

Appendix Test Data for LTE band 40(2305-2315) (Conducted Measurement)

Product Name: LEARNING CAMERA



Trade Mark:

Test Model: DEX-01

FCC ID: 2BOSD-DEX-01

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
NOTE	N/A

Appendix A: RF output power

Test Result

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation n	RB Size	RB Offset	Average Power (dBm)	Peak Power (dBm)	PAR (dB)	Limi t (dB)	AntGai n (dBi)	EIRP (dBm)	Limit (dBm)	Conclusio n
40(2305-2315)	5	2307.5	QPSK	25	LOW	22.58	26.74	4.16	13	0.58	23.16	24	Pass
40(2305-2315)	5	2307.5	QPSK	12	LOW	22.73	27.11	4.38	13	0.58	23.31	24	Pass
40(2305-2315)	5	2307.5	QPSK	12	MID	22.54	27.05	4.51	13	0.58	23.12	24	Pass
40(2305-2315)	5	2307.5	QPSK	12	HIGH	21.11	27.13	6.02	13	0.58	21.69	24	Pass
40(2305-2315)	5	2307.5	QPSK	1	LOW	22.74	26.88	4.14	13	0.58	23.32	24	Pass
40(2305-2315)	5	2307.5	QPSK	1	MID	22.86	27	4.14	13	0.58	23.44	24	Pass
40(2305-2315)	5	2307.5	QPSK	1	HIGH	22.71	27.18	4.47	13	0.58	23.29	24	Pass
40(2305-2315)	5	2307.5	16QAM	25	LOW	20.81	27.36	6.55	13	0.58	21.39	24	Pass
40(2305-2315)	5	2307.5	16QAM	12	LOW	20.77	26.87	6.10	13	0.58	21.35	24	Pass

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)	Peak Power (dBm)	PAR (dB)	Limit (dB)	Antenna (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
40(2305-2315)	5	2307.5	16QAM	12	MID	20.77	26.88	6.11	13	0.58	21.35	24	Pass
40(2305-2315)	5	2307.5	16QAM	12	HIGH	20.75	27.01	6.26	13	0.58	21.33	24	Pass
40(2305-2315)	5	2307.5	16QAM	1	LOW	21.76	26.49	4.73	13	0.58	22.34	24	Pass
40(2305-2315)	5	2307.5	16QAM	1	MID	21.88	26.72	4.84	13	0.58	22.46	24	Pass
40(2305-2315)	5	2307.5	16QAM	1	HIGH	21.72	26.72	5	13	0.58	22.30	24	Pass
40(2305-2315)	5	2310	QPSK	25	LOW	21.74	27.51	5.77	13	0.58	22.32	24	Pass
40(2305-2315)	5	2310	QPSK	12	LOW	21.75	27.09	5.34	13	0.58	22.33	24	Pass
40(2305-2315)	5	2310	QPSK	12	MID	21.78	27.11	5.33	13	0.58	22.36	24	Pass
40(2305-2315)	5	2310	QPSK	12	HIGH	21.74	27.19	5.45	13	0.58	22.32	24	Pass
40(2305-2315)	5	2310	QPSK	1	LOW	22.7	26.99	4.29	13	0.58	23.28	24	Pass
40(2305-2315)	5	2310	QPSK	1	MID	22.81	27.21	4.40	13	0.58	23.39	24	Pass
40(2305-2315)	5	2310	QPSK	1	HIGH	22.67	27.19	4.52	13	0.58	23.25	24	Pass
40(2305-2315)	5	2310	16QAM	25	LOW	20.76	27.49	6.73	13	0.58	21.34	24	Pass
40(2305-2315)	5	2310	16QAM	12	LOW	20.75	27.13	6.38	13	0.58	21.33	24	Pass
40(2305-2315)	5	2310	16QAM	12	MID	20.74	27.11	6.37	13	0.58	21.32	24	Pass
40(2305-2315)	5	2310	16QAM	12	HIGH	20.73	27.12	6.39	13	0.58	21.31	24	Pass
40(2305-2315)	5	2310	16QAM	1	LOW	21.76	26.93	5.17	13	0.58	22.34	24	Pass
40(2305-2315)	5	2310	16QAM	1	MID	21.92	27.16	5.24	13	0.58	22.50	24	Pass
40(2305-2315)	5	2310	16QAM	1	HIGH	21.73	27.11	5.38	13	0.58	22.31	24	Pass
40(2305-2315)	5	2312.5	QPSK	25	LOW	21.74	27.59	5.85	13	0.58	22.32	24	Pass

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)	Peak Power (dBm)	PAR (dB)	Limit (dB)	AntGai n (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
40(2305-2315)	5	2312.5	QPSK	12	LOW	21.76	27.35	5.5 9	13	0.58	22.3 4	24	Pass
40(2305-2315)	5	2312.5	QPSK	12	MID	21.77	27.36	5.5 9	13	0.58	22.3 5	24	Pass
40(2305-2315)	5	2312.5	QPSK	12	HIGH	21.67	27.28	5.6 1	13	0.58	22.2 5	24	Pass
40(2305-2315)	5	2312.5	QPSK	1	LOW	22.72	26.94	4.2 2	13	0.58	23.3 0	24	Pass
40(2305-2315)	5	2312.5	QPSK	1	MID	22.86	27.11	4.2 5	13	0.58	23.4 4	24	Pass
40(2305-2315)	5	2312.5	QPSK	1	HIGH	22.78	27.11	4.3 3	13	0.58	23.3 6	24	Pass
40(2305-2315)	5	2312.5	16QAM	25	LOW	20.74	27.32	6.5 8	13	0.58	21.3 2	24	Pass
40(2305-2315)	5	2312.5	16QAM	12	LOW	20.74	26.9	6.1 6	13	0.58	21.3 2	24	Pass
40(2305-2315)	5	2312.5	16QAM	12	MID	20.75	26.9	6.1 5	13	0.58	21.3 3	24	Pass
40(2305-2315)	5	2312.5	16QAM	12	HIGH	20.75	27.18	6.4 3	13	0.58	21.3 3	24	Pass
40(2305-2315)	5	2312.5	16QAM	1	LOW	21.93	26.51	4.5 8	13	0.58	22.5 1	24	Pass
40(2305-2315)	5	2312.5	16QAM	1	MID	21.96	26.65	4.6 9	13	0.58	22.5 4	24	Pass
40(2305-2315)	5	2312.5	16QAM	1	HIGH	21.8	26.59	4.7 9	13	0.58	22.3 8	24	Pass
40(2305-2315)	10	2310	QPSK	50	LOW	21.7	27.51	5.8 1	13	0.58	22.2 8	24	Pass
40(2305-2315)	10	2310	QPSK	25	LOW	21.73	27.17	5.4 4	13	0.58	22.3 1	24	Pass
40(2305-2315)	10	2310	QPSK	25	MID	21.72	27.14	5.4 2	13	0.58	22.3 0	24	Pass
40(2305-2315)	10	2310	QPSK	25	HIGH	21.68	27.3	5.6 2	13	0.58	22.2 6	24	Pass
40(2305-2315)	10	2310	QPSK	1	LOW	22.85	27.18	4.3 3	13	0.58	23.4 3	24	Pass
40(2305-2315)	10	2310	QPSK	1	MID	23.06	27.54	4.4 8	13	0.58	23.6 4	24	Pass
40(2305-2315)	10	2310	QPSK	1	HIGH	22.8	27.65	4.8 5	13	0.58	23.3 8	24	Pass

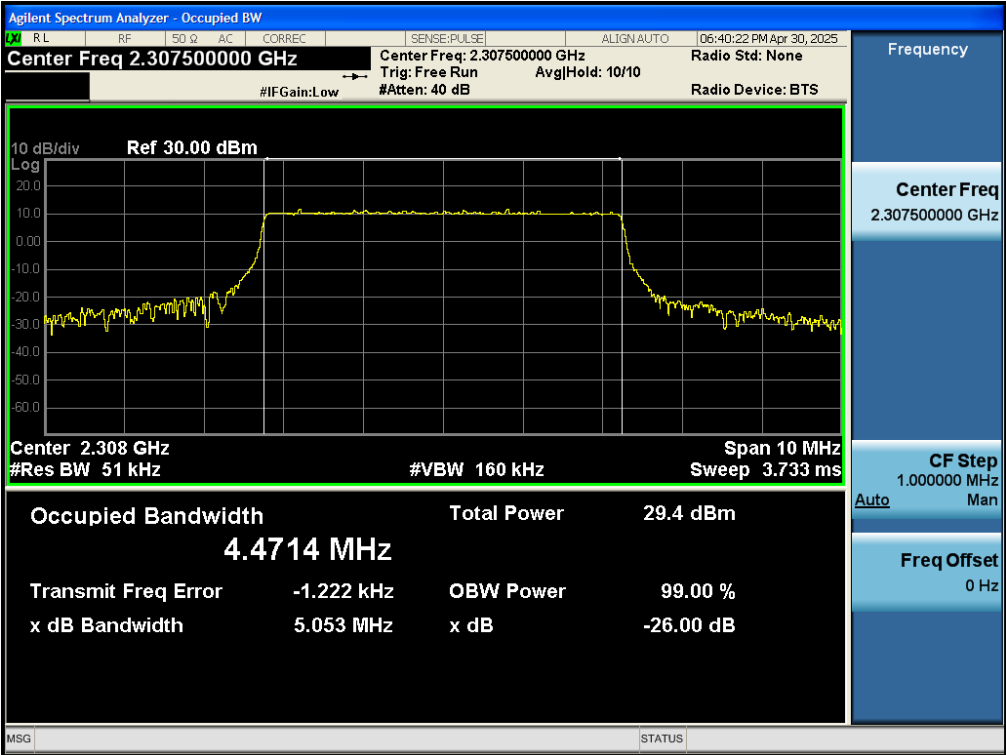
Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)	Peak Power (dBm)	PAR (dB)	Limit (dB)	AntGai (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
40(2305-2315)	10	2310	16QAM	50	LOW	20.71	27.83	7.12	13	0.58	21.29	24	Pass
40(2305-2315)	10	2310	16QAM	25	LOW	20.73	27.47	6.74	13	0.58	21.31	24	Pass
40(2305-2315)	10	2310	16QAM	25	MID	20.74	27.47	6.73	13	0.58	21.32	24	Pass
40(2305-2315)	10	2310	16QAM	25	HIGH	20.73	27.77	7.04	13	0.58	21.31	24	Pass
40(2305-2315)	10	2310	16QAM	1	LOW	21.78	27.01	5.23	13	0.58	22.36	24	Pass
40(2305-2315)	10	2310	16QAM	1	MID	22	27.45	5.45	13	0.58	22.58	24	Pass
40(2305-2315)	10	2310	16QAM	1	HIGH	21.77	27.51	5.74	13	0.58	22.35	24	Pass

Appendix B: Occupied bandwidth

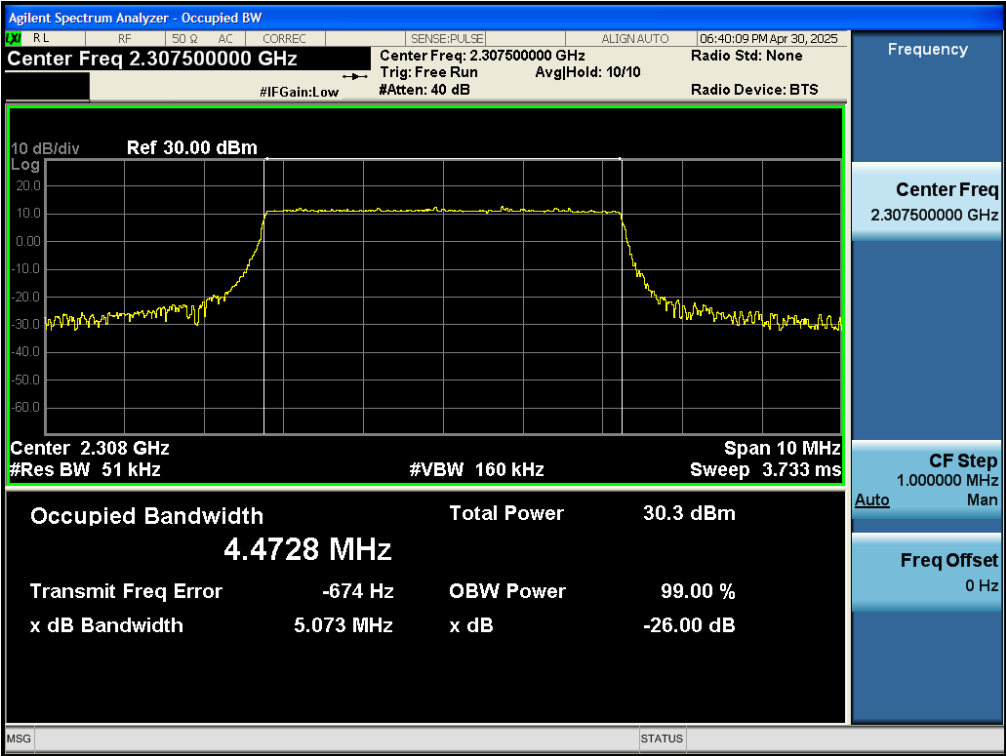
Test Result

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Occupied Bandwidth (MHz)	Emission Bandwidth (MHz)	Limit
40(2305-2315)	5	2307.5	QPSK	25	LOW	4.473	5.073	No limit
40(2305-2315)	5	2307.5	16QAM	25	LOW	4.471	5.053	No limit
40(2305-2315)	5	2310	QPSK	25	LOW	4.486	4.919	No limit
40(2305-2315)	5	2310	16QAM	25	LOW	4.47	4.973	No limit
40(2305-2315)	5	2312.5	QPSK	25	LOW	4.473	4.962	No limit
40(2305-2315)	5	2312.5	16QAM	25	LOW	4.483	5.000	No limit
40(2305-2315)	10	2310	QPSK	50	LOW	8.941	9.843	No limit
40(2305-2315)	10	2310	16QAM	50	LOW	8.952	9.654	No limit

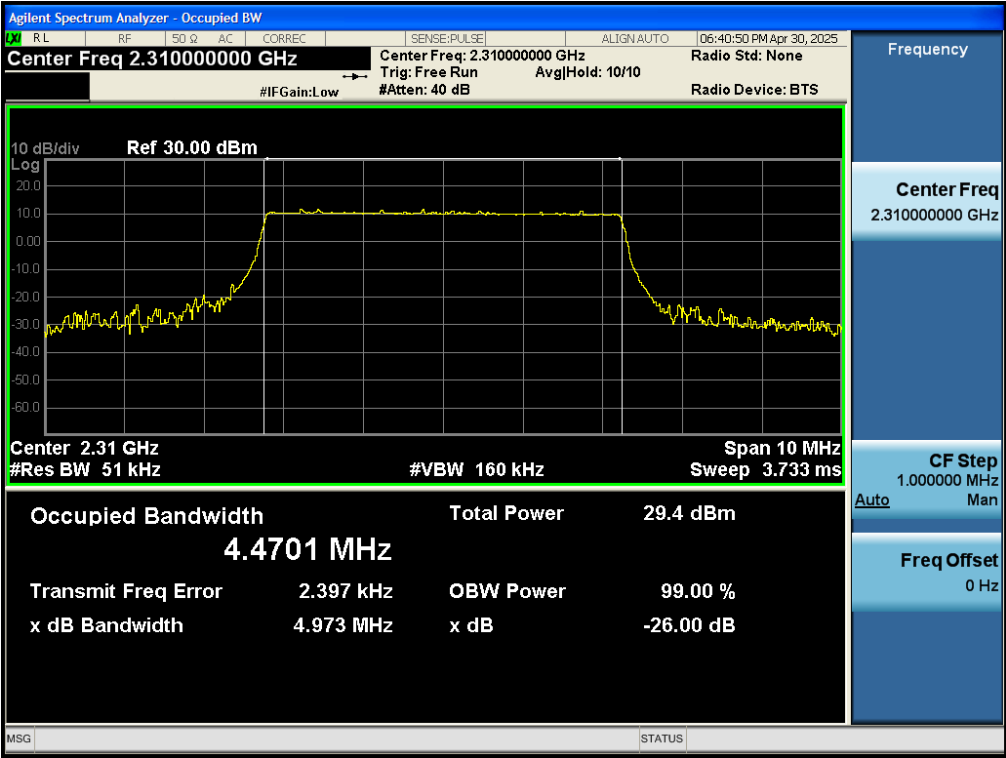
Test Graphs



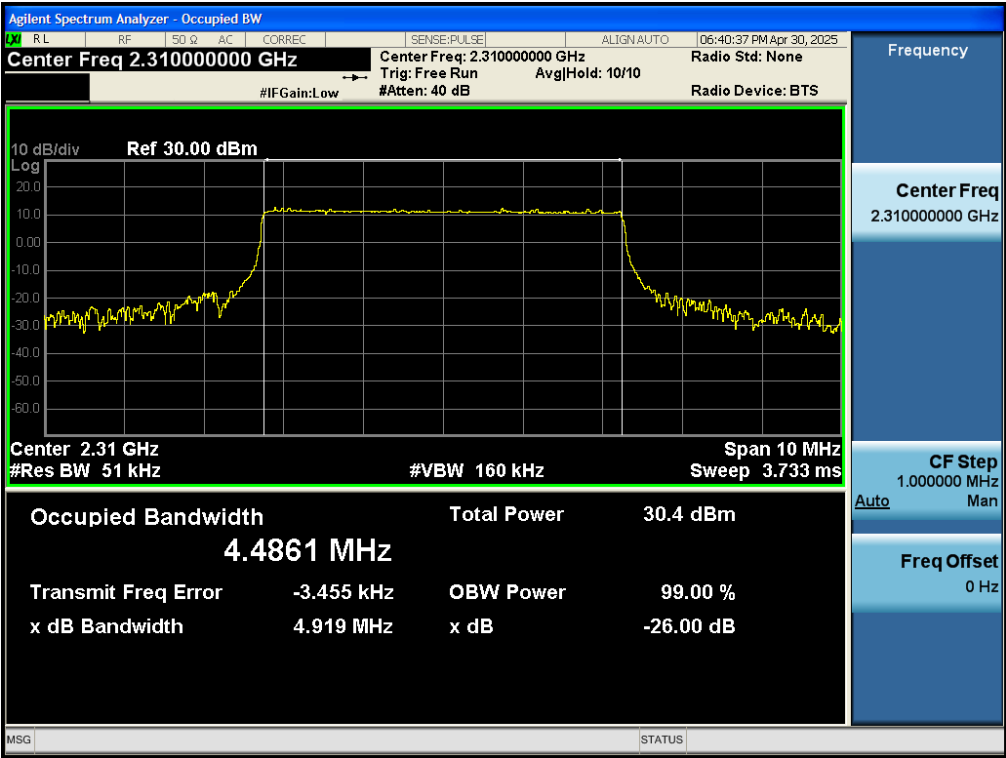
Test_Graph_band40(2305-2315)_2307.5MHz_5M_16QAM_25RB#LOW_OBW&EBW



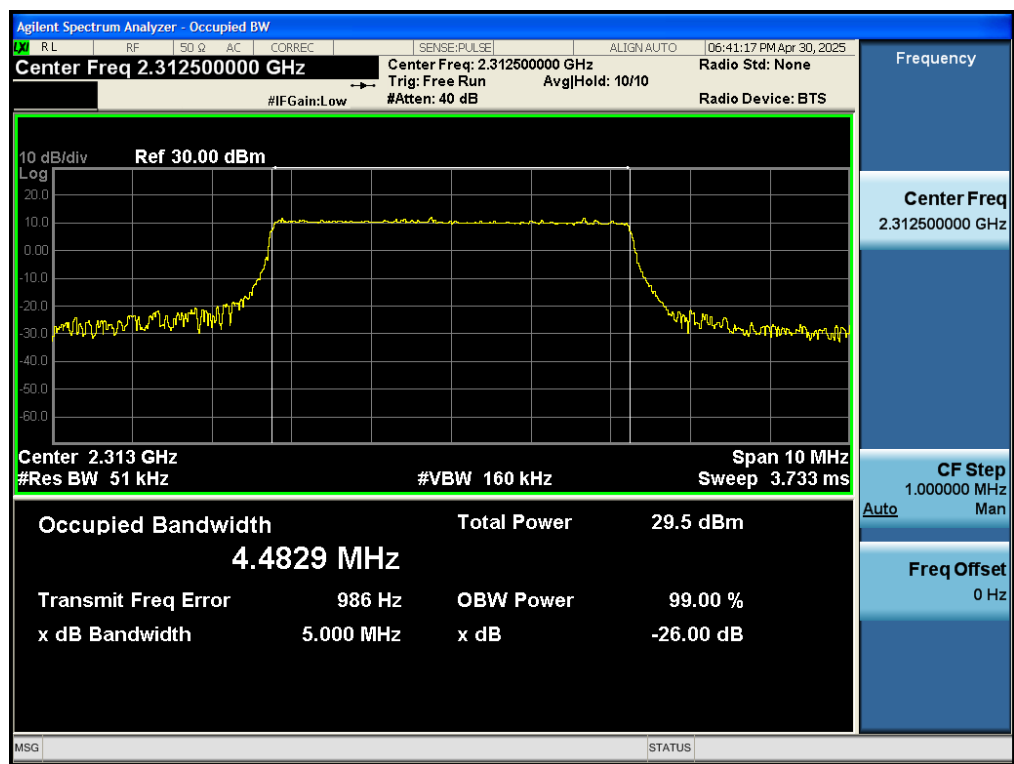
Test_Graph_band40(2305-2315)_2307.5MHz_5M_QPSK_25RB#LOW_OBW&EBW



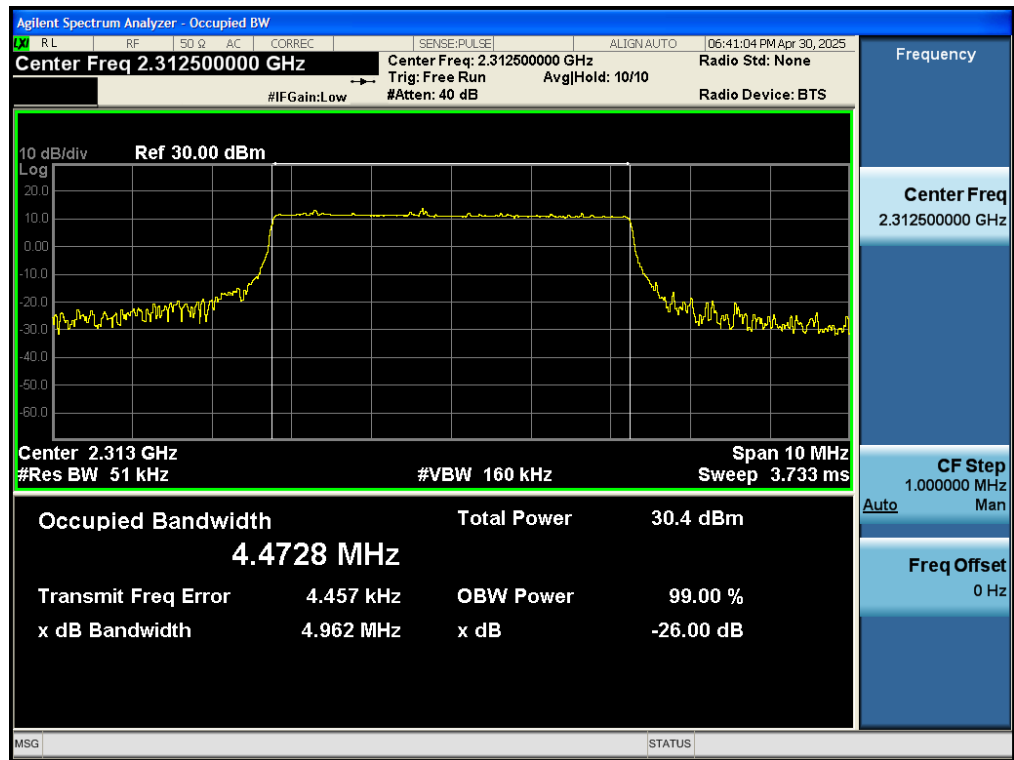
Test_Graph_band40(2305-2315)_2310MHz_5M_16QAM_25RB#LOW_OBW&EBW



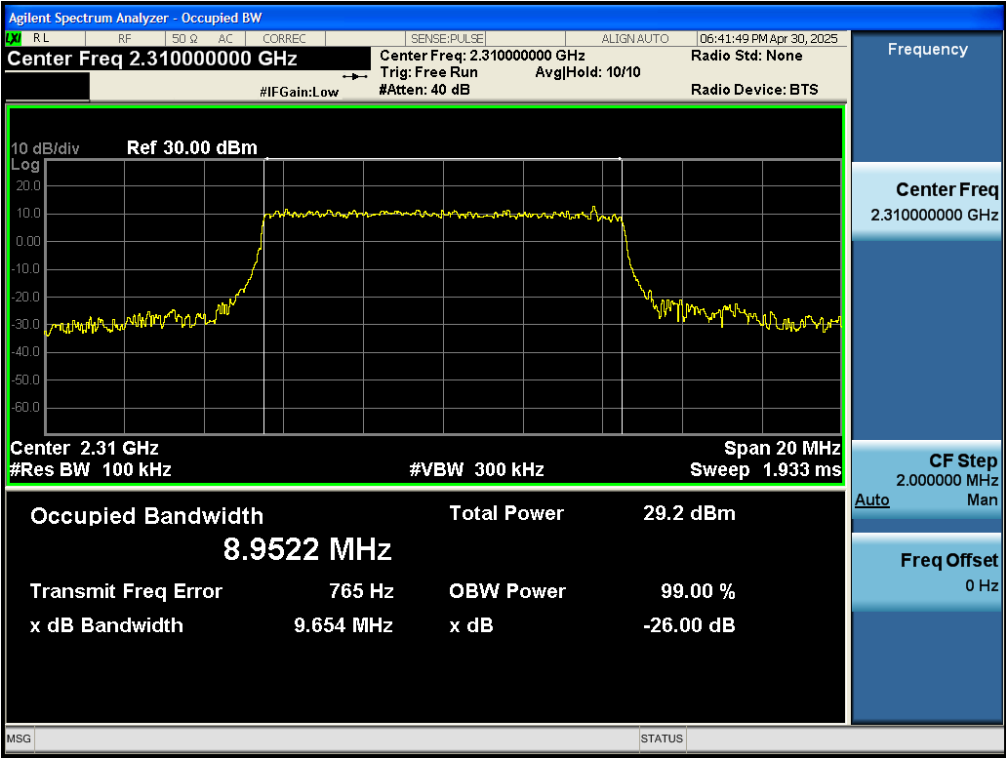
Test_Graph_band40(2305-2315)_2310MHz_5M_QPSK_25RB#LOW_OBW&EBW



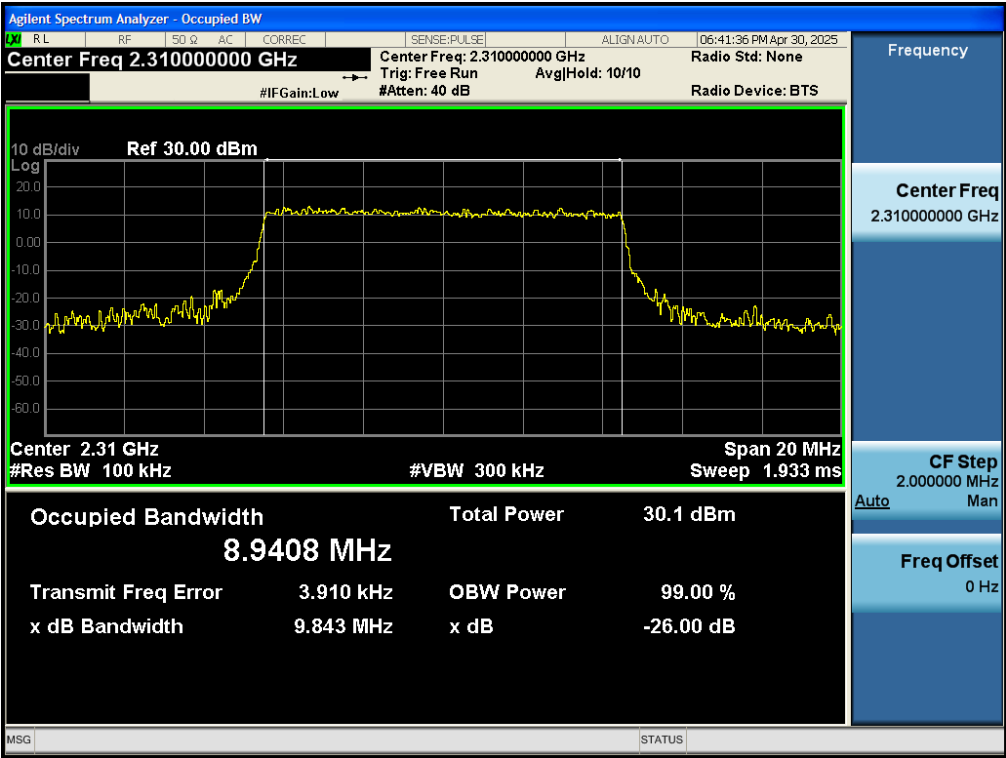
Test_Graph_band40(2305-2315)_2312.5MHz_5M_16QAM_25RB#LOW_OBW&EBW



Test_Graph_band40(2305-2315)_2312.5MHz_5M_QPSK_25RB#LOW_OBW&EBW



Test_Graph_band40(2305-2315)_2310MHz_10M_16QAM_50RB#LOW_OBW&EBW



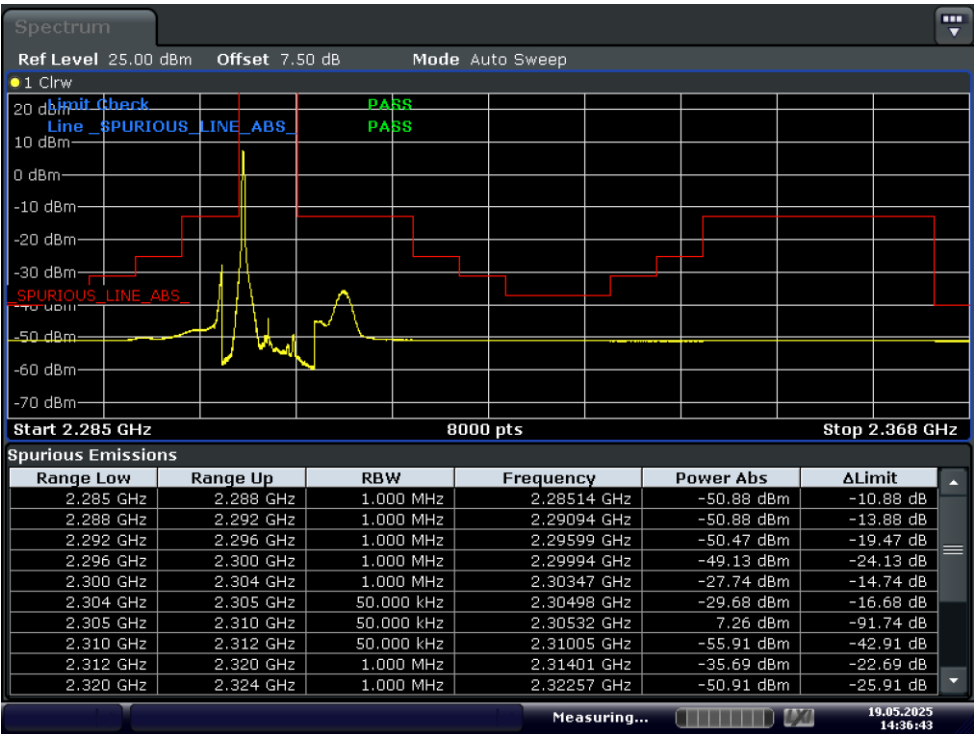
Test_Graph_band40(2305-2315)_2310MHz_10M_QPSK_50RB#LOW_OBW&EBW

Appendix C: Band edge emissions

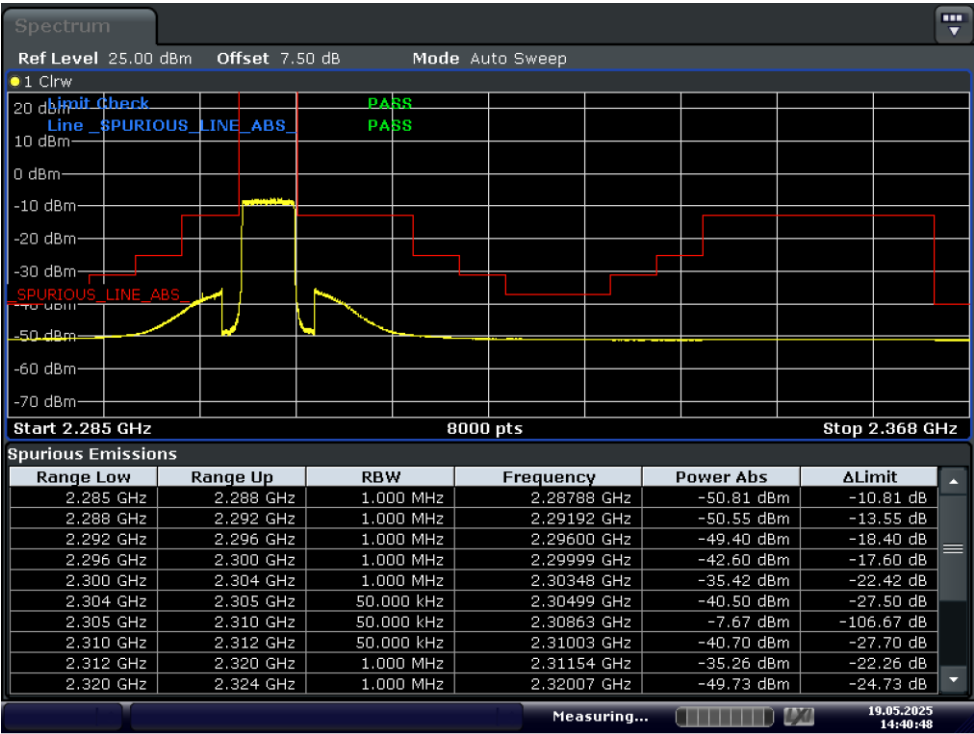
Test Result

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Conclusion
40(2305-2315)	5	2307.5	QPSK	1	LOW	Pass
40(2305-2315)	5	2307.5	QPSK	25	LOW	Pass
40(2305-2315)	5	2307.5	16QAM	1	LOW	Pass
40(2305-2315)	5	2307.5	16QAM	25	LOW	Pass
40(2305-2315)	5	2312.5	QPSK	1	HIGH	Pass
40(2305-2315)	5	2312.5	QPSK	25	LOW	Pass
40(2305-2315)	5	2312.5	16QAM	1	HIGH	Pass
40(2305-2315)	5	2312.5	16QAM	25	LOW	Pass
40(2305-2315)	10	2310	QPSK	1	LOW	Pass
40(2305-2315)	10	2310	QPSK	50	LOW	Pass
40(2305-2315)	10	2310	16QAM	1	LOW	Pass
40(2305-2315)	10	2310	16QAM	50	LOW	Pass

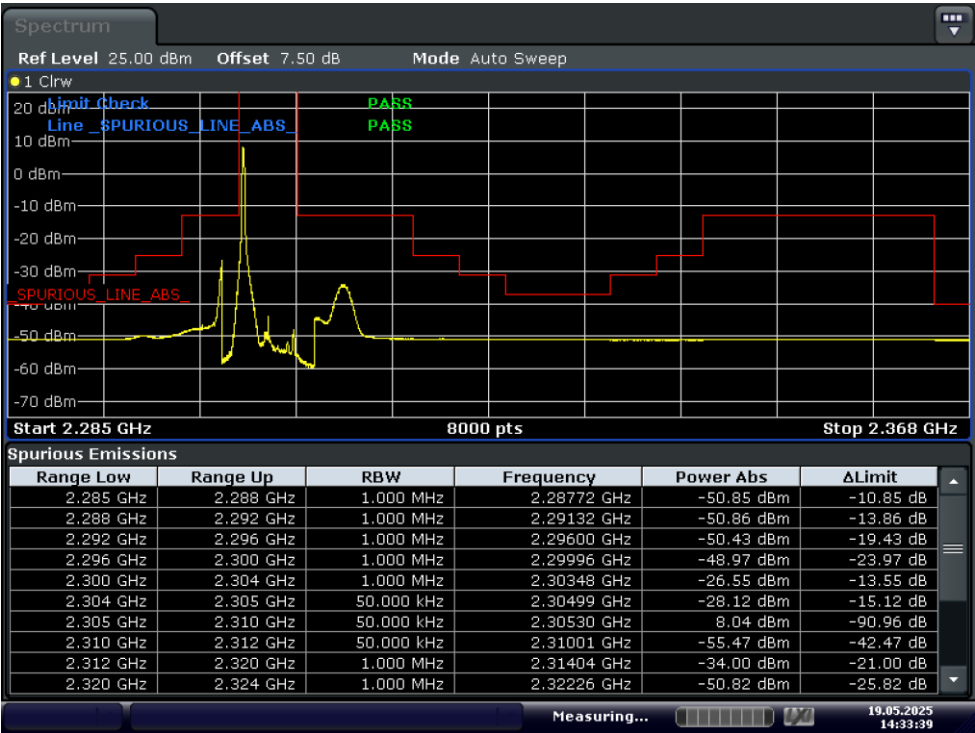
Test Graphs



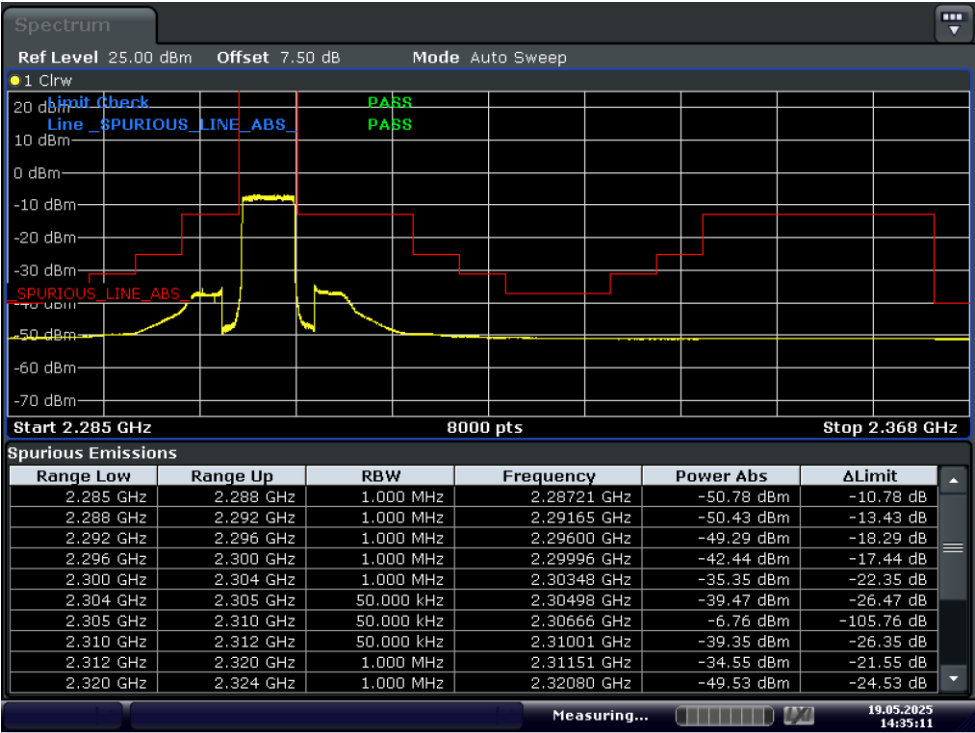
Test_Graph_band40(2305-2315)_2307.5MHz_5M_16QAM_1RB#LOW_Band edge



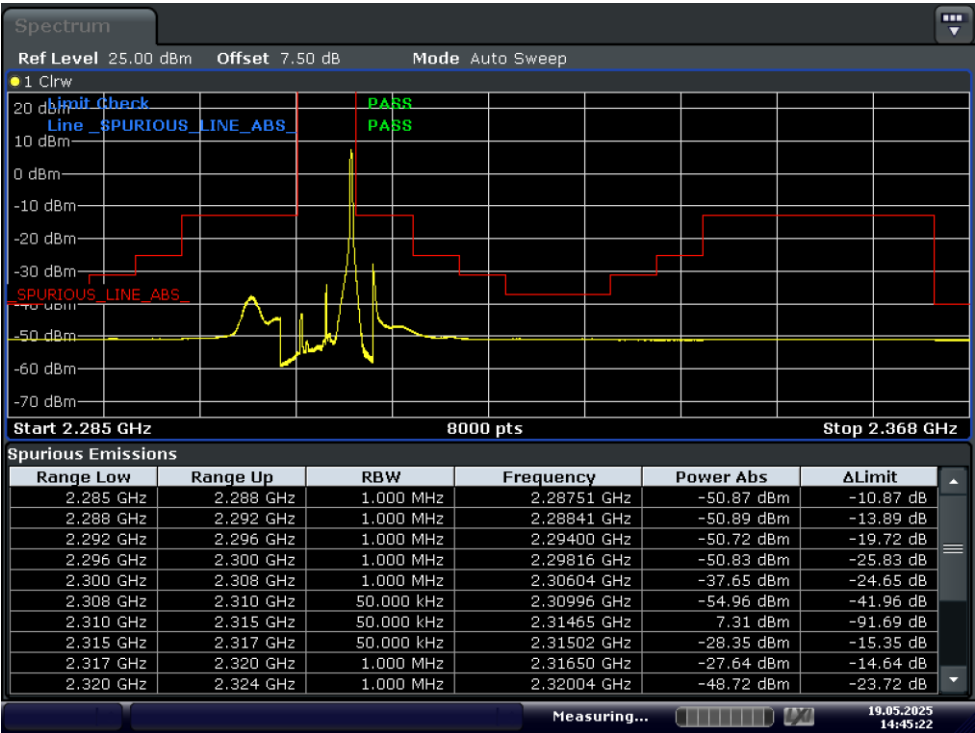
Test_Graph_band40(2305-2315)_2307.5MHz_5M_16QAM_25RB#LOW_Band edge



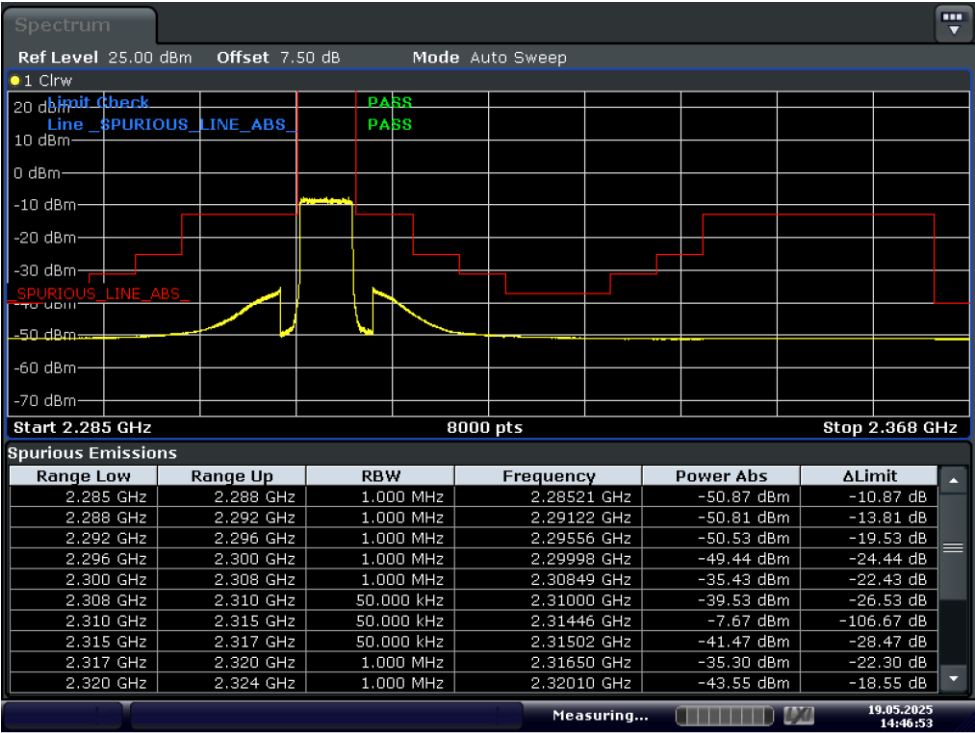
Test_Graph_band40(2305-2315)_2307.5MHz_5M_QPSK_1RB#LOW_Band edge



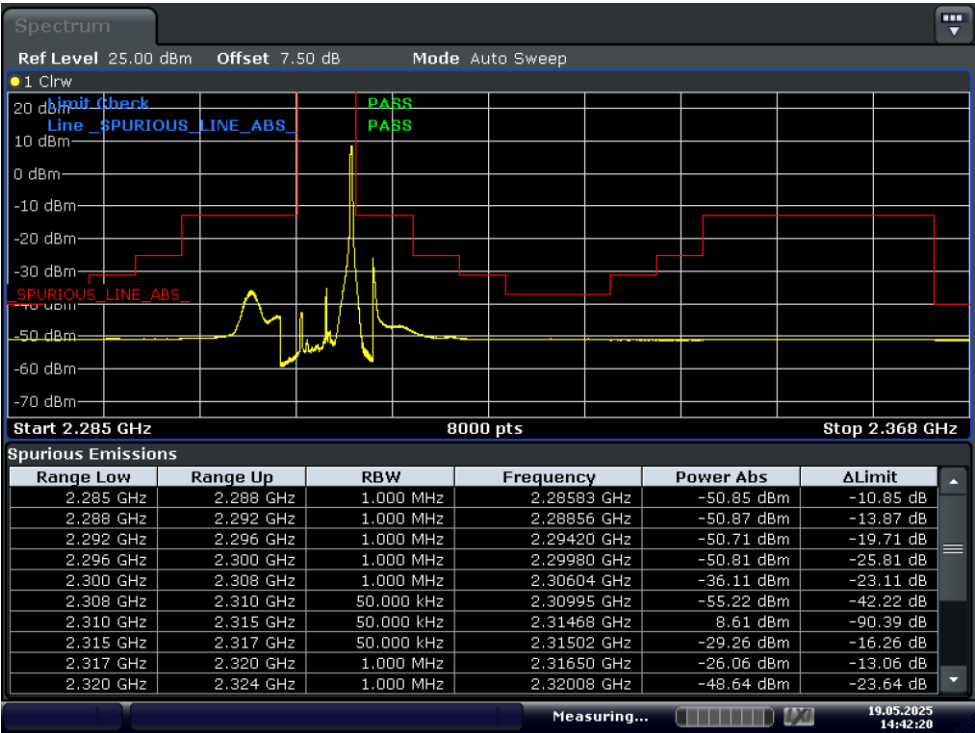
Test_Graph_band40(2305-2315)_2307.5MHz_5M_QPSK_25RB#LOW_Band edge



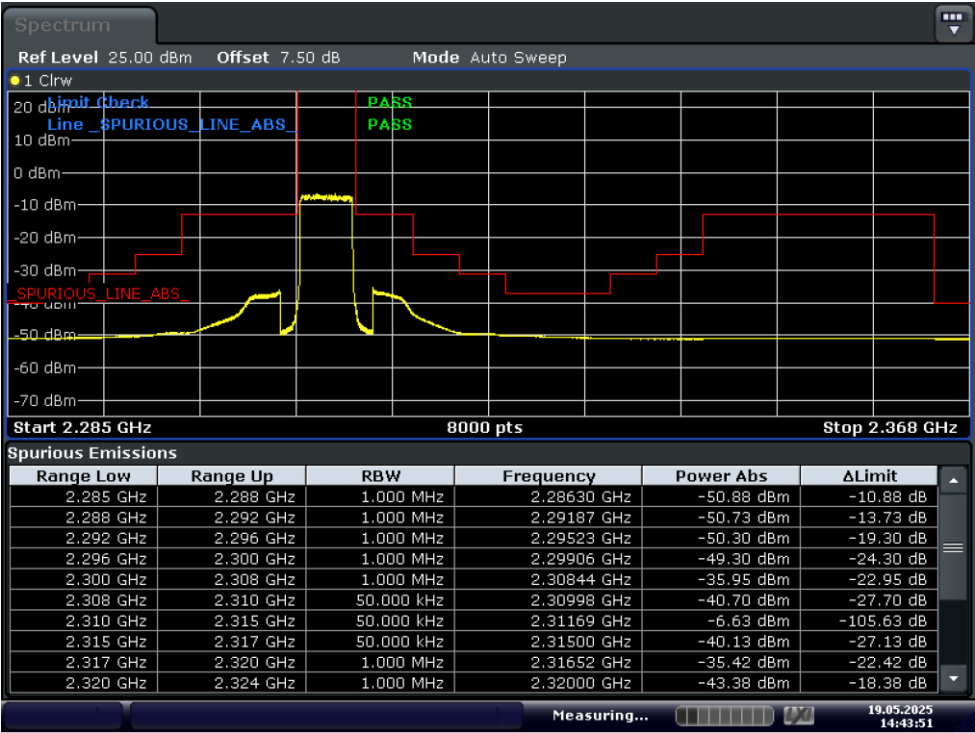
Test_Graph_band40(2305-2315)_2312.5MHz_5M_16QAM_1RB#HIGH_Band edge



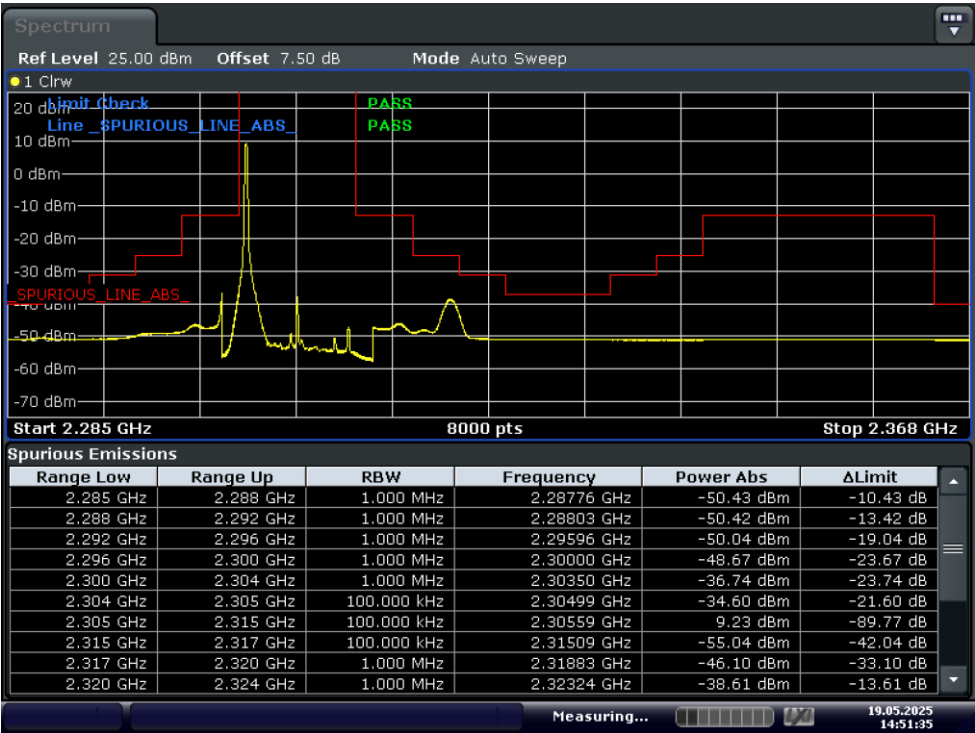
Test_Graph_band40(2305-2315)_2312.5MHz_5M_16QAM_25RB#LOW_Band edge



Test_Graph_band40(2305-2315)_2312.5MHz_5M_QPSK_1RB#HIGH_Band edge



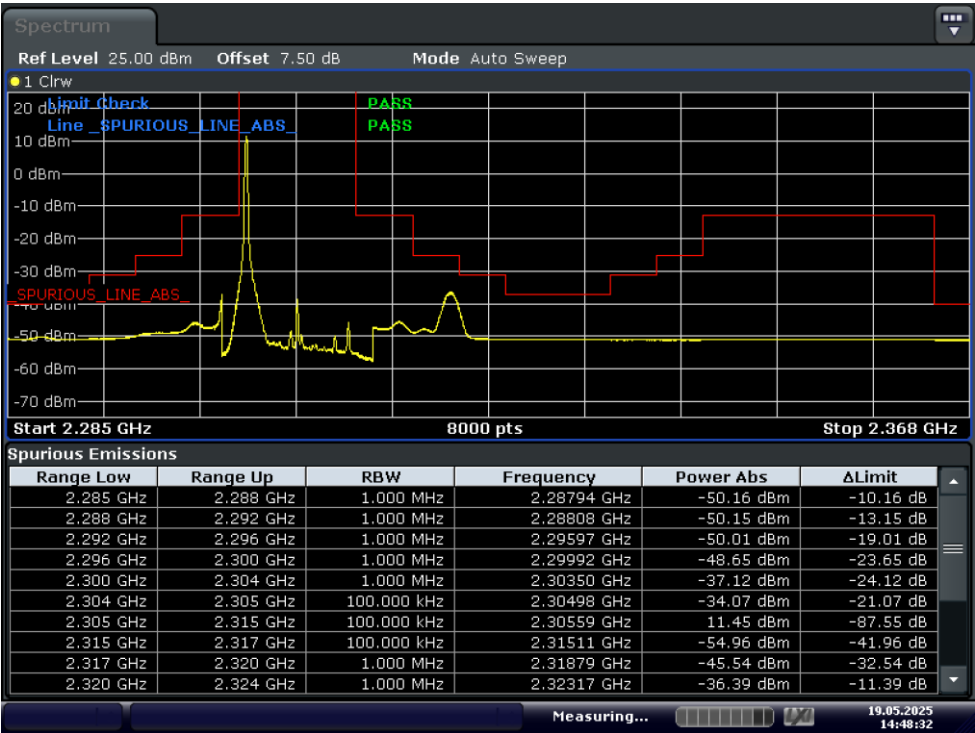
Test_Graph_band40(2305-2315)_2312.5MHz_5M_QPSK_25RB#LOW_Band edge



Test_Graph_band40(2305-2315)_2310MHz_10M_16QAM_1RB#LOW_Band edge



Test_Graph_band40(2305-2315)_2310MHz_10M_16QAM_50RB#LOW_Band edge



Test_Graph_band40(2305-2315)_2310MHz_10M_QPSK_1RB#LOW_Band edge



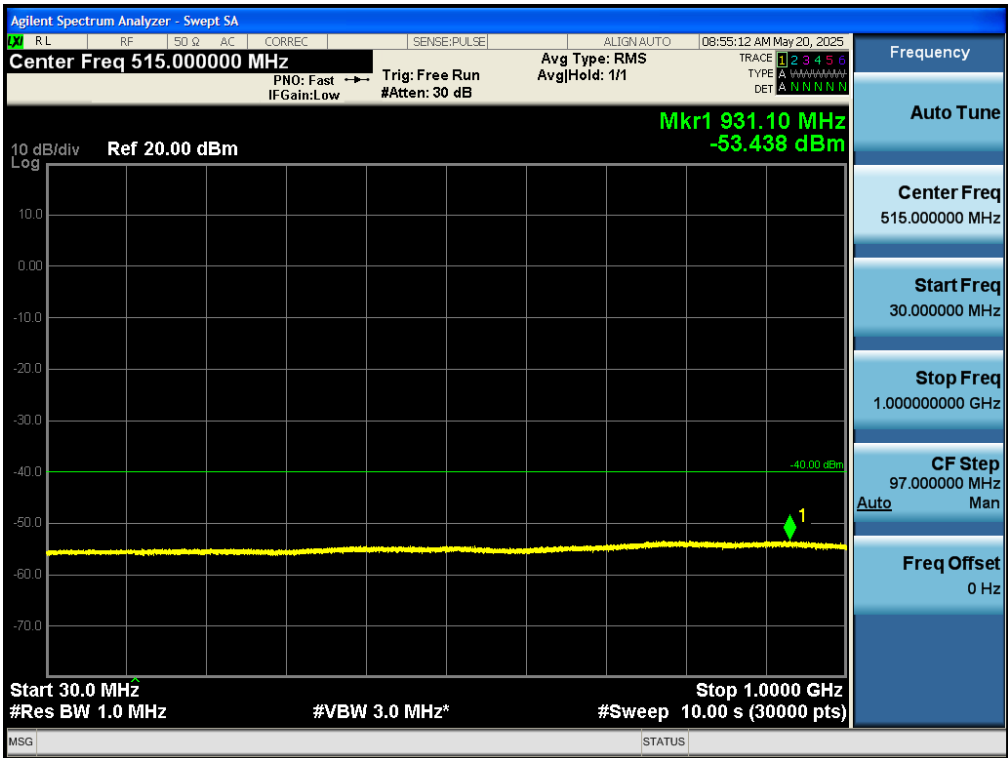
Test_Graph_band40(2305-2315)_2310MHz_10M_QPSK_50RB#LOW_Band edge

Appendix D: Unwanted spurious emissions at antenna terminals

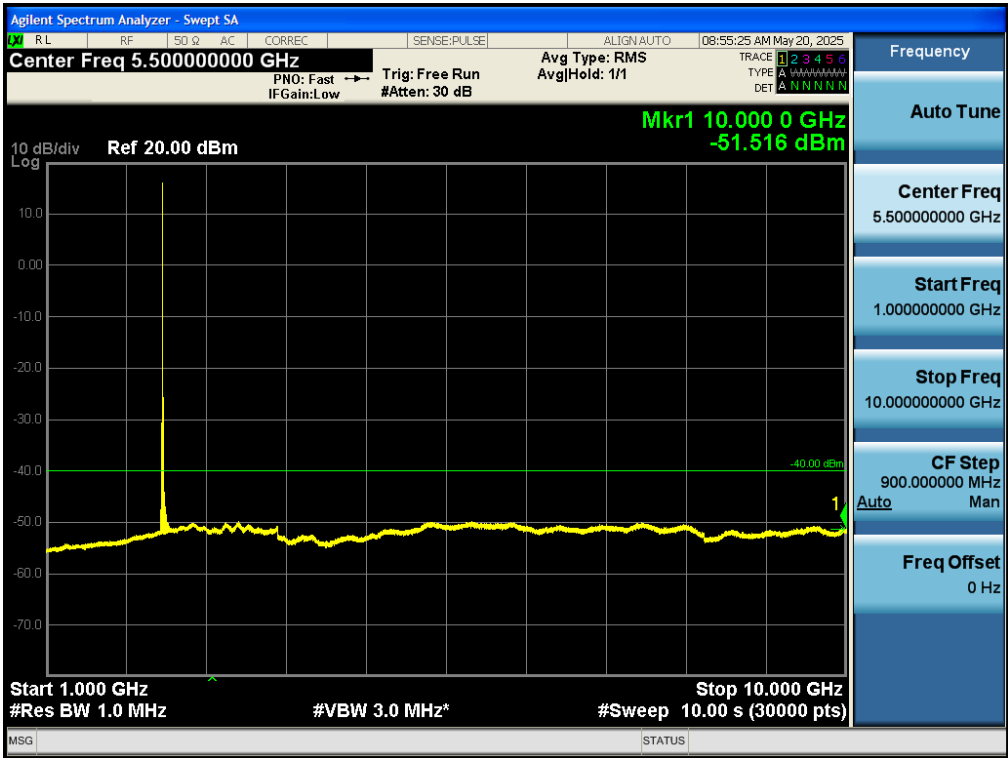
Test Result

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Conclusion
40(2305-2315)	5	2307.5	QPSK	25	LOW	Pass
40(2305-2315)	5	2310	QPSK	25	LOW	Pass
40(2305-2315)	5	2312.5	QPSK	25	LOW	Pass
40(2305-2315)	10	2310	QPSK	50	LOW	Pass

Test Graphs



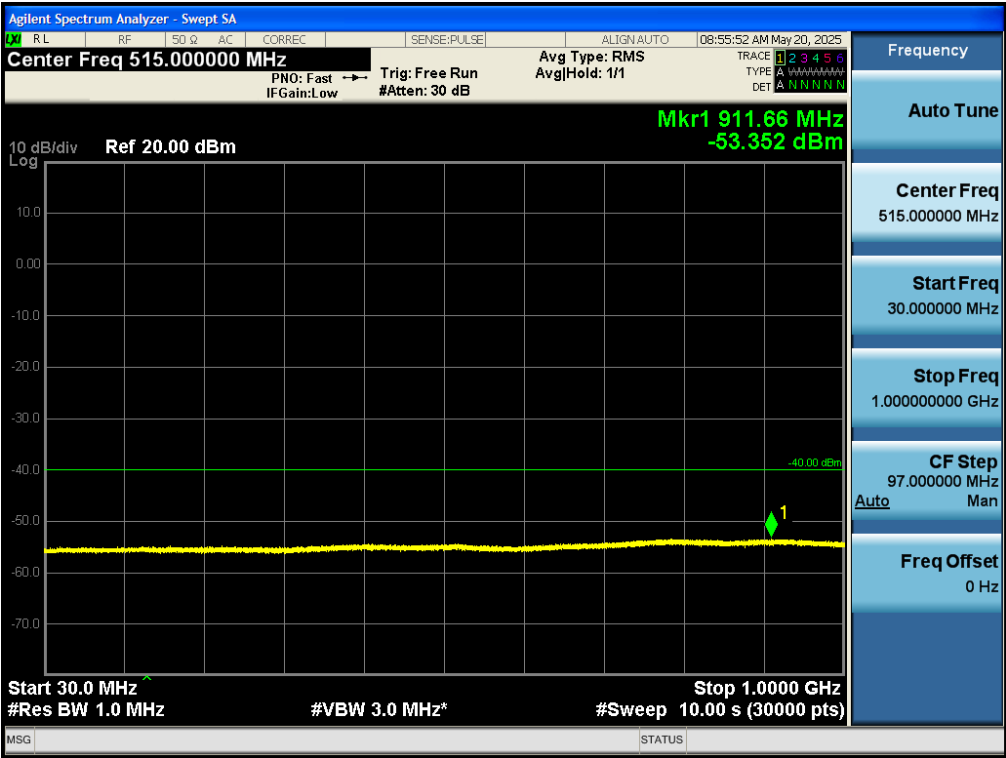
Test_Graph_band40(2305-
2315)_2307.5MHz_5M_QPSK_25RB#LOW_30M_1G_TX



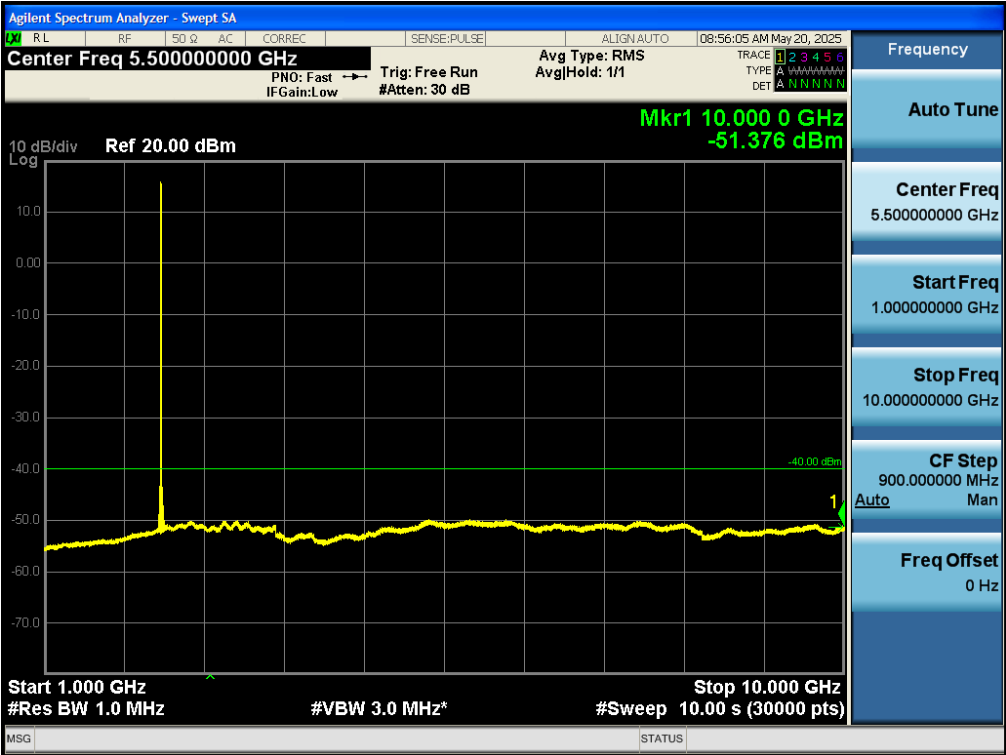
Test_Graph_band40(2305-
2315)_2307.5MHz_5M_QPSK_25RB#LOW_1G_10G_TX



Test_Graph_band40(2305-
2315)_2307.5MHz_5M_QPSK_25RB#LOW_10G_26.0G_TX



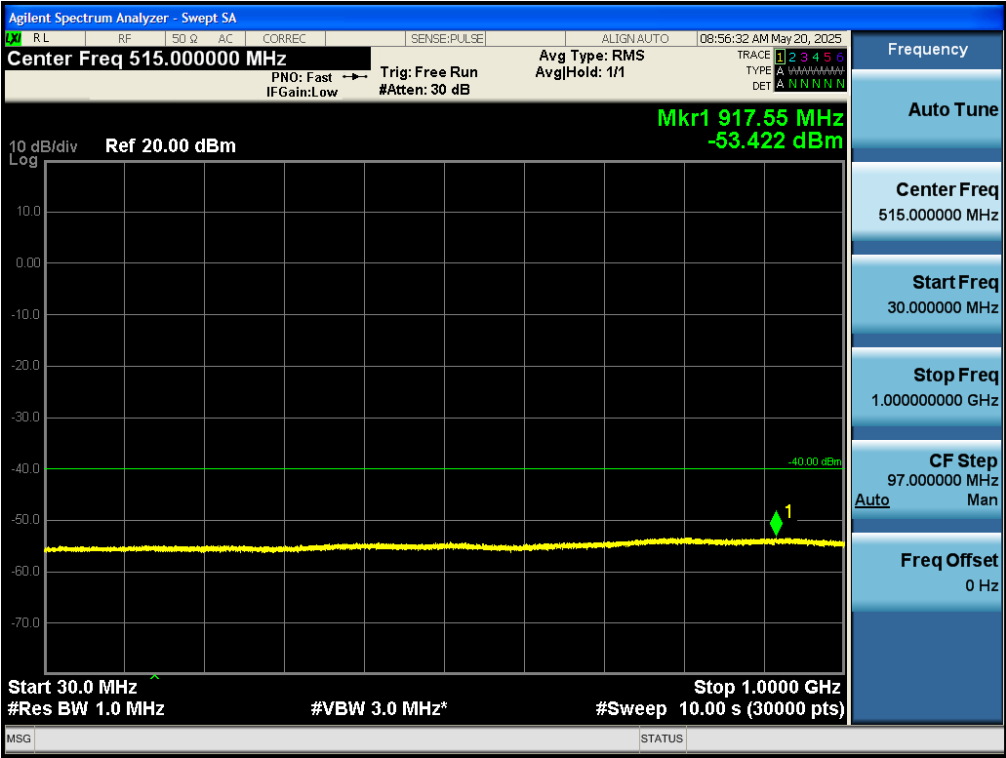
Test_Graph_band40(2305-2315)_2310MHz_5M_QPSK_25RB#LOW_30M_1G_TX



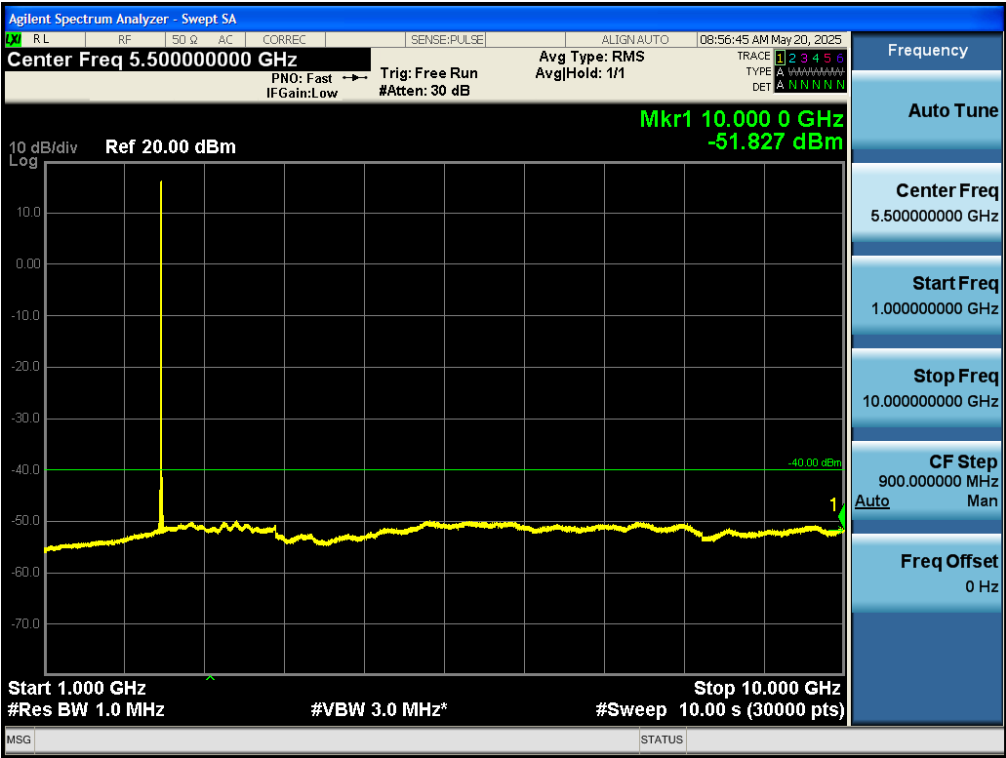
Test_Graph_band40(2305-2315)_2310MHz_5M_QPSK_25RB#LOW_1G_10G_TX



Test_Graph_band40(2305-2315)_2310MHz_5M_QPSK_25RB#LOW_10G_26.0G_TX



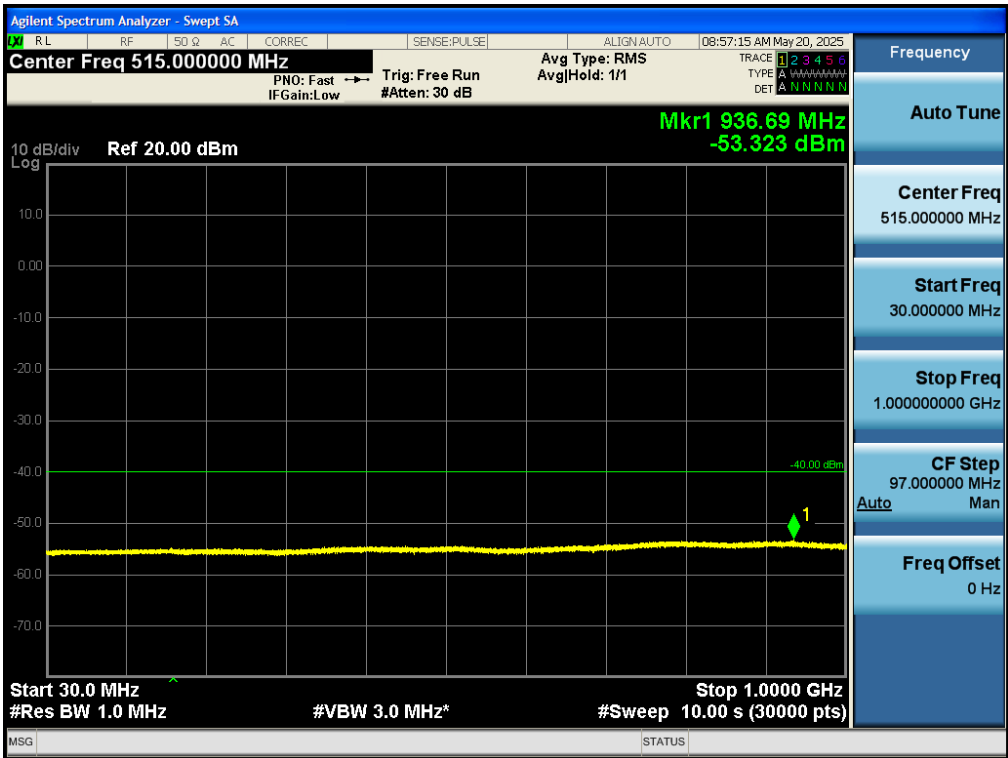
Test_Graph_band40(2305-2315)_2312.5MHz_5M_QPSK_25RB#LOW_30M_1G_TX



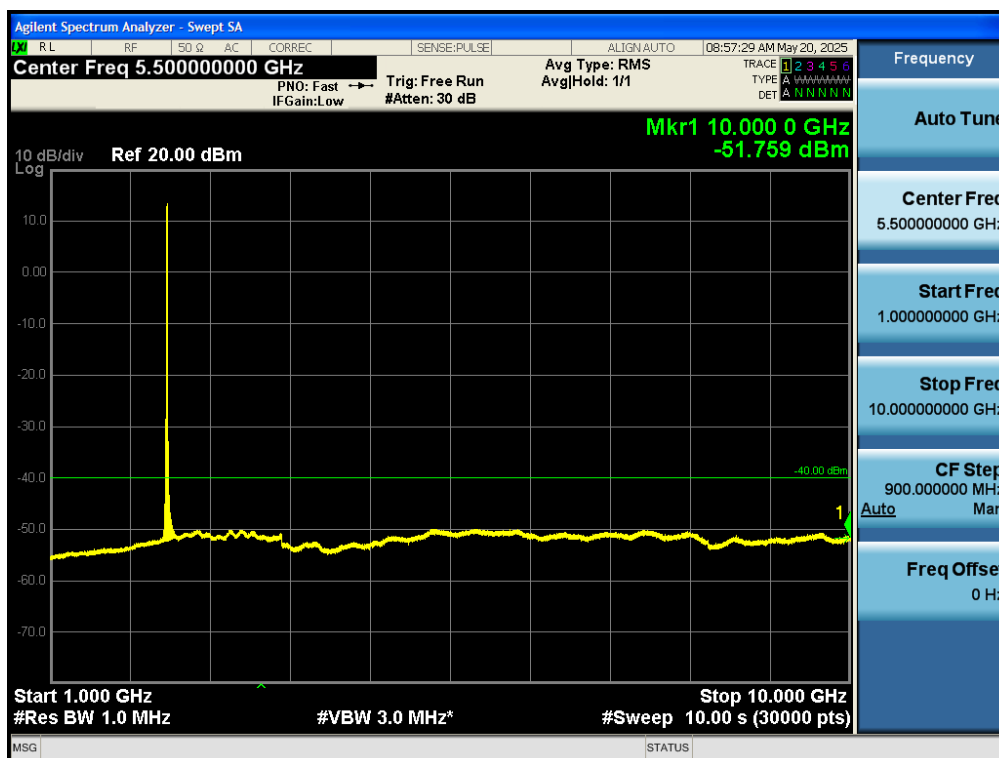
Test_Graph_band40(2305-2315)_2312.5MHz_5M_QPSK_25RB#LOW_1G_10G_TX



Test_Graph_band40(2305-2315)_2312.5MHz_5M_QPSK_25RB#LOW_10G_26.0G_TX



Test_Graph_band40(2305-2315)_2310MHz_10M_QPSK_50RB#LOW_30M_1G_TX



Test_Graph_band40(2305-
2315)_2310MHz_10M_QPSK_50RB#LOW_1G_10G_TX



Test_Graph_band40(2305-
2315)_2310MHz_10M_QPSK_50RB#LOW_10G_26.0G_TX

Appendix E: Frequency stability

Test Result

Test Conditions (LTE Band 40(2305-2315)(QPSK) /BW 10MHz)		Frequency Range		Frequency Error	Verdict
Temperature (°C)	Voltage (Volt)	>2305 Freq Reading @ Low End (MHz)	<2315 Freq Reading @ High End (MHz)	Middle Channel ≤2.5ppm	
50	Normal Voltage	2305.5768	2314.4617	0.0060	PASS
40	Normal Voltage	2305.5768	2314.4618	0.0061	
30	Normal Voltage	2305.5769	2314.4619	0.0067	
20(Ref.)	Normal Voltage	2305.5769	2314.4618	0.0070	
10	Normal Voltage	2305.5769	2314.4618	0.0065	
0	Normal Voltage	2305.5769	2314.4619	0.0065	
-10	Normal Voltage	2305.5769	2314.4619	0.0063	
-20	Normal Voltage	2305.5770	2314.4619	0.0068	
-30	Normal Voltage	2305.5769	2314.4619	0.0067	
20	+15%	2305.5770	2314.4618	0.0066	
20	-15%	2305.5769	2314.4618	0.0066	
20	Battery End Point	2305.5769	2314.4619	0.0061	