

Appendix A: Effective (Isotropic) Radiated Power Output Data for NB1

Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Conducted POWER(d Bm)	ERP/EIR P(dBm)	Verdict
Band 71	Stand- Alone	3.75k Hz	0.18	QPSK	133124	1@0	22.24	19.61	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	QPSK	133124	1@47	22.24	19.61	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	BPSK	133124	1@0	22.18	19.55	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	BPSK	133124	1@47	22.28	19.65	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	QPSK	133297	1@0	21.58	18.95	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	QPSK	133297	1@47	21.59	18.96	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	BPSK	133297	1@0	21.52	18.89	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	BPSK	133297	1@47	21.62	18.99	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	QPSK	133470	1@0	21.15	18.52	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	QPSK	133470	1@47	21.15	18.52	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	BPSK	133470	1@0	21.13	18.5	PASS
Band 71	Stand- Alone	3.75k Hz	0.18	BPSK	133470	1@47	21.18	18.55	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133124	1@0	22.45	19.82	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133124	1@11	22.46	19.83	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133124	3@3	22.78	20.15	PASS
Band 71	Stand- Alone	15kHz	0.18	BPSK	133124	1@0	22.42	19.79	PASS
Band 71	Stand- Alone	15kHz	0.18	BPSK	133124	1@11	22.44	19.81	PASS

Band 71	Stand- Alone	15kHz	0.18	QPSK	133297	1@0	21.83	19.2	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133297	1@11	21.81	19.18	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133297	3@3	22.26	19.63	PASS
Band 71	Stand- Alone	15kHz	0.18	BPSK	133297	1@0	21.80	19.17	PASS
Band 71	Stand- Alone	15kHz	0.18	BPSK	133297	1@11	21.81	19.18	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133470	1@0	21.41	18.78	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133470	1@11	21.38	18.75	PASS
Band 71	Stand- Alone	15kHz	0.18	QPSK	133470	3@3	21.93	19.3	PASS
Band 71	Stand- Alone	15kHz	0.18	BPSK	133470	1@0	21.38	18.75	PASS
Band 71	Stand- Alone	15kHz	0.18	BPSK	133470	1@11	21.40	18.77	PASS

Appendix B: Peak-to-Average Ratio(CCDF) for NB1

Test Result

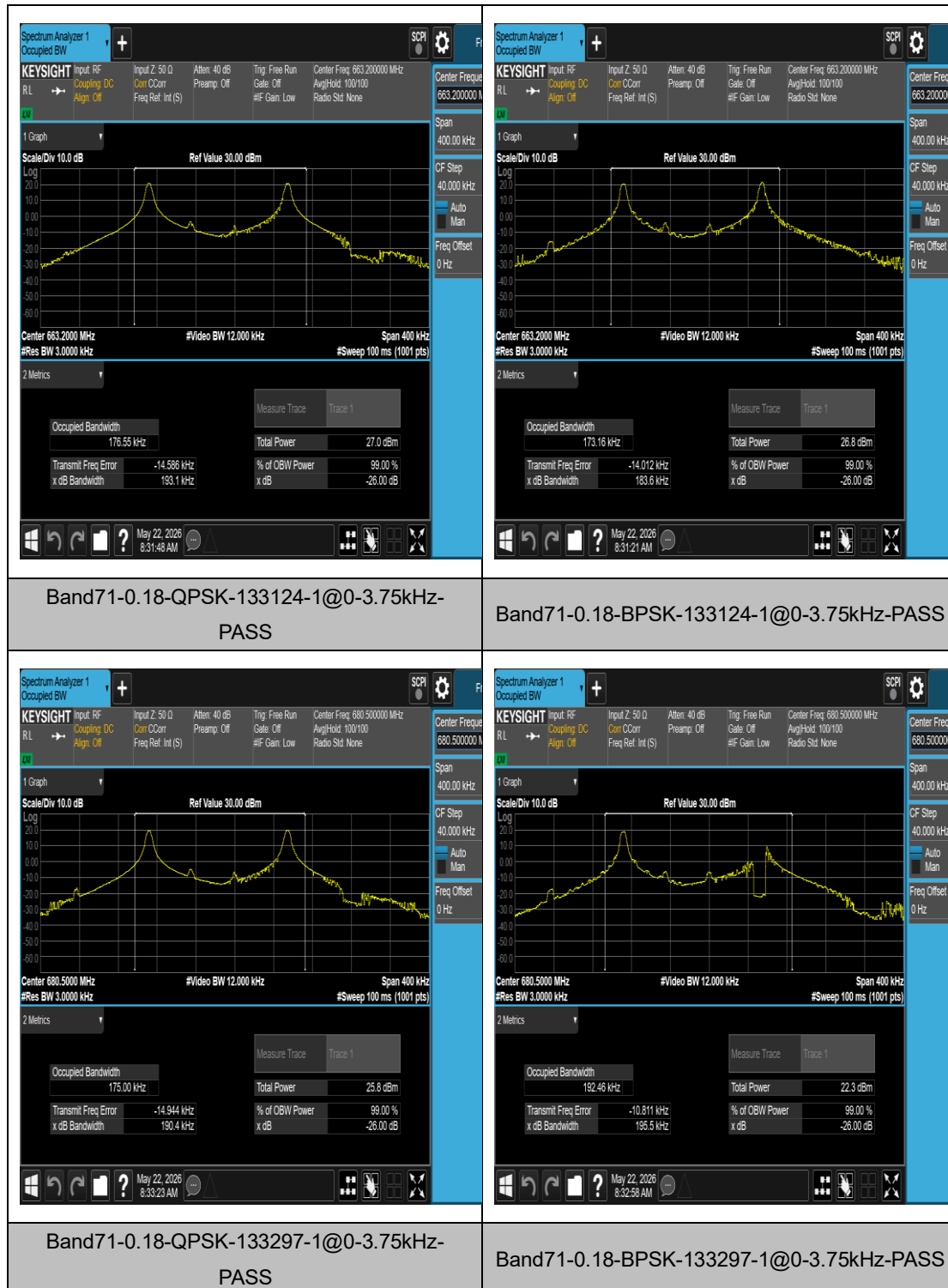
Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	Limit (dBm)	Verdict
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133297	1@0	4.75	<=13	PASS
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133297	1@47	4.8	<=13	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133297	1@0	4.87	<=13	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133297	1@47	4.8	<=13	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133297	1@0	5.97	<=13	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133297	1@11	6.05	<=13	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133297	3@3	11.51	<=13	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133297	1@0	5.95	<=13	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133297	1@11	5.87	<=13	PASS

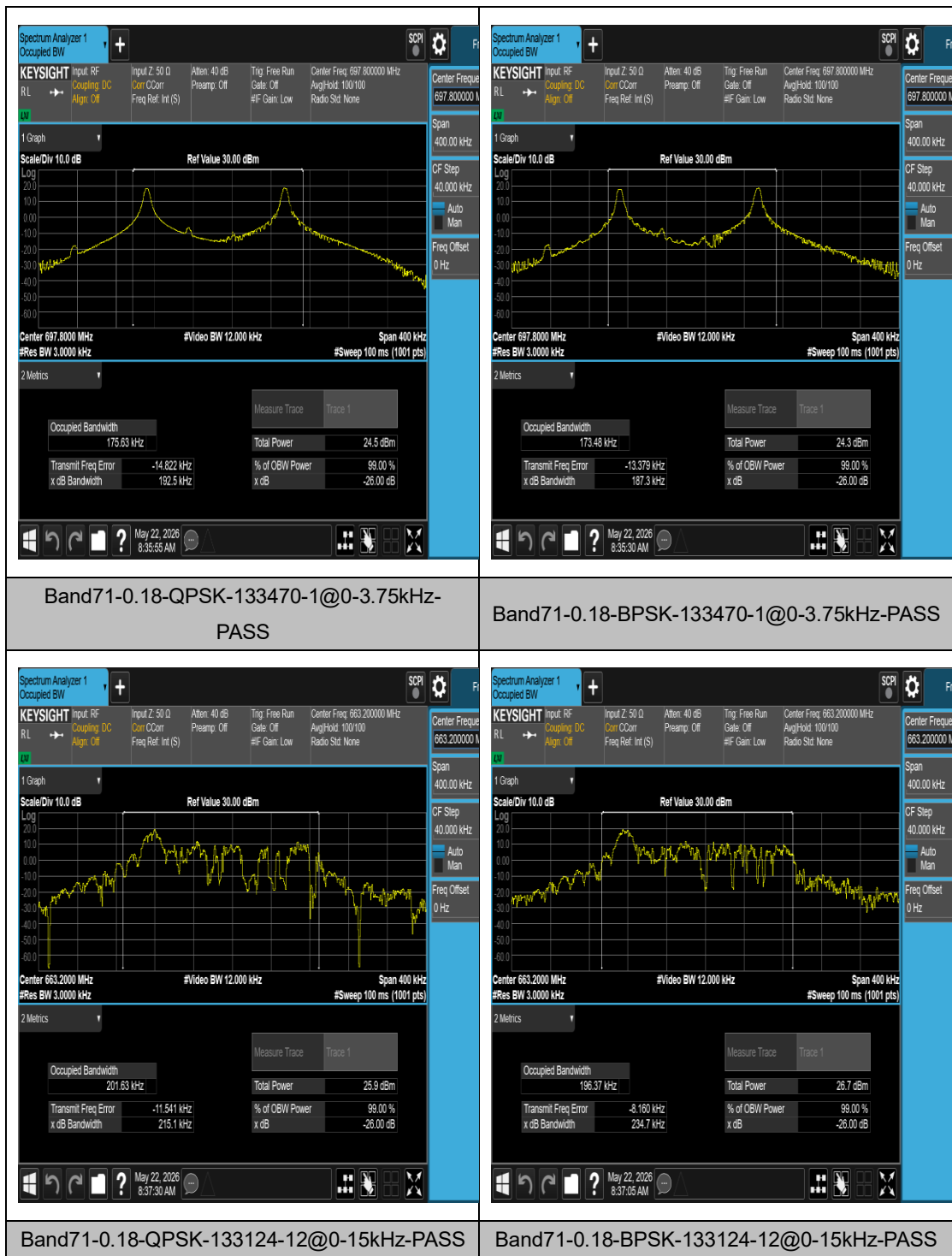
Appendix C: Emission Bandwidth for NB1

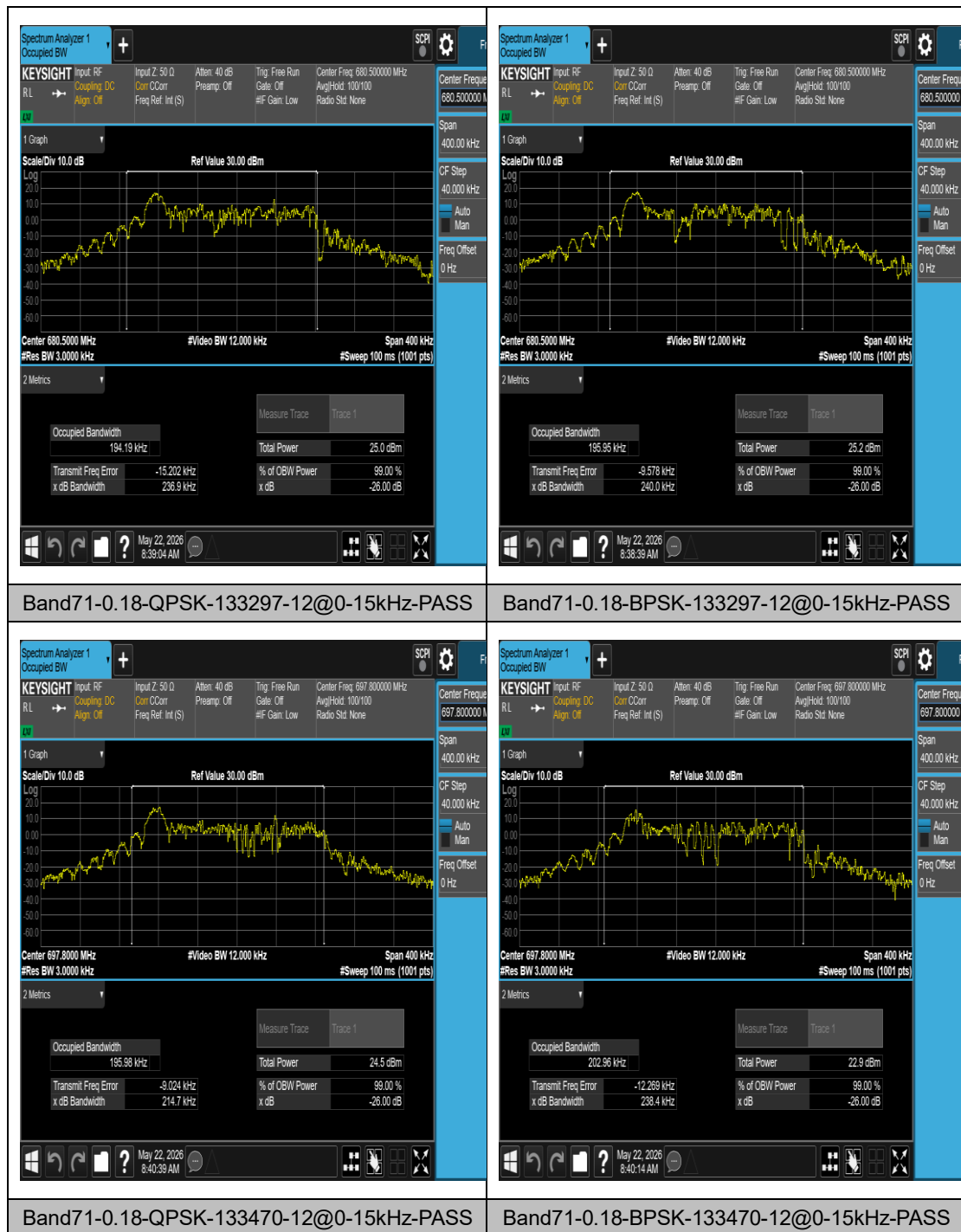
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133124	1@0	0.17655	0.1931	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133124	1@0	0.17316	0.1836	PASS
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133297	1@0	0.17500	0.1904	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133297	1@0	0.19246	0.1955	PASS
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133470	1@0	0.17563	0.1925	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133470	1@0	0.17348	0.1873	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133124	12@0	0.20163	0.2151	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133124	12@0	0.19637	0.2347	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133297	12@0	0.19419	0.2369	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133297	12@0	0.19595	0.2400	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133470	12@0	0.19598	0.2147	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133470	12@0	0.20296	0.2384	PASS

Test Graphs







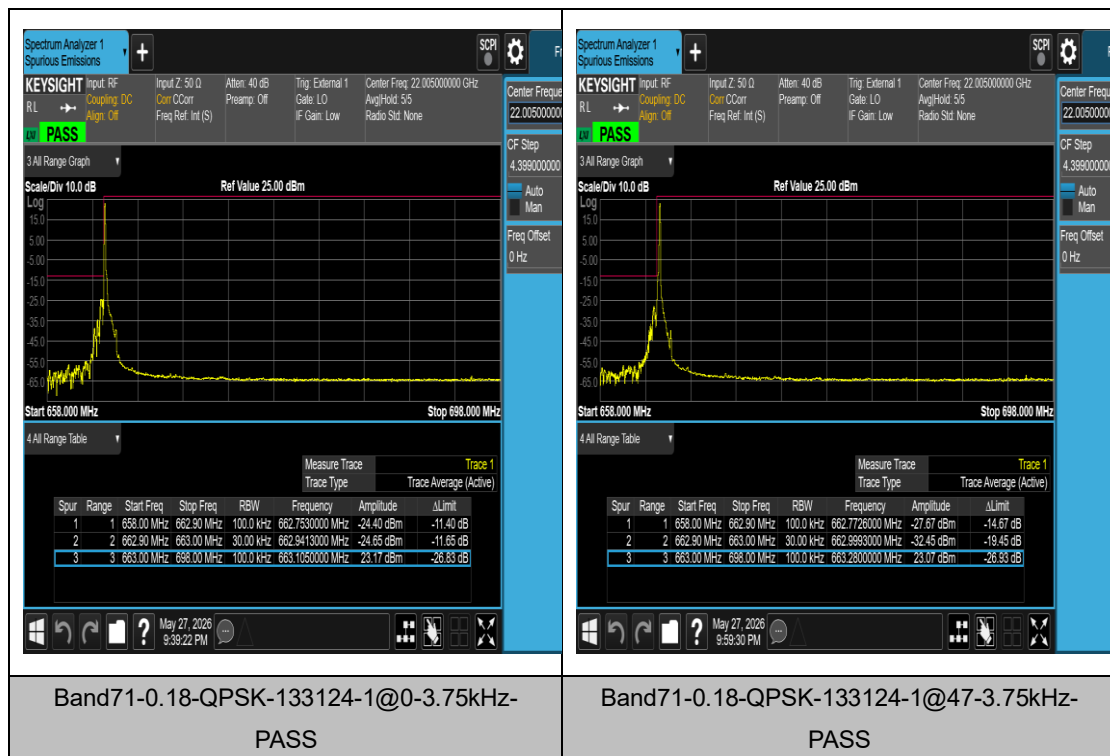
Appendix D: Band Edge for NB1

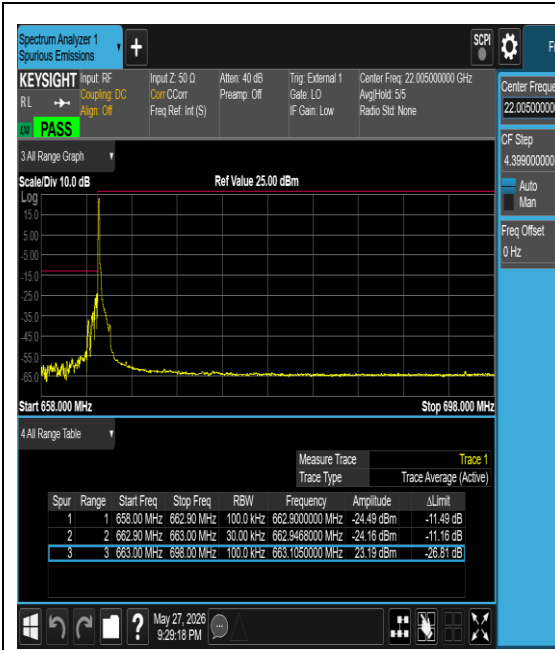
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	Verdict
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133124	1@0	-24.40	PASS
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133124	1@47	-27.67	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133124	1@0	-24.16	PASS

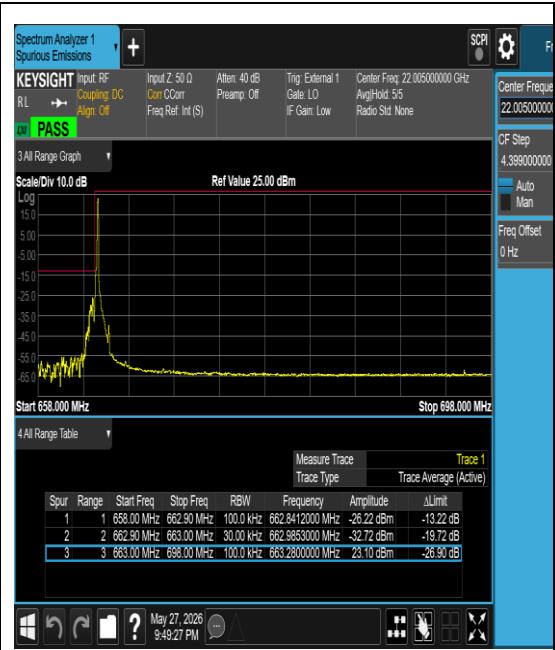
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133124	1@47	-26.22	PASS
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133470	1@0	-24.98	PASS
Band71	Stand-Alone	3.75kHz	0.18	QPSK	133470	1@47	-26.03	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133470	1@0	-30.57	PASS
Band71	Stand-Alone	3.75kHz	0.18	BPSK	133470	1@47	-26.38	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133124	1@0	-23.06	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133124	1@11	-30.94	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133124	12@0	-16.44	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133124	1@0	-23.37	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133124	1@11	-29.07	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133470	1@0	-30.03	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133470	1@11	-23.91	PASS
Band71	Stand-Alone	15kHz	0.18	QPSK	133470	12@0	-21.77	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133470	1@0	-30.74	PASS
Band71	Stand-Alone	15kHz	0.18	BPSK	133470	1@11	-23.52	PASS

Test Graphs

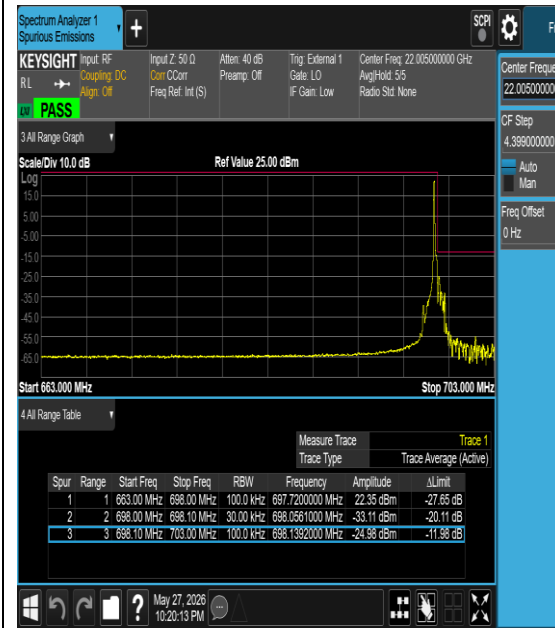




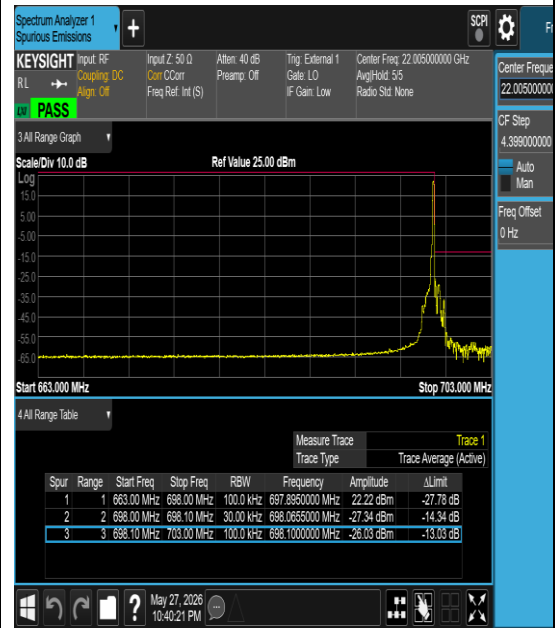
Band71-0.18-BPSK-133124-1@0-3.75kHz-PASS



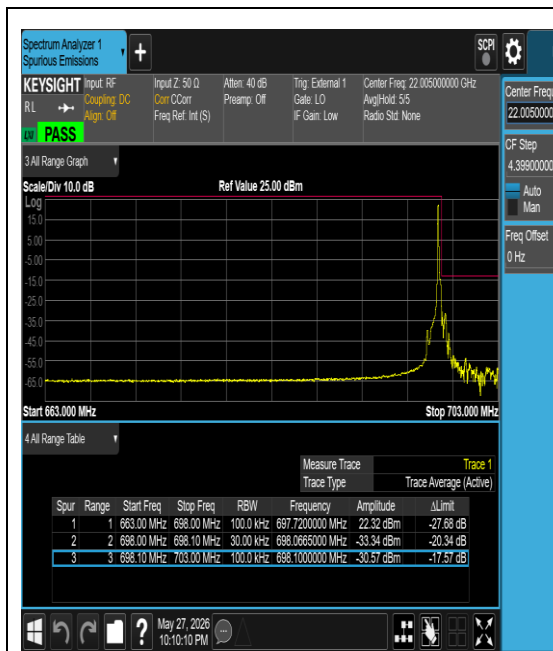
Band71-0.18-BPSK-133124-1@47-3.75kHz-PASS



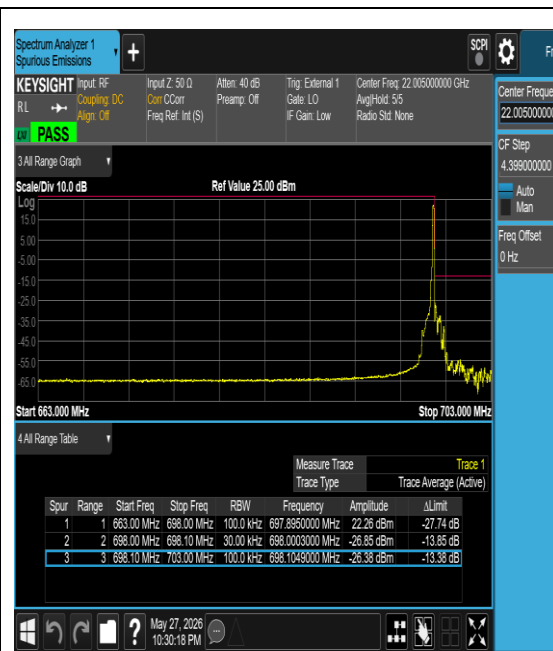
Band71-0.18-QPSK-133470-1@0-3.75kHz-PASS



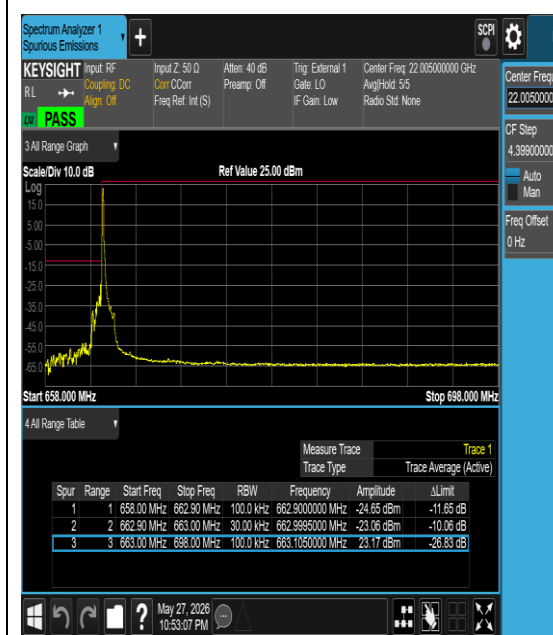
Band71-0.18-QPSK-133470-1@47-3.75kHz-PASS



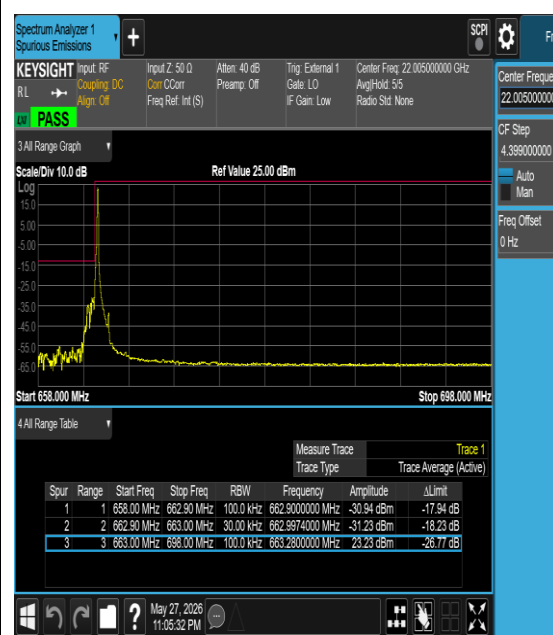
Band71-0.18-BPSK-133470-1@0-3.75kHz-PASS



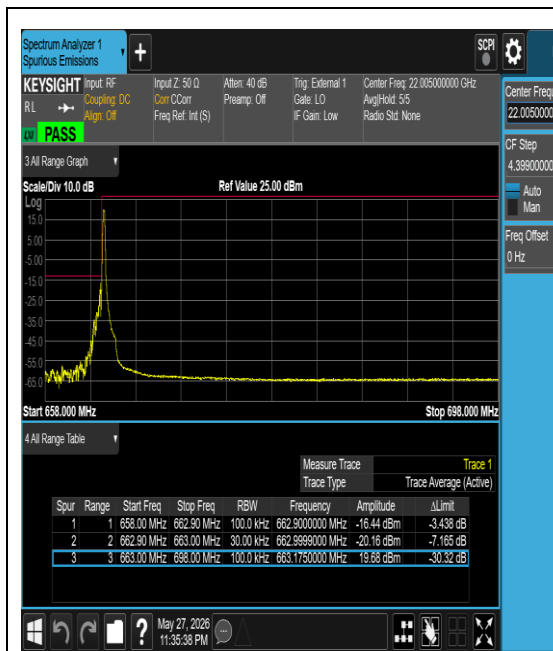
Band71-0.18-BPSK-133470-1@47-3.75kHz-PASS



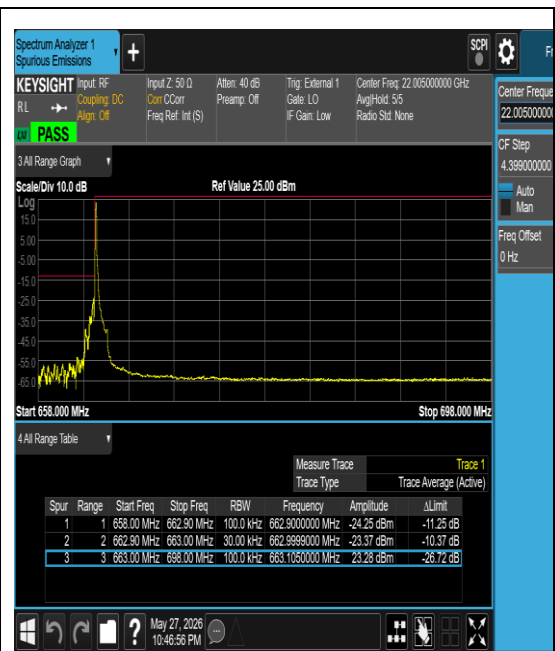
Band71-0.18-QPSK-133124-1@0-15kHz-PASS



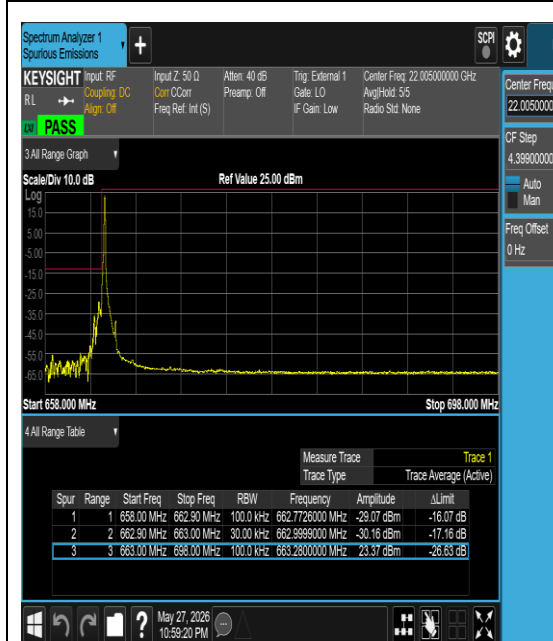
Band71-0.18-QPSK-133124-1@11-15kHz-PASS



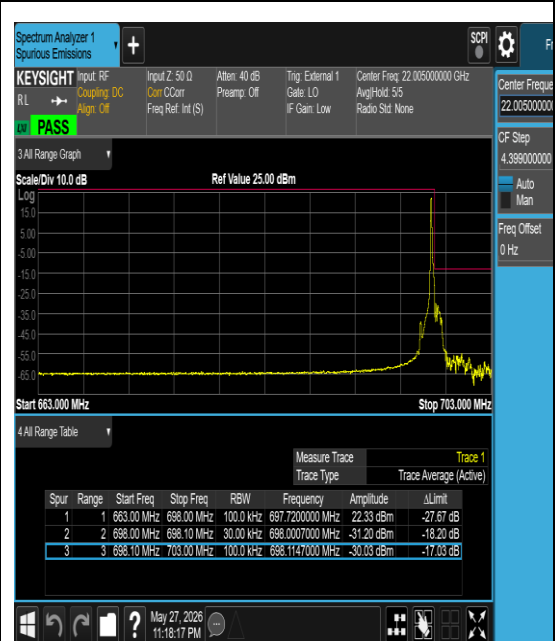
Band71-0.18-QPSK-133124-12@0-15kHz-PASS



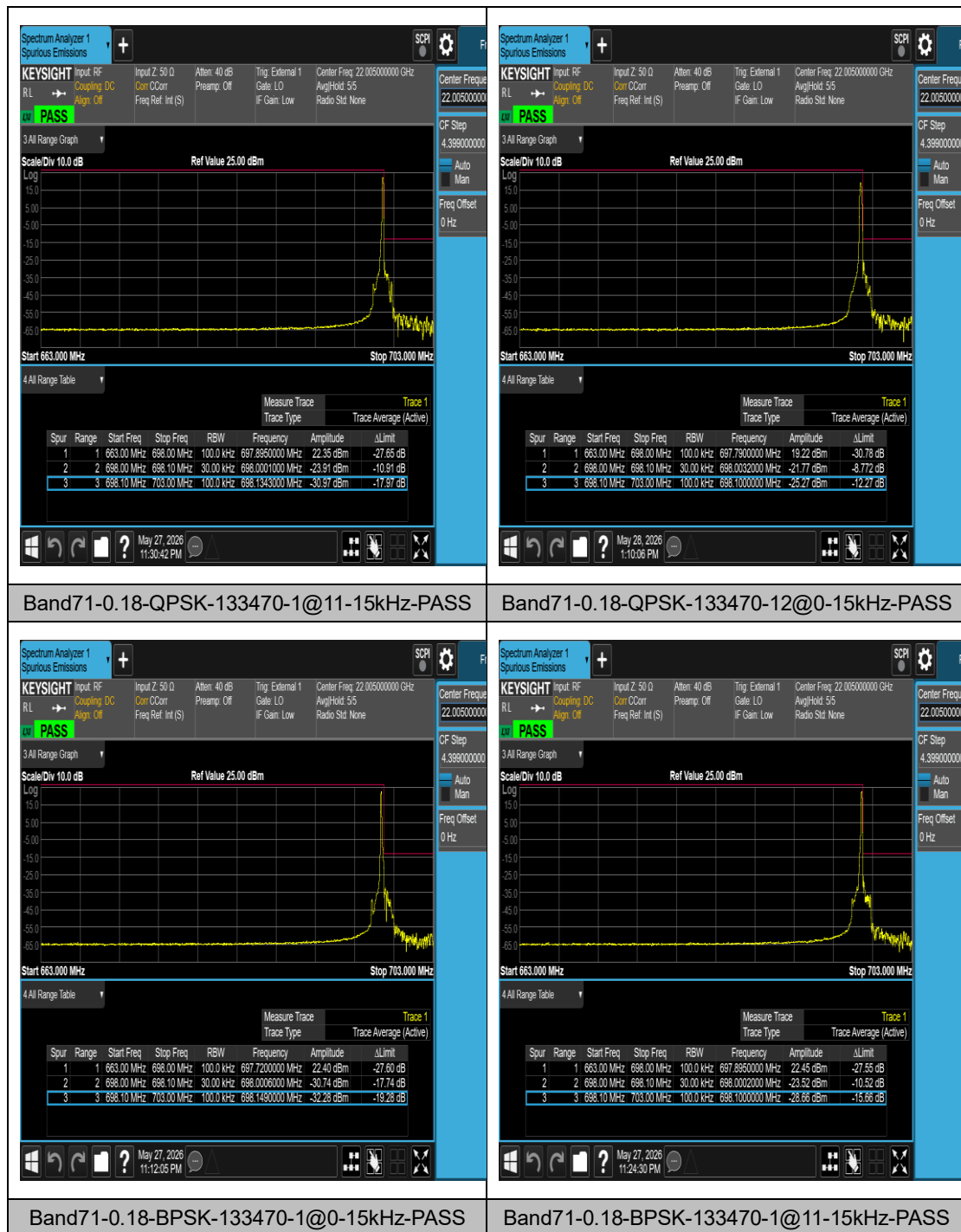
Band71-0.18-BPSK-133124-1@0-15kHz-PASS



Band71-0.18-BPSK-133124-1@11-15kHz-PASS



Band71-0.18-QPSK-133470-1@0-15kHz-PASS



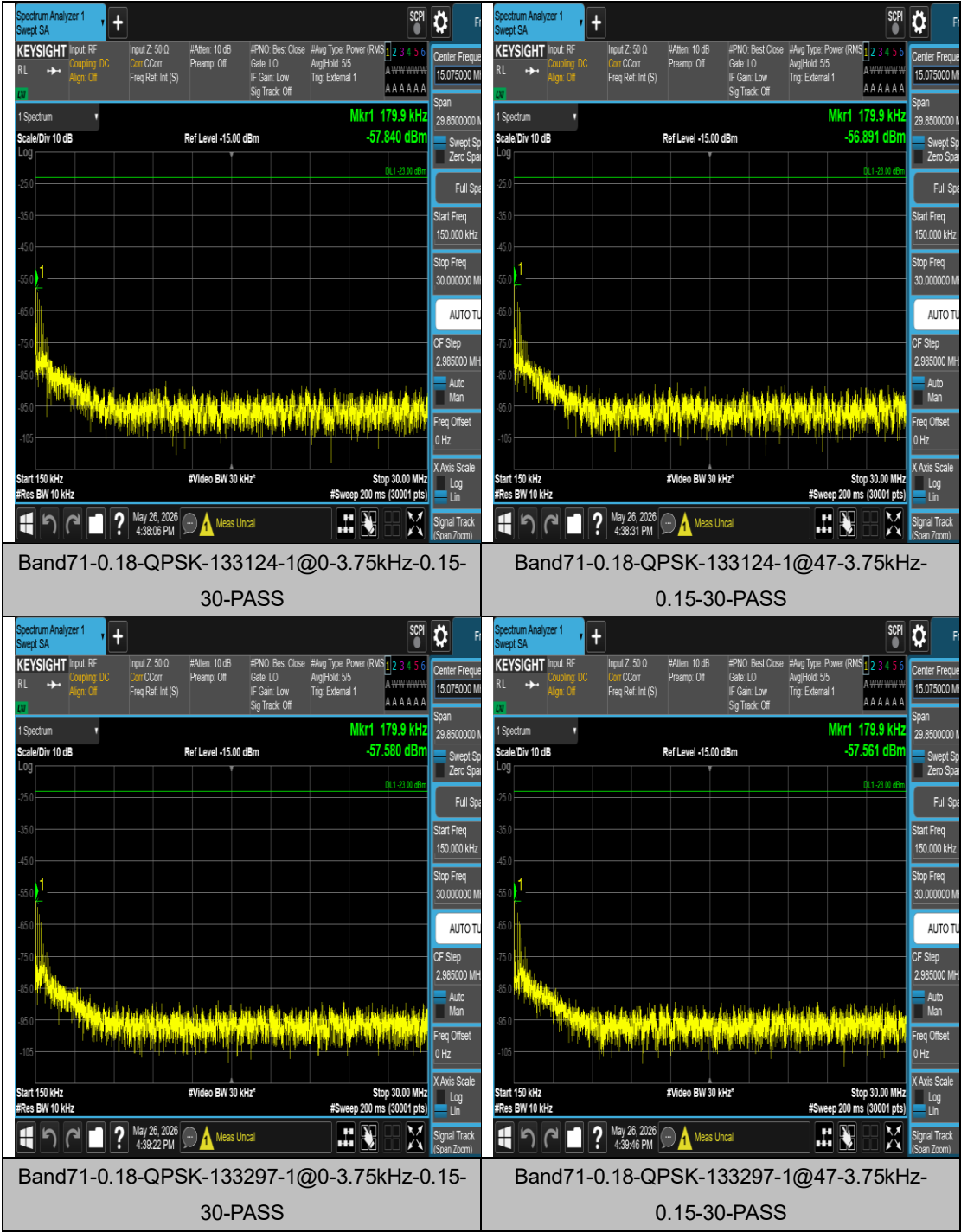
Appendix E: Conducted Spurious Emission for NB1

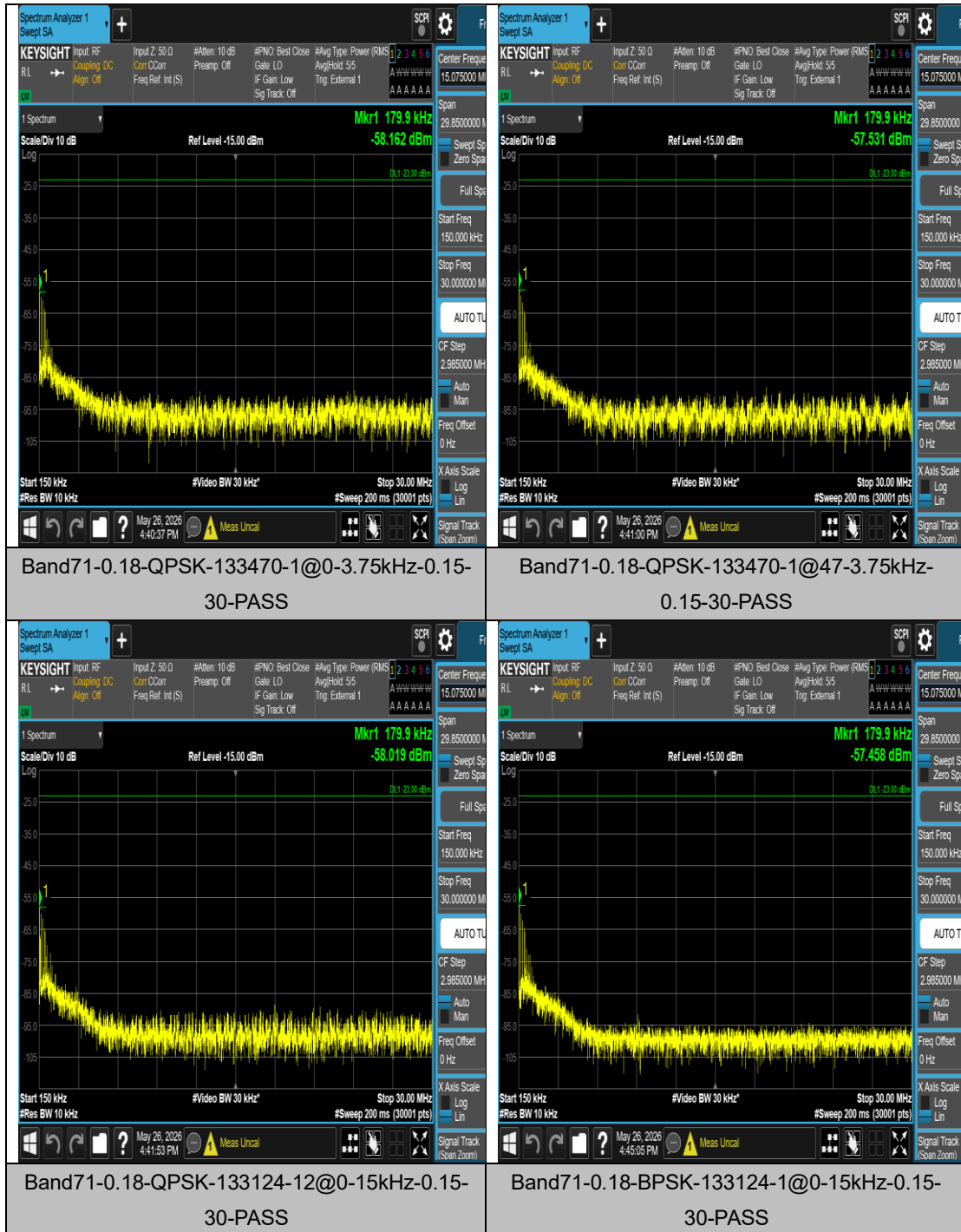
Test Result

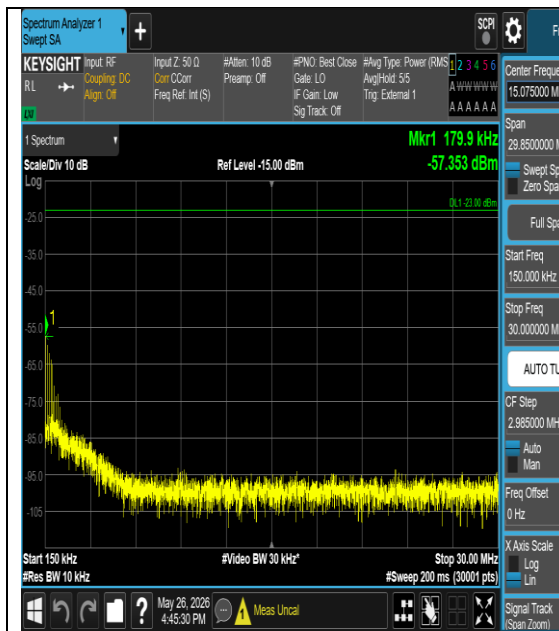
Band	OpMode	SCS	BW	Modulation	Channel	Tones	Freq Start [MHz]	Freq Stop [MHz]	Result (dBm)	Limit (dBm)	Verdict
Band7	Stand-Alone	3.75kHz	0.18	QPSK	133124	1@0	0.15	30	-57.84	-23	PASS

1											
Band7 1	Stand-Alone	3.75kHz	0.18	QPSK	133124	1@47	0.15	30	-56.89	-23	PASS
Band7 1	Stand-Alone	3.75kHz	0.18	QPSK	133297	1@0	0.15	30	-57.58	-23	PASS
Band7 1	Stand-Alone	3.75kHz	0.18	QPSK	133297	1@47	0.15	30	-57.56	-23	PASS
Band7 1	Stand-Alone	3.75kHz	0.18	QPSK	133470	1@0	0.15	30	-58.16	-23	PASS
Band7 1	Stand-Alone	3.75kHz	0.18	QPSK	133470	1@47	0.15	30	-57.53	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	QPSK	133124	12@0	0.15	30	-58.02	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	BPSK	133124	1@0	0.15	30	-57.46	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	BPSK	133124	1@11	0.15	30	-57.35	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	QPSK	133297	12@0	0.15	30	-58.19	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	BPSK	133297	1@0	0.15	30	-59.57	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	BPSK	133297	1@11	0.15	30	-56.77	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	QPSK	133470	12@0	0.15	30	-57.98	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	BPSK	133470	1@0	0.15	30	-58.93	-23	PASS
Band7 1	Stand-Alone	15kHz	0.18	BPSK	133470	1@11	0.15	30	-56.94	-23	PASS

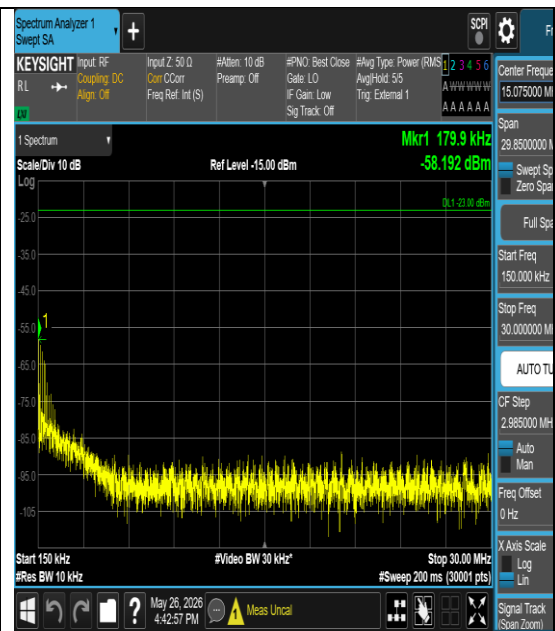
Test Graphs



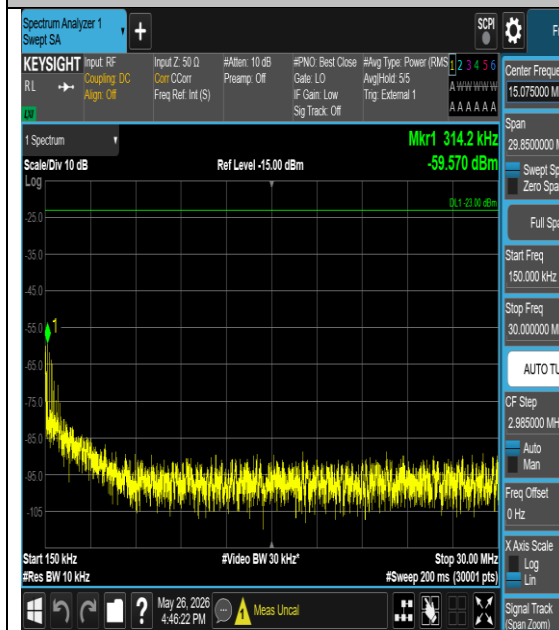




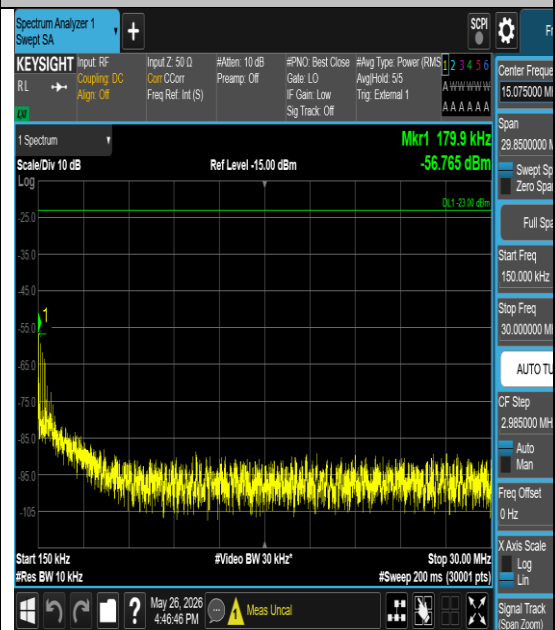
Band71-0.18-BPSK-133124-1@11-15kHz-0.15-30-PASS



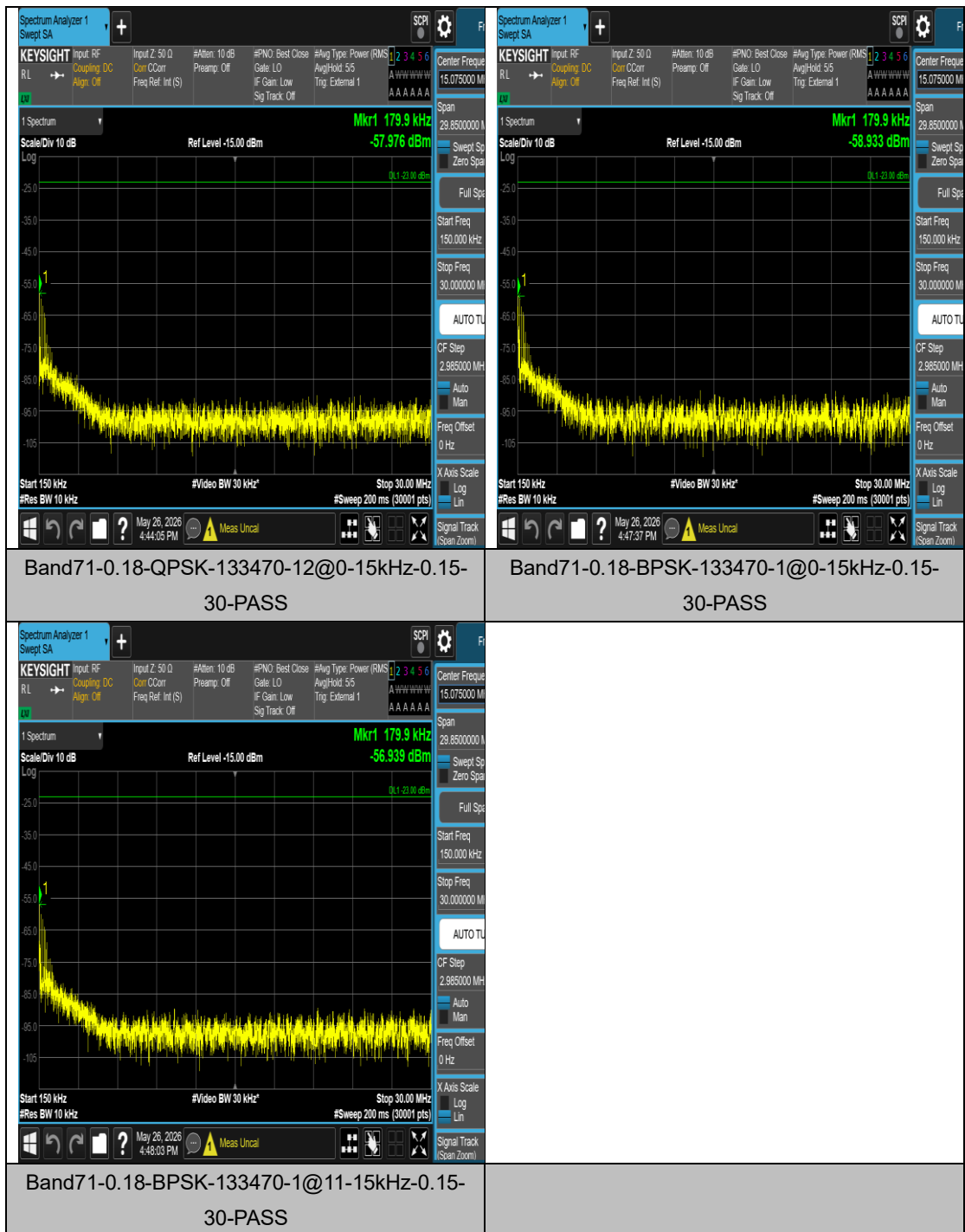
Band71-0.18-QPSK-133297-12@0-15kHz-0.15-30-PASS



Band71-0.18-BPSK-133297-1@0-15kHz-0.15-30-PASS



Band71-0.18-BPSK-133297-1@11-15kHz-0.15-30-PASS



Appendix F: Frequency Stability for NB1

Test Result

Voltage												
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band 71	Stand-Alone	3.75 kHz	0.18	QPSK	133 297	1@ 0	VL	NT	-0.10	- 0.000 147	±2.5	PASS
Band 71	Stand-Alone	3.75 kHz	0.18	QPSK	133 297	1@ 0	VN	NT	2.10	0.003 086	±2.5	PASS
Band 71	Stand-Alone	3.75 kHz	0.18	QPSK	133 297	1@ 0	VH	NT	-1.40	- 0.002 057	±2.5	PASS
Band 71	Stand-Alone	3.75 kHz	0.18	QPSK	133 297	1@ 47	VL	NT	-0.40	- 0.000 588	±2.5	PASS
Band 71	Stand-Alone	3.75 kHz	0.18	QPSK	133 297	1@ 47	VN	NT	-0.50	- 0.000 735	±2.5	PASS
Band 71	Stand-Alone	3.75 kHz	0.18	QPSK	133 297	1@ 47	VH	NT	-0.30	- 0.000 441	±2.5	PASS
Band 71	Stand-Alone	15k Hz	0.18	QPSK	133 297	1@ 0	VL	NT	0.20	0.000 294	±2.5	PASS
Band 71	Stand-Alone	15k Hz	0.18	QPSK	133 297	1@ 0	VN	NT	2.90	0.004 262	±2.5	PASS
Band 71	Stand-Alone	15k Hz	0.18	QPSK	133 297	1@ 0	VH	NT	0.70	0.001 029	±2.5	PASS

Ban d71	Stan d- Alon e	15k Hz	0.18	QPSK	133 297	1@ 11	VL	NT	1.30	0.001 910	±2. 5	PA SS
Ban d71	Stan d- Alon e	15k Hz	0.18	QPSK	133 297	1@ 11	VN	NT	1.60	0.002 351	±2. 5	PA SS
Ban d71	Stan d- Alon e	15k Hz	0.18	QPSK	133 297	1@ 11	VH	NT	1.30	0.001 910	±2. 5	PA SS

Temperature												
Band	OpM ode	Bandw idth	Modula tion	Chan nel	Ton es	SC S	Volt age [Vdc]	Temper ature (°C)	Devia tion (Hz)	Devia tion (ppm)	Lim it (pp m)	Ver dict
Ban d71	Stan d- Alon e	3.75k Hz	0.18	QPS K	133 297	1@ 0	NV	-30	0.60	0.000 882	±2. 5	PA SS
Ban d71	Stan d- Alon e	3.75k Hz	0.18	QPS K	133 297	1@ 0	NV	-20	-0.10	- 0.000 147	±2. 5	PA SS
Ban d71	Stan d- Alon e	3.75k Hz	0.18	QPS K	133 297	1@ 0	NV	-10	-0.20	- 0.000 294	±2. 5	PA SS
Ban d71	Stan d- Alon e	3.75k Hz	0.18	QPS K	133 297	1@ 0	NV	0	-0.80	- 0.001 176	±2. 5	PA SS
Ban d71	Stan d- Alon e	3.75k Hz	0.18	QPS K	133 297	1@ 0	NV	10	-0.80	- 0.001 176	±2. 5	PA SS
Ban d71	Stan d- Alon e	3.75k Hz	0.18	QPS K	133 297	1@ 0	NV	20	-1.10	- 0.001 616	±2. 5	PA SS
Ban d71	Stan d-	3.75k Hz	0.18	QPS K	133 297	1@ 0	NV	30	-0.90	- 0.001	±2. 5	PA SS

	Alone									323		
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@0	NV	40	-1.50	-0.002204	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@0	NV	50	-1.30	-0.001910	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	-30	-0.70	-0.001029	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	-20	-0.50	-0.000735	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	-10	-0.80	-0.001176	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	0	1.50	0.002204	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	10	1.40	0.002057	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	20	1.30	0.001910	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	30	1.30	0.001910	±2.5	PASS
Band71	Stand-Alone	3.75k Hz	0.18	QPSK	133297	1@47	NV	40	1.40	0.002057	±2.5	PASS
Band	Stand	3.75k	0.18	QPS	133	1@	NV	50	1.10	0.001	±2.	PA

d71	d- Alone	Hz		K	297	47				616	5	SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	-30	-1.30	- 0.001 910	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	-20	-0.20	- 0.000 294	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	-10	0.50	0.000 735	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	0	1.40	0.002 057	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	10	1.30	0.001 910	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	20	-0.70	- 0.001 029	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	30	0.20	0.000 294	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	40	0.50	0.000 735	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 0	NV	50	0.00	0.000 000	±2. 5	PA SS
Ban d71	Stan d- Alone	15kHz	0.18	QPS K	133 297	1@ 11	NV	-30	-0.10	- 0.000 147	±2. 5	PA SS

Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	-20	0.40	0.000 588	±2. 5	PA SS
Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	-10	-0.10	- 0.000 147	±2. 5	PA SS
Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	0	0.10	0.000 147	±2. 5	PA SS
Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	10	0.00	0.000 000	±2. 5	PA SS
Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	20	1.10	0.001 616	±2. 5	PA SS
Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	30	0.70	0.001 029	±2. 5	PA SS
Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	40	0.30	0.000 441	±2. 5	PA SS
Ban d71	Stan d- Alon e	15kH z	0.18	QPS K	133 297	1@ 11	NV	50	0.10	0.000 147	±2. 5	PA SS