

APPENDIX E: TEST RESULTS OF BAND 13 FOR CAT-M OPERATION

APPENDIX E: TEST RESULTS OF BAND 13 FOR CAT-M OPERATION	1
APPENDIX E.1: EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA FOR M1	2
Test Result	2
APPENDIX E.2: PEAK-TO-AVERAGE RATIO (CCDF) FOR M1	3
Test Result	3
Test Graphs	4
APPENDIX E.3: 26DB BANDWIDTH AND OCCUPIED BANDWIDTH FOR M1	6
Test Result	6
Test Graphs	7
APPENDIX E.4: BAND EDGE FOR M1	9
Test Result	9
Test Graphs	9
APPENDIX E.5: CONDUCTED SPURIOUS EMISSION FOR M1	14
Test Result	14
Test Graphs	15
APPENDIX E.6: FREQUENCY STABILITY FOR M1	39
Test Result	39

APPENDIX E.1: EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA FOR M1

Test Result

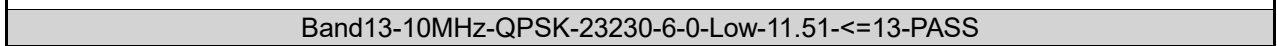
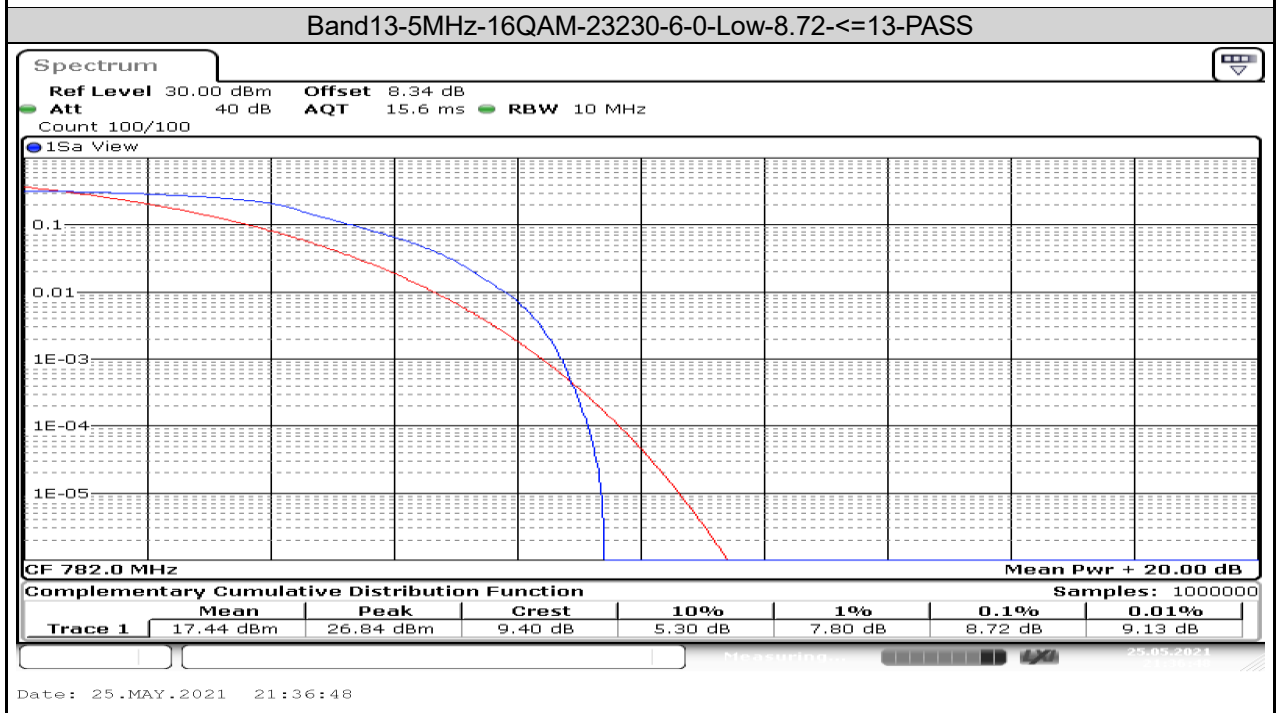
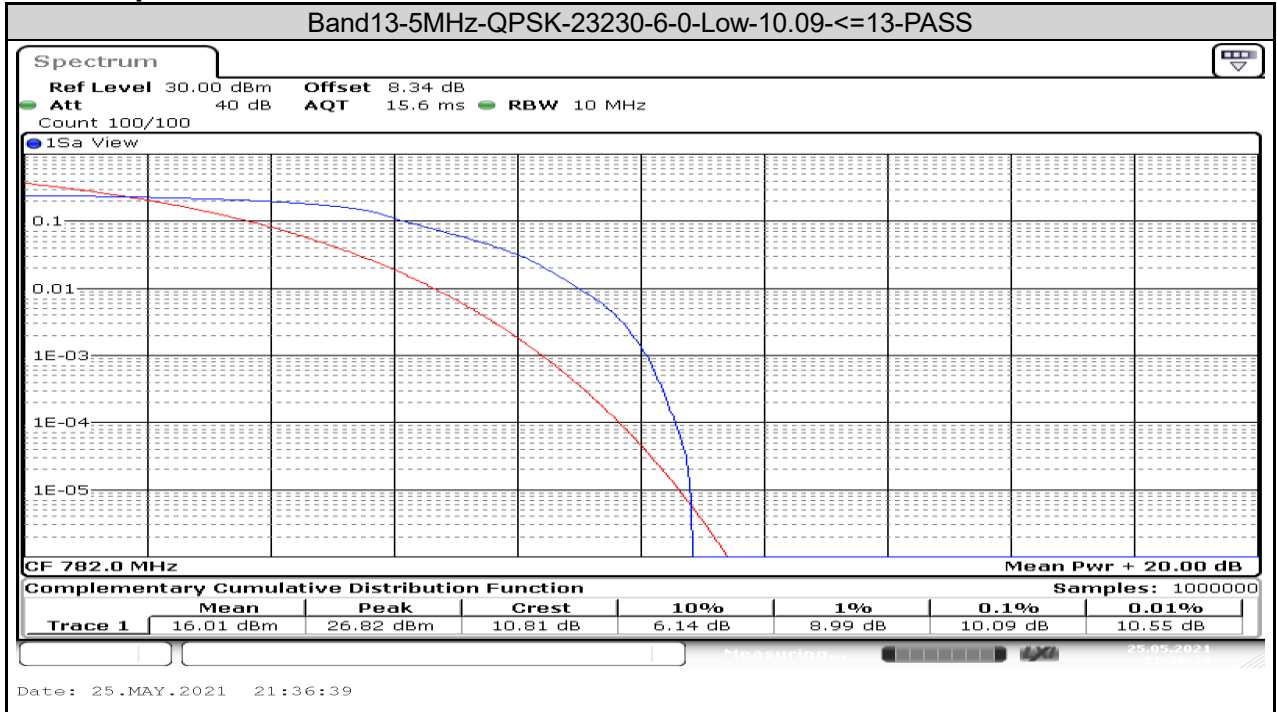
Band	Bandwidth	Channel	Modulation	RB Size	RB Start	NBIndex	Measure Result (dBm)	ERP		Limit (watts)	Verdict
								dBm	Watts		
Band13	5MHz	23205	QPSK	1	0	Low	23.61	23.60	0.229	3	PASS
Band13	5MHz	23205	QPSK	6	0	Low	22.39	22.38	0.173	3	PASS
Band13	5MHz	23230	QPSK	1	0	Low	23.66	23.65	0.232	3	PASS
Band13	5MHz	23230	QPSK	6	0	Low	22.44	22.43	0.175	3	PASS
Band13	5MHz	23255	QPSK	1	5	High	23.35	23.34	0.216	3	PASS
Band13	5MHz	23255	QPSK	3	3	High	22.25	22.24	0.167	3	PASS
Band13	5MHz	23205	16QAM	1	0	Low	23.89	23.88	0.244	3	PASS
Band13	5MHz	23205	16QAM	6	0	Low	22.25	22.24	0.167	3	PASS
Band13	5MHz	23230	16QAM	1	0	Low	23.88	23.87	0.244	3	PASS
Band13	5MHz	23230	16QAM	6	0	Low	22.24	22.23	0.167	3	PASS
Band13	5MHz	23255	16QAM	1	5	High	23.63	23.62	0.230	3	PASS
Band13	5MHz	23255	16QAM	3	3	High	22.33	22.32	0.171	3	PASS
Band13	10MHz	23230	QPSK	1	0	Low	23.73	23.72	0.236	3	PASS
Band13	10MHz	23230	QPSK	1	5	High	23.27	23.26	0.212	3	PASS
Band13	10MHz	23230	QPSK	5	0	Low	22.35	22.34	0.171	3	PASS
Band13	10MHz	23230	QPSK	5	1	High	22.12	22.11	0.163	3	PASS
Band13	10MHz	23230	16QAM	1	0	Low	23.85	23.84	0.242	3	PASS
Band13	10MHz	23230	16QAM	1	5	High	23.7	23.69	0.234	3	PASS
Band13	10MHz	23230	16QAM	5	0	Low	22.28	22.27	0.169	3	PASS
Band13	10MHz	23230	16QAM	5	1	High	22.17	22.16	0.164	3	PASS

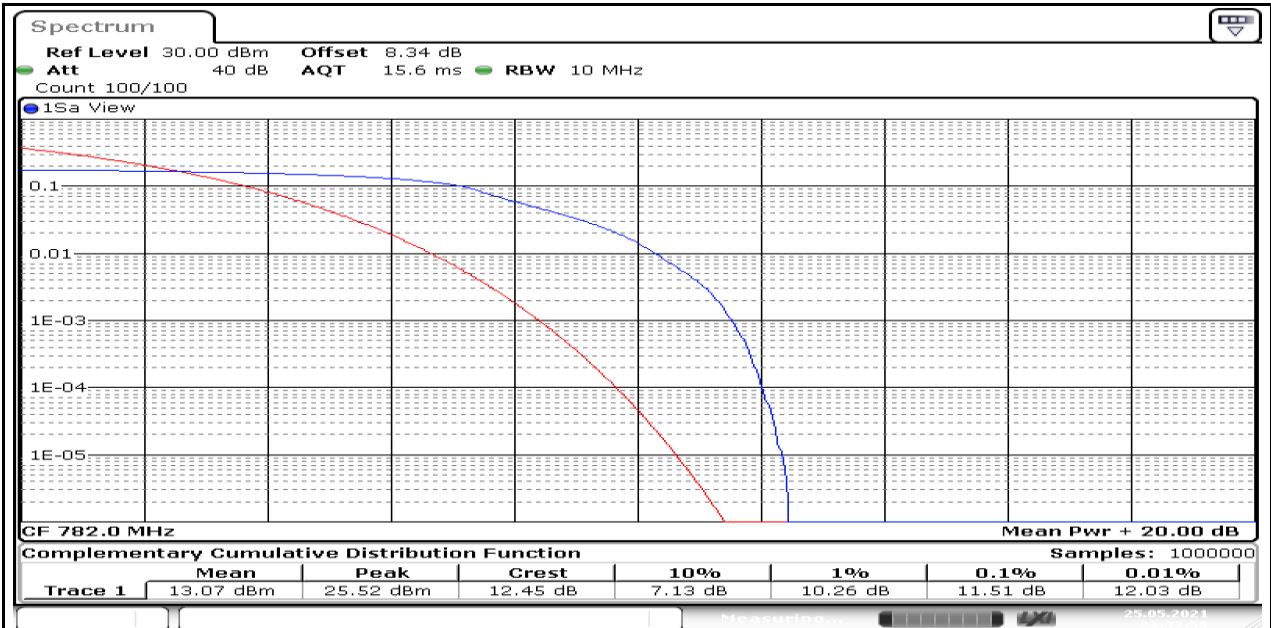
APPENDIX E.2: PEAK-TO-AVERAGE RATIO (CCDF) FOR M1

Test Result

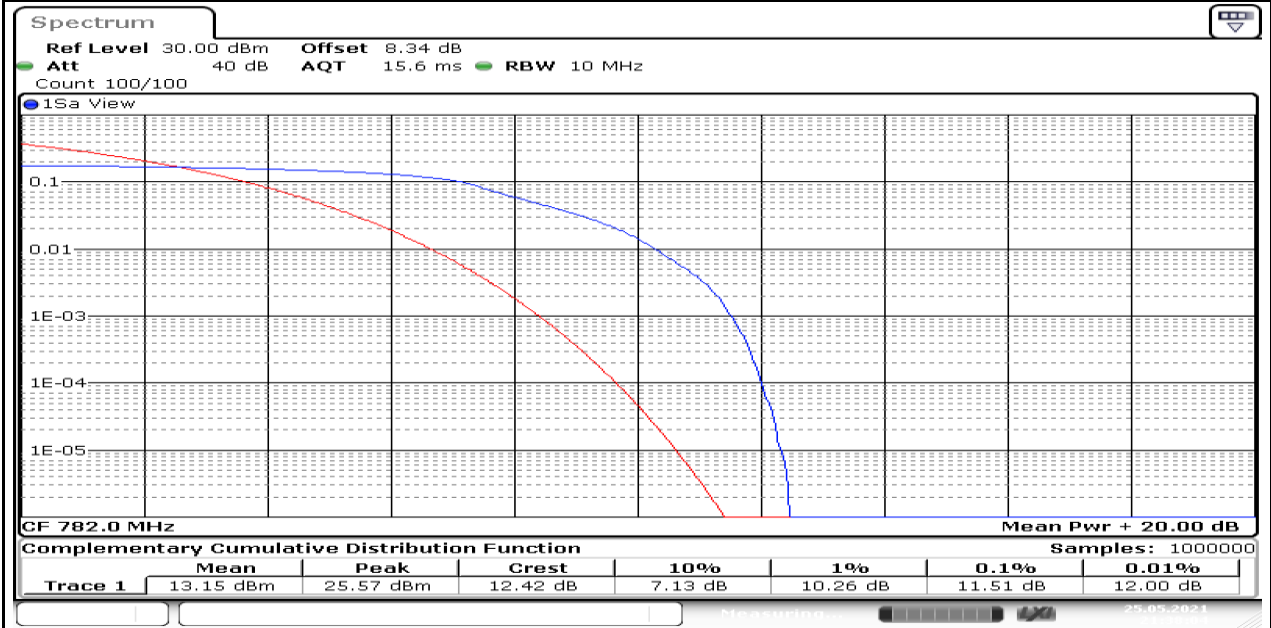
Band	Bandwidth	Channel	Modulation	RB Size	RB Start	Index	Result (dB)	Limit (dB)	Verdict
Band13	5MHz	23230	QPSK	6	0	Low	10.09	<=13	PASS
Band13	5MHz	23230	16QAM	6	0	Low	8.72	<=13	PASS
Band13	10MHz	23230	QPSK	6	0	Low	11.51	<=13	PASS
Band13	10MHz	23230	16QAM	6	0	Low	11.51	<=13	PASS

Test Graphs





Band13-10MHz-16QAM-23230-6-0-Low-11.51-<=13-PASS

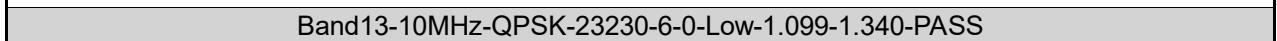
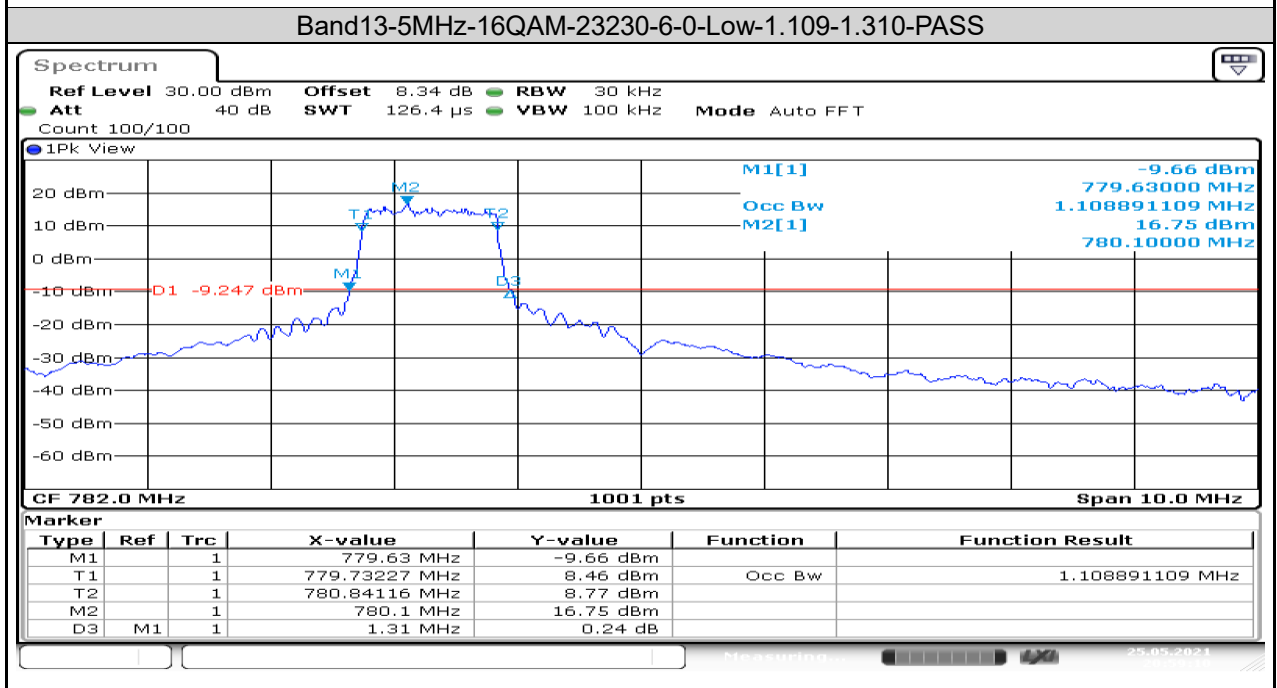
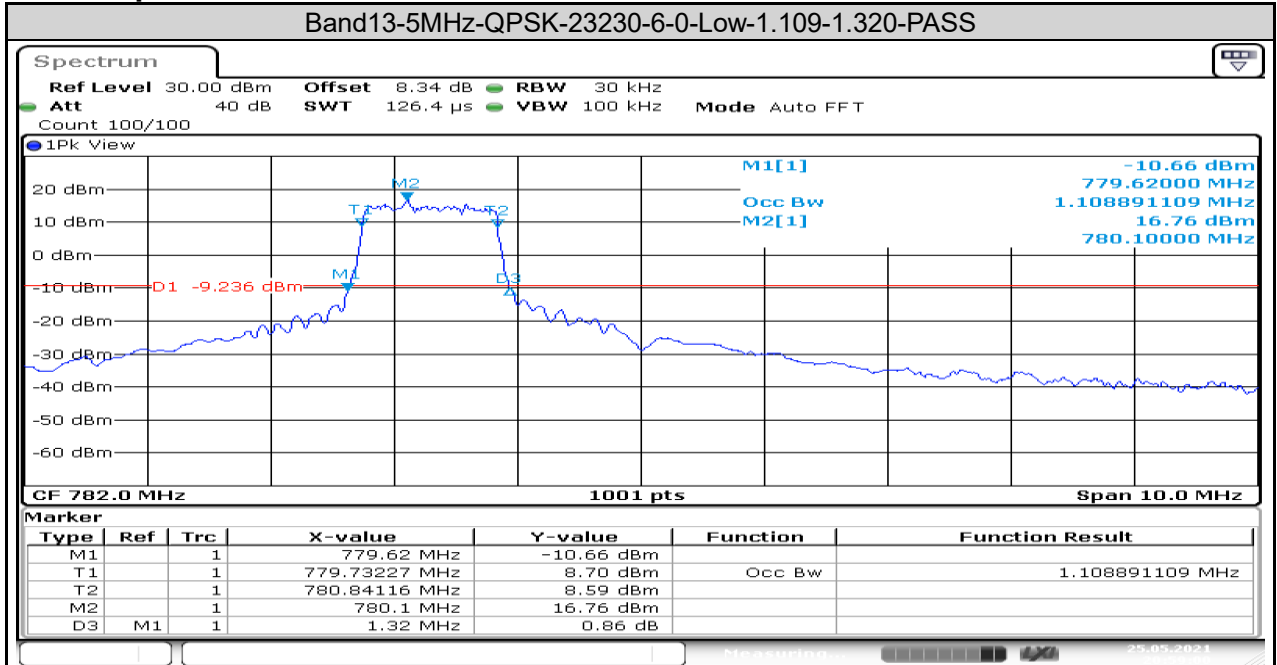


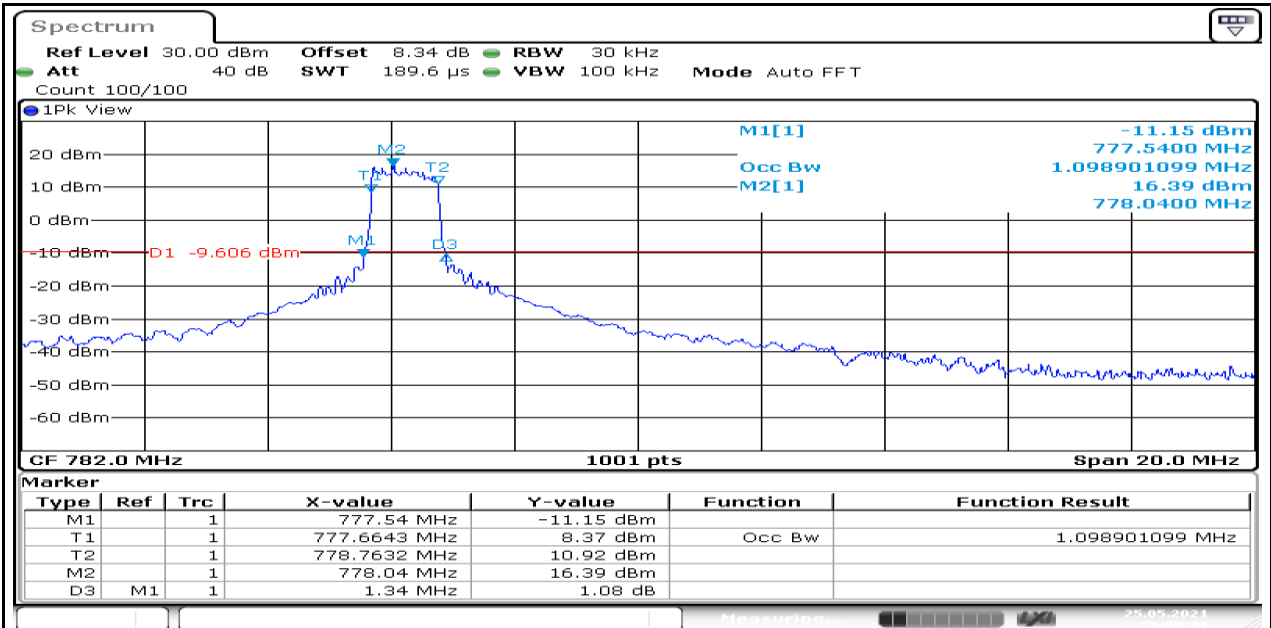
APPENDIX E.3: 26dB BANDWIDTH AND OCCUPIED BANDWIDTH FOR M1

Test Result

Band	Bandwidth	Channel	Modulation	RB Size	RB Start	Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	23230	QPSK	6	0	Low	1.109	1.320	PASS
Band13	5MHz	23230	16QAM	6	0	Low	1.109	1.310	PASS
Band13	10MHz	23230	QPSK	6	0	Low	1.099	1.340	PASS
Band13	10MHz	23230	16QAM	6	0	Low	1.099	1.340	PASS

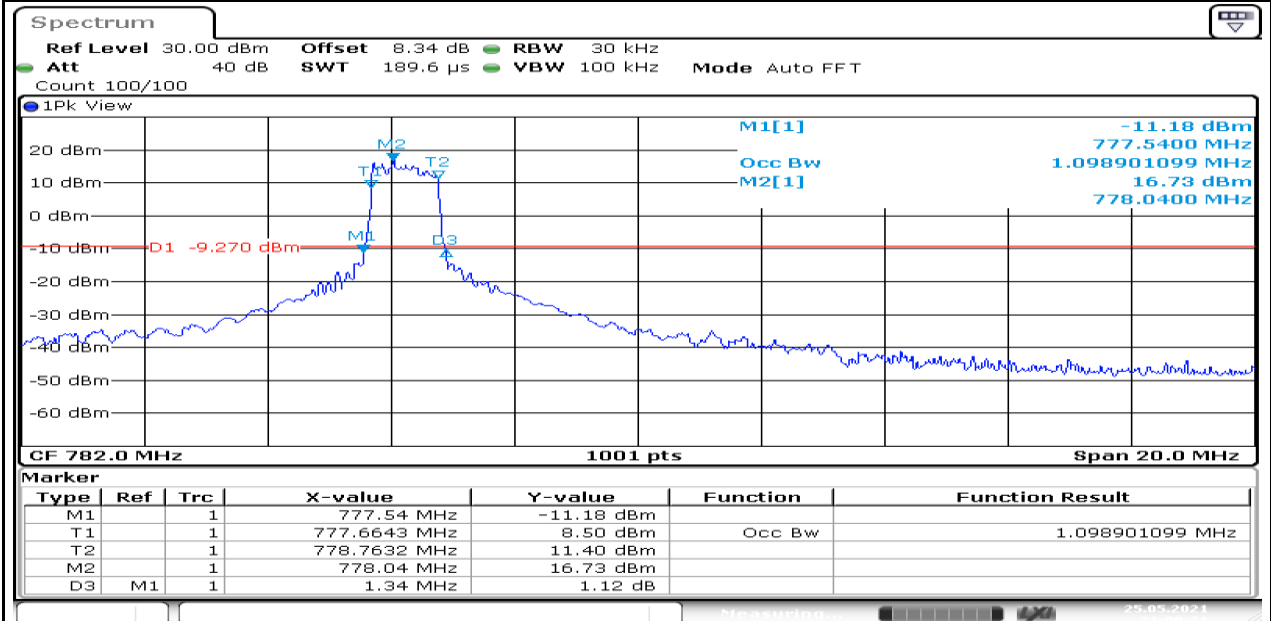
Test Graphs





Date: 25.MAY.2021 21:00:21

Band13-10MHz-16QAM-23230-6-0-Low-1.099-1.340-PASS



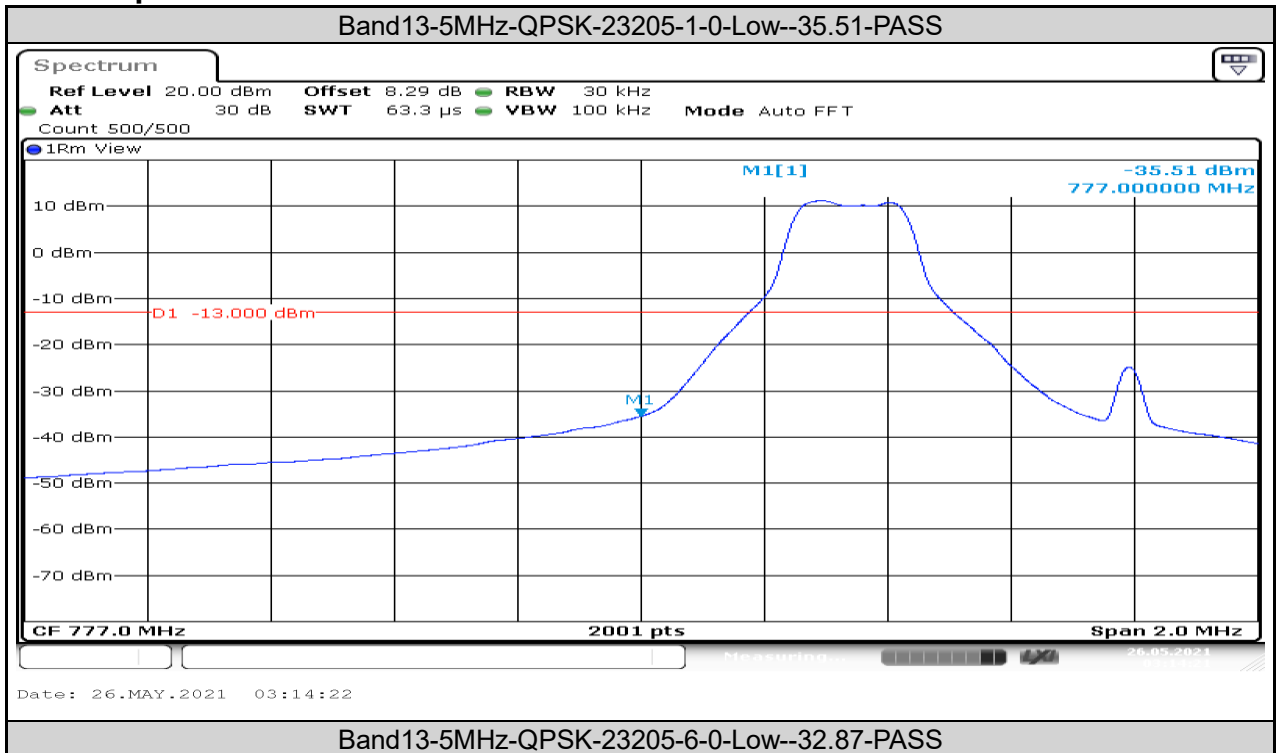
Date: 25.MAY.2021 21:00:31

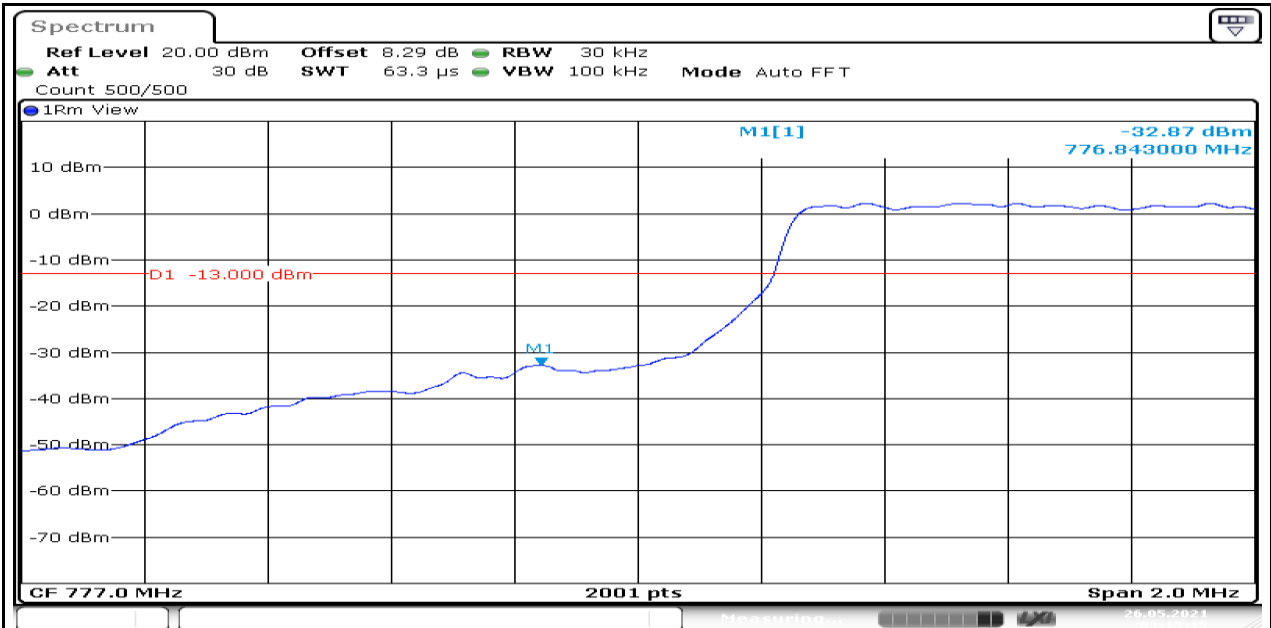
APPENDIX E.4: BAND EDGE FOR M1

Test Result

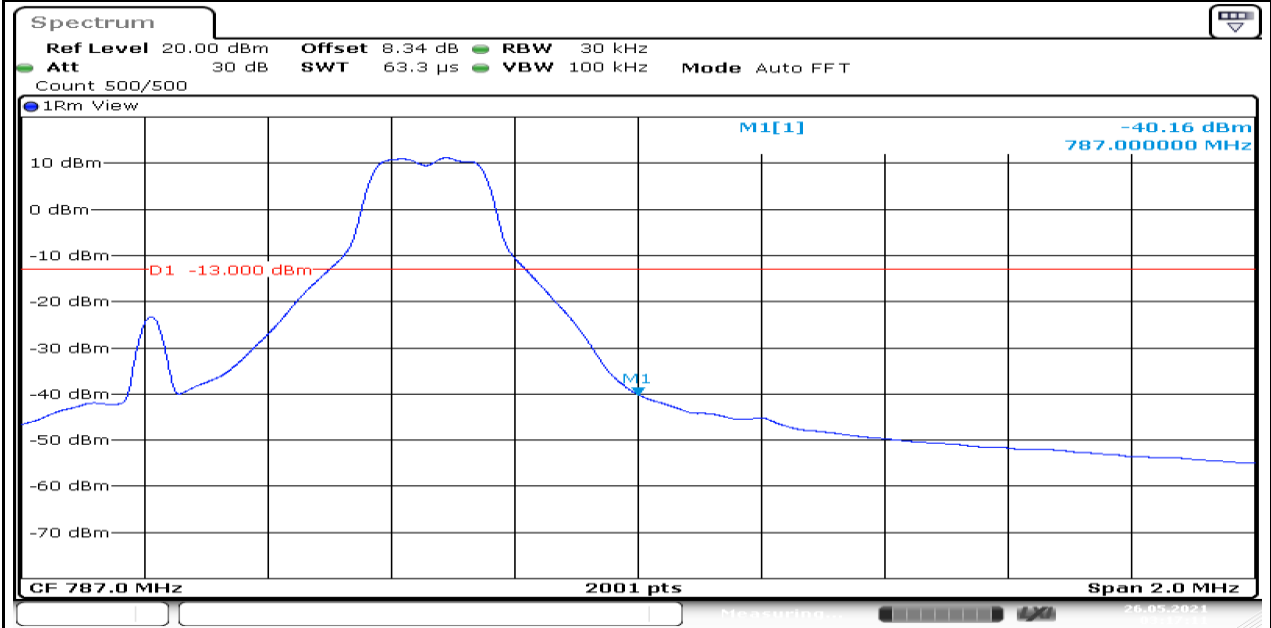
Band	Bandwidth	Channel	Modulation	RB Size	RB Start	NB Index	Result(dBm)	Verdict
Band13	5MHz	23205	QPSK	1	0	Low	-35.51	PASS
Band13	5MHz	23205	QPSK	6	0	Low	-32.87	PASS
Band13	5MHz	23255	QPSK	1	5	High	-40.16	PASS
Band13	5MHz	23255	QPSK	3	3	High	-32.61	PASS
Band13	5MHz	23205	16QAM	1	0	Low	-38.76	PASS
Band13	5MHz	23205	16QAM	6	0	Low	-33.22	PASS
Band13	5MHz	23255	16QAM	1	5	High	-40.68	PASS
Band13	5MHz	23255	16QAM	3	3	High	-32.83	PASS

Test Graphs

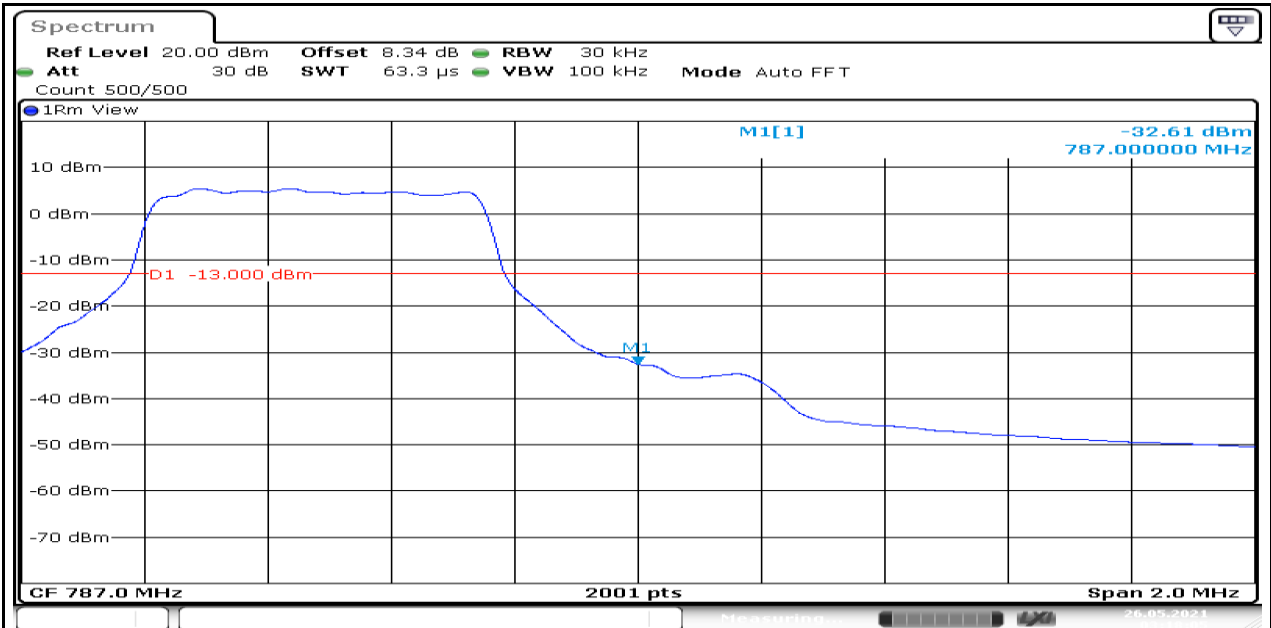




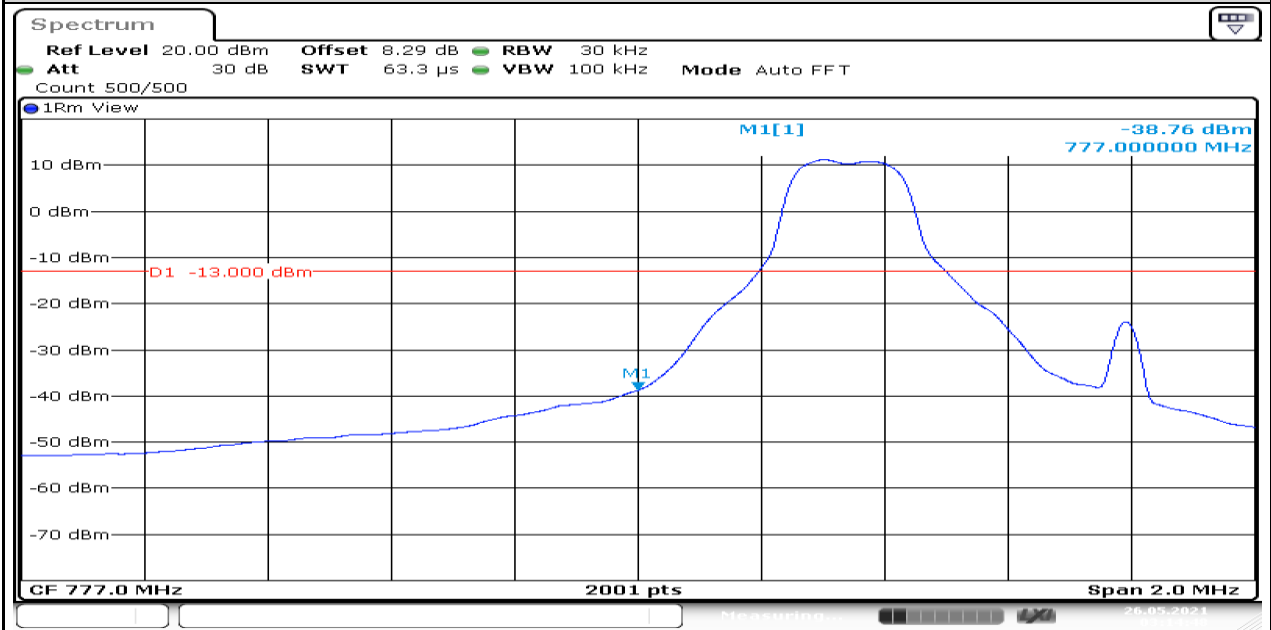
Band13-5MHz-QPSK-23255-1-5-High--40.16-PASS



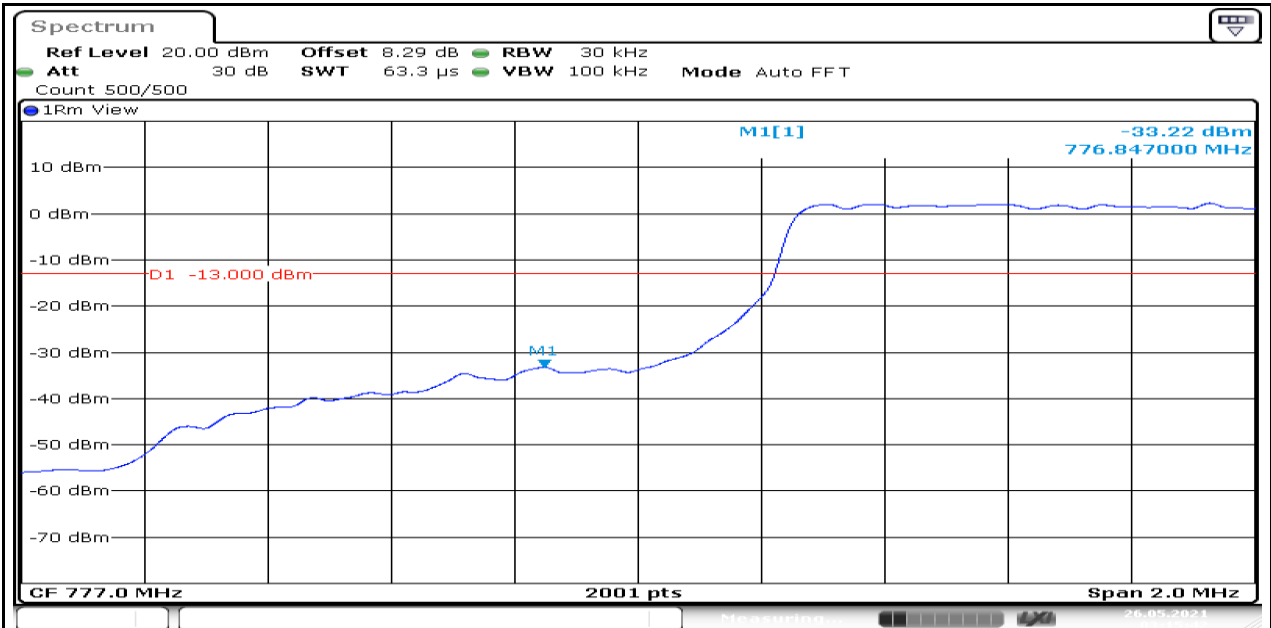
Band13-5MHz-QPSK-23255-3-3-High--32.61-PASS



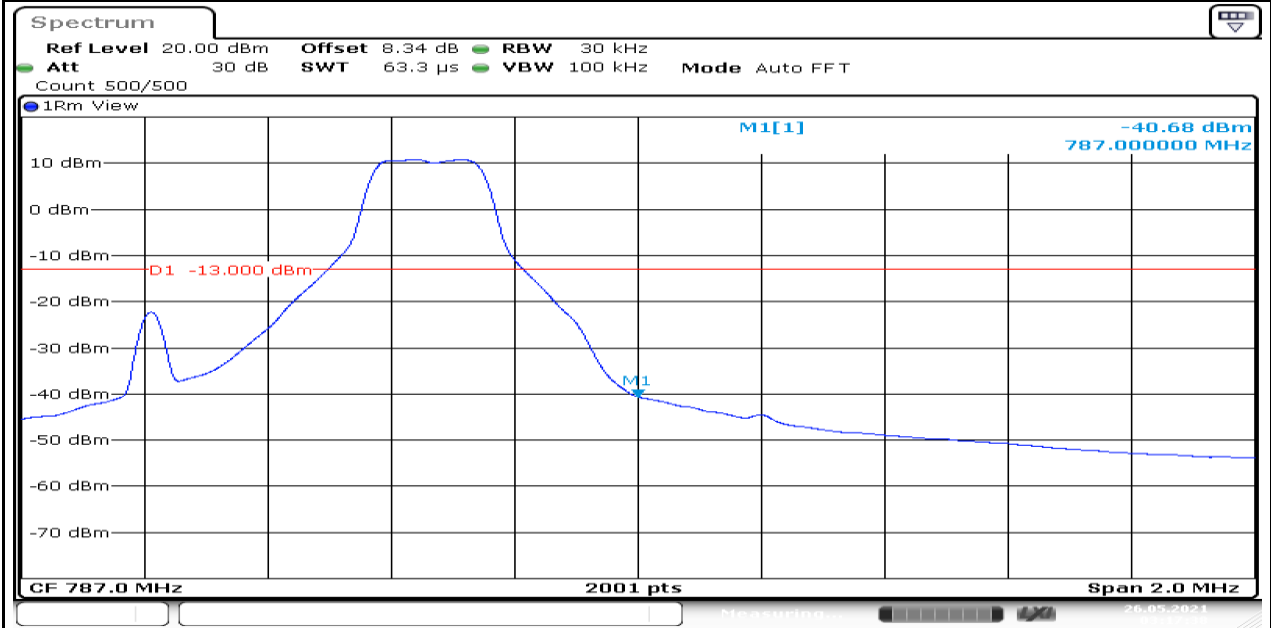
Band13-5MHz-16QAM-23205-1-0-Low--38.76-PASS



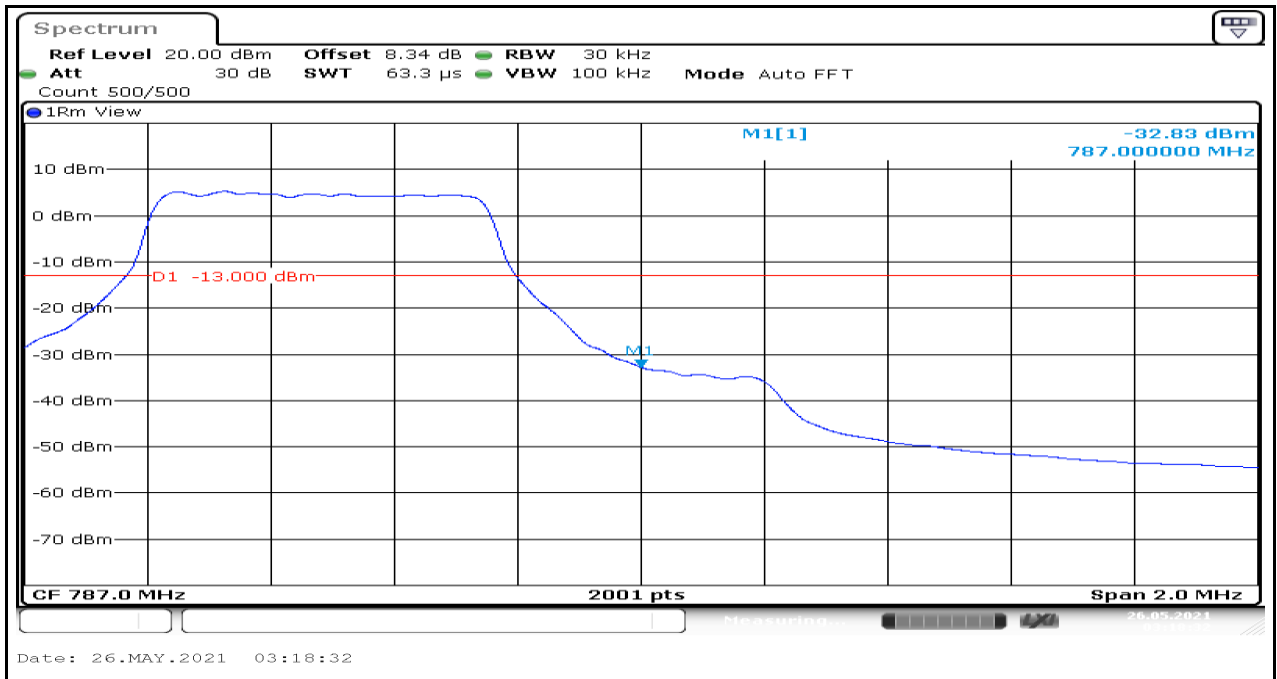
Band13-5MHz-16QAM-23205-6-0-Low--33.22-PASS



Band13-5MHz-16QAM-23255-1-5-High--40.68-PASS



Band13-5MHz-16QAM-23255-3-3-High--32.83-PASS



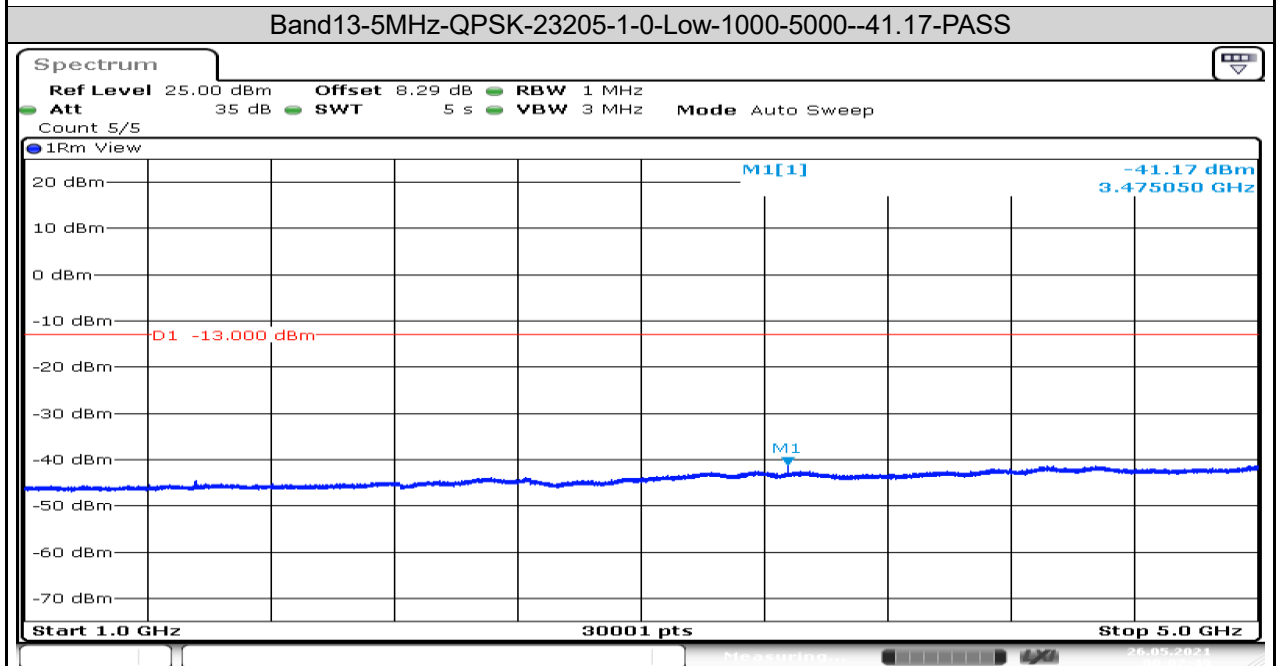
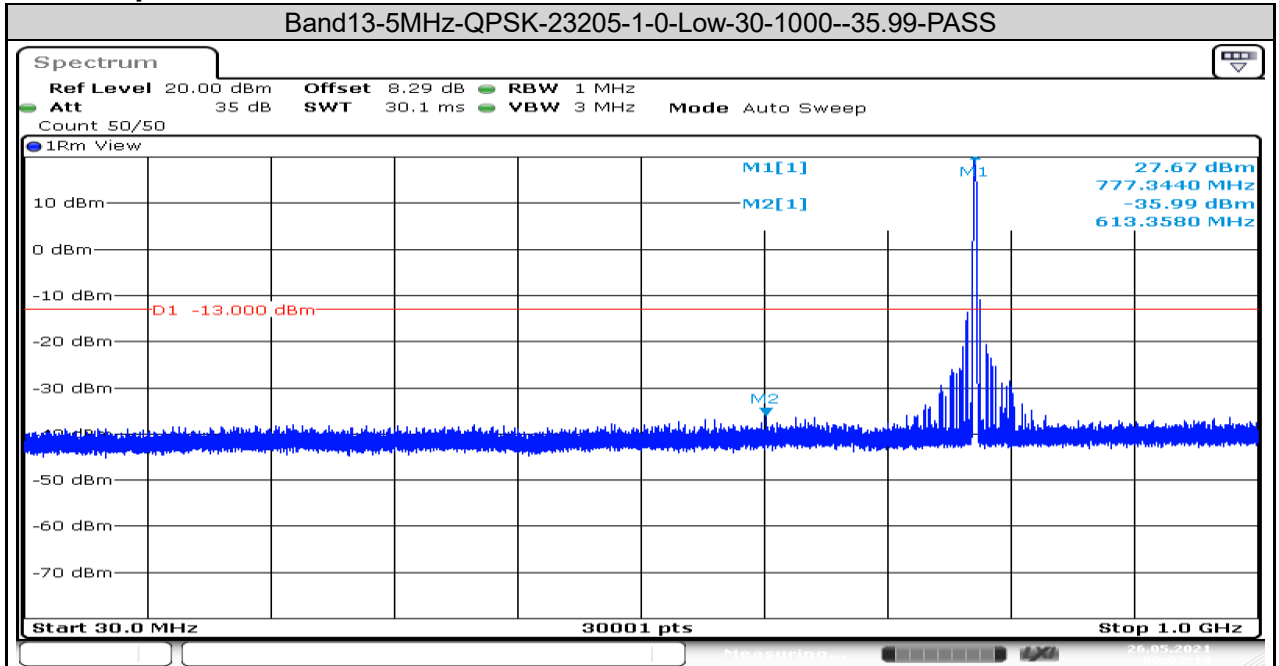
APPENDIX E.5: CONDUCTED SPURIOUS EMISSION FOR M1

Test Result

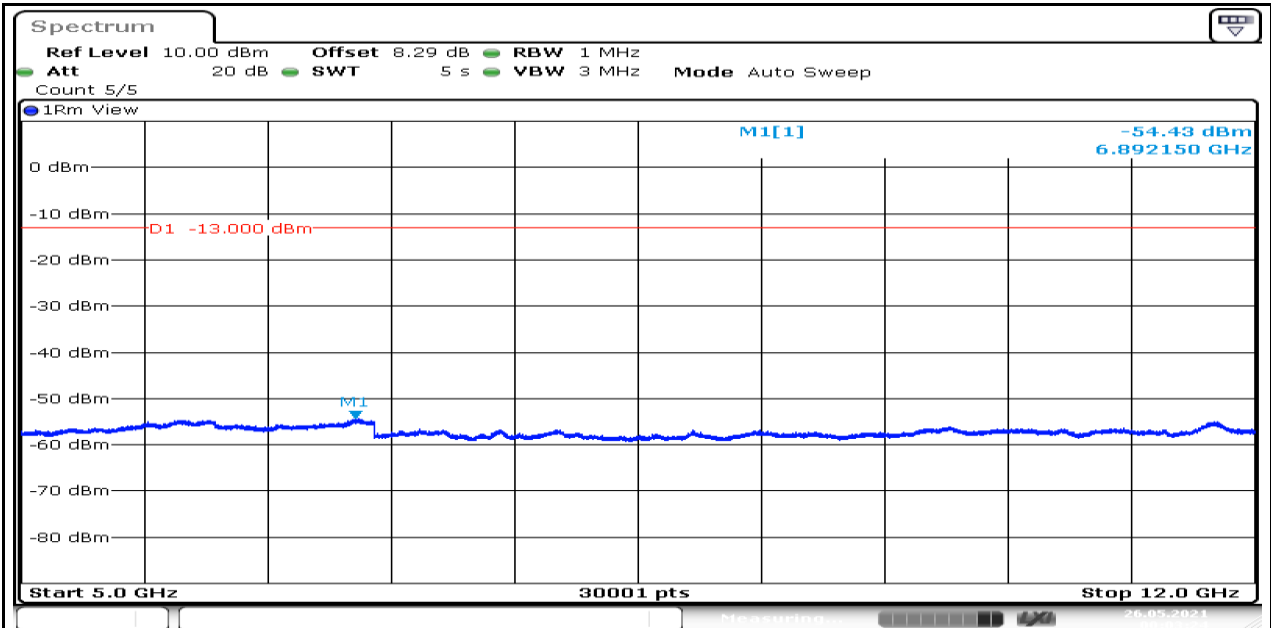
Band	Bandwidth	Channel	Modulation	RB Size	RB Start	Index	Start Freq	Stop Freq	Result (dBm)	Verdict
Band13	5MHz	23205	QPSK	1	0	Low	30	1000	-35.99	PASS
Band13	5MHz	23205	QPSK	1	0	Low	1000	5000	-41.17	PASS
Band13	5MHz	23205	QPSK	1	0	Low	5000	12000	-54.43	PASS
Band13	5MHz	23205	QPSK	1	0	Low	12000	26500	-50.4	PASS
Band13	5MHz	23205	QPSK	6	0	Low	30	1000	-36.34	PASS
Band13	5MHz	23205	QPSK	6	0	Low	1000	5000	-40.87	PASS
Band13	5MHz	23205	QPSK	6	0	Low	5000	12000	-54.37	PASS
Band13	5MHz	23205	QPSK	6	0	Low	12000	26500	-50.41	PASS
Band13	5MHz	23230	QPSK	1	0	Low	30	1000	-35.68	PASS
Band13	5MHz	23230	QPSK	1	0	Low	1000	5000	-41.27	PASS
Band13	5MHz	23230	QPSK	1	0	Low	5000	12000	-54.41	PASS
Band13	5MHz	23230	QPSK	1	0	Low	12000	26500	-50.4	PASS
Band13	5MHz	23230	QPSK	6	0	Low	30	1000	-35.96	PASS
Band13	5MHz	23230	QPSK	6	0	Low	1000	5000	-41.17	PASS
Band13	5MHz	23230	QPSK	6	0	Low	5000	12000	-54.27	PASS
Band13	5MHz	23230	QPSK	6	0	Low	12000	26500	-50.35	PASS
Band13	5MHz	23255	QPSK	1	5	High	30	1000	-36.07	PASS
Band13	5MHz	23255	QPSK	1	5	High	1000	5000	-41.05	PASS
Band13	5MHz	23255	QPSK	1	5	High	5000	12000	-54.44	PASS
Band13	5MHz	23255	QPSK	1	5	High	12000	26500	-50.32	PASS
Band13	5MHz	23255	QPSK	3	3	High	30	1000	-35.82	PASS
Band13	5MHz	23255	QPSK	3	3	High	1000	5000	-40.92	PASS
Band13	5MHz	23255	QPSK	3	3	High	5000	12000	-54.25	PASS
Band13	5MHz	23255	QPSK	3	3	High	12000	26500	-50.39	PASS
Band13	5MHz	23205	16QAM	1	0	Low	30	1000	-35.86	PASS
Band13	5MHz	23205	16QAM	1	0	Low	1000	5000	-41.36	PASS
Band13	5MHz	23205	16QAM	1	0	Low	5000	12000	-54.34	PASS
Band13	5MHz	23205	16QAM	1	0	Low	12000	26500	-50.25	PASS
Band13	5MHz	23205	16QAM	6	0	Low	30	1000	-36.35	PASS
Band13	5MHz	23205	16QAM	6	0	Low	1000	5000	-41.16	PASS
Band13	5MHz	23205	16QAM	6	0	Low	5000	12000	-54.25	PASS
Band13	5MHz	23205	16QAM	6	0	Low	12000	26500	-50.42	PASS
Band13	5MHz	23230	16QAM	1	0	Low	30	1000	-36.14	PASS
Band13	5MHz	23230	16QAM	1	0	Low	1000	5000	-40.46	PASS
Band13	5MHz	23230	16QAM	1	0	Low	5000	12000	-54.34	PASS
Band13	5MHz	23230	16QAM	1	0	Low	12000	26500	-50.1	PASS
Band13	5MHz	23230	16QAM	6	0	Low	30	1000	-35.87	PASS
Band13	5MHz	23230	16QAM	6	0	Low	1000	5000	-41.05	PASS
Band13	5MHz	23230	16QAM	6	0	Low	5000	12000	-54.22	PASS
Band13	5MHz	23230	16QAM	6	0	Low	12000	26500	-50.36	PASS
Band13	5MHz	23255	16QAM	1	5	High	30	1000	-36.8	PASS
Band13	5MHz	23255	16QAM	1	5	High	1000	5000	-41.35	PASS
Band13	5MHz	23255	16QAM	1	5	High	5000	12000	-54.24	PASS
Band13	5MHz	23255	16QAM	1	5	High	12000	26500	-50.12	PASS
Band13	5MHz	23255	16QAM	3	3	High	30	1000	-36.32	PASS

Band13	5MHz	23255	16QAM	3	3	High	1000	5000	-41.24	PASS
Band13	5MHz	23255	16QAM	3	3	High	5000	12000	-54.26	PASS
Band13	5MHz	23255	16QAM	3	3	High	12000	26500	-50.35	PASS

Test Graphs

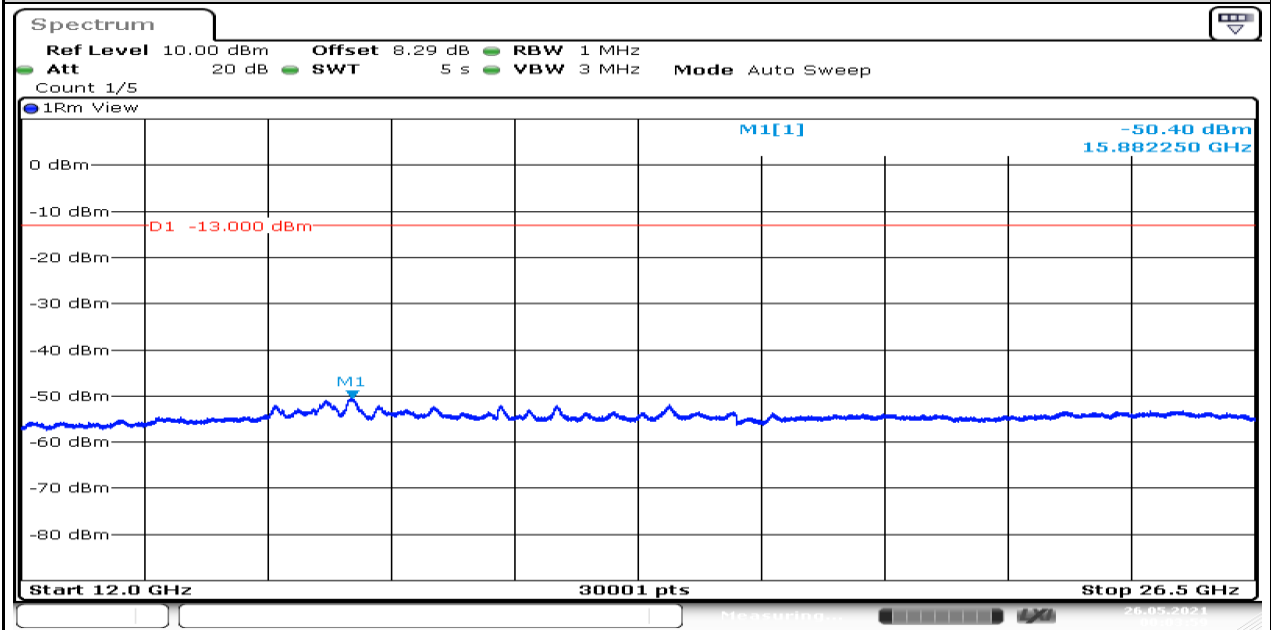


Band13-5MHz-QPSK-23205-1-0-Low-5000-12000--54.43-PASS



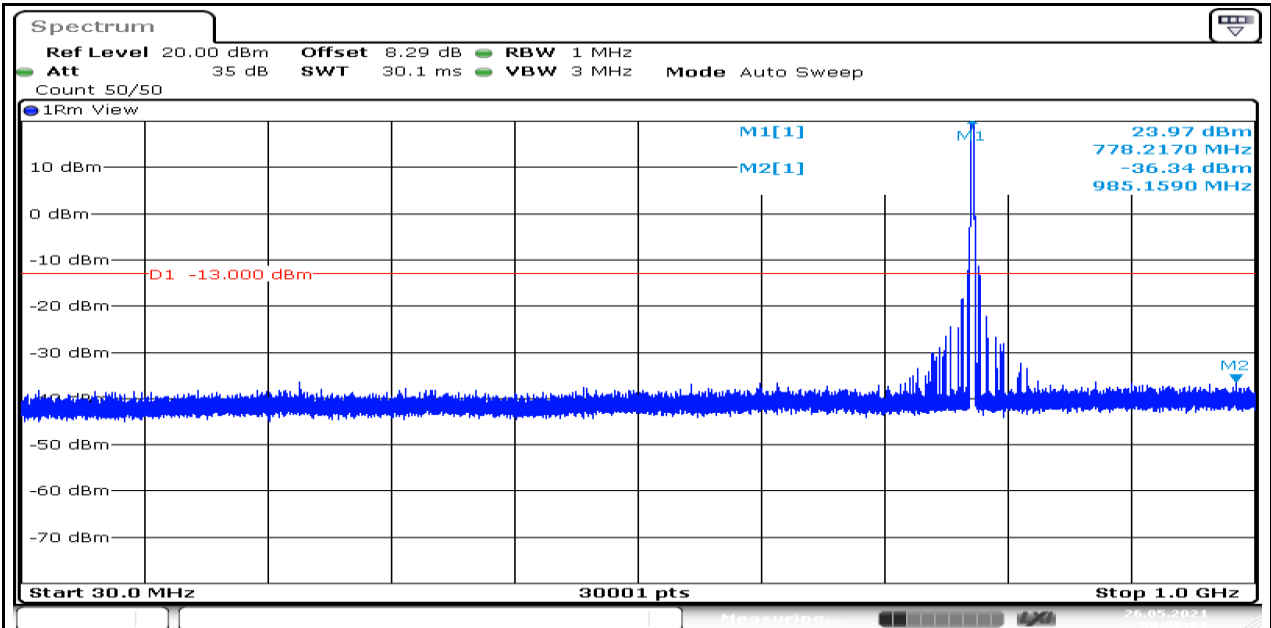
Date: 26.MAY.2021 00:03:24

Band13-5MHz-QPSK-23205-1-0-Low-12000-26500--50.4-PASS

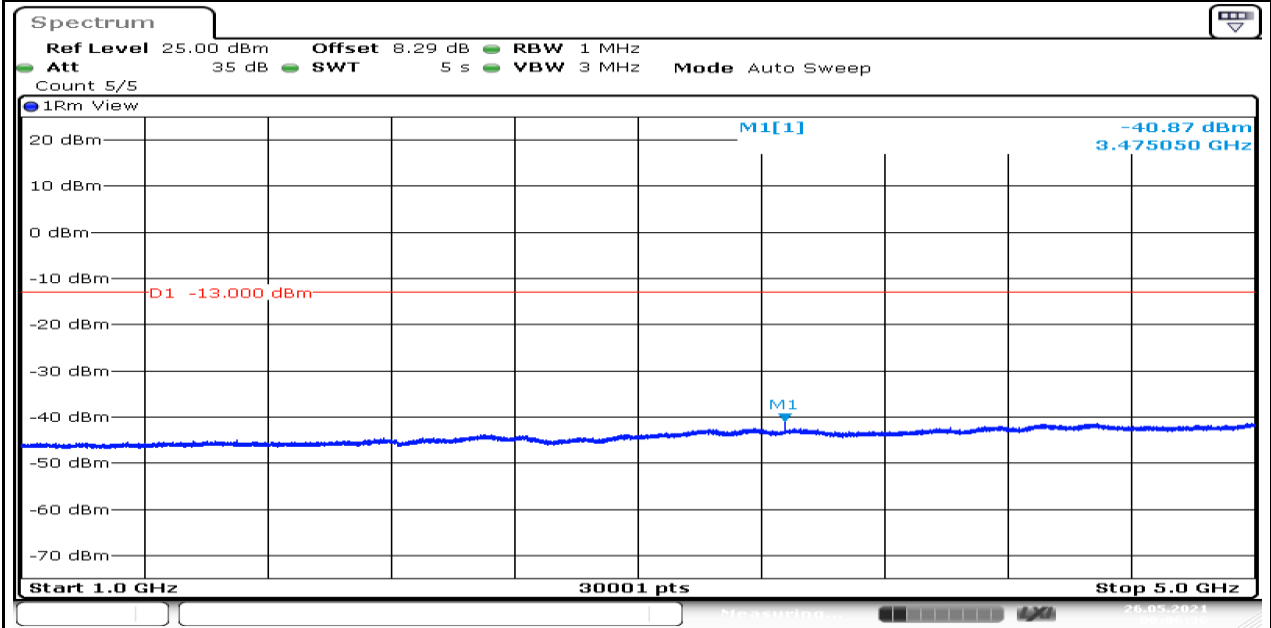


Date: 26.MAY.2021 00:03:59

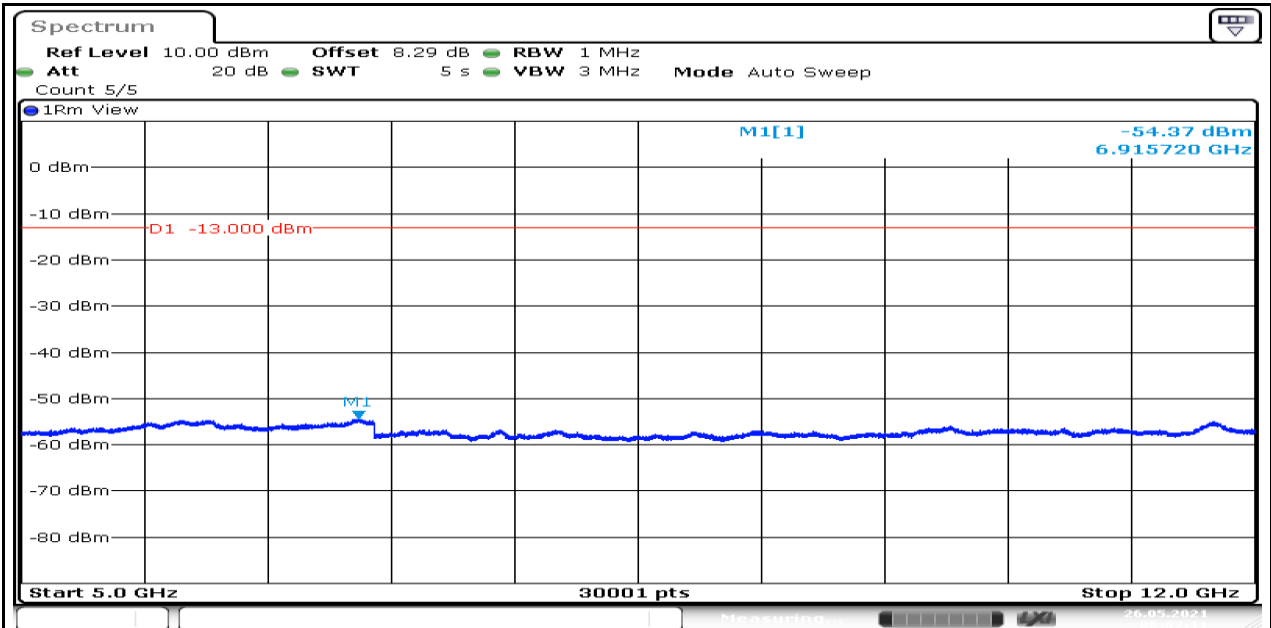
Band13-5MHz-QPSK-23205-6-0-Low-30-1000--36.34-PASS



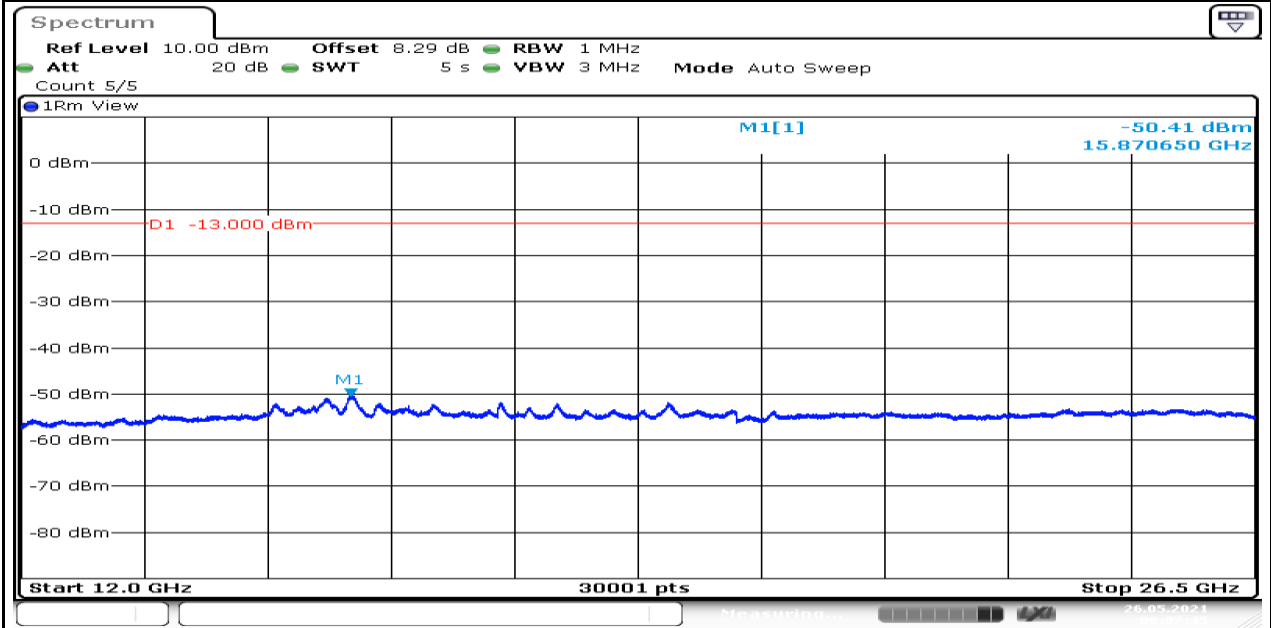
Band13-5MHz-QPSK-23205-6-0-Low-1000-5000--40.87-PASS



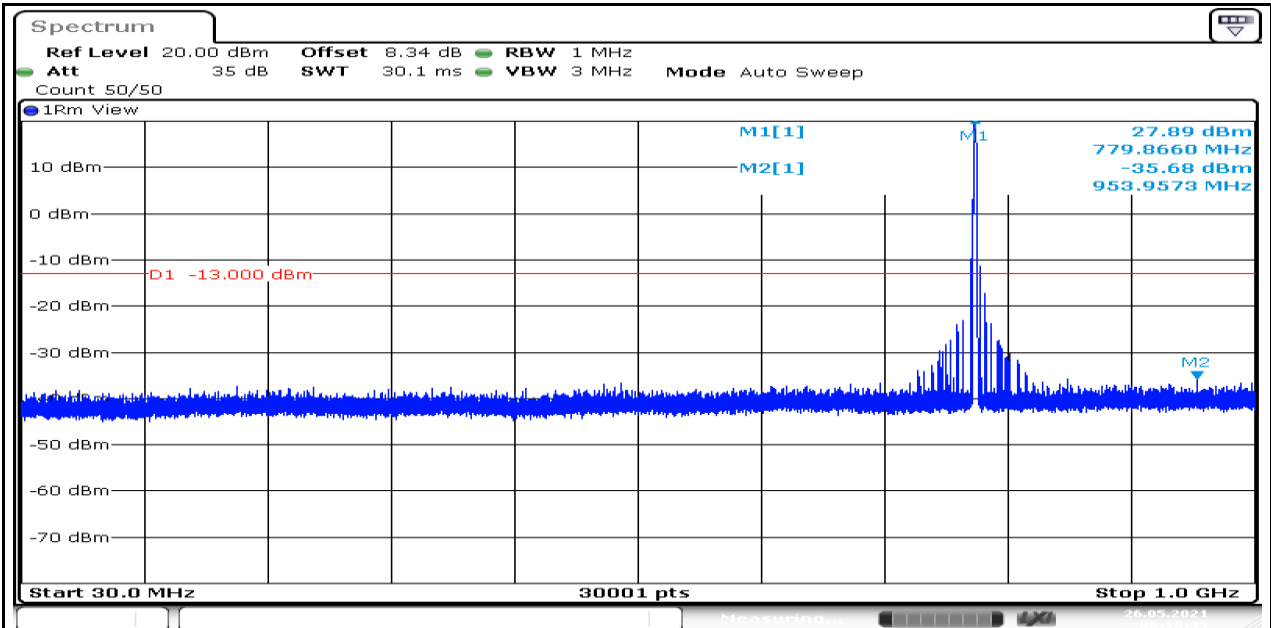
Band13-5MHz-QPSK-23205-6-0-Low-5000-12000--54.37-PASS



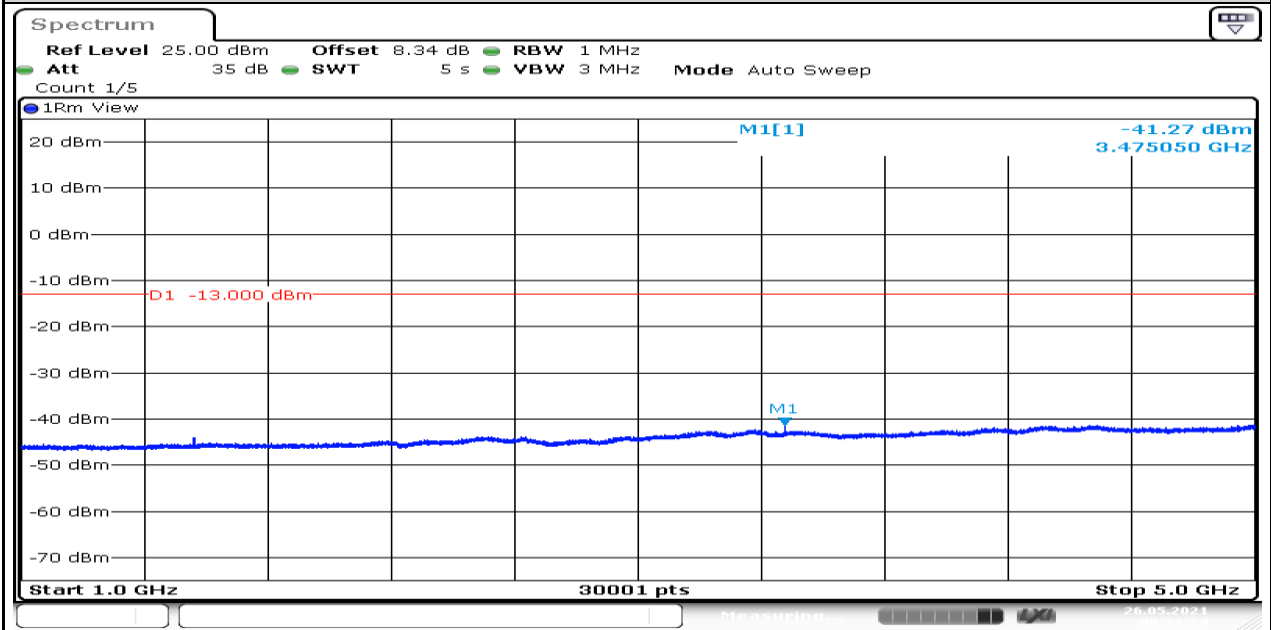
Band13-5MHz-QPSK-23205-6-0-Low-12000-26500--50.41-PASS



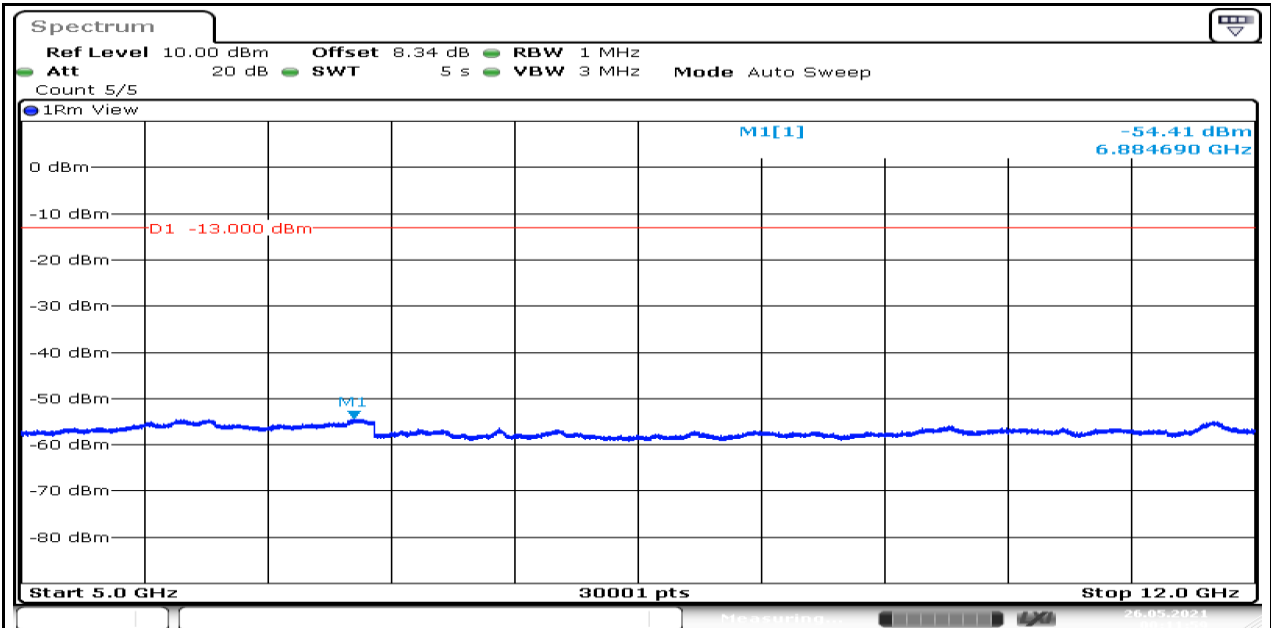
Band13-5MHz-QPSK-23230-1-0-Low-30-1000--35.68-PASS



Band13-5MHz-QPSK-23230-1-0-Low-1000-5000--41.27-PASS

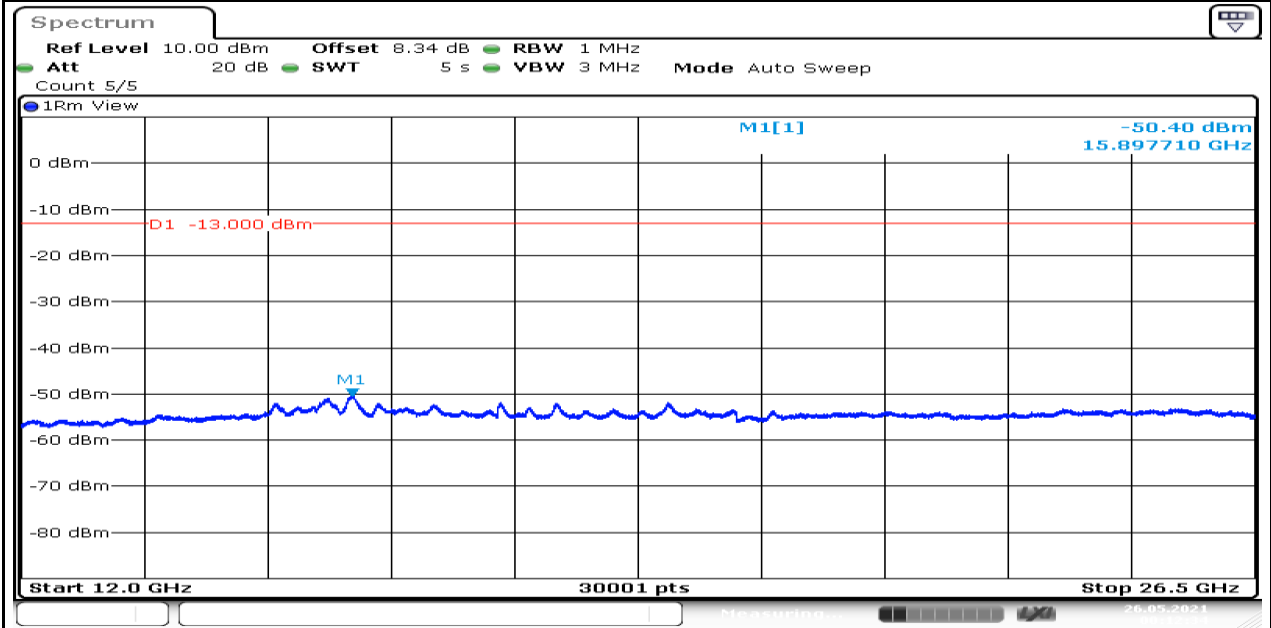


Band13-5MHz-QPSK-23230-1-0-Low-5000-12000--54.41-PASS



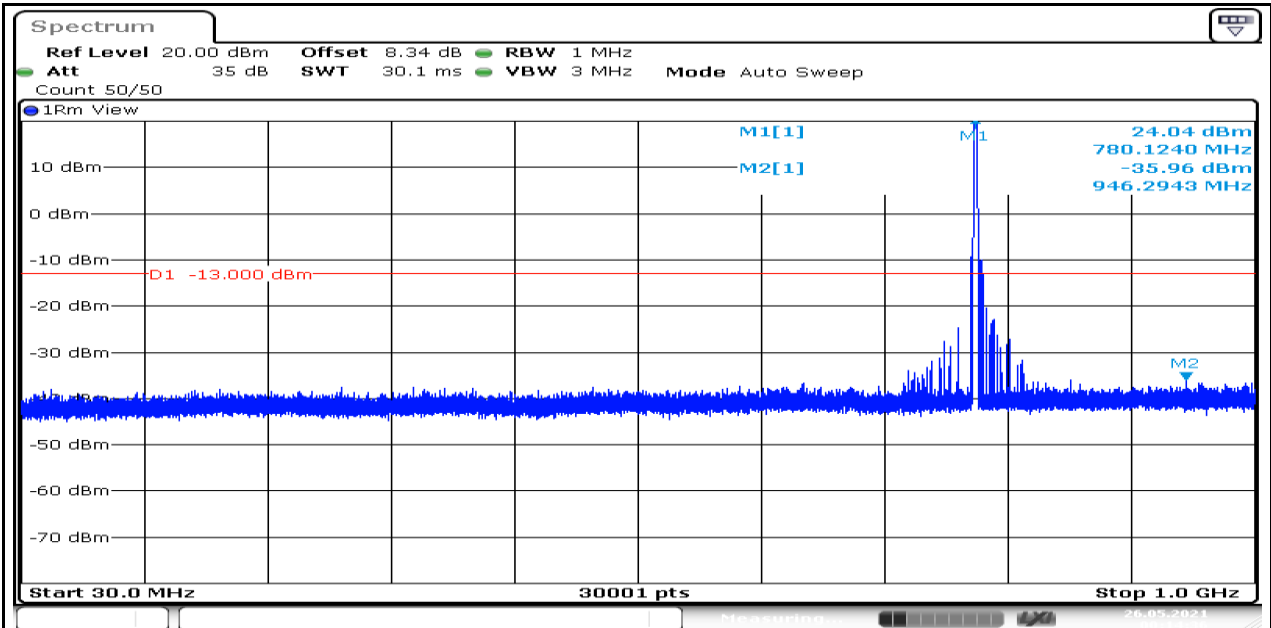
Date: 26.MAY.2021 00:11:59

Band13-5MHz-QPSK-23230-1-0-Low-12000-26500--50.4-PASS

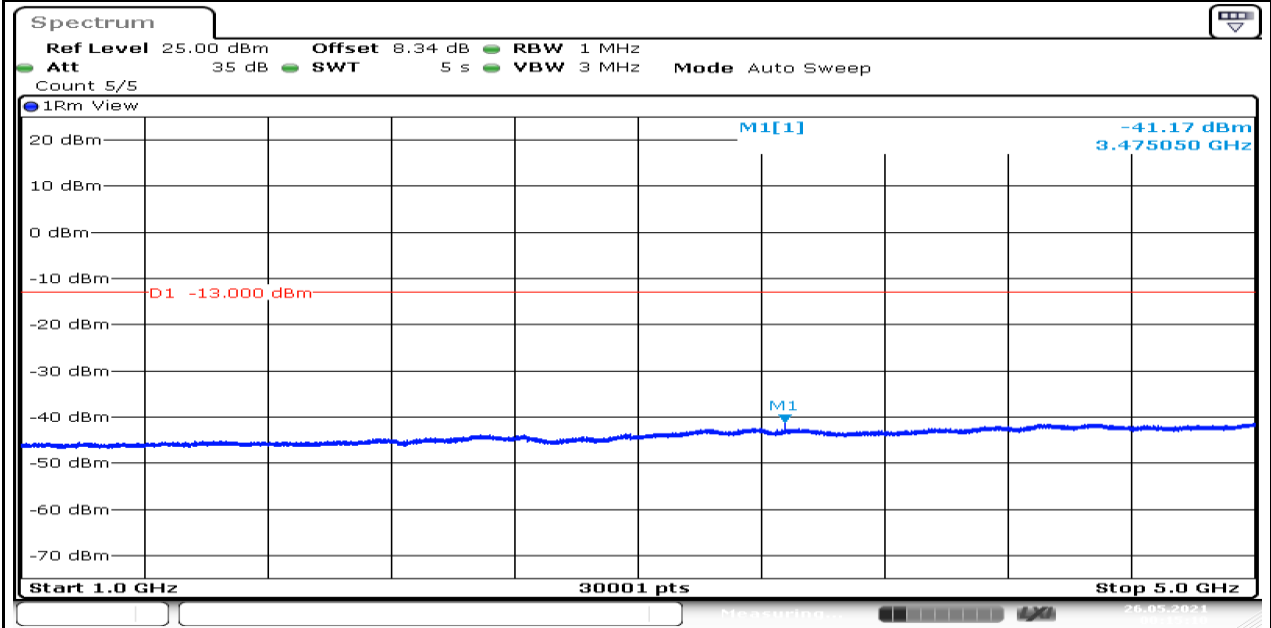


Date: 26.MAY.2021 00:12:34

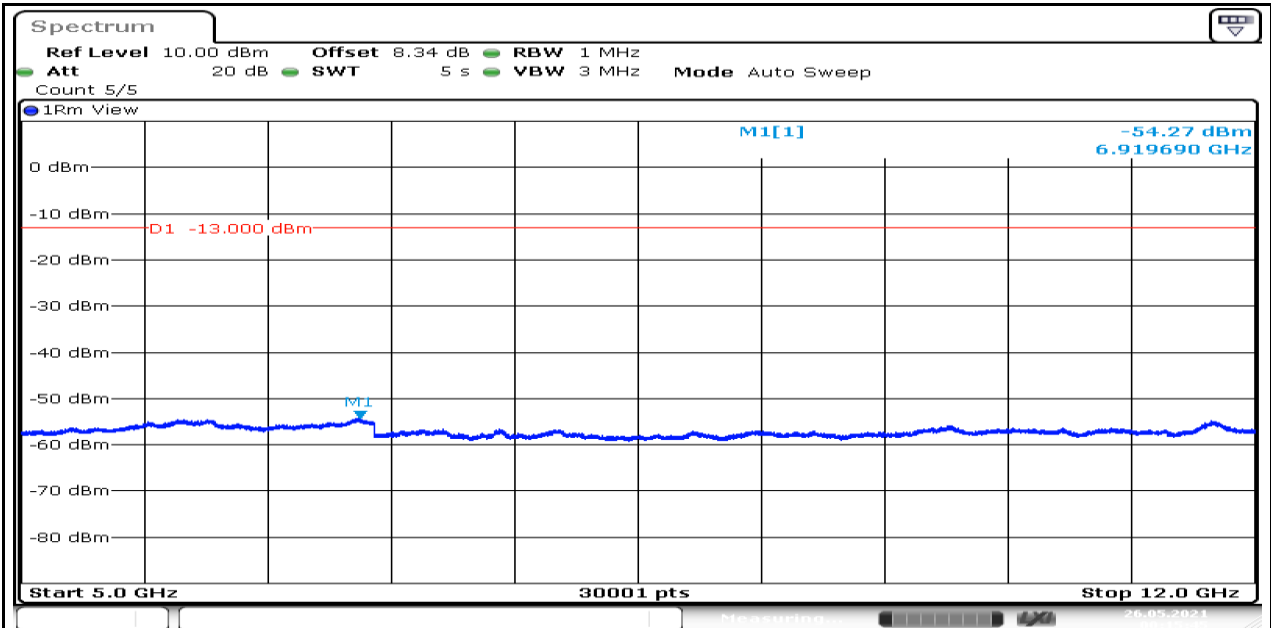
Band13-5MHz-QPSK-23230-6-0-Low-30-1000--35.96-PASS



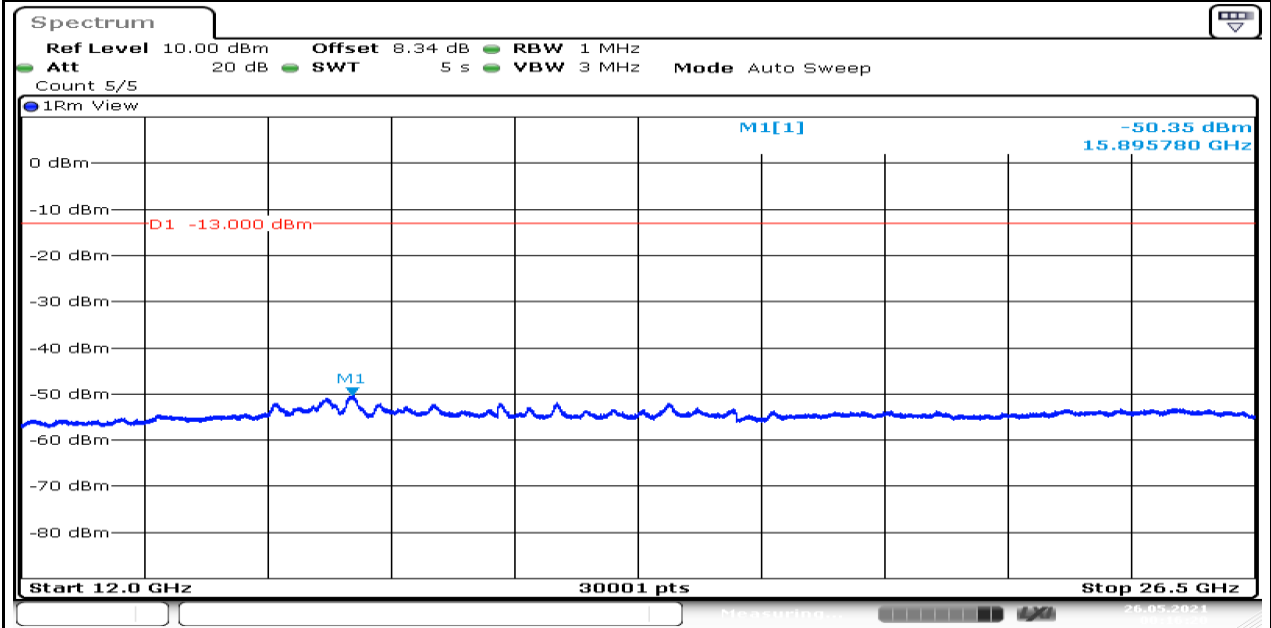
Band13-5MHz-QPSK-23230-6-0-Low-1000-5000--41.17-PASS



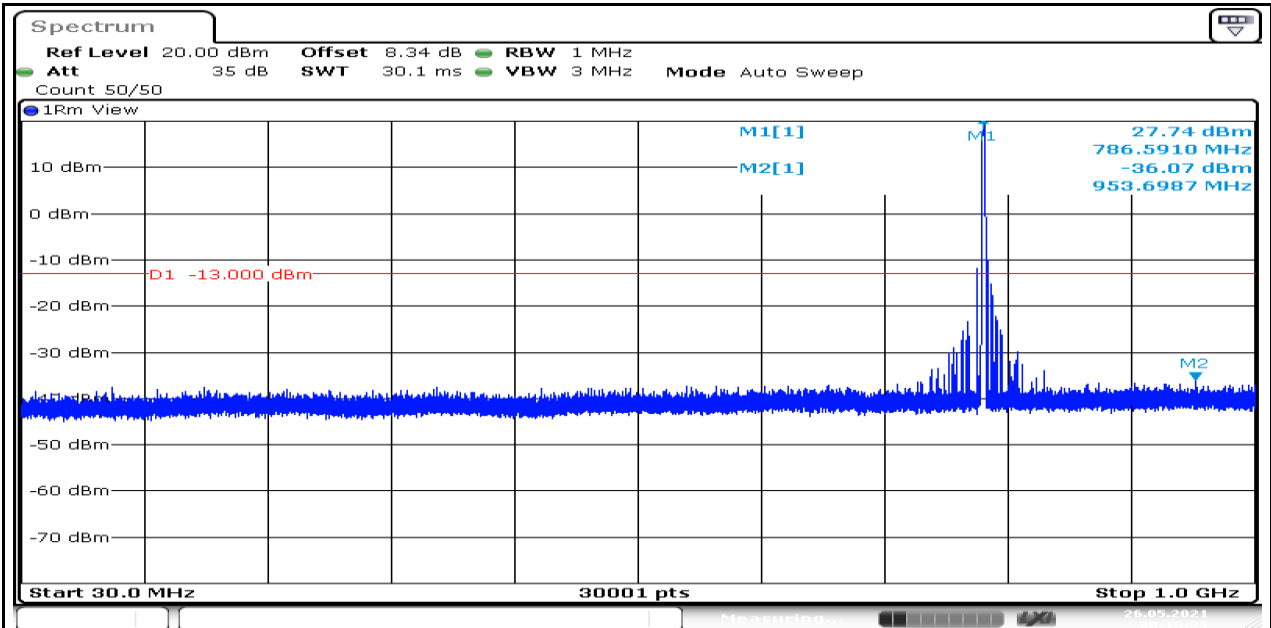
Band13-5MHz-QPSK-23230-6-0-Low-5000-12000--54.27-PASS



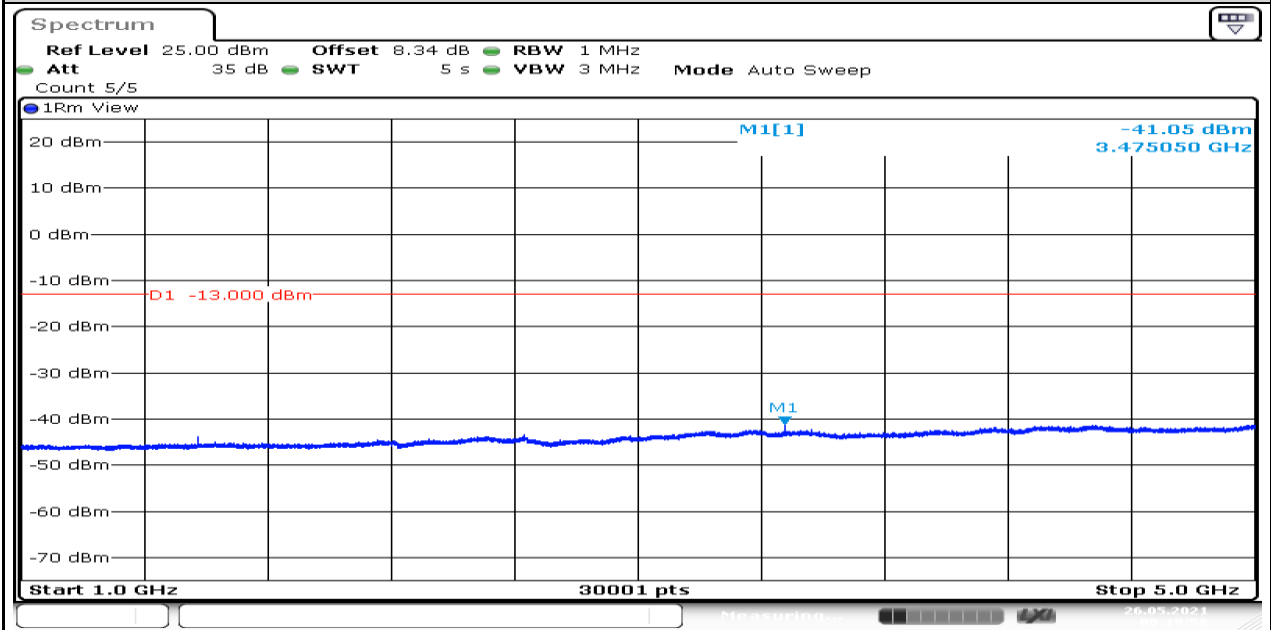
Band13-5MHz-QPSK-23230-6-0-Low-12000-26500--50.35-PASS



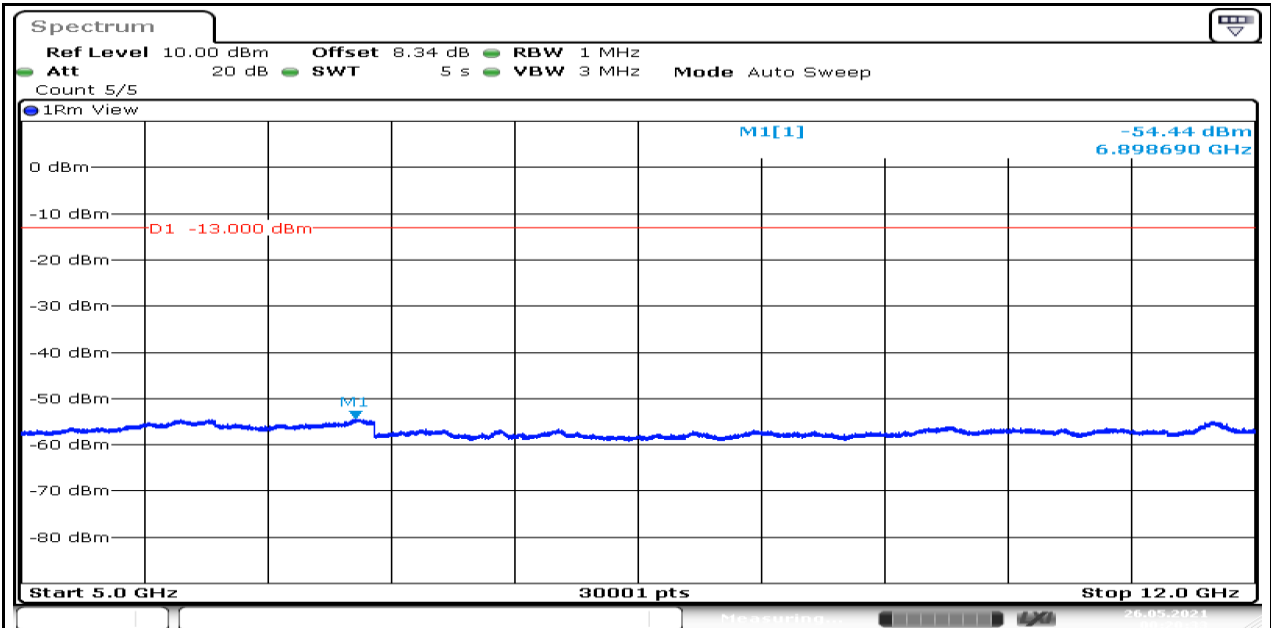
Band13-5MHz-QPSK-23255-1-5-High-30-1000--36.07-PASS



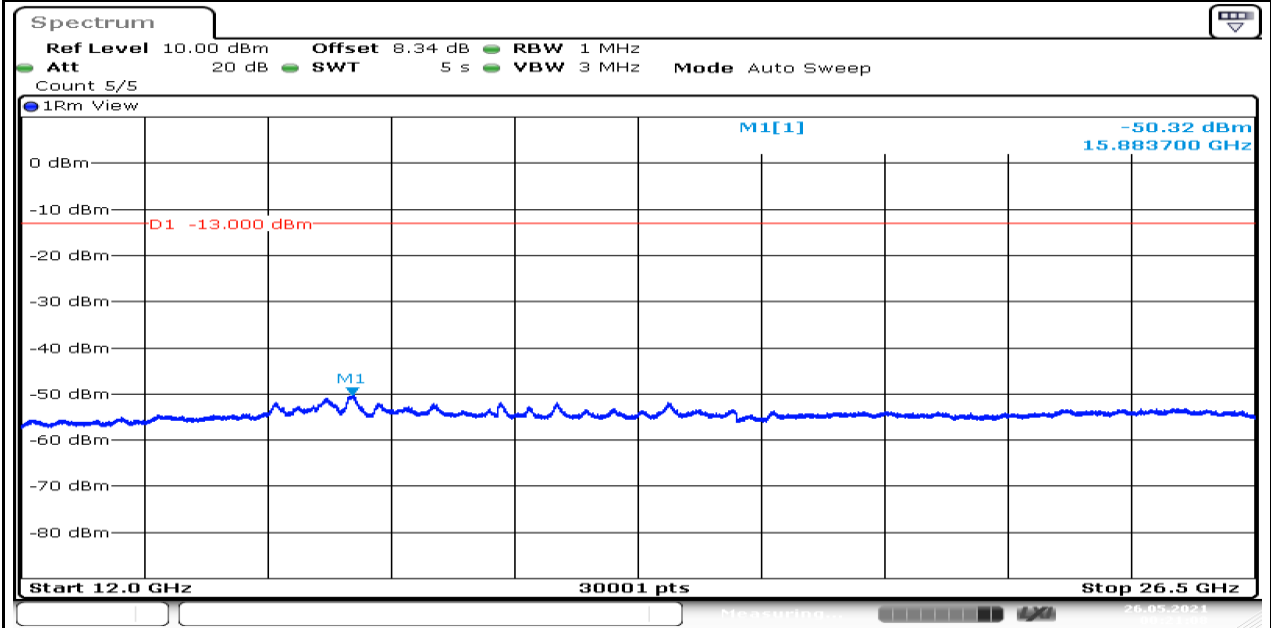
Band13-5MHz-QPSK-23255-1-5-High-1000-5000--41.05-PASS



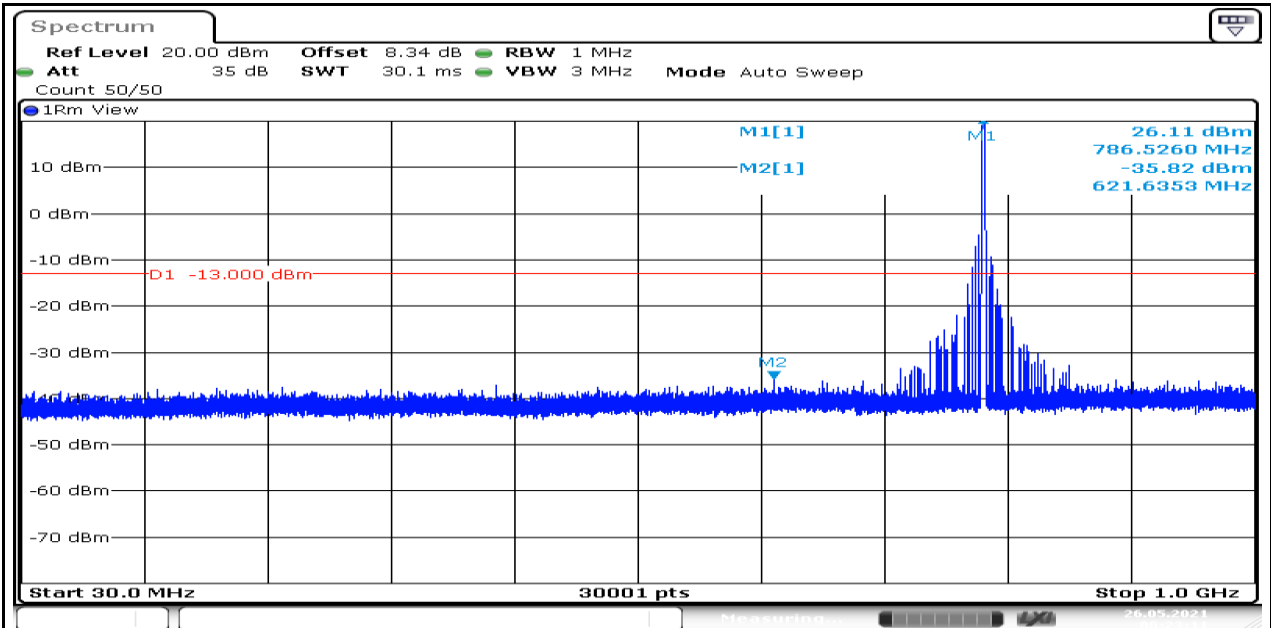
Band13-5MHz-QPSK-23255-1-5-High-5000-12000--54.44-PASS



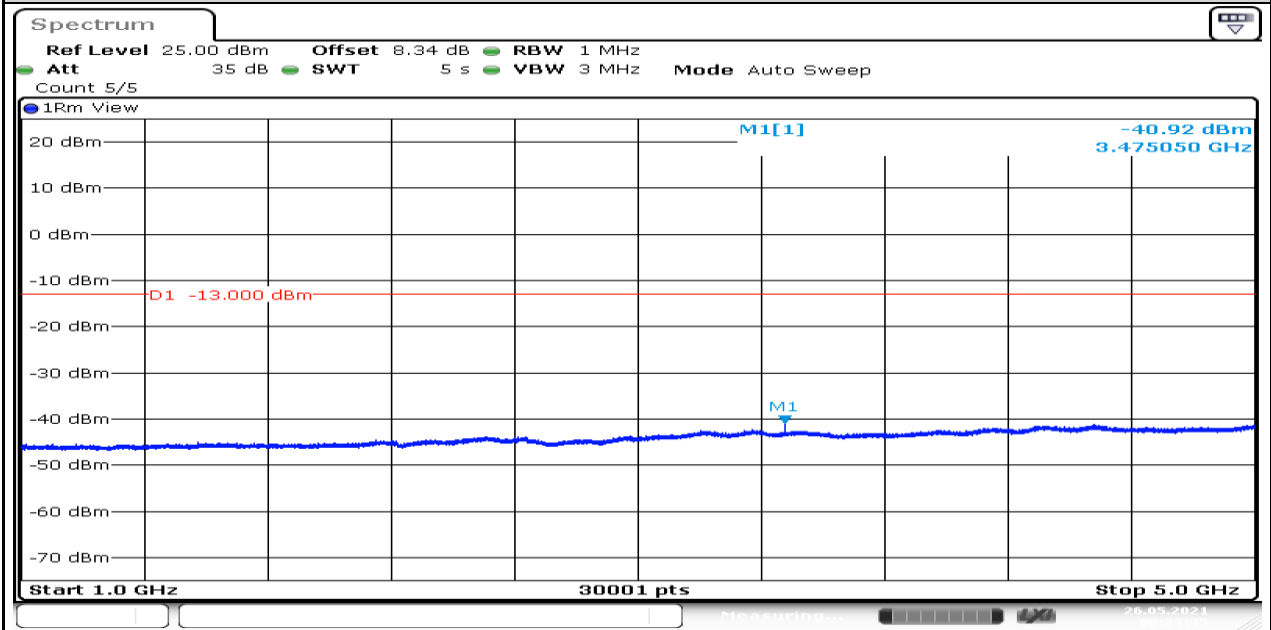
Band13-5MHz-QPSK-23255-1-5-High-12000-26500--50.32-PASS



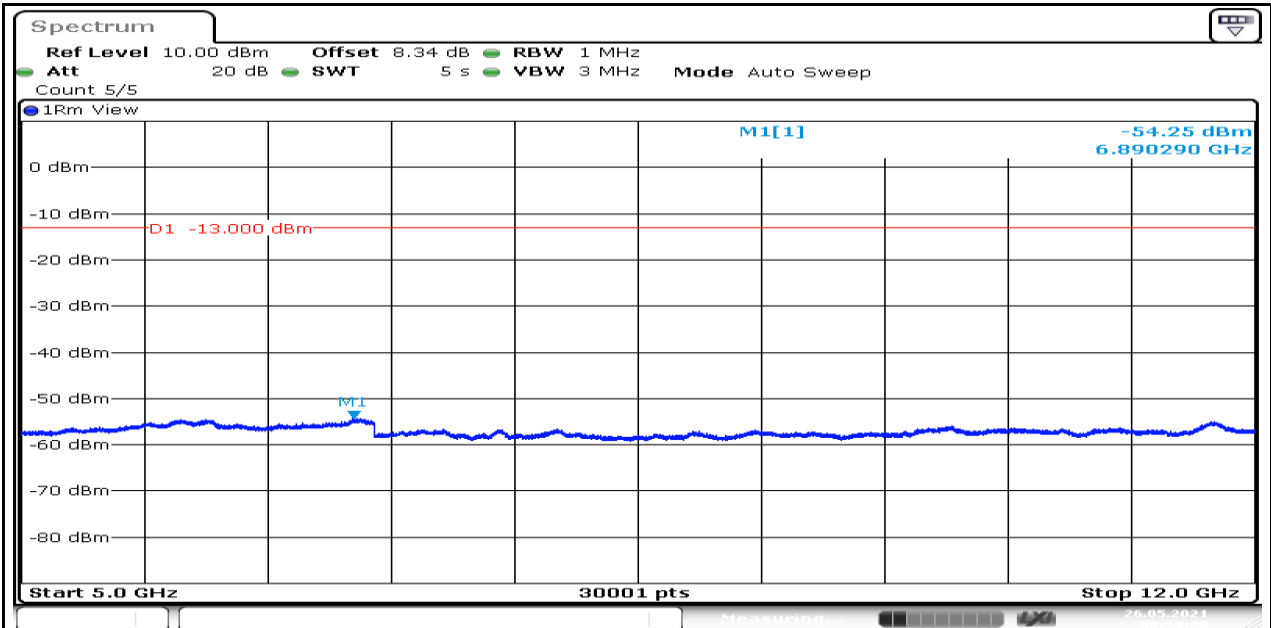
Band13-5MHz-QPSK-23255-3-3-High-30-1000--35.82-PASS



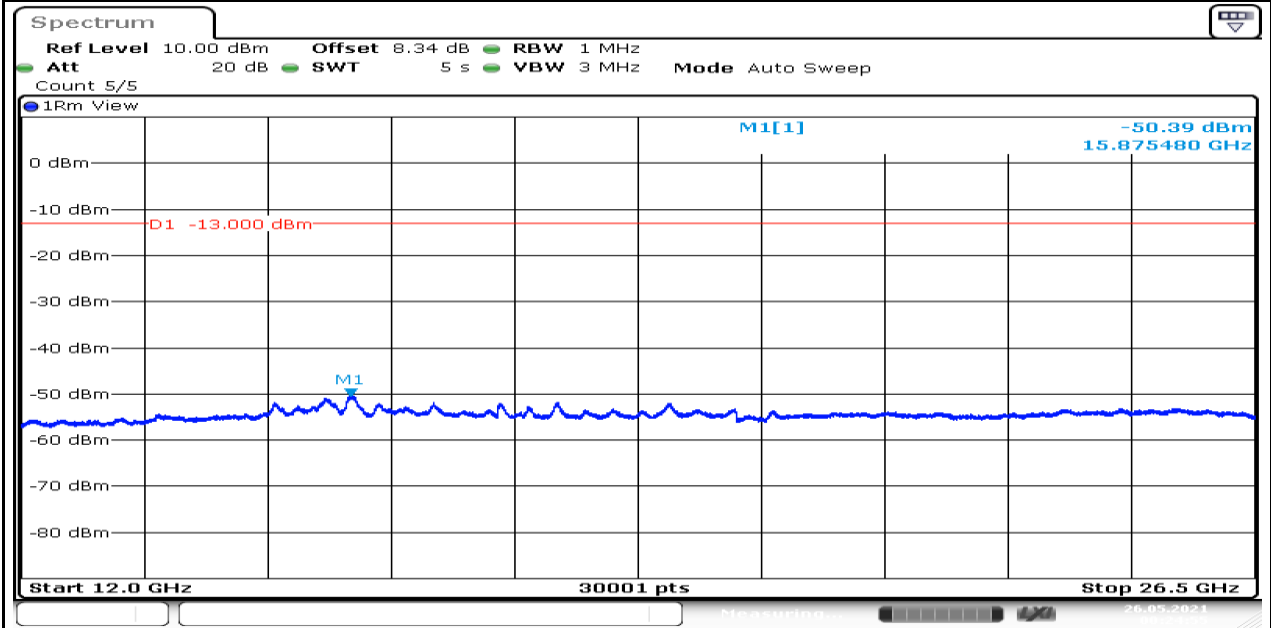
Band13-5MHz-QPSK-23255-3-3-High-1000-5000--40.92-PASS



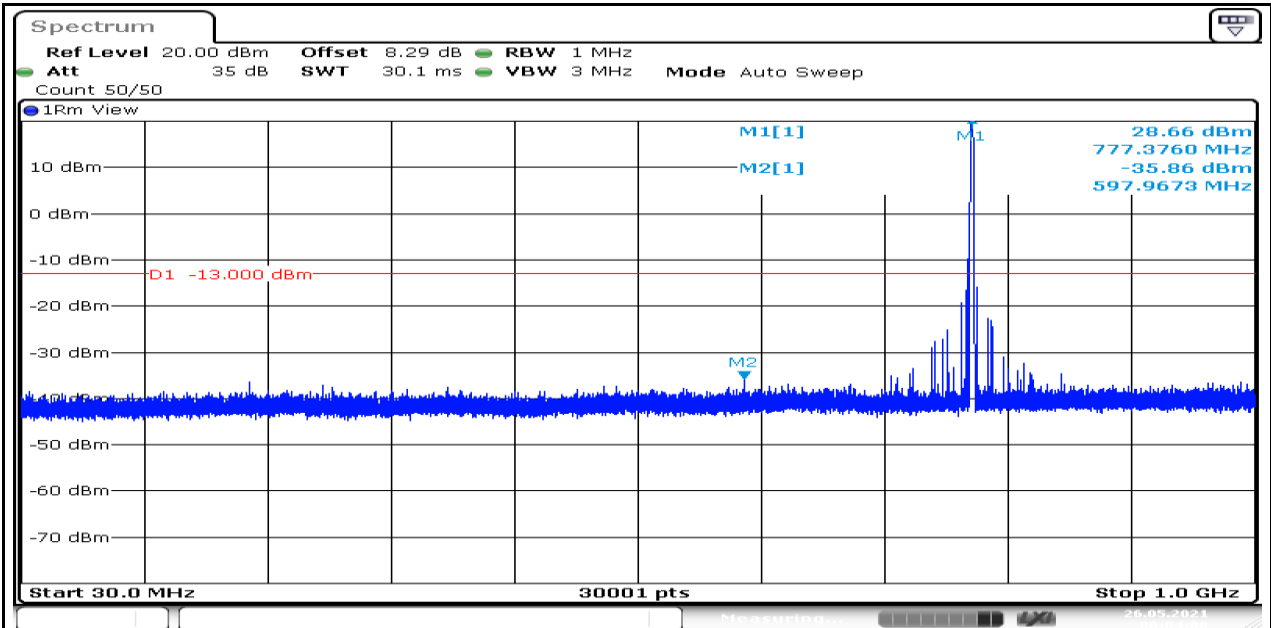
Band13-5MHz-QPSK-23255-3-3-High-5000-12000--54.25-PASS



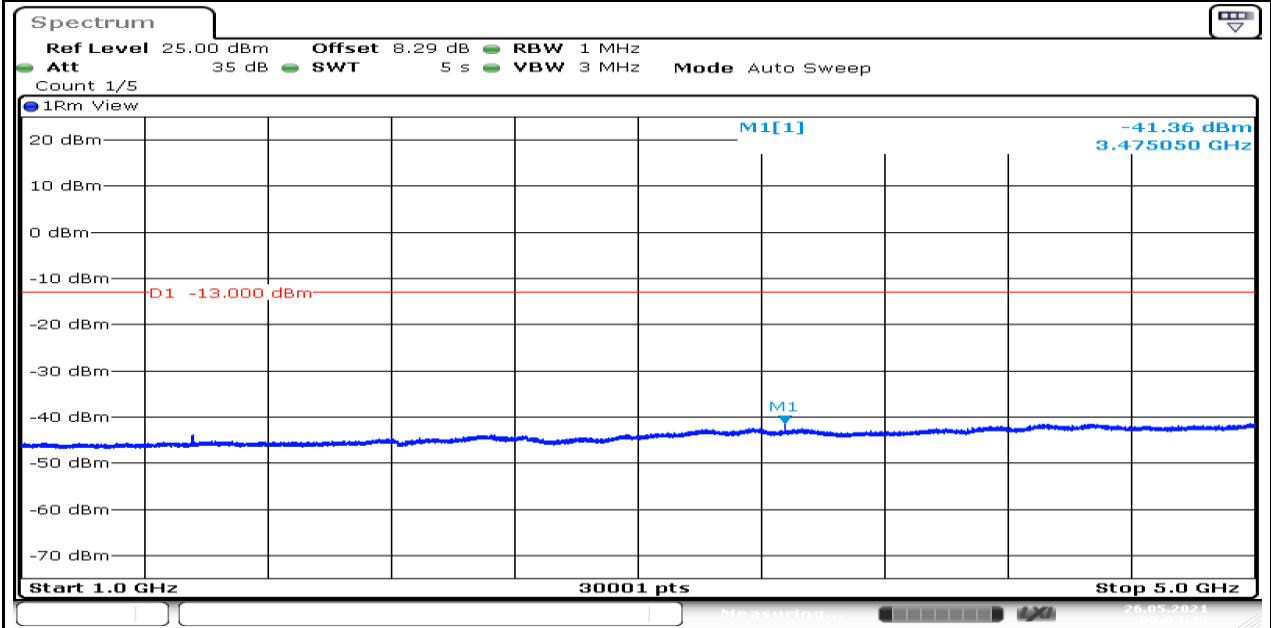
Band13-5MHz-QPSK-23255-3-3-High-12000-26500--50.39-PASS



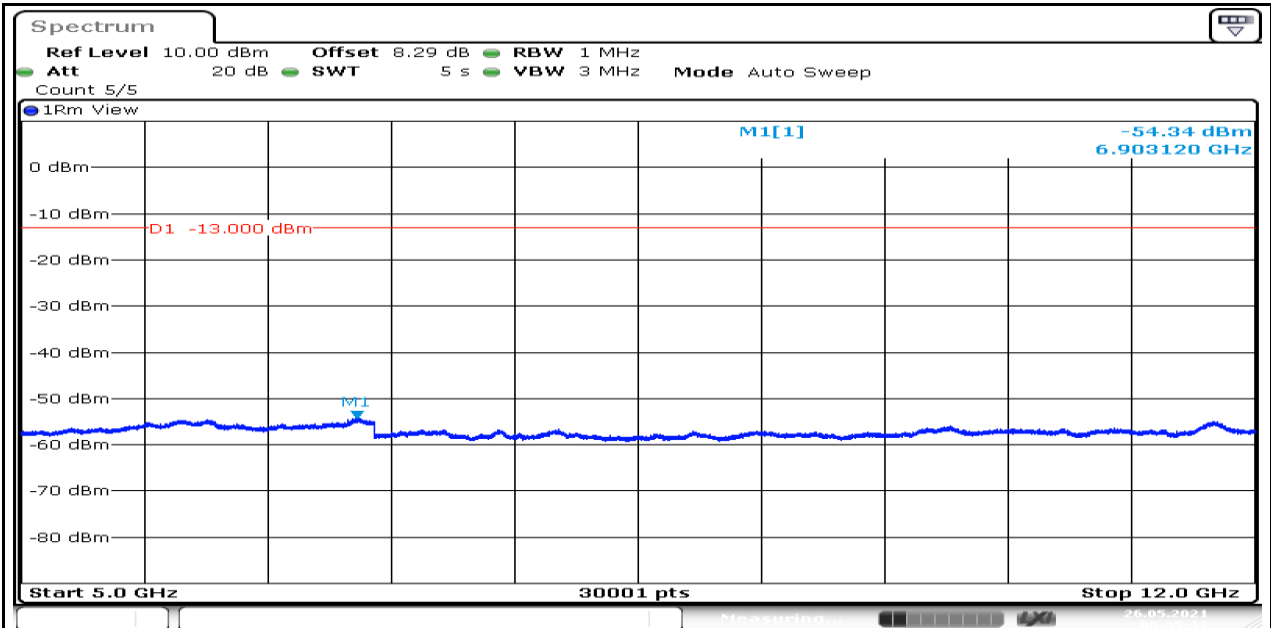
Band13-5MHz-16QAM-23205-1-0-Low-30-1000--35.86-PASS



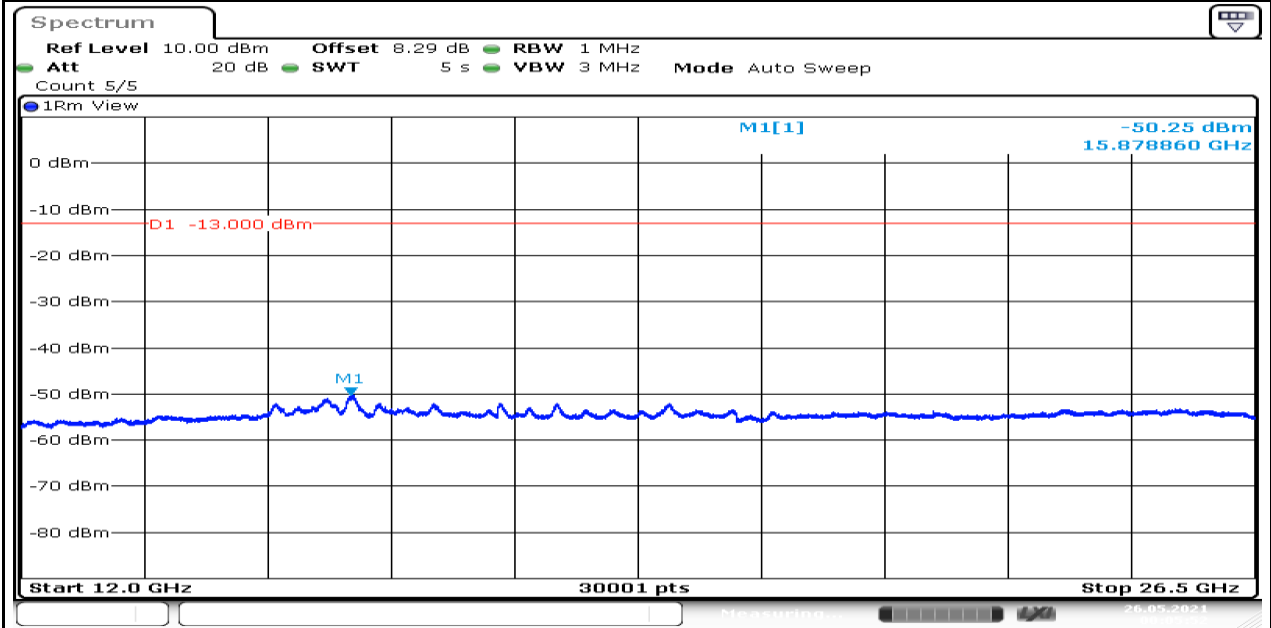
Band13-5MHz-16QAM-23205-1-0-Low-1000-5000--41.36-PASS



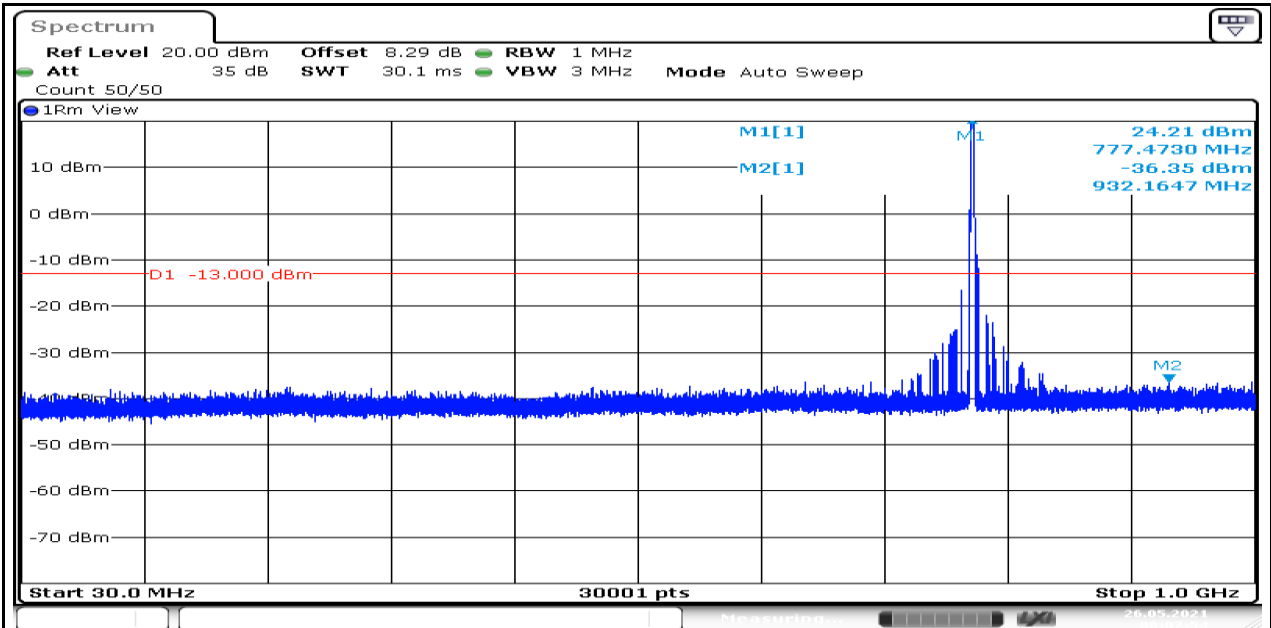
Band13-5MHz-16QAM-23205-1-0-Low-5000-12000--54.34-PASS



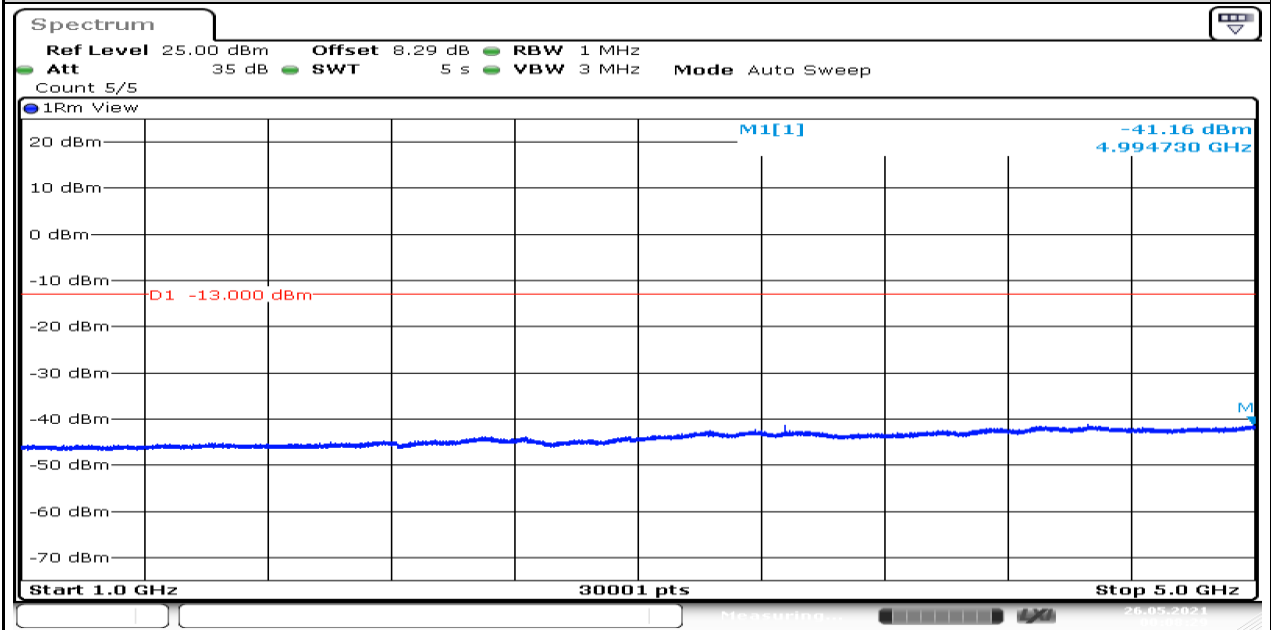
Band13-5MHz-16QAM-23205-1-0-Low-12000-26500--50.25-PASS



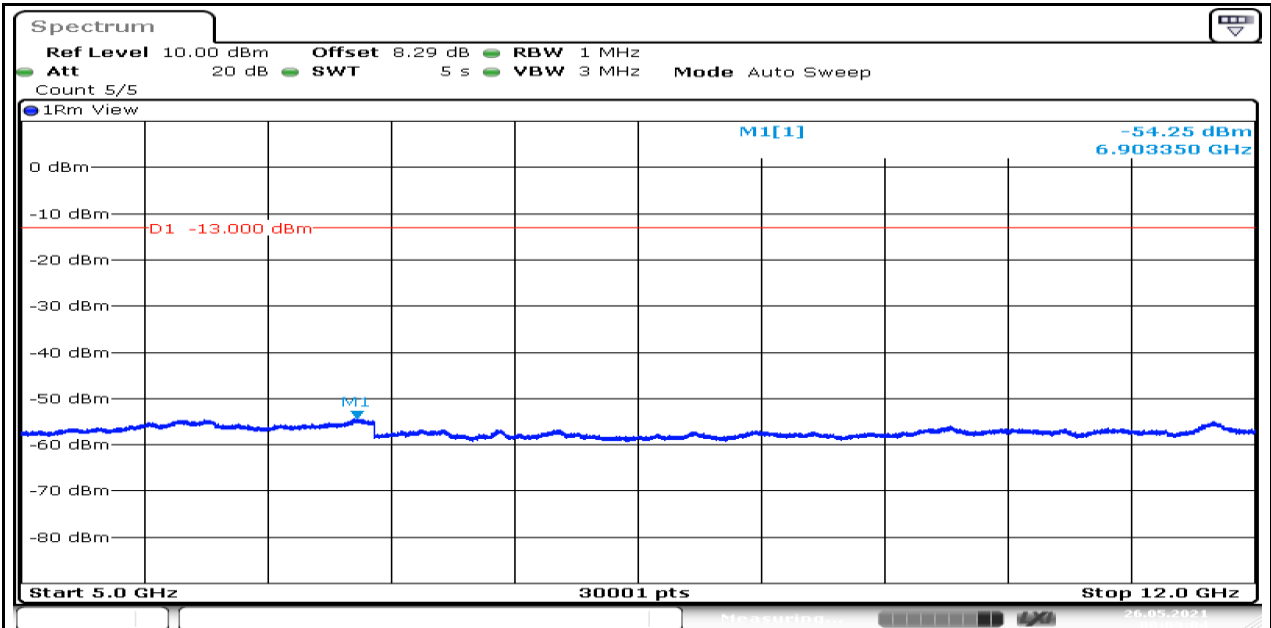
Band13-5MHz-16QAM-23205-6-0-Low-30-1000--36.35-PASS



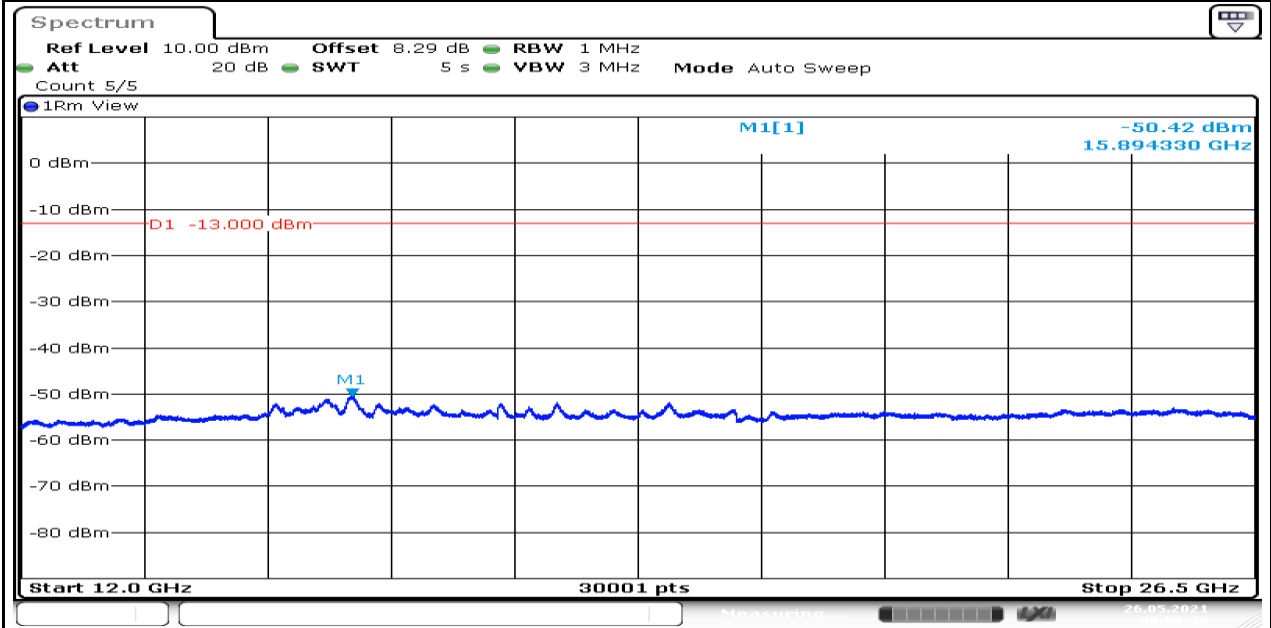
Band13-5MHz-16QAM-23205-6-0-Low-1000-5000--41.16-PASS



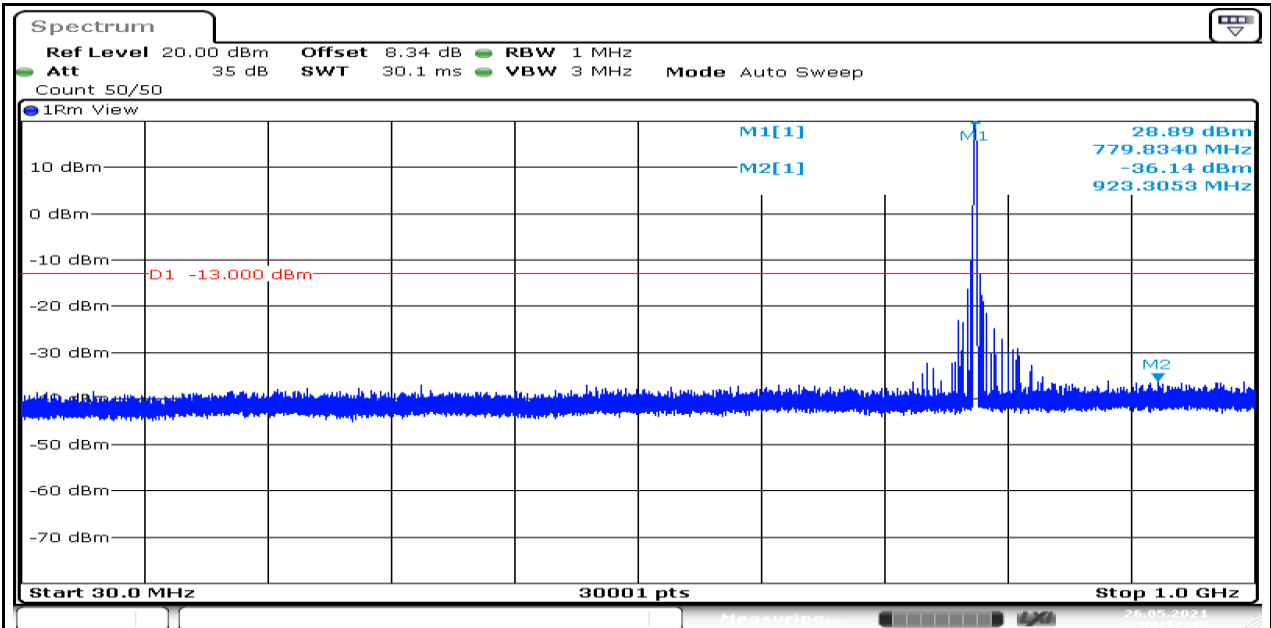
Band13-5MHz-16QAM-23205-6-0-Low-5000-12000--54.25-PASS



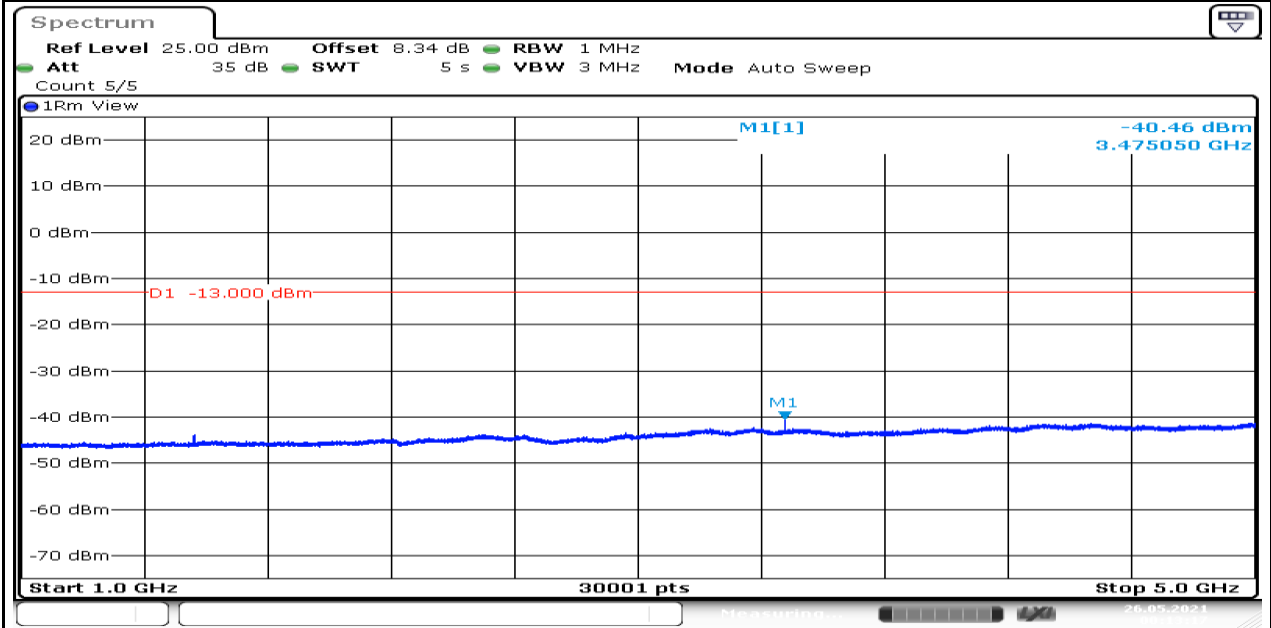
Band13-5MHz-16QAM-23205-6-0-Low-12000-26500--50.42-PASS



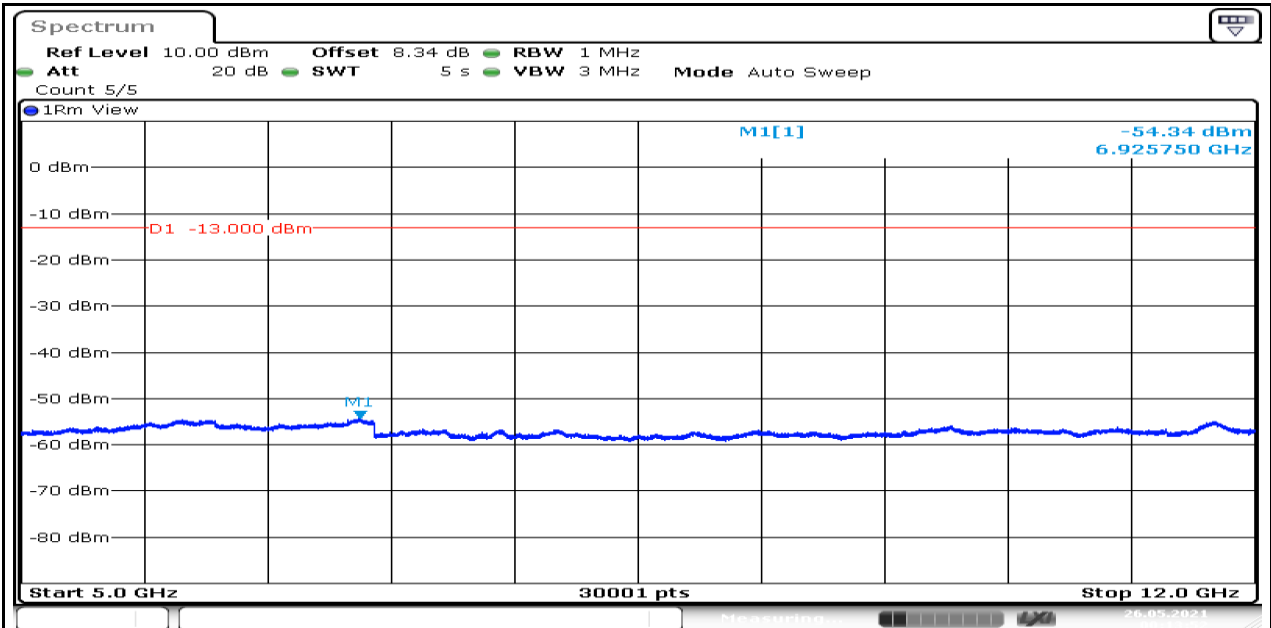
Band13-5MHz-16QAM-23230-1-0-Low-30-1000--36.14-PASS



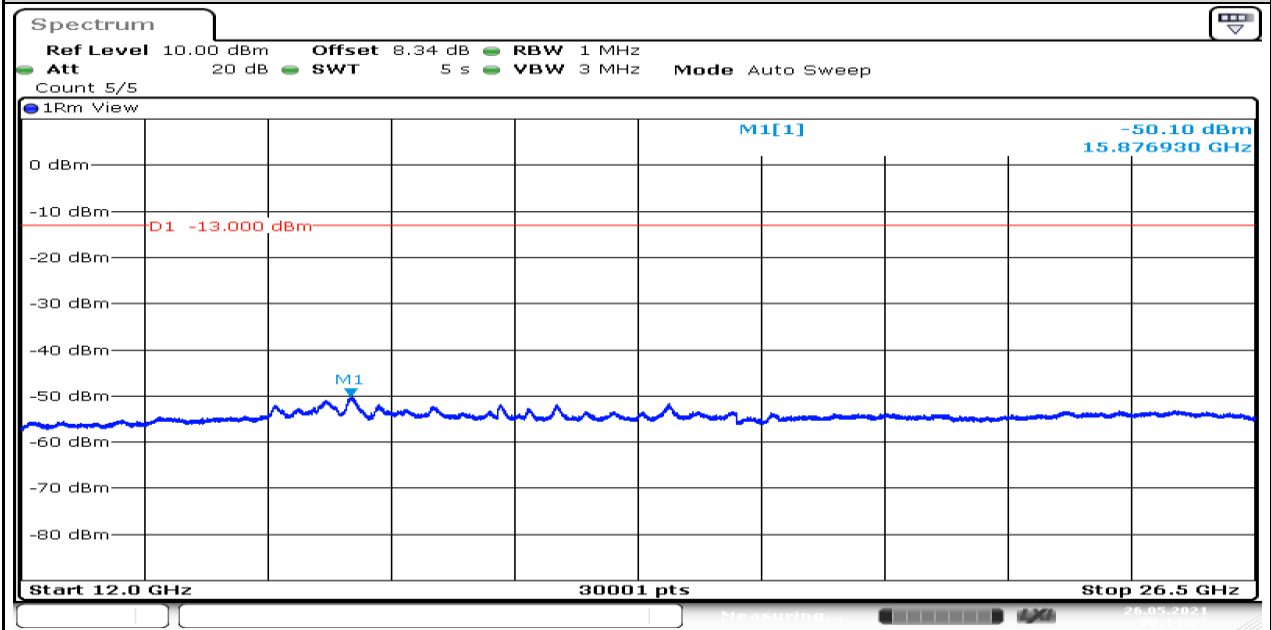
Band13-5MHz-16QAM-23230-1-0-Low-1000-5000--40.46-PASS



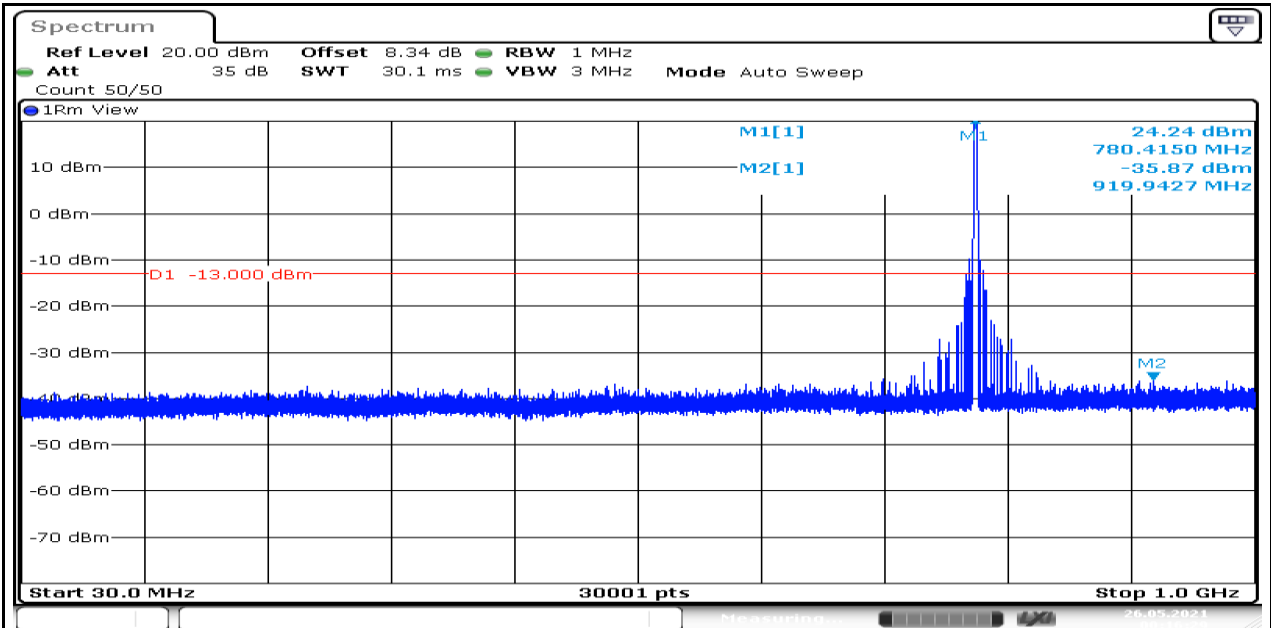
Band13-5MHz-16QAM-23230-1-0-Low-5000-12000--54.34-PASS



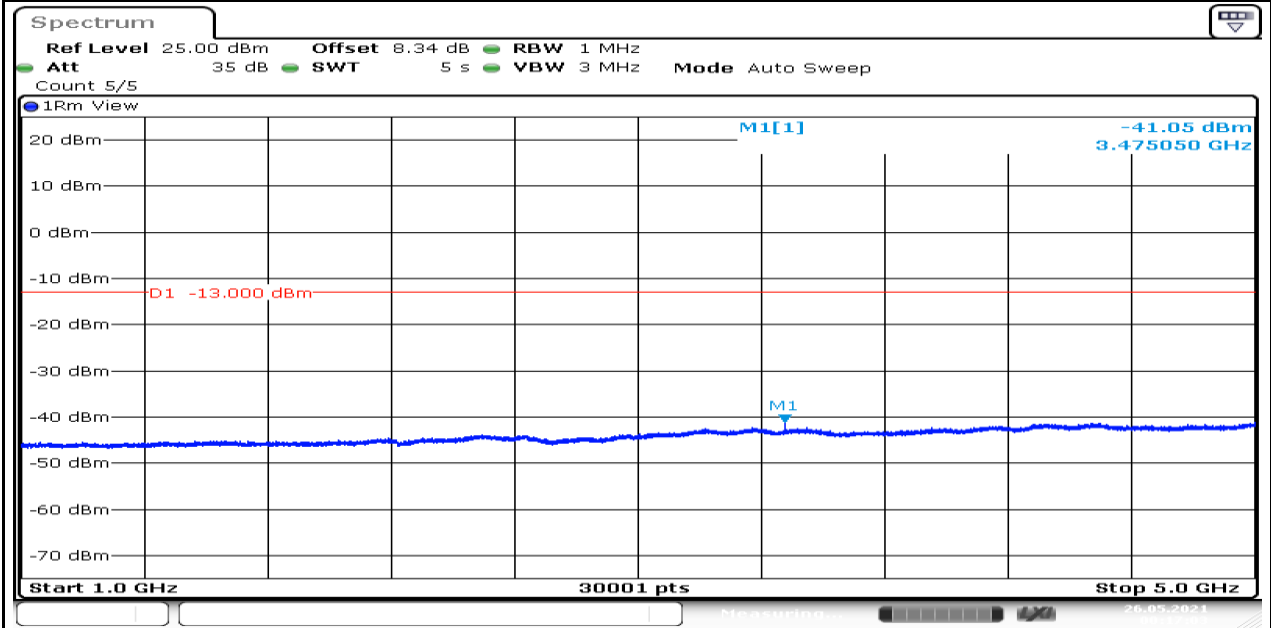
Band13-5MHz-16QAM-23230-1-0-Low-12000-26500--50.1-PASS



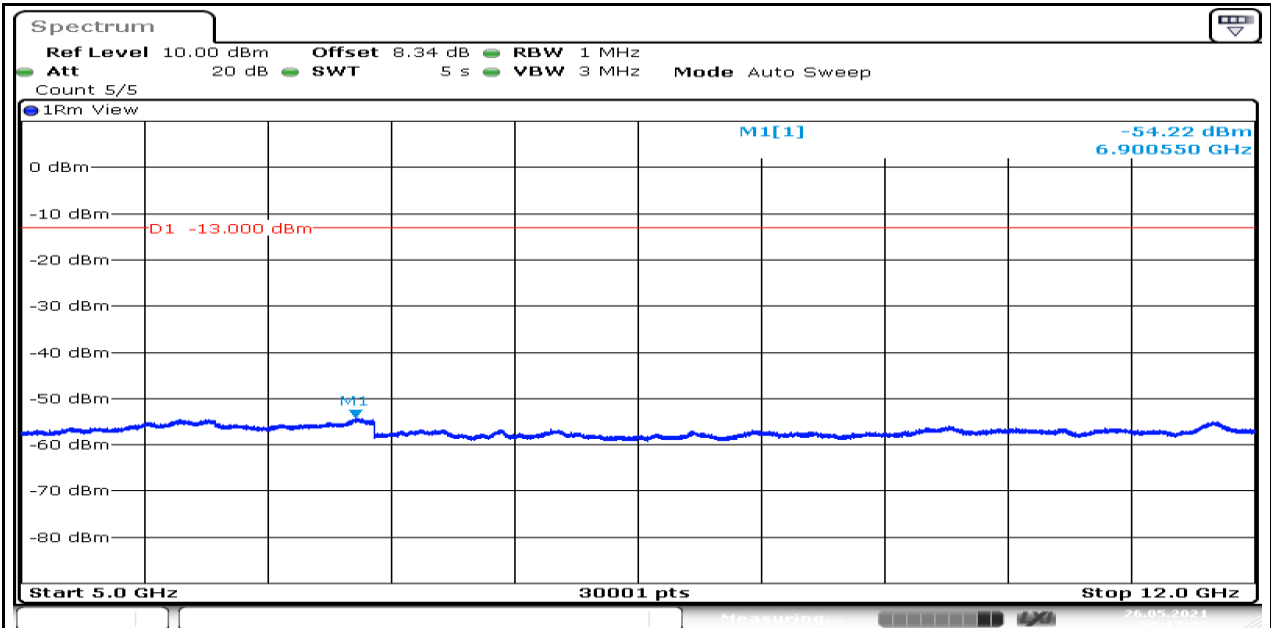
Band13-5MHz-16QAM-23230-6-0-Low-30-1000--35.87-PASS



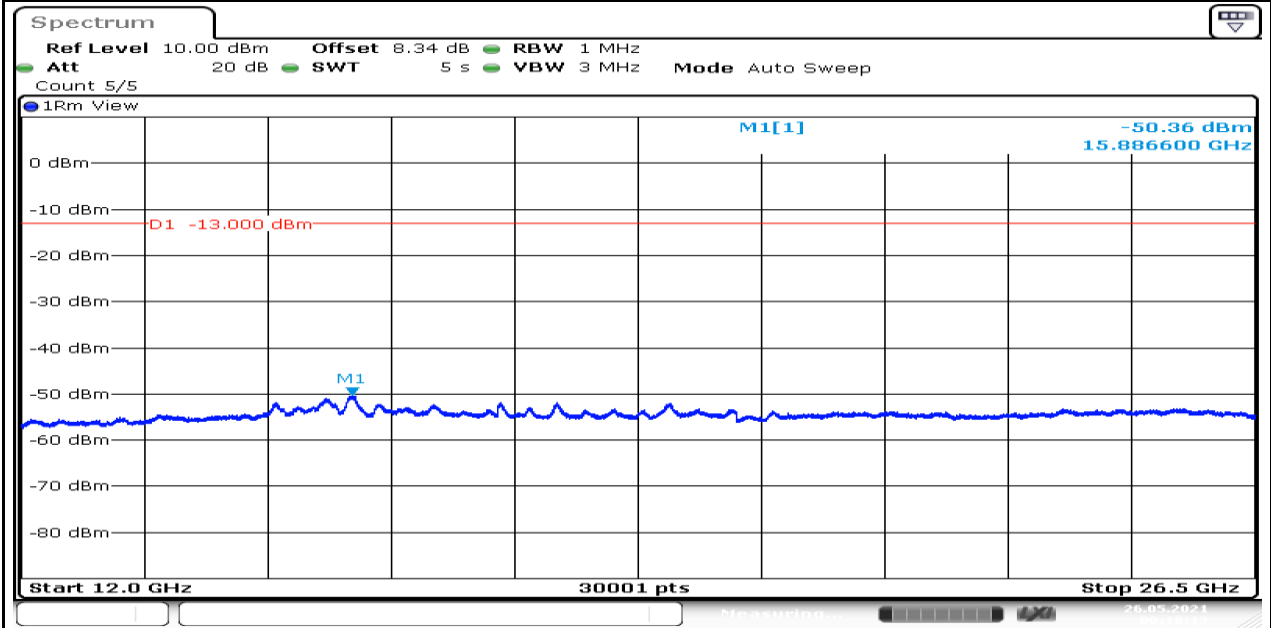
Band13-5MHz-16QAM-23230-6-0-Low-1000-5000--41.05-PASS



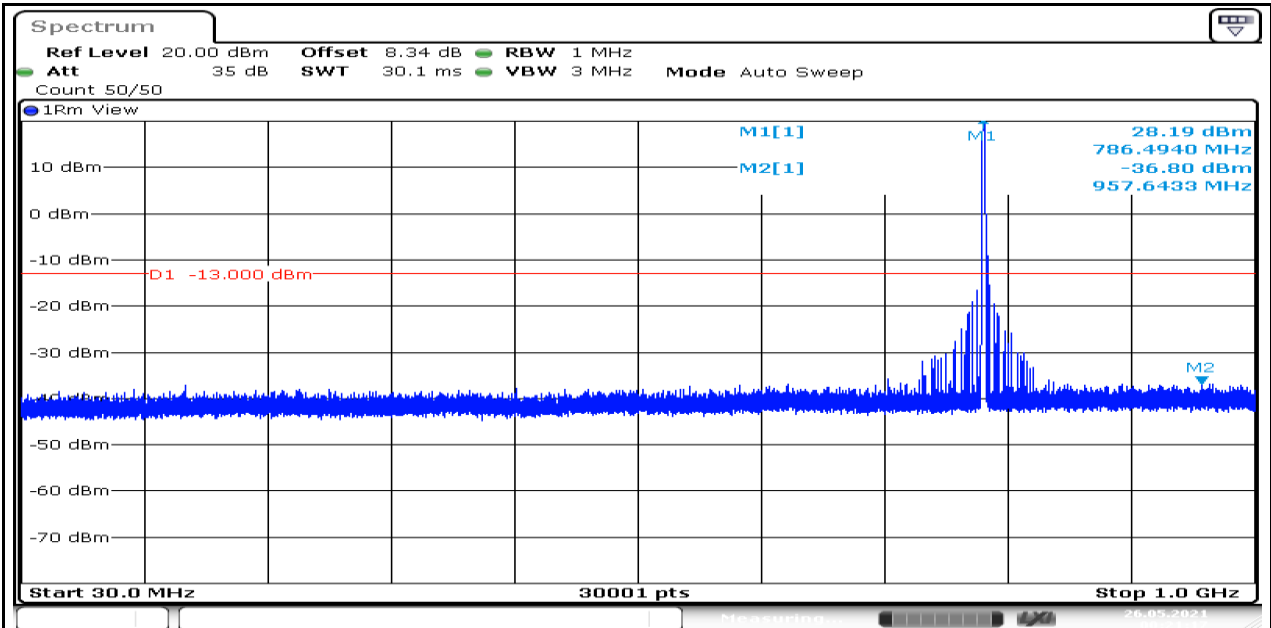
Band13-5MHz-16QAM-23230-6-0-Low-5000-12000--54.22-PASS



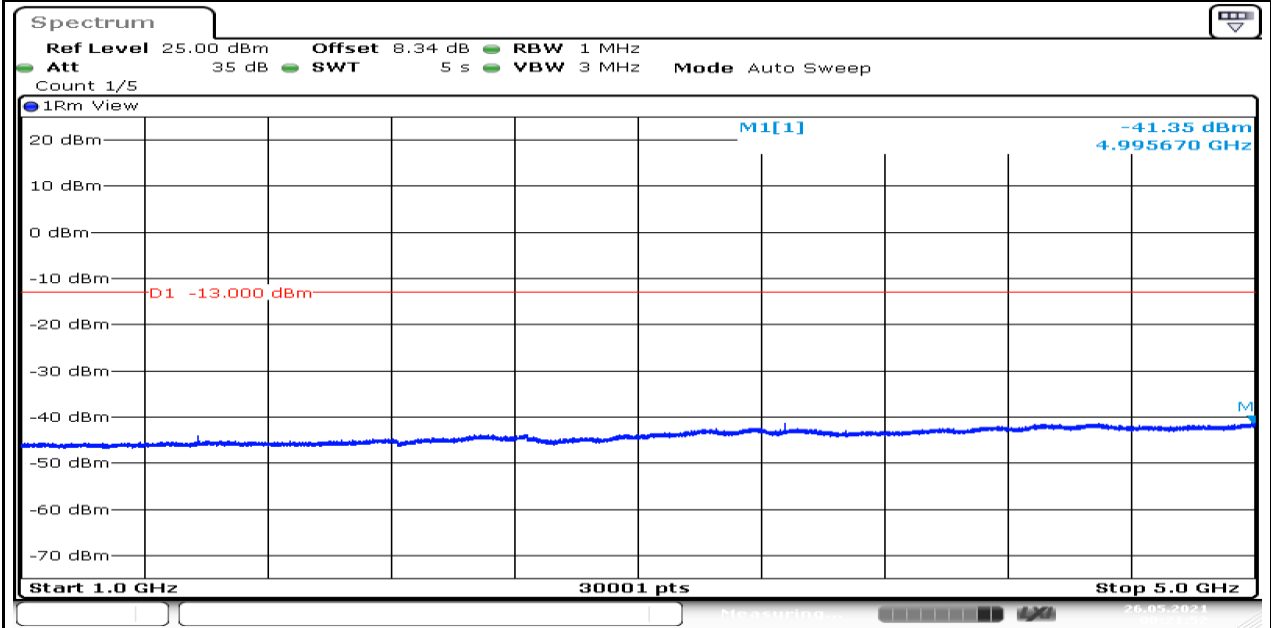
Band13-5MHz-16QAM-23230-6-0-Low-12000-26500--50.36-PASS



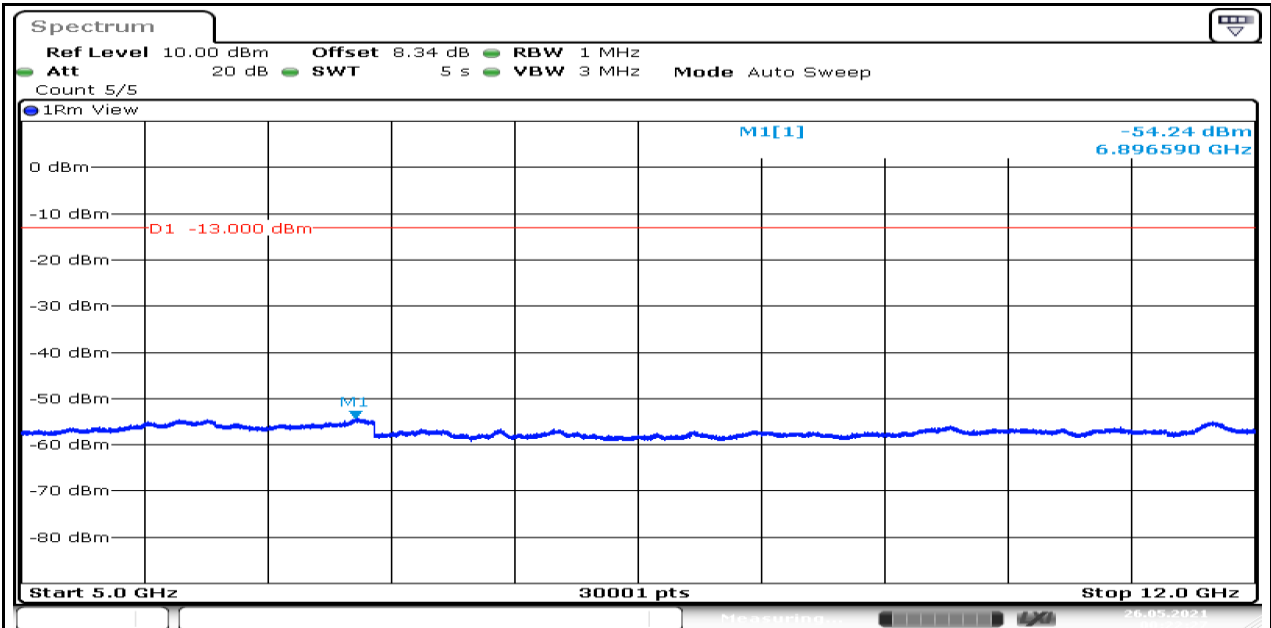
Band13-5MHz-16QAM-23255-1-5-High-30-1000--36.8-PASS



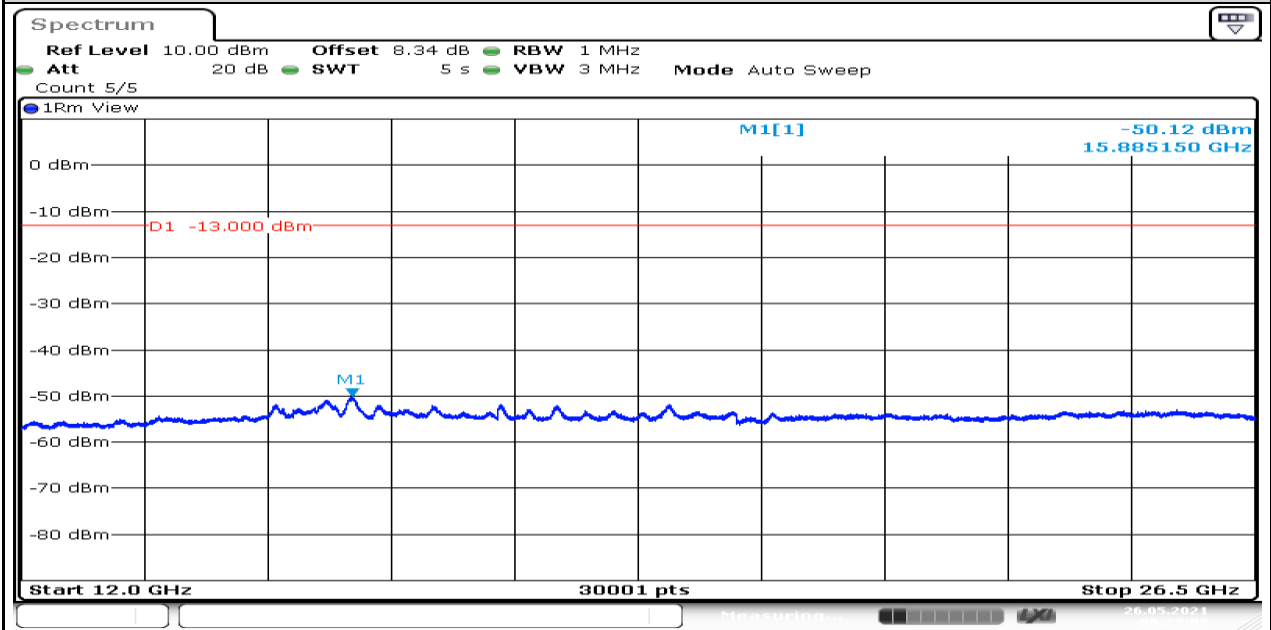
Band13-5MHz-16QAM-23255-1-5-High-1000-5000--41.35-PASS



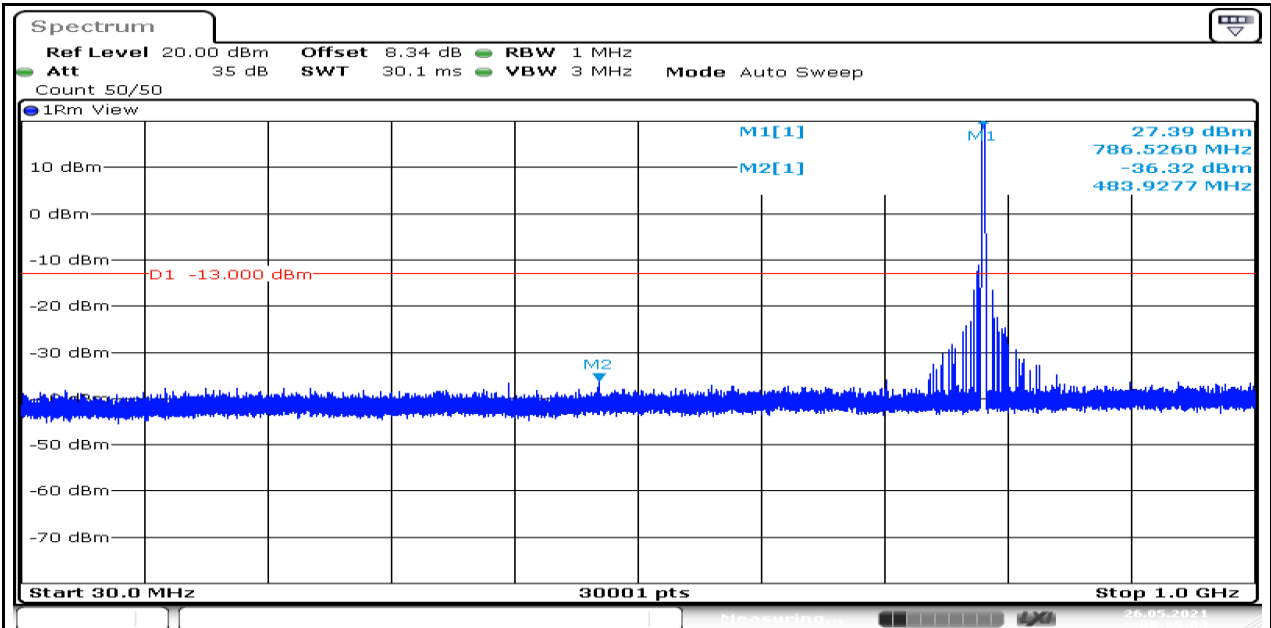
Band13-5MHz-16QAM-23255-1-5-High-5000-12000--54.24-PASS



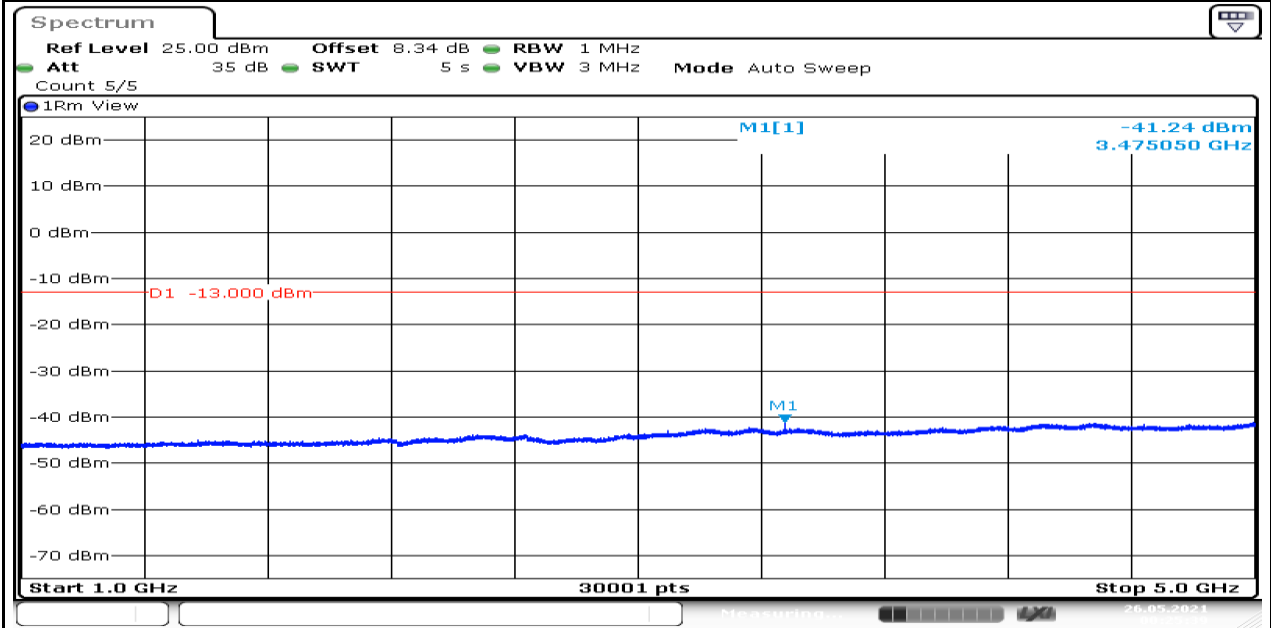
Band13-5MHz-16QAM-23255-1-5-High-12000-26500--50.12-PASS



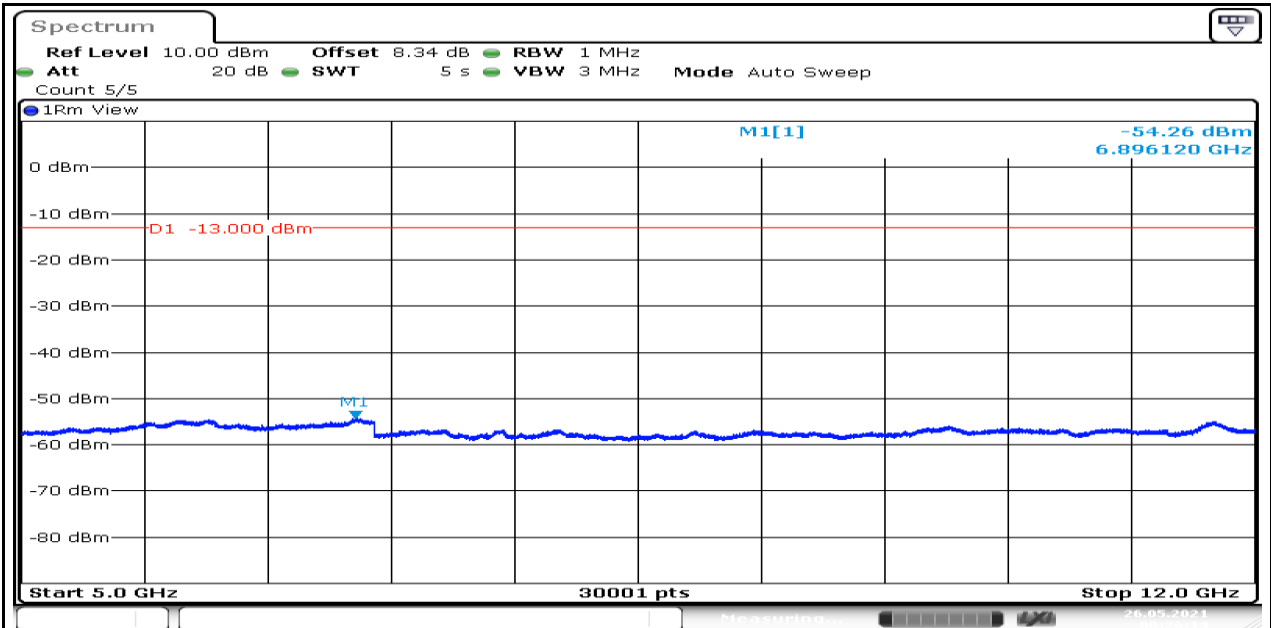
Band13-5MHz-16QAM-23255-3-3-High-30-1000--36.32-PASS



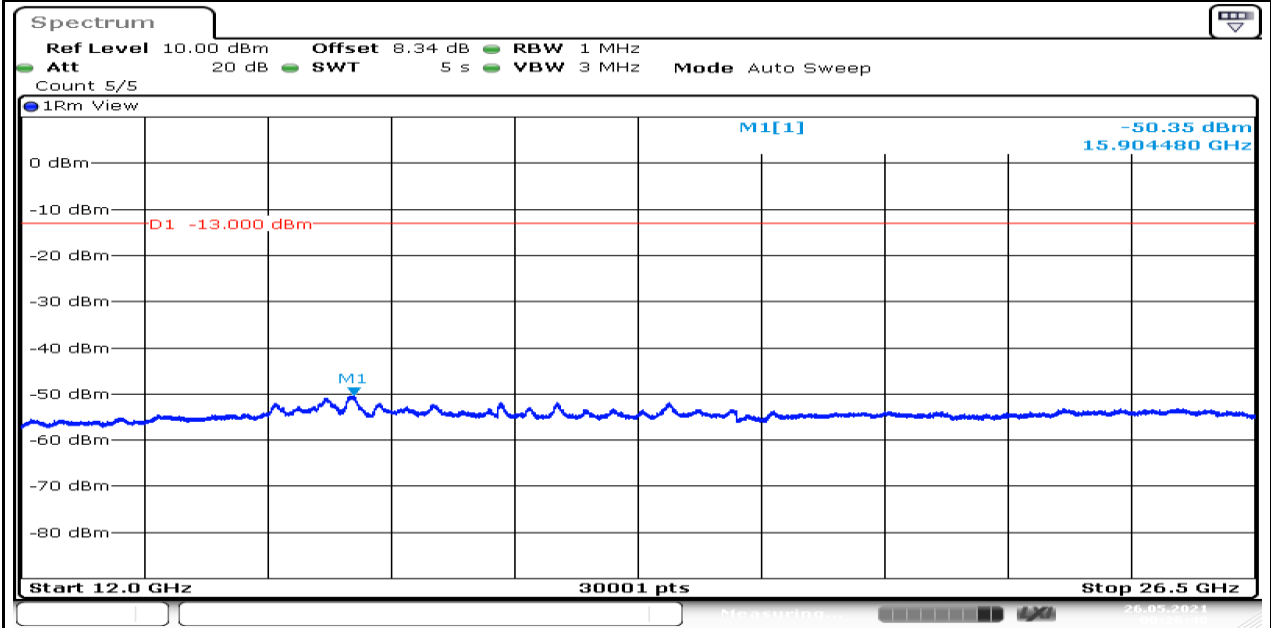
Band13-5MHz-16QAM-23255-3-3-High-1000-5000--41.24-PASS



Band13-5MHz-16QAM-23255-3-3-High-5000-12000--54.26-PASS



Band13-5MHz-16QAM-23255-3-3-High-12000-26500--50.35-PASS



APPENDIX E.6: FREQUENCY STABILITY FOR M1

Test Result

Voltage												
Band	Bandwidth	Channel	Modulation	RB Size	RB Start	Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	5MHz	23230	QPSK	1	0	Low	HV	NT	-10.03	-0.012826	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	LV	NT	-8.17	-0.010448	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	NT	-7.88	-0.010077	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	HV	NT	-7.64	-0.009770	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	LV	NT	-8.94	-0.011432	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	NT	-8.28	-0.010588	±2.5	PASS

Temperature												
Band	Bandwidth	Channel	Modulation	RB Size	RB Start	Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	5MHz	23230	QPSK	1	0	Low	NV	85	-7.98	-0.010205	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	-30	-8.18	-0.010460	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	-20	-9.04	-0.011560	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	-10	-8.74	-0.011176	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	0	-10.37	-0.013261	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	10	-9.76	-0.012481	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	20	-9.58	-0.012251	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	30	-8.27	-0.010575	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	40	-7.35	-0.009399	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	50	-7.21	-0.009220	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	60	-7.80	-0.009974	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	70	-8.73	-0.011164	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	-40	-9.08	-0.011611	±2.5	PASS
Band13	5MHz	23230	QPSK	1	0	Low	NV	80	-9.03	-0.011547	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	85	-7.17	-0.009169	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	-30	-8.14	-0.010409	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	-20	-9.06	-0.011586	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	-10	-7.98	-0.010205	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	0	-6.12	-0.007826	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	10	-8.23	-0.010524	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	20	-8.68	-0.011100	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	30	-8.57	-0.010959	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	40	-8.35	-0.010678	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	50	-9.36	-0.011969	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	60	-9.56	-0.012225	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	70	-8.48	-0.010844	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	80	-8.04	-0.010281	±2.5	PASS
Band13	5MHz	23230	16QAM	1	0	Low	NV	-40	-9.04	-0.011560	±2.5	PASS