

Appendix E: Test Results of Band 13 for NB-IoT operation

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Appendix E.1: RF Power Output and Effective (Isotropic) Radiated Power Output Data for NB

Test Result

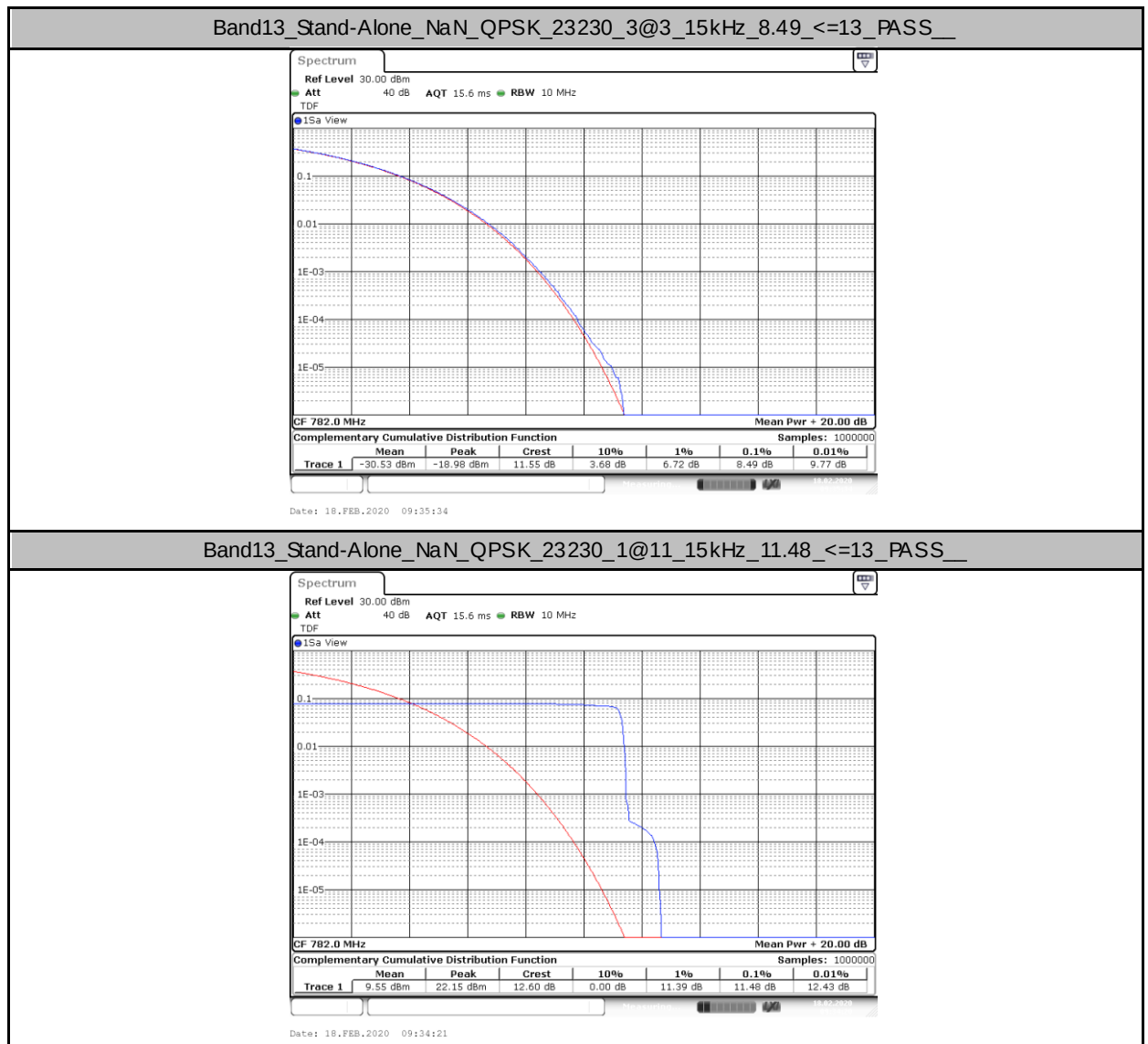
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result	ERP		Limit (watts)	Verdict
							dBm	dBm	Watts		
Band13	Stand-Alone	NaN	QPSK	23181	1@0	15kHz	7.95	7.94	0.006	3	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@11	15kHz	7.93	7.92	0.006	3	PASS
Band13	Stand-Alone	NaN	QPSK	23181	3@3	15kHz	7.93	7.92	0.006	3	PASS
Band13	Stand-Alone	NaN	QPSK	23182	1@0	15kHz	21.75	21.74	0.149	3	PASS
Band13	Stand-Alone	NaN	QPSK	23182	3@3	15kHz	24.72	24.71	0.296	3	PASS
Band13	Stand-Alone	NaN	QPSK	23182	1@11	15kHz	21.67	21.66	0.147	3	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	23.30	23.29	0.213	3	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	23.31	23.3	0.214	3	PASS
Band13	Stand-Alone	NaN	QPSK	23230	3@3	15kHz	23.30	23.29	0.213	3	PASS
Band13	Stand-Alone	NaN	QPSK	23278	1@0	15kHz	22.13	22.12	0.163	3	PASS
Band13	Stand-Alone	NaN	QPSK	23278	1@11	15kHz	22.06	22.05	0.160	3	PASS
Band13	Stand-Alone	NaN	QPSK	23278	3@3	15kHz	24.80	24.79	0.301	3	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@11	15kHz	8.02	8.01	0.006	3	PASS
Band13	Stand-Alone	NaN	QPSK	23279	3@3	15kHz	8.06	8.05	0.006	3	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	15kHz	8.13	8.12	0.006	3	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@11	15kHz	7.89	7.88	0.006	3	PASS
Band13	Stand-Alone	NaN	BPSK	23181	3@3	15kHz	7.94	7.93	0.006	3	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	15kHz	7.84	7.83	0.006	3	PASS
Band13	Stand-Alone	NaN	BPSK	23182	1@0	15kHz	21.67	21.66	0.147	3	PASS
Band13	Stand-Alone	NaN	BPSK	23182	1@11	15kHz	21.52	21.51	0.142	3	PASS
Band13	Stand-Alone	NaN	BPSK	23182	3@3	15kHz	21.97	21.96	0.157	3	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@11	15kHz	18.28	18.27	0.067	3	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	15kHz	21.10	21.09	0.129	3	PASS
Band13	Stand-Alone	NaN	BPSK	23230	3@3	15kHz	23.31	23.3	0.214	3	PASS
Band13	Stand-Alone	NaN	BPSK	23278	1@0	15kHz	22.10	22.09	0.162	3	PASS
Band13	Stand-Alone	NaN	BPSK	23278	1@11	15kHz	21.89	21.88	0.154	3	PASS
Band13	Stand-Alone	NaN	BPSK	23278	3@3	15kHz	22.15	22.14	0.164	3	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@11	15kHz	7.96	7.95	0.006	3	PASS
Band13	Stand-Alone	NaN	BPSK	23279	3@3	15kHz	8.07	8.06	0.006	3	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	15kHz	8.00	7.99	0.006	3	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@47	3.75kHz	6.21	6.2	0.004	3	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	3.75kHz	6.36	6.35	0.004	3	PASS
Band13	Stand-Alone	NaN	QPSK	23182	1@0	3.75kHz	24.97	24.96	0.313	3	PASS
Band13	Stand-Alone	NaN	QPSK	23182	1@47	3.75kHz	24.95	24.94	0.312	3	PASS
Band13	Stand-Alone	NaN	QPSK	23278	1@0	3.75kHz	24.80	24.79	0.301	3	PASS
Band13	Stand-Alone	NaN	QPSK	23278	1@47	3.75kHz	24.85	24.84	0.305	3	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@47	3.75kHz	6.39	6.38	0.004	3	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	3.75kHz	6.46	6.45	0.004	3	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@47	3.75kHz	6.25	6.24	0.004	3	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	3.75kHz	6.24	6.23	0.004	3	PASS
Band13	Stand-Alone	NaN	BPSK	23182	1@47	3.75kHz	24.75	24.74	0.298	3	PASS
Band13	Stand-Alone	NaN	BPSK	23182	1@0	3.75kHz	24.77	24.76	0.299	3	PASS
Band13	Stand-Alone	NaN	BPSK	23278	1@0	3.75kHz	24.78	24.77	0.300	3	PASS
Band13	Stand-Alone	NaN	BPSK	23278	1@47	3.75kHz	24.77	24.76	0.299	3	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@47	3.75kHz	6.36	6.35	0.004	3	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	3.75kHz	6.31	6.3	0.004	3	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	24.91	24.9	0.309	3	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	24.98	24.97	0.314	3	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@47	3.75kHz	24.86	24.85	0.305	3	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	3.75kHz	24.84	24.83	0.304	3	PASS

Appendix E.2: Peak-to-Average Ratio(CCDF) for NB

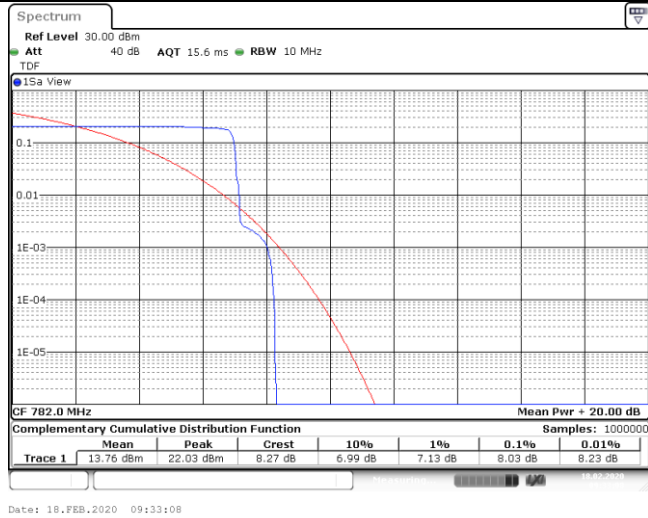
Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
Band13	Stand-Alone	NaN	QPSK	23230	3@3	15kHz	8.49	<=13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	11.48	<=13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	8.03	<=13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	3@3	15kHz	9.54	<=13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@11	15kHz	6.55	<=13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	15kHz	8.46	<=13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	3.1	<=13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	3.86	<=13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@47	3.75kHz	1.97	<=13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	3.75kHz	1.97	<=13	PASS

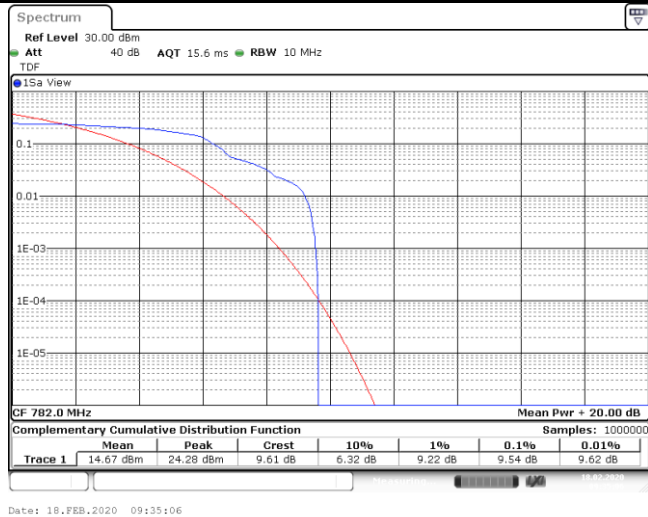
Test Graphs



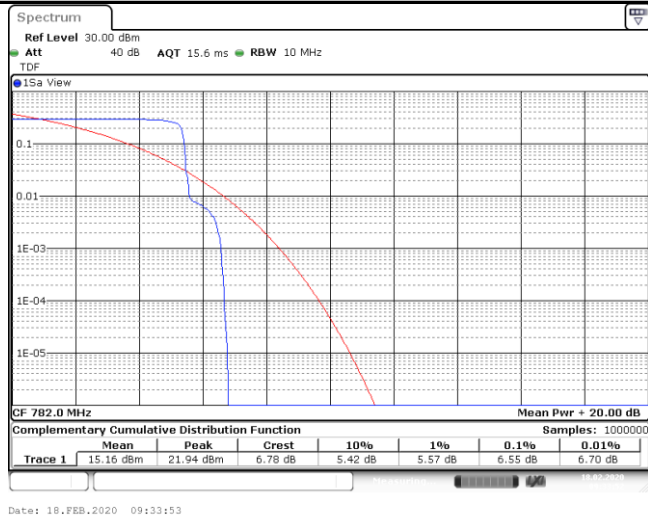
Band13_Stand-Alone_NaN_QPSK_23230_1@0_15kHz_8.03_<=13_PASS__



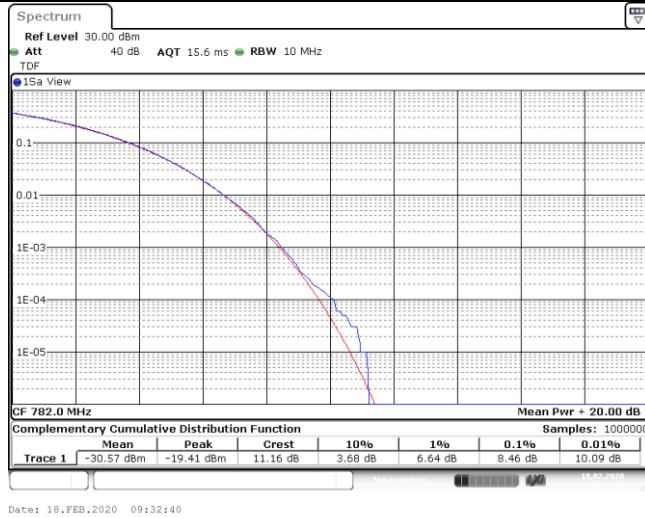
Band13_Stand-Alone_NaN_BPSK_23230_3@3_15kHz_9.54_<=13_PASS__



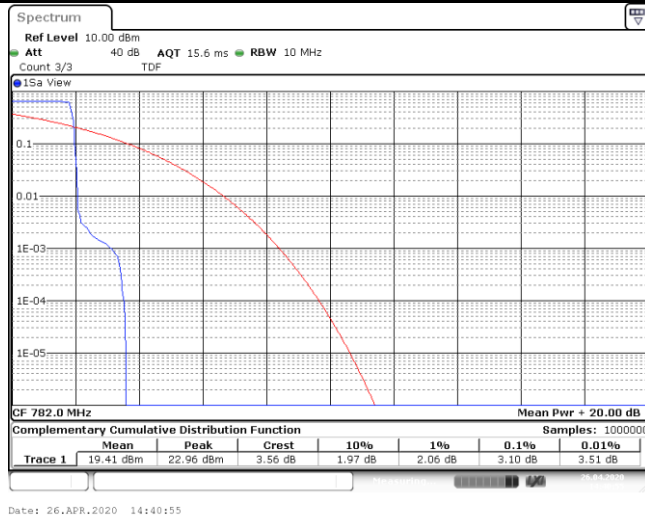
Band13_Stand-Alone_NaN_BPSK_23230_1@11_15kHz_6.55_<=13_PASS__



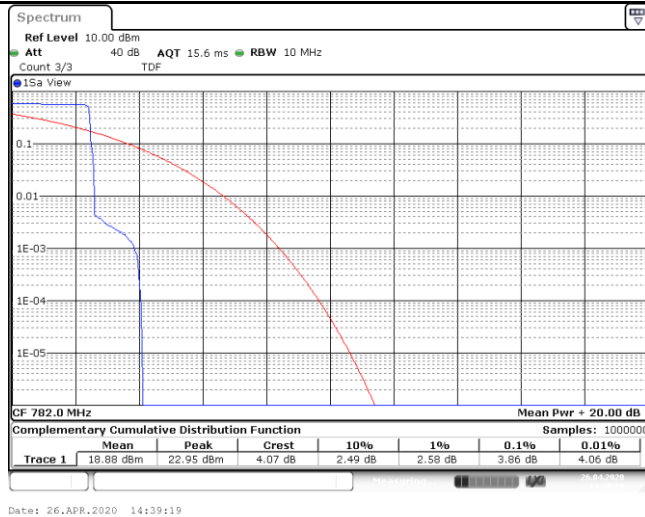
Band13_Stand-Alone_NaN_BPSK_23230_1@0_15kHz_8.46_<=13_PASS__



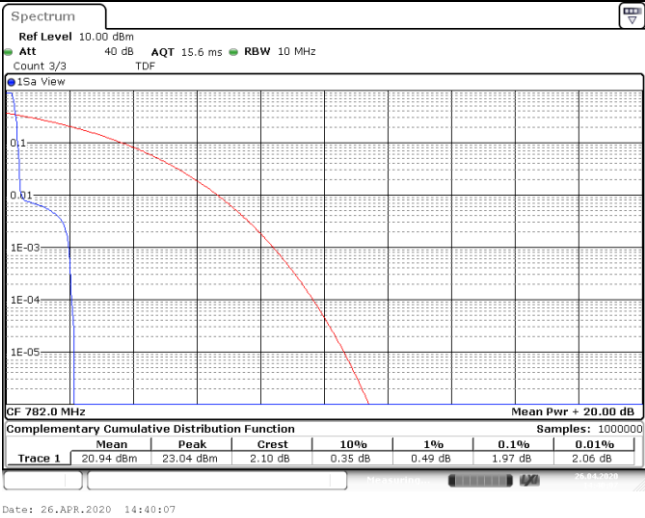
Band13_Stand-Alone_NaN_QPSK_23230_1@47_3.75kHz_3.1_<=13_PASS__



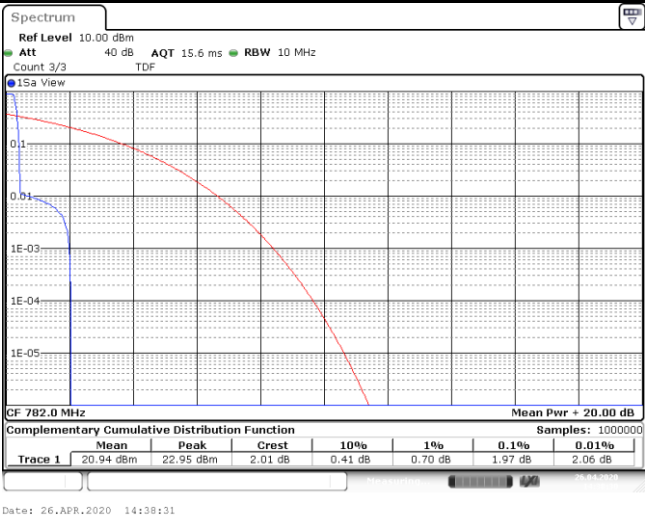
Band13_Stand-Alone_NaN_QPSK_23230_1@0_3.75kHz_3.86_<=13_PASS__



Band13_Stand-Alone_NaN_BPSK_23230_1@47_3.75kHz_1.97_<=13_PASS__



Band13_Stand-Alone_NaN_BPSK_23230_1@0_3.75kHz_1.97_<=13_PASS__

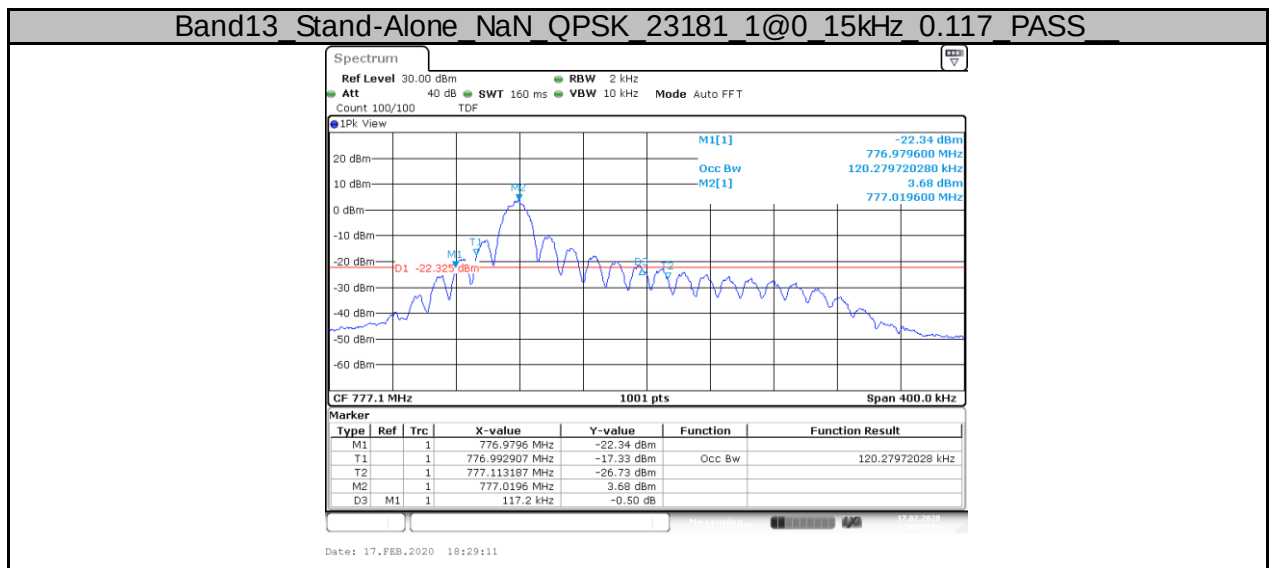


Appendix E.3: 26dB Emission Bandwidth and Occupied Bandwidth for NB

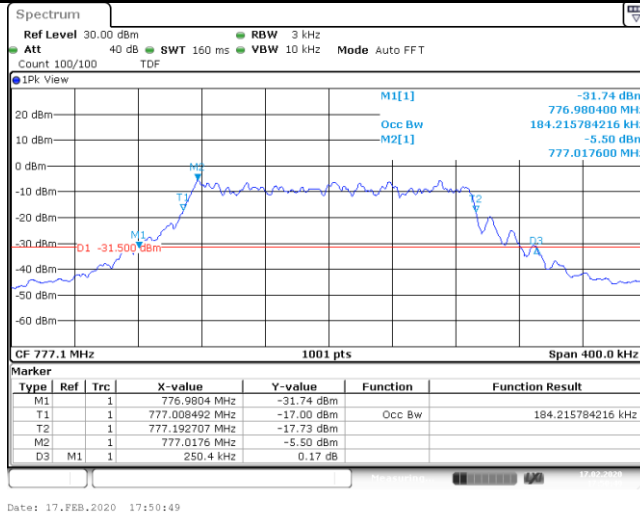
Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Verdict
Band13	Stand-Alone	NaN	QPSK	23181	1@0	15kHz	0.117	0.120	PASS
Band13	Stand-Alone	NaN	QPSK	23181	12@0	15kHz	0.250	0.184	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	0.118	0.120	PASS
Band13	Stand-Alone	NaN	QPSK	23230	12@0	15kHz	0.250	0.184	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	15kHz	0.118	0.120	PASS
Band13	Stand-Alone	NaN	QPSK	23279	12@0	15kHz	0.250	0.184	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	15kHz	0.106	0.128	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	15kHz	0.106	0.127	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	15kHz	0.106	0.128	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	3.75kHz	0.038	0.052	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	3.75kHz	0.038	0.052	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	3.75kHz	0.034	0.055	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	3.75kHz	0.036	0.055	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	0.038	0.049	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	3.75kHz	0.032	0.054	PASS

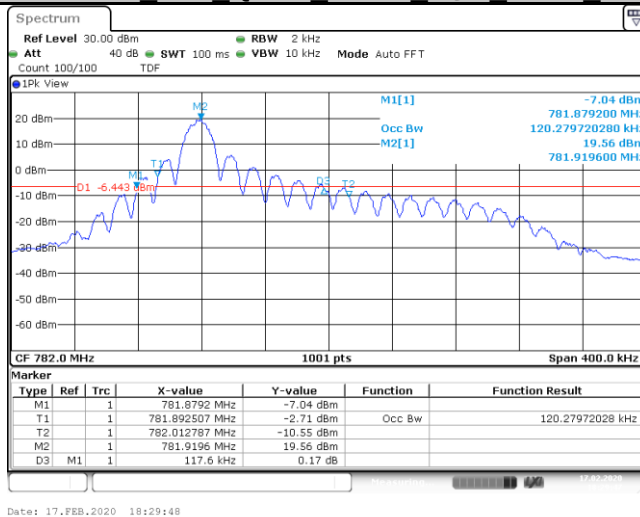
Test Graphs



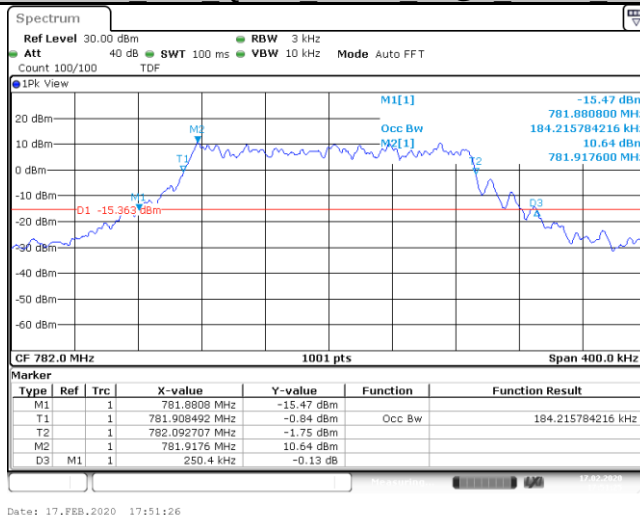
Band13 Stand-Alone NaN QPSK 23181 12@0 15kHz 0.250 PASS



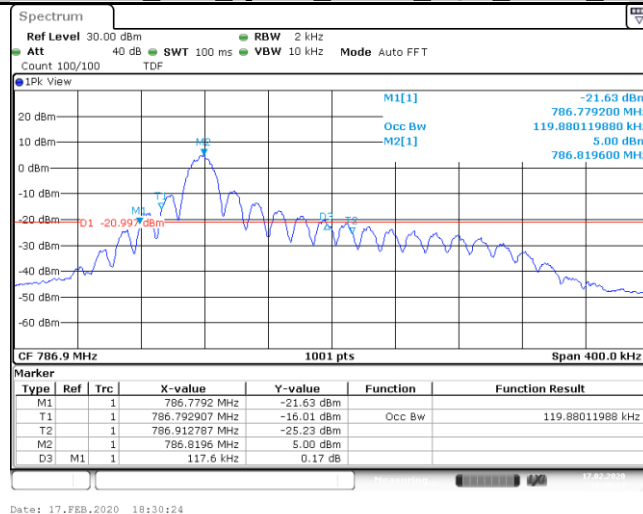
Band13 Stand-Alone NaN QPSK 23230 1@0 15kHz 0.118 PASS



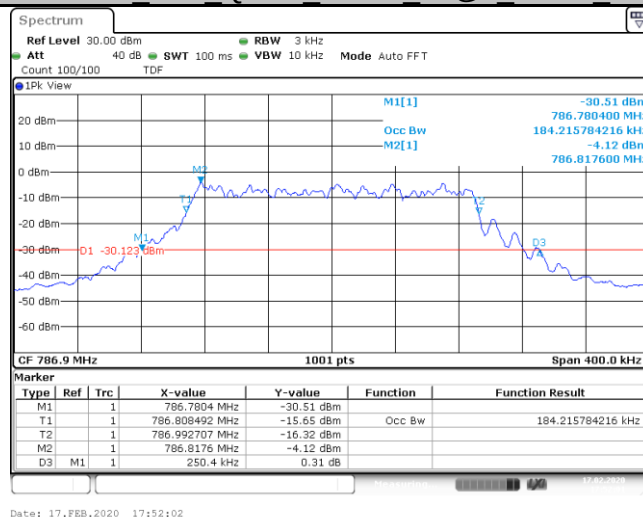
Band13 Stand-Alone NaN QPSK 23230 12@0 15kHz 0.250 PASS



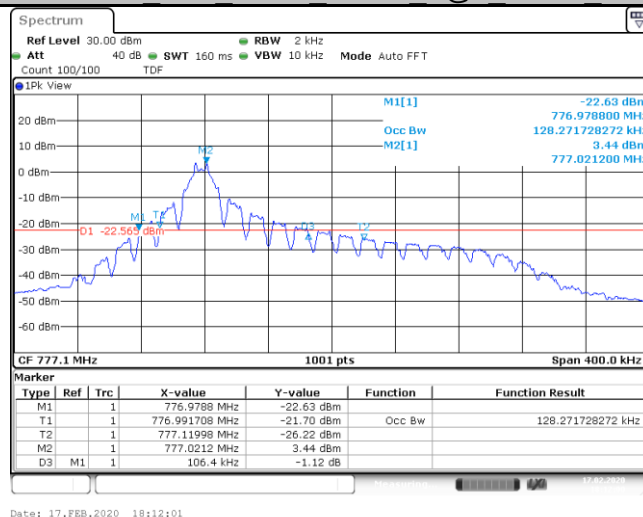
Band13 Stand-Alone NaN QPSK 23279 1@0 15kHz 0.118 PASS



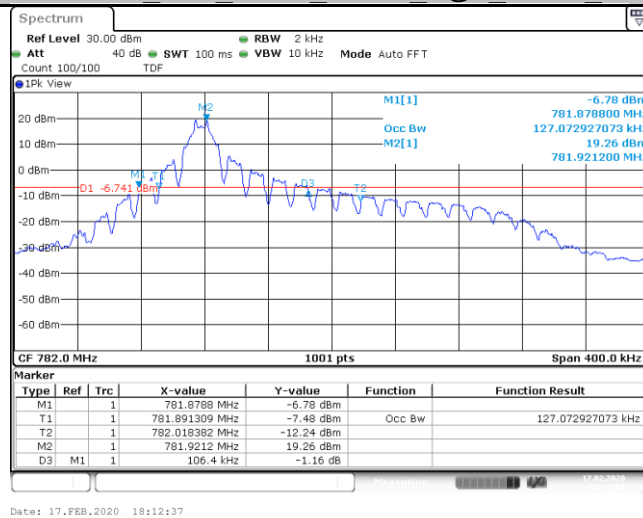
Band13 Stand-Alone NaN QPSK 23279 12@0 15kHz 0.250 PASS



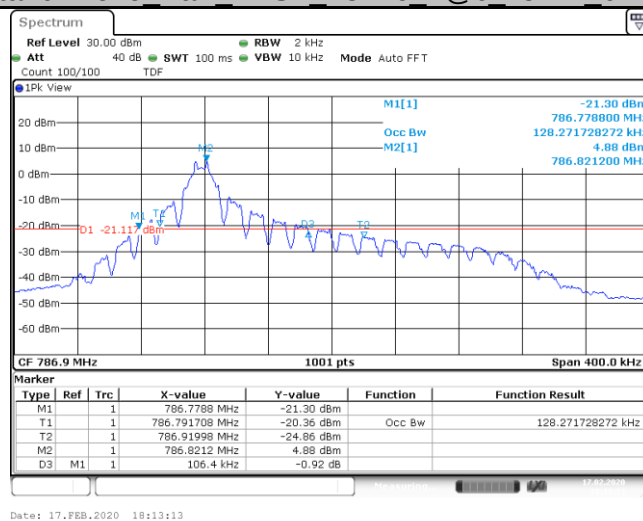
Band13 Stand-Alone NaN BPSK 23181 1@0 15kHz 0.106 PASS



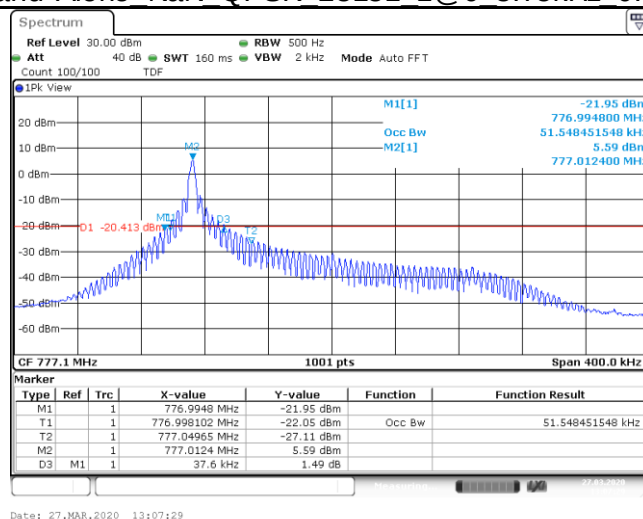
Band13 Stand-Alone NaN BPSK 23230 1@0 15kHz 0.106 PASS



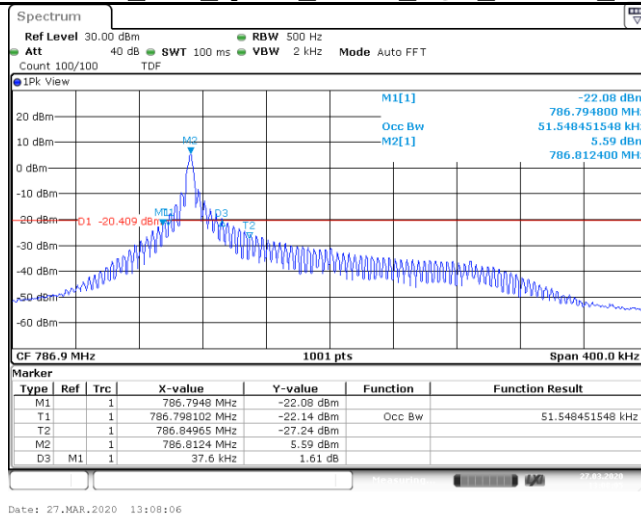
Band13 Stand-Alone NaN BPSK 23279 1@0 15kHz 0.106 PASS



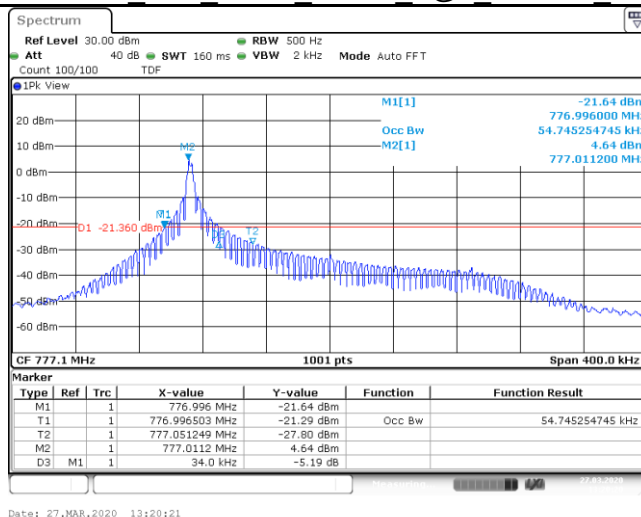
Band13 Stand-Alone NaN QPSK 23181 1@0 3.75kHz 0.038 PASS



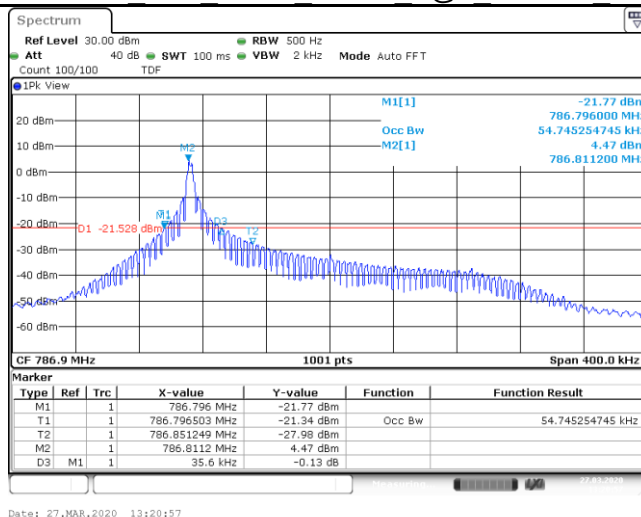
Band13 Stand-Alone NaN QPSK 23279 1@0 3.75kHz 0.038 PASS



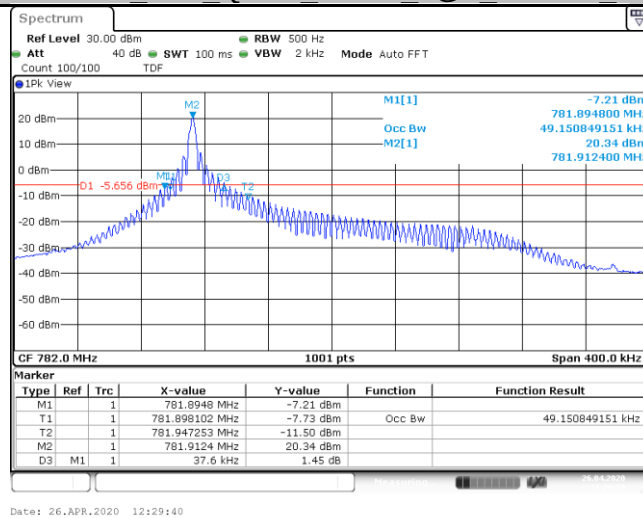
Band13 Stand-Alone NaN BPSK 23181 1@0 3.75kHz 0.034 PASS



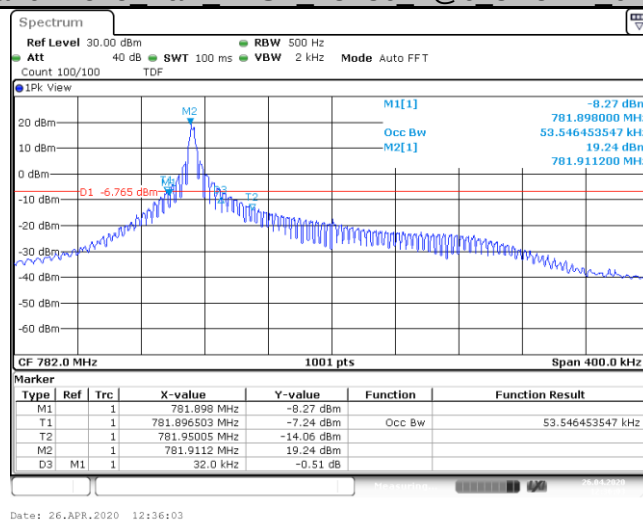
Band13 Stand-Alone NaN BPSK 23279 1@0 3.75kHz 0.036 PASS



Band13 Stand-Alone NaN QPSK 23230 1@0 3.75kHz 0.038 PASS



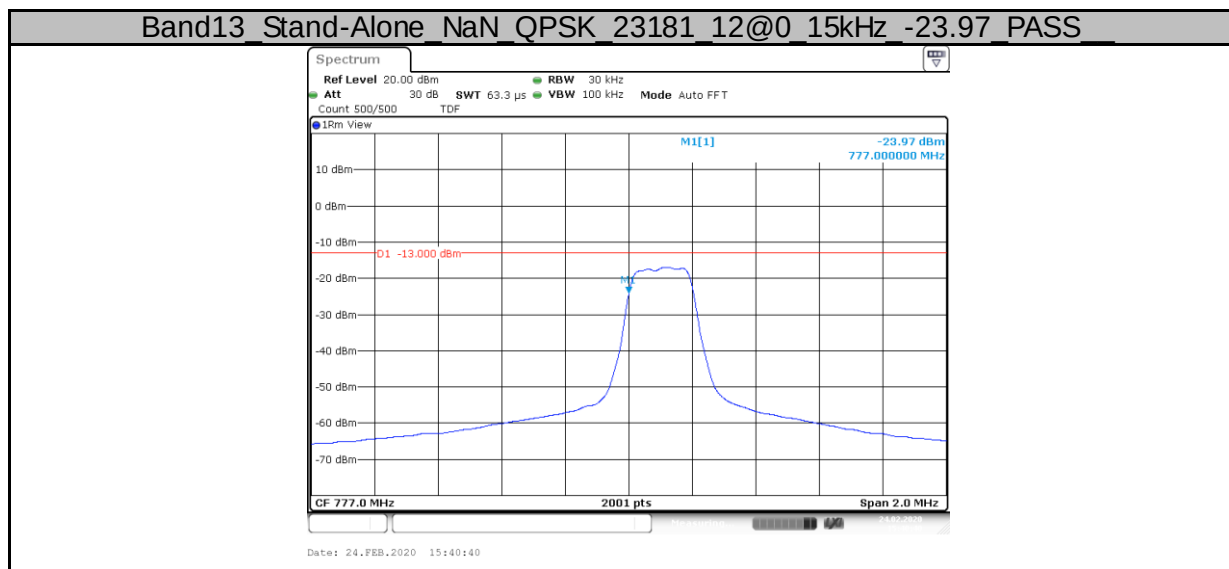
Band13 Stand-Alone NaN BPSK 23230 1@0 3.75kHz 0.032 PASS



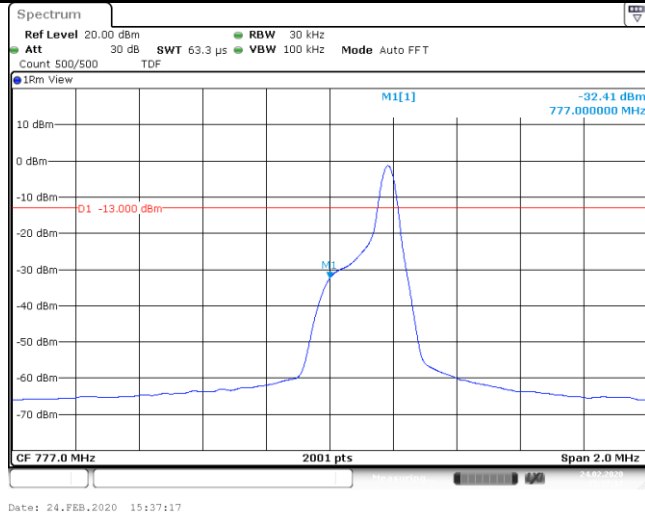
Appendix E.4: Band Edge for NB Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
Band13	Stand-Alone	NaN	QPSK	23181	12@0	15kHz	-23.97	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@11	15kHz	-32.41	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	15kHz	-16.69	PASS
Band13	Stand-Alone	NaN	QPSK	23279	12@0	15kHz	-21.95	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@11	15kHz	-16.65	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	15kHz	-30.51	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@11	15kHz	-30.44	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	15kHz	-14.81	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@11	15kHz	-15.11	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	15kHz	-29.09	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@47	3.75kHz	-32.93	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	3.75kHz	-18.08	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@47	3.75kHz	-17.78	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	3.75kHz	-33.59	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@47	3.75kHz	-31.99	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	3.75kHz	-16.66	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@47	3.75kHz	-16.81	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	3.75kHz	-32.09	PASS

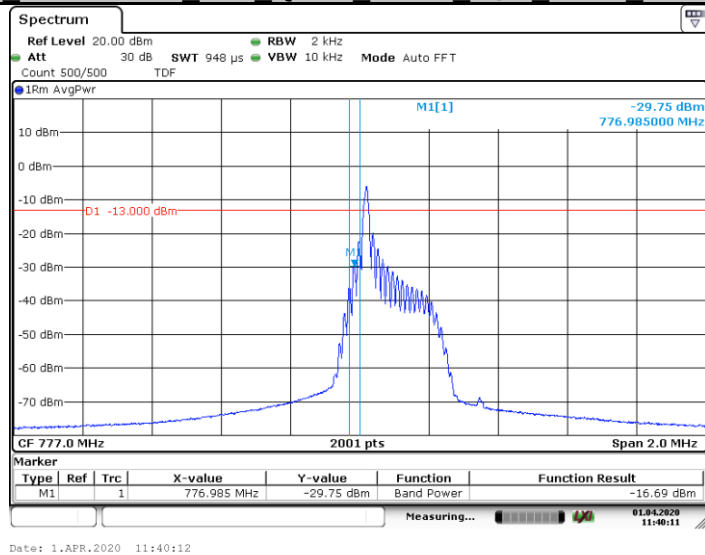
Test Graphs



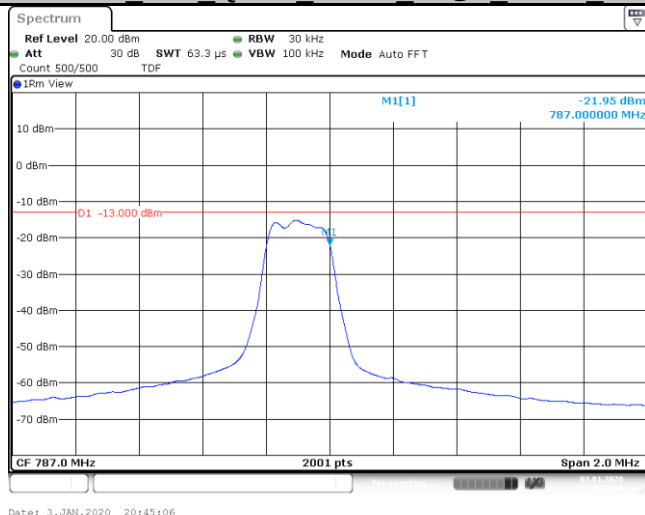
Band13 Stand-Alone NaN QPSK 23181 1@11 15kHz -32.41 PASS



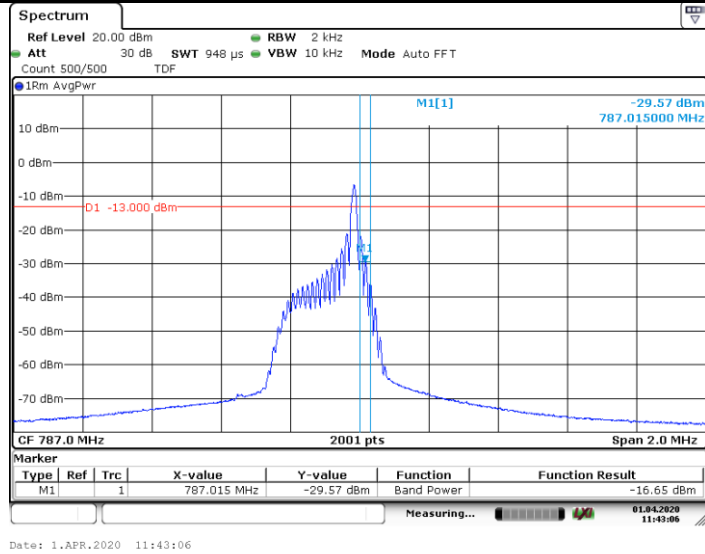
Band13 Stand-Alone NaN QPSK 23181 1@0 15kHz -16.69 PASS



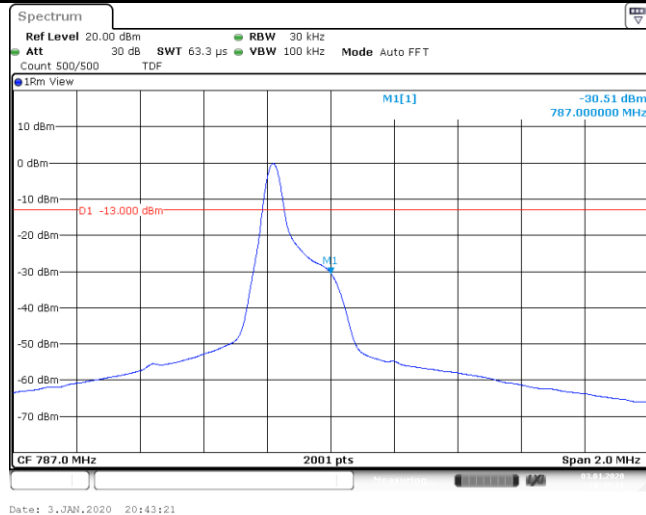
Band13 Stand-Alone NaN QPSK 23279 12@0 15kHz -21.95 PASS



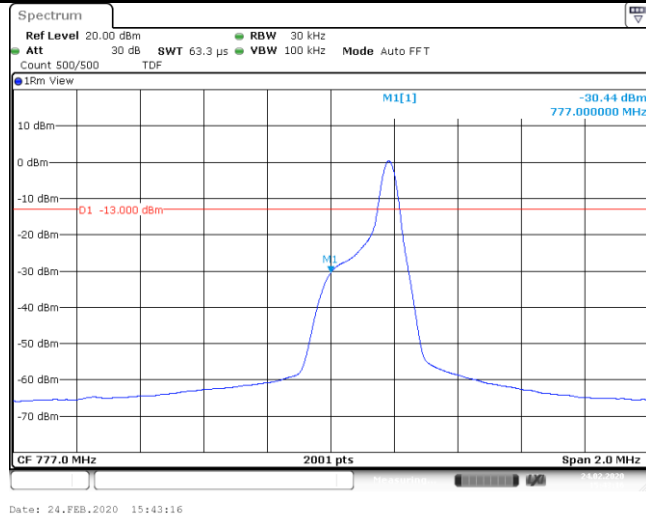
Band13 Stand-Alone NaN QPSK 23279 1@11 15kHz -16.65 PASS



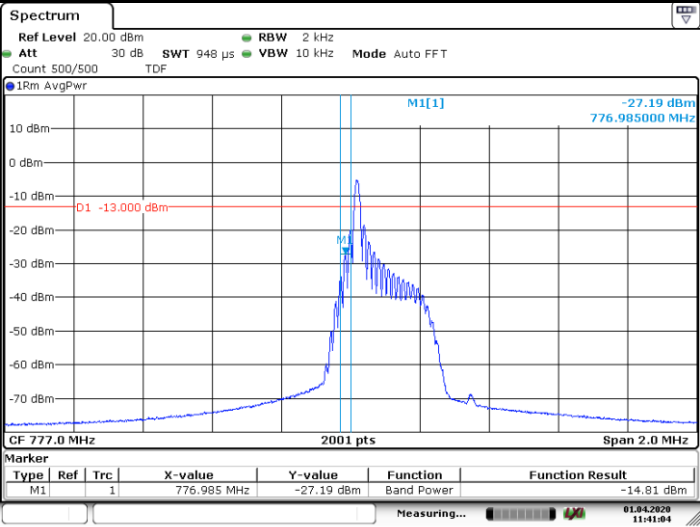
Band13 Stand-Alone NaN QPSK 23279 1@0 15kHz -30.51 PASS



Band13 Stand-Alone NaN BPSK 23181 1@11 15kHz -30.44 PASS

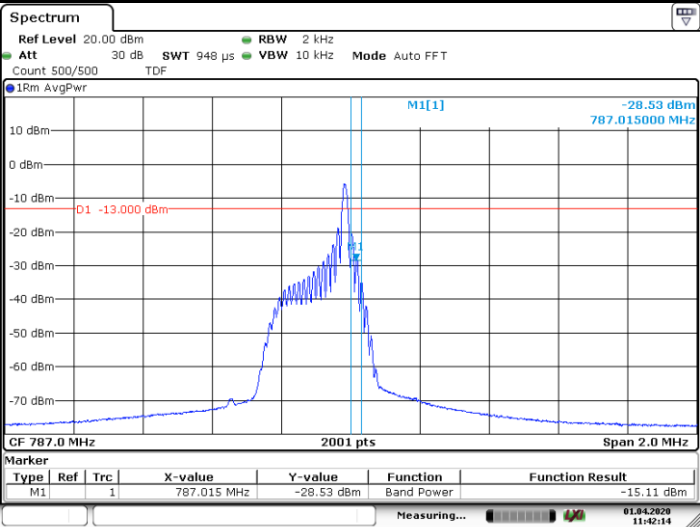


Band13 Stand-Alone NaN BPSK 23181 1@0 15kHz -14.81 PASS



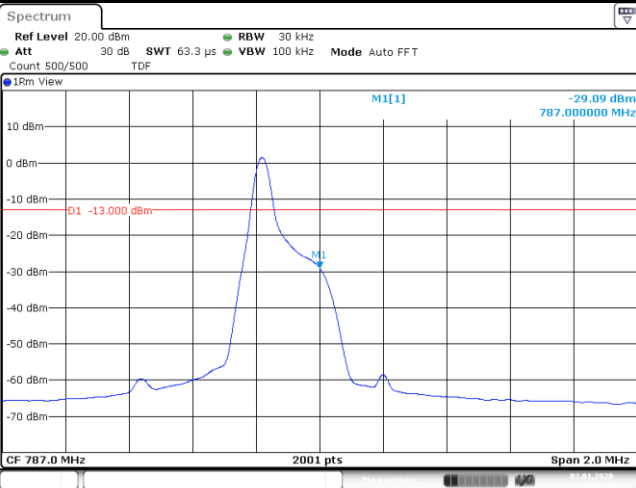
Date: 1.APR.2020 11:41:05

Band13 Stand-Alone NaN BPSK 23279 1@11 15kHz -15.11 PASS



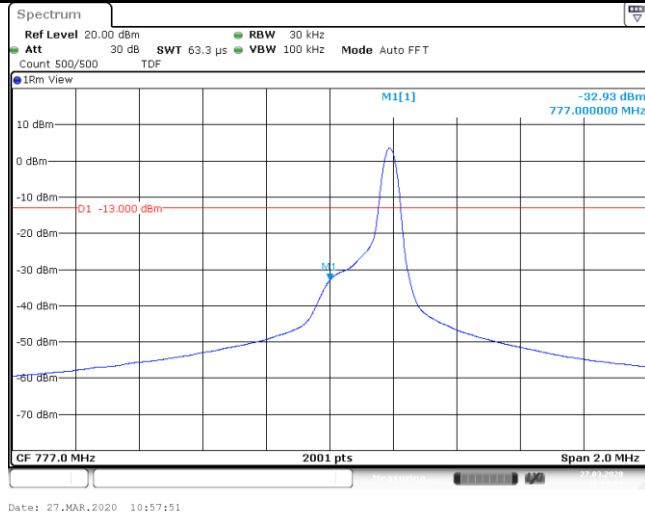
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Band13 Stand-Alone NaN BPSK 23279 1@0 15kHz -29.09 PASS

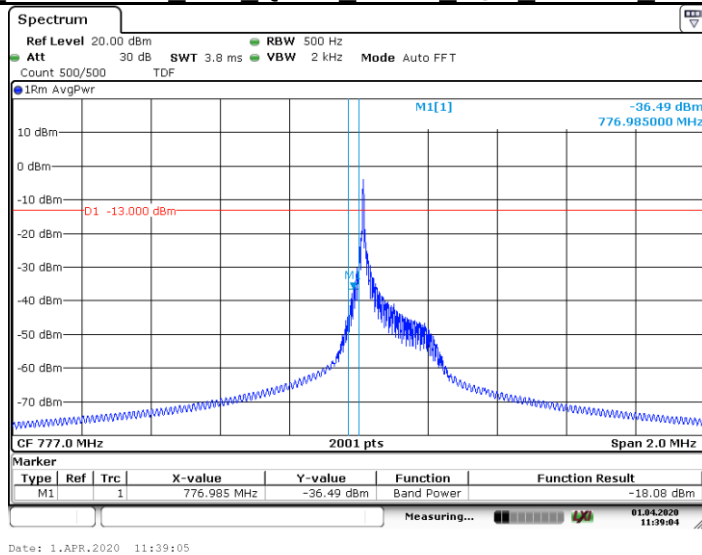


Date: 3.JAN.2020 22:03:28

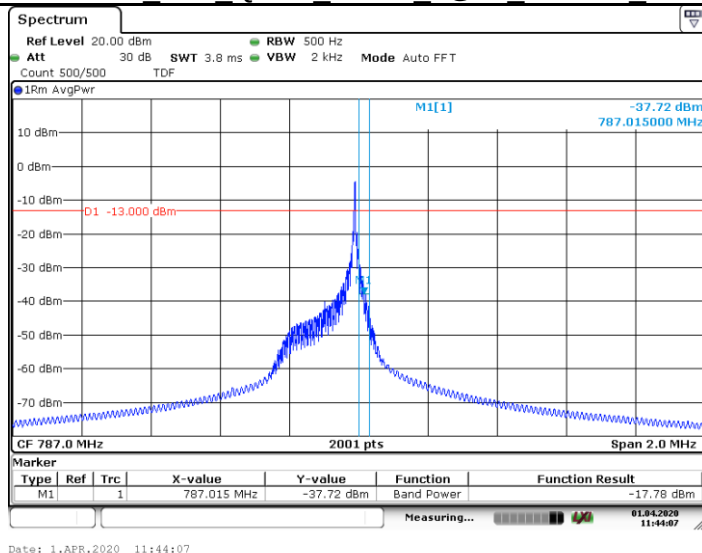
Band13 Stand-Alone NaN QPSK 23181 1@47 3.75kHz -32.93 PASS



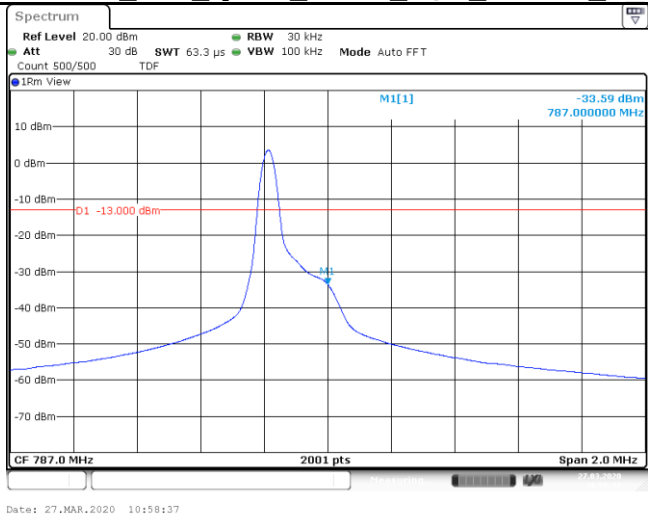
Band13 Stand-Alone NaN QPSK 23181 1@0 3.75kHz -18.08 PASS



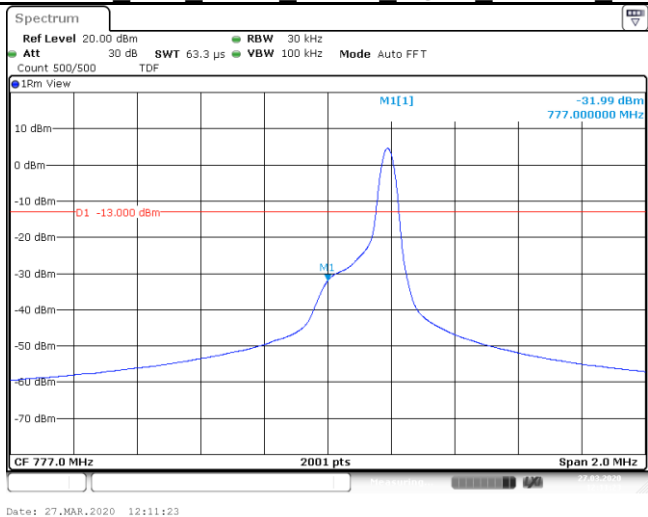
Band13 Stand-Alone NaN QPSK 23279 1@47 3.75kHz -17.78 PASS



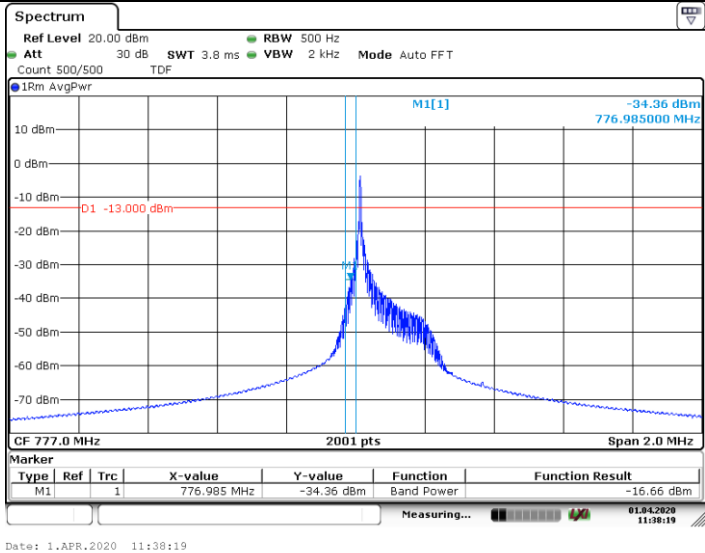
Band13 Stand-Alone NaN QPSK 23279 1@0 3.75kHz -33.59 PASS



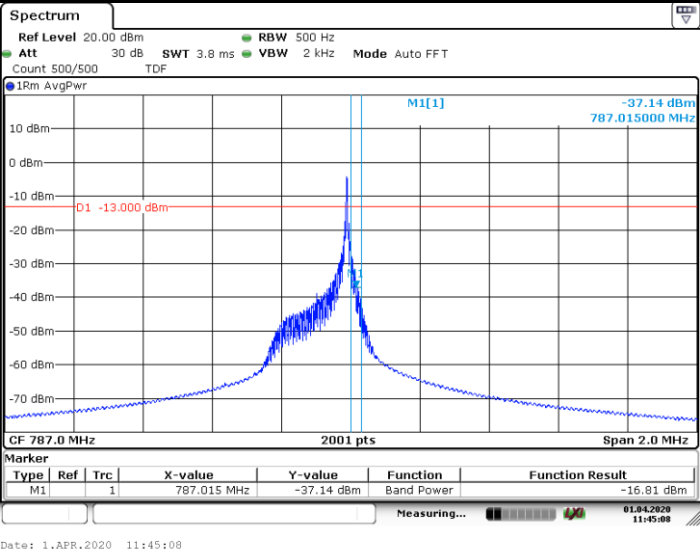
Band13 Stand-Alone NaN BPSK 23181 1@47 3.75kHz -31.99 PASS



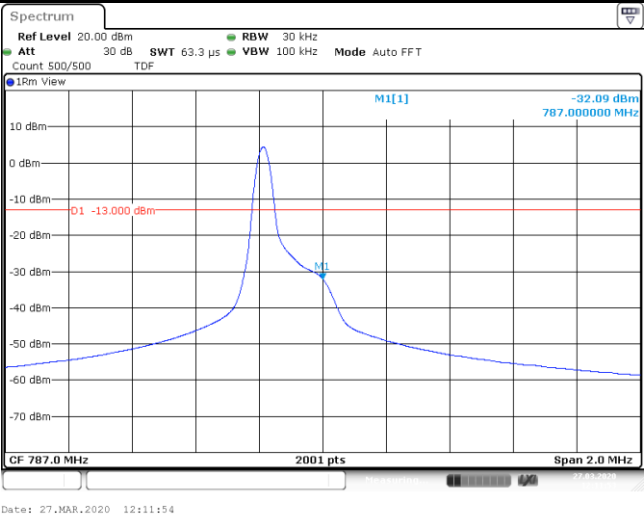
Band13 Stand-Alone NaN BPSK 23181 1@0 3.75kHz -16.66 PASS



Band13 Stand-Alone NaN BPSK 23279 1@47 3.75kHz -16.81 PASS



Band13 Stand-Alone NaN BPSK 23279 1@0 3.75kHz -32.09 PASS



Appendix E.5: Conducted Spurious Emission for NB

Test Result

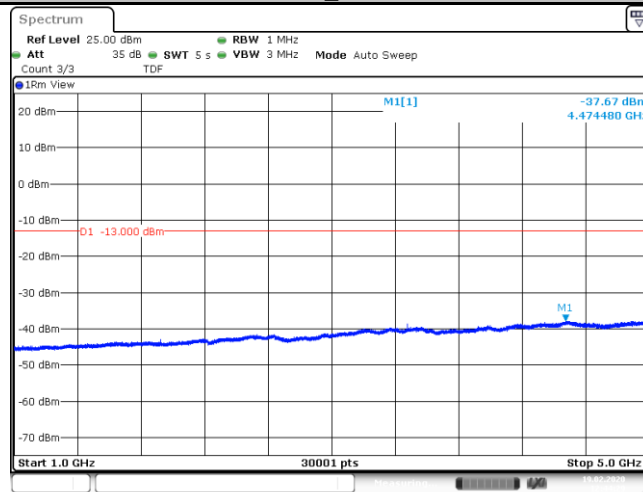
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	StartFreq (MHz)	StopFreq (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band13	Stand-Alone	NaN	QPSK	23181	12@0	15kHz	1000	5000	1000~5000MHz@-37.67dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	12@0	15kHz	5000	12000	5000~12000MHz@-47.28dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	12@0	15kHz	12000	26500	12000~26500MHz@-41.29dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	12@0	15kHz	30	1000	30~1000MHz@-35.28dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	12@0	15kHz	30	1000	30~1000MHz@-35.34dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	12@0	15kHz	1000	5000	1000~5000MHz@-37.72dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	12@0	15kHz	5000	12000	5000~12000MHz@-47.42dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	12@0	15kHz	12000	26500	12000~26500MHz@-41.31dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	12@0	15kHz	12000	26500	12000~26500MHz@-41.36dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	12@0	15kHz	5000	12000	5000~12000MHz@-47.27dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	12@0	15kHz	30	1000	30~1000MHz@-35.04dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	12@0	15kHz	1000	5000	1000~5000MHz@-37.59dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	15kHz	1000	5000	1000~5000MHz@-37.7dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	15kHz	12000	26500	12000~26500MHz@-41.28dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@11	15kHz	30	1000	30~1000MHz@-35.47dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@11	15kHz	1000	5000	1000~5000MHz@-37.86dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@11	15kHz	5000	12000	5000~12000MHz@-47.13dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@11	15kHz	12000	26500	12000~26500MHz@-41.25dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	15kHz	30	1000	30~1000MHz@-36.07dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23181	1@0	15kHz	5000	12000	5000~12000MHz@-47.11dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@11	15kHz	12000	26500	12000~26500MHz@-41.25dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@11	15kHz	5000	12000	5000~12000MHz@-47.19dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@11	15kHz	1000	5000	1000~5000MHz@-37.72dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@11	15kHz	30	1000	30~1000MHz@-34.55dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	15kHz	12000	26500	12000~26500MHz@-41.26dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	15kHz	5000	12000	5000~12000MHz@-47.21dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	15kHz	1000	5000	1000~5000MHz@-37.69dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23230	1@0	15kHz	30	1000	30~1000MHz@-35.87dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	15kHz	30	1000	30~1000MHz@-35.17dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	15kHz	1000	5000	1000~5000MHz@-37.68dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	15kHz	5000	12000	5000~12000MHz@-47.44dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@0	15kHz	12000	26500	12000~26500MHz@-41.21dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@11	15kHz	30	1000	30~1000MHz@-35.87dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@11	15kHz	1000	5000	1000~5000MHz@-37.69dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@11	15kHz	5000	12000	5000~12000MHz@-47.33dBm	-13	PASS
Band13	Stand-Alone	NaN	BPSK	23279	1@11	15kHz	12000	26500	12000~26500MHz@-41.32dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.23dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.62dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.82dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.28dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@47	3.75kHz	30	1000	30~1000MHz@-35.41dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.7dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@0	3.75kHz	30	1000	30~1000MHz@-34.99dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23181	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.68dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.1dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.72dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.52dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.36dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@47	3.75kHz	30	1000	30~1000MHz@-34.95dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.87dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.75dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23279	1@0	3.75kHz	30	1000	30~1000MHz@-34.76dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.85dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.65dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.48dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.47dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	30	1000	30~1000MHz@-35.32dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.83dBm	-13	PASS

Produkte
Products

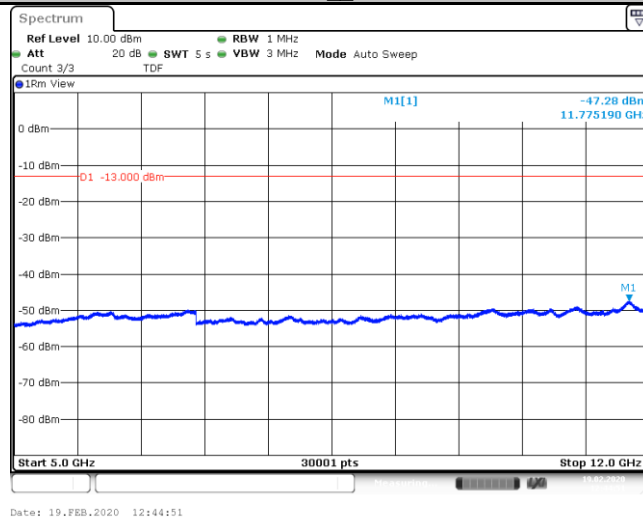
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.82dBm	-13	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	30	1000	30~1000MHz@-35.83dBm	-13	PASS

Test Graphs

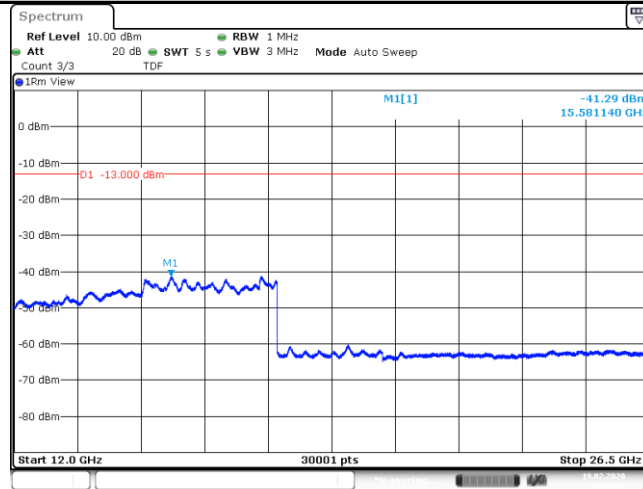
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Band13_Stand-Alone_NaN_QPSK_23181_12@0_15kHz_5000_12000_5000~12000MHz@-47.28dBm_-13_PAS
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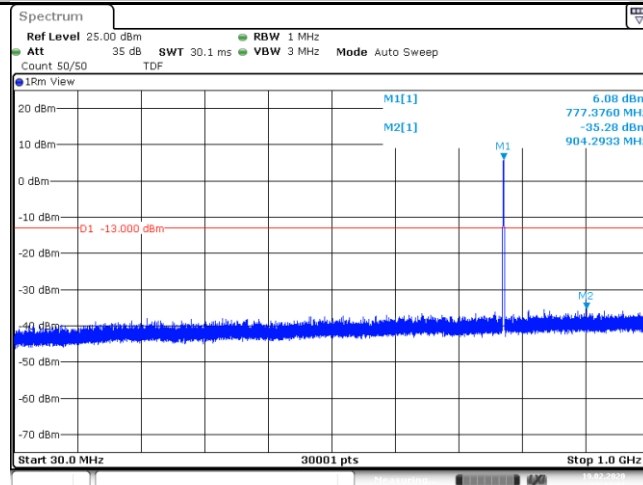


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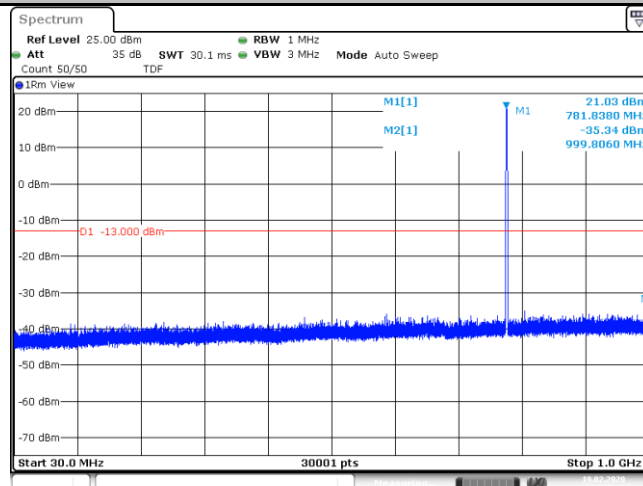
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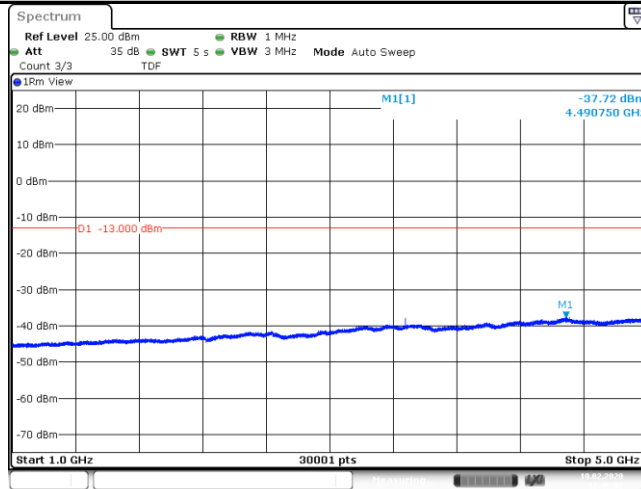
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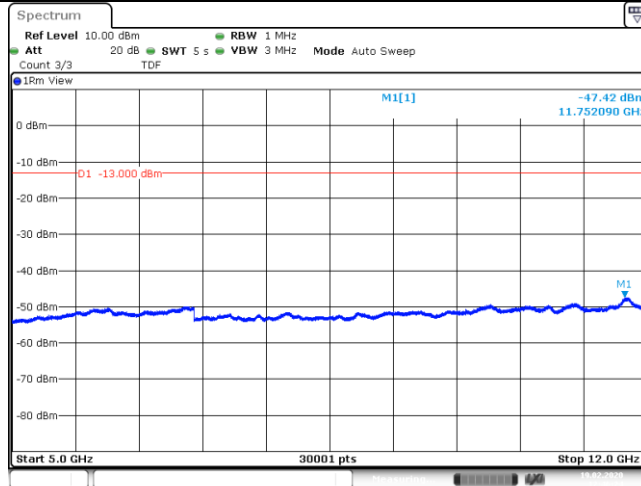
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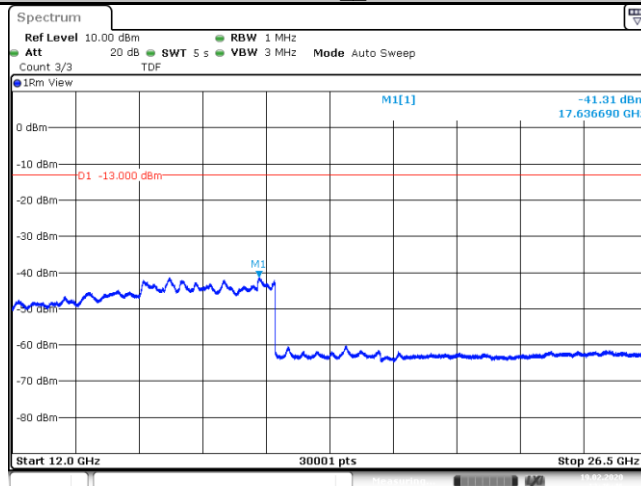
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S_



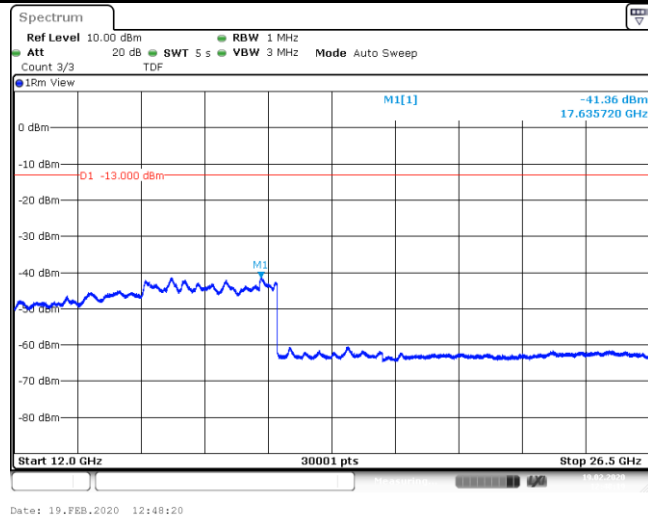
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ASS_

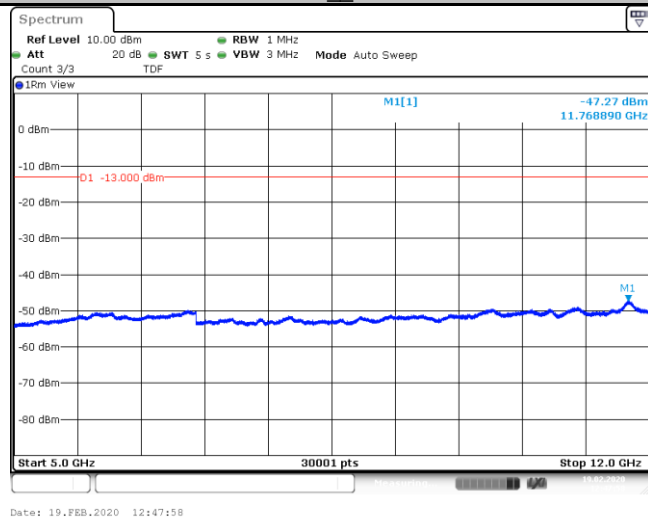


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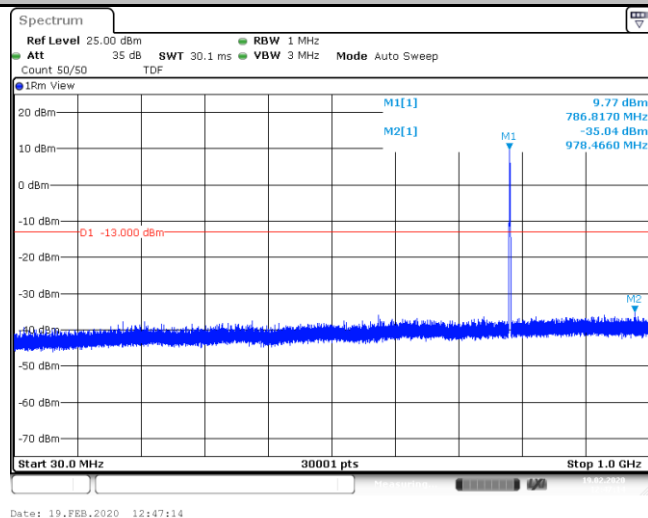
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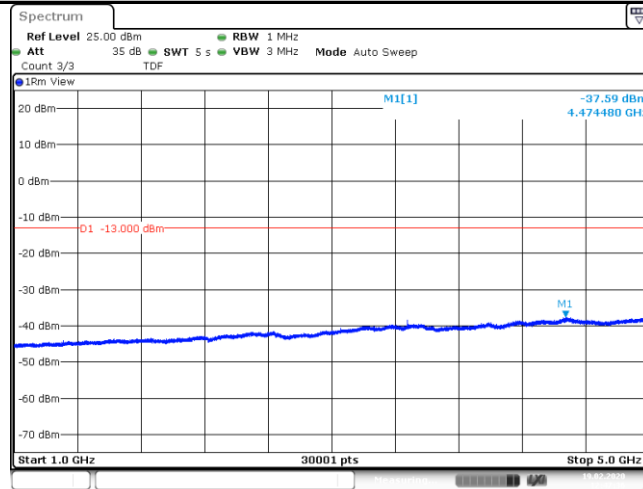
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Band13_Stand-Alone_NaN_QPSK_23279_12@0_15kHz_30_1000_30~1000MHz@-35.04dBm_-13_PASS

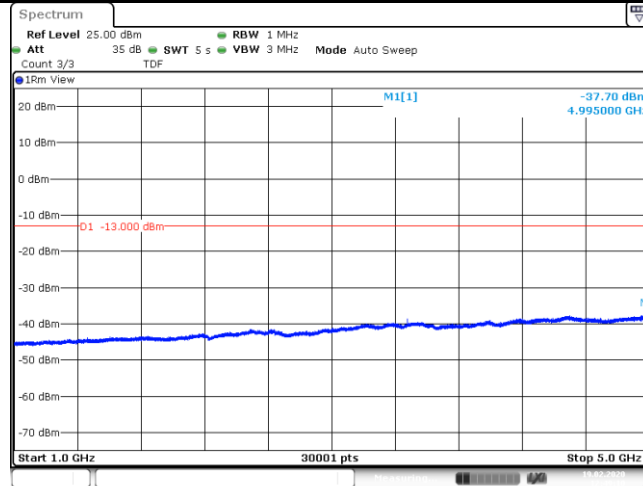


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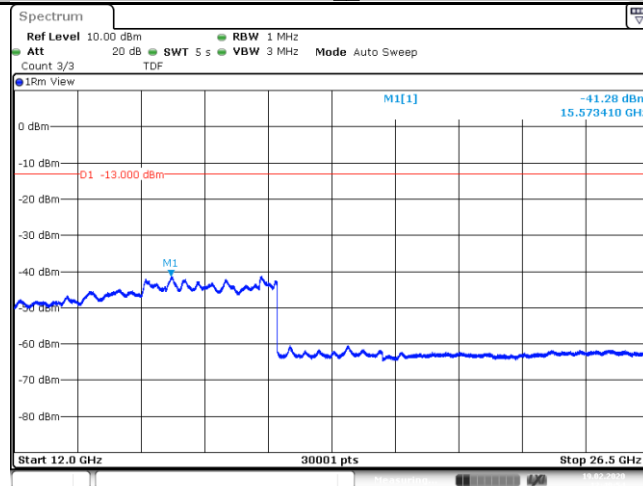
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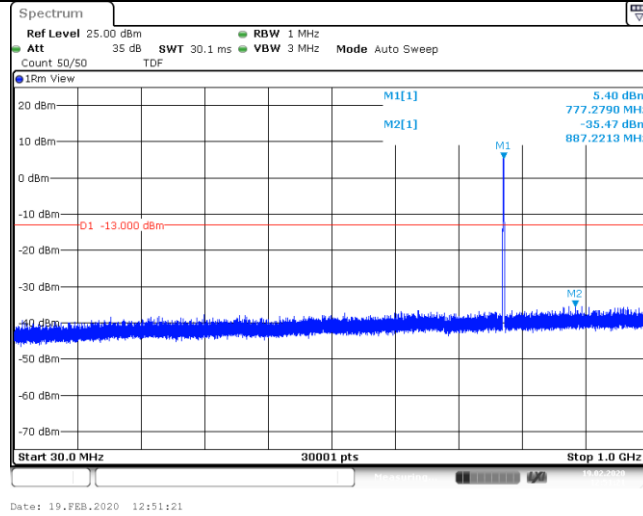
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SS

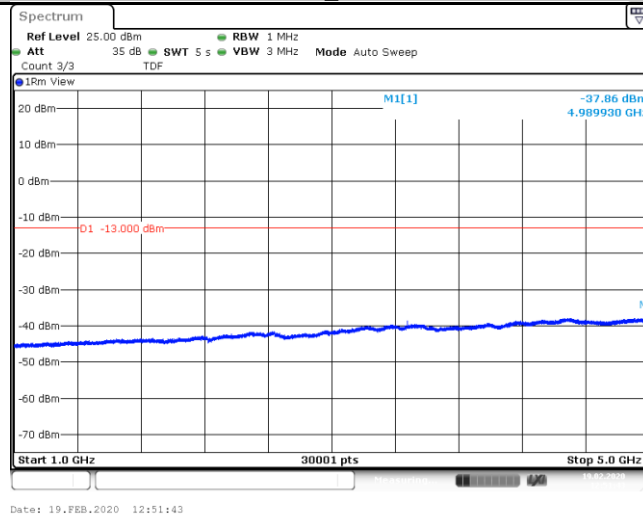


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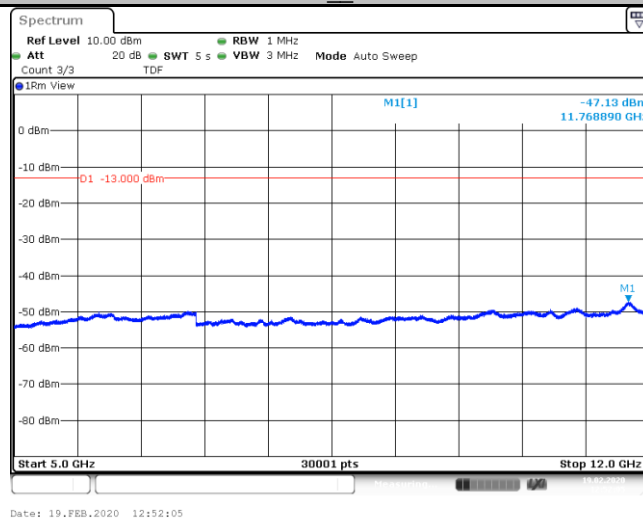
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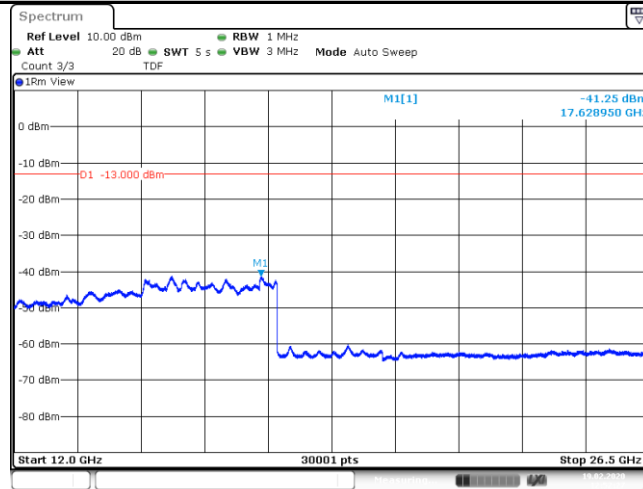
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S__

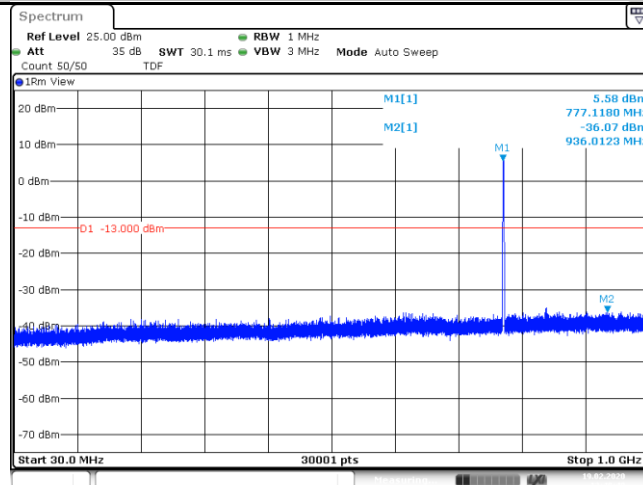


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SS__



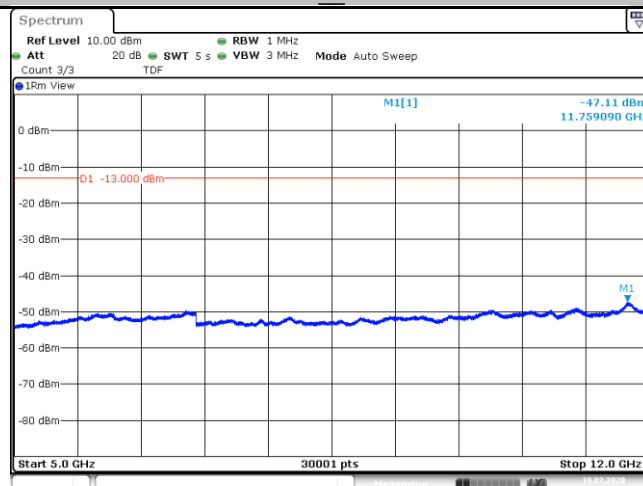
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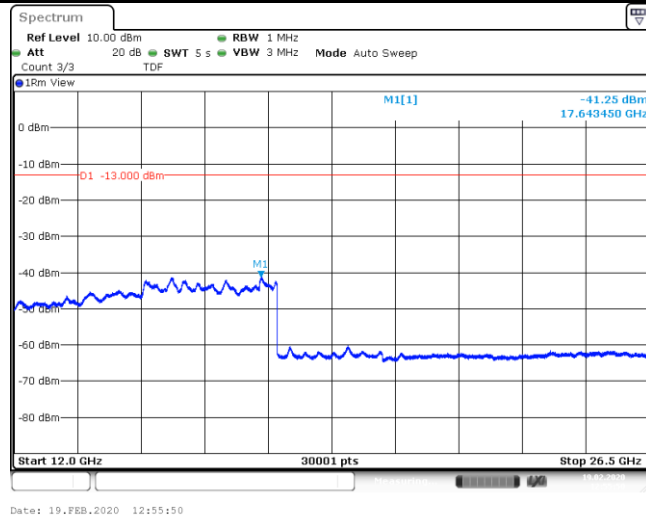
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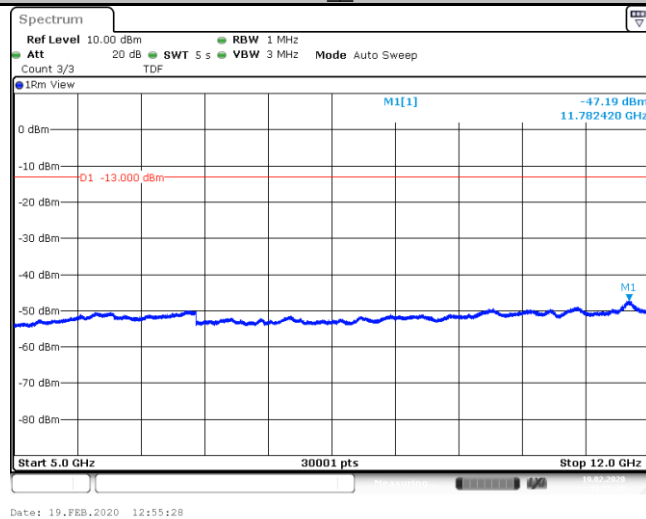


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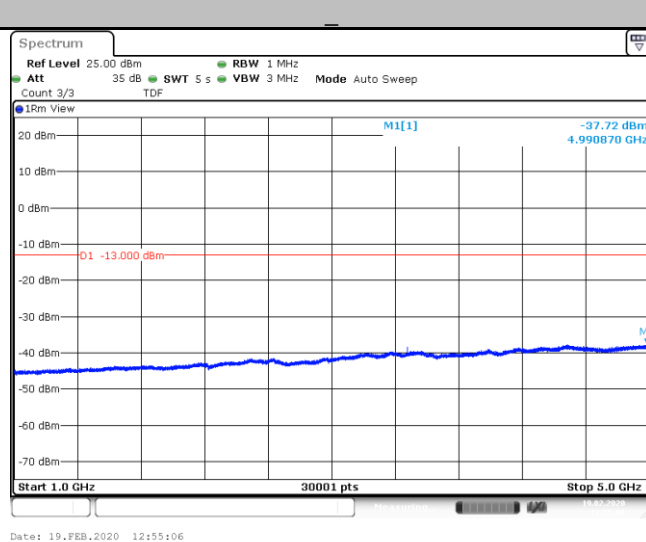
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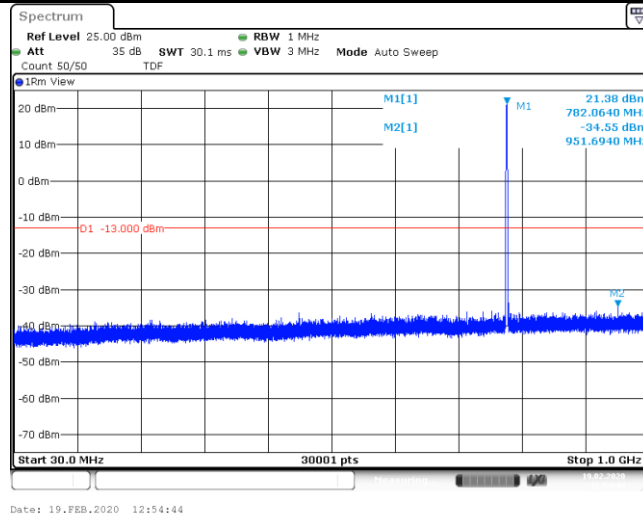
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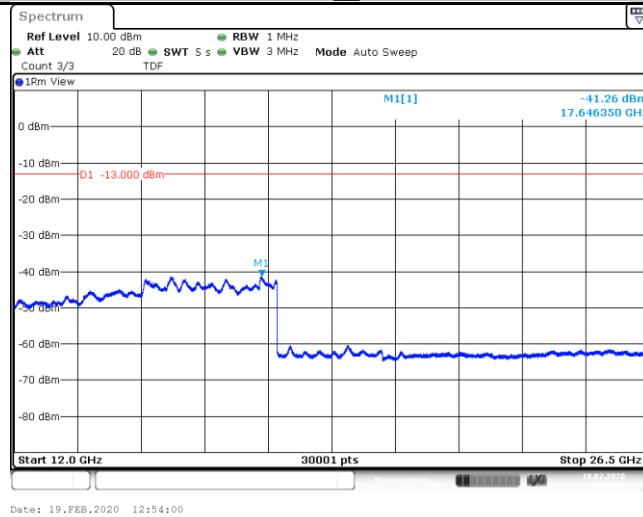
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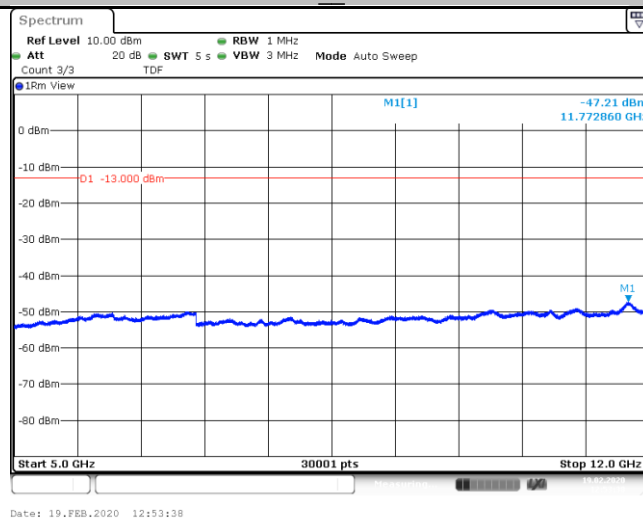
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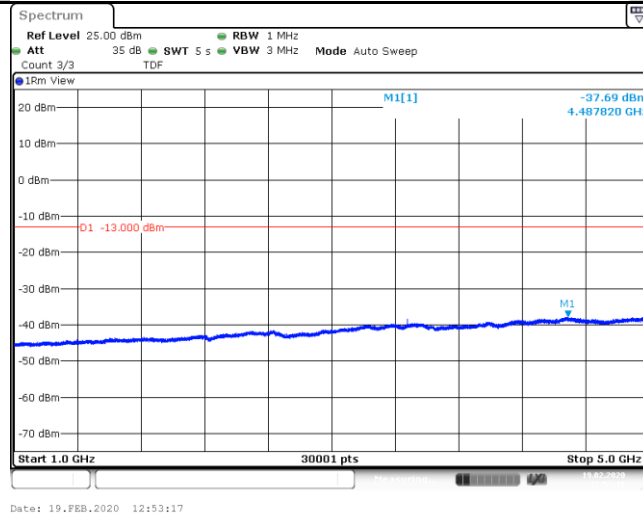
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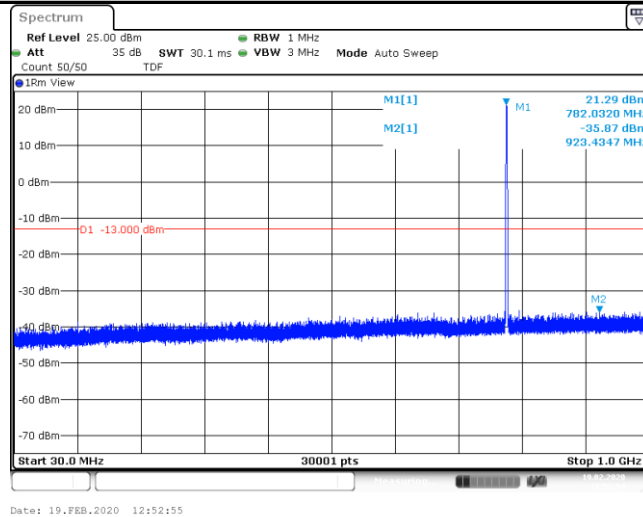
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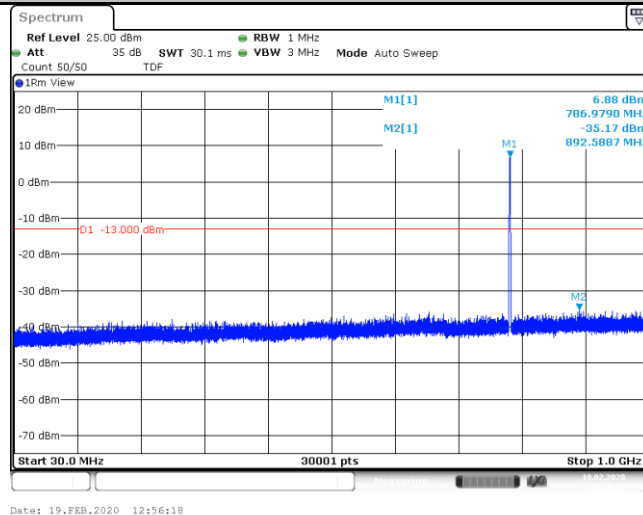
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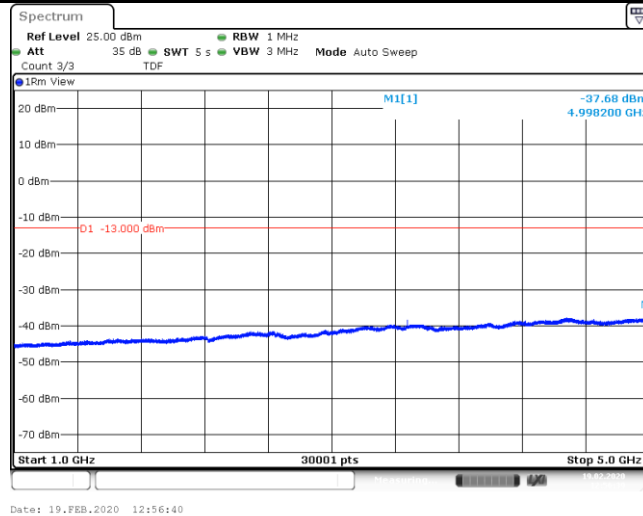
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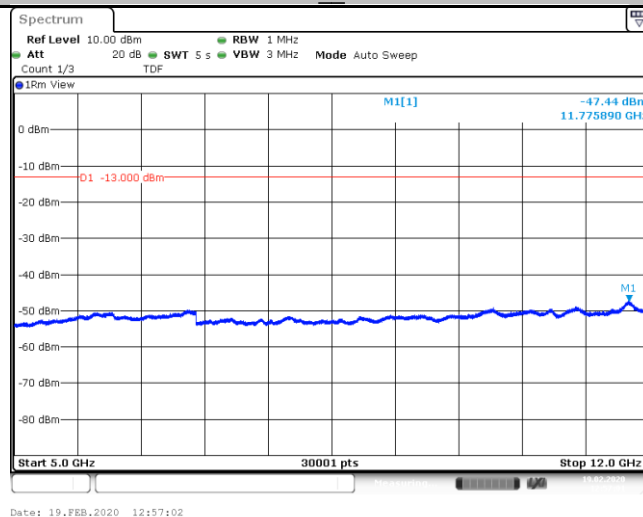
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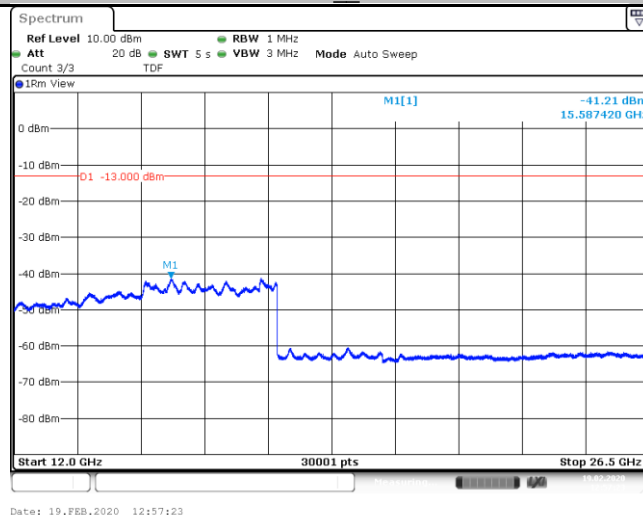
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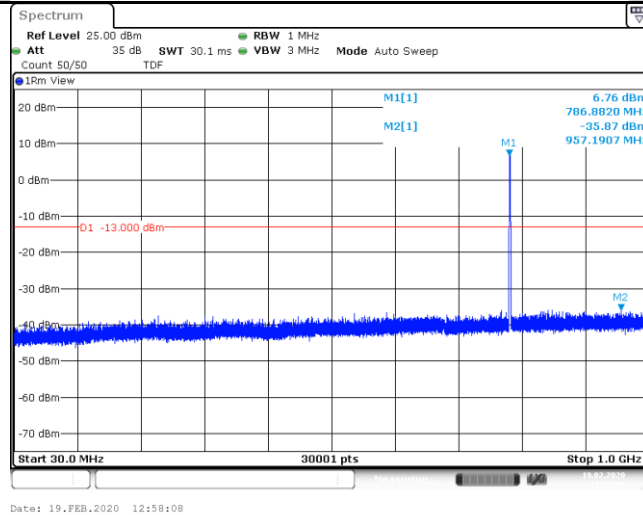
Band13_Stand-Alone_NaN_BPSK_23279_1@0_15kHz_5000_12000_5000~12000MHz@-47.44dBm_-13_PASS



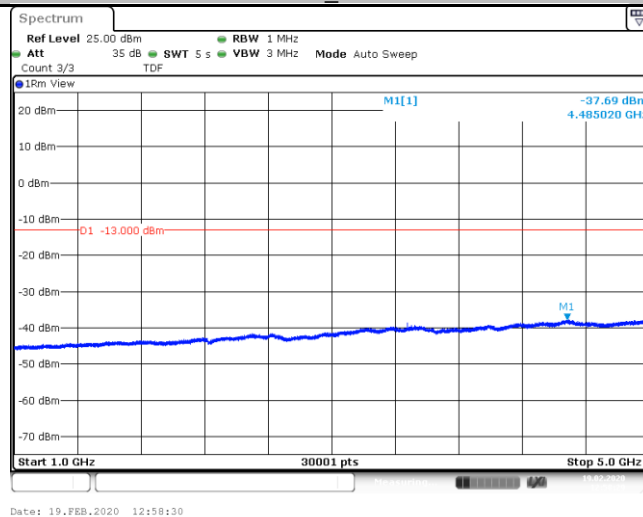
Band13_Stand-Alone_NaN_BPSK_23279_1@0_15kHz_12000_26500_12000~26500MHz@-41.21dBm_-13_PA SS



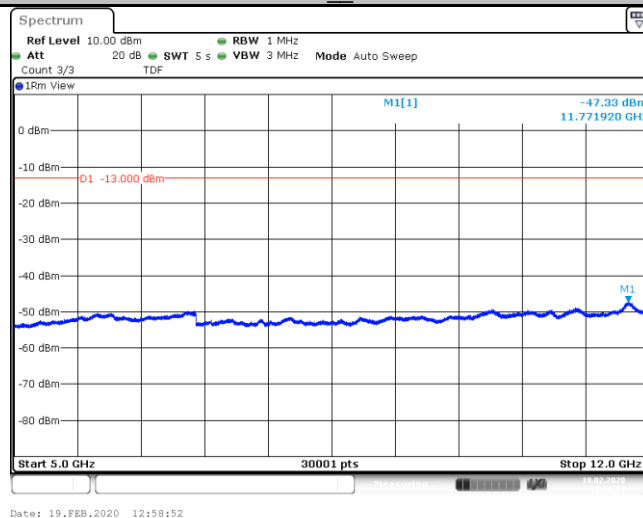
Band13_Stand-Alone_NaN_BPSK_23279_1@11_15kHz_30_1000_30~1000MHz@-35.87dBm_-13_PASS__



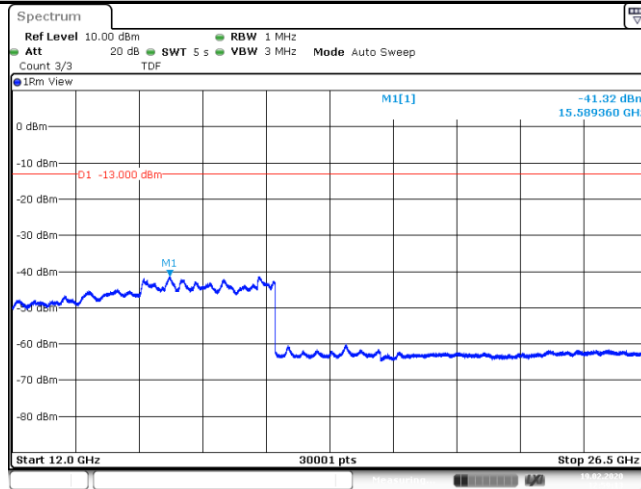
Band13_Stand-Alone_NaN_BPSK_23279_1@11_15kHz_1000_5000_1000~5000MHz@-37.69dBm_-13_PASS__



Band13_Stand-Alone_NaN_BPSK_23279_1@11_15kHz_5000_12000_5000~12000MHz@-47.33dBm_-13_PAS
S__

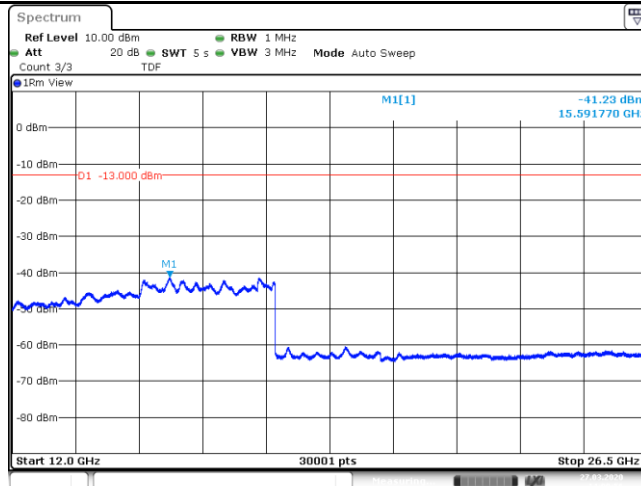


Band13_Stand-Alone_NaN_BPSK_23279_1@11_15kHz_12000_26500_12000~26500MHz@-41.32dBm_-13_PA
SS



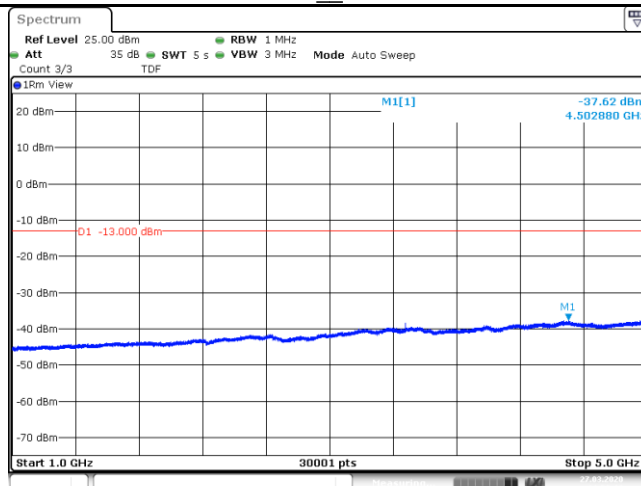
Date: 19.FEB.2020 12:59:14

Band13_Stand-Alone_NaN_QPSK_23181_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.23dBm_-13_PASS



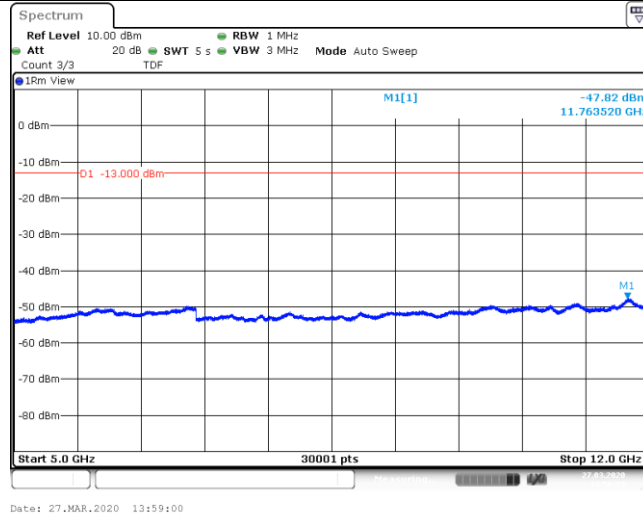
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Band13_Stand-Alone_NaN_QPSK_23181_1@0_3.75kHz_1000_5000_1000~5000MHz@-37.62dBm_-13_PASS

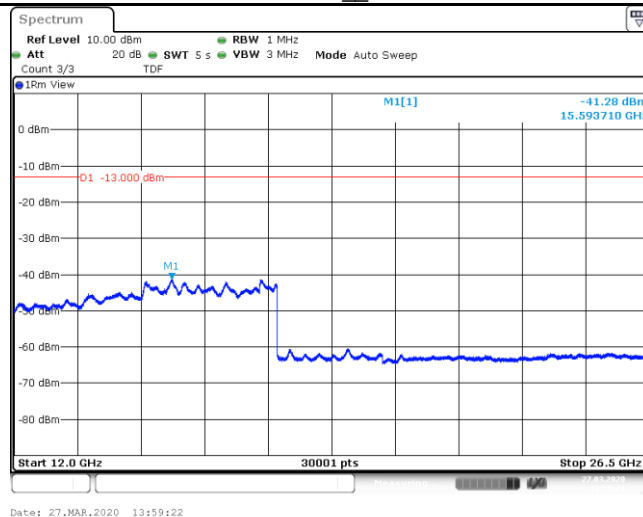


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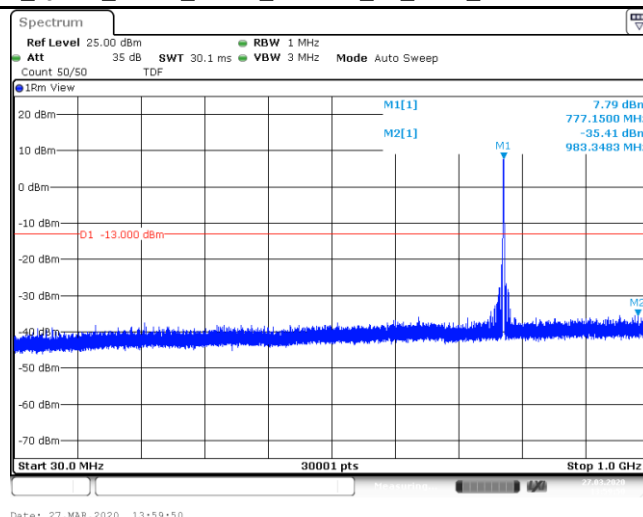
Band13_Stand-Alone_NaN_QPSK_23181_1@0_3.75kHz_5000_12000_5000~12000MHz@-47.82dBm_-13_PAS S



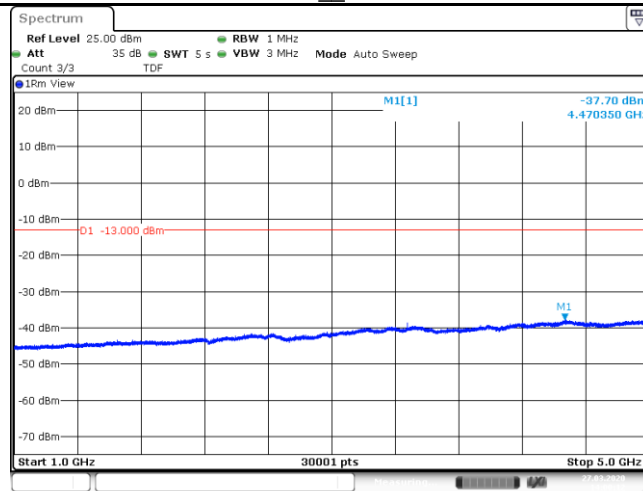
Band13_Stand-Alone_NaN_QPSK_23181_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.28dBm_-13_P ASS



Band13_Stand-Alone_NaN_QPSK_23181_1@47_3.75kHz_30_1000_30~1000MHz@-35.41dBm_-13_PAS S

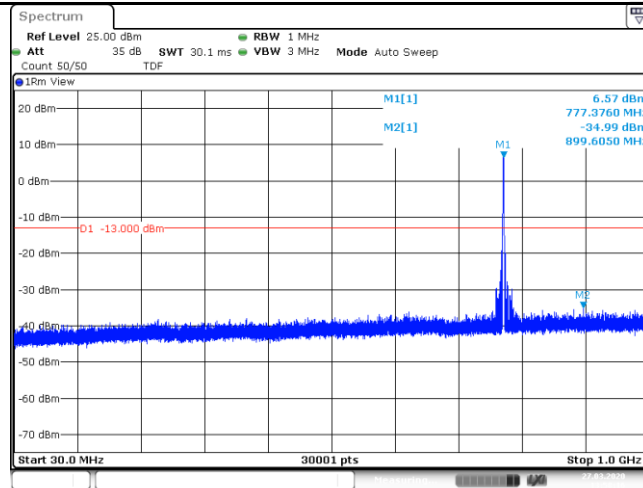


Band13_Stand-Alone_NaN_QPSK_23181_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.7dBm_-13_PASS



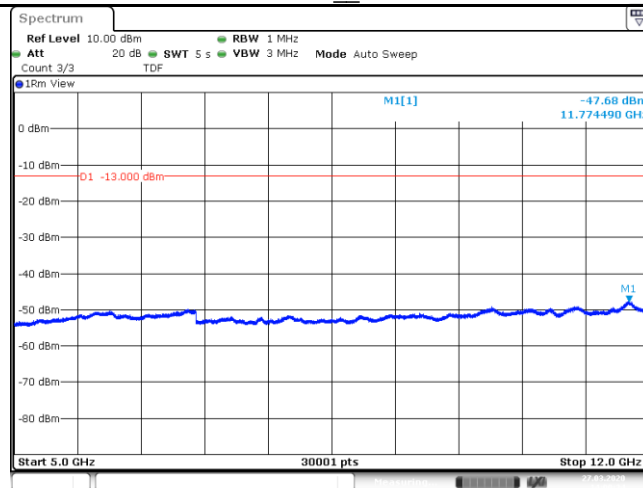
Date: 27.MAR.2020 14:00:12

Band13_Stand-Alone_NaN_QPSK_23181_1@0_3.75kHz_30_1000_30~1000MHz@-34.99dBm_-13_PASS__



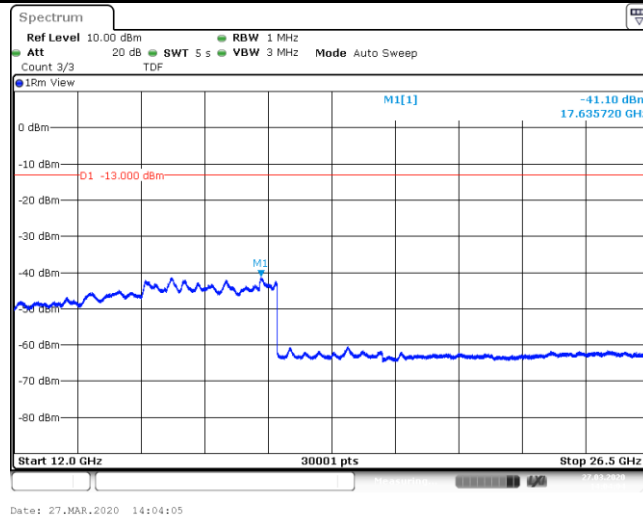
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Band13_Stand-Alone_NaN_QPSK_23181_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.68dBm_-13_PASS

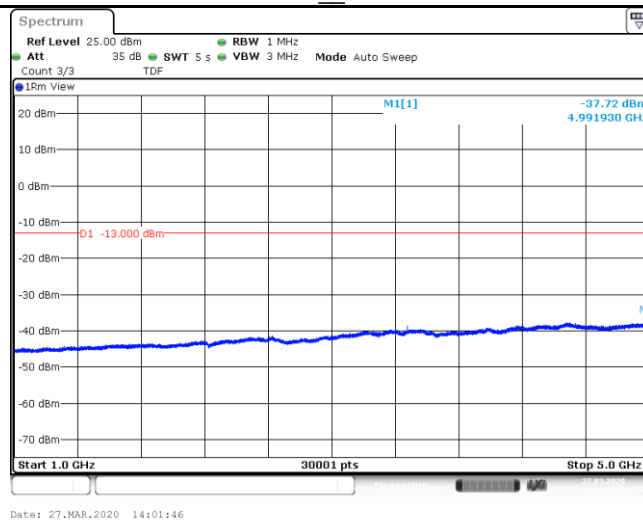


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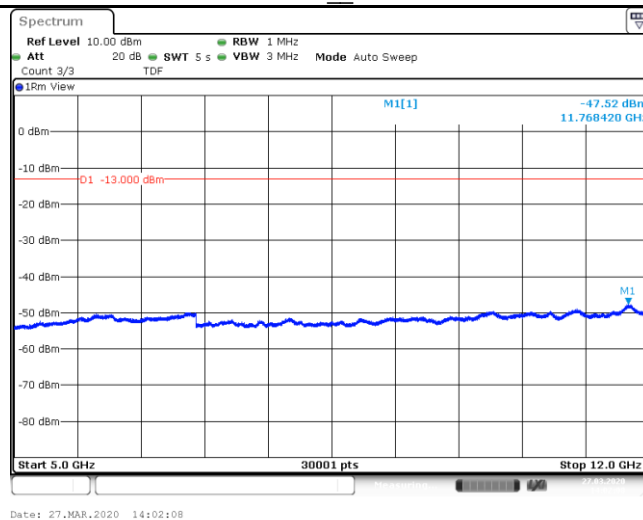
Band13_Stand-Alone_NaN_QPSK_23279_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.1dBm_-13_P ASS



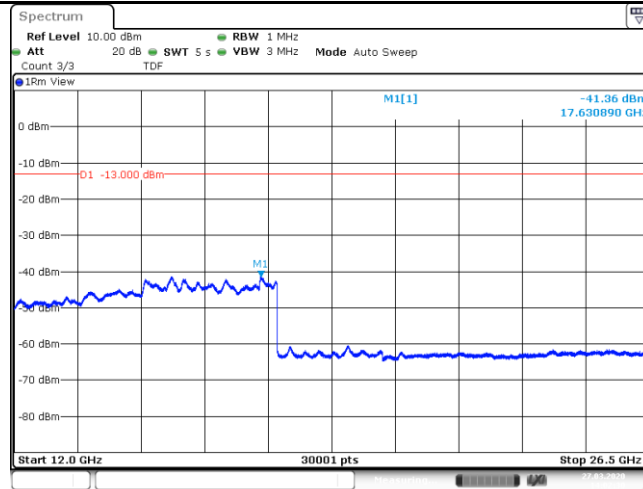
Band13_Stand-Alone_NaN_QPSK_23279_1@0_3.75kHz_1000_5000_1000~5000MHz@-37.72dBm_-13_PASS



Band13_Stand-Alone_NaN_QPSK_23279_1@0_3.75kHz_5000_12000_5000~12000MHz@-47.52dBm_-13_PAS S

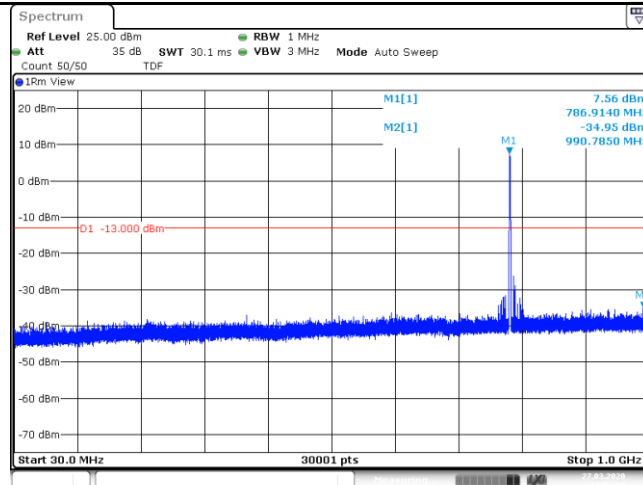


Band13_Stand-Alone_NaN_QPSK_23279_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.36dBm_-13_P ASS



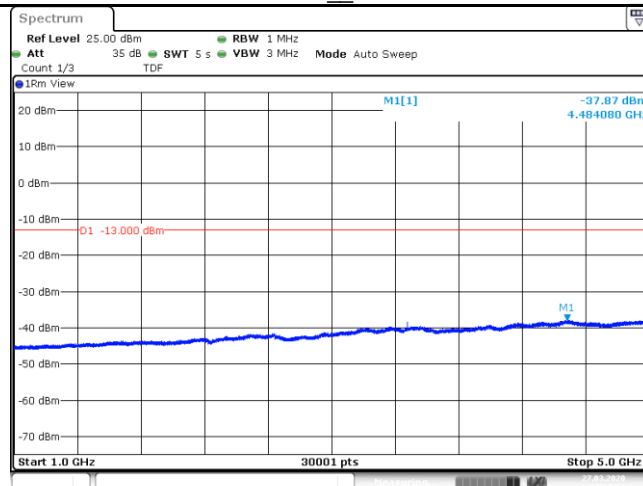
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Band13_Stand-Alone_NaN_QPSK_23279_1@47_3.75kHz_30_1000_30~1000MHz@-34.95dBm_-13_PASS__



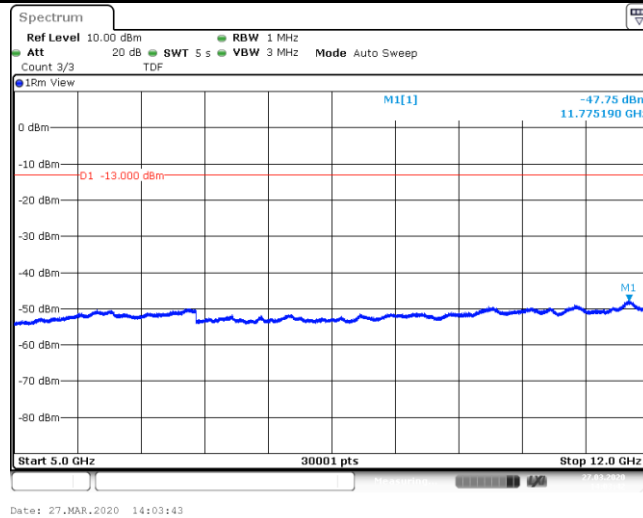
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Band13_Stand-Alone_NaN_QPSK_23279_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.87dBm_-13_PAS S

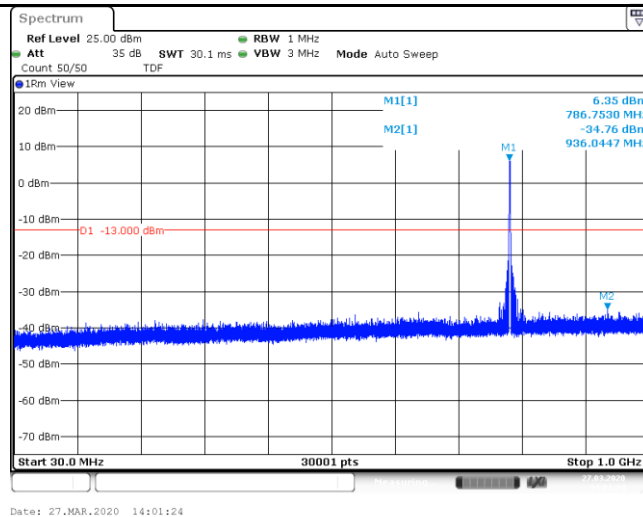


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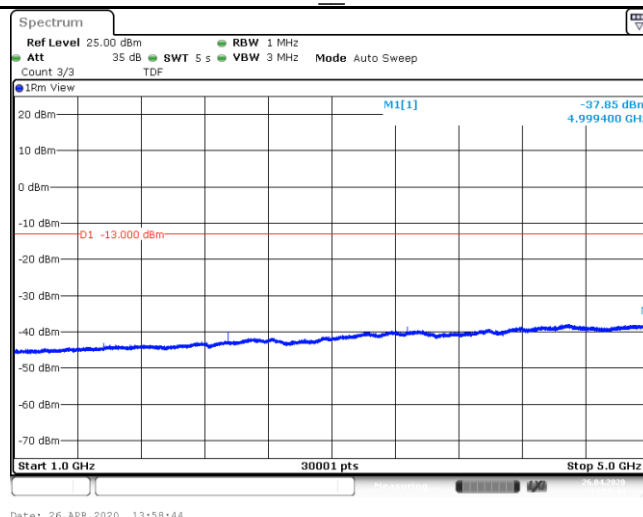
Band13_Stand-Alone_NaN_QPSK_23279_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.75dBm_-13_PA
SS__



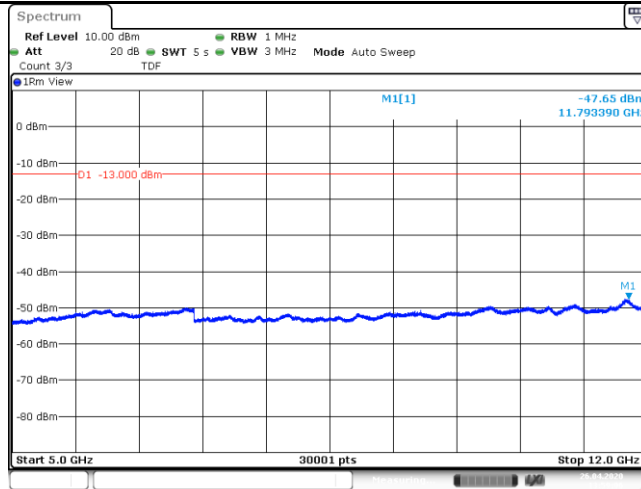
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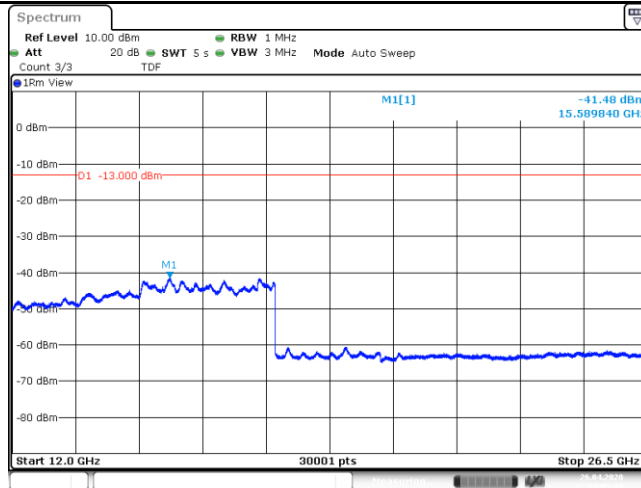
Band13_Stand-Alone_NaN_QPSK_23230_1@0_3.75kHz_1000_5000_1000~5000MHz@-37.85dBm_-13_PASS



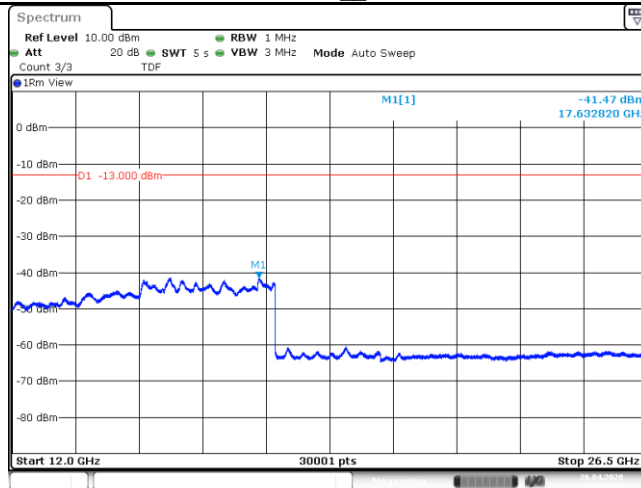
Band13_Stand-Alone_NaN_QPSK_23230_1@0_3.75kHz_5000_12000_5000~12000MHz@-47.65dBm_-13_PAS S



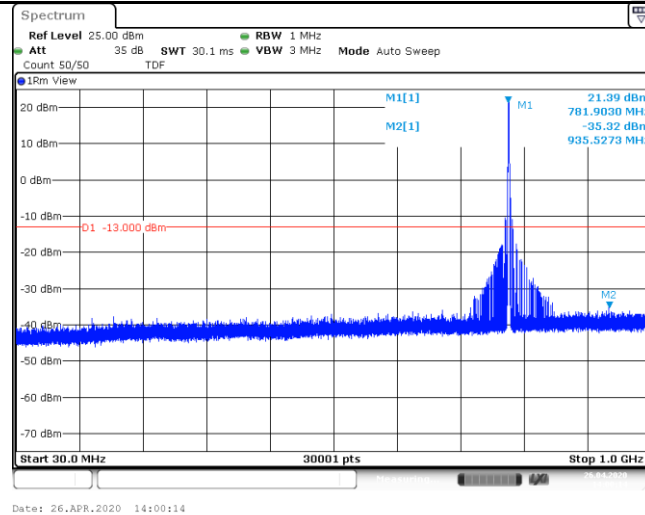
Band13_Stand-Alone_NaN_QPSK_23230_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.48dBm_-13_PASS



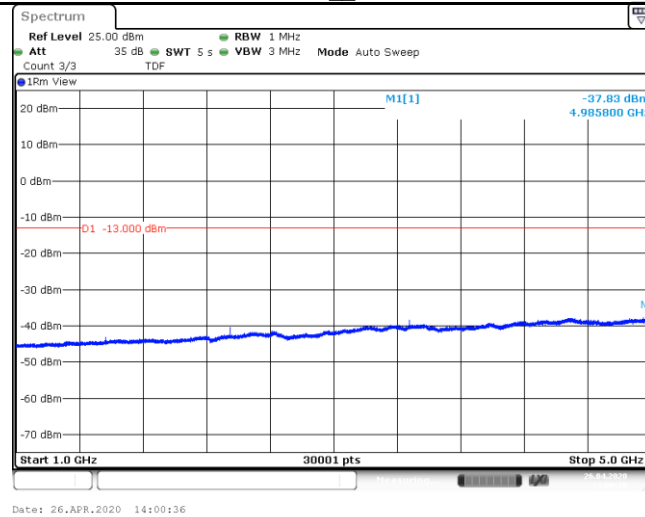
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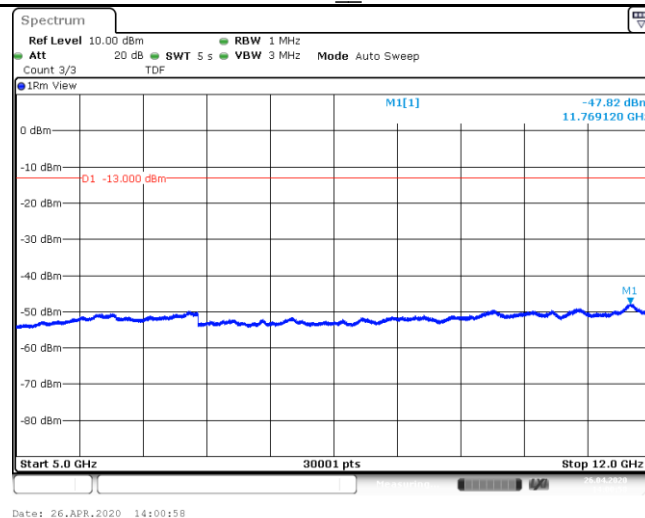
Band13_Stand-Alone_NaN_QPSK_23230_1@47_3.75kHz_30_1000_30~1000MHz@-35.32dBm_-13_PASS__



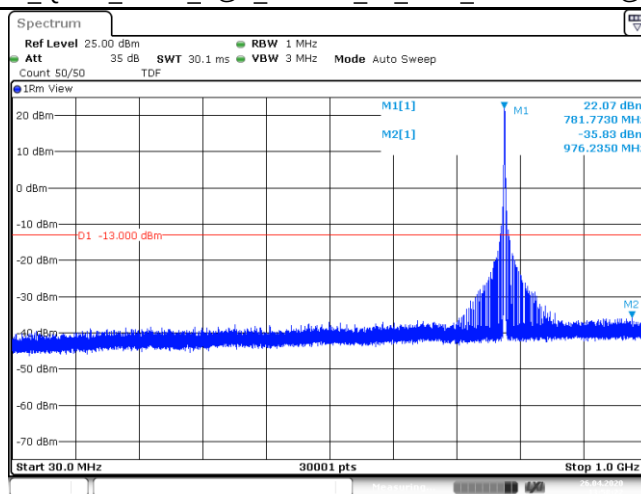
Band13_Stand-Alone_NaN_QPSK_23230_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.83dBm_-13_PAS S__



Band13_Stand-Alone_NaN_QPSK_23230_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.82dBm_-13_PAS S__



Band13_Stand-Alone_NaN_QPSK_23230_1@0_3.75kHz_30_1000_30~1000MHz@-35.83dBm_-13_PASS__



Date: 26.APR.2020 13:58:22

Appendix E.6: Frequency Stability for NB Test Result

Voltage												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	HV	NT	-14.85	-0.018990	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	LV	NT	-12.79	-0.016355	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	NT	-15.36	-0.019642	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	HV	NT	-15.86	-0.020281	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	LV	NT	-16.58	-0.021202	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	NT	-17.14	-0.021918	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	HV	NT	-7.27	-0.009297	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	LV	NT	-7.21	-0.009220	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	NT	-7.22	-0.009233	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	HV	NT	-6.88	-0.008798	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	LV	NT	-8.18	-0.010460	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	NT	-8.01	-0.010243	±2.5	PASS

Temperature												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	-40	-15.45	-0.019757	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	-30	-16.09	-0.020575	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	-20	-16.25	-0.020780	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	-10	-15.68	-0.020051	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	0	-15.61	-0.019962	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	10	-11.69	-0.014949	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	20	-14.06	-0.017980	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	30	-14.42	-0.018440	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	40	-14.35	-0.018350	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	50	-15.99	-0.020448	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	60	-15.34	-0.019616	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	70	-13.78	-0.017621	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	-40	-14.36	-0.018363	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	85	-19.98	-0.025550	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	85	-16.71	-0.021368	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	-30	-16.67	-0.021317	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	-20	-14.25	-0.018223	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	-10	-13.53	-0.017302	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	0	-11.89	-0.015205	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	10	-14.31	-0.018299	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	20	-13.03	-0.016662	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	30	-15.38	-0.019668	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	40	-12.70	-0.016240	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	50	-12.66	-0.016189	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	60	-14.48	-0.018517	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	70	-14.00	-0.017903	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@11	15kHz	NV	80	-13.16	-0.016829	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	15kHz	NV	80	-14.22	-0.018184	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	-40	-6.92	-0.008849	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	-30	-6.38	-0.008159	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	-20	-4.49	-0.005742	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	-10	-4.75	-0.006074	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	0	-6.59	-0.008427	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	10	-5.34	-0.006829	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	20	-6.17	-0.007890	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	30	-5.78	-0.007391	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	40	-4.19	-0.005358	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	50	-3.23	-0.004130	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	60	-5.82	-0.007442	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	70	-6.08	-0.007775	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	-40	-6.19	-0.007916	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	85	-6.44	-0.008235	±2.5	PASS

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Produkte
Products

Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	85	-3.40	-0.004348	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	-30	-7.32	-0.009361	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	-20	-6.11	-0.007813	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	-10	-6.77	-0.008657	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	0	-6.72	-0.008593	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	10	-5.68	-0.007263	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	20	-4.86	-0.006215	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	30	-5.42	-0.006931	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	40	-6.47	-0.008274	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	50	-5.42	-0.006931	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	60	-5.84	-0.007468	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	70	-5.06	-0.006471	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@47	3.75kHz	NV	80	-4.45	-0.005691	±2.5	PASS
Band13	Stand-Alone	NaN	QPSK	23230	1@0	3.75kHz	NV	80	-5.78	-0.007391	±2.5	PASS