

APPENDIX A: TEST RESULTS OF BAND 787-788 FOR NB-IOT OPERATION

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APPENDIX A.1: EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA FOR NB-IOT

Test Result

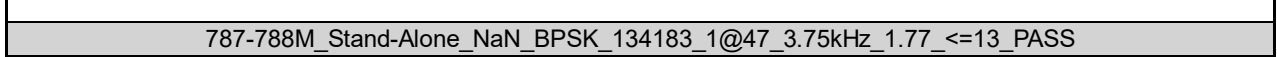
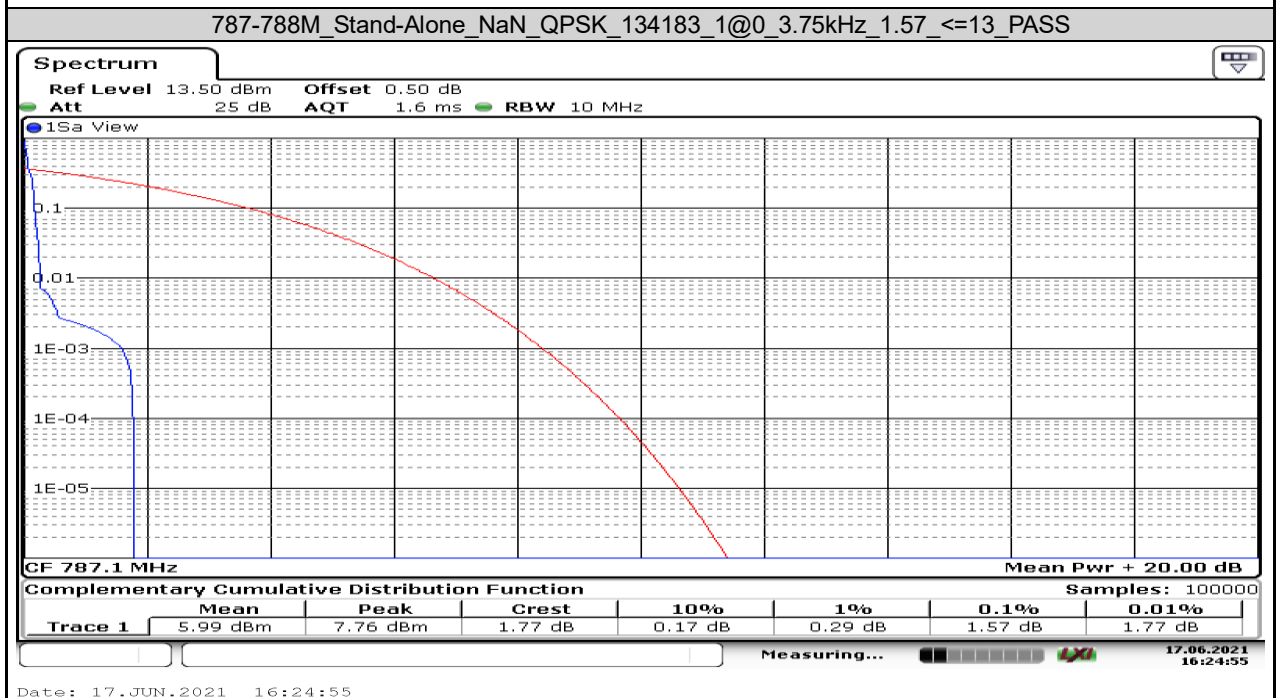
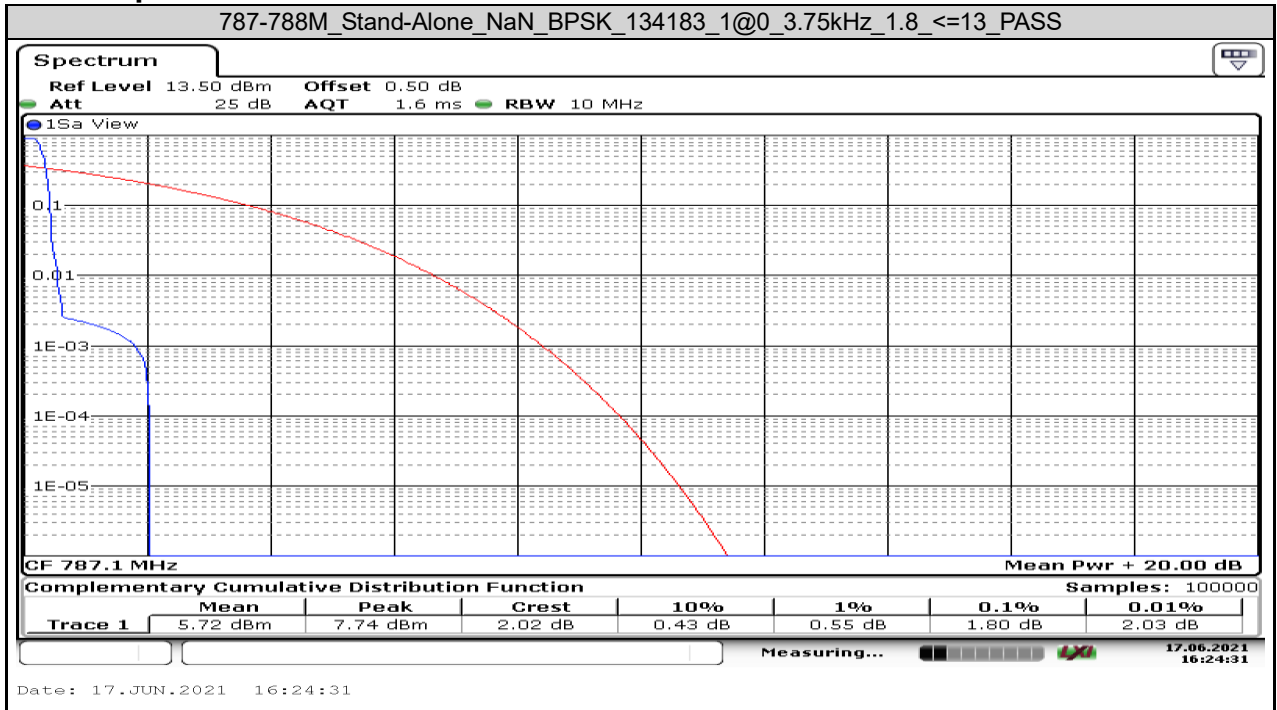
Test Configuration		EARFCN	Frequency (MHz)	EARFCN	Frequency (MHz)	EARFCN	Frequency (MHz)	EARFCN	Frequency (MHz)
		134183	787.1	134184	787.2	134190	787.8	134191	787.9
Modulation: BPSK		Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)
3.75kHz	1RB0	6.41	6.4	22.49	22.48	22.34	22.33	6.10	6.09
	1RB47	6.30	6.29	22.41	22.4	22.35	22.34	6.00	5.99
15kHz	1RB0	6.44	6.43	22.79	22.78	22.68	22.67	6.20	6.19
	1RB11	6.29	6.28	22.78	22.77	22.64	22.63	6.13	6.12
Modulation: QPSK		Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)
3.75kHz	1RB0	6.45	6.44	22.50	22.49	22.54	22.53	6.20	6.19
	1RB47	6.39	6.38	22.42	22.41	22.48	22.47	6.14	6.13
15kHz	1RB0	6.47	6.46	22.99	22.98	22.84	22.83	6.23	6.22
	1RB11	6.38	6.37	22.90	22.89	22.78	22.77	6.15	6.14
	3RB3	6.44	6.43	22.98	22.97	22.85	22.84	6.19	6.18

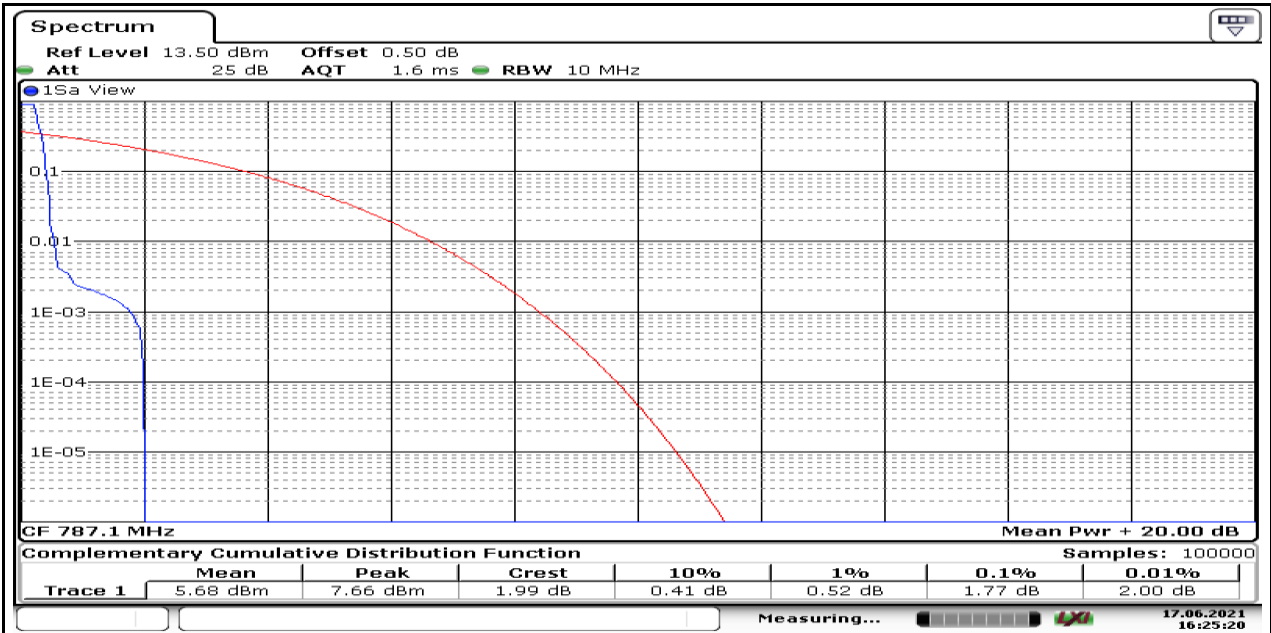
APPENDIX A.2: PEAK-TO-AVERAGE RATIO (CCDF) FOR NB-IOT

Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	3.75kHz	1.8	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	3.75kHz	1.57	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@47	3.75kHz	1.77	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@47	3.75kHz	1.8	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	15kHz	1.48	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	15kHz	1.51	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@11	15kHz	1.54	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@11	15kHz	1.59	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	3@3	15kHz	3.91	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@0	3.75kHz	1.86	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	3.75kHz	1.36	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@47	3.75kHz	1.91	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@47	3.75kHz	1.62	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@0	15kHz	1.39	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	15kHz	1.45	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@11	15kHz	1.42	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@11	15kHz	1.48	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	3@3	15kHz	3.54	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	3.75kHz	1.74	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	3.75kHz	1.74	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@47	3.75kHz	1.59	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@47	3.75kHz	1.88	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	15kHz	1.48	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	15kHz	1.54	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@11	15kHz	1.57	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@11	15kHz	1.59	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	3@3	15kHz	3.94	<=13	PASS

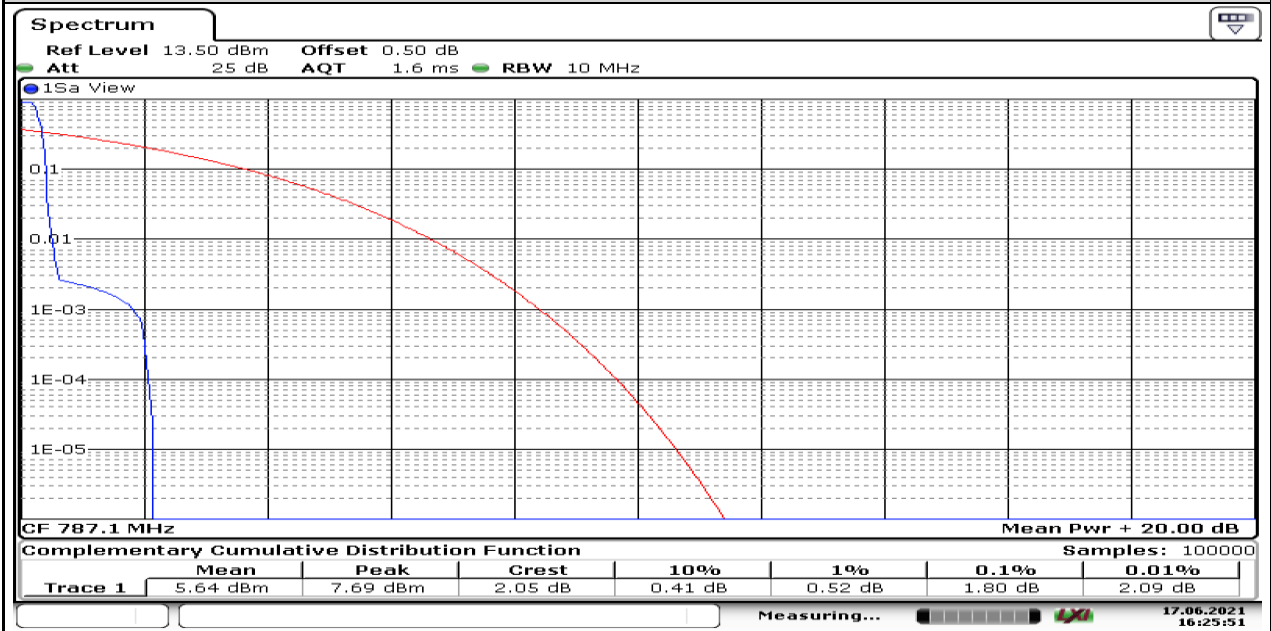
Test Graphs





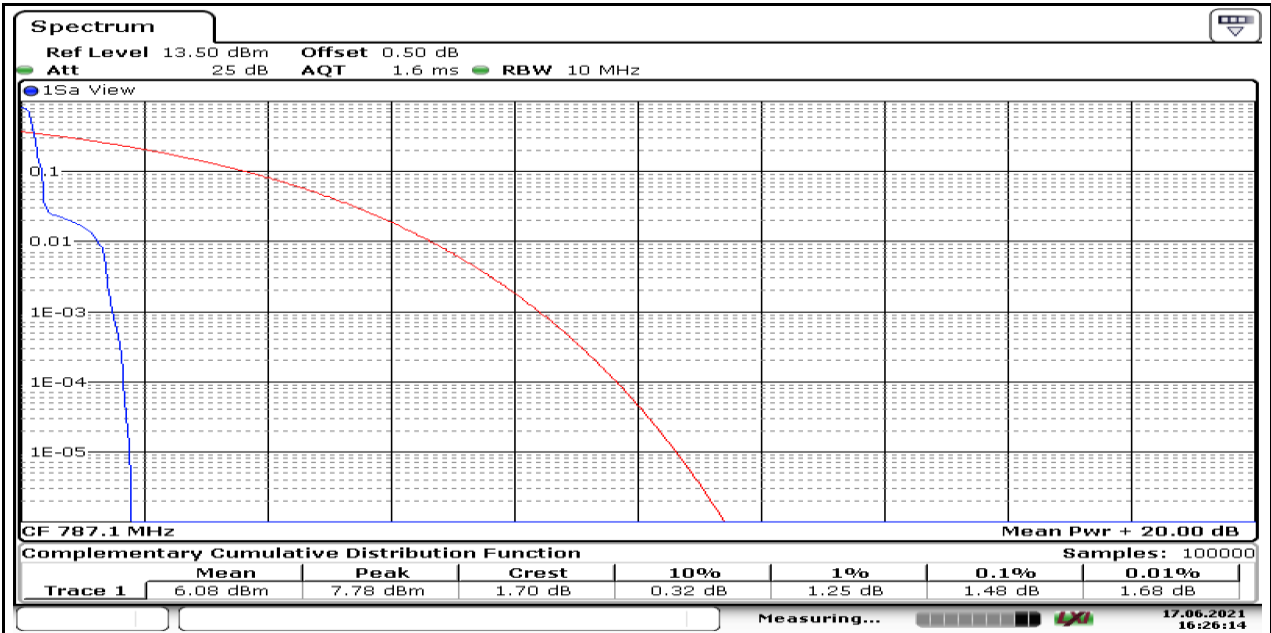
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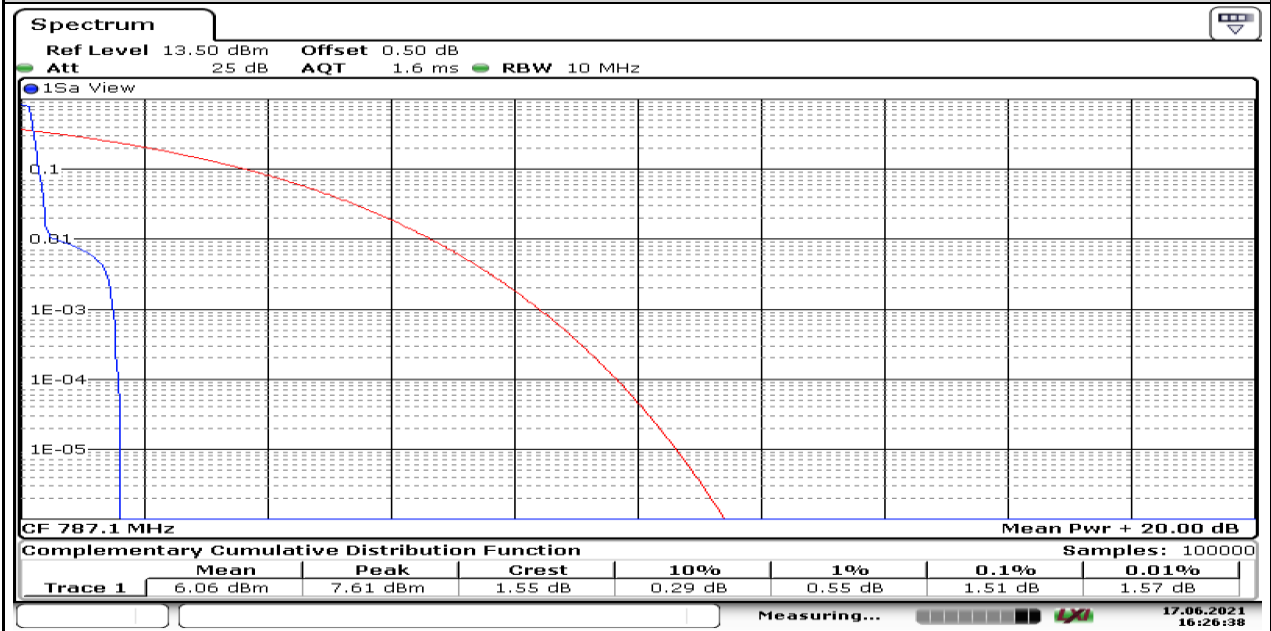
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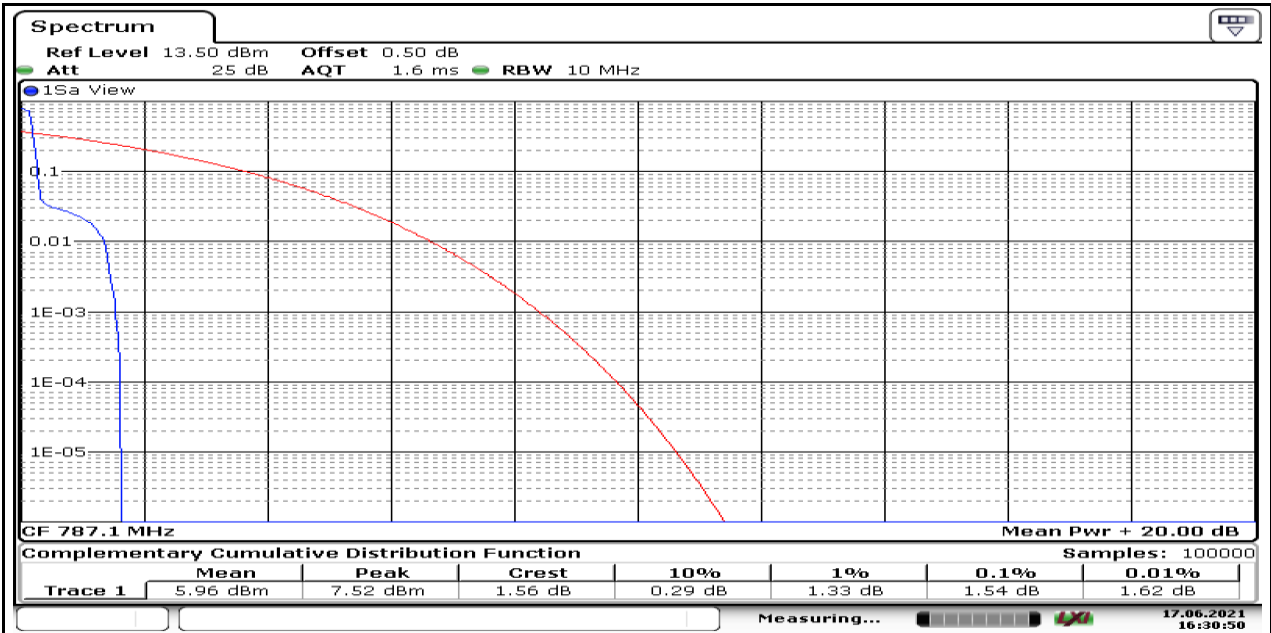
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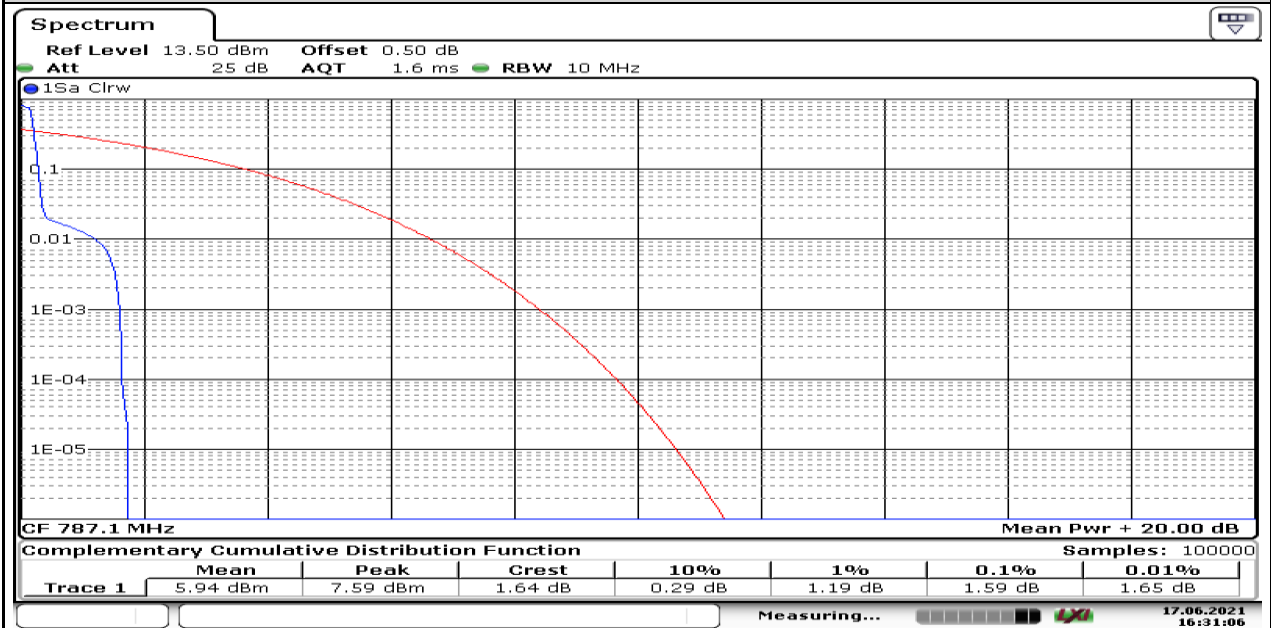
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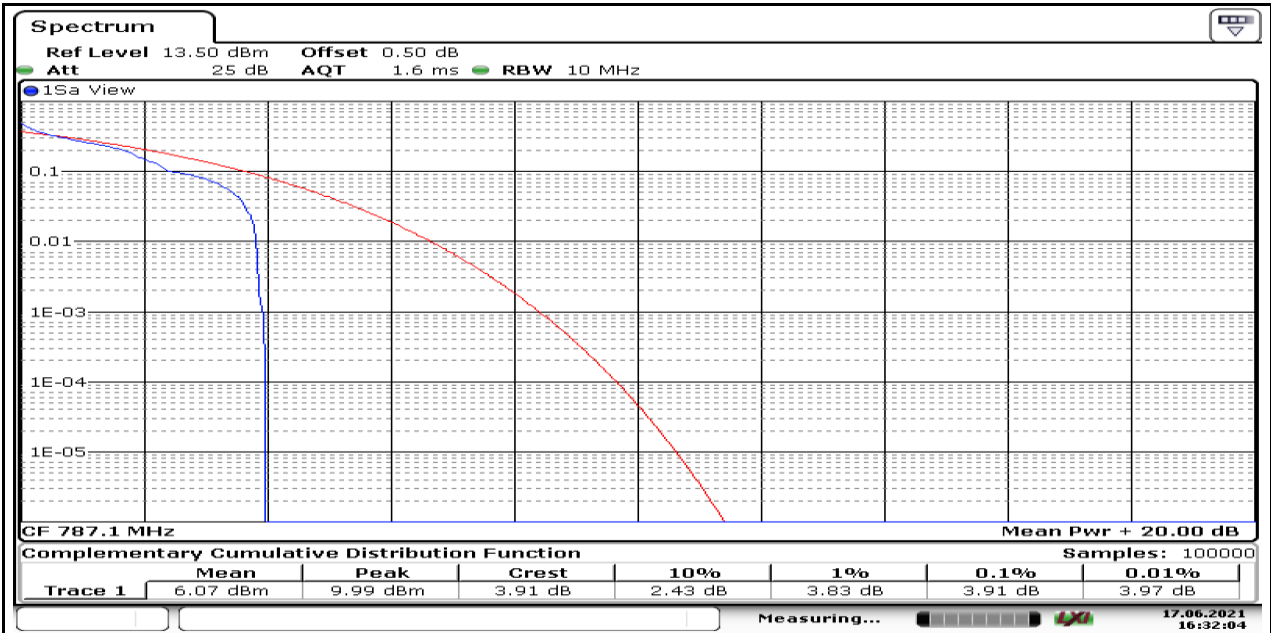
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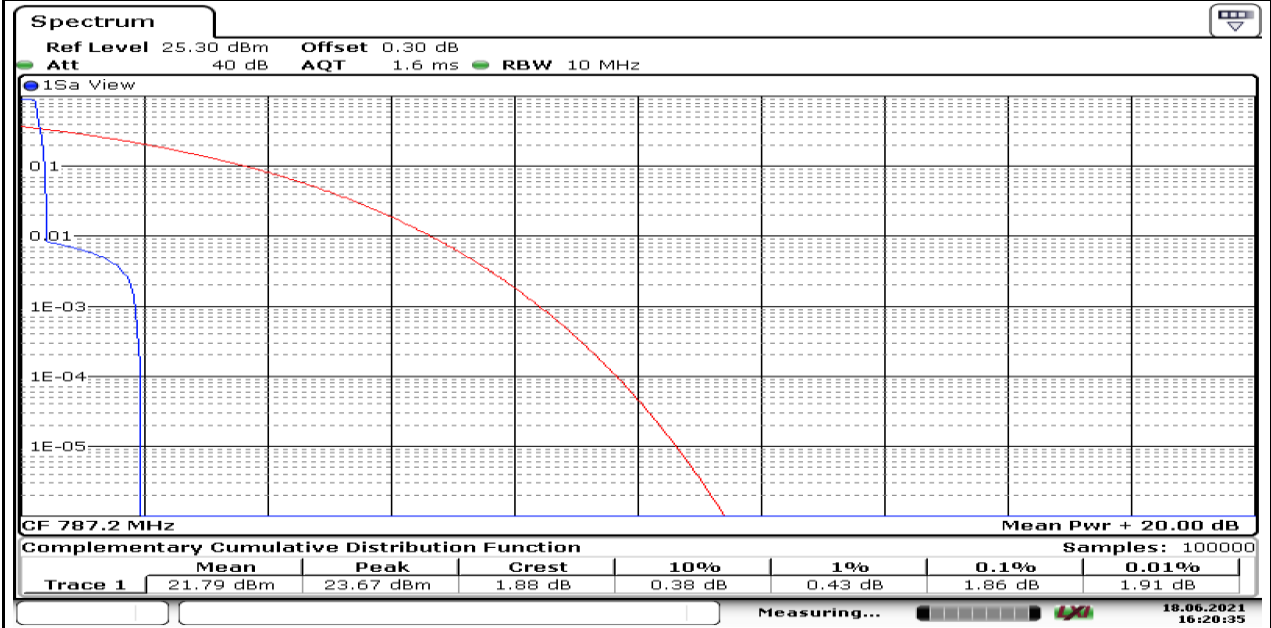
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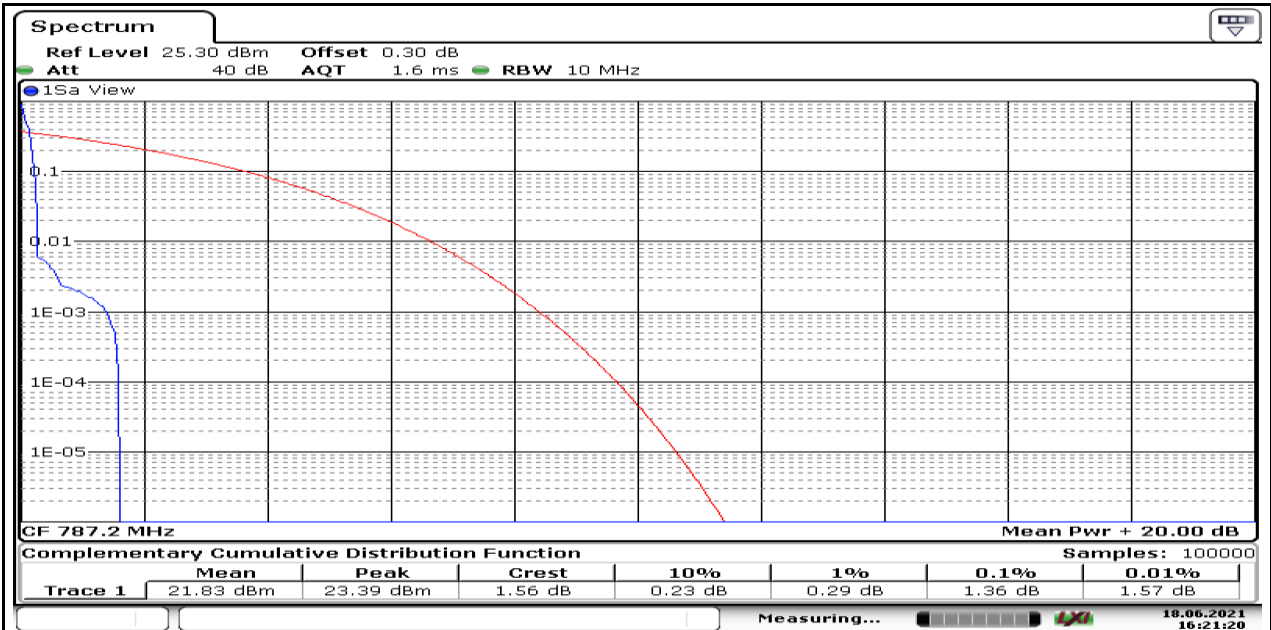
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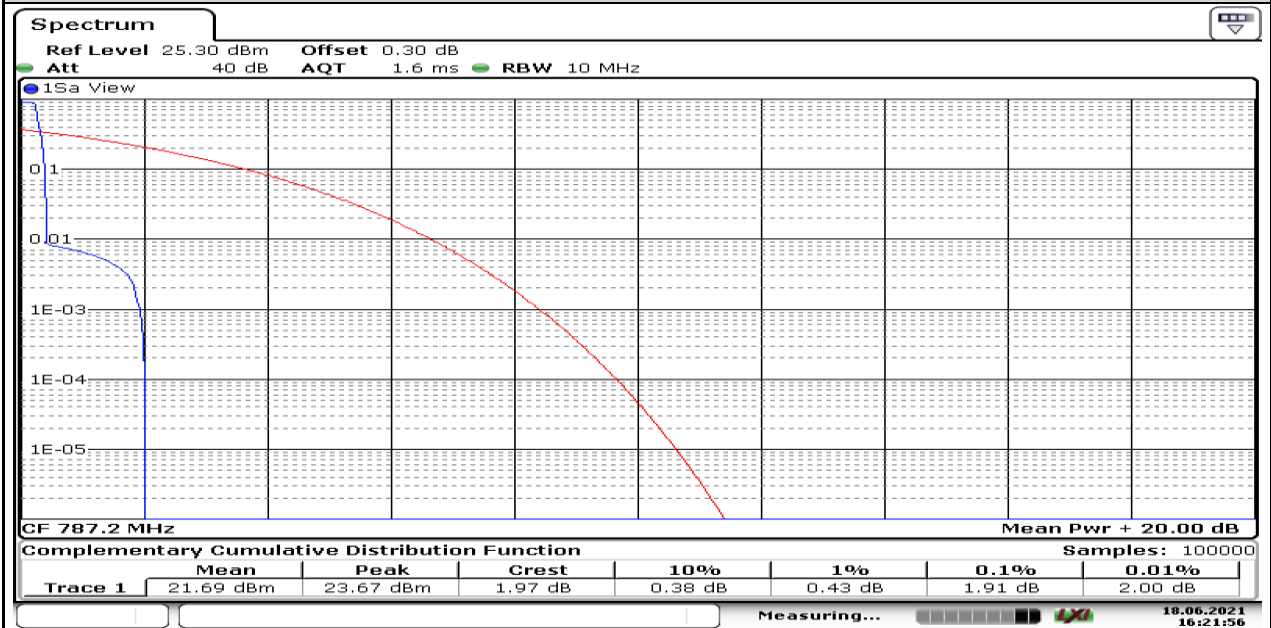
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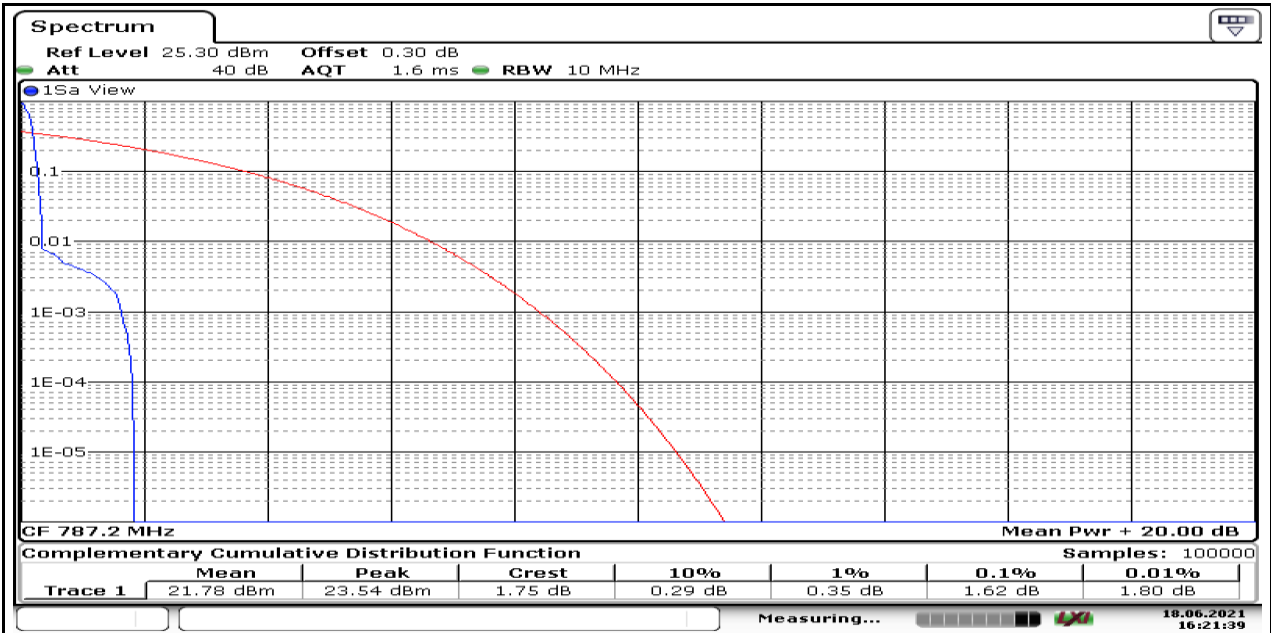
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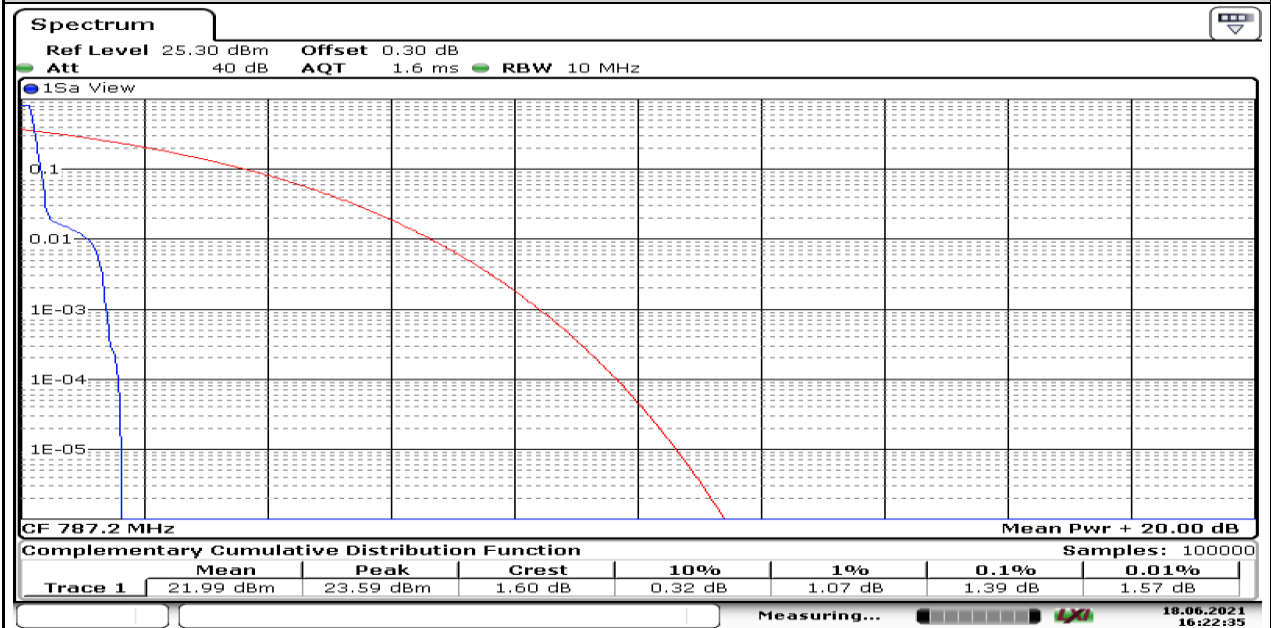
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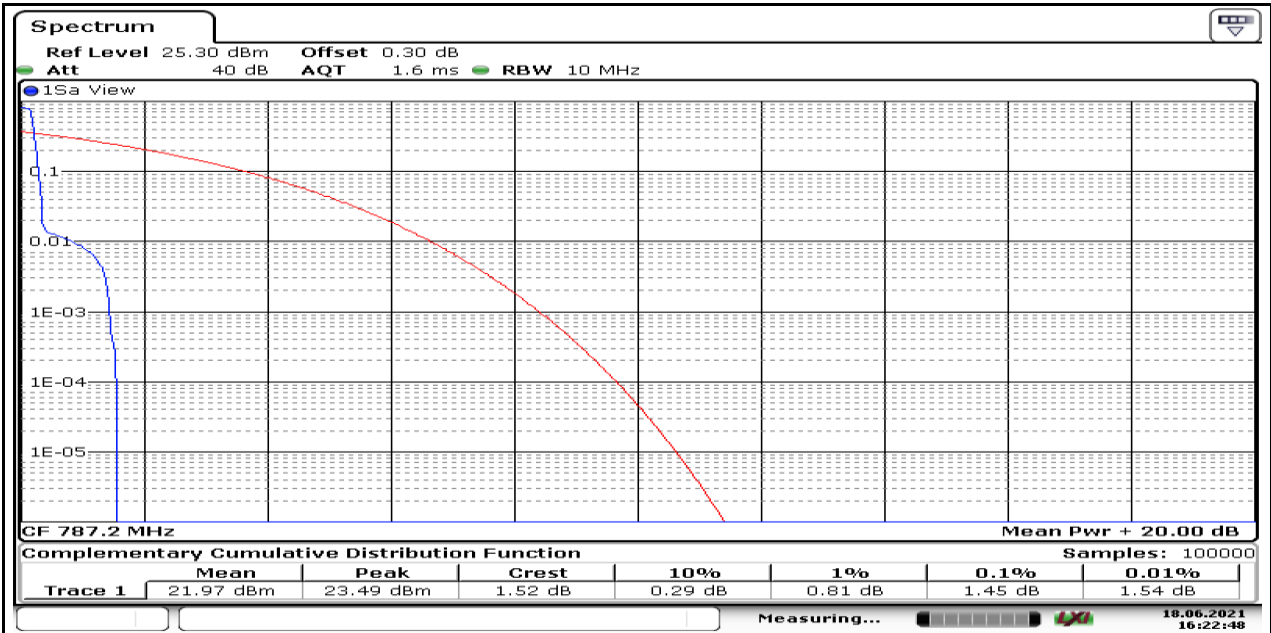
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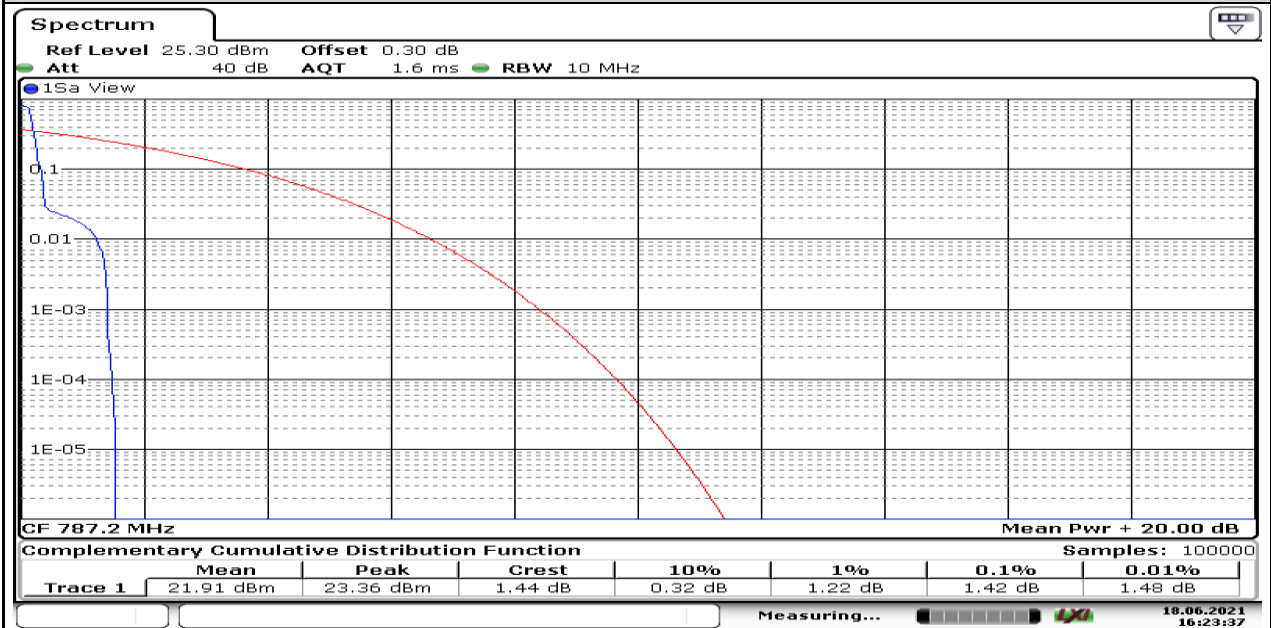
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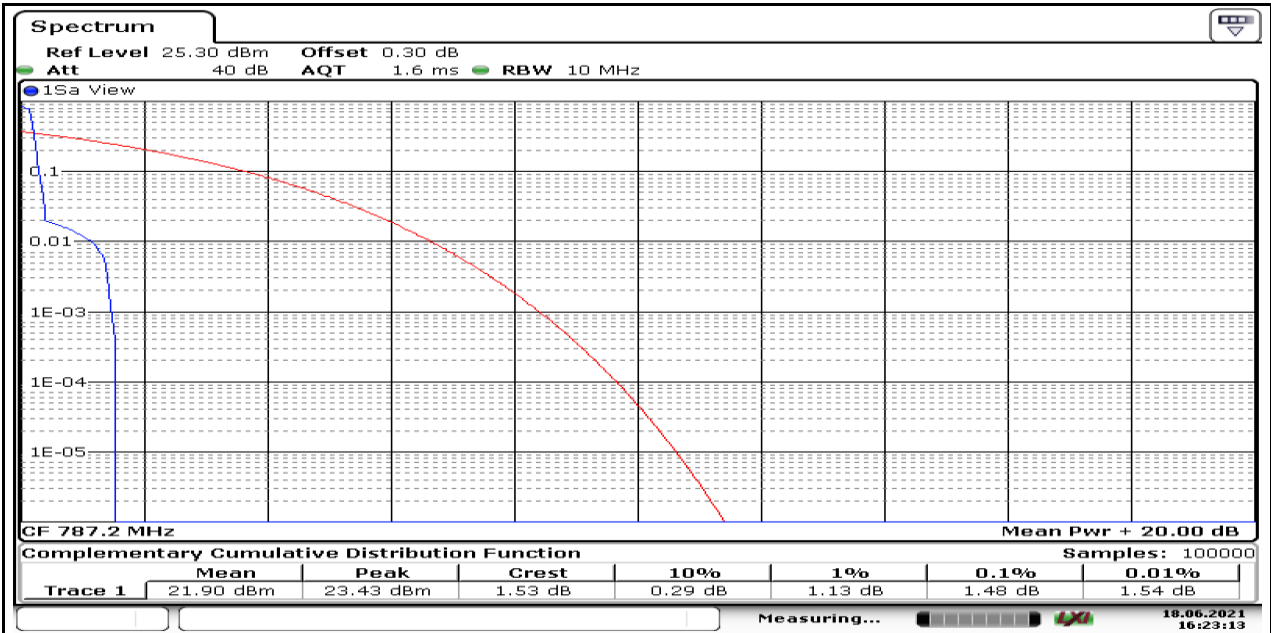
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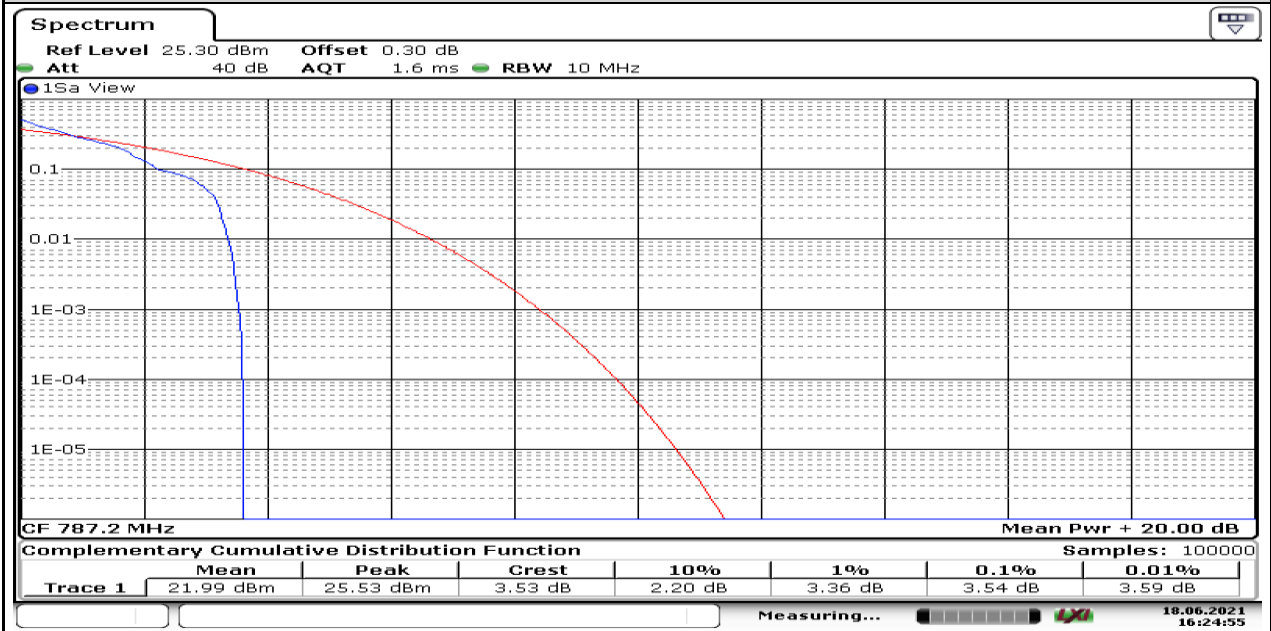
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787-788M_Stand-Alone_NaN_QPSK_134184_1@11_15kHz_1.48_<=13_PASS



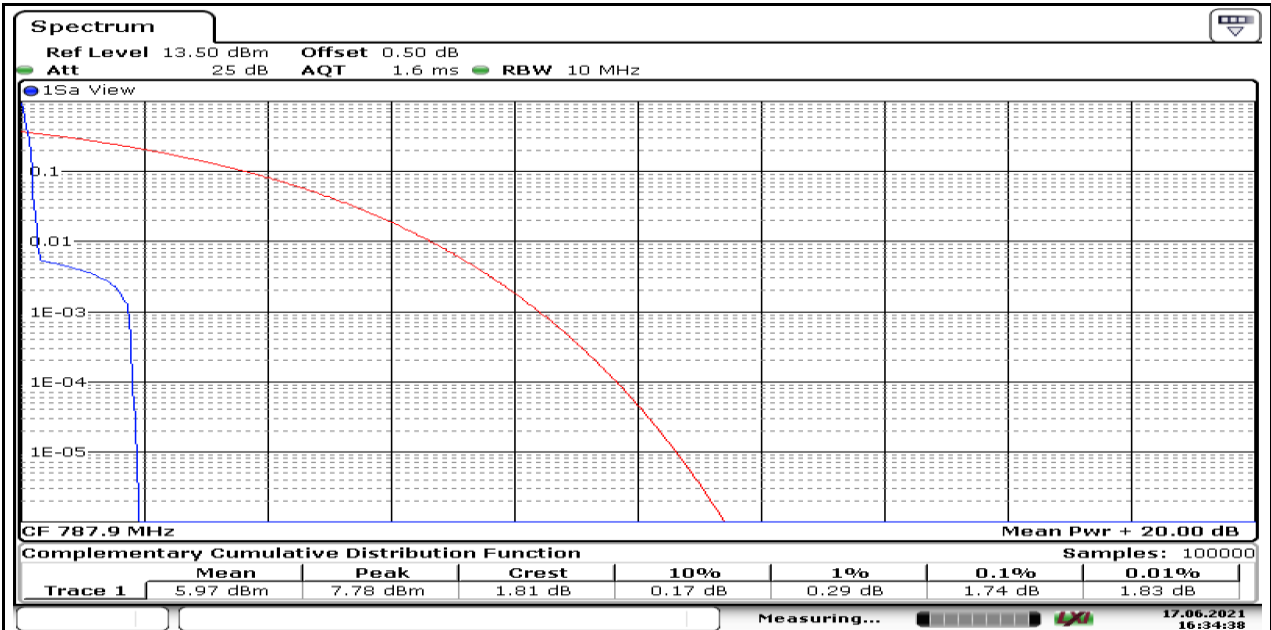
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787-788M_Stand-Alone_NaN_QPSK_134184_3@3_15kHz_3.54_<=13_PASS



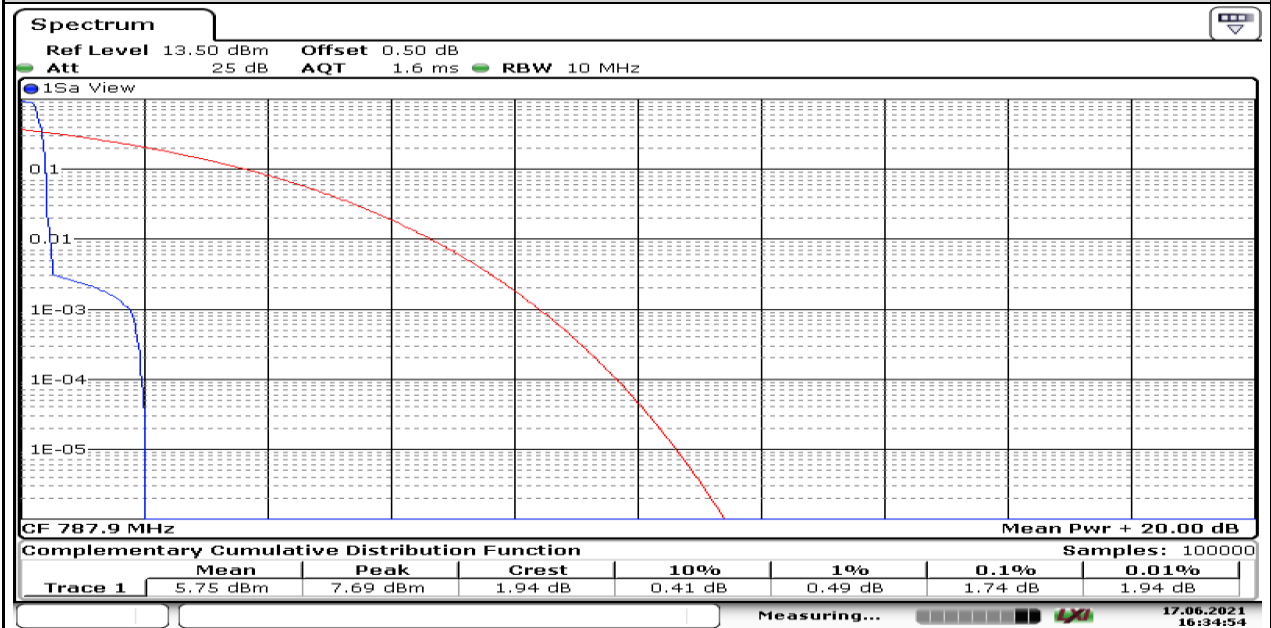
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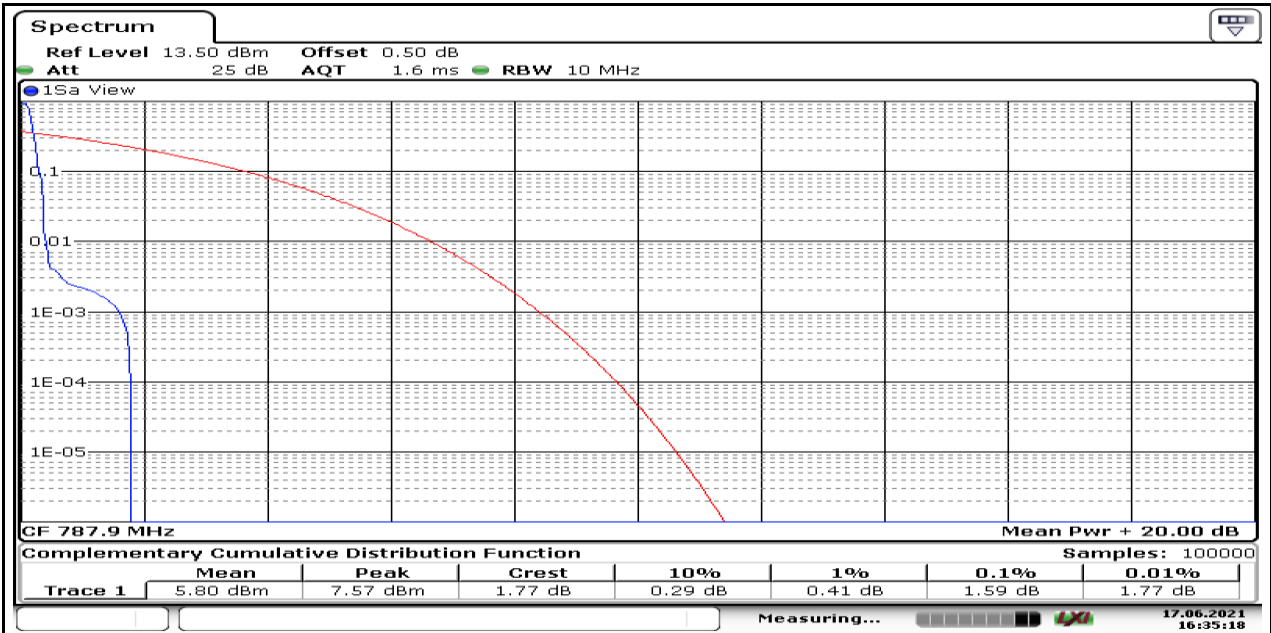
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787-788M_Stand-Alone_NaN_QPSK_134191_1@0_3.75kHz_1.74_<=13_PASS



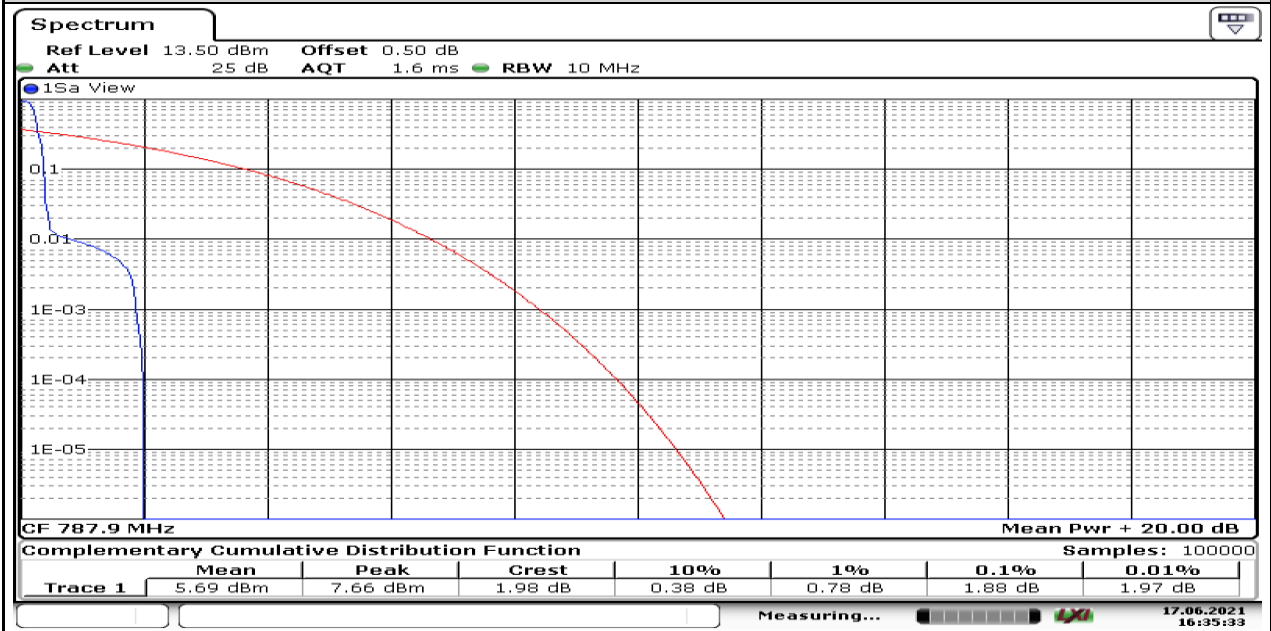
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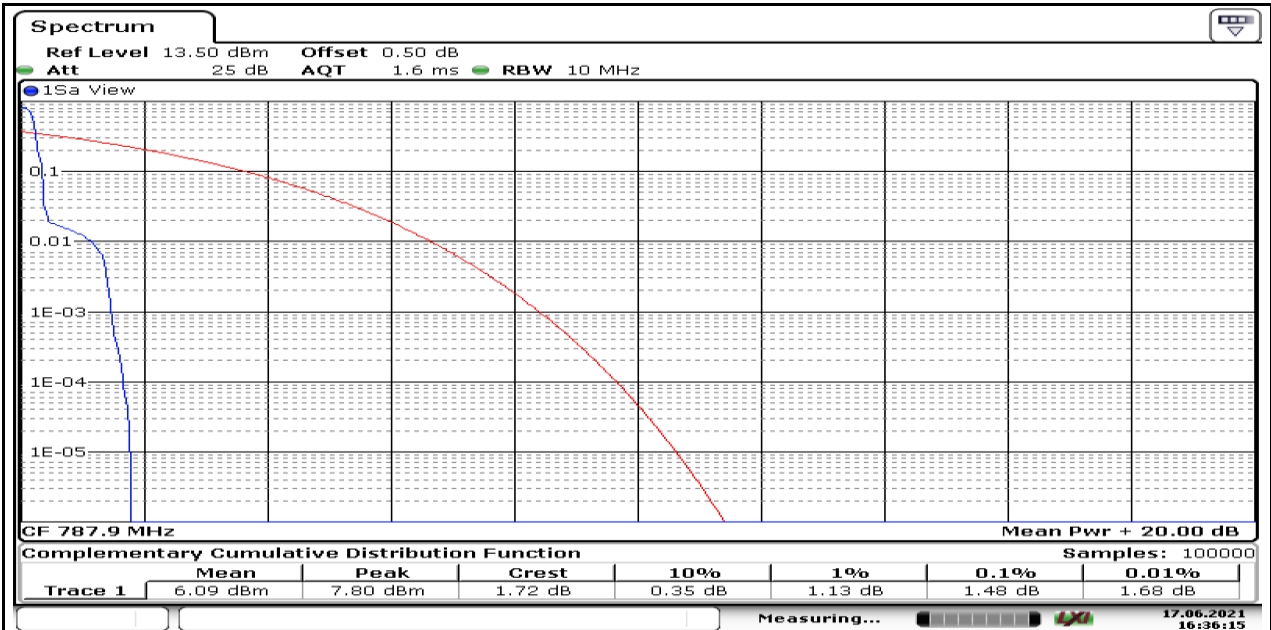
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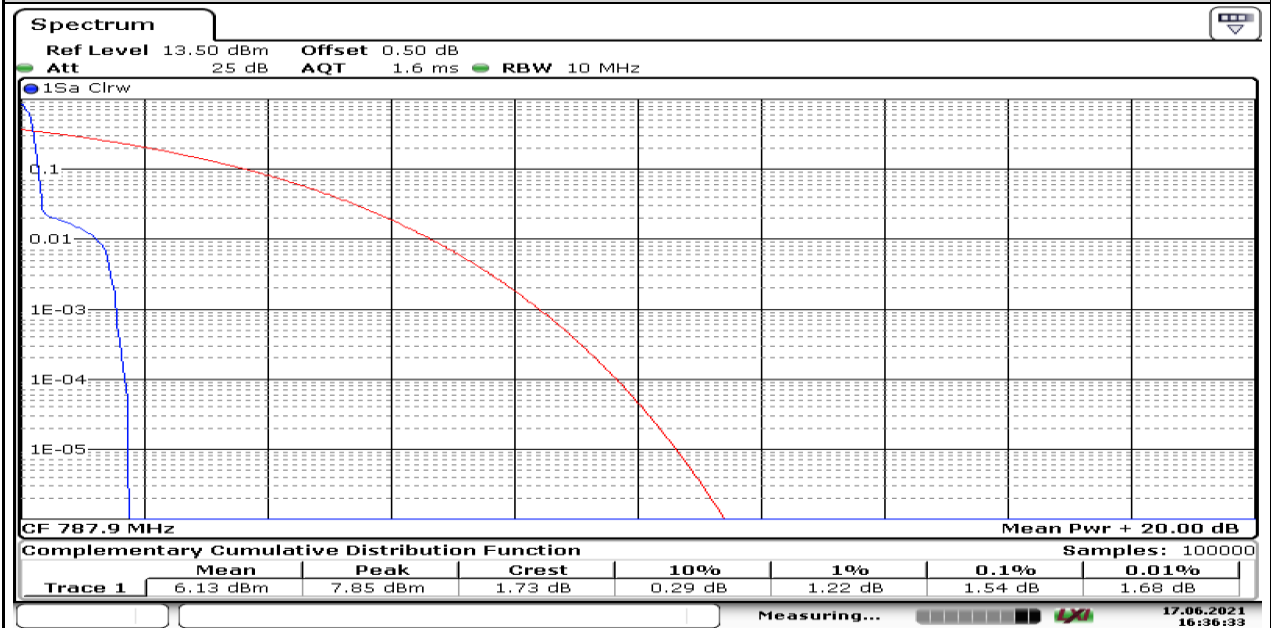
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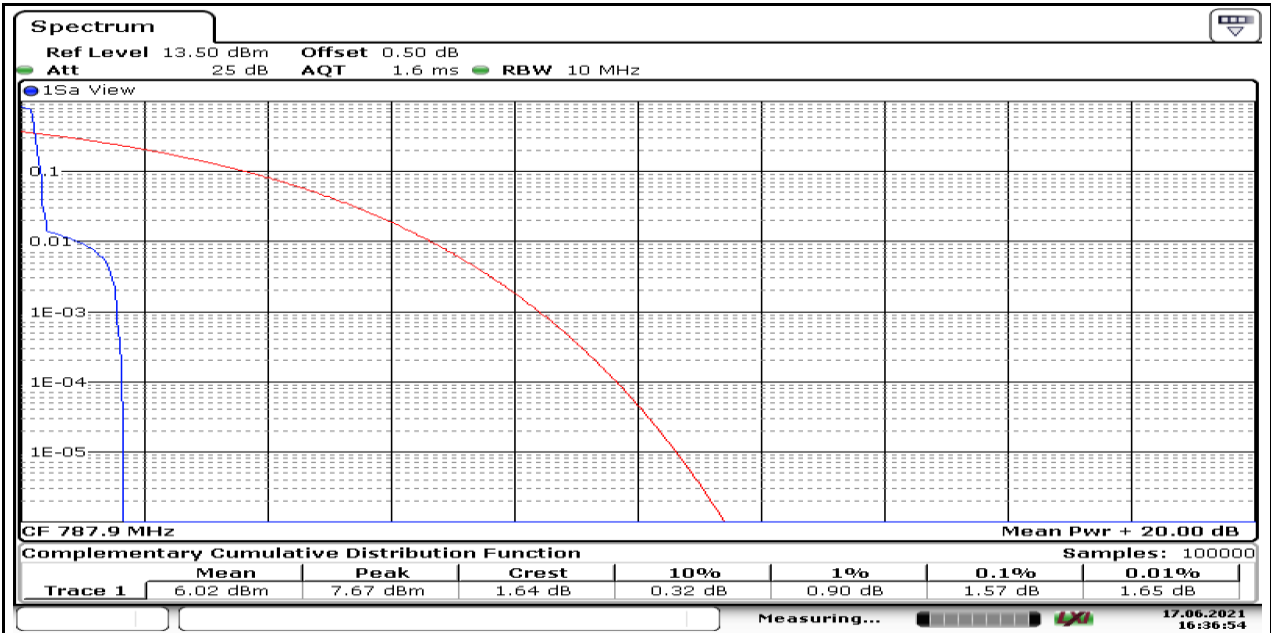
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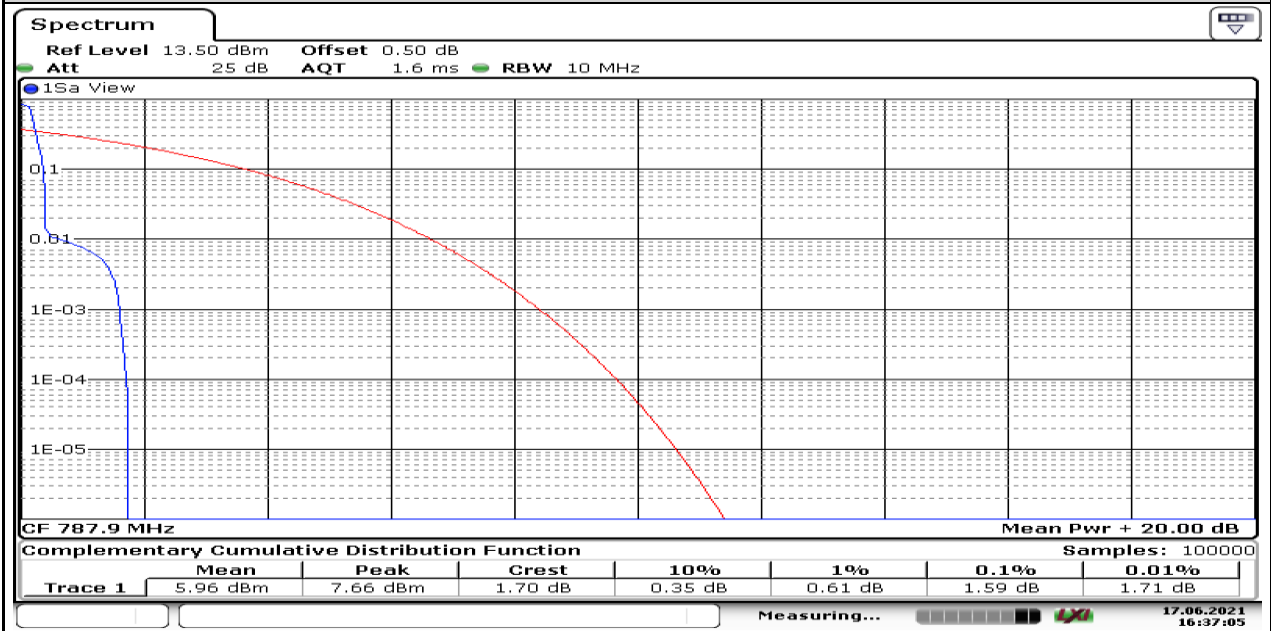
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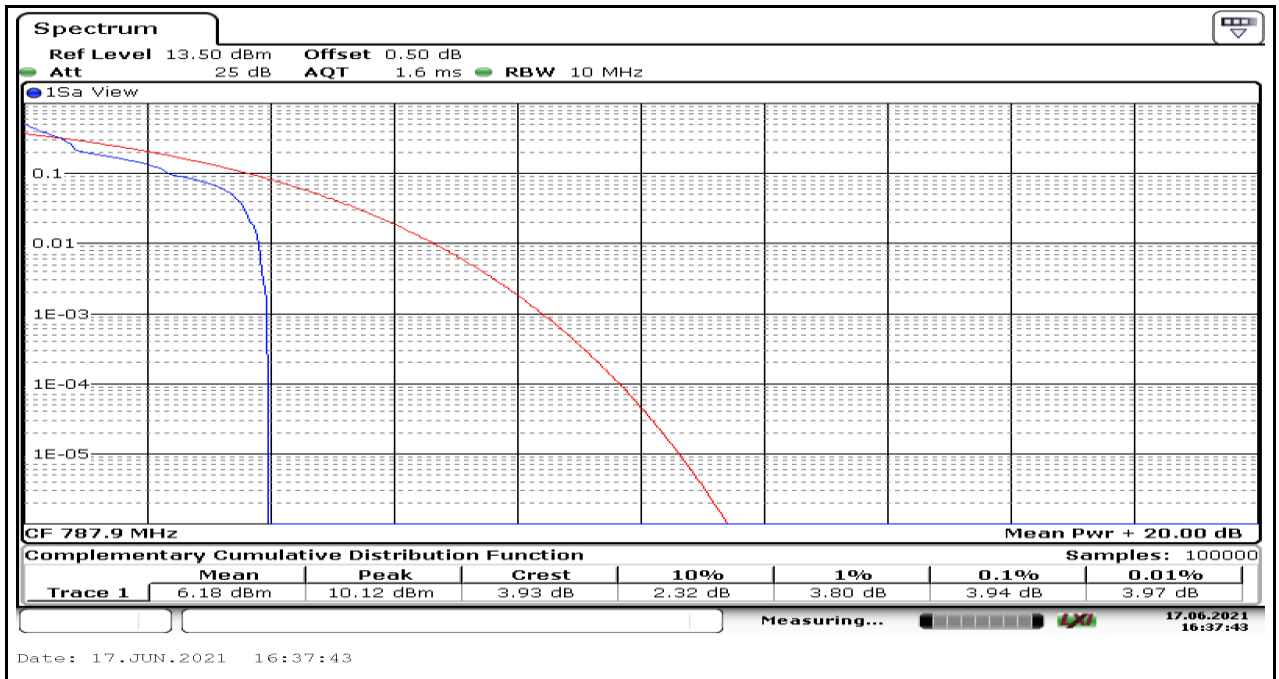
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787-788M_Stand-Alone_NaN_QPSK_134191_1@11_15kHz_1.59_<=13_PASS



Date: 17.JUN.2021 16:37:05

787-788M_Stand-Alone_NaN_QPSK_134191_3@3_15kHz_3.94_<=13_PASS

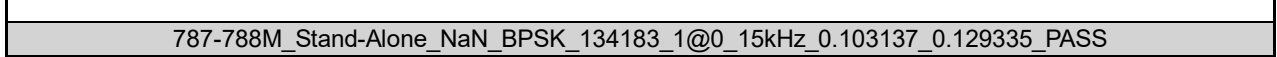
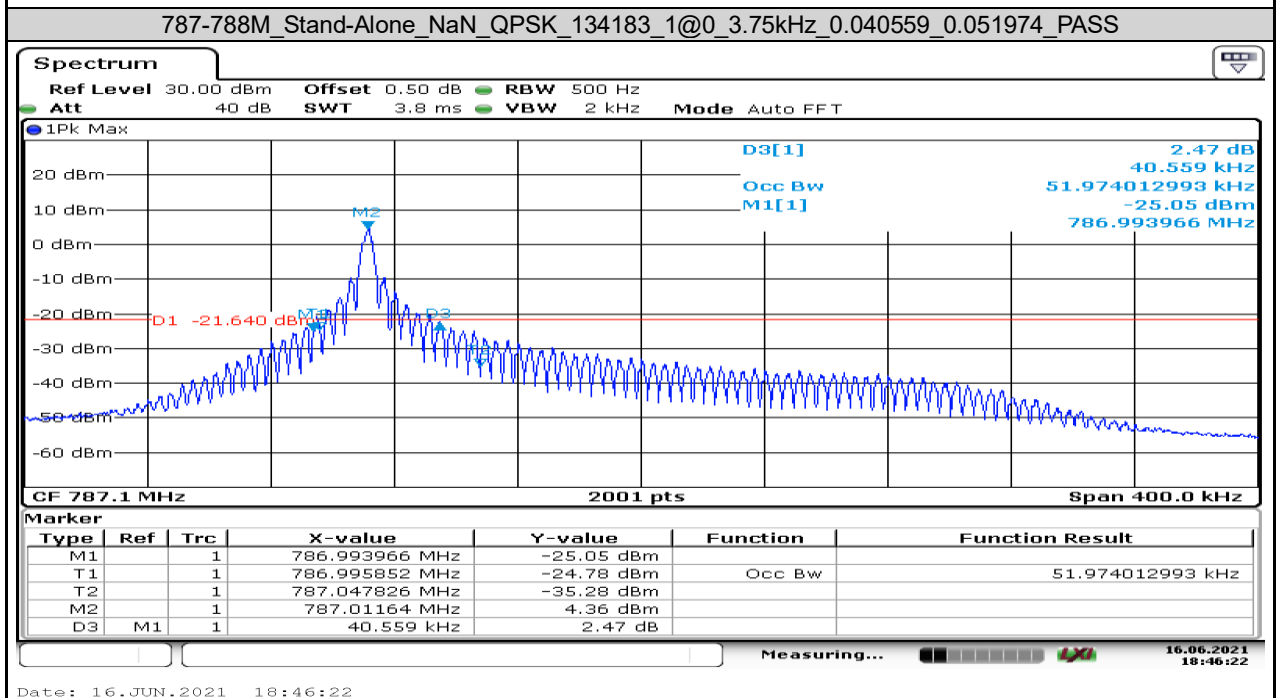
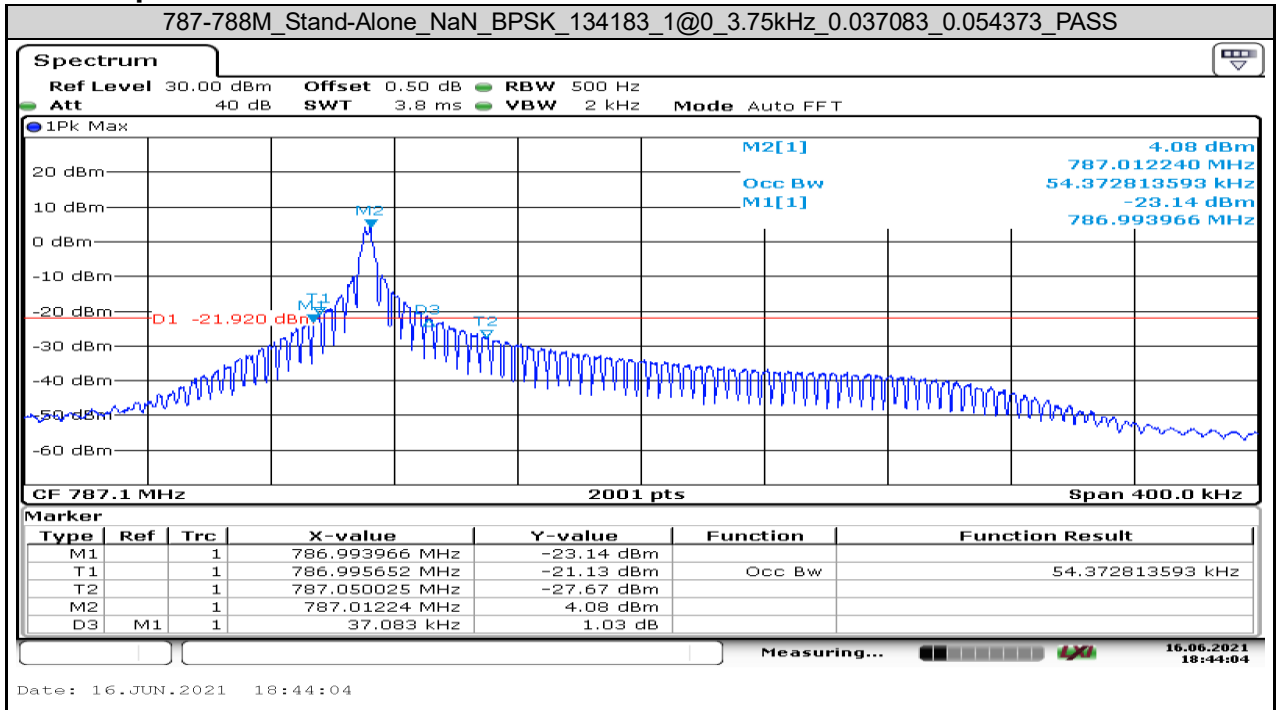


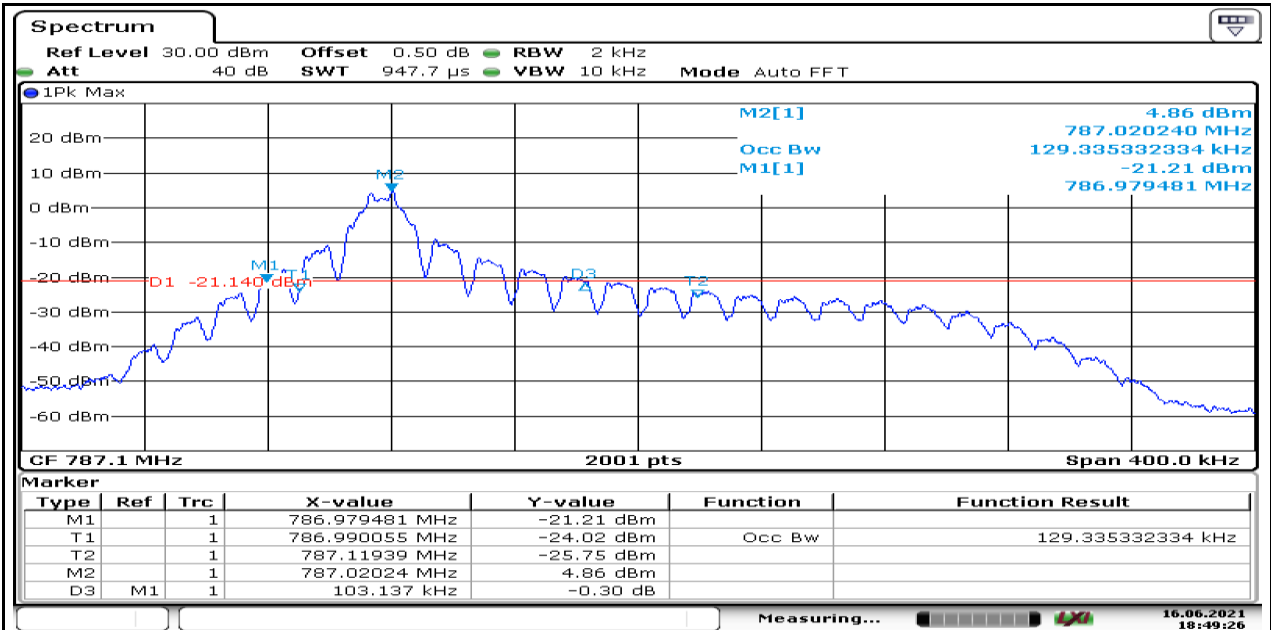
APPENDIX A.3: EMISSION BANDWIDTH FOR NB-IOT

Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	26dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Verdict
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	3.75kHz	0.037083	0.054373	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	3.75kHz	0.040559	0.051974	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	15kHz	0.103137	0.129335	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	15kHz	0.147173	0.132334	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	12@0	15kHz	0.267113	0.190305	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	3.75kHz	0.039401	0.055172	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	3.75kHz	0.037083	0.050375	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	15kHz	0.118781	0.129335	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	15kHz	0.146593	0.131934	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	12@0	15kHz	0.252048	0.185507	PASS

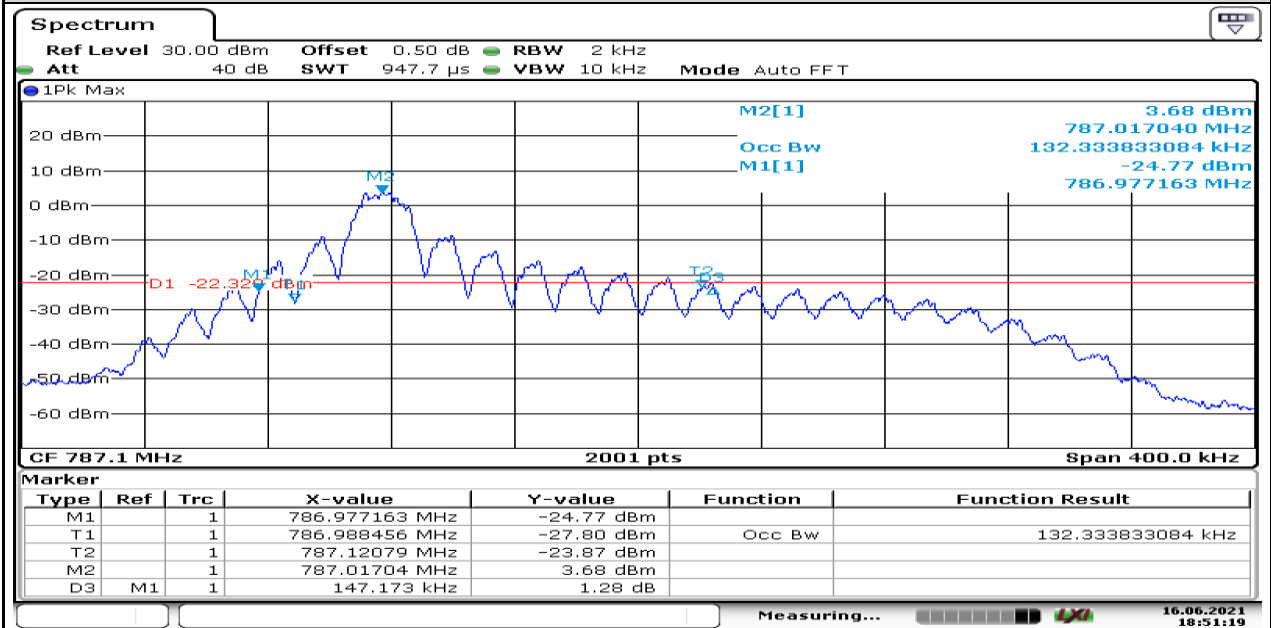
Test Graphs





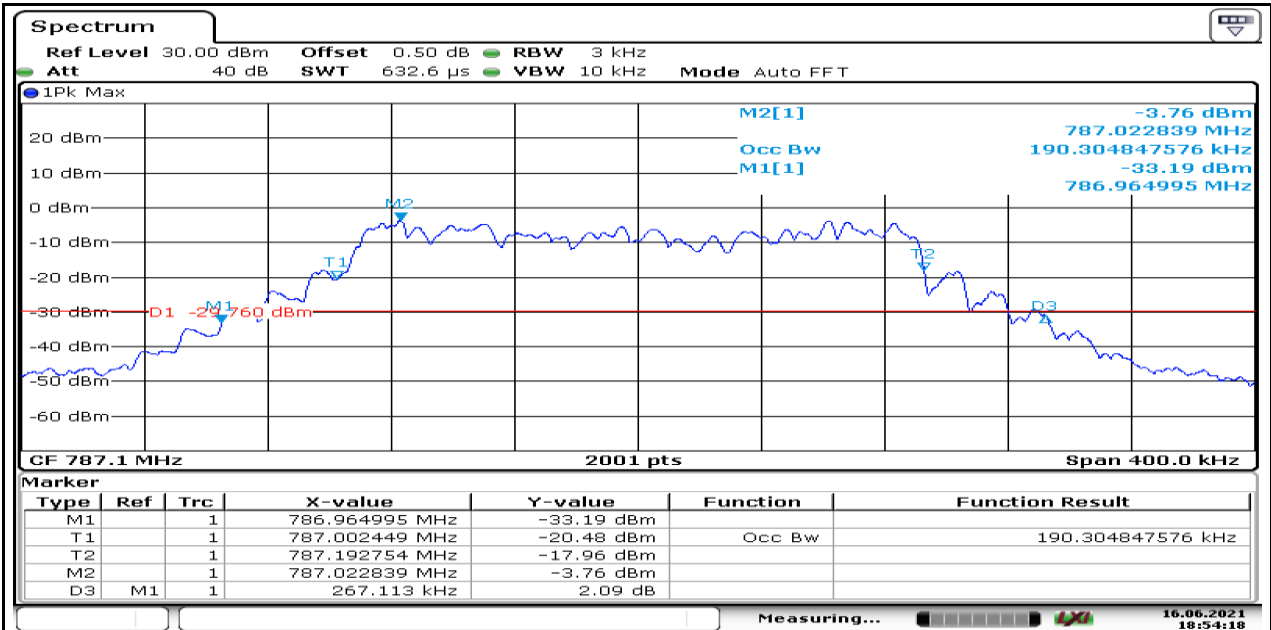
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787-788M_Stand-Alone_NaN_QPSK_134183_1@0_15kHz_0.147173_0.132334_PASS



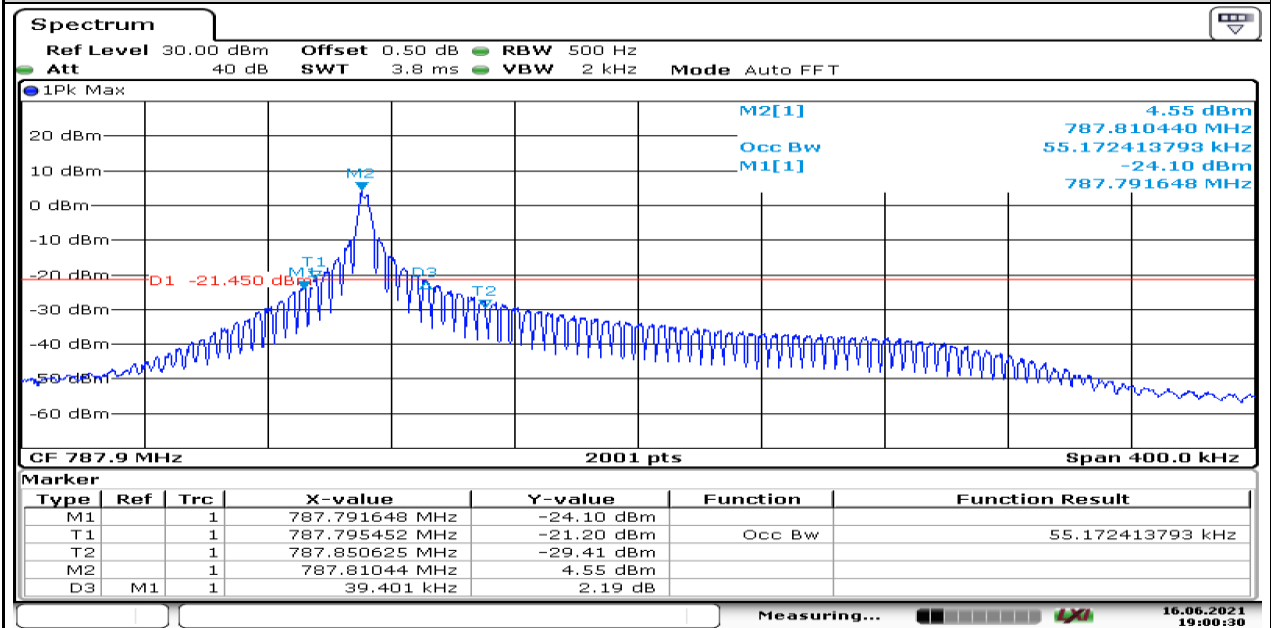
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787-788M_Stand-Alone_NaN_QPSK_134183_12@0_15kHz_0.267113_0.190305_PASS



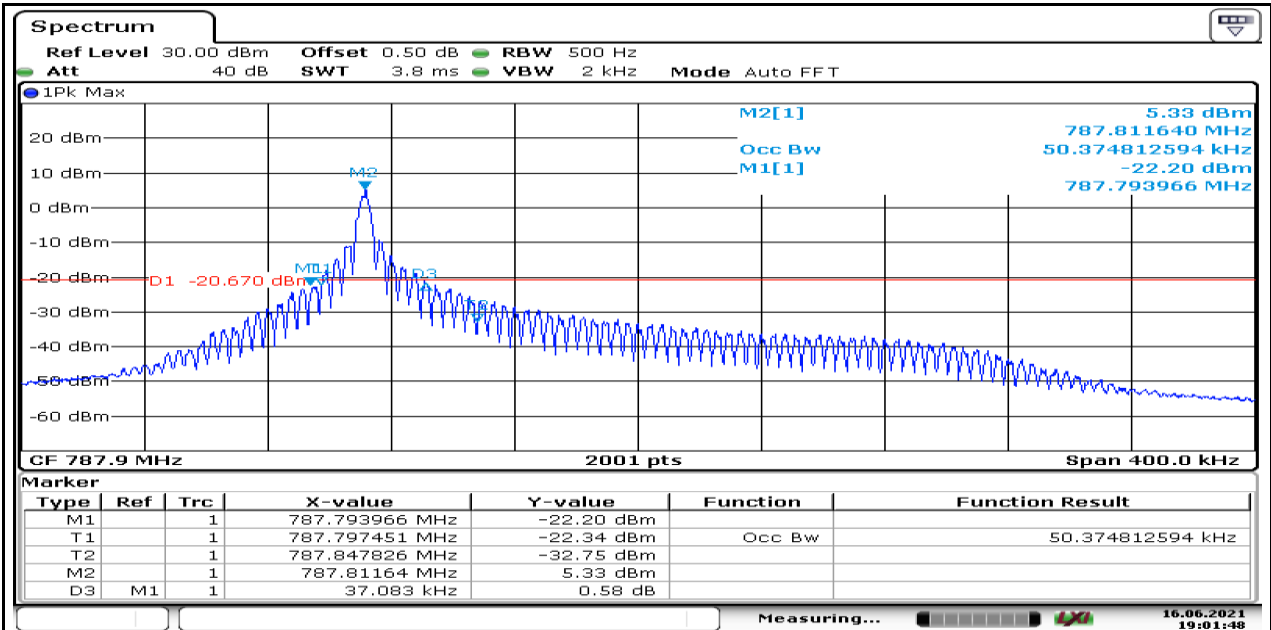
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787-788M_Stand-Alone_NaN_BPSK_134191_1@0_3.75kHz_0.039401_0.055172_PASS



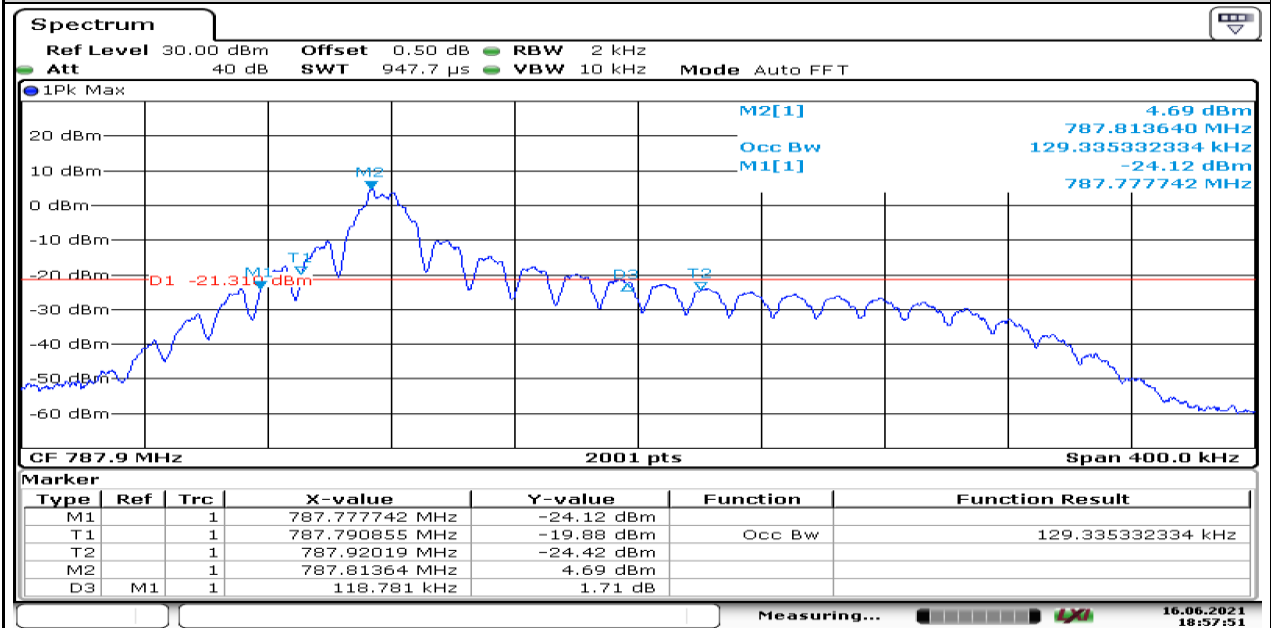
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787-788M_Stand-Alone_NaN_QPSK_134191_1@0_3.75kHz_0.037083_0.050375_PASS



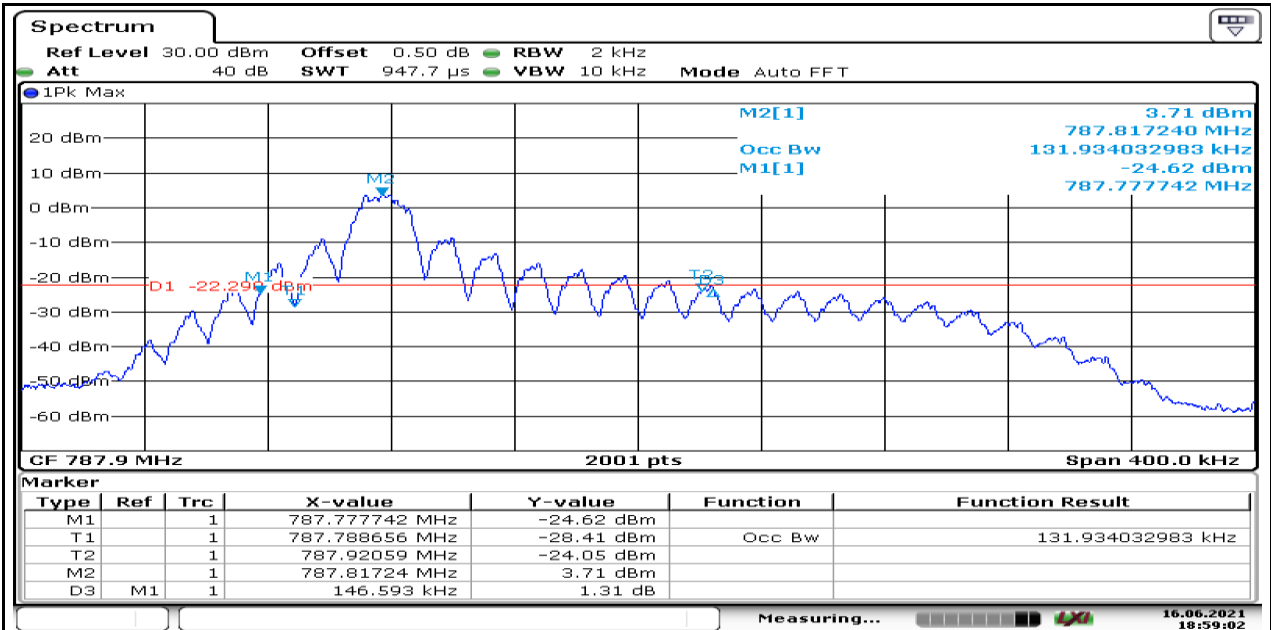
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787-788M_Stand-Alone_NaN_BPSK_134191_1@_15kHz_0.118781_0.129335_PASS



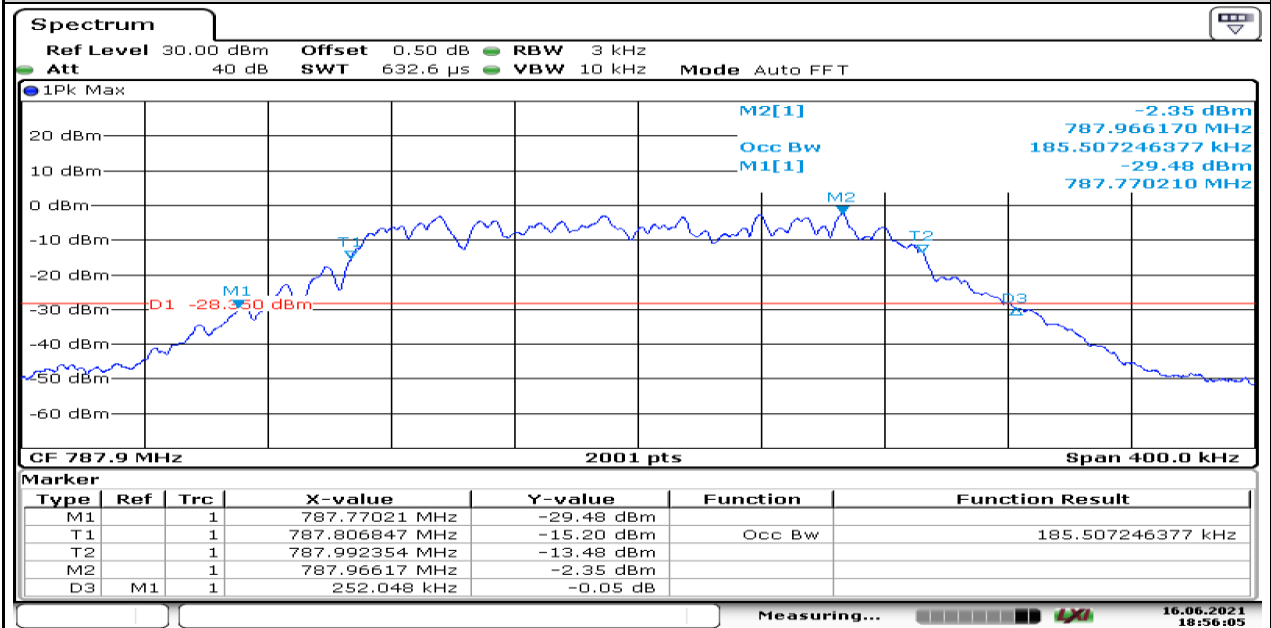
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787-788M_Stand-Alone_NaN_QPSK_134191_1@_15kHz_0.146593_0.131934_PASS



Date: 16.JUN.2021 18:59:03

787-788M_Stand-Alone_NaN_QPSK_134191_12@0_15kHz_0.252048_0.185507_PASS



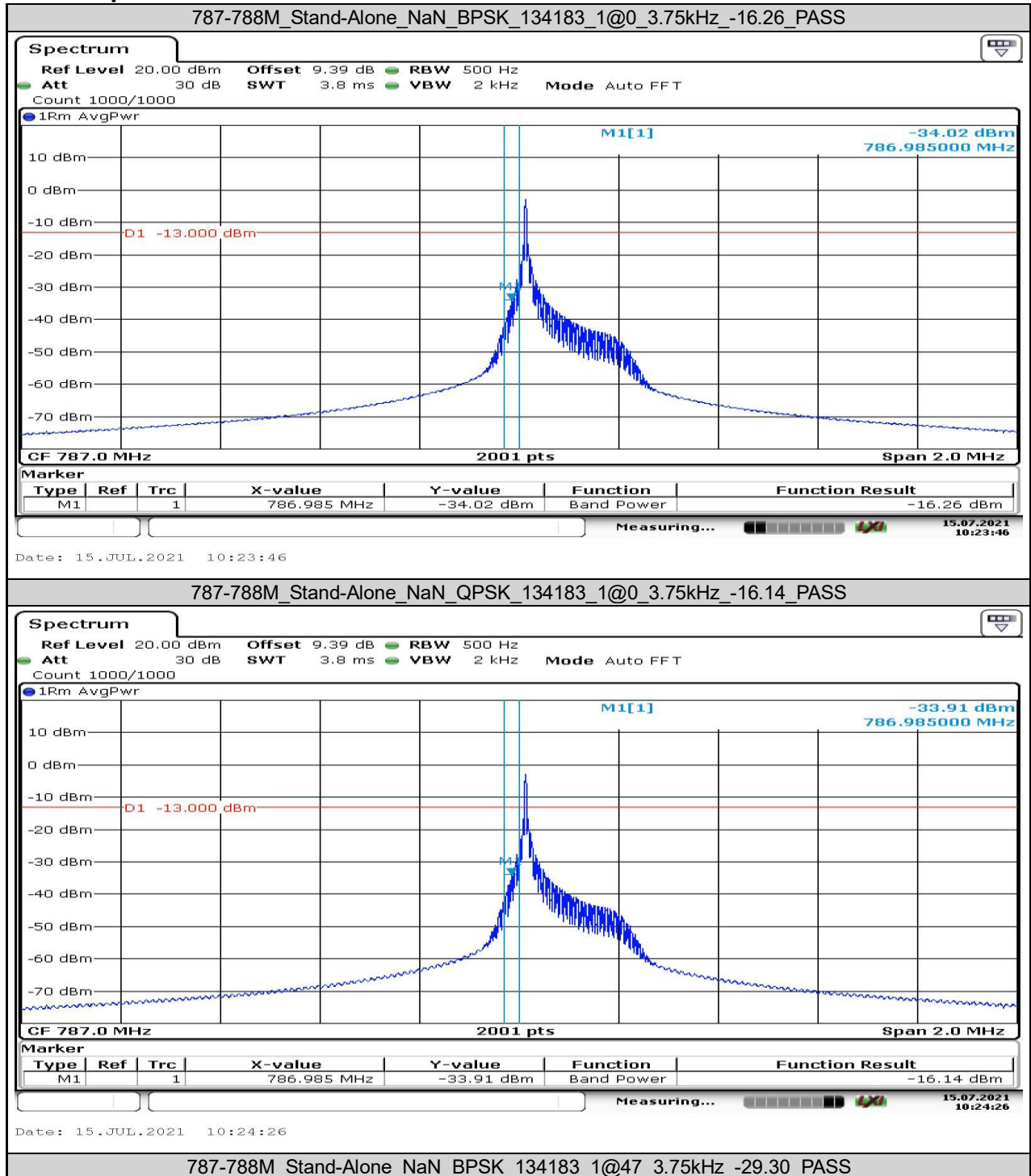
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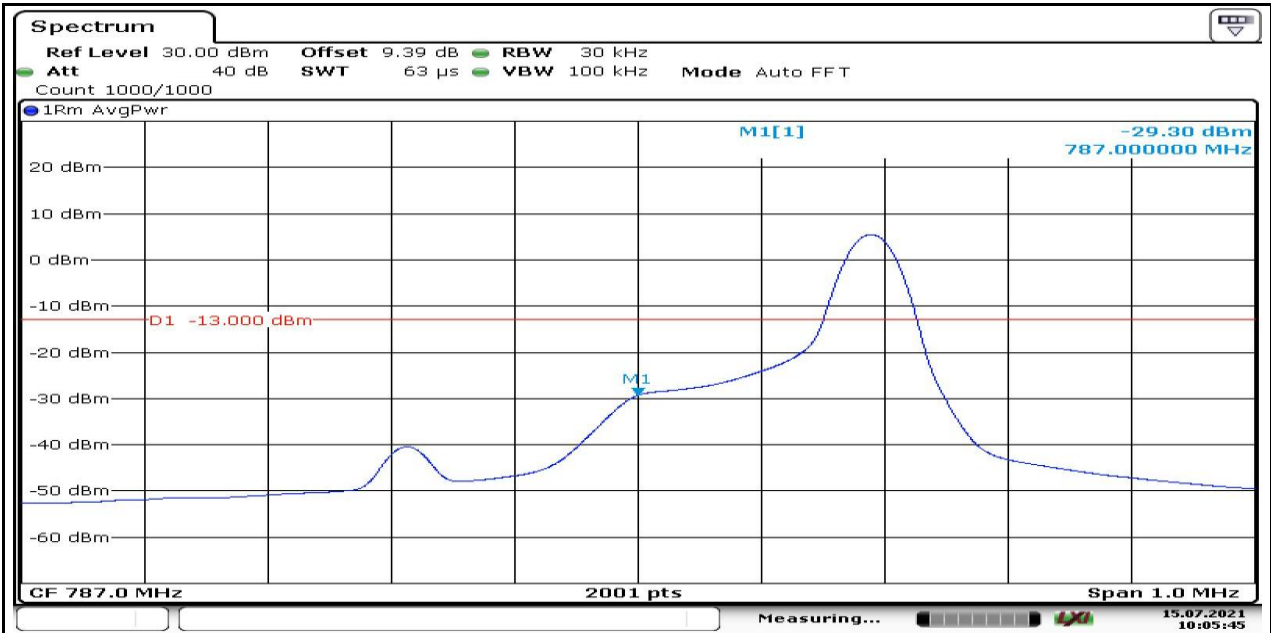
APPENDIX A.4: BAND EDGE FOR NB-IOT

Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	3.75kHz	-16.26	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	3.75kHz	-16.14	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@47	3.75kHz	-29.30	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@47	3.75kHz	-30.98	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	15kHz	-14.37	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	15kHz	-14.28	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@11	15kHz	-28.48	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@11	15kHz	-28.43	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	12@0	15kHz	-21.31	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@0	3.75kHz	-24.64	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	3.75kHz	-25.17	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@47	3.75kHz	-24.50	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@47	3.75kHz	-24.46	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@0	15kHz	-35.19	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	15kHz	-37.31	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@11	15kHz	-27.09	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@11	15kHz	-27.33	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	12@0	15kHz	-35.77	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@0	3.75kHz	-29.09	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@0	3.75kHz	-28.92	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@47	3.75kHz	-25.15	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@47	3.75kHz	-24.20	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@0	15kHz	-40.62	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@0	15kHz	-39.70	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@11	15kHz	-36.84	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@11	15kHz	-35.52	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	12@0	15kHz	-38.87	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	3.75kHz	-31.14	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	3.75kHz	-30.82	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@47	3.75kHz	-15.90	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@47	3.75kHz	-15.92	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	15kHz	-27.33	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	15kHz	-27.64	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@11	15kHz	-13.93	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@11	15kHz	-13.87	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	12@0	15kHz	-20.45	PASS

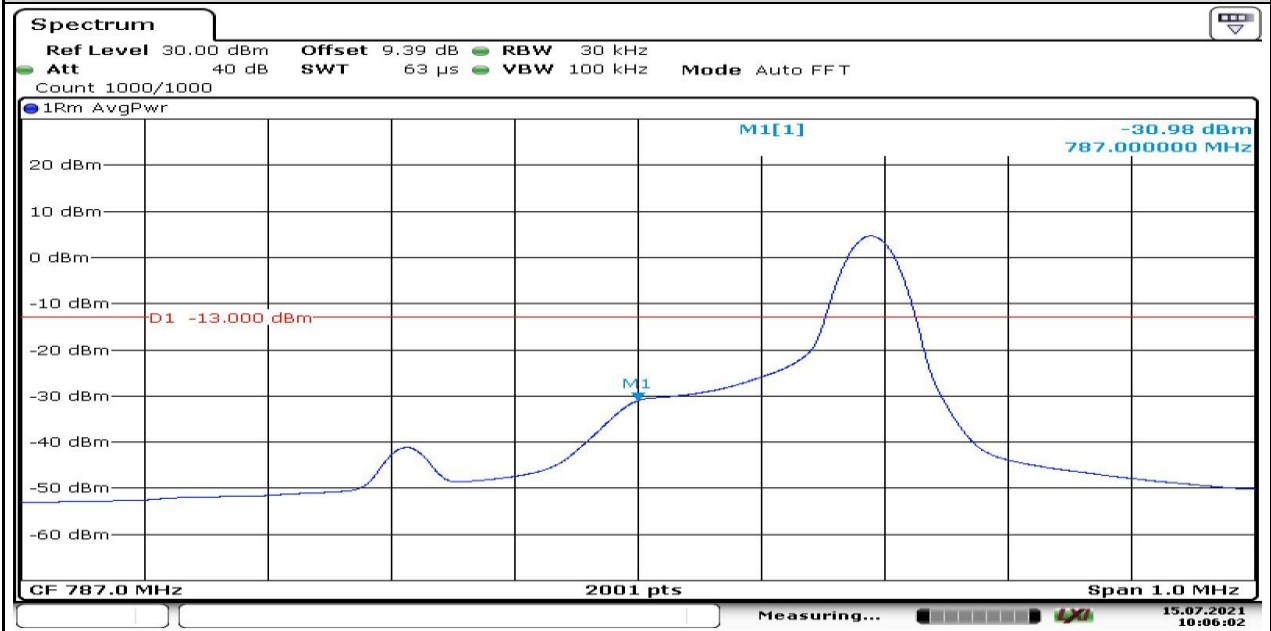
Test Graphs





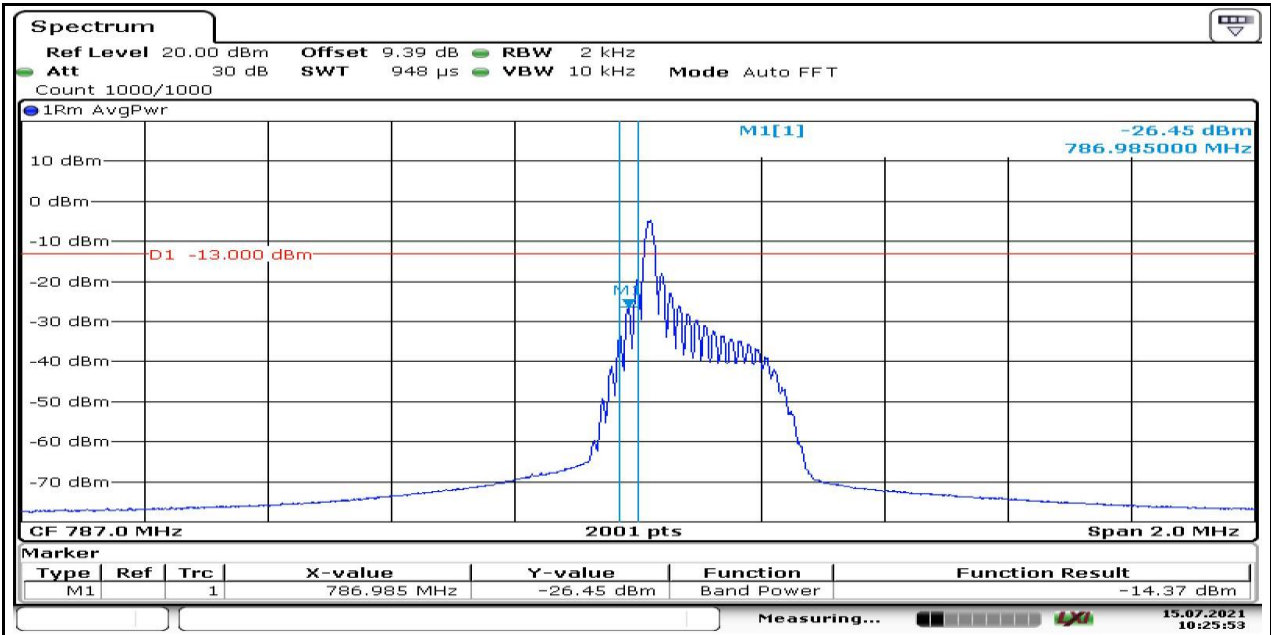
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787-788M_Stand-Alone_NaN_QPSK_134183_1@47_3.75kHz_-30.98_PASS

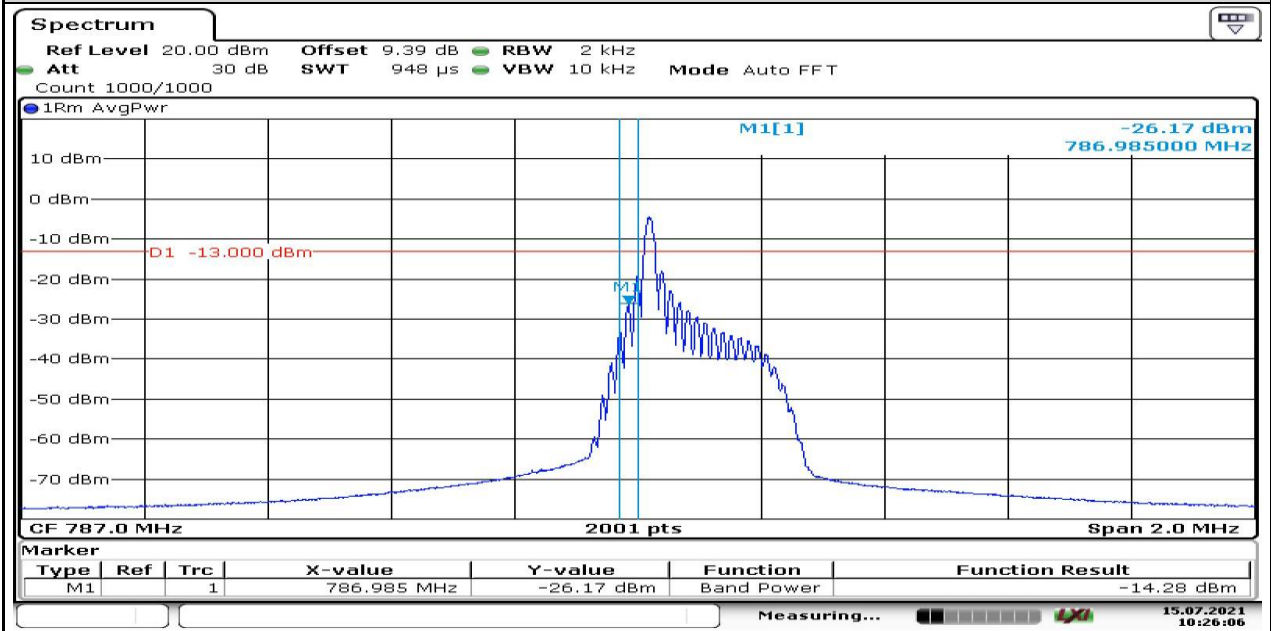


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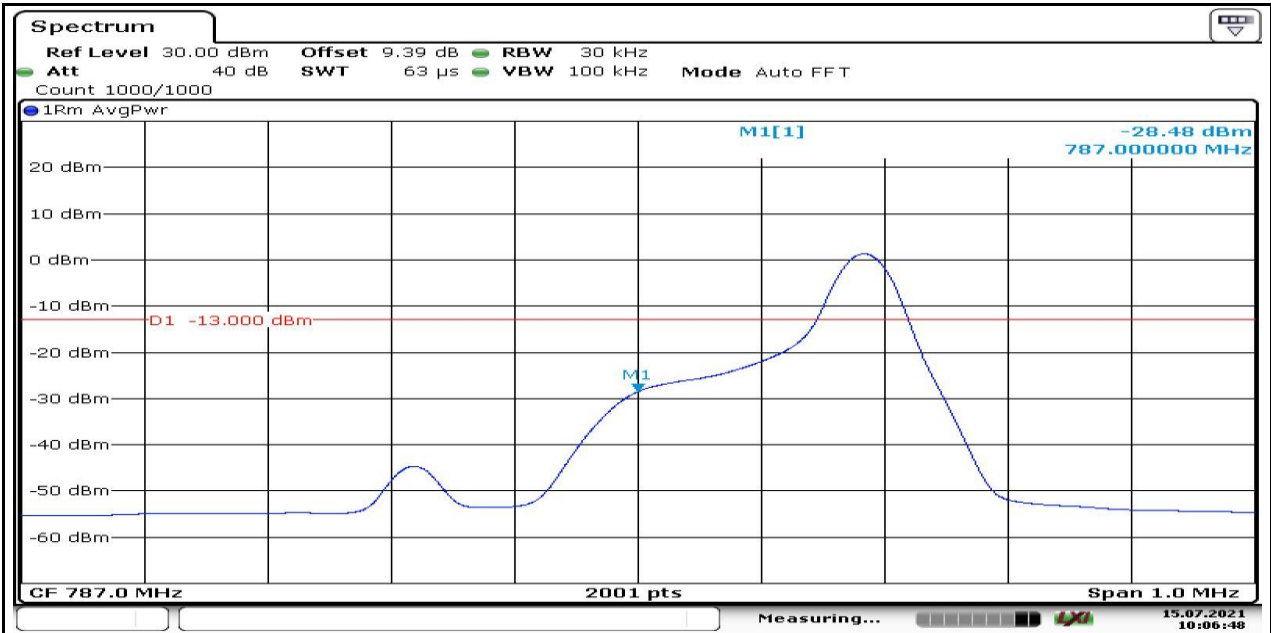
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787-788M_Stand-Alone_NaN_QPSK_134183_1@0_15kHz_-14.28_PASS

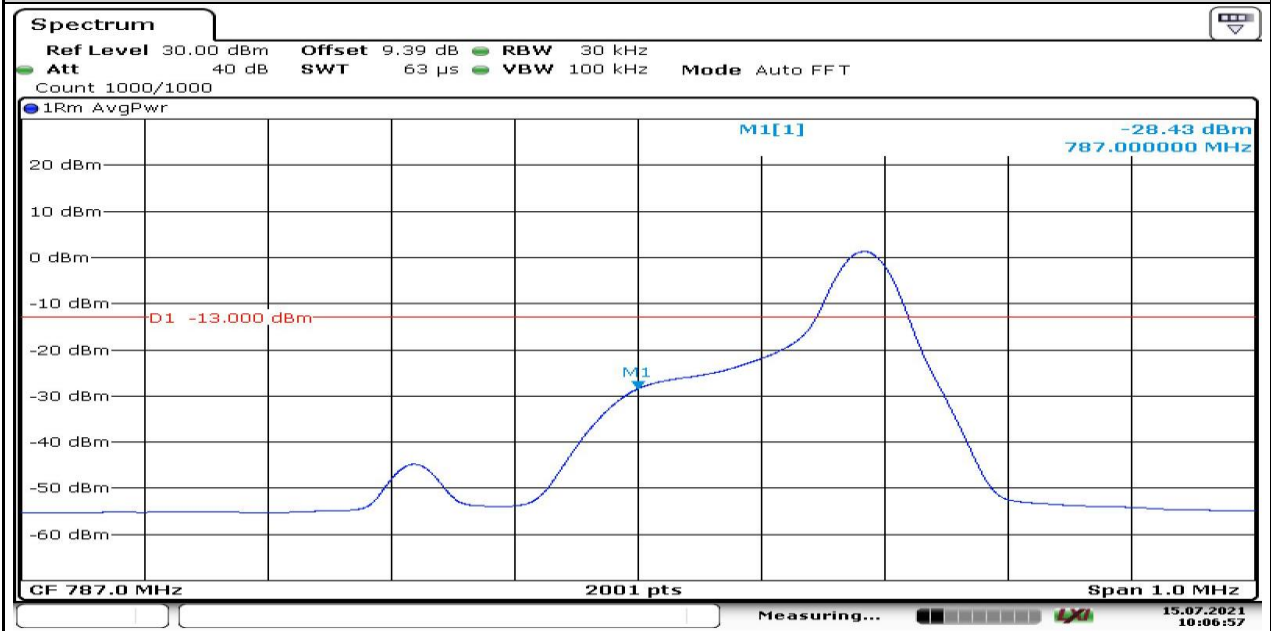


787-788M_Stand-Alone_NaN_BPSK_134183_1@11_15kHz_-28.48_PASS



Date: 15.JUL.2021 10:06:48

787-788M_Stand-Alone_NaN_QPSK_134183_1@11_15kHz_-28.43_PASS



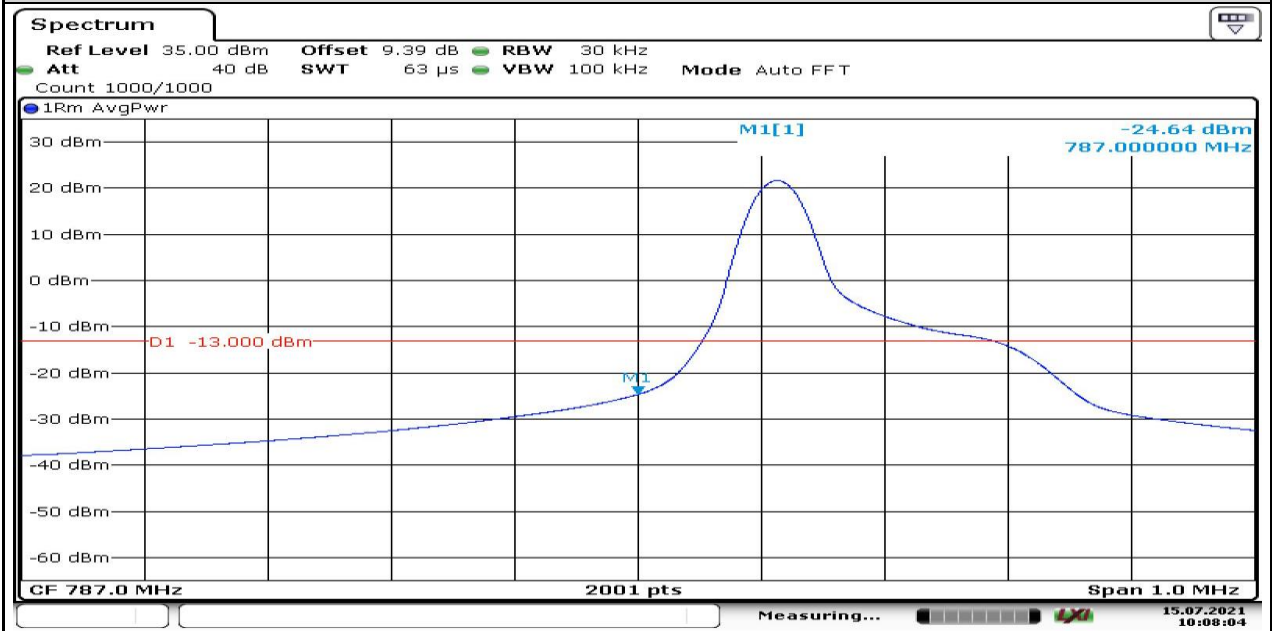
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787-788M_Stand-Alone_NaN_QPSK_134183_12@0_15kHz_-21.31_PASS



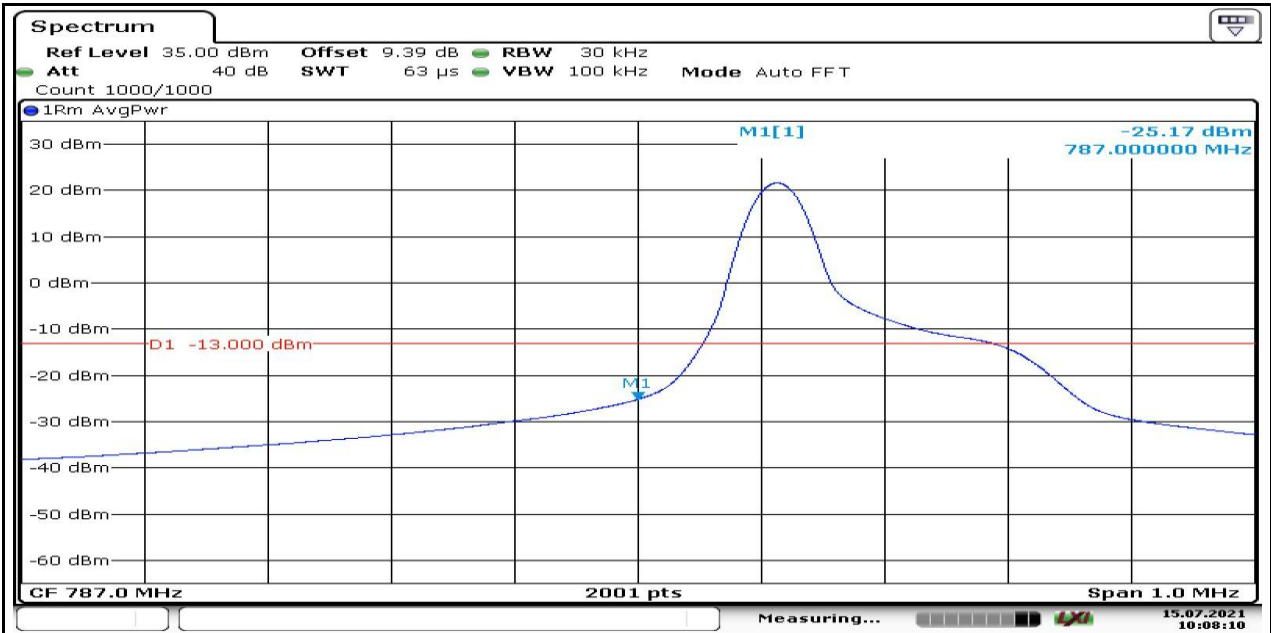
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787-788M_Stand-Alone_NaN_BPSK_134184_1@0_3.75kHz_-24.64_PASS



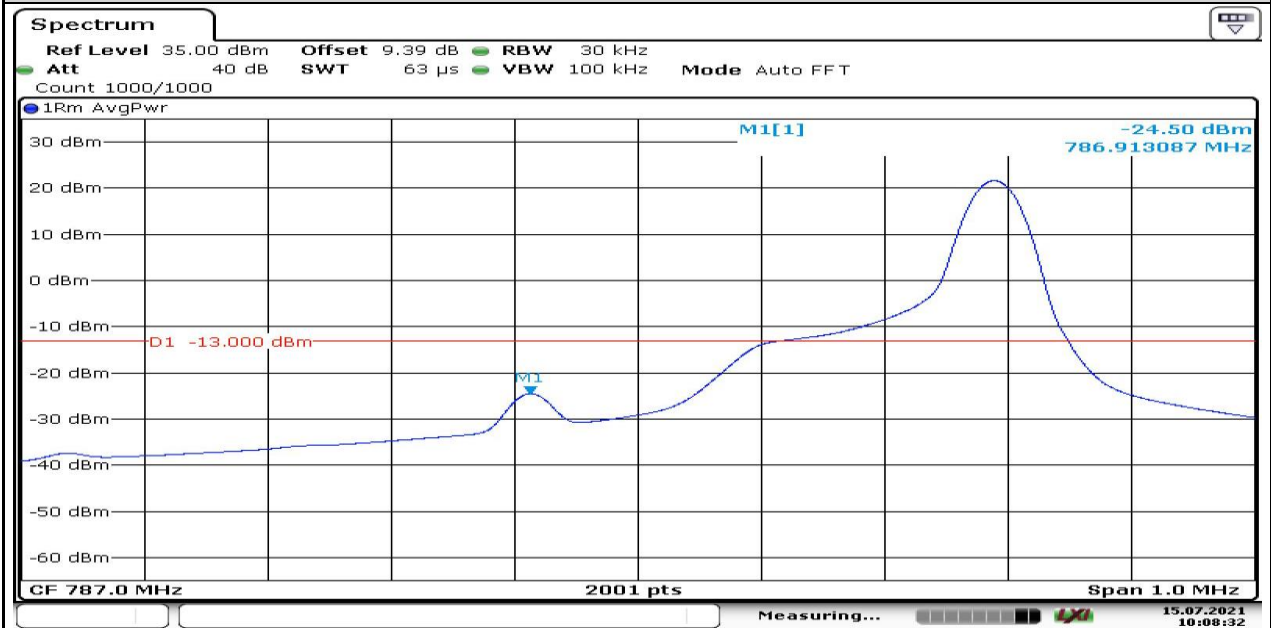
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787-788M_Stand-Alone_NaN_QPSK_134184_1@0_3.75kHz_-25.17_PASS



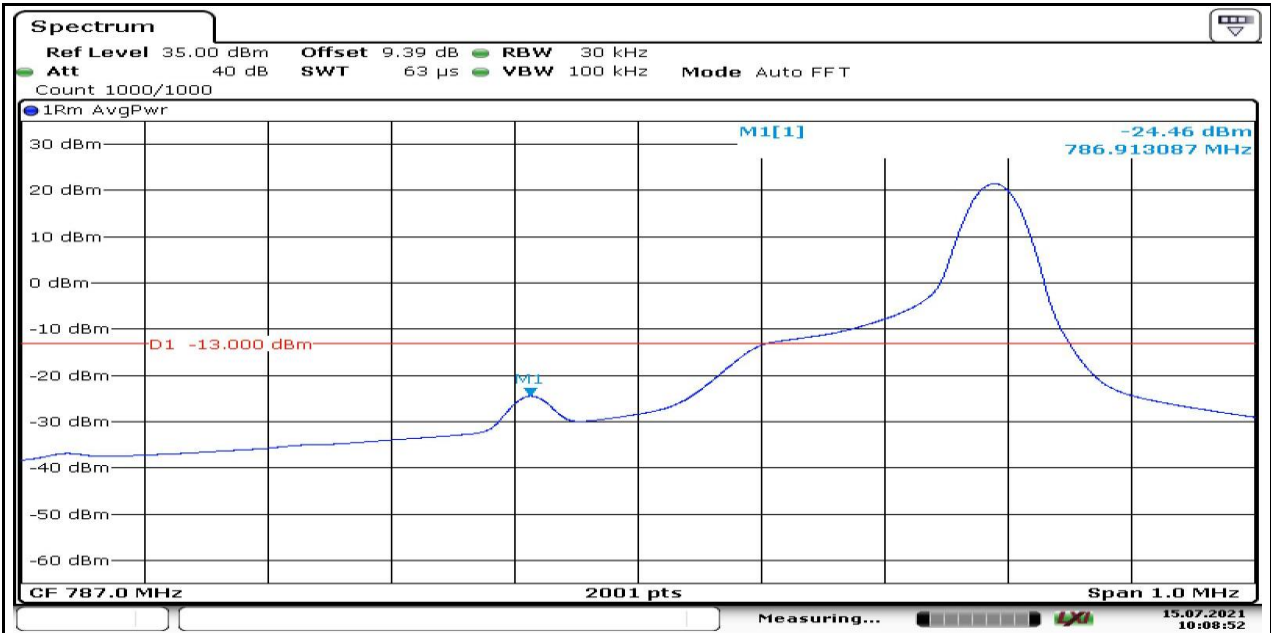
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787-788M_Stand-Alone_NaN_BPSK_134184_1@47_3.75kHz_-24.50_PASS



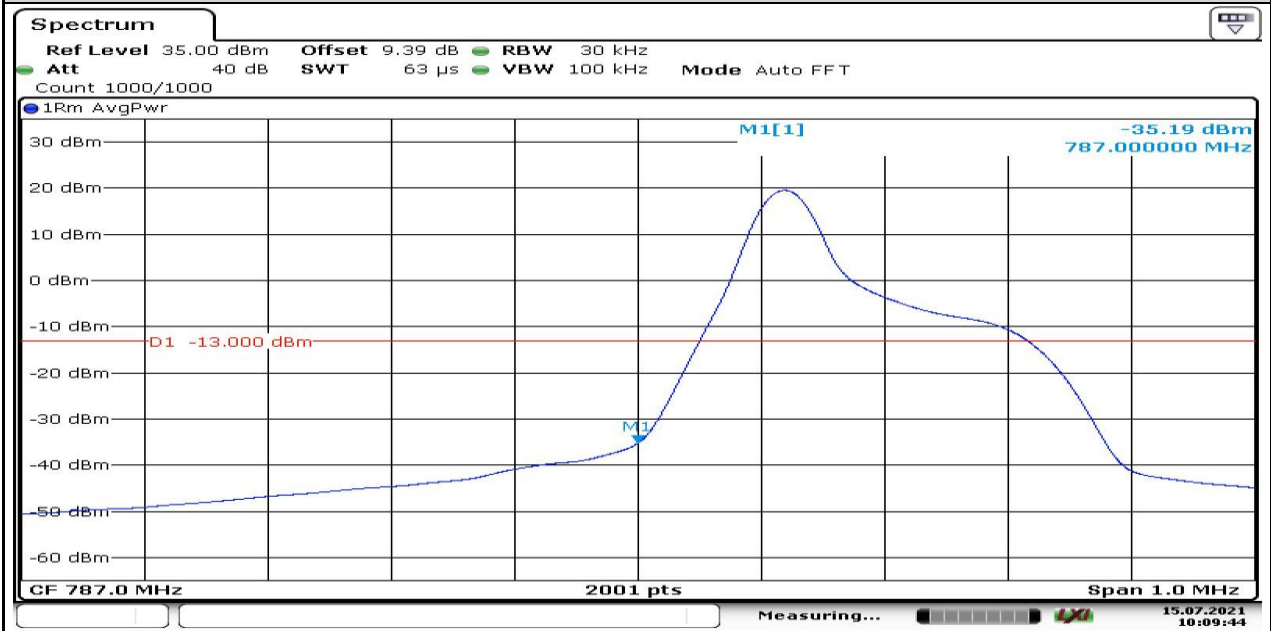
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787-788M_Stand-Alone_NaN_QPSK_134184_1@47_3.75kHz_-24.46_PASS



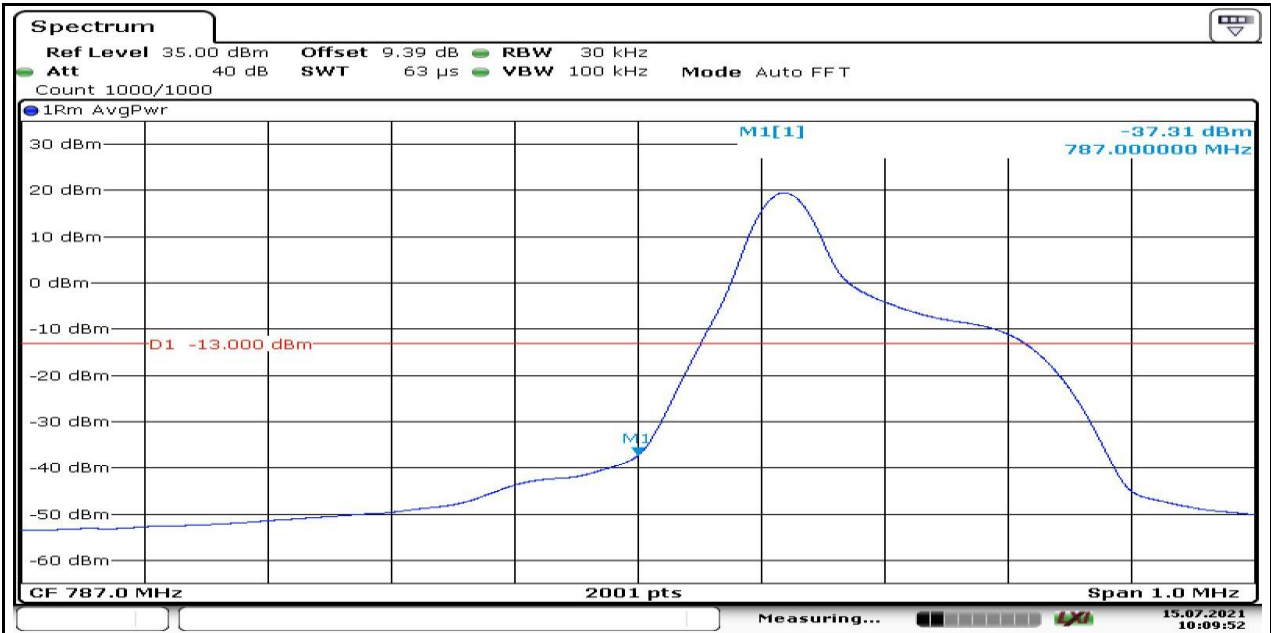
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787-788M_Stand-Alone_NaN_BPSK_134184_1@0_15kHz_-35.19_PASS



Date: 15.JUL.2021 10:09:44

787-788M_Stand-Alone_NaN_QPSK_134184_1@0_15kHz_-37.31_PASS



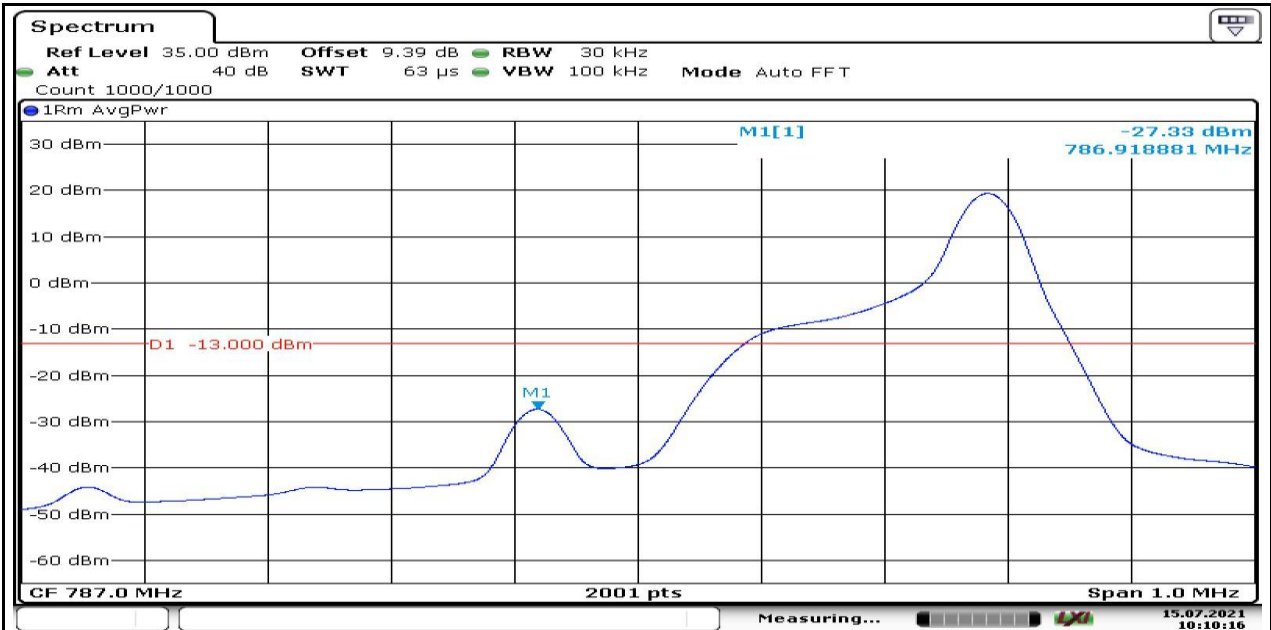
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787-788M_Stand-Alone_NaN_BPSK_134184_1@11_15kHz_-27.09_PASS



Date: 15.JUL.2021 10:10:10

787-788M_Stand-Alone_NaN_QPSK_134184_1@11_15kHz_-27.33_PASS



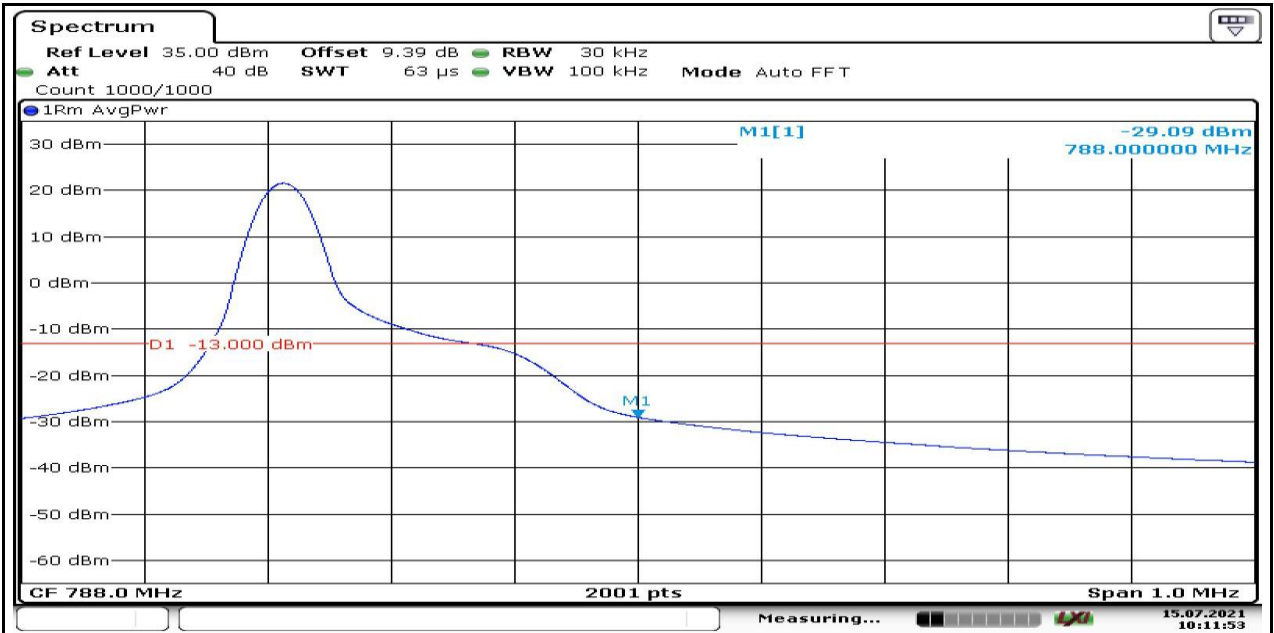
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787-788M_Stand-Alone_NaN_QPSK_134184_12@0_15kHz_-35.77_PASS



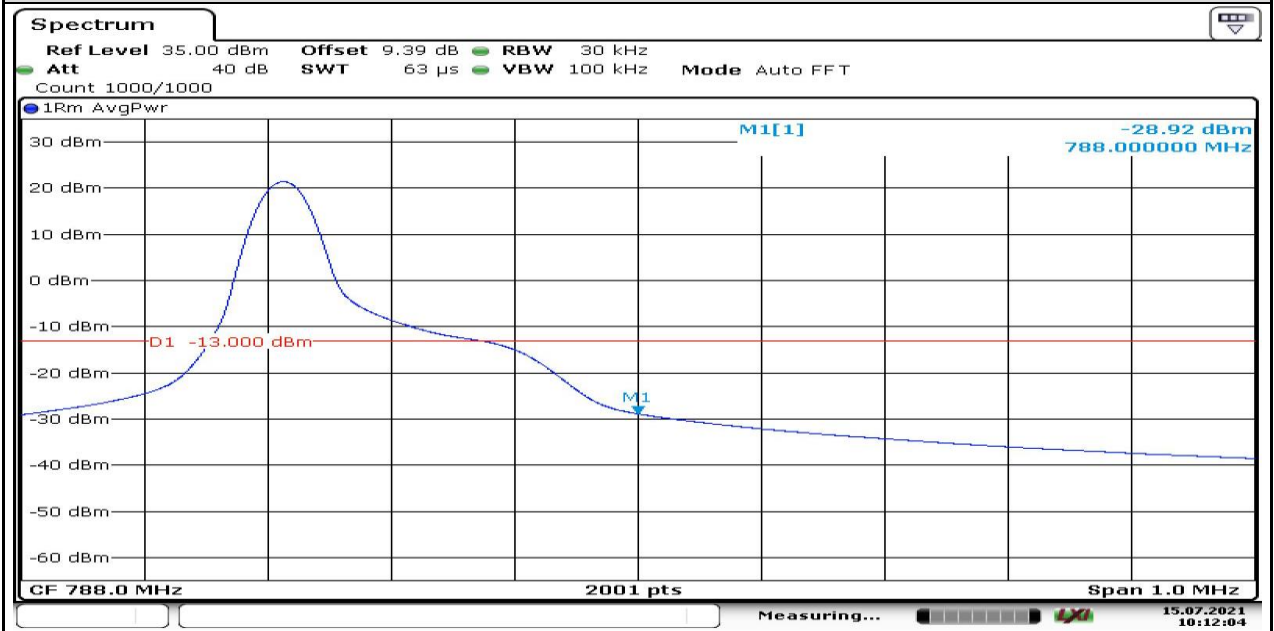
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787-788M_Stand-Alone_NaN_BPSK_134190_1@0_3.75kHz_-29.09_PASS



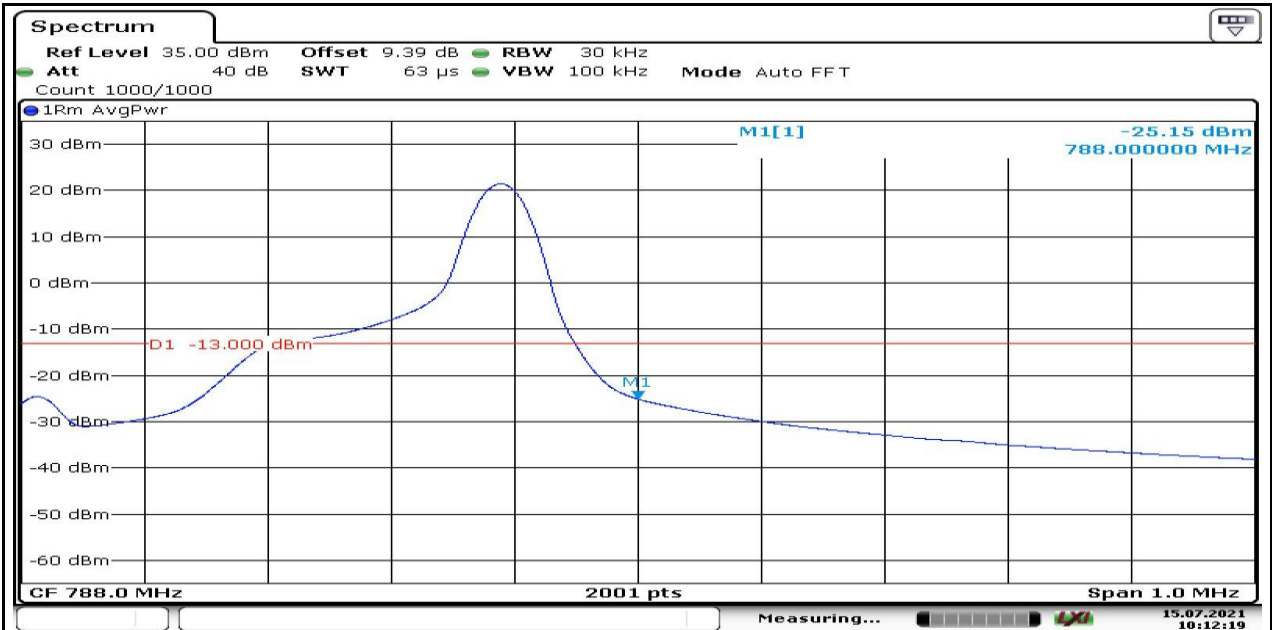
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787-788M_Stand-Alone_NaN_QPSK_134190_1@0_3.75kHz_-28.92_PASS



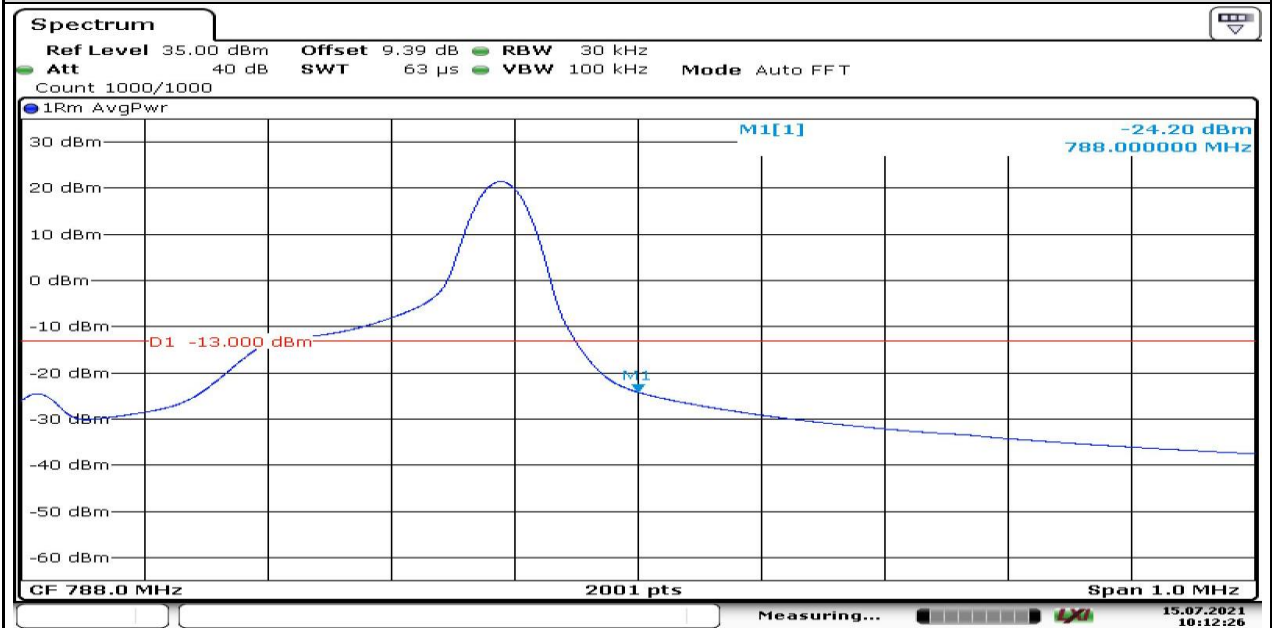
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787-788M_Stand-Alone_NaN_BPSK_134190_1@47_3.75kHz_-25.15_PASS



Date: 15.JUL.2021 10:12:19

787-788M_Stand-Alone_NaN_QPSK_134190_1@47_3.75kHz_-24.20_PASS



Date: 15.JUL.2021 10:12:27

787-788M_Stand-Alone_NaN_BPSK_134190_1@0_15kHz_-40.62_PASS



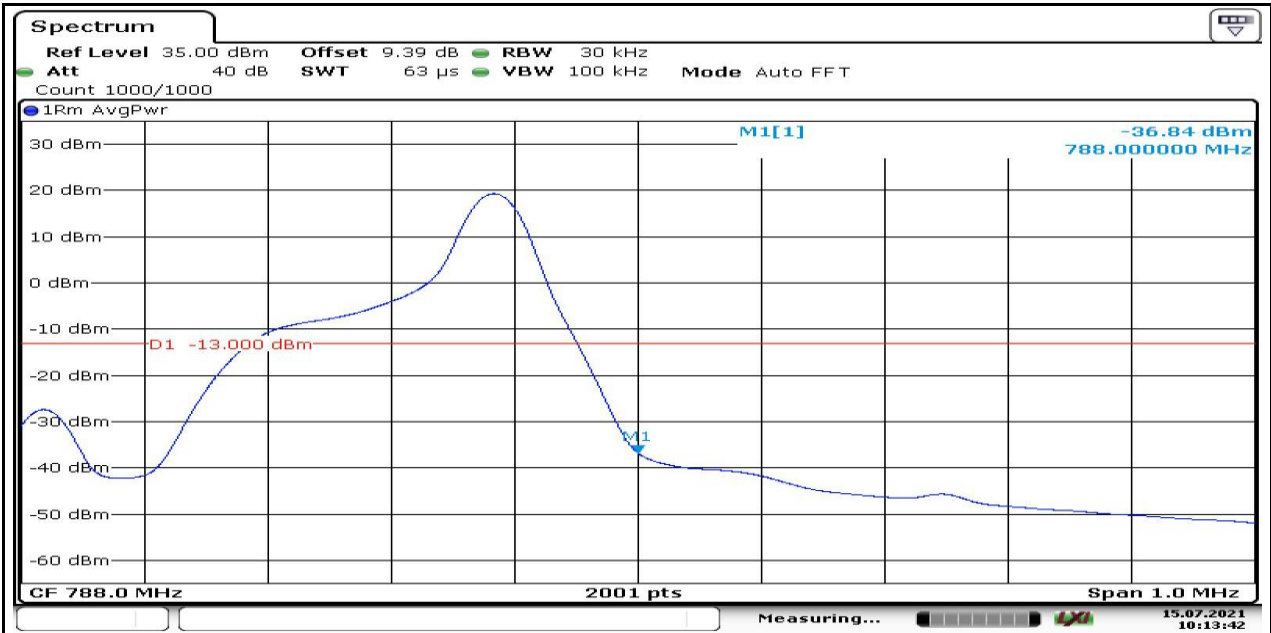
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787-788M_Stand-Alone_NaN_QPSK_134190_1@0_15kHz_-39.70_PASS



Date: 15.JUL.2021 10:14:11

787-788M_Stand-Alone_NaN_BPSK_134190_1@11_15kHz_-36.84_PASS



Date: 15.JUL.2021 10:13:42

787-788M_Stand-Alone_NaN_QPSK_134190_1@11_15kHz_-35.52_PASS



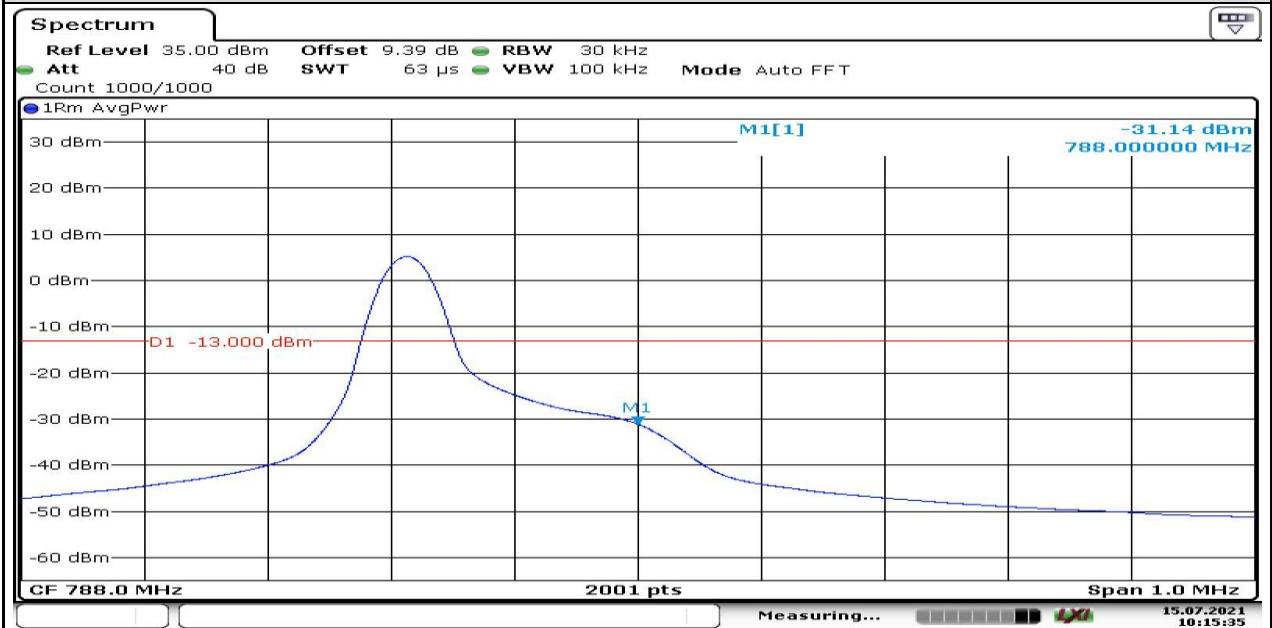
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787-788M_Stand-Alone_NaN_QPSK_134190_12@0_15kHz_-38.87_PASS



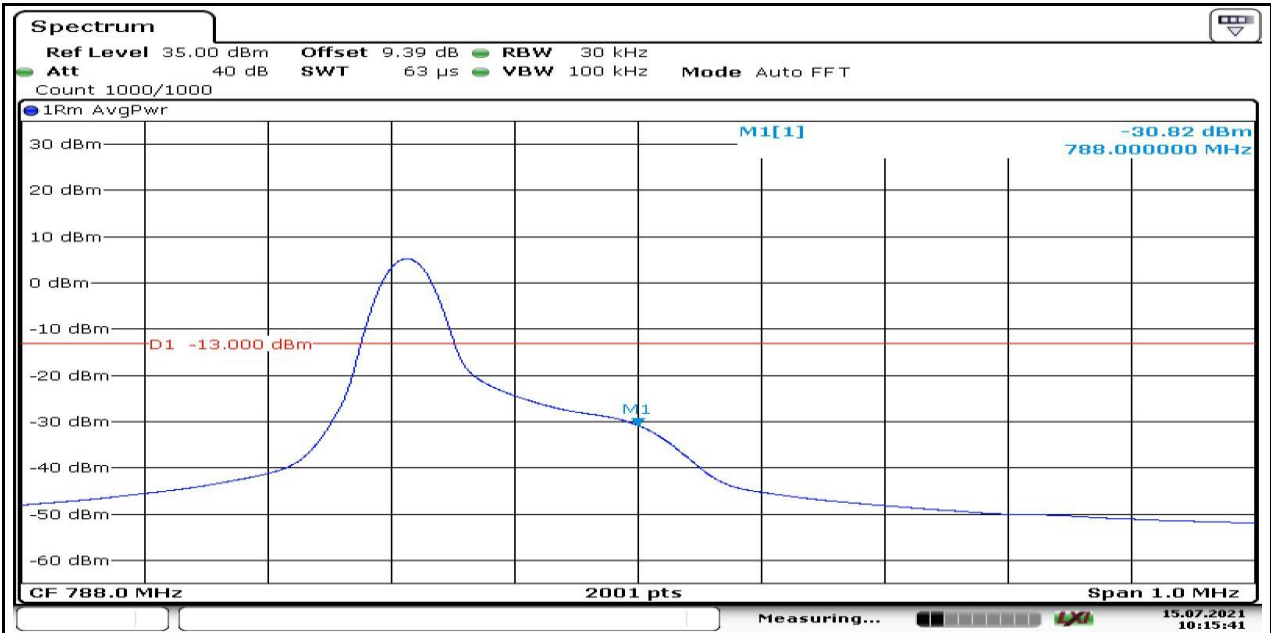
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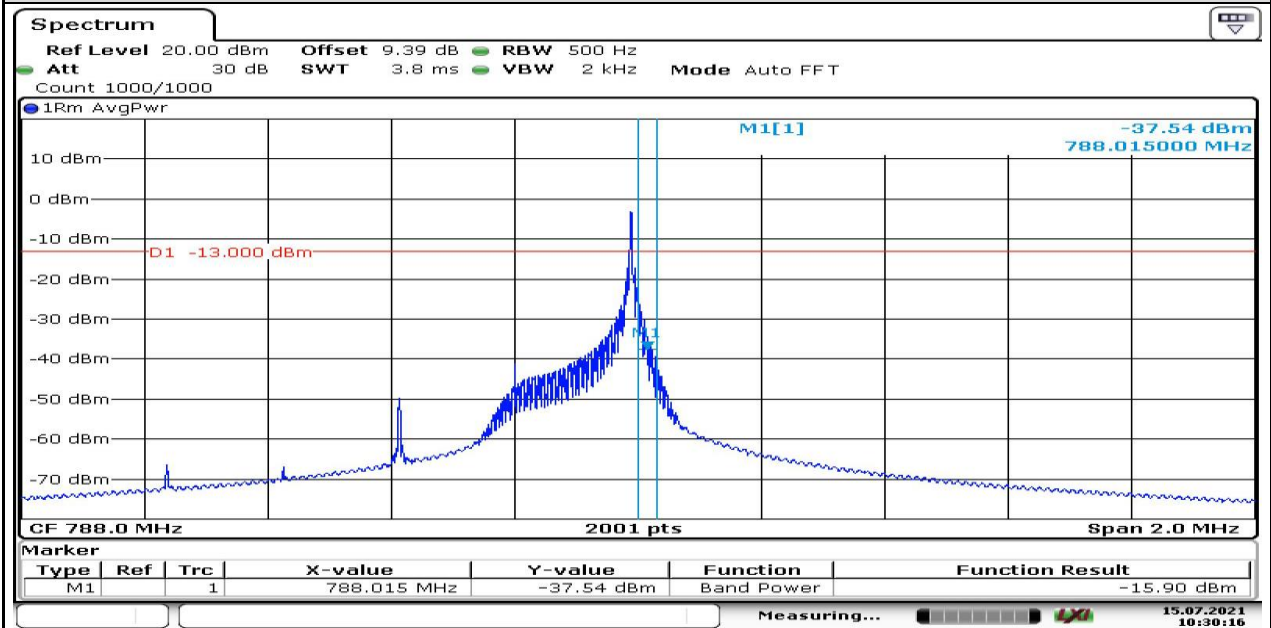


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787-788M_Stand-Alone_NaN_QPSK_134191_1@0_3.75kHz_-30.82_PASS



787-788M_Stand-Alone_NaN_BPSK_134191_1@47_3.75kHz_-15.90_PASS



787-788M_Stand-Alone_NaN_QPSK_134191_1@47_3.75kHz_-15.92_PASS