

Appendix C: Test Results of Band 5 for NB-IoT operation

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

Test Result

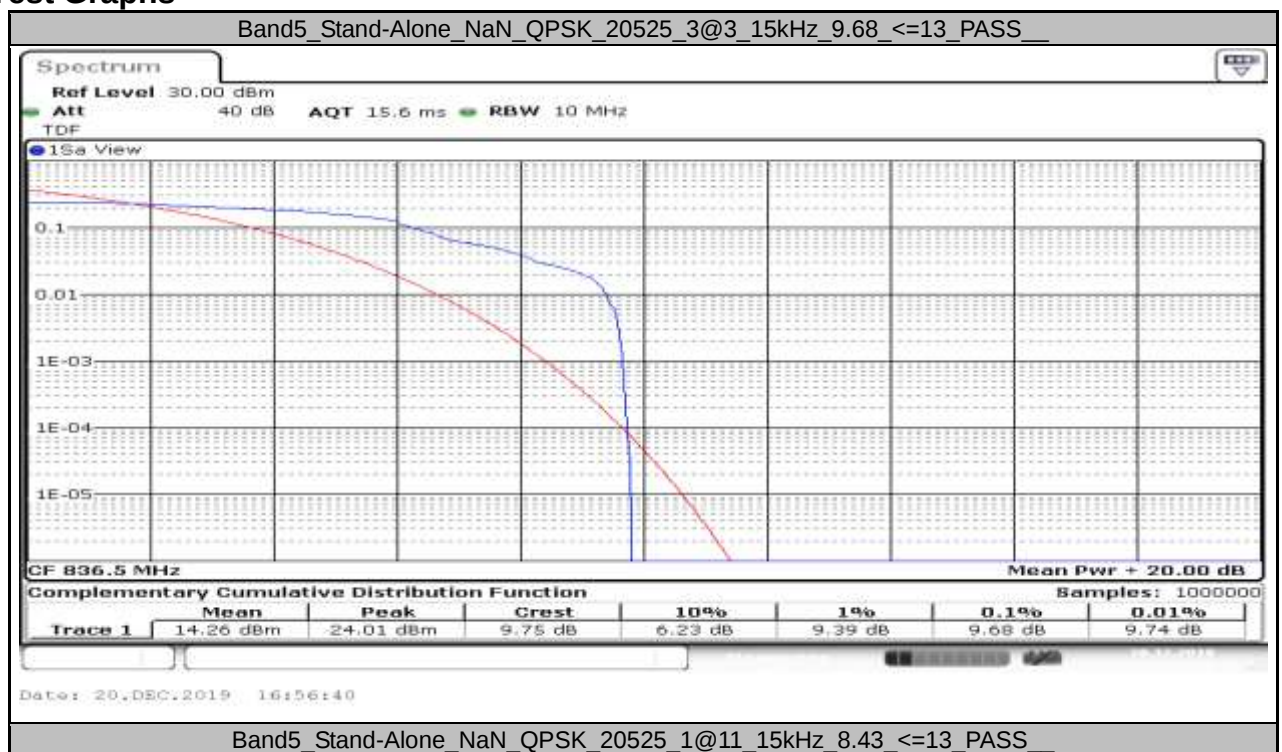
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result	ERP		Limit (watts)		Verdict
							dBm	dBm	Watts	FCC	ISED	
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	11.31	11.3	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	15kHz	11.01	11	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	3@3	15kHz	11.09	11.08	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@11	15kHz	11.14	11.13	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@47	3.75kHz	11.35	11.34	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	20.63	20.62	0.115	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	20.52	20.51	0.112	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	3@3	15kHz	21.01	21	0.126	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	20.88	20.87	0.122	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	20.95	20.94	0.124	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@47	3.75kHz	11.76	11.75	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	3@3	15kHz	11.17	11.16	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@11	15kHz	11.3	11.29	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	11.73	11.72	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	15kHz	11.37	11.36	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	3@3	15kHz	10.98	10.97	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@11	15kHz	10.82	10.81	0.012	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@47	3.75kHz	11.33	11.32	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	11.07	11.06	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	3.75kHz	11.27	11.26	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	3@3	15kHz	20.99	20.98	0.125	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@47	3.75kHz	20.51	20.5	0.112	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	20.76	20.75	0.119	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	3.75kHz	20.52	20.51	0.112	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	20.8	20.79	0.120	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	11.4	11.39	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@47	3.75kHz	11.61	11.6	0.014	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@11	15kHz	11.15	11.14	0.013	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	3.75kHz	11.71	11.7	0.015	7	11.5	PASS
Band5	Stand-Alone	NaN	BPSK	20649	3@3	15kHz	11.06	11.05	0.013	7	11.5	PASS

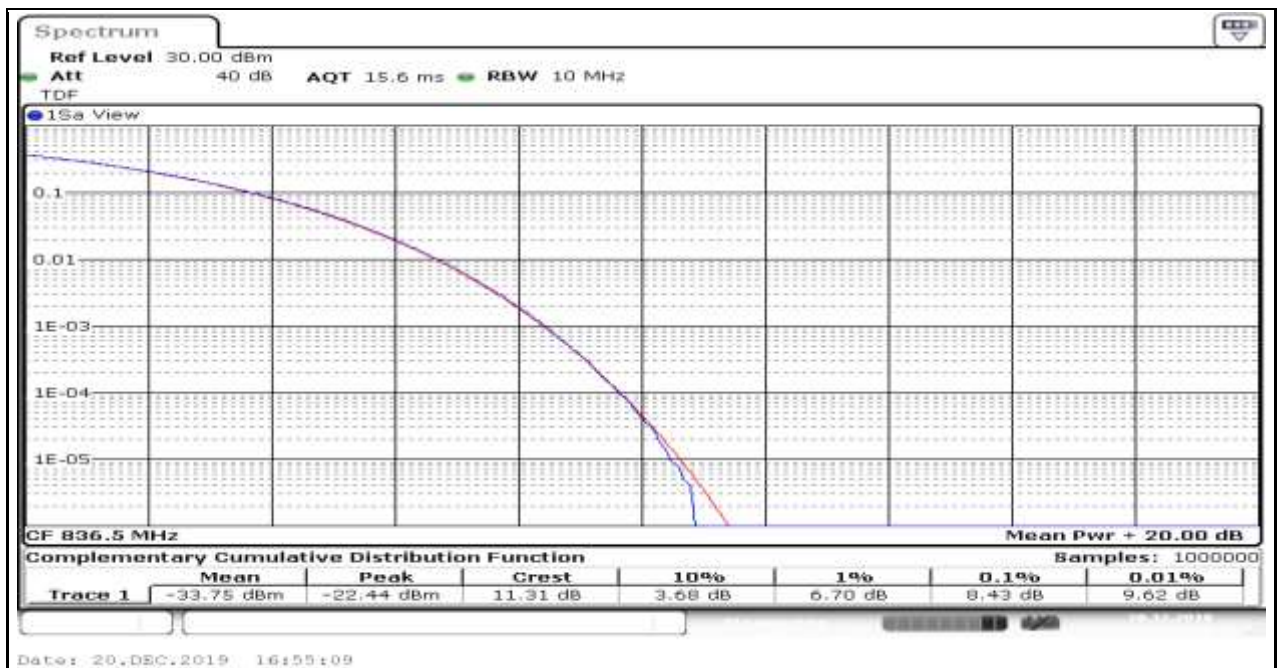
Appendix C.2: Peak-to-Average Ratio (CCDF) for NB

Test Result

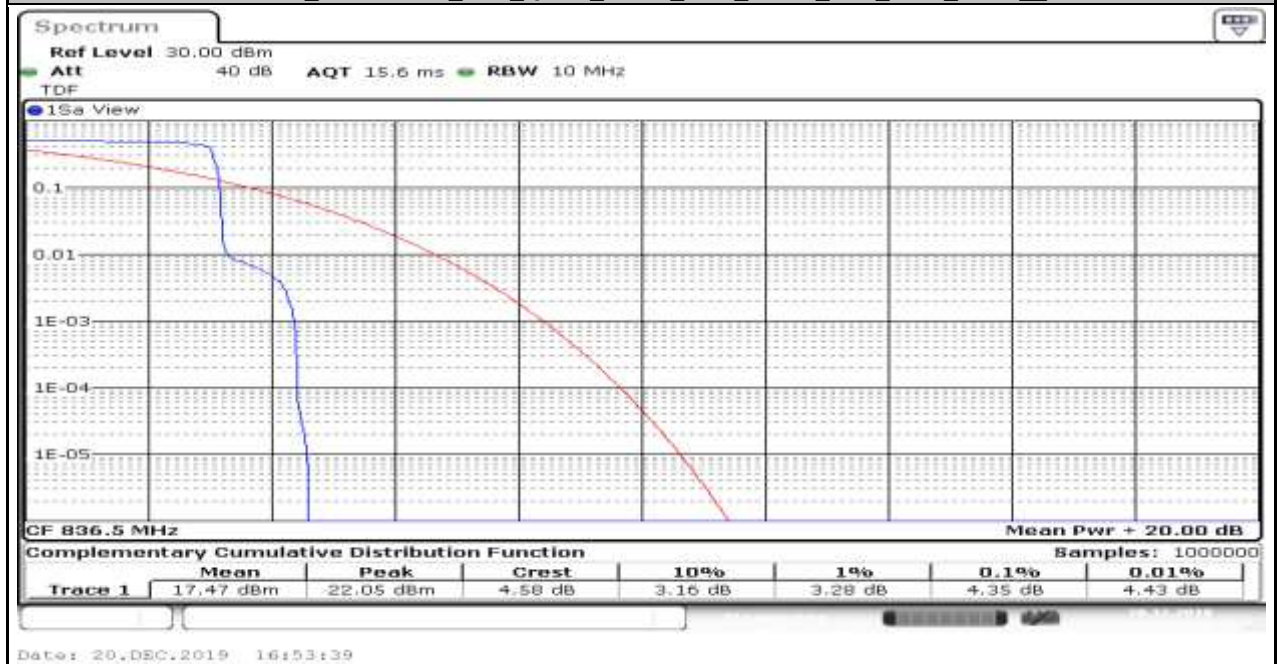
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
Band5	Stand-Alone	NaN	QPSK	20525	3@3	15kHz	9.68	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	8.43	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	4.35	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	5.1	<=13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	6.99	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	3@3	15kHz	9.59	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	11.45	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	1.39	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@47	3.75kHz	7.39	<=13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	3.75kHz	1.74	<=13	PASS

Test Graphs

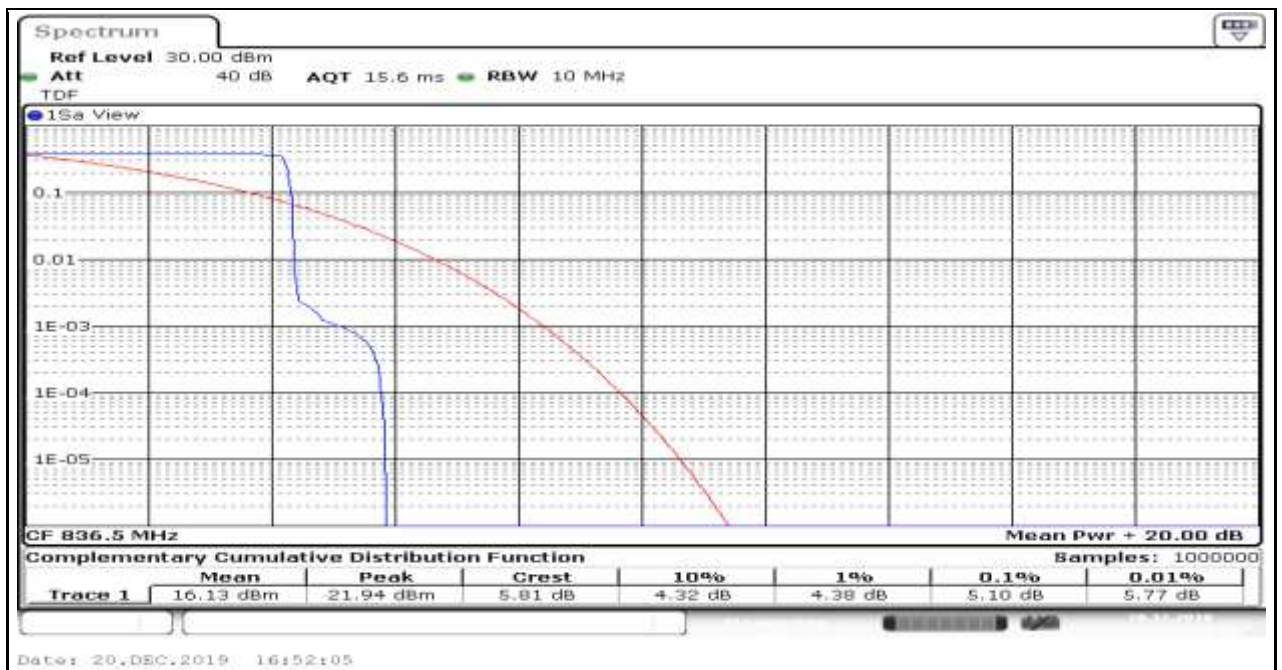




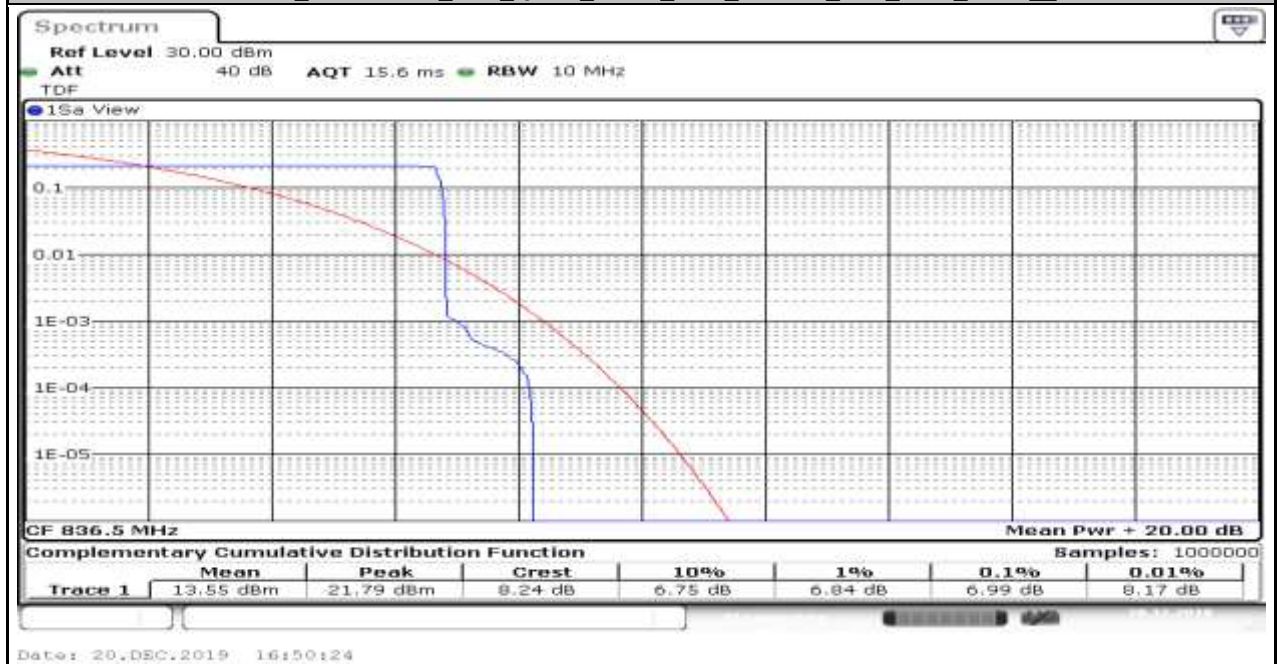
Band5_Stand-Alone_NaN_QPSK_20525_1@0_15kHz_4.35_<=13_PASS_



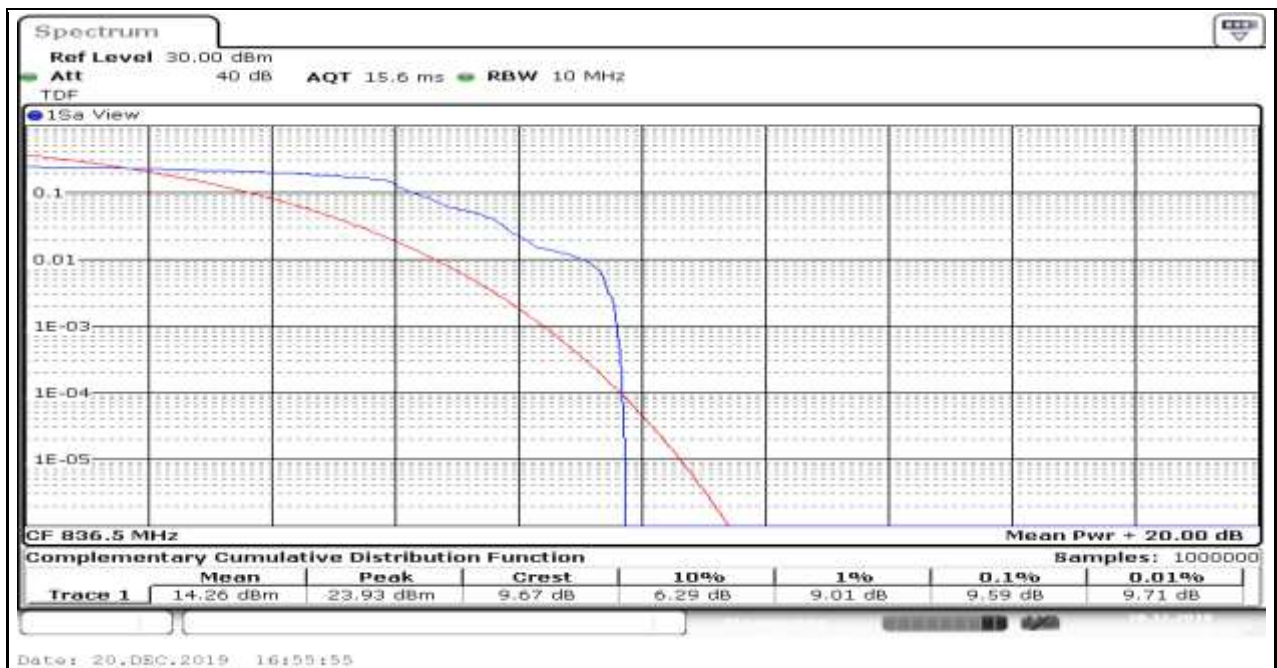
Band5_Stand-Alone_NaN_QPSK_20525_1@47_3.75kHz_5.1_<=13_PASS_



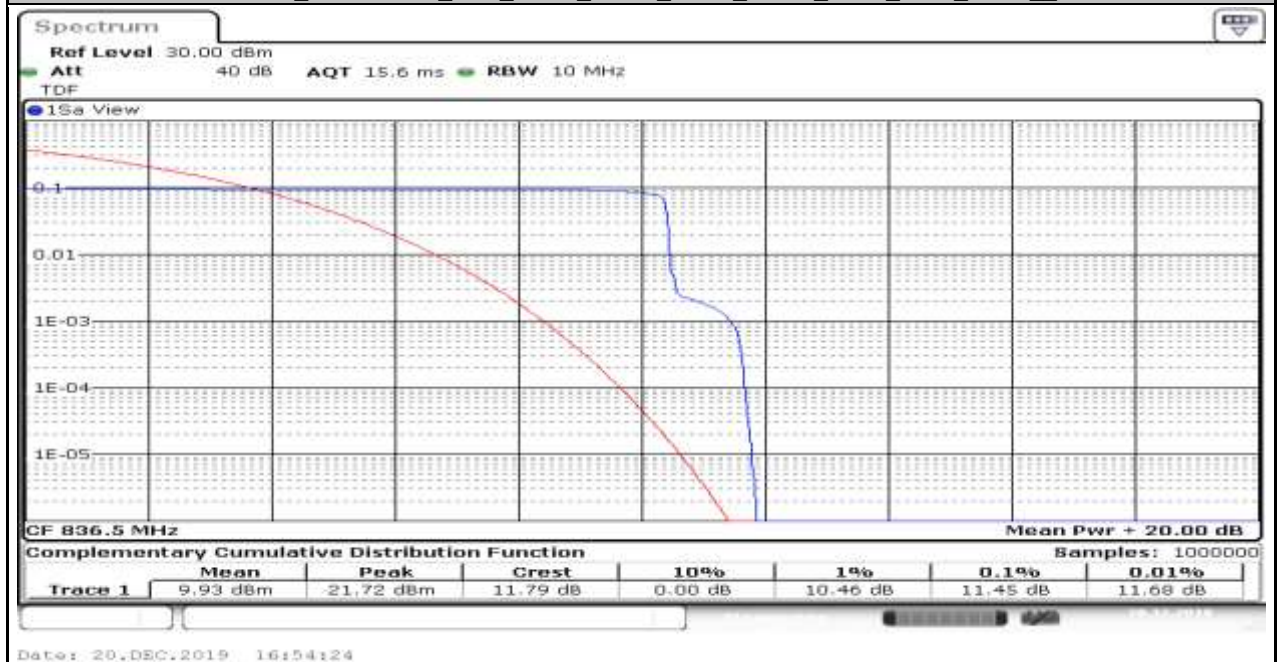
Band5_Stand-Alone_NaN_QPSK_20525_1@0_3.75kHz_6.99_<=13_PASS__



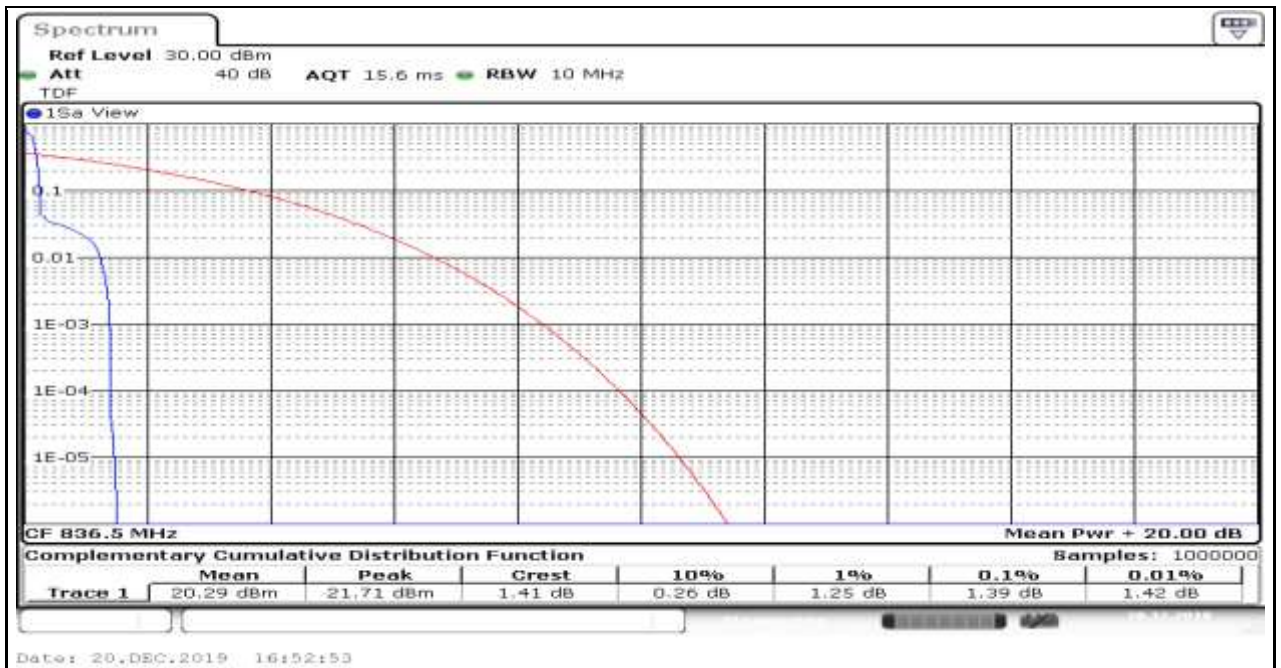
Band5_Stand-Alone_NaN_BPSK_20525_3@3_15kHz_9.59_<=13_PASS__



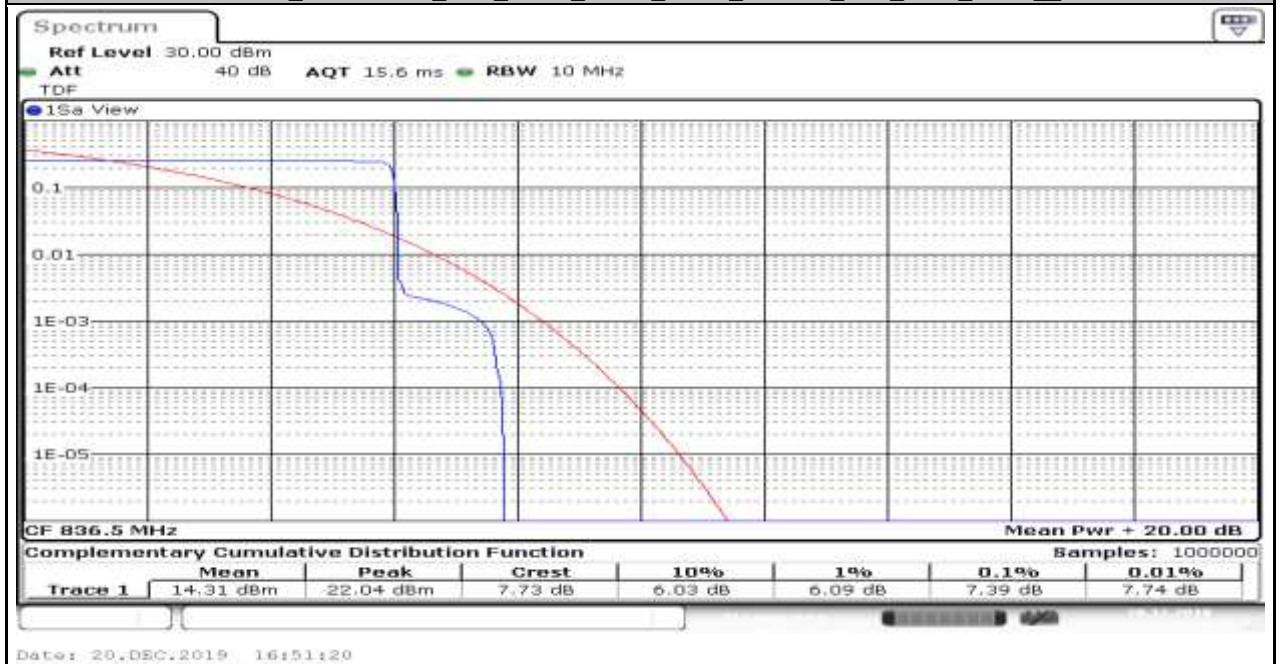
Band5_Stand-Alone_NaN_BPSK_20525_1@11_15kHz_11.45_<=13_PASS_



Band5_Stand-Alone_NaN_BPSK_20525_1@0_15kHz_1.39_<=13_PASS_

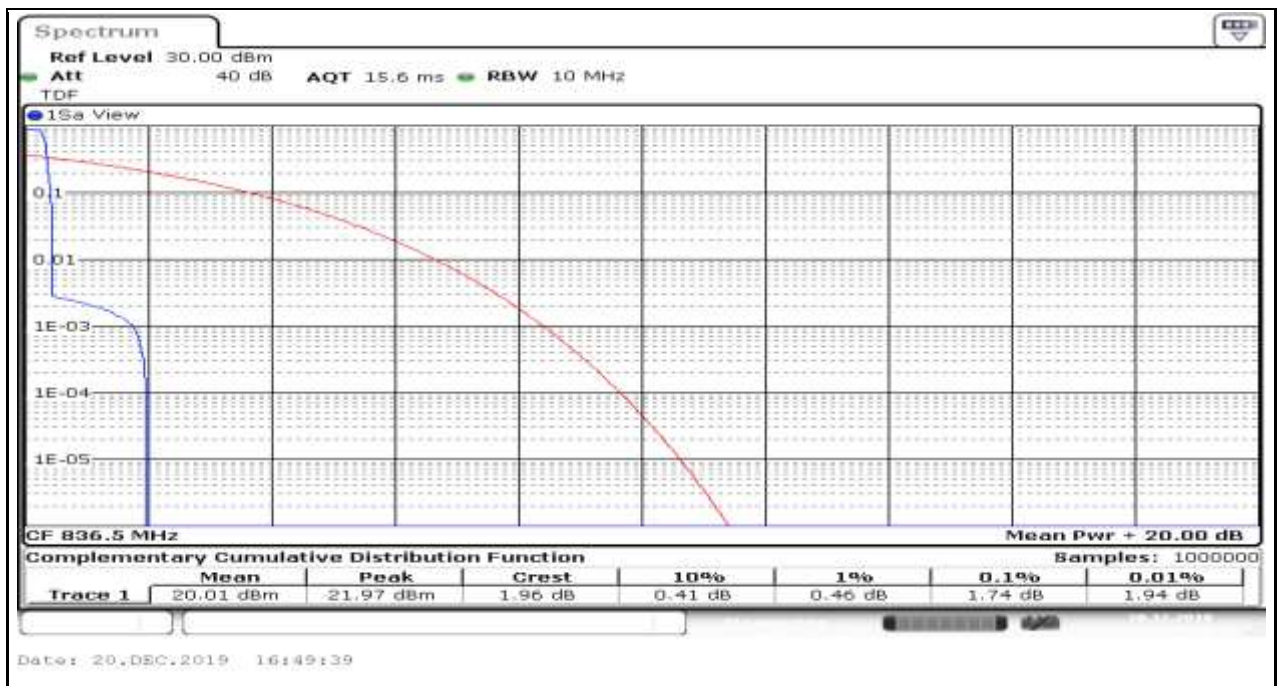


Band5_Stand-Alone_NaN_BPSK_20525_1@47_3.75kHz_7.39_<=13_PASS_



Band5_Stand-Alone_NaN_BPSK_20525_1@0_3.75kHz_1.74_<=13_PASS_

Produkte
Products

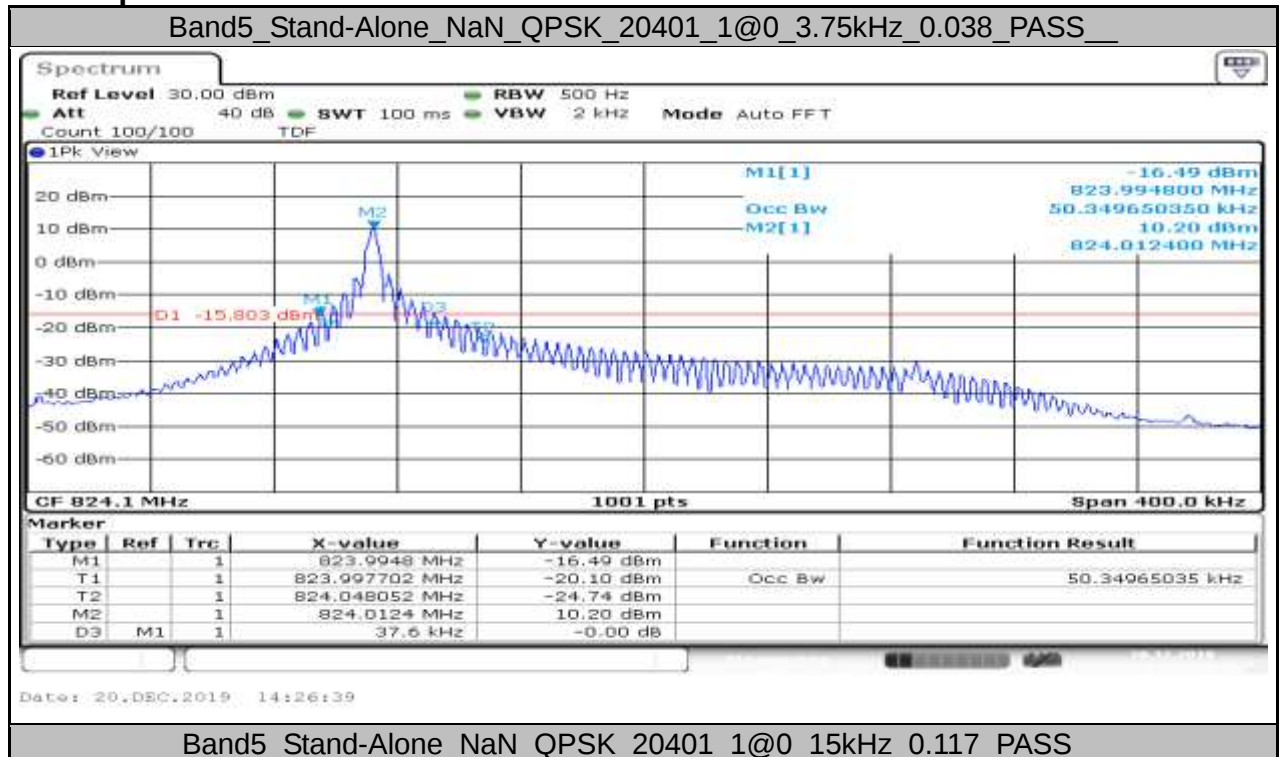


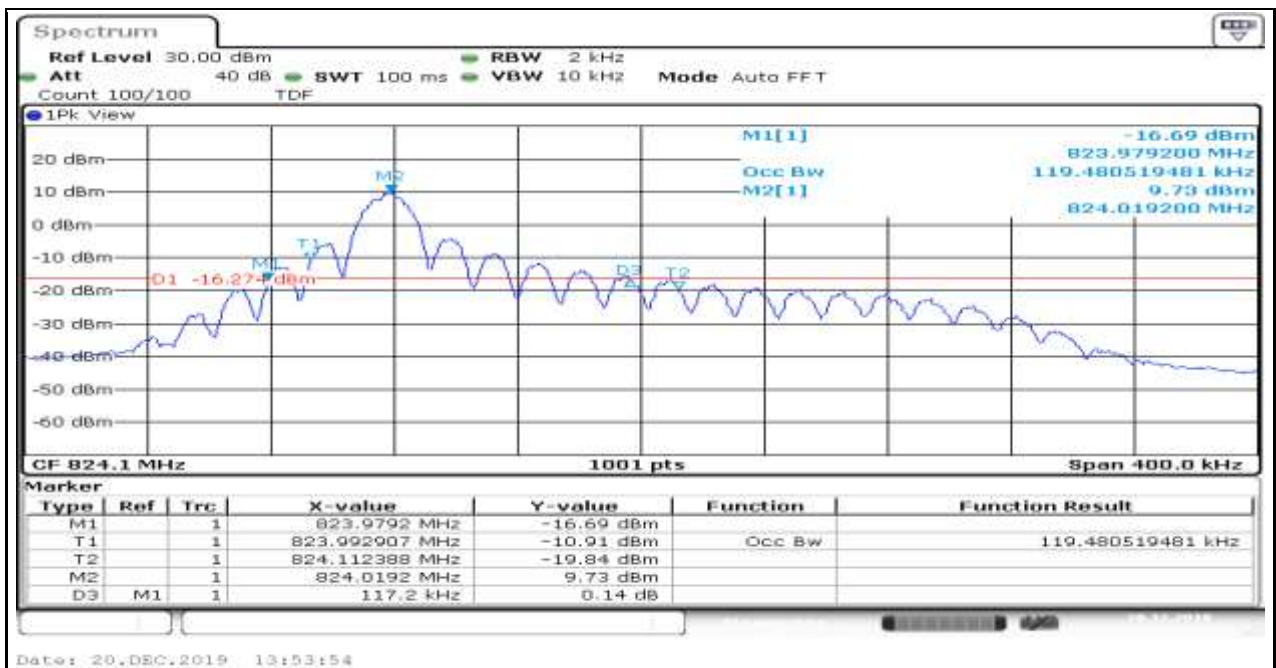
Appendix C.3: 26dB Emission Bandwidth and Occupied Bandwidth for NB

Test Result

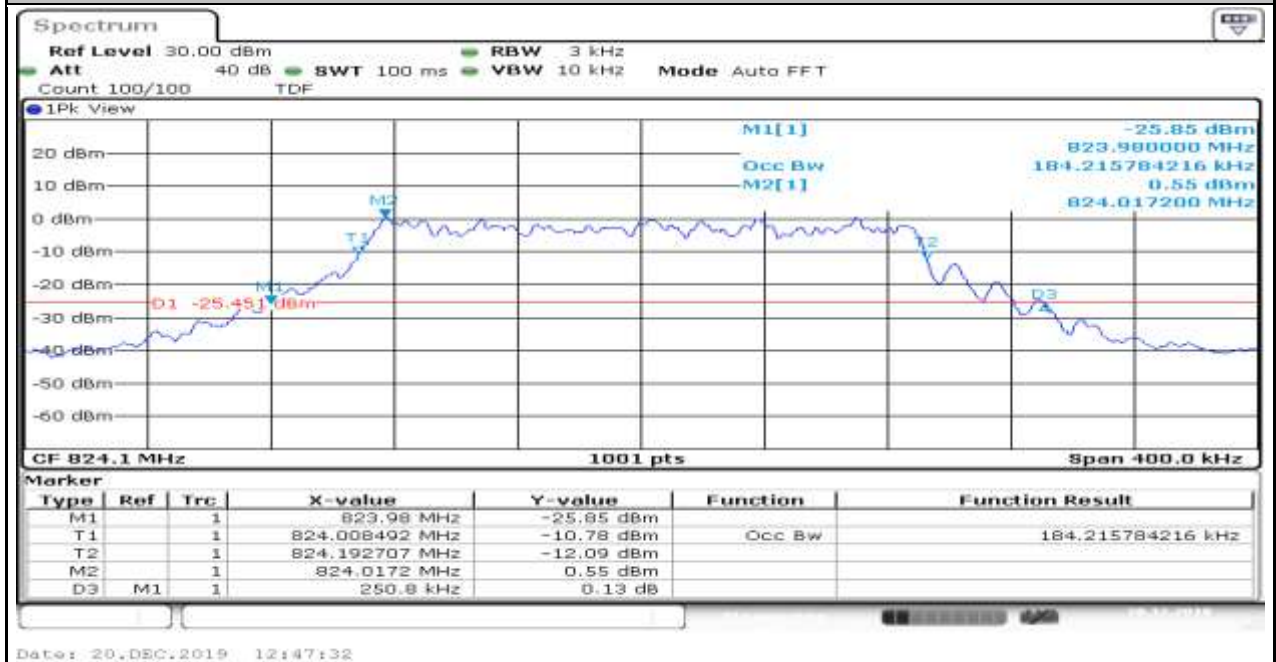
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Verdict
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	0.038	0.050	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	15kHz	0.117	0.119	PASS
Band5	Stand-Alone	NaN	QPSK	20401	12@0	15kHz	0.251	0.184	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	0.038	0.052	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	0.117	0.119	PASS
Band5	Stand-Alone	NaN	QPSK	20525	12@0	15kHz	0.250	0.184	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	0.038	0.050	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	15kHz	0.117	0.119	PASS
Band5	Stand-Alone	NaN	QPSK	20649	12@0	15kHz	0.251	0.184	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	3.75kHz	0.032	0.053	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	0.106	0.127	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	3.75kHz	0.032	0.054	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	0.106	0.127	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	3.75kHz	0.032	0.054	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	0.106	0.127	PASS

Test Graphs

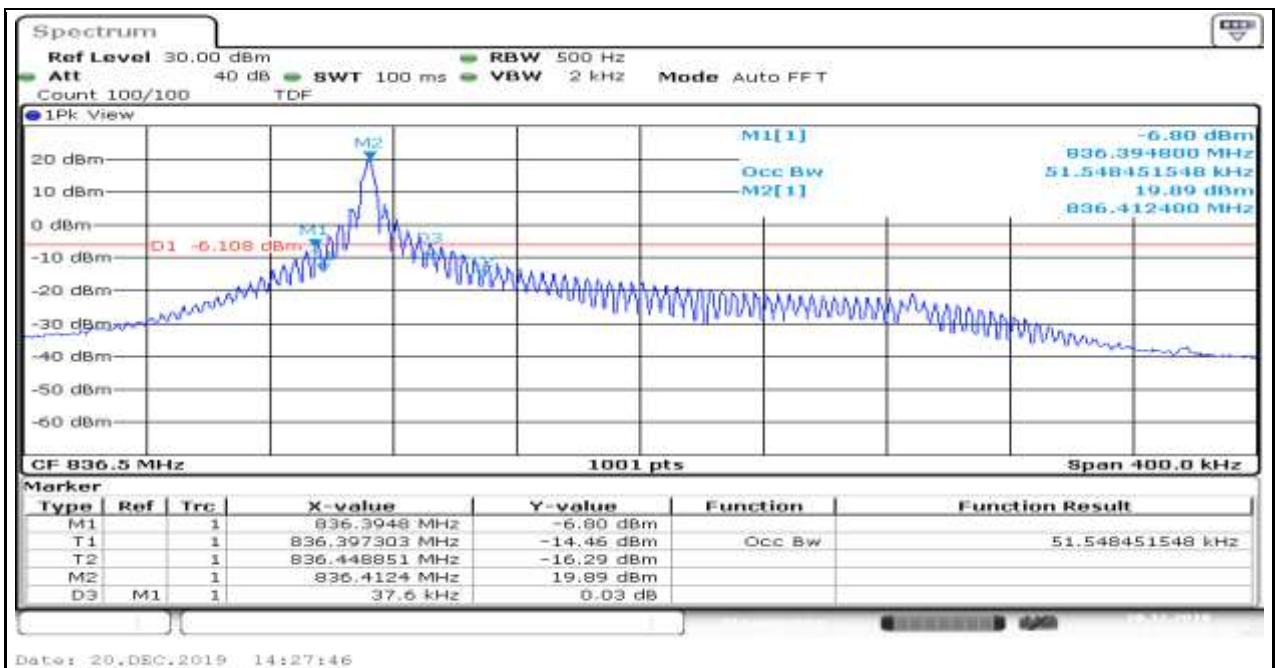




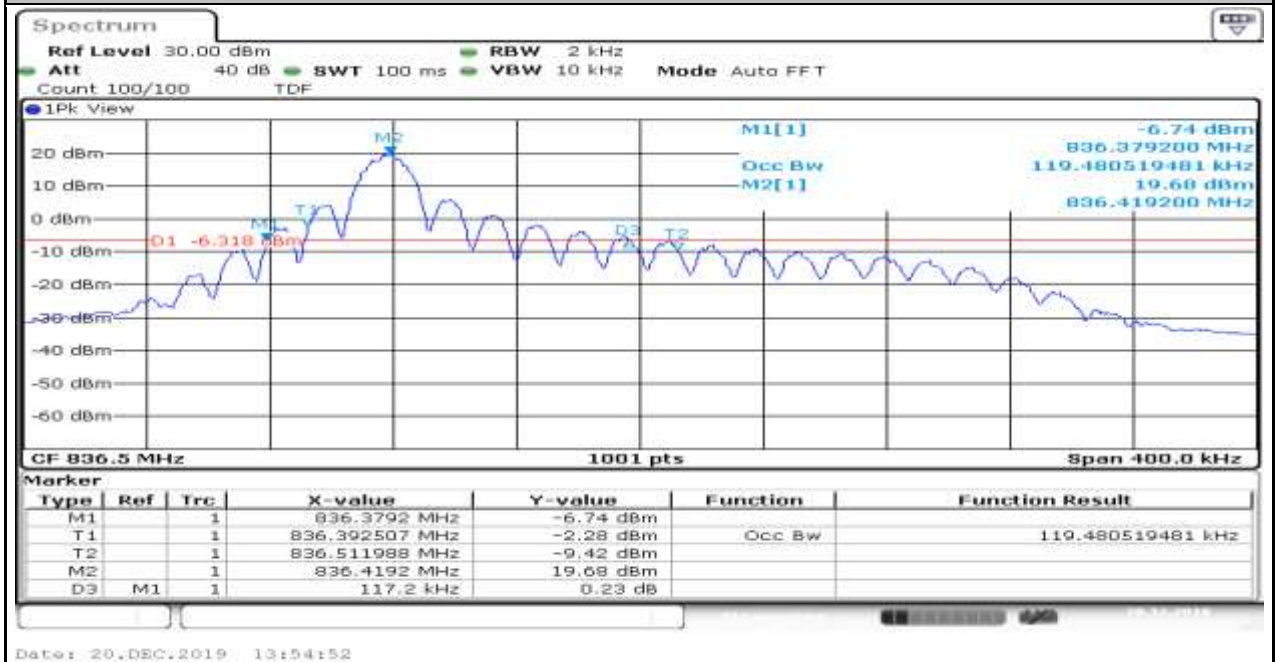
Band5_Stand-Alone_NaN_QPSK_20401_12@0_15kHz_0.251_PASS__



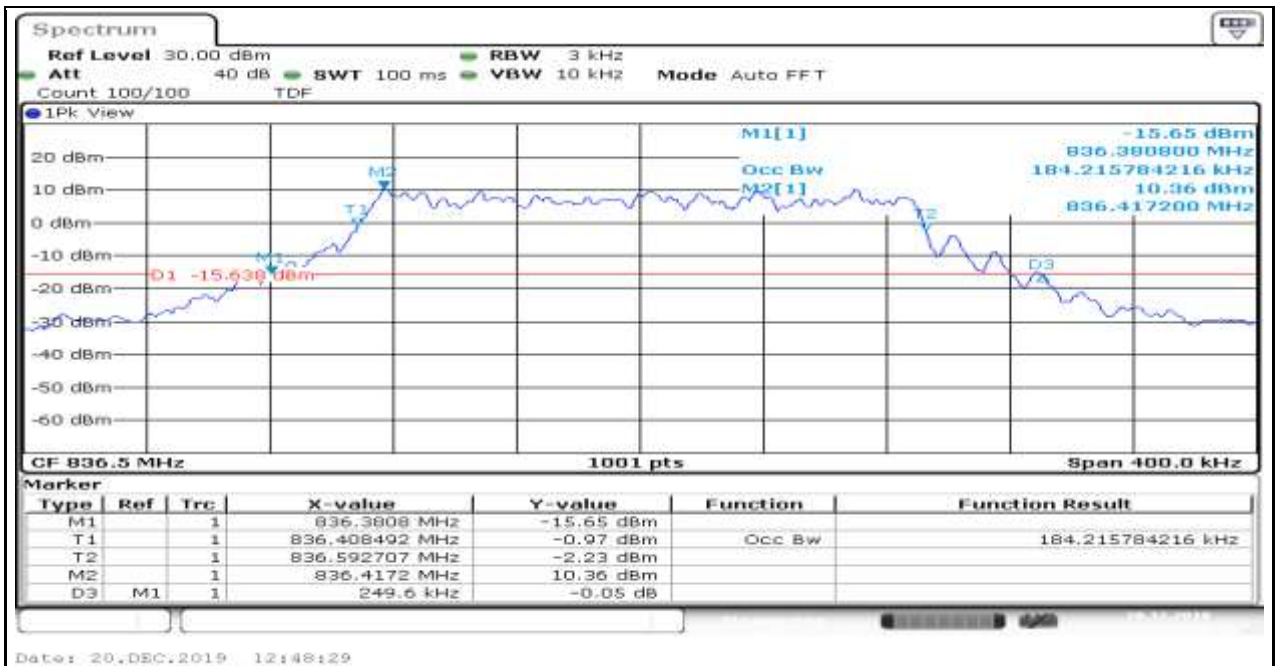
Band5_Stand-Alone_NaN_QPSK_20525_1@0_3.75kHz_0.038_PASS__



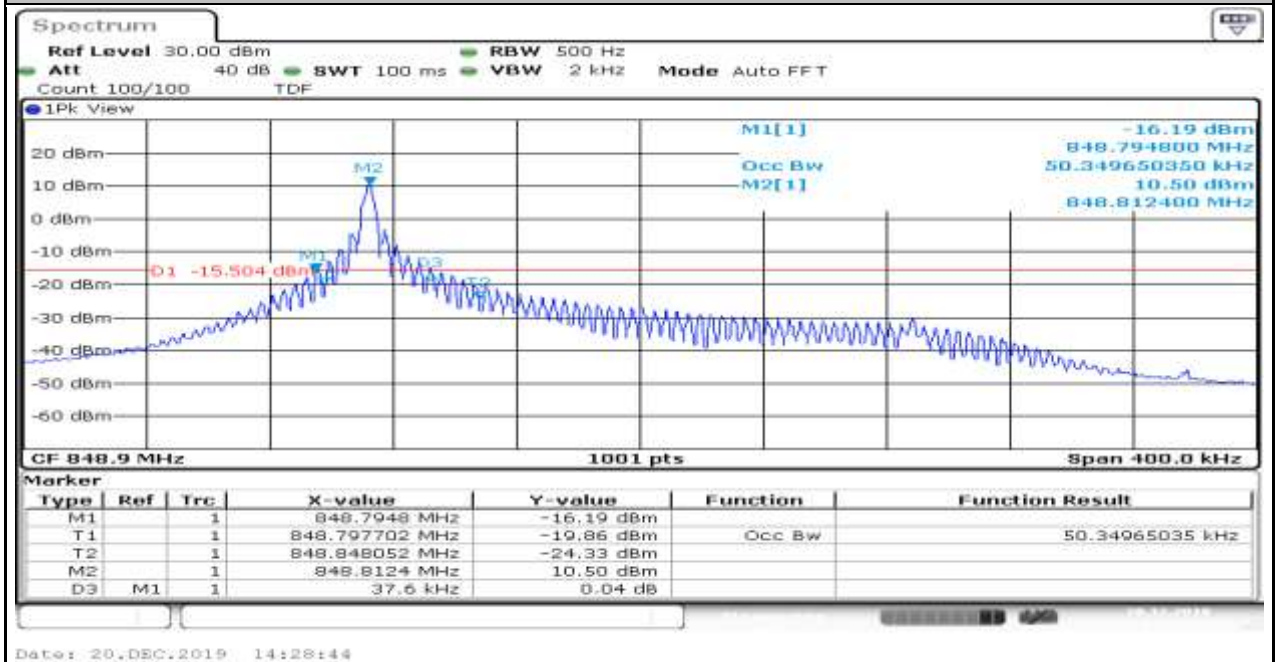
Band5_Stand-Alone_NaN_QPSK_20525_1@0_15kHz_0.117_PASS



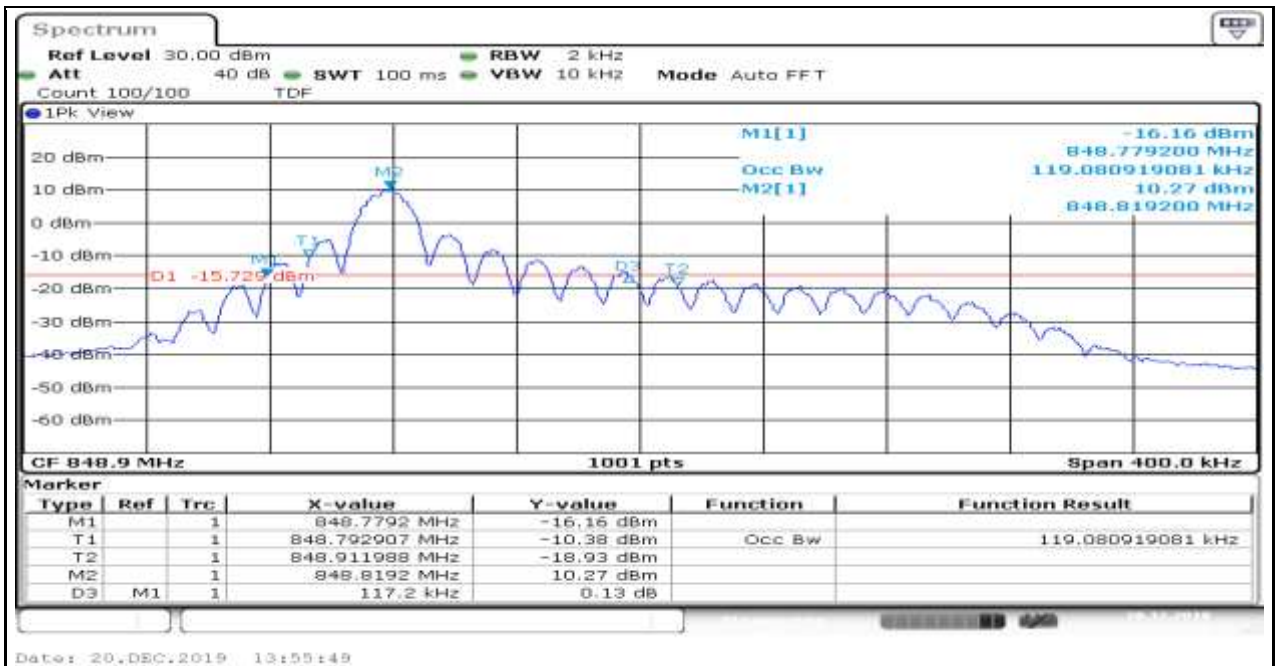
Band5_Stand-Alone_NaN_QPSK_20525_12@0_15kHz_0.250_PASS



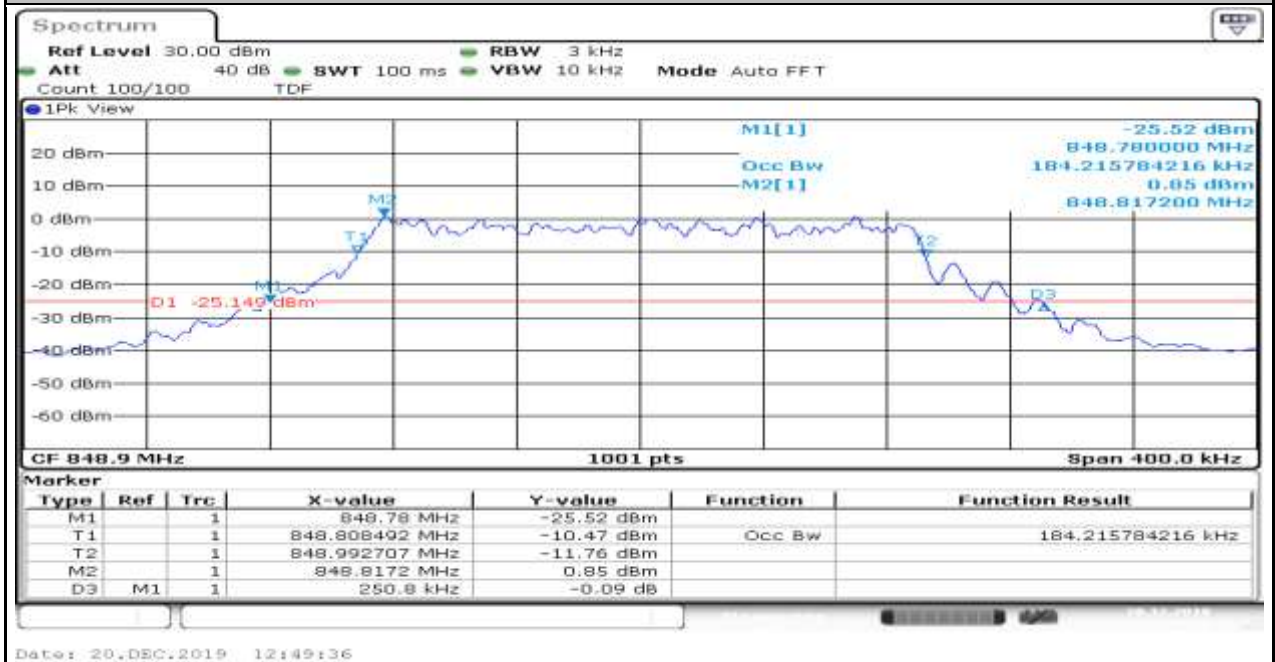
Band5_Stand-Alone_NaN_QPSK_20649_1@0_3.75kHz_0.038_PASS__



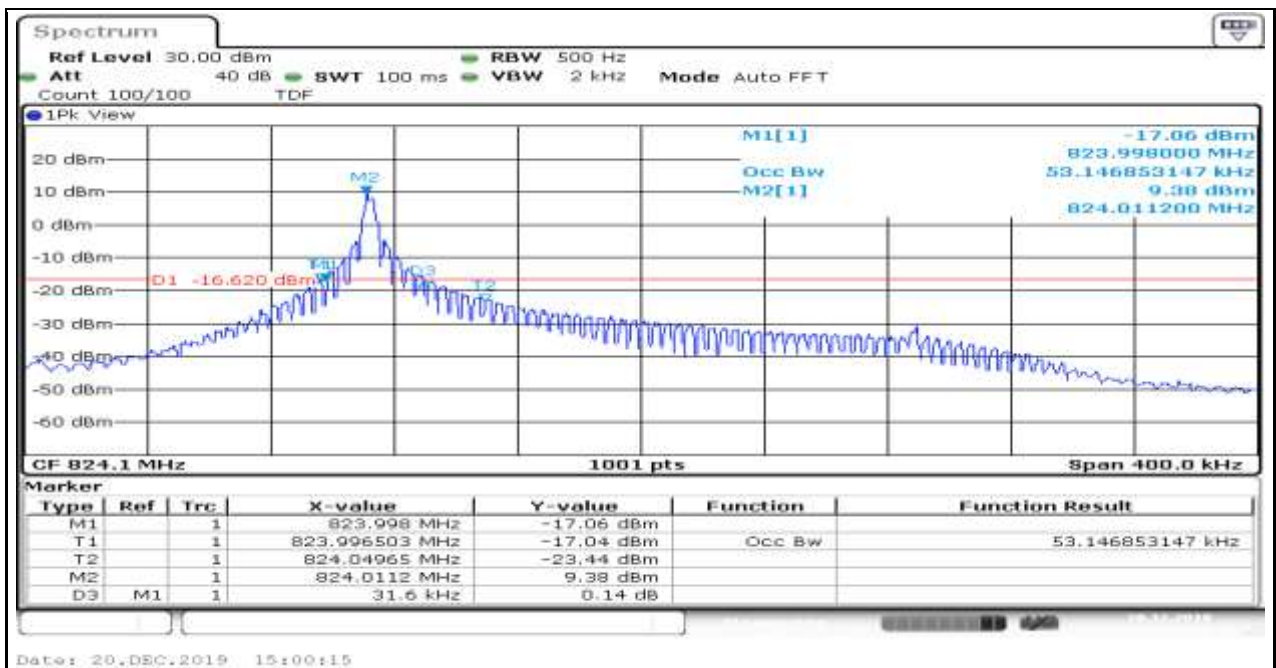
Band5_Stand-Alone_NaN_QPSK_20649_1@0_15kHz_0.117_PASS__



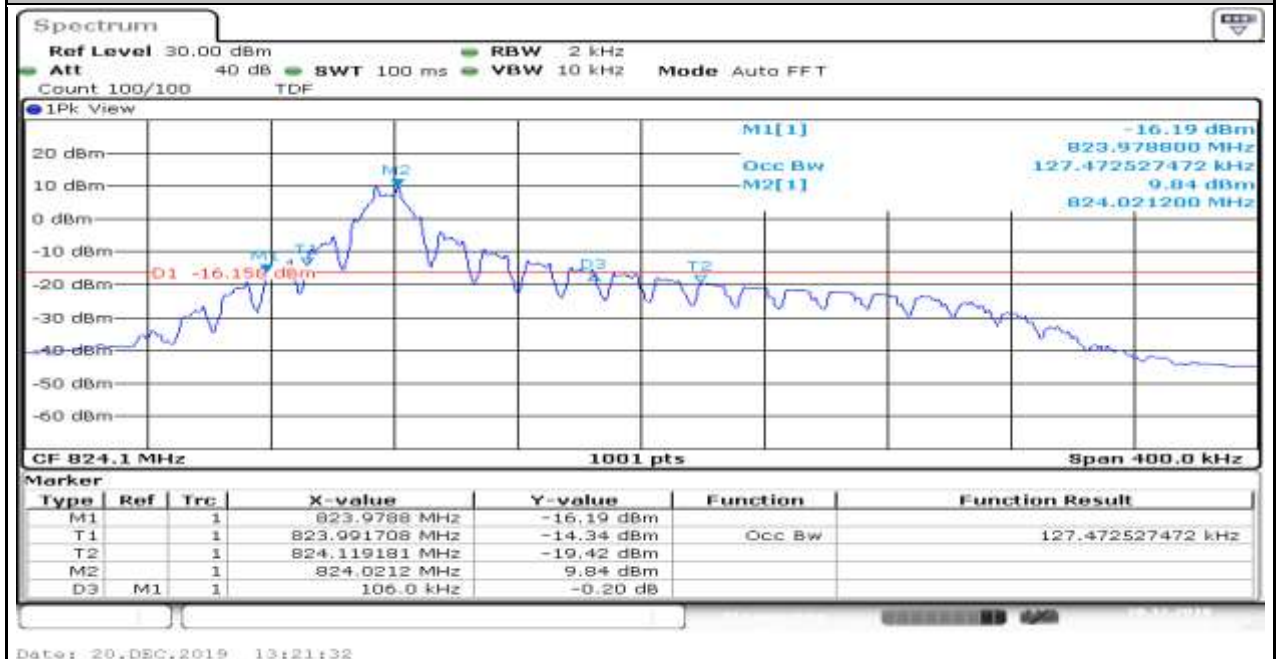
Band5_Stand-Alone_NaN_QPSK_20649_12@0_15kHz_0.251_PASS



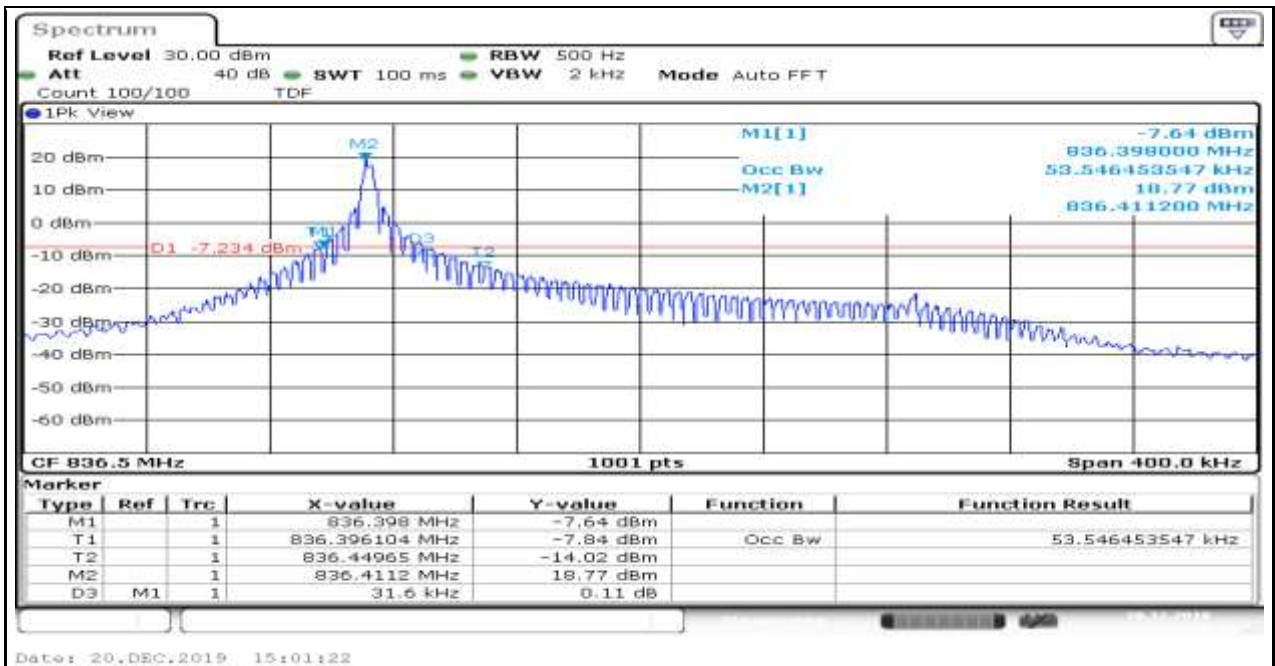
Band5_Stand-Alone_NaN_BPSK_20401_1@0_3.75kHz_0.032_PASS



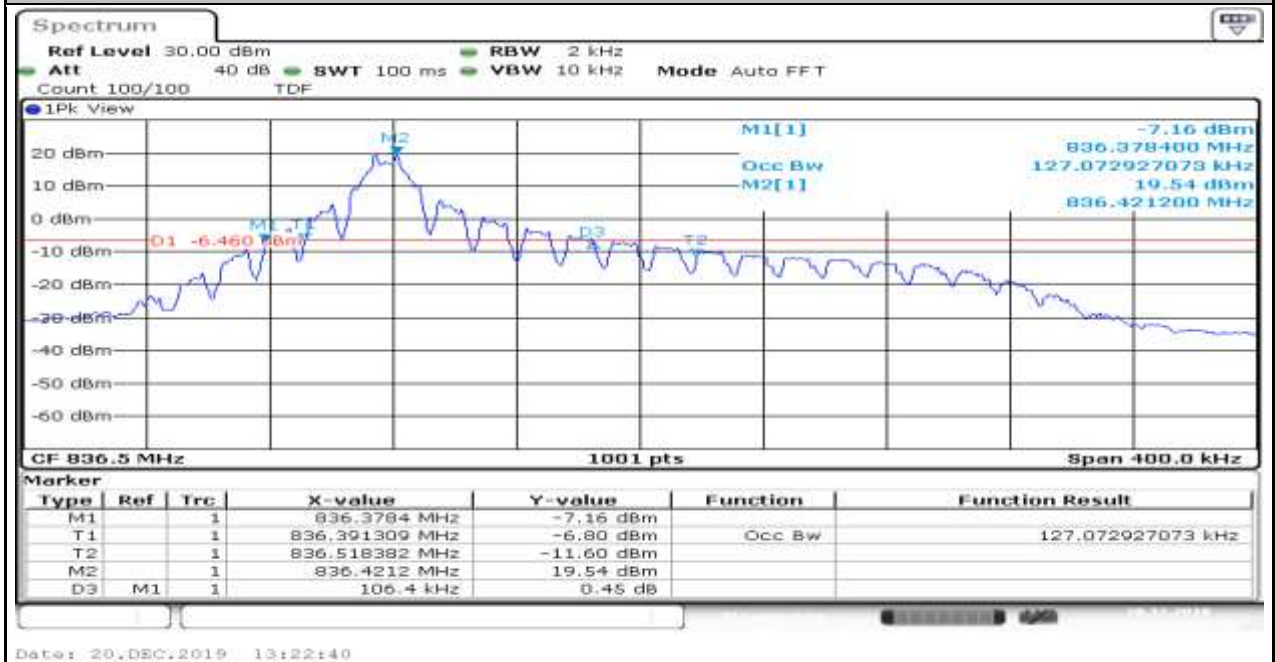
Band5_Stand-Alone_NaN_BPSK_20401_1@0_15kHz_0.106_PASS



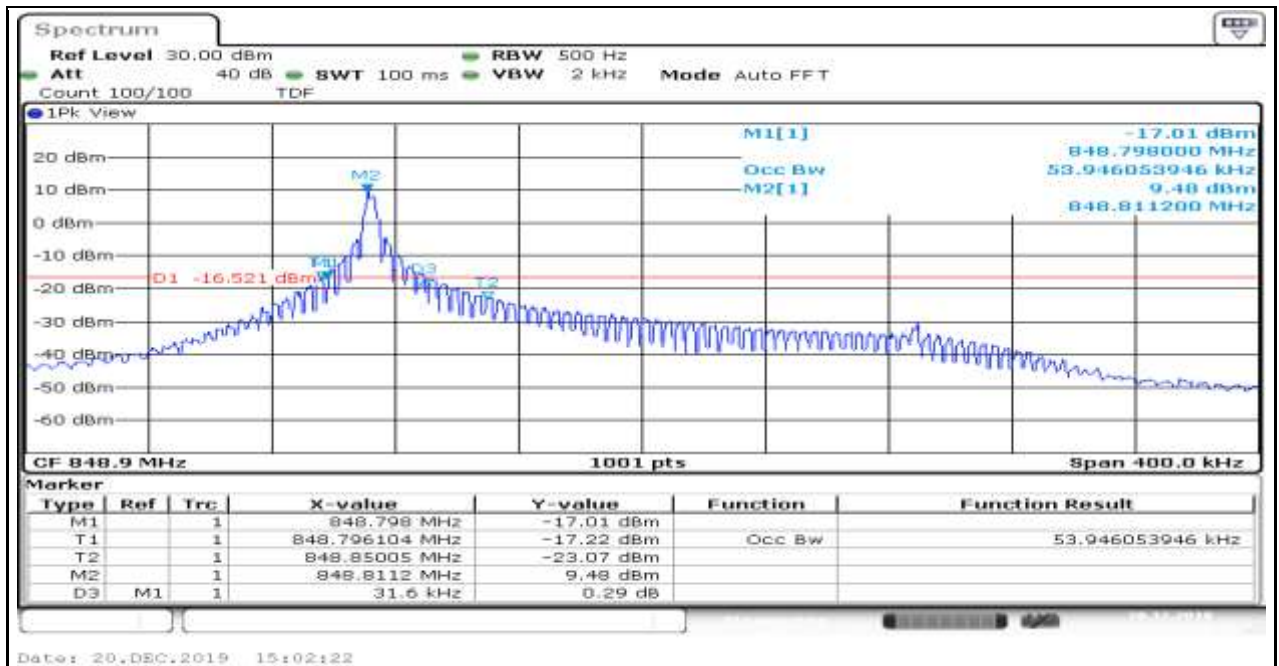
Band5_Stand-Alone_NaN_BPSK_20525_1@0_3.75kHz_0.032_PASS



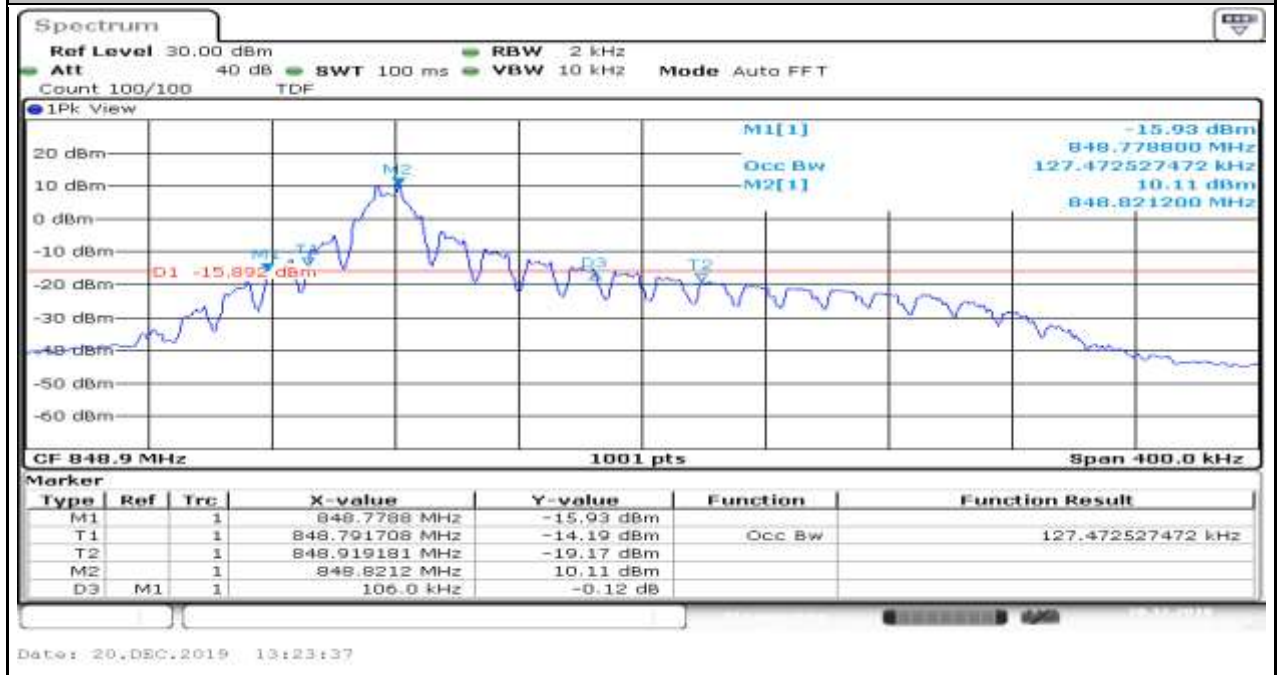
Band5_Stand-Alone_NaN_BPSK_20525_1@0_15kHz_0.106_PASS



Band5_Stand-Alone_NaN_BPSK_20649_1@0_3.75kHz_0.032_PASS



Band5_Stand-Alone_NaN_BPSK_20649_1@0_15kHz_0.106_PASS

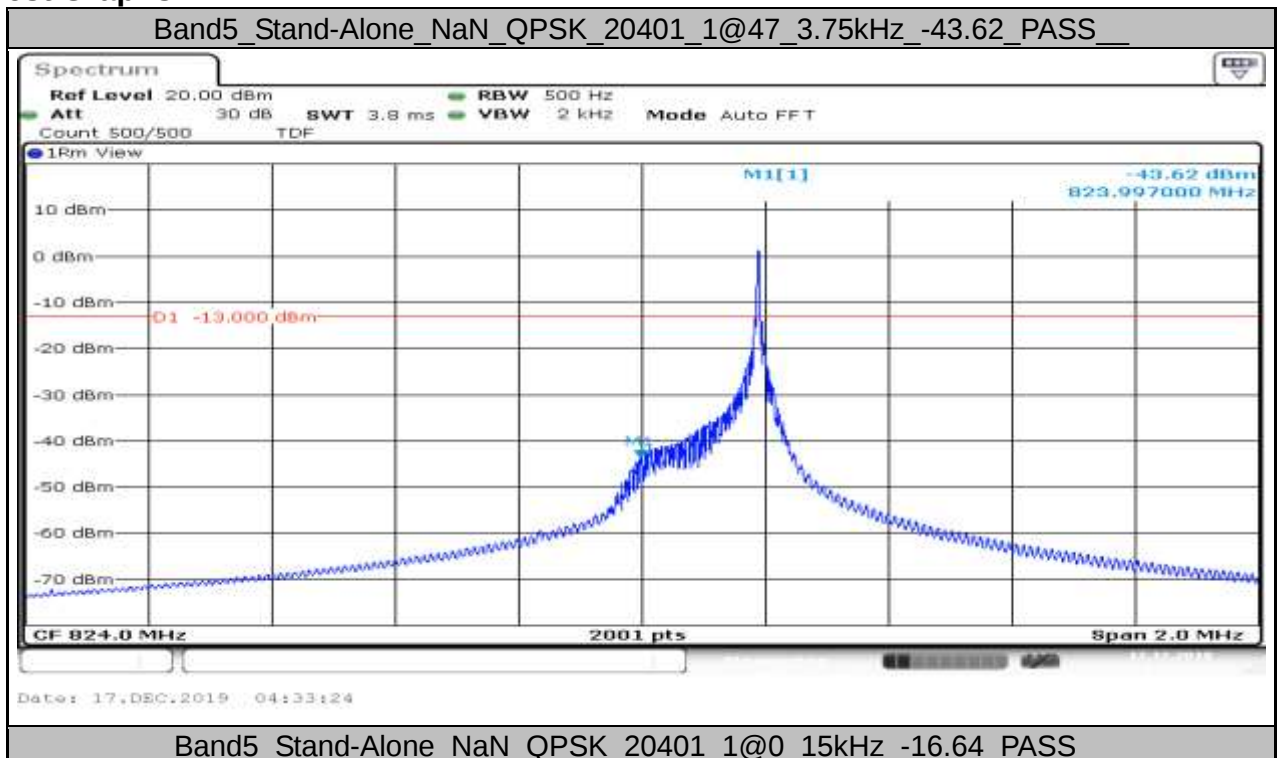


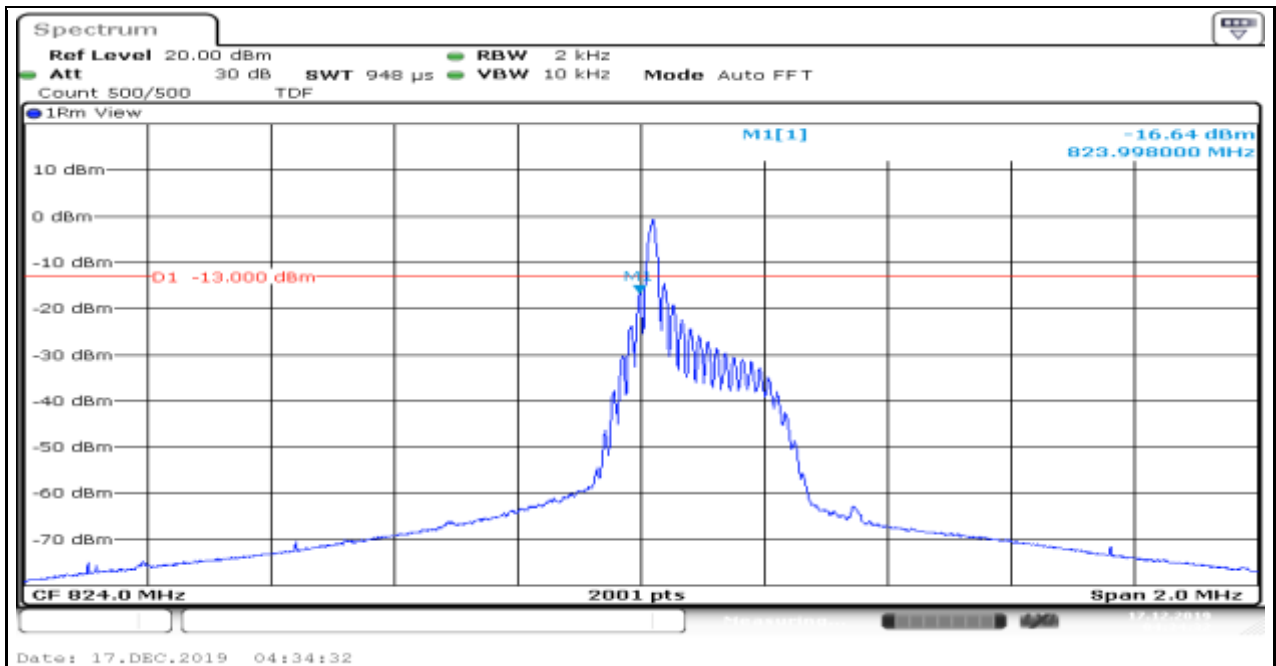
Appendix C.4: Band Edge for NB

Test Result

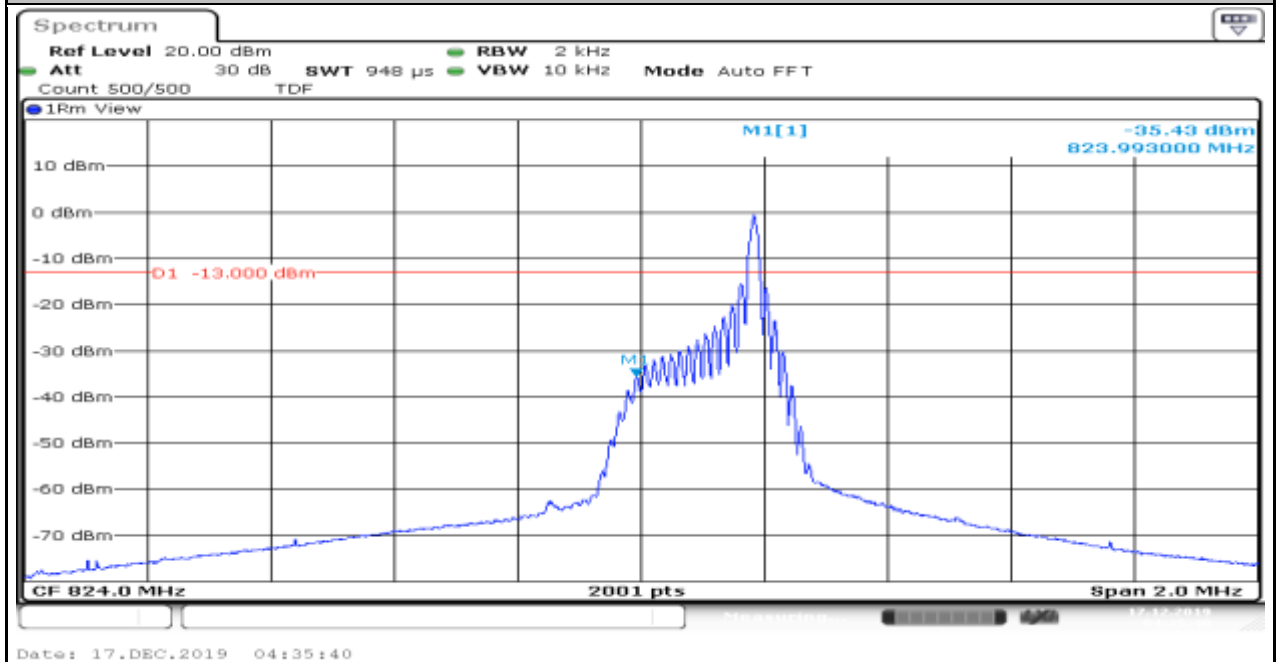
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
Band5	Stand-Alone	NaN	QPSK	20401	1@47	3.75kHz	-43.62	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	15kHz	-16.64	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@11	15kHz	-35.43	PASS
Band5	Stand-Alone	NaN	QPSK	20401	12@0	15kHz	-33.47	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	-22.32	PASS
Band5	Stand-Alone	NaN	QPSK	20649	12@0	15kHz	-29.95	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	-43.15	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@47	3.75kHz	-21.29	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@11	15kHz	-16.41	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	15kHz	-35.03	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	3.75kHz	-20.18	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@47	3.75kHz	-42.35	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	-14.63	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@11	15kHz	-33.20	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@11	15kHz	-14.78	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	3.75kHz	-42.00	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@47	3.75kHz	-20.50	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	-33.60	PASS

Test Graphs

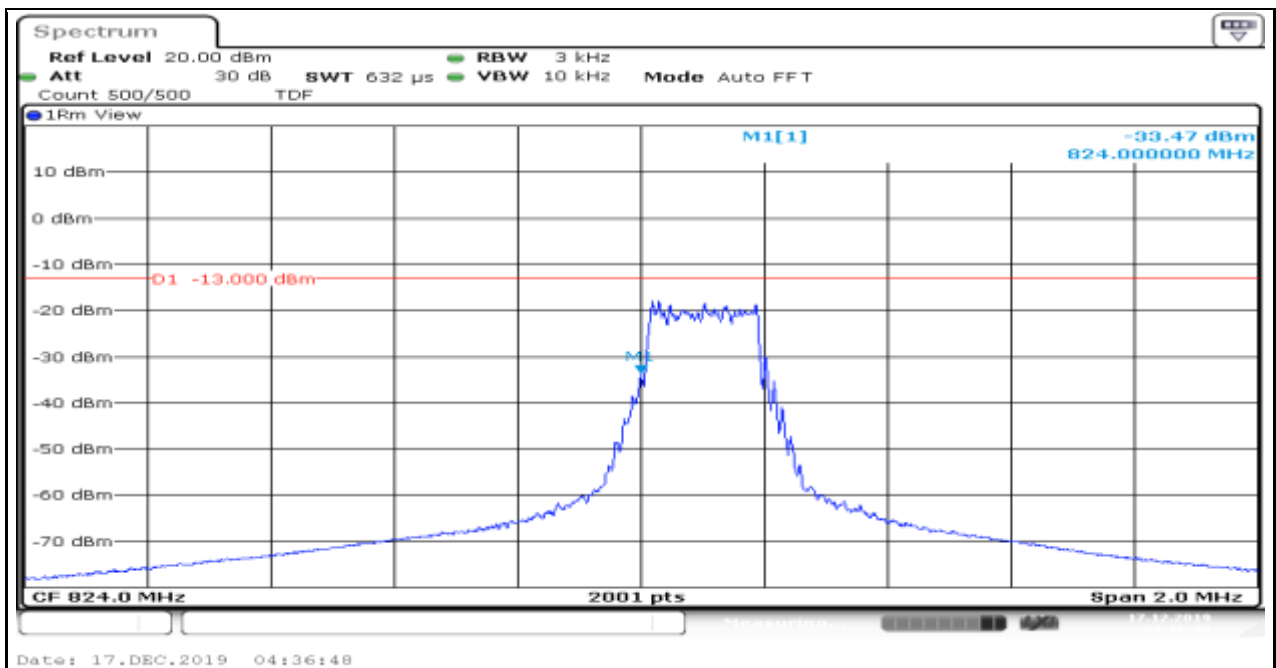




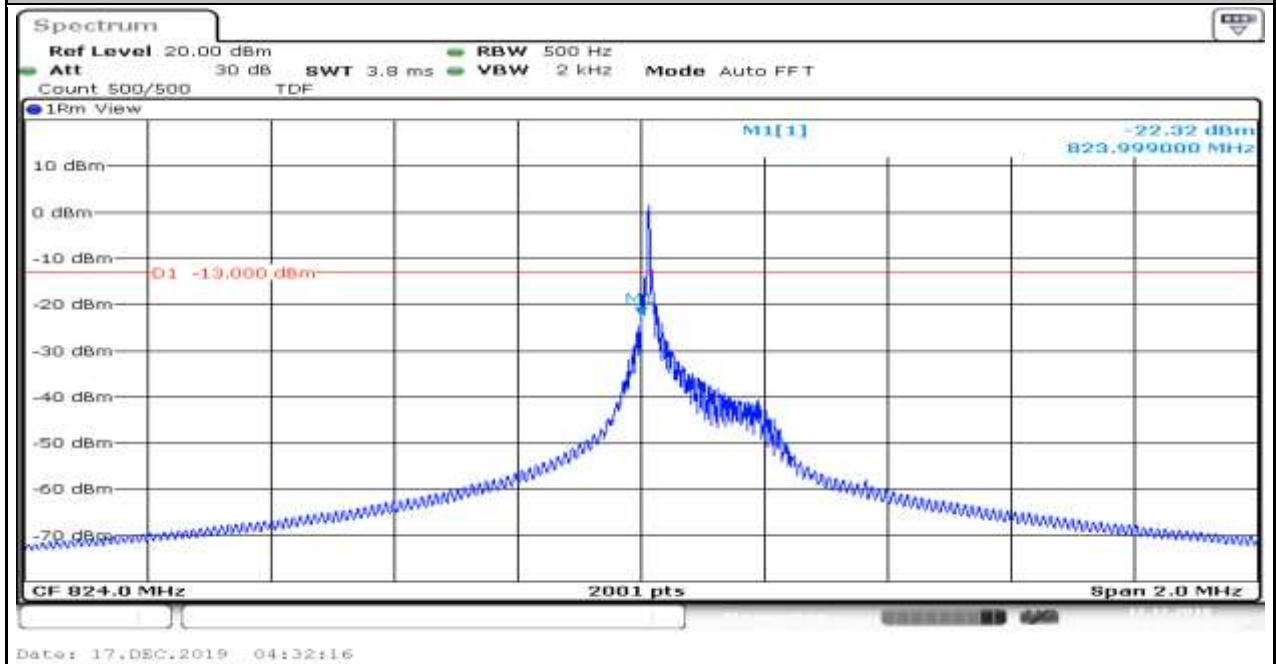
Band5_Stand-Alone_NaN_QPSK_20401_1@11_15kHz_-35.43_PASS__



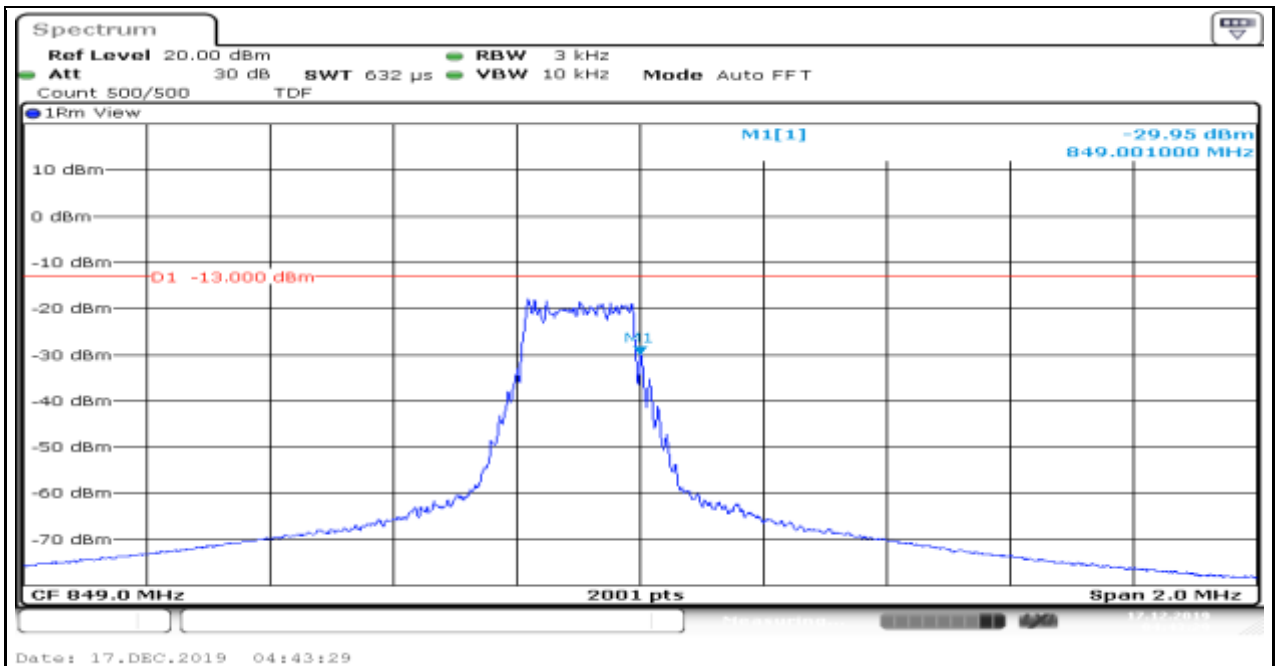
Band5_Stand-Alone_NaN_QPSK_20401_12@0_15kHz_-33.47_PASS__



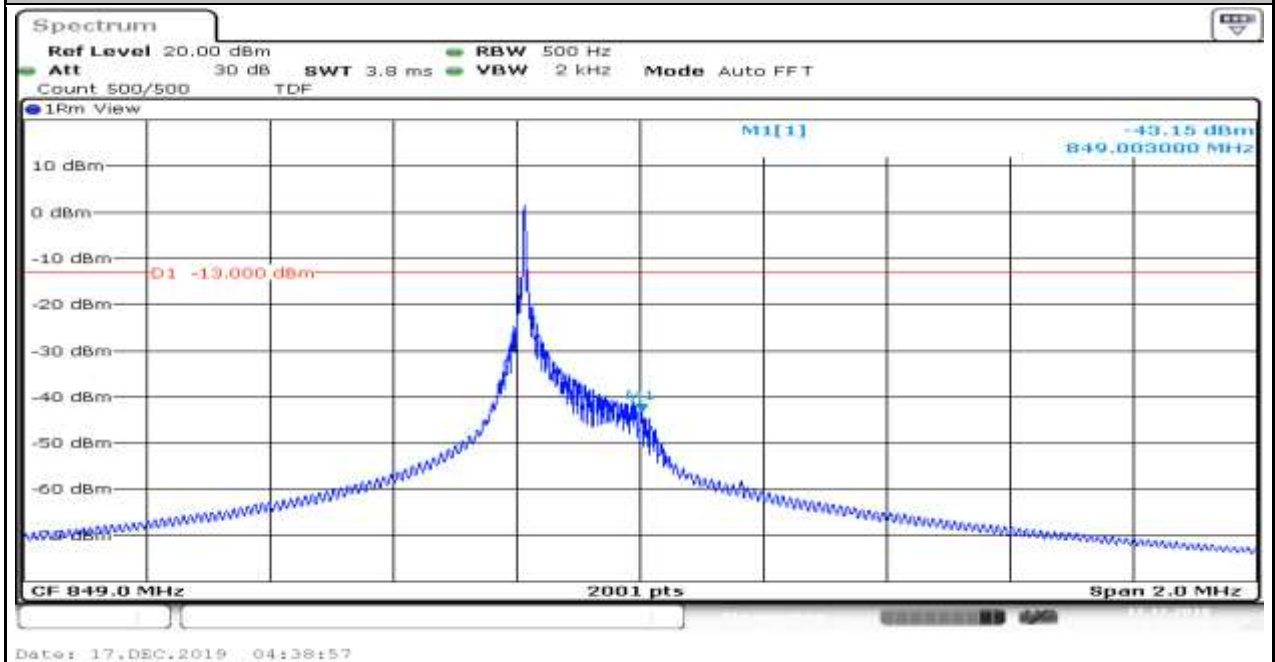
Band5_Stand-Alone_NaN_QPSK_20401_1@0_3.75kHz_-22.32_PASS__



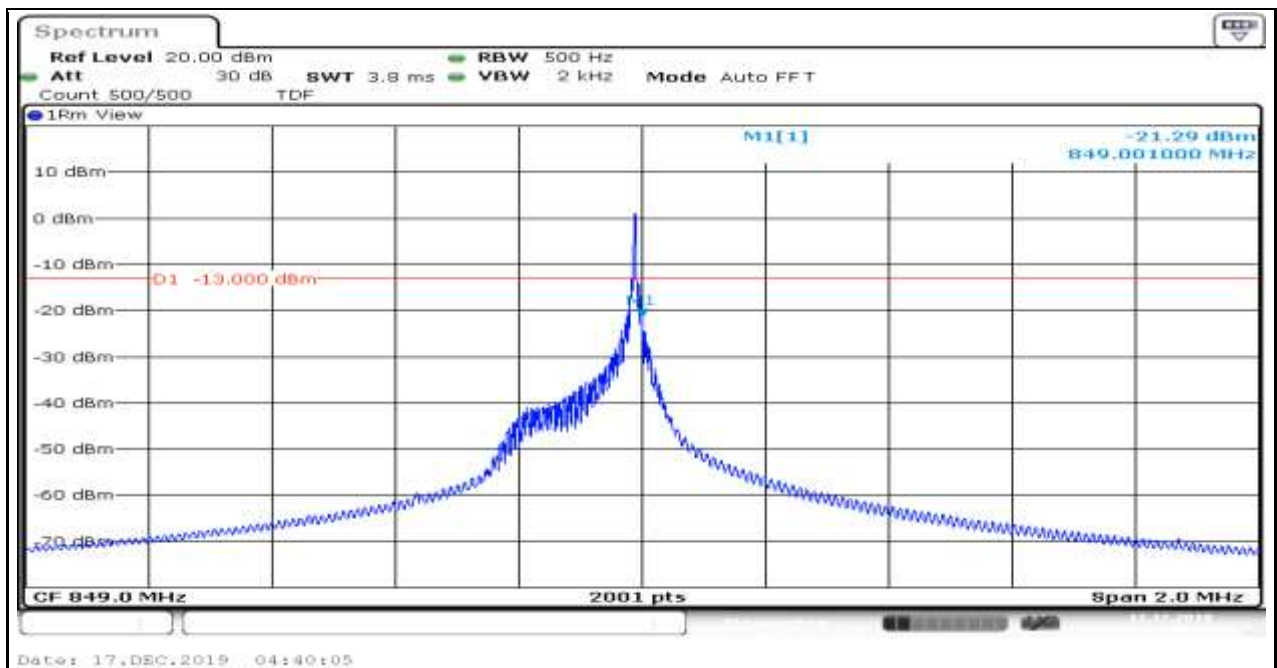
Band5_Stand-Alone_NaN_QPSK_20649_12@0_15kHz_-29.95_PASS__



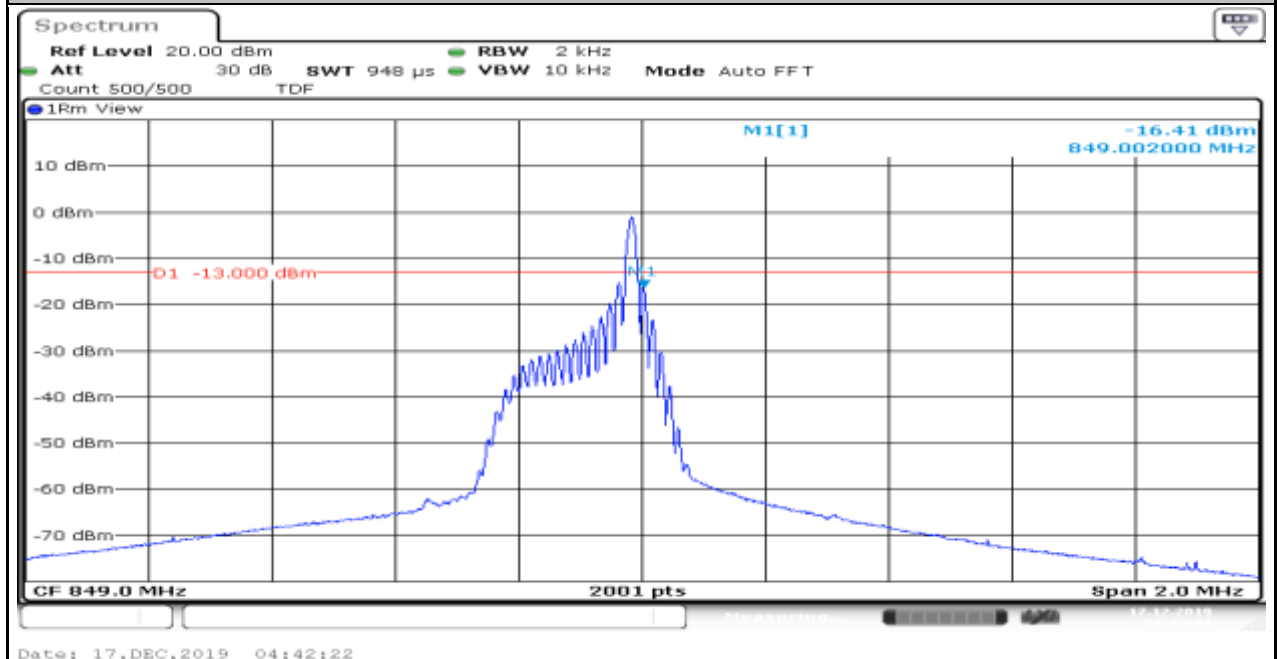
Band5_Stand-Alone_NaN_QPSK_20649_1@0_3.75kHz_-43.15_PASS__



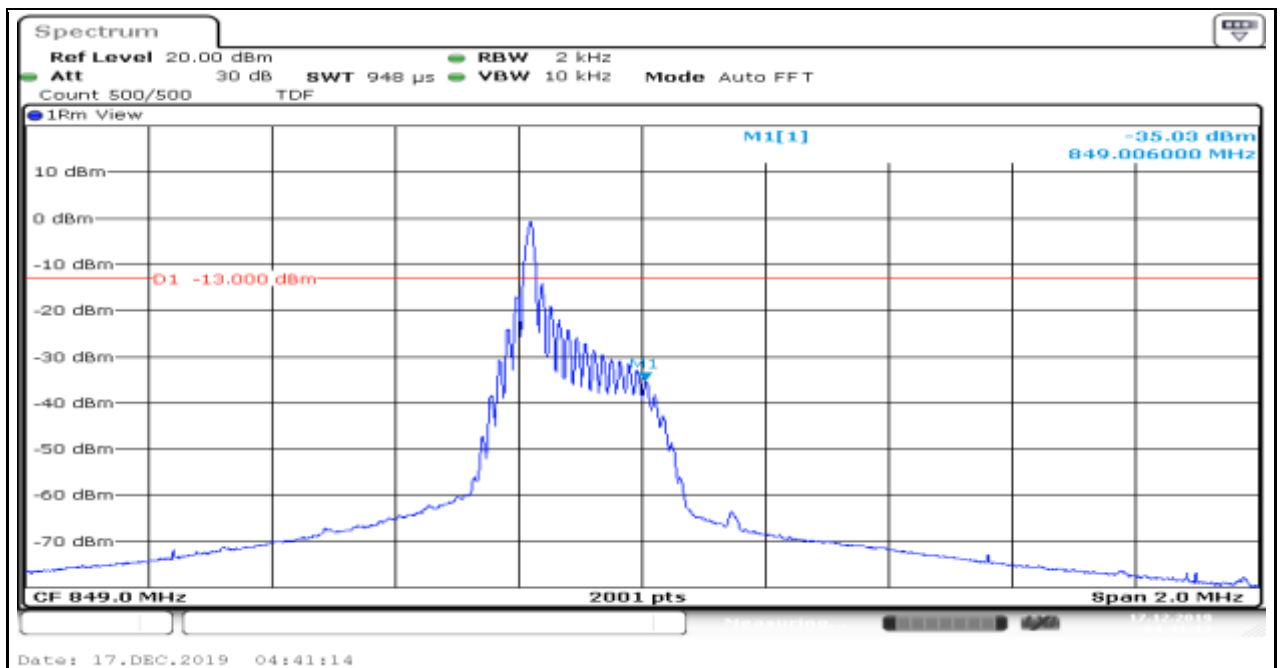
Band5_Stand-Alone_NaN_QPSK_20649_1@47_3.75kHz_-21.29_PASS__



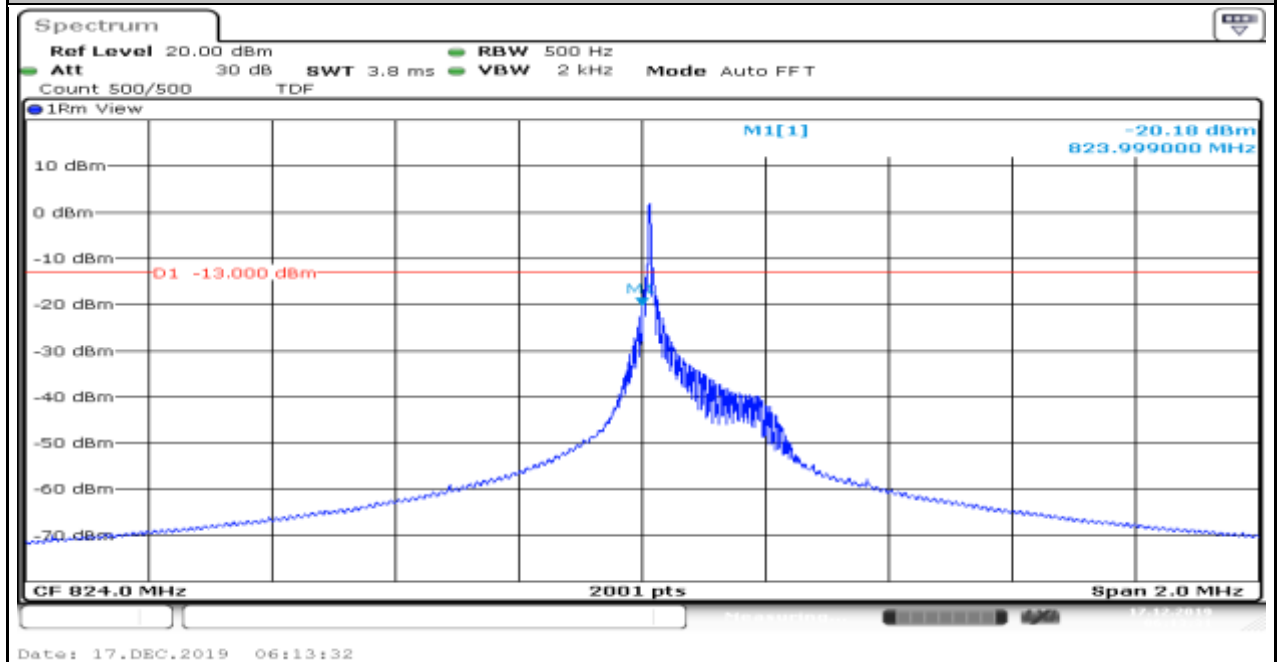
Band5_Stand-Alone_NaN_QPSK_20649_1@11_15kHz_-16.41_PASS__



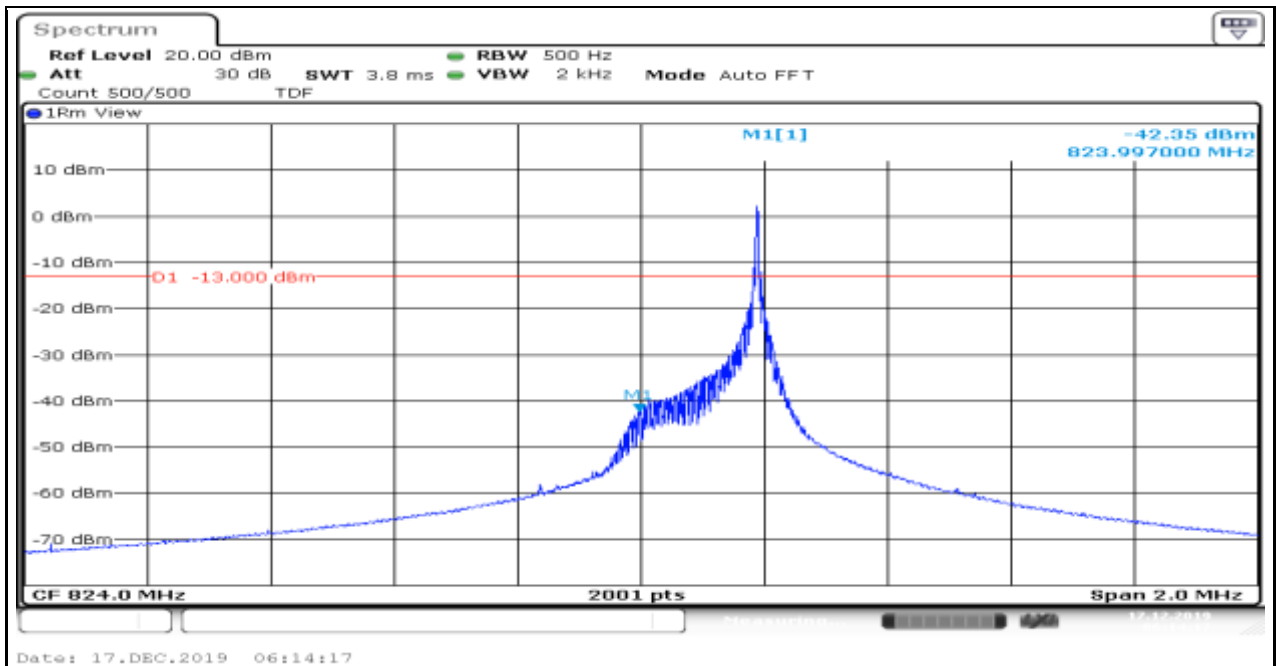
Band5_Stand-Alone_NaN_QPSK_20649_1@0_15kHz_-35.03_PASS__



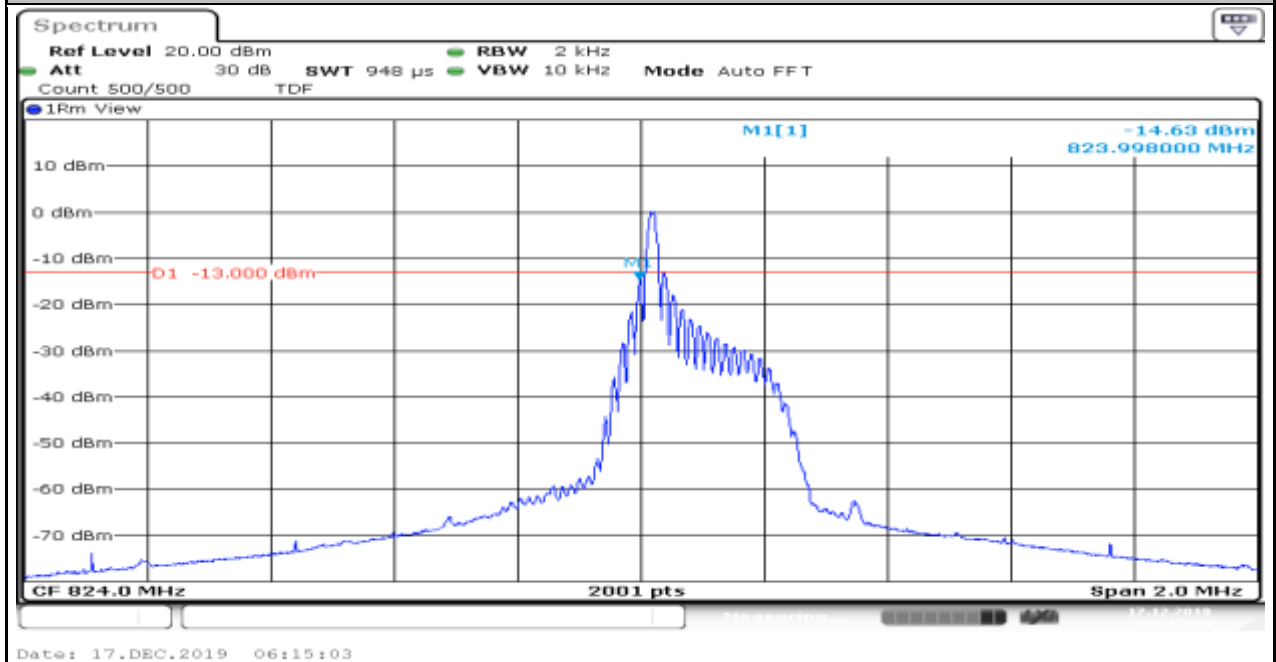
Band5_Stand-Alone_NaN_BPSK_20401_1@0_3.75kHz_-20.18_PASS__



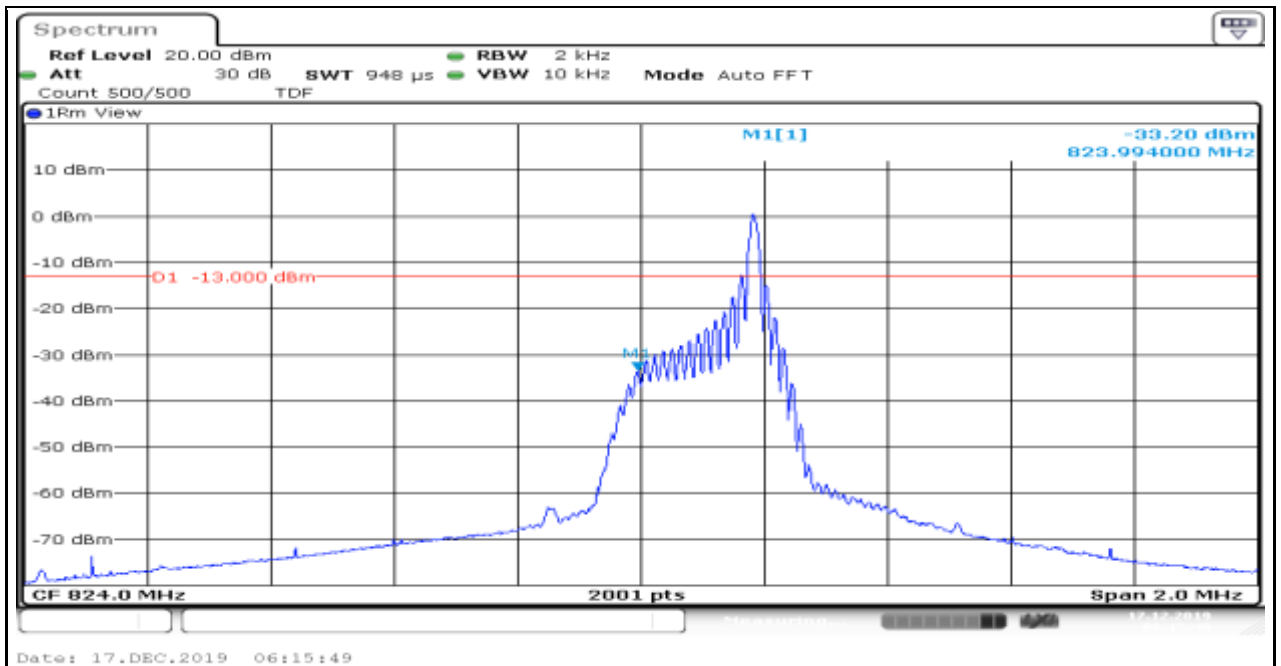
Band5_Stand-Alone_NaN_BPSK_20401_1@47_3.75kHz_-42.35_PASS__



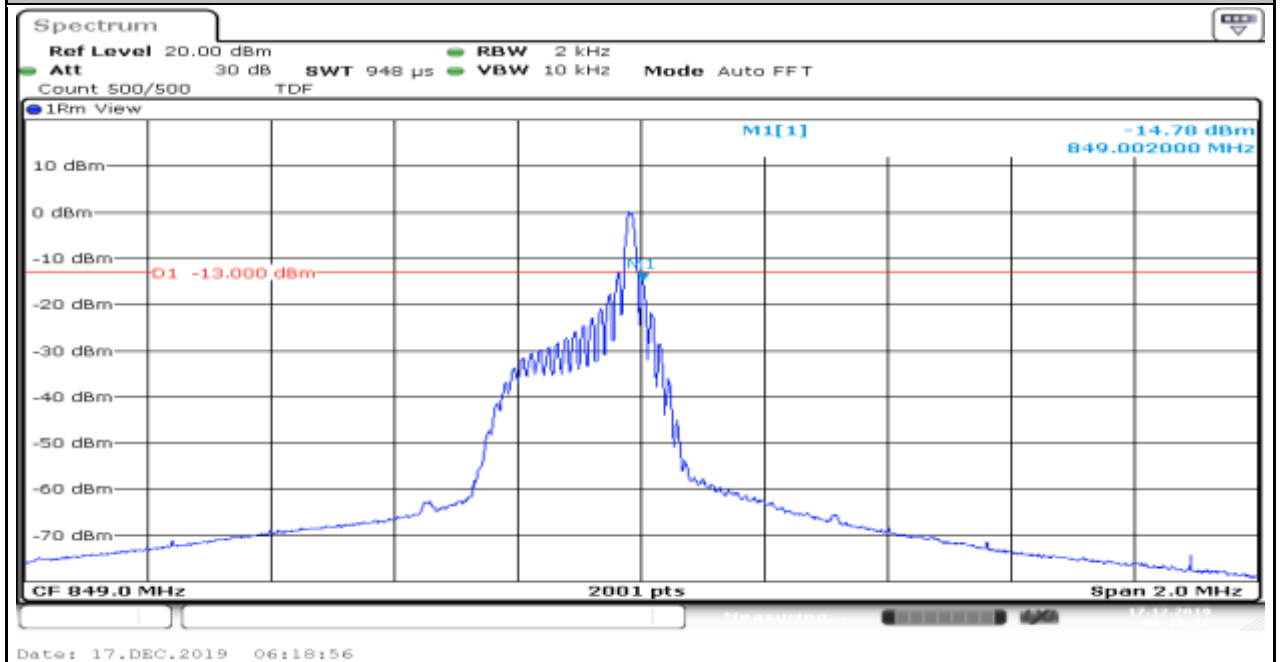
Band5_Stand-Alone_NaN_BPSK_20401_1@0_15kHz_-14.63_PASS__



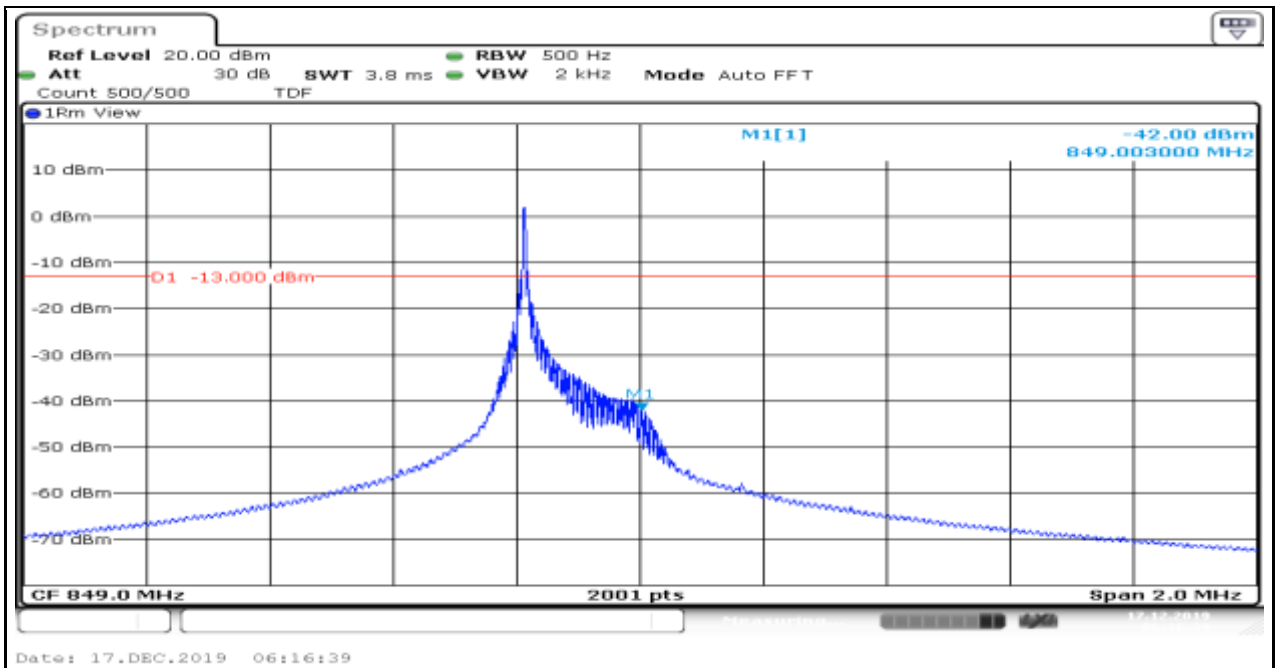
Band5_Stand-Alone_NaN_BPSK_20401_1@11_15kHz_-33.20_PASS__



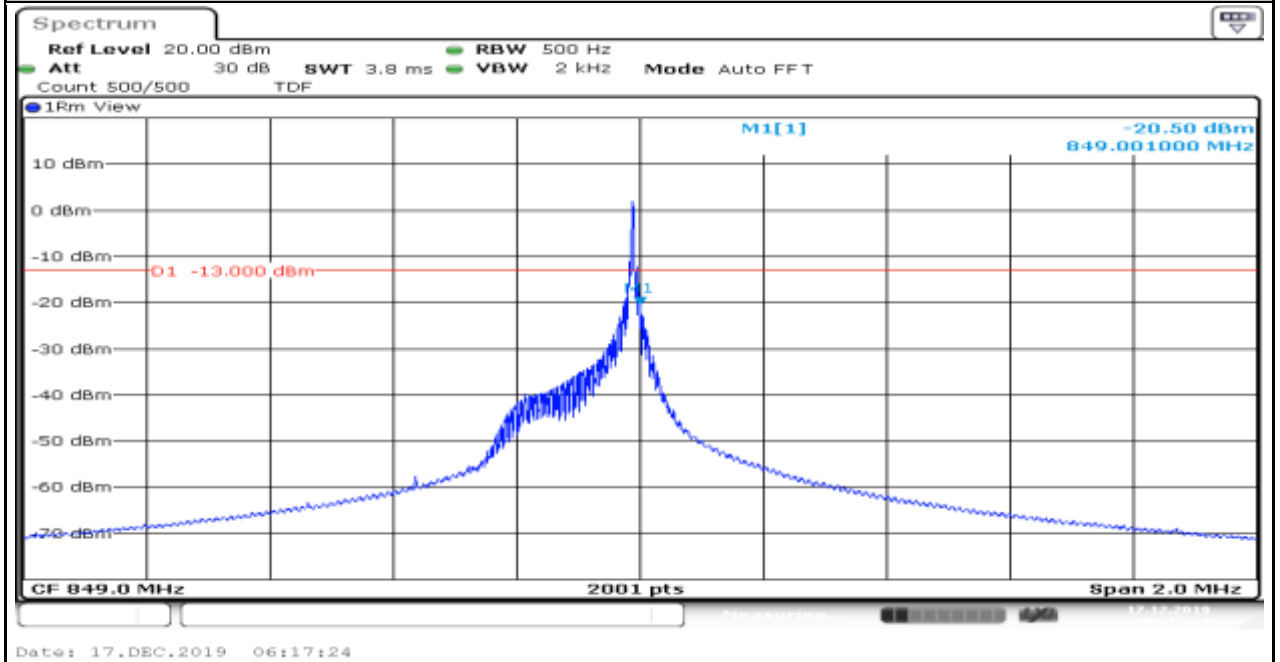
Band5_Stand-Alone_NaN_BPSK_20649_1@11_15kHz_-14.78_PASS__



Band5_Stand-Alone_NaN_BPSK_20649_1@0_3.75kHz_-42.00_PASS__

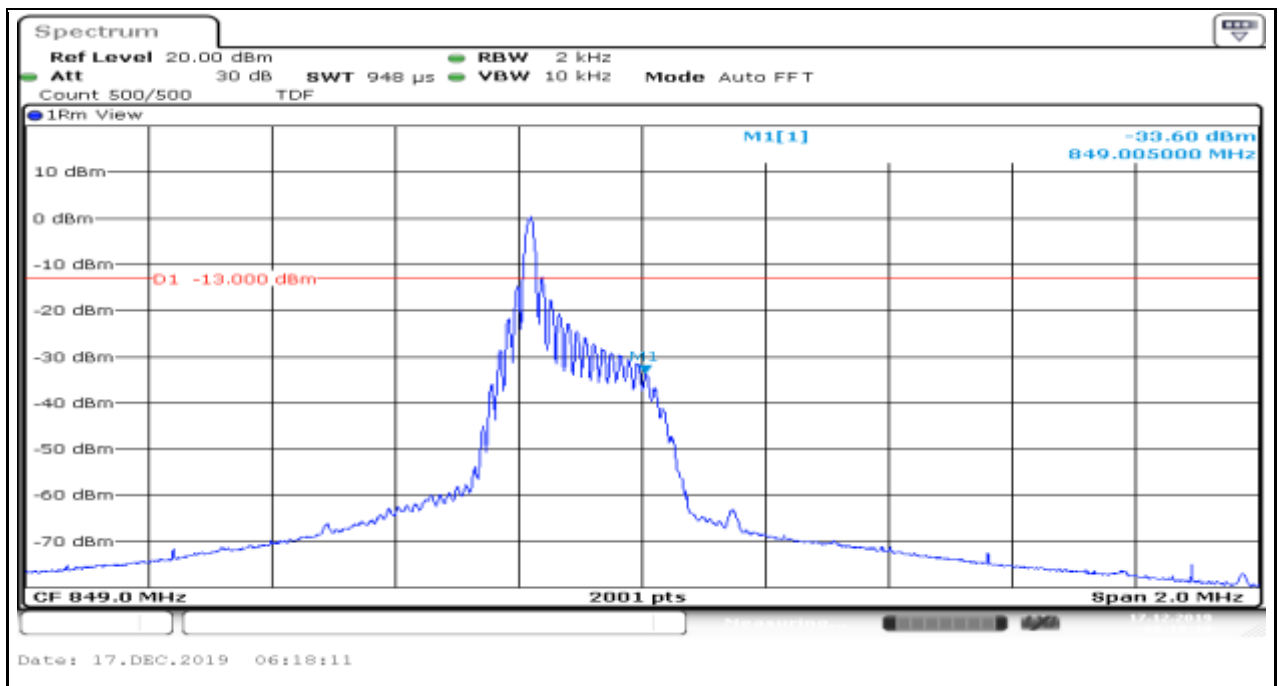


Band5_Stand-Alone_NaN_BPSK_20649_1@47_3.75kHz_-20.50_PASS__



Band5_Stand-Alone_NaN_BPSK_20649_1@0_15kHz_-33.60_PASS__

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Appendix C.5: Conducted Spurious Emission for NB

Test Result

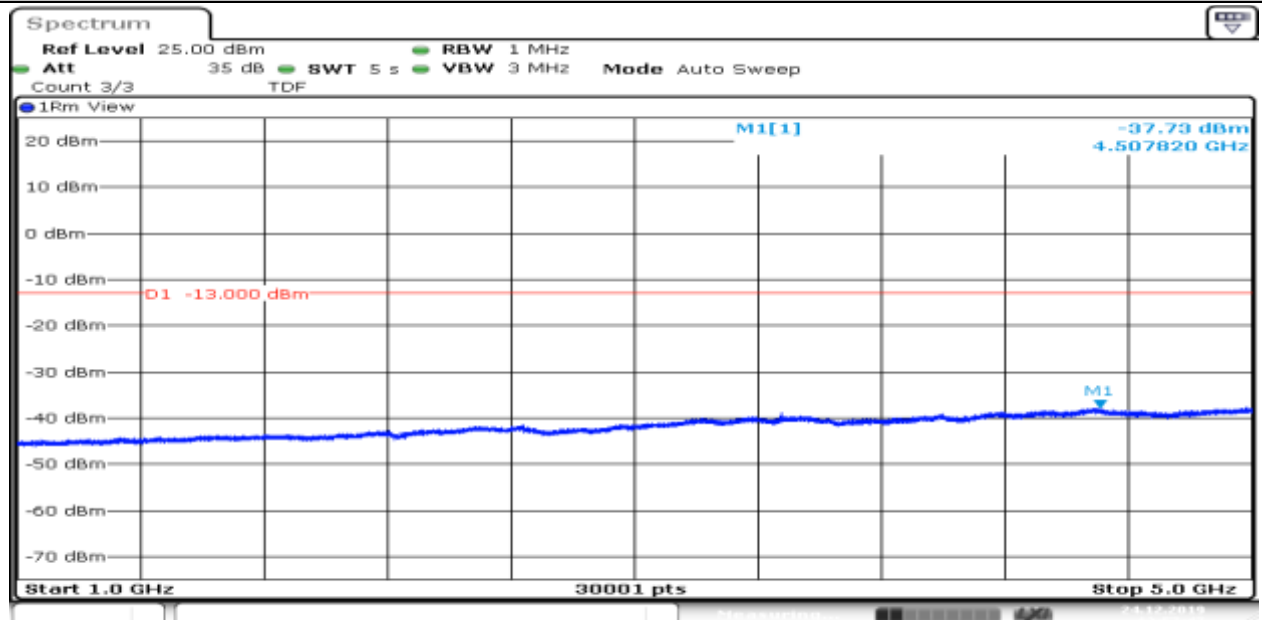
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	StartFreq (MHz)	StopFreq (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	1000	5000	1000-5000MHz@-37.73dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	5000	12000	5000-12000MHz@-47.5dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	12000	26500	12000-26500MHz@-41.45dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@47	3.75kHz	30	1000	30-1000MHz@-36.34dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@47	3.75kHz	1000	5000	1000-5000MHz@-37.92dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@47	3.75kHz	5000	12000	5000-12000MHz@-47.53dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@47	3.75kHz	12000	26500	12000-26500MHz@-41.5dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	1@0	3.75kHz	30	1000	30-1000MHz@-36.06dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	12@0	15kHz	12000	26500	12000-26500MHz@-41.42dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	12@0	15kHz	5000	12000	5000-12000MHz@-47.6dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	12@0	15kHz	1000	5000	1000-5000MHz@-37.73dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20401	12@0	15kHz	30	1000	30-1000MHz@-35.86dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	5000	12000	5000-12000MHz@-47.41dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	12@0	15kHz	1000	5000	1000-5000MHz@-37.72dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	12000	26500	12000-26500MHz@-41.3dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	5000	12000	5000-12000MHz@-47.34dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	1000	5000	1000-5000MHz@-37.68dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	12@0	15kHz	12000	26500	12000-26500MHz@-41.45dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	12000	26500	12000-26500MHz@-41.49dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	12@0	15kHz	5000	12000	5000-12000MHz@-47.44dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	1000	5000	1000-5000MHz@-37.88dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	30	1000	30-1000MHz@-36.48dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	30	1000	30-1000MHz@-36.05dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20525	12@0	15kHz	30	1000	30-1000MHz@-35.28dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	12000	26500	12000-26500MHz@-41.47dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	30	1000	30-1000MHz@-35.47dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	5000	12000	5000-12000MHz@-47.57dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@47	3.75kHz	30	1000	30-1000MHz@-35.44dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@47	3.75kHz	1000	5000	1000-5000MHz@-37.79dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@47	3.75kHz	5000	12000	5000-12000MHz@-47.52dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@47	3.75kHz	12000	26500	12000-26500MHz@-41.33dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	12@0	15kHz	30	1000	30-1000MHz@-36.04dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	1@0	3.75kHz	1000	5000	1000-5000MHz@-37.88dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	12@0	15kHz	12000	26500	12000-26500MHz@-41.44dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	12@0	15kHz	5000	12000	5000-12000MHz@-47.55dBm	-13	PASS
Band5	Stand-Alone	NaN	QPSK	20649	12@0	15kHz	1000	5000	1000-5000MHz@-37.74dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	12000	26500	12000-26500MHz@-41.48dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	1000	5000	1000-5000MHz@-37.87dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	5000	12000	5000-12000MHz@-47.46dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@11	15kHz	12000	26500	12000-26500MHz@-41.6dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@11	15kHz	5000	12000	5000-12000MHz@-47.48dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@11	15kHz	1000	5000	1000-5000MHz@-37.89dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@11	15kHz	30	1000	30-1000MHz@-35.71dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20401	1@0	15kHz	30	1000	30-1000MHz@-35.91dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	30	1000	30-1000MHz@-36dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	12000	26500	12000-26500MHz@-41.17dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	1000	5000	1000-5000MHz@-37.76dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	5000	12000	5000-12000MHz@-47.44dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@11	15kHz	30	1000	30-1000MHz@-35.49dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	12000	26500	12000-26500MHz@-41.35dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	1000	5000	1000-5000MHz@-37.71dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20525	1@0	15kHz	5000	12000	5000-12000MHz@-47.29dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@11	15kHz	12000	26500	12000-26500MHz@-41.45dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	30	1000	30-1000MHz@-35.77dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	1000	5000	1000-5000MHz@-37.7dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	5000	12000	5000-12000MHz@-47.46dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@0	15kHz	12000	26500	12000-26500MHz@-41.49dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@11	15kHz	30	1000	30-1000MHz@-36.36dBm	-13	PASS
Band5	Stand-Alone	NaN	BPSK	20649	1@11	15kHz	1000	5000	1000-5000MHz@-37.77dBm	-13	PASS

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Band5	Stand-Alone	NaN	BPSK	20649	1@11	15kHz	5000	12000	5000~12000MHz@-47.35dBm	-13	PASS
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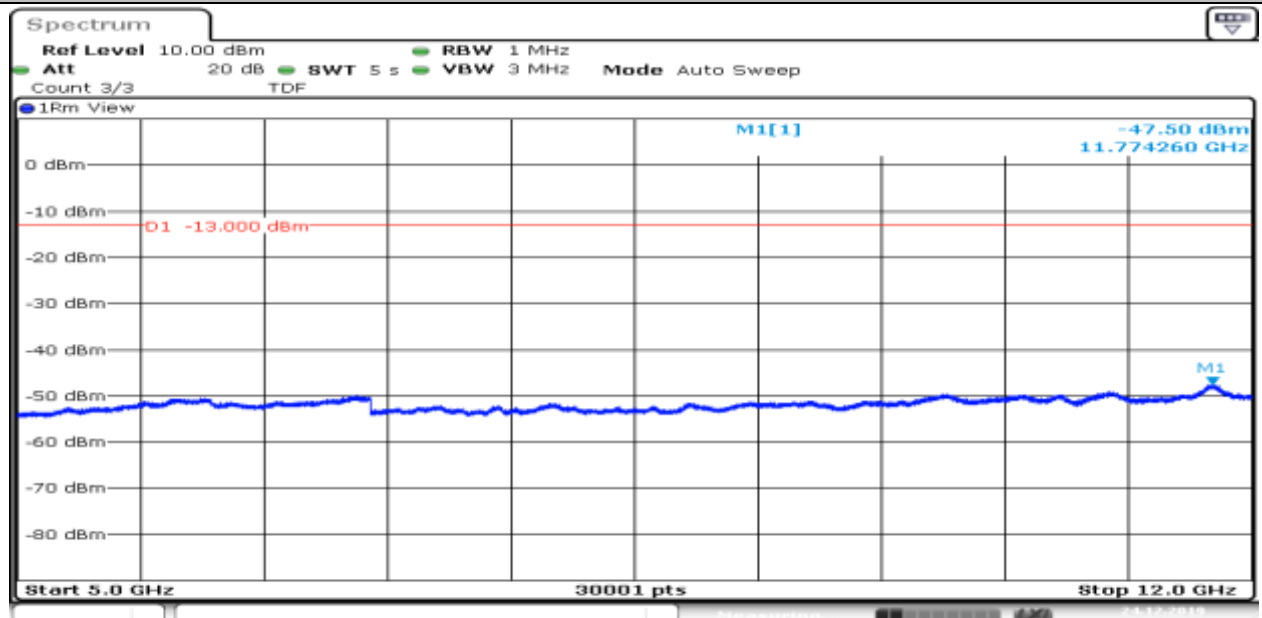
Test Graphs

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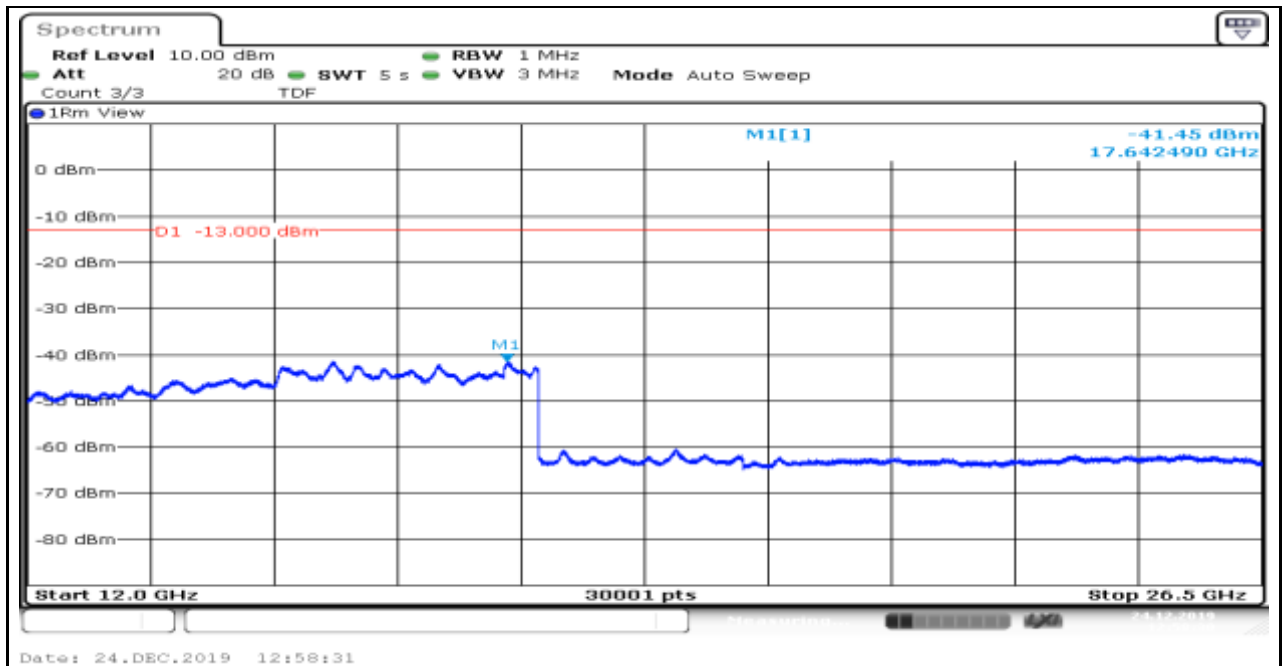
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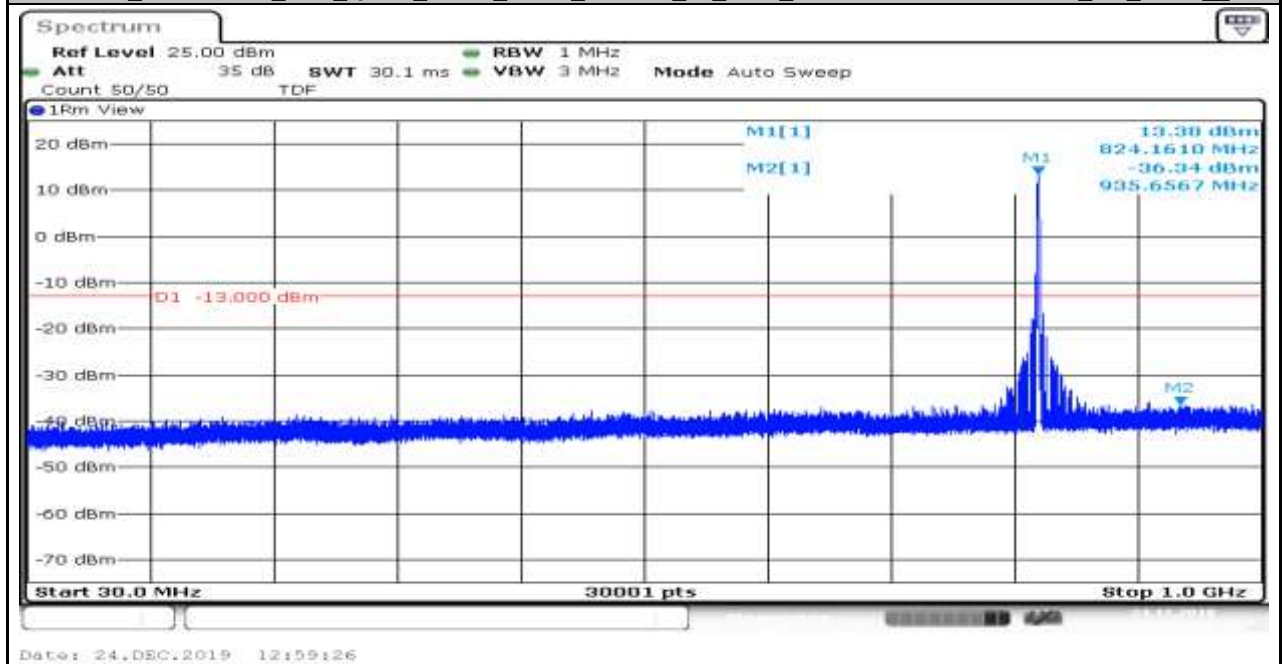


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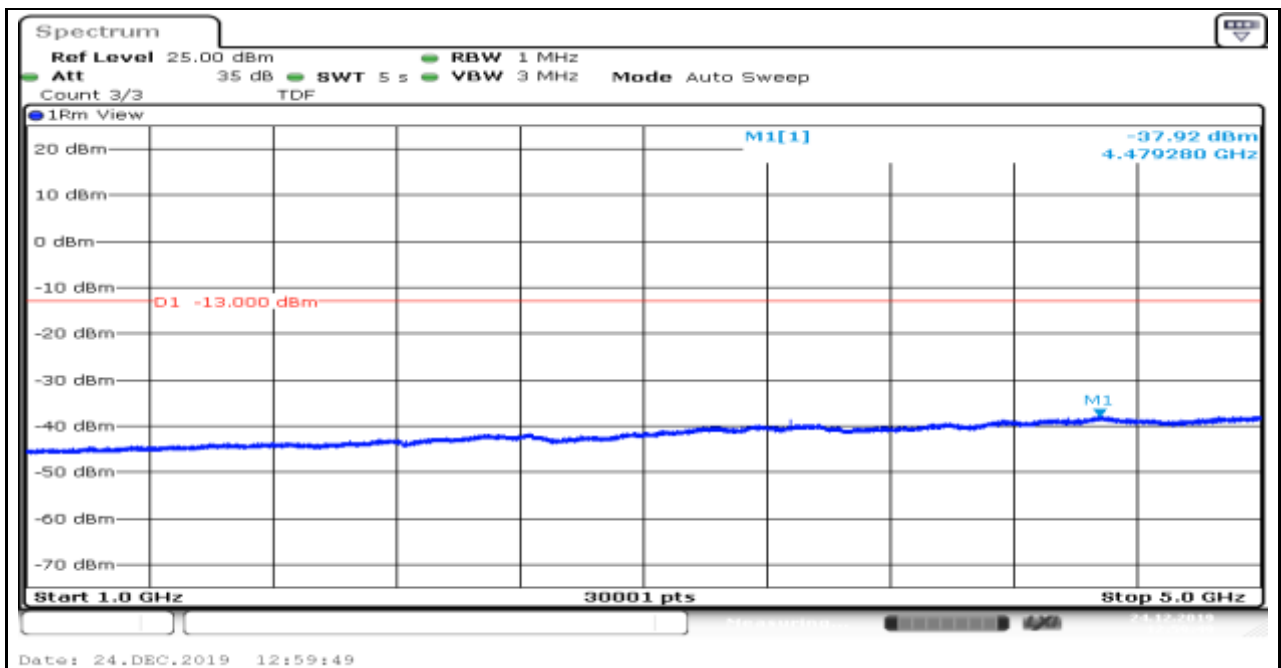
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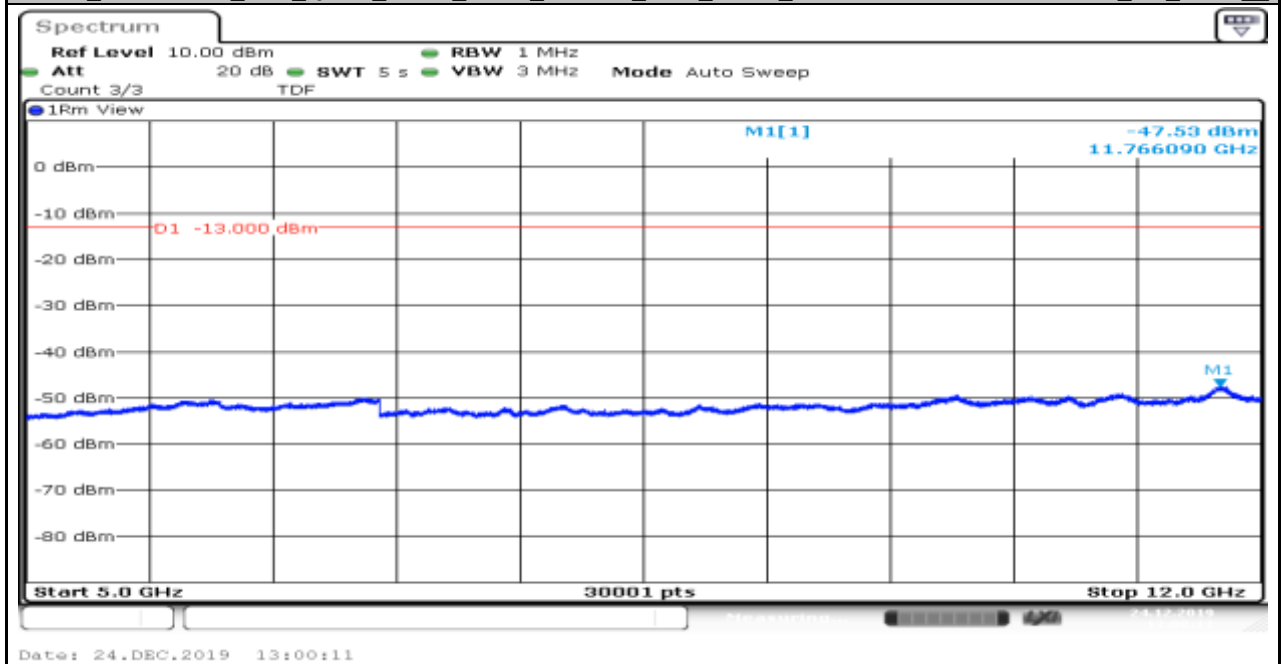
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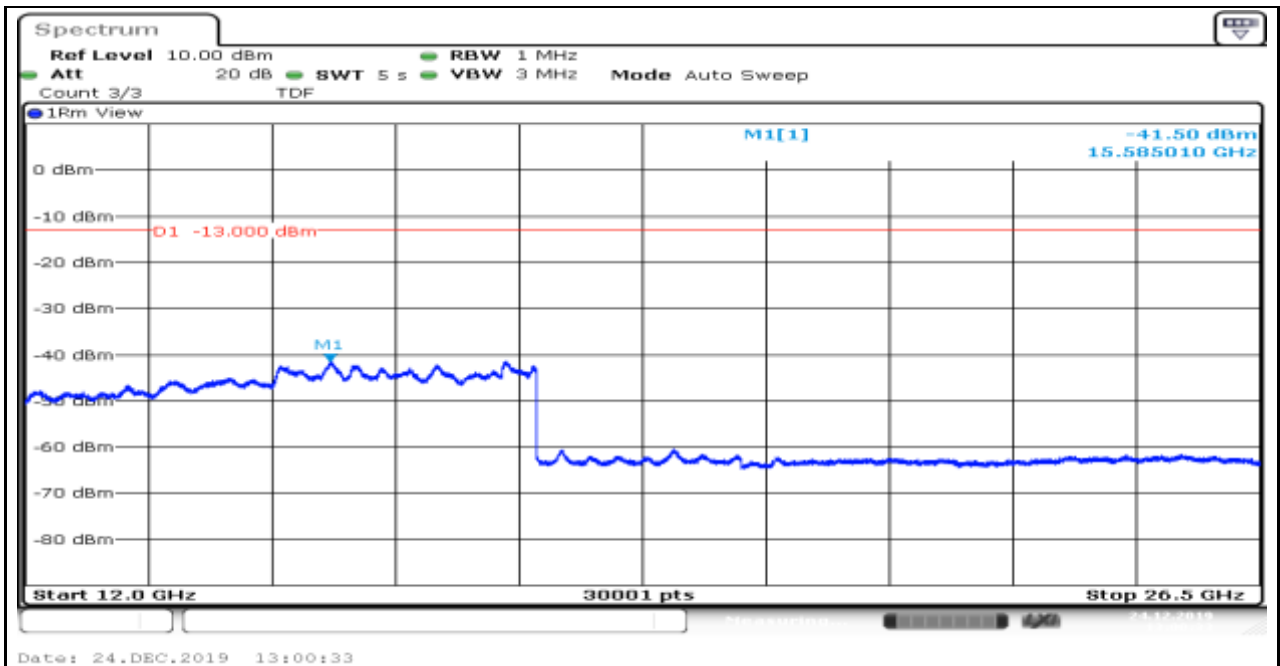
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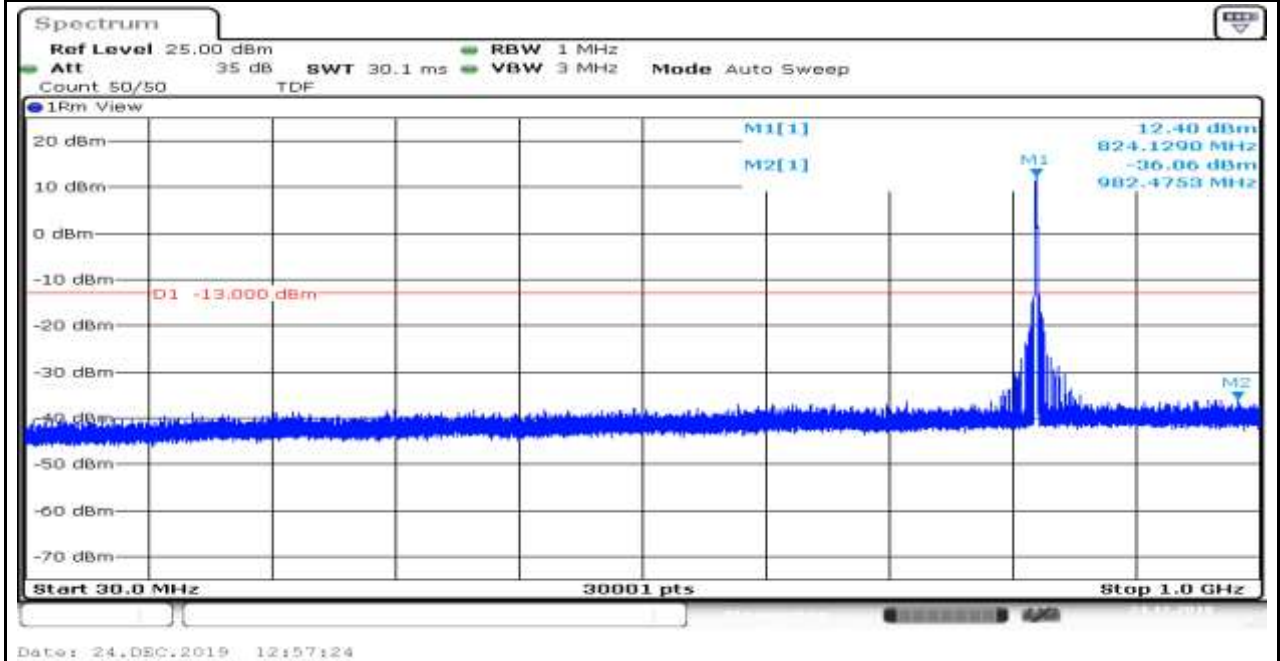
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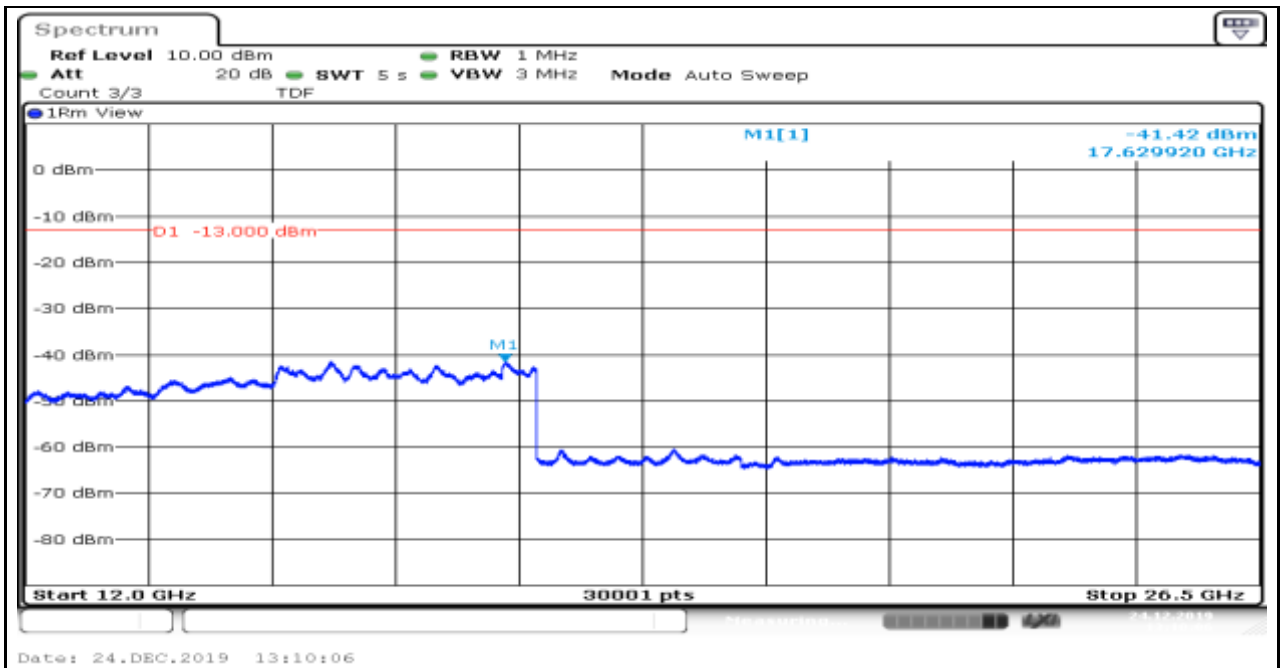
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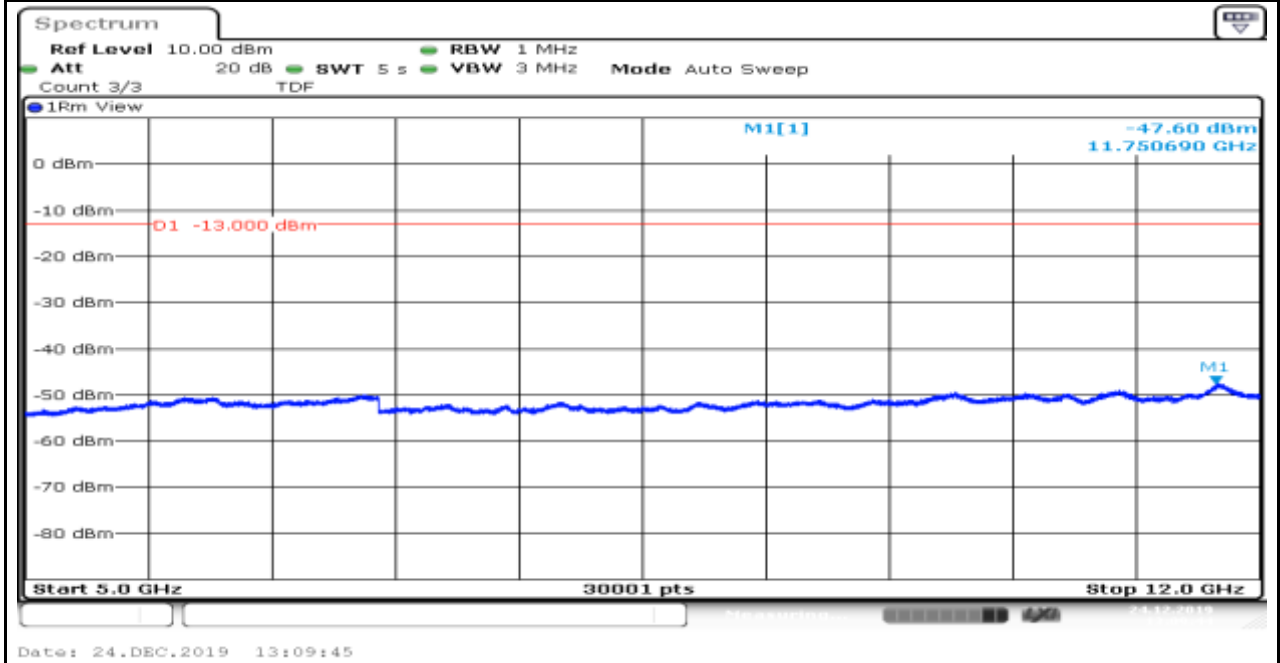
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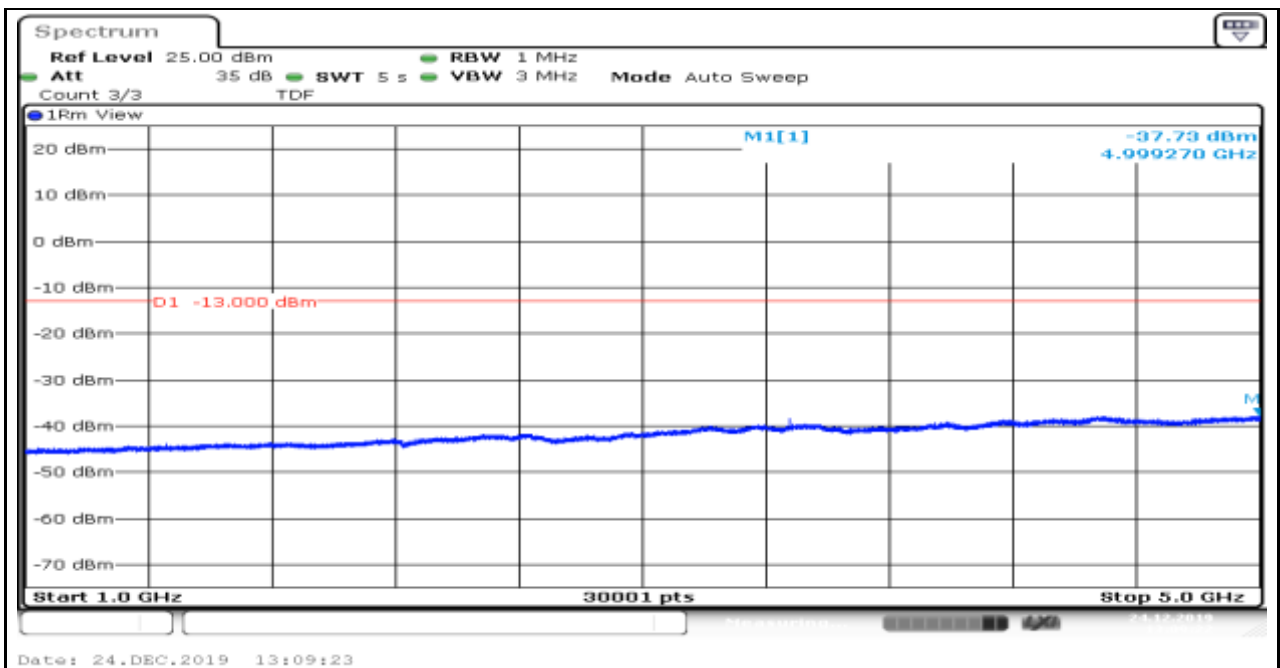
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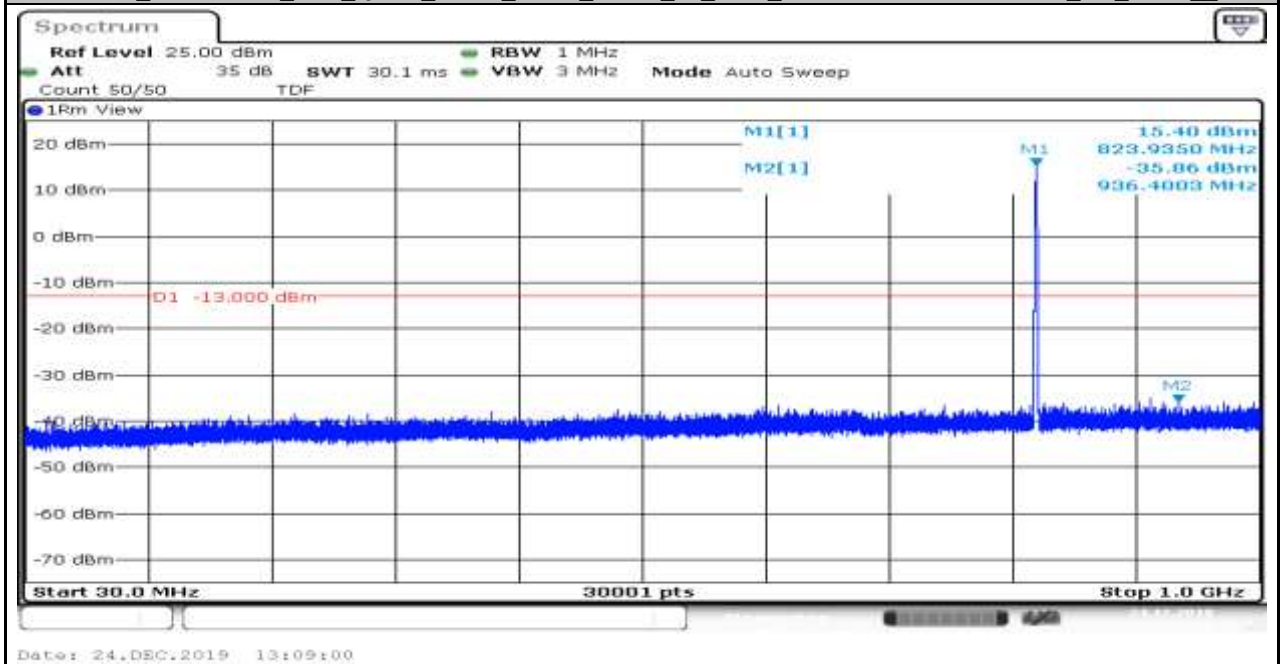
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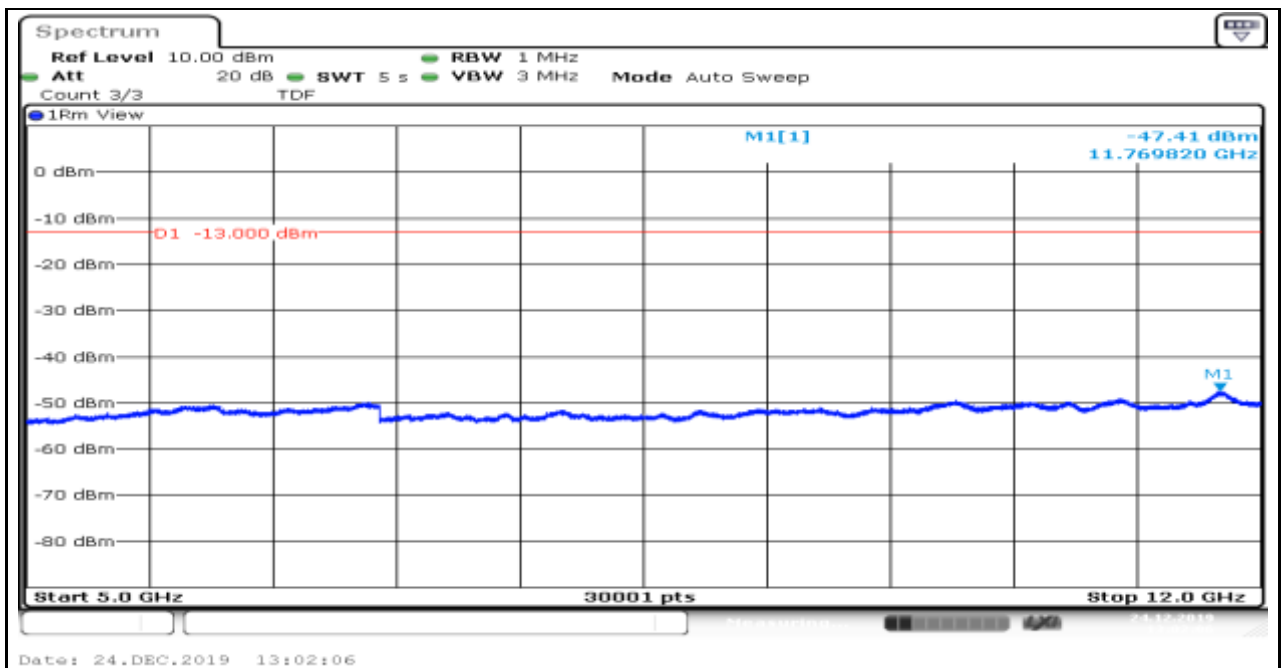
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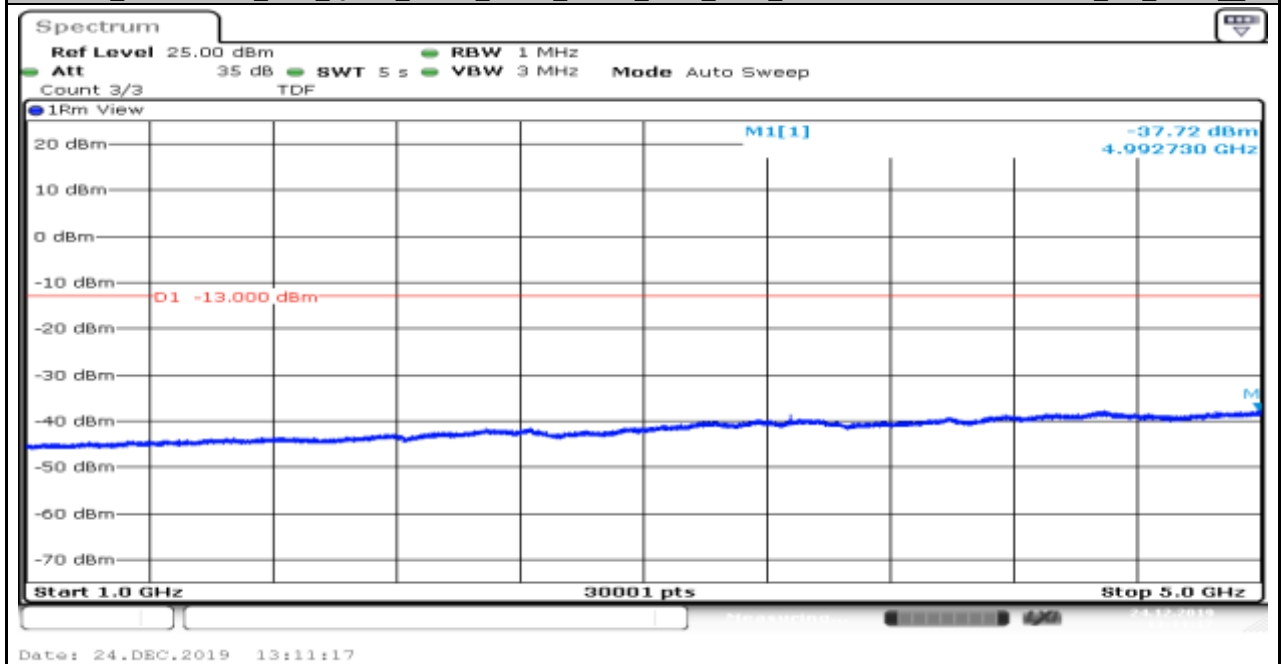
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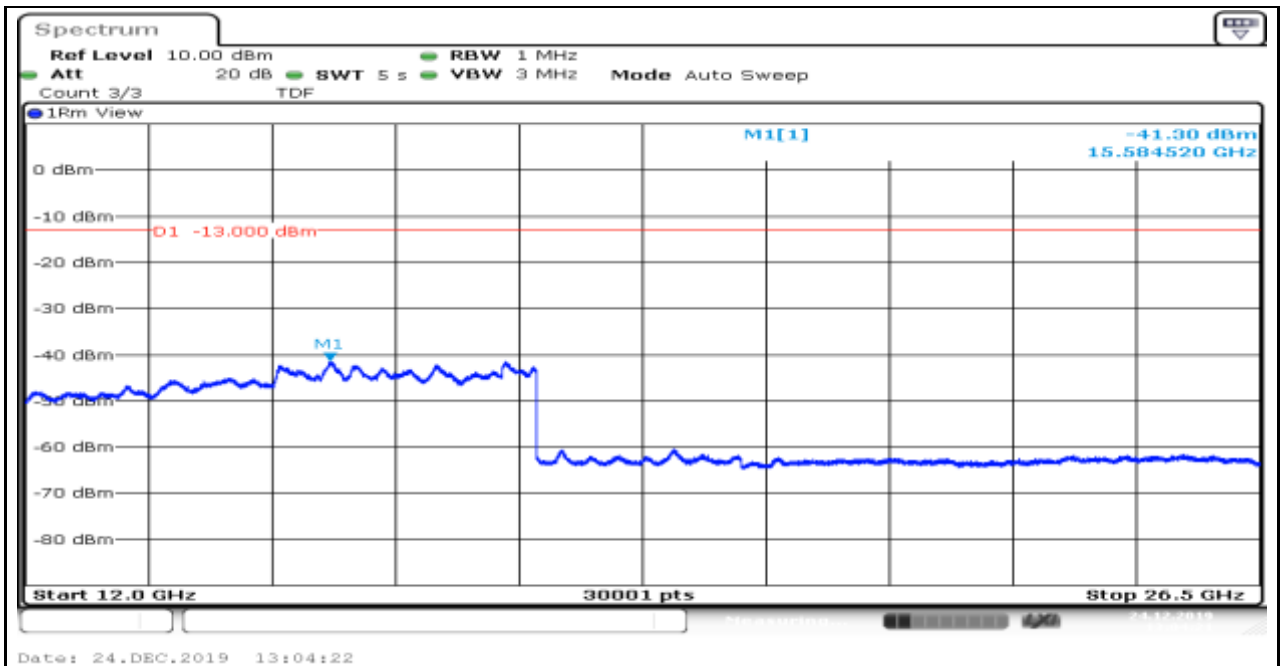
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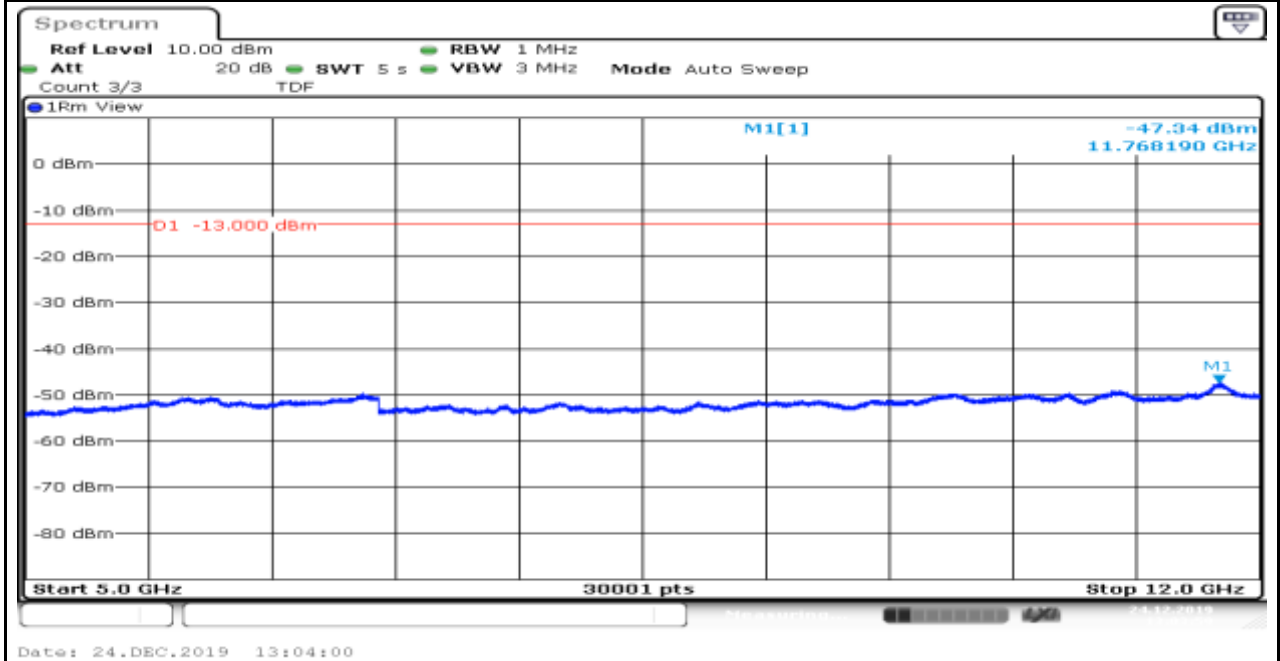
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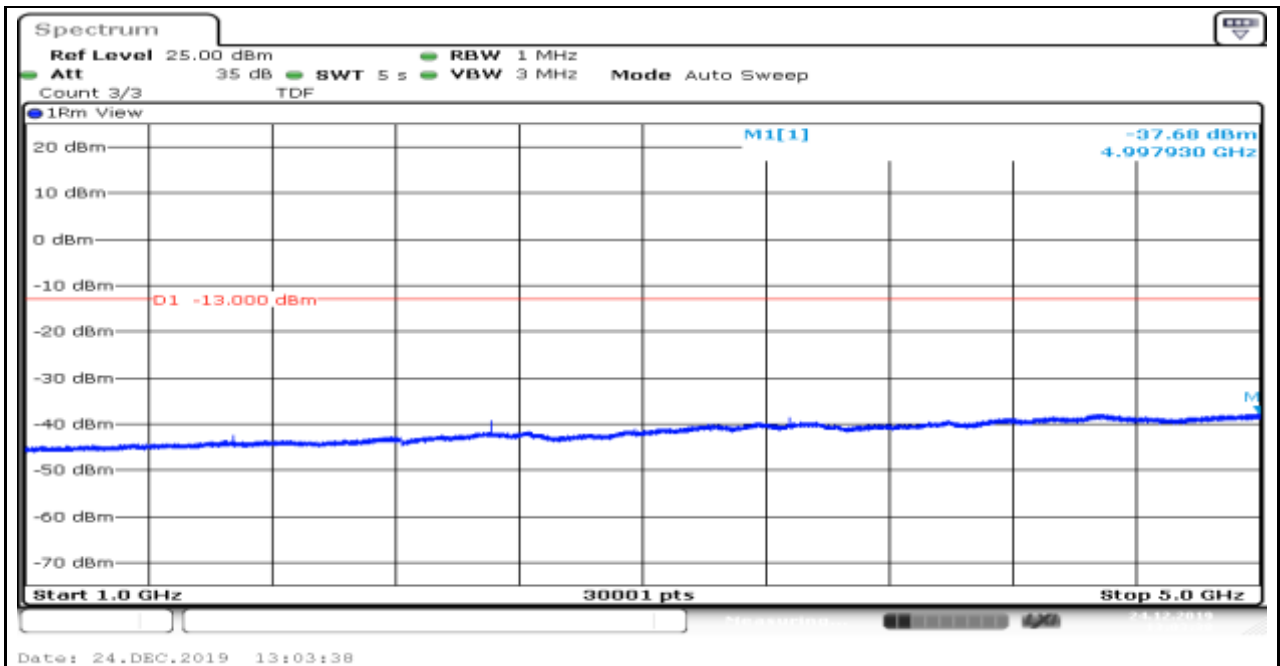
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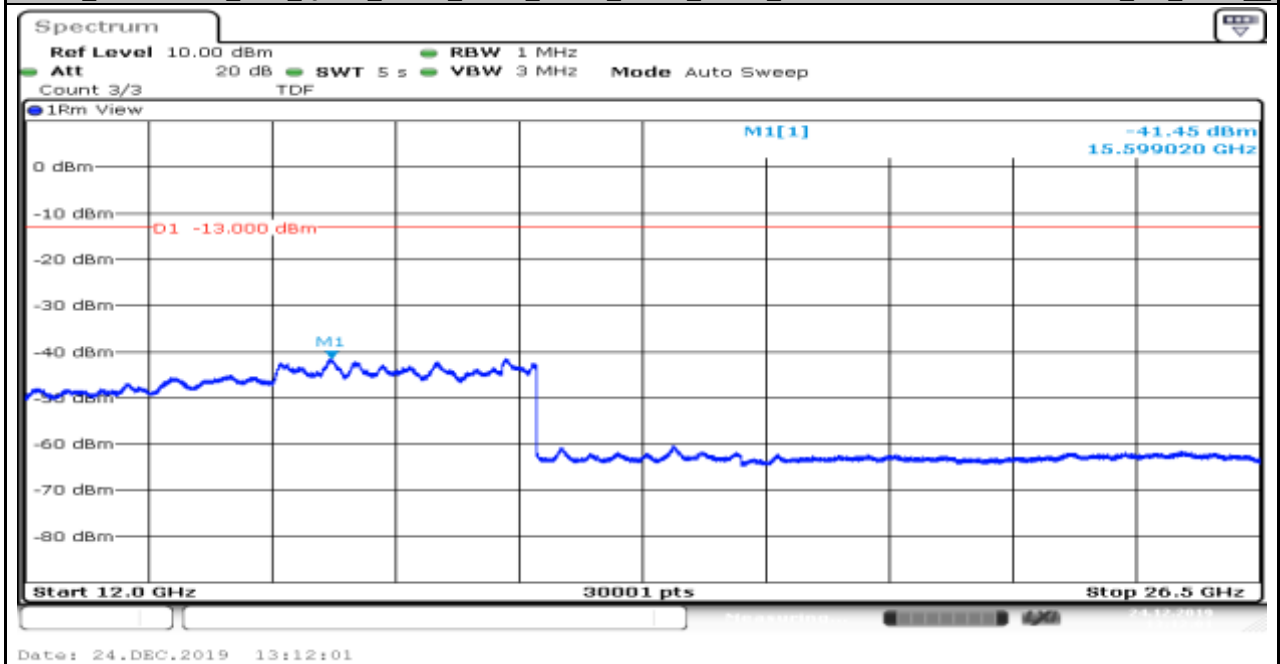
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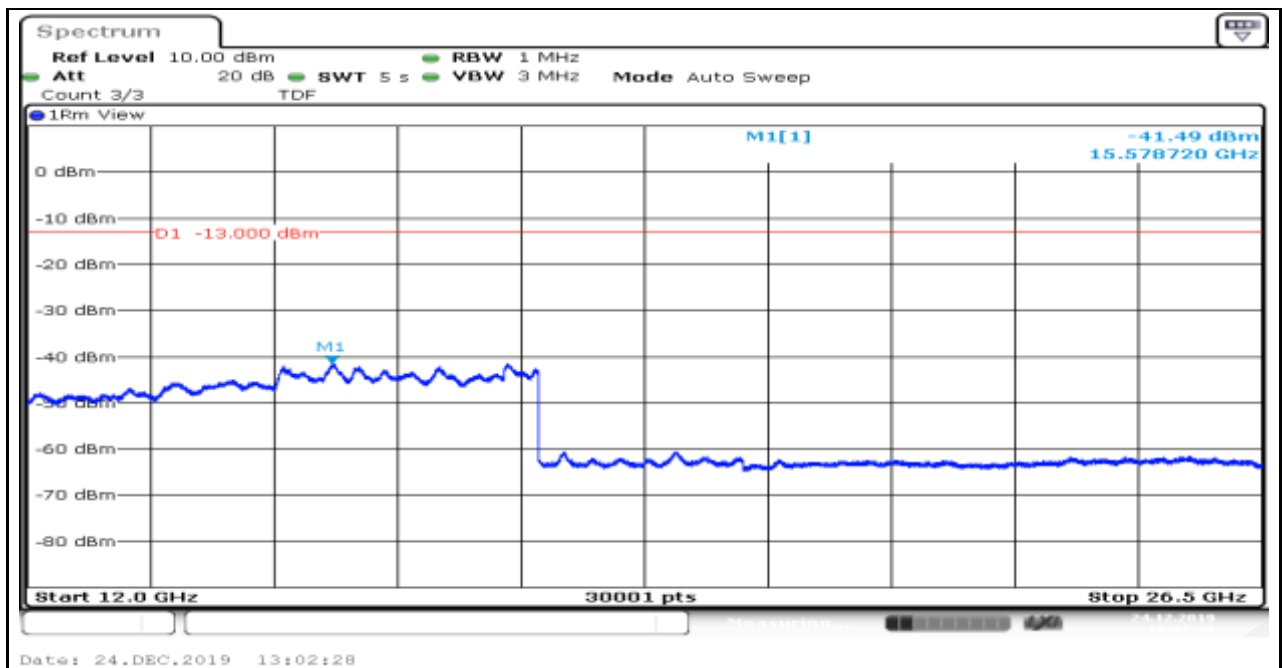
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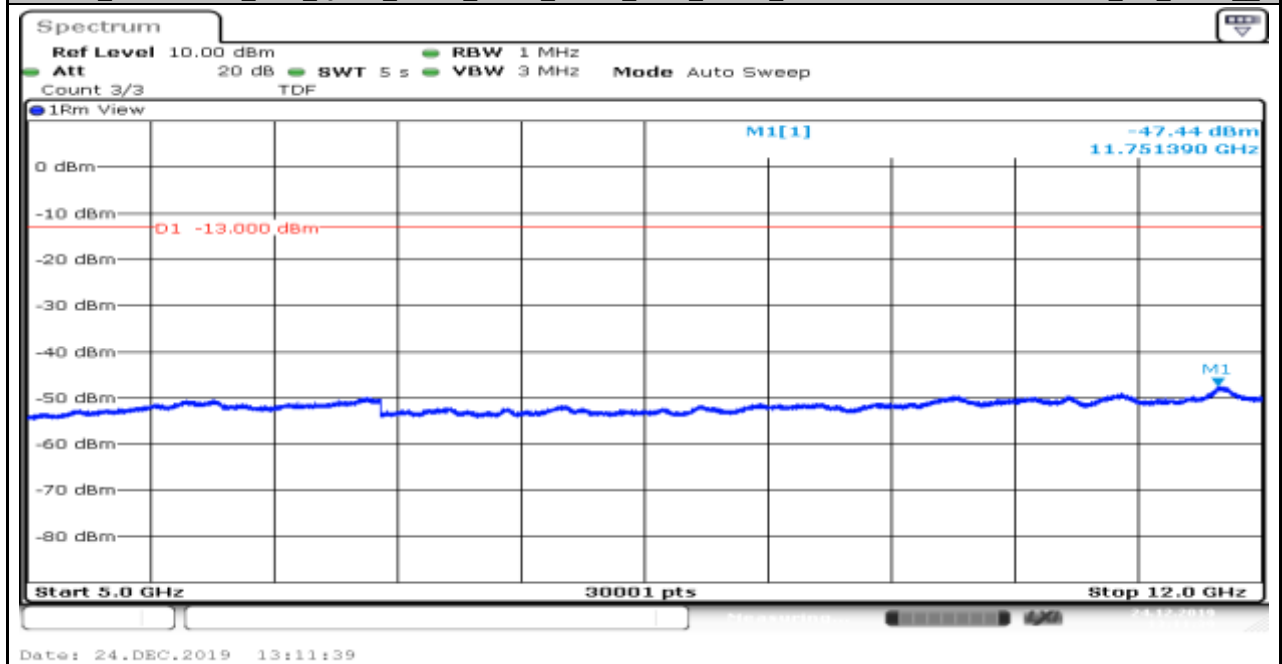
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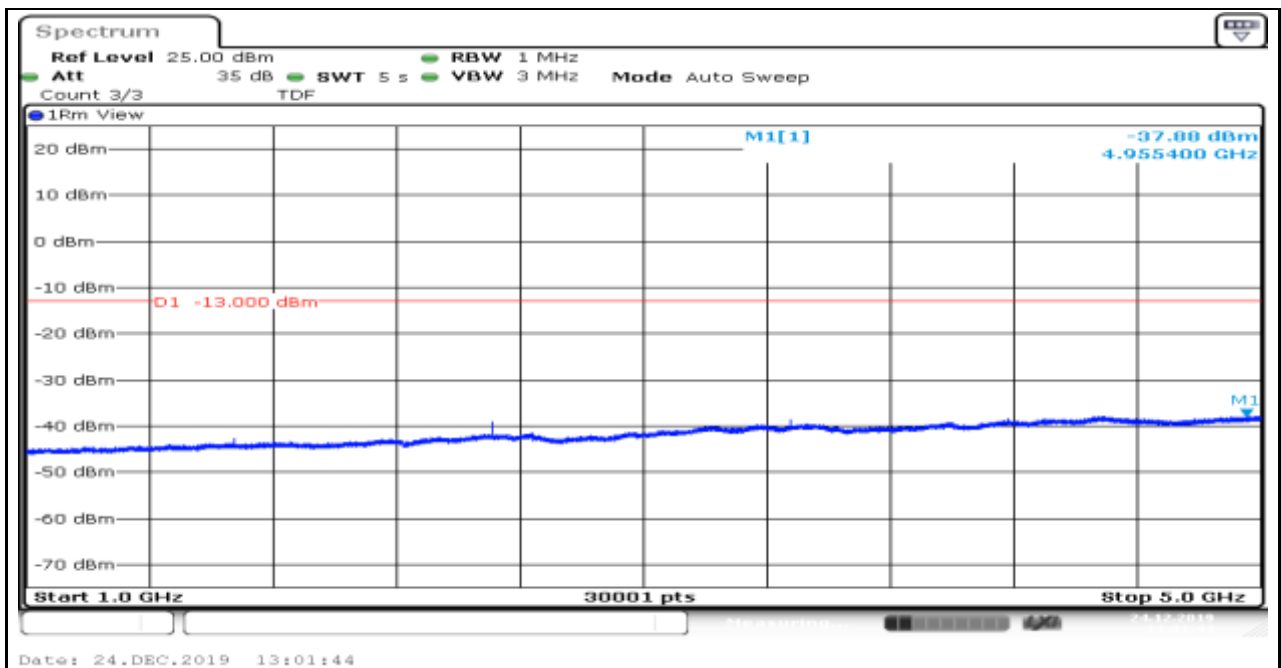
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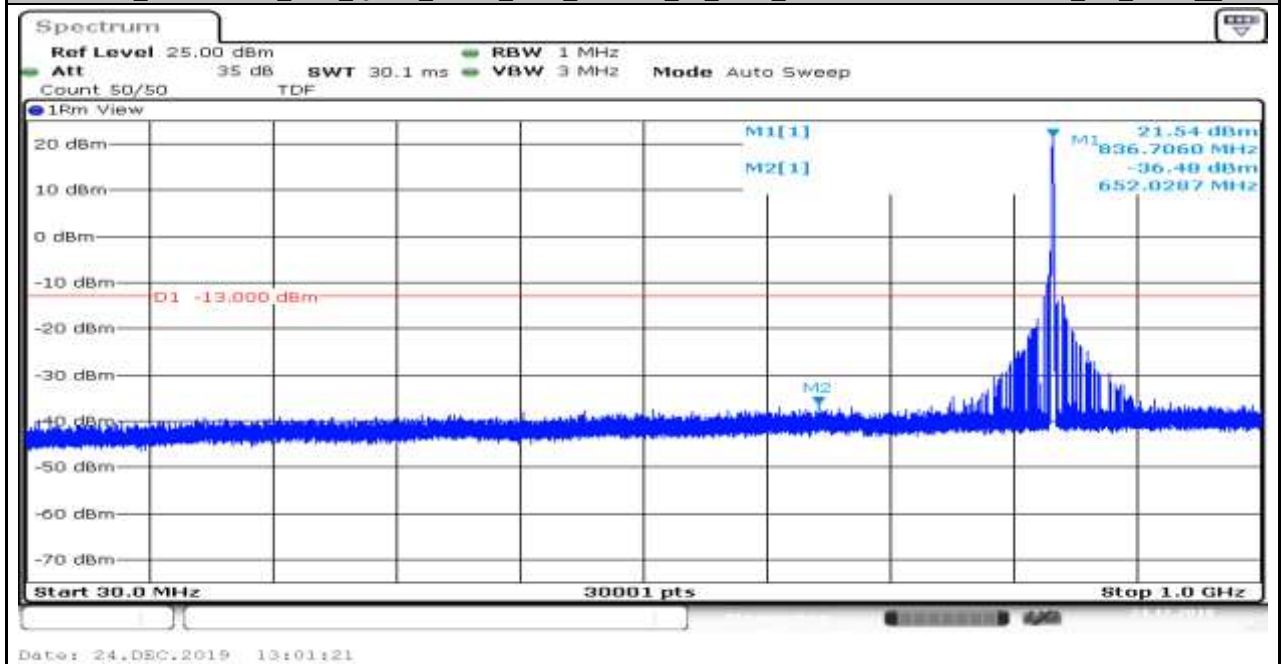
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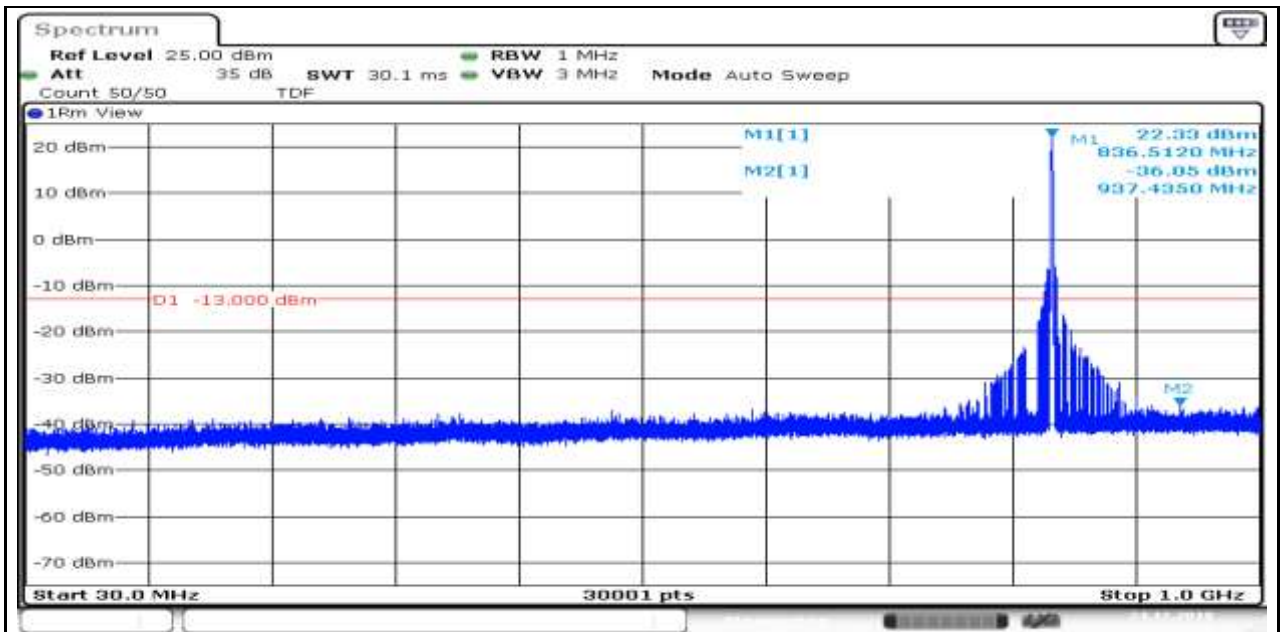
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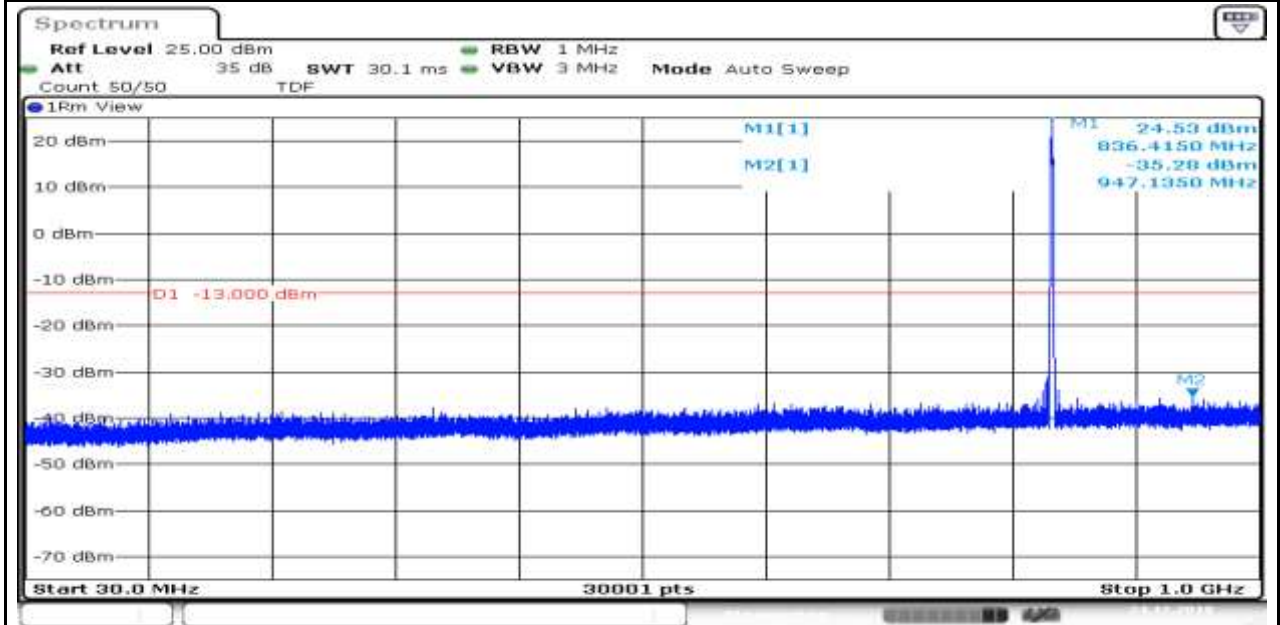


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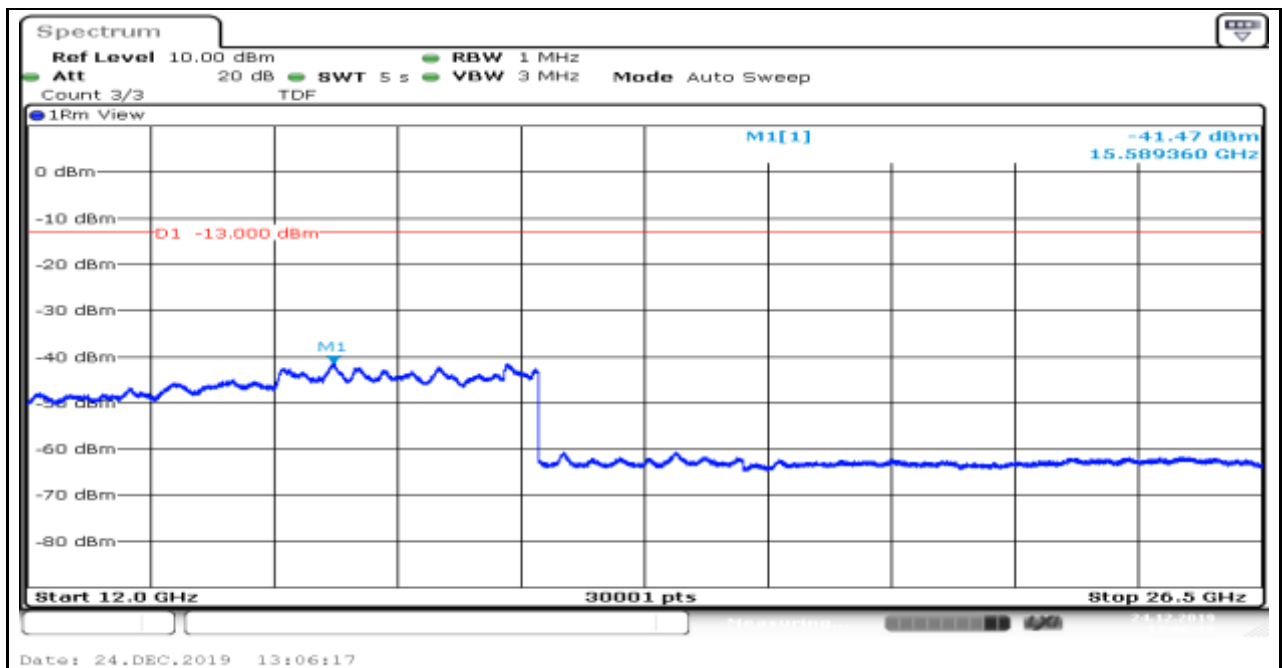
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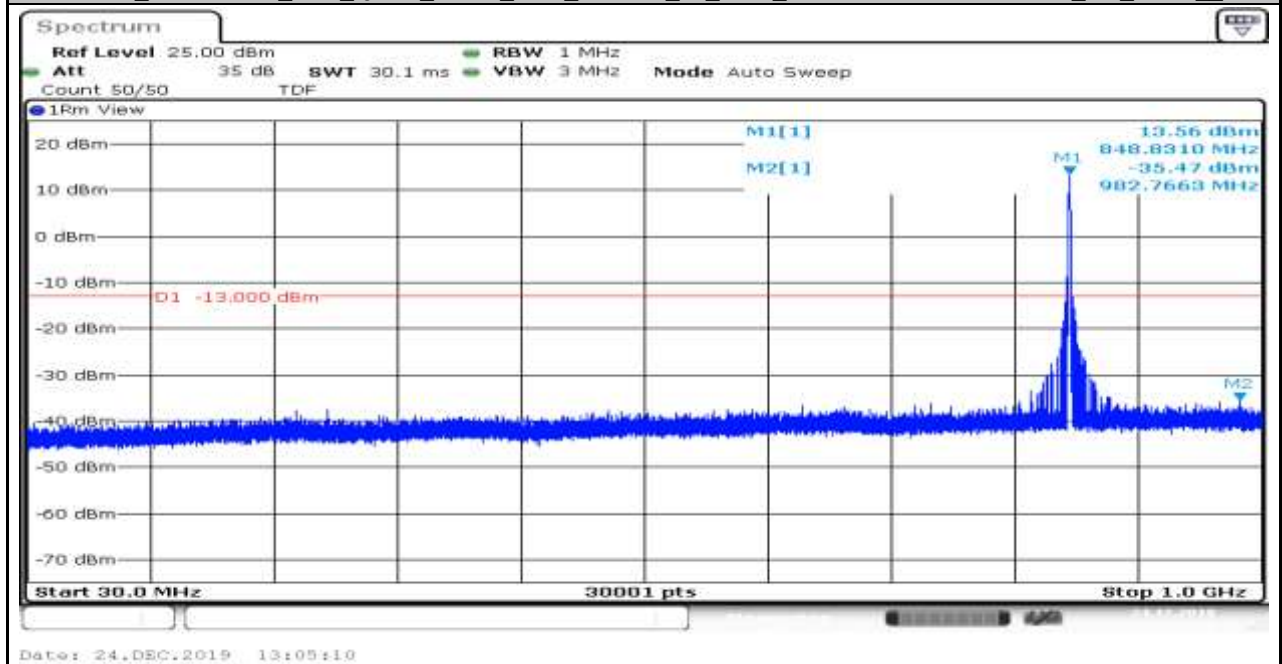


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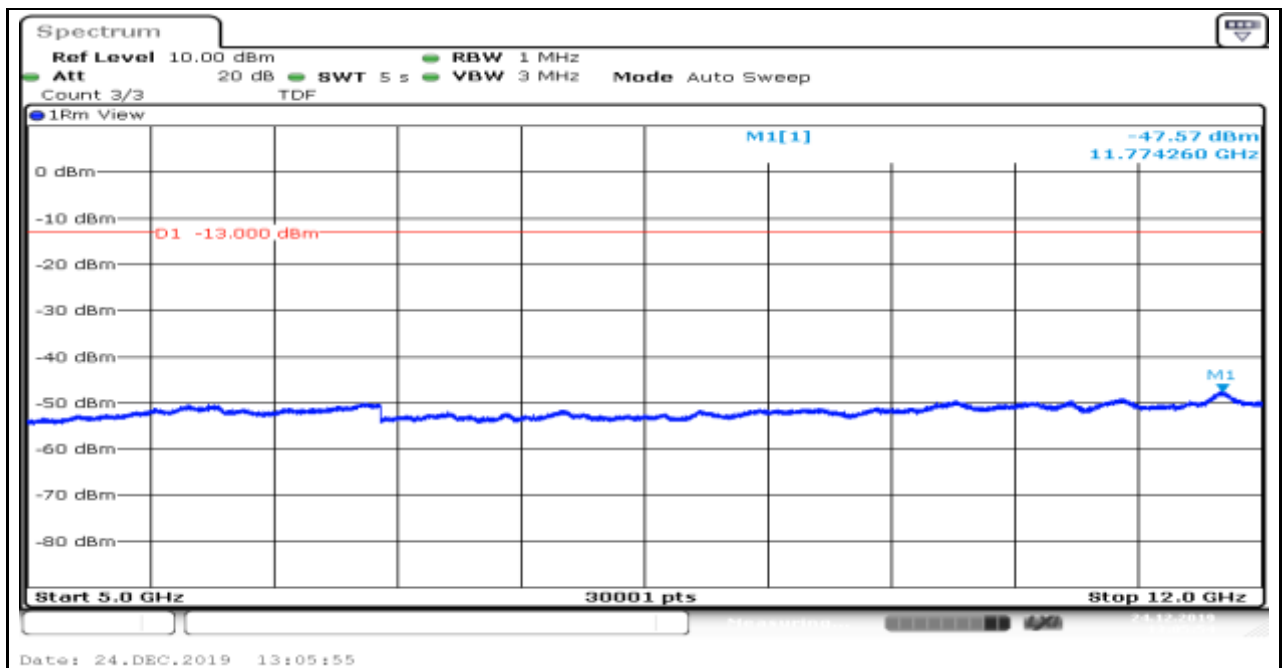
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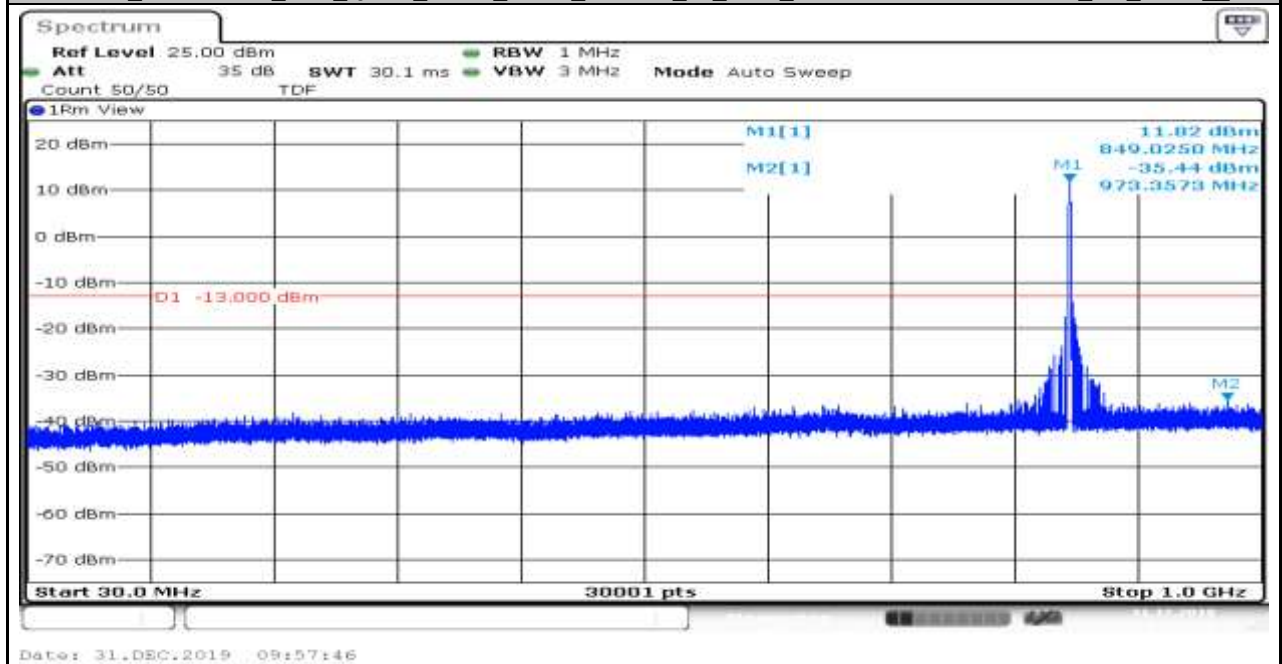
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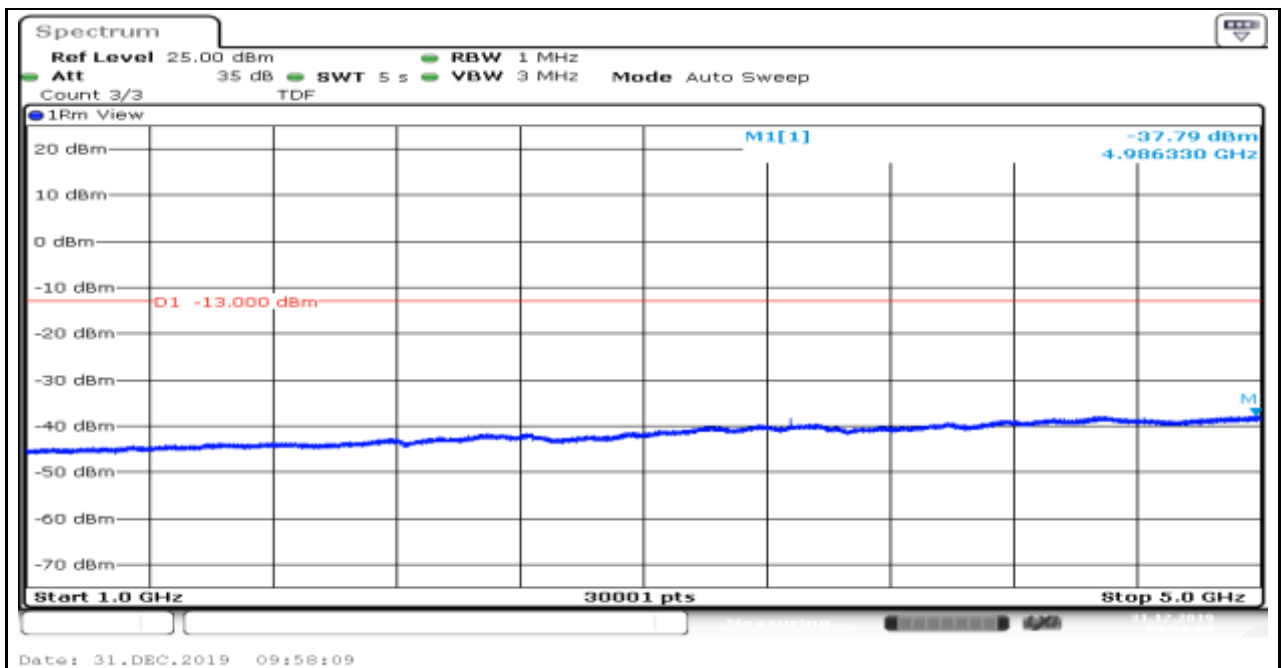
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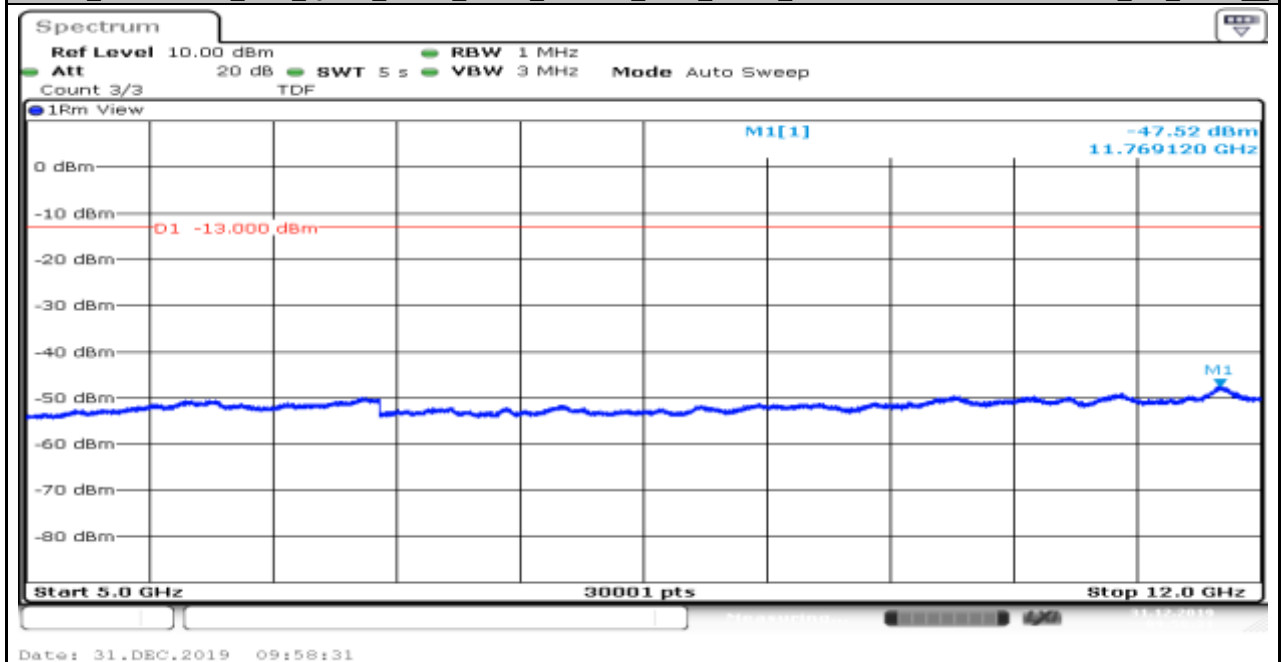
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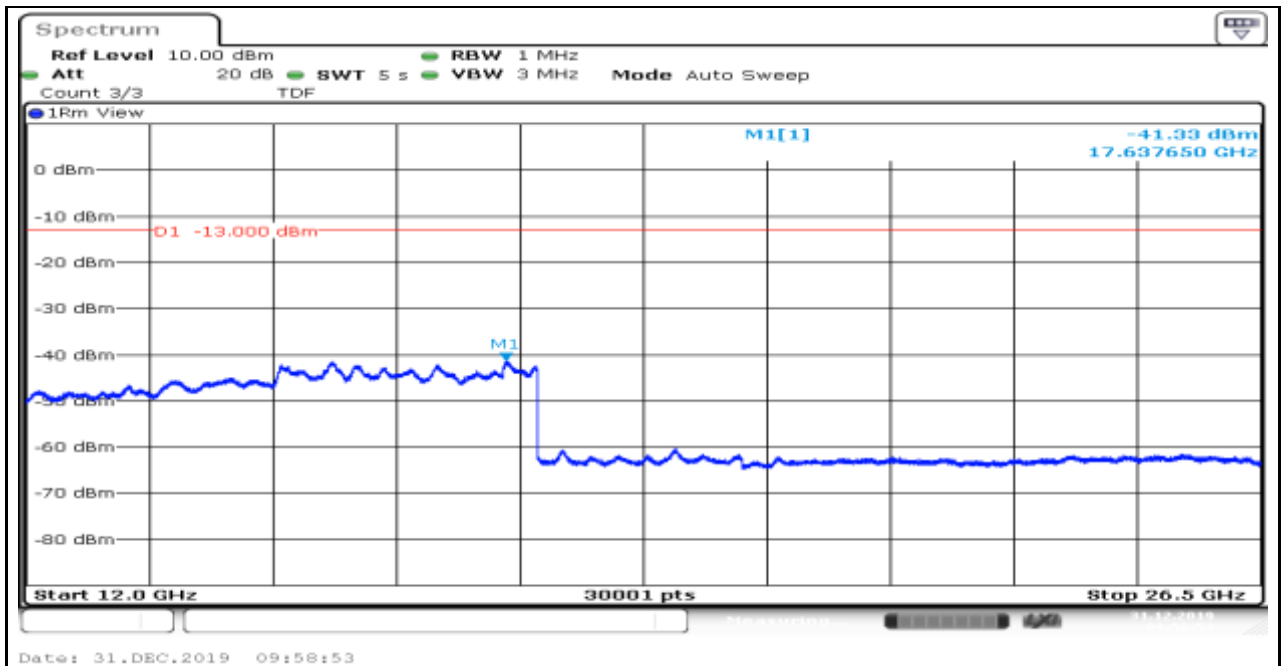
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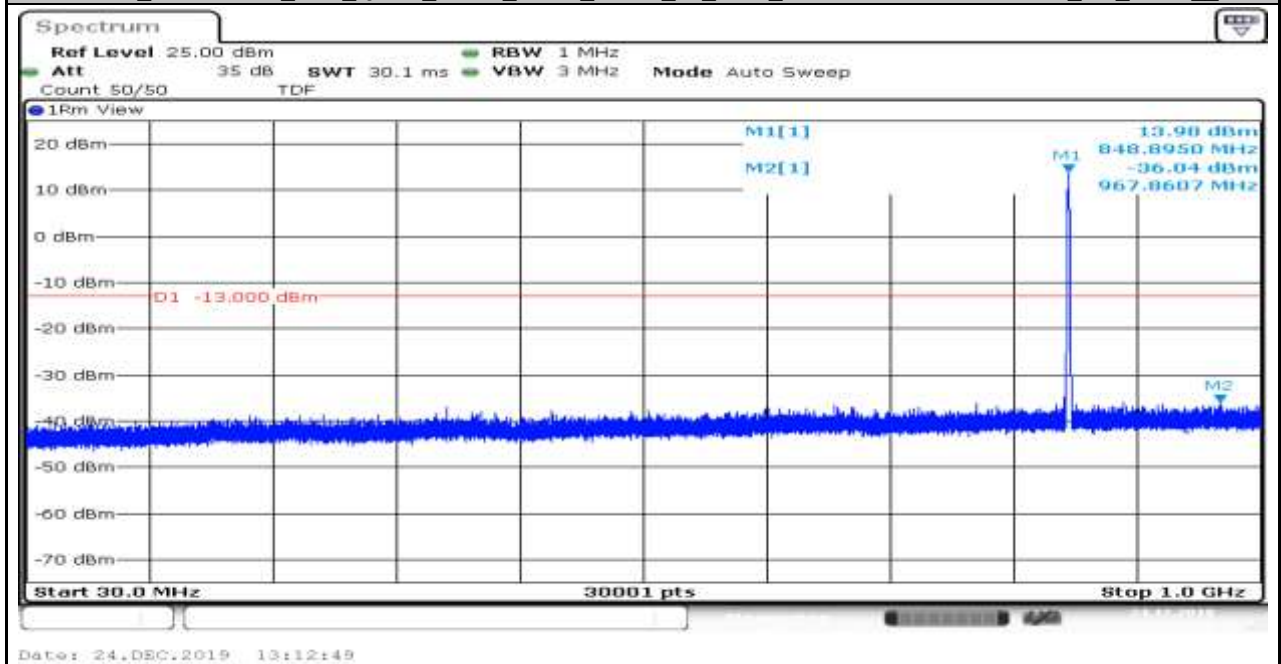
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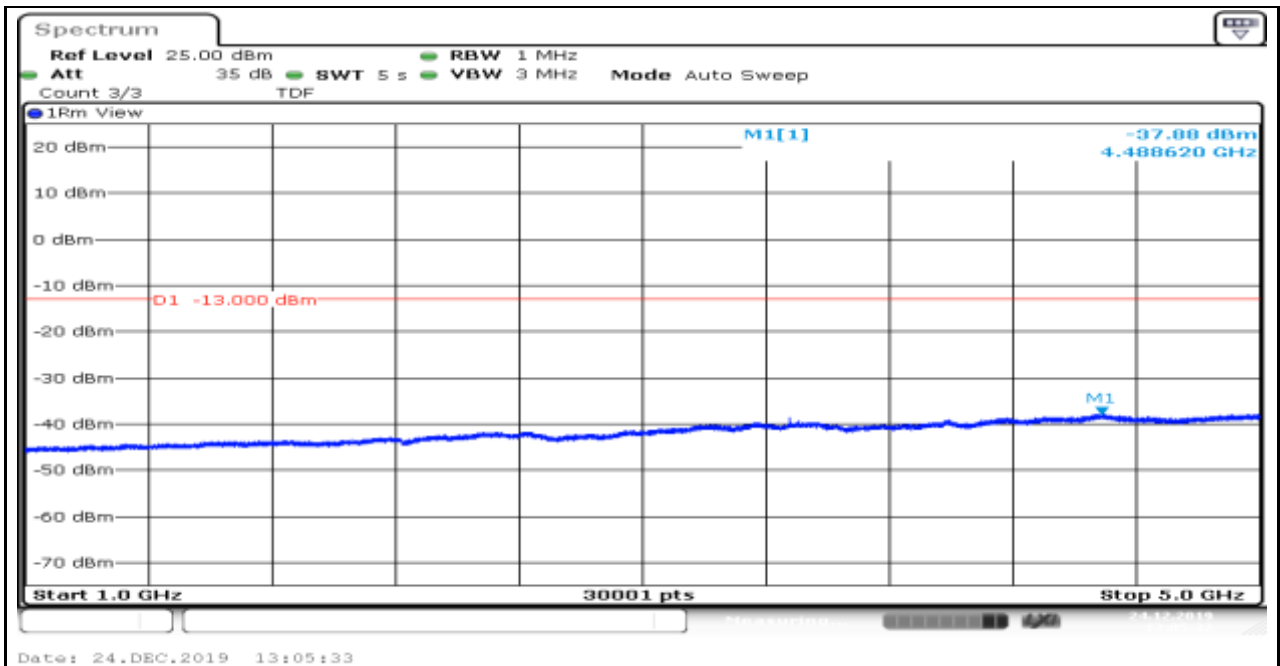
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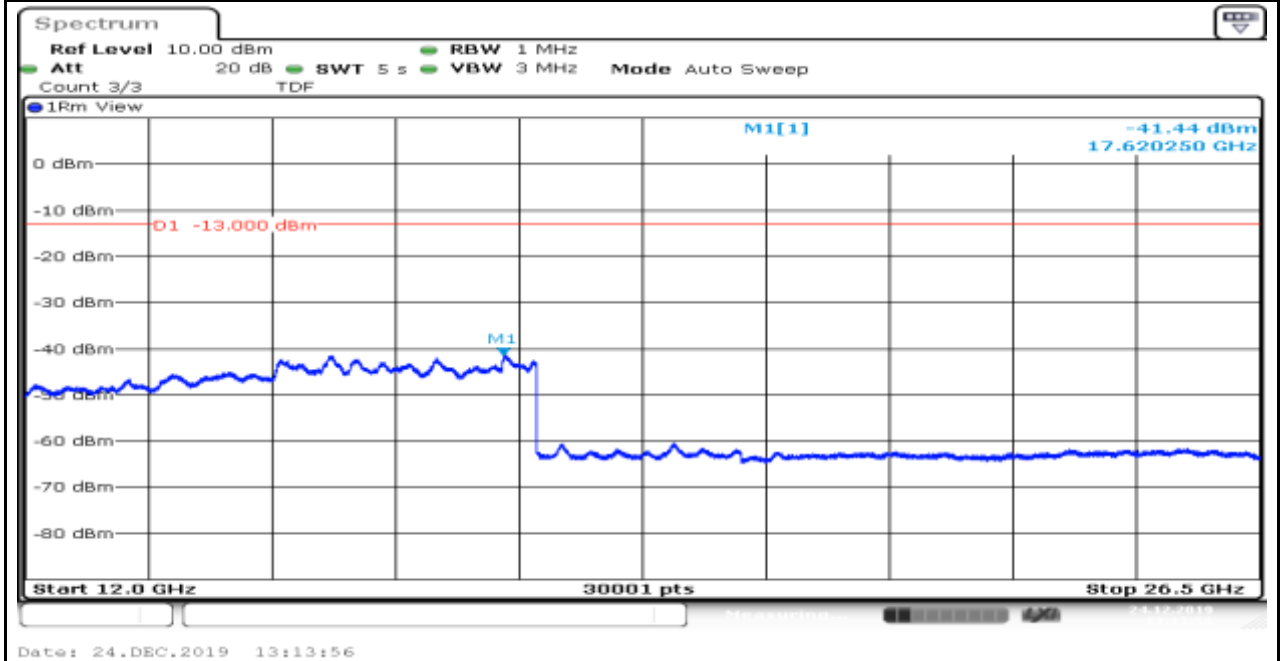
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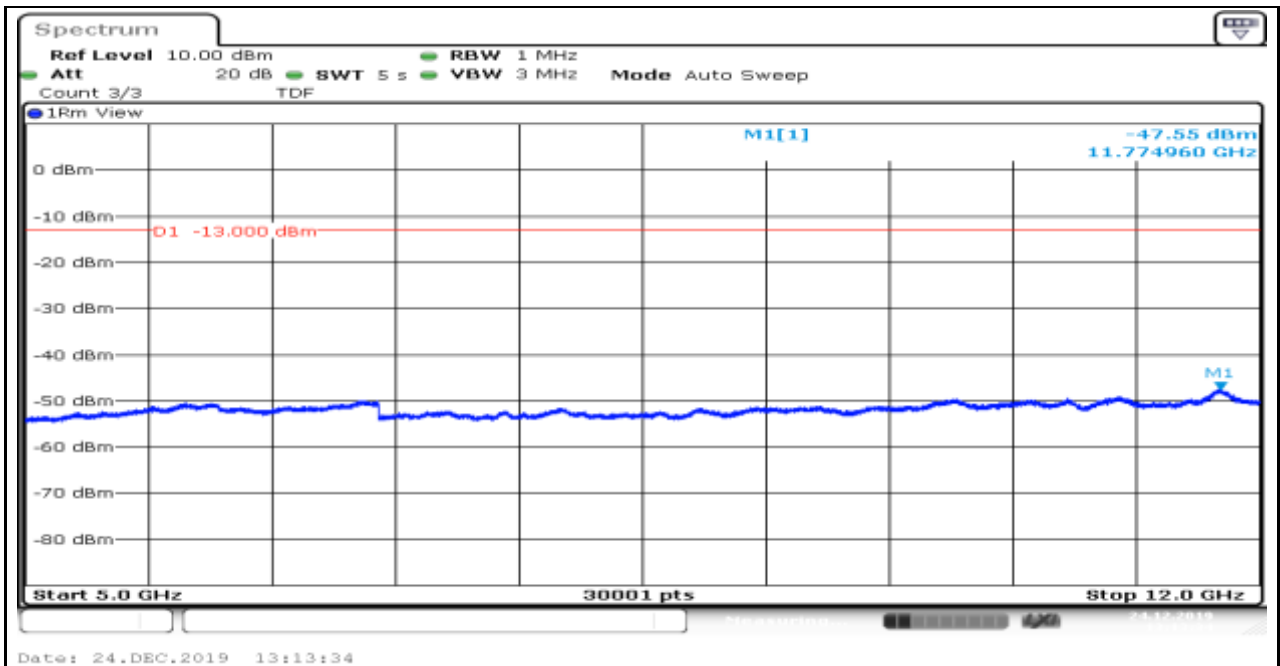
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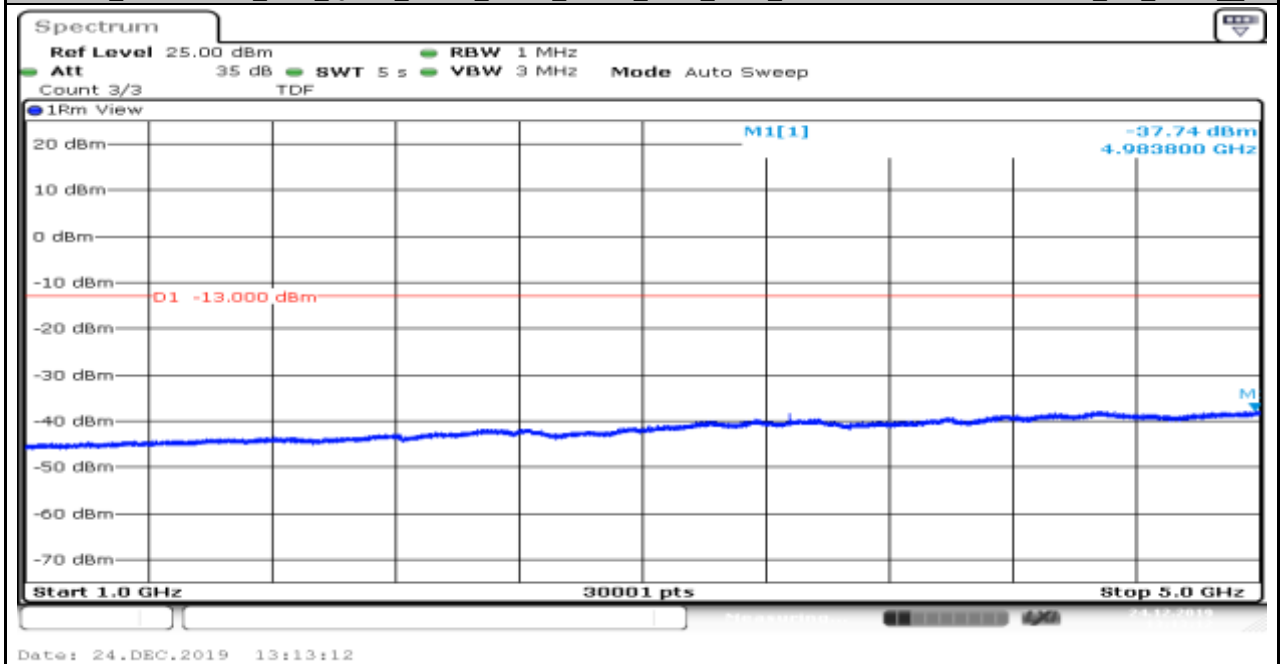
Band5_Stand-Alone_NaN_QPSK_20649_12@0_15kHz_12000_26500_12000~26500MHz@-41.44dBm_-13_PASS



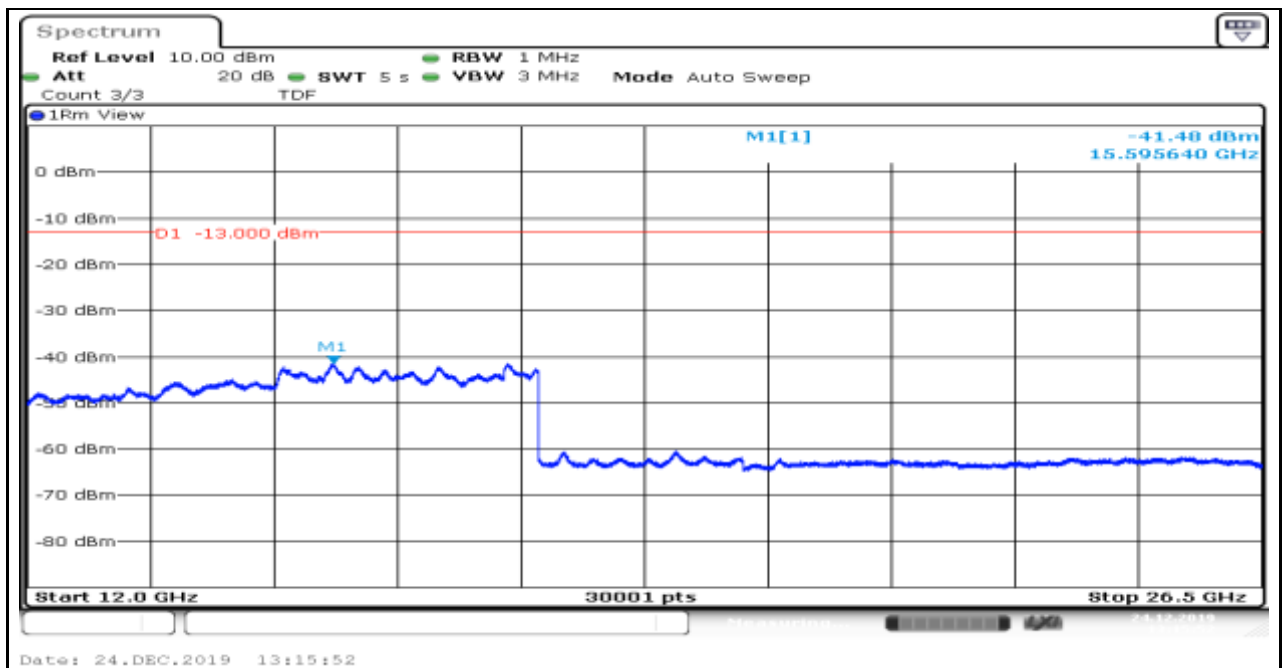
Band5_Stand-Alone_NaN_QPSK_20649_12@0_15kHz_5000_12000_5000~12000MHz@-47.55dBm_-13_PASS



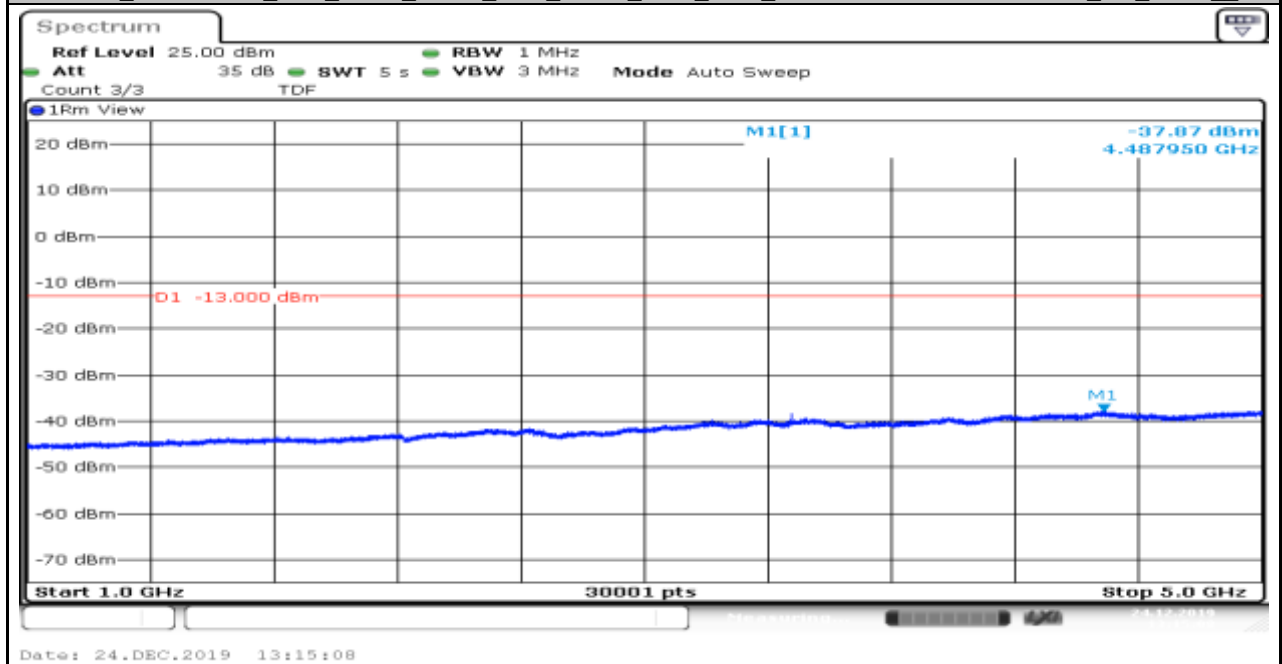
Band5_Stand-Alone_NaN_QPSK_20649_12@0_15kHz_1000_5000_1000~5000MHz@-37.74dBm_-13_PASS



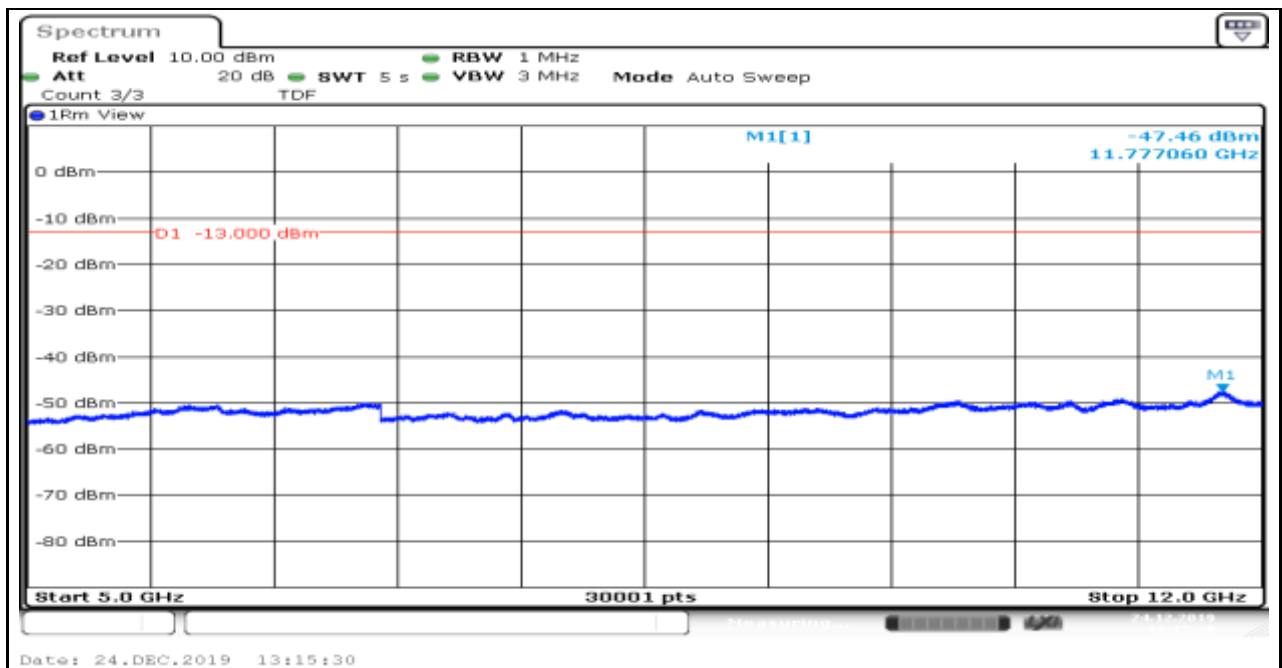
Band5_Stand-Alone_NaN_BPSK_20401_1@0_15kHz_12000_26500_12000~26500MHz@-41.48dBm_-13_PASS



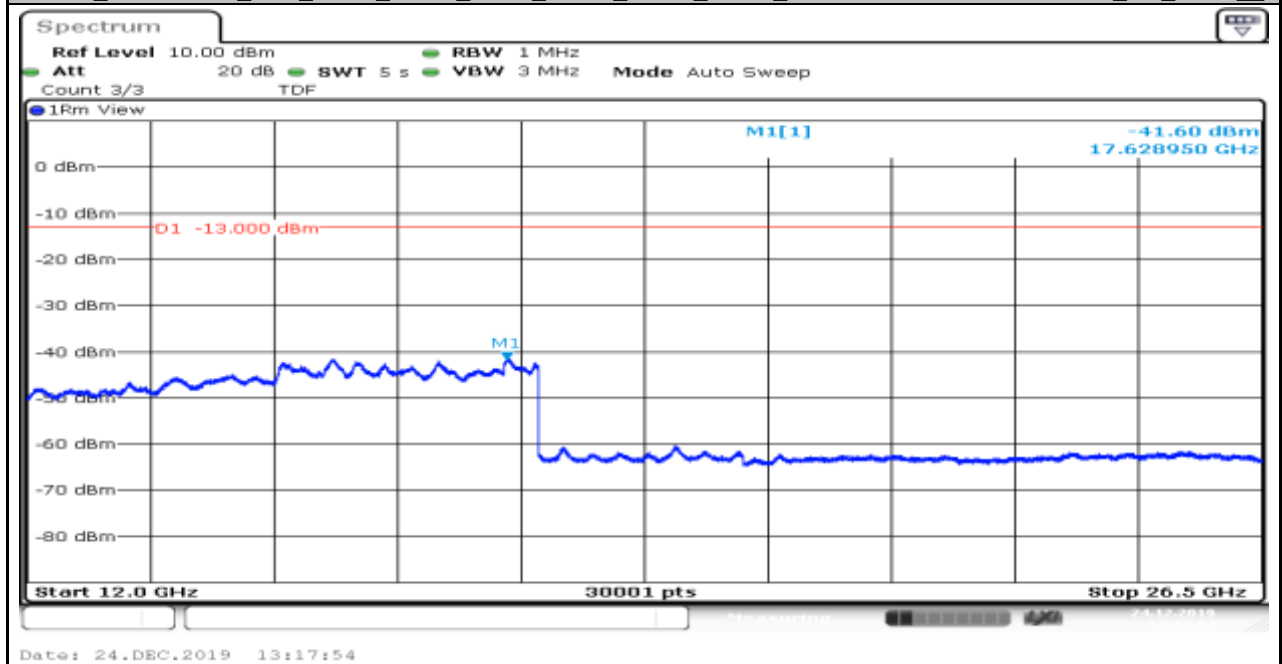
Band5_Stand-Alone_NaN_BPSK_20401_1@0_15kHz_1000_5000_1000~5000MHz@-37.87dBm_-13_PASS_



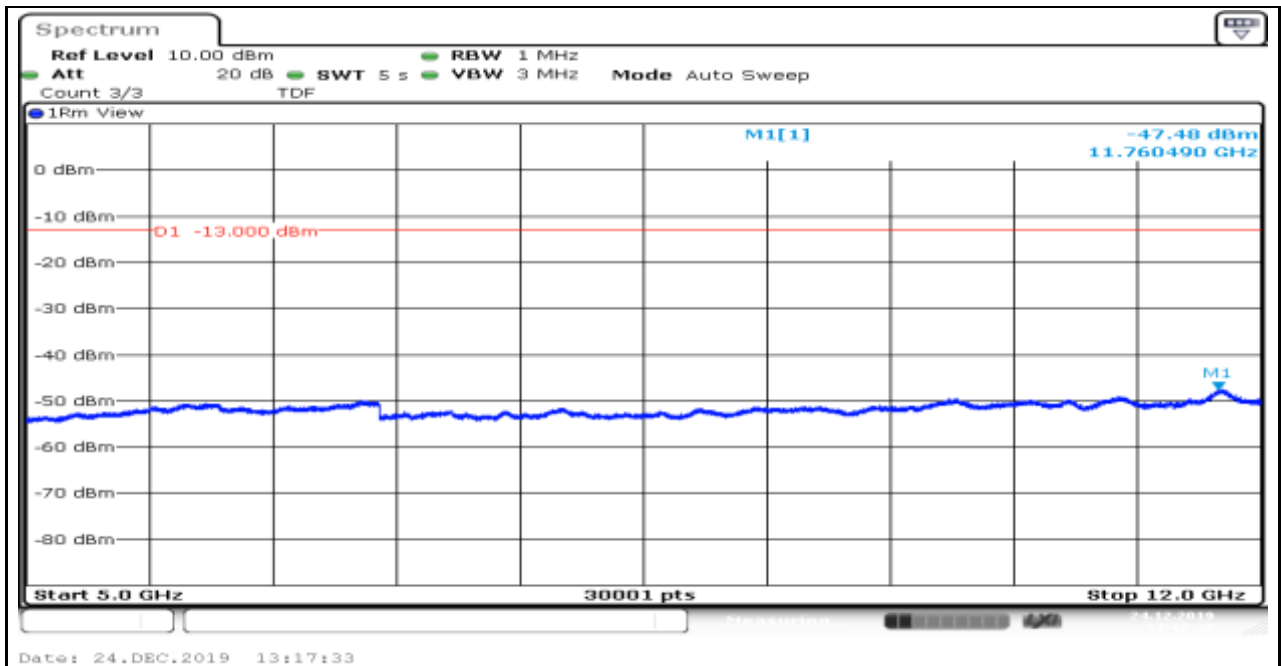
Band5_Stand-Alone_NaN_BPSK_20401_1@0_15kHz_5000_12000_5000~12000MHz@-47.46dBm_-13_PASS_



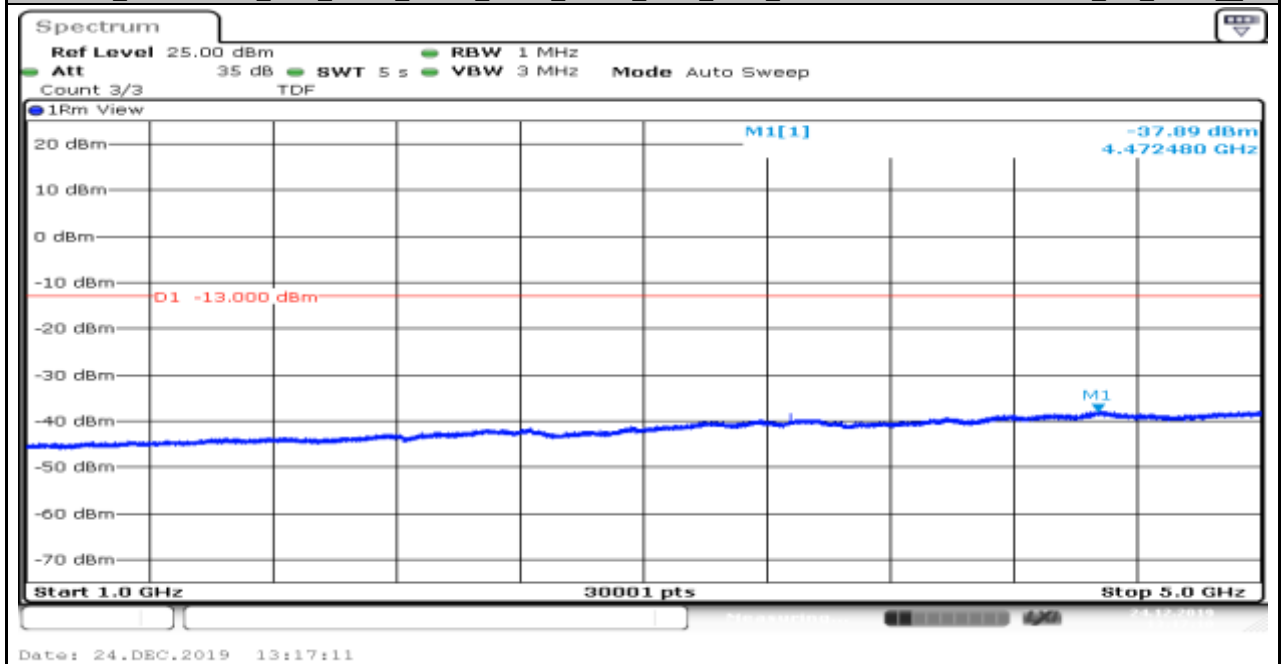
Band5_Stand-Alone_NaN_BPSK_20401_1@11_15kHz_12000_26500_12000~26500MHz@-41.6dBm_-13_PASS



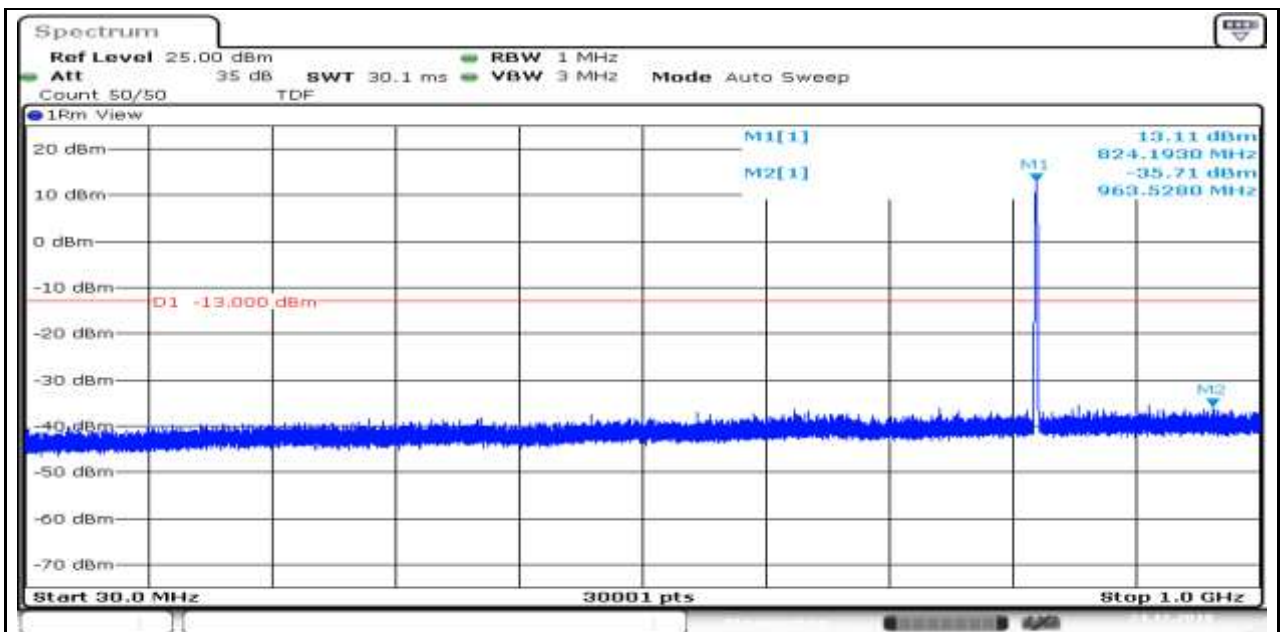
Band5_Stand-Alone_NaN_BPSK_20401_1@11_15kHz_5000_12000_5000~12000MHz@-47.48dBm_-13_PASS



Band5_Stand-Alone_NaN_BPSK_20401_1@11_15kHz_1000_5000_1000~5000MHz@-37.89dBm_-13_PASS_

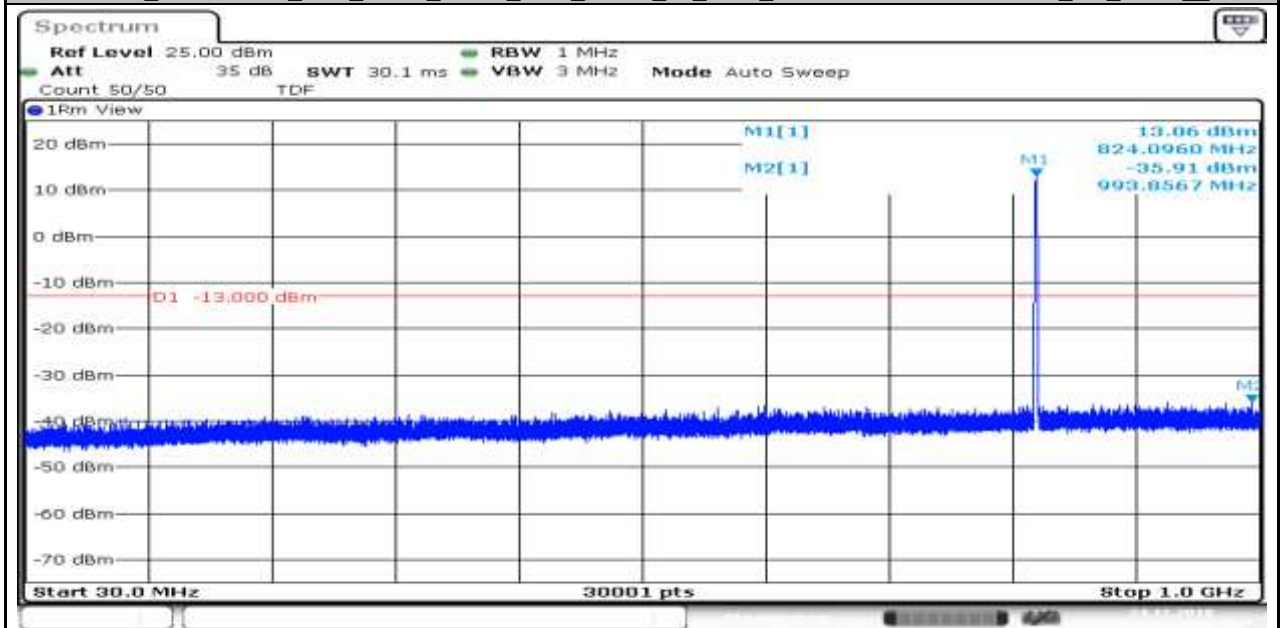


Band5_Stand-Alone_NaN_BPSK_20401_1@11_15kHz_30_1000_30~1000MHz@-35.71dBm_-13_PASS_



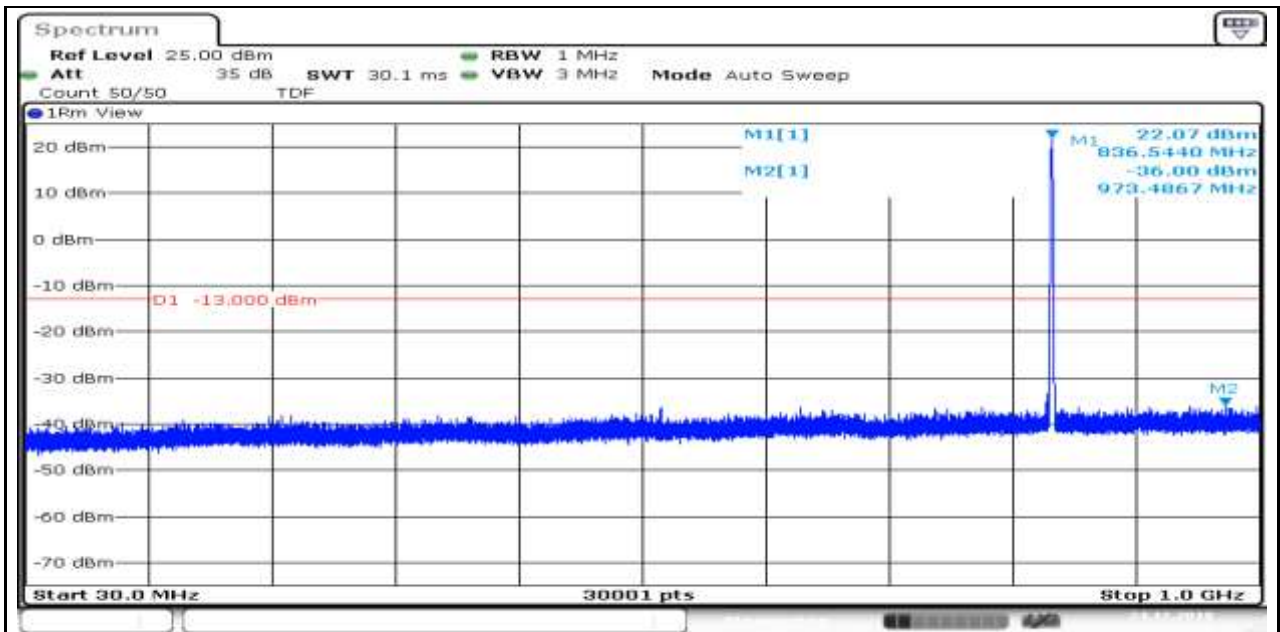
Date: 24.DEC.2019 13:16:48

Band5_Stand-Alone_NaN_BPSK_20401_1@0_15kHz_30_1000_30~1000MHz@-35.91dBm_-13_PASS



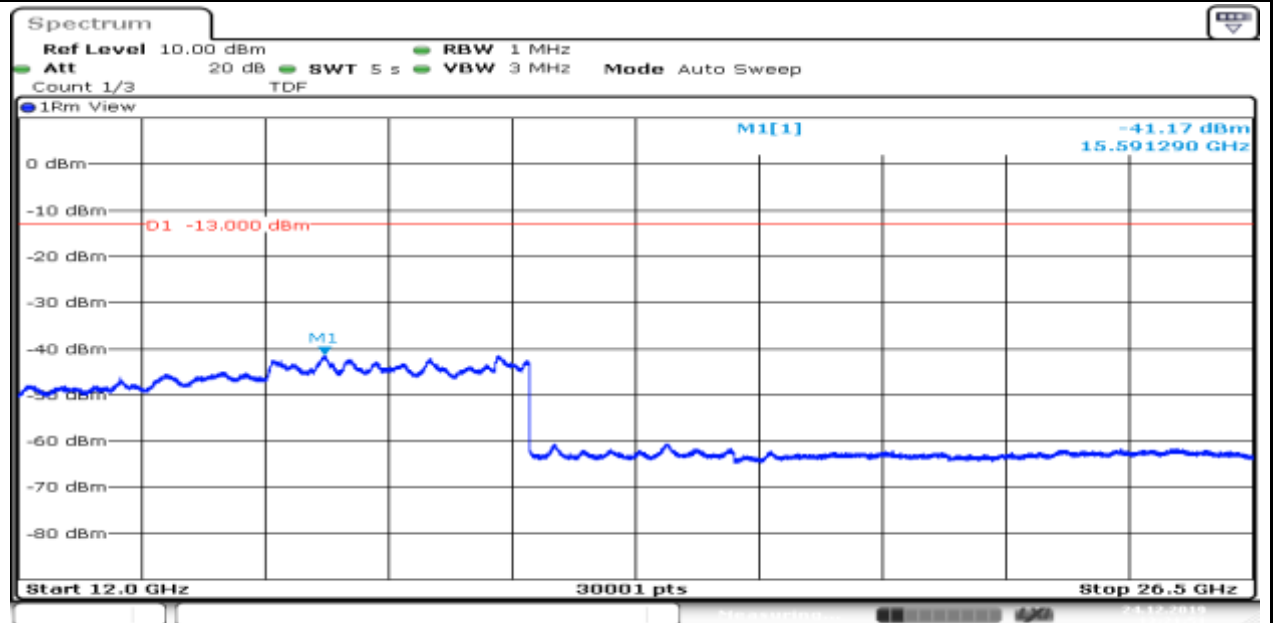
Date: 24.DEC.2019 13:14:45

Band5_Stand-Alone_NaN_BPSK_20525_1@0_15kHz_30_1000_30~1000MHz@-36dBm_-13_PASS



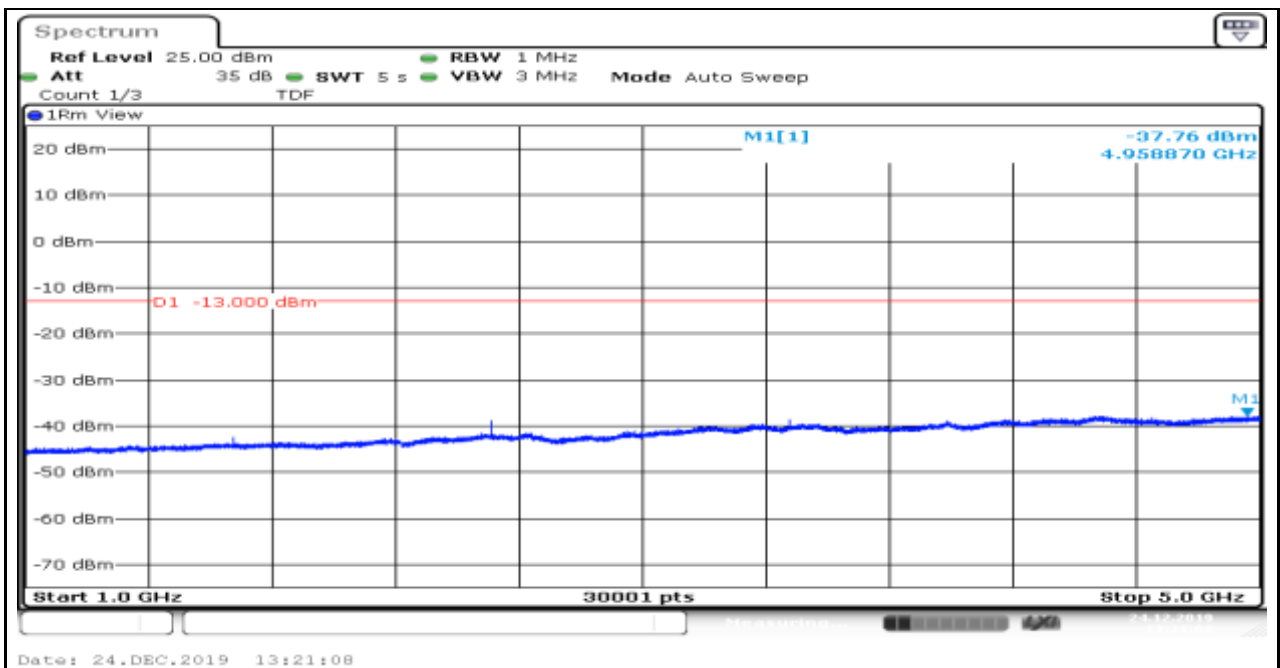
Date: 24.DEC.2019 13:18:42

Band5_Stand-Alone_NaN_BPSK_20525_1@11_15kHz_12000_26500_12000~26500MHz@-41.17dBm_-13_PASS

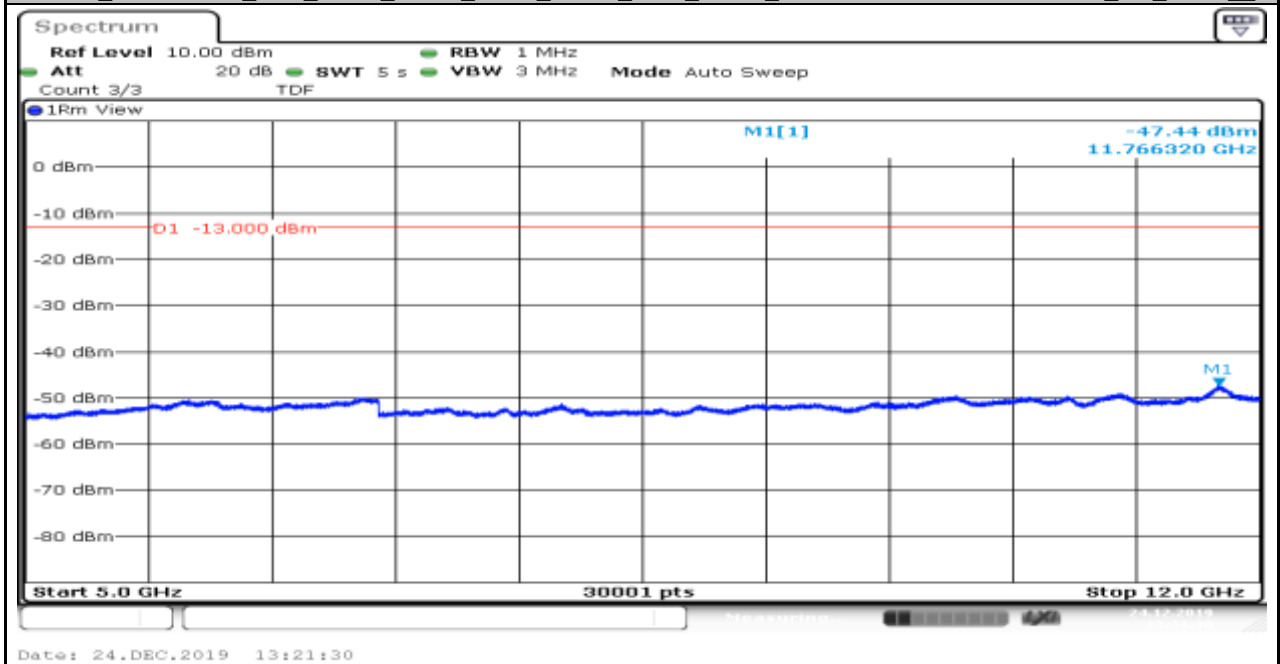


Date: 24.DEC.2019 13:21:52

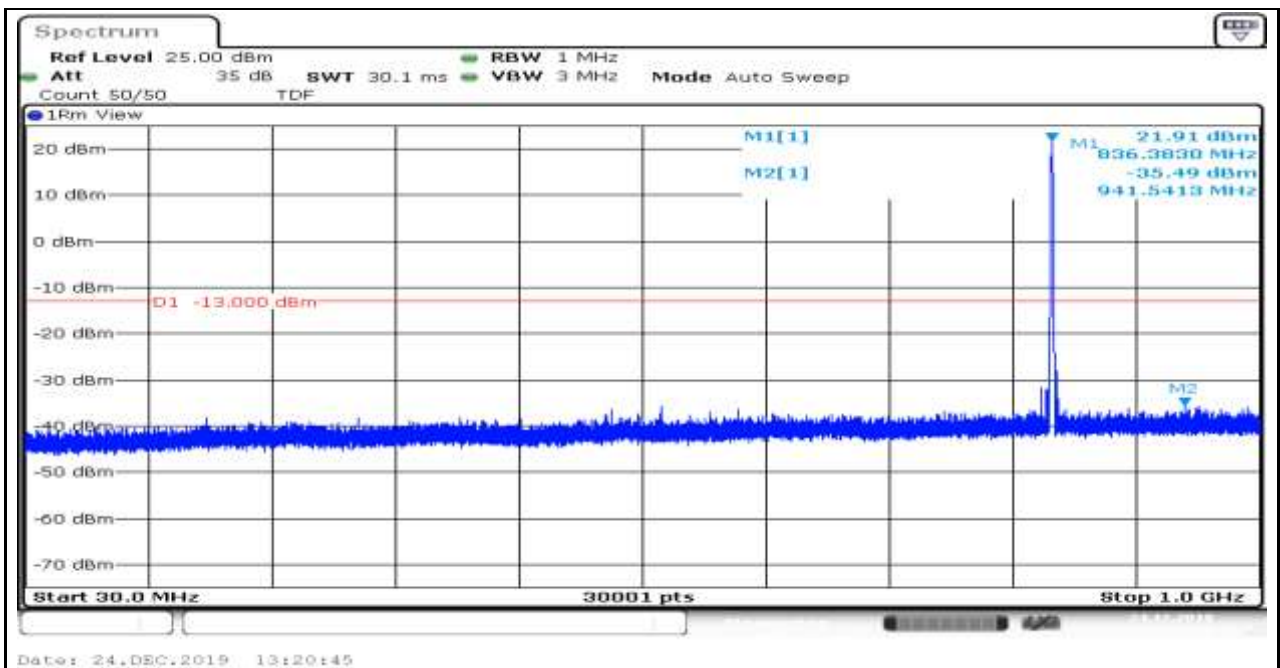
Band5_Stand-Alone_NaN_BPSK_20525_1@11_15kHz_1000_5000_1000~5000MHz@-37.76dBm_-13_PASS



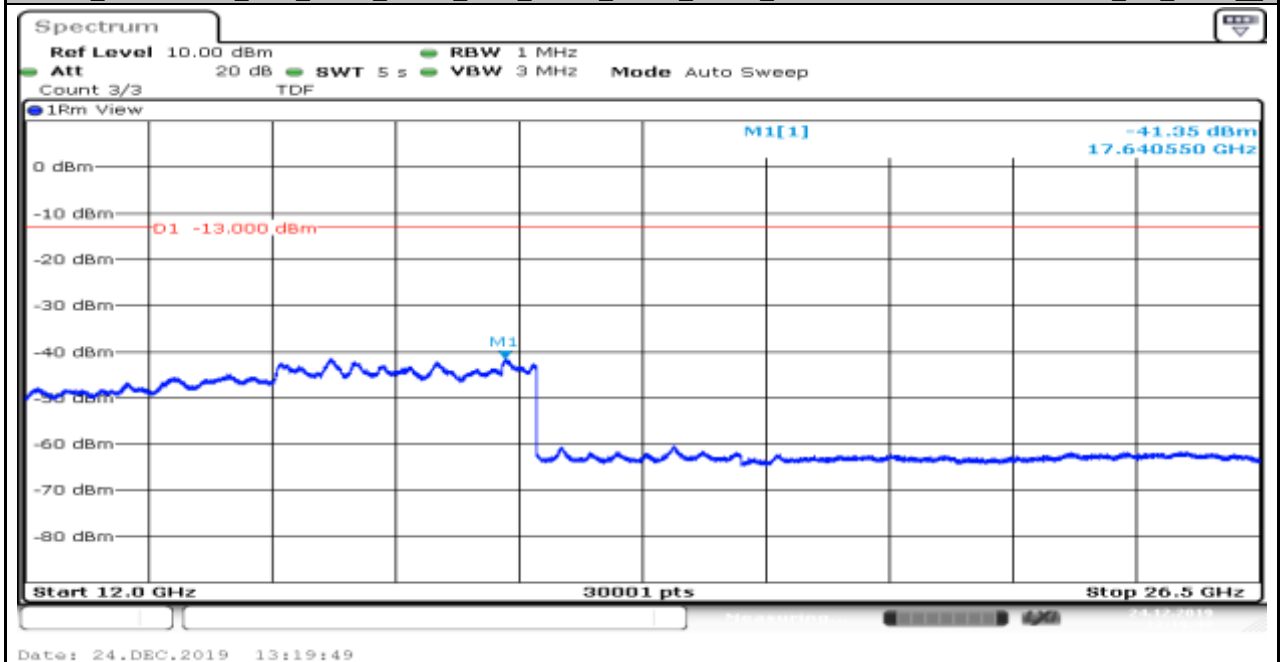
Band5_Stand-Alone_NaN_BPSK_20525_1@11_15kHz_5000_12000_5000~12000MHz@-47.44dBm_-13_PASS_



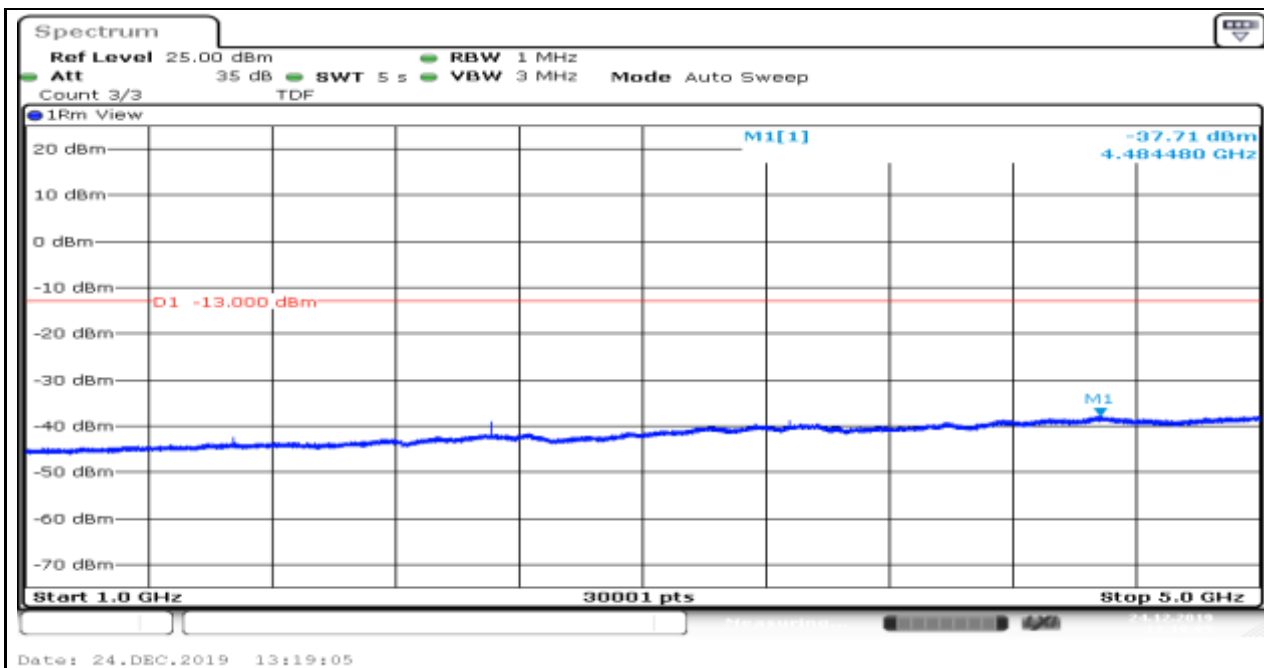
Band5_Stand-Alone_NaN_BPSK_20525_1@11_15kHz_30_1000_30~1000MHz@-35.49dBm_-13_PASS_



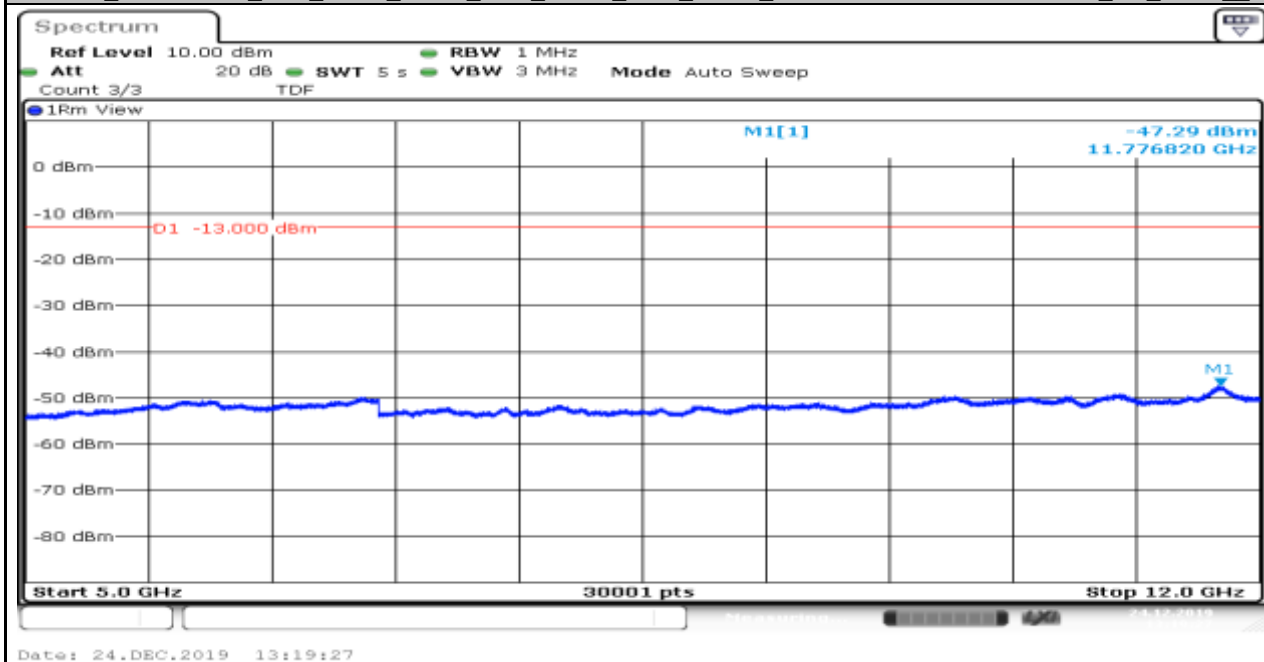
Band5_Stand-Alone_NaN_BPSK_20525_1@0_15kHz_12000_26500_12000-26500MHz@-41.35dBm_-13_PASS



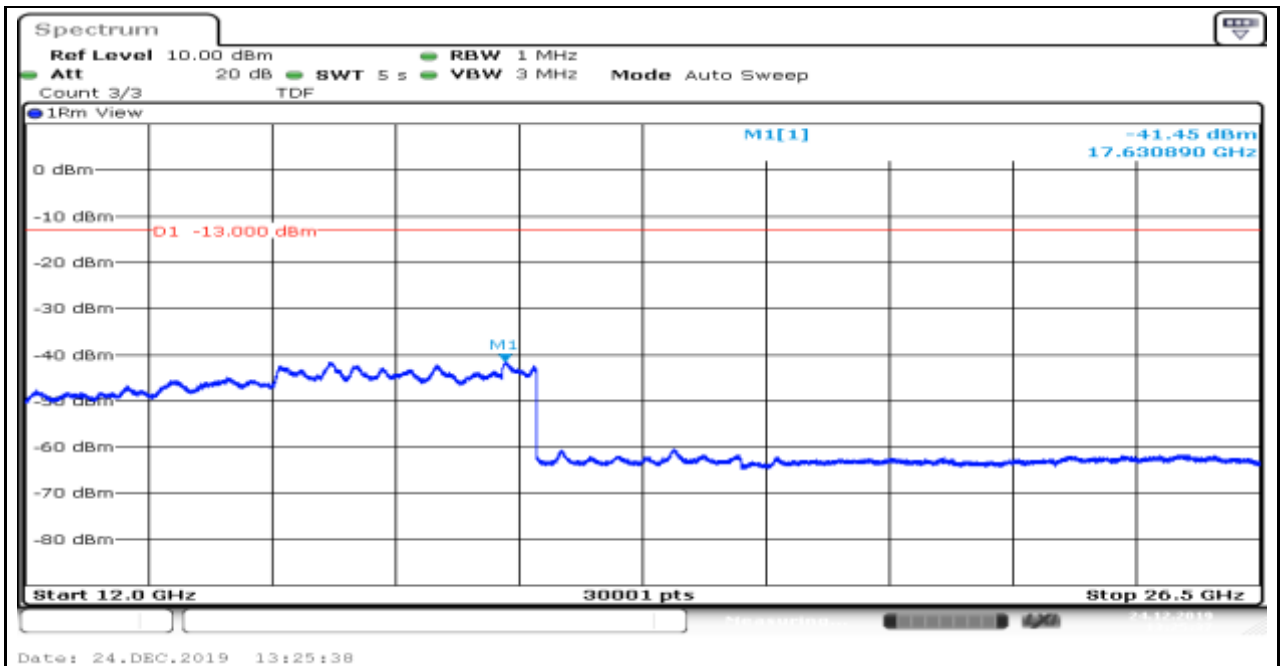
Band5_Stand-Alone_NaN_BPSK_20525_1@0_15kHz_1000_5000_1000-5000MHz@-37.71dBm_-13_PASS



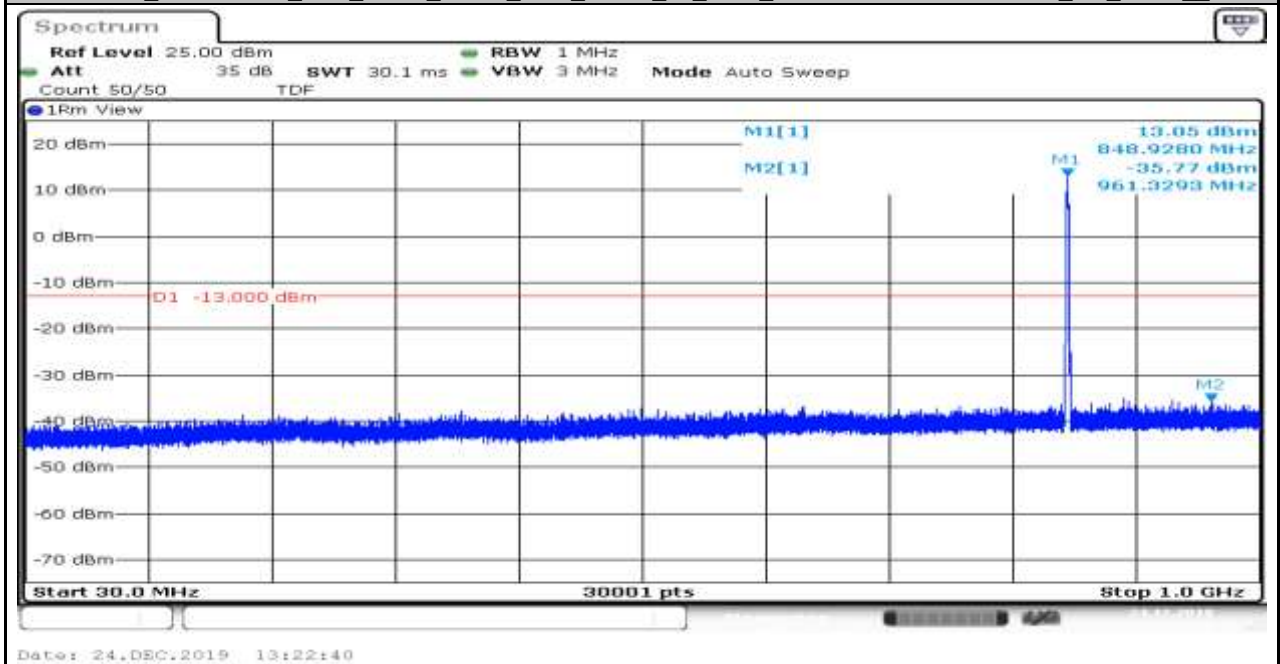
Band5_Stand-Alone_NaN_BPSK_20525_1@0_15kHz_5000_12000_5000~12000MHz@-47.29dBm_-13_PASS_



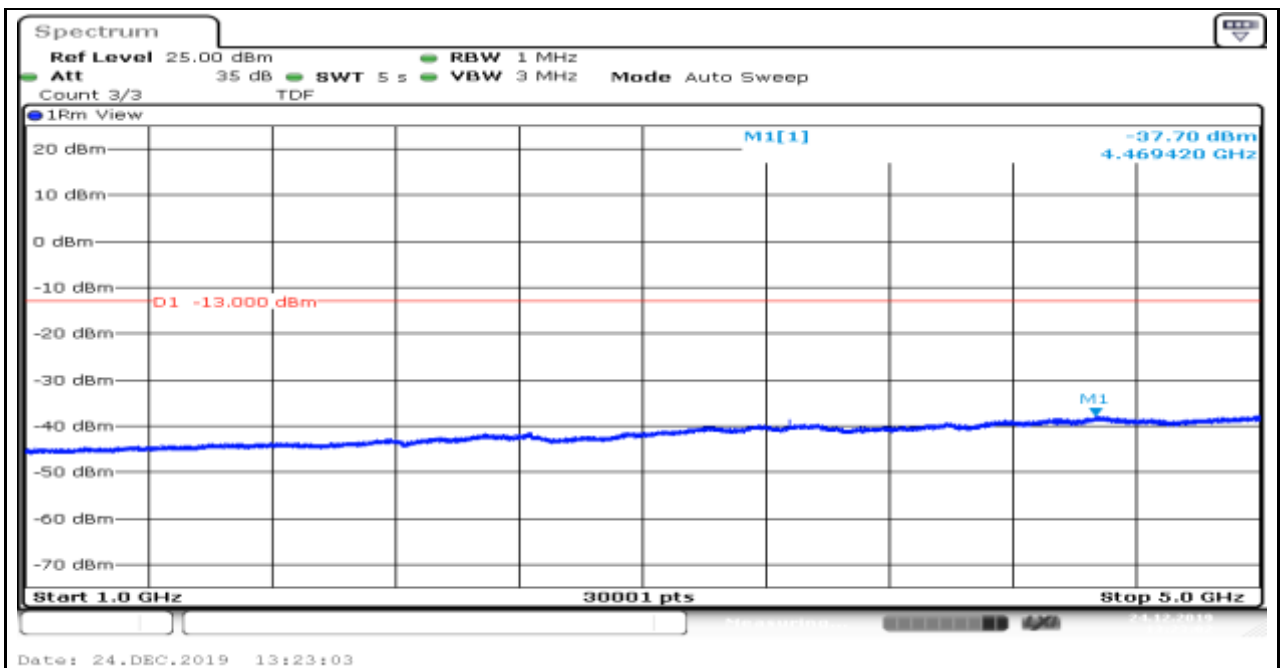
Band5_Stand-Alone_NaN_BPSK_20649_1@11_15kHz_12000_26500_12000~26500MHz@-41.45dBm_-13_PASS_



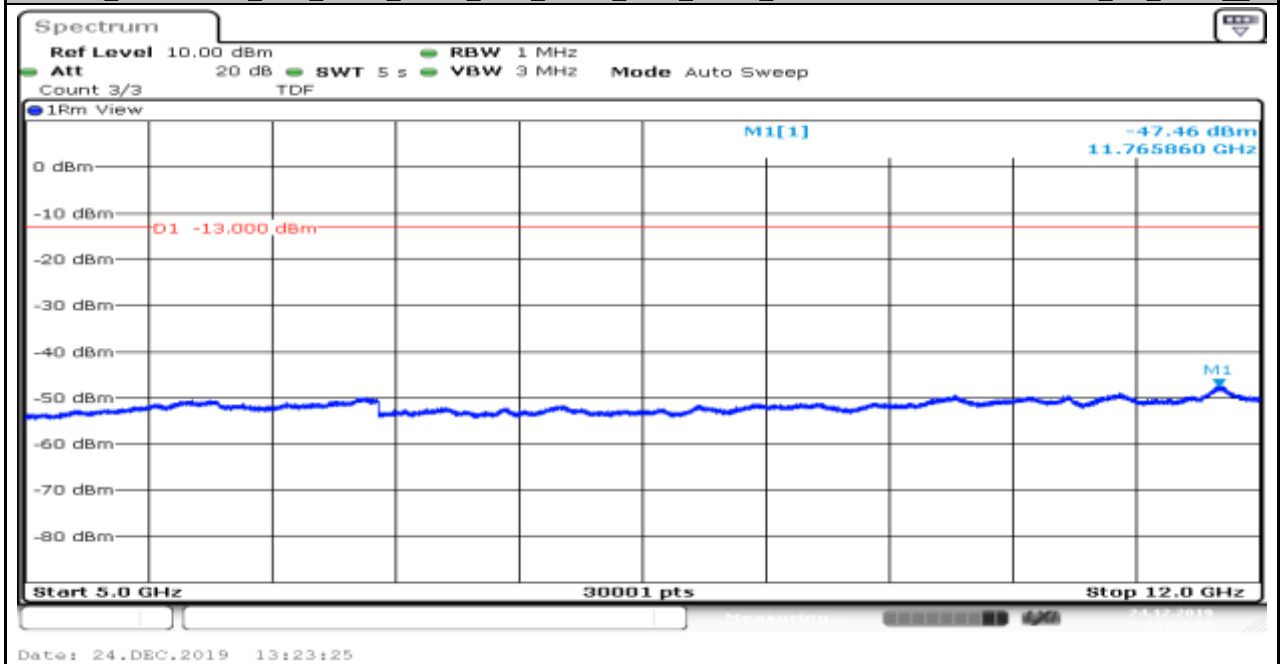
Band5_Stand-Alone_NaN_BPSK_20649_1@0_15kHz_30_1000_30~1000MHz@-35.77dBm_-13_PASS



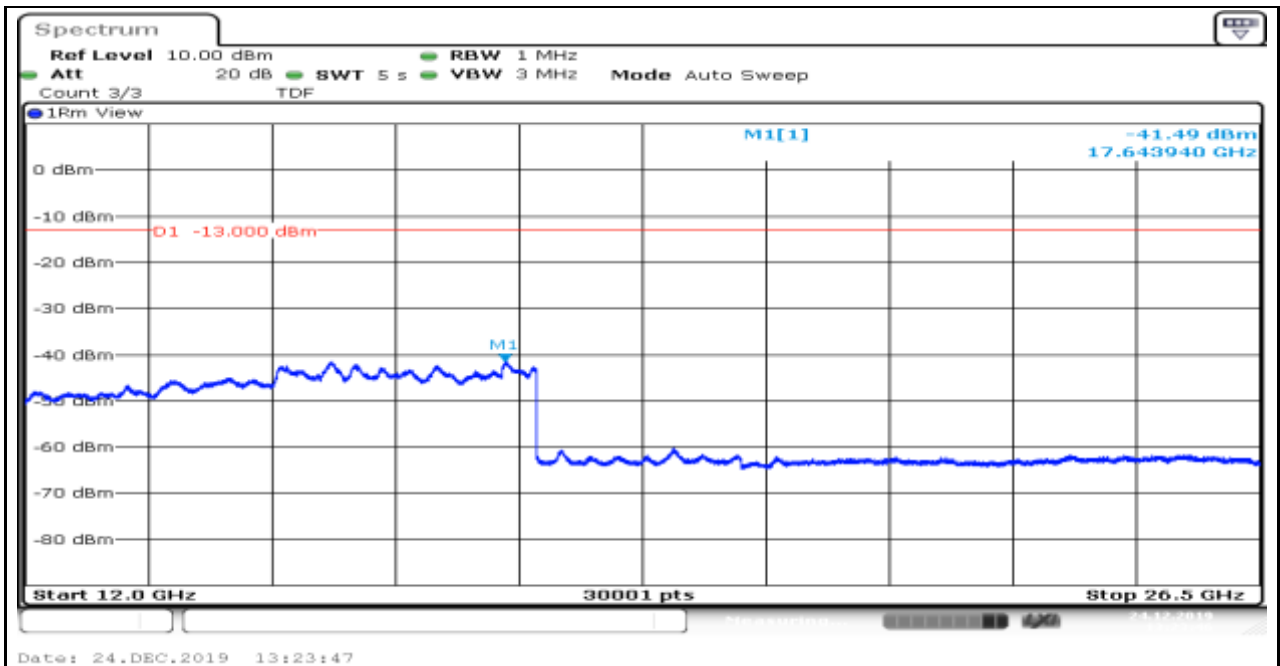
Band5_Stand-Alone_NaN_BPSK_20649_1@0_15kHz_1000_5000_1000~5000MHz@-37.7dBm_-13_PASS



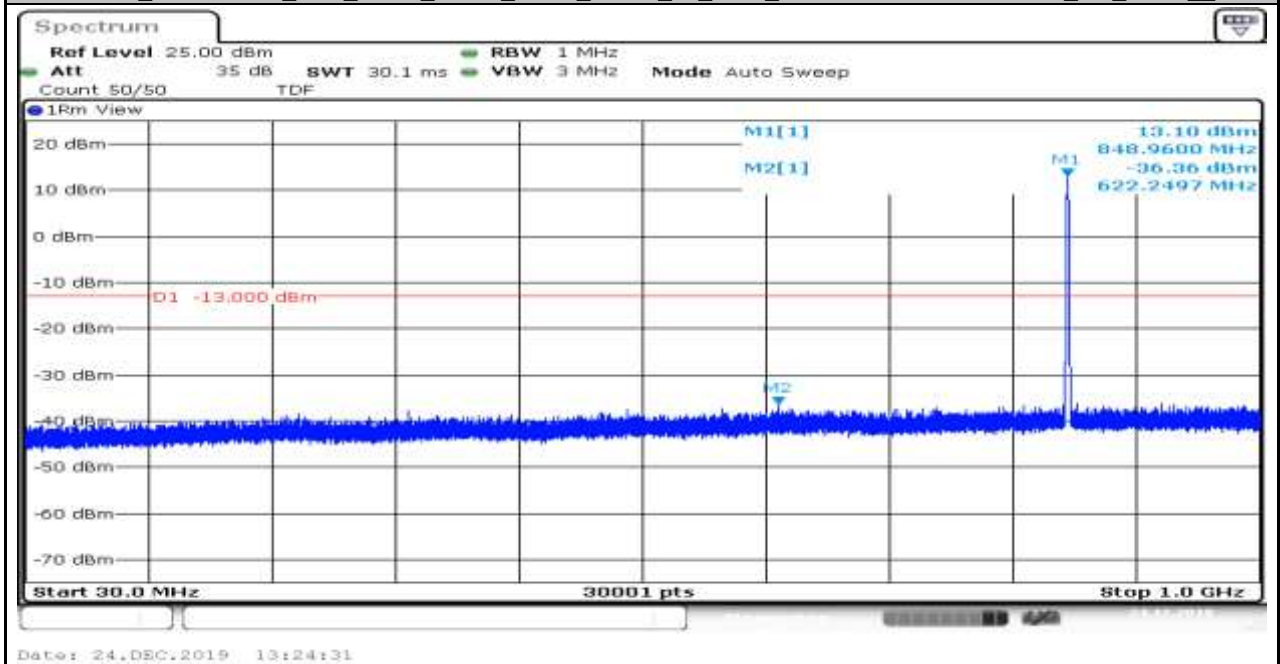
Band5_Stand-Alone_NaN_BPSK_20649_1@0_15kHz_5000_12000_5000-12000MHz@-47.46dBm_-13_PASS_



Band5_Stand-Alone_NaN_BPSK_20649_1@0_15kHz_12000_26500_12000-26500MHz@-41.49dBm_-13_PASS_

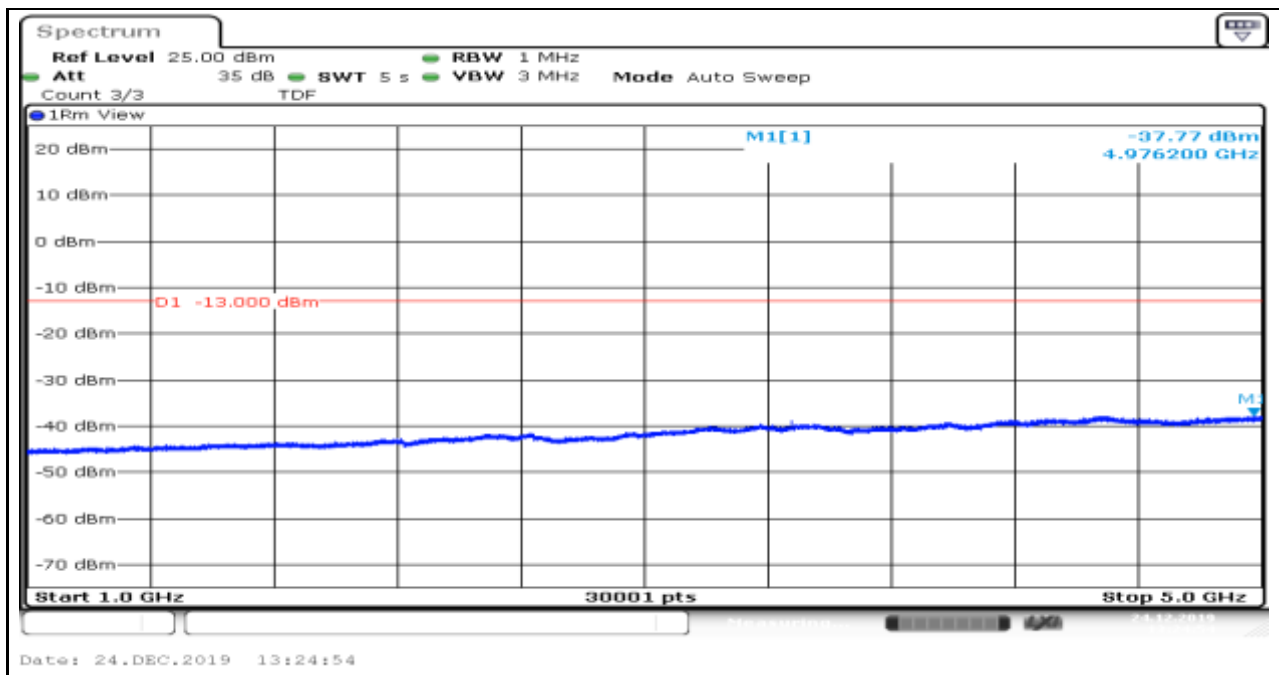


Band5_Stand-Alone_NaN_BPSK_20649_1@11_15kHz_30_1000_30~1000MHz@-36.36dBm_-13_PASS

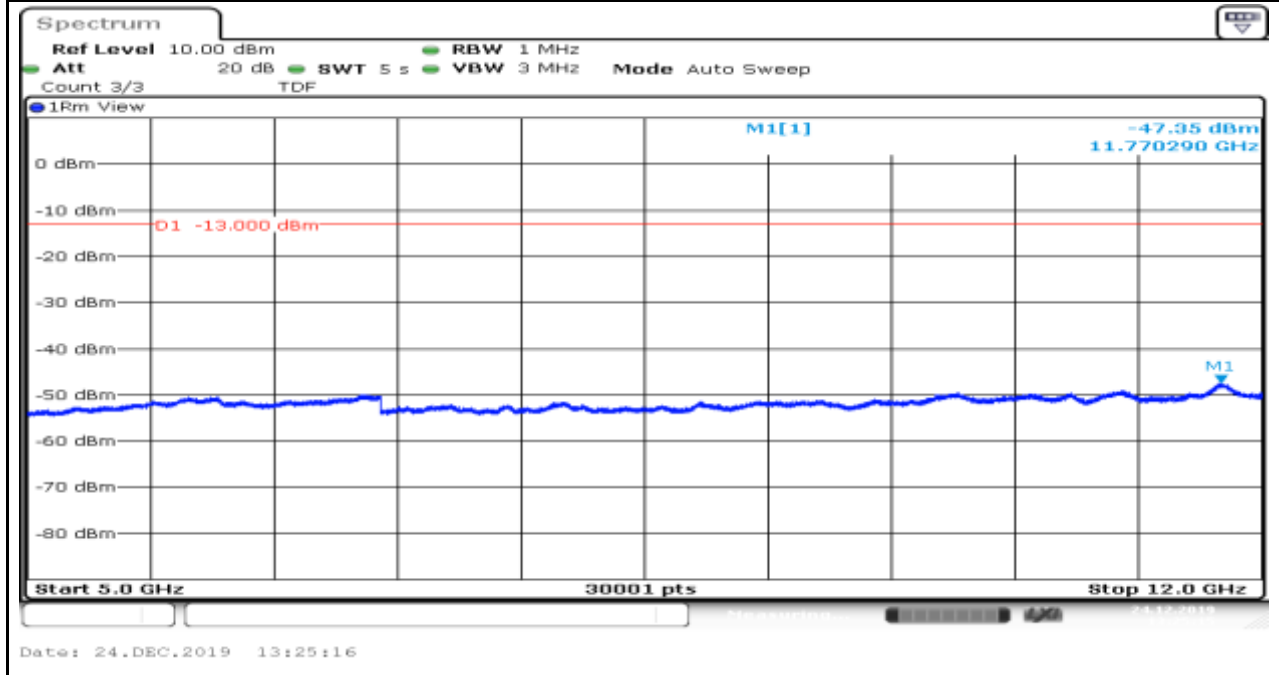


Band5_Stand-Alone_NaN_BPSK_20649_1@11_15kHz_1000_5000_1000~5000MHz@-37.77dBm_-13_PASS

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Band5_Stand-Alone_NaN_BPSK_20649_1@11_15kHz_5000_12000_5000~12000MHz@-47.35dBm_-13_PASS



Appendix C.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
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	NT	-18.81	-0.022487	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	HV	NT	-15.85	-0.018948	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	HV	NT	-19.21	-0.022965	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	NT	-20.27	-0.024232	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	LV	NT	-15.49	-0.018518	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	LV	NT	-8.57	-0.010245	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	NT	-12.55	-0.015003	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	NT	-10.83	-0.012947	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	HV	NT	-7.22	-0.008631	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	LV	NT	-16.85	-0.020143	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	LV	NT	-8.85	-0.010580	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	HV	NT	-7.14	-0.008536	±2.5	PASS

Temperature												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	-10	-15.41	-0.018422	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	70	-15.06	-0.018004	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	60	-15.02	-0.017956	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	50	-17.21	-0.020574	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	40	-17.31	-0.020693	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	30	-19.45	-0.023252	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	20	-16.81	-0.020096	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	0	-16.44	-0.019653	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	-20	-17.64	-0.021088	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	80	-21.39	-0.025571	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	-30	-14.91	-0.017824	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	50	-16.47	-0.019689	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	10	-19.40	-0.023192	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	-40	-13.02	-0.015565	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	-20	-15.05	-0.017992	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	-10	-17.12	-0.020466	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	0	-16.09	-0.019235	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	10	-18.78	-0.022451	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	20	-14.88	-0.017788	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	40	-16.09	-0.019235	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	-40	-17.32	-0.020705	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	60	-17.19	-0.020550	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	70	-15.34	-0.018338	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	80	-15.78	-0.018864	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	85	-16.22	-0.019390	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	15kHz	NV	85	-16.42	-0.019629	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	30	-13.72	-0.016402	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	-20	-6.15	-0.007352	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	85	-7.17	-0.008571	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	-30	-6.19	-0.007400	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	-10	-6.54	-0.007818	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	0	-4.29	-0.005129	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	10	-6.64	-0.007938	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	20	-5.12	-0.006121	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	30	-7.11	-0.008500	±2.5	PASS

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Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	40	-6.24	-0.007460	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	50	-5.49	-0.006563	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	60	-6.84	-0.008177	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	70	-6.07	-0.007256	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	80	-5.92	-0.007077	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@11	15kHz	NV	-30	-14.75	-0.017633	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	85	-3.72	-0.004447	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	70	-6.19	-0.007400	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@0	3.75kHz	NV	-40	-7.44	-0.008894	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	80	-4.69	-0.005607	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	60	-4.92	-0.005882	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	50	-5.04	-0.006025	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	40	-5.45	-0.006515	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	30	-7.01	-0.008380	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	10	-7.51	-0.008978	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	0	-4.68	-0.005595	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	-10	-6.95	-0.008308	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	-20	-6.18	-0.007388	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	-30	-6.87	-0.008213	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	20	-4.96	-0.005929	±2.5	PASS
Band5	Stand-Alone	NaN	QPSK	20525	1@47	3.75kHz	NV	-40	-7.38	-0.008822	±2.5	PASS