

Annex for FCC LTE Band 13

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	23.11	-3.40	17.56	<=34.77	Pass
			13	23.19	-3.40	17.64	<=34.77	Pass
			24	22.96	-3.40	17.41	<=34.77	Pass
		12	0	21.96	-3.40	16.41	<=34.77	Pass
			6	21.98	-3.40	16.43	<=34.77	Pass
			13	21.85	-3.40	16.30	<=34.77	Pass
		25	0	21.89	-3.40	16.34	<=34.77	Pass
	782	1	0	23.05	-3.40	17.50	<=34.77	Pass
			13	23.09	-3.40	17.54	<=34.77	Pass
			24	23.00	-3.40	17.45	<=34.77	Pass
		12	0	21.81	-3.40	16.26	<=34.77	Pass
			6	21.90	-3.40	16.35	<=34.77	Pass
			13	21.83	-3.40	16.28	<=34.77	Pass
		25	0	21.82	-3.40	16.27	<=34.77	Pass
	784.5	1	0	23.04	-3.40	17.49	<=34.77	Pass
			13	23.15	-3.40	17.60	<=34.77	Pass
			24	23.16	-3.40	17.61	<=34.77	Pass
		12	0	21.83	-3.40	16.28	<=34.77	Pass
			6	21.94	-3.40	16.39	<=34.77	Pass
			13	21.94	-3.40	16.39	<=34.77	Pass
		25	0	21.89	-3.40	16.34	<=34.77	Pass
16QAM	779.5	1	0	22.18	-3.40	16.63	<=34.77	Pass
			13	22.16	-3.40	16.61	<=34.77	Pass
			24	21.98	-3.40	16.43	<=34.77	Pass
		12	0	20.94	-3.40	15.39	<=34.77	Pass
			6	21.07	-3.40	15.52	<=34.77	Pass
			13	20.93	-3.40	15.38	<=34.77	Pass
		25	0	21.01	-3.40	15.46	<=34.77	Pass
	782	1	0	22.22	-3.40	16.67	<=34.77	Pass
			13	22.19	-3.40	16.64	<=34.77	Pass
			24	22.16	-3.40	16.61	<=34.77	Pass
		12	0	20.95	-3.40	15.40	<=34.77	Pass
			6	21.05	-3.40	15.50	<=34.77	Pass
			13	20.97	-3.40	15.42	<=34.77	Pass
		25	0	20.92	-3.40	15.37	<=34.77	Pass
	784.5	1	0	21.78	-3.40	16.23	<=34.77	Pass
			13	21.90	-3.40	16.35	<=34.77	Pass
			24	21.97	-3.40	16.42	<=34.77	Pass
		12	0	20.94	-3.40	15.39	<=34.77	Pass
			6	21.06	-3.40	15.51	<=34.77	Pass
			13	21.05	-3.40	15.50	<=34.77	Pass
		25	0	21.03	-3.40	15.48	<=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	23.00	-3.40	17.45	<=34.77	Pass
			25	22.93	-3.40	17.38	<=34.77	Pass
			49	23.00	-3.40	17.45	<=34.77	Pass
		25	0	21.69	-3.40	16.14	<=34.77	Pass
			13	21.80	-3.40	16.25	<=34.77	Pass
			25	21.72	-3.40	16.17	<=34.77	Pass
		50	0	21.73	-3.40	16.18	<=34.77	Pass
			0	22.61	-3.40	17.06	<=34.77	Pass
			0	22.45	-3.40	16.90	<=34.77	Pass
16QAM	782	1	25	22.55	-3.40	17.00	<=34.77	Pass
		25	0	18.94	-3.40	13.39	<=34.77	Pass
			13	18.92	-3.40	13.37	<=34.77	Pass
			25	18.82	-3.40	13.27	<=34.77	Pass
		50	0	18.82	-3.40	13.27	<=34.77	Pass
			0	18.82	-3.40	13.27	<=34.77	Pass
			0	18.82	-3.40	13.27	<=34.77	Pass
			0	18.82	-3.40	13.27	<=34.77	Pass
			0	18.82	-3.40	13.27	<=34.77	Pass

Note1: ERP=Conducted Power+Antenna Gain-2.15

2. Frequency Stability**2.1 Test Result****2.1.1 B13_5MHz**

Band: 13 / Bandwidth: 5MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	779.5	25	0	20	3.15	-15.664	-0.0201	-2.5 to 2.5	Pass
					3.70	-24.347	-0.0312	-2.5 to 2.5	Pass
					4.26	-22.602	-0.0290	-2.5 to 2.5	Pass
				-30	3.70	-29.898	-0.0384	-2.5 to 2.5	Pass
					3.70	-25.091	-0.0322	-2.5 to 2.5	Pass
					3.70	-19.856	-0.0255	-2.5 to 2.5	Pass
				0	3.70	-4.792	-0.0061	-2.5 to 2.5	Pass
					3.70	-10.829	-0.0139	-2.5 to 2.5	Pass
					3.70	-16.737	-0.0215	-2.5 to 2.5	Pass
				40	3.70	-26.579	-0.0341	-2.5 to 2.5	Pass
					3.70	-4.234	-0.0054	-2.5 to 2.5	Pass
					3.70	-5.851	-0.0075	-2.5 to 2.5	Pass
	782	25	0	20	3.70	-16.494	-0.0211	-2.5 to 2.5	Pass
					4.26	-26.879	-0.0344	-2.5 to 2.5	Pass
					3.70	-23.303	-0.0298	-2.5 to 2.5	Pass
				-30	3.70	-18.153	-0.0232	-2.5 to 2.5	Pass
					3.70	-16.980	-0.0217	-2.5 to 2.5	Pass
					3.70	-13.189	-0.0169	-2.5 to 2.5	Pass
				0	3.70	-28.496	-0.0364	-2.5 to 2.5	Pass
					3.70	-16.079	-0.0206	-2.5 to 2.5	Pass
					3.70	-23.646	-0.0302	-2.5 to 2.5	Pass
				40	3.70	-22.531	-0.0288	-2.5 to 2.5	Pass
					3.15	-20.056	-0.0256	-2.5 to 2.5	Pass
					3.70	-28.524	-0.0364	-2.5 to 2.5	Pass
				-30	3.70	-19.183	-0.0245	-2.5 to 2.5	Pass
					3.70	-22.416	-0.0286	-2.5 to 2.5	Pass
					3.70	-22.416	-0.0286	-2.5 to 2.5	Pass

16QAM	779.5	25	0	-10	3.70	-17.352	-0.0221	-2.5 to 2.5	Pass
				0	3.70	-11.644	-0.0148	-2.5 to 2.5	Pass
				10	3.70	-28.138	-0.0359	-2.5 to 2.5	Pass
				30	3.70	-19.383	-0.0247	-2.5 to 2.5	Pass
				40	3.70	-11.716	-0.0149	-2.5 to 2.5	Pass
	782	25	0	50	3.70	-27.380	-0.0349	-2.5 to 2.5	Pass
				20	3.15	-3.533	-0.0045	-2.5 to 2.5	Pass
					3.70	24.433	0.0313	-2.5 to 2.5	Pass
					4.26	9.942	0.0128	-2.5 to 2.5	Pass
				-30	3.70	26.751	0.0343	-2.5 to 2.5	Pass
				-20	3.70	13.447	0.0173	-2.5 to 2.5	Pass
				-10	3.70	28.095	0.0360	-2.5 to 2.5	Pass
				0	3.70	7.381	0.0095	-2.5 to 2.5	Pass
				10	3.70	9.513	0.0122	-2.5 to 2.5	Pass
				30	3.70	18.997	0.0244	-2.5 to 2.5	Pass
				40	3.70	21.057	0.0270	-2.5 to 2.5	Pass
				50	3.70	11.415	0.0146	-2.5 to 2.5	Pass
				20	3.15	-20.828	-0.0266	-2.5 to 2.5	Pass
					3.70	-15.206	-0.0194	-2.5 to 2.5	Pass
					4.26	-16.580	-0.0212	-2.5 to 2.5	Pass
	784.5	25	0	-30	3.70	-21.114	-0.0270	-2.5 to 2.5	Pass
				-20	3.70	-25.206	-0.0322	-2.5 to 2.5	Pass
				-10	3.70	-17.953	-0.0230	-2.5 to 2.5	Pass
				0	3.70	-19.999	-0.0256	-2.5 to 2.5	Pass
				10	3.70	-26.622	-0.0340	-2.5 to 2.5	Pass
				30	3.70	-24.104	-0.0308	-2.5 to 2.5	Pass
				40	3.70	-26.093	-0.0334	-2.5 to 2.5	Pass
				50	3.70	-12.331	-0.0158	-2.5 to 2.5	Pass
				20	3.15	-3.033	-0.0039	-2.5 to 2.5	Pass
					3.70	20.814	0.0265	-2.5 to 2.5	Pass
					4.26	13.375	0.0170	-2.5 to 2.5	Pass
				-30	3.70	28.052	0.0358	-2.5 to 2.5	Pass
				-20	3.70	16.837	0.0215	-2.5 to 2.5	Pass
				-10	3.70	22.788	0.0290	-2.5 to 2.5	Pass
				0	3.70	6.866	0.0088	-2.5 to 2.5	Pass
				10	3.70	4.077	0.0052	-2.5 to 2.5	Pass
				30	3.70	4.578	0.0058	-2.5 to 2.5	Pass
				40	3.70	7.939	0.0101	-2.5 to 2.5	Pass
				50	3.70	11.759	0.0150	-2.5 to 2.5	Pass

2.1.2 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	3.15	-21.057	-0.0269	-2.5 to 2.5	Pass
					3.70	-19.569	-0.0250	-2.5 to 2.5	Pass
					4.26	-18.897	-0.0242	-2.5 to 2.5	Pass
				-30	3.70	-16.007	-0.0205	-2.5 to 2.5	Pass
				-20	3.70	-26.522	-0.0339	-2.5 to 2.5	Pass
				-10	3.70	-20.742	-0.0265	-2.5 to 2.5	Pass
				0	3.70	-22.430	-0.0287	-2.5 to 2.5	Pass
				10	3.70	-13.618	-0.0174	-2.5 to 2.5	Pass
				30	3.70	-26.908	-0.0344	-2.5 to 2.5	Pass
				40	3.70	-19.755	-0.0253	-2.5 to 2.5	Pass
				50	3.70	-9.627	-0.0123	-2.5 to 2.5	Pass
16QAM	782	50	0	20	3.15	-3.333	-0.0043	-2.5 to 2.5	Pass
					3.70	-5.021	-0.0064	-2.5 to 2.5	Pass

					4.26	-1.030	-0.0013	-2.5 to 2.5	Pass
				-30	3.70	-5.736	-0.0073	-2.5 to 2.5	Pass
				-20	3.70	-1.574	-0.0020	-2.5 to 2.5	Pass
				-10	3.70	-4.635	-0.0059	-2.5 to 2.5	Pass
				0	3.70	1.674	0.0021	-2.5 to 2.5	Pass
				10	3.70	0.200	0.0003	-2.5 to 2.5	Pass
				30	3.70	-2.761	-0.0035	-2.5 to 2.5	Pass
				40	3.70	-3.891	-0.0050	-2.5 to 2.5	Pass
				50	3.70	-5.178	-0.0066	-2.5 to 2.5	Pass

3. Modulation Characteristics

3.1 Test Result

3.1.1 B13_5MHz

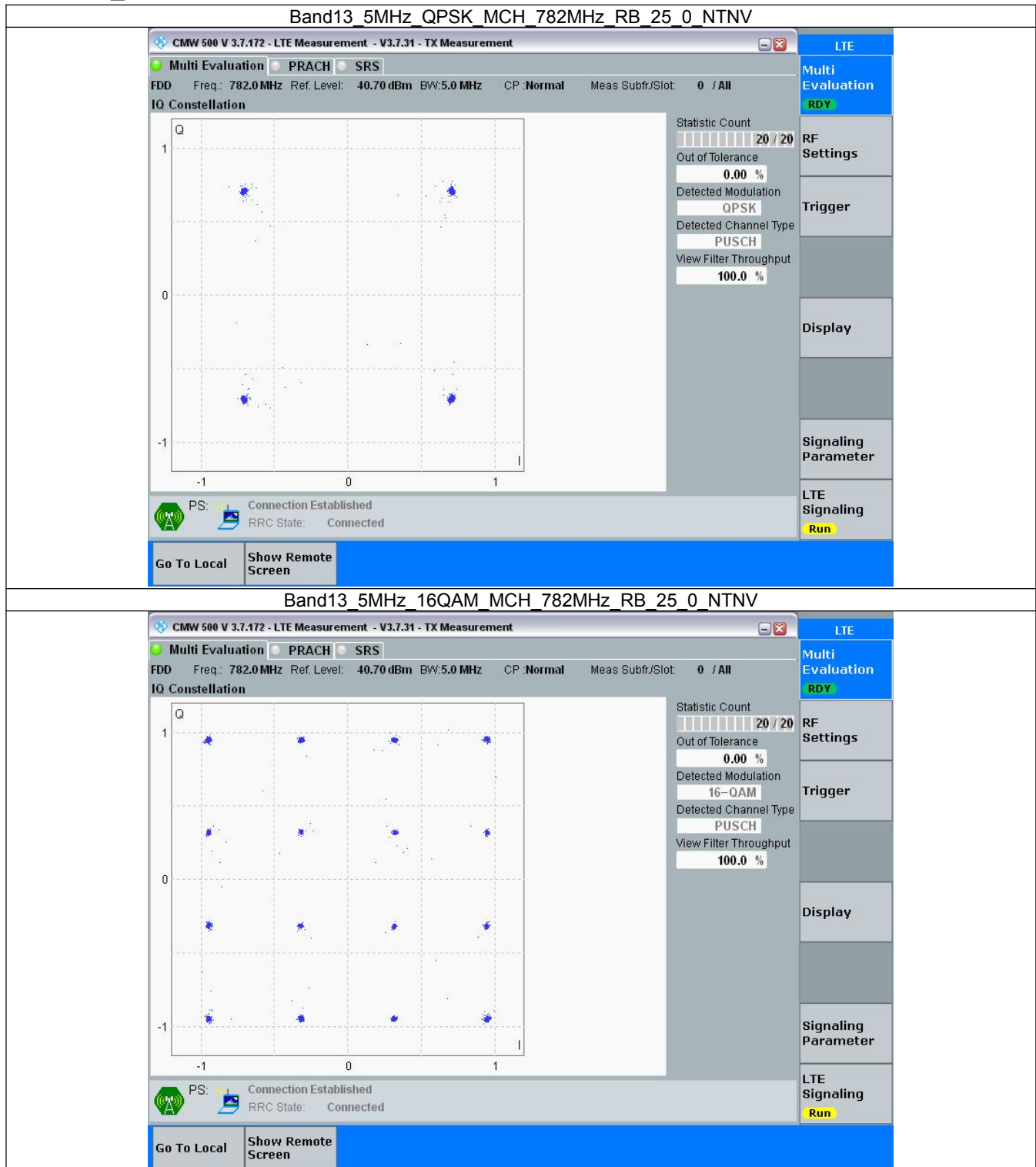
Band: 13 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Modulation Characteristics		Verdict
		Size	Offset	Result	Limit	
QPSK	782	25	0	Refer To Test Graph		Pass
16QAM	782	25	0	Refer To Test Graph		Pass

3.1.2 B13_10MHz

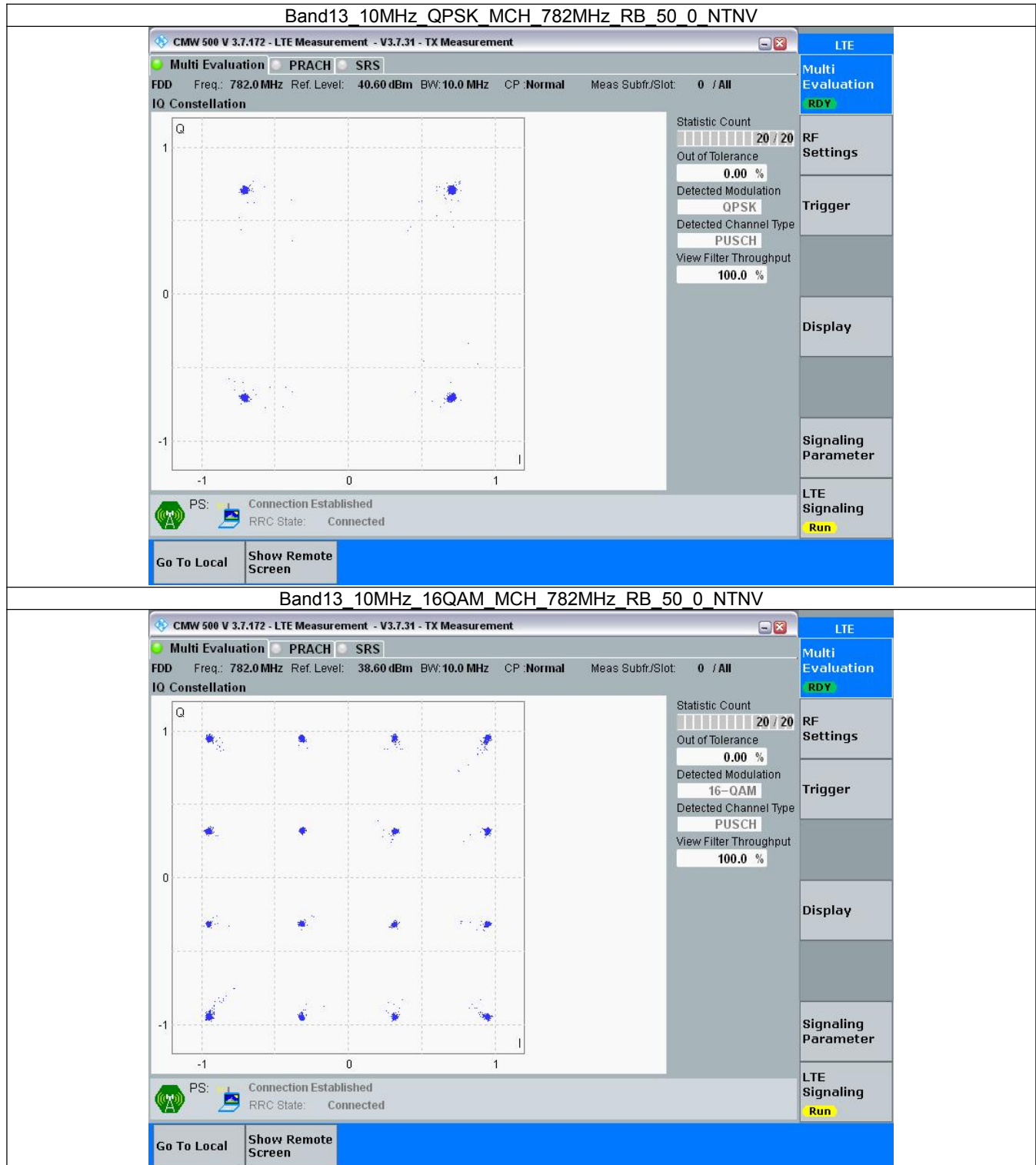
Band: 13 / Bandwidth: 10MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Modulation Characteristics		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	Refer To Test Graph		Pass
16QAM	782	50	0	Refer To Test Graph		Pass

3.2 Test Graph

3.2.1 B13_5MHz



3.2.2 B13_10MHz



4. 99% & 26dB Bandwidth

4.1 Test Result

4.1.1 Band13_OBW

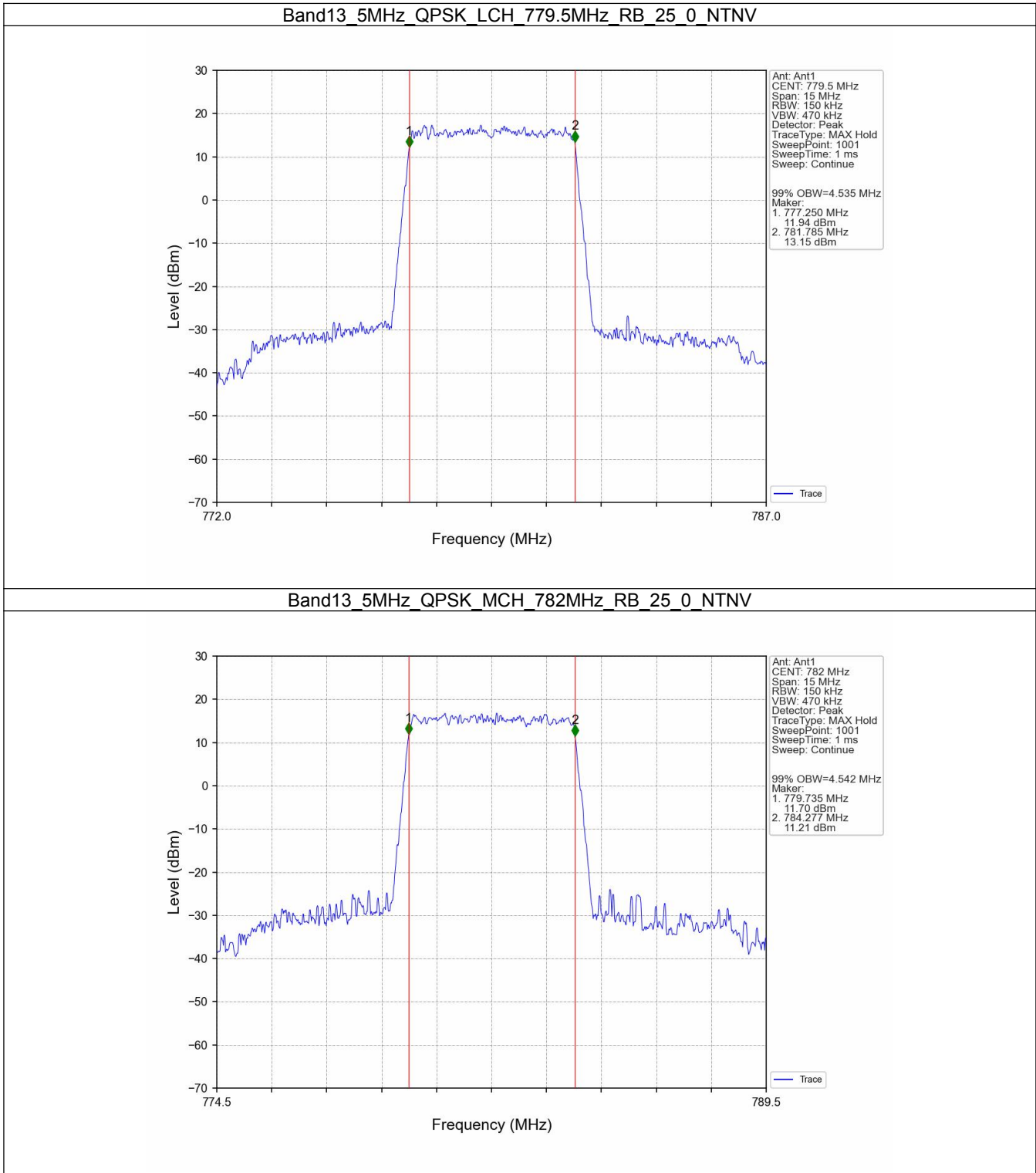
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	779.5	25	0	4.535	/	Pass
		782	25	0	4.542	/	Pass
		784.5	25	0	4.560	/	Pass
	16QAM	779.5	25	0	4.531	/	Pass
		782	25	0	4.544	/	Pass
		784.5	25	0	4.539	/	Pass
10	QPSK	782	50	0	9.057	/	Pass
	16QAM	782	50	0	9.040	/	Pass

4.1.2 Band13_XDB

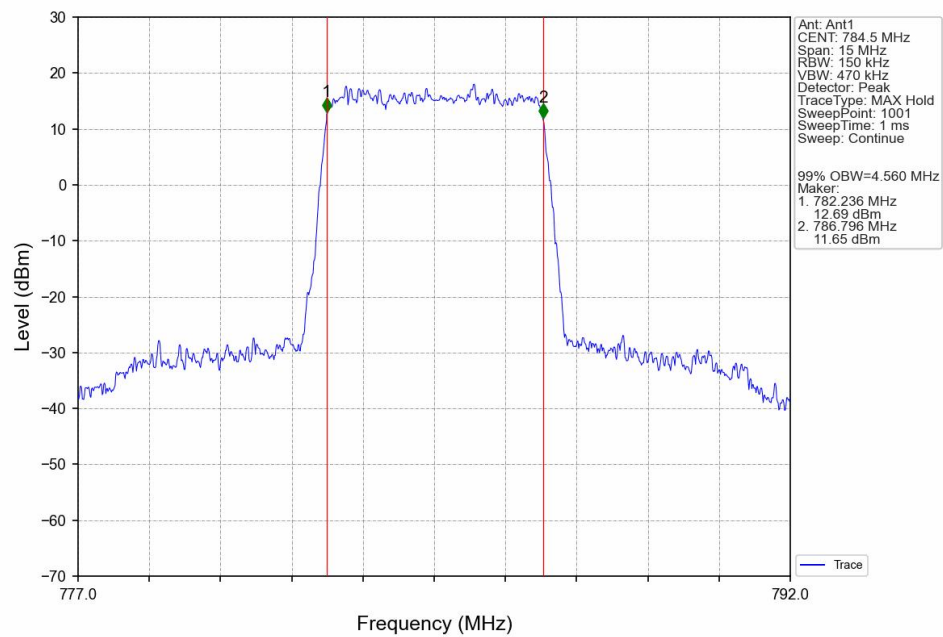
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	779.5	25	0	5.018	/	Pass
		782	25	0	5.024	/	Pass
		784.5	25	0	5.007	/	Pass
	16QAM	779.5	25	0	5.047	/	Pass
		782	25	0	5.044	/	Pass
		784.5	25	0	5.016	/	Pass
10	QPSK	782	50	0	10.007	/	Pass
	16QAM	782	50	0	9.948	/	Pass

4.2 Test Graph

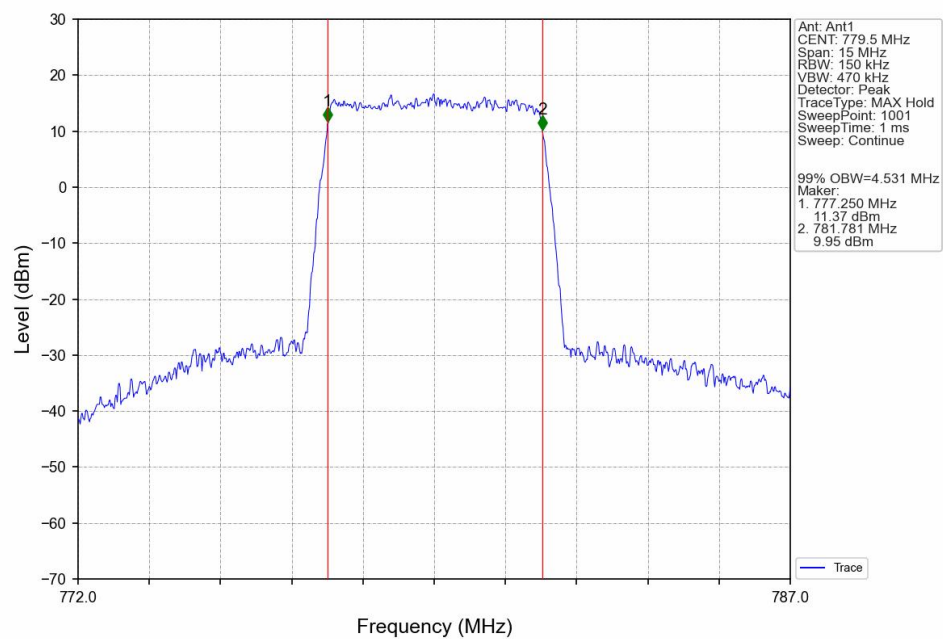
4.2.1 Band13_OBW



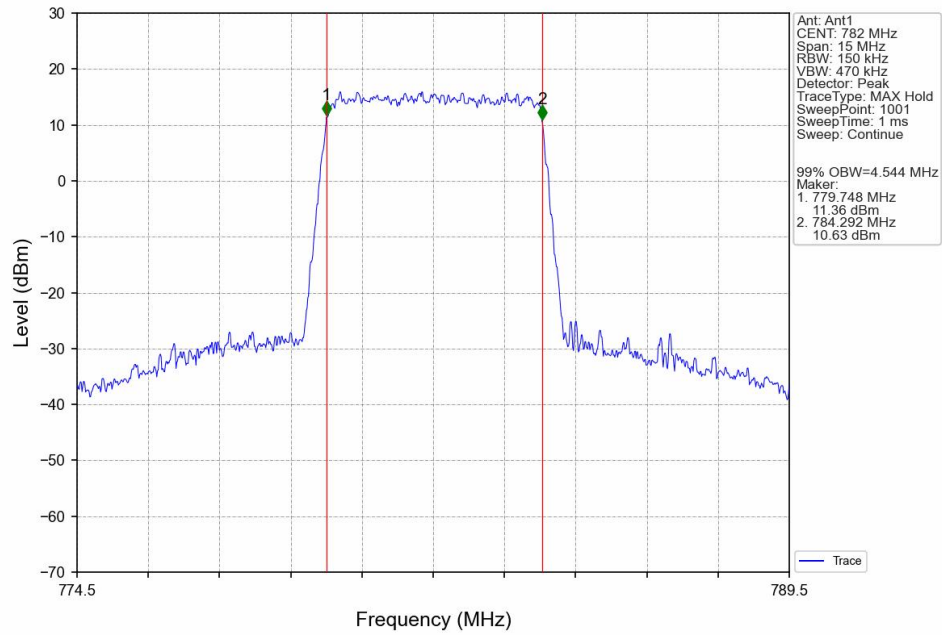
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



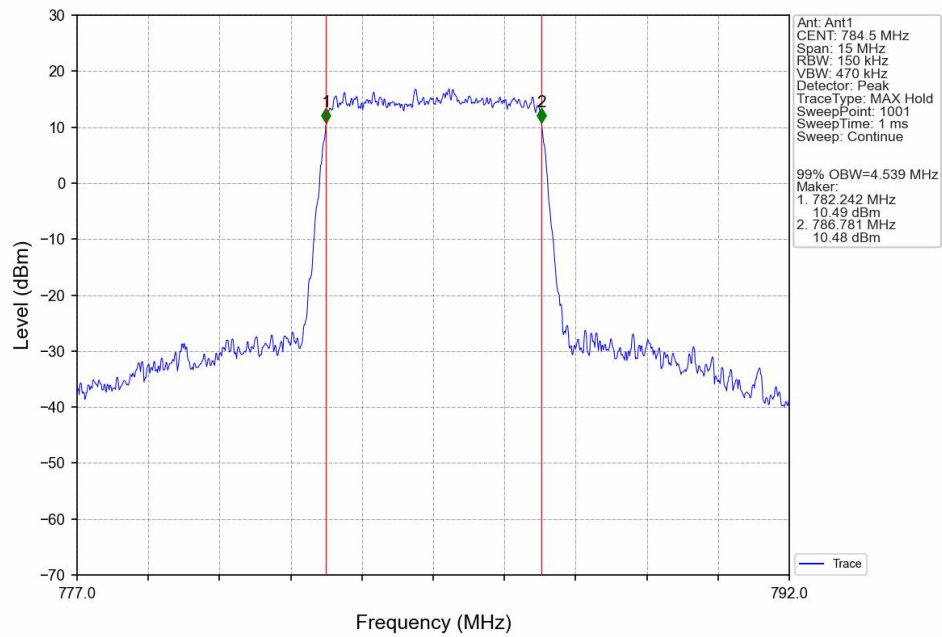
Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV



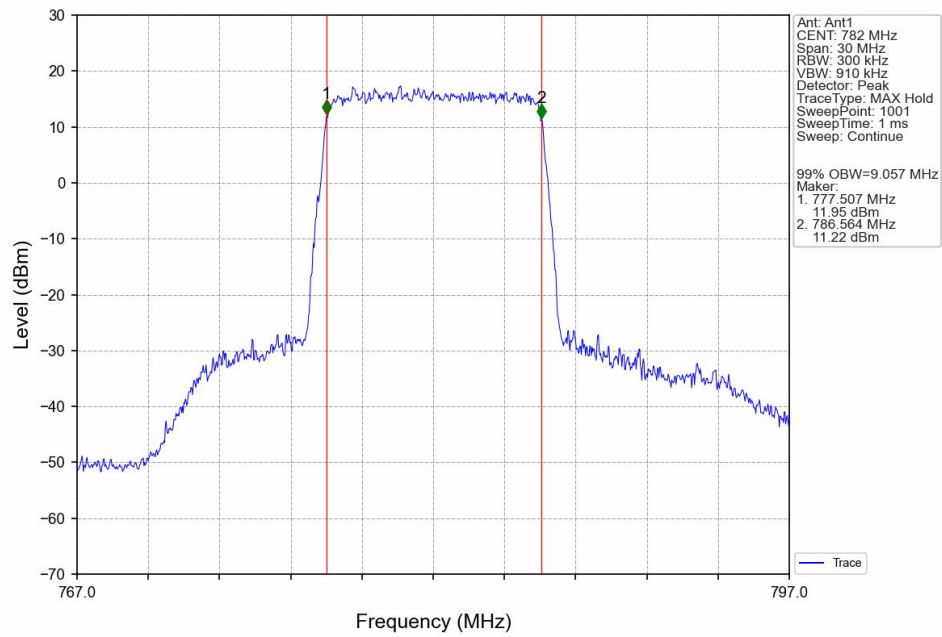
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



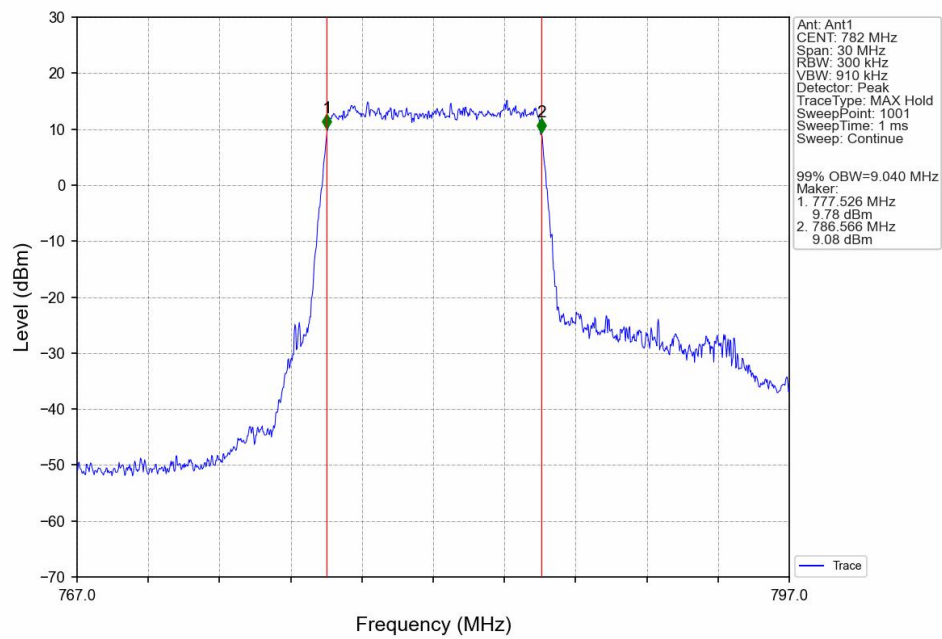
Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV



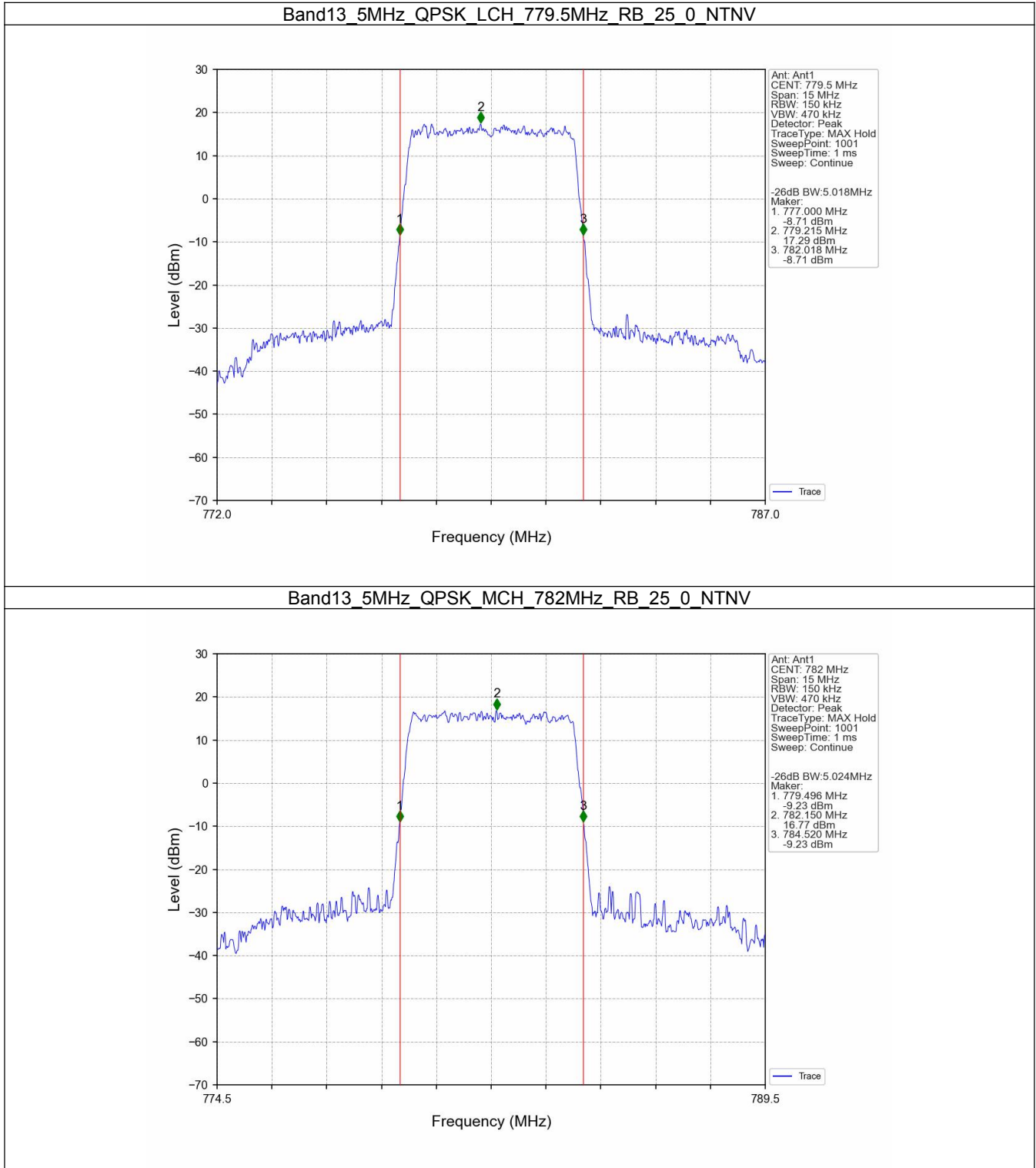
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



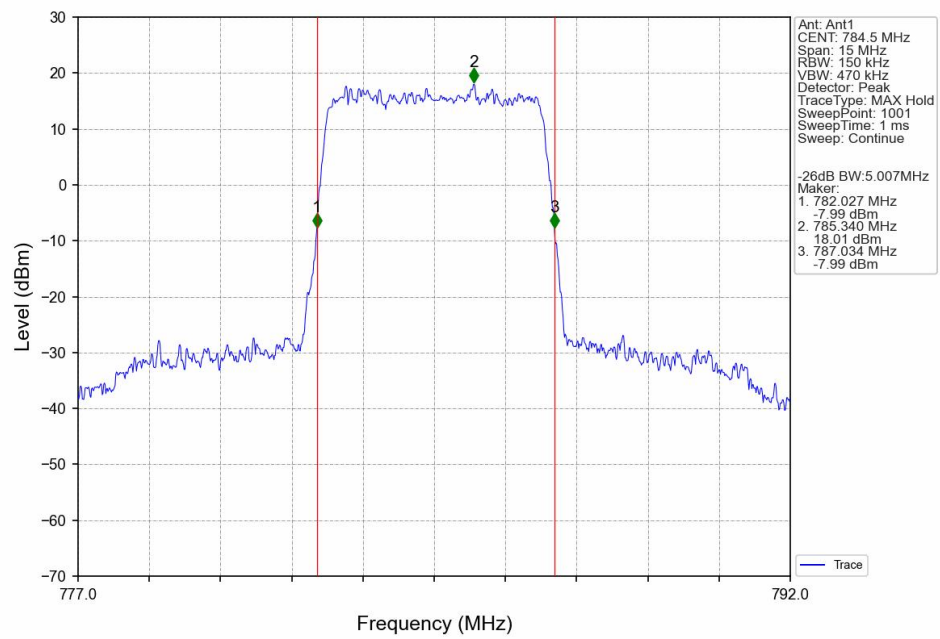
Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



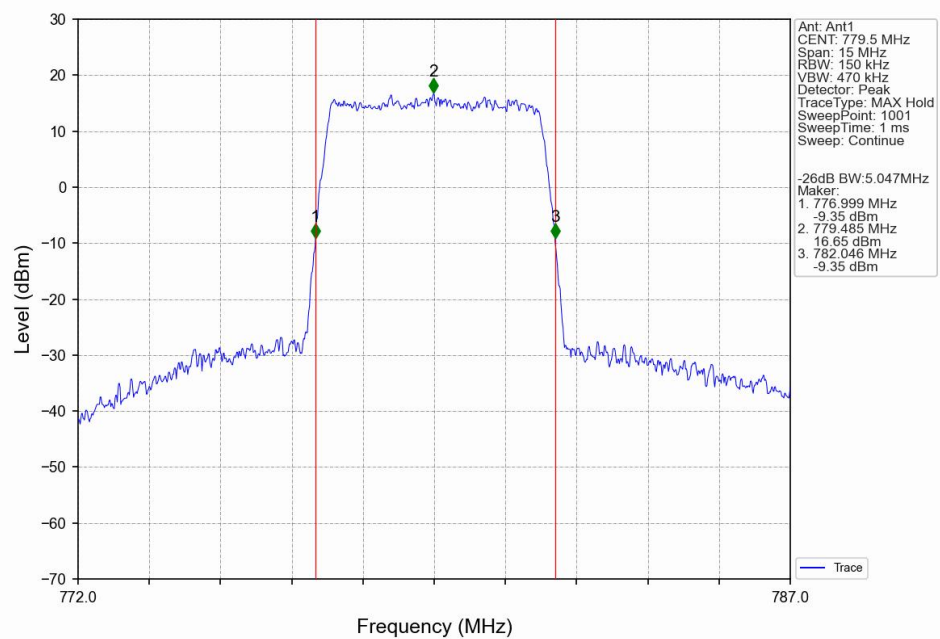
4.2.2 Band13_XDB



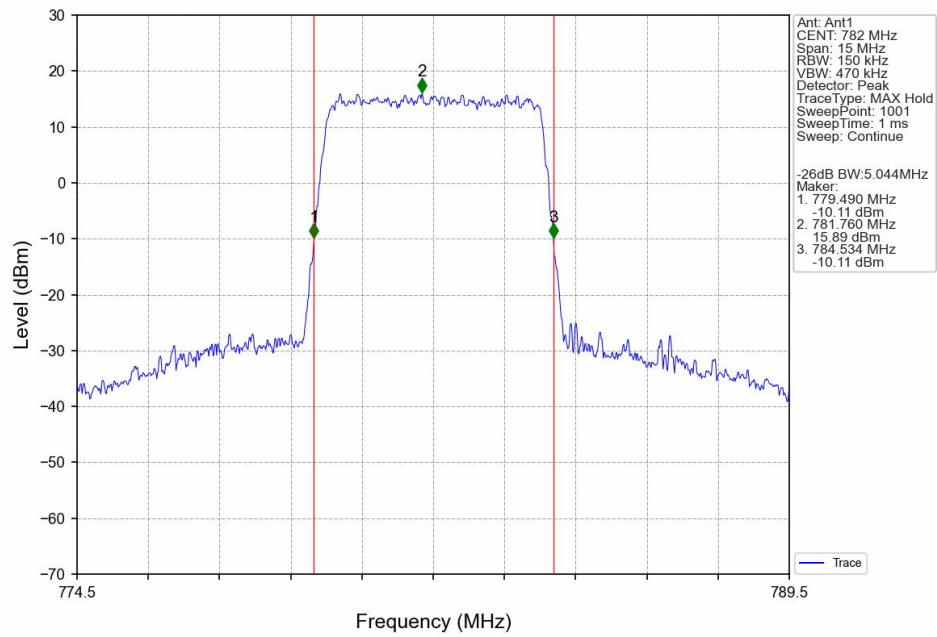
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



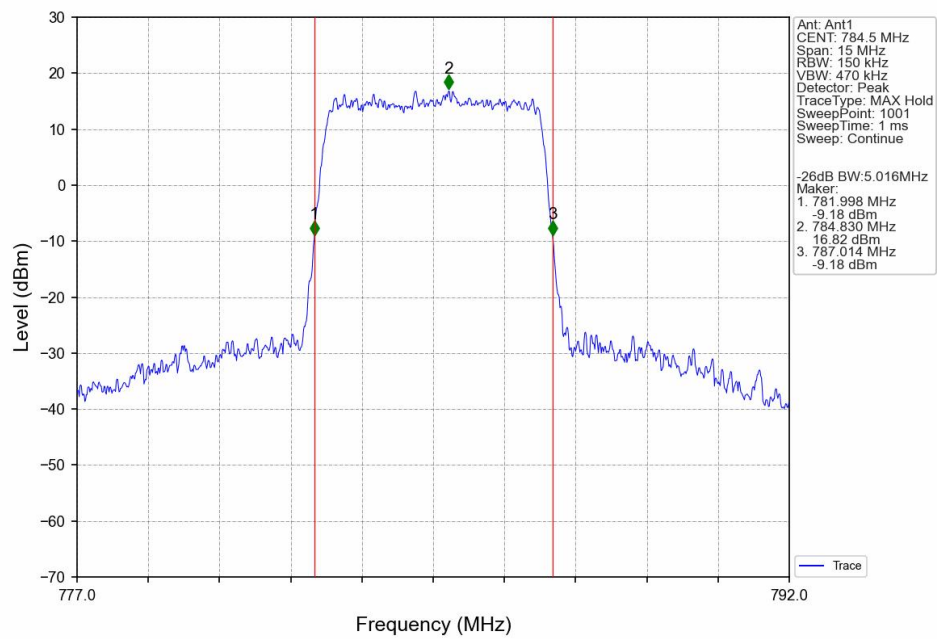
Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV



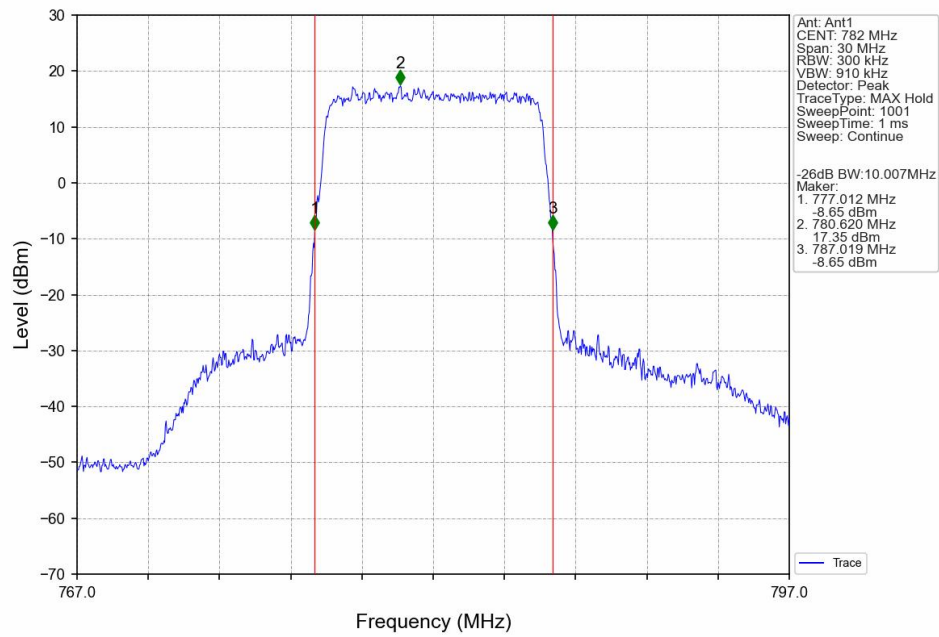
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



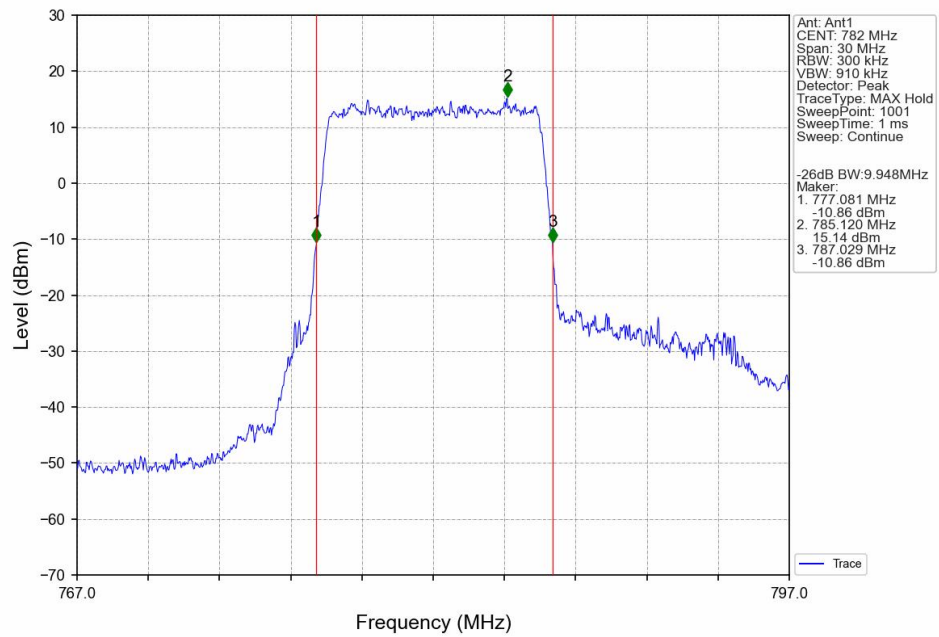
Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV



Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



5. Peak-Average Ratio

5.1 Test Result

5.1.1 B13_5MHz

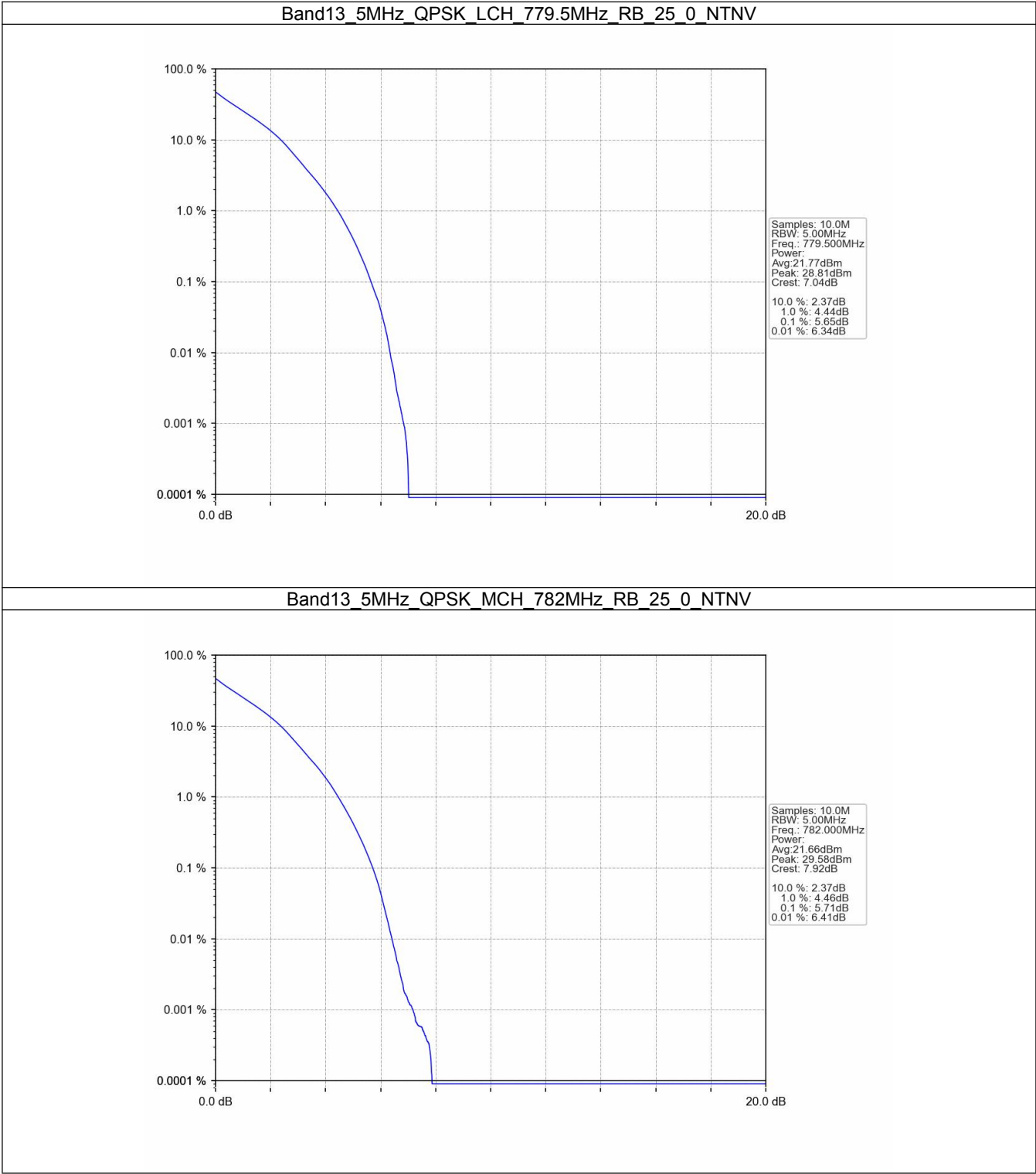
Band: 13 / Bandwidth: 5MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	779.5	25	0	5.65	<=13	Pass
	782	25	0	5.71	<=13	Pass
	784.5	25	0	5.71	<=13	Pass
16QAM	779.5	25	0	6.36	<=13	Pass
	782	25	0	7.07	<=13	Pass
	784.5	25	0	6.33	<=13	Pass

5.1.2 B13_10MHz

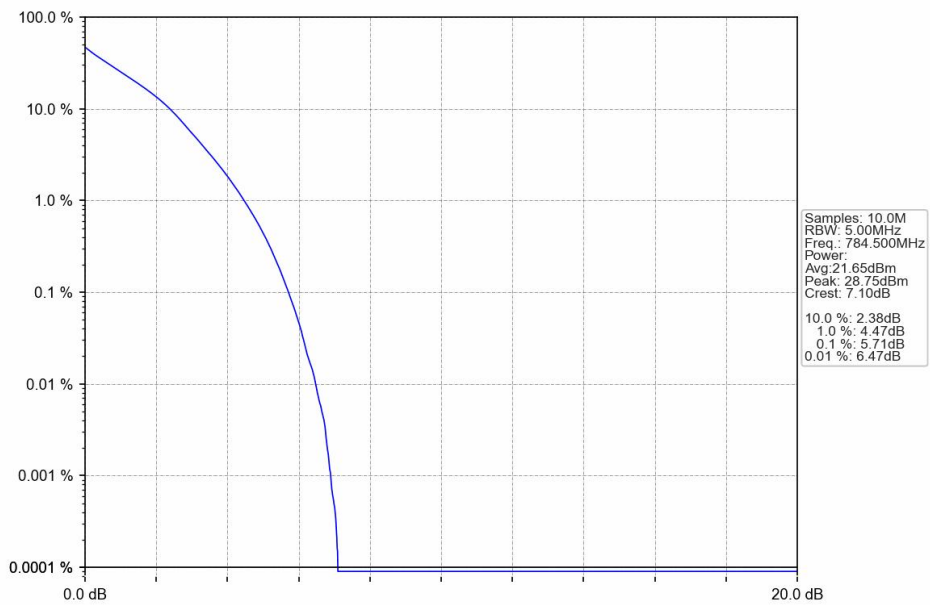
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	5.61	<=13	Pass
16QAM	782	50	0	5.85	<=13	Pass

5.2 Test Graph

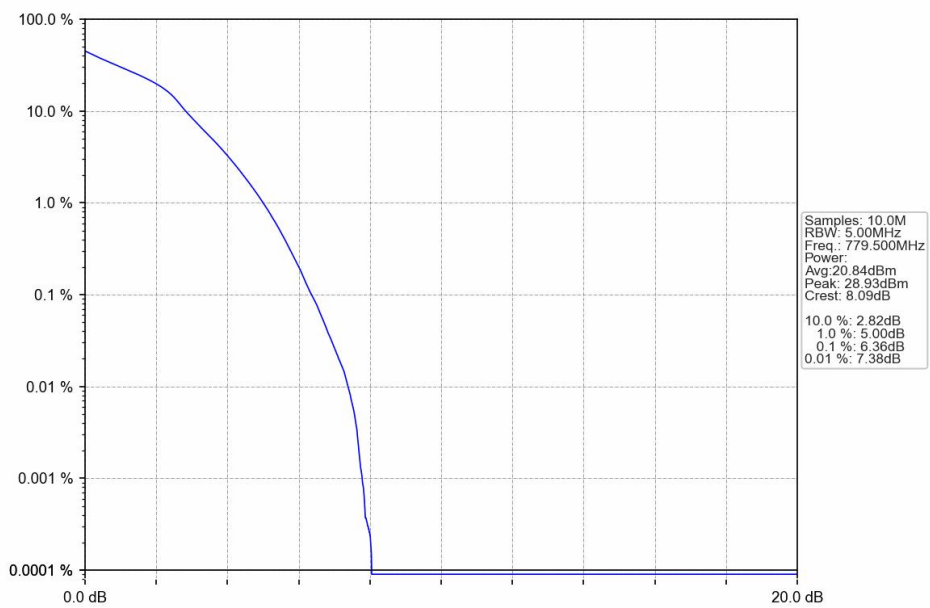
5.2.1 B13_5MHz



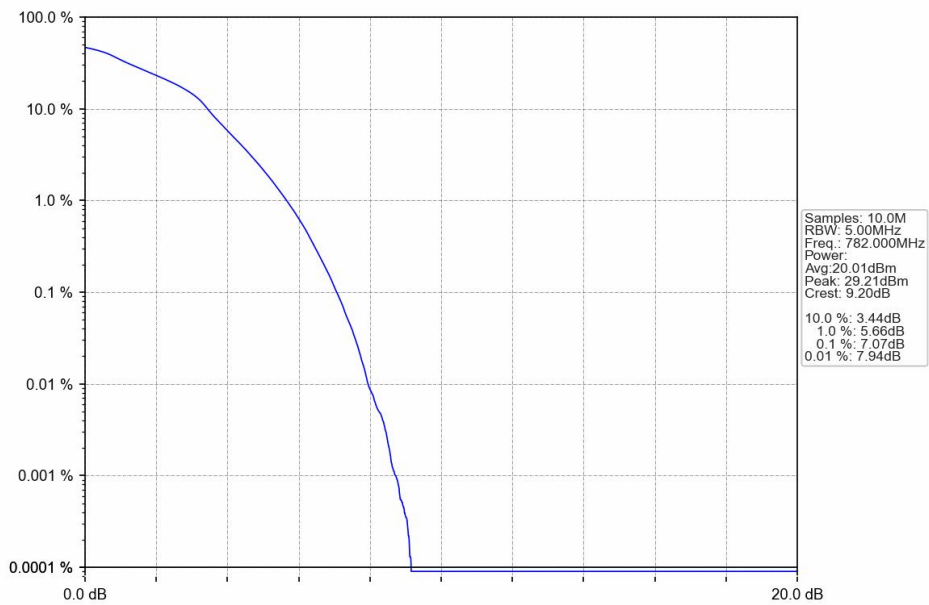
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



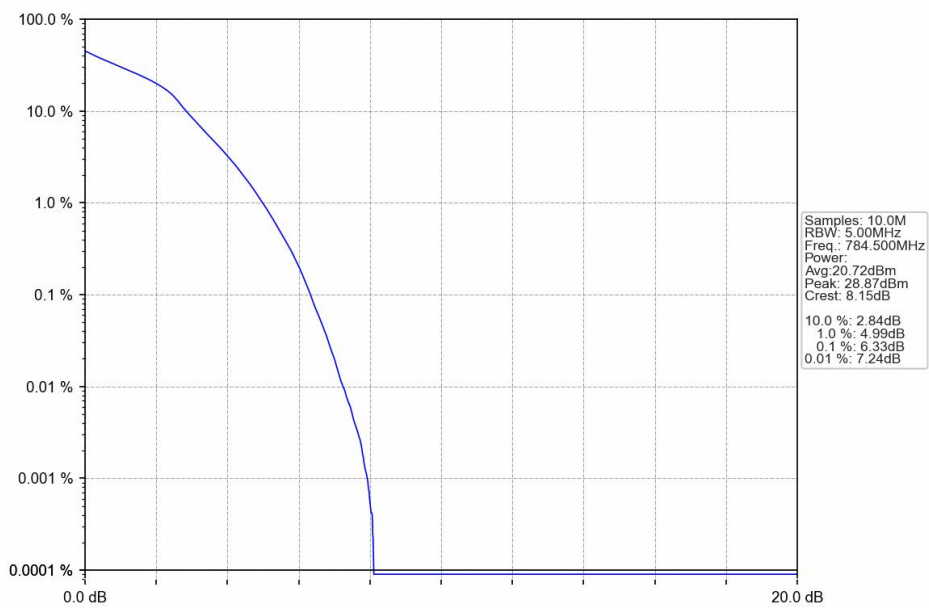
Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV



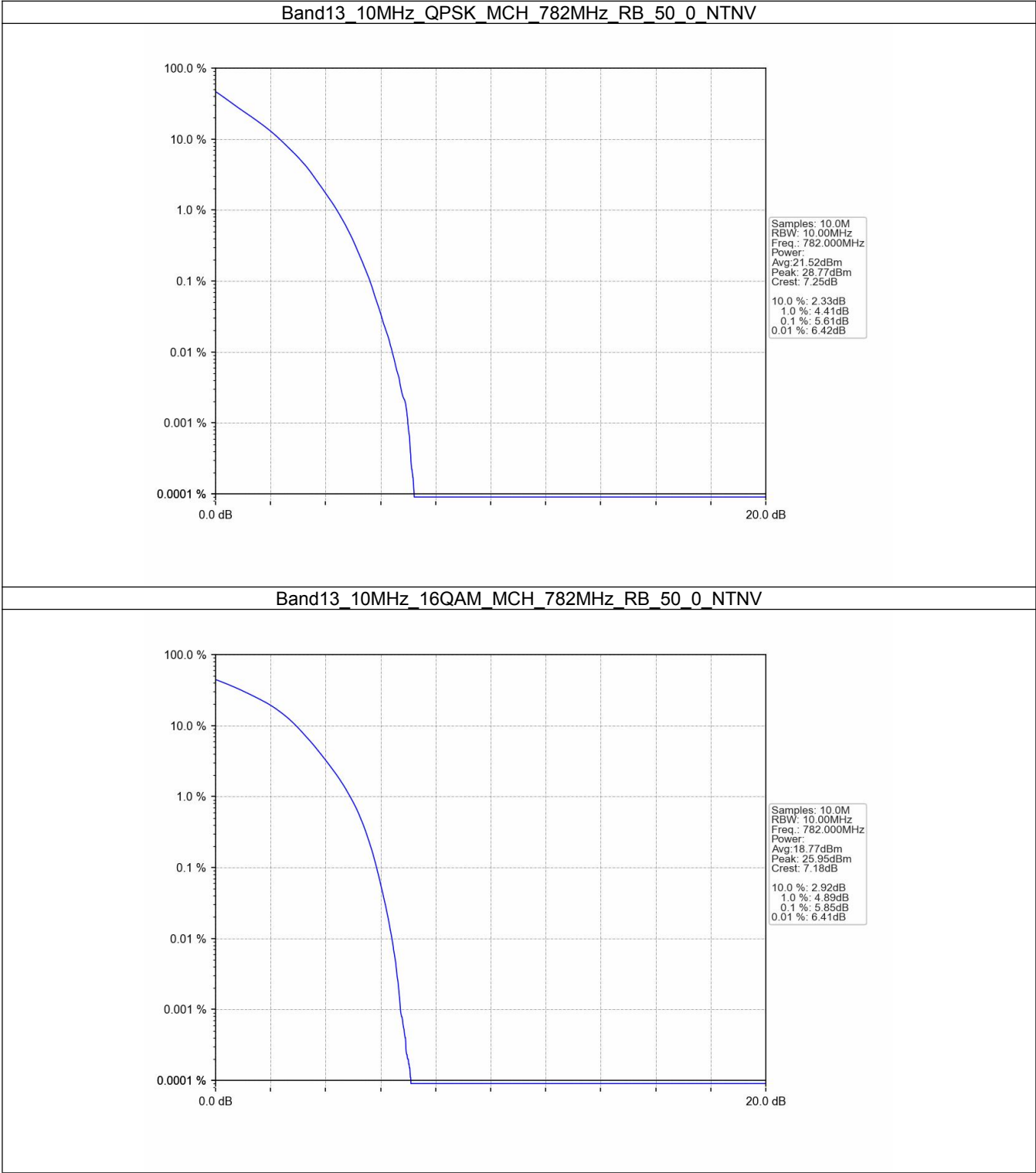
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV



5.2.2 B13_10MHz



6. Spurious Emission

6.1 Test Result

6.1.1 B13_5MHz

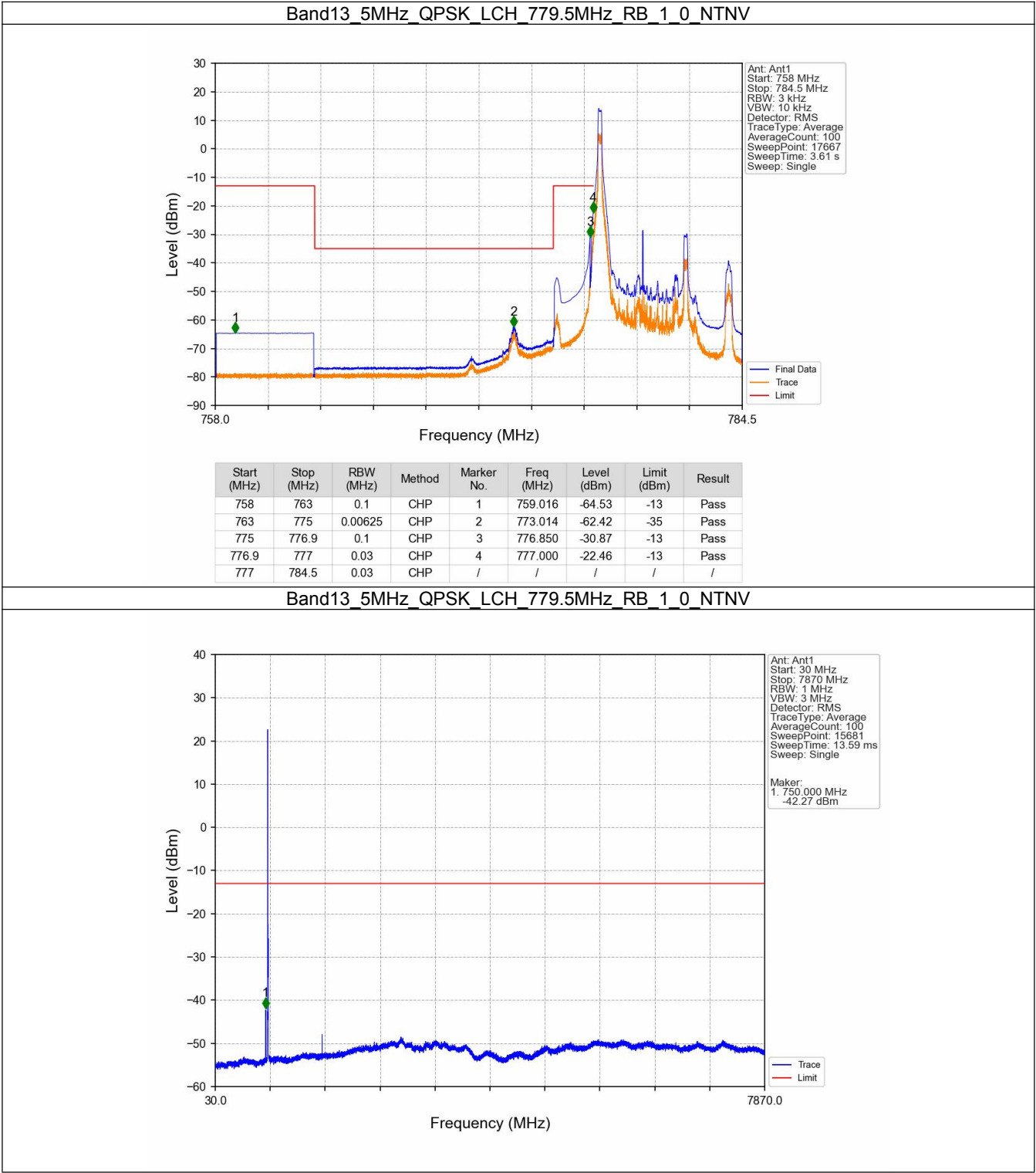
Band: 13 / Bandwidth: 5MHz / NTVN						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	779.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	782	1	0	Refer To Test Graph		Pass
	784.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
16QAM	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

6.1.2 B13_10MHz

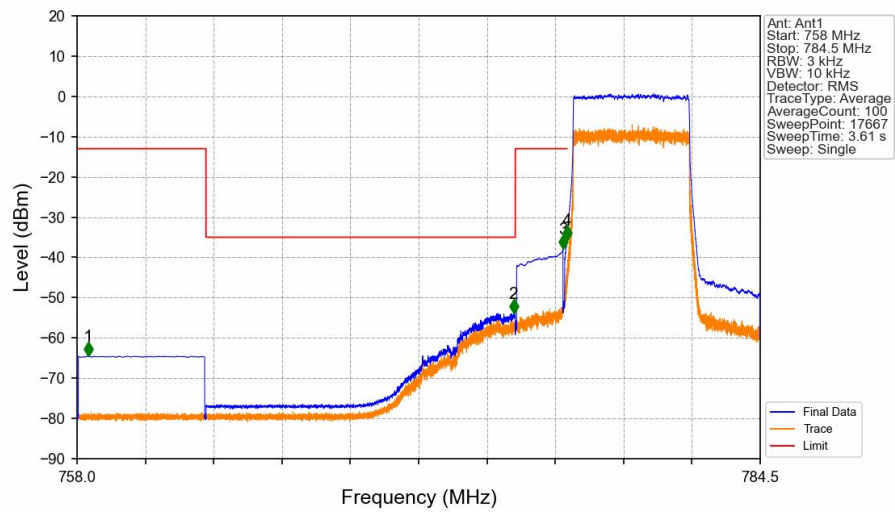
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	782	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	782	1	49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
16QAM	782	1	0	Refer To 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

6.2 Test Graph

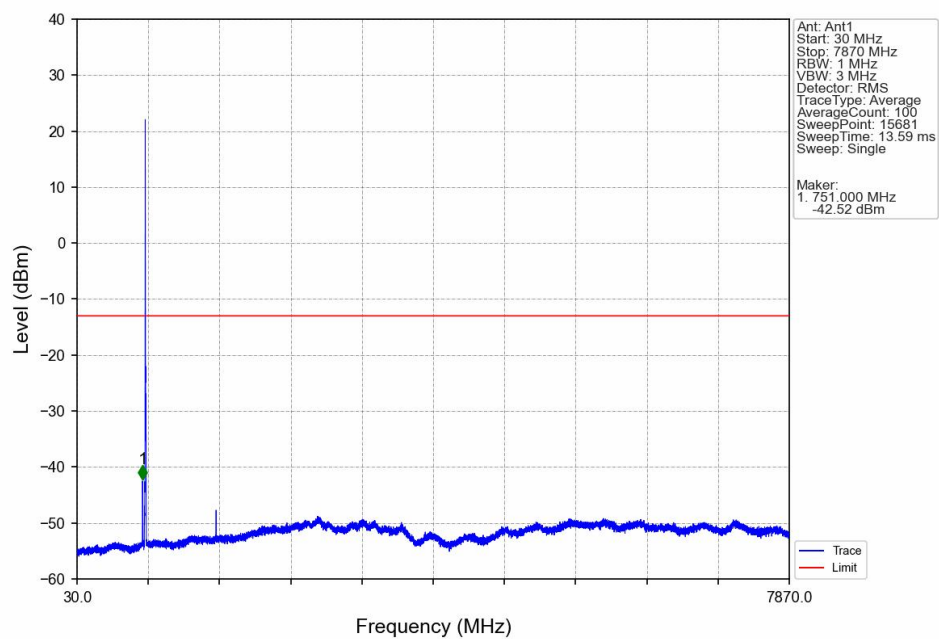
6.2.1 B13_5MHz



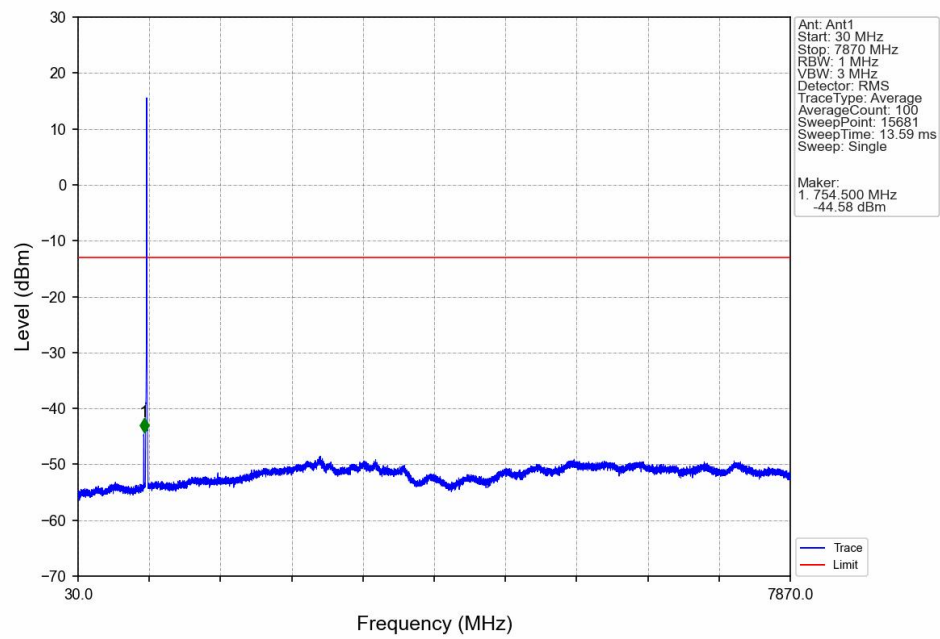
Band13_5MHz_QPSK_LCH_779.5MHz_RB_25_0_NTNV



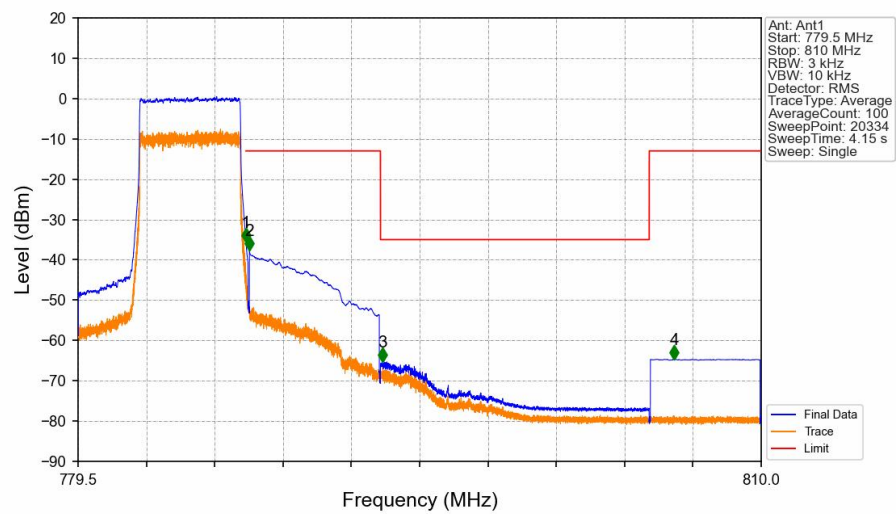
Band13_5MHz_QPSK_MCH_782MHz_RB_1_0_NTNV



Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_0_NTNV

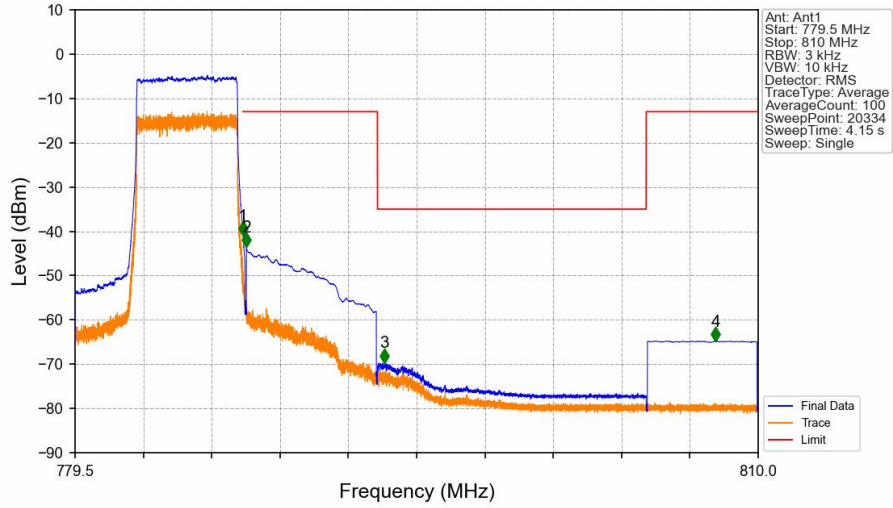


Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_24_NTNV



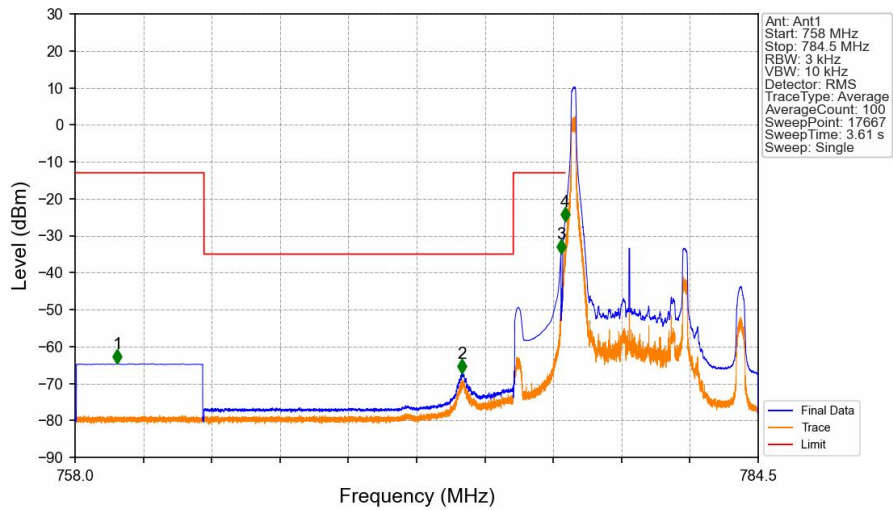
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-35.60	-13	Pass
787.1	793	0.1	CHP	2	787.150	-37.73	-13	Pass
793	805	0.00625	CHP	3	793.102	-65.22	-35	Pass
805	810	0.1	CHP	4	806.116	-64.65	-13	Pass

Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



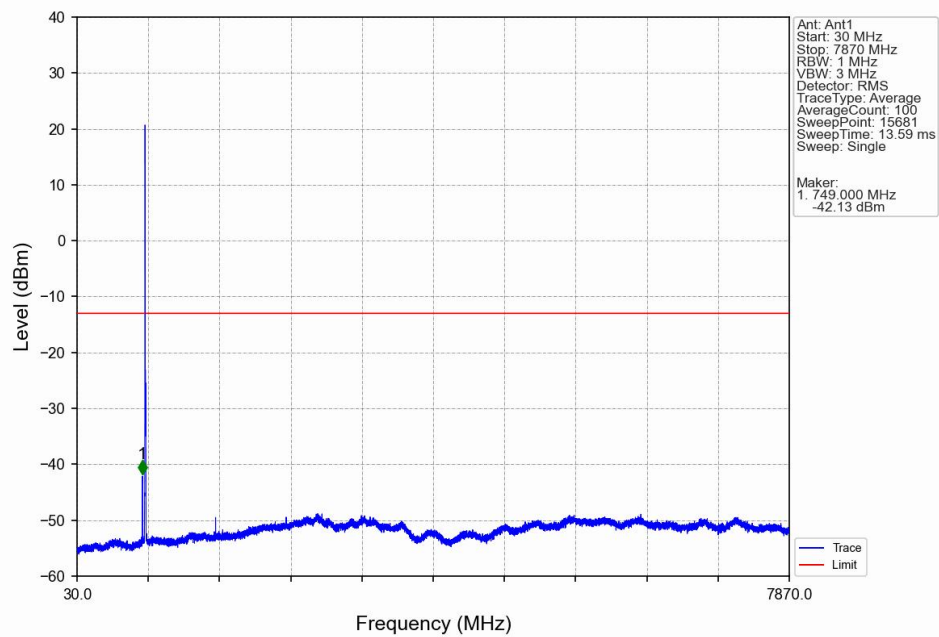
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-40.97	-13	Pass
787.1	793	0.1	CHP	2	787.150	-43.57	-13	Pass
793	805	0.00625	CHP	3	793.317	-69.64	-35	Pass
805	810	0.1	CHP	4	808.099	-64.76	-13	Pass

Band13_5MHz_16QAM_LCH_779.5MHz_RB_1_0_NTNV

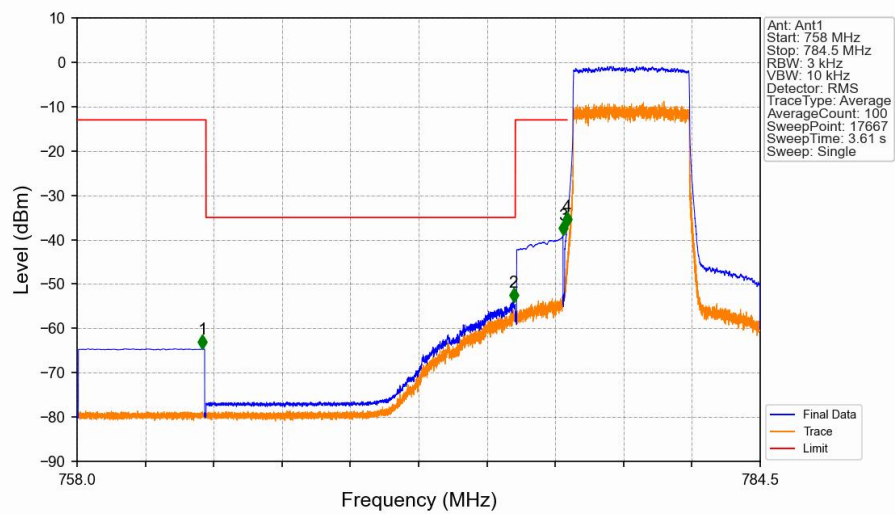


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	759.643	-64.67	-13	Pass
763	775	0.00625	CHP	2	773.011	-67.26	-35	Pass
775	776.9	0.1	CHP	3	776.850	-34.82	-13	Pass
776.9	777	0.03	CHP	4	777.000	-26.04	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

Band13_5MHz_16QAM_LCH_779.5MHz_RB_1_0_NTNV

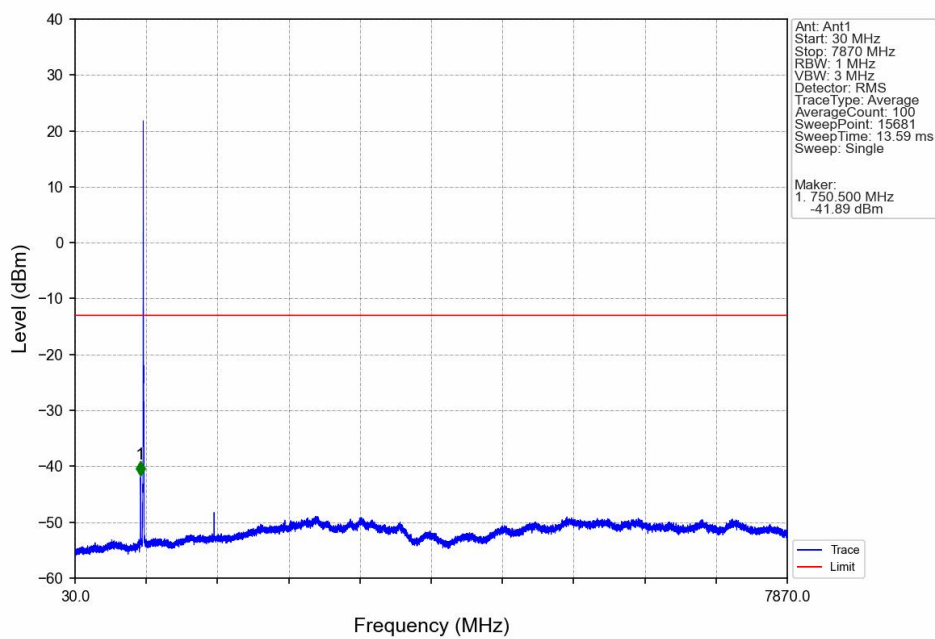


Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV

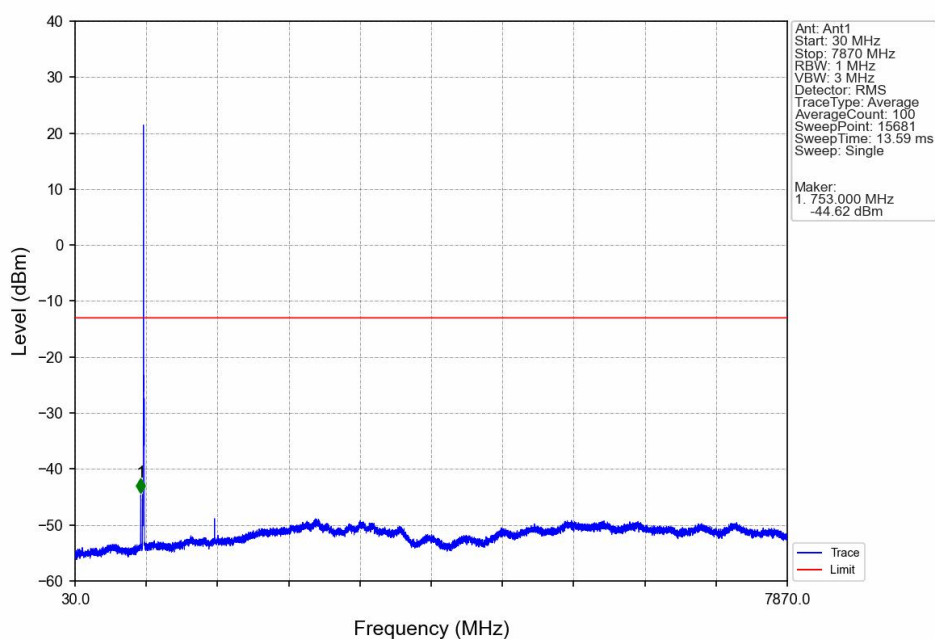


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	762.865	-64.60	-13	Pass
763	775	0.00625	CHP	2	774.933	-53.99	-35	Pass
775	776.9	0.1	CHP	3	776.850	-39.00	-13	Pass
776.9	777	0.03	CHP	4	777.000	-36.92	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

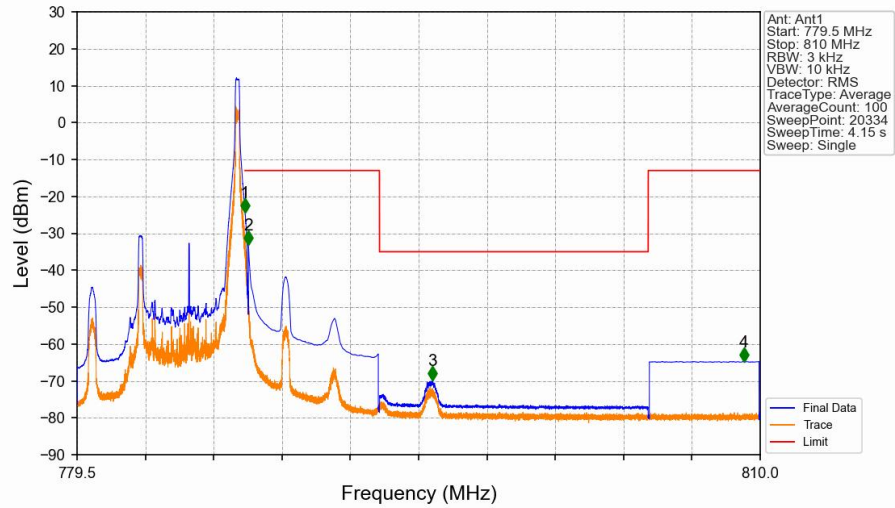
Band13_5MHz_16QAM_MCH_782MHz_RB_1_0_NTNV



Band13_5MHz_16QAM_HCH_784.5MHz_RB_1_0_NTNV

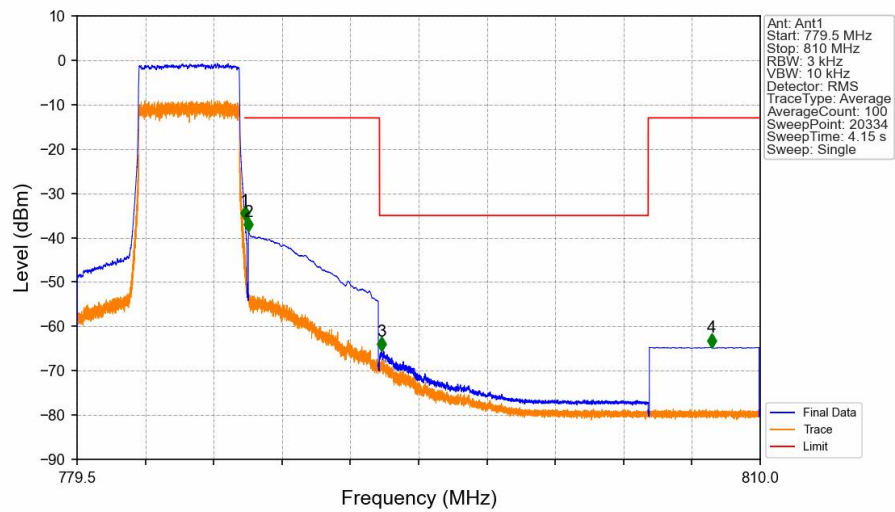


Band13_5MHz_16QAM_HCH_784.5MHz_RB_1_24_NTNV



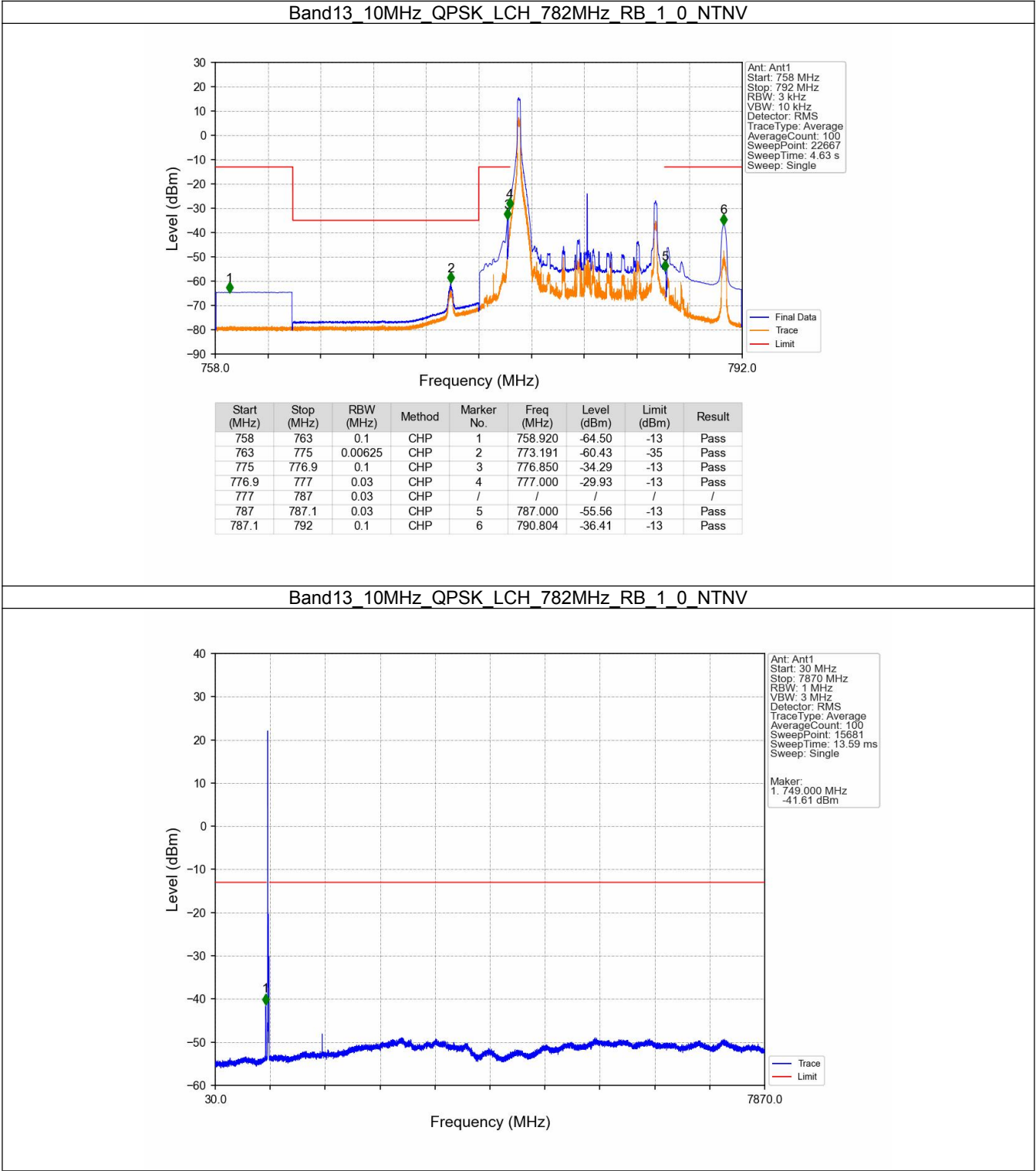
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-24.28	-13	Pass
787.1	793	0.1	CHP	2	787.150	-33.05	-13	Pass
793	805	0.00625	CHP	3	795.349	-69.85	-35	Pass
805	810	0.1	CHP	4	809.268	-64.72	-13	Pass

Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV

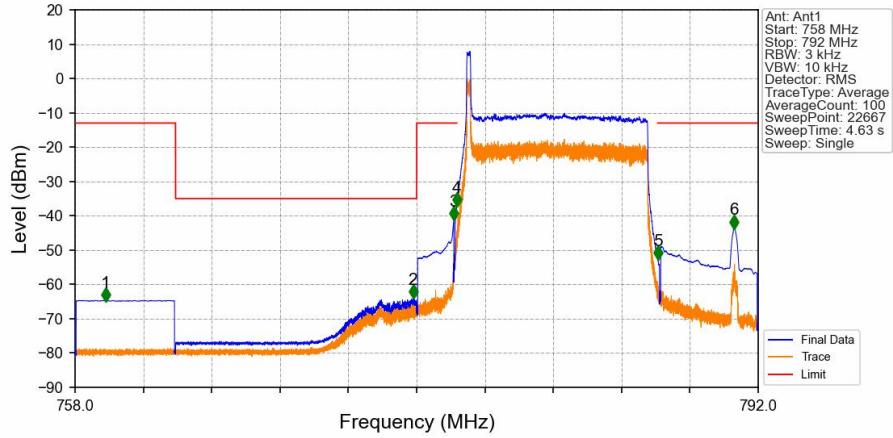


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	1	787.000	-35.97	-13	Pass
787.1	793	0.1	CHP	2	787.150	-38.58	-13	Pass
793	805	0.00625	CHP	3	793.105	-65.46	-35	Pass
805	810	0.1	CHP	4	807.826	-64.72	-13	Pass

6.2.2 B13_10MHz

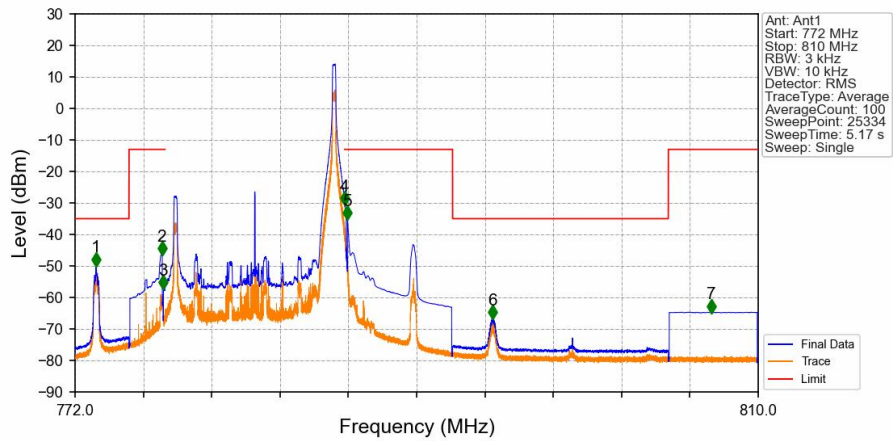


Band13_10MHz_QPSK_LCH_782MHz_RB_50_0_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	759.529	-64.70	-13	Pass
763	775	0.00625	CHP	2	774.821	-63.79	-35	Pass
775	776.9	0.1	CHP	3	776.850	-40.96	-13	Pass
776.9	777	0.03	CHP	4	777.000	-37.04	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.000	-52.49	-13	Pass
787.1	792	0.1	CHP	6	790.806	-43.44	-13	Pass

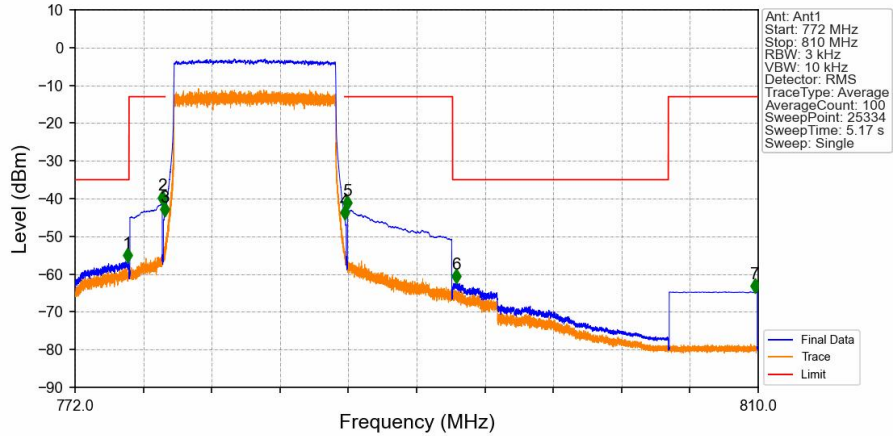
Band13_10MHz_QPSK_HCH_782MHz_RB_1_49_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	CHP	1	773.163	-49.77	-35	Pass
775	776.9	0.1	CHP	2	776.832	-46.24	-13	Pass
776.9	777	0.03	CHP	3	776.916	-57.04	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-30.48	-13	Pass
787.1	793	0.1	CHP	5	787.150	-35.01	-13	Pass
793	805	0.00625	CHP	6	795.222	-66.49	-35	Pass
805	810	0.1	CHP	7	807.385	-64.66	-13	Pass

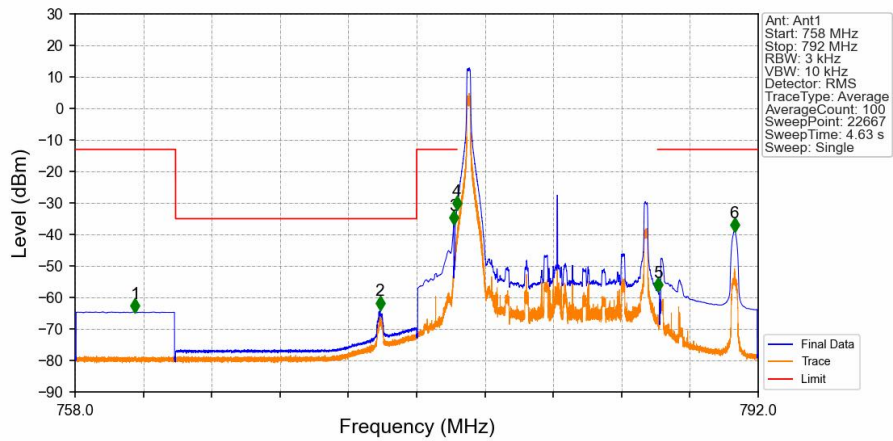
Model: MDPT3301LE

Band13_10MHz_QPSK_HCH_782MHz_RB_50_0_NTNV



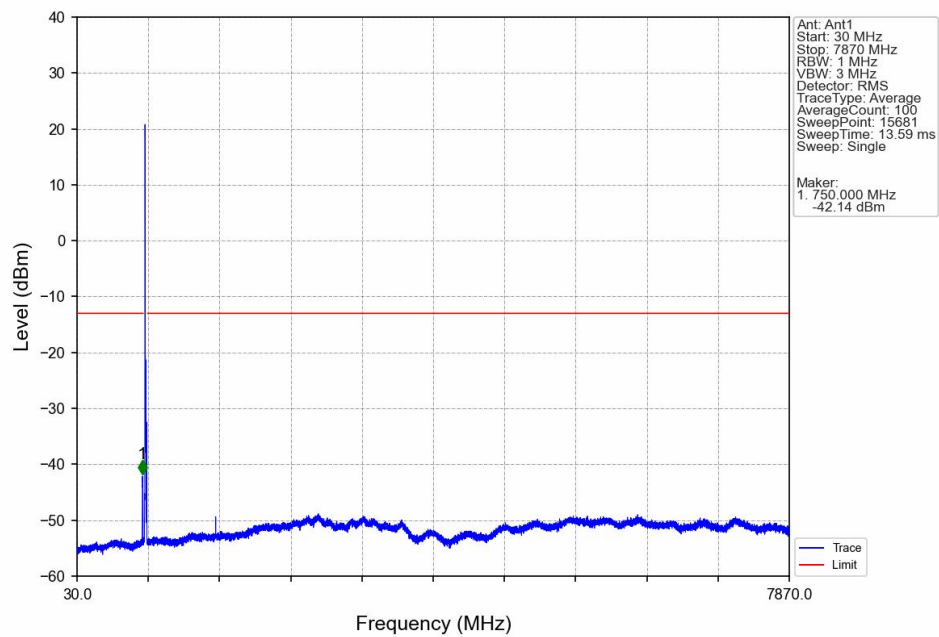
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
772	775	0.00625	CHP	1	774.898	-56.59	-35	Pass
775	776.9	0.1	CHP	2	776.850	-41.29	-13	Pass
776.9	777	0.03	CHP	3	776.982	-44.39	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.002	-45.30	-13	Pass
787.1	793	0.1	CHP	5	787.150	-42.67	-13	Pass
793	805	0.00625	CHP	6	793.182	-62.10	-35	Pass
805	810	0.1	CHP	7	809.818	-64.69	-13	Pass

Band13_10MHz_16QAM_LCH_782MHz_RB_1_0_NTNV

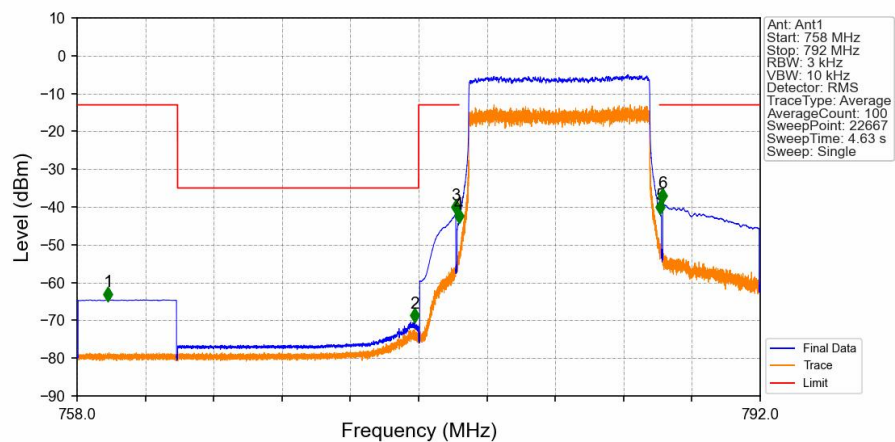


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	760.991	-64.57	-13	Pass
763	775	0.00625	CHP	2	773.177	-63.61	-35	Pass
775	776.9	0.1	CHP	3	776.850	-36.48	-13	Pass
776.9	777	0.03	CHP	4	777.000	-31.89	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.000	-57.81	-13	Pass
787.1	792	0.1	CHP	6	790.815	-38.84	-13	Pass

Band13_10MHz_16QAM_LCH_782MHz_RB_1_0_NTNV

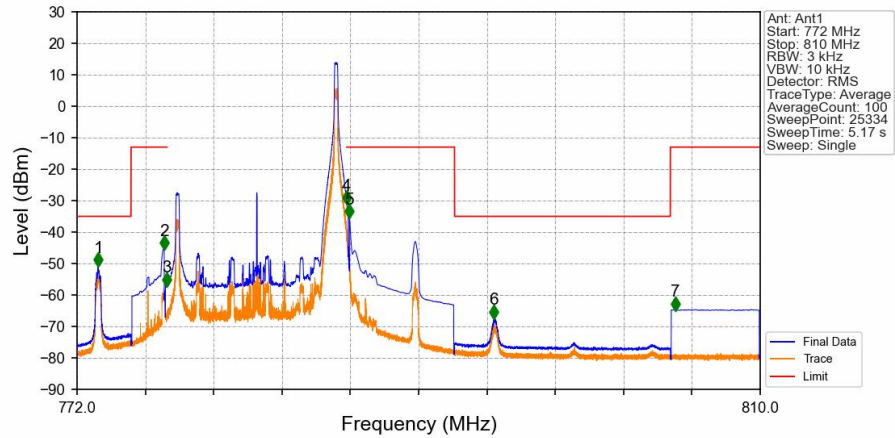


Band13_10MHz_16QAM_LCH_782MHz_RB_50_0_NTNV



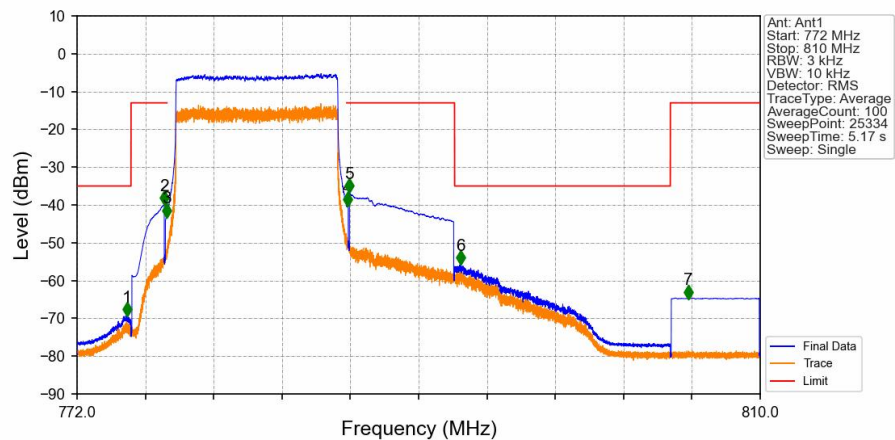
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	759.547	-64.57	-13	Pass
763	775	0.00625	CHP	2	774.806	-70.31	-35	Pass
775	776.9	0.1	CHP	3	776.848	-41.63	-13	Pass
776.9	777	0.03	CHP	4	777.000	-44.03	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.030	-41.55	-13	Pass
787.1	792	0.1	CHP	6	787.150	-38.49	-13	Pass

Band13_10MHz_16QAM_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	773.179	-50.64	-35	Pass
775	776.9	0.1	CHP	2	776.847	-45.31	-13	Pass
776.9	777	0.03	CHP	3	776.989	-56.93	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-30.87	-13	Pass
787.1	793	0.1	CHP	5	787.150	-35.24	-13	Pass
793	805	0.00625	CHP	6	795.193	-67.18	-35	Pass
805	810	0.1	CHP	7	805.263	-64.62	-13	Pass

Band13_10MHz_16QAM_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	774.775	-69.13	-35	Pass
775	776.9	0.1	CHP	2	776.848	-39.66	-13	Pass
776.9	777	0.03	CHP	3	776.983	-43.03	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.030	-40.12	-13	Pass
787.1	793	0.1	CHP	5	787.150	-36.47	-13	Pass
793	805	0.00625	CHP	6	793.335	-55.55	-35	Pass
805	810	0.1	CHP	7	805.993	-64.61	-13	Pass

7. Frequency Stability (IC)

7.1 Test Result

7.1.1 B13_5MHz

Band: 13 / Bandwidth: 5MHz / NTNV									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	OBW (FL - FH) (MHz)		Limit	Verdict
		Size	Offset			FL	FH		
QPSK	779.5	25	0	20	3.15	777.251	781.797	777 to 782	Pass
					3.70	777.253	781.792	777 to 782	Pass
					4.26	777.257	781.794	777 to 782	Pass
				-30	3.70	777.253	781.795	777 to 782	Pass
				-20	3.70	777.253	781.795	777 to 782	Pass
				-10	3.70	777.253	781.794	777 to 782	Pass
				0	3.70	777.254	781.788	777 to 782	Pass
				10	3.70	777.258	781.782	777 to 782	Pass
				30	3.70	777.259	781.788	777 to 782	Pass
				40	3.70	777.254	781.791	777 to 782	Pass
				50	3.70	777.256	781.791	777 to 782	Pass
	782	25	0	20	3.15	779.734	784.291	777 to 787	Pass
					3.70	779.743	784.291	777 to 787	Pass
					4.26	779.746	784.282	777 to 787	Pass
				-30	3.70	779.741	784.289	777 to 787	Pass
				-20	3.70	779.735	784.292	777 to 787	Pass
				-10	3.70	779.739	784.292	777 to 787	Pass
				0	3.70	779.735	784.288	777 to 787	Pass
				10	3.70	779.735	784.284	777 to 787	Pass
				30	3.70	779.732	784.284	777 to 787	Pass
				40	3.70	779.736	784.289	777 to 787	Pass
				50	3.70	779.734	784.295	777 to 787	Pass
	784.5	25	0	20	3.15	782.235	786.809	782 to 787	Pass
					3.70	782.241	786.812	782 to 787	Pass
					4.26	782.237	786.811	782 to 787	Pass
				-30	3.70	782.241	786.797	782 to 787	Pass
				-20	3.70	782.240	786.796	782 to 787	Pass
				-10	3.70	782.241	786.812	782 to 787	Pass
				0	3.70	782.234	786.803	782 to 787	Pass
				10	3.70	782.240	786.788	782 to 787	Pass
				30	3.70	782.239	786.794	782 to 787	Pass
				40	3.70	782.236	786.810	782 to 787	Pass
				50	3.70	782.245	786.807	782 to 787	Pass
16QAM	779.5	25	0	20	3.15	777.249	781.805	777 to 782	Pass
					3.70	777.246	781.804	777 to 782	Pass
					4.26	777.246	781.798	777 to 782	Pass
				-30	3.70	777.235	781.800	777 to 782	Pass
				-20	3.70	777.249	781.796	777 to 782	Pass
				-10	3.70	777.262	781.792	777 to 782	Pass
				0	3.70	777.254	781.808	777 to 782	Pass
				10	3.70	777.241	781.795	777 to 782	Pass
				30	3.70	777.257	781.792	777 to 782	Pass
				40	3.70	777.249	781.801	777 to 782	Pass
				50	3.70	777.255	781.793	777 to 782	Pass
	782	25	0	20	3.15	779.731	784.311	777 to 787	Pass
					3.70	779.746	784.291	777 to 787	Pass

					4.26	779.728	784.311	777 to 787	Pass
				-30	3.70	779.731	784.306	777 to 787	Pass
				-20	3.70	779.743	784.307	777 to 787	Pass
				-10	3.70	779.727	784.304	777 to 787	Pass
				0	3.70	779.736	784.310	777 to 787	Pass
				10	3.70	779.732	784.310	777 to 787	Pass
				30	3.70	779.737	784.299	777 to 787	Pass
				40	3.70	779.735	784.309	777 to 787	Pass
				50	3.70	779.733	784.299	777 to 787	Pass
	784.5	25	0	20	3.15	782.253	786.794	782 to 787	Pass
					3.70	782.246	786.793	782 to 787	Pass
					4.26	782.244	786.796	782 to 787	Pass
				-30	3.70	782.255	786.791	782 to 787	Pass
				-20	3.70	782.249	786.794	782 to 787	Pass
				-10	3.70	782.245	786.791	782 to 787	Pass
				0	3.70	782.248	786.790	782 to 787	Pass
				10	3.70	782.252	786.791	782 to 787	Pass
				30	3.70	782.247	786.791	782 to 787	Pass
				40	3.70	782.248	786.794	782 to 787	Pass
				50	3.70	782.252	786.795	782 to 787	Pass

7.1.2 B13_10MHz

Band: 13 / Bandwidth: 10MHz / NTNV									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	OBW (FL - FH) (MHz)		Limit	Verdict
		Size	Offset			FL	FH		
QPSK	782	50	0	20	3.15	777.519	786.560	777 to 787	Pass
					3.70	777.529	786.551	777 to 787	Pass
					4.26	777.521	786.552	777 to 787	Pass
				-30	3.70	777.523	786.590	777 to 787	Pass
				-20	3.70	777.515	786.587	777 to 787	Pass
				-10	3.70	777.531	786.572	777 to 787	Pass
				0	3.70	777.517	786.583	777 to 787	Pass
				10	3.70	777.522	786.573	777 to 787	Pass
				30	3.70	777.520	786.549	777 to 787	Pass
				40	3.70	777.523	786.583	777 to 787	Pass
				50	3.70	777.521	786.555	777 to 787	Pass
16QAM	782	50	0	20	3.15	777.521	786.578	777 to 787	Pass
					3.70	777.535	786.579	777 to 787	Pass
					4.26	777.521	786.566	777 to 787	Pass
				-30	3.70	777.529	786.567	777 to 787	Pass
				-20	3.70	777.535	786.580	777 to 787	Pass
				-10	3.70	777.533	786.555	777 to 787	Pass
				0	3.70	777.525	786.573	777 to 787	Pass
				10	3.70	777.524	786.582	777 to 787	Pass
				30	3.70	777.521	786.576	777 to 787	Pass
				40	3.70	777.539	786.582	777 to 787	Pass
				50	3.70	777.523	786.606	777 to 787	Pass

8. Radiated Spurious Emission

8.1 Test Result

LTE Band 13_Channel Bandwidth 5MHz_QPSK _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1559	-40.88	6.87	3.00	9.88	-37.87	-40.00	2.13	H
2338.5	-46.59	7.66	3.00	11.36	-42.89	-13.00	-29.89	H
1559	-44.53	6.87	3.00	9.88	-41.52	-40.00	-1.52	V
2338.5	-49.56	7.66	3.00	11.36	-45.86	-13.00	-32.86	V

LTE Band 13_Channel Bandwidth 5MHz_QPSK _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564	-40.08	6.93	3.00	10.03	-36.98	-40.00	3.02	H
2346	-47.21	7.81	3.00	11.41	-43.61	-13.00	-30.61	H
1564	-43.20	6.93	3.00	10.03	-40.10	-40.00	-0.10	V
2346	-47.34	7.81	3.00	11.41	-43.74	-13.00	-30.74	V

LTE Band 13_Channel Bandwidth 5MHz_QPSK _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1569	-41.09	7.03	3.00	9.62	-38.50	-40.00	1.50	H
2353.5	-47.08	7.96	3.00	11.46	-43.58	-13.00	-30.58	H

1569	-43.80	7.03	3.00	9.62	-41.21	-40.00	-1.21	V
2353.5	-49.41	7.96	3.00	11.46	-45.91	-13.00	-32.91	V

LTE Band 13_Channel Bandwidth 10MHz_QPSK _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564	-40.90	6.87	3.00	9.88	-37.89	-40.00	2.11	H
2346	-46.36	7.66	3.00	11.36	-42.66	-13.00	-29.66	H
1564	-44.50	6.87	3.00	9.88	-41.49	-40.00	-1.49	V
2346	-49.70	7.66	3.00	11.36	-46.00	-13.00	-33.00	V

LTE Band 13_Channel Bandwidth 10MHz_QPSK _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564	-40.01	6.93	3.00	10.03	-36.91	-40.00	3.09	H
2346	-46.96	7.81	3.00	11.41	-43.36	-13.00	-30.36	H
1564	-43.49	6.93	3.00	10.03	-40.39	-40.00	-0.39	V
2346	-47.50	7.81	3.00	11.41	-43.90	-13.00	-30.90	V

LTE Band 13_Channel Bandwidth 10MHz_QPSK _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564	-41.37	7.03	3.00	9.62	-38.78	-40.00	1.22	H

Model: MDPT3301LE

2346	-46.77	7.96	3.00	11.46	-43.27	-13.00	-30.27	H
1564	-43.79	7.03	3.00	9.62	-41.20	-40.00	-1.20	V
2346	-49.20	7.96	3.00	11.46	-45.70	-13.00	-32.70	V