

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

1.1.1 B70_5MHz_EIRP

Band: 70 / Bandwidth: 5MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	1697.5	1	0	23.58	3.00	26.58	<=30	Pass
			13	23.90	3.00	26.90	<=30	Pass
			24	23.76	3.00	26.76	<=30	Pass
		12	0	22.83	3.00	25.83	<=30	Pass
			6	22.85	3.00	25.85	<=30	Pass
			13	22.93	3.00	25.93	<=30	Pass
		25	0	22.86	3.00	25.86	<=30	Pass
	1702.5	1	0	23.84	3.00	26.84	<=30	Pass
			13	23.42	3.00	26.42	<=30	Pass
			24	23.38	3.00	26.38	<=30	Pass
		12	0	22.82	3.00	25.82	<=30	Pass
			6	22.86	3.00	25.86	<=30	Pass
			13	22.83	3.00	25.83	<=30	Pass
		25	0	22.80	3.00	25.80	<=30	Pass
	1707.5	1	0	23.74	3.00	26.74	<=30	Pass
			13	23.59	3.00	26.59	<=30	Pass
			24	23.74	3.00	26.74	<=30	Pass
		12	0	22.92	3.00	25.92	<=30	Pass
			6	22.92	3.00	25.92	<=30	Pass
			13	22.84	3.00	25.84	<=30	Pass
		25	0	22.88	3.00	25.88	<=30	Pass
16QAM	1697.5	1	0	23.08	3.00	26.08	<=30	Pass
			13	22.77	3.00	25.77	<=30	Pass
			24	22.80	3.00	25.80	<=30	Pass
		12	0	21.89	3.00	24.89	<=30	Pass
			6	21.94	3.00	24.94	<=30	Pass
			13	21.91	3.00	24.91	<=30	Pass
		25	0	21.90	3.00	24.90	<=30	Pass
	1702.5	1	0	22.26	3.00	25.26	<=30	Pass
			13	23.06	3.00	26.06	<=30	Pass
			24	22.91	3.00	25.91	<=30	Pass
		12	0	21.82	3.00	24.82	<=30	Pass
			6	21.96	3.00	24.96	<=30	Pass
			13	21.97	3.00	24.97	<=30	Pass
		25	0	21.78	3.00	24.78	<=30	Pass
	1707.5	1	0	23.01	3.00	26.01	<=30	Pass
			13	23.04	3.00	26.04	<=30	Pass
			24	22.38	3.00	25.38	<=30	Pass
		12	0	21.95	3.00	24.95	<=30	Pass
			6	21.92	3.00	24.92	<=30	Pass
			13	21.97	3.00	24.97	<=30	Pass
		25	0	21.88	3.00	24.88	<=30	Pass
64QAM	1697.5	1	0	22.97	3.00	25.97	<=30	Pass
			13	22.61	3.00	25.61	<=30	Pass
			24	22.64	3.00	25.64	<=30	Pass
		12	0	21.84	3.00	24.84	<=30	Pass
			6	21.92	3.00	24.92	<=30	Pass

			13	21.97	3.00	24.97	<=30	Pass
		25	0	21.89	3.00	24.89	<=30	Pass
	1702.5	1	0	22.91	3.00	25.91	<=30	Pass
			13	22.69	3.00	25.69	<=30	Pass
			24	22.89	3.00	25.89	<=30	Pass
		12	0	21.85	3.00	24.85	<=30	Pass
			6	21.90	3.00	24.90	<=30	Pass
			13	21.83	3.00	24.83	<=30	Pass
		25	0	21.85	3.00	24.85	<=30	Pass
	1707.5	1	0	22.75	3.00	25.75	<=30	Pass
			13	22.71	3.00	25.71	<=30	Pass
			24	22.69	3.00	25.69	<=30	Pass
		12	0	21.72	3.00	24.72	<=30	Pass
			6	21.92	3.00	24.92	<=30	Pass
			13	21.96	3.00	24.96	<=30	Pass
		25	0	21.89	3.00	24.89	<=30	Pass

Note1: EIRP=Conducted Power+Antenna Gain

1.1.2 B70_10MHz_EIRP

Band: 70 / Bandwidth: 10MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	1700	1	0	23.73	3.00	26.73	<=30	Pass
			25	23.31	3.00	26.31	<=30	Pass
			49	23.75	3.00	26.75	<=30	Pass
		25	0	22.84	3.00	25.84	<=30	Pass
			13	23.01	3.00	26.01	<=30	Pass
			25	22.91	3.00	25.91	<=30	Pass
		50	0	22.96	3.00	25.96	<=30	Pass
	1702.5	1	0	23.76	3.00	26.76	<=30	Pass
			25	23.63	3.00	26.63	<=30	Pass
			49	23.69	3.00	26.69	<=30	Pass
		25	0	22.81	3.00	25.81	<=30	Pass
			13	22.88	3.00	25.88	<=30	Pass
			25	22.79	3.00	25.79	<=30	Pass
		50	0	22.74	3.00	25.74	<=30	Pass
	1705	1	0	23.77	3.00	26.77	<=30	Pass
			25	23.63	3.00	26.63	<=30	Pass
			49	23.47	3.00	26.47	<=30	Pass
		25	0	22.89	3.00	25.89	<=30	Pass
			13	22.85	3.00	25.85	<=30	Pass
			25	22.80	3.00	25.80	<=30	Pass
		50	0	22.76	3.00	25.76	<=30	Pass
16QAM	1700	1	0	22.85	3.00	25.85	<=30	Pass
			25	22.91	3.00	25.91	<=30	Pass
			49	23.08	3.00	26.08	<=30	Pass
		25	0	21.83	3.00	24.83	<=30	Pass
			13	22.03	3.00	25.03	<=30	Pass
			25	21.95	3.00	24.95	<=30	Pass
		50	0	21.86	3.00	24.86	<=30	Pass
	1702.5	1	0	21.61	3.00	24.61	<=30	Pass
			25	22.81	3.00	25.81	<=30	Pass
			49	22.74	3.00	25.74	<=30	Pass
		25	0	21.82	3.00	24.82	<=30	Pass
			13	21.85	3.00	24.85	<=30	Pass
			25	21.82	3.00	24.82	<=30	Pass

		50	0	21.90	3.00	24.90	<=30	Pass	
	1705	1	0	22.71	3.00	25.71	<=30	Pass	
			25	23.03	3.00	26.03	<=30	Pass	
			49	22.83	3.00	25.83	<=30	Pass	
			0	21.92	3.00	24.92	<=30	Pass	
		25	13	21.89	3.00	24.89	<=30	Pass	
			25	21.84	3.00	24.84	<=30	Pass	
			50	0	21.89	3.00	24.89	<=30	Pass
				0	22.28	3.00	25.28	<=30	Pass
	64QAM	1700	1	25	22.78	3.00	25.78	<=30	Pass
49				22.39	3.00	25.39	<=30	Pass	
0				21.78	3.00	24.78	<=30	Pass	
25			13	21.93	3.00	24.93	<=30	Pass	
			25	21.94	3.00	24.94	<=30	Pass	
			50	0	21.89	3.00	24.89	<=30	Pass
1702.5			1	0	23.04	3.00	26.04	<=30	Pass
				25	22.35	3.00	25.35	<=30	Pass
				49	22.07	3.00	25.07	<=30	Pass
		25	0	21.83	3.00	24.83	<=30	Pass	
			13	21.84	3.00	24.84	<=30	Pass	
			25	21.80	3.00	24.80	<=30	Pass	
		50	0	21.90	3.00	24.90	<=30	Pass	
1705		1	0	22.56	3.00	25.56	<=30	Pass	
			25	22.66	3.00	25.66	<=30	Pass	
			49	22.63	3.00	25.63	<=30	Pass	
		25	0	21.89	3.00	24.89	<=30	Pass	
			13	21.87	3.00	24.87	<=30	Pass	
			25	21.83	3.00	24.83	<=30	Pass	
		50	0	21.88	3.00	24.88	<=30	Pass	
		Note1: EIRP=Conducted Power+Antenna Gain							

1.1.3 B70_15MHz_EIRP

Band: 70 / Bandwidth: 15MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	1702.5	1	0	23.91	3.00	26.91	<=30	Pass
			38	23.85	3.00	26.85	<=30	Pass
			74	23.74	3.00	26.74	<=30	Pass
		36	0	22.81	3.00	25.81	<=30	Pass
			18	22.82	3.00	25.82	<=30	Pass
			39	22.84	3.00	25.84	<=30	Pass
		75	0	22.87	3.00	25.87	<=30	Pass
16QAM	1702.5	1	0	23.07	3.00	26.07	<=30	Pass
			38	23.12	3.00	26.12	<=30	Pass
			74	22.89	3.00	25.89	<=30	Pass
		36	0	21.74	3.00	24.74	<=30	Pass
			18	21.89	3.00	24.89	<=30	Pass
			39	21.75	3.00	24.75	<=30	Pass
		75	0	21.80	3.00	24.80	<=30	Pass
64QAM	1702.5	1	0	22.56	3.00	25.56	<=30	Pass
			38	22.86	3.00	25.86	<=30	Pass
			74	22.16	3.00	25.16	<=30	Pass
		36	0	21.73	3.00	24.73	<=30	Pass
			18	21.88	3.00	24.88	<=30	Pass
			39	21.85	3.00	24.85	<=30	Pass
		75	0	21.84	3.00	24.84	<=30	Pass

Note1: EIRP=Conducted Power+Antenna Gain

2. Frequency Stability

2.1 Test Result

2.1.1 B70_10MHz

Band: 70 / Bandwidth: 10MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	1702.5	50	0	20	LV	-2.400	-0.0014	-2.5 to 2.5	Pass
					HV	0.200	0.0001	-2.5 to 2.5	Pass
					NV	-2.200	-0.0013	-2.5 to 2.5	Pass
				-30	NV	-0.800	-0.0005	-2.5 to 2.5	Pass
				-20	NV	-2.200	-0.0013	-2.5 to 2.5	Pass
				-10	NV	-2.500	-0.0015	-2.5 to 2.5	Pass
				0	NV	-2.500	-0.0015	-2.5 to 2.5	Pass
				10	NV	-2.100	-0.0012	-2.5 to 2.5	Pass
				30	NV	-2.400	-0.0014	-2.5 to 2.5	Pass
				40	NV	-2.400	-0.0014	-2.5 to 2.5	Pass
				50	NV	-2.400	-0.0014	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band70_OBW

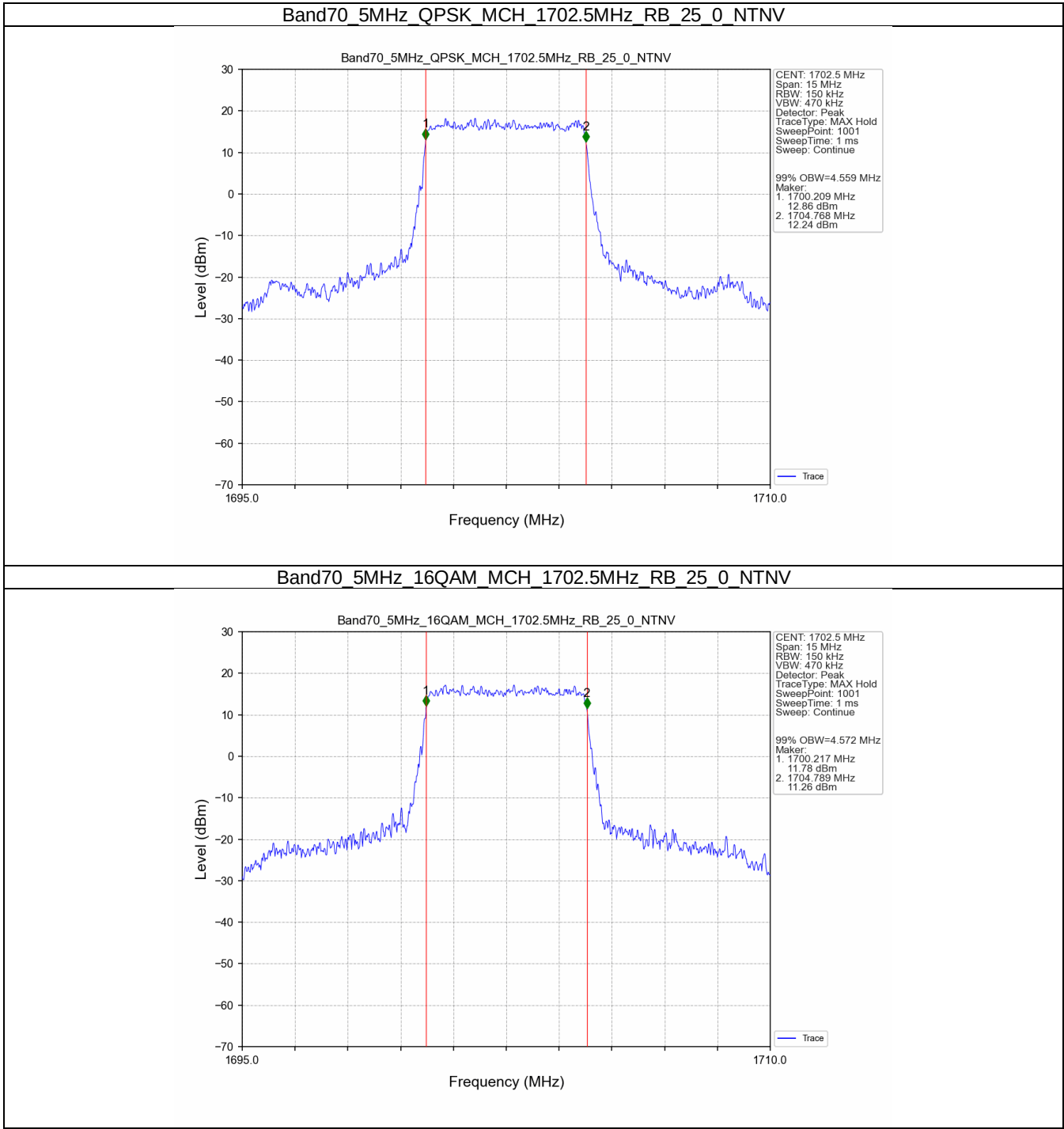
Band: 70 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	1702.5	25	0	4.559	/	Pass
	16QAM	1702.5	25	0	4.572	/	Pass
10	QPSK	1702.5	50	0	9.102	/	Pass
	16QAM	1702.5	50	0	9.067	/	Pass
15	QPSK	1702.5	75	0	13.644	/	Pass
	16QAM	1702.5	75	0	13.647	/	Pass

3.1.2 Band70_XDB

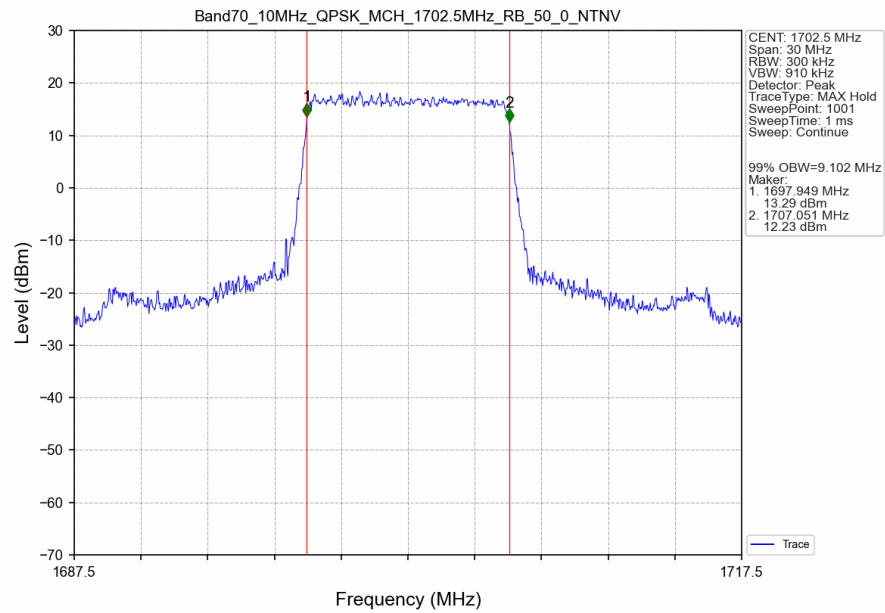
Band: 70 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	1702.5	25	0	5.197	/	Pass
	16QAM	1702.5	25	0	5.255	/	Pass
10	QPSK	1702.5	50	0	10.193	/	Pass
	16QAM	1702.5	50	0	10.151	/	Pass
15	QPSK	1702.5	75	0	15.173	/	Pass
	16QAM	1702.5	75	0	15.116	/	Pass

3.2 Test Graph

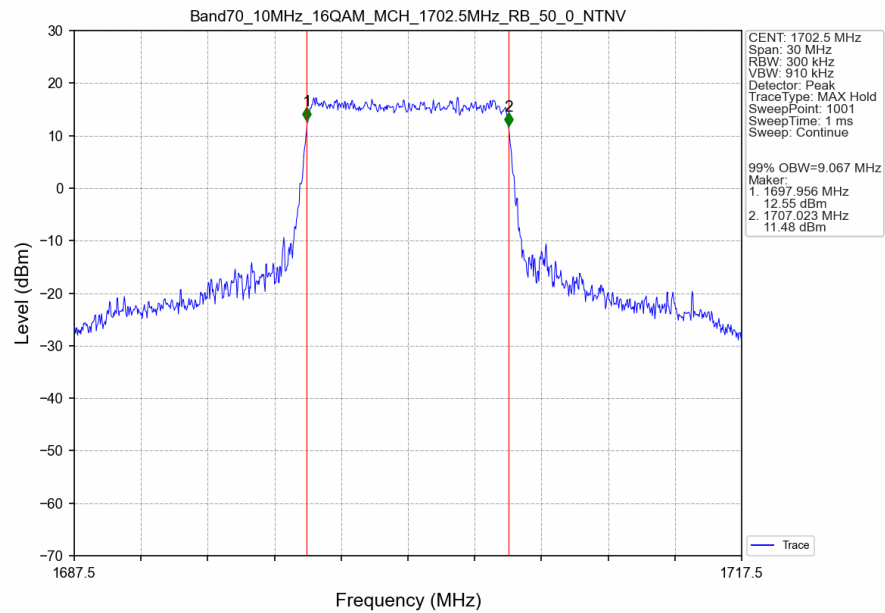
3.2.1 Band70_OBW



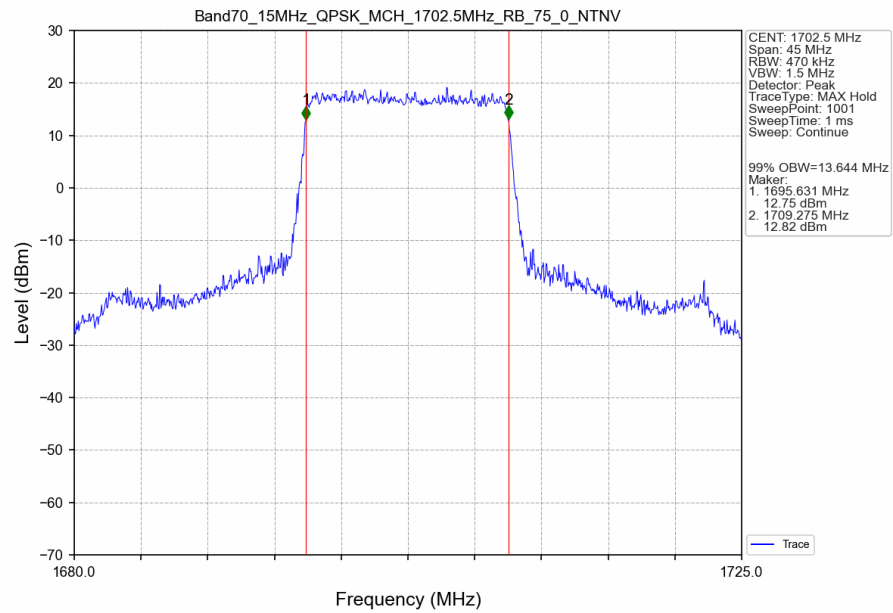
Band70 10MHz QPSK MCH 1702.5MHz RB 50 0 NTN



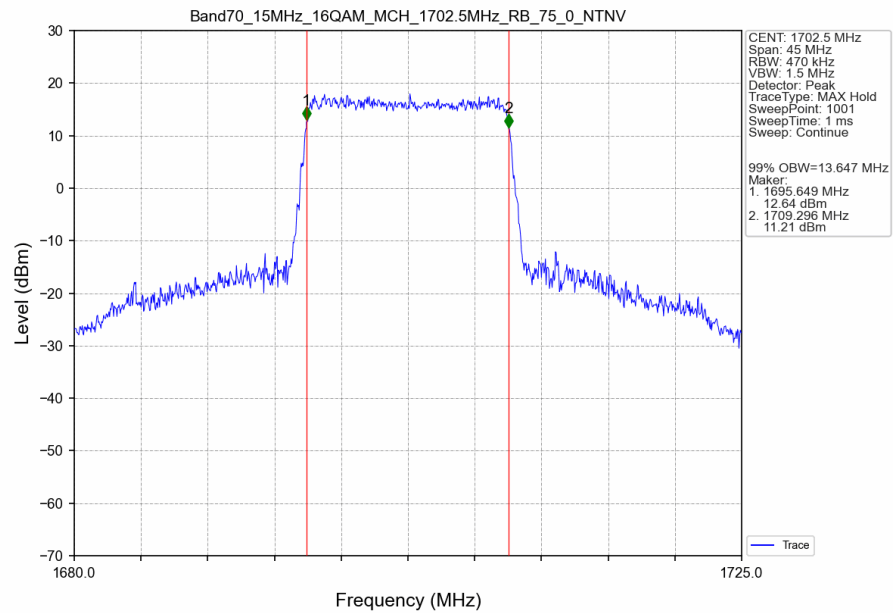
Band70 10MHz 16QAM MCH 1702.5MHz RB 50 0 NTN



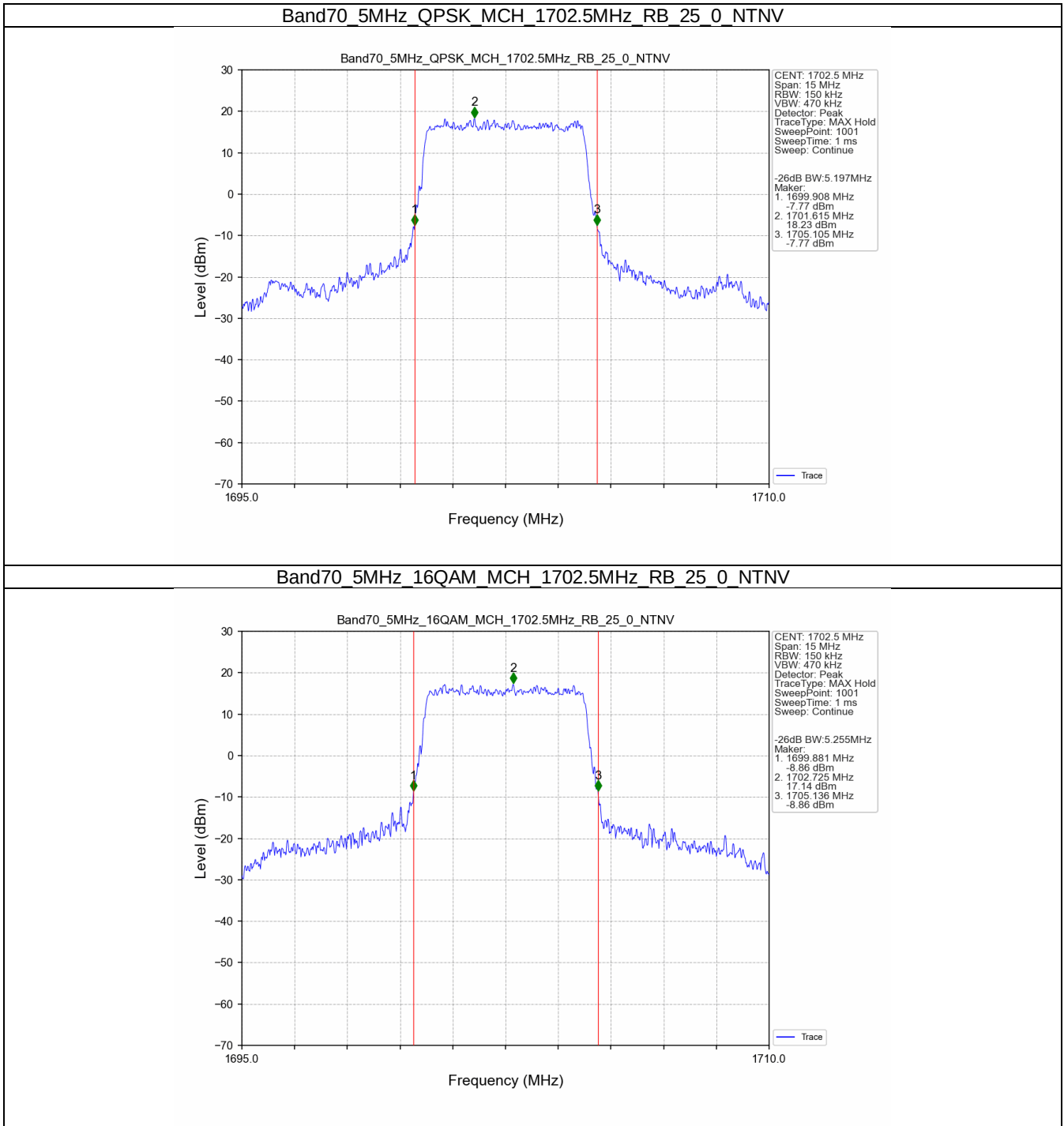
Band70 15MHz QPSK MCH 1702.5MHz RB 75 0 NTNV



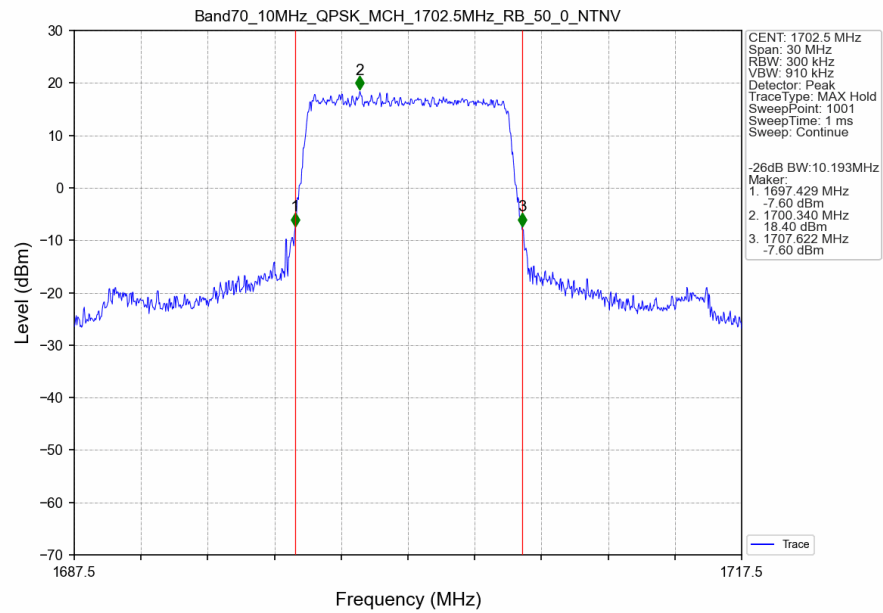
Band70 15MHz 16QAM MCH 1702.5MHz RB 75 0 NTNV



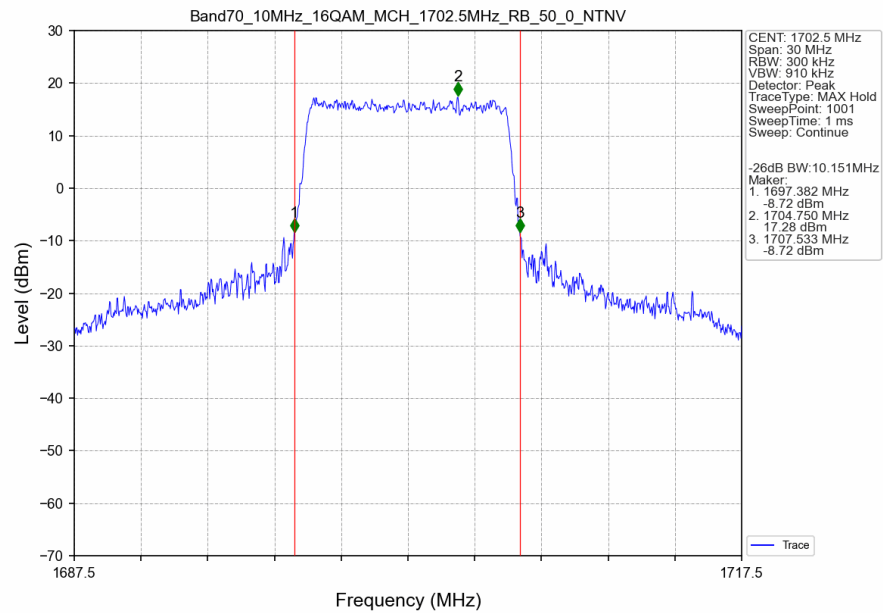
3.2.2 Band70_XDB



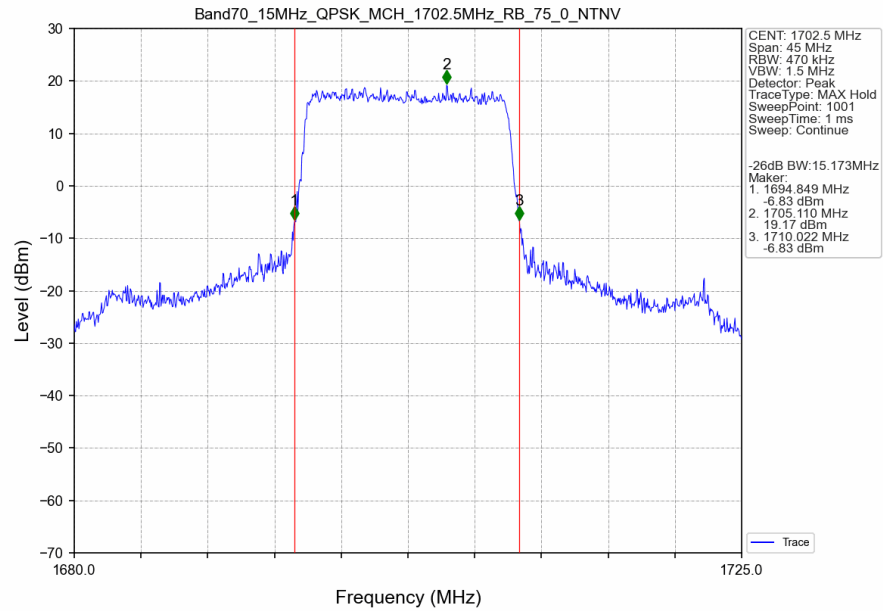
Band70 10MHz QPSK MCH 1702.5MHz RB 50 0 NTN



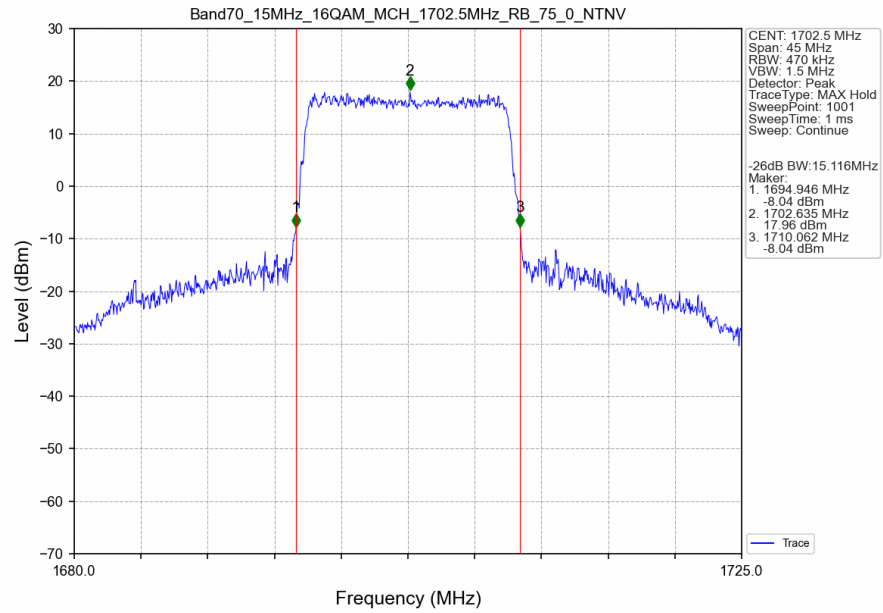
Band70 10MHz 16QAM MCH 1702.5MHz RB 50 0 NTN



Band70 15MHz QPSK MCH 1702.5MHz RB 75 0 NTN



Band70 15MHz 16QAM MCH 1702.5MHz RB 75 0 NTN



4. Peak-Average Ratio

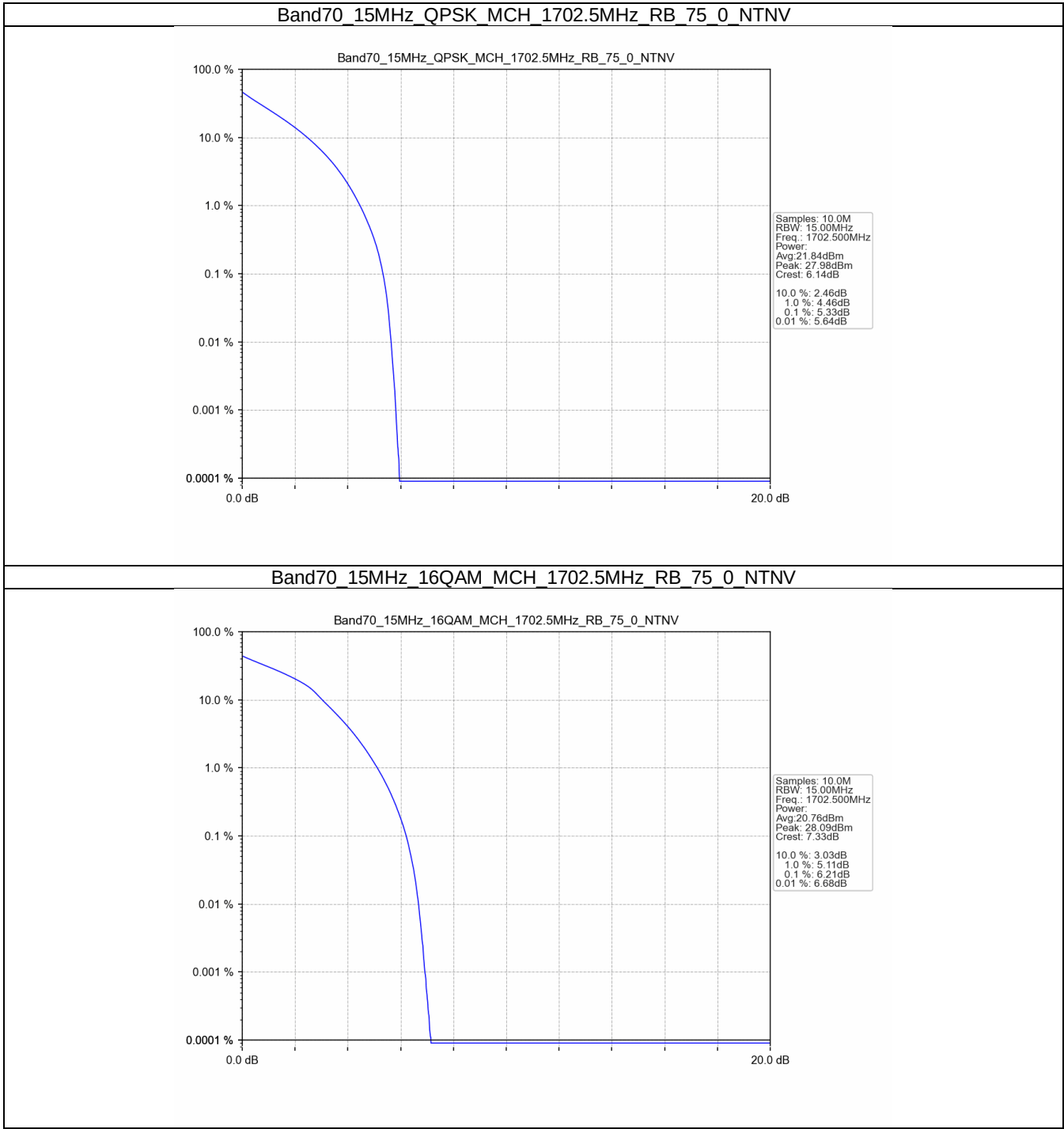
4.1 Test Result

4.1.1 B70_15MHz

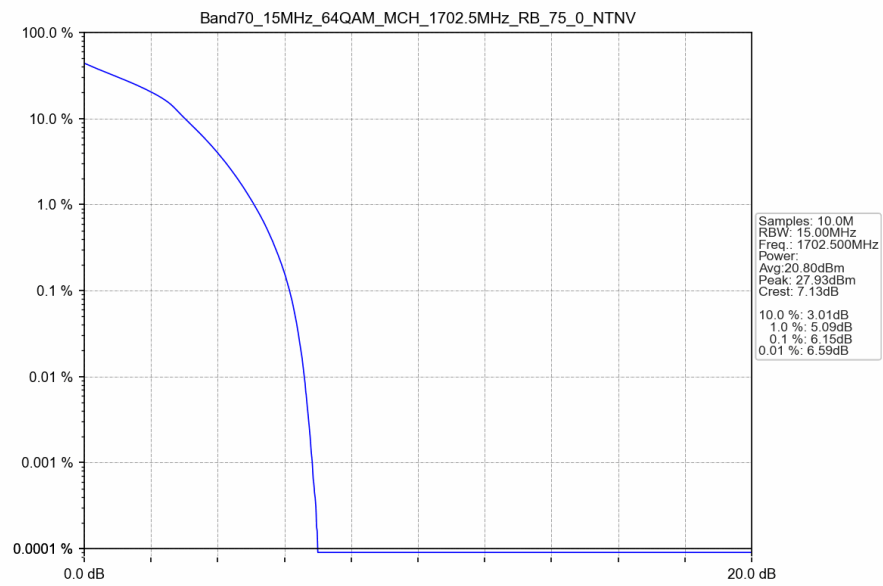
Band: 70 / Bandwidth: 15MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	1702.5	75	0	5.33	<=13	Pass
16QAM	1702.5	75	0	6.21	<=13	Pass
64QAM	1702.5	75	0	6.15	<=13	Pass

4.2 Test Graph

4.2.1 B70_15MHz



Band70 15MHz 64QAM MCH 1702.5MHz RB 75 0 NTNV



5. Spurious Emission

5.1 Test Result

5.1.1 B70_5MHz

Band: 70 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	1697.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	1702.5	1	0	Refer To Test Graph		Pass
	1707.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass

5.1.2 B70_10MHz

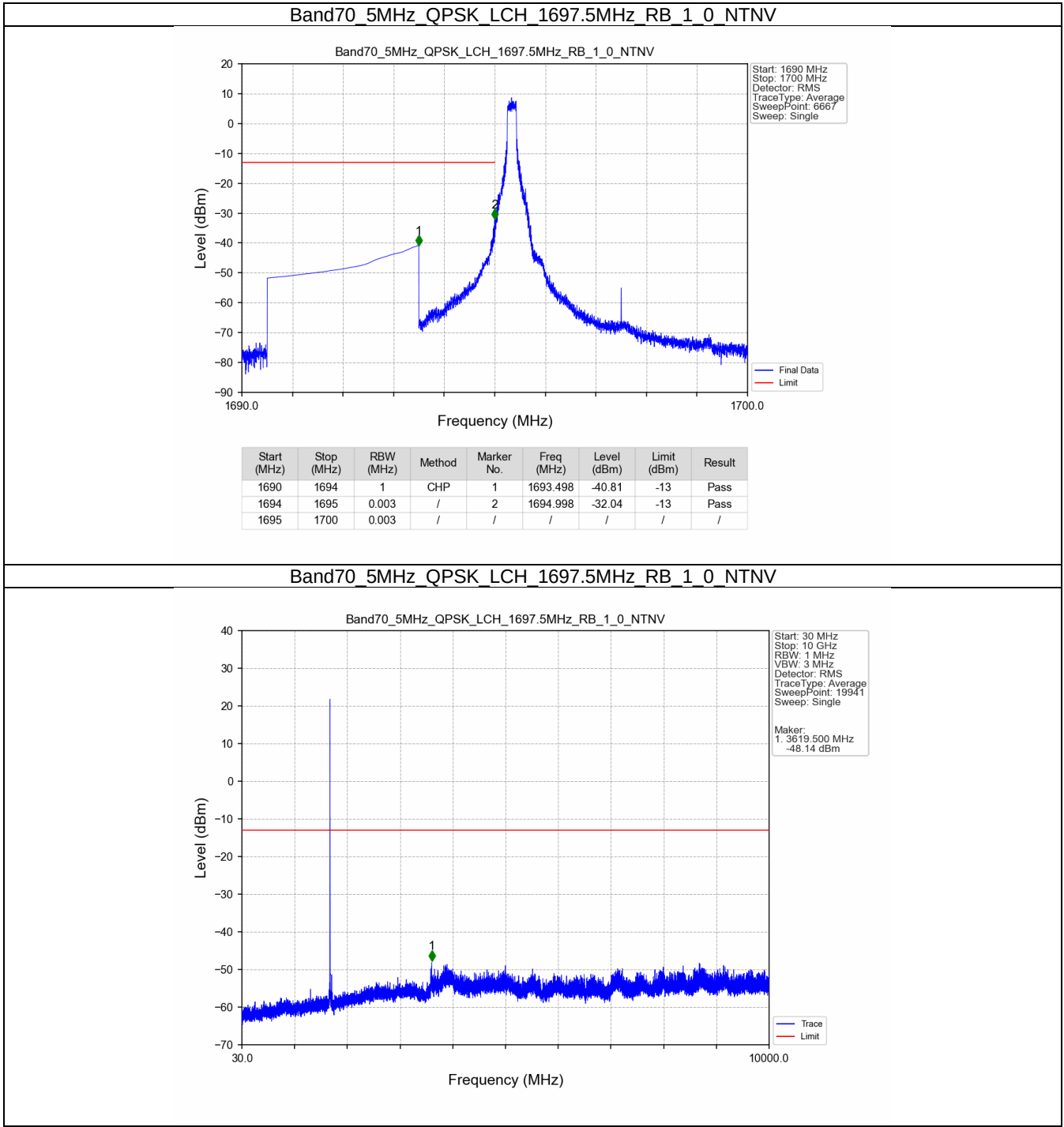
Band: 70 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	1700	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	1702.5	1	0	Refer To Test Graph		Pass
	1705	1	0	Refer To Test Graph		Pass
			49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

5.1.3 B70_15MHz

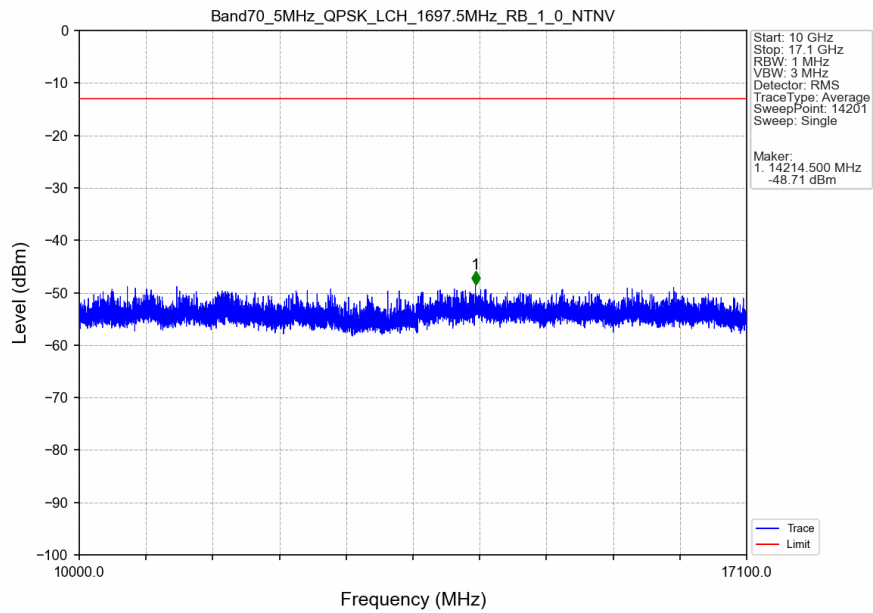
Band: 70 / Bandwidth: 15MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	1702.5	1	0	Refer To Test Graph		Pass
		75	0	Refer To Test Graph		Pass
	1702.5	1	74	Refer To Test Graph		Pass
		75	0	Refer To Test Graph		Pass

5.2 Test Graph

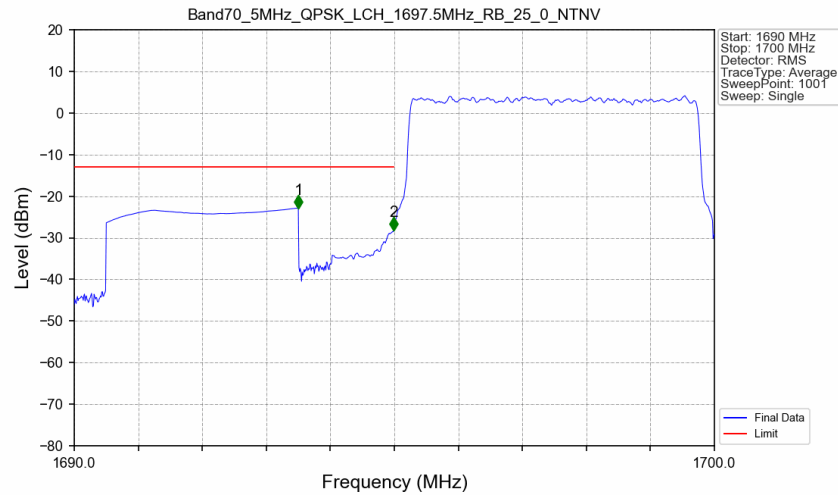
5.2.1 B70_5MHz



Band70 5MHz QPSK LCH 1697.5MHz RB 1 0 NTV

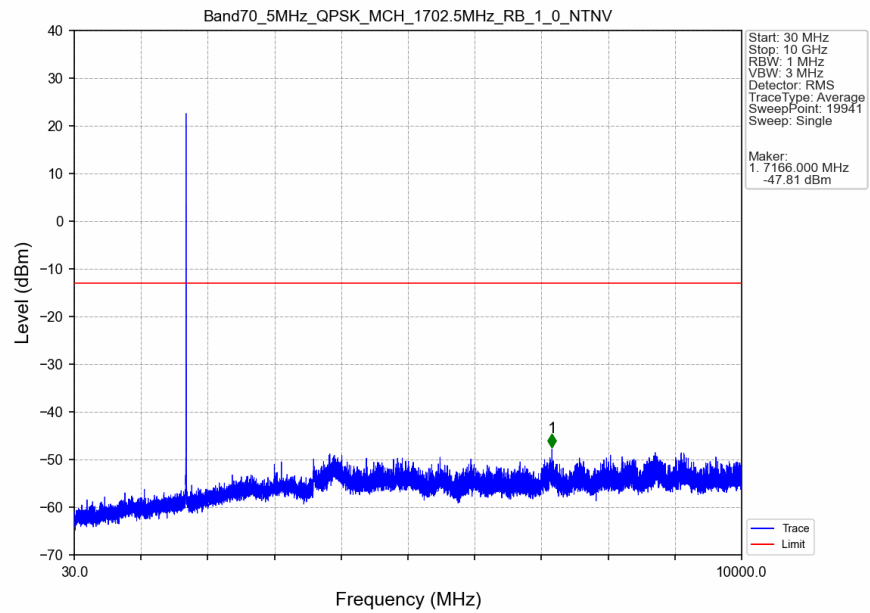


Band70_5MHz_QPSK_LCH_1697.5MHz_RB_25_0_NTV

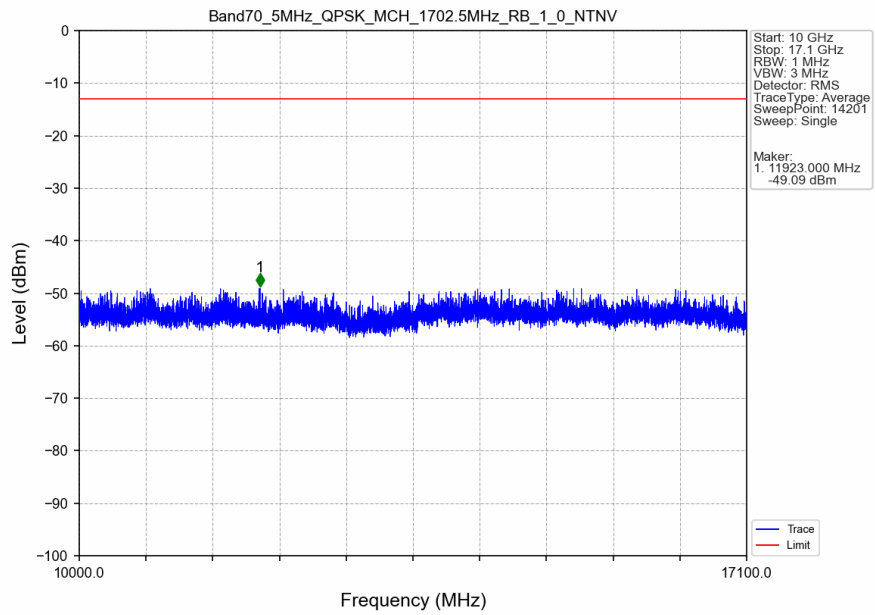


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1690	1694	1	CHP	1	1693.500	-22.85	-13	Pass
1694	1695	0.052	CHP	2	1694.990	-28.17	-13	Pass
1695	1700	0.052	CHP	/	/	/	/	/

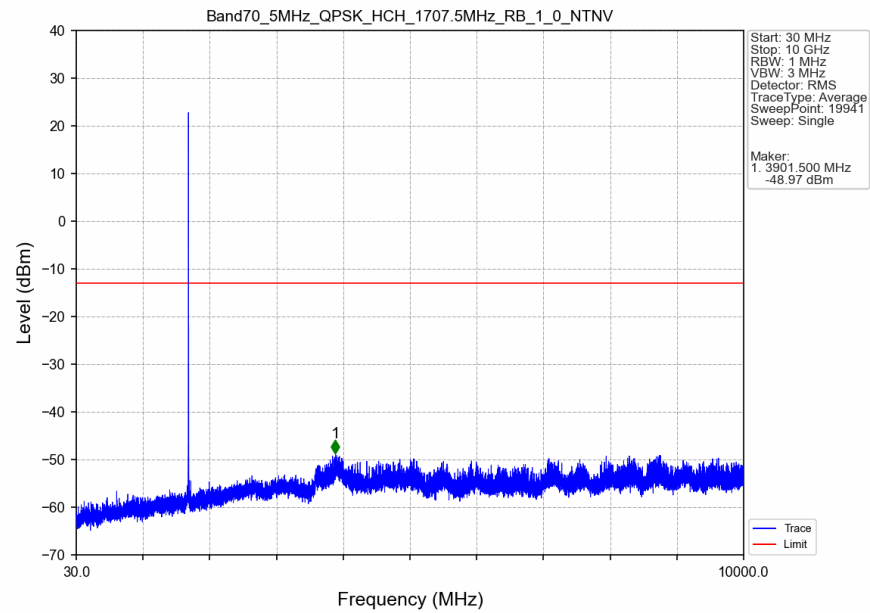
Band70 5MHz QPSK MCH 1702.5MHz RB 1 0 NTNV



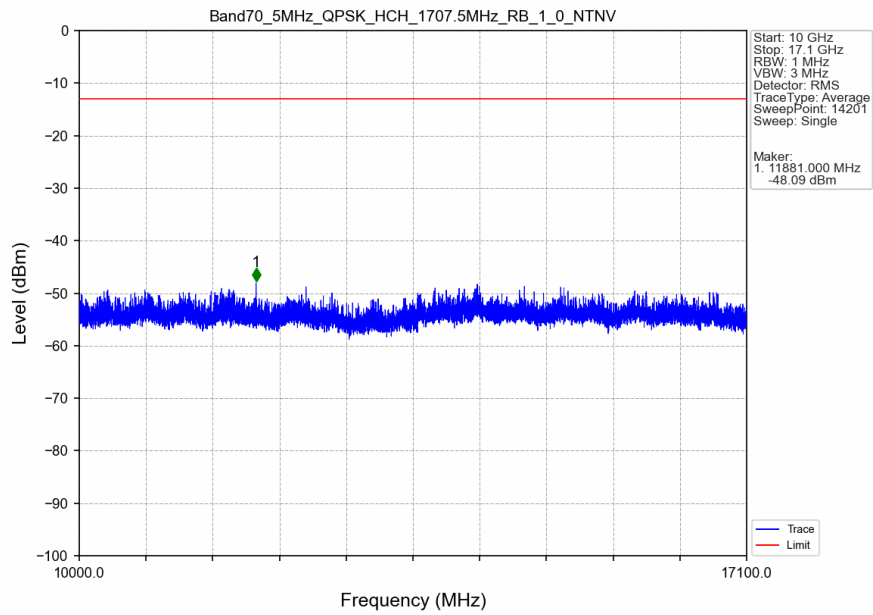
Band70 5MHz QPSK MCH 1702.5MHz RB 1 0 NTNV



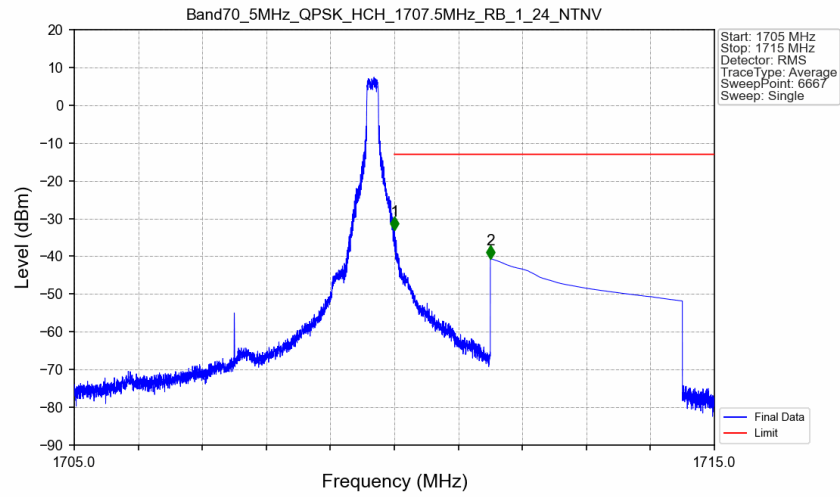
Band70 5MHz QPSK HCH 1707.5MHz RB 1 0 NTNV



Band70 5MHz QPSK HCH 1707.5MHz RB 1 0 NTNV

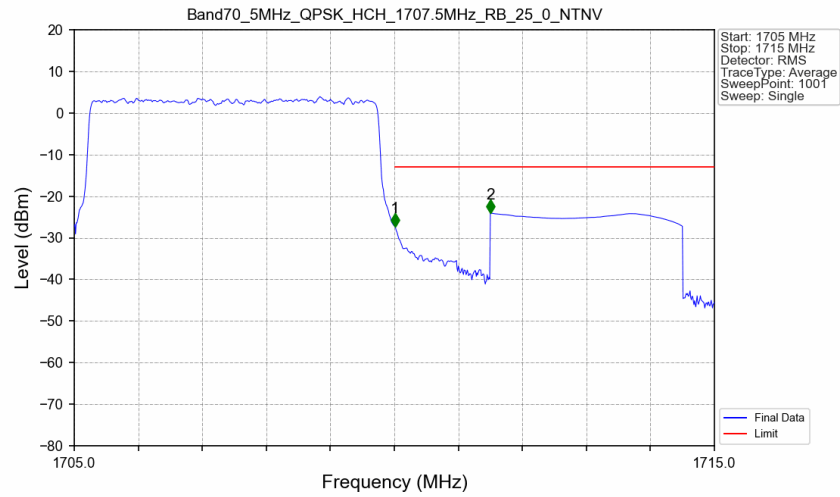


Band70 5MHz QPSK HCH 1707.5MHz RB 1 24 NTV



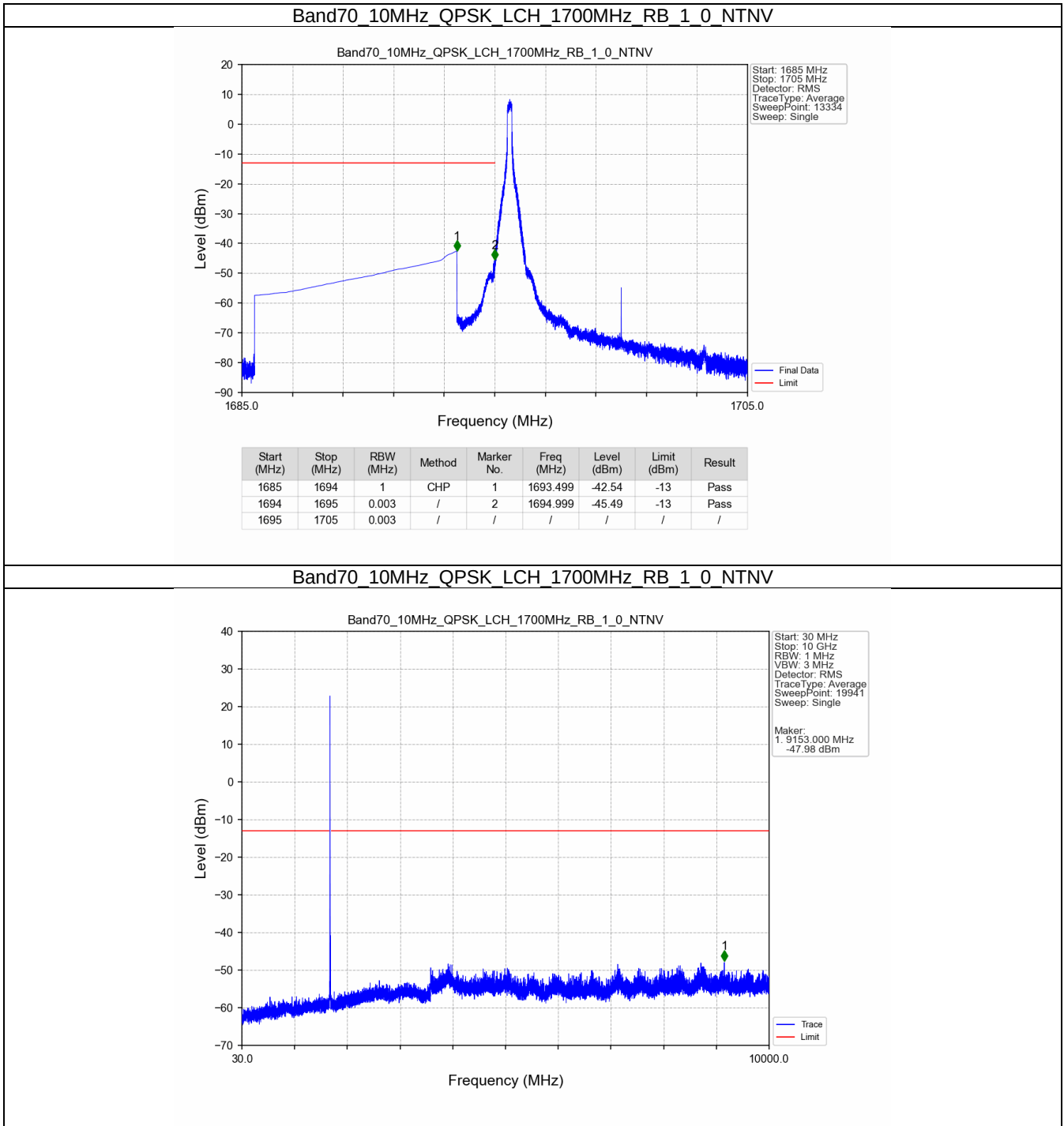
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1705	1710	0.003	/	/	/	/	/	/
1710	1711	0.003	/	1	1710.002	-33.07	-13	Pass
1711	1715	1	CHP	2	1711.500	-40.60	-13	Pass

Band70 5MHz QPSK HCH 1707.5MHz RB 25 0 NTV

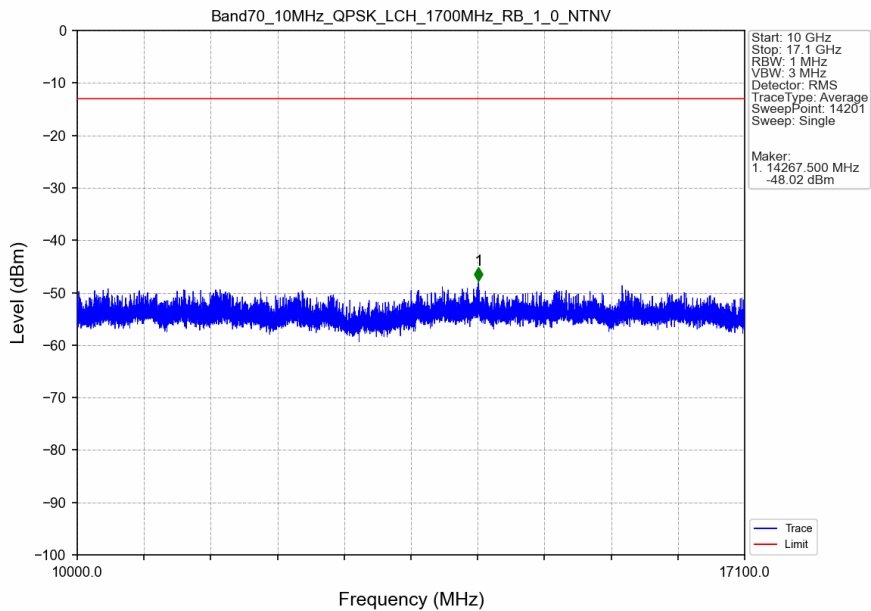


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1705	1710	0.052	CHP	/	/	/	/	/
1710	1711	0.052	CHP	1	1710.010	-27.26	-13	Pass
1711	1715	1	CHP	2	1711.500	-24.05	-13	Pass

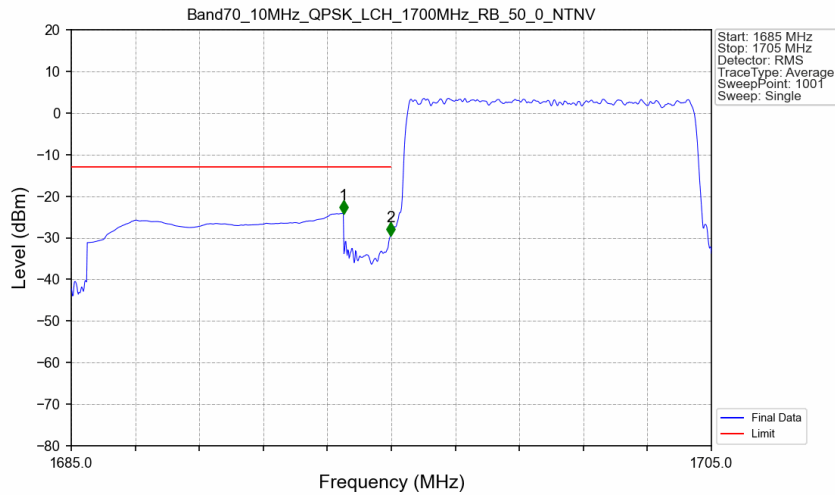
5.2.2 B70_10MHz



Band70 10MHz QPSK LCH 1700MHz RB 1 0 NTNV

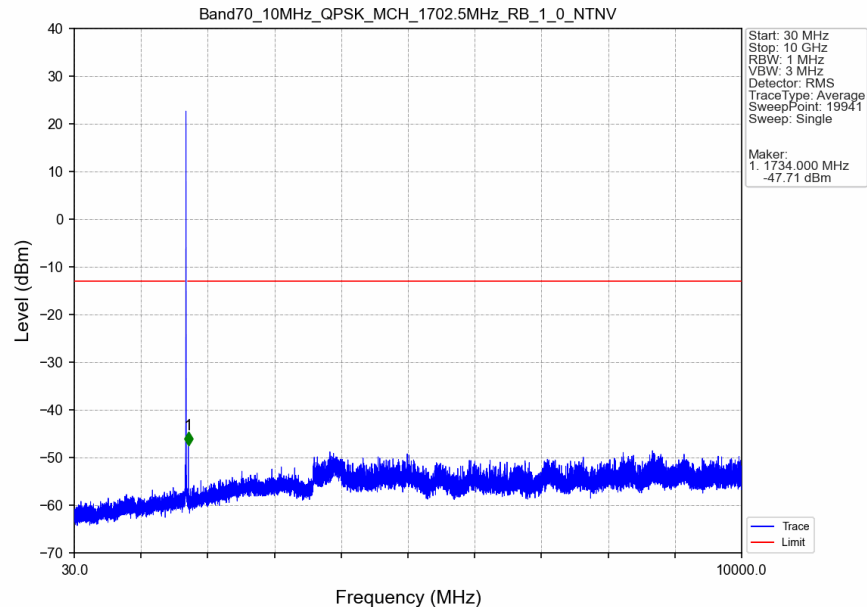


Band70_10MHz_QPSK_LCH_1700MHz_RB_50_0_NTNV

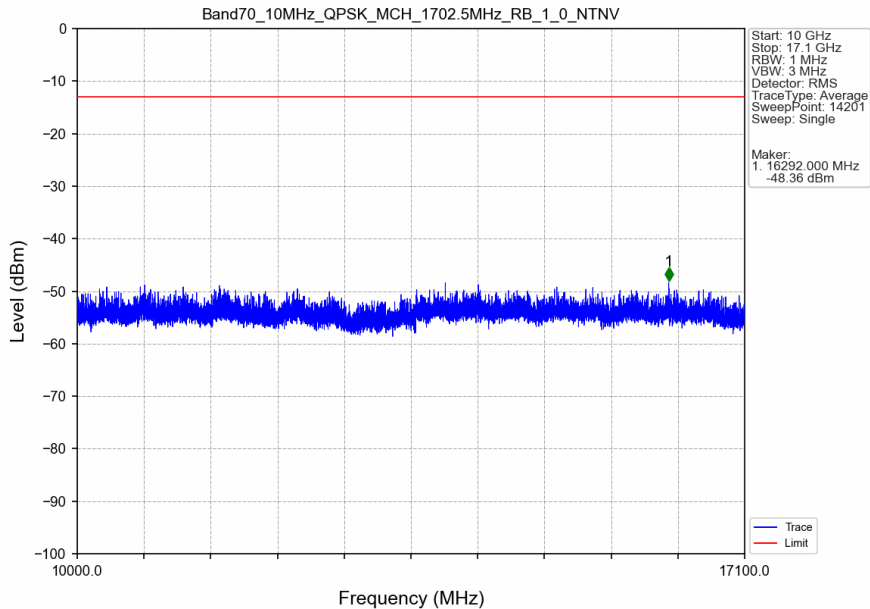


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1685	1694	1	CHP	1	1693.500	-24.15	-13	Pass
1694	1695	0.102	CHP	2	1694.980	-29.52	-13	Pass
1695	1705	0.102	CHP	/	/	/	/	/

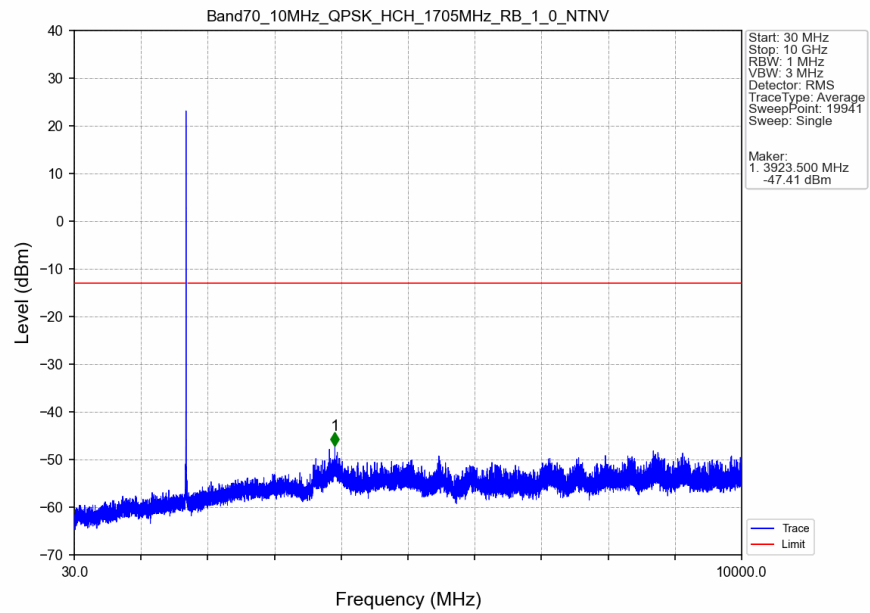
Band70 10MHz QPSK MCH 1702.5MHz RB 1 0 NTV



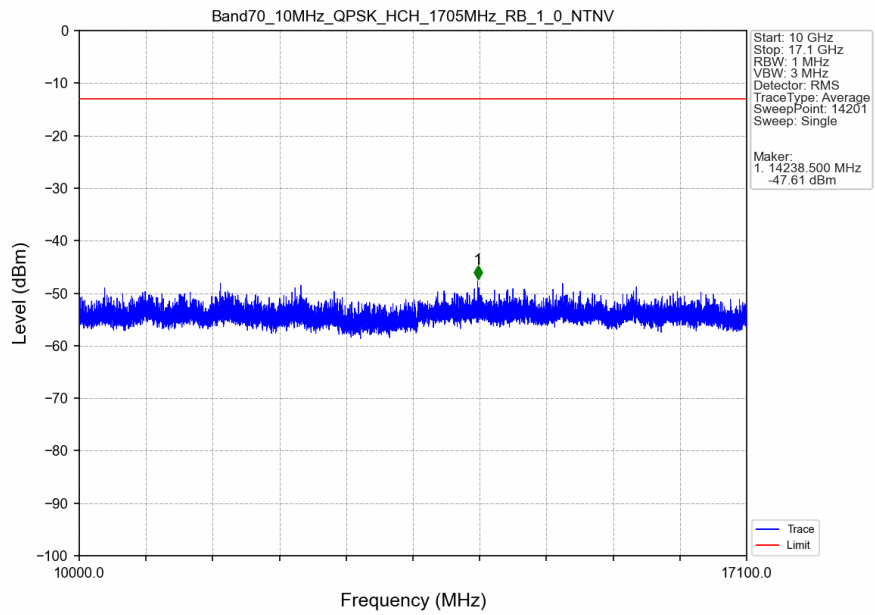
Band70 10MHz QPSK MCH 1702.5MHz RB 1 0 NTV



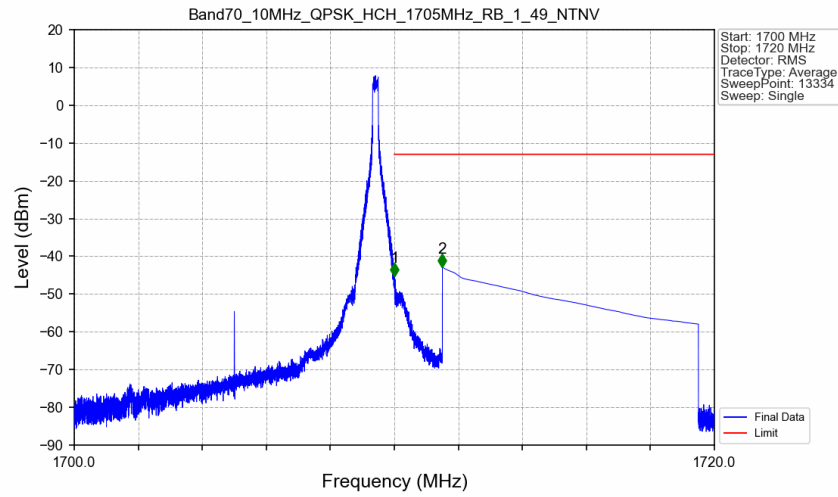
Band70 10MHz QPSK HCH 1705MHz RB 1 0 NTN



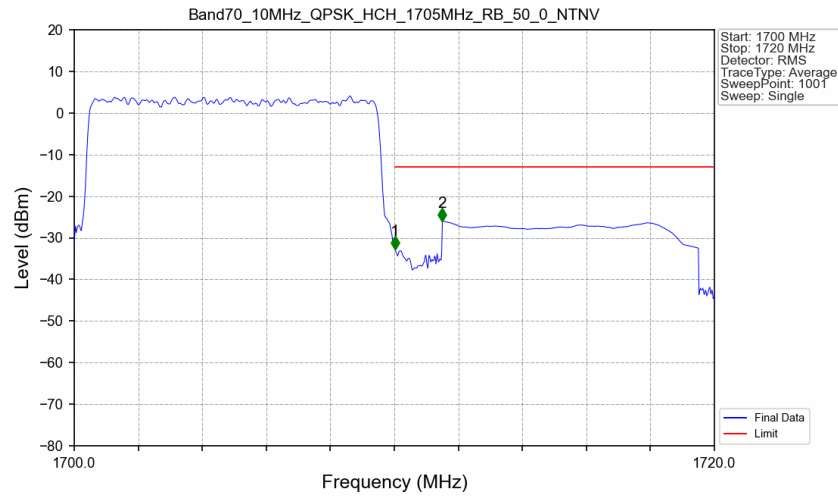
Band70 10MHz QPSK HCH 1705MHz RB 1 0 NTN



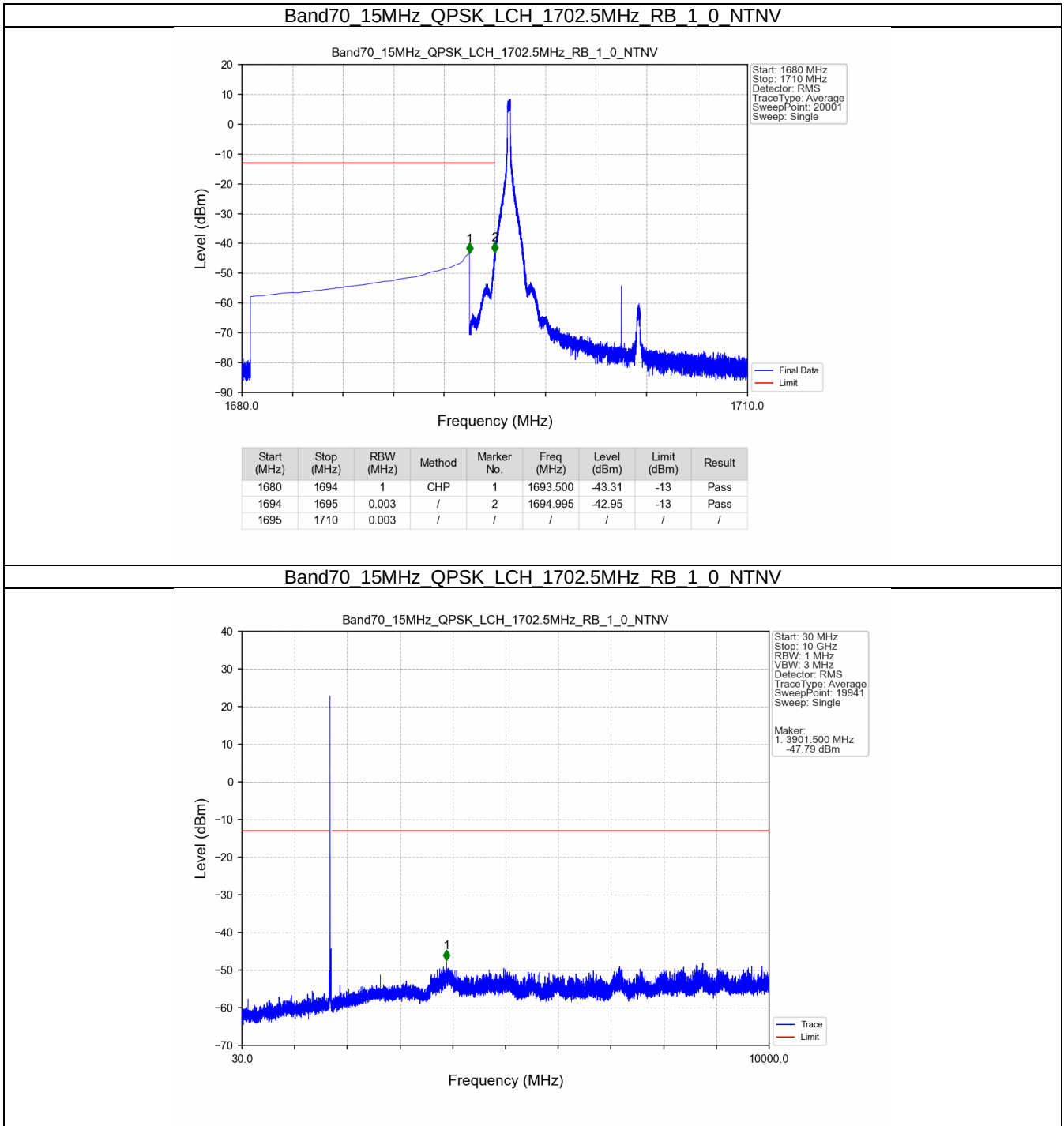
Band70_10MHz_QPSK_HCH_1705MHz_RB_1_49_NTNV



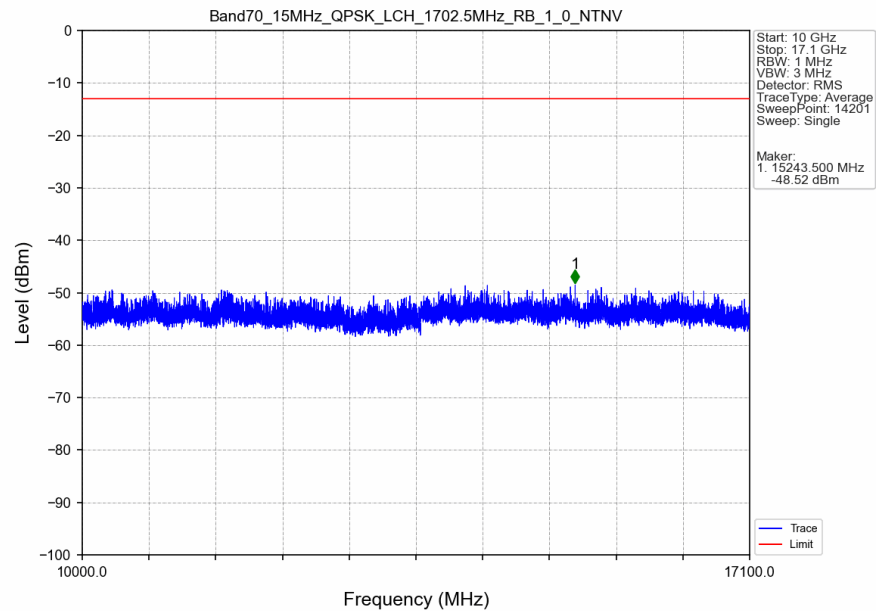
Band70_10MHz_QPSK_HCH_1705MHz_RB_50_0_NTNV



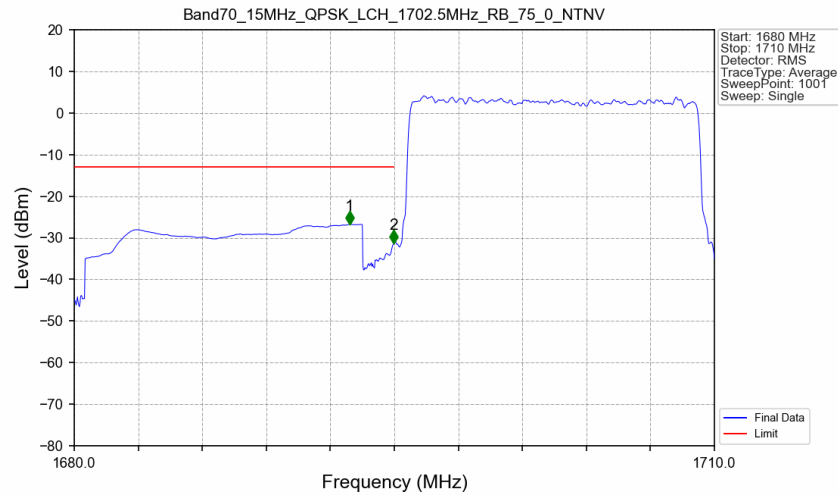
5.2.3 B70_15MHz



Band70 15MHz QPSK LCH 1702.5MHz RB 1 0 NTNV

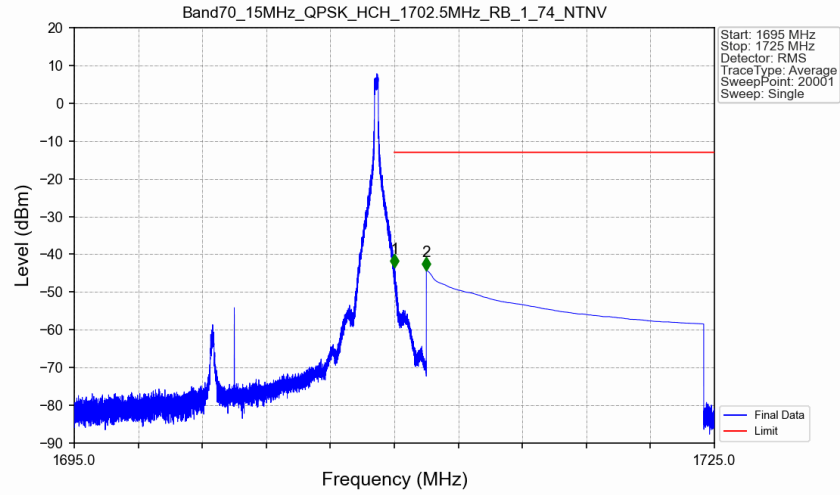


Band70 15MHz QPSK LCH 1702.5MHz RB 75 0 NTNV



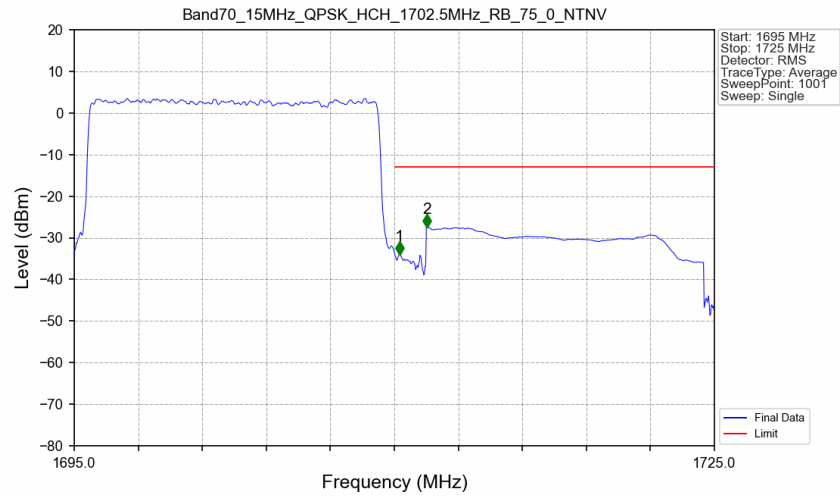
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1680	1694	1	CHP	1	1692.900	-26.75	-13	Pass
1694	1695	0.152	CHP	2	1694.970	-31.30	-13	Pass
1695	1710	0.152	CHP	/	/	/	/	/

Band70 15MHz QPSK HCH 1702.5MHz RB 1 74 NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1695	1710	0.003	/	/	/	/	/	/
1710	1711	0.003	/	1	1710.006	-43.47	-13	Pass
1711	1725	1	CHP	2	1711.500	-44.22	-13	Pass

Band70 15MHz QPSK HCH 1702.5MHz RB 75 0 NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
1695	1710	0.152	CHP	/	/	/	/	/
1710	1711	0.152	CHP	1	1710.240	-33.96	-13	Pass
1711	1725	1	CHP	2	1711.530	-27.43	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 70-Middle channel, Modulation: QPSK, Bandwidth:15MHz, 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
3391.5	-67.19	-13	-54.19	-71.74	3.35	7.9	Horizontal	Pass
5087.25	-63.45	-13	-50.45	-69.04	4.6	10.19	Horizontal	Pass
6783.0	-61.26	-13	-48.26	-67.22	4.89	10.85	Horizontal	Pass
3391.5	-66.74	-13	-53.74	-71.29	3.35	7.9	Vertical	Pass
5087.25	-63.54	-13	-50.54	-69.13	4.6	10.19	Vertical	Pass
6783.0	-61.41	-13	-48.41	-67.37	4.89	10.85	Vertical	Pass

LTE Band 70-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
3391.0	-67.28	-13	-54.28	-71.83	3.35	7.9	Horizontal	Pass
5086.5	-63.92	-13	-50.92	-69.51	4.6	10.19	Horizontal	Pass
6782.0	-60.99	-13	-47.99	-66.95	4.89	10.85	Horizontal	Pass
3391.0	-67.09	-13	-54.09	-71.64	3.35	7.9	Vertical	Pass
5086.5	-63.94	-13	-50.94	-69.53	4.6	10.19	Vertical	Pass
6782.0	-61.57	-13	-48.57	-67.53	4.89	10.85	Vertical	Pass

LTE Band 70-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
3396.0	-67.19	-13	-54.19	-71.75	3.35	7.91	Horizontal	Pass
5094.0	-63.45	-13	-50.45	-69.05	4.6	10.2	Horizontal	Pass
6792.0	-61.26	-13	-48.26	-67.23	4.89	10.86	Horizontal	Pass
3396.0	-66.74	-13	-53.74	-71.3	3.35	7.91	Vertical	Pass
5094.0	-63.54	-13	-50.54	-69.14	4.6	10.2	Vertical	Pass
6792.0	-61.41	-13	-48.41	-67.38	4.89	10.86	Vertical	Pass

LTE Band 70-High 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
3401.0	-67.21	-13	-54.21	-71.78	3.35	7.92	Horizontal	Pass
5101.5	-63.89	-13	-50.89	-69.49	4.6	10.2	Horizontal	Pass
6802.0	-61.51	-13	-48.51	-67.5	4.89	10.88	Horizontal	Pass
3401.0	-66.22	-13	-53.22	-70.79	3.35	7.92	Vertical	Pass
5101.5	-63.76	-13	-50.76	-69.36	4.6	10.2	Vertical	Pass
6802.0	-61.67	-13	-48.67	-67.66	4.89	10.88	Vertical	Pass