

Appendix for NB-IOT Band 12

Product Name: NBloT Meter Interface Unit
Model No: AGIL WRPMIU 301

Appendix A: Average Power Output Data

Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Conducted POWER(dBm)	Verdict
Band 12	Stand-Al one	3.75kHz	NaN	BPSK	23011	1@0	23.71	PASS
Band 12	Stand-Al one	3.75kHz	NaN	BPSK	23011	1@47	23.69	PASS
Band 12	Stand-Al one	3.75kHz	NaN	BPSK	23095	1@0	23.82	PASS
Band 12	Stand-Al one	3.75kHz	NaN	BPSK	23095	1@47	23.82	PASS
Band 12	Stand-Al one	3.75kHz	NaN	BPSK	23179	1@0	24.02	PASS
Band 12	Stand-Al one	3.75kHz	NaN	BPSK	23179	1@47	24.03	PASS
Band 12	Stand-Al one	3.75kHz	NaN	QPSK	23011	1@0	23.74	PASS
Band 12	Stand-Al one	3.75kHz	NaN	QPSK	23011	1@47	23.73	PASS
Band 12	Stand-Al one	3.75kHz	NaN	QPSK	23095	1@0	23.86	PASS
Band 12	Stand-Al one	3.75kHz	NaN	QPSK	23095	1@47	23.86	PASS
Band 12	Stand-Al one	3.75kHz	NaN	QPSK	23179	1@0	24.07	PASS
Band 12	Stand-Al one	3.75kHz	NaN	QPSK	23179	1@47	24.07	PASS
Band 12	Stand-Al one	15kHz	NaN	BPSK	23011	1@0	23.08	PASS
Band 12	Stand-Al one	15kHz	NaN	BPSK	23011	1@11	23.82	PASS
Band 12	Stand-Al one	15kHz	NaN	BPSK	23095	1@0	23.07	PASS
Band 12	Stand-Al one	15kHz	NaN	BPSK	23095	1@11	23.08	PASS
Band 12	Stand-Al one	15kHz	NaN	BPSK	23179	1@0	23.05	PASS

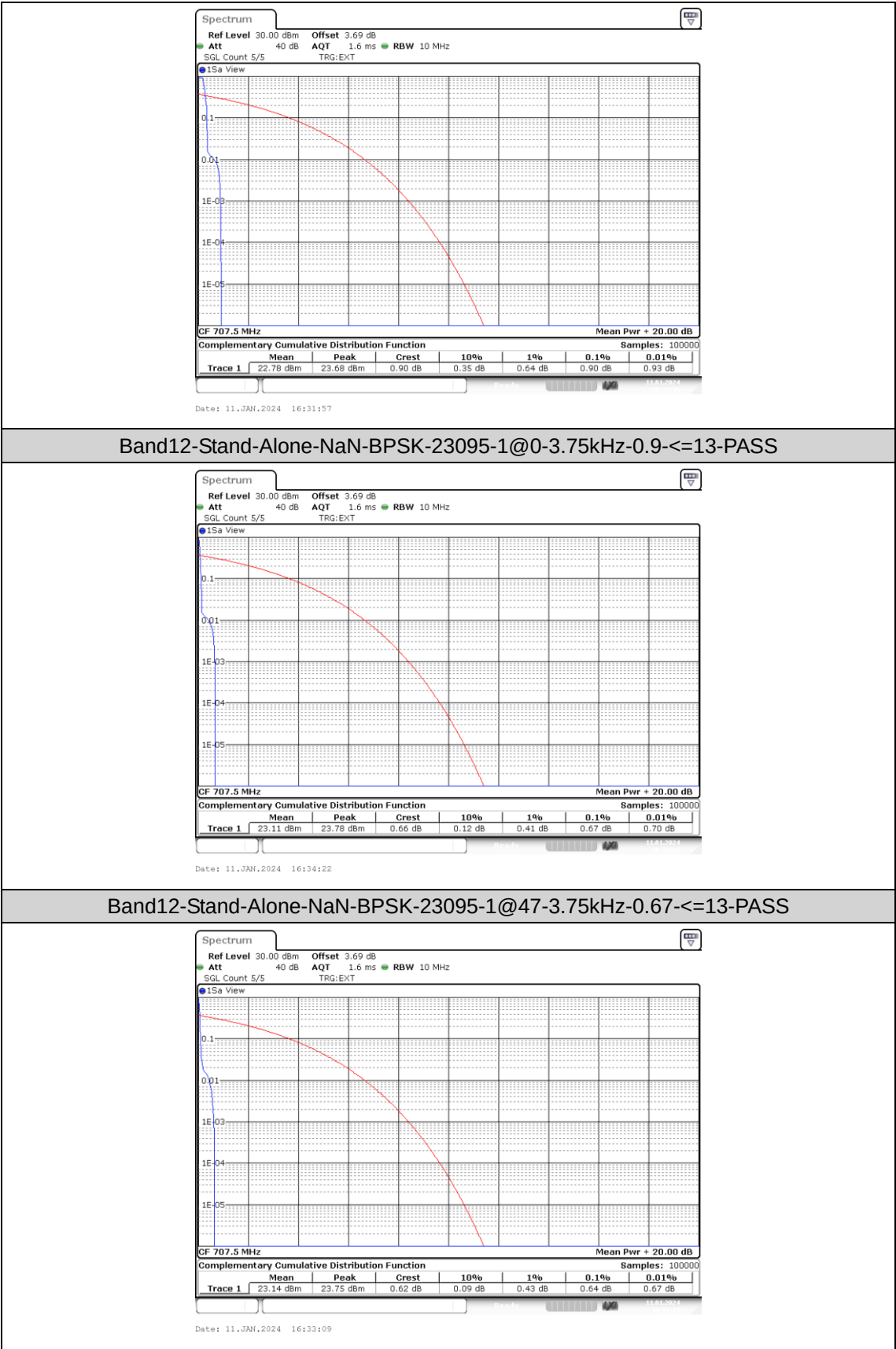
Band 12	Stand-Al one	15kHz	NaN	BPSK	23179	1@11	23.06	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23011	1@0	23.08	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23011	1@11	23.07	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23011	3@3	22.73	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23095	1@0	23.22	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23095	1@11	23.22	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23095	3@3	22.84	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23179	1@0	23.22	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23179	1@11	23.19	PASS
Band 12	Stand-Al one	15kHz	NaN	QPSK	23179	3@3	22.83	PASS

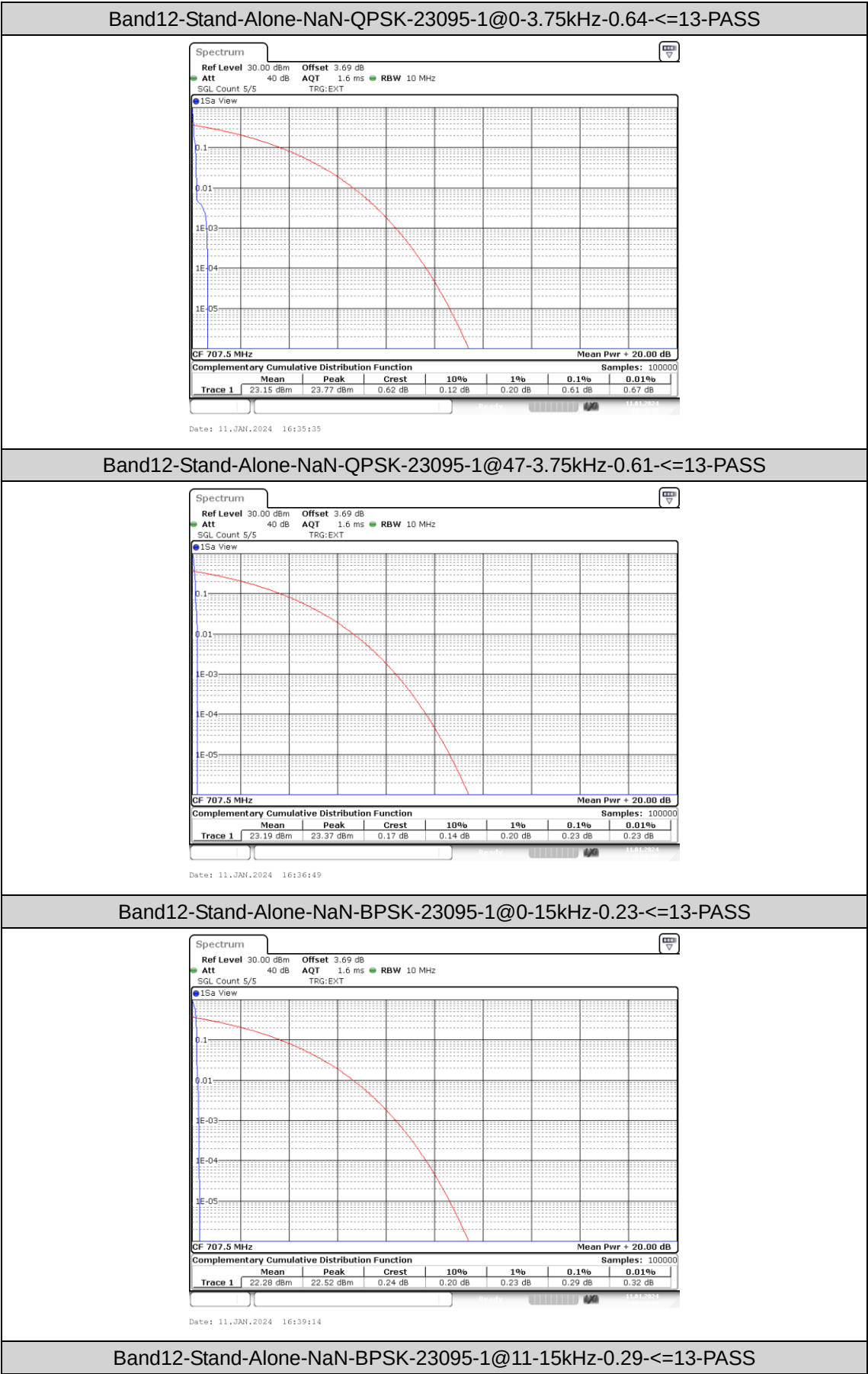
Appendix B: Peak-to-Average Ratio(CCDF)

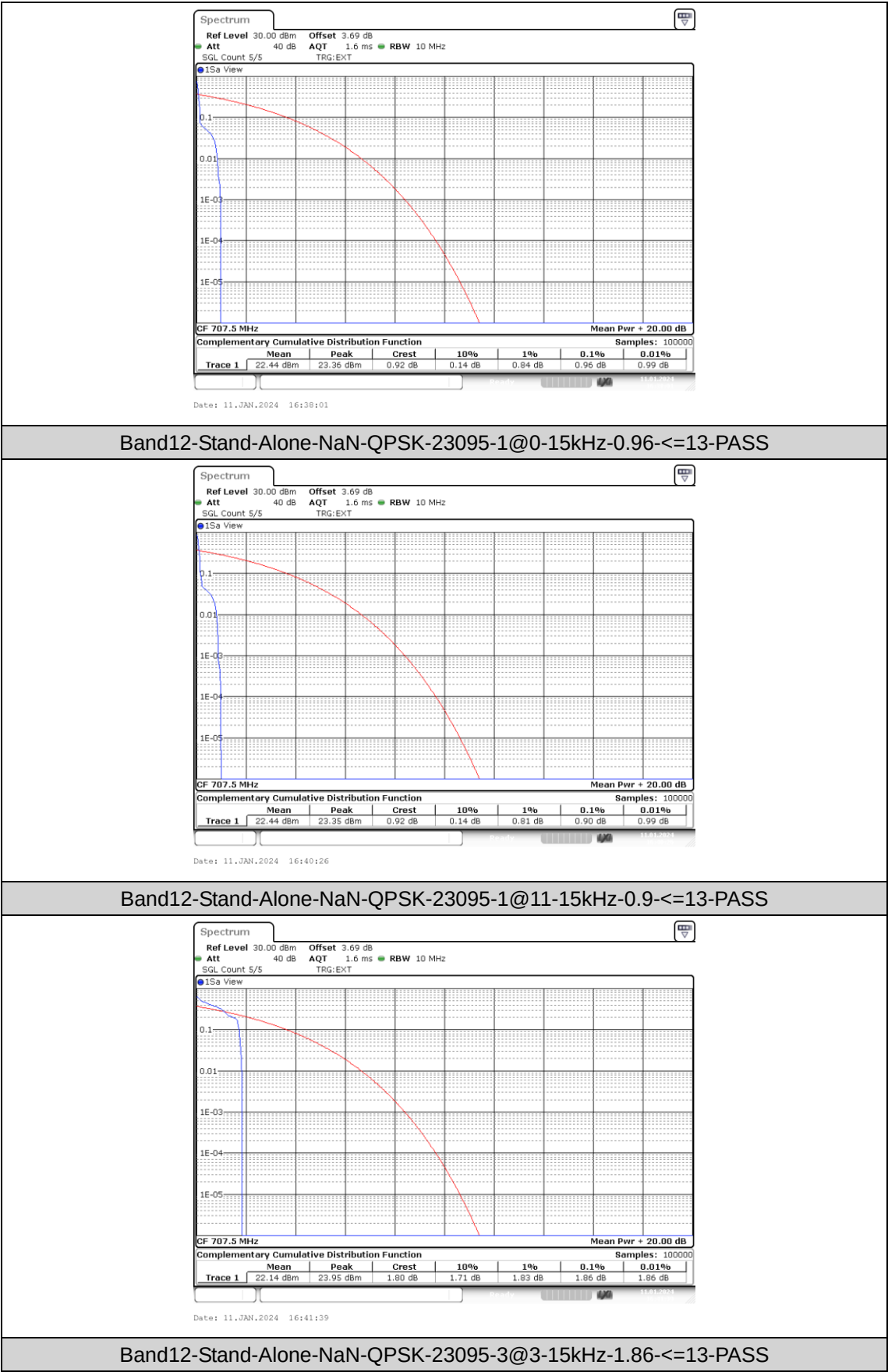
Test Result

Band	OpMode	SCS	BW	Modu	Channel	Tones	Result (dBm)	Limit (dBm)	Verdict
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23095	1@0	0.90	<=13	PASS
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23095	1@47	0.67	<=13	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@0	0.64	<=13	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@47	0.61	<=13	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23095	1@0	0.23	<=13	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23095	1@11	0.29	<=13	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23095	1@0	0.96	<=13	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23095	1@11	0.90	<=13	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23095	3@3	1.86	<=13	PASS

Test Graphs







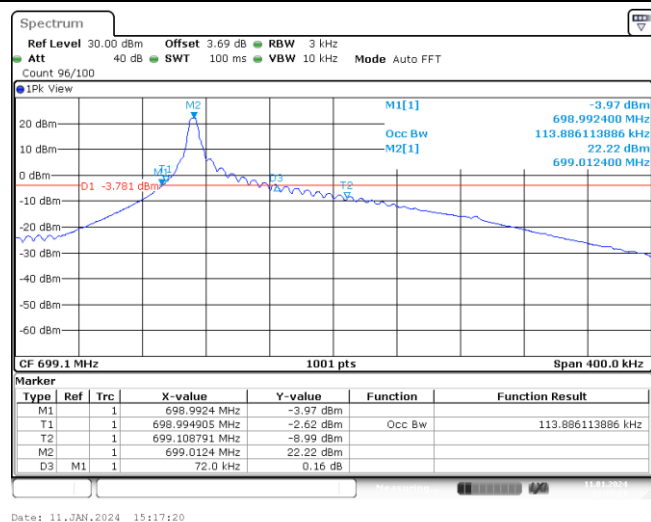
Appendix C: Emission Bandwidth

Test Result

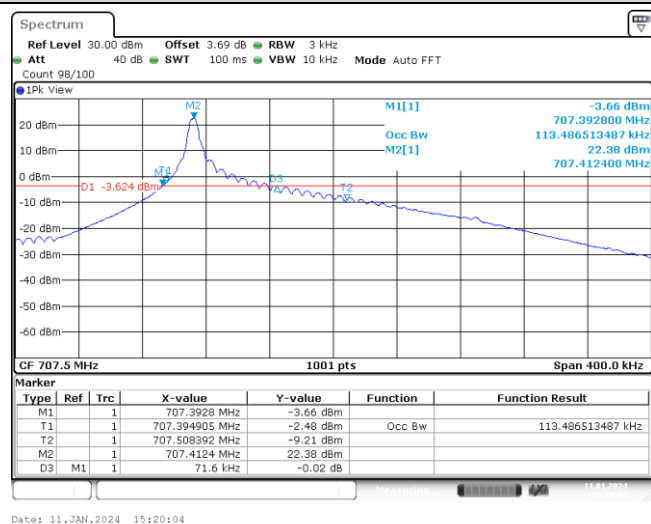
Band	OpMode	SCS	BW	Modu	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23011	1@0	0.114	0.072	PASS
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23095	1@0	0.113	0.072	PASS
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23179	1@0	0.114	0.072	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@0	0.115	0.069	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@0	0.114	0.069	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23179	1@0	0.115	0.069	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23011	1@0	0.111	0.122	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23011	12@0	0.177	0.230	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23095	1@0	0.111	0.122	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23095	12@0	0.177	0.230	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23179	1@0	0.111	0.124	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23179	12@0	0.178	0.237	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23011	1@0	0.133	0.161	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23011	12@0	0.177	0.230	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23095	1@0	0.133	0.161	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23095	12@0	0.177	0.230	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23179	1@0	0.135	0.161	PASS

Band12	Stand-Al one	15kHz	NaN	QPSK	23179	12@0	0.178	0.237	PASS
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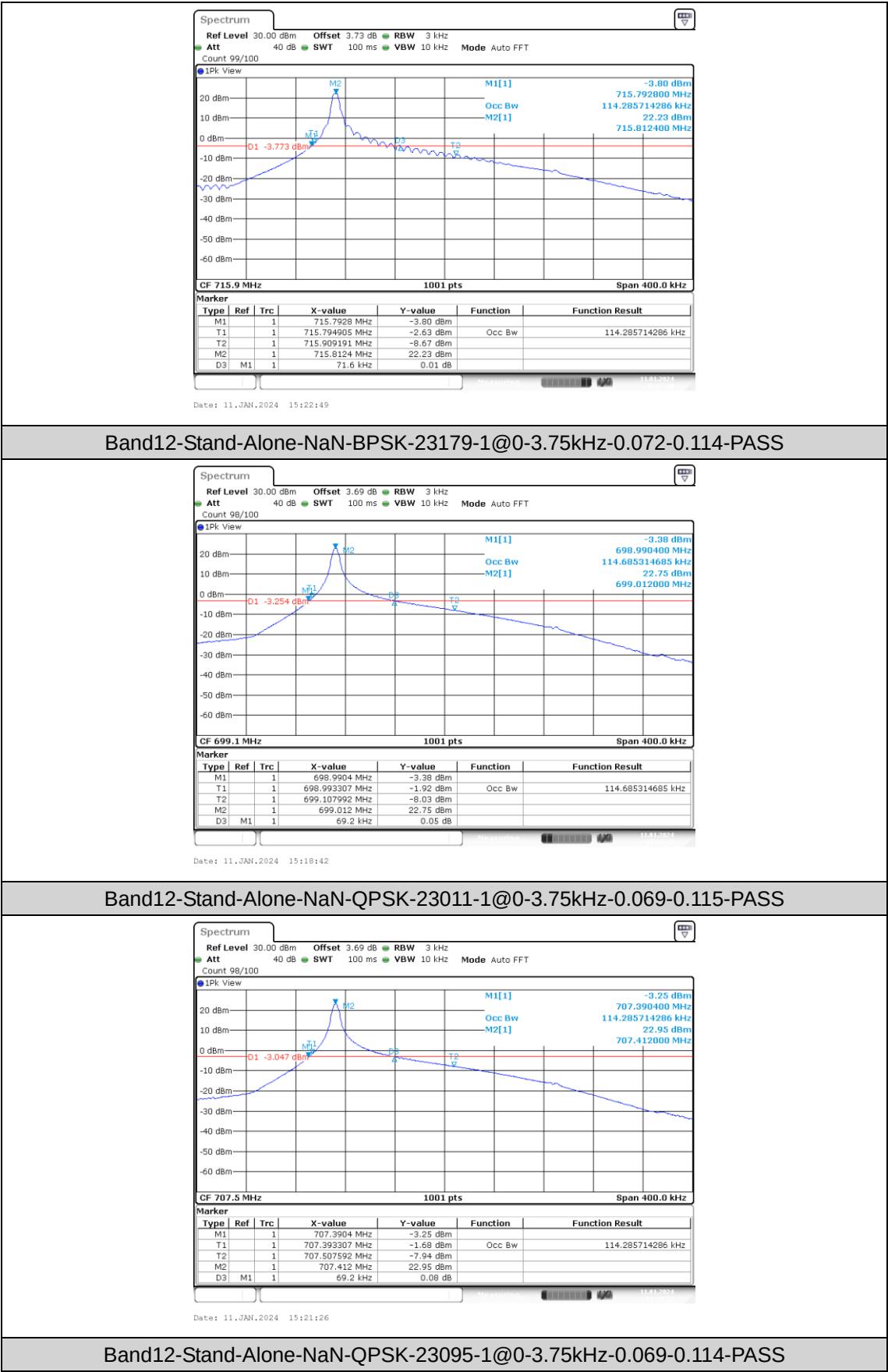
Test Graphs

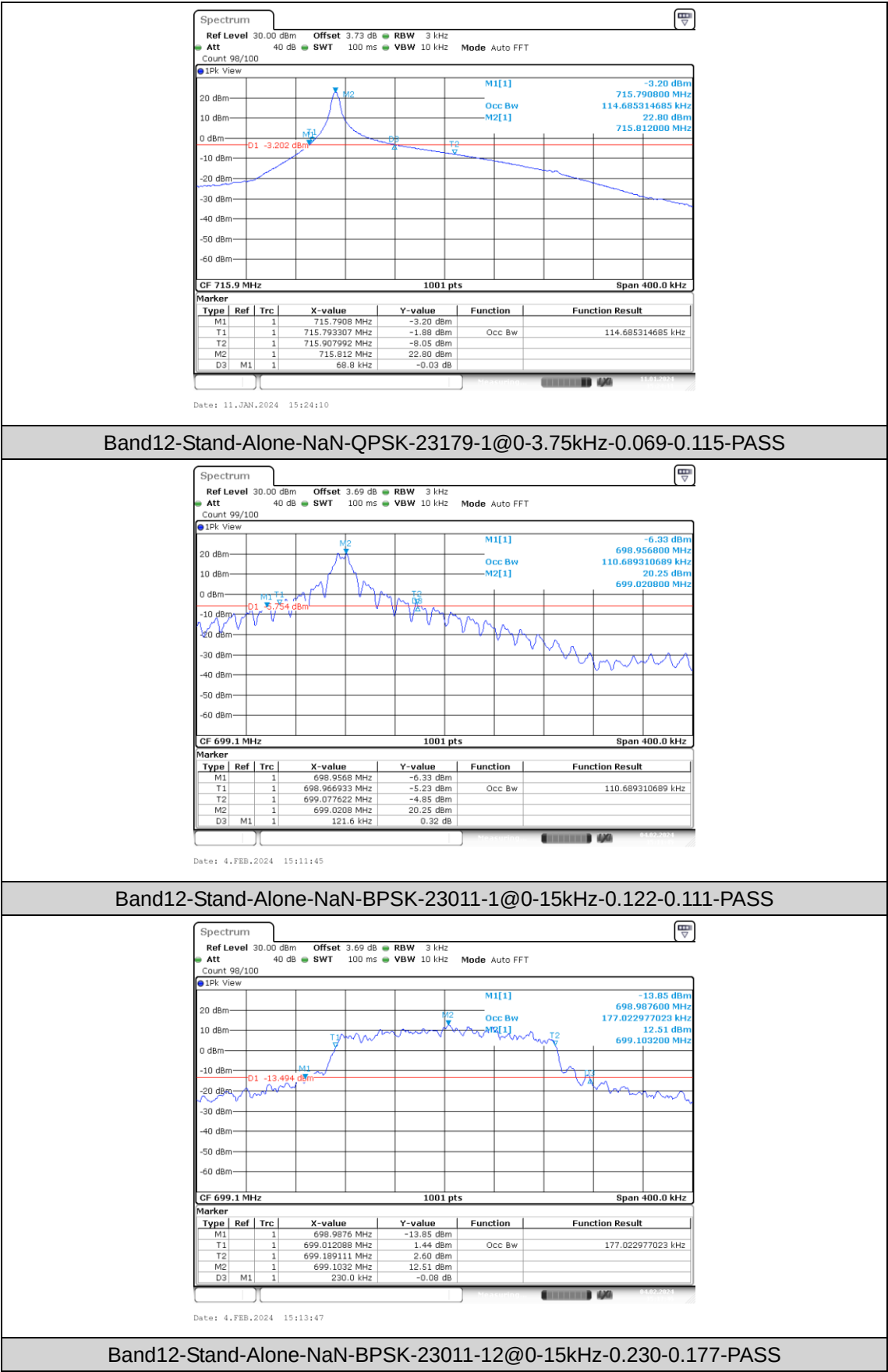


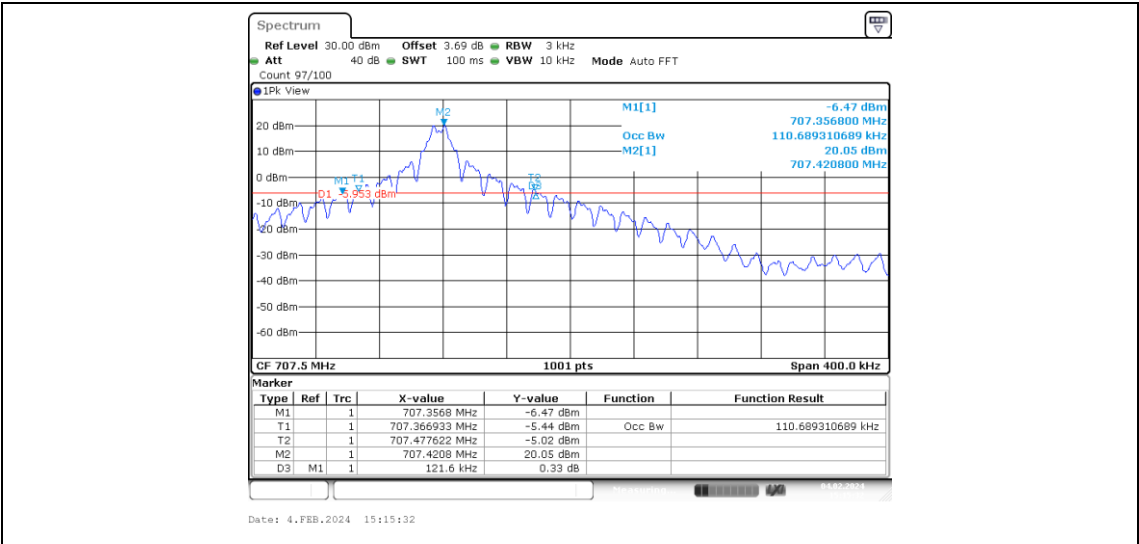
Band12-Stand-Alone-NaN-BPSK-23011-1@0-3.75kHz-0.072-0.114-PASS



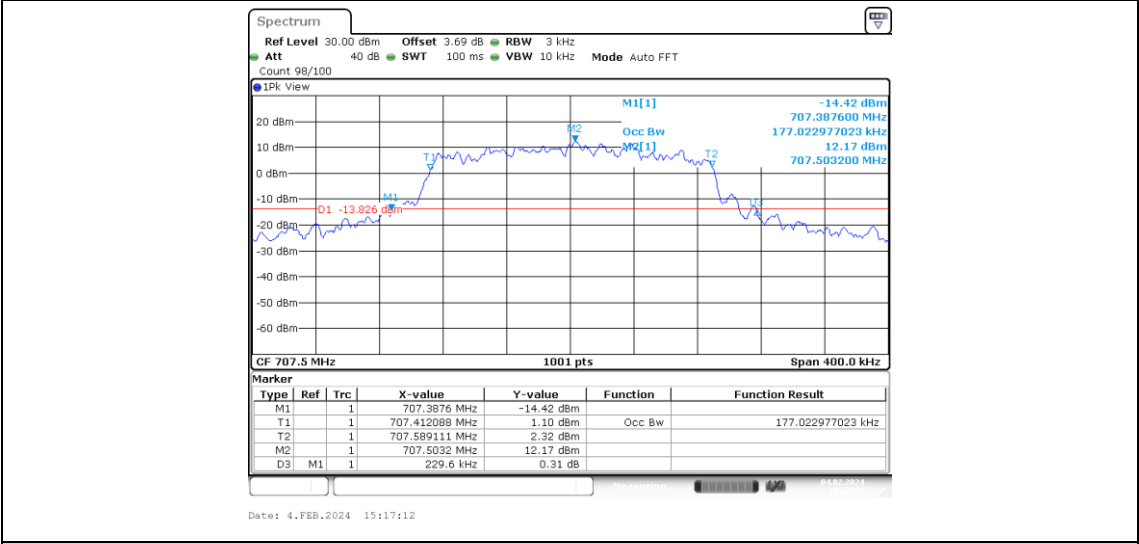
Band12-Stand-Alone-NaN-BPSK-23095-1@0-3.75kHz-0.072-0.113-PASS



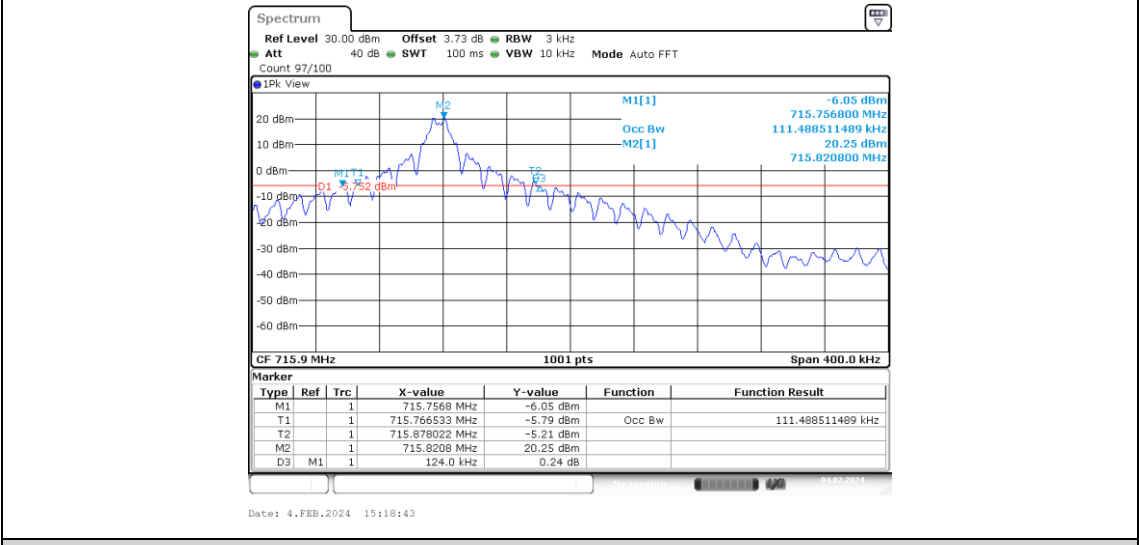




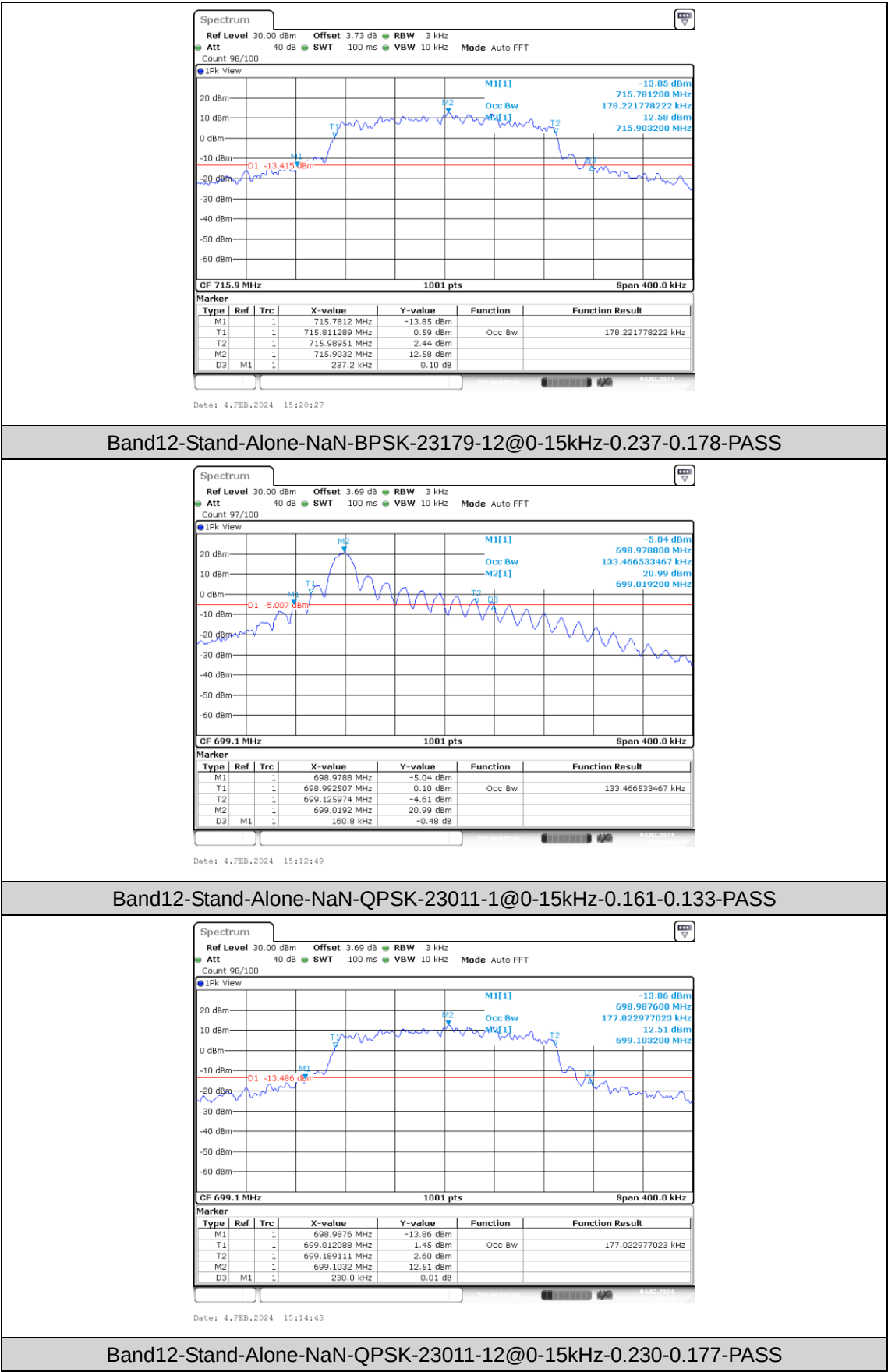
Band12-Stand-Alone-NaN-BPSK-23095-1@0-15kHz-0.122-0.111-PASS

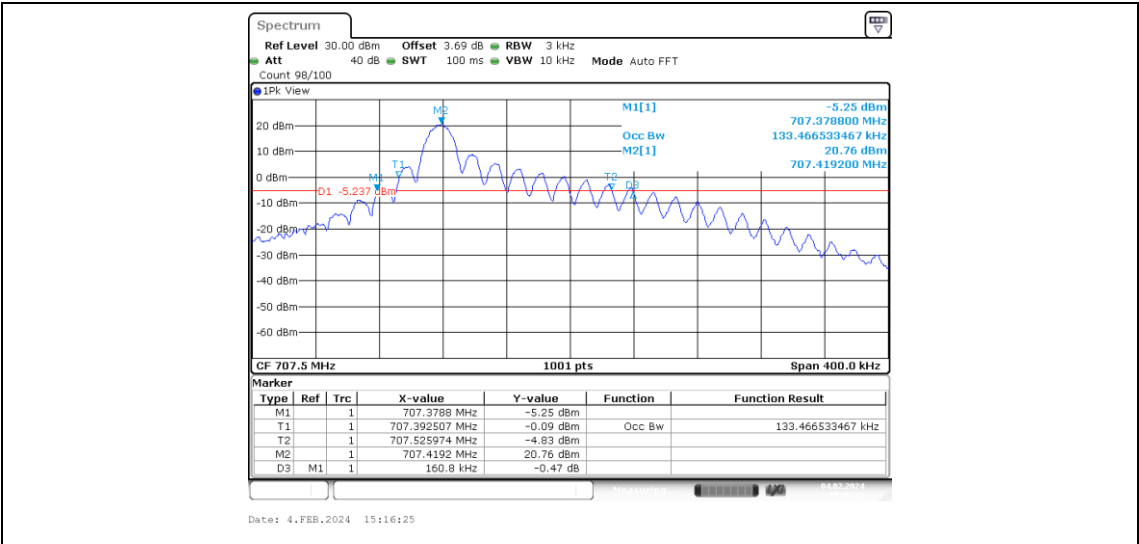


Band12-Stand-Alone-NaN-BPSK-23095-12@0-15kHz-0.230-0.177-PASS

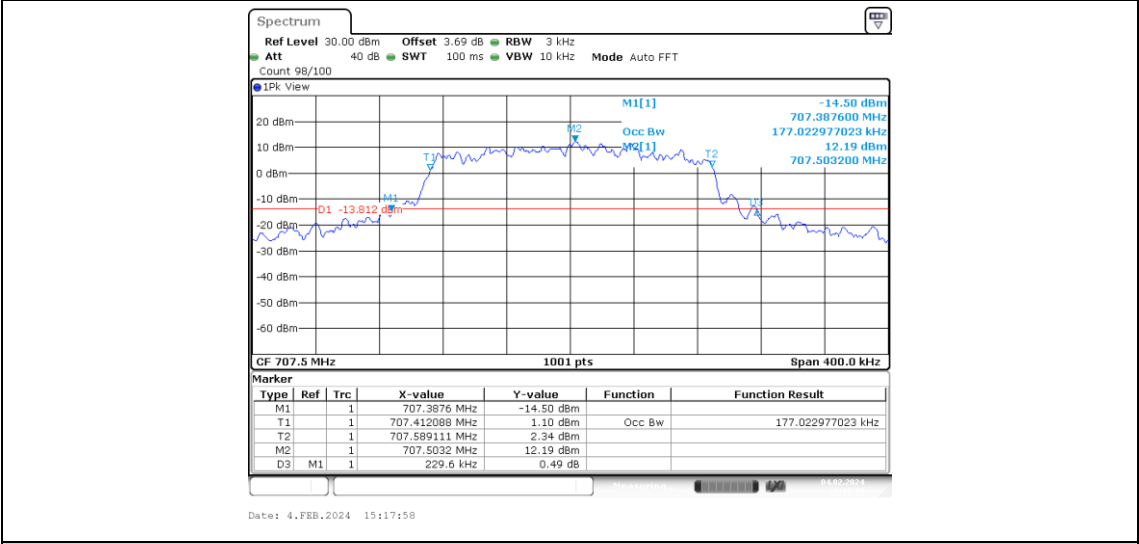


Band12-Stand-Alone-NaN-BPSK-23179-1@0-15kHz-0.124-0.111-PASS

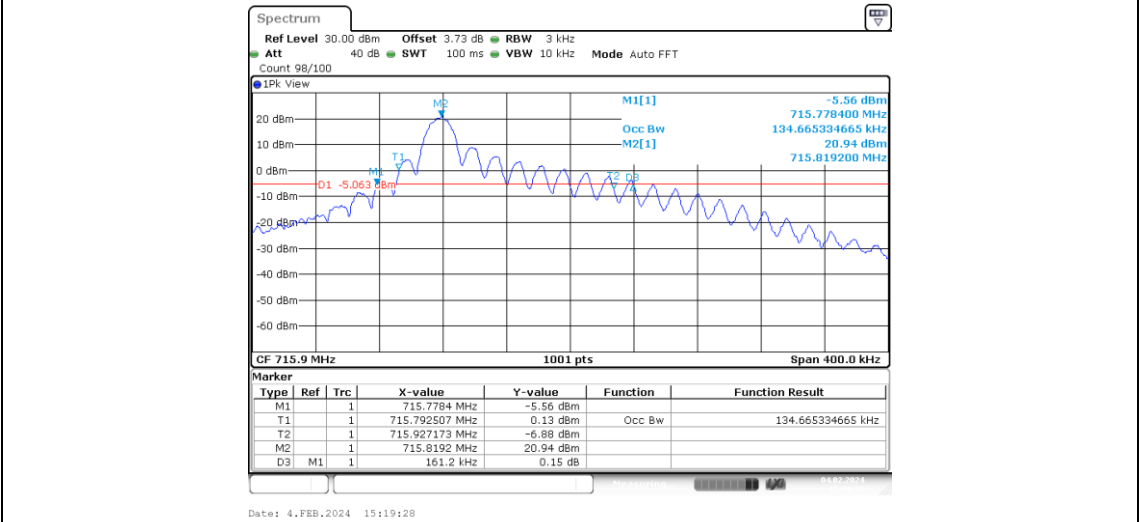




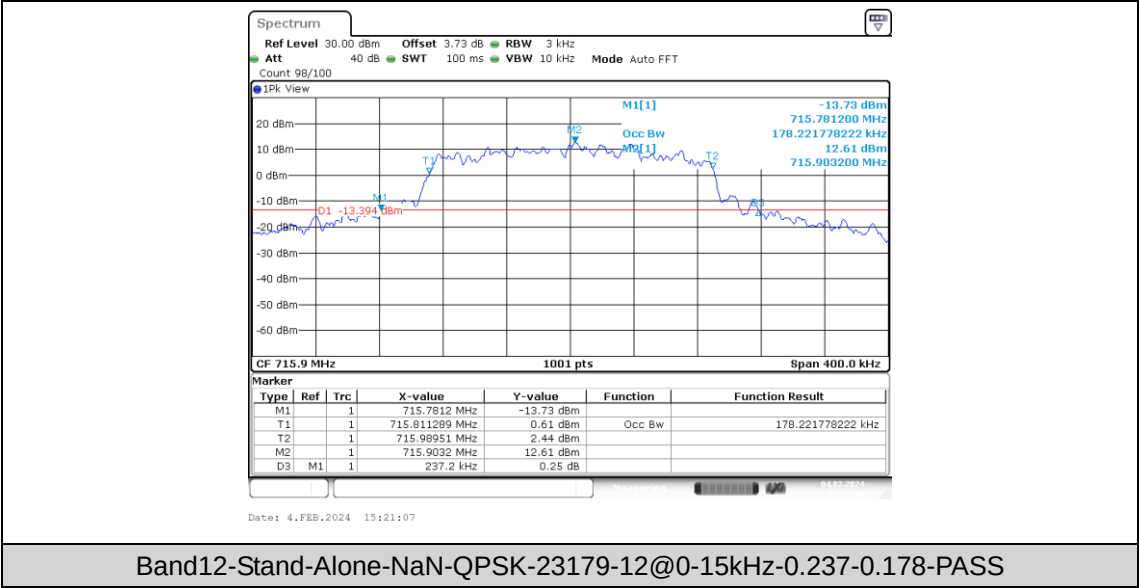
Band12-Stand-Alone-NaN-QPSK-23095-1@0-15kHz-0.161-0.133-PASS



Band12-Stand-Alone-NaN-QPSK-23095-12@0-15kHz-0.230-0.177-PASS



Band12-Stand-Alone-NaN-QPSK-23179-1@0-15kHz-0.161-0.135-PASS



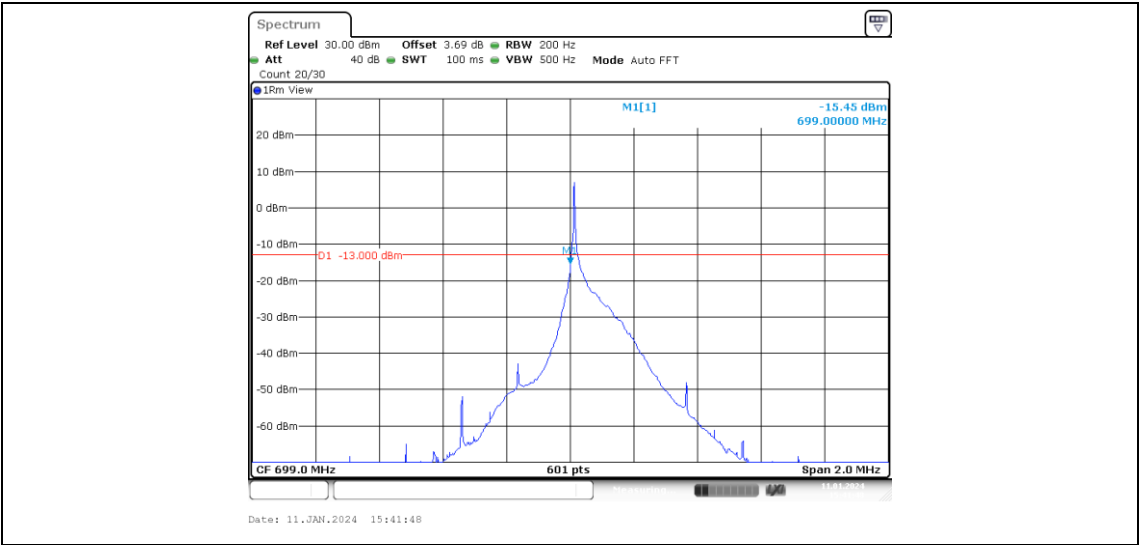
Appendix D: Band Edge for NB1

Test Result

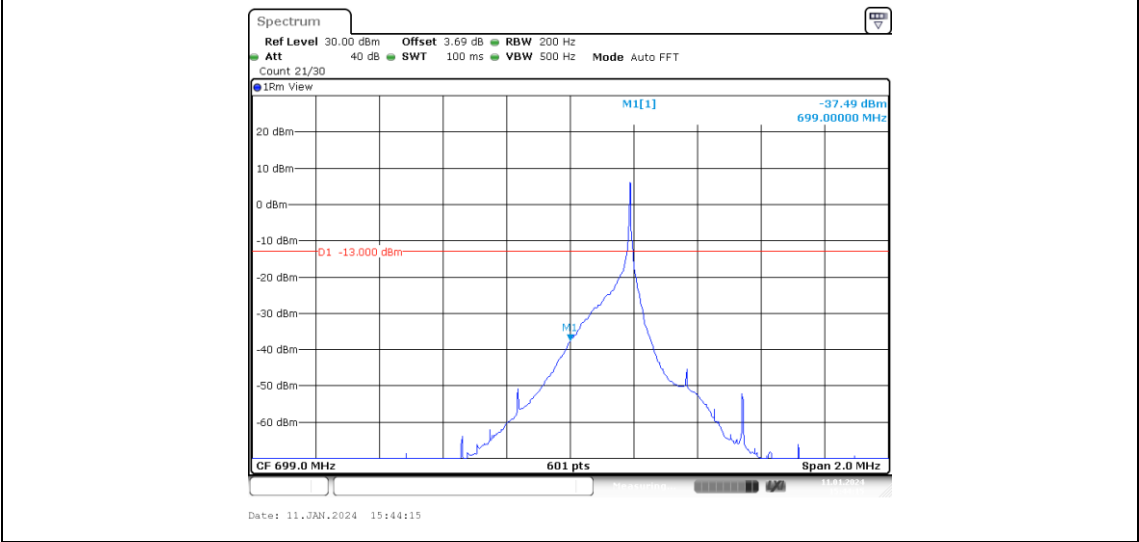
Band	OpMode	SCS	BW	Modu	Channel	Tones	Result (dBm)	Verdict
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23011	1@0	-15.45	PASS
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23011	1@47	-37.49	PASS
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23179	1@0	-36.27	PASS
Band12	Stand-Alone	3.75kHz	NaN	BPSK	23179	1@47	-15.55	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@0	-16.74	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@47	-40.55	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23179	1@0	-40.61	PASS
Band12	Stand-Alone	3.75kHz	NaN	QPSK	23179	1@47	-16.78	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23011	1@0	-13.00	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23011	1@11	-43.36	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23011	12@0	-32.99	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23179	1@0	-45.00	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23179	1@11	-13.81	PASS
Band12	Stand-Alone	15kHz	NaN	BPSK	23179	12@0	-25.52	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23011	1@0	-17.68	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23011	1@11	-37.12	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23011	12@0	-29.0	PASS

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Band12	Stand-Alone	15kHz	NaN	QPSK	23179	1@0	-38.5 4	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23179	1@11	-17.2 9	PASS
Band12	Stand-Alone	15kHz	NaN	QPSK	23179	12@0	-24.8 6	PASS

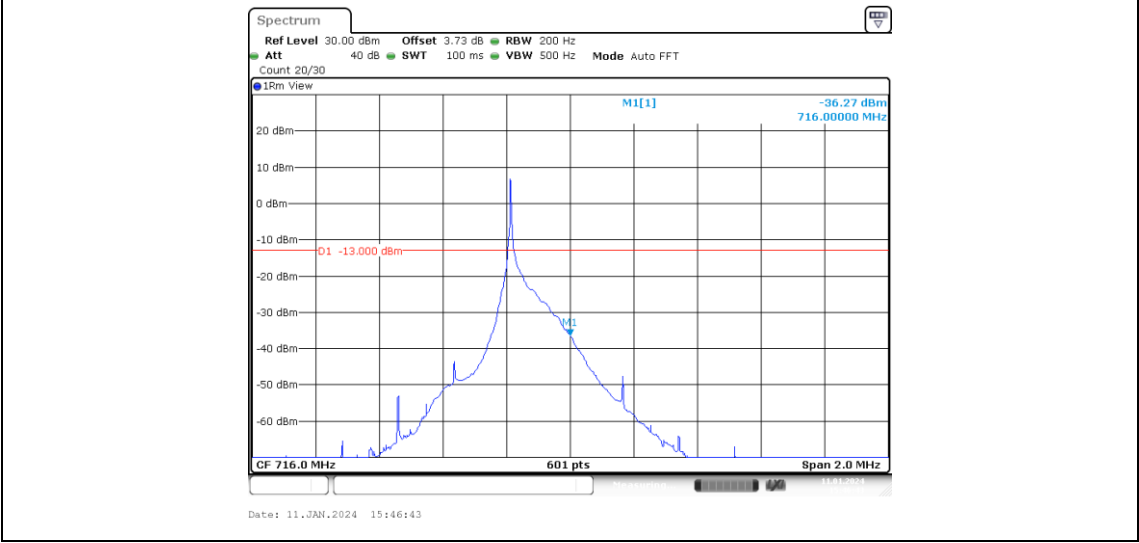
Test Graphs

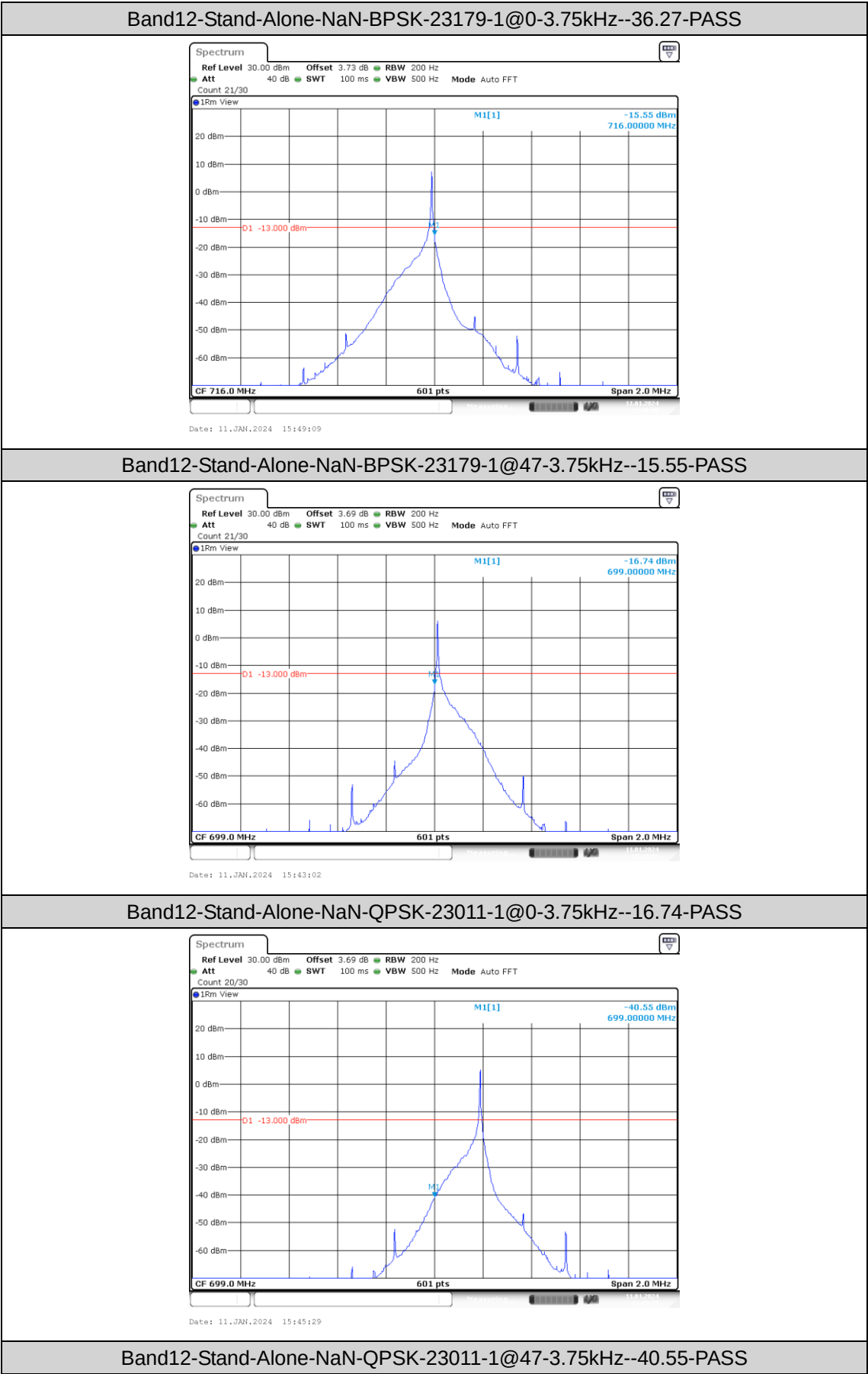


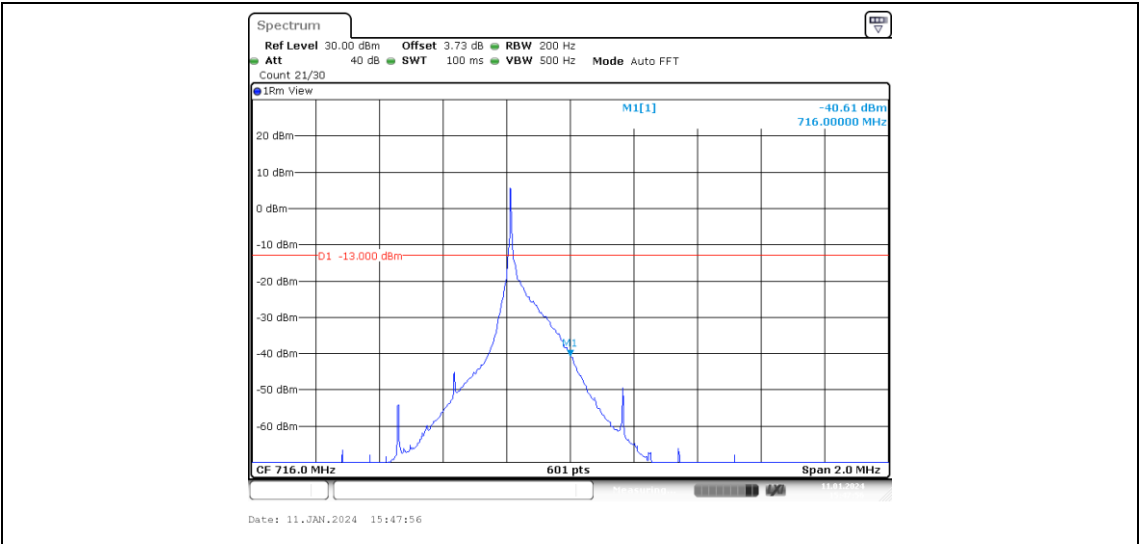
Band12-Stand-Alone-NaN-BPSK-23011-1@0-3.75kHz--15.45-PASS



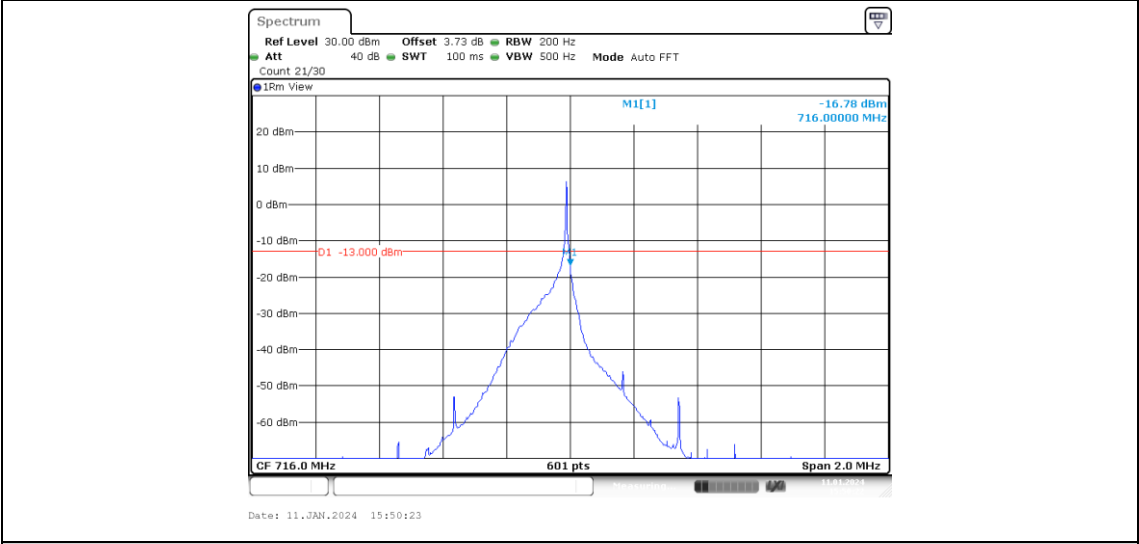
Band12-Stand-Alone-NaN-BPSK-23011-1@47-3.75kHz--37.49-PASS



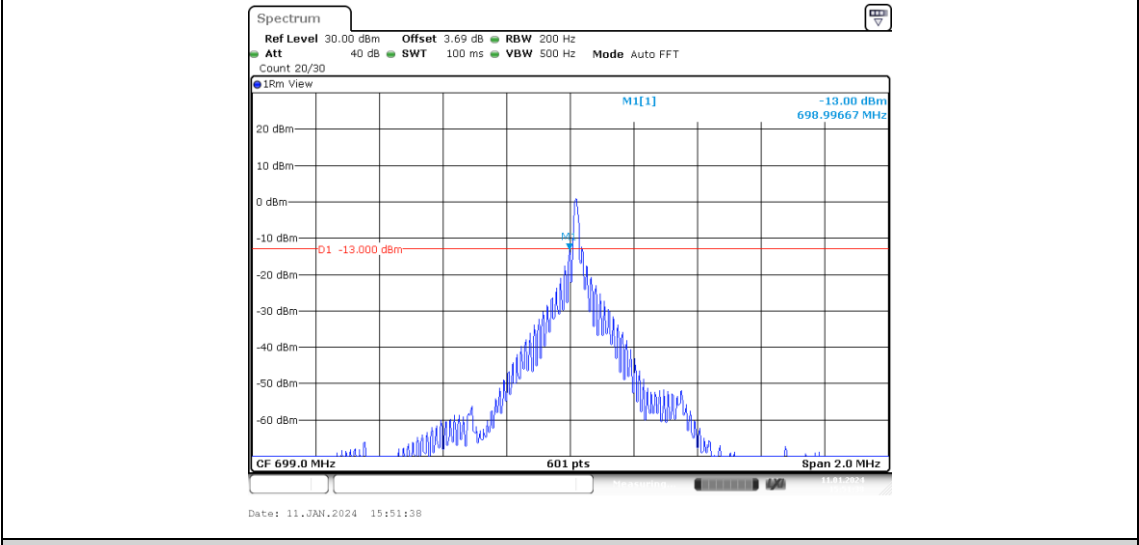




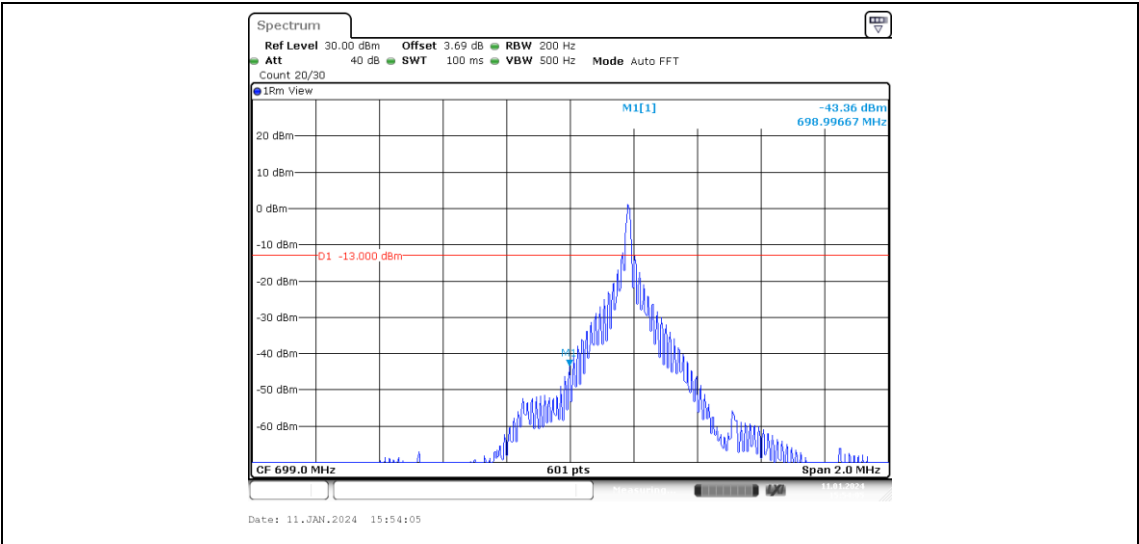
Band12-Stand-Alone-NaN-QPSK-23179-1@0-3.75kHz--40.61-PASS



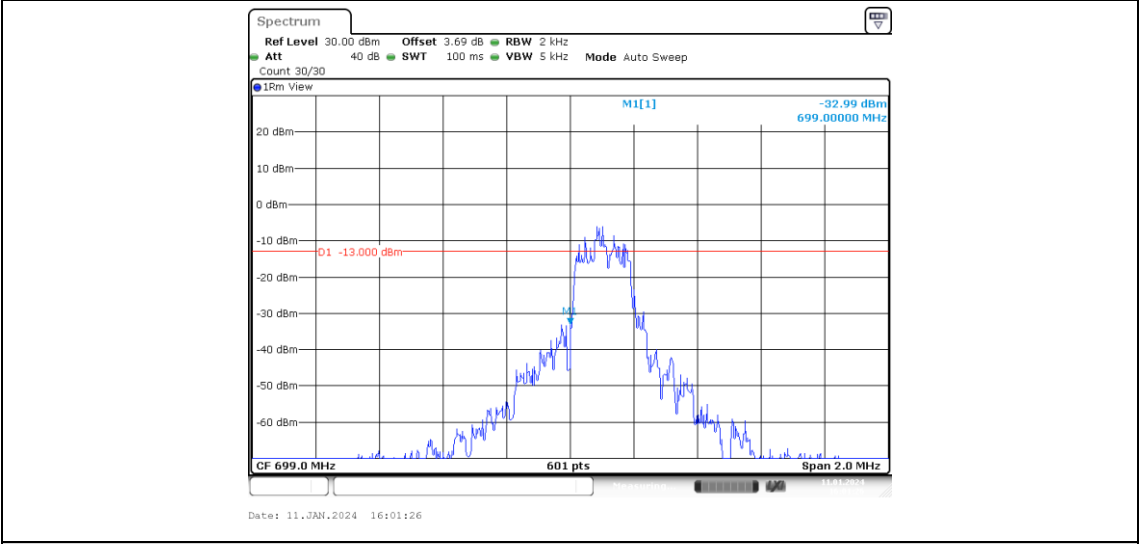
Band12-Stand-Alone-NaN-QPSK-23179-1@47-3.75kHz--16.78-PASS



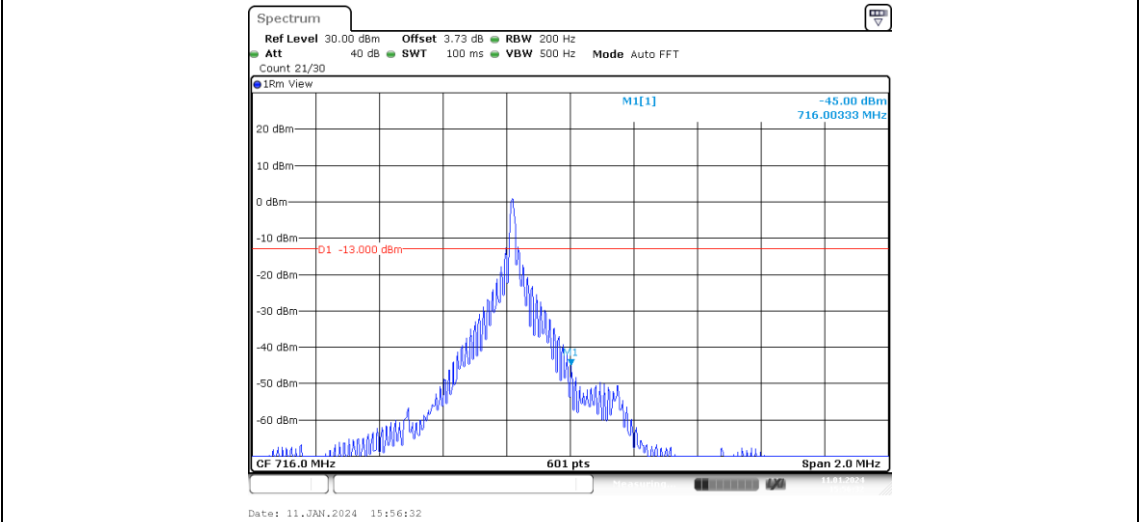
Band12-Stand-Alone-NaN-BPSK-23011-1@0-15kHz--13.00-PASS



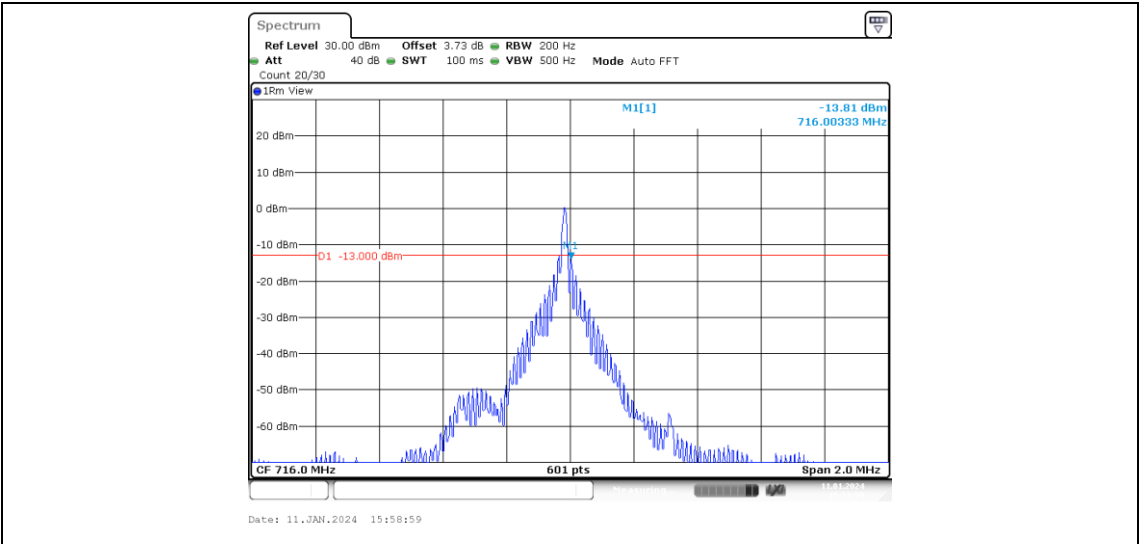
Band12-Stand-Alone-NaN-BPSK-23011-1@11-15kHz--43.36-PASS



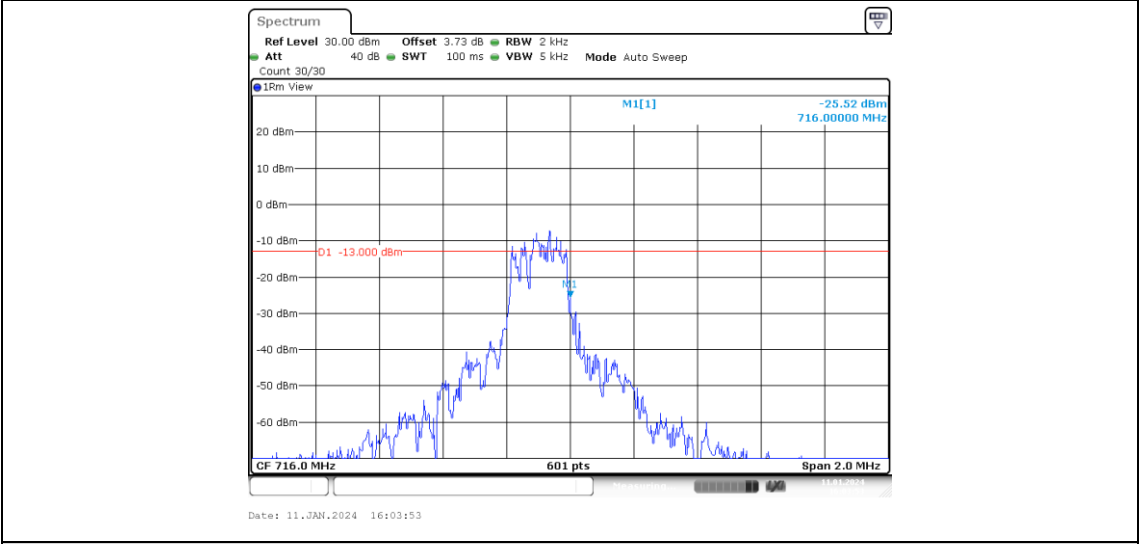
Band12-Stand-Alone-NaN-BPSK-23011-12@0-15kHz--32.99-PASS



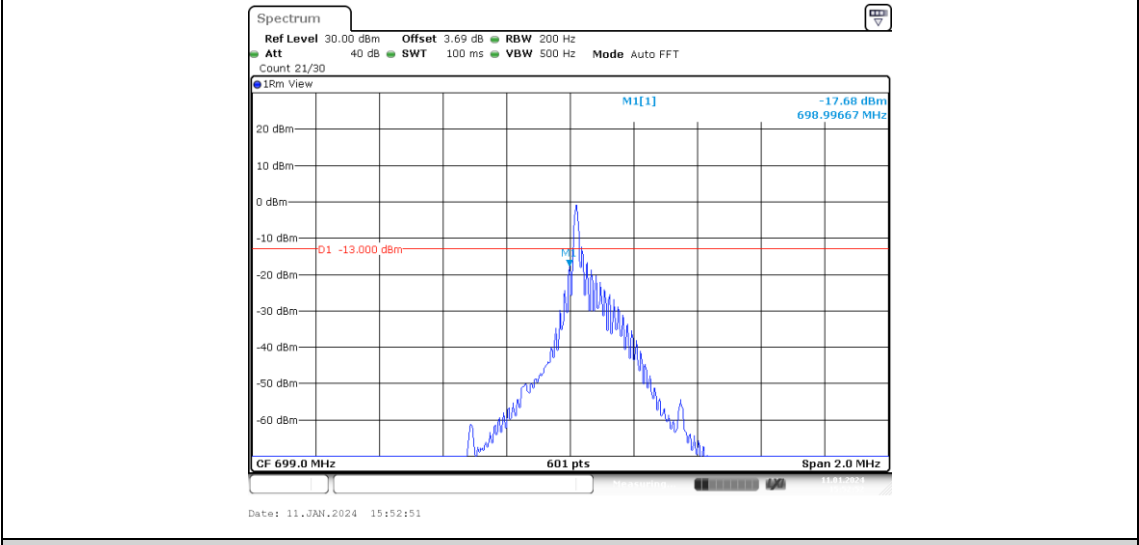
Band12-Stand-Alone-NaN-BPSK-23179-1@0-15kHz--45.00-PASS



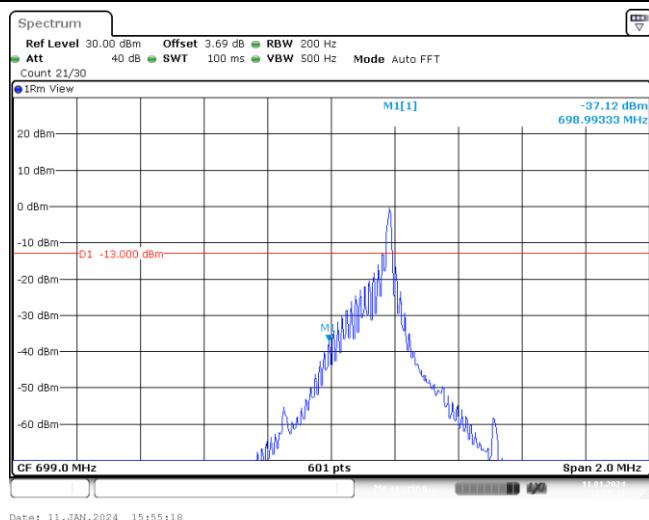
Band12-Stand-Alone-NaN-BPSK-23179-1@11-15kHz--13.81-PASS



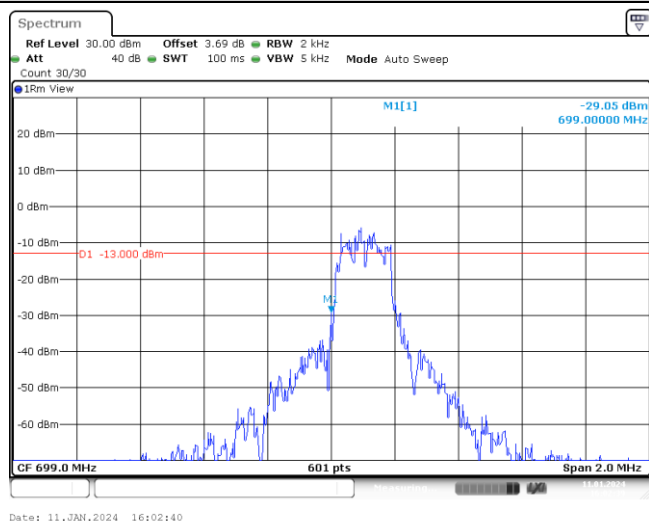
Band12-Stand-Alone-NaN-BPSK-23179-12@0-15kHz--25.52-PASS



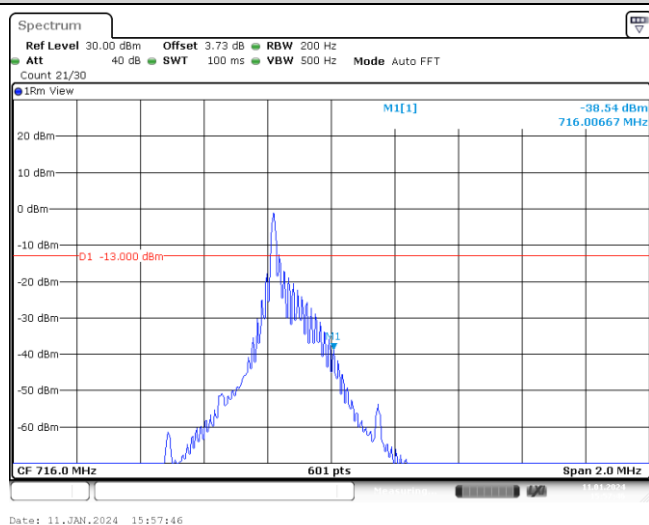
Band12-Stand-Alone-NaN-QPSK-23011-1@0-15kHz--17.68-PASS



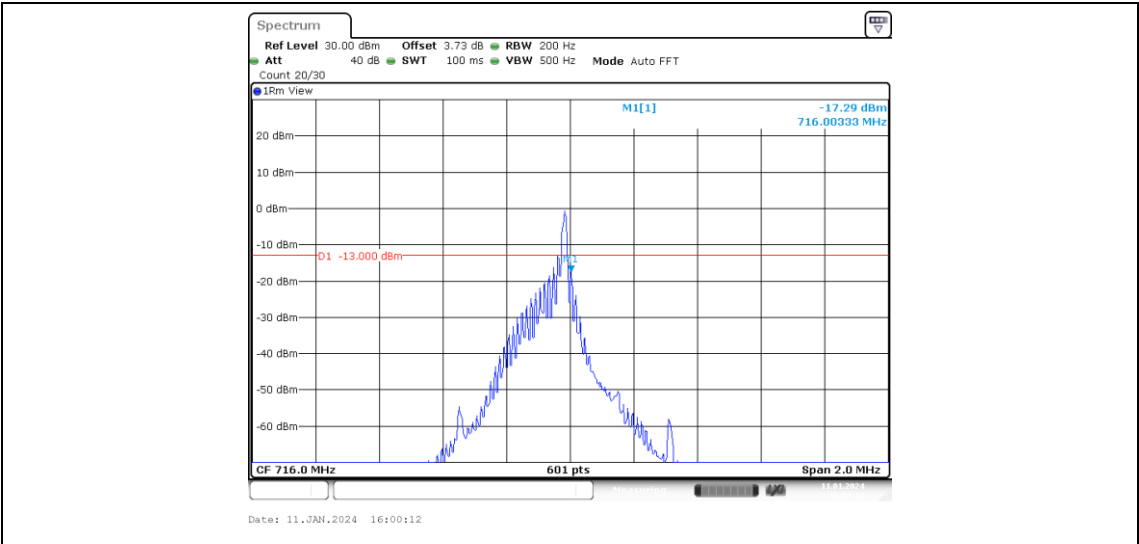
Band12-Stand-Alone-NaN-QPSK-23011-1@11-15kHz--37.12-PASS



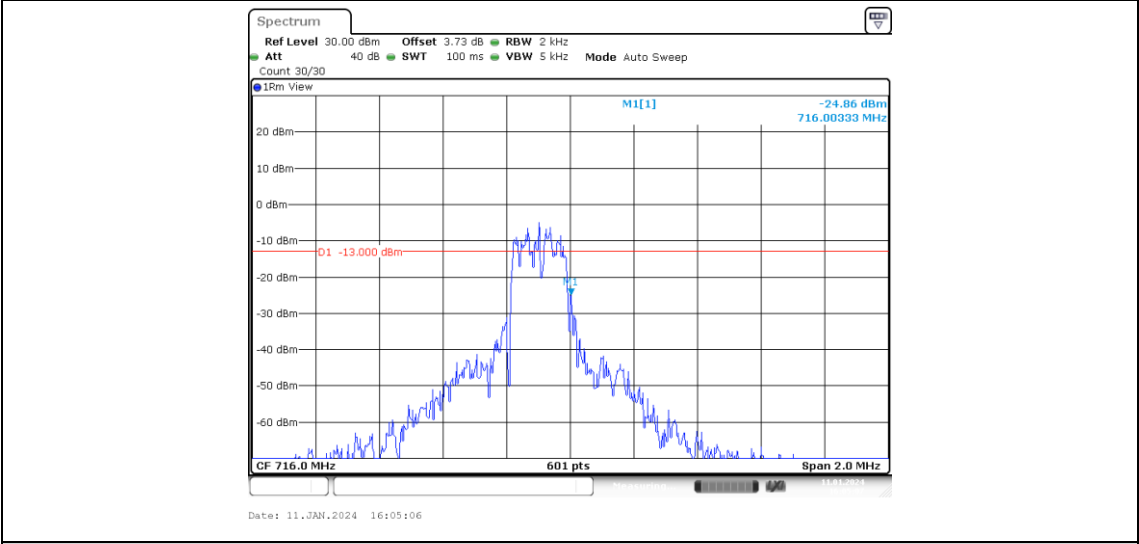
Band12-Stand-Alone-NaN-QPSK-23011-12@0-15kHz--29.05-PASS



Band12-Stand-Alone-NaN-QPSK-23179-1@0-15kHz--38.54-PASS



Band12-Stand-Alone-NaN-QPSK-23179-1@11-15kHz--17.29-PASS



Band12-Stand-Alone-NaN-QPSK-23179-12@0-15kHz--24.86-PASS

Appendix E: Conducted Spurious Emission for NB1

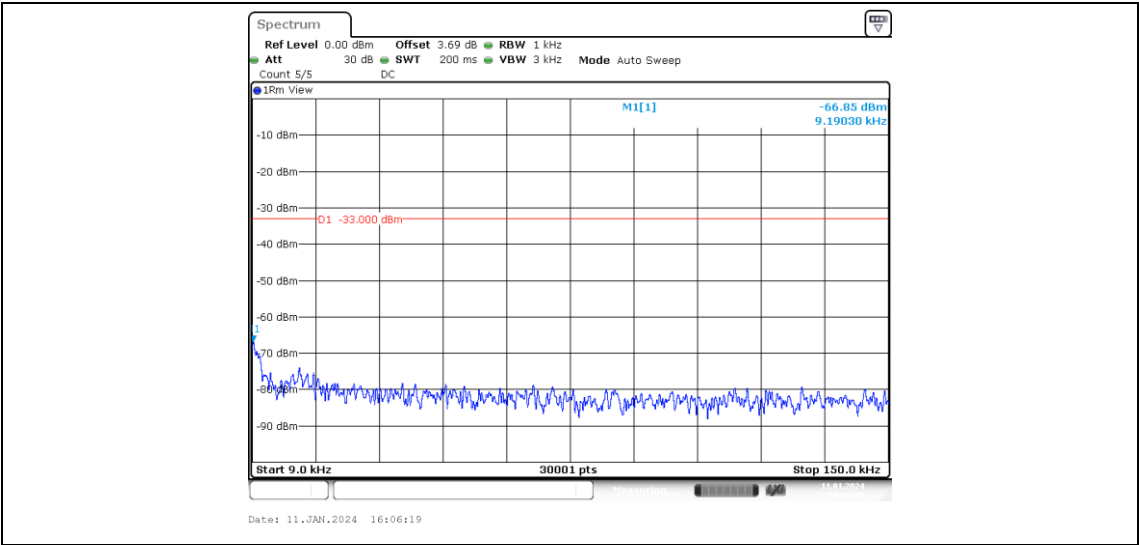
Test Result

Band	OpMode	SCS	BW	Modu	Channel	Tones	Freq Start [MHz]	Freq Stop [MHz]	Result (dBm)	Limit (dBm)	Verdict
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@0	0.009	0.15	-66.85	-33	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@0	0.15	30	-77.24	-23	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@0	30	1000	-53.53	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@0	1000	10000	-41.01	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@47	0.009	0.15	-67.34	-33	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@47	0.15	30	-77.18	-23	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@47	30	1000	-54.59	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23011	1@47	1000	10000	-41.12	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@0	0.009	0.15	-67.18	-33	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@0	0.15	30	-79	-23	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@0	30	1000	-57.48	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@0	1000	10000	-44.5	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@47	0.009	0.15	-66.98	-33	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@47	0.15	30	-77.69	-23	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@47	30	1000	-56.53	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23095	1@47	1000	10000	-42.38	-13	PASS
Band1 2	Stand-Alone	3.75kHz	NaN	QPSK	23179	1@0	0.009	0.15	-66.72	-33	PASS

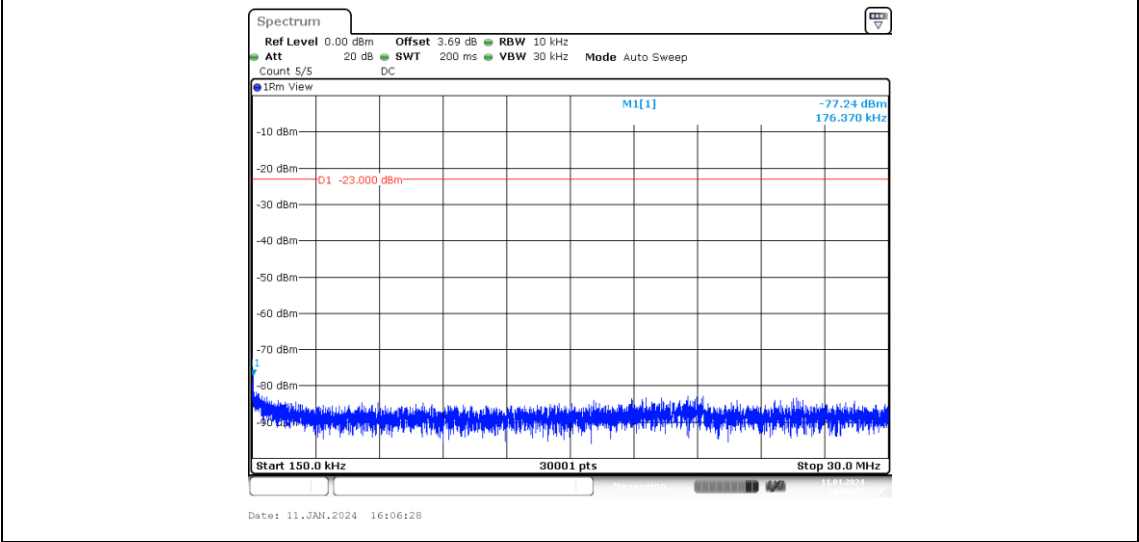
Band1 2	Stand-Alon e	3.75kHz	NaN	QPSK	23179	1@0	0.15	30	-78.86	-23	PASS
Band1 2	Stand-Alon e	3.75kHz	NaN	QPSK	23179	1@0	30	1000	-58.38	-13	PASS
Band1 2	Stand-Alon e	3.75kHz	NaN	QPSK	23179	1@0	1000	1000 0	-45.32	-13	PASS
Band1 2	Stand-Alon e	3.75kHz	NaN	QPSK	23179	1@47	0.009	0.15	-68.5	-33	PASS
Band1 2	Stand-Alon e	3.75kHz	NaN	QPSK	23179	1@47	0.15	30	-79.67	-23	PASS
Band1 2	Stand-Alon e	3.75kHz	NaN	QPSK	23179	1@47	30	1000	-58.39	-13	PASS
Band1 2	Stand-Alon e	3.75kHz	NaN	QPSK	23179	1@47	1000	1000 0	-45.88	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@0	0.009	0.15	-68.68	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@0	0.15	30	-78.01	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@0	30	1000	-54.46	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@0	1000	1000 0	-41.36	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@11	0.009	0.15	-72.66	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@11	0.15	30	-74.01	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@11	30	1000	-55.06	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23011	1@11	1000	1000 0	-40.64	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23095	1@0	0.009	0.15	-74.48	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23095	1@0	0.15	30	-73.69	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23095	1@0	30	1000	-55.61	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23095	1@0	1000	1000 0	-42.39	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23095	1@11	0.009	0.15	-69.03	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23095	1@11	0.15	30	-72.42	-23	PASS
Band1	Stand-Alon	15kHz	NaN	BPSK	23095	1@11	30	1000	-56.75	-13	PASS

2	e										
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23095	1@11	1000	1000 0	-43.84	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@0	0.009	0.15	-67.12	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@0	0.15	30	-75.59	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@0	30	1000	-59.45	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@0	1000	1000 0	-46.51	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@11	0.009	0.15	-70.17	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@11	0.15	30	-76.31	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@11	30	1000	-58.04	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	BPSK	23179	1@11	1000	1000 0	-46.5	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23011	12@0	0.009	0.15	-71.64	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23011	12@0	0.15	30	-72.64	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23011	12@0	30	1000	-64.98	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23011	12@0	1000	1000 0	-50.31	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23095	12@0	0.009	0.15	-73.11	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23095	12@0	0.15	30	-74.23	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23095	12@0	30	1000	-64.91	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23095	12@0	1000	1000 0	-50.32	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23179	12@0	0.009	0.15	-71.31	-33	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23179	12@0	0.15	30	-81.5	-23	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23179	12@0	30	1000	-62.52	-13	PASS
Band1 2	Stand-Alon e	15kHz	NaN	QPSK	23179	12@0	1000	1000 0	-50.41	-13	PASS

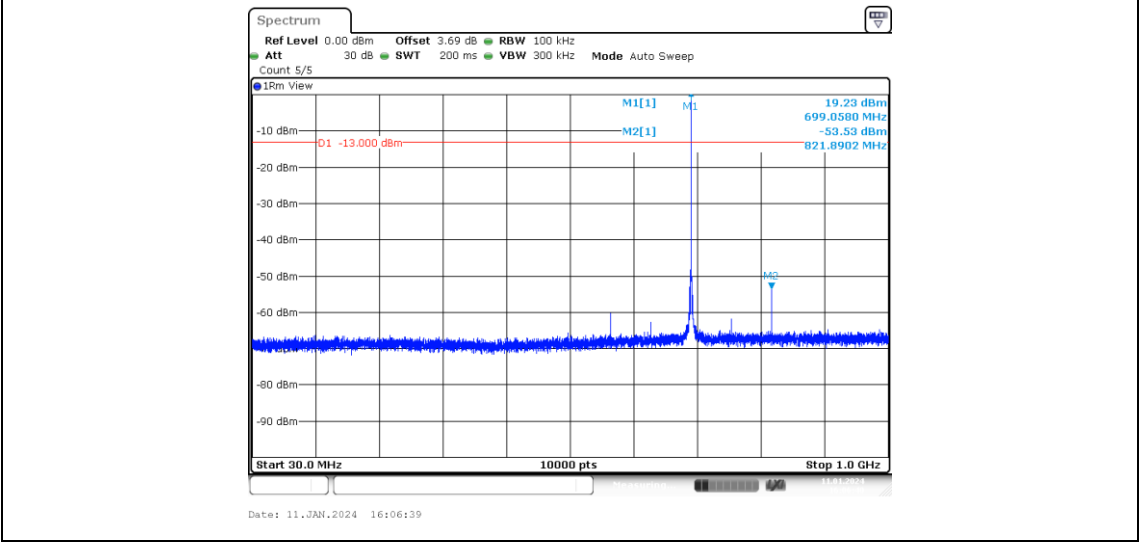
Test Graphs

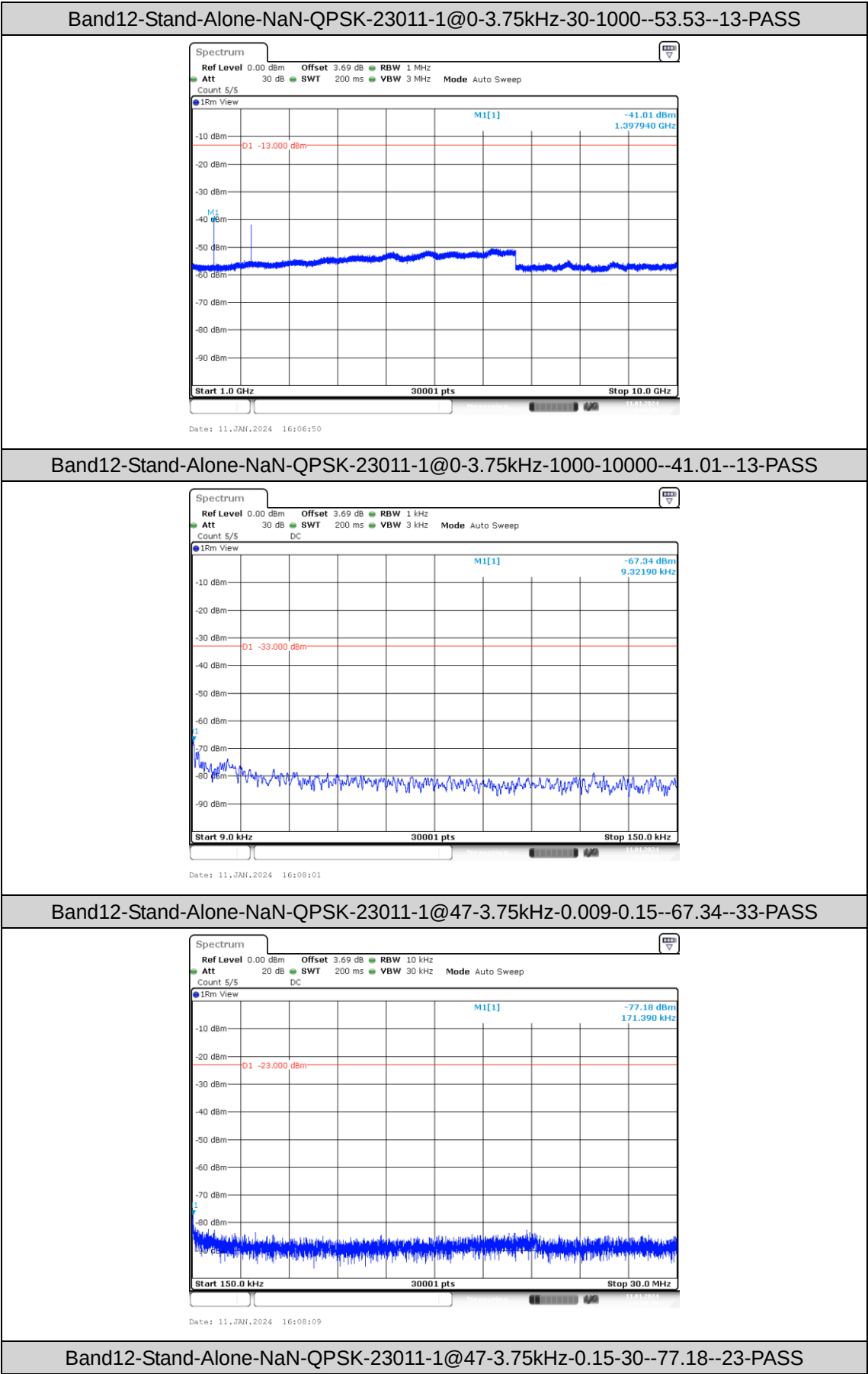


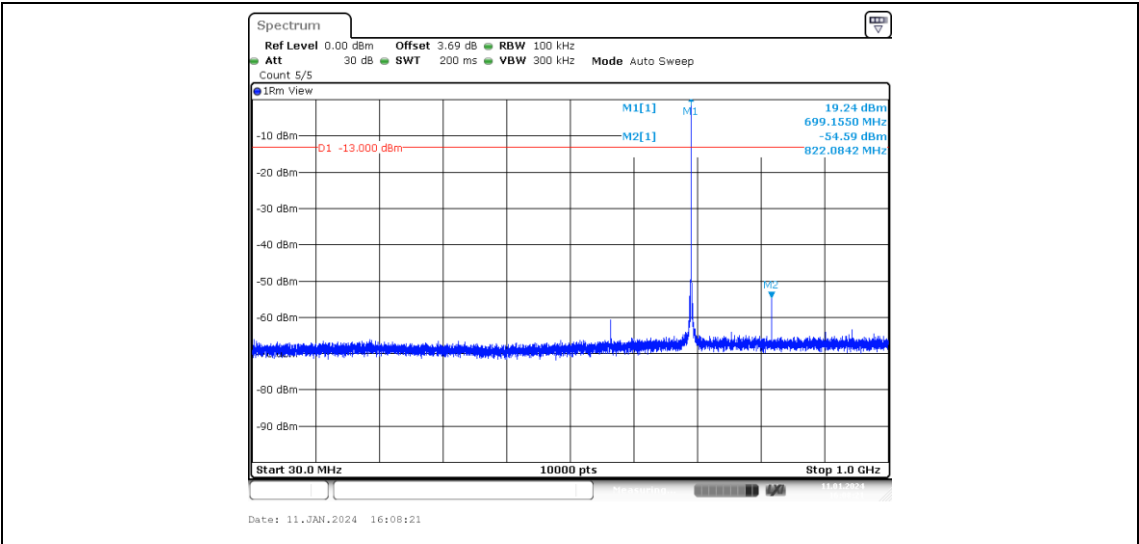
Band12-Stand-Alone-NaN-QPSK-23011-1@0-3.75kHz-0.009-0.15--66.85--33-PASS



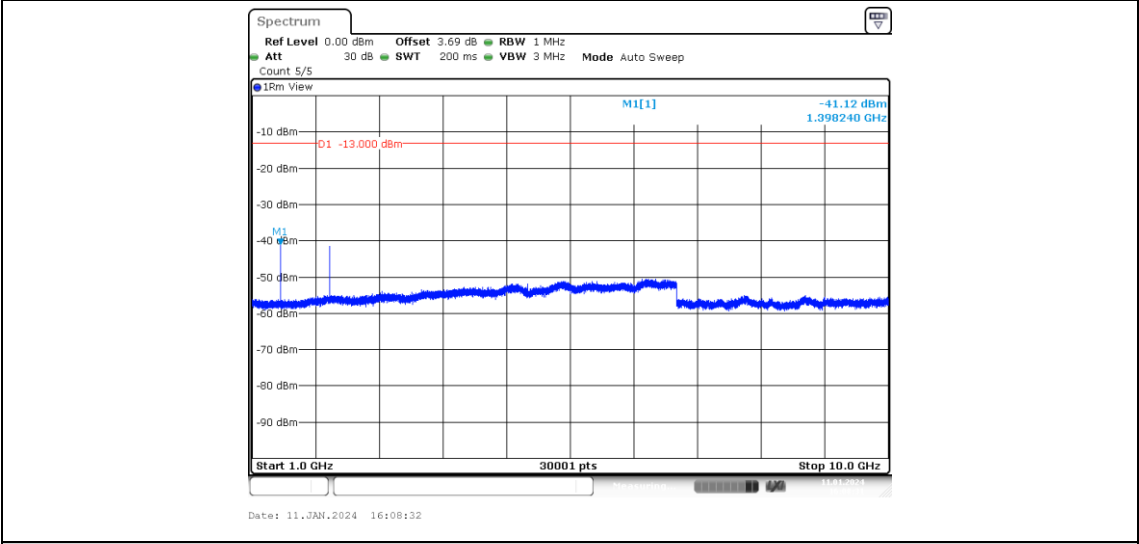
Band12-Stand-Alone-NaN-QPSK-23011-1@0-3.75kHz-0.15-30--77.24--23-PASS



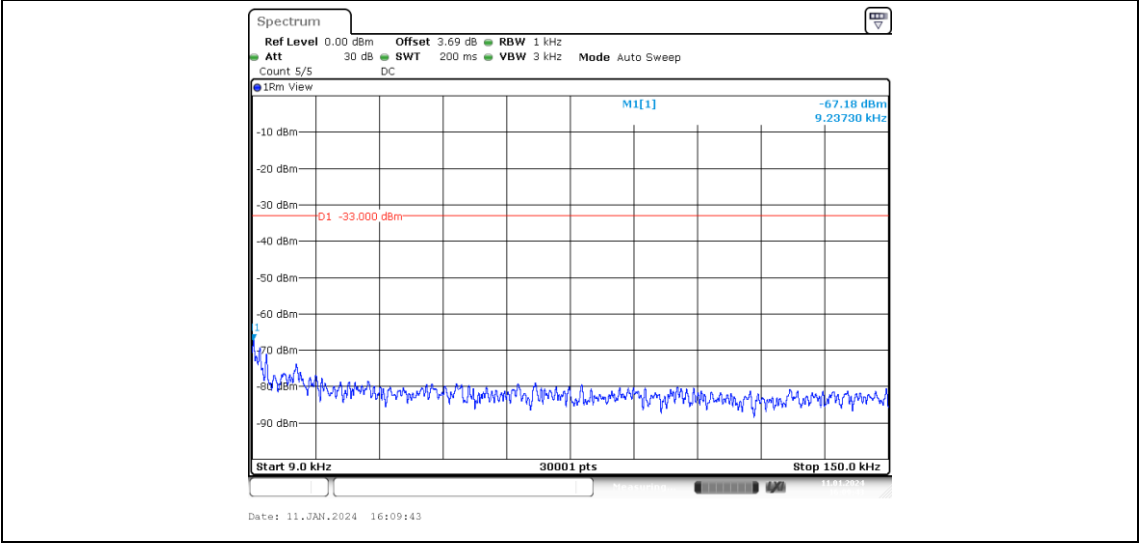




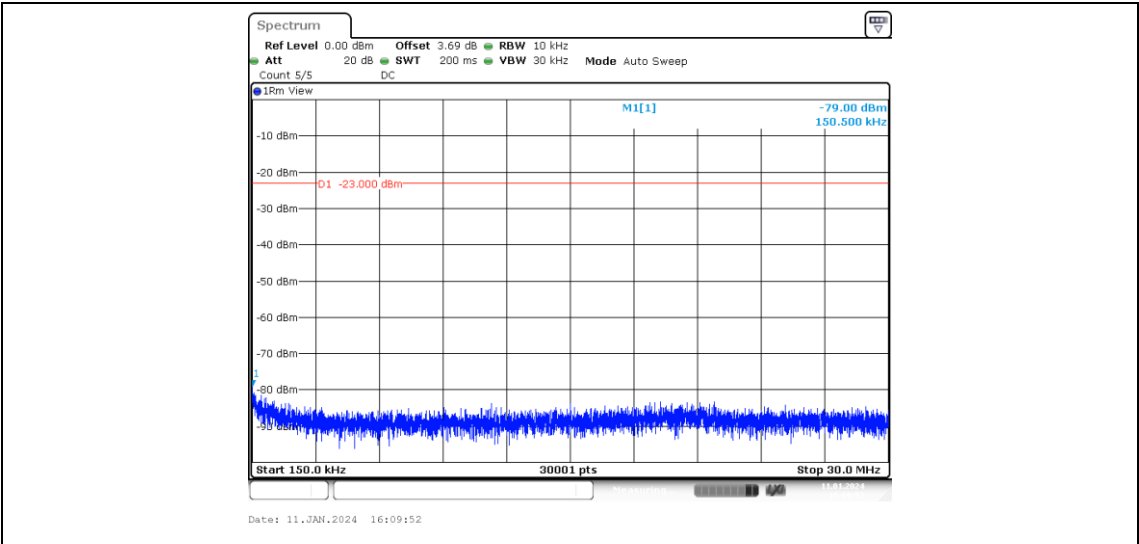
Band12-Stand-Alone-NaN-QPSK-23011-1@47-3.75kHz-30-1000--54.59--13-PASS



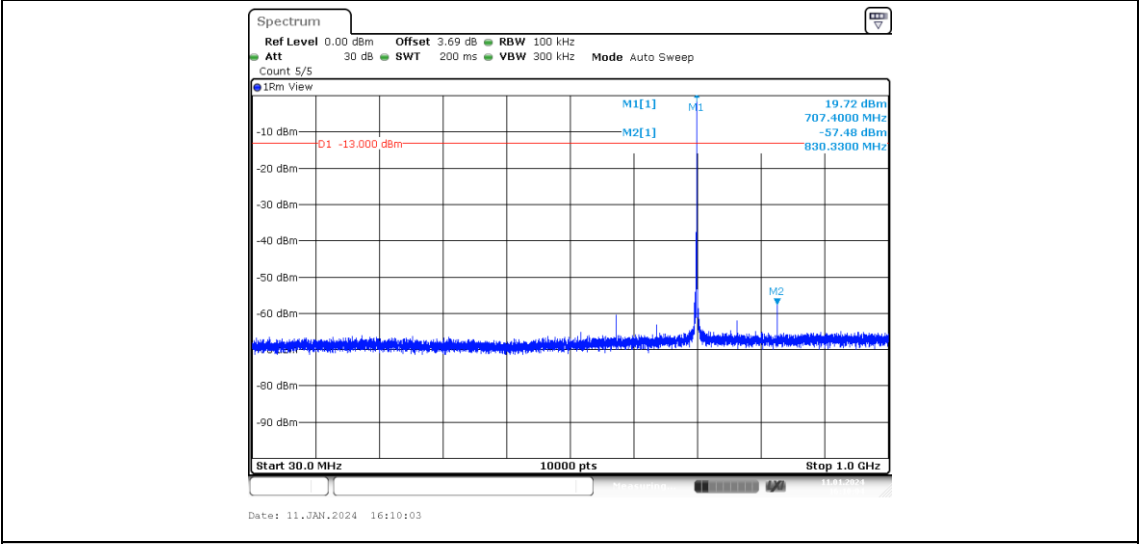
Band12-Stand-Alone-NaN-QPSK-23011-1@47-3.75kHz-1000-10000--41.12--13-PASS



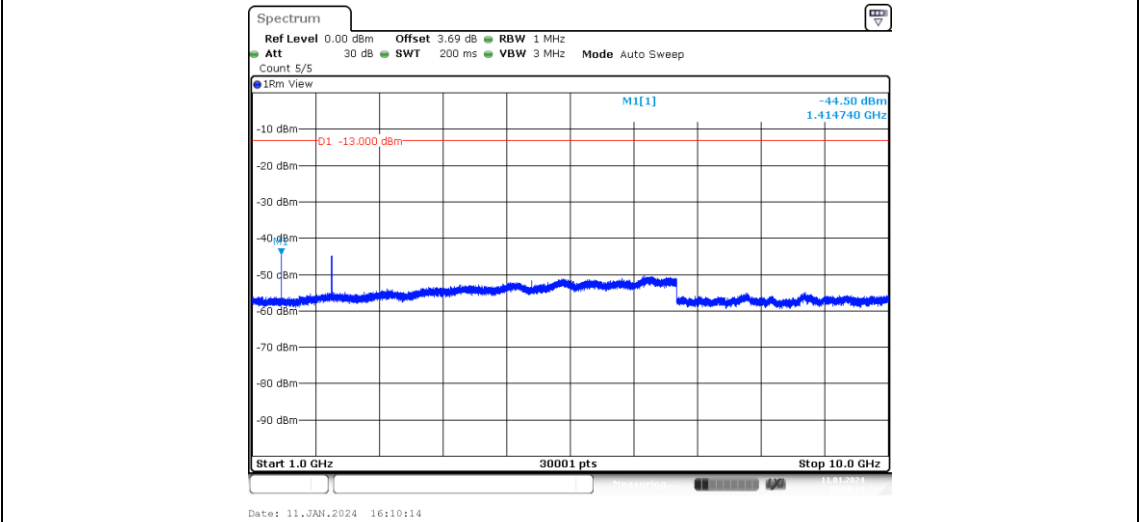
Band12-Stand-Alone-NaN-QPSK-23095-1@0-3.75kHz-0.009-0.15--67.18--33-PASS



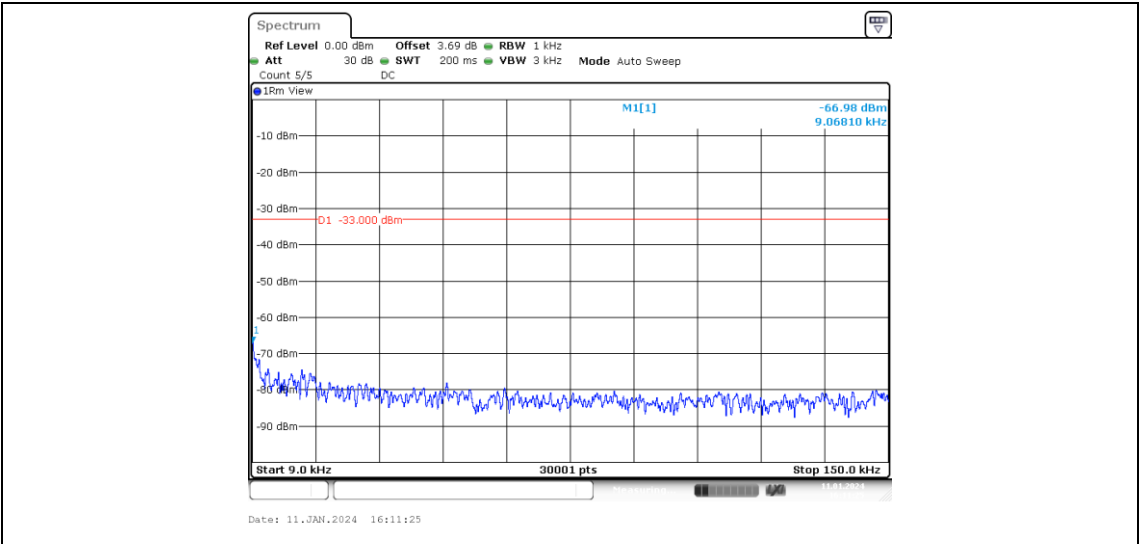
Band12-Stand-Alone-NaN-QPSK-23095-1@0-3.75kHz-0.15-30--79--23-PASS



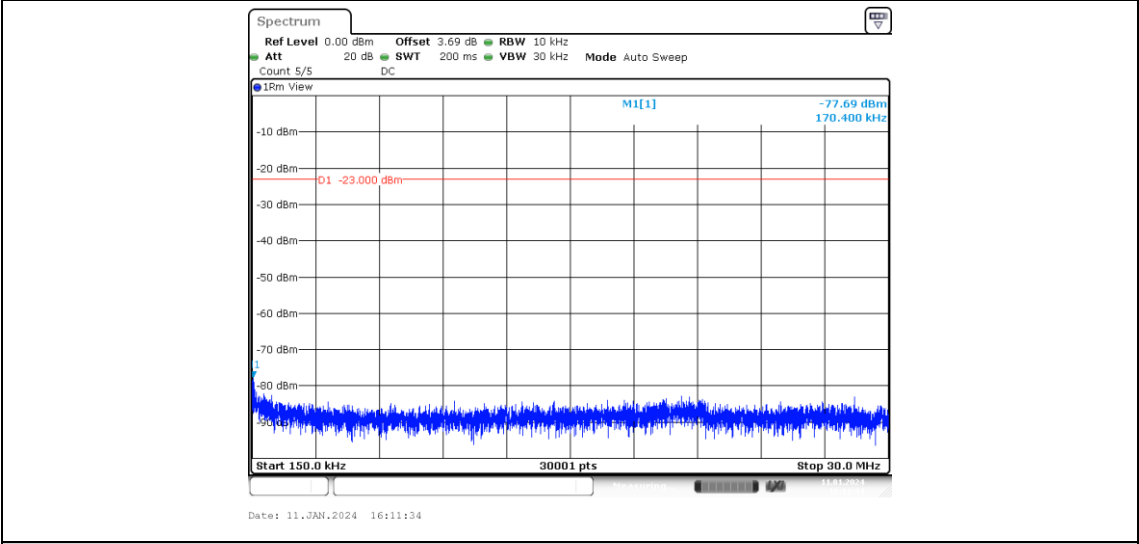
Band12-Stand-Alone-NaN-QPSK-23095-1@0-3.75kHz-30-1000--57.48--13-PASS



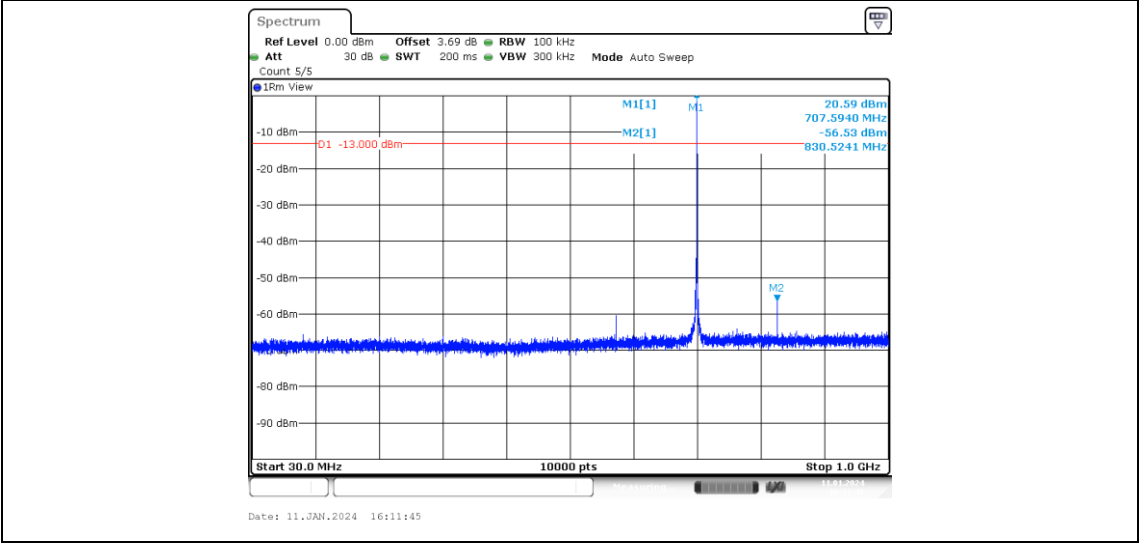
Band12-Stand-Alone-NaN-QPSK-23095-1@0-3.75kHz-1000-10000--44.5--13-PASS



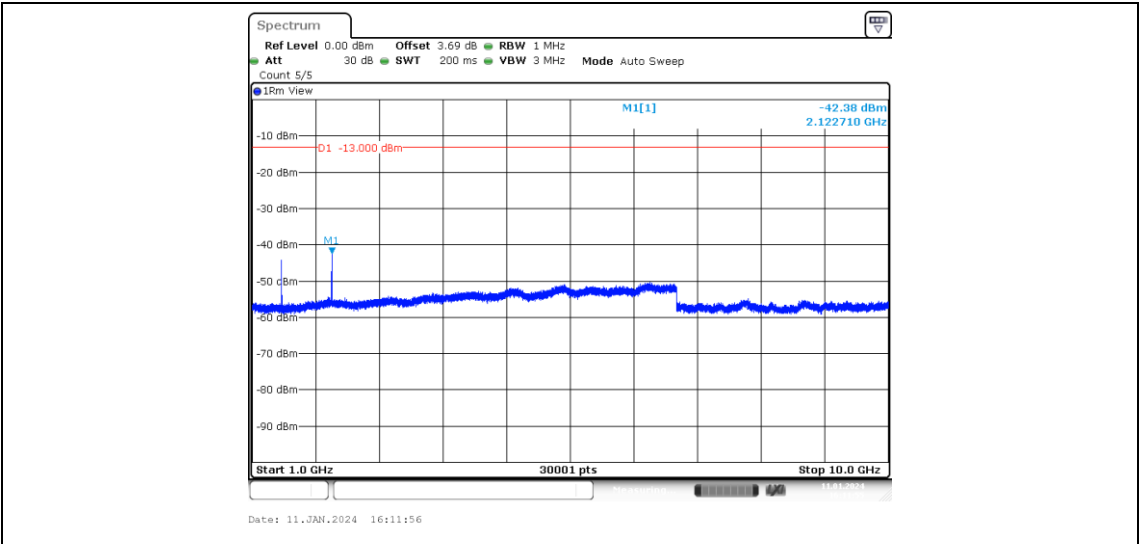
Band12-Stand-Alone-NaN-QPSK-23095-1@47-3.75kHz-0.009-0.15--66.98--33-PASS



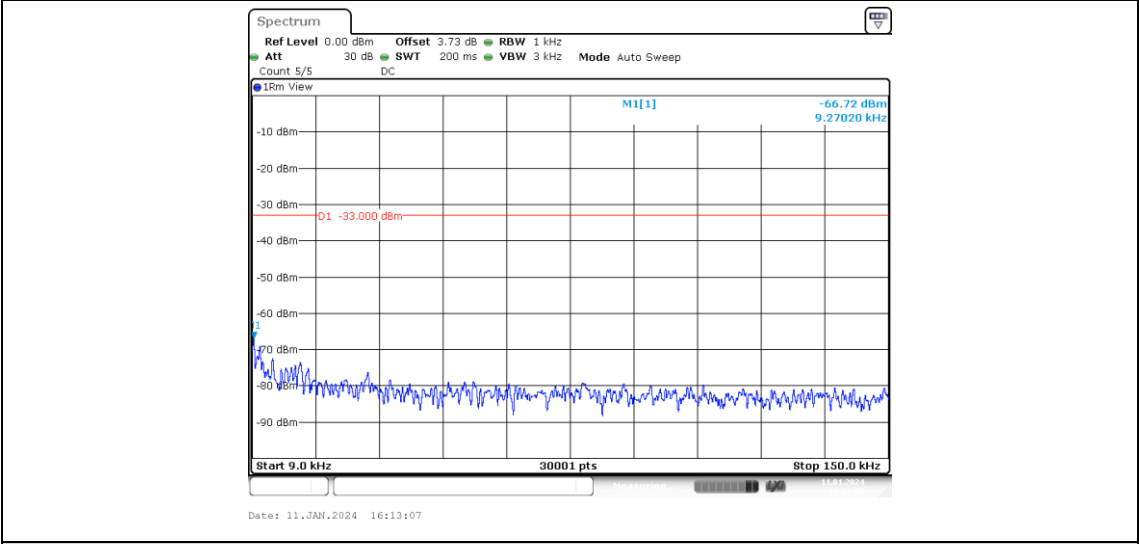
Band12-Stand-Alone-NaN-QPSK-23095-1@47-3.75kHz-0.15-30--77.69--23-PASS



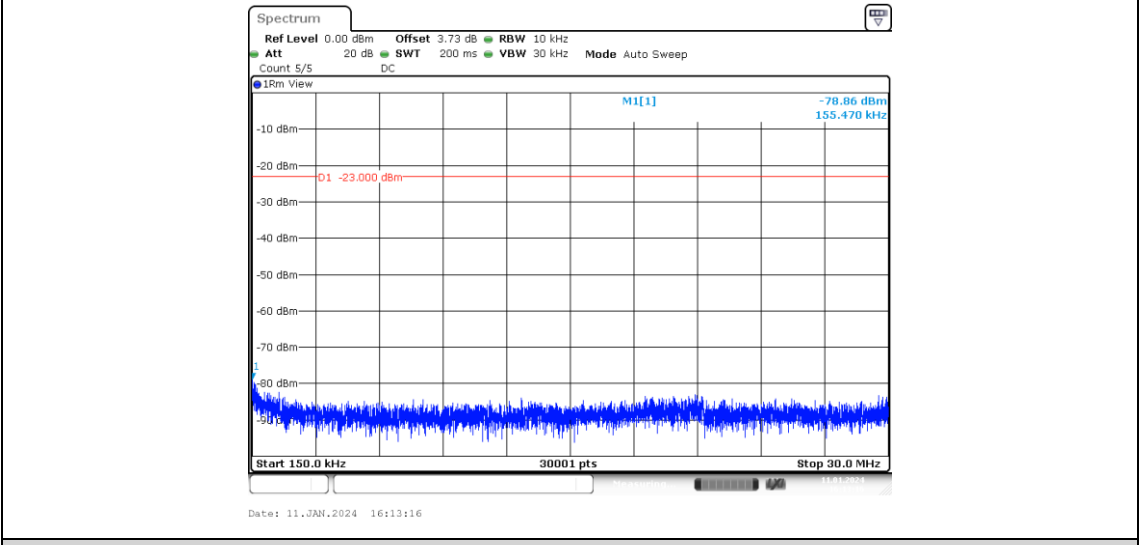
Band12-Stand-Alone-NaN-QPSK-23095-1@47-3.75kHz-30-1000--56.53--13-PASS



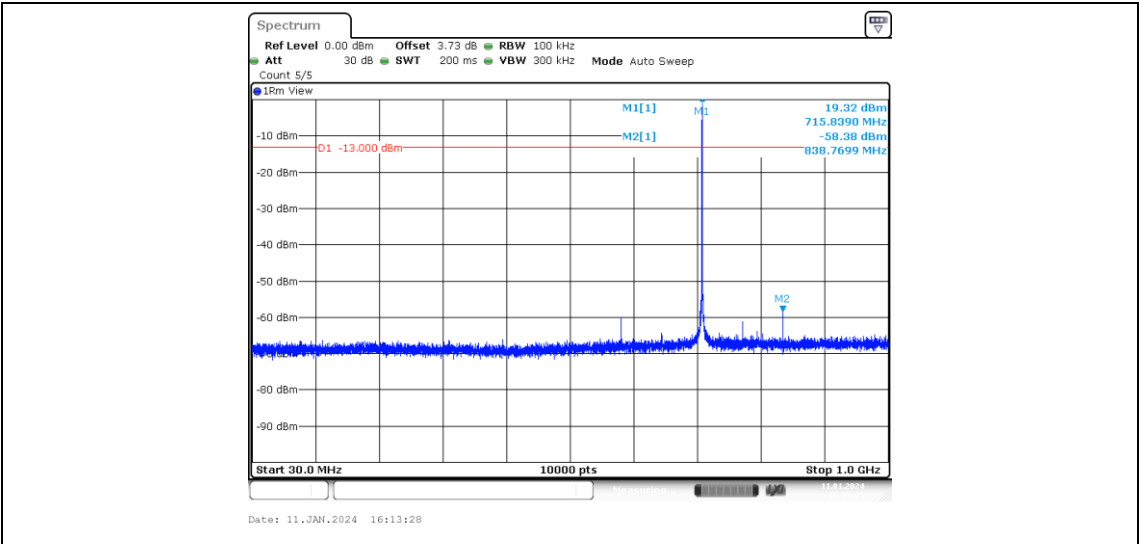
Band12-Stand-Alone-NaN-QPSK-23095-1@47-3.75kHz-1000-10000--42.38--13-PASS



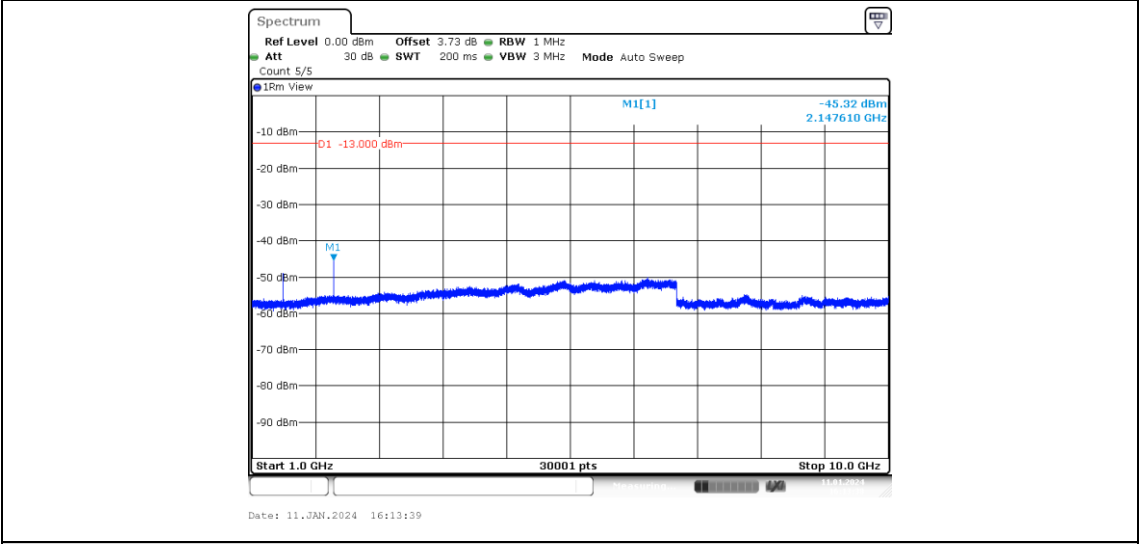
Band12-Stand-Alone-NaN-QPSK-23179-1@0-3.75kHz-0.009-0.15--66.72--33-PASS



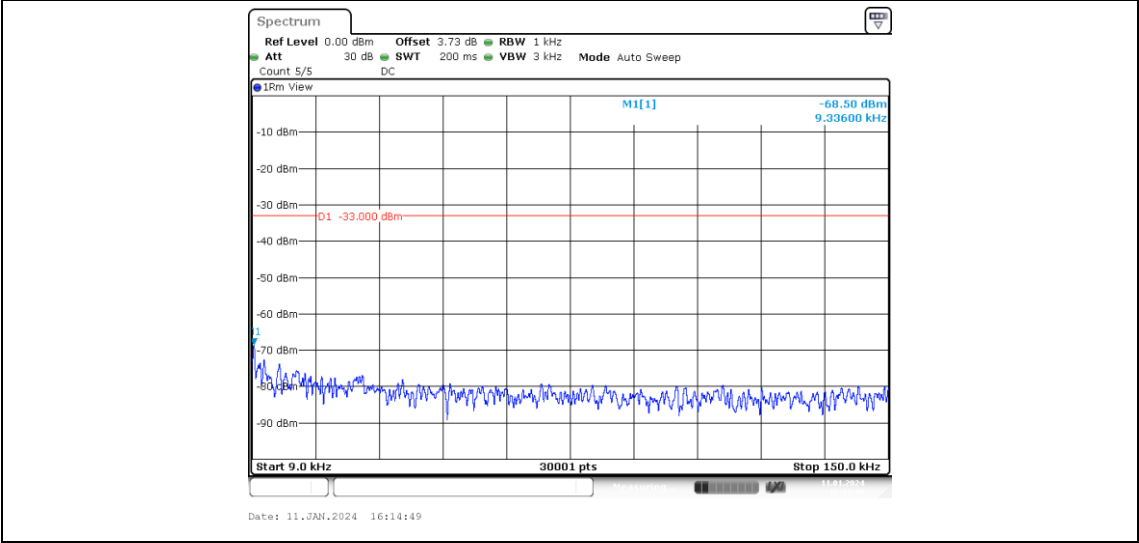
Band12-Stand-Alone-NaN-QPSK-23179-1@0-3.75kHz-0.15-30--78.86--23-PASS



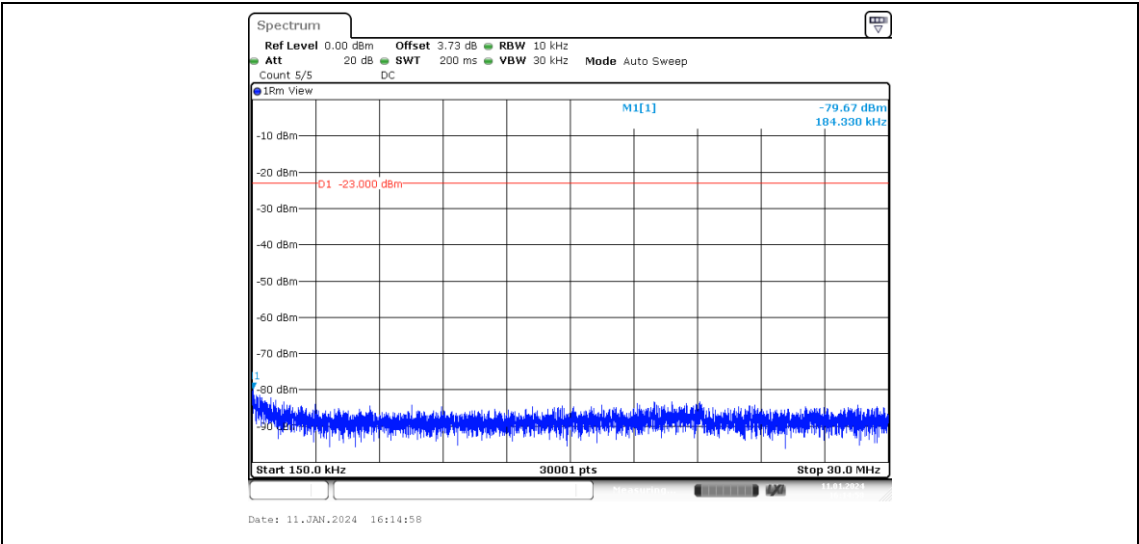
Band12-Stand-Alone-NaN-QPSK-23179-1@0-3.75kHz-30-1000--58.38--13-PASS



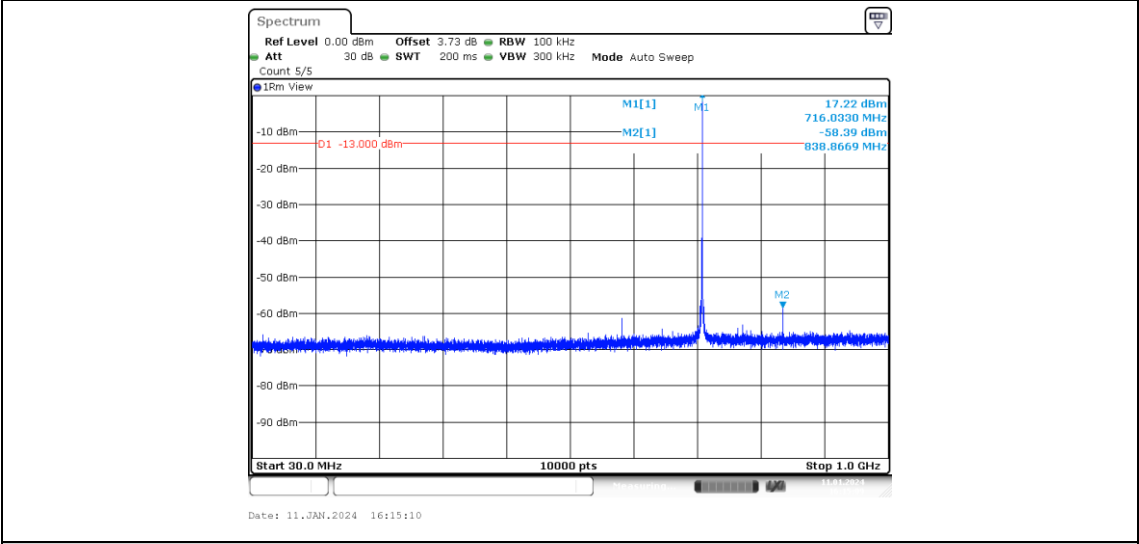
Band12-Stand-Alone-NaN-QPSK-23179-1@0-3.75kHz-1000-10000--45.32--13-PASS



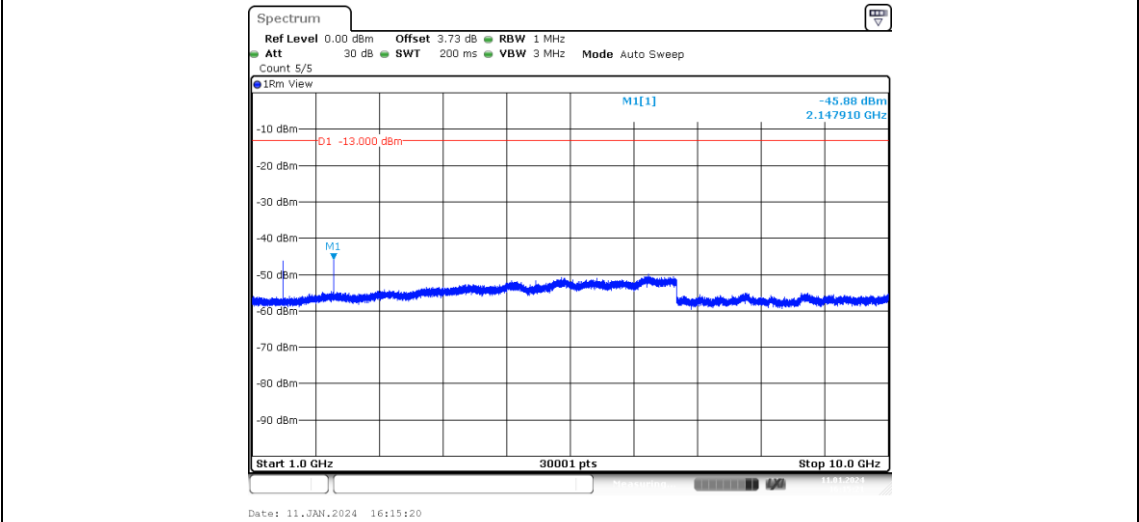
Band12-Stand-Alone-NaN-QPSK-23179-1@47-3.75kHz-0.009-0.15--68.5--33-PASS



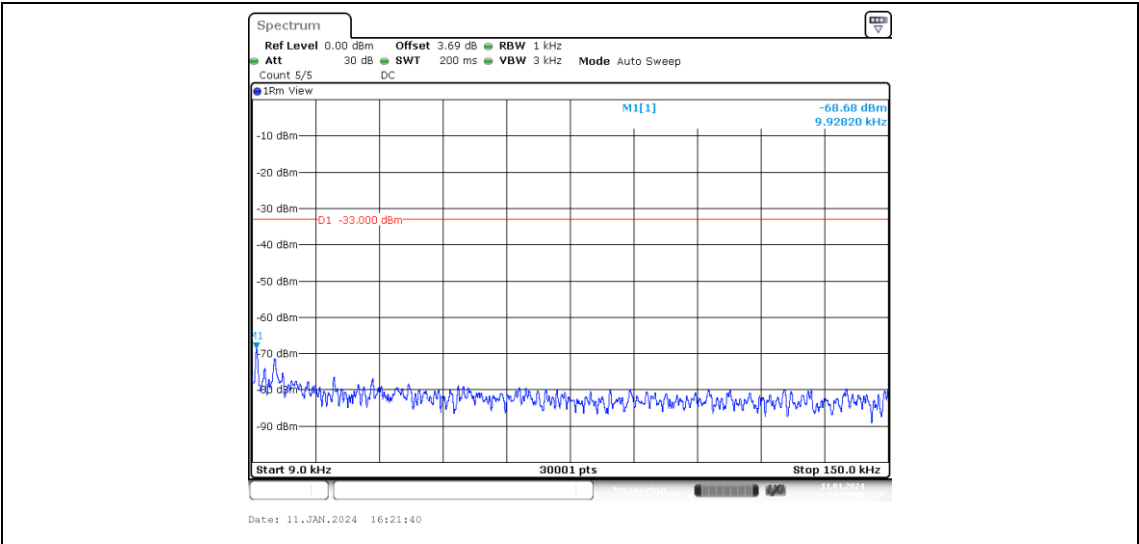
Band12-Stand-Alone-NaN-QPSK-23179-1@47-3.75kHz-0.15-30--79.67--23-PASS



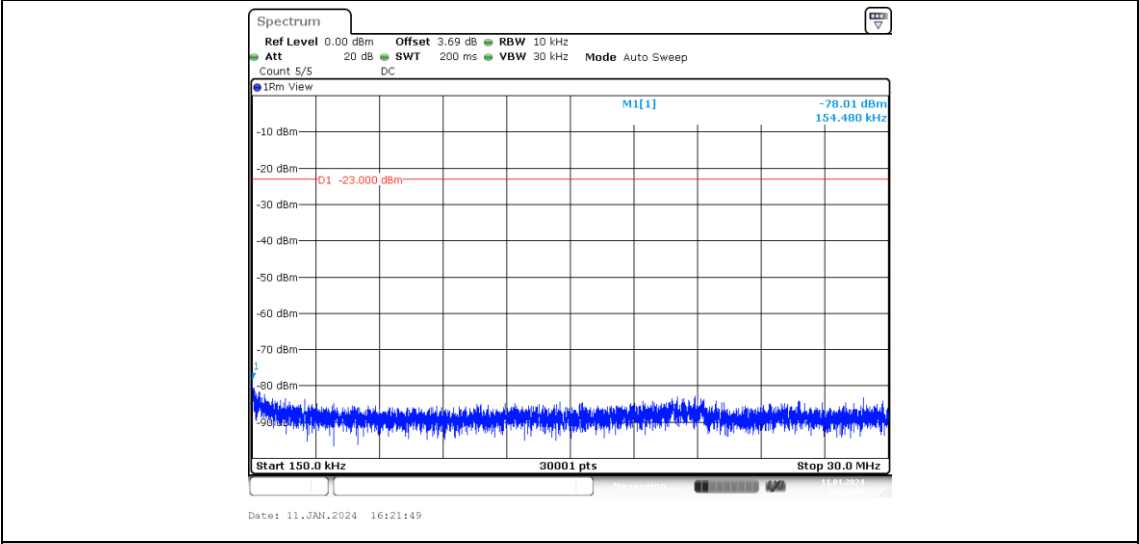
Band12-Stand-Alone-NaN-QPSK-23179-1@47-3.75kHz-30-1000--58.39--13-PASS



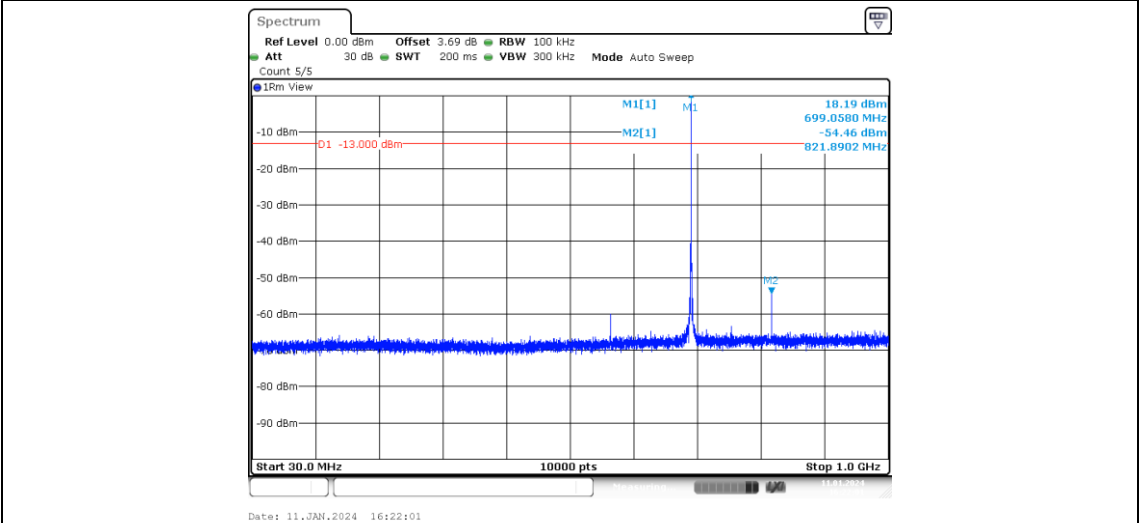
Band12-Stand-Alone-NaN-QPSK-23179-1@47-3.75kHz-1000-10000--45.88--13-PASS



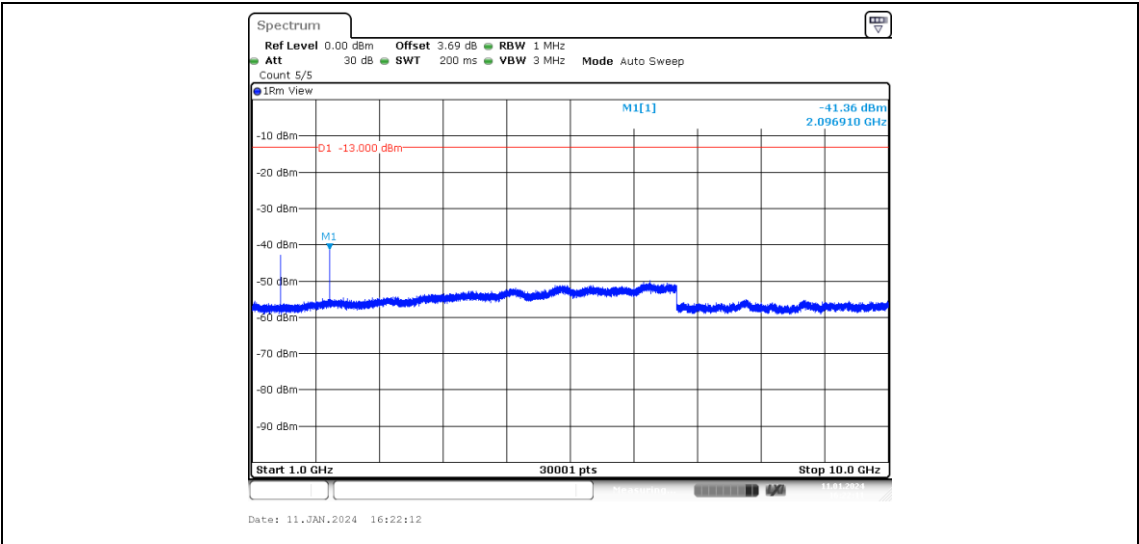
Band12-Stand-Alone-NaN-BPSK-23011-1@0-15kHz-0.009-0.15--68.68--33-PASS



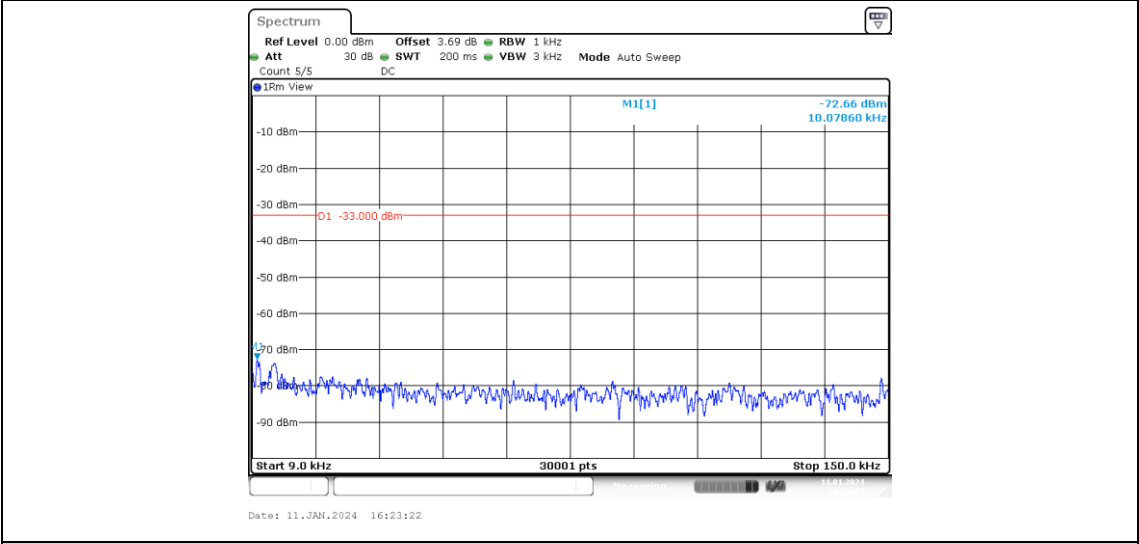
Band12-Stand-Alone-NaN-BPSK-23011-1@0-15kHz-0.15-30--78.01--23-PASS



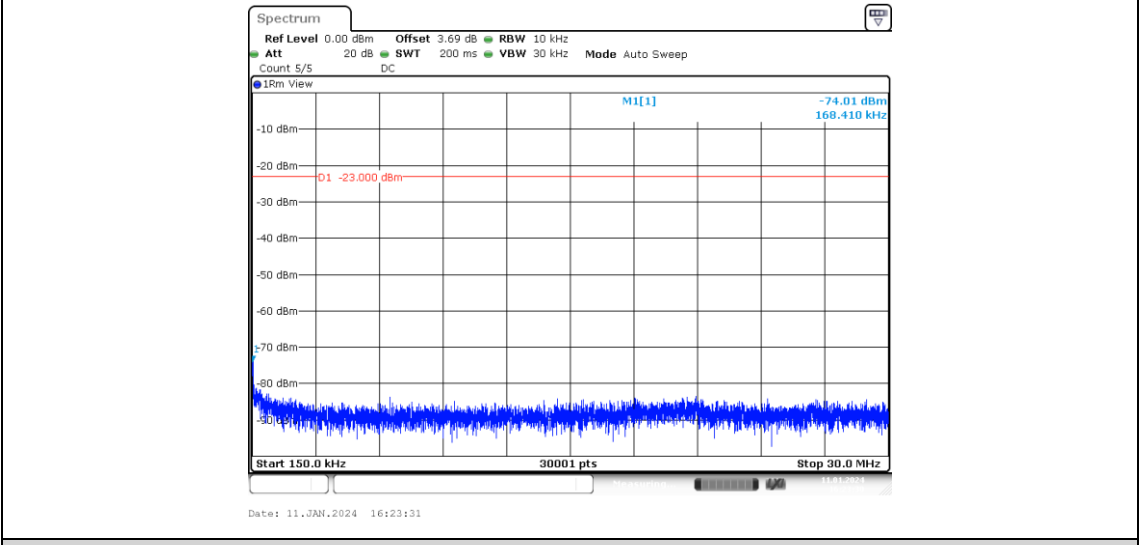
Band12-Stand-Alone-NaN-BPSK-23011-1@0-15kHz-30-1000--54.46--13-PASS



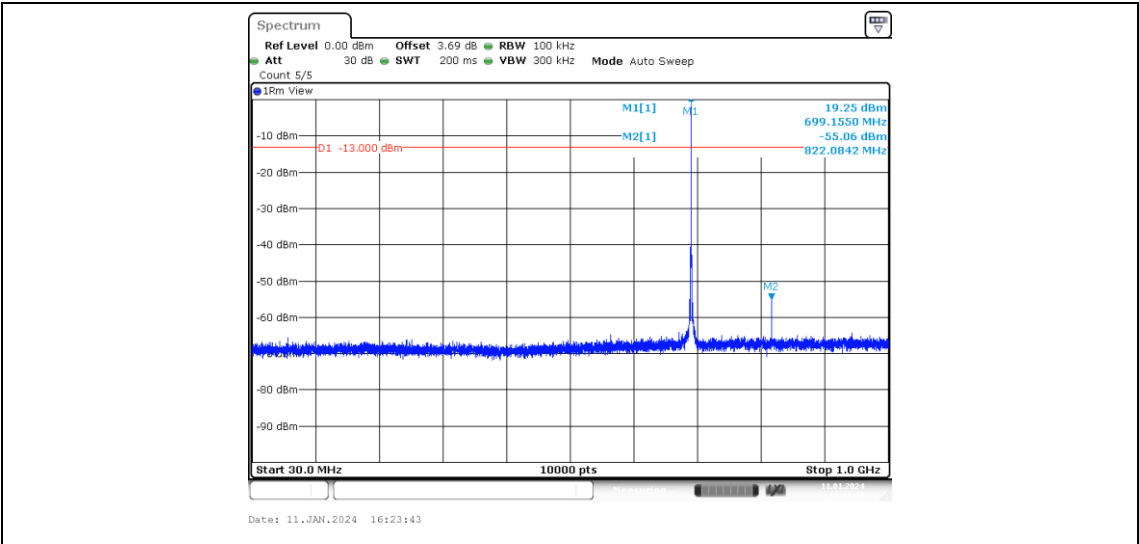
Band12-Stand-Alone-NaN-BPSK-23011-1@0-15kHz-1000-10000--41.36--13-PASS



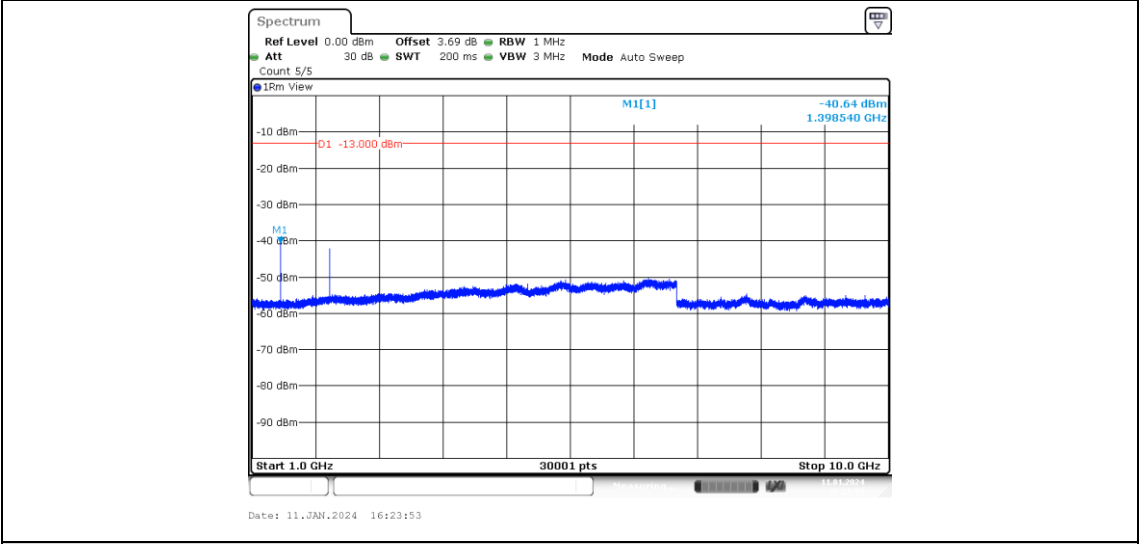
Band12-Stand-Alone-NaN-BPSK-23011-1@11-15kHz-0.009-0.15--72.66--33-PASS



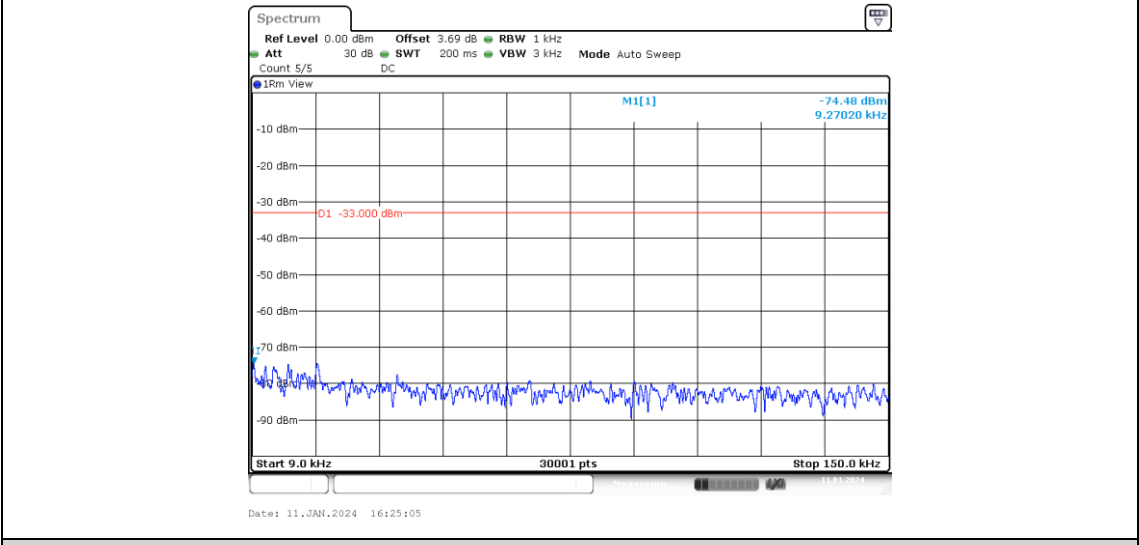
Band12-Stand-Alone-NaN-BPSK-23011-1@11-15kHz-0.15-30--74.01--23-PASS



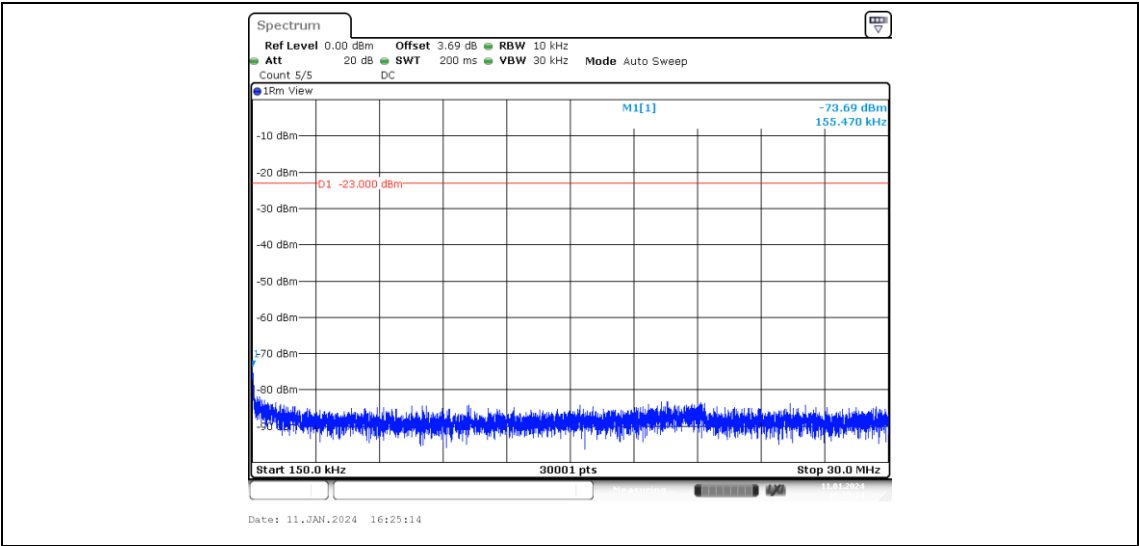
Band12-Stand-Alone-NaN-BPSK-23011-1@11-15kHz-30-1000--55.06--13-PASS



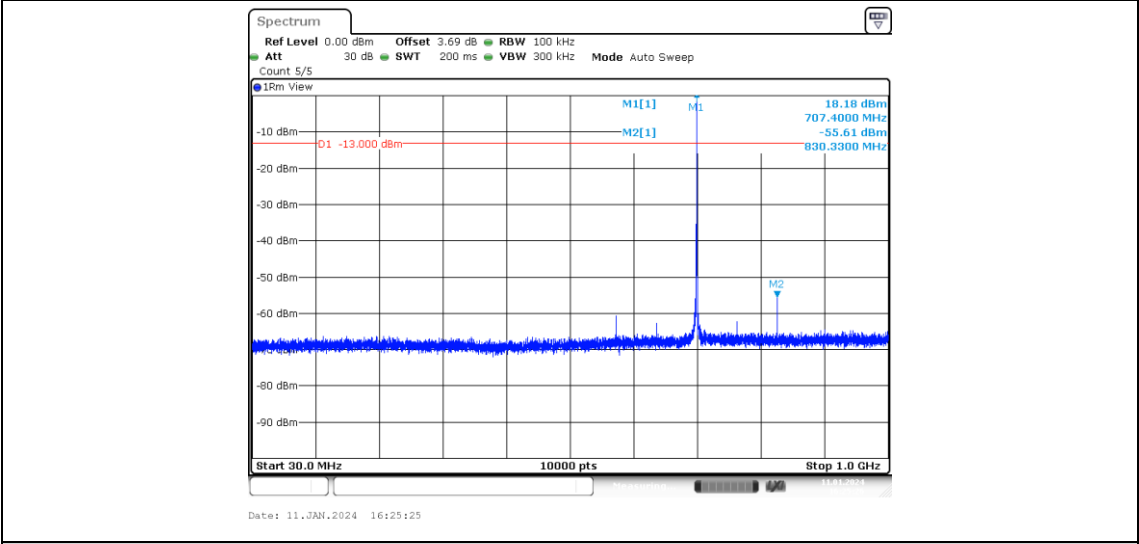
Band12-Stand-Alone-NaN-BPSK-23011-1@11-15kHz-1000-10000--40.64--13-PASS



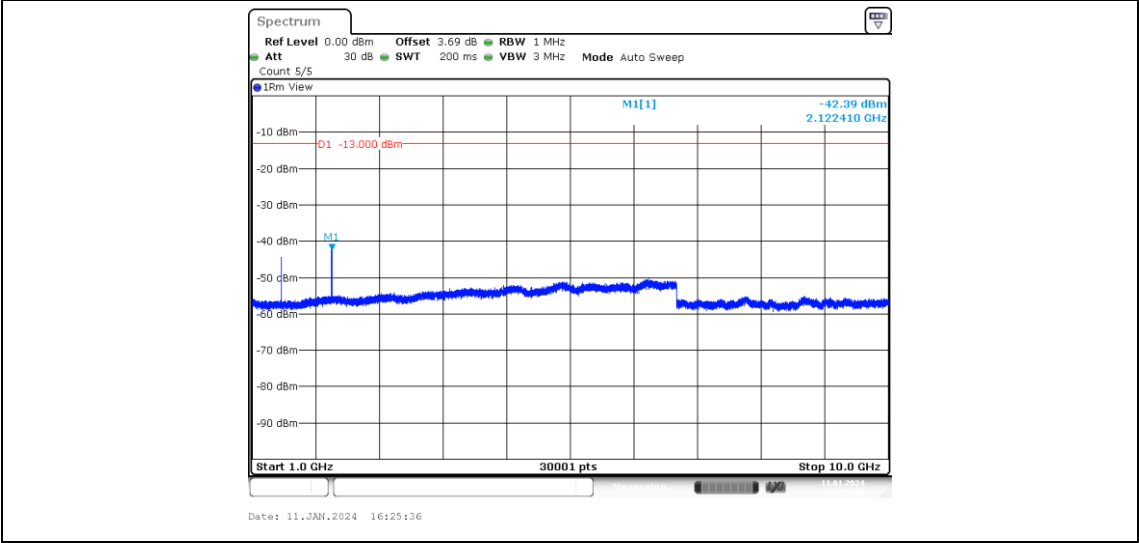
Band12-Stand-Alone-NaN-BPSK-23095-1@0-15kHz-0.009-0.15--74.48--33-PASS



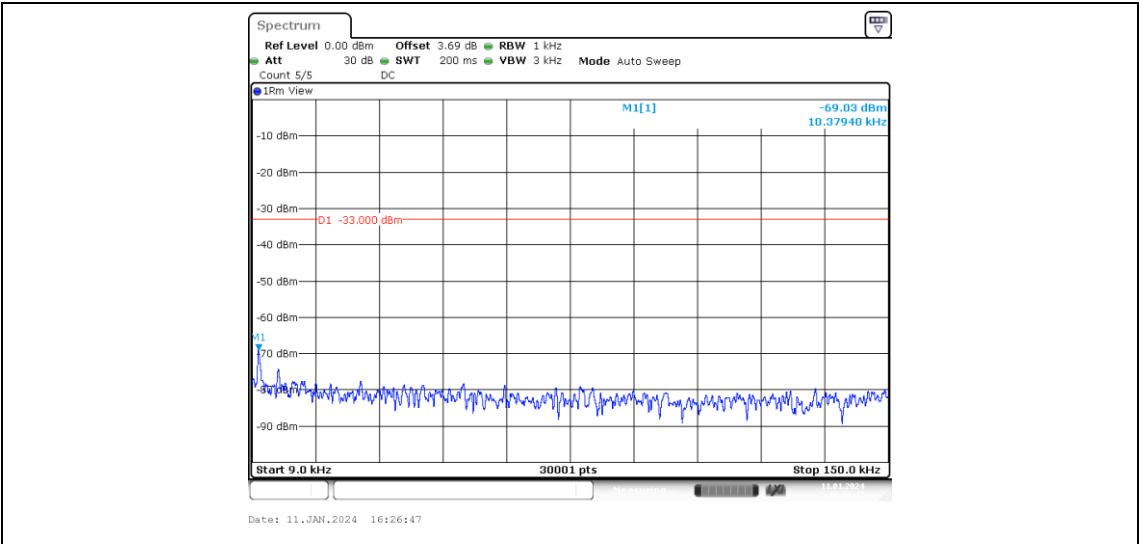
Band12-Stand-Alone-NaN-BPSK-23095-1@0-15kHz-0.15-30--73.69--23-PASS



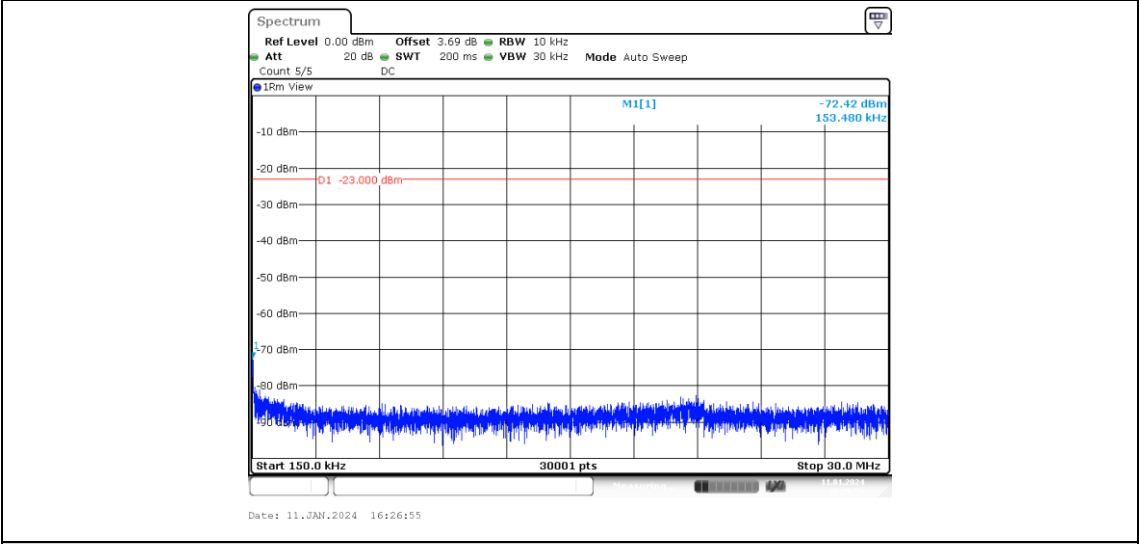
Band12-Stand-Alone-NaN-BPSK-23095-1@0-15kHz-30-1000--55.61--13-PASS



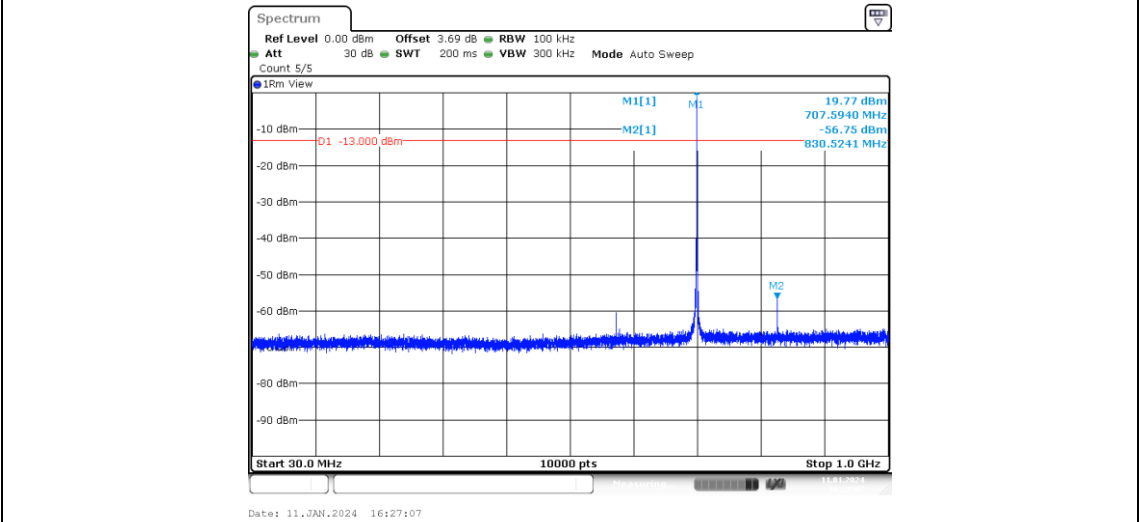
Band12-Stand-Alone-NaN-BPSK-23095-1@0-15kHz-1000-10000--42.39--13-PASS



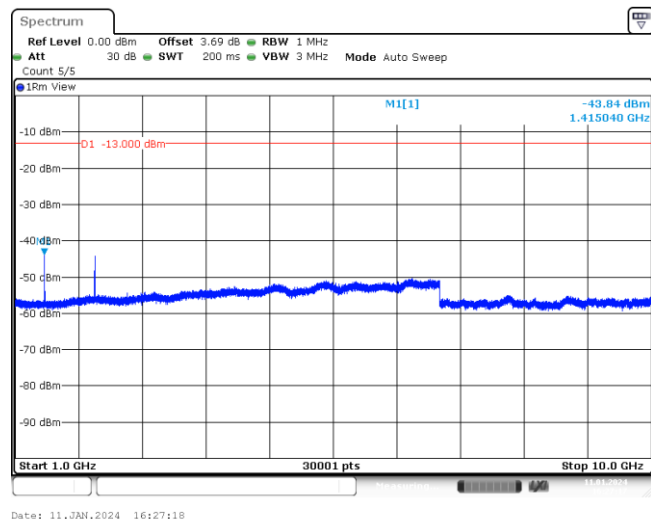
Band12-Stand-Alone-NaN-BPSK-23095-1@11-15kHz-0.15--69.03--33-PASS



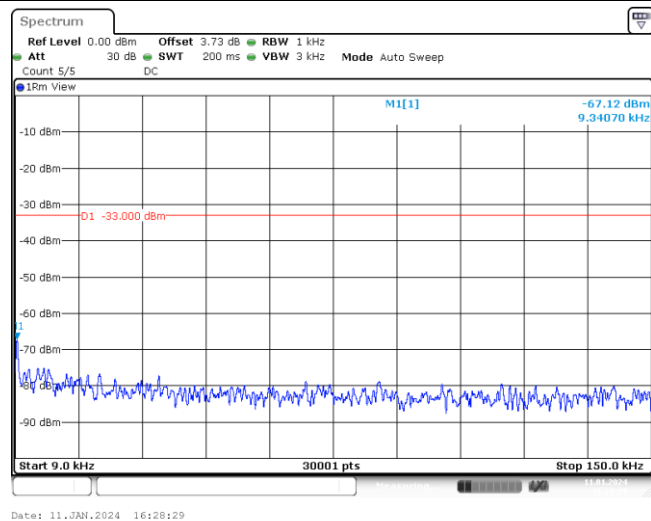
Band12-Stand-Alone-NaN-BPSK-23095-1@11-15kHz-0.15-30--72.42--23-PASS



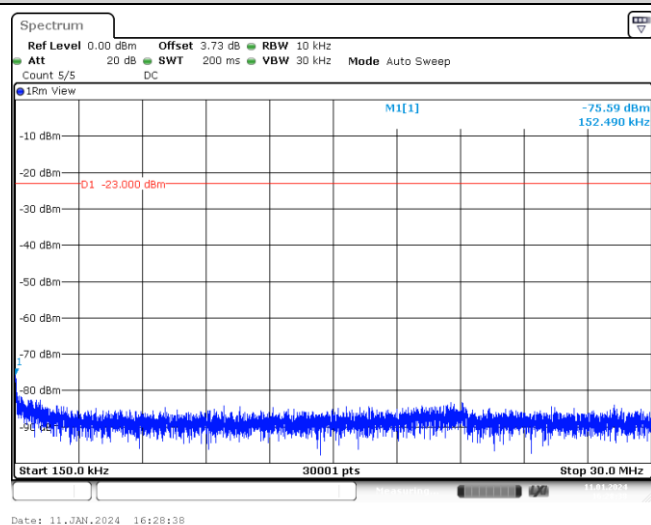
Band12-Stand-Alone-NaN-BPSK-23095-1@11-15kHz-30-1000--56.75--13-PASS



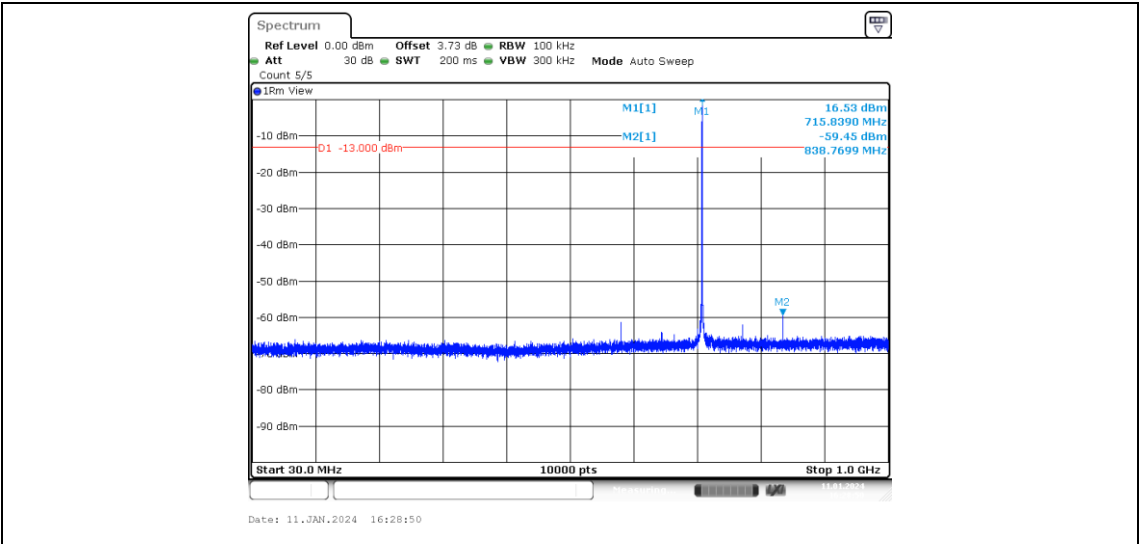
Band12-Stand-Alone-NaN-BPSK-23095-1@11-15kHz-1000-10000--43.84--13-PASS



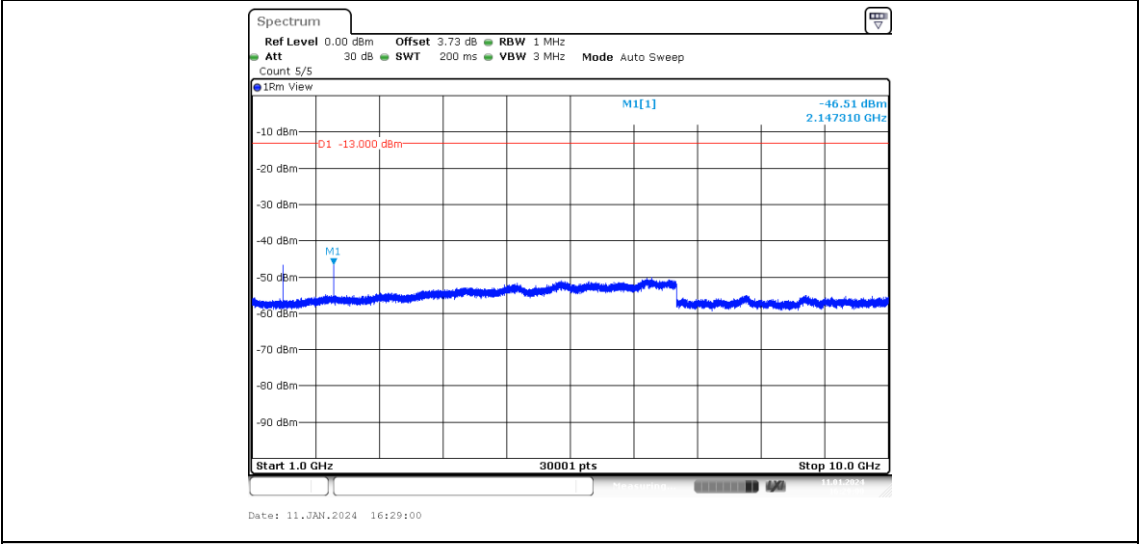
Band12-Stand-Alone-NaN-BPSK-23179-1@0-15kHz-0.009-0.15--67.12--33-PASS



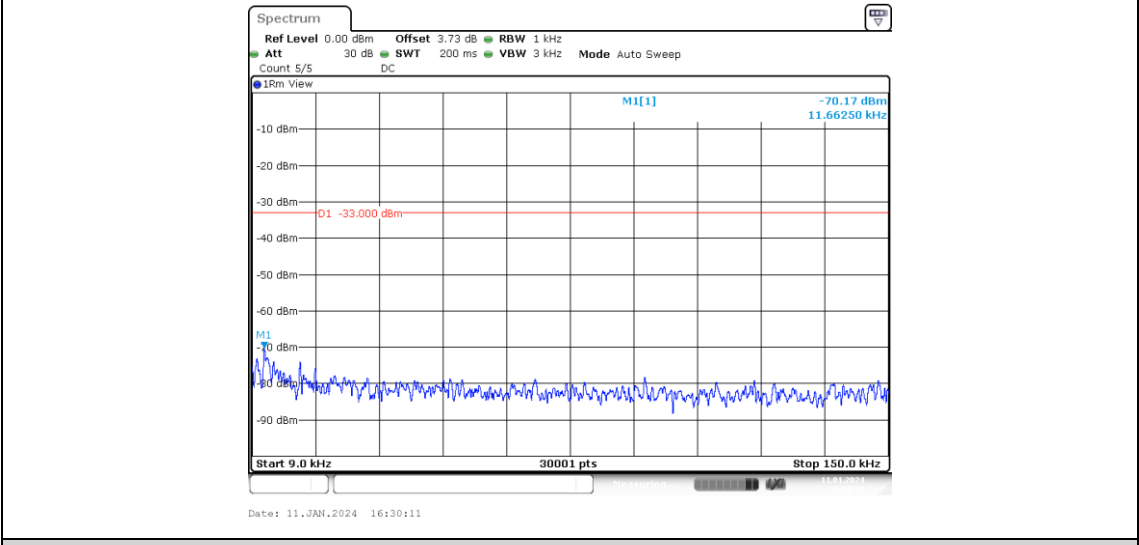
Band12-Stand-Alone-NaN-BPSK-23179-1@0-15kHz-0.15-30--75.59--23-PASS



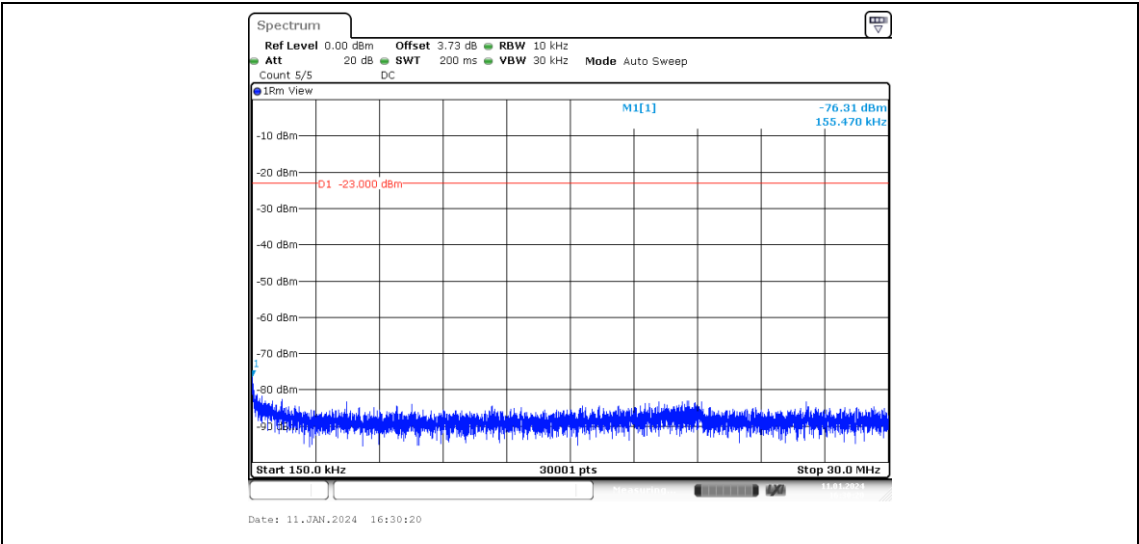
Band12-Stand-Alone-NaN-BPSK-23179-1@0-15kHz-30-1000--59.45--13-PASS



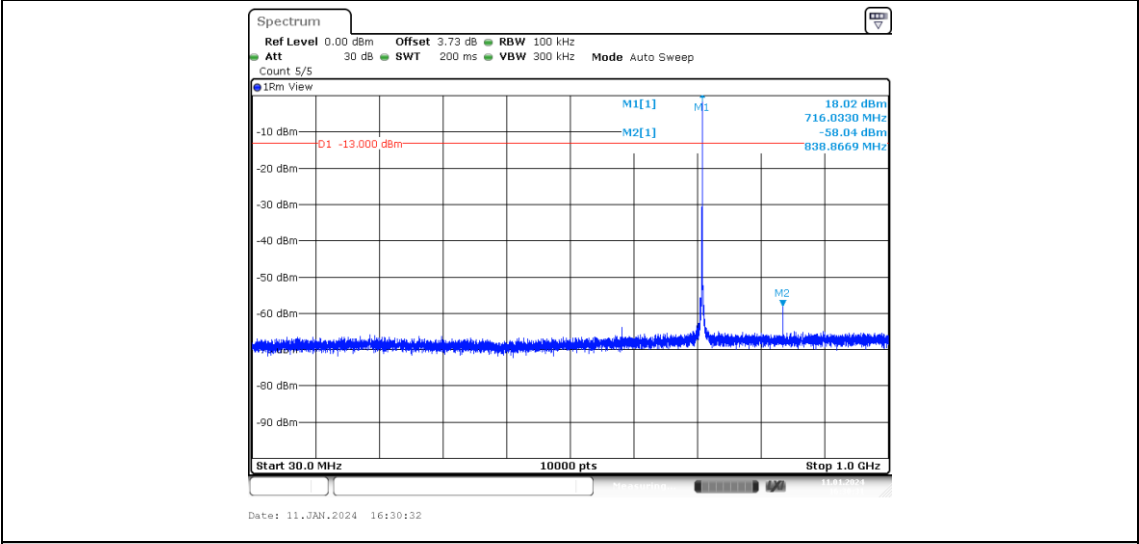
Band12-Stand-Alone-NaN-BPSK-23179-1@0-15kHz-1000-10000--46.51--13-PASS



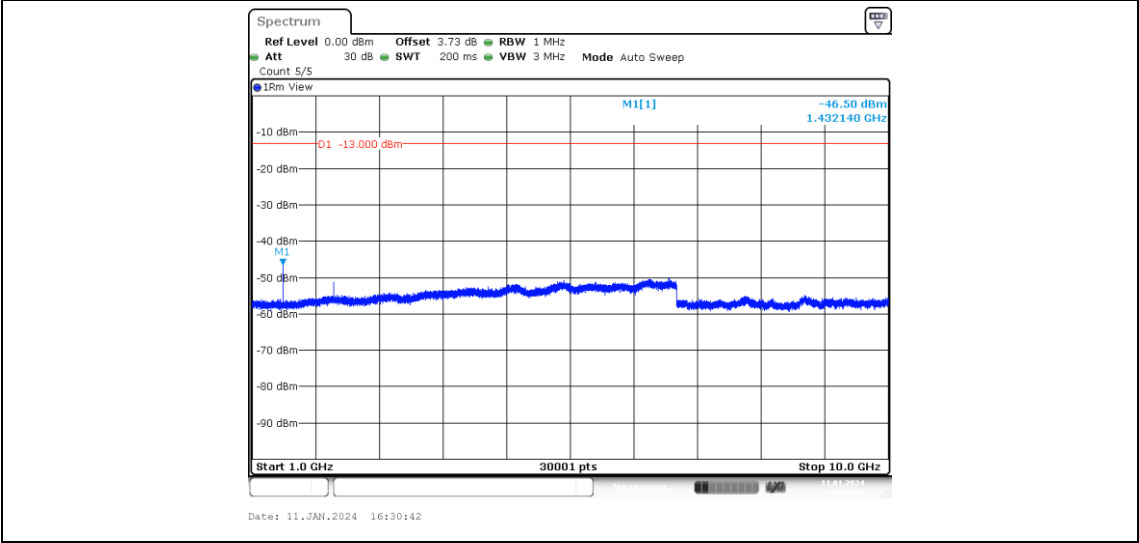
Band12-Stand-Alone-NaN-BPSK-23179-1@11-15kHz-0.009-0.15--70.17--33-PASS



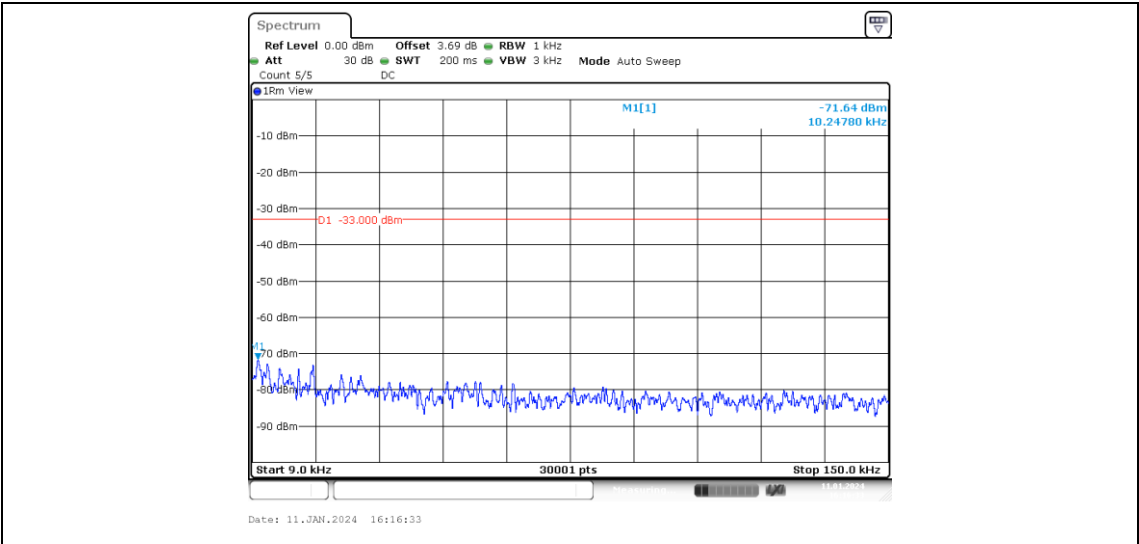
Band12-Stand-Alone-NaN-BPSK-23179-1@11-15kHz-0.15-30--76.31--23-PASS



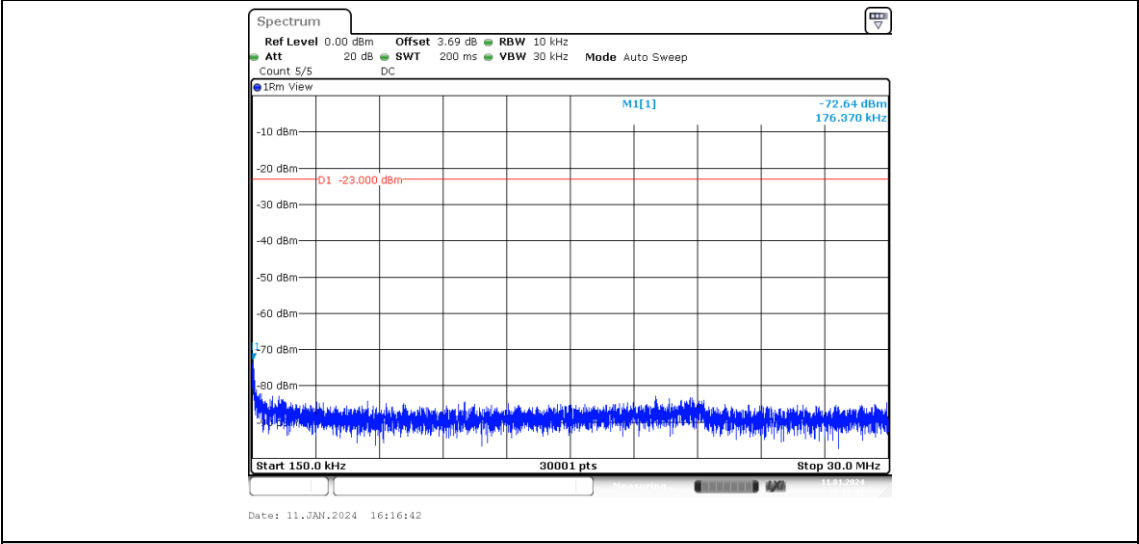
Band12-Stand-Alone-NaN-BPSK-23179-1@11-15kHz-30-1000--58.04--13-PASS



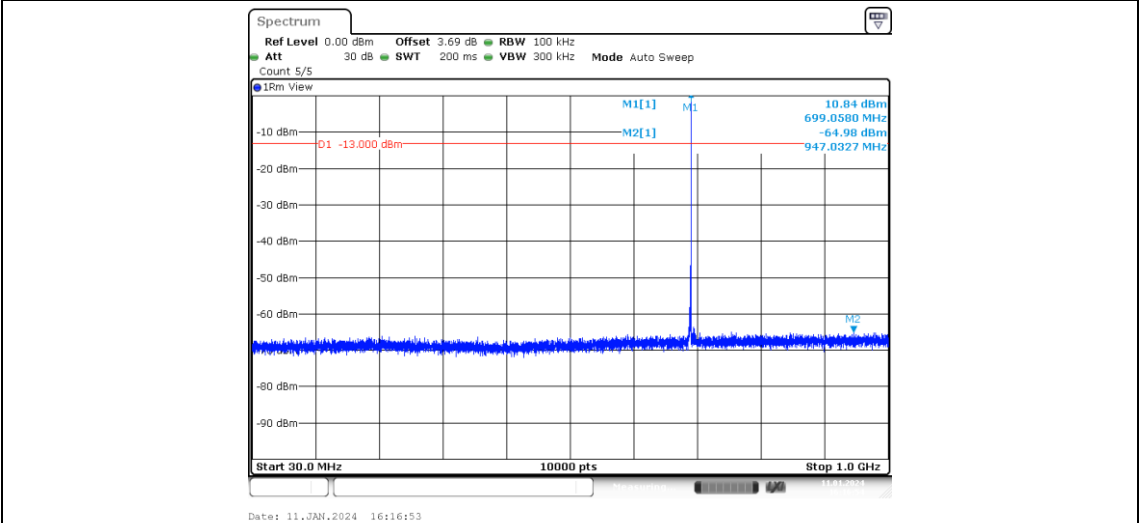
Band12-Stand-Alone-NaN-BPSK-23179-1@11-15kHz-1000-10000--46.5--13-PASS



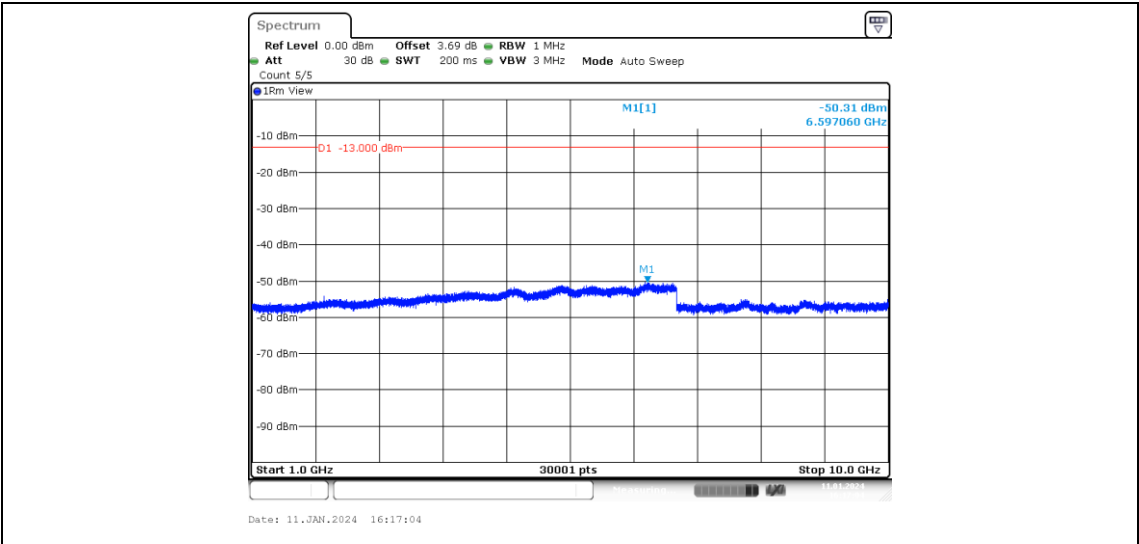
Band12-Stand-Alone-NaN-QPSK-23011-12@0-15kHz-0.009-0.15--71.64--33-PASS



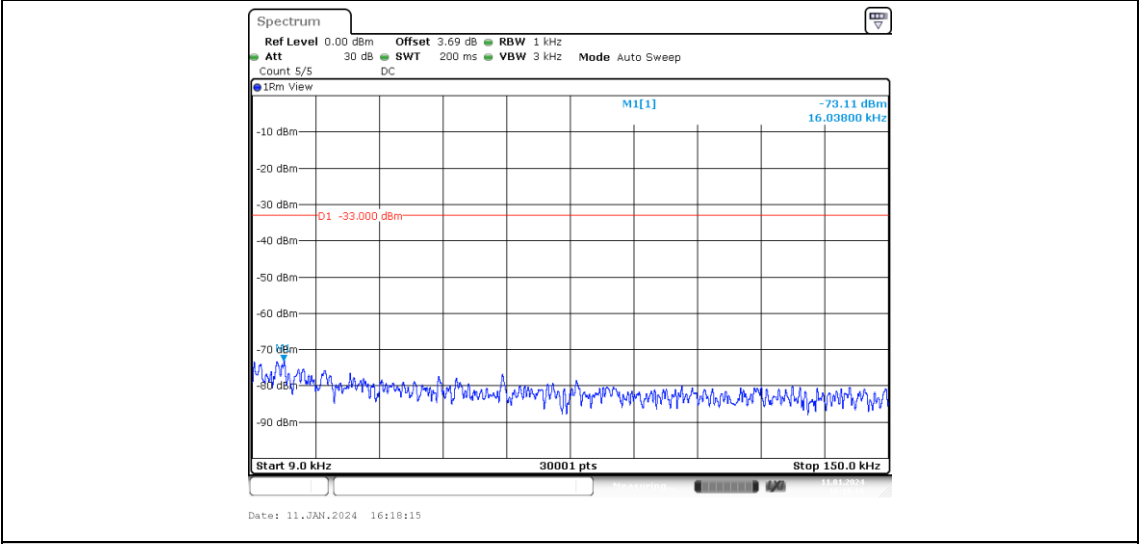
Band12-Stand-Alone-NaN-QPSK-23011-12@0-15kHz-0.15-30--72.64--23-PASS



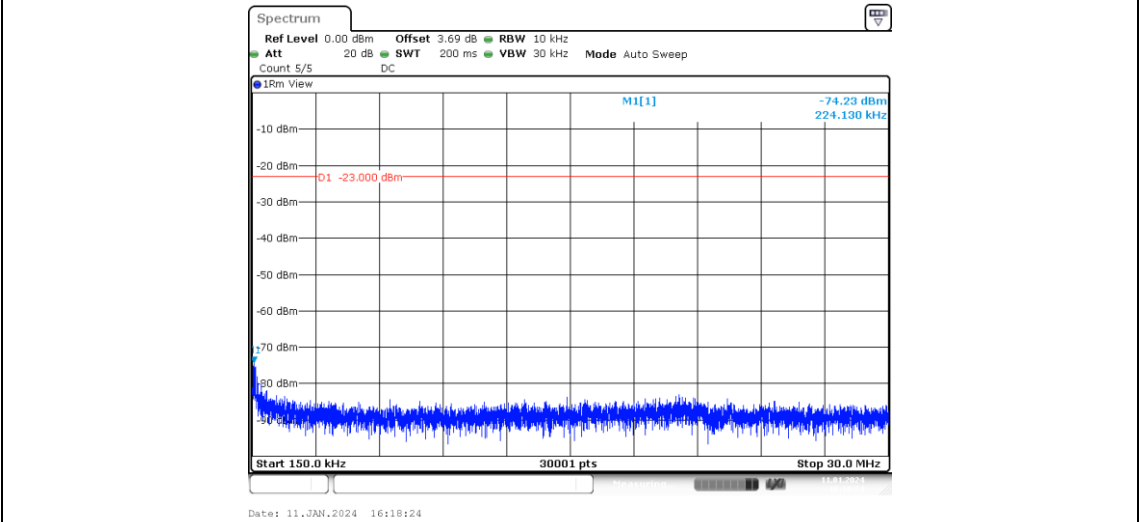
Band12-Stand-Alone-NaN-QPSK-23011-12@0-15kHz-30-1000--64.98--13-PASS



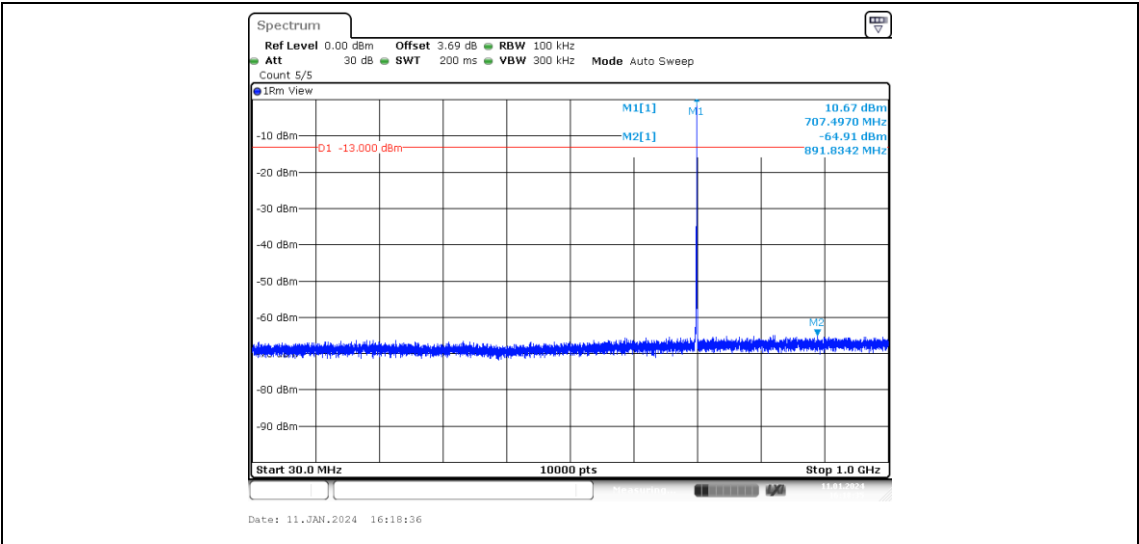
Band12-Stand-Alone-NaN-QPSK-23011-12@0-15kHz-1000-10000--50.31--13-PASS



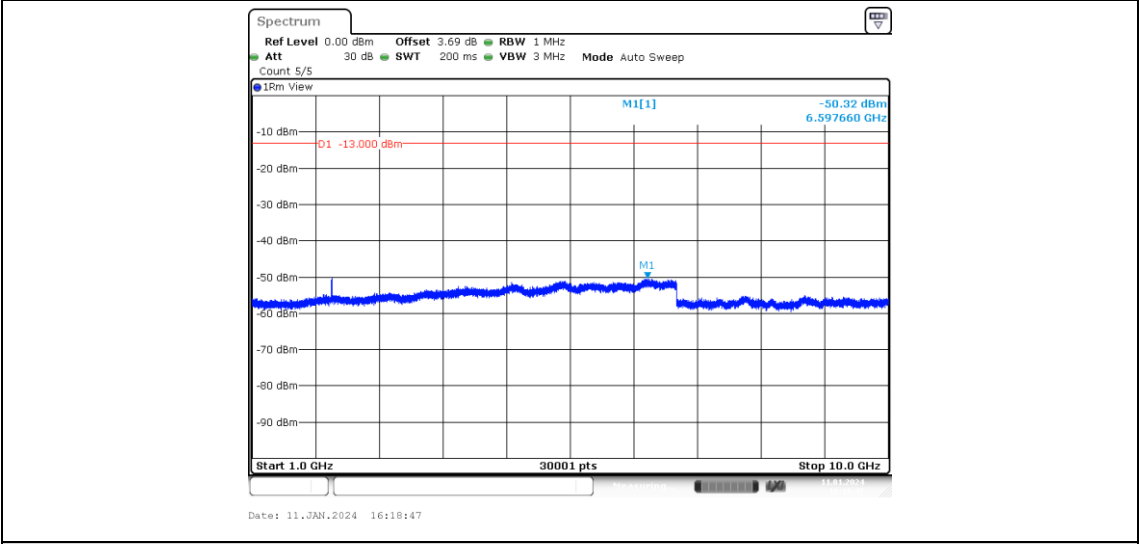
Band12-Stand-Alone-NaN-QPSK-23095-12@0-15kHz-0.009-0.15--73.11--33-PASS



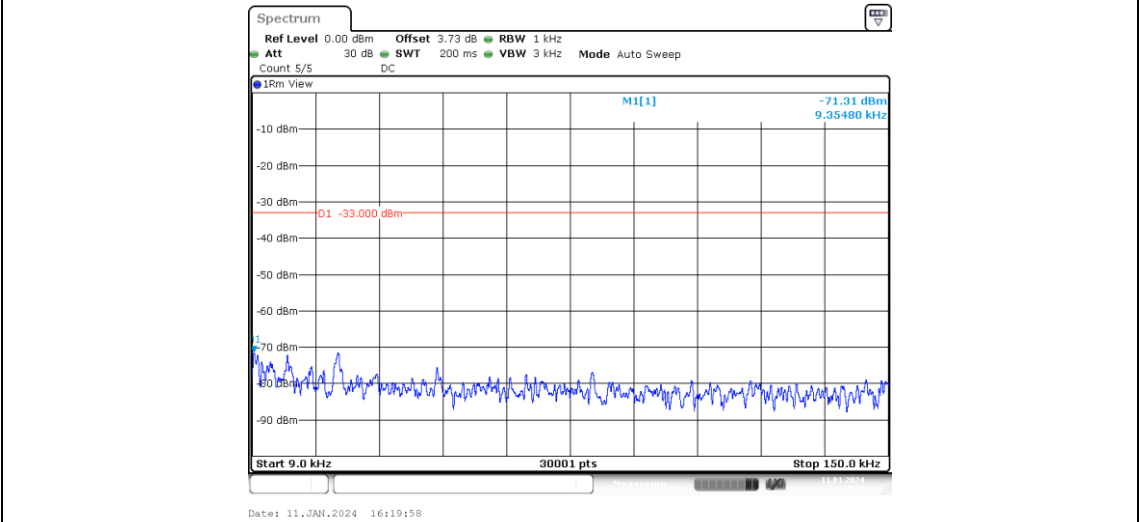
Band12-Stand-Alone-NaN-QPSK-23095-12@0-15kHz-0.15-30--74.23--23-PASS



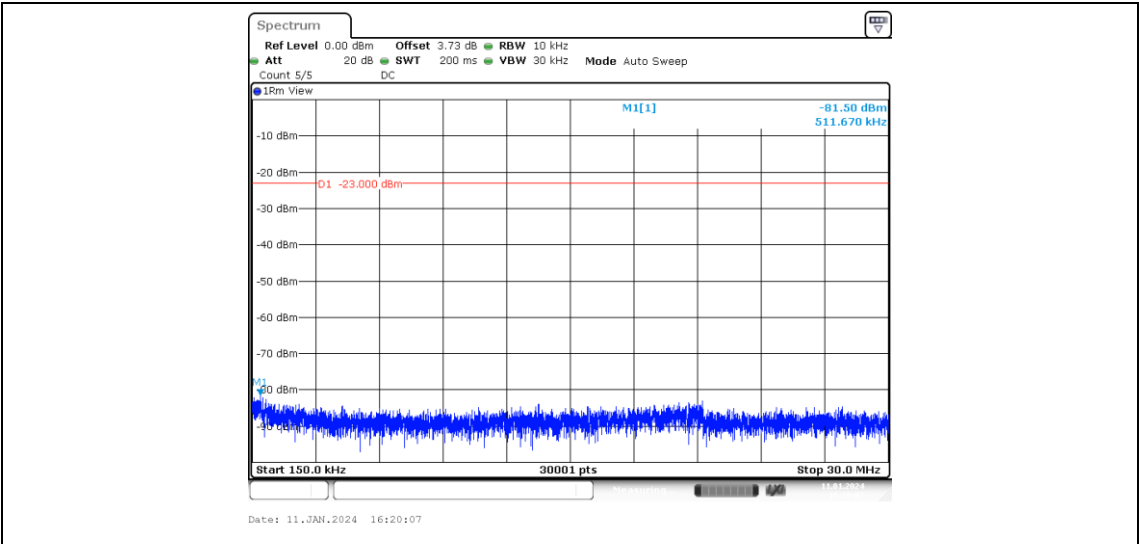
Band12-Stand-Alone-NaN-QPSK-23095-12@0-15kHz-30-1000--64.91--13-PASS



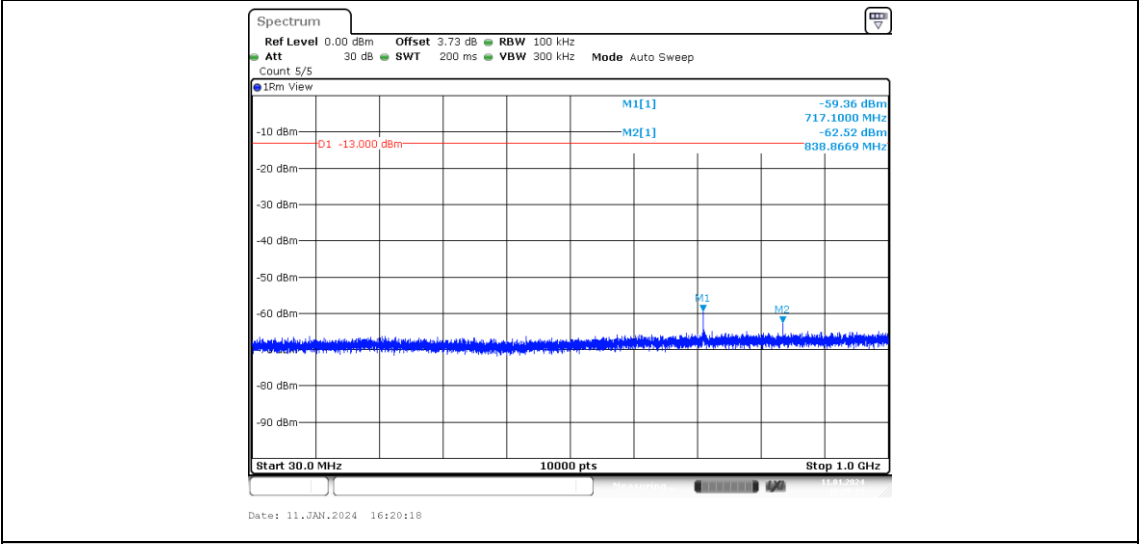
Band12-Stand-Alone-NaN-QPSK-23095-12@0-15kHz-1000-10000--50.32--13-PASS



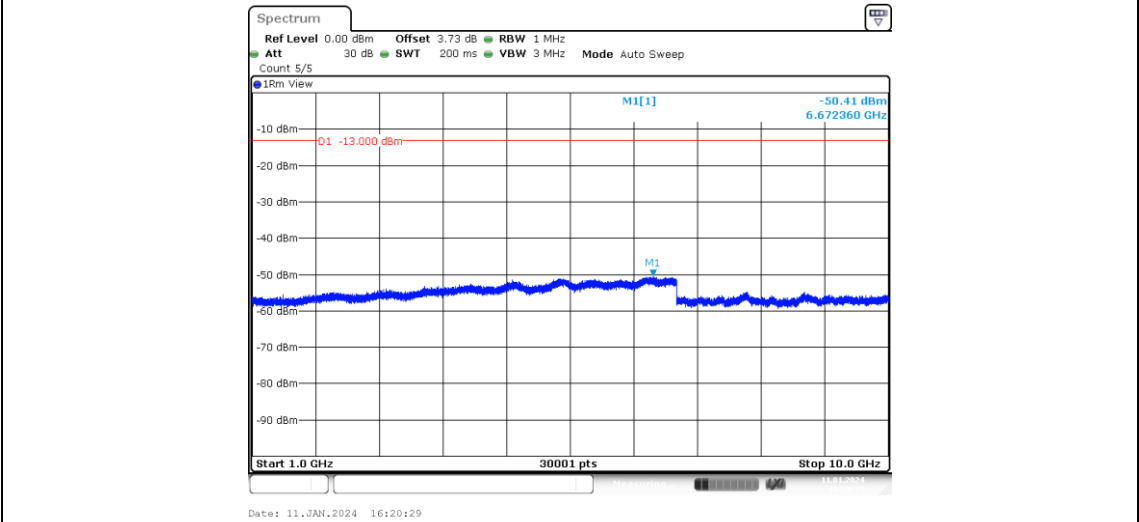
Band12-Stand-Alone-NaN-QPSK-23179-12@0-15kHz-0.009-0.15--71.31--33-PASS



Band12-Stand-Alone-NaN-QPSK-23179-12@0-15kHz-0.15-30--81.5--23-PASS



Band12-Stand-Alone-NaN-QPSK-23179-12@0-15kHz-30-1000--62.52--13-PASS



Band12-Stand-Alone-NaN-QPSK-23179-12@0-15kHz-1000-10000--50.41--13-PASS

Appendix F: Frequency Stability for NB1

Test Result

Voltage												
Band	OpMod e	SCS	Band width	Modul ation	Cha nnel	To ne s	Volt age [Vd c]	Tempe rature (°C)	Devi ation (Hz)	Devi ation (ppm)	Li mit (pp m)	Ver dict
Ban d12	Stand- Alone	3.75 kHz	NaN	QPS K	230 95	1 @ 0	VH	NT	10.9 7	0.015 505	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QPS K	230 95	1 @ 0	VL	NT	10.4 4	0.014 756	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QPS K	230 95	1 @ 0	VN	NT	9.76	0.013 795	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QPS K	230 95	1 @ 47	VH	NT	12.2 0	0.017 244	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QPS K	230 95	1 @ 47	VL	NT	12.0 0	0.016 961	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QPS K	230 95	1 @ 47	VN	NT	8.30	0.011 731	±2. 5	PA SS
Ban d12	Stand- Alone	15k Hz	NaN	QPS K	230 95	1 @ 0	VH	NT	12.7 6	0.018 035	±2. 5	PA SS
Ban d12	Stand- Alone	15k Hz	NaN	QPS K	230 95	1 @ 0	VL	NT	10.6 6	0.015 067	±2. 5	PA SS
Ban d12	Stand- Alone	15k Hz	NaN	QPS K	230 95	1 @ 0	VN	NT	-13.1 2	-0.01 8544	±2. 5	PA SS
Ban d12	Stand- Alone	15k Hz	NaN	QPS K	230 95	1 @1 1	VH	NT	15.9 4	0.022 530	±2. 5	PA SS
Ban d12	Stand- Alone	15k Hz	NaN	QPS K	230 95	1 @1 1	VL	NT	16.2 6	0.022 982	±2. 5	PA SS
Ban	Stand-	15k	NaN	QPS	230	1	VN	NT	-14.1	-0.02	±2.	PA

d12	Alone	Hz		K	95	@1 1			9	0057	5	SS
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Temperature												
Band	OpMod e	Band width	Modul ation	Cha nnel	To ne s	SC S	Volt age [Vd c]	Tempe rature (°C)	Devi ation (Hz)	Devia tion (ppm)	Li mit (pp m)	Ver dict
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	50	12.8 5	0.018 163	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	-20	10.0 9	0.014 261	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	-10	11.0 6	0.015 633	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	0	9.21	0.013 018	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	10	15.0 5	0.021 272	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	20	-21.4 6	-0.03 0332	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	30	10.8 3	0.015 307	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	40	-18.0 8	-0.02 5555	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 0	NV	-30	10.2 4	0.014 473	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	30	15.6 5	0.022 120	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	20	8.60	0.012 155	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09	1 @	NV	10	-15.5 8	-0.02 2021	±2. 5	PA SS

					5	47						
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	0	-13.9 5	-0.01 9717	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	-10	-28.4 2	-0.04 0170	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	40	9.67	0.013 668	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	-30	-14.7 8	-0.02 0890	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	50	17.0 5	0.024 099	±2. 5	PA SS
Ban d12	Stand- Alone	3.75 kHz	NaN	QP SK	23 09 5	1 @ 47	NV	-20	-12.9 6	-0.01 8318	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	50	-10.3 4	-0.01 4615	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	-20	10.6 9	0.015 110	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	-10	11.5 3	0.016 297	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	0	12.7 3	0.017 993	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	10	-8.38	-0.01 1845	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	20	-13.6 0	-0.01 9223	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	30	-10.4 6	-0.01 4784	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz z	NaN	QP SK	23 09 5	1 @ 0	NV	40	19.6 6	0.027 788	±2. 5	PA SS

Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @ 0	NV	-30	12.8 2	0.018 120	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	40	-16.9 1	-0.02 3901	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	30	-13.2 5	-0.01 8728	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	20	9.06	0.012 806	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	10	-10.2 6	-0.01 4502	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	0	10.9 4	0.015 463	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	-10	-14.6 5	-0.02 0707	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	-30	-21.3 0	-0.03 0106	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	50	-14.1 9	-0.02 0057	±2. 5	PA SS
Ban d12	Stand- Alone	15kHz	NaN	QP SK	23 09 5	1 @1 1	NV	-20	14.4 2	0.020 382	±2. 5	PA SS