

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	23.10	-3.35	17.60	<=34.77	Pass
			13	23.15	-3.35	17.65	<=34.77	Pass
			24	22.95	-3.35	17.45	<=34.77	Pass
		12	0	22.23	-3.35	16.73	<=34.77	Pass
			6	22.34	-3.35	16.84	<=34.77	Pass
			13	22.22	-3.35	16.72	<=34.77	Pass
		25	0	22.13	-3.35	16.63	<=34.77	Pass
	782	1	0	23.26	-3.35	17.76	<=34.77	Pass
			13	23.42	-3.35	17.92	<=34.77	Pass
			24	23.18	-3.35	17.68	<=34.77	Pass
		12	0	22.24	-3.35	16.74	<=34.77	Pass
			6	22.34	-3.35	16.84	<=34.77	Pass
			13	22.18	-3.35	16.68	<=34.77	Pass
	25	0	22.22	-3.35	16.72	<=34.77	Pass	
	784.5	1	0	23.27	-3.35	17.77	<=34.77	Pass
			13	23.42	-3.35	17.92	<=34.77	Pass
			24	23.10	-3.35	17.60	<=34.77	Pass
		12	0	22.19	-3.35	16.69	<=34.77	Pass
			6	22.30	-3.35	16.80	<=34.77	Pass
			13	22.24	-3.35	16.74	<=34.77	Pass
		25	0	22.16	-3.35	16.66	<=34.77	Pass
16QAM	779.5	1	0	21.99	-3.35	16.49	<=34.77	Pass
			13	22.15	-3.35	16.65	<=34.77	Pass
			24	21.73	-3.35	16.23	<=34.77	Pass
		12	0	20.97	-3.35	15.47	<=34.77	Pass
			6	21.09	-3.35	15.59	<=34.77	Pass
			13	21.08	-3.35	15.58	<=34.77	Pass
		25	0	20.99	-3.35	15.49	<=34.77	Pass
	782	1	0	22.11	-3.35	16.61	<=34.77	Pass
			13	22.04	-3.35	16.54	<=34.77	Pass
			24	21.79	-3.35	16.29	<=34.77	Pass
		12	0	21.23	-3.35	15.73	<=34.77	Pass
			6	21.31	-3.35	15.81	<=34.77	Pass
			13	21.25	-3.35	15.75	<=34.77	Pass
	25	0	21.21	-3.35	15.71	<=34.77	Pass	
	784.5	1	0	21.93	-3.35	16.43	<=34.77	Pass
			13	22.04	-3.35	16.54	<=34.77	Pass
			24	21.76	-3.35	16.26	<=34.77	Pass
		12	0	21.28	-3.35	15.78	<=34.77	Pass
			6	21.26	-3.35	15.76	<=34.77	Pass
			13	20.98	-3.35	15.48	<=34.77	Pass
		25	0	21.14	-3.35	15.64	<=34.77	Pass
Note1: ERP=Conducted Power+Antenna Gain-2.15								

1.1.2 B13_10MHz_ERP

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	22.95	-3.35	17.45	<=34.77	Pass
			25	23.29	-3.35	17.79	<=34.77	Pass
			49	23.11	-3.35	17.61	<=34.77	Pass
		25	0	22.16	-3.35	16.66	<=34.77	Pass
			13	22.26	-3.35	16.76	<=34.77	Pass
			25	22.15	-3.35	16.65	<=34.77	Pass
		50	0	22.20	-3.35	16.70	<=34.77	Pass
16QAM	782	1	0	21.99	-3.35	16.49	<=34.77	Pass
			25	22.19	-3.35	16.69	<=34.77	Pass
			49	21.78	-3.35	16.28	<=34.77	Pass
		25	0	21.14	-3.35	15.64	<=34.77	Pass
			13	21.25	-3.35	15.75	<=34.77	Pass
			25	21.14	-3.35	15.64	<=34.77	Pass
		50	0	21.20	-3.35	15.70	<=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	3.5	0.100	0.0001	-2.5 to 2.5	Pass
					3.87	-1.500	-0.0019	-2.5 to 2.5	Pass
					4.4	-1.400	-0.0018	-2.5 to 2.5	Pass
				-30	3.87	-1.800	-0.0023	-2.5 to 2.5	Pass
				-20	3.87	-2.300	-0.0029	-2.5 to 2.5	Pass
				-10	3.87	-2.800	-0.0036	-2.5 to 2.5	Pass
				0	3.87	-3.400	-0.0043	-2.5 to 2.5	Pass
				10	3.87	-1.100	-0.0014	-2.5 to 2.5	Pass
				30	3.87	-1.000	-0.0013	-2.5 to 2.5	Pass
				40	3.87	-2.100	-0.0027	-2.5 to 2.5	Pass
				50	3.87	-1.400	-0.0018	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band13_OBW

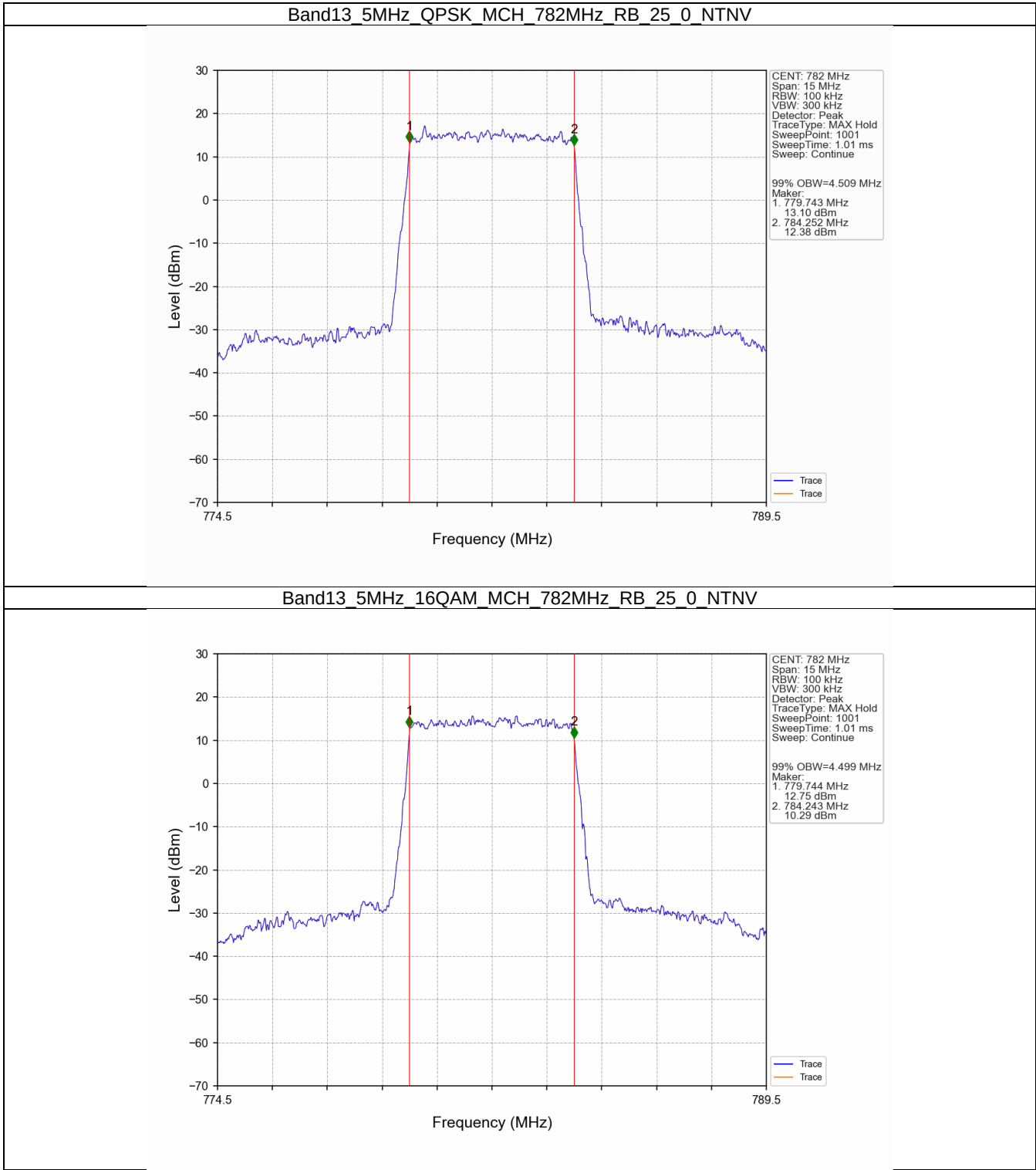
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	4.509	/	Pass
	16QAM	782	25	0	4.499	/	Pass
10	QPSK	782	50	0	8.950	/	Pass
	16QAM	782	50	0	8.947	/	Pass

3.1.2 Band13_XDB

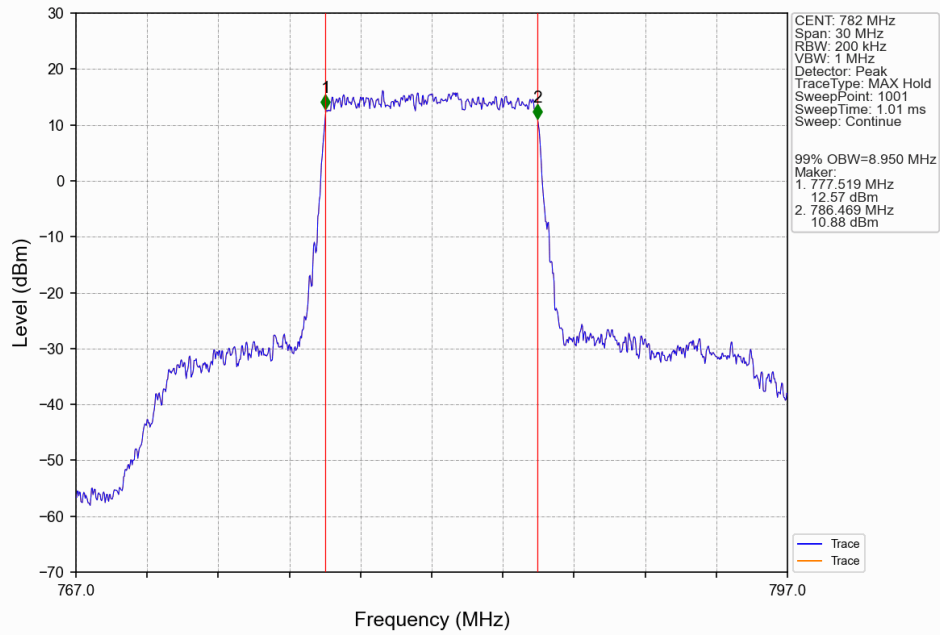
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	5.002	/	Pass
	16QAM	782	25	0	5.006	/	Pass
10	QPSK	782	50	0	9.780	/	Pass
	16QAM	782	50	0	9.736	/	Pass

3.2 Test Graph

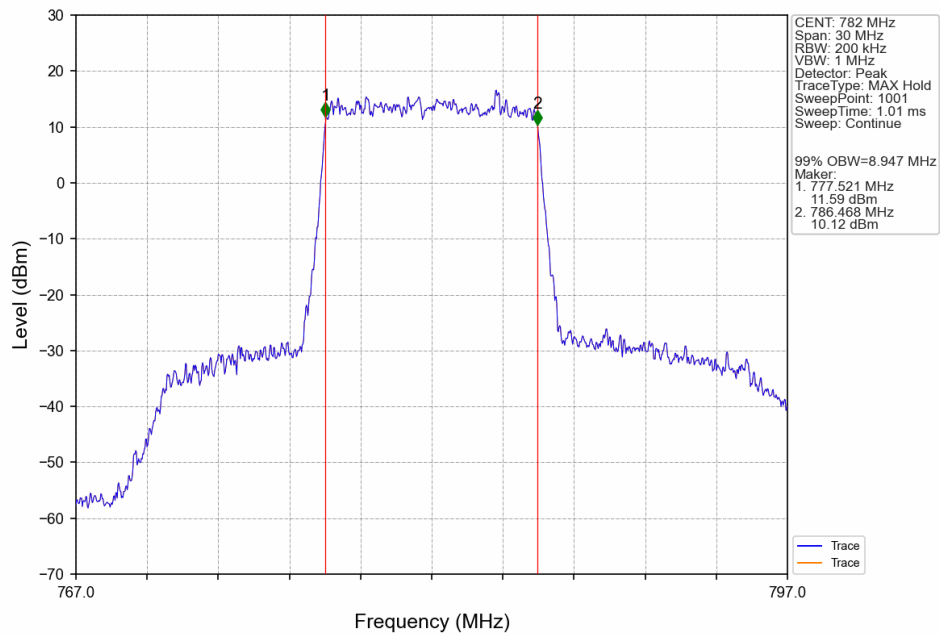
3.2.1 Band13_OBW



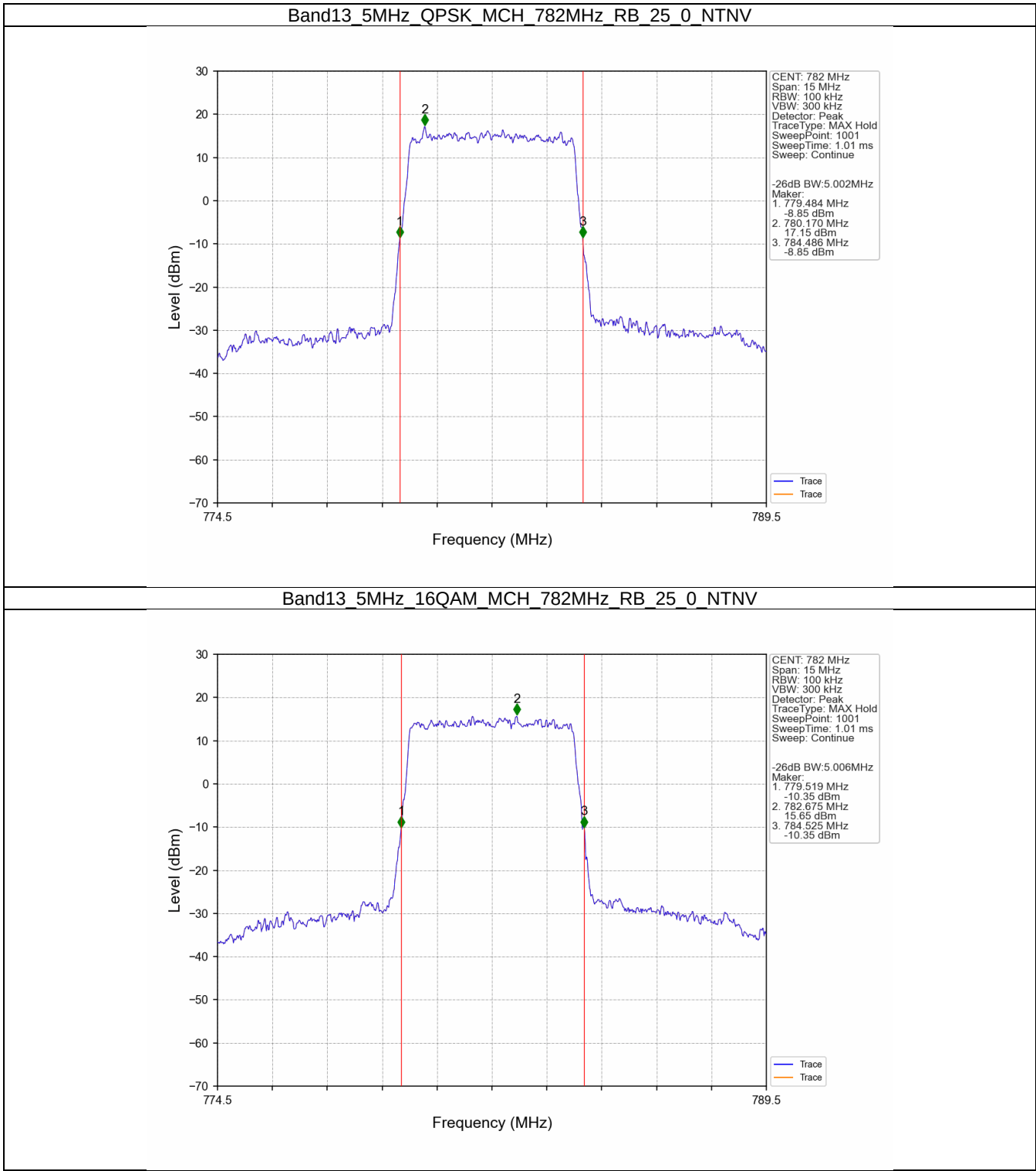
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



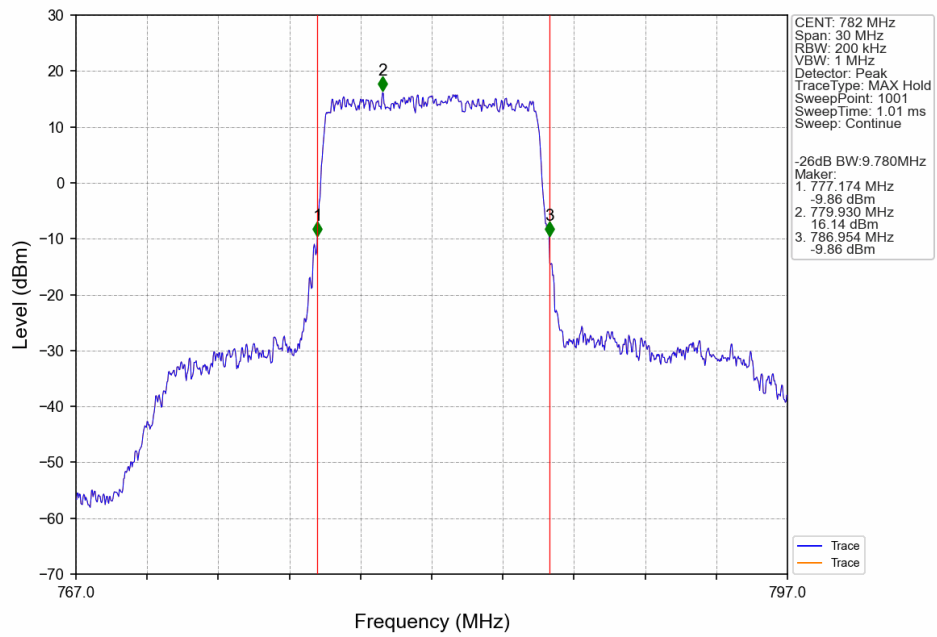
Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



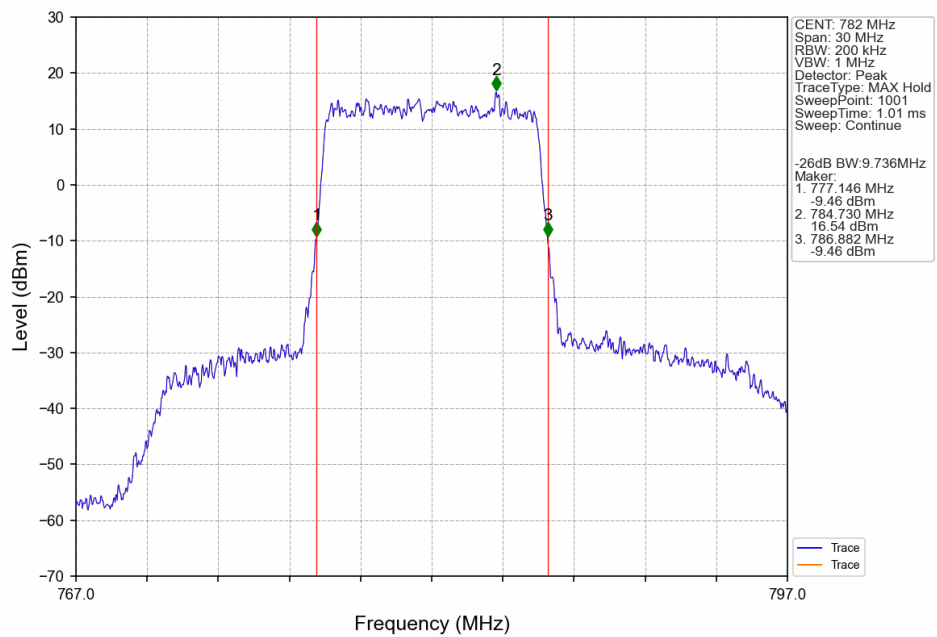
3.2.2 Band13_XDB



Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



4. Peak-Average Ratio

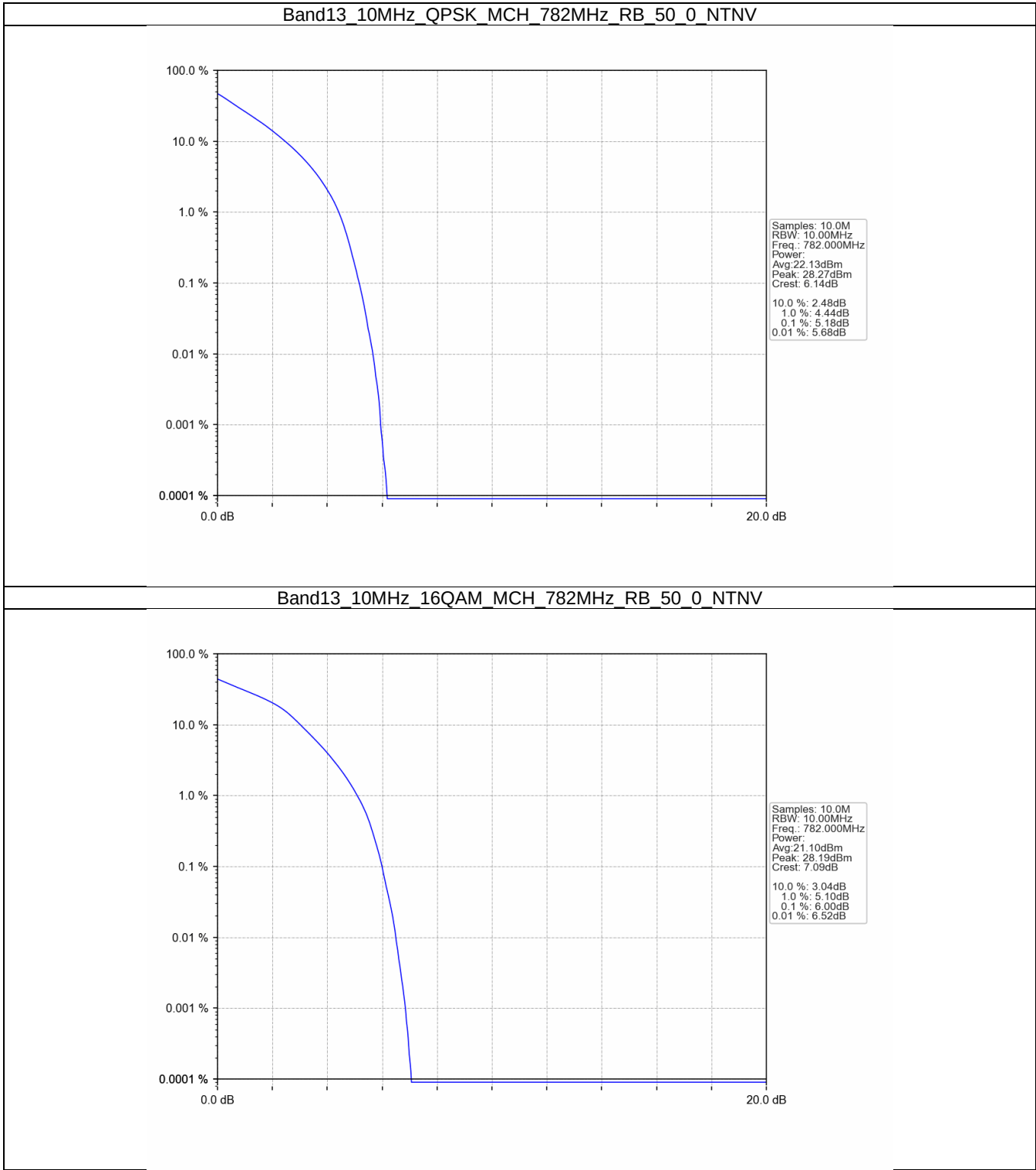
4.1 Test Result

4.1.1 B13_10MHz

Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	5.18	<=13	Pass
16QAM	782	50	0	6.00	<=13	Pass

4.2 Test Graph

4.2.1 B13_10MHz



5. Spurious Emission

5.1 Test Result

5.1.1 B13_5MHz

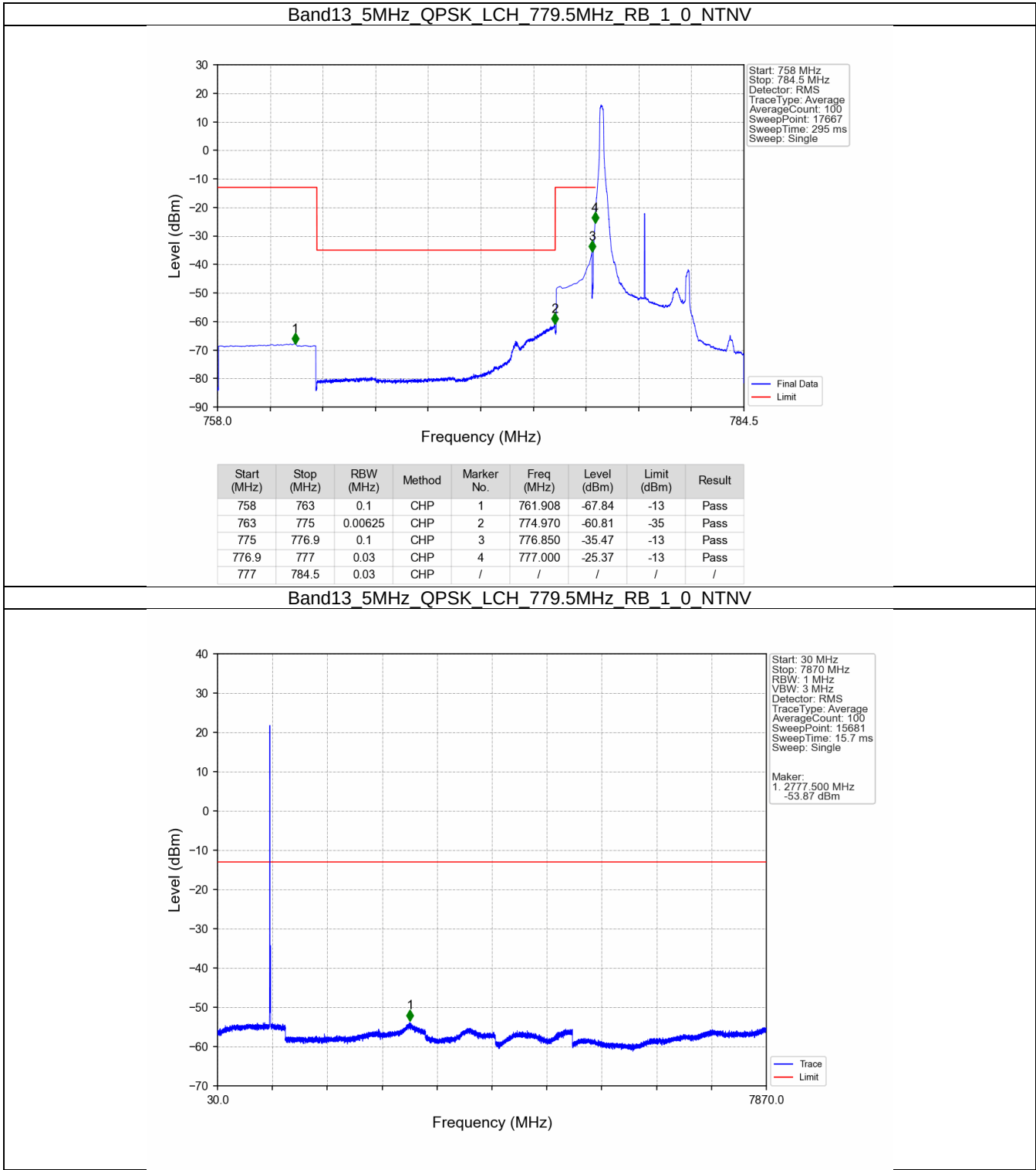
Band: 13 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	779.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	782	1	0	Refer To Test Graph		Pass
	784.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test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

5.1.2 B13_10MHz

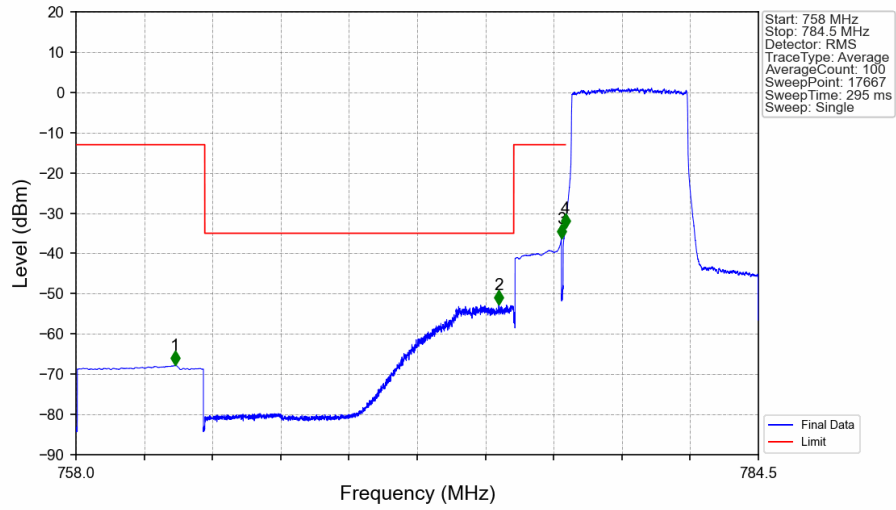
Band: 13 / Bandwidth: 10MHz / NTVN						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	782	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	782	1	49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

5.2 Test Graph

5.2.1 B13_5MHz

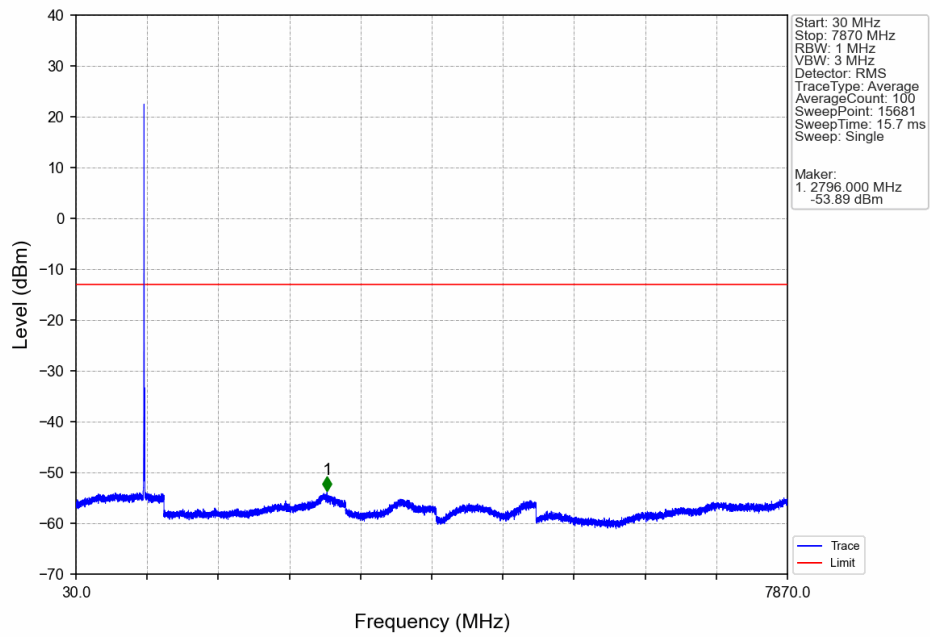


Band13 5MHz QPSK LCH 779.5MHz RB 25_0 NTN

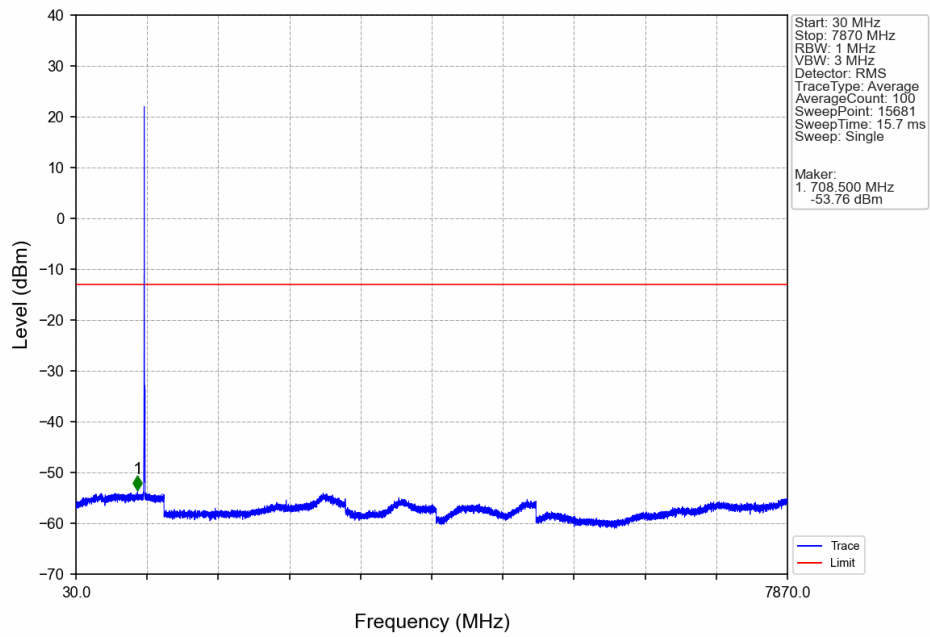


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	761.851	-67.76	-13	Pass
763	775	0.00625	CHP	2	774.418	-52.59	-35	Pass
775	776.9	0.1	CHP	3	776.850	-36.22	-13	Pass
776.9	777	0.03	CHP	4	777.000	-33.60	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

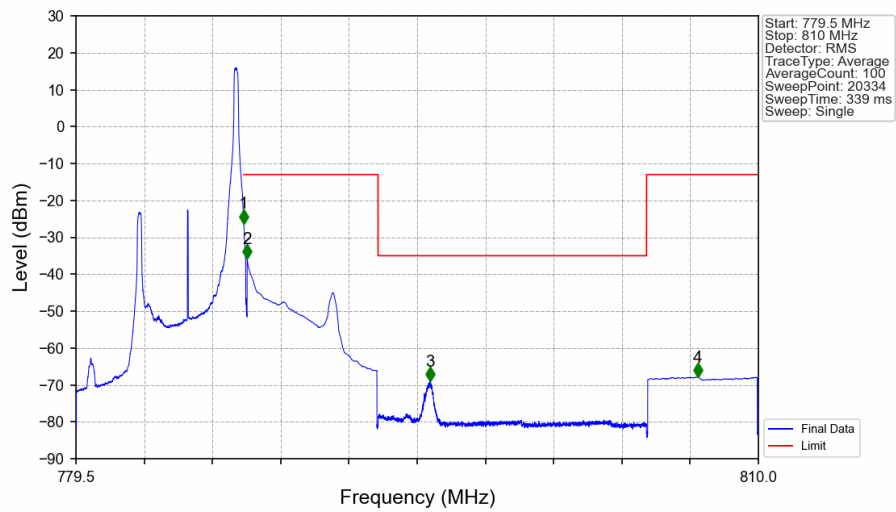
Band13 5MHz QPSK MCH 782MHz RB 1_0 NTN



Band13 5MHz QPSK HCH 784.5MHz RB_1_0 NTN

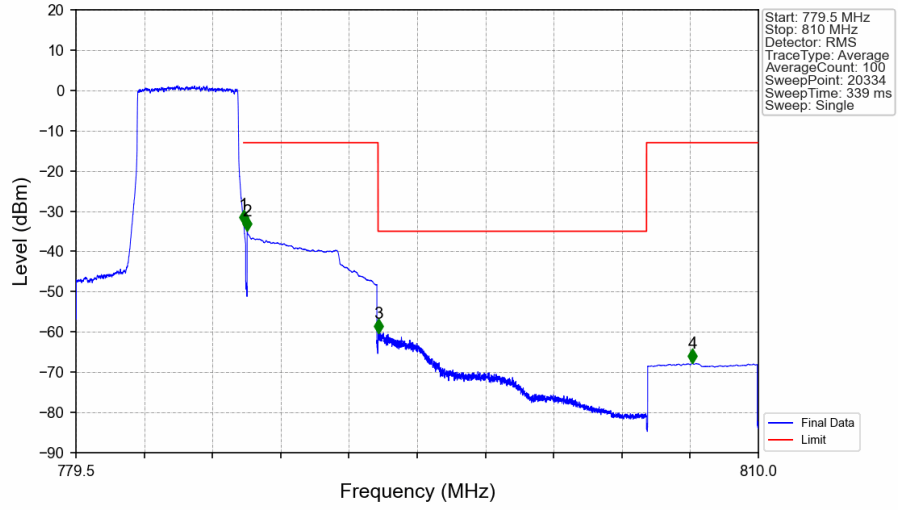


Band13 5MHz QPSK HCH 784.5MHz RB 1 24 NTN



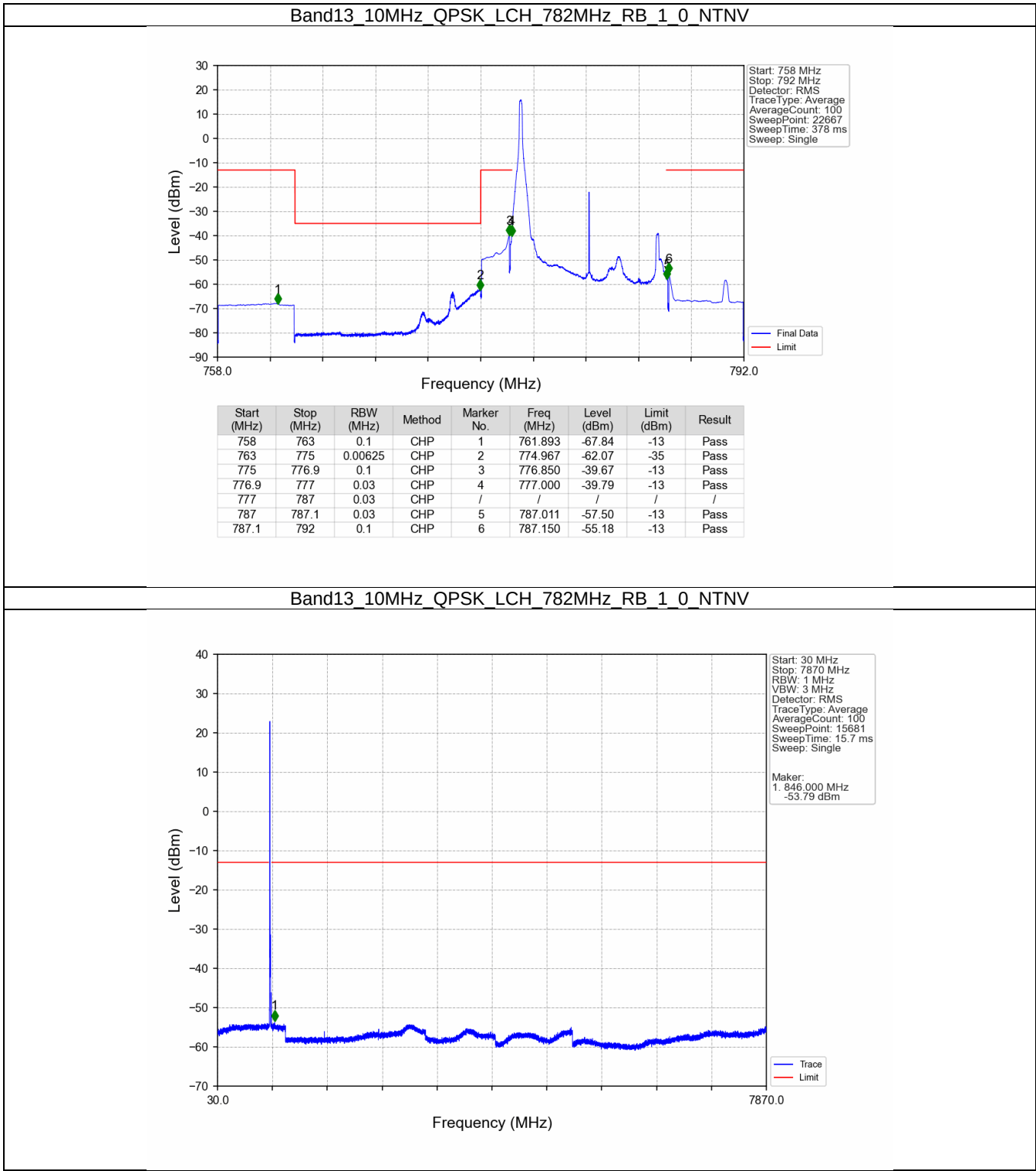
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-26.22	-13	Pass
787.1	793	0.1	CHP	2	787.150	-35.74	-13	Pass
793	805	0.00625	CHP	3	795.321	-68.95	-35	Pass
805	810	0.1	CHP	4	807.285	-67.84	-13	Pass

Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV

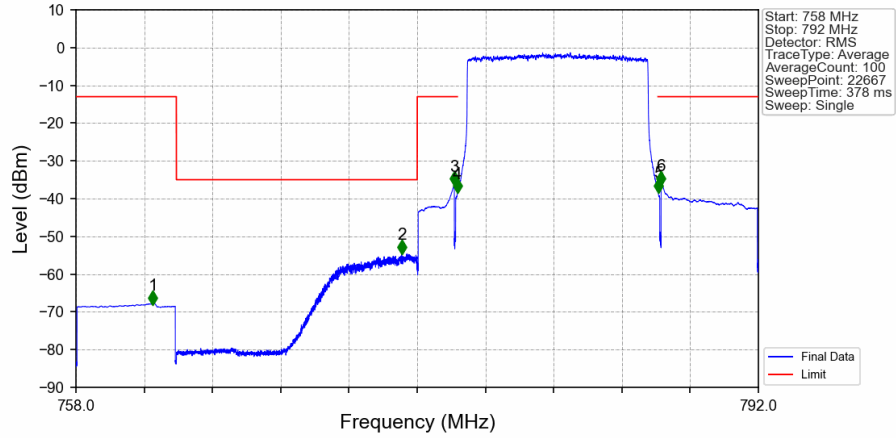


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-33.17	-13	Pass
787.1	793	0.1	CHP	2	787.150	-34.93	-13	Pass
793	805	0.00625	CHP	3	793.011	-60.31	-35	Pass
805	810	0.1	CHP	4	807.061	-67.75	-13	Pass

5.2.2 B13_10MHz

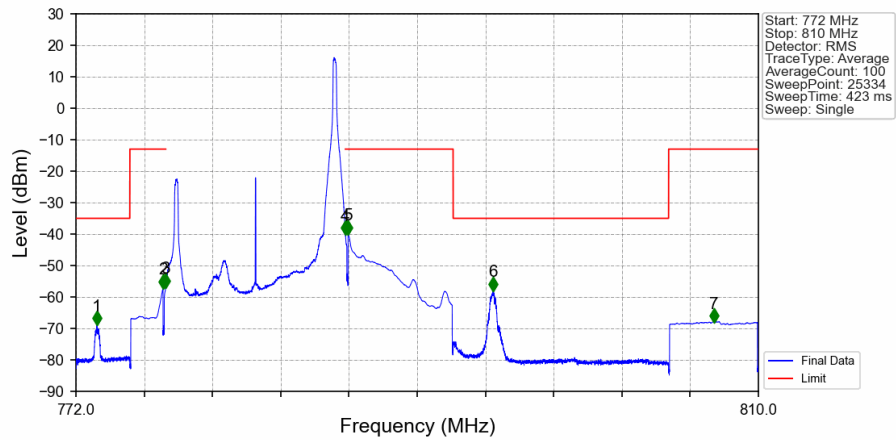


Band13_10MHz_QPSK_LCH_782MHz_RB_50_0_NTNV



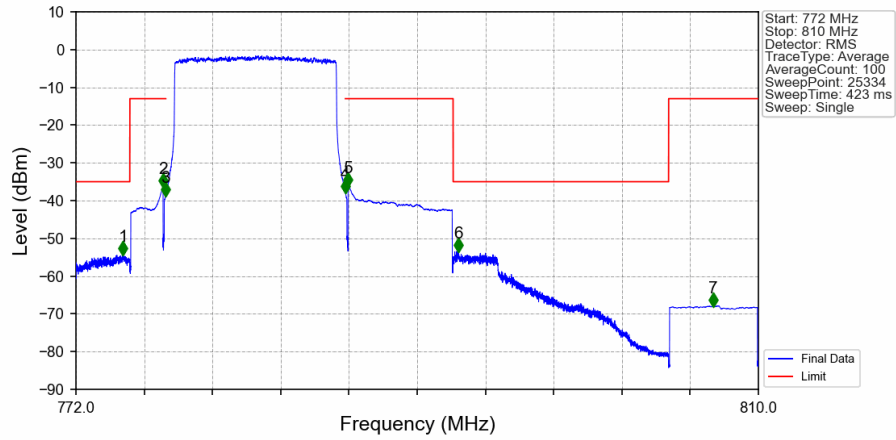
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	761.837	-67.80	-13	Pass
763	775	0.00625	CHP	2	774.224	-54.33	-35	Pass
775	776.9	0.1	CHP	3	776.850	-36.34	-13	Pass
776.9	777	0.03	CHP	4	777.000	-38.26	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.000	-38.07	-13	Pass
787.1	792	0.1	CHP	6	787.152	-36.14	-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	CHP	1	773.166	-68.65	-35	Pass
775	776.9	0.1	CHP	2	776.850	-56.91	-13	Pass
776.9	777	0.03	CHP	3	777.000	-56.70	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-39.90	-13	Pass
787.1	793	0.1	CHP	5	787.150	-39.74	-13	Pass
793	805	0.00625	CHP	6	795.225	-57.72	-35	Pass
805	810	0.1	CHP	7	807.532	-67.77	-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	CHP	1	774.612	-54.26	-35	Pass
775	776.9	0.1	CHP	2	776.850	-36.28	-13	Pass
776.9	777	0.03	CHP	3	777.000	-38.63	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-37.67	-13	Pass
787.1	793	0.1	CHP	5	787.150	-35.99	-13	Pass
793	805	0.00625	CHP	6	793.302	-53.33	-35	Pass
805	810	0.1	CHP	7	807.469	-67.85	-13	Pass

6. Field Strength of Spurious Radiation

Test Band = LTE Band 13 10M_ TM1

Test Channel = Mid Channel

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	2332.5	64.61	-49.24	26.90	-53.00	-13.00	40.00	Horizontal
2	1555.18	54.09	-49.89	25.19	-65.87	-13.00	52.87	Horizontal
3	3110.36	53.49	-48.89	28.19	-62.47	-13.00	49.47	Horizontal
4	3887.95	49.72	-48.43	29.12	-64.85	-13.00	51.85	Horizontal
5	4665.54	49.27	-48.07	30.47	-63.59	-13.00	50.59	Horizontal
6	5443.13	49.12	-47.42	32.44	-61.12	-13.00	48.12	Horizontal

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1555.18	49.80	-49.89	25.19	-70.16	-13.00	57.16	Vertical
2	2332.77	70.78	-49.25	26.90	-46.83	-13.00	33.83	Vertical
3	3110.36	53.91	-48.89	28.19	-62.05	-13.00	49.05	Vertical
4	3887.95	49.14	-48.43	29.12	-65.43	-13.00	52.43	Vertical
5	4665.54	49.55	-48.07	30.47	-63.31	-13.00	50.31	Vertical
6	5443.13	49.83	-47.42	32.44	-60.41	-13.00	47.41	Vertical

Test Band = LTE Band 13 5M_ TM1
Test Channel = Low Channel

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1554.5	59.95	-49.88	25.18	-60.01	-13.00	47.01	Horizontal
2	2332	65.34	-49.24	26.90	-52.26	-13.00	39.26	Horizontal
3	3109.36	52.52	-48.89	28.19	-63.44	-13.00	50.44	Horizontal
4	3886.7	48.84	-48.43	29.12	-65.73	-13.00	52.73	Horizontal
5	4664.04	49.23	-48.07	30.46	-63.63	-13.00	50.63	Horizontal
6	5441.38	49.90	-47.42	32.44	-60.34	-13.00	47.34	Horizontal

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	2332	74.39	-49.24	26.90	-43.21	-13.00	30.21	Vertical
2	1554.68	49.98	-49.89	25.19	-69.98	-13.00	56.98	Vertical
3	3109.36	52.76	-48.89	28.19	-63.20	-13.00	50.20	Vertical
4	3886.7	48.38	-48.43	29.12	-66.19	-13.00	53.19	Vertical
5	4664.04	49.63	-48.07	30.46	-63.23	-13.00	50.23	Vertical
6	5441.38	49.72	-47.42	32.44	-60.52	-13.00	47.52	Vertical

Test Band = LTE Band 13 5M_ TM1
Test Channel = Mid Channel

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	2339.5	62.93	-49.27	26.91	-54.69	-13.00	41.69	Horizontal
2	1559.68	60.61	-49.89	25.22	-59.32	-40.00	19.32	Horizontal
3	3119.36	53.15	-48.86	28.20	-62.78	-13.00	49.78	Horizontal
4	3899.2	48.96	-48.43	29.14	-65.59	-13.00	52.59	Horizontal
5	4679.04	49.40	-48.07	30.49	-63.44	-13.00	50.44	Horizontal
6	5458.88	50.80	-47.41	32.49	-59.39	-13.00	46.39	Horizontal

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	2339.5	70.93	-49.27	26.91	-46.69	-13.00	33.69	Vertical
2	1559.68	53.16	-49.89	25.22	-66.77	-40.00	26.77	Vertical
3	3119.36	51.38	-48.86	28.20	-64.55	-13.00	51.55	Vertical
4	3899.2	48.40	-48.43	29.14	-66.15	-13.00	53.15	Vertical
5	4679.04	49.44	-48.07	30.49	-63.40	-13.00	50.40	Vertical
6	5458.88	50.11	-47.41	32.49	-60.08	-13.00	47.08	Vertical

Test Band = LTE Band 13 5M_ TM1
Test Channel = High Channel

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	2347	65.03	-49.29	26.92	-52.60	-13.00	39.60	Horizontal
2	1564.68	57.85	-49.90	25.26	-62.05	-40.00	22.05	Horizontal
3	3129.36	51.47	-48.83	28.20	-64.42	-13.00	51.42	Horizontal
4	3911.7	50.02	-48.42	29.16	-64.50	-13.00	51.50	Horizontal
5	4694.04	49.50	-48.08	30.53	-63.31	-13.00	50.31	Horizontal
6	5476.38	49.34	-47.40	32.53	-60.79	-13.00	47.79	Horizontal

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	2347	75.05	-49.29	26.92	-42.58	-13.00	29.58	Vertical
2	1564.68	49.88	-49.90	25.26	-70.02	-40.00	30.02	Vertical
3	3129.36	53.64	-48.83	28.20	-62.25	-13.00	49.25	Vertical
4	3911.7	47.77	-48.42	29.16	-66.75	-13.00	53.75	Vertical
5	4694.04	48.83	-48.08	30.53	-63.98	-13.00	50.98	Vertical
6	5476.38	49.78	-47.40	32.53	-60.35	-13.00	47.35	Vertical