

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

1.1.1 B13_5MHz_ERP

Band: 13 / Bandwidth: 5MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	779.5	1	0	23.90	-5.44	16.31	<=34.77	Pass
			13	23.78	-5.44	16.19	<=34.77	Pass
			24	23.81	-5.44	16.22	<=34.77	Pass
		12	0	23.15	-5.44	15.56	<=34.77	Pass
			6	23.15	-5.44	15.56	<=34.77	Pass
			13	23.15	-5.44	15.56	<=34.77	Pass
		25	0	23.18	-5.44	15.59	<=34.77	Pass
	782	1	0	24.30	-5.44	16.71	<=34.77	Pass
			13	24.30	-5.44	16.71	<=34.77	Pass
			24	24.06	-5.44	16.47	<=34.77	Pass
		12	0	23.21	-5.44	15.62	<=34.77	Pass
			6	23.20	-5.44	15.61	<=34.77	Pass
			13	23.19	-5.44	15.60	<=34.77	Pass
		25	0	23.23	-5.44	15.64	<=34.77	Pass
	784.5	1	0	24.28	-5.44	16.69	<=34.77	Pass
			13	24.26	-5.44	16.67	<=34.77	Pass
			24	24.19	-5.44	16.60	<=34.77	Pass
		12	0	23.21	-5.44	15.62	<=34.77	Pass
			6	23.16	-5.44	15.57	<=34.77	Pass
			13	23.18	-5.44	15.59	<=34.77	Pass
		25	0	23.24	-5.44	15.65	<=34.77	Pass
16QAM	779.5	1	0	22.80	-5.44	15.21	<=34.77	Pass
			13	22.77	-5.44	15.18	<=34.77	Pass
			24	22.79	-5.44	15.20	<=34.77	Pass
		12	0	22.16	-5.44	14.57	<=34.77	Pass
			6	22.15	-5.44	14.56	<=34.77	Pass
			13	22.17	-5.44	14.58	<=34.77	Pass
		25	0	22.18	-5.44	14.59	<=34.77	Pass
	782	1	0	23.17	-5.44	15.58	<=34.77	Pass
			13	23.10	-5.44	15.51	<=34.77	Pass
			24	23.14	-5.44	15.55	<=34.77	Pass
		12	0	22.24	-5.44	14.65	<=34.77	Pass
			6	22.22	-5.44	14.63	<=34.77	Pass
			13	22.22	-5.44	14.63	<=34.77	Pass
		25	0	22.26	-5.44	14.67	<=34.77	Pass
	784.5	1	0	23.31	-5.44	15.72	<=34.77	Pass
			13	23.15	-5.44	15.56	<=34.77	Pass
			24	23.37	-5.44	15.78	<=34.77	Pass
		12	0	22.28	-5.44	14.69	<=34.77	Pass
			6	22.24	-5.44	14.65	<=34.77	Pass
			13	22.24	-5.44	14.65	<=34.77	Pass
		25	0	22.17	-5.44	14.58	<=34.77	Pass
64QAM	779.5	1	0	22.06	-5.44	14.47	<=34.77	Pass
			13	21.97	-5.44	14.38	<=34.77	Pass
			24	22.19	-5.44	14.60	<=34.77	Pass
		12	0	21.22	-5.44	13.63	<=34.77	Pass
			6	21.22	-5.44	13.63	<=34.77	Pass
			13	21.25	-5.44	13.66	<=34.77	Pass
		25	0	21.17	-5.44	13.58	<=34.77	Pass

	782	1	0	22.42	-5.44	14.83	<=34.77	Pass
			13	22.51	-5.44	14.92	<=34.77	Pass
			24	22.50	-5.44	14.91	<=34.77	Pass
		12	0	21.31	-5.44	13.72	<=34.77	Pass
			6	21.28	-5.44	13.69	<=34.77	Pass
			13	21.27	-5.44	13.68	<=34.77	Pass
		25	0	21.22	-5.44	13.63	<=34.77	Pass
	784.5	1	0	22.81	-5.44	15.22	<=34.77	Pass
			13	22.79	-5.44	15.20	<=34.77	Pass
			24	22.79	-5.44	15.20	<=34.77	Pass
		12	0	21.29	-5.44	13.70	<=34.77	Pass
			6	21.25	-5.44	13.66	<=34.77	Pass
			13	21.25	-5.44	13.66	<=34.77	Pass
		25	0	21.17	-5.44	13.58	<=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	24.18	-5.44	16.59	<=34.77	Pass
			25	24.17	-5.44	16.58	<=34.77	Pass
			49	24.18	-5.44	16.59	<=34.77	Pass
		25	0	23.16	-5.44	15.57	<=34.77	Pass
			13	23.18	-5.44	15.59	<=34.77	Pass
			25	23.18	-5.44	15.59	<=34.77	Pass
		50	0	23.18	-5.44	15.59	<=34.77	Pass
16QAM	782	1	0	23.24	-5.44	15.65	<=34.77	Pass
			25	23.28	-5.44	15.69	<=34.77	Pass
			49	23.34	-5.44	15.75	<=34.77	Pass
		25	0	22.14	-5.44	14.55	<=34.77	Pass
			13	22.14	-5.44	14.55	<=34.77	Pass
			25	22.13	-5.44	14.54	<=34.77	Pass
		50	0	22.14	-5.44	14.55	<=34.77	Pass
64QAM	782	1	0	22.13	-5.44	14.54	<=34.77	Pass
			25	22.11	-5.44	14.52	<=34.77	Pass
			49	22.12	-5.44	14.53	<=34.77	Pass
		25	0	21.15	-5.44	13.56	<=34.77	Pass
			13	21.16	-5.44	13.57	<=34.77	Pass
			25	21.17	-5.44	13.58	<=34.77	Pass
		50	0	21.14	-5.44	13.55	<=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	3.6	-1.159	-0.0015	-2.5 to 2.5	Pass
					3.85	-5.050	-0.0065	-2.5 to 2.5	Pass
					4.3	-3.834	-0.0049	-2.5 to 2.5	Pass
				-30	3.85	-3.161	-0.0040	-2.5 to 2.5	Pass
				-20	3.85	-2.446	-0.0031	-2.5 to 2.5	Pass
				-10	3.85	-1.588	-0.0020	-2.5 to 2.5	Pass
				0	3.85	-0.615	-0.0008	-2.5 to 2.5	Pass
				10	3.85	-2.546	-0.0033	-2.5 to 2.5	Pass
				30	3.85	-1.674	-0.0021	-2.5 to 2.5	Pass
				40	3.85	-0.958	-0.0012	-2.5 to 2.5	Pass
				50	3.85	-5.007	-0.0064	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band13_OBW

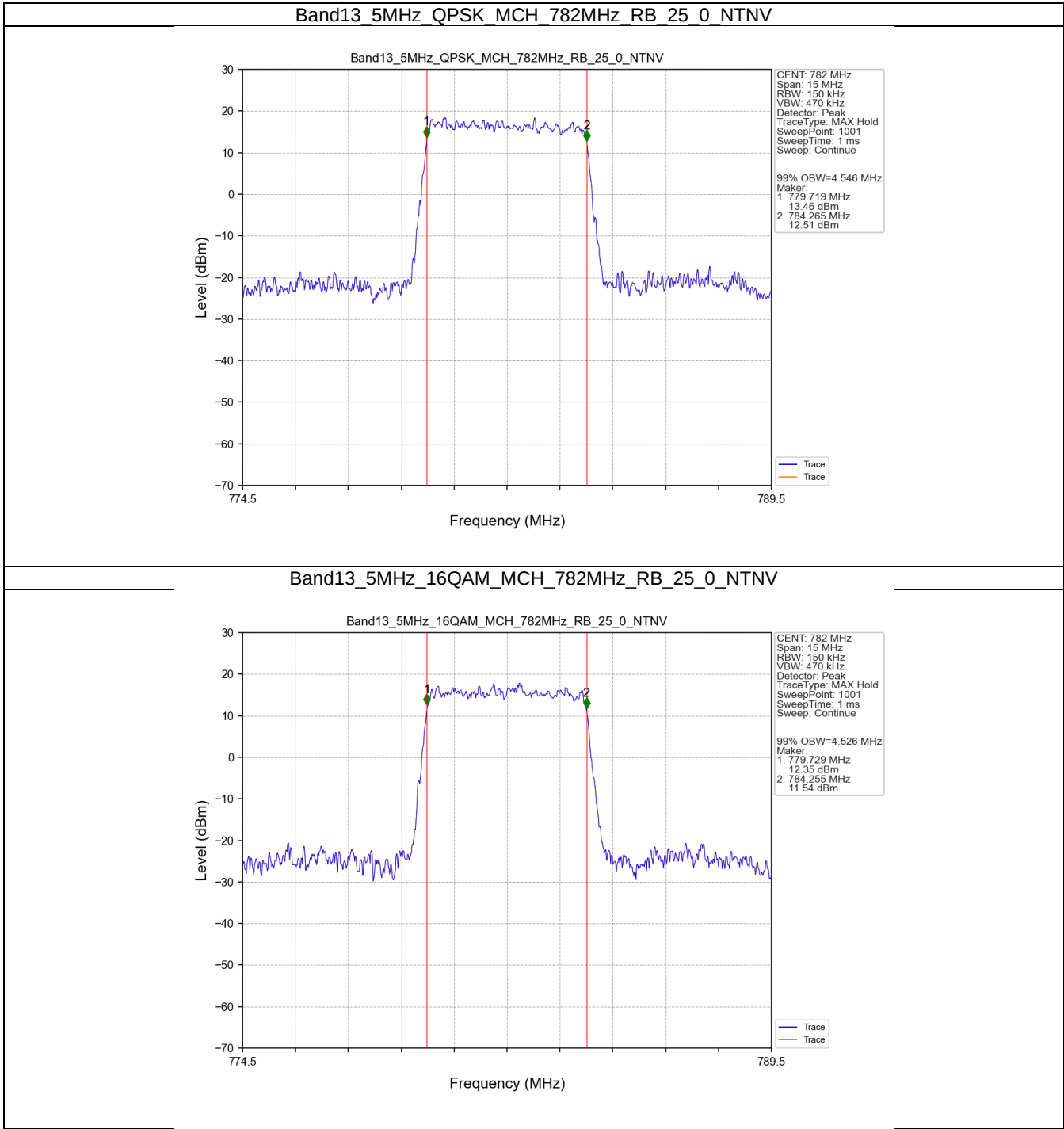
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	4.546	/	Pass
	16QAM	782	25	0	4.526	/	Pass
10	QPSK	782	50	0	9.047	/	Pass
	16QAM	782	50	0	9.028	/	Pass

3.1.2 Band13_XDB

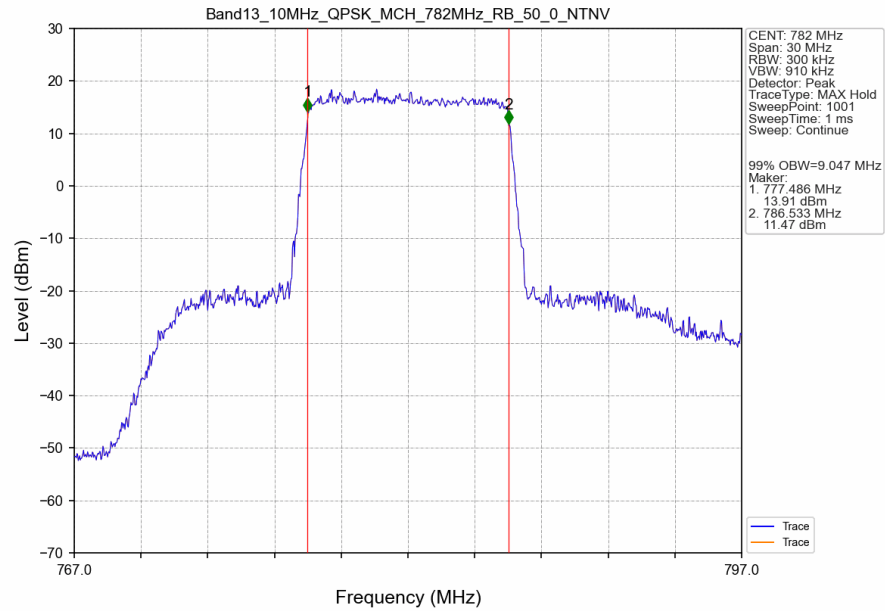
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	5.070	/	Pass
	16QAM	782	25	0	5.053	/	Pass
10	QPSK	782	50	0	9.952	/	Pass
	16QAM	782	50	0	9.960	/	Pass

3.2 Test Graph

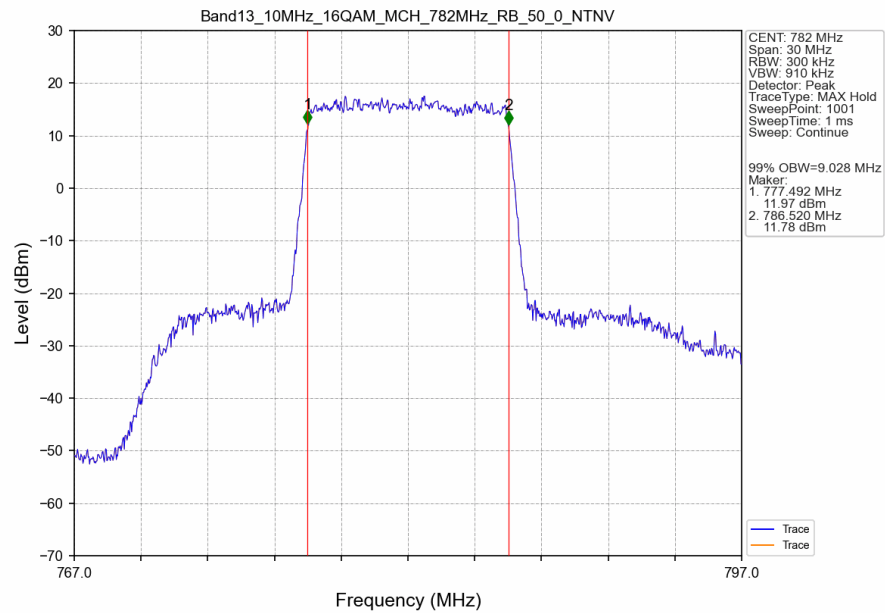
3.2.1 Band13_OBW



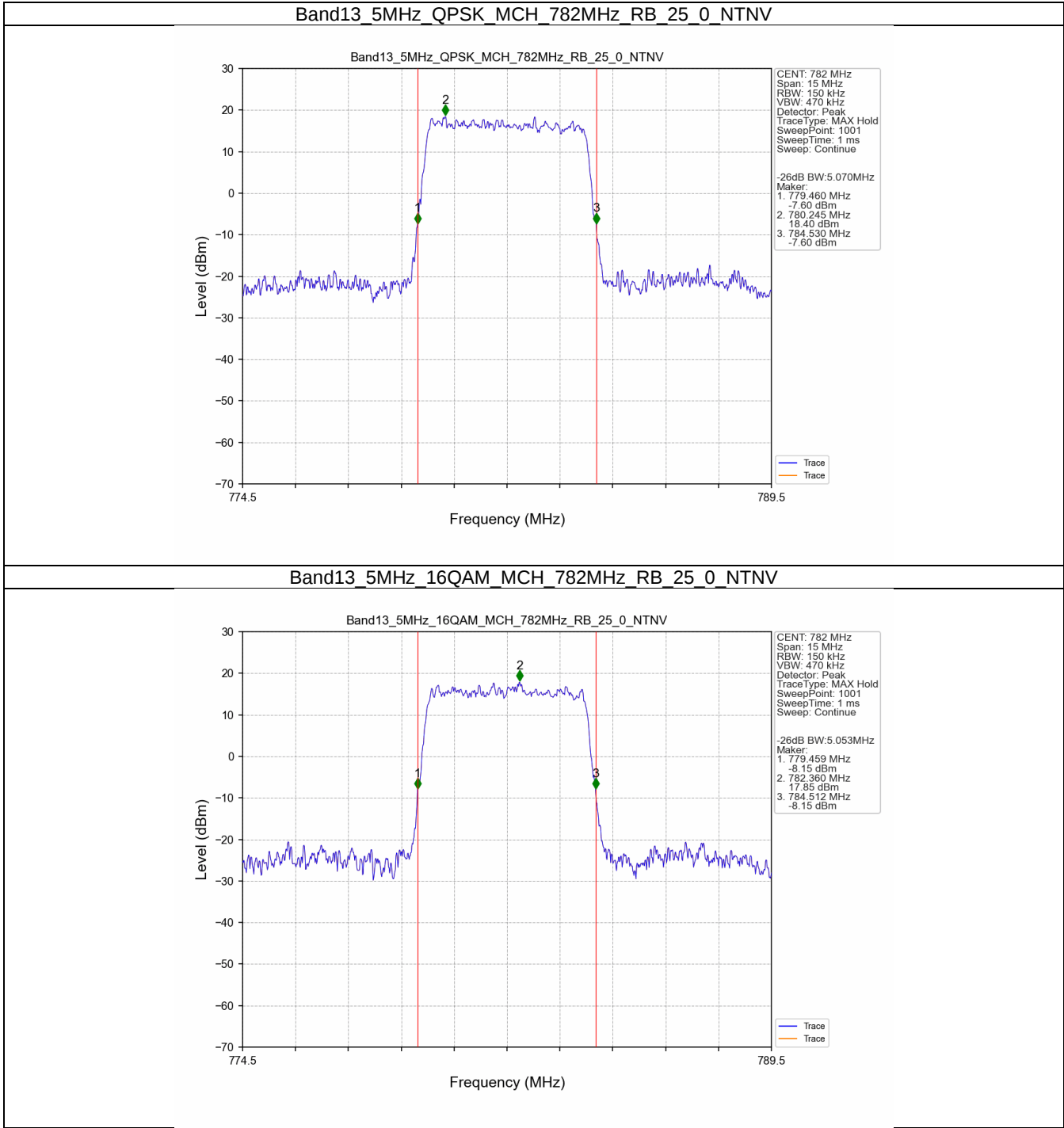
Band13 10MHz QPSK MCH 782MHz RB 50 0 NTNV



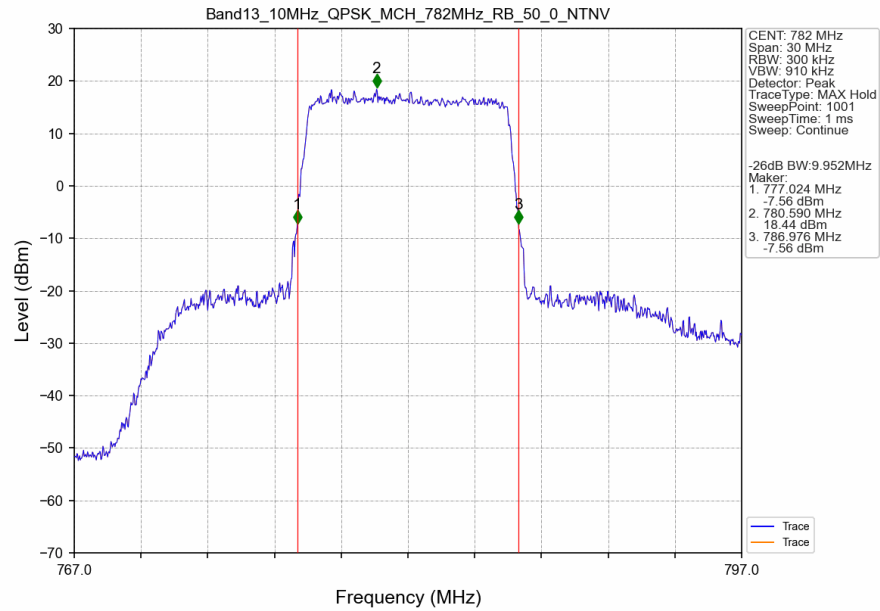
Band13 10MHz 16QAM MCH 782MHz RB 50 0 NTNV



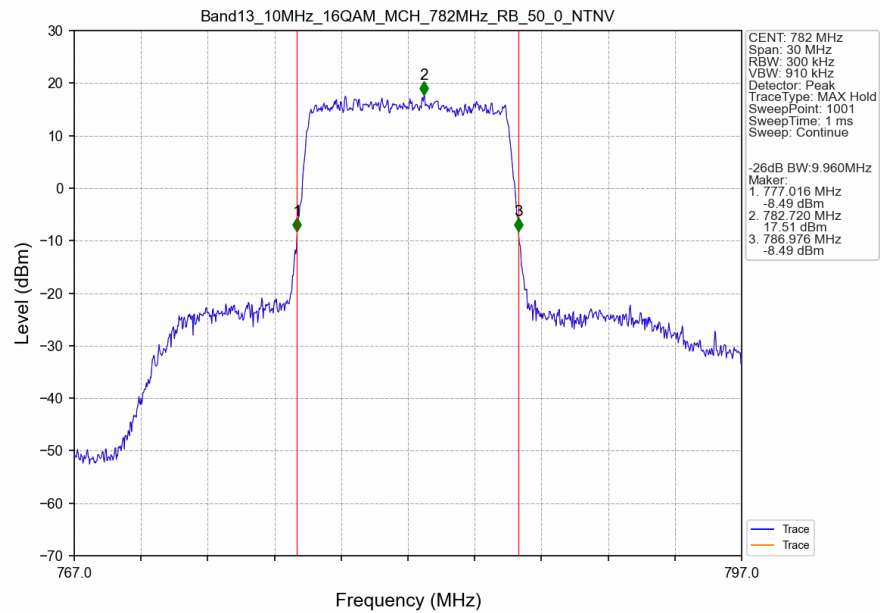
3.2.2 Band13_XDB



Band13 10MHz QPSK MCH 782MHz RB 50 0 NTN



Band13 10MHz 16QAM MCH 782MHz RB 50 0 NTN



4. Peak-Average Ratio

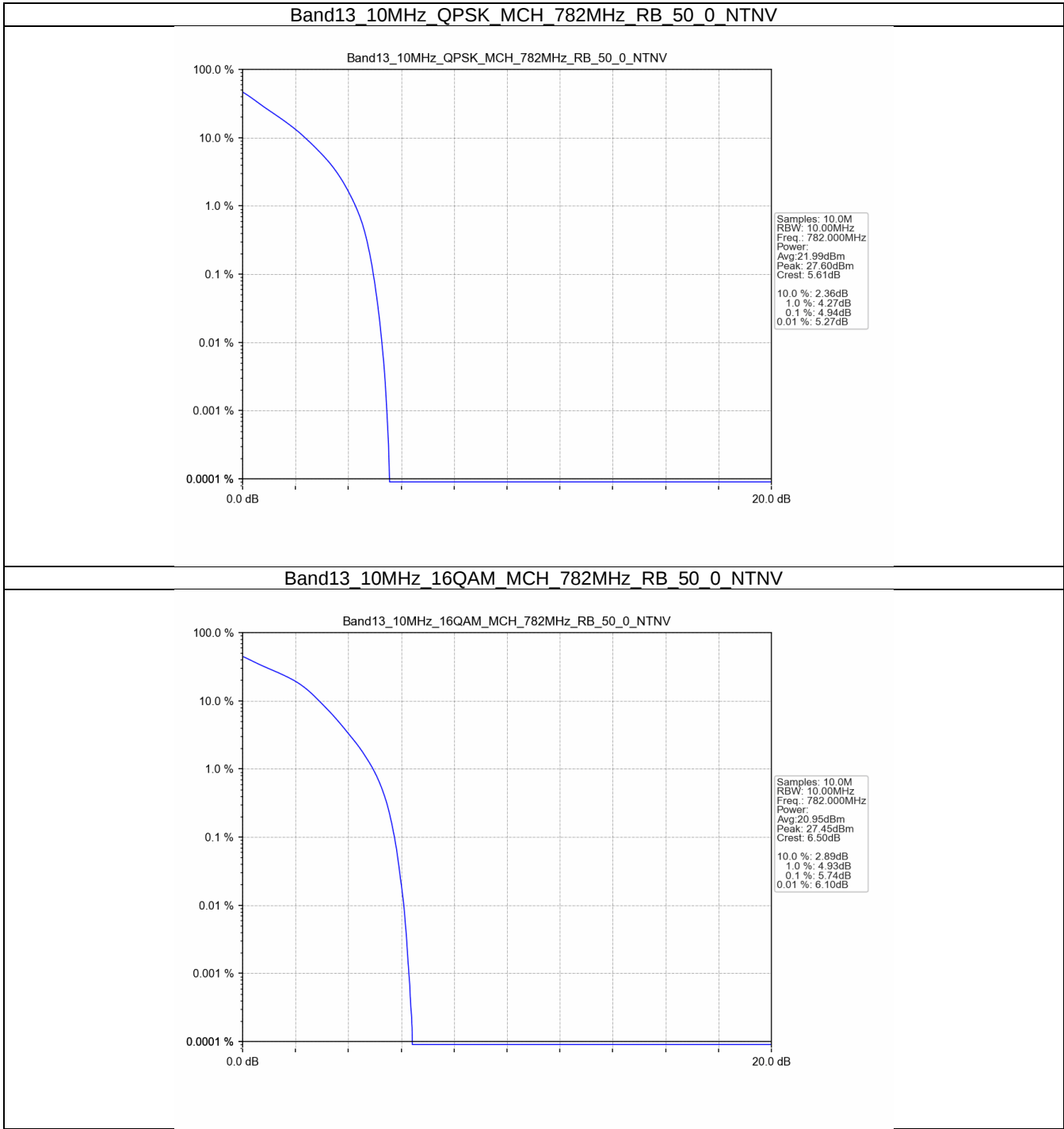
4.1 Test Result

4.1.1 B13_10MHz

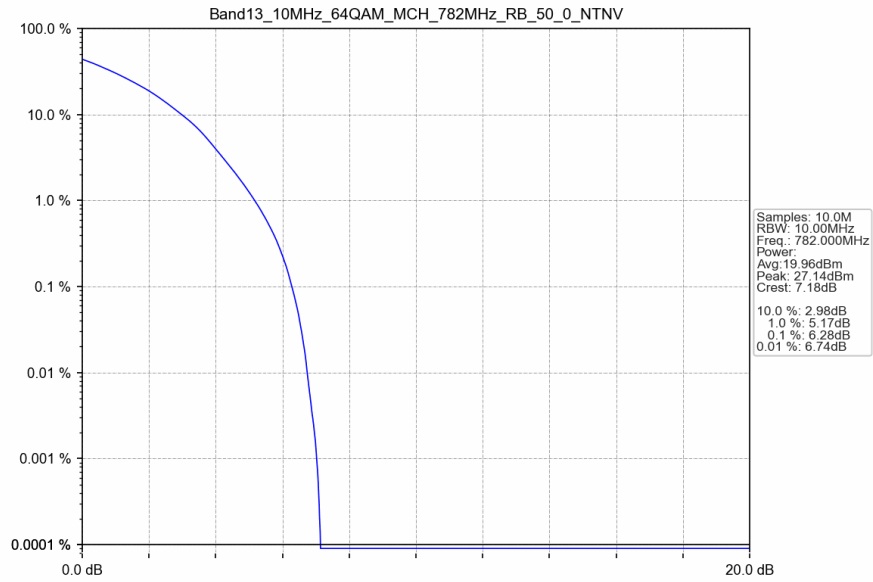
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	4.94	<=13	Pass
16QAM	782	50	0	5.74	<=13	Pass
64QAM	782	50	0	6.28	<=13	Pass

4.2 Test Graph

4.2.1 B13_10MHz



Band13 10MHz 64QAM MCH 782MHz RB 50 0 NTNV



5. Spurious Emission

5.1 Test Result

5.1.1 B13_5MHz

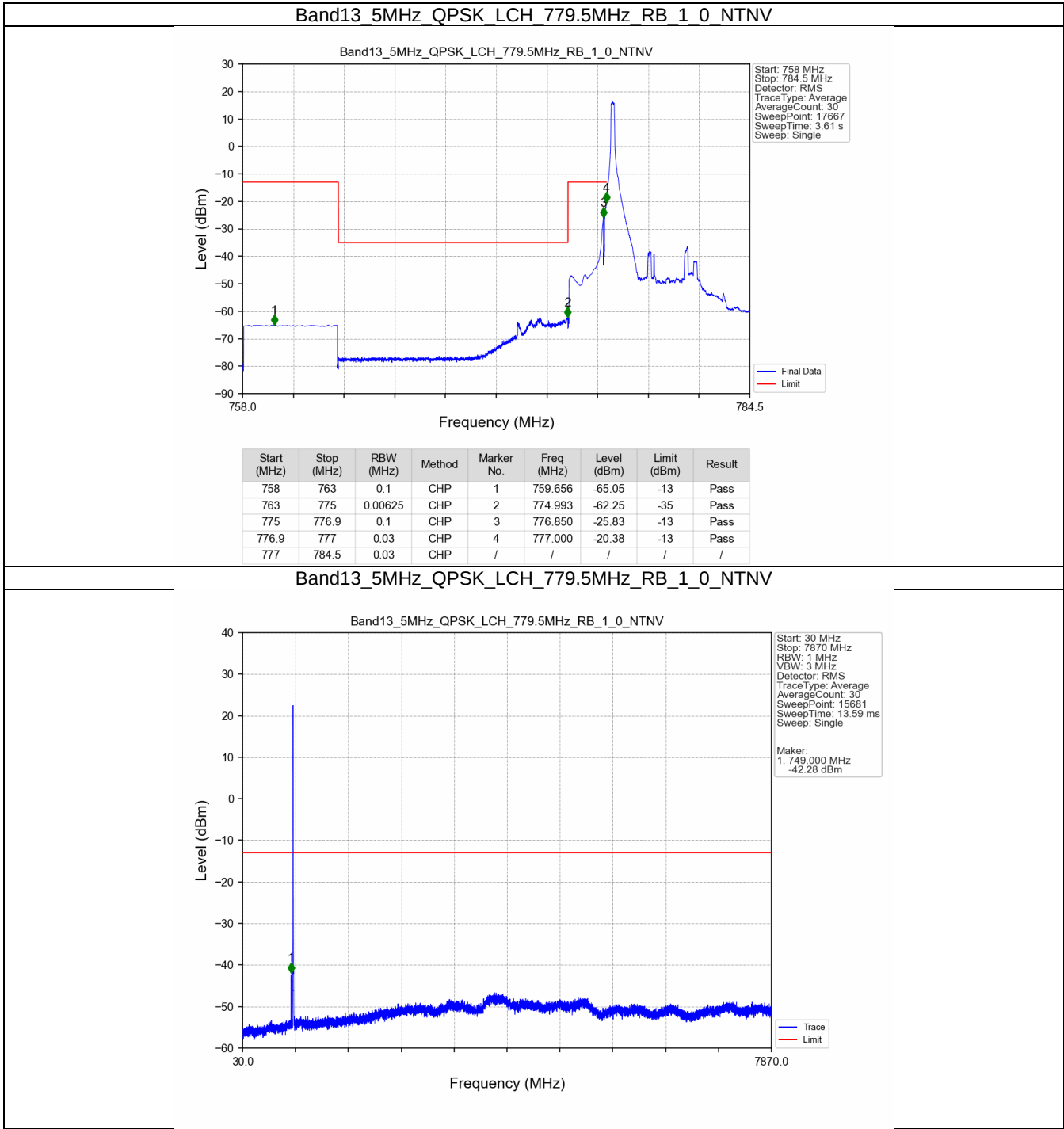
Band: 13 / Bandwidth: 5MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	779.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	782	1	0	Refer To Test Graph		Pass
	784.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test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

5.1.2 B13_10MHz

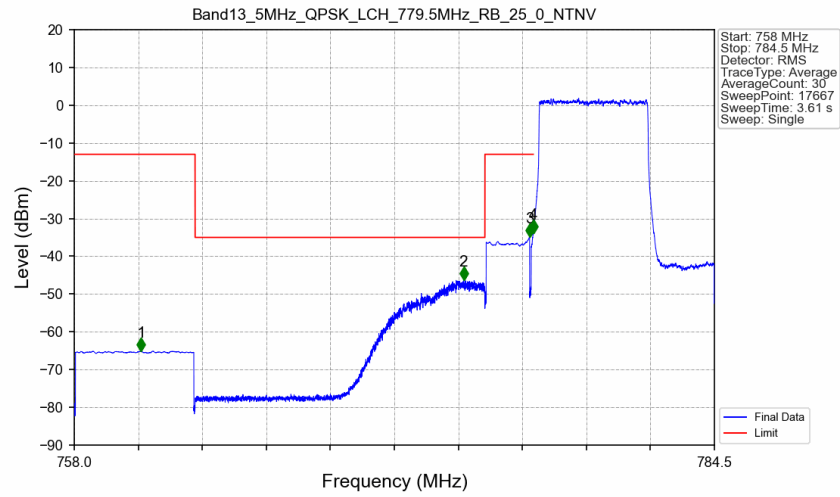
Band: 13 / Bandwidth: 10MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	782	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	782	1	49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

5.2 Test Graph

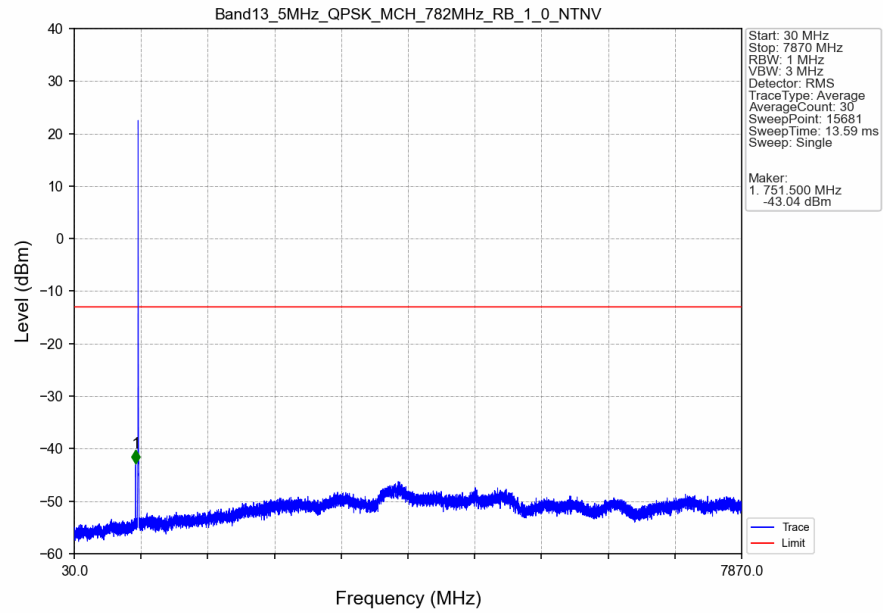
5.2.1 B13_5MHz



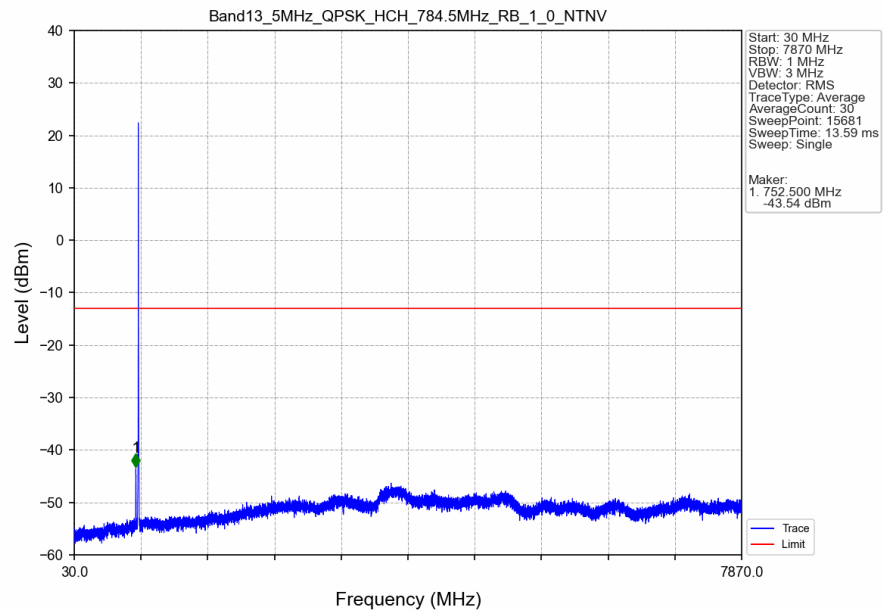
Band13 5MHz QPSK LCH 779.5MHz RB 25 0 NTV



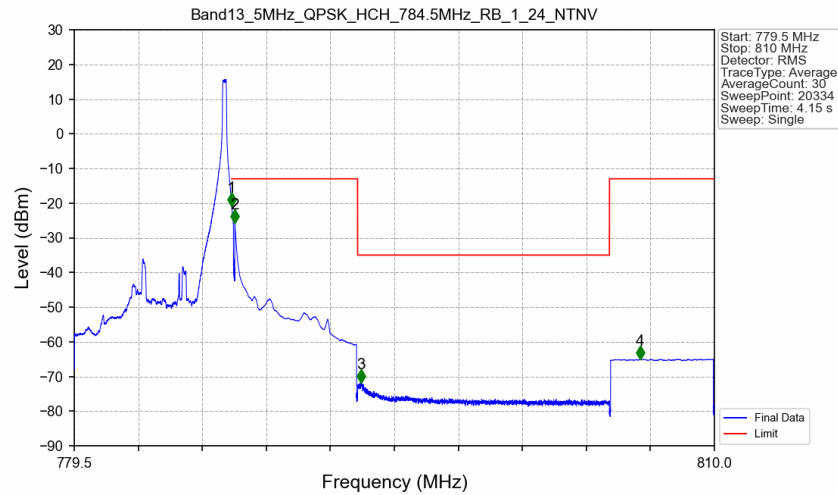
Band13 5MHz QPSK MCH 782MHz RB 1 0 NTV



Band13 5MHz QPSK HCH 784.5MHz RB 1 0 NTV

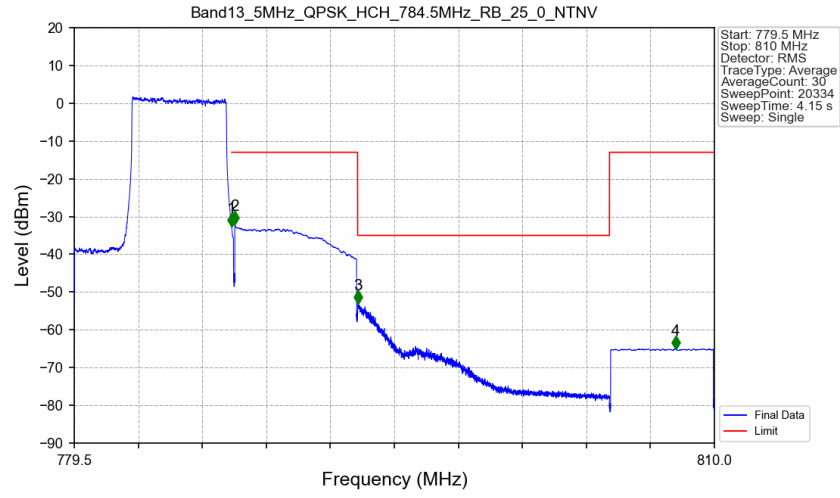


Band13 5MHz QPSK HCH 784.5MHz RB 1 24 NTV



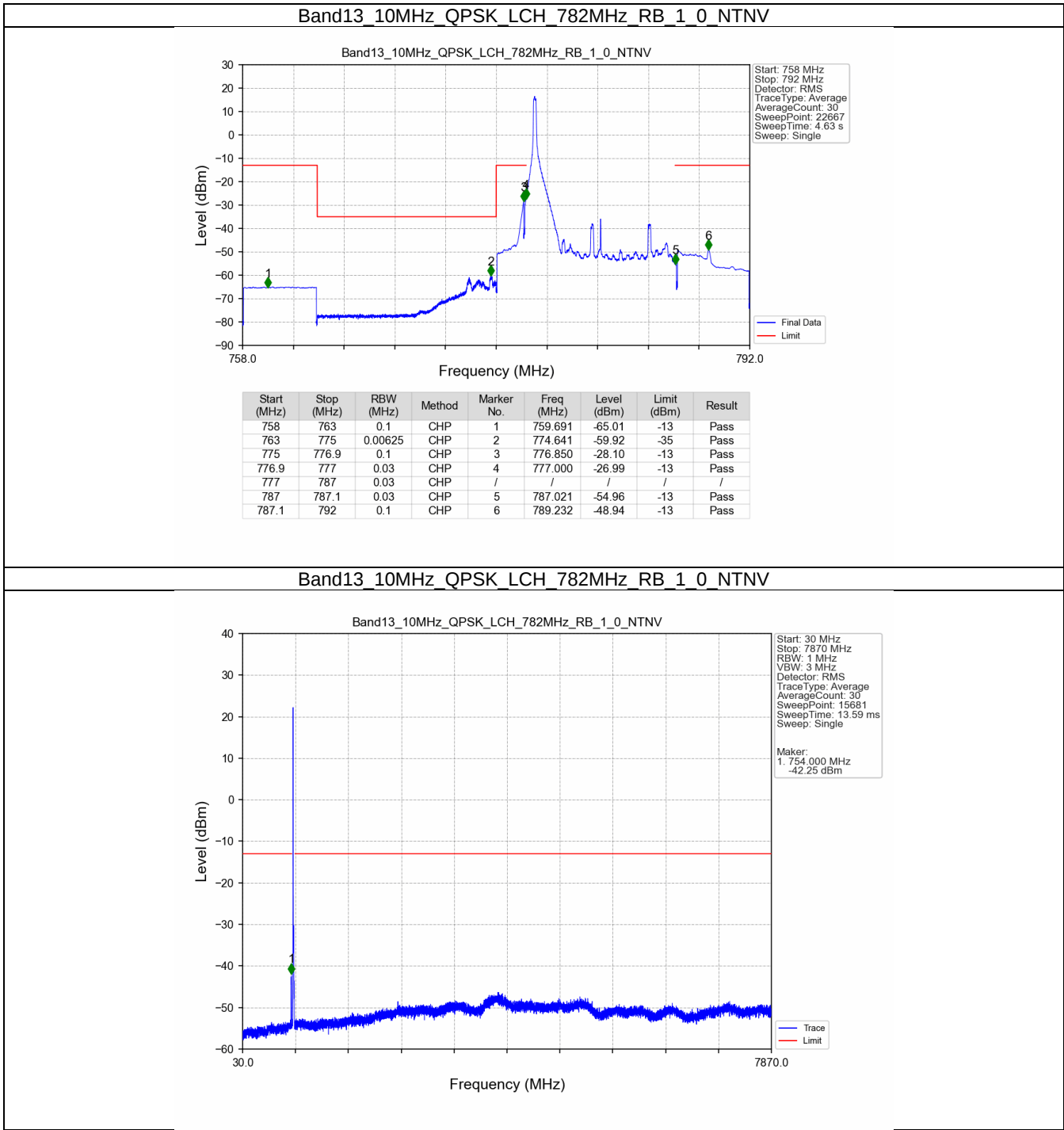
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-20.92	-13	Pass
787.1	793	0.1	CHP	2	787.150	-25.77	-13	Pass
793	805	0.00625	CHP	3	793.180	-71.79	-35	Pass
805	810	0.1	CHP	4	806.451	-65.04	-13	Pass

Band13 5MHz QPSK HCH 784.5MHz RB 25 0 NTN

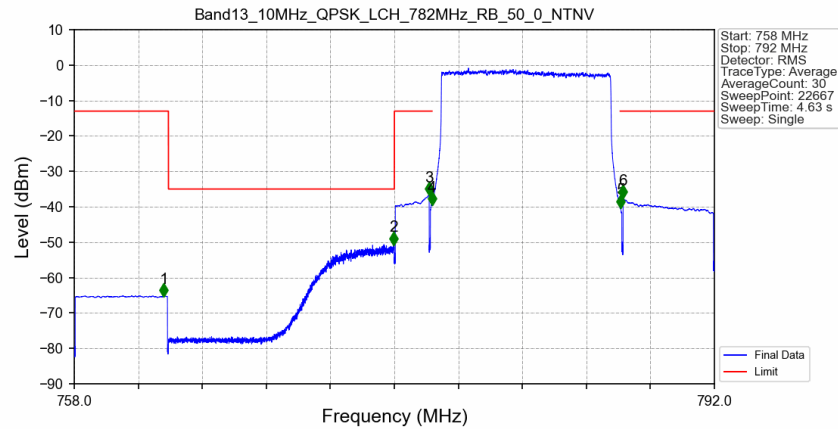


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-32.71	-13	Pass
787.1	793	0.1	CHP	2	787.150	-32.07	-13	Pass
793	805	0.00625	CHP	3	793.009	-53.03	-35	Pass
805	810	0.1	CHP	4	808.146	-65.03	-13	Pass

5.2.2 B13_10MHz

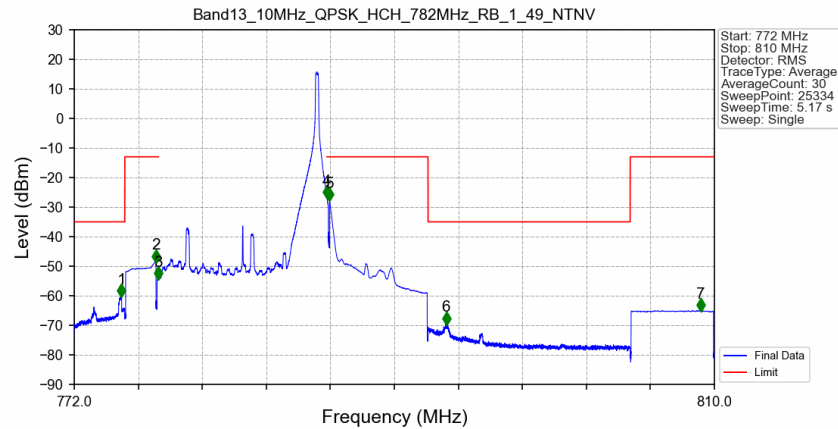


Band13 10MHz QPSK LCH 782MHz RB 50 0 NTN



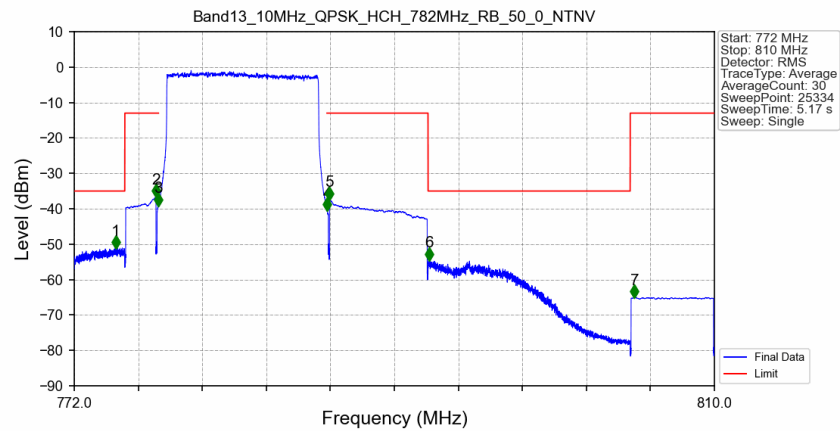
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	762.754	-65.14	-13	Pass
763	775	0.00625	CHP	2	774.953	-50.49	-35	Pass
775	776.9	0.1	CHP	3	776.850	-36.44	-13	Pass
776.9	777	0.03	CHP	4	777.000	-39.21	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.015	-40.03	-13	Pass
787.1	792	0.1	CHP	6	787.150	-37.32	-13	Pass

Band13 10MHz QPSK HCH 782MHz RB 1 49 NTN



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	CHP	1	774.793	-60.07	-35	Pass
775	776.9	0.1	CHP	2	776.848	-48.45	-13	Pass
776.9	777	0.03	CHP	3	776.997	-54.24	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-26.76	-13	Pass
787.1	793	0.1	CHP	5	787.150	-27.50	-13	Pass
793	805	0.00625	CHP	6	794.079	-69.49	-35	Pass
805	810	0.1	CHP	7	809.203	-65.05	-13	Pass

Band13 10MHz QPSK HCH 782MHz RB 50 0 NTN



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	CHP	1	774.450	-51.04	-35	Pass
775	776.9	0.1	CHP	2	776.848	-36.55	-13	Pass
776.9	777	0.03	CHP	3	776.985	-38.96	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.011	-40.33	-13	Pass
787.1	793	0.1	CHP	5	787.150	-37.26	-13	Pass
793	805	0.00625	CHP	6	793.063	-54.31	-35	Pass
805	810	0.1	CHP	7	805.258	-64.90	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 13 ANT13-Middle channel, Modulation: QPSK, Bandwidth:10MHz, 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
1555.0	-70.28	-13	-57.28	-73.42	2.6	5.74	Horizontal	Pass
2332.5	-68.65	-13	-55.65	-71.11	2.96	5.42	Horizontal	Pass
3110.0	-67.04	-13	-54.04	-71.04	3.2	7.2	Horizontal	Pass
1555.0	-70.16	-13	-57.16	-73.3	2.6	5.74	Vertical	Pass
2332.5	-68.74	-13	-55.74	-71.2	2.96	5.42	Vertical	Pass
3110.0	-66.81	-13	-53.81	-70.81	3.2	7.2	Vertical	Pass

LTE Band 13 ANT13-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	-70.36	-13	-57.36	-73.5	2.6	5.74	Horizontal	Pass
2331.75	-69.15	-13	-56.15	-71.61	2.96	5.42	Horizontal	Pass
3109.0	-66.73	-13	-53.73	-70.72	3.2	7.19	Horizontal	Pass
1554.5	-70.8	-13	-57.8	-73.94	2.6	5.74	Vertical	Pass
2331.75	-69.03	-13	-56.03	-71.49	2.96	5.42	Vertical	Pass
3109.0	-66.66	-13	-53.66	-70.65	3.2	7.19	Vertical	Pass

LTE Band 13 ANT13-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	-70.47	-40	-30.47	-73.6	2.6	5.73	Horizontal	Pass
2339.25	-69.2	-13	-56.2	-71.67	2.96	5.43	Horizontal	Pass
3119.0	-66.68	-13	-53.68	-70.69	3.21	7.22	Horizontal	Pass
1559.5	-70.52	-40	-30.52	-73.65	2.6	5.73	Vertical	Pass
2339.25	-69.03	-13	-56.03	-71.5	2.96	5.43	Vertical	Pass
3119.0	-66.86	-13	-53.86	-70.87	3.21	7.22	Vertical	Pass

LTE Band 13 ANT13-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	-70.61	-40	-30.61	-73.73	2.6	5.72	Horizontal	Pass
2346.75	-68.74	-13	-55.74	-71.22	2.97	5.45	Horizontal	Pass
3129.0	-66.78	-13	-53.78	-70.81	3.21	7.24	Horizontal	Pass
1564.5	-70.28	-40	-30.28	-73.4	2.6	5.72	Vertical	Pass
2346.75	-69.01	-13	-56.01	-71.49	2.97	5.45	Vertical	Pass
3129.0	-66.58	-13	-53.58	-70.61	3.21	7.24	Vertical	Pass