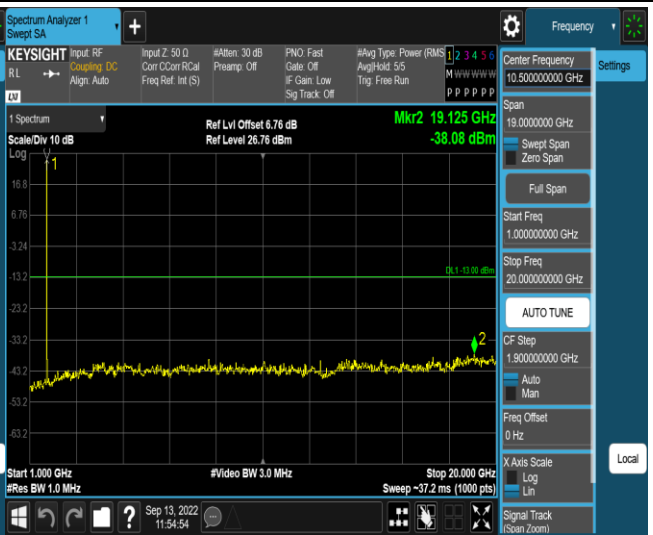


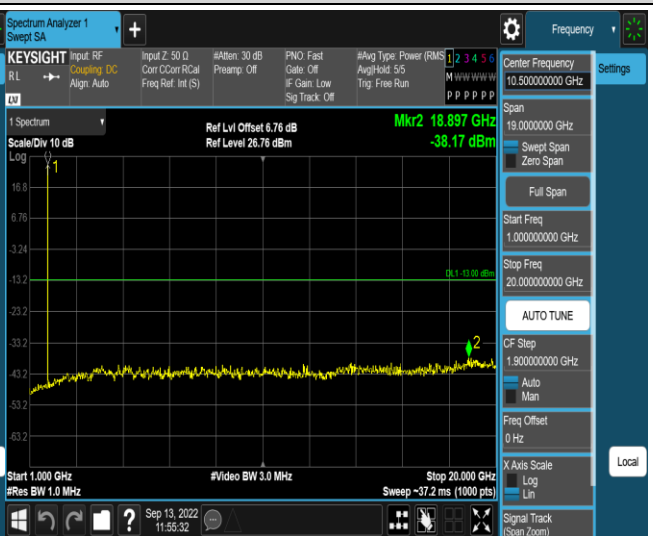
Band66-1.4MHz-16QAM-131979-1RB#0-Range1:3  
0~1000MHz

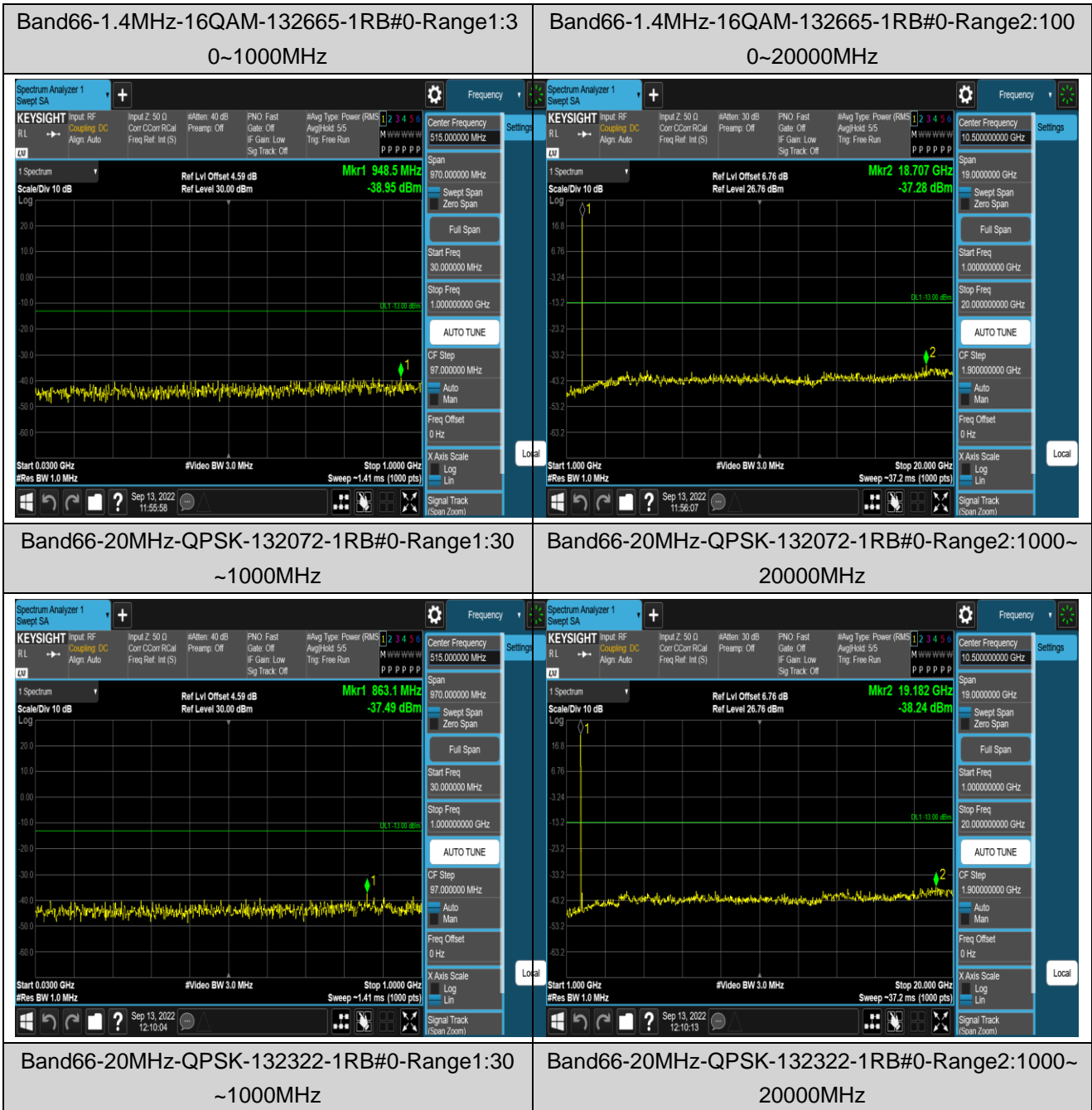
Band66-1.4MHz-16QAM-131979-1RB#0-Range2:100  
0~20000MHz

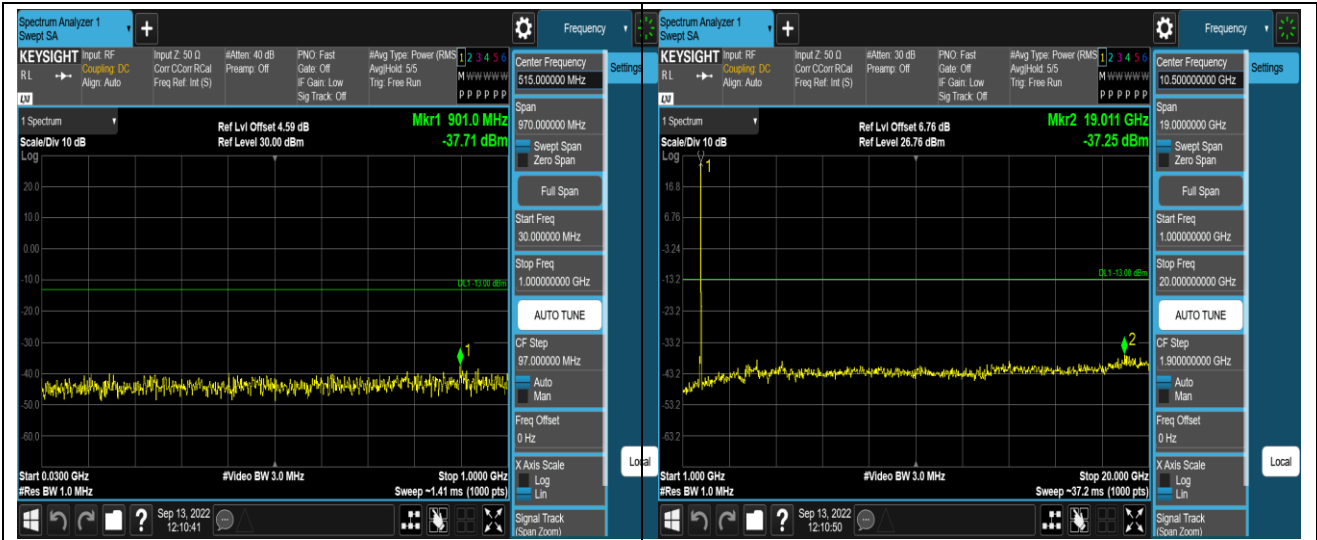


Band66-1.4MHz-16QAM-132322-1RB#0-Range1:3  
0~1000MHz

Band66-1.4MHz-16QAM-132322-1RB#0-Range2:100  
0~20000MHz

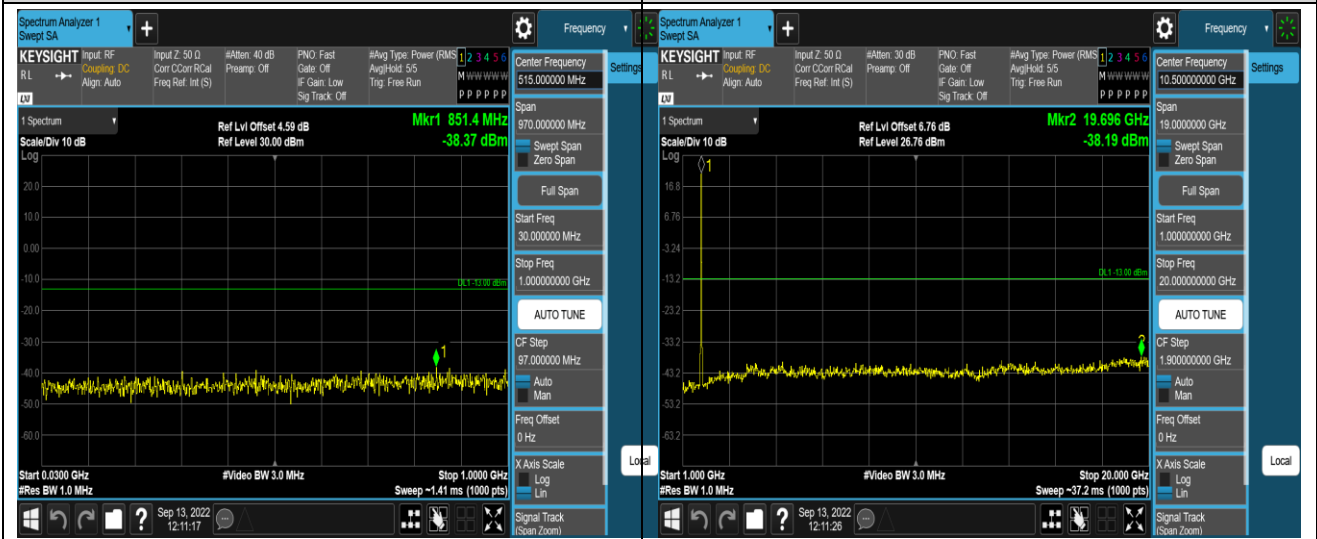






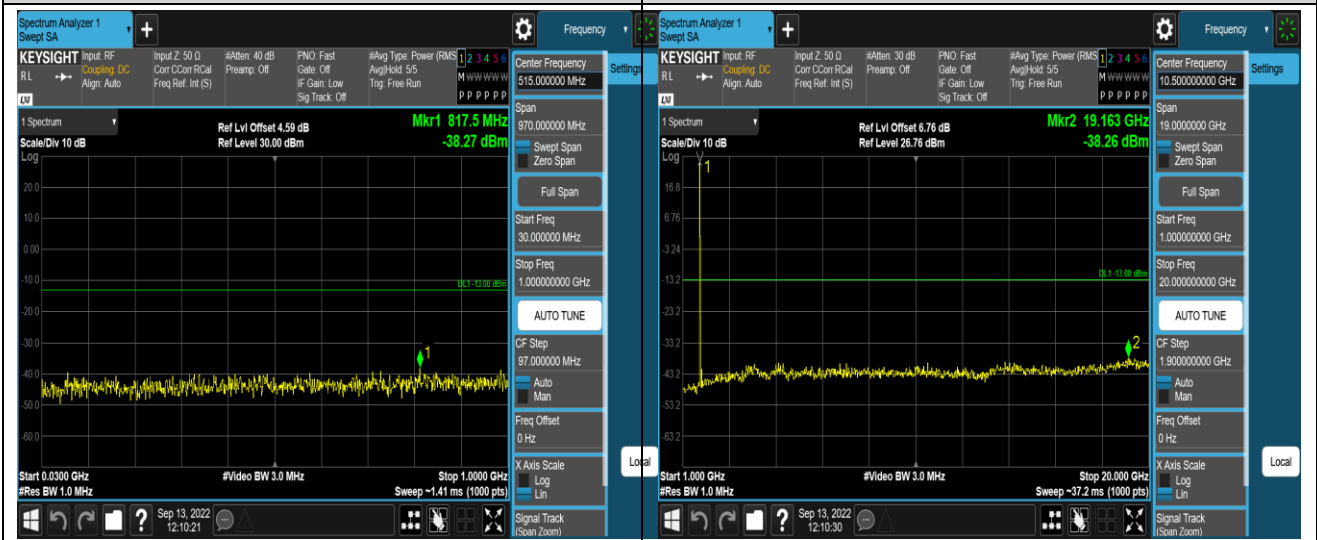
Band66-20MHz-QPSK-132572-1RB#0-Range1:30  
~1000MHz

Band66-20MHz-QPSK-132572-1RB#0-Range2:1000~  
20000MHz



Band66-20MHz-16QAM-132072-1RB#0-Range1:3  
0~1000MHz

Band66-20MHz-16QAM-132072-1RB#0-Range2:1000  
~20000MHz





## 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					
3.85	-30	12.12	0.006447	Within authorized band for Band 2	Pass
	-20	26.38	0.014032		
	-10	20.93	0.011133		
	0	14.93	0.007941		
	10	24.85	0.013218		
	20	33.35	0.017739		
	30	24.79	0.013186		
	40	17.64	0.009383		
	50	17.47	0.009293		
16QAM					
3.85	-30	13.13	0.006984	Within authorized band for Band 2	Pass
	-20	43.77	0.023282		
	-10	47.42	0.025223		
	0	54.25	0.028856		
	10	24.06	0.012798		
	20	36.28	0.019298		
	30	38.98	0.020734		
	40	2.20	0.001170		
	50	-7.81	-0.004154		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	9.98	0.005309	Within authorized band for Band 2	Pass
	3.85	16.24	0.008638		
	4.40	-4.26	-0.002266		
16QAM					
25	3.50	50.07	0.026633	Within authorized band for Band 2	Pass
	3.85	32.27	0.017165		
	4.40	29.18	0.015521		

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					
3.85	-30	1.54	0.001841	±2.5	Pass
	-20	1.89	0.002259		
	-10	-3.72	-0.004447		
	0	-5.56	-0.006647		
	10	-9.91	-0.011847		
	20	-7.15	-0.008548		
	30	-10.51	-0.012564		
	40	-7.17	-0.008571		
	50	-11.47	-0.013712		
16QAM					
3.85	-30	27.37	0.032720	±2.5	Pass
	-20	40.00	0.047818		
	-10	-5.49	-0.006563		
	0	8.85	0.010580		
	10	13.36	0.015971		
	20	19.94	0.023837		
	30	21.97	0.026264		
	40	29.07	0.034752		
	50	32.10	0.038374		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	13.56	0.016210	±2.5	Pass
	3.85	19.76	0.023622		
	4.40	8.80	0.010520		
16QAM					
25	3.50	-3.12	-0.003730	±2.5	Pass
	3.85	-14.38	-0.017191		
	4.40	21.92	0.026204		

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					
3.85	-30	-30.37	-0.011980	Within authorized band for Band 7	Pass
	-20	-22.40	-0.008836		
	-10	4.16	0.001641		
	0	23.37	0.009219		
	10	47.11	0.018584		
	20	16.58	0.006540		
	30	26.45	0.010434		
	40	39.40	0.015542		
	50	44.88	0.017704		
16QAM					
3.85	-30	35.31	0.013929	Within authorized band for Band 7	Pass
	-20	-6.65	-0.002623		
	-10	21.73	0.008572		
	0	28.80	0.011361		
	10	39.37	0.015531		
	20	18.93	0.007467		
	30	32.76	0.012923		
	40	32.50	0.012821		
	50	-55.46	-0.021878		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	15.92	0.006280	Within authorized band for Band 7	Pass
	3.85	35.08	0.013838		
	4.40	-16.37	-0.006458		
16QAM					
25	3.50	56.00	0.022091	Within authorized band for Band 7	Pass
	3.85	-5.99	-0.002363		
	4.40	-6.21	-0.002450		

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		
<b>QPSK</b>					
3.85	-30	-23.13	-0.032693	Within authorized band for Band 12	Pass
	-20	-29.57	-0.041795		
	-10	-37.55	-0.053074		
	0	-42.04	-0.059420		
	10	-48.29	-0.068254		
	20	-2.63	-0.003717		
	30	-8.08	-0.011420		
	40	-10.40	-0.014700		
	50	-15.98	-0.022587		
<b>16QAM</b>					
3.85	-30	4.92	0.006954	Within authorized band for Band 12	Pass
	-20	15.26	0.021569		
	-10	17.65	0.024947		
	0	19.37	0.027378		
	10	20.66	0.029201		
	20	24.59	0.034756		
	30	28.84	0.040763		
	40	32.10	0.045371		
	50	32.79	0.046346		
<b>Voltage</b>					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
<b>QPSK</b>					
25	3.50	-1.26	-0.001781	Within authorized band for Band 12	Pass
	3.85	9.24	0.013060		
	4.40	-11.07	-0.015647		
<b>16QAM</b>					
25	3.50	-11.50	-0.016254	Within authorized band for Band 12	Pass
	3.85	-19.03	-0.026898		
	4.40	-3.40	-0.004806		

*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					
3.85	-30	-27.08	-0.038141	Within authorized band for Band 17	Pass
	-20	-17.62	-0.024817		
	-10	-20.08	-0.028282		
	0	-24.85	-0.035000		
	10	-26.65	-0.037535		
	20	-26.09	-0.036746		
	30	-29.14	-0.041042		
	40	-31.99	-0.045056		
	50	-32.89	-0.046324		
16QAM					
3.85	-30	-11.36	-0.016000	Within authorized band for Band 17	Pass
	-20	-3.88	-0.005465		
	-10	2.93	0.004127		
	0	8.84	0.012451		
	10	14.05	0.019789		
	20	15.72	0.022141		
	30	17.78	0.025042		
	40	20.04	0.028225		
	50	25.96	0.036563		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	7.60	0.010704	Within authorized band for Band 17	Pass
	3.85	14.72	0.020732		
	4.40	-2.37	-0.003338		
16QAM					
25	3.50	-26.66	-0.037549	Within authorized band for Band 17	Pass
	3.85	-31.20	-0.043944		
	4.40	-19.57	-0.027563		

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this 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					
3.85	-30	-5.51	-0.003158	Within authorized band for Band 66	Pass
	-20	-11.44	-0.006556		
	-10	-12.36	-0.007083		
	0	-12.95	-0.007421		
	10	-9.77	-0.005599		
	20	-11.66	-0.006682		
	30	-9.67	-0.005542		
	40	-11.10	-0.006361		
	50	-10.86	-0.006223		
16QAM					
3.85	-30	29.74	0.017043	Within authorized band for Band 66	Pass
	-20	13.89	0.007960		
	-10	26.06	0.014934		
	0	42.80	0.024527		
	10	12.60	0.007221		
	20	24.55	0.014069		
	30	25.09	0.014378		
	40	31.23	0.017897		
	50	37.42	0.021444		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	9.74	0.005582	Within authorized band for Band 66	Pass
	3.85	15.81	0.009060		
	4.40	-9.80	-0.005616		
16QAM					
25	3.50	24.16	0.013845	Within authorized band for Band 66	Pass
	3.85	-7.21	-0.004132		
	4.40	7.17	0.004109		

*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
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
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS

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



Test Graphs

