

1. Effective (Isotropic) Radiated Power Output Data

1.1 B13_5MHz_ERP(ANT31)

1.1.1 Test Result

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	23.36	-6.00	15.21	<=34.77	Pass		
			13	23.36	-6.00	15.21	<=34.77	Pass		
			24	23.41	-6.00	15.26	<=34.77	Pass		
		12	0	22.24	-6.00	14.09	<=34.77	Pass		
			6	22.25	-6.00	14.10	<=34.77	Pass		
			13	22.30	-6.00	14.15	<=34.77	Pass		
		25	0	22.32	-6.00	14.17	<=34.77	Pass		
		782	1	0	23.39	-6.00	15.24	<=34.77	Pass	
				13	23.37	-6.00	15.22	<=34.77	Pass	
	24			23.42	-6.00	15.27	<=34.77	Pass		
	12		0	22.35	-6.00	14.20	<=34.77	Pass		
			6	22.36	-6.00	14.21	<=34.77	Pass		
			13	22.35	-6.00	14.20	<=34.77	Pass		
	25		0	22.39	-6.00	14.24	<=34.77	Pass		
	784.5		1	0	23.45	-6.00	15.30	<=34.77	Pass	
				13	23.43	-6.00	15.28	<=34.77	Pass	
		24		23.45	-6.00	15.30	<=34.77	Pass		
		12	0	22.35	-6.00	14.20	<=34.77	Pass		
			6	22.35	-6.00	14.20	<=34.77	Pass		
			13	22.33	-6.00	14.18	<=34.77	Pass		
		25	0	22.38	-6.00	14.23	<=34.77	Pass		
		16QAM	779.5	1	0	22.20	-6.00	14.05	<=34.77	Pass
					13	22.20	-6.00	14.05	<=34.77	Pass
	24				22.23	-6.00	14.08	<=34.77	Pass	
12	0			21.34	-6.00	13.19	<=34.77	Pass		
	6			21.33	-6.00	13.18	<=34.77	Pass		
	13			21.34	-6.00	13.19	<=34.77	Pass		
25	0			21.36	-6.00	13.21	<=34.77	Pass		
782	1			0	22.63	-6.00	14.48	<=34.77	Pass	
				13	22.63	-6.00	14.48	<=34.77	Pass	
			24	22.64	-6.00	14.49	<=34.77	Pass		
	12		0	21.41	-6.00	13.26	<=34.77	Pass		
			6	21.40	-6.00	13.25	<=34.77	Pass		
			13	21.39	-6.00	13.24	<=34.77	Pass		
	25		0	21.36	-6.00	13.21	<=34.77	Pass		
	784.5		1	0	22.49	-6.00	14.34	<=34.77	Pass	
				13	22.48	-6.00	14.33	<=34.77	Pass	
24				22.49	-6.00	14.34	<=34.77	Pass		
12			0	21.36	-6.00	13.21	<=34.77	Pass		
			6	21.36	-6.00	13.21	<=34.77	Pass		
			13	21.35	-6.00	13.20	<=34.77	Pass		
25			0	21.39	-6.00	13.24	<=34.77	Pass		
64QAM			779.5	1	0	21.33	-6.00	13.18	<=34.77	Pass
					13	21.30	-6.00	13.15	<=34.77	Pass
	24				21.33	-6.00	13.18	<=34.77	Pass	
	12	0		20.29	-6.00	12.14	<=34.77	Pass		
		6		20.28	-6.00	12.13	<=34.77	Pass		
		13		20.24	-6.00	12.09	<=34.77	Pass		
	25	0		20.31	-6.00	12.16	<=34.77	Pass		

	782	1	0	21.51	-6.00	13.36	<=34.77	Pass	
			13	21.50	-6.00	13.35	<=34.77	Pass	
			24	21.52	-6.00	13.37	<=34.77	Pass	
		12	0	20.36	-6.00	12.21	<=34.77	Pass	
			6	20.36	-6.00	12.21	<=34.77	Pass	
			13	20.35	-6.00	12.20	<=34.77	Pass	
		25	0	20.38	-6.00	12.23	<=34.77	Pass	
		784.5	1	0	21.59	-6.00	13.44	<=34.77	Pass
				13	21.55	-6.00	13.40	<=34.77	Pass
	24			21.56	-6.00	13.41	<=34.77	Pass	
	12		0	20.49	-6.00	12.34	<=34.77	Pass	
			6	20.47	-6.00	12.32	<=34.77	Pass	
			13	20.42	-6.00	12.27	<=34.77	Pass	
	25	0	20.33	-6.00	12.18	<=34.77	Pass		

Note1: ERP=Conducted Power+Antenna Gain-2.15

1.2 B13_10MHz_ERP

1.2.1 Test Result

Band: 13 / Bandwidth: 10MHz / NTN								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	782	1	0	23.41	-6.00	15.26	<=34.77	Pass
			25	23.39	-6.00	15.24	<=34.77	Pass
			49	23.38	-6.00	15.23	<=34.77	Pass
		25	0	22.37	-6.00	14.22	<=34.77	Pass
			13	22.38	-6.00	14.23	<=34.77	Pass
			25	22.37	-6.00	14.22	<=34.77	Pass
		50	0	22.36	-6.00	14.21	<=34.77	Pass
16QAM	782	1	0	22.91	-6.00	14.76	<=34.77	Pass
			25	22.94	-6.00	14.79	<=34.77	Pass
			49	22.91	-6.00	14.76	<=34.77	Pass
		25	0	21.40	-6.00	13.25	<=34.77	Pass
			13	21.41	-6.00	13.26	<=34.77	Pass
			25	21.40	-6.00	13.25	<=34.77	Pass
		50	0	21.35	-6.00	13.20	<=34.77	Pass
64QAM	782	1	0	21.59	-6.00	13.44	<=34.77	Pass
			25	21.60	-6.00	13.45	<=34.77	Pass
			49	21.59	-6.00	13.44	<=34.77	Pass
		25	0	20.37	-6.00	12.22	<=34.77	Pass
			13	20.37	-6.00	12.22	<=34.77	Pass
			25	20.36	-6.00	12.21	<=34.77	Pass
		50	0	20.36	-6.00	12.21	<=34.77	Pass

Note1: ERP=Conducted Power+Antenna Gain-2.15

2. Frequency Stability

2.1 B13_10MHz

2.1.1 Test Result

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	3.7	-3.300	-0.0042	/	Pass
					3.91	1.200	0.0015	/	Pass
					4.4	2.300	0.0029	/	Pass
				-30	3.91	-2.300	-0.0029	/	Pass
				-20	3.91	-0.800	-0.0010	/	Pass
				-10	3.91	-2.300	-0.0029	/	Pass
				0	3.91	-2.300	-0.0029	/	Pass
				10	3.91	-6.400	-0.0082	/	Pass
				30	3.91	-4.600	-0.0059	/	Pass
				40	3.91	-1.300	-0.0017	/	Pass
				50	3.91	0.100	0.0001	/	Pass

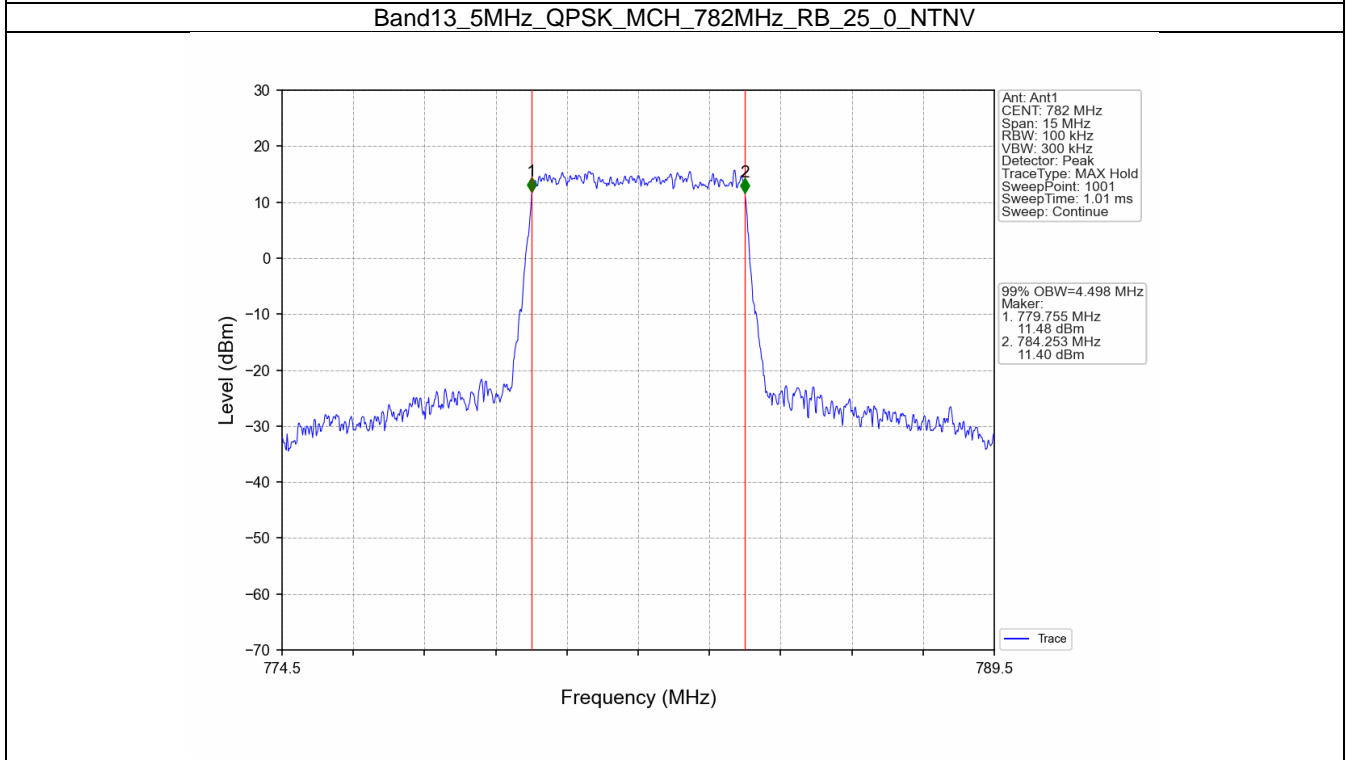
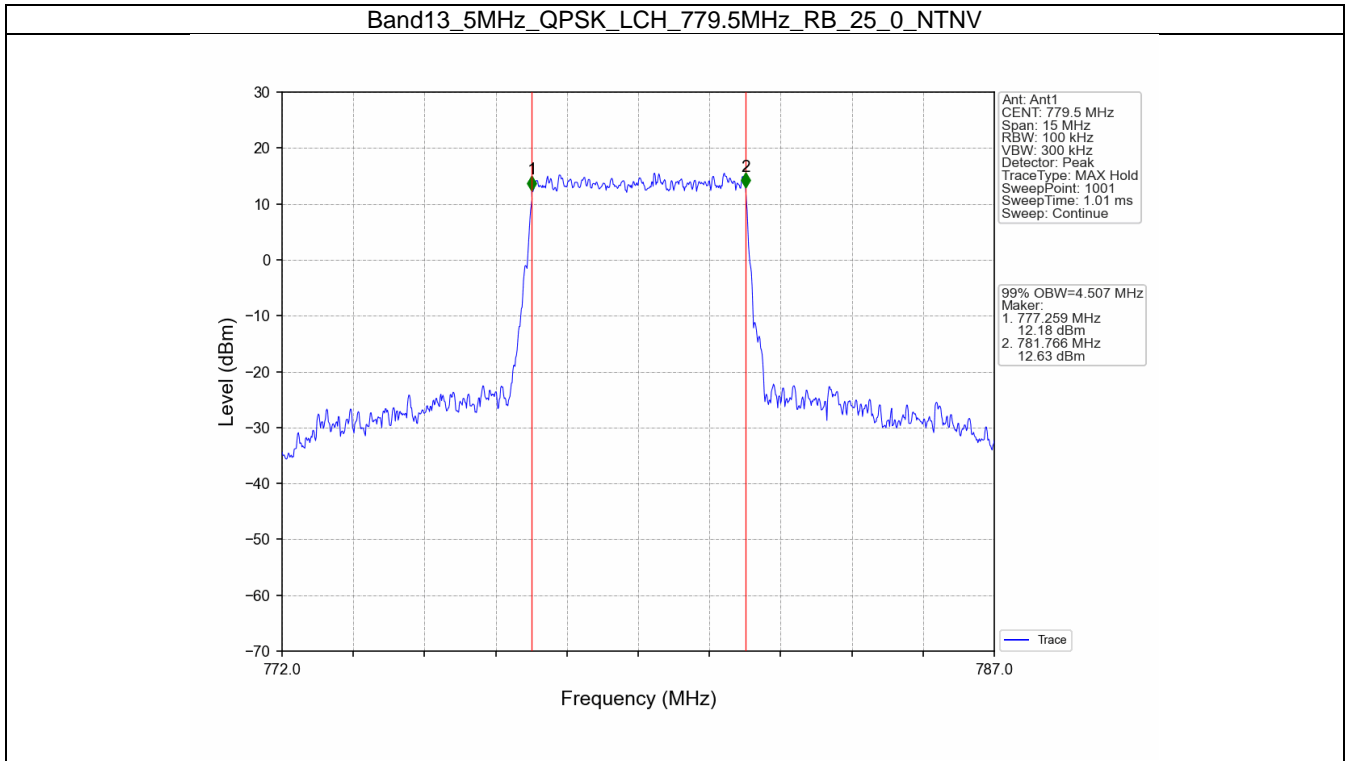
3. 99% & 26dB Bandwidth

3.1 Band13_OBW

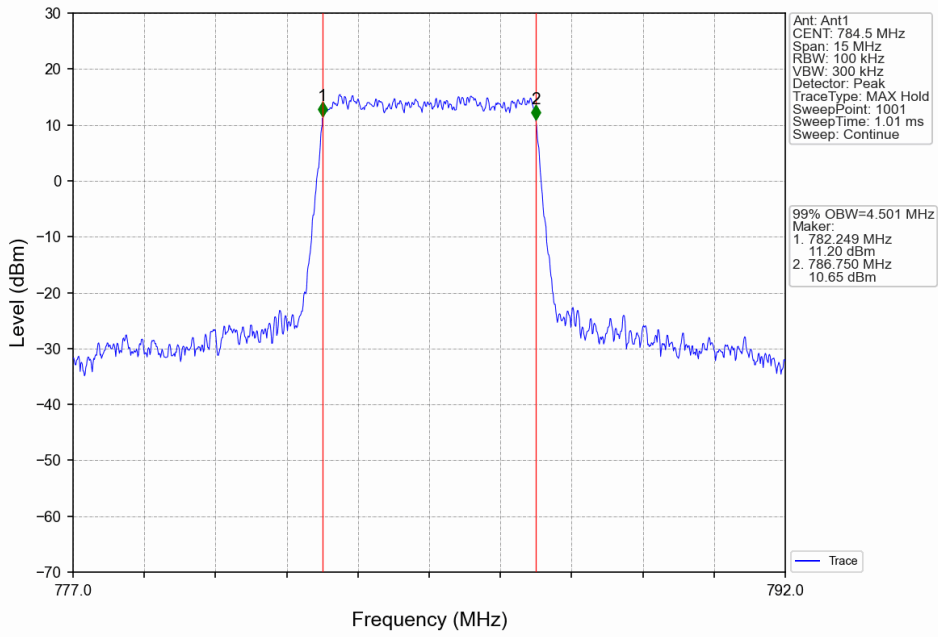
3.1.1 Test Result

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	4.507	/	Pass
		782	25	0	4.498	/	Pass
		784.5	25	0	4.501	/	Pass
	16QAM	779.5	25	0	4.502	/	Pass
		782	25	0	4.510	/	Pass
		784.5	25	0	4.501	/	Pass
	64QAM	779.5	25	0	4.511	/	Pass
		782	25	0	4.504	/	Pass
		784.5	25	0	4.492	/	Pass
10	QPSK	782	50	0	8.980	/	Pass
	16QAM	782	50	0	8.970	/	Pass
	64QAM	782	50	0	8.980	/	Pass

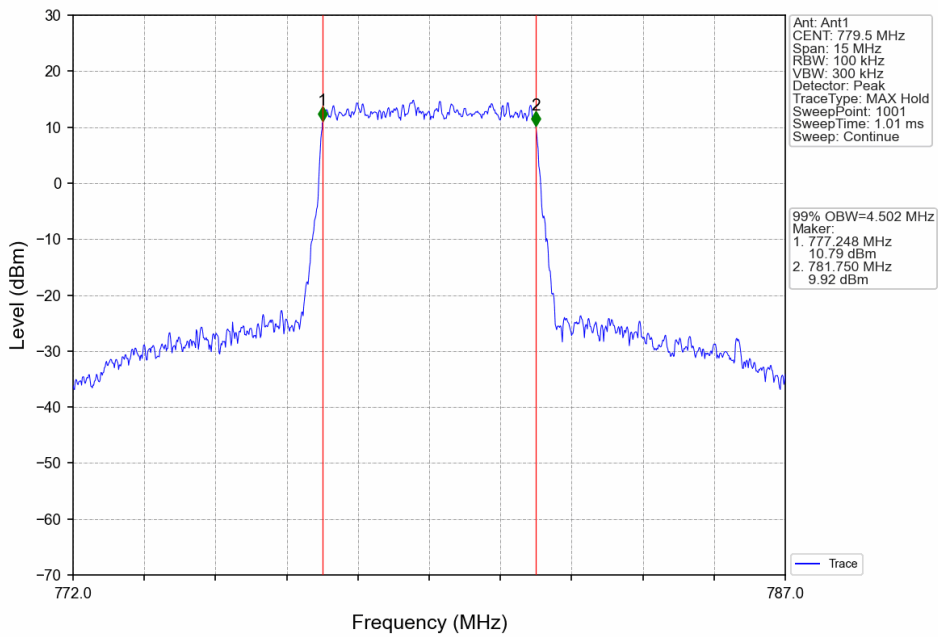
3.1.2 Test Graph



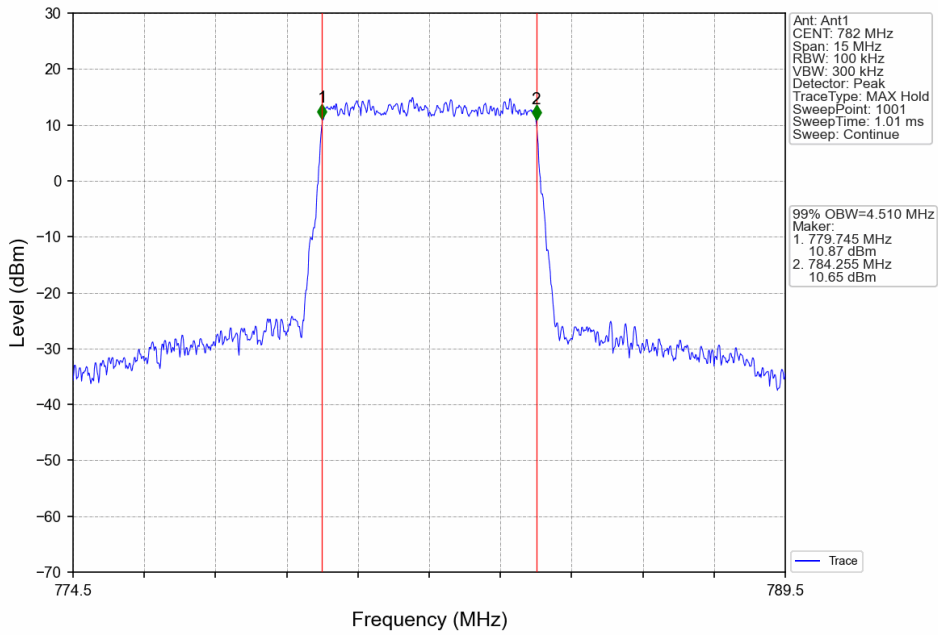
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



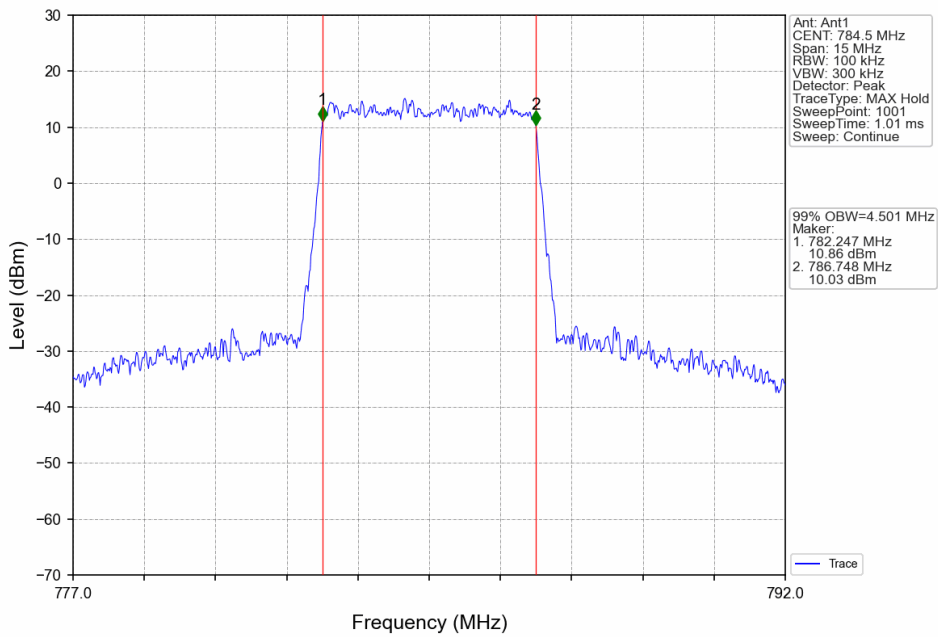
Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV



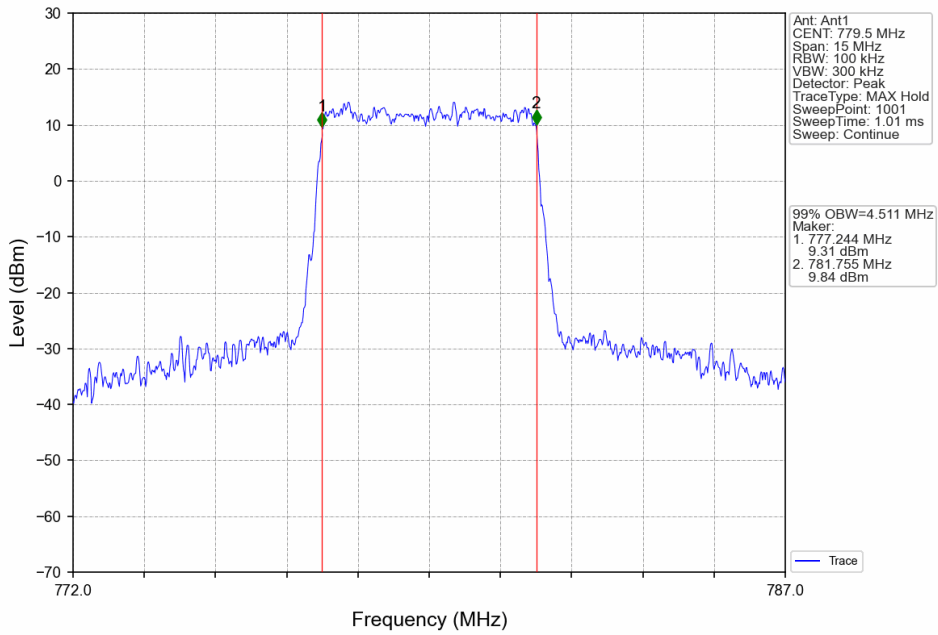
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



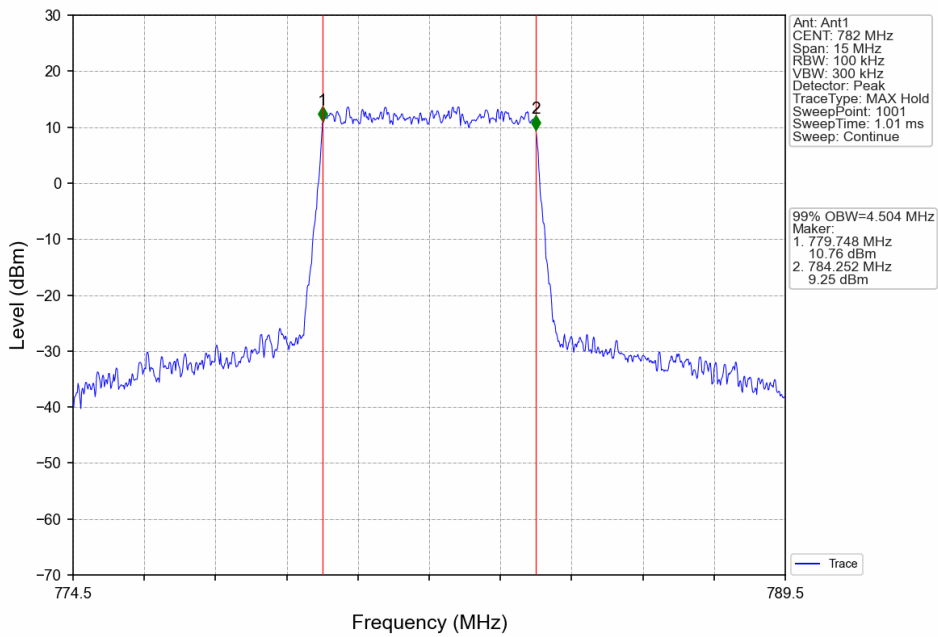
Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV



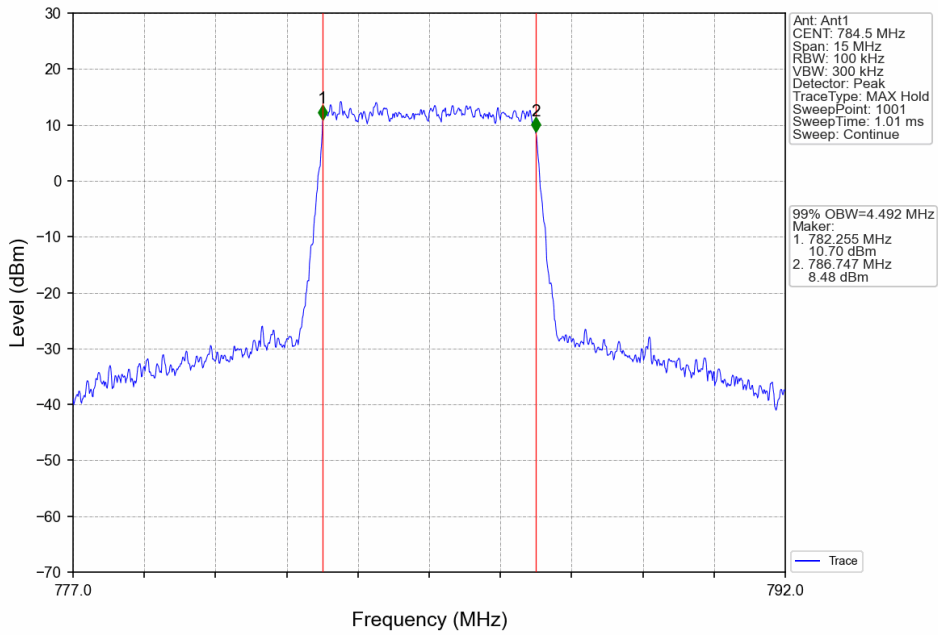
Band13_5MHz_64QAM_LCH_779.5MHz_RB_25_0_NTNV



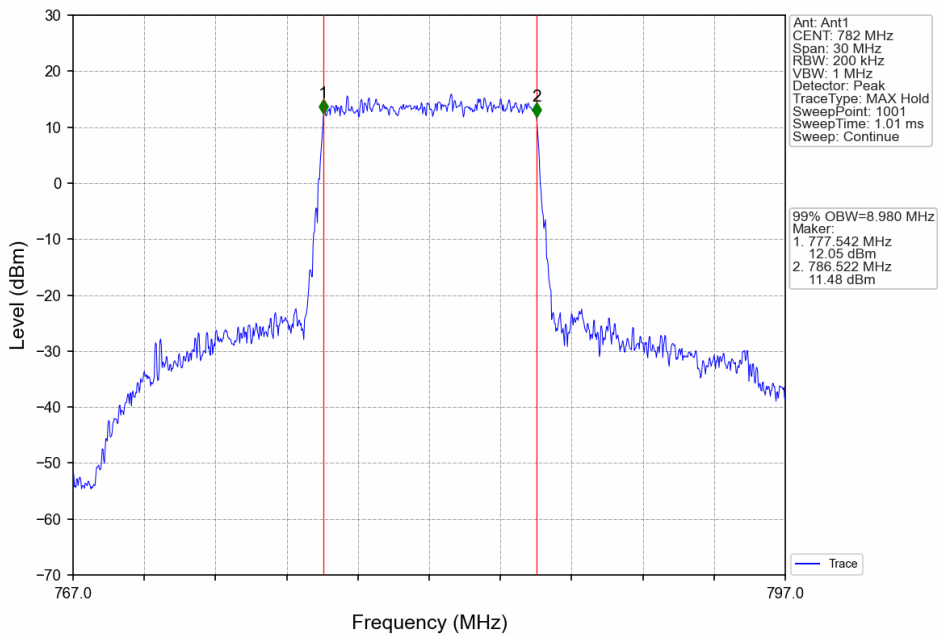
Band13_5MHz_64QAM_MCH_782MHz_RB_25_0_NTNV



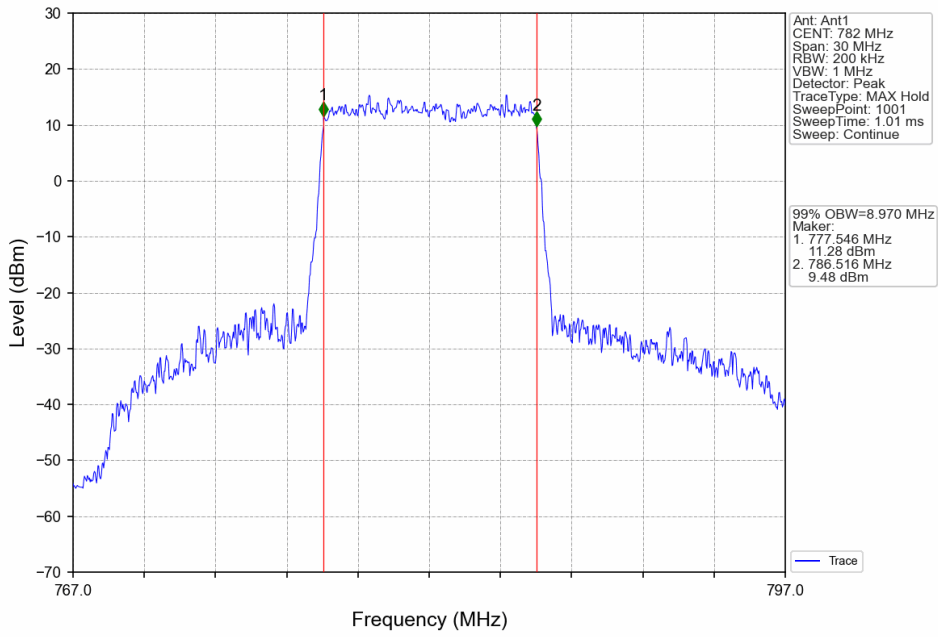
Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV



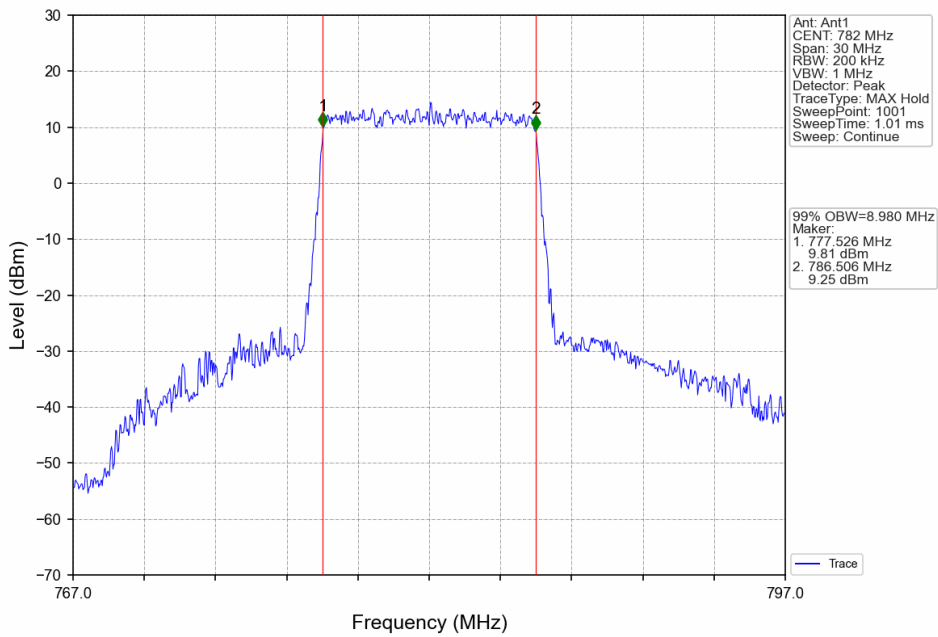
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV

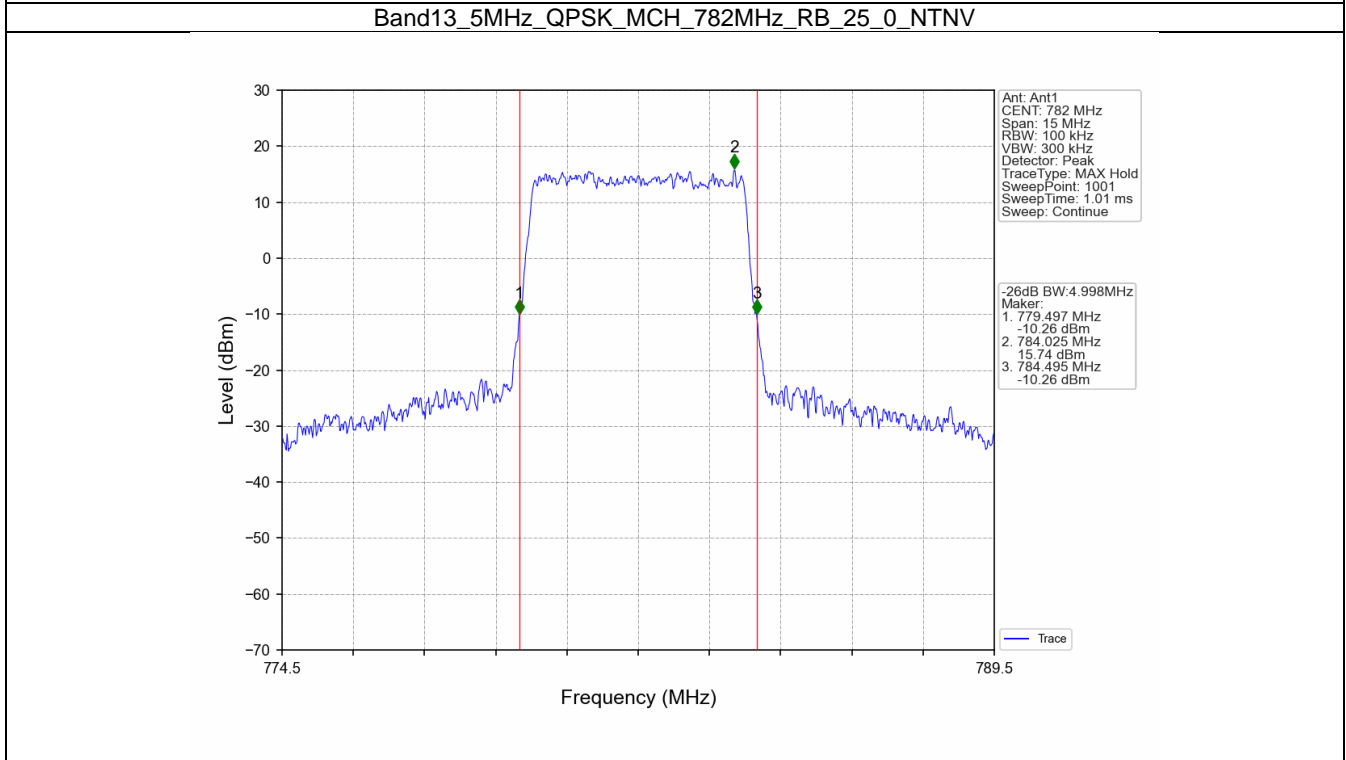
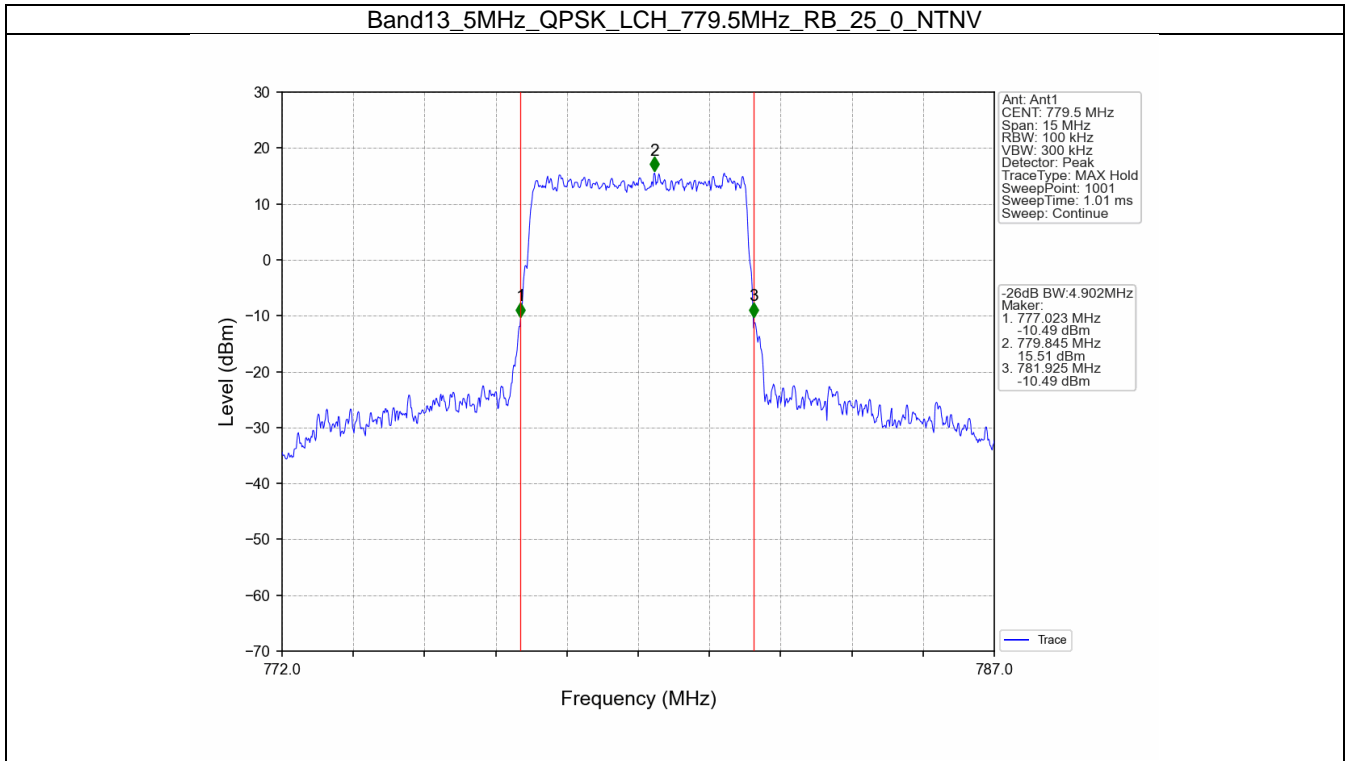


3.2 Band13_XDB

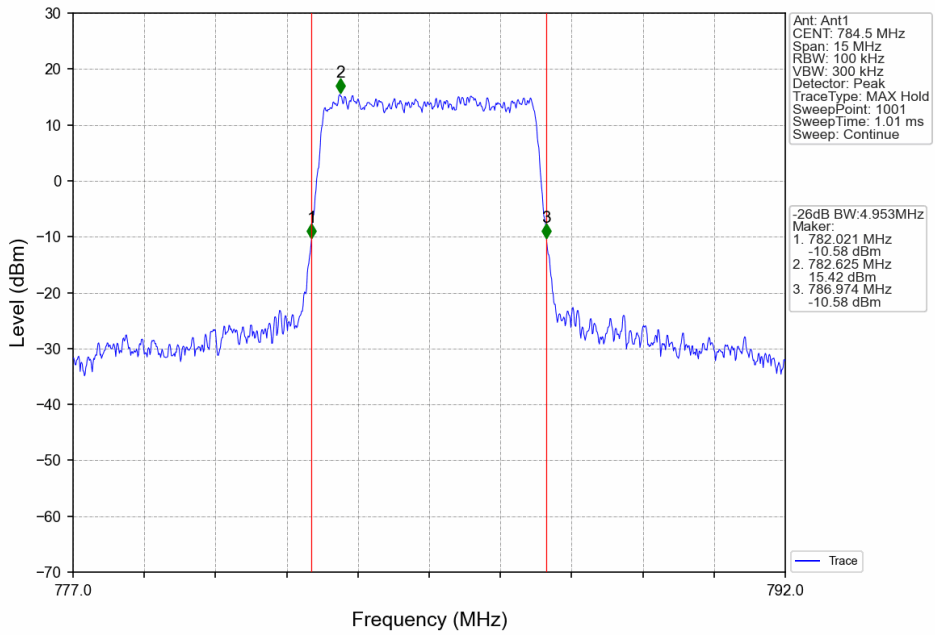
3.2.1 Test Result

Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	779.5	25	0	4.902	/	Pass
		782	25	0	4.998	/	Pass
		784.5	25	0	4.953	/	Pass
	16QAM	779.5	25	0	4.990	/	Pass
		782	25	0	4.982	/	Pass
		784.5	25	0	4.914	/	Pass
	64QAM	779.5	25	0	4.925	/	Pass
		782	25	0	4.923	/	Pass
		784.5	25	0	4.957	/	Pass
10	QPSK	782	50	0	9.812	/	Pass
	16QAM	782	50	0	9.720	/	Pass
	64QAM	782	50	0	9.810	/	Pass

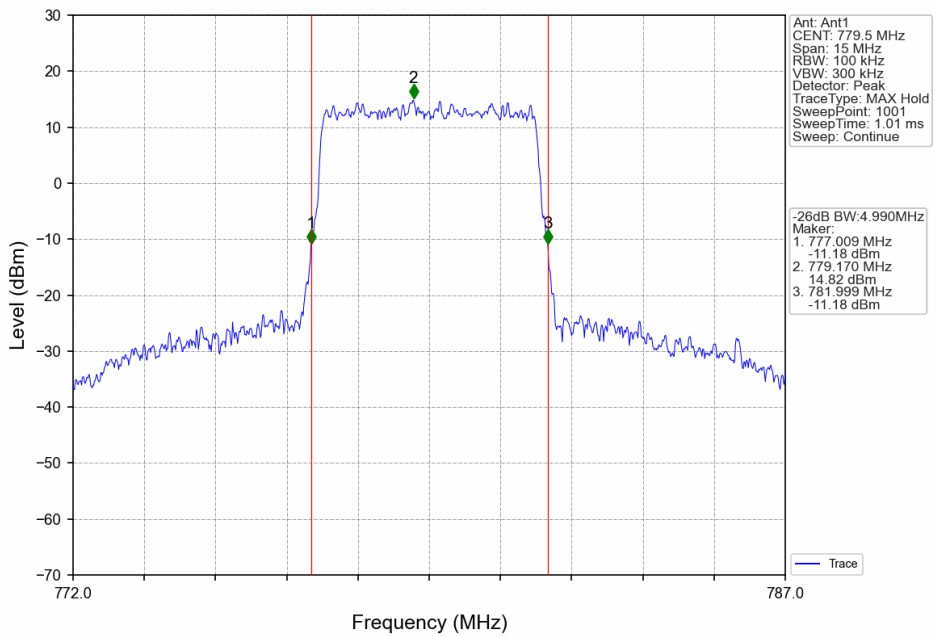
3.2.2 Test Graph



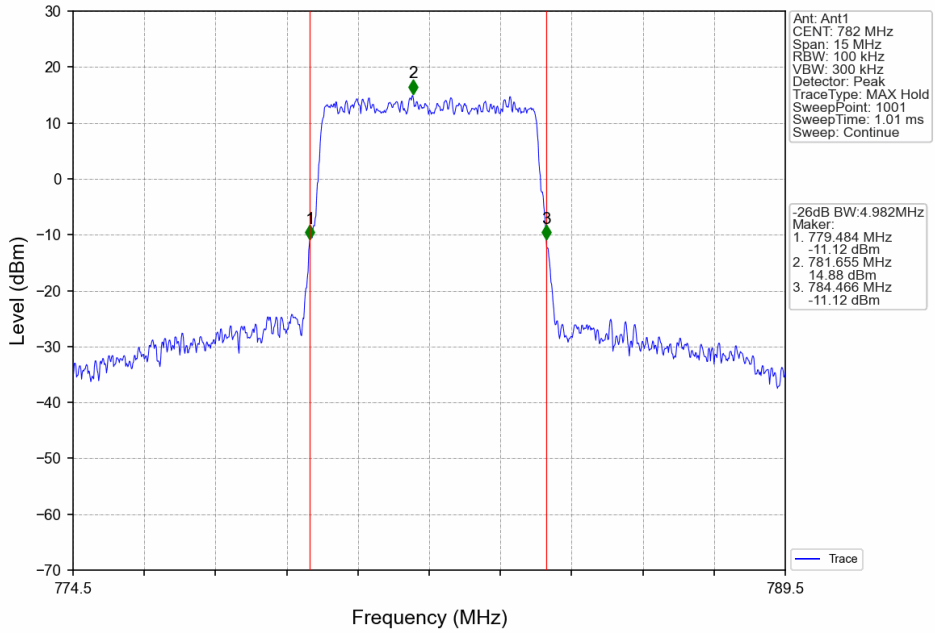
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



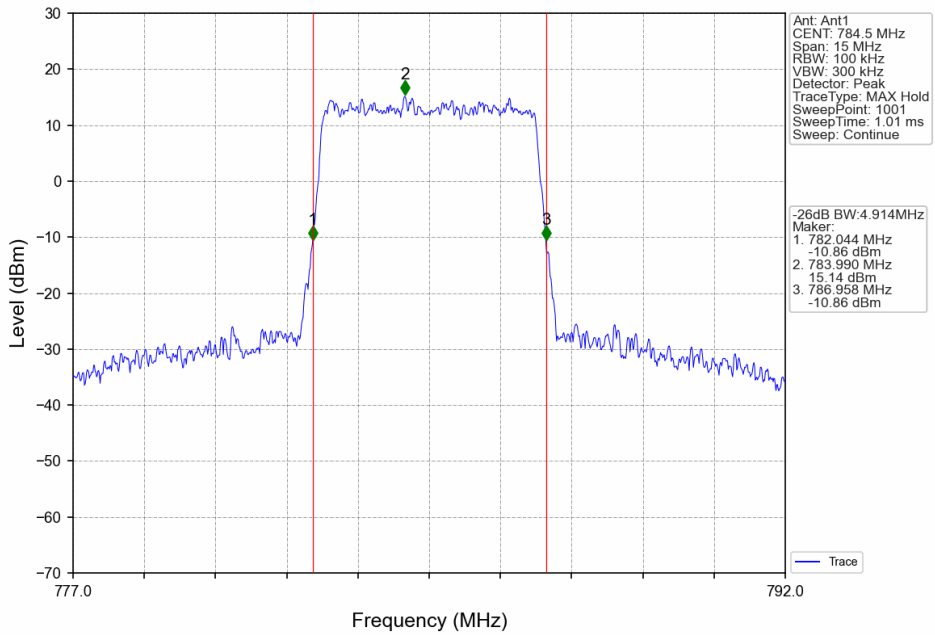
Band13_5MHz_16QAM_LCH_779.5MHz_RB_25_0_NTNV



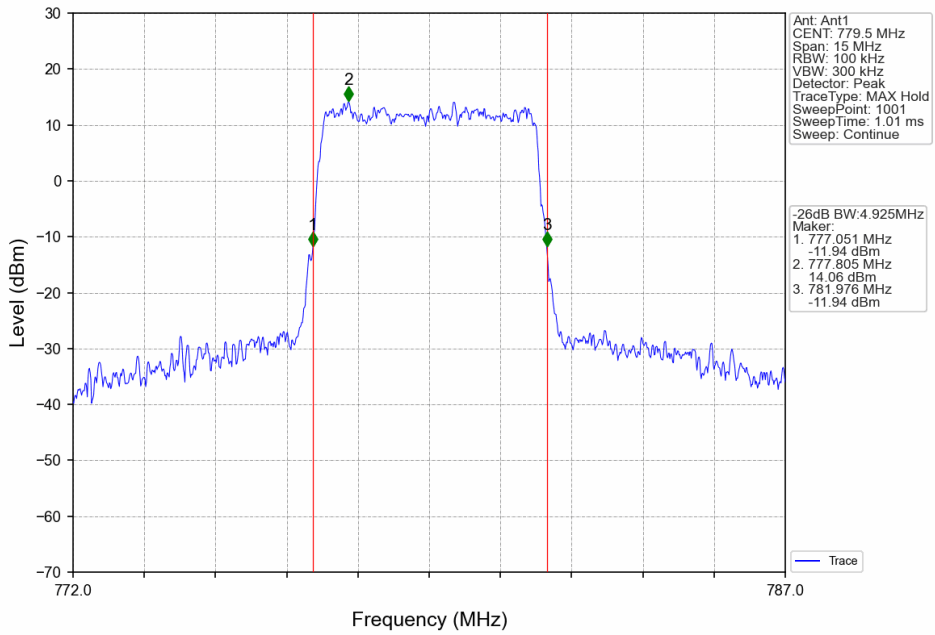
Band13_5MHz_16QAM_MCH_782MHz_RB_25_0_NTNV



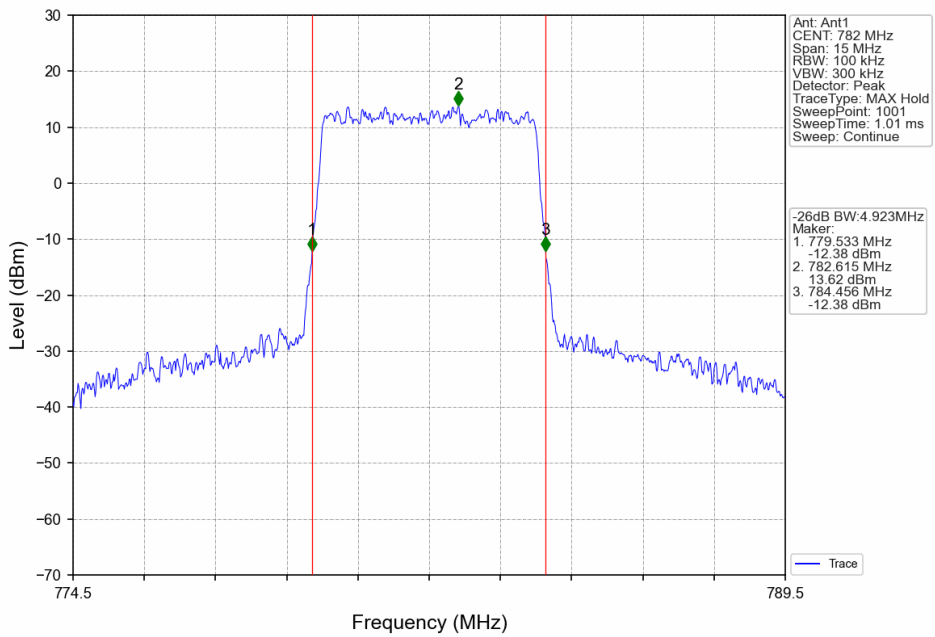
Band13_5MHz_16QAM_HCH_784.5MHz_RB_25_0_NTNV



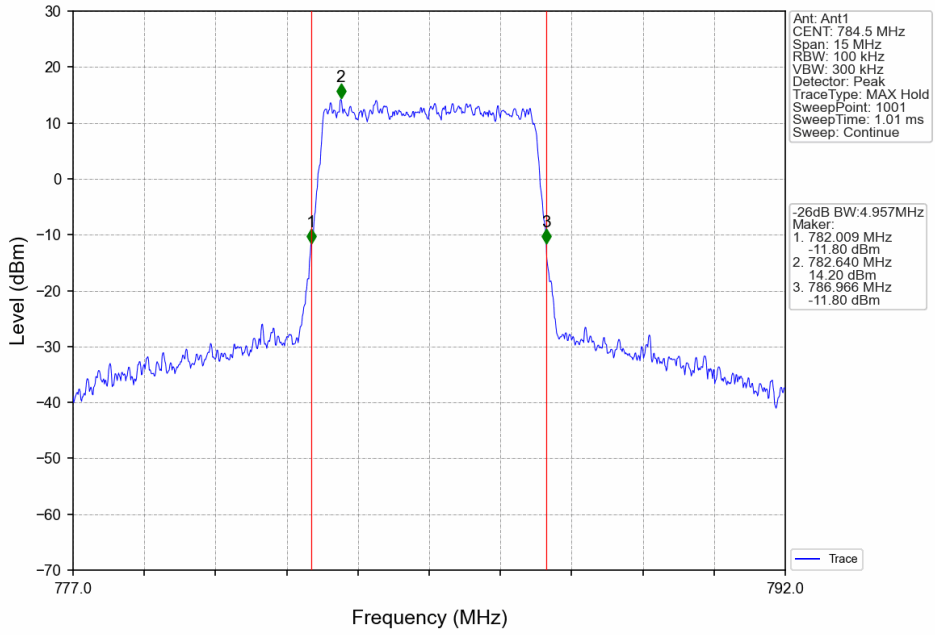
Band13_5MHz_64QAM_LCH_779.5MHz_RB_25_0_NTNV



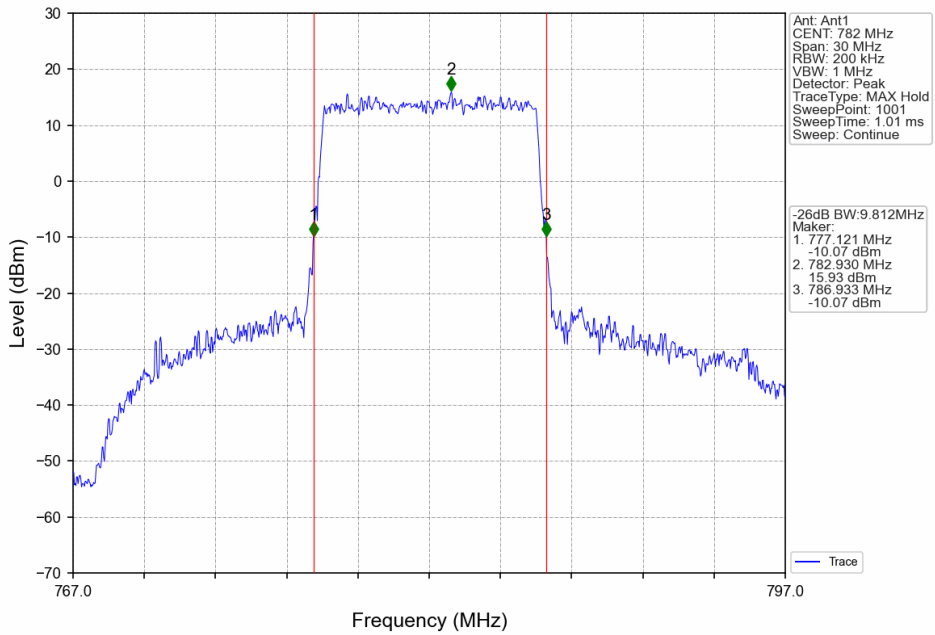
Band13_5MHz_64QAM_MCH_782MHz_RB_25_0_NTNV



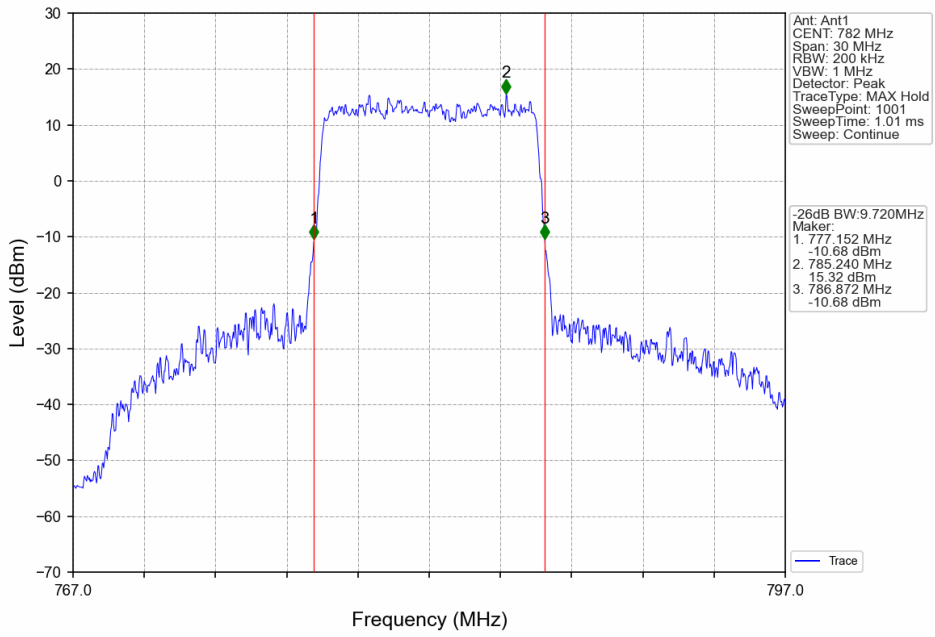
Band13_5MHz_64QAM_HCH_784.5MHz_RB_25_0_NTNV



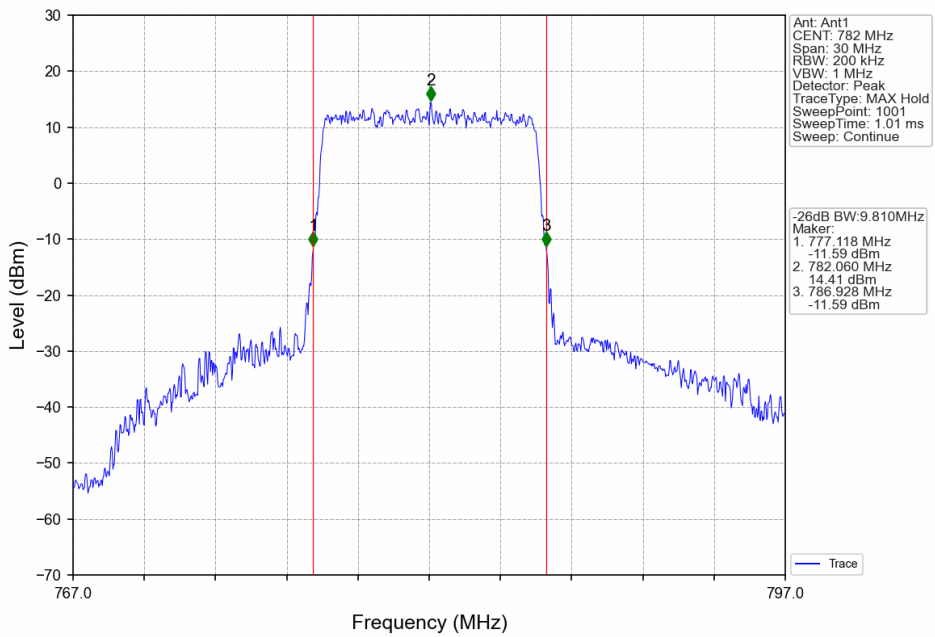
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



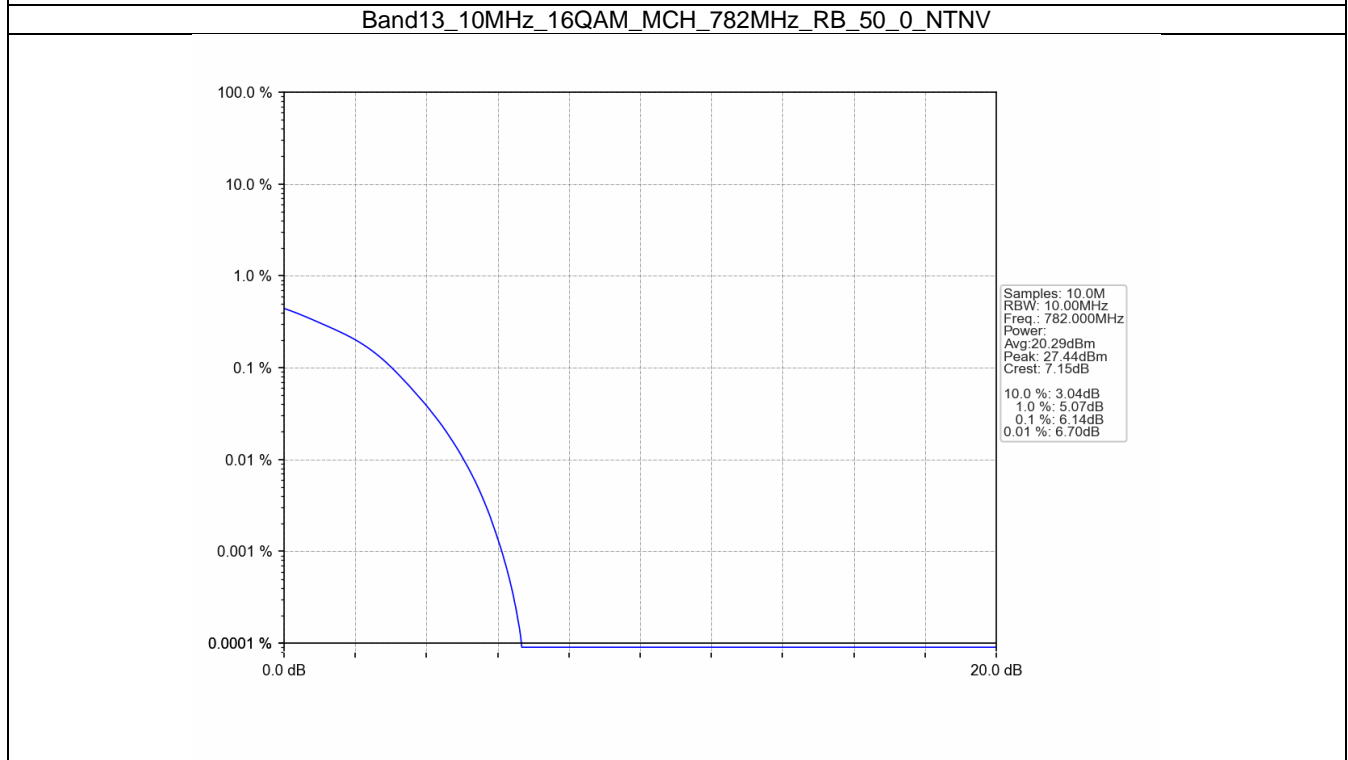
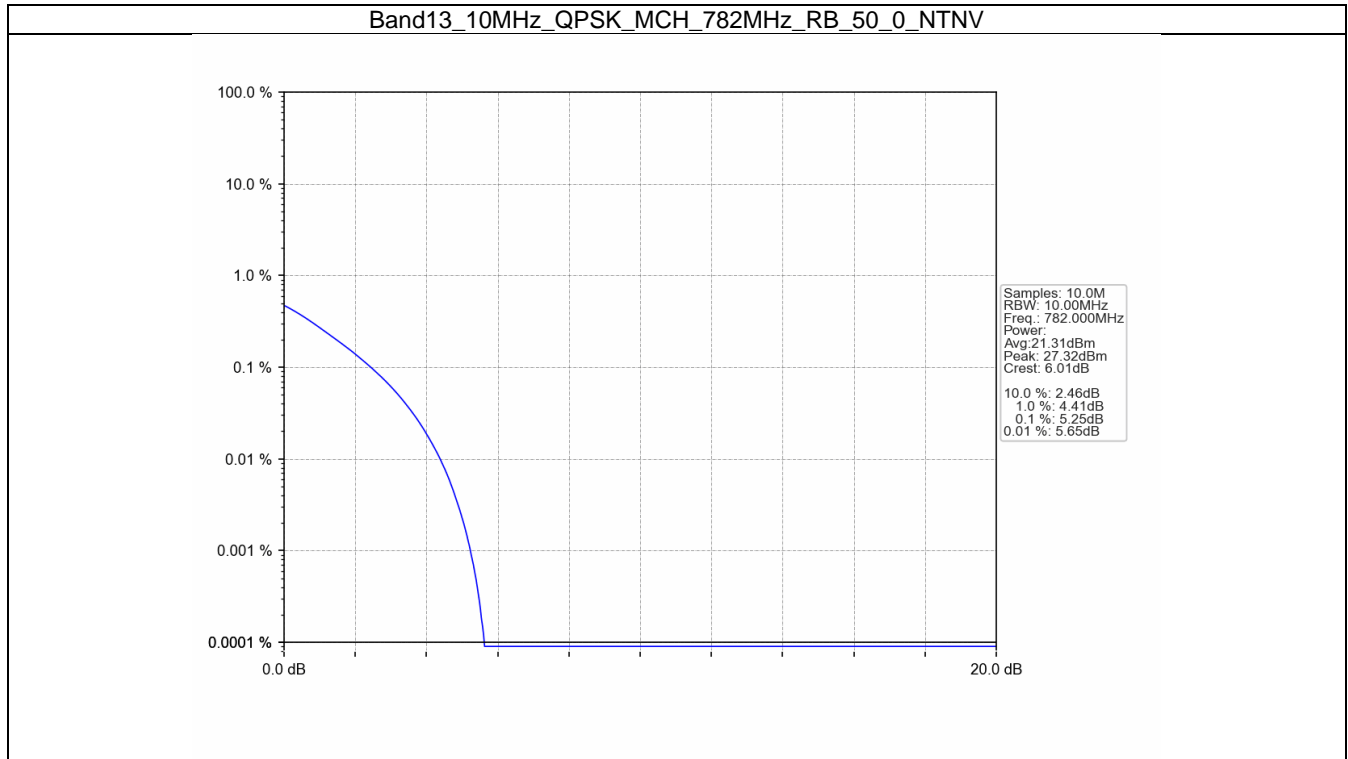
4. Peak-Average Ratio

4.1 B13_10MHz

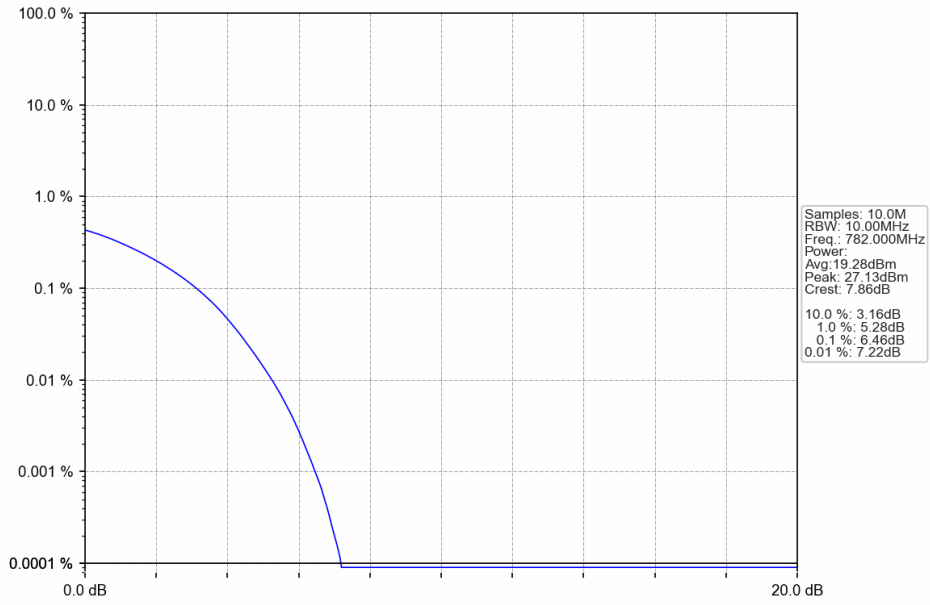
4.1.1 Test Result

Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	5.25	<=13	Pass
16QAM	782	50	0	6.14	<=13	Pass
64QAM	782	50	0	6.46	<=13	Pass

4.1.2 Test Graph



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



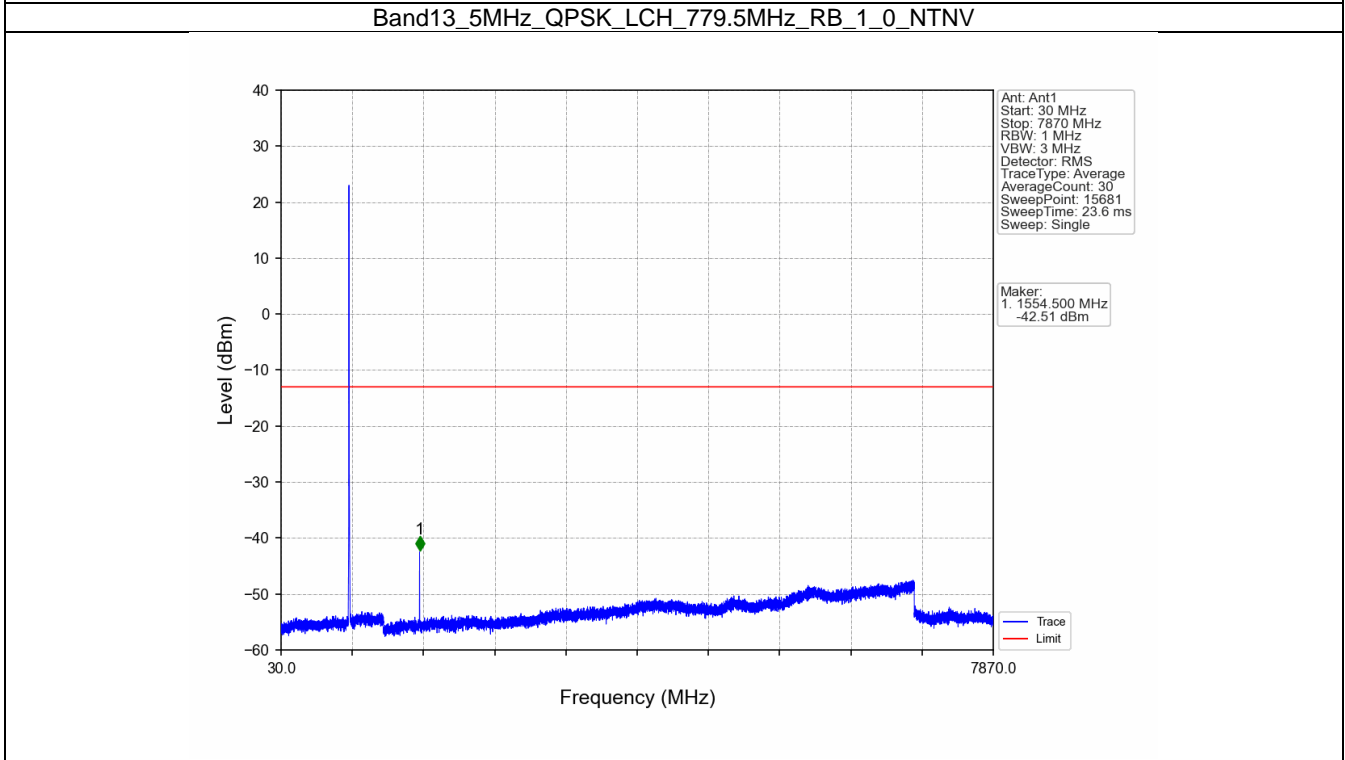
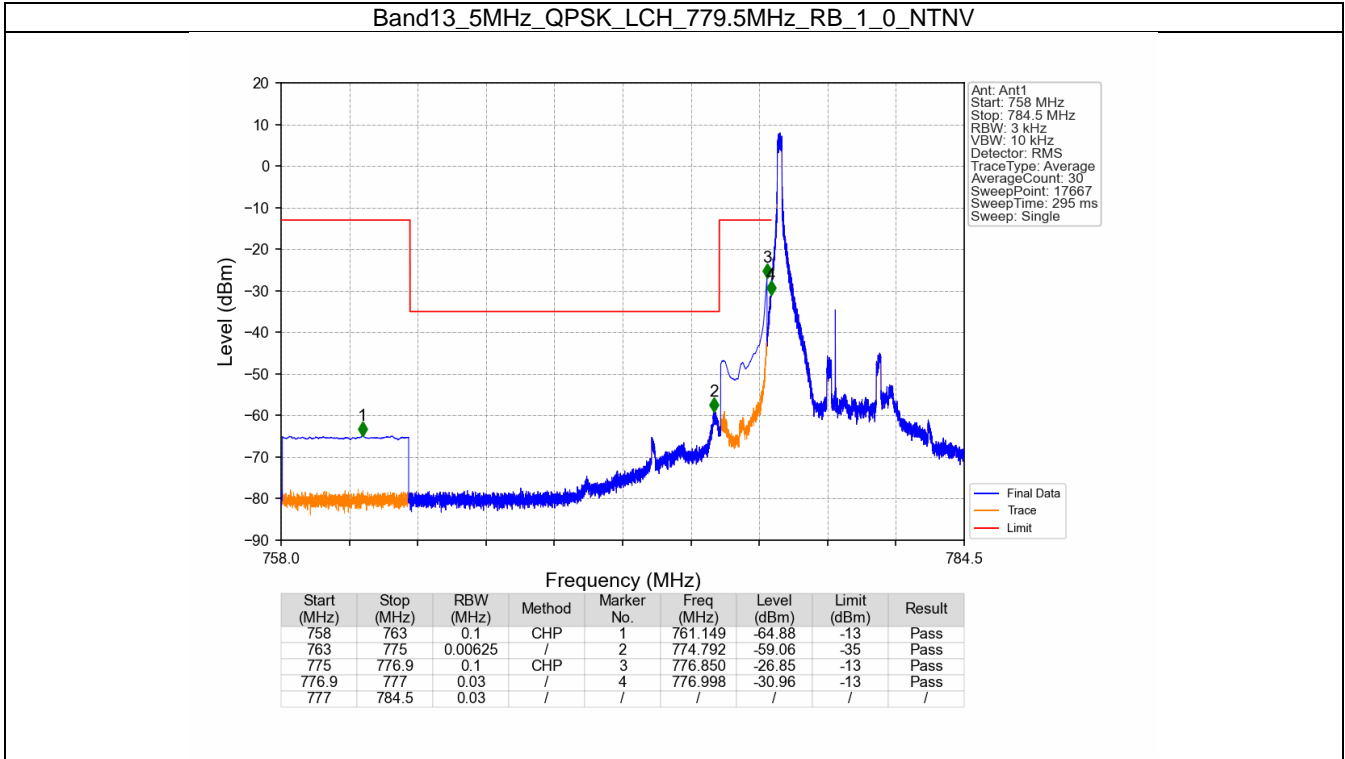
5. Spurious Emission & Band Edges

5.1 B13_5MHz

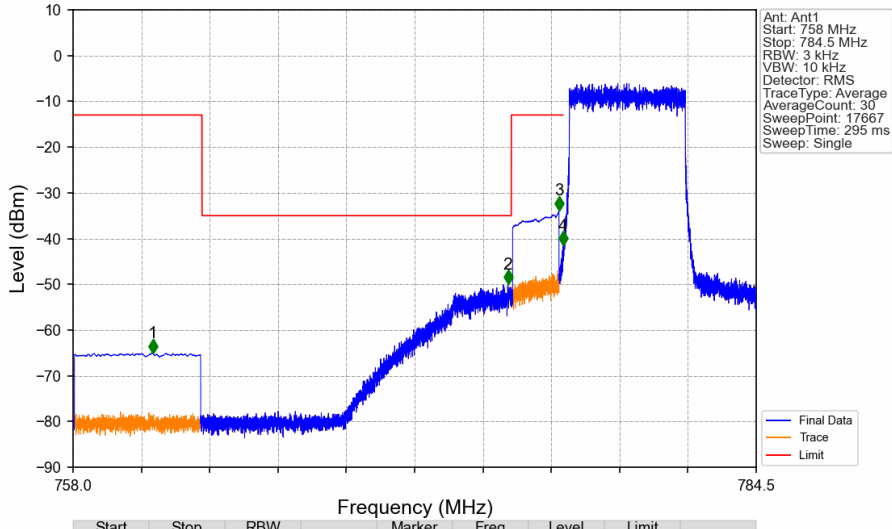
5.1.1 Test Result

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 Test Graph

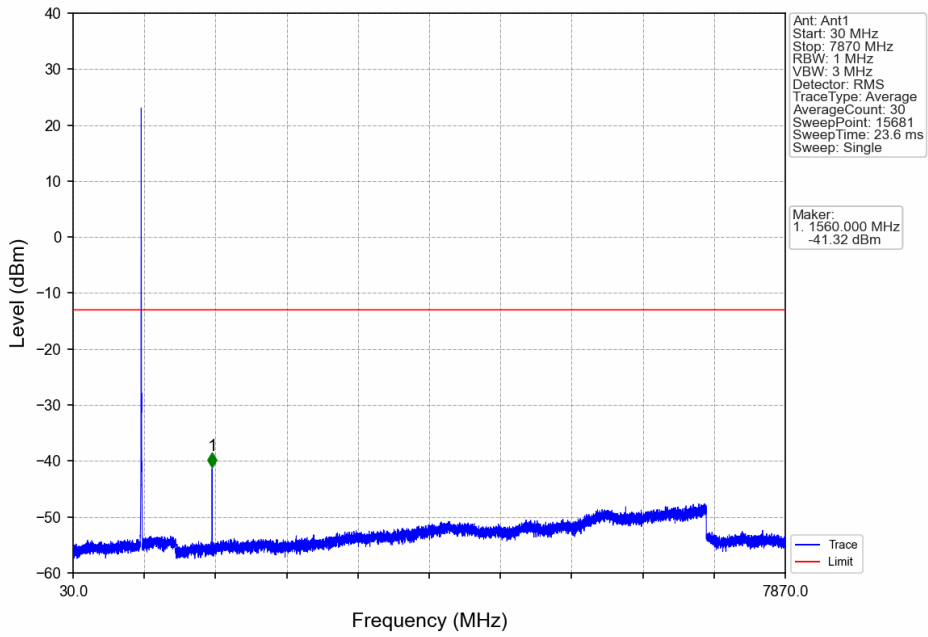


Band13_5MHz_QPSK_LCH_779.5MHz_RB_25_0_NTNV

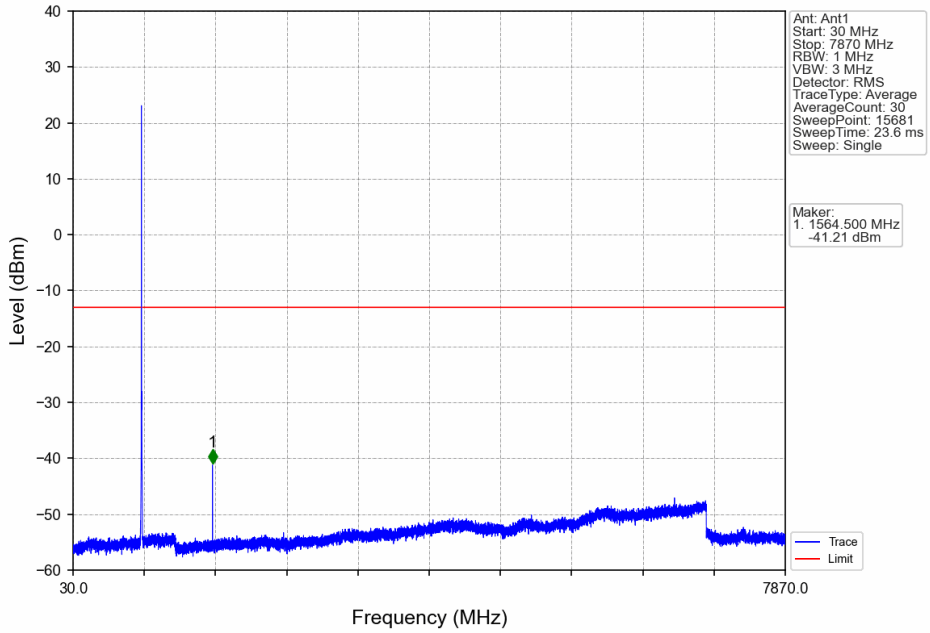


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	761.087	-65.05	-13	Pass
763	775	0.00625	/	2	774.871	-50.02	-35	Pass
775	776.9	0.1	CHP	3	776.850	-33.82	-13	Pass
776.9	777	0.03	/	4	776.998	-41.50	-13	Pass
777	784.5	0.03	/	/	/	/	/	/

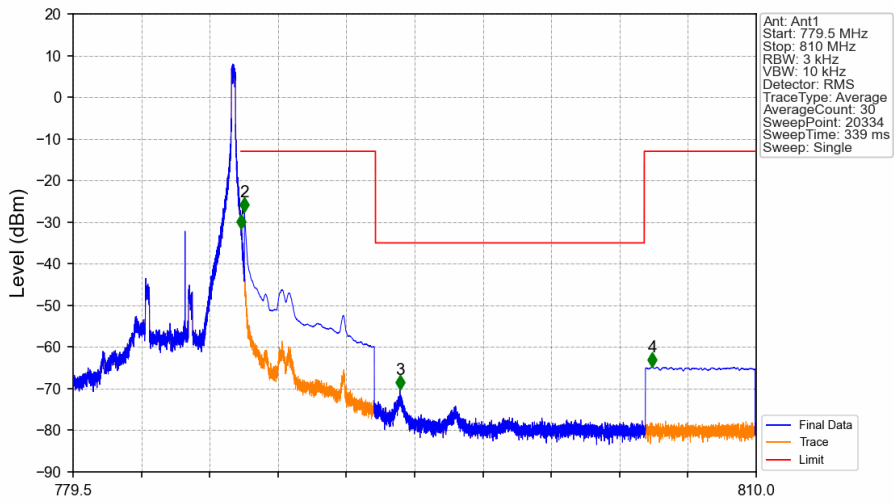
Band13_5MHz_QPSK_MCH_782MHz_RB_1_0_NTNV



Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_0_NTNV

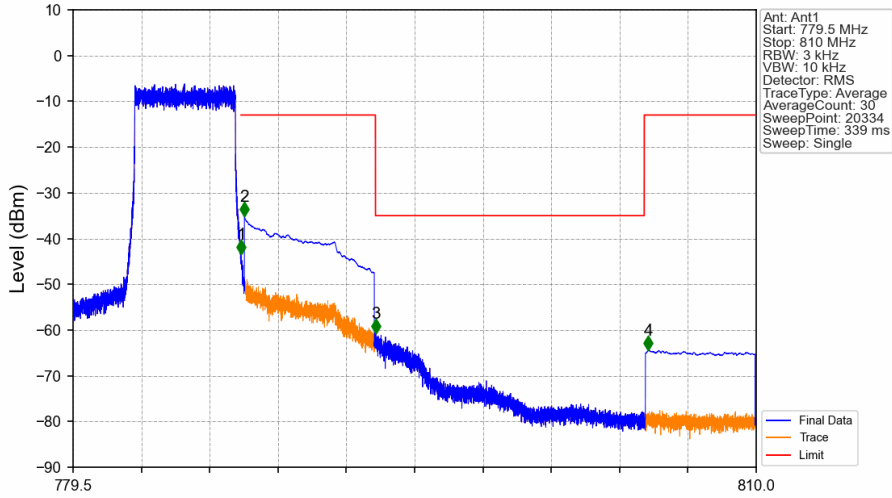


Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_24_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	1	787.009	-31.56	-13	Pass
787.1	793	0.1	CHP	2	787.150	-27.62	-13	Pass
793	805	0.00625	/	3	794.094	-70.26	-35	Pass
805	810	0.1	CHP	4	805.354	-64.77	-13	Pass

Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



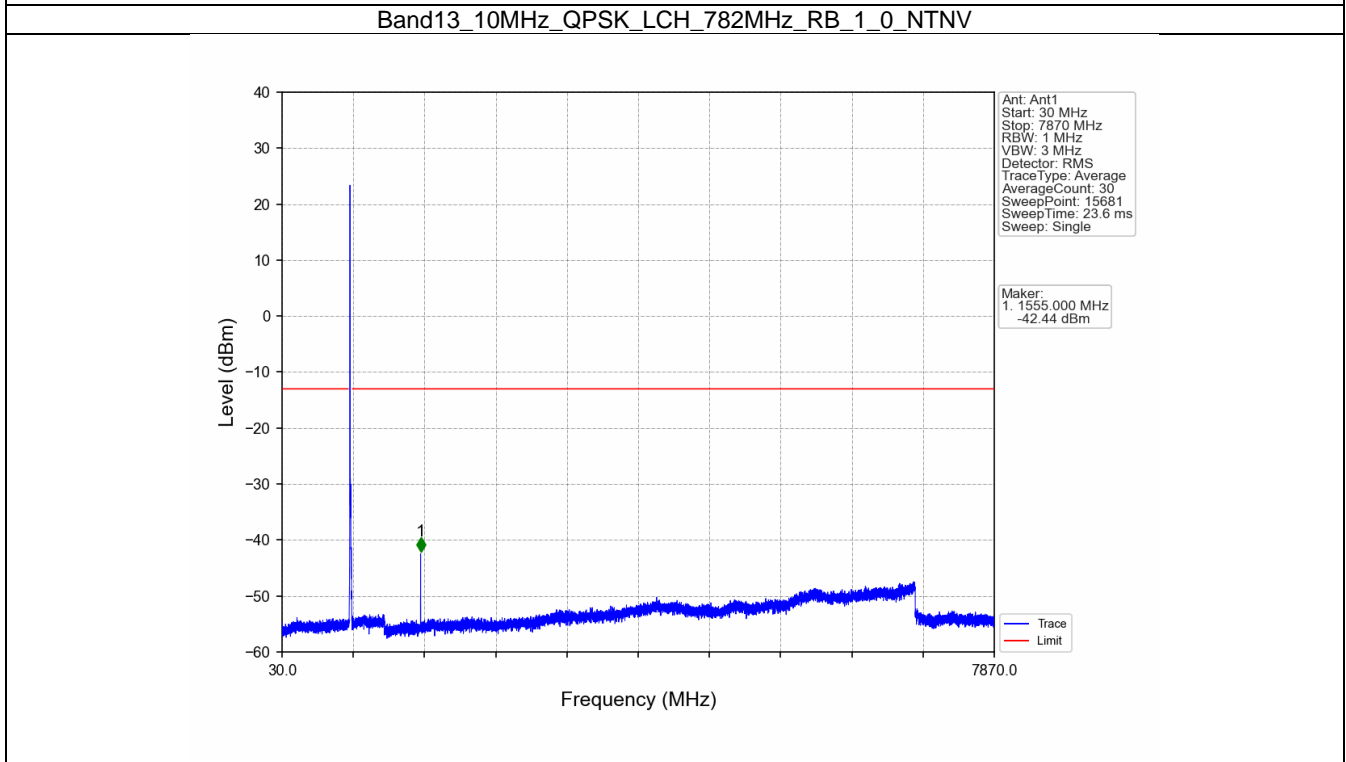
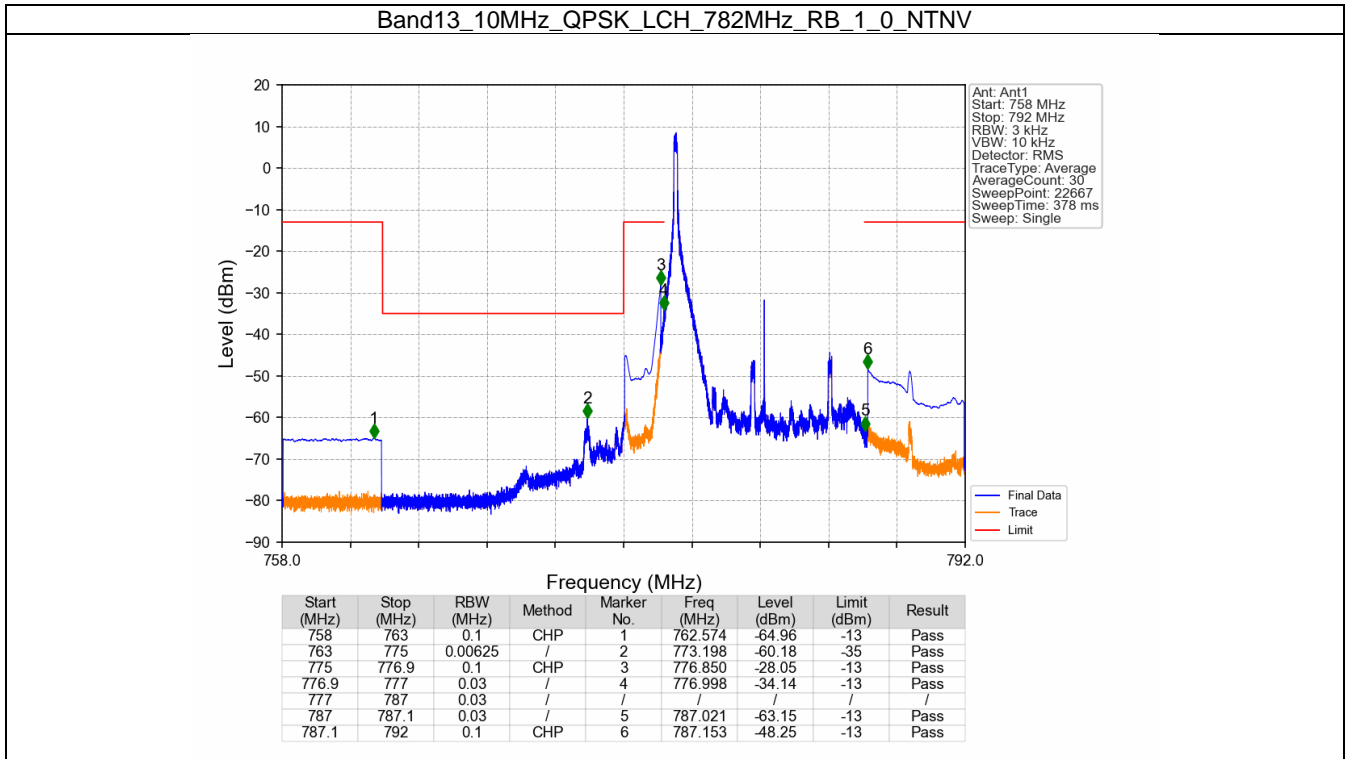
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
779.5	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	1	787.011	-43.46	-13	Pass
787.1	793	0.1	CHP	2	787.150	-35.17	-13	Pass
793	805	0.00625	/	3	793.014	-60.74	-35	Pass
805	810	0.1	CHP	4	805.176	-64.42	-13	Pass

5.2 B13_10MHz

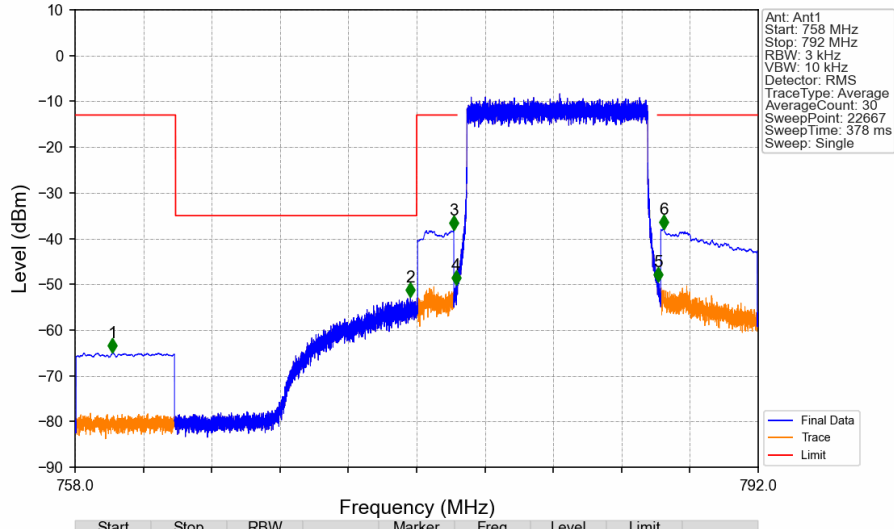
5.2.1 Test Result

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	

5.2.2 Test Graph

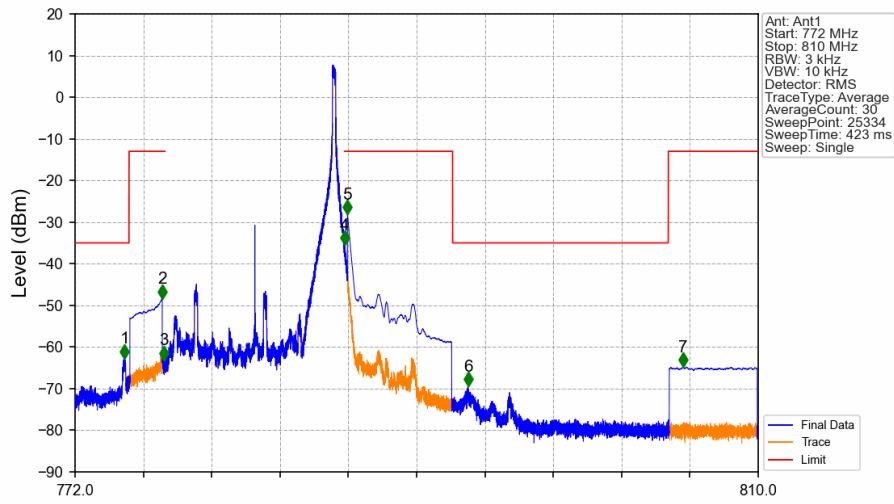


Band13_10MHz_QPSK_LCH_782MHz_RB_50_0_NTNV



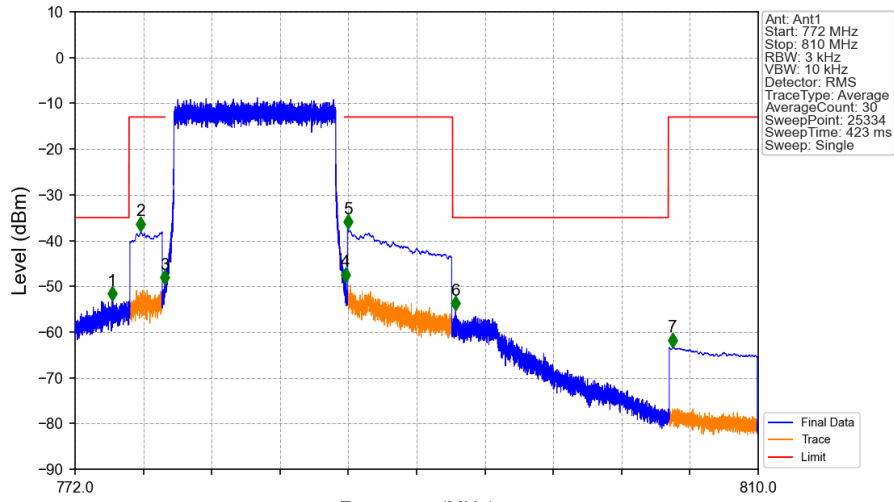
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	759.857	-65.02	-13	Pass
763	775	0.00625	/	2	774.691	-52.85	-35	Pass
775	776.9	0.1	CHP	3	776.850	-38.15	-13	Pass
776.9	777	0.03	/	4	776.971	-50.10	-13	Pass
777	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	5	787.021	-49.40	-13	Pass
787.1	792	0.1	CHP	6	787.297	-37.92	-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	/	1	774.748	-62.77	-35	Pass
775	776.9	0.1	CHP	2	776.850	-48.42	-13	Pass
776.9	777	0.03	/	3	776.920	-63.14	-13	Pass
777	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	4	787.002	-35.53	-13	Pass
787.1	793	0.1	CHP	5	787.150	-28.06	-13	Pass
793	805	0.00625	/	6	793.858	-69.38	-35	Pass
805	810	0.1	CHP	7	805.828	-64.76	-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	/	1	774.045	-53.09	-35	Pass
775	776.9	0.1	CHP	2	775.651	-37.90	-13	Pass
776.9	777	0.03	/	3	776.998	-49.65	-13	Pass
777	787	0.03	/	/	/	/	/	/
787	787.1	0.03	/	4	787.033	-49.01	-13	Pass
787.1	793	0.1	CHP	5	787.161	-37.45	-13	Pass
793	805	0.00625	/	6	793.168	-55.24	-35	Pass
805	810	0.1	CHP	7	805.249	-63.28	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 13_10M ANT13- Middle channel								
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	-66.58	-13	-53.58	-69.72	2.6	5.74	Horizontal	Pass
2332.5	-56.0	-13	-43.0	-58.46	2.96	5.42	Horizontal	Pass
3110.0	-67.36	-13	-54.36	-71.36	3.2	7.2	Horizontal	Pass
1555.0	-66.15	-13	-53.15	-69.29	2.6	5.74	Vertical	Pass
2332.5	-57.31	-13	-44.31	-59.77	2.96	5.42	Vertical	Pass
3110.0	-67.67	-13	-54.67	-71.67	3.2	7.2	Vertical	Pass

LTE Band 13_5M ANT13-Low channel								
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	-67.04	-13	-54.04	-70.18	2.6	5.74	Horizontal	Pass
2331.75	-56.9	-13	-43.9	-59.36	2.96	5.42	Horizontal	Pass
3109.0	-67.26	-13	-54.26	-71.25	3.2	7.19	Horizontal	Pass
1554.5	-65.0	-13	-52.0	-68.14	2.6	5.74	Vertical	Pass
2331.75	-55.88	-13	-42.88	-58.34	2.96	5.42	Vertical	Pass
3109.0	-67.44	-13	-54.44	-71.43	3.2	7.19	Vertical	Pass

LTE Band 13_5M ANT13- Middle channel								
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	-65.66	-40	-25.66	-68.79	2.6	5.73	Horizontal	Pass
2339.25	-57.33	-13	-44.33	-59.8	2.96	5.43	Horizontal	Pass
3119.0	-67.7	-13	-54.7	-71.71	3.21	7.22	Horizontal	Pass
1559.5	-65.78	-40	-25.78	-68.91	2.6	5.73	Vertical	Pass
2339.25	-57.13	-13	-44.13	-59.6	2.96	5.43	Vertical	Pass
3119.0	-67.73	-13	-54.73	-71.74	3.21	7.22	Vertical	Pass

LTE Band 13_5M ANT13- High channel								
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	-64.9	-40	-24.9	-68.02	2.6	5.72	Horizontal	Pass
2346.75	-58.48	-13	-45.48	-60.96	2.97	5.45	Horizontal	Pass
3129.0	-67.65	-13	-54.65	-71.68	3.21	7.24	Horizontal	Pass
1564.5	-65.63	-40	-25.63	-68.75	2.6	5.72	Vertical	Pass
2346.75	-57.57	-13	-44.57	-60.05	2.97	5.45	Vertical	Pass
3129.0	-67.37	-13	-54.37	-71.4	3.21	7.24	Vertical	Pass

1) All antennas of RSE are tested, and only the worst data is presented.
 ---End of Attachment---