

Appendix Test Data for LTE band 13(Conducted Measurement)

Product Name: 4G Poc Radio

Trade Mark: N/A

Test Model: N180

FCC ID: 2BQXTP360N

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	RB Size	RB Offset	Average Power (dBm)	Peak Power (dBm)	PAR (dB)	Limit (dB)	AntGain (dBi)	ERP (dBm)	Limit (dBm)	Conclusion
13	5	779.5	QPSK	25	LOW	23.21	29.62	6.41	13	0.22	21.28	34.8	Pass
13	5	779.5	QPSK	12	LOW	23.04	29.02	5.98	13	0.22	21.11	34.8	Pass
13	5	779.5	QPSK	12	MID	23.03	28.99	5.96	13	0.22	21.1	34.8	Pass
13	5	779.5	QPSK	12	HIGH	23.4	29.46	6.06	13	0.22	21.47	34.8	Pass
13	5	779.5	QPSK	1	LOW	23.94	29.32	5.38	13	0.22	22.01	34.8	Pass
13	5	779.5	QPSK	1	MID	24.26	29.5	5.24	13	0.22	22.33	34.8	Pass
13	5	779.5	QPSK	1	HIGH	24.42	29.52	5.10	13	0.22	22.49	34.8	Pass
13	5	779.5	16QAM	25	LOW	22.25	29.34	7.09	13	0.22	20.32	34.8	Pass
13	5	779.5	16QAM	12	LOW	22.03	29.07	7.04	13	0.22	20.1	34.8	Pass
13	5	779.5	16QAM	12	MID	22.03	28.83	6.80	13	0.22	20.1	34.8	Pass
13	5	779.5	16QAM	12	HIGH	22.39	29.28	6.89	13	0.22	20.46	34.8	Pass
13	5	779.5	16QAM	1	LOW	23.1	29.27	6.17	13	0.22	21.17	34.8	Pass
13	5	779.5	16QAM	1	MID	23.43	29.47	6.04	13	0.22	21.5	34.8	Pass
13	5	779.5	16QAM	1	HIGH	23.63	29.53	5.90	13	0.22	21.7	34.8	Pass
13	5	782	QPSK	25	LOW	23.37	29.51	6.14	13	0.22	21.44	34.8	Pass
13	5	782	QPSK	12	LOW	23.38	29.23	5.85	13	0.22	21.45	34.8	Pass
13	5	782	QPSK	12	MID	23.38	29.24	5.86	13	0.22	21.45	34.8	Pass
13	5	782	QPSK	12	HIGH	23.48	29.34	5.86	13	0.22	21.55	34.8	Pass
13	5	782	QPSK	1	LOW	24.25	30.11	5.86	13	0.22	22.32	34.8	Pass
13	5	782	QPSK	1	MID	24.49	30.08	5.59	13	0.22	22.56	34.8	Pass
13	5	782	QPSK	1	HIGH	24.35	30.18	5.83	13	0.22	22.42	34.8	Pass
13	5	782	16QAM	25	LOW	22.44	29.86	7.42	13	0.22	20.51	34.8	Pass





Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)	Peak Power (dBm)	PAR (dB)	Limit (dB)	AntGain (dBi)	ERP (dBm)	Limit (dBm)	Conclusion
13	5	782	16QAM	12	LOW	22.41	29.88	7.47	13	0.22	20.48	34.8	Pass
13	5	782	16QAM	12	MID	22.41	29.77	7.36	13	0.22	20.48	34.8	Pass
13	5	782	16QAM	12	HIGH	22.53	29.93	7.40	13	0.22	20.6	34.8	Pass
13	5	782	16QAM	1	LOW	23.21	28.74	5.53	13	0.22	21.28	34.8	Pass
13	5	782	16QAM	1	MID	23.47	28.89	5.42	13	0.22	21.54	34.8	Pass
13	5	782	16QAM	1	HIGH	23.37	28.88	5.51	13	0.22	21.44	34.8	Pass
13	5	784.5	QPSK	25	LOW	23.32	29.33	6.01	13	0.22	21.39	34.8	Pass
13	5	784.5	QPSK	12	LOW	23.45	29.71	6.26	13	0.22	21.52	34.8	Pass
13	5	784.5	QPSK	12	MID	23.45	29.81	6.36	13	0.22	21.52	34.8	Pass
13	5	784.5	QPSK	12	HIGH	23.17	29.56	6.39	13	0.22	21.24	34.8	Pass
13	5	784.5	QPSK	1	LOW	24.48	29.7	5.22	13	0.22	22.55	34.8	Pass
13	5	784.5	QPSK	1	MID	24.35	29.73	5.38	13	0.22	22.42	34.8	Pass
13	5	784.5	QPSK	1	HIGH	23.93	29.42	5.49	13	0.22	22	34.8	Pass
13	5	784.5	16QAM	25	LOW	22.32	30	7.68	13	0.22	20.39	34.8	Pass
13	5	784.5	16QAM	12	LOW	22.51	29.23	6.72	13	0.22	20.58	34.8	Pass
13	5	784.5	16QAM	12	MID	22.52	29.25	6.73	13	0.22	20.59	34.8	Pass
13	5	784.5	16QAM	12	HIGH	22.23	29.19	6.96	13	0.22	20.3	34.8	Pass
13	5	784.5	16QAM	1	LOW	23.87	29.49	5.62	13	0.22	21.94	34.8	Pass
13	5	784.5	16QAM	1	MID	23.72	29.5	5.78	13	0.22	21.79	34.8	Pass
13	5	784.5	16QAM	1	HIGH	23.3	29.19	5.89	13	0.22	21.37	34.8	Pass
13	10	782	QPSK	50	LOW	23.06	29.24	6.18	13	0.22	21.13	34.8	Pass
13	10	782	QPSK	25	LOW	23.09	29.45	6.36	13	0.22	21.16	34.8	Pass
13	10	782	QPSK	25	MID	23.08	29.52	6.44	13	0.22	21.15	34.8	Pass
13	10	782	QPSK	25	HIGH	23.2	29.62	6.42	13	0.22	21.27	34.8	Pass
13	10	782	QPSK	1	LOW	23.84	28.88	5.04	13	0.22	21.91	34.8	Pass
13	10	782	QPSK	1	MID	24.34	29.21	4.87	13	0.22	22.41	34.8	Pass
13	10	782	QPSK	1	HIGH	23.81	28.86	5.05	13	0.22	21.88	34.8	Pass
13	10	782	16QAM	25	LOW	22.13	29.33	7.20	13	0.22	20.2	34.8	Pass
13	10	782	16QAM	25	MID	22.13	29.43	7.30	13	0.22	20.2	34.8	Pass
13	10	782	16QAM	25	HIGH	22.28	29.56	7.28	13	0.22	20.35	34.8	Pass
13	10	782	16QAM	1	LOW	23.51	29.8	6.29	13	0.22	21.58	34.8	Pass
13	10	782	16QAM	1	MID	24.02	29.97	5.95	13	0.22	22.09	34.8	Pass
13	10	782	16QAM	1	HIGH	23.5	29.81	6.31	13	0.22	21.57	34.8	Pass





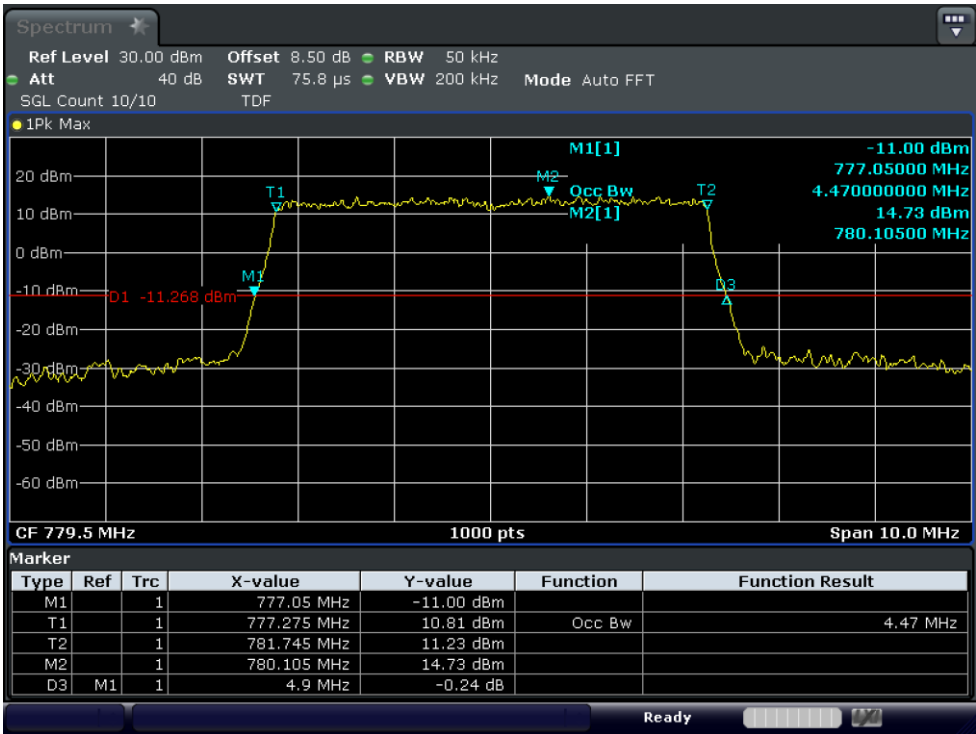
Appendix B: Occupied bandwidth

Test Result

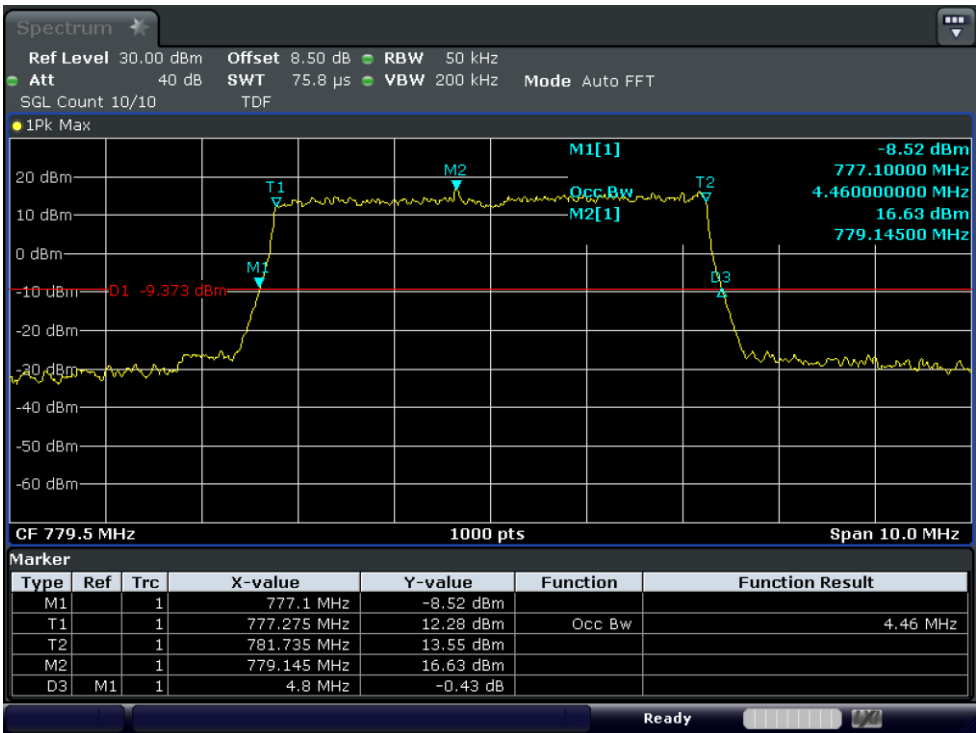
Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Occupied Bandwidth (MHz)	Emission Bandwidth (MHz)	Limit
13	5	779.5	QPSK	25	LOW	4.46	4.8	No limit
13	5	779.5	16QAM	25	LOW	4.47	4.9	No limit
13	5	782	QPSK	25	LOW	4.48	4.85	No limit
13	5	782	16QAM	25	LOW	4.46	4.84	No limit
13	5	784.5	QPSK	25	LOW	4.48	4.85	No limit
13	5	784.5	16QAM	25	LOW	4.49	4.84	No limit
13	10	782	QPSK	50	LOW	8.92	9.46	No limit



Test Graphs

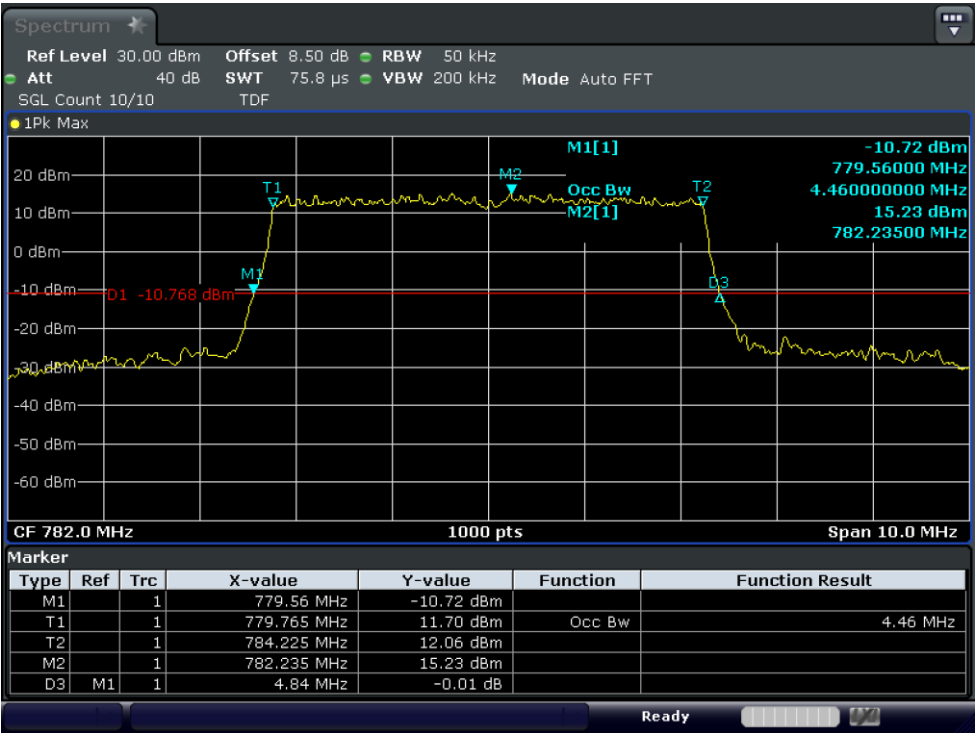


Test_Graph_band13_779.5MHz_5M_16QAM_25RB#LOW_OBW&EBW

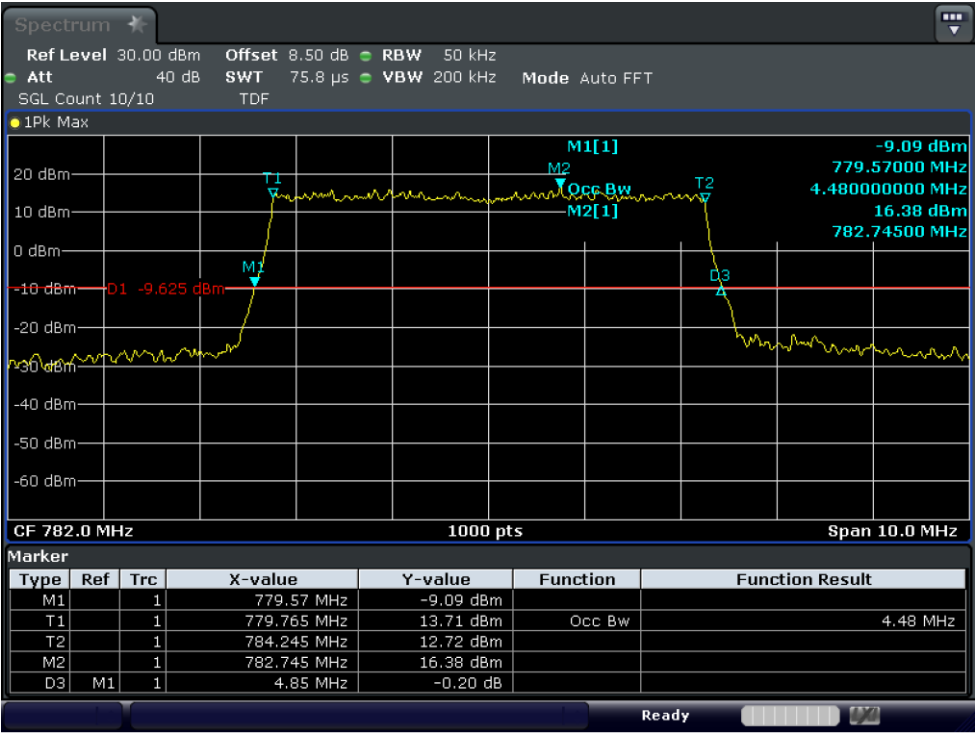


Test_Graph_band13_779.5MHz_5M_QPSK_25RB#LOW_OBW&EBW

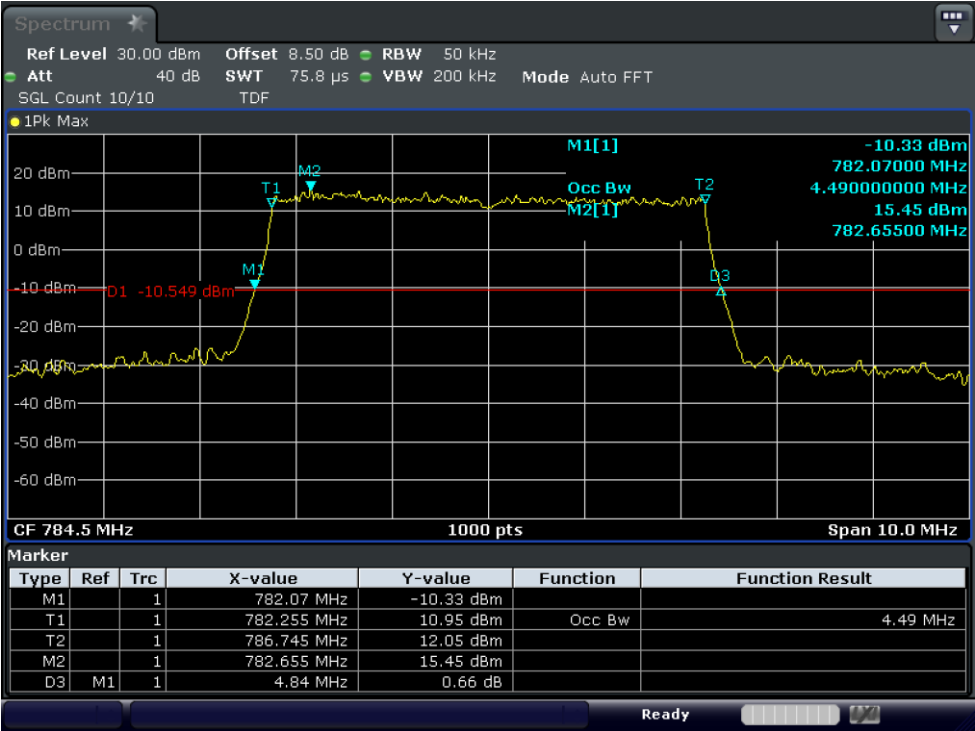




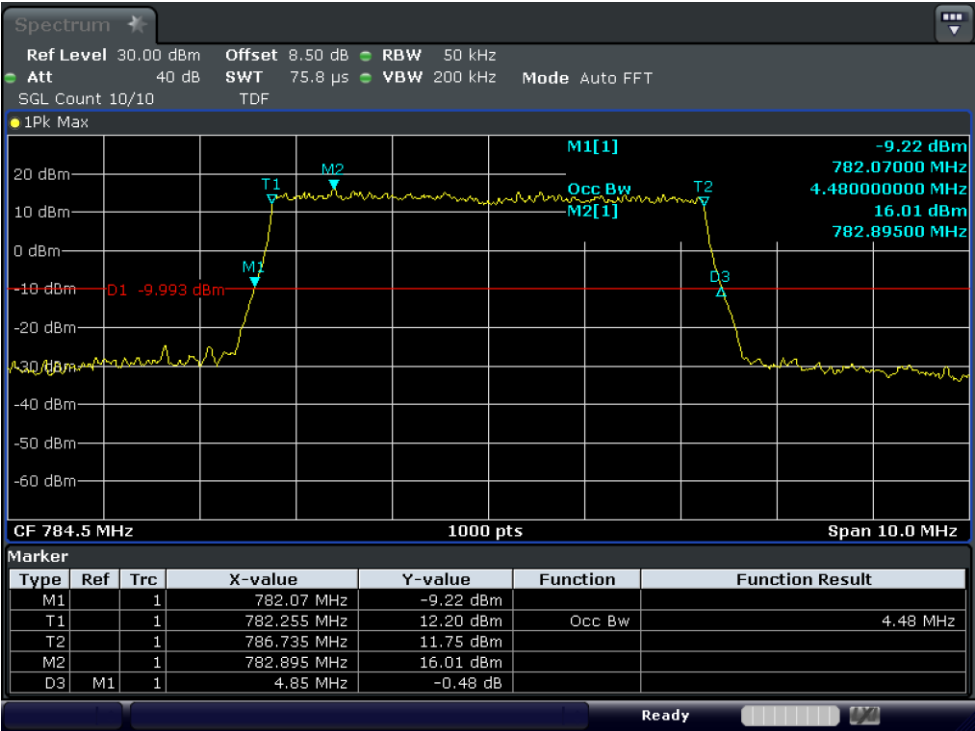
Test_Graph_band13_782MHz_5M_16QAM_25RB#LOW_OBW&EBW



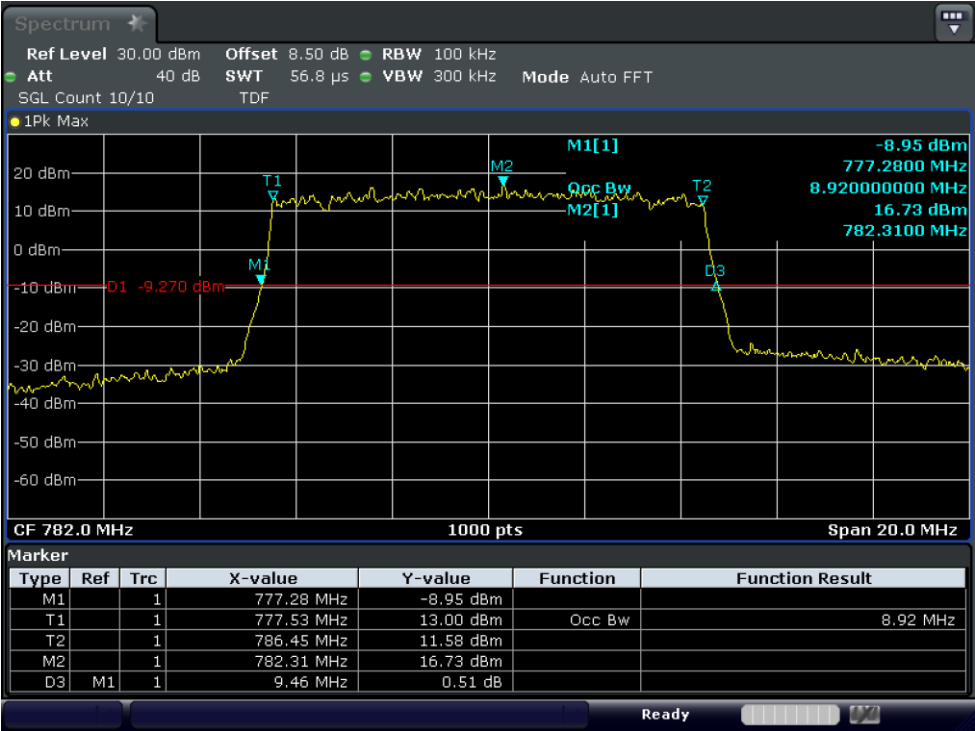
Test_Graph_band13_782MHz_5M_QPSK_25RB#LOW_OBW&EBW



Test_Graph_band13_784.5MHz_5M_16QAM_25RB#LOW_OBW&EBW



Test_Graph_band13_784.5MHz_5M_QPSK_25RB#LOW_OBW&EBW



Test_Graph_band13_782MHz_10M_QPSK_50RB#LOW_OBW&EBW





Appendix C: Band edge emissions

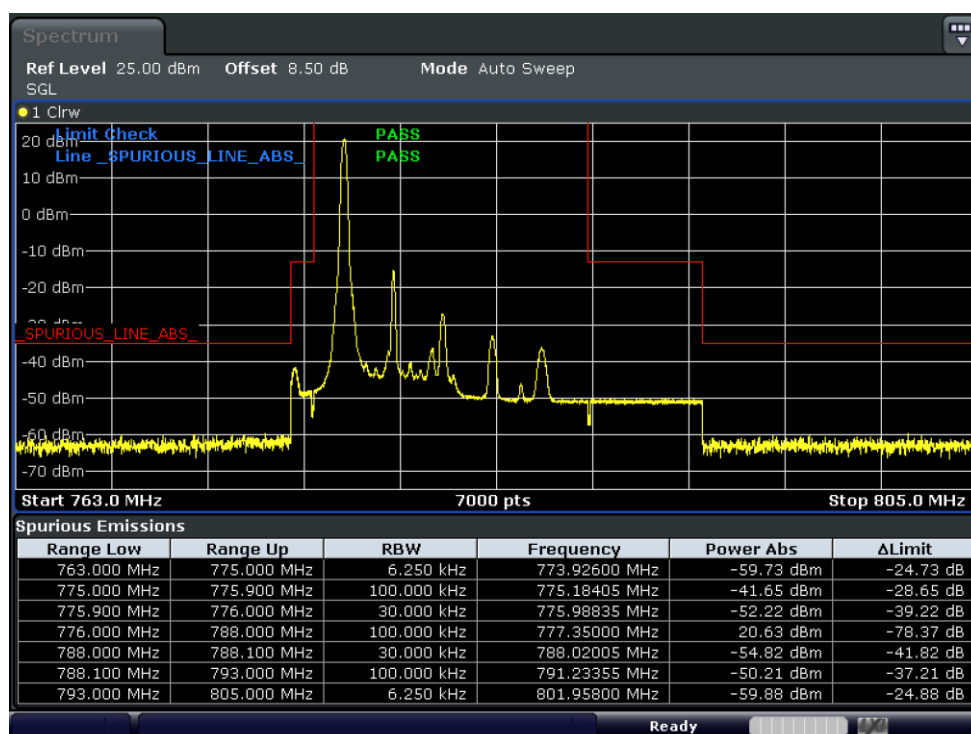
Test Result

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Conclusion
13	5	779.5	QPSK	1	LOW	Pass
13	5	779.5	QPSK	25	LOW	Pass
13	5	779.5	16QAM	1	LOW	Pass
13	5	779.5	16QAM	25	LOW	Pass
13	5	784.5	QPSK	1	HIGH	Pass
13	5	784.5	QPSK	25	LOW	Pass
13	5	784.5	16QAM	1	HIGH	Pass
13	5	784.5	16QAM	25	LOW	Pass
13	10	782	QPSK	1	LOW	Pass
13	10	782	QPSK	50	LOW	Pass
13	10	782	16QAM	1	LOW	Pass

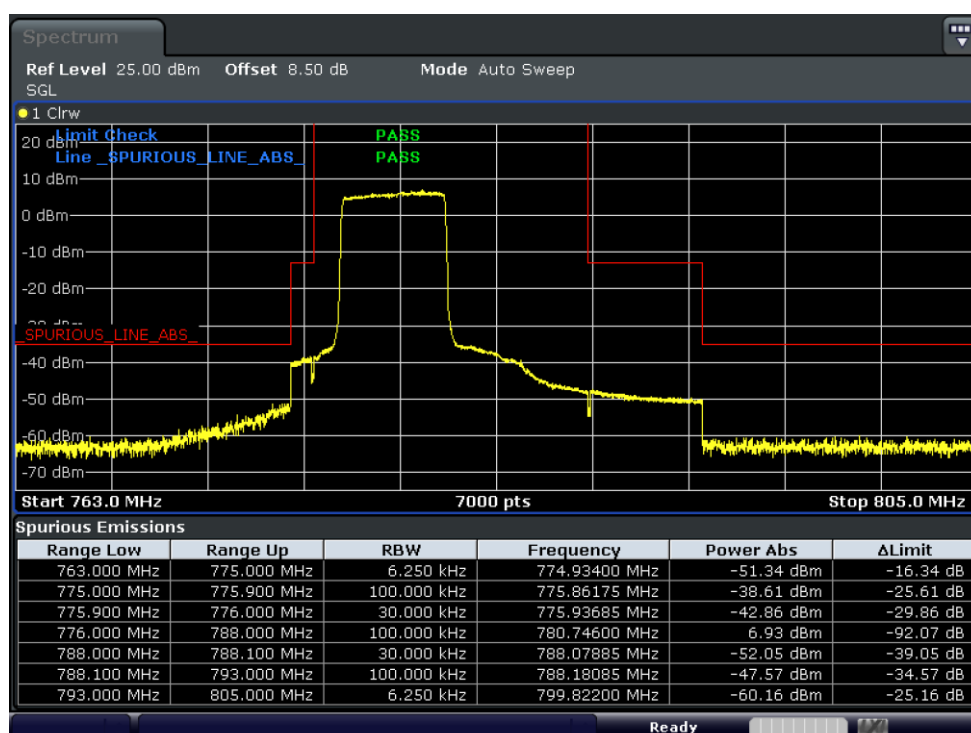




Test Graphs

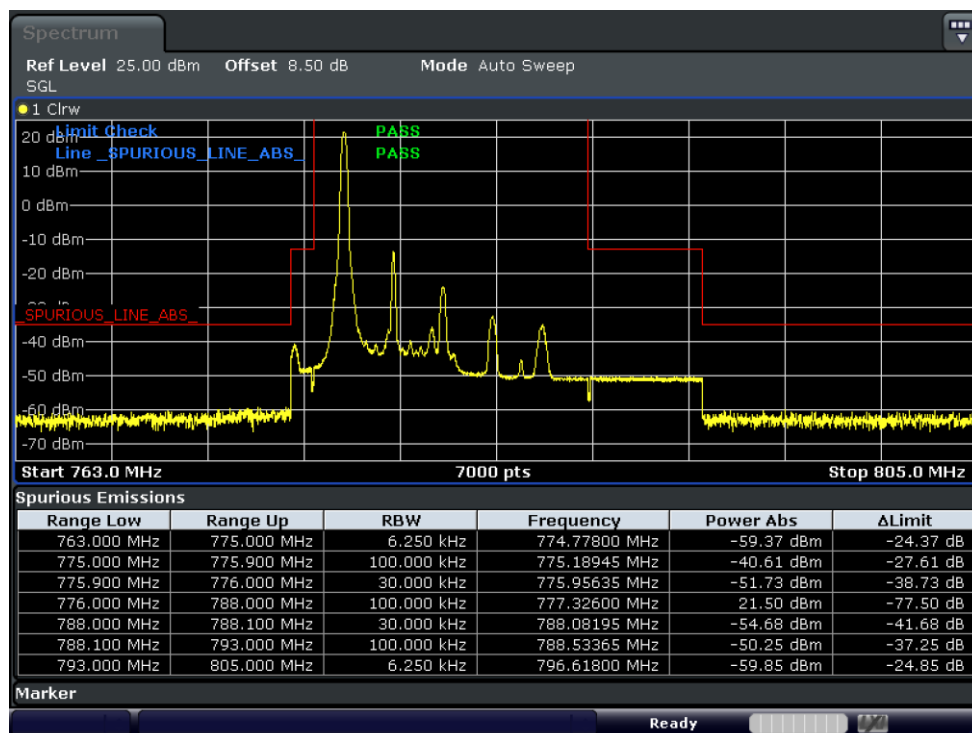


Test_Graph_band13_779.5MHz_5M_16QAM_1RB#LOW_Band edge

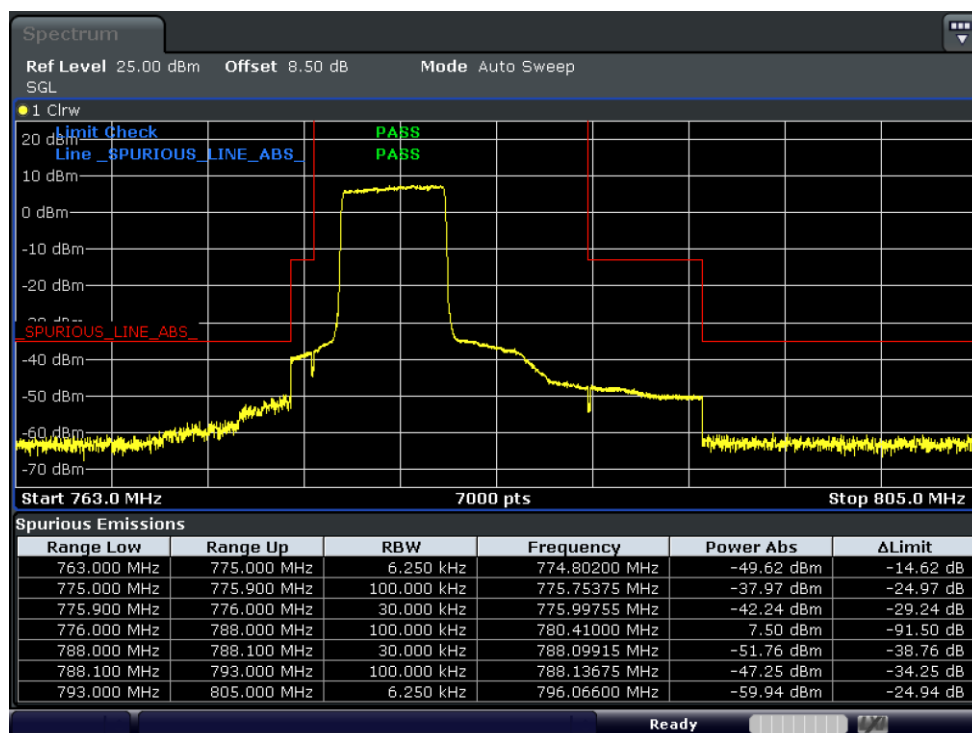


Test_Graph_band13_779.5MHz_5M_16QAM_25RB#LOW_Band edge



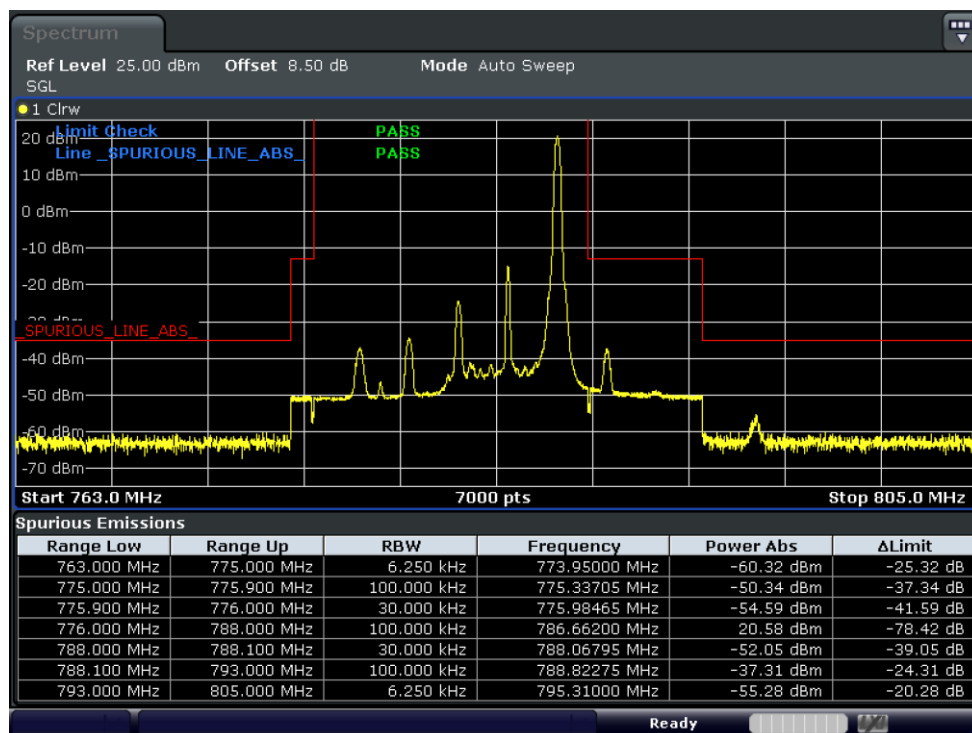


Test_Graph_band13_779.5MHz_5M_QPSK_1RB#LOW_Band edge

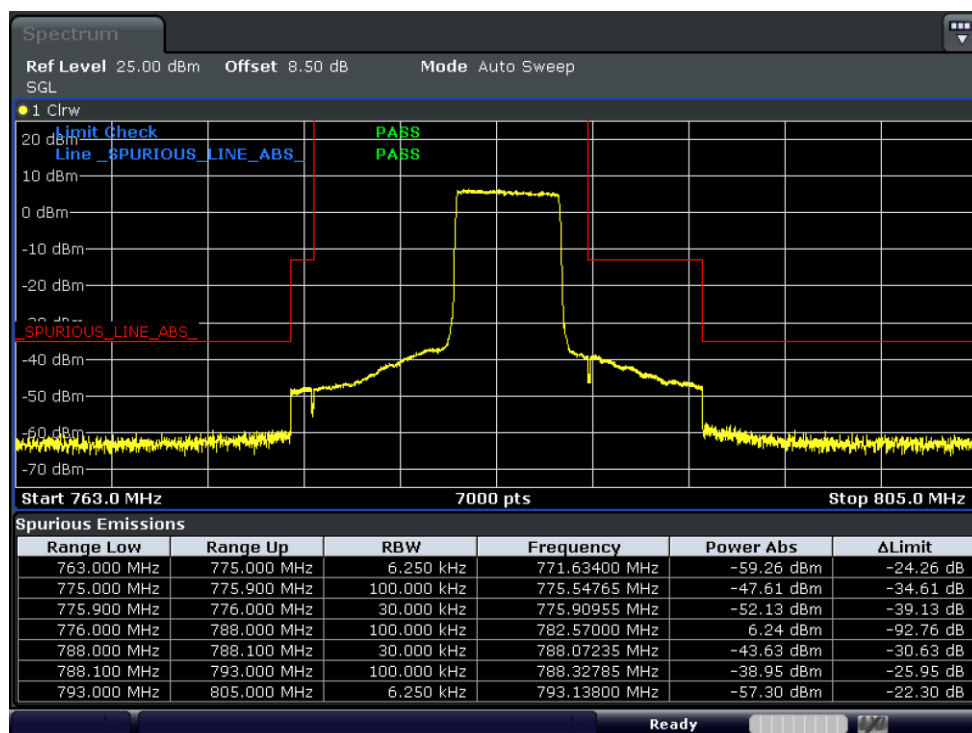


Test_Graph_band13_779.5MHz_5M_QPSK_25RB#LOW_Band edge



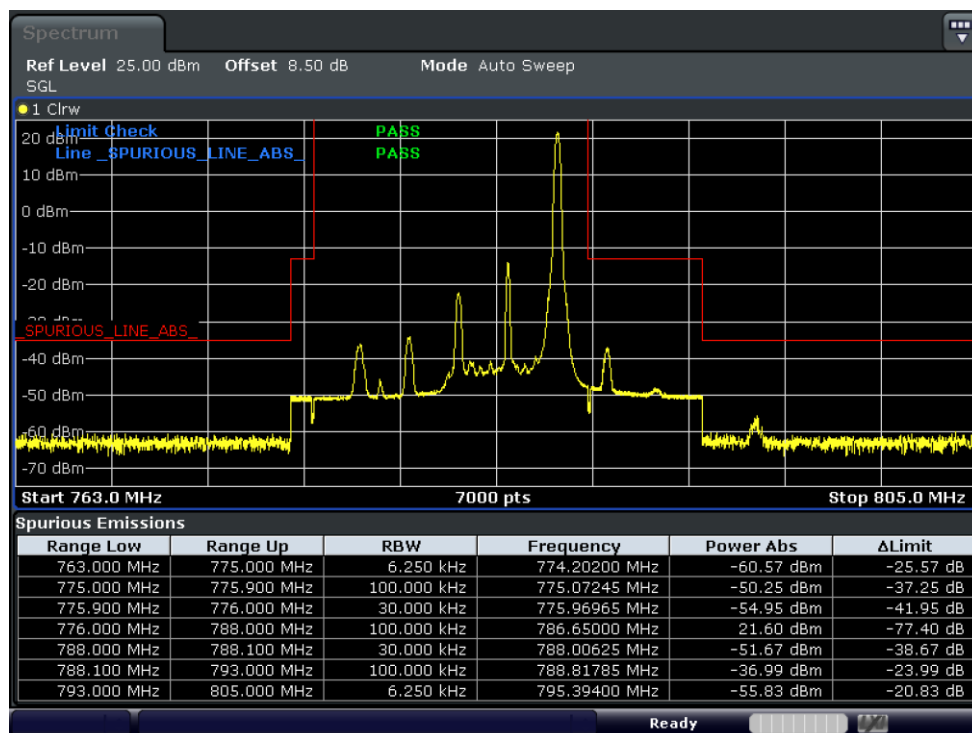


Test_Graph_band13_784.5MHz_5M_16QAM_1RB#HIGH_Band edge

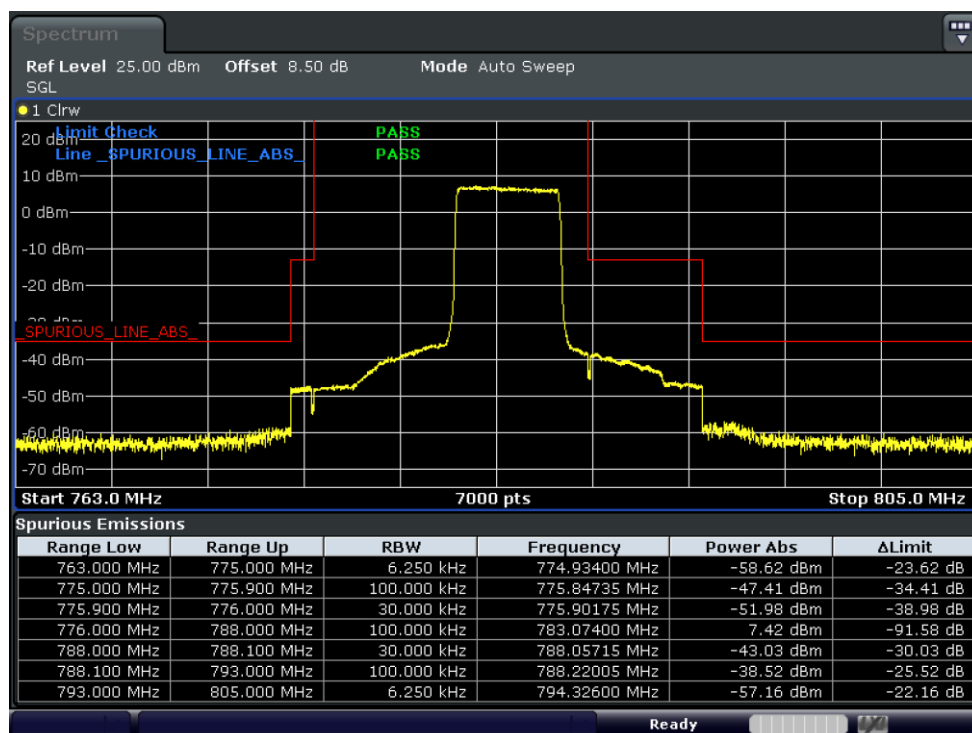


Test_Graph_band13_784.5MHz_5M_16QAM_25RB#LOW_Band edge



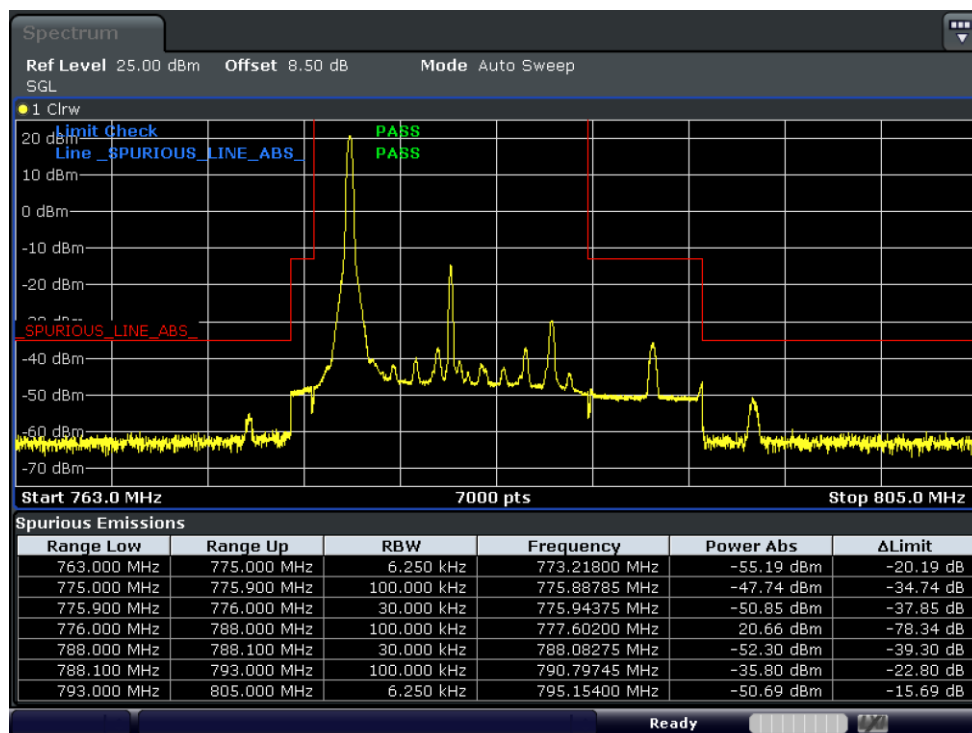


Test_Graph_band13_784.5MHz_5M_QPSK_1RB#HIGH_Band edge

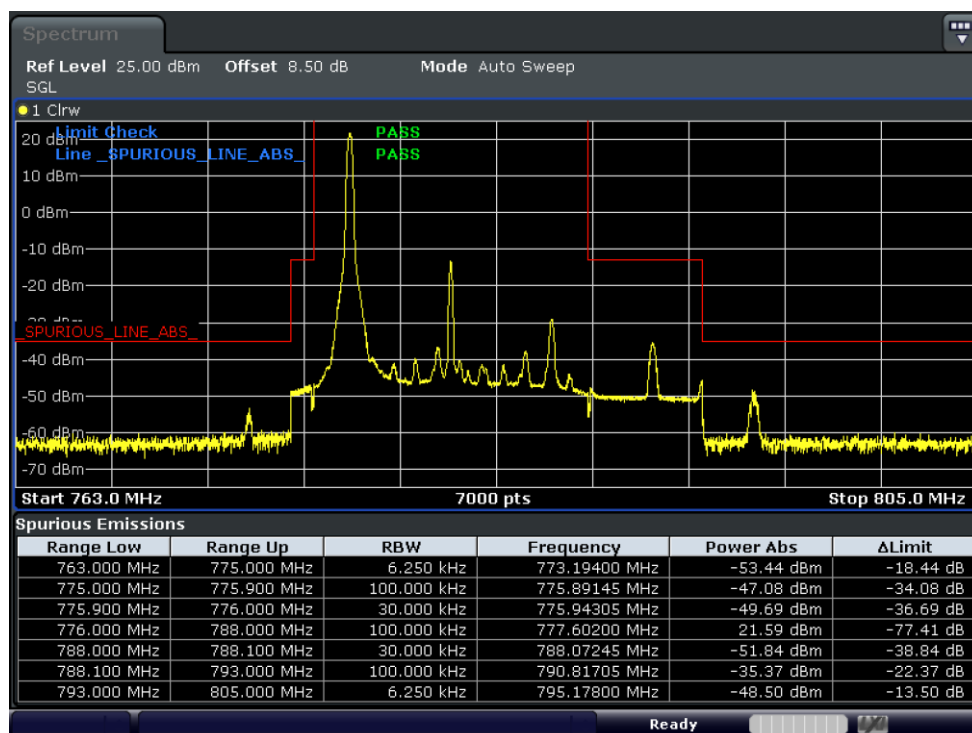


Test_Graph_band13_784.5MHz_5M_QPSK_25RB#LOW_Band edge



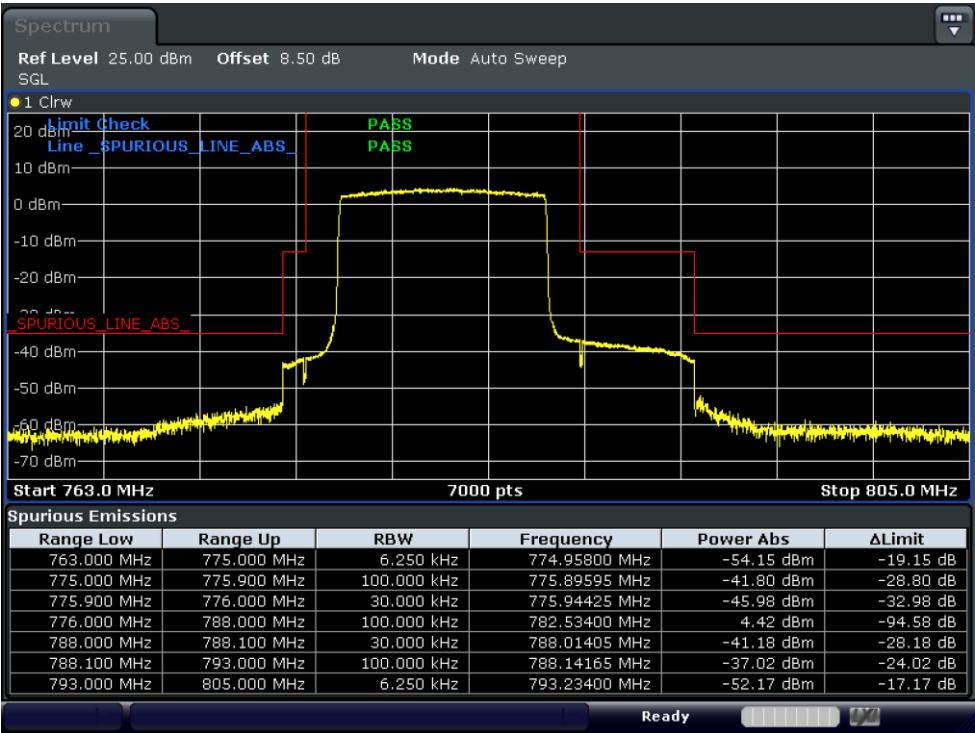


Test_Graph_band13_782MHz_10M_16QAM_1RB#LOW_Band edge



Test_Graph_band13_782MHz_10M_QPSK_1RB#LOW_Band edge





Test_Graph_band13_782MHz_10M_QPSK_50RB#LOW_Band edge



Appendix D: Unwanted spurious emissions at antenna terminals

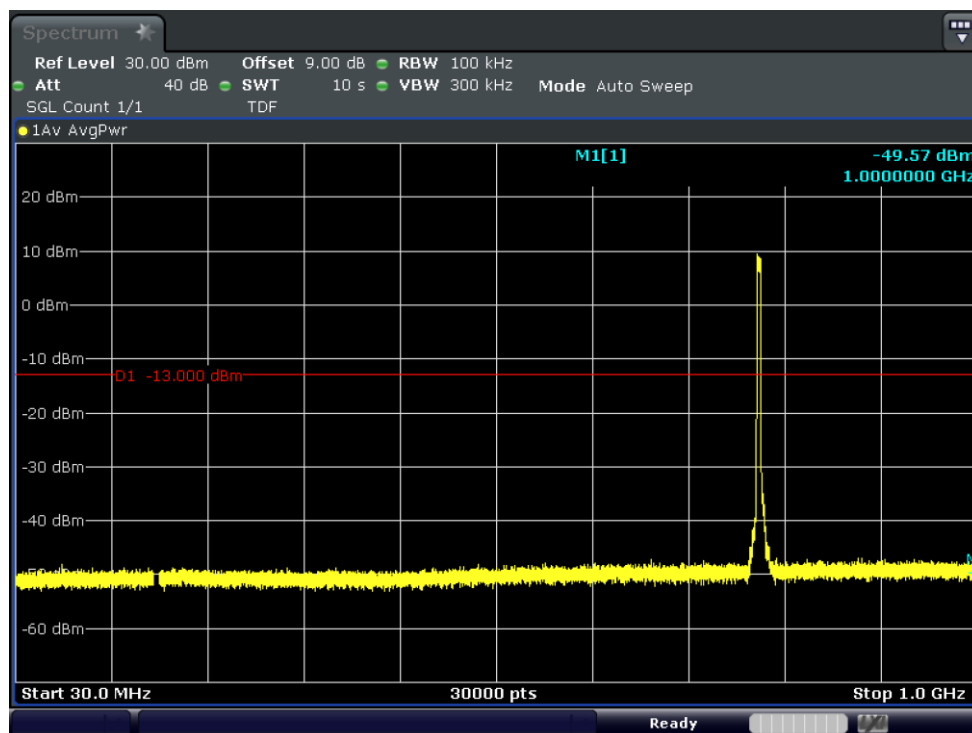
Test Result

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Conclusion
13	5	779.5	QPSK	25	LOW	Pass
13	5	782	QPSK	25	LOW	Pass
13	5	784.5	QPSK	25	LOW	Pass
13	10	782	QPSK	50	LOW	Pass

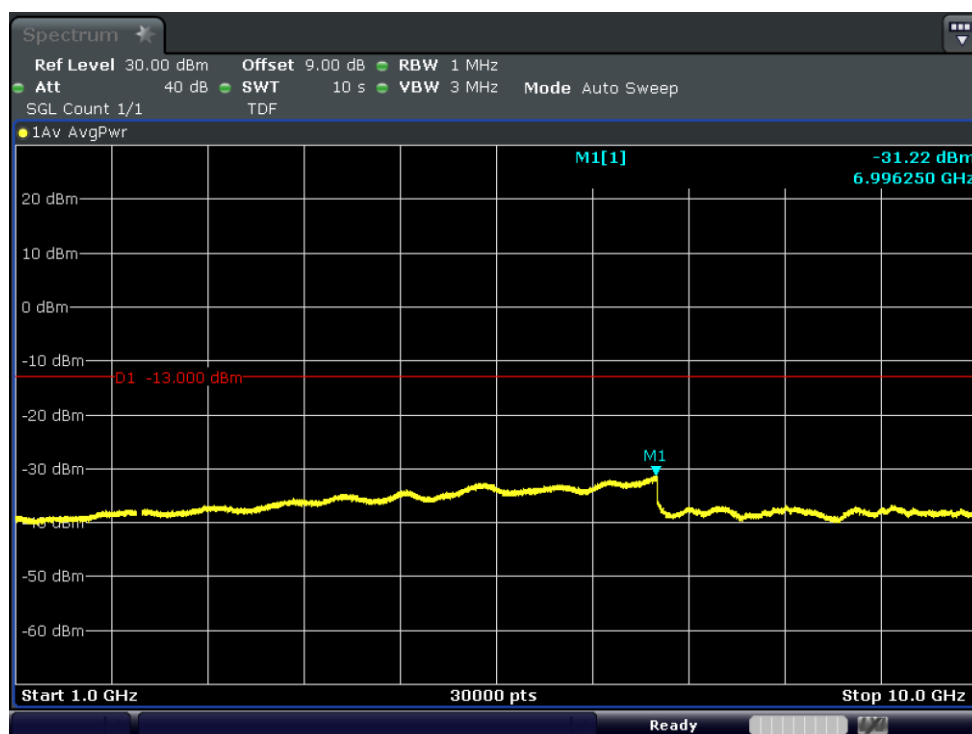
Note: Both QPSK and 16QAM modulation modes were tested. Since the QPSK mode produced the worst-case results, only the corresponding QPSK test results are included in this report.



Test Graphs

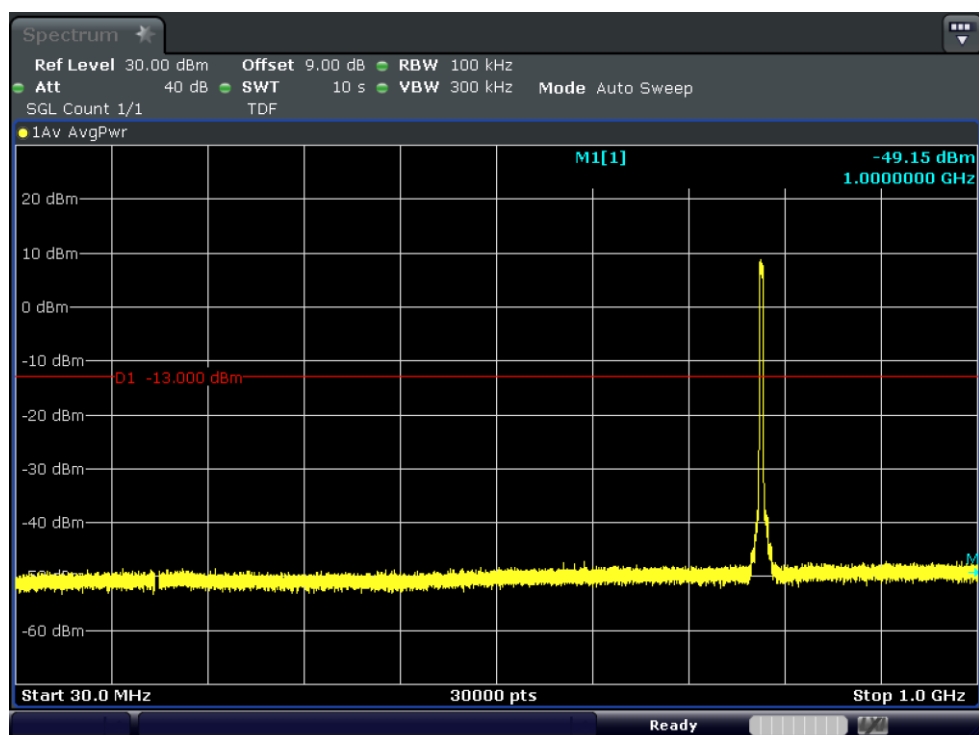


Test_Graph_band13_779.5MHz_5M_QPSK_25RB#LOW_30M_1G_TX

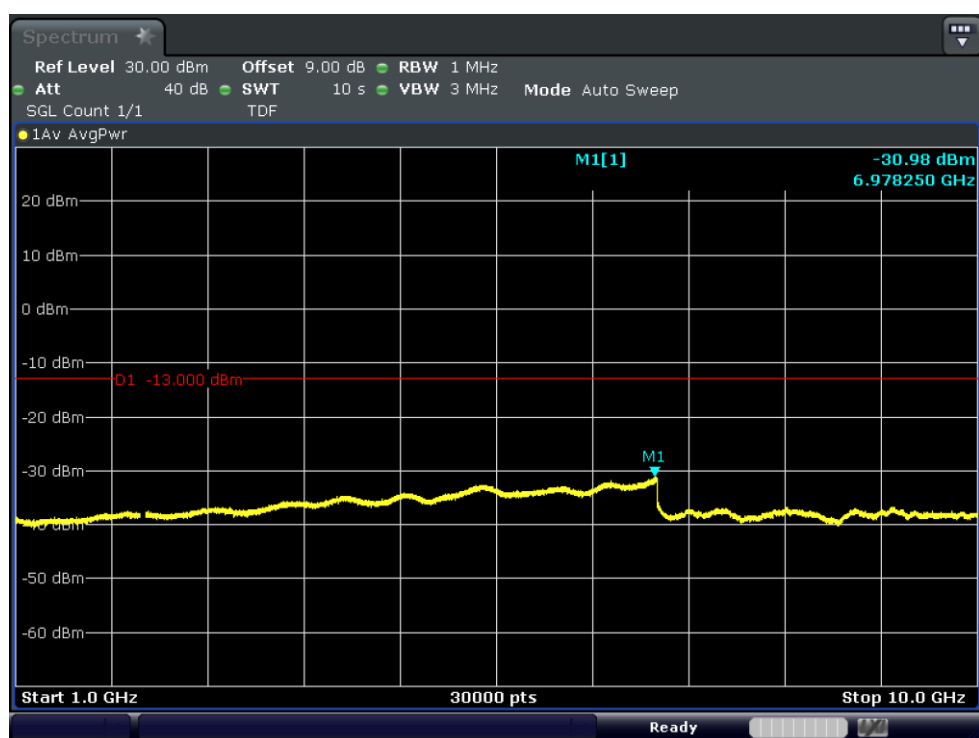


Test_Graph_band13_779.5MHz_5M_QPSK_25RB#LOW_1G_10G_TX



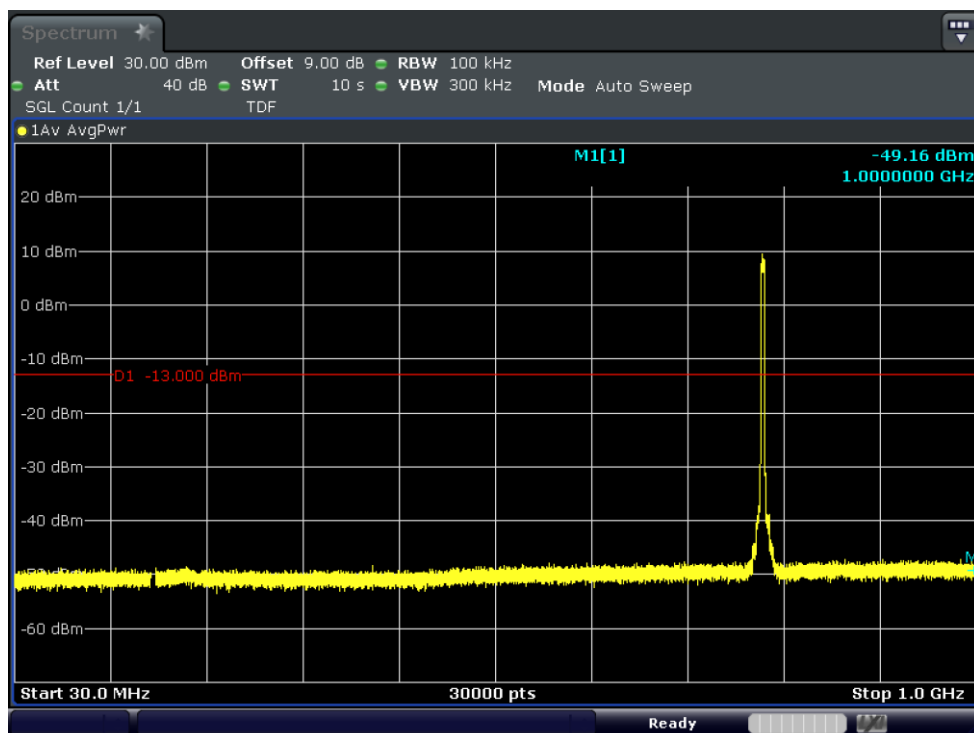


Test_Graph_band13_782MHz_5M_QPSK_25RB#LOW_30M_1G_TX

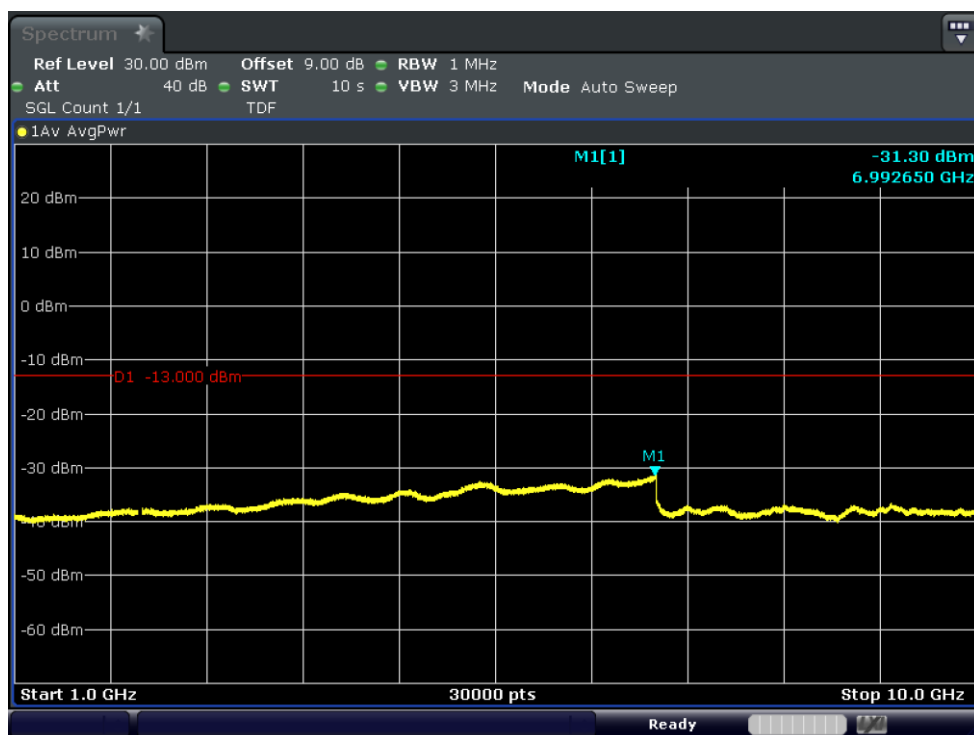


Test_Graph_band13_782MHz_5M_QPSK_25RB#LOW_1G_10G_TX



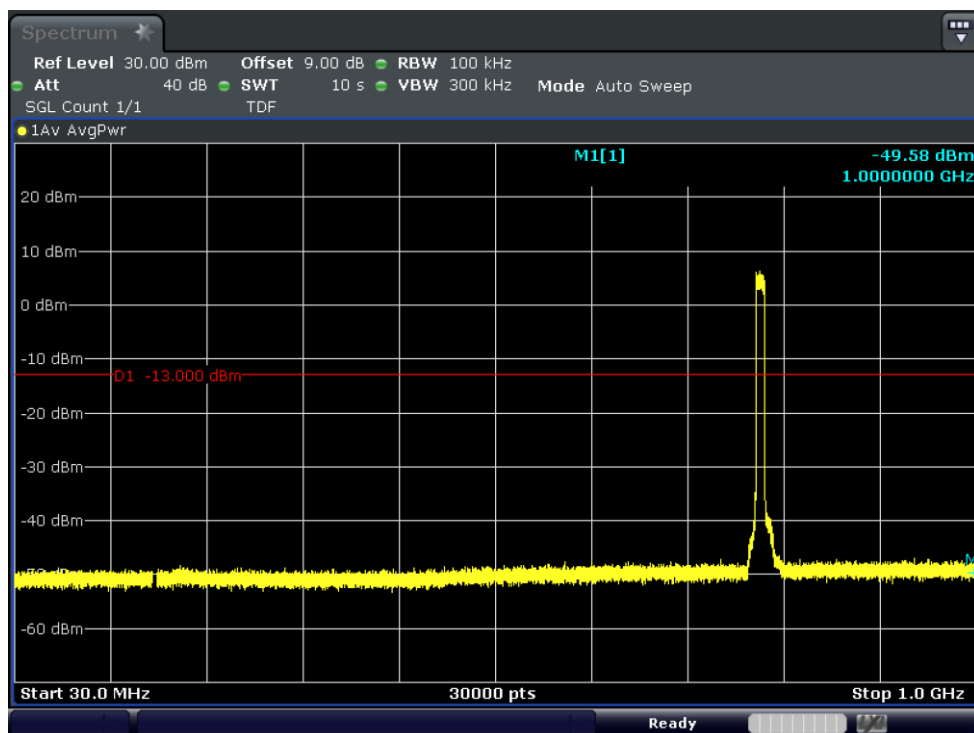


Test_Graph_band13_784.5MHz_5M_QPSK_25RB#LOW_30M_1G_TX

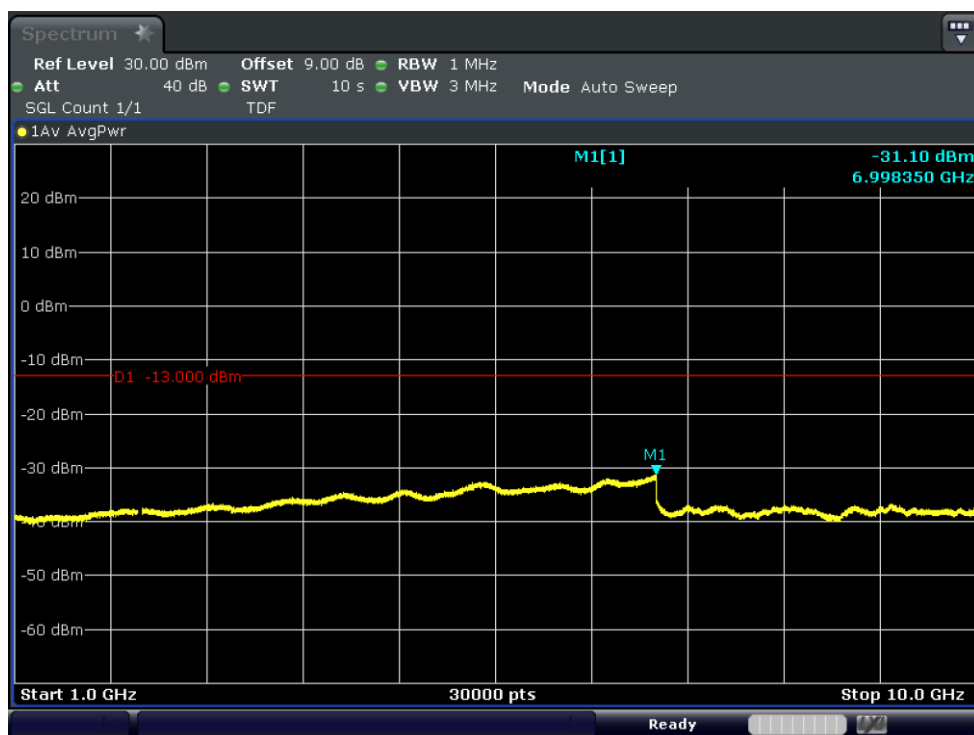


Test_Graph_band13_784.5MHz_5M_QPSK_25RB#LOW_1G_10G_TX





Test_Graph_band13_782MHz_10M_QPSK_50RB#LOW_30M_1G_TX



Test_Graph_band13_782MHz_10M_QPSK_50RB#LOW_1G_10G_TX





Appendix E: Frequency stability

Test Result

Test Conditions (LTE Band 13(QPSK) /BW 10MHz)		Frequency Range		Frequency Error	Verdict
Temperature (°C)	Voltage (Volt)	>777 Freq Reading @ Low End (MHz)	<787 Freq Reading @ High End (MHz)	Middle Channel	
				≤2.5ppm	
50	Normal Voltage	777.5903	786.4994	0.0060	PASS
40	Normal Voltage	777.5904	786.4996	0.0070	
30	Normal Voltage	777.5905	786.4995	0.0062	
20(Ref.)	Normal Voltage	777.5904	786.4995	0.0062	
10	Normal Voltage	777.5903	786.4994	0.0069	
0	Normal Voltage	777.5904	786.4995	0.0070	
-10	Normal Voltage	777.5905	786.4996	0.0061	
-20	Normal Voltage	777.5905	786.4995	0.0063	
-30	Normal Voltage	777.5905	786.4995	0.0067	
20	+15%	777.5904	786.4996	0.0068	
20	-15%	777.5904	786.4996	0.0067	
20	Battery End Point	777.5904	786.4996	0.0067	

