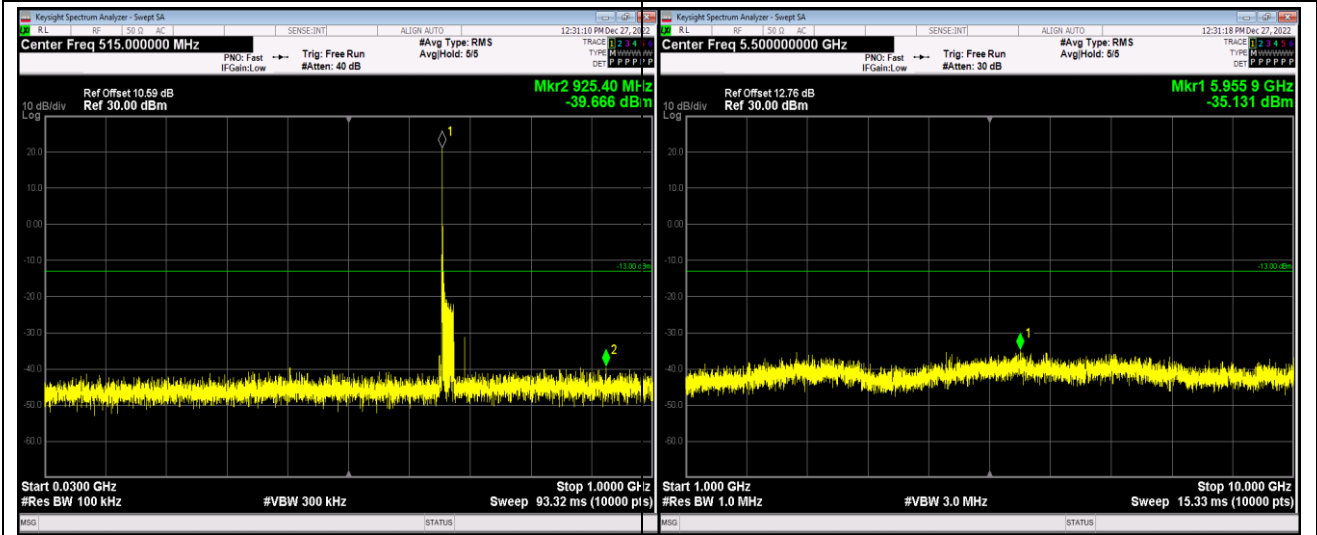


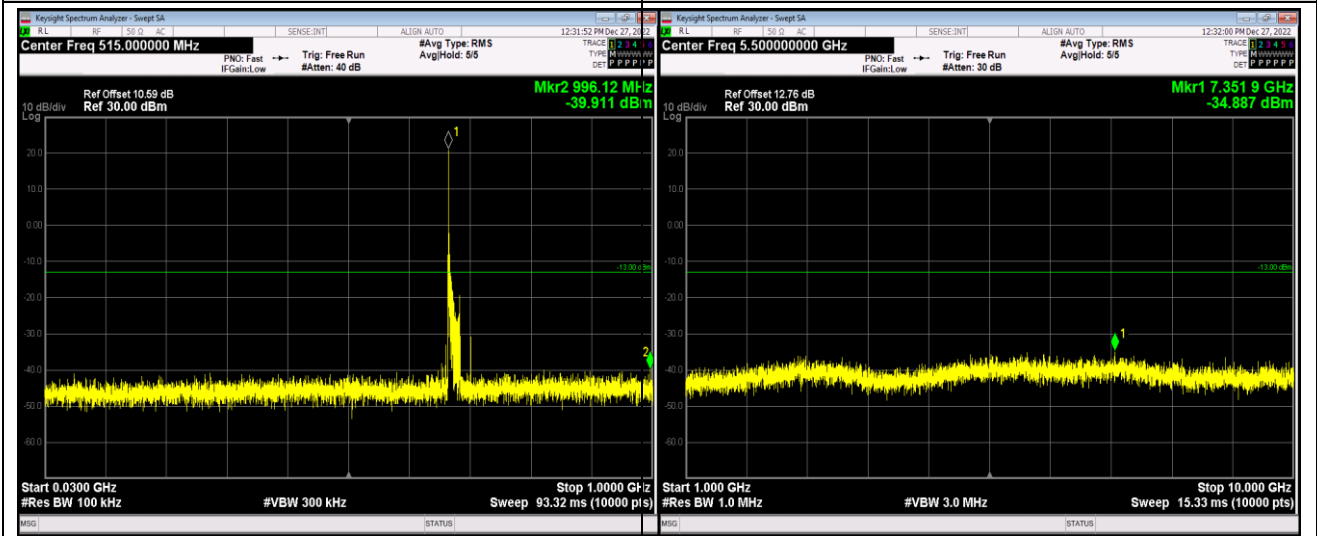
Band71-20MHz-QPSK-133222-1RB#0-Range1:30
~1000MHz

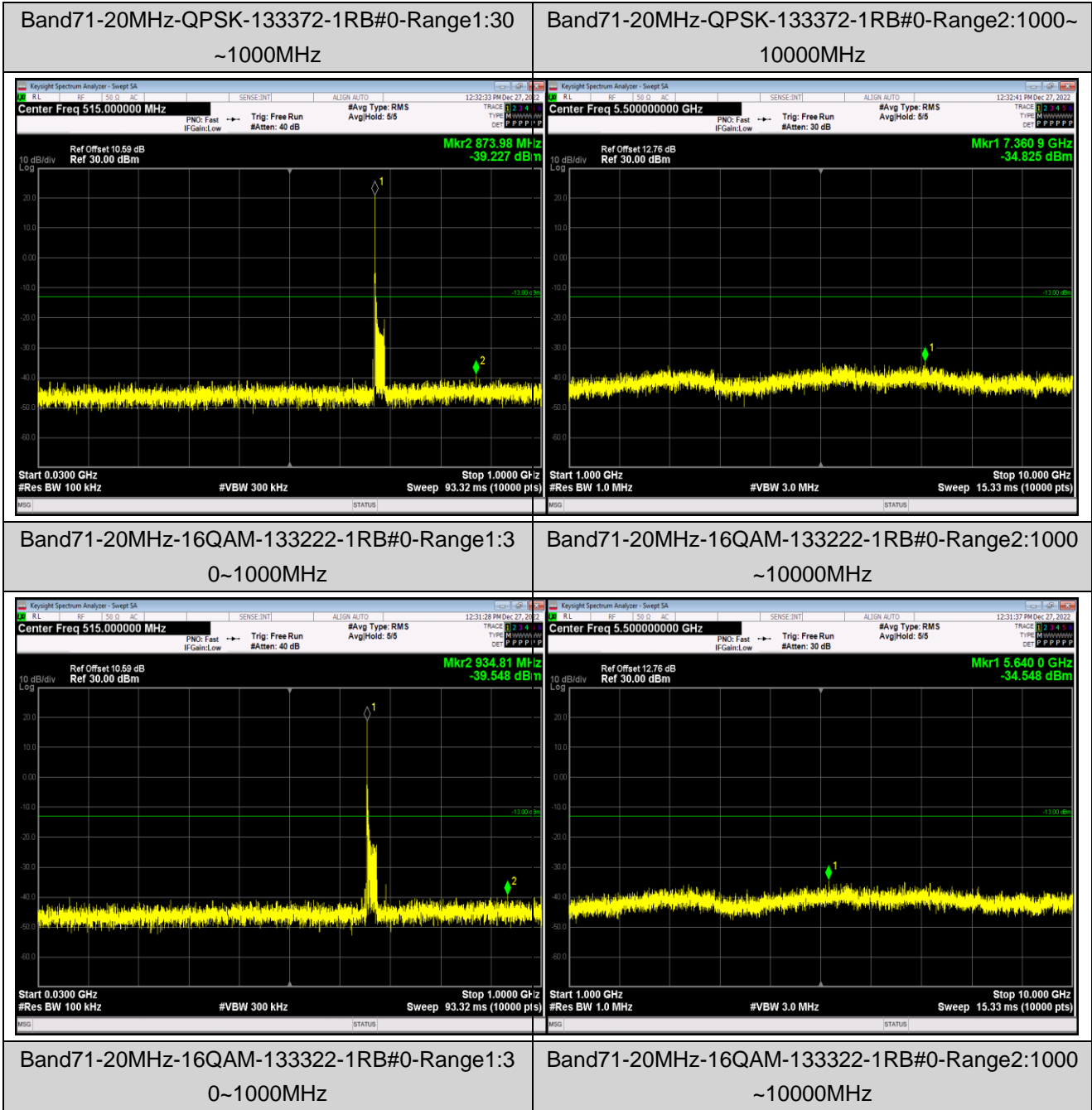
Band71-20MHz-QPSK-133222-1RB#0-Range2:1000~
10000MHz

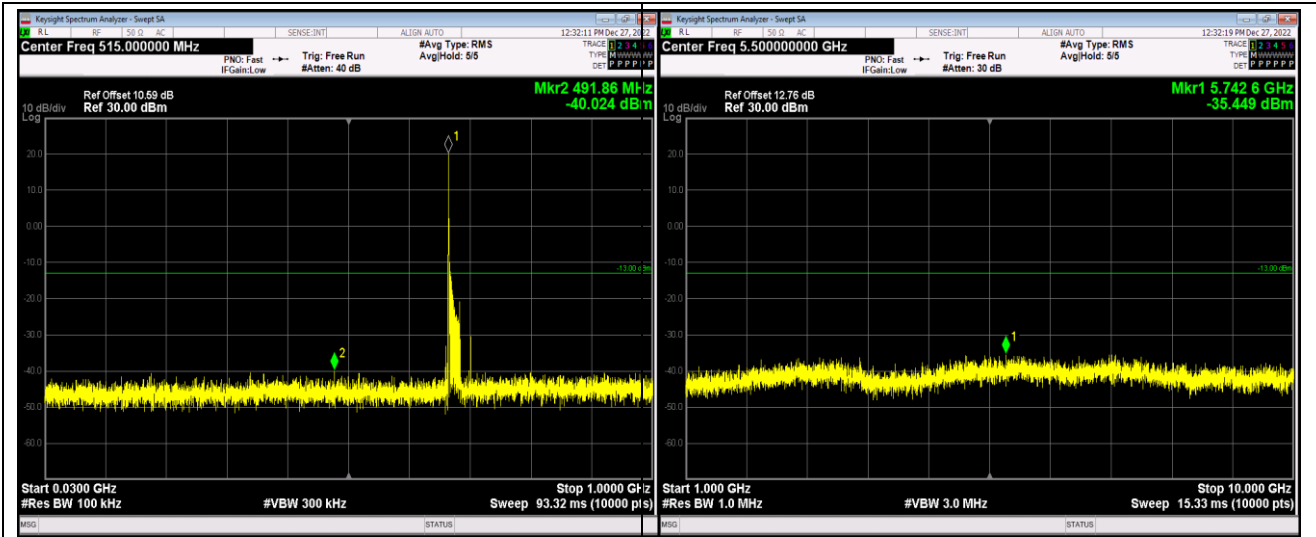


Band71-20MHz-QPSK-133322-1RB#0-Range1:30
~1000MHz

Band71-20MHz-QPSK-133322-1RB#0-Range2:1000~
10000MHz

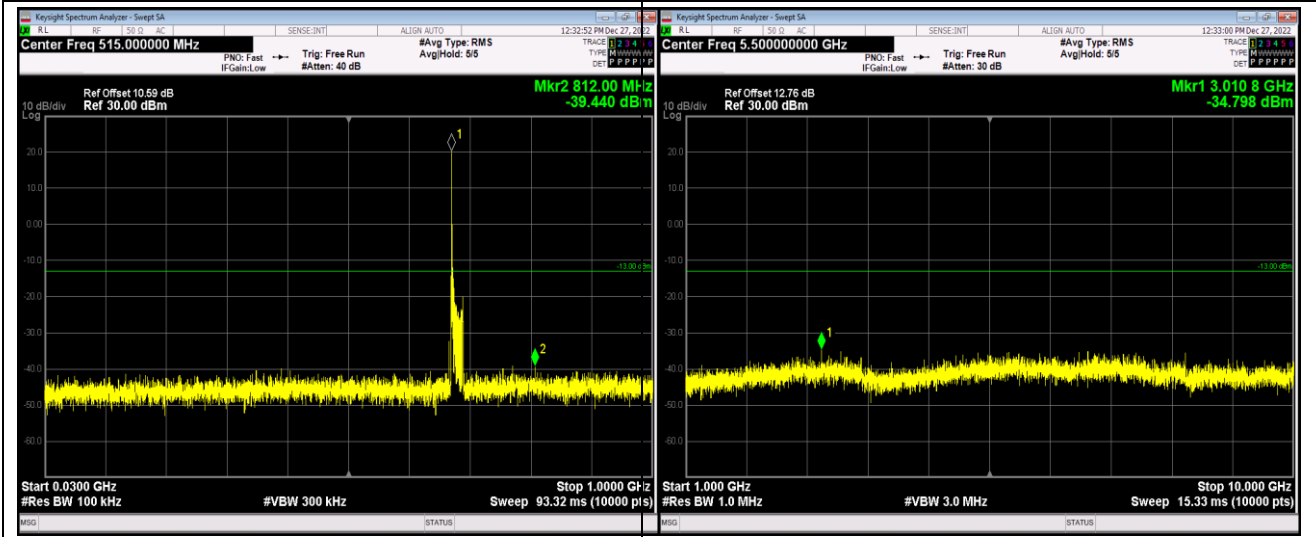






Band71-20MHz-16QAM-133372-1RB#0-Range1:3
0~1000MHz

Band71-20MHz-16QAM-133372-1RB#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					
3.70	-30	23.70	0.012606	Within authorized band for Band 2	Pass
	-20	22.79	0.012122		
	-10	24.26	0.012904		
	0	26.71	0.014207		
	10	29.77	0.015835		
	20	29.38	0.015628		
	30	30.60	0.016277		
	40	34.05	0.018112		
	50	39.44	0.020979		
16QAM					
3.70	-30	49.81	0.026495	Within authorized band for Band 2	Pass
	-20	-4.78	-0.002543		
	-10	11.80	0.006277		
	0	24.23	0.012888		
	10	35.02	0.018628		
	20	47.35	0.025186		
	30	20.11	0.010697		
	40	29.55	0.015718		
	50	37.92	0.020170		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.33	30.53	0.016239	Within authorized band for Band 2	Pass
	3.70	27.27	0.014505		
	4.07	25.35	0.013484		
16QAM					
25	3.33	22.27	0.011846	Within authorized band for Band 2	Pass
	3.70	46.86	0.024926		
	4.07	38.34	0.020394		

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					
3.70	-30	-4.69	-0.005607	±2.5	Pass
	-20	-12.02	-0.014369		
	-10	-18.78	-0.022451		
	0	-24.59	-0.029396		
	10	-31.00	-0.037059		
	20	-36.76	-0.043945		
	30	-40.98	-0.048990		
	40	-47.55	-0.056844		
	50	-51.64	-0.061733		
16QAM					
3.70	-30	1.72	0.002056	±2.5	Pass
	-20	4.39	0.005248		
	-10	5.68	0.006790		
	0	6.82	0.008153		
	10	7.40	0.008846		
	20	9.10	0.010879		
	30	9.80	0.011715		
	40	10.36	0.012385		
	50	9.50	0.011357		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.33	15.31	0.018302	±2.5	Pass
	3.70	13.46	0.016091		
	4.07	5.74	0.006862		
16QAM					
25	3.33	-6.41	-0.007663	±2.5	Pass
	3.70	-7.68	-0.009181		
	4.07	-3.03	-0.003622		

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					
3.70	-30	-15.48	-0.021880	Within authorized band for Band 12	Pass
	-20	-23.92	-0.033809		
	-10	-30.21	-0.042700		
	0	-39.88	-0.056367		
	10	-55.95	-0.079081		
	20	-7.94	-0.011223		
	30	-15.54	-0.021965		
	40	-20.37	-0.028792		
	50	-27.01	-0.038177		
16QAM					
3.70	-30	-28.55	-0.040353	Within authorized band for Band 12	Pass
	-20	-28.85	-0.040777		
	-10	-26.18	-0.037004		
	0	-27.15	-0.038375		
	10	-26.28	-0.037145		
	20	-25.91	-0.036622		
	30	-27.08	-0.038276		
	40	-25.72	-0.036353		
	50	-25.96	-0.036693		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.33	4.99	0.007053	Within authorized band for Band 12	Pass
	3.70	6.68	0.009442		
	4.07	-6.42	-0.009074		
16QAM					
25	3.33	-32.60	-0.046078	Within authorized band for Band 12	Pass
	3.70	-33.06	-0.046728		
	4.07	-29.80	-0.042120		

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					
3.70	-30	39.97	0.056296	Within authorized band for Band 17	Pass
	-20	46.68	0.065746		
	-10	7.85	0.011056		
	0	14.51	0.020437		
	10	23.45	0.033028		
	20	29.23	0.041169		
	30	36.89	0.051958		
	40	45.43	0.063986		
	50	48.68	0.068563		
16QAM					
3.70	-30	-8.81	-0.012408	Within authorized band for Band 17	Pass
	-20	4.59	0.006465		
	-10	11.10	0.015634		
	0	19.60	0.027606		
	10	28.22	0.039746		
	20	37.44	0.052732		
	30	45.52	0.064113		
	40	12.59	0.017732		
	50	21.49	0.030268		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.33	27.84	0.039211	Within authorized band for Band 17	Pass
	3.70	15.01	0.021141		
	4.07	32.52	0.045803		
16QAM					
25	3.33	21.27	0.029958	Within authorized band for Band 17	Pass
	3.70	6.81	0.009592		
	4.07	36.86	0.051915		

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

LTE Band 41 part: (2555-2655)

Reference Frequency: LTE Band 41 (10MHz) Middle channel=40640 Frequency=2605.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.70	-30	-26.48	-0.010165	Within authorized band for Band 41	Pass
	-20	-24.33	-0.009340		
	-10	-25.35	-0.009731		
	0	9.20	0.003532		
	10	-26.21	-0.010061		
	20	-49.57	-0.019029		
	30	-36.74	-0.014104		
	40	11.46	0.004399		
	50	-14.32	-0.005497		
16QAM					
3.70	-30	-5.46	-0.002096	Within authorized band for Band 41	Pass
	-20	-25.39	-0.009747		
	-10	-22.56	-0.008660		
	0	21.01	0.008065		
	10	23.55	0.009040		
	20	24.69	0.009478		
	30	22.13	0.008495		
	40	21.93	0.008418		
	50	25.69	0.009862		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.33	-9.01	-0.003459	Within authorized band for Band 41	Pass
	3.70	24.03	0.009225		
	4.07	-12.10	-0.004645		
16QAM					
25	3.33	-11.52	-0.004422	Within authorized band for Band41	Pass
	3.70	-30.43	-0.011681		
	4.07	-6.37	-0.002445		

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					
3.70	-30	-39.94	-0.022888	Within authorized band for Band 66	Pass
	-20	-40.30	-0.023095		
	-10	-17.18	-0.009845		
	0	-39.34	-0.022544		
	10	-25.94	-0.014865		
	20	-43.07	-0.024682		
	30	-23.03	-0.013198		
	40	-39.93	-0.022883		
	50	-12.67	-0.007261		
16QAM					
3.70	-30	-21.00	-0.012034	Within authorized band for Band 66	Pass
	-20	-11.60	-0.006648		
	-10	-12.20	-0.006991		
	0	-11.52	-0.006602		
	10	-16.25	-0.009312		
	20	-15.09	-0.008648		
	30	-35.28	-0.020218		
	40	-14.06	-0.008057		
	50	-13.62	-0.007805		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.33	-34.28	-0.019645	Within authorized band for Band 66	Pass
	3.70	15.46	0.008860		
	4.07	-23.16	-0.013272		
16QAM					
25	3.33	-28.04	-0.016069	Within authorized band for Band 66	Pass
	3.70	-23.93	-0.013713		
	4.07	-22.19	-0.012716		

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

LTE Band 71 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					
3.70	-30	24.99	0.036723	Within authorized band for Band 71	Pass
	-20	28.17	0.041396		
	-10	29.64	0.043556		
	0	31.64	0.046495		
	10	35.08	0.051550		
	20	33.72	0.049552		
	30	33.46	0.049170		
	40	31.56	0.046378		
	50	31.29	0.045981		
16QAM					
3.70	-30	1.76	0.002586	Within authorized band for Band 71	Pass
	-20	6.62	0.009728		
	-10	13.35	0.019618		
	0	16.95	0.024908		
	10	21.77	0.031991		
	20	24.96	0.036679		
	30	25.91	0.038075		
	40	29.28	0.043027		
	50	29.00	0.042616		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.33	16.35	0.024026	Within authorized band for Band 71	Pass
	3.70	-2.78	-0.004085		
	4.07	22.70	0.033358		
16QAM					
25	3.33	37.85	0.055621	Within authorized band for Band 71	Pass
	3.70	31.41	0.046157		
	4.07	46.68	0.068597		

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
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
Band41	20MHz	QPSK	40740	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40740	100RB#0	PASS	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS
Band71	20MHz	QPSK	133322	100RB#0	PASS	PASS
Band71	20MHz	16QAM	133322	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

