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	23.12	-9.70	11.27	<=34.77	Pass
			13	23.10	-9.70	11.25	<=34.77	Pass
			24	23.09	-9.70	11.24	<=34.77	Pass
		12	0	22.13	-9.70	10.28	<=34.77	Pass
			6	22.15	-9.70	10.30	<=34.77	Pass
			13	22.13	-9.70	10.28	<=34.77	Pass
		25	0	22.15	-9.70	10.30	<=34.77	Pass
	782	1	0	23.11	-9.70	11.26	<=34.77	Pass
			13	23.04	-9.70	11.19	<=34.77	Pass
			24	23.01	-9.70	11.16	<=34.77	Pass
		12	0	22.07	-9.70	10.22	<=34.77	Pass
			6	22.06	-9.70	10.21	<=34.77	Pass
			13	22.04	-9.70	10.19	<=34.77	Pass
		25	0	22.08	-9.70	10.23	<=34.77	Pass
	784.5	1	0	23.11	-9.70	11.26	<=34.77	Pass
			13	22.96	-9.70	11.11	<=34.77	Pass
			24	23.04	-9.70	11.19	<=34.77	Pass
		12	0	22.08	-9.70	10.23	<=34.77	Pass
			6	22.01	-9.70	10.16	<=34.77	Pass
			13	22.01	-9.70	10.16	<=34.77	Pass
		25	0	22.10	-9.70	10.25	<=34.77	Pass
16QAM	779.5	1	0	22.37	-9.70	10.52	<=34.77	Pass
			13	22.28	-9.70	10.43	<=34.77	Pass
			24	22.29	-9.70	10.44	<=34.77	Pass
		12	0	21.09	-9.70	9.24	<=34.77	Pass
			6	21.16	-9.70	9.31	<=34.77	Pass
			13	21.15	-9.70	9.30	<=34.77	Pass
		25	0	21.13	-9.70	9.28	<=34.77	Pass
	782	1	0	22.23	-9.70	10.38	<=34.77	Pass
			13	22.05	-9.70	10.20	<=34.77	Pass
			24	22.08	-9.70	10.23	<=34.77	Pass
		12	0	21.09	-9.70	9.24	<=34.77	Pass
			6	21.15	-9.70	9.30	<=34.77	Pass
			13	21.02	-9.70	9.17	<=34.77	Pass
		25	0	21.10	-9.70	9.25	<=34.77	Pass
	784.5	1	0	22.20	-9.70	10.35	<=34.77	Pass
			13	21.95	-9.70	10.10	<=34.77	Pass
			24	22.13	-9.70	10.28	<=34.77	Pass
		12	0	21.13	-9.70	9.28	<=34.77	Pass
			6	21.09	-9.70	9.24	<=34.77	Pass
			13	21.06	-9.70	9.21	<=34.77	Pass
		25	0	21.12	-9.70	9.27	<=34.77	Pass
64QAM	779.5	1	0	21.28	-9.70	9.43	<=34.77	Pass
			13	20.71	-9.70	8.86	<=34.77	Pass
			24	21.22	-9.70	9.37	<=34.77	Pass
		12	0	20.12	-9.70	8.27	<=34.77	Pass
			6	20.10	-9.70	8.25	<=34.77	Pass
			13	20.18	-9.70	8.33	<=34.77	Pass
		25	0	20.12	-9.70	8.27	<=34.77	Pass

	782	1	0	21.26	-9.70	9.41	<=34.77	Pass
			13	21.03	-9.70	9.18	<=34.77	Pass
			24	20.99	-9.70	9.14	<=34.77	Pass
		12	0	20.15	-9.70	8.30	<=34.77	Pass
			6	20.17	-9.70	8.32	<=34.77	Pass
			13	20.11	-9.70	8.26	<=34.77	Pass
		25	0	20.10	-9.70	8.25	<=34.77	Pass
	784.5	1	0	21.09	-9.70	9.24	<=34.77	Pass
			13	21.17	-9.70	9.32	<=34.77	Pass
			24	21.22	-9.70	9.37	<=34.77	Pass
		12	0	20.15	-9.70	8.30	<=34.77	Pass
			6	20.09	-9.70	8.24	<=34.77	Pass
			13	20.07	-9.70	8.22	<=34.77	Pass
		25	0	20.10	-9.70	8.25	<=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	23.11	-9.70	11.26	<=34.77	Pass
			25	23.07	-9.70	11.22	<=34.77	Pass
			49	23.01	-9.70	11.16	<=34.77	Pass
		25	0	22.07	-9.70	10.22	<=34.77	Pass
			13	22.07	-9.70	10.22	<=34.77	Pass
			25	22.01	-9.70	10.16	<=34.77	Pass
		50	0	22.06	-9.70	10.21	<=34.77	Pass
16QAM	782	1	0	22.23	-9.70	10.38	<=34.77	Pass
			25	22.18	-9.70	10.33	<=34.77	Pass
			49	22.25	-9.70	10.40	<=34.77	Pass
		25	0	21.01	-9.70	9.16	<=34.77	Pass
			13	21.08	-9.70	9.23	<=34.77	Pass
			25	20.99	-9.70	9.14	<=34.77	Pass
		50	0	21.06	-9.70	9.21	<=34.77	Pass
64QAM	782	1	0	21.12	-9.70	9.27	<=34.77	Pass
			25	21.23	-9.70	9.38	<=34.77	Pass
			49	21.13	-9.70	9.28	<=34.77	Pass
		25	0	20.02	-9.70	8.17	<=34.77	Pass
			13	20.06	-9.70	8.21	<=34.77	Pass
			25	19.98	-9.70	8.13	<=34.77	Pass
		50	0	20.02	-9.70	8.17	<=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	-4.500	-0.0058	-2.5 to 2.5	Pass
					NV	-5.800	-0.0074	-2.5 to 2.5	Pass
					HV	0.400	0.0005	-2.5 to 2.5	Pass
				-30	NV	-1.000	-0.0013	-2.5 to 2.5	Pass
				-20	NV	-3.200	-0.0041	-2.5 to 2.5	Pass
				-10	NV	-1.500	-0.0019	-2.5 to 2.5	Pass
				0	NV	4.000	0.0051	-2.5 to 2.5	Pass
				10	NV	0.000	0.0000	-2.5 to 2.5	Pass
				30	NV	-4.400	-0.0056	-2.5 to 2.5	Pass
				40	NV	-3.900	-0.0050	-2.5 to 2.5	Pass
				50	NV	-4.300	-0.0055	-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	4.537	/	Pass
	16QAM	782	25	0	4.538	/	Pass
10	QPSK	782	50	0	9.047	/	Pass
	16QAM	782	50	0	9.002	/	Pass

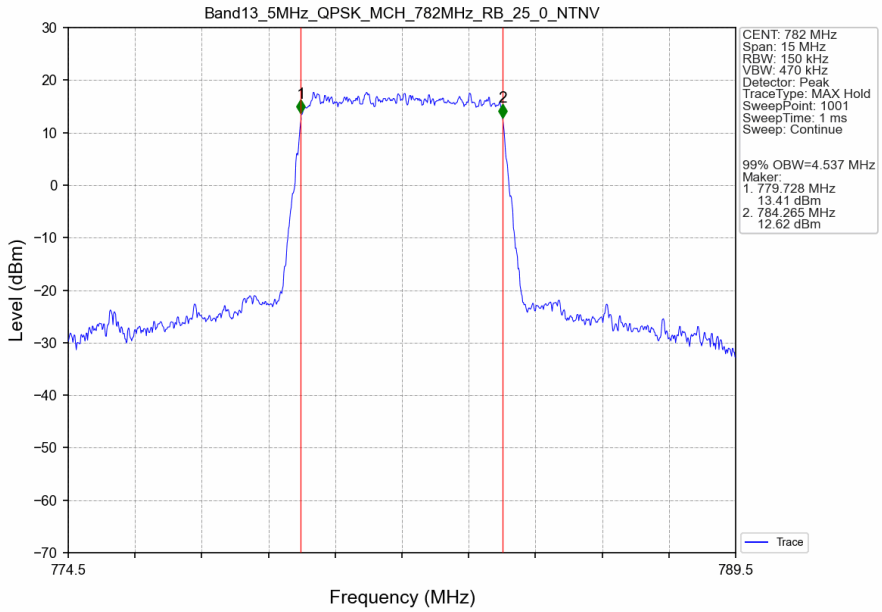
3.1.2 Band13_XDB

Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	5.057	/	Pass
	16QAM	782	25	0	5.029	/	Pass
10	QPSK	782	50	0	9.962	/	Pass
	16QAM	782	50	0	9.859	/	Pass

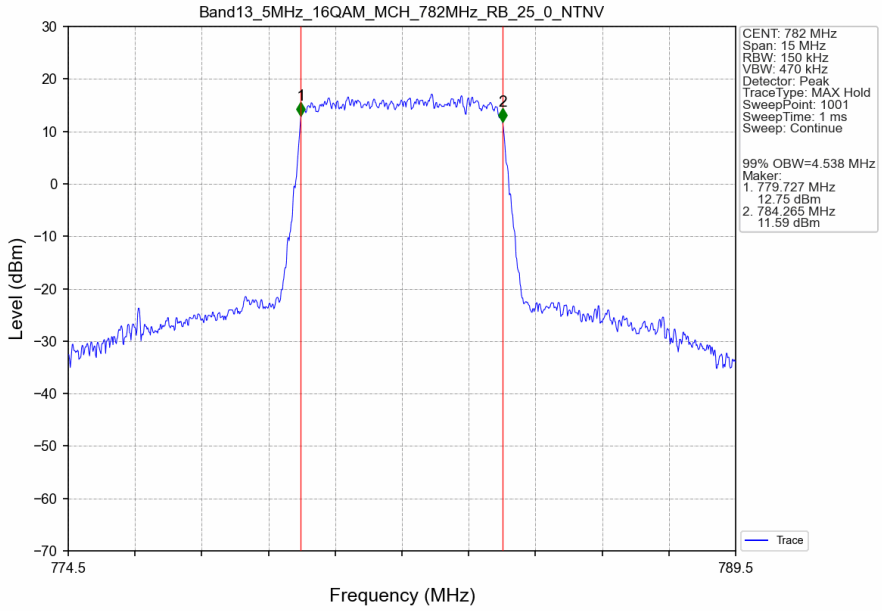
3.2 Test Graph

3.2.1 Band13_OBW

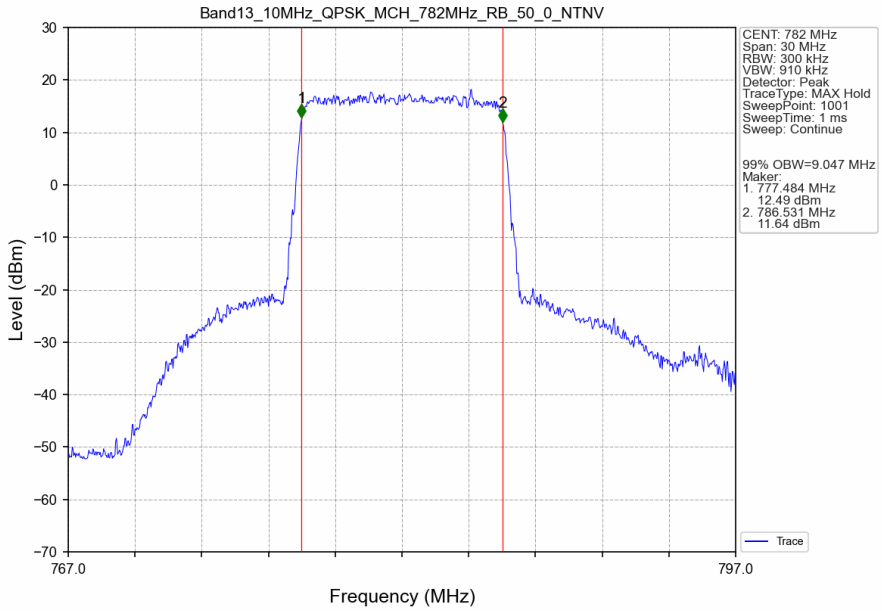
Band13_5MHz_QPSK_MCH_782MHz_RB_25_0_NTNV



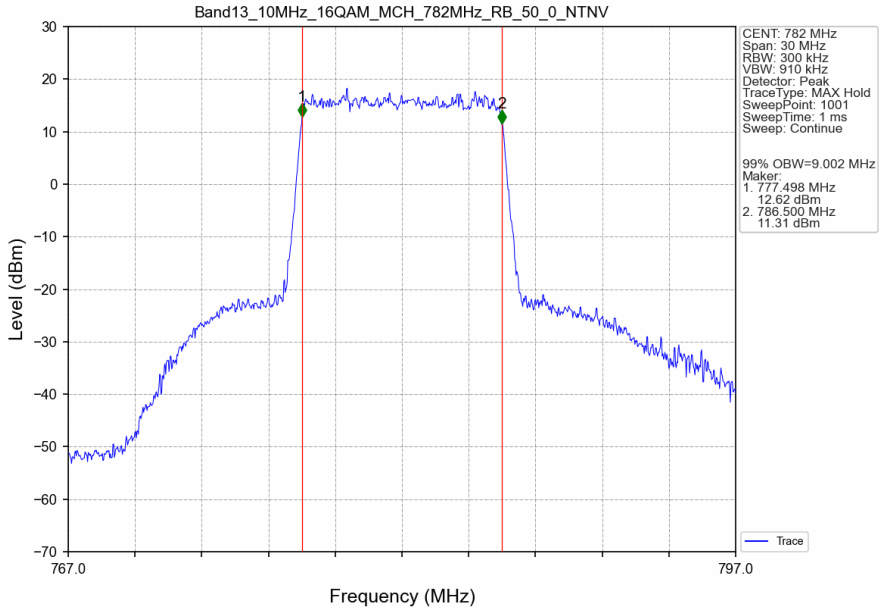
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV

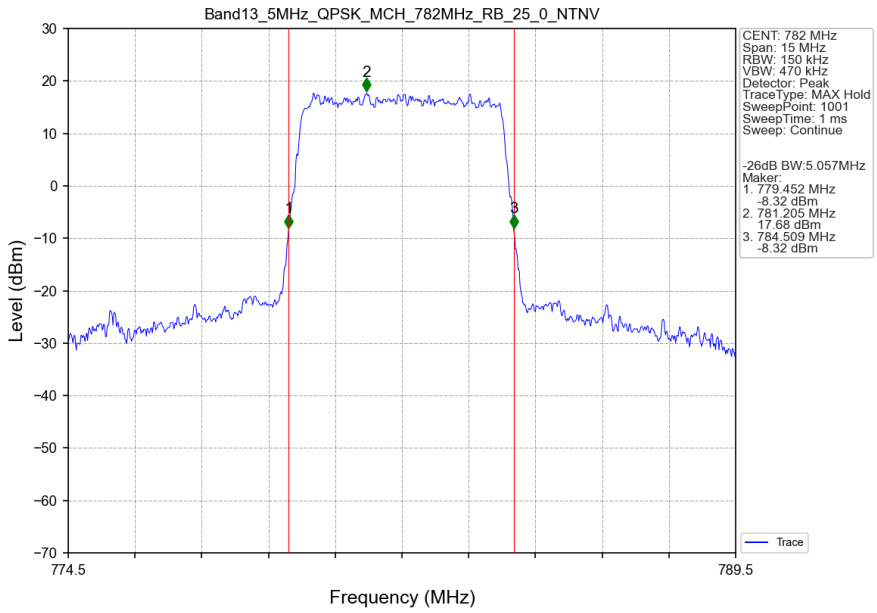


Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV

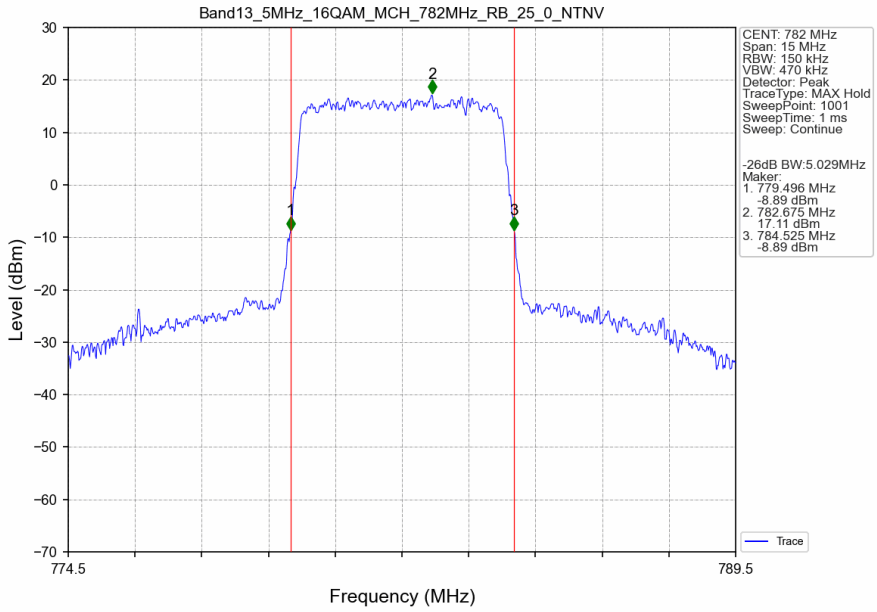


3.2.2 Band13_XDB

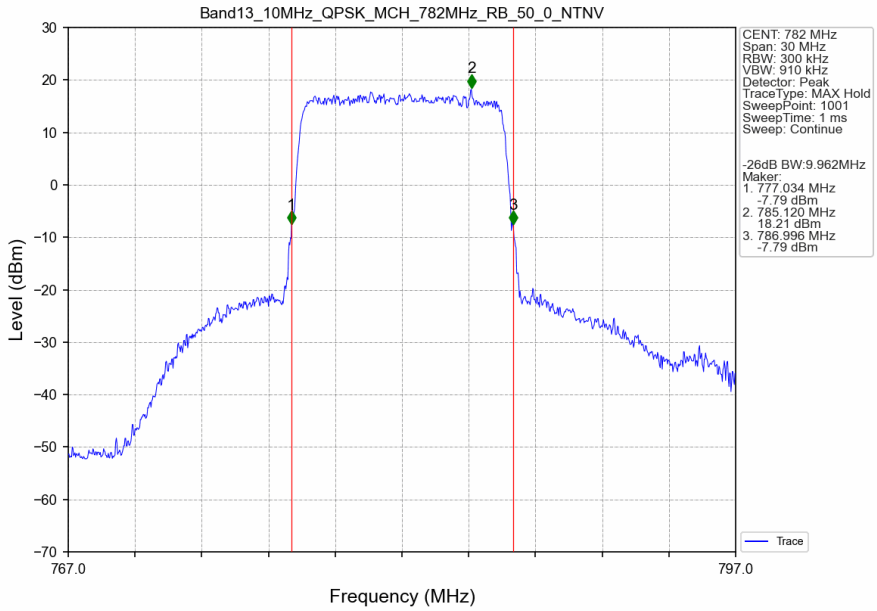
Band13_5MHz_QPSK_MCH_782MHz_RB_25_0_NTNV



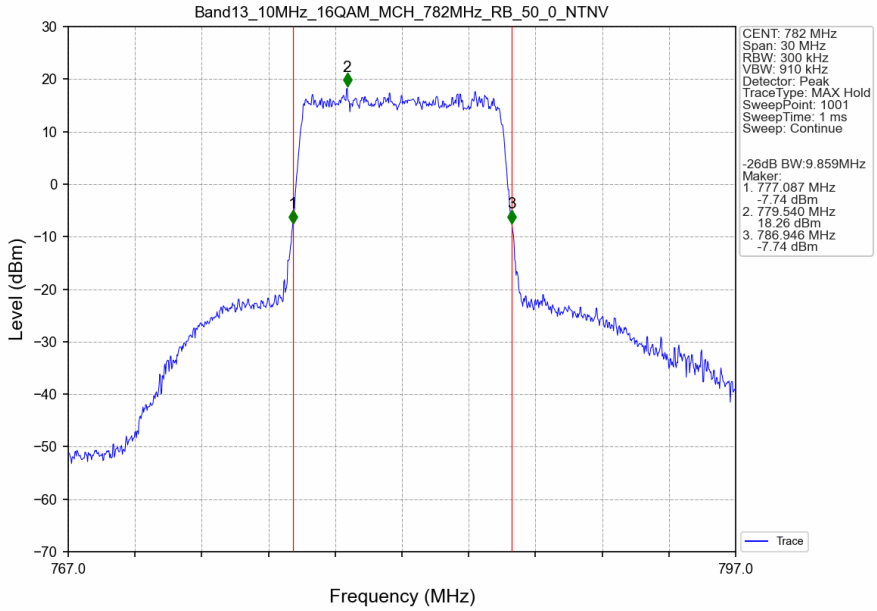
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



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

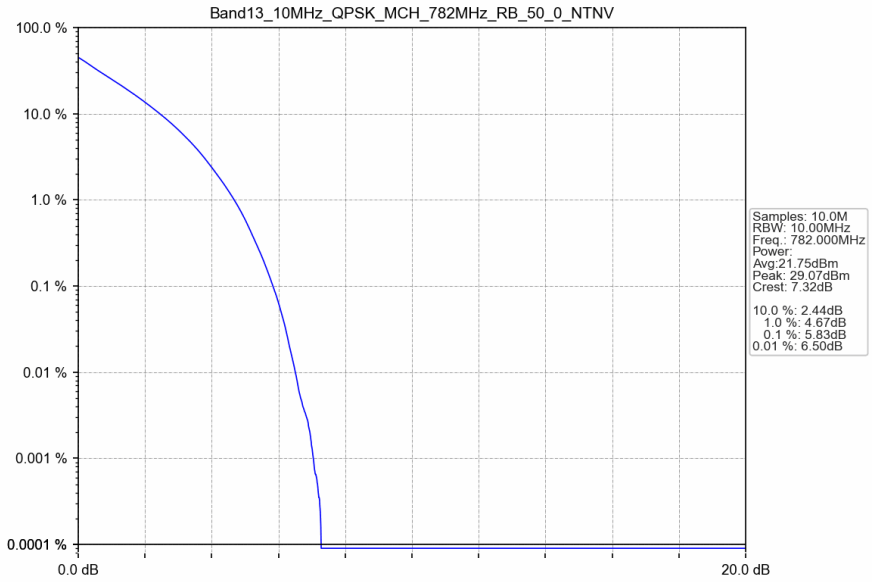
4.1.1 B13_10MHz

Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	5.83	<=13	Pass
16QAM	782	50	0	6.51	<=13	Pass
64QAM	782	50	0	6.70	<=13	Pass

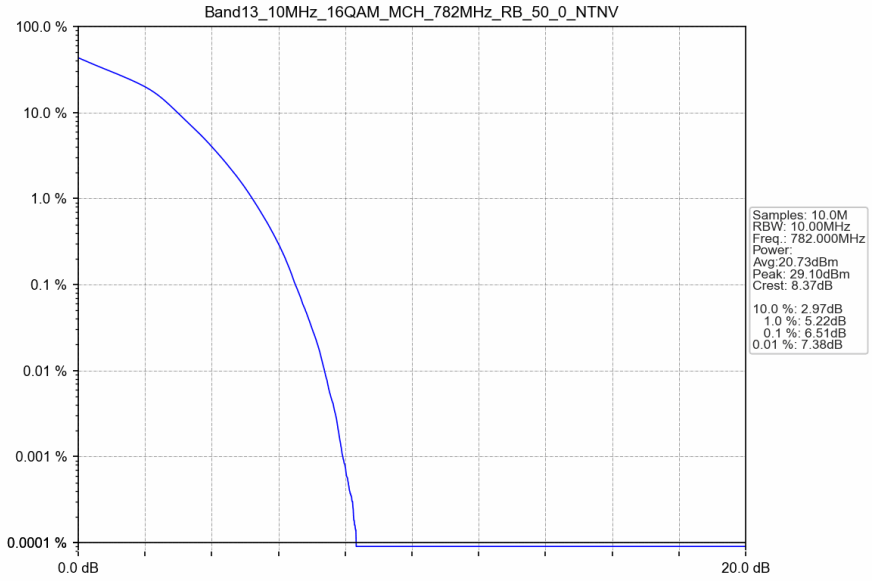
4.2 Test Graph

4.2.1 B13_10MHz

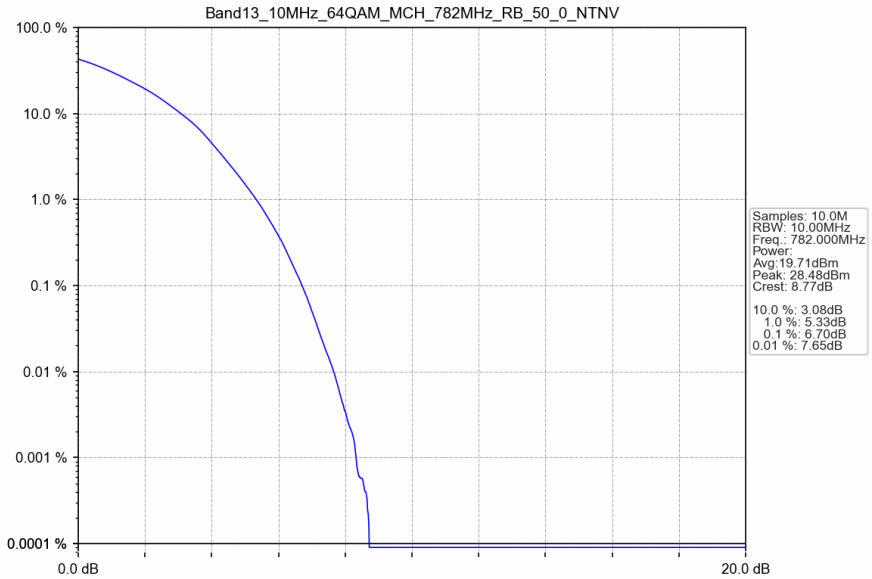
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



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

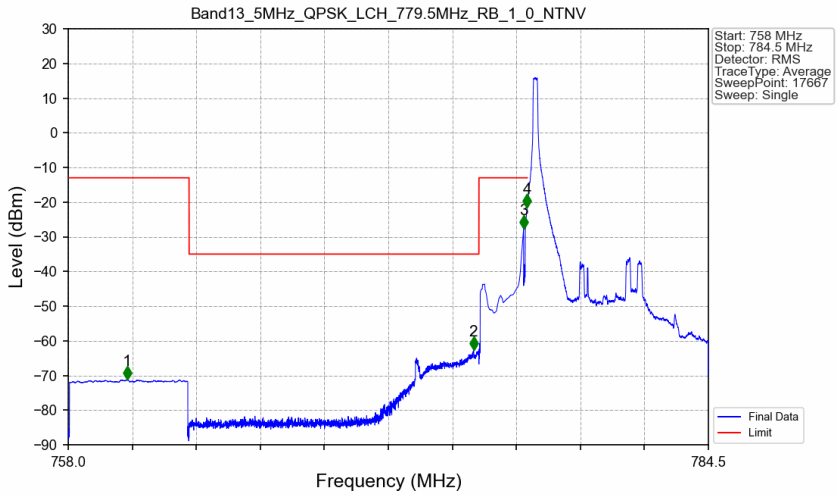
5.1.2 B13_10MHz

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

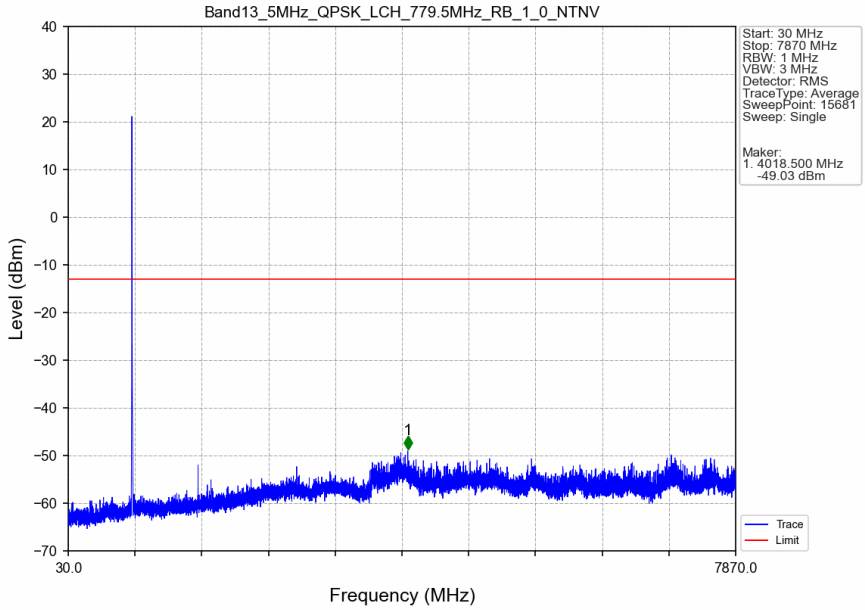
5.2.1 B13_5MHz

Band13_5MHz_QPSK_LCH_779.5MHz_RB_1_0_NTNV

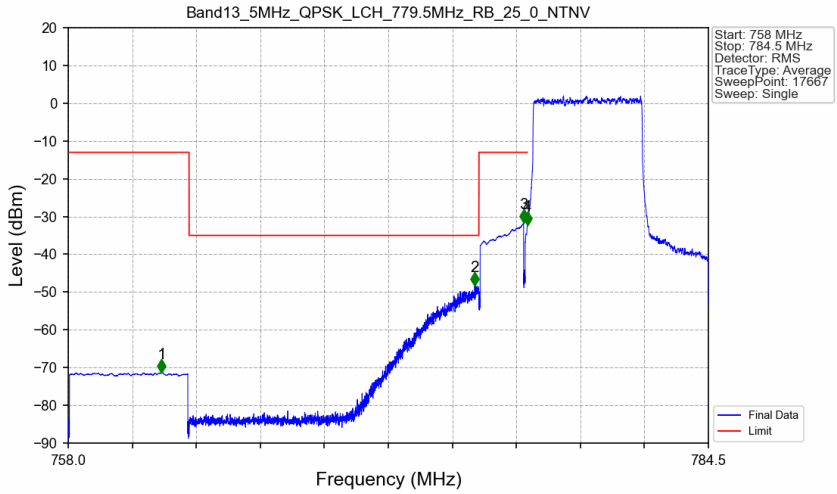


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	760.445	-71.23	-13	Pass
763	775	0.00625	CHP	2	774.780	-62.67	-35	Pass
775	776.9	0.1	CHP	3	776.850	-27.63	-13	Pass
776.9	777	0.03	CHP	4	776.997	-21.56	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

Band13_5MHz_QPSK_LCH_779.5MHz_RB_1_0_NTNV

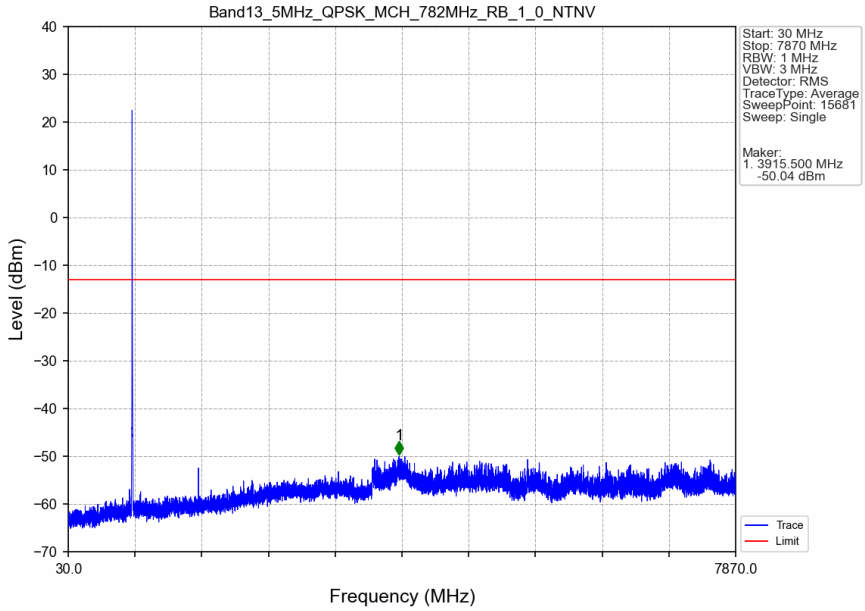


Band13_5MHz_QPSK_LCH_779.5MHz_RB_25_0_NTNV

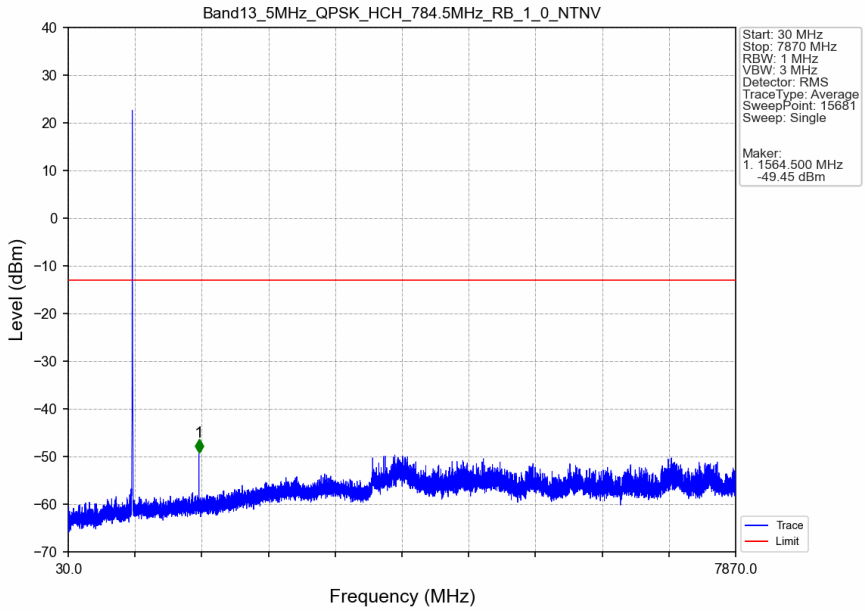


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	761.867	-71.22	-13	Pass
763	775	0.00625	CHP	2	774.826	-48.19	-35	Pass
775	776.9	0.1	CHP	3	776.850	-31.62	-13	Pass
776.9	777	0.03	CHP	4	777.000	-32.31	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

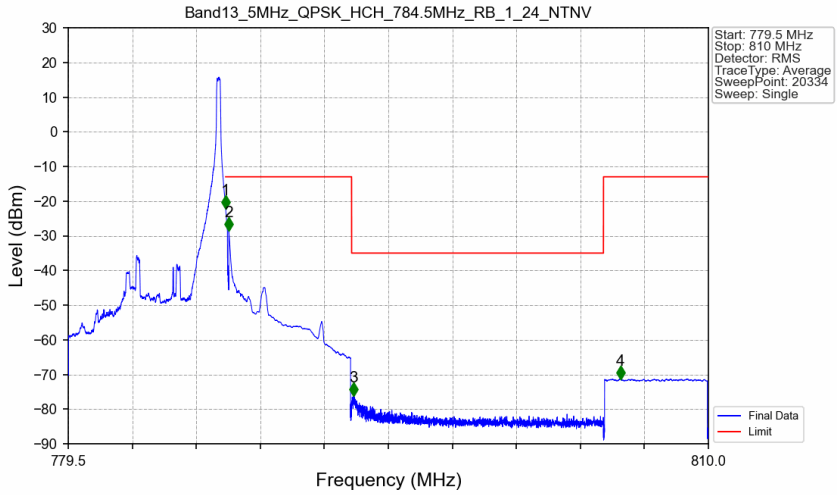
Band13_5MHz_QPSK_MCH_782MHz_RB_1_0_NTNV



Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_0_NTNV

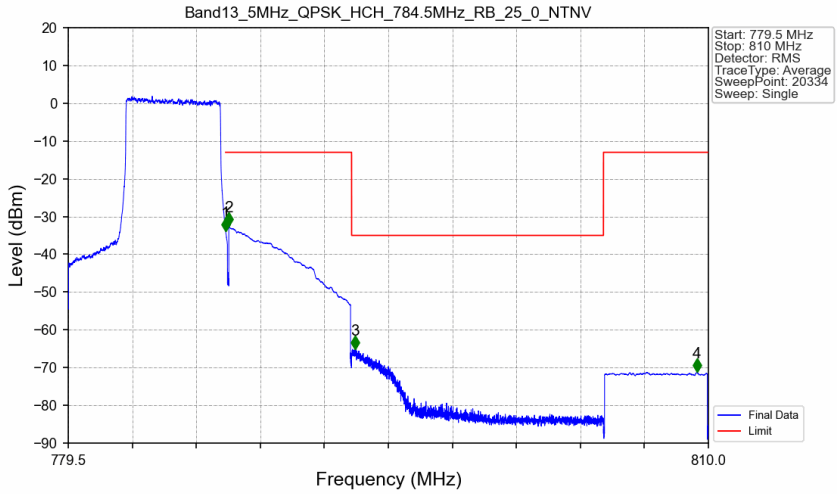


Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_24_NTNV



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	-22.19	-13	Pass
787.1	793	0.1	CHP	2	787.150	-28.46	-13	Pass
793	805	0.00625	CHP	3	793.084	-76.26	-35	Pass
805	810	0.1	CHP	4	805.806	-71.28	-13	Pass

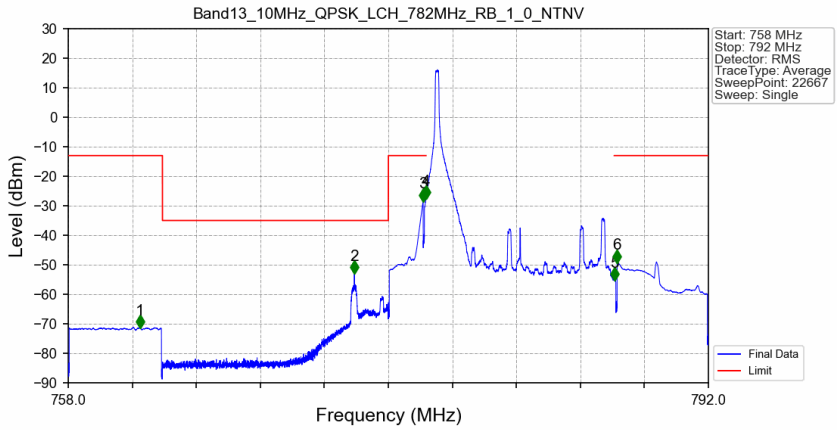
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



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	-33.81	-13	Pass
787.1	793	0.1	CHP	2	787.150	-32.42	-13	Pass
793	805	0.00625	CHP	3	793.159	-65.09	-35	Pass
805	810	0.1	CHP	4	809.451	-71.14	-13	Pass

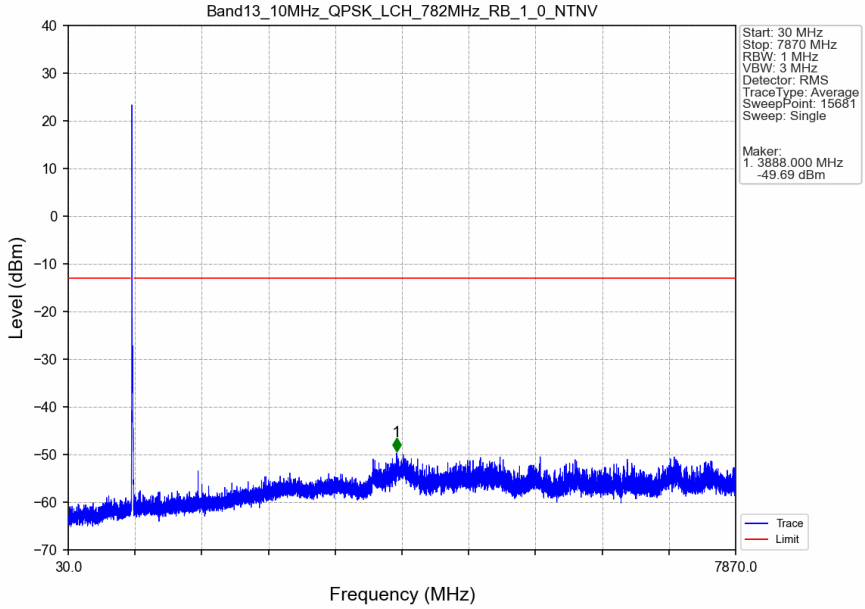
5.2.2 B13_10MHz

Band13_10MHz_QPSK_LCH_782MHz_RB_1_0_NTNV

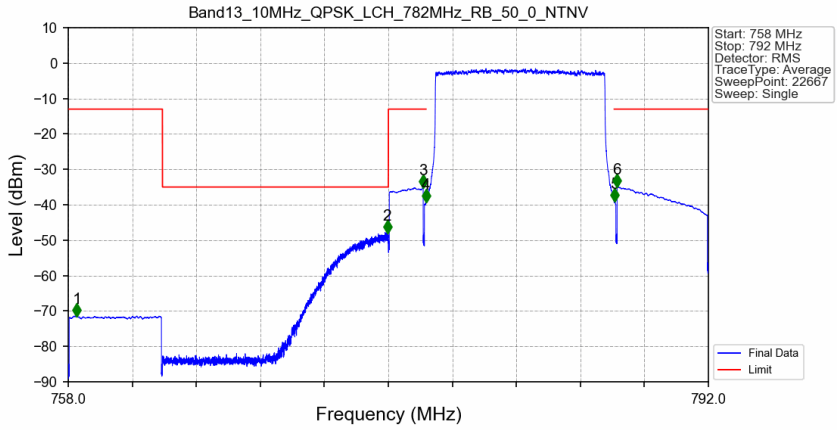


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	761.804	-71.21	-13	Pass
763	775	0.00625	CHP	2	773.195	-52.62	-35	Pass
775	776.9	0.1	CHP	3	776.850	-28.23	-13	Pass
776.9	777	0.03	CHP	4	777.000	-27.25	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.000	-54.98	-13	Pass
787.1	792	0.1	CHP	6	787.152	-48.98	-13	Pass

Band13_10MHz_QPSK_LCH_782MHz_RB_1_0_NTNV

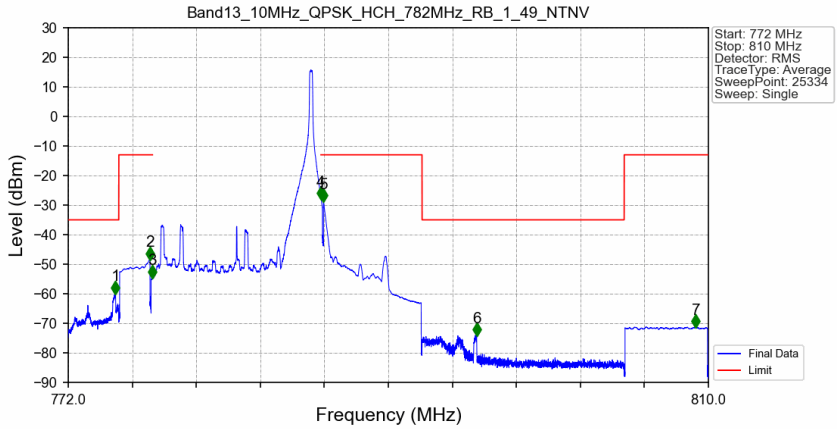


Band13_10MHz_QPSK_LCH_782MHz_RB_50_0_NTNV



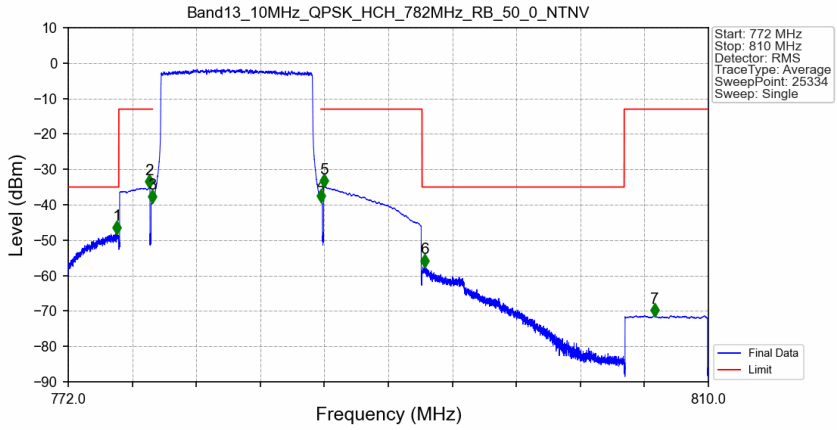
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	758.447	-71.35	-13	Pass
763	775	0.00625	CHP	2	774.944	-47.75	-35	Pass
775	776.9	0.1	CHP	3	776.845	-35.06	-13	Pass
776.9	777	0.03	CHP	4	777.000	-39.02	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.030	-38.78	-13	Pass
787.1	792	0.1	CHP	6	787.150	-34.77	-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	774.793	-59.77	-35	Pass
775	776.9	0.1	CHP	2	776.850	-48.24	-13	Pass
776.9	777	0.03	CHP	3	776.986	-54.36	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-27.82	-13	Pass
787.1	793	0.1	CHP	5	787.150	-28.62	-13	Pass
793	805	0.00625	CHP	6	796.240	-73.90	-35	Pass
805	810	0.1	CHP	7	809.254	-71.21	-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	774.882	-47.89	-35	Pass
775	776.9	0.1	CHP	2	776.815	-34.99	-13	Pass
776.9	777	0.03	CHP	3	777.000	-39.16	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.024	-39.11	-13	Pass
787.1	793	0.1	CHP	5	787.176	-34.73	-13	Pass
793	805	0.00625	CHP	6	793.155	-57.32	-35	Pass
805	810	0.1	CHP	7	806.788	-71.31	-13	Pass

6. Field Strength of Spurious Radiation

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	-64.79	-13	-51.79	-67.93	2.6	5.74	Horizontal	Pass
2332.5	-62.19	-13	-49.19	-64.65	2.96	5.42	Horizontal	Pass
3110.0	-58.89	-13	-45.89	-62.89	3.2	7.2	Horizontal	Pass
1555.0	-63.84	-13	-50.84	-66.98	2.6	5.74	Vertical	Pass
2332.5	-63.81	-13	-50.81	-66.27	2.96	5.42	Vertical	Pass
3110.0	-58.27	-13	-45.27	-62.27	3.2	7.2	Vertical	Pass