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	24.00	1.40	23.25	<=34.77	Pass
			13	24.07	1.40	23.32	<=34.77	Pass
			24	24.14	1.40	23.39	<=34.77	Pass
		12	0	23.03	1.40	22.28	<=34.77	Pass
			6	23.02	1.40	22.27	<=34.77	Pass
			13	23.07	1.40	22.32	<=34.77	Pass
		25	0	23.08	1.40	22.33	<=34.77	Pass
	782	1	0	24.11	1.40	23.36	<=34.77	Pass
			13	24.05	1.40	23.30	<=34.77	Pass
			24	24.10	1.40	23.35	<=34.77	Pass
		12	0	23.07	1.40	22.32	<=34.77	Pass
			6	23.08	1.40	22.33	<=34.77	Pass
			13	23.07	1.40	22.32	<=34.77	Pass
		25	0	23.08	1.40	22.33	<=34.77	Pass
	784.5	1	0	24.06	1.40	23.31	<=34.77	Pass
			13	24.10	1.40	23.35	<=34.77	Pass
			24	24.07	1.40	23.32	<=34.77	Pass
		12	0	23.07	1.40	22.32	<=34.77	Pass
			6	23.01	1.40	22.26	<=34.77	Pass
			13	23.02	1.40	22.27	<=34.77	Pass
		25	0	23.09	1.40	22.34	<=34.77	Pass
16QAM	779.5	1	0	22.99	1.40	22.24	<=34.77	Pass
			13	23.04	1.40	22.29	<=34.77	Pass
			24	23.01	1.40	22.26	<=34.77	Pass
		12	0	21.97	1.40	21.22	<=34.77	Pass
			6	22.08	1.40	21.33	<=34.77	Pass
			13	22.01	1.40	21.26	<=34.77	Pass
		25	0	22.07	1.40	21.32	<=34.77	Pass
	782	1	0	23.33	1.40	22.58	<=34.77	Pass
			13	23.37	1.40	22.62	<=34.77	Pass
			24	23.27	1.40	22.52	<=34.77	Pass
		12	0	21.98	1.40	21.23	<=34.77	Pass
			6	22.00	1.40	21.25	<=34.77	Pass
			13	21.97	1.40	21.22	<=34.77	Pass
		25	0	22.05	1.40	21.30	<=34.77	Pass
	784.5	1	0	23.28	1.40	22.53	<=34.77	Pass
			13	23.42	1.40	22.67	<=34.77	Pass
			24	23.26	1.40	22.51	<=34.77	Pass
		12	0	22.01	1.40	21.26	<=34.77	Pass
			6	21.99	1.40	21.24	<=34.77	Pass
			13	21.93	1.40	21.18	<=34.77	Pass
		25	0	22.06	1.40	21.31	<=34.77	Pass
64QAM	779.5	1	0	22.13	1.40	21.38	<=34.77	Pass
			13	21.33	1.40	20.58	<=34.77	Pass
			24	21.88	1.40	21.13	<=34.77	Pass
		12	0	21.11	1.40	20.36	<=34.77	Pass
			6	21.10	1.40	20.35	<=34.77	Pass
			13	21.14	1.40	20.39	<=34.77	Pass
		25	0	21.12	1.40	20.37	<=34.77	Pass

	782	1	0	22.00	1.40	21.25	<=34.77	Pass
			13	22.26	1.40	21.51	<=34.77	Pass
			24	21.90	1.40	21.15	<=34.77	Pass
		12	0	21.09	1.40	20.34	<=34.77	Pass
			6	21.08	1.40	20.33	<=34.77	Pass
			13	21.07	1.40	20.32	<=34.77	Pass
		25	0	21.08	1.40	20.33	<=34.77	Pass
	784.5	1	0	22.18	1.40	21.43	<=34.77	Pass
			13	22.04	1.40	21.29	<=34.77	Pass
			24	22.13	1.40	21.38	<=34.77	Pass
		12	0	21.07	1.40	20.32	<=34.77	Pass
			6	21.08	1.40	20.33	<=34.77	Pass
			13	21.07	1.40	20.32	<=34.77	Pass
		25	0	21.06	1.40	20.31	<=34.77	Pass
256QAM	779.5	1	0	18.87	1.40	18.12	<=34.77	Pass
			13	18.96	1.40	18.21	<=34.77	Pass
			24	19.19	1.40	18.44	<=34.77	Pass
		12	0	19.10	1.40	18.35	<=34.77	Pass
			6	19.06	1.40	18.31	<=34.77	Pass
			13	19.06	1.40	18.31	<=34.77	Pass
		25	0	19.05	1.40	18.30	<=34.77	Pass
	782	1	0	19.00	1.40	18.25	<=34.77	Pass
			13	19.13	1.40	18.38	<=34.77	Pass
			24	19.06	1.40	18.31	<=34.77	Pass
		12	0	18.91	1.40	18.16	<=34.77	Pass
			6	19.04	1.40	18.29	<=34.77	Pass
			13	18.99	1.40	18.24	<=34.77	Pass
		25	0	19.05	1.40	18.30	<=34.77	Pass
	784.5	1	0	19.18	1.40	18.43	<=34.77	Pass
			13	19.12	1.40	18.37	<=34.77	Pass
			24	19.06	1.40	18.31	<=34.77	Pass
		12	0	19.05	1.40	18.30	<=34.77	Pass
			6	18.99	1.40	18.24	<=34.77	Pass
			13	19.01	1.40	18.26	<=34.77	Pass
		25	0	19.07	1.40	18.32	<=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	24.20	1.40	23.45	<=34.77	Pass
			25	24.05	1.40	23.30	<=34.77	Pass
			49	24.17	1.40	23.42	<=34.77	Pass
		25	0	22.99	1.40	22.24	<=34.77	Pass
			13	23.08	1.40	22.33	<=34.77	Pass
			25	23.04	1.40	22.29	<=34.77	Pass
		50	0	23.04	1.40	22.29	<=34.77	Pass
16QAM	782	1	0	23.13	1.40	22.38	<=34.77	Pass
			25	23.00	1.40	22.25	<=34.77	Pass
			49	23.08	1.40	22.33	<=34.77	Pass
		25	0	22.01	1.40	21.26	<=34.77	Pass
			13	22.05	1.40	21.30	<=34.77	Pass
			25	22.03	1.40	21.28	<=34.77	Pass
		50	0	22.04	1.40	21.29	<=34.77	Pass
64QAM	782	1	0	22.18	1.40	21.43	<=34.77	Pass

			25	22.23	1.40	21.48	<=34.77	Pass
			49	22.07	1.40	21.32	<=34.77	Pass
		25	0	21.04	1.40	20.29	<=34.77	Pass
			13	21.02	1.40	20.27	<=34.77	Pass
			25	21.00	1.40	20.25	<=34.77	Pass
		50	0	21.03	1.40	20.28	<=34.77	Pass
256QAM	782	1	0	19.17	1.40	18.42	<=34.77	Pass
			25	18.98	1.40	18.23	<=34.77	Pass
			49	19.10	1.40	18.35	<=34.77	Pass
		25	0	19.01	1.40	18.26	<=34.77	Pass
			13	19.05	1.40	18.30	<=34.77	Pass
			25	19.01	1.40	18.26	<=34.77	Pass
		50	0	18.99	1.40	18.24	<=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	3.8	-1.200	-0.0015	-2.5 to 2.5	Pass
					4	-0.600	-0.0008	-2.5 to 2.5	Pass
					4.2	-0.900	-0.0012	-2.5 to 2.5	Pass
				-30	4	-4.200	-0.0054	-2.5 to 2.5	Pass
				-20	4	-1.100	-0.0014	-2.5 to 2.5	Pass
				-10	4	-1.300	-0.0017	-2.5 to 2.5	Pass
				0	4	-2.200	-0.0028	-2.5 to 2.5	Pass
				10	4	0.300	0.0004	-2.5 to 2.5	Pass
				30	4	-2.600	-0.0033	-2.5 to 2.5	Pass
				40	4	-4.700	-0.0060	-2.5 to 2.5	Pass
				50	4	-5.900	-0.0075	-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	4.533	/	Pass
	16QAM	782	25	0	4.534	/	Pass
10	QPSK	782	50	0	9.050	/	Pass
	16QAM	782	50	0	9.005	/	Pass

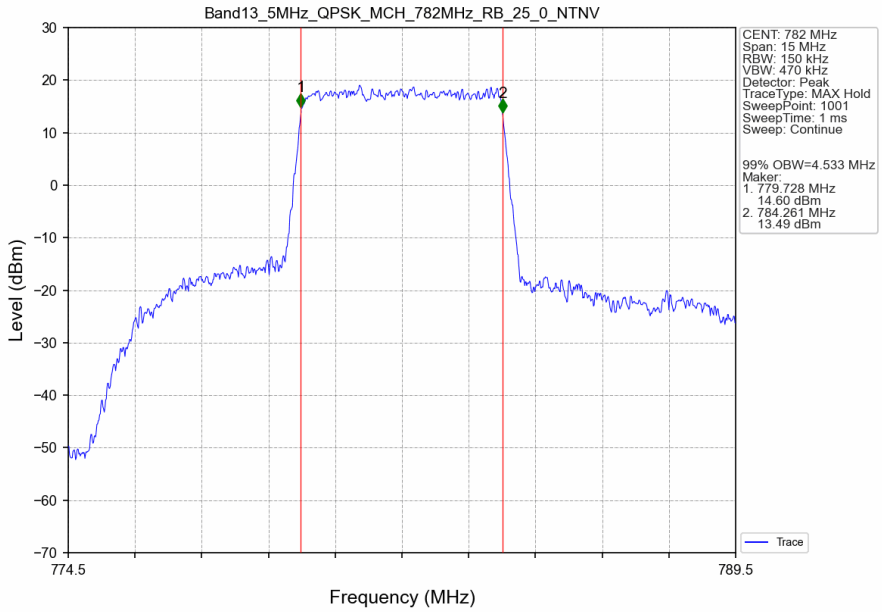
3.1.2 Band13_XDB

Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	5.043	/	Pass
	16QAM	782	25	0	5.010	/	Pass
10	QPSK	782	50	0	9.902	/	Pass
	16QAM	782	50	0	9.922	/	Pass

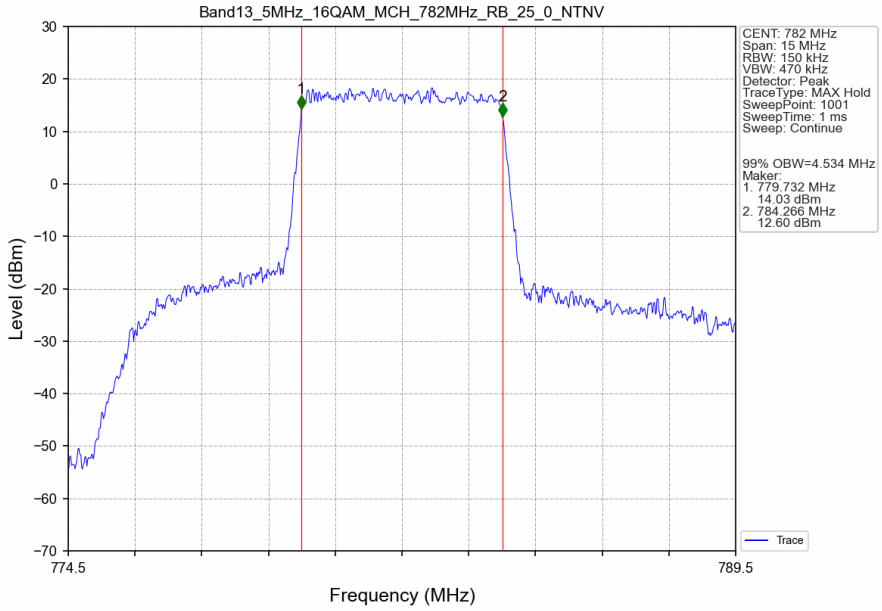
3.2 Test Graph

3.2.1 Band13_OBW

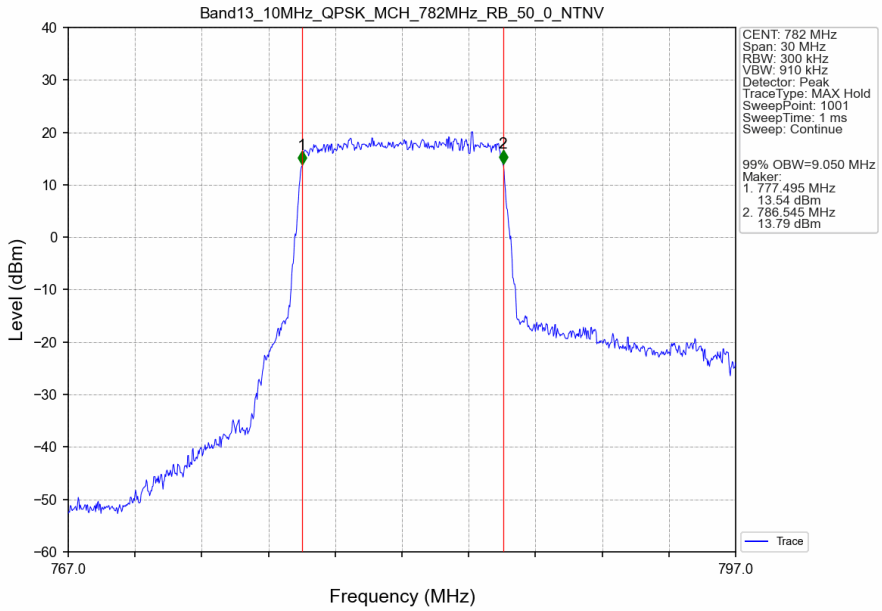
Band13_5MHz_QPSK_MCH_782MHz_RB_25_0_NTNV



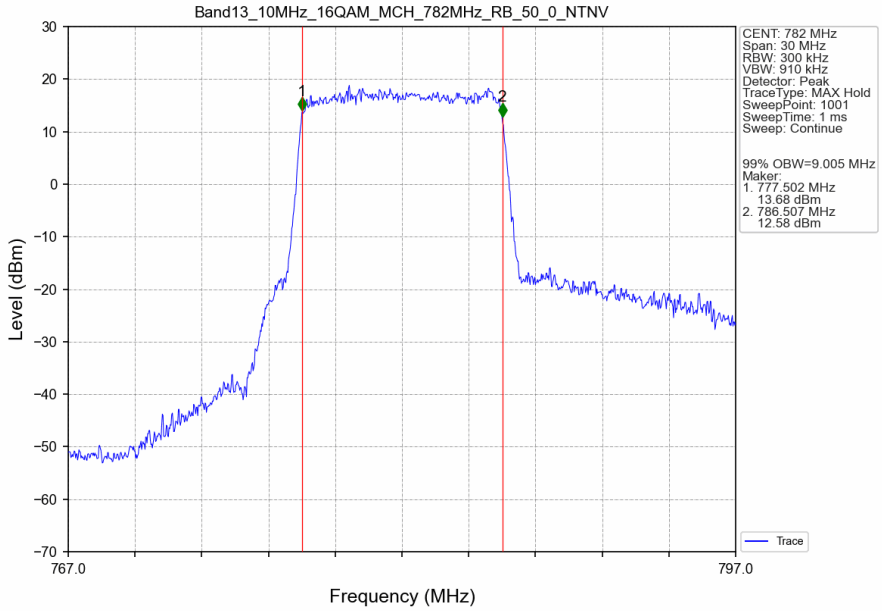
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV

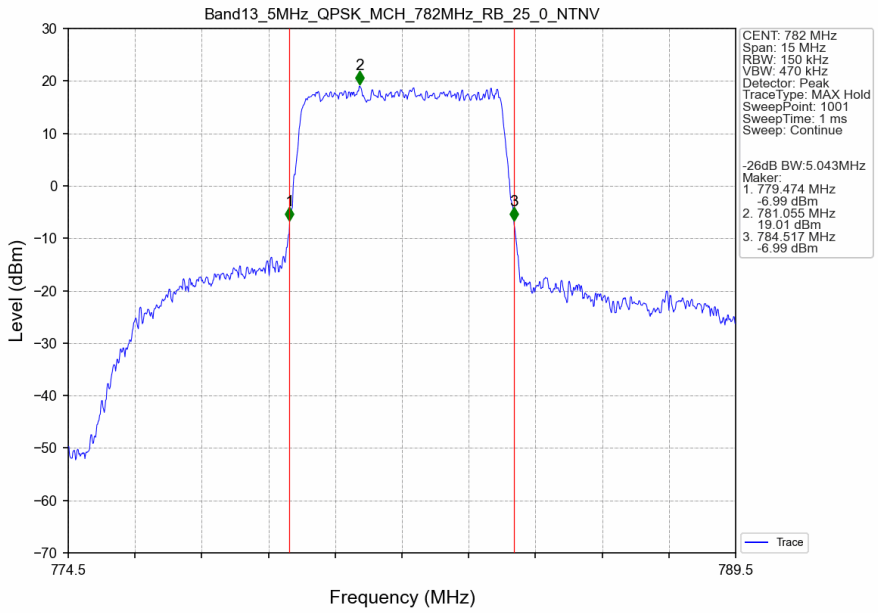


Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV

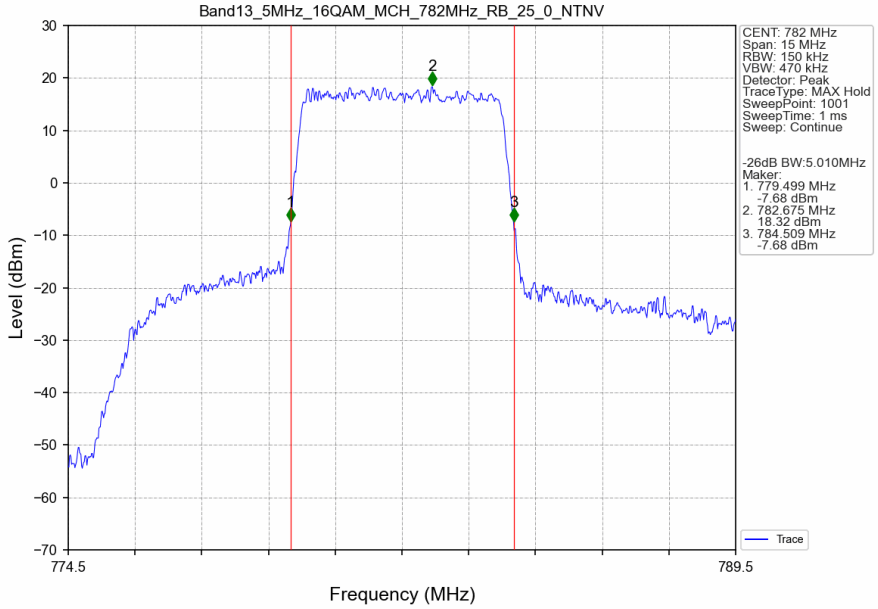


3.2.2 Band13_XDB

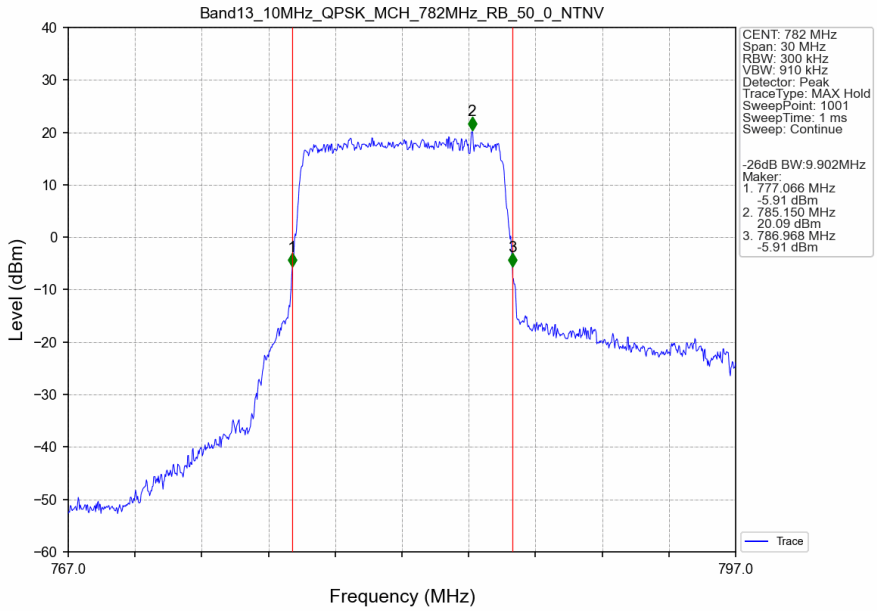
Band13_5MHz_QPSK_MCH_782MHz_RB_25_0_NTNV



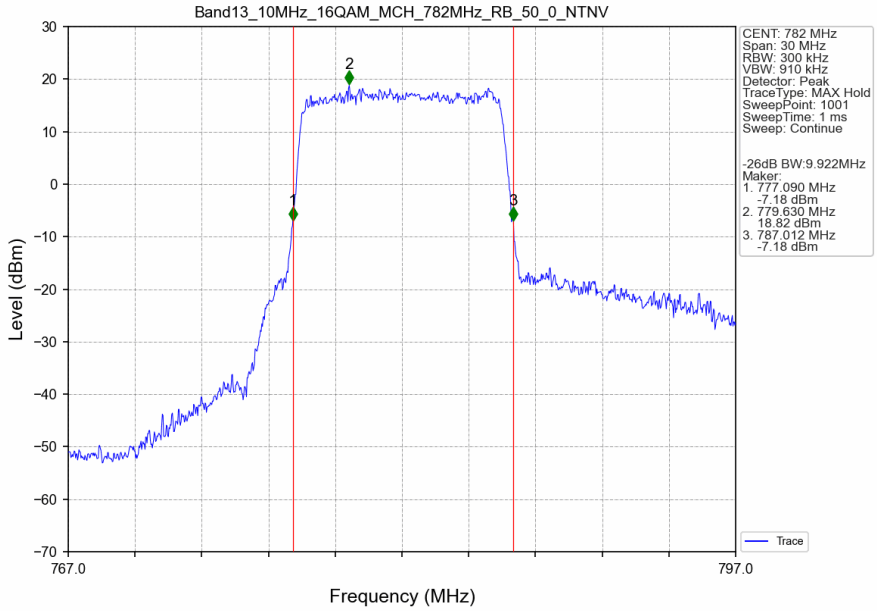
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



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

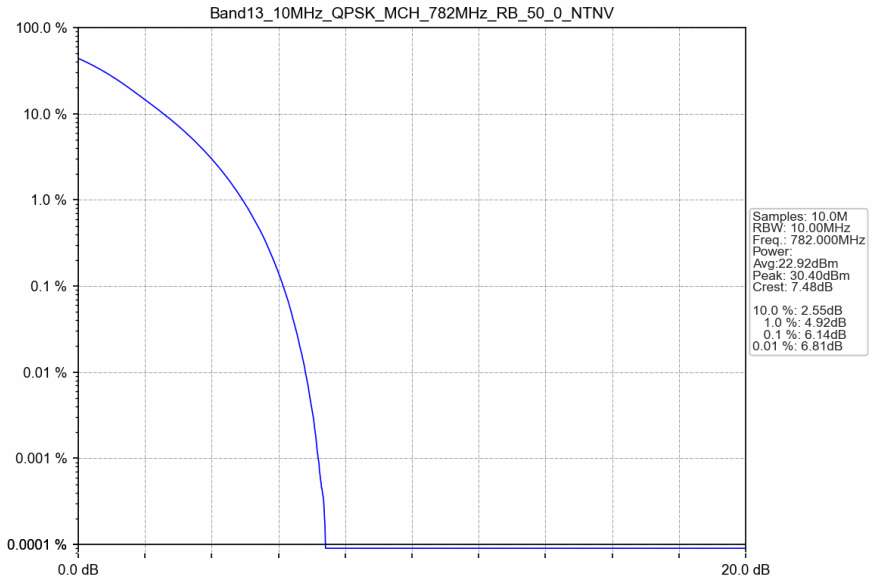
4.1.1 B13_10MHz

Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	6.14	<=13	Pass
16QAM	782	50	0	6.82	<=13	Pass
64QAM	782	50	0	6.91	<=13	Pass
256QAM	782	50	0	6.77	<=13	Pass

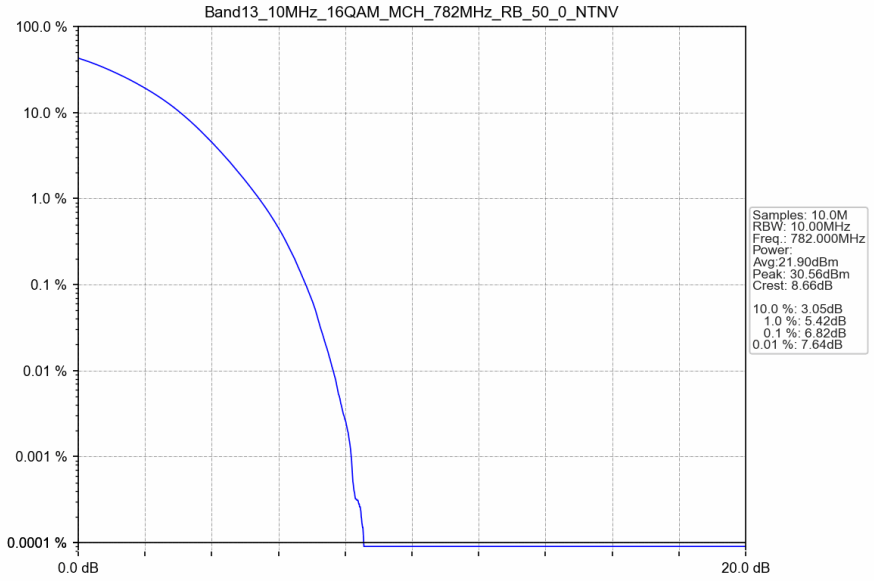
4.2 Test Graph

4.2.1 B13_10MHz

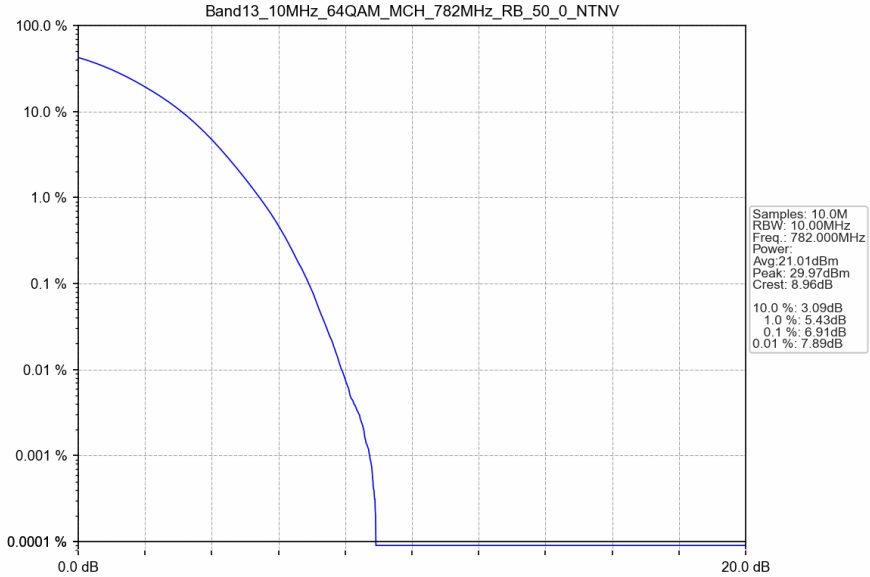
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



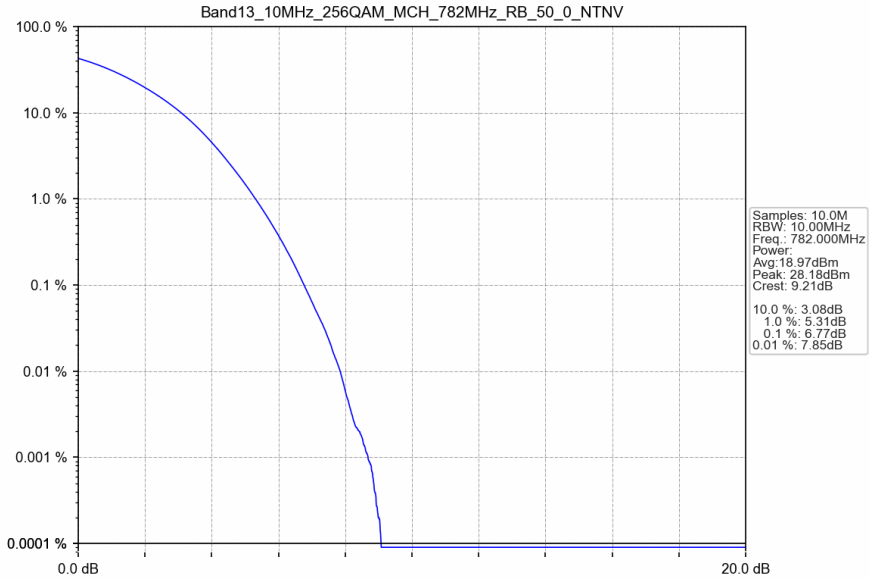
Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_256QAM_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

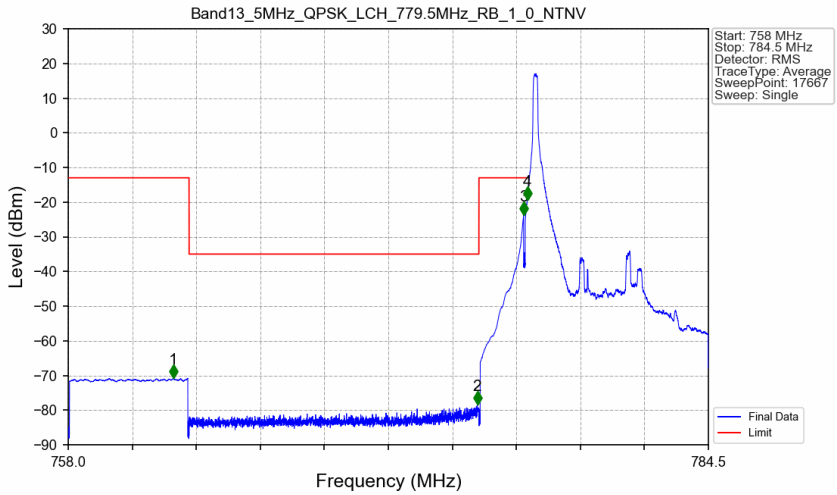
5.1.2 B13_10MHz

Band: 13 / Bandwidth: 10MHz / 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

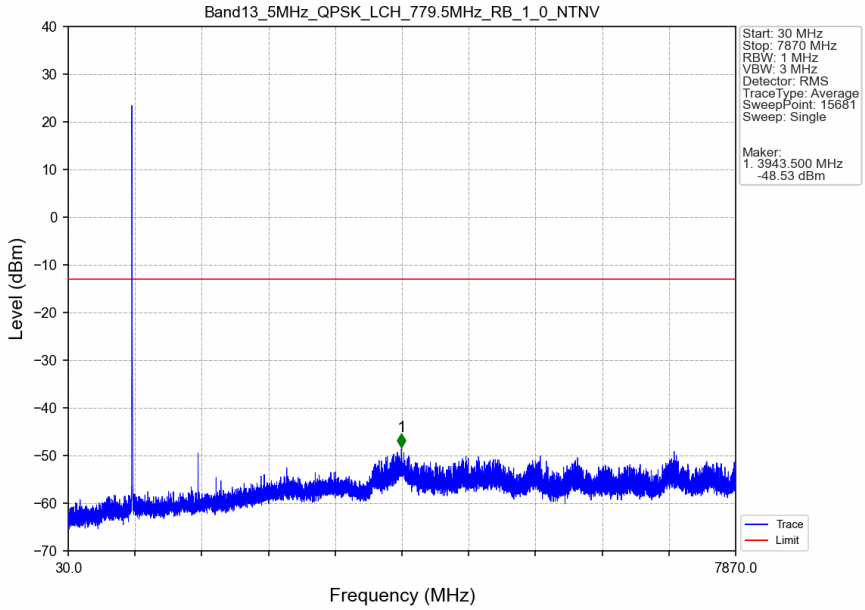
5.2.1 B13_5MHz

Band13_5MHz_QPSK_LCH_779.5MHz_RB_1_0_NTNV

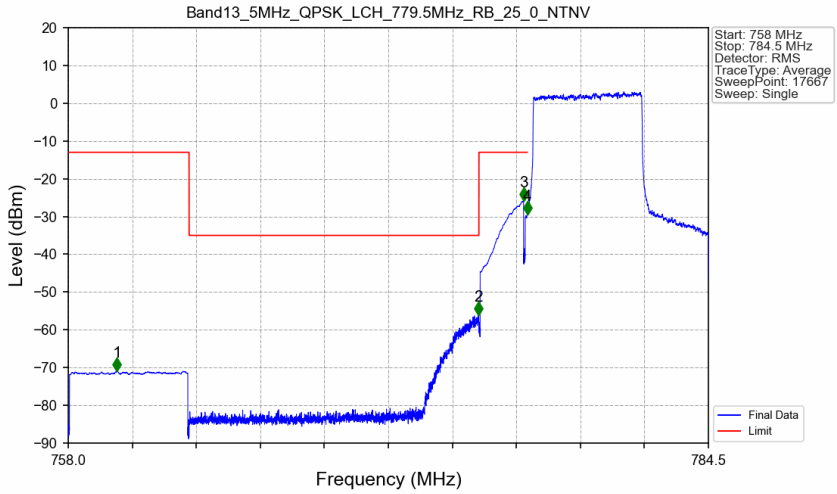


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	762.352	-70.74	-13	Pass
763	775	0.00625	CHP	2	774.931	-78.32	-35	Pass
775	776.9	0.1	CHP	3	776.850	-23.68	-13	Pass
776.9	777	0.03	CHP	4	777.000	-19.37	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

Band13_5MHz_QPSK_LCH_779.5MHz_RB_1_0_NTNV

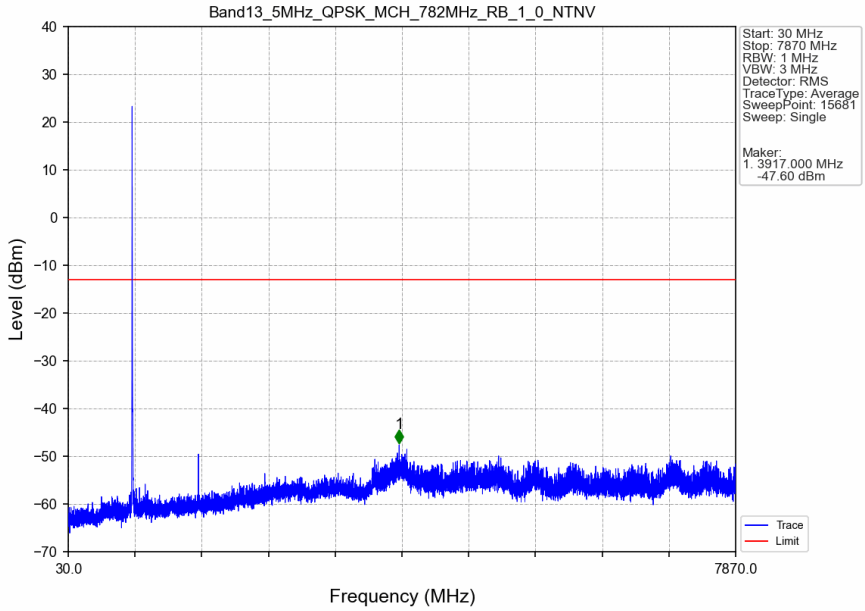


Band13_5MHz_QPSK_LCH_779.5MHz_RB_25_0_NTNV

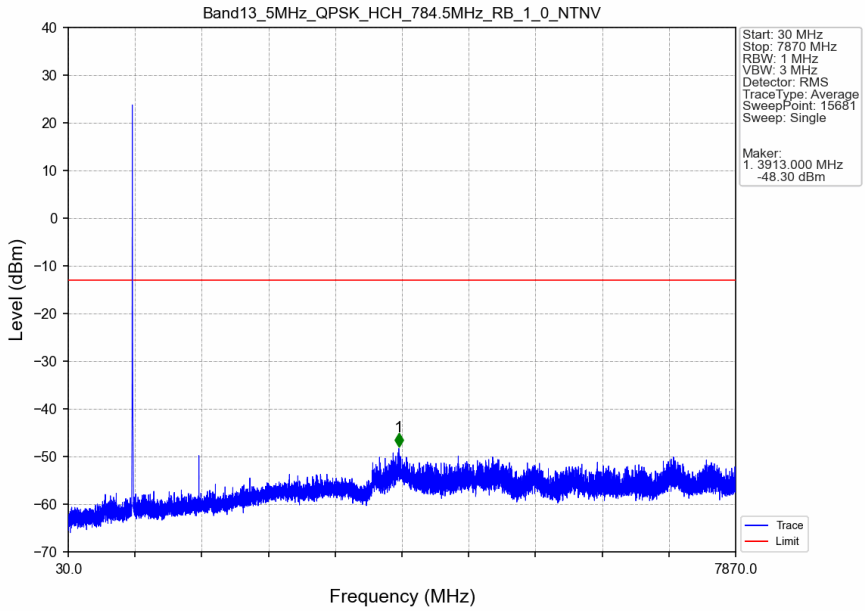


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	760.018	-70.89	-13	Pass
763	775	0.00625	CHP	2	774.991	-56.01	-35	Pass
775	776.9	0.1	CHP	3	776.847	-25.76	-13	Pass
776.9	777	0.03	CHP	4	776.998	-29.35	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

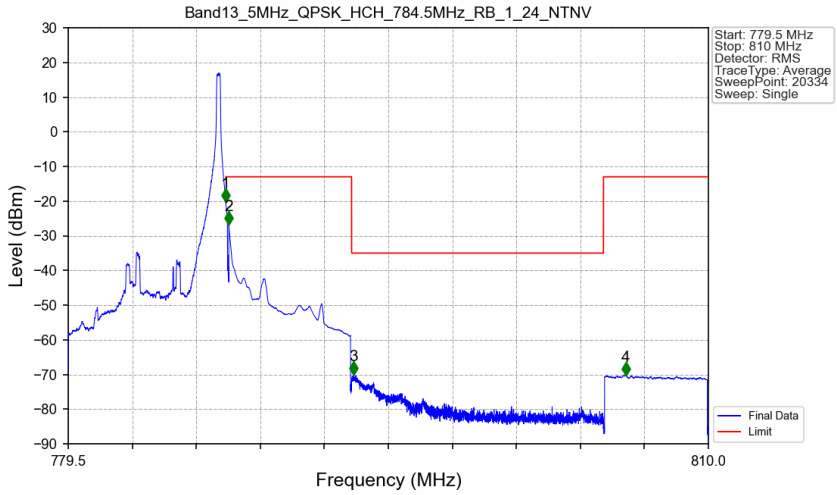
Band13_5MHz_QPSK_MCH_782MHz_RB_1_0_NTNV



Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_0_NTNV

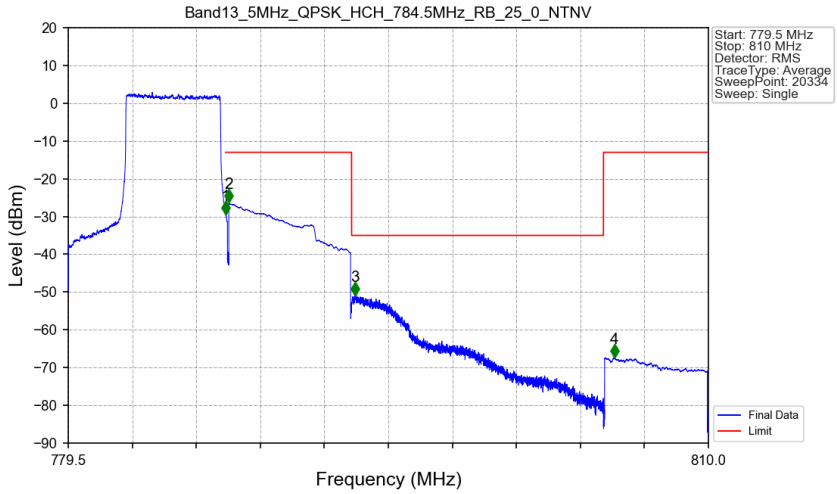


Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_24_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-20.23	-13	Pass
787.1	793	0.1	CHP	2	787.150	-26.83	-13	Pass
793	805	0.00625	CHP	3	793.096	-70.09	-35	Pass
805	810	0.1	CHP	4	806.056	-70.22	-13	Pass

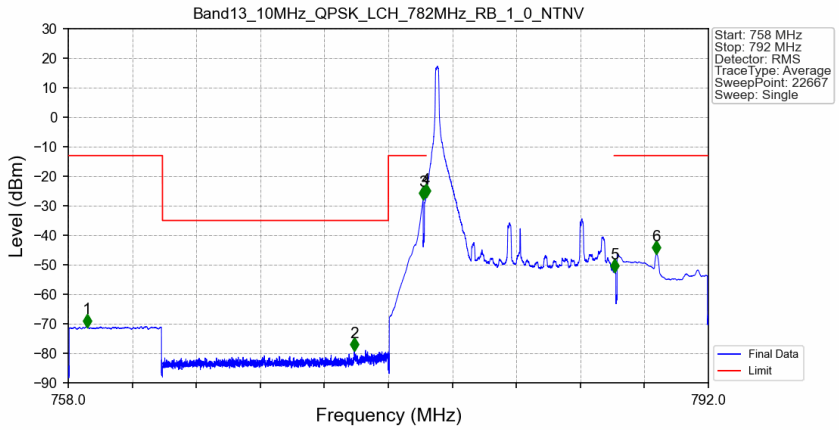
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



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	-29.42	-13	Pass
787.1	793	0.1	CHP	2	787.150	-26.29	-13	Pass
793	805	0.00625	CHP	3	793.158	-50.84	-35	Pass
805	810	0.1	CHP	4	805.519	-67.37	-13	Pass

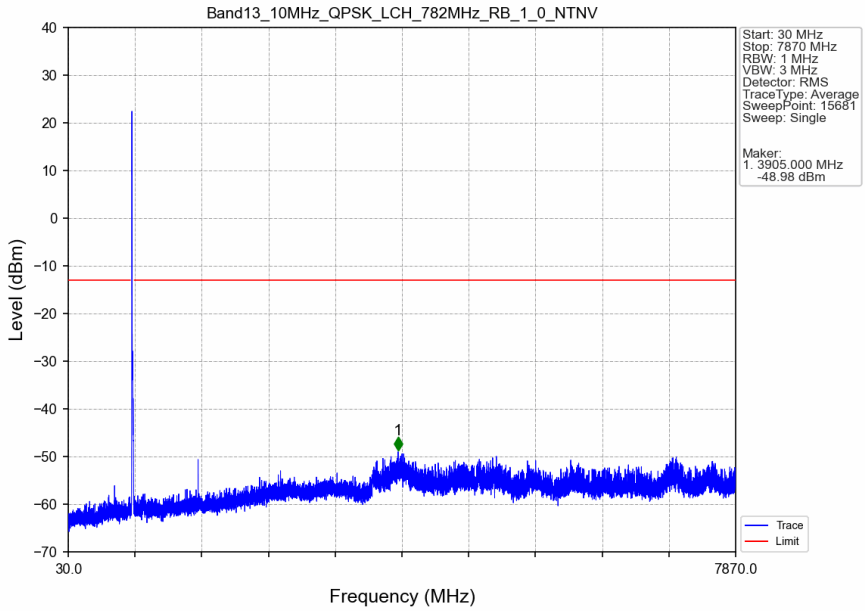
5.2.2 B13_10MHz

Band13_10MHz_QPSK_LCH_782MHz_RB_1_0_NTNV

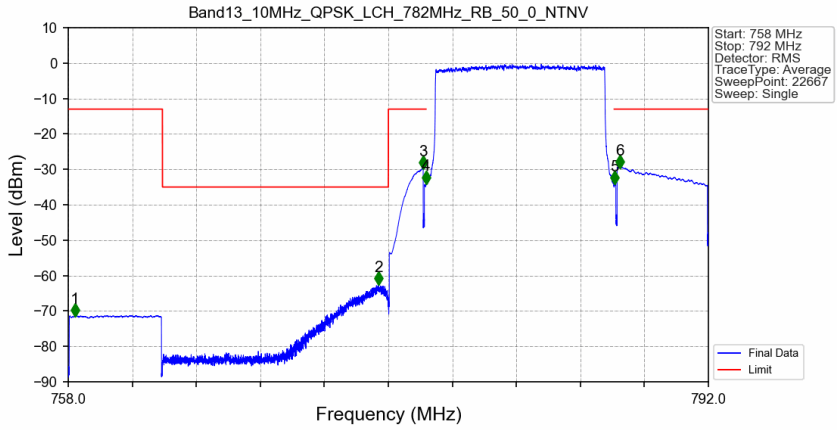


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	759.004	-70.82	-13	Pass
763	775	0.00625	CHP	2	773.194	-78.95	-35	Pass
775	776.9	0.1	CHP	3	776.850	-27.65	-13	Pass
776.9	777	0.03	CHP	4	777.000	-26.78	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.014	-52.24	-13	Pass
787.1	792	0.1	CHP	6	789.240	-46.02	-13	Pass

Band13_10MHz_QPSK_LCH_782MHz_RB_1_0_NTNV

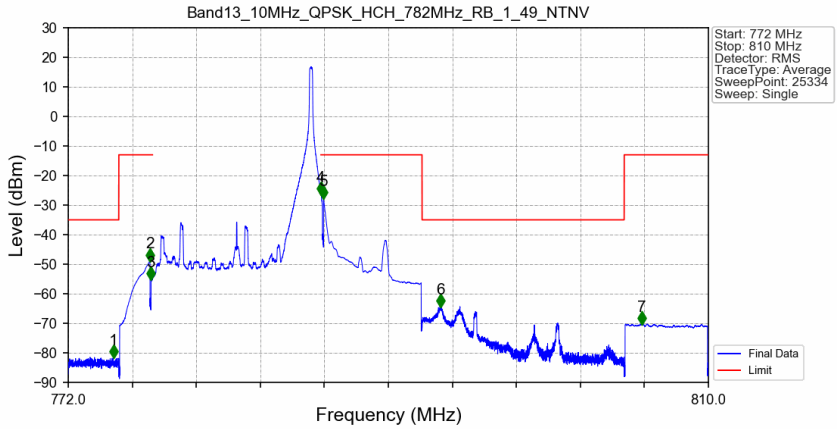


Band13_10MHz_QPSK_LCH_782MHz_RB_50_0_NTNV



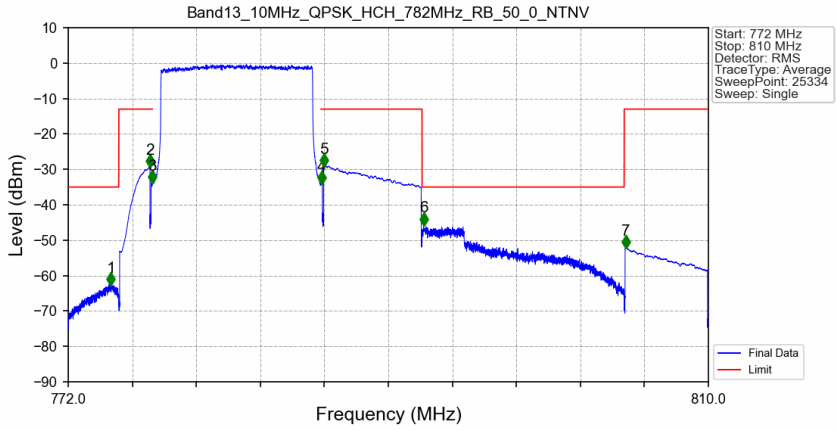
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	758.362	-71.26	-13	Pass
763	775	0.00625	CHP	2	774.493	-62.38	-35	Pass
775	776.9	0.1	CHP	3	776.835	-29.72	-13	Pass
776.9	777	0.03	CHP	4	777.000	-33.82	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.027	-33.88	-13	Pass
787.1	792	0.1	CHP	6	787.317	-29.38	-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	774.673	-81.44	-35	Pass
775	776.9	0.1	CHP	2	776.848	-48.75	-13	Pass
776.9	777	0.03	CHP	3	776.916	-55.01	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.003	-26.21	-13	Pass
787.1	793	0.1	CHP	5	787.150	-27.59	-13	Pass
793	805	0.00625	CHP	6	794.095	-64.18	-35	Pass
805	810	0.1	CHP	7	806.031	-70.23	-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	774.537	-62.55	-35	Pass
775	776.9	0.1	CHP	2	776.842	-29.26	-13	Pass
776.9	777	0.03	CHP	3	777.000	-33.74	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.036	-33.96	-13	Pass
787.1	793	0.1	CHP	5	787.165	-29.05	-13	Pass
793	805	0.00625	CHP	6	793.092	-45.59	-35	Pass
805	810	0.1	CHP	7	805.092	-52.08	-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	-70.32	-13	-57.32	-73.46	2.6	5.74	Horizontal	Pass
2331.75	-69.83	-13	-56.83	-72.29	2.96	5.42	Horizontal	Pass
3109.0	-67.47	-13	-54.47	-71.46	3.2	7.19	Horizontal	Pass
1554.5	-70.78	-13	-57.78	-73.92	2.6	5.74	Vertical	Pass
2331.75	-69.43	-13	-56.43	-71.89	2.96	5.42	Vertical	Pass
3109.0	-67.34	-13	-54.34	-71.33	3.2	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	-70.65	-40	-30.65	-73.78	2.6	5.73	Horizontal	Pass
2339.25	-69.67	-13	-56.67	-72.14	2.96	5.43	Horizontal	Pass
3119.0	-67.26	-13	-54.26	-71.27	3.21	7.22	Horizontal	Pass
1559.5	-70.69	-40	-30.69	-73.82	2.6	5.73	Vertical	Pass
2339.25	-69.41	-13	-56.41	-71.88	2.96	5.43	Vertical	Pass
3119.0	-67.42	-13	-54.42	-71.43	3.21	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	-70.54	-40	-30.54	-73.66	2.6	5.72	Horizontal	Pass
2346.75	-69.65	-13	-56.65	-72.13	2.97	5.45	Horizontal	Pass
3129.0	-67.39	-13	-54.39	-71.42	3.21	7.24	Horizontal	Pass
1564.5	-70.1	-40	-30.1	-73.22	2.6	5.72	Vertical	Pass
2346.75	-69.61	-13	-56.61	-72.09	2.97	5.45	Vertical	Pass
3129.0	-66.9	-13	-53.9	-70.93	3.21	7.24	Vertical	Pass

LTE Band 13-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	-70.5	-13	-57.5	-73.64	2.6	5.74	Horizontal	Pass
2332.5	-69.76	-13	-56.76	-72.22	2.96	5.42	Horizontal	Pass
3110.0	-67.32	-13	-54.32	-71.32	3.2	7.2	Horizontal	Pass
1555.0	-70.58	-13	-57.58	-73.72	2.6	5.74	Vertical	Pass
2332.5	-69.84	-13	-56.84	-72.3	2.96	5.42	Vertical	Pass
3110.0	-67.23	-13	-54.23	-71.23	3.2	7.2	Vertical	Pass