

Appendix for Band 13

Report No.: BCTC2309367965-2E

Applicant: Arize Corporation

Product Name: Smart Hub

Model/Type
reference: ASH120

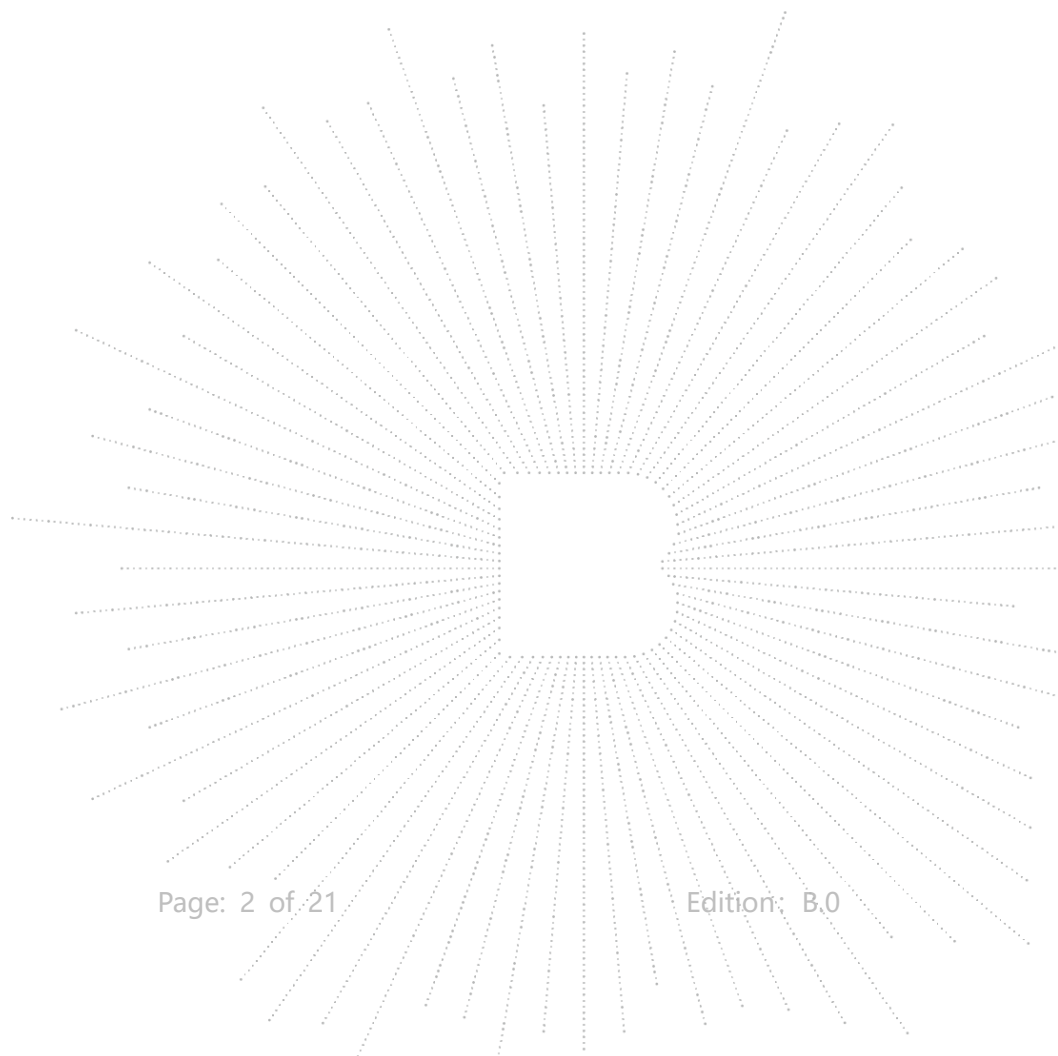
Tested Date: 2023-09-26 to 2023-11-03

Issued Date: 2023-11-03

Shenzhen BCTC Testing Co., Ltd.

Contents

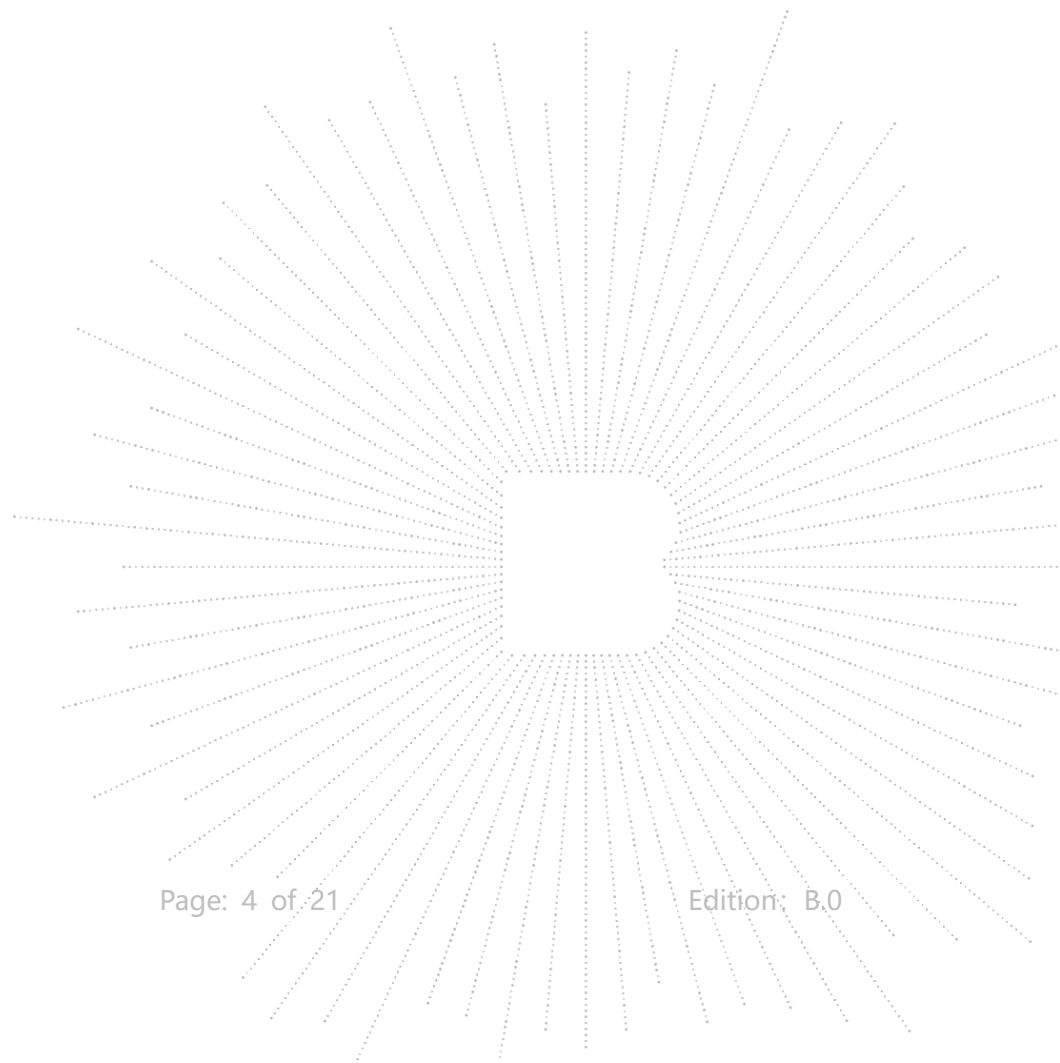
Appendix 1. Conducted output power	3
Appendix 2. Frequency stability.....	5
Appendix 3. Peak-to-Average Ratio	7
Appendix 4. Occupied bandwidth	11
Appendix 5. Band edge	15
Appendix 6. Out-of-band emissions	18



Appendix 1. Conducted output power

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Gain (dBm)	ERP (dBm)	ERP Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
Band13	5	23205	1	#0	QPSK	22.70	3.64	24.19	37	26.34	37	PASS
Band13	5	23205	1	#Mid	QPSK	22.85	3.64	24.34	37	26.49	37	PASS
Band13	5	23205	1	#Max	QPSK	22.77	3.64	24.26	37	26.41	37	PASS
Band13	5	23205	12	#0	QPSK	21.54	3.64	23.03	37	25.18	37	PASS
Band13	5	23205	12	#Mid	QPSK	21.61	3.64	23.10	37	25.25	37	PASS
Band13	5	23205	12	#Max	QPSK	21.66	3.64	23.15	37	25.30	37	PASS
Band13	5	23205	25	#0	QPSK	21.68	3.64	23.17	37	25.32	37	PASS
Band13	5	23205	1	#0	16QAM	21.76	3.64	23.25	37	25.40	37	PASS
Band13	5	23205	1	#Mid	16QAM	21.30	3.64	22.79	37	24.94	37	PASS
Band13	5	23205	1	#Max	16QAM	21.60	3.64	23.09	37	25.24	37	PASS
Band13	5	23205	12	#0	16QAM	20.57	3.64	22.06	37	24.21	37	PASS
Band13	5	23205	12	#Mid	16QAM	20.47	3.64	21.96	37	24.11	37	PASS
Band13	5	23205	12	#Max	16QAM	20.48	3.64	21.97	37	24.12	37	PASS
Band13	5	23205	25	#0	16QAM	20.52	3.64	22.01	37	24.16	37	PASS
Band13	5	23230	1	#0	QPSK	22.63	3.64	24.12	37	26.27	37	PASS
Band13	5	23230	1	#Mid	QPSK	22.94	3.64	24.43	37	26.58	37	PASS
Band13	5	23230	1	#Max	QPSK	22.69	3.64	24.18	37	26.33	37	PASS
Band13	5	23230	12	#0	QPSK	21.62	3.64	23.11	37	25.26	37	PASS
Band13	5	23230	12	#Mid	QPSK	21.76	3.64	23.25	37	25.40	37	PASS
Band13	5	23230	12	#Max	QPSK	21.79	3.64	23.28	37	25.43	37	PASS
Band13	5	23230	25	#0	QPSK	21.63	3.64	23.12	37	25.27	37	PASS
Band13	5	23230	1	#0	16QAM	21.75	3.64	23.24	37	25.39	37	PASS
Band13	5	23230	1	#Mid	16QAM	22.13	3.64	23.62	37	25.77	37	PASS
Band13	5	23230	1	#Max	16QAM	21.83	3.64	23.32	37	25.47	37	PASS
Band13	5	23230	12	#0	16QAM	20.66	3.64	22.15	37	24.30	37	PASS
Band13	5	23230	12	#Mid	16QAM	20.73	3.64	22.22	37	24.37	37	PASS
Band13	5	23230	12	#Max	16QAM	20.78	3.64	22.27	37	24.42	37	PASS
Band13	5	23230	25	#0	16QAM	20.64	3.64	22.13	37	24.28	37	PASS
Band13	5	23255	1	#0	QPSK	22.52	3.64	24.01	37	26.16	37	PASS
Band13	5	23255	1	#Mid	QPSK	22.93	3.64	24.42	37	26.57	37	PASS
Band13	5	23255	1	#Max	QPSK	22.61	3.64	24.10	37	26.25	37	PASS
Band13	5	23255	12	#0	QPSK	21.57	3.64	23.06	37	25.21	37	PASS
Band13	5	23255	12	#Mid	QPSK	21.73	3.64	23.22	37	25.37	37	PASS
Band13	5	23255	12	#Max	QPSK	21.84	3.64	23.33	37	25.48	37	PASS
Band13	5	23255	25	#0	QPSK	21.68	3.64	23.17	37	25.32	37	PASS
Band13	5	23255	1	#0	16QAM	21.36	3.64	22.85	37	25.00	37	PASS

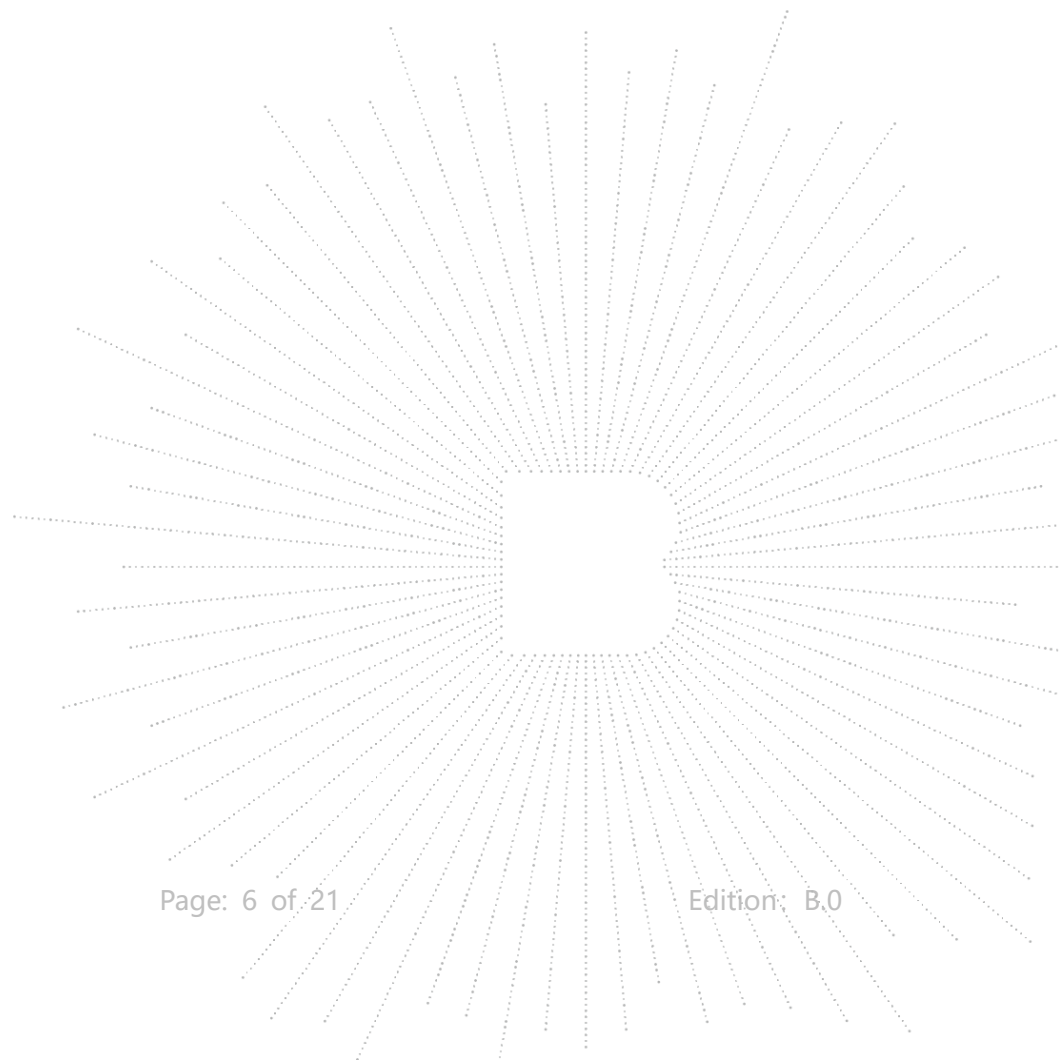
Band13	5	23255	1	#Mid	16QAM	21.94	3.64	23.43	37	25.58	37	PASS
Band13	5	23255	1	#Max	16QAM	21.57	3.64	23.06	37	25.21	37	PASS
Band13	5	23255	12	#0	16QAM	20.34	3.64	21.83	37	23.98	37	PASS
Band13	5	23255	12	#Mid	16QAM	20.50	3.64	21.99	37	24.14	37	PASS
Band13	5	23255	12	#Max	16QAM	20.58	3.64	22.07	37	24.22	37	PASS
Band13	5	23255	25	#0	16QAM	20.56	3.64	22.05	37	24.20	37	PASS
Band13	10	23230	1	#0	QPSK	22.64	3.64	24.13	37	26.28	37	PASS
Band13	10	23230	1	#Mid	QPSK	22.57	3.64	24.06	37	26.21	37	PASS
Band13	10	23230	1	#Max	QPSK	22.74	3.64	24.23	37	26.38	37	PASS
Band13	10	23230	25	#0	QPSK	21.47	3.64	22.96	37	25.11	37	PASS
Band13	10	23230	25	#Mid	QPSK	21.57	3.64	23.06	37	25.21	37	PASS
Band13	10	23230	25	#Max	QPSK	21.67	3.64	23.16	37	25.31	37	PASS
Band13	10	23230	50	#0	QPSK	21.64	3.64	23.13	37	25.28	37	PASS



Appendix 2. Frequency stability

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Voltage (Vdc)	Temperature (C)	Result (Hz)	Result (ppm)	Low Limit (ppm)	High Limit (ppm)	Verdict
Band13	5	23205	25	#0	QPSK	LV	NT	-2.53	-0.003	-2.5	2.5	PASS
Band13	5	23205	25	#0	QPSK	NV	NT	-1.96	-0.003	-2.5	2.5	PASS
Band13	5	23205	25	#0	QPSK	HV	NT	-1.29	-0.002	-2.5	2.5	PASS
Band13	5	23205	25	#0	16QAM	LV	NT	-2.39	-0.003	-2.5	2.5	PASS
Band13	5	23205	25	#0	16QAM	NV	NT	-1.93	-0.002	-2.5	2.5	PASS
Band13	5	23205	25	#0	16QAM	HV	NT	-1.80	-0.002	-2.5	2.5	PASS
Band13	5	23230	25	#0	QPSK	LV	NT	-0.51	-0.001	-2.5	2.5	PASS
Band13	5	23230	25	#0	QPSK	NV	NT	-0.74	-0.001	-2.5	2.5	PASS
Band13	5	23230	25	#0	QPSK	HV	NT	-0.79	-0.001	-2.5	2.5	PASS
Band13	5	23230	25	#0	16QAM	LV	NT	-1.13	-0.001	-2.5	2.5	PASS
Band13	5	23230	25	#0	16QAM	NV	NT	-0.10	0.000	-2.5	2.5	PASS
Band13	5	23230	25	#0	16QAM	HV	NT	-0.77	-0.001	-2.5	2.5	PASS
Band13	5	23255	25	#0	QPSK	LV	NT	-0.99	-0.001	-2.5	2.5	PASS
Band13	5	23255	25	#0	QPSK	NV	NT	-0.41	-0.001	-2.5	2.5	PASS
Band13	5	23255	25	#0	QPSK	HV	NT	-0.60	-0.001	-2.5	2.5	PASS
Band13	5	23255	25	#0	16QAM	LV	NT	-0.96	-0.001	-2.5	2.5	PASS
Band13	5	23255	25	#0	16QAM	NV	NT	-0.67	-0.001	-2.5	2.5	PASS
Band13	5	23255	25	#0	16QAM	HV	NT	-0.54	-0.00	-2.5	2.5	PASS

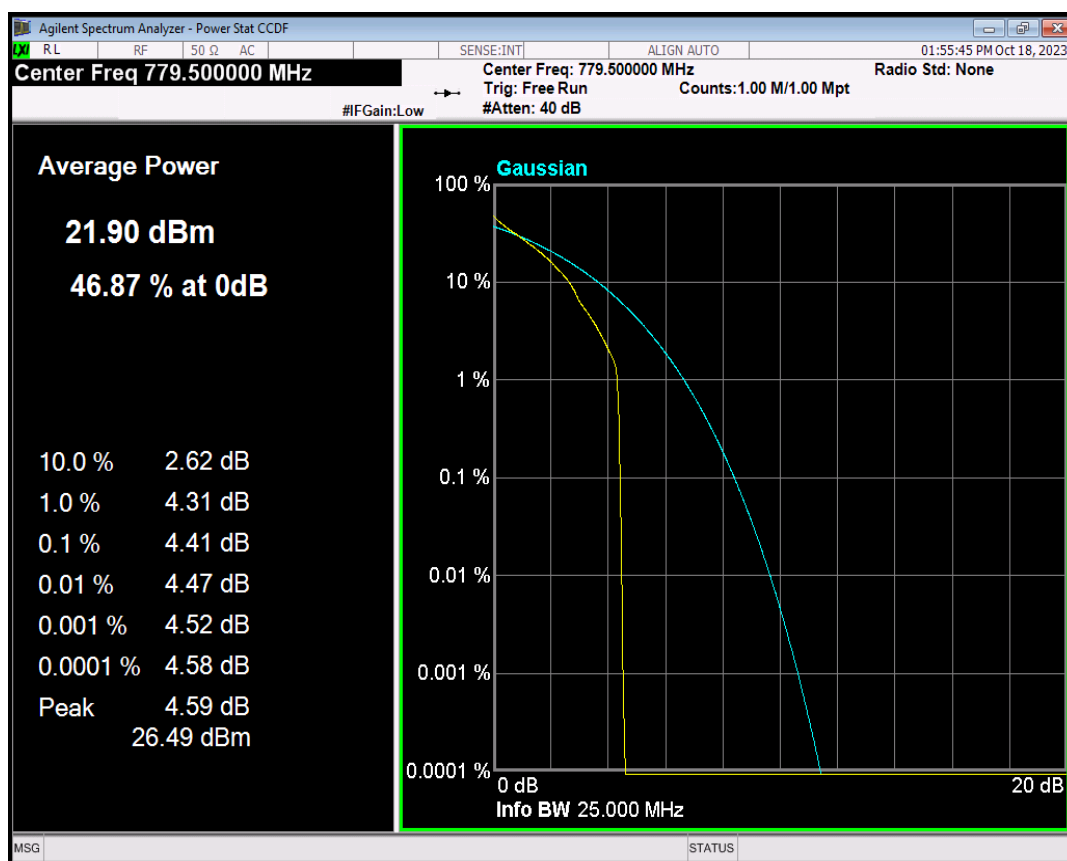
3									1			
Band1	10	23230	50	#0	QPSK	LV	NT	-0.66	-0.00	-2.5	2.5	PASS
3									1			
Band1	10	23230	50	#0	QPSK	NV	NT	-1.10	-0.00	-2.5	2.5	PASS
3									1			
Band1	10	23230	50	#0	QPSK	HV	NT	-1.66	-0.00	-2.5	2.5	PASS
3									2			



Appendix 3. Peak-to-Average Ratio

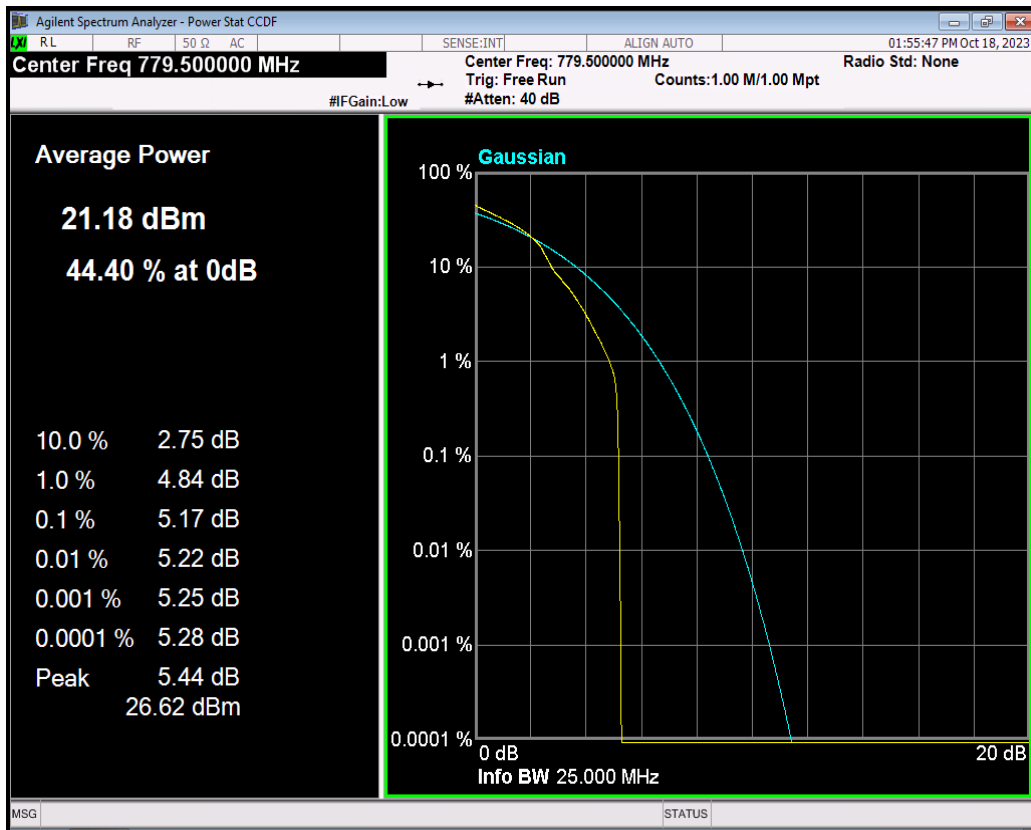
Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Result (dB)	high Limit (dB)	Verdict
Band13	5	23205	1	#0	QPSK	4.41	13	PASS
Band13	5	23205	1	#0	16QAM	5.17	13	PASS
Band13	5	23230	1	#0	QPSK	4.41	13	PASS
Band13	5	23230	1	#0	16QAM	5.15	13	PASS
Band13	5	23255	1	#0	QPSK	4.46	13	PASS
Band13	5	23255	1	#0	16QAM	5.34	13	PASS
Band13	10	23230	1	#0	QPSK	4.55	13	PASS

Band13 QPSK BW=5MHz Channel=23205 RB Size=1 Position=#0

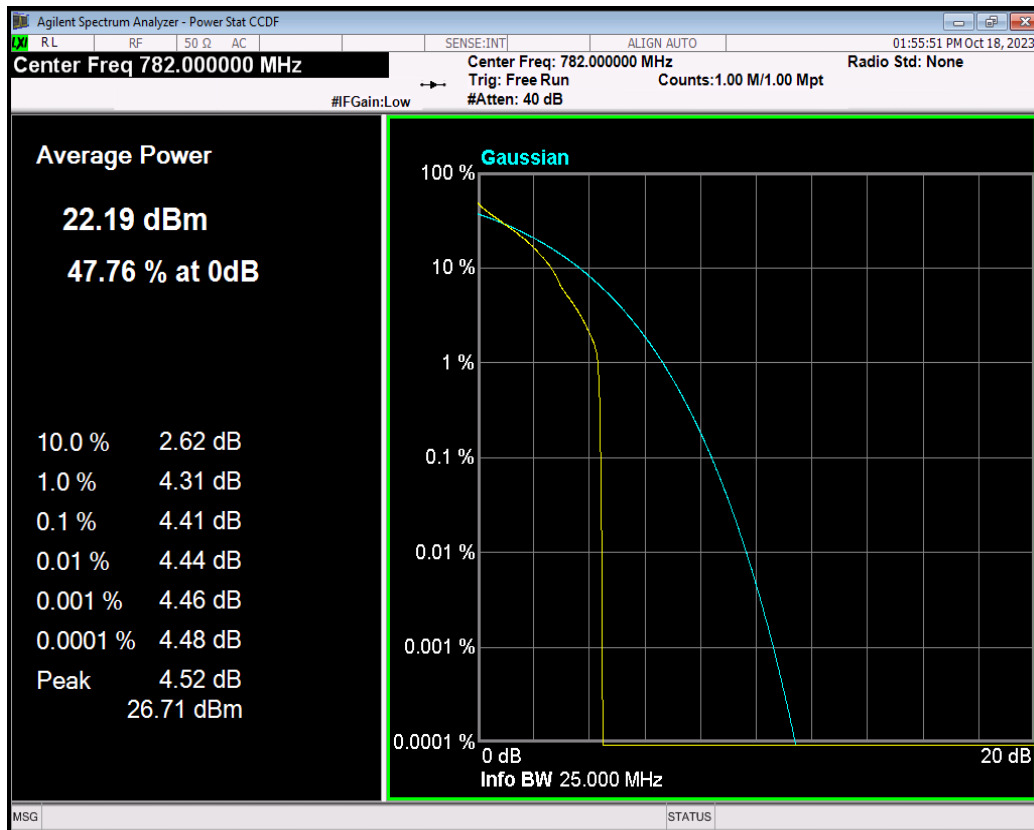




Band13 16QAM BW=5MHz Channel=23205 RB Size=1 Position=#0

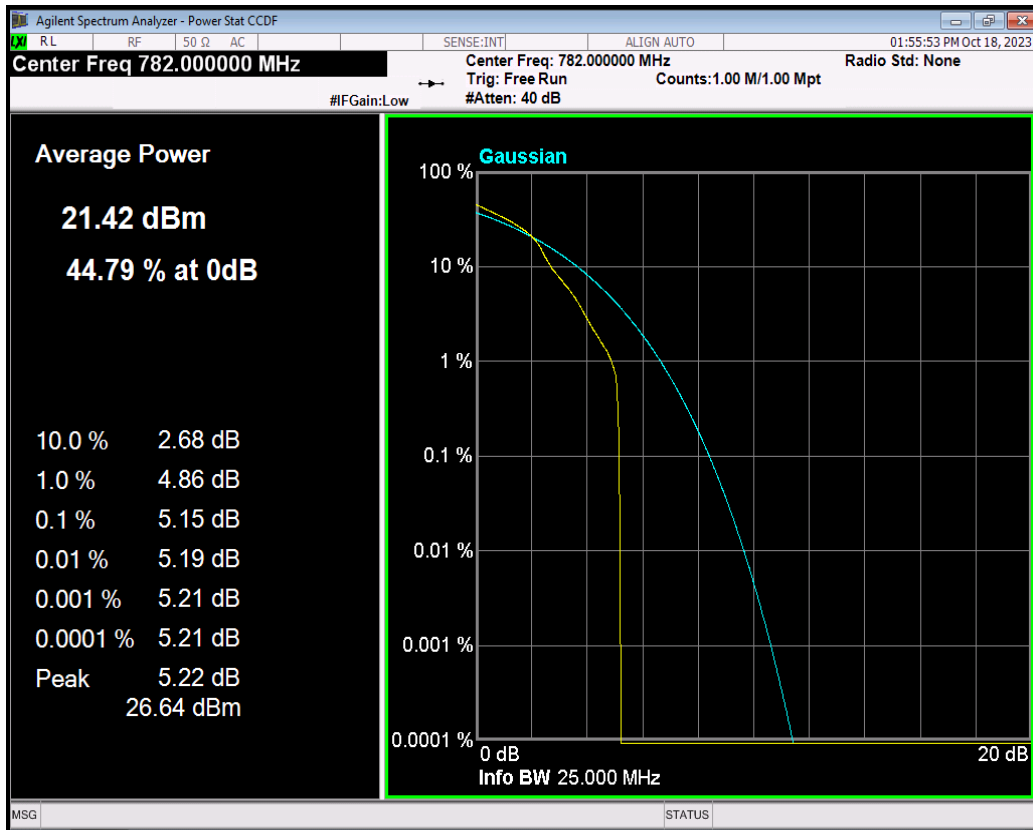


Band13 QPSK BW=5MHz Channel=23230 RB Size=1 Position=#0

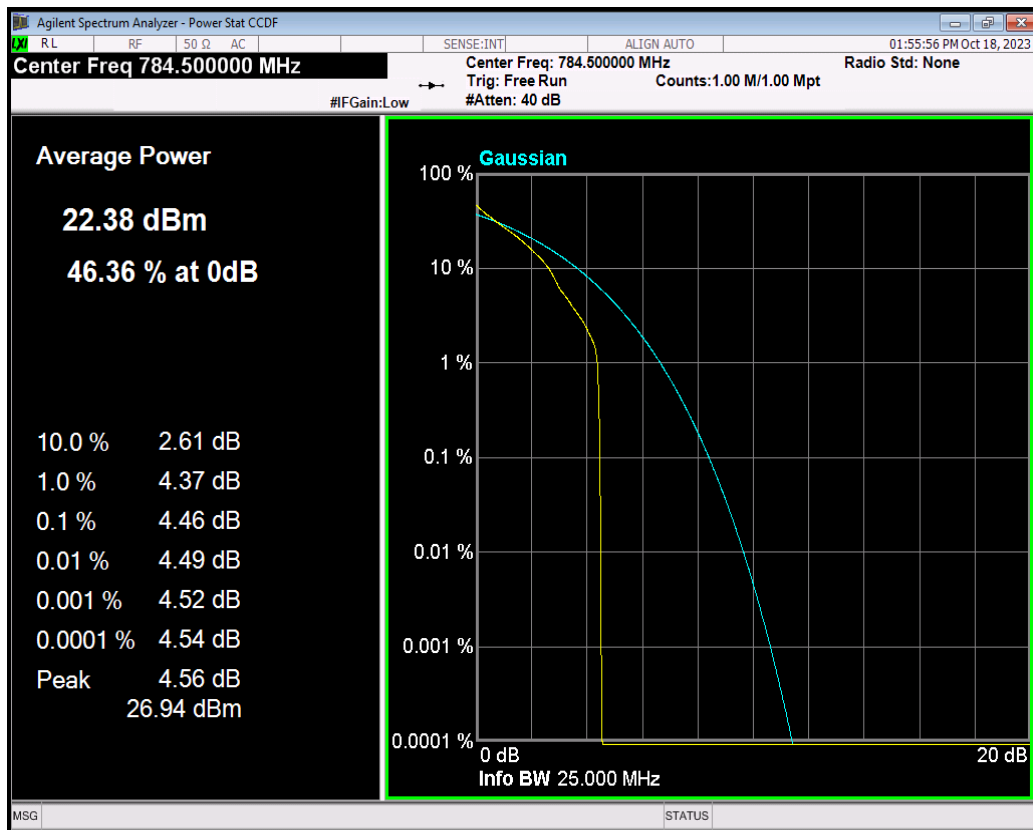




Band13 16QAM BW=5MHz Channel=23230 RB Size=1 Position=#0

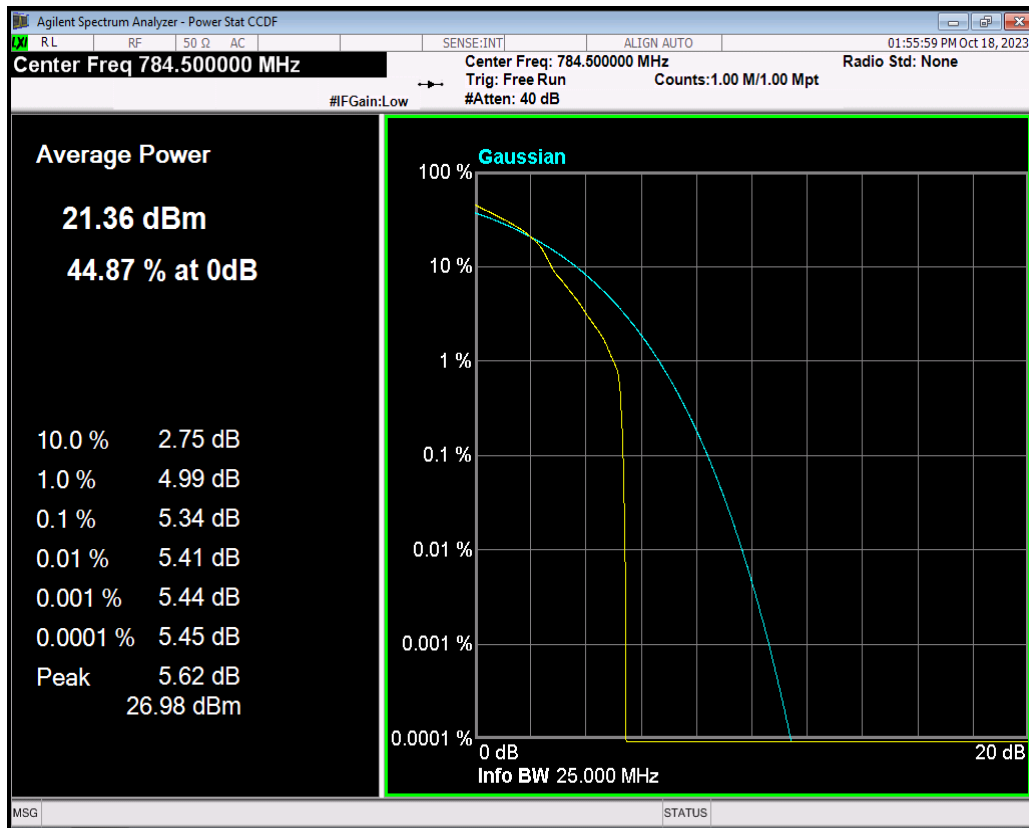


Band13 QPSK BW=5MHz Channel=23255 RB Size=1 Position=#0

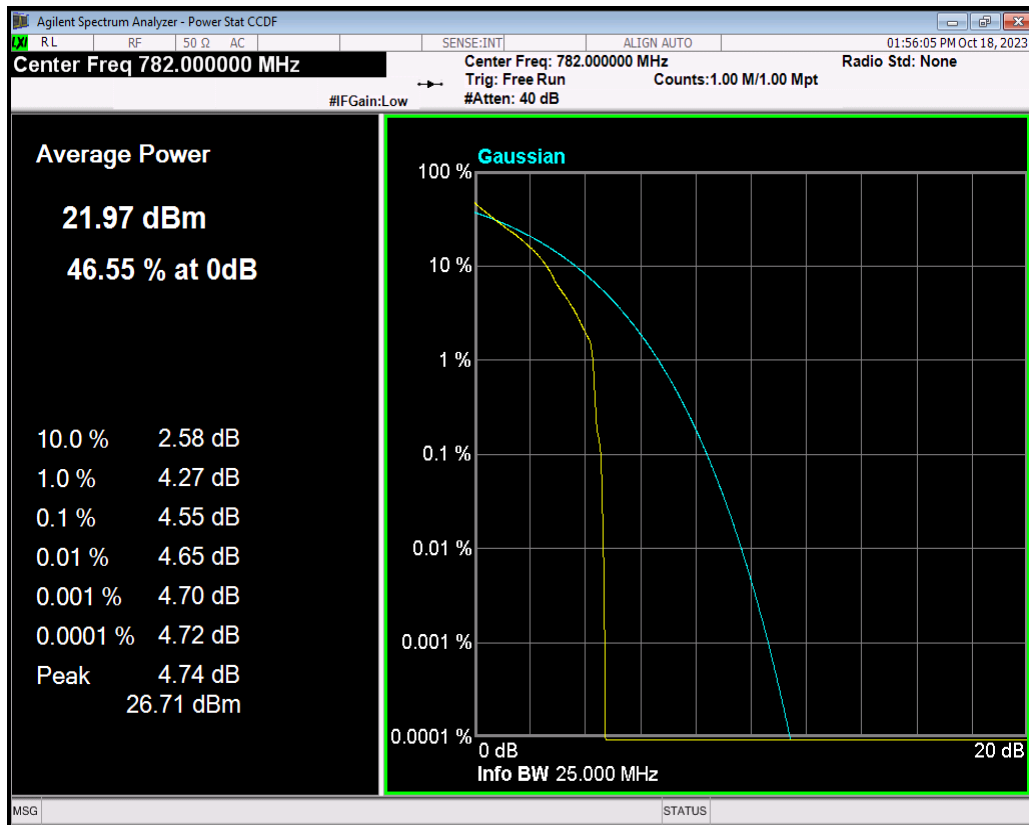




Band13 16QAM BW=5MHz Channel=23255 RB Size=1 Position=#0



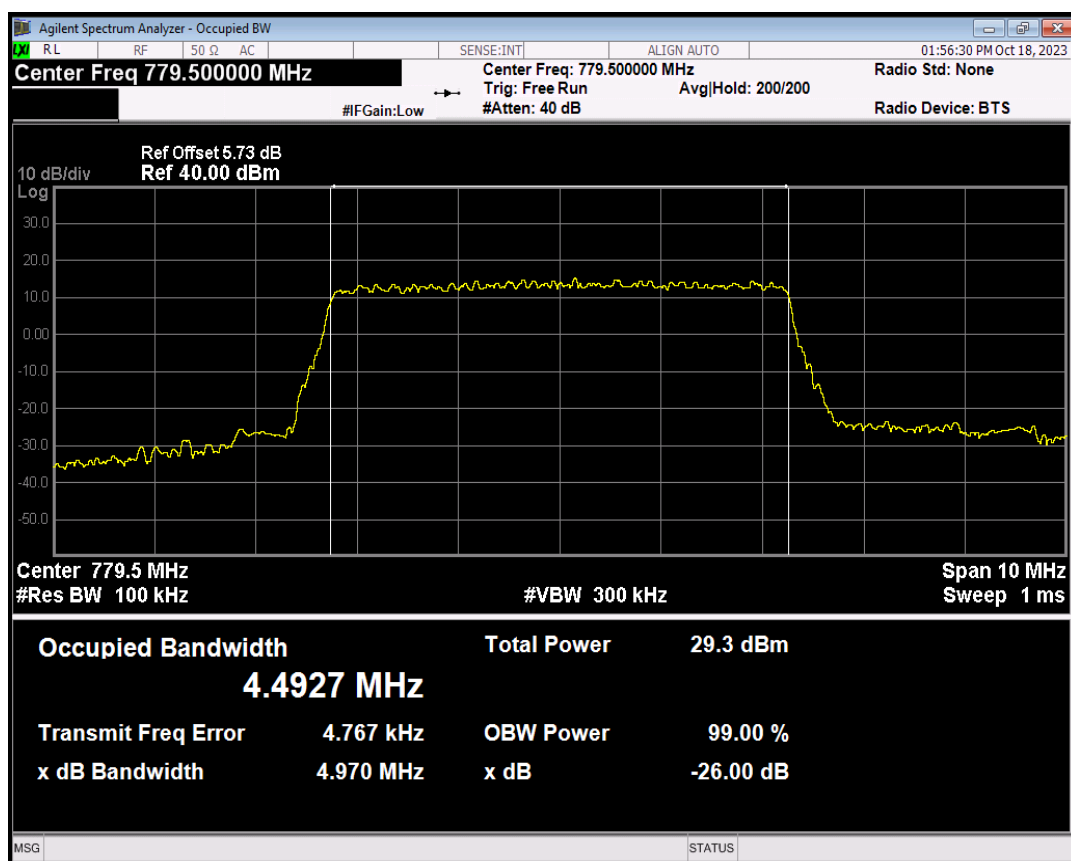
Band13 QPSK BW=10MHz Channel=23230 RB Size=1 Position=#0



Appendix 4. Occupied bandwidth

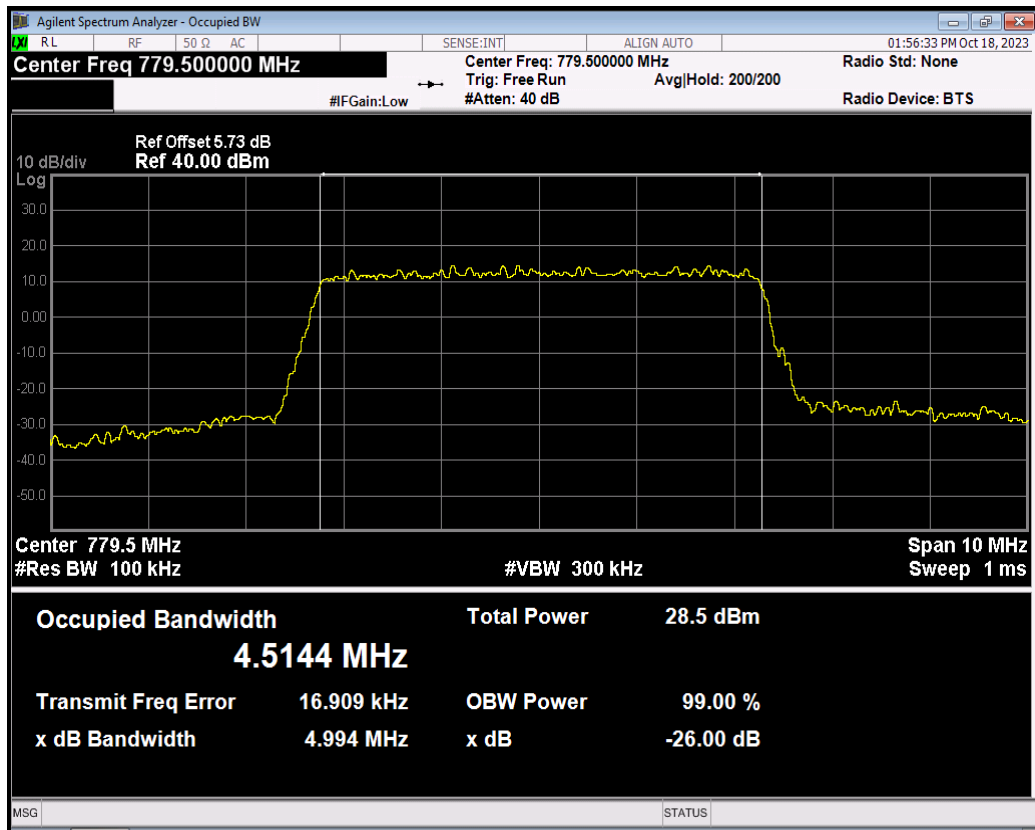
Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	99% OBW (MHz)	-26dB EBW (MHz)	Verdict
Band13	5	23205	25	#0	QPSK	4.493	4.970	PASS
Band13	5	23205	25	#0	16QAM	4.514	4.994	PASS
Band13	5	23230	25	#0	QPSK	4.505	4.951	PASS
Band13	5	23230	25	#0	16QAM	4.526	5.005	PASS
Band13	5	23255	25	#0	QPSK	4.546	5.061	PASS
Band13	5	23255	25	#0	16QAM	4.522	4.971	PASS
Band13	10	23230	50	#0	QPSK	8.989	9.787	PASS

Band13 QPSK BW=5MHz Channel=23205 RB Size=25 Position=#0

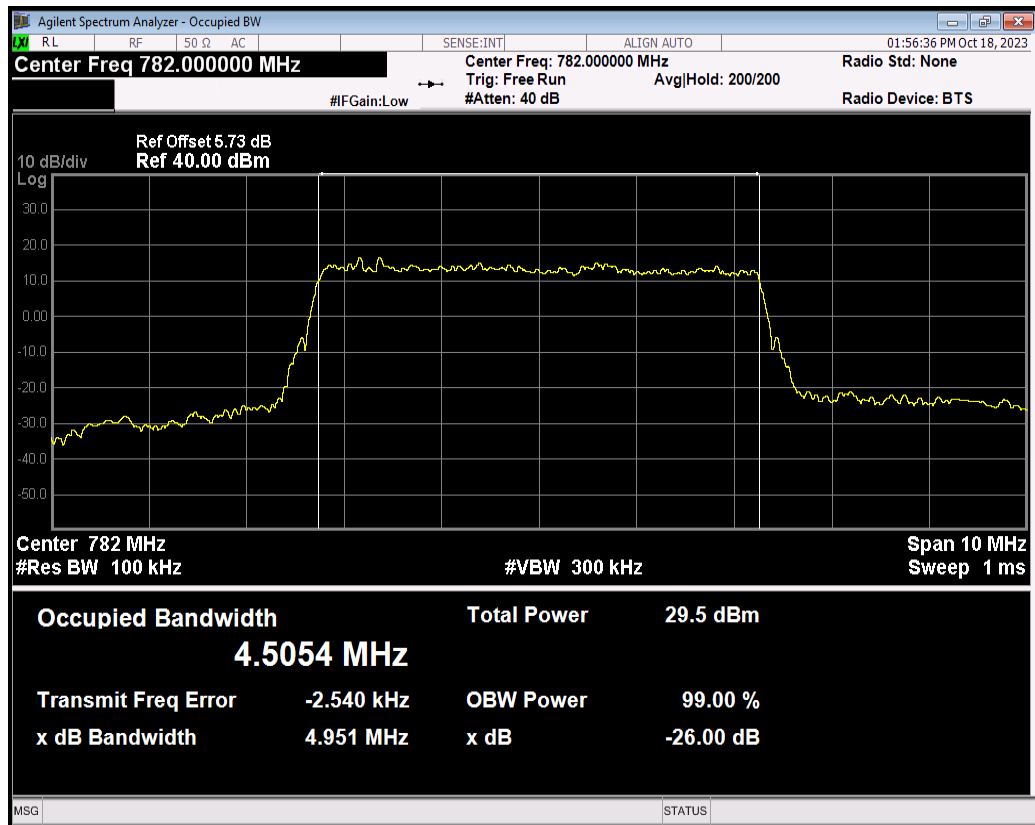




Band13 16QAM BW=5MHz Channel=23205 RB Size=25 Position=#0

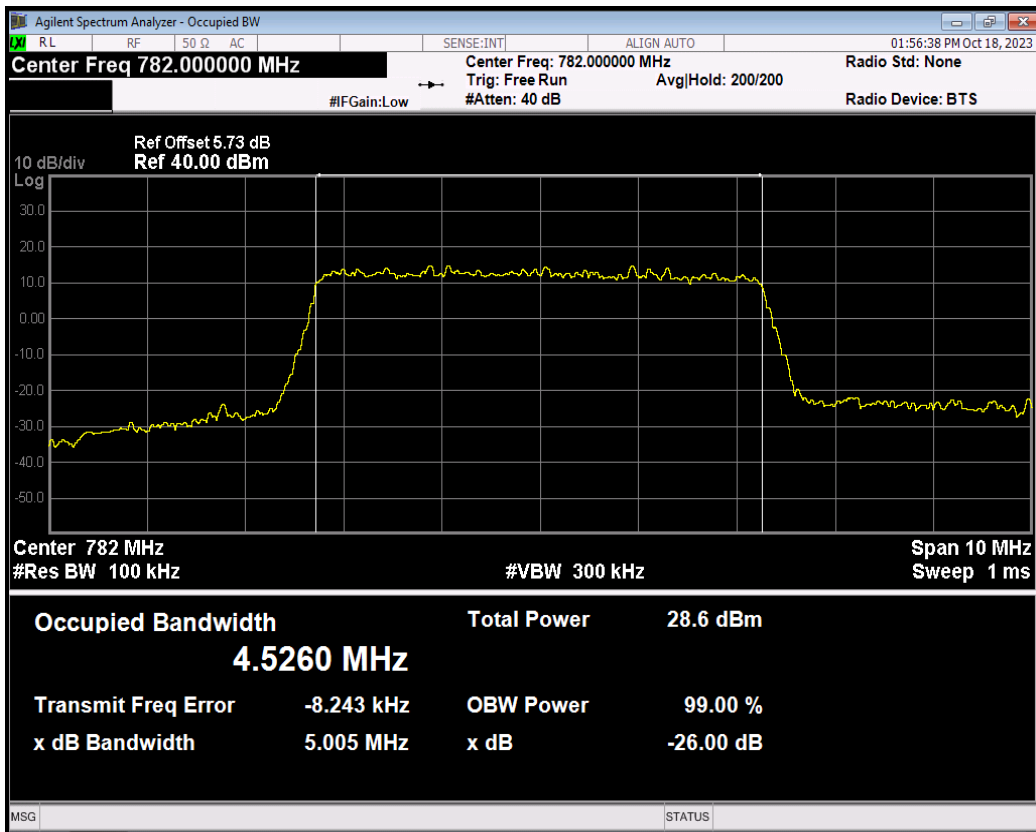


Band13 QPSK BW=5MHz Channel=23230 RB Size=25 Position=#0

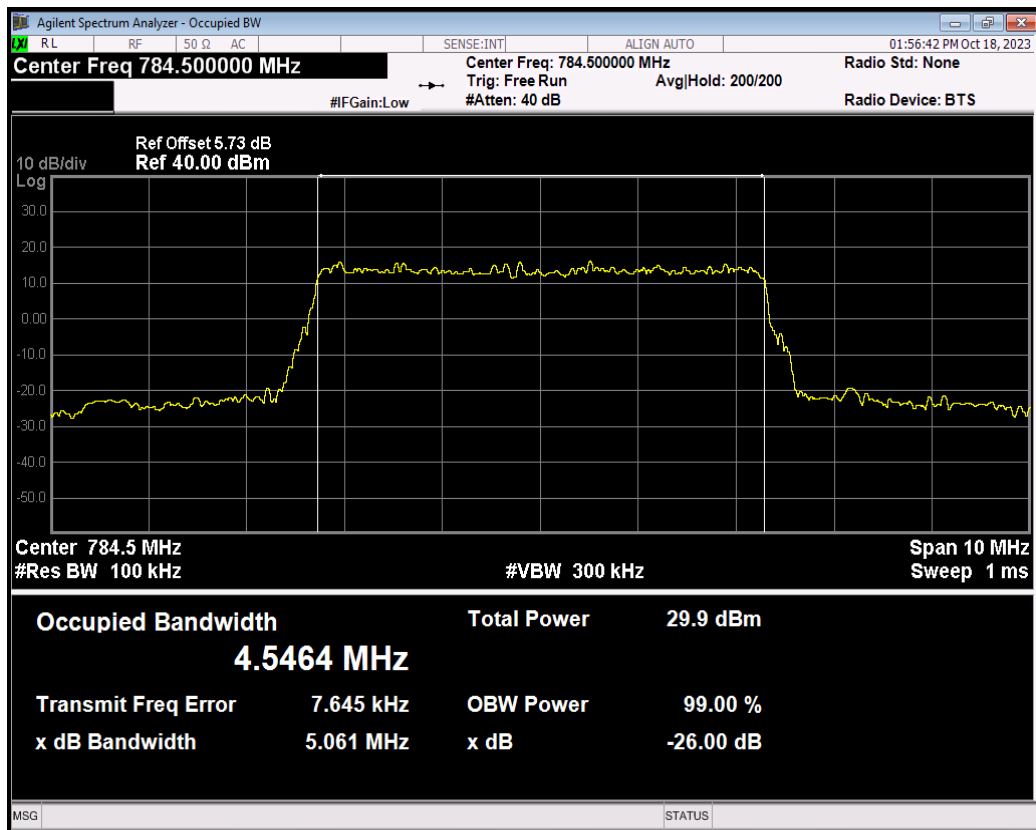




Band13 16QAM BW=5MHz Channel=23230 RB Size=25 Position=#0

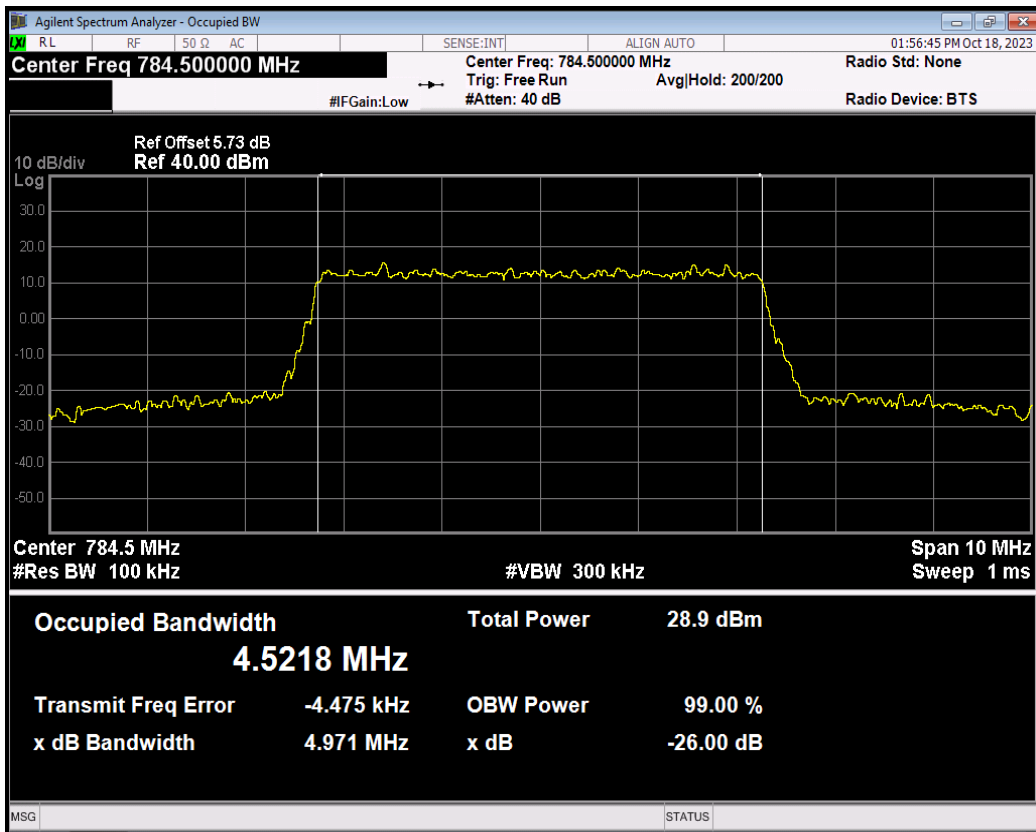


Band13 QPSK BW=5MHz Channel=23255 RB Size=25 Position=#0

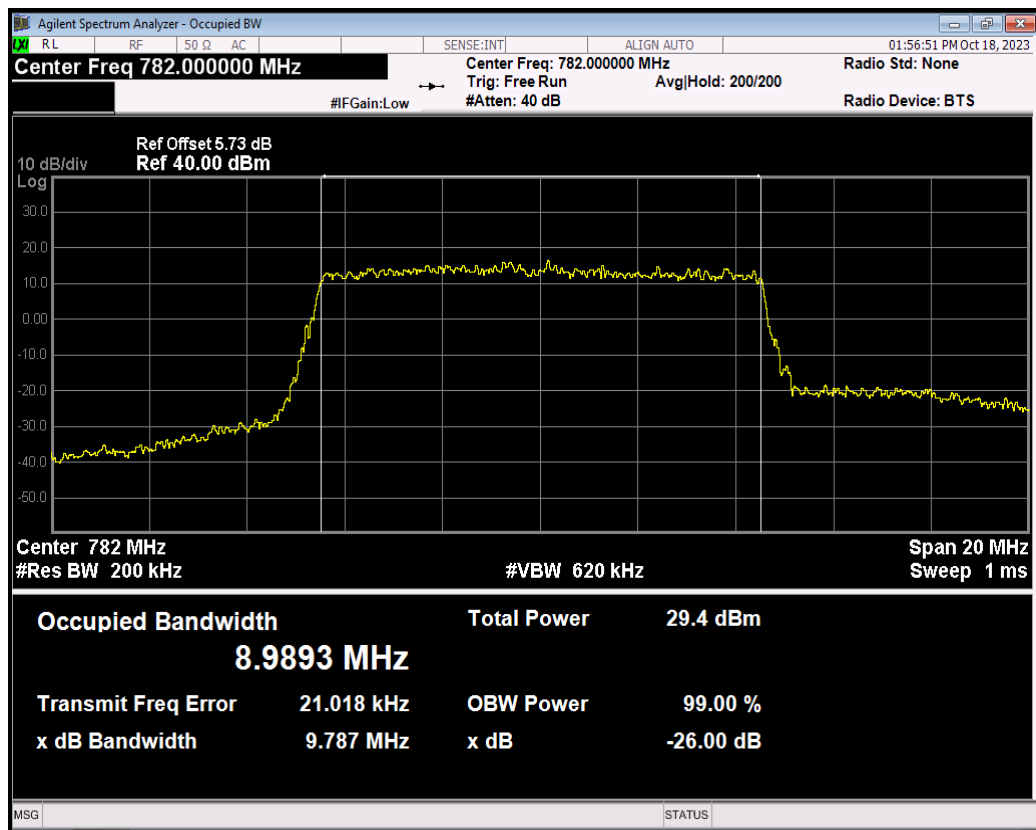




Band13 16QAM BW=5MHz Channel=23255 RB Size=25 Position=#0



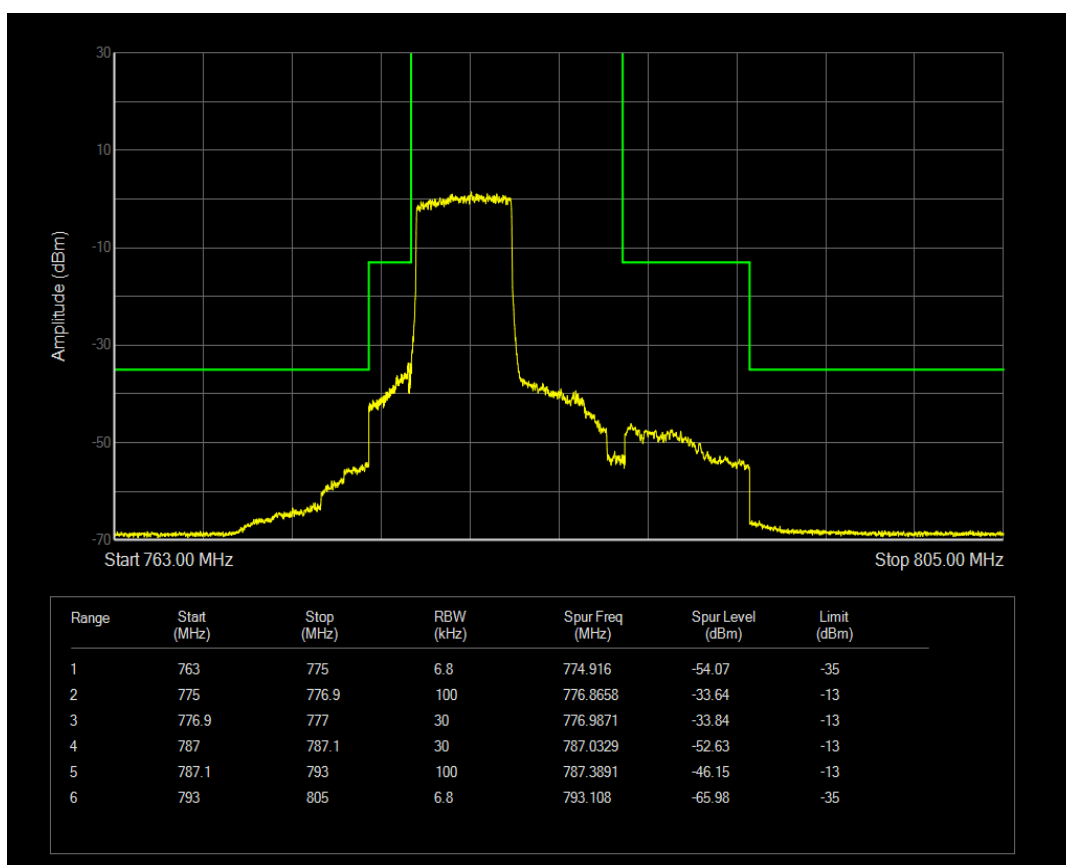
Band13 QPSK BW=10MHz Channel=23230 RB Size=50 Position=#0



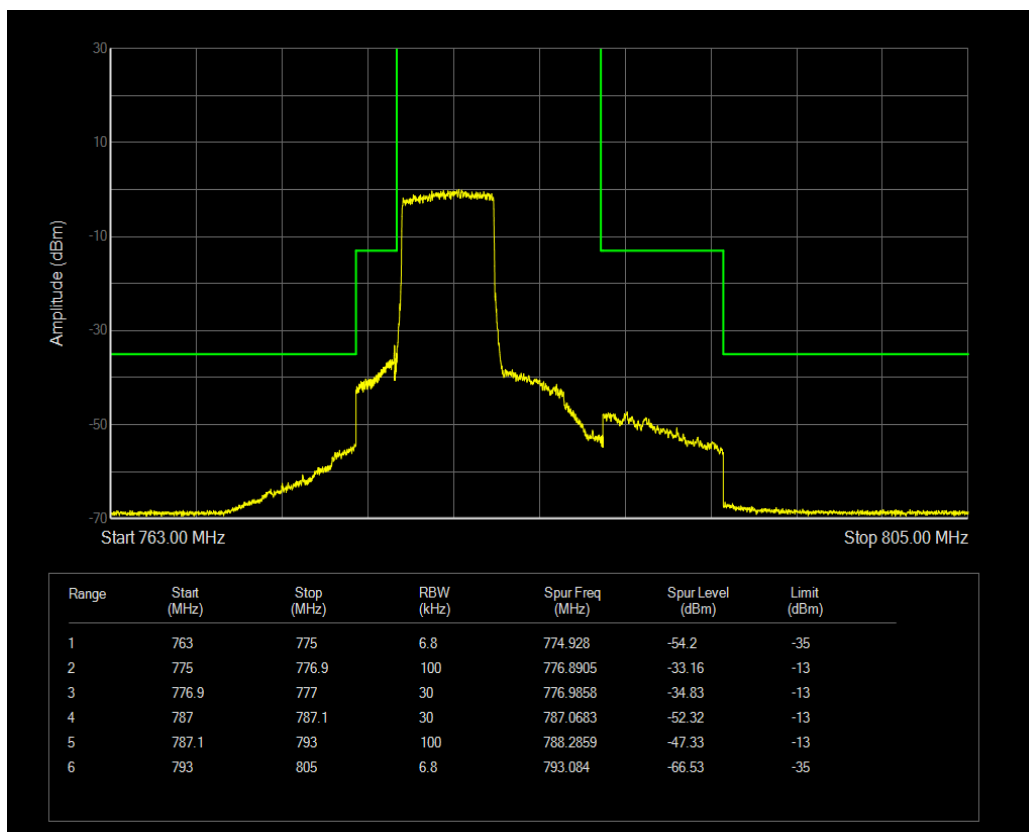
Appendix 5. Band edge

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
Band13	5	23205	25	#0	QPSK	774.92	-54.07	-35	PASS
Band13	5	23205	25	#0	16QAM	774.93	-54.20	-35	PASS
Band13	5	23255	25	#0	QPSK	787.12	-28.27	-13	PASS
Band13	5	23255	25	#0	16QAM	787.11	-29.70	-13	PASS
Band13	10	23230	50	#0	QPSK	793.20	-50.37	-35	PASS

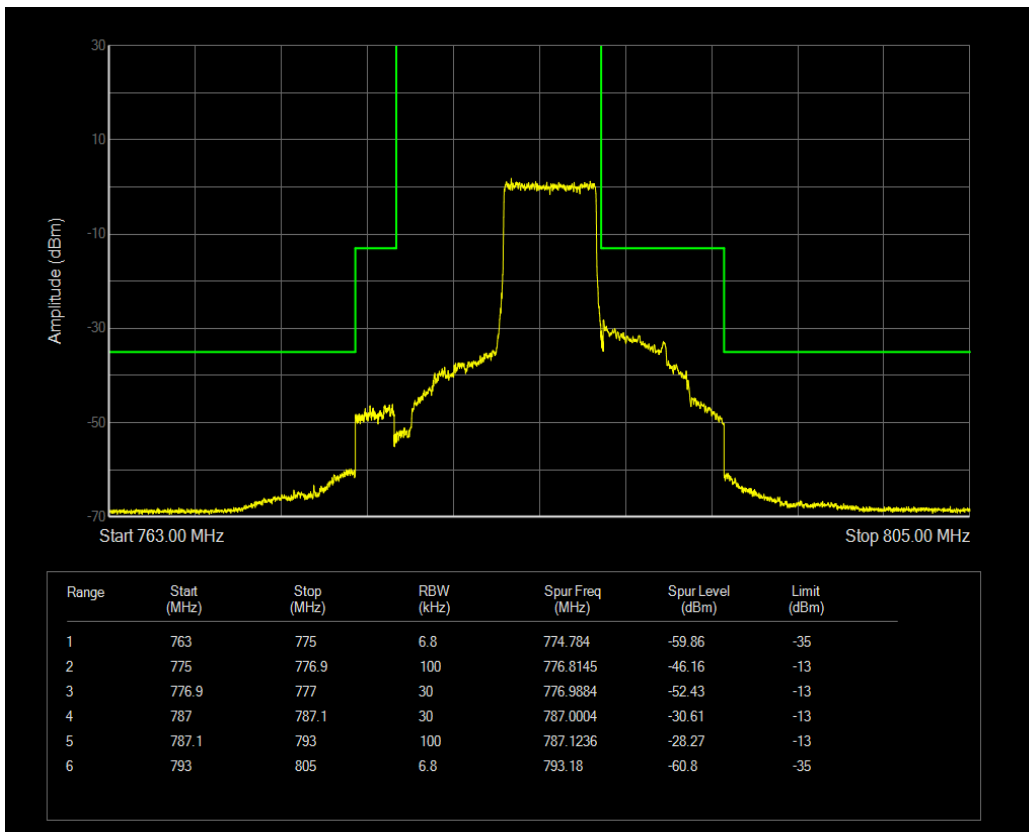
Band13 QPSK BW=5MHz Channel=23205 RB Size=25 Position=#0



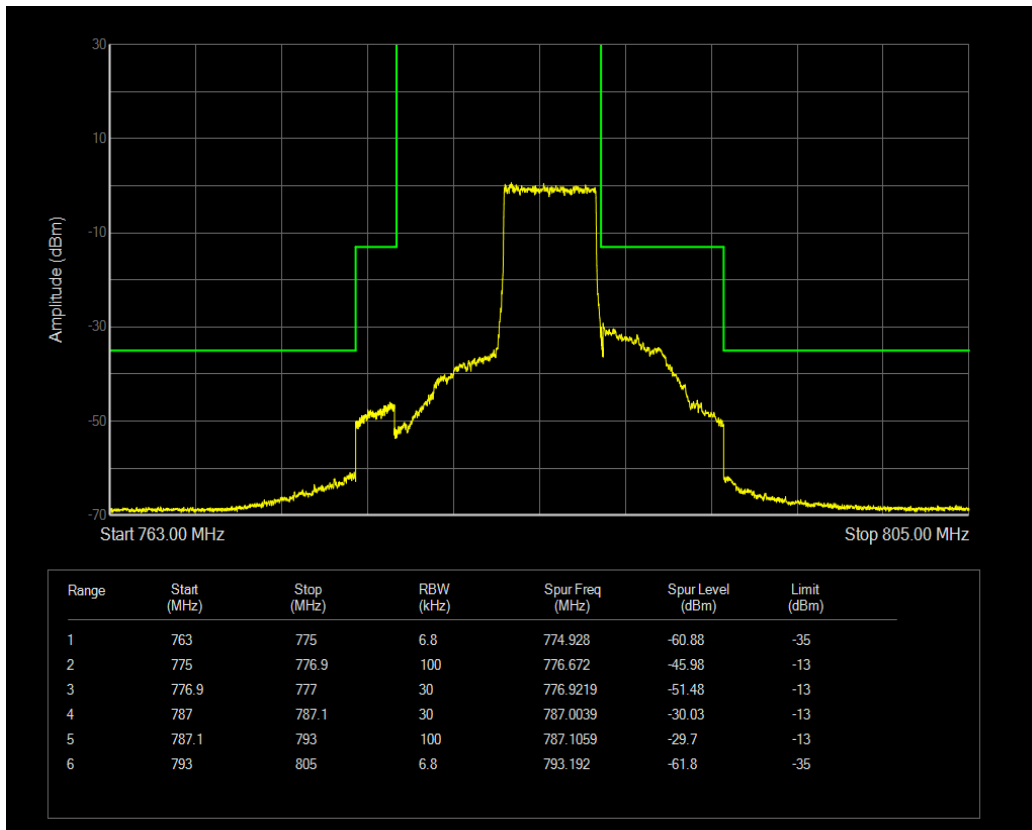
Band13 16QAM BW=5MHz Channel=23205 RB Size=25 Position=#0



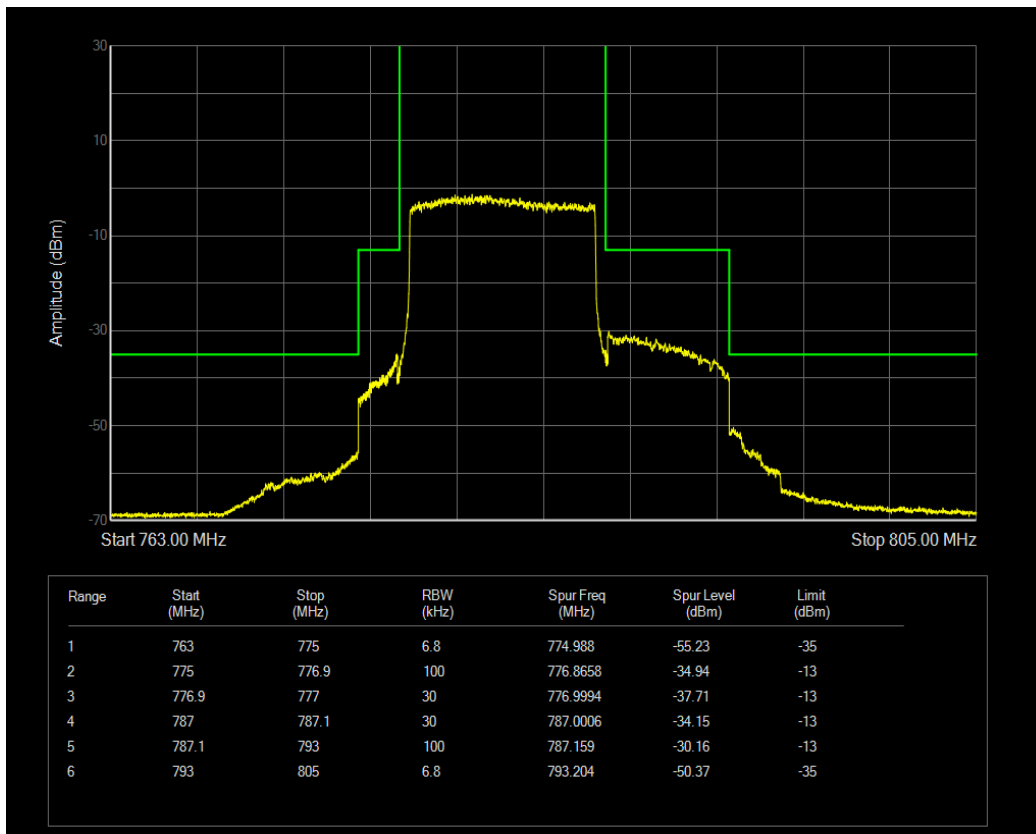
Band13 QPSK BW=5MHz Channel=23255 RB Size=25 Position=#0



Band13 16QAM BW=5MHz Channel=23255 RB Size=25 Position=#0



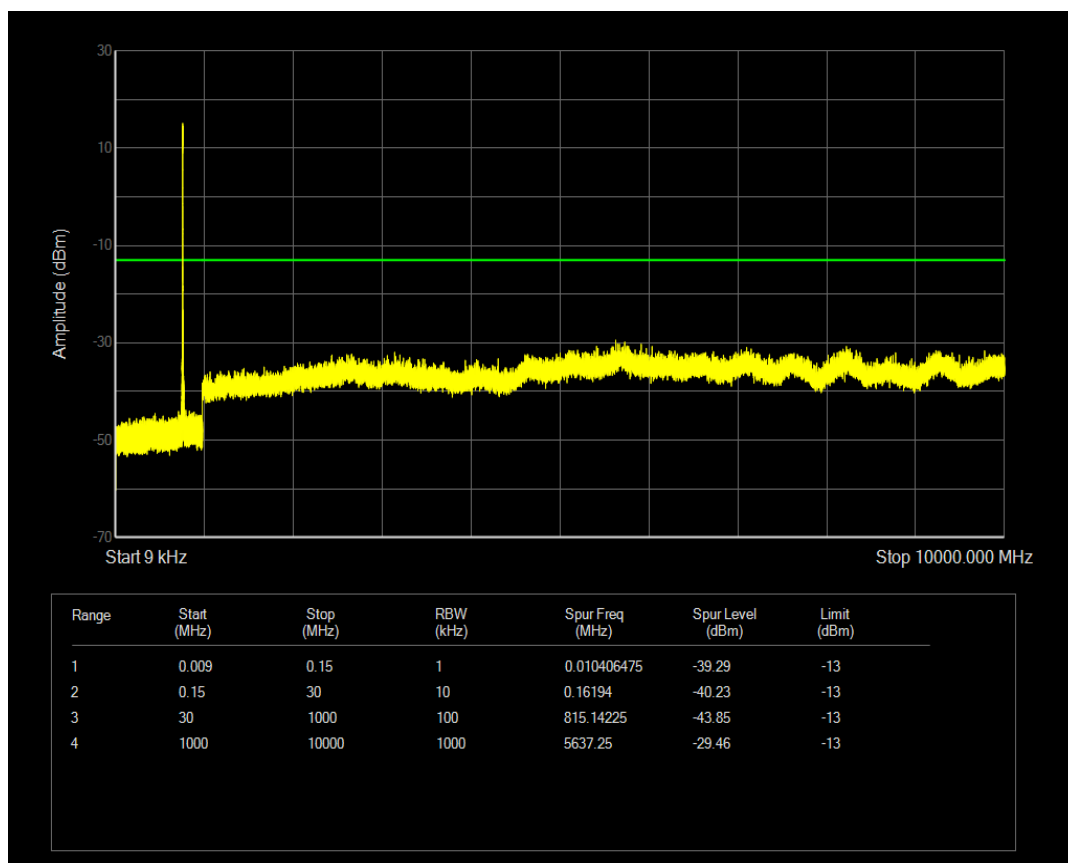
Band13 QPSK BW=10MHz Channel=23230 RB Size=50 Position=#0



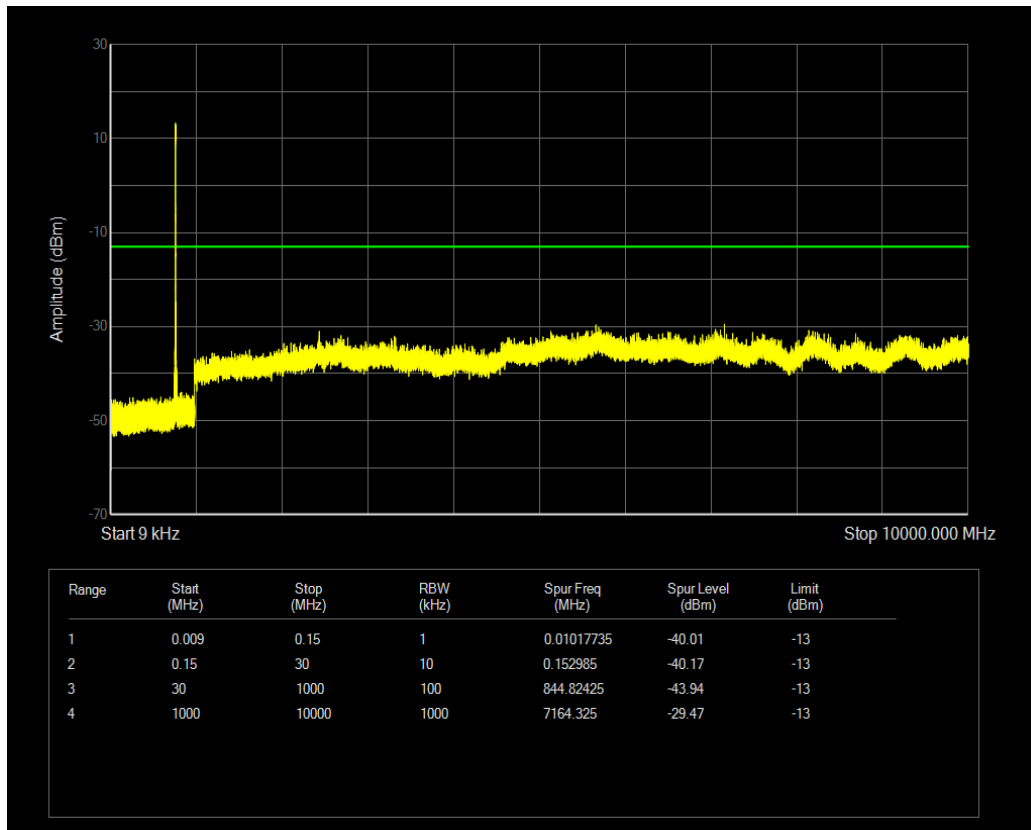
Appendix 6. Out-of-band emissions

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
Band13	5	23205	25	#0	QPSK	5637.25	-29.46	-13	PASS
Band13	5	23205	25	#0	16QAM	7164.33	-29.47	-13	PASS
Band13	5	23230	25	#0	QPSK	5708.58	-30.09	-13	PASS
Band13	5	23230	25	#0	16QAM	5686.98	-29.57	-13	PASS
Band13	5	23255	25	#0	QPSK	5665.60	-28.63	-13	PASS
Band13	5	23255	25	#0	16QAM	7573.38	-29.77	-13	PASS
Band13	10	23230	50	#0	QPSK	5758.75	-29.85	-13	PASS

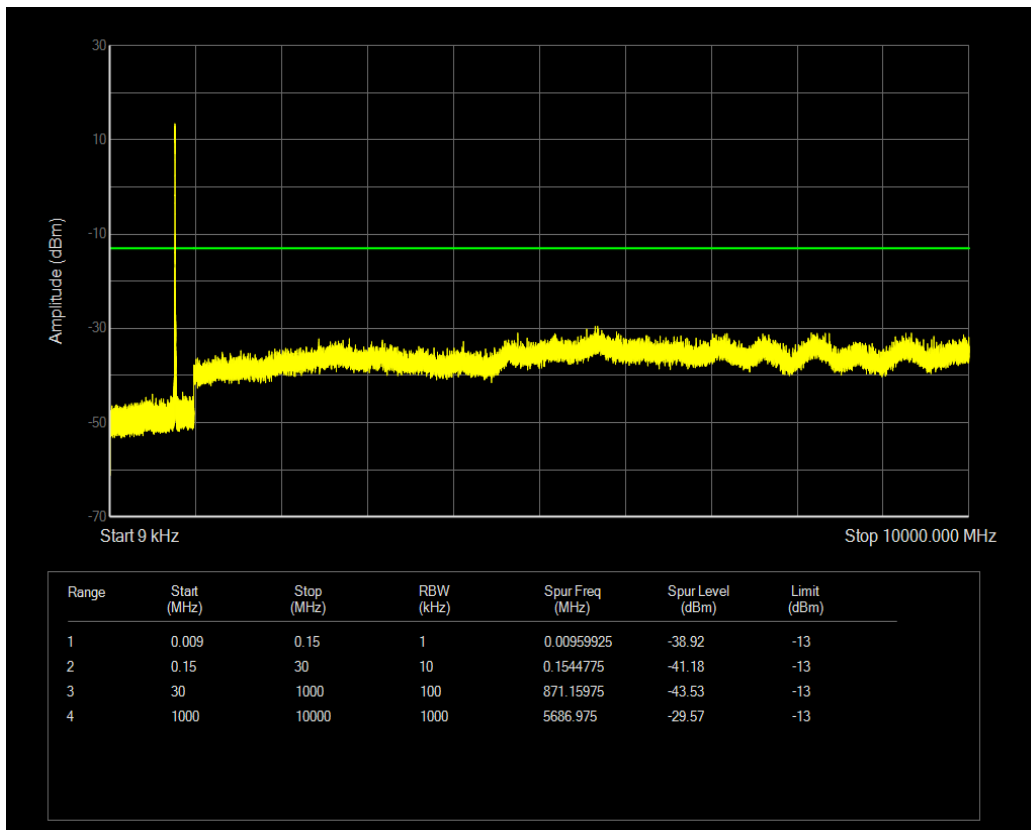
Band13 QPSK BW=5MHz Channel=23205 RB Size=25 Position=#0



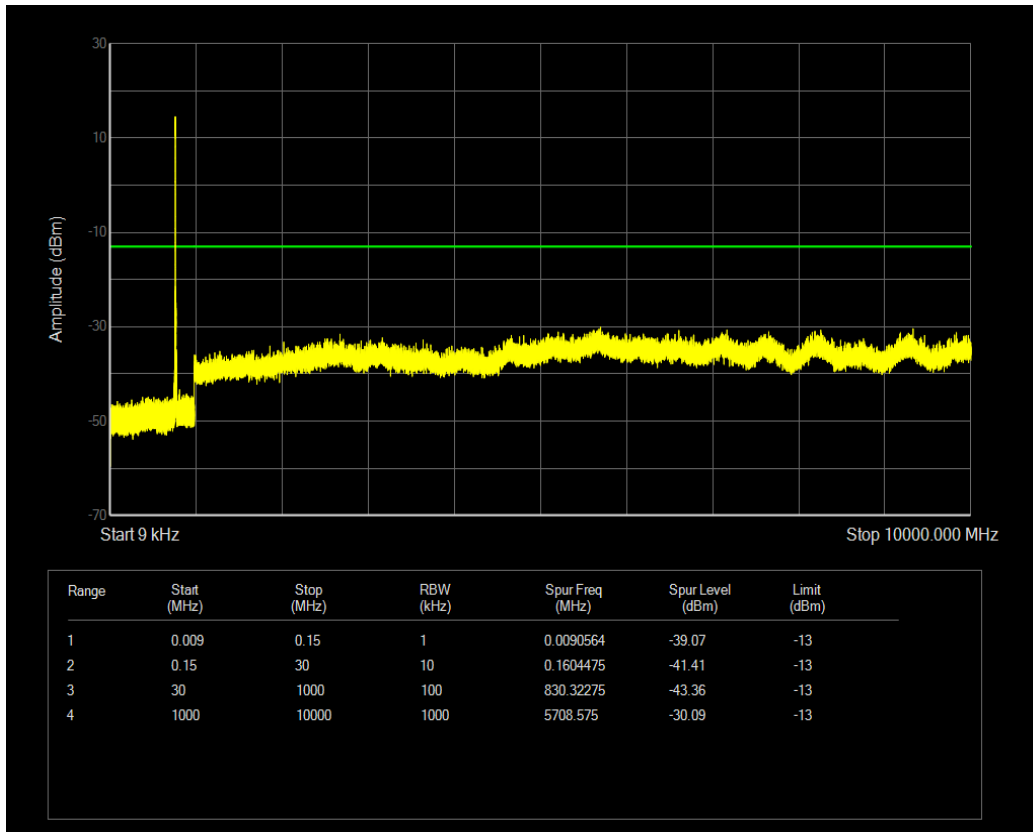
Band13 16QAM BW=5MHz Channel=23205 RB Size=25 Position=#0



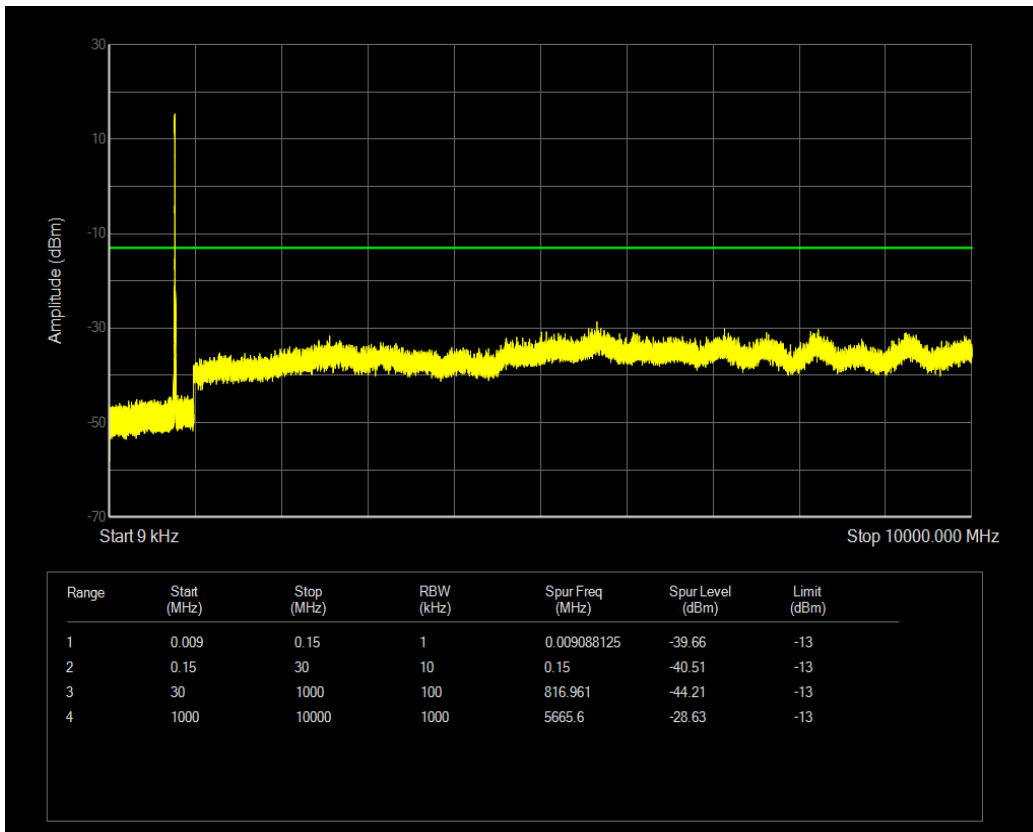
Band13 16QAM BW=5MHz Channel=23230 RB Size=25 Position=#0



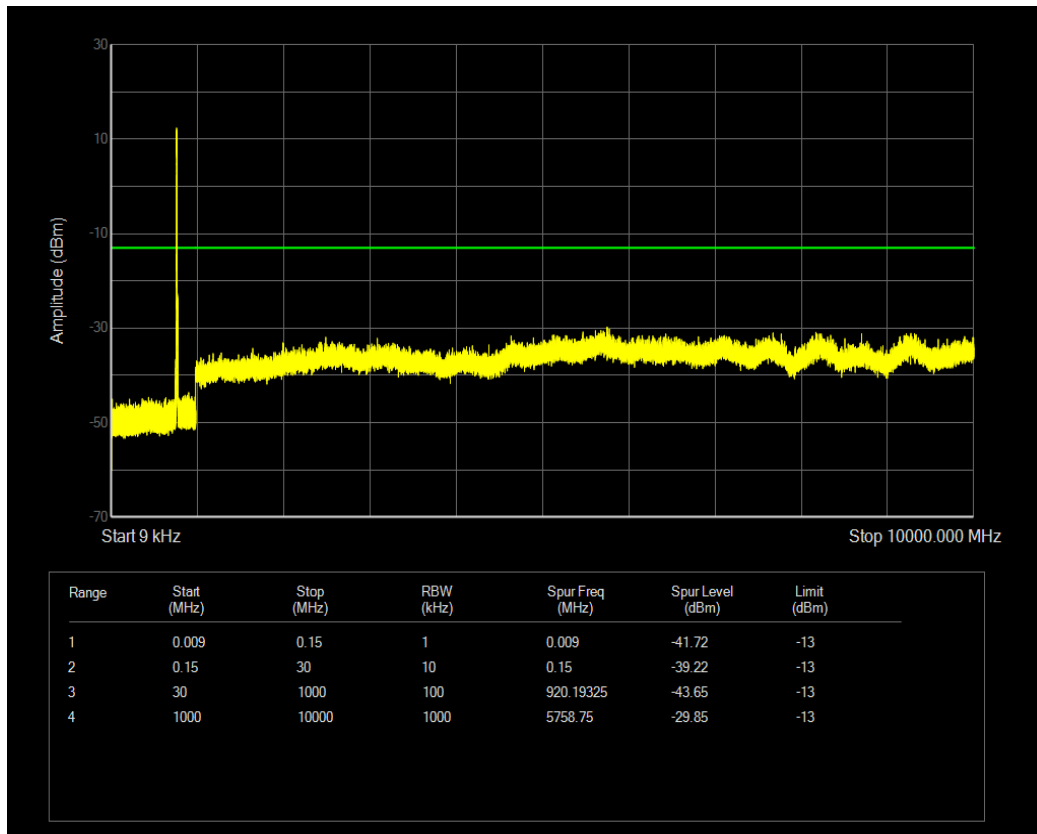
Band13 QPSK BW=5MHz Channel=23230 RB Size=25 Position=#0



Band13 QPSK BW=5MHz Channel=23255 RB Size=25 Position=#0



Band13 QPSK BW=10MHz Channel=23230 RB Size=50 Position=#0



Band13 16QAM BW=5MHz Channel=23255 RB Size=25 Position=#0

