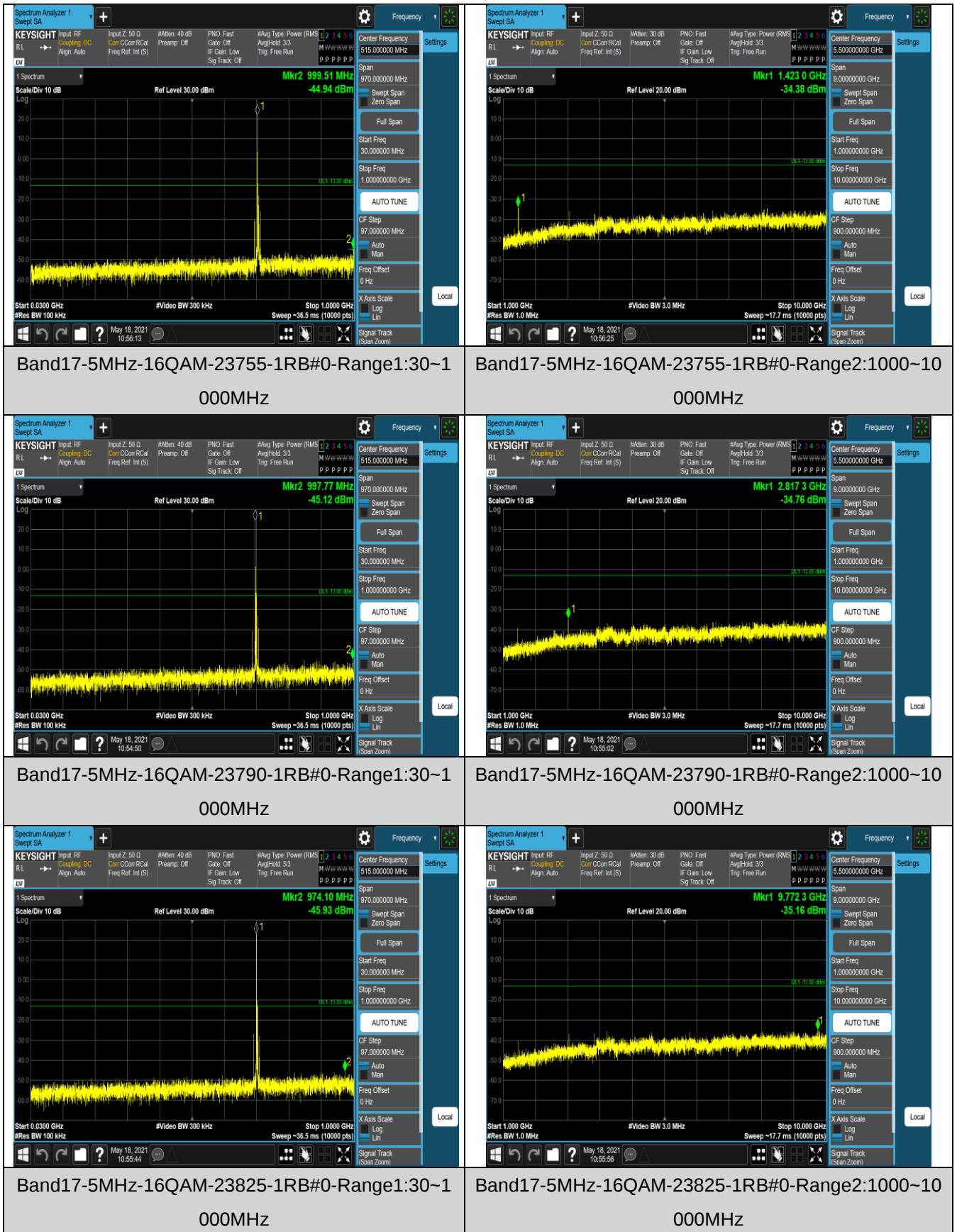
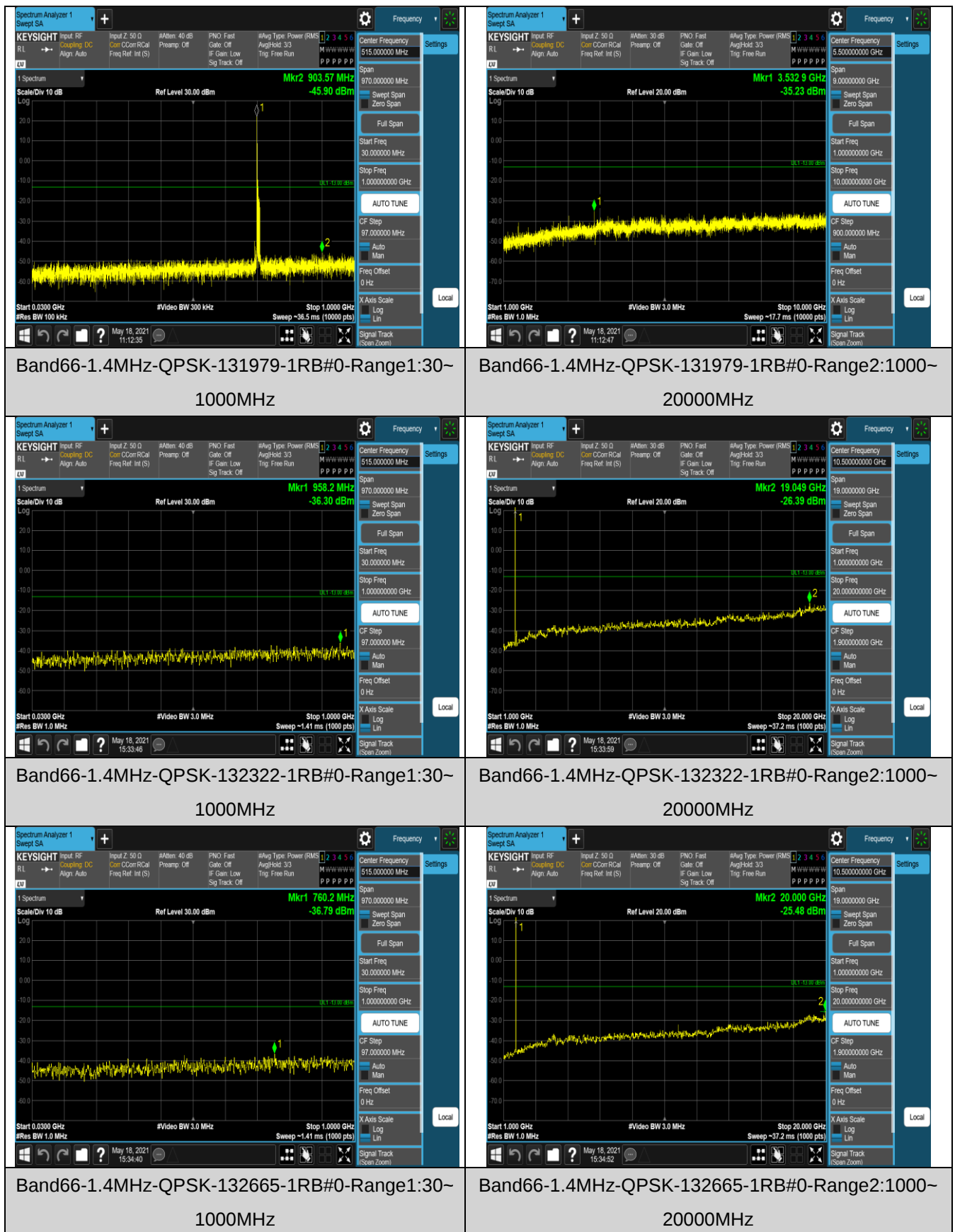


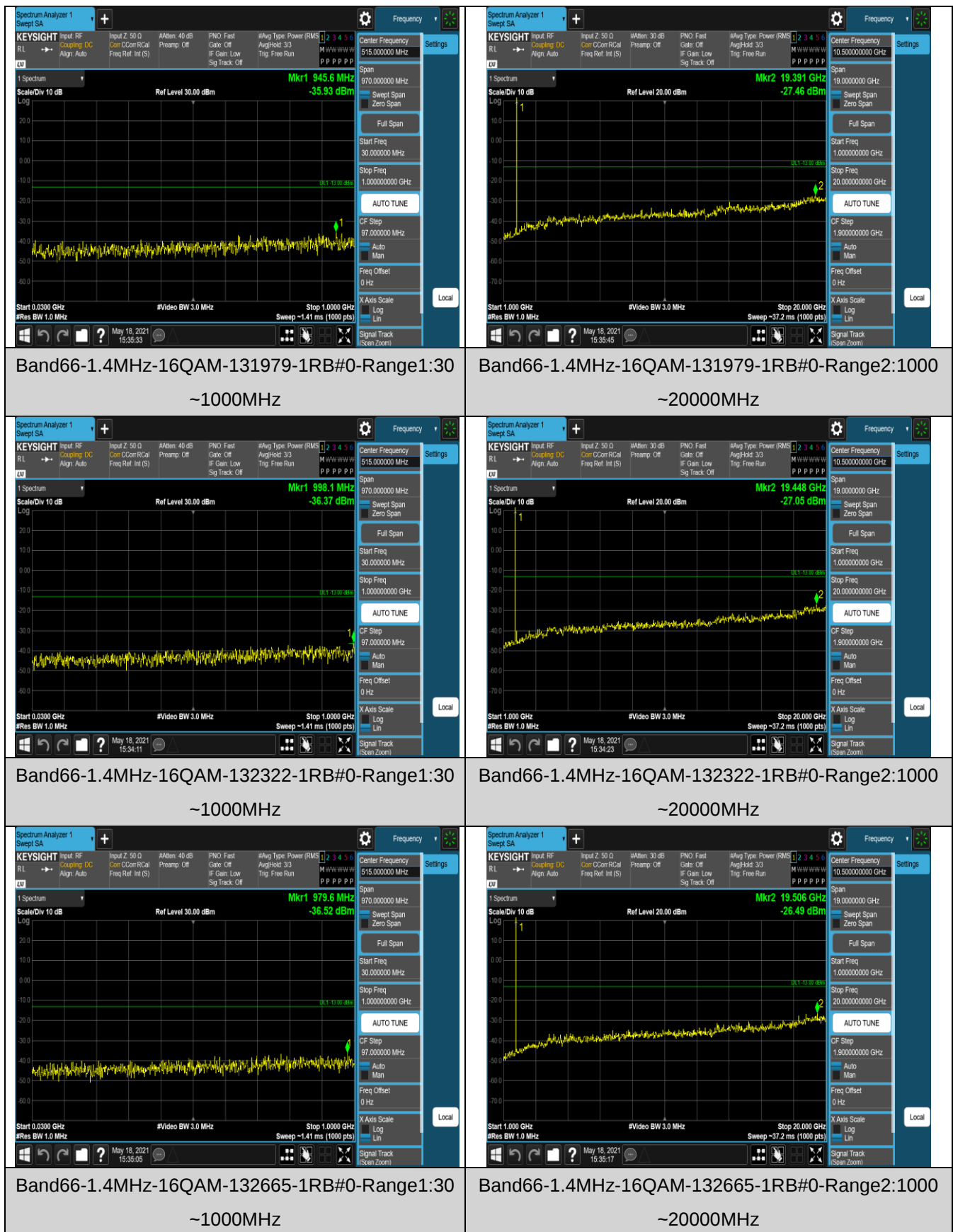


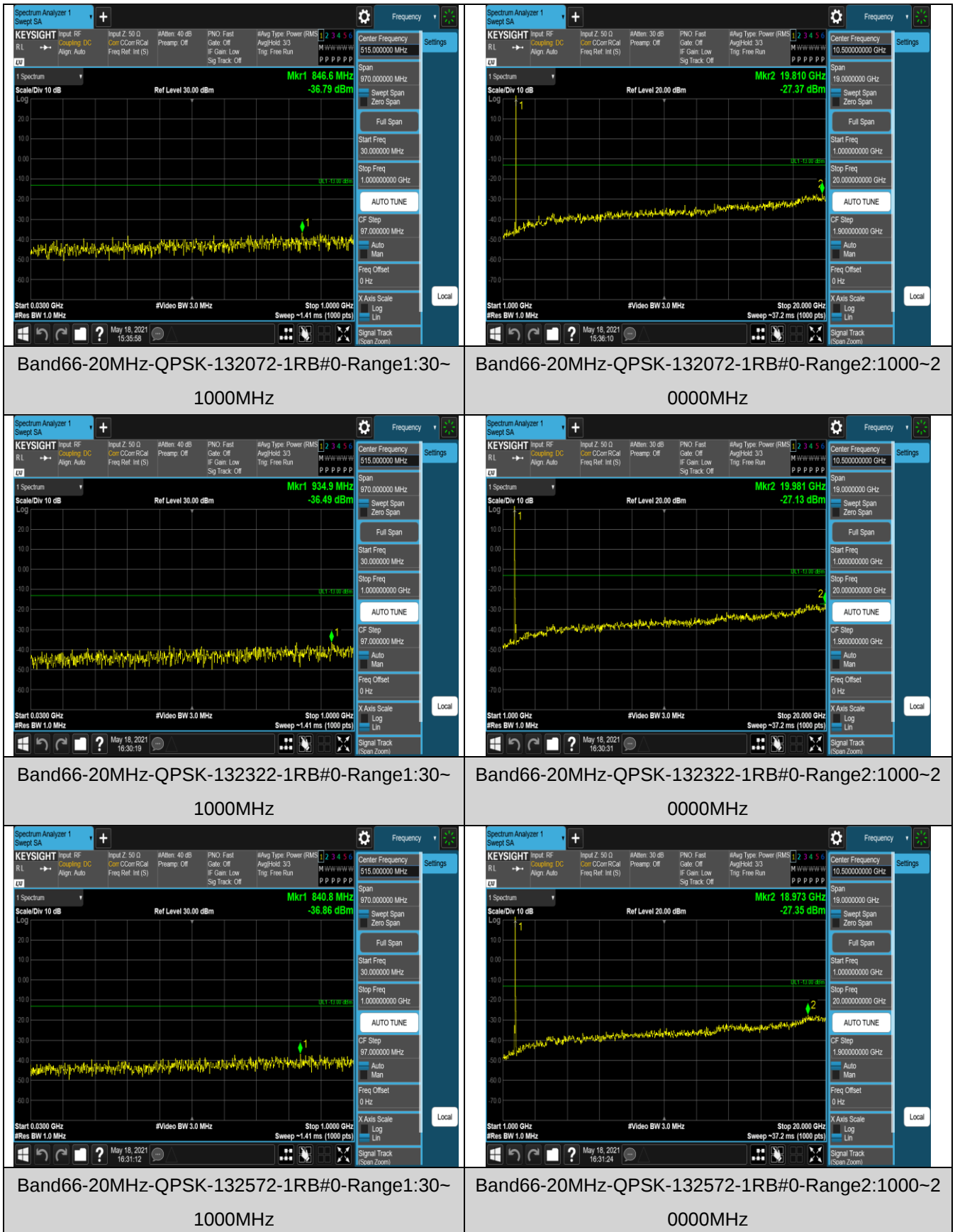


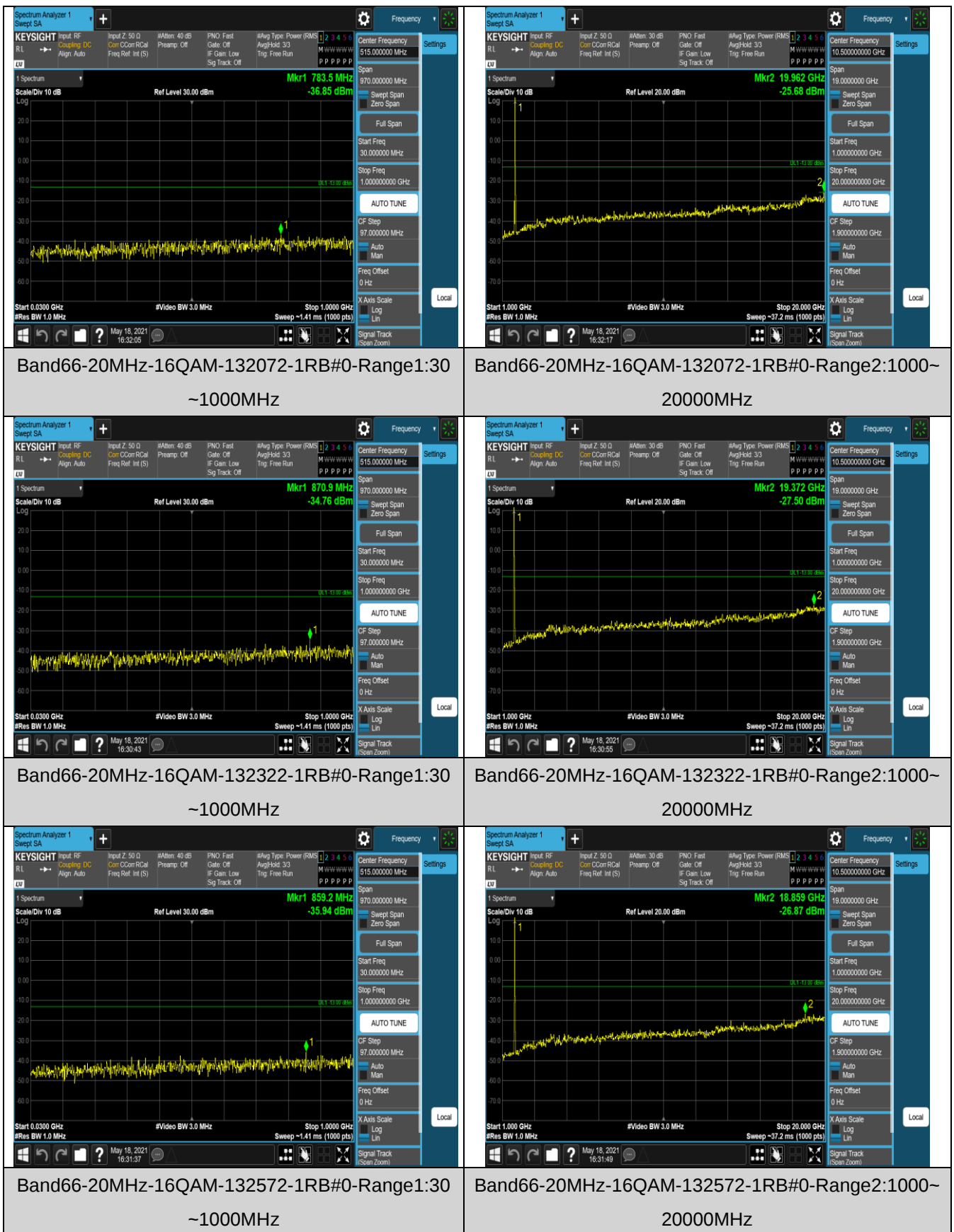


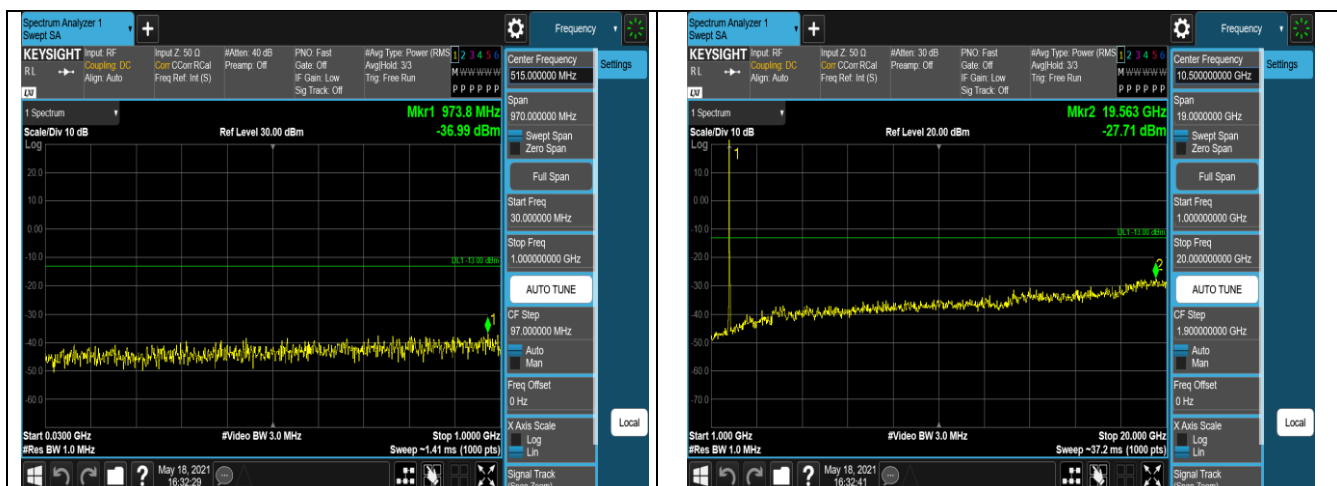












Appendix F: Frequency Stability

Test Result (Worst case):

LTE Band 2 part:

Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 Frequency=1880.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-23.06	-0.012266	Within authorized band for Band 2	Pass
	-20	-27.47	-0.014612		
	-10	-36.55	-0.019441		
	0	-40.78	-0.021691		
	10	-40.94	-0.021777		
	20	-46.86	-0.024926		
	30	-46.01	-0.024473		
	40	-41.23	-0.021931		
	50	-40.76	-0.021681		
16QAM					
3.80	-30	8.27	0.004399	Within authorized band for Band 2	Pass
	-20	21.47	0.011420		
	-10	27.09	0.014410		
	0	37.89	0.020154		
	10	44.16	0.023489		
	20	8.68	0.004617		
	30	9.51	0.005059		
	40	13.42	0.007138		
	50	13.40	0.007128		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-7.74	-0.004117	Within authorized band for Band 2	Pass
	3.80	22.97	0.012218		
	4.40	-17.48	-0.009298		
16QAM					
25	3.50	-26.98	-0.014351	Within authorized band for Band 2	Pass
	3.80	-40.68	-0.021638		
	4.40	-13.28	-0.007064		
Note: Only the worst case shown in the report.					

Note: Only the worst case shown in the report.

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-14.46	-0.008346	Within authorized band for Band 4	Pass
	-20	-32.26	-0.018620		
	-10	-7.75	-0.004473		
	0	-18.94	-0.010932		
	10	-25.52	-0.014730		
	20	-26.19	-0.015117		
	30	-28.98	-0.016727		
	40	-35.13	-0.020277		
	50	-33.63	-0.019411		
16QAM					
3.80	-30	-14.66	-0.008462	Within authorized band for Band 4	Pass
	-20	-14.52	-0.008381		
	-10	-8.01	-0.004623		
	0	-12.20	-0.007042		
	10	-9.77	-0.005639		
	20	-9.88	-0.005703		
	30	-3.85	-0.002222		
	40	5.79	0.003342		
	50	-9.44	-0.005449		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-40.31	-0.023267	Within authorized band for Band 4	Pass
	3.80	34.96	0.020179		
	4.40	-42.64	-0.024612		
16QAM					
25	3.50	-33.26	-0.019198	Within authorized band for Band 4	Pass
	3.80	-38.74	-0.022361		
	4.40	-24.09	-0.013905		
Note: Only the worst case shown in the report.					

LTE Band 5 part:

Reference Frequency: LTE Band 5(10MHz) Middle channel=20525 Frequency=836.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	10.73	0.012827	±2.5	Pass
	-20	6.81	0.008141		
	-10	4.59	0.005487		
	0	2.39	0.002857		
	10	2.60	0.003108		
	20	-3.15	-0.003766		
	30	-3.12	-0.003730		
	40	-7.21	-0.008619		
	50	-6.41	-0.007663		
16QAM					
3.80	-30	40.11	0.047950	±2.5	Pass
	-20	47.99	0.057370		
	-10	7.84	0.009372		
	0	13.60	0.016258		
	10	17.67	0.021124		
	20	21.24	0.025392		
	30	28.80	0.034429		
	40	29.28	0.035003		
	50	33.60	0.040167		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	20.89	0.024973	±2.5	Pass
	3.80	33.96	0.040598		
	4.40	16.47	0.019689		
16QAM					
25	3.50	15.74	0.018816	±2.5	Pass
	3.80	-7.11	-0.008500		
	4.40	28.54	0.034118		
Note: Only the worst case shown in the report.					

LTE Band 12 part:

Reference Frequency: LTE Band 12(10MHz) Middle channel=23095 Frequency=707.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.8	-30	13.26	0.018742	Within authorized band for Band 12	Pass
	-20	12.15	0.017173		
	-10	8.70	0.012297		
	0	10.56	0.014926		
	10	9.16	0.012947		
	20	8.25	0.011661		
	30	7.72	0.010912		
	40	6.47	0.009145		
	50	7.71	0.010898		
16QAM					
3.8	-30	38.55	0.054488	Within authorized band for Band 12	Pass
	-20	45.30	0.064028		
	-10	7.94	0.011223		
	0	13.95	0.019717		
	10	20.01	0.028283		
	20	25.28	0.035731		
	30	29.08	0.041102		
	40	34.45	0.048693		
	50	38.70	0.054700		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	18.95	0.026784	Within authorized band for Band 12	Pass
	3.80	27.48	0.038841		
	4.40	15.13	0.021385		
16QAM					
25	3.50	21.54	0.030445	Within authorized band for Band 12	Pass
	3.80	9.68	0.013682		
	4.40	29.73	0.042021		
Note: Only the worst case shown in the report.					

LTE Band 17 part:

Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 Frequency=710.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.8	-30	14.62	0.020592	Within authorized band for Band 17	Pass
	-20	12.36	0.017408		
	-10	8.24	0.011606		
	0	7.01	0.009873		
	10	3.95	0.005563		
	20	2.59	0.003648		
	30	2.10	0.002958		
	40	2.63	0.003704		
	50	2.19	0.003085		
16QAM					
3.8	-30	28.85	0.040634	Within authorized band for Band 17	Pass
	-20	33.04	0.046535		
	-10	37.45	0.052746		
	0	41.60	0.058592		
	10	44.67	0.062915		
	20	48.92	0.068901		
	30	3.02	0.004254		
	40	4.59	0.006465		
	50	10.66	0.015014		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	19.88	0.028000	Within authorized band for Band 17	Pass
	3.80	31.99	0.045056		
	4.40	15.79	0.022239		
16QAM					
25	3.50	13.19	0.018577	Within authorized band for Band 17	Pass
	3.80	2.78	0.003915		
	4.40	20.96	0.029521		
Note: Only the worst case shown in the report.					

LTE Band 66 part:

Reference Frequency: LTE Band 66 (10MHz) Middle channel=132322 Frequency=1745.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.8	-30	-13.03	-0.007467	Within authorized band for Band 66	Pass
	-20	-30.94	-0.017731		
	-10	-41.00	-0.023496		
	0	-13.56	-0.007771		
	10	-20.27	-0.011616		
	20	-23.43	-0.013427		
	30	-31.30	-0.017937		
	40	-38.68	-0.022166		
	50	-43.62	-0.024997		
16QAM					
3.8	-30	13.55	0.007765	Within authorized band for Band 66	Pass
	-20	25.56	0.014648		
	-10	30.84	0.017673		
	0	-4.86	-0.002785		
	10	9.16	0.005249		
	20	22.02	0.012619		
	30	25.55	0.014642		
	40	34.85	0.019971		
	50	38.57	0.022103		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	11.32	0.006487	Within authorized band for Band 66	Pass
	3.80	-5.68	-0.003255		
	4.40	-17.97	-0.010298		
16QAM					
25	3.50	-20.38	-0.011679	Within authorized band for Band 66	Pass
	3.80	-44.15	-0.025301		
	4.40	7.52	0.004309		
Note: Only the worst case shown in the report.					