

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

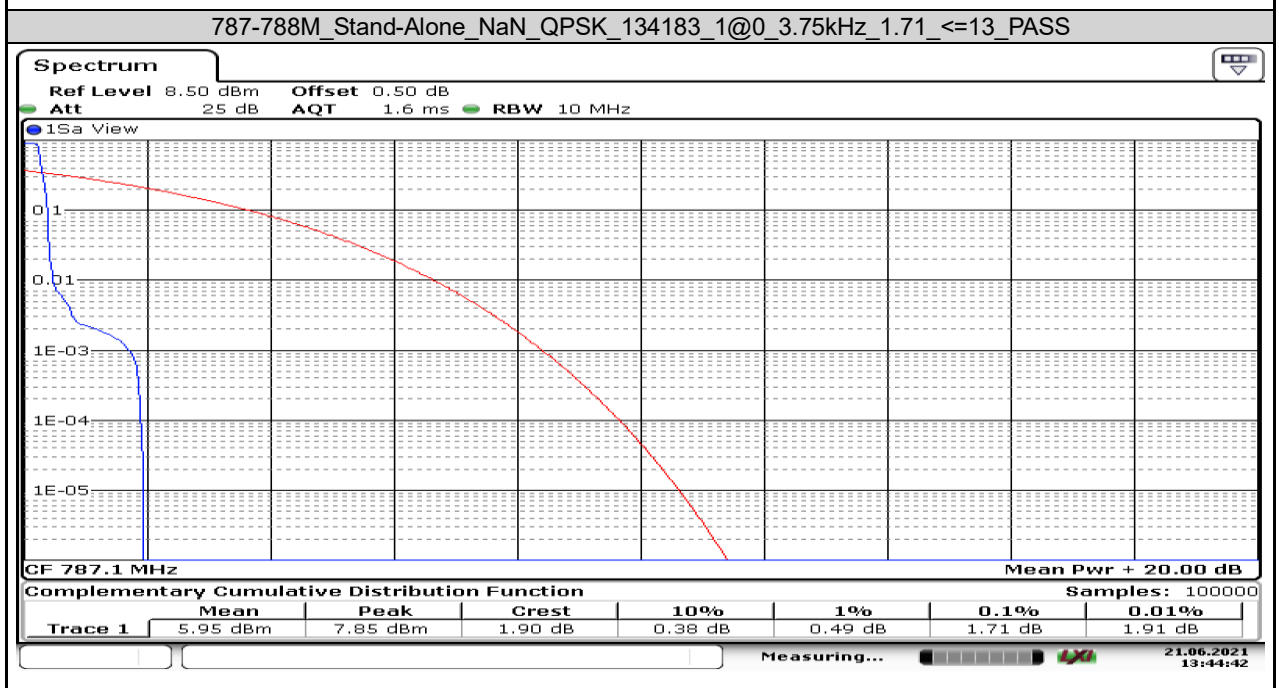
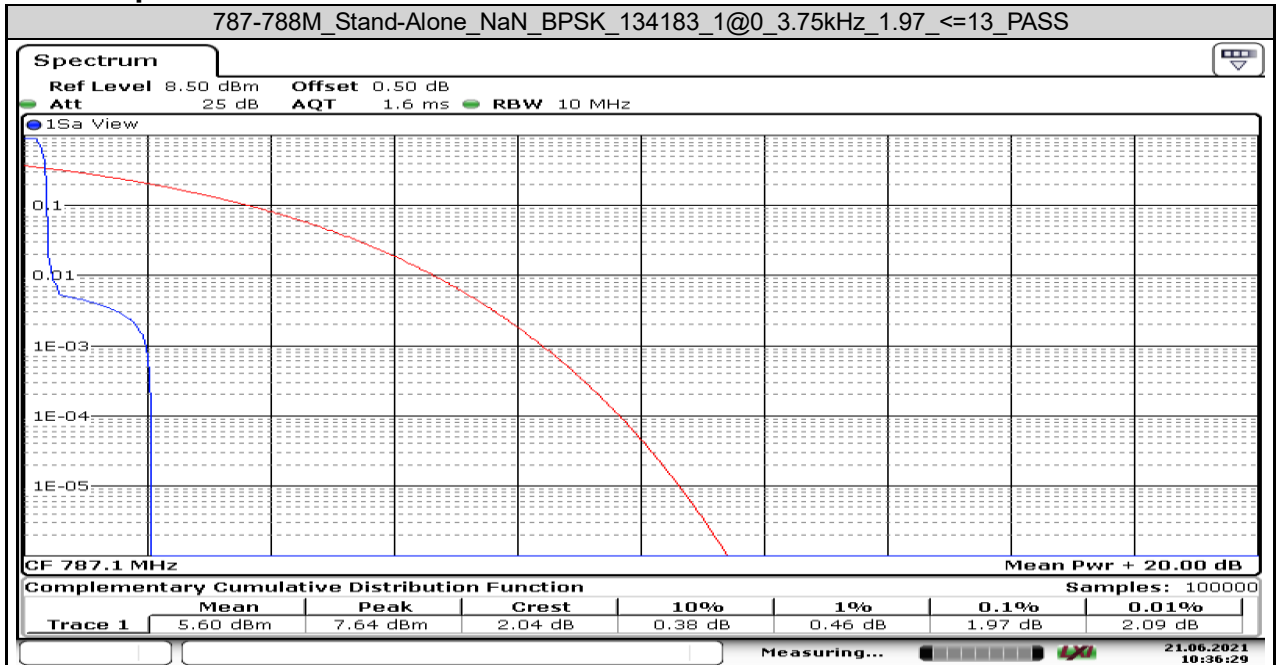
Test Configuration		EARFCN	Frequency (MHz)	EARFCN	Frequency (MHz)	EARFCN	Frequency (MHz)	EARFCN	Frequency (MHz)
		134183	787.1	134184	787.2	134190	787.8	134191	787.9
Modulation: BPSK		Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)	Conducted Power (dBm)	E.R.P (dBm)
3.75kHz	1RB0	6.54	6.53	22.61	22.60	22.53	22.52	6.26	6.25
	1RB47	6.41	6.40	22.49	22.48	22.44	22.43	6.32	6.31
15kHz	1RB0	6.51	6.50	22.90	22.89	23.08	23.07	6.43	6.42
	1RB11	6.43	6.42	22.87	22.86	22.97	22.96	6.33	6.32
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	6.57	6.56	22.83	22.82	22.68	22.67	6.45	6.44
	1RB47	6.46	6.45	22.72	22.71	22.61	22.60	6.37	6.36
15kHz	1RB0	6.63	6.62	23.17	23.16	22.84	22.83	6.52	6.51
	1RB11	6.56	6.55	22.96	22.95	22.70	22.69	6.43	6.42
	3RB3	6.64	6.63	23.00	22.99	23.03	23.02	6.51	6.50

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

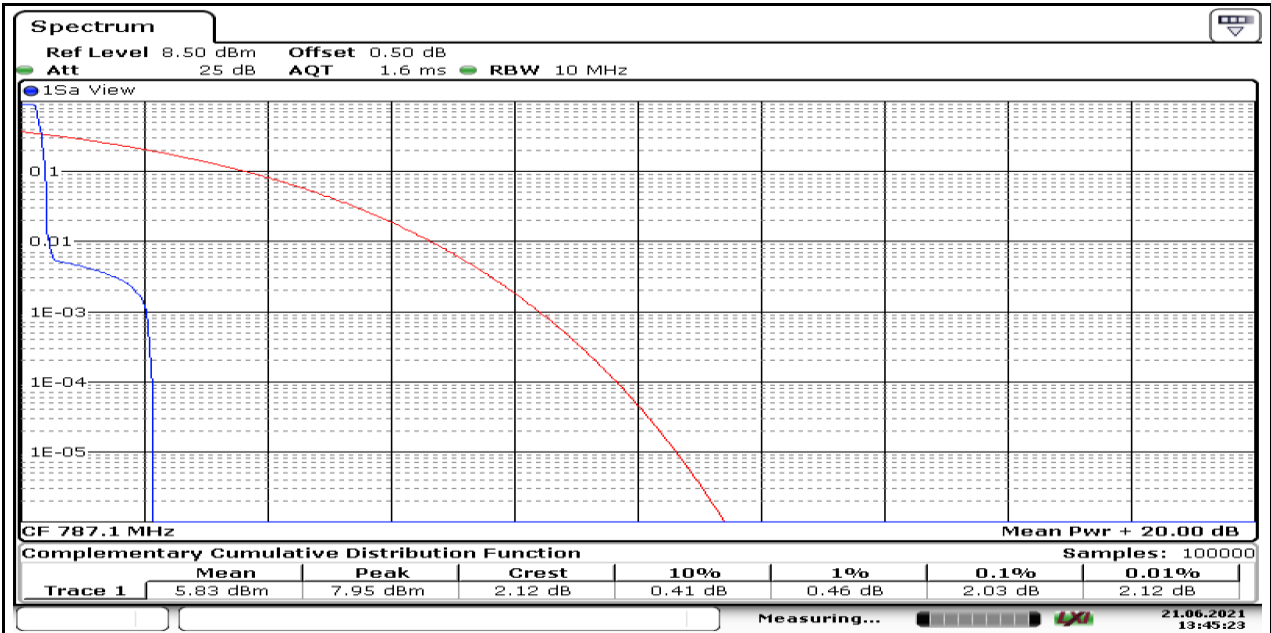
Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dB)	Limit (dB)	Verdict
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	3.75kHz	1.97	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	3.75kHz	1.71	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@47	3.75kHz	2.03	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@47	3.75kHz	1.86	<=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	1.54	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@11	15kHz	1.59	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@11	15kHz	1.57	<=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	1.80	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	3.75kHz	1.68	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@47	3.75kHz	2.03	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@47	3.75kHz	1.68	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@0	15kHz	1.45	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	15kHz	1.57	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@11	15kHz	1.51	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@11	15kHz	1.57	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	3@3	15kHz	3.88	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	3.75kHz	2.00	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	3.75kHz	1.77	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@47	3.75kHz	1.91	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@47	3.75kHz	1.68	<=13	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	15kHz	1.51	<=13	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	15kHz	1.59	<=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	3.86	<=13	PASS

Test Graphs

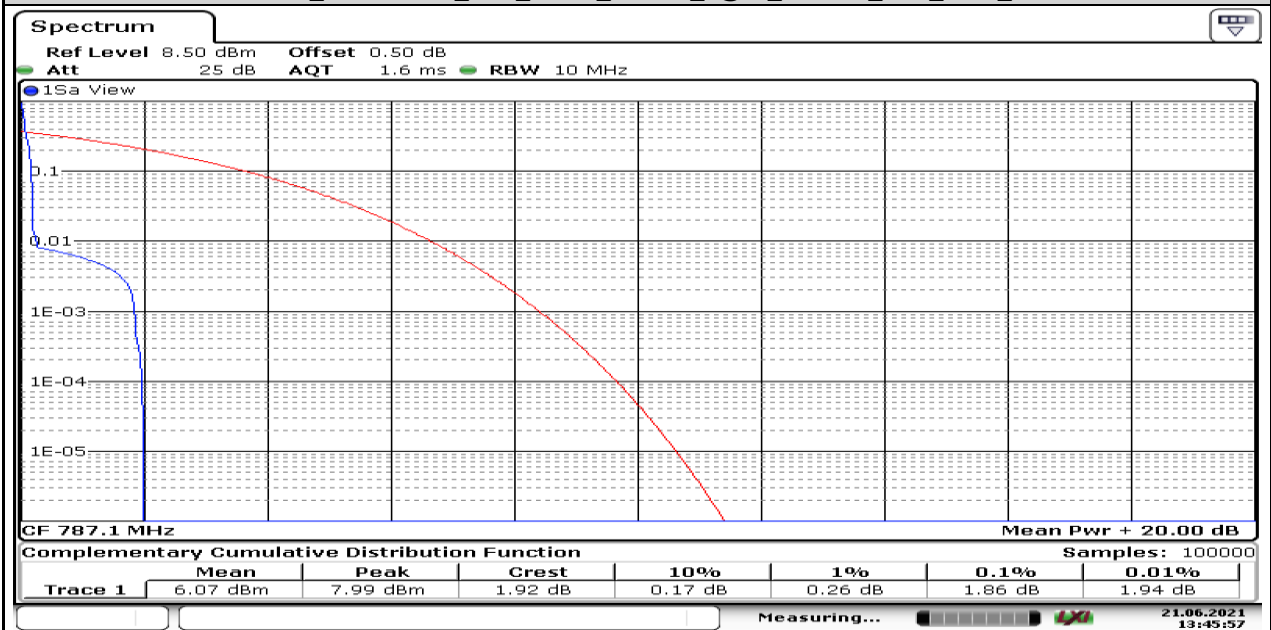


787-788M_Stand-Alone_NaN_BPSK_134183_1@47_3.75kHz_2.03_<=13_PASS



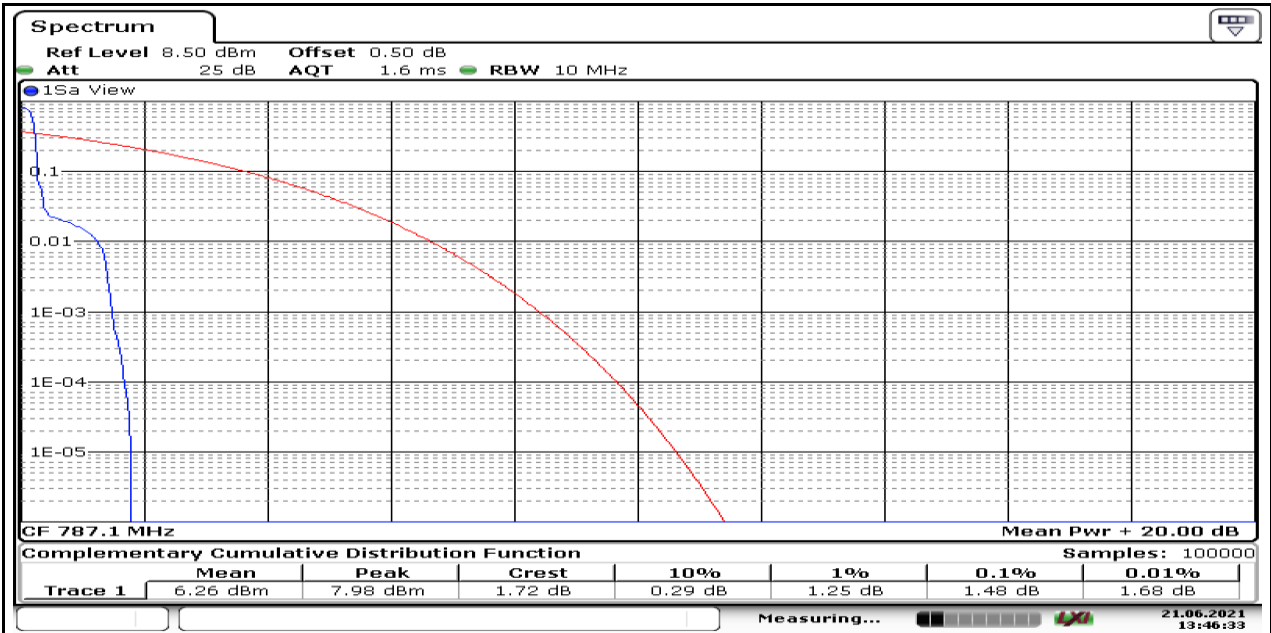
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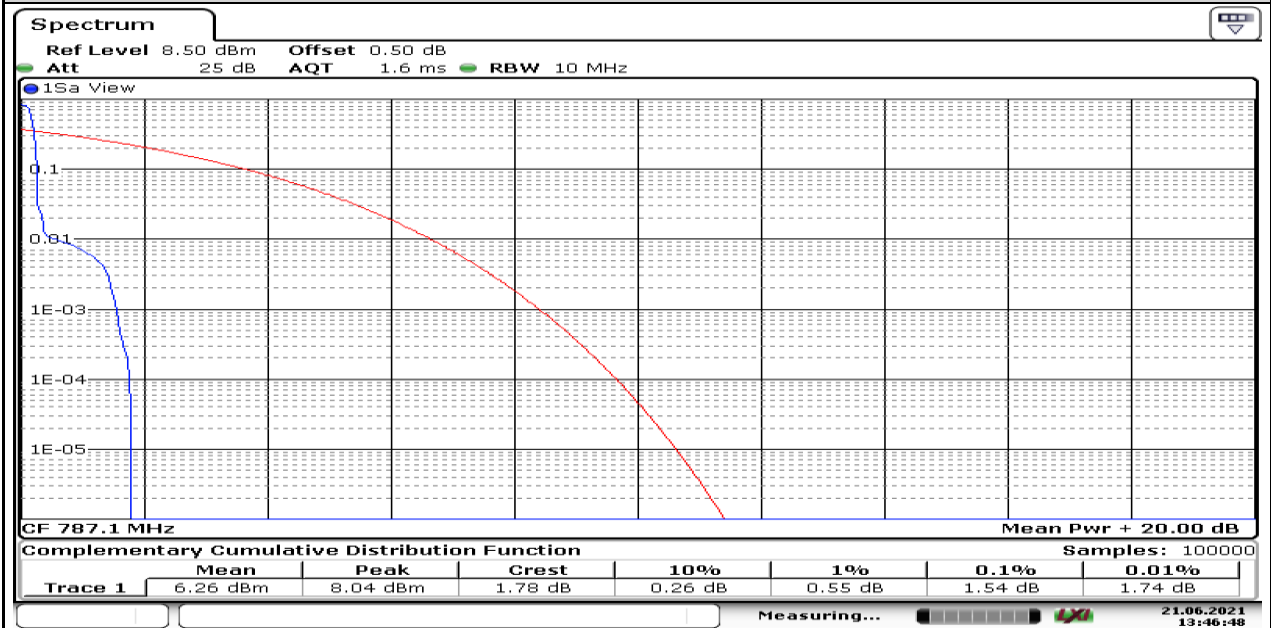
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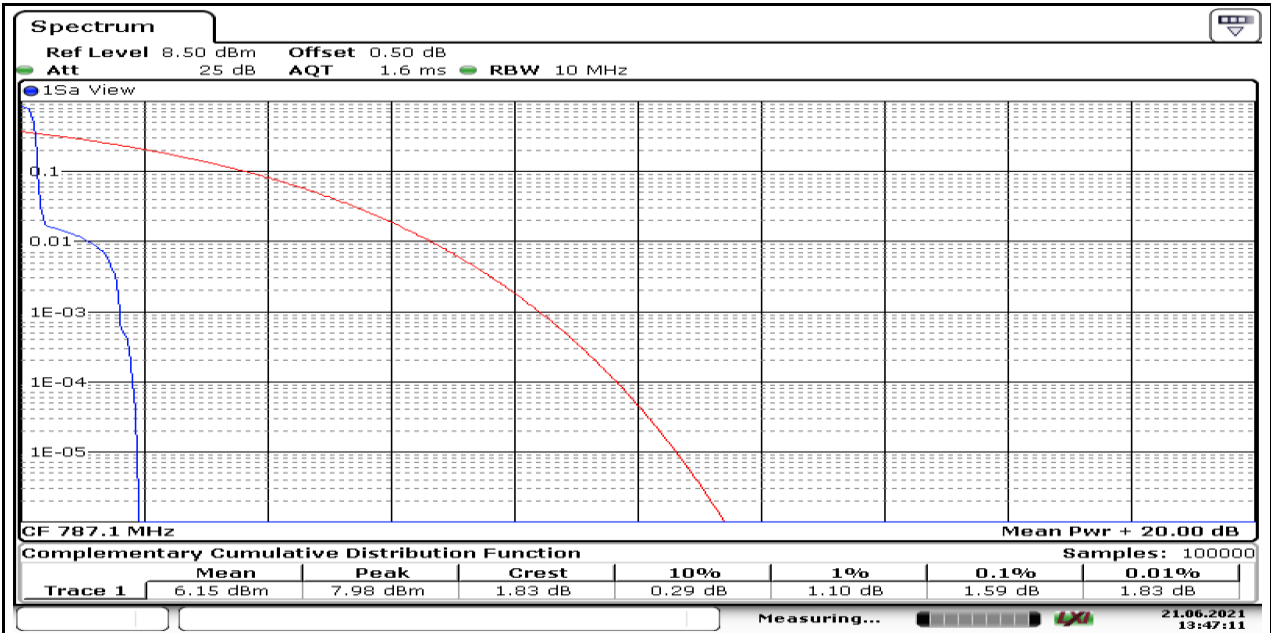
Date: 21.JUN.2021 13:46:34

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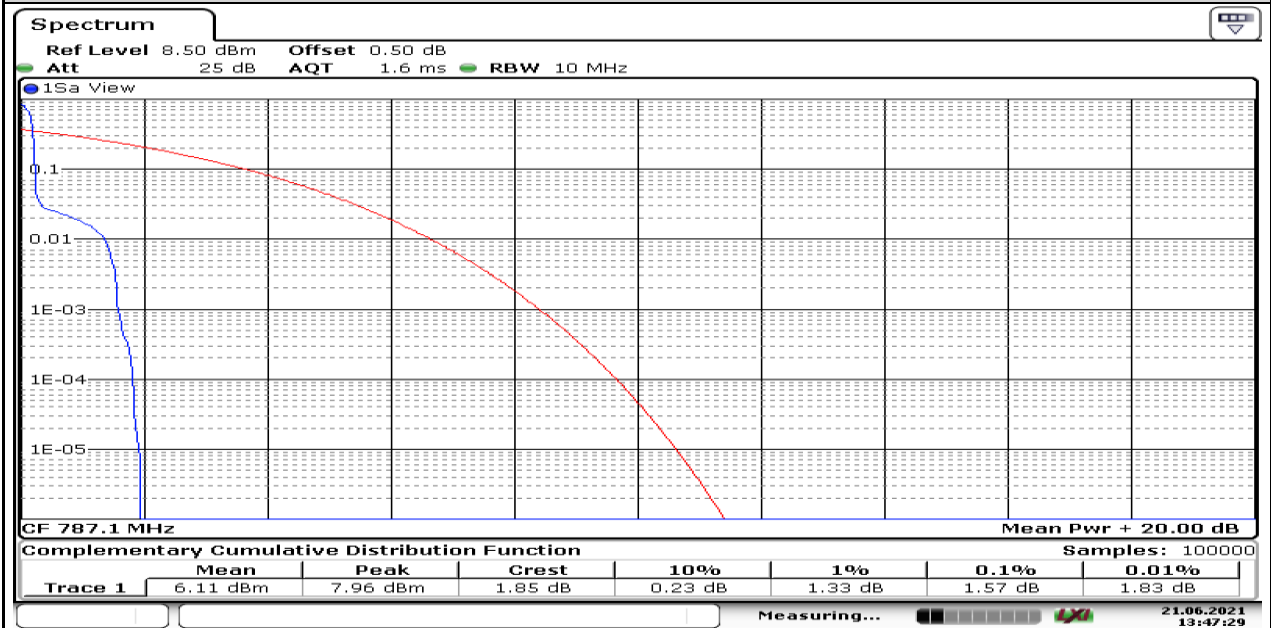
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787-788M_Stand-Alone_NaN_BPSK_134183_1@11_15kHz_1.59_<=13_PASS



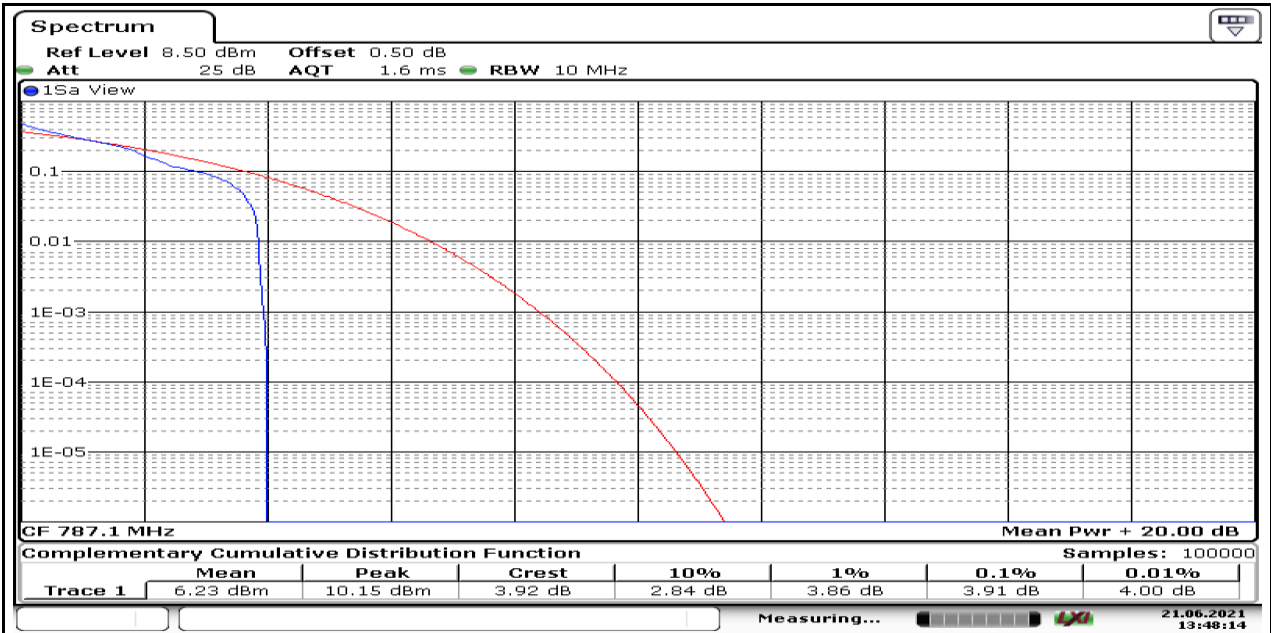
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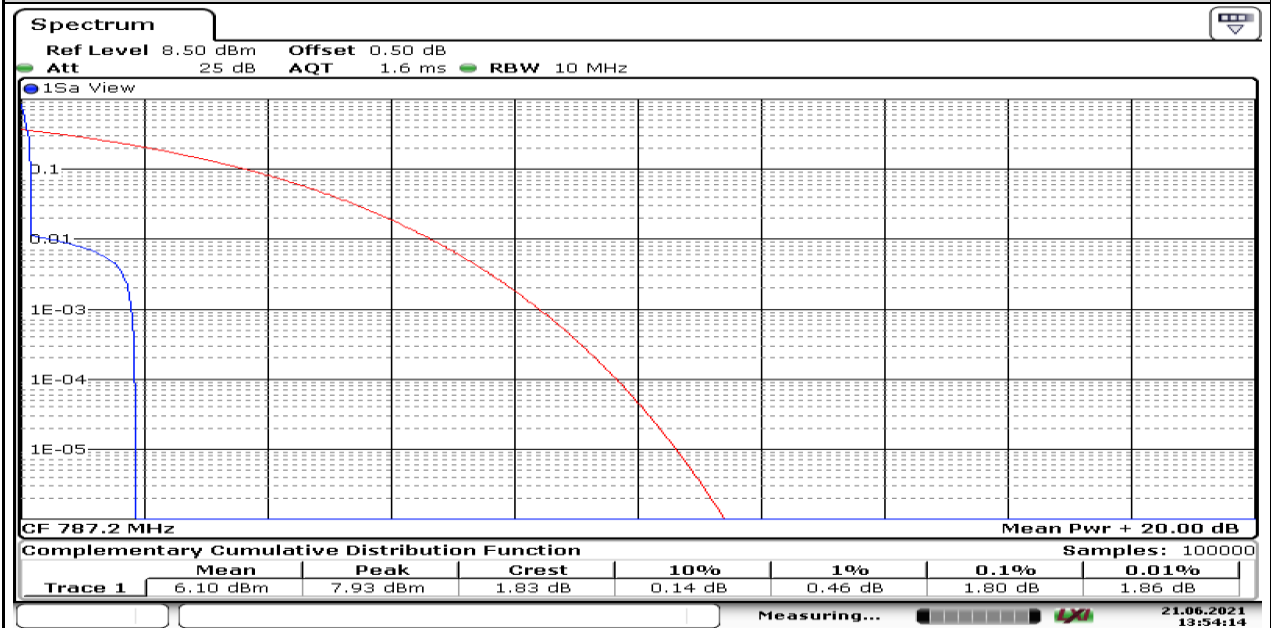
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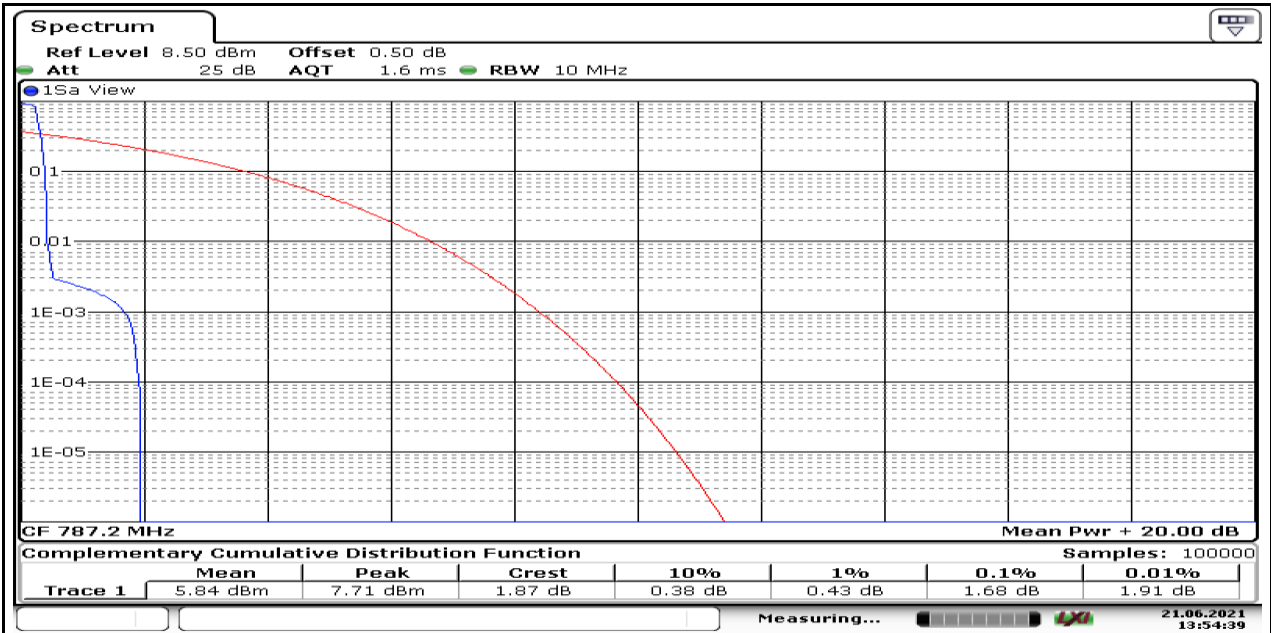
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787-788M_Stand-Alone_NaN_BPSK_134184_1@0_3.75kHz_1.80_<=13_PASS



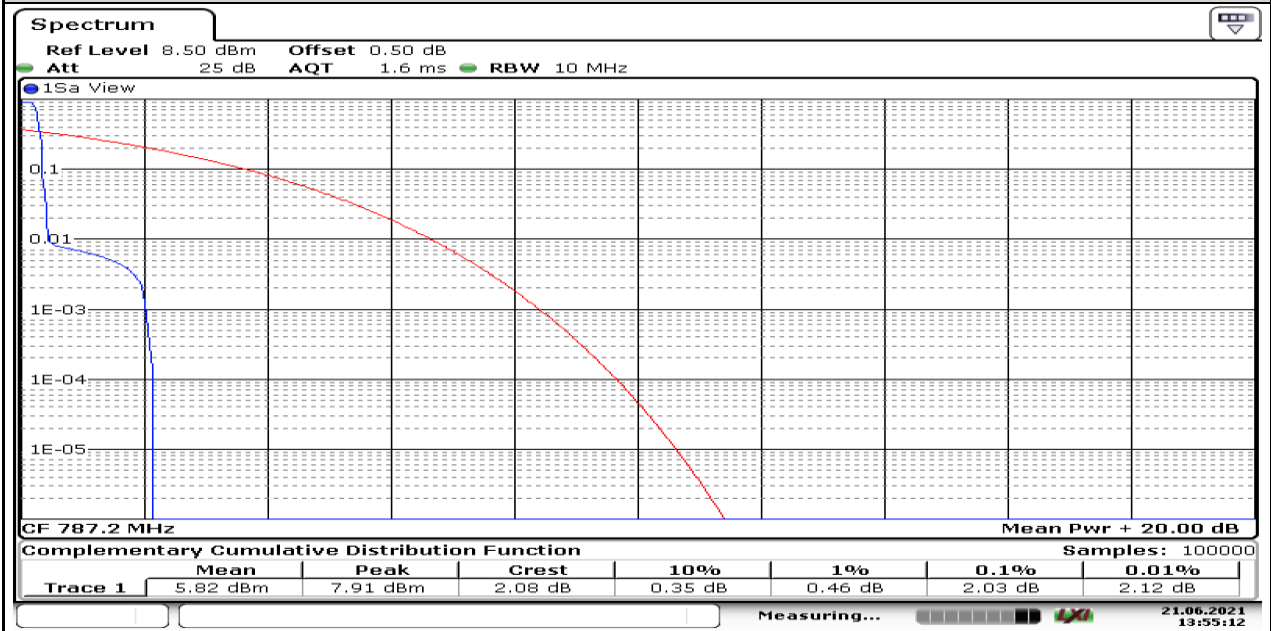
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787-788M_Stand-Alone_NaN_QPSK_134184_1@0_3.75kHz_1.68_<=13_PASS



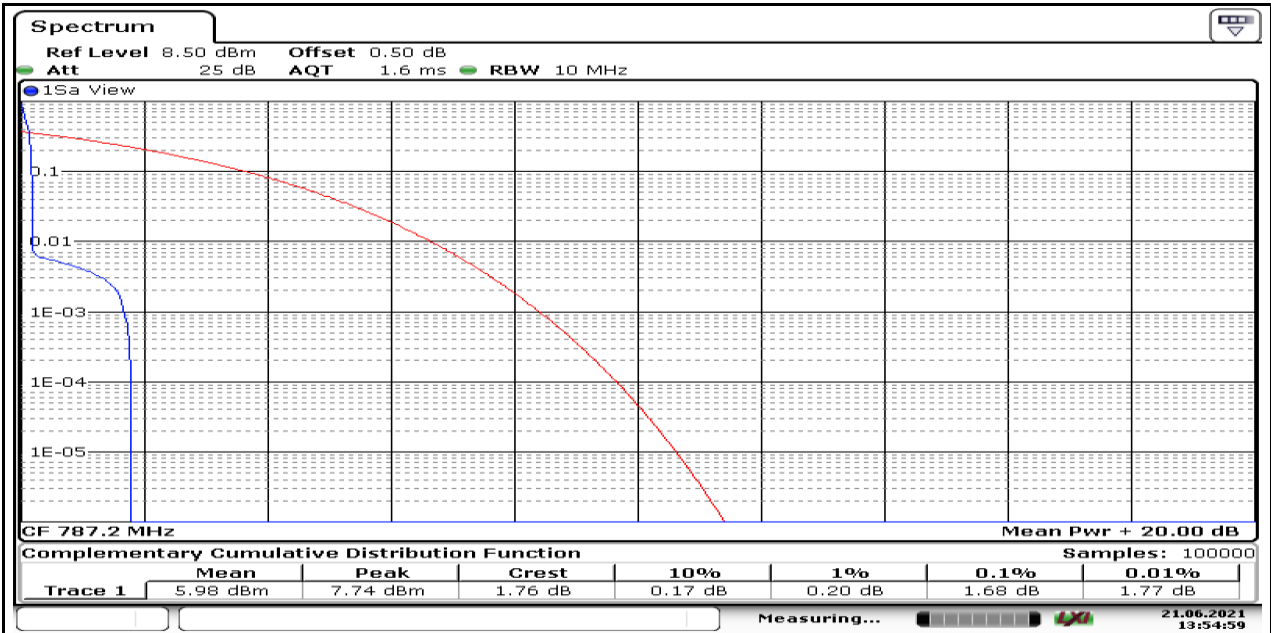
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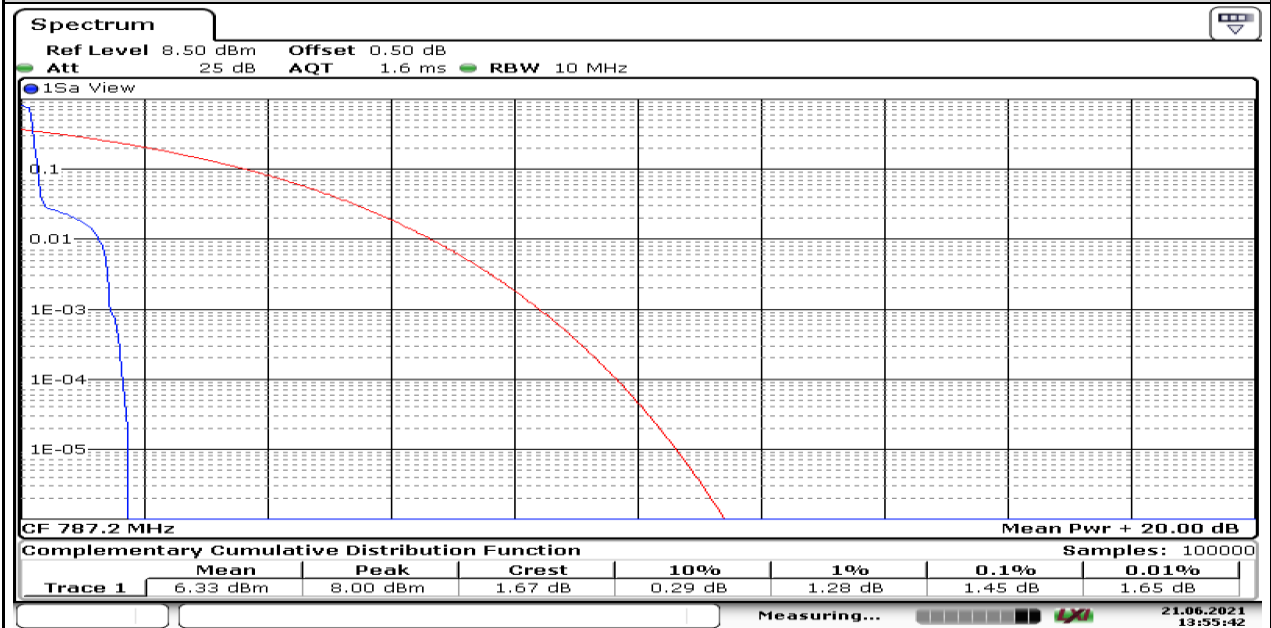
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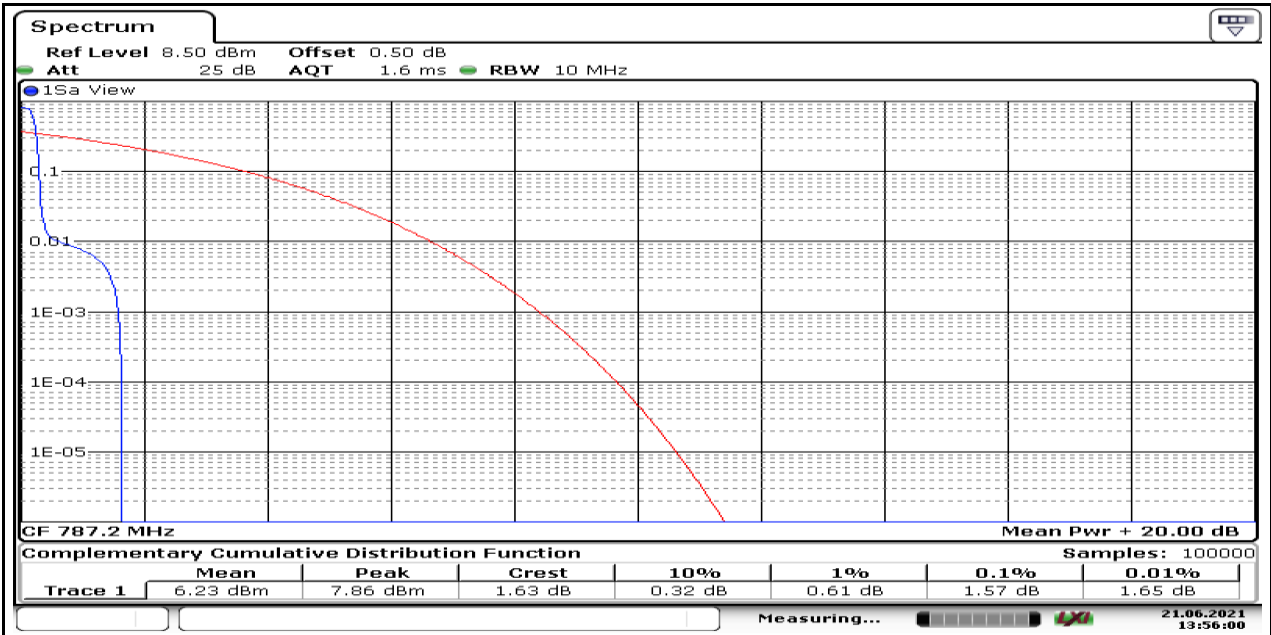
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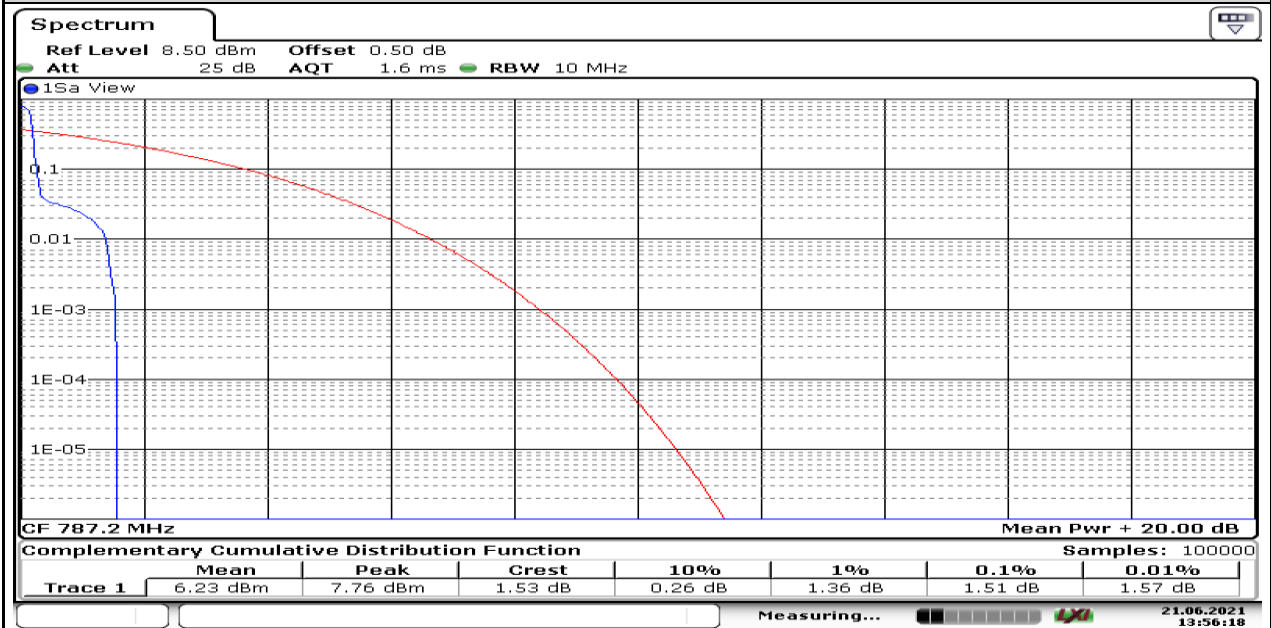
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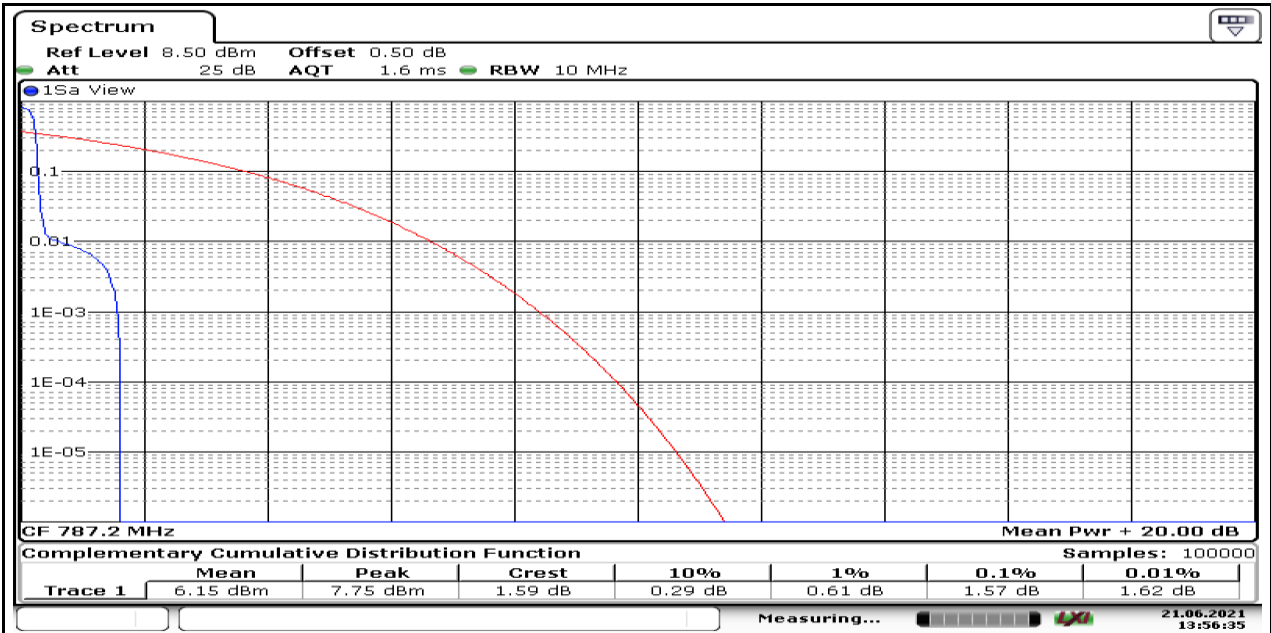
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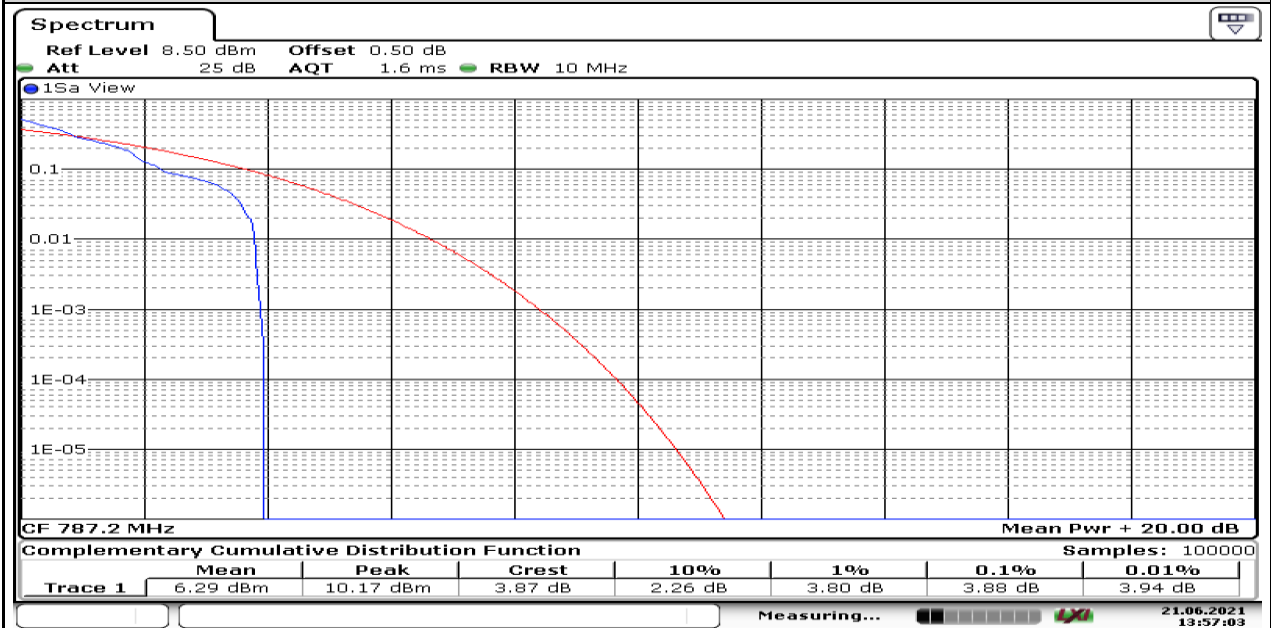
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787-788M_Stand-Alone_NaN_QPSK_134184_1@11_15kHz_1.57_<=13_PASS



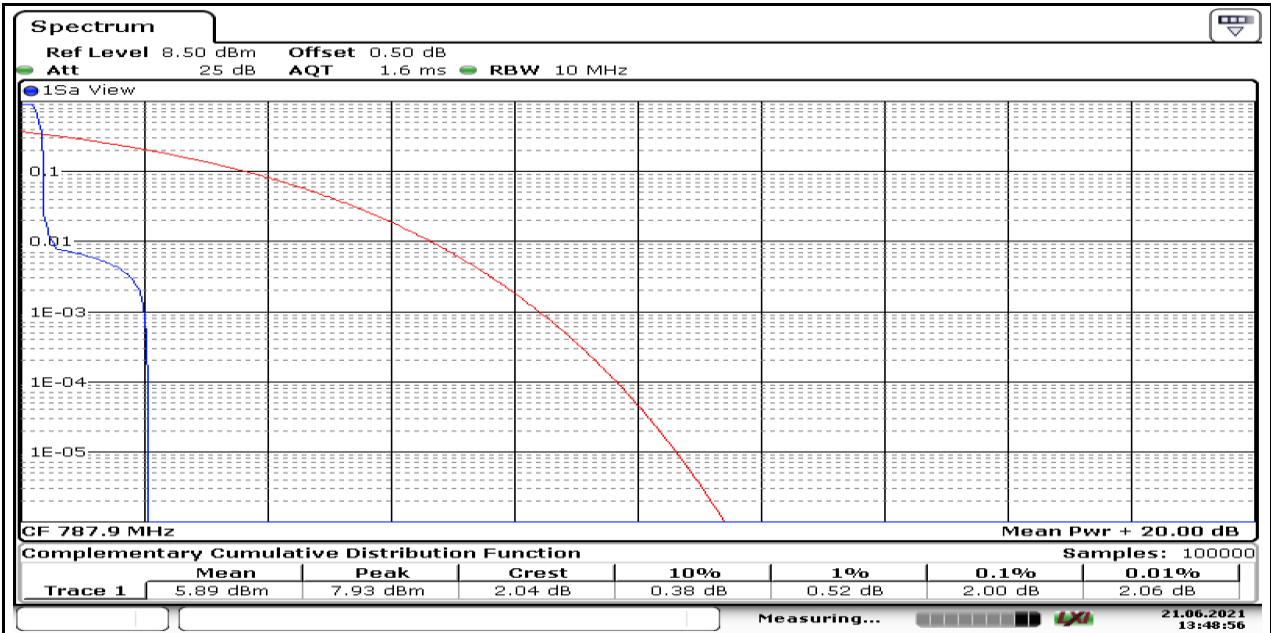
Date: 21.JUN.2021 13:56:35

787-788M_Stand-Alone_NaN_QPSK_134184_3@3_15kHz_3.88_<=13_PASS



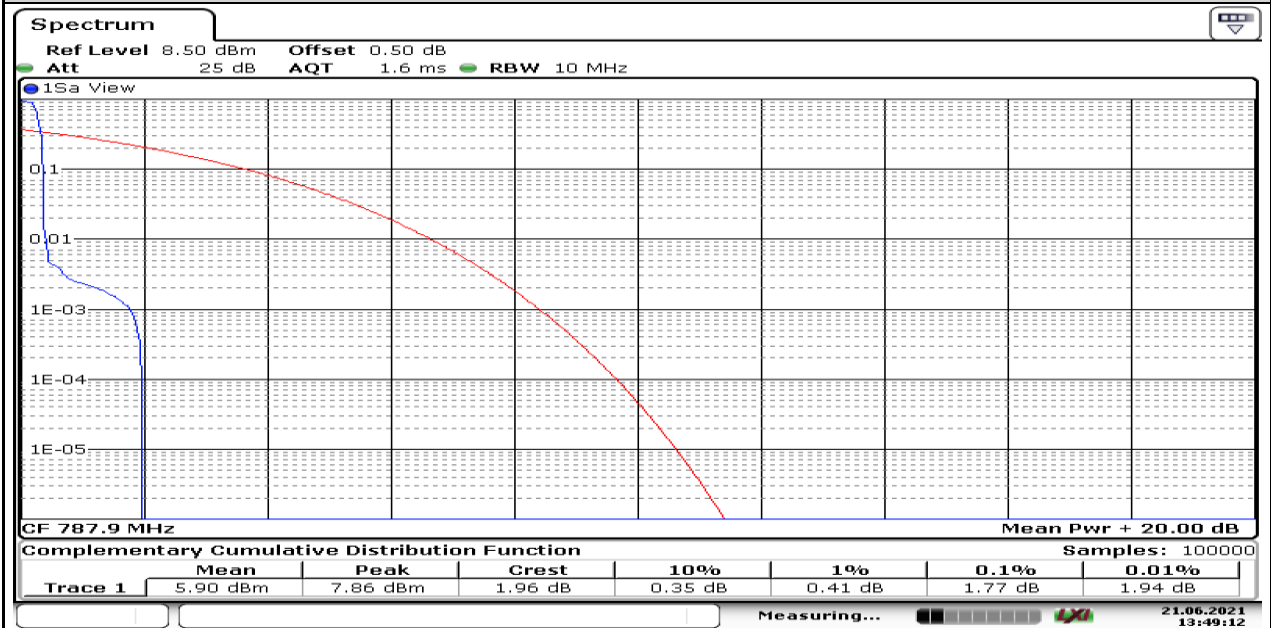
Date: 21.JUN.2021 13:57:04

787-788M_Stand-Alone_NaN_BPSK_134191_1@0_3.75kHz_2.00_<=13_PASS



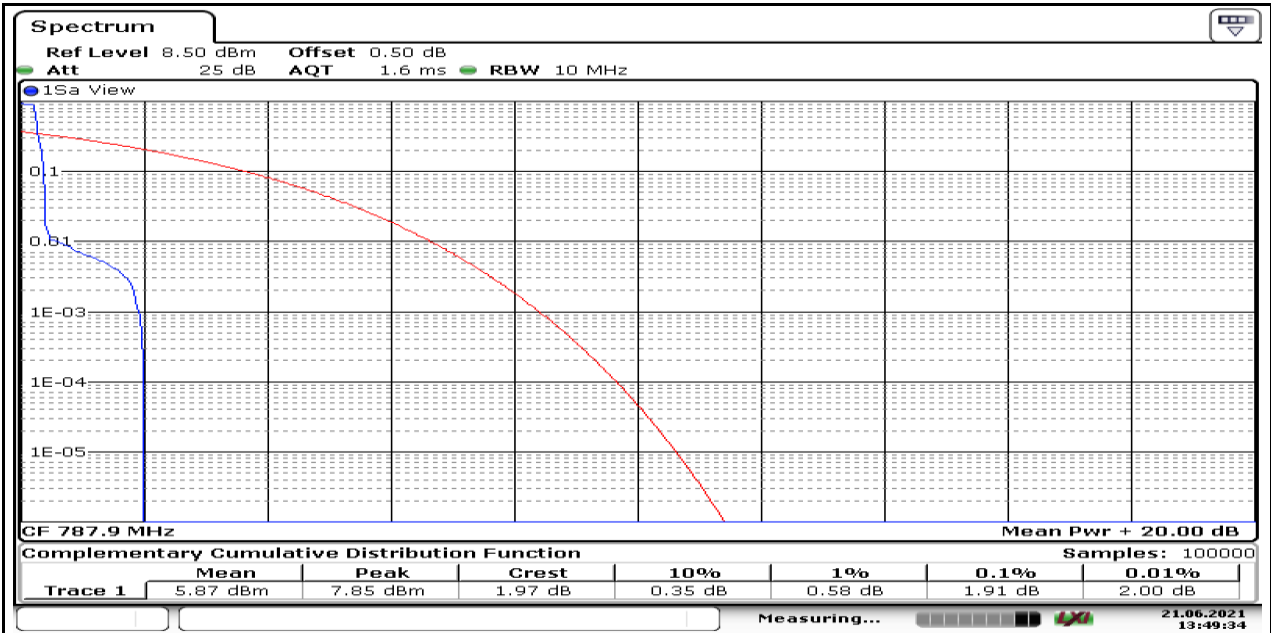
Date: 21.JUN.2021 13:48:57

787-788M_Stand-Alone_NaN_QPSK_134191_1@0_3.75kHz_1.77_<=13_PASS



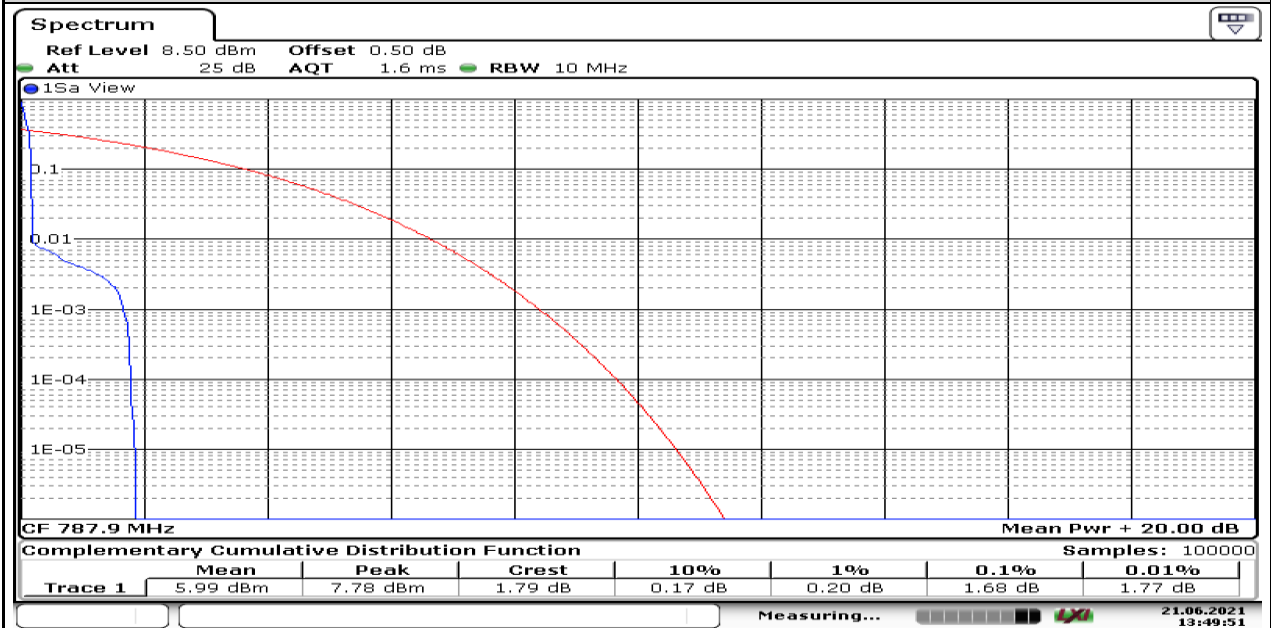
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787-788M_Stand-Alone_NaN_BPSK_134191_1@47_3.75kHz_1.91_<=13_PASS



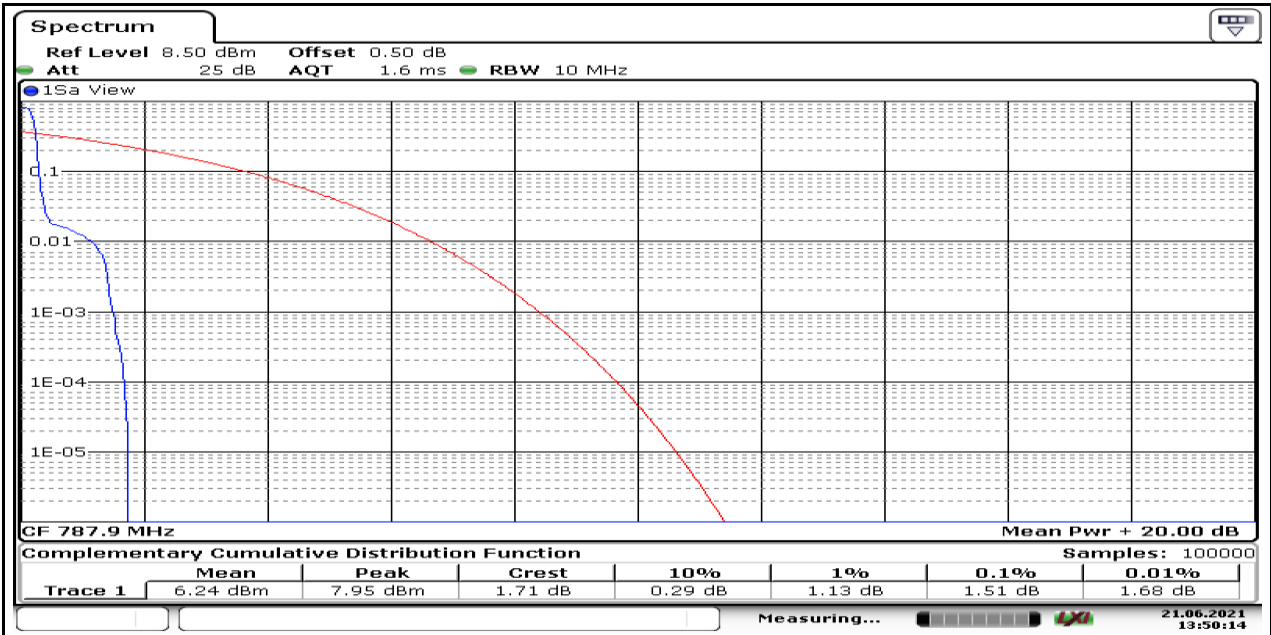
Date: 21.JUN.2021 13:49:35

787-788M_Stand-Alone_NaN_QPSK_134191_1@47_3.75kHz_1.68_<=13_PASS



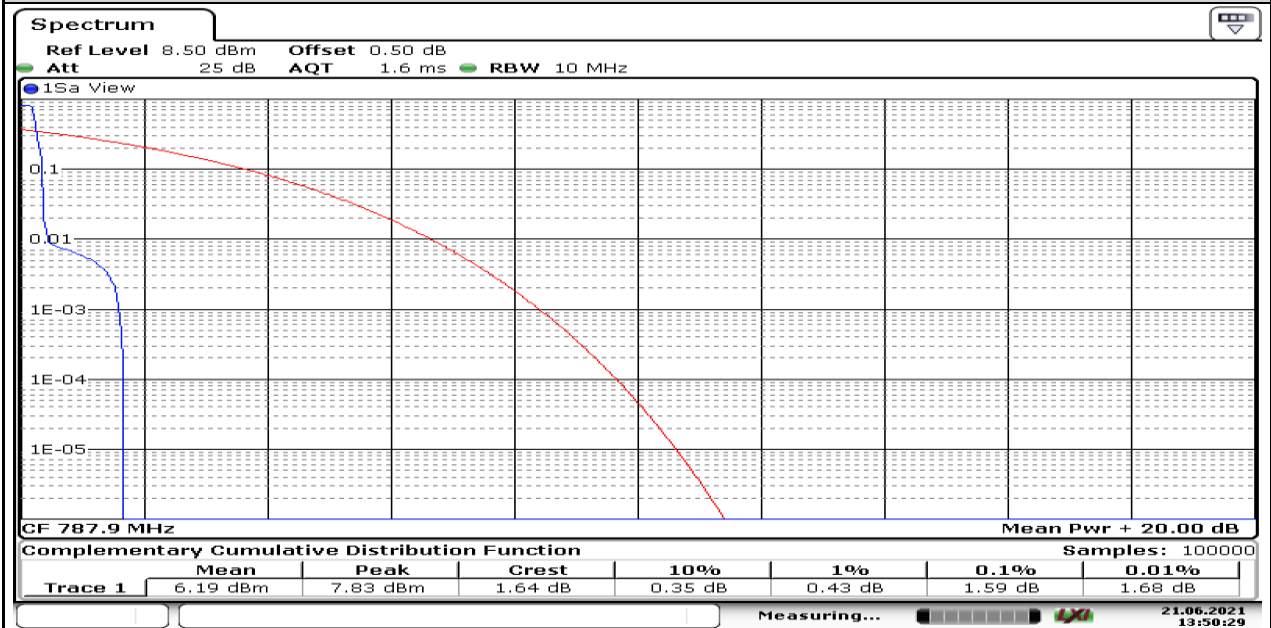
Date: 21.JUN.2021 13:49:52

787-788M_Stand-Alone_NaN_BPSK_134191_1@0_15kHz_1.51_<=13_PASS



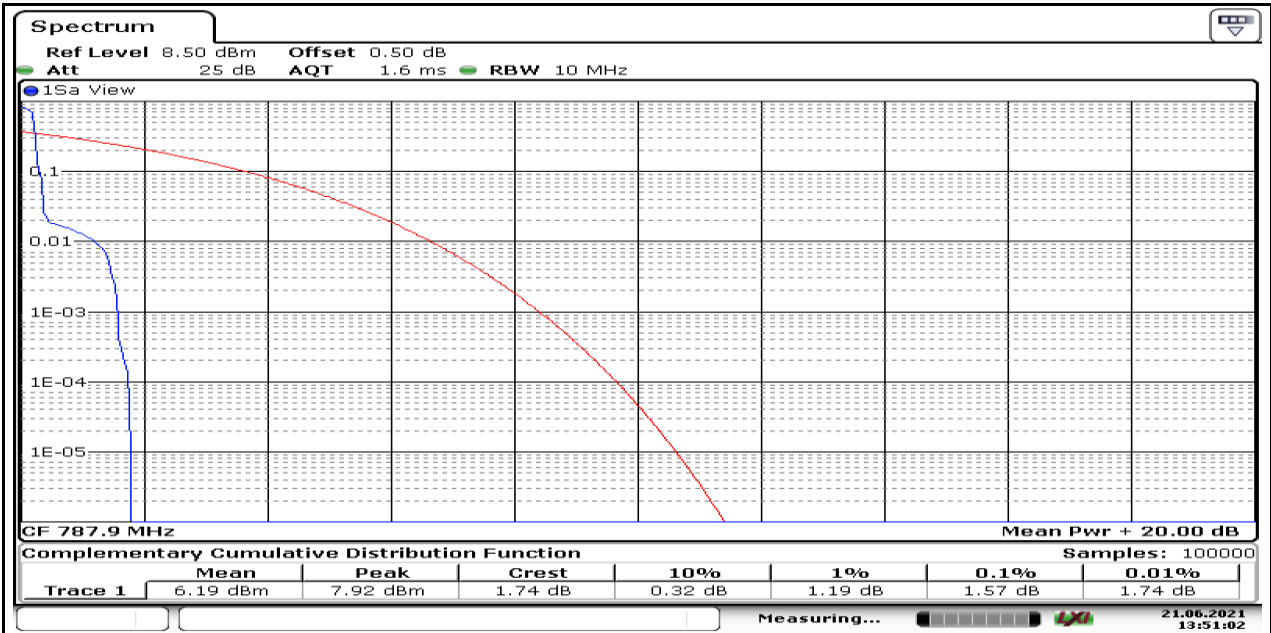
Date: 21.JUN.2021 13:50:15

787-788M_Stand-Alone_NaN_QPSK_134191_1@0_15kHz_1.59_<=13_PASS



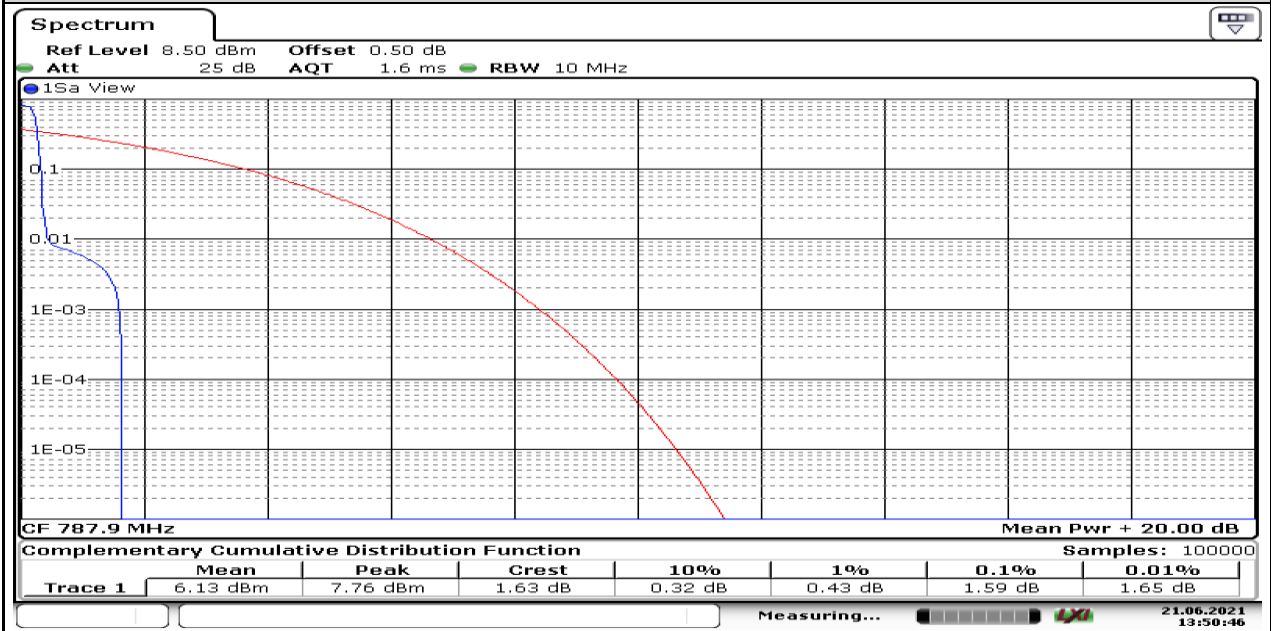
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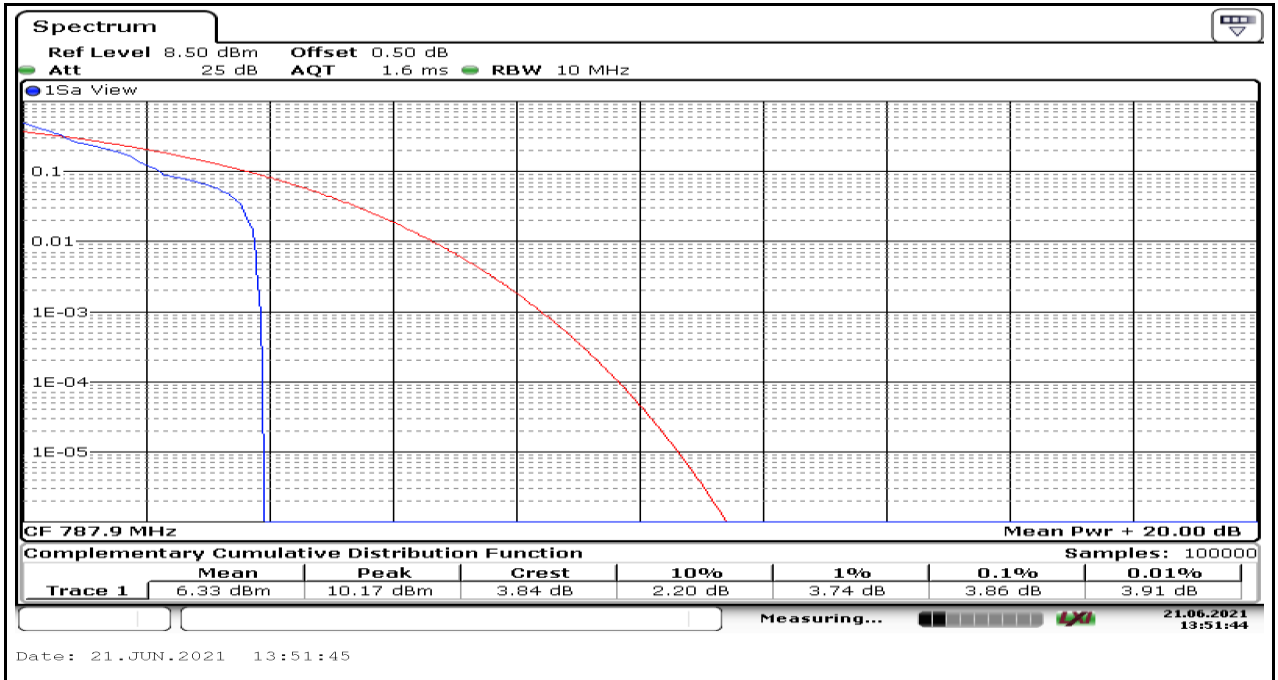
Date: 21.JUN.2021 13:51:02

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



Date: 21.JUN.2021 13:50:46

787-788M_Stand-Alone_NaN_QPSK_134191_3@3_15kHz_3.86_<=13_PASS

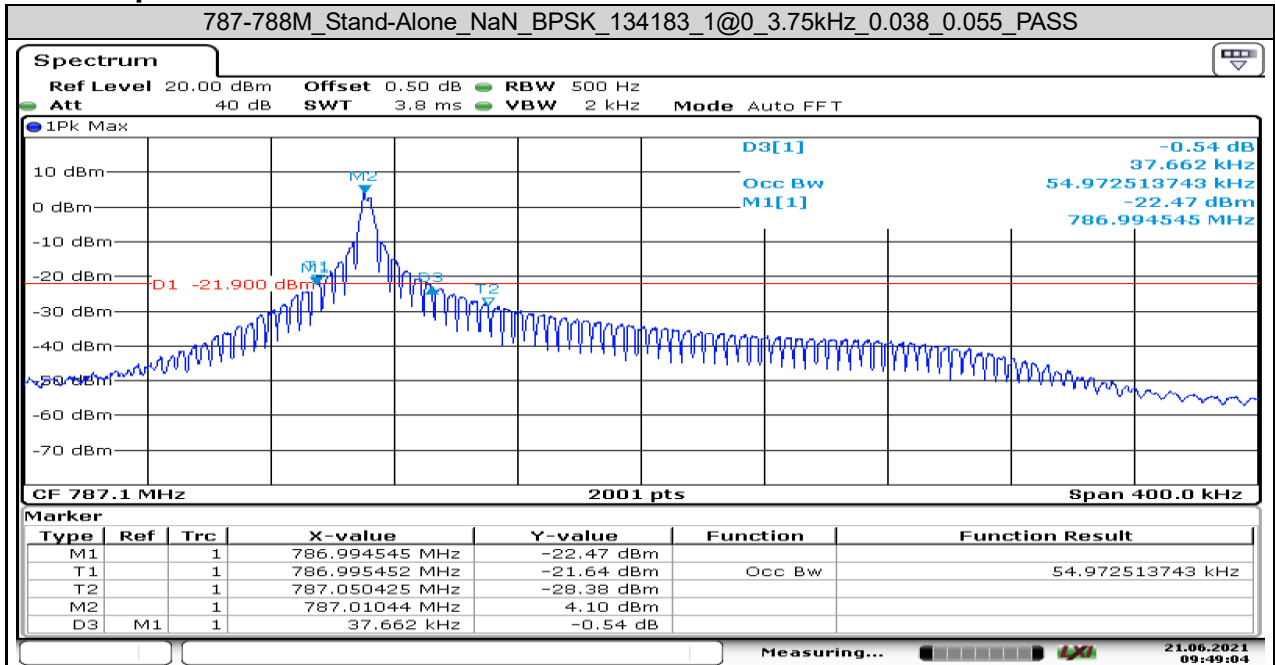


APPENDIX A.3: EMISSION BANDWIDTH FOR NB-IOT

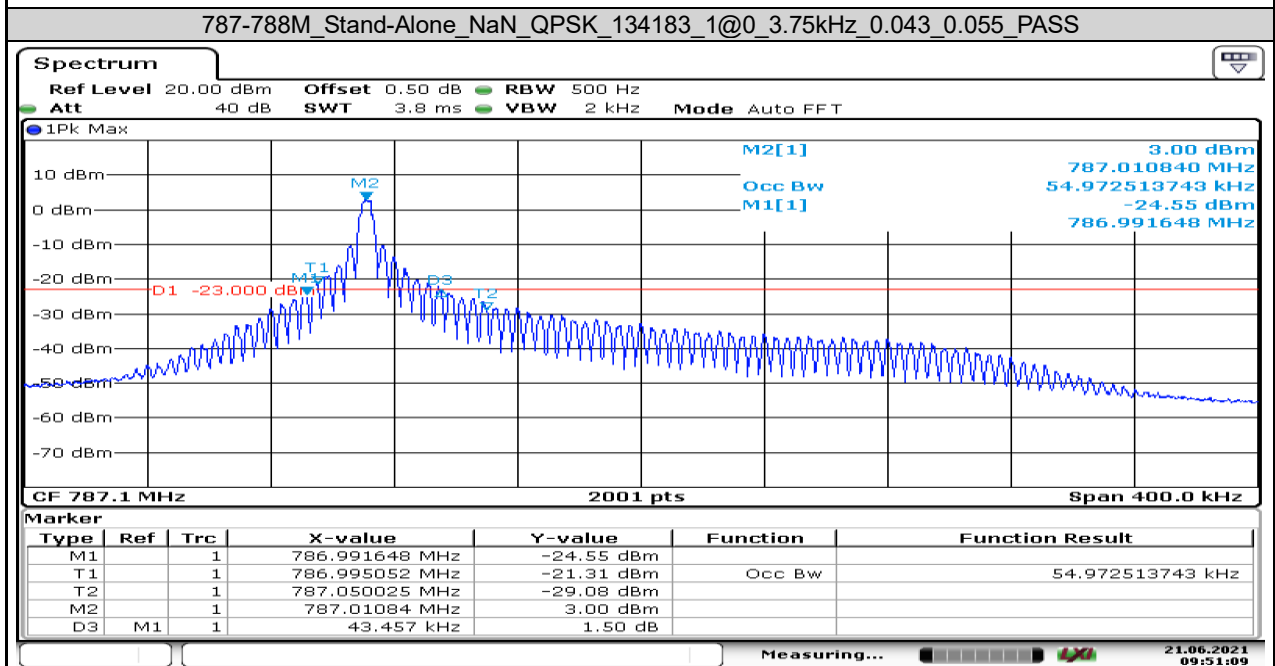
Test Result

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	0.038	0.055	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	3.75kHz	0.043	0.055	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	15kHz	0.119	0.131	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	15kHz	0.157	0.130	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	12@0	15kHz	0.260	0.186	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	3.75kHz	0.041	0.053	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	3.75kHz	0.045	0.055	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	15kHz	0.120	0.126	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	15kHz	0.116	0.115	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	12@0	15kHz	0.239	0.183	PASS

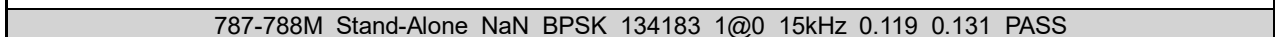
Test Graphs

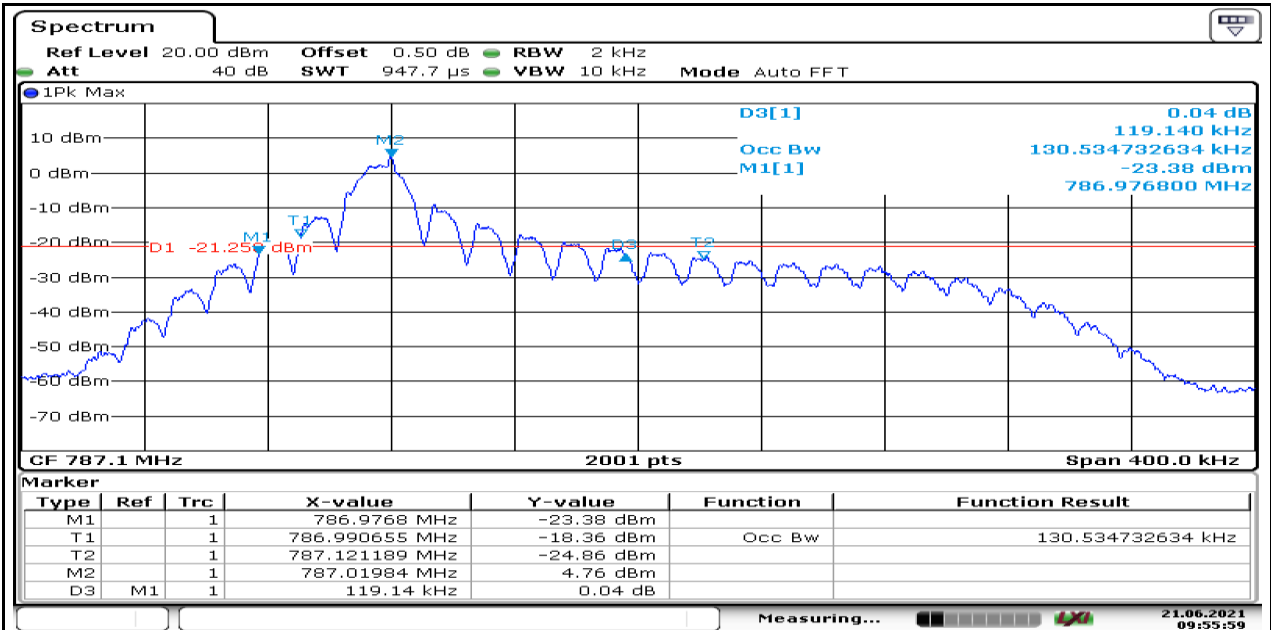


Date: 21.JUN.2021 09:49:05



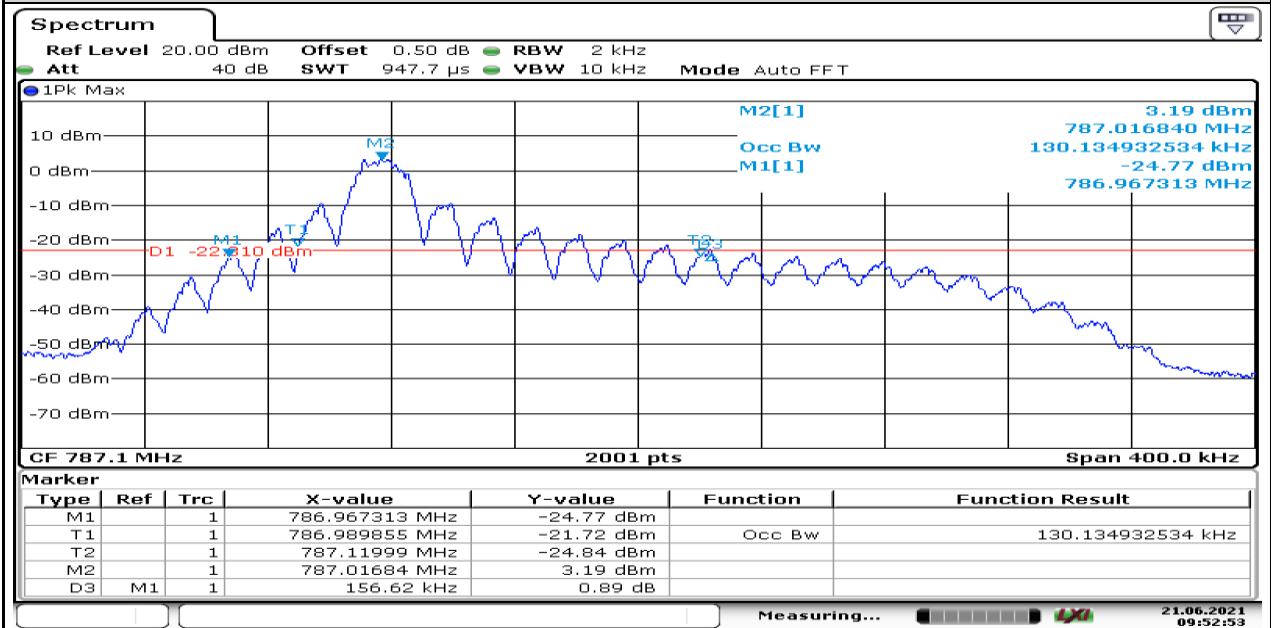
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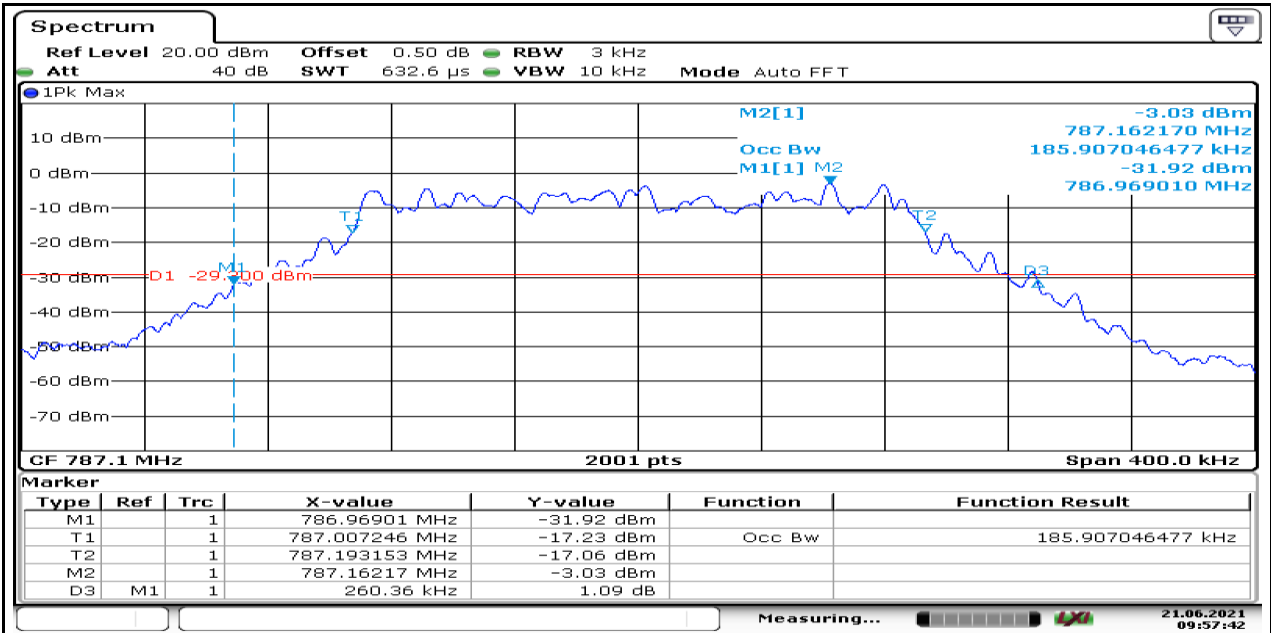
Date: 21.JUN.2021 09:55:59

787-788M_Stand-Alone_NaN_QPSK_134183_1@0_15kHz_0.157_0.130_PASS



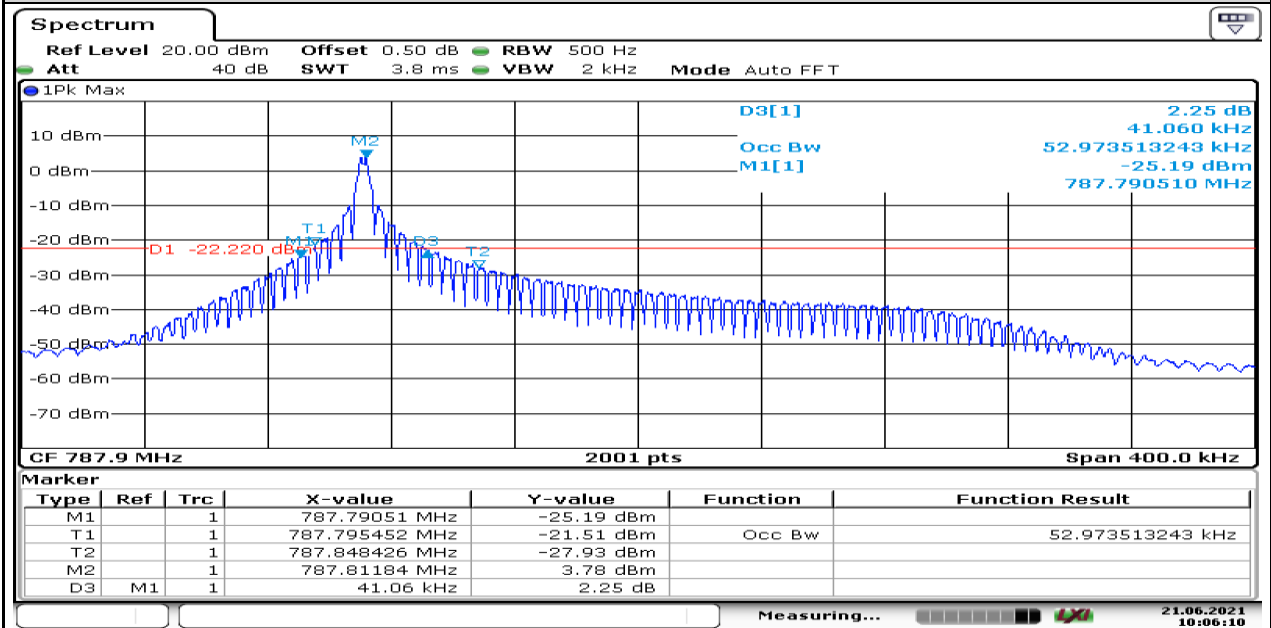
Date: 21.JUN.2021 09:52:53

787-788M_Stand-Alone_NaN_QPSK_134183_12@0_15kHz_0.260_0.186_PASS



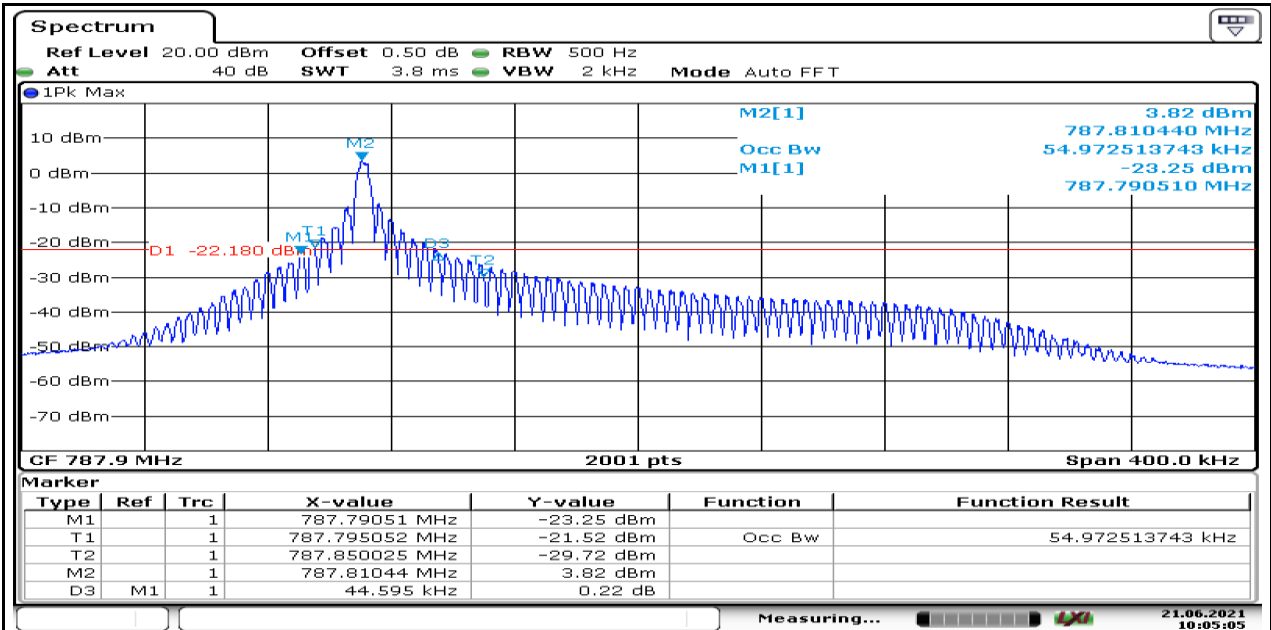
Date: 21.JUN.2021 09:57:42

787-788M_Stand-Alone_NaN_BPSK_134191_1@0_3.75kHz_0.041_0.053_PASS



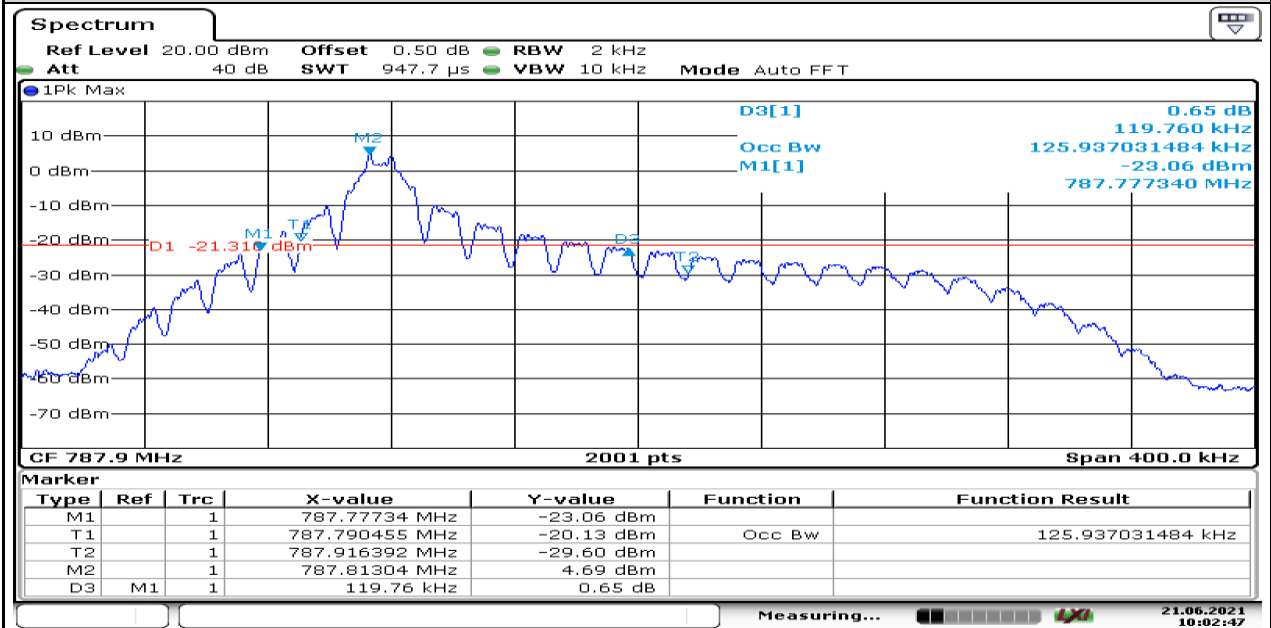
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787-788M_Stand-Alone_NaN_QPSK_134191_1@0_3.75kHz_0.045_0.055_PASS



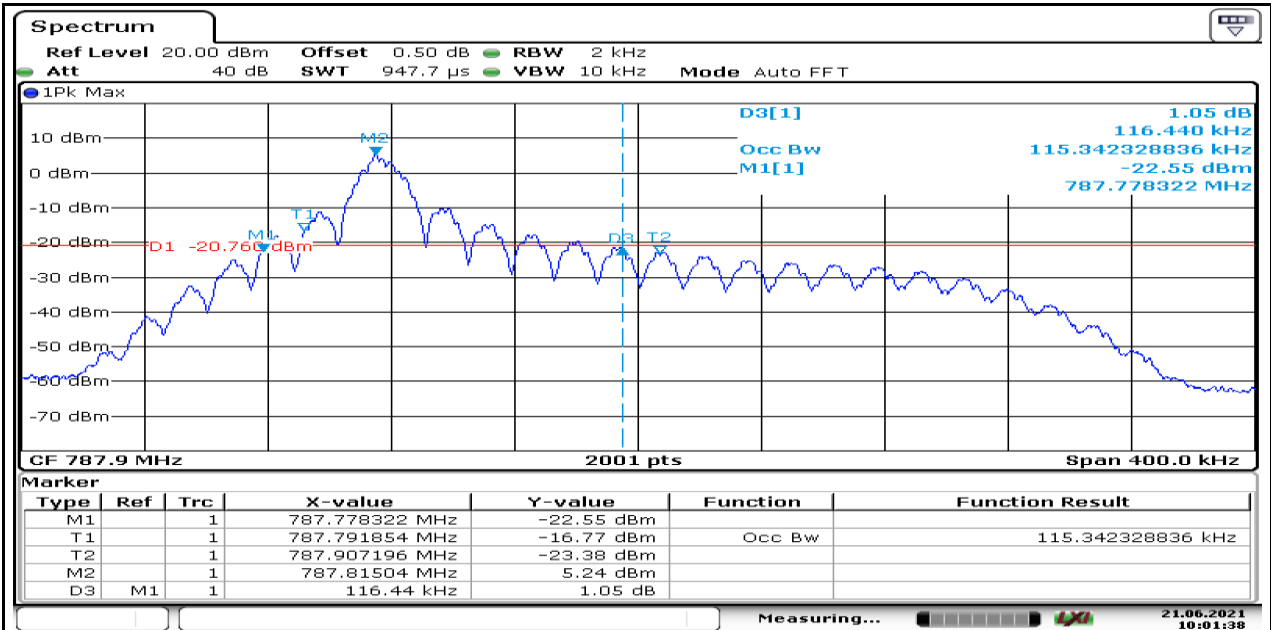
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787-788M_Stand-Alone_NaN_BPSK_134191_1@_15kHz_0.120_0.126_PASS



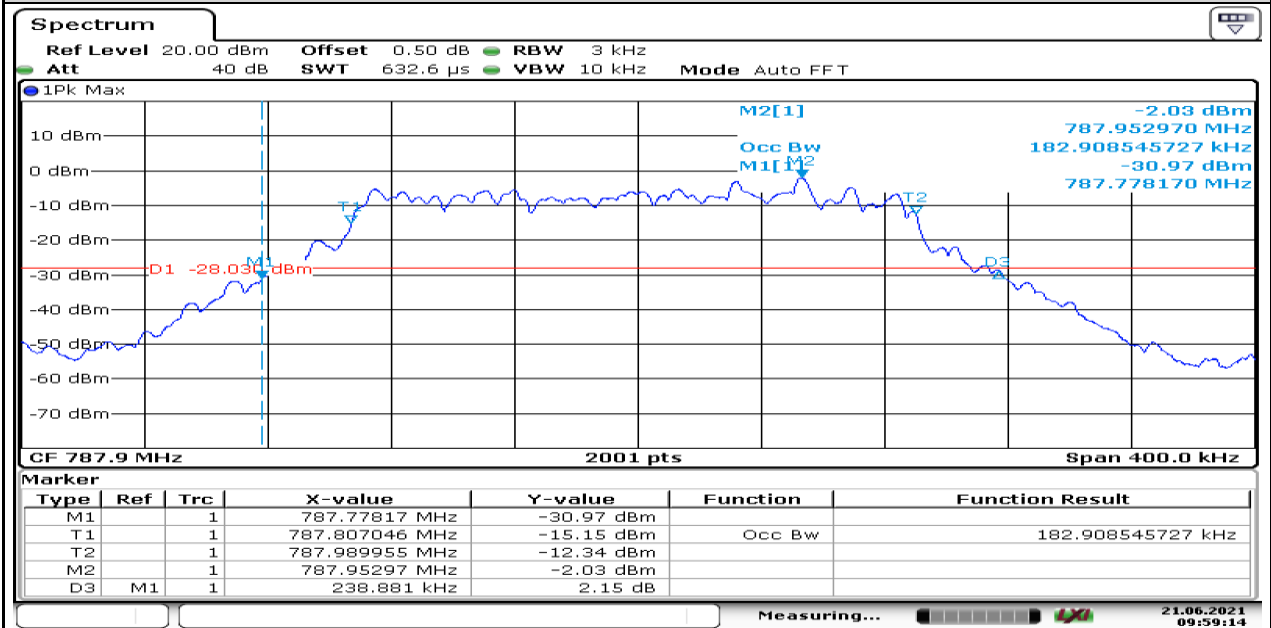
Date: 21.JUN.2021 10:02:48

787-788M_Stand-Alone_NaN_QPSK_134191_1@_15kHz_0.116_0.115_PASS



Date: 21.JUN.2021 10:01:38

787-788M_Stand-Alone_Na_N_QPSK_134191_12@_0_15kHz_0.239_0.183_PASS



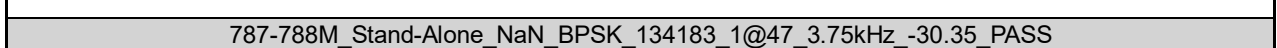
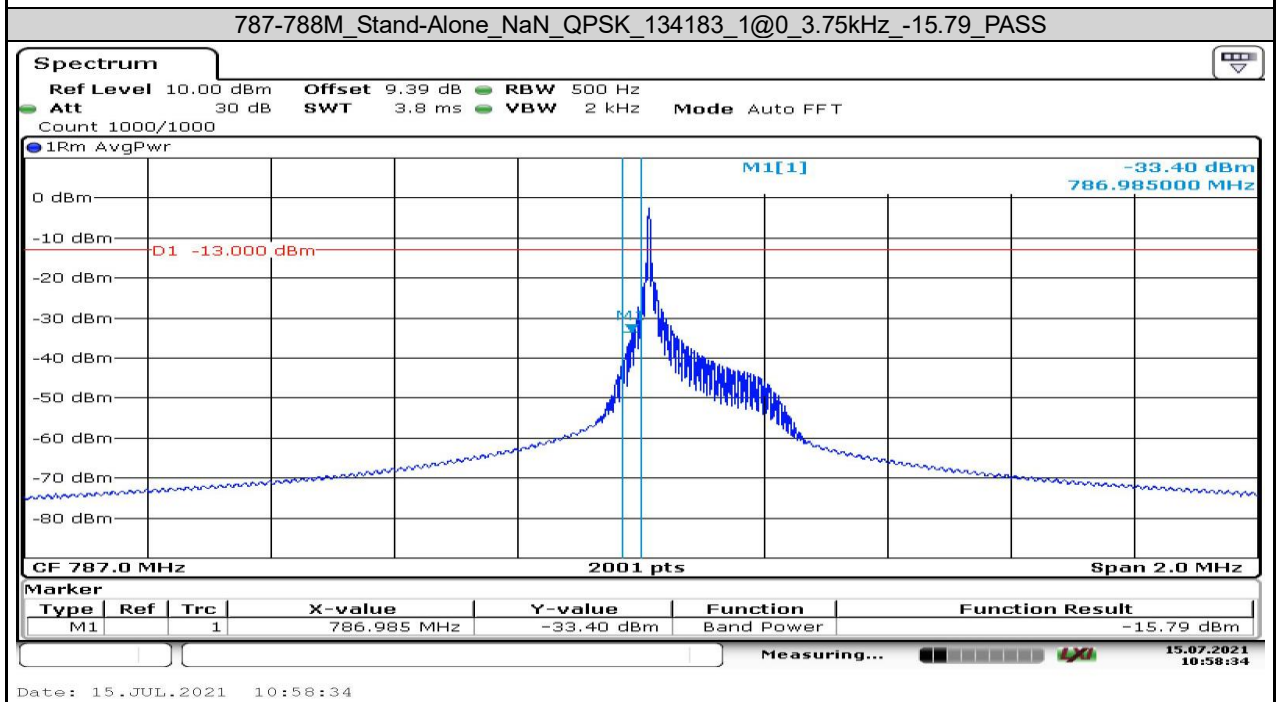
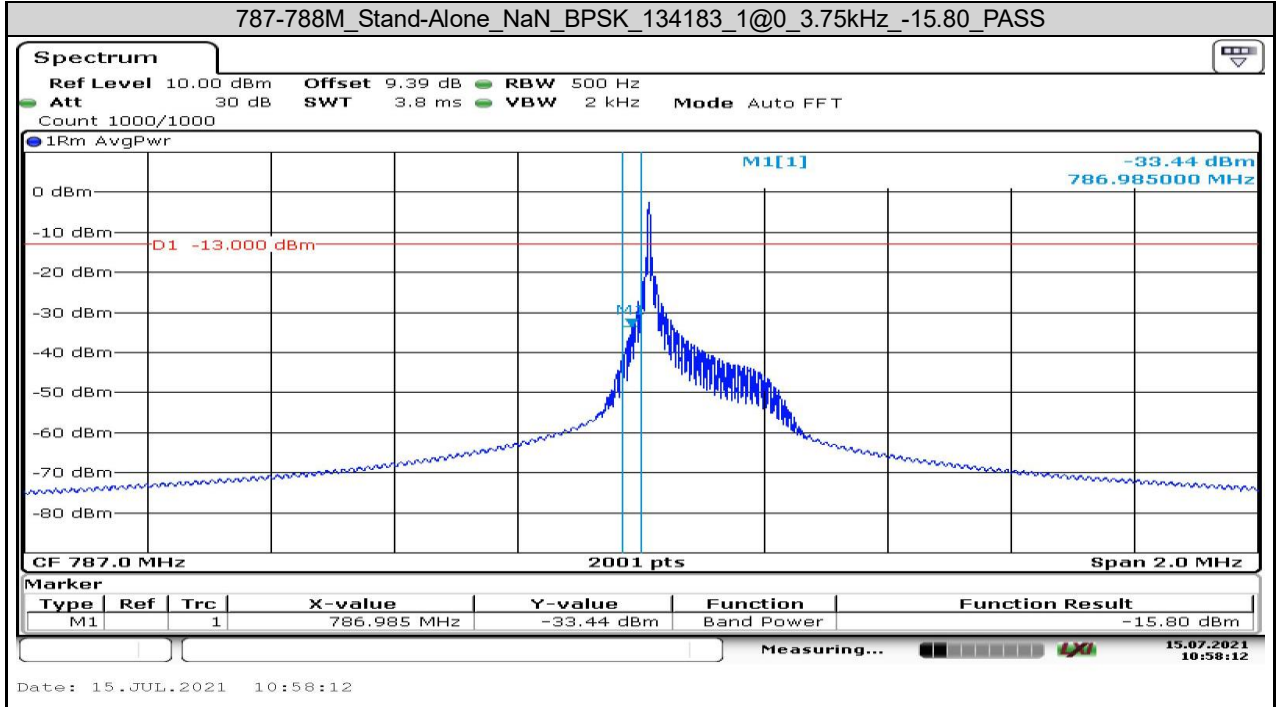
Date: 21.JUN.2021 09:59:14

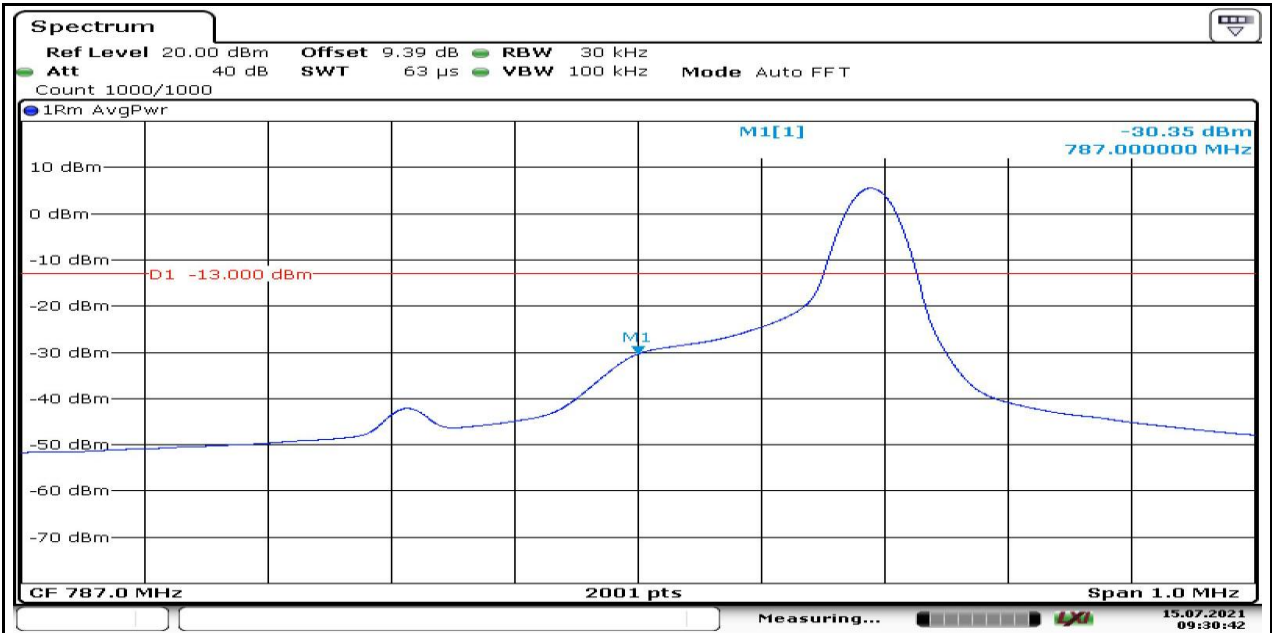
APPENDIX A.4: BAND EDGE FOR NB-IOT

Test Result

Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Result (dBm)	Verdict
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	3.75kHz	-15.80	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	3.75kHz	-15.79	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@47	3.75kHz	-30.35	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@47	3.75kHz	-29.81	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@0	15kHz	-13.84	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@0	15kHz	-15.73	PASS
787-788M	Stand-Alone	NaN	BPSK	134183	1@11	15kHz	-27.12	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	1@11	15kHz	-28.53	PASS
787-788M	Stand-Alone	NaN	QPSK	134183	12@0	15kHz	-21.07	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@0	3.75kHz	-24.08	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	3.75kHz	-25.35	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@47	3.75kHz	-26.95	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@47	3.75kHz	-27.36	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@0	15kHz	-30.99	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@0	15kHz	-30.15	PASS
787-788M	Stand-Alone	NaN	BPSK	134184	1@11	15kHz	-30.06	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	1@11	15kHz	-31.37	PASS
787-788M	Stand-Alone	NaN	QPSK	134184	12@0	15kHz	-37.45	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@0	3.75kHz	-30.24	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@0	3.75kHz	-30.27	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@47	3.75kHz	-24.60	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@47	3.75kHz	-24.43	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@0	15kHz	-36.15	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@0	15kHz	-37.76	PASS
787-788M	Stand-Alone	NaN	BPSK	134190	1@11	15kHz	-34.00	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	1@11	15kHz	-30.87	PASS
787-788M	Stand-Alone	NaN	QPSK	134190	12@0	15kHz	-35.52	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	3.75kHz	-30.56	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	3.75kHz	-31.85	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@47	3.75kHz	-15.36	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@47	3.75kHz	-15.44	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@0	15kHz	-27.10	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@0	15kHz	-28.98	PASS
787-788M	Stand-Alone	NaN	BPSK	134191	1@11	15kHz	-13.64	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	1@11	15kHz	-13.68	PASS
787-788M	Stand-Alone	NaN	QPSK	134191	12@0	15kHz	-20.07	PASS

Test Graphs





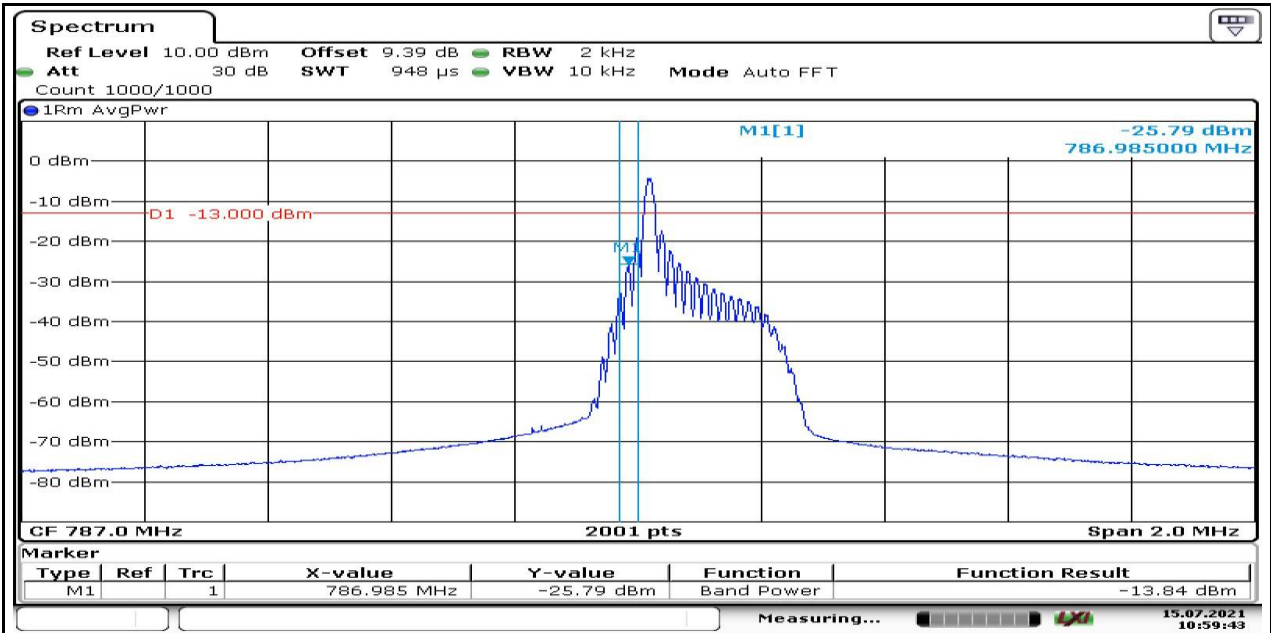
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787-788M_Stand-Alone_NaN_QPSK_134183_1@47_3.75kHz_-29.81_PASS



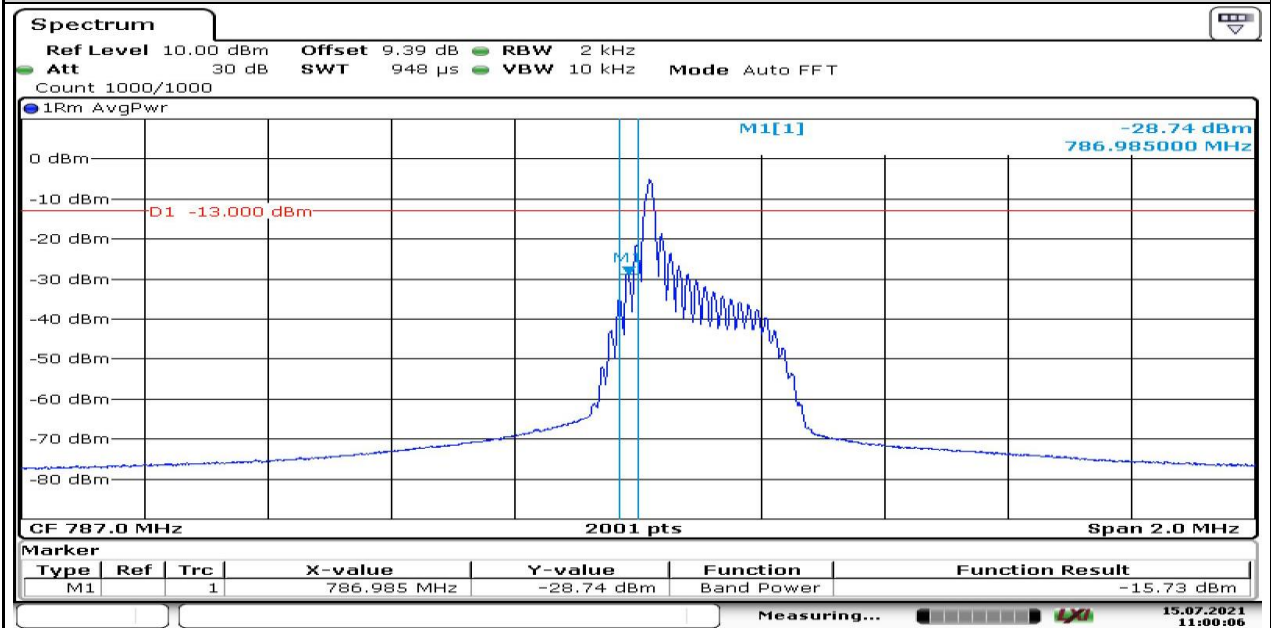
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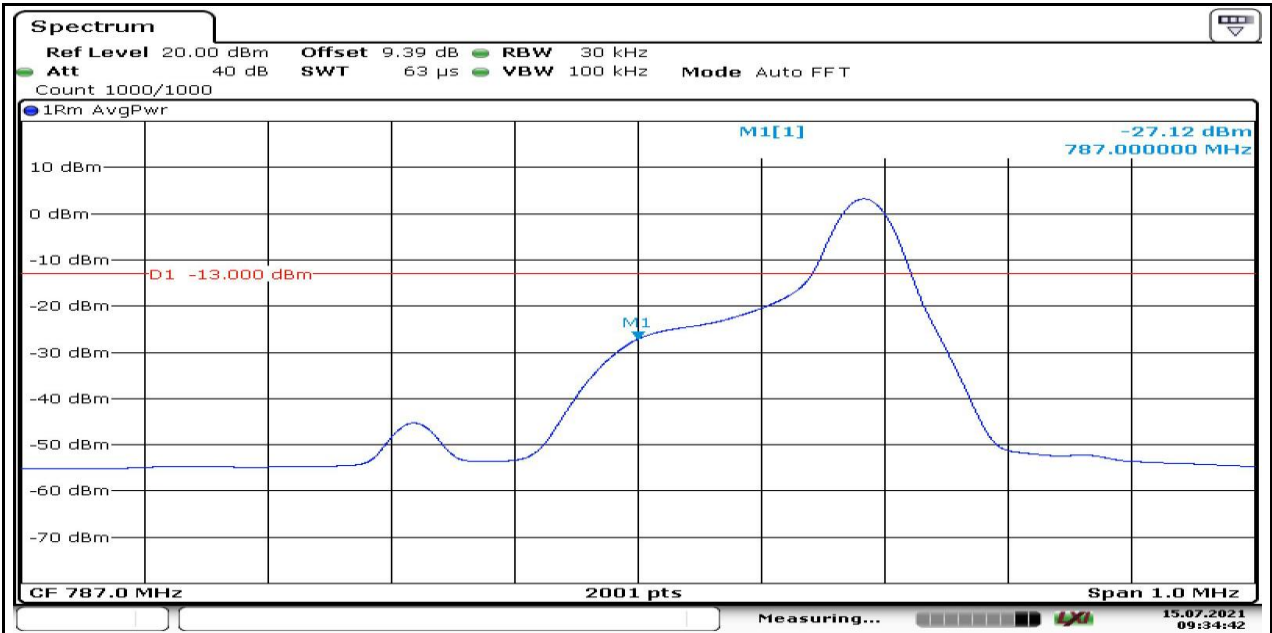
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787-788M_Stand-Alone_NaN_QPSK_134183_1@0_15kHz_-15.73_PASS



Date: 15.JUL.2021 11:00:06

787-788M_Stand-Alone_NaN_BPSK_134183_1@11_15kHz_-27.12_PASS



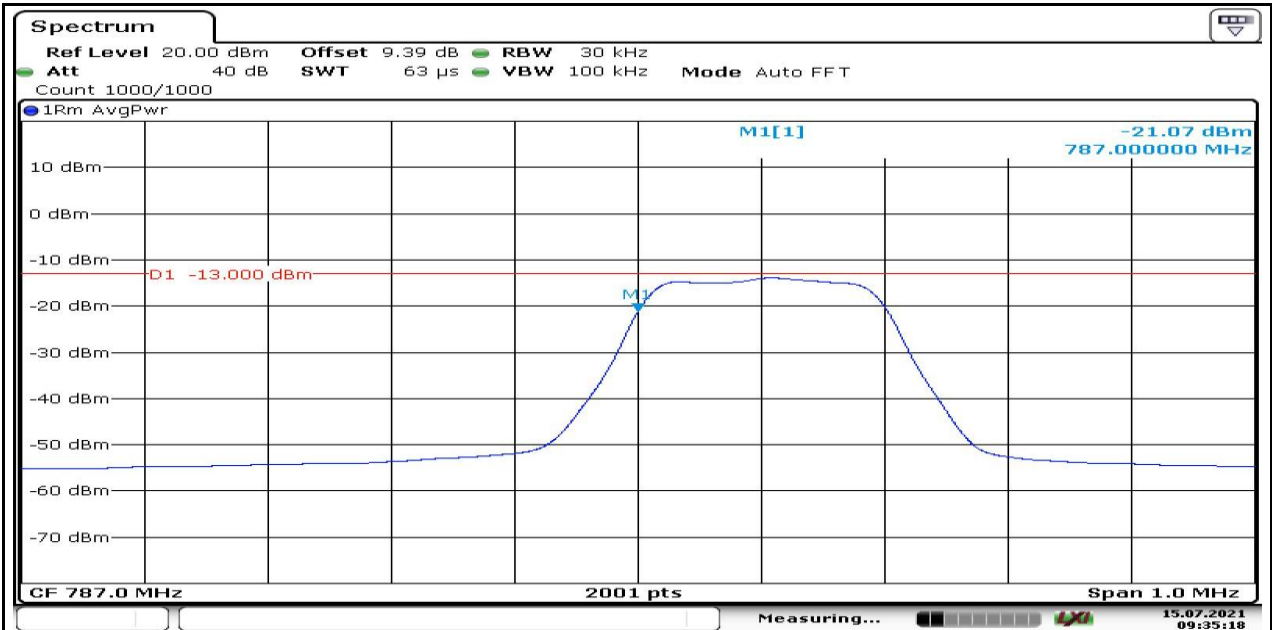
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Date: 15.JUL.2021 09:34:52

787-788M_Stand-Alone_NaN_QPSK_134183_12@0_15kHz_-21.07_PASS



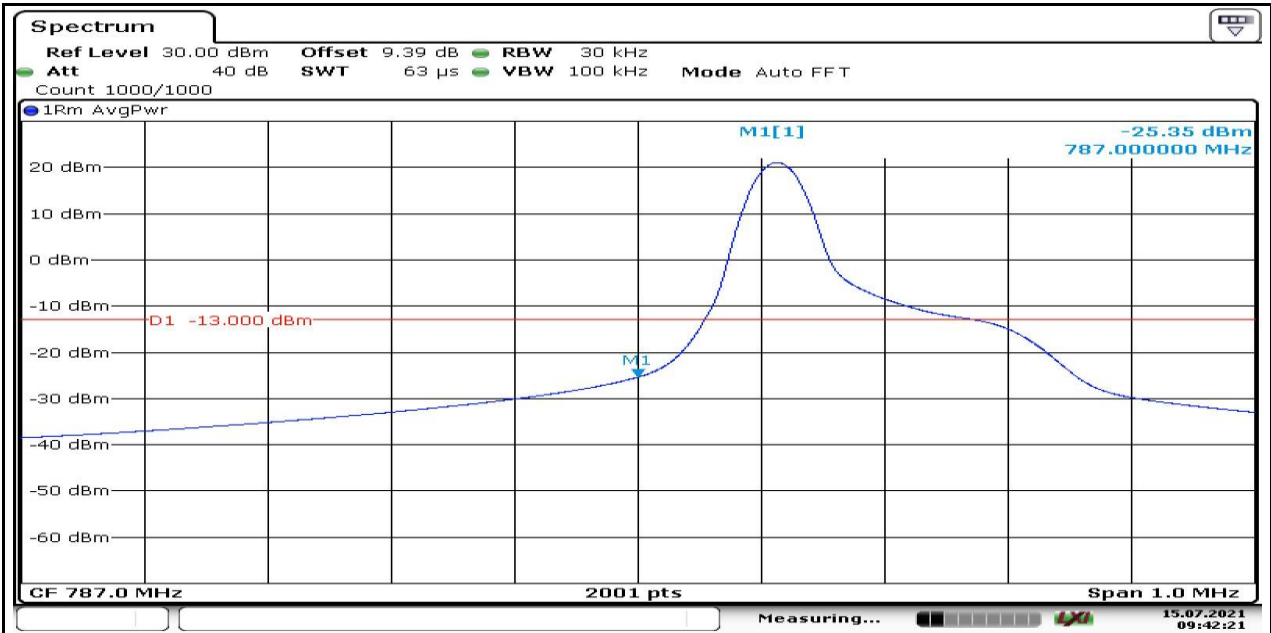
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787-788M_Stand-Alone_NaN_BPSK_134184_1@0_3.75kHz_-24.08_PASS



Date: 15.JUL.2021 09:42:07

787-788M_Stand-Alone_NaN_QPSK_134184_1@0_3.75kHz_-25.35_PASS



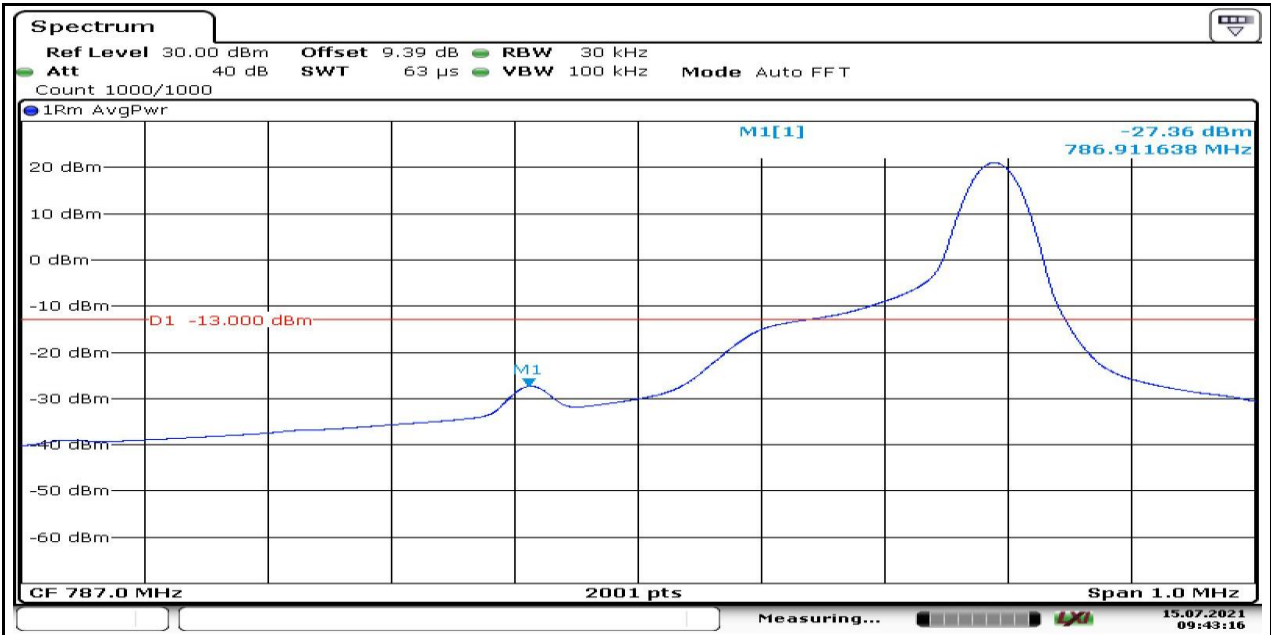
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787-788M_Stand-Alone_NaN_BPSK_134184_1@47_3.75kHz_-26.95_PASS



Date: 15.JUL.2021 09:42:59

787-788M_Stand-Alone_NaN_QPSK_134184_1@47_3.75kHz_-27.36_PASS



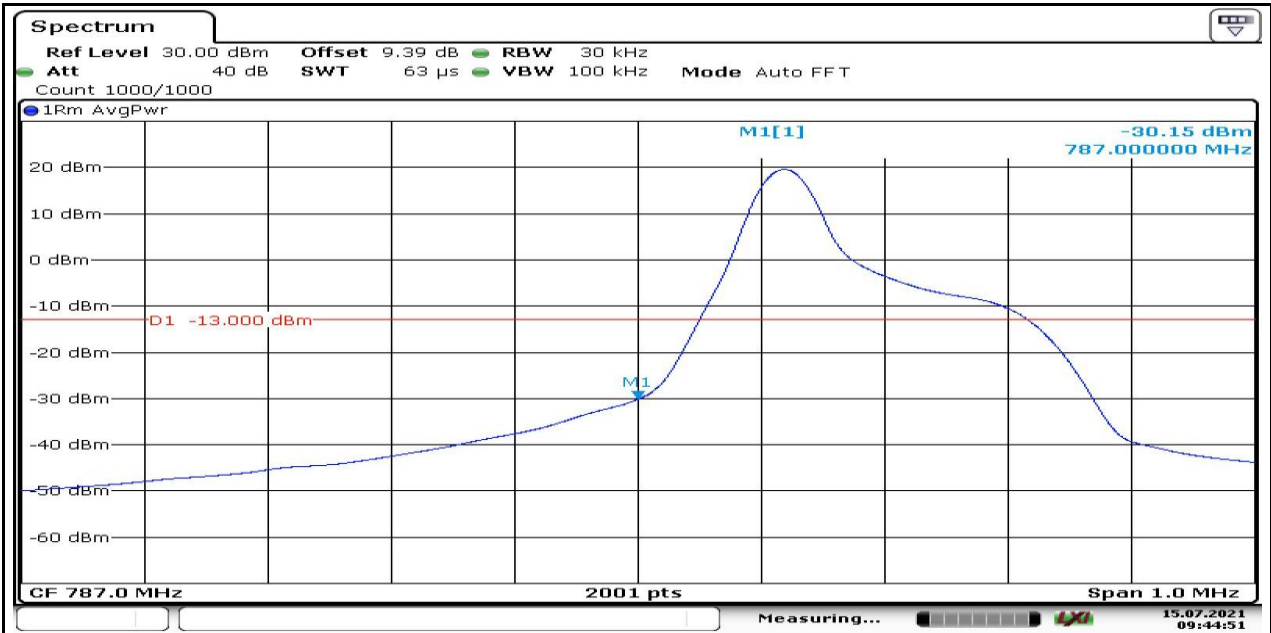
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787-788M_Stand-Alone_NaN_BPSK_134184_1@0_15kHz_-30.99_PASS



Date: 15.JUL.2021 09:44:38

787-788M_Stand-Alone_NaN_QPSK_134184_1@0_15kHz_-30.15_PASS



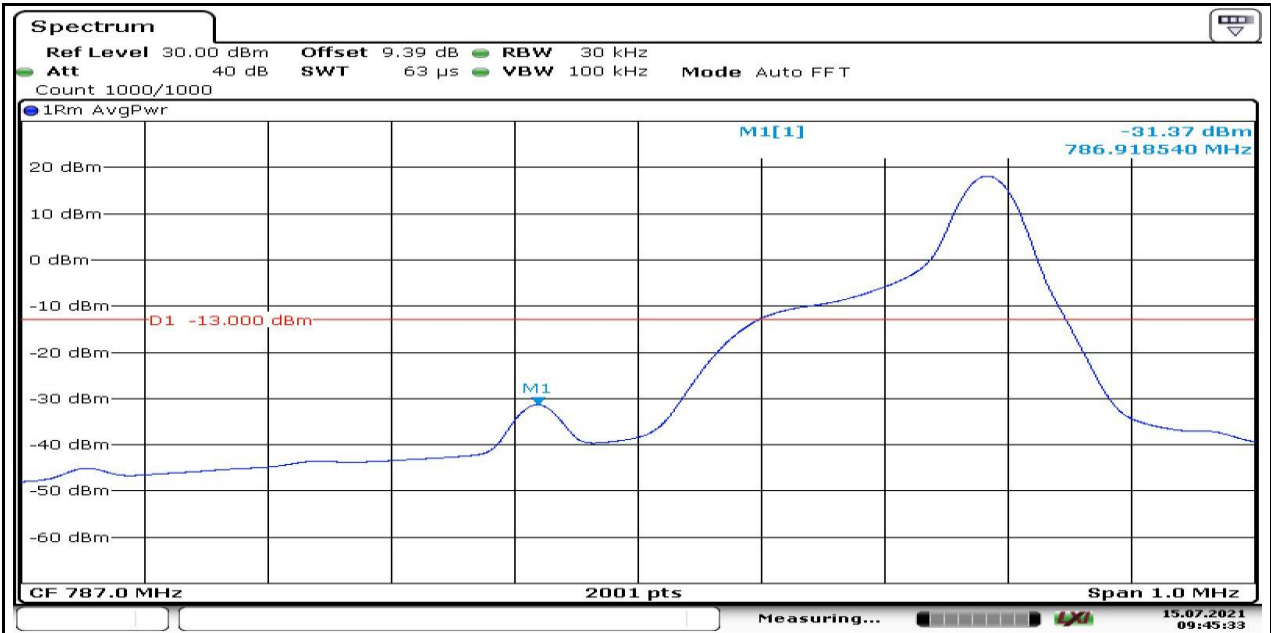
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787-788M_Stand-Alone_NaN_BPSK_134184_1@11_15kHz_-30.06_PASS



Date: 15.JUL.2021 09:45:17

787-788M_Stand-Alone_NaN_QPSK_134184_1@11_15kHz_-31.37_PASS



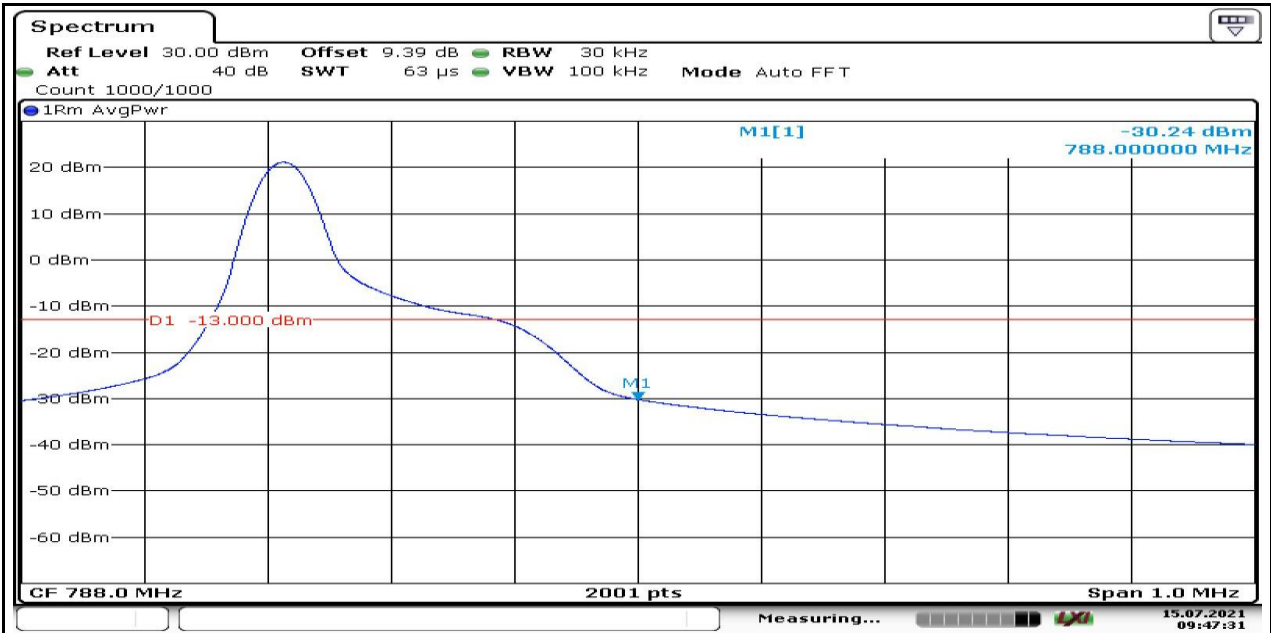
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Date: 15.JUL.2021 09:37:07

787-788M_Stand-Alone_NaN_BPSK_134190_1@0_3.75kHz_-30.24_PASS



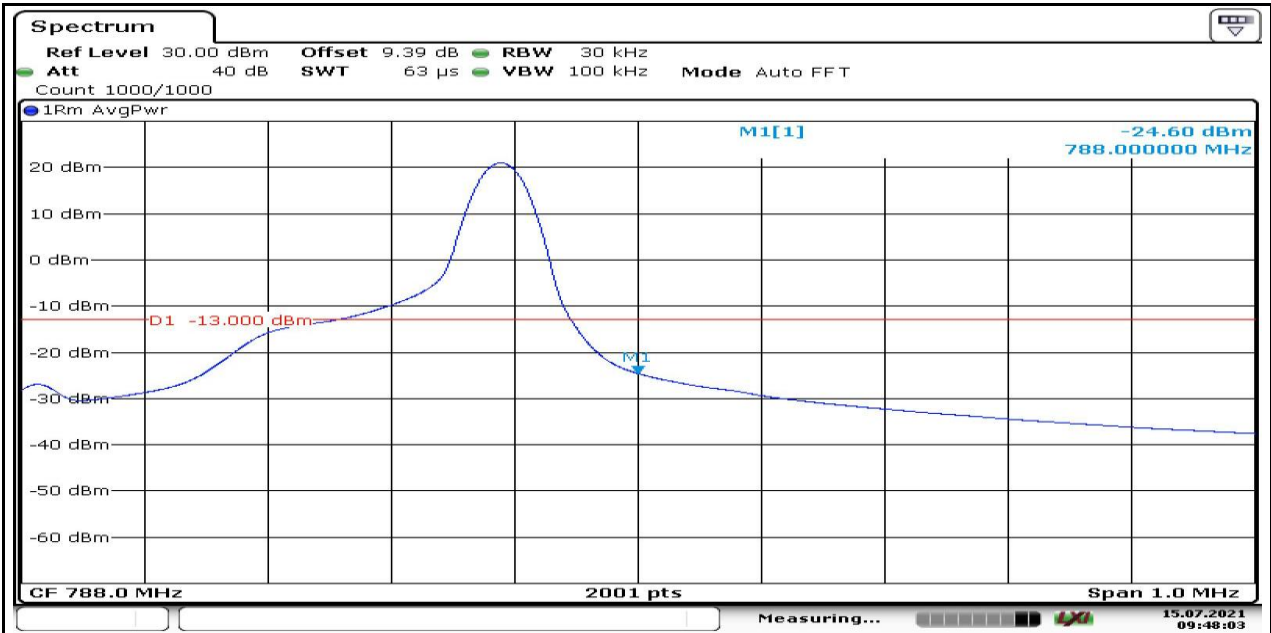
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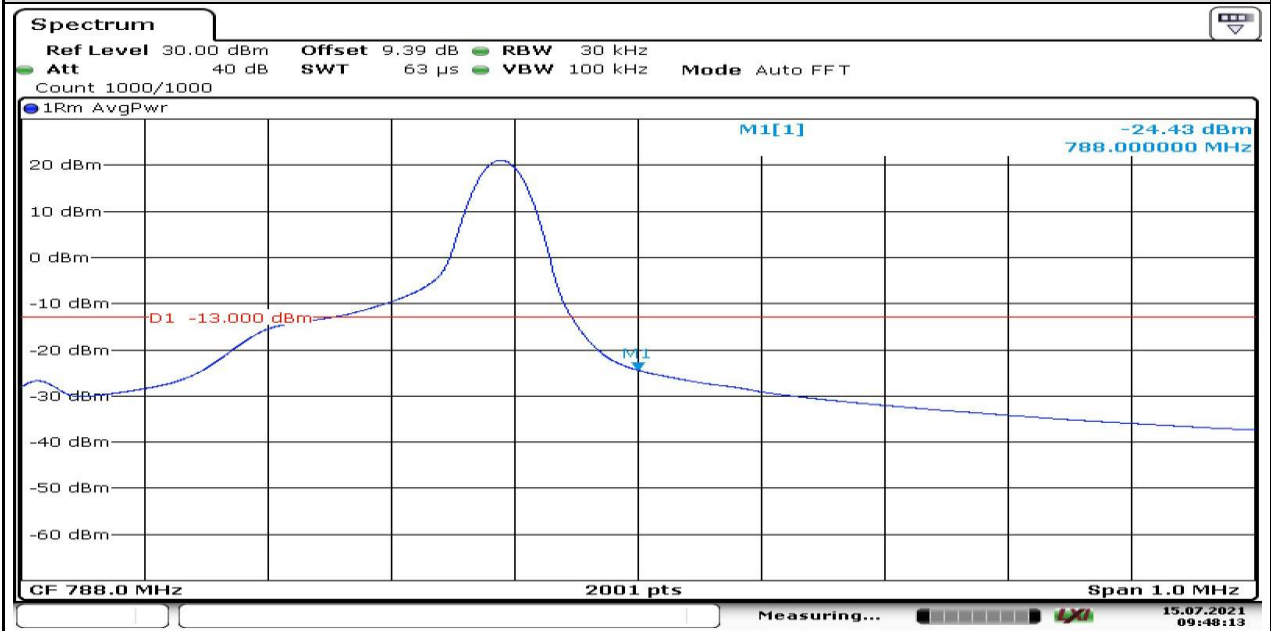
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787-788M_Stand-Alone_NaN_BPSK_134190_1@47_3.75kHz_-24.60_PASS



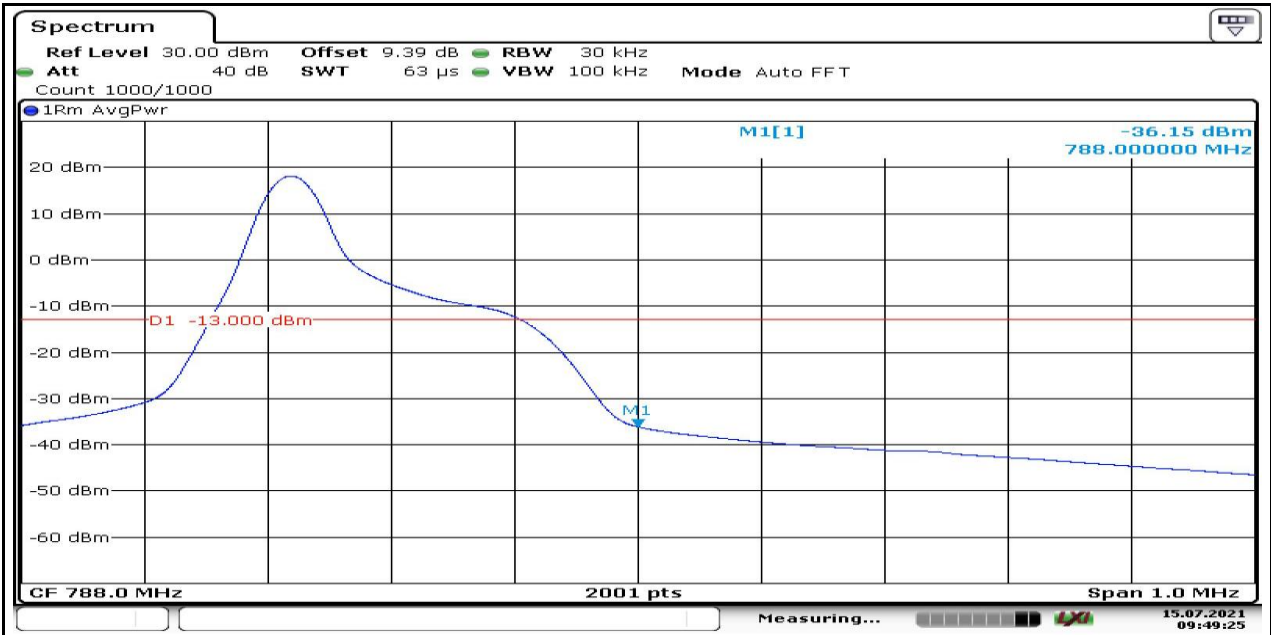
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787-788M_Stand-Alone_NaN_QPSK_134190_1@47_3.75kHz_-24.43_PASS



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787-788M_Stand-Alone_NaN_BPSK_134190_1@0_15kHz_-36.15_PASS



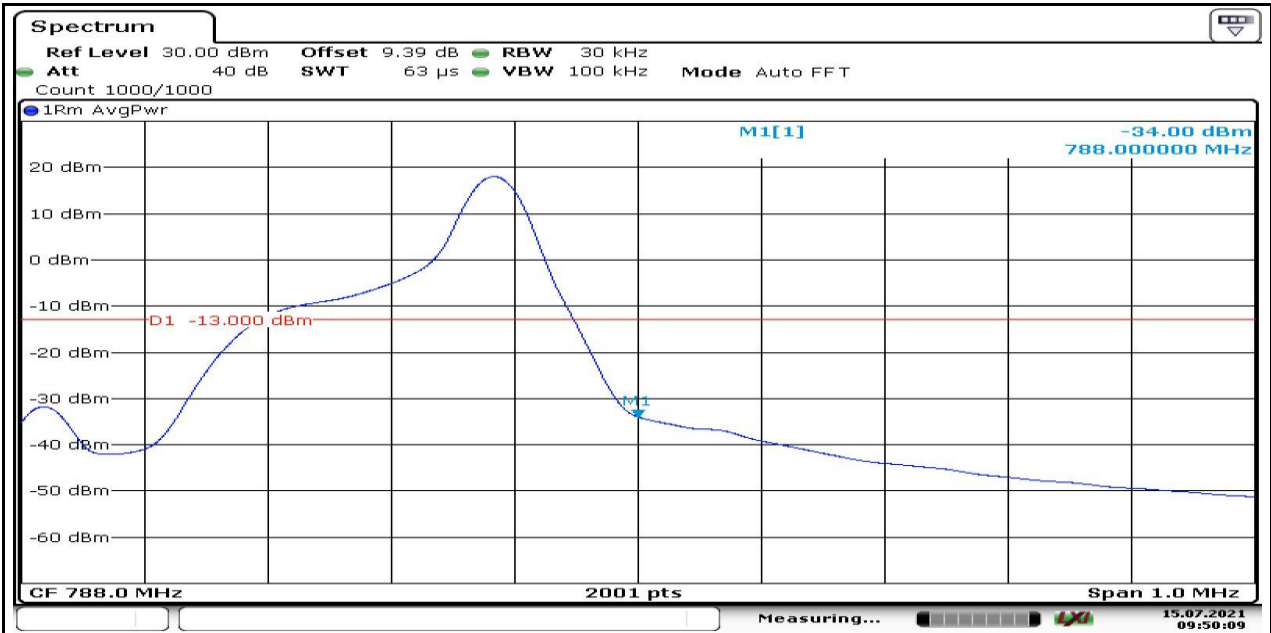
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787-788M_Stand-Alone_NaN_QPSK_134190_1@0_15kHz_-37.76_PASS



Date: 15.JUL.2021 09:49:35

787-788M_Stand-Alone_NaN_BPSK_134190_1@11_15kHz_-34.00_PASS



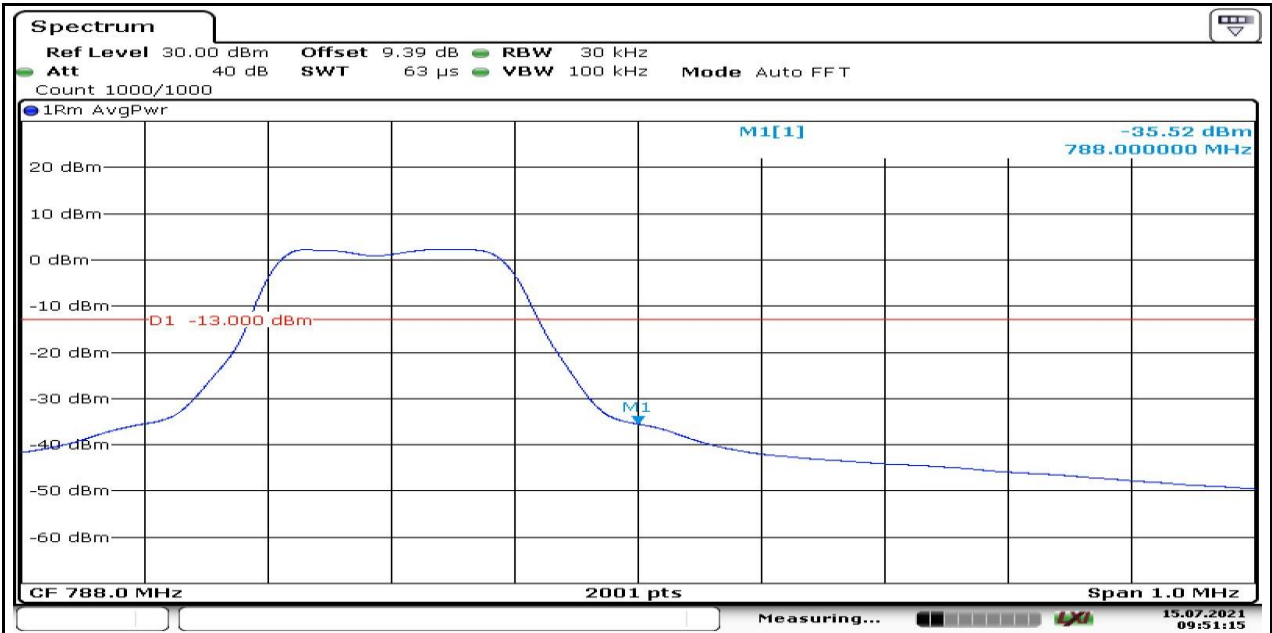
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787-788M_Stand-Alone_NaN_QPSK_134190_1@11_15kHz_-30.87_PASS



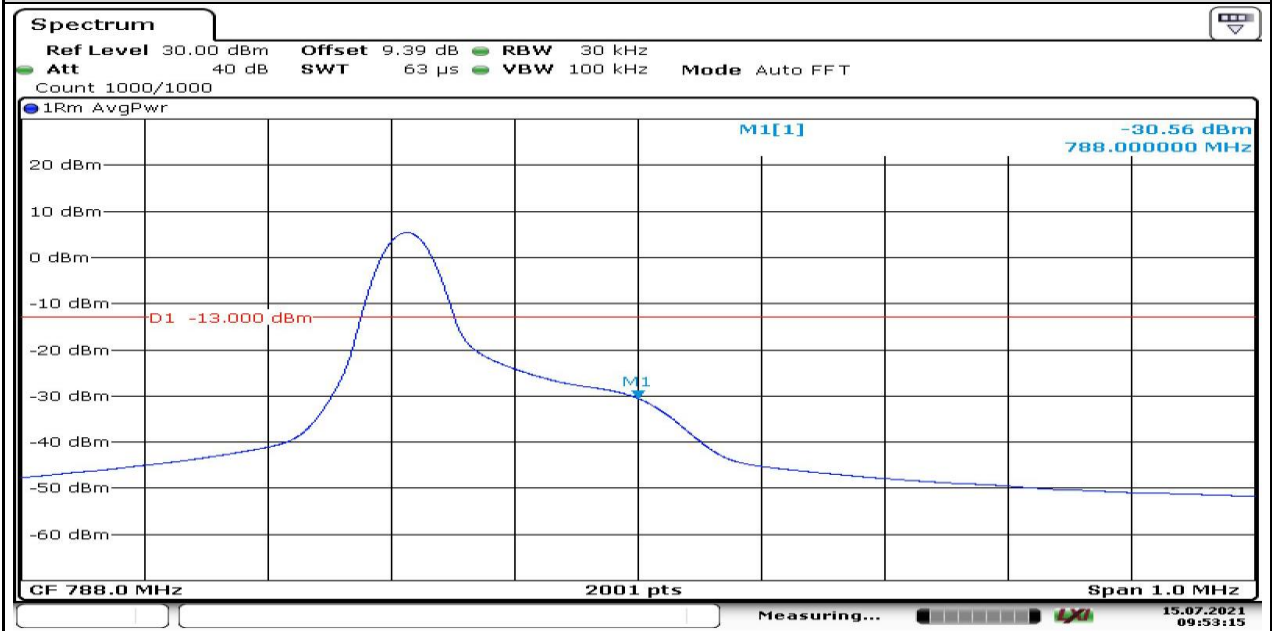
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787-788M_Stand-Alone_NaN_QPSK_134190_12@0_15kHz_-35.52_PASS



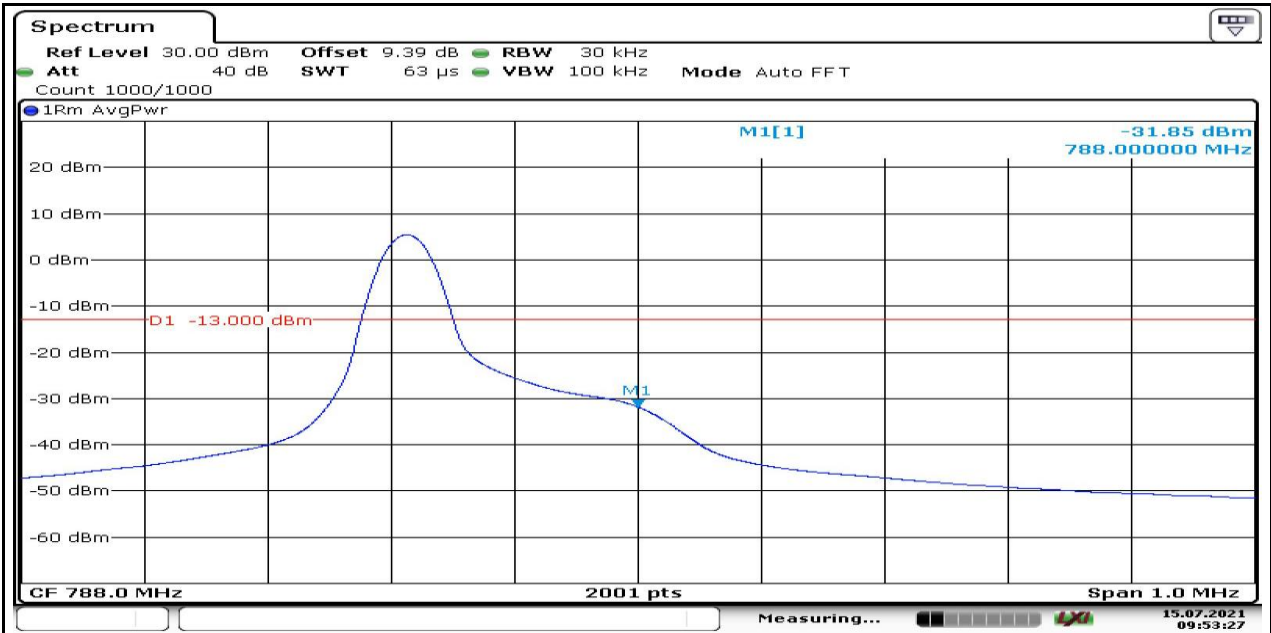
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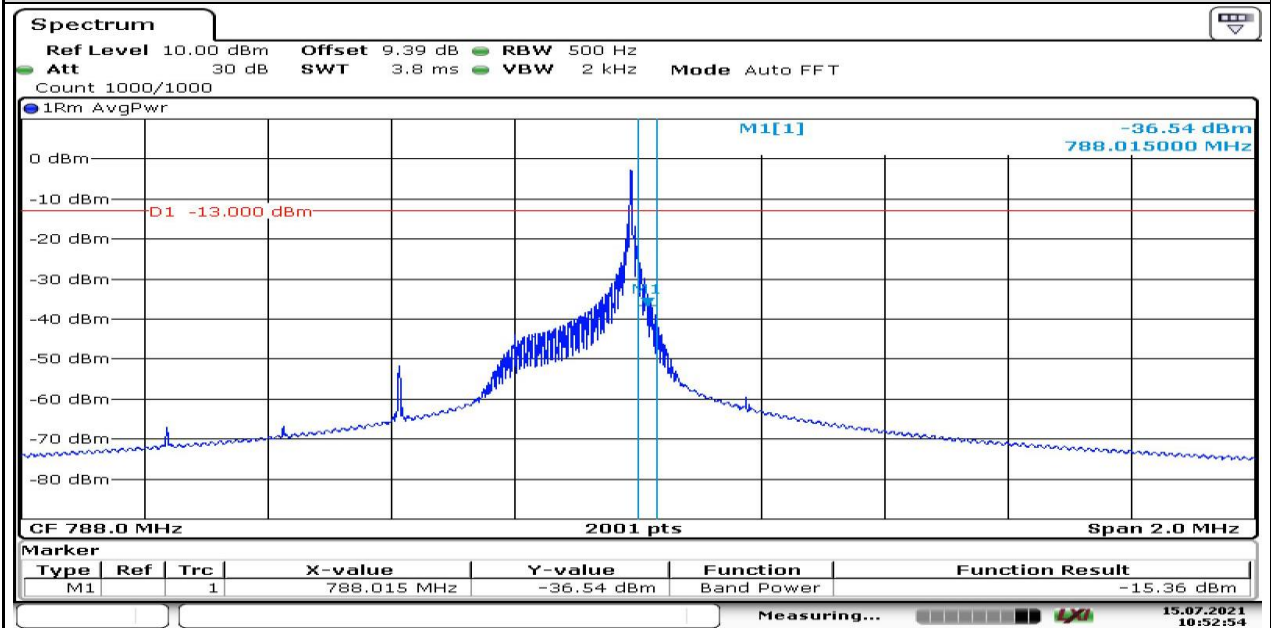
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Date: 15.JUL.2021 09:53:27

787-788M_Stand-Alone_NaN_BPSK_134191_1@47_3.75kHz_-15.36_PASS



Date: 15.JUL.2021 10:52:55

787-788M_Stand-Alone_NaN_QPSK_134191_1@47_3.75kHz_-15.44_PASS