

Appendix K: Test Results of Band 85 for NB-IoT operation

APPENDIX K: TEST RESULTS OF BAND 85 FOR NB-IOT OPERATION	1
APPENDIX K.1: RF POWER OUTPUT AND EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA FOR NB	2
Test Result	2
APPENDIX K.2: PEAK-TO-AVERAGE RATIO (CCDF) FOR NB.....	3
Test Result	3
Test Graphs.....	3
APPENDIX K.3: 26dB EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH FOR NB	9
Test Result	9
Test Graphs.....	9
APPENDIX K.4: BAND EDGE FOR NB.....	17
Test Result	17
Test Graphs.....	17
APPENDIX K.5: CONDUCTED SPURIOUS EMISSION FOR NB	27
Test Result	27
Test Graphs.....	28
APPENDIX K.6: FREQUENCY STABILITY FOR NB	58
Test Result	58

Appendix K.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		
Band85	Stand-Alone	NaN	QPSK	134003	1@0	3.75kHz	11.92	11.91	0.016	3	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@47	3.75kHz	11.84	11.83	0.015	3	PASS
Band85	Stand-Alone	NaN	QPSK	134003	3@3	15kHz	11.8	11.79	0.015	3	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@11	15kHz	11.78	11.77	0.015	3	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@0	15kHz	11.83	11.82	0.015	3	PASS
Band85	Stand-Alone	NaN	QPSK	134092	3@3	15kHz	21.13	21.12	0.129	3	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	20.64	20.63	0.116	3	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	20.7	20.69	0.117	3	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	21.07	21.06	0.128	3	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	21.1	21.09	0.129	3	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	15kHz	11.92	11.91	0.016	3	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@47	3.75kHz	11.97	11.96	0.016	3	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@11	15kHz	11.86	11.85	0.015	3	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	3.75kHz	12.06	12.05	0.016	3	PASS
Band85	Stand-Alone	NaN	QPSK	134181	3@3	15kHz	11.6	11.59	0.014	3	PASS
Band85	Stand-Alone	NaN	BPSK	134003	3@3	15kHz	11.7	11.69	0.015	3	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@11	15kHz	11.76	11.75	0.015	3	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@47	3.75kHz	11.89	11.88	0.015	3	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	3.75kHz	11.93	11.92	0.016	3	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	15kHz	11.86	11.85	0.015	3	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@11	15kHz	20.92	20.91	0.123	3	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@47	3.75kHz	20.64	20.63	0.116	3	PASS
Band85	Stand-Alone	NaN	BPSK	134092	3@3	15kHz	21.13	21.12	0.129	3	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	3.75kHz	20.65	20.64	0.116	3	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	15kHz	20.96	20.95	0.124	3	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	15kHz	11.95	11.94	0.016	3	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@11	15kHz	11.8	11.79	0.015	3	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@47	3.75kHz	12.04	12.03	0.016	3	PASS
Band85	Stand-Alone	NaN	BPSK	134181	3@3	15kHz	11.6	11.59	0.014	3	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	3.75kHz	12.08	12.07	0.016	3	PASS

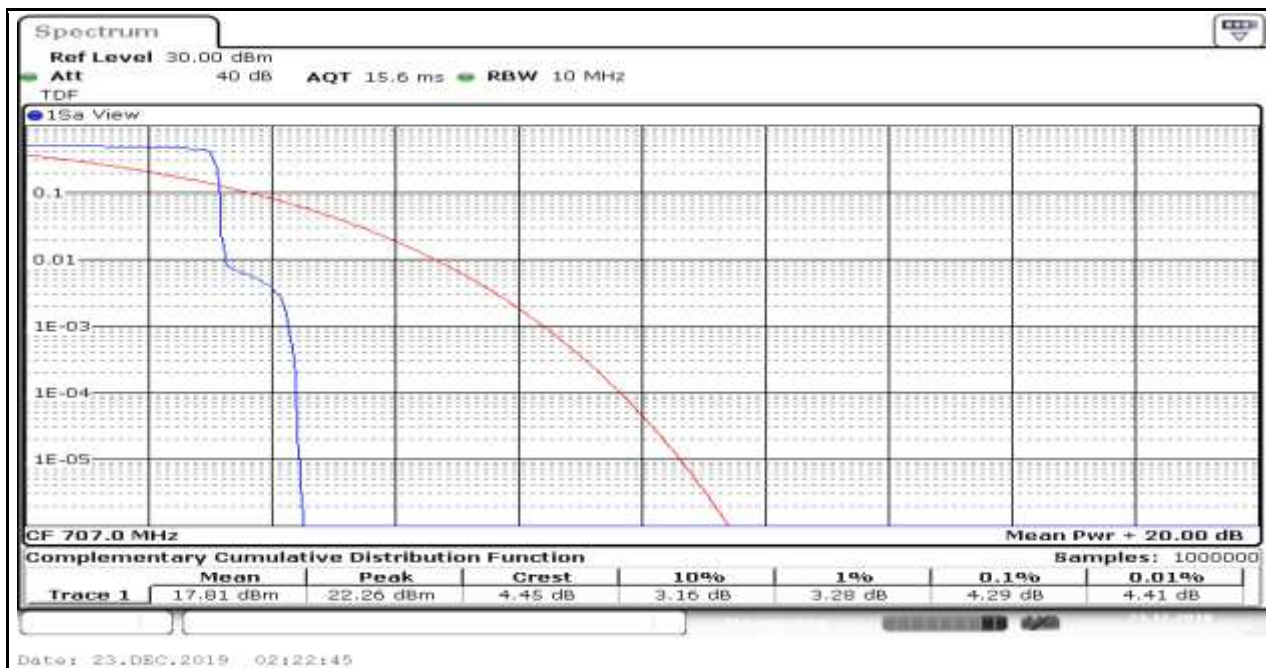
Appendix K.2: Peak-to-Average Ratio (CCDF) for NB

Test Result

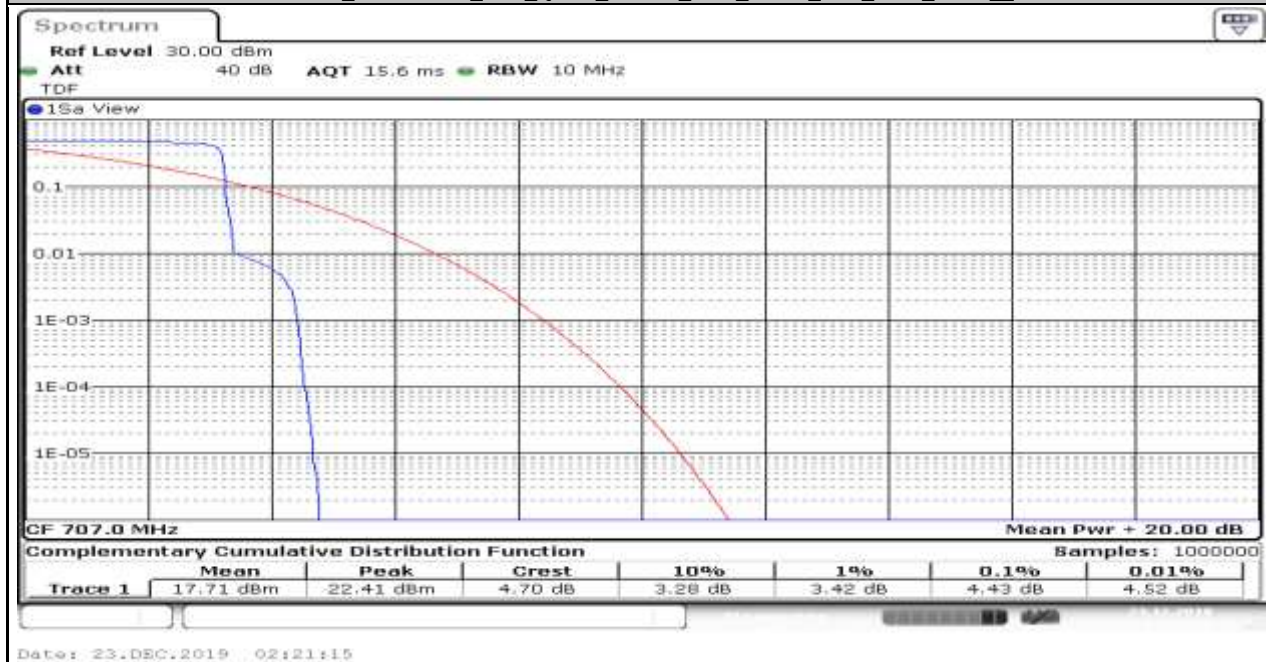
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
Band85	Stand-Alone	NaN	QPSK	134092	3@3	15kHz	10.14	<=13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	4.29	<=13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	4.43	<=13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	4.55	<=13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	6.43	<=13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	3@3	15kHz	8.46	<=13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@11	15kHz	1.91	<=13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	15kHz	8.41	<=13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@47	3.75kHz	4.78	<=13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	3.75kHz	1.59	<=13	PASS

Test Graphs

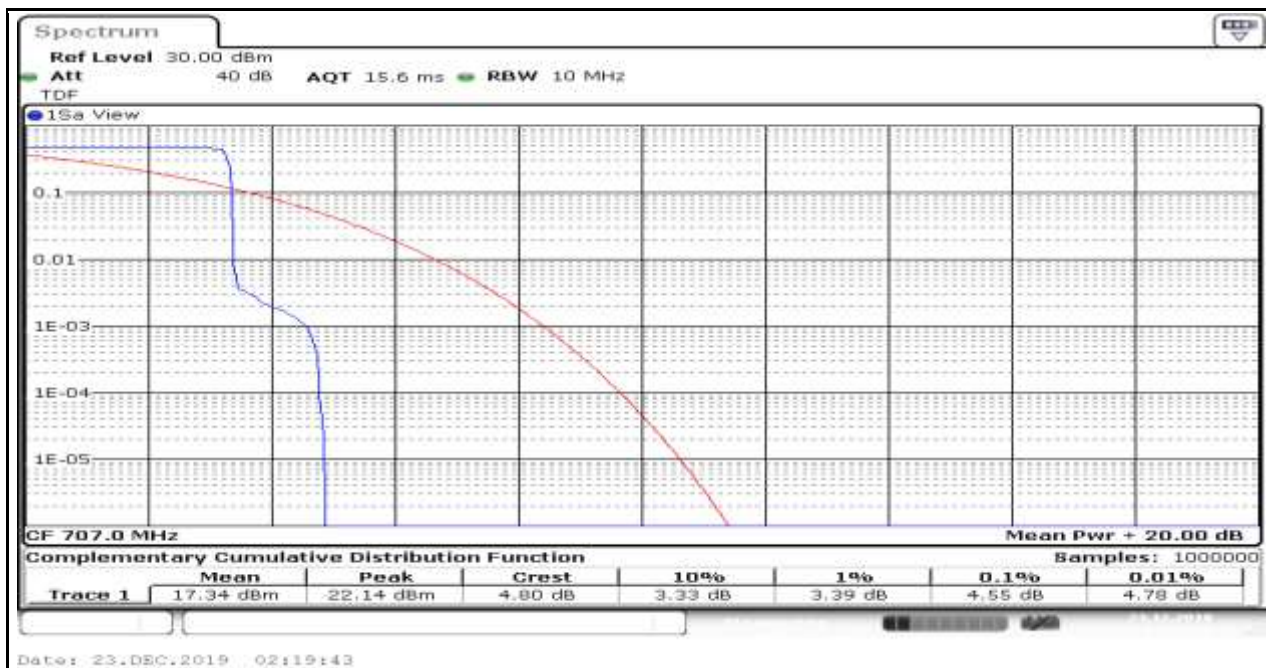




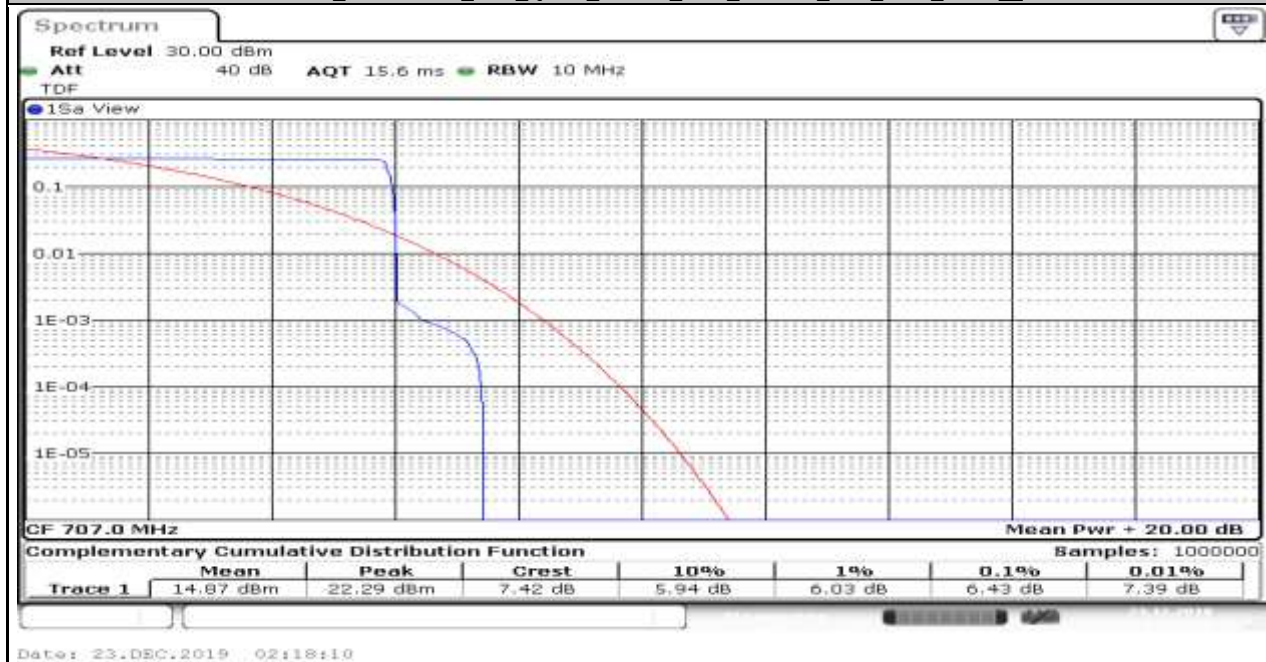
Band85_Stand-Alone_NaN_QPSK_134092_1@0_15kHz_4.43_<=13_PASS_



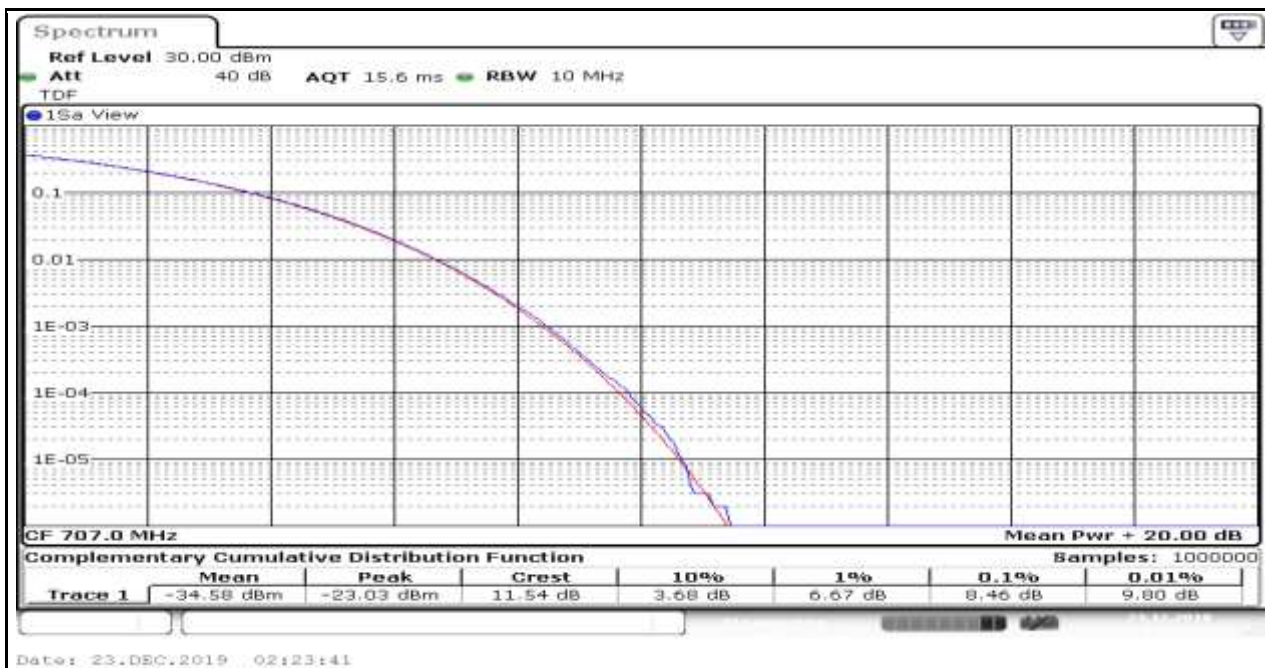
Band85_Stand-Alone_NaN_QPSK_134092_1@47_3.75kHz_4.55_<=13_PASS_



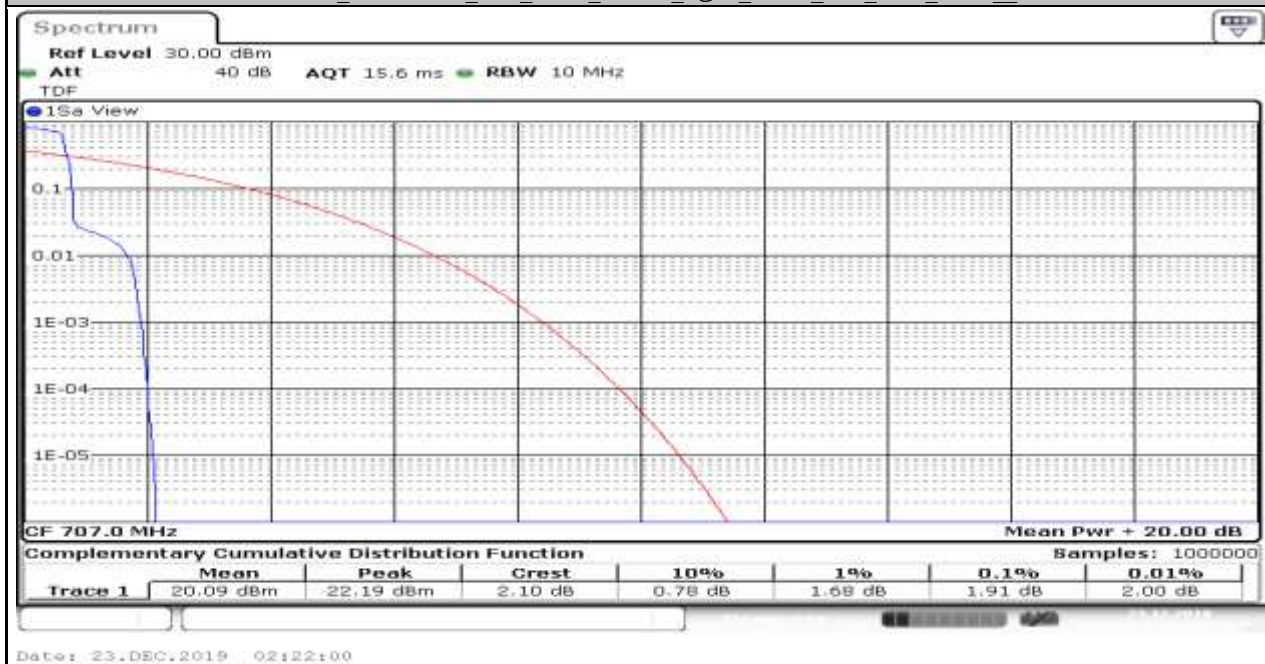
Band85_Stand-Alone_NaN_QPSK_134092_1@0_3.75kHz_6.43_<=13_PASS_



Band85_Stand-Alone_NaN_BPSK_134092_3@3_15kHz_8.46_<=13_PASS_



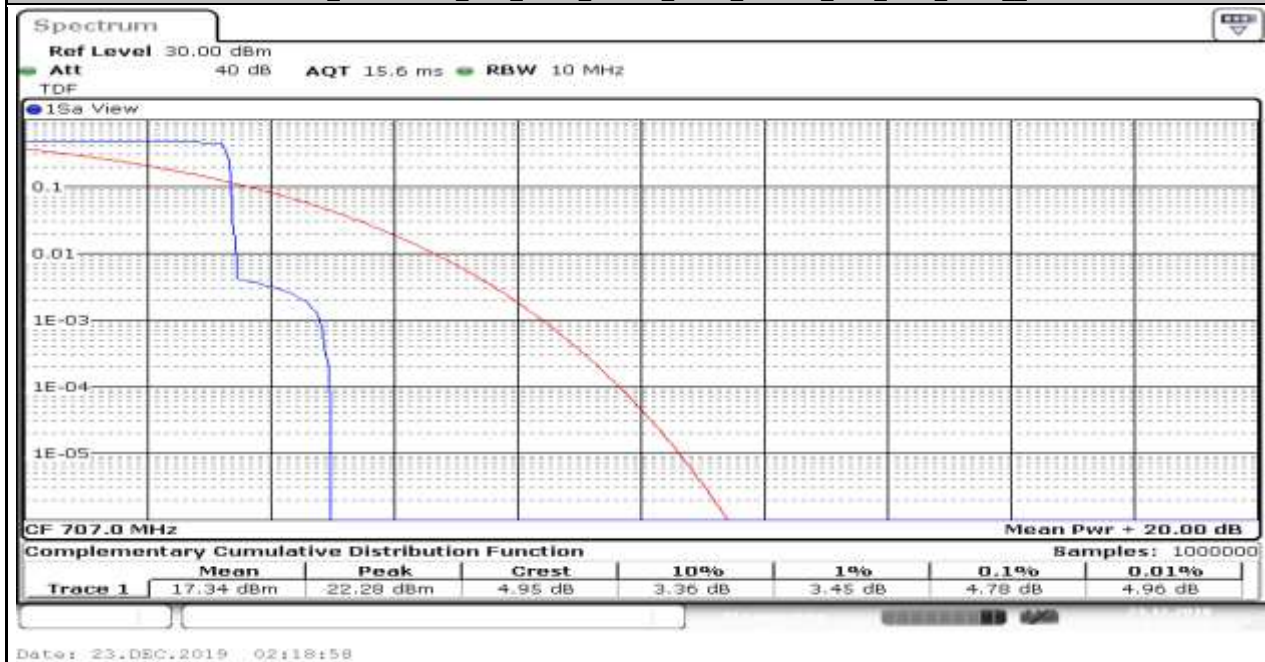
Band85_Stand-Alone_NaN_BPSK_134092_1@11_15kHz_1.91_<=13_PASS_



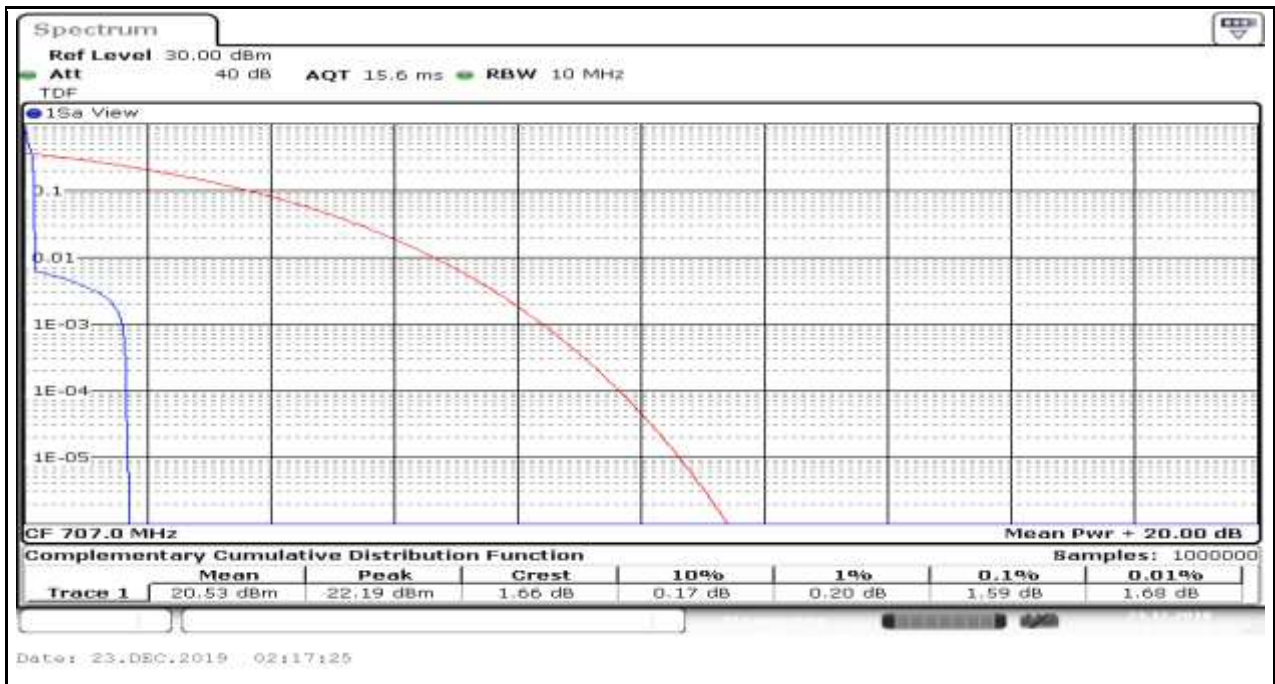
Band85_Stand-Alone_NaN_BPSK_134092_1@0_15kHz_8.41_<=13_PASS_



Band85_Stand-Alone_NaN_BPSK_134092_1@47_3.75kHz_4.78_<=13_PASS_



Band85_Stand-Alone_NaN_BPSK_134092_1@0_3.75kHz_1.59_<=13_PASS_

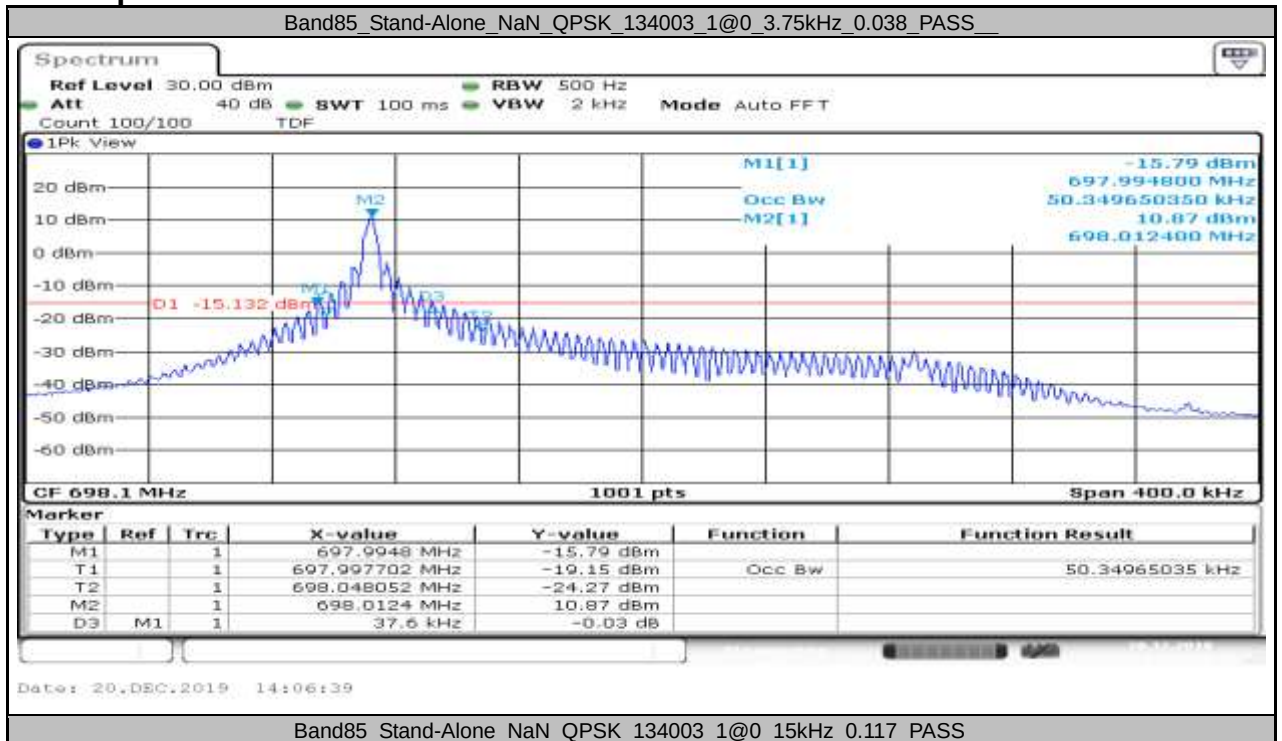


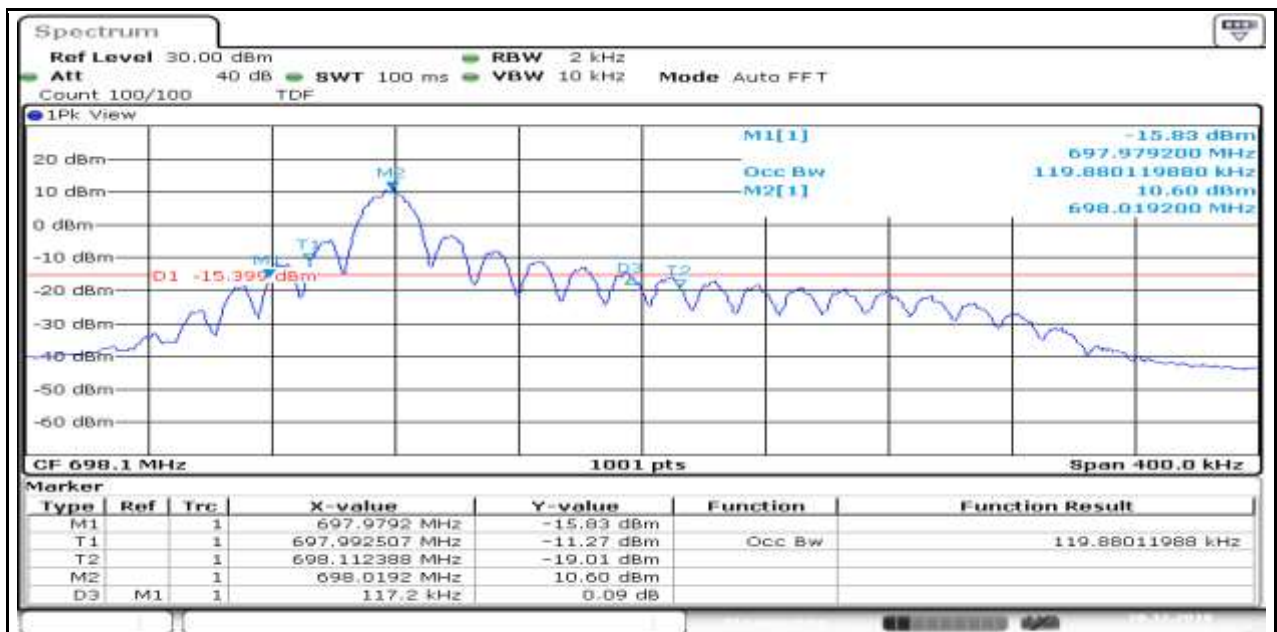
Appendix K.3: 26dB Emission Bandwidth and Occupied Bandwidth for NB

Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Verdict
Band85	Stand-Alone	NaN	QPSK	134003	1@0	3.75kHz	0.038	0.050	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@0	15kHz	0.117	0.120	PASS
Band85	Stand-Alone	NaN	QPSK	134003	12@0	15kHz	0.251	0.184	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	0.038	0.052	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	0.117	0.121	PASS
Band85	Stand-Alone	NaN	QPSK	134092	12@0	15kHz	0.250	0.184	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	3.75kHz	0.038	0.050	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	15kHz	0.117	0.120	PASS
Band85	Stand-Alone	NaN	QPSK	134181	12@0	15kHz	0.251	0.184	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	3.75kHz	0.032	0.054	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	15kHz	0.106	0.127	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	3.75kHz	0.032	0.053	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	15kHz	0.106	0.126	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	3.75kHz	0.032	0.054	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	15kHz	0.106	0.127	PASS

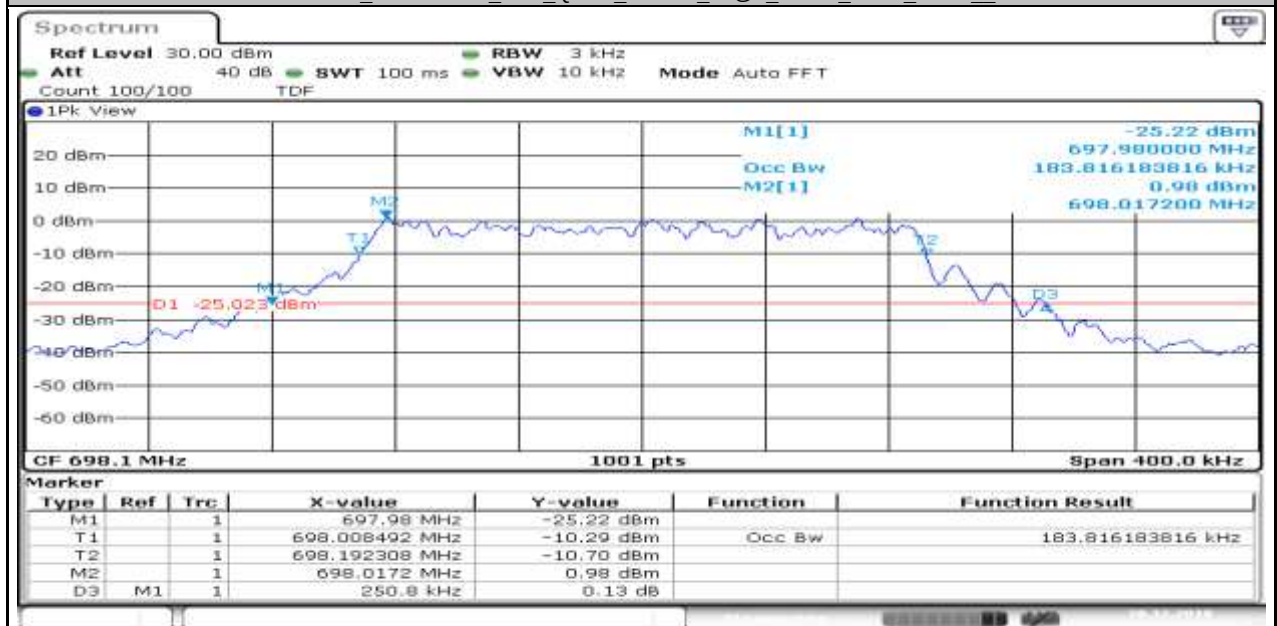
Test Graphs





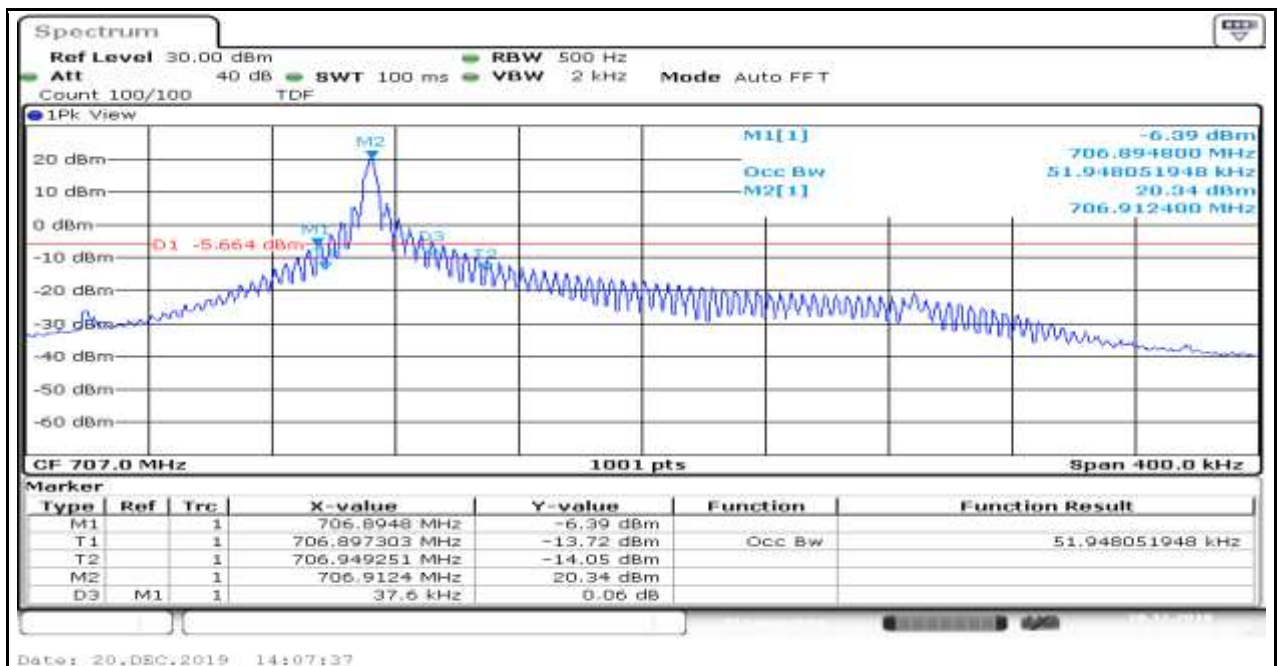
Date: 20.DEC.2019 13:34:42

Band85_Stand-Alone_NaN_QPSK_134003_12@0_15kHz_0.251_PASS_

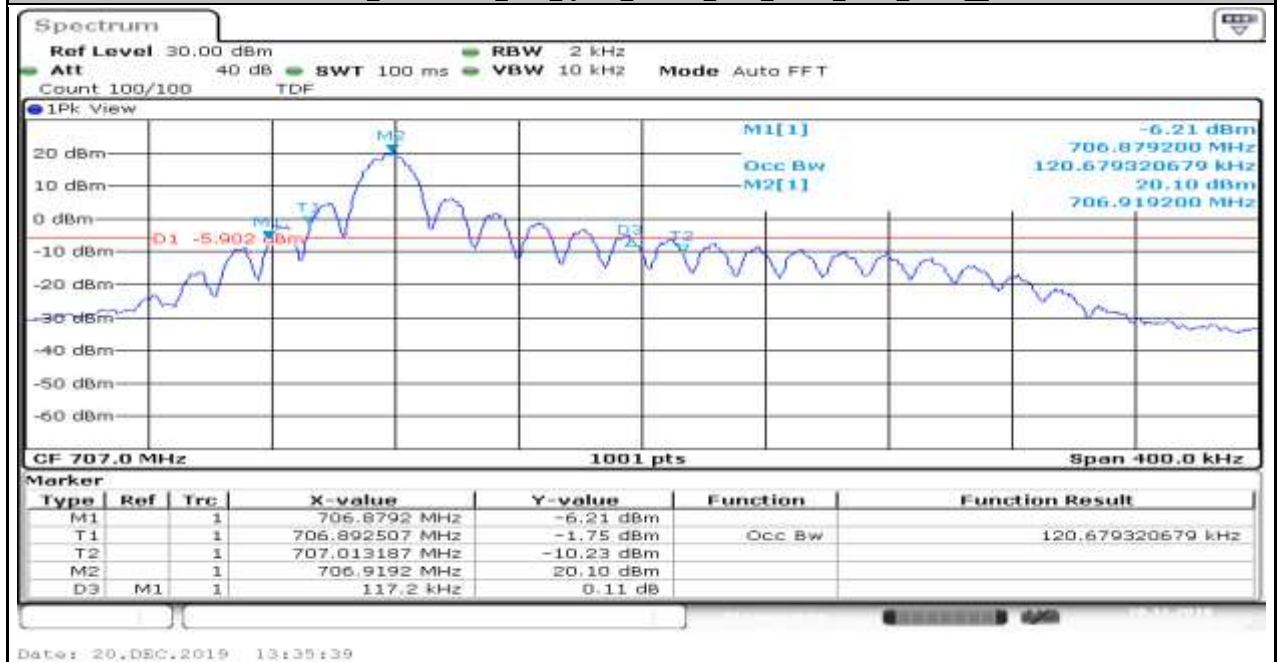


Date: 20.DEC.2019 12:28:01

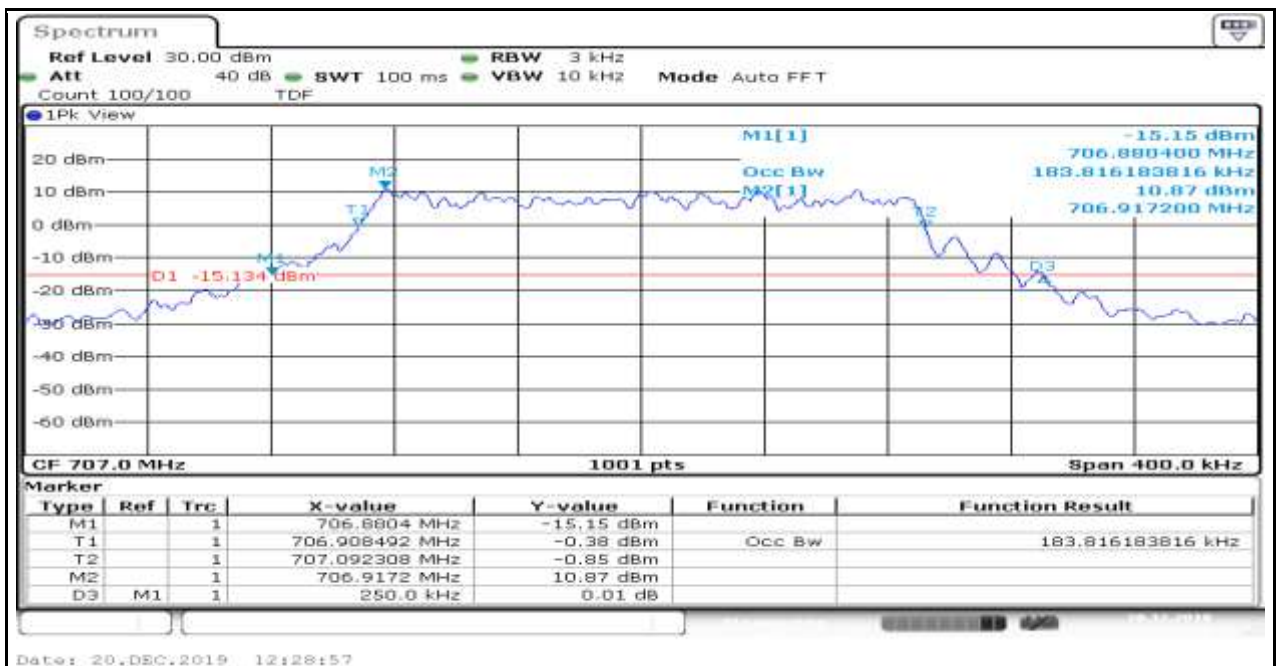
Band85_Stand-Alone_NaN_QPSK_134092_1@0_3.75kHz_0.038_PASS_



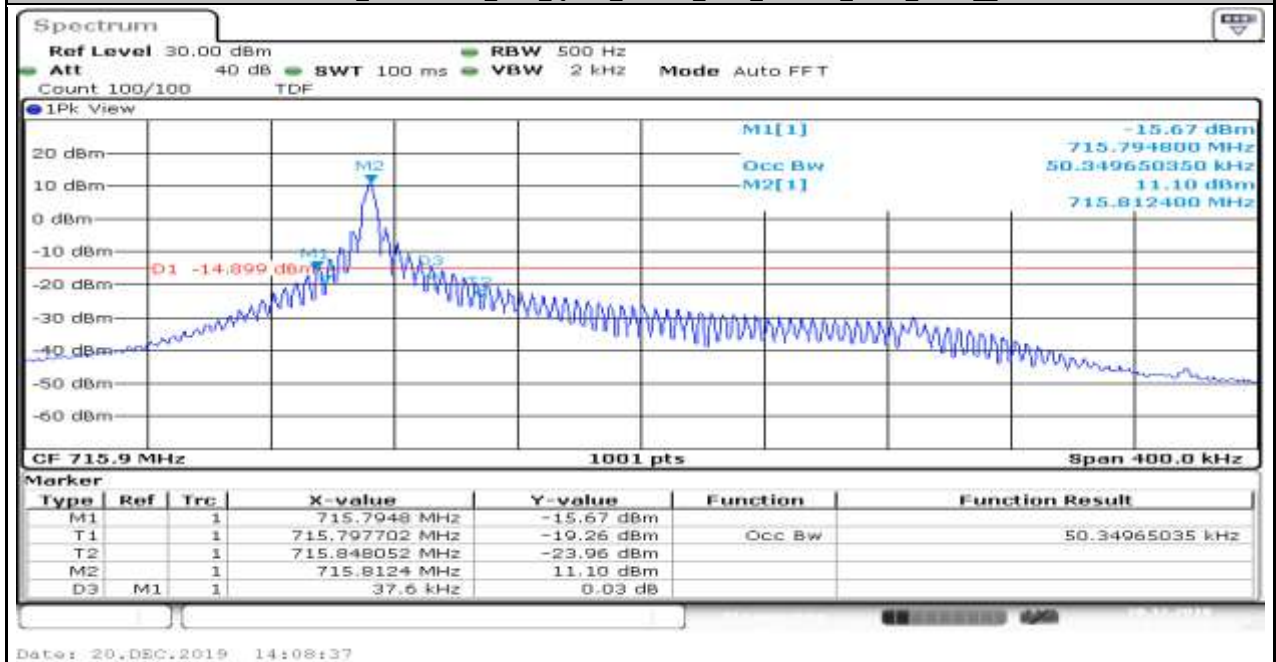
Band85_Stand-Alone_NaN_QPSK_134092_1@0_15kHz_0.117_PASS_



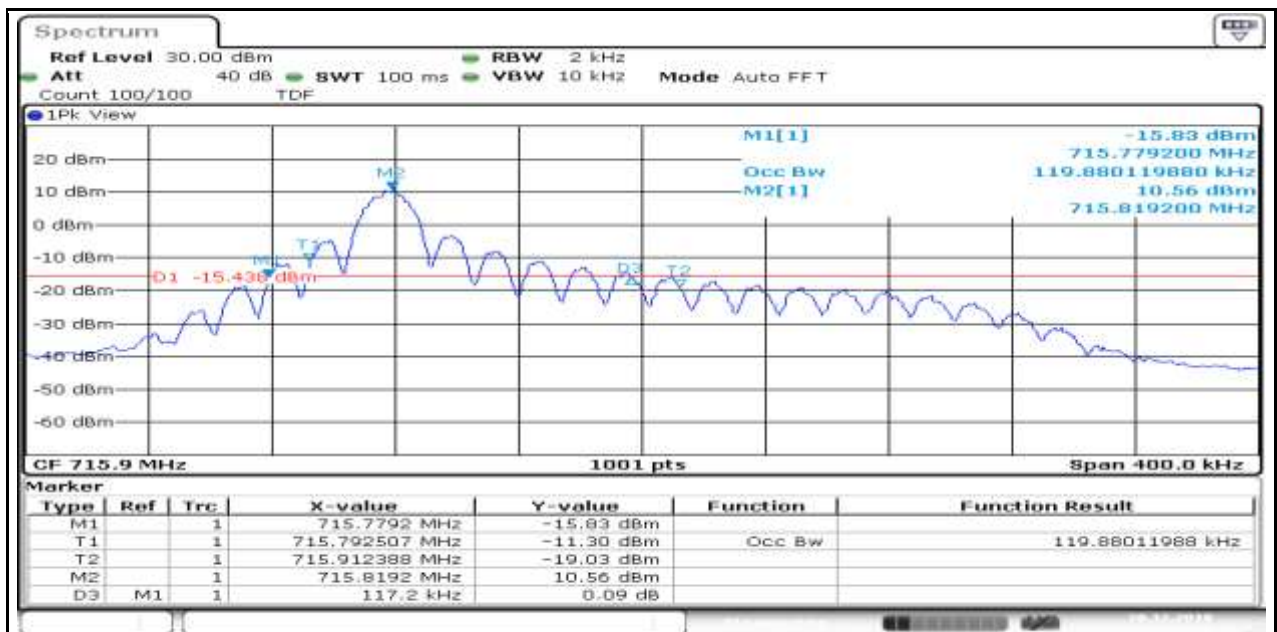
Band85_Stand-Alone_NaN_QPSK_134092_12@0_15kHz_0.250_PASS_



Band85_Stand-Alone_NaN_QPSK_134181_1@0_3.75kHz_0.038_PASS_

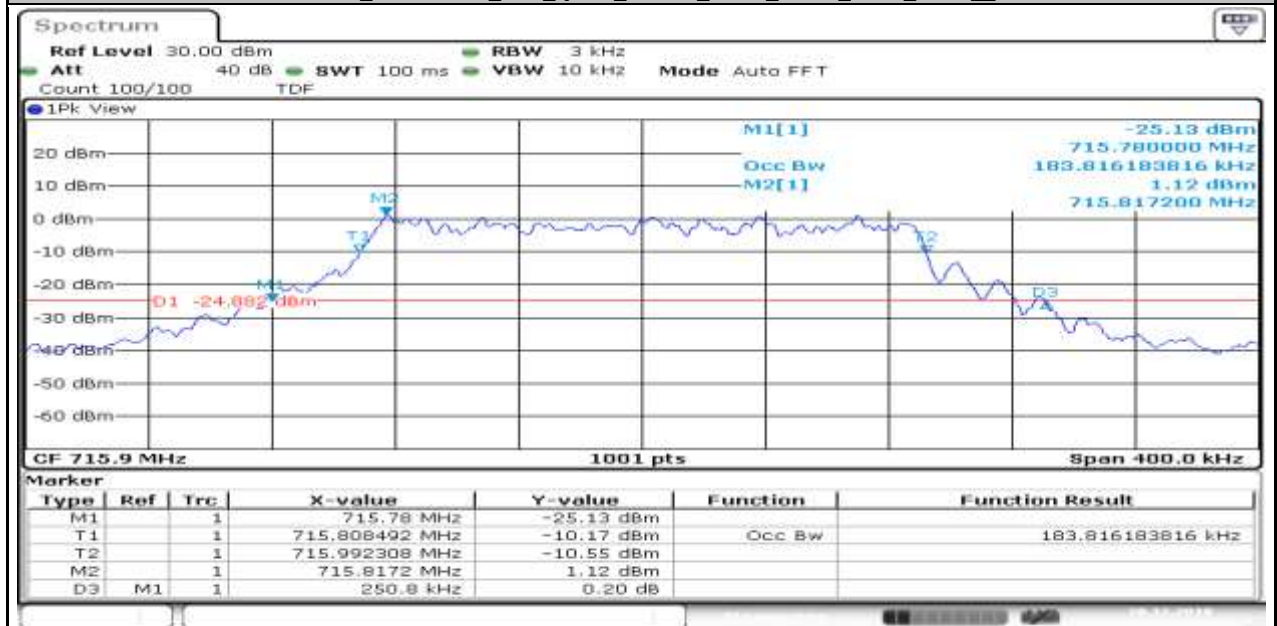


Band85_Stand-Alone_NaN_QPSK_134181_1@0_15kHz_0.117_PASS_



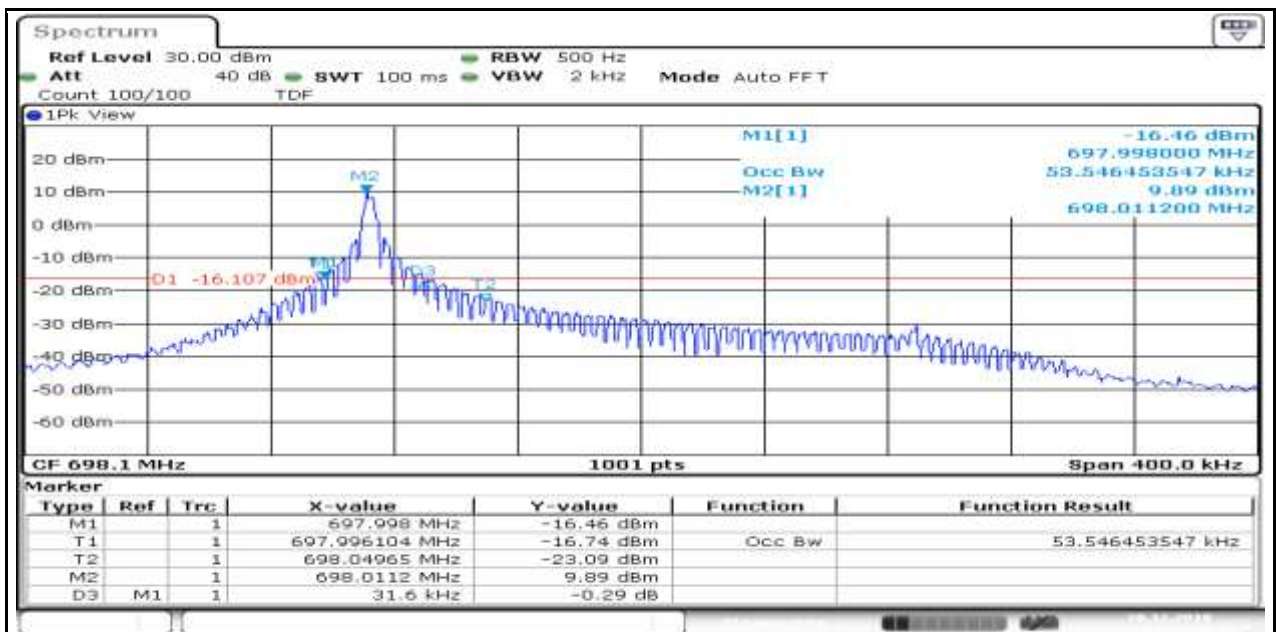
Date: 20.DEC.2019 13:36:35

Band85_Stand-Alone_NaN_QPSK_134181_12@0_15kHz_0.251_PASS_



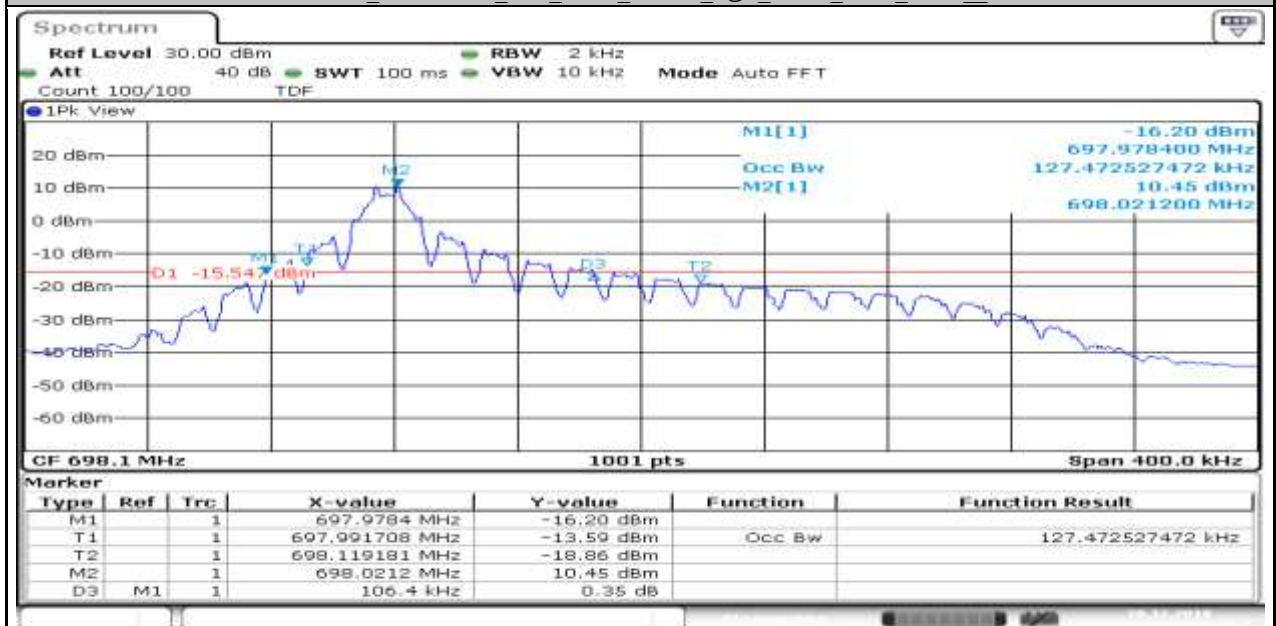
Date: 20.DEC.2019 12:30:04

Band85_Stand-Alone_NaN_BPSK_134003_1@0_3.75kHz_0.032_PASS_



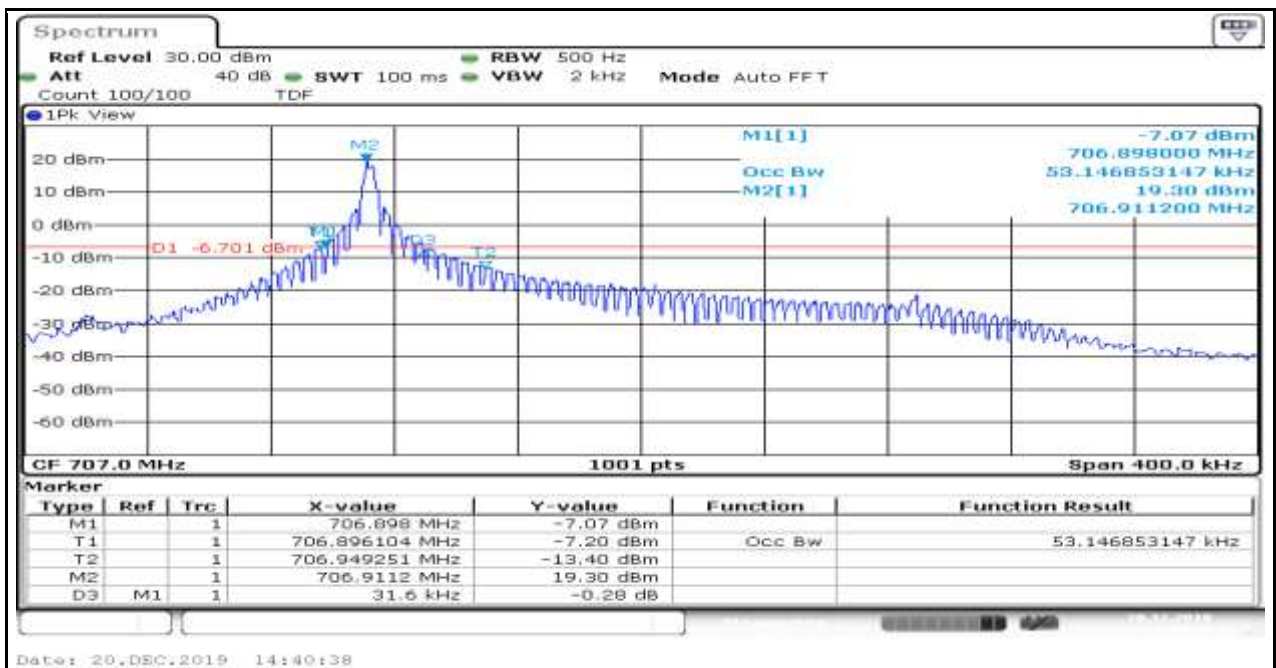
Date: 20.DEC.2019 14:39:37

Band85_Stand-Alone_NaN_BPSK_134003_1@0_15kHz_0.106_PASS_

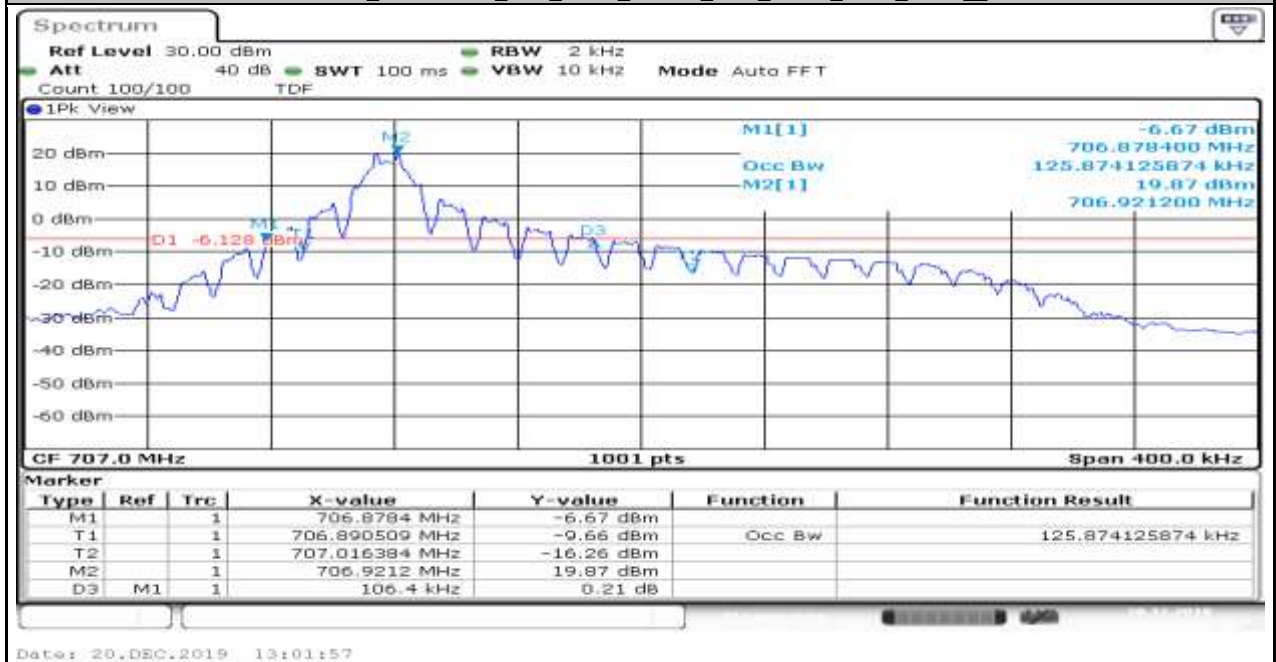


Date: 20.DEC.2019 13:00:49

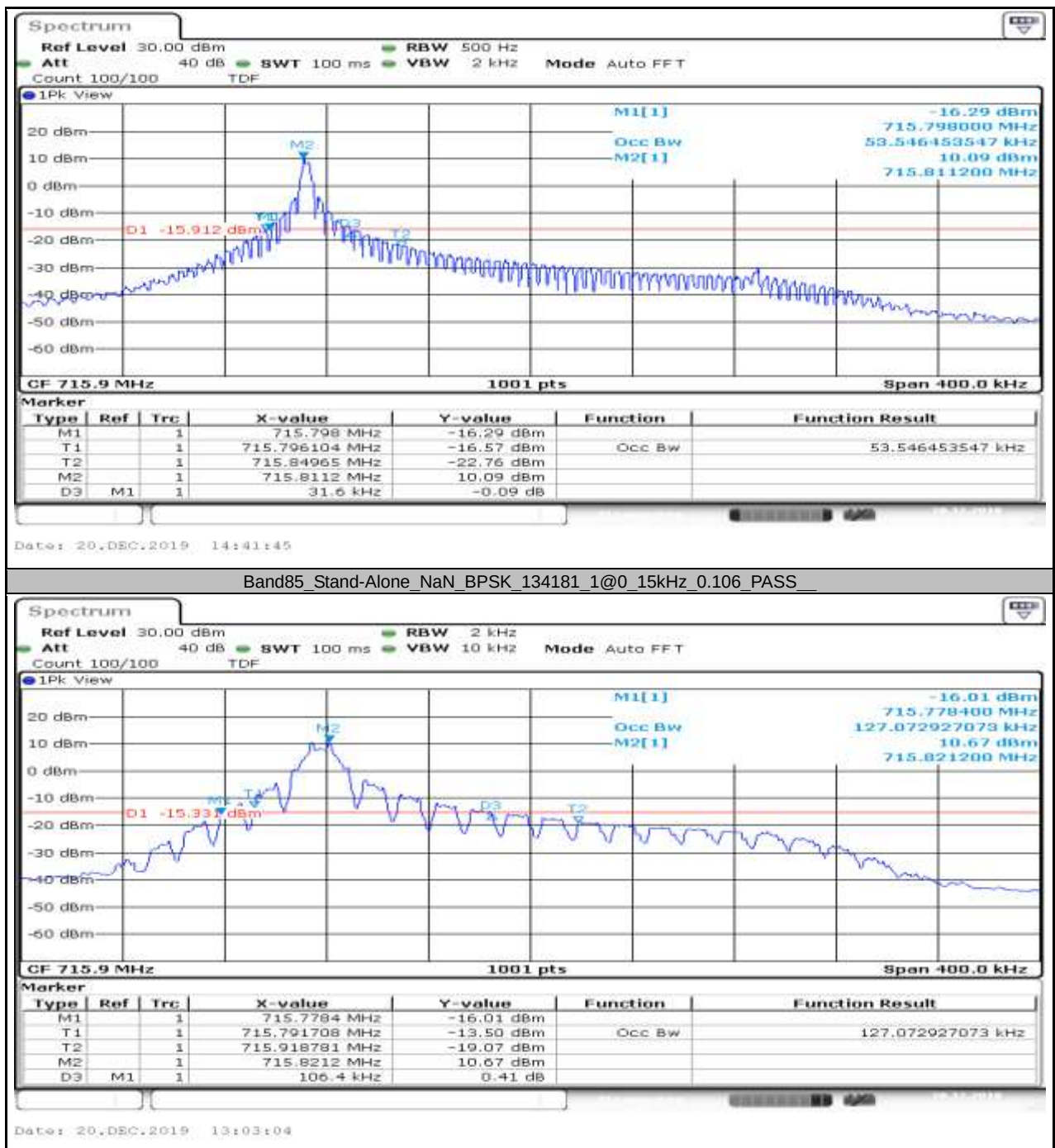
Band85_Stand-Alone_NaN_BPSK_134092_1@0_3.75kHz_0.032_PASS_



Band85_Stand-Alone_NaN_BPSK_134092_1@0_15kHz_0.106_PASS_



Band85_Stand-Alone_NaN_BPSK_134181_1@0_3.75kHz_0.032_PASS_

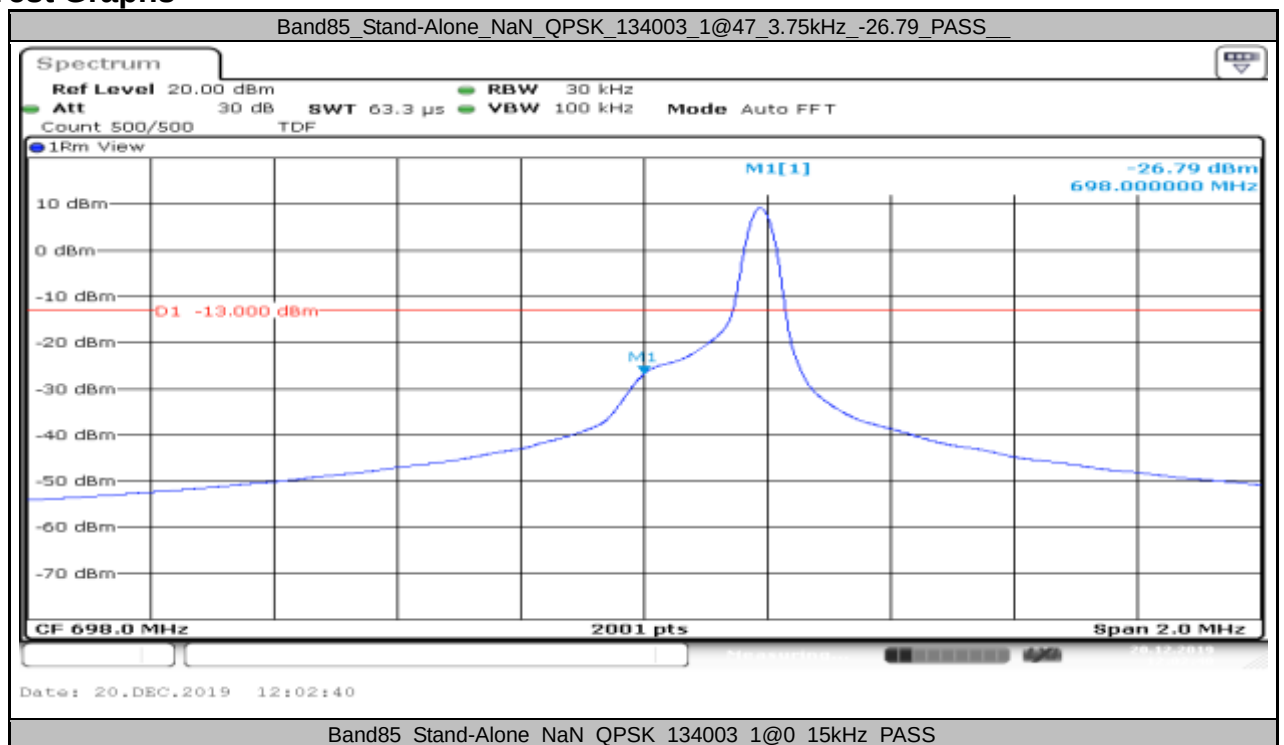


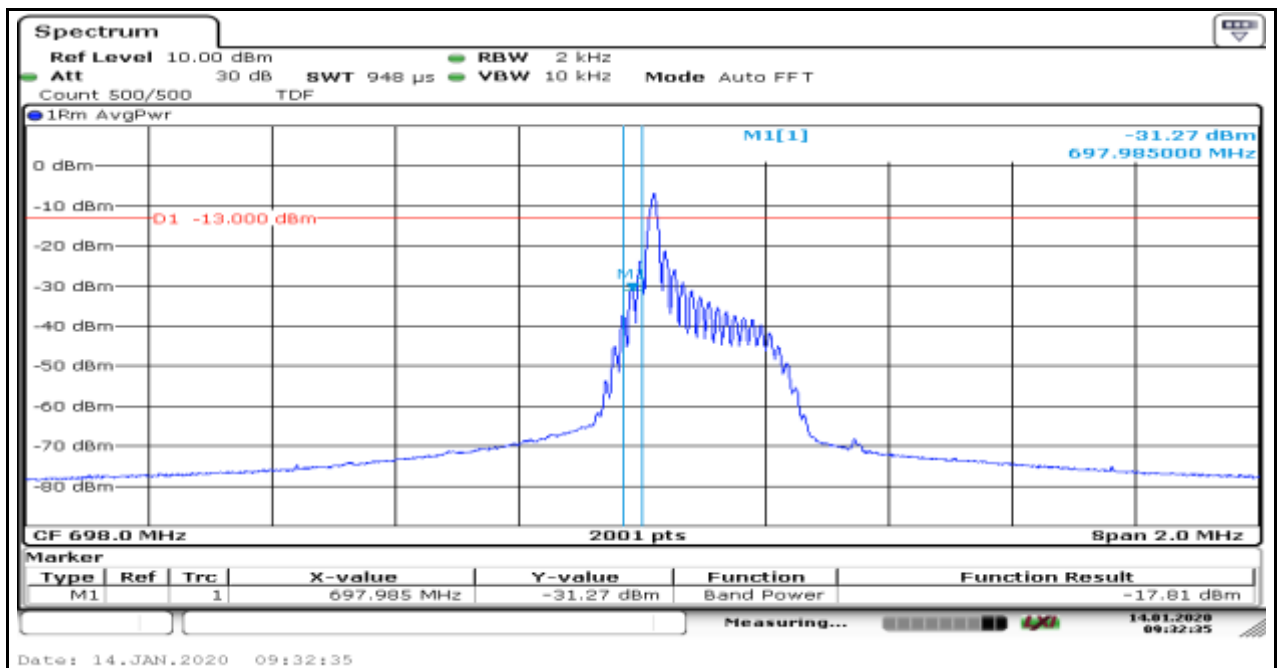
Appendix K.4: Band Edge for NB

Test Result

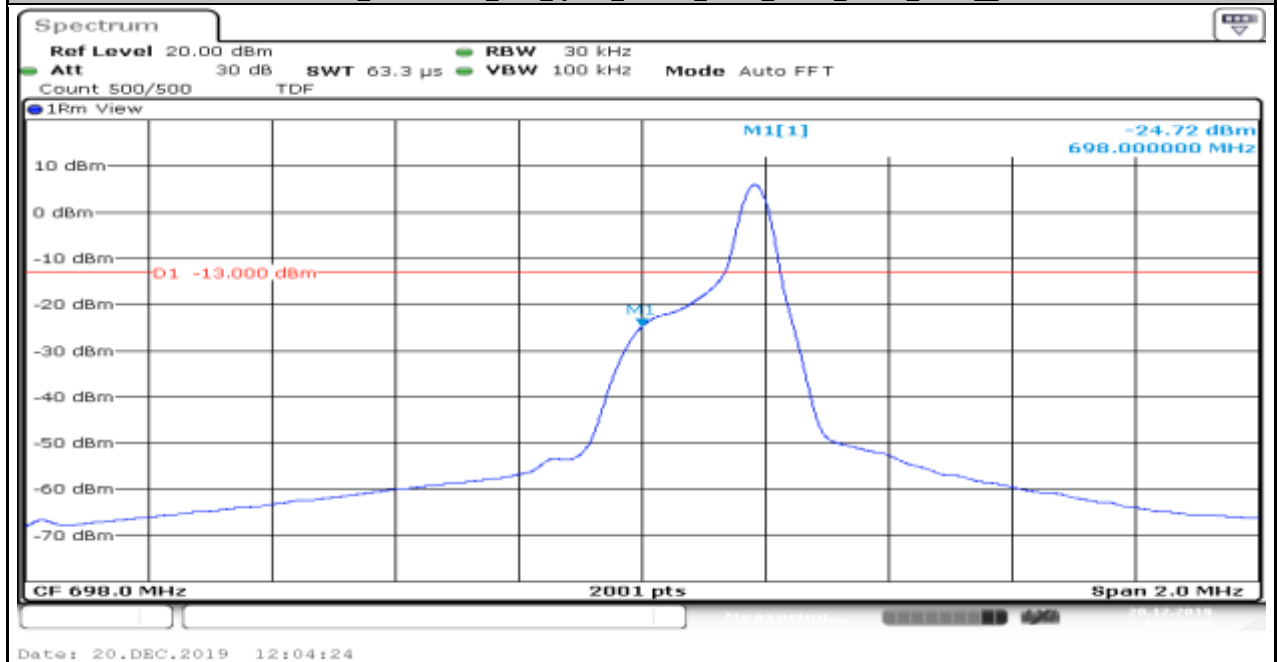
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
Band85	Stand-Alone	NaN	QPSK	134003	1@47	3.75kHz	-26.79	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@0	15kHz	-17.81	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@11	15kHz	-24.72	PASS
Band85	Stand-Alone	NaN	QPSK	134003	12@0	15kHz	-17.21	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@0	3.75kHz	-18.65	PASS
Band85	Stand-Alone	NaN	QPSK	134181	12@0	15kHz	-16.20	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	3.75kHz	-25.91	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@47	3.75kHz	-19.89	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@11	15kHz	-19.20	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	15kHz	-23.02	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	3.75kHz	-17.35	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@47	3.75kHz	-27.09	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	15kHz	-15.64	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@11	15kHz	-21.82	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@11	15kHz	-17.17	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	3.75kHz	-26.44	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@47	3.75kHz	-18.73	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	15kHz	-22.90	PASS

Test Graphs

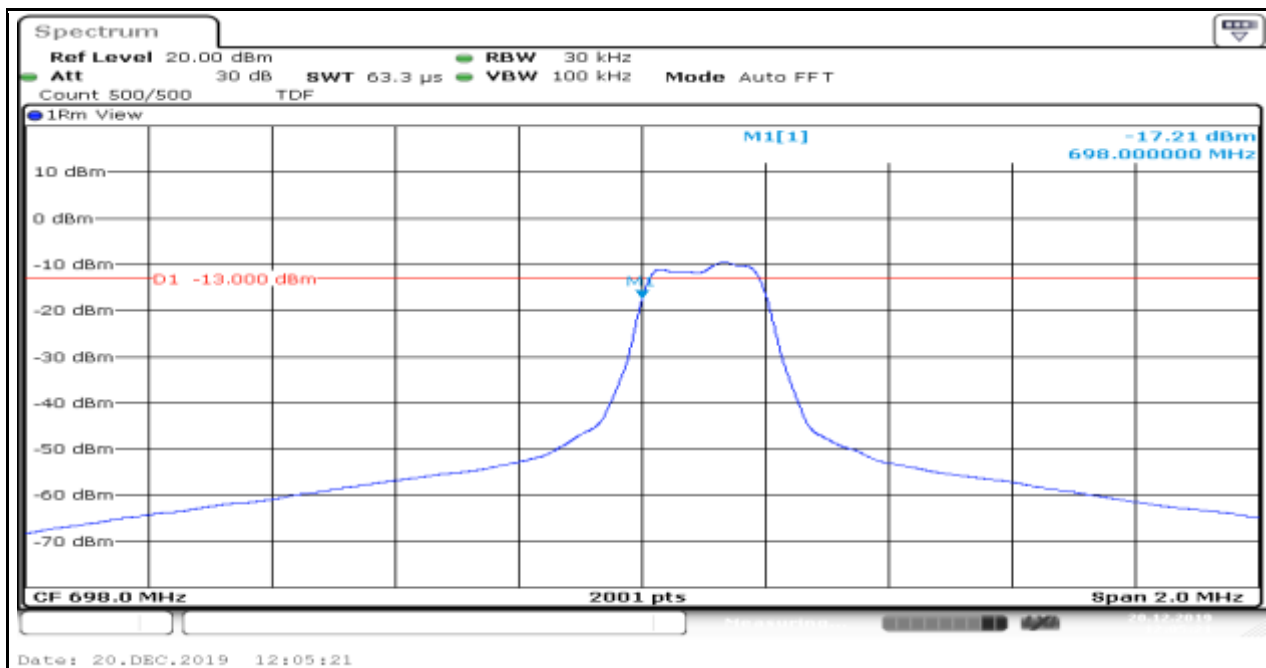




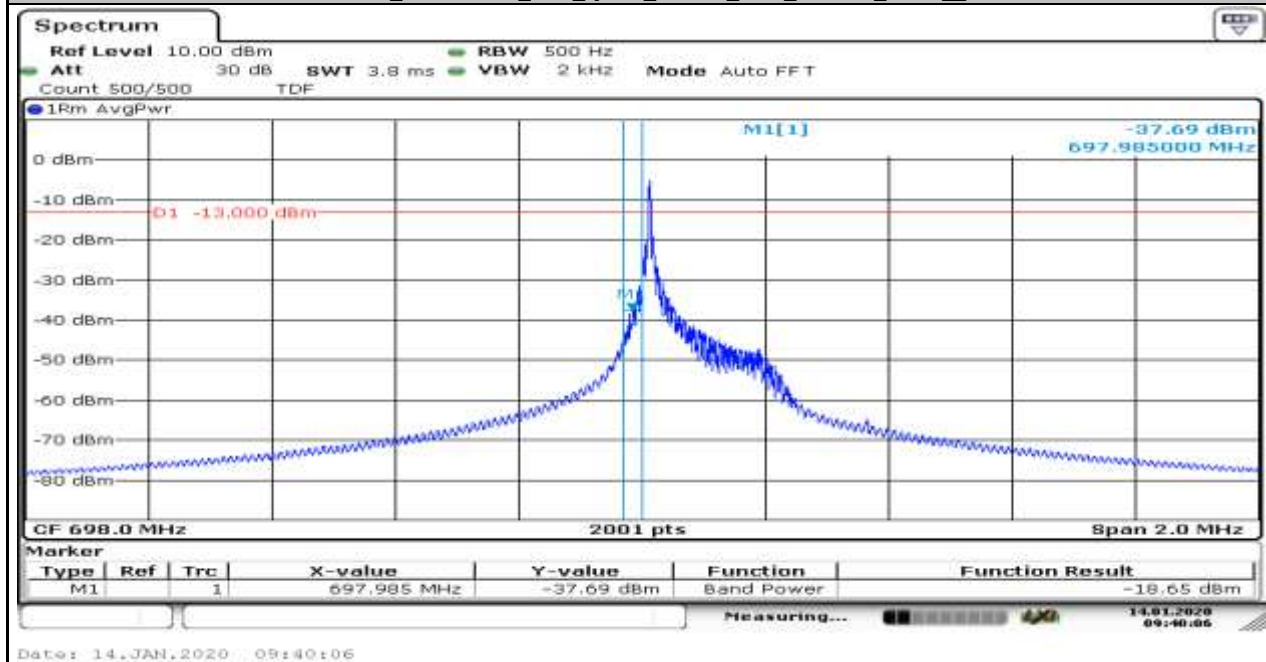
Band85_Stand-Alone_NaN_QPSK_134003_1@11_15kHz_-24.72_PASS_



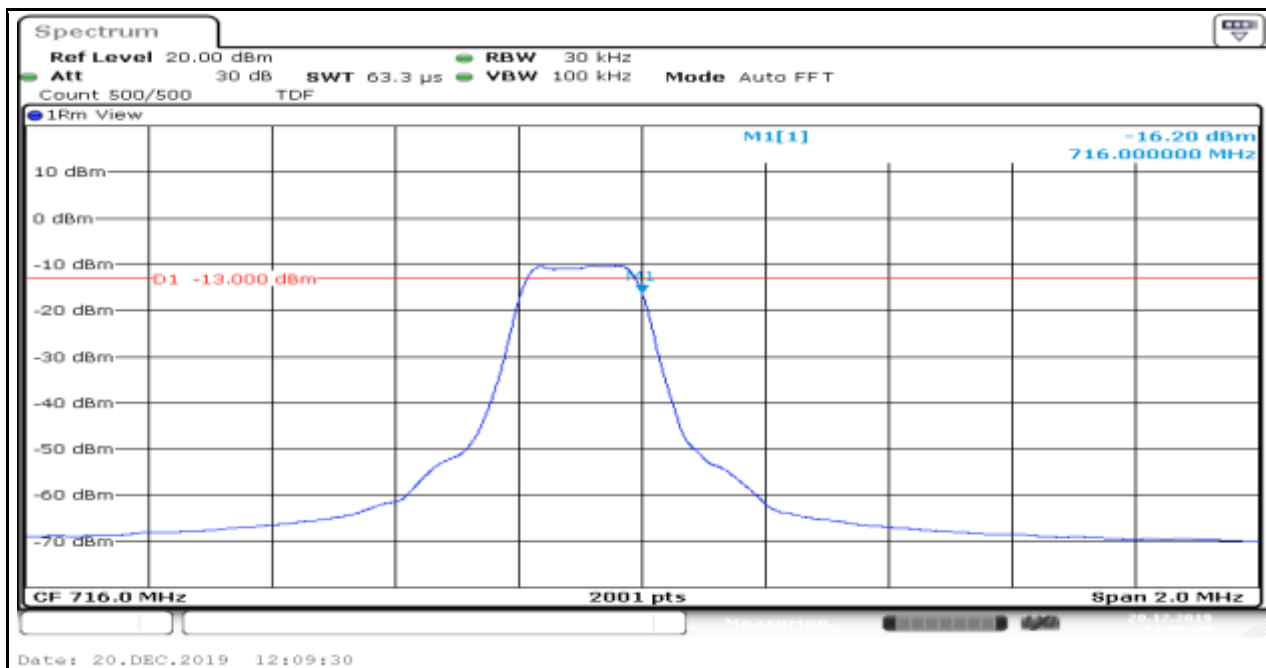
Band85_Stand-Alone_NaN_QPSK_134003_12@0_15kHz_-17.21_PASS_



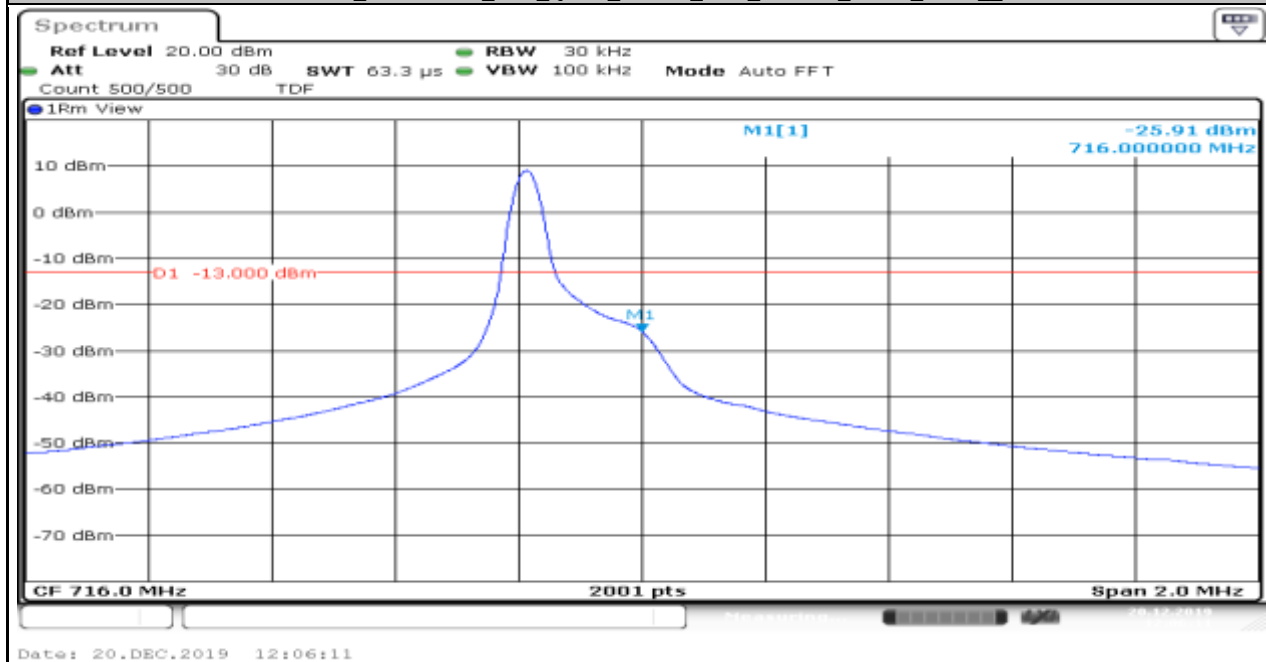
Band85_Stand-Alone_NaN_QPSK_134003_1@0_3.75kHz_PASS_



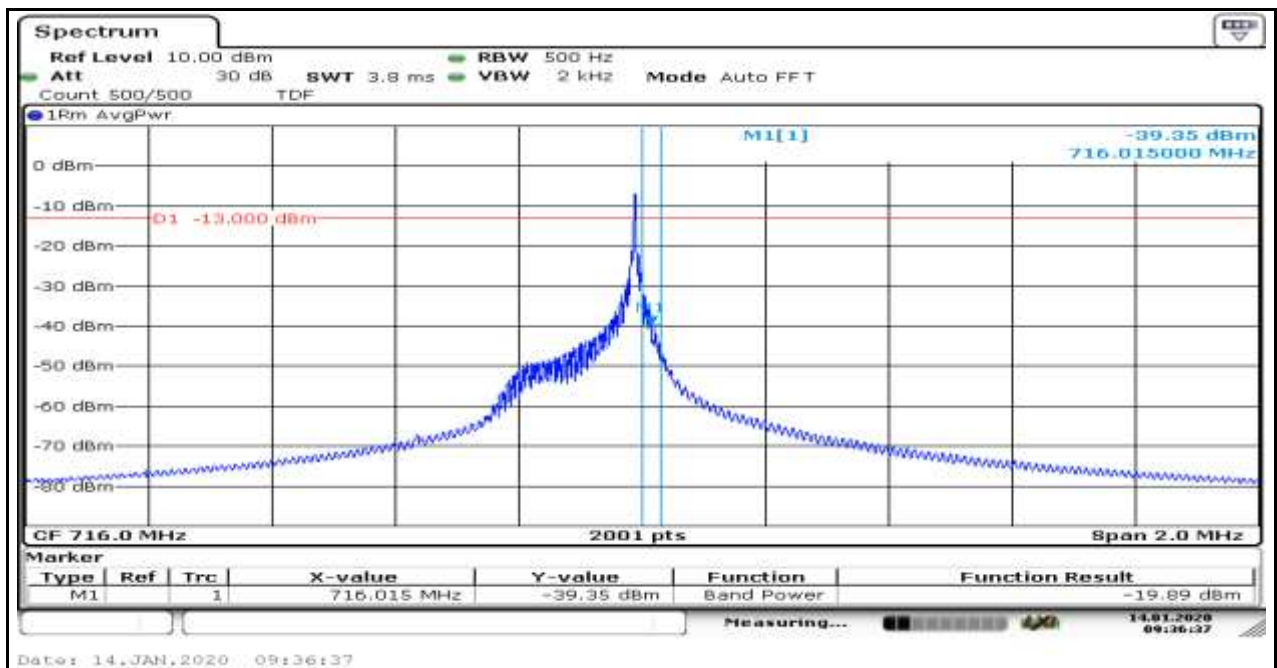
Band85_Stand-Alone_NaN_QPSK_134181_12@0_15kHz_-16.20_PASS_



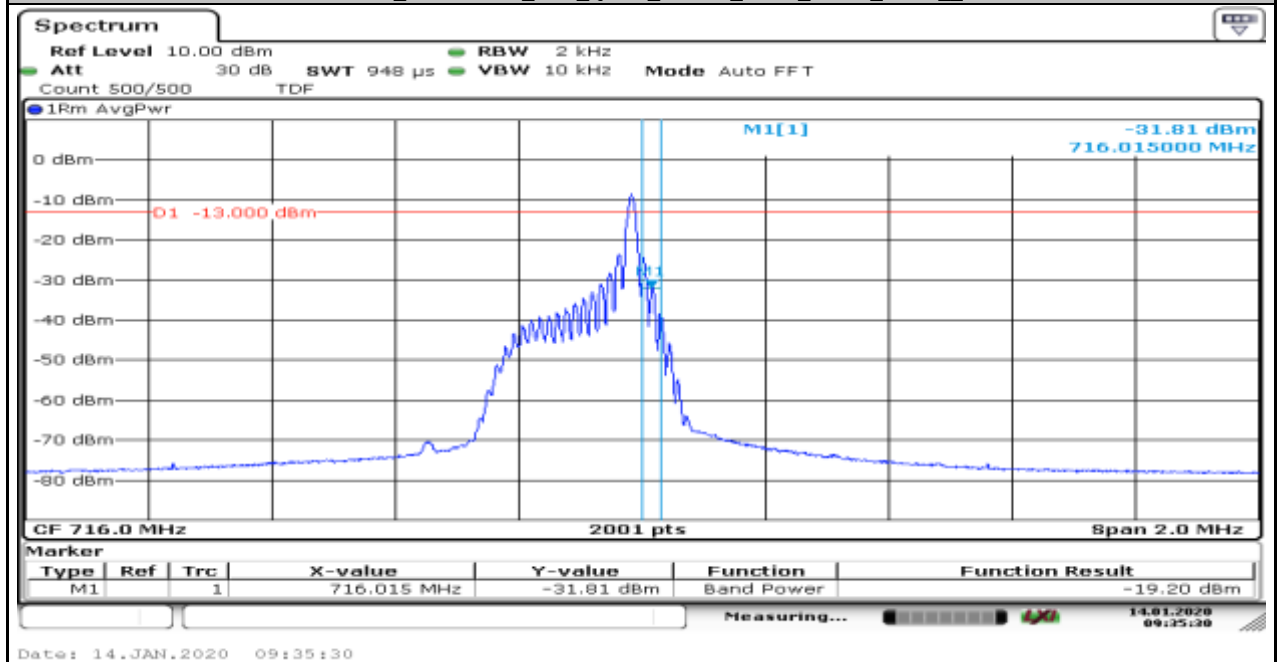
Band85_Stand-Alone_NaN_QPSK_134181_1@0_3.75kHz_-25.91_PASS_



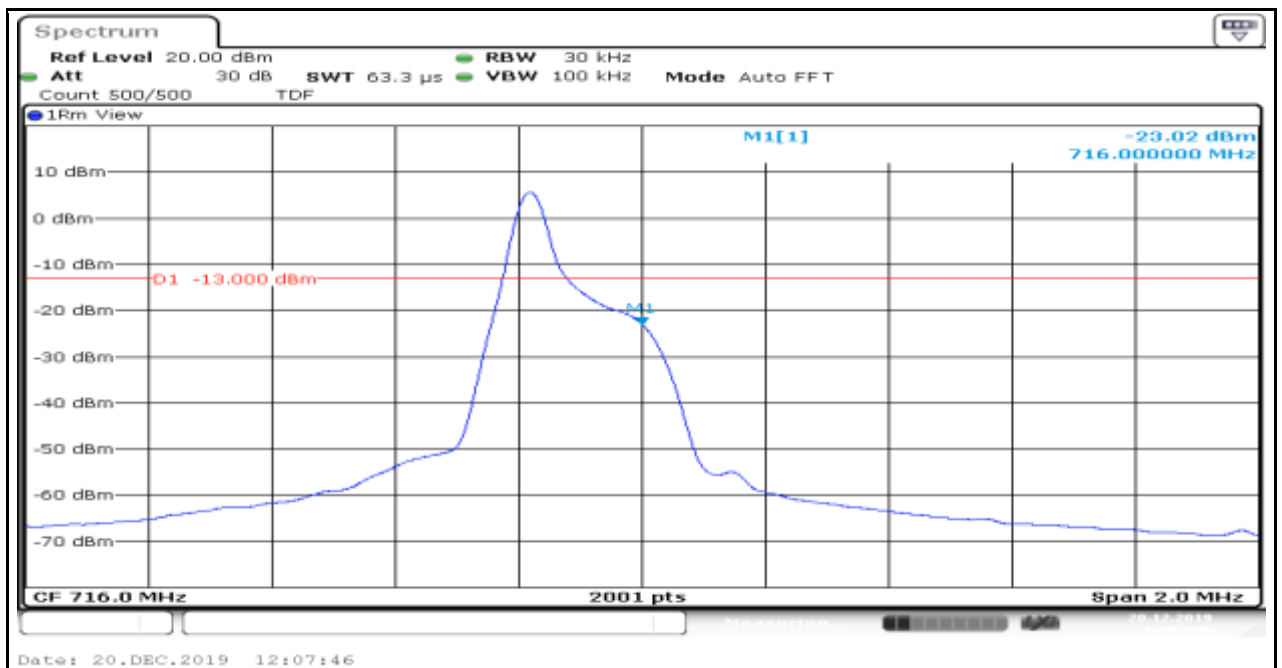
Band85_Stand-Alone_NaN_QPSK_134181_1@47_3.75kHz_PASS_



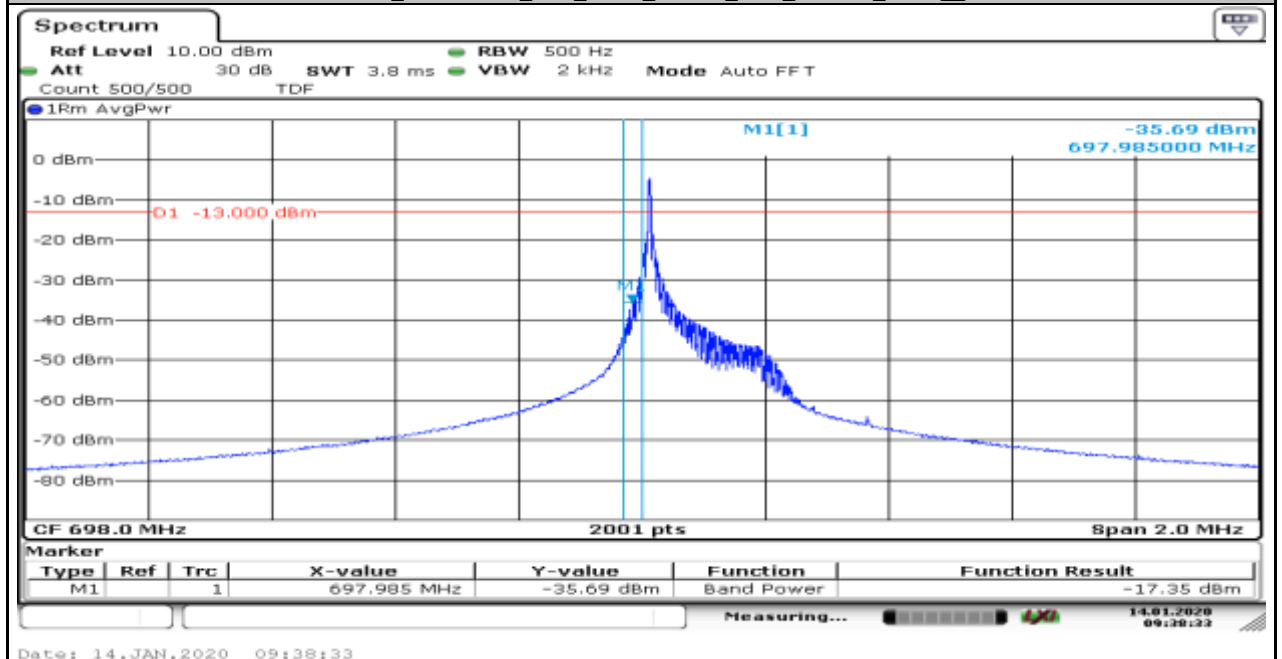
Band85_Stand-Alone_NaN_QPSK_134181_1@11_15kHz_PASS_



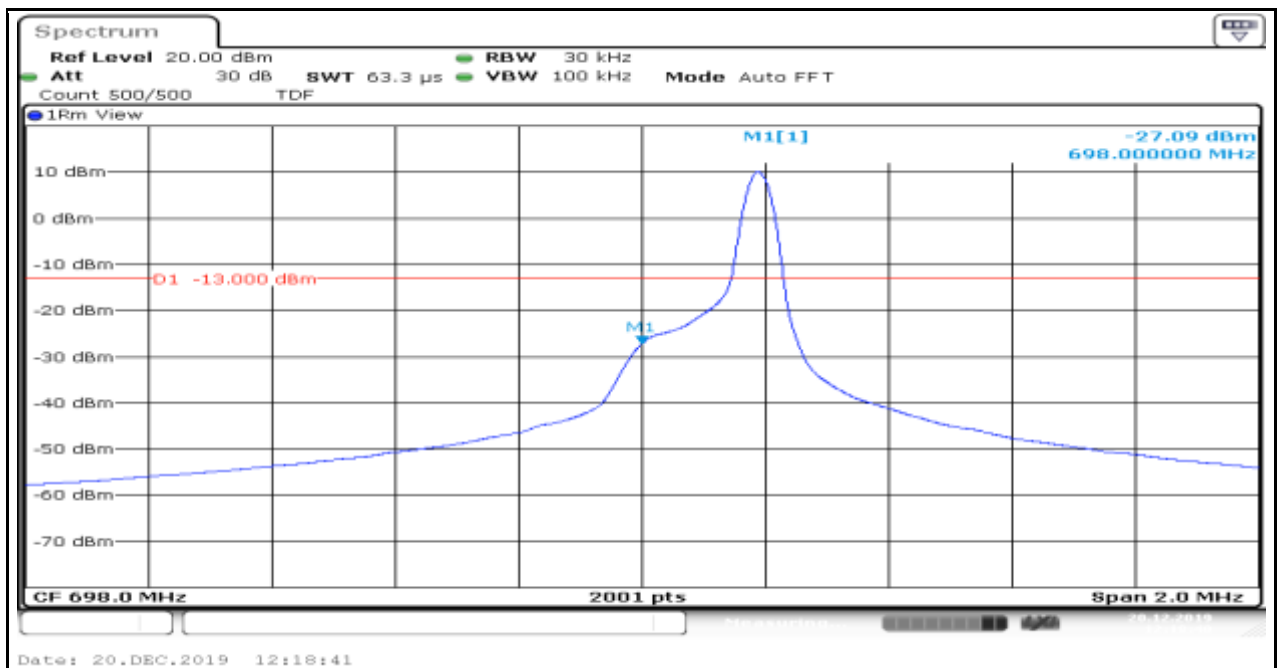
Band85_Stand-Alone_NaN_QPSK_134181_1@0_15kHz_-23.02_PASS_



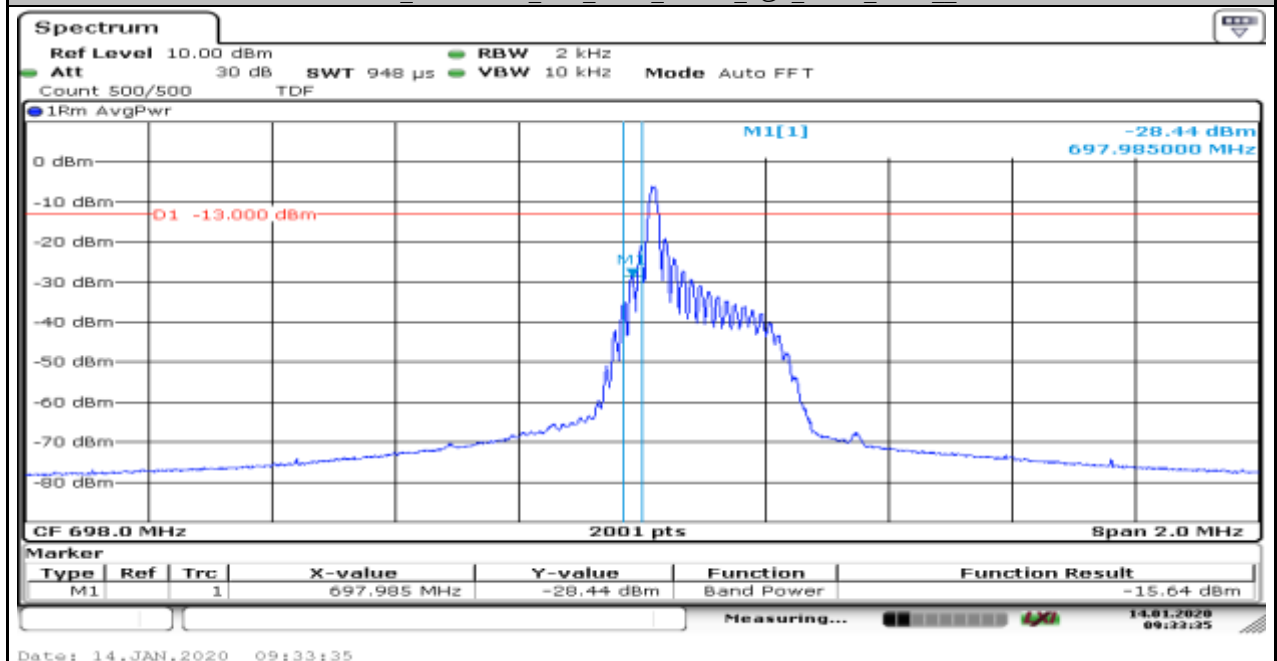
Band85_Stand-Alone_NaN_BPSK_134003_1@0_3.75kHz_PASS_



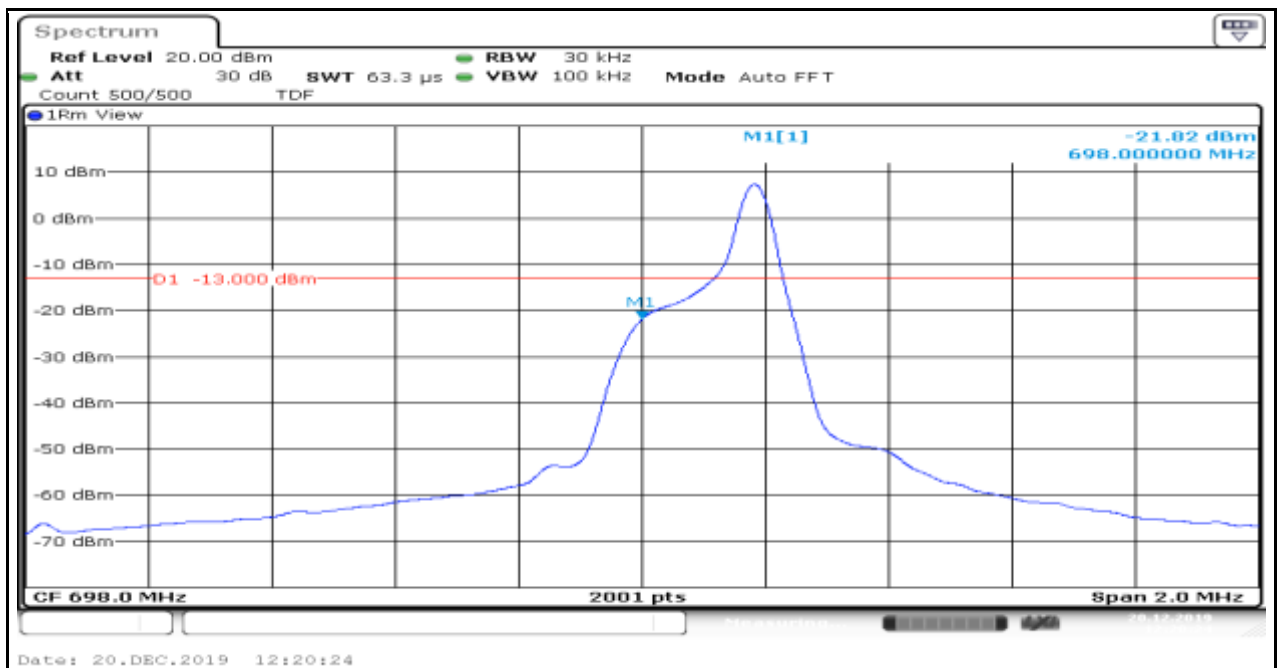
Band85_Stand-Alone_NaN_BPSK_134003_1@47_3.75kHz_-27.09_PASS_



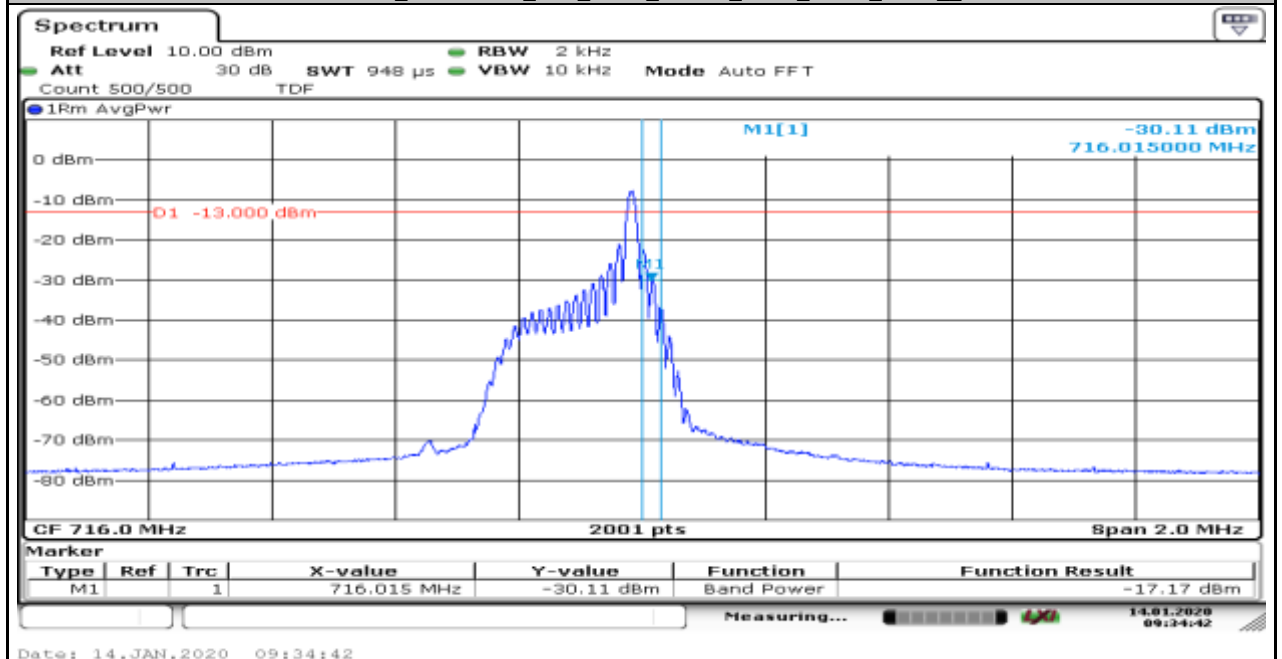
Band85_Stand-Alone_NaN_BPSK_134003_1@0_15kHz_PASS_



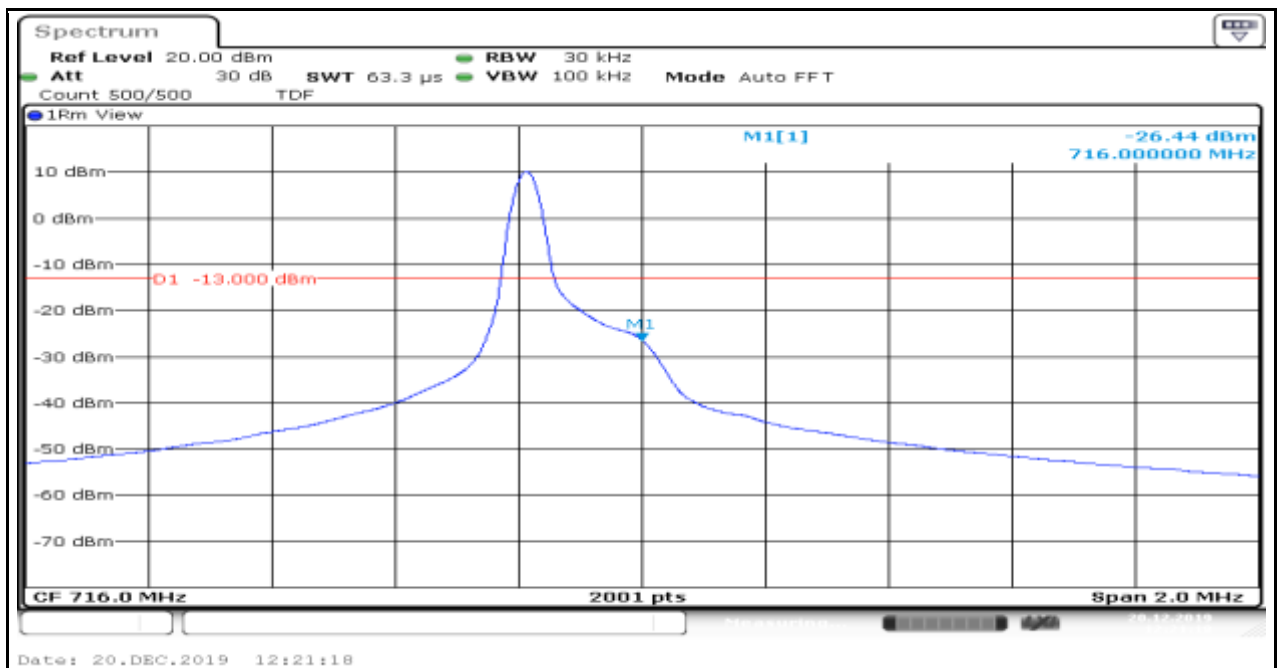
Band85_Stand-Alone_NaN_BPSK_134003_1@11_15kHz_-21.82_PASS_



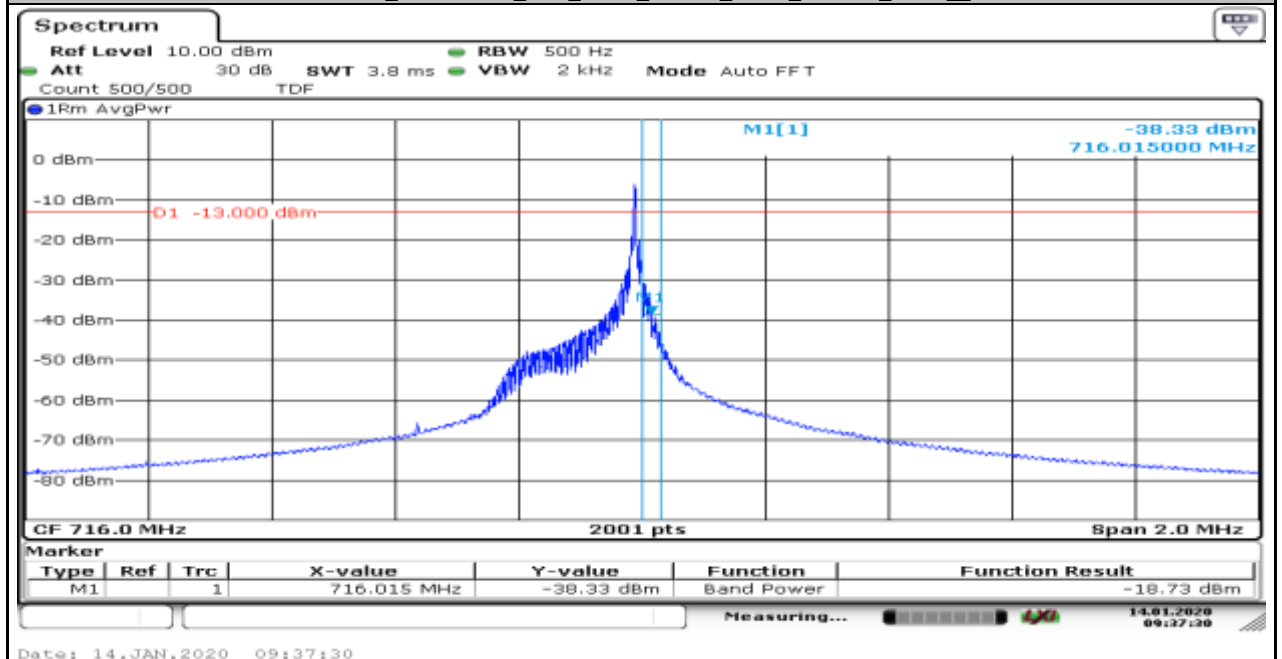
Band85_Stand-Alone_NaN_BPSK_134181_1@11_15kHz_PASS



Band85_Stand-Alone_NaN_BPSK_134181_1@0_3.75kHz_-26.44_PASS

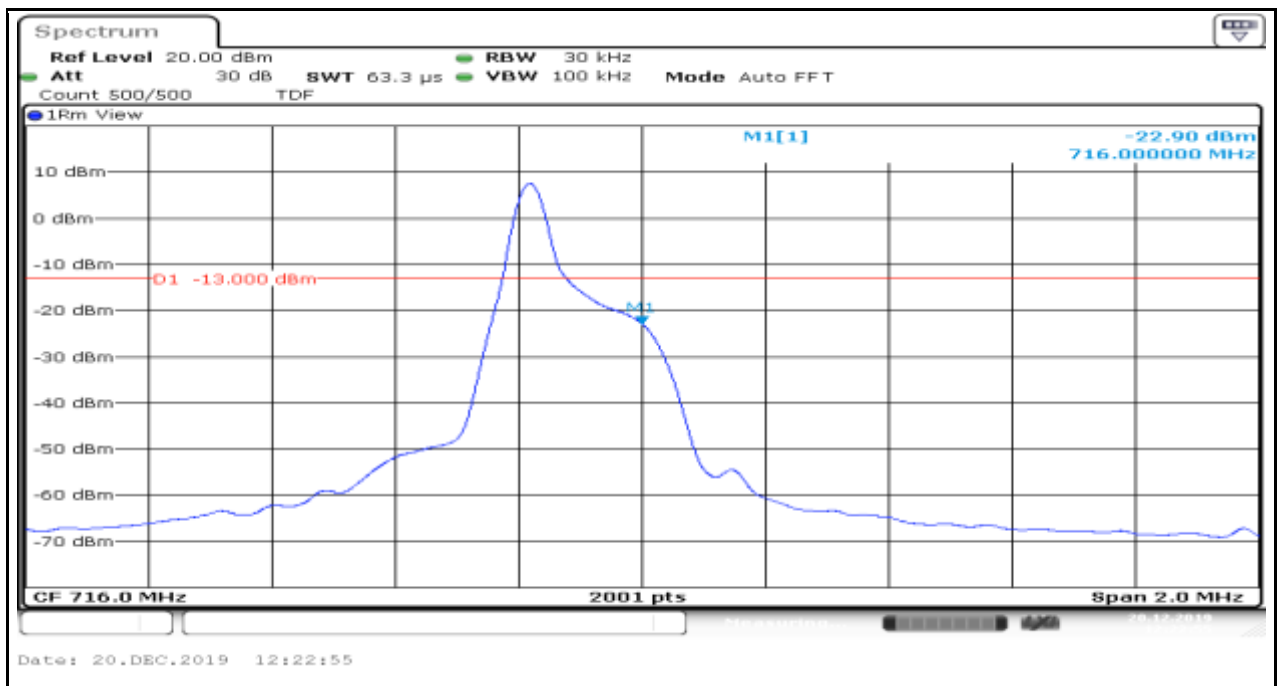


Band85_Stand-Alone_NaN_BPSK_134181_1@47_3.75kHz_PASS_



Band85_Stand-Alone_NaN_BPSK_134181_1@0_15kHz_-22.90_PASS_

Produkte
Products



Appendix K.5: Conducted Spurious Emission for NB

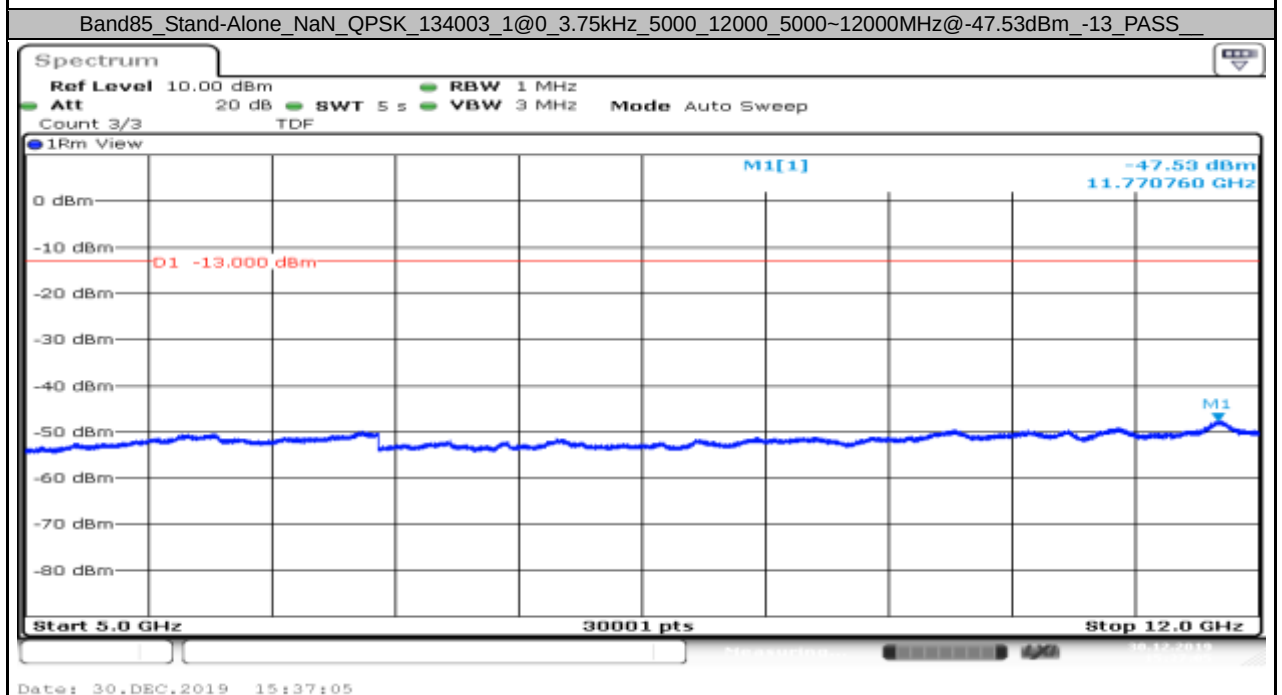
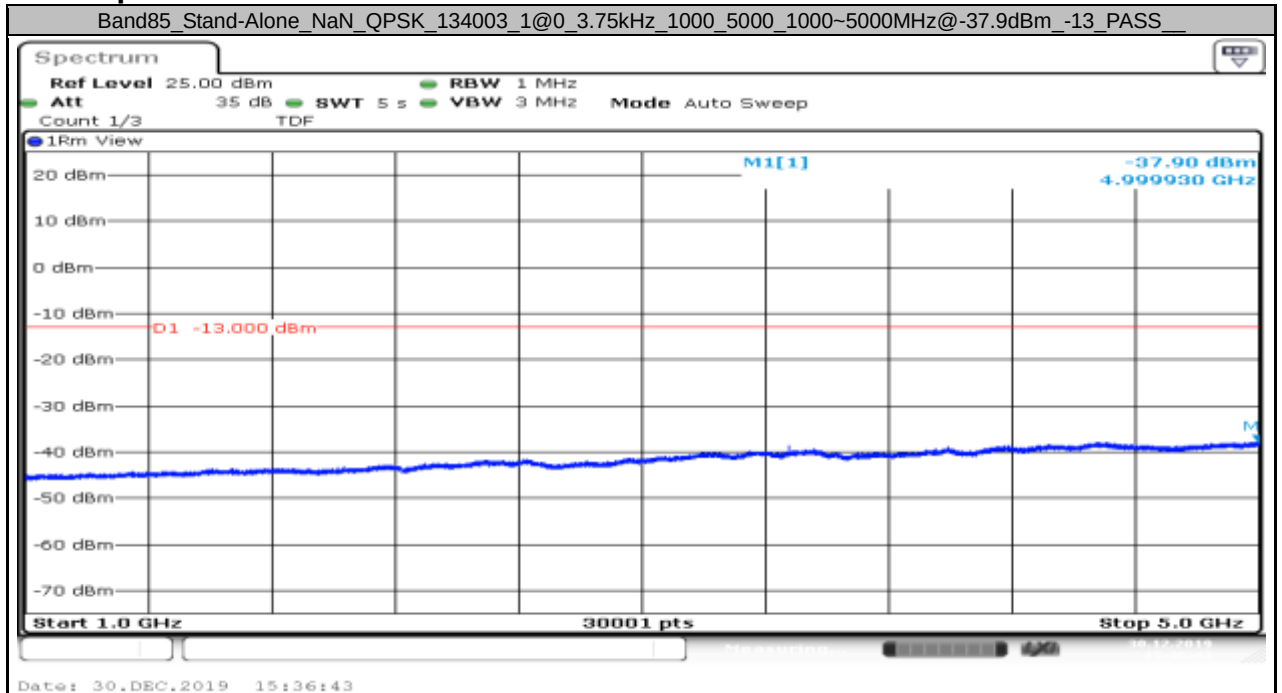
Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	StartFreq (MHz)	StopFreq (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band85	Stand-Alone	NaN	QPSK	134003	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.9dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.53dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.42dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@47	3.75kHz	30	1000	30~1000MHz@-35.5dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.73dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.35dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.37dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	1@0	3.75kHz	30	1000	30~1000MHz@-35.87dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	12@0	15kHz	12000	26500	12000~26500MHz@-41.26dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	12@0	15kHz	5000	12000	5000~12000MHz@-47.51dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	12@0	15kHz	1000	5000	1000~5000MHz@-37.79dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134003	12@0	15kHz	30	1000	30~1000MHz@-35.58dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.37dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	12@0	15kHz	1000	5000	1000~5000MHz@-37.78dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.38dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.43dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.94dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	12@0	15kHz	12000	26500	12000~26500MHz@-41.24dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.37dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	12@0	15kHz	5000	12000	5000~12000MHz@-47.42dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.86dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	30	1000	30~1000MHz@-35.83dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	30	1000	30~1000MHz@-36.33dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134092	12@0	15kHz	30	1000	30~1000MHz@-36dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	3.75kHz	12000	26500	12000~26500MHz@-41.52dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	3.75kHz	30	1000	30~1000MHz@-36.41dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	3.75kHz	5000	12000	5000~12000MHz@-47.45dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@47	3.75kHz	30	1000	30~1000MHz@-35.88dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@47	3.75kHz	1000	5000	1000~5000MHz@-37.78dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@47	3.75kHz	5000	12000	5000~12000MHz@-47.5dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@47	3.75kHz	12000	26500	12000~26500MHz@-41.4dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	12@0	15kHz	30	1000	30~1000MHz@-35.65dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	1@0	3.75kHz	1000	5000	1000~5000MHz@-37.7dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	12@0	15kHz	12000	26500	12000~26500MHz@-41.4dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	12@0	15kHz	5000	12000	5000~12000MHz@-47.27dBm	-13	PASS
Band85	Stand-Alone	NaN	QPSK	134181	12@0	15kHz	1000	5000	1000~5000MHz@-37.83dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	15kHz	12000	26500	12000~26500MHz@-41.44dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	15kHz	1000	5000	1000~5000MHz@-37.66dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	15kHz	5000	12000	5000~12000MHz@-47.61dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@11	15kHz	12000	26500	12000~26500MHz@-41.33dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@11	15kHz	5000	12000	5000~12000MHz@-47.53dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@11	15kHz	1000	5000	1000~5000MHz@-37.71dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@11	15kHz	30	1000	30~1000MHz@-35.69dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134003	1@0	15kHz	30	1000	30~1000MHz@-35.73dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	15kHz	30	1000	30~1000MHz@-36.16dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@11	15kHz	12000	26500	12000~26500MHz@-41.49dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@11	15kHz	1000	5000	1000~5000MHz@-37.76dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@11	15kHz	5000	12000	5000~12000MHz@-47.42dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@11	15kHz	30	1000	30~1000MHz@-35.5dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	15kHz	12000	26500	12000~26500MHz@-41.12dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	15kHz	1000	5000	1000~5000MHz@-37.84dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134092	1@0	15kHz	5000	12000	5000~12000MHz@-47.05dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@11	15kHz	12000	26500	12000~26500MHz@-41.36dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	15kHz	30	1000	30~1000MHz@-36.07dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	15kHz	1000	5000	1000~5000MHz@-37.8dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	15kHz	5000	12000	5000~12000MHz@-47.47dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@0	15kHz	12000	26500	12000~26500MHz@-41.35dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@11	15kHz	30	1000	30~1000MHz@-35.87dBm	-13	PASS

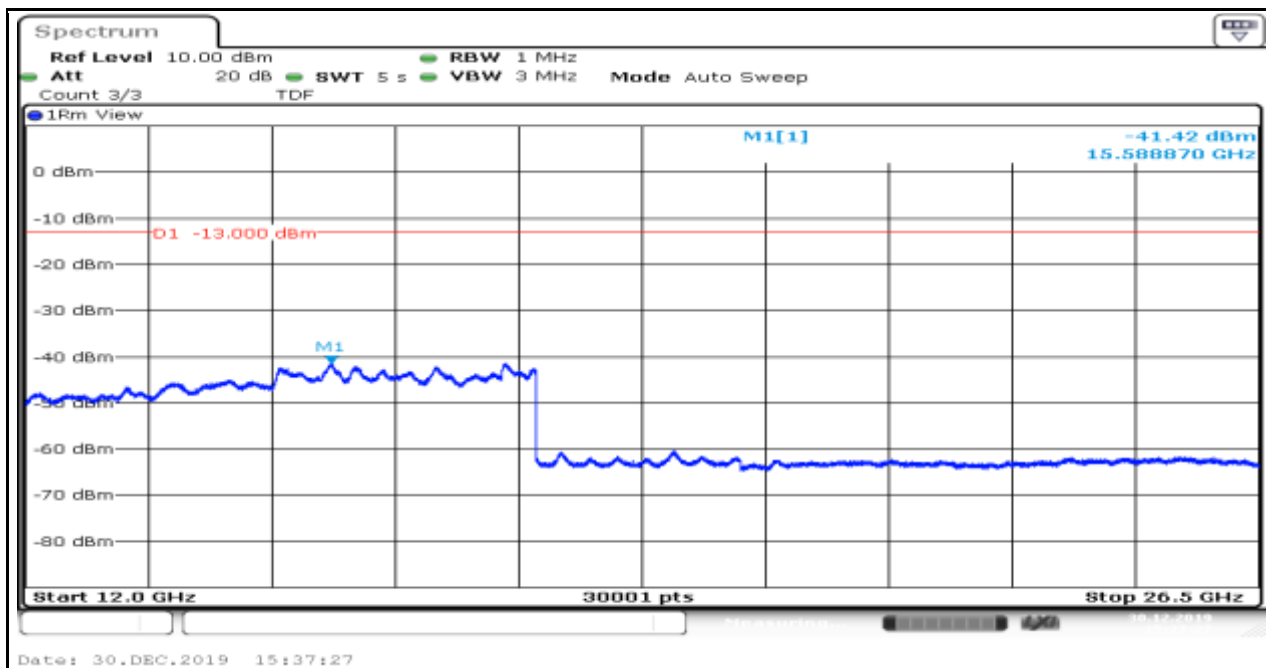
Produkte
Products

Band85	Stand-Alone	NaN	BPSK	134181	1@11	15kHz	1000	5000	1000~5000MHz@-37.74dBm	-13	PASS
Band85	Stand-Alone	NaN	BPSK	134181	1@11	15kHz	5000	12000	5000~12000MHz@-47.4dBm	-13	PASS

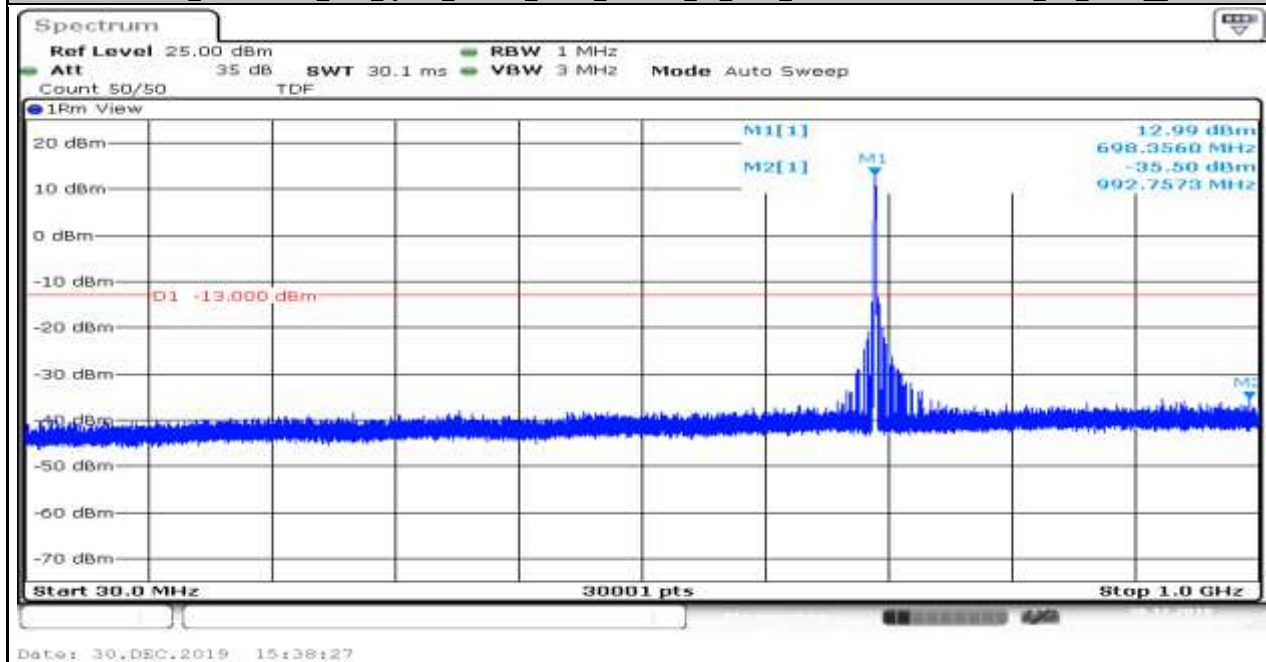
Test Graphs



Band85_Stand-Alone_NaN_QPSK_134003_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.42dBm_-13_PASS_

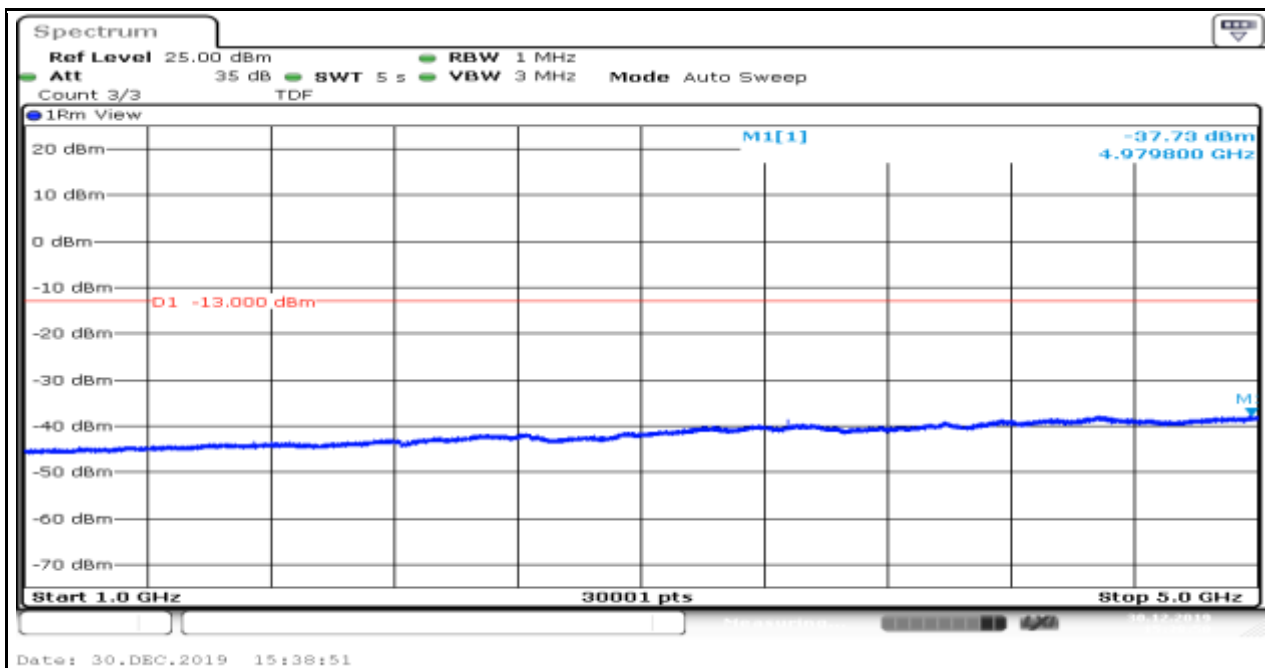


Band85_Stand-Alone_NaN_QPSK_134003_1@47_3.75kHz_30_1000_30~1000MHz@-35.5dBm_-13_PASS

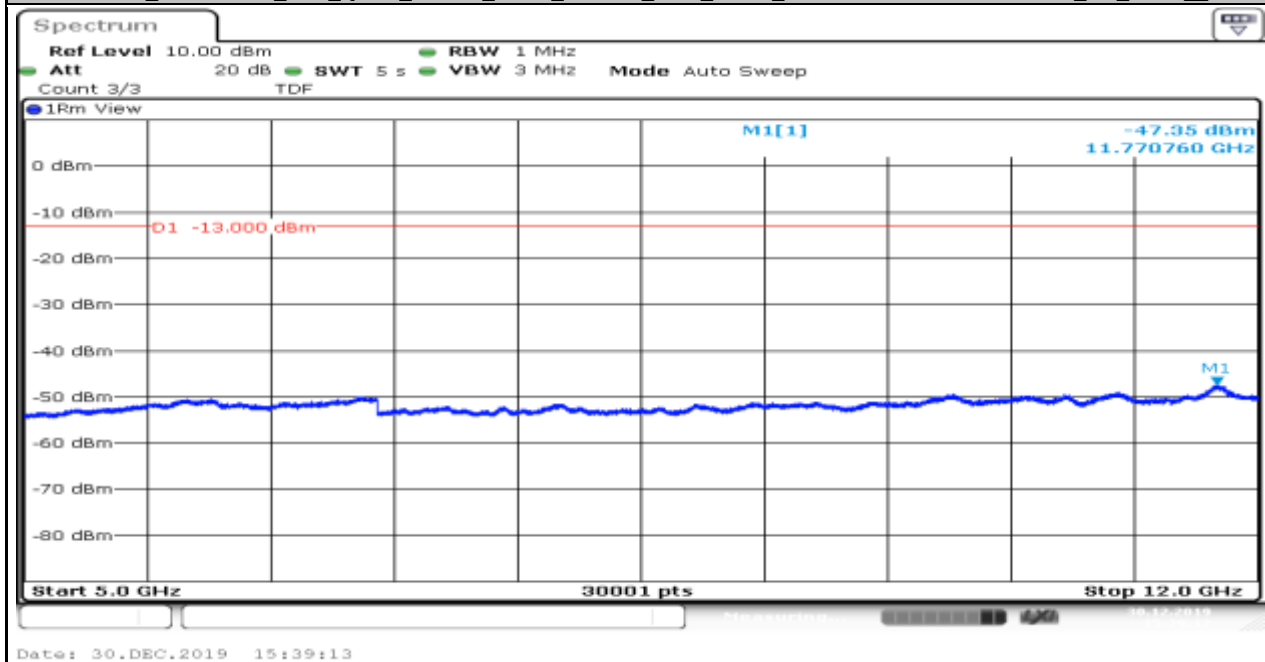


Band85_Stand-Alone_NaN_QPSK_134003_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.73dBm_-13_PASS

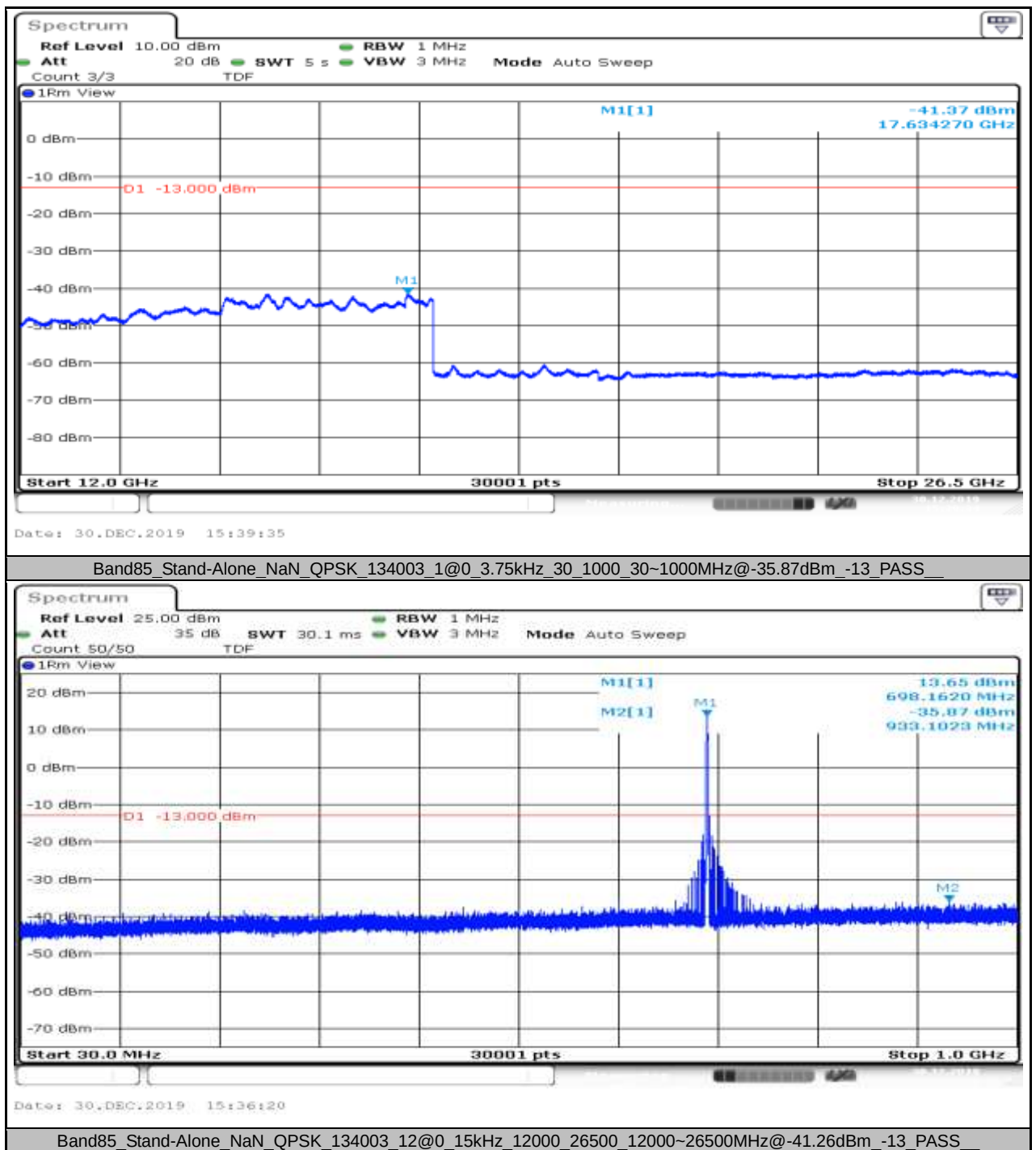
Produkte
Products

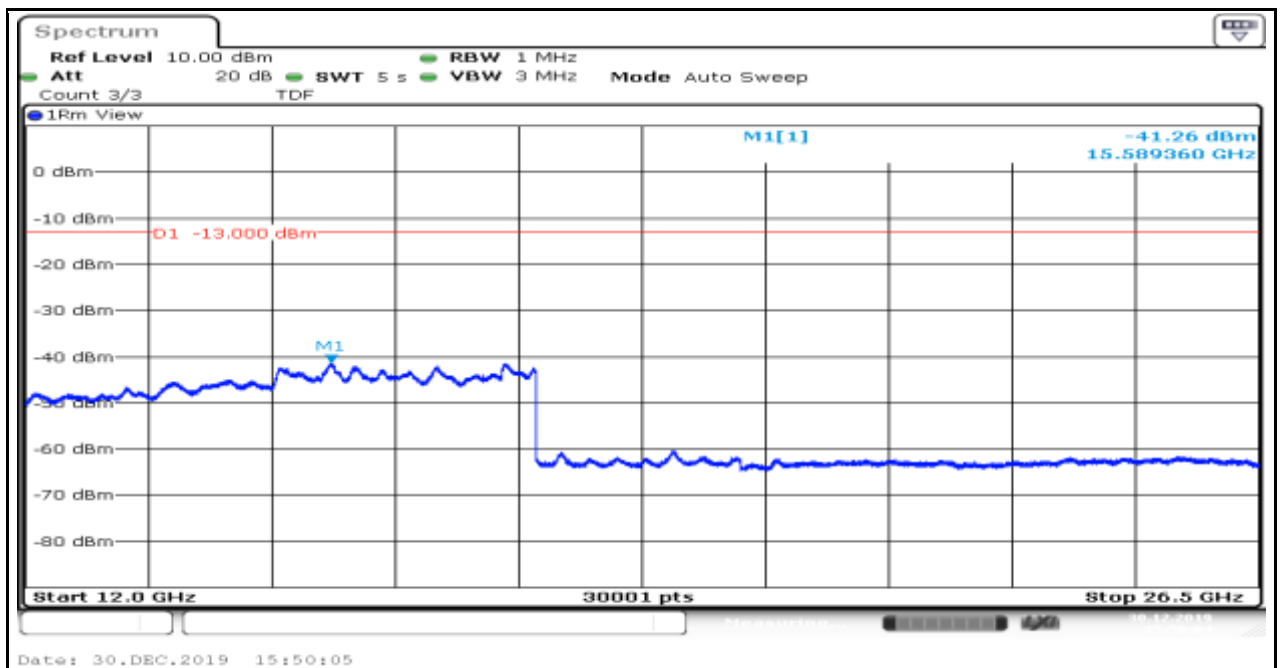


Band85_Stand-Alone_NaN_QPSK_134003_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.35dBm_-13_PASS

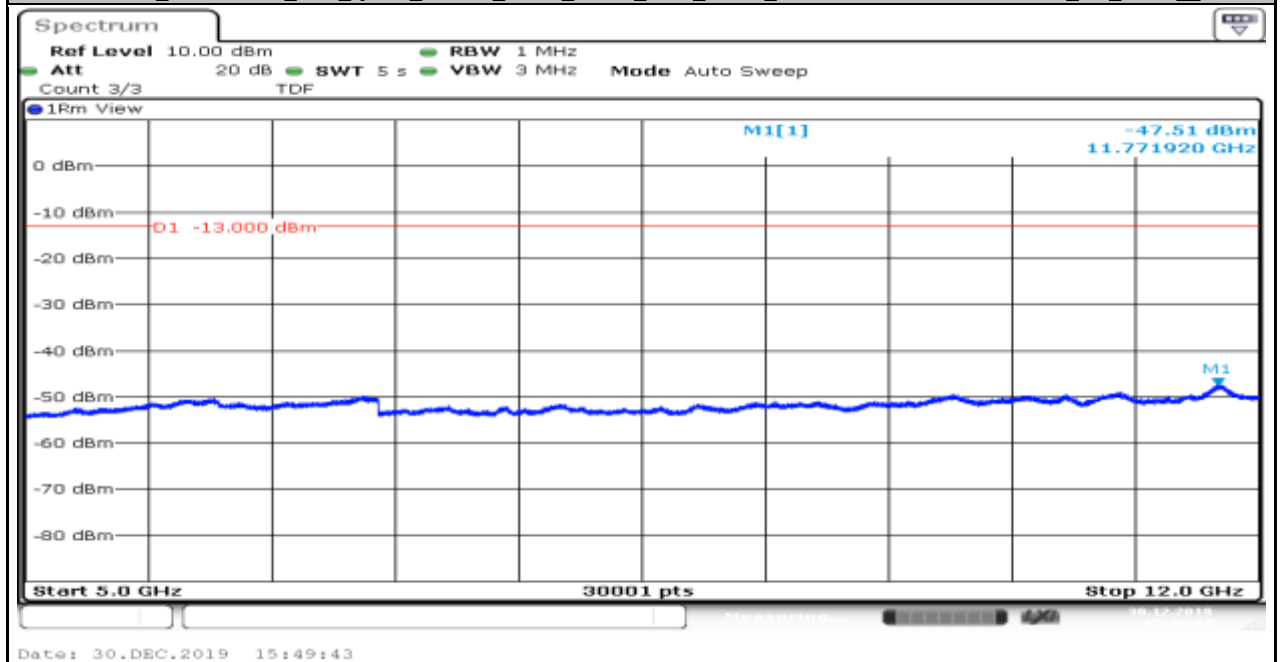


Band85_Stand-Alone_NaN_QPSK_134003_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.37dBm_-13_PASS

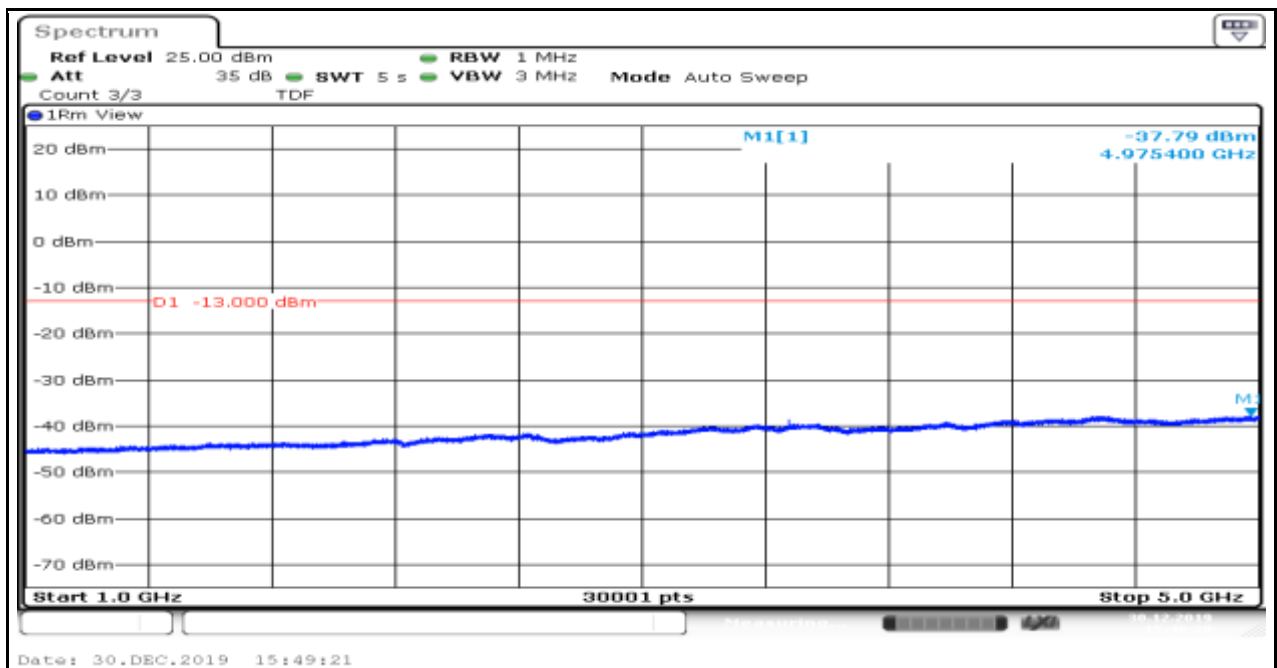




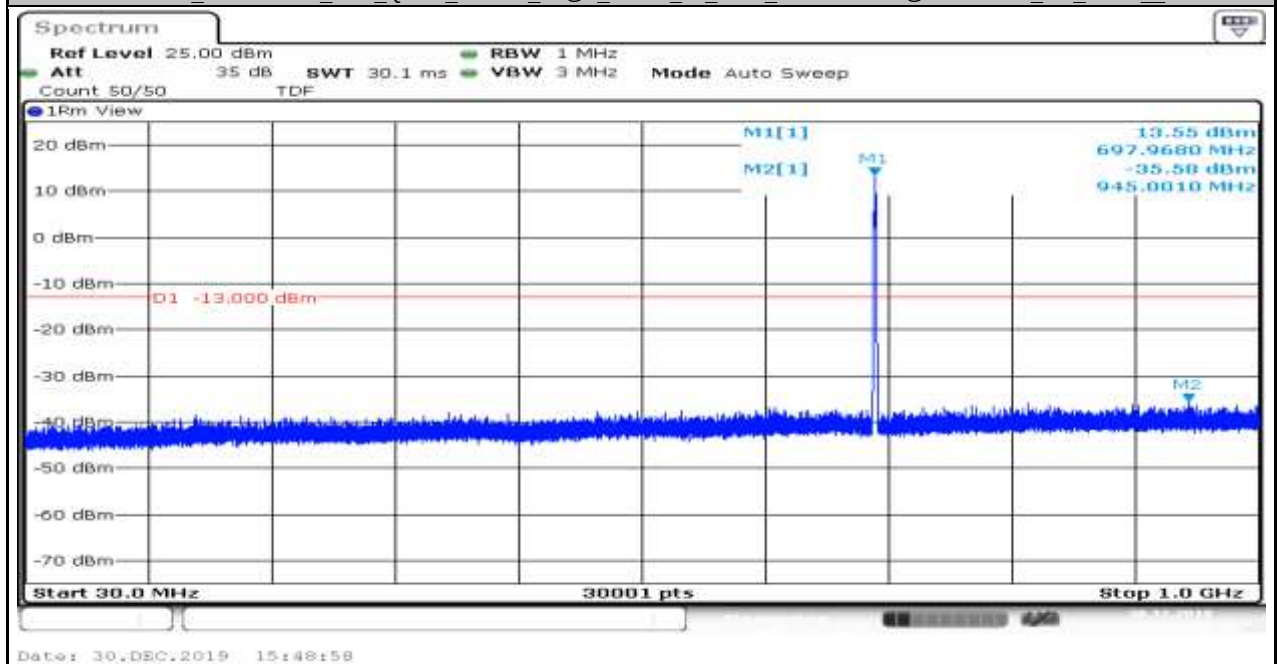
Band85_Stand-Alone_NaN_QPSK_134003_12@0_15kHz_5000_12000_5000~12000MHz@-47.51dBm_-13_PASS



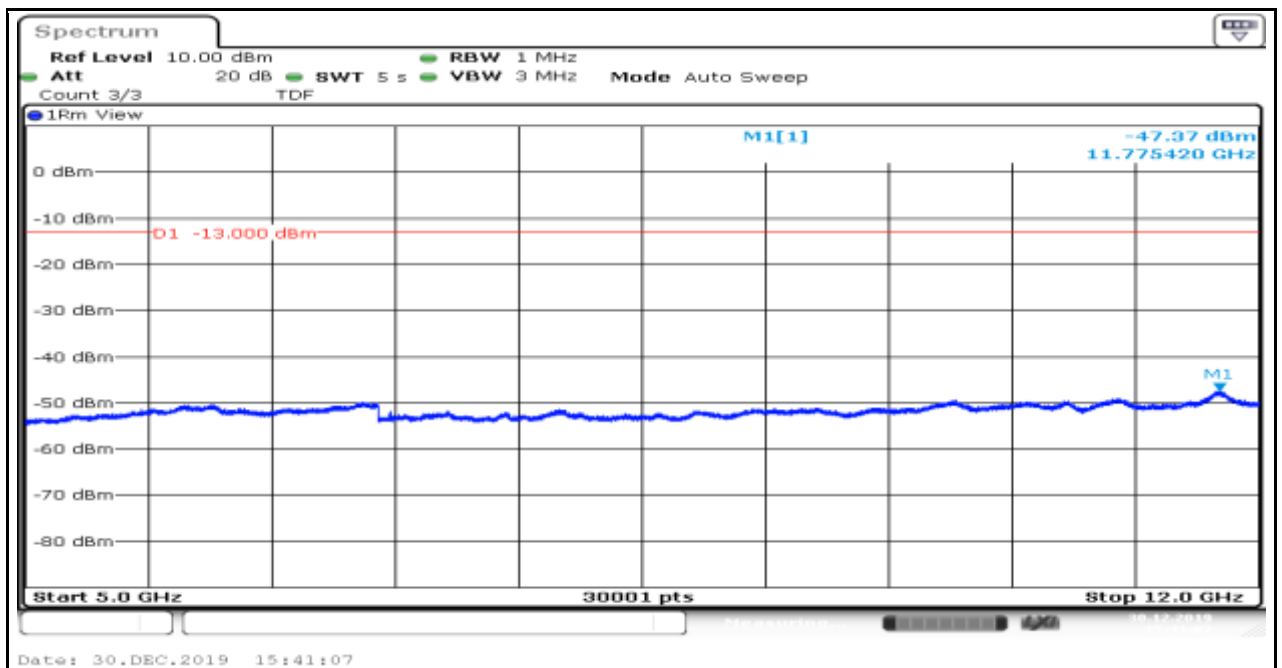
Band85_Stand-Alone_NaN_QPSK_134003_12@0_15kHz_1000_5000_1000~5000MHz@-37.79dBm_-13_PASS



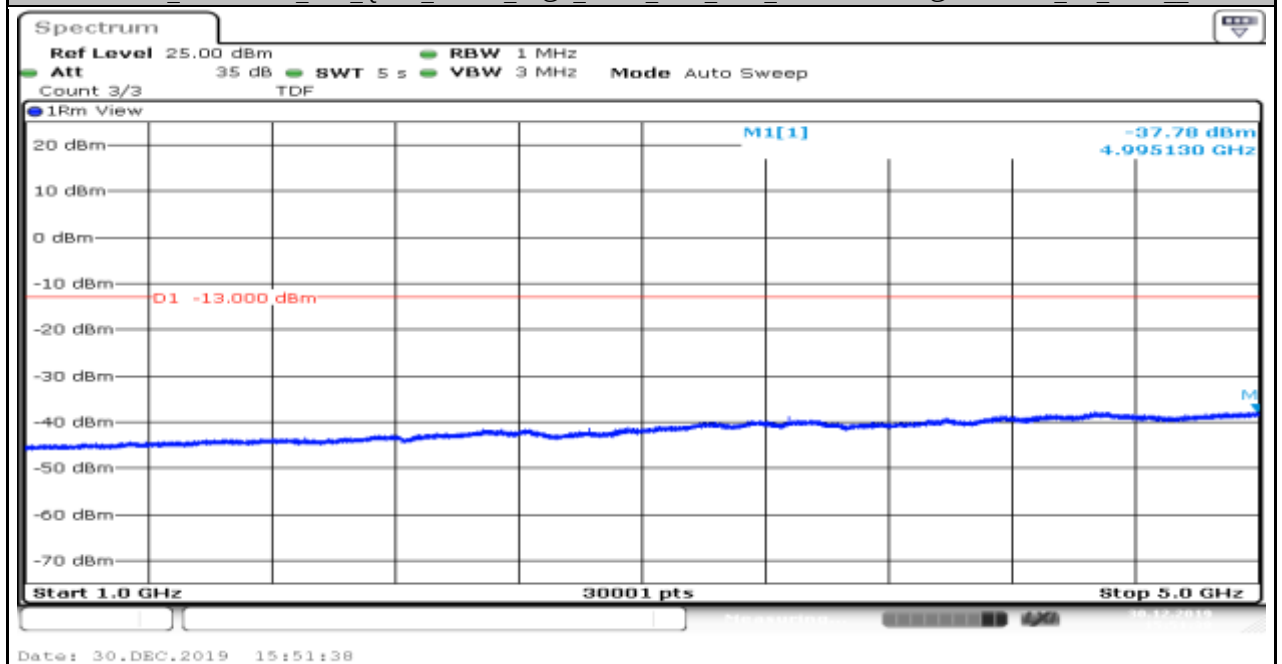
Band85_Stand-Alone_NaN_QPSK_134003_12@0_15kHz_30_1000_30~1000MHz@-35.58dBm_-13_PASS



Band85_Stand-Alone_NaN_QPSK_134092_1@0_3.75kHz_5000_12000_5000~12000MHz@-47.37dBm_-13_PASS

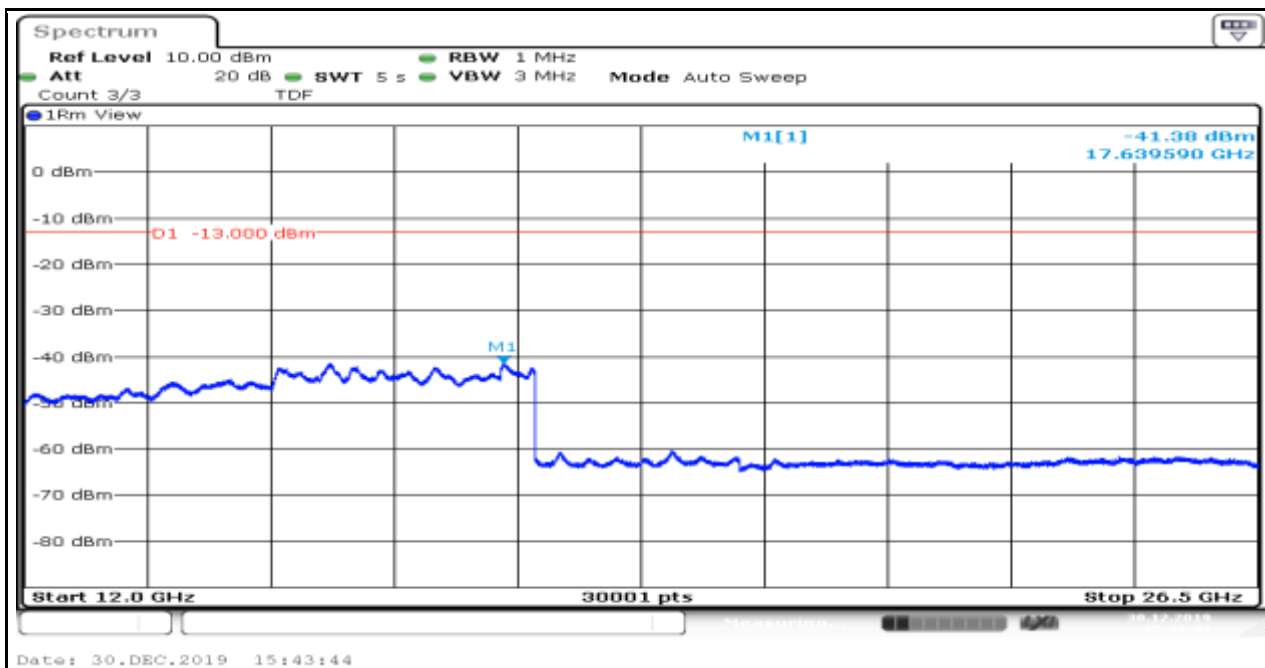


Band85_Stand-Alone_NaN_QPSK_134092_12@0_15kHz_1000_5000_1000~5000MHz@-37.78dBm_-13_PASS

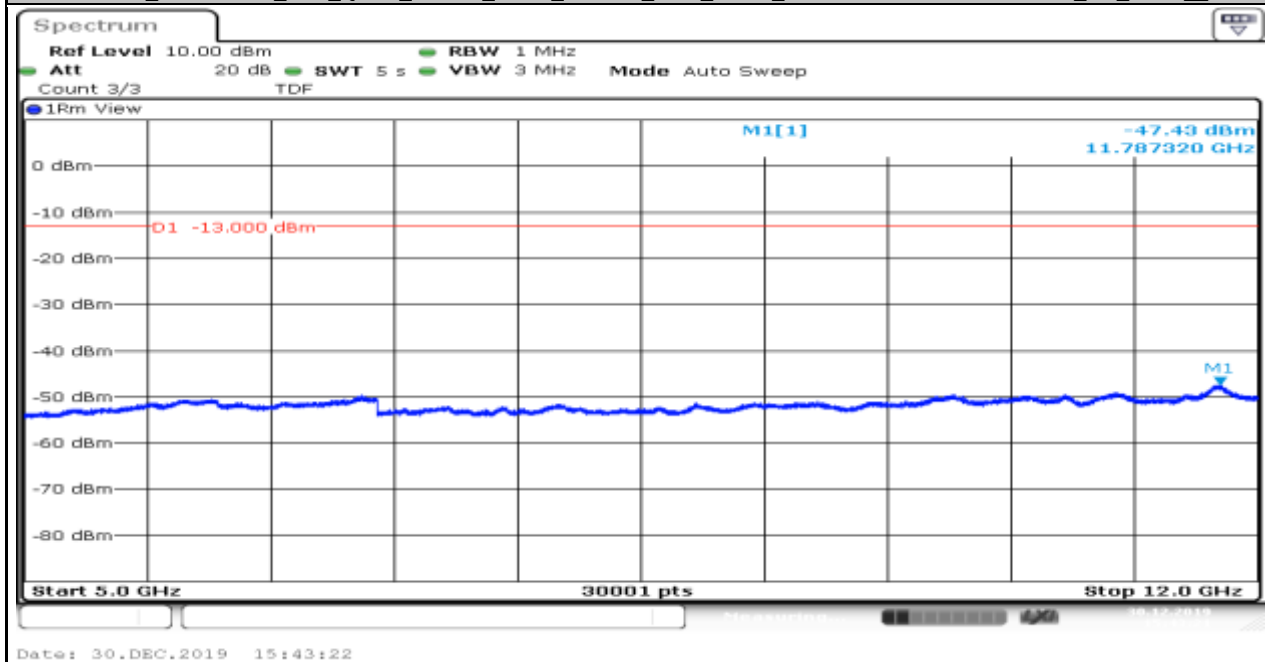


Band85_Stand-Alone_NaN_QPSK_134092_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.38dBm_-13_PASS

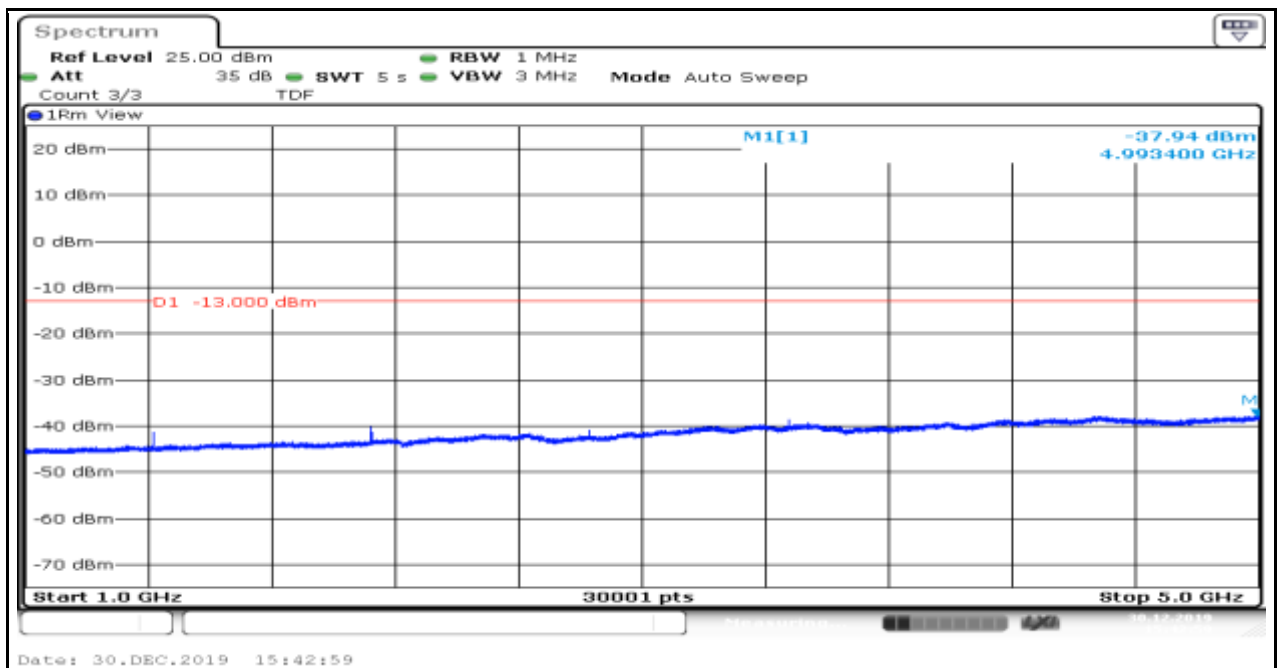
Produkte
Products



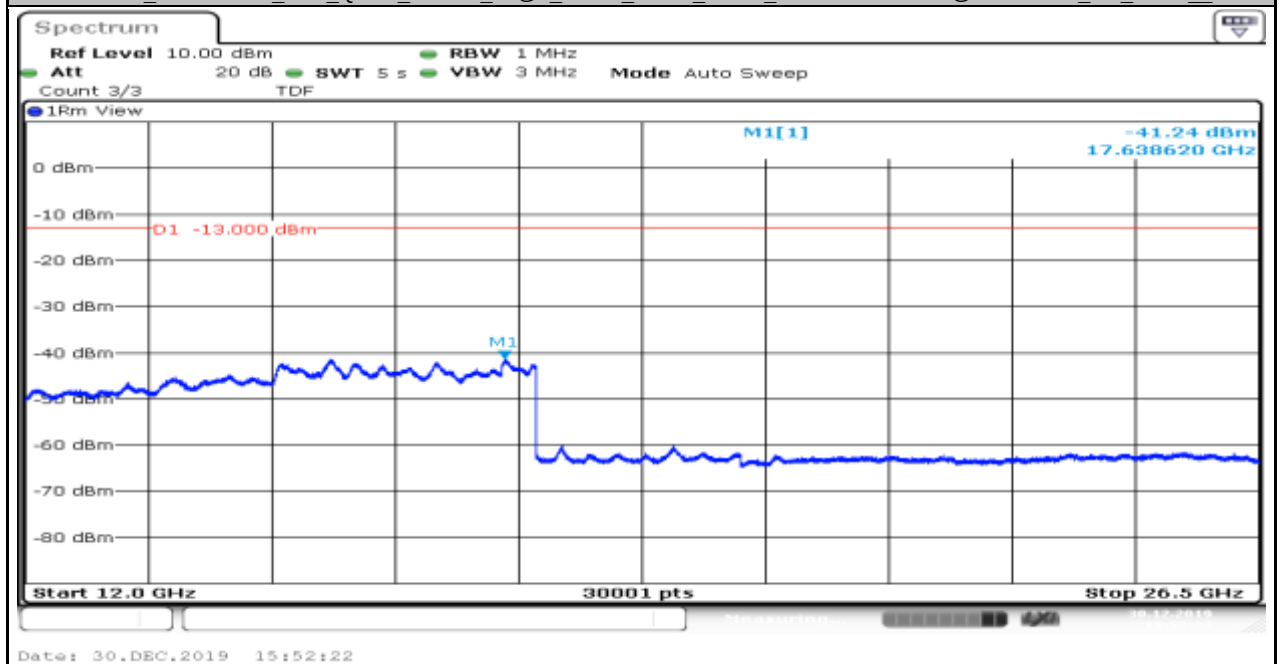
Band85_Stand-Alone_NaN_QPSK_134092_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.43dBm_-13_PASS



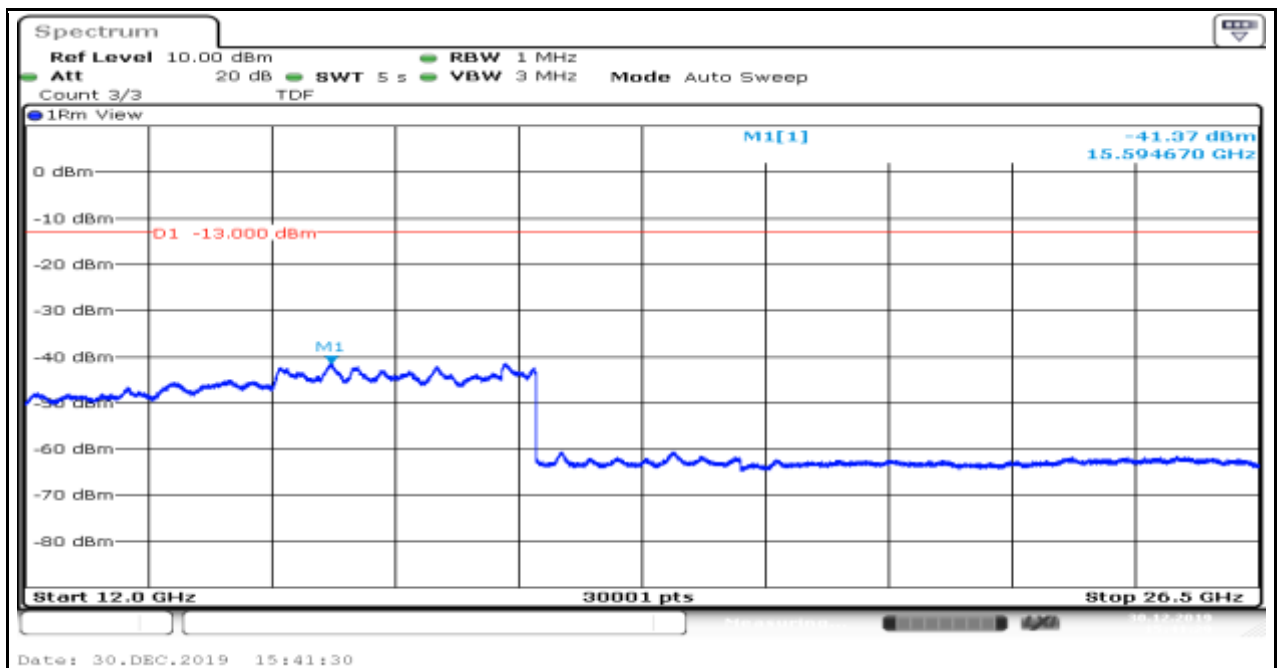
Band85_Stand-Alone_NaN_QPSK_134092_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.94dBm_-13_PASS



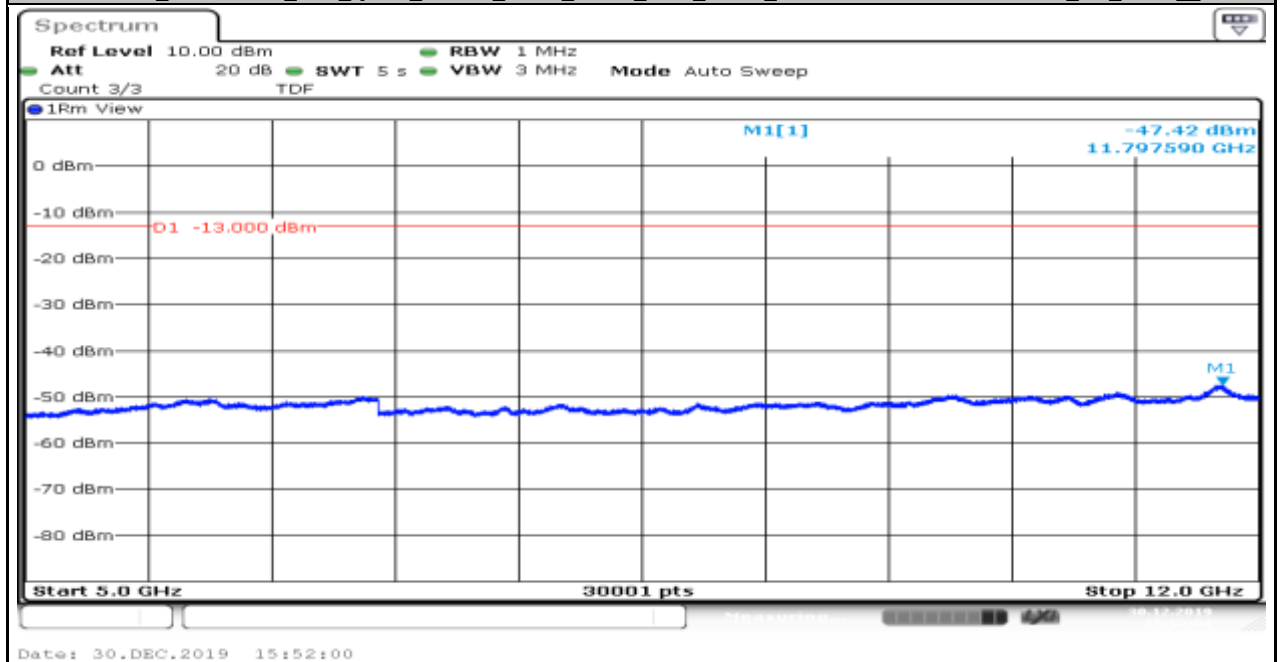
Band85_Stand-Alone_NaN_QPSK_134092_12@0_15kHz_12000_26500_12000~26500MHz@-41.24dBm_-13_PASS



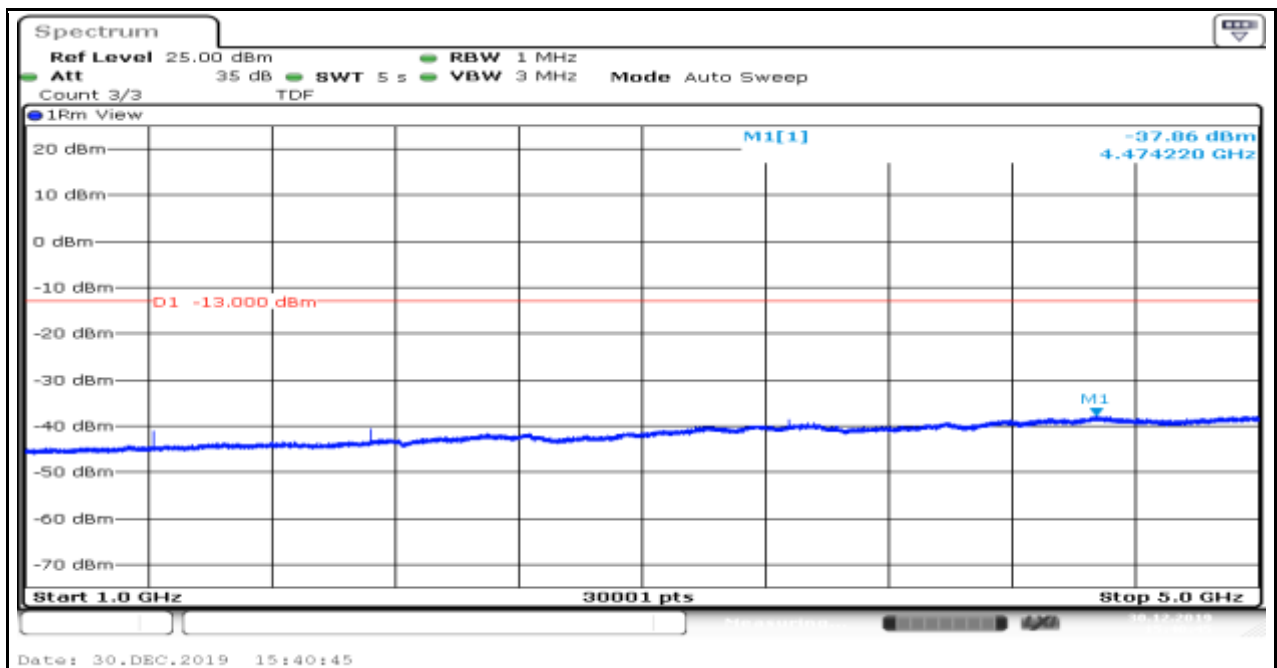
Band85_Stand-Alone_NaN_QPSK_134092_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.37dBm_-13_PASS



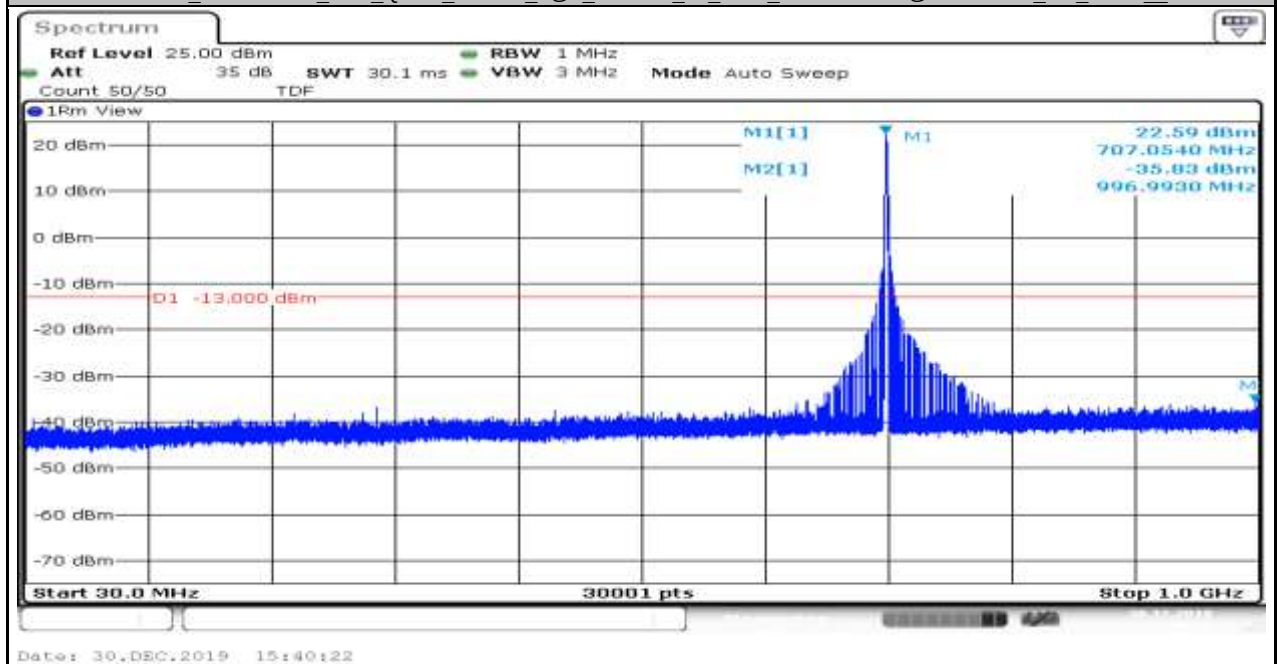
Band85_Stand-Alone_NaN_QPSK_134092_12@0_15kHz_5000_12000_5000~12000MHz@-47.42dBm_-13_PASS



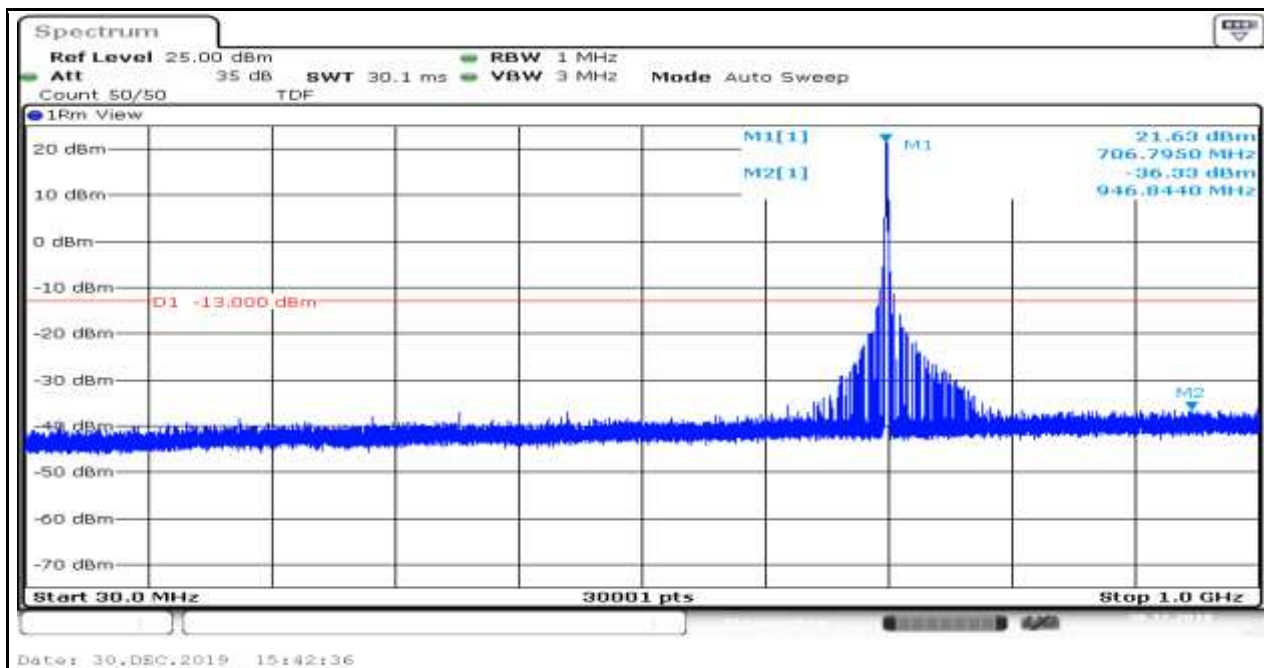
Band85_Stand-Alone_NaN_QPSK_134092_1@0_3.75kHz_1000_5000_1000~5000MHz@-37.86dBm_-13_PASS



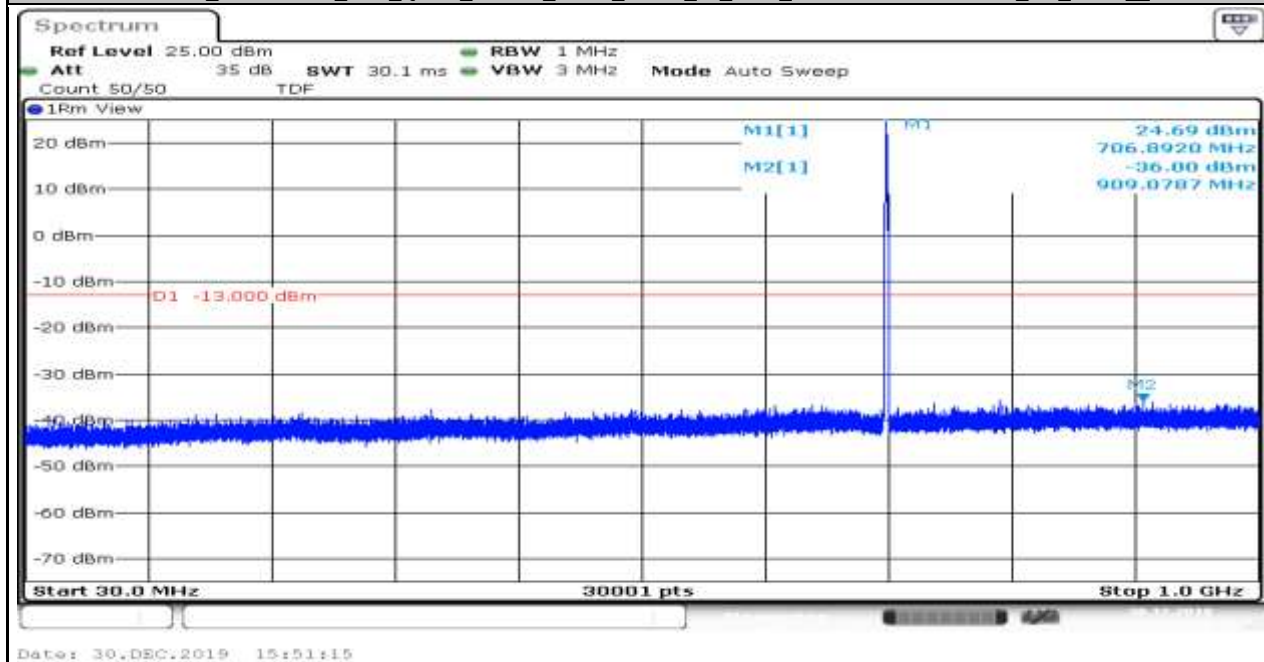
Band85_Stand-Alone_NaN_QPSK_134092_1@0_3.75kHz_30_1000_30~1000MHz@-35.83dBm_-13_PASS



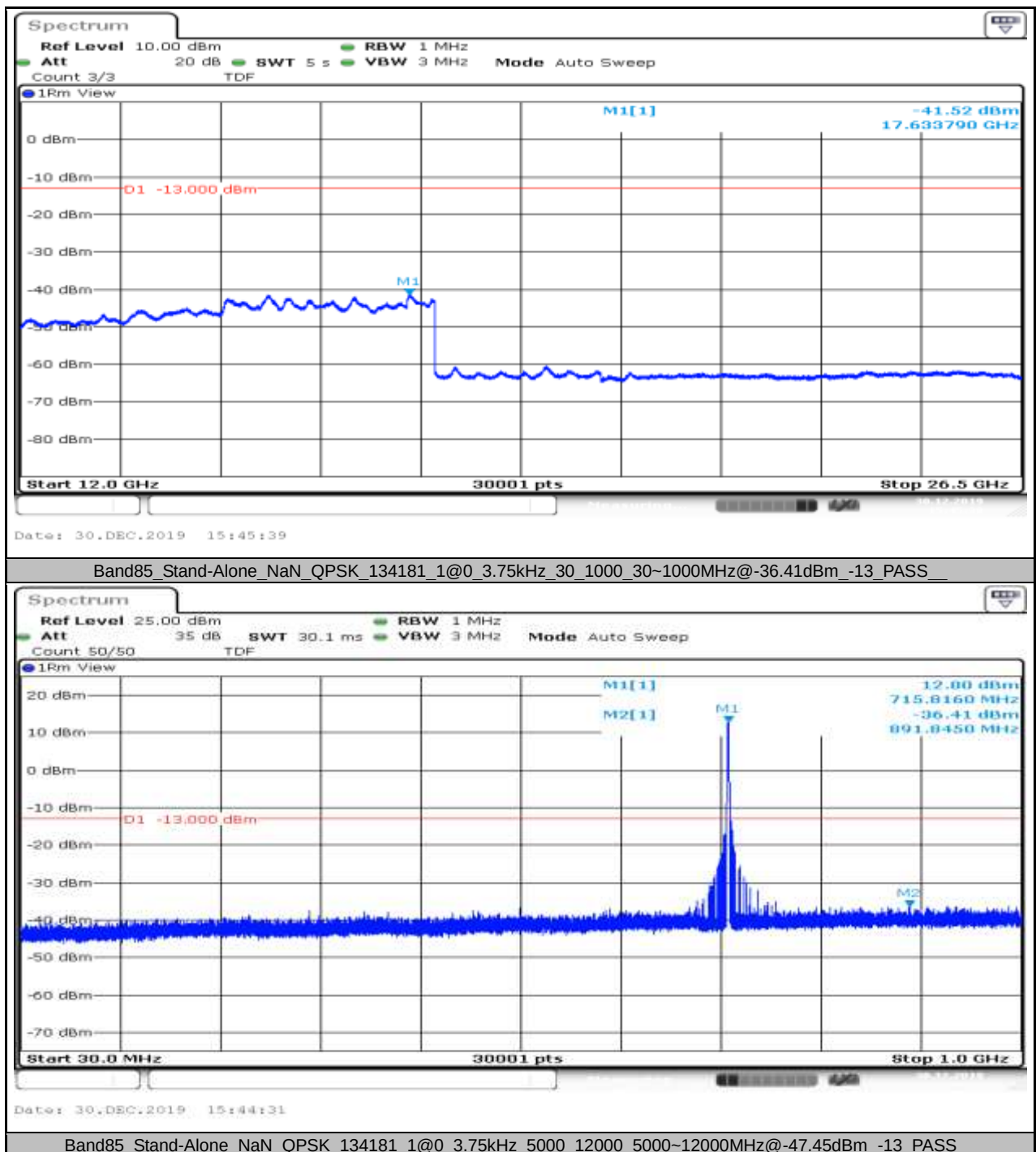
Band85_Stand-Alone_NaN_QPSK_134092_1@47_3.75kHz_30_1000_30~1000MHz@-36.33dBm_-13_PASS

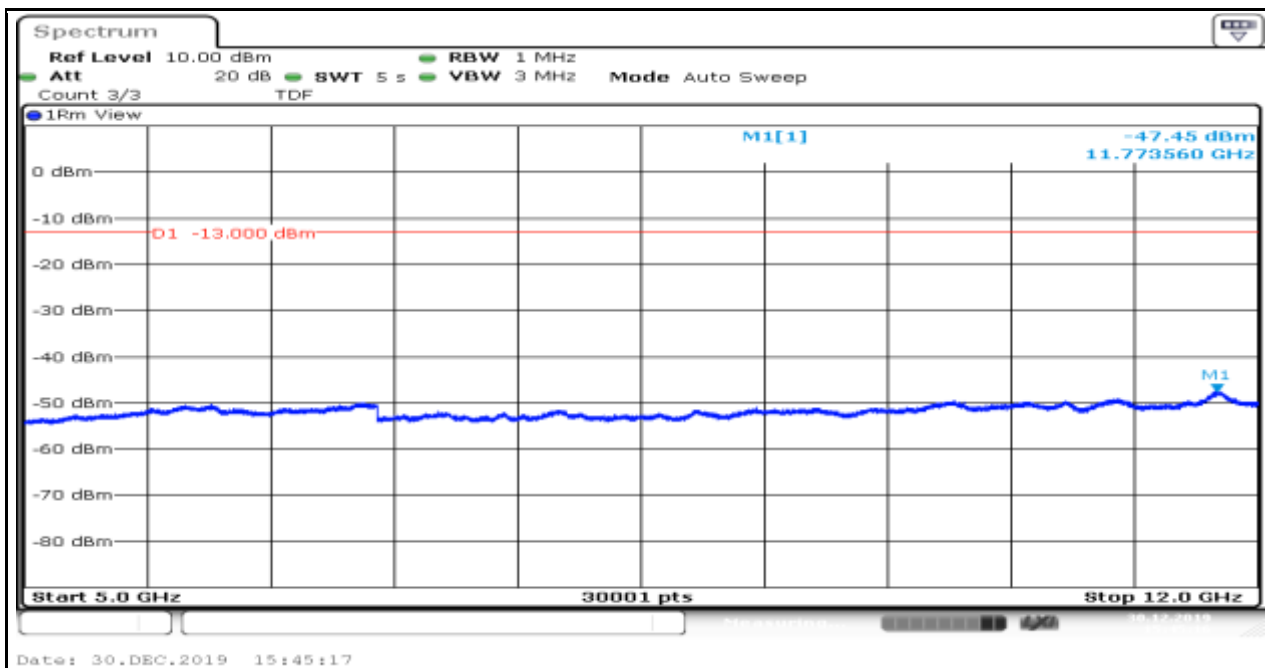


Band85_Stand-Alone_NaN_QPSK_134092_12@0_15kHz_30_1000_30~1000MHz@-36dBm_-13_PASS_

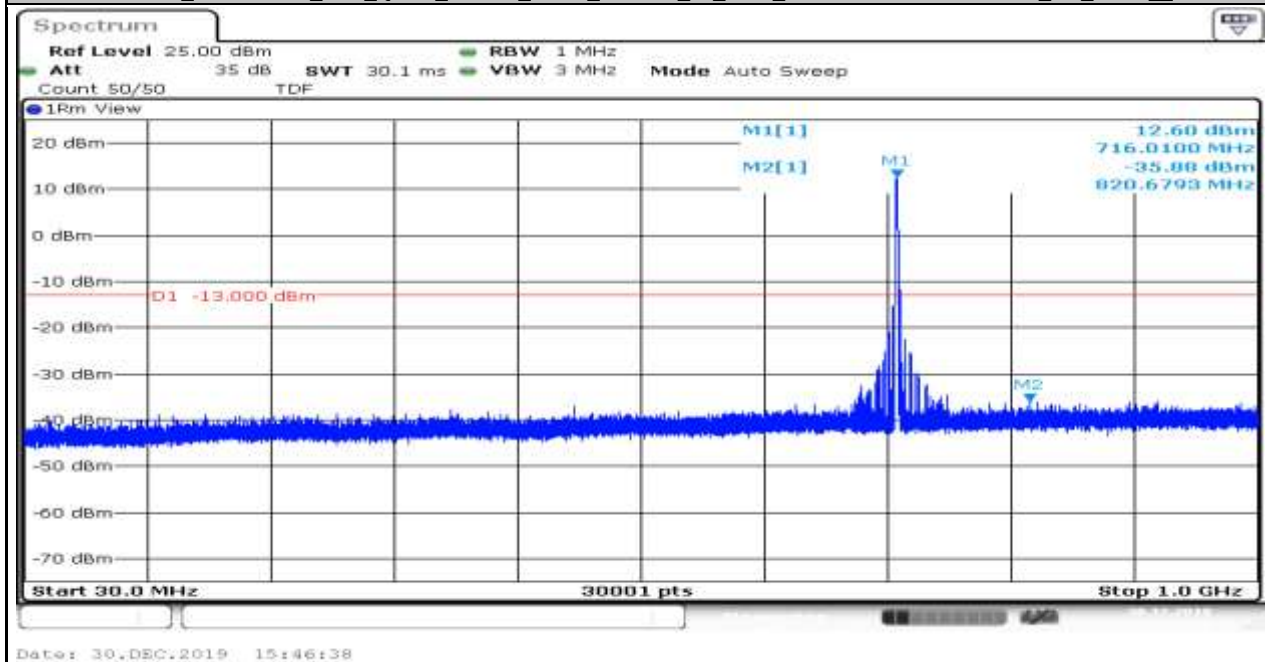


Band85_Stand-Alone_NaN_QPSK_134181_1@0_3.75kHz_12000_26500_12000~26500MHz@-41.52dBm_-13_PASS_

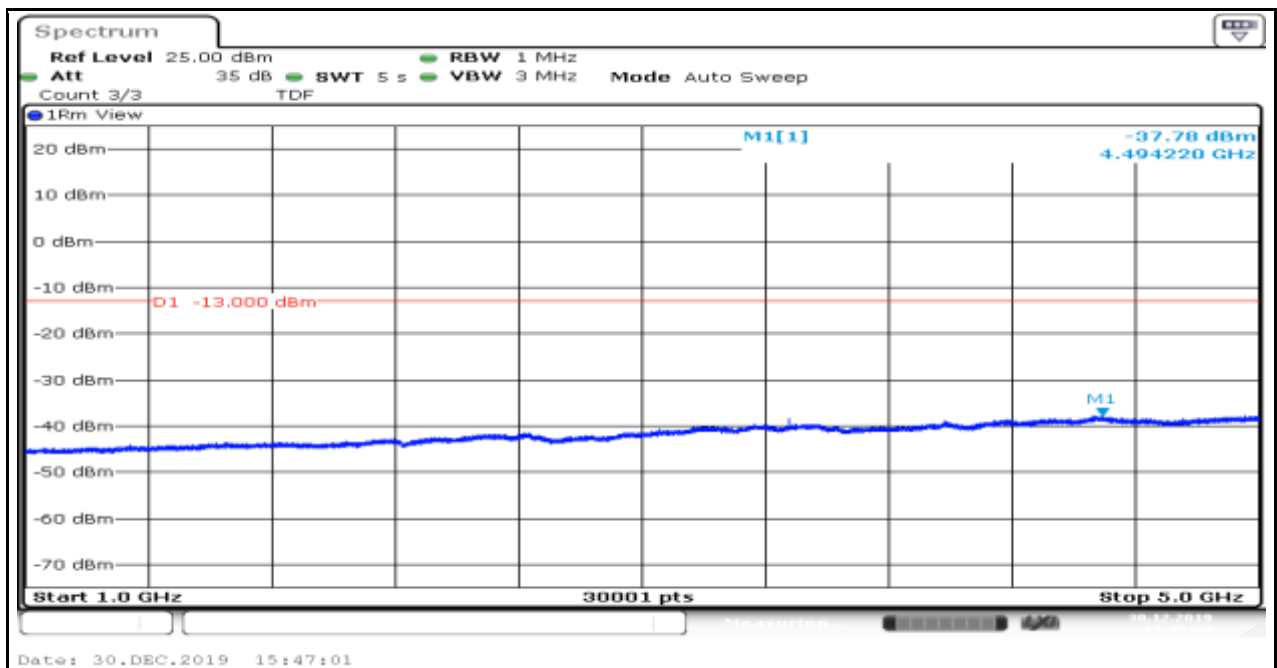




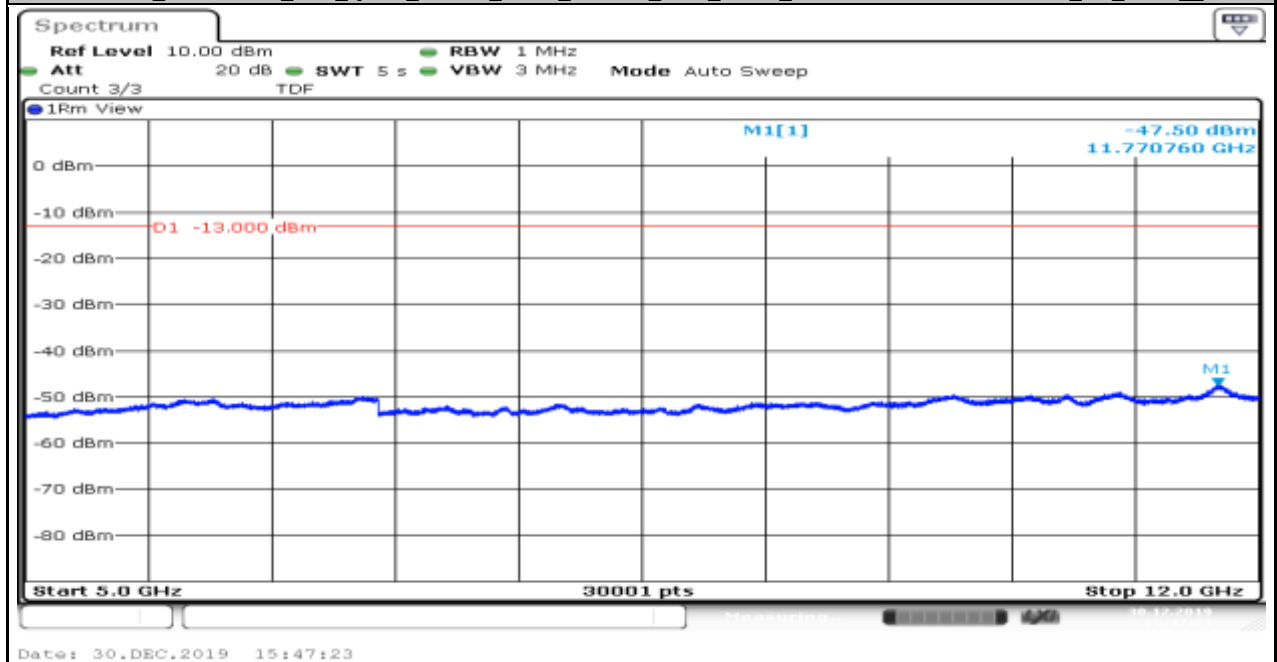
Band85_Stand-Alone_NaN_QPSK_134181_1@47_3.75kHz_30_1000_30~1000MHz@-35.88dBm_-13_PASS



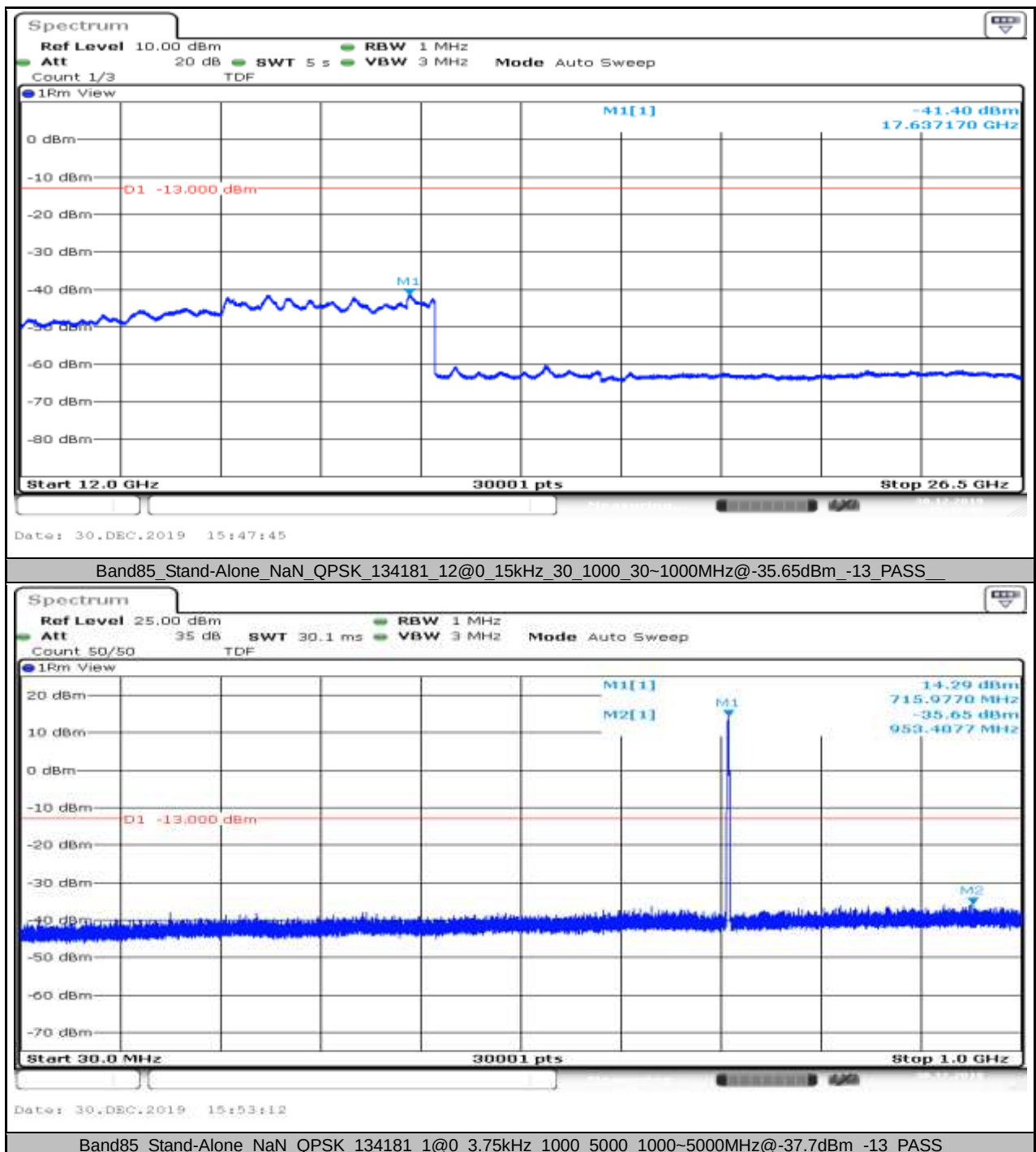
Band85_Stand-Alone_NaN_QPSK_134181_1@47_3.75kHz_1000_5000_1000~5000MHz@-37.78dBm_-13_PASS

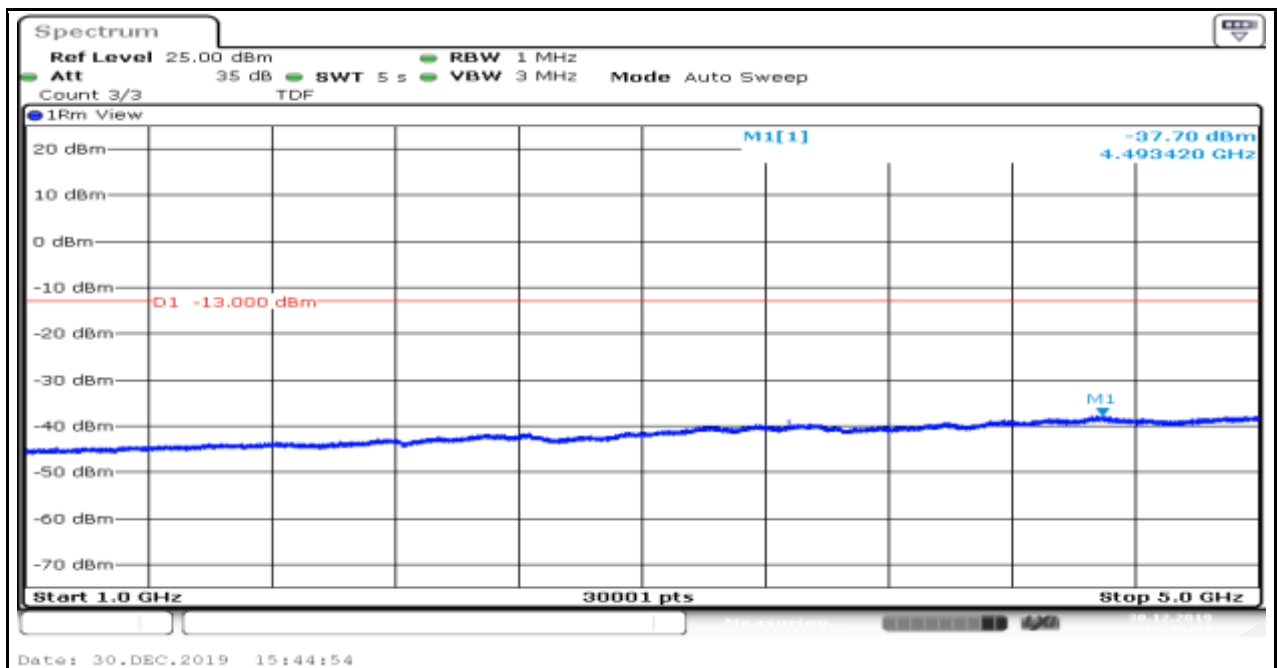


Band85_Stand-Alone_NaN_QPSK_134181_1@47_3.75kHz_5000_12000_5000~12000MHz@-47.5dBm_-13_PASS_

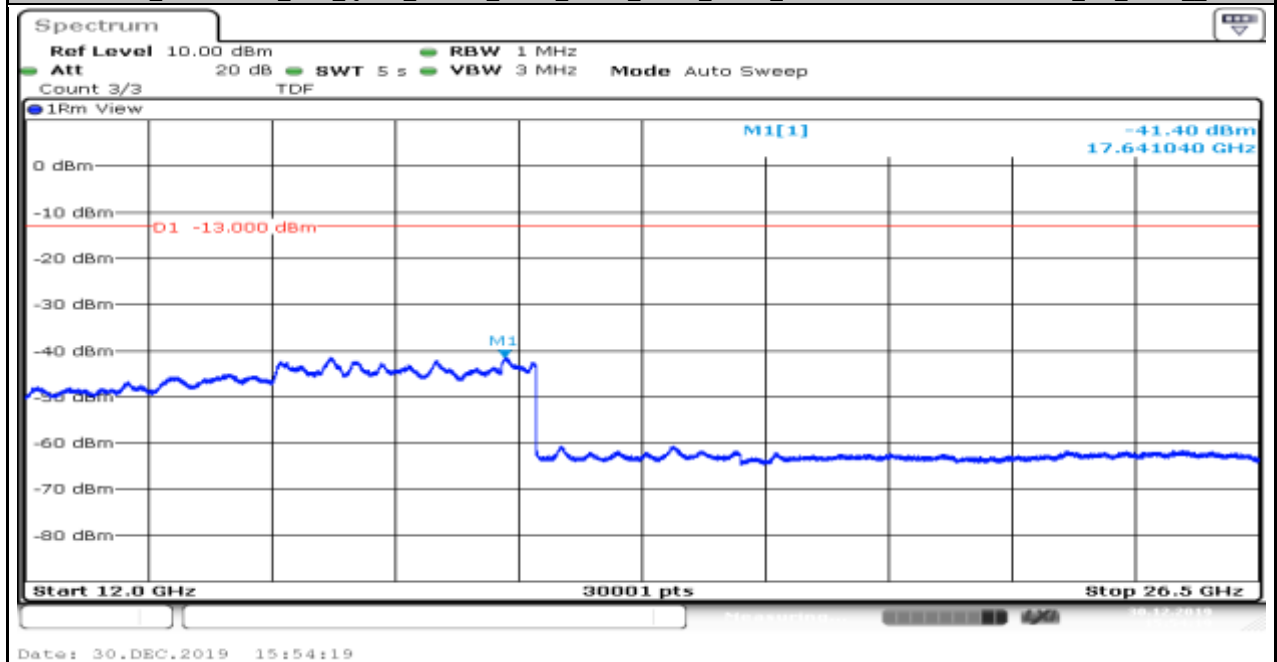


Band85_Stand-Alone_NaN_QPSK_134181_1@47_3.75kHz_12000_26500_12000~26500MHz@-41.4dBm_-13_PASS_

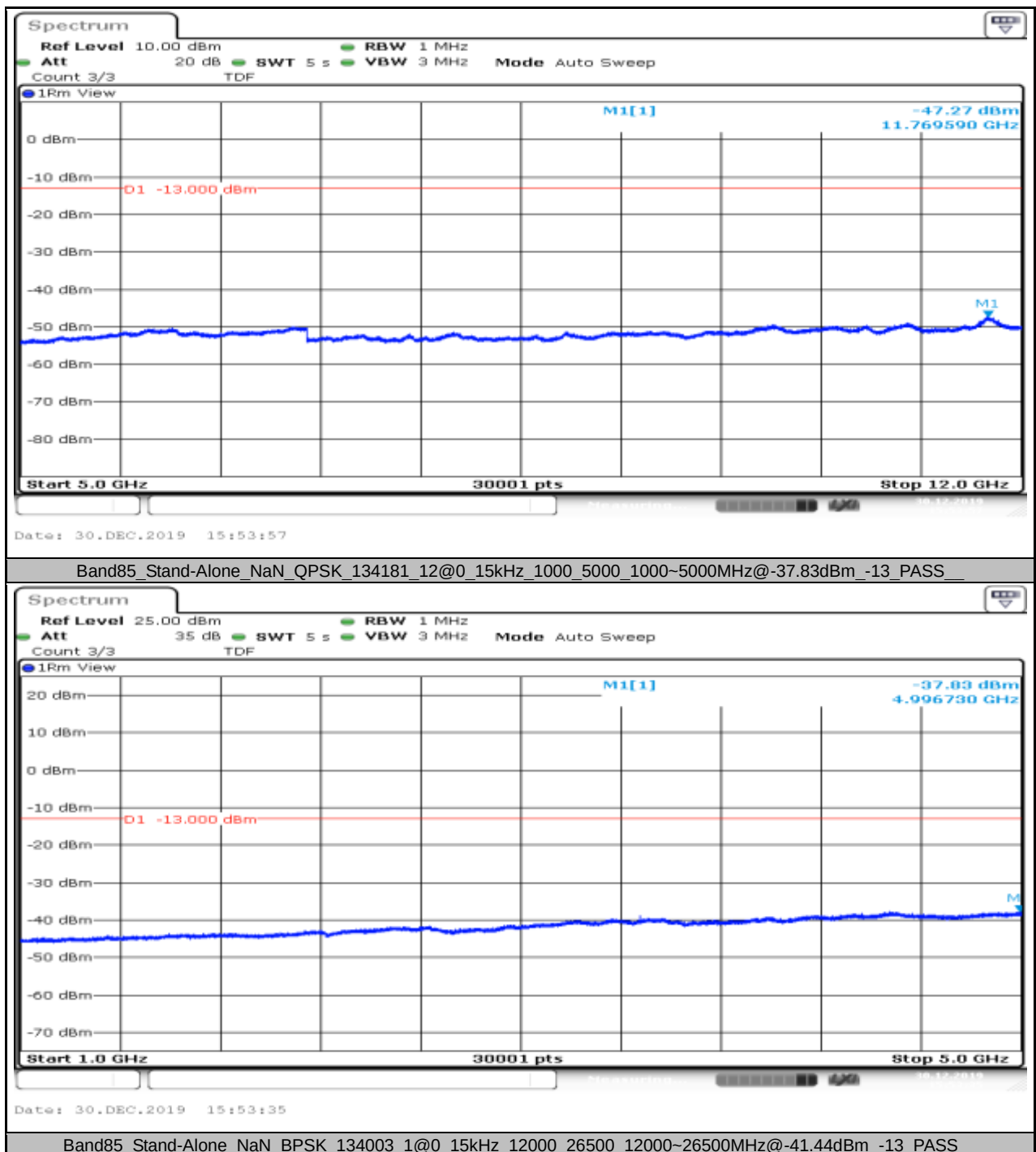




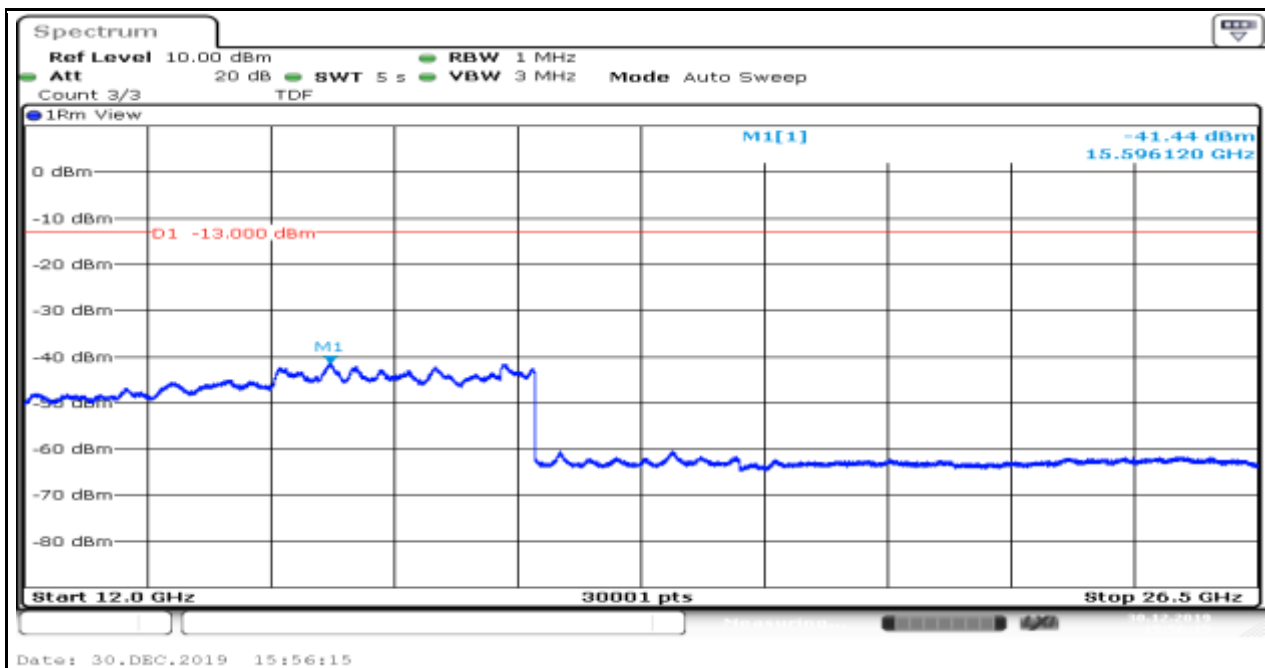
Band85_Stand-Alone_NaN_QPSK_134181_12@0_15kHz_12000_26500_12000~26500MHz@-41.4dBm_-13_PASS



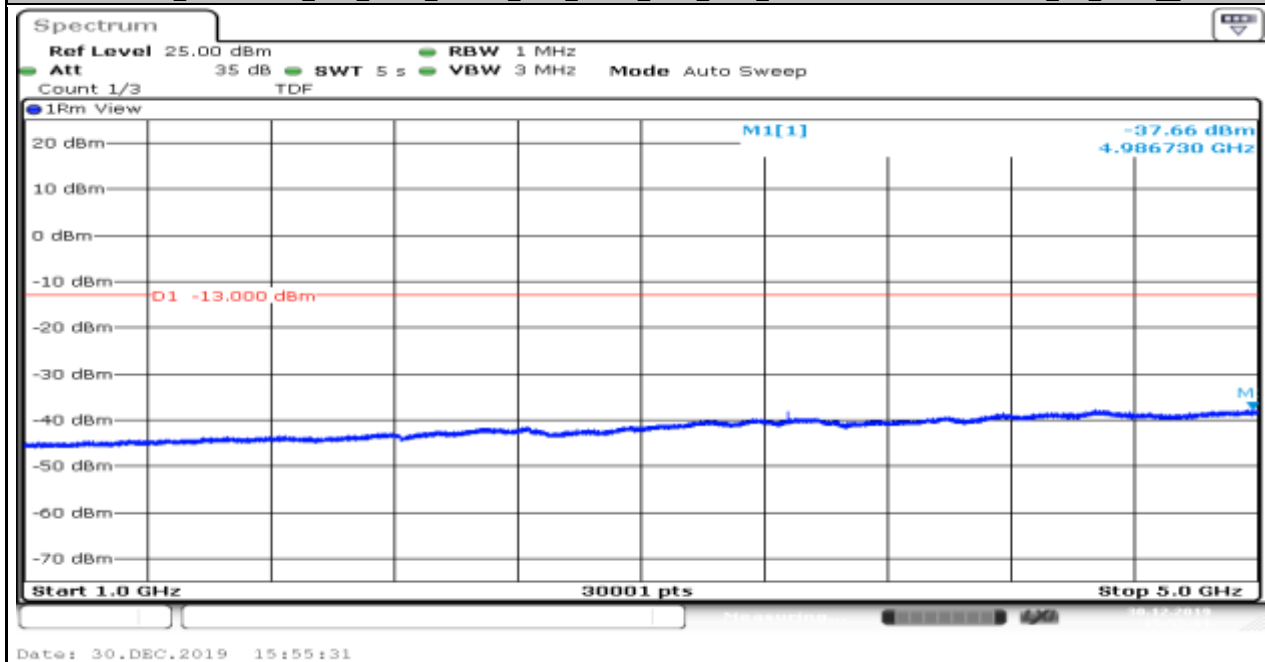
Band85_Stand-Alone_NaN_QPSK_134181_12@0_15kHz_5000_12000_5000~12000MHz@-47.27dBm_-13_PASS



Produkte
Products

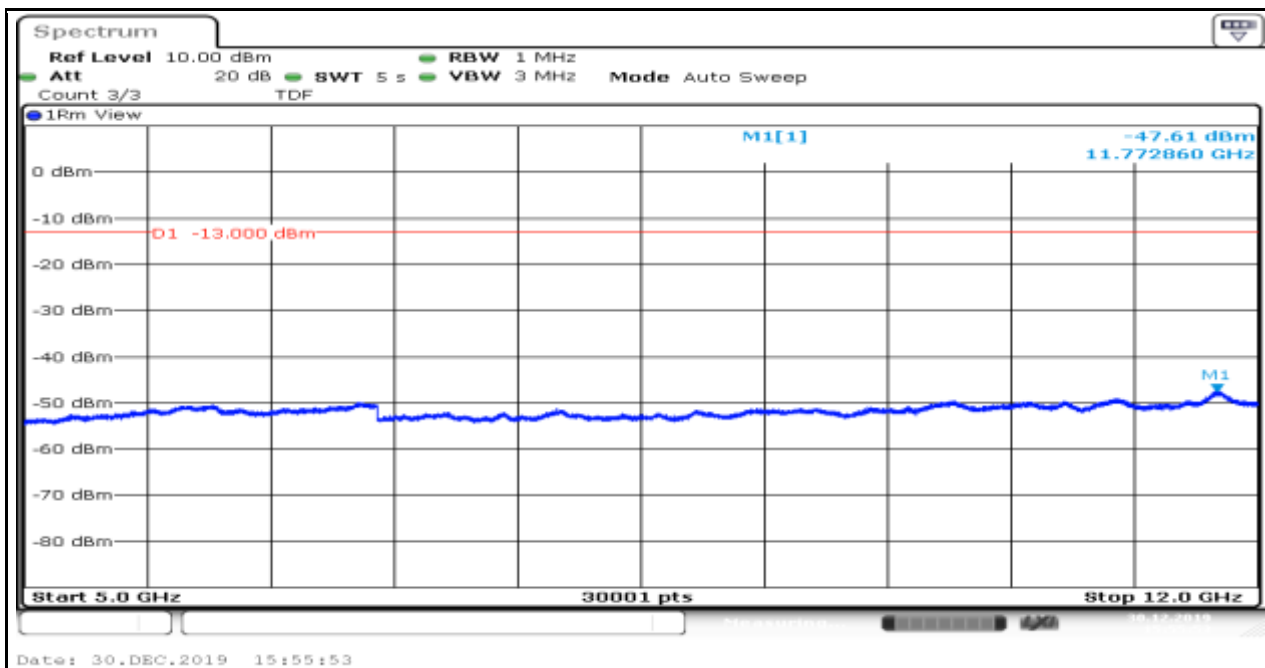


Band85_Stand-Alone_NaN_BPSK_134003_1@0_15kHz_1000_5000_1000~5000MHz@-37.66dBm_-13_PASS_

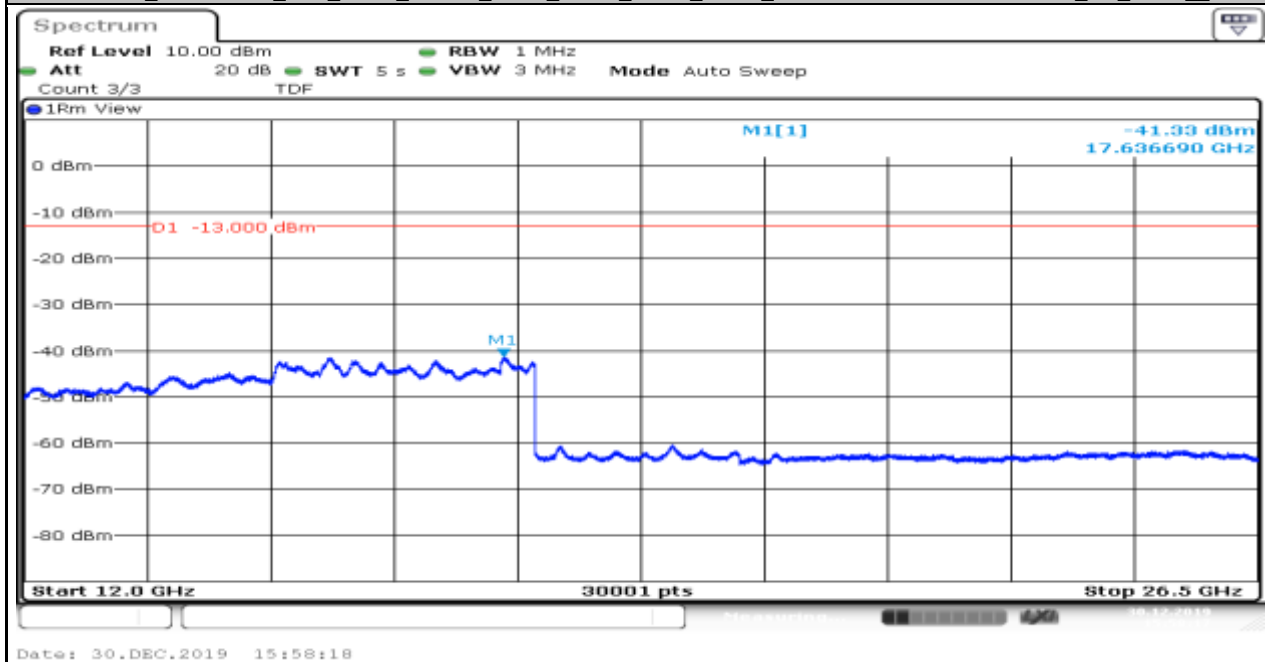


Band85_Stand-Alone_NaN_BPSK_134003_1@0_15kHz_5000_12000_5000~12000MHz@-47.61dBm_-13_PASS_

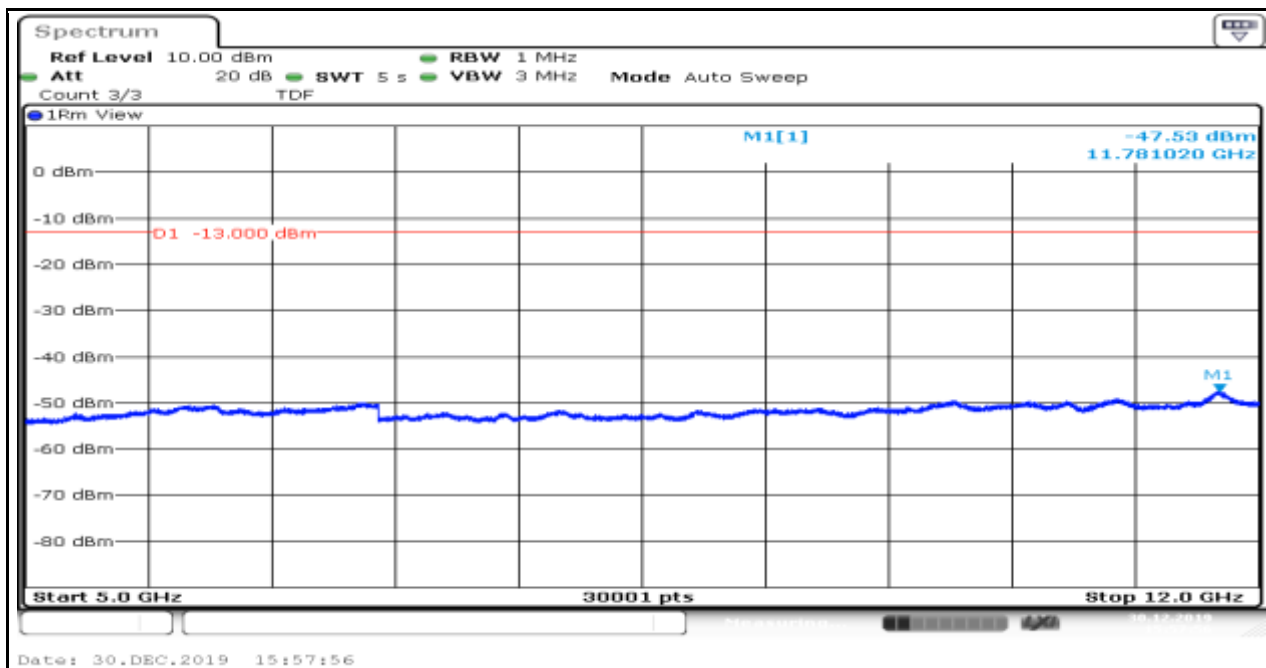
Produkte
Products



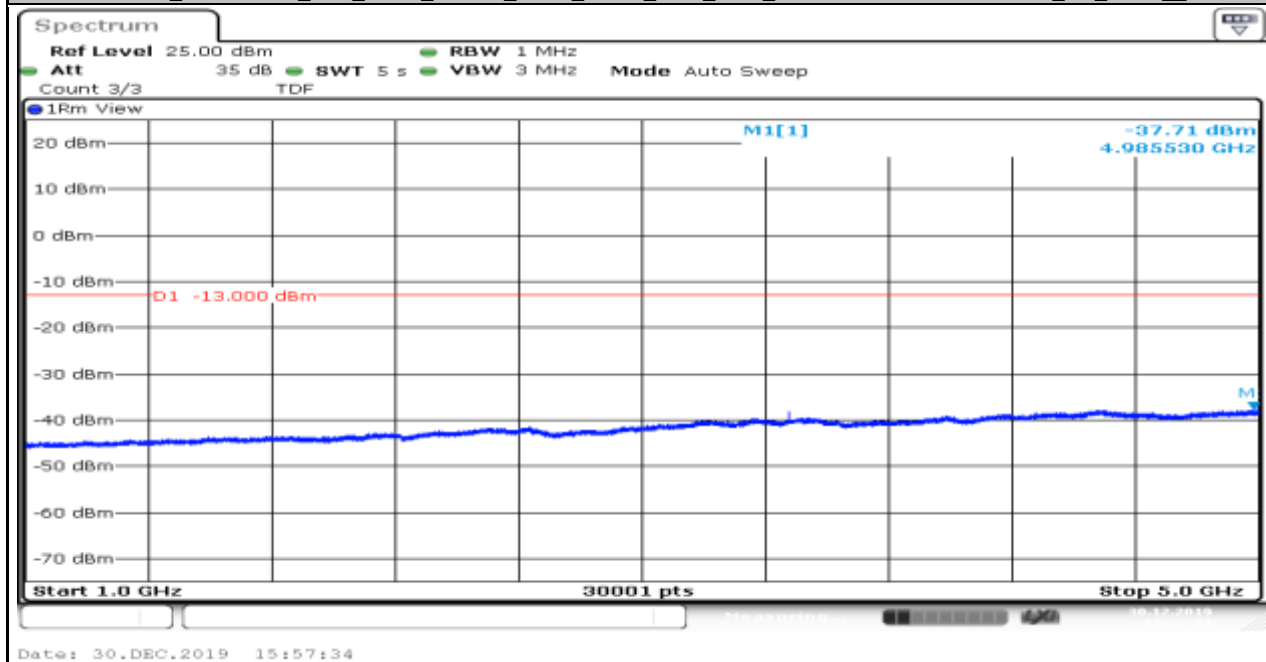
Band85_Stand-Alone_NaN_BPSK_134003_1@11_15kHz_12000_26500_12000~26500MHz@-41.33dBm_-13_PASS



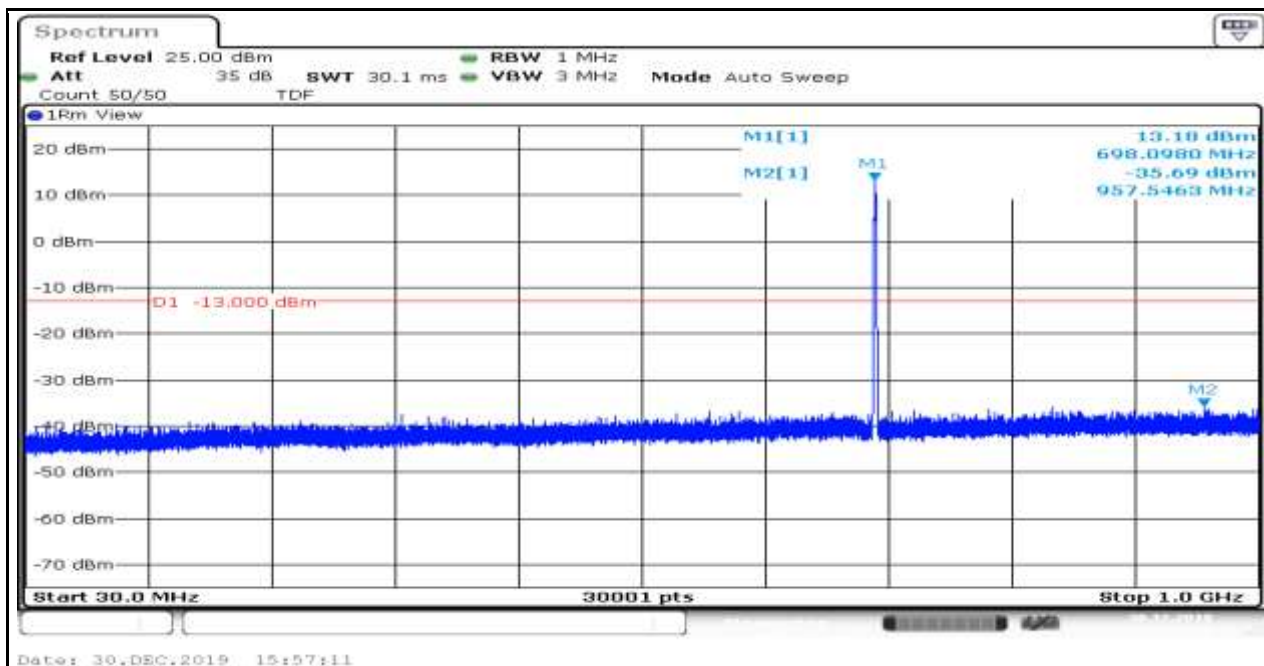
Band85_Stand-Alone_NaN_BPSK_134003_1@11_15kHz_5000_12000_5000~12000MHz@-47.53dBm_-13_PASS



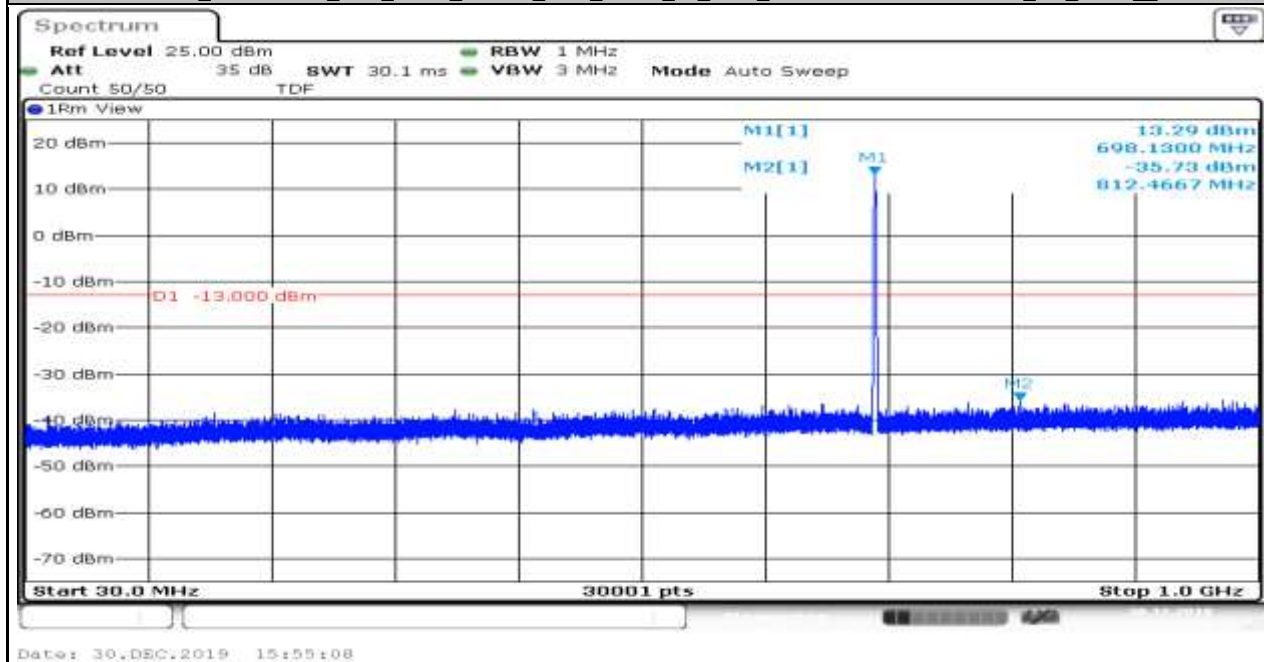
Band85_Stand-Alone_NaN_BPSK_134003_1@11_15kHz_1000_5000_1000~5000MHz@-37.71dBm_-13_PASS



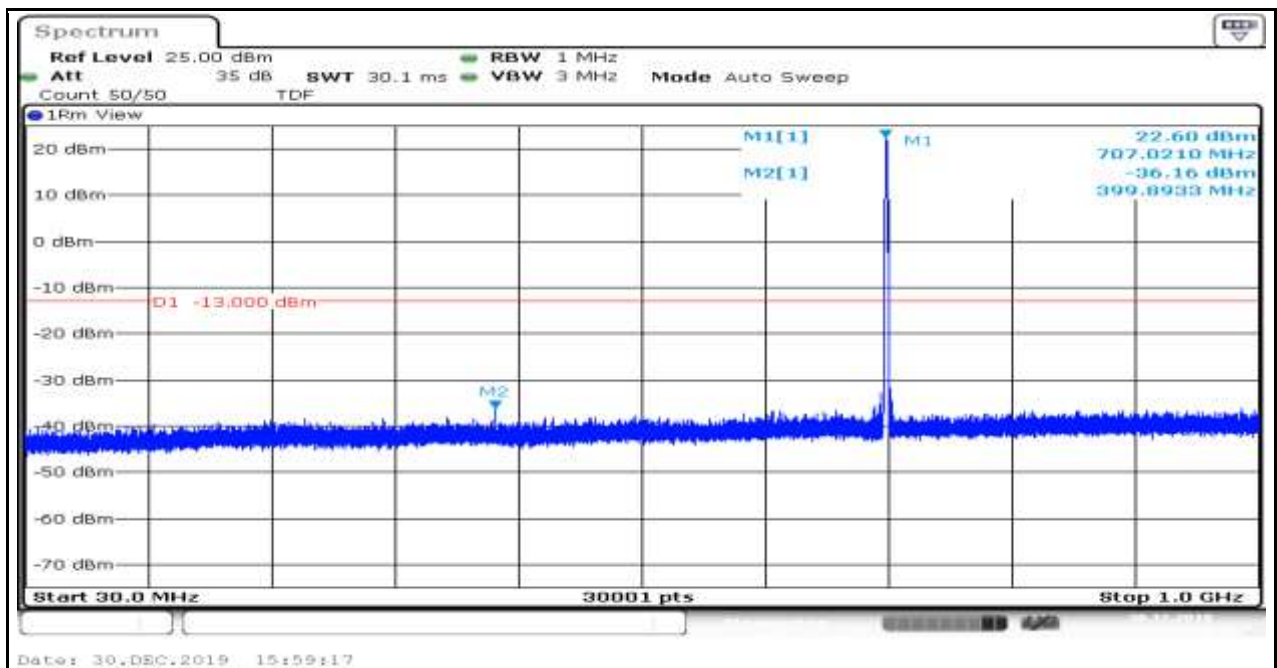
Band85_Stand-Alone_NaN_BPSK_134003_1@11_15kHz_30_1000_30~1000MHz@-35.69dBm_-13_PASS



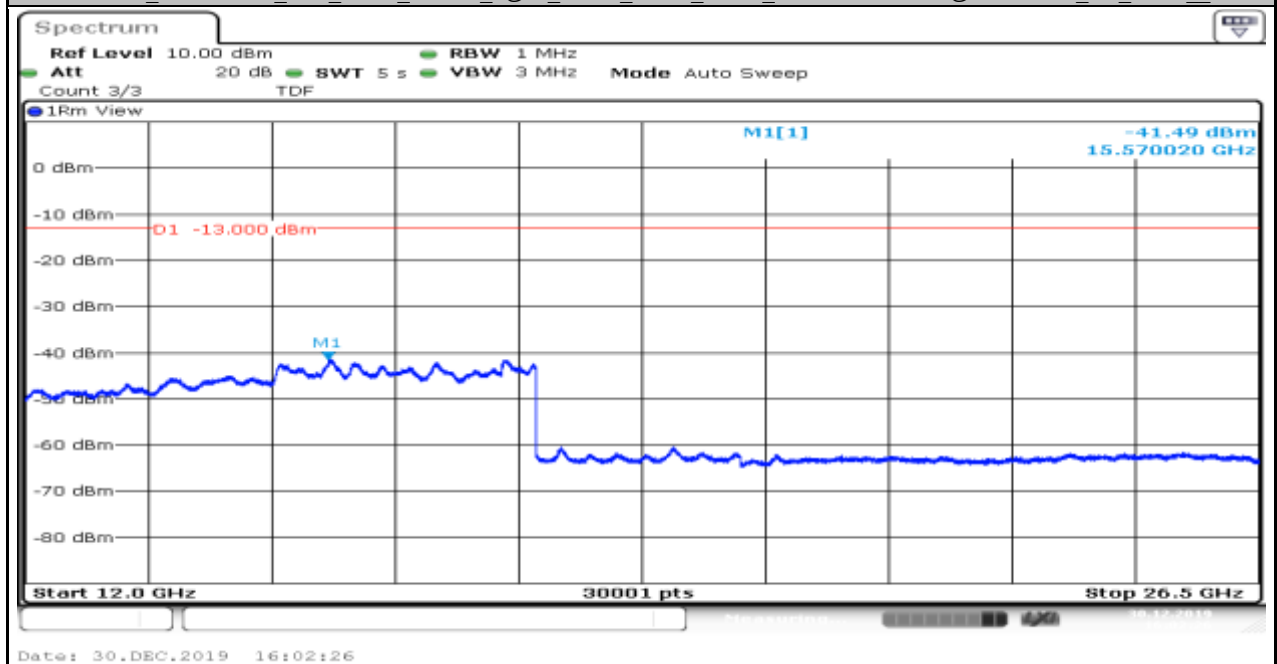
Band85_Stand-Alone_NaN_BPSK_134003_1@0_15kHz_30_1000_30~1000MHz@-35.73dBm_-13_PASS_



Band85_Stand-Alone_NaN_BPSK_134092_1@0_15kHz_30_1000_30~1000MHz@-36.16dBm_-13_PASS_

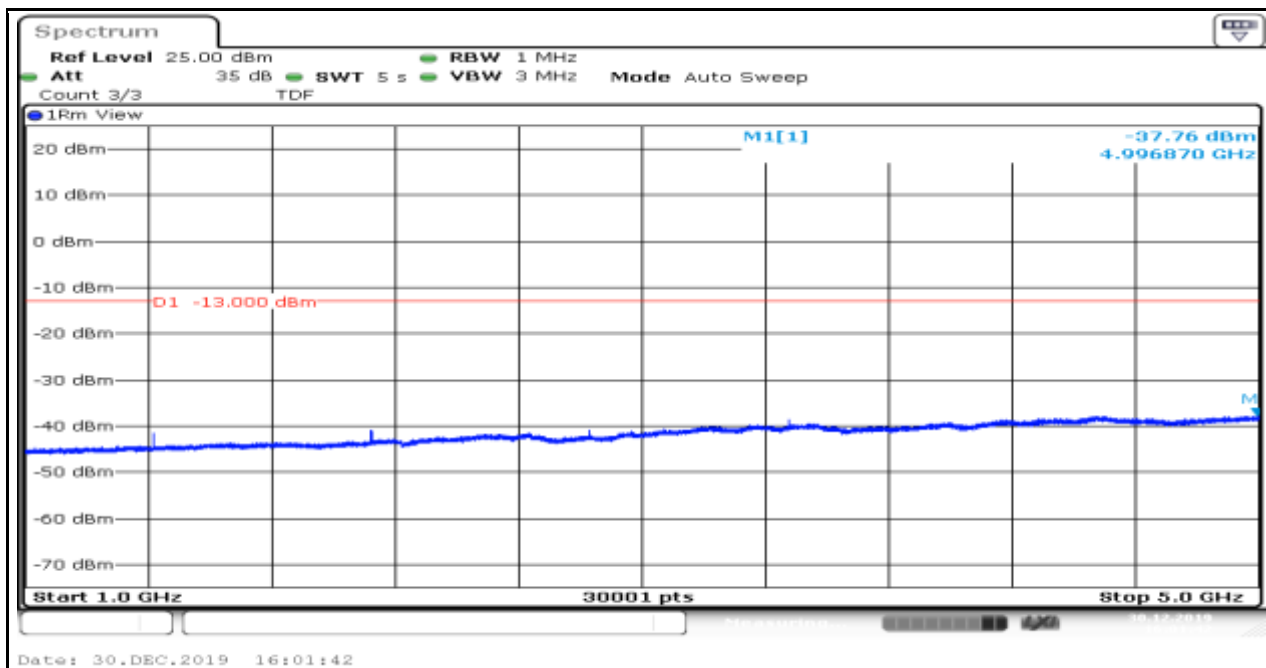


Band85_Stand-Alone_NaN_BPSK_134092_1@11_15kHz_12000_26500_12000~26500MHz@-41.49dBm_-13_PASS

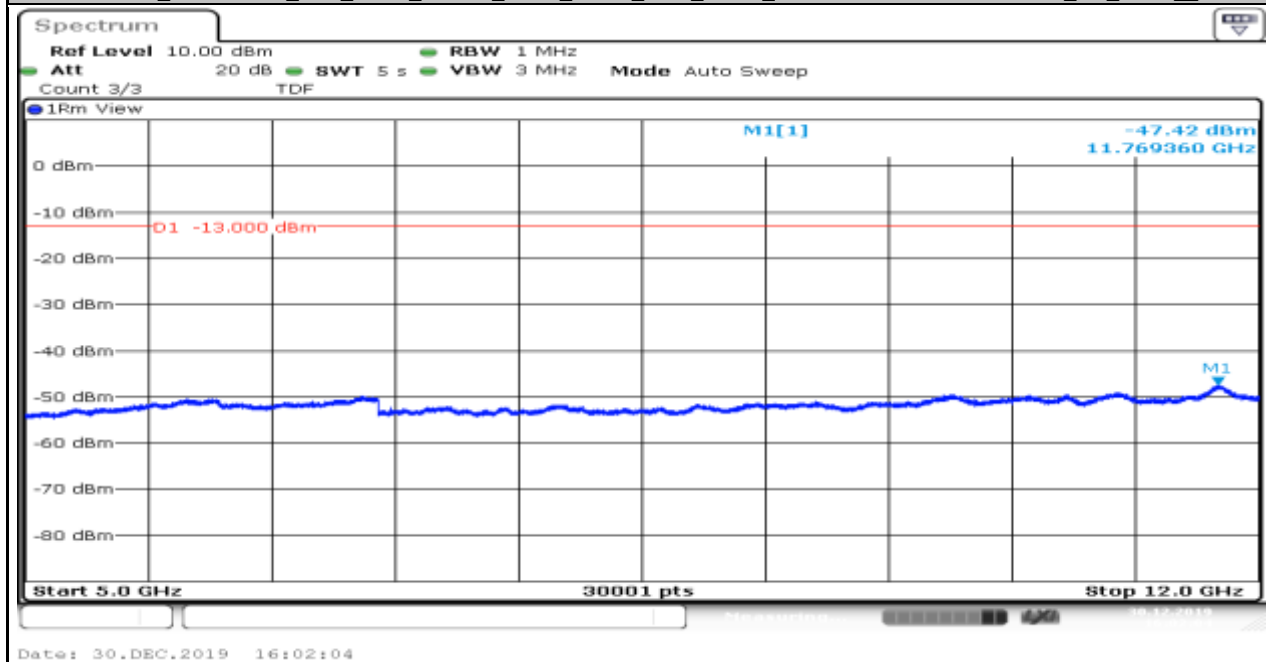


Band85_Stand-Alone_NaN_BPSK_134092_1@11_15kHz_1000_5000_1000~5000MHz@-37.76dBm_-13_PASS

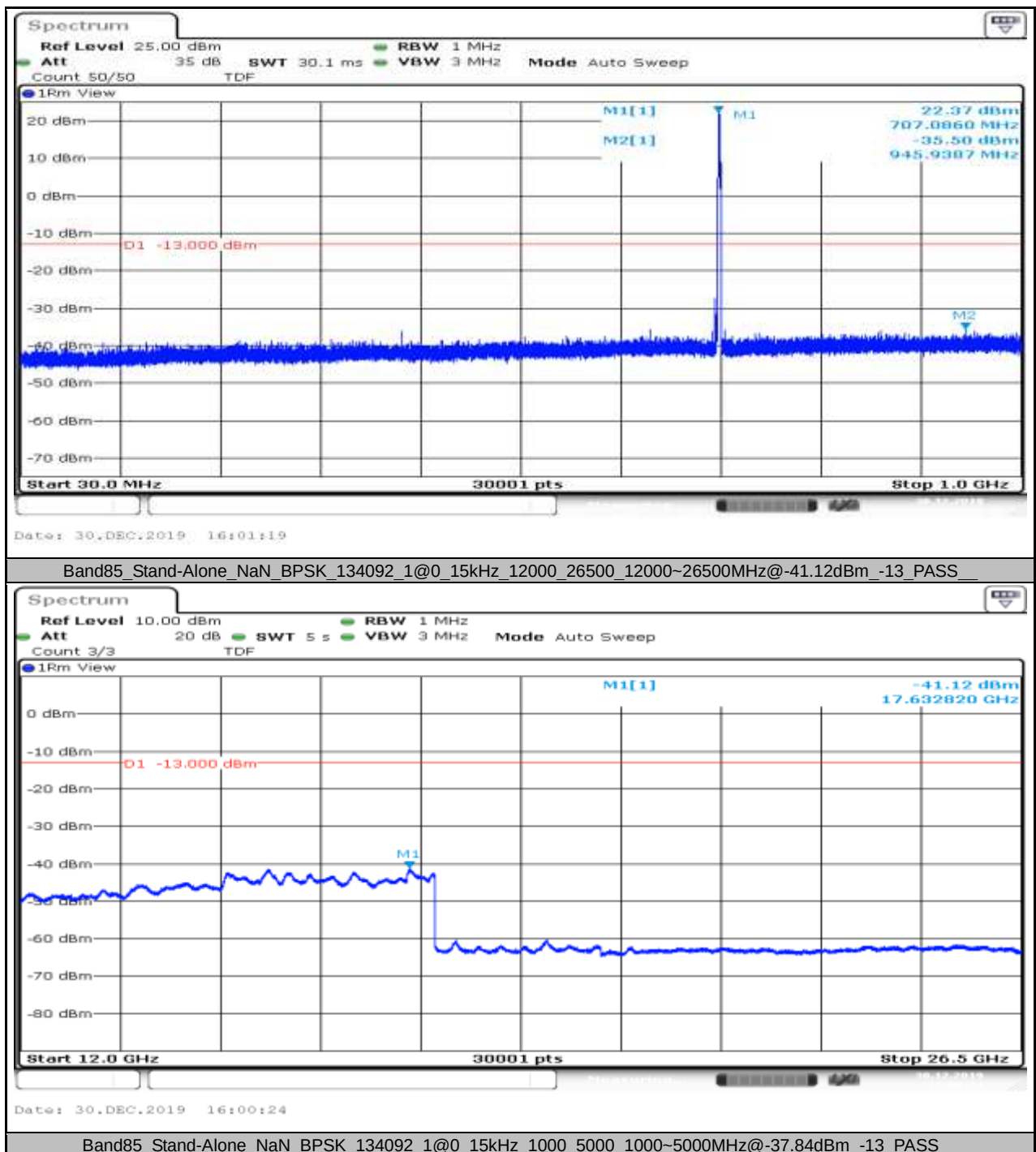
Produkte
Products

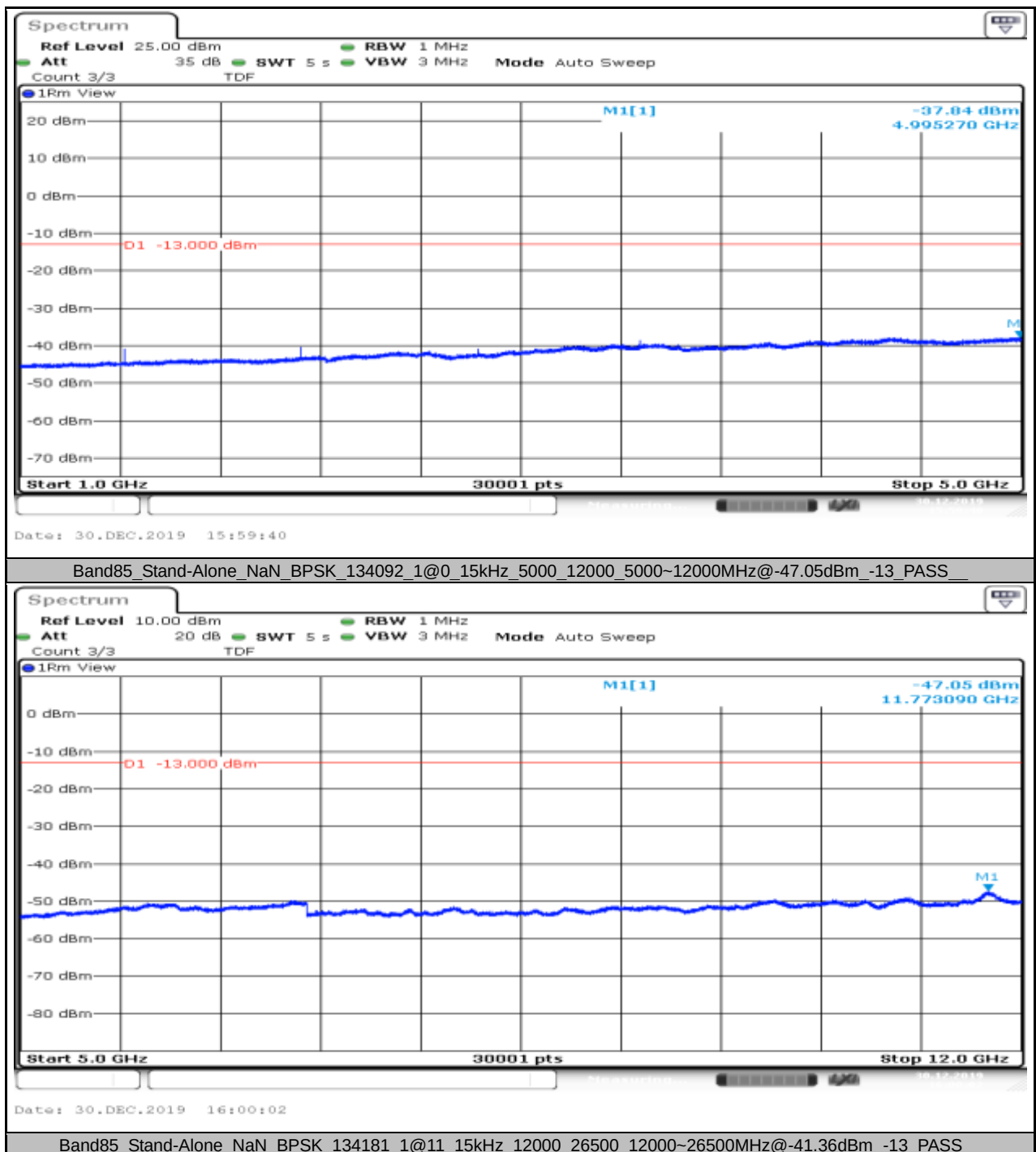


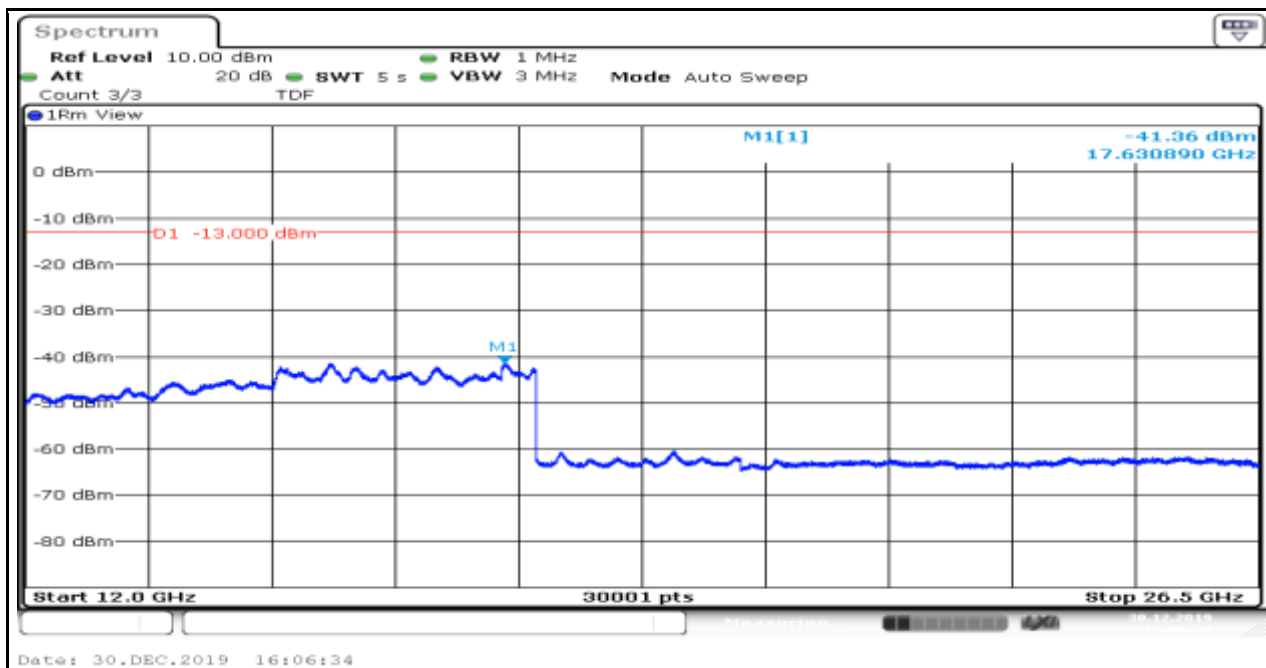
Band85_Stand-Alone_NaN_BPSK_134092_1@11_15kHz_5000_12000_5000~12000MHz@-47.42dBm_-13_PASS



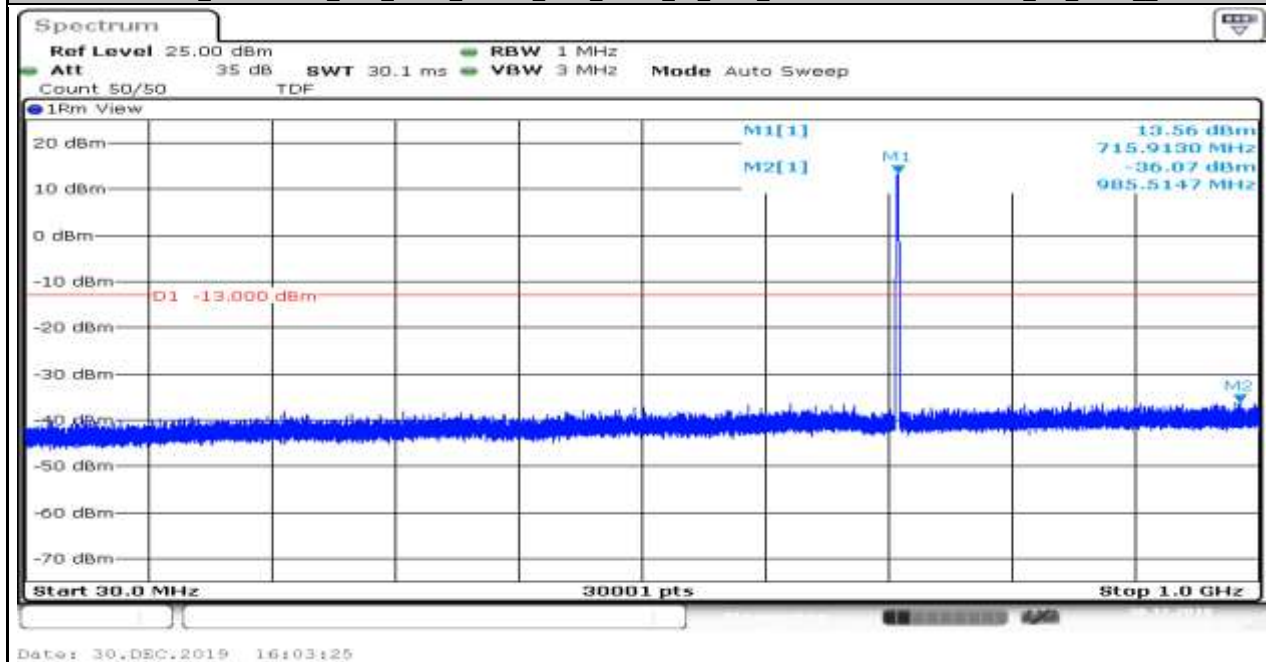
Band85_Stand-Alone_NaN_BPSK_134092_1@11_15kHz_30_1000_30~1000MHz@-35.5dBm_-13_PASS





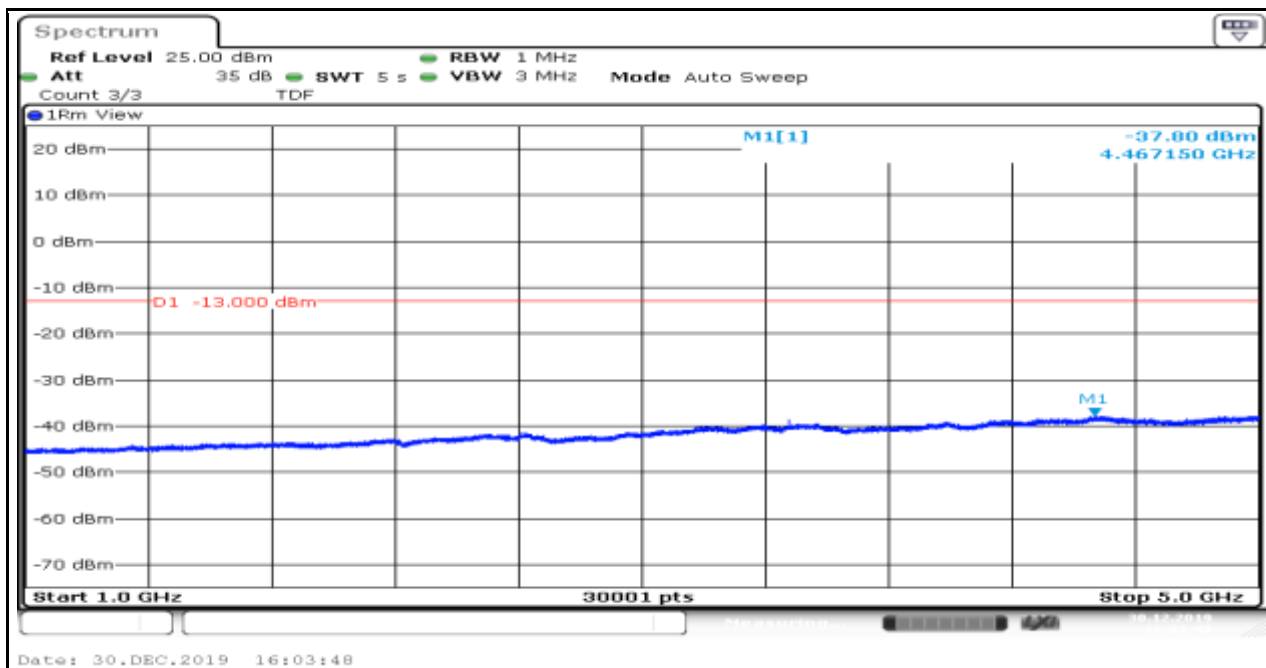


Band85_Stand-Alone_NaN_BPSK_134181_1@0_15kHz_30_1000_30~1000MHz@-36.07dBm_-13_PASS_

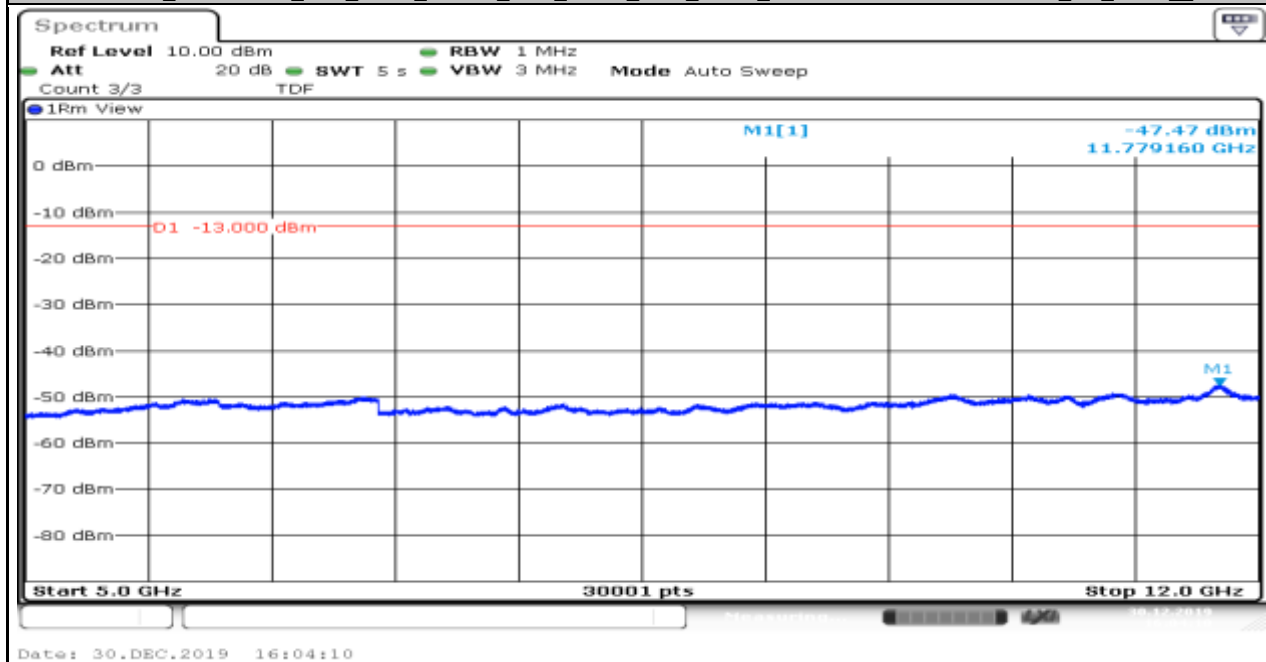


Band85_Stand-Alone_NaN_BPSK_134181_1@0_15kHz_1000_5000_1000~5000MHz@-37.8dBm_-13_PASS_

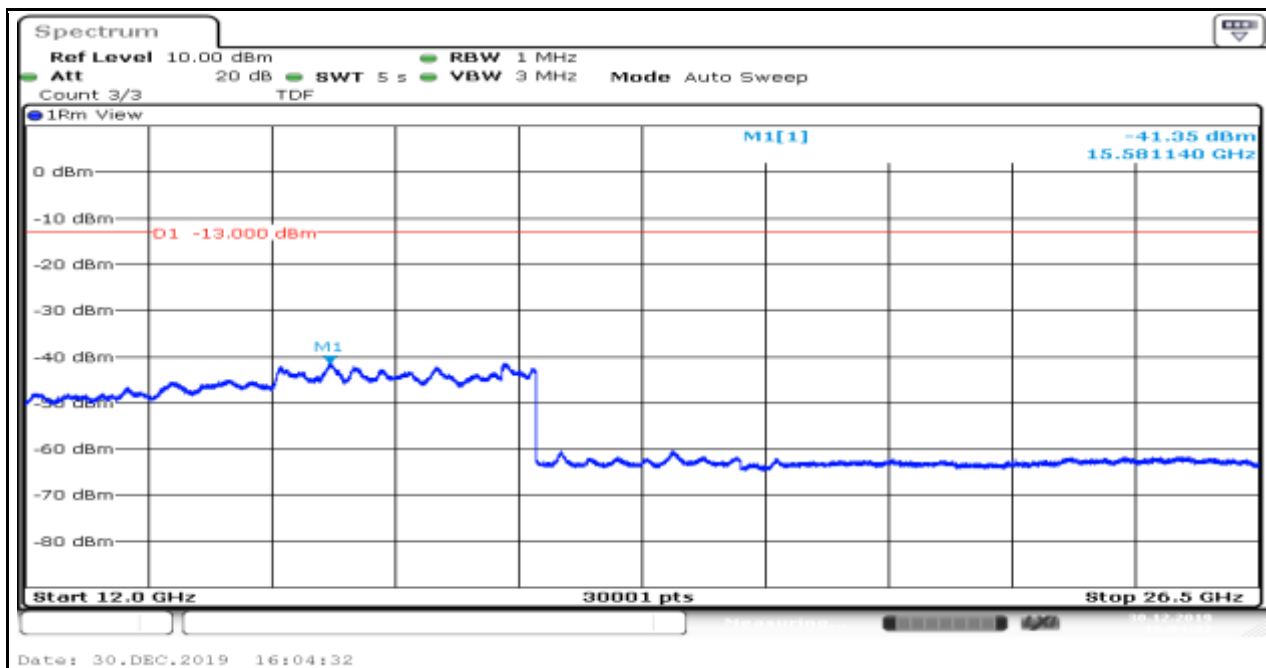
Produkte
Products



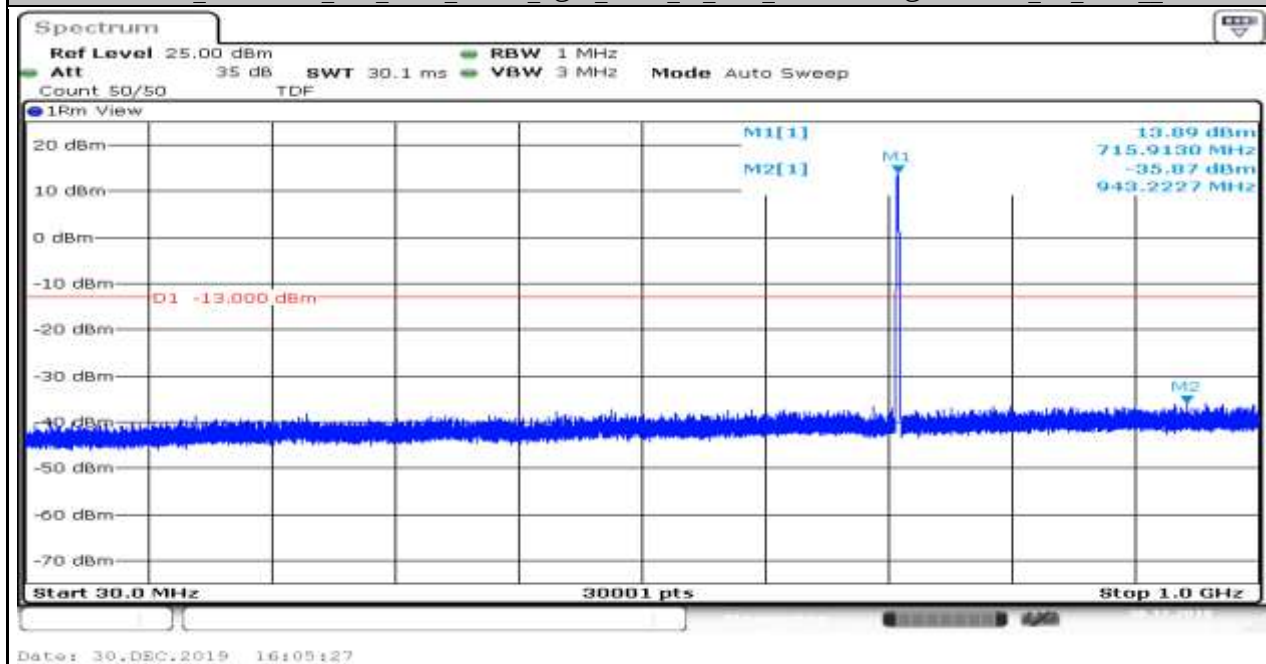
Band85_Stand-Alone_NaN_BPSK_134181_1@0_15kHz_5000_12000_5000-12000MHz@-47.47dBm_-13_PASS



Band85_Stand-Alone_NaN_BPSK_134181_1@0_15kHz_12000_26500_12000-26500MHz@-41.35dBm_-13_PASS

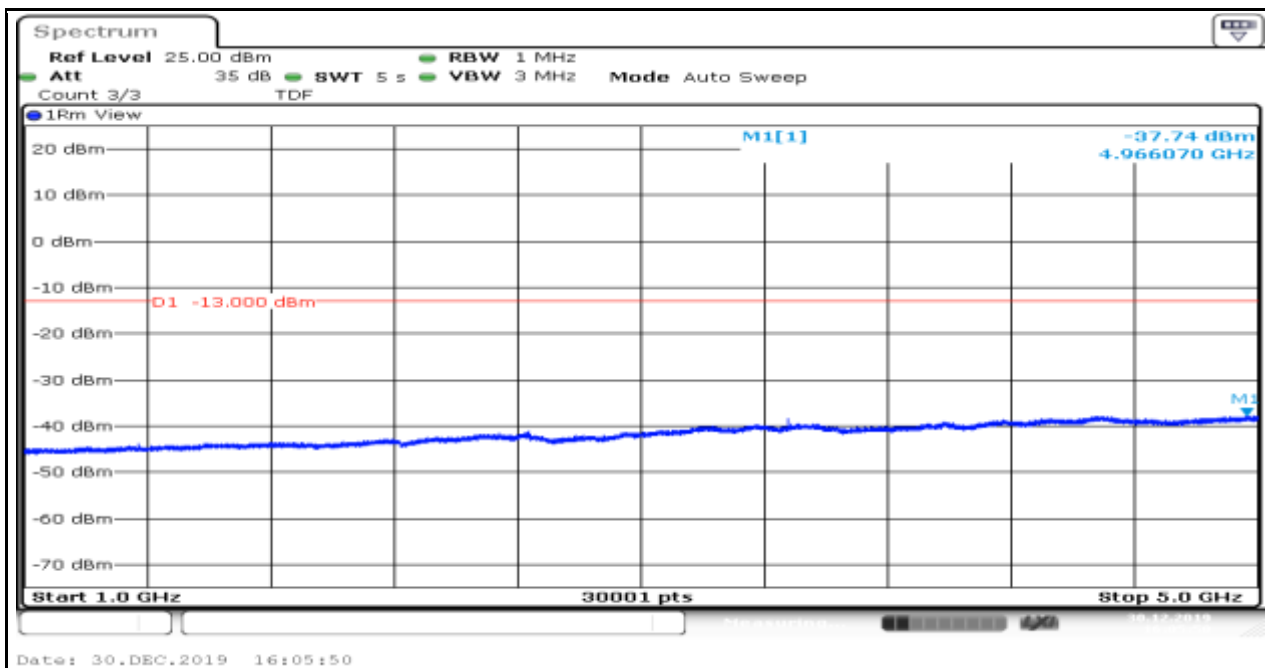


Band85_Stand-Alone_NaN_BPSK_134181_1@11_15kHz_30_1000_30~1000MHz@-35.87dBm_-13_PASS_

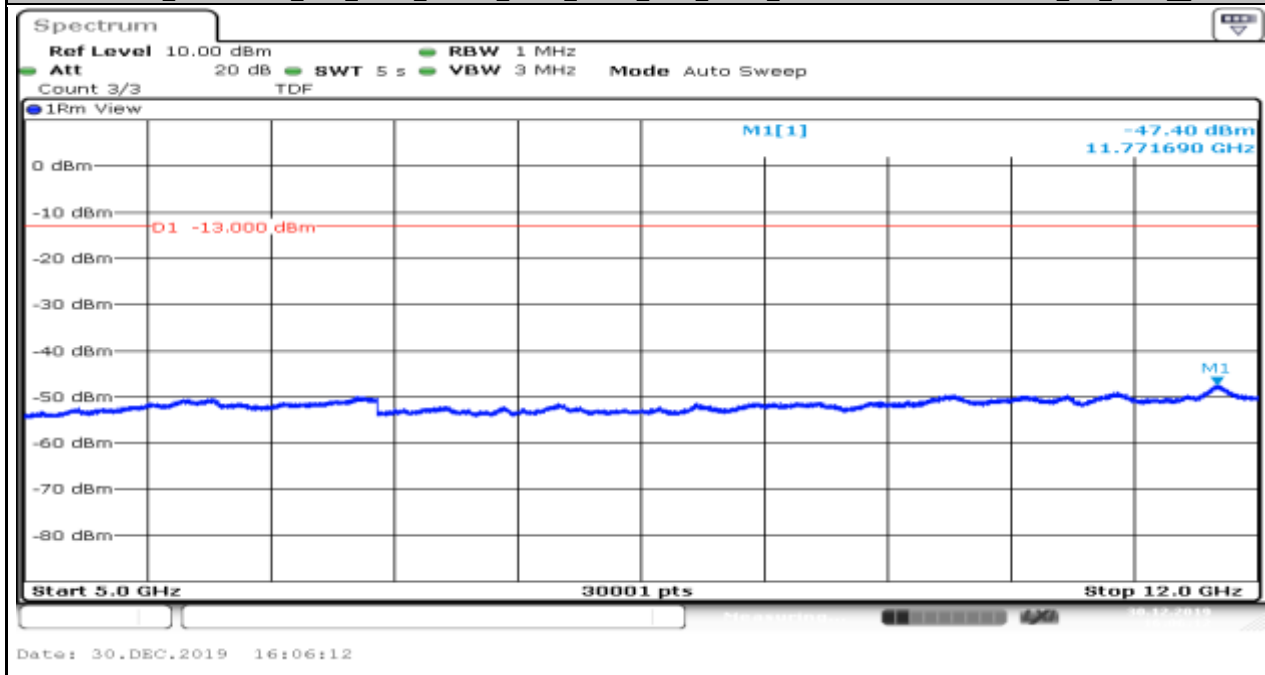


Band85_Stand-Alone_NaN_BPSK_134181_1@11_15kHz_1000_5000_1000~5000MHz@-37.74dBm_-13_PASS_

Produkte
Products



Band85_Stand-Alone_NaN_BPSK_134181_1@11_15kHz_5000_12000_5000-12000MHz@-47.4dBm_-13_PASS



Produkte
Products

Appendix K.6: Frequency Stability for NB

Test Result

Voltage												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	LV	NT	-7.24	-0.01024	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	LV	NT	-8.41	-0.011895	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	NT	-7.6	-0.01075	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	HV	NT	-9.76	-0.013805	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	LV	NT	-8.67	-0.012263	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	NT	-10.74	-0.015191	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	HV	NT	-6.68	-0.009448	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	LV	NT	-6.91	-0.009774	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	HV	NT	-7.52	-0.010636	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	NT	-9.04	-0.012786	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	HV	NT	-6.29	-0.008897	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	NT	-7.68	-0.010863	±2.5	PASS

Temperature												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	-30	-8.4	-0.011881	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	50	-9.48	-0.013409	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	85	-6.17	-0.008727	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	80	-8.84	-0.012504	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	70	-9.31	-0.013168	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	60	-9.3	-0.013154	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	40	-9.27	-0.013112	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	30	-9.71	-0.013734	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	20	-6.97	-0.009859	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	10	-10	-0.014144	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	0	-7.81	-0.011047	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	-20	-9.23	-0.013055	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	-10	-8.48	-0.011994	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	-40	-7.82	-0.011061	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	-30	-9.1	-0.012871	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	-20	-7.65	-0.01082	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	-10	-6.71	-0.009491	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	0	-9.18	-0.012984	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	10	-9.68	-0.013692	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	20	-7.55	-0.010679	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	30	-7.44	-0.010523	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	40	-5.68	-0.008034	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	50	-9.24	-0.013069	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	60	-8.47	-0.01198	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	15kHz	NV	-40	-7.85	-0.011103	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	80	-5.74	-0.008119	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	80	-4.86	-0.006874	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	70	-7.34	-0.010382	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	85	-3.96	-0.005601	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@11	15kHz	NV	85	-9.11	-0.012885	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	-40	-6.11	-0.008642	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	-30	-6.37	-0.00901	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	-20	-4.76	-0.006733	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	-10	-6.61	-0.009349	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	0	-6.21	-0.008784	±2.5	PASS

Appendix K
50315831 001
Page 59 of 59



Produkte
Products

Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	10	-4.85	-0.00686	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	20	-4.89	-0.006917	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	30	-6.11	-0.008642	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	40	-4.38	-0.006195	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	50	-4.69	-0.006634	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	-40	-7.85	-0.011103	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	70	-6.14	-0.008685	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	85	-4.41	-0.006238	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	-30	-5.54	-0.007836	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	-20	-5.64	-0.007977	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	-10	-5.56	-0.007864	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	0	-6.35	-0.008982	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	10	-5.05	-0.007143	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	20	-5.48	-0.007751	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	30	-3.59	-0.005078	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	40	-4.48	-0.006337	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	50	-4.08	-0.005771	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	60	-4.89	-0.006917	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	70	-3.62	-0.00512	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@47	3.75kHz	NV	80	-4.41	-0.006238	±2.5	PASS
Band85	Stand-Alone	NaN	QPSK	134092	1@0	3.75kHz	NV	60	-4.82	-0.006818	±2.5	PASS