

FCC Appendix RF Test Data for LTE Band 13

FCC ID : 2BVLN-QS

Company : Wuhan Qinggou Intelligent Technology Co., Ltd.

EUT : Qingo AI Vending

Model Number : QS-779CREW(G)-US

Report No. : CTA26030400805

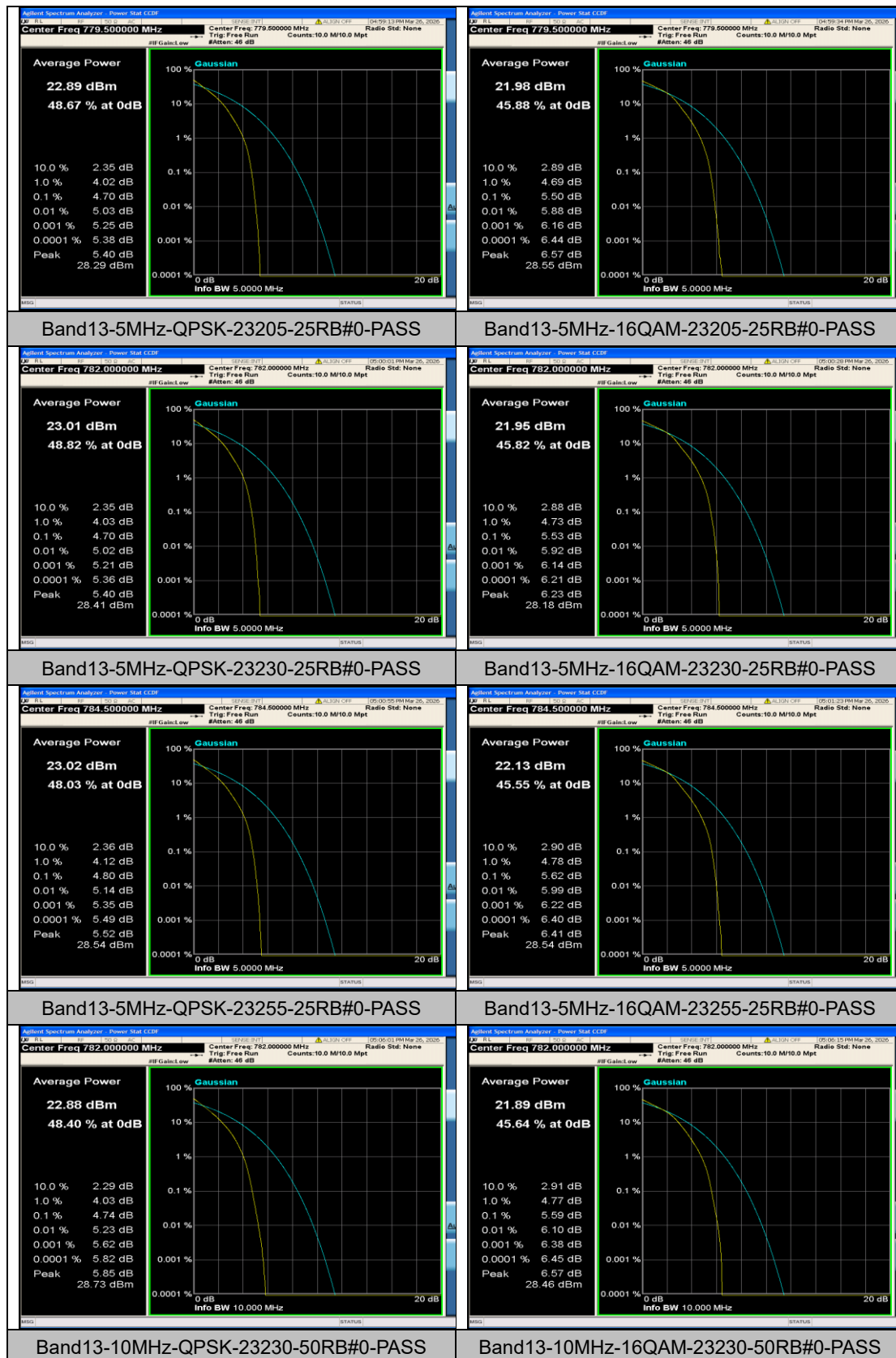
Reviewed By : Eric Wang

Appendix B: Peak-to-Average Ratio(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.70	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.50	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.70	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.53	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.80	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	5.62	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	4.74	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.59	13	PASS

Test Graphs

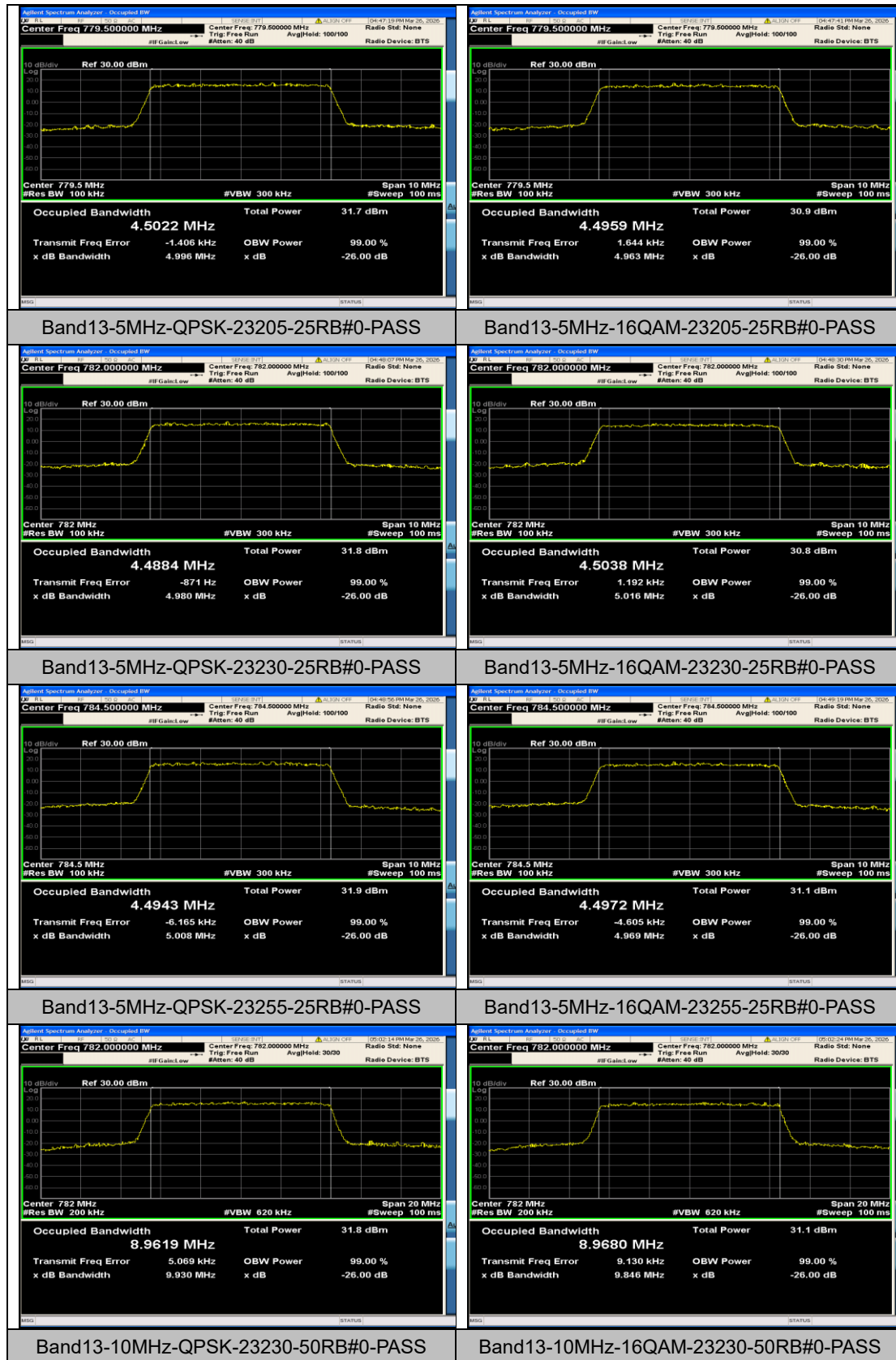


Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.5022	4.996	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.4959	4.963	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.4884	4.980	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.5038	5.016	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.4943	5.008	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.4972	4.969	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.9619	9.930	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.9680	9.846	PASS

Test Graphs

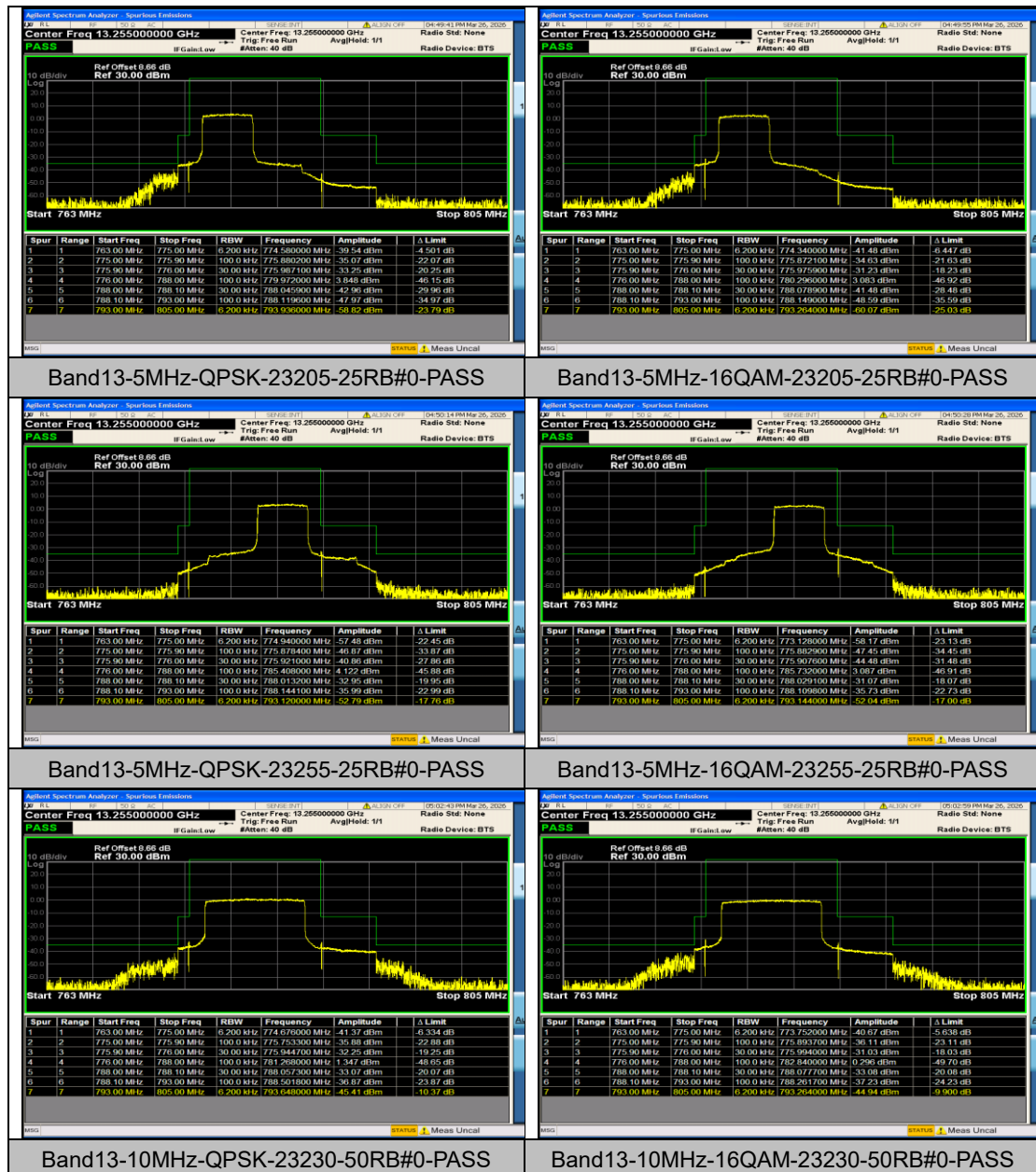


Appendix D: Band Edge

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	-39.54	PASS
Band13	5MHz	16QAM	23205	25RB#0	-41.48	PASS
Band13	5MHz	QPSK	23255	25RB#0	-52.79	PASS
Band13	5MHz	16QAM	23255	25RB#0	-52.04	PASS
Band13	10MHz	QPSK	23230	50RB#0	-41.37	PASS
Band13	10MHz	16QAM	23230	50RB#0	-40.67	PASS

Test Graphs



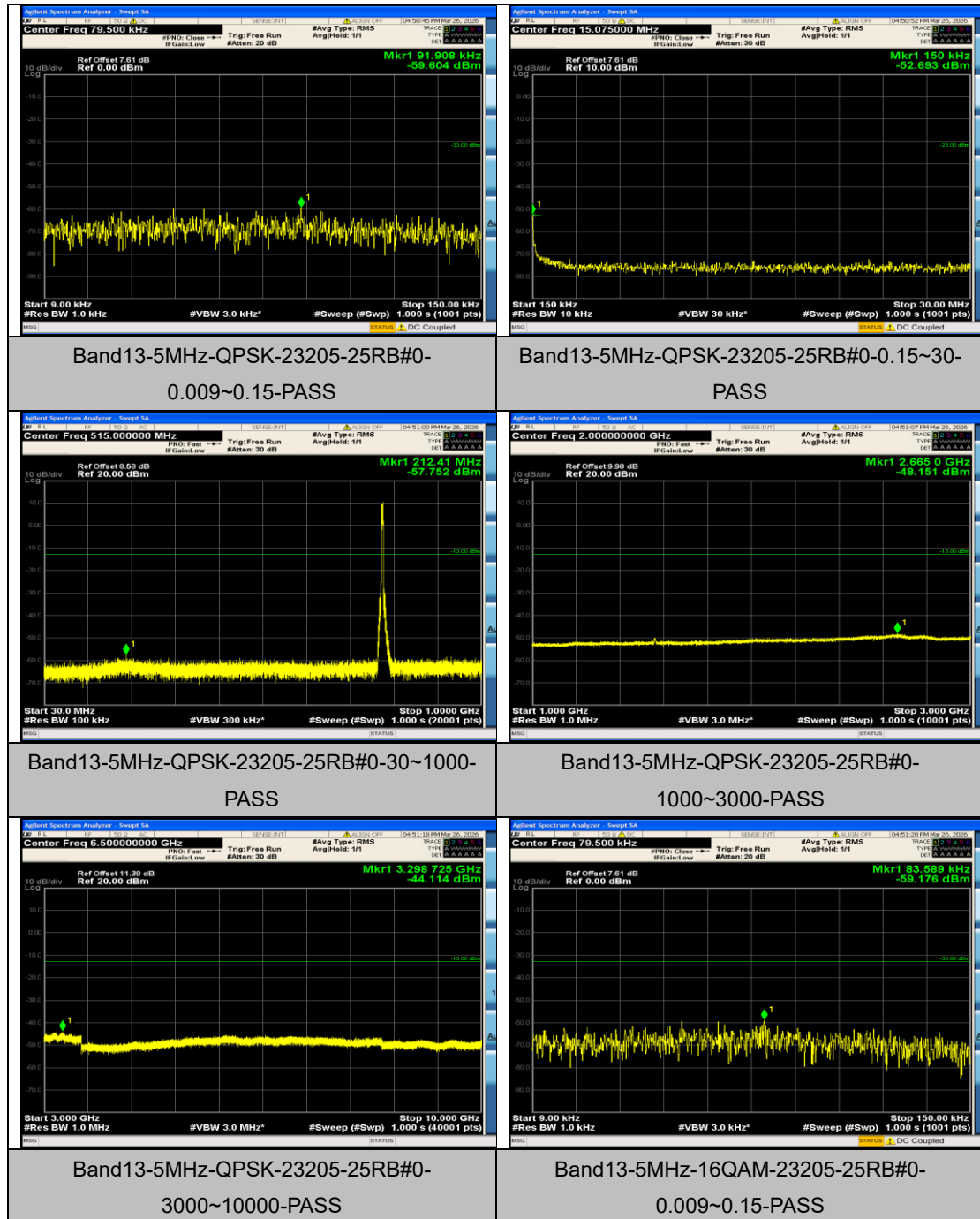
Appendix E: Conducted Spurious Emission

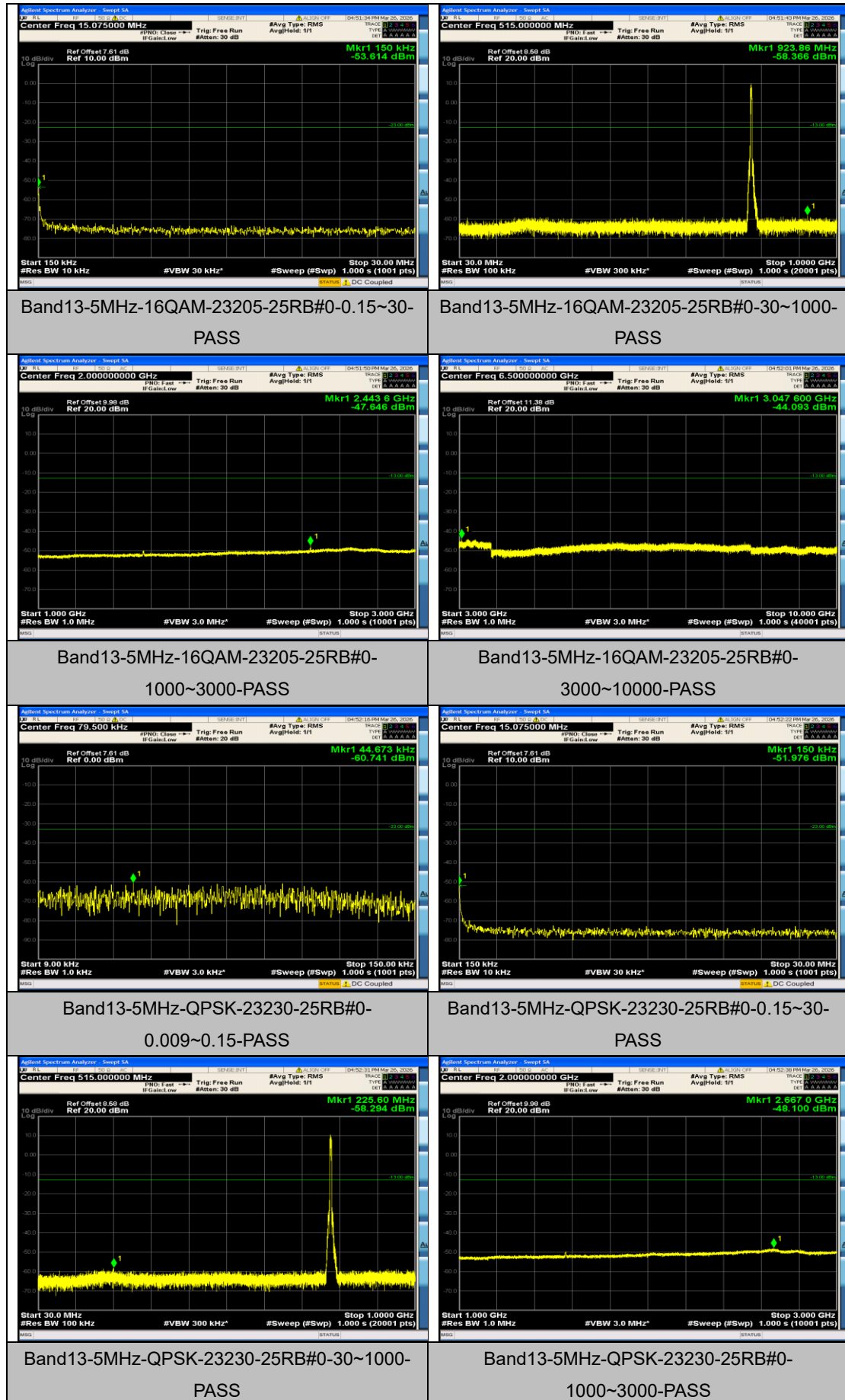
Test Result

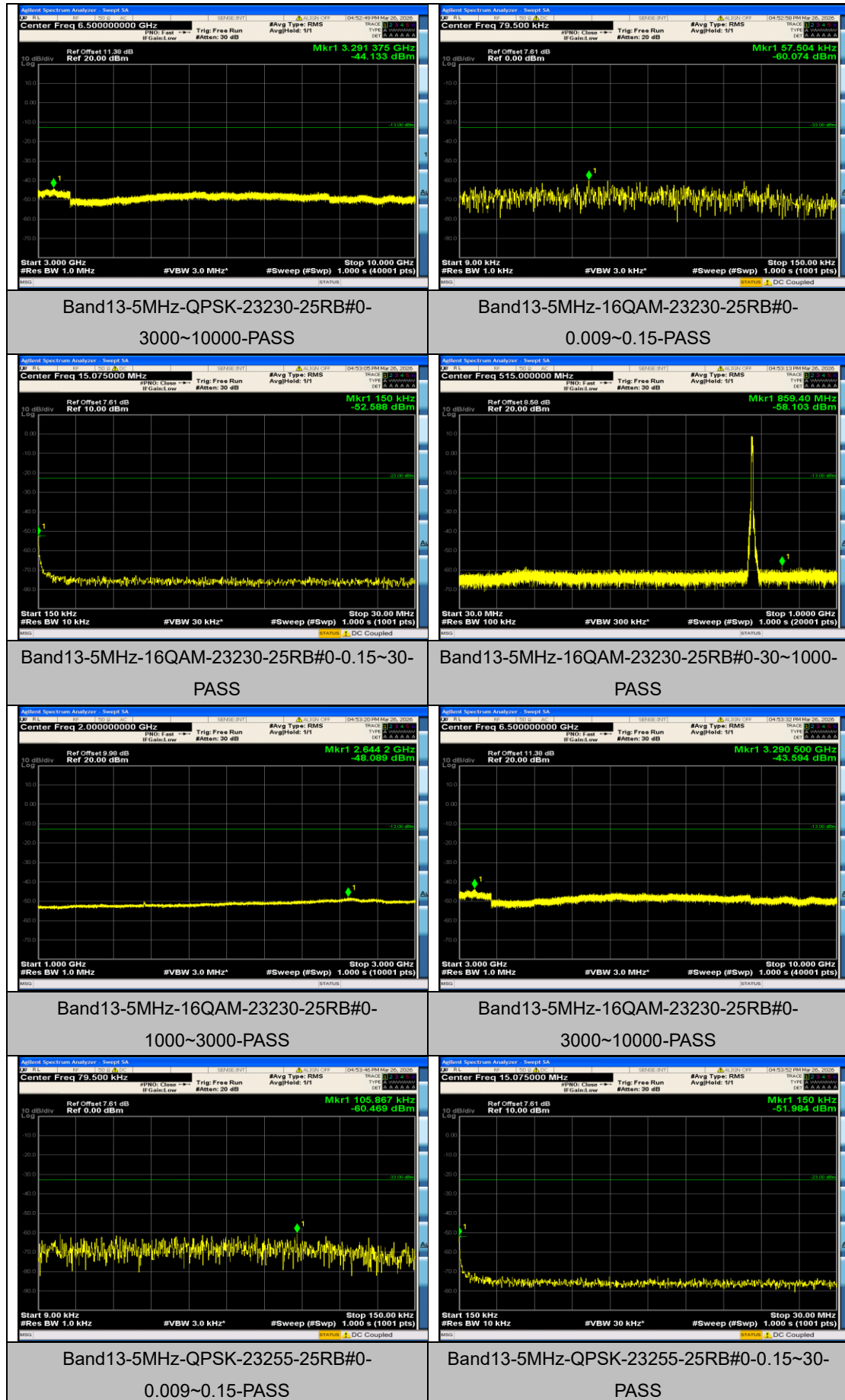
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	0.009~0.15	-59.60	PASS
Band13	5MHz	QPSK	23205	25RB#0	0.15~30	-52.69	PASS
Band13	5MHz	QPSK	23205	25RB#0	30~1000	-57.75	PASS
Band13	5MHz	QPSK	23205	25RB#0	1000~3000	-48.15	PASS
Band13	5MHz	QPSK	23205	25RB#0	3000~10000	-44.11	PASS
Band13	5MHz	16QAM	23205	25RB#0	0.009~0.15	-59.18	PASS
Band13	5MHz	16QAM	23205	25RB#0	0.15~30	-53.61	PASS
Band13	5MHz	16QAM	23205	25RB#0	30~1000	-58.37	PASS
Band13	5MHz	16QAM	23205	25RB#0	1000~3000	-47.65	PASS
Band13	5MHz	16QAM	23205	25RB#0	3000~10000	-44.09	PASS
Band13	5MHz	QPSK	23230	25RB#0	0.009~0.15	-60.74	PASS
Band13	5MHz	QPSK	23230	25RB#0	0.15~30	-51.98	PASS
Band13	5MHz	QPSK	23230	25RB#0	30~1000	-58.29	PASS
Band13	5MHz	QPSK	23230	25RB#0	1000~3000	-48.10	PASS
Band13	5MHz	QPSK	23230	25RB#0	3000~10000	-44.13	PASS
Band13	5MHz	16QAM	23230	25RB#0	0.009~0.15	-60.07	PASS
Band13	5MHz	16QAM	23230	25RB#0	0.15~30	-52.59	PASS
Band13	5MHz	16QAM	23230	25RB#0	30~1000	-58.10	PASS
Band13	5MHz	16QAM	23230	25RB#0	1000~3000	-48.09	PASS
Band13	5MHz	16QAM	23230	25RB#0	3000~10000	-43.59	PASS
Band13	5MHz	QPSK	23255	25RB#0	0.009~0.15	-60.47	PASS
Band13	5MHz	QPSK	23255	25RB#0	0.15~30	-51.98	PASS
Band13	5MHz	QPSK	23255	25RB#0	30~1000	-58.35	PASS
Band13	5MHz	QPSK	23255	25RB#0	1000~3000	-48.18	PASS
Band13	5MHz	QPSK	23255	25RB#0	3000~10000	-44.11	PASS
Band13	5MHz	16QAM	23255	25RB#0	0.009~0.15	-59.76	PASS
Band13	5MHz	16QAM	23255	25RB#0	0.15~30	-52.12	PASS
Band13	5MHz	16QAM	23255	25RB#0	30~1000	-57.85	PASS
Band13	5MHz	16QAM	23255	25RB#0	1000~3000	-48.01	PASS
Band13	5MHz	16QAM	23255	25RB#0	3000~10000	-44.35	PASS
Band13	10MHz	QPSK	23230	50RB#0	0.009~0.15	-59.48	PASS
Band13	10MHz	QPSK	23230	50RB#0	0.15~30	-55.05	PASS
Band13	10MHz	QPSK	23230	50RB#0	30~1000	-58.59	PASS
Band13	10MHz	QPSK	23230	50RB#0	1000~3000	-48.01	PASS
Band13	10MHz	QPSK	23230	50RB#0	3000~10000	-43.95	PASS
Band13	10MHz	16QAM	23230	50RB#0	0.009~0.15	-60.88	PASS

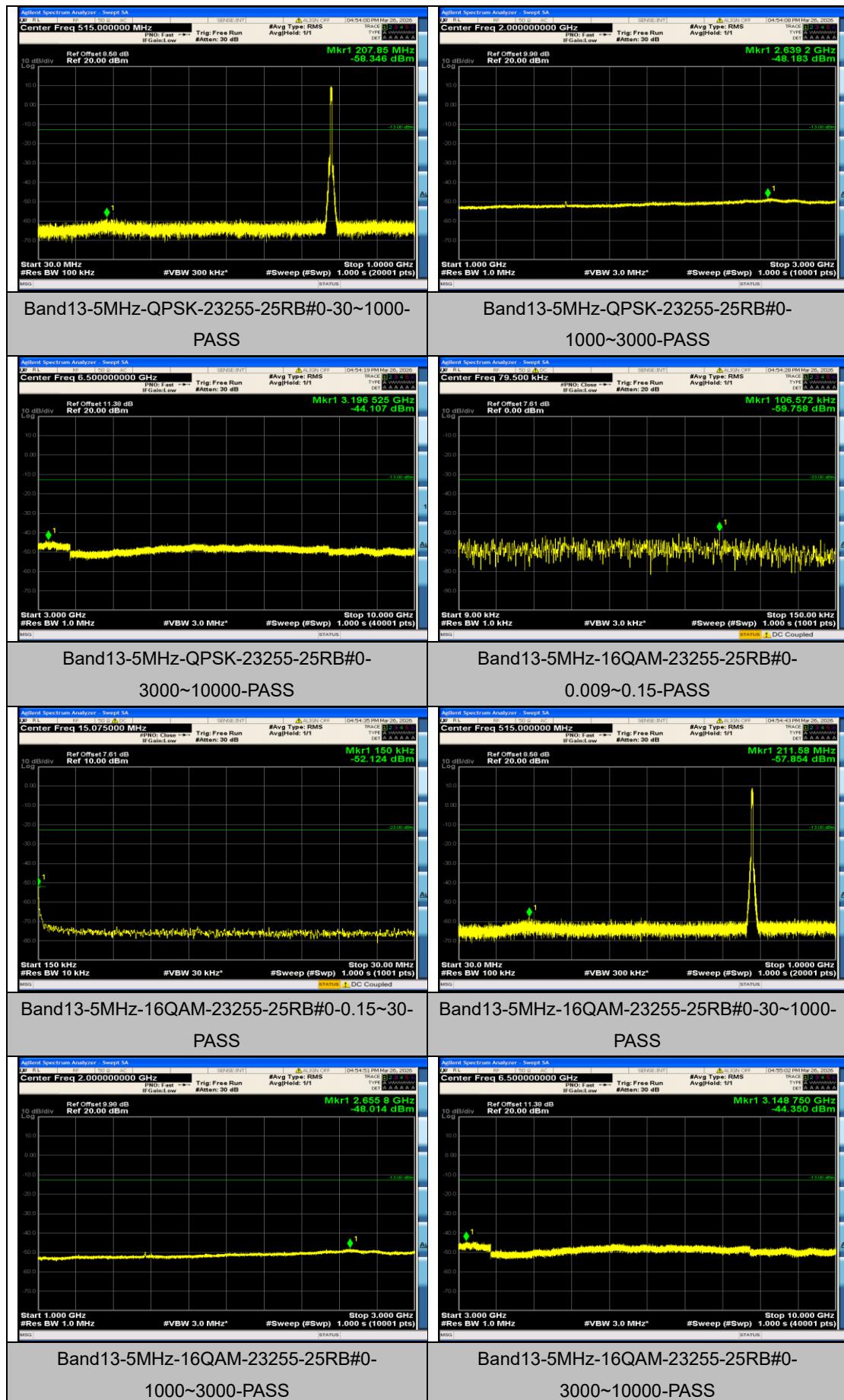
Band13	10MHz	16QAM	23230	50RB#0	0.15~30	-51.01	PASS
Band13	10MHz	16QAM	23230	50RB#0	30~1000	-58.71	PASS
Band13	10MHz	16QAM	23230	50RB#0	1000~3000	-48.22	PASS
Band13	10MHz	16QAM	23230	50RB#0	3000~10000	-44.12	PASS

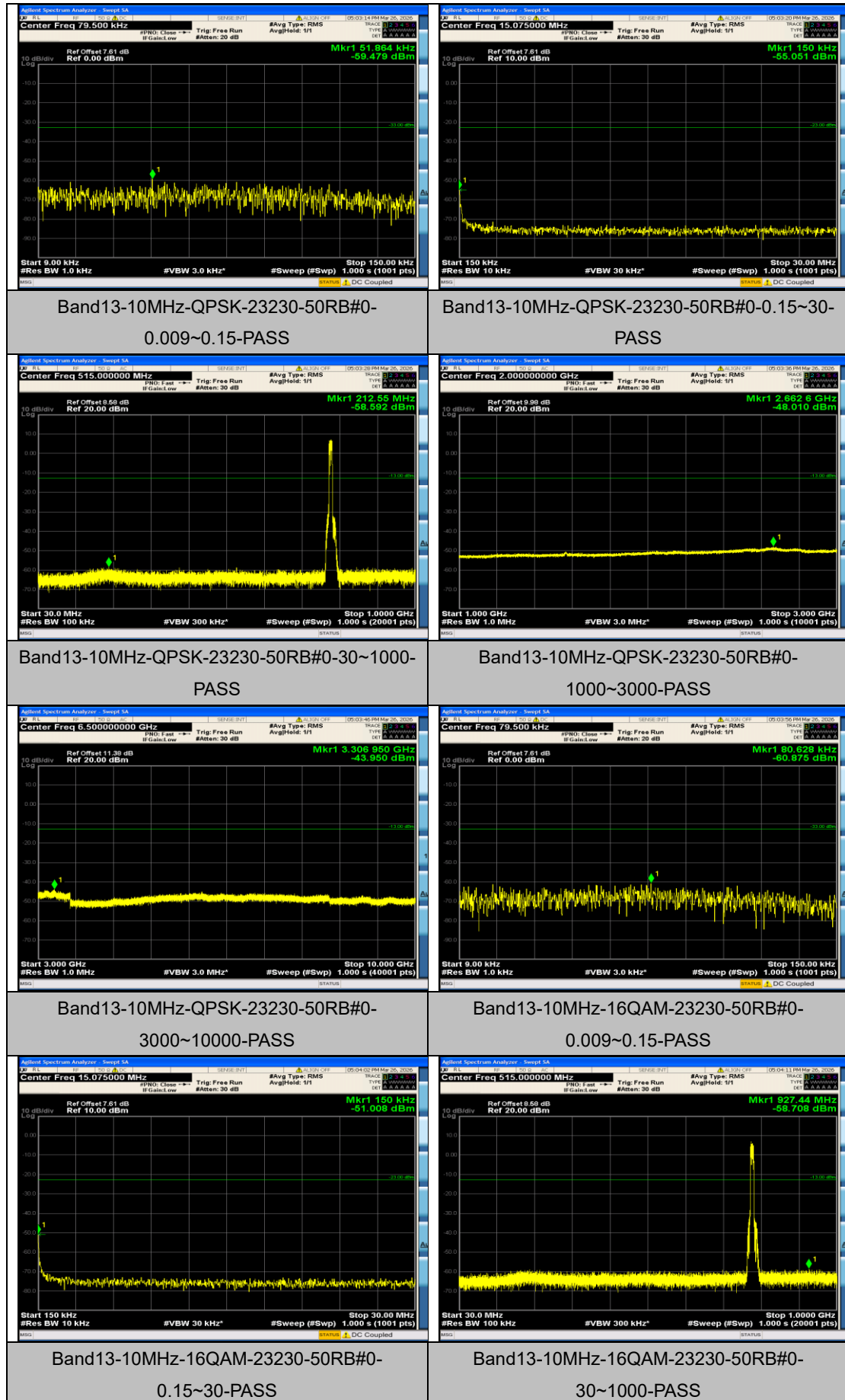
Test Graphs

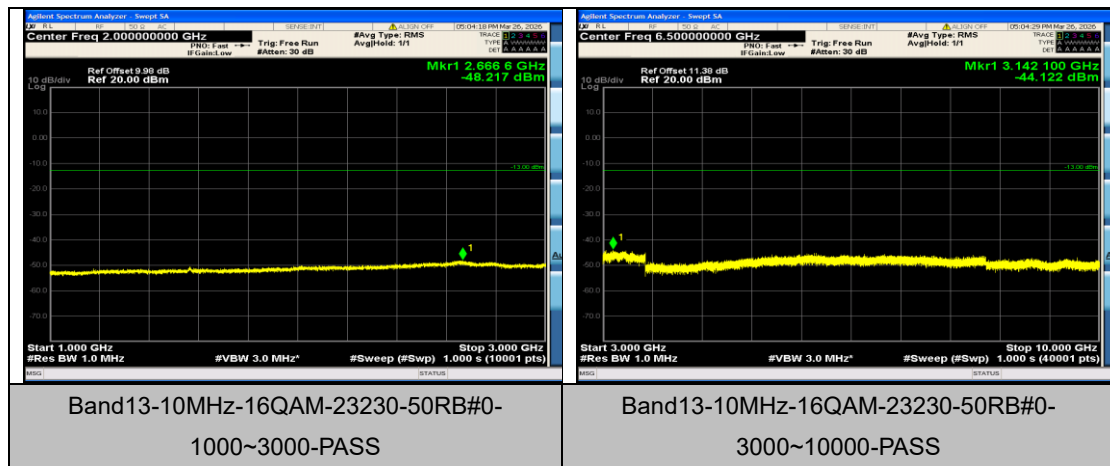












Appendix F: Frequency Stability

Test Result

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	NV	-30	3.65	0.004682	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	-20	1.40	0.001796	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	-10	2.85	0.003656	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	0	3.28	0.004208	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	10	-2.93	-0.003759	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	20	2.66	0.003412	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	30	3.66	0.004695	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	40	2.60	0.003335	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	50	-3.99	-0.005119	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-30	-1.86	-0.002386	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-20	-2.78	-0.003566	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-10	1.32	0.001693	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	0	3.36	0.004310	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	10	2.80	0.003592	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	20	1.27	0.001629	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	30	2.23	0.002861	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	40	4.01	0.005144	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	50	-1.75	-0.002245	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-30	2.46	0.003146	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-20	2.60	0.003325	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-10	3.83	0.004898	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	0	-1.90	-0.002430	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	10	-2.32	-0.002967	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	20	2.20	0.002813	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	30	-2.32	-0.002967	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	40	2.39	0.003056	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	50	1.52	0.001944	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-30	2.17	0.002775	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-20	-2.57	-0.003286	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-10	1.87	0.002391	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	0	3.58	0.004578	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	10	-1.59	-0.002033	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	20	-2.23	-0.002852	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	30	2.63	0.003363	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	40	2.32	0.002967	±2.5	PASS

Band13	5MHz	16QAM	23230	25RB#0	NV	50	-2.19	-0.002801	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-30	4.31	0.005494	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-20	3.95	0.005035	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-10	3.19	0.004066	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	0	2.56	0.003263	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	10	2.10	0.002677	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	20	4.71	0.006004	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	30	2.90	0.003697	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	40	2.86	0.003646	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	50	2.49	0.003174	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-30	2.92	0.003722	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-20	2.05	0.002613	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-10	2.49	0.003174	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	0	3.09	0.003939	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	10	-1.99	-0.002537	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	20	2.70	0.003442	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	30	-2.47	-0.003149	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	40	2.27	0.002894	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	50	2.36	0.003008	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-30	-3.09	-0.003951	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-20	2.70	0.003453	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-10	-2.88	-0.003683	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	0	1.34	0.001714	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	10	2.03	0.002596	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	20	3.96	0.005064	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	30	1.95	0.002494	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	40	2.89	0.003696	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	50	2.27	0.002903	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-30	1.43	0.001829	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-20	2.43	0.003107	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-10	3.53	0.004514	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	0	1.14	0.001458	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	10	2.10	0.002685	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	20	3.46	0.004425	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	30	2.72	0.003478	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	40	2.60	0.003325	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	50	1.96	0.002506	±2.5	PASS