

Appendix for Band 7

Report No.: BCTC2304073080-2E

Applicant: SEEWORLD Technology Co.,Ltd

Product Name: GPS Tracker

Model/Type
reference: S21L

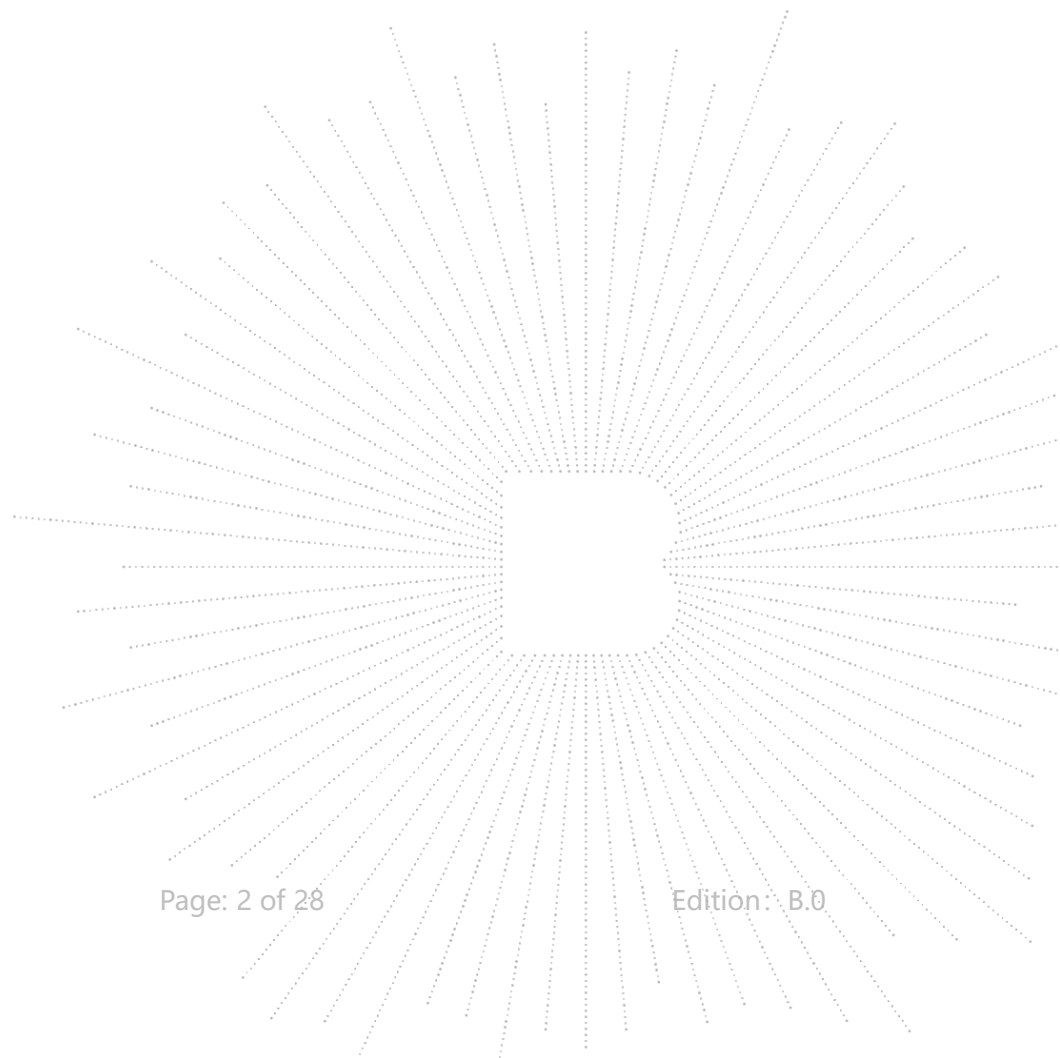
Tested Date: 2023-05-04 to 2023-05-31

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Shenzhen BCTC Testing Co., Ltd.

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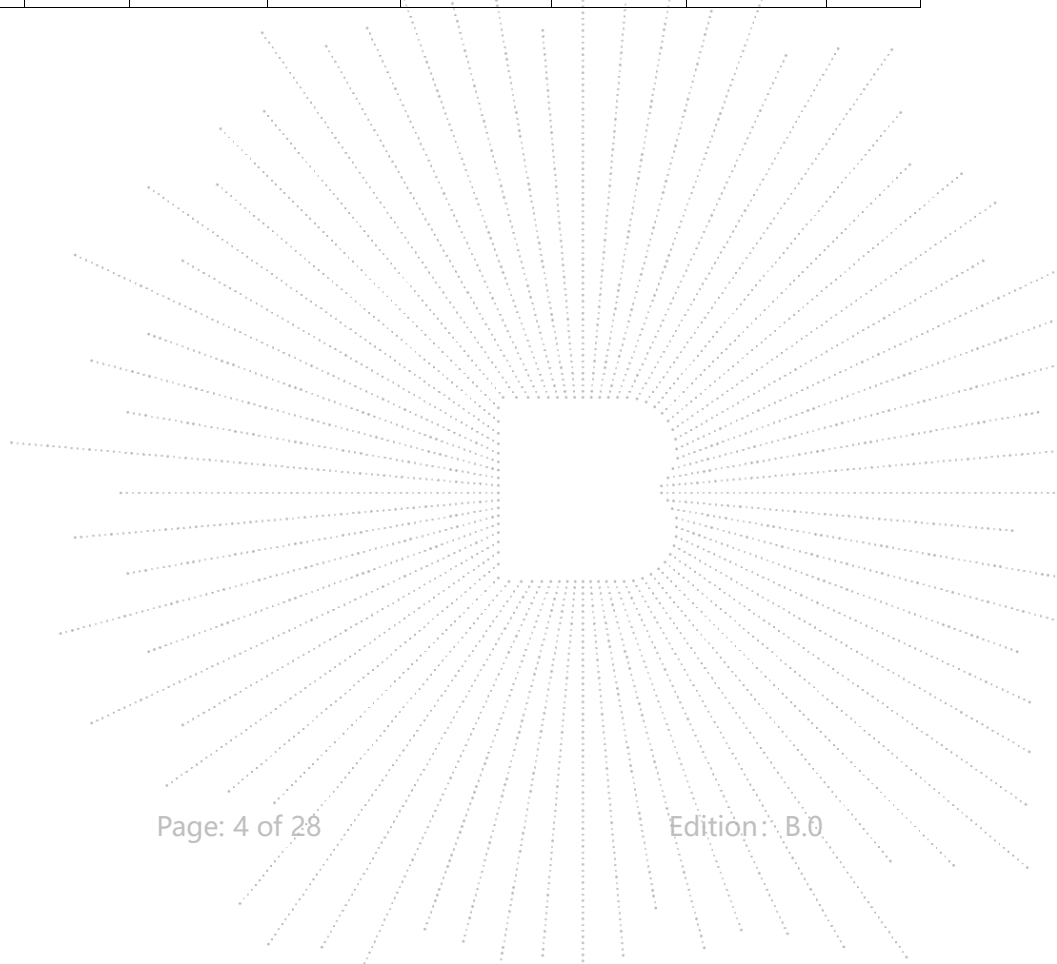
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Appendix 1. Conducted output power

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Gain (dBm)	EIRP (dBm)	Verdict
Band7	5	20775	1	#0	QPSK	19.49	1.2	20.69	PASS
Band7	5	20775	1	#Mid	QPSK	19.47	1.2	20.67	PASS
Band7	5	20775	1	#Max	QPSK	19.76	1.2	20.96	PASS
Band7	5	20775	12	#0	QPSK	18.32	1.2	19.52	PASS
Band7	5	20775	12	#Mid	QPSK	18.47	1.2	19.67	PASS
Band7	5	20775	12	#Max	QPSK	18.53	1.2	19.73	PASS
Band7	5	20775	25	#0	QPSK	18.42	1.2	19.62	PASS
Band7	5	20775	1	#0	16QAM	18.79	1.2	19.99	PASS
Band7	5	20775	1	#Mid	16QAM	18.78	1.2	19.98	PASS
Band7	5	20775	1	#Max	16QAM	19.08	1.2	20.28	PASS
Band7	5	20775	12	#0	16QAM	17.33	1.2	18.53	PASS
Band7	5	20775	12	#Mid	16QAM	17.49	1.2	18.69	PASS
Band7	5	20775	12	#Max	16QAM	17.57	1.2	18.77	PASS
Band7	5	20775	25	#0	16QAM	17.48	1.2	18.68	PASS
Band7	5	21100	1	#0	QPSK	20.00	1.2	21.20	PASS
Band7	5	21100	1	#Mid	QPSK	19.48	1.2	20.68	PASS
Band7	5	21100	1	#Max	QPSK	19.09	1.2	20.29	PASS
Band7	5	21100	12	#0	QPSK	18.68	1.2	19.88	PASS
Band7	5	21100	12	#Mid	QPSK	18.53	1.2	19.73	PASS
Band7	5	21100	12	#Max	QPSK	18.26	1.2	19.46	PASS
Band7	5	21100	25	#0	QPSK	18.53	1.2	19.73	PASS
Band7	5	21100	1	#0	16QAM	19.40	1.2	20.60	PASS
Band7	5	21100	1	#Mid	16QAM	18.91	1.2	20.11	PASS
Band7	5	21100	1	#Max	16QAM	18.53	1.2	19.73	PASS
Band7	5	21100	12	#0	16QAM	17.73	1.2	18.93	PASS
Band7	5	21100	12	#Mid	16QAM	17.59	1.2	18.79	PASS
Band7	5	21100	12	#Max	16QAM	17.31	1.2	18.51	PASS
Band7	5	21100	25	#0	16QAM	17.44	1.2	18.64	PASS
Band7	5	21425	1	#0	QPSK	21.04	1.2	22.24	PASS
Band7	5	21425	1	#Mid	QPSK	20.73	1.2	21.93	PASS
Band7	5	21425	1	#Max	QPSK	20.37	1.2	21.57	PASS
Band7	5	21425	12	#0	QPSK	19.86	1.2	21.06	PASS
Band7	5	21425	12	#Mid	QPSK	19.83	1.2	21.03	PASS
Band7	5	21425	12	#Max	QPSK	19.63	1.2	20.83	PASS
Band7	5	21425	25	#0	QPSK	19.73	1.2	20.93	PASS
Band7	5	21425	1	#0	16QAM	20.64	1.2	21.84	PASS
Band7	5	21425	1	#Mid	16QAM	20.32	1.2	21.52	PASS
Band7	5	21425	1	#Max	16QAM	20.04	1.2	21.24	PASS

Band7	5	21425	12	#0	16QAM	18.92	1.2	20.12	PASS
Band7	5	21425	12	#Mid	16QAM	18.86	1.2	20.06	PASS
Band7	5	21425	12	#Max	16QAM	18.67	1.2	19.87	PASS
Band7	5	21425	25	#0	16QAM	18.74	1.2	19.94	PASS
Band7	10	20800	1	#0	QPSK	19.47	1.2	20.67	PASS
Band7	10	20800	1	#Mid	QPSK	19.74	1.2	20.94	PASS
Band7	10	20800	1	#Max	QPSK	20.54	1.2	21.74	PASS
Band7	10	20800	25	#0	QPSK	18.31	1.2	19.51	PASS
Band7	10	20800	25	#Mid	QPSK	18.72	1.2	19.92	PASS
Band7	10	20800	25	#Max	QPSK	19.02	1.2	20.22	PASS
Band7	10	20800	50	#0	QPSK	18.66	1.2	19.86	PASS
Band7	10	21100	1	#0	QPSK	20.54	1.2	21.74	PASS
Band7	10	21100	1	#Mid	QPSK	19.59	1.2	20.79	PASS
Band7	10	21100	1	#Max	QPSK	18.89	1.2	20.09	PASS
Band7	10	21100	25	#0	QPSK	18.91	1.2	20.11	PASS
Band7	10	21100	25	#Mid	QPSK	18.58	1.2	19.78	PASS
Band7	10	21100	25	#Max	QPSK	18.03	1.2	19.23	PASS
Band7	10	21100	50	#0	QPSK	18.48	1.2	19.68	PASS
Band7	10	21400	1	#0	QPSK	21.04	1.2	22.24	PASS
Band7	10	21400	1	#Mid	QPSK	21.10	1.2	22.30	PASS
Band7	10	21400	1	#Max	QPSK	20.56	1.2	21.76	PASS
Band7	10	21400	25	#0	QPSK	19.97	1.2	21.17	PASS
Band7	10	21400	25	#Mid	QPSK	20.03	1.2	21.23	PASS
Band7	10	21400	25	#Max	QPSK	19.70	1.2	20.90	PASS
Band7	10	21400	50	#0	QPSK	19.85	1.2	21.05	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
Band 7	5	20775	25	#0	QPSK	LV	NT	-9.36	-0.004	-2.5	2.5	PASS
Band 7	5	20775	25	#0	QPSK	NV	NT	-10.30	-0.004	-2.5	2.5	PASS
Band 7	5	20775	25	#0	QPSK	HV	NT	-13.26	-0.005	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	LV	NT	-6.65	-0.003	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	NV	NT	-9.98	-0.004	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	HV	NT	-5.61	-0.002	-2.5	2.5	PASS
Band 7	5	21100	25	#0	QPSK	LV	NT	-6.88	-0.003	-2.5	2.5	PASS
Band 7	5	21100	25	#0	QPSK	NV	NT	-8.55	-0.003	-2.5	2.5	PASS
Band 7	5	21100	25	#0	QPSK	HV	NT	-5.82	-0.002	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	LV	NT	-9.70	-0.004	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	NV	NT	-12.06	-0.005	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	HV	NT	-1.14	0.000	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	LV	NT	-14.53	-0.006	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	NV	NT	1.33	0.001	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	HV	NT	1.44	0.001	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	LV	NT	0.20	0.000	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	NV	NT	6.61	0.003	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	HV	NT	-1.24	0.000	-2.5	2.5	PASS

Band 7	10	20800	50	#0	QPSK	LV	NT	-0.07	0.000	-2.5	2.5	PASS
Band 7	10	20800	50	#0	QPSK	NV	NT	-8.53	-0.003	-2.5	2.5	PASS
Band 7	10	20800	50	#0	QPSK	HV	NT	0.94	0.000	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	LV	NT	-19.76	-0.008	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	NV	NT	1.24	0.000	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	HV	NT	-7.17	-0.003	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	LV	NT	-14.38	-0.006	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	NV	NT	16.79	0.007	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	HV	NT	-4.15	-0.002	-2.5	2.5	PASS

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
Band 7	5	20775	25	#0	QPSK	NV	-30	-6.45	-0.003	-2.5	2.5	PASS
Band 7	5	20775	25	#0	QPSK	NV	-20	-3.45	-0.001	-2.5	2.5	PASS
Band 7	5	20775	25	#0	QPSK	NV	0	-4.82	-0.002	-2.5	2.5	PASS
Band 7	5	20775	25	#0	QPSK	NV	10	-0.21	0.000	-2.5	2.5	PASS
Band 7	5	20775	25	#0	QPSK	NV	20	-10.87	-0.004	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	NV	-30	1.37	0.001	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	NV	-20	-8.90	-0.004	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	NV	0	1.85	0.001	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	NV	10	0.00	0.000	-2.5	2.5	PASS
Band 7	5	20775	25	#0	16QAM	NV	20	0.00	0.000	-2.5	2.5	PASS

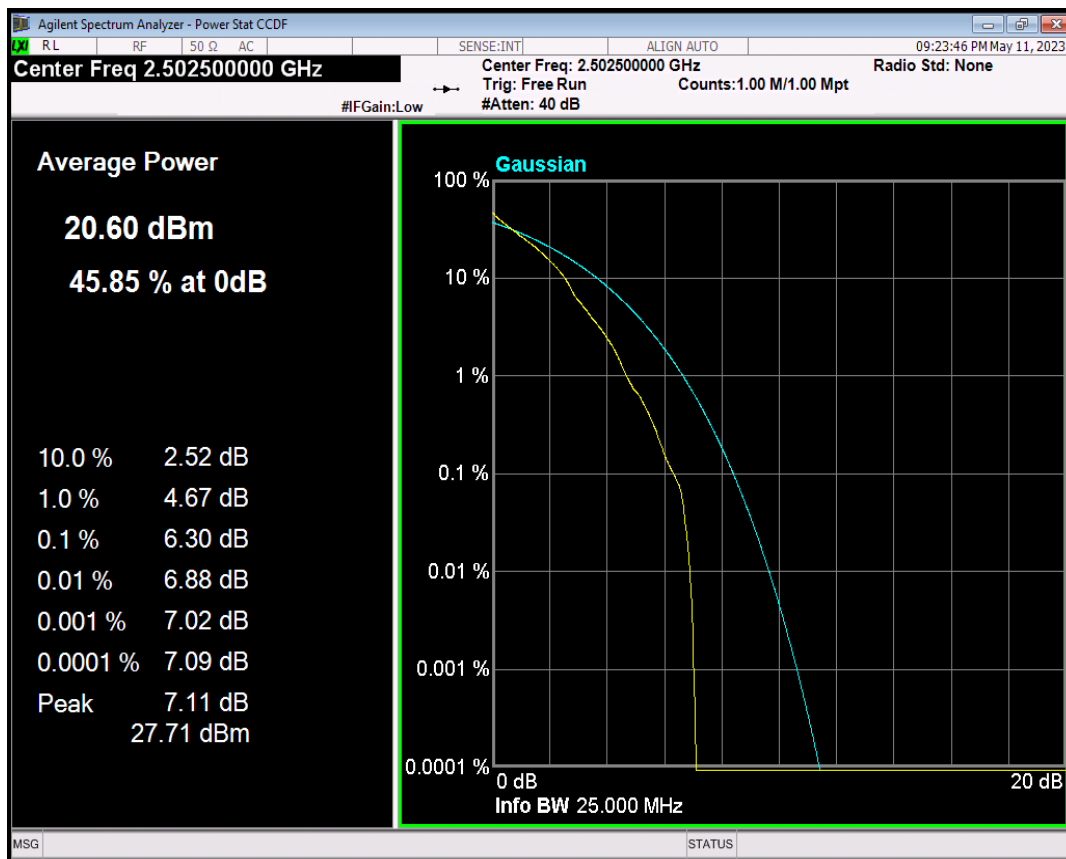
Band 7	5	21100	25	#0	QPSK	NV	-30	5.87	0.002	-2.5	2.5	PASS
Band 7	5	21100	25	#0	QPSK	NV	-20	-11.94	-0.00 5	-2.5	2.5	PASS
Band 7	5	21100	25	#0	QPSK	NV	0	4.59	0.002	-2.5	2.5	PASS
Band 7	5	21100	25	#0	QPSK	NV	10	-5.65	-0.00 2	-2.5	2.5	PASS
Band 7	5	21100	25	#0	QPSK	NV	20	-15.1 8	-0.00 6	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	NV	-30	-15.6 8	-0.00 6	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	NV	-20	6.09	0.002	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	NV	0	5.44	0.002	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	NV	10	5.08	0.002	-2.5	2.5	PASS
Band 7	5	21100	25	#0	16QAM	NV	20	-15.9 4	-0.00 6	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	NV	-30	-1.89	-0.00 1	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	NV	-20	-7.52	-0.00 3	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	NV	0	-0.59	0.000	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	NV	10	-1.93	-0.00 1	-2.5	2.5	PASS
Band 7	5	21425	25	#0	QPSK	NV	20	-7.22	-0.00 3	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	NV	-30	-16.7 9	-0.00 7	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	NV	-20	-4.19	-0.00 2	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	NV	0	-2.88	-0.00 1	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	NV	10	-0.89	0.000	-2.5	2.5	PASS
Band 7	5	21425	25	#0	16QAM	NV	20	-12.4 0	-0.00 5	-2.5	2.5	PASS
Band 7	10	20800	50	#0	QPSK	NV	-30	-8.48	-0.00 3	-2.5	2.5	PASS
Band 7	10	20800	50	#0	QPSK	NV	-20	5.49	0.002	-2.5	2.5	PASS

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Band 7	10	20800	50	#0	QPSK	NV	0	-17.27	-0.007	-2.5	2.5	PASS
Band 7	10	20800	50	#0	QPSK	NV	10	-5.94	-0.002	-2.5	2.5	PASS
Band 7	10	20800	50	#0	QPSK	NV	20	-8.77	-0.004	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	NV	-30	7.47	0.003	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	NV	-20	-3.42	-0.001	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	NV	0	-8.98	-0.004	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	NV	10	5.72	0.002	-2.5	2.5	PASS
Band 7	10	21100	50	#0	QPSK	NV	20	-8.91	-0.004	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	NV	-30	1.12	0.000	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	NV	-20	-3.26	-0.001	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	NV	0	-13.90	-0.005	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	NV	10	-10.71	-0.004	-2.5	2.5	PASS
Band 7	10	21400	50	#0	QPSK	NV	20	-3.39	-0.001	-2.5	2.5	PASS

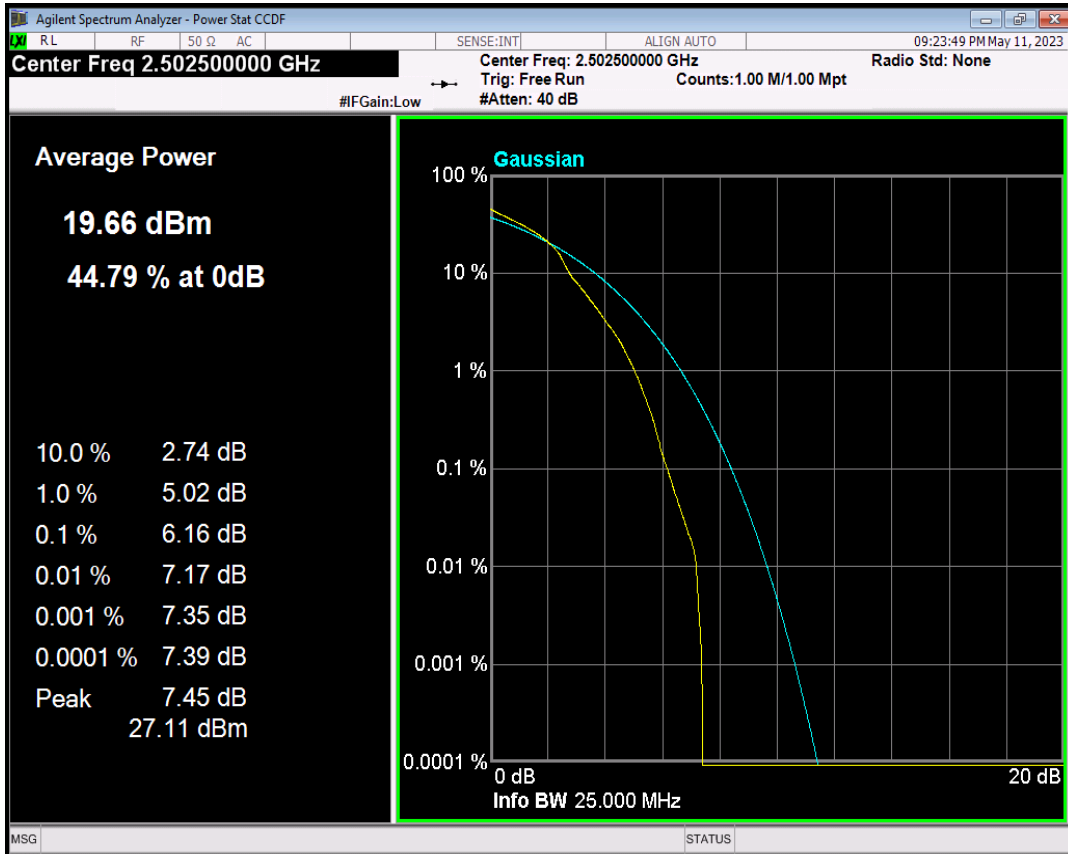
Appendix 3. Peak-to-Average Ratio

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Result (dB)	high Limit (dB)	Verdict
Band7	5	20775	1	#0	QPSK	6.30	13	PASS
Band7	5	20775	1	#0	16QAM	6.16	13	PASS
Band7	5	21100	1	#0	QPSK	5.56	13	PASS
Band7	5	21100	1	#0	16QAM	6.05	13	PASS
Band7	5	21425	1	#0	QPSK	5.34	13	PASS
Band7	5	21425	1	#0	16QAM	5.95	13	PASS
Band7	10	20800	1	#0	QPSK	5.69	13	PASS
Band7	10	21100	1	#0	QPSK	5.70	13	PASS
Band7	10	21400	1	#0	QPSK	4.92	13	PASS

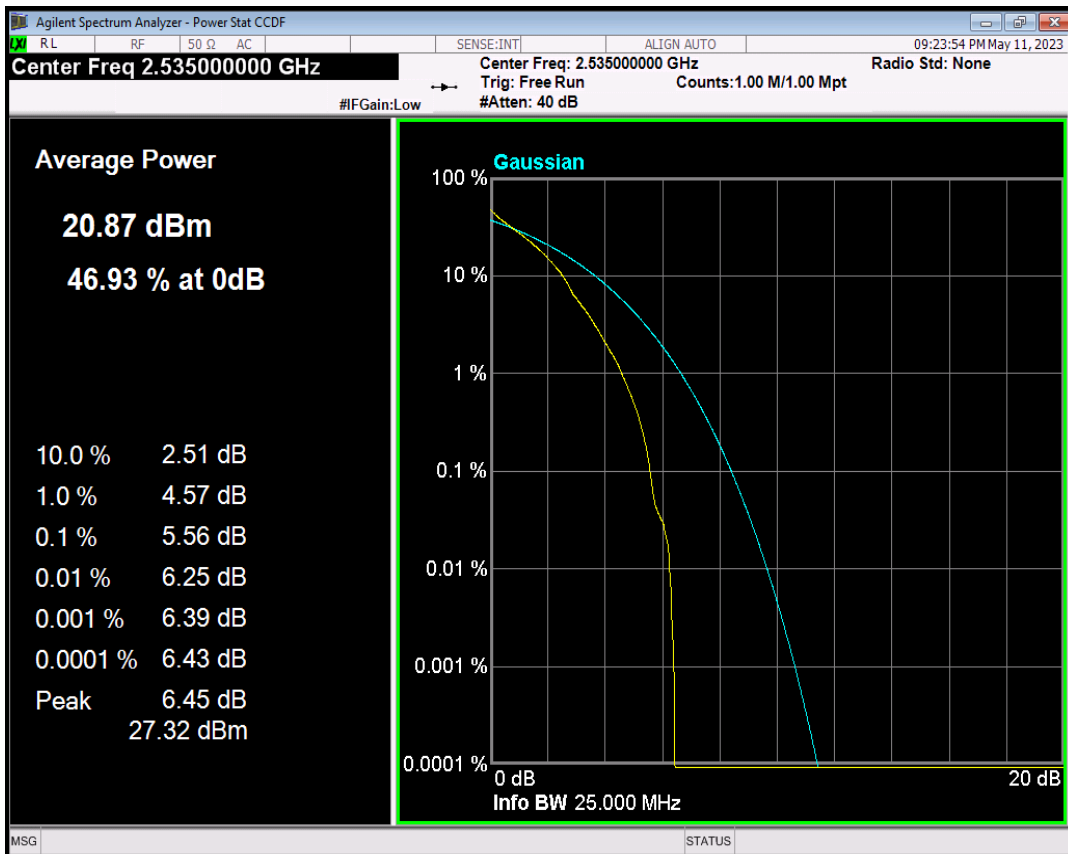
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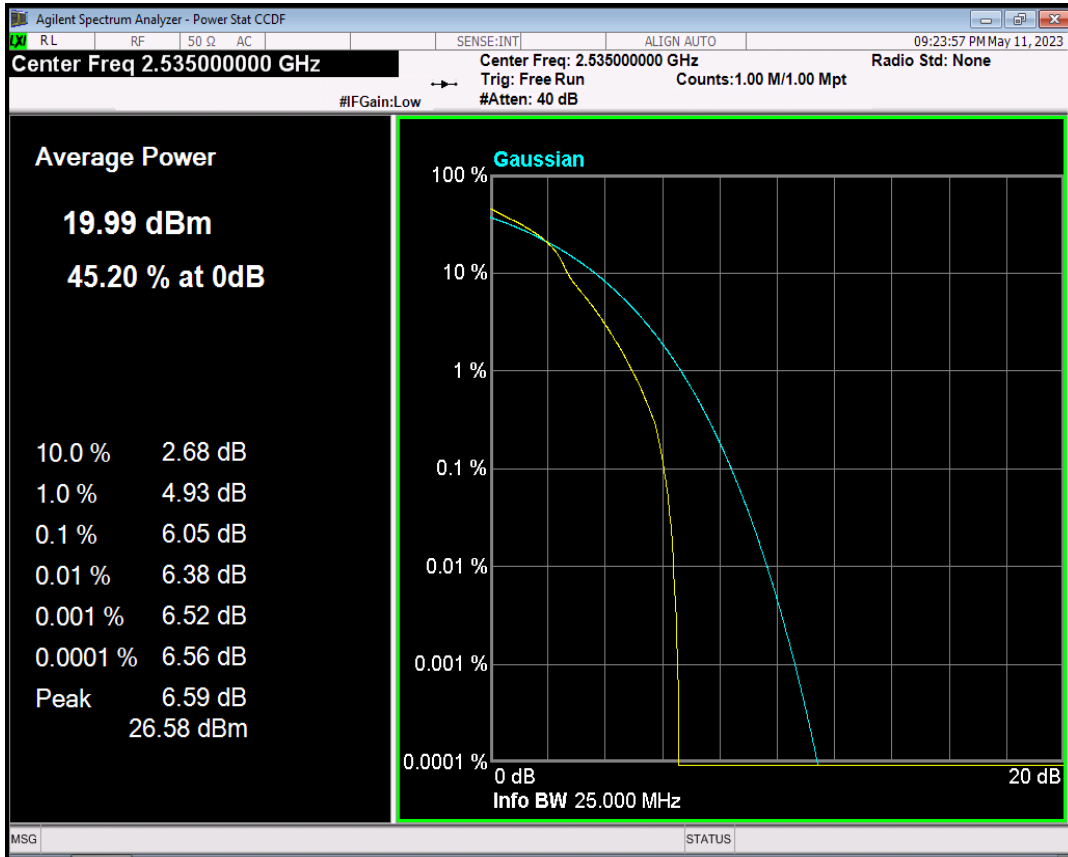
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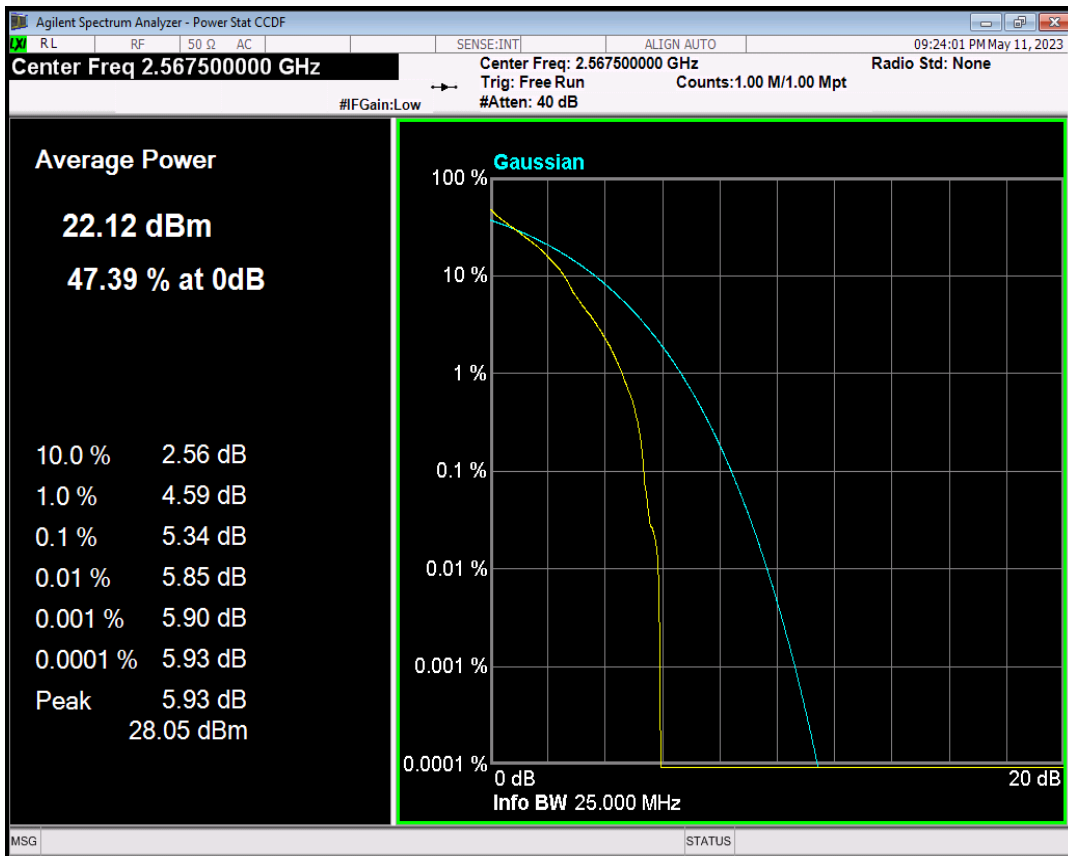
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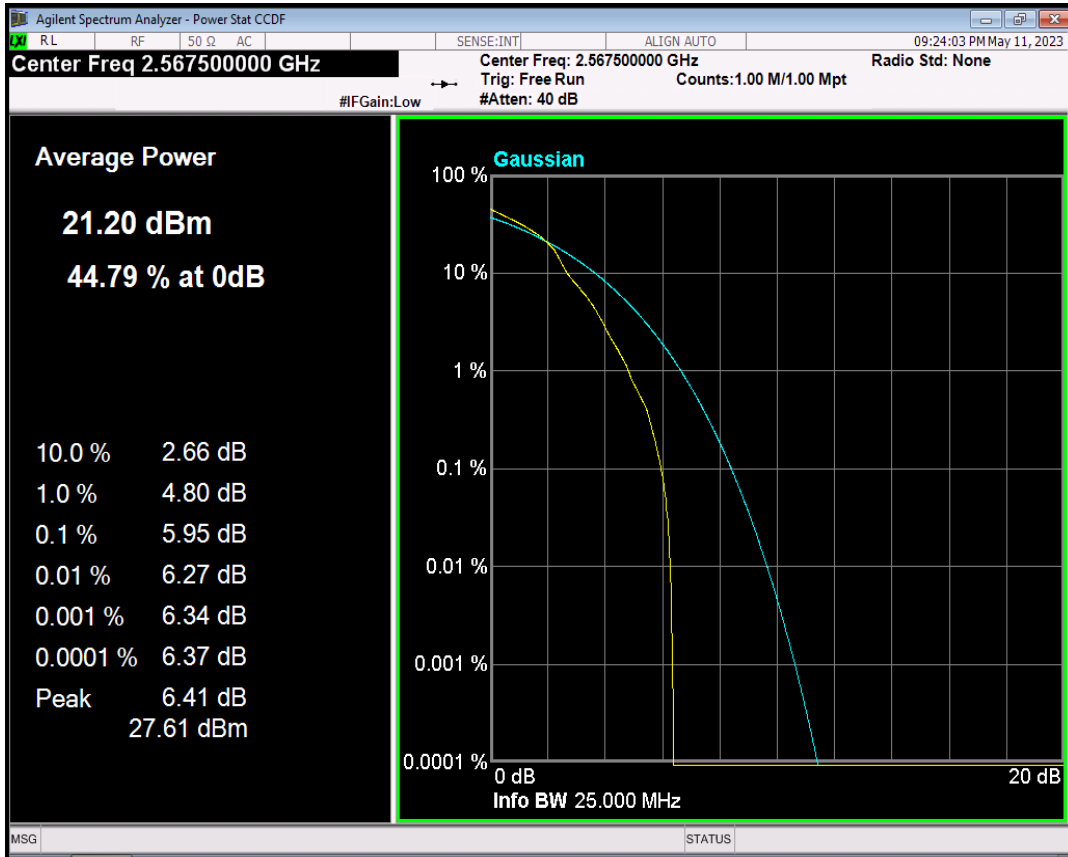
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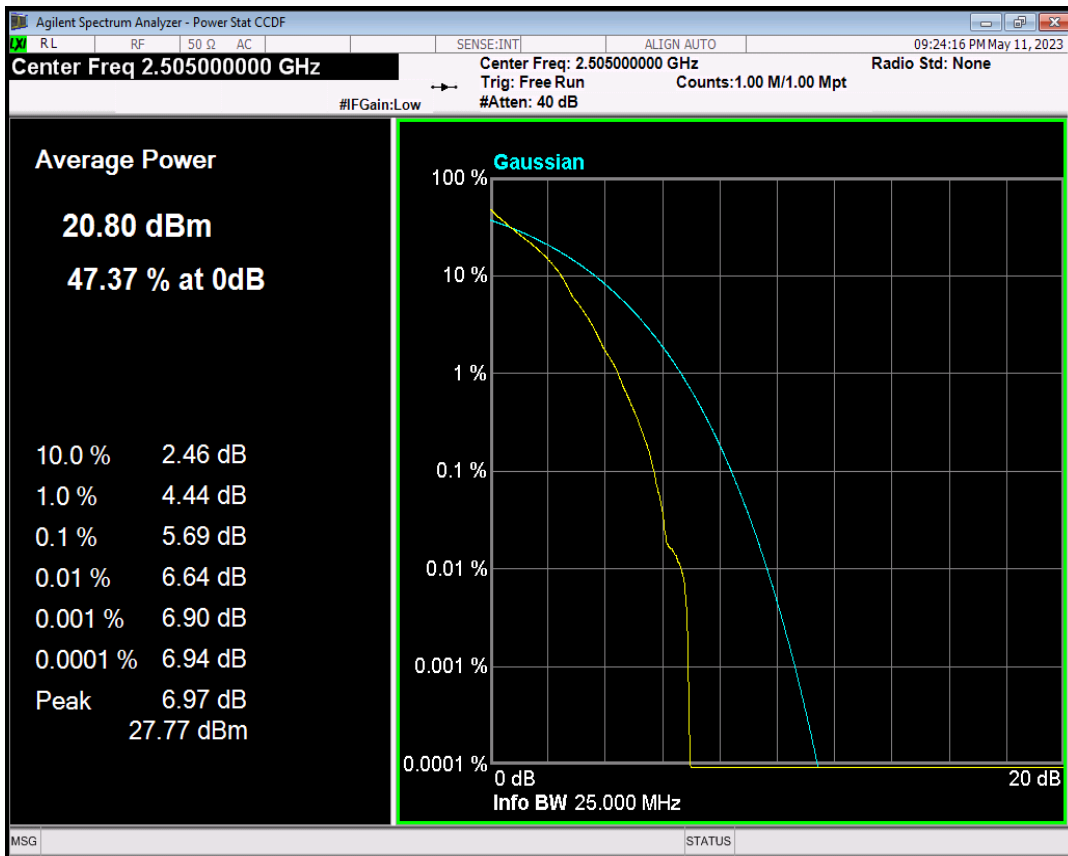
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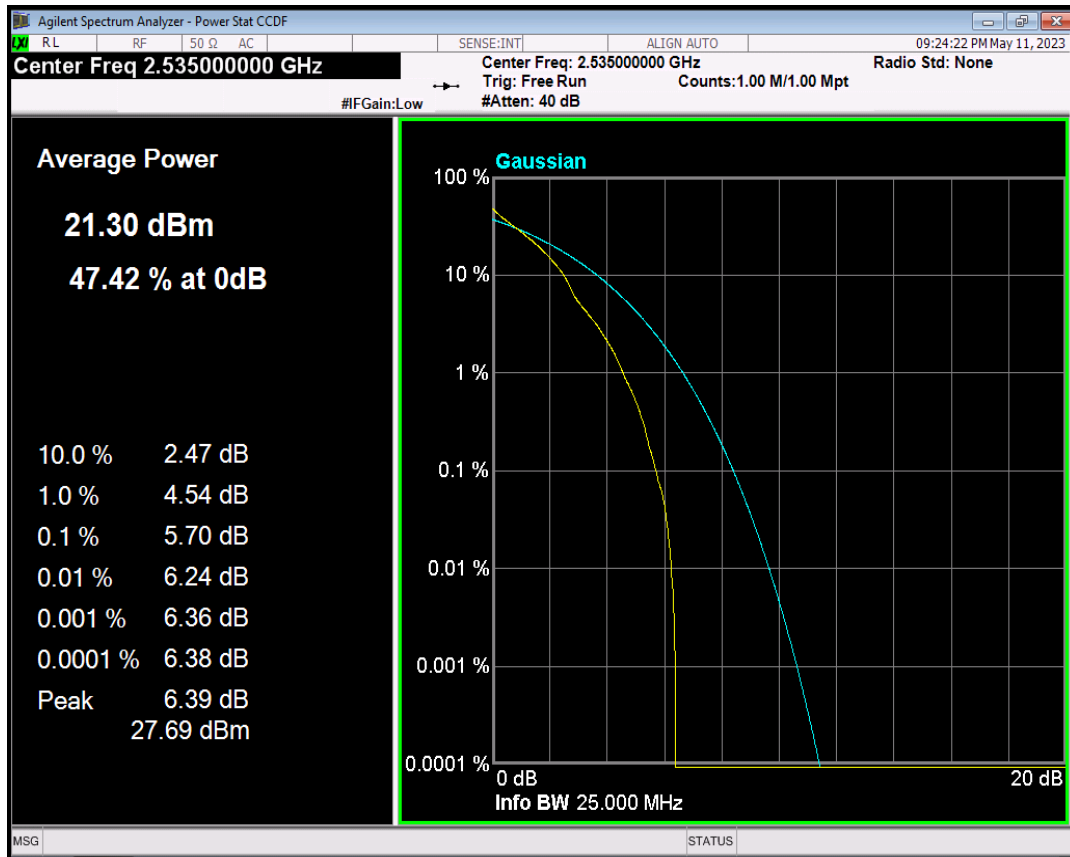
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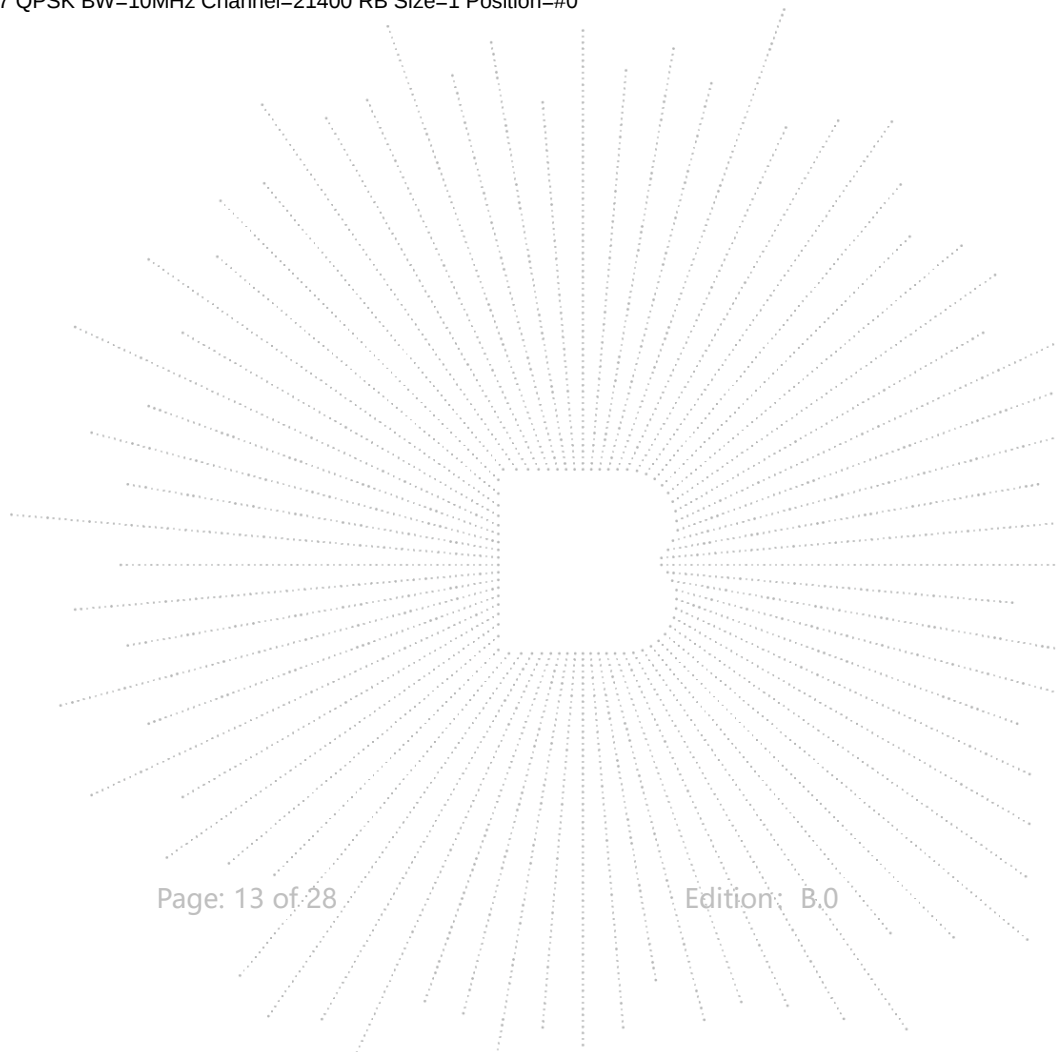
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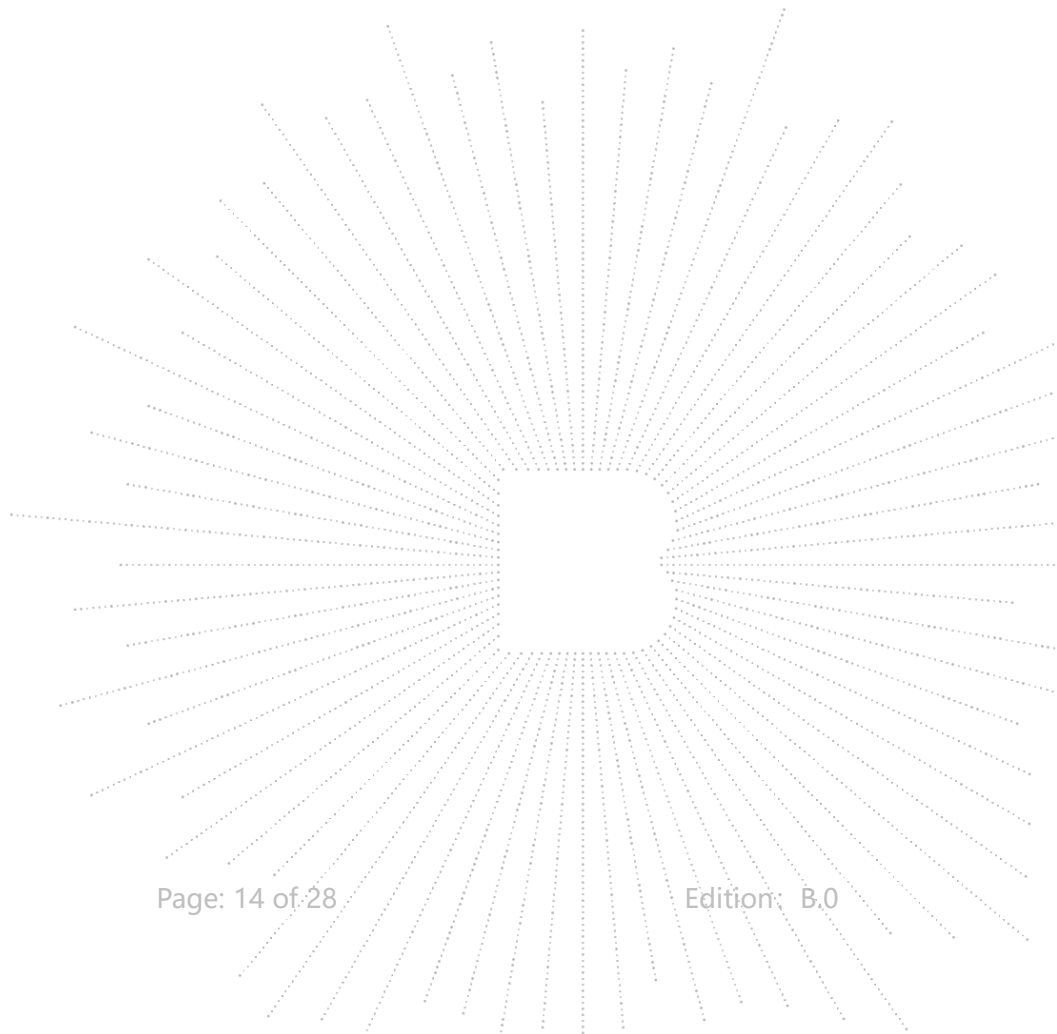
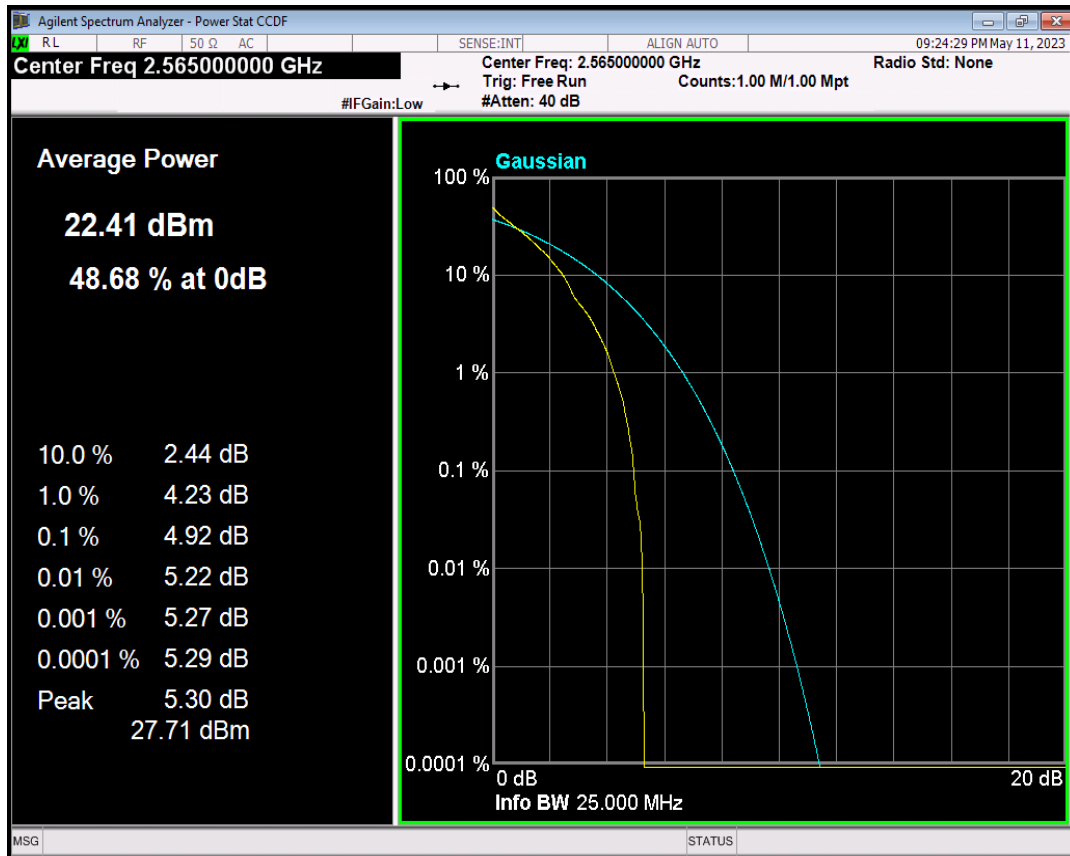


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Band7 QPSK BW=10MHz Channel=21400 RB Size=1 Position=#0

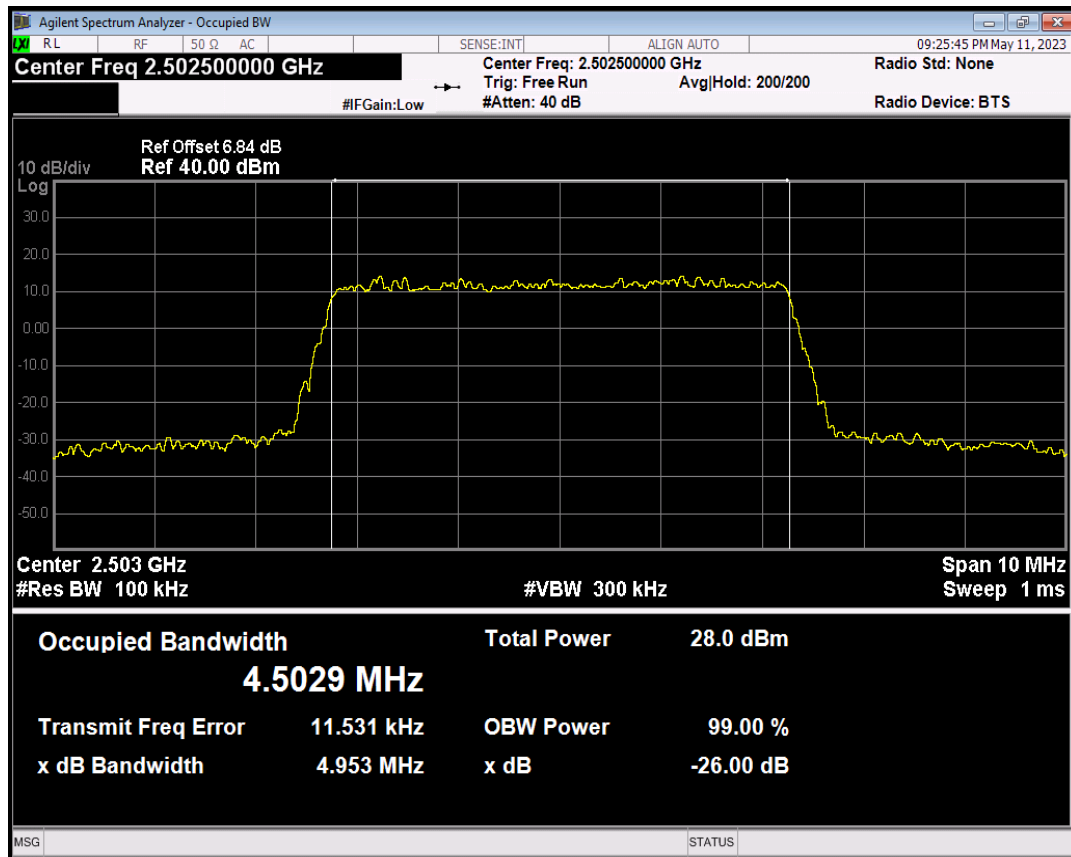




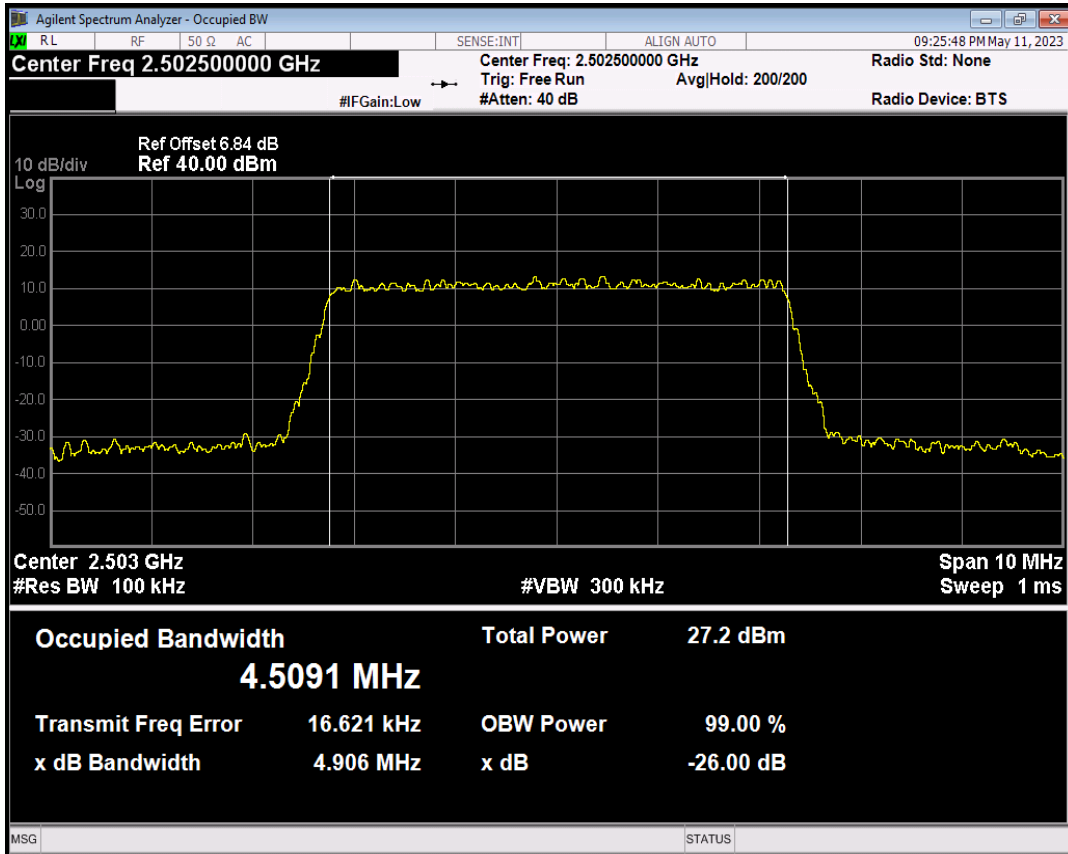
Appendix 4. Occupied bandwidth

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	99% OBW (MHz)	-26dB EBW (MHz)	Verdict
Band7	5	20775	25	#0	QPSK	4.503	4.953	PASS
Band7	5	20775	25	#0	16QAM	4.509	4.906	PASS
Band7	5	21100	25	#0	QPSK	4.506	4.925	PASS
Band7	5	21100	25	#0	16QAM	4.502	4.927	PASS
Band7	5	21425	25	#0	QPSK	4.499	4.926	PASS
Band7	5	21425	25	#0	16QAM	4.505	4.906	PASS
Band7	10	20800	50	#0	QPSK	8.950	9.737	PASS
Band7	10	21100	50	#0	QPSK	8.996	9.796	PASS
Band7	10	21400	50	#0	QPSK	8.966	9.598	PASS

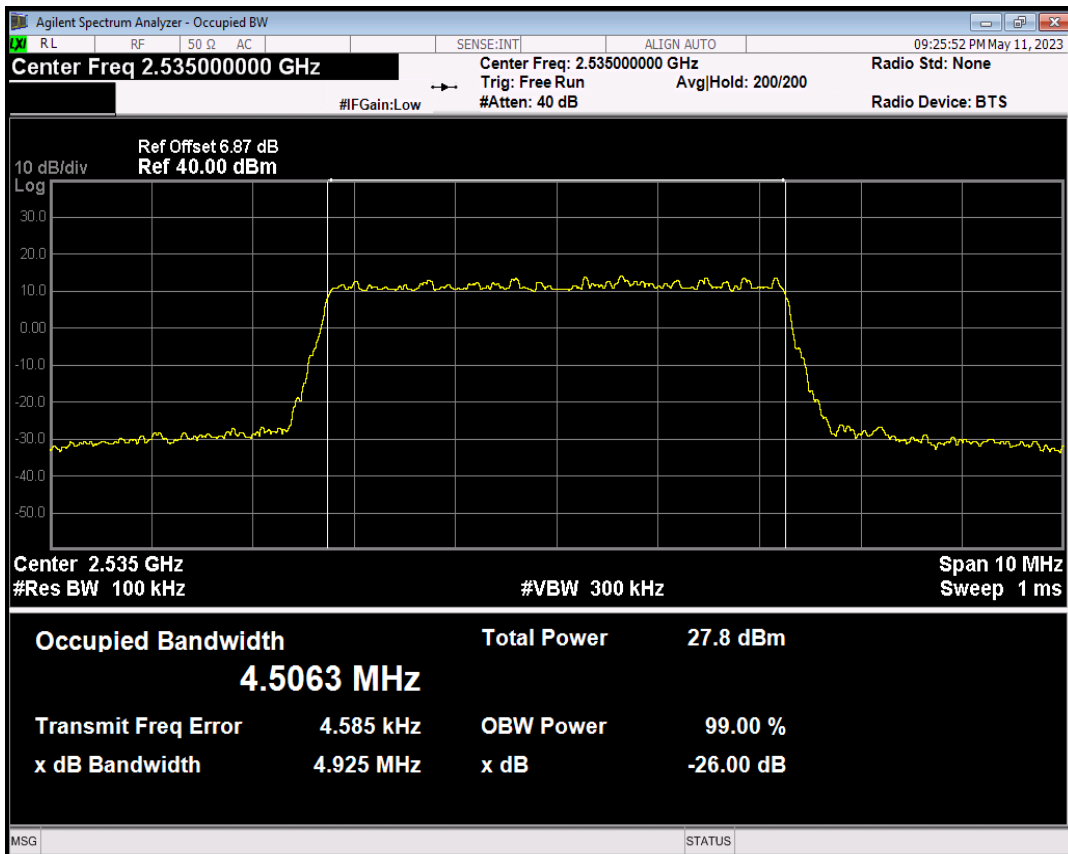
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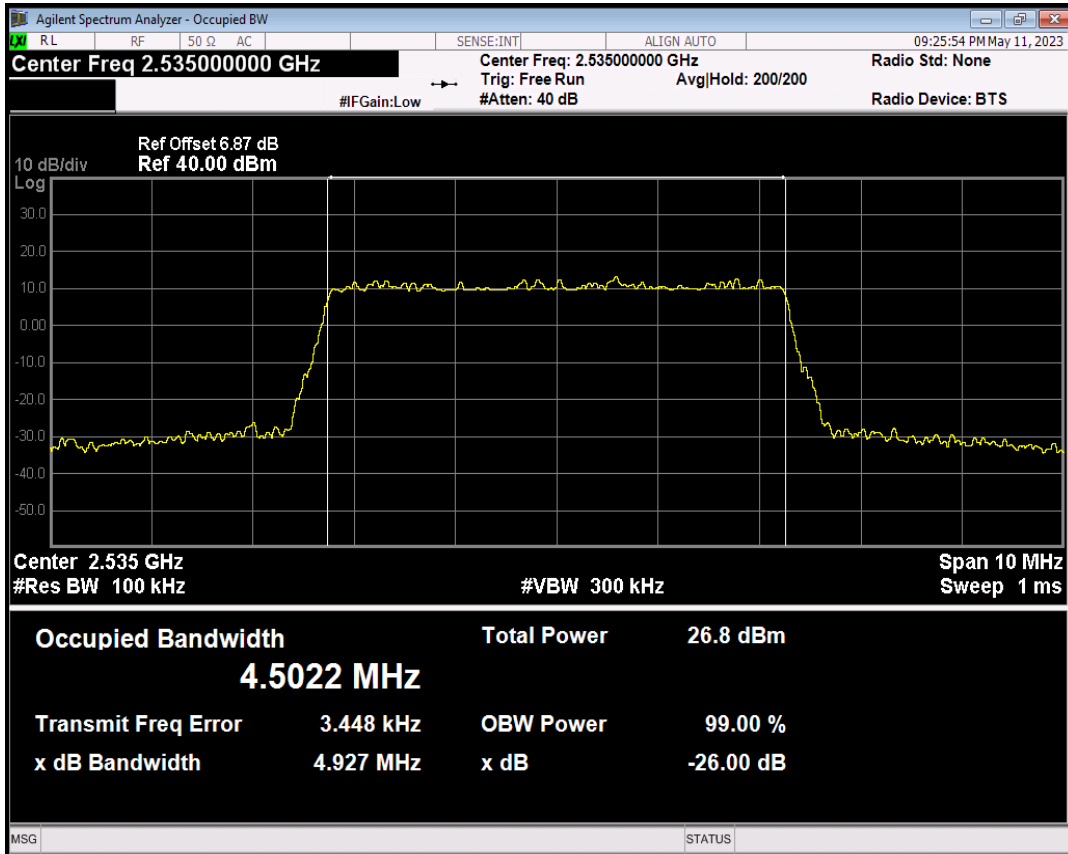
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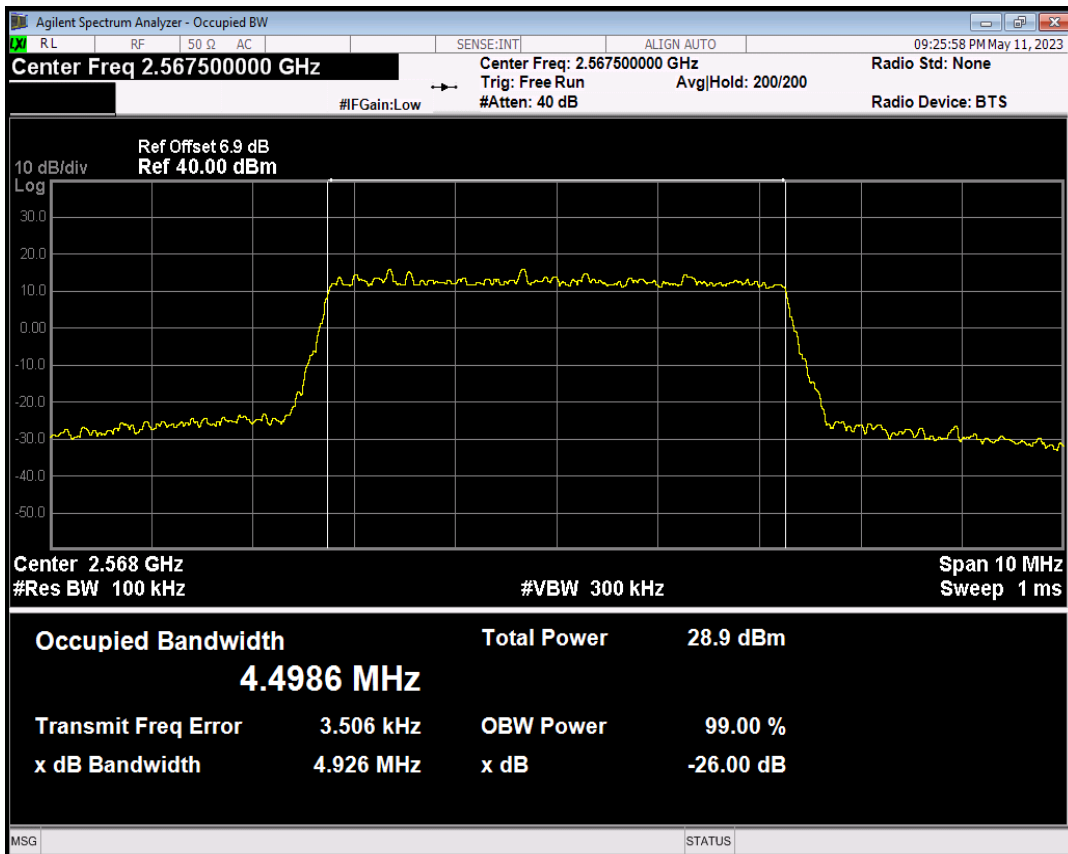
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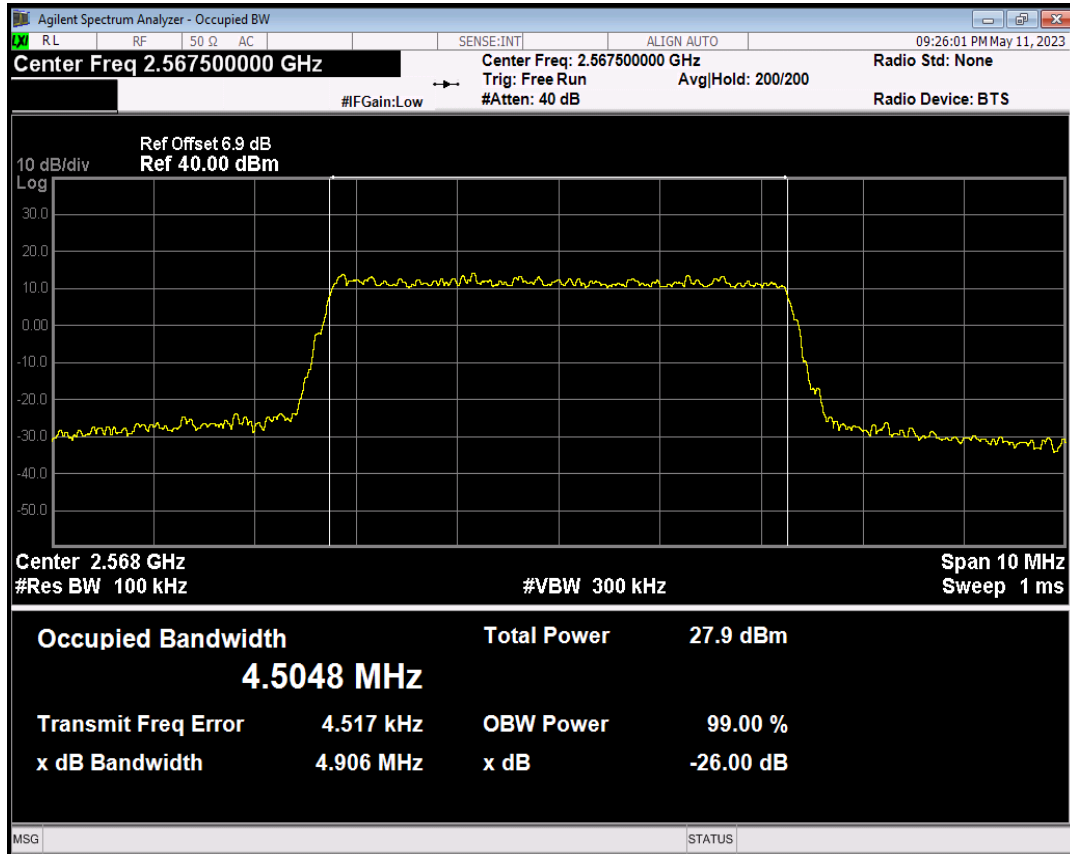
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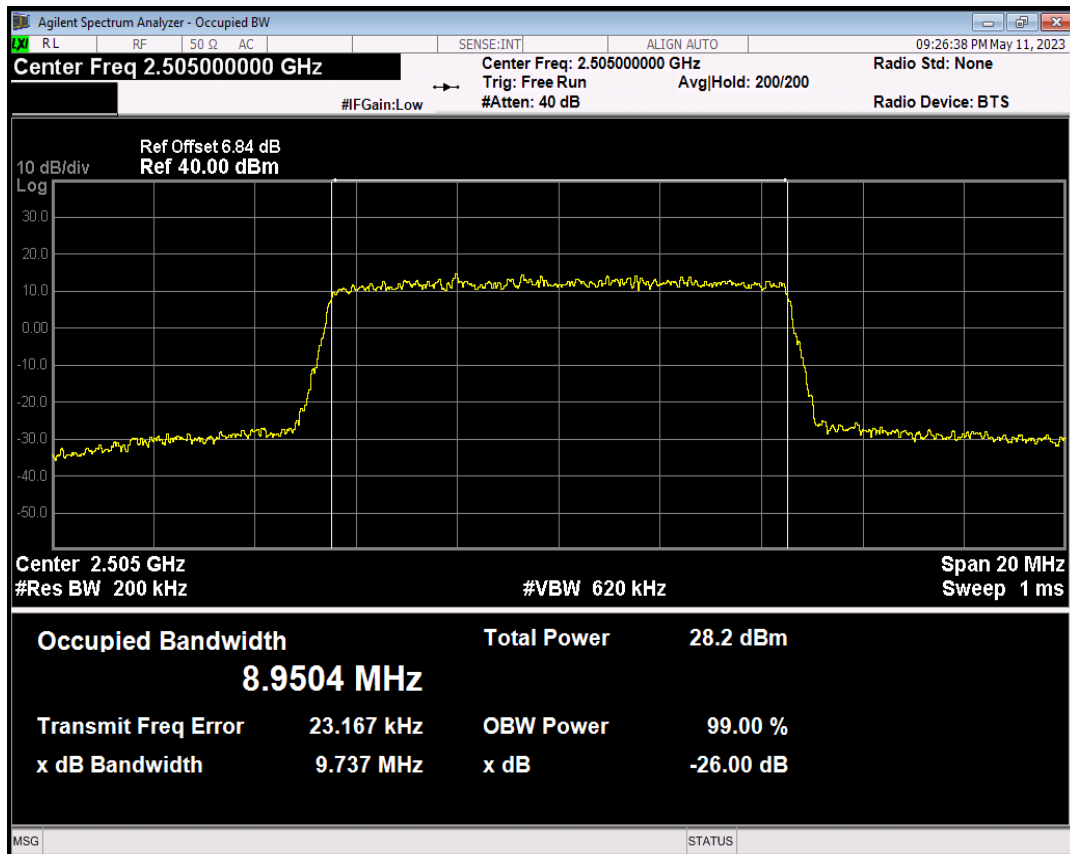
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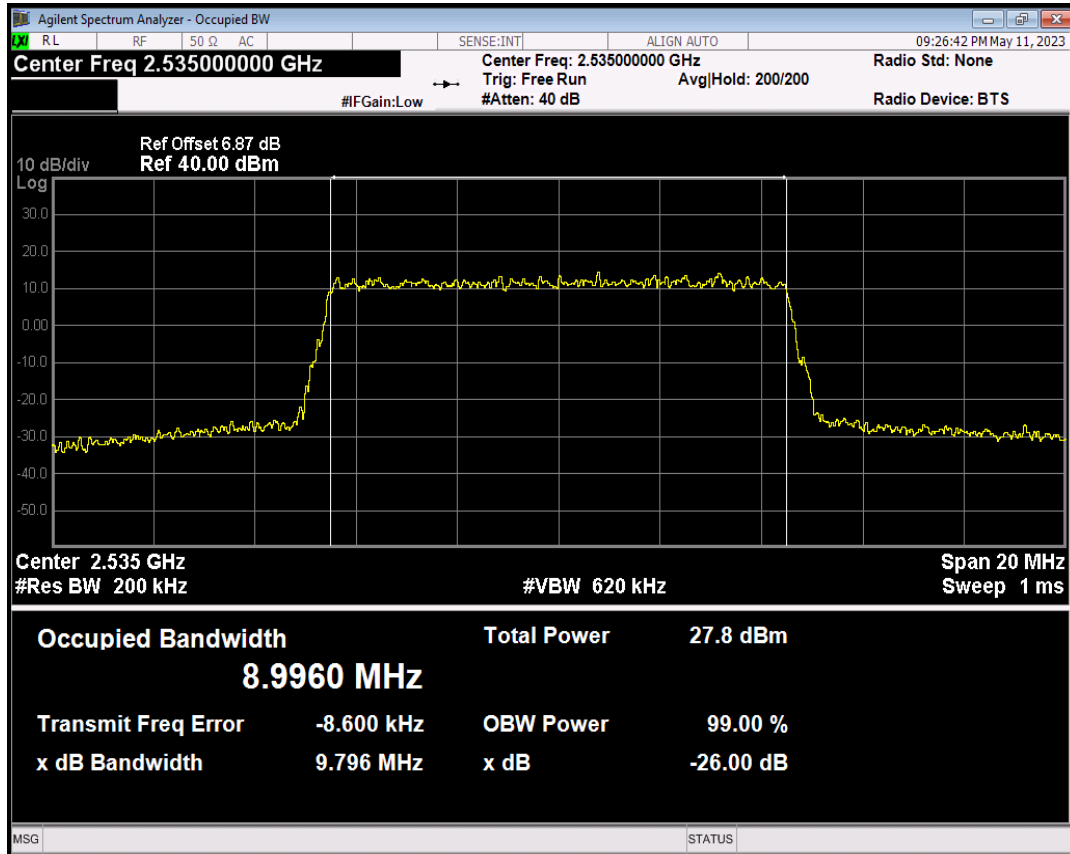
Band7 16QAM BW=5MHz Channel=21425 RB Size=25 Position=#0



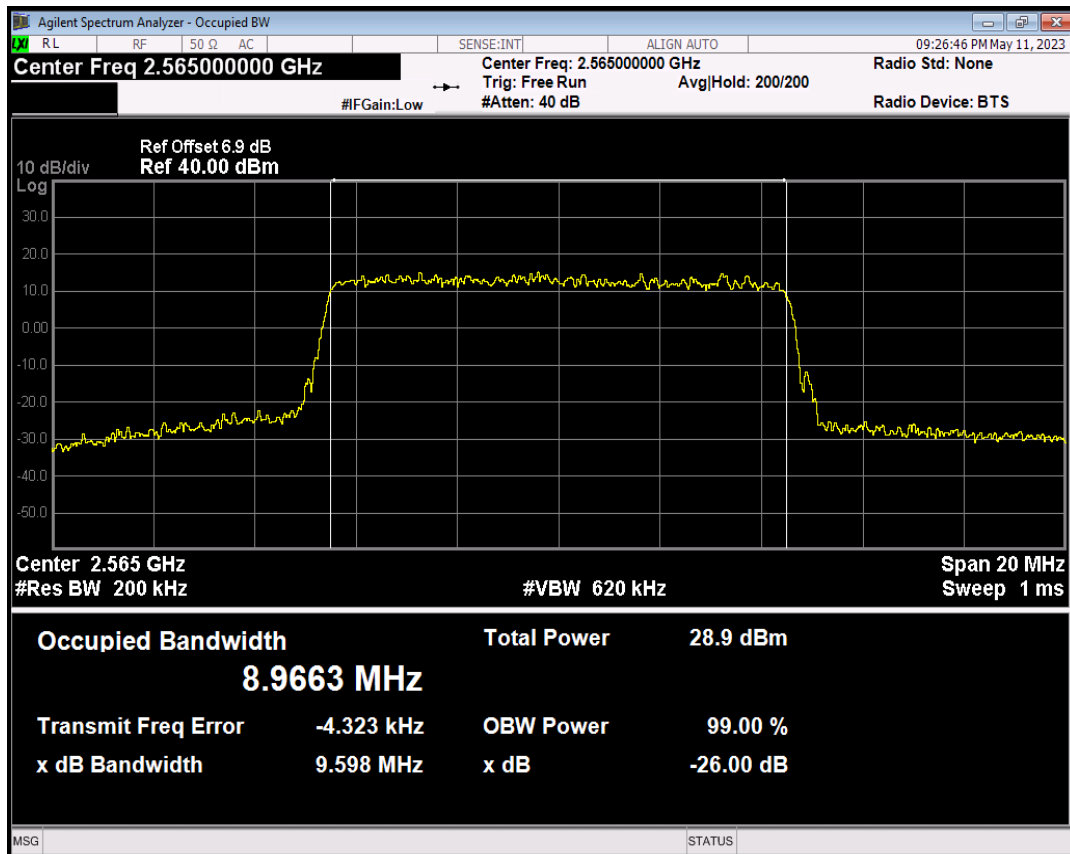
Band7 QPSK BW=10MHz Channel=20800 RB Size=50 Position=#0



Band7 QPSK BW=10MHz Channel=21100 RB Size=50 Position=#0



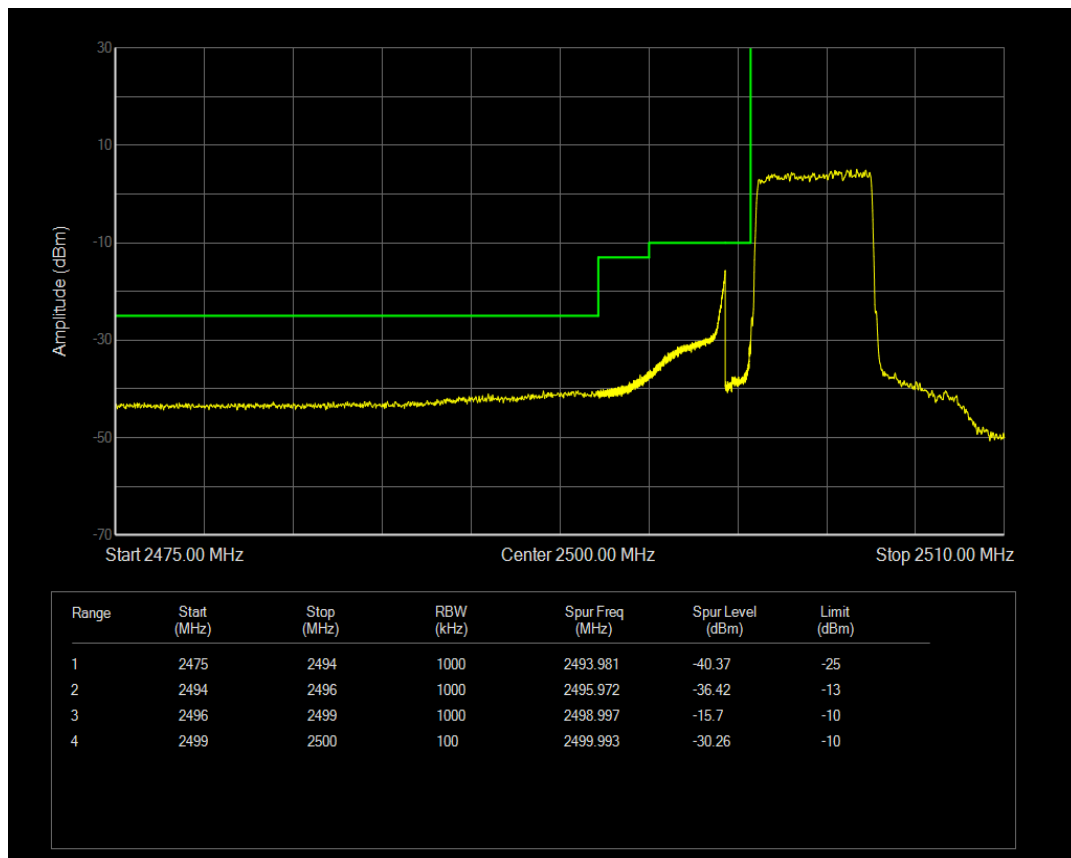
Band7 QPSK BW=10MHz Channel=21400 RB Size=50 Position=#0



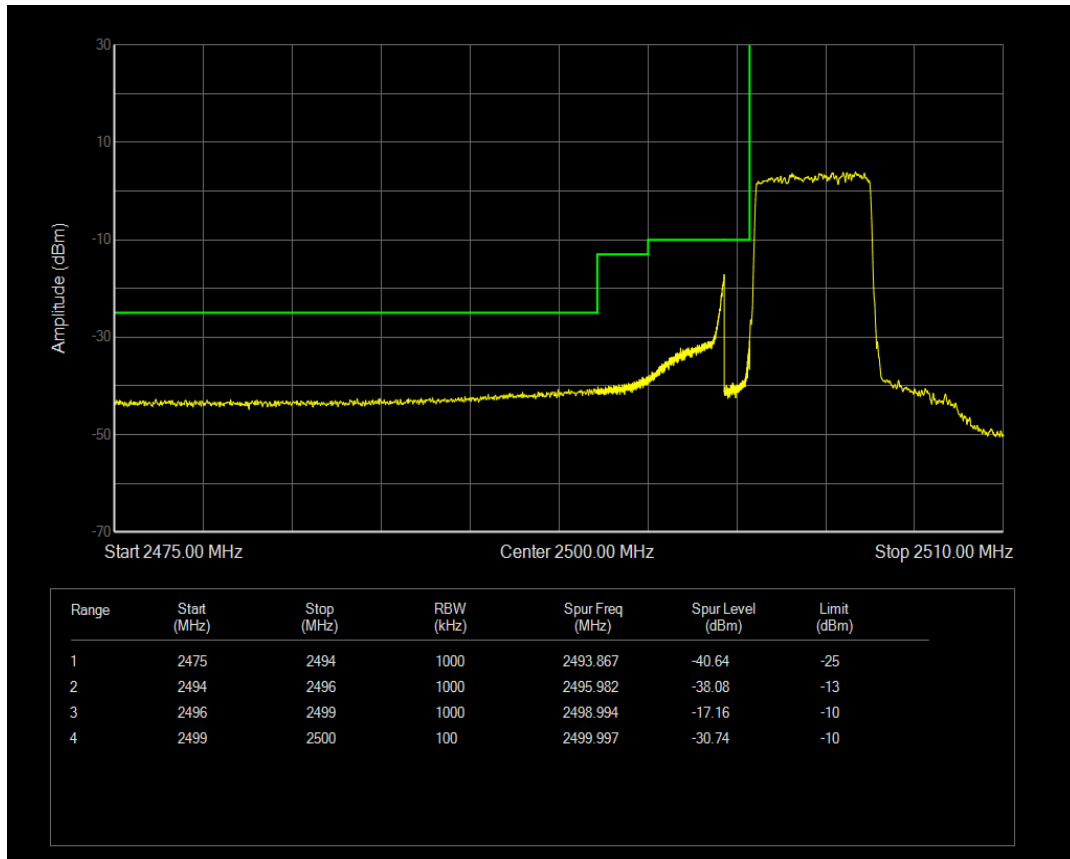
Appendix 5. Band edge

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
Band7	5	20775	25	#0	QPSK	2499.00	-15.70	-10	PASS
Band7	5	20775	25	#0	16QAM	2498.99	-17.16	-10	PASS
Band7	5	21425	25	#0	QPSK	2571.00	-15.02	-10	PASS
Band7	5	21425	25	#0	16QAM	2571.00	-17.06	-10	PASS
Band7	10	20800	50	#0	QPSK	2489.94	-41.01	-25	PASS
Band7	10	21400	50	#0	QPSK	2571.00	-26.59	-10	PASS

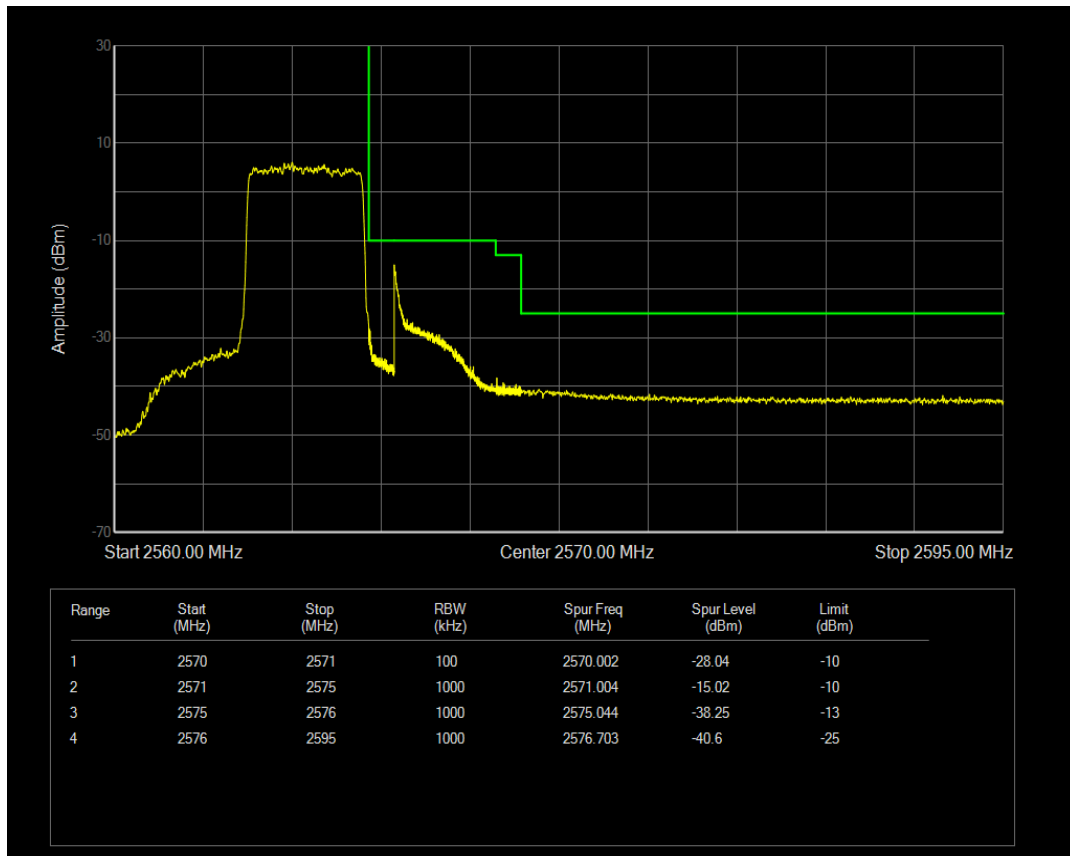
Band7 QPSK BW=5MHz Channel=20775 RB Size=25 Position=#0



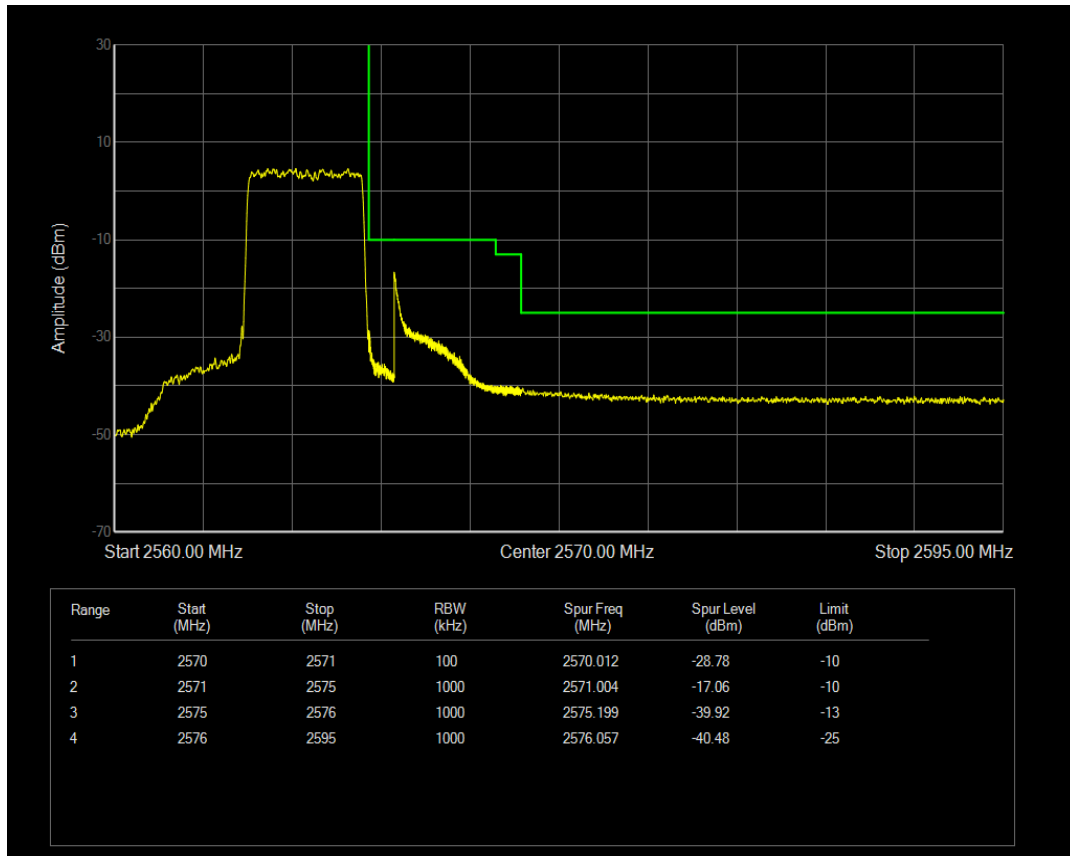
Band7 16QAM BW=5MHz Channel=20775 RB Size=25 Position=#0



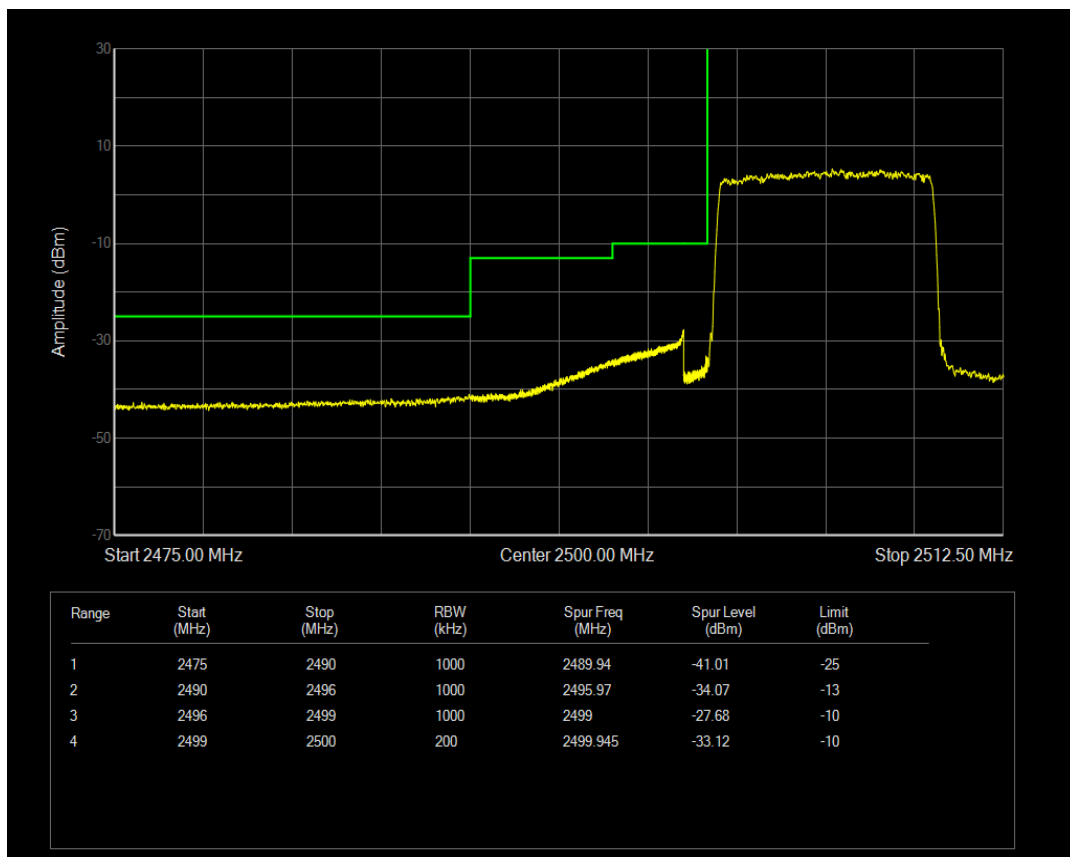
Band7 QPSK BW=5MHz Channel=21425 RB Size=25 Position=#0



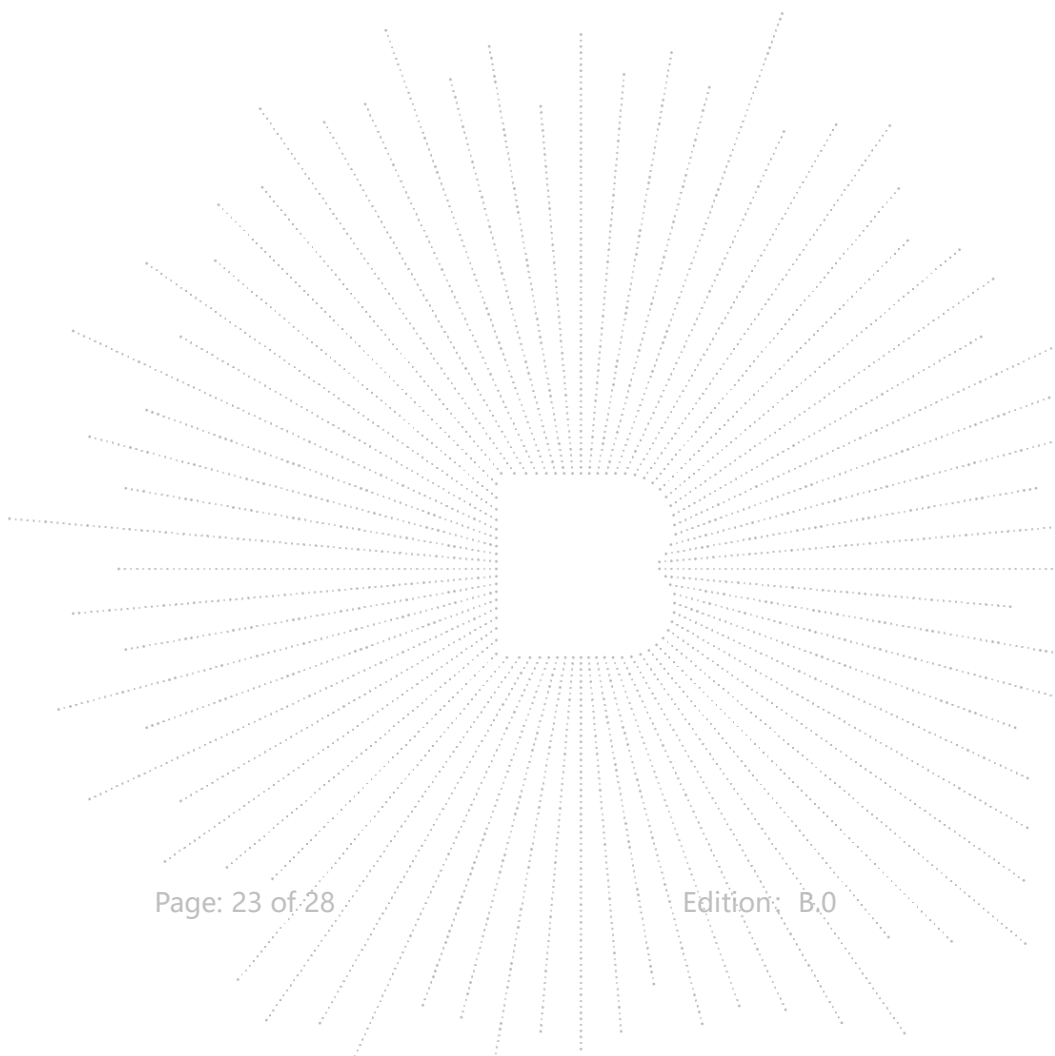
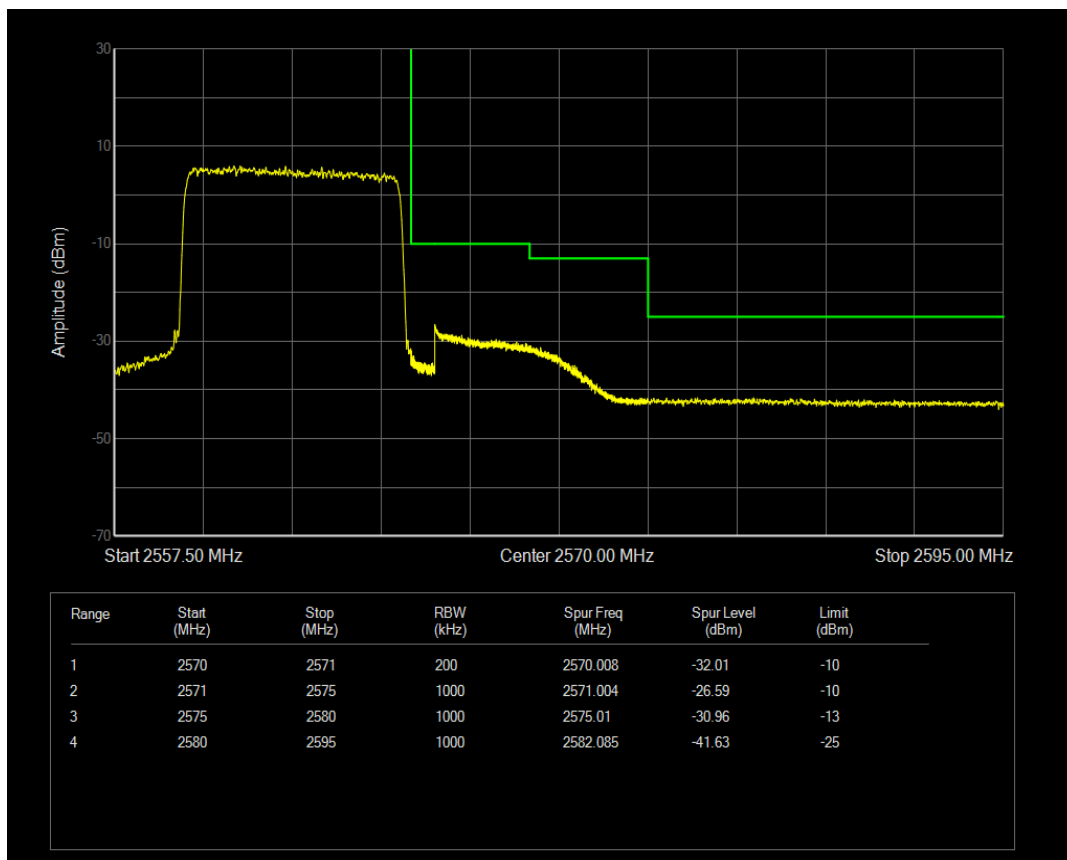
Band7 16QAM BW=5MHz Channel=21425 RB Size=25 Position=#0



Band7 QPSK BW=10MHz Channel=20800 RB Size=50 Position=#0



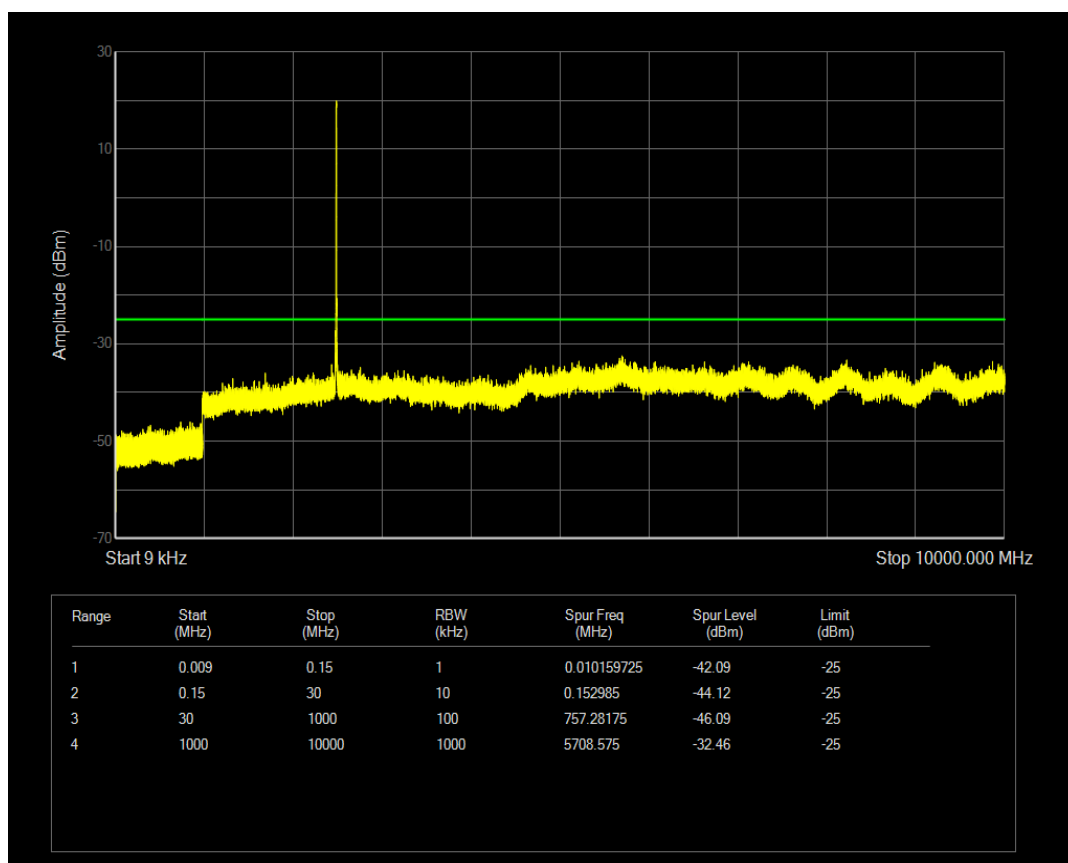
Band7 QPSK BW=10MHz Channel=21400 RB Size=50 Position=#0



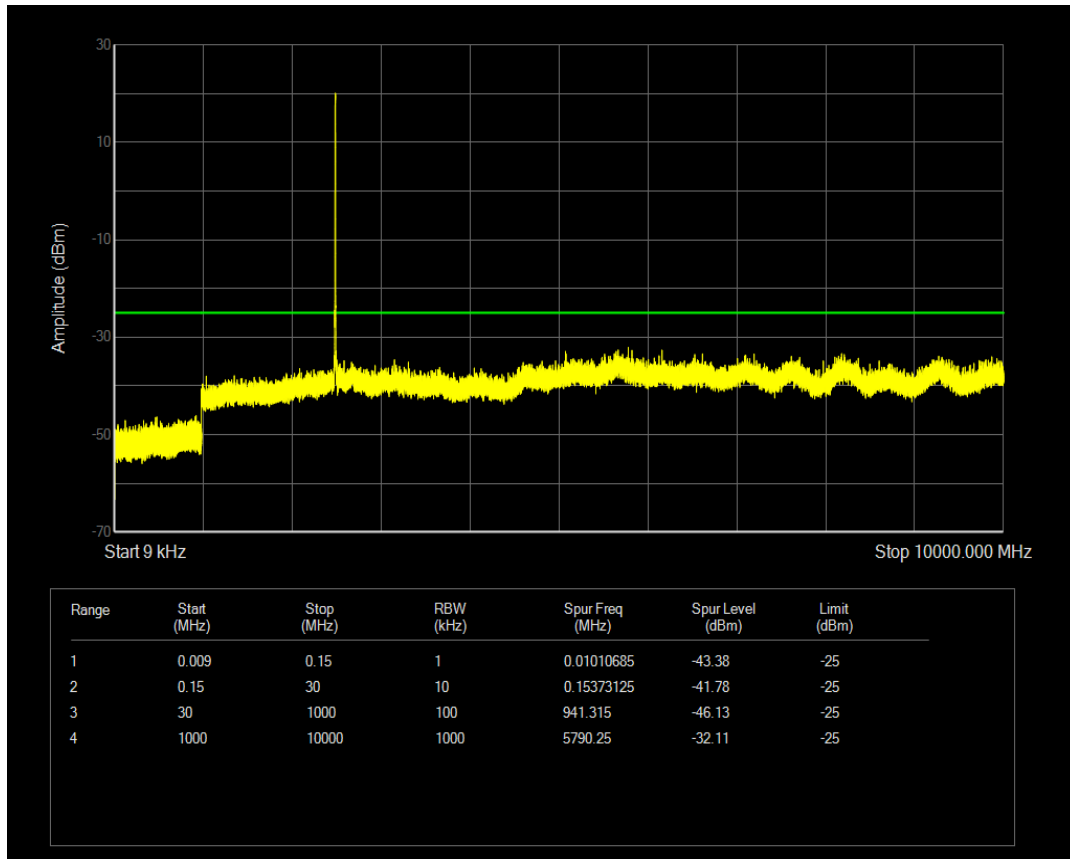
Appendix 6. Out-of-band emissions

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
Band7	5	20775	25	#0	QPSK	5708.58	-32.46	-25	PASS
Band7	5	20775	25	#0	16QAM	5790.25	-32.11	-25	PASS
Band7	5	21100	25	#0	QPSK	5793.40	-32.61	-25	PASS
Band7	5	21100	25	#0	16QAM	5667.40	-32.45	-25	PASS
Band7	5	21425	25	#0	QPSK	5618.13	-32.20	-25	PASS
Band7	5	21425	25	#0	16QAM	9284.28	-32.24	-25	PASS
Band7	10	20800	50	#0	QPSK	5656.38	-32.48	-25	PASS
Band7	10	21100	50	#0	QPSK	5682.03	-32.66	-25	PASS
Band7	10	21400	50	#0	QPSK	5683.38	-32.31	-25	PASS

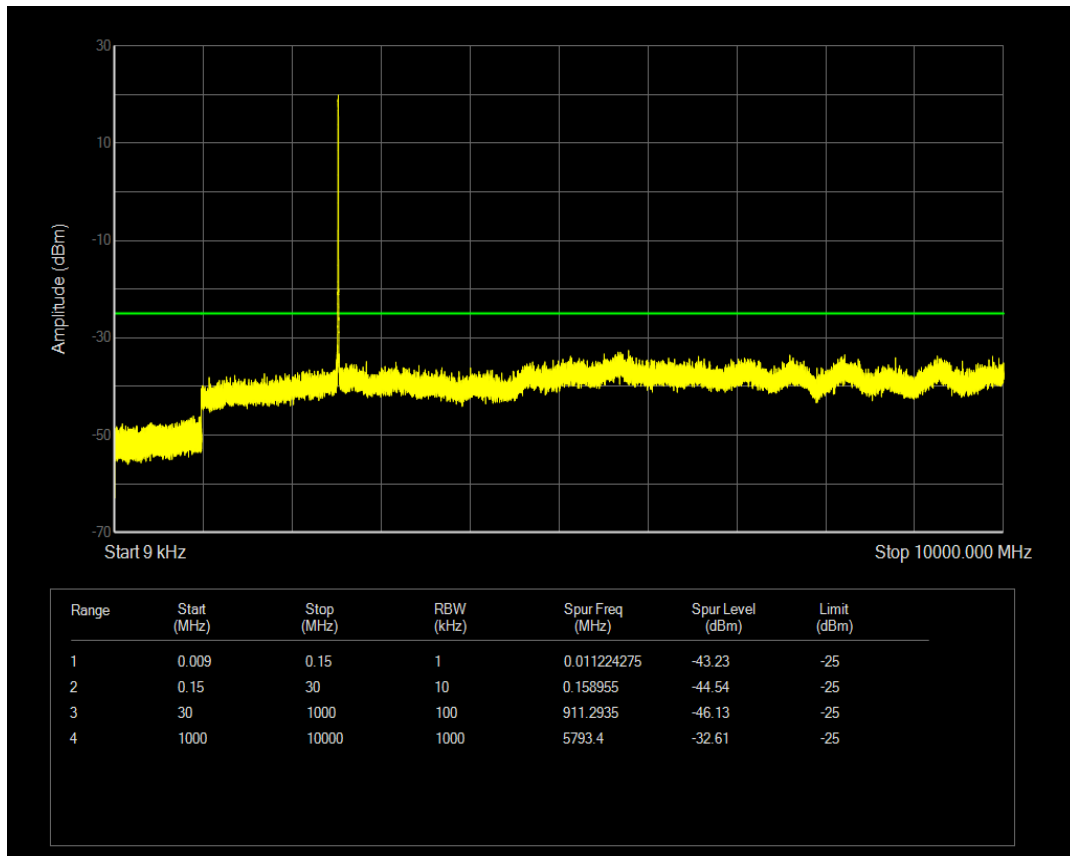
Band7 QPSK BW=5MHz Channel=20775 RB Size=25 Position=#0



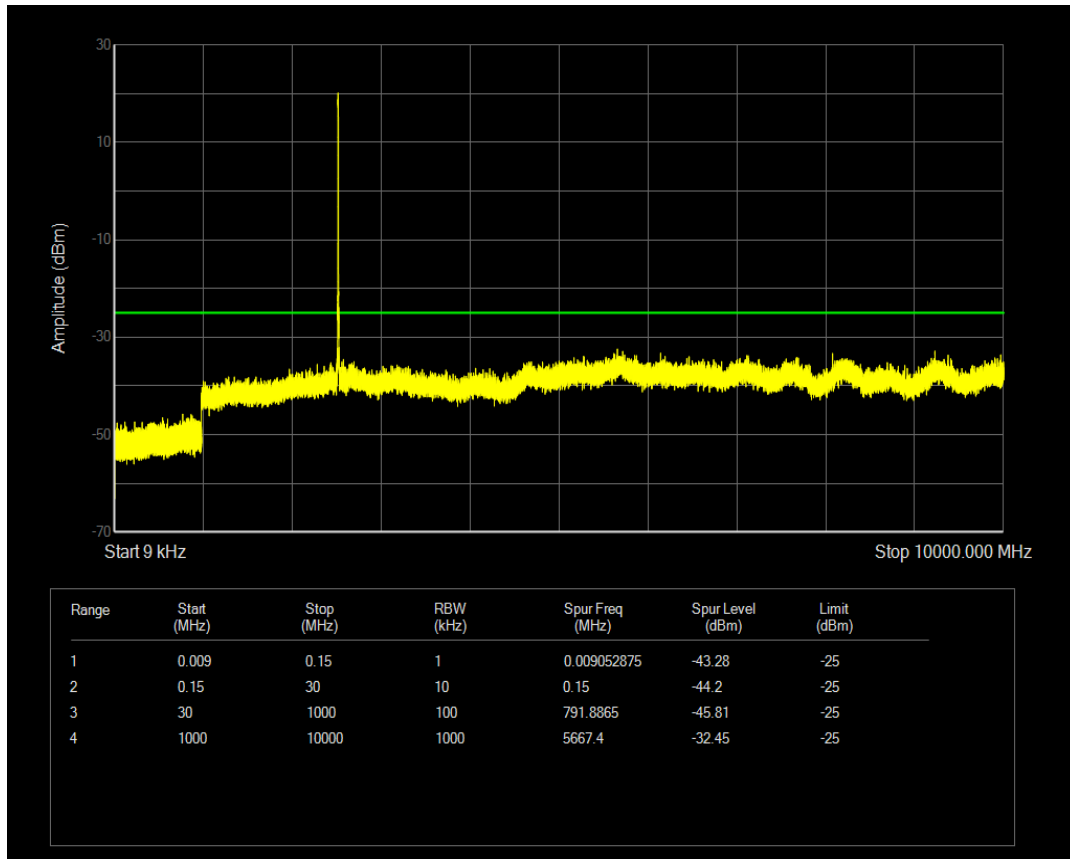
Band7 16QAM BW=5MHz Channel=20775 RB Size=25 Position=#0



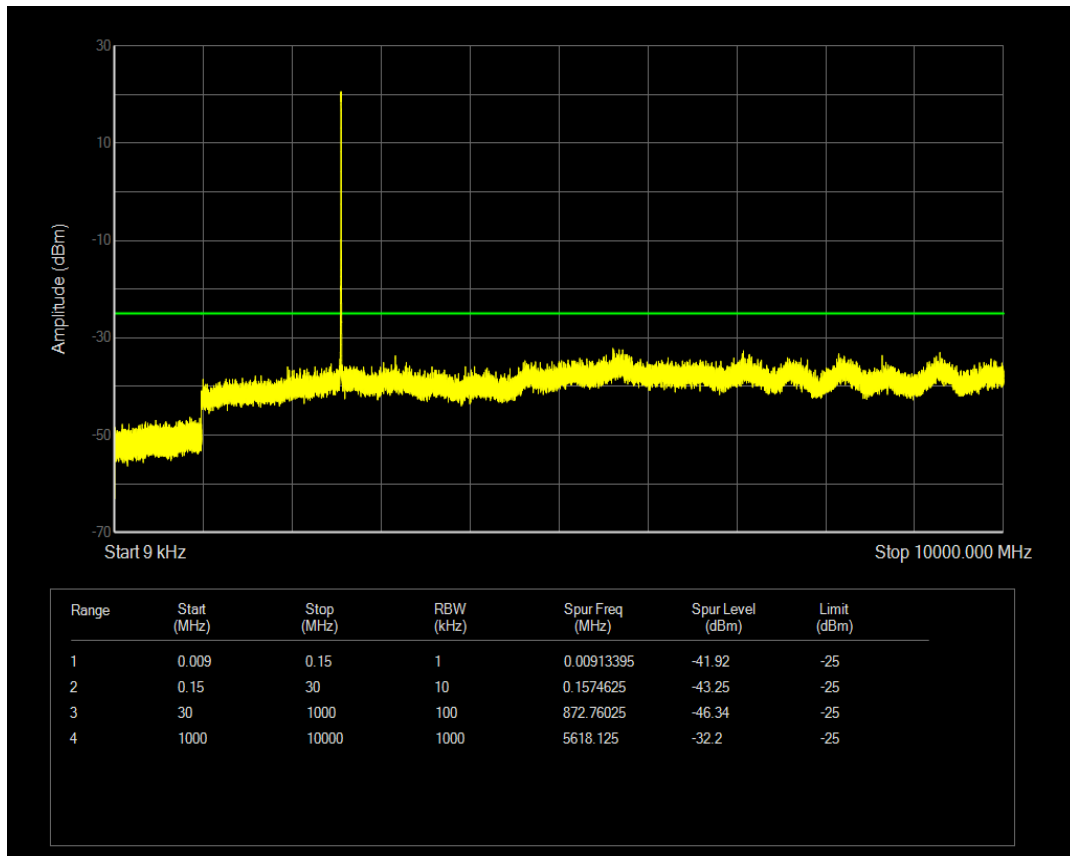
Band7 QPSK BW=5MHz Channel=21100 RB Size=25 Position=#0



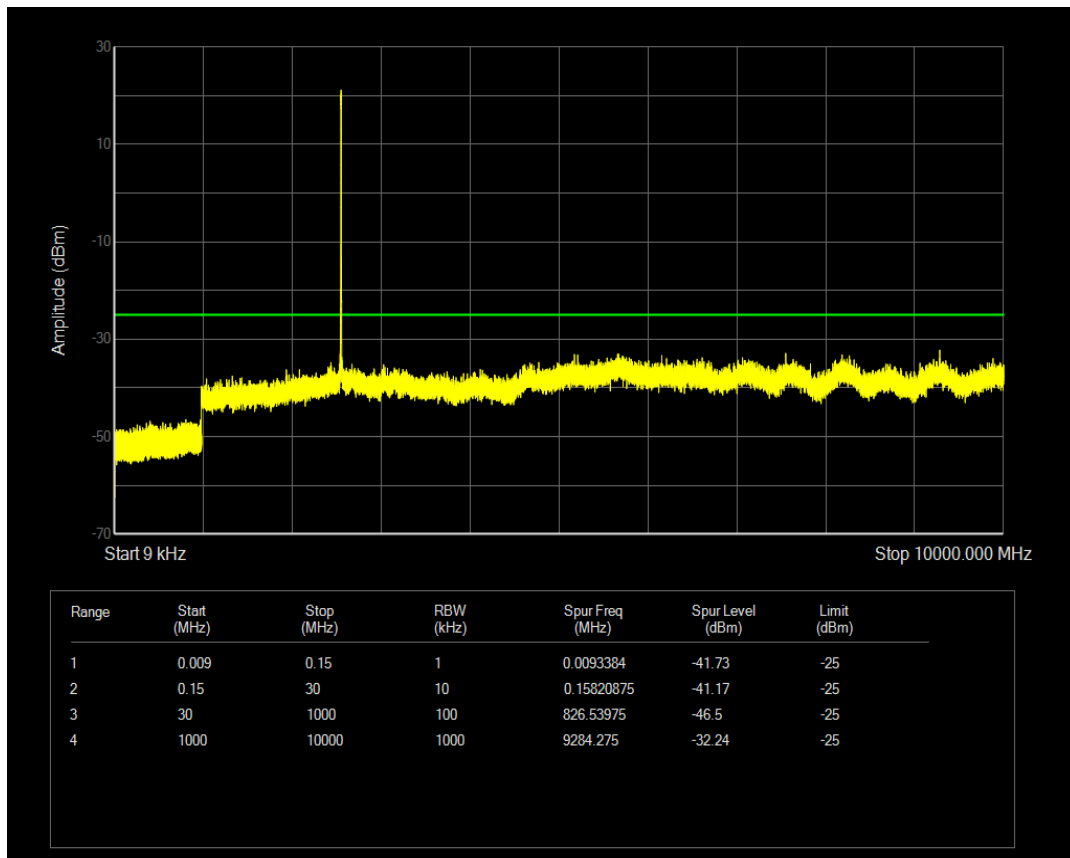
Band7 16QAM BW=5MHz Channel=21100 RB Size=25 Position=#0



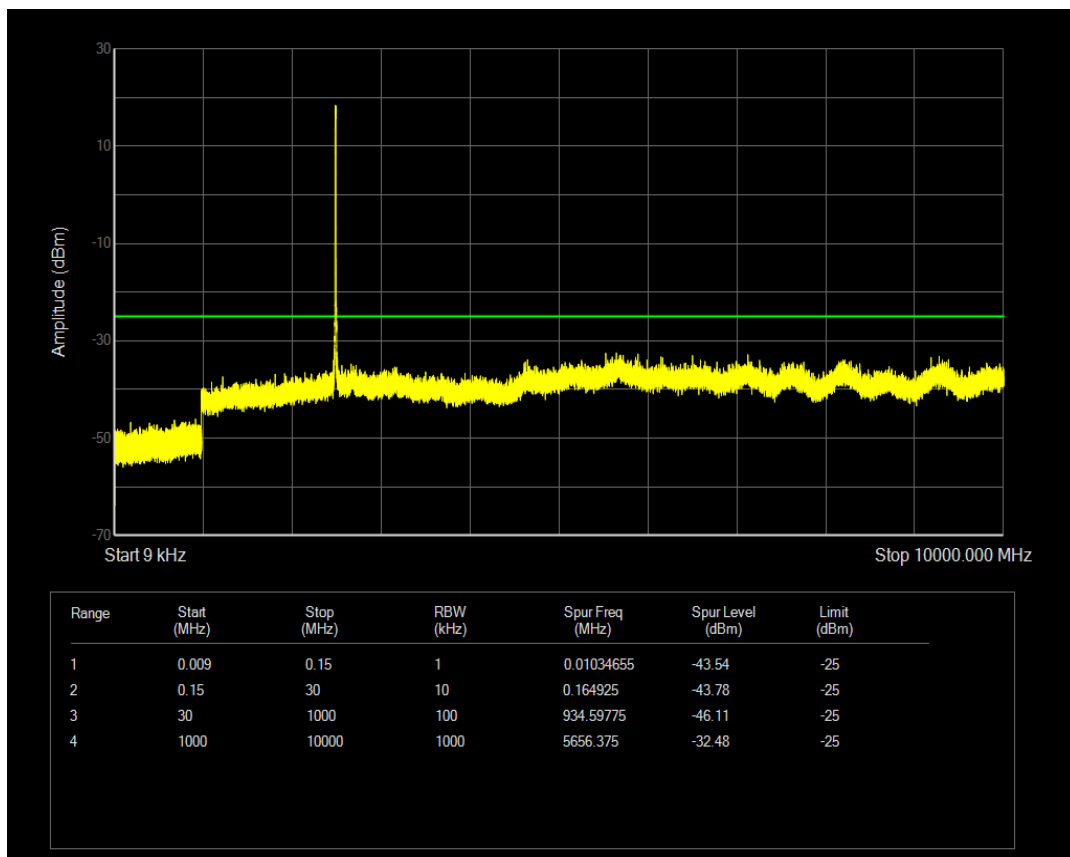
Band7 QPSK BW=5MHz Channel=21425 RB Size=25 Position=#0



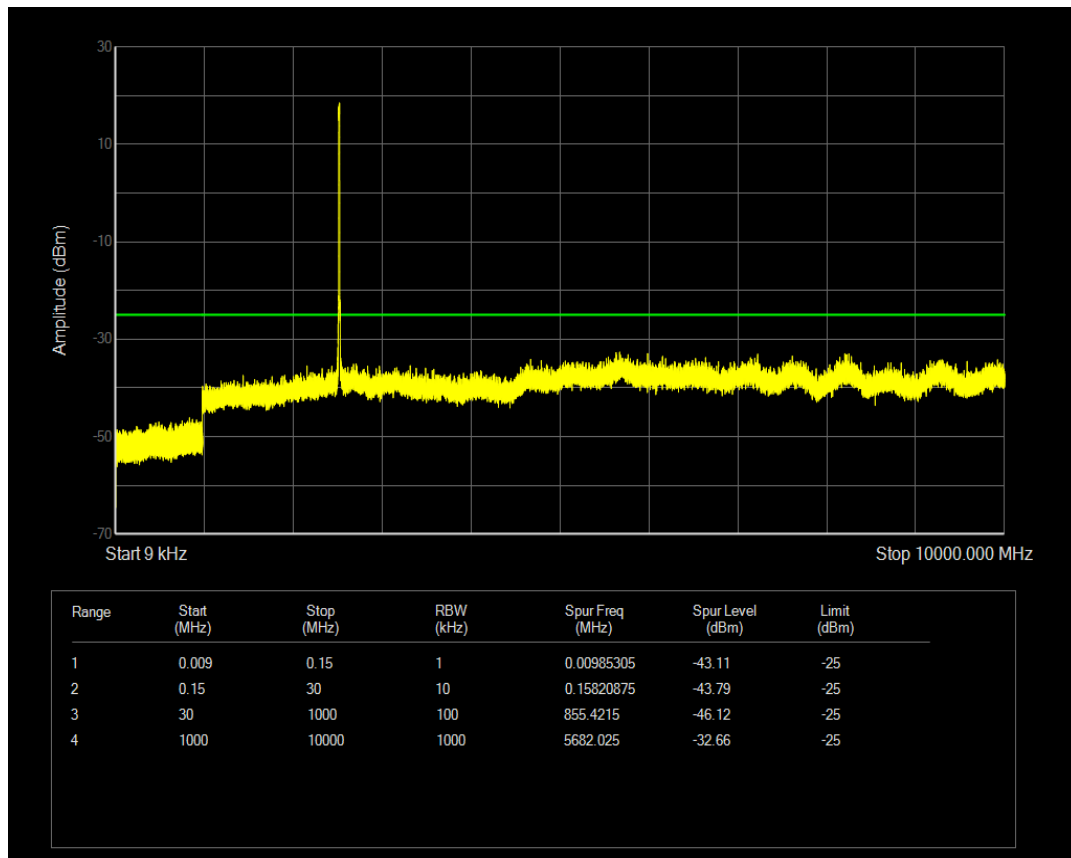
Band7 16QAM BW=5MHz Channel=21425 RB Size=25 Position=#0



Band7 QPSK BW=10MHz Channel=20800 RB Size=50 Position=#0



Band7 QPSK BW=10MHz Channel=21100 RB Size=50 Position=#0



Band7 QPSK BW=10MHz Channel=21400 RB Size=50 Position=#0

