

Appendix-B LTE Cat M1 Band 4

Effective (Isotropic) Radiated Power Output Data for M1

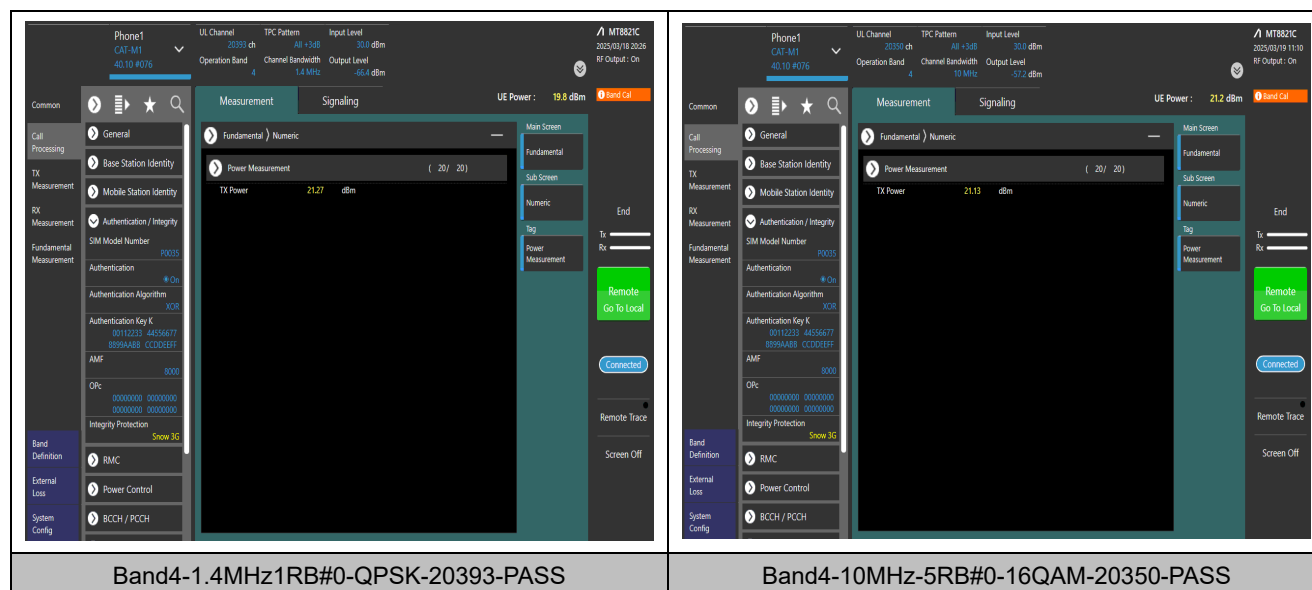
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Power (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band4	1.4MHz	QPSK	19957	1	0	Low	21	23	30	PASS
Band4	1.4MHz	QPSK	19957	1	5	Low	20.83	22.83	30	PASS
Band4	1.4MHz	QPSK	19957	6	0	Low	20.53	22.53	30	PASS
Band4	1.4MHz	QPSK	20175	1	0	Low	21.07	23.07	30	PASS
Band4	1.4MHz	QPSK	20175	1	5	Low	20.92	22.92	30	PASS
Band4	1.4MHz	QPSK	20175	6	0	Low	20.21	22.21	30	PASS
Band4	1.4MHz	QPSK	20393	1	0	High	21.27	23.27	30	PASS
Band4	1.4MHz	QPSK	20393	1	5	High	21.02	23.02	30	PASS
Band4	1.4MHz	QPSK	20393	6	0	High	20.15	22.15	30	PASS
Band4	3MHz	QPSK	19965	1	0	Low	21.02	23.02	30	PASS
Band4	3MHz	QPSK	19965	1	5	Low	20.84	22.84	30	PASS
Band4	3MHz	QPSK	19965	6	0	Low	20.02	22.02	30	PASS
Band4	3MHz	QPSK	20175	1	0	Low	21.11	23.11	30	PASS
Band4	3MHz	QPSK	20175	1	5	Low	20.92	22.92	30	PASS
Band4	3MHz	QPSK	20175	6	0	Low	20.15	22.15	30	PASS
Band4	3MHz	QPSK	20385	1	0	High	21.13	23.13	30	PASS
Band4	3MHz	QPSK	20385	1	5	High	20.96	22.96	30	PASS
Band4	3MHz	QPSK	20385	6	0	High	20.23	22.23	30	PASS
Band4	5MHz	QPSK	19975	1	0	Low	21.08	23.08	30	PASS
Band4	5MHz	QPSK	19975	1	5	Low	20.93	22.93	30	PASS
Band4	5MHz	QPSK	19975	6	0	Low	20.09	22.09	30	PASS
Band4	5MHz	QPSK	20175	1	0	Low	21.01	23.01	30	PASS
Band4	5MHz	QPSK	20175	1	5	Low	20.87	22.87	30	PASS
Band4	5MHz	QPSK	20175	6	0	Low	20.09	22.09	30	PASS
Band4	5MHz	QPSK	20375	1	0	High	21.15	23.15	30	PASS
Band4	5MHz	QPSK	20375	1	5	High	20.88	22.88	30	PASS
Band4	5MHz	QPSK	20375	6	0	High	20.01	22.01	30	PASS
Band4	10MHz	QPSK	20000	1	0	Low	21.14	23.14	30	PASS
Band4	10MHz	QPSK	20000	1	5	Low	20.89	22.89	30	PASS
Band4	10MHz	QPSK	20000	6	0	Low	20.04	22.04	30	PASS
Band4	10MHz	QPSK	20175	1	0	Low	21.09	23.09	30	PASS
Band4	10MHz	QPSK	20175	1	5	Low	20.89	22.89	30	PASS
Band4	10MHz	QPSK	20175	6	0	Low	20.11	22.11	30	PASS
Band4	10MHz	QPSK	20350	1	0	High	21.19	23.19	30	PASS
Band4	10MHz	QPSK	20350	1	5	High	20.93	22.93	30	PASS
Band4	10MHz	QPSK	20350	6	0	High	20.05	22.05	30	PASS

Band4	15MHz	QPSK	20025	1	0	Low	20.99	22.99	30	PASS
Band4	15MHz	QPSK	20025	1	5	Low	20.84	22.84	30	PASS
Band4	15MHz	QPSK	20025	6	0	Low	20.94	22.94	30	PASS
Band4	15MHz	QPSK	20175	1	0	Low	20.98	22.98	30	PASS
Band4	15MHz	QPSK	20175	1	5	Low	20.82	22.82	30	PASS
Band4	15MHz	QPSK	20175	6	0	Low	21.02	23.02	30	PASS
Band4	15MHz	QPSK	20325	1	0	High	21.11	23.11	30	PASS
Band4	15MHz	QPSK	20325	1	5	High	20.79	22.79	30	PASS
Band4	15MHz	QPSK	20325	6	0	High	20.94	22.94	30	PASS
Band4	20MHz	QPSK	20050	1	0	Low	20.98	22.98	30	PASS
Band4	20MHz	QPSK	20050	1	5	Low	20.74	22.74	30	PASS
Band4	20MHz	QPSK	20050	6	0	Low	20.99	22.99	30	PASS
Band4	20MHz	QPSK	20175	1	0	Low	21.02	23.02	30	PASS
Band4	20MHz	QPSK	20175	1	5	Low	20.82	22.82	30	PASS
Band4	20MHz	QPSK	20175	6	0	Low	21.04	23.04	30	PASS
Band4	20MHz	QPSK	20300	6	0	High	21.1	23.1	30	PASS
Band4	1.4MHz	16QAM	19957	1	0	Low	20.16	22.16	30	PASS
Band4	1.4MHz	16QAM	19957	1	5	Low	20.26	22.26	30	PASS
Band4	1.4MHz	16QAM	19957	5	0	Low	20.02	22.02	30	PASS
Band4	1.4MHz	16QAM	20175	1	0	Low	20.24	22.24	30	PASS
Band4	1.4MHz	16QAM	20175	1	5	Low	20.05	22.05	30	PASS
Band4	1.4MHz	16QAM	20175	5	0	Low	20.05	22.05	30	PASS
Band4	1.4MHz	16QAM	20393	1	0	High	20.28	22.28	30	PASS
Band4	1.4MHz	16QAM	20393	1	5	High	20.06	22.06	30	PASS
Band4	1.4MHz	16QAM	20393	5	0	High	20.09	22.09	30	PASS
Band4	3MHz	16QAM	19965	1	0	Low	20.13	22.13	30	PASS
Band4	3MHz	16QAM	19965	1	5	Low	20.01	22.01	30	PASS
Band4	3MHz	16QAM	19965	5	0	Low	20.12	22.12	30	PASS
Band4	3MHz	16QAM	20175	1	0	Low	20.21	22.21	30	PASS
Band4	3MHz	16QAM	20175	1	5	Low	20.04	22.04	30	PASS
Band4	3MHz	16QAM	20175	5	0	Low	20.18	22.18	30	PASS
Band4	3MHz	16QAM	20385	1	0	High	20.25	22.25	30	PASS
Band4	3MHz	16QAM	20385	1	5	High	20.01	22.01	30	PASS
Band4	3MHz	16QAM	20385	5	0	High	20.09	22.09	30	PASS
Band4	5MHz	16QAM	19975	1	0	Low	20.82	22.82	30	PASS
Band4	5MHz	16QAM	19975	1	5	Low	20.71	22.71	30	PASS
Band4	5MHz	16QAM	19975	5	0	Low	20.09	22.09	30	PASS
Band4	5MHz	16QAM	20175	1	0	Low	20.92	22.92	30	PASS
Band4	5MHz	16QAM	20175	1	5	Low	20.65	22.65	30	PASS
Band4	5MHz	16QAM	20175	5	0	Low	20.13	22.13	30	PASS
Band4	5MHz	16QAM	20375	1	0	High	20.9	22.9	30	PASS
Band4	5MHz	16QAM	20375	1	5	High	20.65	22.65	30	PASS
Band4	5MHz	16QAM	20375	5	0	High	20.13	22.13	30	PASS
Band4	10MHz	16QAM	20000	1	0	Low	20.89	22.89	30	PASS

Band4	10MHz	16QAM	20000	1	5	Low	20.61	22.61	30	PASS
Band4	10MHz	16QAM	20000	5	0	Low	20.74	22.74	30	PASS
Band4	10MHz	16QAM	20175	1	0	Low	20.94	22.94	30	PASS
Band4	10MHz	16QAM	20175	1	5	Low	20.6	22.6	30	PASS
Band4	10MHz	16QAM	20175	5	0	Low	20.85	22.85	30	PASS
Band4	10MHz	16QAM	20350	1	0	High	20.96	22.96	30	PASS
Band4	10MHz	16QAM	20350	1	5	High	20.64	22.64	30	PASS
Band4	10MHz	16QAM	20350	5	0	High	21.13	23.13	30	PASS
Band4	15MHz	16QAM	20025	1	0	Low	20.77	22.77	30	PASS
Band4	15MHz	16QAM	20025	1	5	Low	20.56	22.56	30	PASS
Band4	15MHz	16QAM	20025	5	0	Low	20.73	22.73	30	PASS
Band4	15MHz	16QAM	20175	1	0	Low	20.8	22.8	30	PASS
Band4	15MHz	16QAM	20175	1	5	Low	20.62	22.62	30	PASS
Band4	15MHz	16QAM	20175	5	0	Low	20.78	22.78	30	PASS
Band4	15MHz	16QAM	20325	1	0	High	20.76	22.76	30	PASS
Band4	15MHz	16QAM	20325	1	5	High	20.53	22.53	30	PASS
Band4	15MHz	16QAM	20325	5	0	High	20.74	22.74	30	PASS
Band4	20MHz	16QAM	20050	1	0	Low	20.74	22.74	30	PASS
Band4	20MHz	16QAM	20050	1	5	Low	20.48	22.48	30	PASS
Band4	20MHz	16QAM	20050	5	0	Low	20.68	22.68	30	PASS
Band4	20MHz	16QAM	20175	1	0	Low	20.84	22.84	30	PASS
Band4	20MHz	16QAM	20175	1	5	Low	20.6	22.6	30	PASS
Band4	20MHz	16QAM	20175	5	0	Low	20.76	22.76	30	PASS
Band4	20MHz	16QAM	20300	1	0	High	20.78	22.78	30	PASS
Band4	20MHz	16QAM	20300	1	5	High	20.55	22.55	30	PASS
Band4	20MHz	16QAM	20300	5	0	High	20.86	22.86	30	PASS

Test Graphs

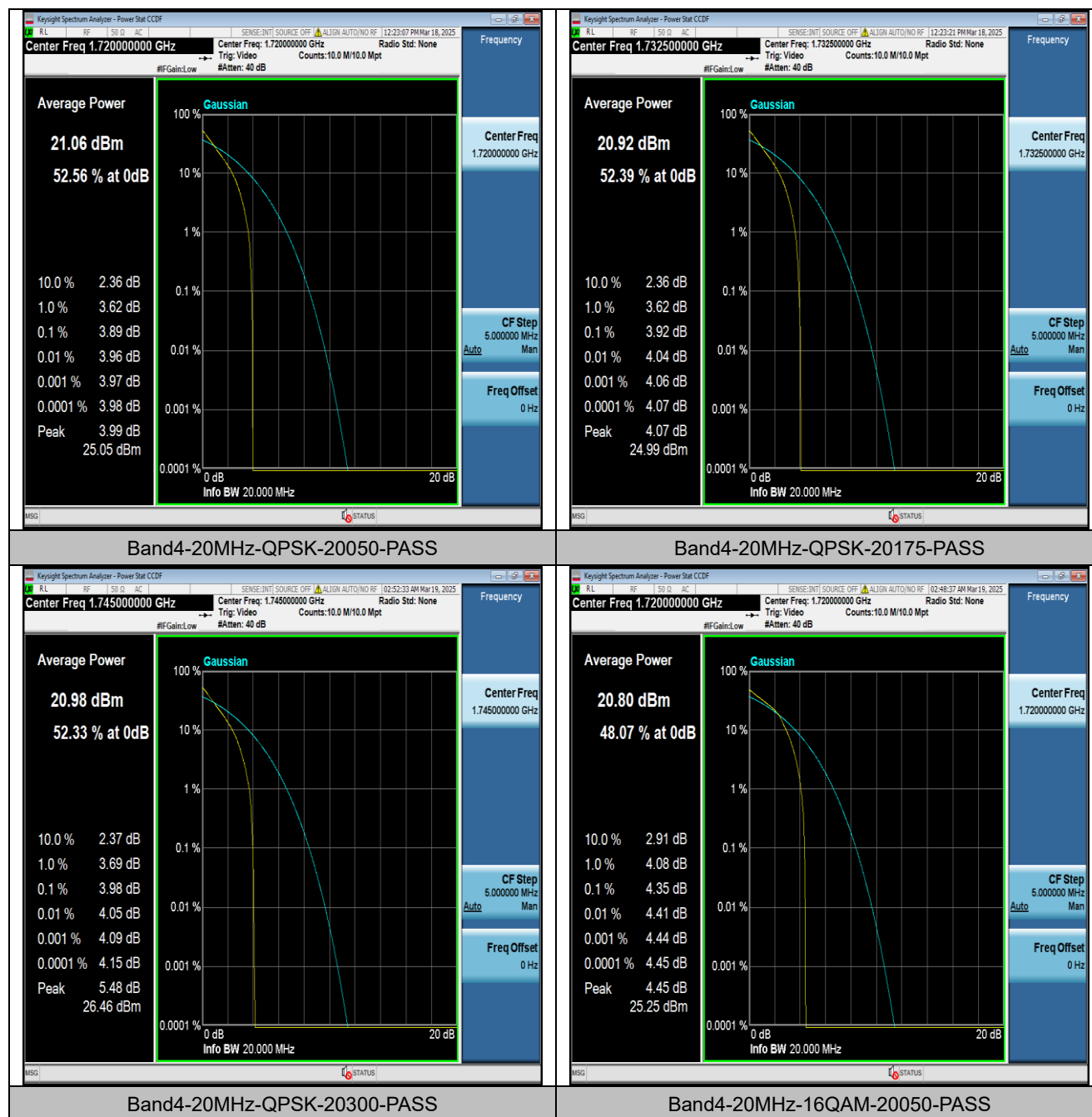


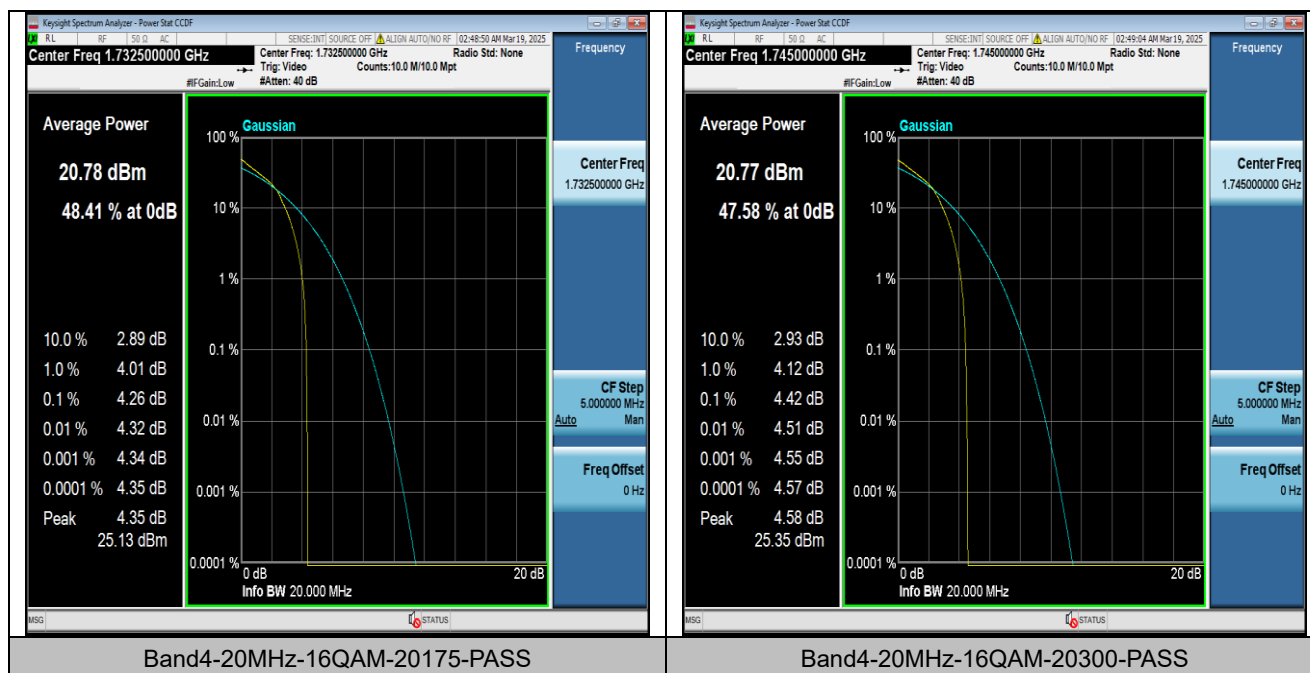
Peak-to-Average Ratio(CCDF) for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band4	20MHz	QPSK	20050	6	0	Low	3.89	<=13	PASS
Band4	20MHz	QPSK	20175	6	0	Low	3.92	<=13	PASS
Band4	20MHz	QPSK	20300	6	0	High	3.98	<=13	PASS
Band4	20MHz	16QAM	20050	5	0	Low	4.35	<=13	PASS
Band4	20MHz	16QAM	20175	5	0	Low	4.26	<=13	PASS
Band4	20MHz	16QAM	20300	5	0	High	4.42	<=13	PASS

Test Graphs

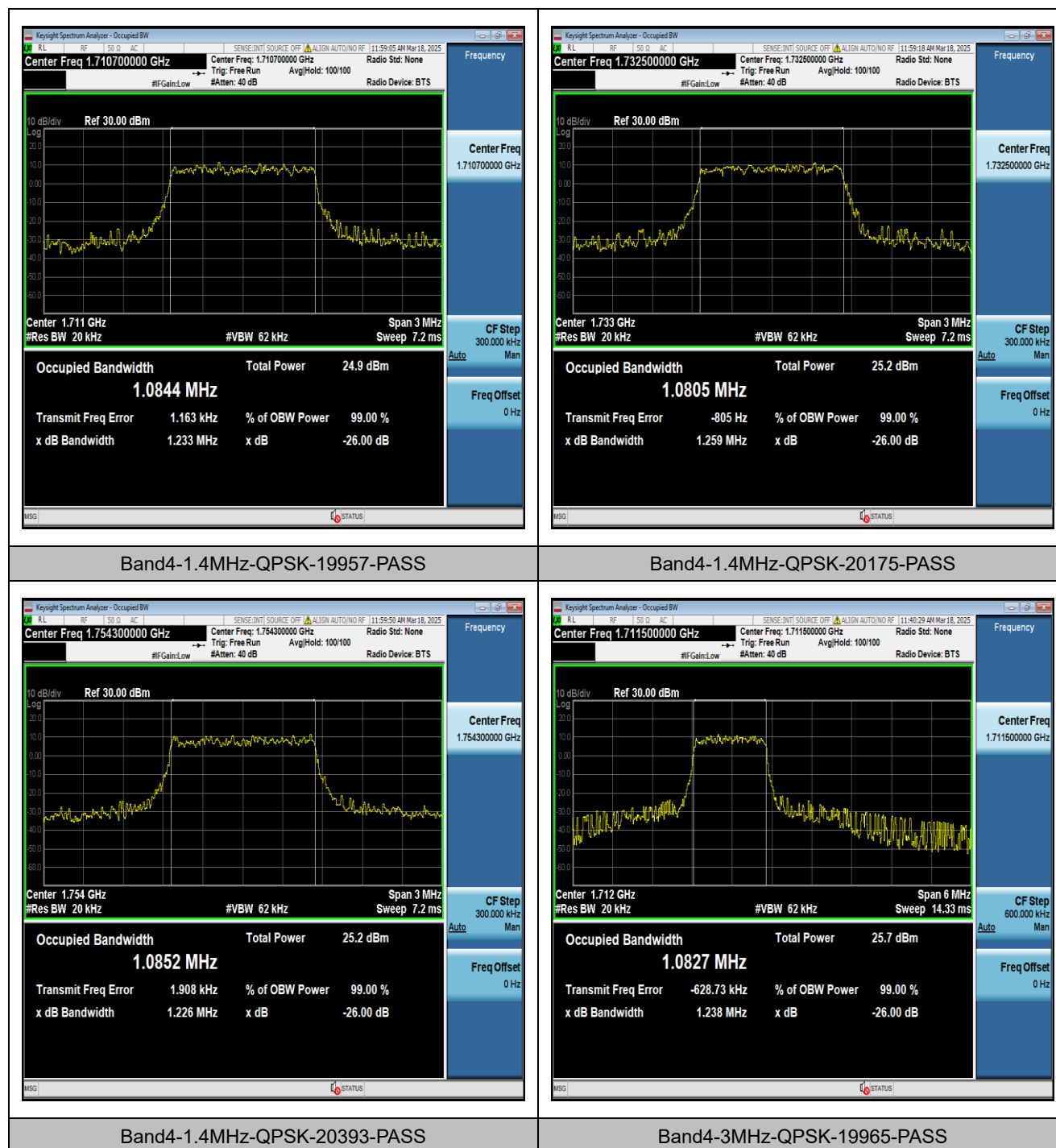


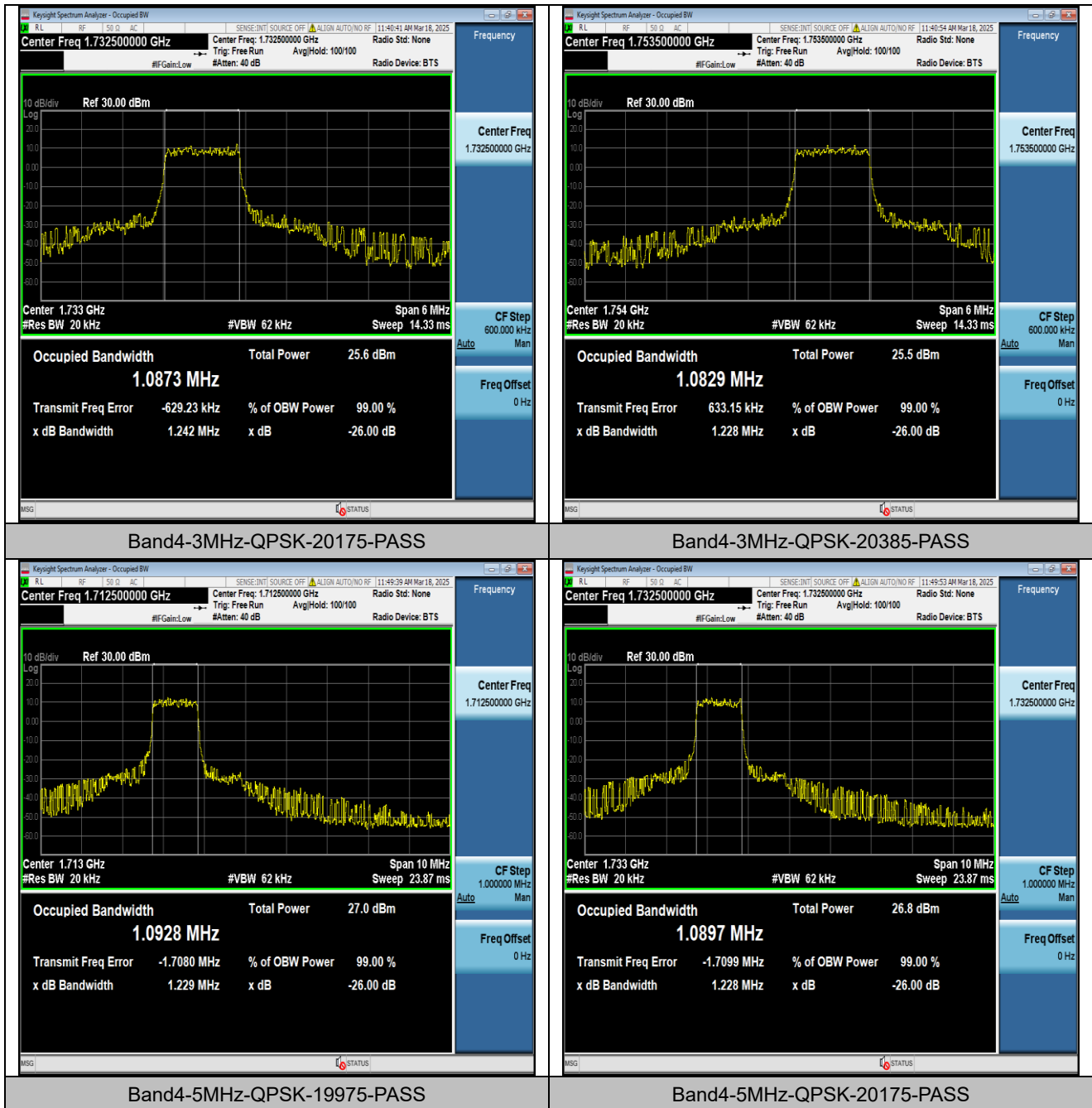


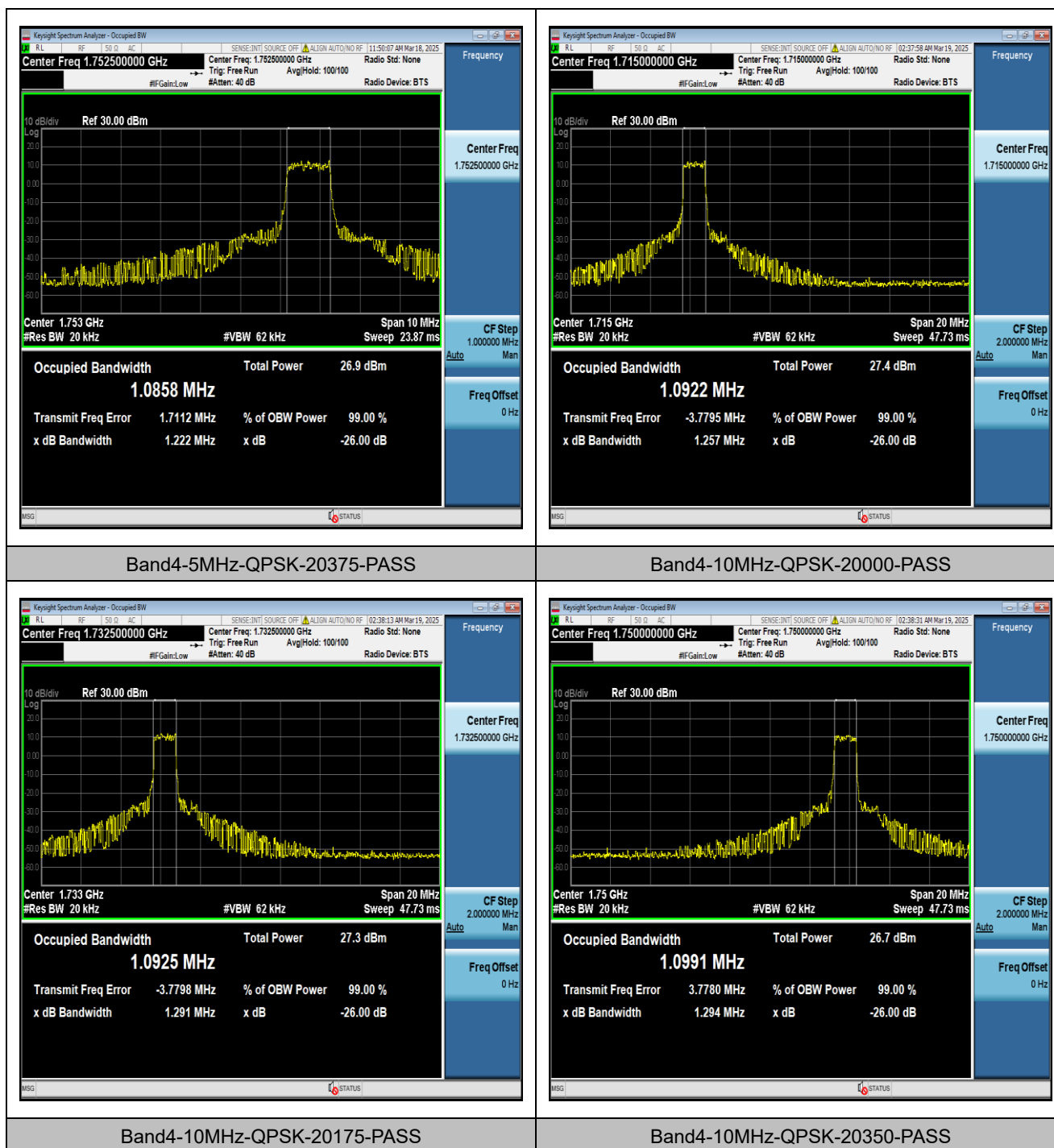
26dB Bandwidth and Occupied Bandwidth for M1**Test Result**

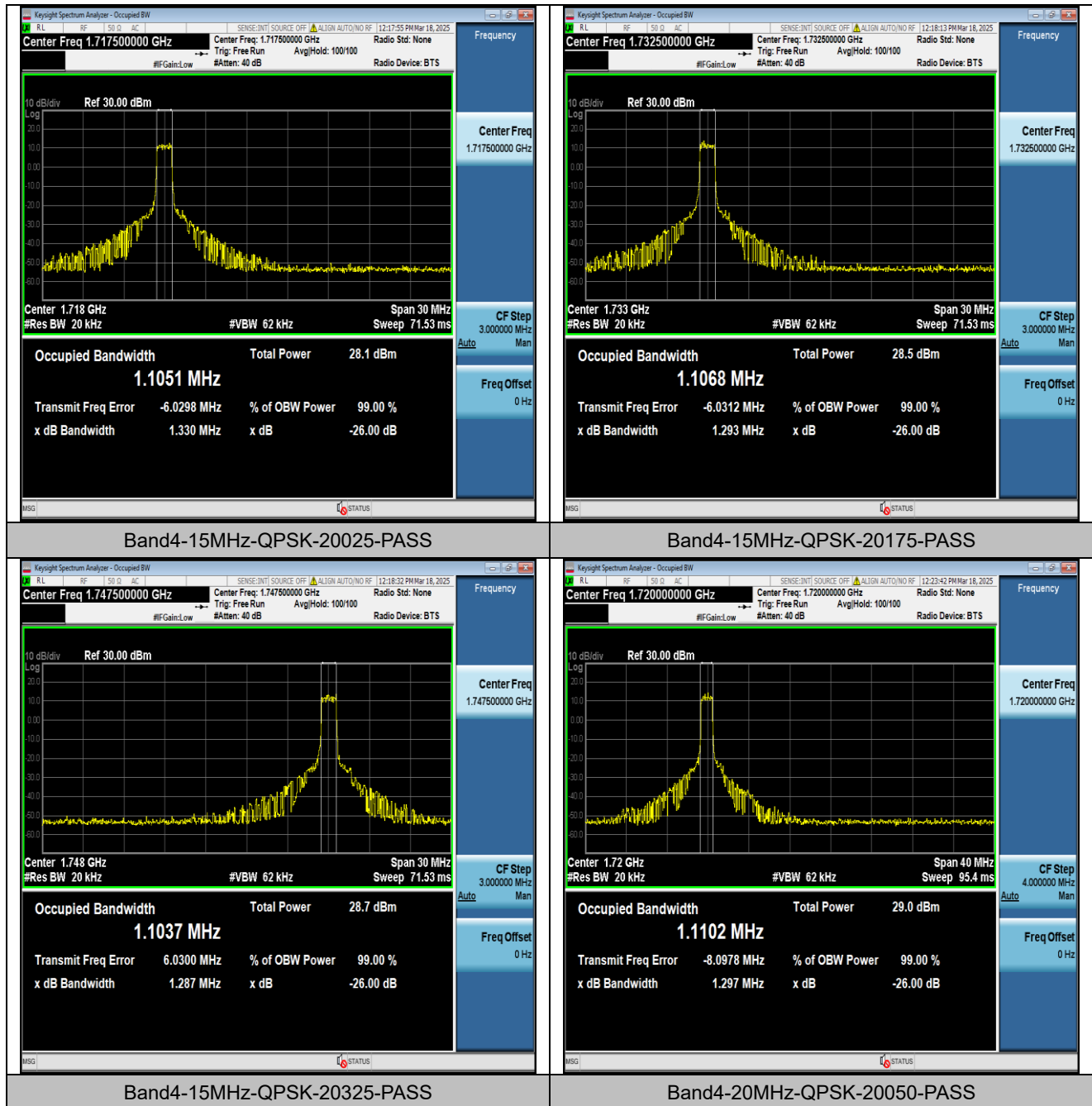
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band4	1.4MHz	QPSK	19957	6	0	Low	1.0844	1.233	PASS
Band4	1.4MHz	QPSK	20175	6	0	Low	1.0805	1.259	PASS
Band4	1.4MHz	QPSK	20393	6	0	High	1.0852	1.226	PASS
Band4	3MHz	QPSK	19965	6	0	Low	1.0827	1.238	PASS
Band4	3MHz	QPSK	20175	6	0	Low	1.0873	1.242	PASS
Band4	3MHz	QPSK	20385	6	0	High	1.0829	1.228	PASS
Band4	5MHz	QPSK	19975	6	0	Low	1.0928	1.229	PASS
Band4	5MHz	QPSK	20175	6	0	Low	1.0897	1.228	PASS
Band4	5MHz	QPSK	20375	6	0	High	1.0858	1.222	PASS
Band4	10MHz	QPSK	20000	6	0	Low	1.0922	1.257	PASS
Band4	10MHz	QPSK	20175	6	0	Low	1.0925	1.291	PASS
Band4	10MHz	QPSK	20350	6	0	High	1.0991	1.294	PASS
Band4	15MHz	QPSK	20025	6	0	Low	1.1051	1.330	PASS
Band4	15MHz	QPSK	20175	6	0	Low	1.1068	1.293	PASS
Band4	15MHz	QPSK	20325	6	0	High	1.1037	1.287	PASS
Band4	20MHz	QPSK	20050	6	0	Low	1.1102	1.297	PASS
Band4	20MHz	QPSK	20175	6	0	Low	1.1131	1.295	PASS
Band4	20MHz	QPSK	20300	6	0	High	1.1080	1.286	PASS
Band4	1.4MHz	16QAM	19957	5	0	Low	0.90844	1.099	PASS
Band4	1.4MHz	16QAM	20175	5	0	Low	0.91638	1.060	PASS
Band4	1.4MHz	16QAM	20393	5	0	High	0.91684	1.075	PASS
Band4	3MHz	16QAM	19965	5	0	Low	0.91310	1.087	PASS
Band4	3MHz	16QAM	20175	5	0	Low	0.91219	1.072	PASS
Band4	3MHz	16QAM	20385	5	0	High	0.91526	1.119	PASS
Band4	5MHz	16QAM	19975	5	0	Low	0.91931	1.104	PASS
Band4	5MHz	16QAM	20175	5	0	Low	0.91588	1.116	PASS
Band4	5MHz	16QAM	20375	5	0	High	0.92155	1.070	PASS
Band4	10MHz	16QAM	20000	5	0	Low	0.91820	1.126	PASS
Band4	10MHz	16QAM	20175	5	0	Low	0.92266	1.111	PASS
Band4	10MHz	16QAM	20350	5	0	High	0.92173	1.135	PASS
Band4	15MHz	16QAM	20025	5	0	Low	0.94180	1.116	PASS
Band4	15MHz	16QAM	20175	5	0	Low	0.92587	1.159	PASS
Band4	15MHz	16QAM	20325	5	0	High	0.93025	1.173	PASS
Band4	20MHz	16QAM	20050	5	0	Low	0.95220	1.150	PASS
Band4	20MHz	16QAM	20175	5	0	Low	0.95260	1.149	PASS
Band4	20MHz	16QAM	20300	5	0	High	0.94968	1.136	PASS

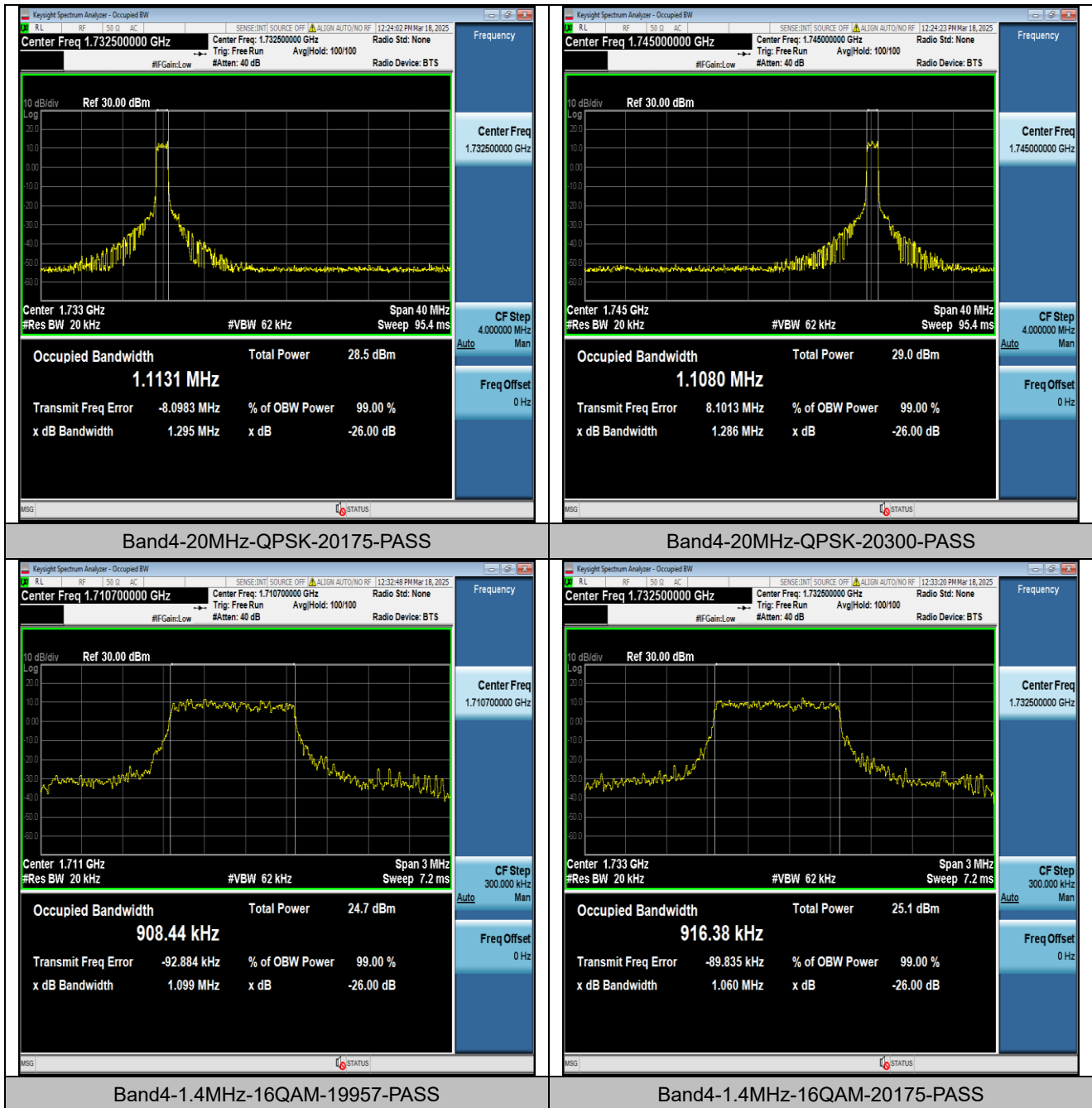
Test Graphs

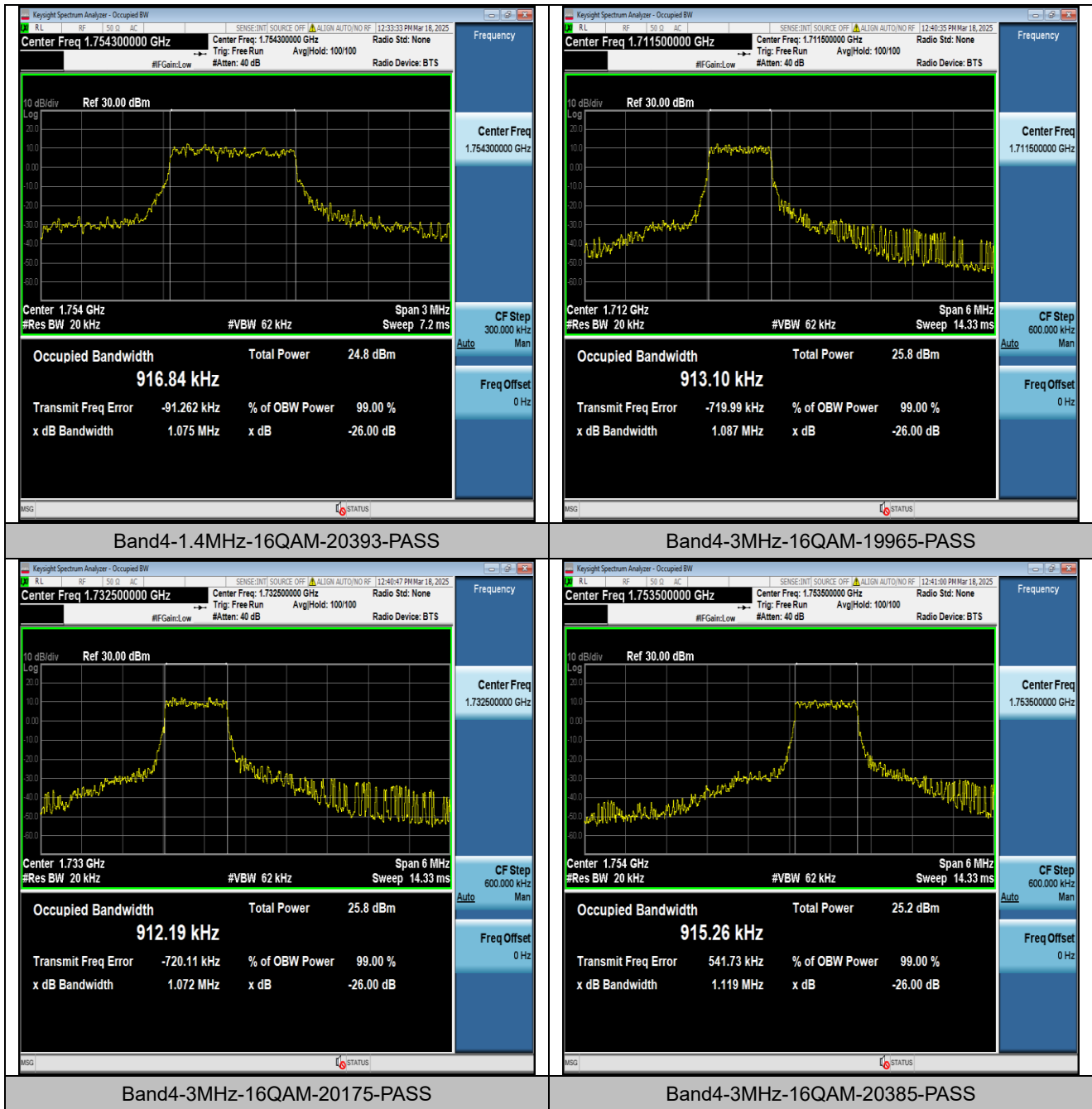


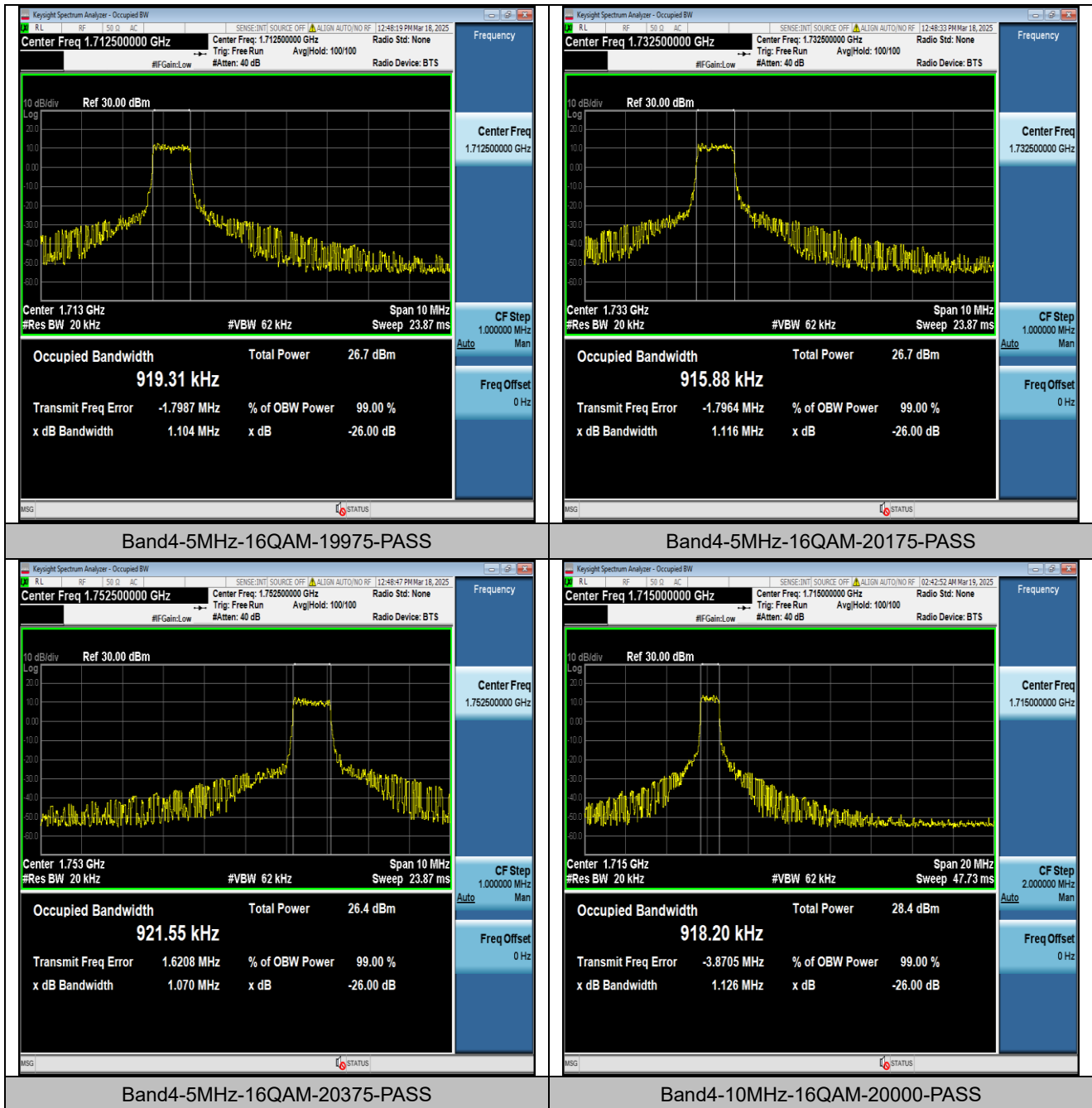


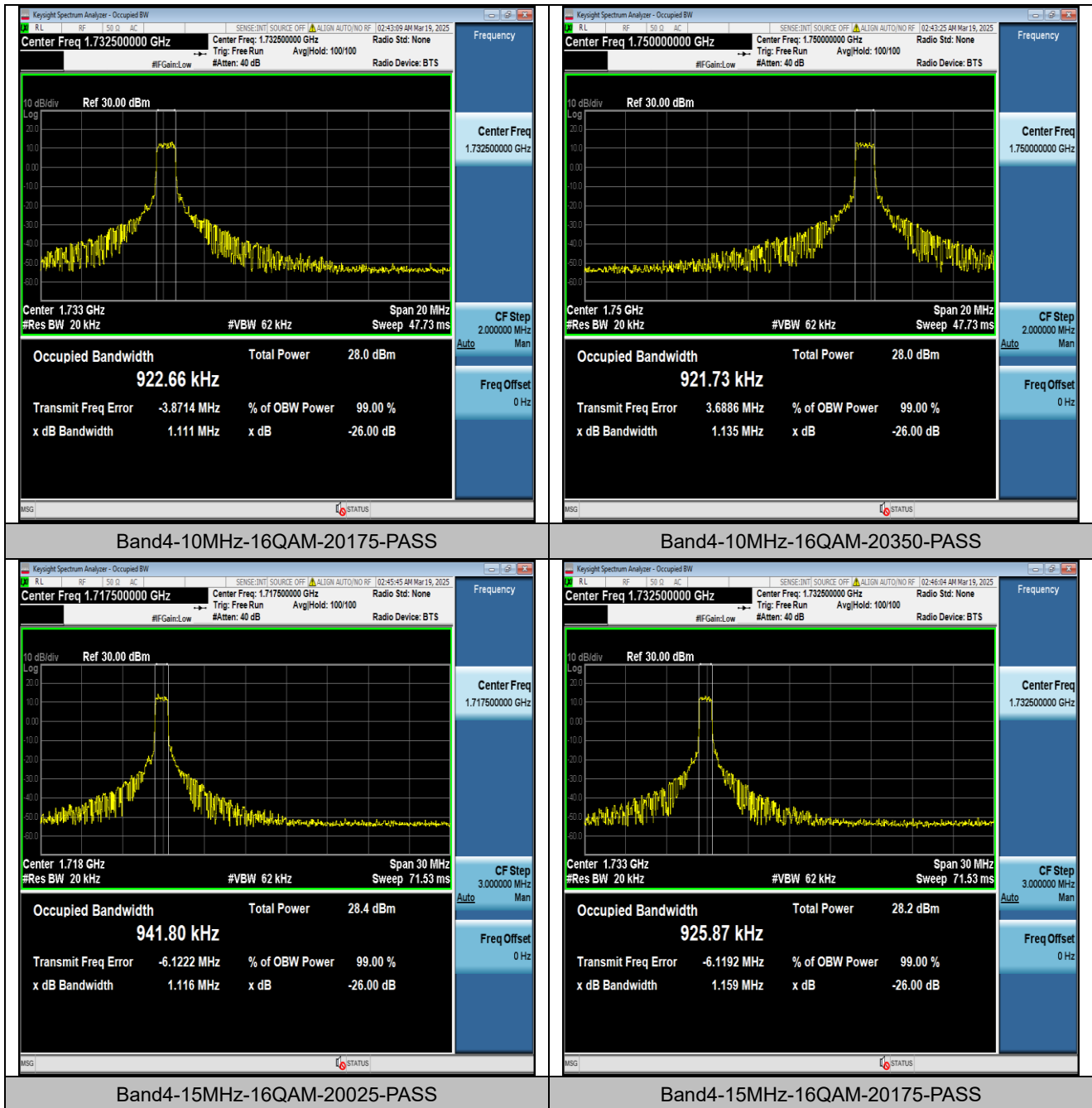


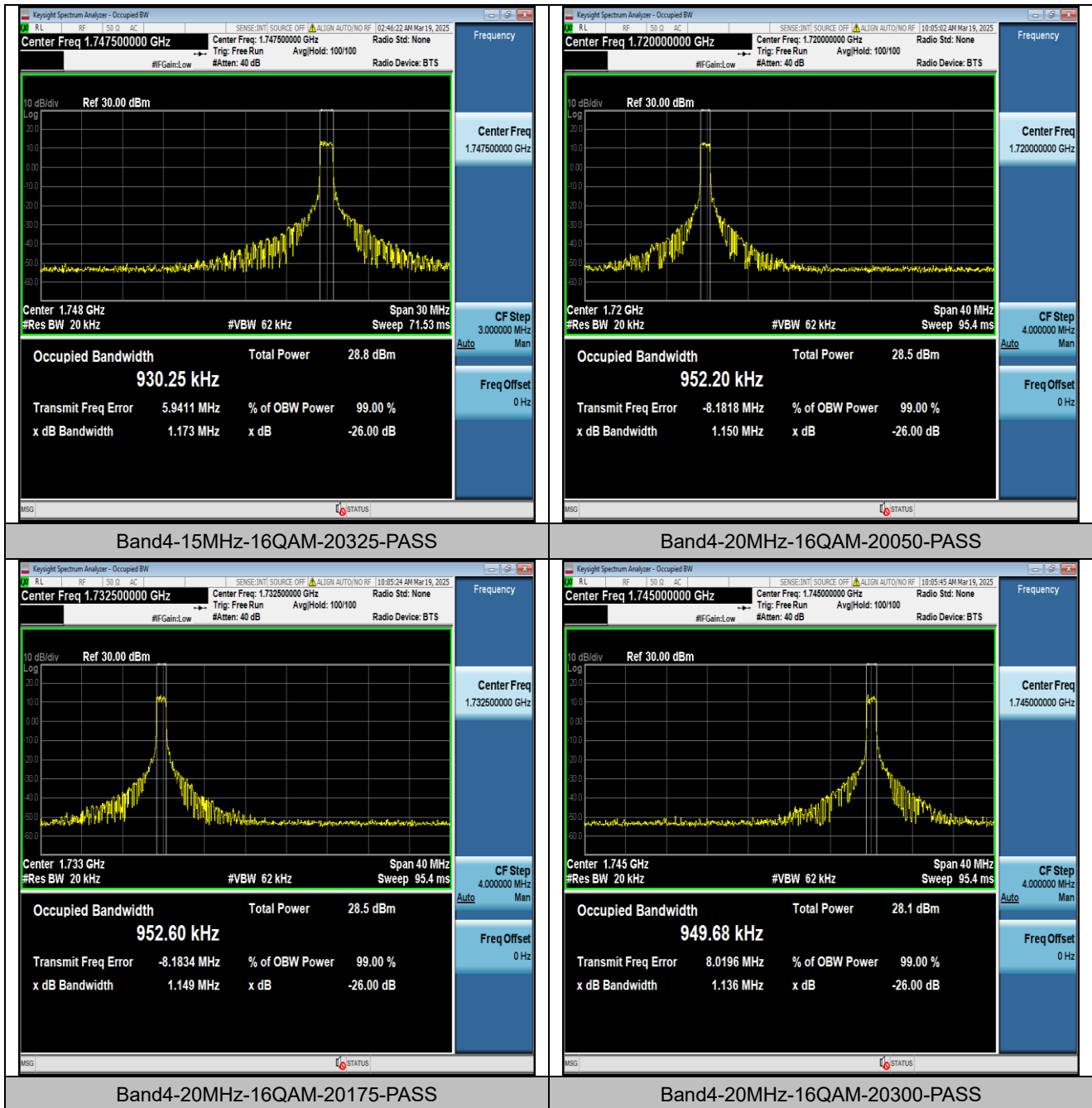






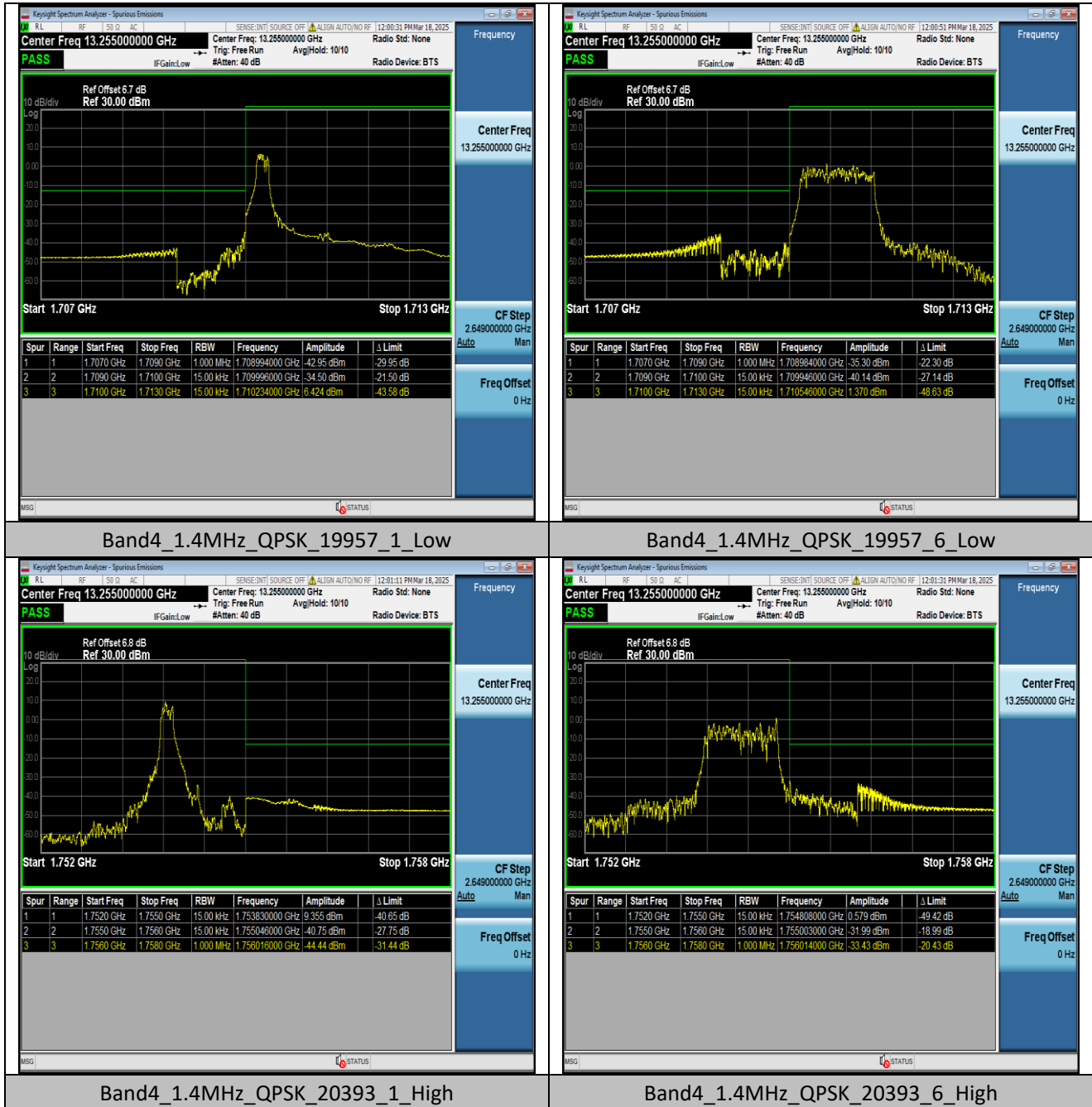


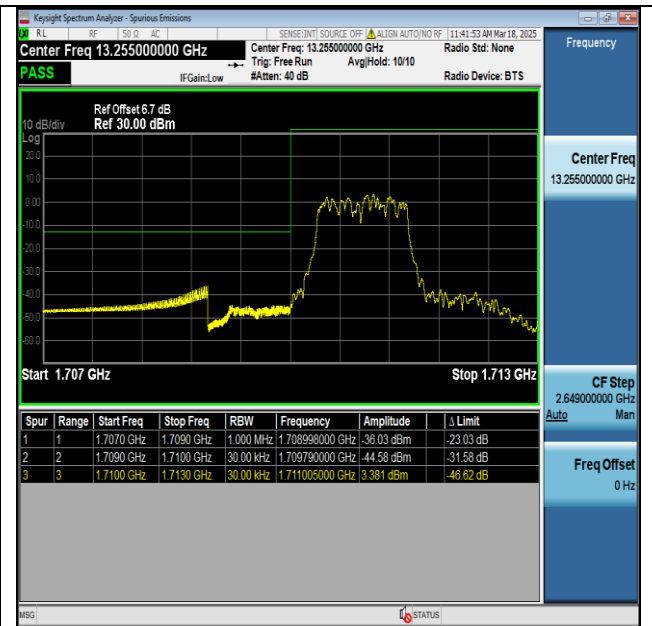
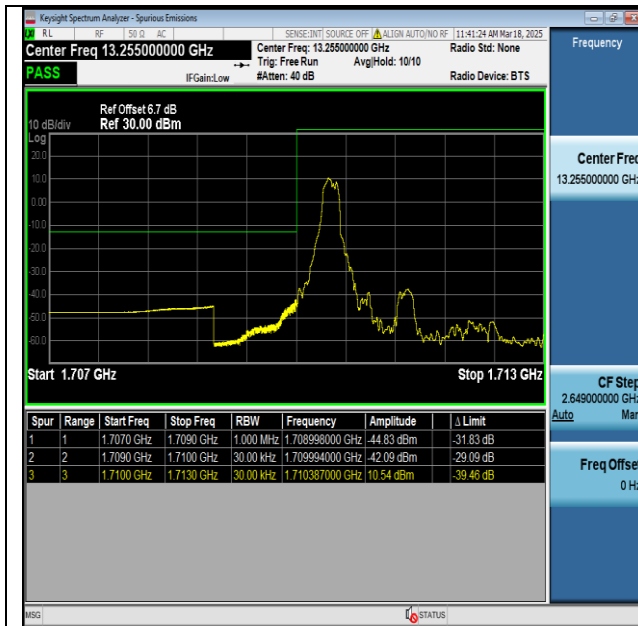




Band Edge for M1

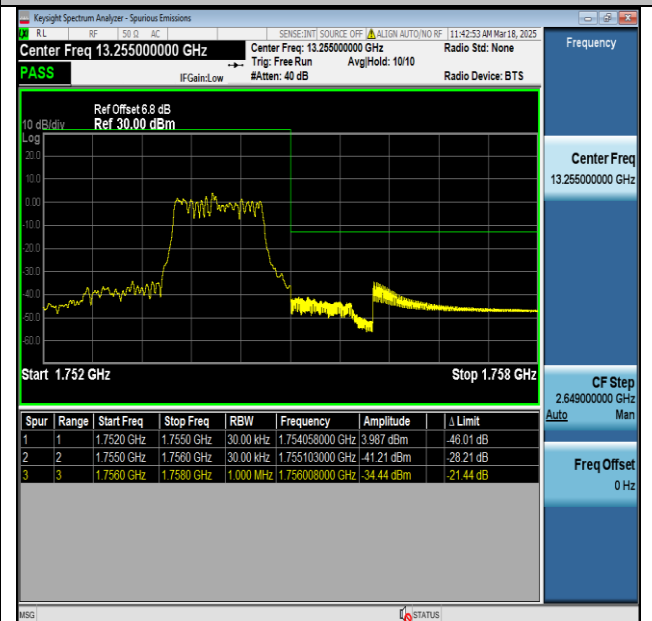
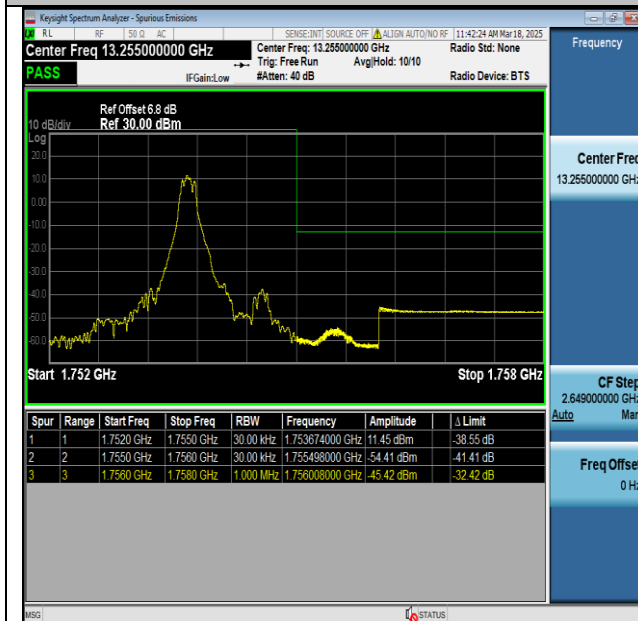
Test Graphs





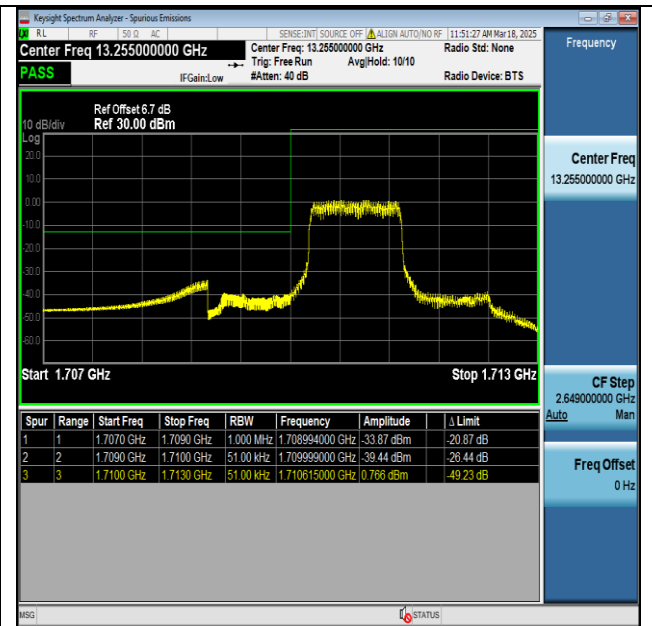
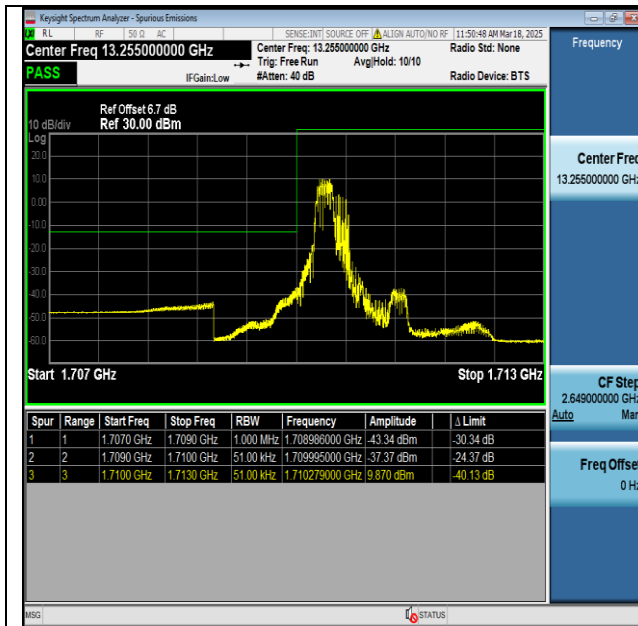
Band4_3MHz_QPSK_19965_1_Low

Band4_3MHz_QPSK_19965_6_Low



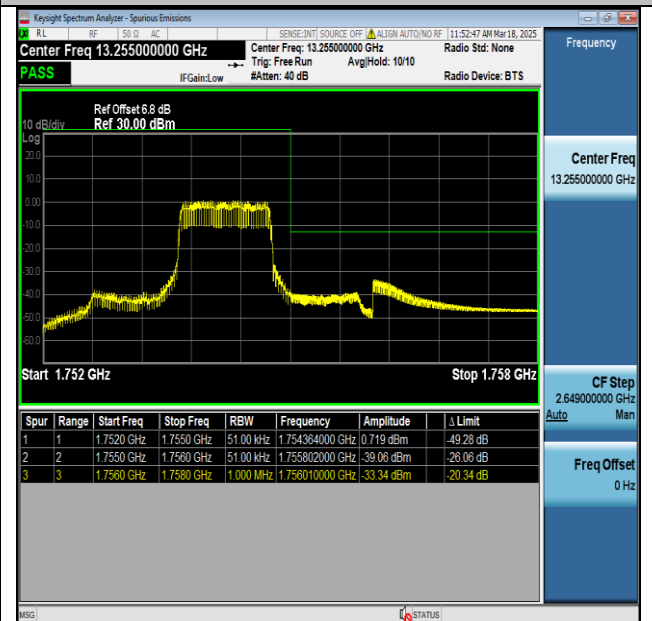
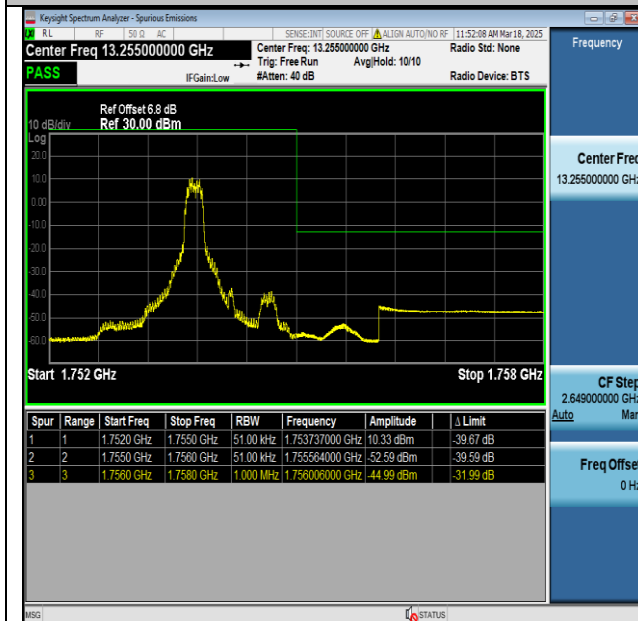
Band4_3MHz_QPSK_20385_1_High

Band4_3MHz_QPSK_20385_6_High



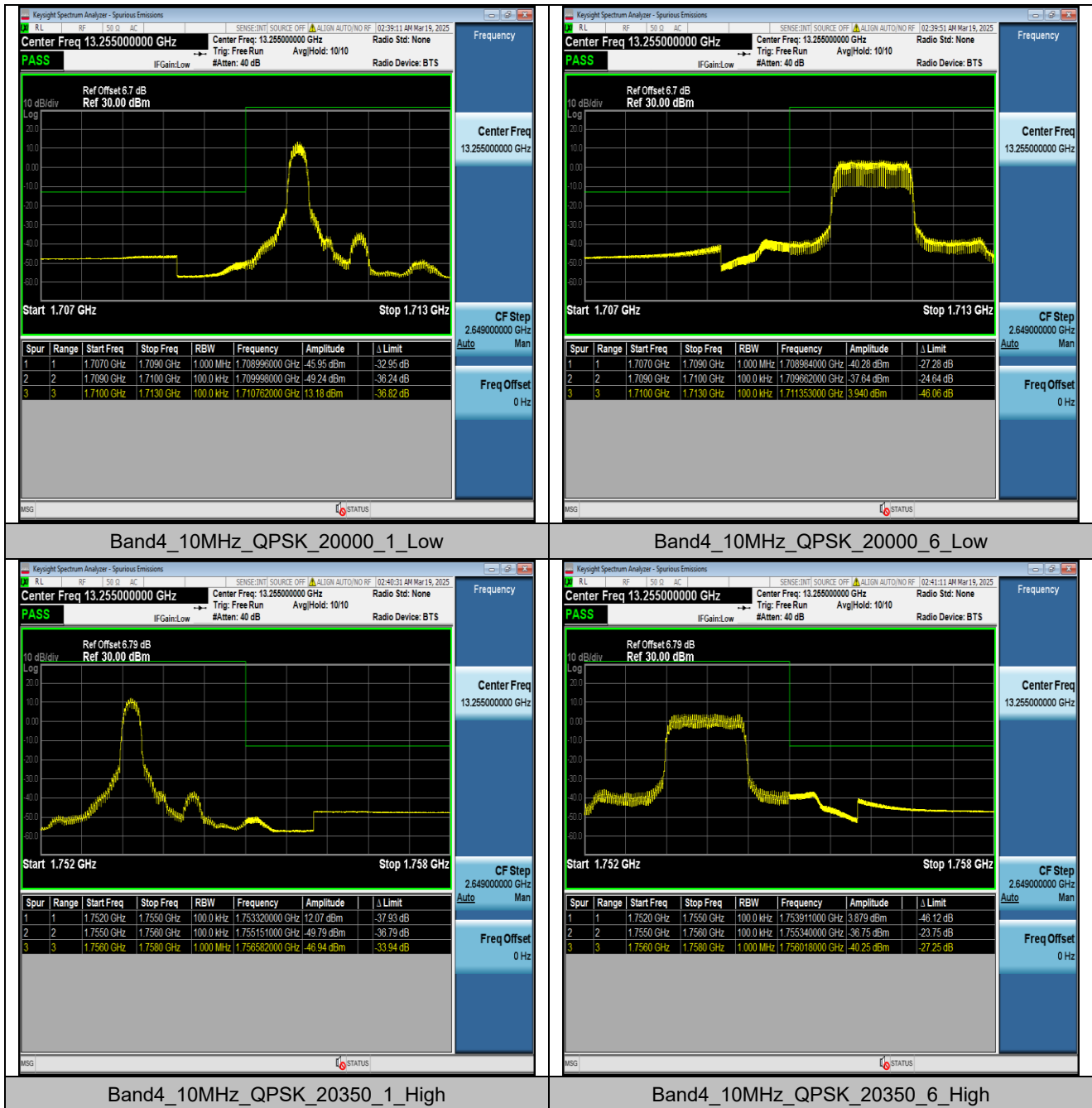
Band4_5MHz_QPSK_19975_1_Low

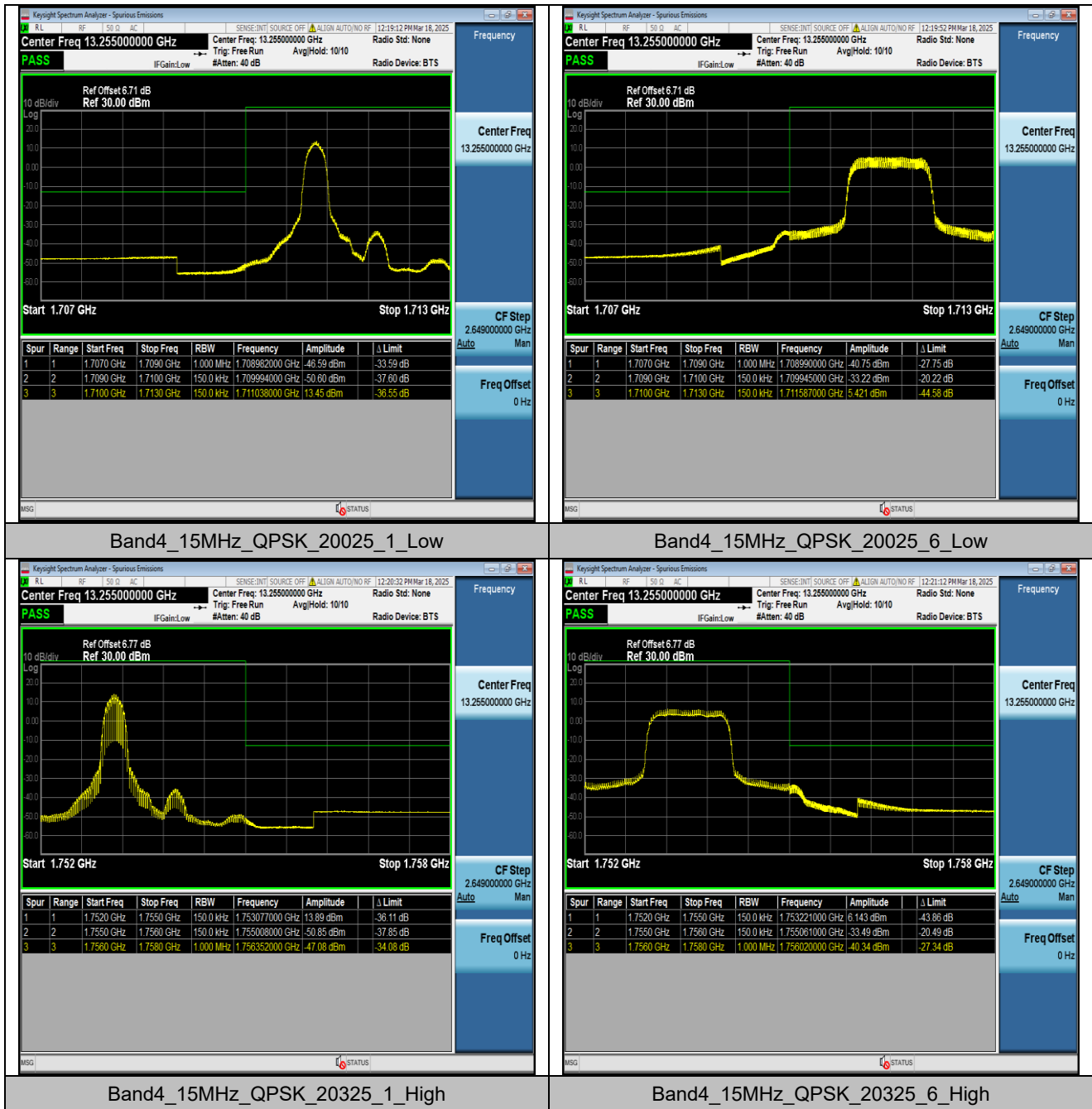
Band4_5MHz_QPSK_19975_6_Low

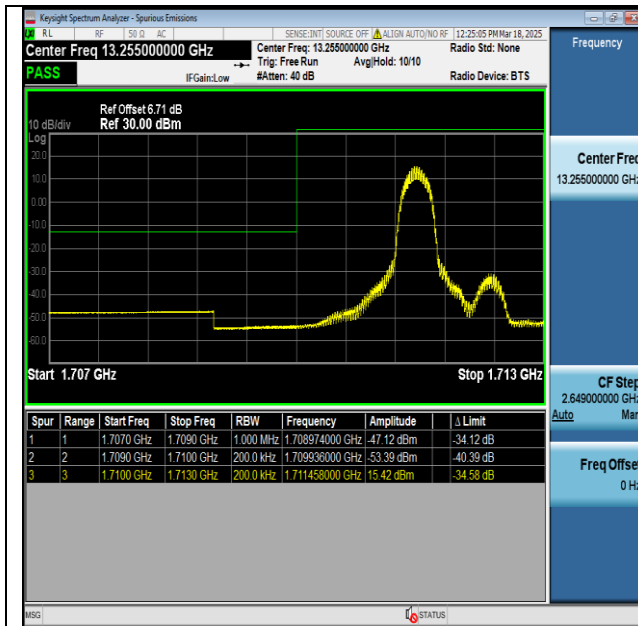


Band4_5MHz_QPSK_20375_1_High

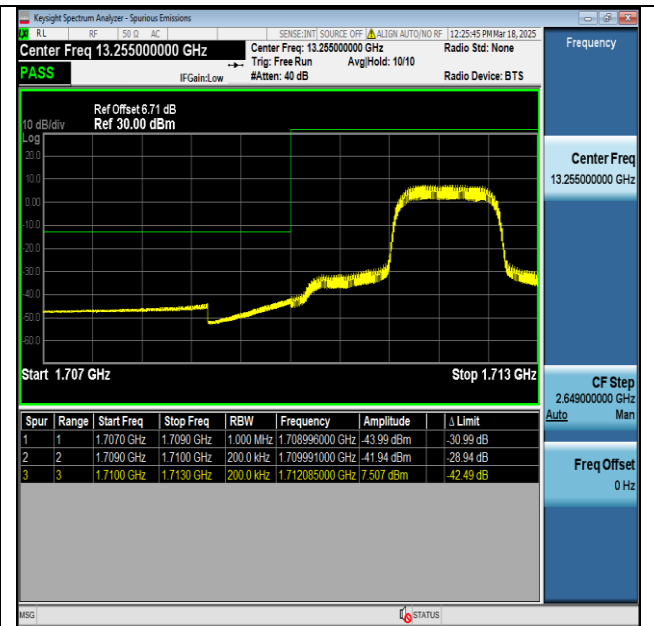
Band4_5MHz_QPSK_20375_6_High



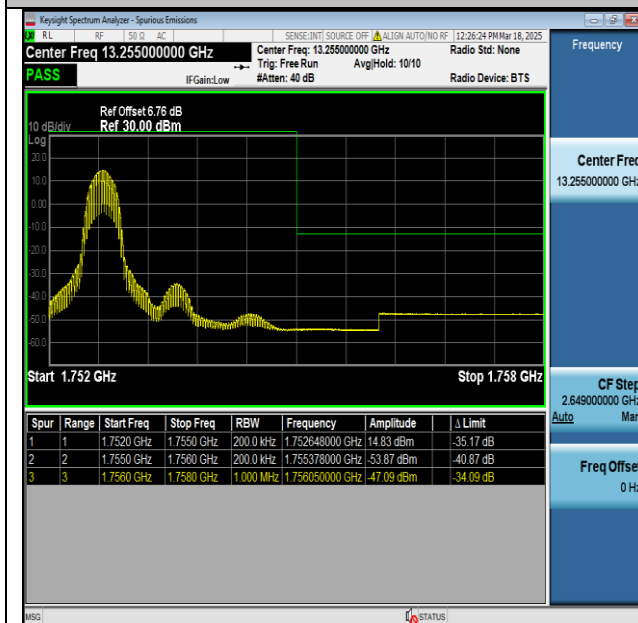




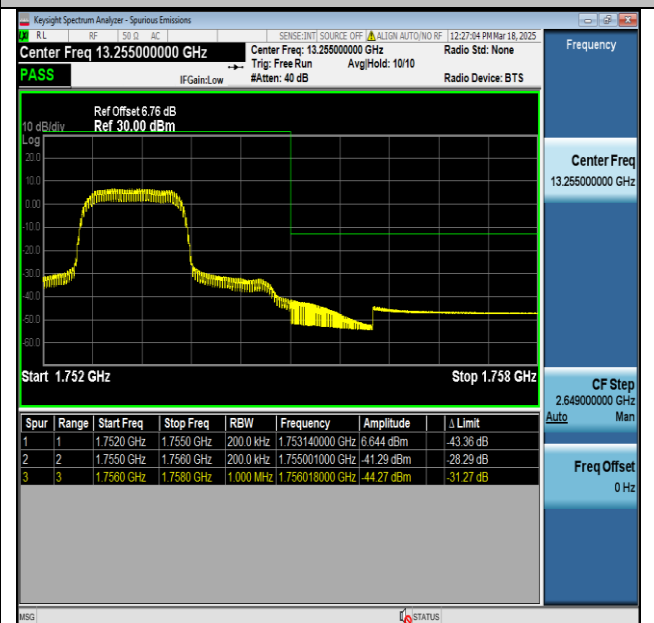
Band4_20MHz_QPSK_20050_1_Low



Band4_20MHz_QPSK_20050_6_Low



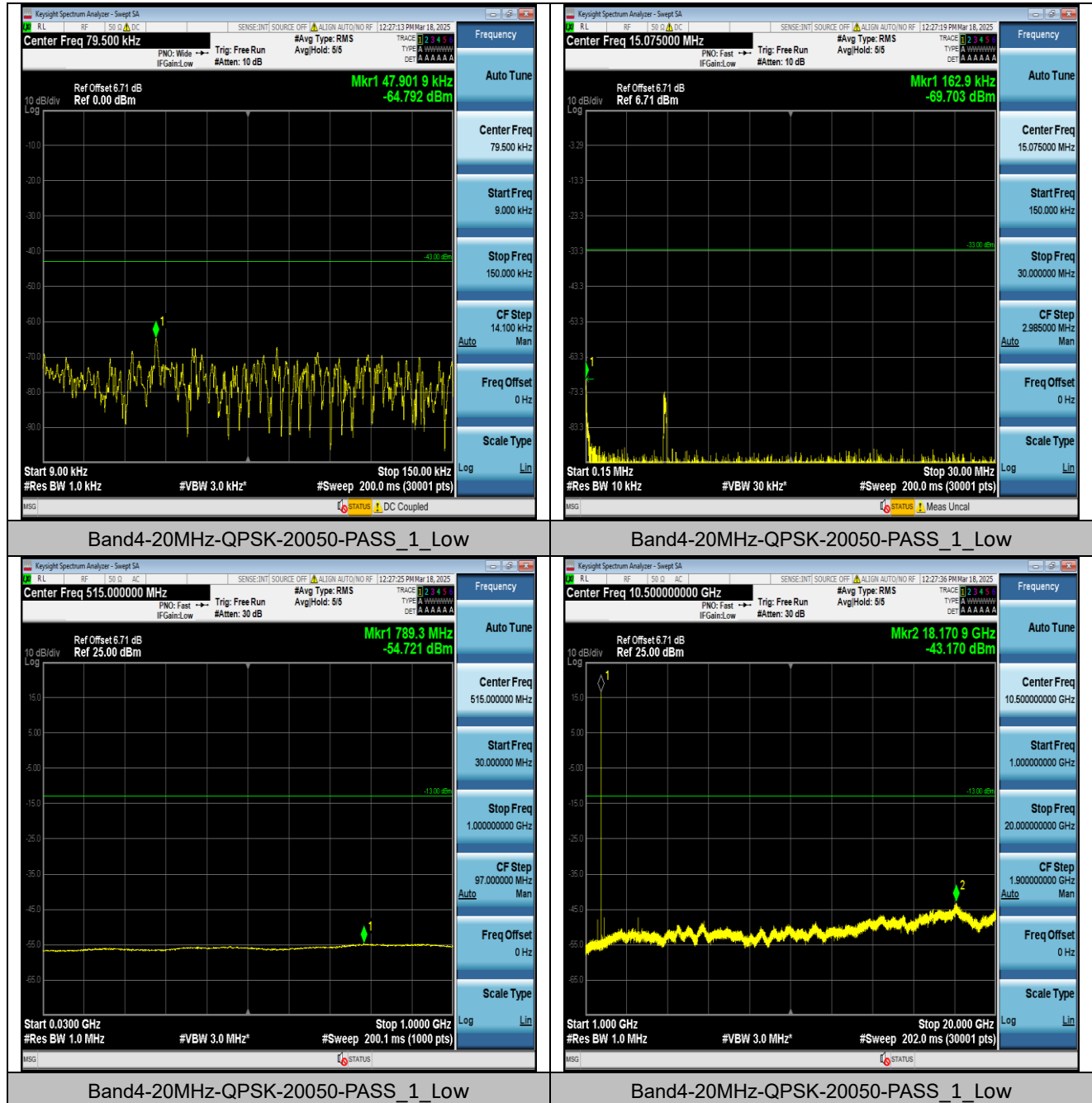
Band4_20MHz_QPSK_20300_1_High

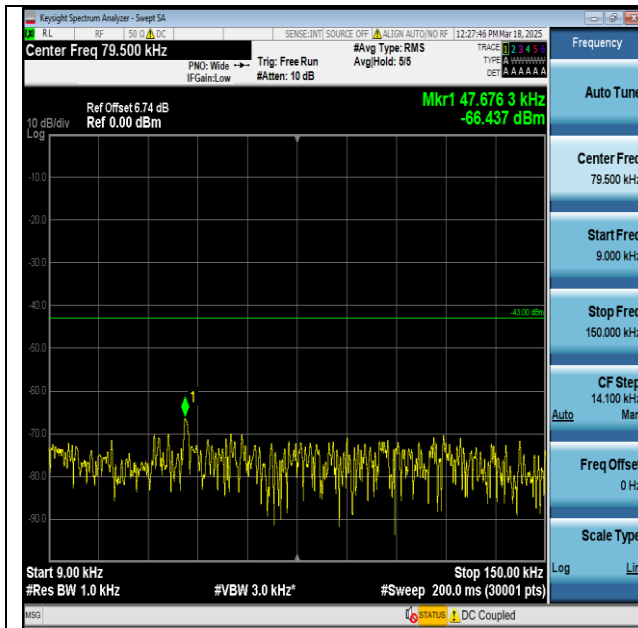


Band4_20MHz_QPSK_20300_6_High

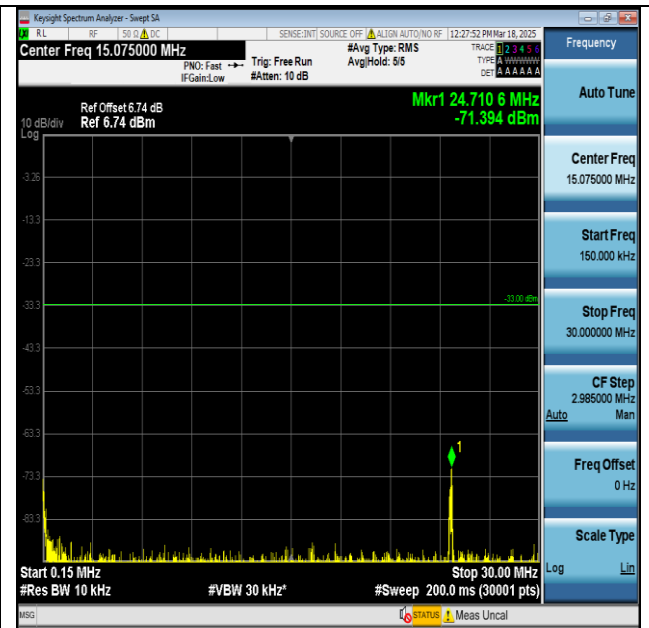
Conducted Spurious Emission for M1

Test Graphs

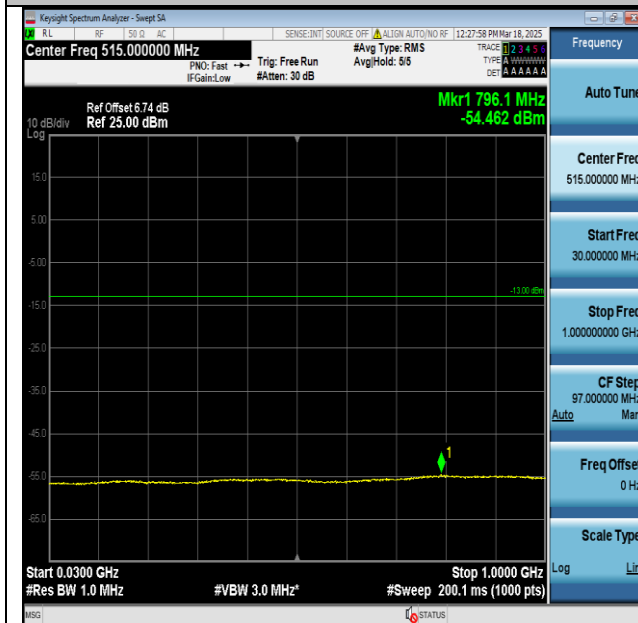




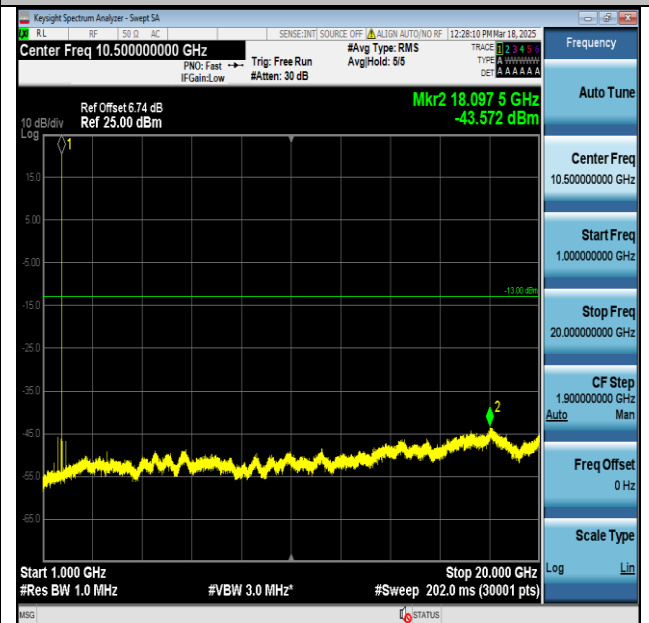
Band4-20MHz-QPSK-20175-PASS_1_Low



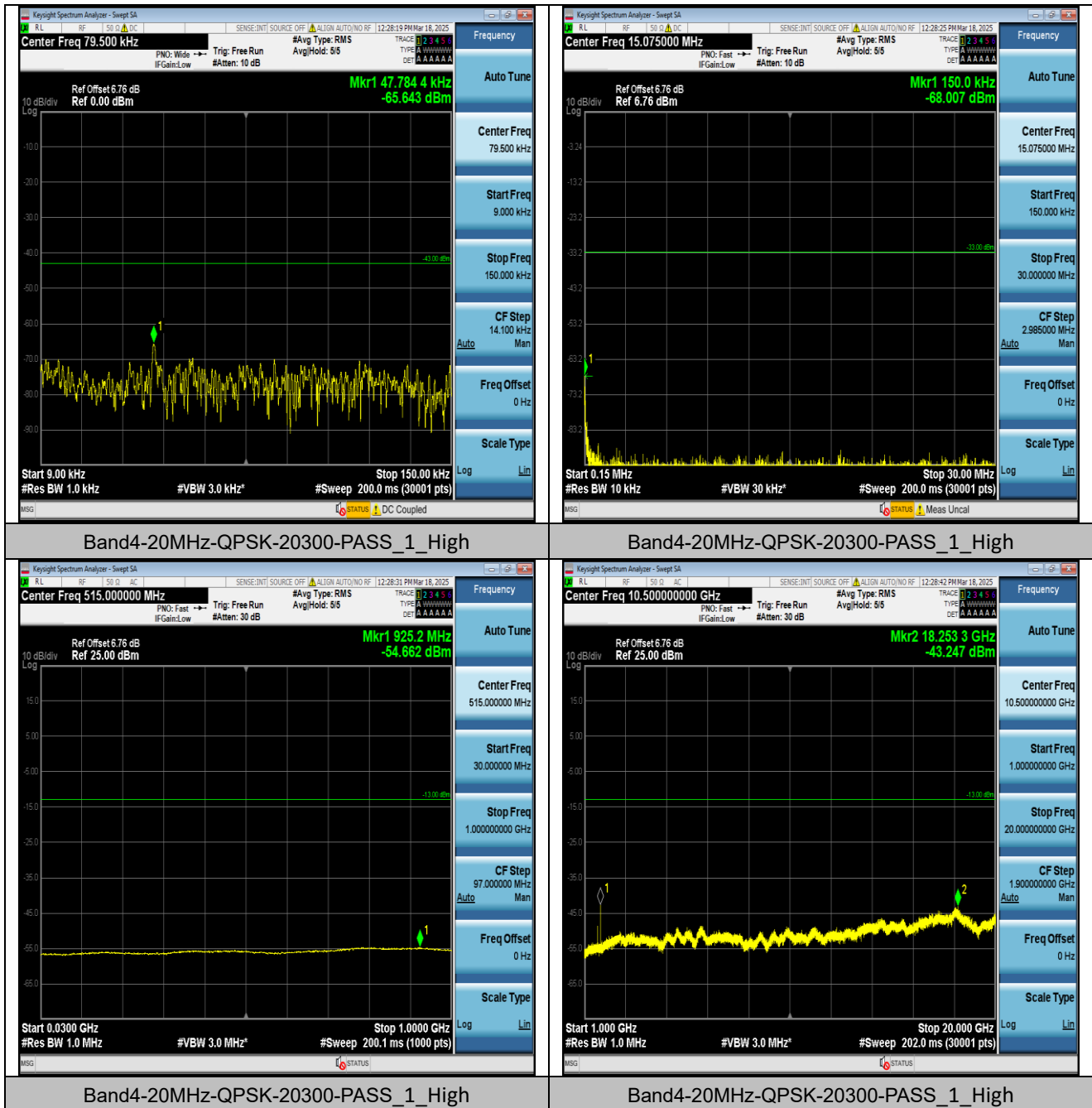
Band4-20MHz-QPSK-20175-PASS_1_Low



Band4-20MHz-QPSK-20175-PASS_1_Low



Band4-20MHz-QPSK-20175-PASS_1_Low



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
Band4	20MHz	QPSK	20175	6	0	Low	VN	NT	2.50	0.001443	PASS
Band4	20MHz	QPSK	20175	6	0	Low	VL	NT	3.90	0.002251	PASS
Band4	20MHz	QPSK	20175	6	0	Low	VH	NT	2.50	0.001443	PASS

Temperature											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	20MHz	QPSK	20175	6	0	Low	NV	-30	5.40	0.003117	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	-20	3.00	0.001732	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	-10	4.00	0.002309	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	0	8.10	0.004675	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	10	4.40	0.002540	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	20	4.50	0.002597	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	30	2.10	0.001212	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	40	7.70	0.004444	PASS
Band4	20MHz	QPSK	20175	6	0	Low	NV	50	2.90	0.001674	PASS

~The End~