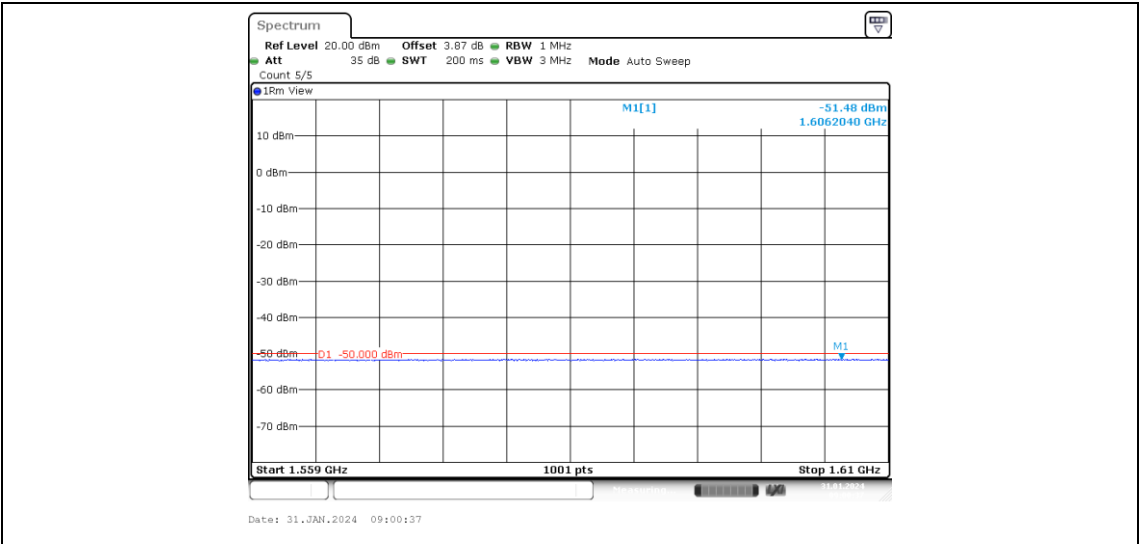
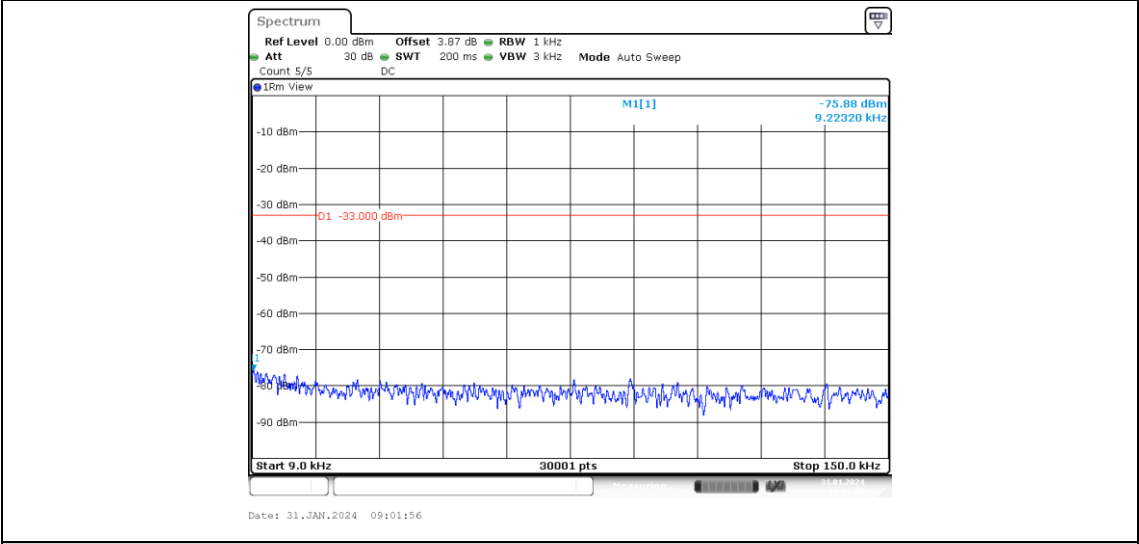
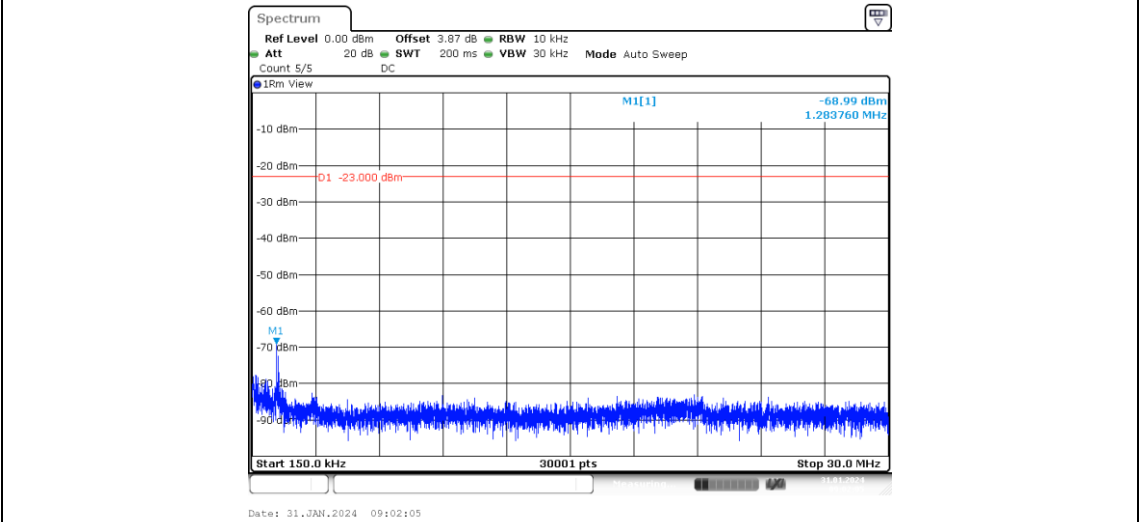




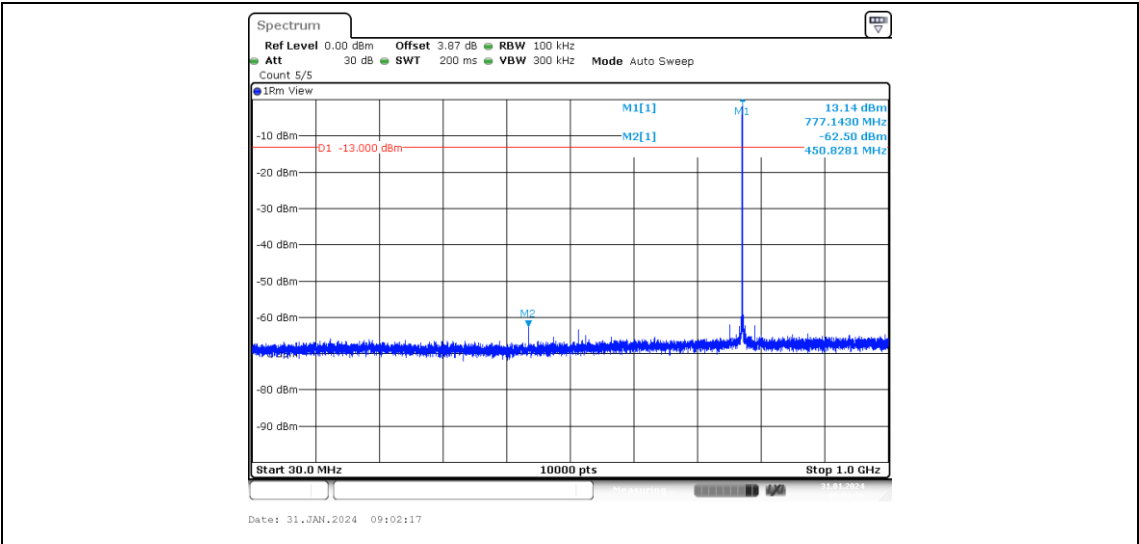
Band13-Stand-Alone-NaN-BPSK-23181-1@0-15kHz-1559-1610--51.48--50-PASS



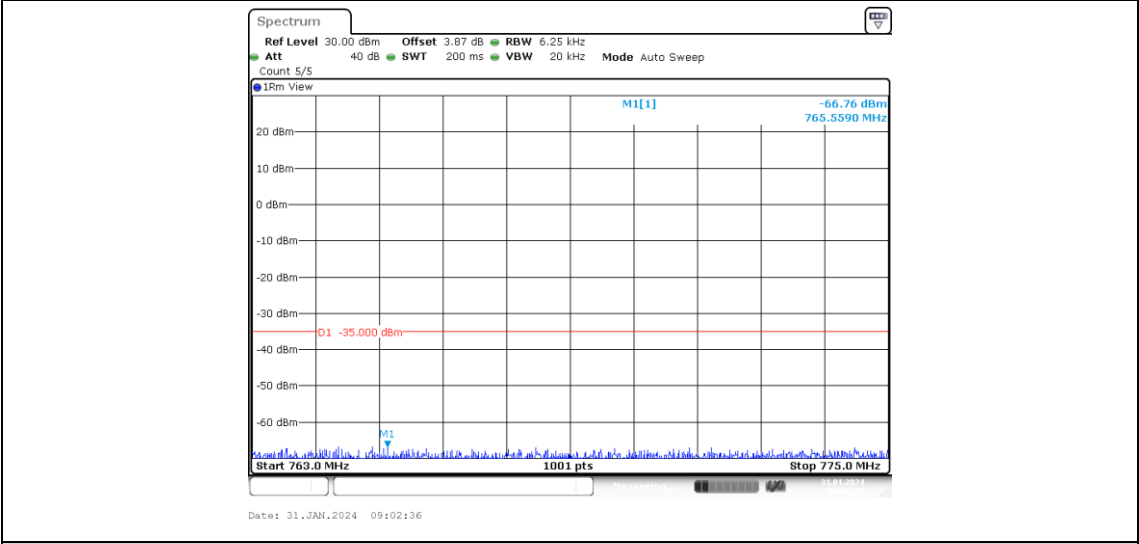
Band13-Stand-Alone-NaN-BPSK-23181-1@11-15kHz-0.009-0.15--75.88--33-PASS



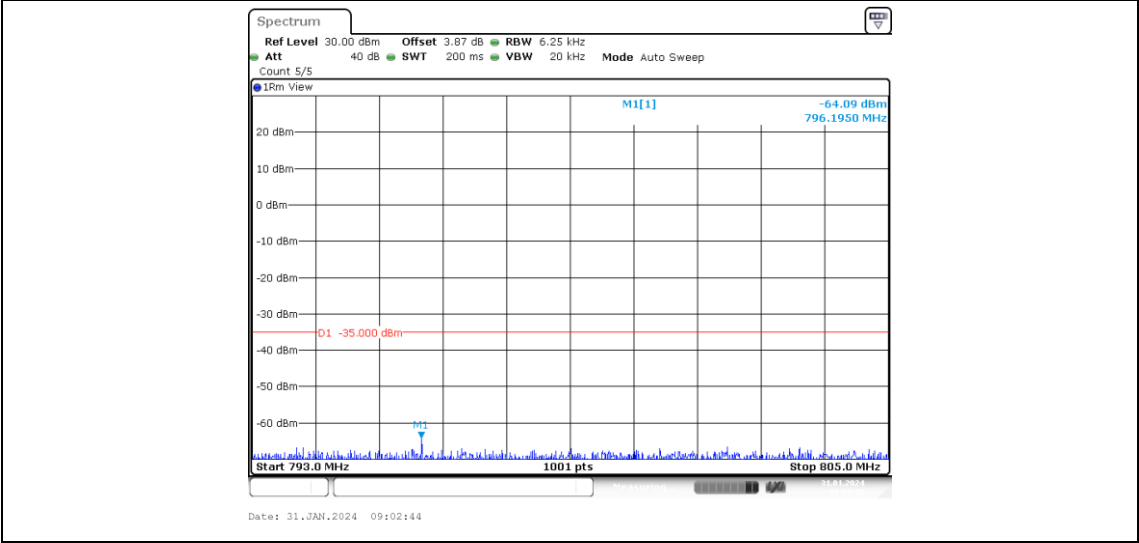
Band13-Stand-Alone-NaN-BPSK-23181-1@11-15kHz-0.15-30--68.99--23-PASS



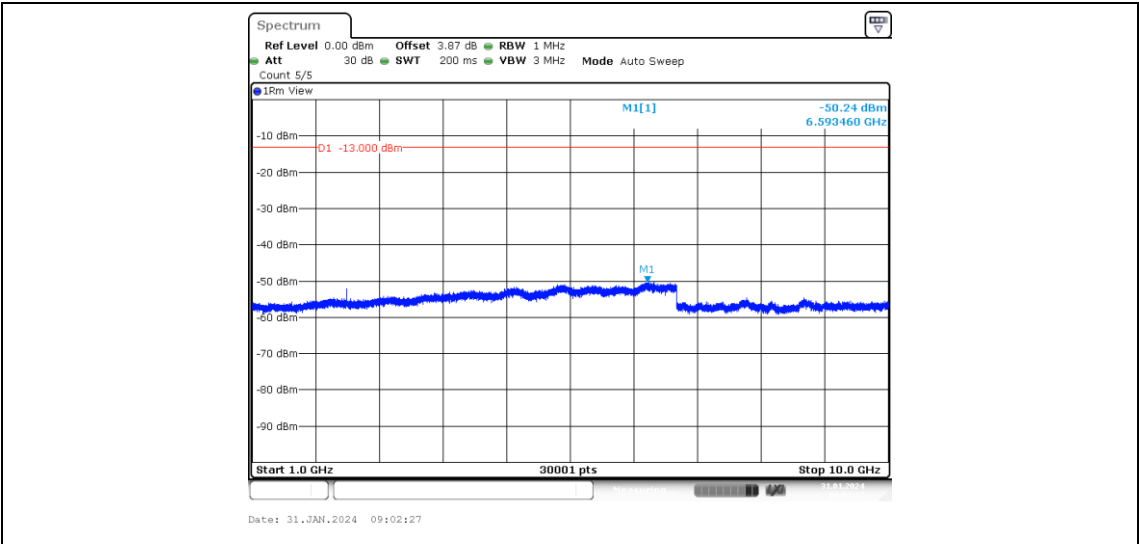
Band13-Stand-Alone-NaN-BPSK-23181-1@11-15kHz-30-1000--62.5--13-PASS



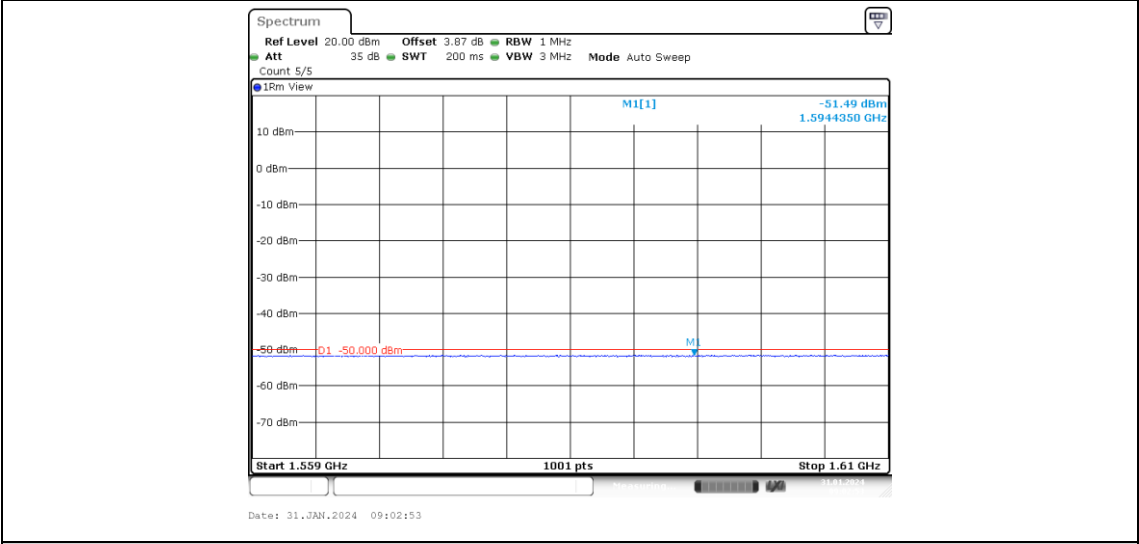
Band13-Stand-Alone-NaN-BPSK-23181-1@11-15kHz-763-775--66.76--35-PASS



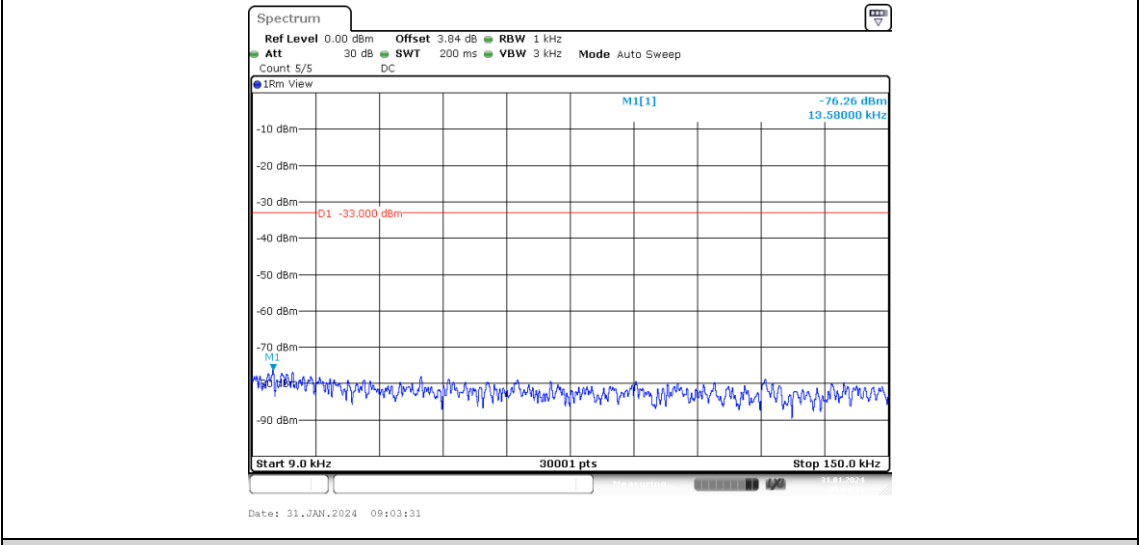
Band13-Stand-Alone-NaN-BPSK-23181-1@11-15kHz-793-805--64.09--35-PASS



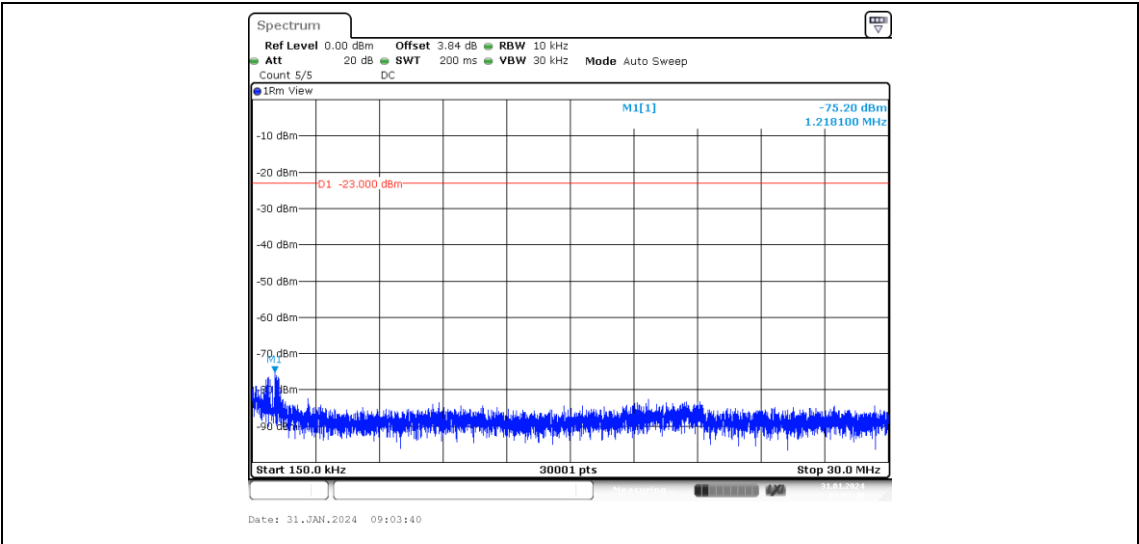
Band13-Stand-Alone-NaN-BPSK-23181-1@11-15kHz-1000-10000--50.24--13-PASS



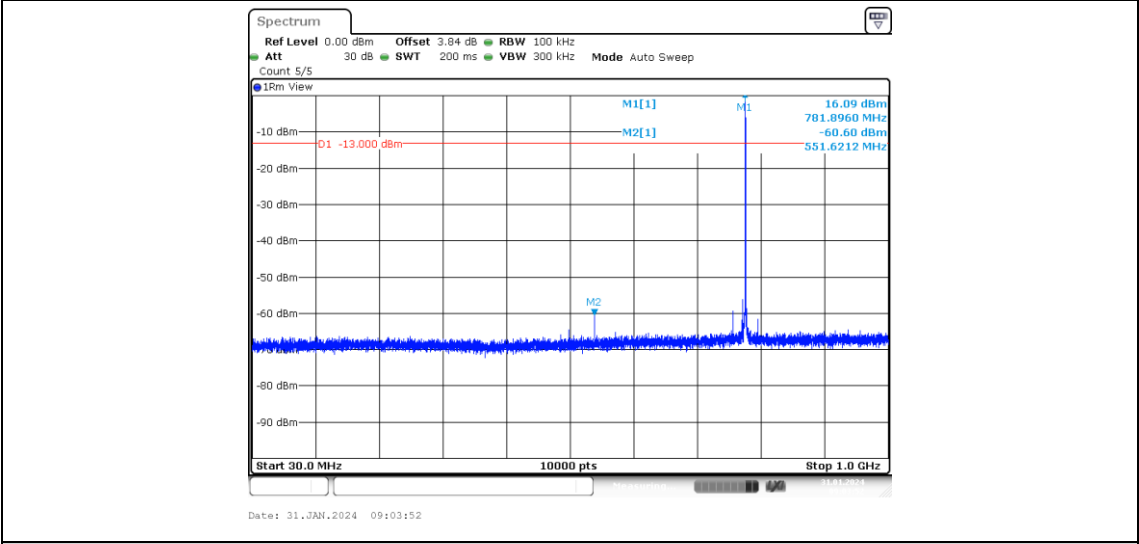
Band13-Stand-Alone-NaN-BPSK-23181-1@11-15kHz-1559-1610--51.49--50-PASS



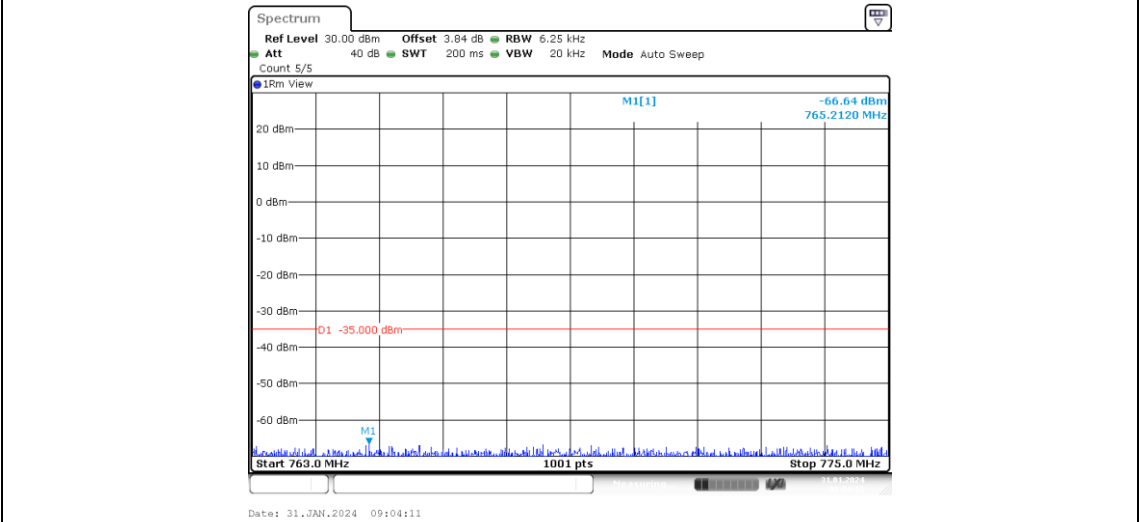
Band13-Stand-Alone-NaN-BPSK-23230-1@0-15kHz-0.009-0.15--76.26--33-PASS



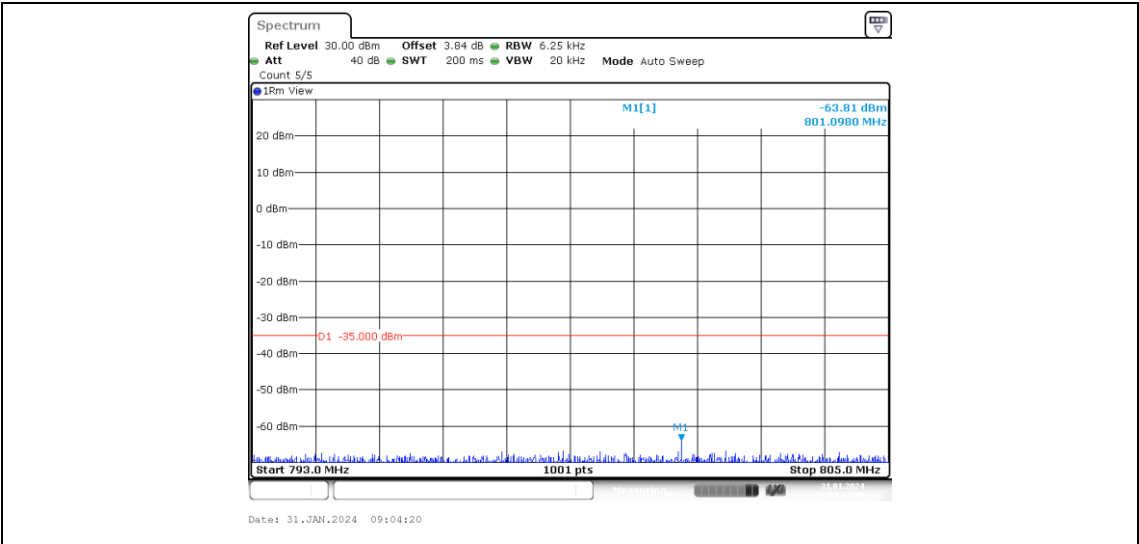
Band13-Stand-Alone-NaN-BPSK-23230-1@0-15kHz-0.15-30--75.2--23-PASS



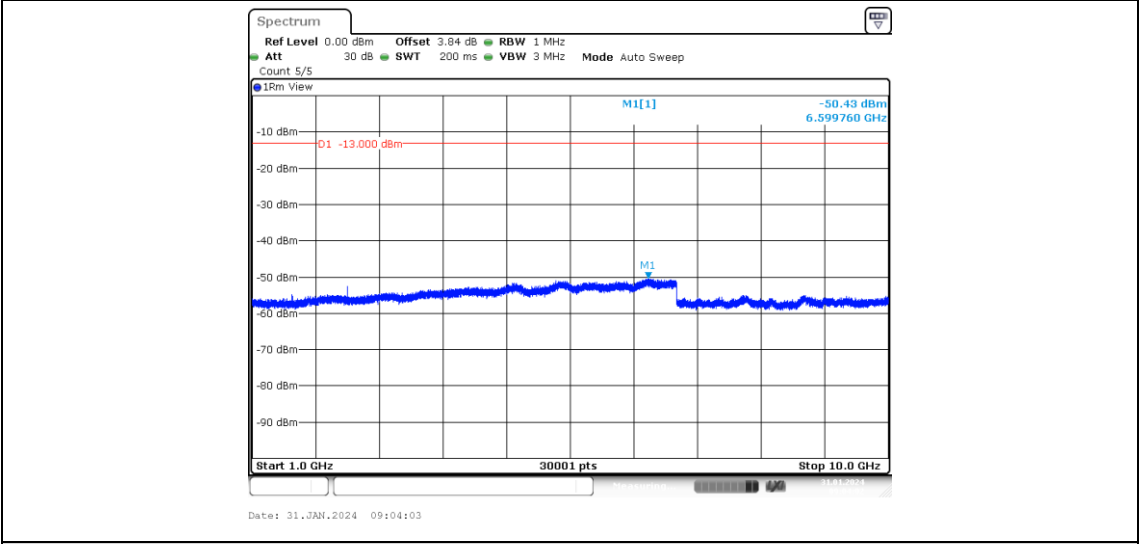
Band13-Stand-Alone-NaN-BPSK-23230-1@0-15kHz-30-1000--60.6--13-PASS



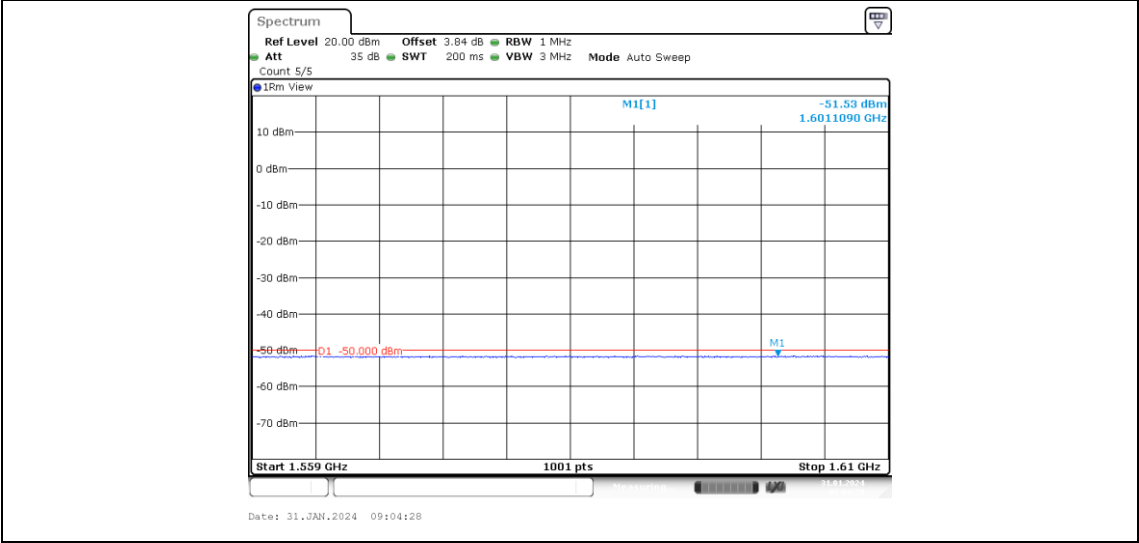
Band13-Stand-Alone-NaN-BPSK-23230-1@0-15kHz-763-775--66.64--35-PASS



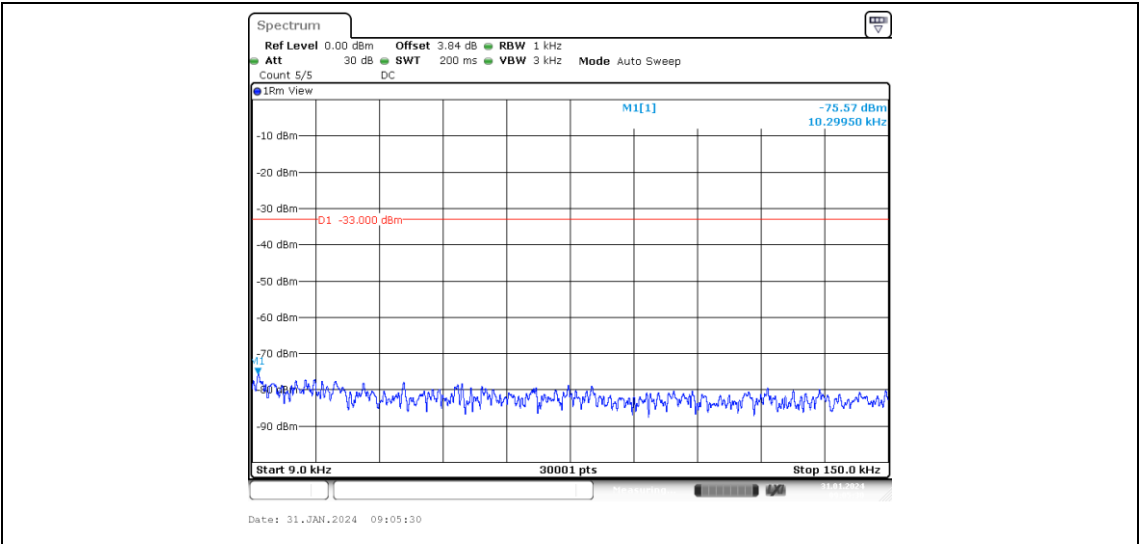
Band13-Stand-Alone-NaN-BPSK-23230-1@0-15kHz-793-805--63.81--35-PASS



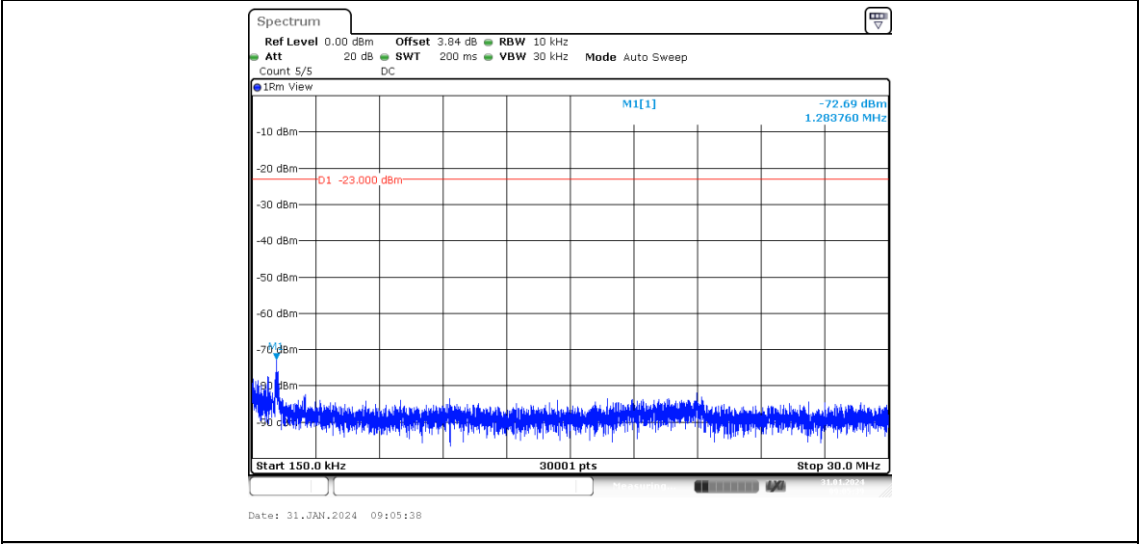
Band13-Stand-Alone-NaN-BPSK-23230-1@0-15kHz-1000-10000--50.43--13-PASS



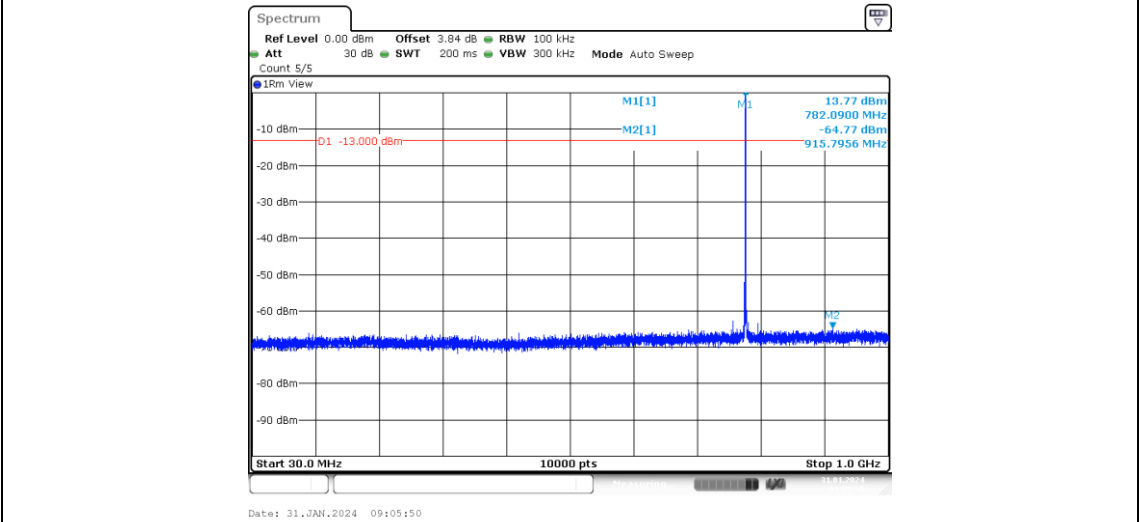
Band13-Stand-Alone-NaN-BPSK-23230-1@0-15kHz-1559-1610--51.53--50-PASS



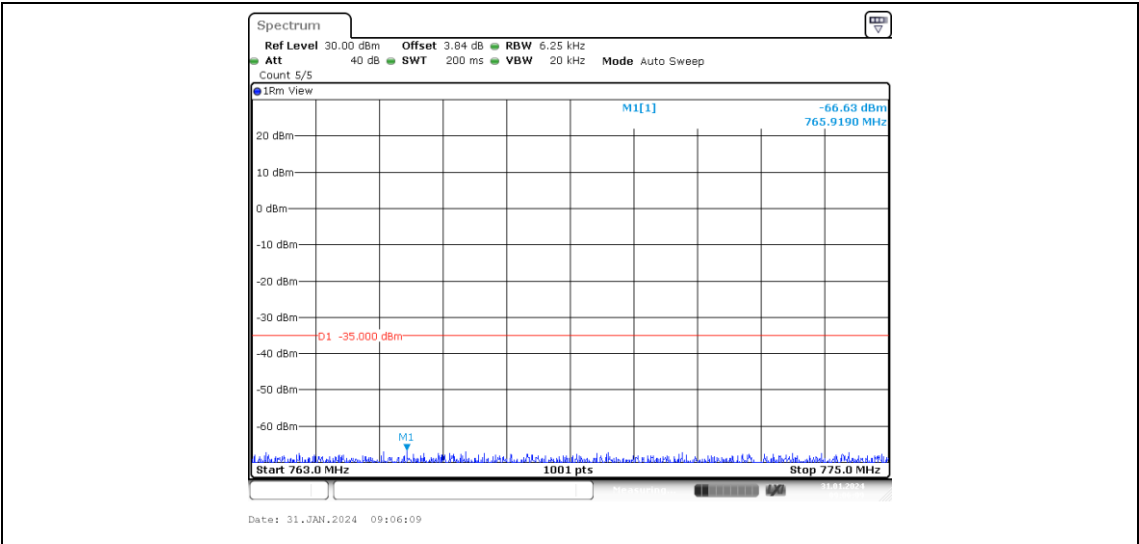
Band13-Stand-Alone-NaN-BPSK-23230-1@11-15kHz-0.009-0.15--75.57--33-PASS



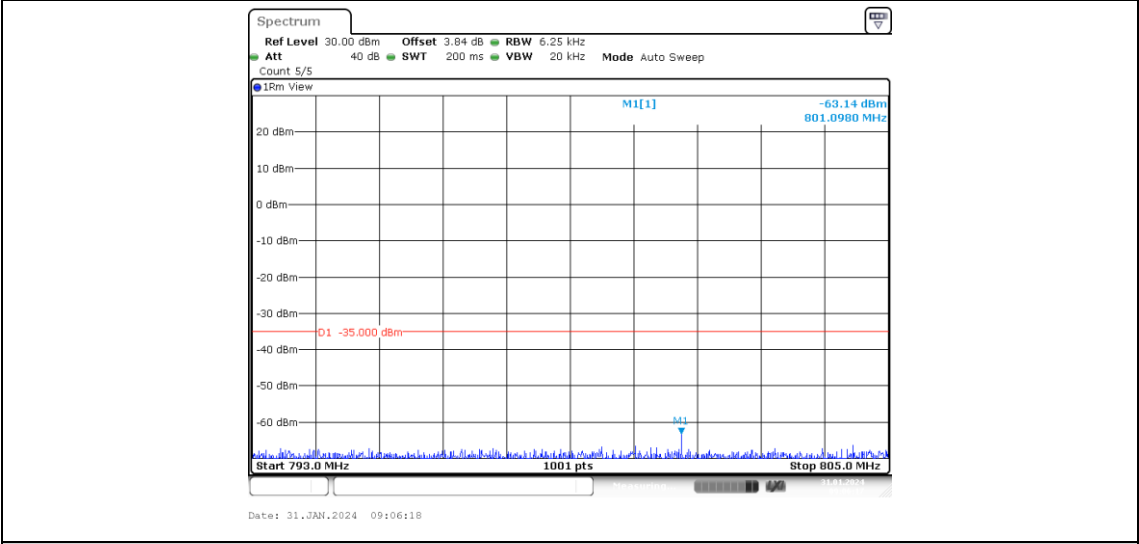
Band13-Stand-Alone-NaN-BPSK-23230-1@11-15kHz-0.15-30--72.69--23-PASS



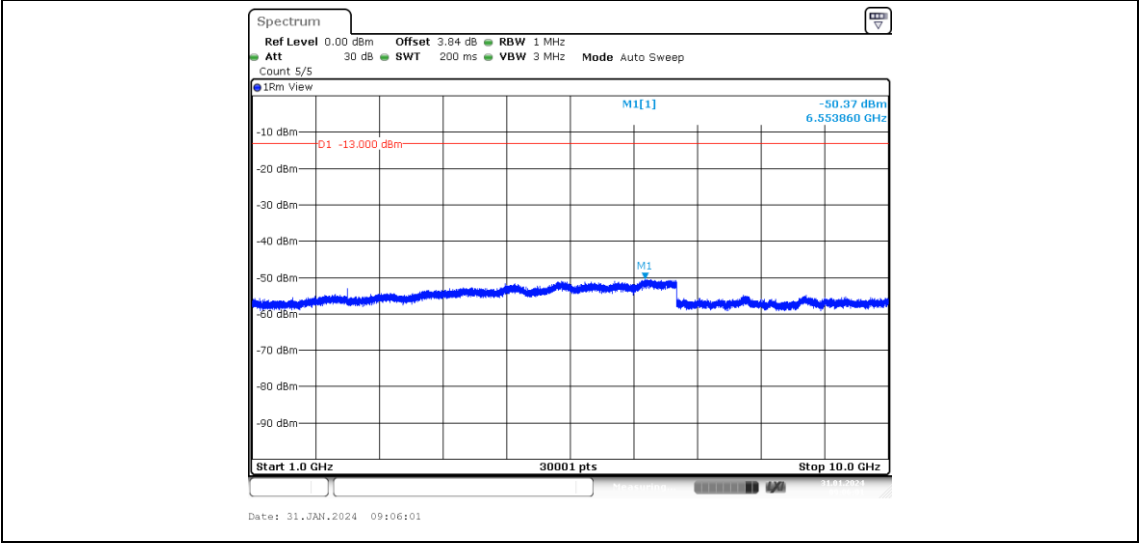
Band13-Stand-Alone-NaN-BPSK-23230-1@11-15kHz-30-1000--64.77--13-PASS



Band13-Stand-Alone-NaN-BPSK-23230-1@11-15kHz-763-775--66.63--35-PASS



Band13-Stand-Alone-NaN-BPSK-23230-1@11-15kHz-793-805--63.14--35-PASS



Band13-Stand-Alone-NaN-BPSK-23230-1@11-15kHz-1000-10000--50.37--13-PASS



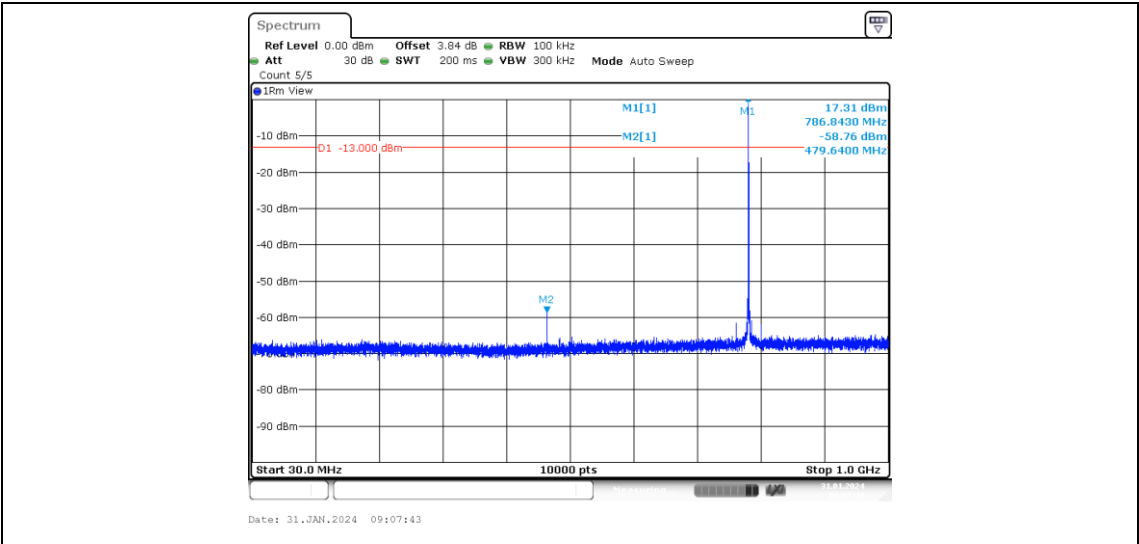
Band13-Stand-Alone-NaN-BPSK-23230-1@11-15kHz-1559-1610--51.46--50-PASS



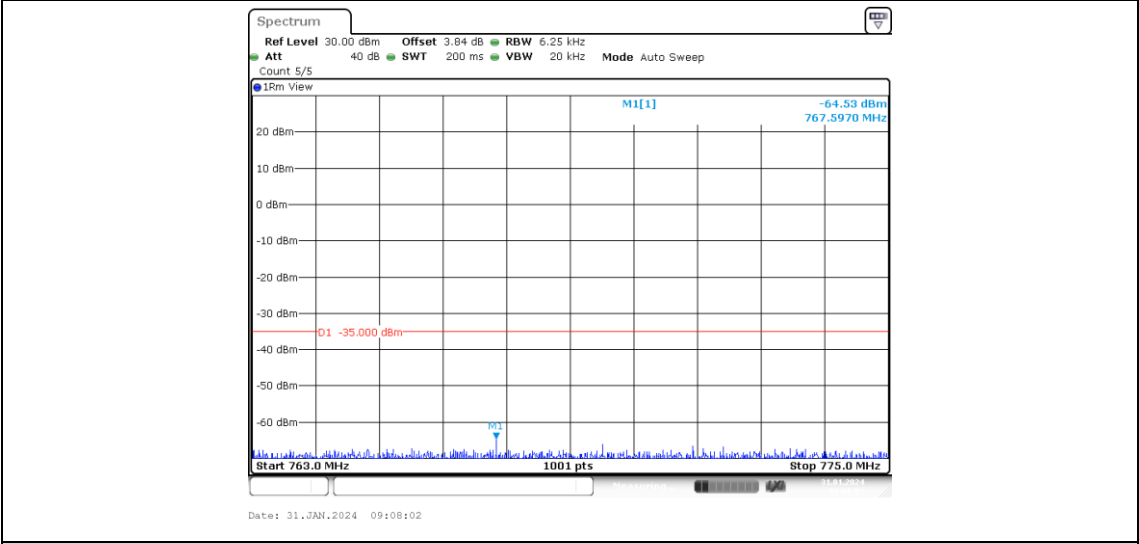
Band13-Stand-Alone-NaN-BPSK-23279-1@0-15kHz-0.009-0.15--75.11--33-PASS



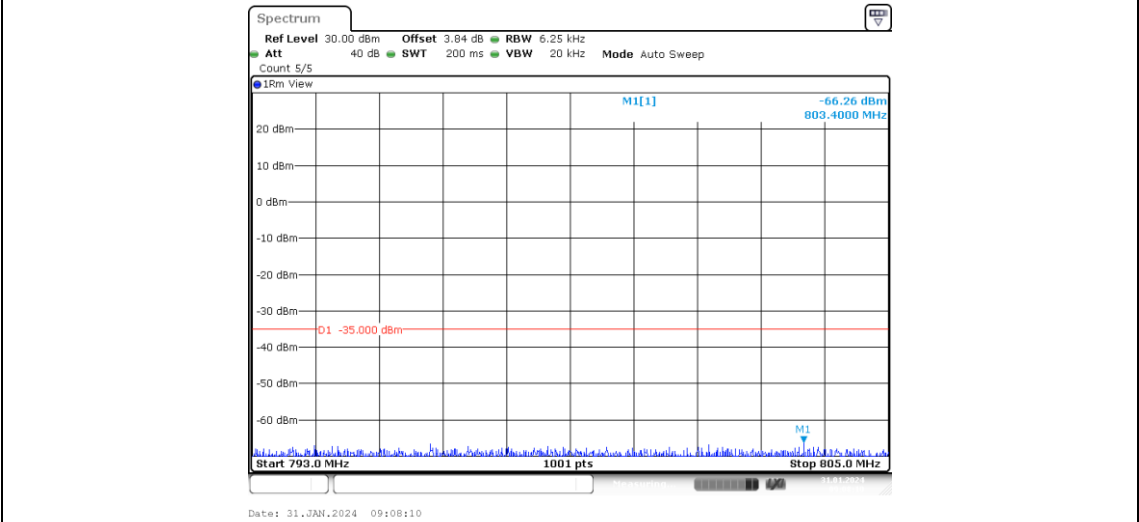
Band13-Stand-Alone-NaN-BPSK-23279-1@0-15kHz-0.15-30--74.21--23-PASS



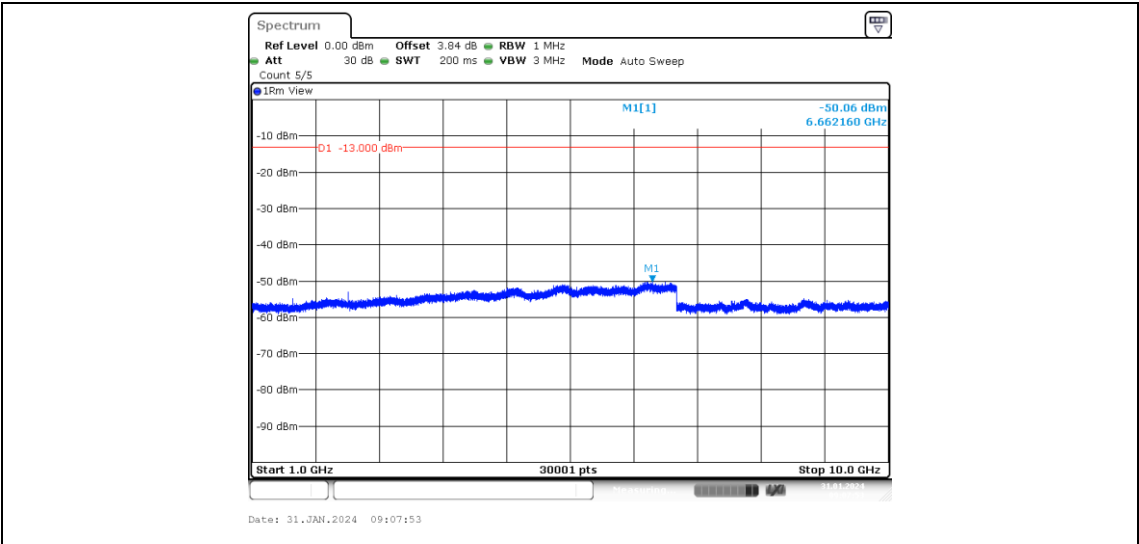
Band13-Stand-Alone-NaN-BPSK-23279-1@0-15kHz-30-1000--58.76--13-PASS



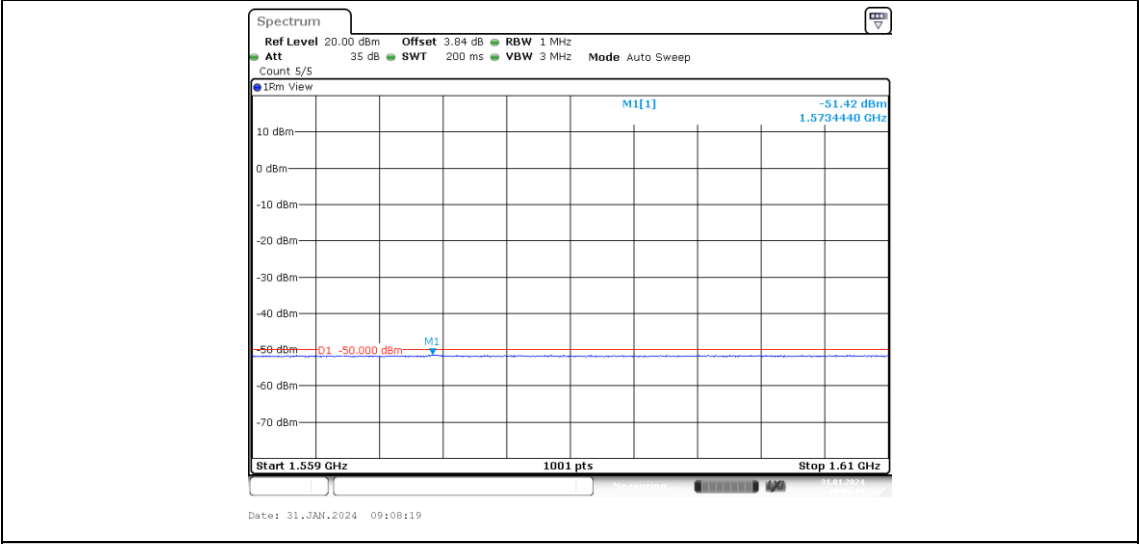
Band13-Stand-Alone-NaN-BPSK-23279-1@0-15kHz-763-775--64.53--35-PASS



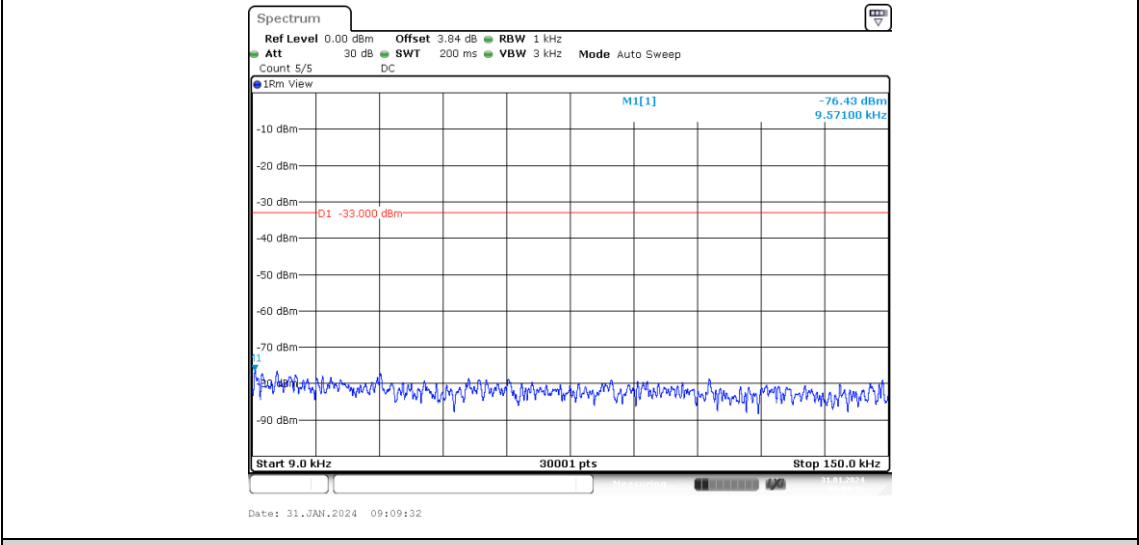
Band13-Stand-Alone-NaN-BPSK-23279-1@0-15kHz-793-805--66.26--35-PASS



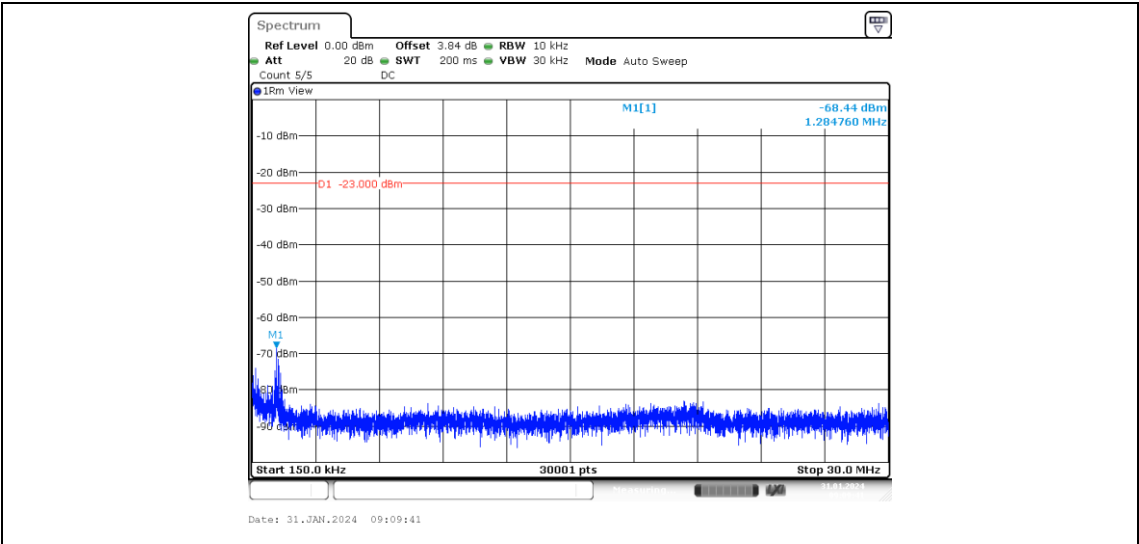
Band13-Stand-Alone-NaN-BPSK-23279-1@0-15kHz-1000-10000--50.06--13-PASS



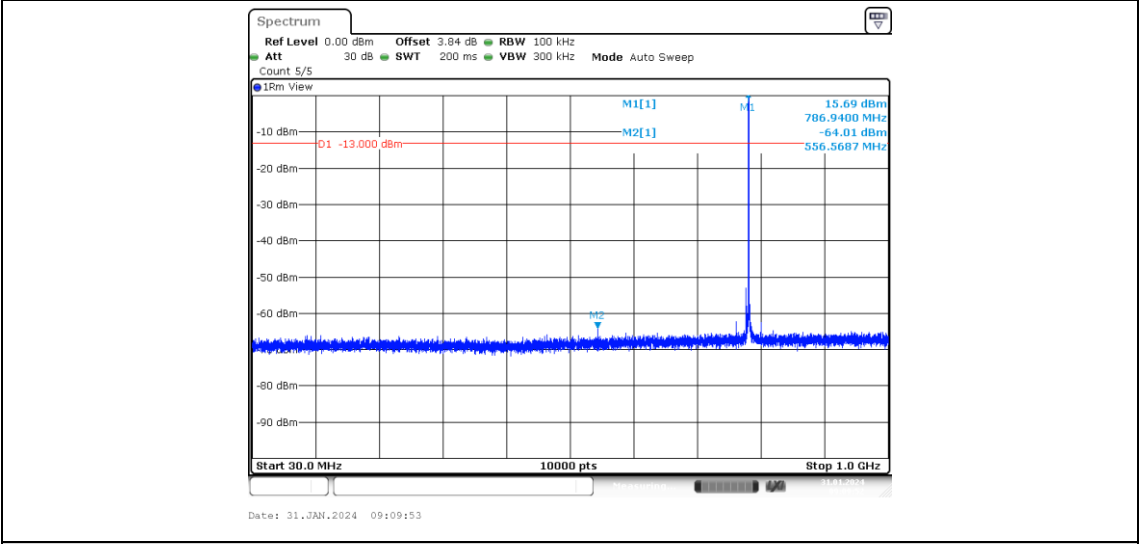
Band13-Stand-Alone-NaN-BPSK-23279-1@0-15kHz-1559-1610--51.42--50-PASS



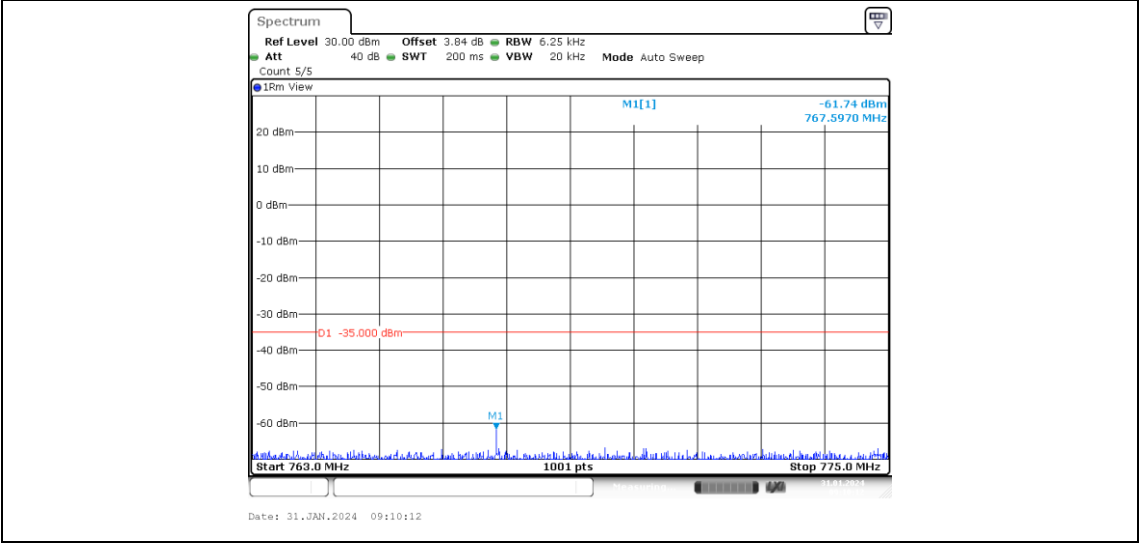
Band13-Stand-Alone-NaN-BPSK-23279-1@11-15kHz-0.009-0.15--76.43--33-PASS



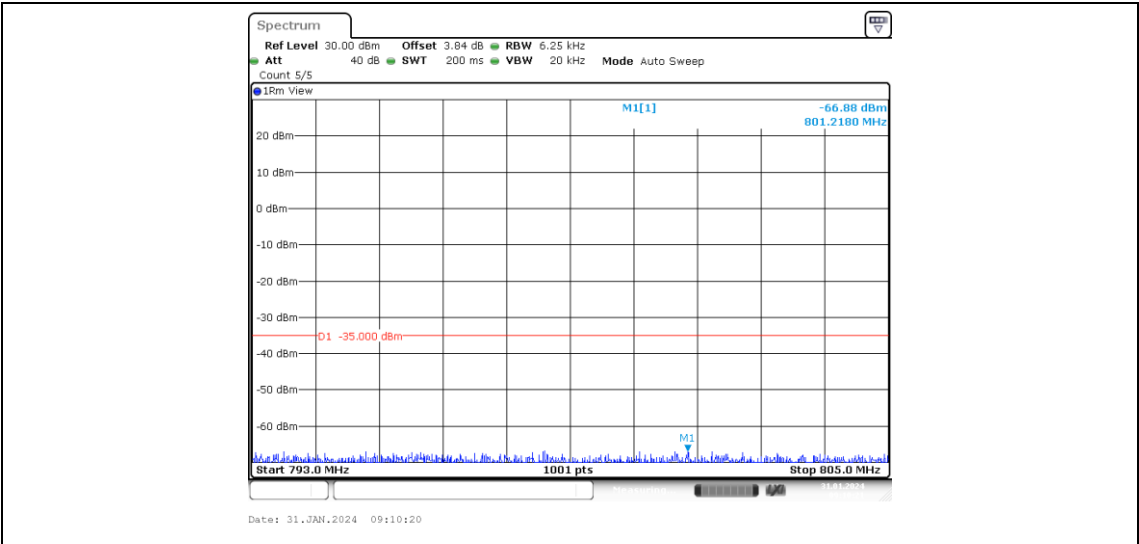
Band13-Stand-Alone-NaN-BPSK-23279-1@11-15kHz-0.15-30--68.44--23-PASS



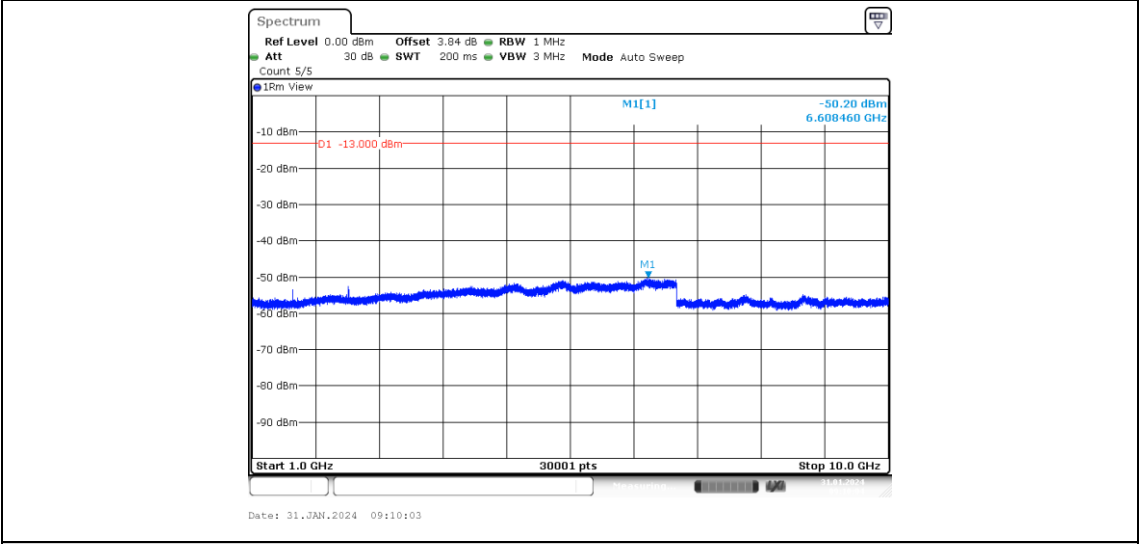
Band13-Stand-Alone-NaN-BPSK-23279-1@11-15kHz-30-1000--64.01--13-PASS



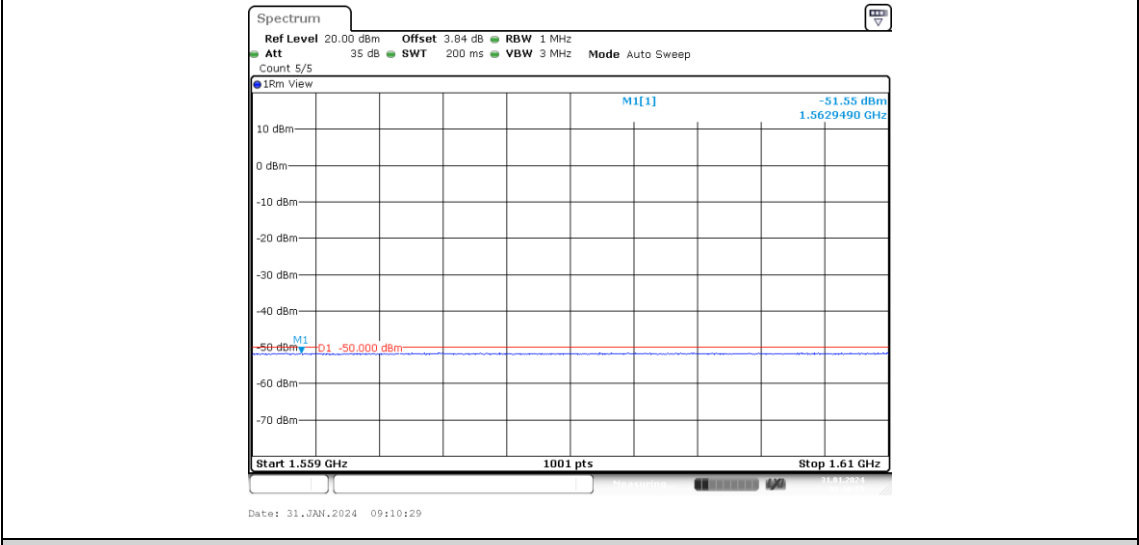
Band13-Stand-Alone-NaN-BPSK-23279-1@11-15kHz-763-775--61.74--35-PASS



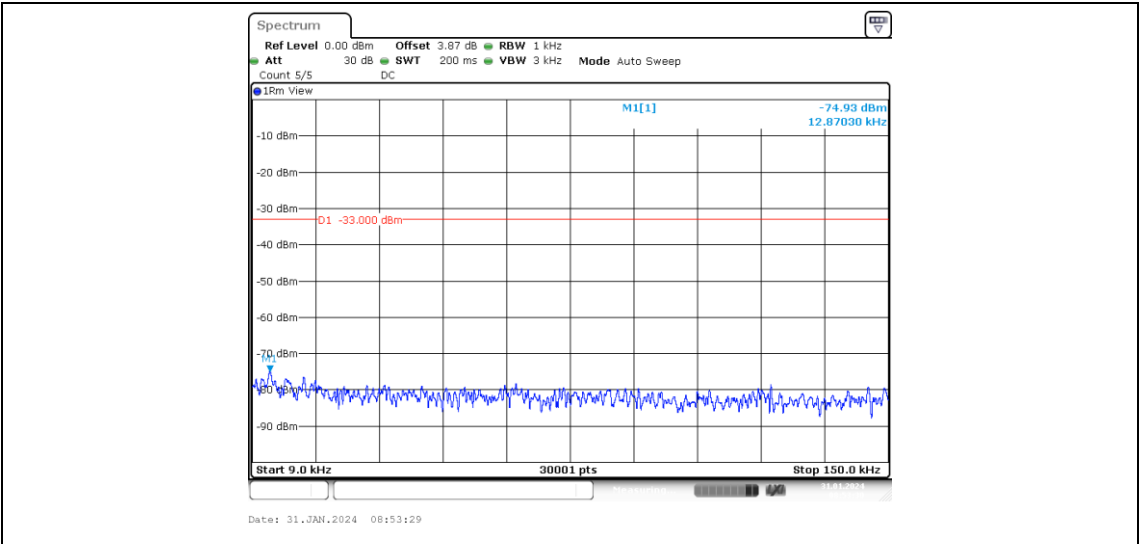
Band13-Stand-Alone-NaN-BPSK-23279-1@11-15kHz-793-805--66.88--35-PASS



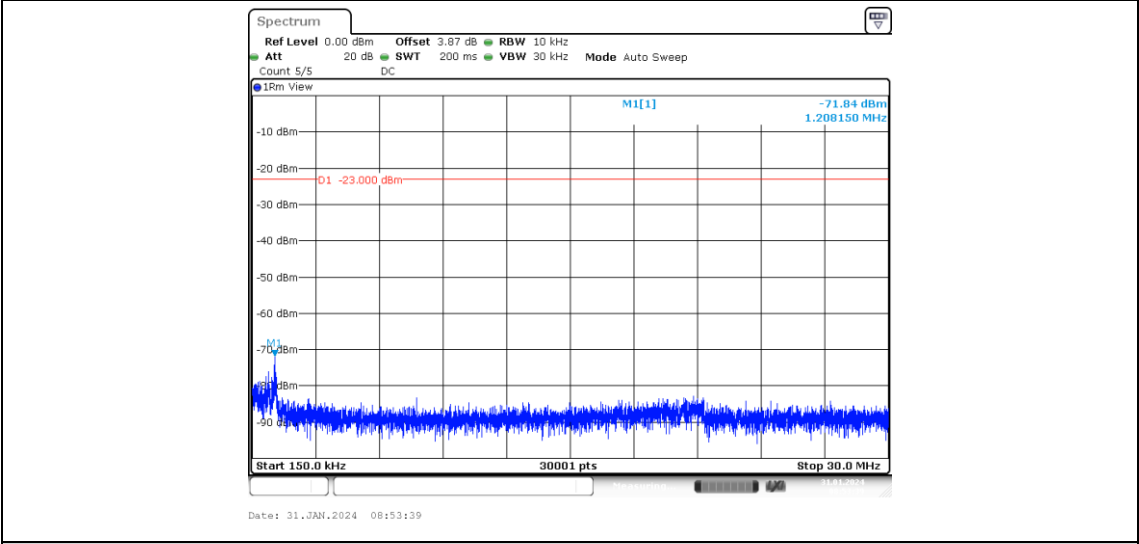
Band13-Stand-Alone-NaN-BPSK-23279-1@11-15kHz-1000-10000--50.2--13-PASS



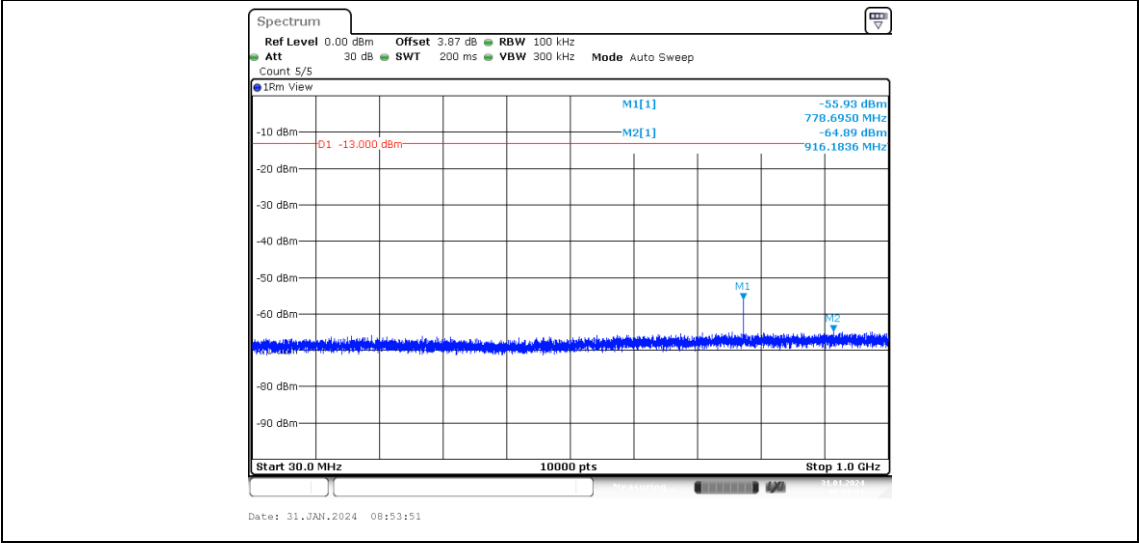
Band13-Stand-Alone-NaN-BPSK-23279-1@11-15kHz-1559-1610--51.55--50-PASS



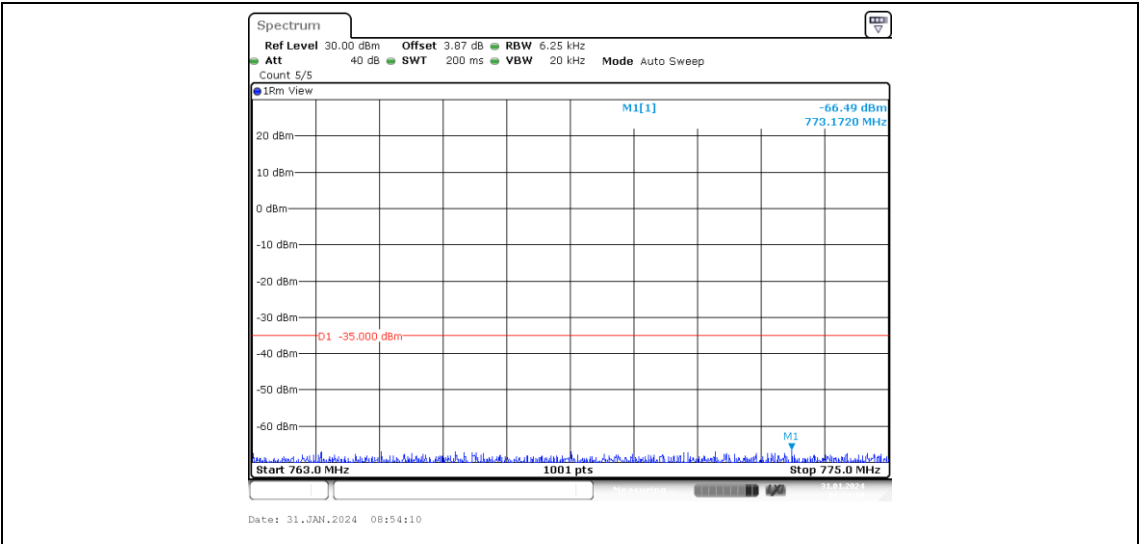
Band13-Stand-Alone-NaN-QPSK-23181-12@0-15kHz-0.009-0.15--74.93--33-PASS



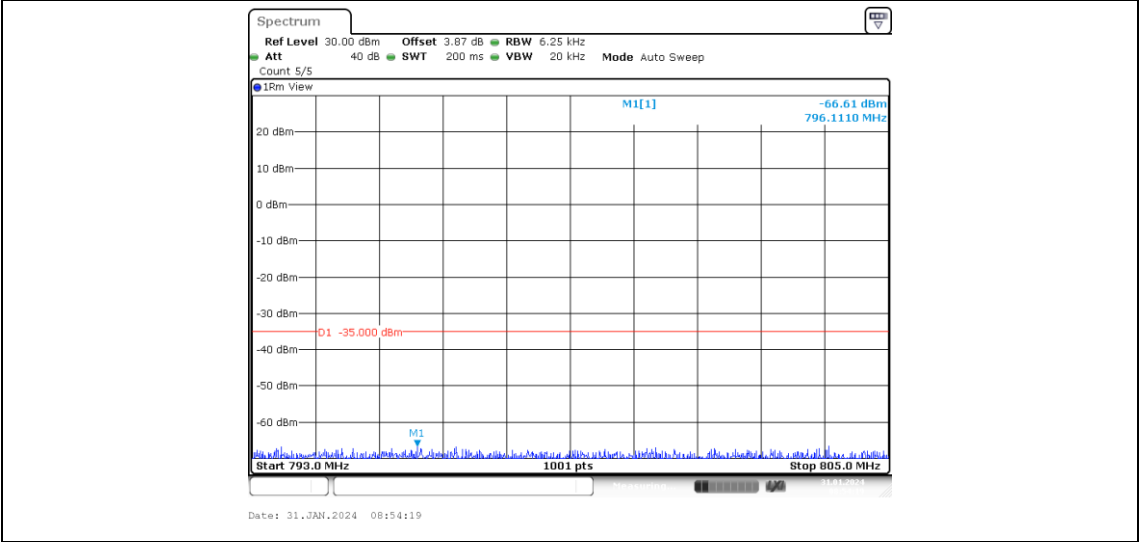
Band13-Stand-Alone-NaN-QPSK-23181-12@0-15kHz-0.15-30--71.84--23-PASS



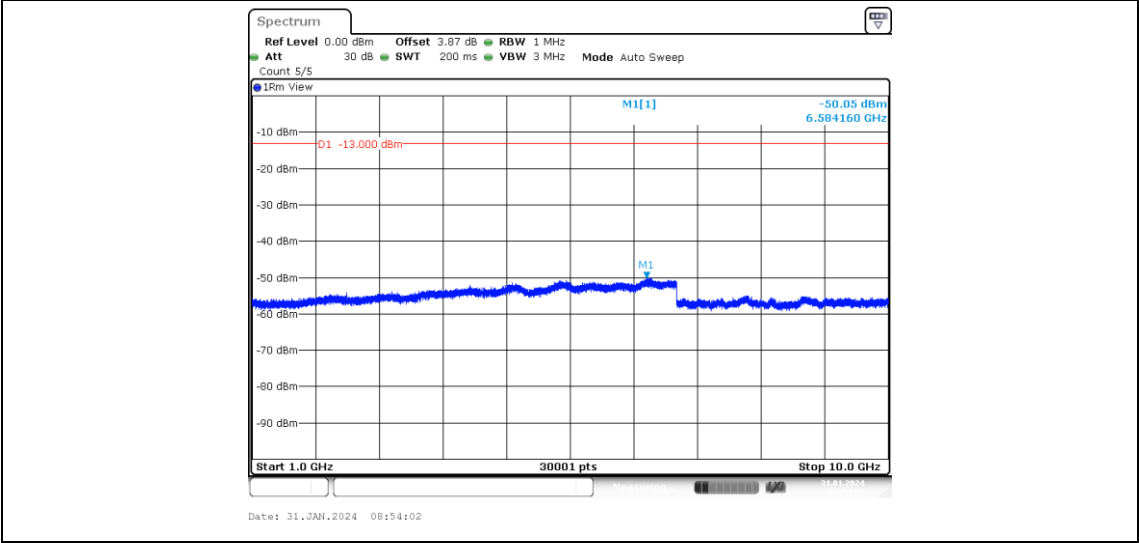
Band13-Stand-Alone-NaN-QPSK-23181-12@0-15kHz-30-1000--64.89--13-PASS



Band13-Stand-Alone-NaN-QPSK-23181-12@0-15kHz-763-775--66.49--35-PASS

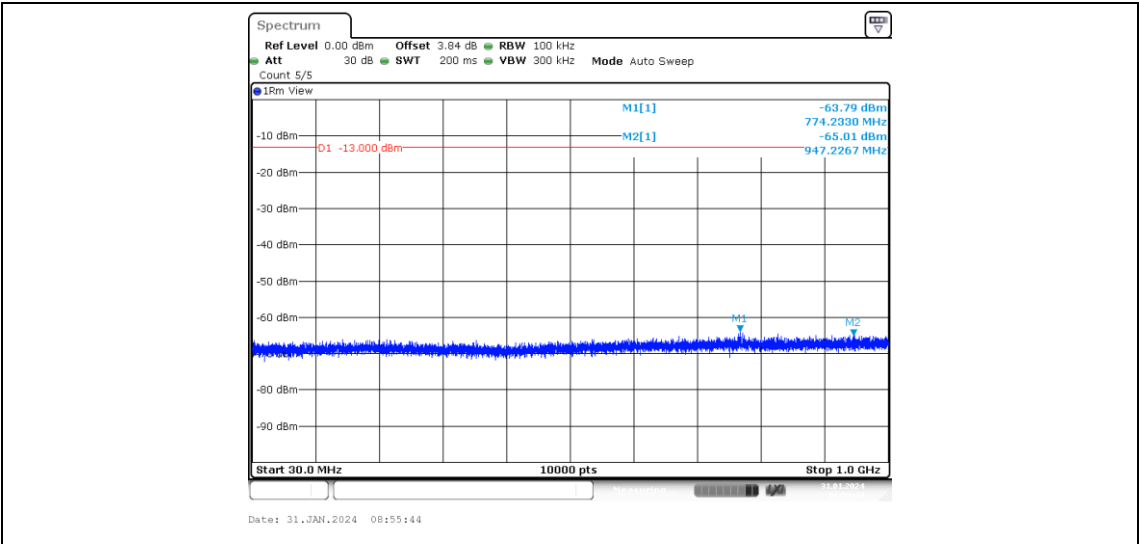


Band13-Stand-Alone-NaN-QPSK-23181-12@0-15kHz-793-805--66.61--35-PASS

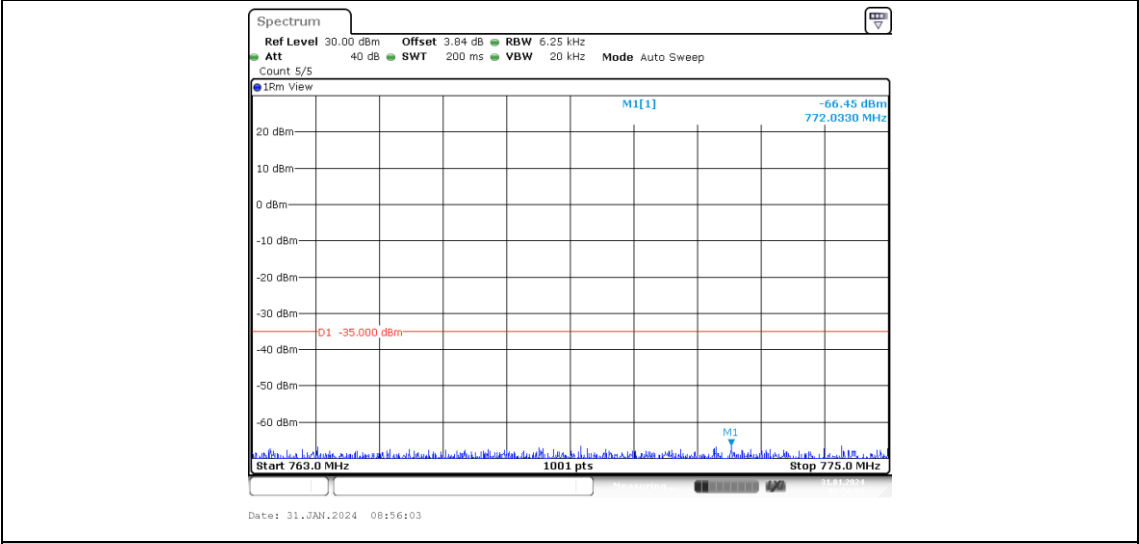


Band13-Stand-Alone-NaN-QPSK-23181-12@0-15kHz-1000-10000--50.05--13-PASS

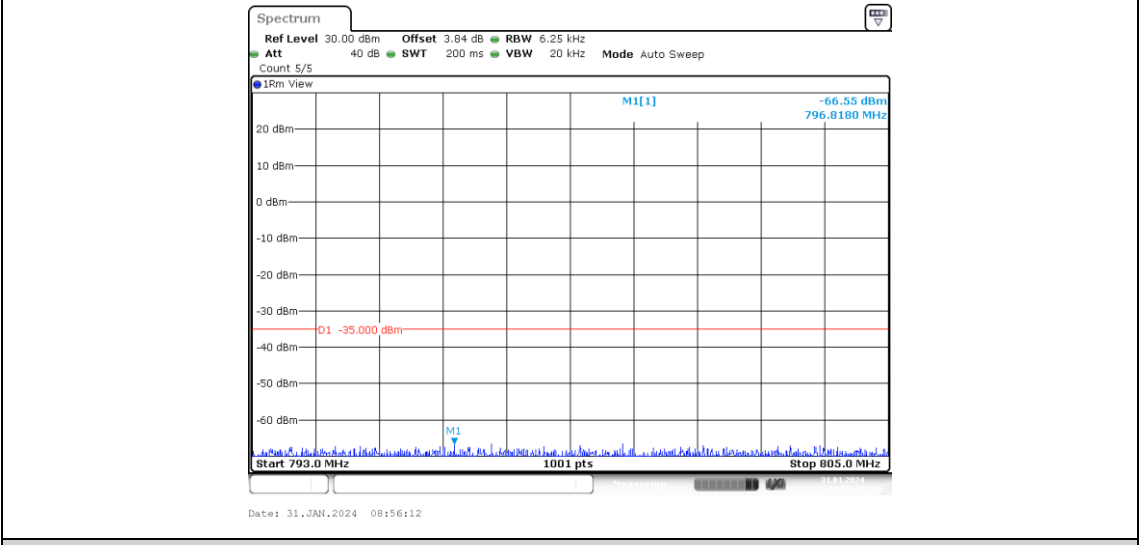




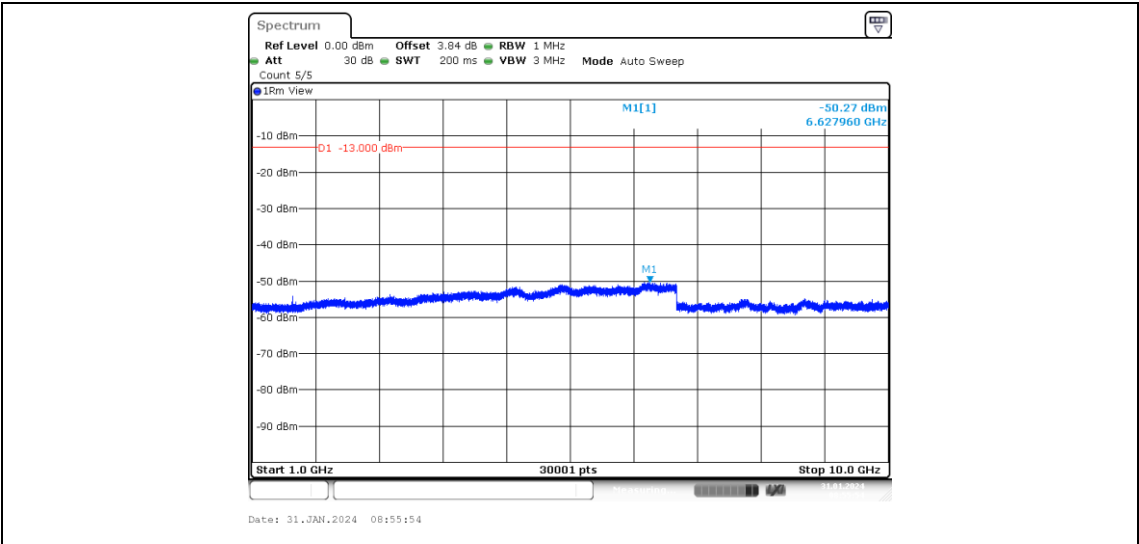
Band13-Stand-Alone-NaN-QPSK-23230-12@0-15kHz-30-1000--65.01--13-PASS



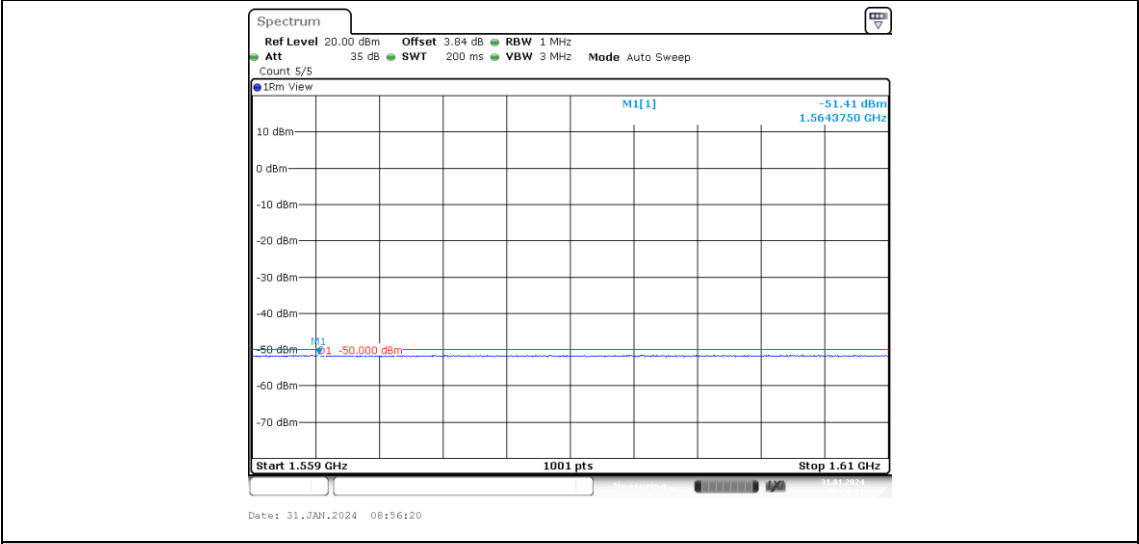
Band13-Stand-Alone-NaN-QPSK-23230-12@0-15kHz-763-775--66.45--35-PASS



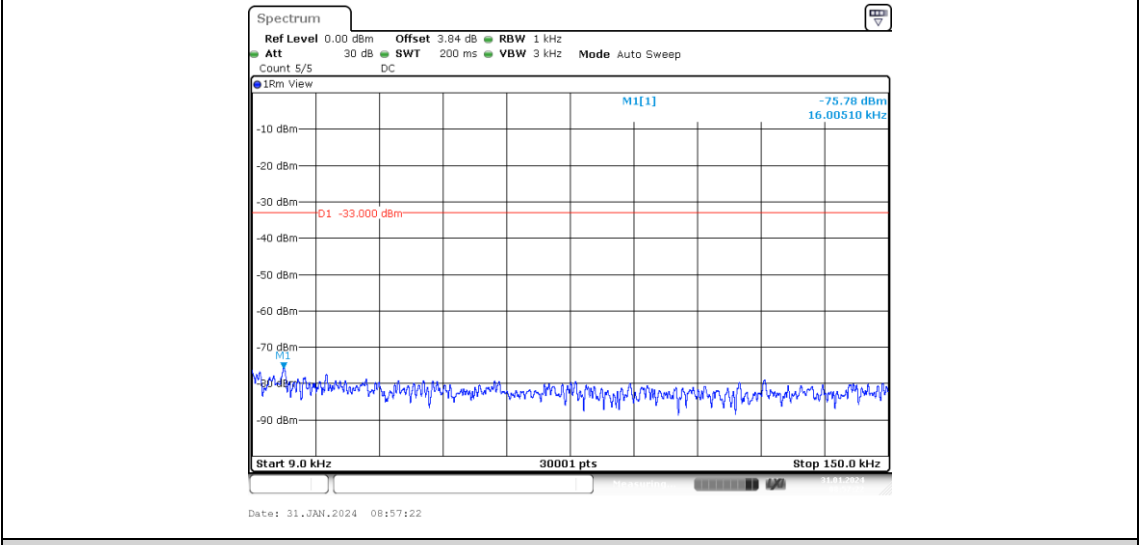
Band13-Stand-Alone-NaN-QPSK-23230-12@0-15kHz-793-805--66.55--35-PASS



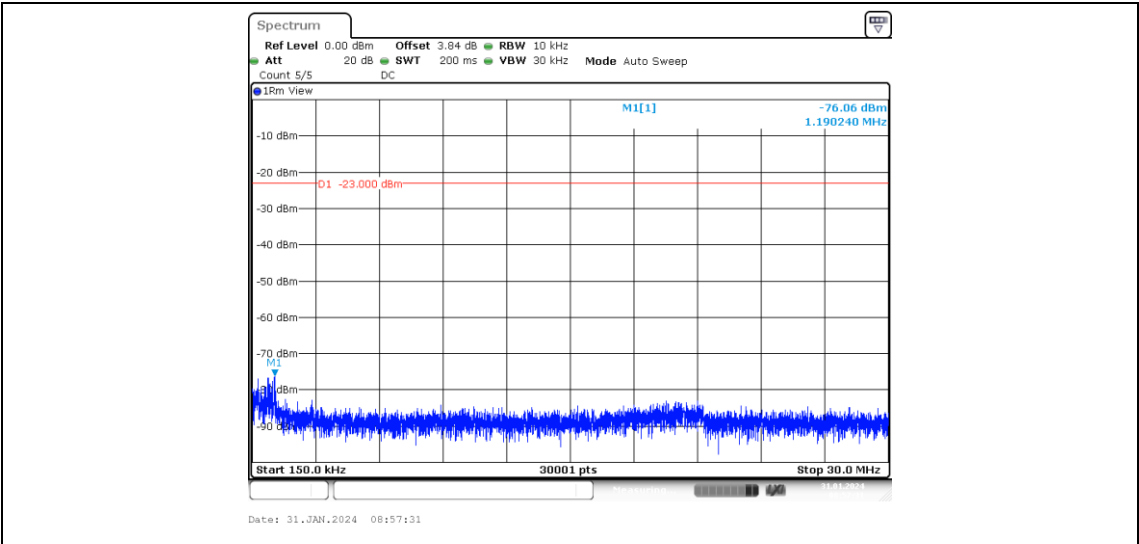
Band13-Stand-Alone-NaN-QPSK-23230-12@0-15kHz-1000-10000--50.27--13-PASS



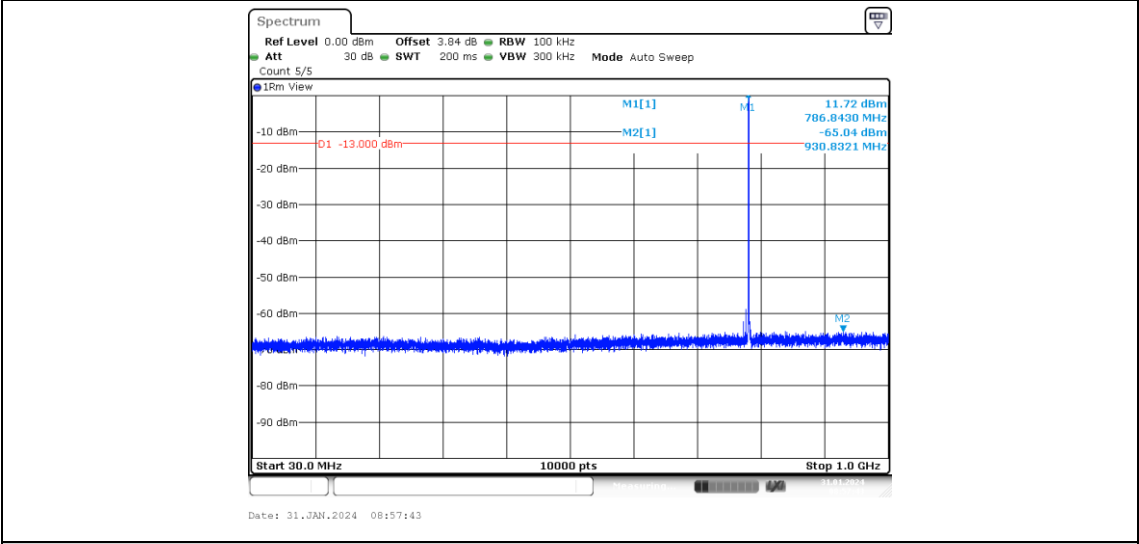
Band13-Stand-Alone-NaN-QPSK-23230-12@0-15kHz-1559-1610--51.41--50-PASS



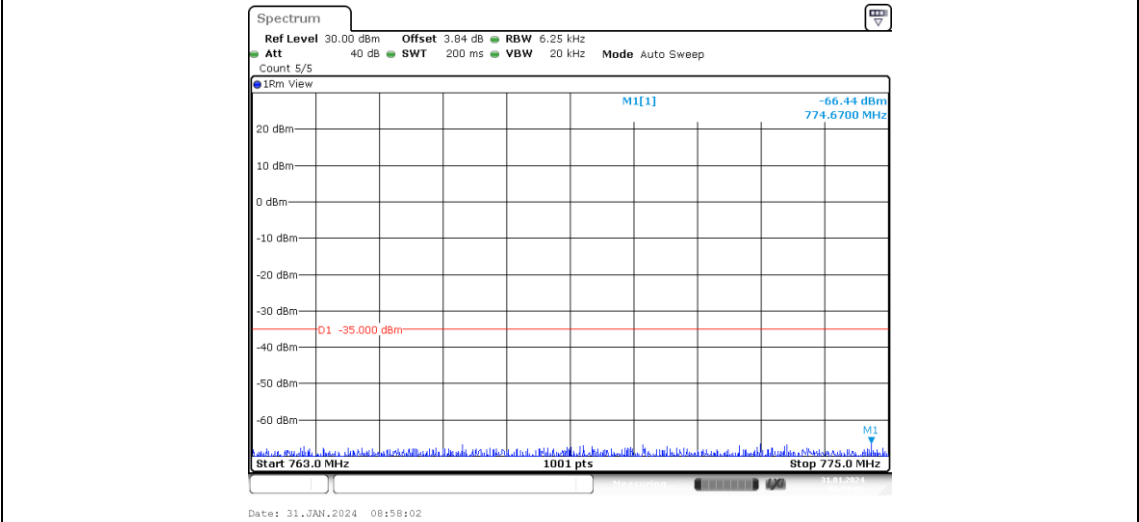
Band13-Stand-Alone-NaN-QPSK-23279-12@0-15kHz-0.009-0.15--75.78--33-PASS



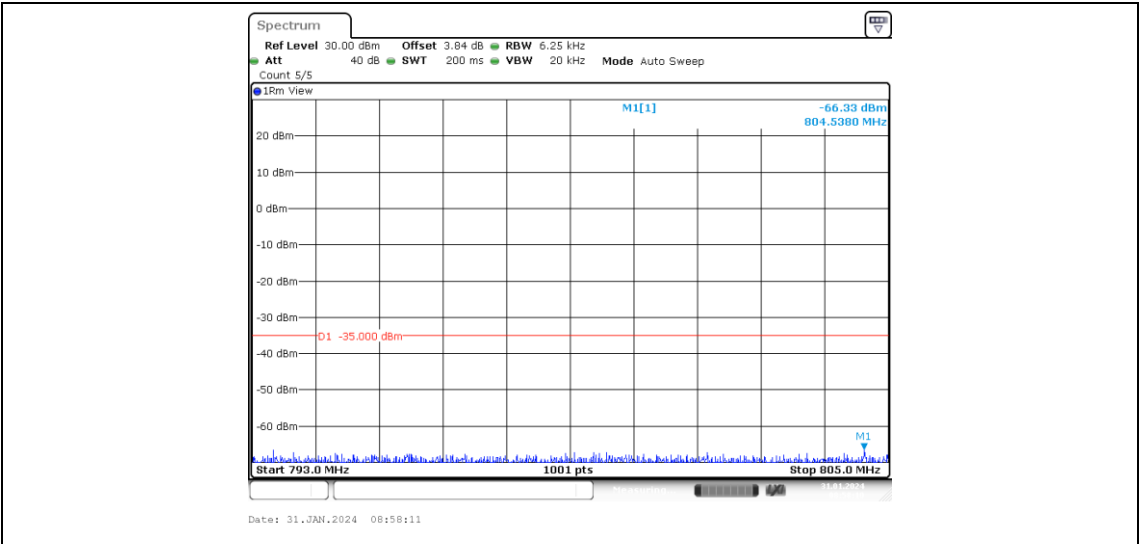
Band13-Stand-Alone-NaN-QPSK-23279-12@0-15kHz-0.15-30--76.06--23-PASS



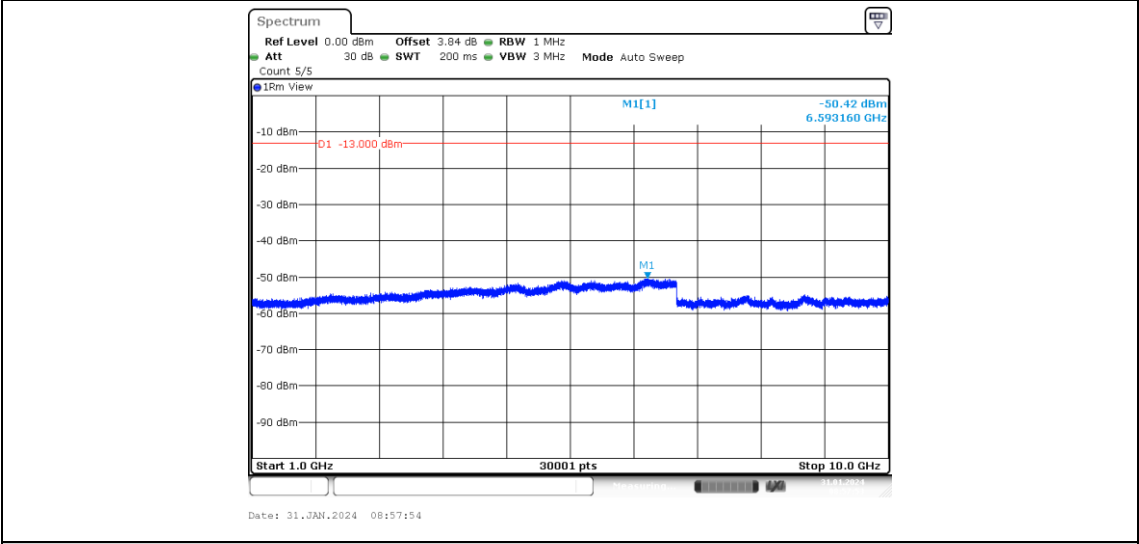
Band13-Stand-Alone-NaN-QPSK-23279-12@0-15kHz-30-1000--65.04--13-PASS



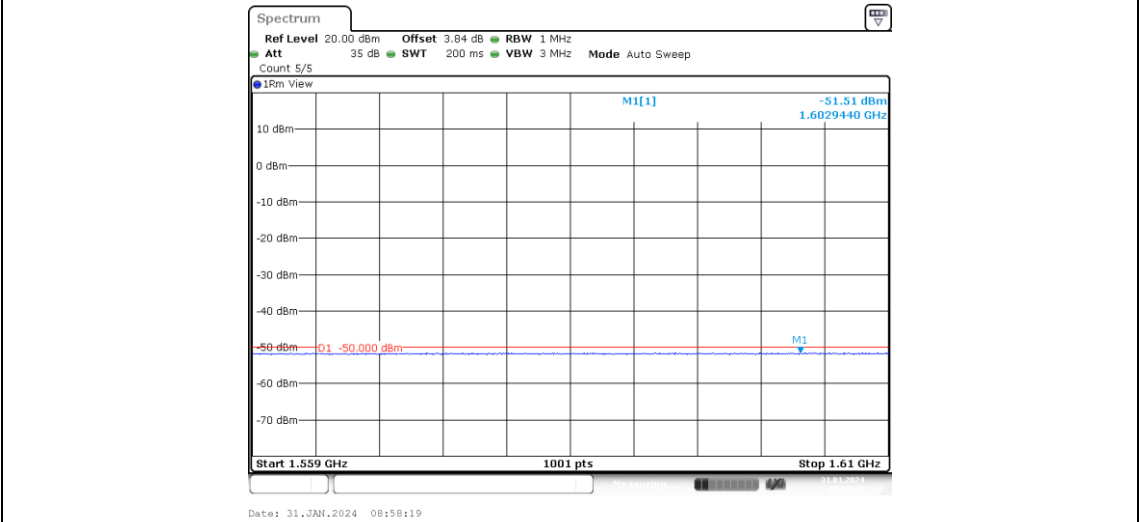
Band13-Stand-Alone-NaN-QPSK-23279-12@0-15kHz-763-775--66.44--35-PASS



Band13-Stand-Alone-NaN-QPSK-23279-12@0-15kHz-793-805--66.33--35-PASS



Band13-Stand-Alone-NaN-QPSK-23279-12@0-15kHz-1000-10000--50.42--13-PASS



Band13-Stand-Alone-NaN-QPSK-23279-12@0-15kHz-1559-1610--51.51--50-PASS

Appendix F: Frequency Stability

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 d13	Stand- Alone	3.75 kHz	NaN	QPS K	232 30	1 @ 0	VH	NT	-13.7 0	-0.01 7519	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QPS K	232 30	1 @ 0	VL	NT	-15.2 9	-0.01 9552	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QPS K	232 30	1 @ 0	VN	NT	-12.7 9	-0.01 6355	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QPS K	232 30	1 @ 47	VH	NT	-13.4 2	-0.01 7161	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QPS K	232 30	1 @ 47	VL	NT	-14.3 3	-0.01 8325	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QPS K	232 30	1 @ 47	VN	NT	-14.1 3	-0.01 8069	±2. 5	PA SS
Ban d13	Stand- Alone	15k Hz	NaN	QPS K	232 30	1 @ 0	VH	NT	-15.6 6	-0.02 0026	±2. 5	PA SS
Ban d13	Stand- Alone	15k Hz	NaN	QPS K	232 30	1 @ 0	VL	NT	-20.0 4	-0.02 5627	±2. 5	PA SS
Ban d13	Stand- Alone	15k Hz	NaN	QPS K	232 30	1 @ 0	VN	NT	-19.8 8	-0.02 5422	±2. 5	PA SS
Ban d13	Stand- Alone	15k Hz	NaN	QPS K	232 30	1 @1 1	VH	NT	-17.8 0	-0.02 2762	±2. 5	PA SS
Ban d13	Stand- Alone	15k Hz	NaN	QPS K	232 30	1 @1 1	VL	NT	-17.6 8	-0.02 2609	±2. 5	PA SS
Ban	Stand-	15k	NaN	QPS	232	1	VN	NT	-12.9	-0.01	±2.	PA

d13	Alone	Hz		K	30	@1 1			0	6496	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 (ppm)	Ver dict
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	50	-14.0 5	-0.01 7967	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	-20	-14.1 3	-0.01 8069	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	-10	-14.6 6	-0.01 8747	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	0	-13.7 9	-0.01 7634	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	10	-13.2 0	-0.01 6880	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	20	-13.7 5	-0.01 7583	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	30	-14.4 9	-0.01 8529	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	40	-14.3 9	-0.01 8402	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 0	NV	-30	-13.6 5	-0.01 7455	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	30	-13.7 0	-0.01 7519	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	20	-13.5 5	-0.01 7327	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23	1 @	NV	10	-14.1 3	-0.01 8069	±2. 5	PA SS

					0	47						
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	0	-14.9 3	-0.01 9092	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	-10	-12.9 2	-0.01 6522	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	40	-12.9 7	-0.01 6586	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	-30	-14.3 6	-0.01 8363	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	50	-13.8 3	-0.01 7685	±2. 5	PA SS
Ban d13	Stand- Alone	3.75 kHz	NaN	QP SK	23 23 0	1 @ 47	NV	-20	-13.6 9	-0.01 7506	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	50	-16.0 1	-0.02 0473	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	-20	-12.5 5	-0.01 6049	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	-10	-19.9 6	-0.02 5524	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	0	-13.3 0	-0.01 7008	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	10	-11.7 3	-0.01 5000	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	20	-13.5 3	-0.01 7302	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	30	-20.1 7	-0.02 5793	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz z	NaN	QP SK	23 23 0	1 @ 0	NV	40	-18.0 0	-0.02 3018	±2. 5	PA SS

Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @ 0	NV	-30	-21.0 9	-0.02 6969	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	40	-17.5 8	-0.02 2481	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	30	-18.5 8	-0.02 3760	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	20	-20.0 3	-0.02 5614	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	10	-18.9 3	-0.02 4207	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	0	-19.8 7	-0.02 5409	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	-10	-18.6 8	-0.02 3887	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	-30	-18.3 7	-0.02 3491	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	50	-18.3 5	-0.02 3465	±2. 5	PA SS
Ban d13	Stand- Alone	15kHz	NaN	QP SK	23 23 0	1 @1 1	NV	-20	-15.0 6	-0.01 9258	±2. 5	PA SS