



TD-LTE/LTE FDD terminal

M/N:HP-N323

FCC ID:2BN5N-HPN323

Applicant:HPYJ USA LLC

Appendix for LTE Band 38



Appendix A: Conducted Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band38	5MHz	QPSK	37775	1RB#0	23.84	PASS
Band38	5MHz	QPSK	37775	1RB#12	23.98	PASS
Band38	5MHz	QPSK	37775	1RB#24	24.05	PASS
Band38	5MHz	QPSK	37775	12RB#0	22.94	PASS
Band38	5MHz	QPSK	37775	12RB#6	22.95	PASS
Band38	5MHz	QPSK	37775	12RB#13	23.05	PASS
Band38	5MHz	QPSK	37775	25RB#0	23.04	PASS
Band38	5MHz	16QAM	37775	1RB#0	23.25	PASS
Band38	5MHz	16QAM	37775	1RB#12	23.43	PASS
Band38	5MHz	16QAM	37775	1RB#24	23.40	PASS
Band38	5MHz	16QAM	37775	12RB#0	22.05	PASS
Band38	5MHz	16QAM	37775	12RB#6	22.05	PASS
Band38	5MHz	16QAM	37775	12RB#13	22.19	PASS
Band38	5MHz	16QAM	37775	25RB#0	22.16	PASS
Band38	5MHz	QPSK	38000	1RB#0	25.15	PASS
Band38	5MHz	QPSK	38000	1RB#12	25.23	PASS
Band38	5MHz	QPSK	38000	1RB#24	25.31	PASS
Band38	5MHz	QPSK	38000	12RB#0	24.26	PASS
Band38	5MHz	QPSK	38000	12RB#6	24.24	PASS
Band38	5MHz	QPSK	38000	12RB#13	24.36	PASS
Band38	5MHz	QPSK	38000	25RB#0	24.32	PASS
Band38	5MHz	16QAM	38000	1RB#0	24.32	PASS
Band38	5MHz	16QAM	38000	1RB#12	24.49	PASS
Band38	5MHz	16QAM	38000	1RB#24	24.49	PASS
Band38	5MHz	16QAM	38000	12RB#0	23.43	PASS
Band38	5MHz	16QAM	38000	12RB#6	23.43	PASS
Band38	5MHz	16QAM	38000	12RB#13	23.55	PASS
Band38	5MHz	16QAM	38000	25RB#0	23.46	PASS
Band38	5MHz	QPSK	38225	1RB#0	24.64	PASS
Band38	5MHz	QPSK	38225	1RB#12	24.48	PASS
Band38	5MHz	QPSK	38225	1RB#24	24.26	PASS
Band38	5MHz	QPSK	38225	12RB#0	23.57	PASS
Band38	5MHz	QPSK	38225	12RB#6	23.59	PASS
Band38	5MHz	QPSK	38225	12RB#13	23.45	PASS
Band38	5MHz	QPSK	38225	25RB#0	23.52	PASS
Band38	5MHz	16QAM	38225	1RB#0	23.68	PASS
Band38	5MHz	16QAM	38225	1RB#12	23.57	PASS

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Band38	5MHz	16QAM	38225	1RB#24	23.38	PASS
Band38	5MHz	16QAM	38225	12RB#0	22.69	PASS
Band38	5MHz	16QAM	38225	12RB#6	22.70	PASS
Band38	5MHz	16QAM	38225	12RB#13	22.57	PASS
Band38	5MHz	16QAM	38225	25RB#0	22.64	PASS
Band38	10MHz	QPSK	37800	1RB#0	24.04	PASS
Band38	10MHz	QPSK	37800	1RB#24	24.21	PASS
Band38	10MHz	QPSK	37800	1RB#49	24.57	PASS
Band38	10MHz	QPSK	37800	25RB#0	23.06	PASS
Band38	10MHz	QPSK	37800	25RB#12	23.08	PASS
Band38	10MHz	QPSK	37800	25RB#25	23.46	PASS
Band38	10MHz	QPSK	37800	50RB#0	23.21	PASS
Band38	10MHz	16QAM	37800	1RB#0	23.26	PASS
Band38	10MHz	16QAM	37800	1RB#24	23.50	PASS
Band38	10MHz	16QAM	37800	1RB#49	23.78	PASS
Band38	10MHz	16QAM	37800	25RB#0	22.24	PASS
Band38	10MHz	16QAM	37800	25RB#12	22.24	PASS
Band38	10MHz	16QAM	37800	25RB#25	22.63	PASS
Band38	10MHz	QPSK	38000	1RB#0	25.22	PASS
Band38	10MHz	QPSK	38000	1RB#24	25.43	PASS
Band38	10MHz	QPSK	38000	1RB#49	25.51	PASS
Band38	10MHz	QPSK	38000	25RB#0	24.25	PASS
Band38	10MHz	QPSK	38000	25RB#12	24.26	PASS
Band38	10MHz	QPSK	38000	25RB#25	24.46	PASS
Band38	10MHz	QPSK	38000	50RB#0	24.41	PASS
Band38	10MHz	16QAM	38000	1RB#0	23.93	PASS
Band38	10MHz	16QAM	38000	1RB#24	24.23	PASS
Band38	10MHz	16QAM	38000	1RB#49	24.29	PASS
Band38	10MHz	16QAM	38000	25RB#0	23.38	PASS
Band38	10MHz	16QAM	38000	25RB#12	23.39	PASS
Band38	10MHz	16QAM	38000	25RB#25	23.60	PASS
Band38	10MHz	QPSK	38200	1RB#0	25.11	PASS
Band38	10MHz	QPSK	38200	1RB#24	24.86	PASS
Band38	10MHz	QPSK	38200	1RB#49	24.39	PASS
Band38	10MHz	QPSK	38200	25RB#0	24.01	PASS
Band38	10MHz	QPSK	38200	25RB#12	23.94	PASS
Band38	10MHz	QPSK	38200	25RB#25	23.60	PASS
Band38	10MHz	QPSK	38200	50RB#0	23.85	PASS
Band38	10MHz	16QAM	38200	1RB#0	24.08	PASS
Band38	10MHz	16QAM	38200	1RB#24	23.87	PASS
Band38	10MHz	16QAM	38200	1RB#49	23.44	PASS
Band38	10MHz	16QAM	38200	25RB#0	23.13	PASS



Band38	10MHz	16QAM	38200	25RB#12	23.14	PASS
Band38	10MHz	16QAM	38200	25RB#25	22.76	PASS
Band38	15MHz	QPSK	37825	1RB#0	24.16	PASS
Band38	15MHz	QPSK	37825	1RB#38	24.64	PASS
Band38	15MHz	QPSK	37825	1RB#74	24.97	PASS
Band38	15MHz	QPSK	37825	38RB#0	23.61	PASS
Band38	15MHz	QPSK	37825	38RB#18	23.64	PASS
Band38	15MHz	QPSK	37825	38RB#37	23.64	PASS
Band38	15MHz	QPSK	37825	75RB#0	23.66	PASS
Band38	15MHz	16QAM	37825	1RB#0	23.37	PASS
Band38	15MHz	16QAM	37825	1RB#38	23.86	PASS
Band38	15MHz	16QAM	37825	1RB#74	24.23	PASS
Band38	15MHz	16QAM	37825	38RB#0	23.64	PASS
Band38	15MHz	16QAM	37825	38RB#18	23.64	PASS
Band38	15MHz	16QAM	37825	38RB#37	23.64	PASS
Band38	15MHz	QPSK	38000	1RB#0	25.17	PASS
Band38	15MHz	QPSK	38000	1RB#38	25.55	PASS
Band38	15MHz	QPSK	38000	1RB#74	25.60	PASS
Band38	15MHz	QPSK	38000	38RB#0	24.51	PASS
Band38	15MHz	QPSK	38000	38RB#18	24.50	PASS
Band38	15MHz	QPSK	38000	38RB#37	24.53	PASS
Band38	15MHz	QPSK	38000	75RB#0	24.53	PASS
Band38	15MHz	16QAM	38000	1RB#0	24.17	PASS
Band38	15MHz	16QAM	38000	1RB#38	24.59	PASS
Band38	15MHz	16QAM	38000	1RB#74	24.64	PASS
Band38	15MHz	16QAM	38000	38RB#0	24.50	PASS
Band38	15MHz	16QAM	38000	38RB#18	24.53	PASS
Band38	15MHz	16QAM	38000	38RB#37	24.53	PASS
Band38	15MHz	QPSK	38175	1RB#0	25.52	PASS
Band38	15MHz	QPSK	38175	1RB#38	25.20	PASS
Band38	15MHz	QPSK	38175	1RB#74	24.59	PASS
Band38	15MHz	QPSK	38175	38RB#0	24.19	PASS
Band38	15MHz	QPSK	38175	38RB#18	24.19	PASS
Band38	15MHz	QPSK	38175	38RB#37	24.19	PASS
Band38	15MHz	QPSK	38175	75RB#0	24.18	PASS
Band38	15MHz	16QAM	38175	1RB#0	24.76	PASS
Band38	15MHz	16QAM	38175	1RB#38	24.46	PASS
Band38	15MHz	16QAM	38175	1RB#74	23.85	PASS
Band38	15MHz	16QAM	38175	38RB#0	24.19	PASS
Band38	15MHz	16QAM	38175	38RB#18	24.19	PASS
Band38	15MHz	16QAM	38175	38RB#37	24.19	PASS
Band38	20MHz	QPSK	37850	1RB#0	23.99	PASS



Band38	20MHz	QPSK	37850	1RB#49	24.75	PASS
Band38	20MHz	QPSK	37850	1RB#99	25.14	PASS
Band38	20MHz	QPSK	37850	50RB#0	23.32	PASS
Band38	20MHz	QPSK	37850	50RB#25	23.30	PASS
Band38	20MHz	QPSK	37850	50RB#50	23.97	PASS
Band38	20MHz	QPSK	37850	100RB#0	23.74	PASS
Band38	20MHz	16QAM	37850	1RB#0	23.11	PASS
Band38	20MHz	16QAM	37850	1RB#49	23.86	PASS
Band38	20MHz	16QAM	37850	1RB#99	24.19	PASS
Band38	20MHz	QPSK	38000	1RB#0	24.88	PASS
Band38	20MHz	QPSK	38000	1RB#49	25.53	PASS
Band38	20MHz	QPSK	38000	1RB#99	25.49	PASS
Band38	20MHz	QPSK	38000	50RB#0	24.25	PASS
Band38	20MHz	QPSK	38000	50RB#25	24.23	PASS
Band38	20MHz	QPSK	38000	50RB#50	24.60	PASS
Band38	20MHz	QPSK	38000	100RB#0	24.40	PASS
Band38	20MHz	16QAM	38000	1RB#0	24.02	PASS
Band38	20MHz	16QAM	38000	1RB#49	24.63	PASS
Band38	20MHz	16QAM	38000	1RB#99	24.58	PASS
Band38	20MHz	QPSK	38150	1RB#0	25.46	PASS
Band38	20MHz	QPSK	38150	1RB#49	25.34	PASS
Band38	20MHz	QPSK	38150	1RB#99	24.49	PASS
Band38	20MHz	QPSK	38150	50RB#0	24.45	PASS
Band38	20MHz	QPSK	38150	50RB#25	24.52	PASS
Band38	20MHz	QPSK	38150	50RB#50	24.04	PASS
Band38	20MHz	QPSK	38150	100RB#0	24.25	PASS
Band38	20MHz	16QAM	38150	1RB#0	24.56	PASS
Band38	20MHz	16QAM	38150	1RB#49	24.48	PASS
Band38	20MHz	16QAM	38150	1RB#99	23.58	PASS



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

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band38	5MHz	QPSK	37775	1RB#0	8.41	13	PASS
Band38	5MHz	QPSK	37775	25RB#0	8.42	13	PASS
Band38	5MHz	16QAM	37775	1RB#0	8.42	13	PASS
Band38	5MHz	16QAM	37775	25RB#0	8.43	13	PASS
Band38	5MHz	QPSK	38000	1RB#0	8.42	13	PASS
Band38	5MHz	QPSK	38000	25RB#0	8.42	13	PASS
Band38	5MHz	16QAM	38000	1RB#0	8.41	13	PASS
Band38	5MHz	16QAM	38000	25RB#0	8.41	13	PASS
Band38	5MHz	QPSK	38225	1RB#0	8.42	13	PASS
Band38	5MHz	QPSK	38225	25RB#0	8.43	13	PASS
Band38	5MHz	16QAM	38225	1RB#0	8.42	13	PASS
Band38	5MHz	16QAM	38225	25RB#0	8.42	13	PASS
Band38	10MHz	QPSK	37800	1RB#0	8.43	13	PASS
Band38	10MHz	QPSK	37800	50RB#0	8.44	13	PASS
Band38	10MHz	16QAM	37800	1RB#0	8.45	13	PASS
Band38	10MHz	QPSK	38000	1RB#0	8.43	13	PASS
Band38	10MHz	QPSK	38000	50RB#0	8.44	13	PASS
Band38	10MHz	16QAM	38000	1RB#0	8.43	13	PASS
Band38	10MHz	QPSK	38200	1RB#0	8.43	13	PASS
Band38	10MHz	QPSK	38200	50RB#0	8.44	13	PASS
Band38	10MHz	16QAM	38200	1RB#0	8.44	13	PASS
Band38	15MHz	QPSK	37825	1RB#0	8.43	13	PASS
Band38	15MHz	QPSK	37825	75RB#0	8.41	13	PASS
Band38	15MHz	16QAM	37825	1RB#0	8.44	13	PASS
Band38	15MHz	QPSK	38000	1RB#0	8.42	13	PASS
Band38	15MHz	QPSK	38000	75RB#0	8.43	13	PASS
Band38	15MHz	16QAM	38000	1RB#0	8.42	13	PASS
Band38	15MHz	QPSK	38175	1RB#0	8.42	13	PASS
Band38	15MHz	QPSK	38175	75RB#0	8.43	13	PASS
Band38	15MHz	16QAM	38175	1RB#0	8.42	13	PASS
Band38	20MHz	QPSK	37850	1RB#0	8.42	13	PASS
Band38	20MHz	QPSK	37850	100RB#0	8.43	13	PASS
Band38	20MHz	QPSK	38000	1RB#0	8.42	13	PASS
Band38	20MHz	QPSK	38000	100RB#0	8.41	13	PASS
Band38	20MHz	QPSK	38150	1RB#0	8.43	13	PASS
Band38	20MHz	QPSK	38150	100RB#0	8.43	13	PASS

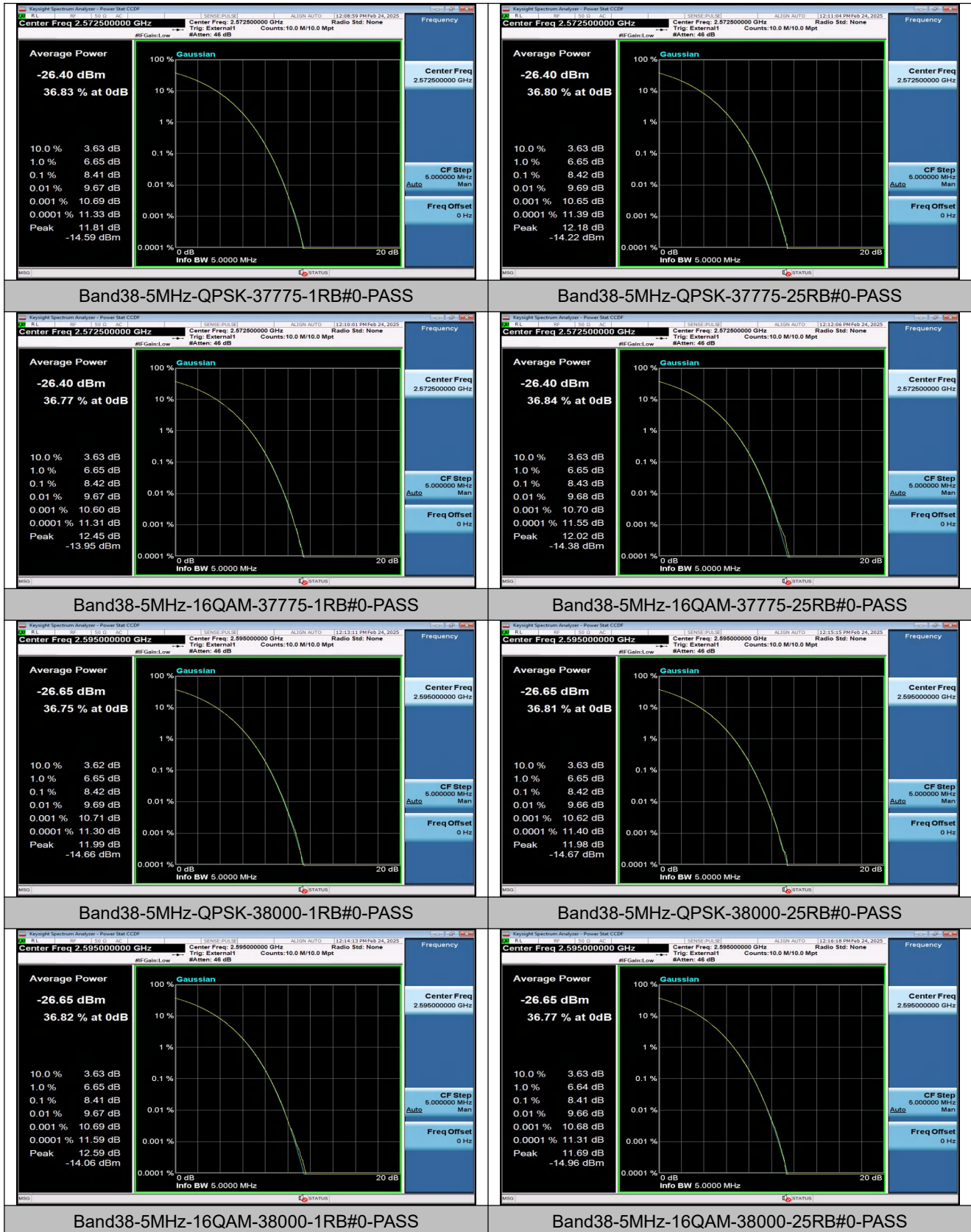


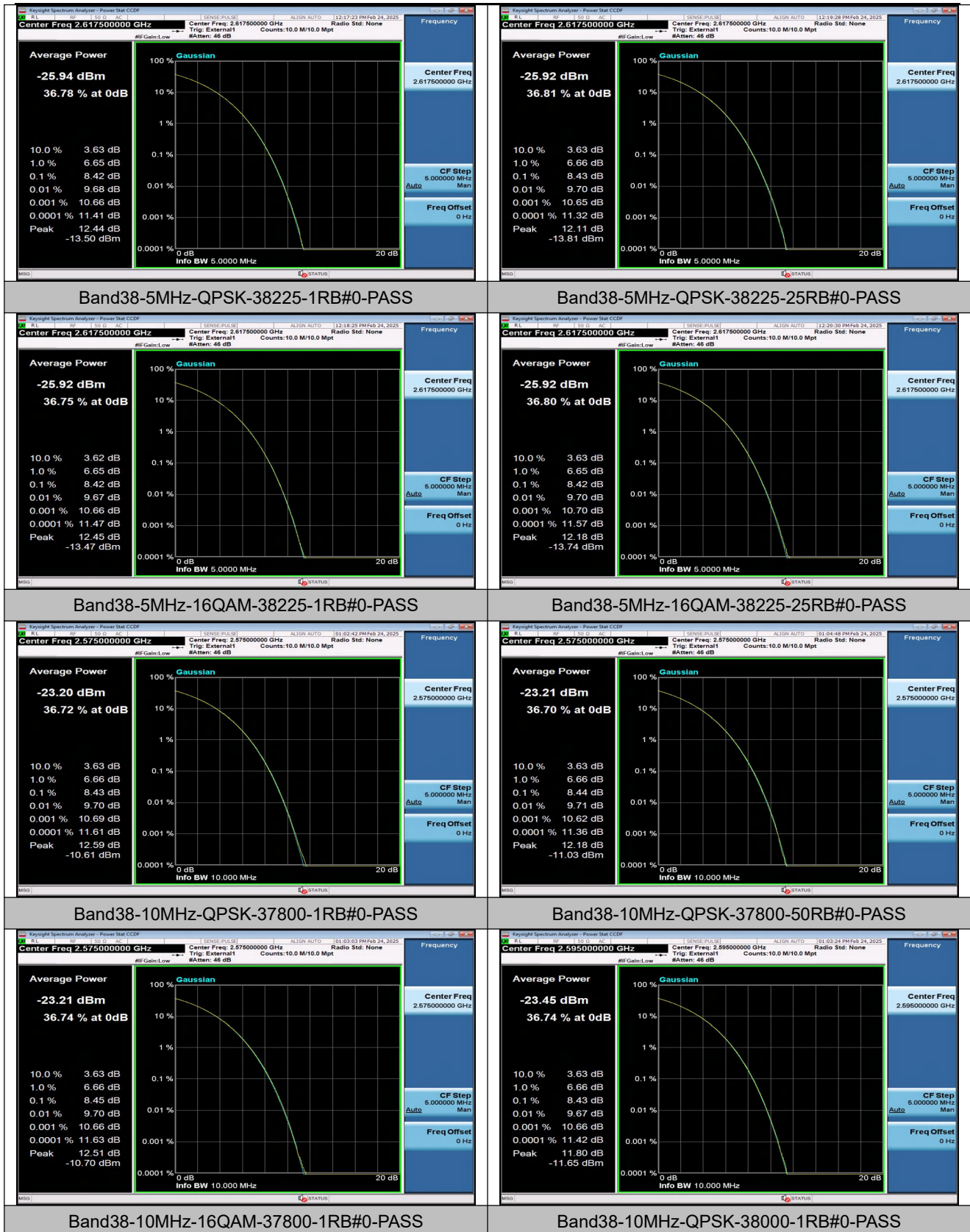
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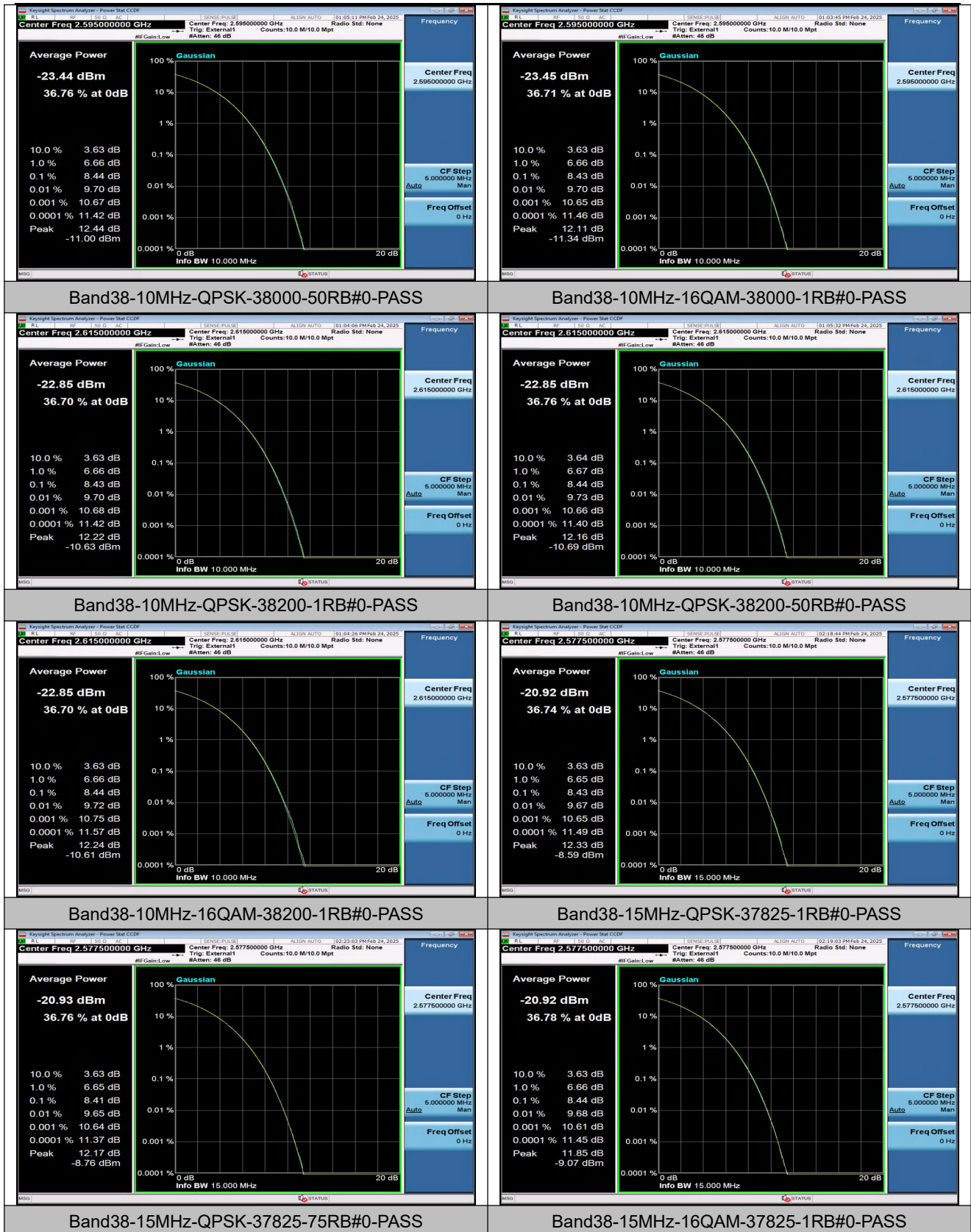
No.:GRCTR250202015-08

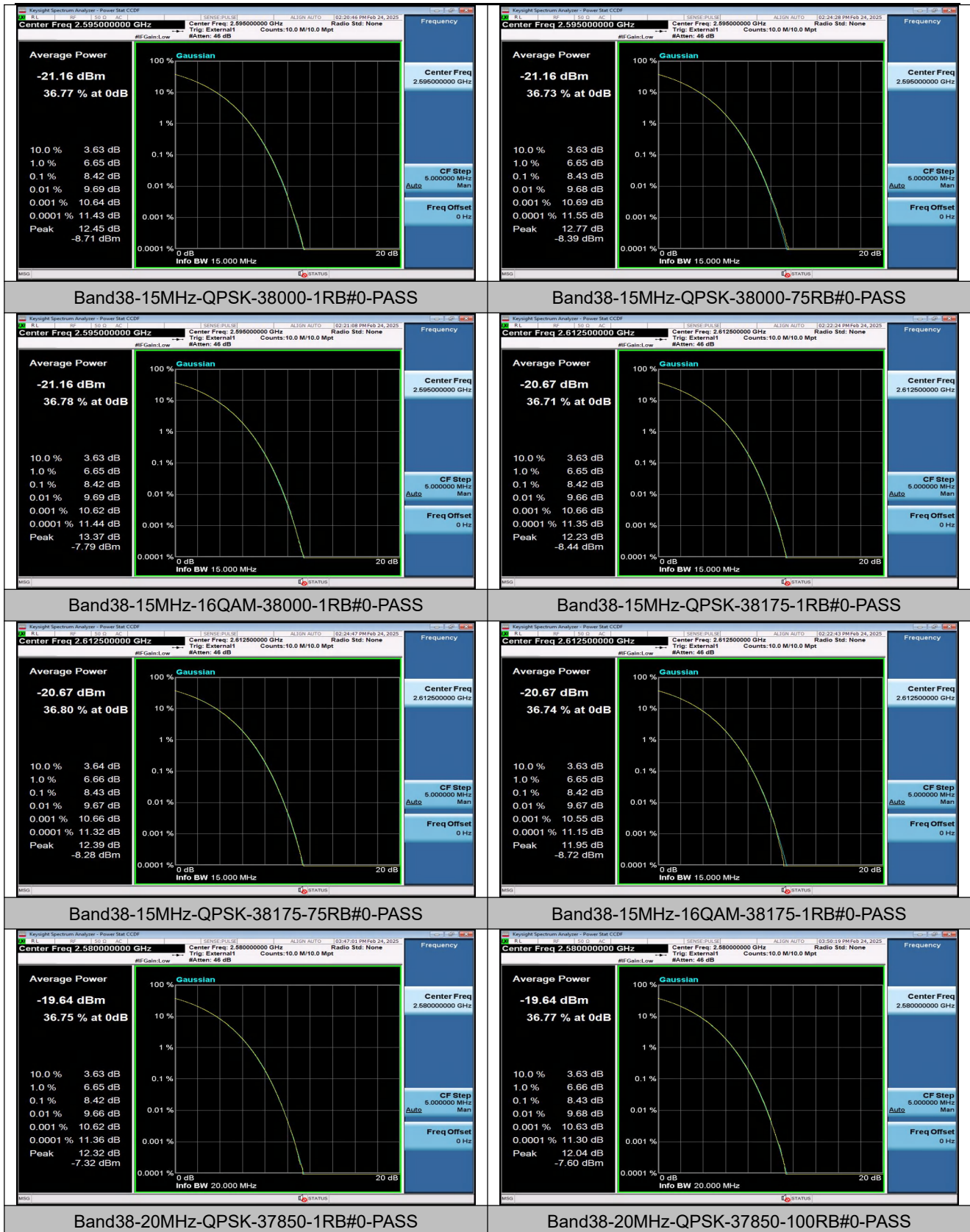


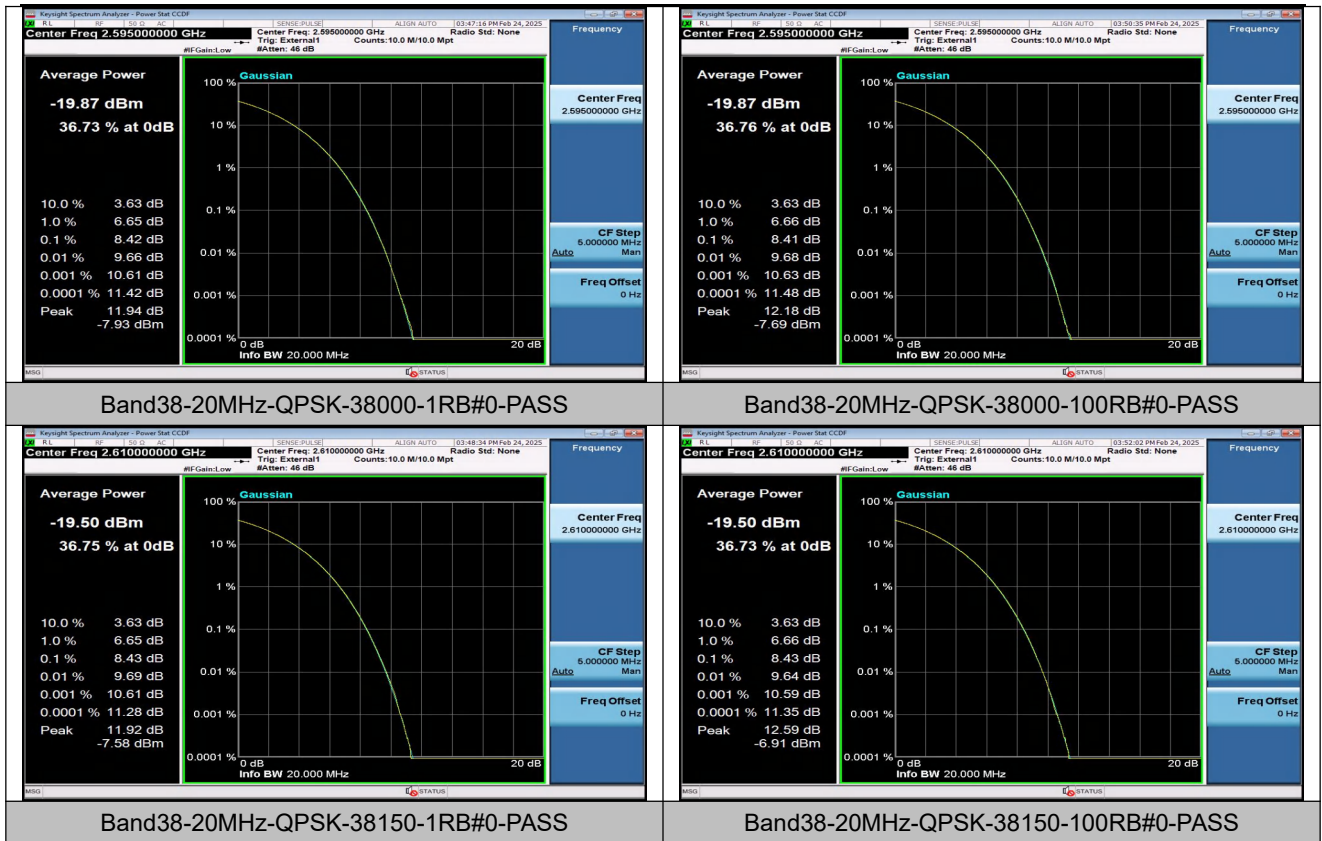
Test Graphs













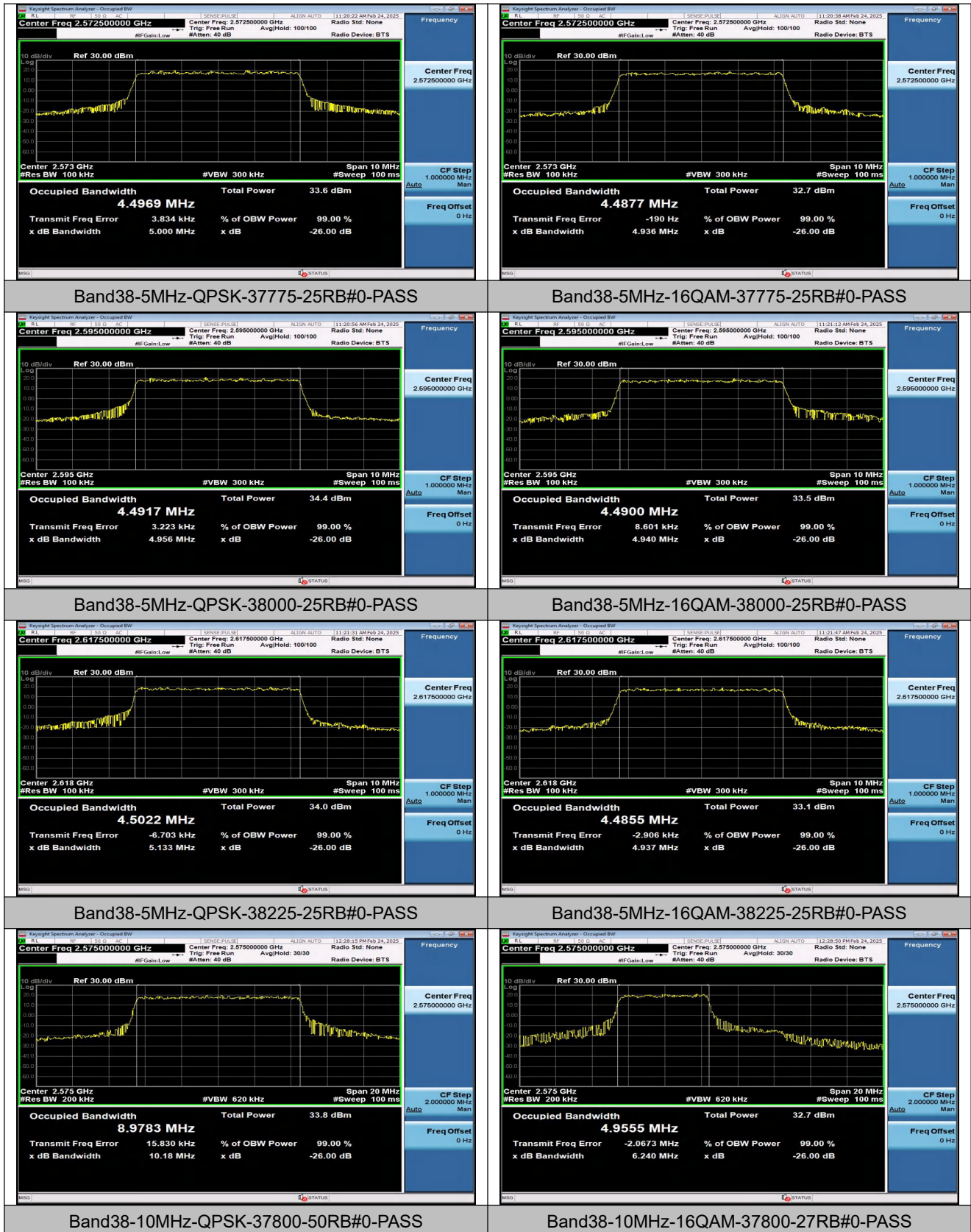
Appendix C: 26dB Bandwidth and Occupied Bandwidth

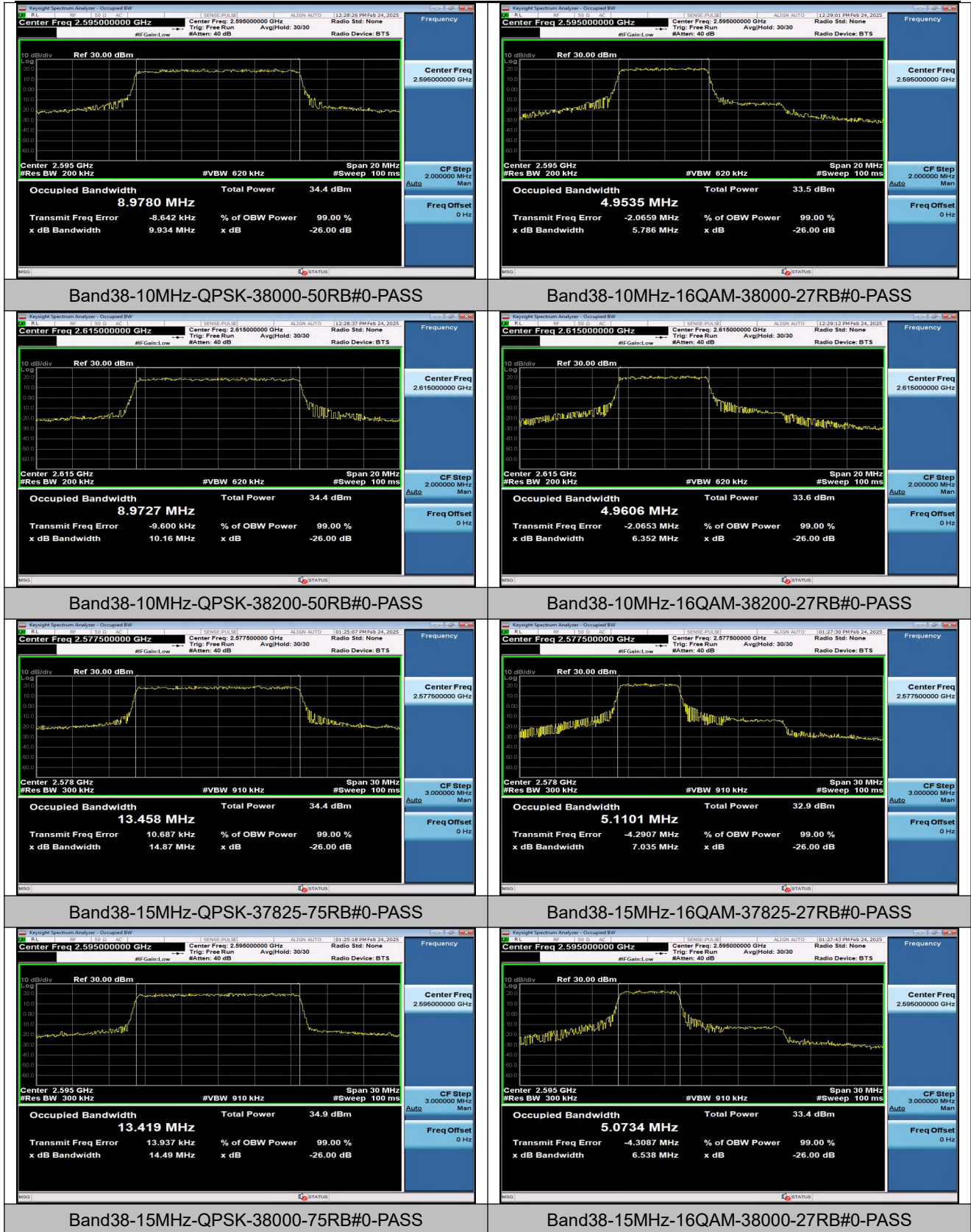
Test Result

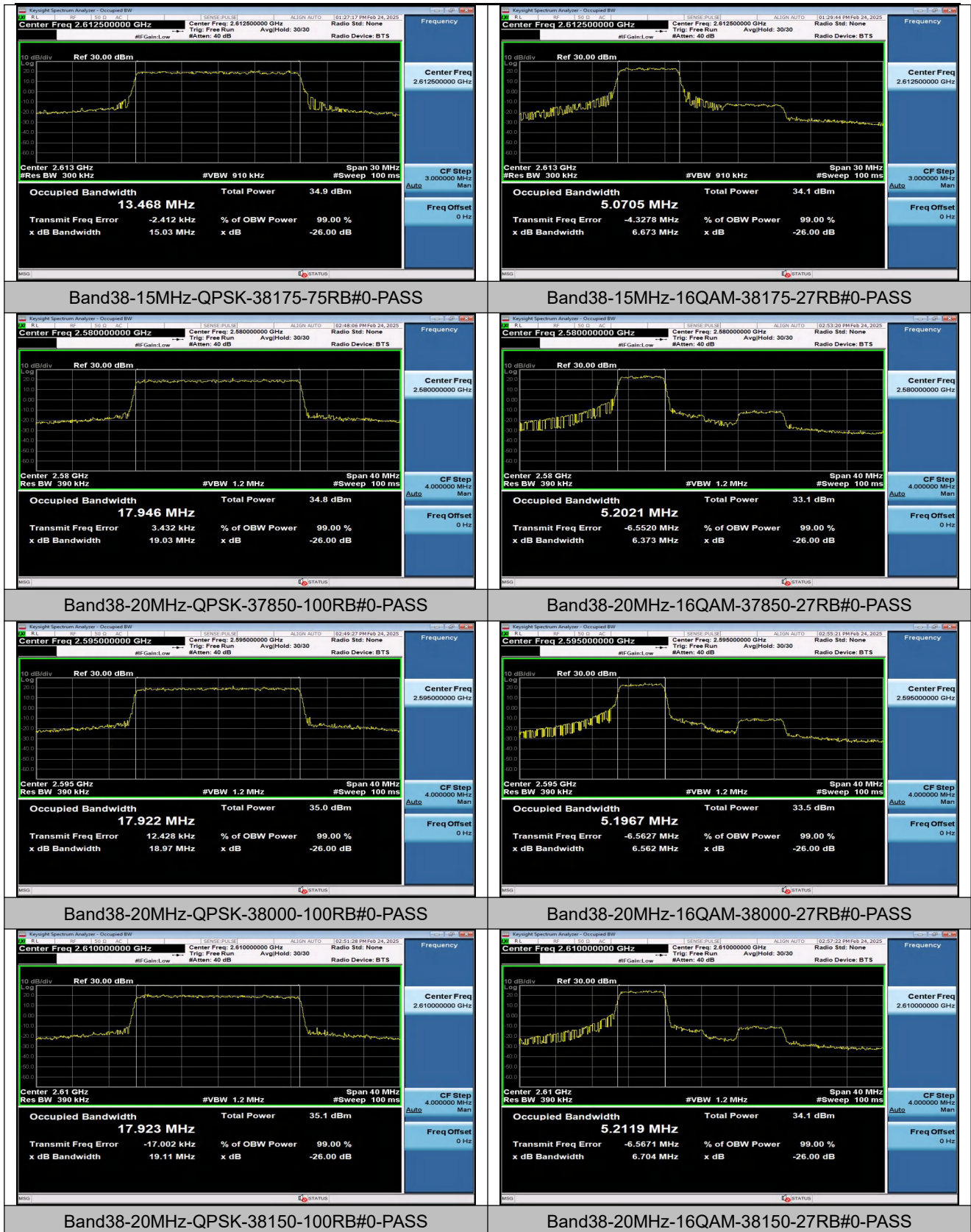
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band38	5MHz	QPSK	37775	25RB#0	4.4969	5.000	PASS
Band38	5MHz	16QAM	37775	25RB#0	4.4877	4.936	PASS
Band38	5MHz	QPSK	38000	25RB#0	4.4917	4.956	PASS
Band38	5MHz	16QAM	38000	25RB#0	4.4900	4.940	PASS
Band38	5MHz	QPSK	38225	25RB#0	4.5022	5.133	PASS
Band38	5MHz	16QAM	38225	25RB#0	4.4855	4.937	PASS
Band38	10MHz	QPSK	37800	50RB#0	8.9783	10.18	PASS
Band38	10MHz	16QAM	37800	27RB#0	4.9555	6.240	PASS
Band38	10MHz	QPSK	38000	50RB#0	8.9780	9.934	PASS
Band38	10MHz	16QAM	38000	27RB#0	4.9535	5.786	PASS
Band38	10MHz	QPSK	38200	50RB#0	8.9727	10.16	PASS
Band38	10MHz	16QAM	38200	27RB#0	4.9606	6.352	PASS
Band38	15MHz	QPSK	37825	75RB#0	13.458	14.87	PASS
Band38	15MHz	16QAM	37825	27RB#0	5.1101	7.035	PASS
Band38	15MHz	QPSK	38000	75RB#0	13.419	14.49	PASS
Band38	15MHz	16QAM	38000	27RB#0	5.0734	6.538	PASS
Band38	15MHz	QPSK	38175	75RB#0	13.468	15.03	PASS
Band38	15MHz	16QAM	38175	27RB#0	5.0705	6.673	PASS
Band38	20MHz	QPSK	37850	100RB#0	17.946	19.03	PASS
Band38	20MHz	16QAM	37850	27RB#0	5.2021	6.373	PASS
Band38	20MHz	QPSK	38000	100RB#0	17.922	18.97	PASS
Band38	20MHz	16QAM	38000	27RB#0	5.1967	6.562	PASS
Band38	20MHz	QPSK	38150	100RB#0	17.923	19.11	PASS
Band38	20MHz	16QAM	38150	27RB#0	5.2119	6.704	PASS



Test Graphs









Appendix D: Band Edge

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band38	5MHz	QPSK	37775	1RB#0	-35.92	PASS
Band38	5MHz	QPSK	37775	1RB#24	-39.38	PASS
Band38	5MHz	QPSK	37775	25RB#0	-36.32	PASS
Band38	5MHz	16QAM	37775	1RB#0	-36.25	PASS
Band38	5MHz	16QAM	37775	1RB#24	-39.79	PASS
Band38	5MHz	16QAM	37775	25RB#0	-36.19	PASS
Band38	5MHz	QPSK	38225	1RB#0	-38.70	PASS
Band38	5MHz	QPSK	38225	1RB#24	-35.01	PASS
Band38	5MHz	QPSK	38225	25RB#0	-34.00	PASS
Band38	5MHz	16QAM	38225	1RB#0	-39.04	PASS
Band38	5MHz	16QAM	38225	1RB#24	-35.76	PASS
Band38	5MHz	16QAM	38225	25RB#0	-33.33	PASS
Band38	10MHz	QPSK	37800	1RB#0	-39.11	PASS
Band38	10MHz	QPSK	37800	1RB#49	-41.18	PASS
Band38	10MHz	QPSK	37800	50RB#0	-38.66	PASS
Band38	10MHz	16QAM	37800	1RB#0	-39.79	PASS
Band38	10MHz	16QAM	37800	1RB#49	-41.18	PASS
Band38	10MHz	QPSK	38200	1RB#0	-40.63	PASS
Band38	10MHz	QPSK	38200	1RB#49	-38.80	PASS
Band38	10MHz	QPSK	38200	50RB#0	-35.83	PASS
Band38	10MHz	16QAM	38200	1RB#0	-40.66	PASS
Band38	10MHz	16QAM	38200	1RB#49	-39.01	PASS
Band38	15MHz	QPSK	37825	1RB#0	-40.91	PASS
Band38	15MHz	QPSK	37825	1RB#74	-41.05	PASS
Band38	15MHz	QPSK	37825	75RB#0	-38.93	PASS
Band38	15MHz	16QAM	37825	1RB#0	-40.78	PASS
Band38	15MHz	16QAM	37825	1RB#74	-41.05	PASS
Band38	15MHz	QPSK	38175	1RB#0	-40.54	PASS
Band38	15MHz	QPSK	38175	1RB#74	-40.39	PASS
Band38	15MHz	QPSK	38175	75RB#0	-36.24	PASS
Band38	15MHz	16QAM	38175	1RB#0	-40.57	PASS
Band38	15MHz	16QAM	38175	1RB#74	-40.40	PASS
Band38	20MHz	QPSK	37850	1RB#0	-38.59	PASS
Band38	20MHz	QPSK	37850	1RB#99	-40.79	PASS
Band38	20MHz	QPSK	37850	100RB#0	-39.51	PASS
Band38	20MHz	16QAM	37850	1RB#0	-39.19	PASS