

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	
QPSK	779.5	1	0	24.25	1.83	23.93	<=34.77	Pass
			13	24.29	1.83	23.97	<=34.77	Pass
			24	24.27	1.83	23.95	<=34.77	Pass
		12	0	23.19	1.83	22.87	<=34.77	Pass
			6	23.35	1.83	23.03	<=34.77	Pass
			13	23.27	1.83	22.95	<=34.77	Pass
		25	0	23.29	1.83	22.97	<=34.77	Pass
	782	1	0	24.25	1.83	23.93	<=34.77	Pass
			13	24.31	1.83	23.99	<=34.77	Pass
			24	24.25	1.83	23.93	<=34.77	Pass
		12	0	23.20	1.83	22.88	<=34.77	Pass
			6	23.25	1.83	22.93	<=34.77	Pass
			13	23.25	1.83	22.93	<=34.77	Pass
		25	0	23.22	1.83	22.90	<=34.77	Pass
	784.5	1	0	24.24	1.83	23.92	<=34.77	Pass
			13	24.25	1.83	23.93	<=34.77	Pass
			24	24.21	1.83	23.89	<=34.77	Pass
		12	0	23.18	1.83	22.86	<=34.77	Pass
			6	23.20	1.83	22.88	<=34.77	Pass
			13	23.23	1.83	22.91	<=34.77	Pass
		25	0	23.19	1.83	22.87	<=34.77	Pass
16QAM	779.5	1	0	23.35	1.83	23.03	<=34.77	Pass
			13	23.37	1.83	23.05	<=34.77	Pass
			24	23.40	1.83	23.08	<=34.77	Pass
		12	0	22.26	1.83	21.94	<=34.77	Pass
			6	22.38	1.83	22.06	<=34.77	Pass
			13	22.33	1.83	22.01	<=34.77	Pass
		25	0	22.34	1.83	22.02	<=34.77	Pass
	782	1	0	23.31	1.83	22.99	<=34.77	Pass
			13	23.51	1.83	23.19	<=34.77	Pass
			24	23.43	1.83	23.11	<=34.77	Pass
		12	0	22.25	1.83	21.93	<=34.77	Pass
			6	22.34	1.83	22.02	<=34.77	Pass
			13	22.35	1.83	22.03	<=34.77	Pass
		25	0	22.26	1.83	21.94	<=34.77	Pass
	784.5	1	0	23.45	1.83	23.13	<=34.77	Pass
			13	23.42	1.83	23.10	<=34.77	Pass
			24	23.39	1.83	23.07	<=34.77	Pass
		12	0	22.23	1.83	21.91	<=34.77	Pass
			6	22.28	1.83	21.96	<=34.77	Pass
			13	22.26	1.83	21.94	<=34.77	Pass
		25	0	22.22	1.83	21.90	<=34.77	Pass
64QAM	779.5	1	0	22.58	1.83	22.26	<=34.77	Pass
			13	22.57	1.83	22.25	<=34.77	Pass
			24	22.38	1.83	22.06	<=34.77	Pass
		12	0	21.23	1.83	20.91	<=34.77	Pass
			6	21.29	1.83	20.97	<=34.77	Pass
			13	21.25	1.83	20.93	<=34.77	Pass
		25	0	21.27	1.83	20.95	<=34.77	Pass
	782	1	0	22.62	1.83	22.30	<=34.77	Pass

			13	22.55	1.83	22.23	<=34.77	Pass
			24	22.51	1.83	22.19	<=34.77	Pass
		12	0	21.25	1.83	20.93	<=34.77	Pass
			6	21.27	1.83	20.95	<=34.77	Pass
			13	21.24	1.83	20.92	<=34.77	Pass
		25	0	21.12	1.83	20.80	<=34.77	Pass
	784.5	1	0	22.55	1.83	22.23	<=34.77	Pass
			13	22.58	1.83	22.26	<=34.77	Pass
			24	22.25	1.83	21.93	<=34.77	Pass
		12	0	21.20	1.83	20.88	<=34.77	Pass
			6	21.23	1.83	20.91	<=34.77	Pass
			13	21.27	1.83	20.95	<=34.77	Pass
		25	0	21.14	1.83	20.82	<=34.77	Pass
		Note1: ERP=Conducted Power+Antenna Gain-2.15						

Band: 13 / Bandwidth: 10MHz / NTNv								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	782	1	0	24.13	1.83	23.81	<=34.77	Pass
			25	24.28	1.83	23.96	<=34.77	Pass
			49	24.17	1.83	23.85	<=34.77	Pass
		25	0	23.27	1.83	22.95	<=34.77	Pass
			13	23.25	1.83	22.93	<=34.77	Pass
			25	23.27	1.83	22.95	<=34.77	Pass
		50	0	23.29	1.83	22.97	<=34.77	Pass
16QAM	782	1	0	23.40	1.83	23.08	<=34.77	Pass
			25	23.47	1.83	23.15	<=34.77	Pass
			49	23.43	1.83	23.11	<=34.77	Pass
		25	0	22.31	1.83	21.99	<=34.77	Pass
			13	22.31	1.83	21.99	<=34.77	Pass
			25	22.35	1.83	22.03	<=34.77	Pass
		50	0	22.34	1.83	22.02	<=34.77	Pass
64QAM	782	1	0	22.40	1.83	22.08	<=34.77	Pass
			25	22.44	1.83	22.12	<=34.77	Pass
			49	22.24	1.83	21.92	<=34.77	Pass
		25	0	21.20	1.83	20.88	<=34.77	Pass
			13	21.24	1.83	20.92	<=34.77	Pass
			25	21.24	1.83	20.92	<=34.77	Pass
		50	0	21.29	1.83	20.97	<=34.77	Pass
Note1: ERP=Conducted Power+Antenna Gain-2.15								

2. Frequency Stability

2.1 Test Result

2.1.1 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	
QPSK	782	50	0	20	3.3	1.600	0.0020	-2.5 to 2.5	Pass
					3.8	1.900	0.0024	-2.5 to 2.5	Pass
					4.4	1.100	0.0014	-2.5 to 2.5	Pass
				-30	3.8	2.000	0.0026	-2.5 to 2.5	Pass
				-20	3.8	1.800	0.0023	-2.5 to 2.5	Pass
				-10	3.8	2.400	0.0031	-2.5 to 2.5	Pass
				0	3.8	2.200	0.0028	-2.5 to 2.5	Pass
				10	3.8	2.300	0.0029	-2.5 to 2.5	Pass
				30	3.8	0.500	0.0006	-2.5 to 2.5	Pass
				40	3.8	0.500	0.0006	-2.5 to 2.5	Pass
				50	3.8	3.000	0.0038	-2.5 to 2.5	Pass
16QAM	782	50	0	20	3.3	2.500	0.0032	-2.5 to 2.5	Pass
					3.8	0.600	0.0008	-2.5 to 2.5	Pass
					4.4	1.700	0.0022	-2.5 to 2.5	Pass
				-30	3.8	2.400	0.0031	-2.5 to 2.5	Pass
				-20	3.8	1.300	0.0017	-2.5 to 2.5	Pass
				-10	3.8	1.900	0.0024	-2.5 to 2.5	Pass
				0	3.8	-1.000	-0.0013	-2.5 to 2.5	Pass
				10	3.8	0.100	0.0001	-2.5 to 2.5	Pass
				30	3.8	0.300	0.0004	-2.5 to 2.5	Pass
				40	3.8	1.900	0.0024	-2.5 to 2.5	Pass
				50	3.8	2.700	0.0035	-2.5 to 2.5	Pass
64QAM	782	50	0	20	3.3	-1.800	-0.0023	-2.5 to 2.5	Pass
					3.8	19.100	0.0244	-2.5 to 2.5	Pass
					4.4	14.600	0.0187	-2.5 to 2.5	Pass
				-30	3.8	-0.400	-0.0005	-2.5 to 2.5	Pass
				-20	3.8	20.400	0.0261	-2.5 to 2.5	Pass
				-10	3.8	-0.200	-0.0003	-2.5 to 2.5	Pass
				0	3.8	6.100	0.0078	-2.5 to 2.5	Pass
				10	3.8	-11.800	-0.0151	-2.5 to 2.5	Pass
				30	3.8	-5.200	-0.0066	-2.5 to 2.5	Pass
				40	3.8	22.100	0.0283	-2.5 to 2.5	Pass
				50	3.8	-3.000	-0.0038	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band13_OBW

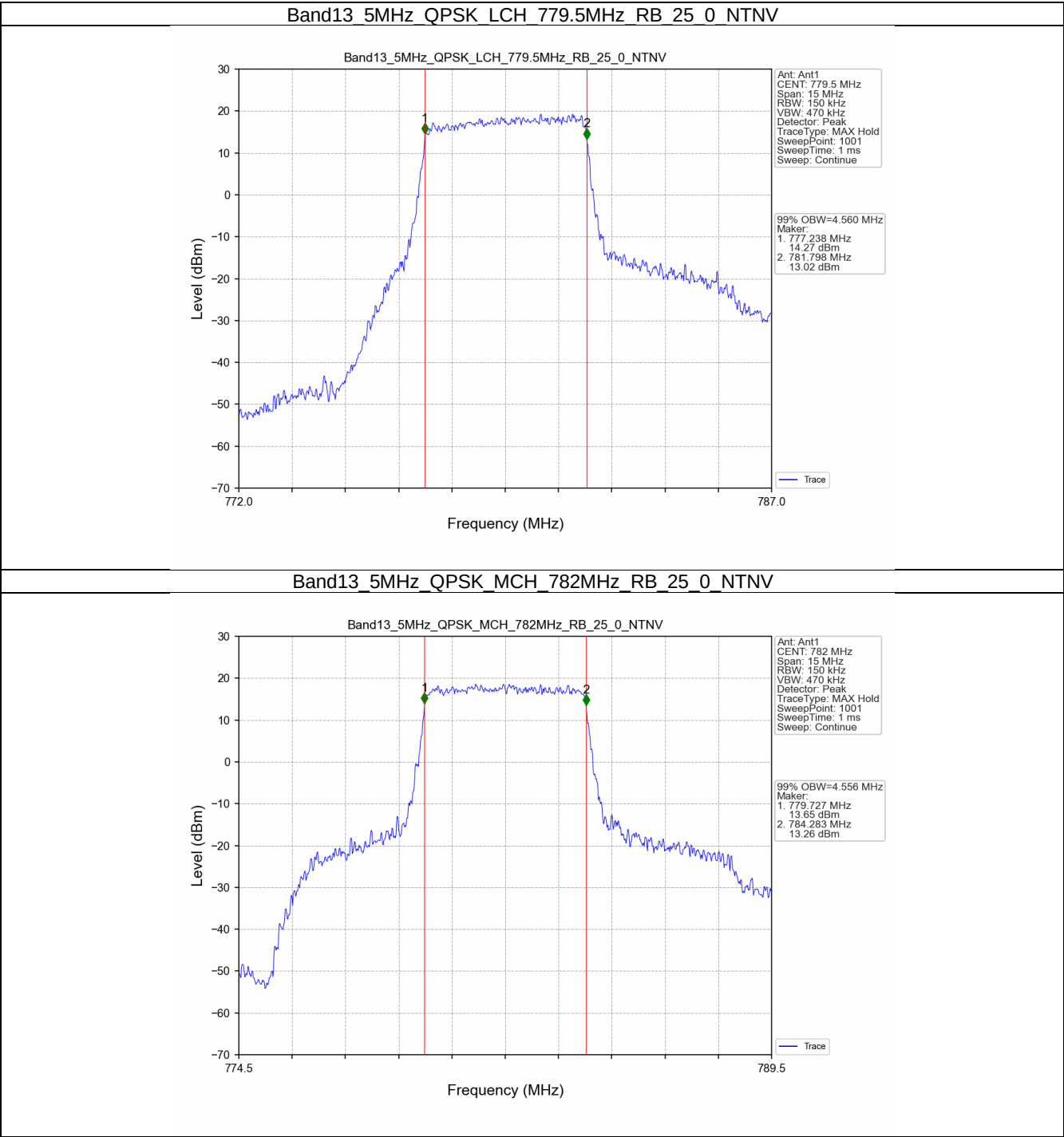
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	779.5	25	0	4.560	/	Pass
		782	25	0	4.556	/	Pass
		784.5	25	0	4.553	/	Pass
	16QAM	779.5	25	0	4.522	/	Pass
		782	25	0	4.537	/	Pass
		784.5	25	0	4.562	/	Pass
	64QAM	779.5	25	0	4.553	/	Pass
		782	25	0	4.535	/	Pass
		784.5	25	0	4.555	/	Pass
10	QPSK	782	50	0	9.038	/	Pass
	16QAM	782	50	0	9.028	/	Pass
	64QAM	782	50	0	9.045	/	Pass

3.1.2 Band13_XDB

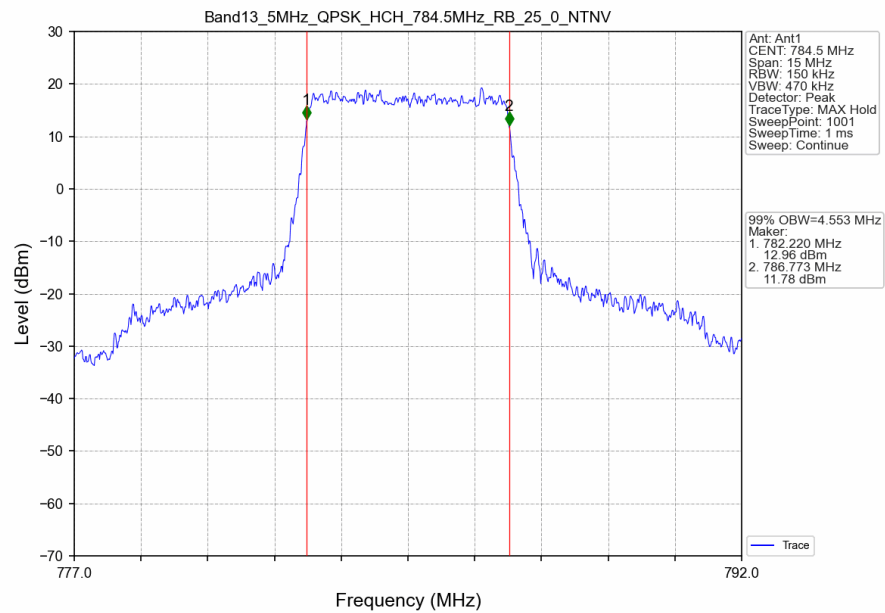
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	779.5	25	0	5.206	/	Pass
		782	25	0	5.218	/	Pass
		784.5	25	0	5.277	/	Pass
	16QAM	779.5	25	0	5.230	/	Pass
		782	25	0	5.163	/	Pass
		784.5	25	0	5.232	/	Pass
	64QAM	779.5	25	0	5.238	/	Pass
		782	25	0	5.180	/	Pass
		784.5	25	0	5.268	/	Pass
10	QPSK	782	50	0	10.162	/	Pass
	16QAM	782	50	0	10.053	/	Pass
	64QAM	782	50	0	10.084	/	Pass

3.2 Test Graph

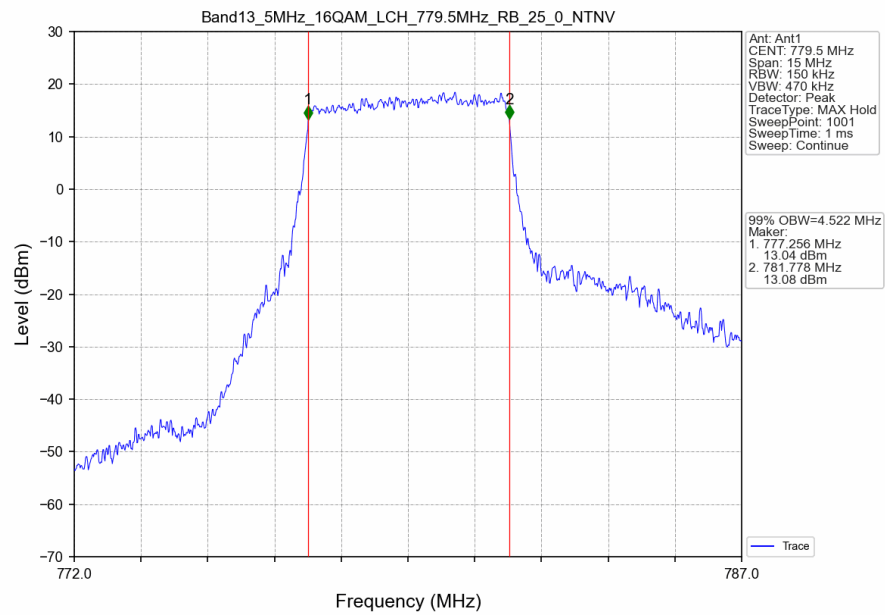
3.2.1 Band13_OBW



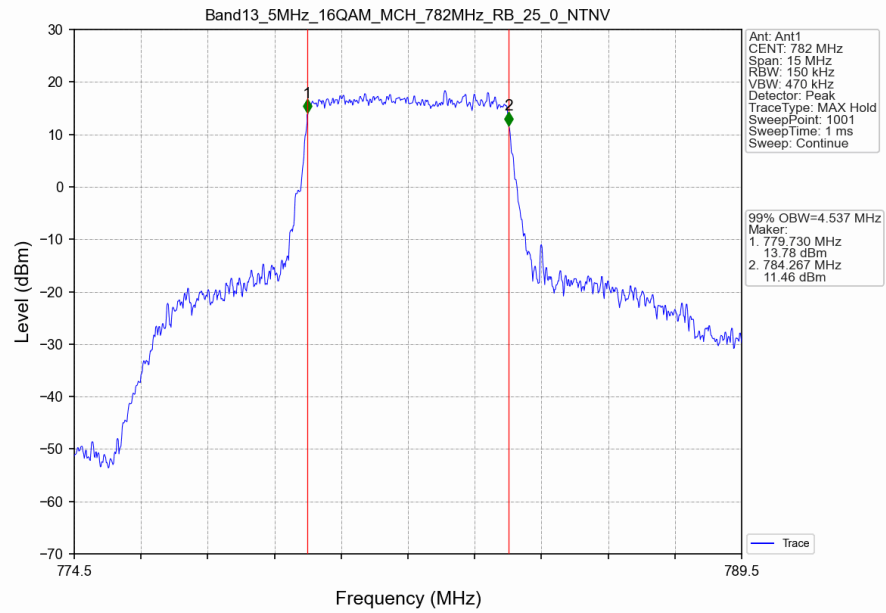
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



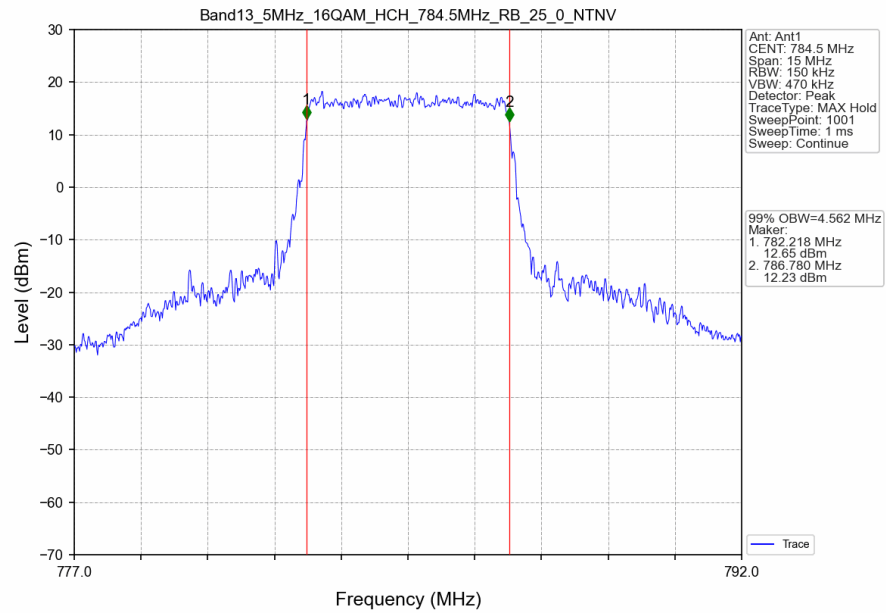
Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV



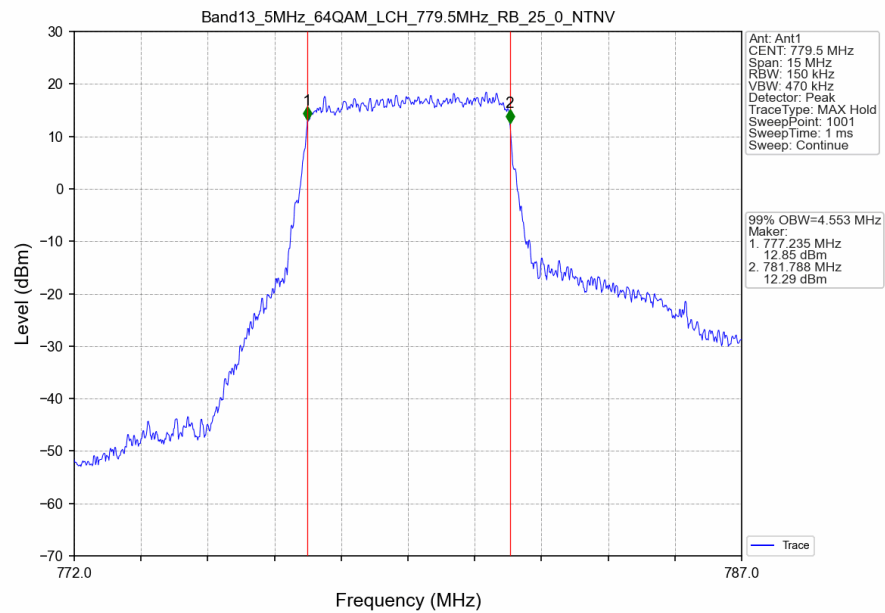
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



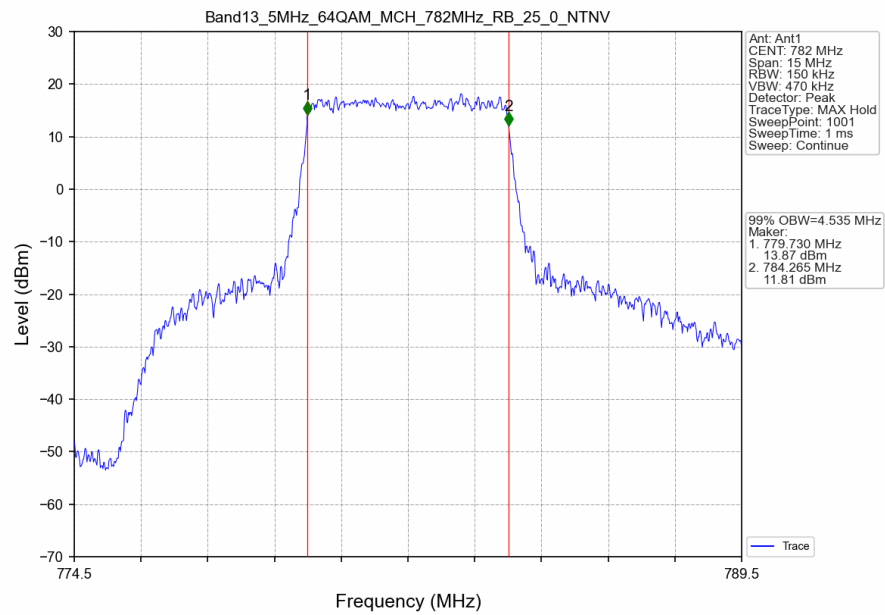
Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV



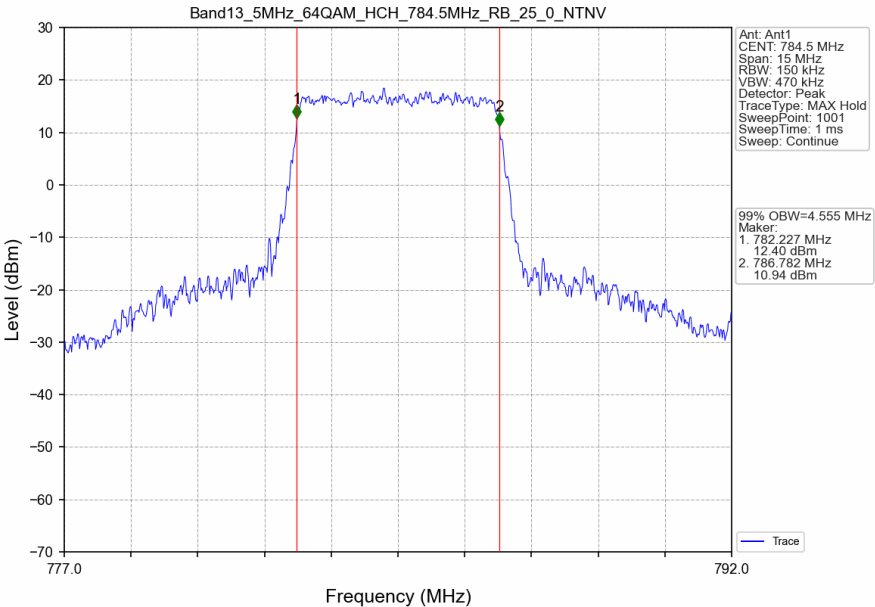
Band13_5MHz_64QAM_LCH_779.5MHz_RB_25_0_NTNV



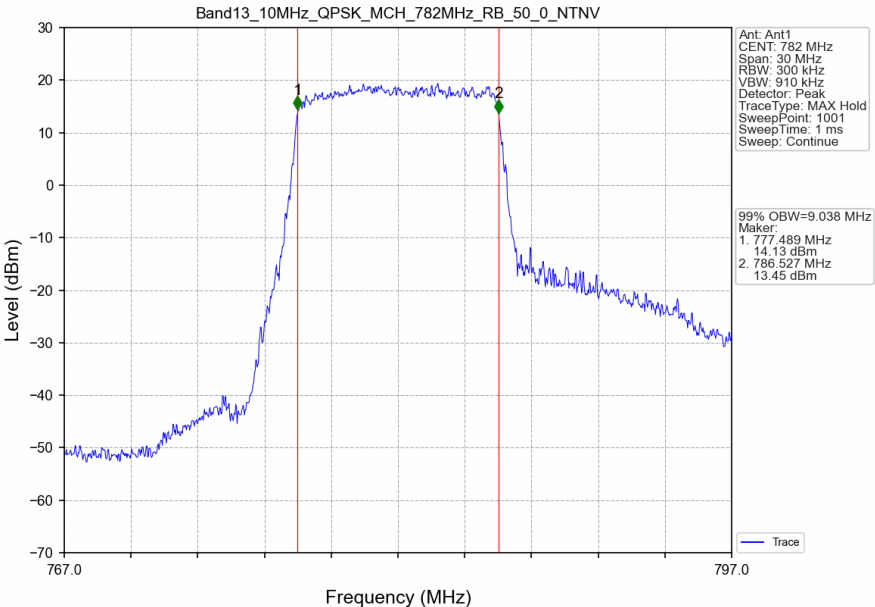
Band13_5MHz_64QAM_MCH_782MHz_RB_25_0_NTNV



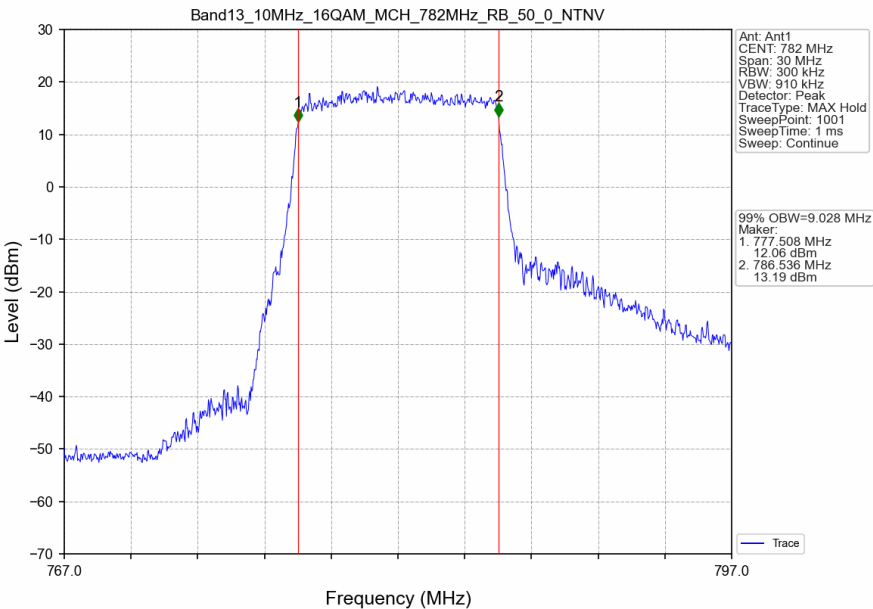
Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV



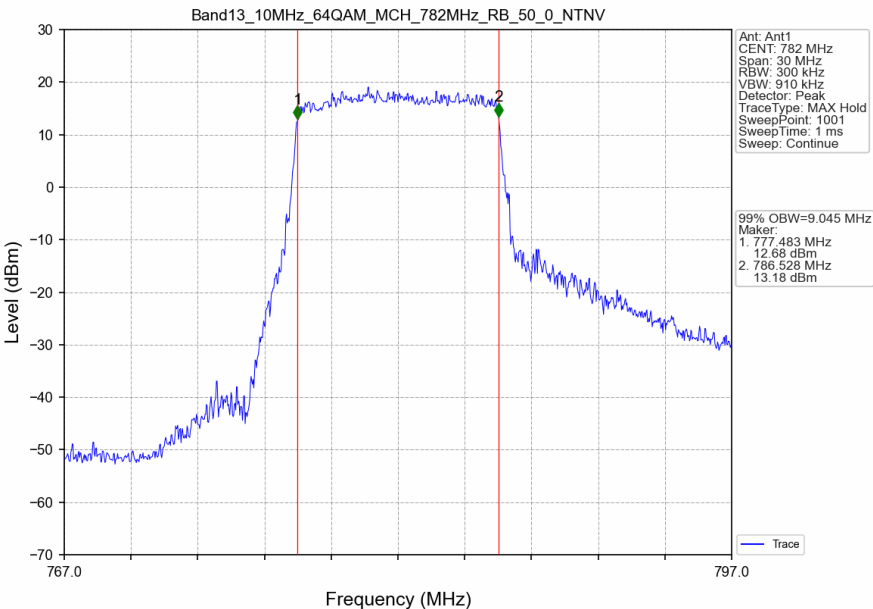
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV

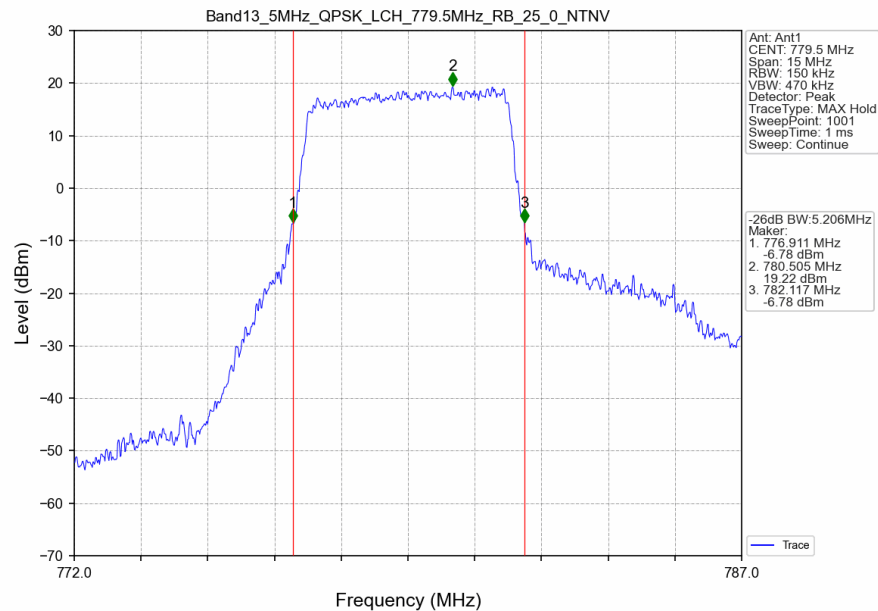


Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV

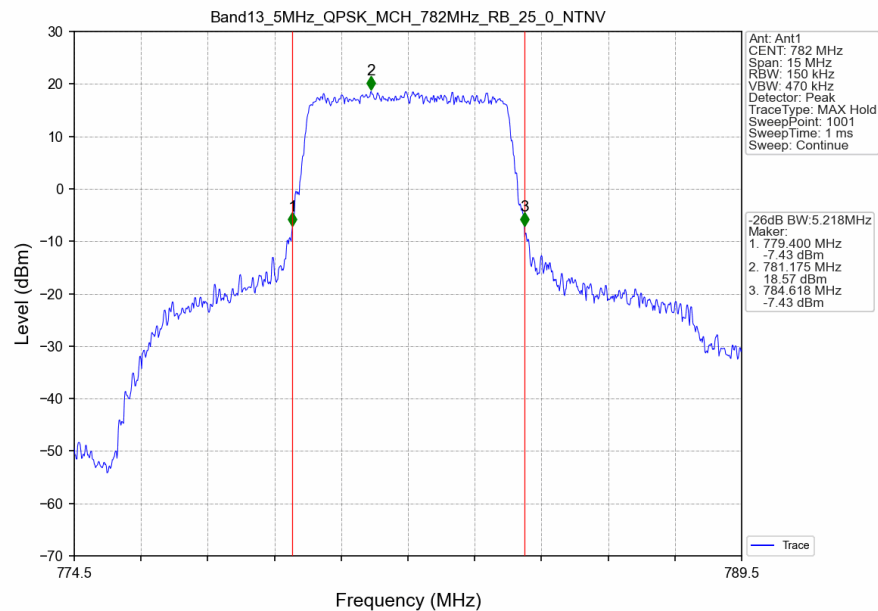


3.2.2 Band13_XDB

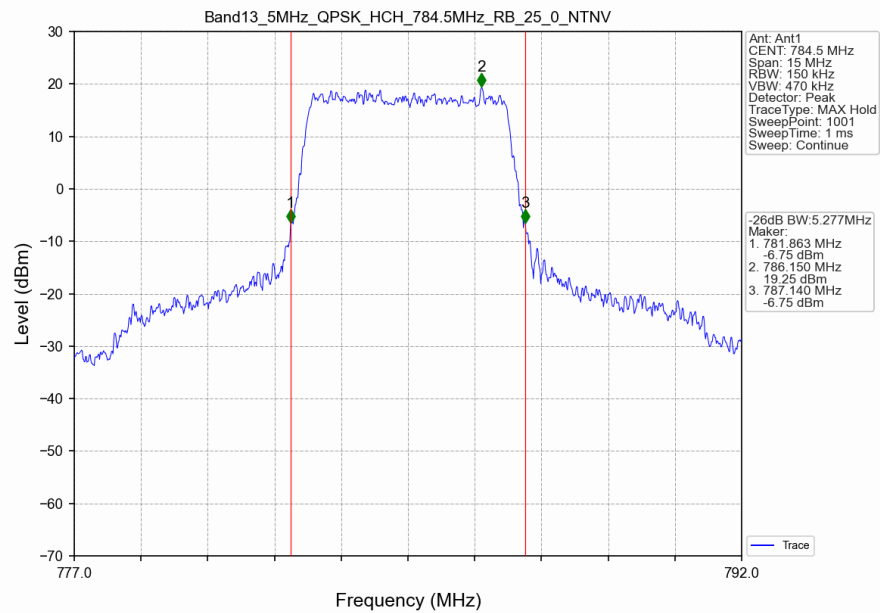
Band13_5MHz_QPSK_LCH_779.5MHz_RB_25_0_NTNV



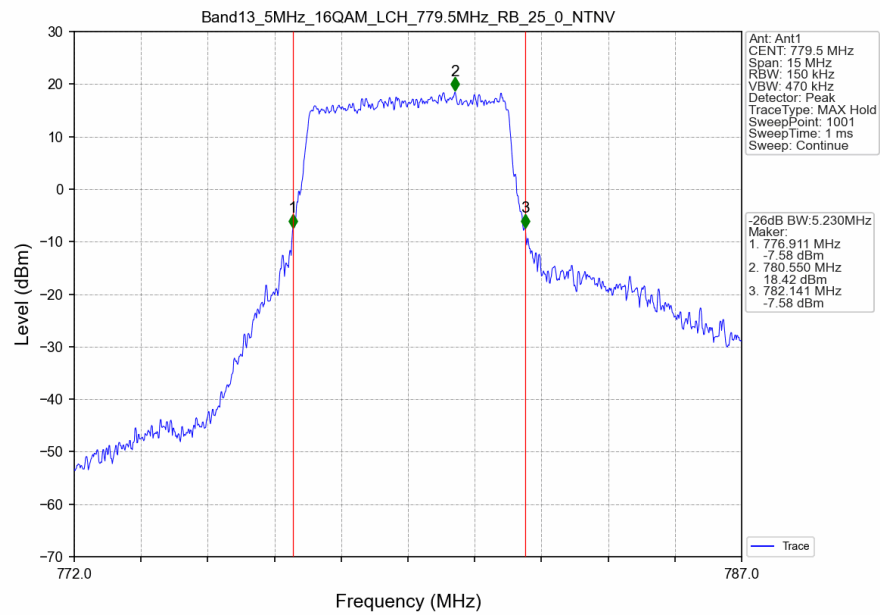
Band13_5MHz_QPSK_MCH_782MHz_RB_25_0_NTNV



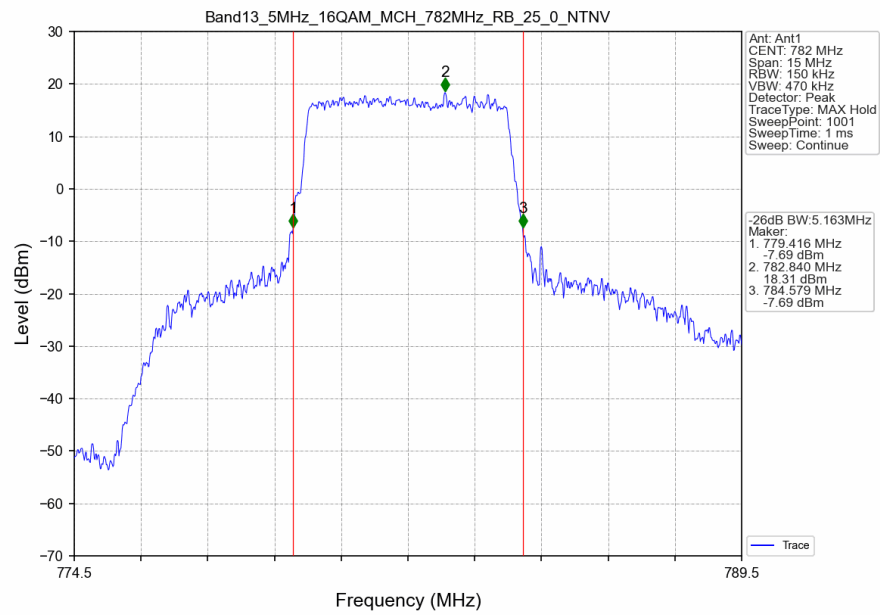
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



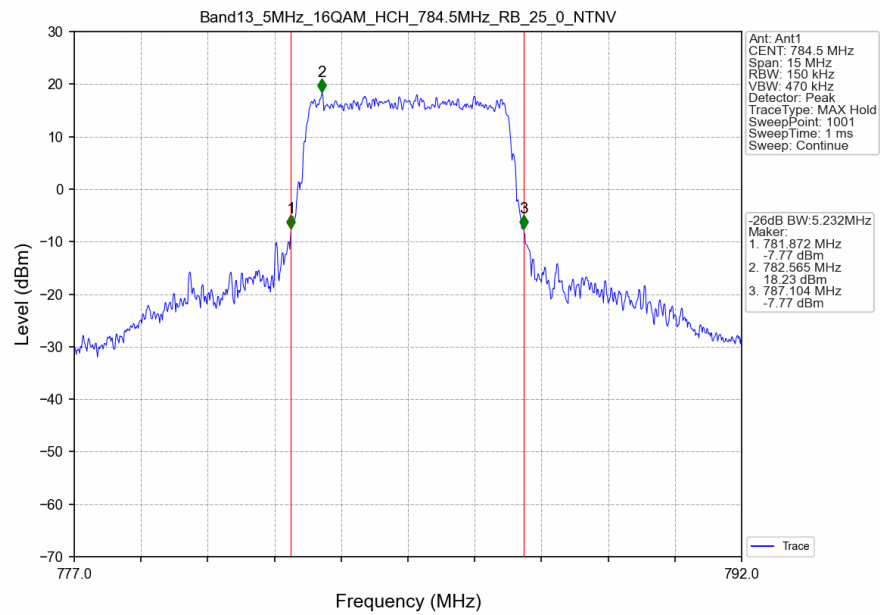
Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV



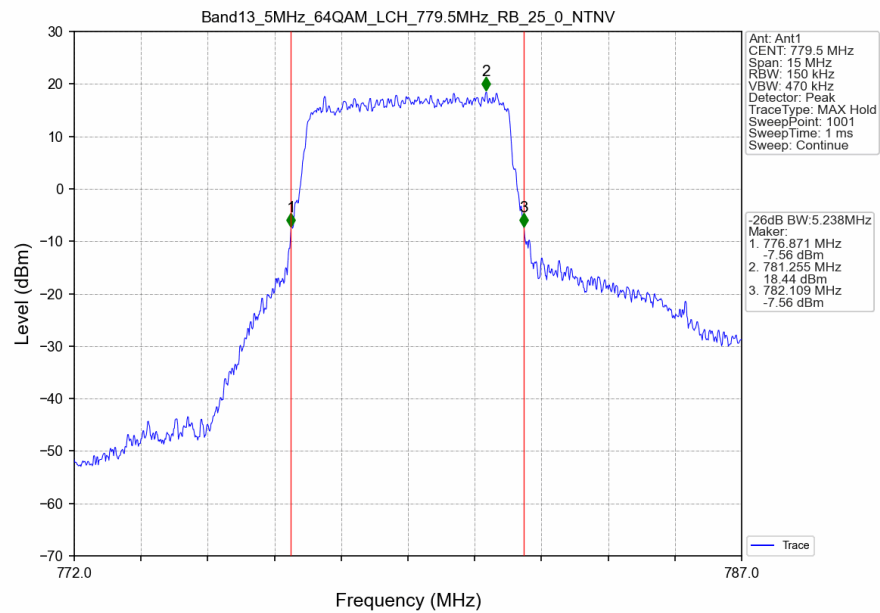
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



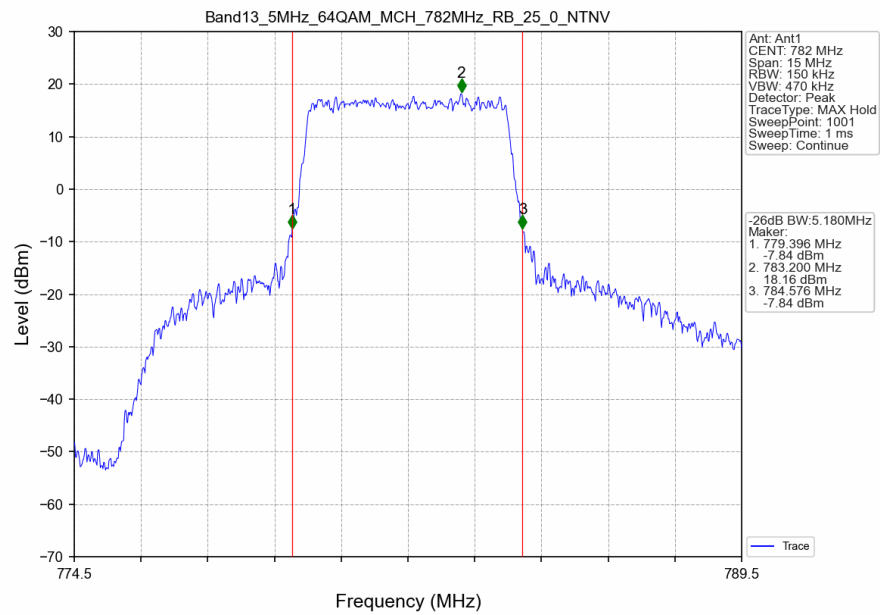
Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV



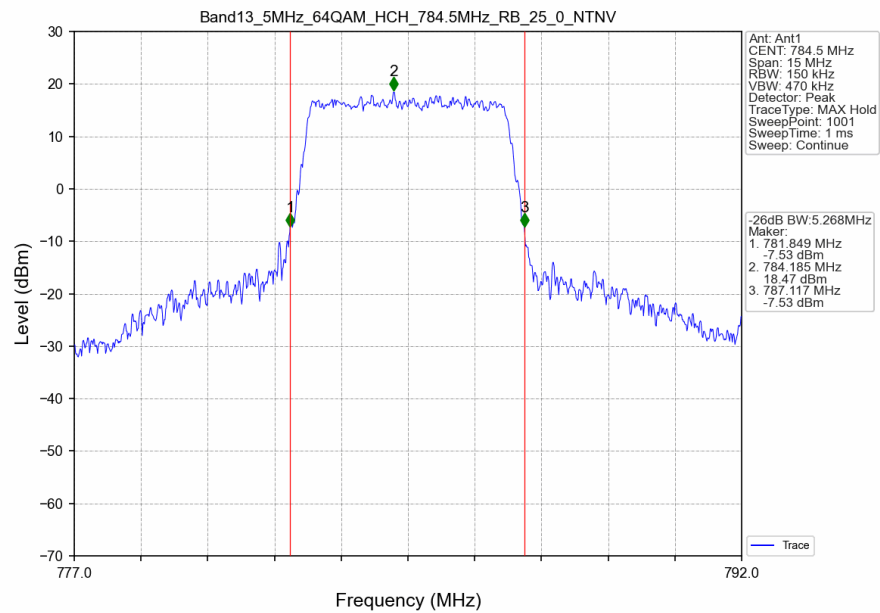
Band13_5MHz_64QAM_LCH_779.5MHz_RB_25_0_NTNV



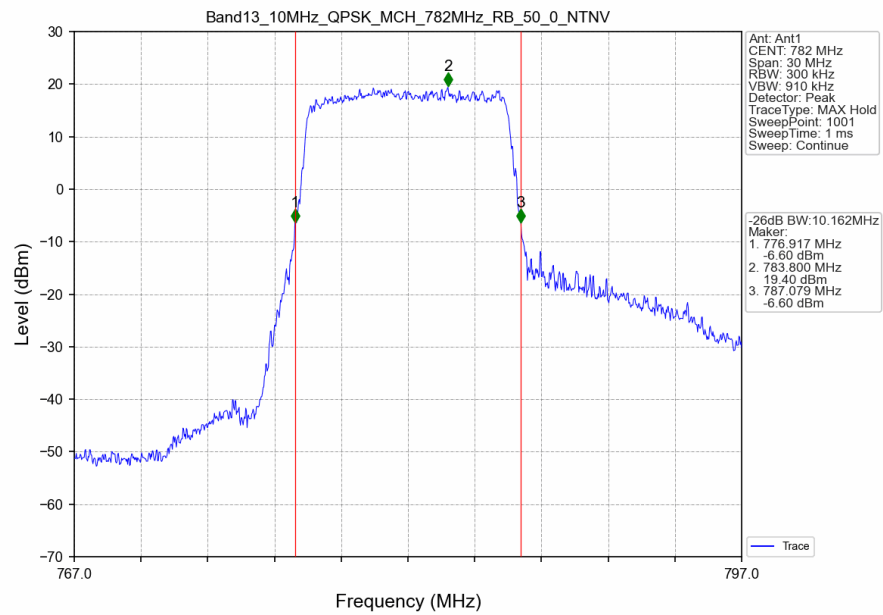
Band13_5MHz_64QAM_MCH_782MHz_RB_25_0_NTNV



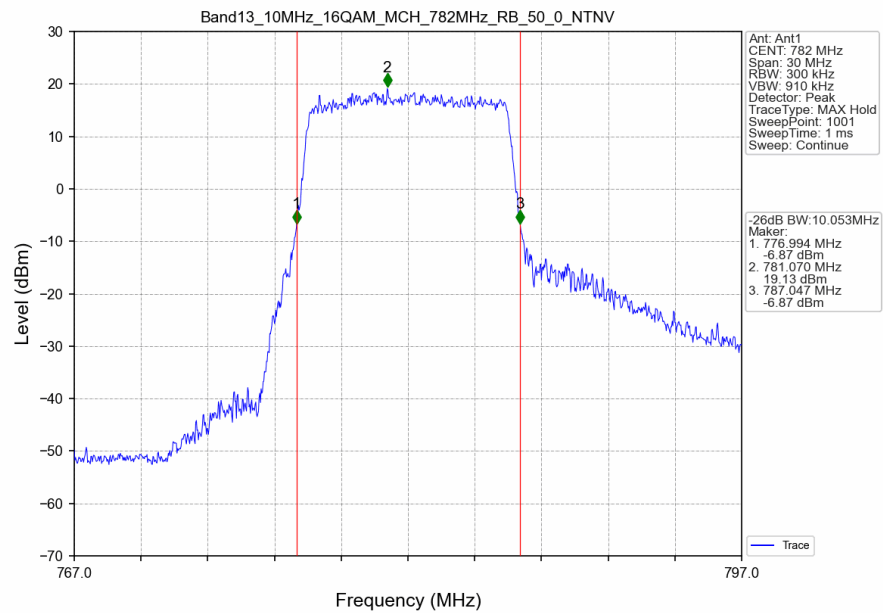
Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV



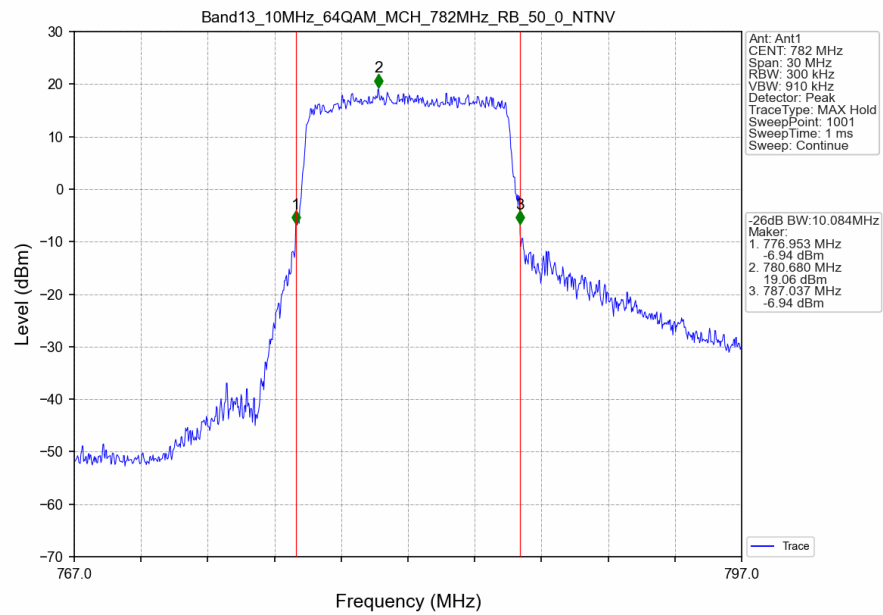
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



4. Peak-Average Ratio

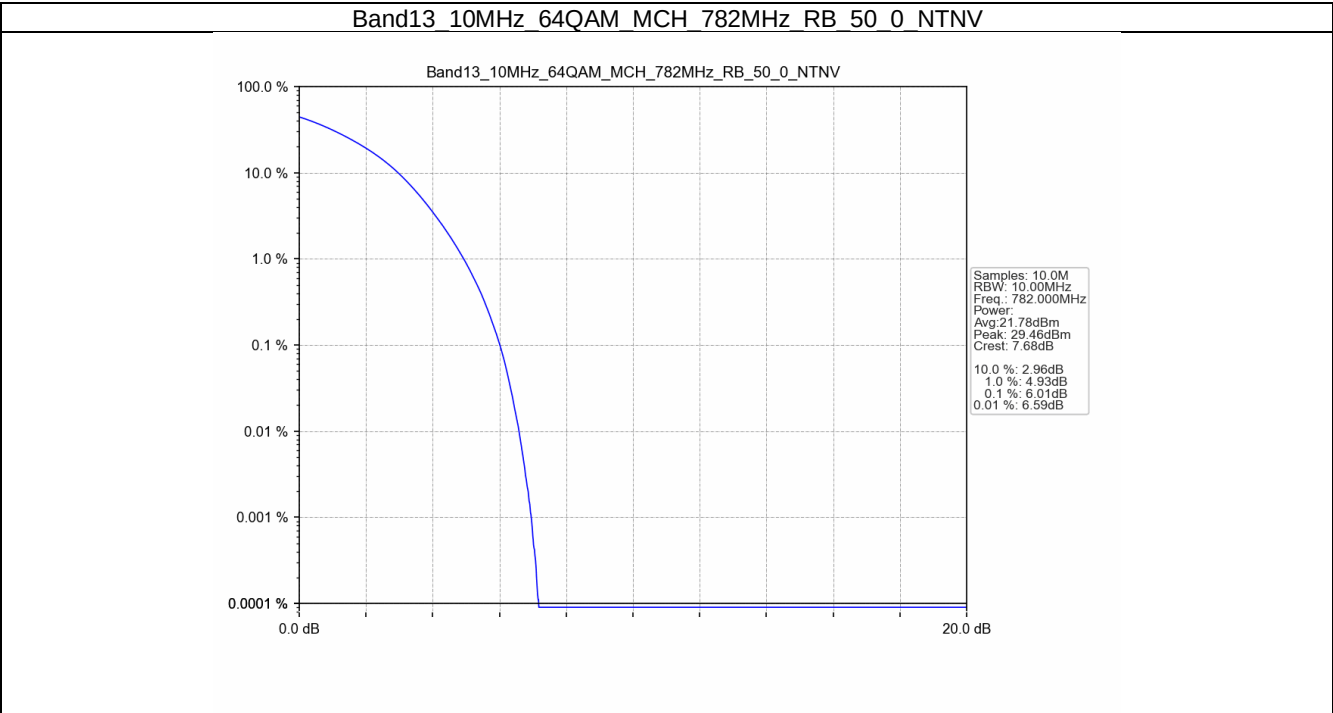
4.1 Test Result

4.1.1 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	6.01	<=13	Pass

4.2 Test Graph

4.2.1 B13_10MHz



5. Spurious Emission & Band Edges

5.1 Test Result

5.1.1 B13_5MHz

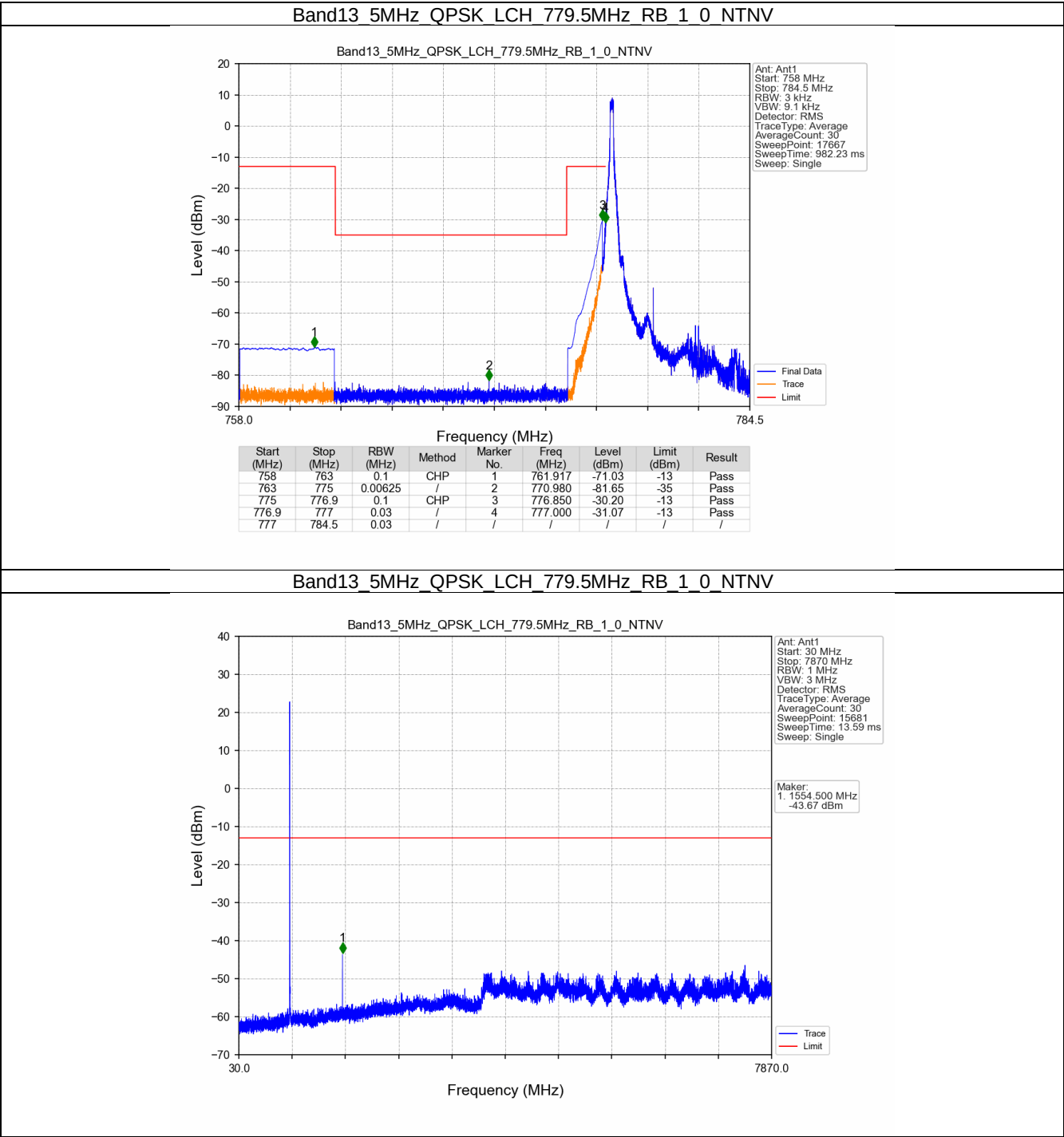
Band: 13 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	779.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	782	1	0	Refer To Test Graph		Pass
	784.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test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

5.1.2 B13_10MHz

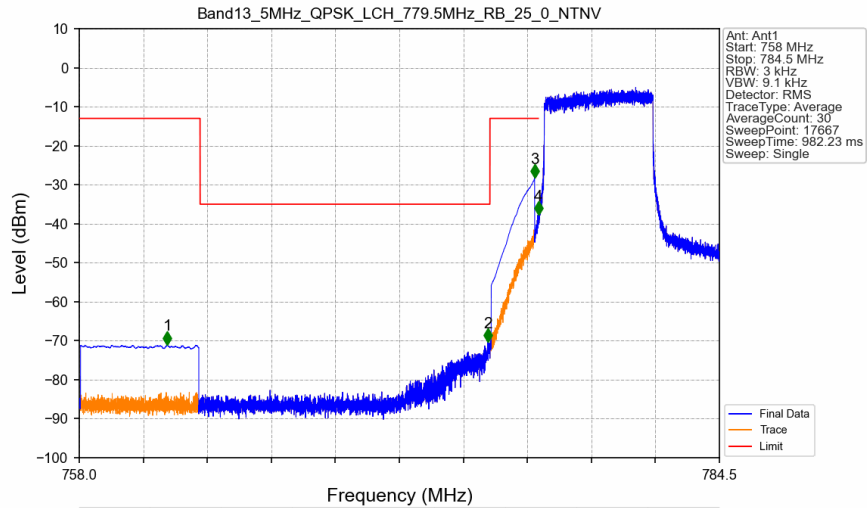
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	782	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	782	1	49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

5.2 Test Graph

5.2.1 B13_5MHz

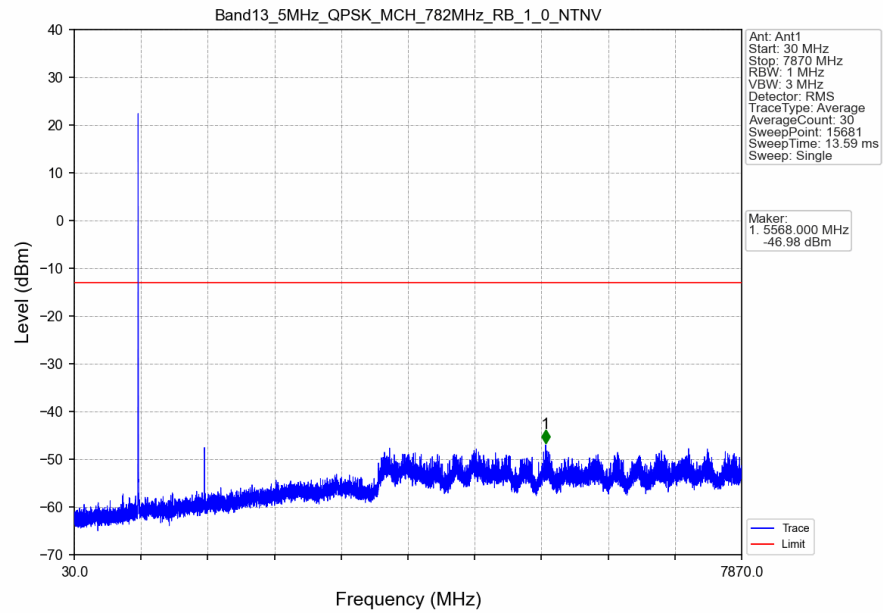


Band13_5MHz_QPSK_LCH_779.5MHz_RB_25_0_NTNV

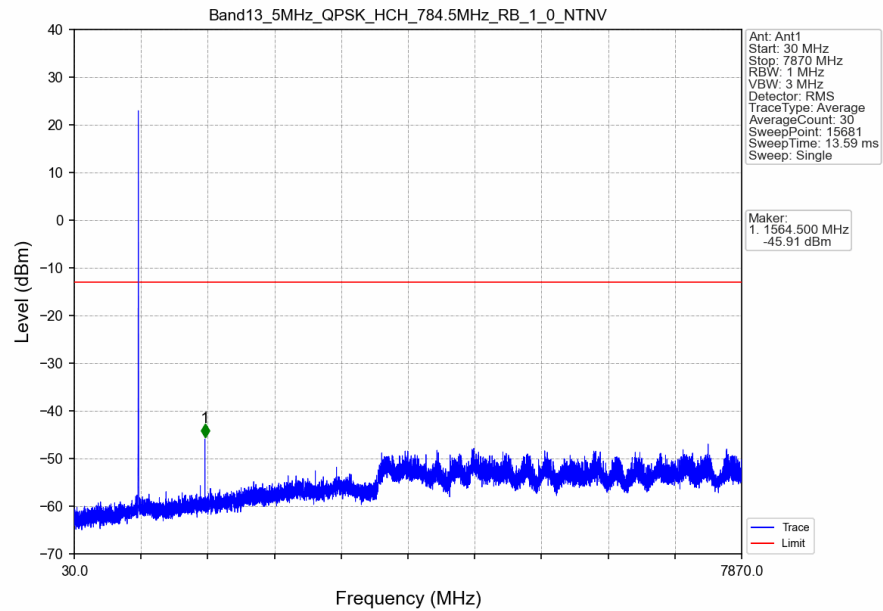


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	761.641	-71.02	-13	Pass
763	775	0.00625	/	2	774.912	-70.32	-35	Pass
775	776.9	0.1	CHP	3	776.850	-28.19	-13	Pass
776.9	777	0.03	/	4	777.000	-37.67	-13	Pass
777	784.5	0.03	/	/	/	/	/	/

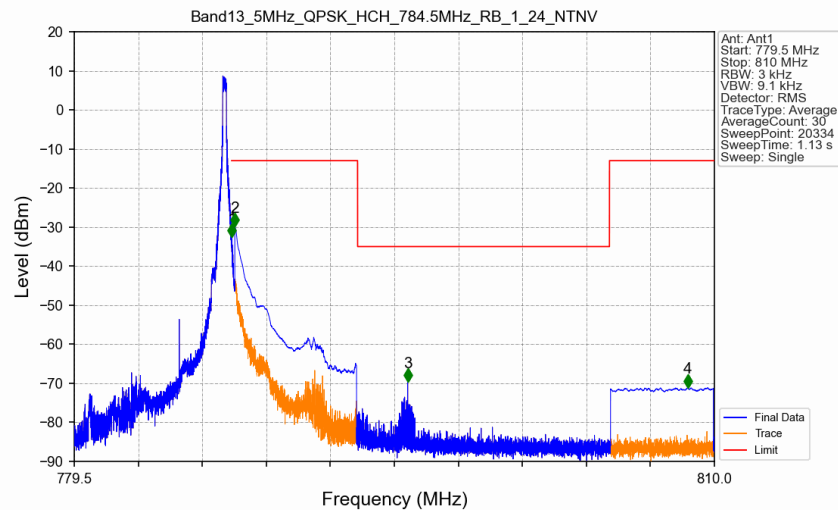
Band13_5MHz_QPSK_MCH_782MHz_RB_1_0_NTNV



Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_0_NTNV

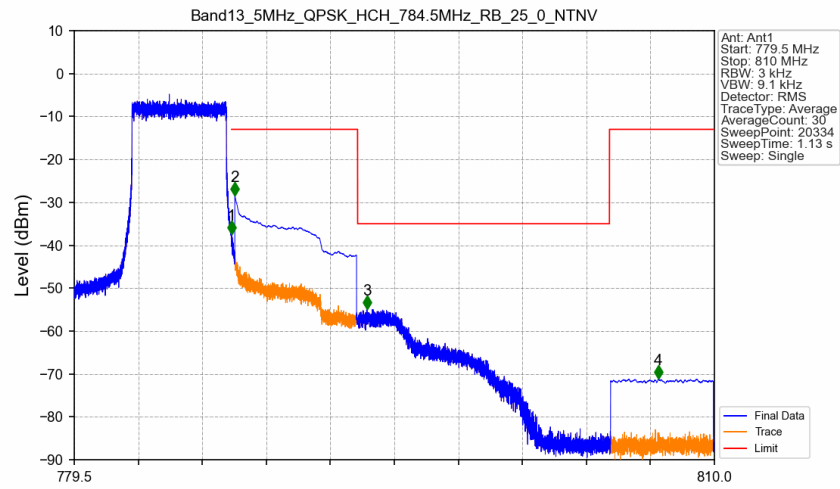


Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_24_NTNV



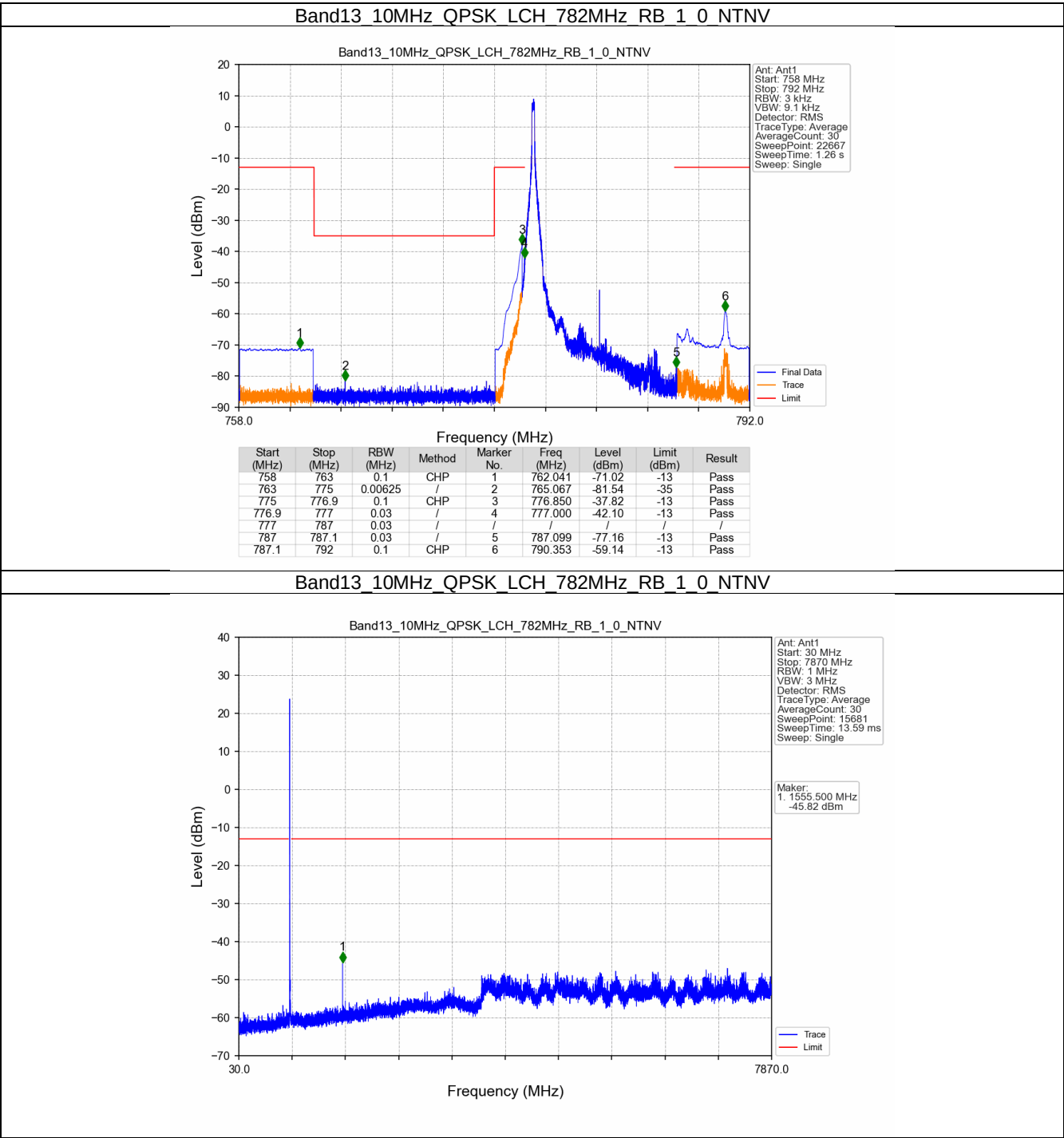
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	/	1	787.014	-32.60	-13	Pass
787	787.1	0.03	/	2	787.150	-29.88	-13	Pass
787.1	793	0.1	CHP	3	795.385	-69.70	-35	Pass
793	805	0.00625	/	4	808.738	-71.09	-13	Pass
805	810	0.1	CHP					

Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV

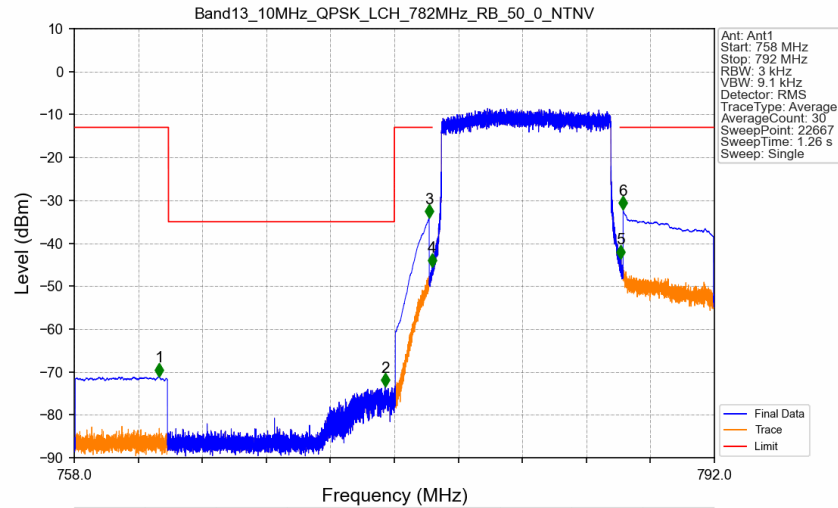


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	1	787.000	-37.45	-13	Pass
787.1	793	0.1	CHP	2	787.150	-28.42	-13	Pass
793	805	0.00625	/	3	793.447	-54.88	-35	Pass
805	810	0.1	CHP	4	807.321	-71.20	-13	Pass

5.2.2 B13_10MHz

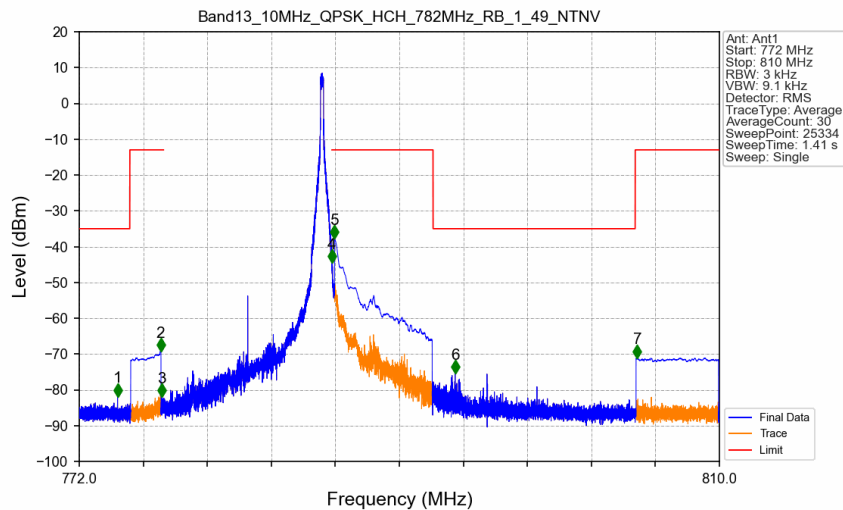


Band13_10MHz_QPSK_LCH_782MHz_RB_50_0_NTNV



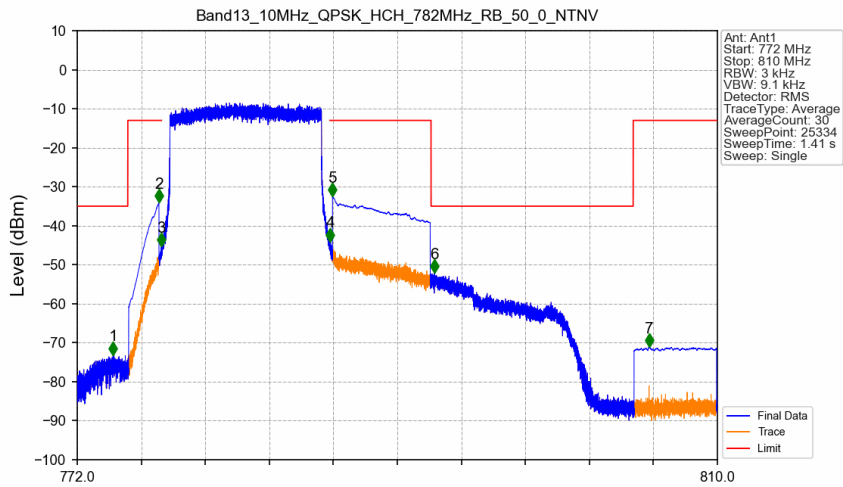
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	762.505	-71.07	-13	Pass
763	775	0.00625	/	2	774.508	-73.46	-35	Pass
775	776.9	0.1	CHP	3	776.850	-34.11	-13	Pass
776.9	777	0.03	/	4	777.000	-45.49	-13	Pass
777	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	5	787.005	-43.54	-13	Pass
787.1	792	0.1	CHP	6	787.150	-32.22	-13	Pass

Band13_10MHz_QPSK_HCH_782MHz_RB_1_49_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	/	1	774.271	-81.91	-35	Pass
775	776.9	0.1	CHP	2	776.836	-69.32	-13	Pass
776.9	777	0.03	/	3	776.914	-82.09	-13	Pass
777	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	4	787.000	-44.64	-13	Pass
787.1	793	0.1	CHP	5	787.150	-37.73	-13	Pass
793	805	0.00625	/	6	794.310	-75.47	-35	Pass
805	810	0.1	CHP	7	805.119	-71.12	-13	Pass

Band13_10MHz_QPSK_HCH_782MHz_RB_50_0_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	/	1	774.132	-73.15	-35	Pass
775	776.9	0.1	CHP	2	776.850	-33.98	-13	Pass
776.9	777	0.03	/	3	777.000	-45.27	-13	Pass
777	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	4	787.017	-44.03	-13	Pass
787.1	793	0.1	CHP	5	787.150	-32.47	-13	Pass
793	805	0.00625	/	6	793.197	-52.08	-35	Pass
805	810	0.1	CHP	7	805.954	-71.07	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 13-Low channel, Modulation: QPSK, Bandwidth:5MHz, 1RB#0								
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	-46.63	-13	-33.63	-50.33	2.04	5.74	Horizontal	Pass
2331.75	-31.73	-13	-18.73	-34.59	2.56	5.42	Horizontal	Pass
3109.0	-53.94	-13	-40.94	-58.1	3.03	7.19	Horizontal	Pass
1554.5	-48.67	-13	-35.67	-52.37	2.04	5.74	Vertical	Pass
2331.75	-43.97	-13	-30.97	-46.83	2.56	5.42	Vertical	Pass
3109.0	-55.17	-13	-42.17	-59.33	3.03	7.19	Vertical	Pass

LTE Band 13-Middle channel, Modulation: QPSK, Bandwidth:5MHz, 1RB#0								
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	-47.01	-40	-7.01	-50.7	2.04	5.73	Horizontal	Pass
2339.25	-32.26	-13	-19.26	-35.13	2.56	5.43	Horizontal	Pass
3119.0	-53.25	-13	-40.25	-57.43	3.04	7.22	Horizontal	Pass
1559.5	-48.99	-40	-8.99	-52.68	2.04	5.73	Vertical	Pass
2339.25	-44.17	-13	-31.17	-47.04	2.56	5.43	Vertical	Pass
3119.0	-55.6	-13	-42.6	-59.78	3.04	7.22	Vertical	Pass

LTE Band 13-High channel, Modulation: QPSK, Bandwidth:5MHz, 1RB#0								
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	-45.47	-40	-5.47	-49.14	2.05	5.72	Horizontal	Pass
2346.75	-32.91	-13	-19.91	-35.8	2.56	5.45	Horizontal	Pass
3129.0	-56.32	-13	-43.32	-60.51	3.05	7.24	Horizontal	Pass
1564.5	-50.13	-40	-10.13	-53.8	2.05	5.72	Vertical	Pass
2346.75	-44.14	-13	-31.14	-47.03	2.56	5.45	Vertical	Pass
3129.0	-56.25	-13	-43.25	-60.44	3.05	7.24	Vertical	Pass

---End of Attachment---