
787.1	793	0.1	CHP	2	787.150	-38.79	-13	Pass
793	805	0.00625	CHP	3	793.137	-71.85	-35	Pass
805	810	0.1	CHP	4	805.357	-71.84	-13	Pass

Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV

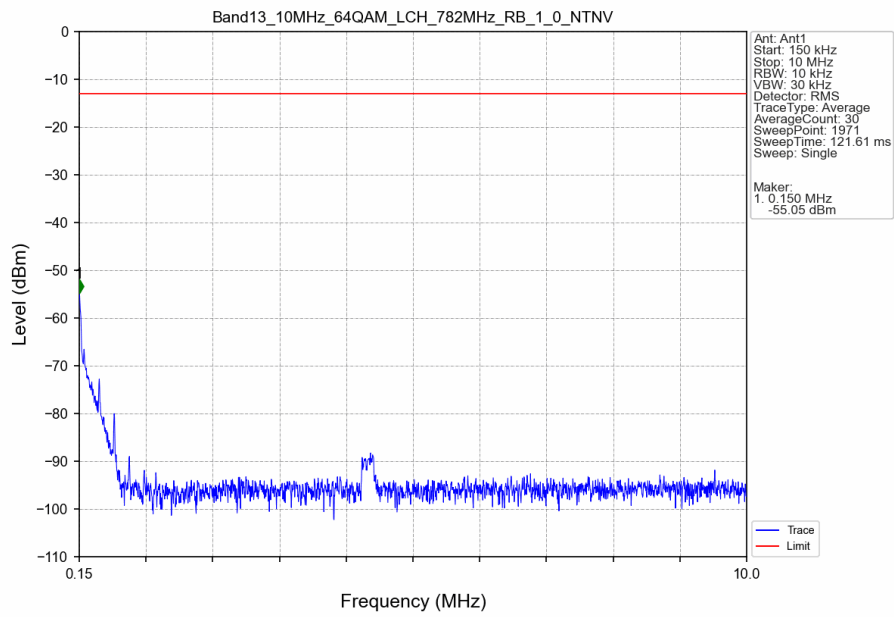


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-35.79	-13	Pass
787.1	793	0.1	CHP	2	787.150	-34.99	-13	Pass
793	805	0.00625	CHP	3	793.071	-59.78	-35	Pass
805	810	0.1	CHP	4	805.302	-71.63	-13	Pass

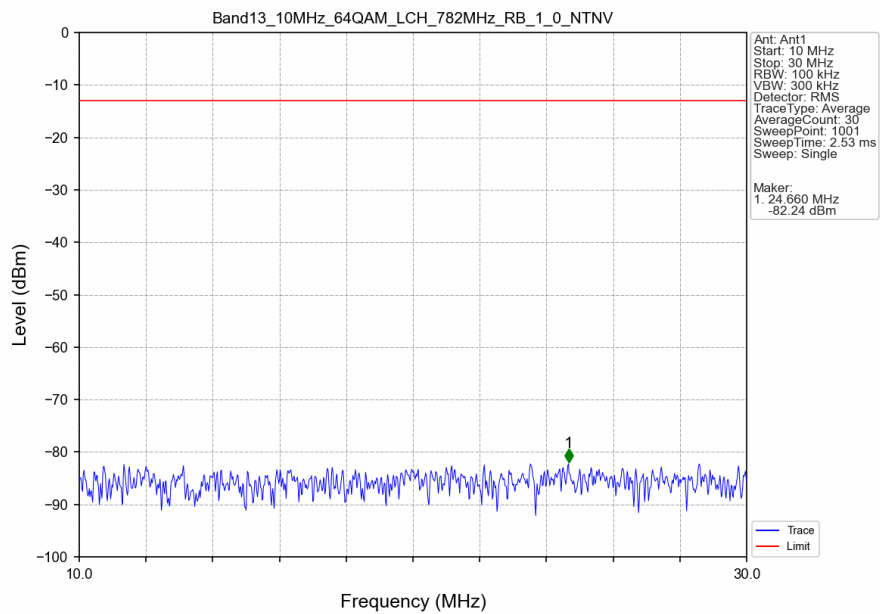
5.2.2 B13_10MHz



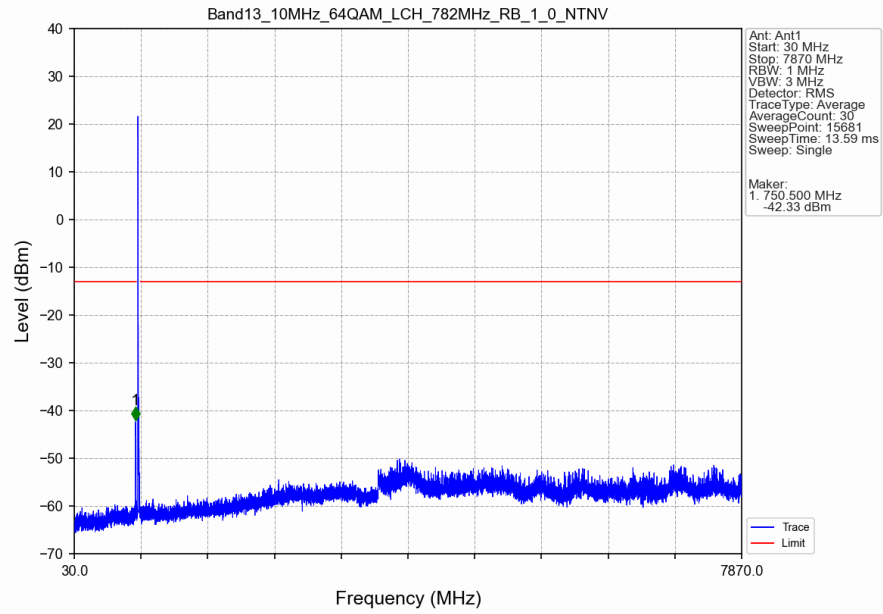
Band13_10MHz_64QAM_LCH_782MHz_RB_1_0_NTNV



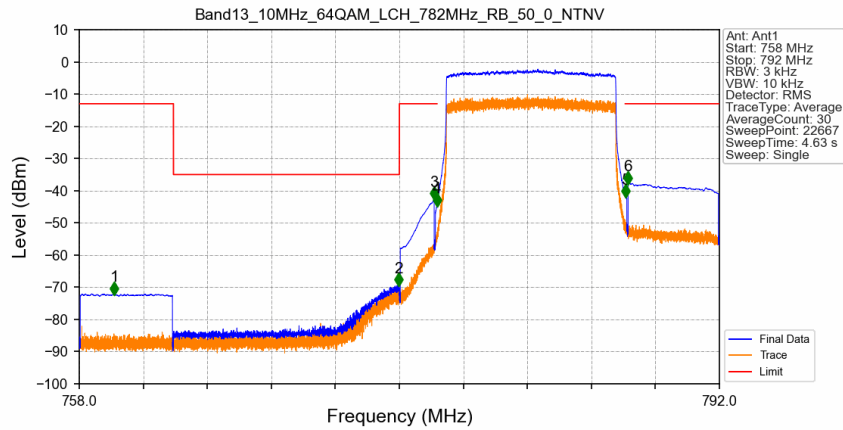
Band13_10MHz_64QAM_LCH_782MHz_RB_1_0_NTNV



Band13_10MHz_64QAM_LCH_782MHz_RB_1_0_NTNV

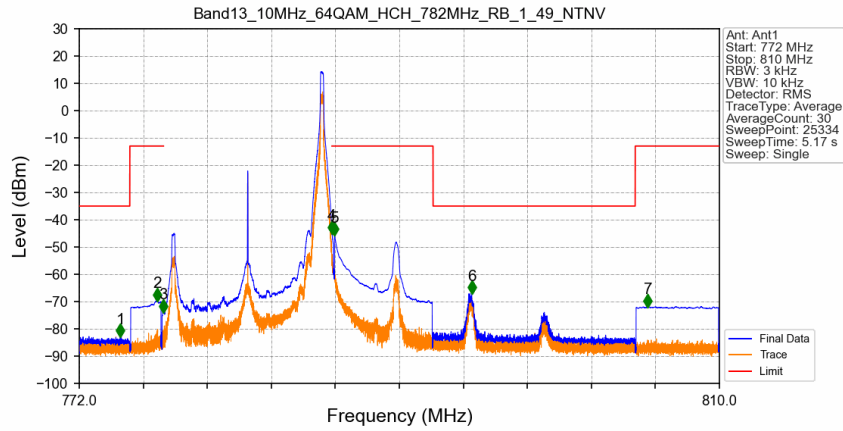


Band13_10MHz_64QAM_LCH_782MHz_RB_50_0_NTNV



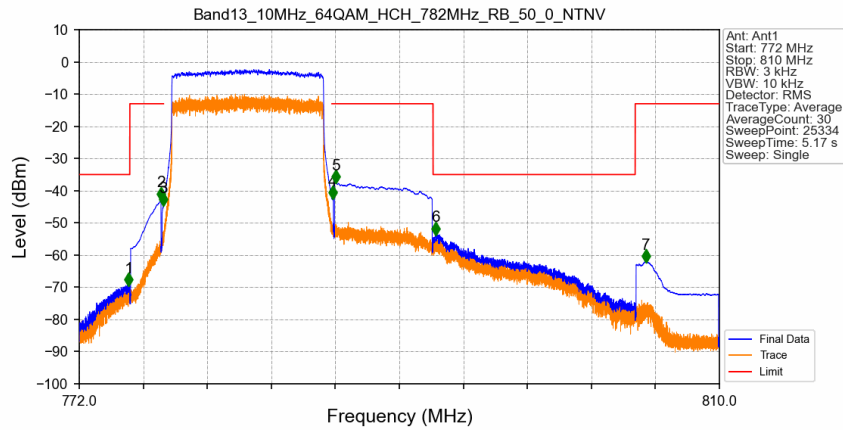
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	759.859	-72.02	-13	Pass
763	775	0.00625	CHP	2	774.956	-69.34	-35	Pass
775	776.9	0.1	CHP	3	776.850	-42.50	-13	Pass
776.9	777	0.03	CHP	4	776.997	-44.55	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.000	-41.79	-13	Pass
787.1	792	0.1	CHP	6	787.150	-37.72	-13	Pass

Band13 10MHz 64QAM HCH 782MHz RB 1 49 NTV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	CHP	1	774.435	-82.72	-35	Pass
775	776.9	0.1	CHP	2	776.617	-69.49	-13	Pass
776.9	777	0.03	CHP	3	776.995	-73.62	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-44.72	-13	Pass
787.1	793	0.1	CHP	5	787.150	-45.51	-13	Pass
793	805	0.00625	CHP	6	795.295	-66.89	-35	Pass
805	810	0.1	CHP	7	805.749	-71.65	-13	Pass

Band13 10MHz 64QAM HCH 782MHz RB 50 0 NTV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	CHP	1	774.940	-69.33	-35	Pass
775	776.9	0.1	CHP	2	776.850	-42.68	-13	Pass
776.9	777	0.03	CHP	3	777.000	-44.46	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.032	-42.28	-13	Pass
787.1	793	0.1	CHP	5	787.225	-37.42	-13	Pass
793	805	0.00625	CHP	6	793.147	-53.50	-35	Pass
805	810	0.1	CHP	7	805.638	-62.04	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 13_10M-Middle channel								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1555.0	-71.07	-13	-58.07	-74.21	2.6	5.74	Horizontal	Pass
2332.5	-69.43	-13	-56.43	-71.89	2.96	5.42	Horizontal	Pass
3110.0	-67.05	-13	-54.05	-71.05	3.2	7.2	Horizontal	Pass
1555.0	-71.15	-13	-58.15	-74.29	2.6	5.74	Vertical	Pass
2332.5	-70.02	-13	-57.02	-72.48	2.96	5.42	Vertical	Pass
3110.0	-67.51	-13	-54.51	-71.51	3.2	7.2	Vertical	Pass

LTE Band 13_5M- Low channel								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1554.5	-70.79	-13	-57.79	-73.93	2.6	5.74	Horizontal	Pass
2331.75	-67.52	-13	-54.52	-69.98	2.96	5.42	Horizontal	Pass
3109.0	-64.95	-13	-51.95	-68.94	3.2	7.19	Horizontal	Pass
1554.5	-70.97	-13	-57.97	-74.11	2.6	5.74	Vertical	Pass
2331.75	-70.29	-13	-57.29	-72.75	2.96	5.42	Vertical	Pass
3109.0	-67.11	-13	-54.11	-71.1	3.2	7.19	Vertical	Pass

LTE Band 13_5M - Middle channel								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1559.5	-70.75	-40	-30.75	-73.88	2.6	5.73	Horizontal	Pass
2339.25	-68.98	-13	-55.98	-71.45	2.96	5.43	Horizontal	Pass
3119.0	-66.05	-13	-53.05	-70.06	3.21	7.22	Horizontal	Pass
1559.5	-71.19	-40	-31.19	-74.32	2.6	5.73	Vertical	Pass
2339.25	-70.27	-13	-57.27	-72.74	2.96	5.43	Vertical	Pass
3119.0	-67.48	-13	-54.48	-71.49	3.21	7.22	Vertical	Pass

LTE Band 13_5M - High channel								
Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1564.5	-70.93	-40	-30.93	-74.05	2.6	5.72	Horizontal	Pass
2346.75	-69.36	-13	-56.36	-71.84	2.97	5.45	Horizontal	Pass
3129.0	-65.77	-13	-52.77	-69.8	3.21	7.24	Horizontal	Pass
1564.5	-71.11	-40	-31.11	-74.23	2.6	5.72	Vertical	Pass
2346.75	-70.14	-13	-57.14	-72.62	2.97	5.45	Vertical	Pass
3129.0	-67.01	-13	-54.01	-71.04	3.21	7.24	Vertical	Pass