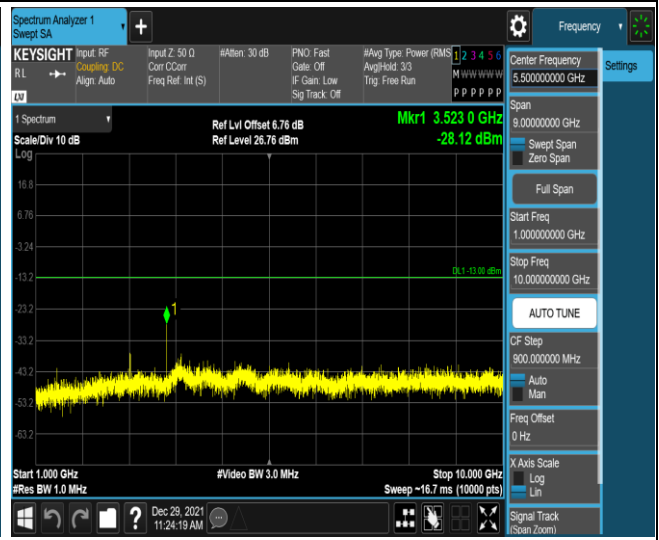
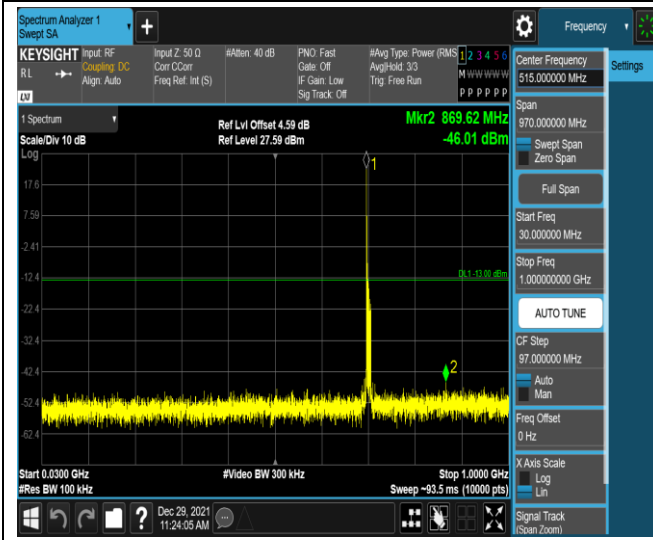




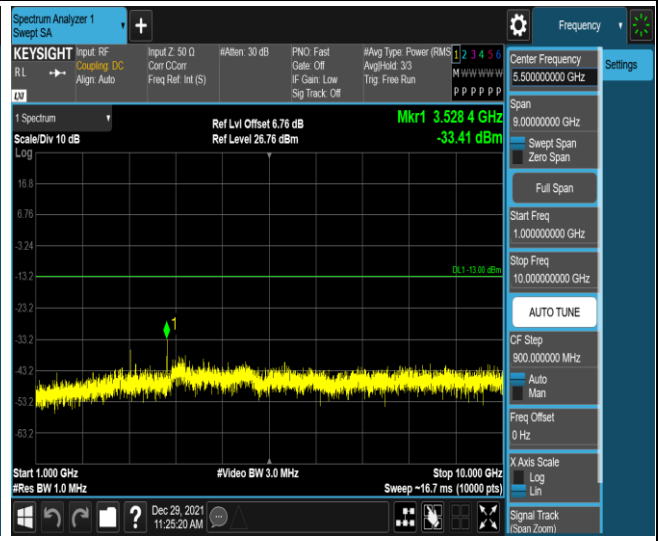
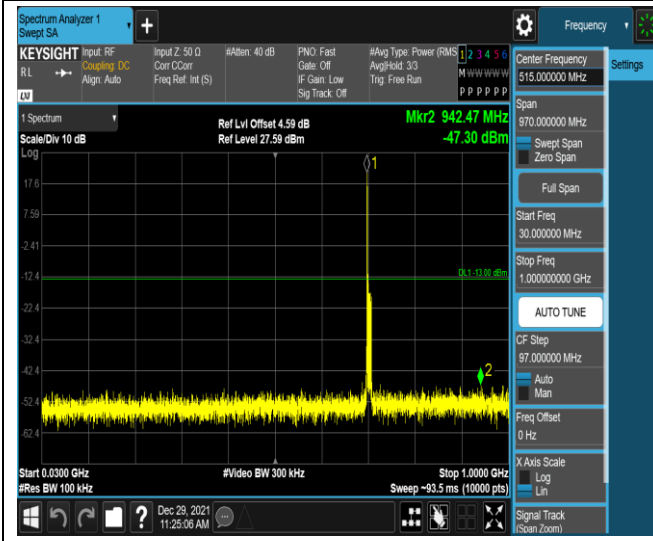
Band17-10MHz-QPSK-23780-1RB#0-Range1:30~1000MHz

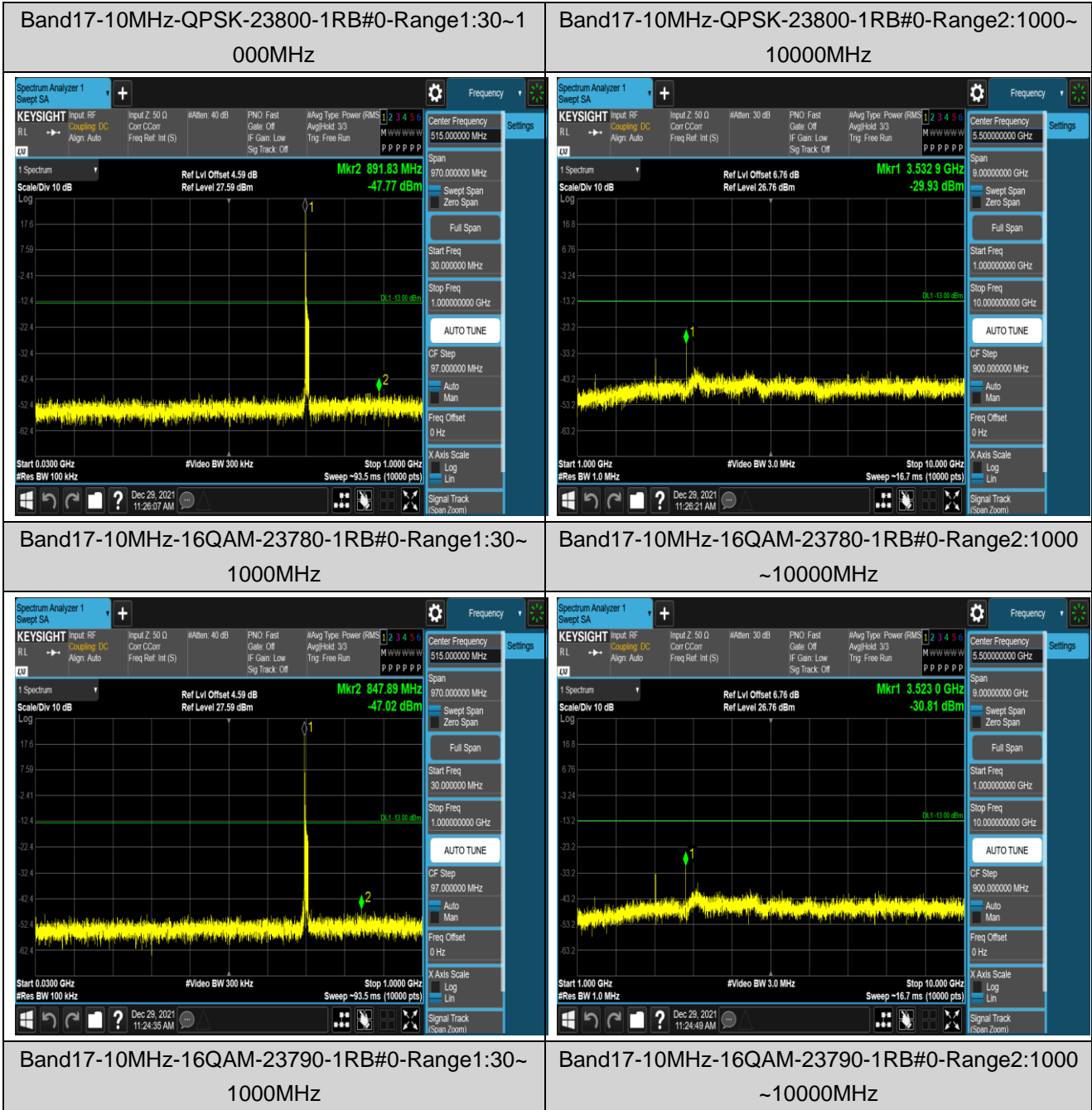
Band17-10MHz-QPSK-23780-1RB#0-Range2:1000~10000MHz



Band17-10MHz-QPSK-23790-1RB#0-Range1:30~1000MHz

Band17-10MHz-QPSK-23790-1RB#0-Range2:1000~10000MHz

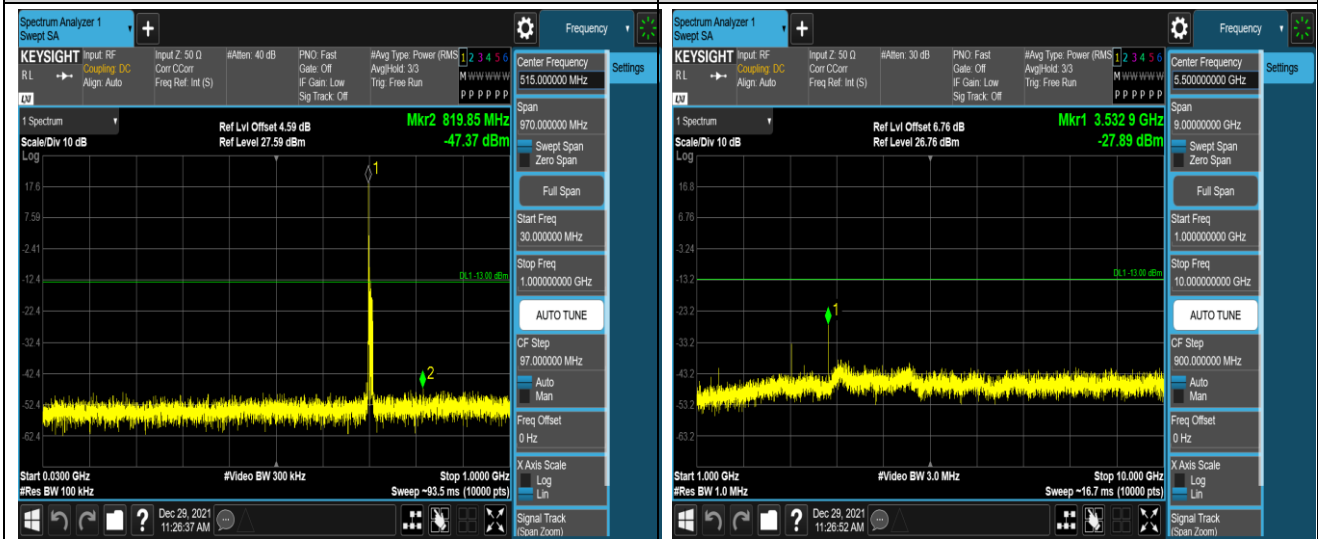






Band17-10MHz-16QAM-23800-1RB#0-Range1:30~1000MHz

Band17-10MHz-16QAM-23800-1RB#0-Range2:1000~10000MHz



Appendix F: Frequency Stability

Test Result

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	-11.44	-0.006085	Within authorized band for Band 2	Pass
	-20	-21.69	-0.011537		
	-10	-50.58	-0.026904		
	0	-24.00	-0.012766		
	10	-27.48	-0.014617		
	20	-23.56	-0.012532		
	30	-47.34	-0.025181		
	40	-47.86	-0.025457		
	50	-47.28	-0.025149		
16QAM					
3.80	-30	45.48	0.024191	Within authorized band for Band 2	Pass
	-20	-5.69	-0.003027		
	-10	-4.39	-0.002335		
	0	13.76	0.007319		
	10	25.84	0.013745		
	20	38.37	0.020410		
	30	32.32	0.017191		
	40	39.02	0.020755		
	50	46.66	0.024819		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	29.43	0.015654	Within authorized band for Band 2	Pass
	3.80	31.44	0.016723		
	4.35	10.84	0.005766		
16QAM					
25	3.50	16.47	0.008761	Within authorized band for Band 2	Pass
	3.80	-47.58	-0.025309		
	4.35	24.36	0.012957		

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	4.18	0.002413	Within authorized band for Band 4	Pass
	-20	3.86	0.002228		
	-10	-4.94	-0.002851		
	0	15.36	0.008866		
	10	8.64	0.004987		
	20	9.41	0.005431		
	30	13.98	0.008069		
	40	8.43	0.004866		
	50	7.58	0.004375		
16QAM					
3.80	-30	21.84	0.012606	Within authorized band for Band 4	Pass
	-20	37.39	0.021582		
	-10	13.09	0.007556		
	0	19.18	0.011071		
	10	39.70	0.022915		
	20	37.55	0.021674		
	30	-3.16	-0.001824		
	40	11.53	0.006655		
	50	7.50	0.004329		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	8.11	0.004681	Within authorized band for Band 4	Pass
	3.80	28.04	0.016185		
	4.35	-14.38	-0.008300		
16QAM					
25	3.50	25.31	0.014609	Within authorized band for Band 4	Pass
	3.80	-6.15	-0.003550		
	4.35	13.63	0.007867		

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this 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	3.76	0.004495	±2.5	Pass
	-20	3.52	0.004208		
	-10	-5.15	-0.006157		
	0	-14.16	-0.016928		
	10	-20.30	-0.024268		
	20	-24.75	-0.029588		
	30	-28.11	-0.033604		
	40	-34.09	-0.040753		
	50	-32.00	-0.038255		
16QAM					
3.80	-30	-16.61	-0.019857	±2.5	Pass
	-20	-14.31	-0.017107		
	-10	-8.25	-0.009863		
	0	-13.13	-0.015696		
	10	-10.94	-0.013078		
	20	-11.22	-0.013413		
	30	-5.46	-0.006527		
	40	5.15	0.006157		
	50	7.61	0.009097		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	19.76	0.023622	±2.5	Pass
	3.80	27.57	0.032959		
	4.35	6.95	0.008308		
16QAM					
25	3.50	-25.81	-0.030855	±2.5	Pass
	3.80	-33.20	-0.039689		
	4.35	-20.30	-0.024268		

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

LTE Band 7 part:

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-38.19	-0.015065	Within authorized band for Band 7	Pass
	-20	-33.40	-0.013176		
	-10	-36.22	-0.014288		
	0	10.57	0.004170		
	10	-14.09	-0.005558		
	20	-20.54	-0.008103		
	30	-50.74	-0.020016		
	40	-32.34	-0.012757		
	50	-38.51	-0.015191		
16QAM					
3.80	-30	-7.50	-0.002959	Within authorized band for Band 7	Pass
	-20	-19.63	-0.007744		
	-10	-13.93	-0.005495		
	0	-5.45	-0.002150		
	10	-4.85	-0.001913		
	20	18.47	0.007286		
	30	29.04	0.011456		
	40	27.22	0.010738		
	50	30.67	0.012099		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.04	-0.004750	Within authorized band for Band 7	Pass
	3.80	39.40	0.015542		
	4.35	-36.68	-0.014469		
16QAM					
25	3.50	30.40	0.011992	Within authorized band for Band 7	Pass
	3.80	-51.11	-0.020162		
	4.35	-11.39	-0.004493		

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this 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					
3.80	-30	-3.00	-0.004240	Within authorized band for Band 12	Pass
	-20	-18.05	-0.025512		
	-10	-35.08	-0.049583		
	0	-2.25	-0.003180		
	10	-7.48	-0.010572		
	20	-17.27	-0.024410		
	30	-17.14	-0.024226		
	40	-24.15	-0.034134		
	50	-31.89	-0.045074		
16QAM					
3.80	-30	-38.34	-0.054191	Within authorized band for Band 12	Pass
	-20	-35.09	-0.049597		
	-10	-29.01	-0.041004		
	0	-30.21	-0.042700		
	10	-34.32	-0.048509		
	20	-31.04	-0.043873		
	30	-26.98	-0.038134		
	40	-27.35	-0.038657		
	50	-21.80	-0.030813		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-34.62	-0.048933	Within authorized band for Band 12	Pass
	3.80	5.18	0.007322		
	4.35	-27.12	-0.038332		
16QAM					
25	3.50	-41.24	-0.058290	Within authorized band for Band 12	Pass
	3.80	-37.44	-0.052919		
	4.35	-40.10	-0.056678		

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

LTE Band 13 part:

Reference Frequency: LTE Band 13 (10MHz) Middle channel=23230 Frequency=782.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	2.63	0.003363	Within authorized band for Band 71	Pass
	-20	7.34	0.009386		
	-10	11.16	0.014271		
	0	14.91	0.019066		
	10	17.87	0.022852		
	20	25.63	0.032775		
	30	27.95	0.035742		
	40	28.55	0.036509		
	50	31.33	0.040064		
16QAM					
3.80	-30	8.41	0.010754	Within authorized band for Band 71	Pass
	-20	23.52	0.030077		
	-10	25.79	0.032980		
	0	29.67	0.037941		
	10	33.52	0.042864		
	20	42.47	0.054309		
	30	45.68	0.058414		
	40	47.14	0.060281		
	50	4.46	0.005703		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.90	-0.016496	Within authorized band for Band 13	Pass
	3.80	-18.60	-0.023785		
	4.35	-4.56	-0.005831		
16QAM					
25	3.50	46.25	0.059143	Within authorized band for Band 13	Pass
	3.80	30.71	0.039271		
	4.35	51.77	0.066202		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 17 part:

Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 Frequency=710.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	20.44	0.028789	Within authorized band for Band 17	Pass
	-20	23.70	0.033380		
	-10	14.45	0.020352		
	0	6.04	0.008507		
	10	8.04	0.011324		
	20	9.96	0.014028		
	30	3.73	0.005254		
	40	6.82	0.009606		
	50	9.41	0.013254		
16QAM					
3.80	-30	26.61	0.037479	Within authorized band for Band 17	Pass
	-20	30.00	0.042254		
	-10	37.62	0.052986		
	0	46.15	0.065000		
	10	8.11	0.011423		
	20	5.91	0.008324		
	30	-2.60	-0.003662		
	40	2.68	0.003775		
	50	12.85	0.018099		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	23.07	0.032493	Within authorized band for Band 17	Pass
	3.80	25.66	0.036141		
	4.35	22.12	0.031155		
16QAM					
25	3.50	7.22	0.010169	Within authorized band for Band 17	Pass
	3.80	10.30	0.014507		
	4.35	17.97	0.025310		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

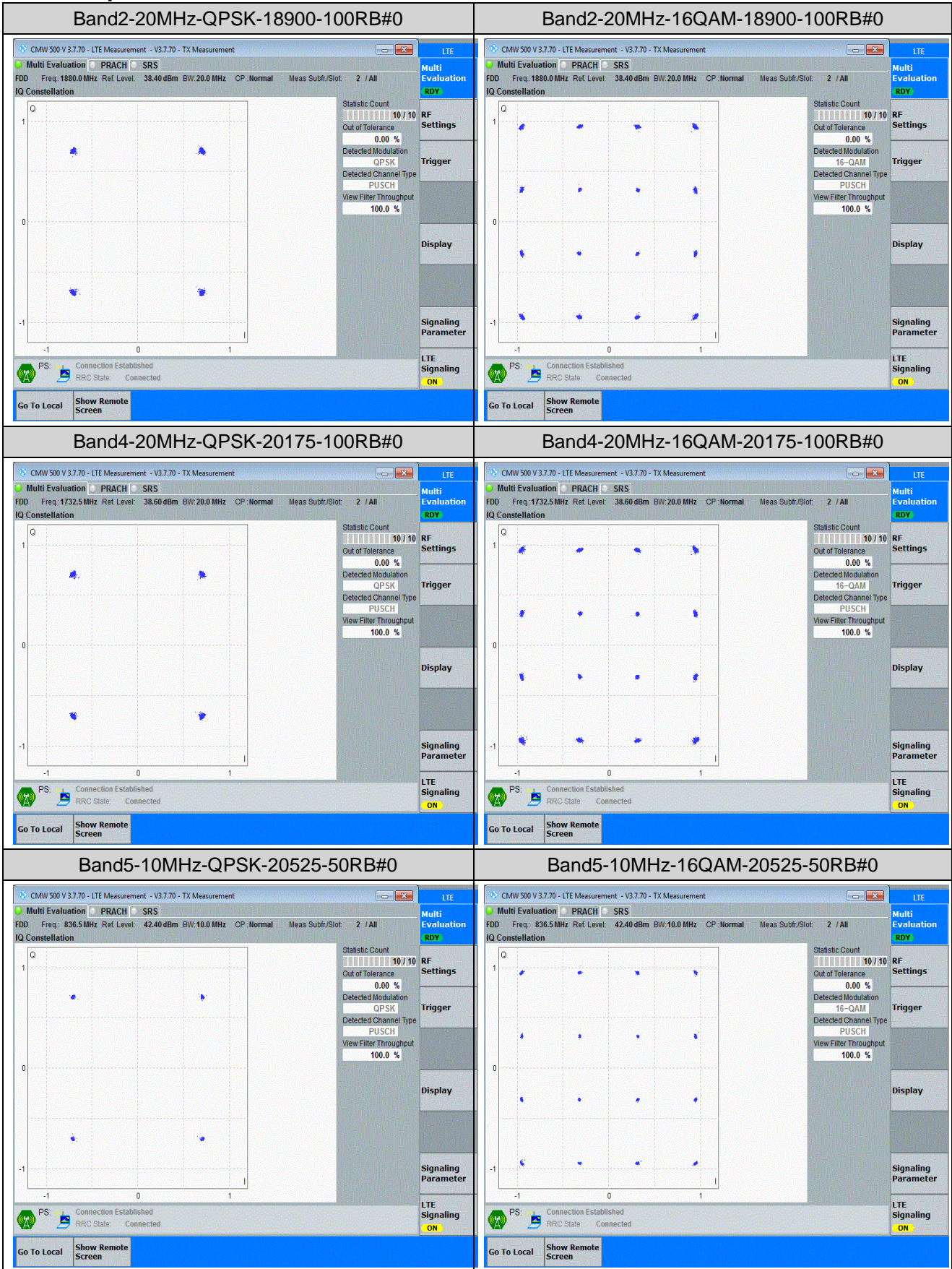
Appendix G: Modulation Characteristics

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band13	10MHz	QPSK	23230	50RB#0	PASS	PASS
Band13	10MHz	16QAM	23230	50RB#0	PASS	PASS
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs



<p align="center">Band7-20MHz-QPSK-21100-100RB#0</p>	<p align="center">Band7-20MHz-16QAM-21100-100RB#0</p>
<p align="center">Band12-10MHz-QPSK-23095-50RB#0</p>	<p align="center">Band12-10MHz-16QAM-23095-50RB#0</p>
<p align="center">Band13-10MHz-QPSK-23230-50RB#0</p>	<p align="center">Band13-10MHz-16QAM-23230-50RB#0</p>
<p align="center">Band17-10MHz-QPSK-23790-50RB#0</p>	<p align="center">Band17-10MHz-16QAM-23790-50RB#0</p>

