Appendix J: Test Results of Band 71 for NB-IoT operation

Appendix J.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		
Band71	Stand-Alone	NaN	QPSK	133123	3@3	15kHz	11.99	11.98	0.016	3	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@11	15kHz	12.03	12.02	0.016	3	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	15kHz	12.07	12.06	0.016	3	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@47	3.75kHz	12.05	12.04	0.016	3	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	3.75kHz	12.18	12.17	0.016	3	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	21.45	21.44	0.139	3	PASS
Band71	Stand-Alone	NaN	QPSK	133297	3@3	15kHz	21.44	21.43	0.139	3	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	21.46	21.45	0.140	3	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	21.43	21.42	0.139	3	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	21.52	21.51	0.142	3	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@11	15kHz	12.18	12.17	0.016	3	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	15kHz	12.14	12.13	0.016	3	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@47	3.75kHz	12.26	12.25	0.017	3	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	3.75kHz	12.35	12.34	0.017	3	PASS
Band71	Stand-Alone	NaN	QPSK	133471	3@3	15kHz	11.99	11.98	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@11	15kHz	11.92	11.91	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133123	3@3	15kHz	12	11.99	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@47	3.75kHz	12.08	12.07	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	3.75kHz	12.12	12.11	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	15kHz	12.13	12.12	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@47	3.75kHz	21.45	21.44	0.139	3	PASS
Band71	Stand-Alone	NaN	BPSK	133297	3@3	15kHz	21.45	21.44	0.139	3	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	15kHz	21.44	21.43	0.139	3	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	3.75kHz	21.43	21.42	0.139	3	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@11	15kHz	21.4	21.39	0.138	3	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	15kHz	12.15	12.14	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@11	15kHz	12.11	12.1	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@47	3.75kHz	12.27	12.26	0.017	3	PASS
Band71	Stand-Alone	NaN	BPSK	133471	3@3	15kHz	12.07	12.06	0.016	3	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	3.75kHz	12.3	12.29	0.017	3	PASS

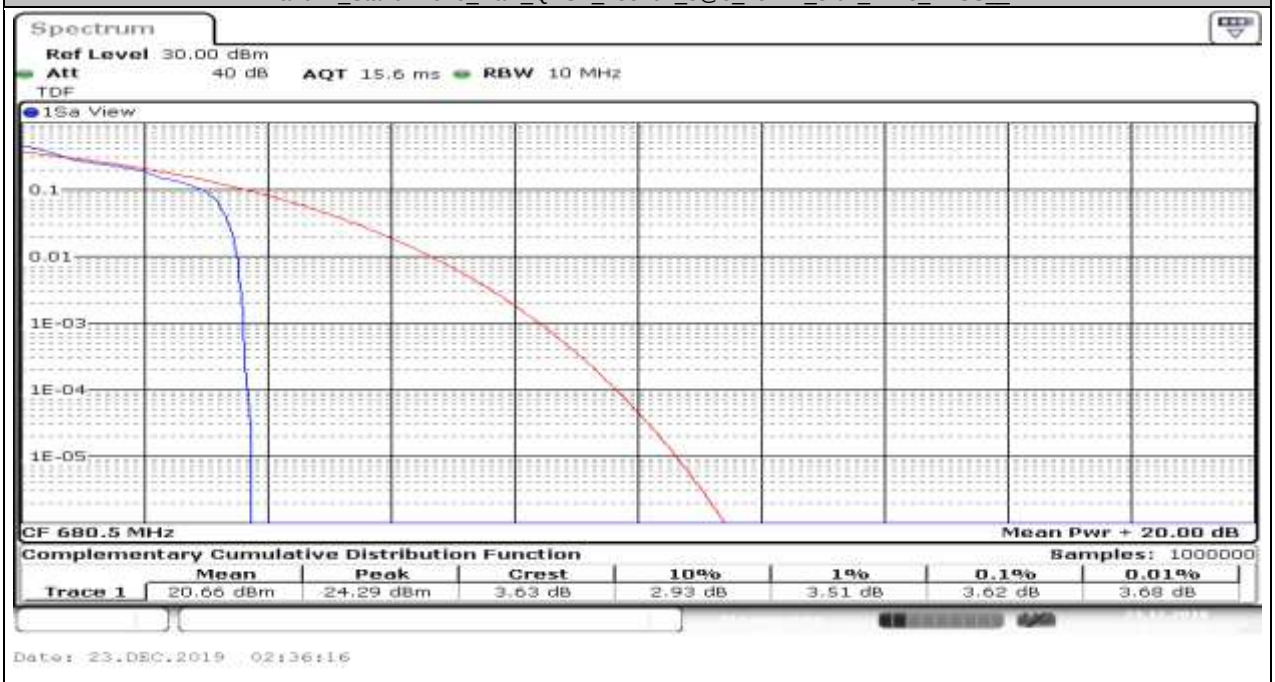
Appendix J.2: Peak-to-Average Ratio (CCDF) for NB

Test Result

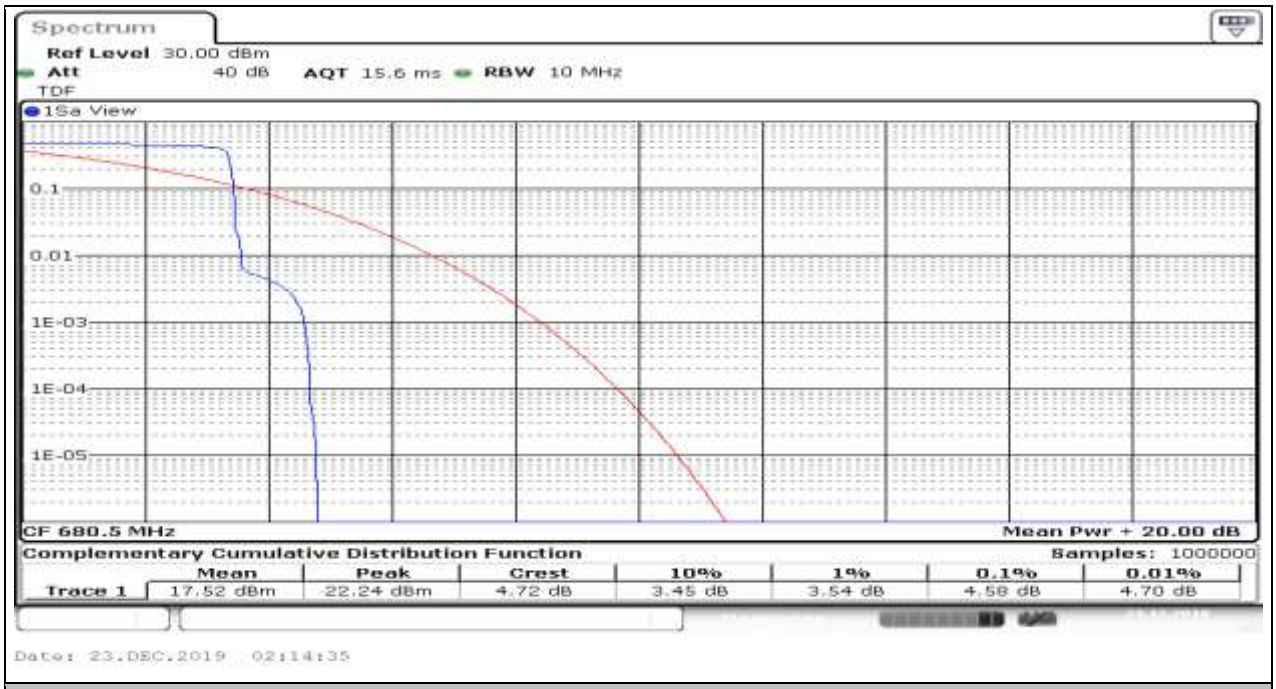
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
Band71	Stand-Alone	NaN	QPSK	133297	3@3	15kHz	3.62	<=13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	4.58	<=13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	4.32	<=13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	1.57	<=13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	2.52	<=13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	3@3	15kHz	9.54	<=13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@11	15kHz	7.83	<=13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	15kHz	1.36	<=13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@47	3.75kHz	1.83	<=13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	3.75kHz	8.67	<=13	PASS

Test Graphs

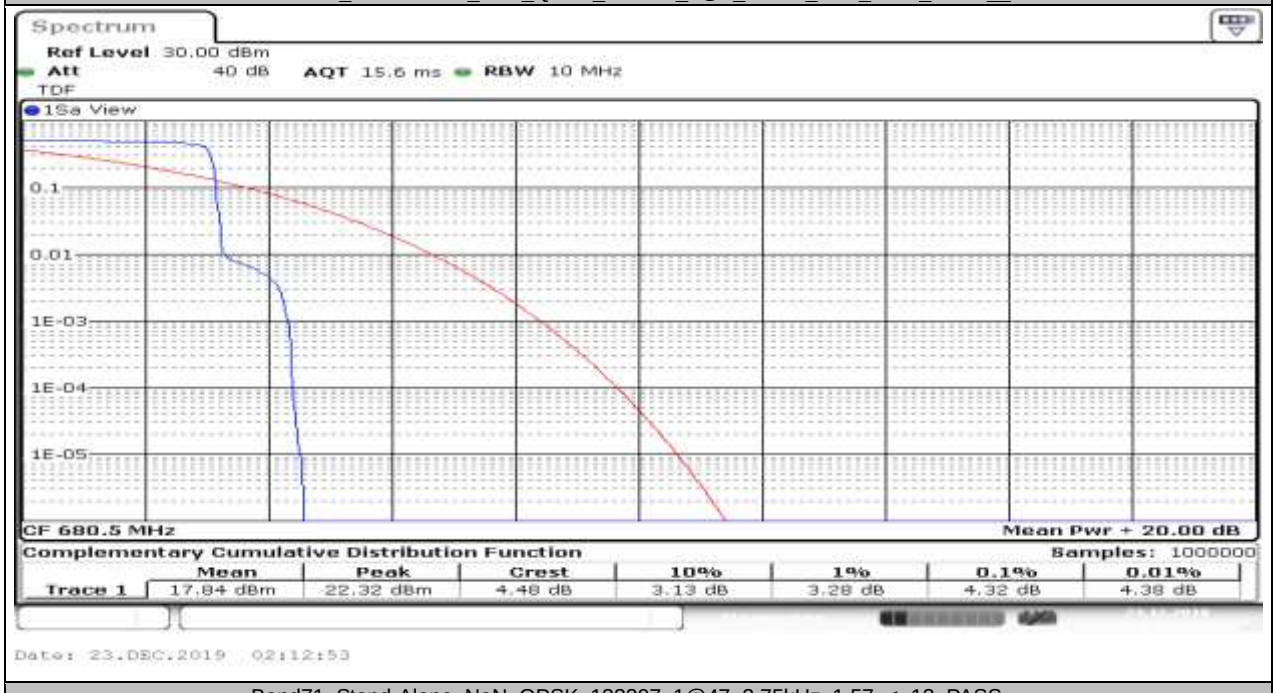
Band71_Stand-Alone_NaN_QPSK_133297_3@3_15kHz_3.62_<=13_PASS__



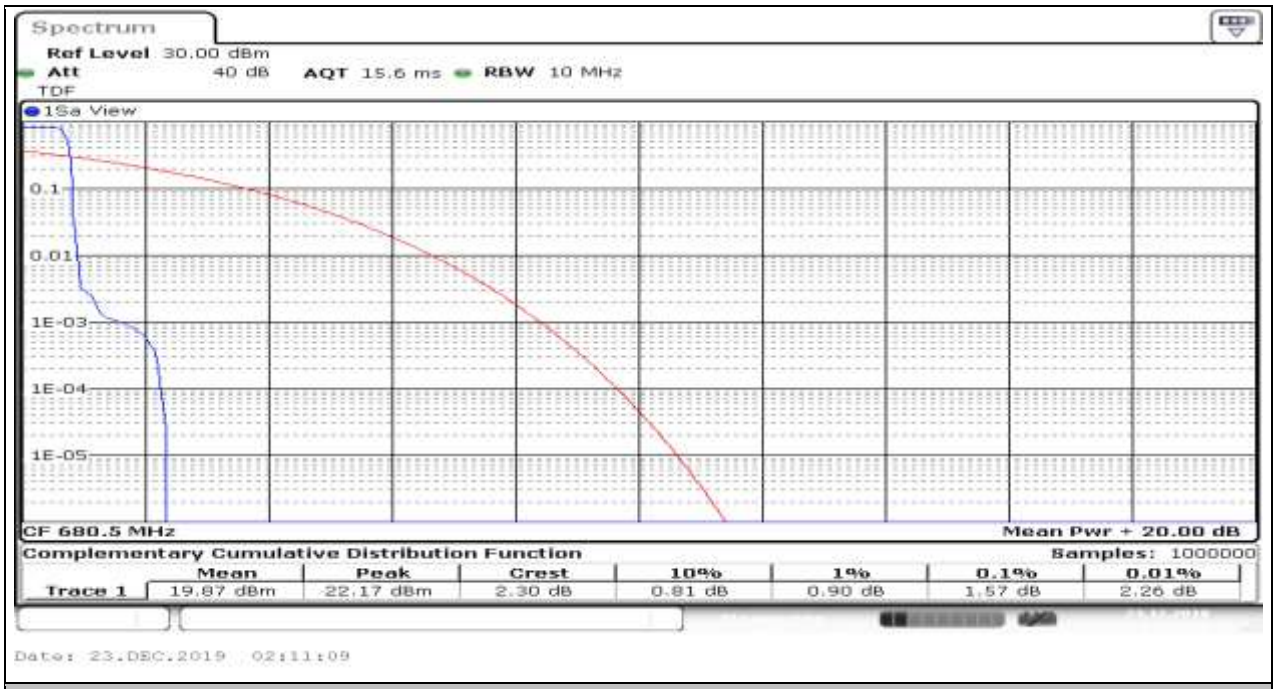
Band71_Stand-Alone_NaN_QPSK_133297_1@11_15kHz_4.58_<=13_PASS__



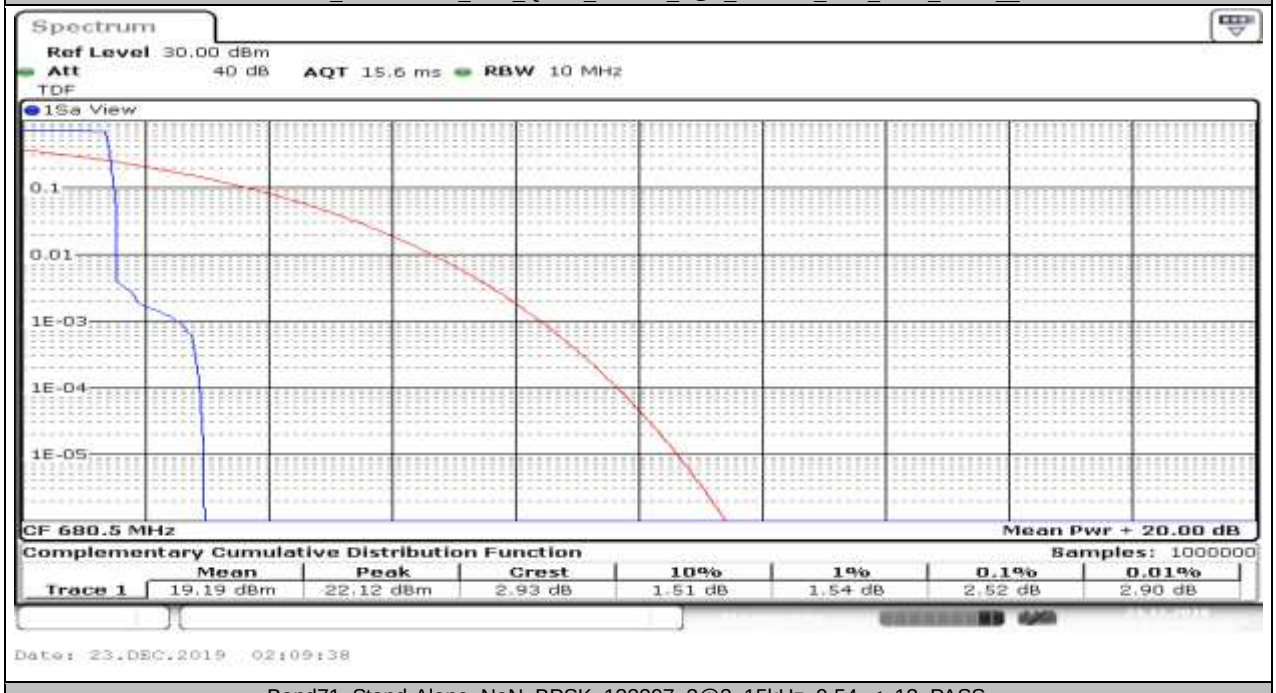
Band71_Stand-Alone_NaN_QPSK_133297_1@0_15kHz_4.32_<=13_PASS__



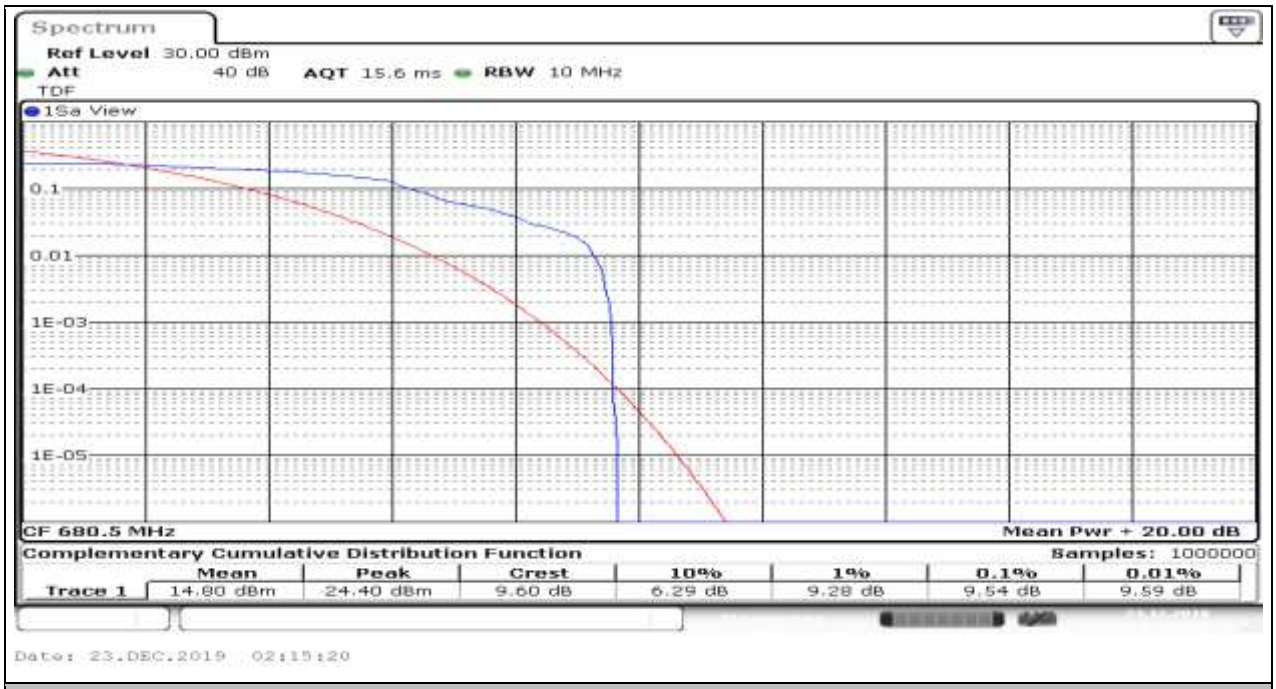
Band71_Stand-Alone_NaN_QPSK_133297_1@47_3.75kHz_1.57_<=13_PASS__



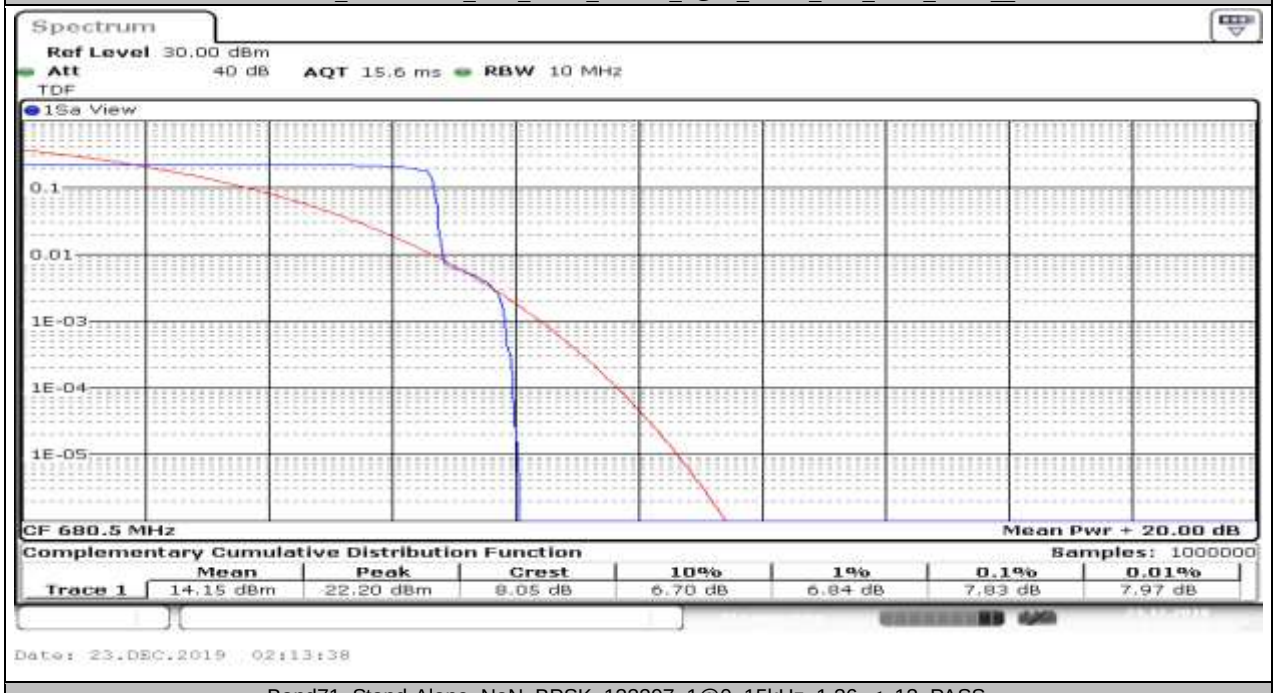
Band71_Stand-Alone_NaN_QPSK_133297_1@0_3.75kHz_2.52_<=13_PASS__



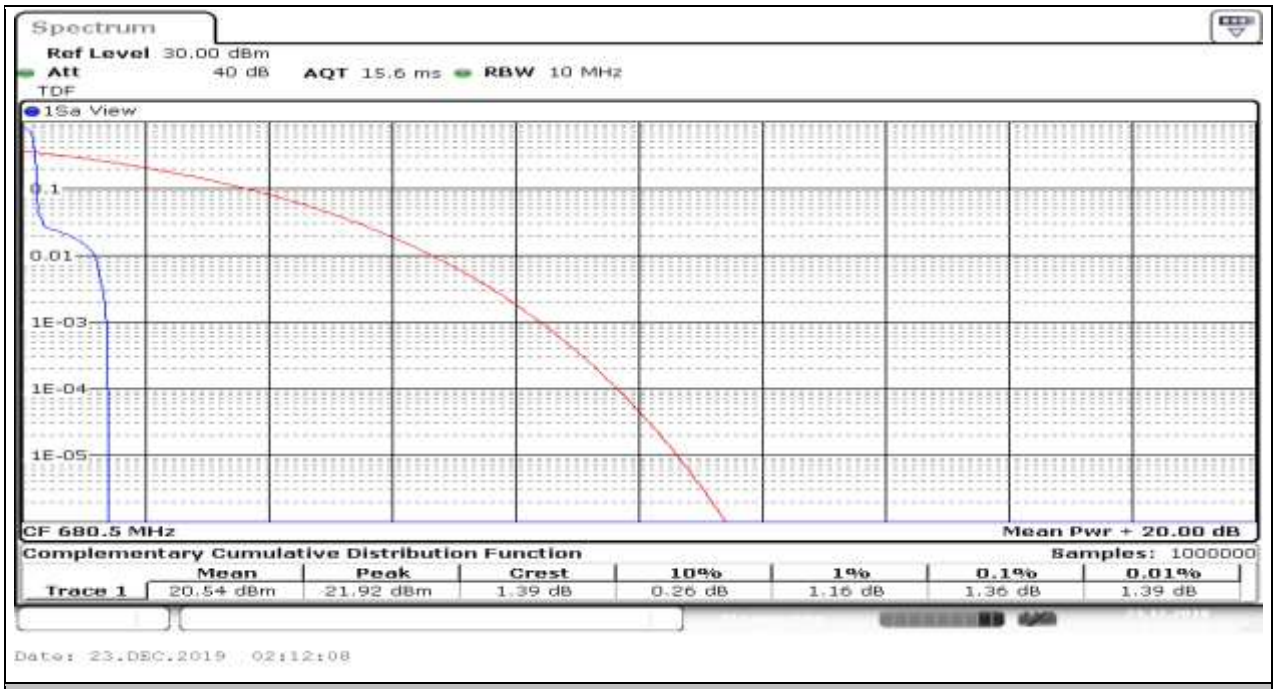
Band71_Stand-Alone_NaN_BPSK_133297_3@3_15kHz_9.54_<=13_PASS__



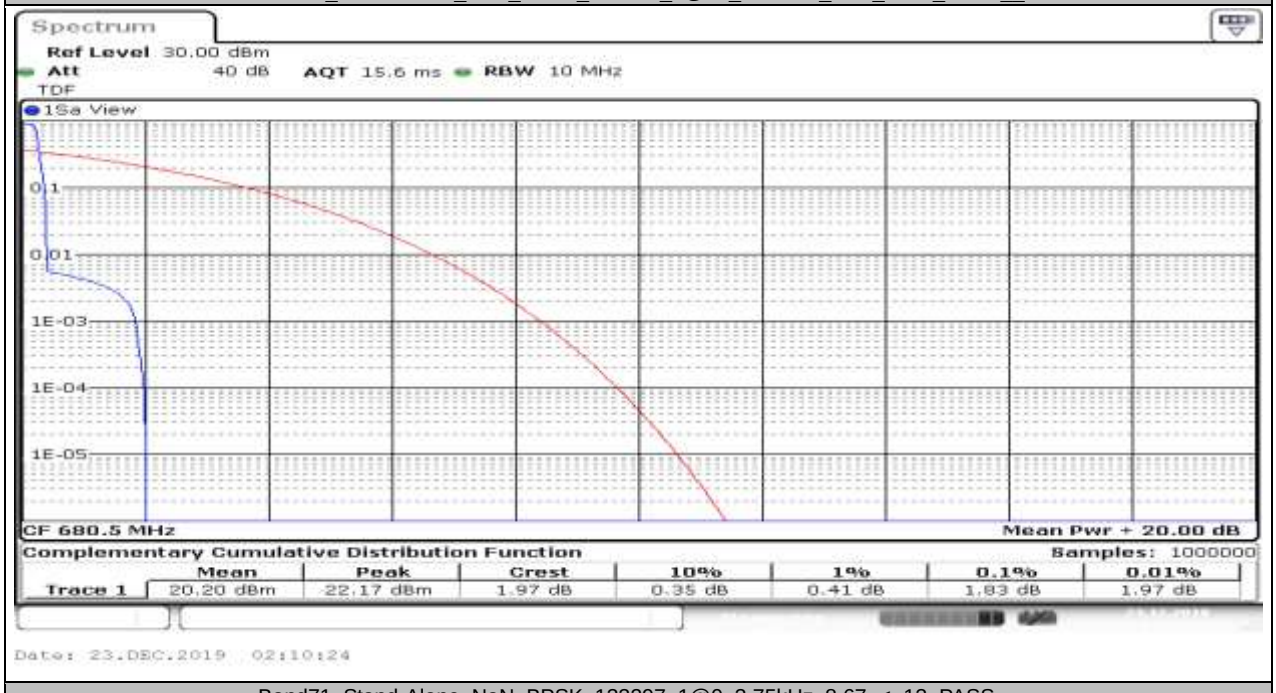
Band71_Stand-Alone_NaN_BPSK_133297_1@11_15kHz_7.83_<=13_PASS__



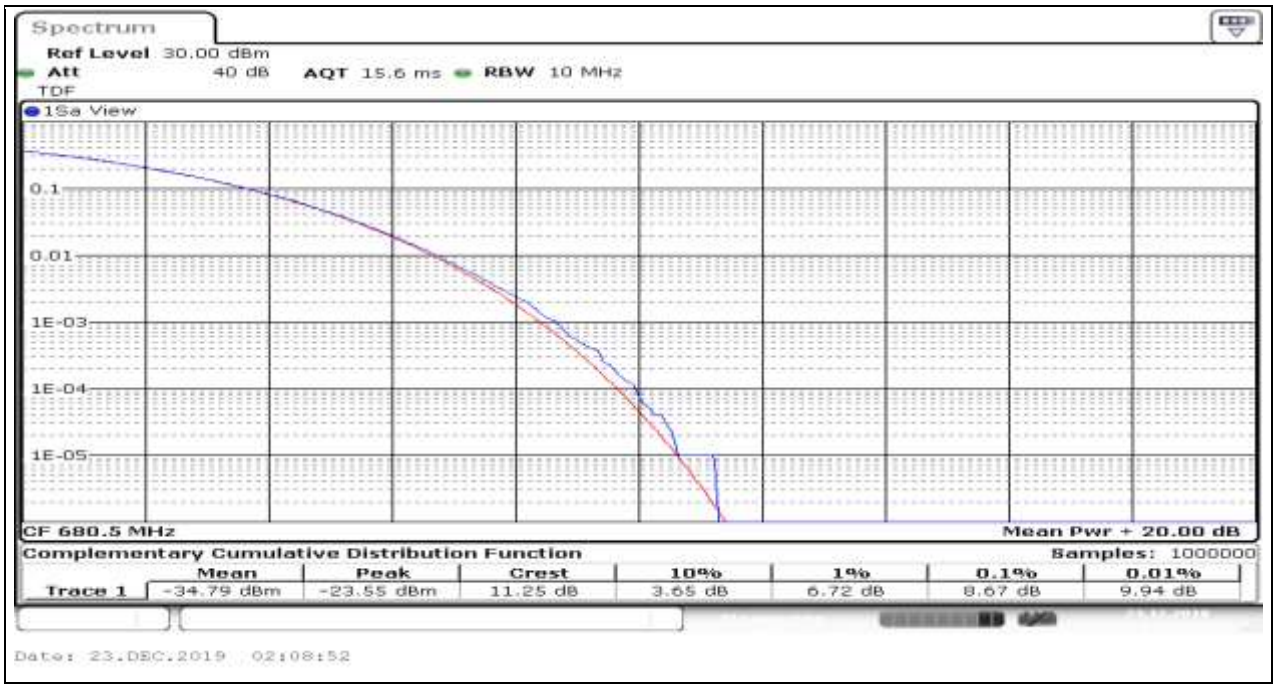
Band71_Stand-Alone_NaN_BPSK_133297_1@0_15kHz_1.36_<=13_PASS__



Band71_Stand-Alone_NaN_BPSK_133297_1@47_3.75kHz_1.83_<=13_PASS__



Band71_Stand-Alone_NaN_BPSK_133297_1@0_3.75kHz_8.67_<=13_PASS__


Spectrum
Ref Level 30.00 dBm
Att 40 dB
AQT 15.6 ms
RBW 10 MHz
TDF
1Sa View
0.1
0.01
1E-03
1E-04
1E-05
CF 680.5 MHz
Mean Pwr + 20.00 dB
Complementary Cumulative Distribution Function
Samples: 1000000
Mean
Peak
Crest
10%
1%
0.1%
0.01%
Trace 1
-34.79 dBm
-23.55 dBm
11.25 dB
3.65 dB
6.72 dB
8.67 dB
9.94 dB
Date: 23.DEC.2019 02:08:52

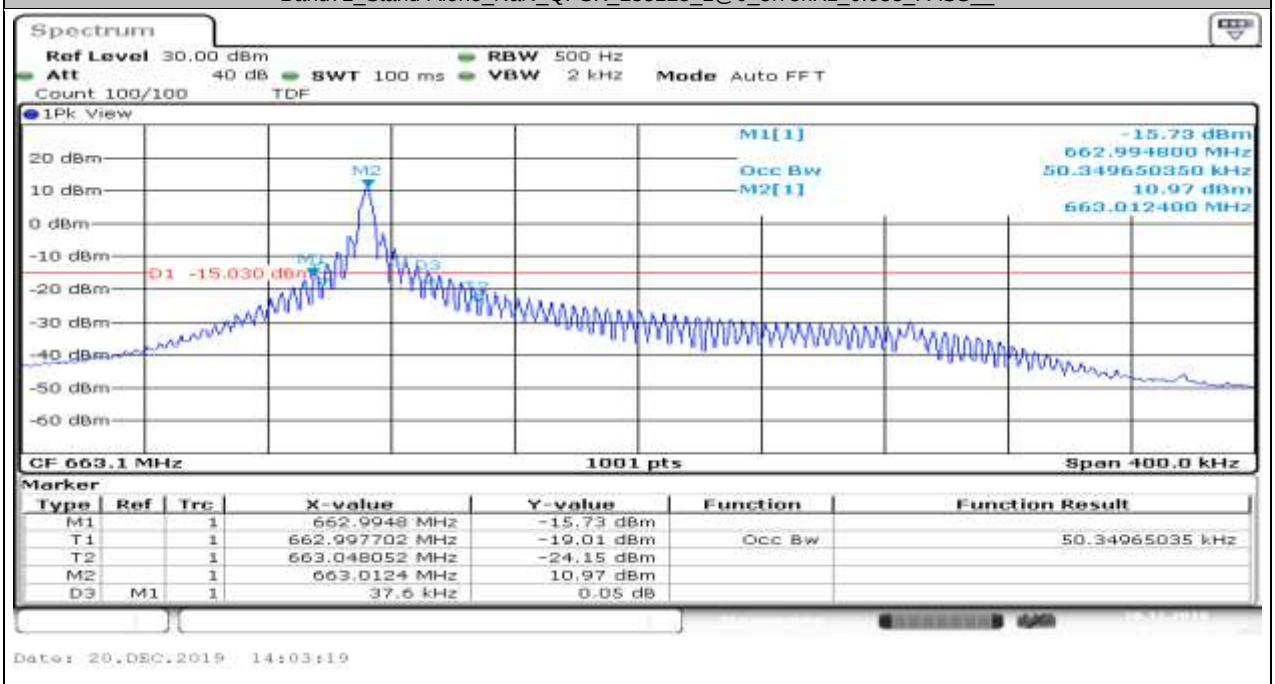
Appendix J.3: 26dB Emission Bandwidth and Occupied Bandwidth for NB

Test Result

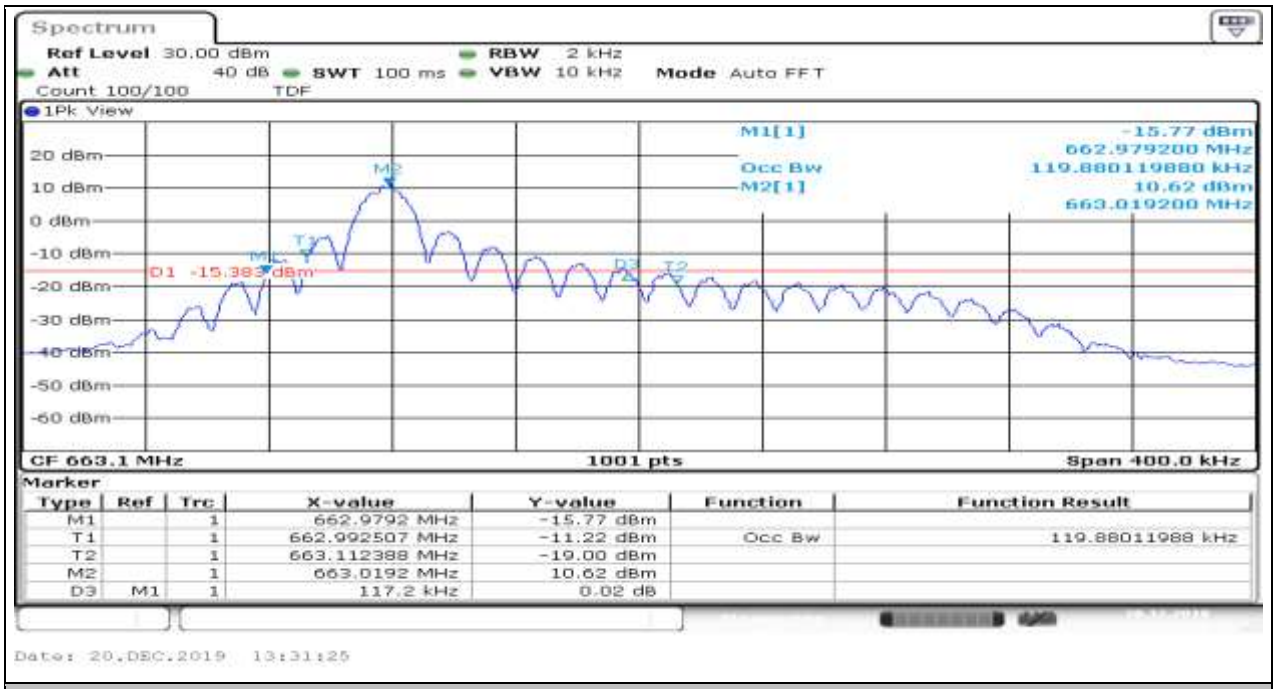
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Verdict
Band71	Stand-Alone	NaN	QPSK	133123	1@0	3.75kHz	0.038	0.050	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	15kHz	0.117	0.120	PASS
Band71	Stand-Alone	NaN	QPSK	133123	12@0	15kHz	0.251	0.184	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	0.038	0.051	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	0.117	0.120	PASS
Band71	Stand-Alone	NaN	QPSK	133297	12@0	15kHz	0.251	0.184	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	3.75kHz	0.038	0.051	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	15kHz	0.117	0.120	PASS
Band71	Stand-Alone	NaN	QPSK	133471	12@0	15kHz	0.251	0.184	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	3.75kHz	0.032	0.053	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	15kHz	0.106	0.127	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	3.75kHz	0.032	0.053	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	15kHz	0.106	0.125	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	3.75kHz	0.032	0.053	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	15kHz	0.106	0.127	PASS

Test Graphs

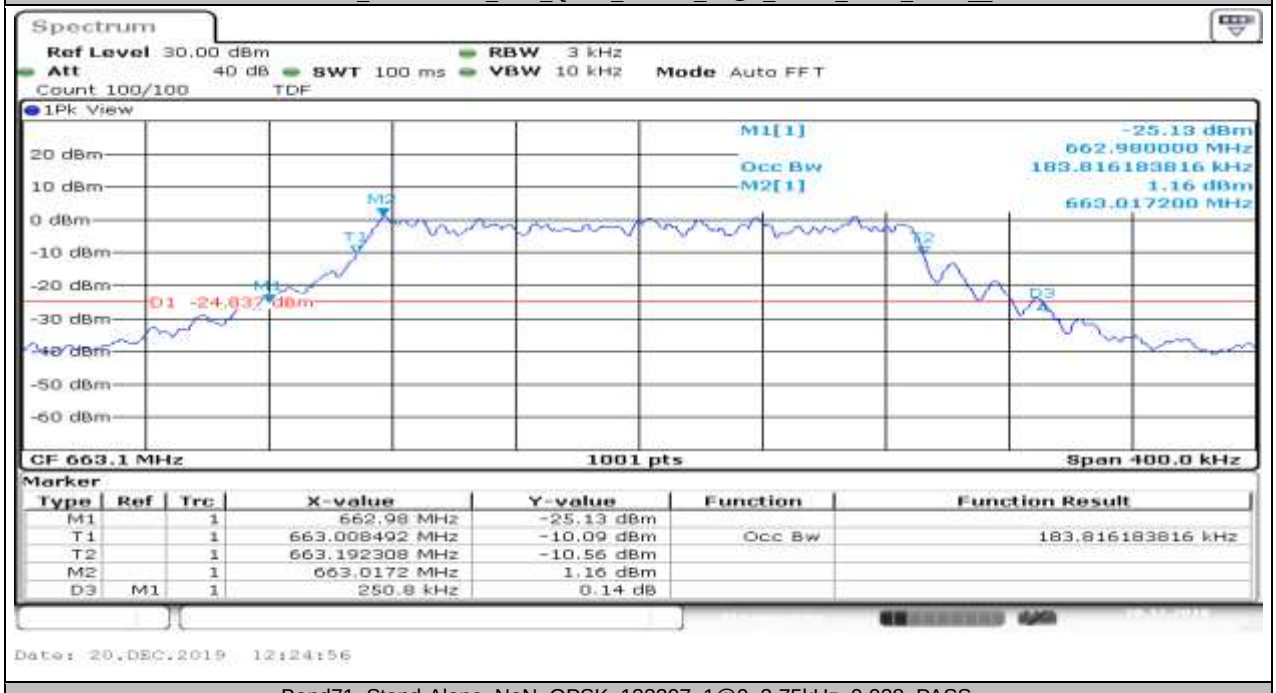
Band71_Stand-Alone_NaN_QPSK_133123_1@0_3.75kHz_0.038_PASS__



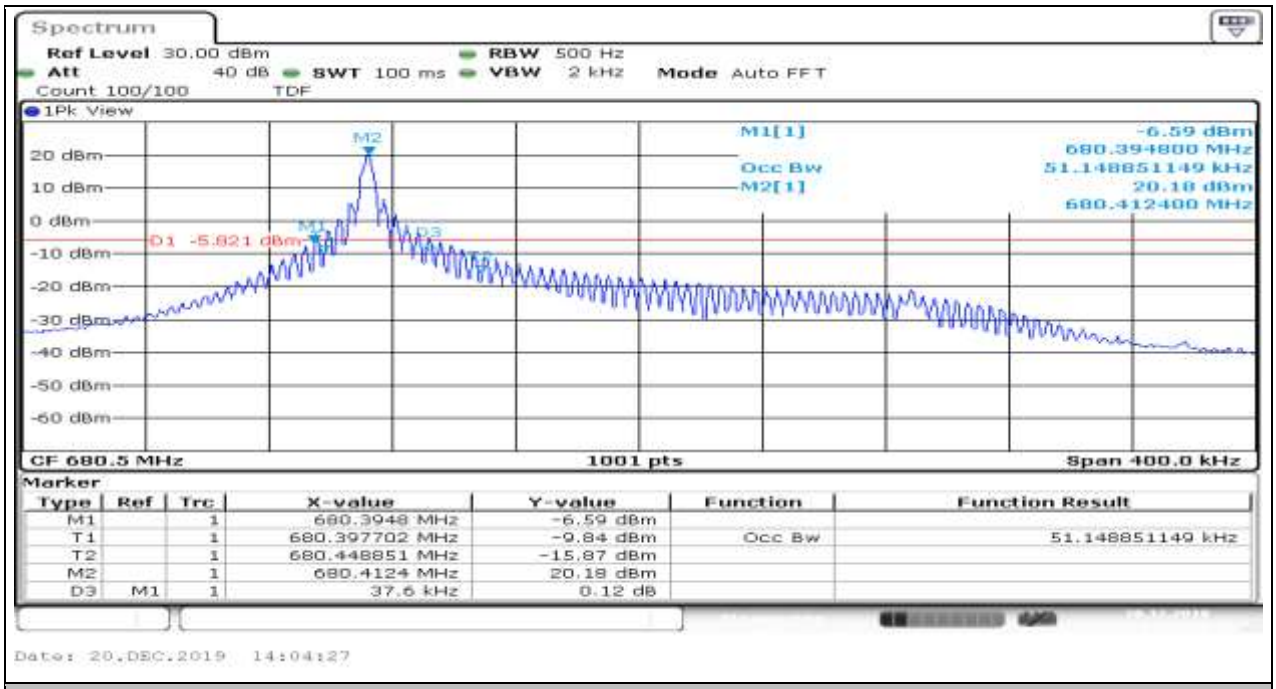
Band71_Stand-Alone_NaN_QPSK_133123_1@0_15kHz_0.117_PASS__



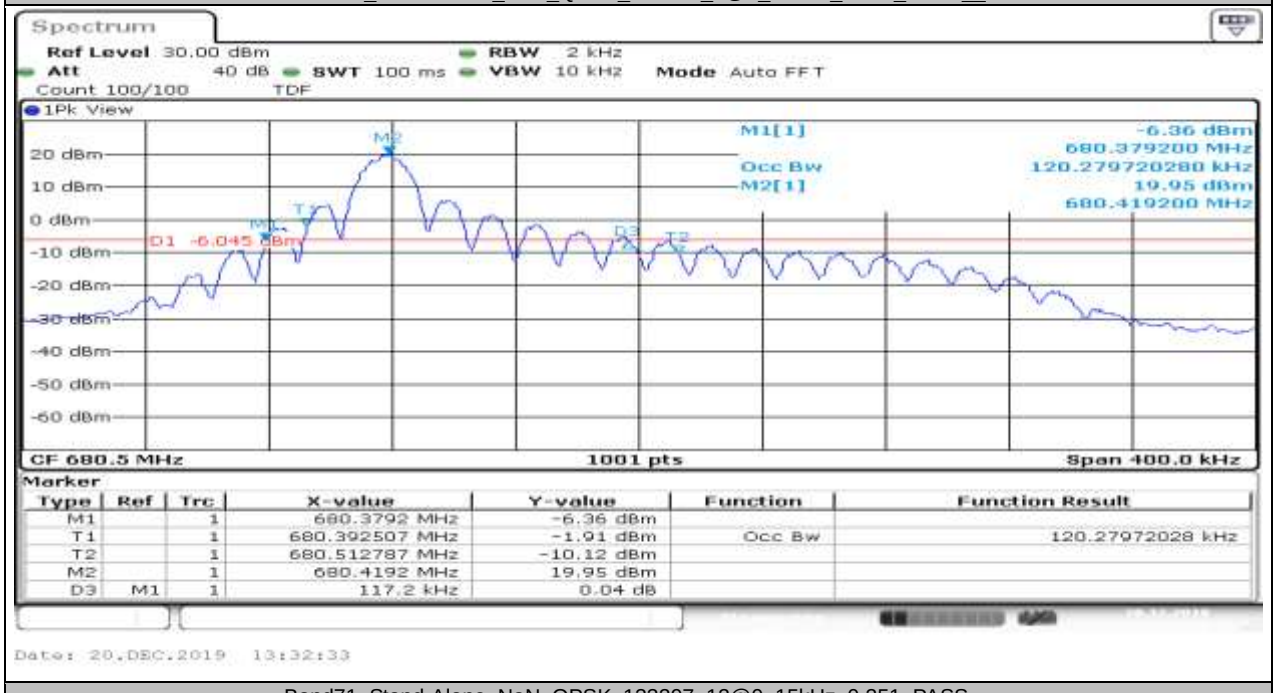
Band71_Stand-Alone_NaN_QPSK_133123_12@0_15kHz_0.251_PASS__



Band71_Stand-Alone_NaN_QPSK_133297_1@0_3.75kHz_0.038_PASS__

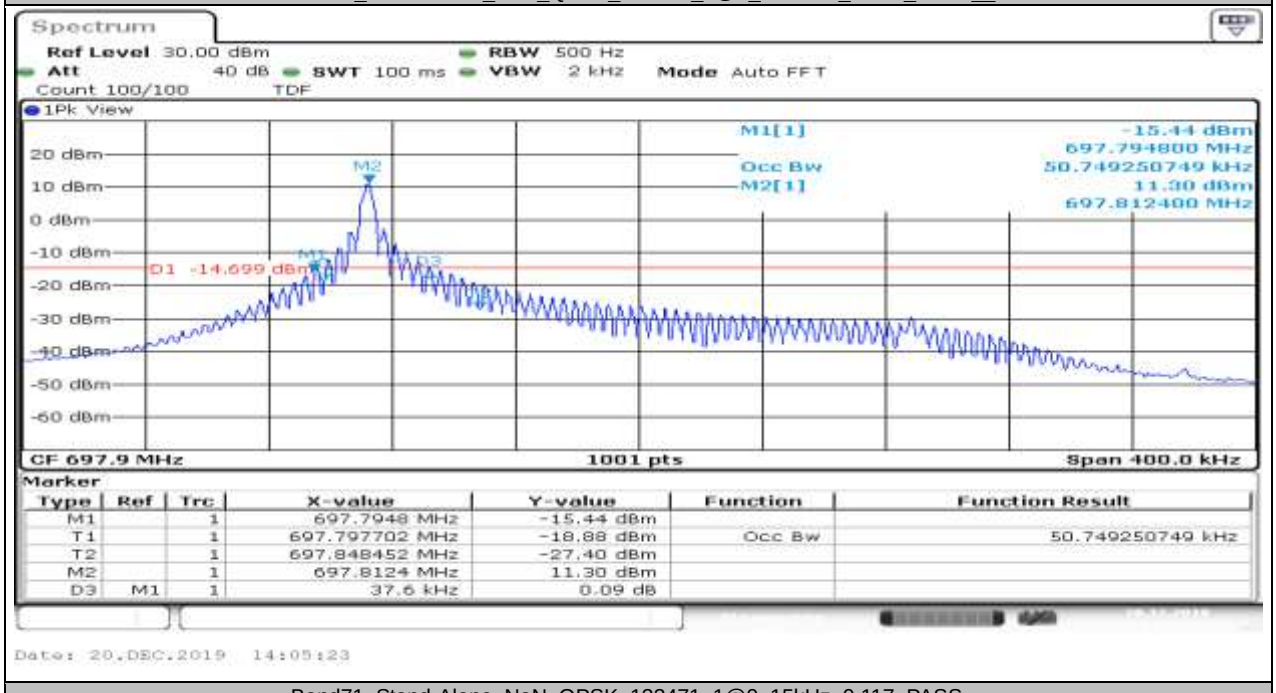


Band71_Stand-Alone_NaN_QPSK_133297_1@0_15kHz_0.117_PASS__

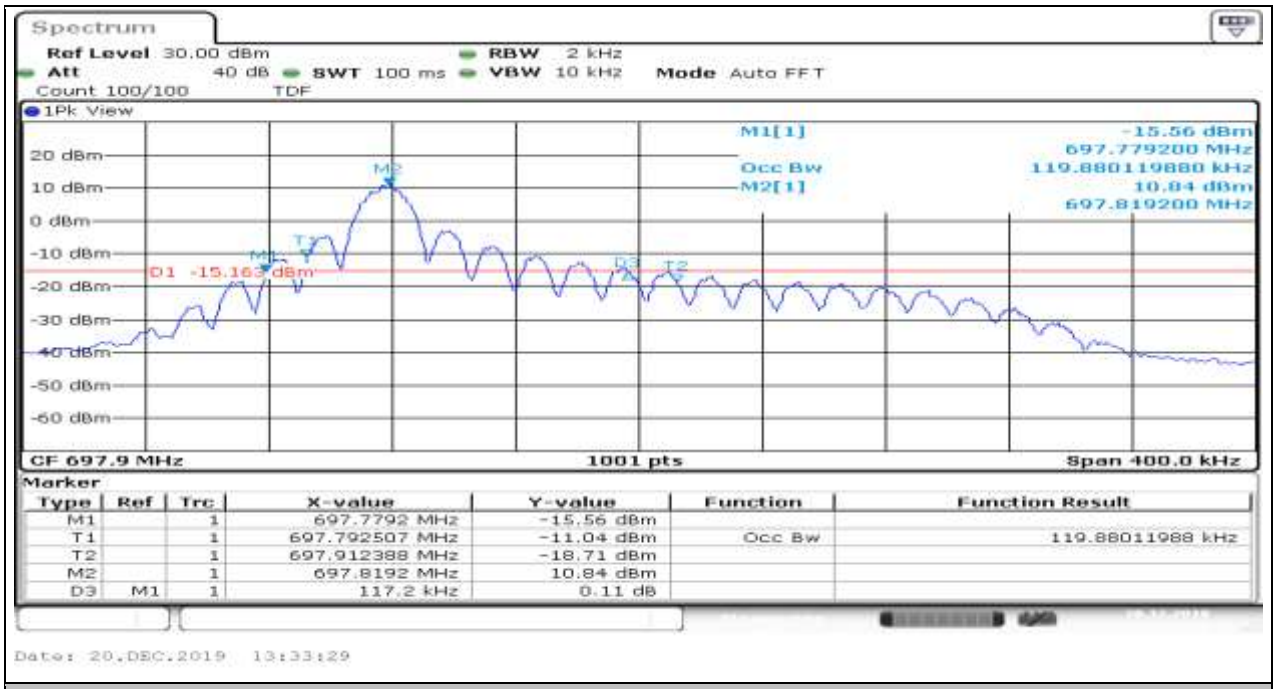


Band71_Stand-Alone_NaN_QPSK_133297_12@0_15kHz_0.251_PASS__

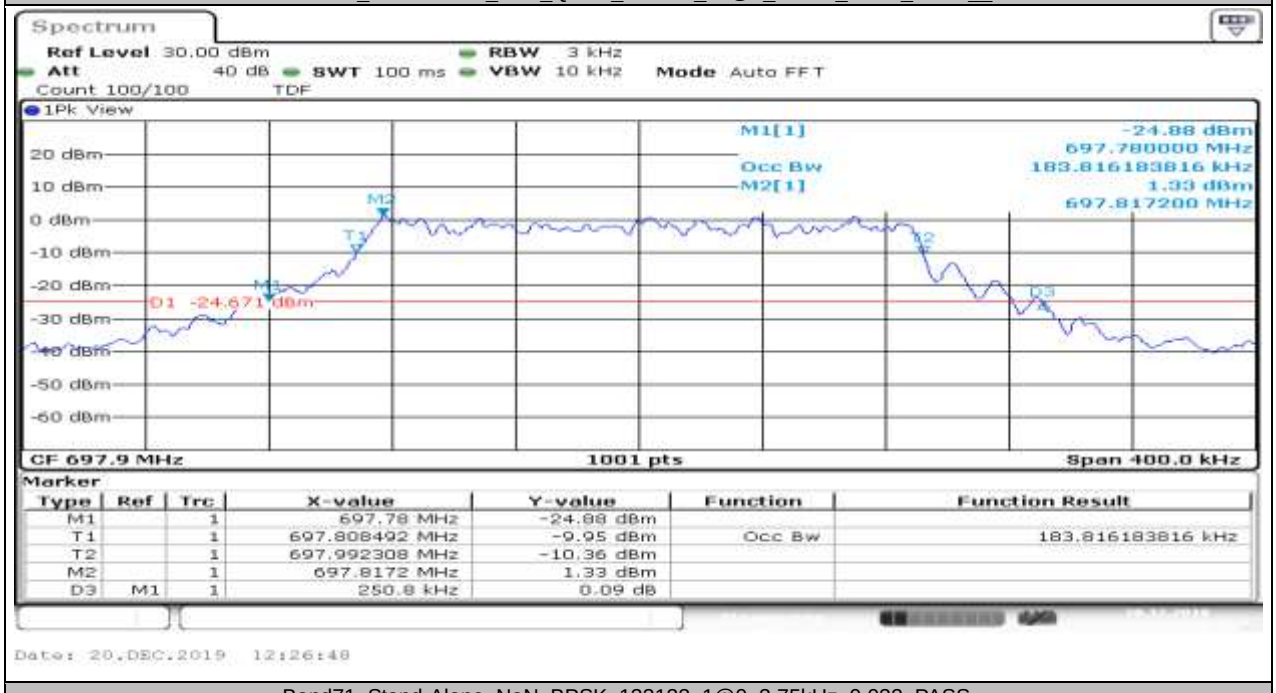
Band71_Stand-Alone_NaN_QPSK_133471_1@0_3.75kHz_0.038_PASS__



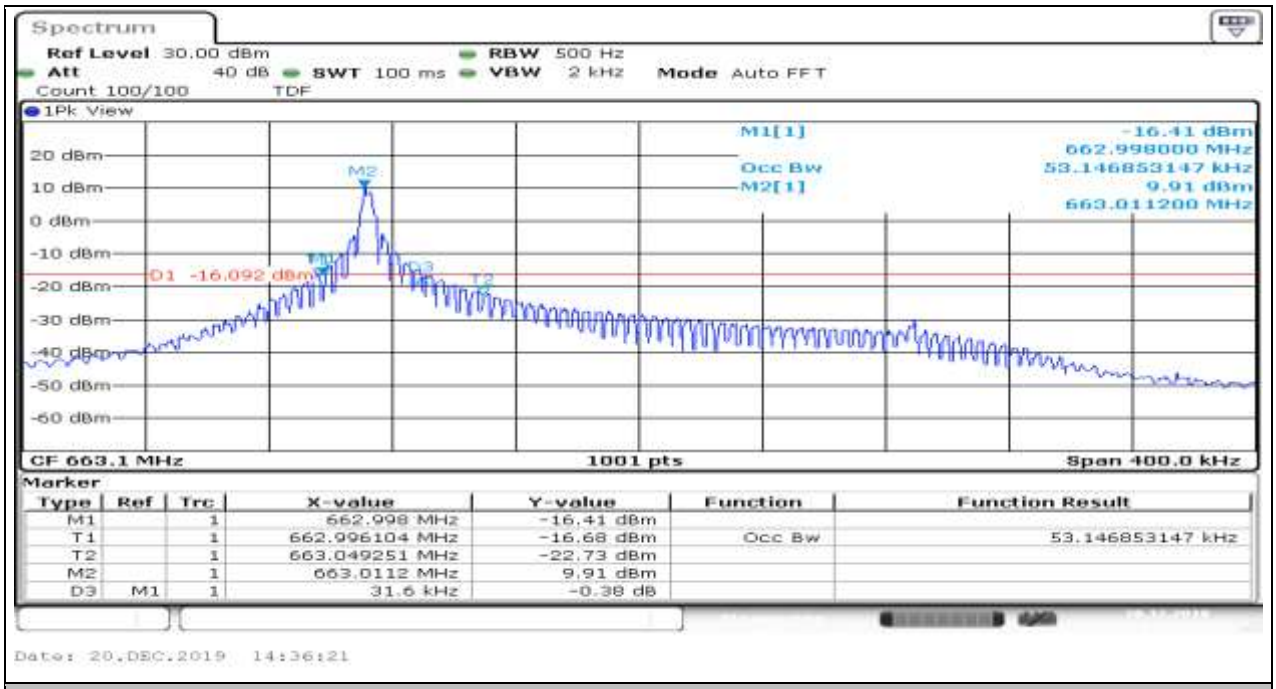
Band71_Stand-Alone_NaN_QPSK_133471_1@0_15kHz_0.117_PASS__



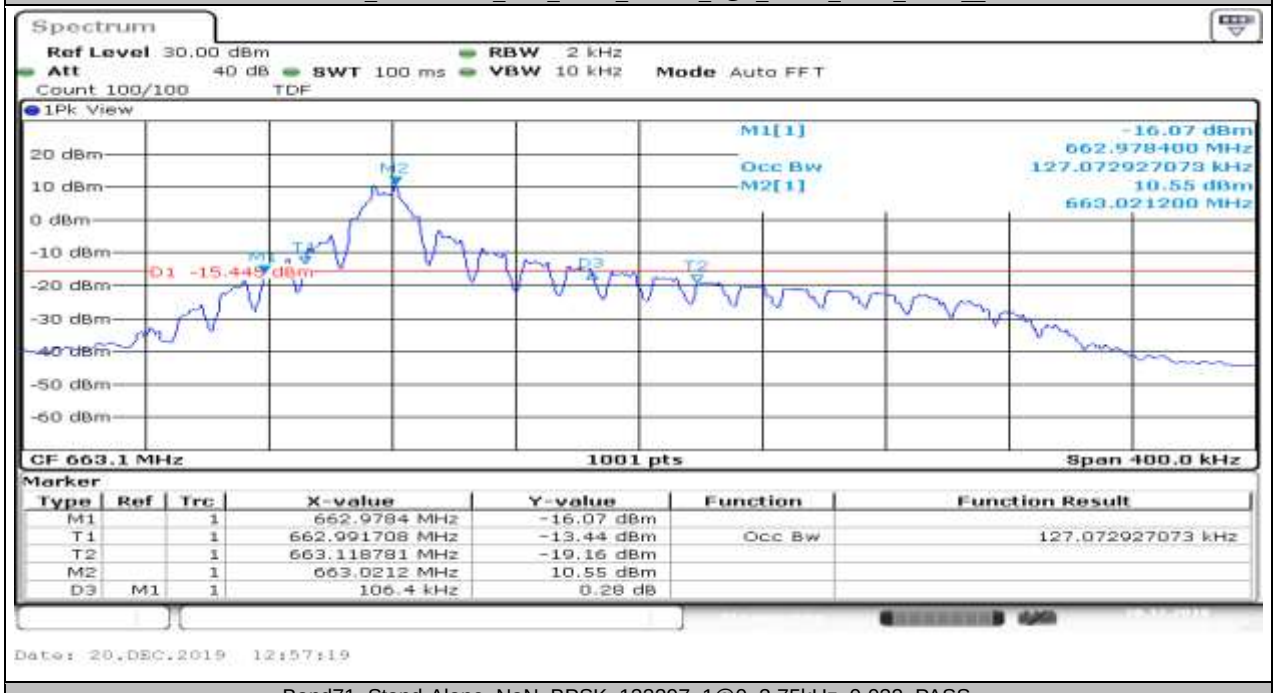
Band71_Stand-Alone_NaN_QPSK_133471_12@0_15kHz_0.251_PASS__



Band71_Stand-Alone_NaN_BPSK_133123_1@0_3.75kHz_0.032_PASS__

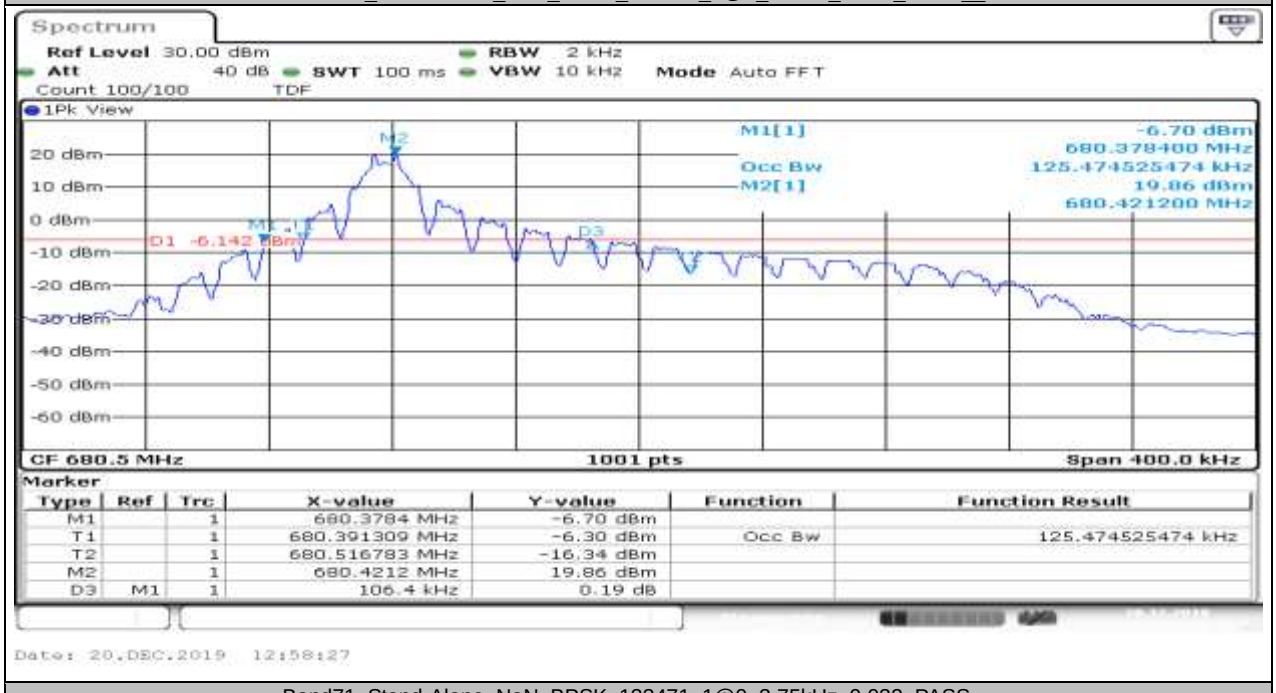


Band71_Stand-Alone_NaN_BPSK_133123_1@0_15kHz_0.106_PASS__

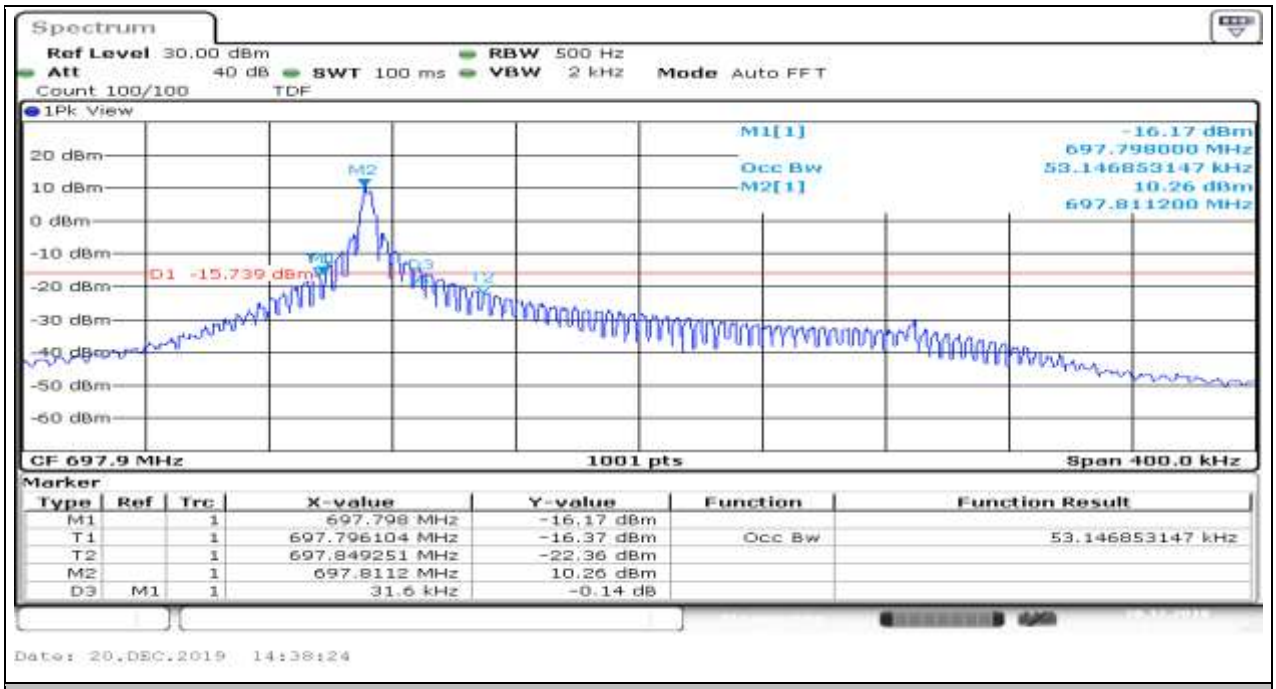


Band71_Stand-Alone_NaN_BPSK_133297_1@0_3.75kHz_0.032_PASS__

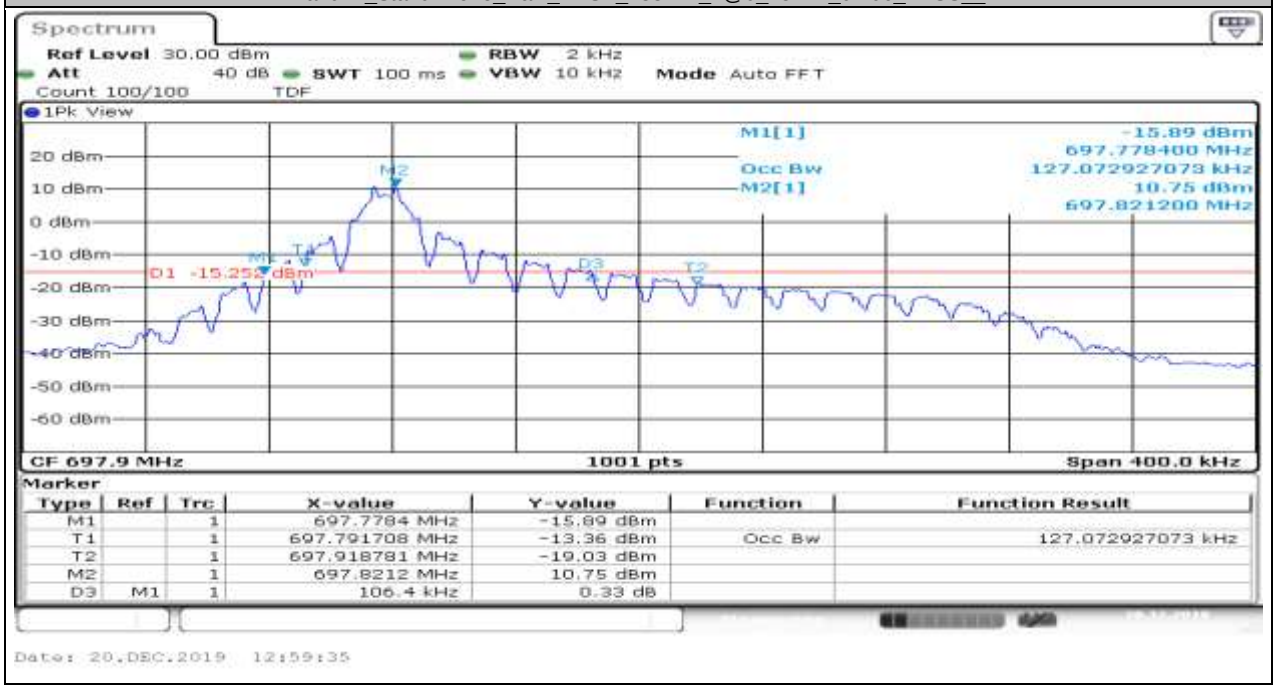
Band71_Stand-Alone_NaN_BPSK_133297_1@0_15kHz_0.106_PASS__



Band71_Stand-Alone_NaN_BPSK_133471_1@0_3.75kHz_0.032_PASS__



Band71_Stand-Alone_NaN_BPSK_133471_1@0_15kHz_0.106_PASS__



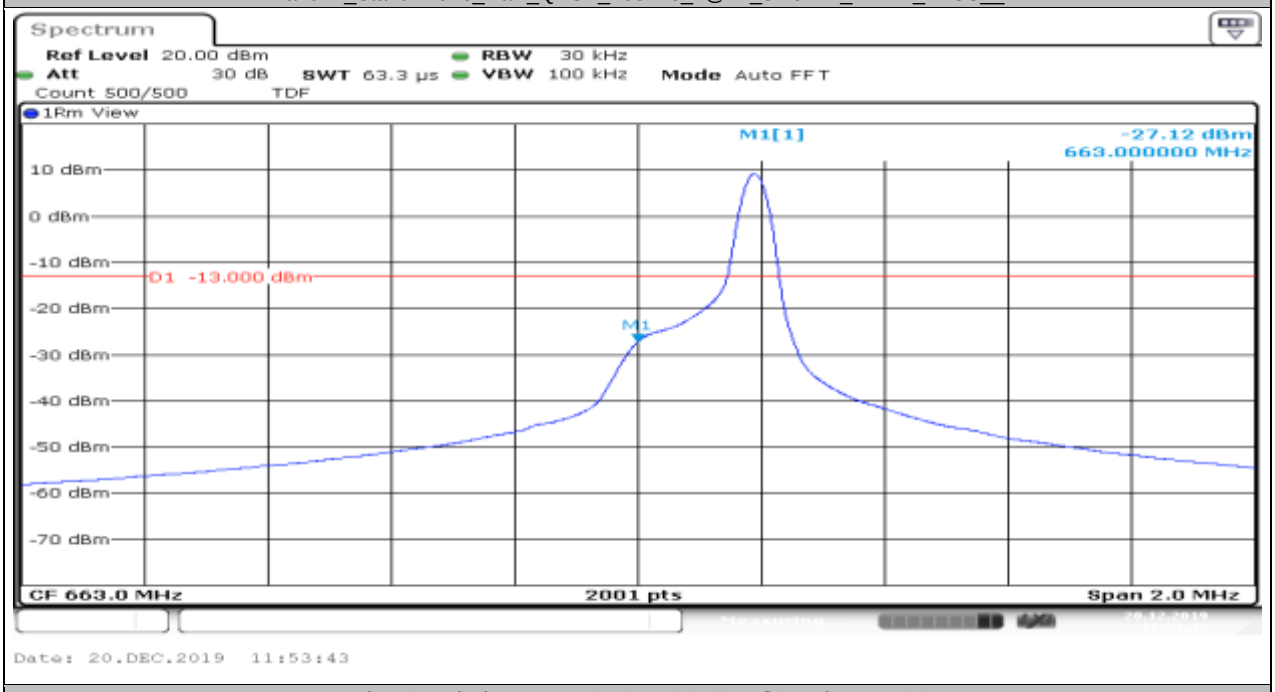
Appendix J.4: Band Edge for NB

Test Result

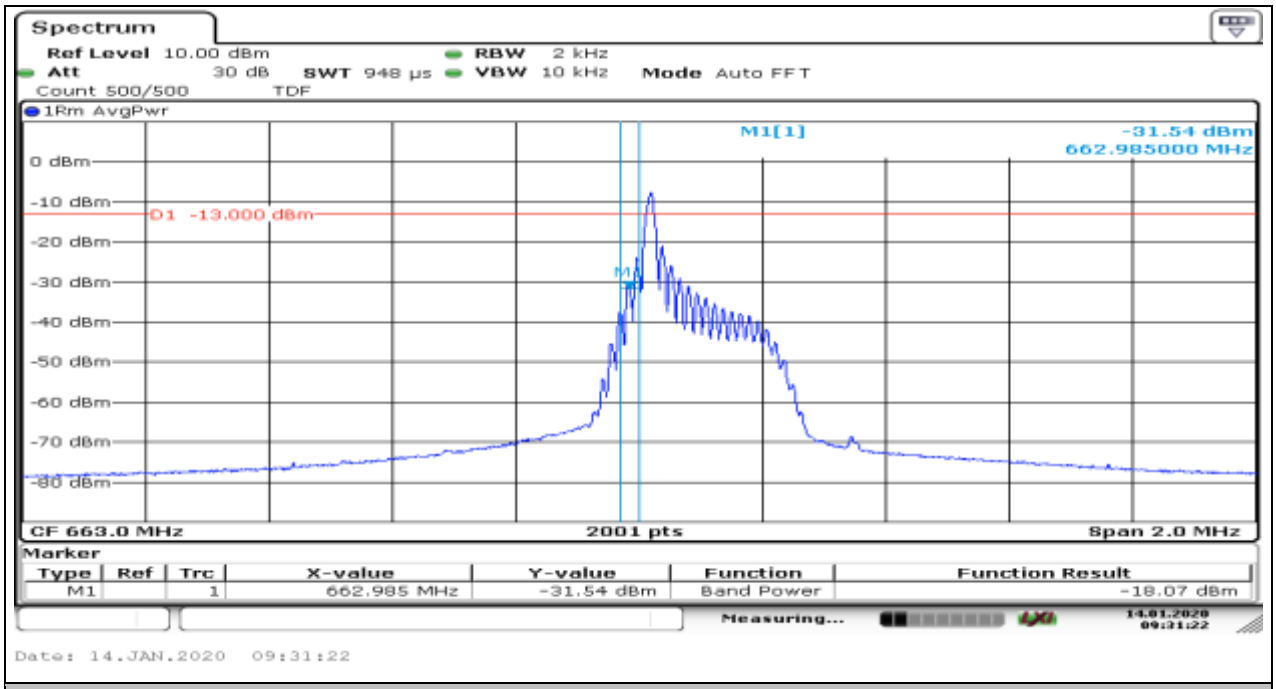
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
Band71	Stand-Alone	NaN	QPSK	133123	1@47	3.75kHz	-27.12	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	15kHz	-18.07	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@11	15kHz	-24.69	PASS
Band71	Stand-Alone	NaN	QPSK	133123	12@0	15kHz	-17.21	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	3.75kHz	-19.18	PASS
Band71	Stand-Alone	NaN	QPSK	133471	12@0	15kHz	-15.50	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	3.75kHz	-26.95	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@47	3.75kHz	-17.22	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@11	15kHz	-16.25	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	15kHz	-24.17	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	3.75kHz	-17.97	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@47	3.75kHz	-26.74	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	15kHz	-16.26	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@11	15kHz	-22.84	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@11	15kHz	-14.57	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	3.75kHz	-26.96	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@47	3.75kHz	-16.06	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	15kHz	-22.19	PASS

Test Graphs

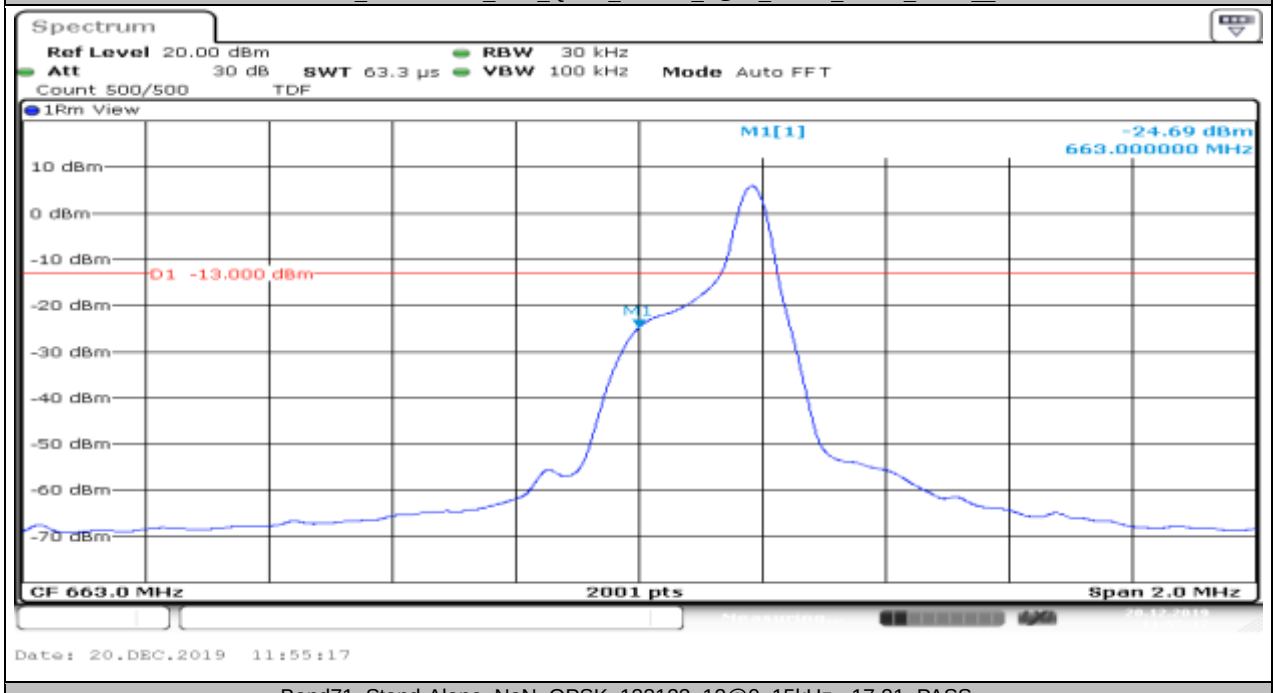
Band71_Stand-Alone_NaN_QPSK_133123_1@47_3.75kHz_-27.12_PASS__



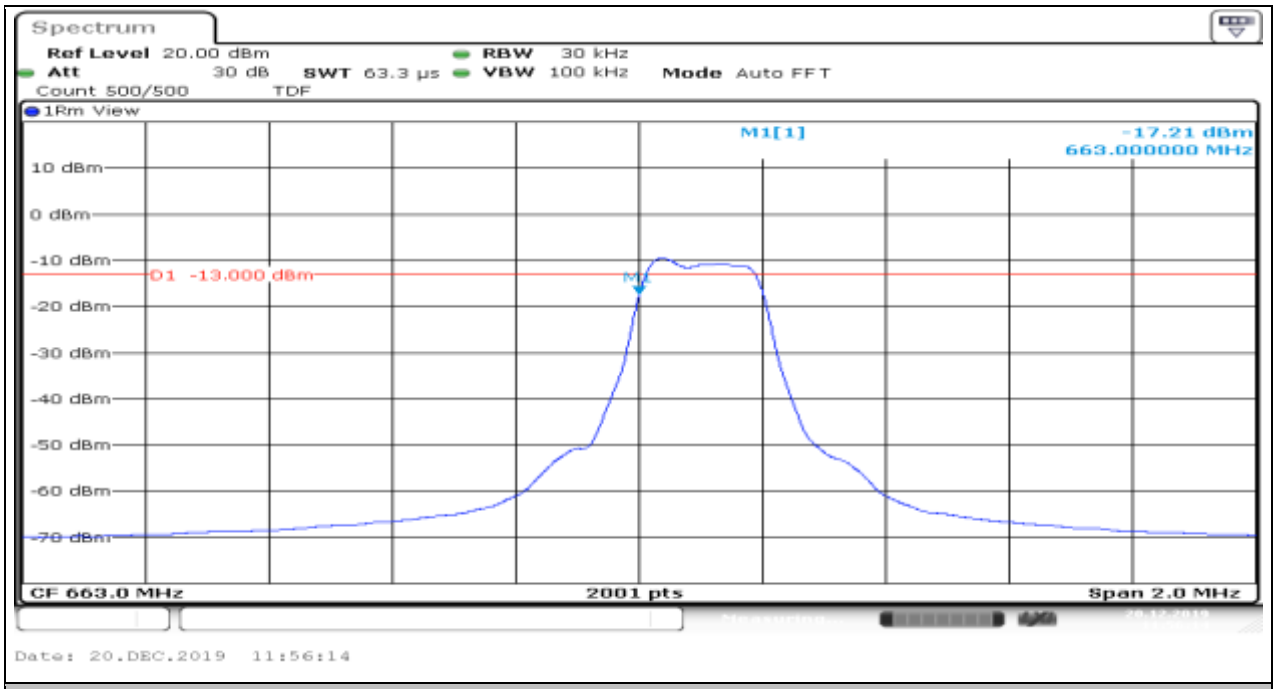
Band71_Stand-Alone_NaN_QPSK_133123_1@0_15kHz_PASS__



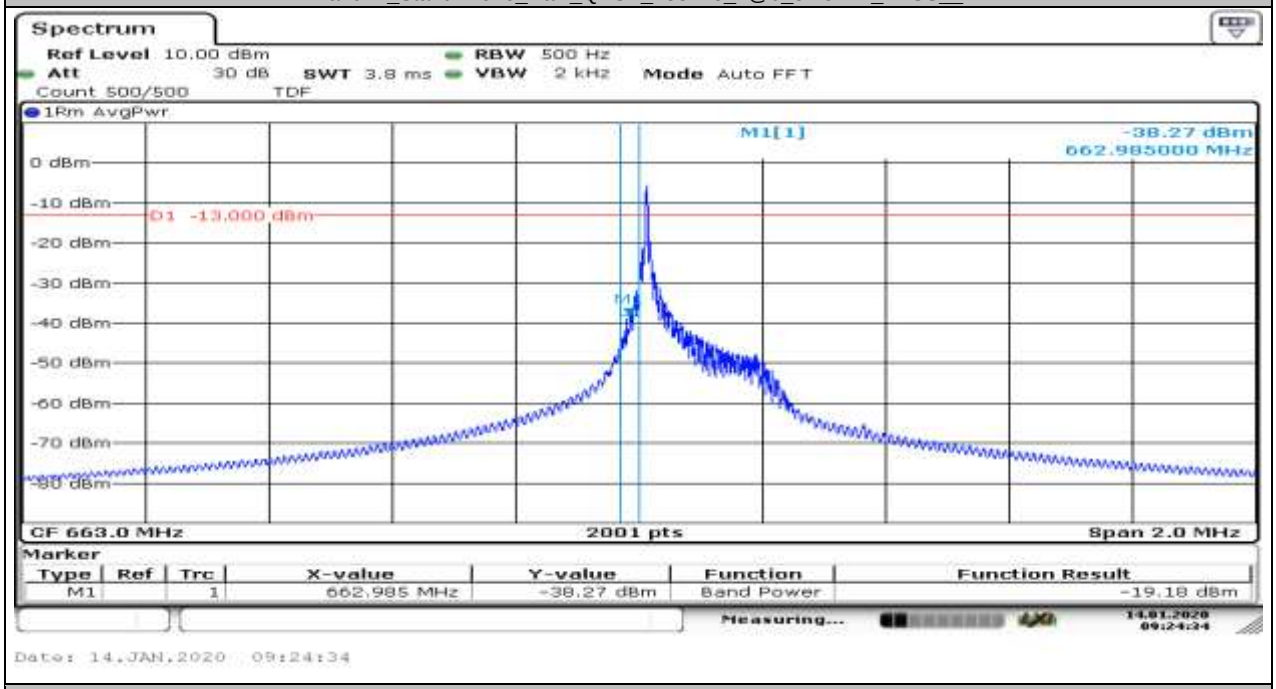
Band71_Stand-Alone_NaN_QPSK_133123_1@11_15kHz_-24.69_PASS__



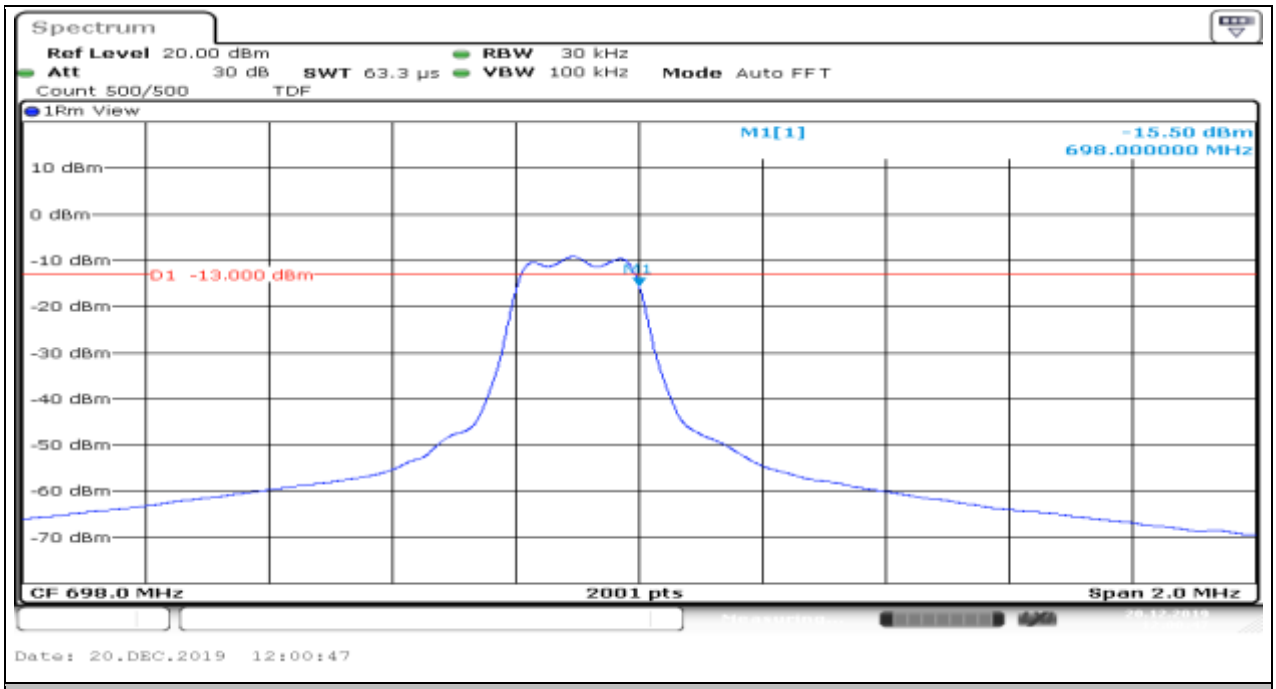
Band71_Stand-Alone_NaN_QPSK_133123_12@0_15kHz_-17.21_PASS__



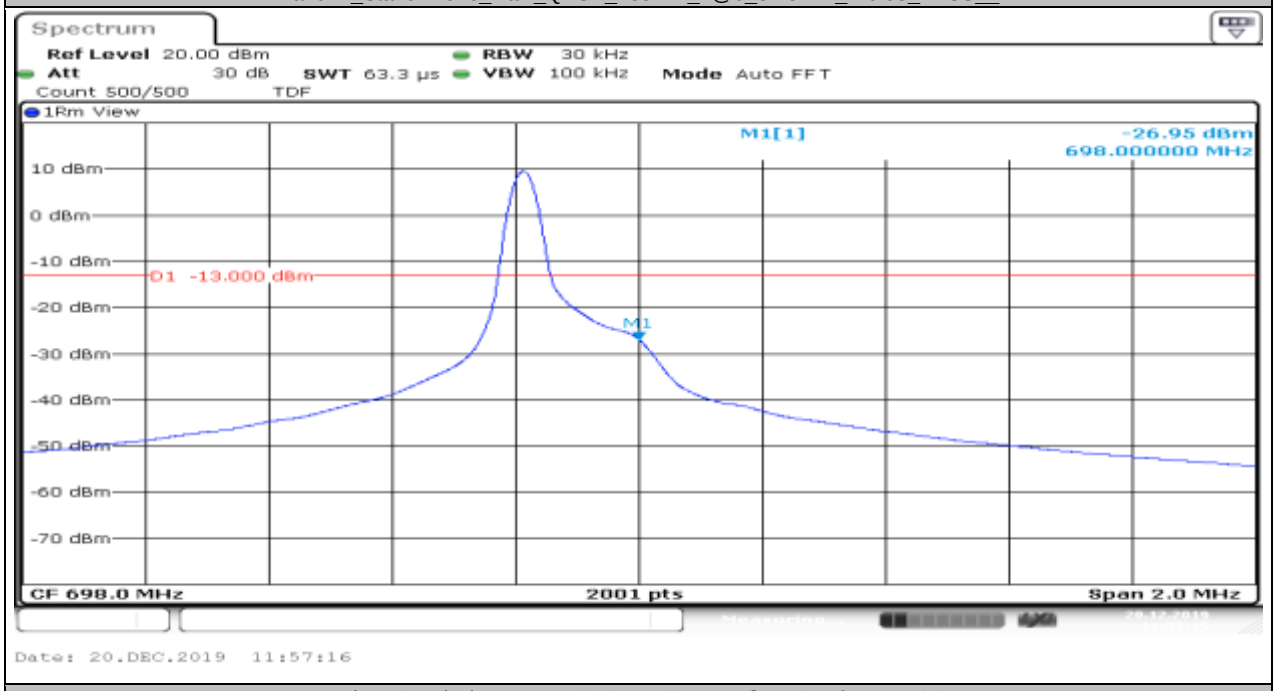
Band71_Stand-Alone_NaN_QPSK_133123_1@0_3.75kHz_PASS__



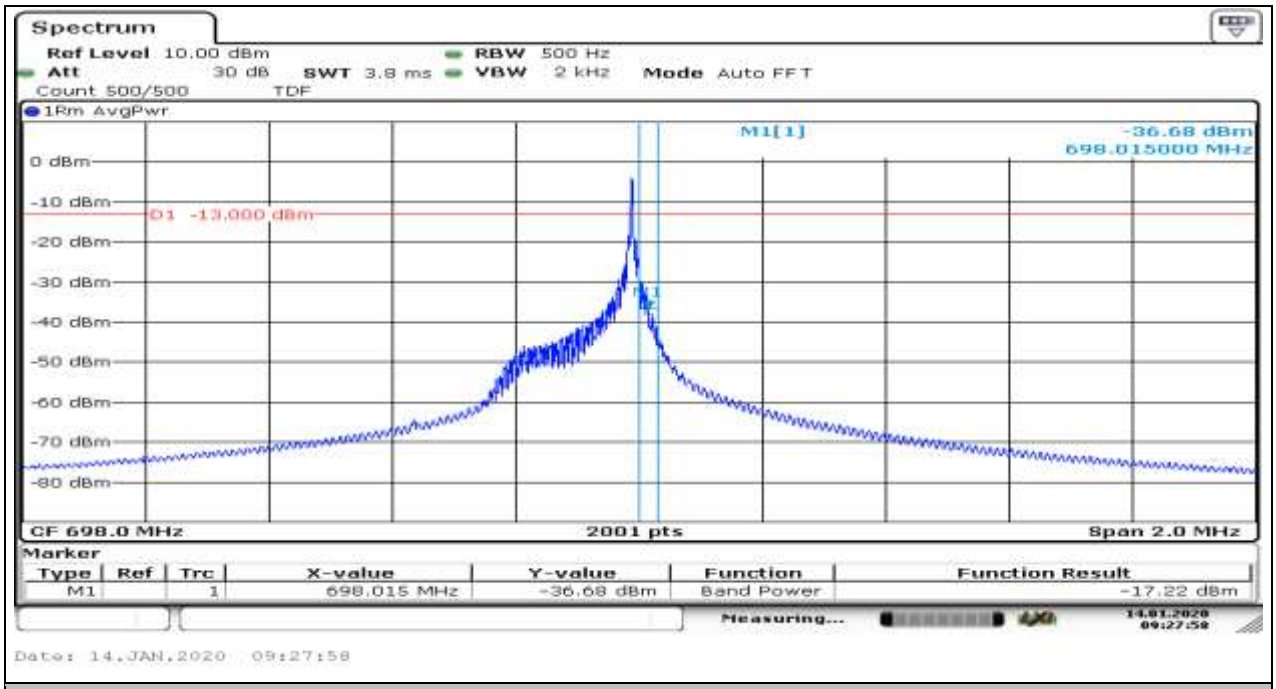
Band71_Stand-Alone_NaN_QPSK_133471_12@0_15kHz_-15.50_PASS__



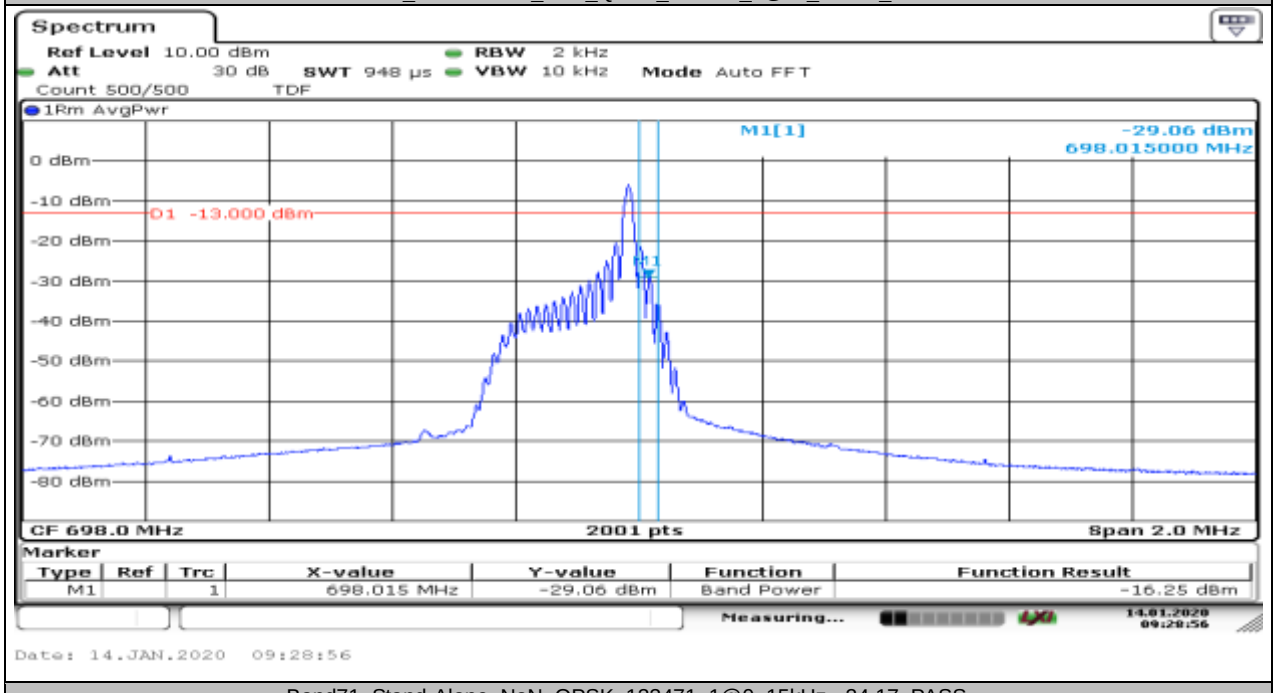
Band71_Stand-Alone_NaN_QPSK_133471_1@0_3.75kHz_-26.95_PASS__



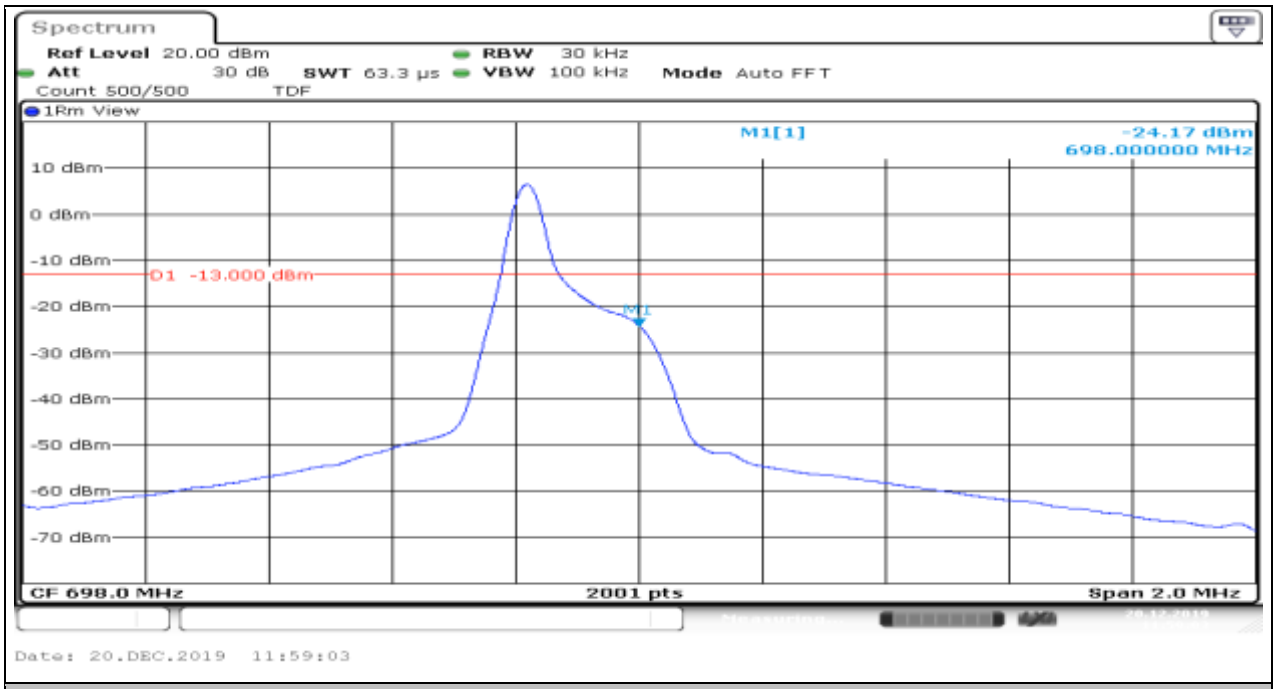
Band71_Stand-Alone_NaN_QPSK_133471_1@47_3.75kHz_PASS__



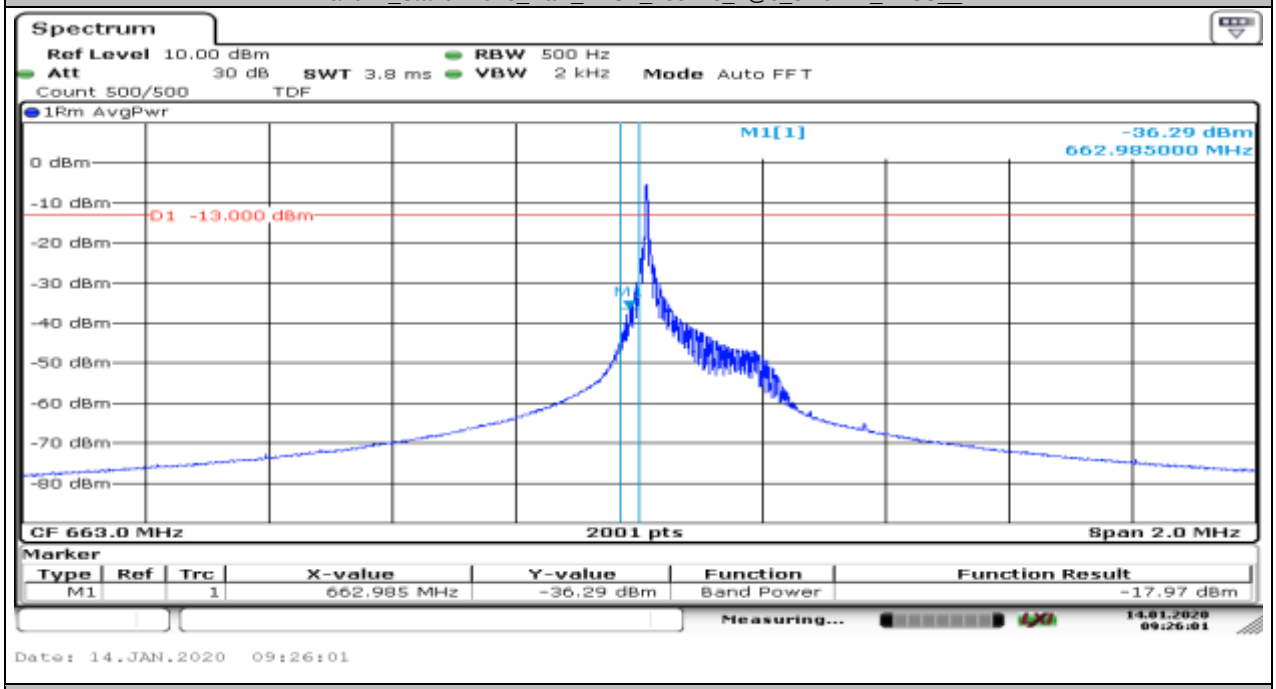
Band71_Stand-Alone_NaN_QPSK_133471_1@11_15kHz_PASS



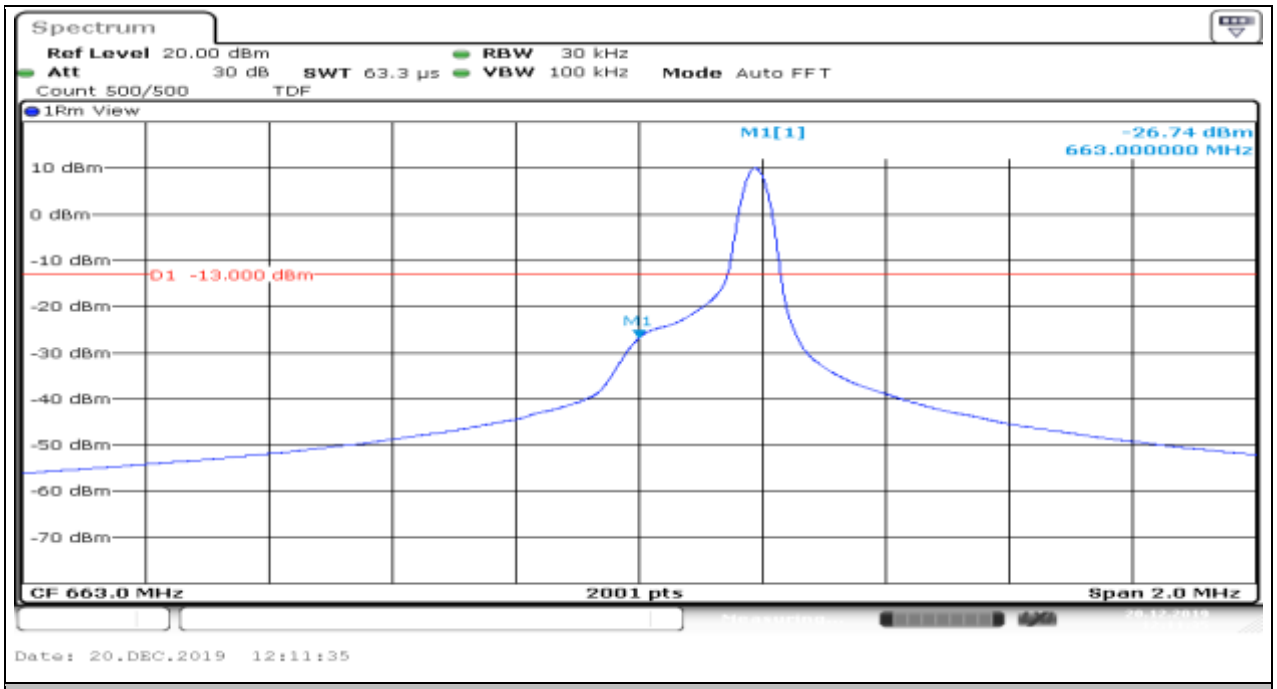
Band71_Stand-Alone_NaN_QPSK_133471_1@0_15kHz_-24.17_PASS__



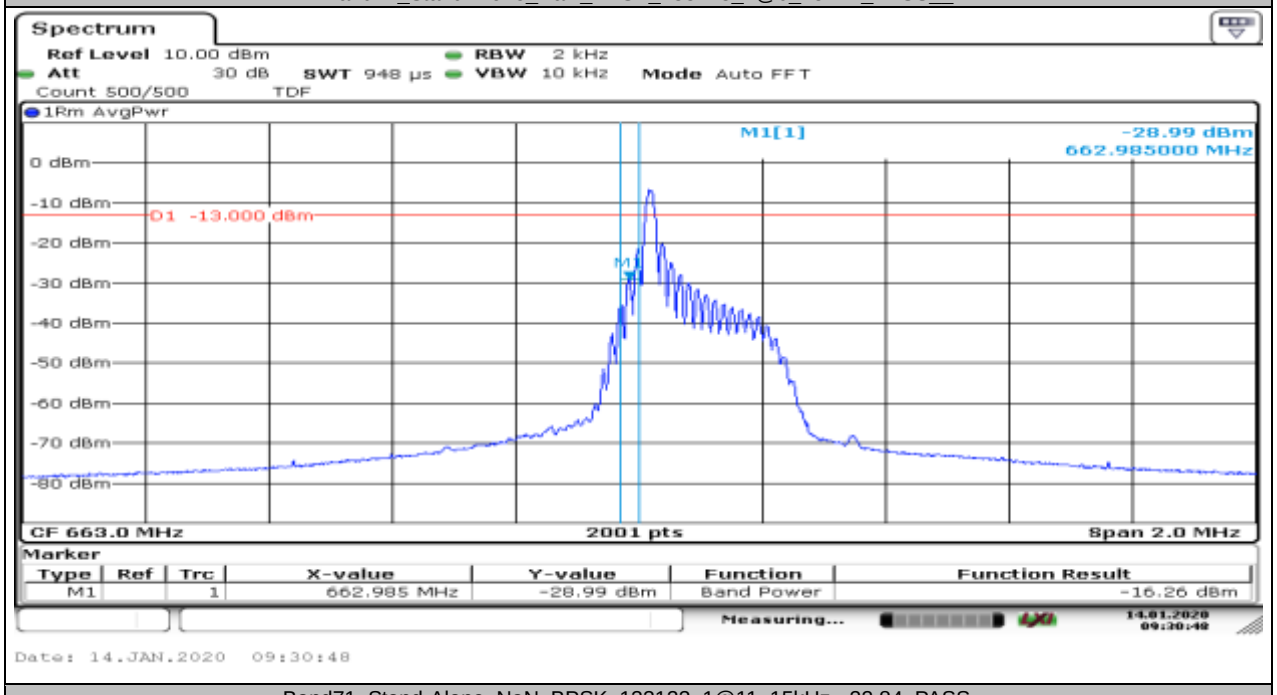
Band71_Stand-Alone_NaN_BPSK_133123_1@0_3.75kHz_PASS__



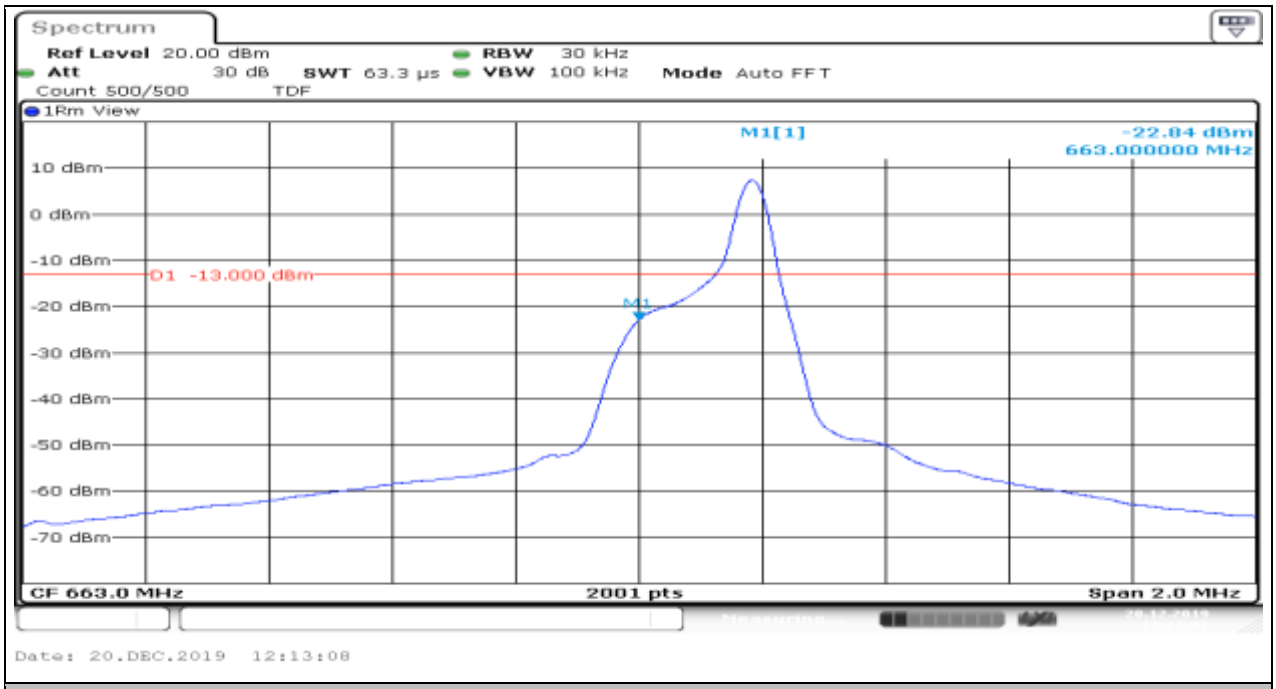
Band71_Stand-Alone_NaN_BPSK_133123_1@47_3.75kHz_-26.74_PASS__



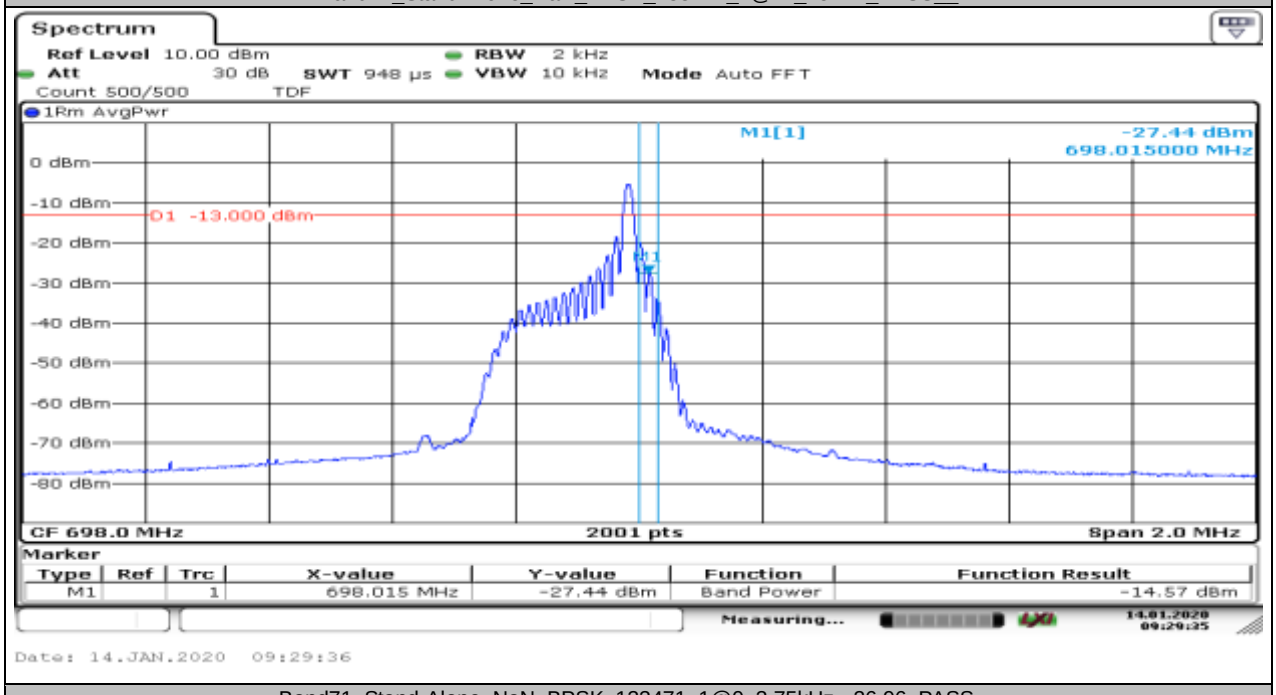
Band71_Stand-Alone_NaN_BPSK_133123_1@0_15kHz_PASS__



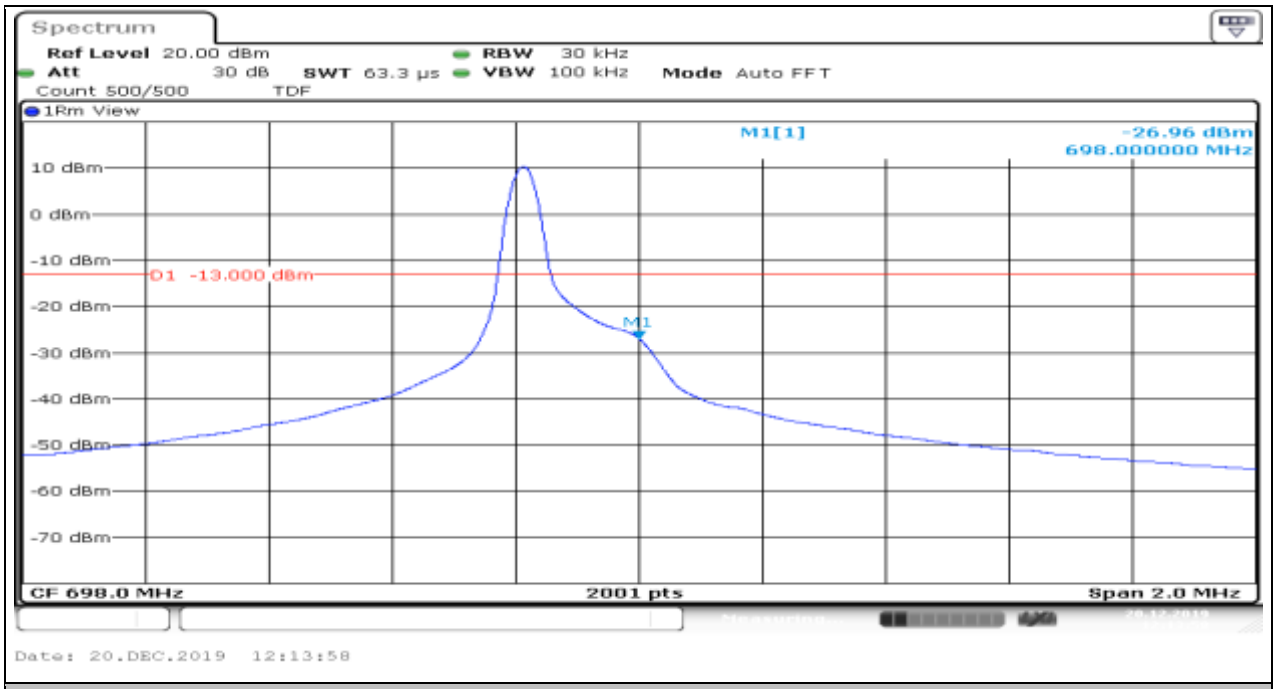
Band71_Stand-Alone_NaN_BPSK_133123_1@11_15kHz_-22.84_PASS__



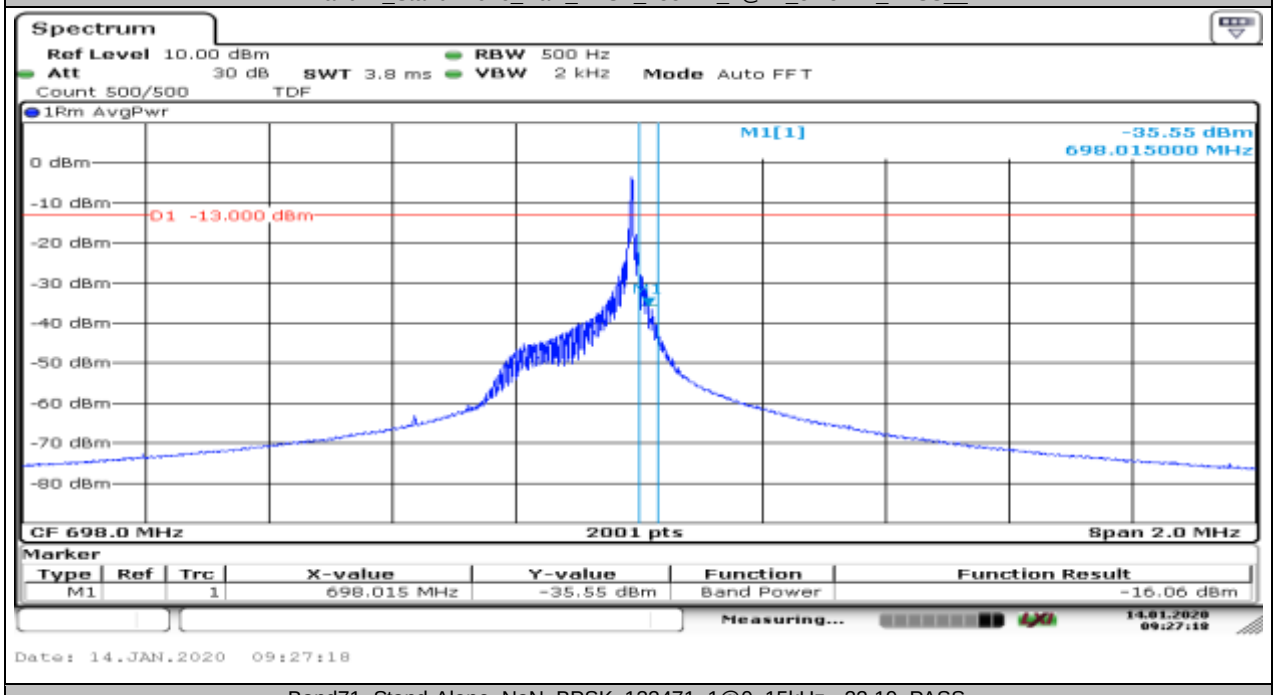
Band71_Stand-Alone_NaN_BPSK_133471_1@11_15kHz_PASS__



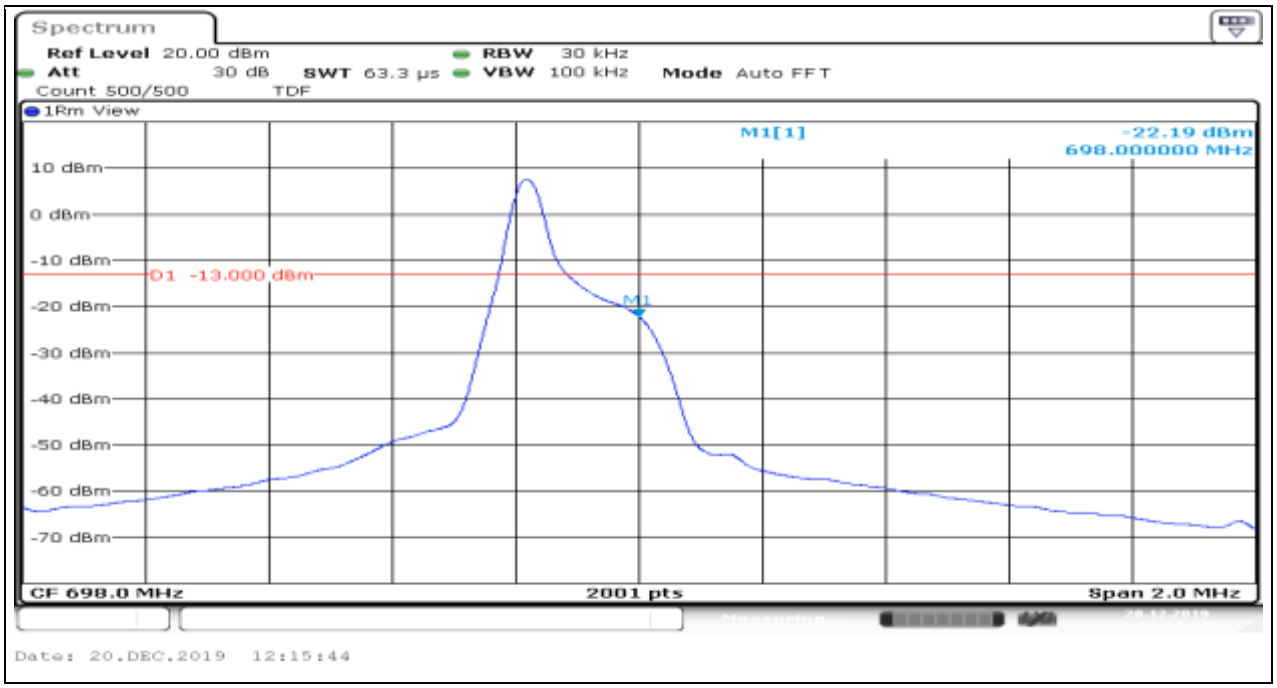
Band71_Stand-Alone_NaN_BPSK_133471_1@0_3.75kHz_-26.96_PASS__



Band71_Stand-Alone_NaN_BPSK_133471_1@47_3.75kHz_PASS__



Band71_Stand-Alone_NaN_BPSK_133471_1@0_15kHz_-22.19_PASS__


Spectrum
Ref Level 20.00 dBm
RBW 30 kHz
Att 30 dB
SWT 63.3 µs
VBW 100 kHz
Mode Auto FFT
Count 500/500
TDF
1Rm View
M1[1]
-22.19 dBm
698.000000 MHz
10 dBm
0 dBm
-10 dBm
D1 -13.000 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 698.0 MHz
2001 pts
Span 2.0 MHz
Date: 20.DEC.2019 12:15:44

Appendix J.5: Conducted Spurious Emission for NB

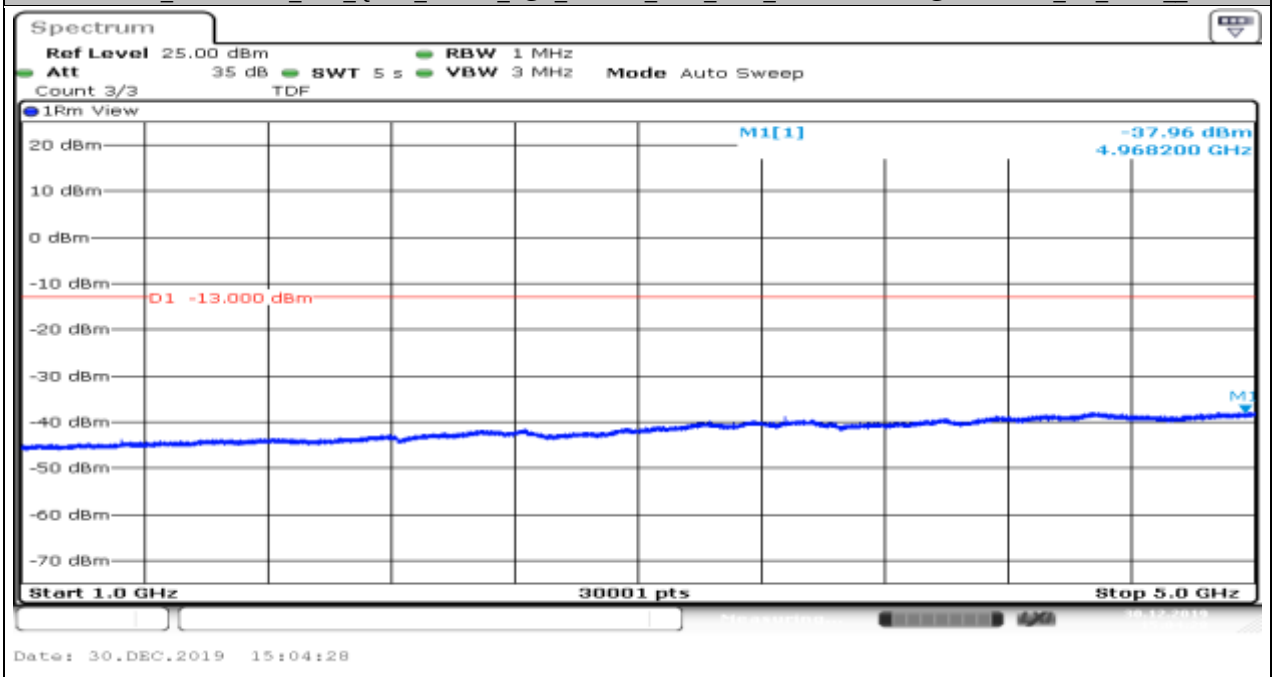
Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	StartFreq (MHz)	StopFreq (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band71	Stand-Alone	NaN	QPSK	133123	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.96dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.42dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.4dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@47	3.75kHz	30	1000	30~1000MHz@-35.79dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.79dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.41dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.22dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	1@0	3.75kHz	30	1000	30~1000MHz@-36.08dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	12@0	15kHz	12000	26500	12000~26500MHz@-41.42dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	12@0	15kHz	5000	12000	5000~12000MHz@-47.47dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	12@0	15kHz	1000	5000	1000~5000MHz@-37.75dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133123	12@0	15kHz	30	1000	30~1000MHz@-34.63dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.46dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	12@0	15kHz	1000	5000	1000~5000MHz@-37.68dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.38dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.49dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.75dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	12@0	15kHz	12000	26500	12000~26500MHz@-41.32dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.33dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	12@0	15kHz	5000	12000	5000~12000MHz@-47.57dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.84dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	30	1000	30~1000MHz@-35.9dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	30	1000	30~1000MHz@-35.72dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133297	12@0	15kHz	30	1000	30~1000MHz@-35.35dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.36dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	3.75kHz	30	1000	30~1000MHz@-35.6dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.43dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@47	3.75kHz	30	1000	30~1000MHz@-35.53dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.87dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.45dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.48dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	12@0	15kHz	30	1000	30~1000MHz@-35.79dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.72dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	12@0	15kHz	12000	26500	12000~26500MHz@-41.46dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	12@0	15kHz	5000	12000	5000~12000MHz@-47.37dBm	-13	PASS
Band71	Stand-Alone	NaN	QPSK	133471	12@0	15kHz	1000	5000	1000~5000MHz@-37.85dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	15kHz	12000	26500	12000~26500MHz@-41.33dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	15kHz	1000	5000	1000~5000MHz@-37.71dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	15kHz	5000	12000	5000~12000MHz@-47.52dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@11	15kHz	12000	26500	12000~26500MHz@-41.45dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@11	15kHz	5000	12000	5000~12000MHz@-47.36dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@11	15kHz	1000	5000	1000~5000MHz@-37.91dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@11	15kHz	30	1000	30~1000MHz@-35.36dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133123	1@0	15kHz	30	1000	30~1000MHz@-35.19dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	15kHz	30	1000	30~1000MHz@-35.88dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@11	15kHz	12000	26500	12000~26500MHz@-41.23dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@11	15kHz	1000	5000	1000~5000MHz@-37.79dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@11	15kHz	5000	12000	5000~12000MHz@-47.38dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@11	15kHz	30	1000	30~1000MHz@-35.75dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	15kHz	12000	26500	12000~26500MHz@-41.21dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	15kHz	1000	5000	1000~5000MHz@-37.83dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133297	1@0	15kHz	5000	12000	5000~12000MHz@-47.52dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@11	15kHz	12000	26500	12000~26500MHz@-41.35dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	15kHz	30	1000	30~1000MHz@-35.8dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	15kHz	1000	5000	1000~5000MHz@-37.69dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	15kHz	5000	12000	5000~12000MHz@-47.38dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@0	15kHz	12000	26500	12000~26500MHz@-41.51dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@11	15kHz	30	1000	30~1000MHz@-35.04dBm	-13	PASS

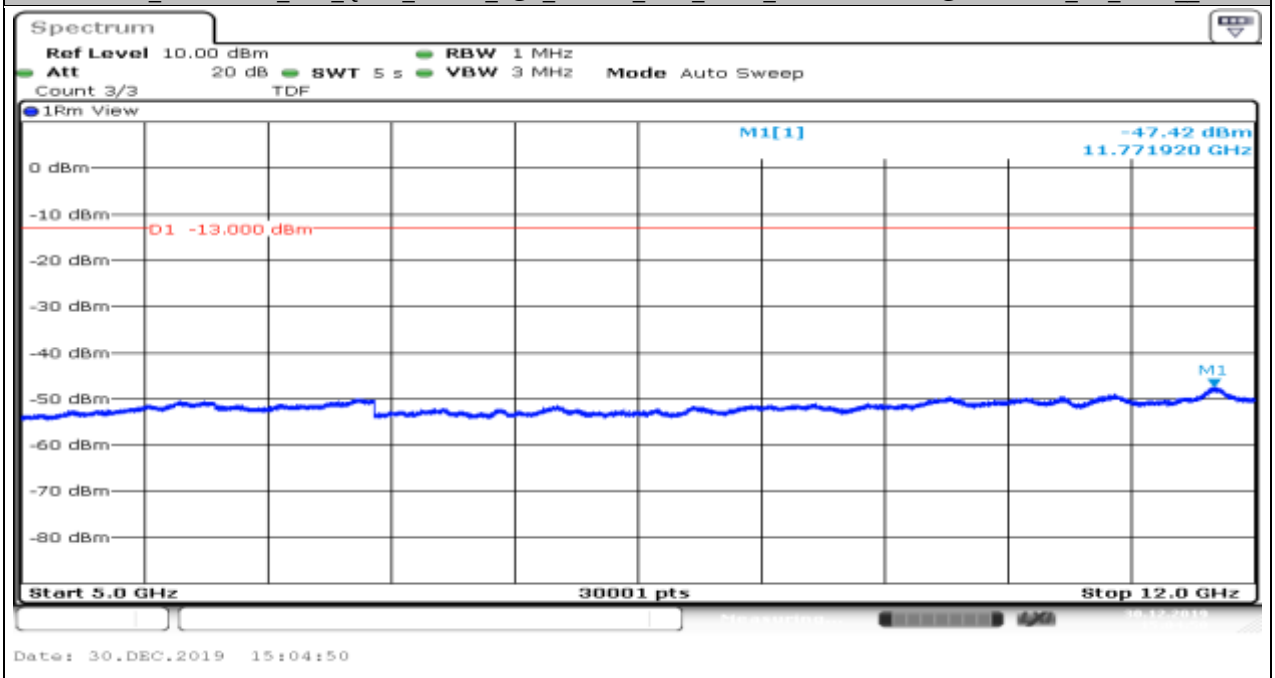
Band71	Stand-Alone	NaN	BPSK	133471	1@11	15kHz	1000	5000	1000~5000MHz@-37.62dBm	-13	PASS
Band71	Stand-Alone	NaN	BPSK	133471	1@11	15kHz	5000	12000	5000~12000MHz@-47.56dBm	-13	PASS

Test Graphs

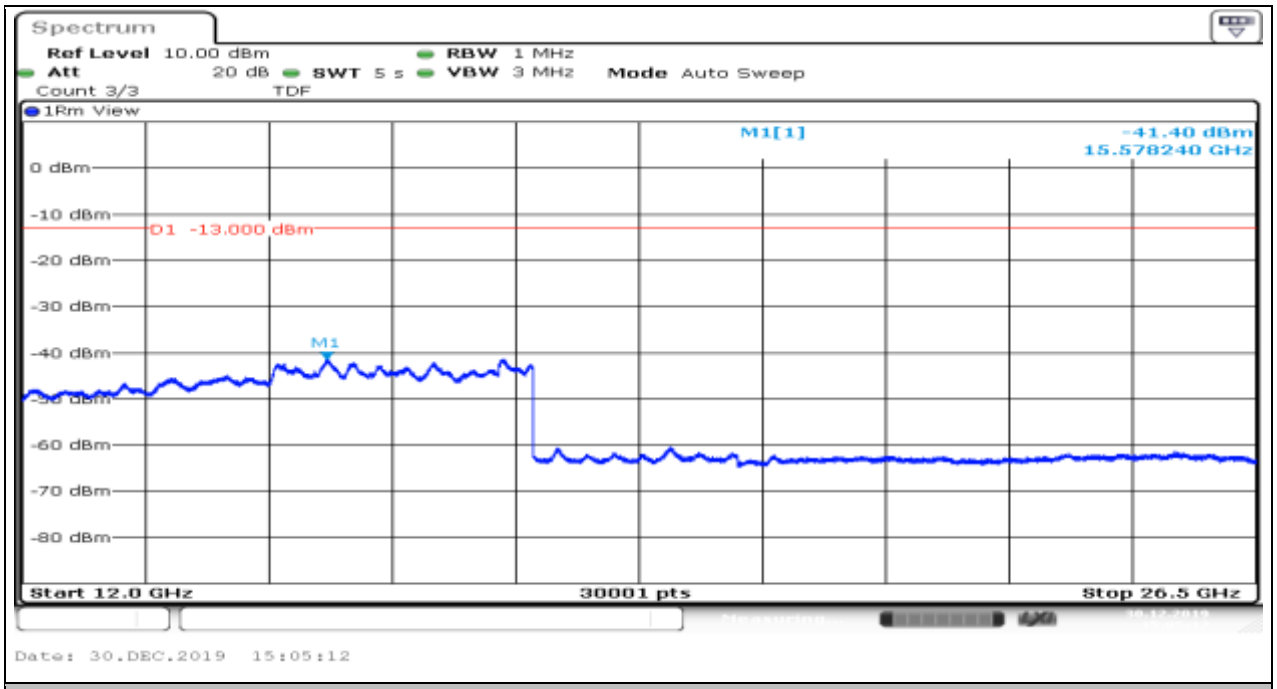
Band71_Stand-Alone_NaN_QPSK_133123_1@0_3.75kHz_1000_5000_1000~5000MHz@-37.96dBm_-13_PASS__



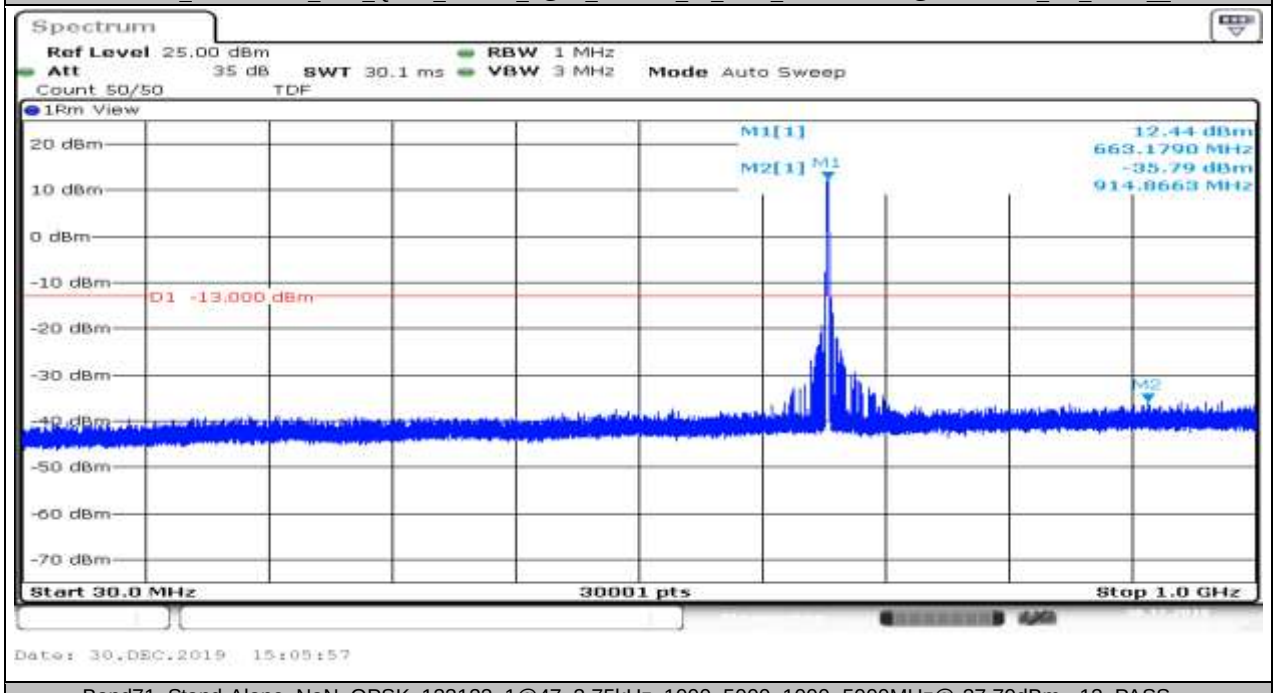
Band71_Stand-Alone_NaN_QPSK_133123_1@0_3.75kHz_5000_12000_5000~12000MHz@-47.42dBm_-13_PASS__



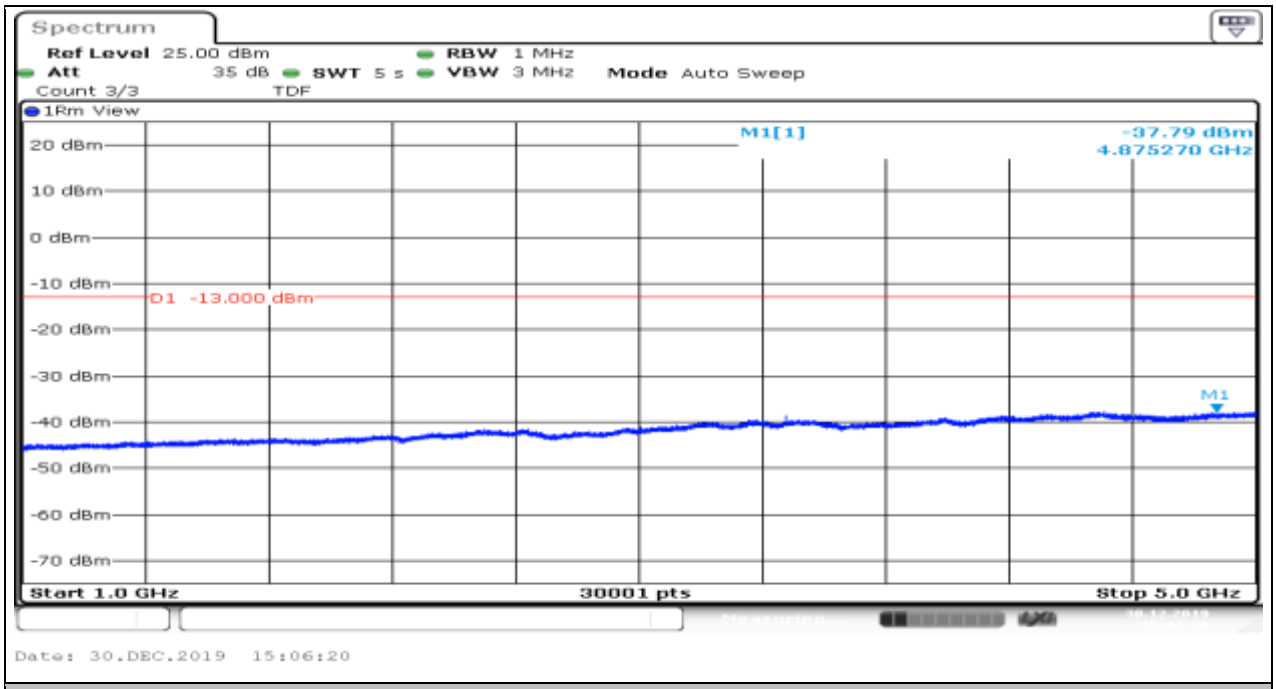
Band71_Stand-Alone_NaN_QPSK_133123_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.4dBm_-13_PASS__



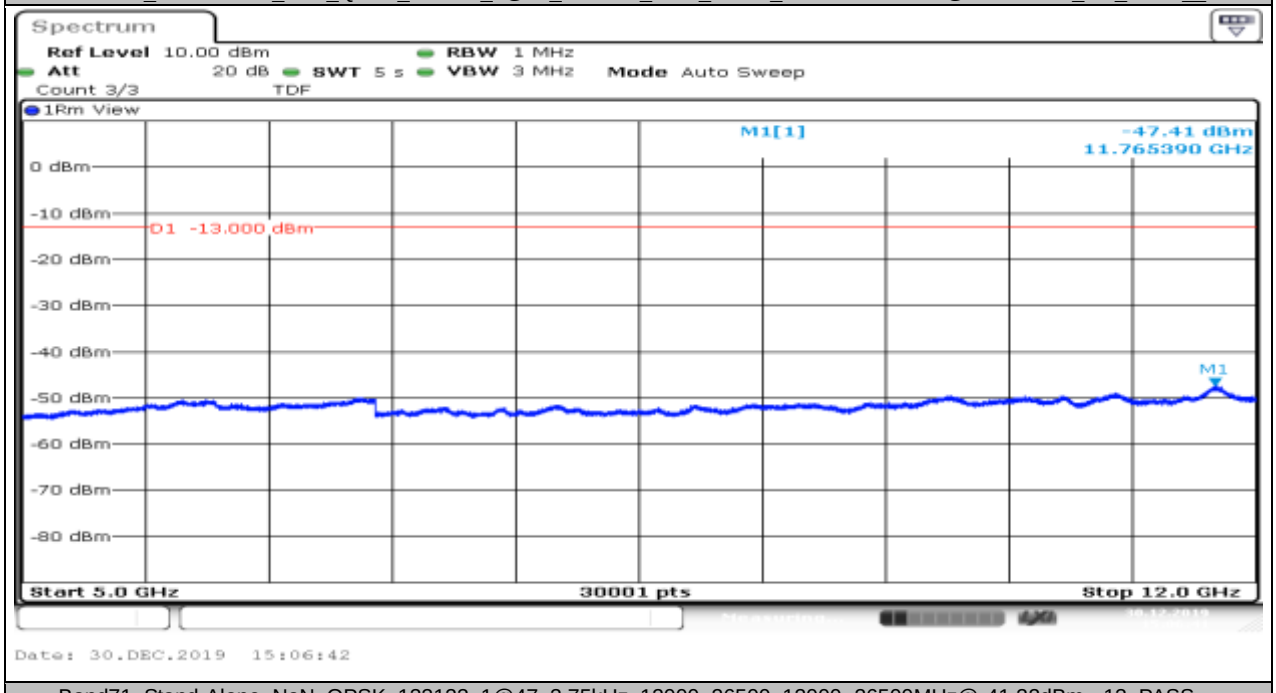
Band71_Stand-Alone_NaN_QPSK_133123_1@47_3.75kHz_30_1000_30~1000MHz@-35.79dBm_-13_PASS__



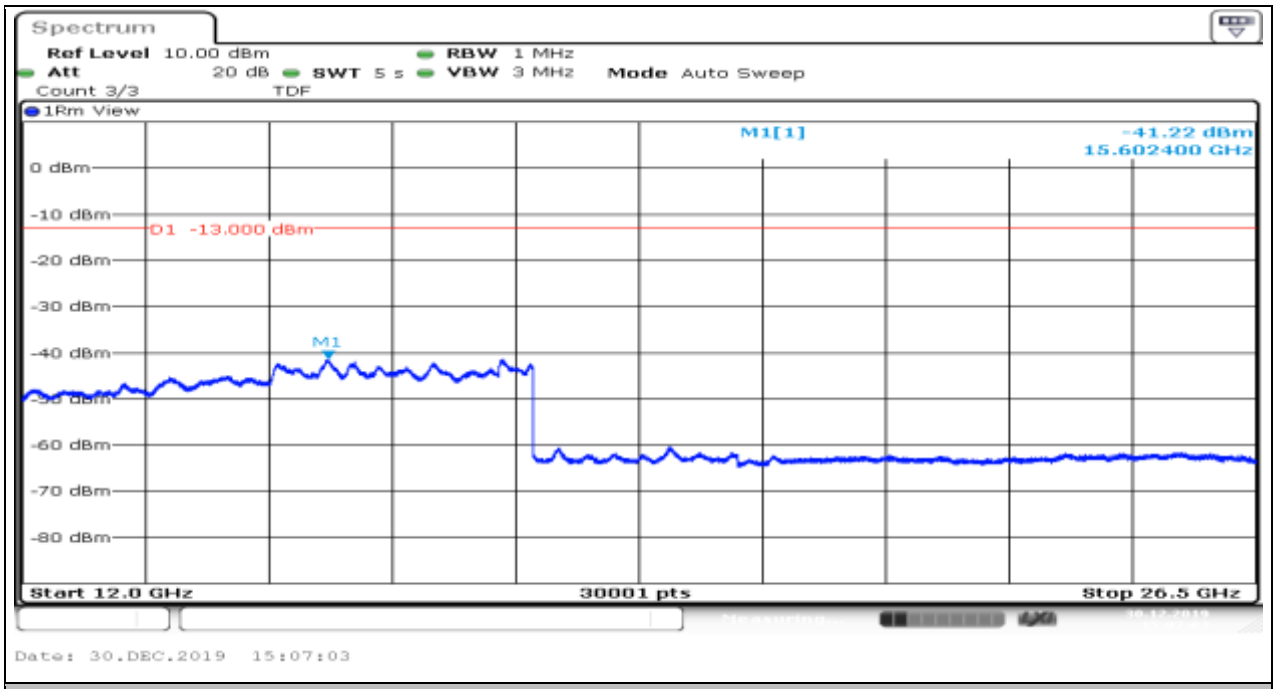
Band71_Stand-Alone_NaN_QPSK_133123_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.79dBm_-13_PASS__



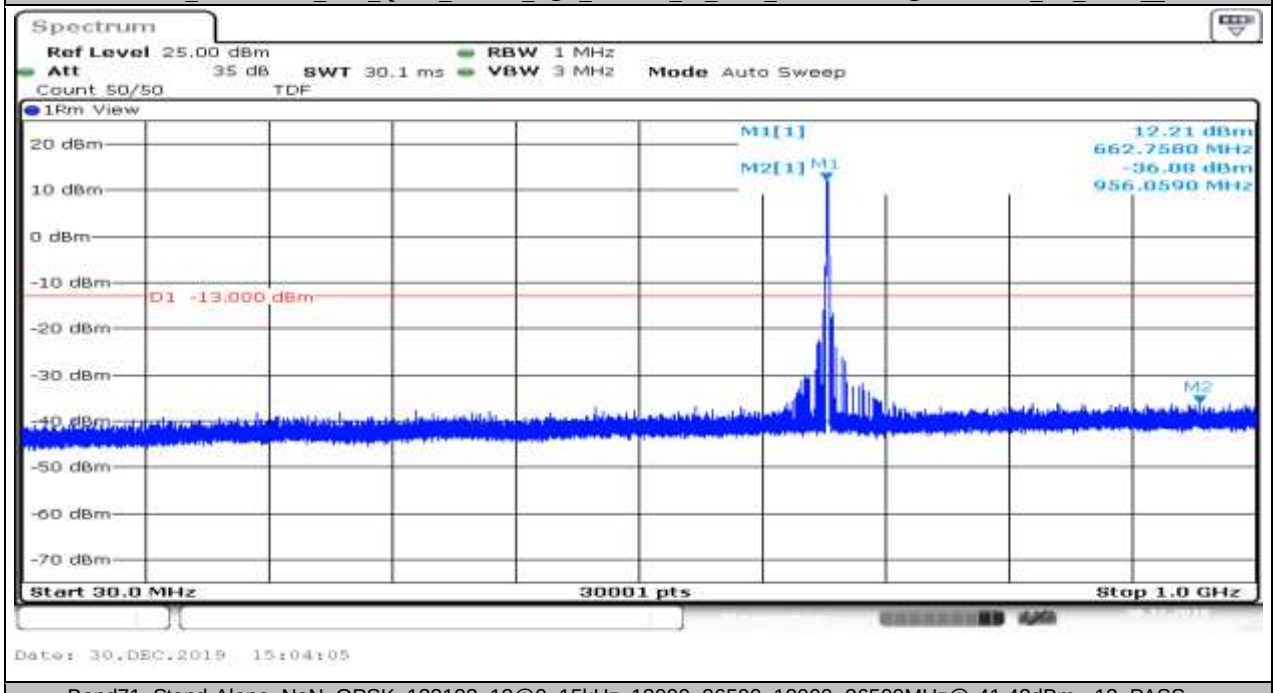
Band71_Stand-Alone_NaN_QPSK_133123_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.41dBm_-13_PASS__



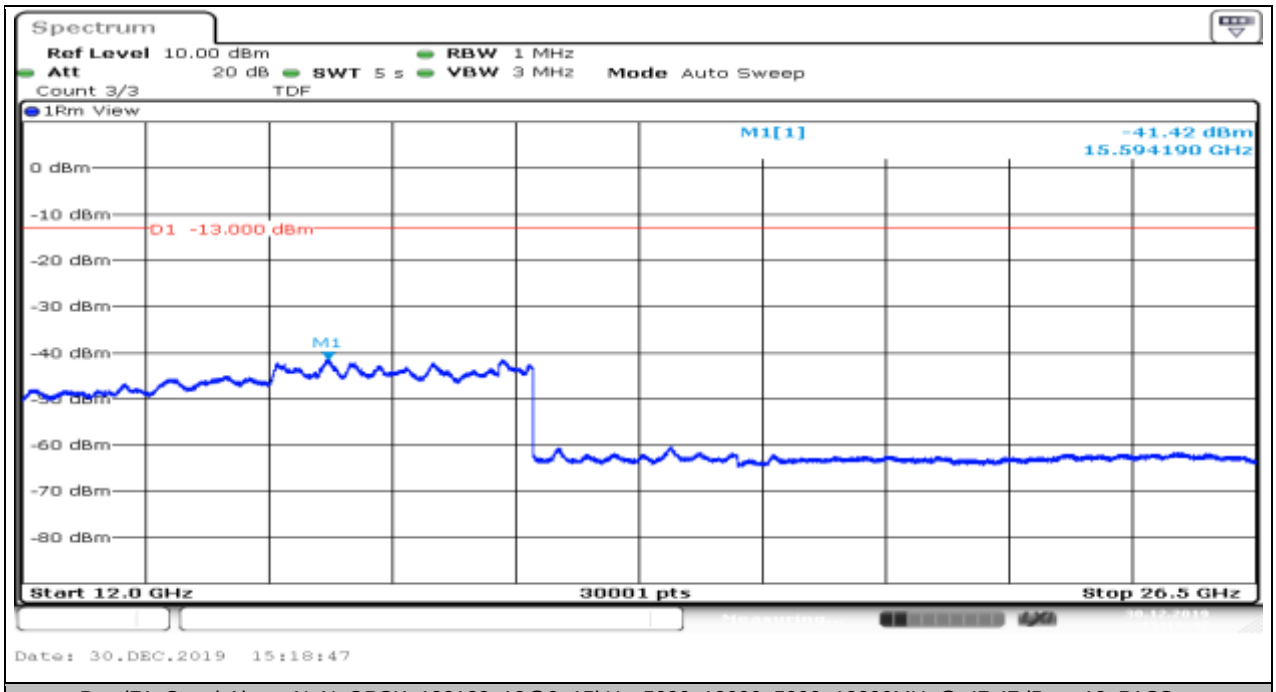
Band71_Stand-Alone_NaN_QPSK_133123_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.22dBm_-13_PASS__



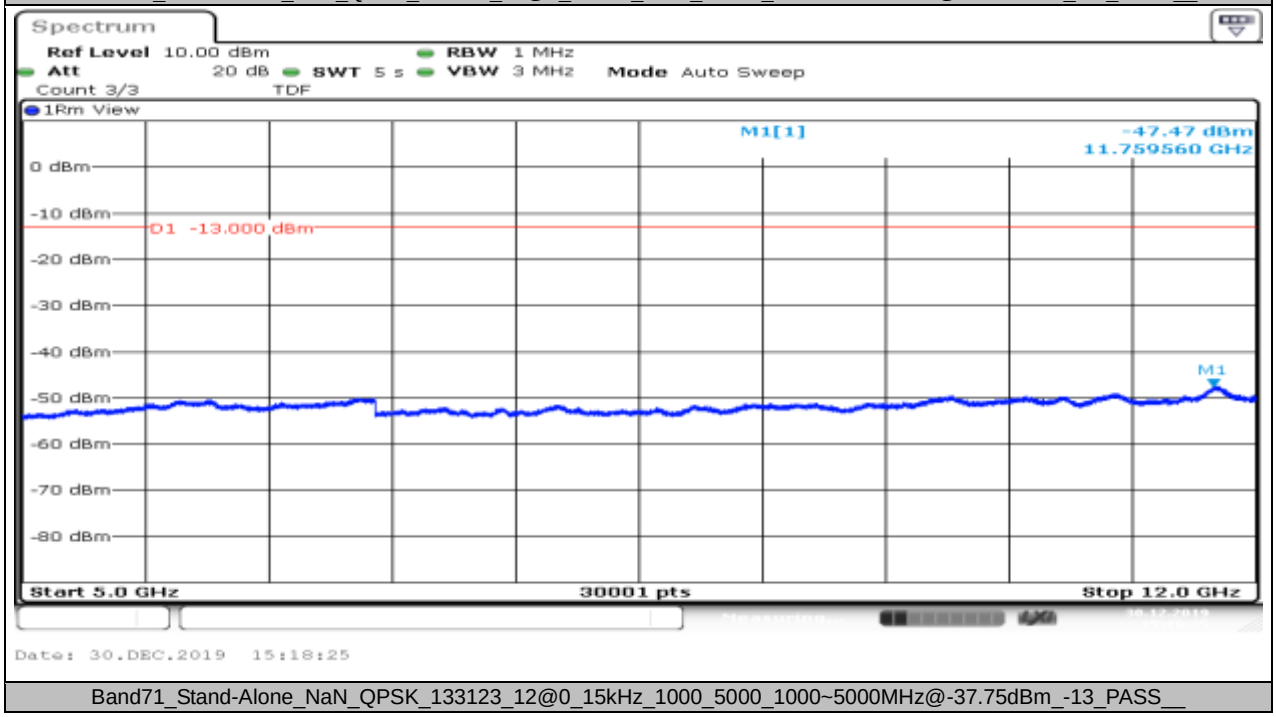
Band71_Stand-Alone_NaN_QPSK_133123_1@0_3.75kHz_30_1000_30~1000MHz@-36.08dBm_-13_PASS__



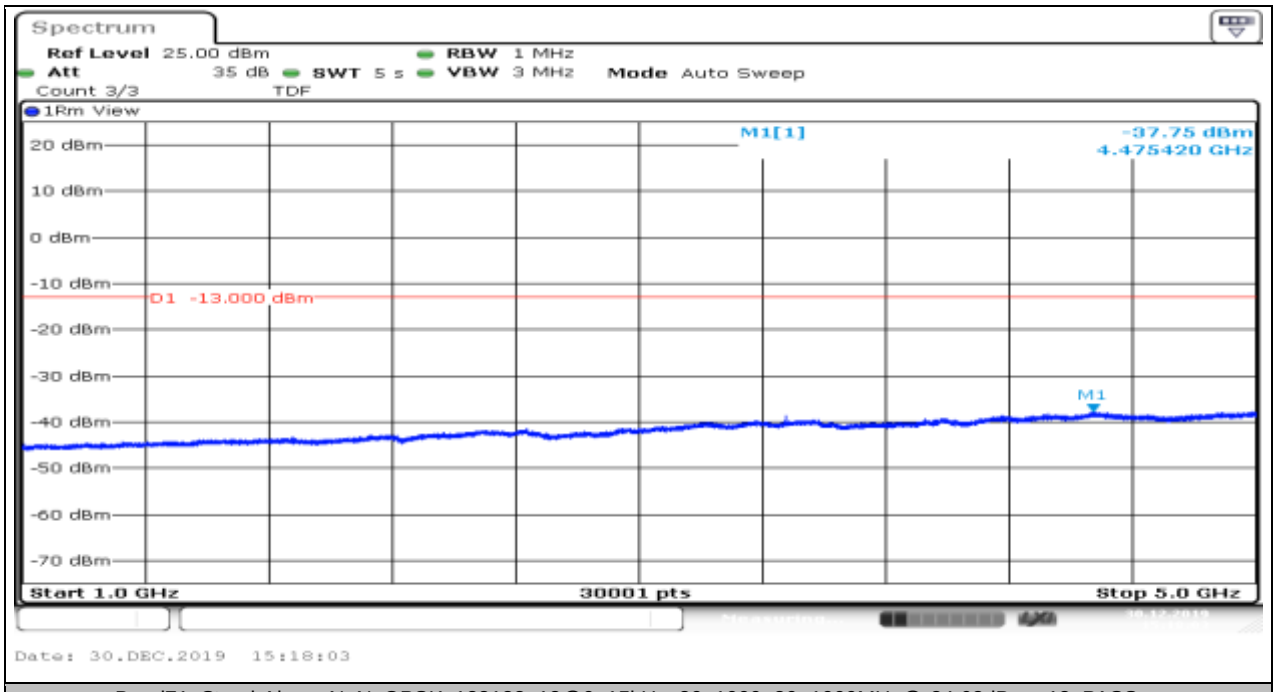
Band71_Stand-Alone_NaN_QPSK_133123_12@0_15kHz_12000_26500_12000~26500MHz@-41.42dBm_-13_PASS__



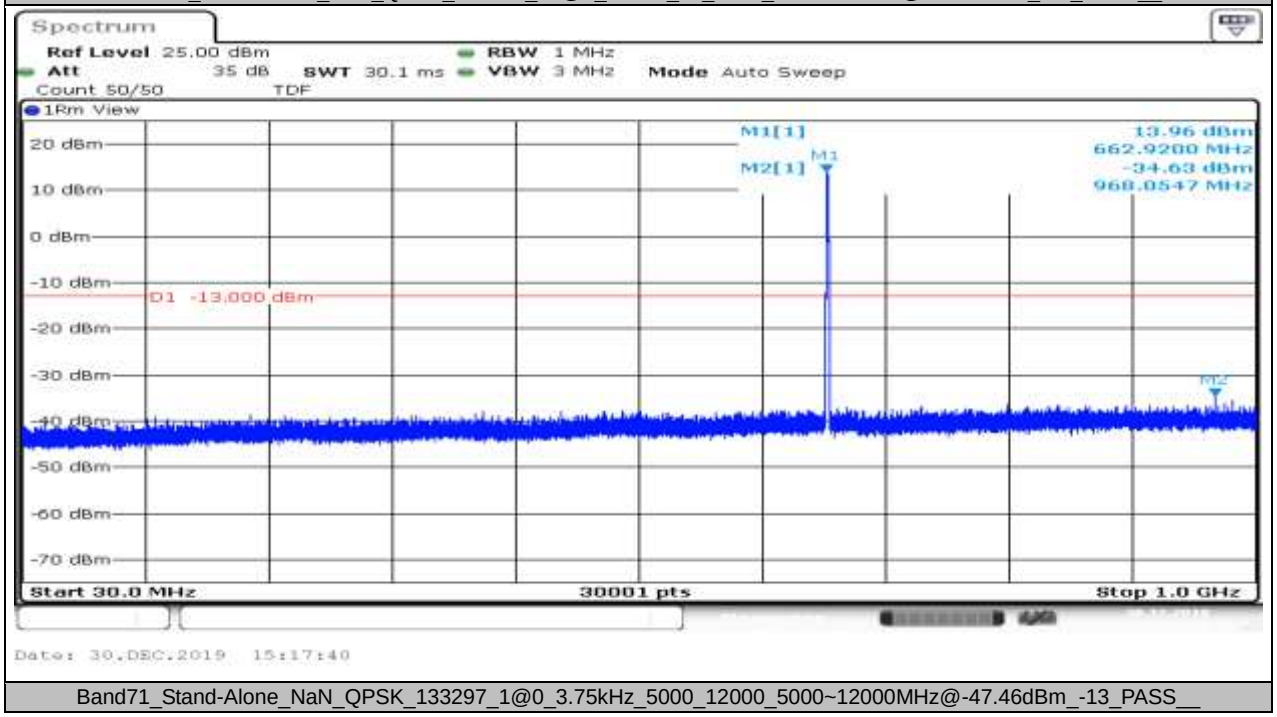
Band71_Stand-Alone_NaN_QPSK_133123_12@0_15kHz_5000_12000_5000~12000MHz@-47.47dBm_-13_PASS__



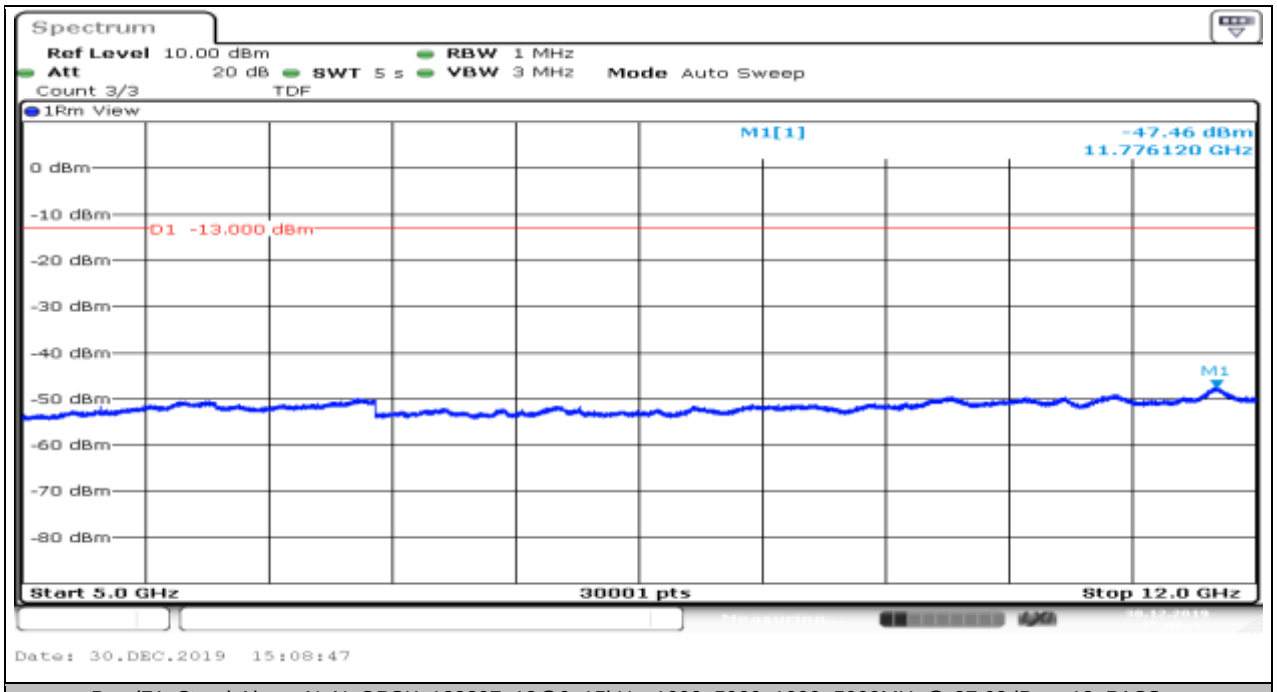
Band71_Stand-Alone_NaN_QPSK_133123_12@0_15kHz_1000_5000_1000~5000MHz@-37.75dBm_-13_PASS__



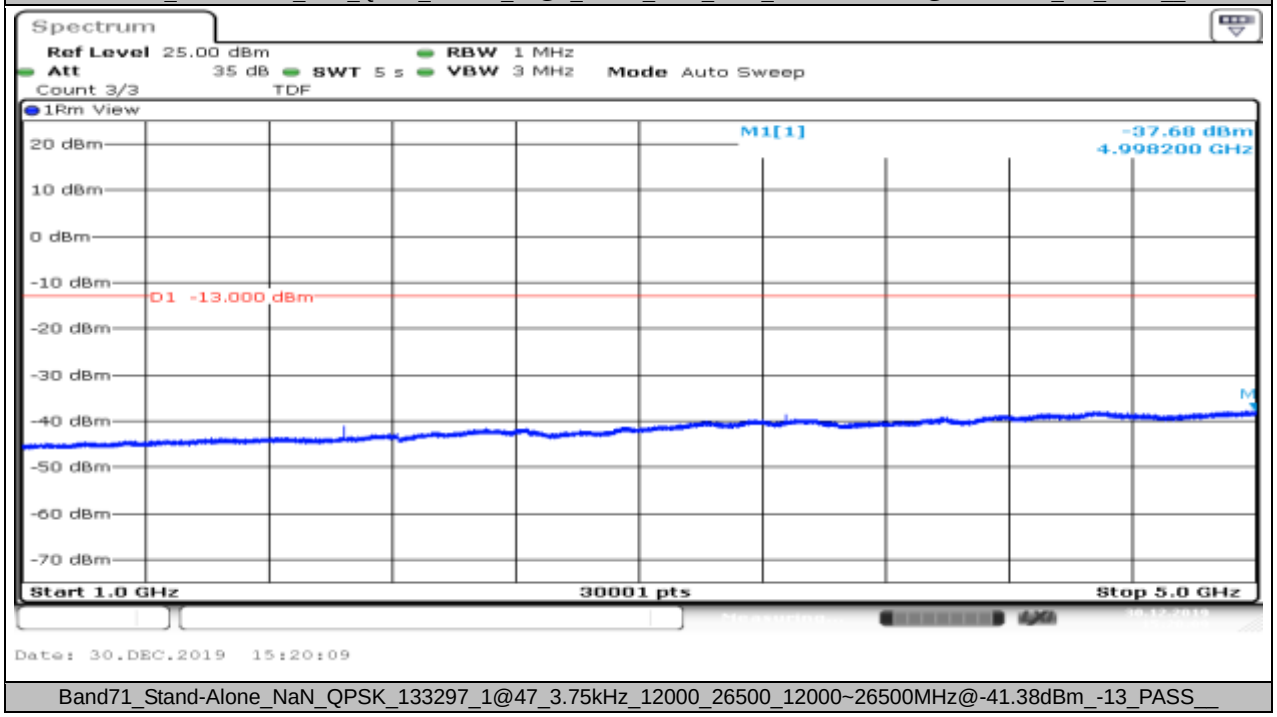
Band71_Stand-Alone_NaN_QPSK_133123_12@0_15kHz_30_1000_30~1000MHz@-34.63dBm_-13_PASS__



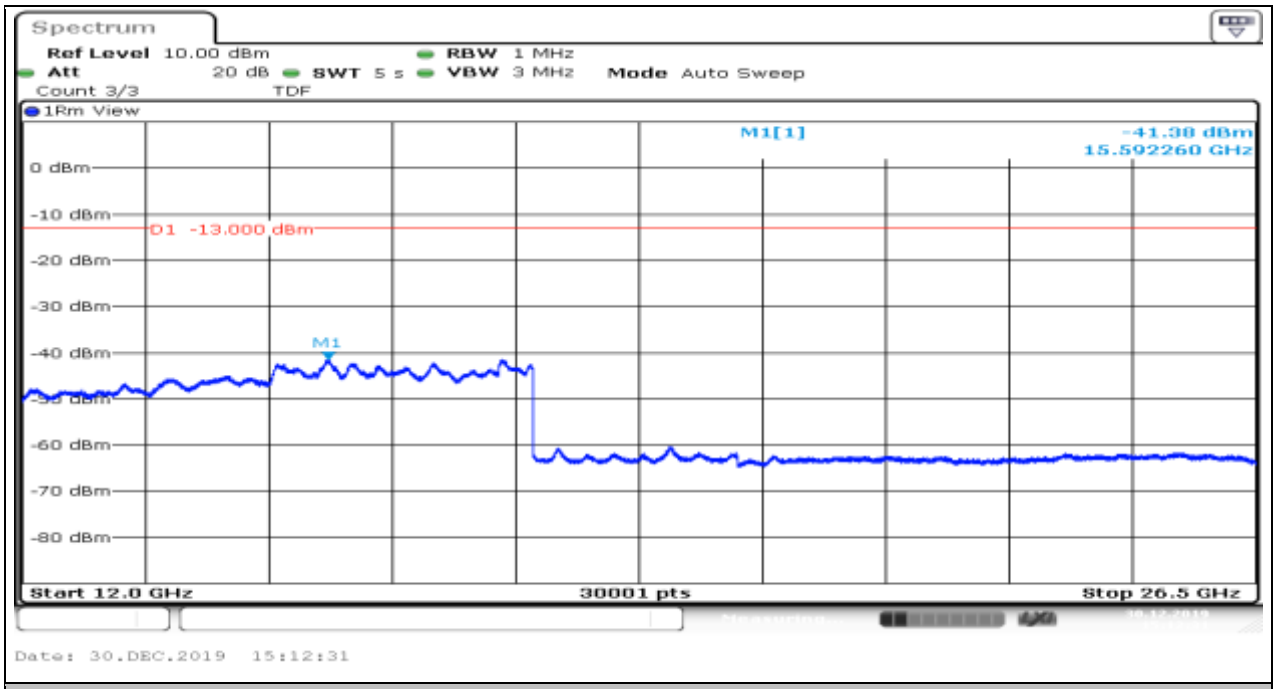
Band71_Stand-Alone_NaN_QPSK_133297_1@0_3.75kHz_5000_12000_5000~12000MHz@-47.46dBm_-13_PASS__



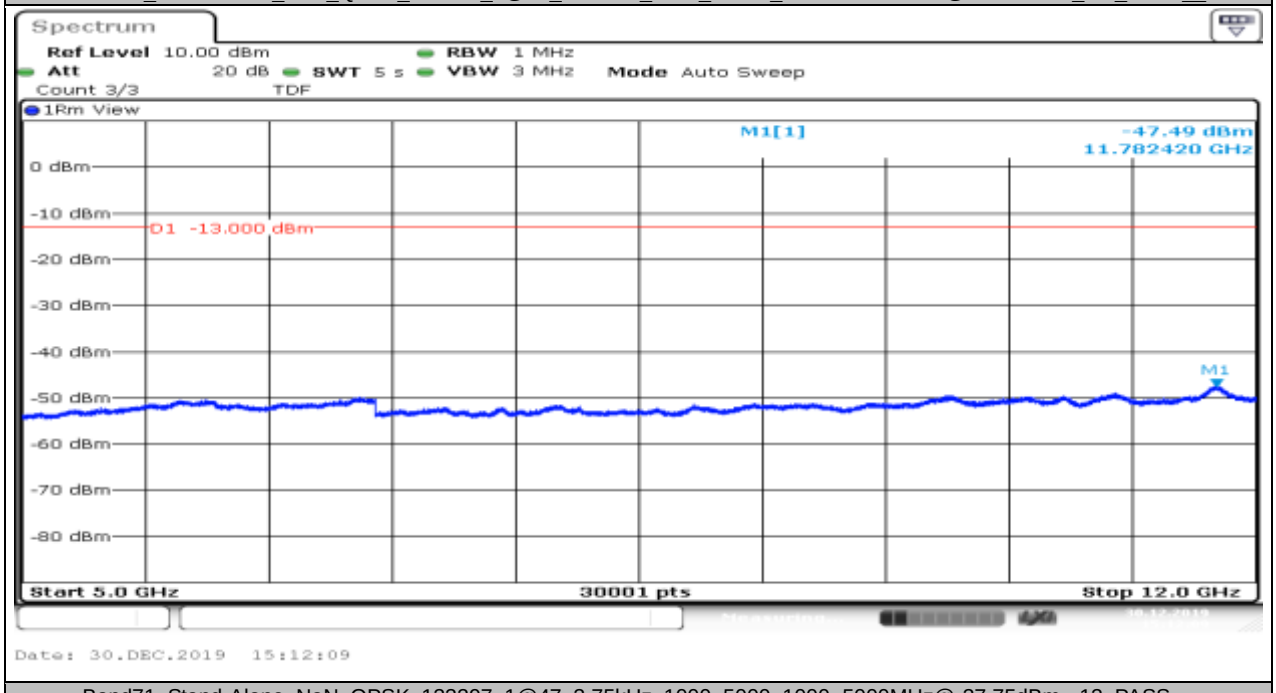
Band71_Stand-Alone_NaN_QPSK_133297_12@0_15kHz_1000_5000_1000~5000MHz@-37.68dBm_-13_PASS__



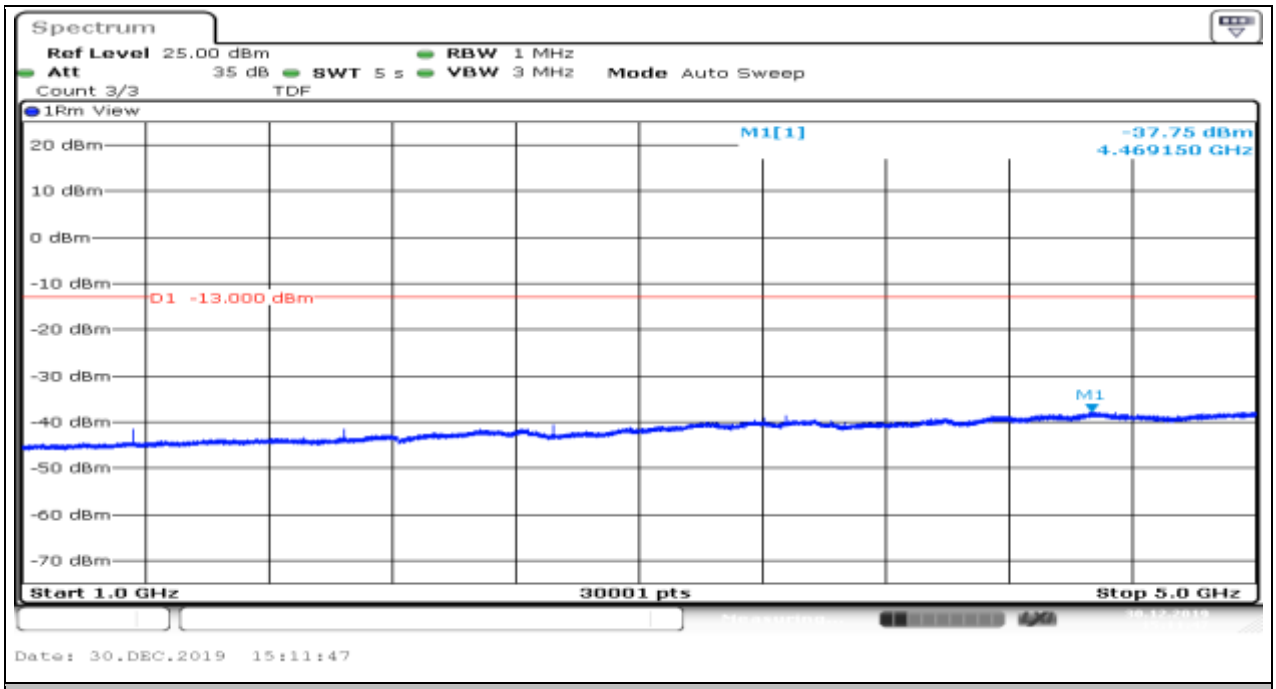
Band71_Stand-Alone_NaN_QPSK_133297_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.38dBm_-13_PASS__



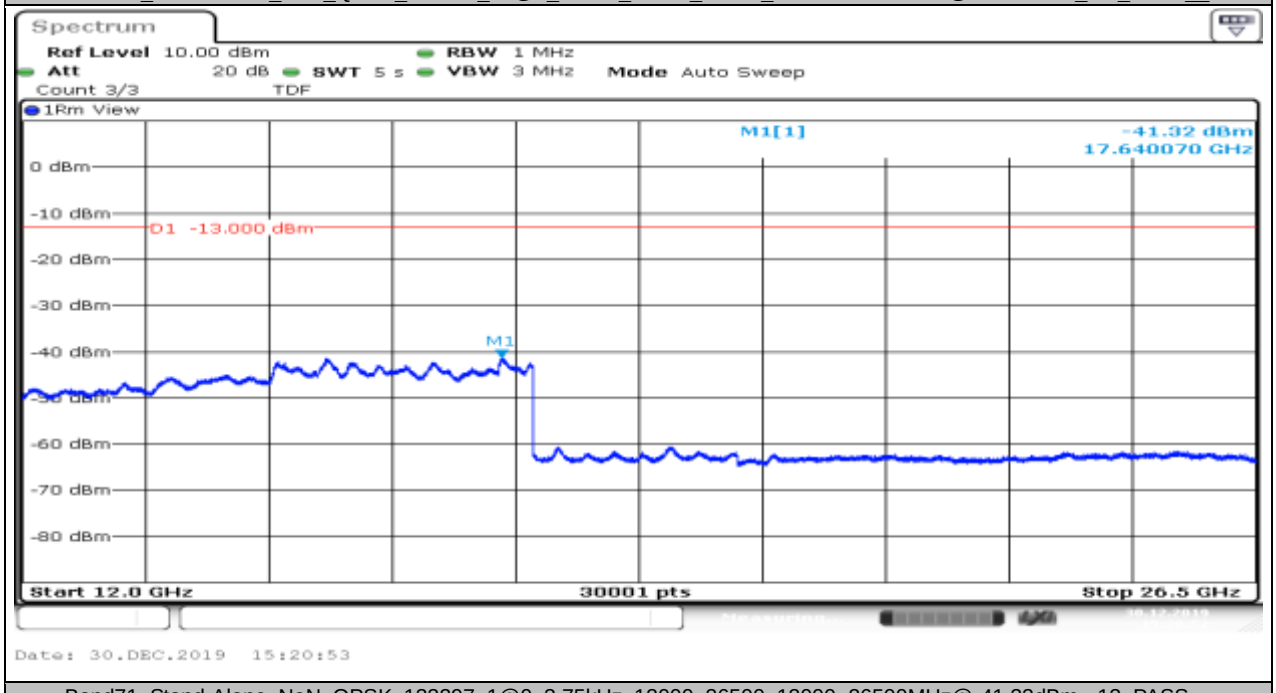
Band71_Stand-Alone_NaN_QPSK_133297_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.49dBm_-13_PASS__



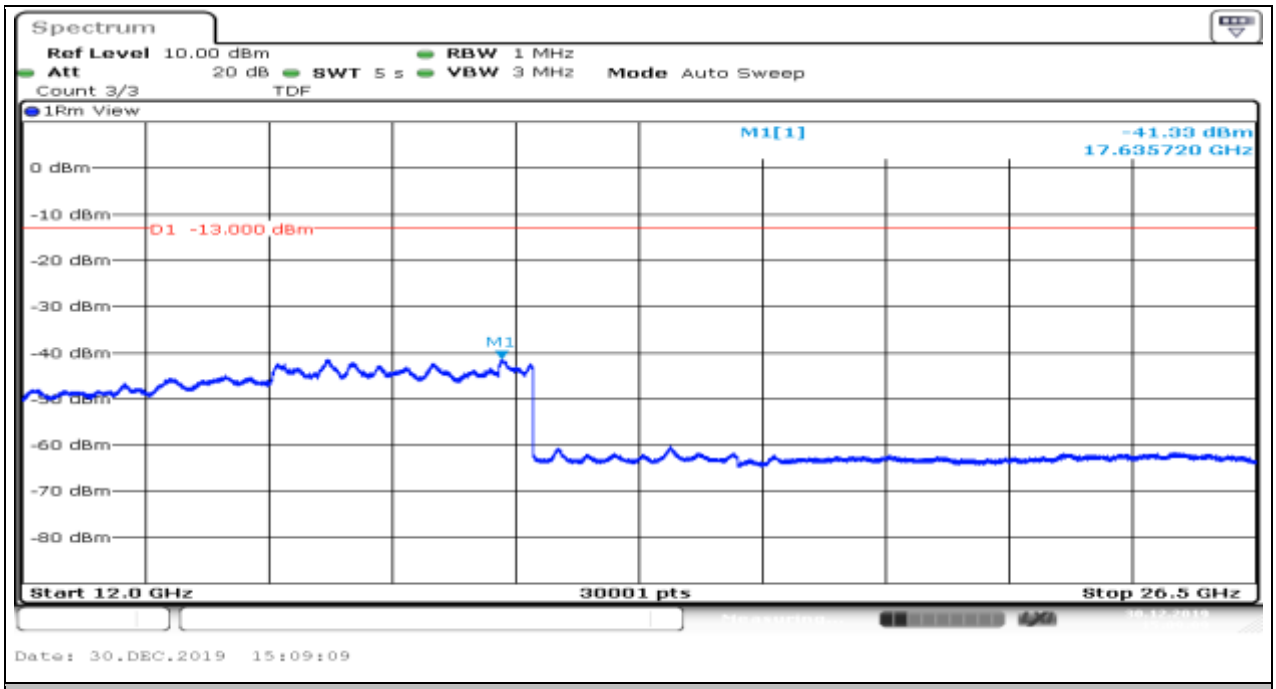
Band71_Stand-Alone_NaN_QPSK_133297_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.75dBm_-13_PASS__



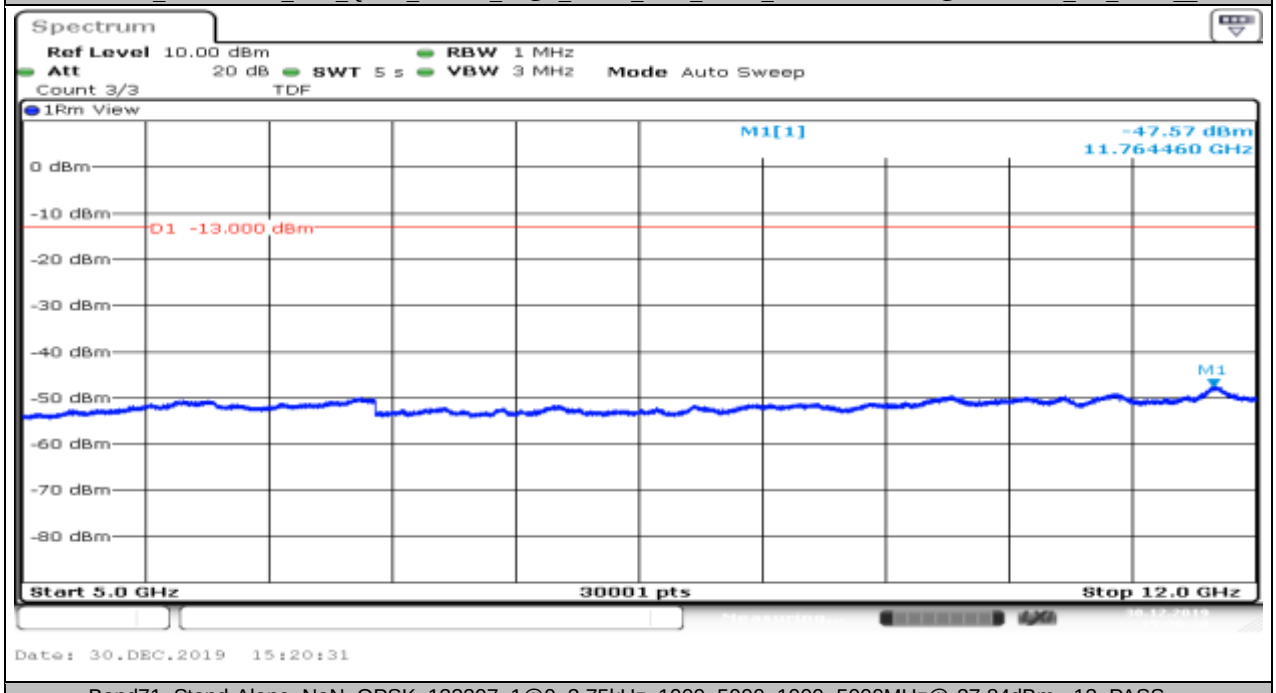
Band71_Stand-Alone_NaN_QPSK_133297_12@0_15kHz_12000_26500_12000~26500MHz@-41.32dBm_-13_PASS__



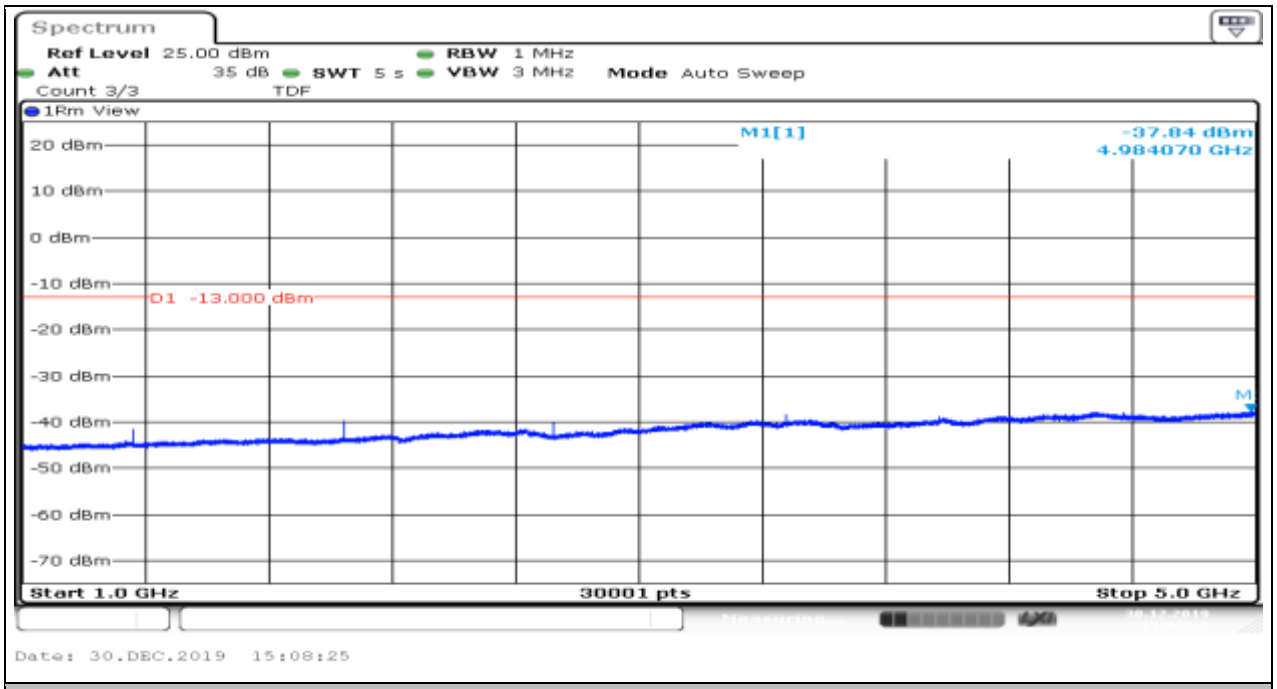
Band71_Stand-Alone_NaN_QPSK_133297_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.33dBm_-13_PASS__



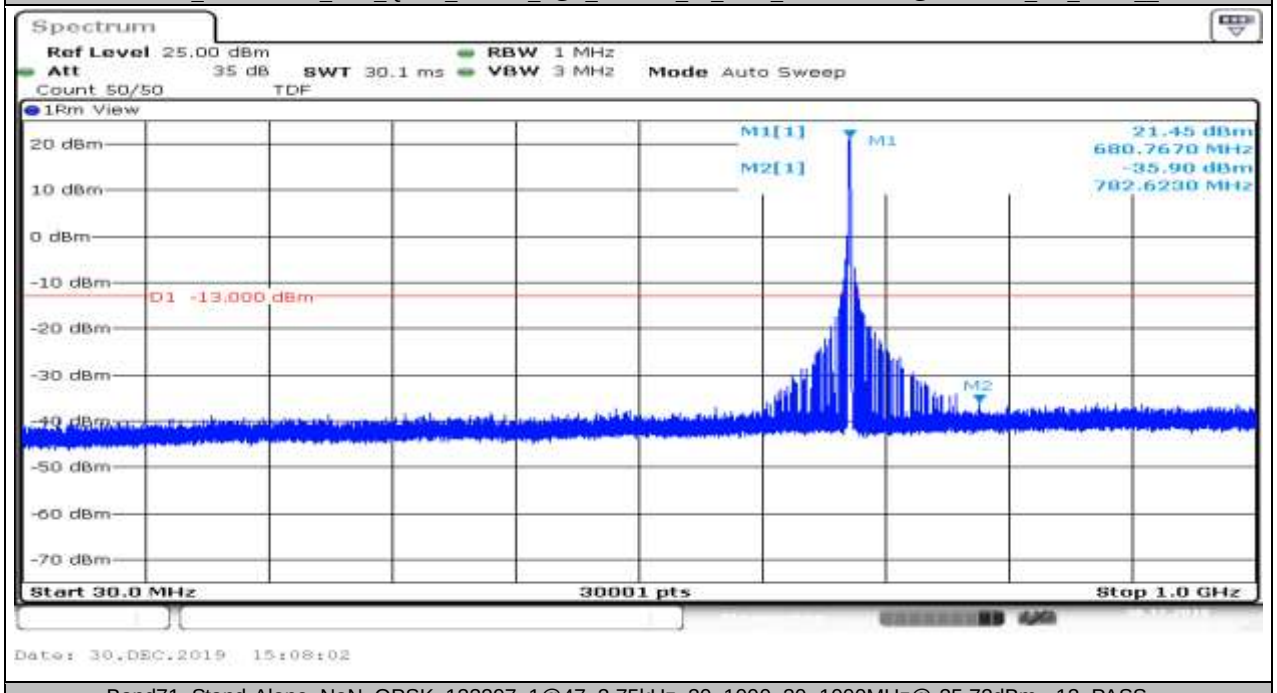
Band71_Stand-Alone_NaN_QPSK_133297_12@0_15kHz_5000_12000_5000~12000MHz@-47.57dBm_-13_PASS__



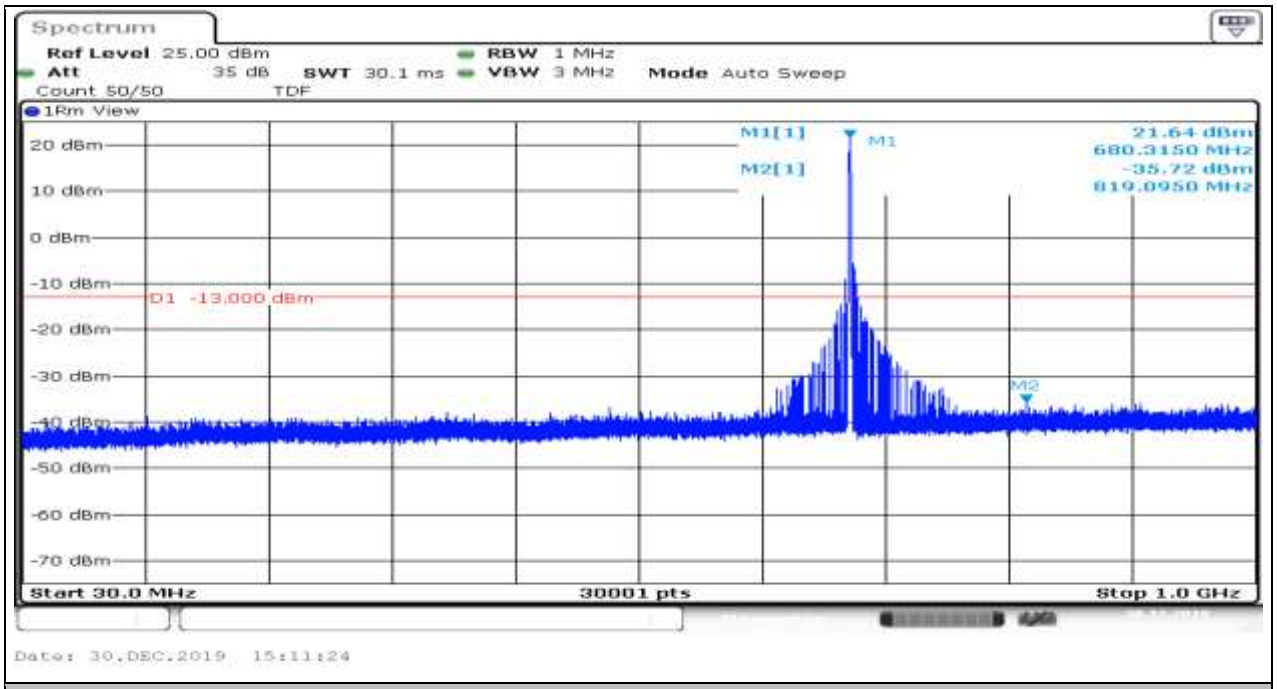
Band71_Stand-Alone_NaN_QPSK_133297_1@0_3.75kHz_1000_5000_1000~5000MHz@-37.84dBm_-13_PASS__



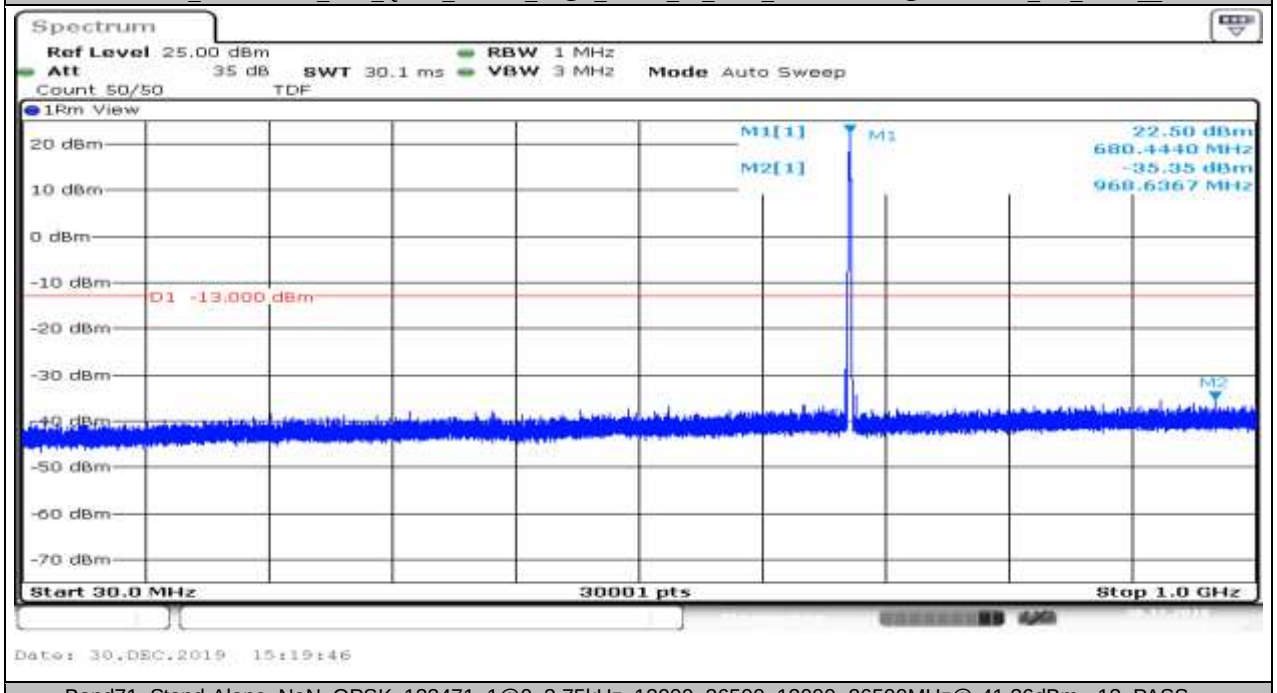
Band71_Stand-Alone_NaN_QPSK_133297_1@0_3.75kHz_30_1000_30~1000MHz@-35.9dBm_-13_PASS__



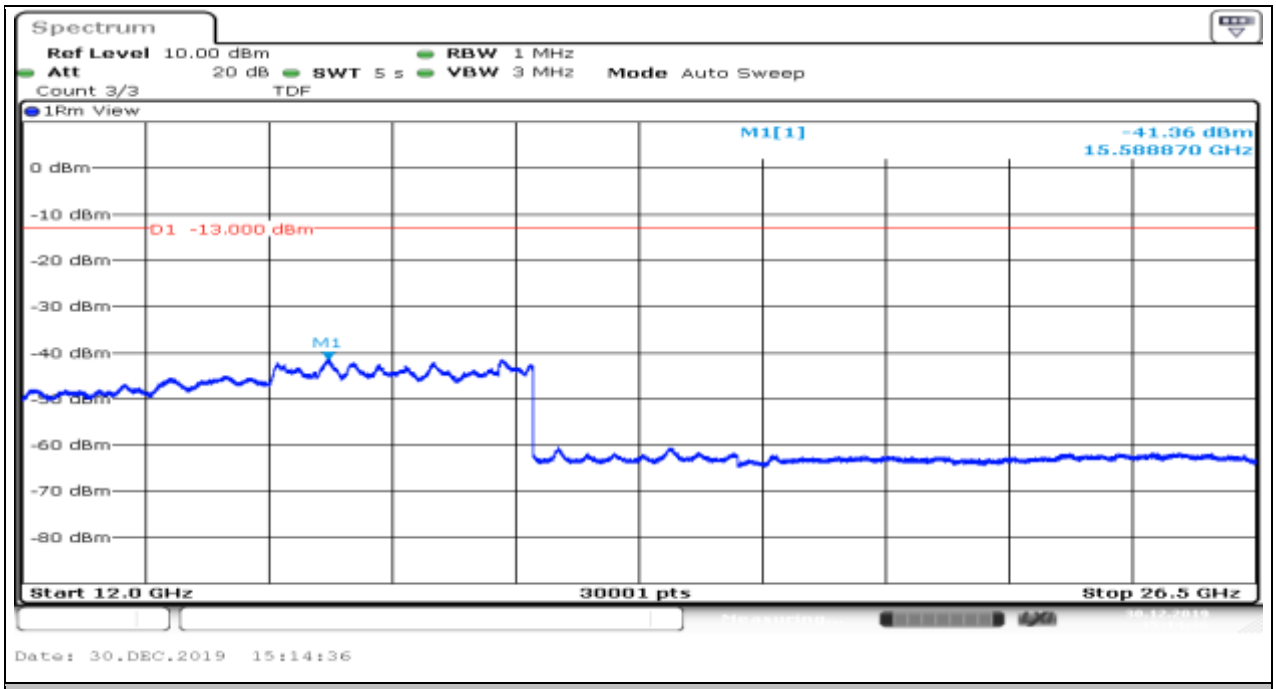
Band71_Stand-Alone_NaN_QPSK_133297_1@47_3.75kHz_30_1000_30~1000MHz@-35.72dBm_-13_PASS__



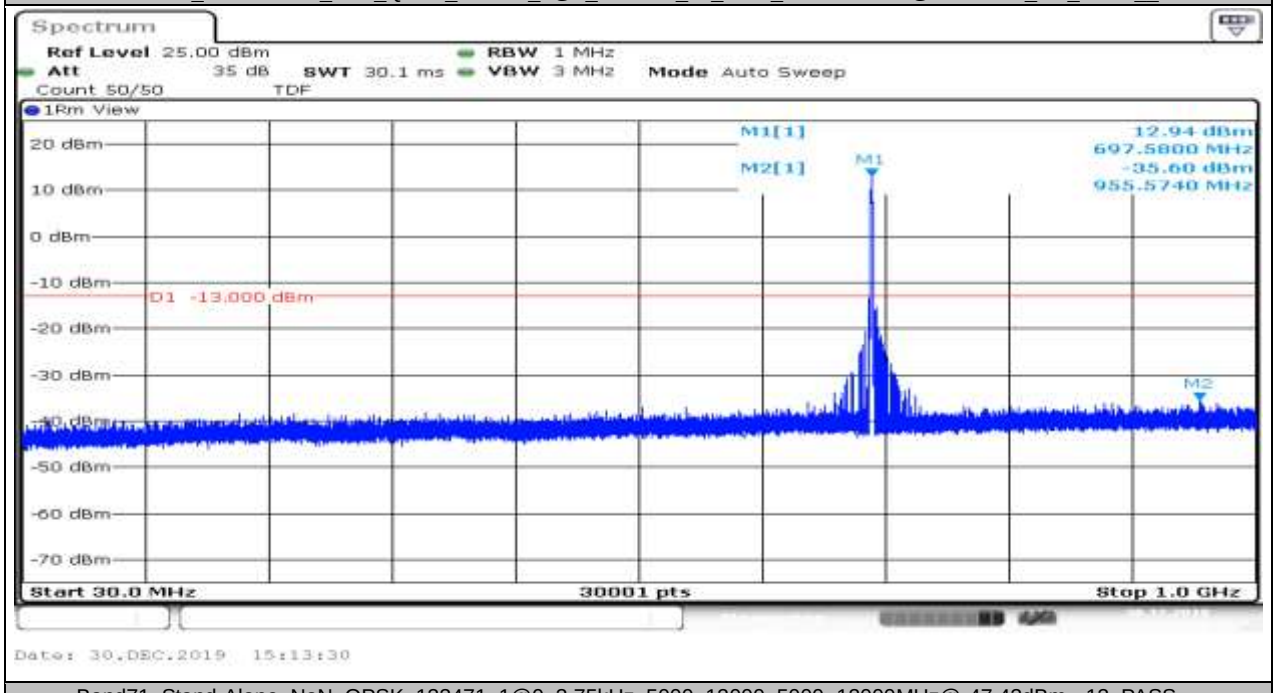
Band71_Stand-Alone_NaN_QPSK_133297_12@0_15kHz_30_1000_30~1000MHz@-35.35dBm_-13_PASS__



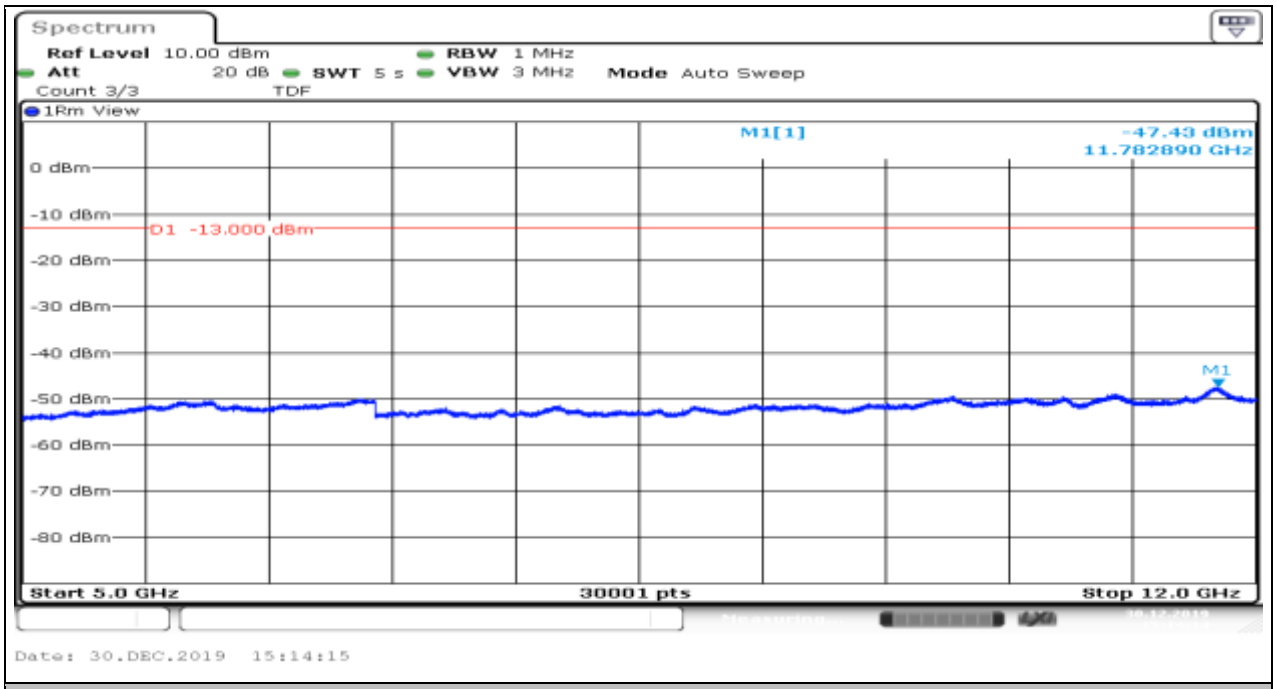
Band71_Stand-Alone_NaN_QPSK_133471_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.36dBm_-13_PASS__



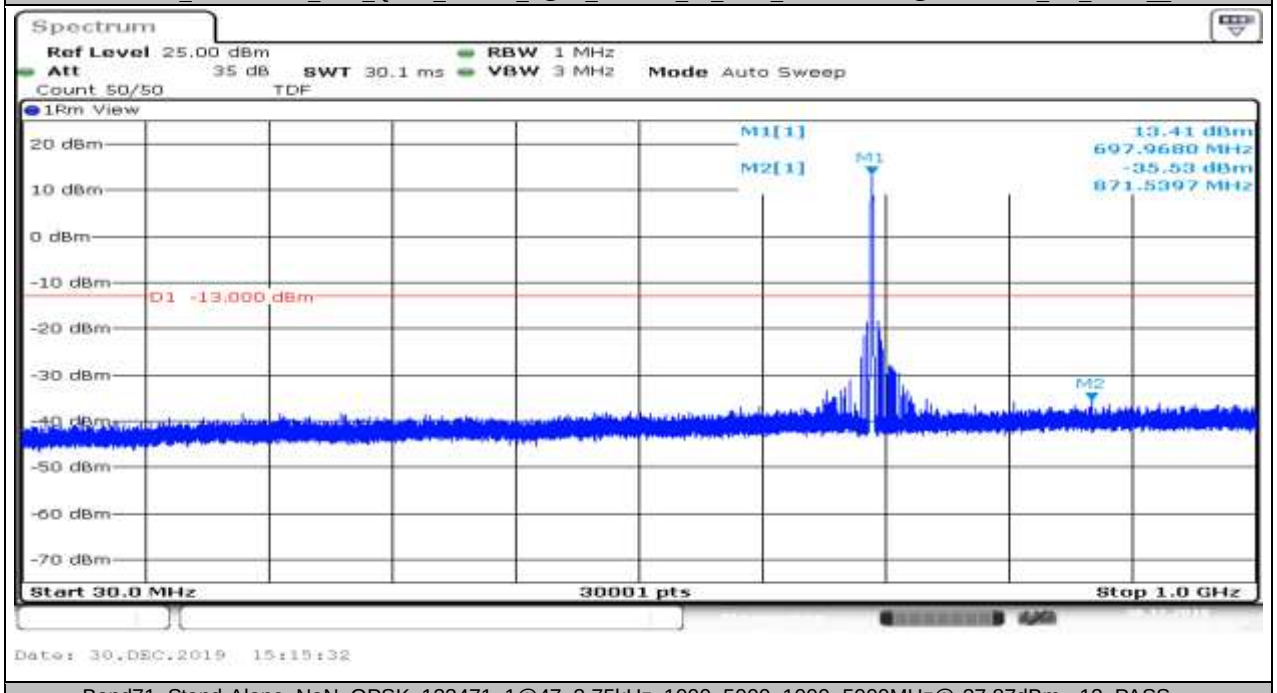
Band71_Stand-Alone_NaN_QPSK_133471_1@0_3.75kHz_30_1000_30~1000MHz@-35.6dBm_-13_PASS__



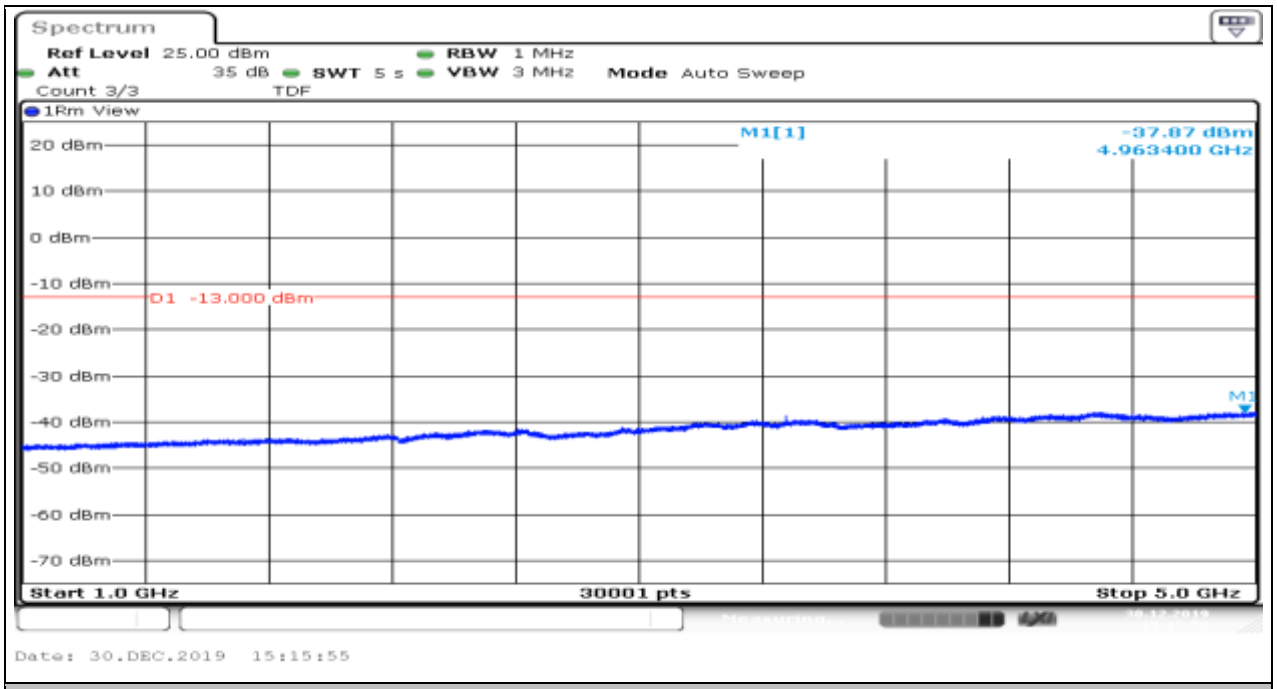
Band71_Stand-Alone_NaN_QPSK_133471_1@0_3.75kHz_5000_12000_5000~12000MHz@-47.43dBm_-13_PASS__



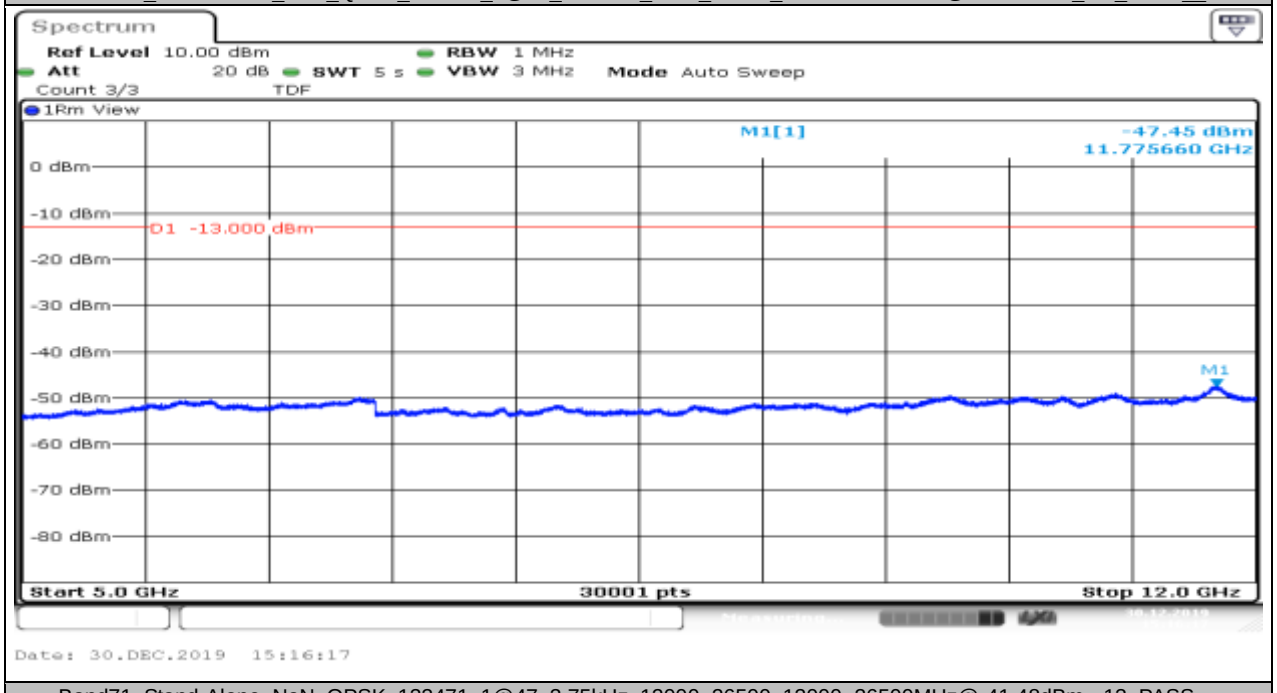
Band71_Stand-Alone_NaN_QPSK_133471_1@47_3.75kHz_30_1000_30~1000MHz@-35.53dBm_-13_PASS__



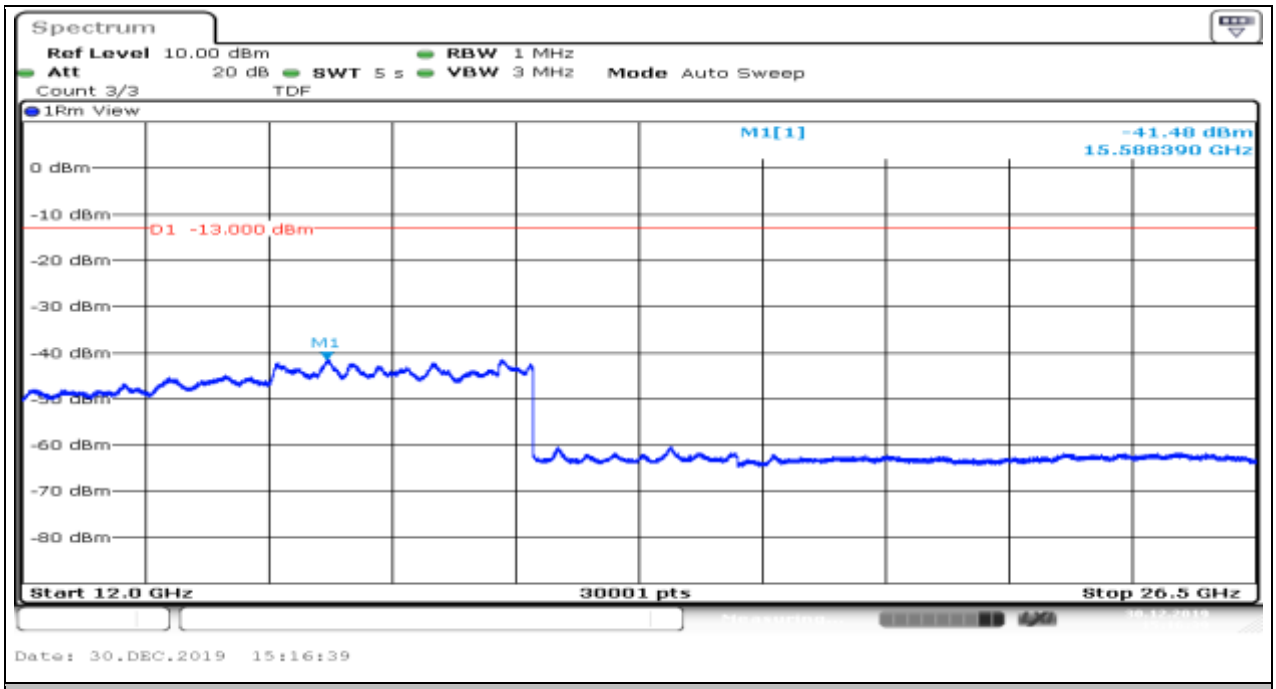
Band71_Stand-Alone_NaN_QPSK_133471_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.87dBm_-13_PASS__



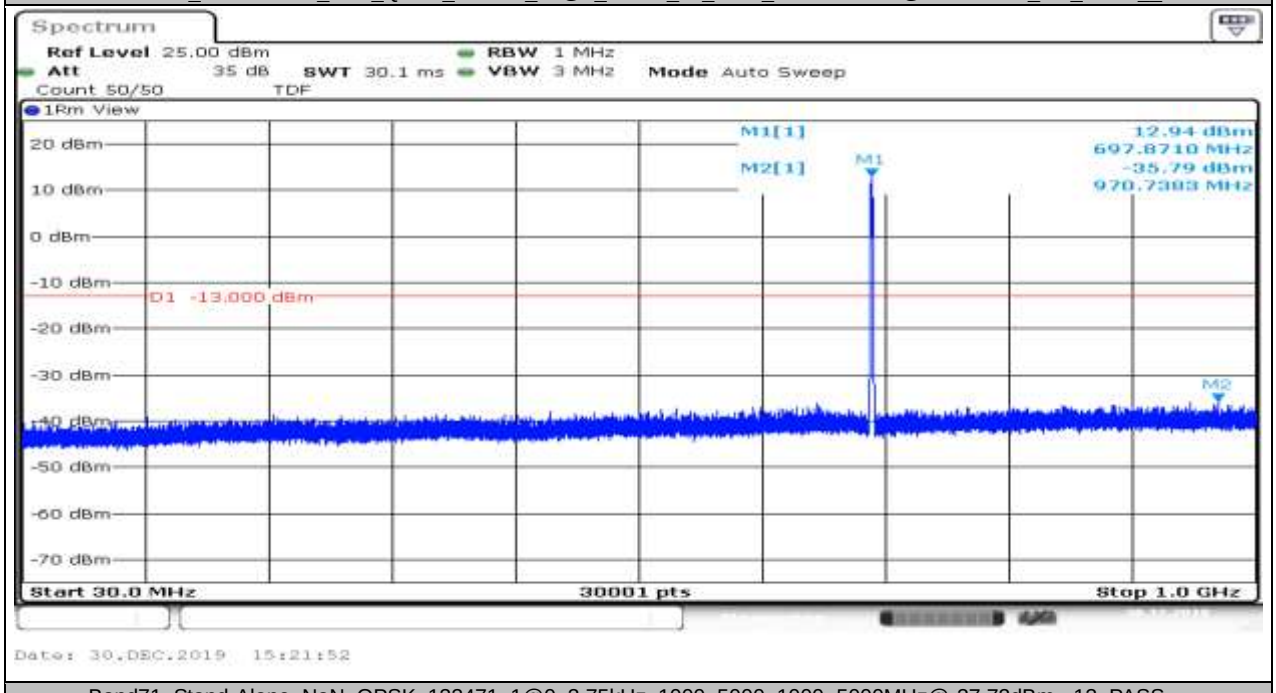
Band71_Stand-Alone_NaN_QPSK_133471_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.45dBm_-13_PASS__



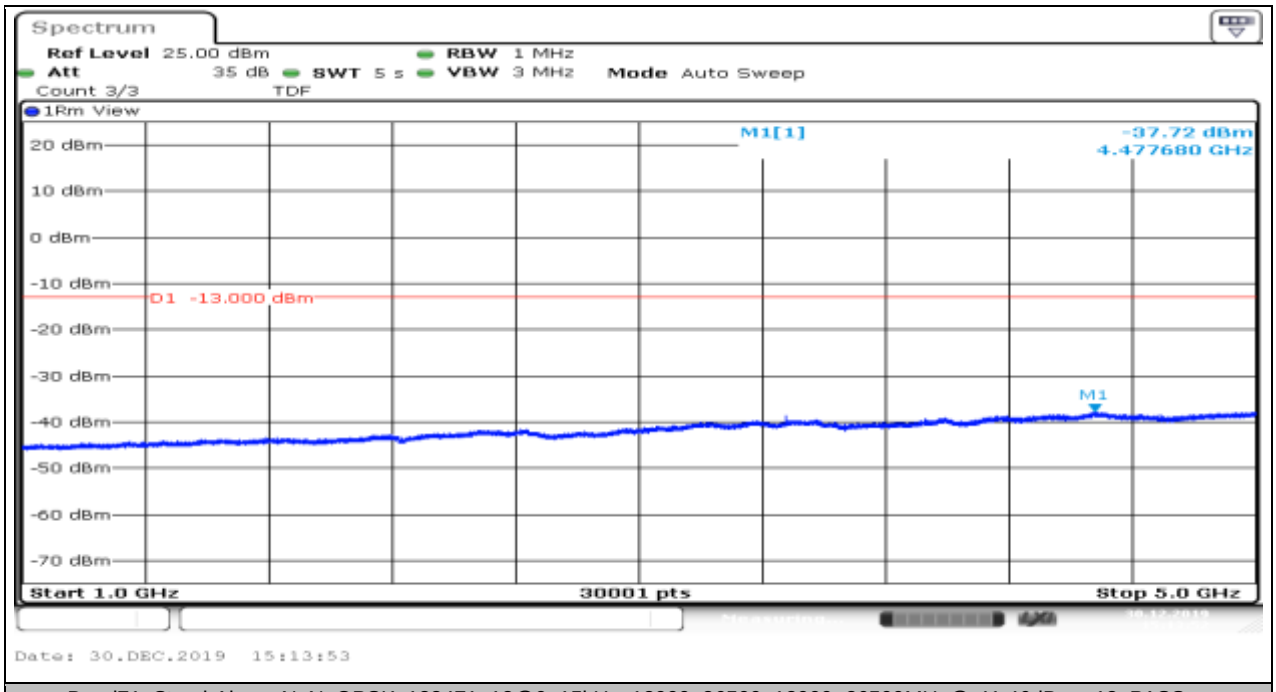
Band71_Stand-Alone_NaN_QPSK_133471_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.48dBm_-13_PASS__



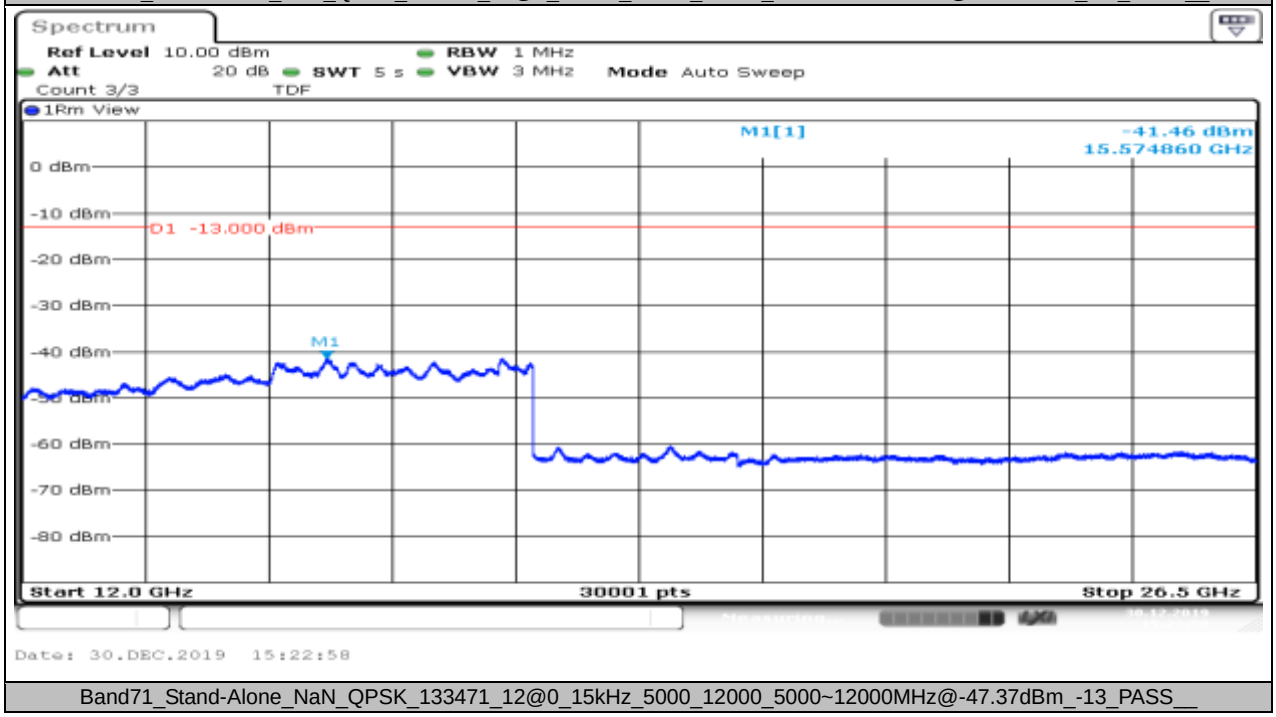
Band71_Stand-Alone_NaN_QPSK_133471_12@0_15kHz_30_1000_30~1000MHz@-35.79dBm_-13_PASS__



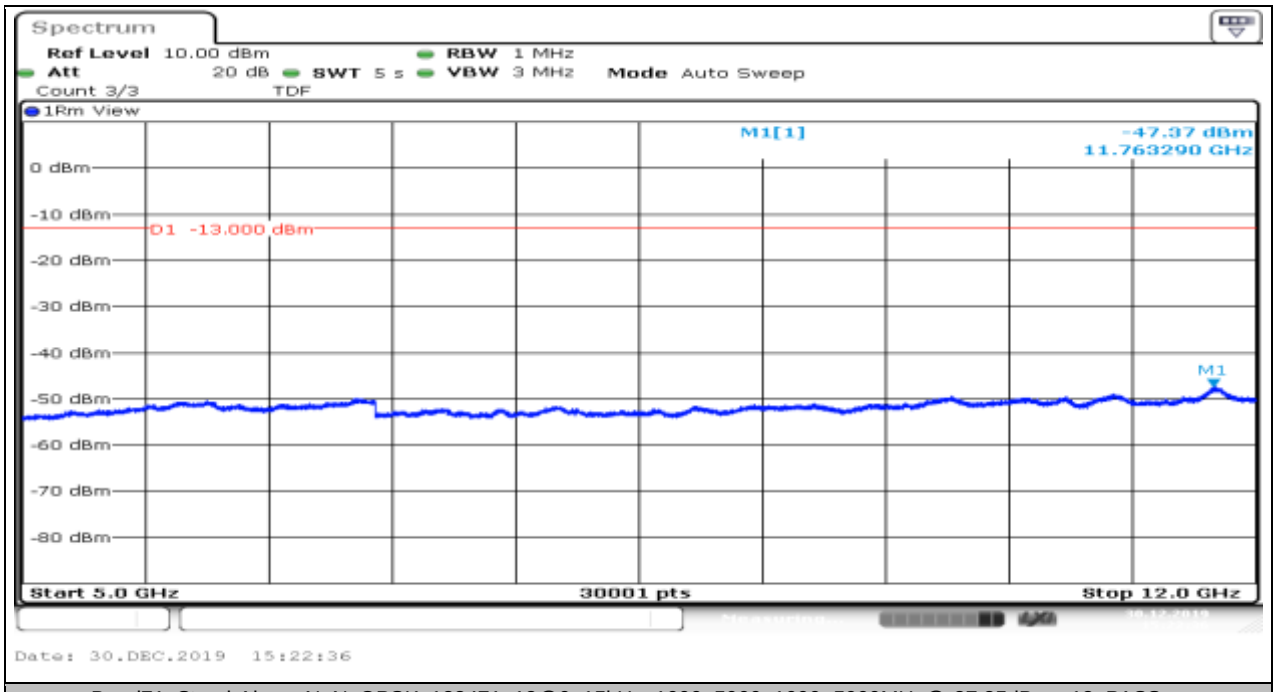
Band71_Stand-Alone_NaN_QPSK_133471_1@0_3.75kHz_1000_5000_1000~5000MHz@-37.72dBm_-13_PASS__



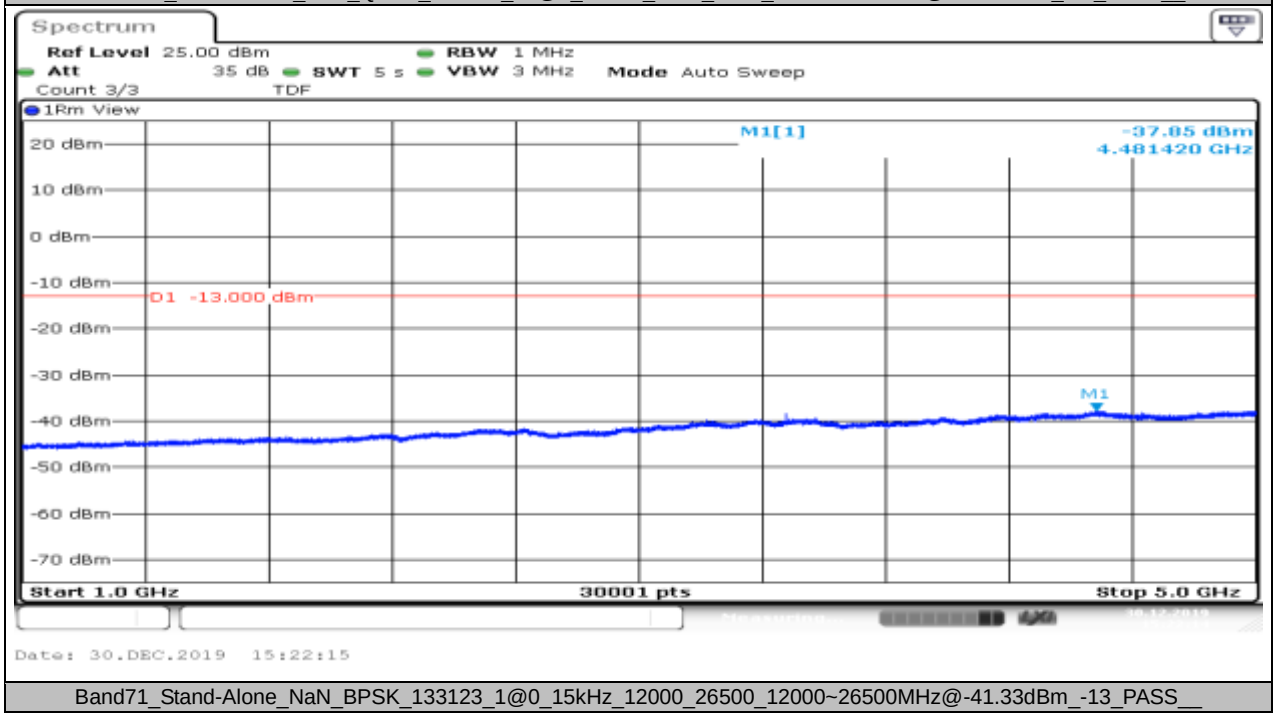
Band71_Stand-Alone_NaN_QPSK_133471_12@0_15kHz_12000_26500_12000~26500MHz@-41.46dBm_-13_PASS__



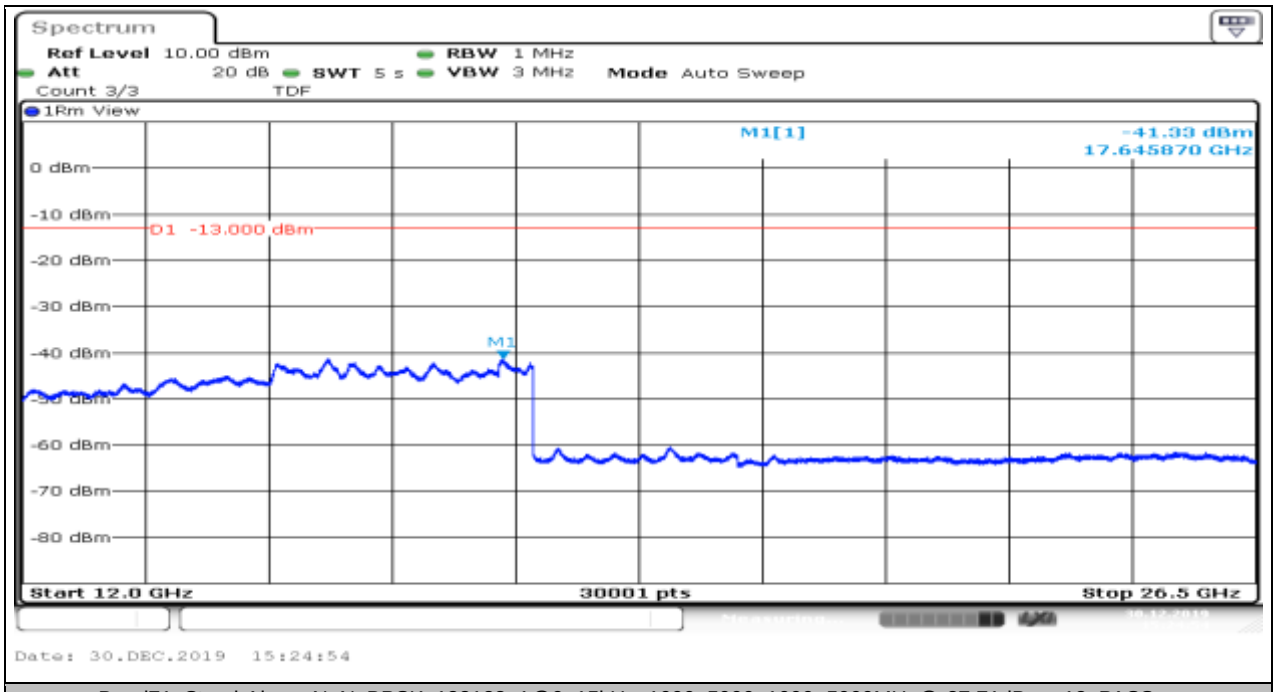
Band71_Stand-Alone_NaN_QPSK_133471_12@0_15kHz_5000_12000_5000~12000MHz@-47.37dBm_-13_PASS__



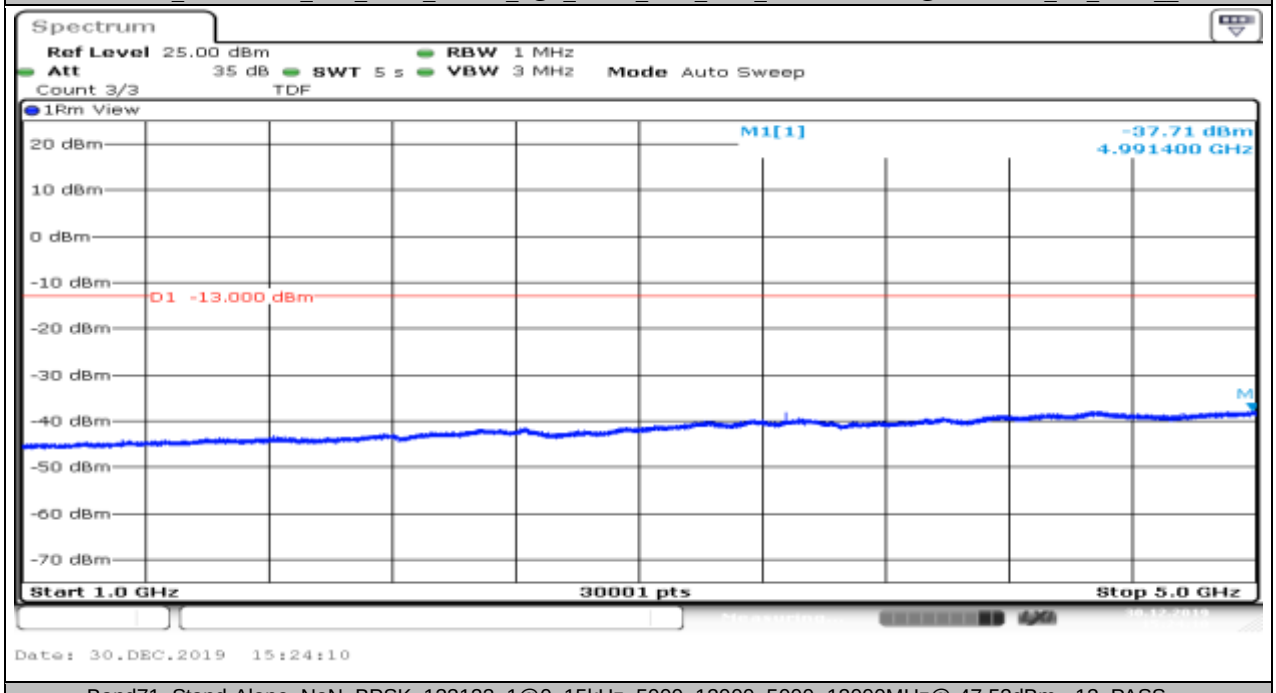
Band71_Stand-Alone_NaN_QPSK_133471_12@0_15kHz_1000_5000_1000~5000MHz@-37.85dBm_-13_PASS__



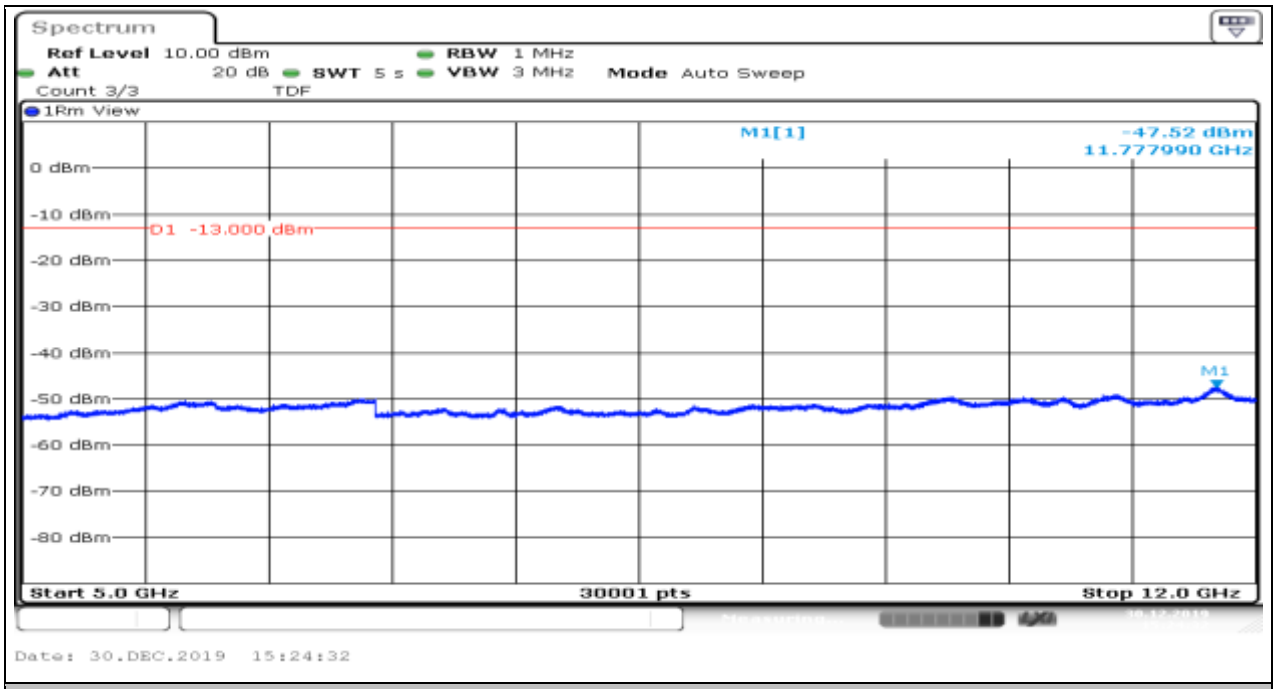
Band71_Stand-Alone_NaN_BPSK_133123_1@0_15kHz_12000_26500_12000~26500MHz@-41.33dBm_-13_PASS__



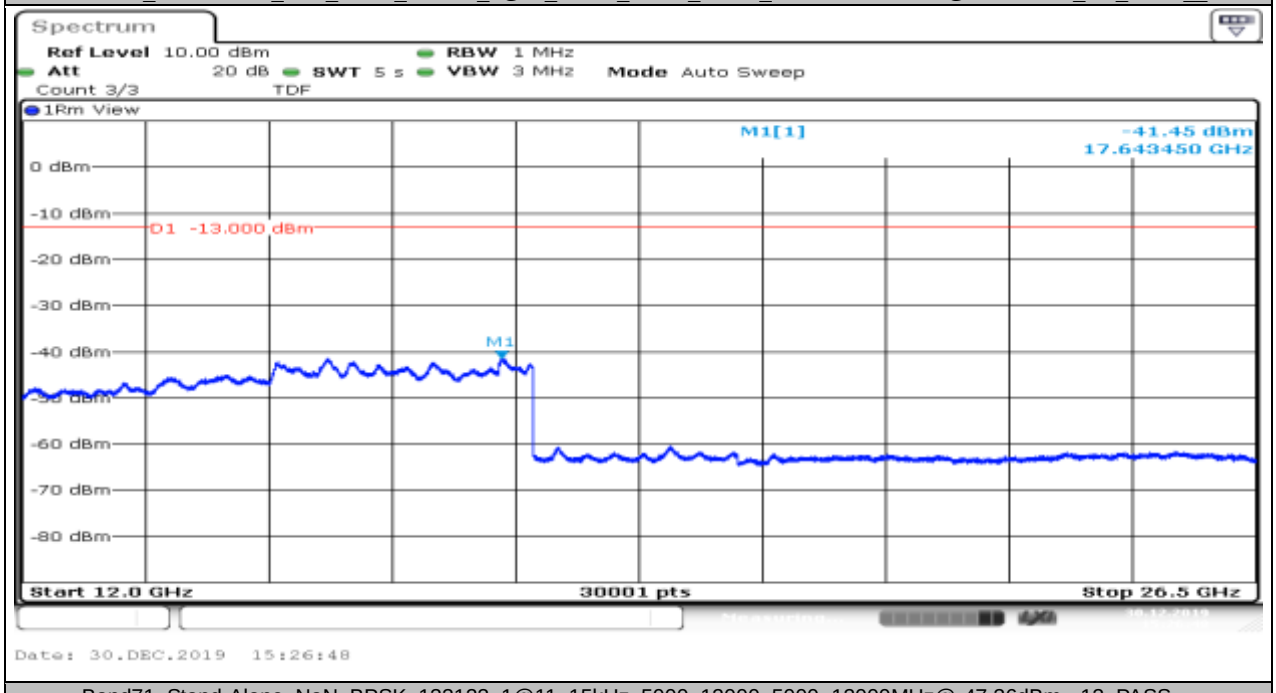
Band71_Stand-Alone_NaN_BPSK_133123_1@0_15kHz_1000_5000_1000~5000MHz@-37.71dBm_-13_PASS__



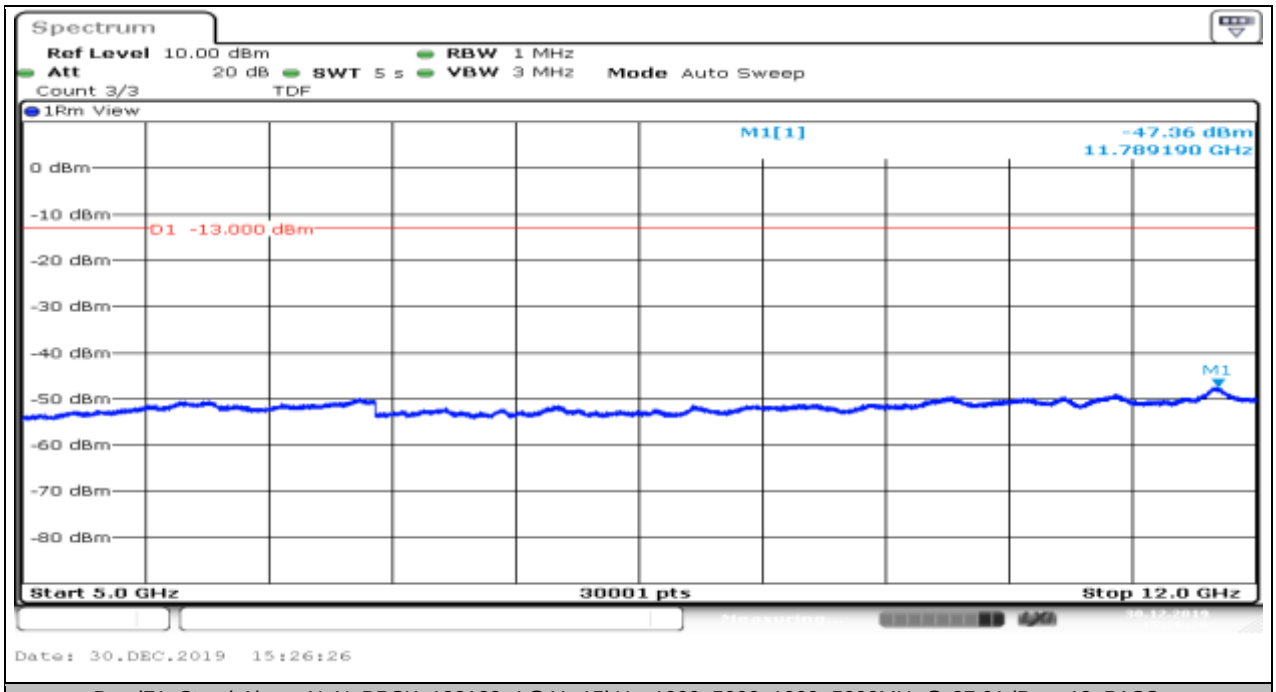
Band71_Stand-Alone_NaN_BPSK_133123_1@0_15kHz_5000_12000_5000~12000MHz@-47.52dBm_-13_PASS__



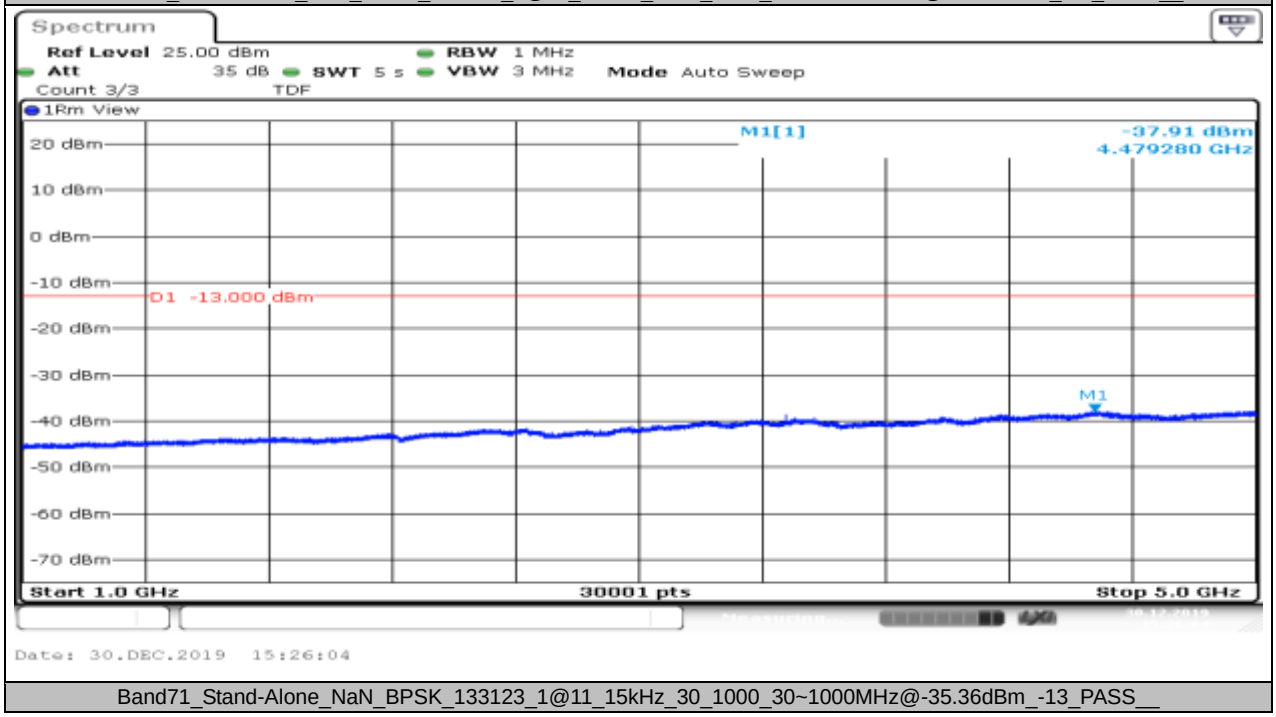
Band71_Stand-Alone_NaN_BPSK_133123_1@11_15kHz_12000_26500_12000~26500MHz@-41.45dBm_-13_PASS__



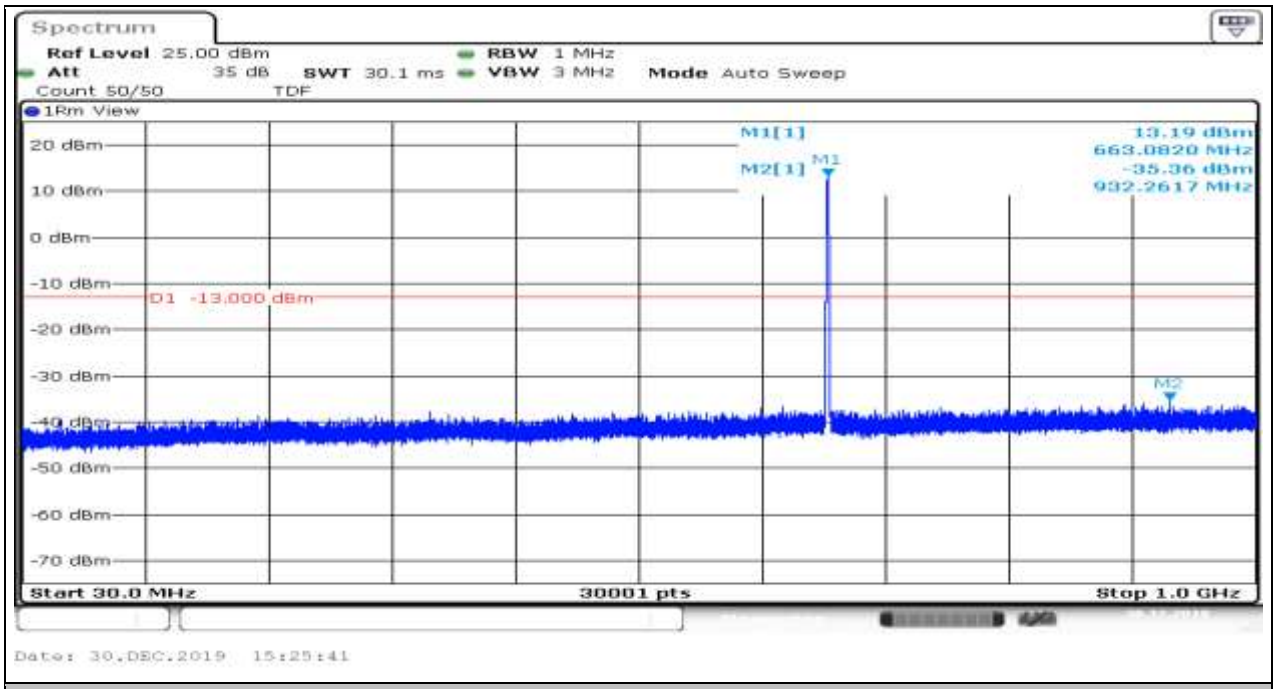
Band71_Stand-Alone_NaN_BPSK_133123_1@11_15kHz_5000_12000_5000~12000MHz@-47.36dBm_-13_PASS__



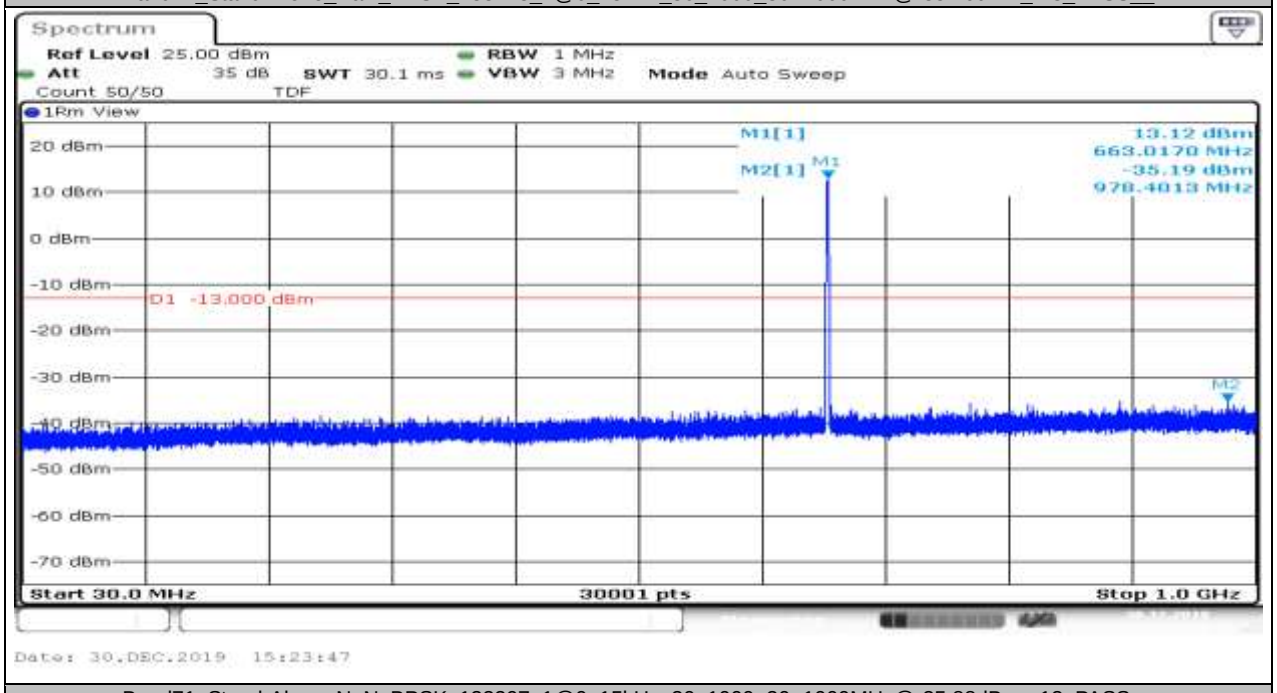
Band71_Stand-Alone_NaN_BPSK_133123_1@11_15kHz_1000_5000_1000~5000MHz@-37.91dBm_-13_PASS__



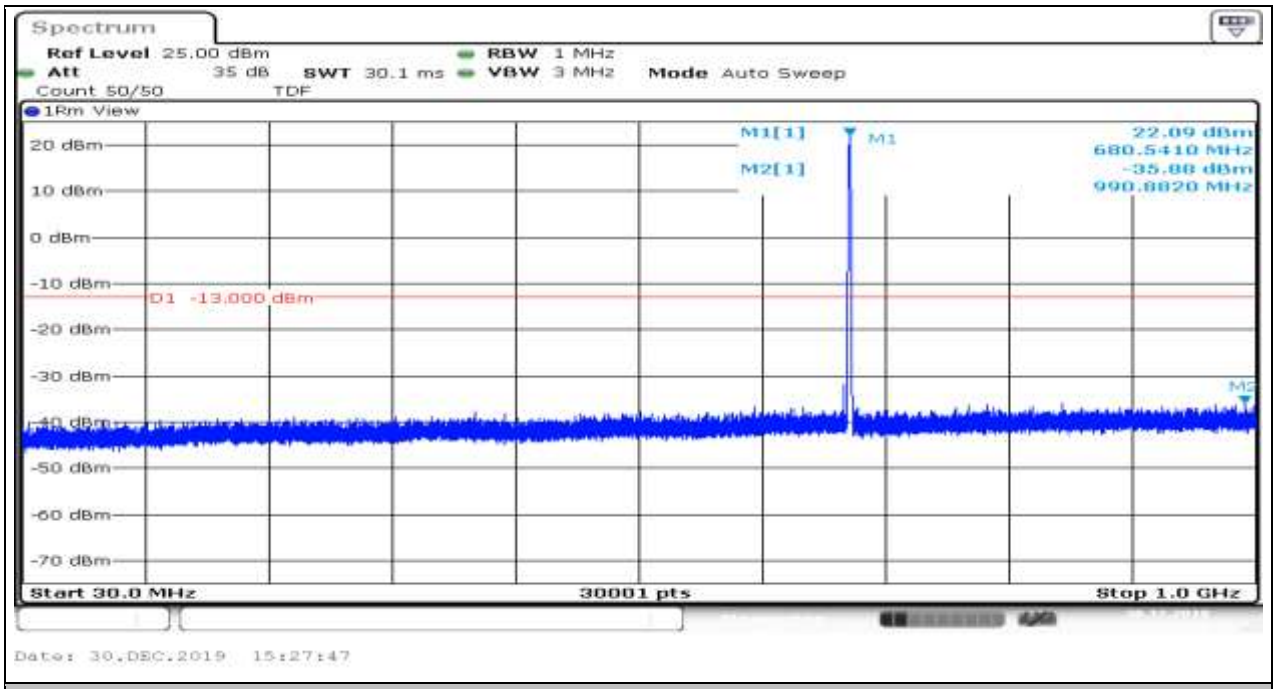
Band71_Stand-Alone_NaN_BPSK_133123_1@11_15kHz_30_1000_30~1000MHz@-35.36dBm_-13_PASS__



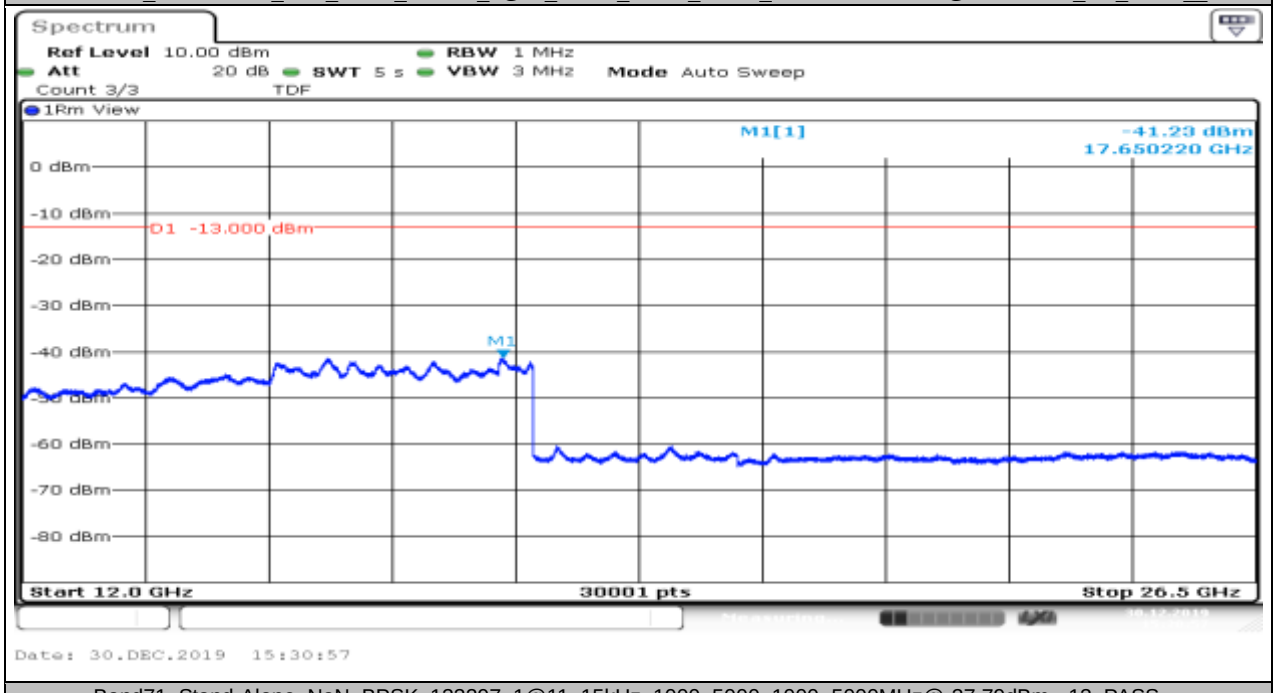
Band71_Stand-Alone_NaN_BPSK_133123_1@0_15kHz_30_1000_30~1000MHz@-35.19dBm_-13_PASS__



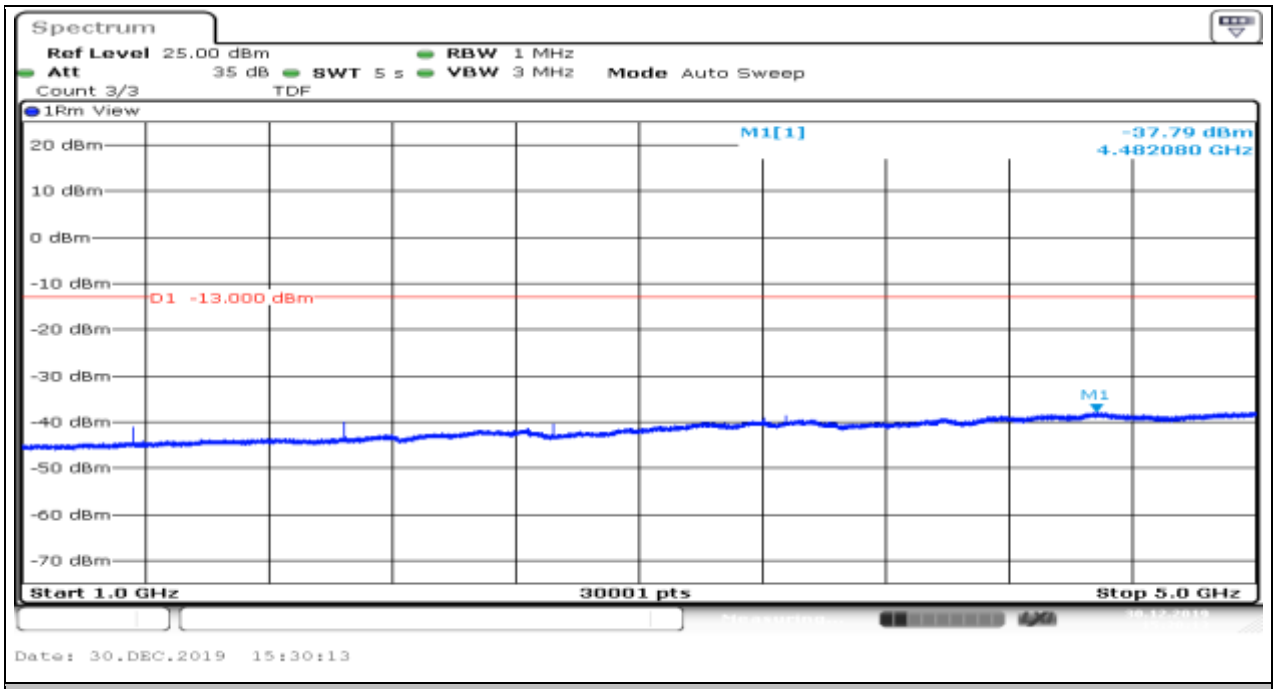
Band71_Stand-Alone_NaN_BPSK_133297_1@0_15kHz_30_1000_30~1000MHz@-35.88dBm_-13_PASS__



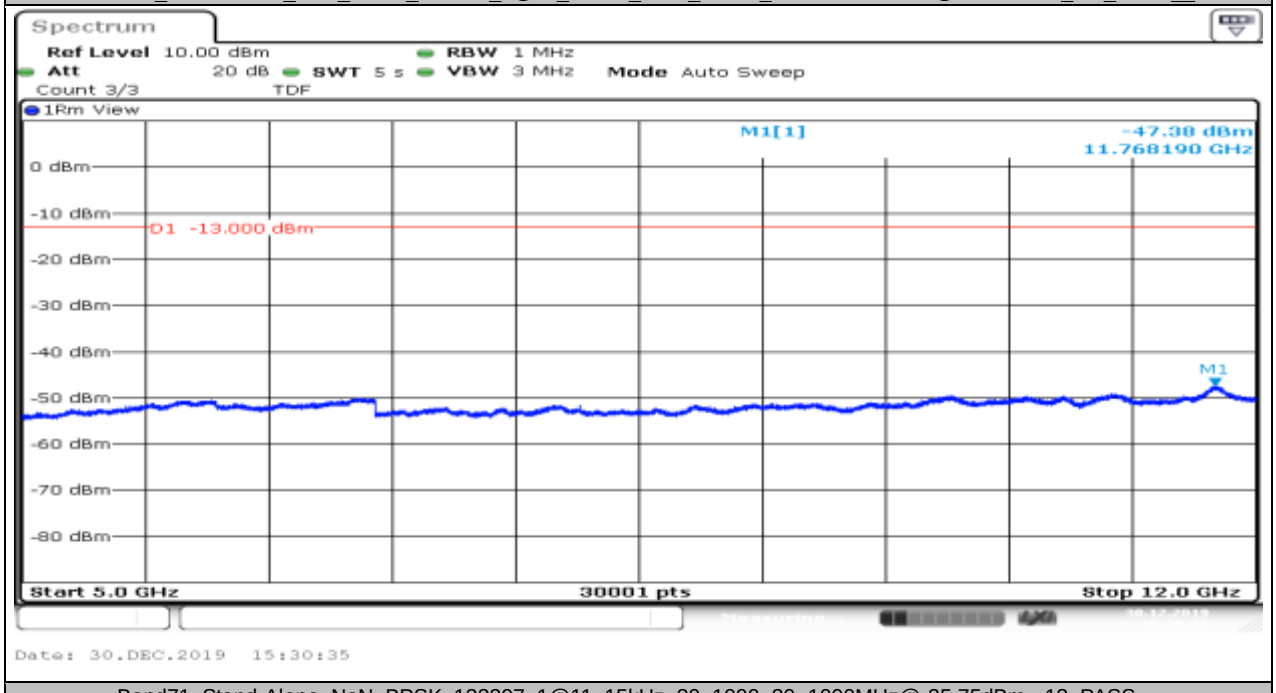
Band71_Stand-Alone_NaN_BPSK_133297_1@11_15kHz_12000_26500_12000~26500MHz@-41.23dBm_-13_PASS__



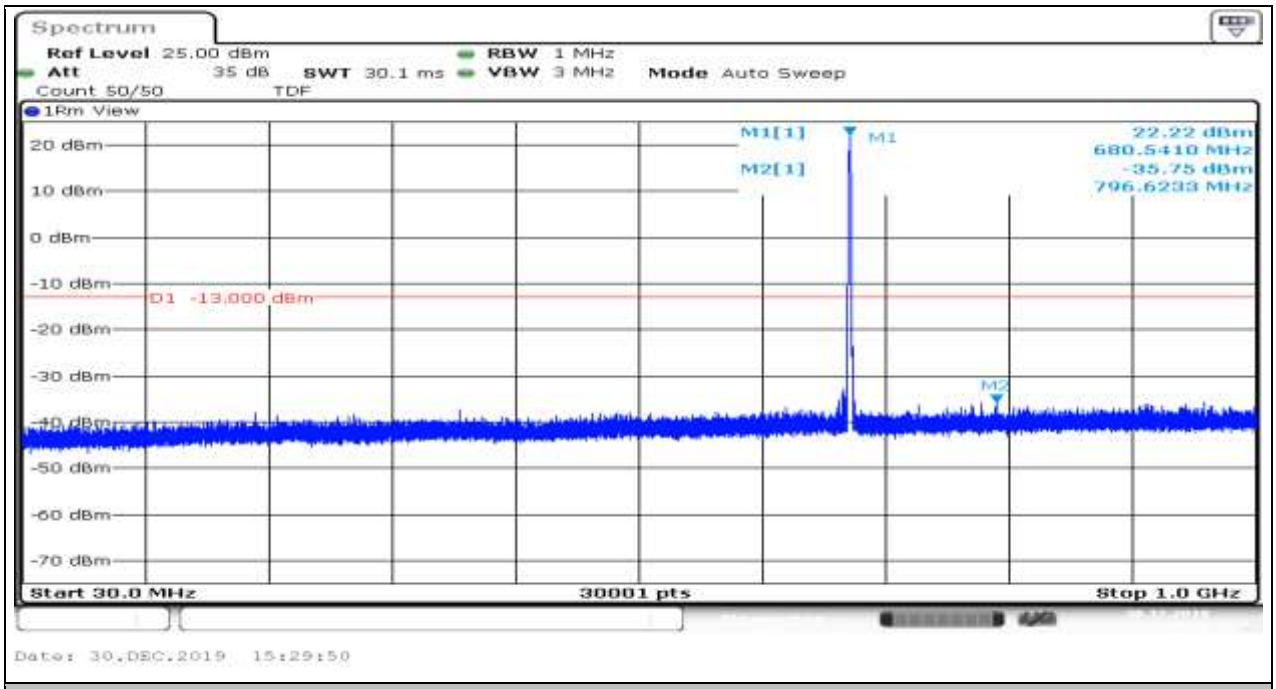
Band71_Stand-Alone_NaN_BPSK_133297_1@11_15kHz_1000_5000_1000~5000MHz@-37.79dBm_-13_PASS__



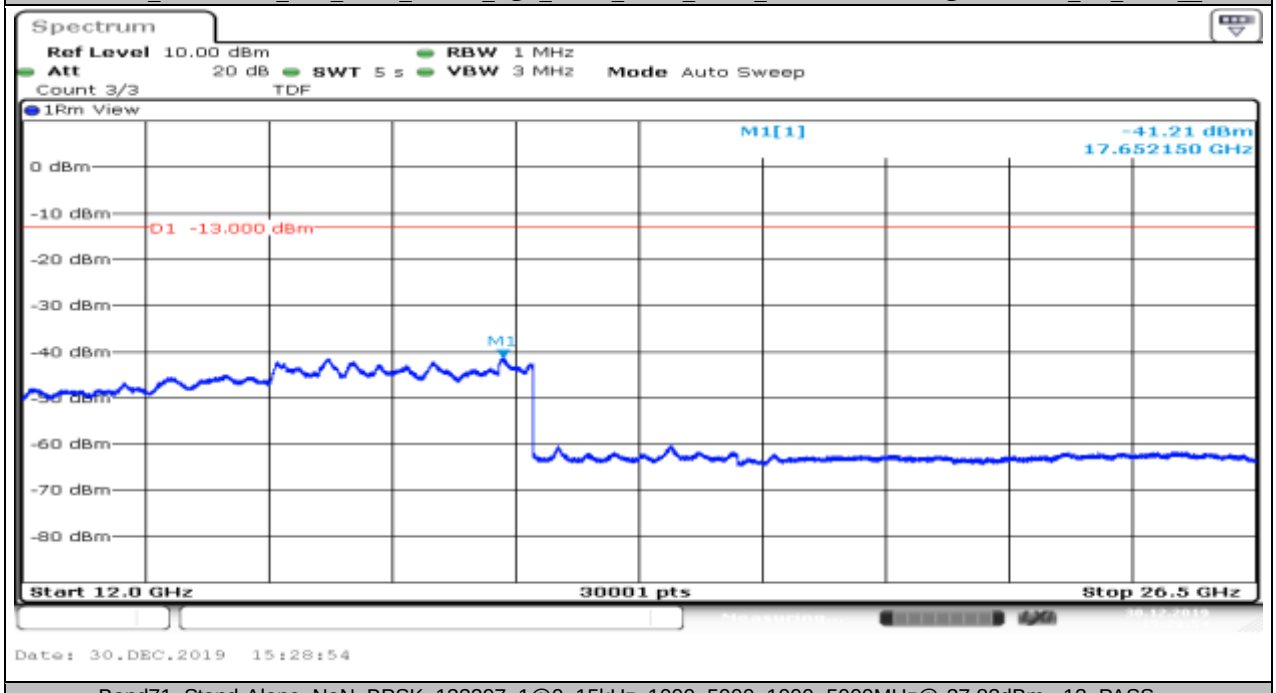
Band71_Stand-Alone_NaN_BPSK_133297_1@11_15kHz_5000_12000_5000~12000MHz@-47.38dBm_-13_PASS__



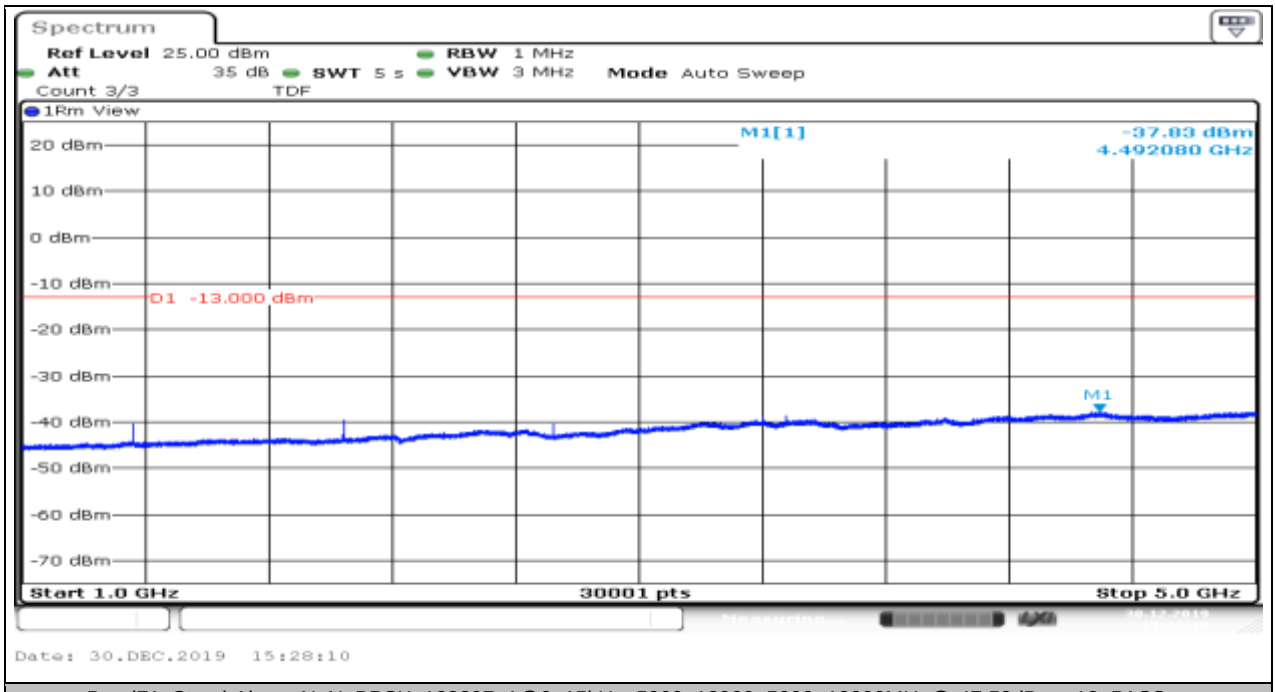
Band71_Stand-Alone_NaN_BPSK_133297_1@11_15kHz_30_1000_30~1000MHz@-35.75dBm_-13_PASS__



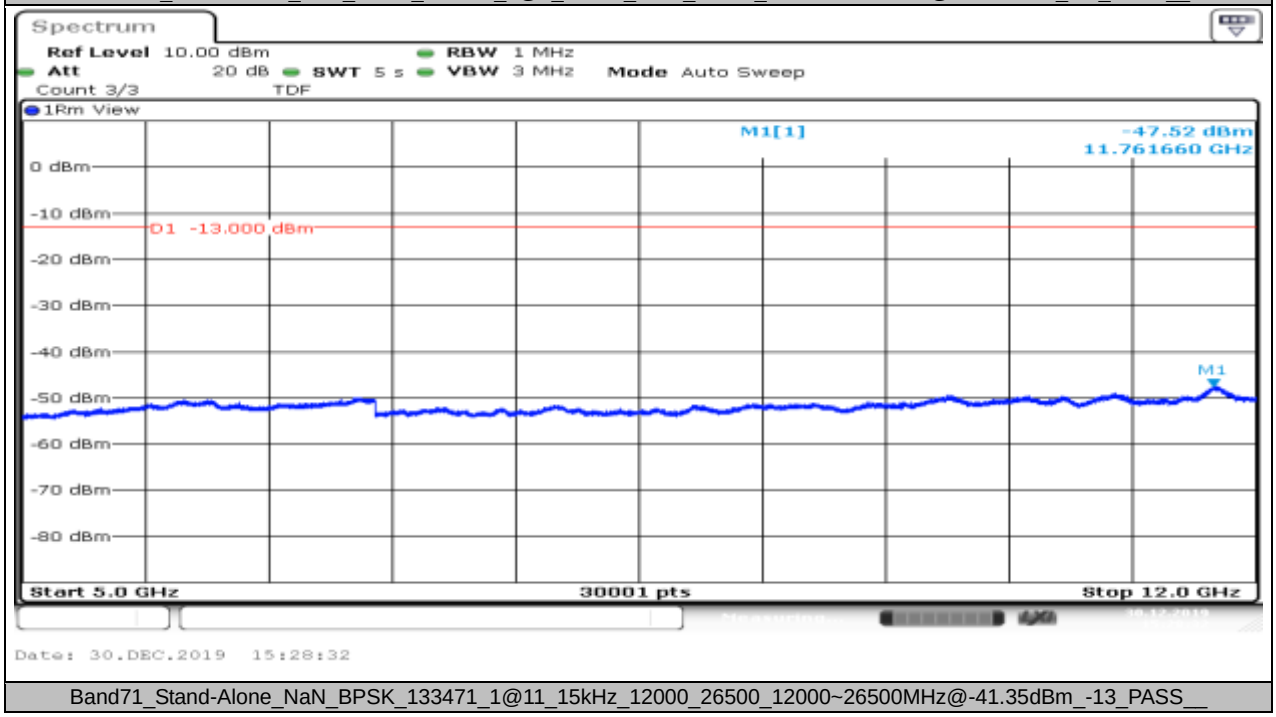
Band71_Stand-Alone_NaN_BPSK_133297_1@0_15kHz_12000_26500_12000~26500MHz@-41.21dBm_-13_PASS__



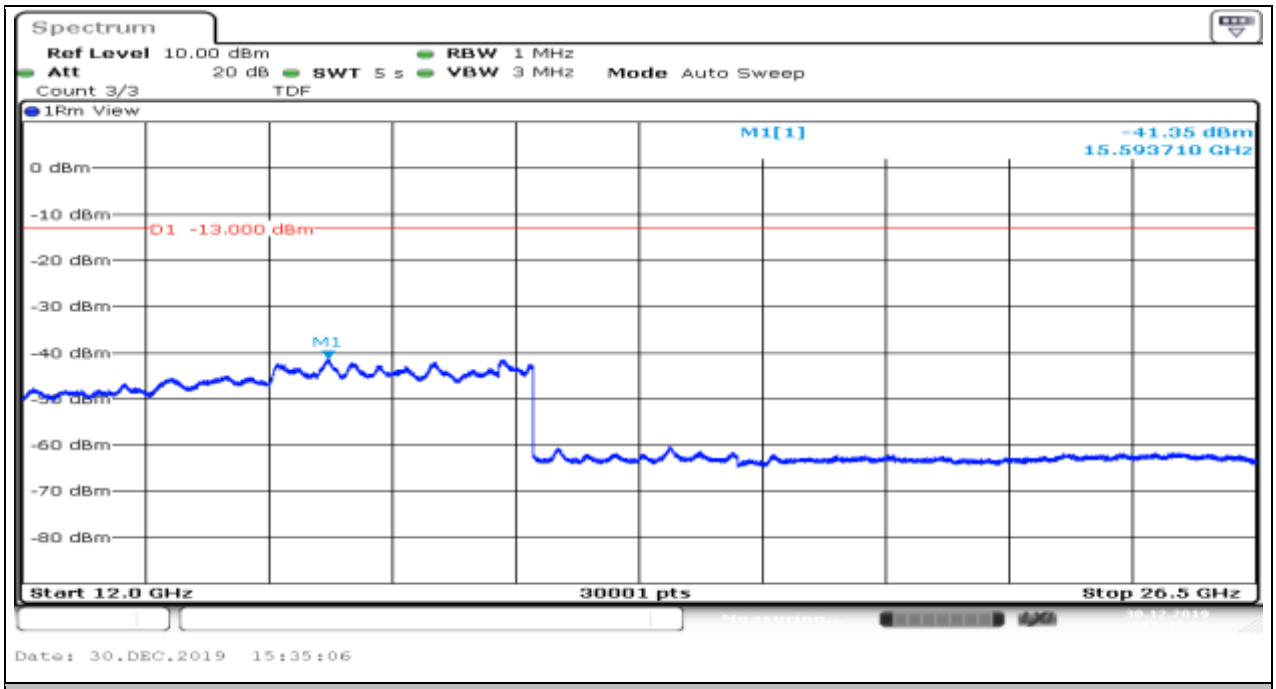
Band71_Stand-Alone_NaN_BPSK_133297_1@0_15kHz_1000_5000_1000~5000MHz@-37.83dBm_-13_PASS__



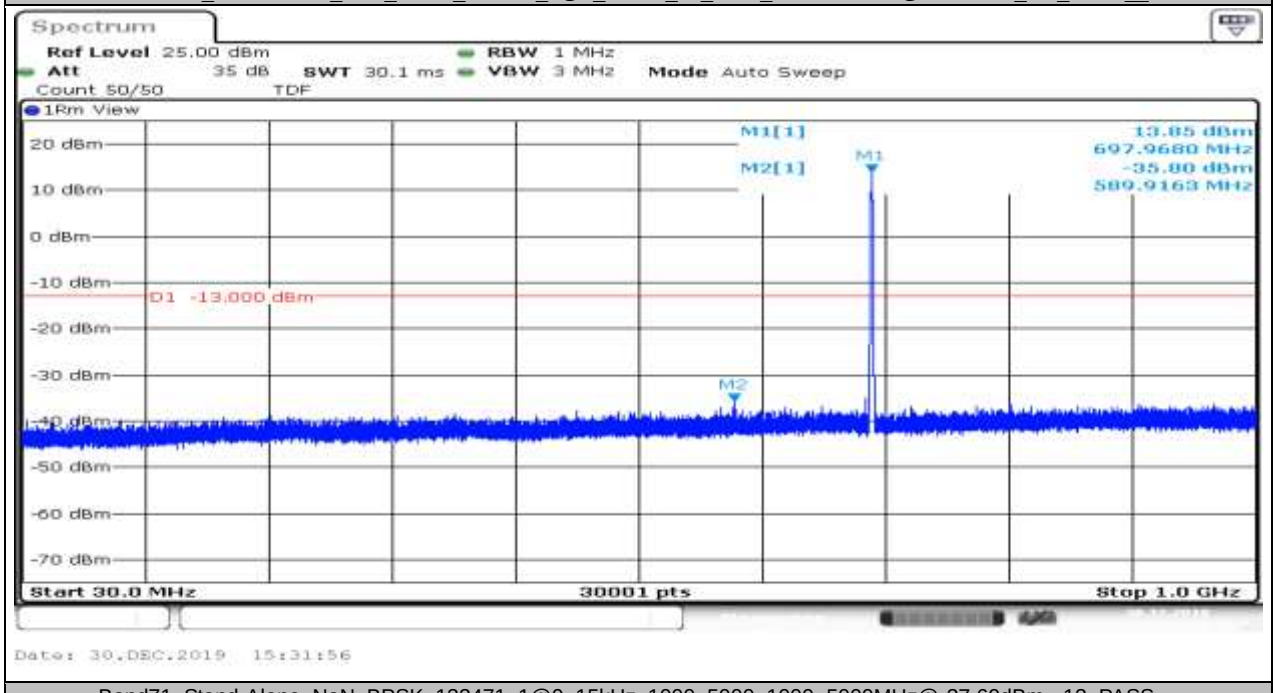
Band71_Stand-Alone_NaN_BPSK_133297_1@0_15kHz_5000_12000_5000~12000MHz@-47.52dBm_-13_PASS__



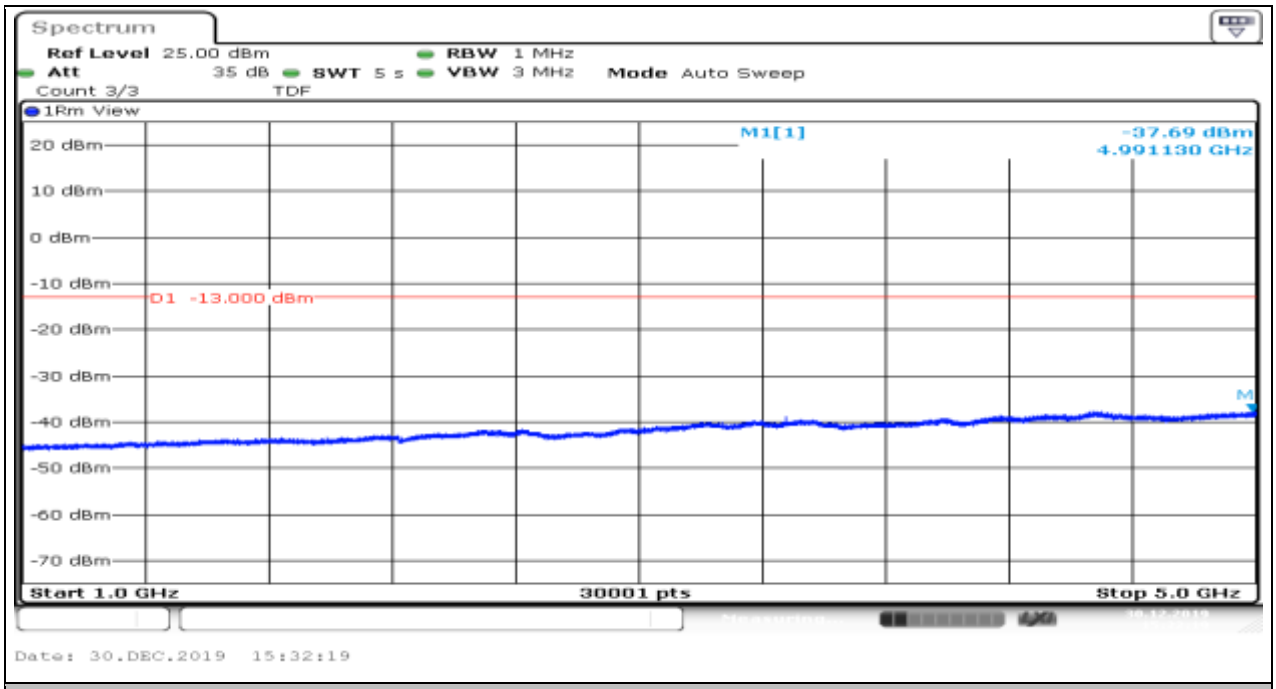
Band71_Stand-Alone_NaN_BPSK_133471_1@11_15kHz_12000_26500_12000~26500MHz@-41.35dBm_-13_PASS__



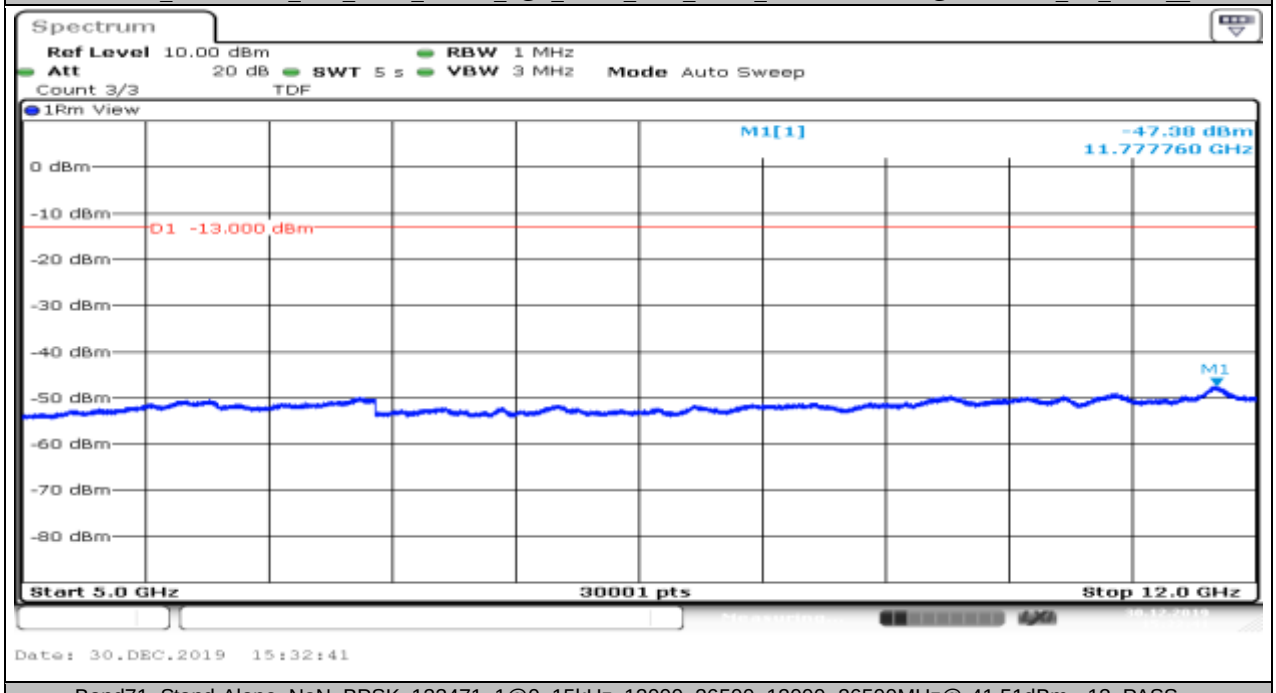
Band71_Stand-Alone_NaN_BPSK_133471_1@0_15kHz_30_1000_30~1000MHz@-35.8dBm_-13_PASS__



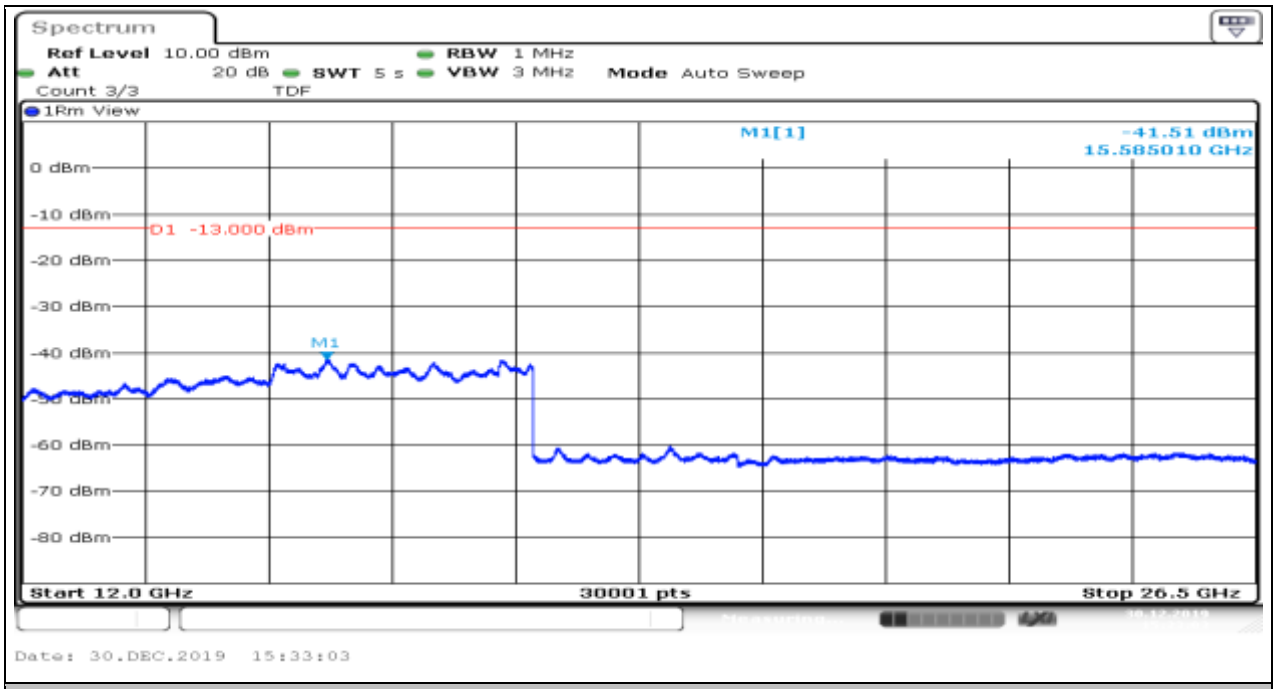
Band71_Stand-Alone_NaN_BPSK_133471_1@0_15kHz_1000_5000_1000~5000MHz@-37.69dBm_-13_PASS__



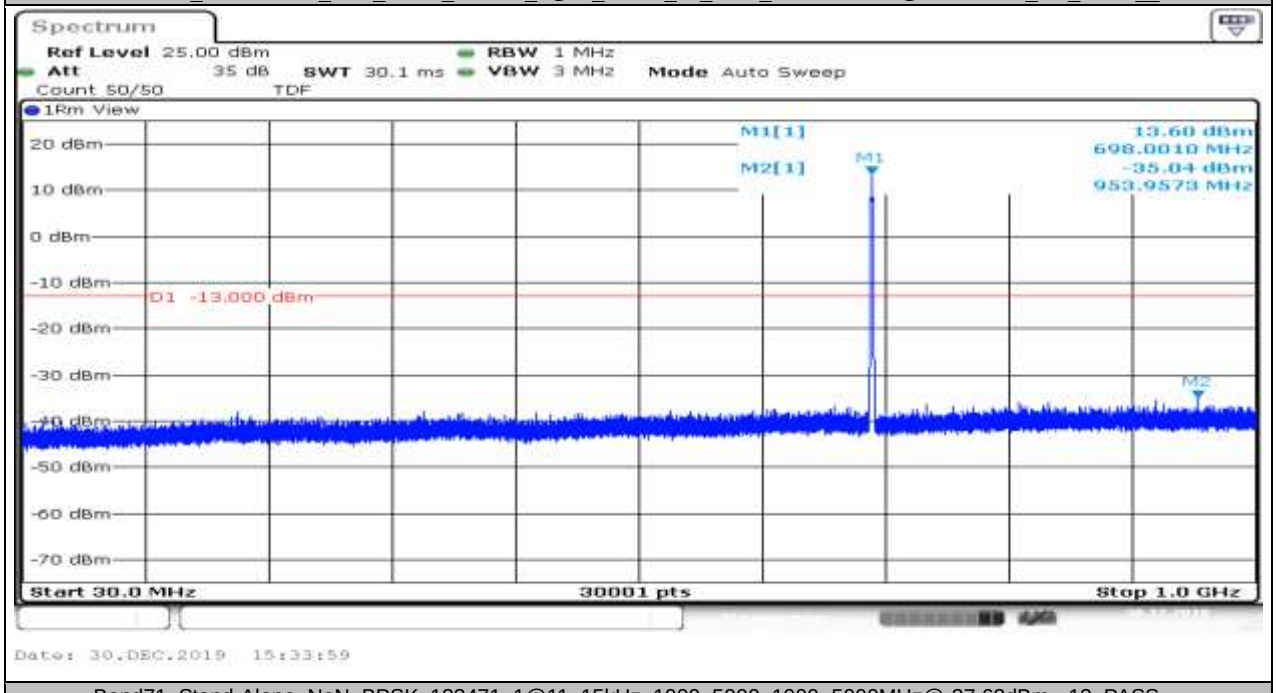
Band71_Stand-Alone_NaN_BPSK_133471_1@0_15kHz_5000_12000_5000~12000MHz@-47.38dBm_-13_PASS__



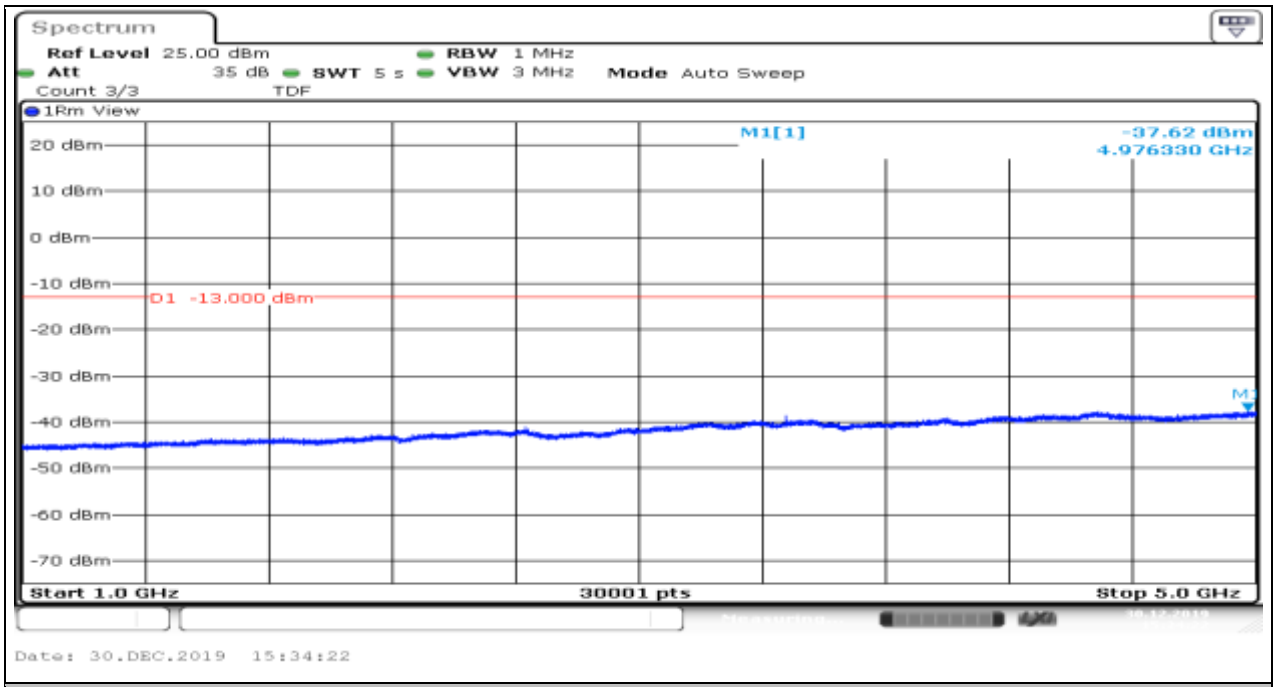
Band71_Stand-Alone_NaN_BPSK_133471_1@0_15kHz_12000_26500_12000~26500MHz@-41.51dBm_-13_PASS__



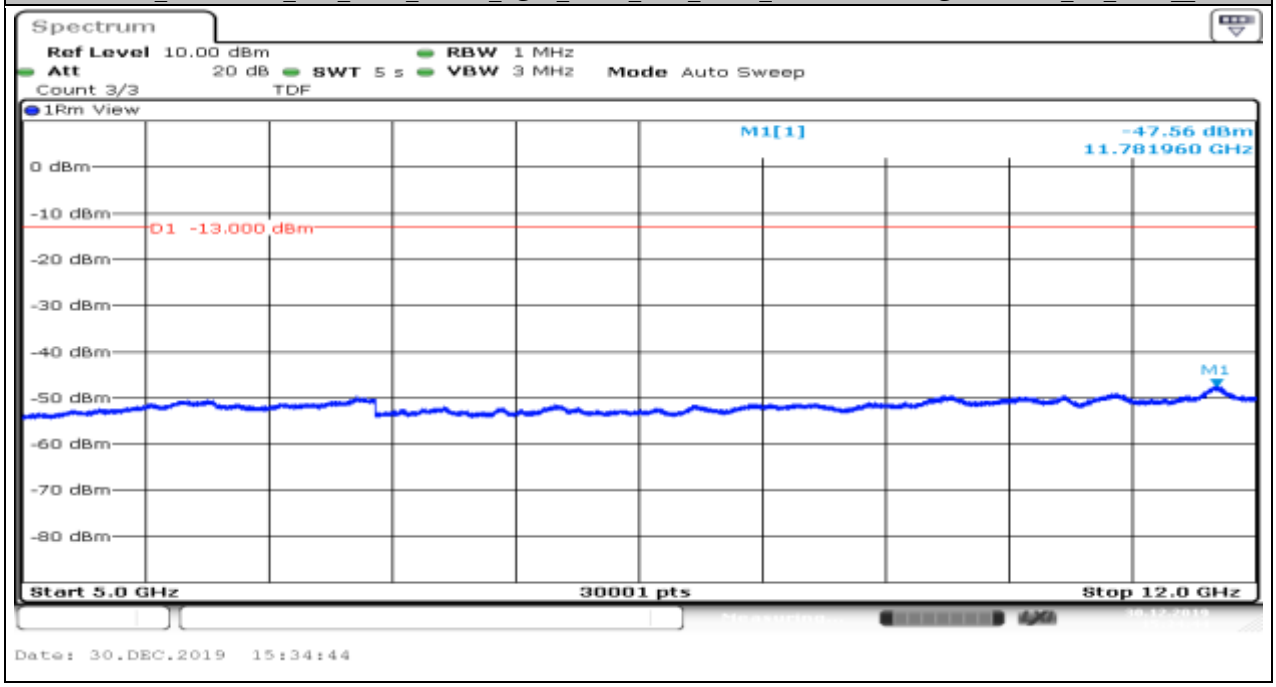
Band71_Stand-Alone_NaN_BPSK_133471_1@11_15kHz_30_1000_30~1000MHz@-35.04dBm_-13_PASS__



Band71_Stand-Alone_NaN_BPSK_133471_1@11_15kHz_1000_5000_1000~5000MHz@-37.62dBm_-13_PASS__



Band71_Stand-Alone_NaN_BPSK_133471_1@11_15kHz_5000_12000_5000~12000MHz@-47.56dBm_-13_PASS__



Appendix J.6: Frequency Stability for NB

Test Result

Voltage												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	HV	NT	-10.17	-0.014945	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	HV	NT	-7.57	-0.011124	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	NT	-9.9	-0.014548	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	LV	NT	-10.2	-0.014989	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	NT	-9.44	-0.013872	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	LV	NT	-8.73	-0.012829	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	NT	-10.76	-0.015812	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	HV	NT	-7.08	-0.010404	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	LV	NT	-7.2	-0.01058	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	NT	-8.03	-0.0118	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	HV	NT	-7.88	-0.01158	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	LV	NT	-10.1	-0.014842	±2.5	PASS

Temperature												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	40	-9.88	-0.014519	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	80	-9.18	-0.01349	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	70	-8.53	-0.012535	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	60	-10.76	-0.015812	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	50	-11.37	-0.016708	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	30	-9.14	-0.013431	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	20	-8.2	-0.01205	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	10	-7.82	-0.011492	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	0	-10.03	-0.014739	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	-20	-10.26	-0.015077	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	20	-7.42	-0.010904	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	-30	-12.35	-0.018148	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	-10	-9.3	-0.013666	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	-40	-7.91	-0.011624	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	-20	-9.5	-0.01396	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	-10	-10.8	-0.015871	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	80	-8.84	-0.01299	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	10	-9.21	-0.013534	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	85	-9.28	-0.013637	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	30	-7.97	-0.011712	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	40	-8.44	-0.012403	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	50	-8.3	-0.012197	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	60	-9.04	-0.013284	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	70	-9.6	-0.014107	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	-40	-11.82	-0.01737	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	15kHz	NV	85	-9.76	-0.014342	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	0	-9.04	-0.013284	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	30	-4.88	-0.007171	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@11	15kHz	NV	-30	-11.01	-0.016179	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	-30	-5.79	-0.008508	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	-20	-6.27	-0.009214	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	-10	-5.62	-0.008259	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	0	-6.71	-0.00986	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	85	-4.19	-0.006157	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	20	-5.97	-0.008773	±2.5	PASS

Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	-40	-6.42	-0.009434	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	40	-4.81	-0.007068	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	50	-4.18	-0.006143	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	60	-4.81	-0.007068	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	70	-5.31	-0.007803	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	80	-3.63	-0.005334	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	40	-6.77	-0.009949	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	80	-4.42	-0.006495	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	10	-4.84	-0.007112	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@0	3.75kHz	NV	85	-5.99	-0.008802	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	70	-5.09	-0.00748	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	50	-5.68	-0.008347	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	30	-4.79	-0.007039	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	20	-6.54	-0.009611	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	10	-5.05	-0.007421	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	0	-6.39	-0.00939	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	-10	-5.12	-0.007524	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	-20	-7.24	-0.010639	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	-30	-6.35	-0.009331	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	-40	-6.24	-0.00917	±2.5	PASS
Band71	Stand-Alone	NaN	QPSK	133297	1@47	3.75kHz	NV	60	-6.05	-0.008891	±2.5	PASS