



Appendix E: Test Data for E-UTRA Band 13

Product Name: 4G module

Test Model: Air780E

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Eason Zhou
Supervised by:	Nick Peng



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E.1 Conducted Output Power Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	23.63	PASS
Band13	5MHz	16QAM	23205	1RB#0	22.71	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.68	PASS
Band13	5MHz	16QAM	23205	1RB#12	22.75	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.74	PASS
Band13	5MHz	16QAM	23205	1RB#24	22.80	PASS
Band13	5MHz	QPSK	23205	12RB#0	22.63	PASS
Band13	5MHz	16QAM	23205	12RB#0	21.93	PASS
Band13	5MHz	QPSK	23205	12RB#6	22.54	PASS
Band13	5MHz	16QAM	23205	12RB#6	21.84	PASS
Band13	5MHz	QPSK	23205	12RB#13	22.66	PASS
Band13	5MHz	16QAM	23205	12RB#13	21.72	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.43	PASS
Band13	5MHz	16QAM	23205	25RB#0	21.90	PASS
Band13	5MHz	QPSK	23230	1RB#0	23.42	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.14	PASS
Band13	5MHz	QPSK	23230	1RB#12	23.42	PASS
Band13	5MHz	16QAM	23230	1RB#12	22.18	PASS
Band13	5MHz	QPSK	23230	1RB#24	23.24	PASS
Band13	5MHz	16QAM	23230	1RB#24	22.07	PASS
Band13	5MHz	QPSK	23230	12RB#0	22.42	PASS
Band13	5MHz	16QAM	23230	12RB#0	21.85	PASS
Band13	5MHz	QPSK	23230	12RB#6	22.59	PASS
Band13	5MHz	16QAM	23230	12RB#6	21.89	PASS
Band13	5MHz	QPSK	23230	12RB#13	22.37	PASS
Band13	5MHz	16QAM	23230	12RB#13	21.76	PASS
Band13	5MHz	QPSK	23230	25RB#0	22.43	PASS
Band13	5MHz	16QAM	23230	25RB#0	22.01	PASS
Band13	5MHz	QPSK	23255	1RB#0	23.26	PASS
Band13	5MHz	16QAM	23255	1RB#0	23.09	PASS
Band13	5MHz	QPSK	23255	1RB#12	23.08	PASS
Band13	5MHz	16QAM	23255	1RB#12	22.87	PASS
Band13	5MHz	QPSK	23255	1RB#24	23.16	PASS
Band13	5MHz	16QAM	23255	1RB#24	22.31	PASS
Band13	5MHz	QPSK	23255	12RB#0	22.49	PASS



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Band13	5MHz	16QAM	23255	12RB#0	21.81	PASS
Band13	5MHz	QPSK	23255	12RB#6	22.48	PASS
Band13	5MHz	16QAM	23255	12RB#6	21.82	PASS
Band13	5MHz	QPSK	23255	12RB#13	22.35	PASS
Band13	5MHz	16QAM	23255	12RB#13	21.73	PASS
Band13	5MHz	QPSK	23255	25RB#0	22.33	PASS
Band13	5MHz	16QAM	23255	25RB#0	21.73	PASS
Band13	10MHz	QPSK	23230	1RB#0	22.98	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.37	PASS
Band13	10MHz	QPSK	23230	1RB#24	22.82	PASS
Band13	10MHz	16QAM	23230	1RB#24	22.21	PASS
Band13	10MHz	QPSK	23230	1RB#49	22.35	PASS
Band13	10MHz	16QAM	23230	1RB#49	21.91	PASS
Band13	10MHz	QPSK	23230	25RB#0	21.95	PASS
Band13	10MHz	16QAM	23230	25RB#0	21.31	PASS
Band13	10MHz	QPSK	23230	25RB#12	21.95	PASS
Band13	10MHz	16QAM	23230	25RB#12	21.37	PASS
Band13	10MHz	QPSK	23230	25RB#25	21.71	PASS
Band13	10MHz	16QAM	23230	25RB#25	21.14	PASS
Band13	10MHz	QPSK	23230	50RB#0	21.94	PASS
Band13	10MHz	16QAM	23230	50RB#0	21.26	PASS



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E.2 Peak-to-Average Ratio(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	4.33	13	PASS
Band13	5MHz	16QAM	23205	1RB#0	5.00	13	PASS
Band13	5MHz	QPSK	23205	25RB#0	5.35	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.92	13	PASS
Band13	5MHz	QPSK	23230	1RB#0	4.57	13	PASS
Band13	5MHz	16QAM	23230	1RB#0	5.08	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	5.38	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.99	13	PASS
Band13	5MHz	QPSK	23255	1RB#0	4.68	13	PASS
Band13	5MHz	16QAM	23255	1RB#0	5.17	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	5.35	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	5.98	13	PASS
Band13	10MHz	QPSK	23230	1RB#0	4.33	13	PASS
Band13	10MHz	16QAM	23230	1RB#0	4.92	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	5.36	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	6.00	13	PASS



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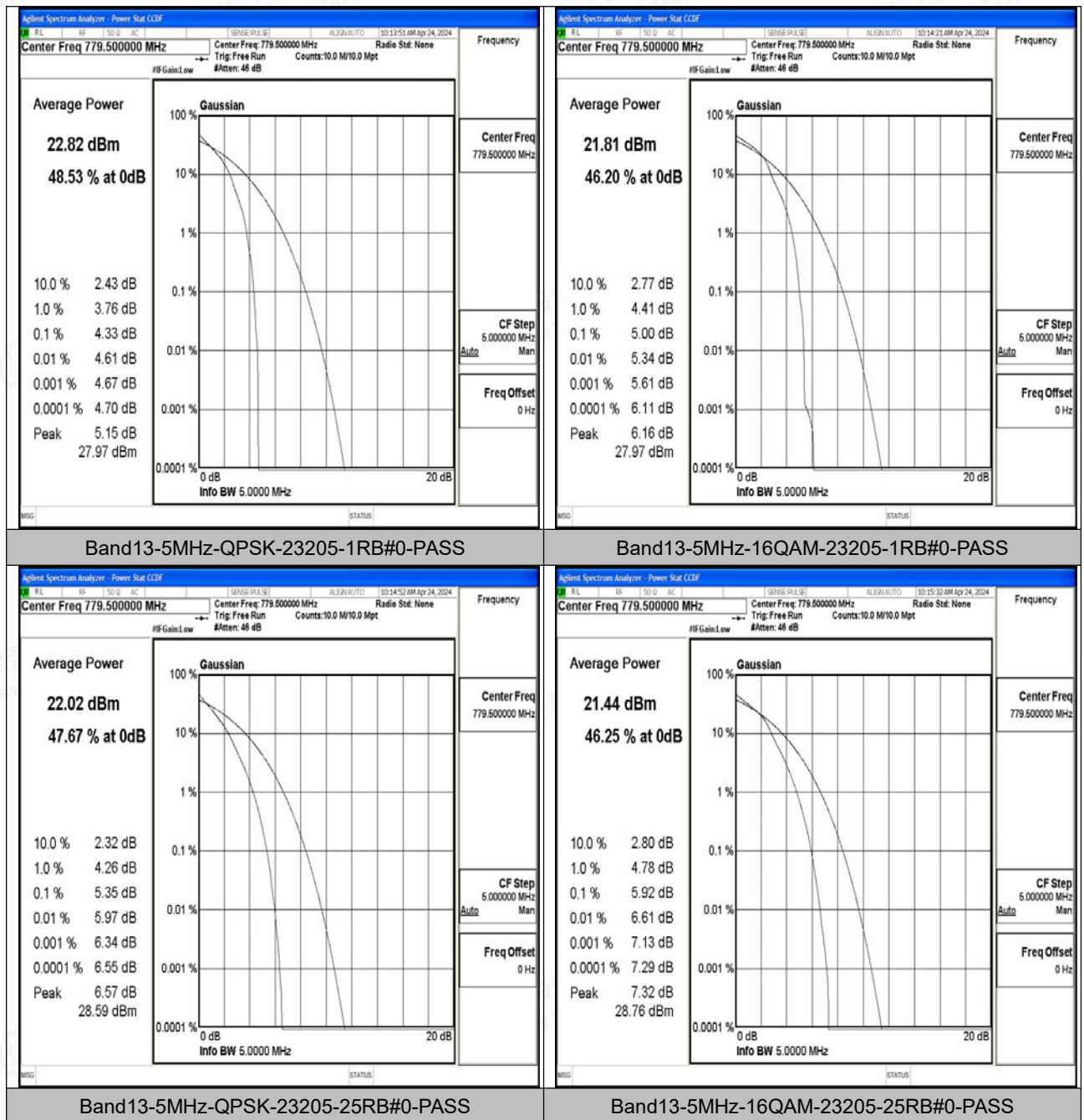
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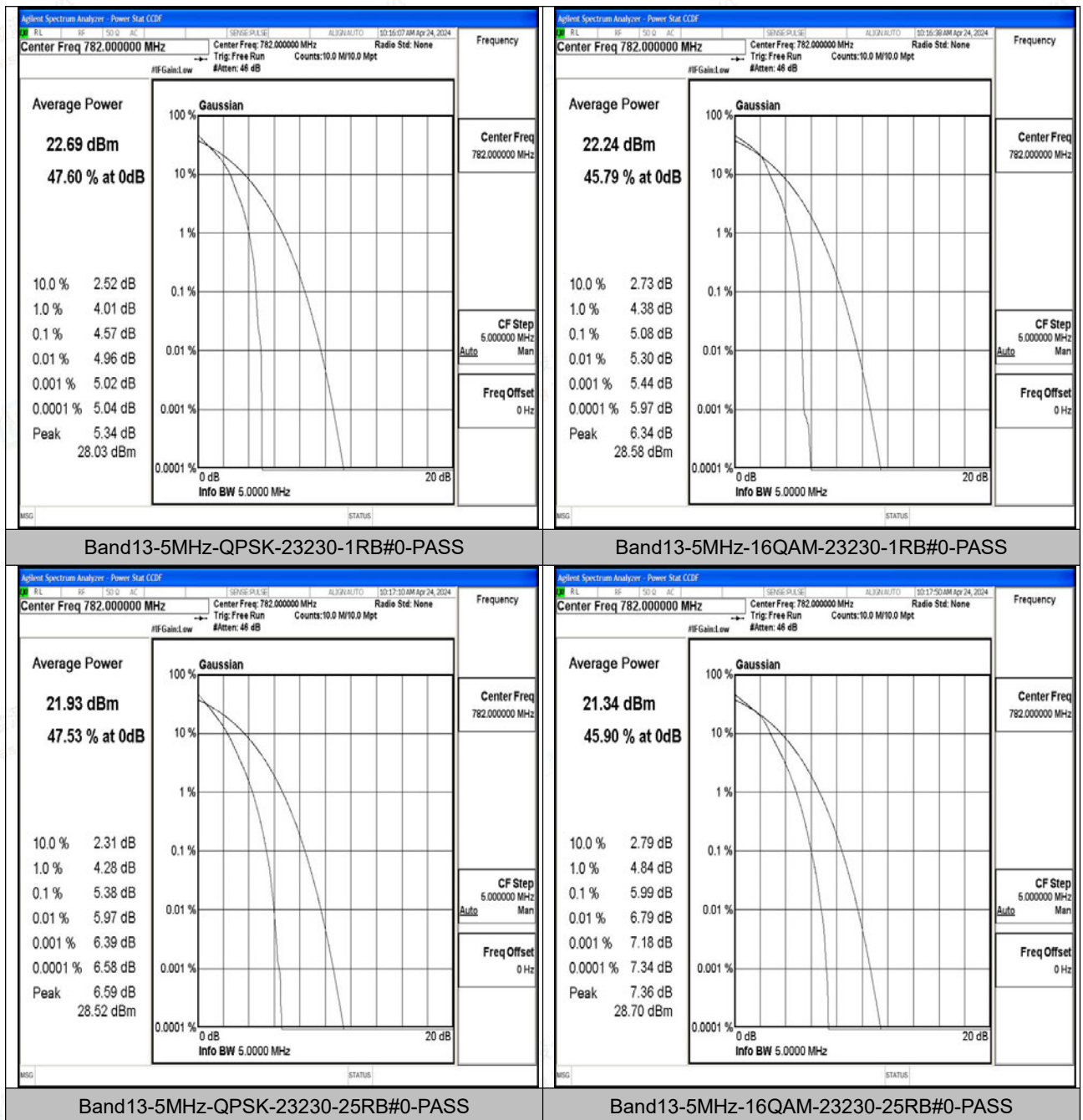
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Test Graphs



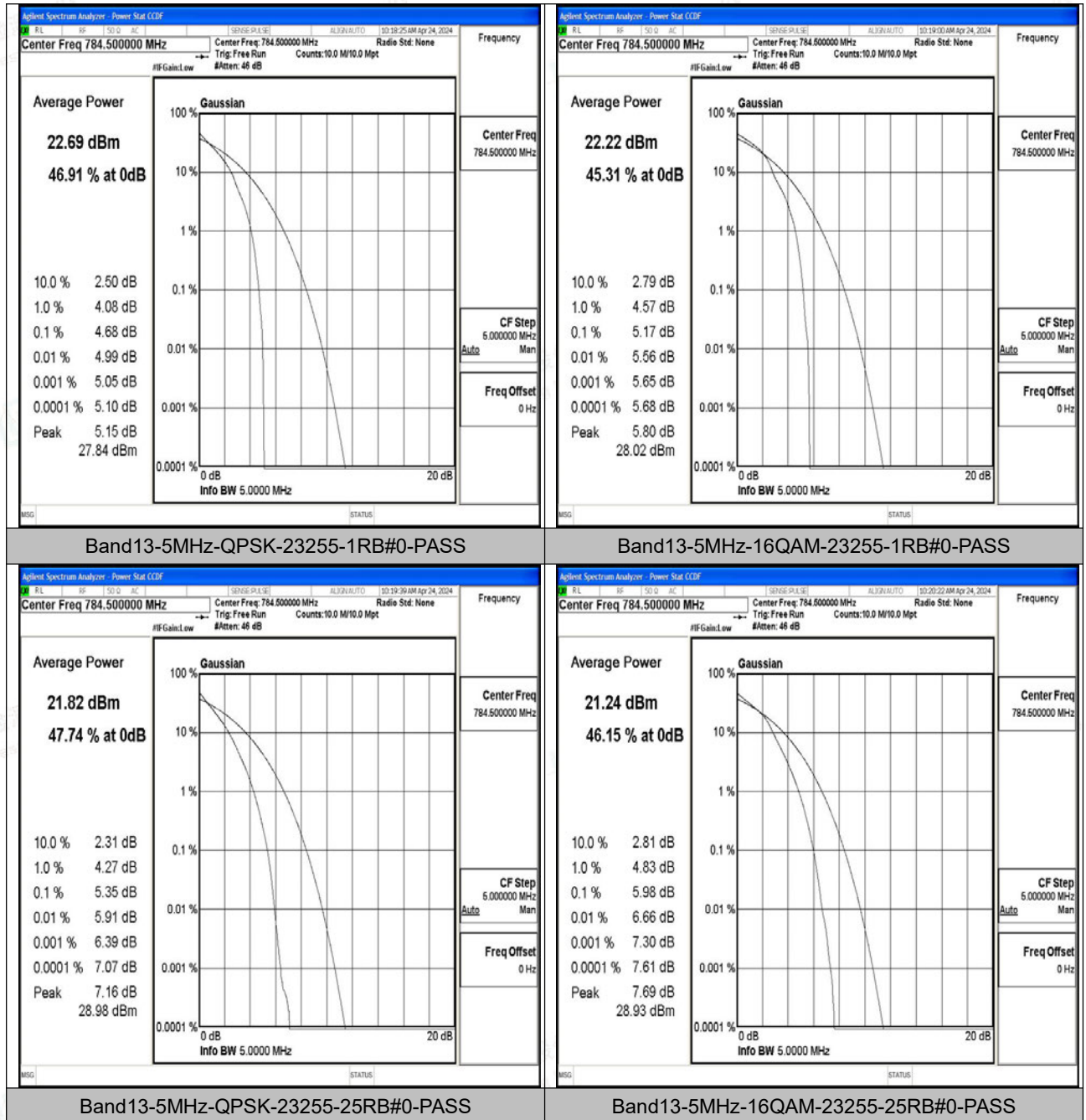


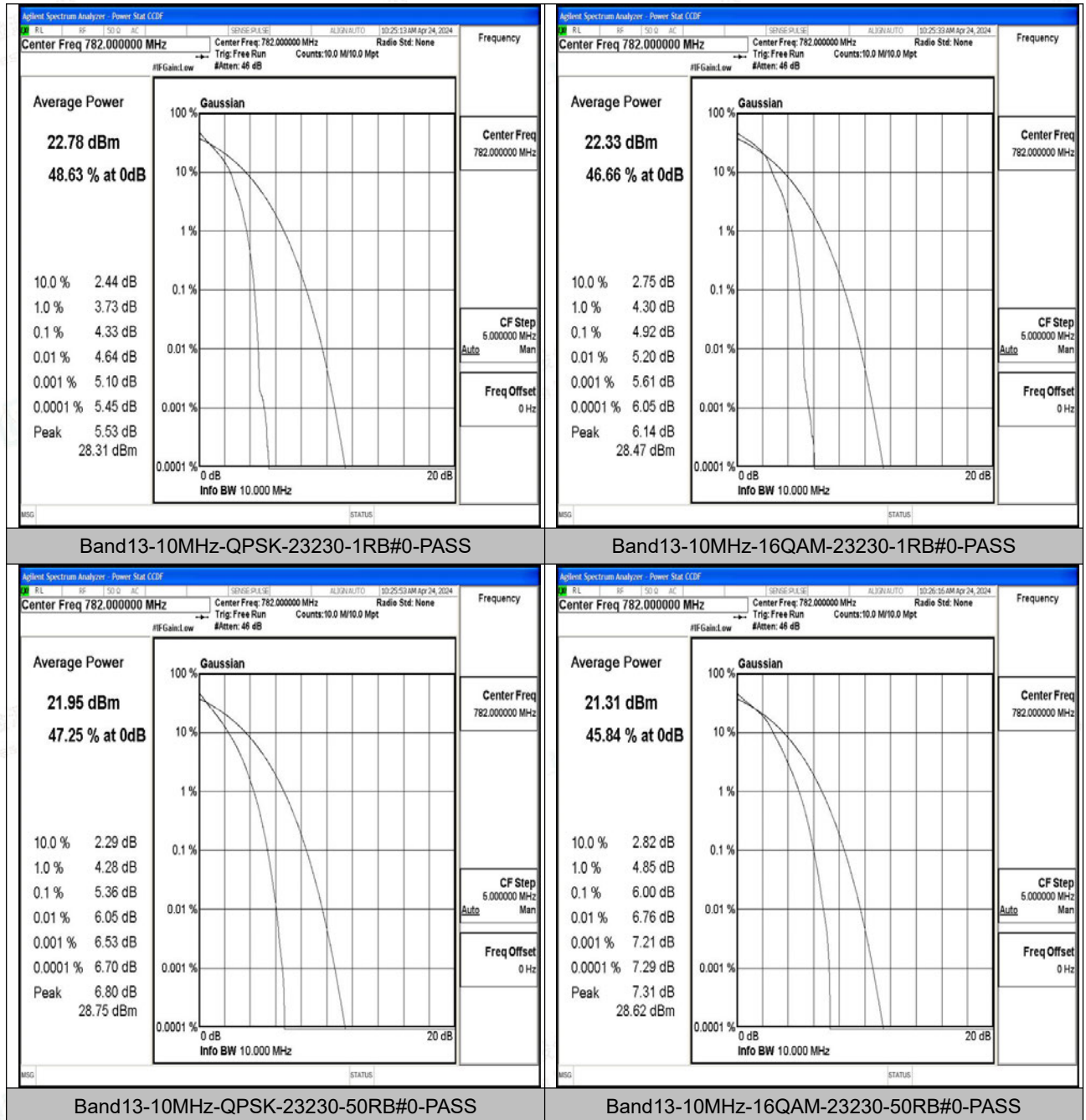
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E.3 26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.5360	5.324	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.5191	5.282	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.5131	5.382	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.5236	5.316	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.5138	5.157	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.5321	5.440	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.9888	10.05	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.9948	10.15	PASS



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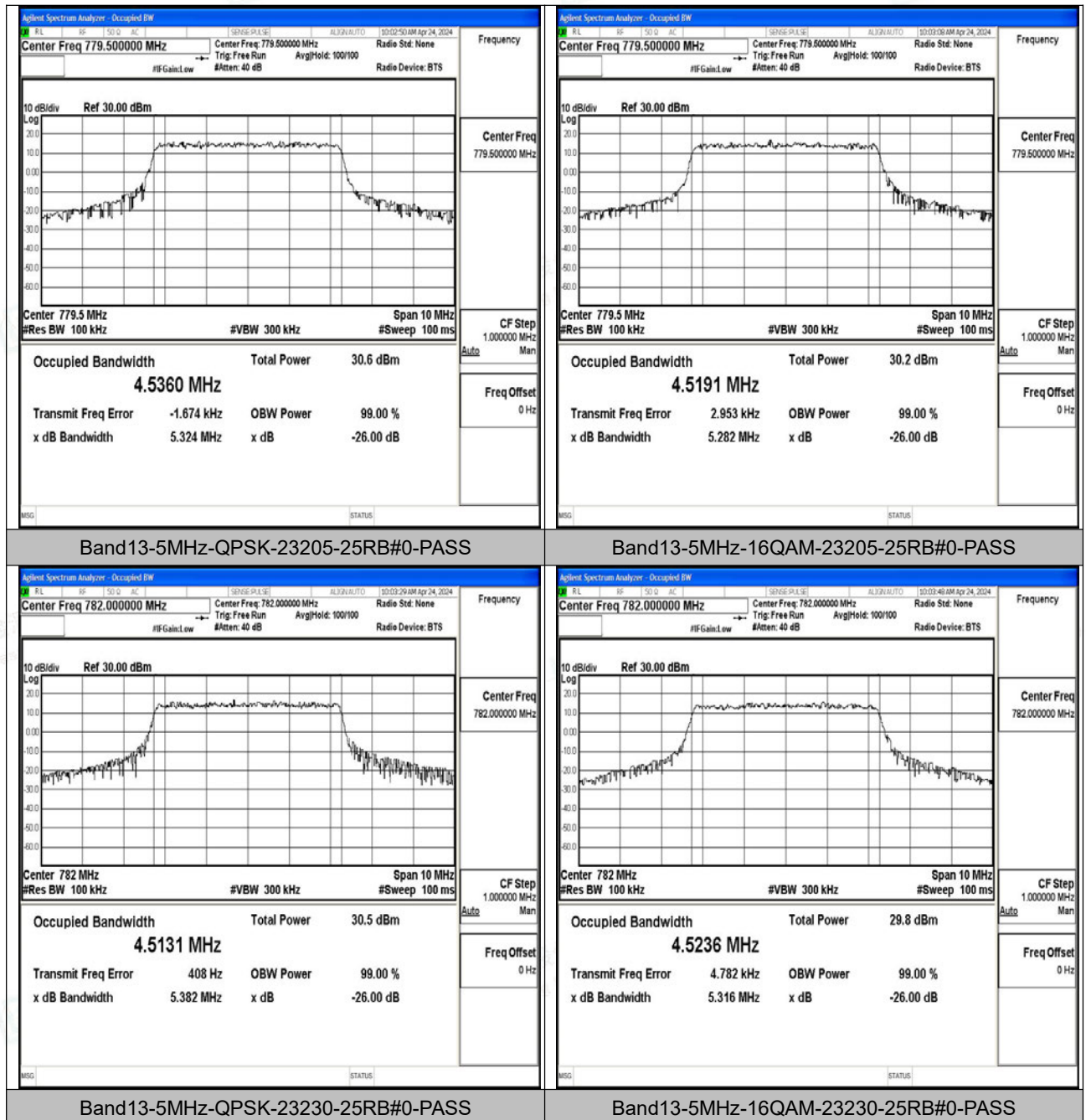
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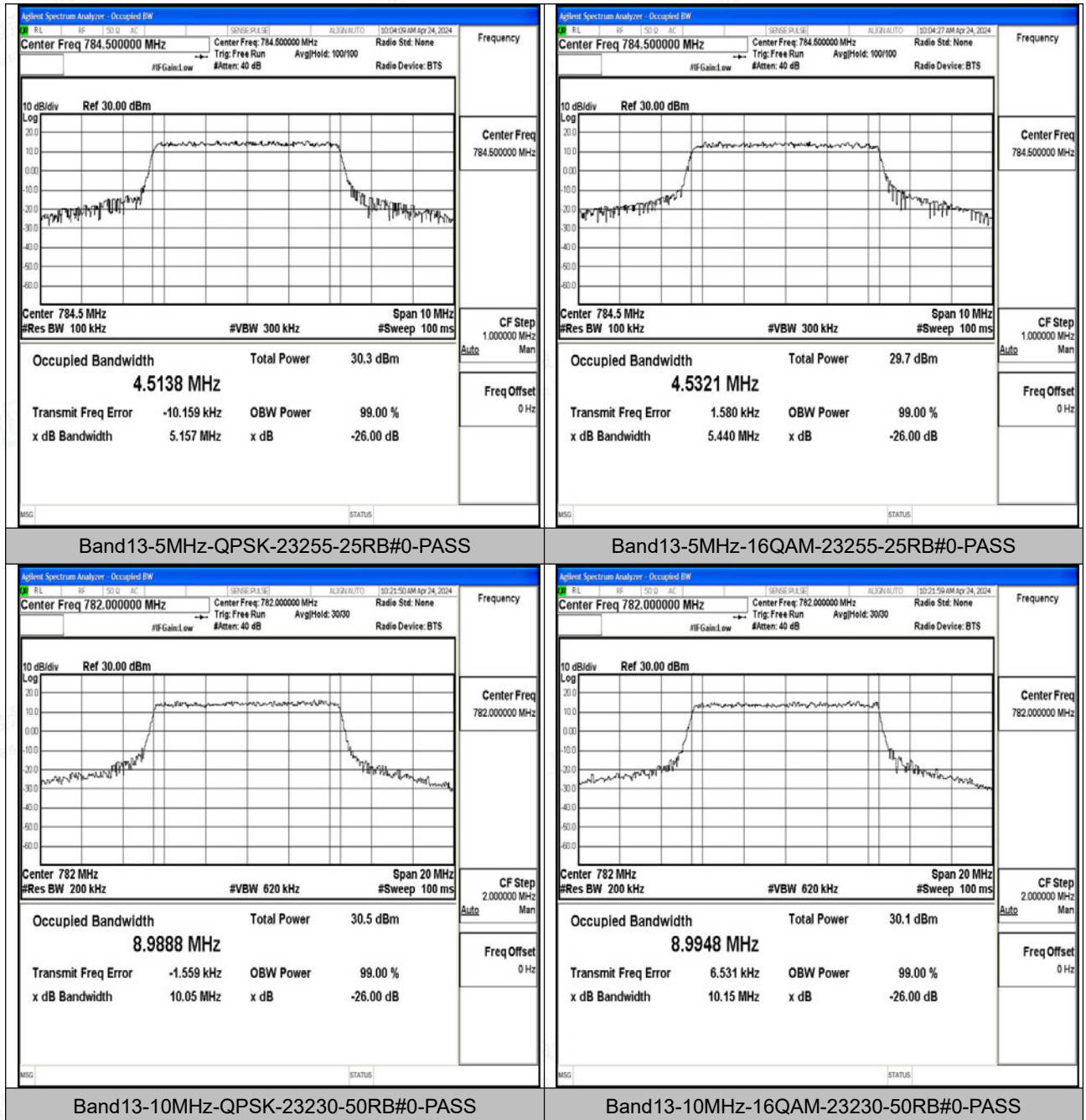
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Test Graphs





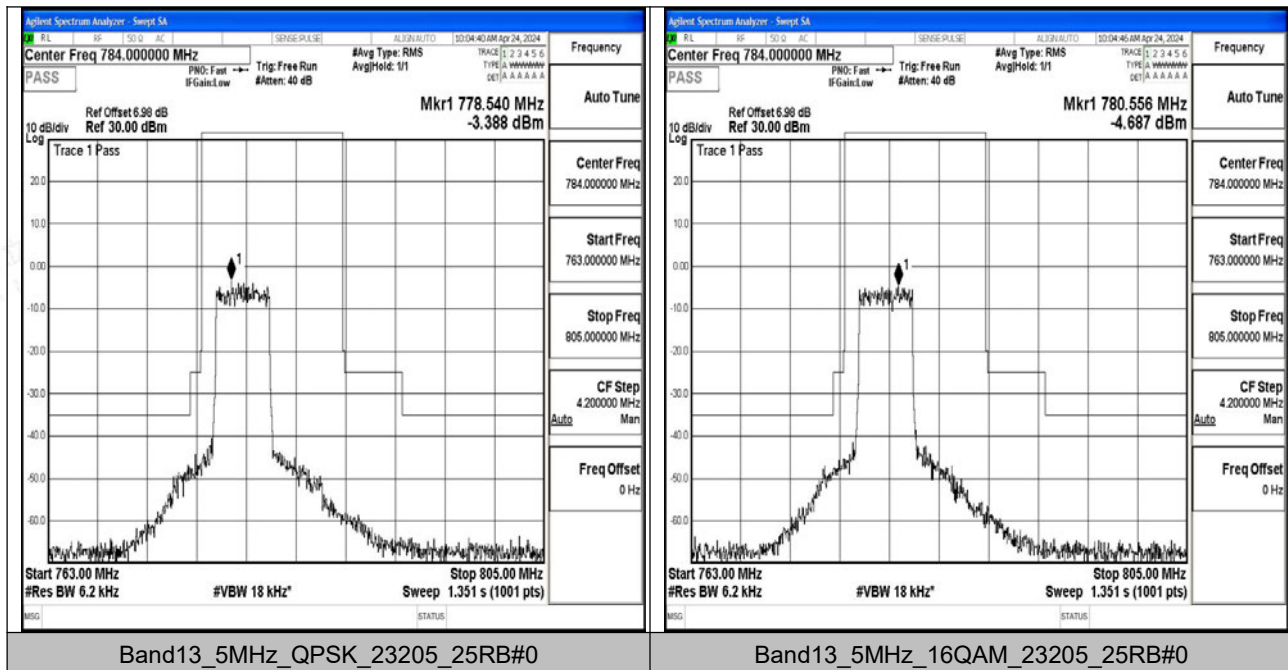


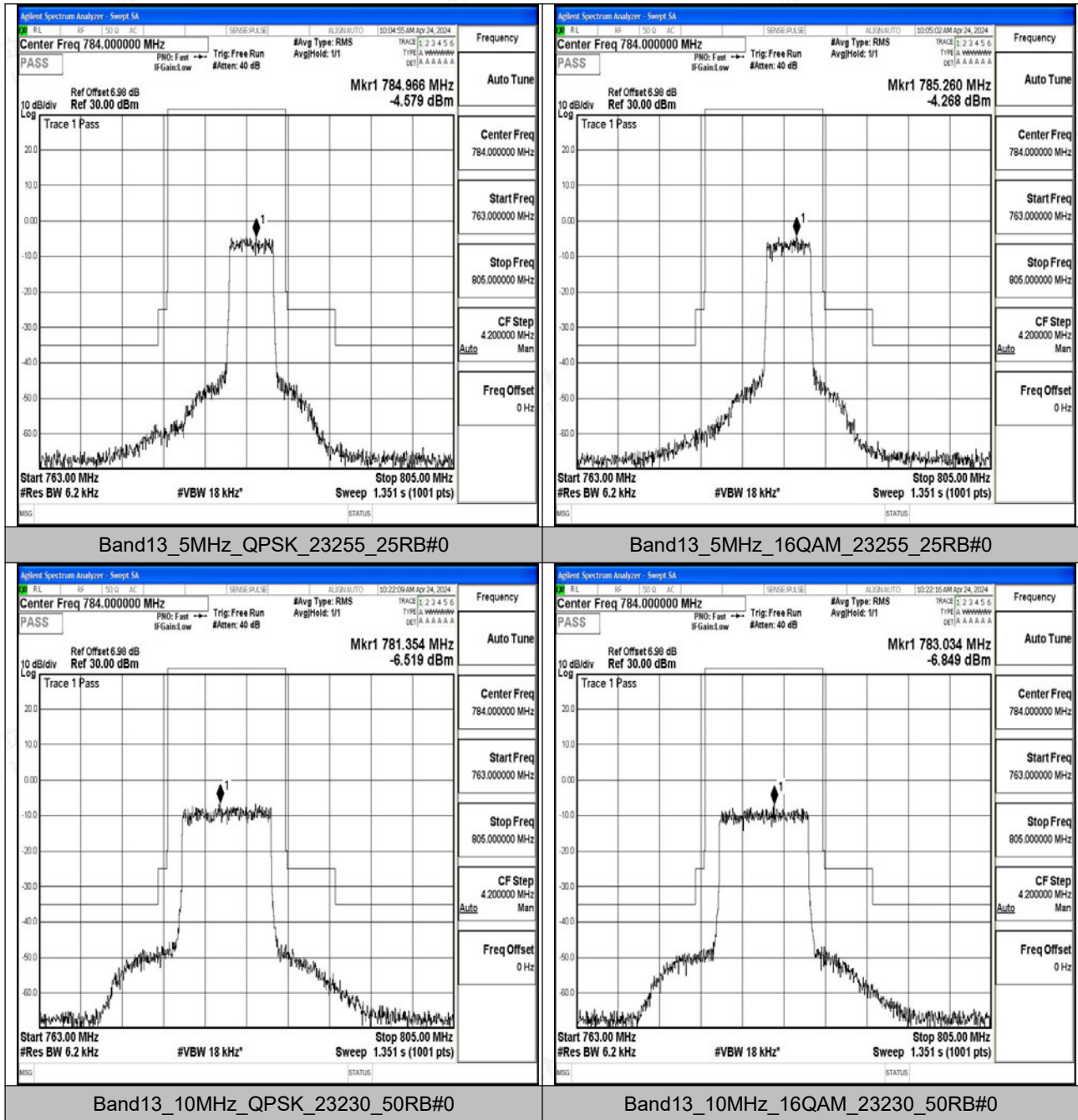
E.4 Band Edge

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	-46.94	PASS
Band13	5MHz	16QAM	23205	25RB#0	-47.00	PASS
Band13	5MHz	QPSK	23255	25RB#0	-45.79	PASS
Band13	5MHz	16QAM	23255	25RB#0	-46.48	PASS
Band13	10MHz	QPSK	23230	50RB#0	-47.02	PASS
Band13	10MHz	16QAM	23230	50RB#0	-48.85	PASS

Test Graphs







E.5 Conducted Spurious Emission

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	0.009~0.15	-59.18	PASS
Band13	5MHz	QPSK	23205	1RB#0	0.15~30	-50.01	PASS
Band13	5MHz	QPSK	23205	1RB#0	30~1000	-61.70	PASS
Band13	5MHz	QPSK	23205	1RB#0	1000~3000	-44.36	PASS
Band13	5MHz	QPSK	23205	1RB#0	3000~10000	-44.06	PASS
Band13	5MHz	16QAM	23205	1RB#0	0.009~0.15	-56.35	PASS
Band13	5MHz	16QAM	23205	1RB#0	0.15~30	-51.73	PASS
Band13	5MHz	16QAM	23205	1RB#0	30~1000	-60.64	PASS
Band13	5MHz	16QAM	23205	1RB#0	1000~3000	-43.99	PASS
Band13	5MHz	16QAM	23205	1RB#0	3000~10000	-44.25	PASS
Band13	5MHz	QPSK	23230	1RB#0	0.009~0.15	-57.95	PASS
Band13	5MHz	QPSK	23230	1RB#0	0.15~30	-52.79	PASS
Band13	5MHz	QPSK	23230	1RB#0	30~1000	-61.79	PASS
Band13	5MHz	QPSK	23230	1RB#0	1000~3000	-44.29	PASS
Band13	5MHz	QPSK	23230	1RB#0	3000~10000	-44.25	PASS
Band13	5MHz	16QAM	23230	1RB#0	0.009~0.15	-57.16	PASS
Band13	5MHz	16QAM	23230	1RB#0	0.15~30	-51.83	PASS
Band13	5MHz	16QAM	23230	1RB#0	30~1000	-62.02	PASS
Band13	5MHz	16QAM	23230	1RB#0	1000~3000	-44.08	PASS
Band13	5MHz	16QAM	23230	1RB#0	3000~10000	-43.80	PASS
Band13	5MHz	QPSK	23255	1RB#0	0.009~0.15	-56.22	PASS
Band13	5MHz	QPSK	23255	1RB#0	0.15~30	-51.59	PASS
Band13	5MHz	QPSK	23255	1RB#0	30~1000	-60.46	PASS
Band13	5MHz	QPSK	23255	1RB#0	1000~3000	-44.13	PASS
Band13	5MHz	QPSK	23255	1RB#0	3000~10000	-44.14	PASS
Band13	5MHz	16QAM	23255	1RB#0	0.009~0.15	-58.70	PASS
Band13	5MHz	16QAM	23255	1RB#0	0.15~30	-54.12	PASS
Band13	5MHz	16QAM	23255	1RB#0	30~1000	-59.26	PASS
Band13	5MHz	16QAM	23255	1RB#0	1000~3000	-43.87	PASS
Band13	5MHz	16QAM	23255	1RB#0	3000~10000	-43.49	PASS
Band13	10MHz	QPSK	23230	1RB#0	0.009~0.15	-57.44	PASS
Band13	10MHz	QPSK	23230	1RB#0	0.15~30	-53.10	PASS
Band13	10MHz	QPSK	23230	1RB#0	30~1000	-61.65	PASS
Band13	10MHz	QPSK	23230	1RB#0	1000~3000	-44.36	PASS



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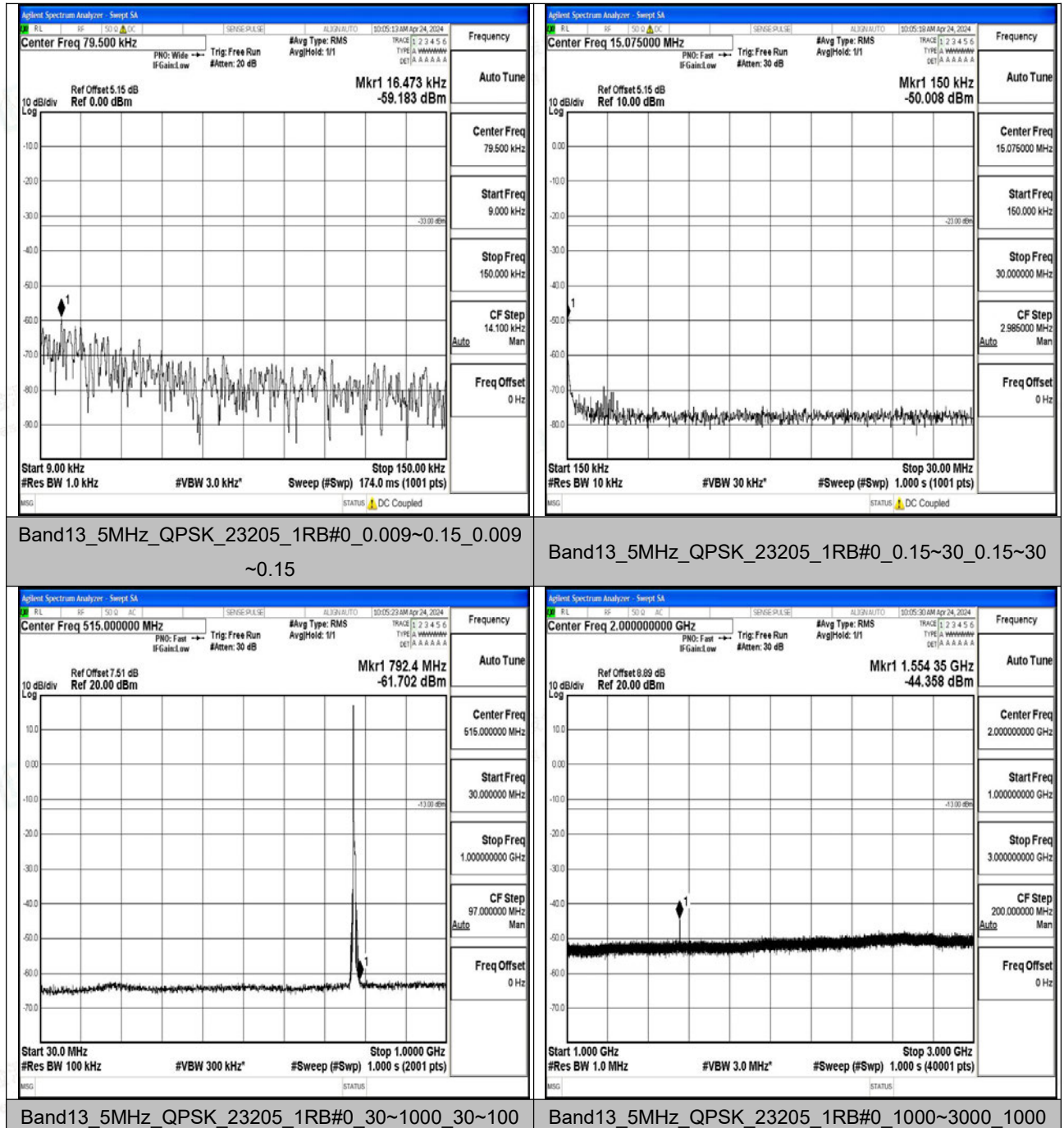
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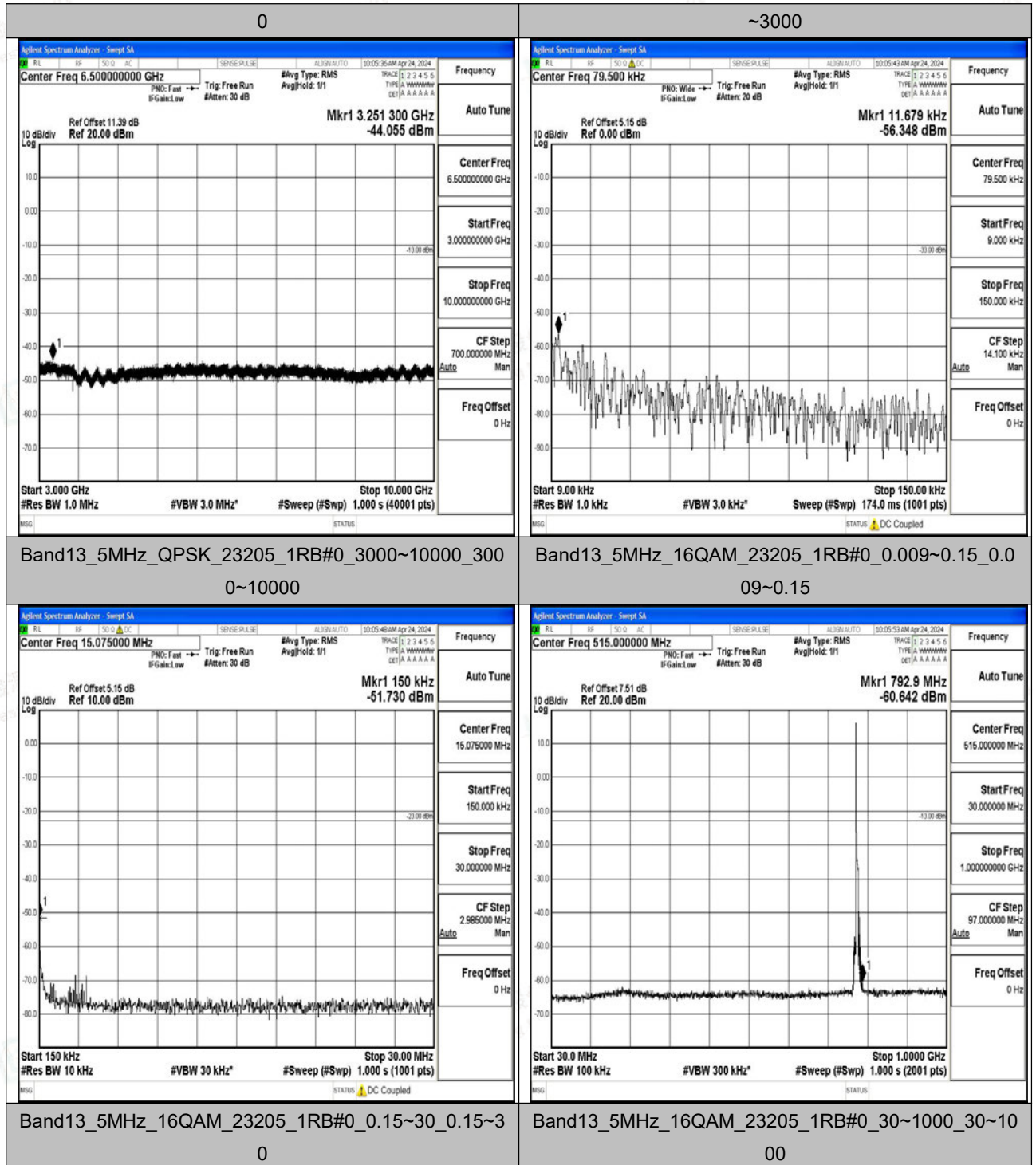
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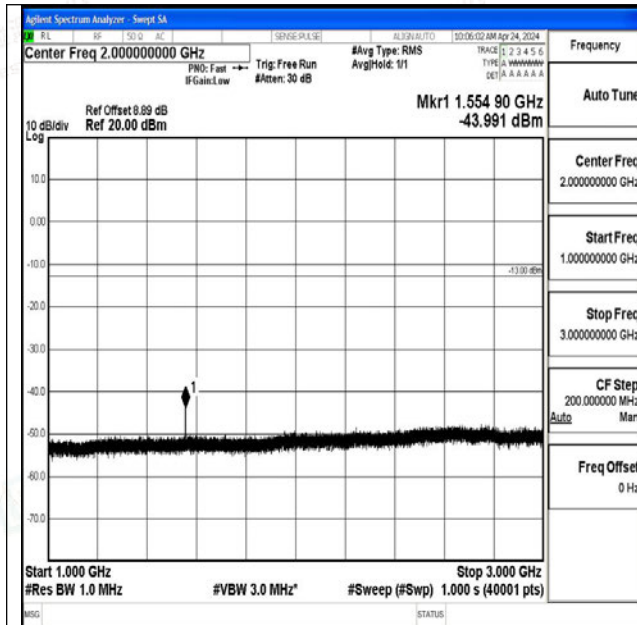


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Band13	10MHz	16QAM	23230	1RB#0	0.009~0.15	-55.54	PASS
Band13	10MHz	16QAM	23230	1RB#0	0.15~30	-52.96	PASS
Band13	10MHz	16QAM	23230	1RB#0	30~1000	-62.20	PASS
Band13	10MHz	16QAM	23230	1RB#0	1000~3000	-44.13	PASS
Band13	10MHz	16QAM	23230	1RB#0	3000~10000	-44.06	PASS

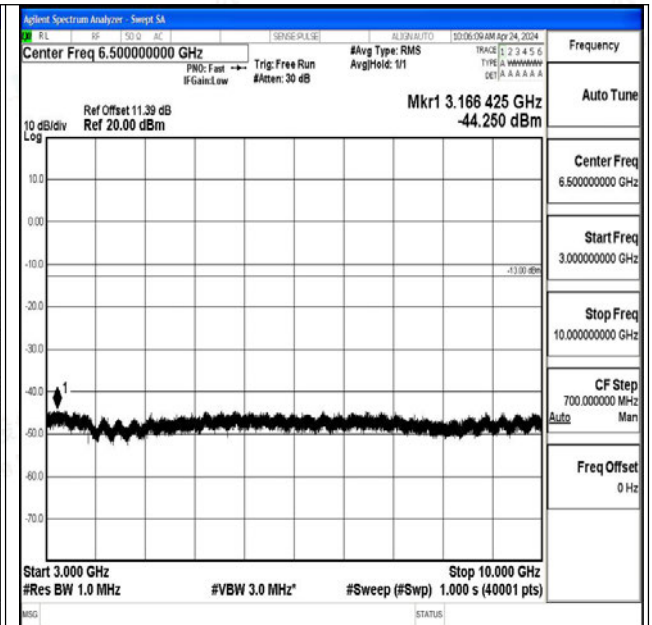
Test Graphs



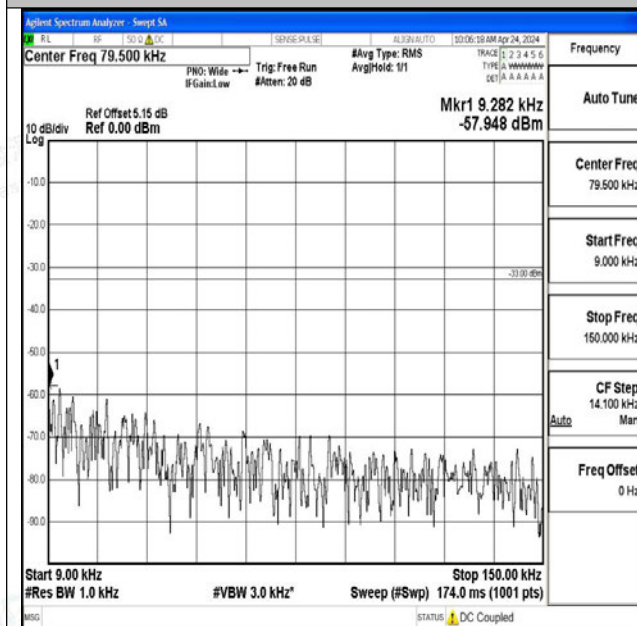




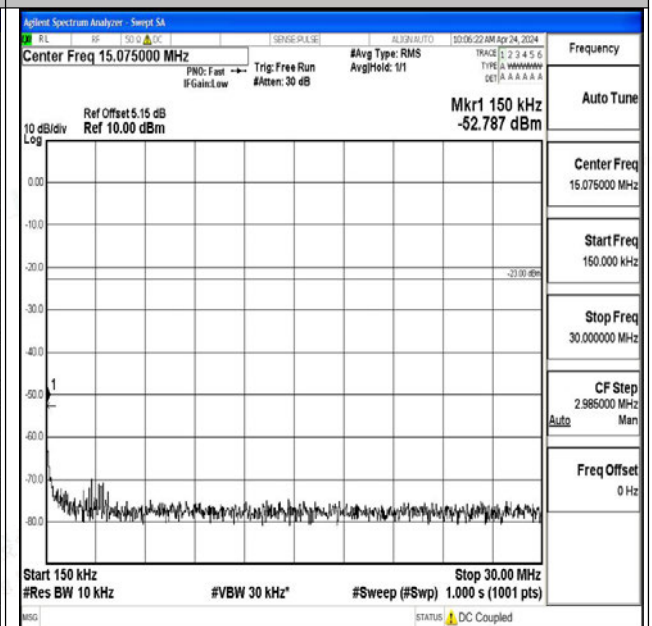
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0~3000



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00~10000

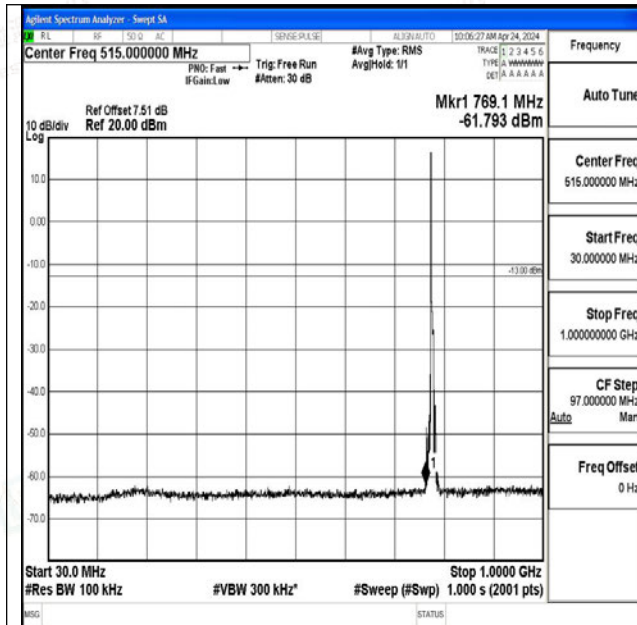


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~0.15



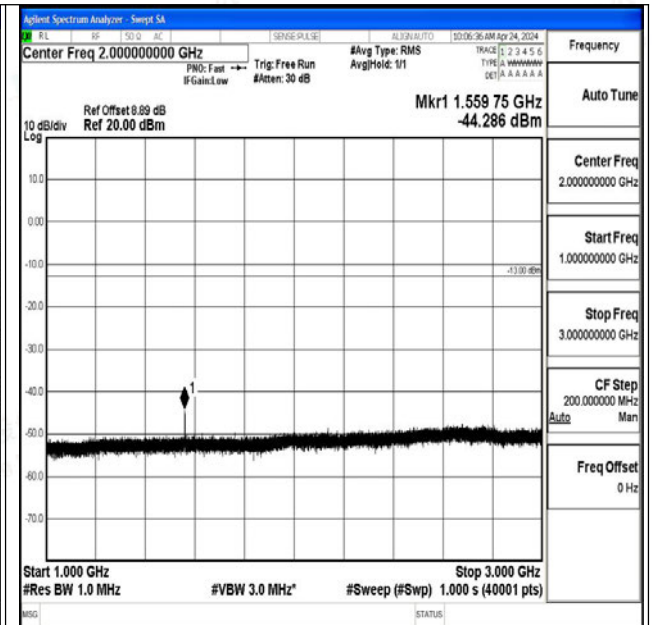
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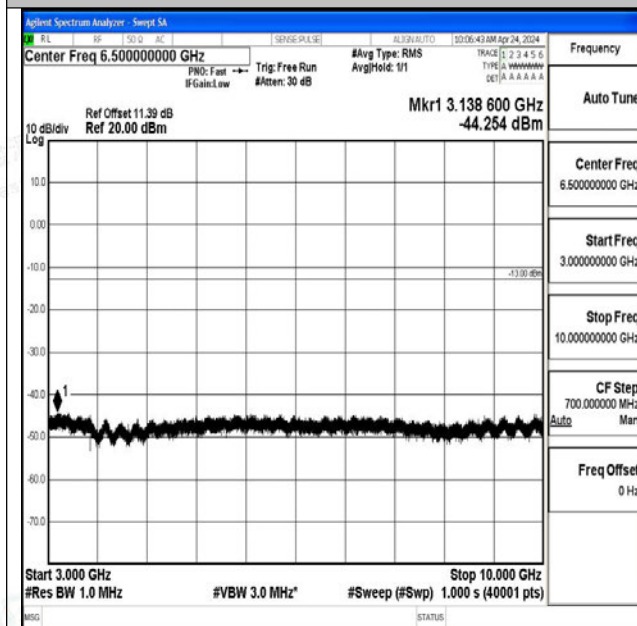
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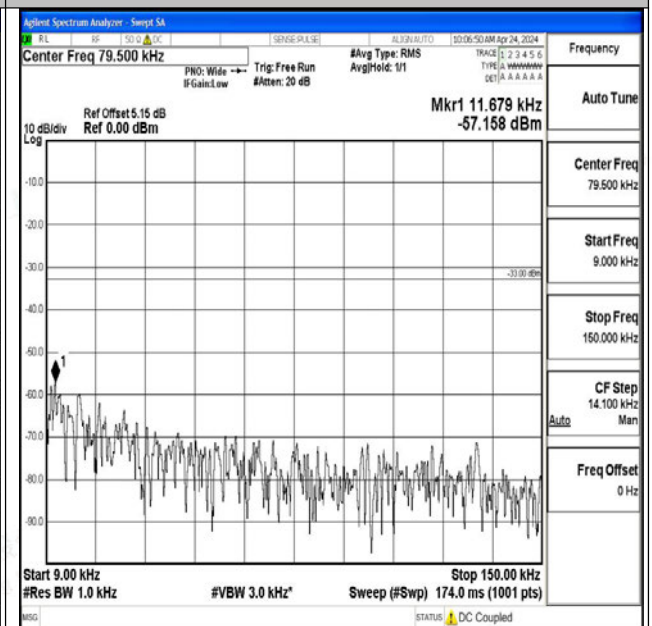
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~3000



Band13_5MHz_QPSK_23230_1RB#0_3000~10000_300~10000

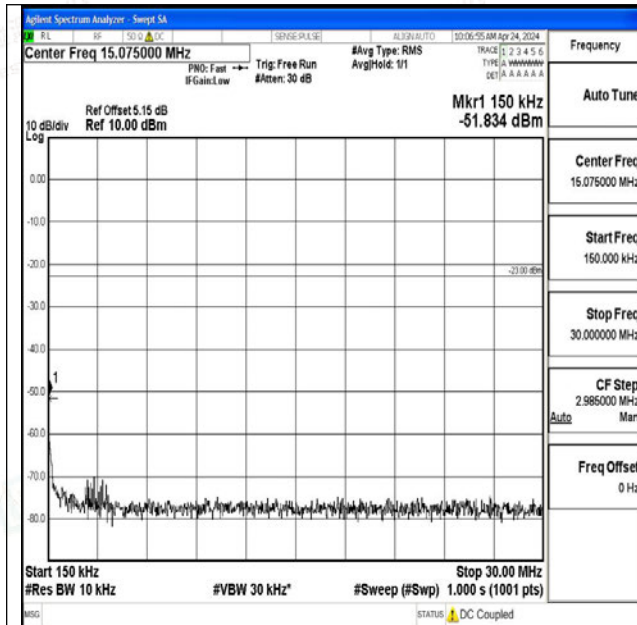
0~10000



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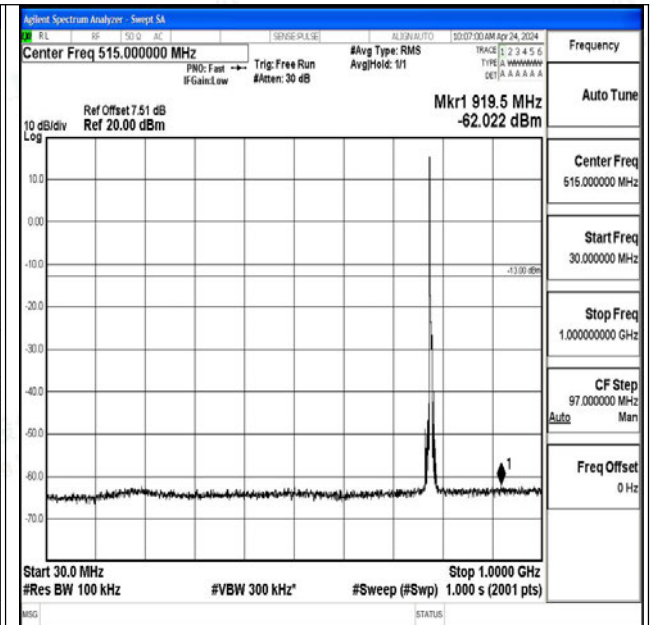
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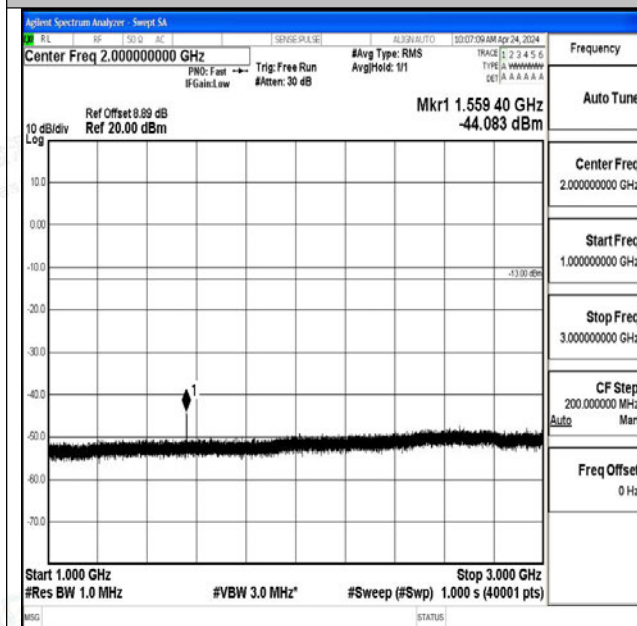
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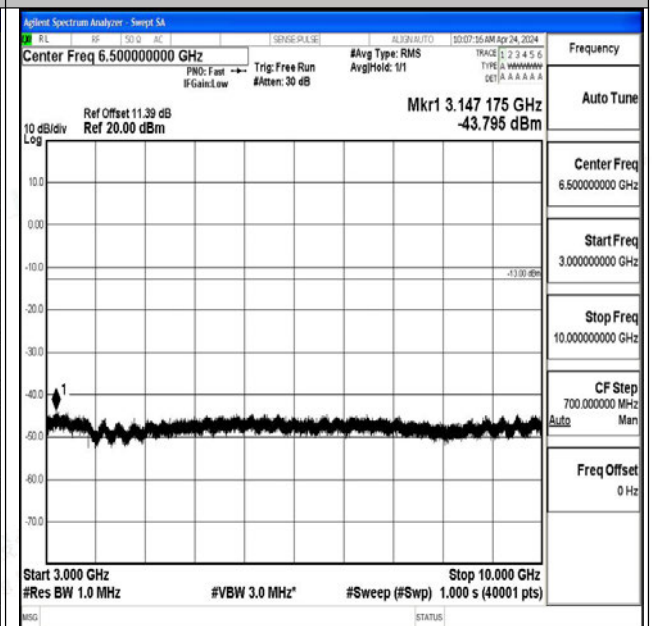
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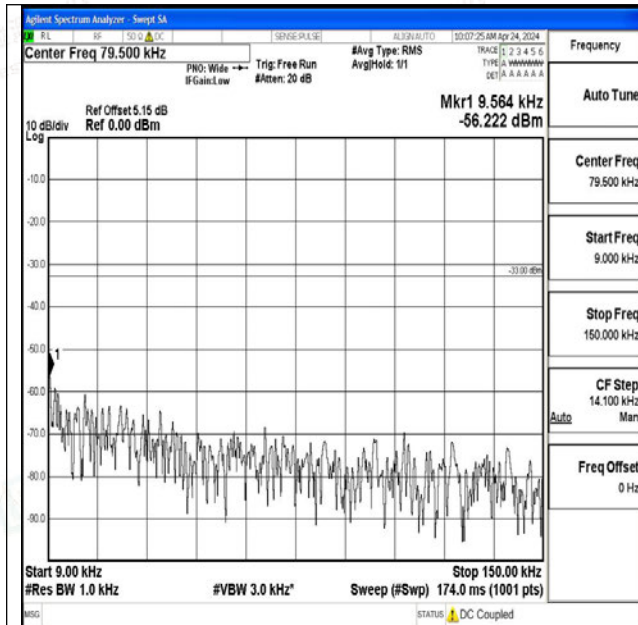
0~3000



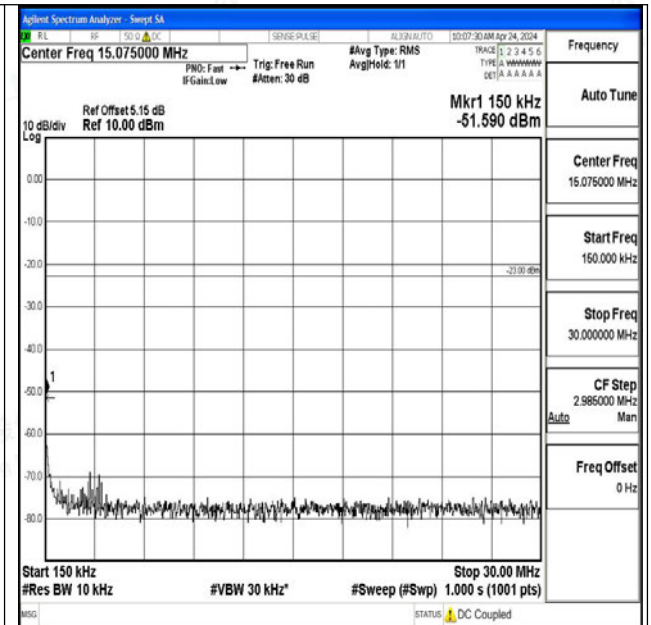
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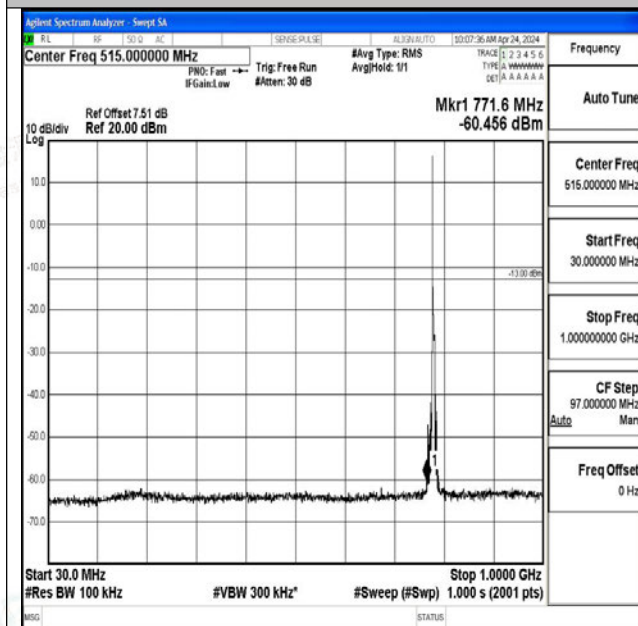




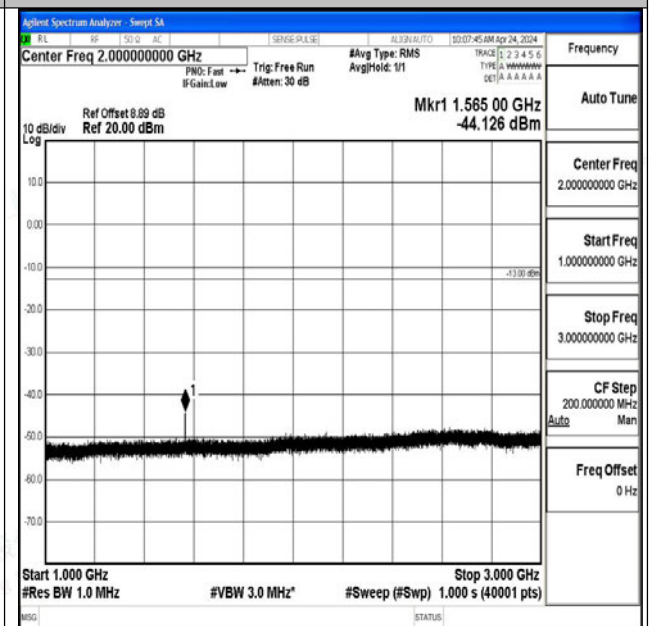
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~0.15



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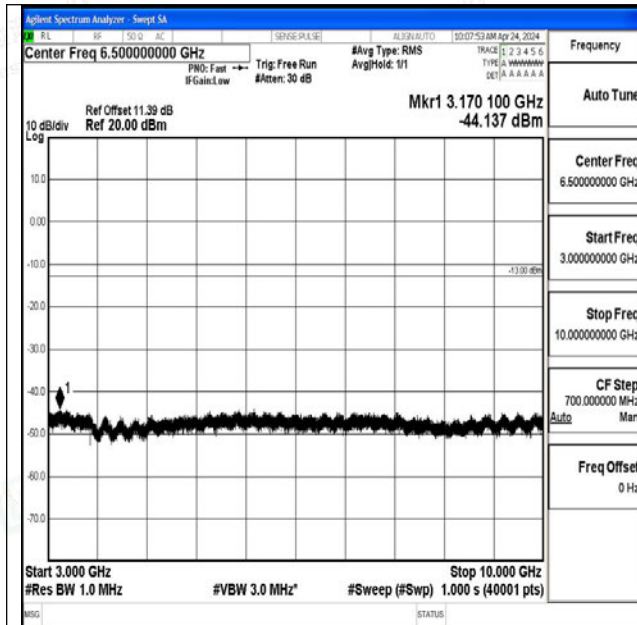


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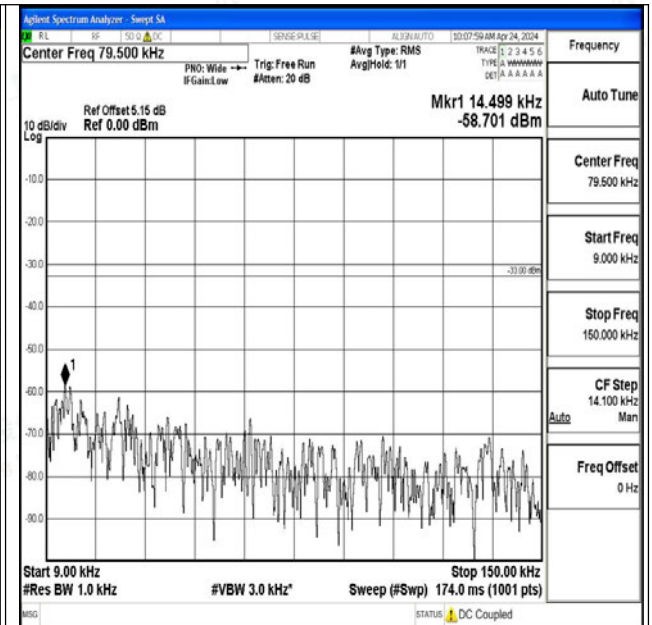


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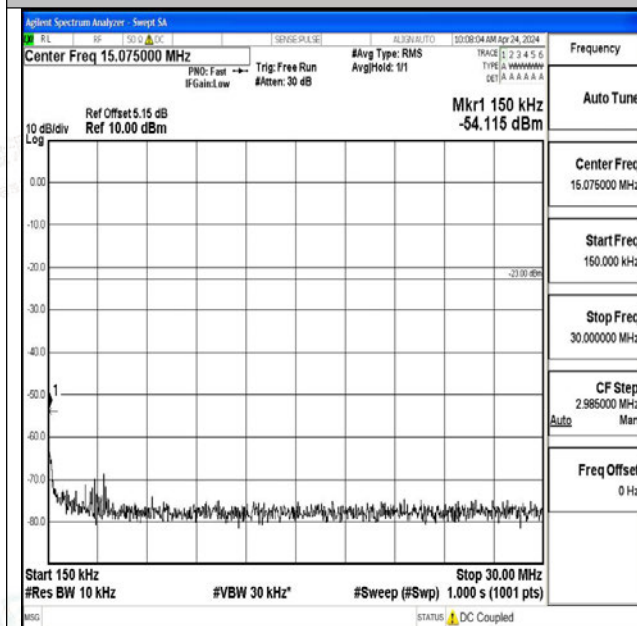




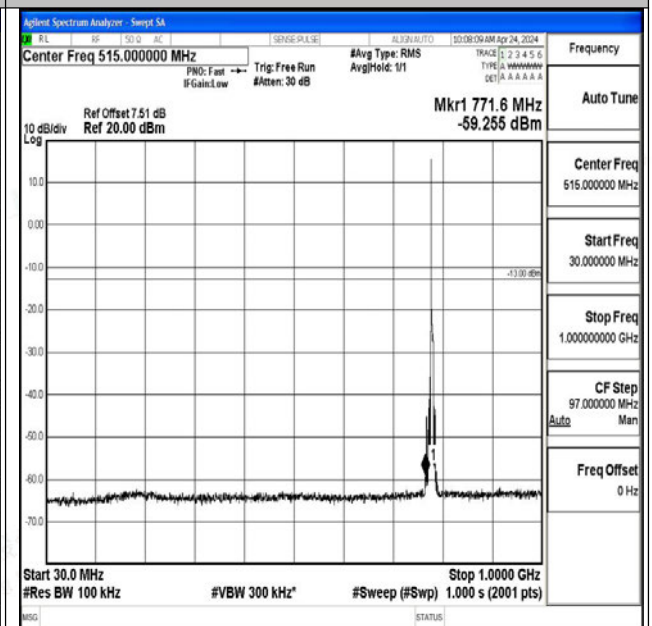
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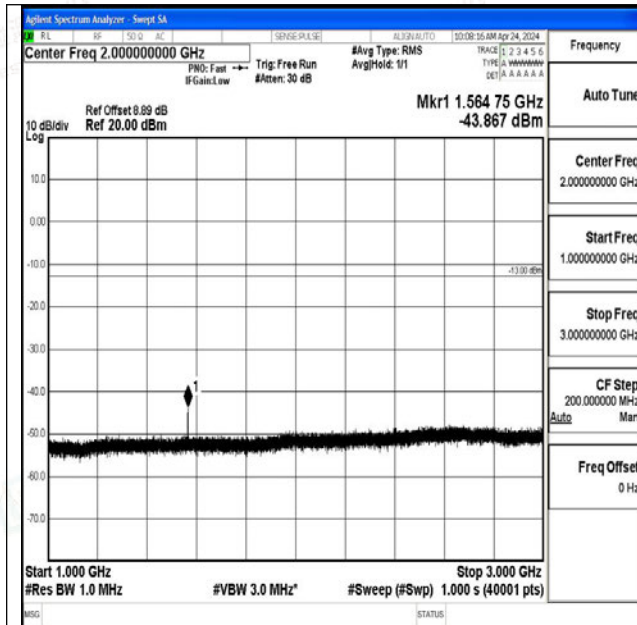


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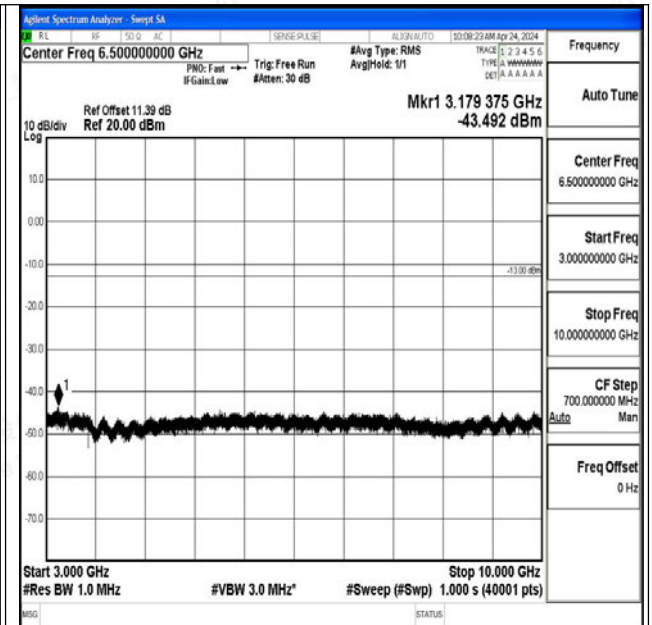


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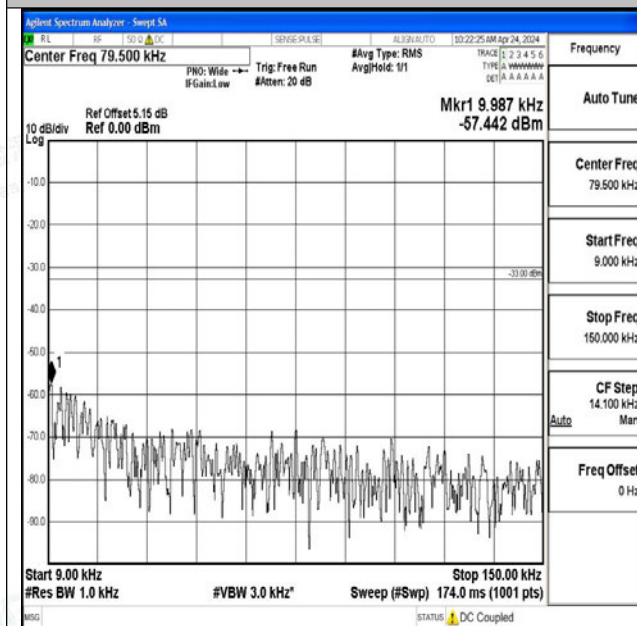




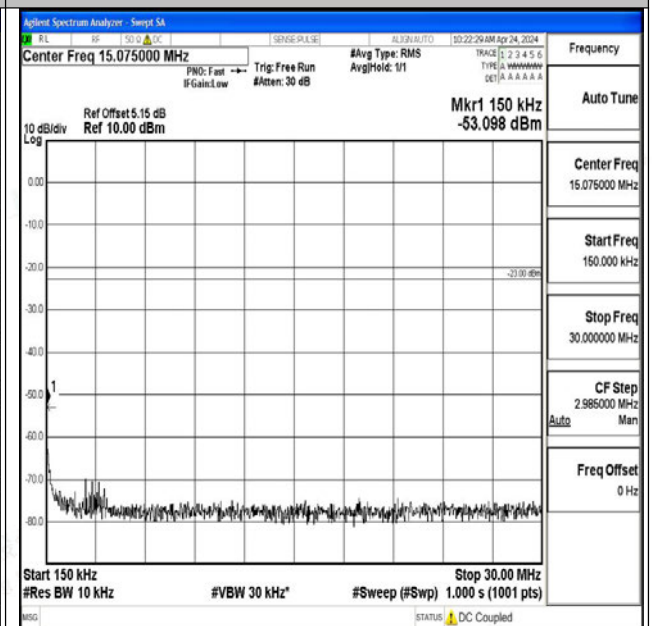
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0~3000



Band13_5MHz_16QAM_23255_1RB#0_3000~10000_30
00~10000

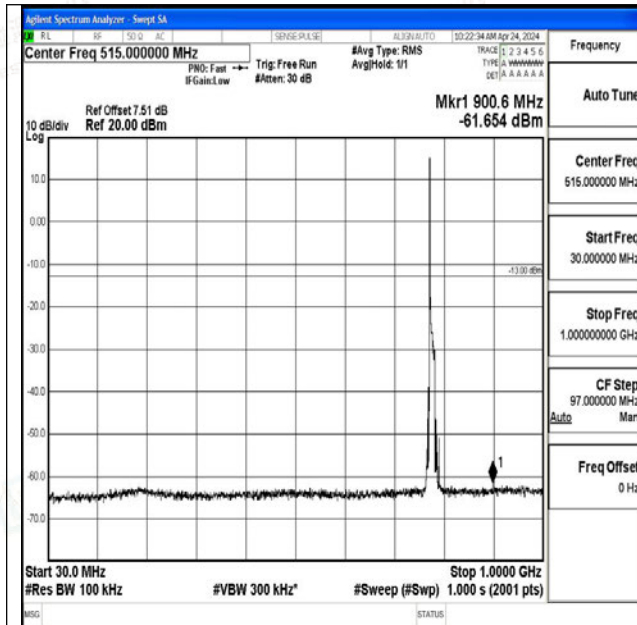


Band13_10MHz_QPSK_23230_1RB#0_0.009~0.15_0.00
9~0.15

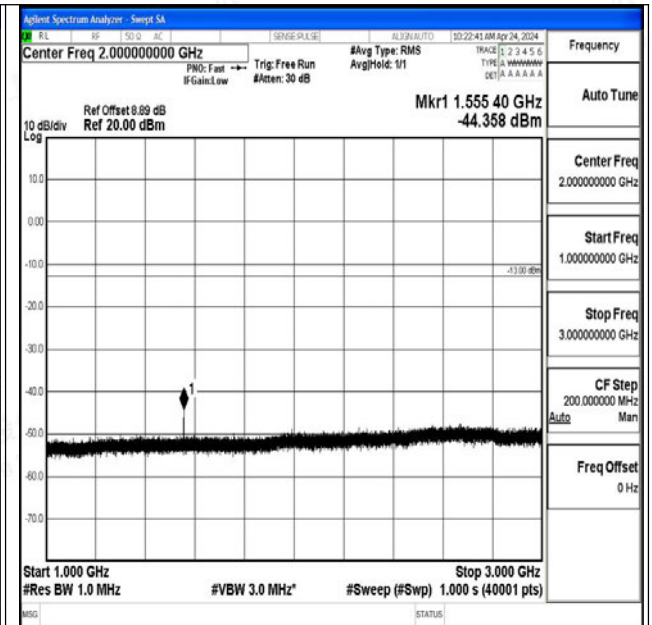


Band13_10MHz_QPSK_23230_1RB#0_0.15~30_0.15~3
0

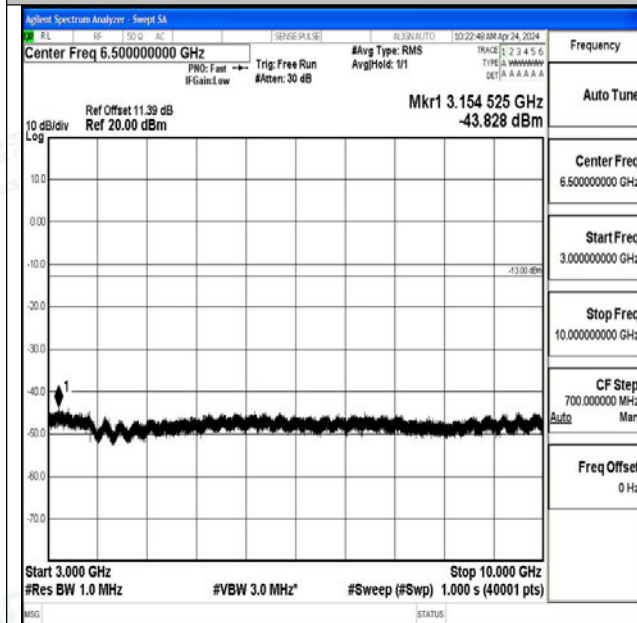




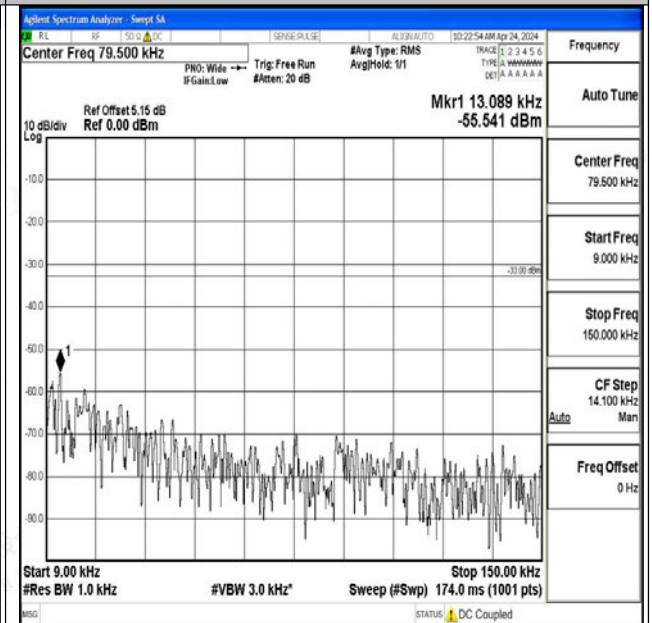
Band13_10MHz_QPSK_23230_1RB#0_30~1000_30~1000



Band13_10MHz_QPSK_23230_1RB#0_1000~3000_1000~3000

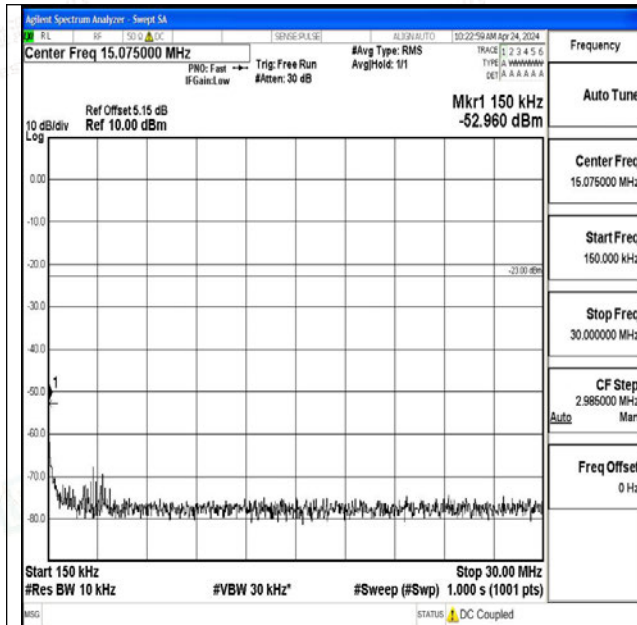


Band13_10MHz_QPSK_23230_1RB#0_3000~10000_3000~10000

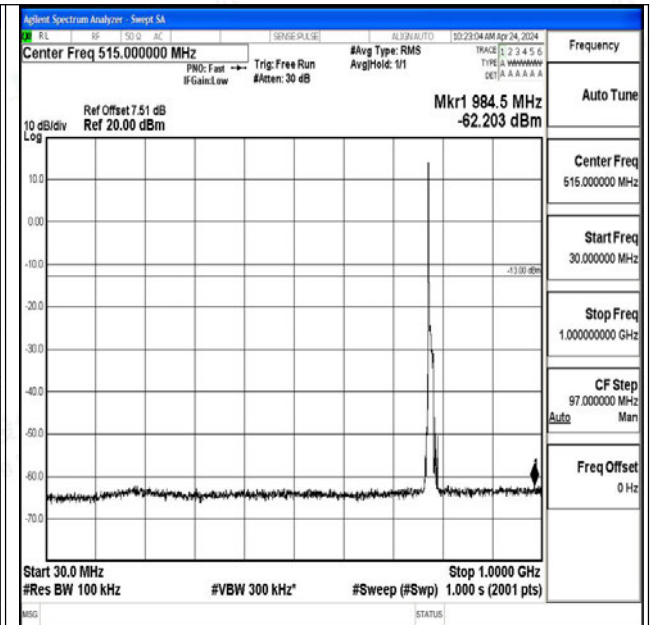


Band13_10MHz_16QAM_23230_1RB#0_0.009~0.15_0.009~0.15

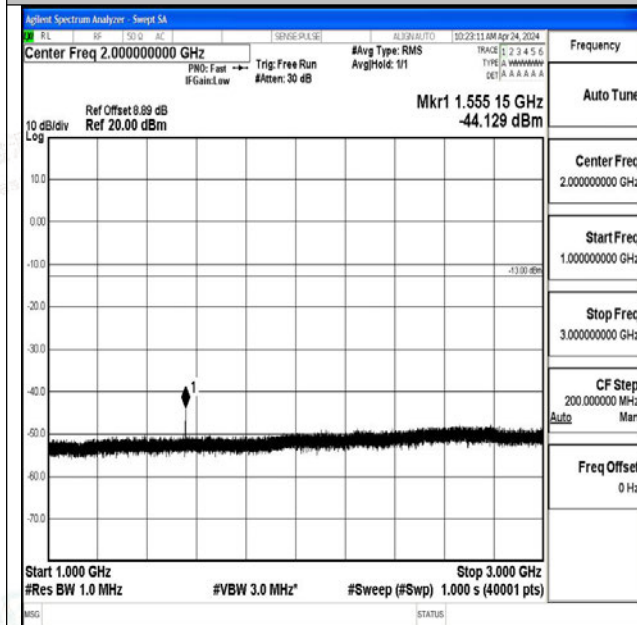




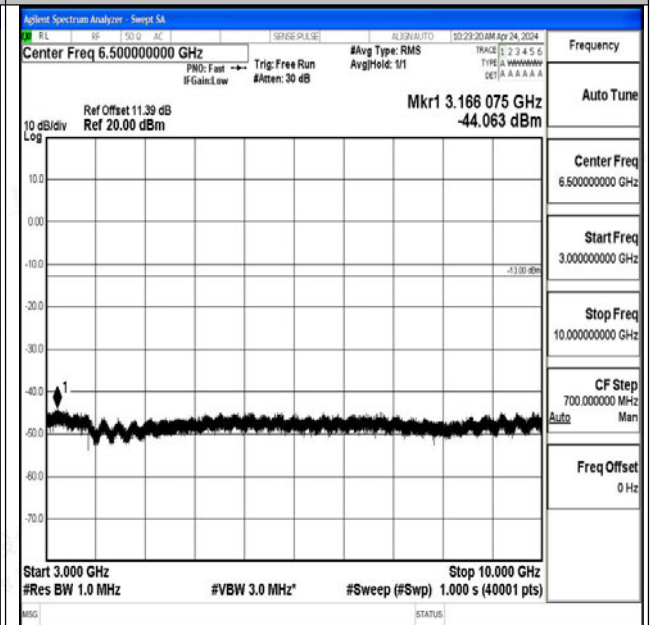
Band13_10MHz_16QAM_23230_1RB#0_0.15~30_0.15~30



Band13_10MHz_16QAM_23230_1RB#0_30~1000_30~1000



Band13_10MHz_16QAM_23230_1RB#0_1000~3000_1000~3000



Band13_10MHz_16QAM_23230_1RB#0_3000~10000_3000~10000

