

Appendix-A LTE Cat M1 Band 66

Effective (Isotropic) Radiated Power Output Data for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Power (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band66	1.4MHz	QPSK	131979	1	0	Low	21.07	23.07	30	PASS
Band66	1.4MHz	QPSK	131979	1	5	Low	20.84	22.84	30	PASS
Band66	1.4MHz	QPSK	131979	6	0	Low	19.02	21.02	30	PASS
Band66	1.4MHz	QPSK	132322	1	0	Low	21.04	23.04	30	PASS
Band66	1.4MHz	QPSK	132322	1	5	Low	20.88	22.88	30	PASS
Band66	1.4MHz	QPSK	132322	6	0	Low	19.10	21.1	30	PASS
Band66	1.4MHz	QPSK	132665	1	0	High	21.06	23.06	30	PASS
Band66	1.4MHz	QPSK	132665	1	5	High	20.86	22.86	30	PASS
Band66	1.4MHz	QPSK	132665	6	0	High	18.98	20.98	30	PASS
Band66	3MHz	QPSK	131987	1	0	Low	20.98	22.98	30	PASS
Band66	3MHz	QPSK	131987	1	5	Low	20.92	22.92	30	PASS
Band66	3MHz	QPSK	131987	6	0	Low	18.98	20.98	30	PASS
Band66	3MHz	QPSK	132322	1	0	Low	21.02	23.02	30	PASS
Band66	3MHz	QPSK	132322	1	5	Low	20.96	22.96	30	PASS
Band66	3MHz	QPSK	132322	6	0	Low	19.06	21.06	30	PASS
Band66	3MHz	QPSK	132657	1	0	High	21.05	23.05	30	PASS
Band66	3MHz	QPSK	132657	1	5	High	20.78	22.78	30	PASS
Band66	3MHz	QPSK	132657	6	0	High	19.08	21.08	30	PASS
Band66	5MHz	QPSK	131997	1	0	Low	21.15	23.15	30	PASS
Band66	5MHz	QPSK	131997	1	5	Low	20.97	22.97	30	PASS
Band66	5MHz	QPSK	131997	6	0	Low	20.25	22.25	30	PASS
Band66	5MHz	QPSK	132322	1	0	Low	21.04	23.04	30	PASS
Band66	5MHz	QPSK	132322	1	5	Low	20.89	22.89	30	PASS
Band66	5MHz	QPSK	132322	6	0	Low	20.11	22.11	30	PASS
Band66	5MHz	QPSK	132647	1	0	High	21.17	23.17	30	PASS
Band66	5MHz	QPSK	132647	1	5	High	20.90	22.9	30	PASS
Band66	5MHz	QPSK	132647	6	0	High	20.09	22.09	30	PASS
Band66	10MHz	QPSK	132022	1	0	Low	21.20	23.2	30	PASS
Band66	10MHz	QPSK	132022	1	5	Low	20.96	22.96	30	PASS
Band66	10MHz	QPSK	132022	6	0	Low	20.14	22.14	30	PASS
Band66	10MHz	QPSK	132322	1	0	Low	21.09	23.09	30	PASS
Band66	10MHz	QPSK	132322	1	5	Low	20.85	22.85	30	PASS
Band66	10MHz	QPSK	132322	6	0	Low	20.00	22	30	PASS
Band66	10MHz	QPSK	132622	1	0	High	21.03	23.03	30	PASS
Band66	10MHz	QPSK	132622	1	5	High	20.87	22.87	30	PASS
Band66	10MHz	QPSK	132622	6	0	High	20.13	22.13	30	PASS
Band66	15MHz	QPSK	132047	1	0	Low	21.07	23.07	30	PASS

Band66	15MHz	QPSK	132047	1	5	Low	20.92	22.92	30	PASS
Band66	15MHz	QPSK	132047	6	0	Low	21.12	23.12	30	PASS
Band66	15MHz	QPSK	132322	1	0	Low	21.03	23.03	30	PASS
Band66	15MHz	QPSK	132322	1	5	Low	20.80	22.8	30	PASS
Band66	15MHz	QPSK	132322	6	0	Low	21.04	23.04	30	PASS
Band66	15MHz	QPSK	132597	1	0	High	21.18	23.18	30	PASS
Band66	15MHz	QPSK	132597	1	5	High	20.93	22.93	30	PASS
Band66	15MHz	QPSK	132597	6	0	High	21.08	23.08	30	PASS
Band66	20MHz	QPSK	132322	1	0	Low	21.06	23.06	30	PASS
Band66	20MHz	QPSK	132322	1	5	Low	20.91	22.91	30	PASS
Band66	20MHz	QPSK	132322	6	0	Low	21.06	23.06	30	PASS
Band66	20MHz	QPSK	132572	1	0	High	21.11	23.11	30	PASS
Band66	20MHz	QPSK	132572	1	5	High	20.95	22.95	30	PASS
Band66	20MHz	QPSK	132572	6	0	High	21.10	23.1	30	PASS
Band66	1.4MHz	16QAM	131979	1	0	Low	20.16	22.16	30	PASS
Band66	1.4MHz	16QAM	131979	1	5	Low	19.95	21.95	30	PASS
Band66	1.4MHz	16QAM	131979	5	0	Low	19.11	21.11	30	PASS
Band66	1.4MHz	16QAM	132322	1	0	Low	20.20	22.2	30	PASS
Band66	1.4MHz	16QAM	132322	1	5	Low	20.22	22.22	30	PASS
Band66	1.4MHz	16QAM	132322	5	0	Low	19.56	21.56	30	PASS
Band66	1.4MHz	16QAM	132665	1	0	High	19.97	21.97	30	PASS
Band66	1.4MHz	16QAM	132665	1	5	High	19.71	21.71	30	PASS
Band66	1.4MHz	16QAM	132665	5	0	High	19.12	21.12	30	PASS
Band66	3MHz	16QAM	131987	1	0	Low	19.83	21.83	30	PASS
Band66	3MHz	16QAM	131987	1	5	Low	19.56	21.56	30	PASS
Band66	3MHz	16QAM	131987	5	0	Low	19.14	21.14	30	PASS
Band66	3MHz	16QAM	132322	1	0	Low	20.46	22.46	30	PASS
Band66	3MHz	16QAM	132322	1	5	Low	20.19	22.19	30	PASS
Band66	3MHz	16QAM	132322	5	0	Low	19.14	21.14	30	PASS
Band66	3MHz	16QAM	132657	1	0	High	19.91	21.91	30	PASS
Band66	3MHz	16QAM	132657	1	5	High	19.71	21.71	30	PASS
Band66	3MHz	16QAM	132657	5	0	High	19.14	21.14	30	PASS
Band66	5MHz	16QAM	131997	1	0	Low	20.93	22.93	30	PASS
Band66	5MHz	16QAM	131997	1	5	Low	20.68	22.68	30	PASS
Band66	5MHz	16QAM	131997	5	0	Low	19.77	21.77	30	PASS
Band66	5MHz	16QAM	132322	1	0	Low	20.82	22.82	30	PASS
Band66	5MHz	16QAM	132322	1	5	Low	20.57	22.57	30	PASS
Band66	5MHz	16QAM	132322	5	0	Low	19.69	21.69	30	PASS
Band66	5MHz	16QAM	132647	1	0	High	20.91	22.91	30	PASS
Band66	5MHz	16QAM	132647	1	5	High	21.06	23.06	30	PASS
Band66	5MHz	16QAM	132647	5	0	High	20.16	22.16	30	PASS
Band66	10MHz	16QAM	132022	1	0	Low	20.83	22.83	30	PASS
Band66	10MHz	16QAM	132022	1	5	Low	20.60	22.6	30	PASS
Band66	10MHz	16QAM	132022	5	0	Low	20.71	22.71	30	PASS
Band66	10MHz	16QAM	132322	1	0	Low	20.76	22.76	30	PASS

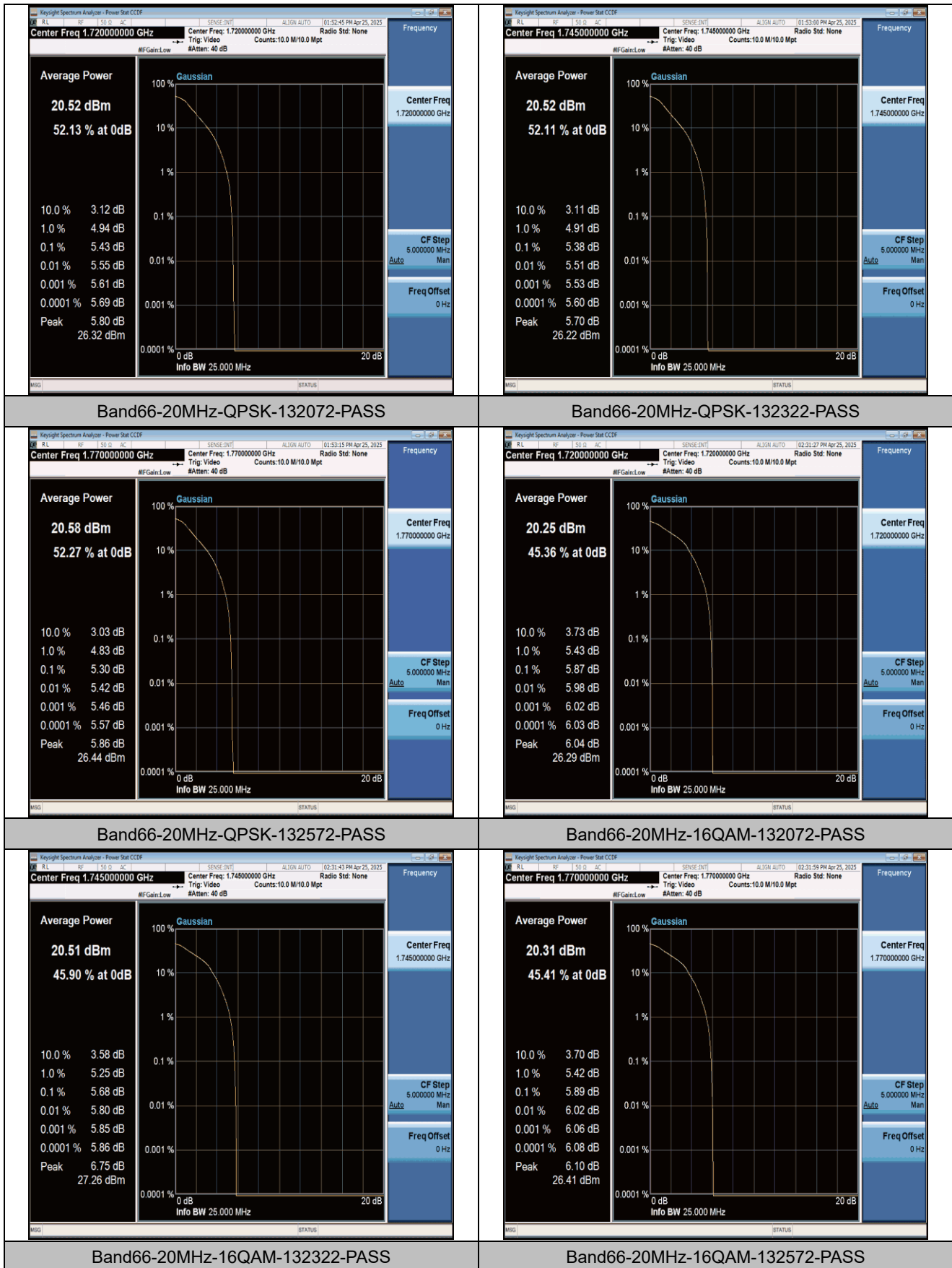
Band66	10MHz	16QAM	132322	1	5	Low	20.52	22.52	30	PASS
Band66	10MHz	16QAM	132322	5	0	Low	20.57	22.57	30	PASS
Band66	10MHz	16QAM	132622	1	0	High	21.21	23.21	30	PASS
Band66	10MHz	16QAM	132622	1	5	High	21.07	23.07	30	PASS
Band66	10MHz	16QAM	132622	5	0	High	21.19	23.19	30	PASS
Band66	15MHz	16QAM	132047	1	0	Low	20.72	22.72	30	PASS
Band66	15MHz	16QAM	132047	1	5	Low	20.55	22.55	30	PASS
Band66	15MHz	16QAM	132047	5	0	Low	20.64	22.64	30	PASS
Band66	15MHz	16QAM	132322	1	0	Low	20.70	22.7	30	PASS
Band66	15MHz	16QAM	132322	1	5	Low	20.48	22.48	30	PASS
Band66	15MHz	16QAM	132322	5	0	Low	20.61	22.61	30	PASS
Band66	15MHz	16QAM	132597	1	0	High	21.26	23.26	30	PASS
Band66	15MHz	16QAM	132597	1	5	High	21.02	23.02	30	PASS
Band66	15MHz	16QAM	132597	5	0	High	21.09	23.09	30	PASS
Band66	20MHz	16QAM	132322	1	0	Low	20.75	22.75	30	PASS
Band66	20MHz	16QAM	132322	1	5	Low	20.48	22.48	30	PASS
Band66	20MHz	16QAM	132322	5	0	Low	20.61	22.61	30	PASS
Band66	20MHz	16QAM	132572	1	0	High	21.31	23.31	30	PASS
Band66	20MHz	16QAM	132572	1	5	High	21.07	23.07	30	PASS
Band66	20MHz	16QAM	132572	5	0	High	21.13	23.13	30	PASS

Peak-to-Average Ratio(CCDF) for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band66	20MHz	QPSK	132072	6	0	Low	5.43	<=13	PASS
Band66	20MHz	QPSK	132322	6	0	Low	5.38	<=13	PASS
Band66	20MHz	QPSK	132572	6	0	High	5.30	<=13	PASS
Band66	20MHz	16QAM	132072	5	0	Low	5.87	<=13	PASS
Band66	20MHz	16QAM	132322	5	0	Low	5.68	<=13	PASS
Band66	20MHz	16QAM	132572	5	0	High	5.89	<=13	PASS

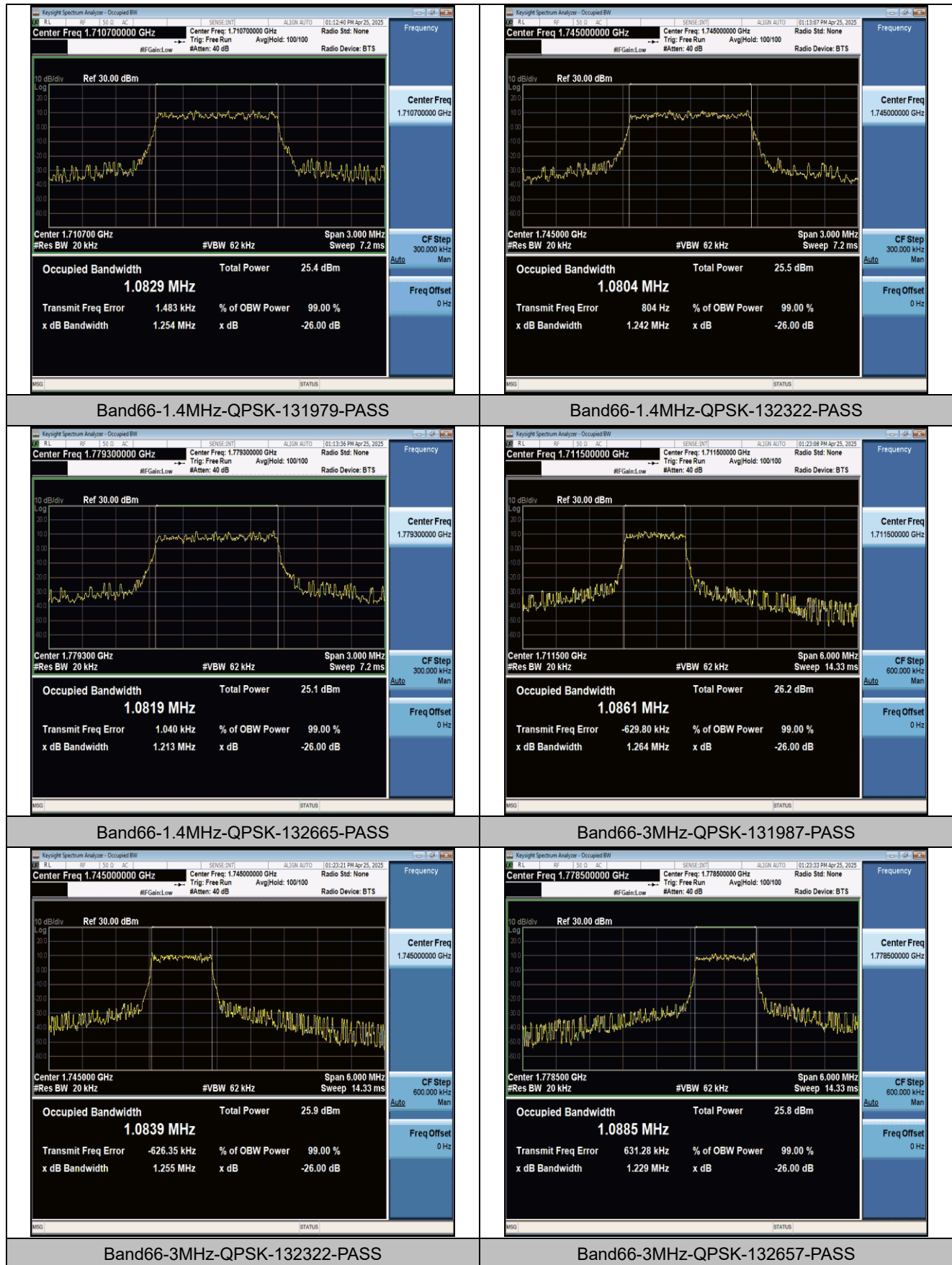
Test Graphs

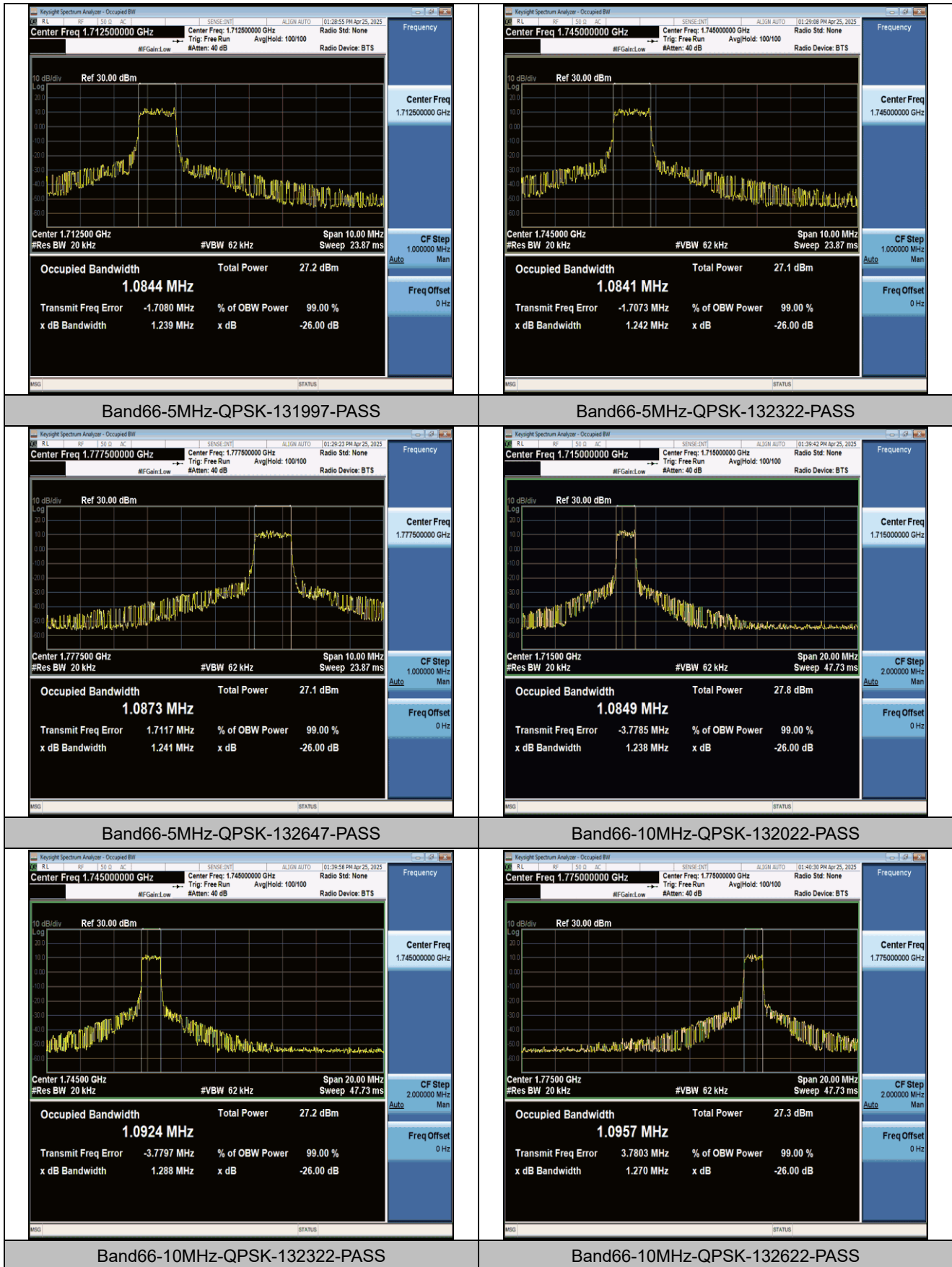


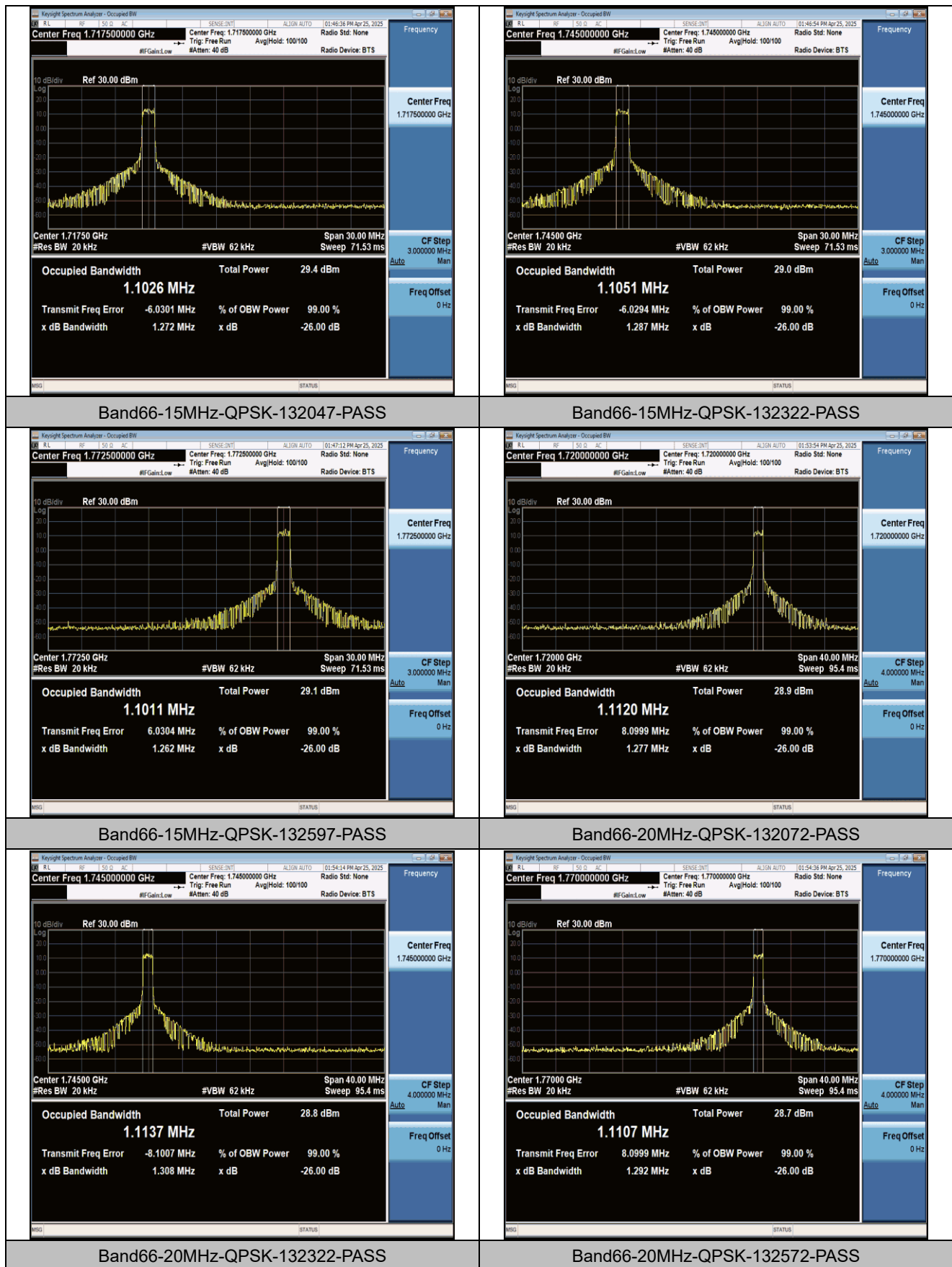
26dB Bandwidth and Occupied Bandwidth for M1**Test Result**

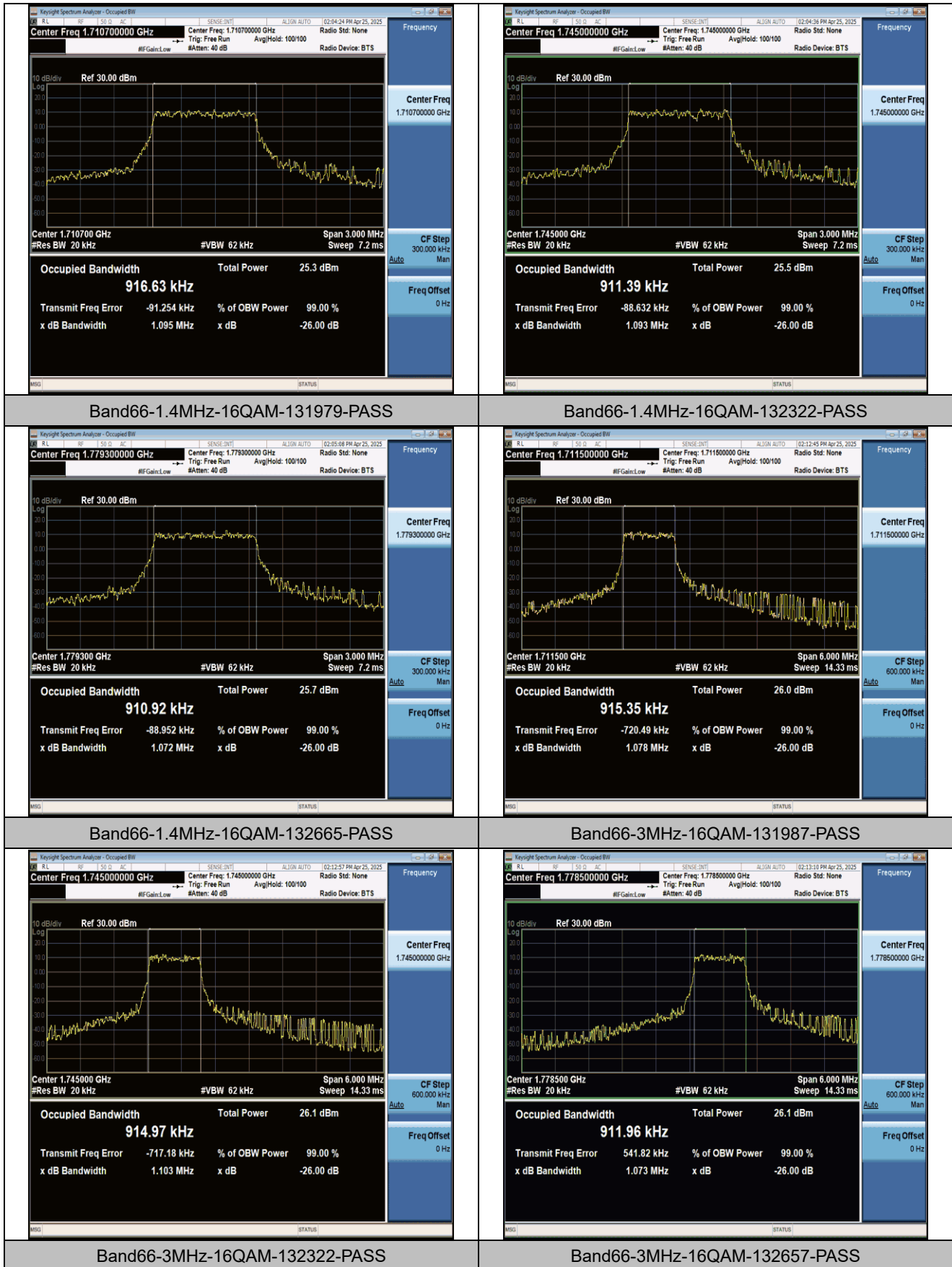
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band66	1.4MHz	QPSK	131979	6	0	Low	1.0829	1.254	PASS
Band66	1.4MHz	QPSK	132322	6	0	Low	1.0804	1.242	PASS
Band66	1.4MHz	QPSK	132665	6	0	High	1.0819	1.213	PASS
Band66	3MHz	QPSK	131987	6	0	Low	1.0861	1.264	PASS
Band66	3MHz	QPSK	132322	6	0	Low	1.0839	1.255	PASS
Band66	3MHz	QPSK	132657	6	0	High	1.0885	1.229	PASS
Band66	5MHz	QPSK	131997	6	0	Low	1.0844	1.239	PASS
Band66	5MHz	QPSK	132322	6	0	Low	1.0841	1.242	PASS
Band66	5MHz	QPSK	132647	6	0	High	1.0873	1.241	PASS
Band66	10MHz	QPSK	132022	6	0	Low	1.0849	1.238	PASS
Band66	10MHz	QPSK	132322	6	0	Low	1.0924	1.288	PASS
Band66	10MHz	QPSK	132622	6	0	High	1.0957	1.270	PASS
Band66	15MHz	QPSK	132047	6	0	Low	1.1026	1.272	PASS
Band66	15MHz	QPSK	132322	6	0	Low	1.1051	1.287	PASS
Band66	15MHz	QPSK	132597	6	0	High	1.1011	1.262	PASS
Band66	20MHz	QPSK	132072	6	0	Low	1.1120	1.277	PASS
Band66	20MHz	QPSK	132322	6	0	Low	1.1137	1.308	PASS
Band66	20MHz	QPSK	132572	6	0	High	1.1107	1.292	PASS
Band66	1.4MHz	16QAM	131979	5	0	Low	0.91663	1.095	PASS
Band66	1.4MHz	16QAM	132322	5	0	Low	0.91139	1.093	PASS
Band66	1.4MHz	16QAM	132665	5	0	High	0.91092	1.072	PASS
Band66	3MHz	16QAM	131987	5	0	Low	0.91535	1.078	PASS
Band66	3MHz	16QAM	132322	5	0	Low	0.91497	1.103	PASS
Band66	3MHz	16QAM	132657	5	0	High	0.91196	1.073	PASS
Band66	5MHz	16QAM	131997	5	0	Low	0.92383	1.092	PASS
Band66	5MHz	16QAM	132322	5	0	Low	0.92309	1.140	PASS
Band66	5MHz	16QAM	132647	5	0	High	0.91804	1.103	PASS
Band66	10MHz	16QAM	132022	5	0	Low	0.92553	1.100	PASS
Band66	10MHz	16QAM	132322	5	0	Low	0.91800	1.077	PASS
Band66	10MHz	16QAM	132622	5	0	High	0.92456	1.116	PASS
Band66	15MHz	16QAM	132047	5	0	Low	0.94569	1.124	PASS
Band66	15MHz	16QAM	132322	5	0	Low	0.92572	1.129	PASS
Band66	15MHz	16QAM	132597	5	0	High	0.92696	1.116	PASS
Band66	20MHz	16QAM	132072	5	0	Low	0.94957	1.132	PASS
Band66	20MHz	16QAM	132322	5	0	Low	0.94796	1.132	PASS
Band66	20MHz	16QAM	132572	5	0	High	0.95109	1.164	PASS

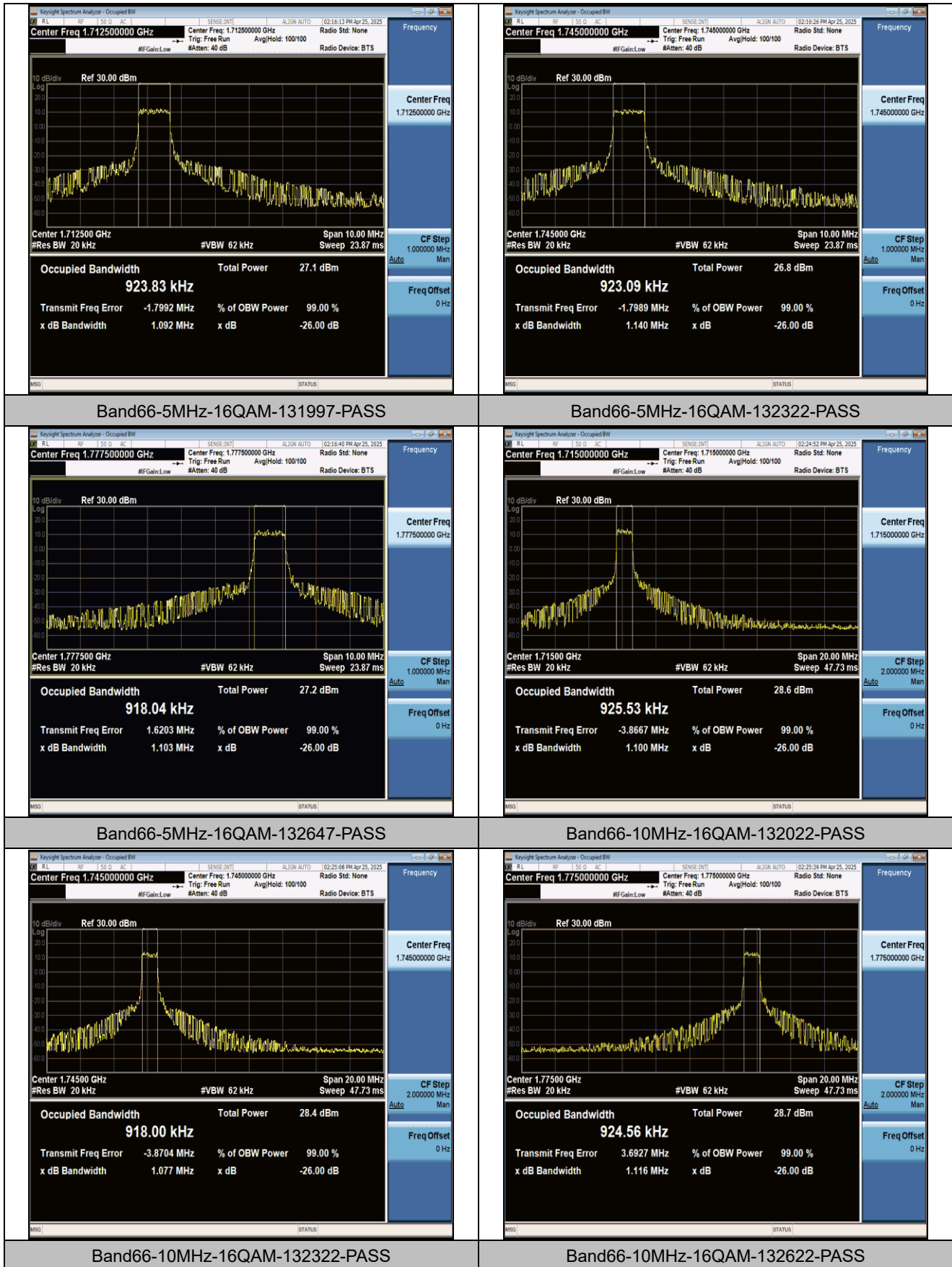
Test Graphs

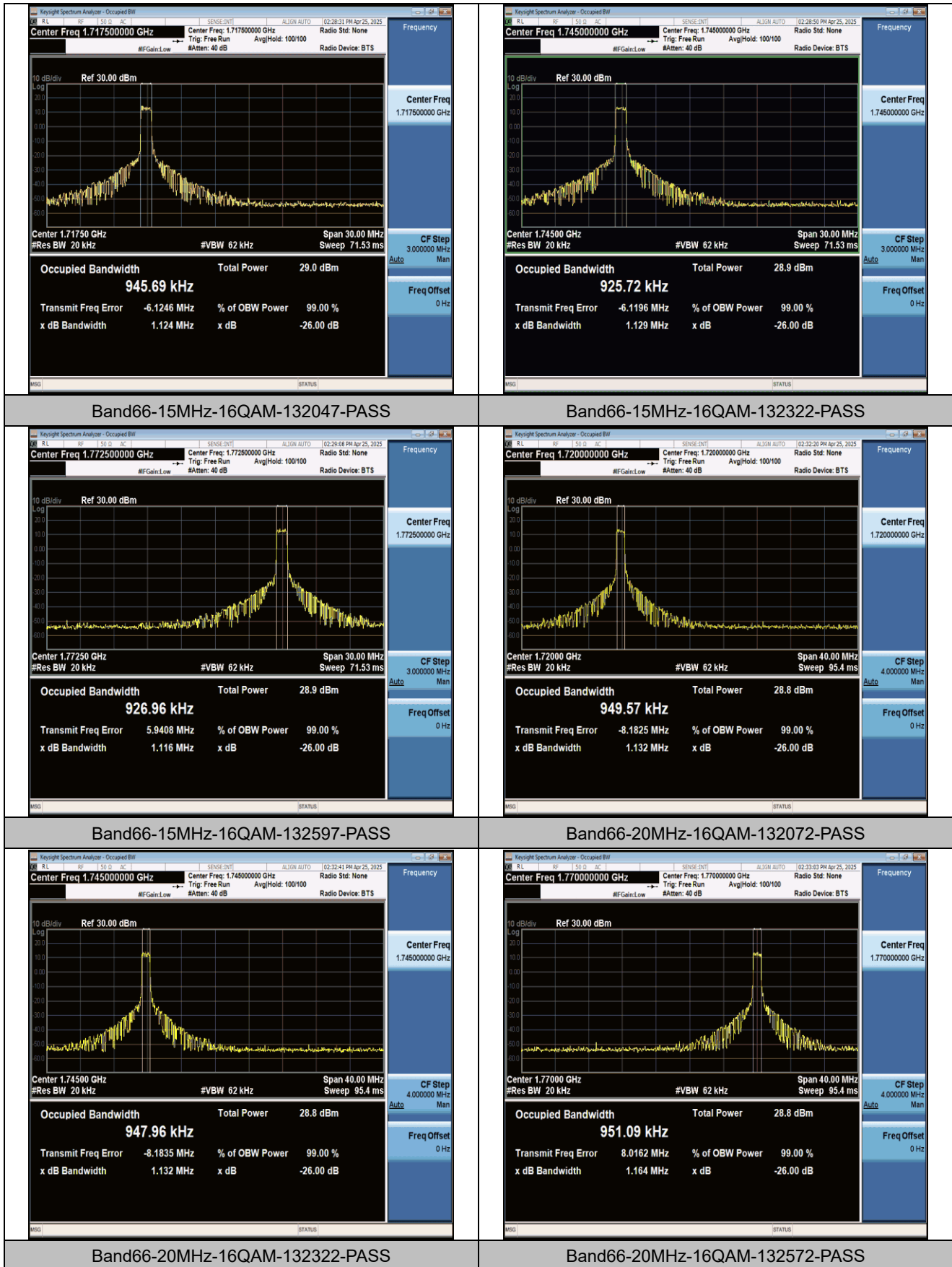






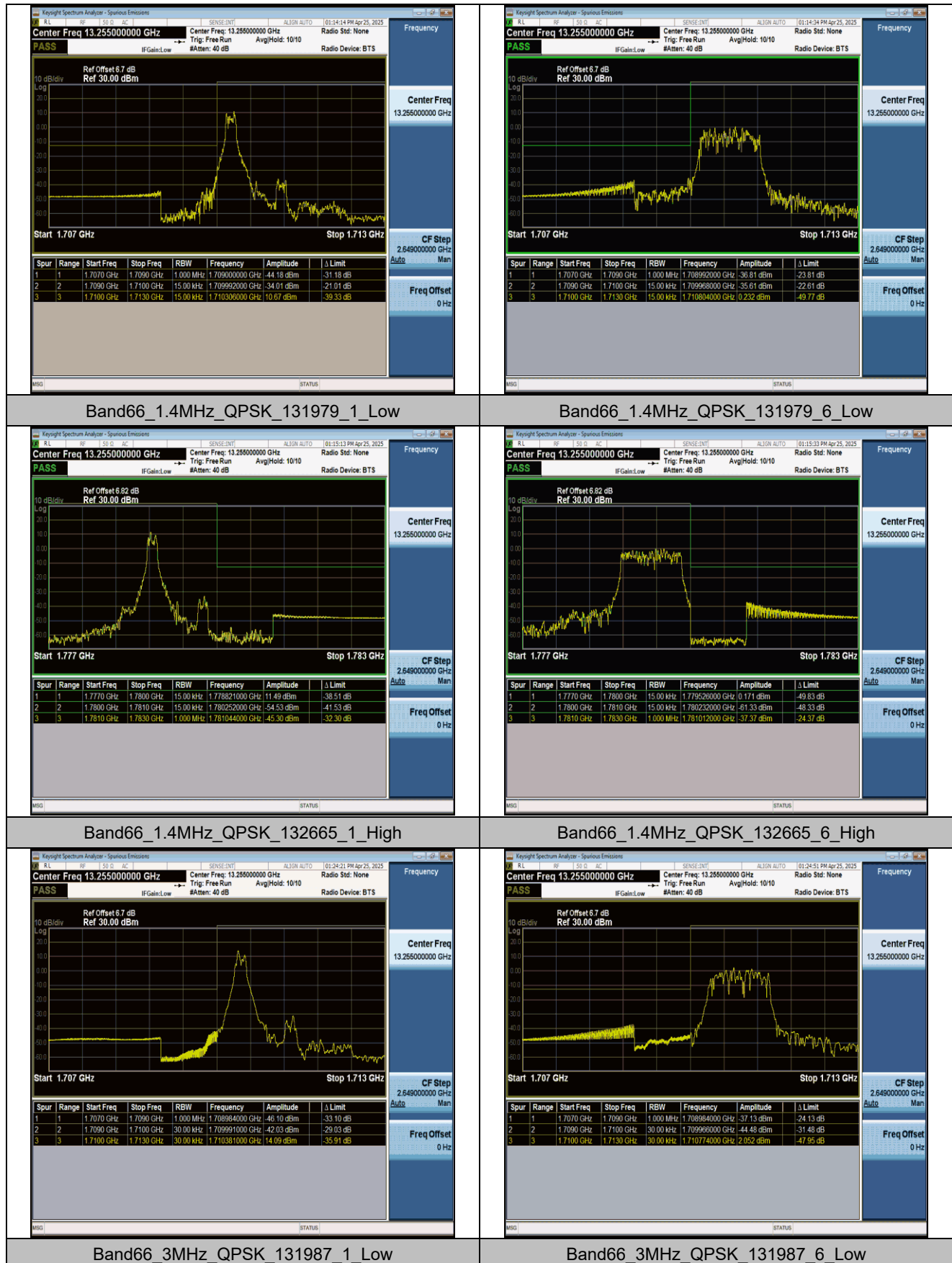


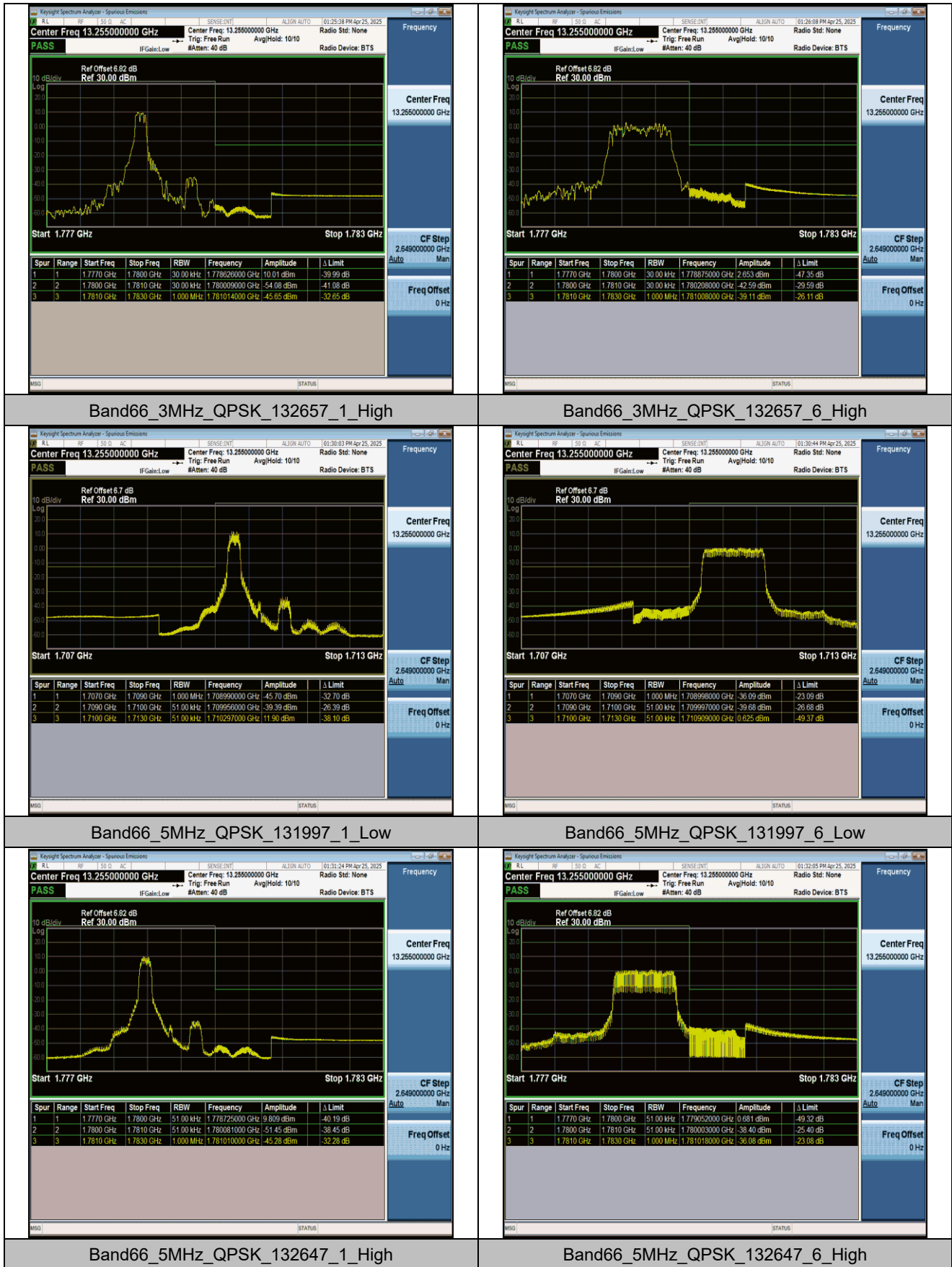




Band Edge for M1

Test Graphs







Band66_10MHz_QPSK_132022_1_Low



Band66_10MHz_QPSK_132022_6_Low



Band66_10MHz_QPSK_132622_1_High



Band66_10MHz_QPSK_132622_6_High



Band66_15MHz_QPSK_132047_1_Low



Band66_15MHz_QPSK_132047_6_Low



Band66_15MHz_QPSK_132597_1_High



Band66_15MHz_QPSK_132597_6_High



Band66_20MHz_QPSK_132072_1_Low



Band66_20MHz_QPSK_132072_6_Low



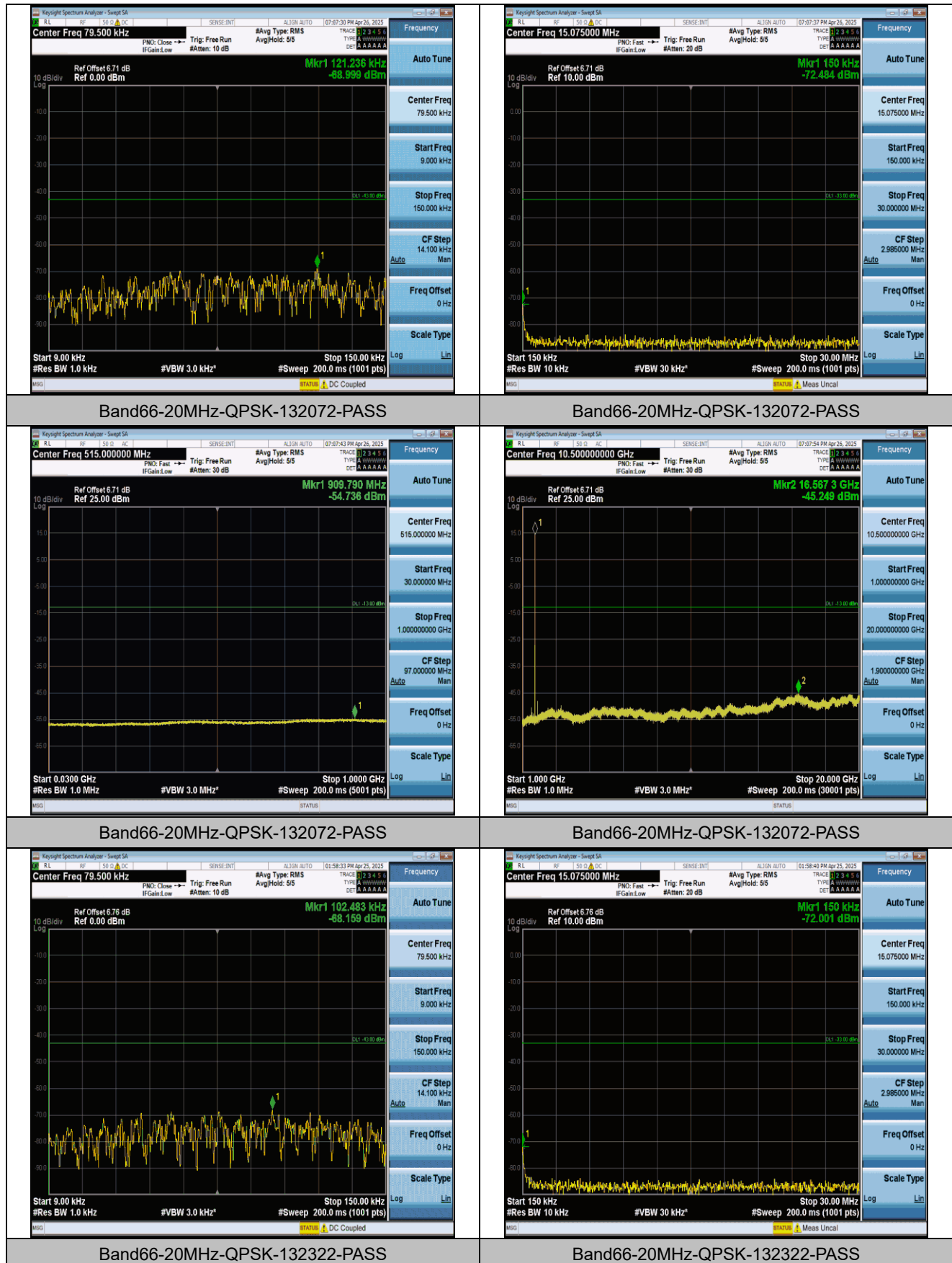
Band66_20MHz_QPSK_132572_1_High

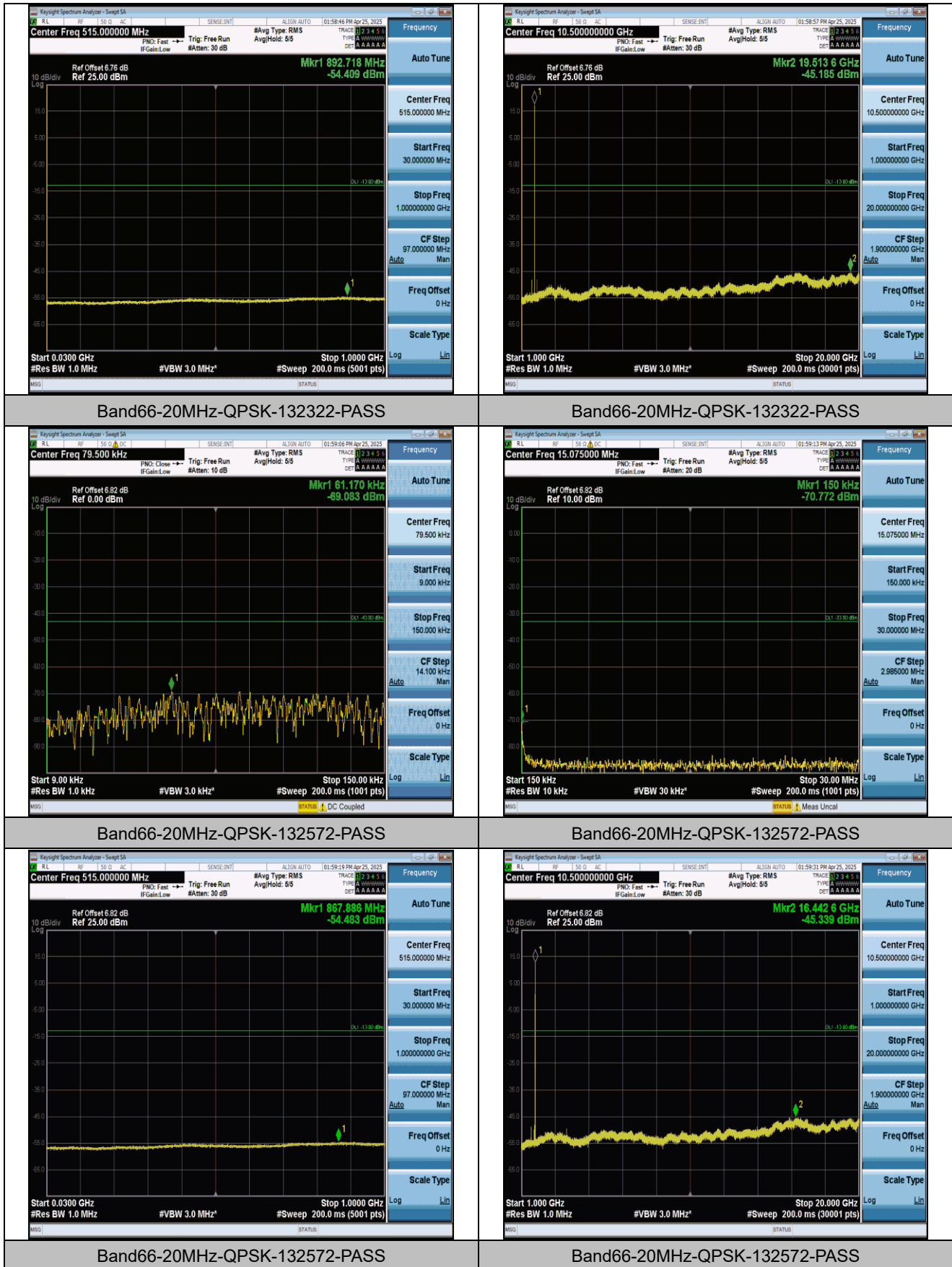


Band66_20MHz_QPSK_132572_6_High

Conducted Spurious Emission for M1

Test Graphs





Frequency Stability for M1

Test Result

Voltage											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band66	20MHz	QPSK	132322	6	0	Low	VN	NT	-3.30	-0.001891	PASS
Band66	20MHz	QPSK	132322	6	0	Low	VL	NT	-1.60	-0.000917	PASS
Band66	20MHz	QPSK	132322	6	0	Low	VH	NT	-2.10	-0.001203	PASS

Temperature											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band66	20MHz	QPSK	132322	6	0	Low	NV	-30	1.80	0.001032	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	-20	0.70	0.000401	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	-10	0.50	0.000287	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	0	-0.40	-0.000229	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	10	-0.80	-0.000458	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	20	-0.70	-0.000401	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	30	-0.70	-0.000401	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	40	-0.90	-0.000516	PASS
Band66	20MHz	QPSK	132322	6	0	Low	NV	50	-4.50	-0.002579	PASS

~The End~