

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

1.1.1 B12_1.4MHz_ERP

Band: 12 / Bandwidth: 1.4MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	699.7	1	0	22.75	3.17	23.77	<=34.77	Pass
			5	22.83	3.17	23.85	<=34.77	Pass
		6	0	21.72	3.17	22.74	<=34.77	Pass
	707.5	1	0	22.97	3.17	23.99	<=34.77	Pass
			5	22.80	3.17	23.82	<=34.77	Pass
		6	0	21.80	3.17	22.82	<=34.77	Pass
	715.3	1	0	22.31	3.17	23.33	<=34.77	Pass
			5	22.22	3.17	23.24	<=34.77	Pass
		6	0	21.27	3.17	22.29	<=34.77	Pass
16QAM	699.7	1	0	21.73	3.17	22.75	<=34.77	Pass
			5	21.77	3.17	22.79	<=34.77	Pass
		6	0	20.80	3.17	21.82	<=34.77	Pass
	707.5	1	0	21.76	3.17	22.78	<=34.77	Pass
			5	21.58	3.17	22.60	<=34.77	Pass
		6	0	20.96	3.17	21.98	<=34.77	Pass
	715.3	1	0	21.39	3.17	22.41	<=34.77	Pass
			5	21.36	3.17	22.38	<=34.77	Pass
		6	0	20.39	3.17	21.41	<=34.77	Pass
Note1: ERP=Conducted Power+Antenna Gain-2.15								

1.1.2 B12_3MHz_ERP

Band: 12 / Bandwidth: 3MHz / NTVN								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	700.5	1	0	22.49	3.17	23.51	<=34.77	Pass
			14	22.33	3.17	23.35	<=34.77	Pass
		15	0	21.64	3.17	22.66	<=34.77	Pass
	707.5	1	0	23.10	3.17	24.12	<=34.77	Pass
			14	22.47	3.17	23.49	<=34.77	Pass
		15	0	21.76	3.17	22.78	<=34.77	Pass
	714.5	1	0	21.79	3.17	22.81	<=34.77	Pass
			14	22.22	3.17	23.24	<=34.77	Pass
		15	0	21.28	3.17	22.30	<=34.77	Pass
16QAM	700.5	1	0	21.92	3.17	22.94	<=34.77	Pass
			14	21.80	3.17	22.82	<=34.77	Pass
		15	0	20.61	3.17	21.63	<=34.77	Pass
	707.5	1	0	22.03	3.17	23.05	<=34.77	Pass
			14	21.42	3.17	22.44	<=34.77	Pass
		15	0	20.92	3.17	21.94	<=34.77	Pass
	714.5	1	0	20.59	3.17	21.61	<=34.77	Pass
			14	21.10	3.17	22.12	<=34.77	Pass
		15	0	20.30	3.17	21.32	<=34.77	Pass
Note1: ERP=Conducted Power+Antenna Gain-2.15								

1.1.3 B12_5MHz_ERP

Band: 12 / Bandwidth: 5MHz / NTV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	701.5	1	0	22.83	3.17	23.85	<=34.77	Pass
			24	23.25	3.17	24.27	<=34.77	Pass
		25	0	21.99	3.17	23.01	<=34.77	Pass
	707.5	1	0	23.33	3.17	24.35	<=34.77	Pass
			24	22.51	3.17	23.53	<=34.77	Pass
		25	0	21.91	3.17	22.93	<=34.77	Pass
	713.5	1	0	22.05	3.17	23.07	<=34.77	Pass
			24	22.78	3.17	23.80	<=34.77	Pass
		25	0	21.61	3.17	22.63	<=34.77	Pass
16QAM	701.5	1	0	22.18	3.17	23.20	<=34.77	Pass
			24	22.54	3.17	23.56	<=34.77	Pass
		25	0	21.04	3.17	22.06	<=34.77	Pass
	707.5	1	0	22.40	3.17	23.42	<=34.77	Pass
			24	21.60	3.17	22.62	<=34.77	Pass
		25	0	21.09	3.17	22.11	<=34.77	Pass
	713.5	1	0	21.36	3.17	22.38	<=34.77	Pass
			24	22.16	3.17	23.18	<=34.77	Pass
		25	0	20.65	3.17	21.67	<=34.77	Pass
Note1: ERP=Conducted Power+Antenna Gain-2.15								

1.1.4 B12_10MHz_ERP

Band: 12 / Bandwidth: 10MHz / NTVN								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	704	1	0	22.74	3.17	23.76	<=34.77	Pass
			49	22.68	3.17	23.70	<=34.77	Pass
		50	0	21.97	3.17	22.99	<=34.77	Pass
	707.5	1	0	23.31	3.17	24.33	<=34.77	Pass
			49	22.82	3.17	23.84	<=34.77	Pass
		50	0	21.97	3.17	22.99	<=34.77	Pass
	711	1	0	23.39	3.17	24.41	<=34.77	Pass
			49	23.45	3.17	24.47	<=34.77	Pass
		50	0	22.02	3.17	23.04	<=34.77	Pass
16QAM	704	1	0	22.17	3.17	23.19	<=34.77	Pass
			49	22.04	3.17	23.06	<=34.77	Pass
	707.5	1	0	22.22	3.17	23.24	<=34.77	Pass
			49	21.74	3.17	22.76	<=34.77	Pass
	711	1	0	22.24	3.17	23.26	<=34.77	Pass
49			22.42	3.17	23.44	<=34.77	Pass	
Note1: ERP=Conducted Power+Antenna Gain-2.15								

2. Frequency Stability

2.1 Test Result

2.1.1 B12_10MHz

Band: 12 / Bandwidth: 10MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	707.5	50	0	20	3.40	-0.401	-0.0006	-2.5 to 2.5	Pass
					3.80	0.100	0.0001	-2.5 to 2.5	Pass
					4.20	0.029	0.0000	-2.5 to 2.5	Pass
				-30	3.80	0.386	0.0005	-2.5 to 2.5	Pass
				-20	3.80	-0.629	-0.0009	-2.5 to 2.5	Pass
				-10	3.80	0.472	0.0007	-2.5 to 2.5	Pass
				0	3.80	0.143	0.0002	-2.5 to 2.5	Pass
				10	3.80	-0.014	0.0000	-2.5 to 2.5	Pass
				30	3.80	0.358	0.0005	-2.5 to 2.5	Pass
				40	3.80	0.300	0.0004	-2.5 to 2.5	Pass
				50	3.80	-0.215	-0.0003	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band12_OBW

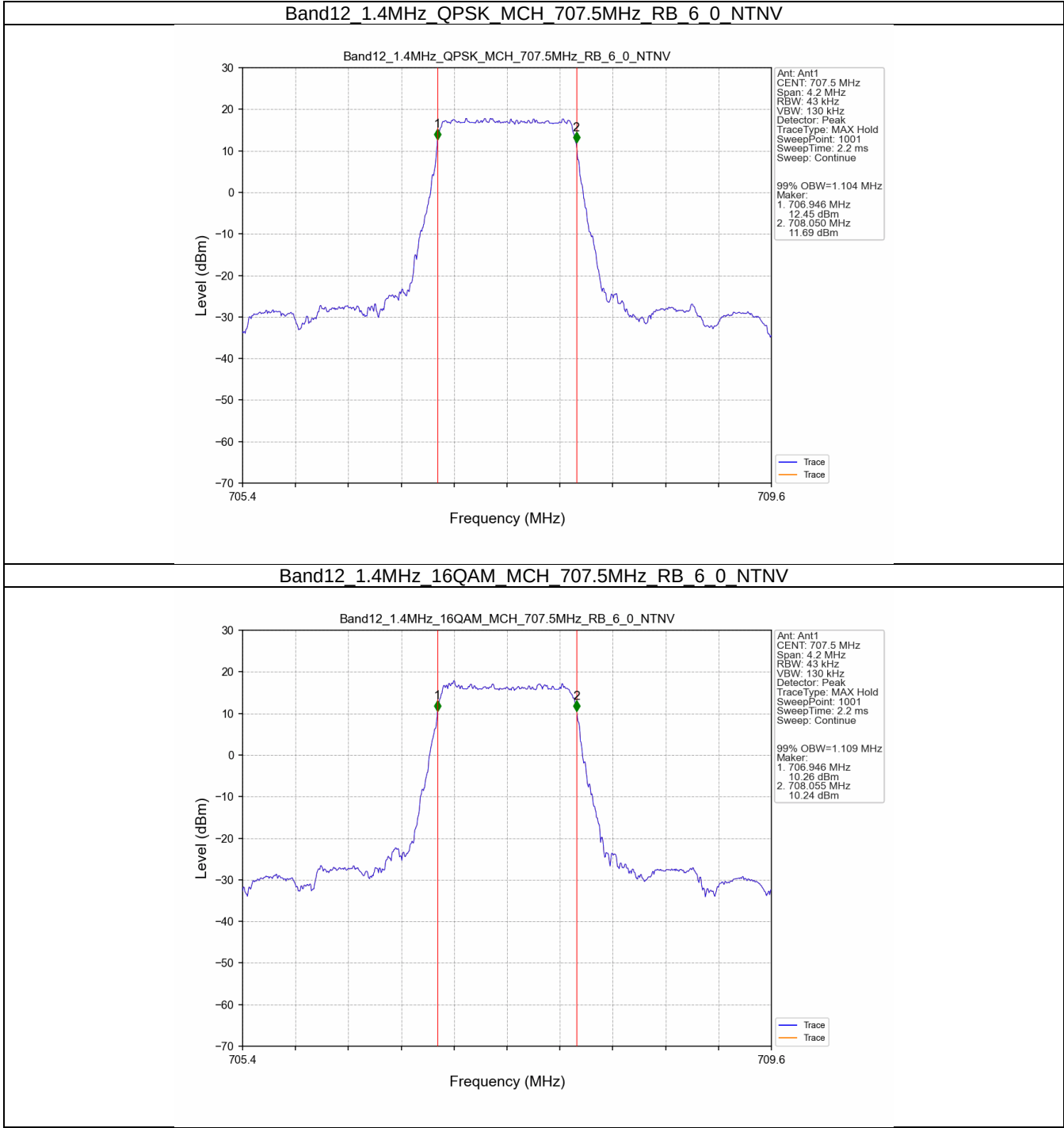
Band: 12 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
1.4	QPSK	707.5	6	0	1.104	/	Pass
	16QAM	707.5	6	0	1.109	/	Pass
3	QPSK	707.5	15	0	2.739	/	Pass
	16QAM	707.5	15	0	2.727	/	Pass
5	QPSK	707.5	25	0	4.566	/	Pass
	16QAM	707.5	25	0	4.535	/	Pass
10	QPSK	707.5	50	0	9.036	/	Pass
	16QAM	707.5	27	0	5.104	/	Pass

3.1.2 Band12_XDB

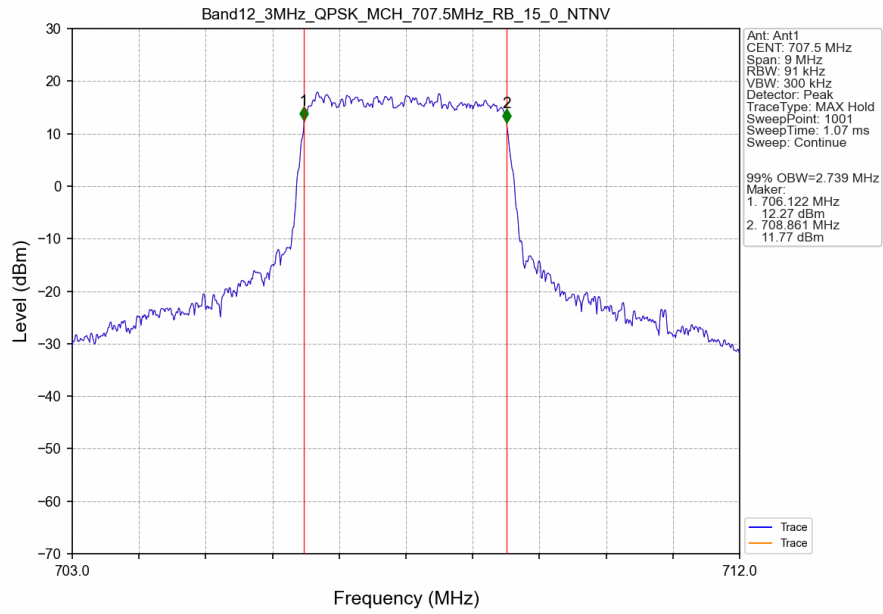
Band: 12 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
1.4	QPSK	707.5	6	0	1.313	/	Pass
	16QAM	707.5	6	0	1.324	/	Pass
3	QPSK	707.5	15	0	3.044	/	Pass
	16QAM	707.5	15	0	3.038	/	Pass
5	QPSK	707.5	25	0	5.100	/	Pass
	16QAM	707.5	25	0	5.048	/	Pass
10	QPSK	707.5	50	0	10.232	/	Pass
	16QAM	707.5	27	0	6.428	/	Pass

3.2 Test Graph

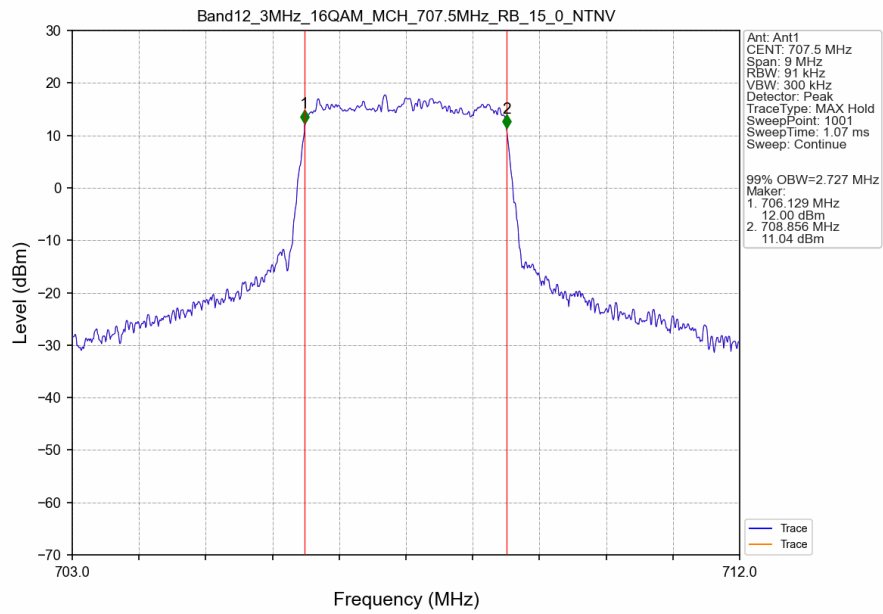
3.2.1 Band12_OBW



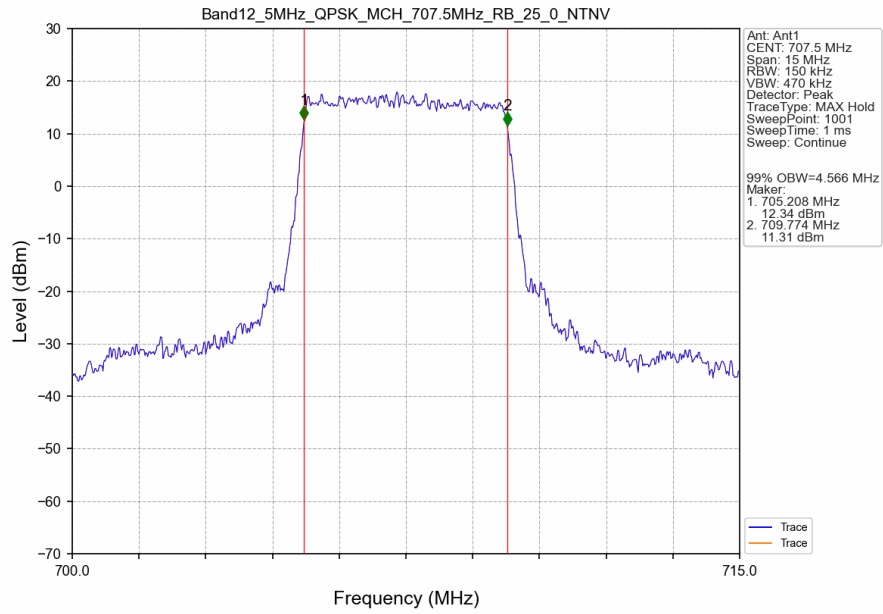
Band12_3MHz_QPSK_MCH_707.5MHz_RB_15_0_NTNV



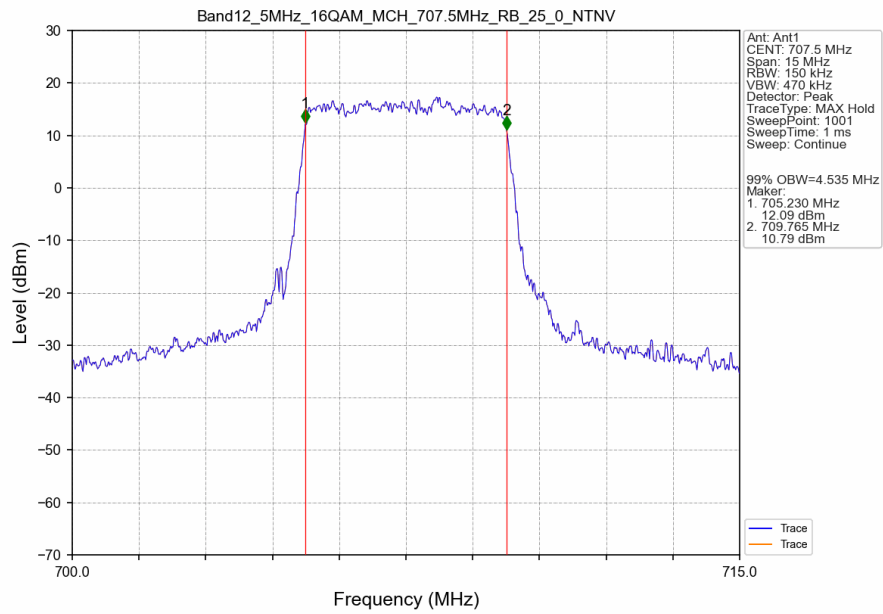
Band12_3MHz_16QAM_MCH_707.5MHz_RB_15_0_NTNV



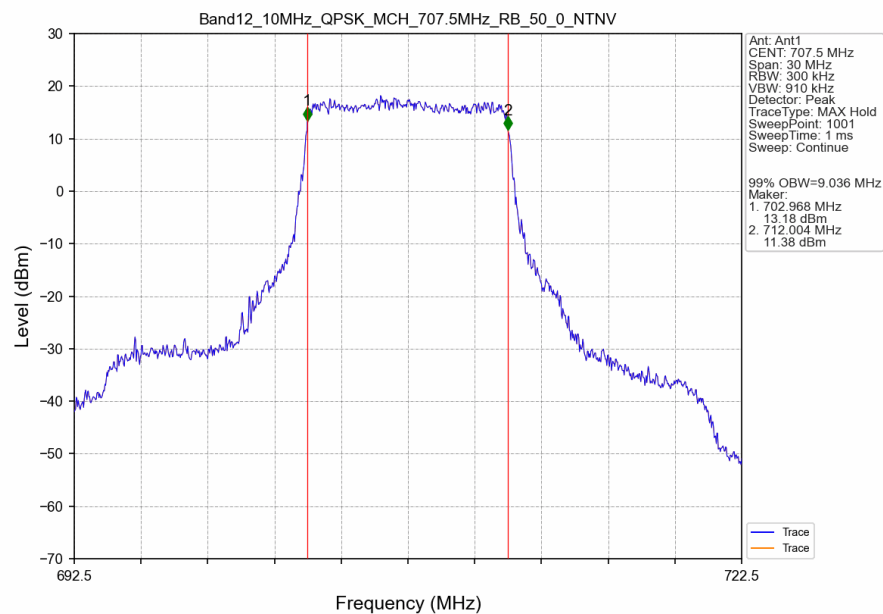
Band12_5MHz_QPSK_MCH_707.5MHz_RB_25_0_NTNV



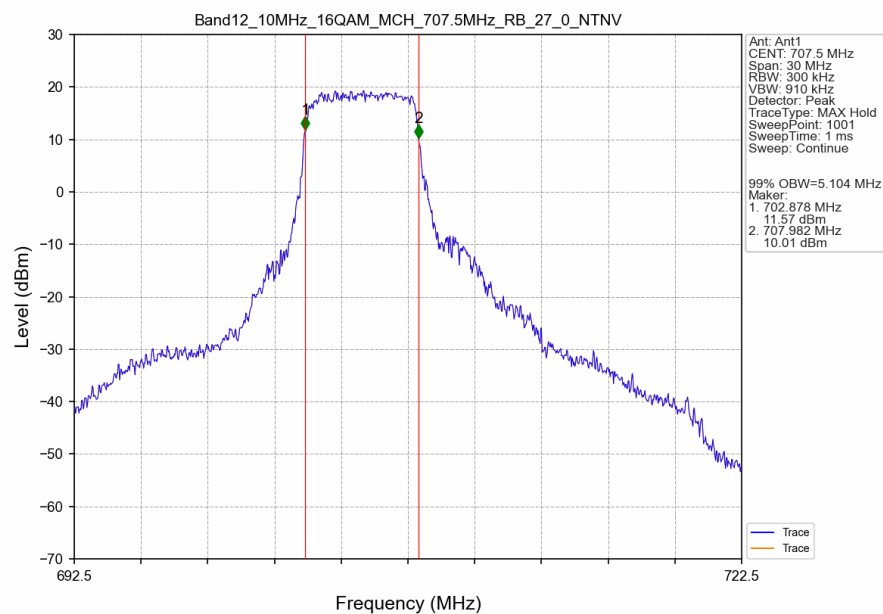
Band12_5MHz_16QAM_MCH_707.5MHz_RB_25_0_NTNV



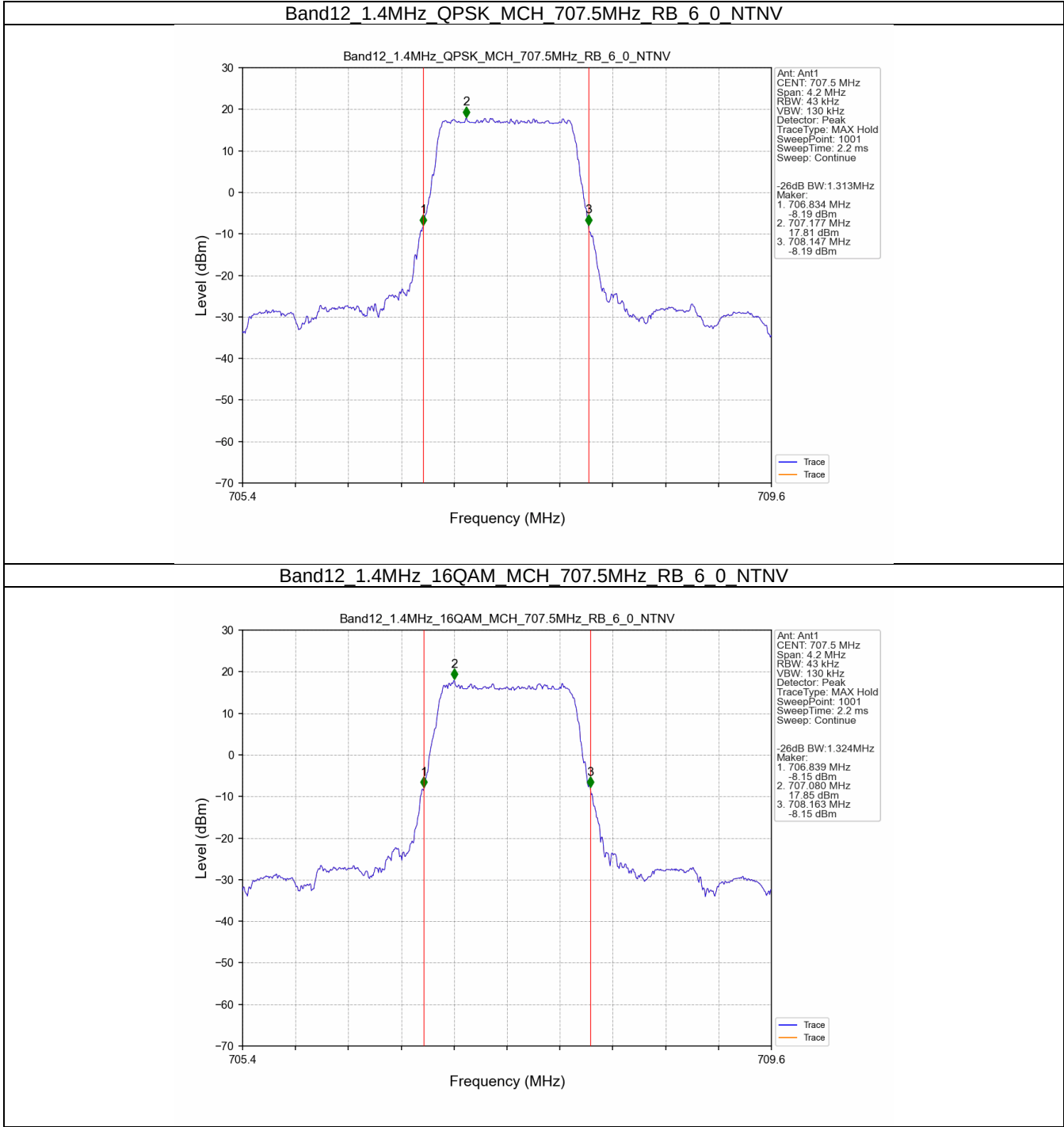
Band12_10MHz_QPSK_MCH_707.5MHz_RB_50_0_NTNV



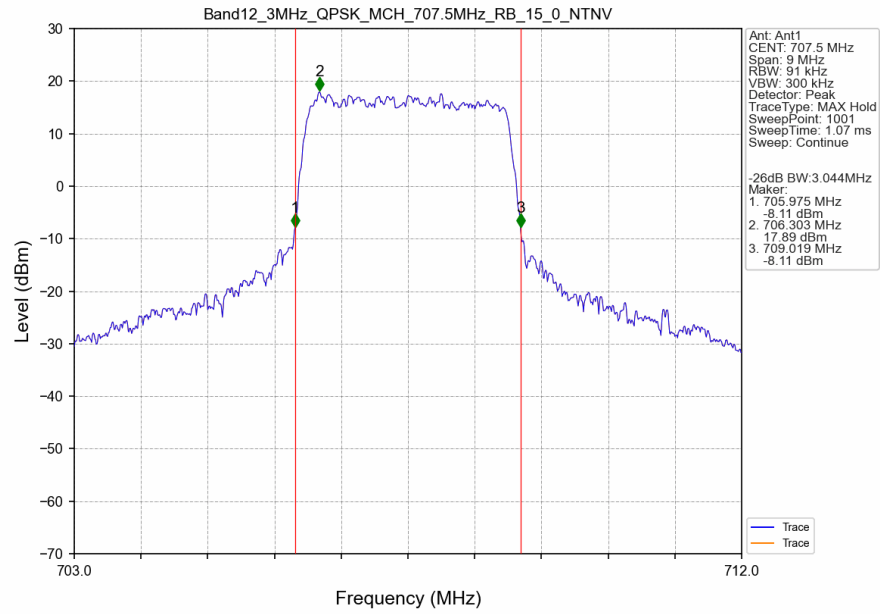
Band12_10MHz_16QAM_MCH_707.5MHz_RB_27_0_NTNV



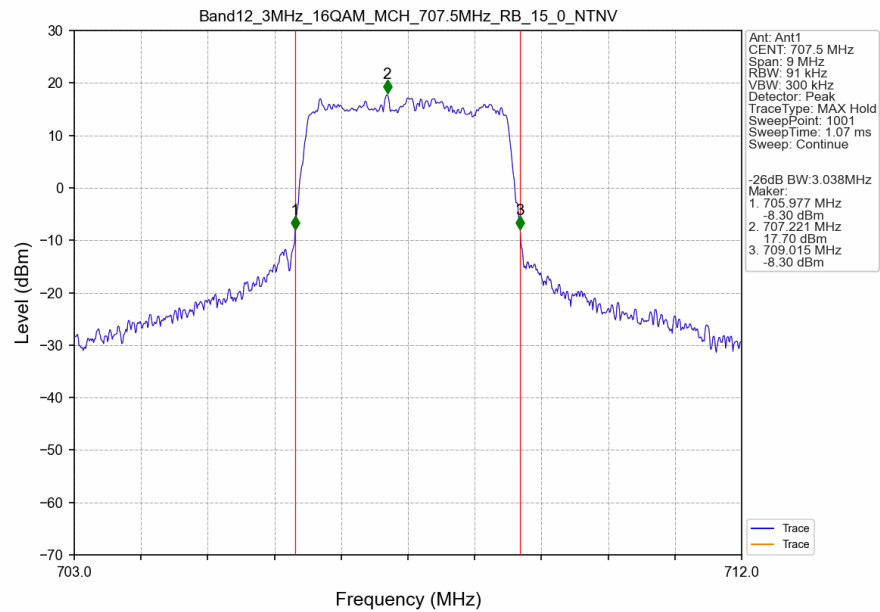
3.2.2 Band12_XDB



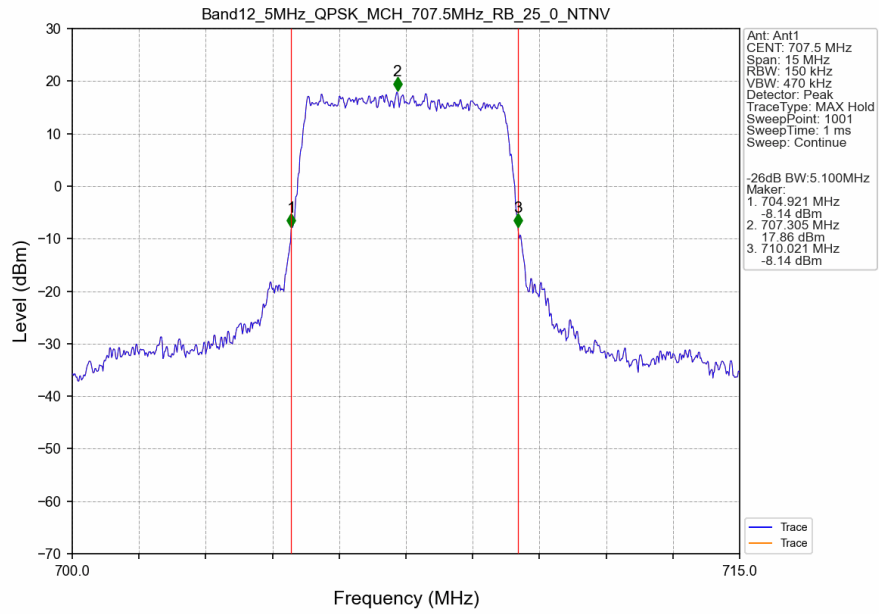
Band12_3MHz_QPSK_MCH_707.5MHz_RB_15_0_NTNV



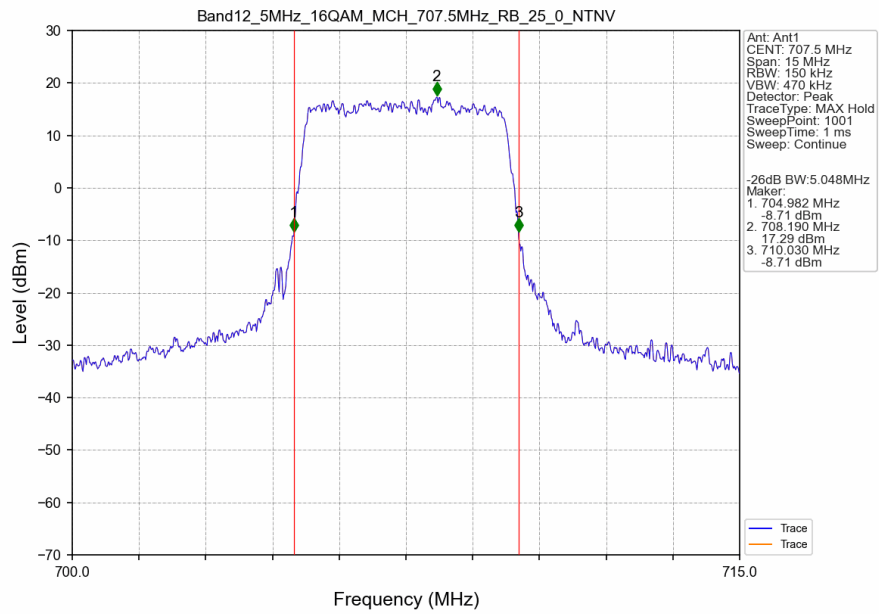
Band12_3MHz_16QAM_MCH_707.5MHz_RB_15_0_NTNV



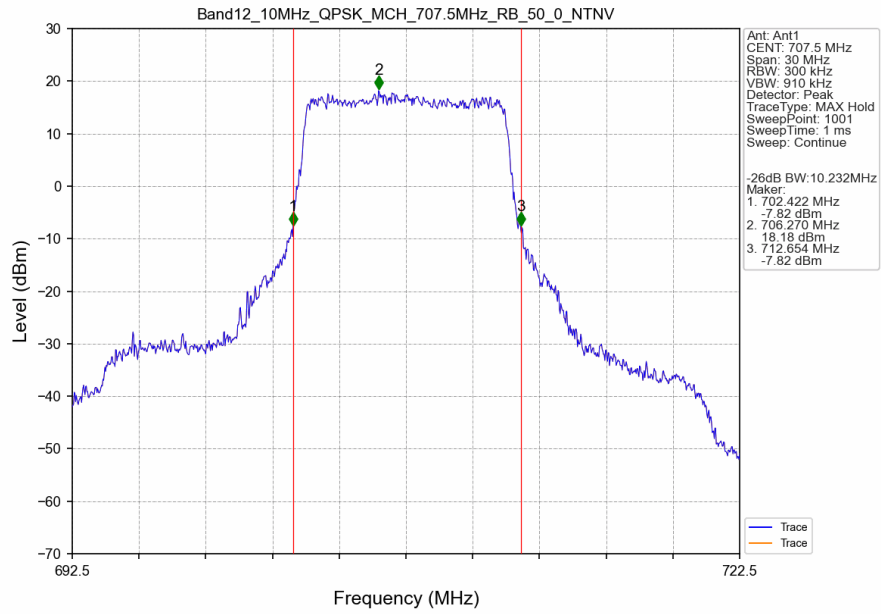
Band12_5MHz_QPSK_MCH_707.5MHz_RB_25_0_NTNV



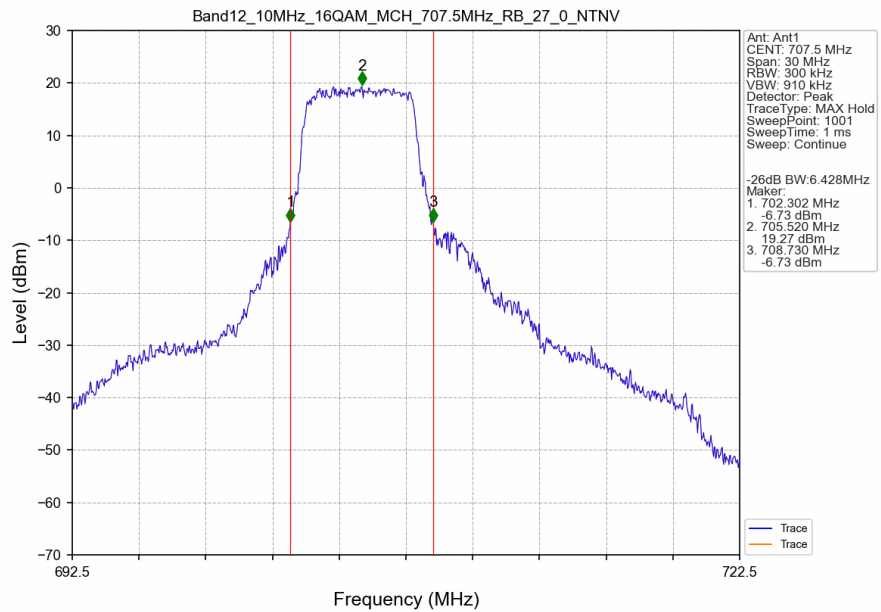
Band12_5MHz_16QAM_MCH_707.5MHz_RB_25_0_NTNV



Band12 10MHz QPSK MCH 707.5MHz RB 50 0 NTV



Band12 10MHz 16QAM MCH 707.5MHz RB 27 0 NTV



4. Peak-Average Ratio

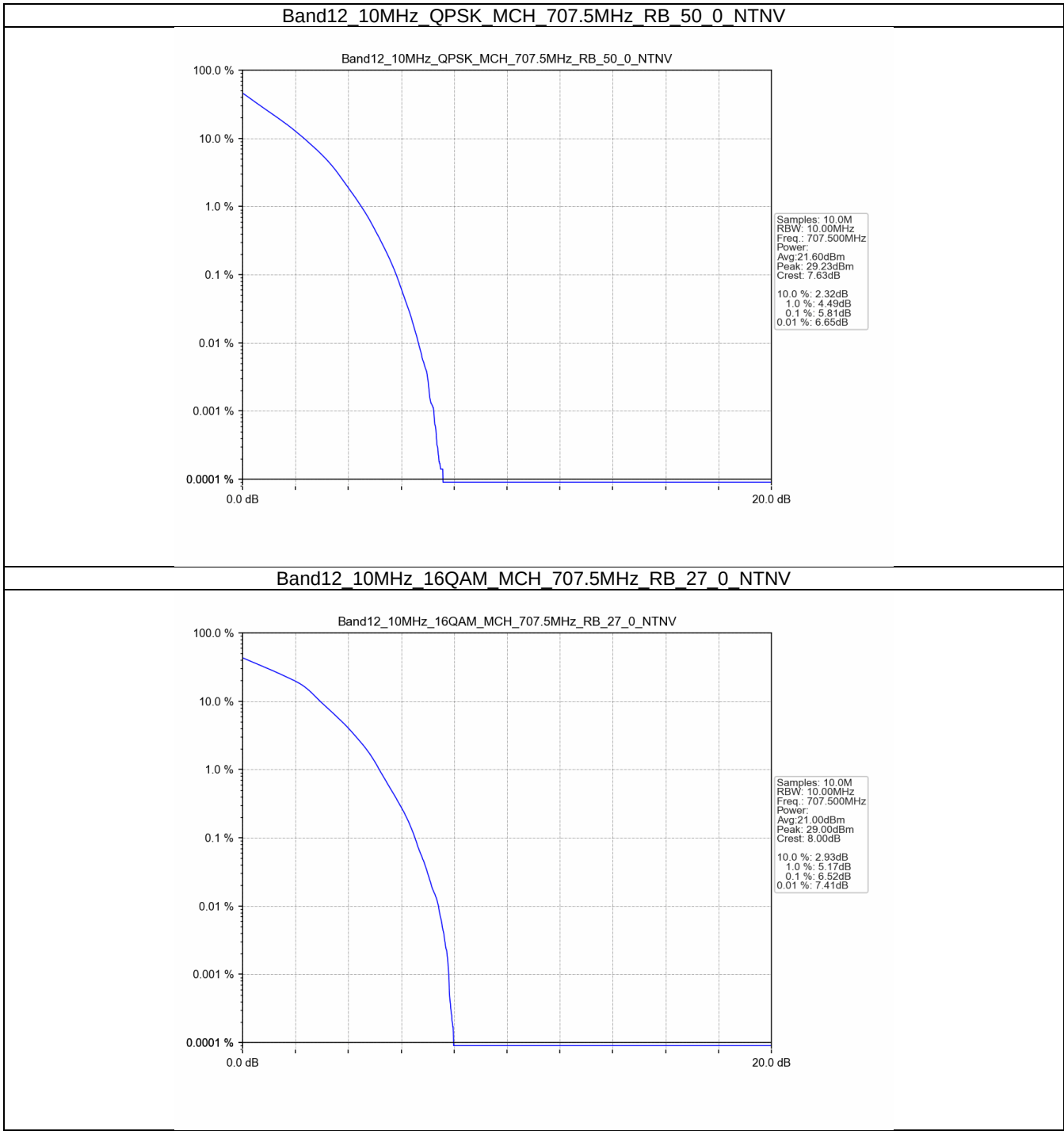
4.1 Test Result

4.1.1 B12_10MHz

Band: 12 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	707.5	50	0	5.81	<=13	Pass
16QAM	707.5	27	0	6.52	<=13	Pass

4.2 Test Graph

4.2.1 B12_10MHz



5. Spurious Emission

5.1 Test Result

5.1.1 B12_1.4MHz

Band: 12 / Bandwidth: 1.4MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	699.7	1	0	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass
	707.5	1	0	Refer To Test Graph		Pass
		715.3	1	0	Refer To Test Graph	
	5			Refer To Test Graph		Pass
	6		0	Refer To Test Graph		Pass

5.1.2 B12_3MHz

Band: 12 / Bandwidth: 3MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	700.5	1	0	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
	707.5	1	0	Refer To Test Graph		Pass
	714.5	1	0	Refer To Test Graph		Pass
			14	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass

5.1.3 B12_5MHz

Band: 12 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	701.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	707.5	1	0	Refer To Test Graph		Pass
	713.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass

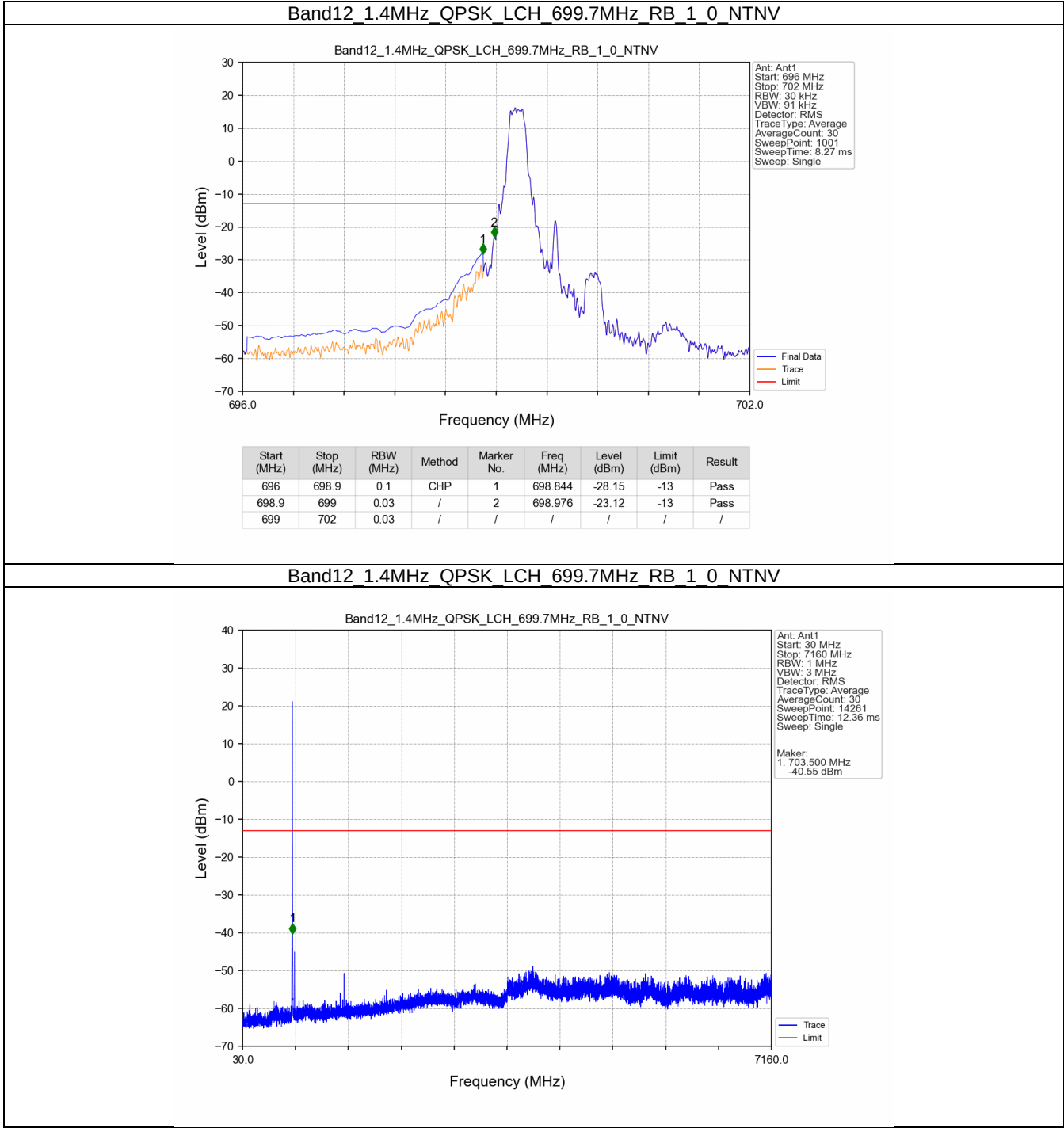
5.1.4 B12_10MHz

Band: 12 / Bandwidth: 10MHz / NTVN						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	704	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	707.5	1	0	Refer To Test Graph		Pass

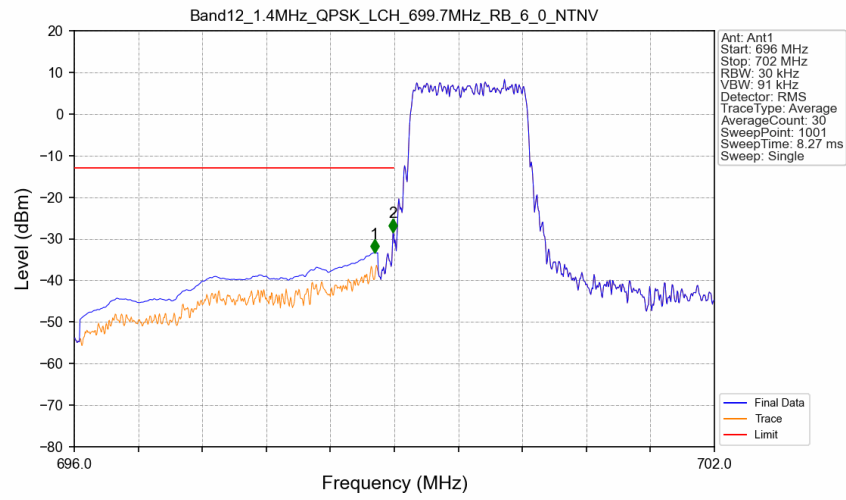
	711	1	0	Refer To Test Graph	Pass
			49	Refer To Test Graph	Pass
		50	0	Refer To Test Graph	Pass

5.2 Test Graph

5.2.1 B12_1.4MHz

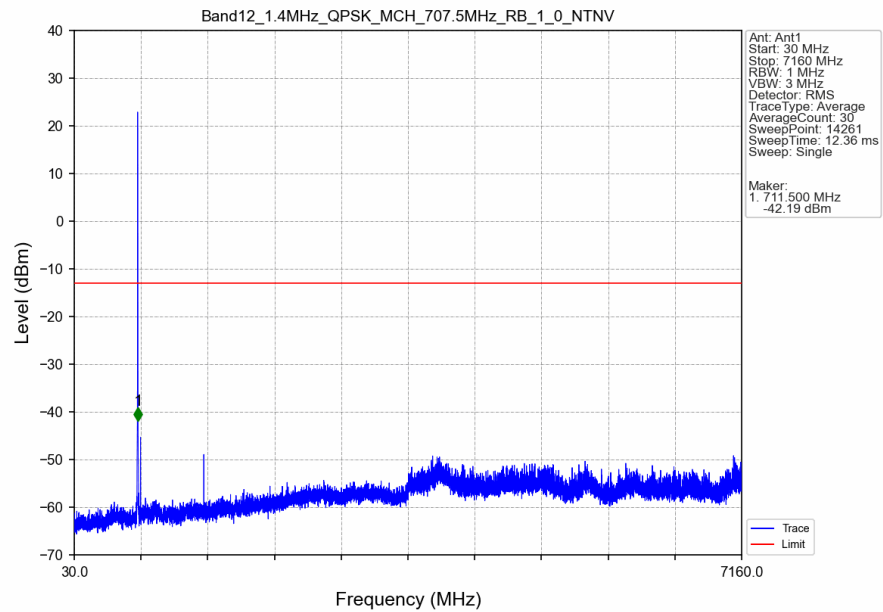


Band12_1.4MHz_QPSK_LCH_699.7MHz_RB_6_0_NTNV

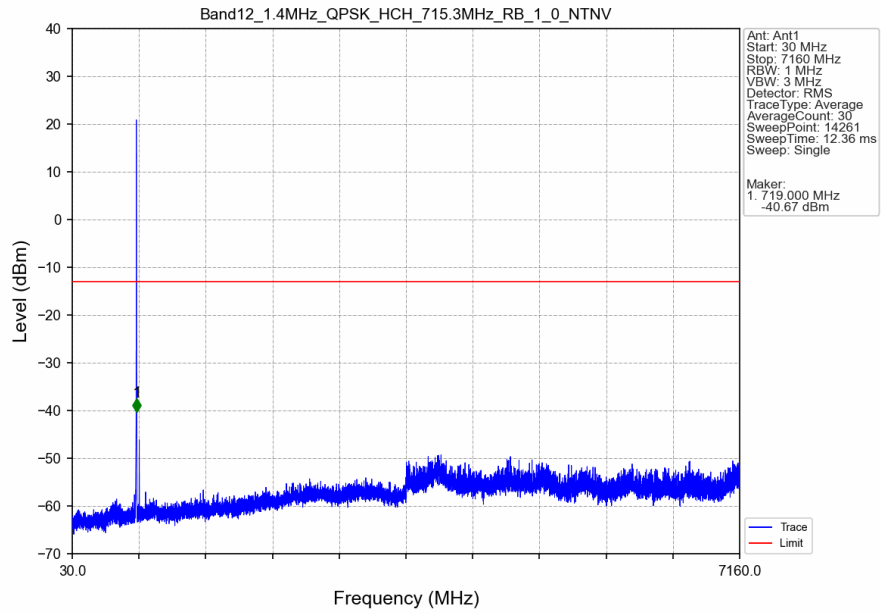


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
696	698.9	0.1	CHP	1	698.814	-33.32	-13	Pass
698.9	699	0.03	/	2	698.988	-28.30	-13	Pass
699	702	0.03	/	/	/	/	/	/

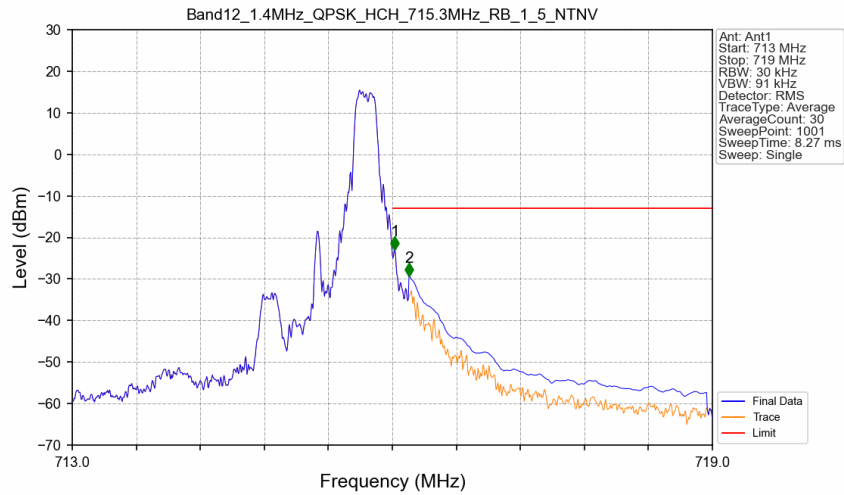
Band12_1.4MHz_QPSK_MCH_707.5MHz_RB_1_0_NTNV



Band12_1.4MHz_QPSK_HCH_715.3MHz_RB_1_0_NTNV

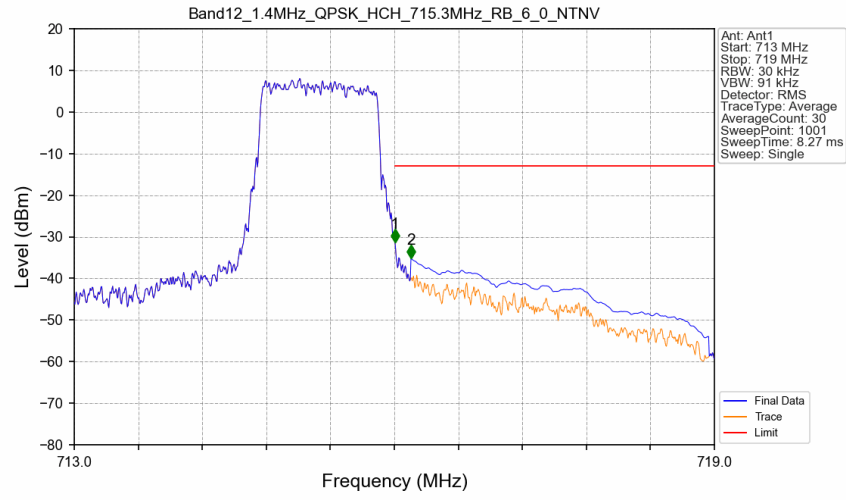


Band12_1.4MHz_QPSK_HCH_715.3MHz_RB_1_5_NTNV



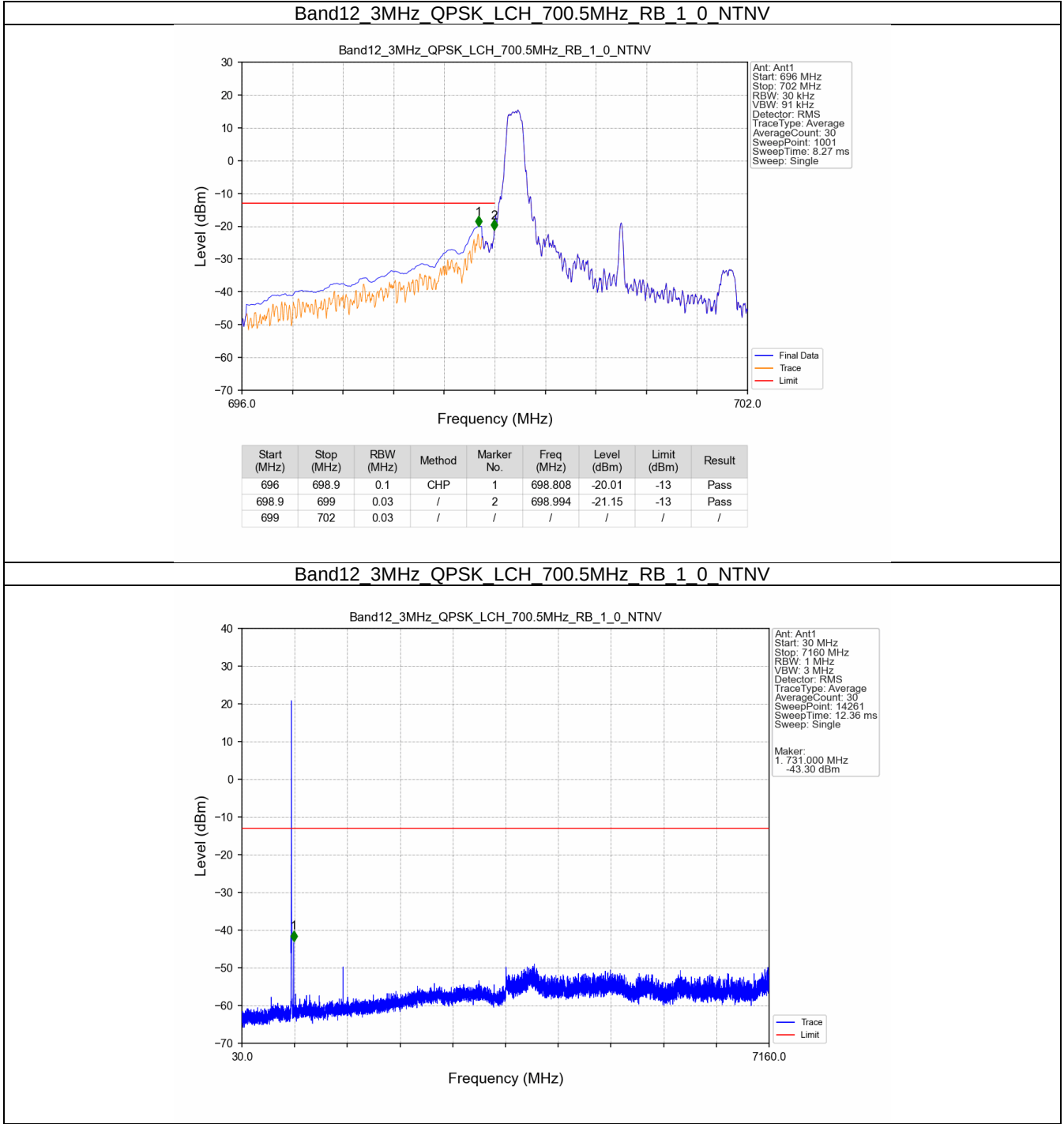
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
713	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.024	-22.99	-13	Pass
716.1	719	0.1	CHP	2	716.156	-29.26	-13	Pass

Band12_1.4MHz_QPSK_HCH_715.3MHz_RB_6_0_NTNV

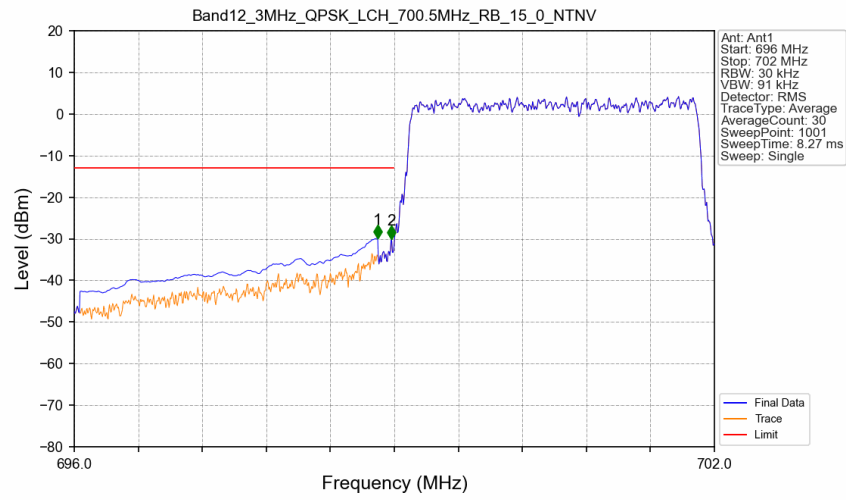


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
713	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.006	-31.25	-13	Pass
716.1	719	0.1	CHP	2	716.156	-35.21	-13	Pass

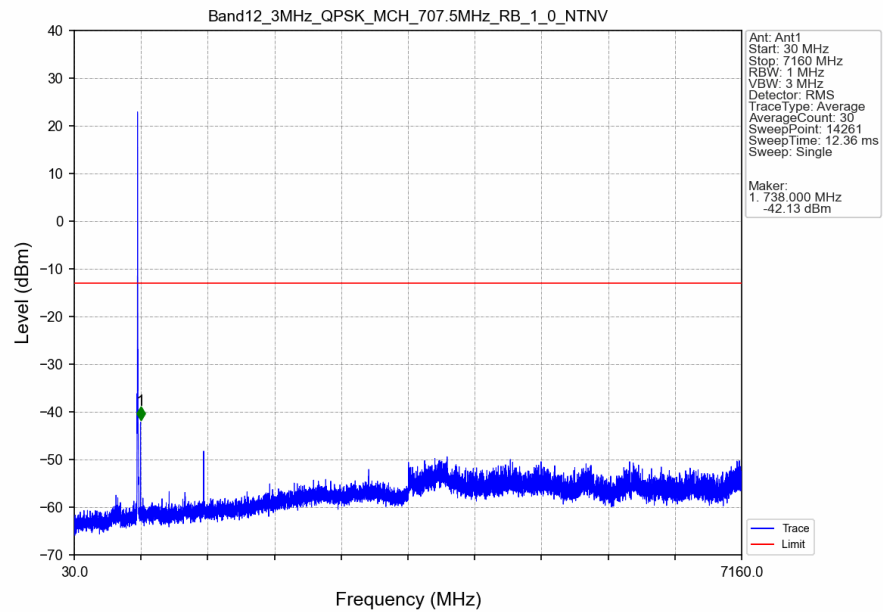
5.2.2 B12_3MHz



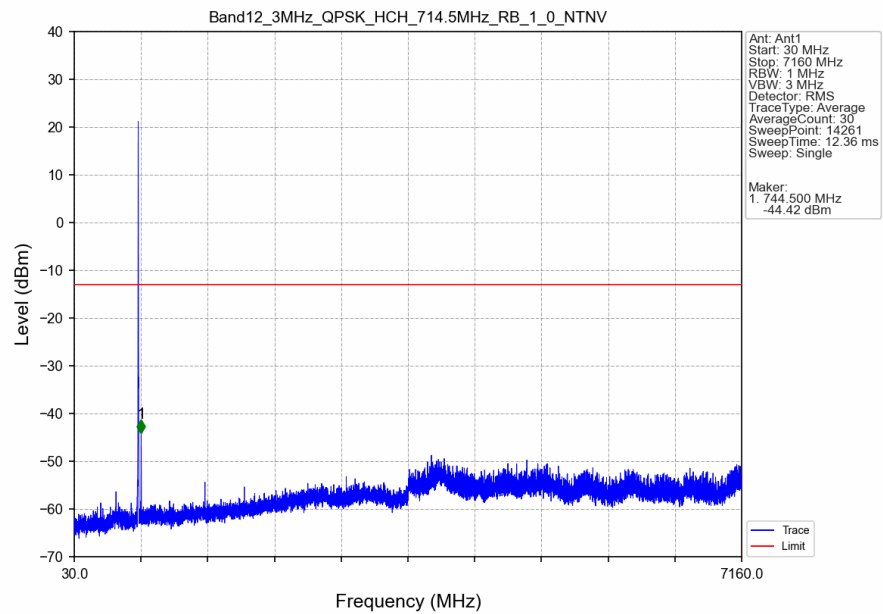
Band12_3MHz_QPSK_LCH_700.5MHz_RB_15_0_NTNV



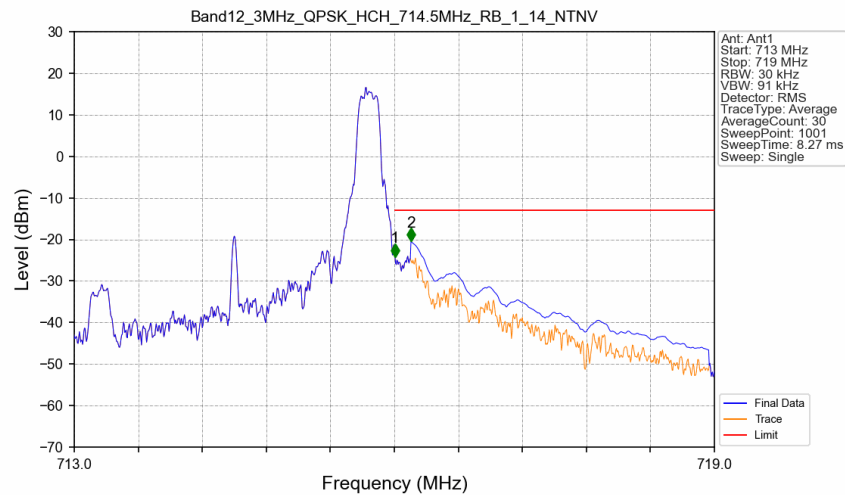
Band12_3MHz_QPSK_MCH_707.5MHz_RB_1_0_NTNV



Band12 3MHz QPSK HCH 714.5MHz RB 1 0 NTV

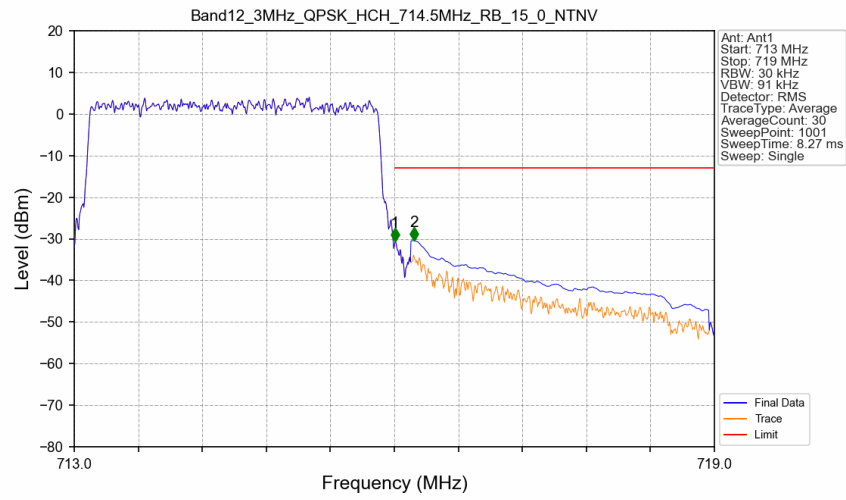


Band12 3MHz QPSK HCH 714.5MHz RB 1 14 NTV



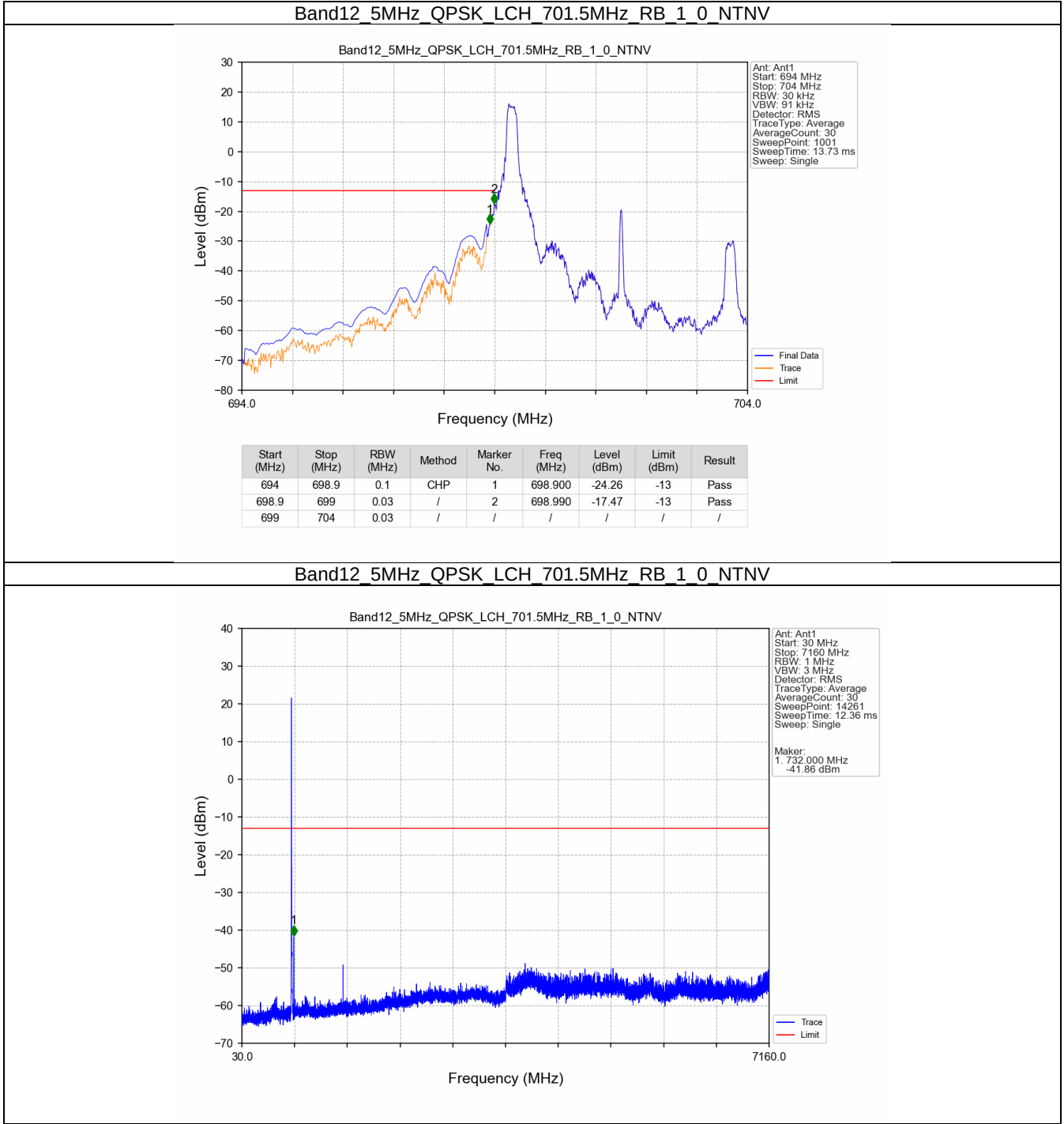
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
713	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.006	-24.14	-13	Pass
716.1	719	0.1	CHP	2	716.156	-20.46	-13	Pass

Band12 3MHz QPSK HCH 714.5MHz RB 15 0_NTNV

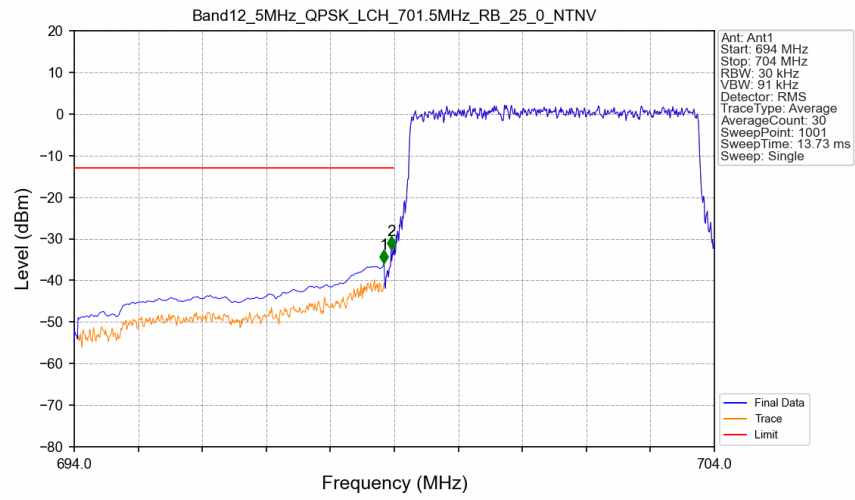


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
713	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.006	-30.58	-13	Pass
716.1	719	0.1	CHP	2	716.186	-30.33	-13	Pass

5.2.3 B12_5MHz

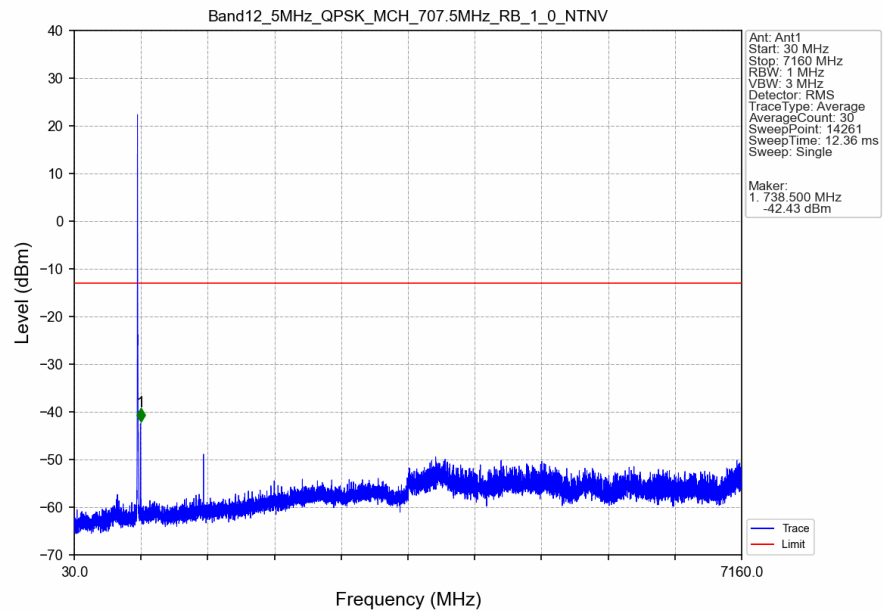


Band12 5MHz QPSK LCH 701.5MHz RB 25_0 NTNV

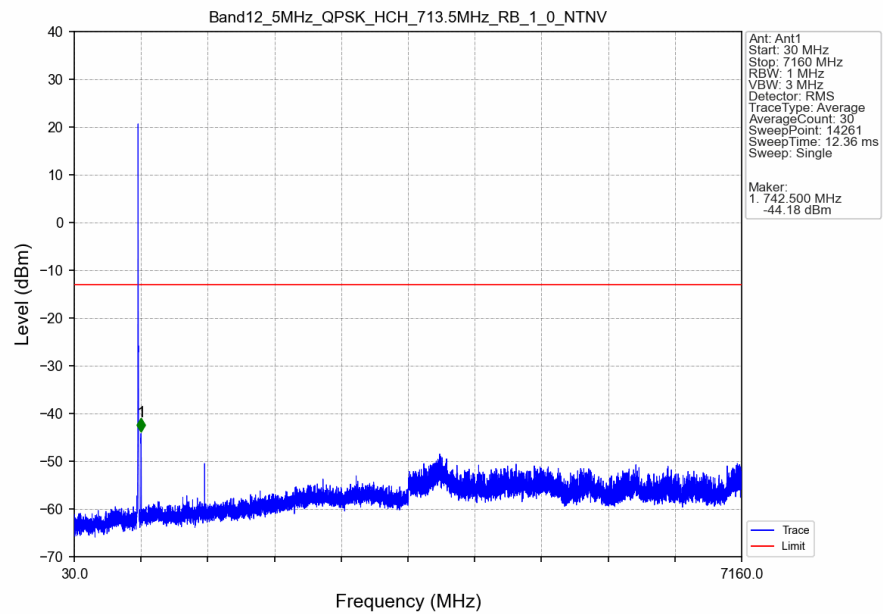


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
694	698.9	0.1	CHP	1	698.840	-35.87	-13	Pass
698.9	699	0.03	/	2	698.950	-32.63	-13	Pass
699	704	0.03	/	/	/	/	/	/

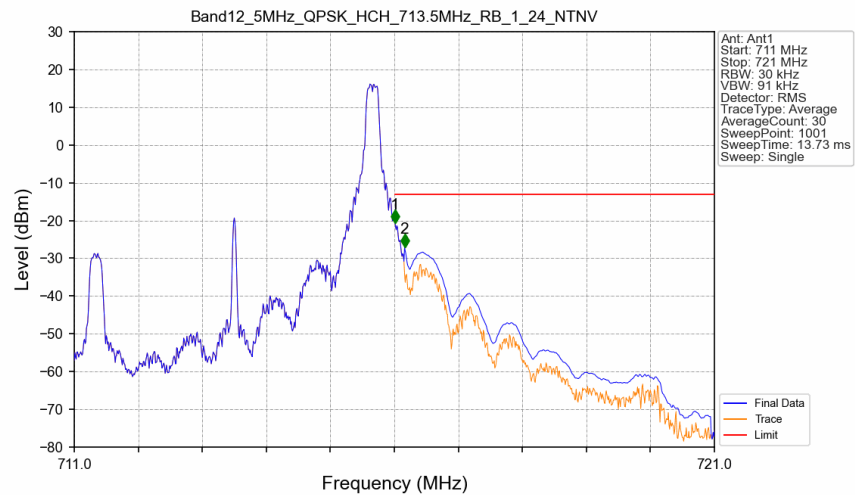
Band12 5MHz QPSK MCH 707.5MHz RB 1_0 NTNV



Band12 5MHz QPSK HCH 713.5MHz RB 1 0 NTN

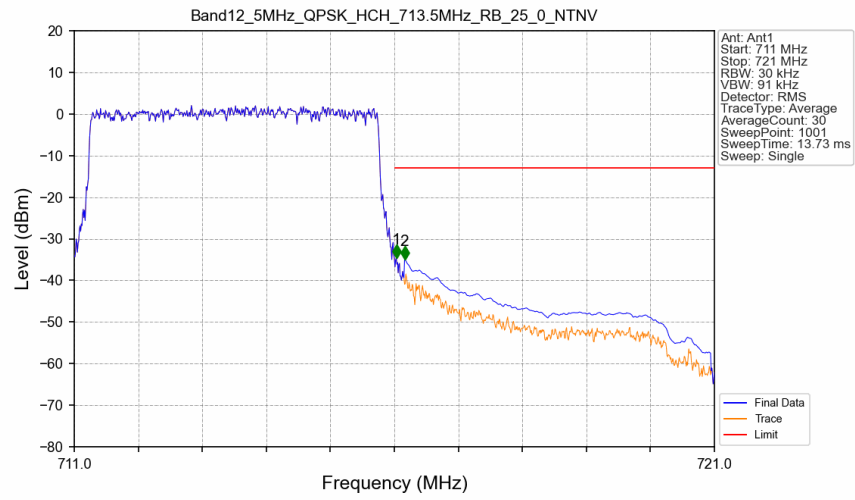


Band12 5MHz QPSK HCH 713.5MHz RB 1 24 NTN



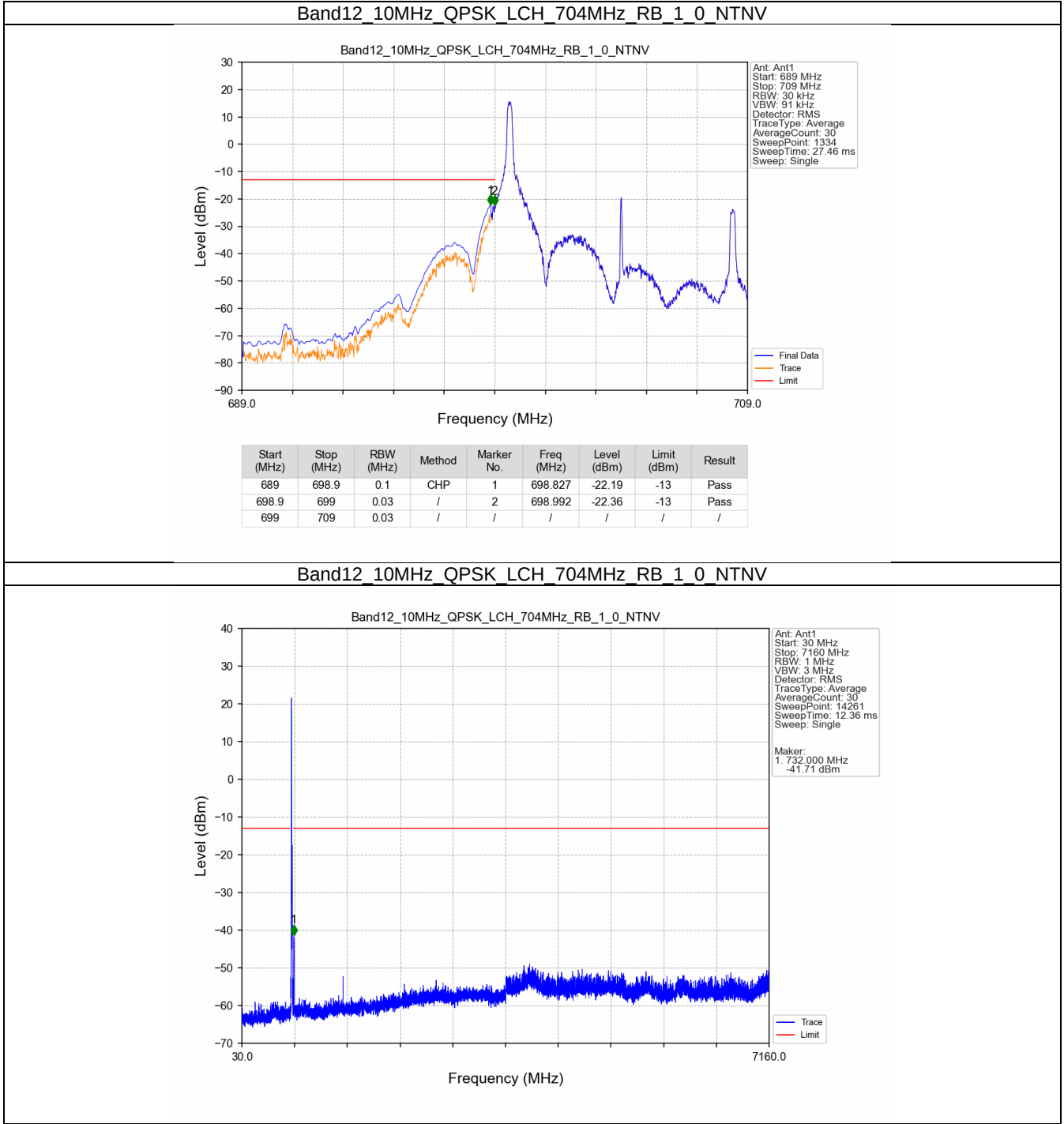
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
711	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.010	-20.63	-13	Pass
716.1	721	0.1	CHP	2	716.160	-27.14	-13	Pass

Band12_5MHz_QPSK_HCH_713.5MHz_RB_25_0_NTNV

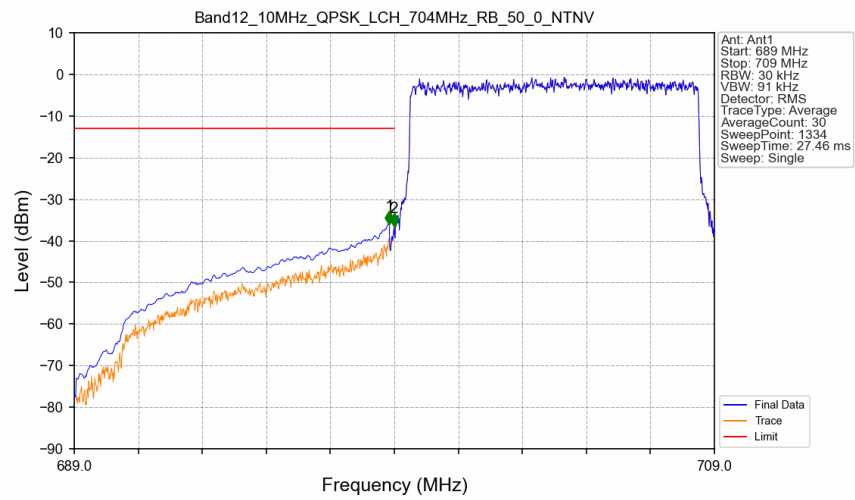


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
711	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.030	-34.63	-13	Pass
716.1	721	0.1	CHP	2	716.160	-34.90	-13	Pass

5.2.4 B12_10MHz

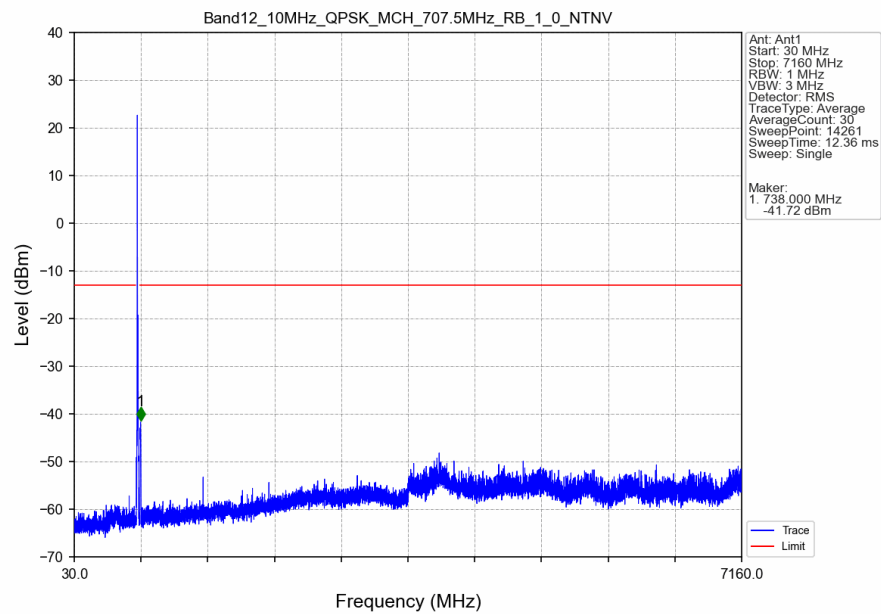


Band12 10MHz QPSK LCH 704MHz RB 50 0 NTN

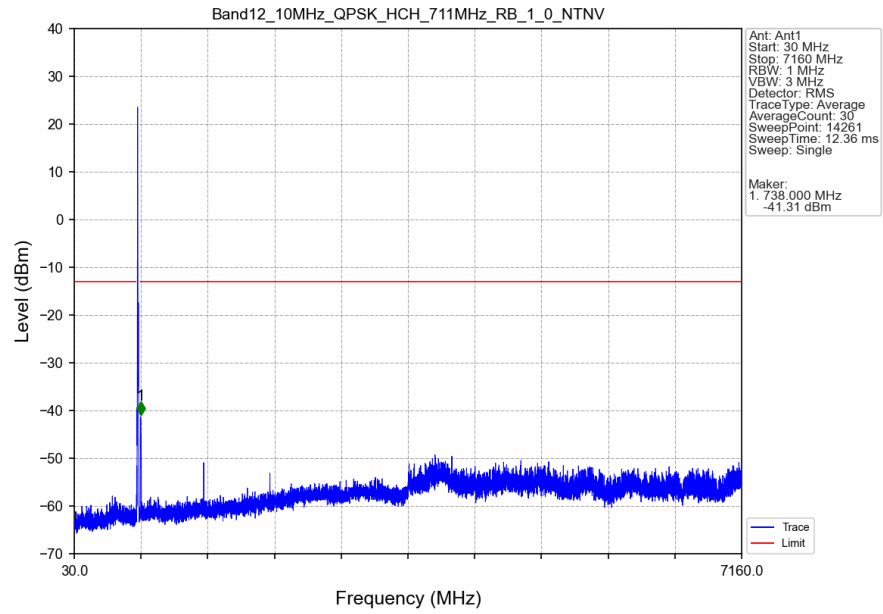


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
689	698.9	0.1	CHP	1	698.842	-36.07	-13	Pass
698.9	699	0.03	/	2	698.992	-36.51	-13	Pass
699	709	0.03	/	/	/	/	/	/

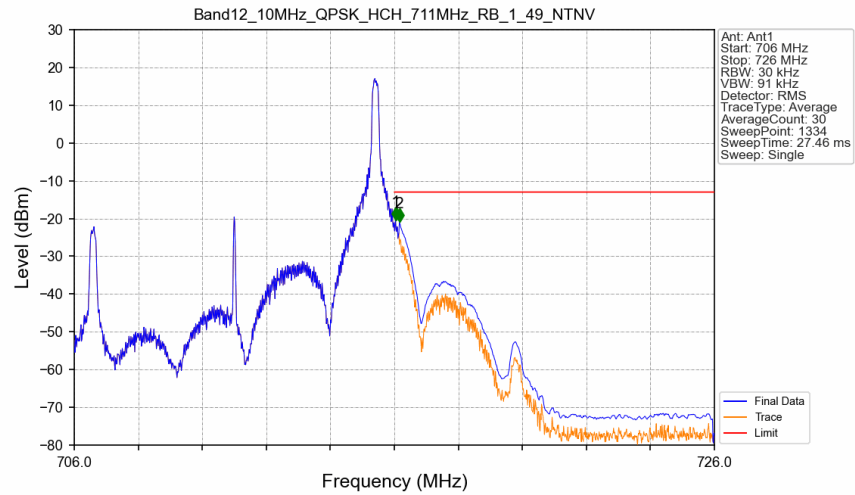
Band12 10MHz QPSK MCH 707.5MHz RB 1 0 NTN



Band12_10MHz_QPSK_HCH_711MHz_RB_1_0_NTNV

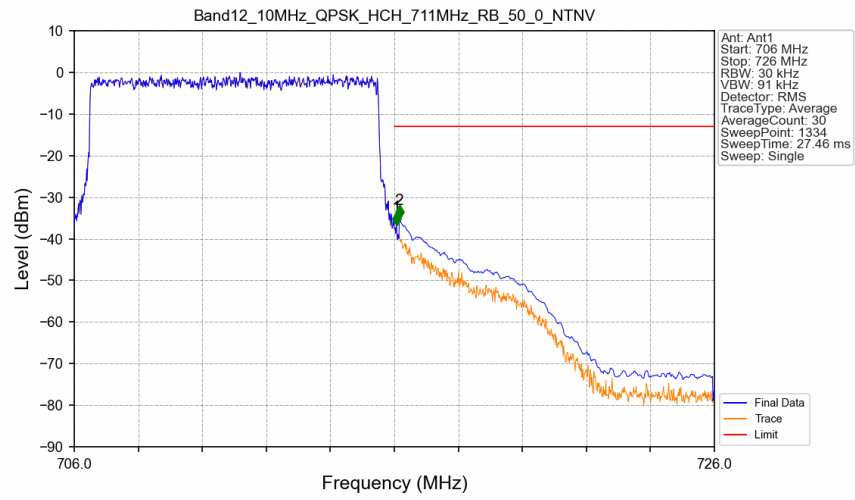


Band12_10MHz_QPSK_HCH_711MHz_RB_1_49_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
706	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.038	-20.45	-13	Pass
716.1	726	0.1	CHP	2	716.158	-20.85	-13	Pass

Band12_10MHz_QPSK_HCH_711MHz_RB_50_0_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
706	716	0.03	/	/	/	/	/	/
716	716.1	0.03	/	1	716.068	-36.69	-13	Pass
716.1	726	0.1	CHP	2	716.158	-35.19	-13	Pass