

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

1.1.1 B13_5MHz_ERP

Band: 13 / Bandwidth: 5MHz / NTV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	779.5	1	0	25.06	-3.92	18.99	<=34.77	Pass
			13	25.01	-3.92	18.94	<=34.77	Pass
			24	25.11	-3.92	19.04	<=34.77	Pass
		12	0	23.94	-3.92	17.87	<=34.77	Pass
			6	23.92	-3.92	17.85	<=34.77	Pass
			13	23.94	-3.92	17.87	<=34.77	Pass
	25	0	23.98	-3.92	17.91	<=34.77	Pass	
	782	1	0	25.08	-3.92	19.01	<=34.77	Pass
			13	24.96	-3.92	18.89	<=34.77	Pass
			24	25.03	-3.92	18.96	<=34.77	Pass
		12	0	23.98	-3.92	17.91	<=34.77	Pass
			6	23.92	-3.92	17.85	<=34.77	Pass
			13	23.92	-3.92	17.85	<=34.77	Pass
	25	0	23.99	-3.92	17.92	<=34.77	Pass	
	784.5	1	0	25.15	-3.92	19.08	<=34.77	Pass
			13	25.06	-3.92	18.99	<=34.77	Pass
			24	25.08	-3.92	19.01	<=34.77	Pass
		12	0	23.94	-3.92	17.87	<=34.77	Pass
6			23.88	-3.92	17.81	<=34.77	Pass	
13			23.94	-3.92	17.87	<=34.77	Pass	
25	0	23.99	-3.92	17.92	<=34.77	Pass		
16QAM	779.5	1	0	23.84	-3.92	17.77	<=34.77	Pass
			13	23.75	-3.92	17.68	<=34.77	Pass
			24	23.92	-3.92	17.85	<=34.77	Pass
		12	0	23.01	-3.92	16.94	<=34.77	Pass
			6	22.96	-3.92	16.89	<=34.77	Pass
			13	22.94	-3.92	16.87	<=34.77	Pass
	25	0	22.98	-3.92	16.91	<=34.77	Pass	
	782	1	0	24.20	-3.92	18.13	<=34.77	Pass
			13	24.16	-3.92	18.09	<=34.77	Pass
			24	24.18	-3.92	18.11	<=34.77	Pass
		12	0	23.03	-3.92	16.96	<=34.77	Pass
			6	22.96	-3.92	16.89	<=34.77	Pass
			13	22.96	-3.92	16.89	<=34.77	Pass
	25	0	22.96	-3.92	16.89	<=34.77	Pass	
	784.5	1	0	24.05	-3.92	17.98	<=34.77	Pass
			13	24.04	-3.92	17.97	<=34.77	Pass
			24	23.98	-3.92	17.91	<=34.77	Pass
		12	0	22.98	-3.92	16.91	<=34.77	Pass
6			22.92	-3.92	16.85	<=34.77	Pass	
13			22.94	-3.92	16.87	<=34.77	Pass	
25	0	22.97	-3.92	16.90	<=34.77	Pass		
64QAM	779.5	1	0	22.85	-3.92	16.78	<=34.77	Pass
			13	22.82	-3.92	16.75	<=34.77	Pass
			24	22.91	-3.92	16.84	<=34.77	Pass
		12	0	22.01	-3.92	15.94	<=34.77	Pass
			6	21.99	-3.92	15.92	<=34.77	Pass
			13	21.99	-3.92	15.92	<=34.77	Pass
25	0	21.93	-3.92	15.86	<=34.77	Pass		

256QAM	782	1	0	23.30	-3.92	17.23	<=34.77	Pass	
			13	23.29	-3.92	17.22	<=34.77	Pass	
			24	23.29	-3.92	17.22	<=34.77	Pass	
		12	0	21.95	-3.92	15.88	<=34.77	Pass	
			6	21.87	-3.92	15.80	<=34.77	Pass	
			13	21.87	-3.92	15.80	<=34.77	Pass	
		25	0	21.92	-3.92	15.85	<=34.77	Pass	
		784.5	1	0	23.23	-3.92	17.16	<=34.77	Pass
				13	23.16	-3.92	17.09	<=34.77	Pass
	24			23.23	-3.92	17.16	<=34.77	Pass	
	12		0	22.05	-3.92	15.98	<=34.77	Pass	
			6	21.99	-3.92	15.92	<=34.77	Pass	
			13	22.01	-3.92	15.94	<=34.77	Pass	
	25		0	22.01	-3.92	15.94	<=34.77	Pass	
	779.5		1	0	19.76	-3.92	13.69	<=34.77	Pass
				13	19.69	-3.92	13.62	<=34.77	Pass
		24		19.73	-3.92	13.66	<=34.77	Pass	
		12		0	20.01	-3.92	13.94	<=34.77	Pass
				6	19.98	-3.92	13.91	<=34.77	Pass
				13	19.98	-3.92	13.91	<=34.77	Pass
		25	0	20.01	-3.92	13.94	<=34.77	Pass	
		782	1	0	20.18	-3.92	14.11	<=34.77	Pass
				13	20.10	-3.92	14.03	<=34.77	Pass
				24	20.15	-3.92	14.08	<=34.77	Pass
12			0	20.06	-3.92	13.99	<=34.77	Pass	
			6	19.99	-3.92	13.92	<=34.77	Pass	
			13	19.99	-3.92	13.92	<=34.77	Pass	
25		0	19.98	-3.92	13.91	<=34.77	Pass		
784.5		1	0	20.07	-3.92	14.00	<=34.77	Pass	
			13	19.97	-3.92	13.90	<=34.77	Pass	
			24	20.00	-3.92	13.93	<=34.77	Pass	
		12	0	19.99	-3.92	13.92	<=34.77	Pass	
	6		19.92	-3.92	13.85	<=34.77	Pass		
	13		19.97	-3.92	13.90	<=34.77	Pass		
25	0	20.01	-3.92	13.94	<=34.77	Pass			

Note1: ERP=Conducted Power+Antenna Gain-2.15

1.1.2 B13_10MHz_ERP

Band: 13 / Bandwidth: 10MHz / NTV										
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict		
		Size	Offset			Result	Limit			
QPSK	782	1	0	25.02	-3.92	18.95	<=34.77	Pass		
			25	25.00	-3.92	18.93	<=34.77	Pass		
			49	25.03	-3.92	18.96	<=34.77	Pass		
		25	0	23.99	-3.92	17.92	<=34.77	Pass		
			13	23.95	-3.92	17.88	<=34.77	Pass		
			25	23.98	-3.92	17.91	<=34.77	Pass		
		50	0	23.99	-3.92	17.92	<=34.77	Pass		
		16QAM	782	1	0	24.34	-3.92	18.27	<=34.77	Pass
					25	24.17	-3.92	18.10	<=34.77	Pass
49	24.25				-3.92	18.18	<=34.77	Pass		
25	0			23.03	-3.92	16.96	<=34.77	Pass		
	13			22.96	-3.92	16.89	<=34.77	Pass		
	25			23.02	-3.92	16.95	<=34.77	Pass		
50	0			22.99	-3.92	16.92	<=34.77	Pass		
64QAM	782			1	0	23.22	-3.92	17.15	<=34.77	Pass

		25	25	23.14	-3.92	17.07	<=34.77	Pass		
			49	23.19	-3.92	17.12	<=34.77	Pass		
			0	22.07	-3.92	16.00	<=34.77	Pass		
			13	22.04	-3.92	15.97	<=34.77	Pass		
			25	22.06	-3.92	15.99	<=34.77	Pass		
			50	21.99	-3.92	15.92	<=34.77	Pass		
		256QAM	782	1	0	19.90	-3.92	13.83	<=34.77	Pass
					25	19.73	-3.92	13.66	<=34.77	Pass
					49	19.83	-3.92	13.76	<=34.77	Pass
				25	0	20.04	-3.92	13.97	<=34.77	Pass
13	19.98	-3.92	13.91		<=34.77	Pass				
25	20.02	-3.92	13.95		<=34.77	Pass				
50	19.97	-3.92	13.90	<=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	-1.144	-0.0015	-2.5 to 2.5	Pass
					NV	-3.304	-0.0042	-2.5 to 2.5	Pass
					HV	-3.033	-0.0039	-2.5 to 2.5	Pass
				-30	NV	0.891	0.0011	-2.5 to 2.5	Pass
				-20	NV	-2.060	-0.0026	-2.5 to 2.5	Pass
				-10	NV	-1.702	-0.0022	-2.5 to 2.5	Pass
				0	NV	-1.731	-0.0022	-2.5 to 2.5	Pass
				10	NV	0.057	0.0001	-2.5 to 2.5	Pass
				30	NV	-0.987	-0.0013	-2.5 to 2.5	Pass
				40	NV	-0.515	-0.0007	-2.5 to 2.5	Pass
				50	NV	-4.148	-0.0053	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band13_OBW

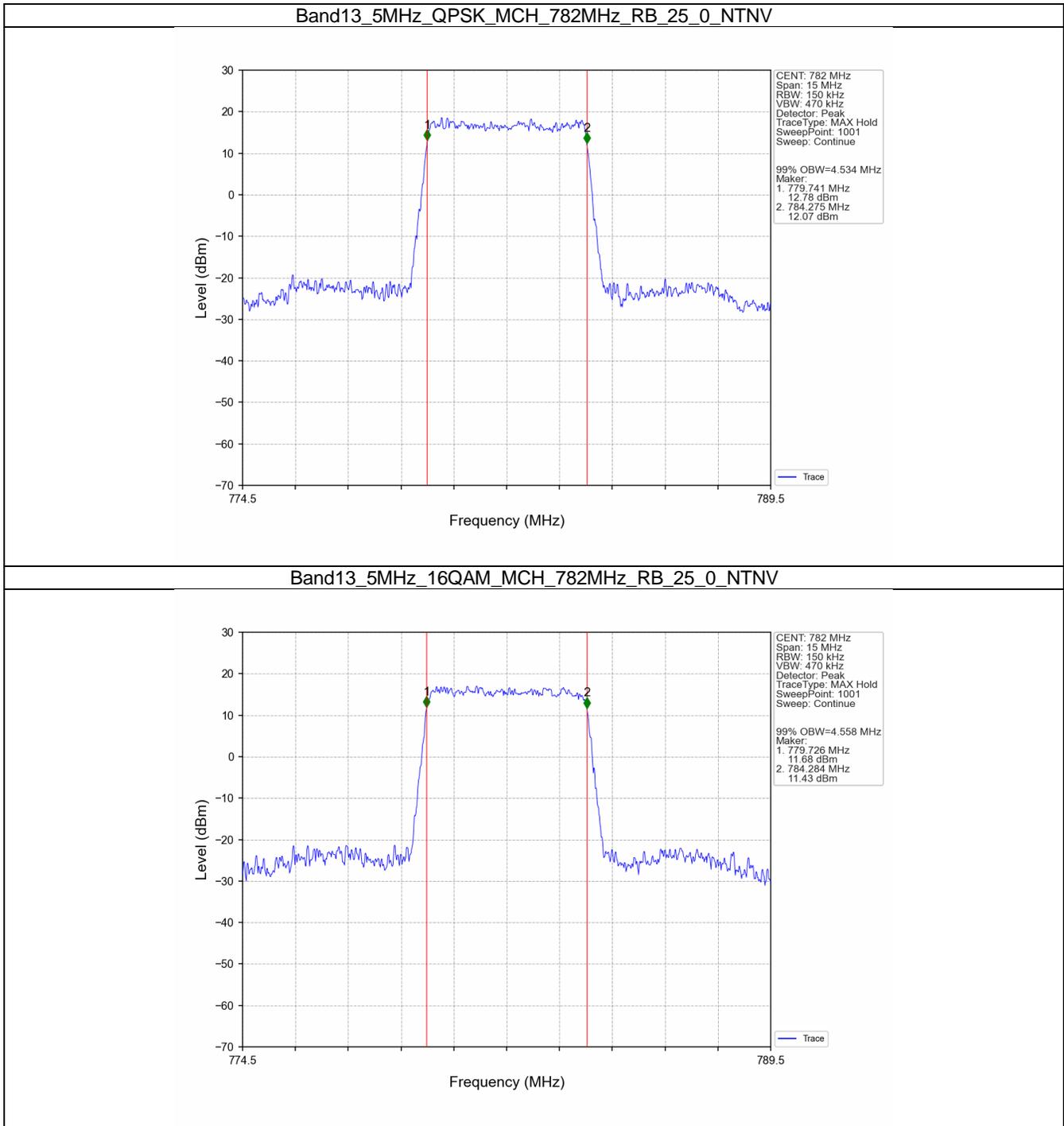
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	4.534	/	Pass
	16QAM	782	25	0	4.558	/	Pass
10	QPSK	782	50	0	9.036	/	Pass
	16QAM	782	50	0	9.047	/	Pass

3.1.2 Band13_XDB

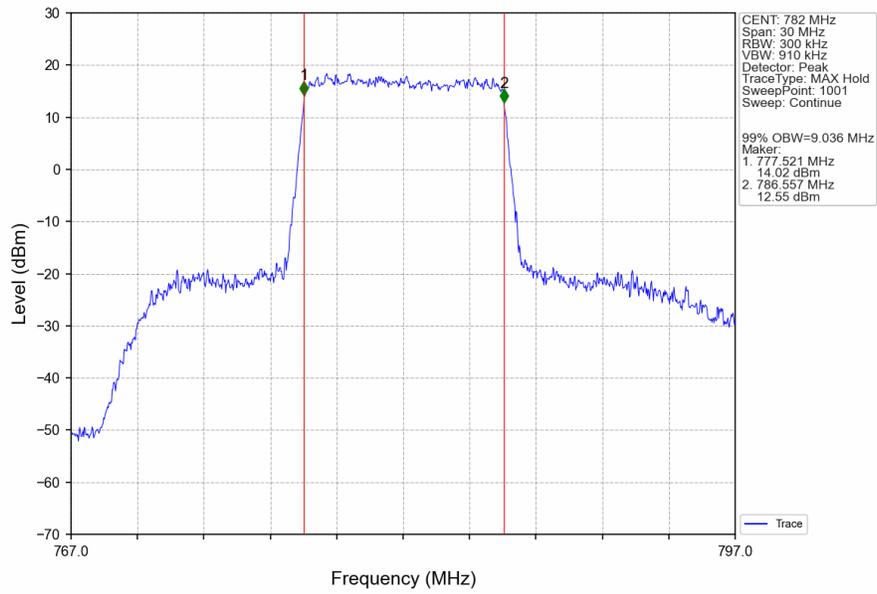
Band: 13 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
5	QPSK	782	25	0	5.067	/	Pass
	16QAM	782	25	0	5.090	/	Pass
10	QPSK	782	50	0	10.051	/	Pass
	16QAM	782	50	0	9.959	/	Pass

3.2 Test Graph

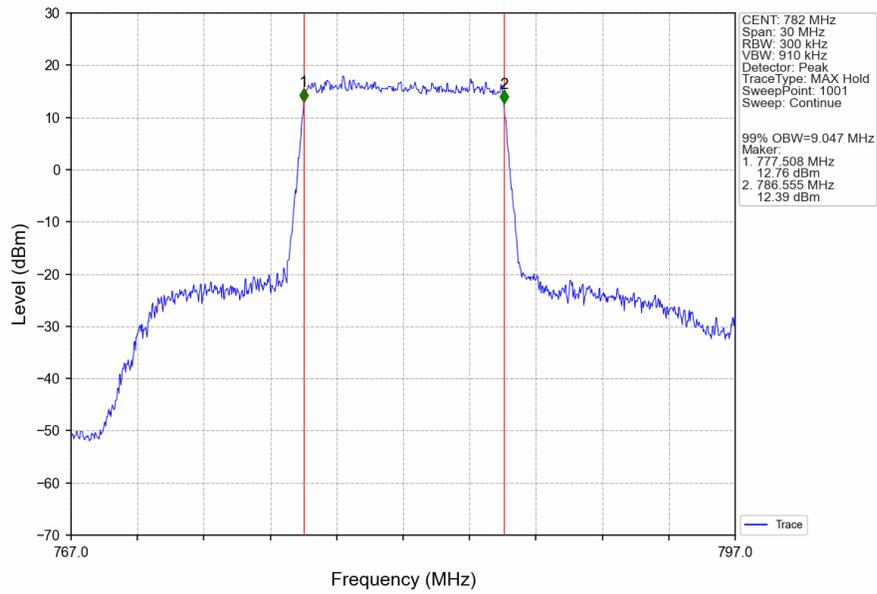
3.2.1 Band13_OBW



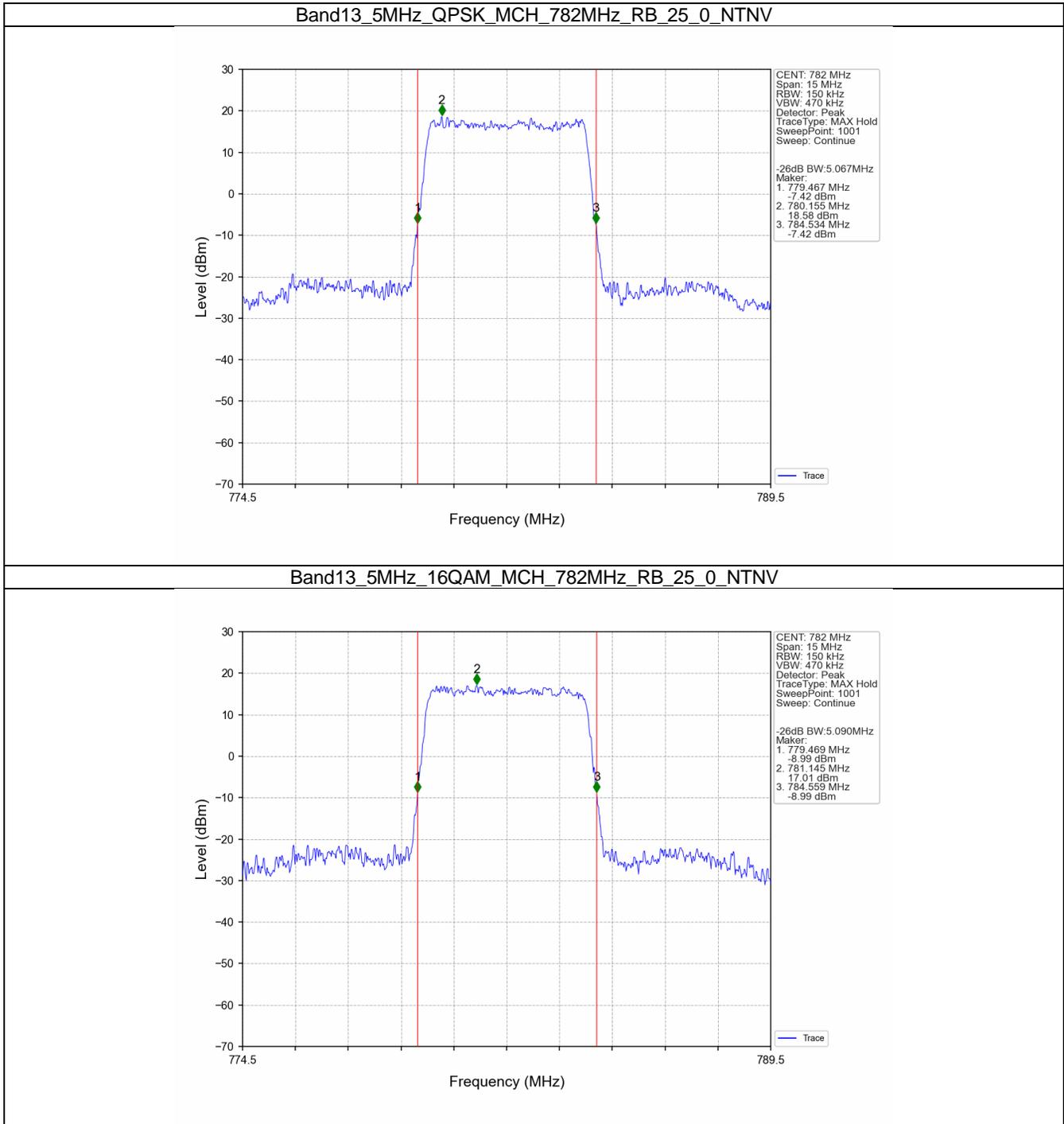
Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



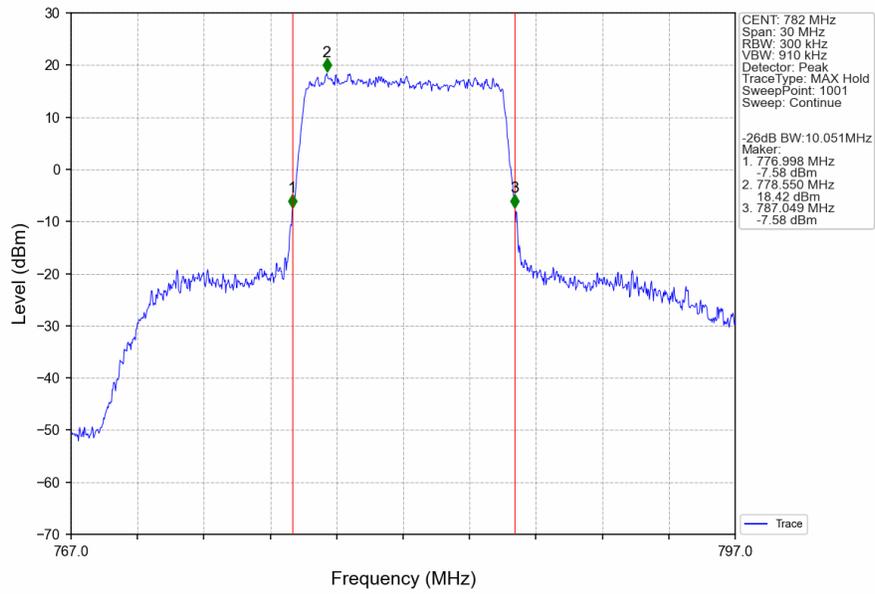
Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



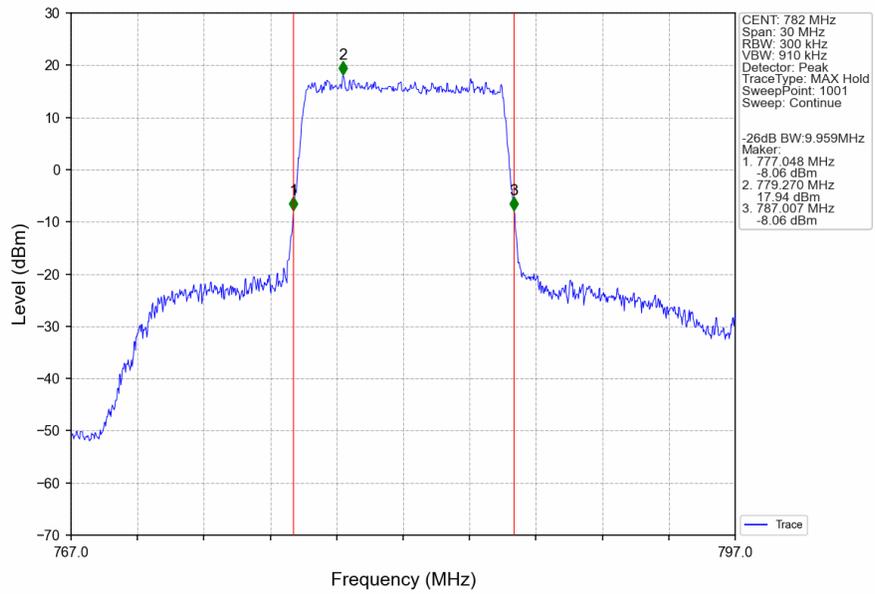
3.2.2 Band13_XDB



Band13_10MHz_QPSK_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



4. Peak-Average Ratio

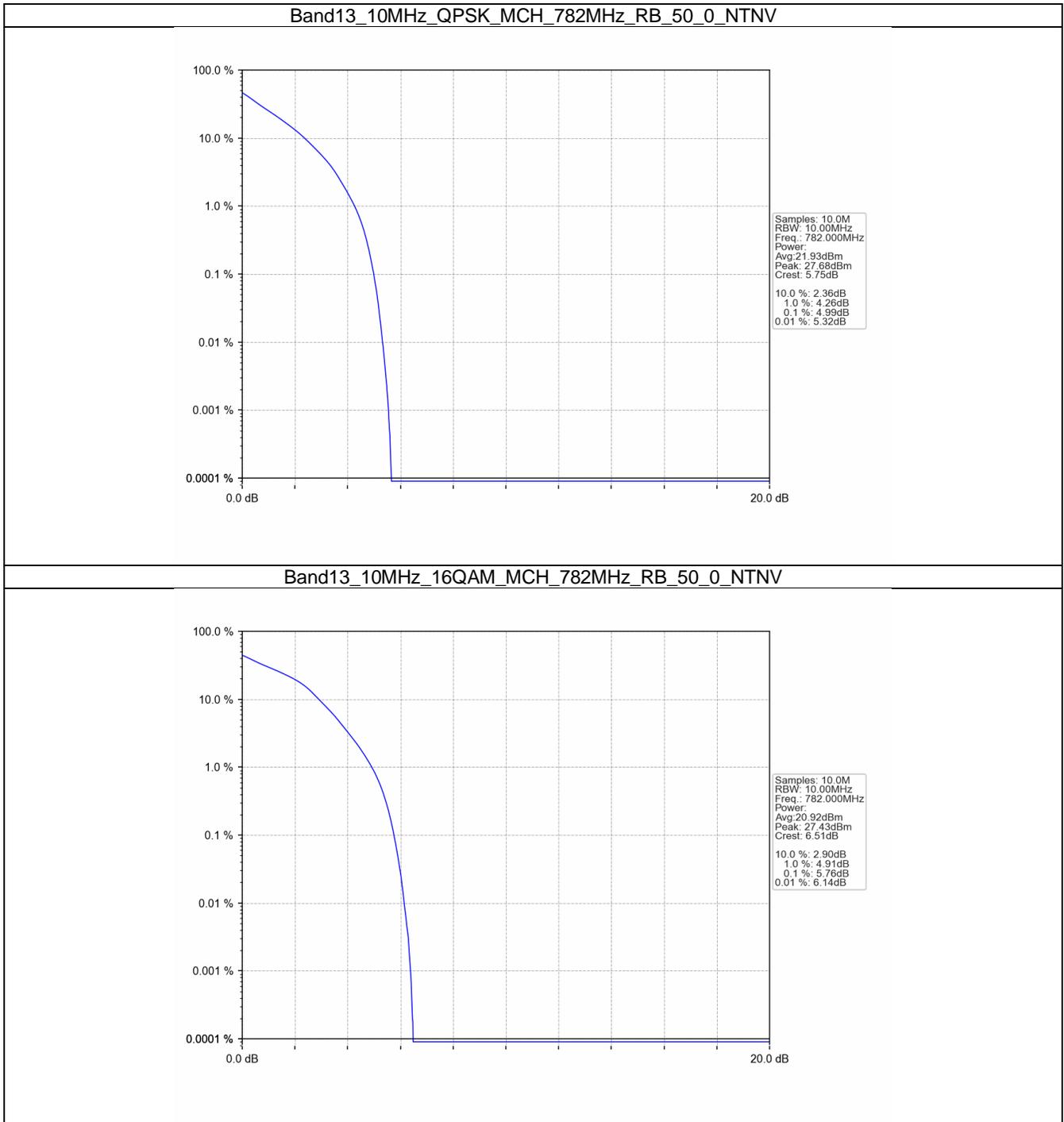
4.1 Test Result

4.1.1 B13_10MHz

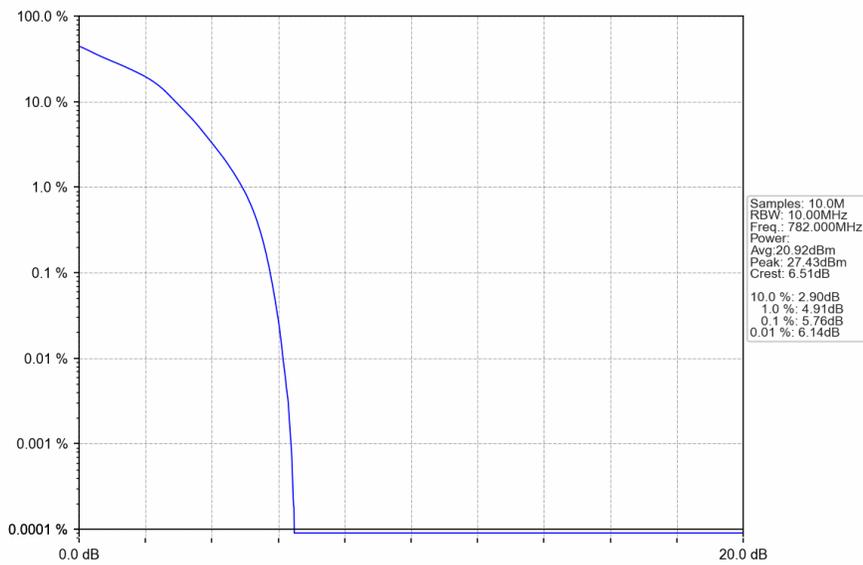
Band: 13 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	782	50	0	4.99	<=13	Pass
16QAM	782	50	0	5.76	<=13	Pass
64QAM	782	50	0	6.21	<=13	Pass
256QAM	782	50	0	6.56	<=13	Pass

4.2 Test Graph

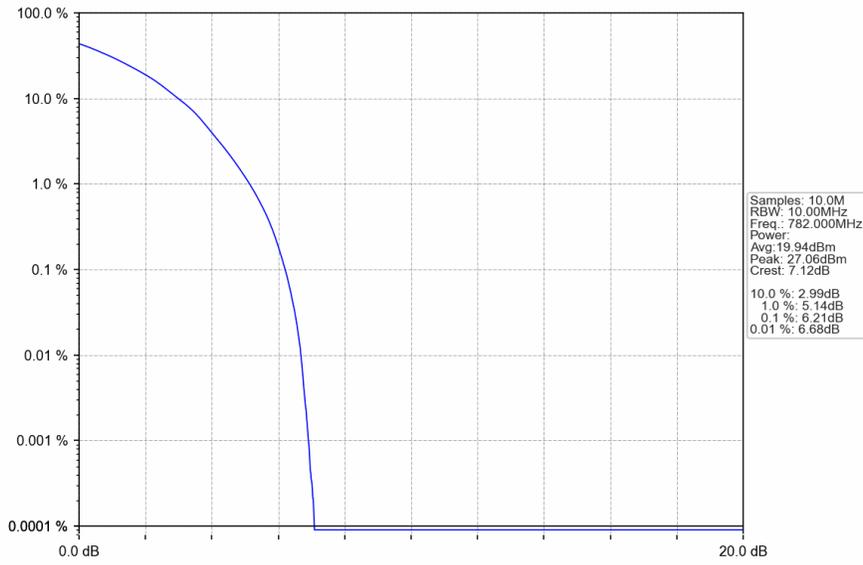
4.2.1 B13_10MHz



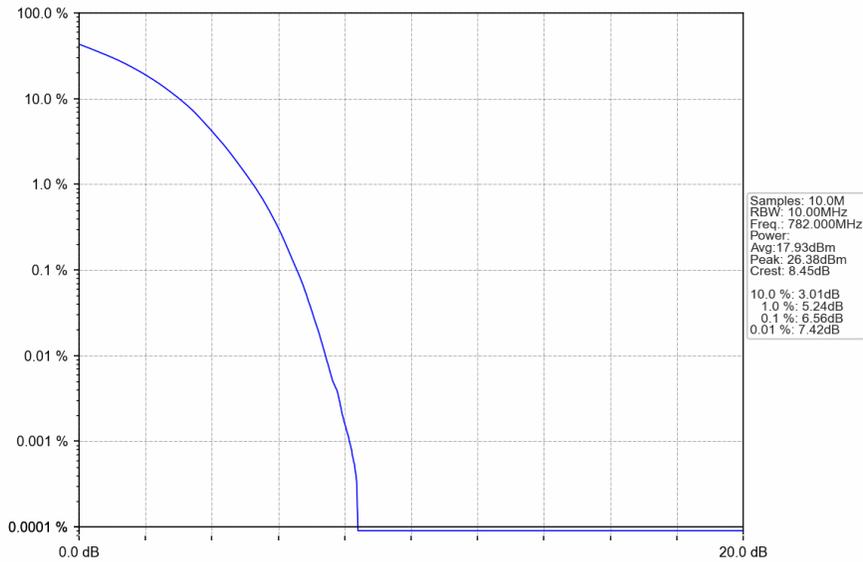
Band13_10MHz_16QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_64QAM_MCH_782MHz_RB_50_0_NTNV



Band13_10MHz_256QAM_MCH_782MHz_RB_50_0_NTNV



5. Spurious Emission

5.1 Test Result

5.1.1 B13_5MHz

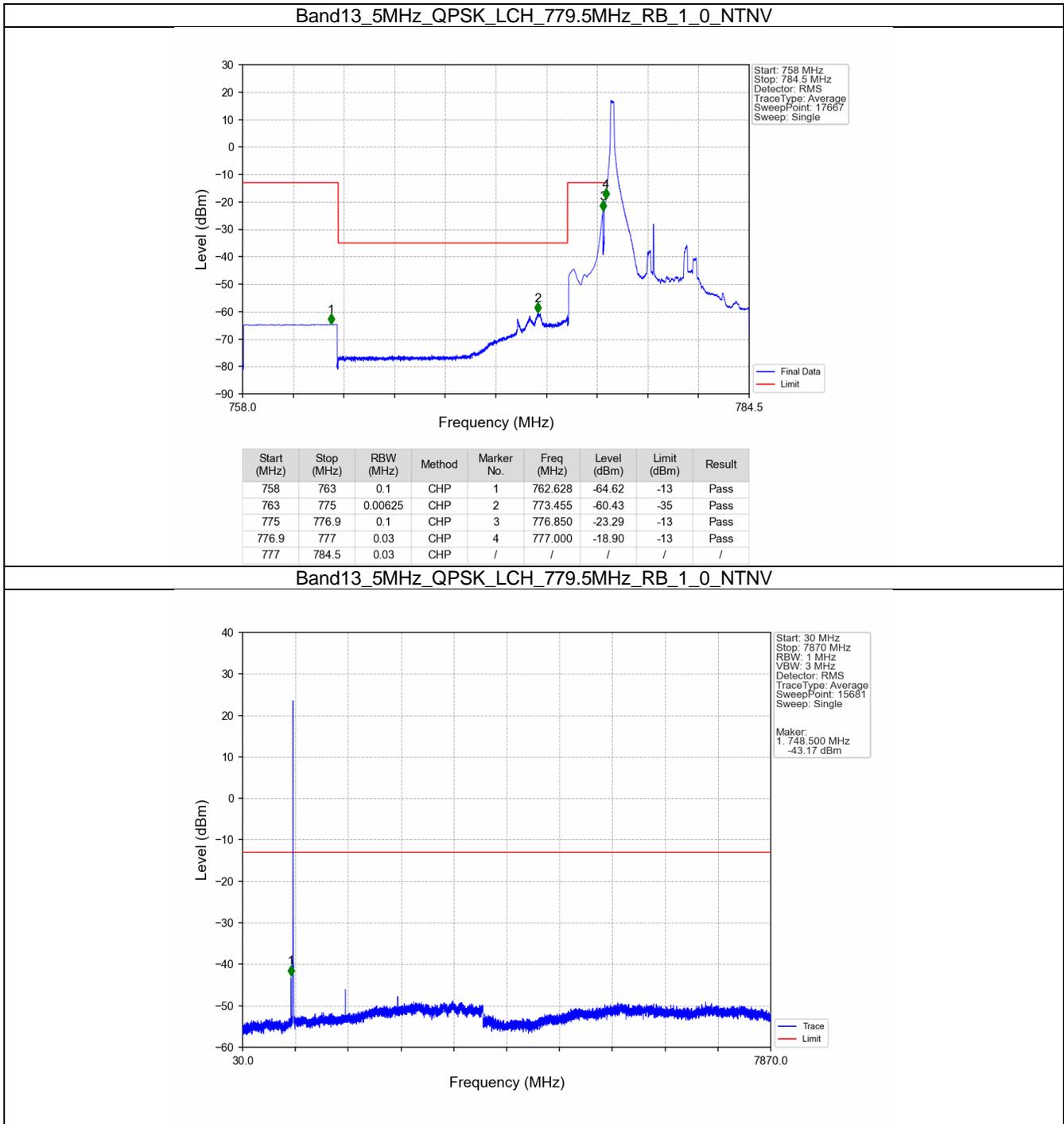
Band: 13 / Bandwidth: 5MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	779.5	1	0	Refer To Test Graph	Pass	
		25	0	Refer To Test Graph	Pass	
	782	1	0	Refer To Test Graph	Pass	
	784.5	1	0	Refer To Test Graph	Pass	
			24	Refer To Test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

5.1.2 B13_10MHz

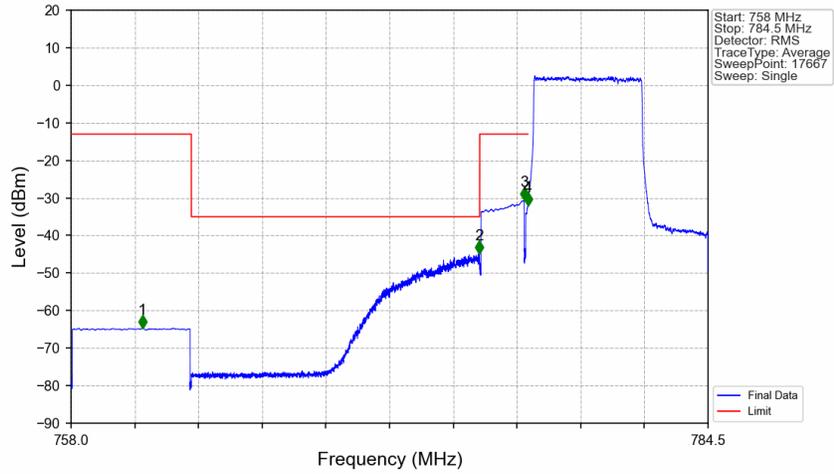
Band: 13 / Bandwidth: 10MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	782	1	0	Refer To Test Graph	Pass	
		50	0	Refer To Test Graph	Pass	
	782	1	49	Refer To Test Graph	Pass	
		50	0	Refer To Test Graph	Pass	

5.2 Test Graph

5.2.1 B13_5MHz

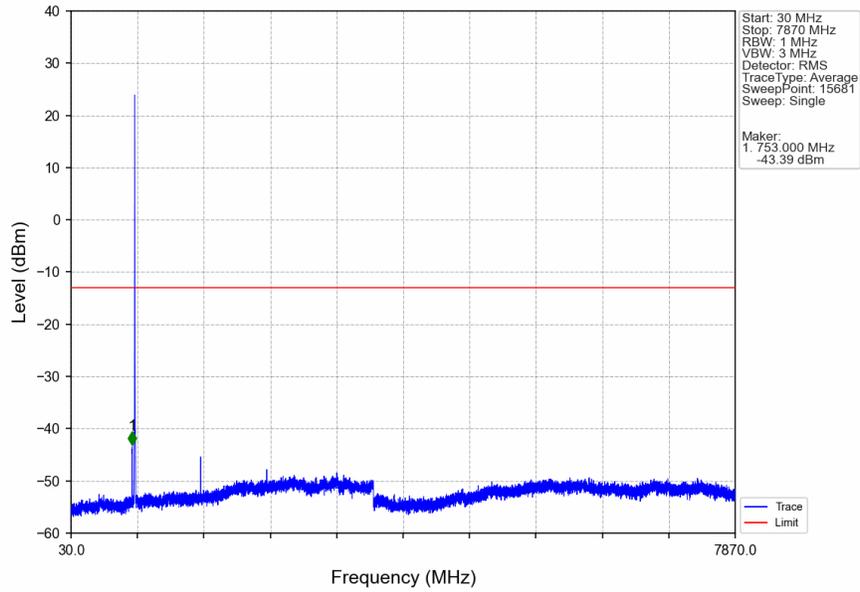


Band13_5MHz_QPSK_LCH_779.5MHz_RB_25_0_NTNV

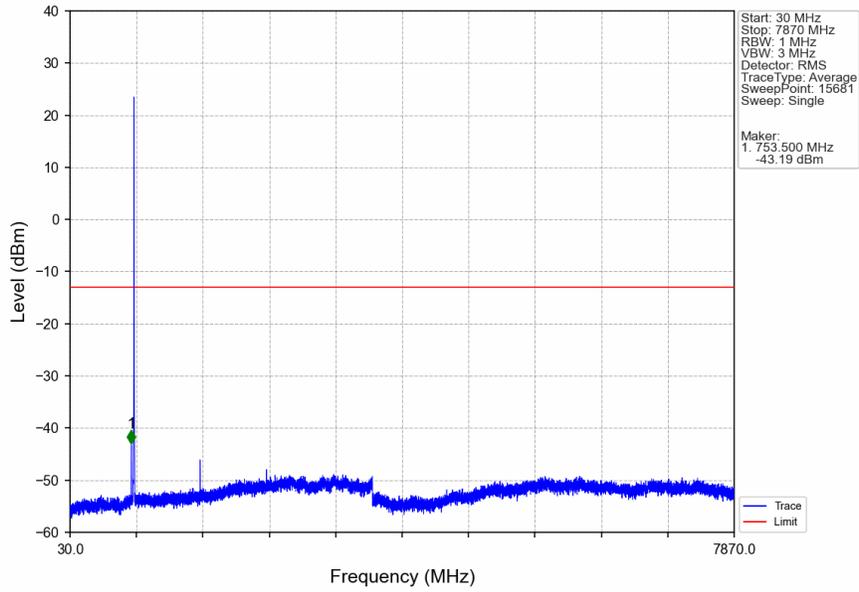


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	760.967	-64.67	-13	Pass
763	775	0.00625	CHP	2	774.976	-44.94	-35	Pass
775	776.9	0.1	CHP	3	776.850	-30.63	-13	Pass
776.9	777	0.03	CHP	4	777.000	-32.03	-13	Pass
777	784.5	0.03	CHP	/	/	/	/	/

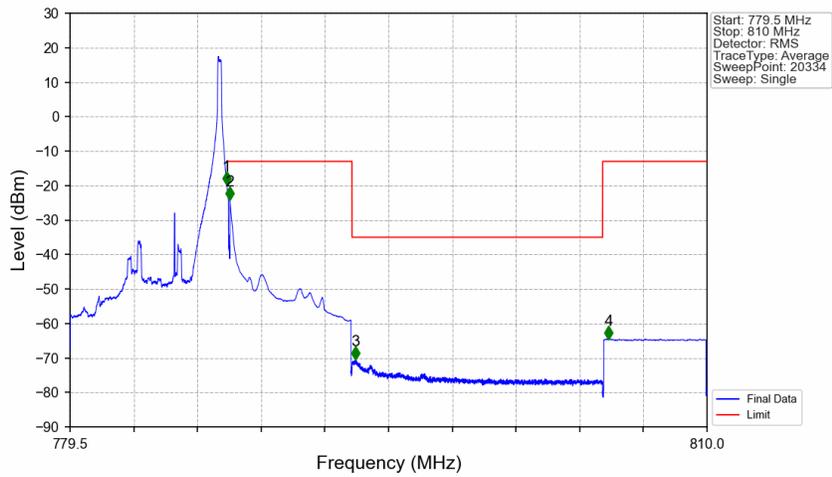
Band13_5MHz_QPSK_MCH_782MHz_RB_1_0_NTNV



Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_0_NTNV

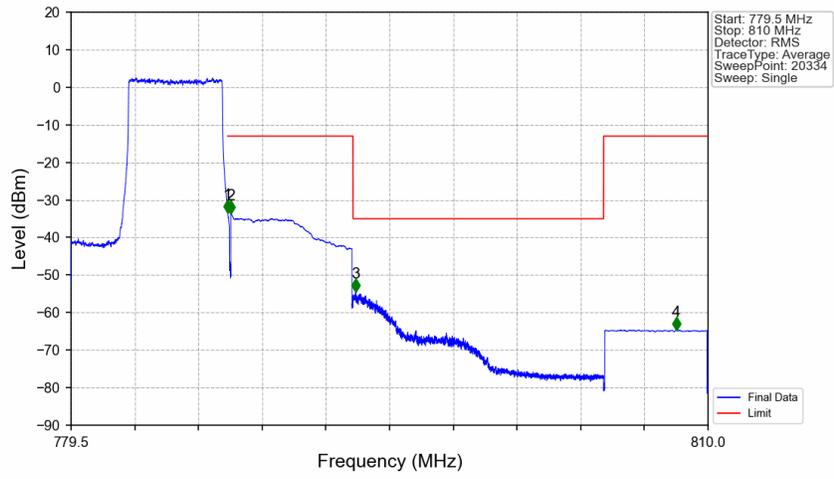


Band13_5MHz_QPSK_HCH_784.5MHz_RB_1_24_NTNV



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	-19.72	-13	Pass
787.1	793	0.1	CHP	2	787.150	-24.20	-13	Pass
793	805	0.00625	CHP	3	793.156	-70.55	-35	Pass
805	810	0.1	CHP	4	805.288	-64.52	-13	Pass

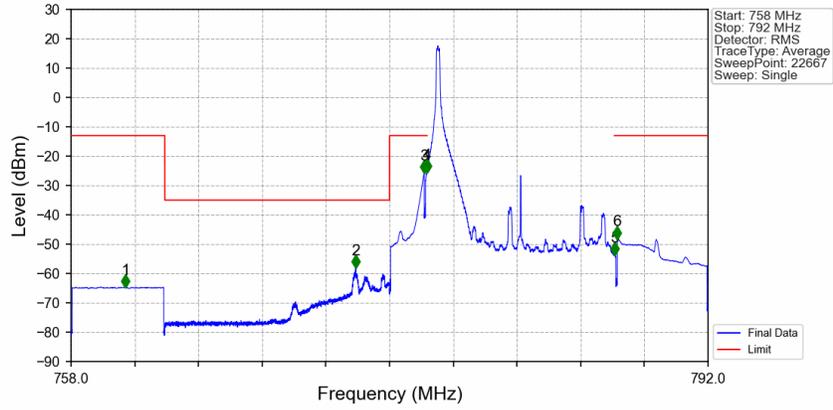
Band13_5MHz_QPSK_HCH_784.5MHz_RB_25_0_NTNV



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	-33.43	-13	Pass
787.1	793	0.1	CHP	2	787.150	-33.63	-13	Pass
793	805	0.00625	CHP	3	793.132	-54.42	-35	Pass
805	810	0.1	CHP	4	808.476	-64.61	-13	Pass

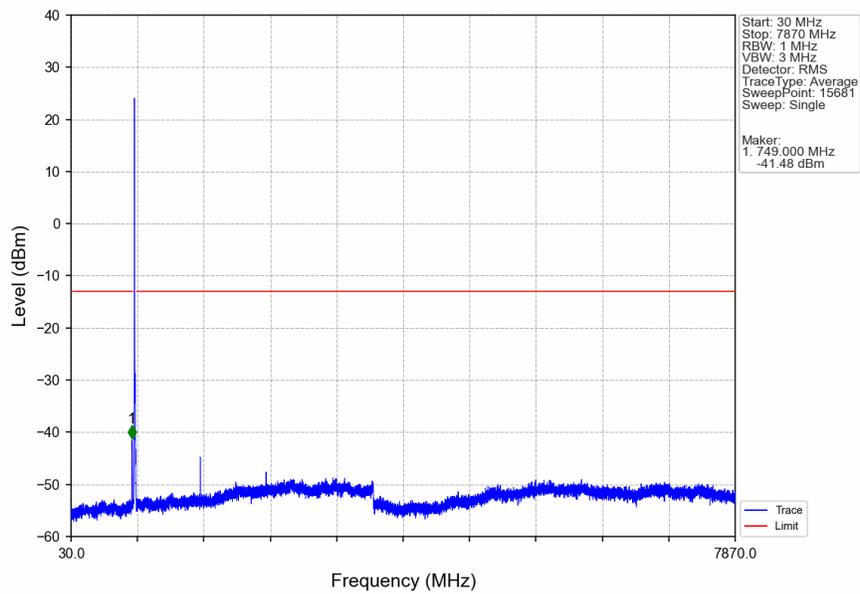
5.2.2 B13_10MHz

Band13_10MHz_QPSK_LCH_782MHz_RB_1_0_NTNV

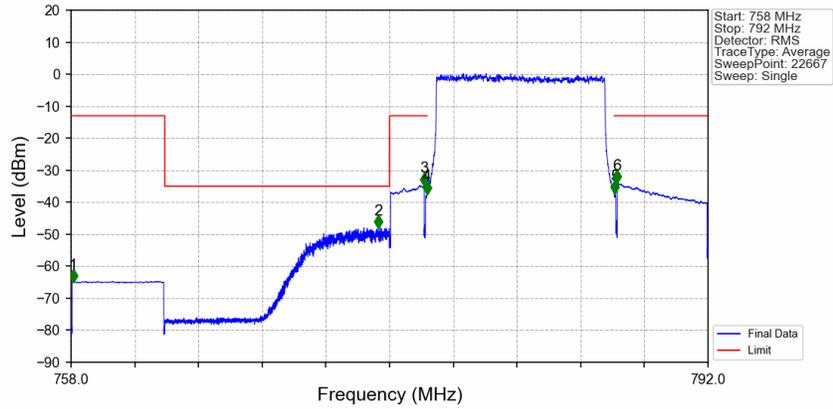


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	760.906	-64.59	-13	Pass
763	775	0.00625	CHP	2	773.191	-57.81	-35	Pass
775	776.9	0.1	CHP	3	776.850	-25.50	-13	Pass
776.9	777	0.03	CHP	4	777.000	-25.26	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.024	-53.52	-13	Pass
787.1	792	0.1	CHP	6	787.152	-47.97	-13	Pass

Band13_10MHz_QPSK_LCH_782MHz_RB_1_0_NTNV

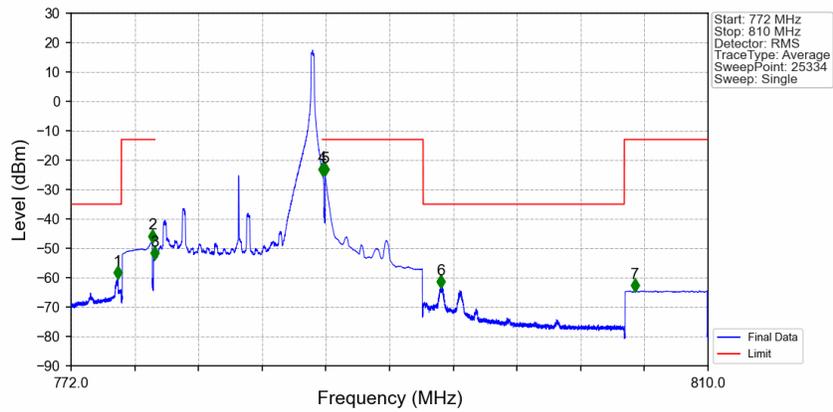


Band13_10MHz_QPSK_LCH_782MHz_RB_50_0_NTNV



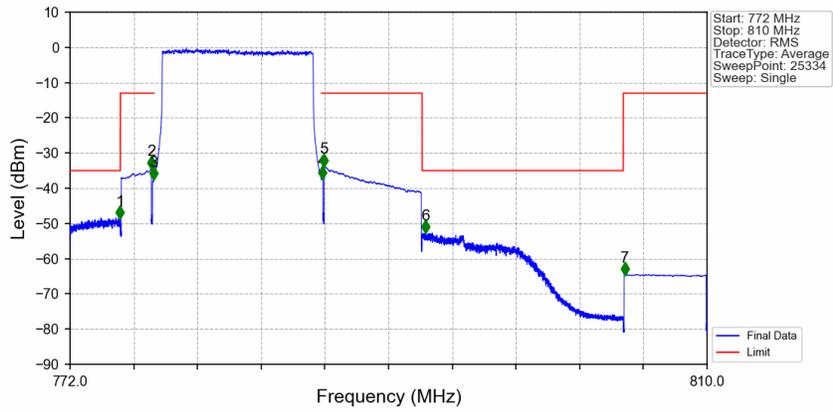
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
758	763	0.1	CHP	1	758.107	-64.72	-13	Pass
763	775	0.00625	CHP	2	774.412	-47.85	-35	Pass
775	776.9	0.1	CHP	3	776.850	-34.57	-13	Pass
776.9	777	0.03	CHP	4	776.994	-37.11	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	5	787.030	-37.06	-13	Pass
787.1	792	0.1	CHP	6	787.150	-33.64	-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	774.777	-60.23	-35	Pass
775	776.9	0.1	CHP	2	776.847	-47.74	-13	Pass
776.9	777	0.03	CHP	3	776.998	-53.50	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.000	-24.87	-13	Pass
787.1	793	0.1	CHP	5	787.150	-25.04	-13	Pass
793	805	0.00625	CHP	6	794.053	-63.15	-35	Pass
805	810	0.1	CHP	7	805.623	-64.54	-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	774.985	-48.39	-35	Pass
775	776.9	0.1	CHP	2	776.850	-34.24	-13	Pass
776.9	777	0.03	CHP	3	776.991	-37.27	-13	Pass
777	787	0.03	CHP	/	/	/	/	/
787	787.1	0.03	CHP	4	787.030	-37.03	-13	Pass
787.1	793	0.1	CHP	5	787.150	-33.58	-13	Pass
793	805	0.00625	CHP	6	793.195	-52.55	-35	Pass
805	810	0.1	CHP	7	805.102	-64.47	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 13 ANT0-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	-67.14	-13	-54.14	-70.28	2.6	5.74	Horizontal	Pass
2332.5	-51.54	-13	-38.54	-54.0	2.96	5.42	Horizontal	Pass
3110.0	-60.05	-13	-47.05	-64.05	3.2	7.2	Horizontal	Pass
1555.0	-61.17	-13	-48.17	-64.31	2.6	5.74	Vertical	Pass
2332.5	-63.01	-13	-50.01	-65.47	2.96	5.42	Vertical	Pass
3110.0	-60.89	-13	-47.89	-64.89	3.2	7.2	Vertical	Pass

LTE Band 13 ANT0-Low channel, Modulation: QPSK, Bandwidth:5MHz, 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
1554.5	-64.29	-13	-51.29	-67.43	2.6	5.74	Horizontal	Pass
2331.75	-60.04	-13	-47.04	-62.5	2.96	5.42	Horizontal	Pass
3109.0	-60.82	-13	-47.82	-64.81	3.2	7.19	Horizontal	Pass
1554.5	-61.45	-13	-48.45	-64.59	2.6	5.74	Vertical	Pass
2331.75	-60.92	-13	-47.92	-63.38	2.96	5.42	Vertical	Pass
3109.0	-61.19	-13	-48.19	-65.18	3.2	7.19	Vertical	Pass

LTE Band 13 ANT0-Middle channel, Modulation: QPSK, Bandwidth:5MHz, 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
1559.5	-65.7	-40	-25.7	-68.83	2.6	5.73	Horizontal	Pass
2339.25	-59.32	-13	-46.32	-61.79	2.96	5.43	Horizontal	Pass
3119.0	-59.51	-13	-46.51	-63.52	3.21	7.22	Horizontal	Pass
1559.5	-61.55	-40	-21.55	-64.68	2.6	5.73	Vertical	Pass
2339.25	-57.22	-13	-44.22	-59.69	2.96	5.43	Vertical	Pass
3119.0	-59.99	-13	-46.99	-64.0	3.21	7.22	Vertical	Pass

LTE Band 13 ANT0-High channel, Modulation: QPSK, Bandwidth:5MHz, 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
1564.5	-65.29	-40	-25.29	-68.41	2.6	5.72	Horizontal	Pass
2346.75	-57.85	-13	-44.85	-60.33	2.97	5.45	Horizontal	Pass
3129.0	-59.73	-13	-46.73	-63.76	3.21	7.24	Horizontal	Pass
1564.5	-62.76	-40	-22.76	-65.88	2.6	5.72	Vertical	Pass
2346.75	-55.13	-13	-42.13	-57.61	2.97	5.45	Vertical	Pass
3129.0	-59.98	-13	-46.98	-64.01	3.21	7.24	Vertical	Pass