

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	22.97	1.60	22.42	<=34.77	Pass
			13	22.69	1.60	22.14	<=34.77	Pass
			24	22.96	1.60	22.41	<=34.77	Pass
		12	0	22.05	1.60	21.50	<=34.77	Pass
			6	22.11	1.60	21.56	<=34.77	Pass
			13	22.04	1.60	21.49	<=34.77	Pass
		25	0	22.05	1.60	21.50	<=34.77	Pass
	782	1	0	22.99	1.60	22.44	<=34.77	Pass
			13	23.04	1.60	22.49	<=34.77	Pass
			24	22.90	1.60	22.35	<=34.77	Pass
		12	0	21.98	1.60	21.43	<=34.77	Pass
			6	22.11	1.60	21.56	<=34.77	Pass
			13	21.97	1.60	21.42	<=34.77	Pass
		25	0	22.07	1.60	21.52	<=34.77	Pass
	784.5	1	0	23.05	1.60	22.50	<=34.77	Pass
			13	23.04	1.60	22.49	<=34.77	Pass
			24	22.95	1.60	22.40	<=34.77	Pass
		12	0	22.06	1.60	21.51	<=34.77	Pass
			6	22.03	1.60	21.48	<=34.77	Pass
			13	22.07	1.60	21.52	<=34.77	Pass
		25	0	22.01	1.60	21.46	<=34.77	Pass
16QAM	779.5	1	0	21.46	1.60	20.91	<=34.77	Pass
			13	22.26	1.60	21.71	<=34.77	Pass
			24	22.23	1.60	21.68	<=34.77	Pass
		12	0	21.14	1.60	20.59	<=34.77	Pass
			6	21.10	1.60	20.55	<=34.77	Pass
			13	21.03	1.60	20.48	<=34.77	Pass
		25	0	21.07	1.60	20.52	<=34.77	Pass
	782	1	0	22.38	1.60	21.83	<=34.77	Pass
			13	22.21	1.60	21.66	<=34.77	Pass
			24	22.50	1.60	21.95	<=34.77	Pass
		12	0	20.94	1.60	20.39	<=34.77	Pass
			6	21.09	1.60	20.54	<=34.77	Pass
			13	21.10	1.60	20.55	<=34.77	Pass
		25	0	21.21	1.60	20.66	<=34.77	Pass
	784.5	1	0	22.21	1.60	21.66	<=34.77	Pass
			13	22.45	1.60	21.90	<=34.77	Pass
			24	22.23	1.60	21.68	<=34.77	Pass
		12	0	20.96	1.60	20.41	<=34.77	Pass
			6	21.14	1.60	20.59	<=34.77	Pass
			13	21.04	1.60	20.49	<=34.77	Pass
		25	0	21.00	1.60	20.45	<=34.77	Pass
64QAM	779.5	1	0	22.08	1.60	21.53	<=34.77	Pass
			13	22.05	1.60	21.50	<=34.77	Pass
			24	21.51	1.60	20.96	<=34.77	Pass
		12	0	21.11	1.60	20.56	<=34.77	Pass
			6	21.10	1.60	20.55	<=34.77	Pass
			13	21.03	1.60	20.48	<=34.77	Pass
		25	0	21.14	1.60	20.59	<=34.77	Pass

	782	1	0	21.81	1.60	21.26	<=34.77	Pass	
			13	22.09	1.60	21.54	<=34.77	Pass	
			24	22.21	1.60	21.66	<=34.77	Pass	
		12	0	20.91	1.60	20.36	<=34.77	Pass	
			6	21.16	1.60	20.61	<=34.77	Pass	
			13	21.00	1.60	20.45	<=34.77	Pass	
		25	0	21.07	1.60	20.52	<=34.77	Pass	
		784.5	1	0	21.99	1.60	21.44	<=34.77	Pass
				13	21.63	1.60	21.08	<=34.77	Pass
	24			21.99	1.60	21.44	<=34.77	Pass	
	12		0	21.02	1.60	20.47	<=34.77	Pass	
			6	21.08	1.60	20.53	<=34.77	Pass	
			13	21.03	1.60	20.48	<=34.77	Pass	
	25		0	20.99	1.60	20.44	<=34.77	Pass	
256QAM	779.5	1	0	17.74	1.60	17.19	<=34.77	Pass	
			13	17.95	1.60	17.40	<=34.77	Pass	
			24	18.05	1.60	17.50	<=34.77	Pass	
		12	0	18.06	1.60	17.51	<=34.77	Pass	
			6	18.07	1.60	17.52	<=34.77	Pass	
			13	18.03	1.60	17.48	<=34.77	Pass	
		25	0	18.16	1.60	17.61	<=34.77	Pass	
	782	1	0	18.03	1.60	17.48	<=34.77	Pass	
			13	18.05	1.60	17.50	<=34.77	Pass	
			24	18.05	1.60	17.50	<=34.77	Pass	
		12	0	18.26	1.60	17.71	<=34.77	Pass	
			6	18.16	1.60	17.61	<=34.77	Pass	
			13	17.94	1.60	17.39	<=34.77	Pass	
		25	0	18.02	1.60	17.47	<=34.77	Pass	
	784.5	1	0	18.20	1.60	17.65	<=34.77	Pass	
			13	18.22	1.60	17.67	<=34.77	Pass	
			24	17.99	1.60	17.44	<=34.77	Pass	
		12	0	18.19	1.60	17.64	<=34.77	Pass	
			6	18.08	1.60	17.53	<=34.77	Pass	
			13	18.12	1.60	17.57	<=34.77	Pass	
		25	0	17.94	1.60	17.39	<=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	23.01	1.60	22.46	<=34.77	Pass
			25	22.62	1.60	22.07	<=34.77	Pass
			49	23.03	1.60	22.48	<=34.77	Pass
		25	0	22.04	1.60	21.49	<=34.77	Pass
			13	22.14	1.60	21.59	<=34.77	Pass
			25	22.02	1.60	21.47	<=34.77	Pass
		50	0	22.09	1.60	21.54	<=34.77	Pass
16QAM	782	1	0	21.70	1.60	21.15	<=34.77	Pass
			25	21.72	1.60	21.17	<=34.77	Pass
			49	22.34	1.60	21.79	<=34.77	Pass
		25	0	21.03	1.60	20.48	<=34.77	Pass
			13	21.11	1.60	20.56	<=34.77	Pass
			25	21.12	1.60	20.57	<=34.77	Pass
		50	0	21.11	1.60	20.56	<=34.77	Pass
64QAM	782	1	0	21.91	1.60	21.36	<=34.77	Pass

			25	22.20	1.60	21.65	<=34.77	Pass
			49	22.01	1.60	21.46	<=34.77	Pass
		25	0	21.12	1.60	20.57	<=34.77	Pass
			13	21.11	1.60	20.56	<=34.77	Pass
			25	20.97	1.60	20.42	<=34.77	Pass
		50	0	20.97	1.60	20.42	<=34.77	Pass
		256QAM	782	1	0	17.57	1.60	17.02
25	17.95				1.60	17.40	<=34.77	Pass
49	18.19				1.60	17.64	<=34.77	Pass
25	0			18.04	1.60	17.49	<=34.77	Pass
	13			18.09	1.60	17.54	<=34.77	Pass
	25			18.10	1.60	17.55	<=34.77	Pass
50	0			18.23	1.60	17.68	<=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	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	782	50	0	20	LV	0.600	0.0008	-2.5 to 2.5	Pass
					NV	0.800	0.0010	-2.5 to 2.5	Pass
					HV	0.900	0.0012	-2.5 to 2.5	Pass
				-30	NV	0.600	0.0008	-2.5 to 2.5	Pass
				-20	NV	1.900	0.0024	-2.5 to 2.5	Pass
				-10	NV	1.600	0.0020	-2.5 to 2.5	Pass
				0	NV	0.100	0.0001	-2.5 to 2.5	Pass
				10	NV	-0.500	-0.0006	-2.5 to 2.5	Pass
				30	NV	0.200	0.0003	-2.5 to 2.5	Pass
				40	NV	1.300	0.0017	-2.5 to 2.5	Pass
				50	NV	0.200	0.0003	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band13_OBW

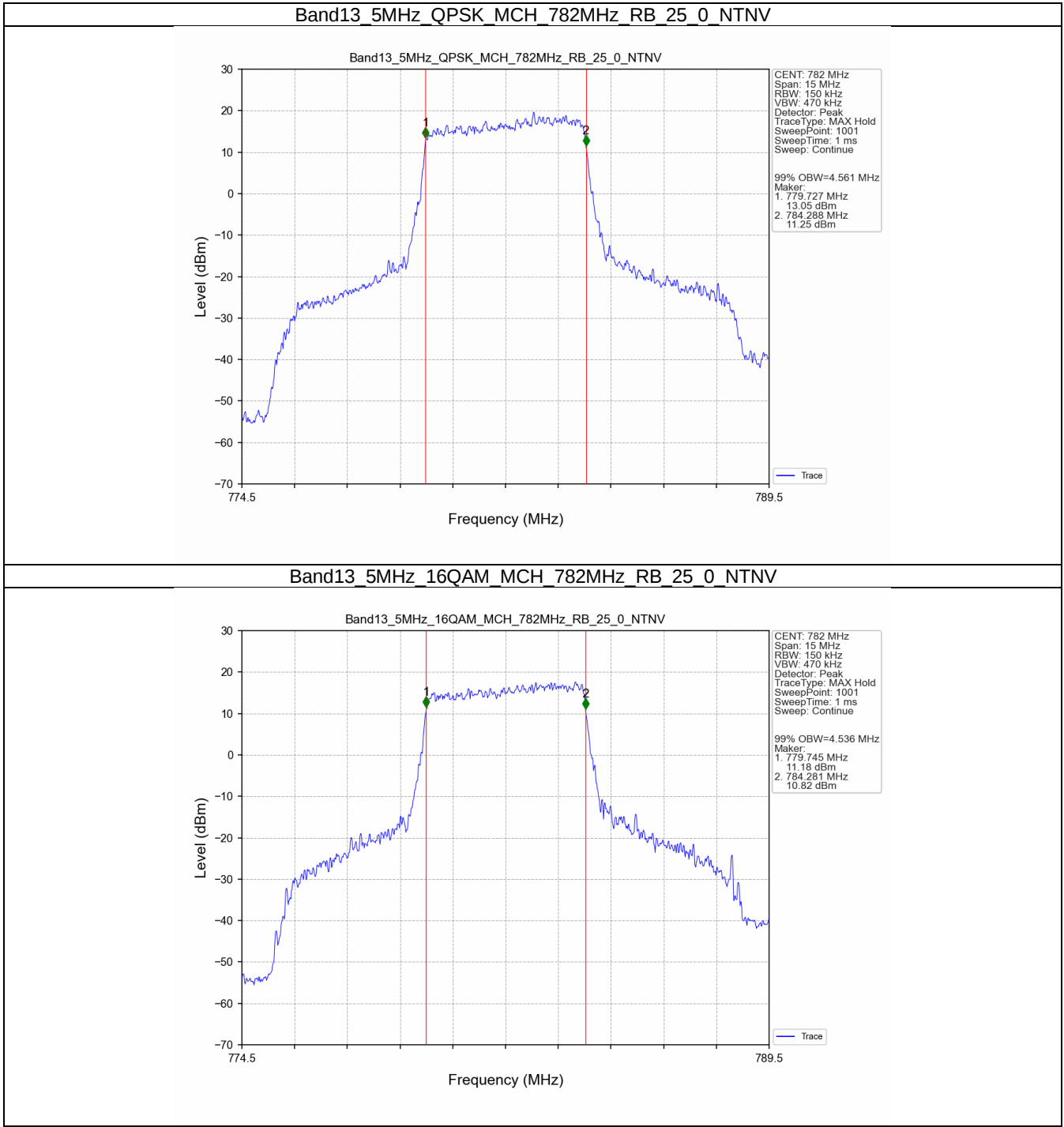
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	4.561	/	Pass
	16QAM	782	25	0	4.536	/	Pass
10	QPSK	782	50	0	9.054	/	Pass
	16QAM	782	50	0	9.033	/	Pass

3.1.2 Band13_XDB

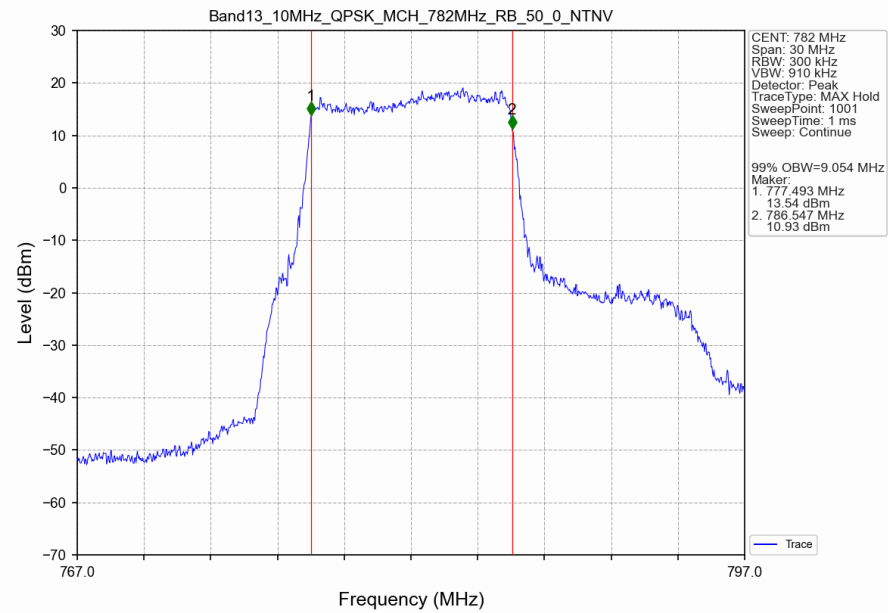
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	5.186	/	Pass
	16QAM	782	25	0	5.203	/	Pass
10	QPSK	782	50	0	10.163	/	Pass
	16QAM	782	50	0	10.009	/	Pass

3.2 Test Graph

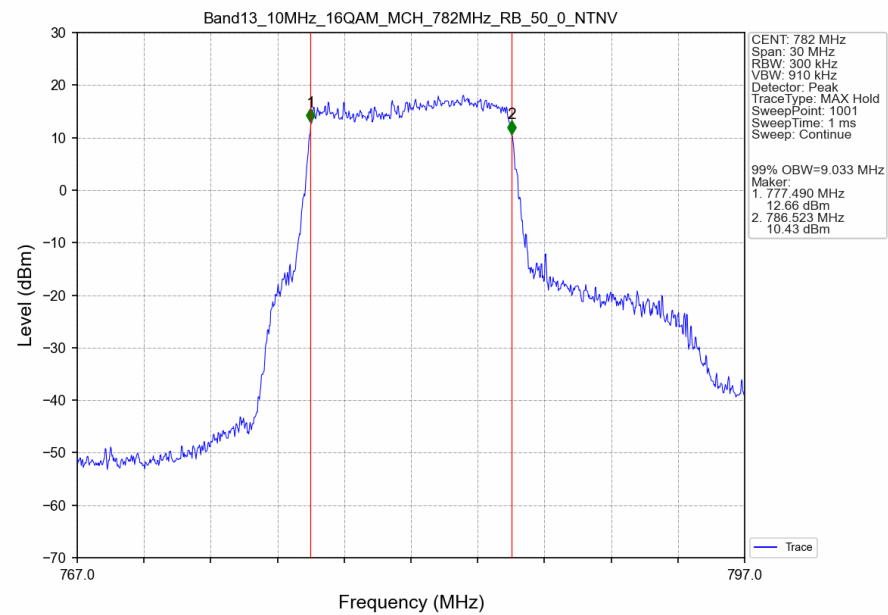
3.2.1 Band13_OBW



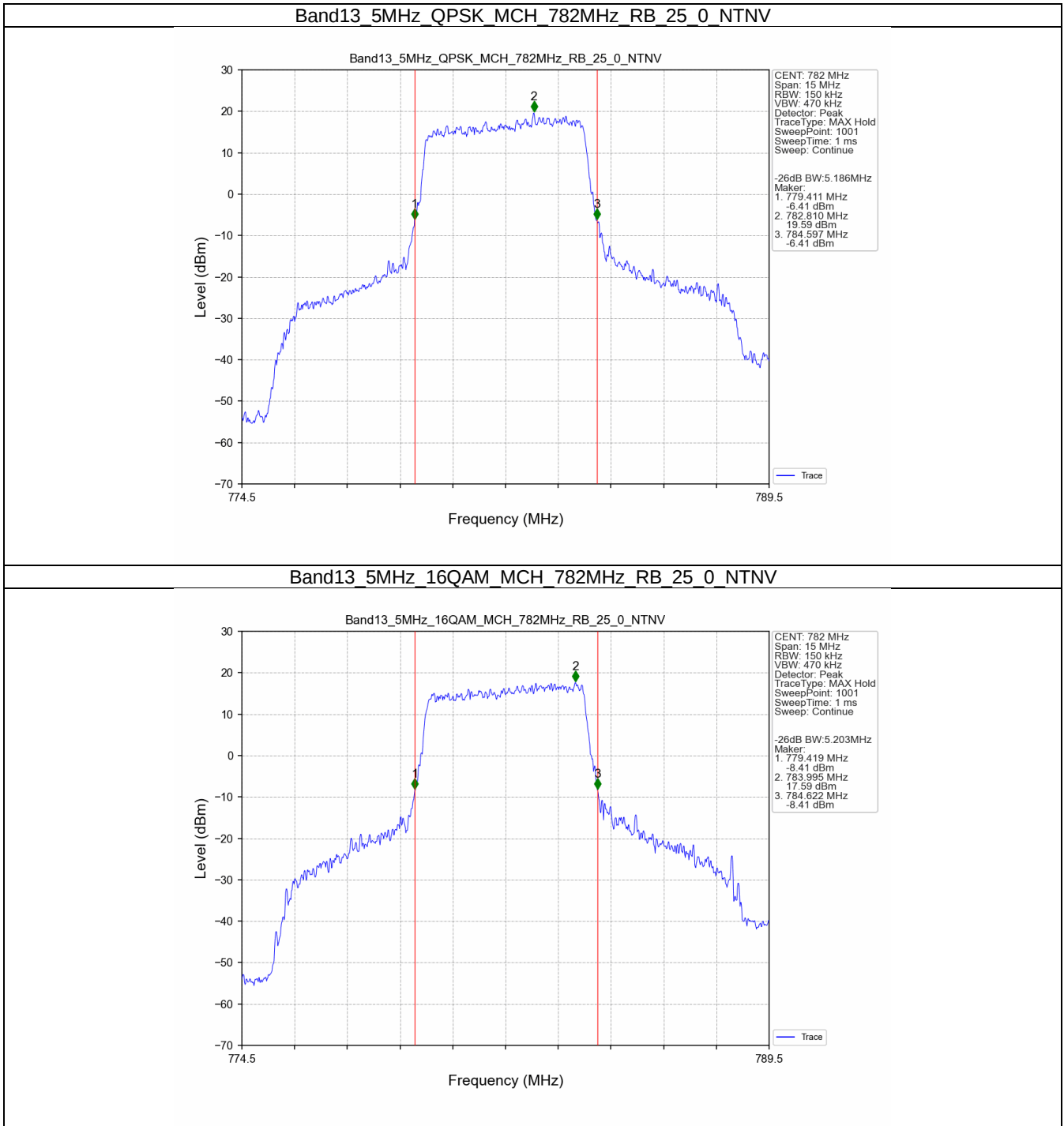
Band13 10MHz QPSK MCH 782MHz RB 50 0 NTV



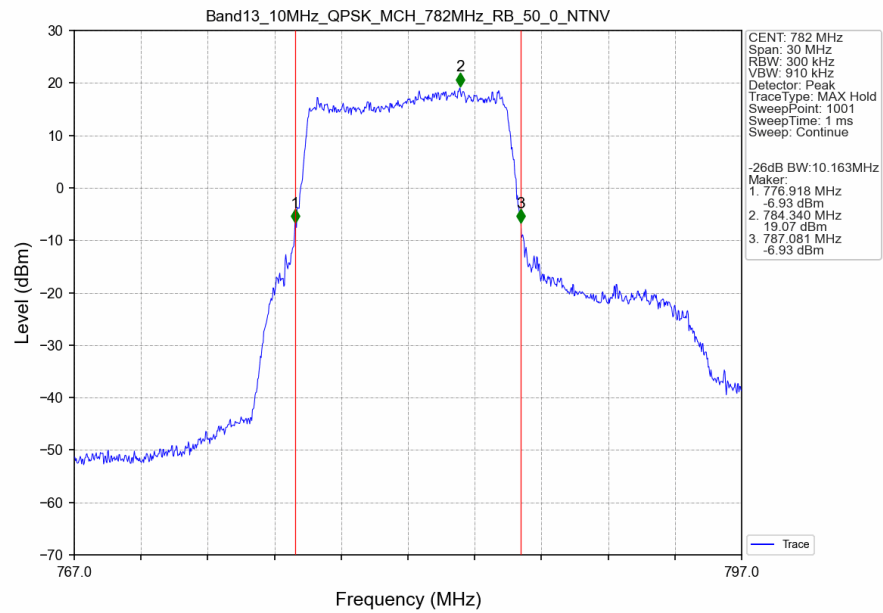
Band13 10MHz 16QAM MCH 782MHz RB 50 0 NTV



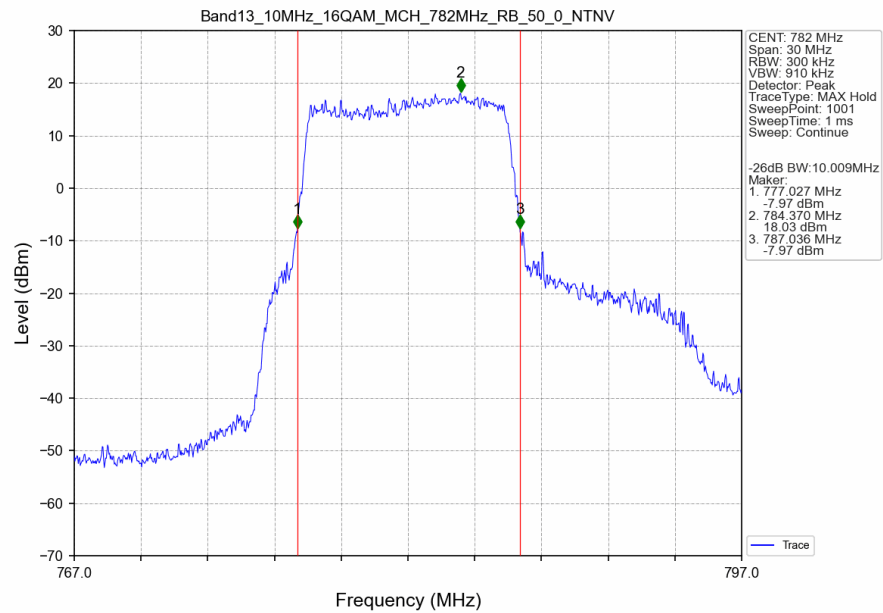
3.2.2 Band13_XDB



Band13 10MHz QPSK MCH 782MHz RB 50 0 NTN



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



4. Peak-Average Ratio

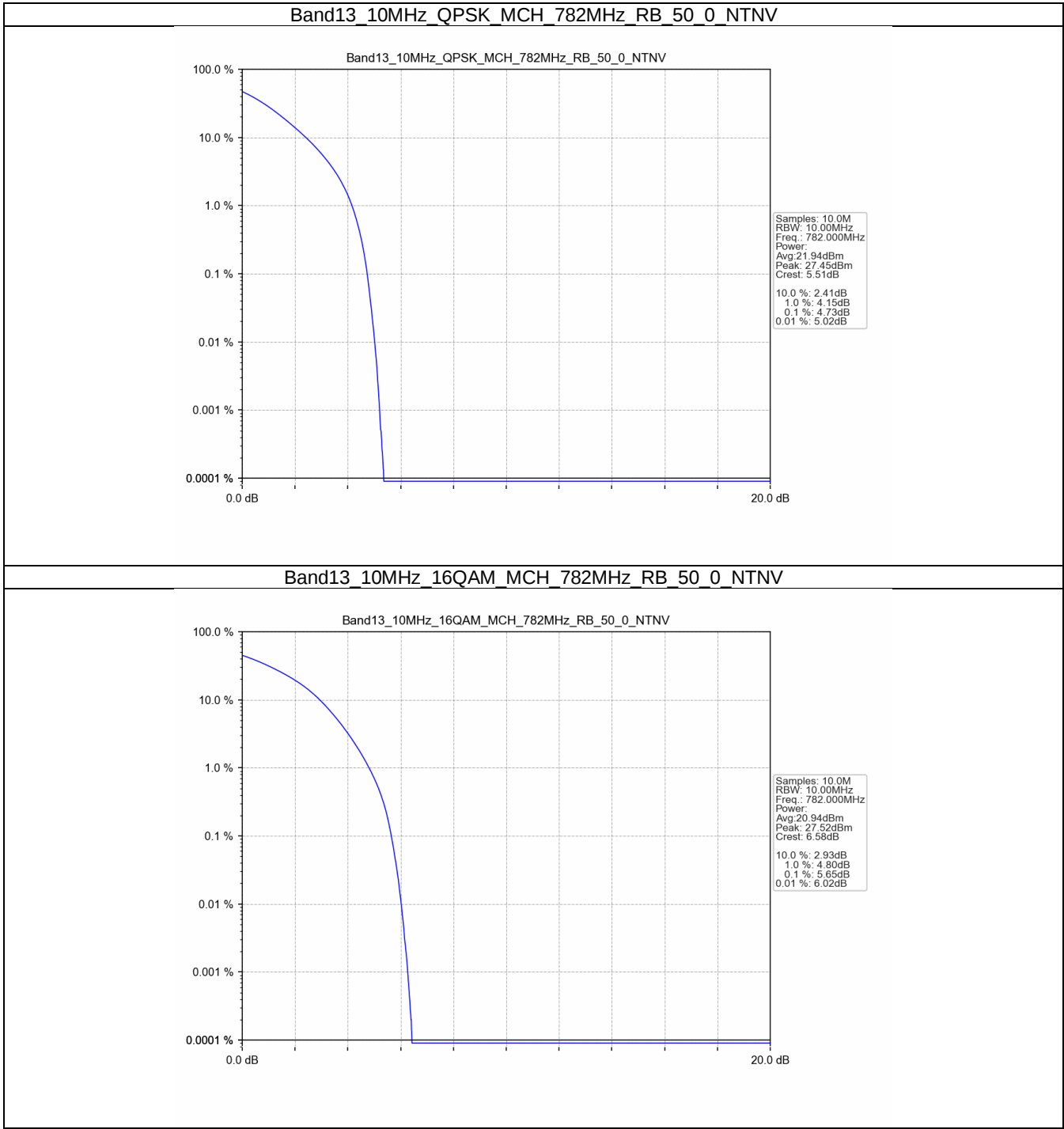
4.1 Test Result

4.1.1 B13_10MHz

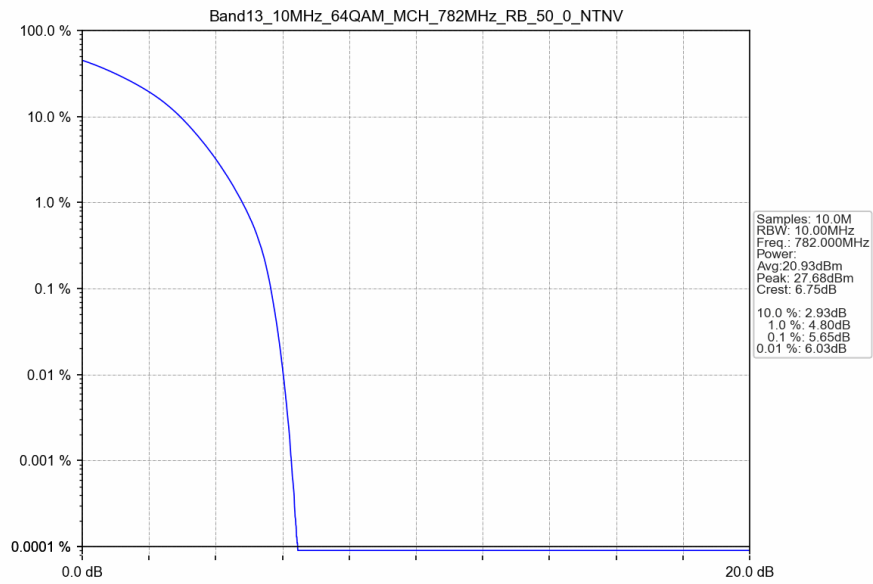
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	4.73	<=13	Pass
16QAM	782	50	0	5.65	<=13	Pass
64QAM	782	50	0	5.65	<=13	Pass
256QAM	782	50	0	6.42	<=13	Pass

4.2 Test Graph

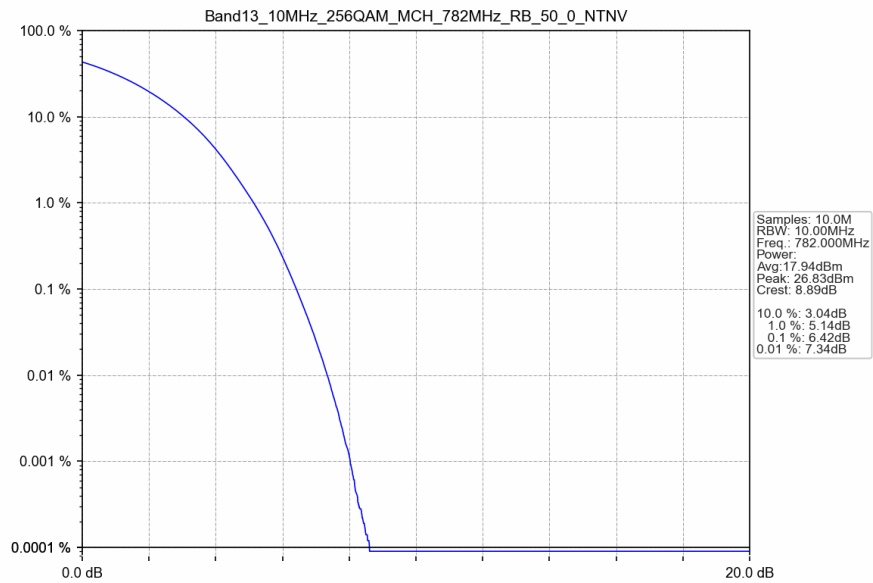
4.2.1 B13_10MHz



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



Band13 10MHz 256QAM MCH 782MHz RB 50 0 NTN



5. Spurious Emission

5.1 Test Result

5.1.1 B13_5MHz

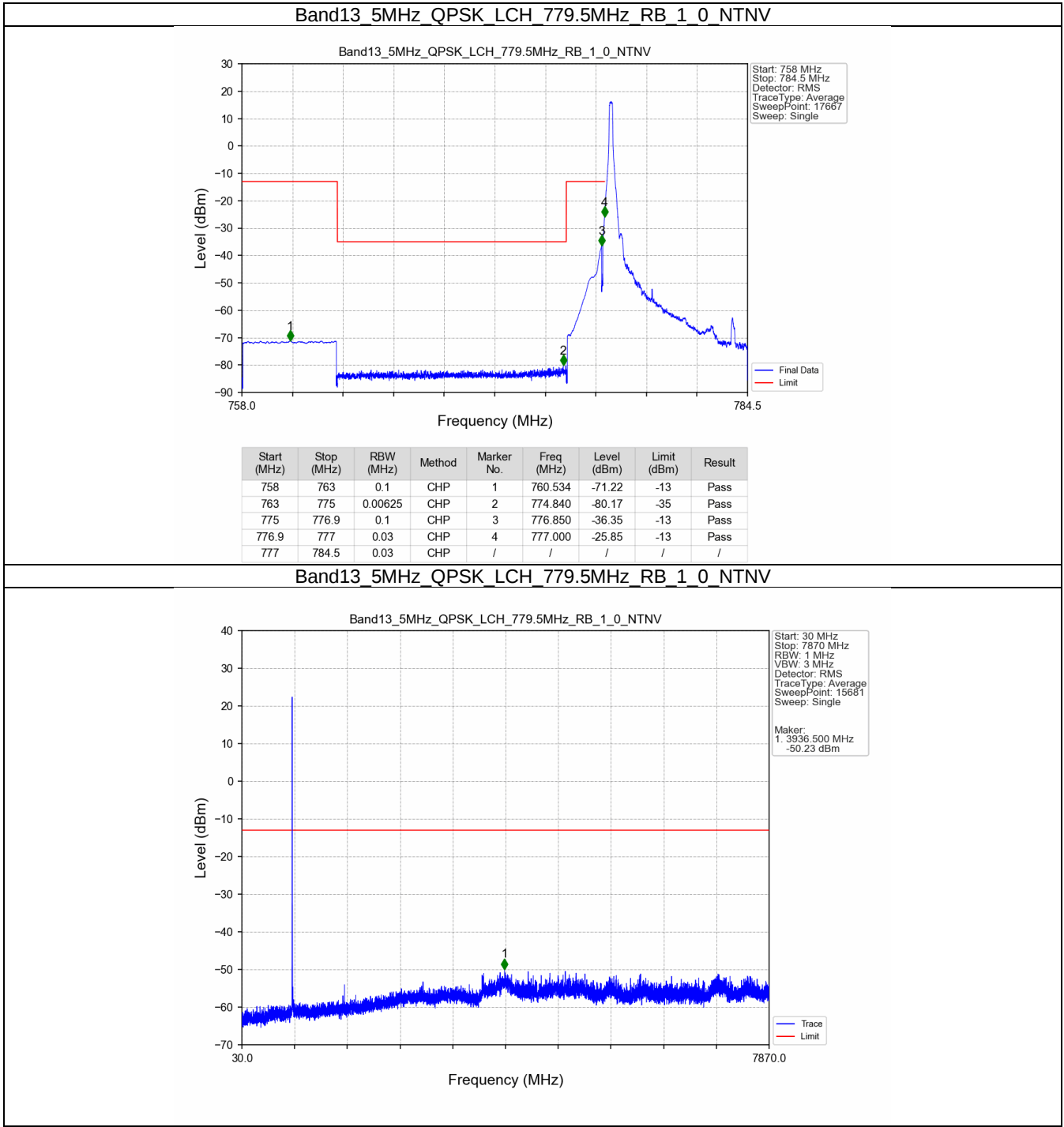
Band: 13 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	779.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	782	1	0	Refer To Test Graph		Pass
	784.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test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

5.1.2 B13_10MHz

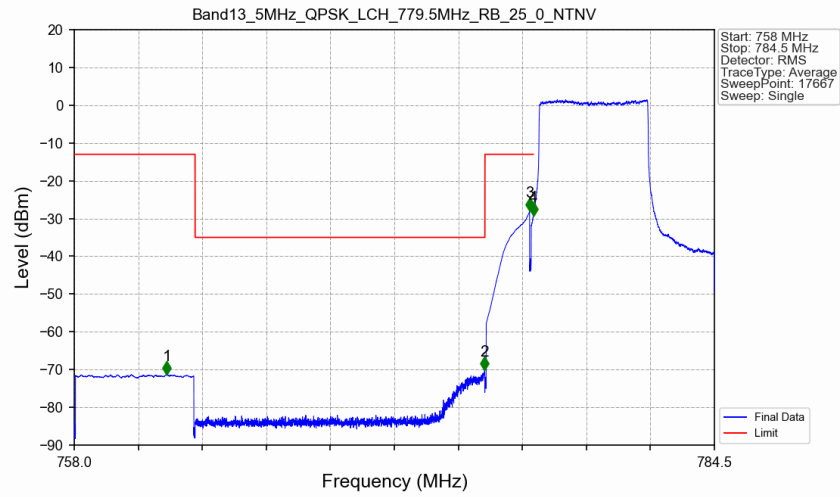
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	782	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	782	1	49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

5.2 Test Graph

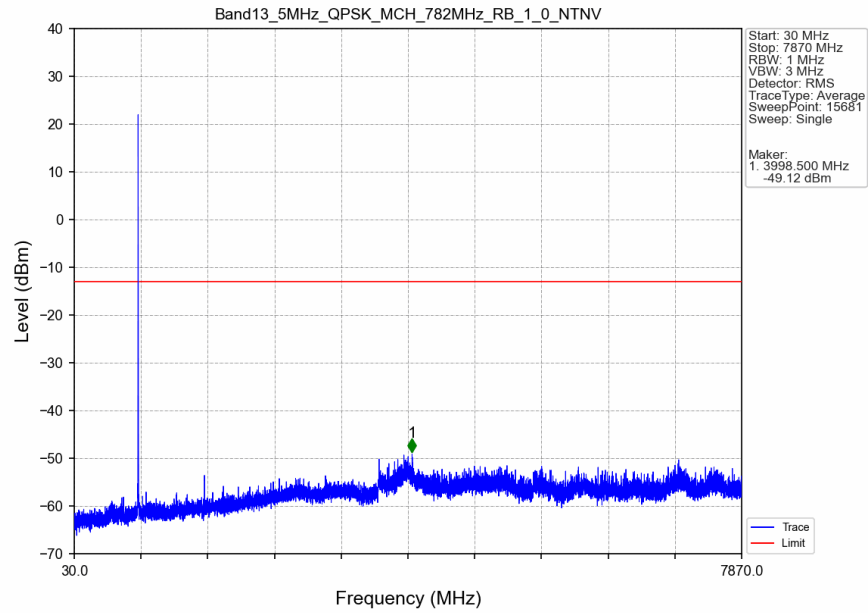
5.2.1 B13_5MHz



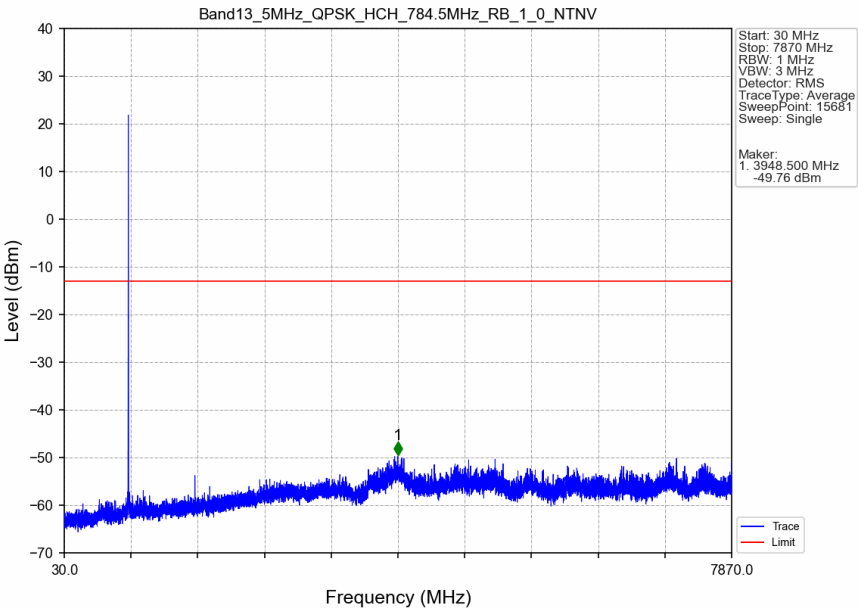
Band13 5MHz QPSK LCH 779.5MHz RB 25 0 NTNV



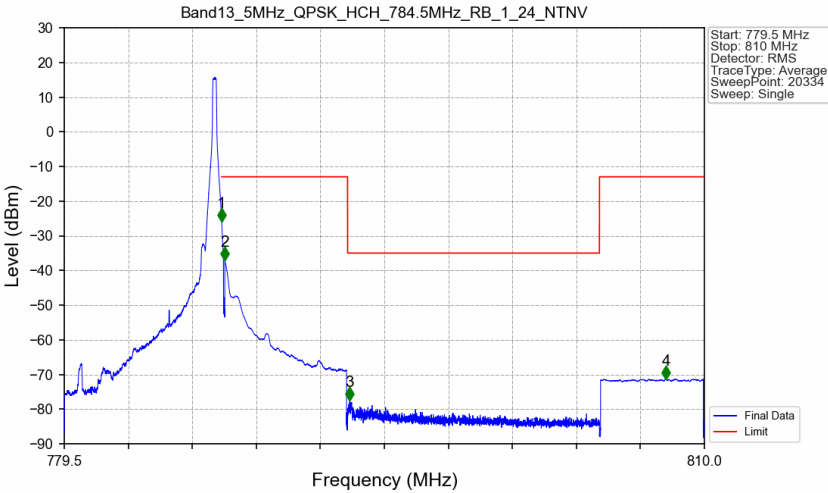
Band13 5MHz QPSK MCH 782MHz RB 1 0 NTNV



Band13 5MHz QPSK HCH 784.5MHz RB 1 0 NTV

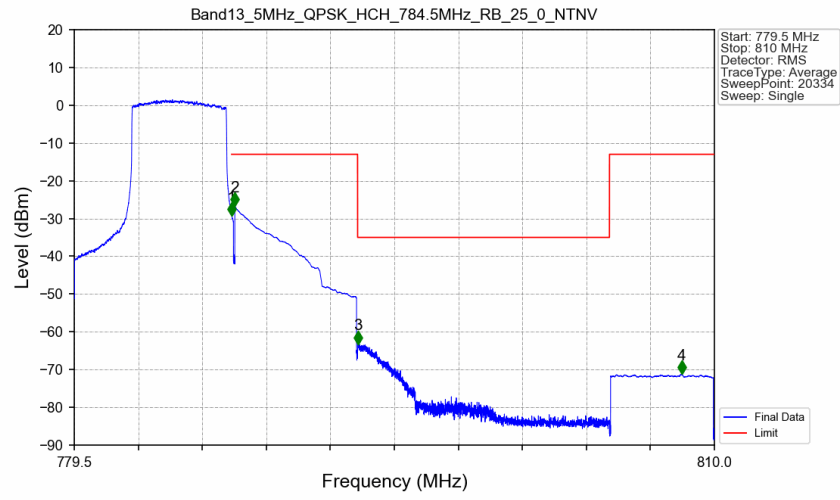


Band13 5MHz QPSK HCH 784.5MHz RB 1 24 NTV



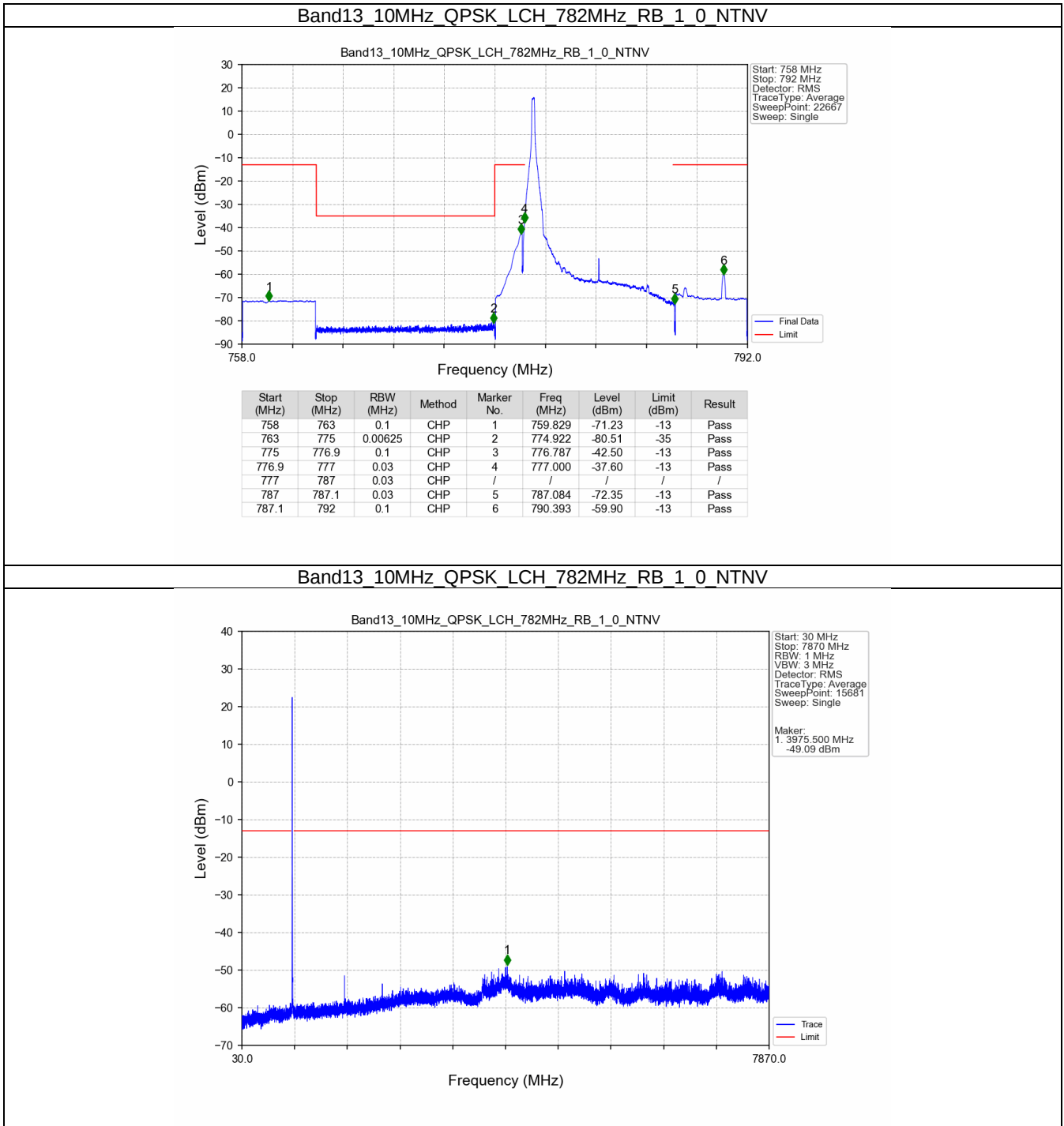
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-25.81	-13	Pass
787.1	793	0.1	CHP	2	787.150	-36.96	-13	Pass
793	805	0.00625	CHP	3	793.101	-77.56	-35	Pass
805	810	0.1	CHP	4	808.174	-71.30	-13	Pass

Band13 5MHz QPSK HCH 784.5MHz RB 25 0 NTN

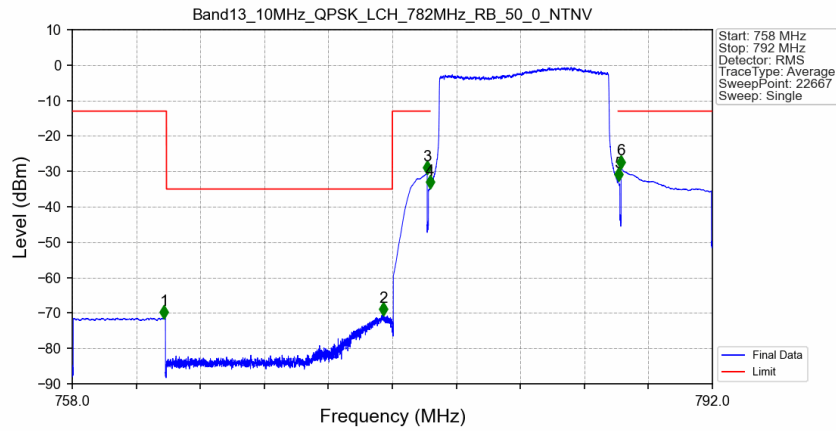


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-29.19	-13	Pass
787.1	793	0.1	CHP	2	787.150	-26.61	-13	Pass
793	805	0.00625	CHP	3	793.012	-63.19	-35	Pass
805	810	0.1	CHP	4	808.441	-71.14	-13	Pass

5.2.2 B13_10MHz

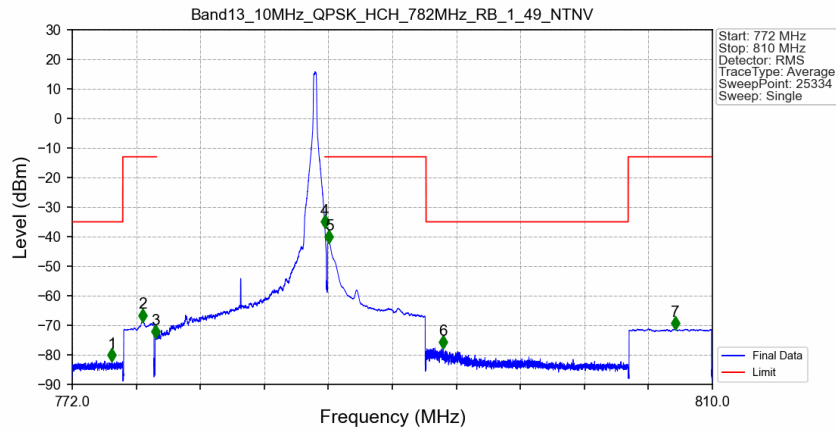


Band13 10MHz QPSK LCH 782MHz RB 50 0 NTNV



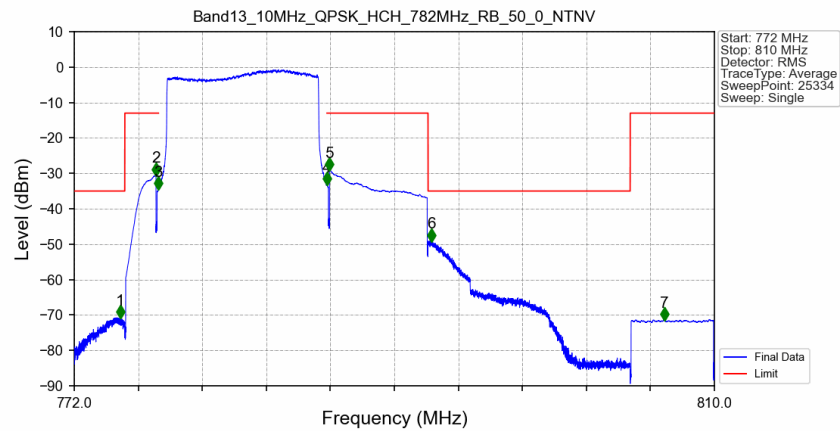
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	762.883	-71.34	-13	Pass
763	775	0.00625	CHP	2	774.524	-70.52	-35	Pass
775	776.9	0.1	CHP	3	776.848	-30.51	-13	Pass
776.9	777	0.03	CHP	4	777.000	-34.62	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.000	-32.49	-13	Pass
787.1	792	0.1	CHP	6	787.150	-28.92	-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	774.355	-81.92	-35	Pass
775	776.9	0.1	CHP	2	776.170	-68.50	-13	Pass
776.9	777	0.03	CHP	3	776.953	-73.99	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-36.89	-13	Pass
787.1	793	0.1	CHP	5	787.245	-41.98	-13	Pass
793	805	0.00625	CHP	6	794.013	-77.51	-35	Pass
805	810	0.1	CHP	7	807.799	-71.17	-13	Pass

Band13 10MHz QPSK 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	774.733	-70.73	-35	Pass
775	776.9	0.1	CHP	2	776.850	-30.41	-13	Pass
776.9	777	0.03	CHP	3	776.986	-34.39	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-33.03	-13	Pass
787.1	793	0.1	CHP	5	787.150	-28.99	-13	Pass
793	805	0.00625	CHP	6	793.182	-48.97	-35	Pass
805	810	0.1	CHP	7	807.031	-71.25	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 13-Low 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	-66.34	-13	-53.34	-69.48	2.6	5.74	Horizontal	Pass
2332.5	-63.62	-13	-50.62	-66.08	2.96	5.42	Horizontal	Pass
3110.0	-60.15	-13	-47.15	-64.15	3.2	7.2	Horizontal	Pass
1555.0	-66.26	-13	-53.26	-69.4	2.6	5.74	Vertical	Pass
2332.5	-63.14	-13	-50.14	-65.6	2.96	5.42	Vertical	Pass
3110.0	-59.78	-13	-46.78	-63.78	3.2	7.2	Vertical	Pass