

Appendix Test Data for LTE band 17(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
17	5	706.5	QPSK	25	LOW	22.99	29.27	6.28	13	0.22	21.06	34.8	Pass
17	5	706.5	QPSK	12	LOW	22.84	28.54	5.70	13	0.22	20.91	34.8	Pass
17	5	706.5	QPSK	12	MID	22.82	28.75	5.93	13	0.22	20.89	34.8	Pass
17	5	706.5	QPSK	12	HIGH	23.14	28.92	5.78	13	0.22	21.21	34.8	Pass
17	5	706.5	QPSK	1	LOW	23.72	28.88	5.16	13	0.22	21.79	34.8	Pass
17	5	706.5	QPSK	1	MID	23.88	28.78	4.90	13	0.22	21.95	34.8	Pass
17	5	706.5	QPSK	1	HIGH	24.51	29.22	4.71	13	0.22	22.58	34.8	Pass
17	5	706.5	16QAM	25	LOW	22	29.23	7.23	13	0.22	20.07	34.8	Pass
17	5	706.5	16QAM	12	LOW	21.85	28.71	6.86	13	0.22	19.92	34.8	Pass
17	5	706.5	16QAM	12	MID	21.85	28.61	6.76	13	0.22	19.92	34.8	Pass
17	5	706.5	16QAM	12	HIGH	22.15	28.64	6.49	13	0.22	20.22	34.8	Pass
17	5	706.5	16QAM	1	LOW	22.93	28.9	5.97	13	0.22	21	34.8	Pass
17	5	706.5	16QAM	1	MID	23.09	28.78	5.69	13	0.22	21.16	34.8	Pass
17	5	706.5	16QAM	1	HIGH	23.68	29.21	5.53	13	0.22	21.75	34.8	Pass
17	5	710	QPSK	25	LOW	23.44	29.41	5.97	13	0.22	21.51	34.8	Pass
17	5	710	QPSK	12	LOW	23.5	29.05	5.55	13	0.22	21.57	34.8	Pass
17	5	710	QPSK	12	MID	23.5	29.12	5.62	13	0.22	21.57	34.8	Pass
17	5	710	QPSK	12	HIGH	23.64	29.39	5.75	13	0.22	21.71	34.8	Pass
17	5	710	QPSK	1	LOW	24.12	29.29	5.17	13	0.22	22.19	34.8	Pass
17	5	710	QPSK	1	MID	24.52	29.79	5.27	13	0.22	22.59	34.8	Pass
17	5	710	QPSK	1	HIGH	24.65	30.23	5.58	13	0.22	22.72	34.8	Pass
17	5	710	16QAM	25	LOW	22.52	29.37	6.85	13	0.22	20.59	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
17	5	710	16QAM	12	LOW	22.54	29.5	6.96	13	0.22	20.61	34.8	Pass
17	5	710	16QAM	12	MID	22.55	29.54	6.99	13	0.22	20.62	34.8	Pass
17	5	710	16QAM	12	HIGH	22.68	29.99	7.31	13	0.22	20.75	34.8	Pass
17	5	710	16QAM	1	LOW	23.11	28.36	5.25	13	0.22	21.18	34.8	Pass
17	5	710	16QAM	1	MID	23.51	28.81	5.30	13	0.22	21.58	34.8	Pass
17	5	710	16QAM	1	HIGH	23.72	29.16	5.44	13	0.22	21.79	34.8	Pass
17	5	713.5	QPSK	25	LOW	23.4	29.9	6.5	13	0.22	21.47	34.8	Pass
17	5	713.5	QPSK	12	LOW	23.63	29.93	6.30	13	0.22	21.7	34.8	Pass
17	5	713.5	QPSK	12	MID	23.63	29.86	6.23	13	0.22	21.7	34.8	Pass
17	5	713.5	QPSK	12	HIGH	23.12	29.38	6.26	13	0.22	21.19	34.8	Pass
17	5	713.5	QPSK	1	LOW	24.7	29.83	5.13	13	0.22	22.77	34.8	Pass
17	5	713.5	QPSK	1	MID	24.43	29.72	5.29	13	0.22	22.5	34.8	Pass
17	5	713.5	QPSK	1	HIGH	23.7	28.95	5.25	13	0.22	21.77	34.8	Pass
17	5	713.5	16QAM	25	LOW	22.4	30.17	7.77	13	0.22	20.47	34.8	Pass
17	5	713.5	16QAM	12	LOW	22.68	29.42	6.74	13	0.22	20.75	34.8	Pass
17	5	713.5	16QAM	12	MID	22.69	29.43	6.74	13	0.22	20.76	34.8	Pass
17	5	713.5	16QAM	12	HIGH	22.19	28.95	6.76	13	0.22	20.26	34.8	Pass
17	5	713.5	16QAM	1	LOW	24.1	29.66	5.56	13	0.22	22.17	34.8	Pass
17	5	713.5	16QAM	1	MID	23.8	29.5	5.70	13	0.22	21.87	34.8	Pass
17	5	713.5	16QAM	1	HIGH	23.09	28.78	5.69	13	0.22	21.16	34.8	Pass
17	10	709	QPSK	50	LOW	23.46	29.5	6.04	13	0.22	21.53	34.8	Pass
17	10	709	QPSK	25	LOW	22.84	29	6.16	13	0.22	20.91	34.8	Pass
17	10	709	QPSK	25	MID	22.84	29.07	6.23	13	0.22	20.91	34.8	Pass
17	10	709	QPSK	25	HIGH	23.45	29.69	6.24	13	0.22	21.52	34.8	Pass
17	10	709	QPSK	1	LOW	23.64	28.54	4.90	13	0.22	21.71	34.8	Pass
17	10	709	QPSK	1	MID	24.53	29.09	4.56	13	0.22	22.6	34.8	Pass
17	10	709	QPSK	1	HIGH	24.36	29.29	4.93	13	0.22	22.43	34.8	Pass
17	10	709	16QAM	25	LOW	21.66	28.68	7.02	13	0.22	19.73	34.8	Pass
17	10	709	16QAM	25	MID	21.66	28.78	7.12	13	0.22	19.73	34.8	Pass
17	10	709	16QAM	25	HIGH	22.27	29.26	6.99	13	0.22	20.34	34.8	Pass
17	10	709	16QAM	1	LOW	22.72	28.06	5.34	13	0.22	20.79	34.8	Pass
17	10	709	16QAM	1	MID	23.58	28.5	4.92	13	0.22	21.65	34.8	Pass
17	10	709	16QAM	1	HIGH	23.44	28.83	5.39	13	0.22	21.51	34.8	Pass
17	10	710	QPSK	50	LOW	23.04	28.77	5.73	13	0.22	21.11	34.8	Pass
17	10	710	QPSK	25	LOW	22.82	28.63	5.81	13	0.22	20.89	34.8	Pass
17	10	710	QPSK	25	MID	22.82	28.7	5.88	13	0.22	20.89	34.8	Pass
17	10	710	QPSK	25	HIGH	23.19	29.22	6.03	13	0.22	21.26	34.8	Pass
17	10	710	QPSK	1	LOW	23.53	28.25	4.72	13	0.22	21.6	34.8	Pass
17	10	710	QPSK	1	MID	24.21	28.75	4.54	13	0.22	22.28	34.8	Pass
17	10	710	QPSK	1	HIGH	23.95	28.92	4.97	13	0.22	22.02	34.8	Pass
17	10	710	16QAM	25	LOW	21.85	28.89	7.04	13	0.22	19.92	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
17	10	710	16QAM	25	MID	21.86	28.88	7.02	13	0.22	19.93	34.8	Pass
17	10	710	16QAM	25	HIGH	22.32	29.47	7.15	13	0.22	20.39	34.8	Pass
17	10	710	16QAM	1	LOW	22.53	28.68	6.15	13	0.22	20.6	34.8	Pass
17	10	710	16QAM	1	MID	23.19	29.11	5.92	13	0.22	21.26	34.8	Pass
17	10	710	16QAM	1	HIGH	22.97	29.31	6.34	13	0.22	21.04	34.8	Pass
17	10	711	QPSK	50	LOW	22.93	29.34	6.41	13	0.22	21	34.8	Pass
17	10	711	QPSK	25	LOW	23.1	28.95	5.85	13	0.22	21.17	34.8	Pass
17	10	711	QPSK	25	MID	23.16	28.97	5.81	13	0.22	21.23	34.8	Pass
17	10	711	QPSK	25	HIGH	23.11	29.15	6.04	13	0.22	21.18	34.8	Pass
17	10	711	QPSK	1	LOW	23.6	28.72	5.12	13	0.22	21.67	34.8	Pass
17	10	711	QPSK	1	MID	24.36	29.5	5.14	13	0.22	22.43	34.8	Pass
17	10	711	QPSK	1	HIGH	23.59	29.06	5.47	13	0.22	21.66	34.8	Pass
17	10	711	16QAM	25	LOW	22.17	28.84	6.67	13	0.22	20.24	34.8	Pass
17	10	711	16QAM	25	MID	22.18	28.94	6.76	13	0.22	20.25	34.8	Pass
17	10	711	16QAM	25	HIGH	22.17	28.92	6.75	13	0.22	20.24	34.8	Pass
17	10	711	16QAM	1	LOW	22.83	28.27	5.44	13	0.22	20.9	34.8	Pass
17	10	711	16QAM	1	MID	23.56	29.05	5.49	13	0.22	21.63	34.8	Pass
17	10	711	16QAM	1	HIGH	22.9	28.58	5.68	13	0.22	20.97	34.8	Pass



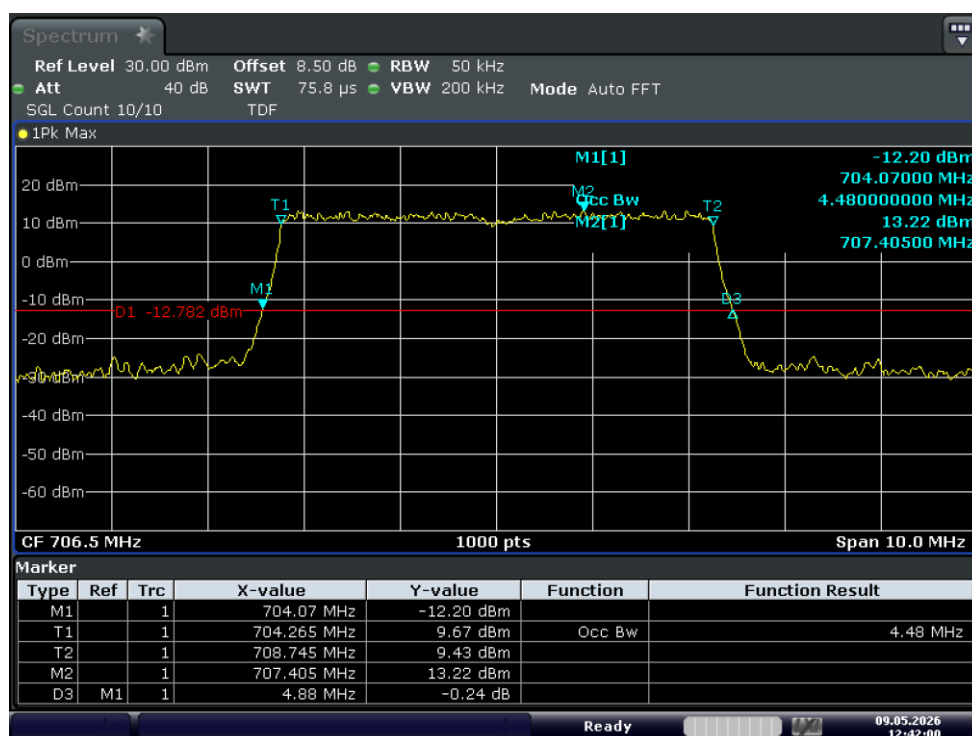
Appendix B: Occupied bandwidth

Test Result

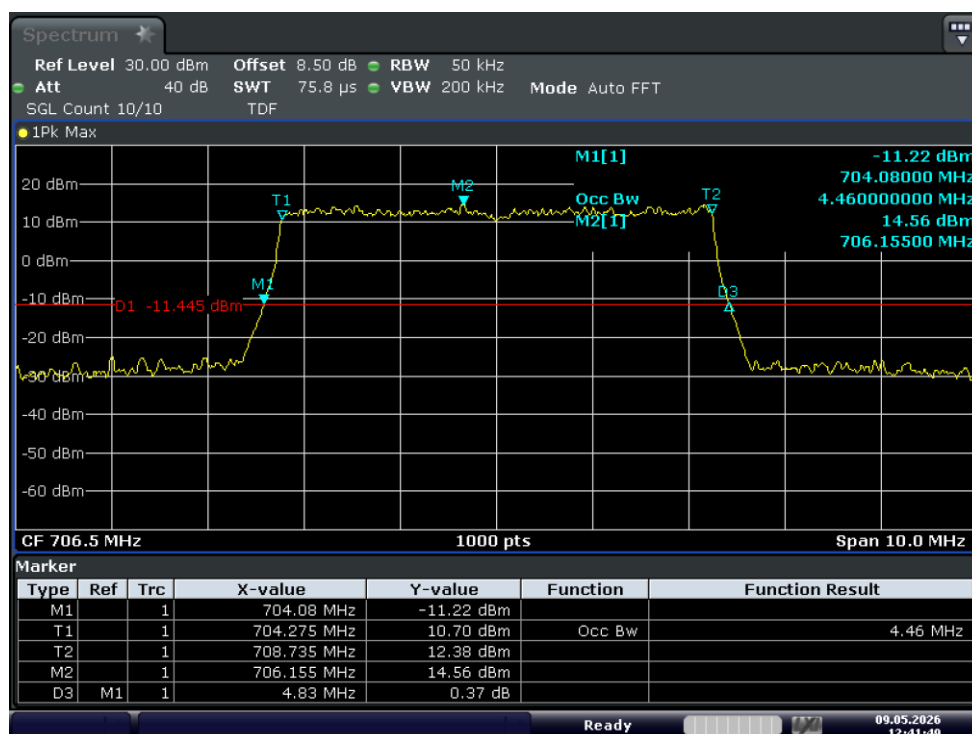
Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Occupied Bandwidth (MHz)	Emission Bandwidth (MHz)	Limit
17	5	706.5	QPSK	25	LOW	4.46	4.83	No limit
17	5	706.5	16QAM	25	LOW	4.48	4.88	No limit
17	5	710	QPSK	25	LOW	4.48	4.86	No limit
17	5	710	16QAM	25	LOW	4.46	4.82	No limit
17	5	713.5	QPSK	25	LOW	4.47	4.83	No limit
17	5	713.5	16QAM	25	LOW	4.48	4.83	No limit
17	10	709	QPSK	50	LOW	8.92	9.58	No limit
17	10	710	QPSK	50	LOW	8.9	9.54	No limit
17	10	711	QPSK	50	LOW	8.9	9.48	No limit



Test Graphs

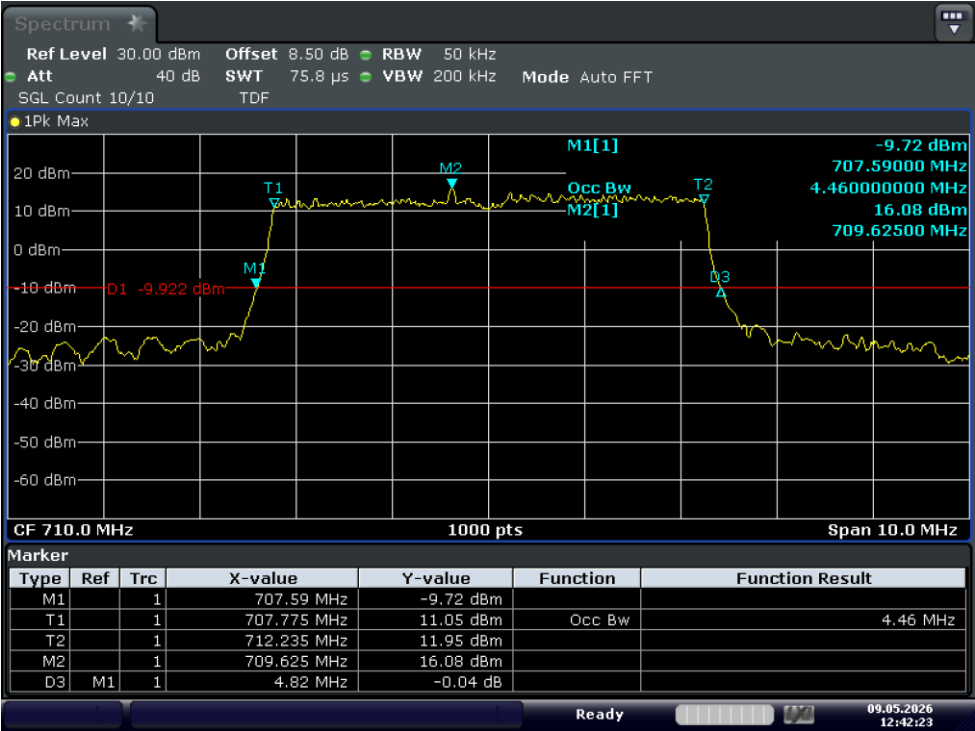


Test_Graph_band17_706.5MHz_5M_16QAM_25RB#LOW_OBW&EBW

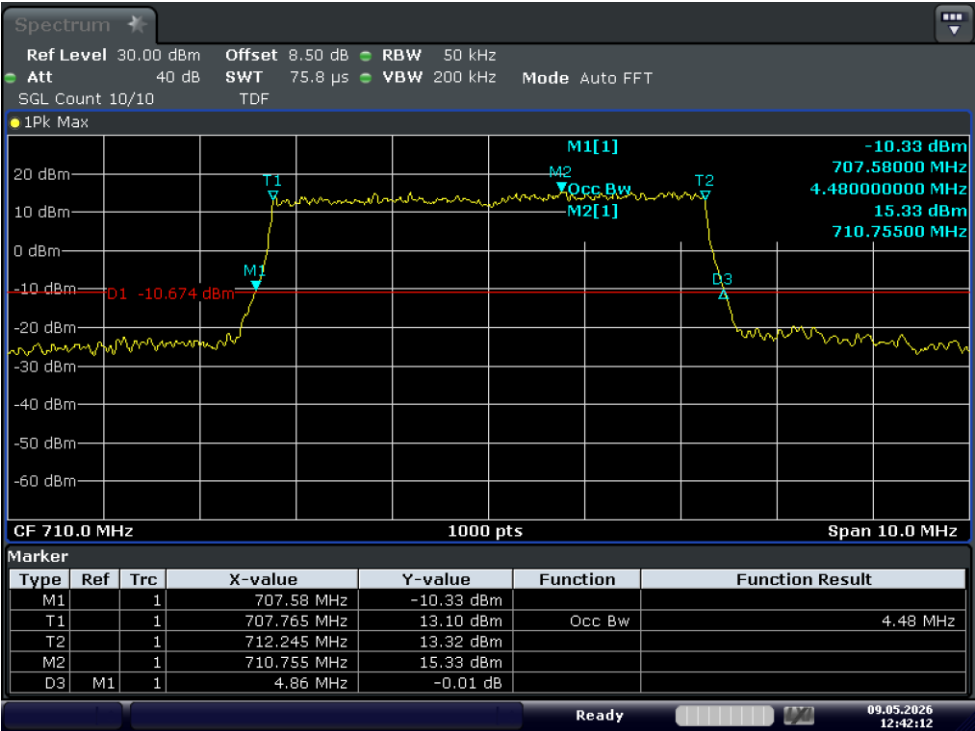


Test_Graph_band17_706.5MHz_5M_QPSK_25RB#LOW_OBW&EBW



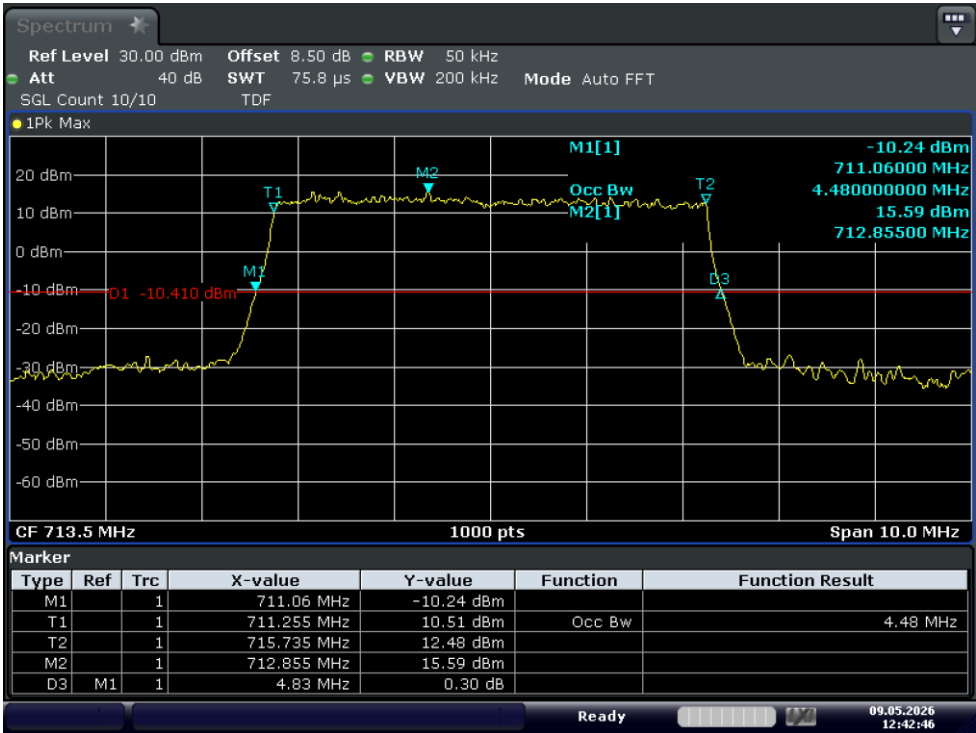


Test_Graph_band17_710MHz_5M_16QAM_25RB#LOW_OBW&EBW

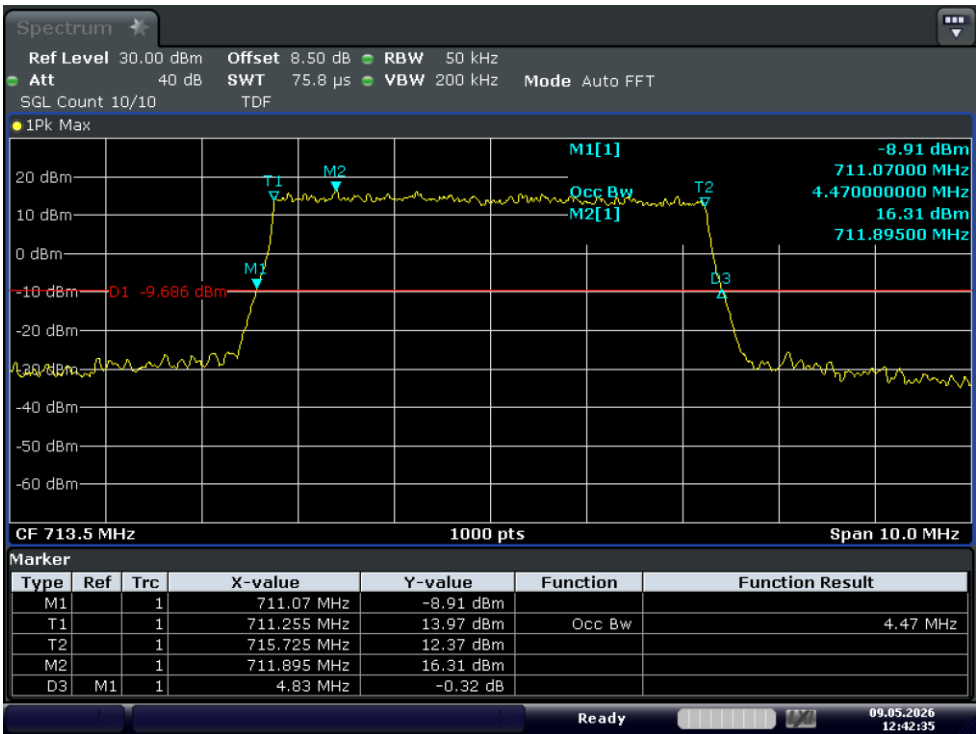


Test_Graph_band17_710MHz_5M_QPSK_25RB#LOW_OBW&EBW



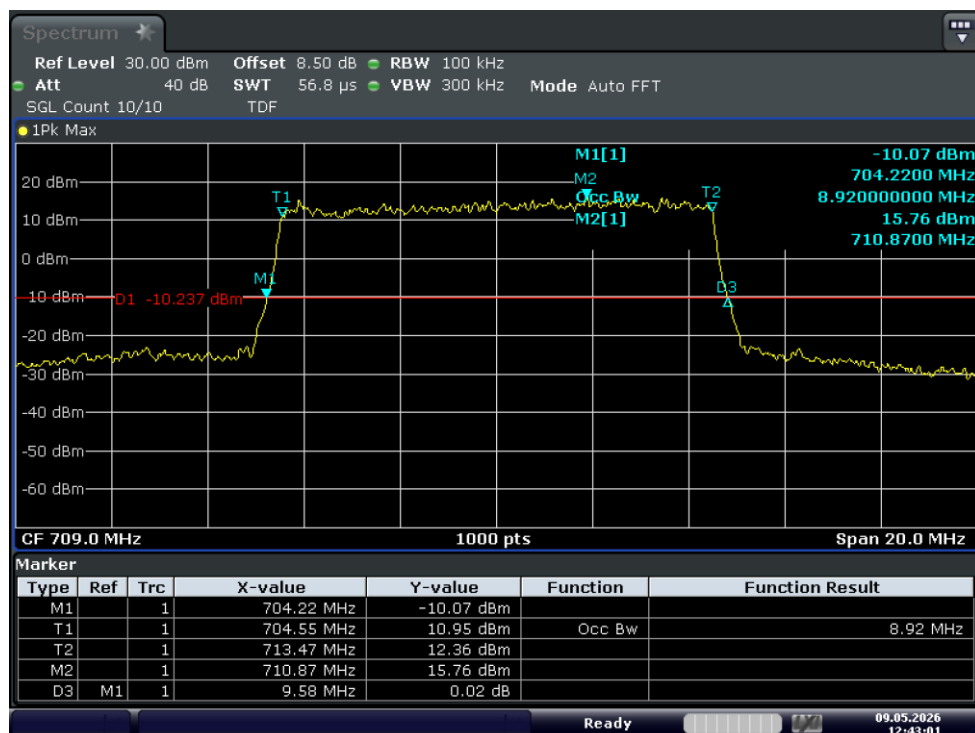


Test_Graph_band17_713.5MHz_5M_16QAM_25RB#LOW_OBW&EBW

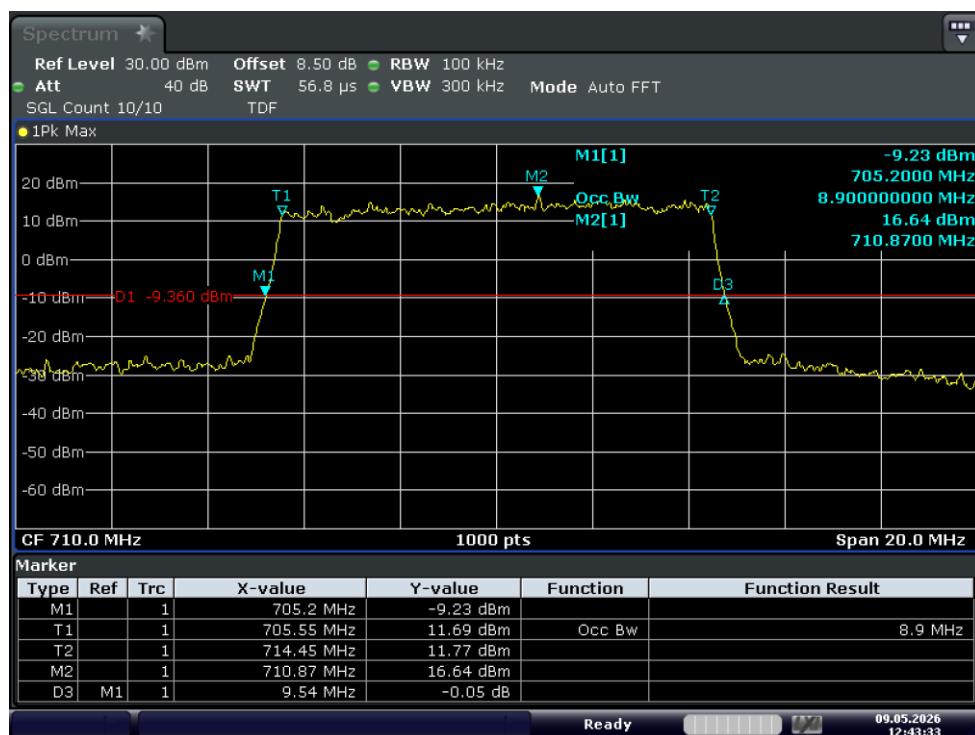


Test_Graph_band17_713.5MHz_5M_QPSK_25RB#LOW_OBW&EBW



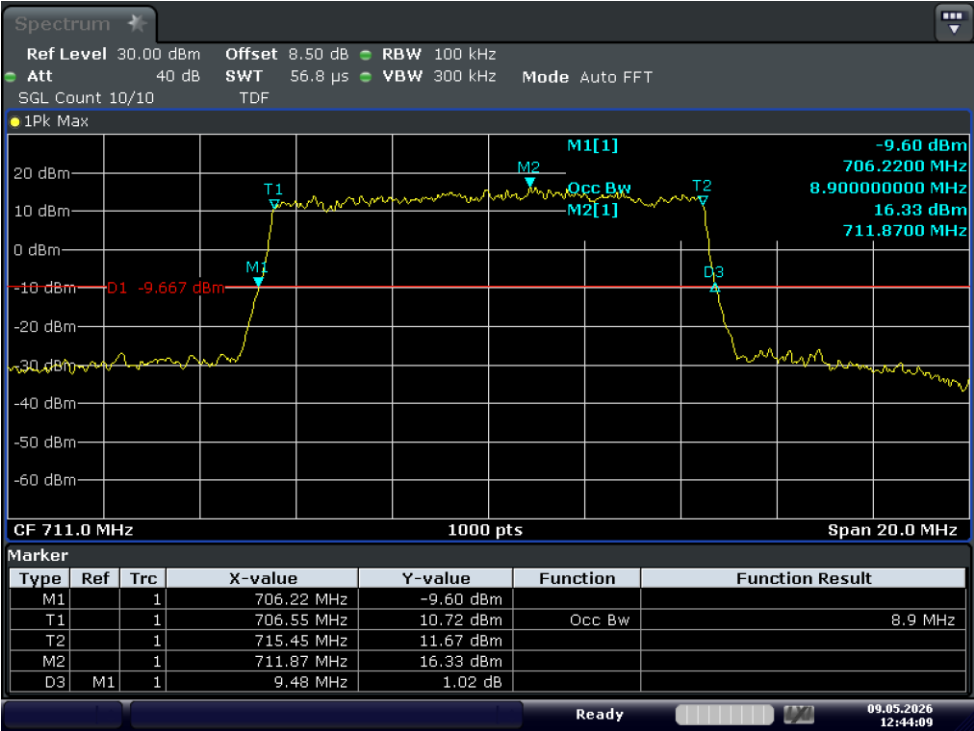


Test_Graph_band17_709MHz_10M_QPSK_50RB#LOW_OBW&EBW



Test_Graph_band17_710MHz_10M_QPSK_50RB#LOW_OBW&EBW





Test_Graph_band17_711MHz_10M_QPSK_50RB#LOW_OBW&EBW





Appendix C: Band edge emissions

Test Result

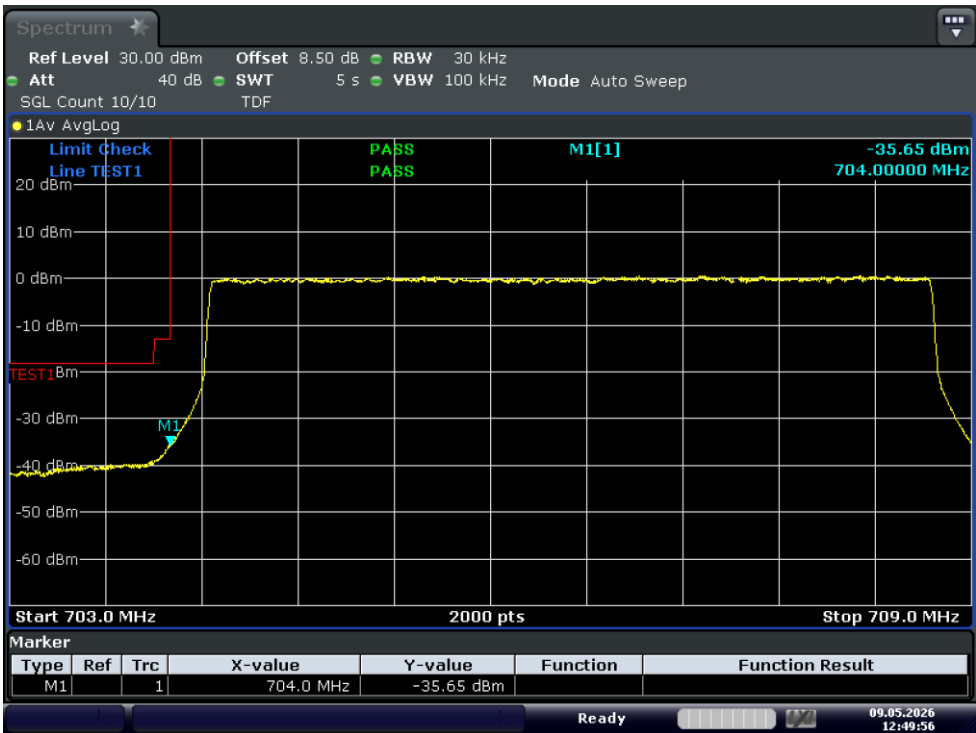
Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Conclusion
17	5	706.5	QPSK	1	LOW	Pass
17	5	706.5	QPSK	25	LOW	Pass
17	5	706.5	16QAM	1	LOW	Pass
17	5	706.5	16QAM	25	LOW	Pass
17	5	713.5	QPSK	1	HIGH	Pass
17	5	713.5	QPSK	25	LOW	Pass
17	5	713.5	16QAM	1	HIGH	Pass
17	5	713.5	16QAM	25	LOW	Pass
17	10	709	QPSK	1	LOW	Pass
17	10	709	QPSK	50	LOW	Pass
17	10	709	16QAM	1	LOW	Pass
17	10	711	QPSK	1	LOW	Pass
17	10	711	QPSK	50	LOW	Pass
17	10	711	16QAM	1	LOW	Pass



Test Graphs



Test_Graph_band17_706.5MHz_5M_16QAM_1RB#LOW_Band edge

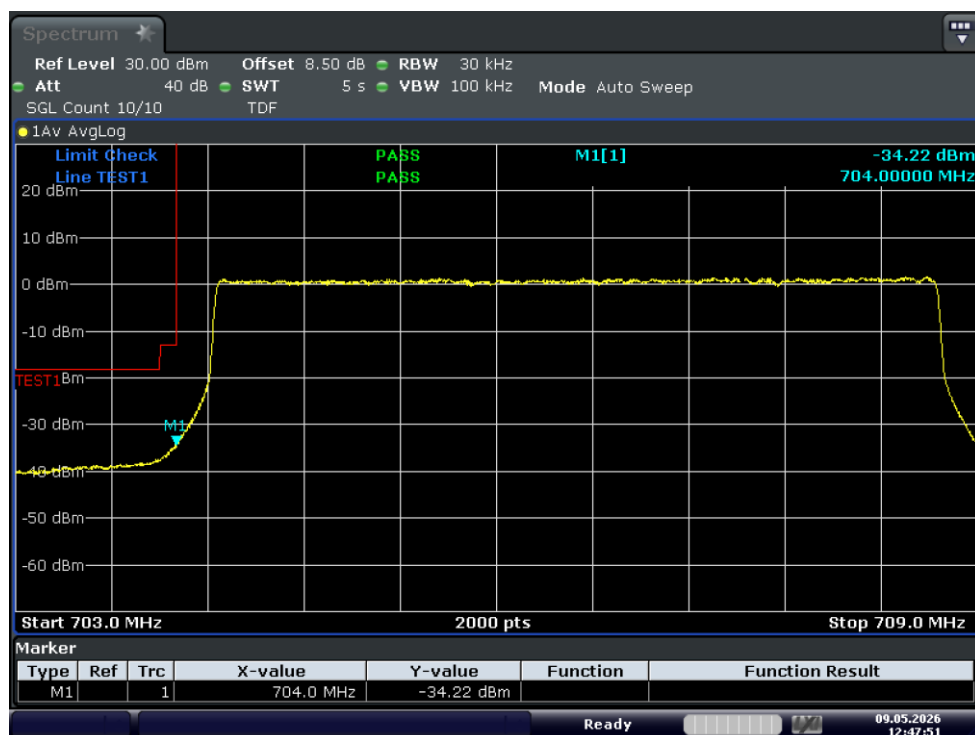


Test_Graph_band17_706.5MHz_5M_16QAM_25RB#LOW_Band edge





Test_Graph_band17_706.5MHz_5M_QPSK_1RB#LOW_Band edge

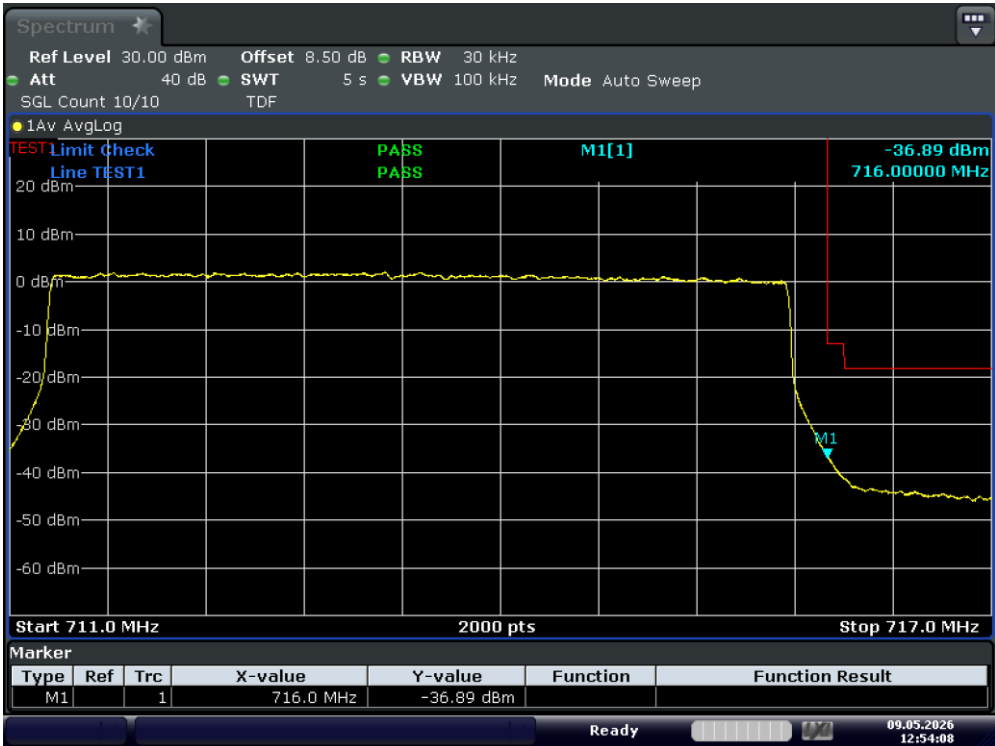


Test_Graph_band17_706.5MHz_5M_QPSK_25RB#LOW_Band edge



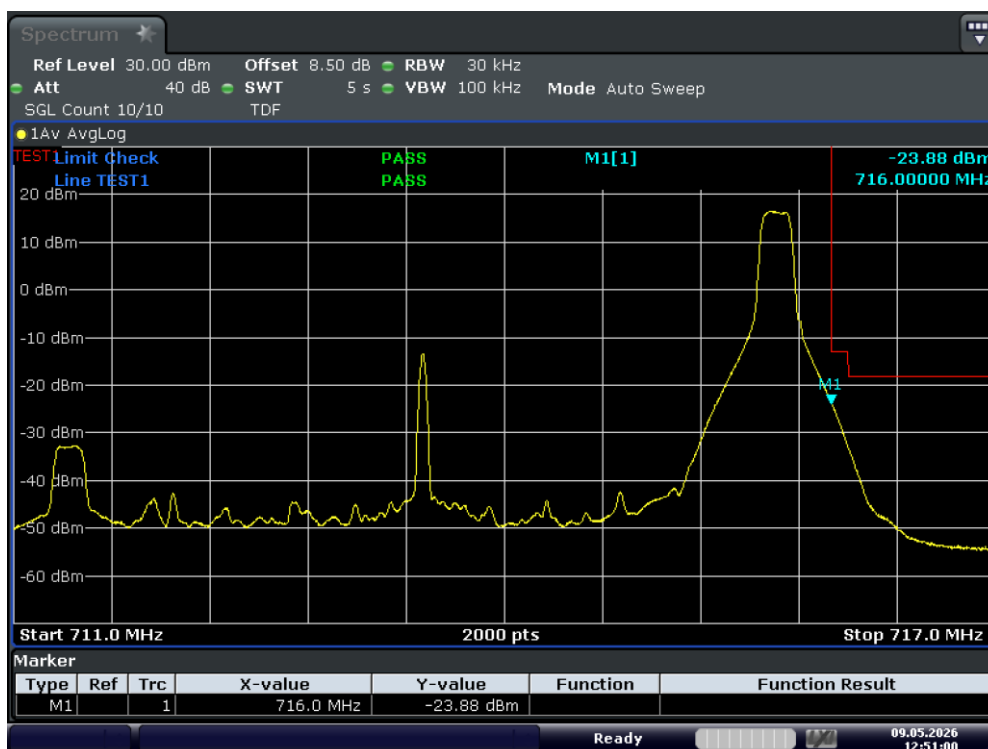


Test_Graph_band17_713.5MHz_5M_16QAM_1RB#HIGH_Band edge

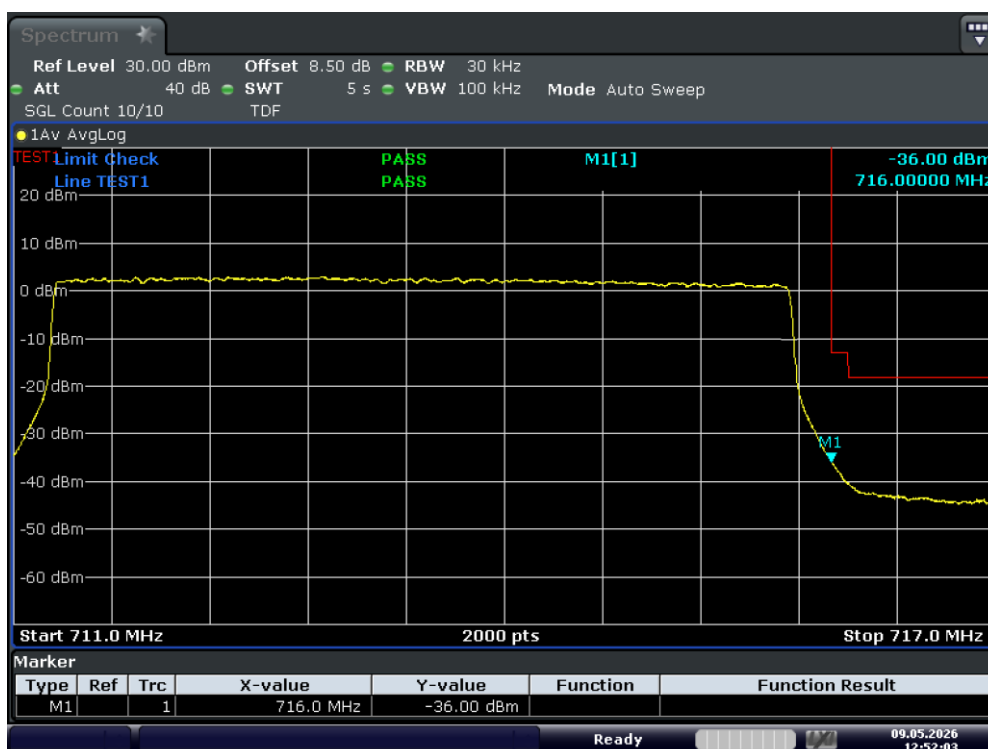


Test_Graph_band17_713.5MHz_5M_16QAM_25RB#LOW_Band edge





Test_Graph_band17_713.5MHz_5M_QPSK_1RB#HIGH_Band edge



Test_Graph_band17_713.5MHz_5M_QPSK_25RB#LOW_Band edge



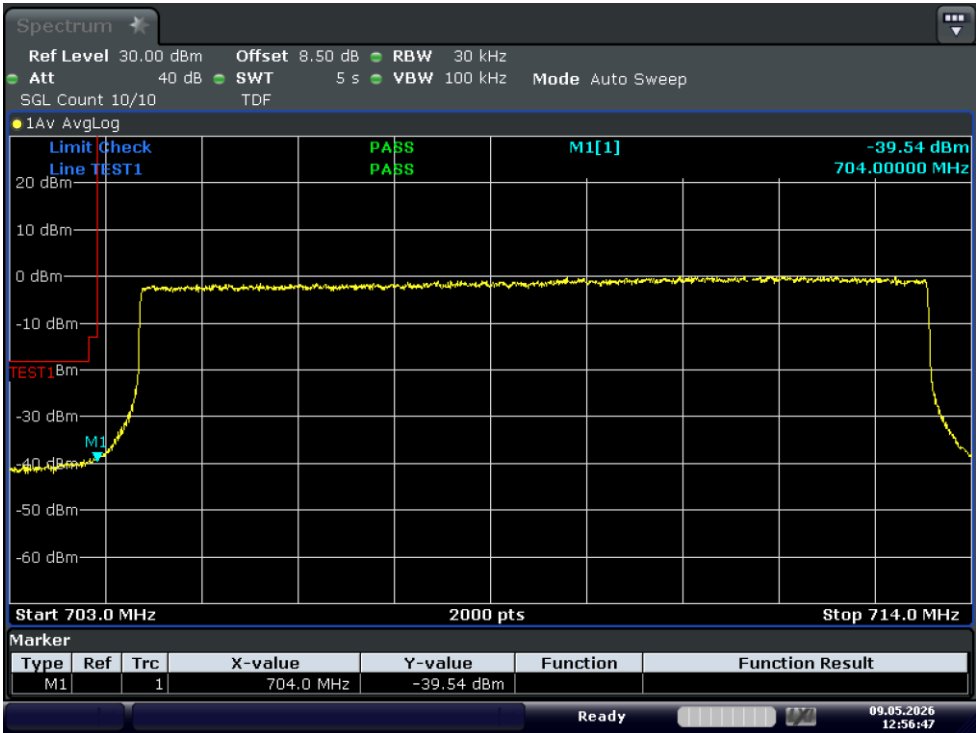


Test_Graph_band17_709MHz_10M_16QAM_1RB#LOW_Band edge



Test_Graph_band17_709MHz_10M_QPSK_1RB#LOW_Band edge





Test_Graph_band17_709MHz_10M_QPSK_50RB#LOW_Band edge

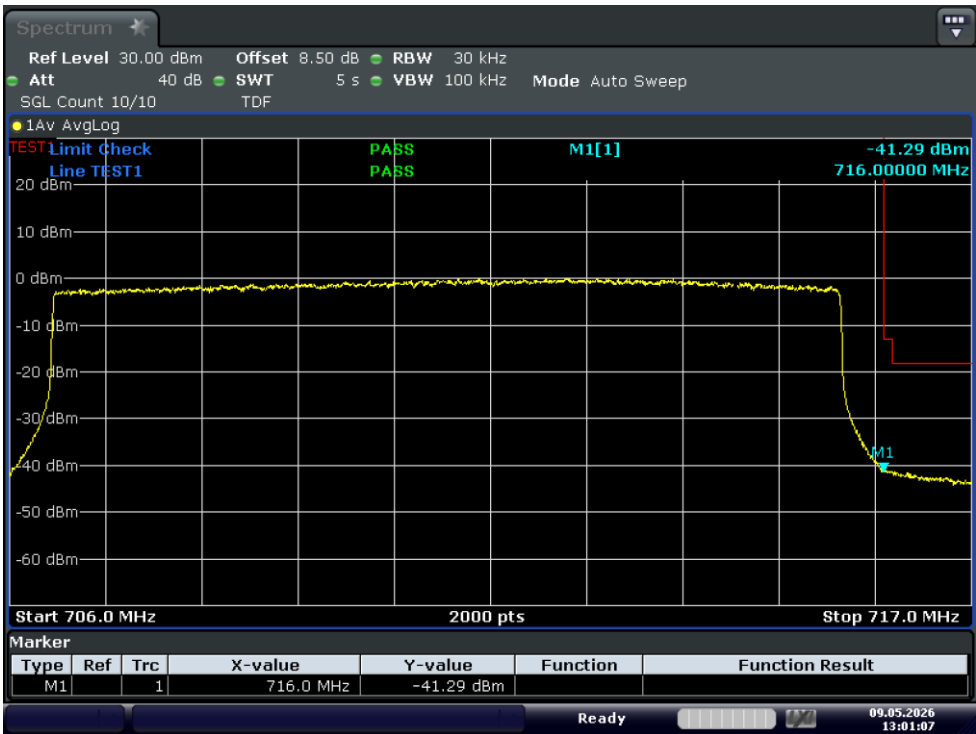


Test_Graph_band17_711MHz_10M_16QAM_1RB#LOW_Band edge





Test_Graph_band17_711MHz_10M_QPSK_1RB#LOW_Band edge



Test_Graph_band17_711MHz_10M_QPSK_50RB#LOW_Band edge





Appendix D: Unwanted spurious emissions at antenna terminals

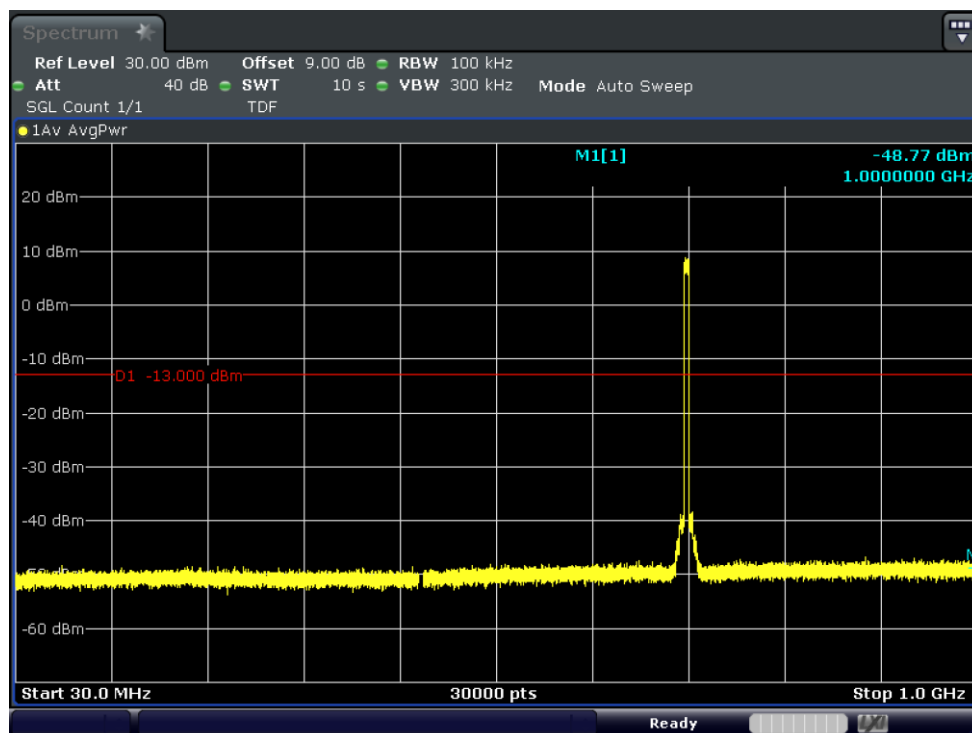
Test Result

Band	Bandwidth (MHz)	UL Frequency (MHz)	Modulation	RB Size	RB Offset	Conclusion
17	5	706.5	QPSK	25	LOW	Pass
17	5	710	QPSK	25	LOW	Pass
17	5	713.5	QPSK	25	LOW	Pass
17	10	709	QPSK	50	LOW	Pass
17	10	710	QPSK	50	LOW	Pass
17	10	711	QPSK	50	LOW	Pass

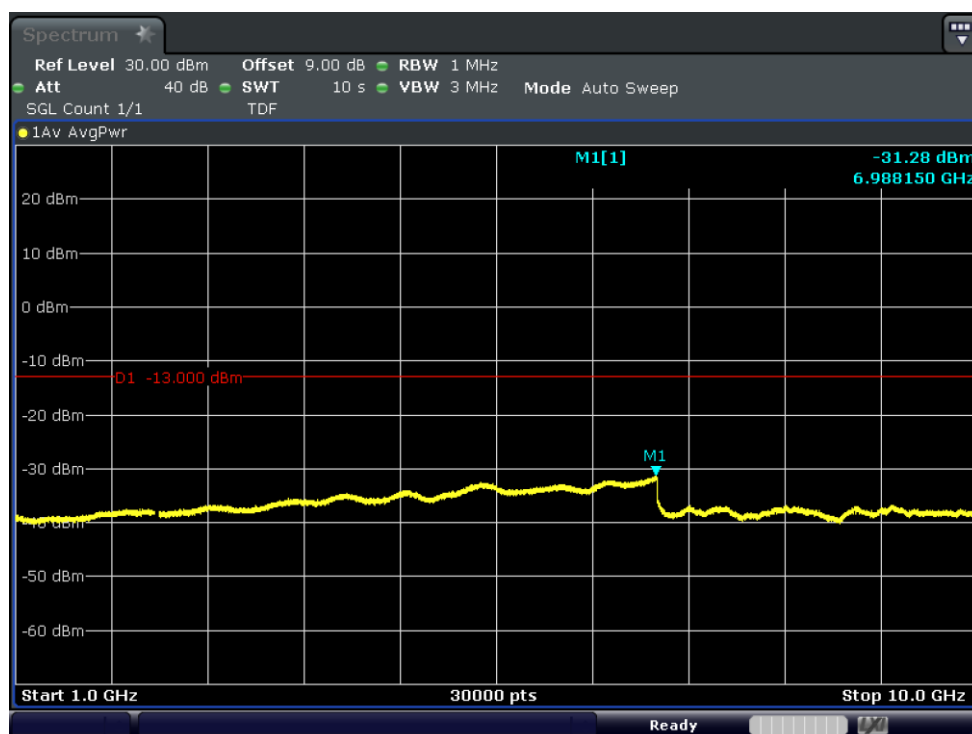
Note: Both QPSK and 16QAM modulation modes were tested. Since the QPSK mode produced the worst-case results, only the corresponding QPSK test results are included in this report.



Test Graphs

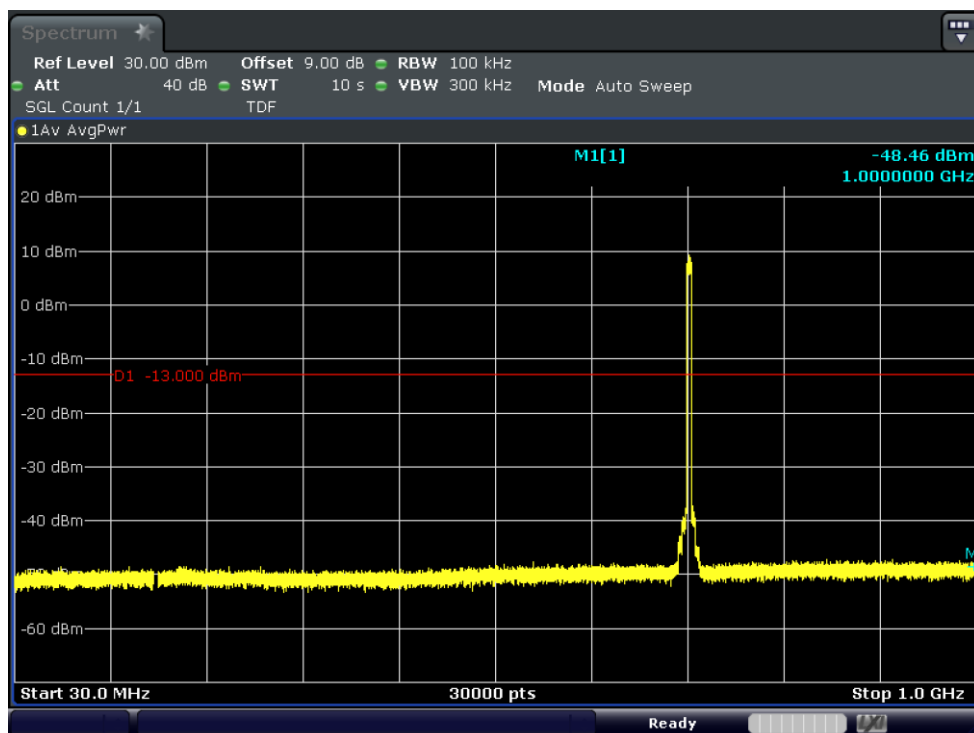


Test_Graph_band17_706.5MHz_5M_QPSK_25RB#LOW_30M_1G_TX

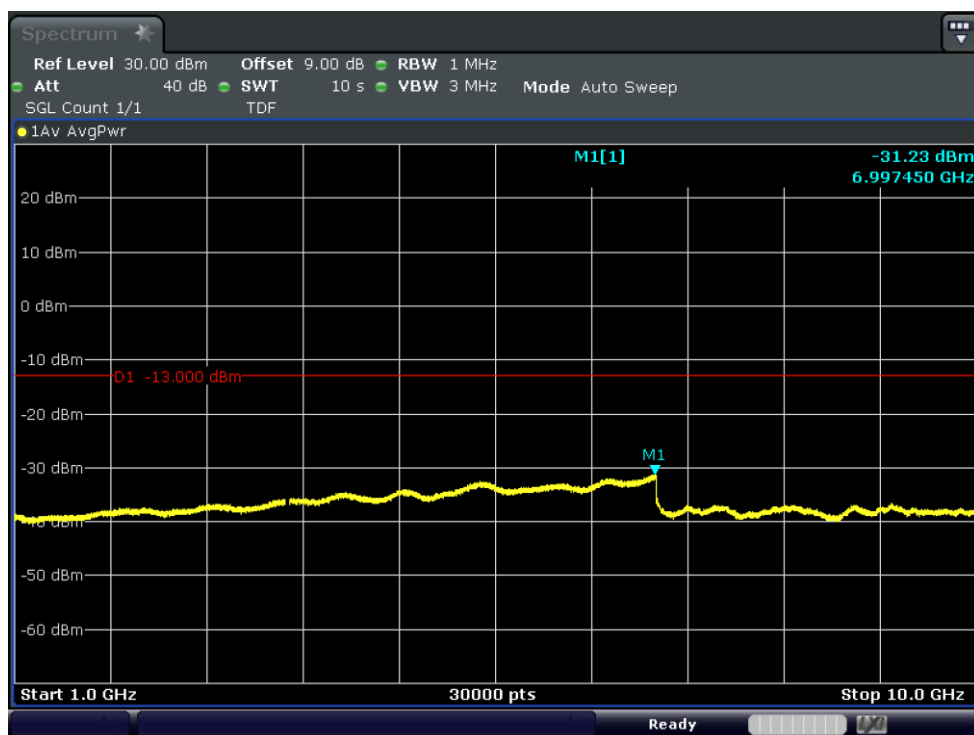


Test_Graph_band17_706.5MHz_5M_QPSK_25RB#LOW_1G_10G_TX



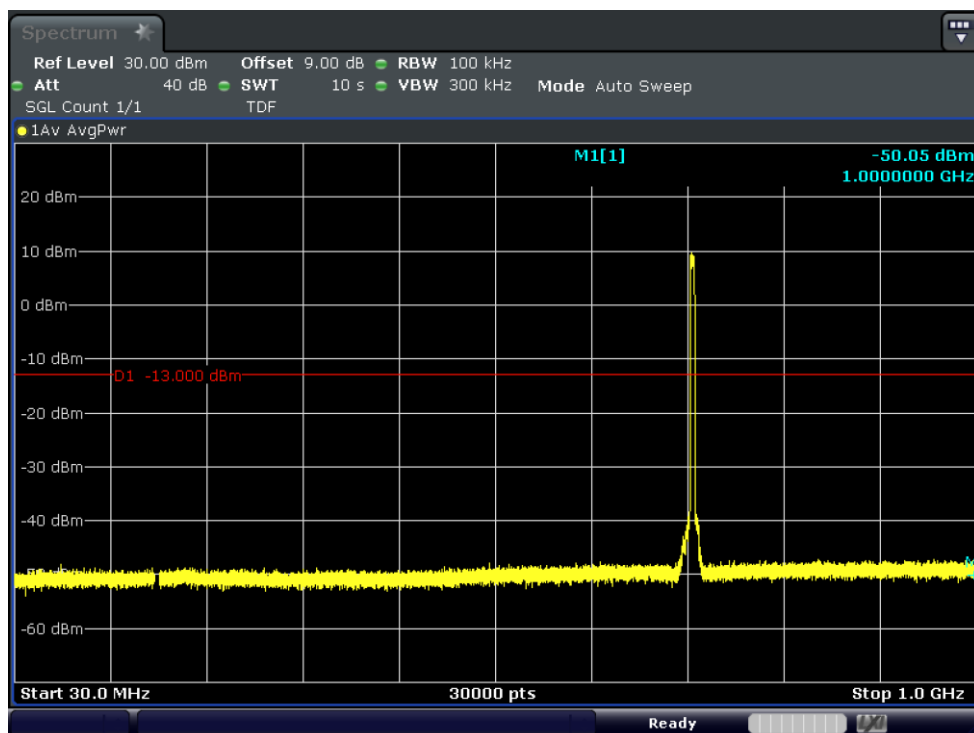


Test_Graph_band17_710MHz_5M_QPSK_25RB#LOW_30M_1G_TX

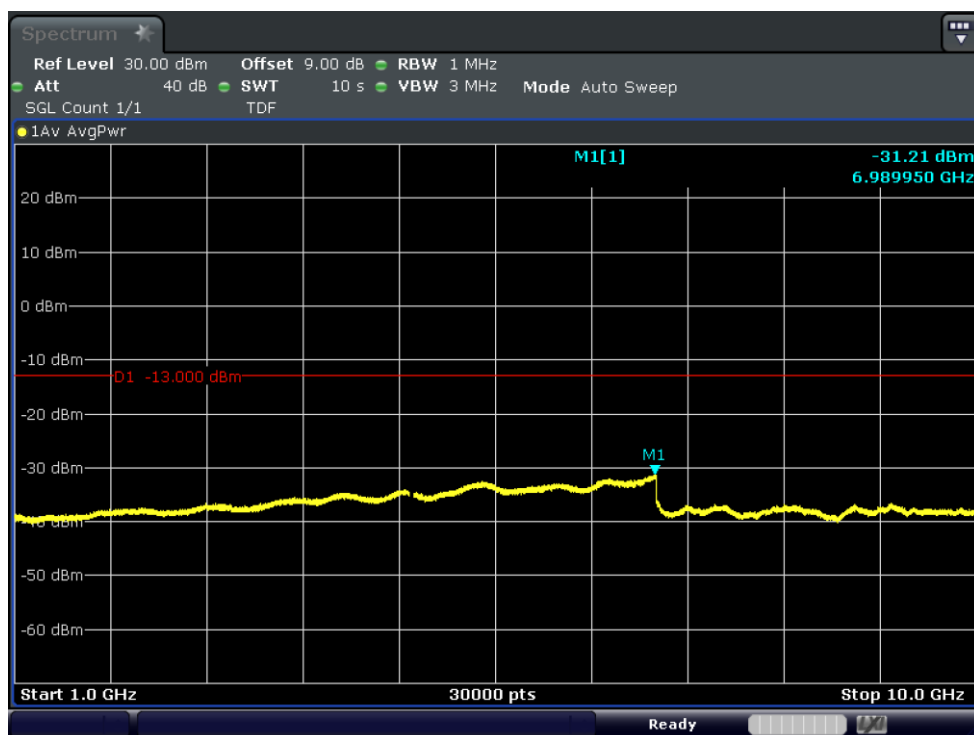


Test_Graph_band17_710MHz_5M_QPSK_25RB#LOW_1G_10G_TX



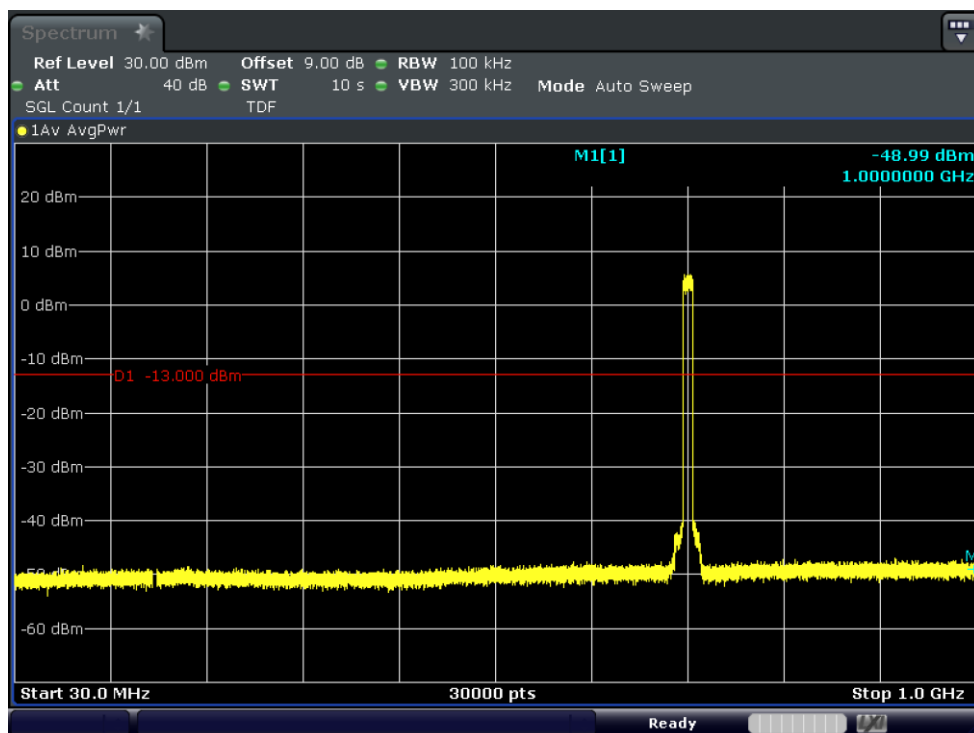


Test_Graph_band17_713.5MHz_5M_QPSK_25RB#LOW_30M_1G_TX

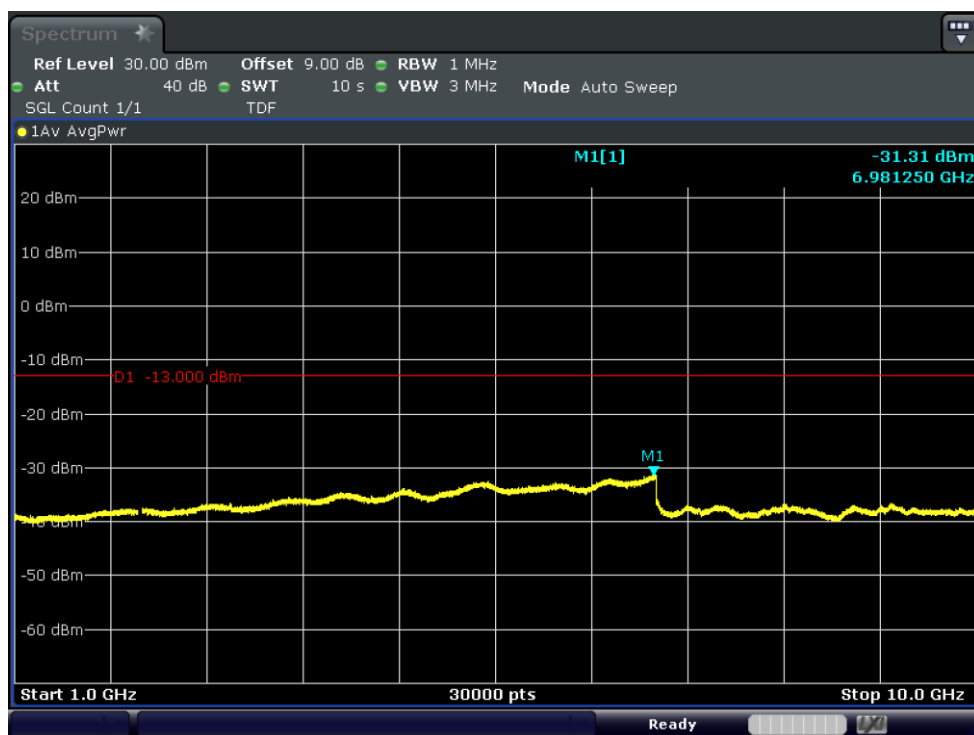


Test_Graph_band17_713.5MHz_5M_QPSK_25RB#LOW_1G_10G_TX



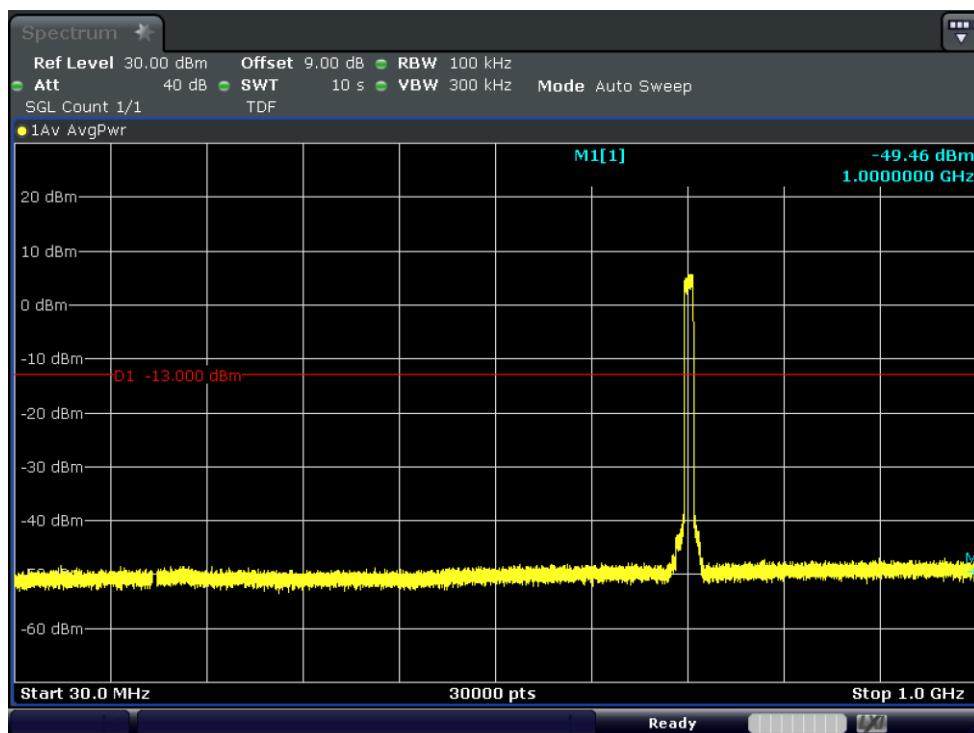


Test_Graph_band17_709MHz_10M_QPSK_50RB#LOW_30M_1G_TX

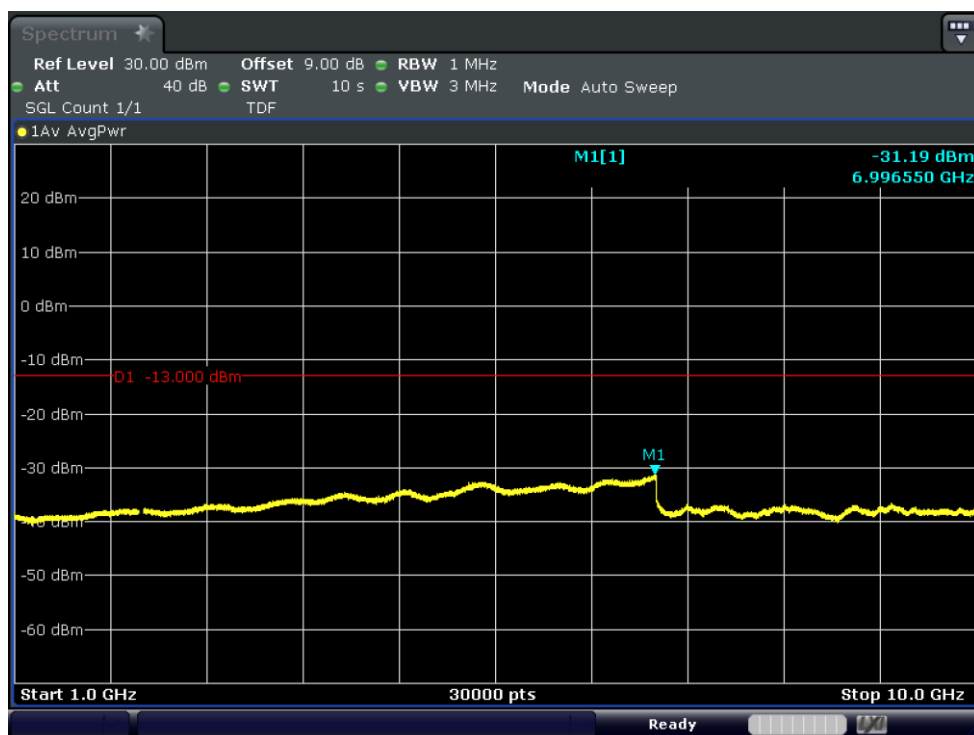


Test_Graph_band17_709MHz_10M_QPSK_50RB#LOW_1G_10G_TX



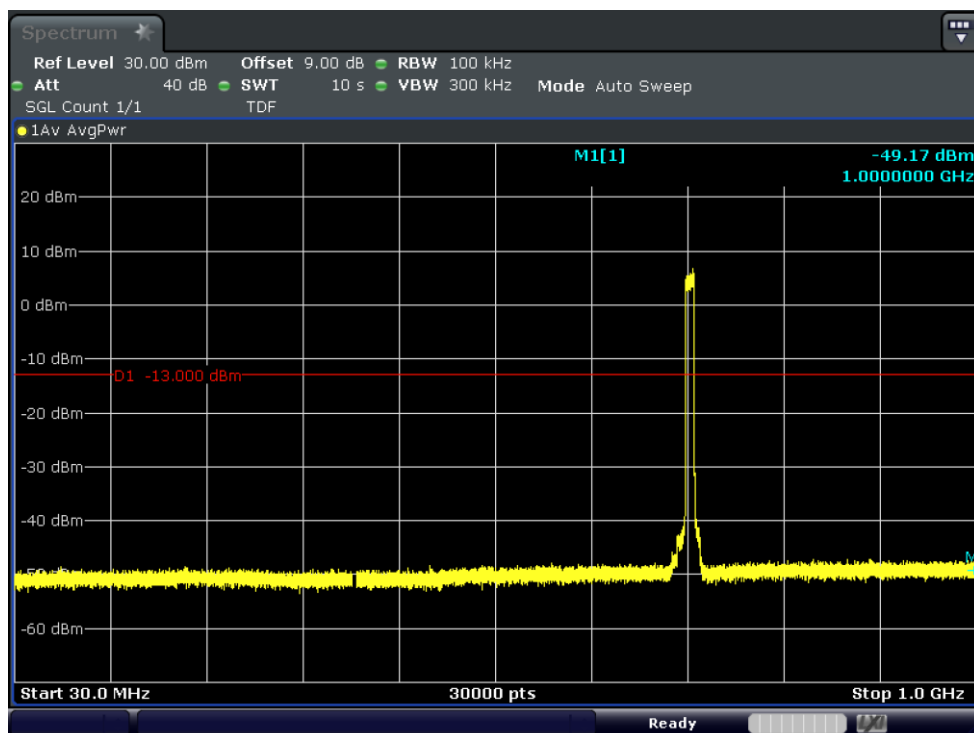


Test_Graph_band17_710MHz_10M_QPSK_50RB#LOW_30M_1G_TX

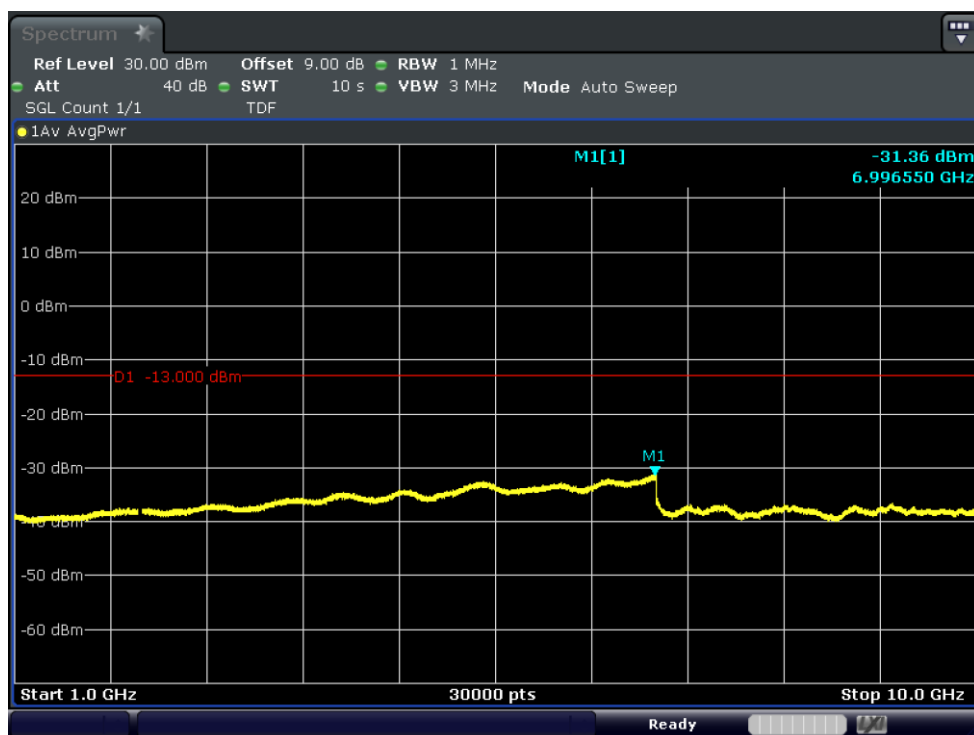


Test_Graph_band17_710MHz_10M_QPSK_50RB#LOW_1G_10G_TX





Test_Graph_band17_711MHz_10M_QPSK_50RB#LOW_30M_1G_TX



Test_Graph_band17_711MHz_10M_QPSK_50RB#LOW_1G_10G_TX





Appendix E: Frequency stability

Test Result

Test Conditions (LTE Band 17(QPSK) /BW 10MHz)		Frequency Range		Frequency Error	Verdict
Temperature (°C)	Voltage (Volt)	>704 Freq Reading @ Low End (MHz)	<716 Freq Reading @ High End (MHz)	Middle Channel	
				≤2.5ppm	
50	Normal Voltage	704.5303	715.4656	0.0065	PASS
40	Normal Voltage	704.5305	715.4656	0.0068	
30	Normal Voltage	704.5304	715.4657	0.0066	
20(Ref.)	Normal Voltage	704.5305	715.4657	0.0066	
10	Normal Voltage	704.5305	715.4656	0.0070	
0	Normal Voltage	704.5305	715.4658	0.0060	
-10	Normal Voltage	704.5305	715.4656	0.0070	
-20	Normal Voltage	704.5305	715.4657	0.0063	
-30	Normal Voltage	704.5304	715.4656	0.0066	
20	+15%	704.5304	715.4657	0.0067	
20	-15%	704.5305	715.4657	0.0062	
20	Battery End Point	704.5304	715.4657	0.0069	

