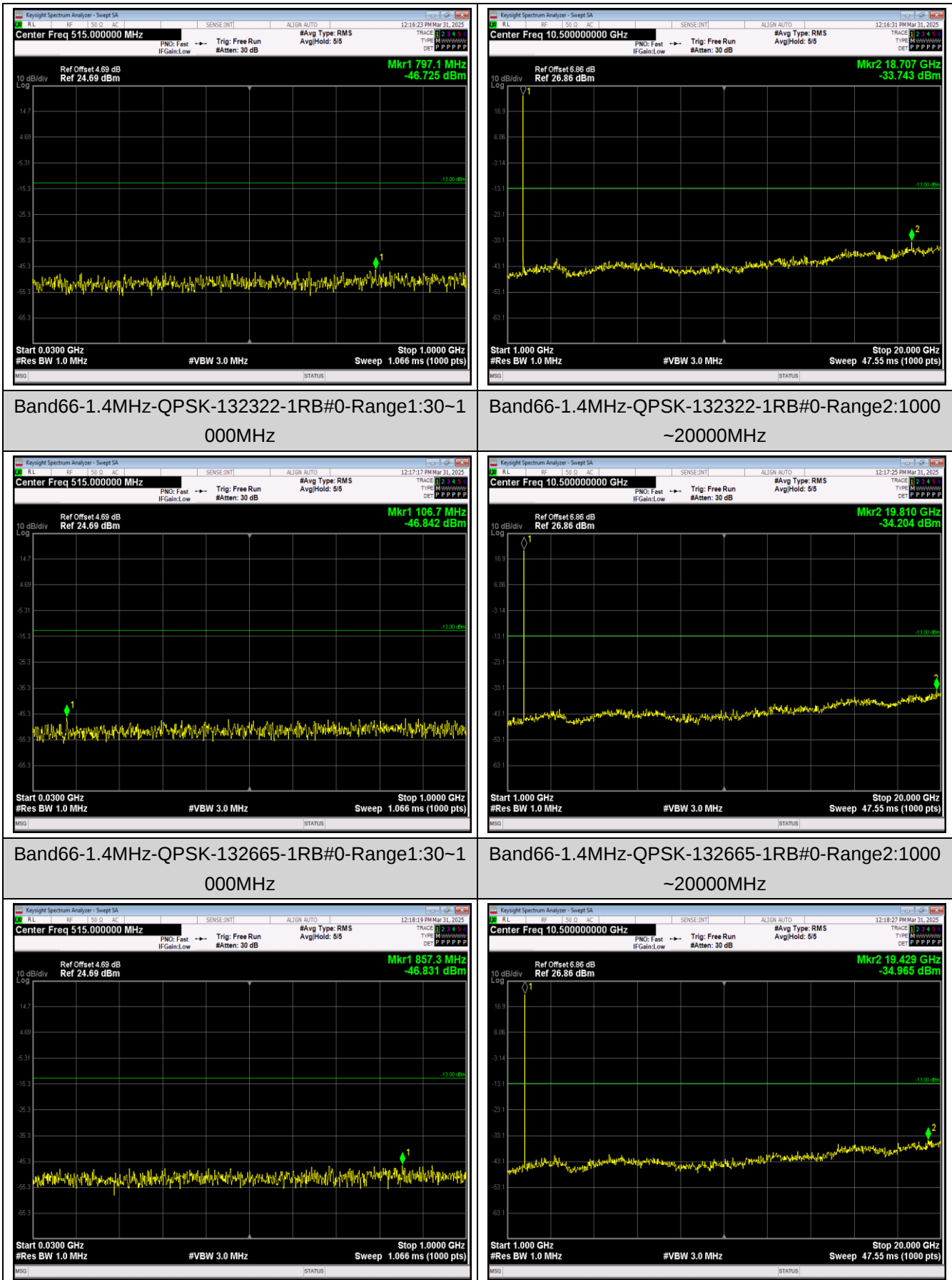
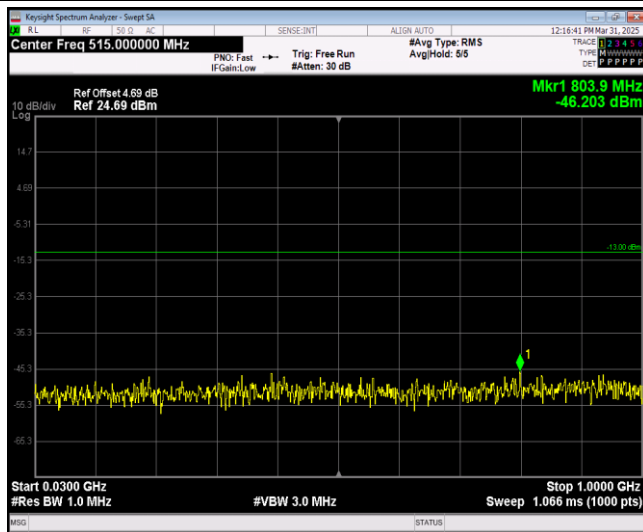
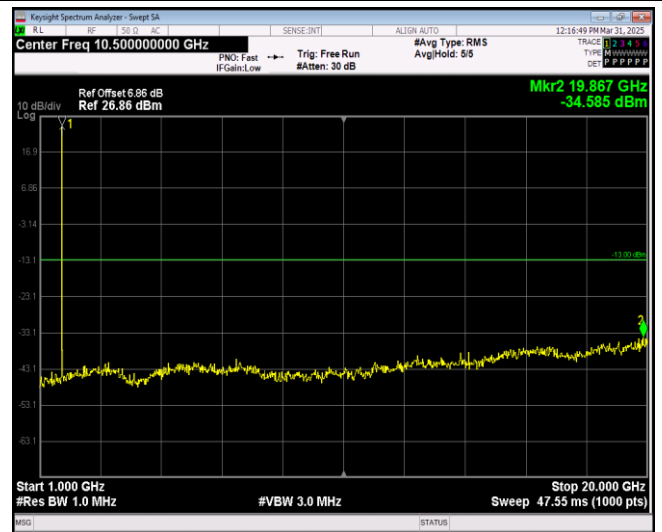




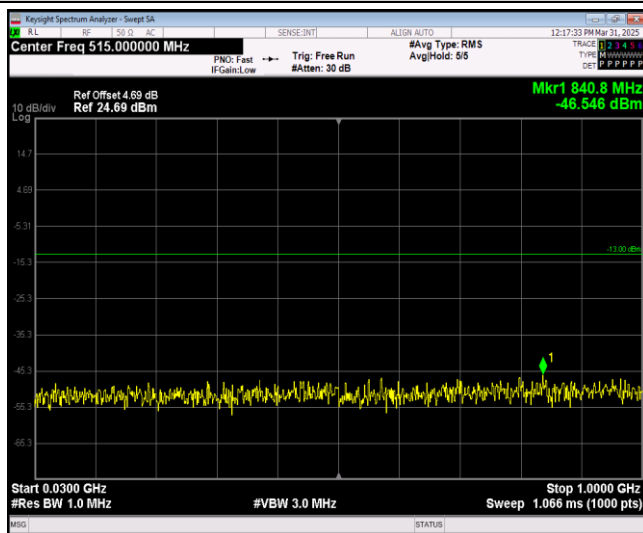
Band66-1.4MHz-16QAM-131979-1RB#0-Range1:30~1000MHz



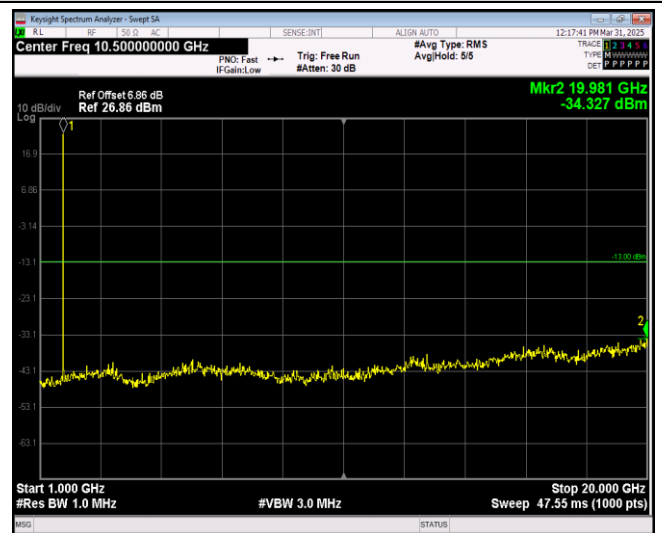
Band66-1.4MHz-16QAM-131979-1RB#0-Range2:1000~20000MHz



Band66-1.4MHz-16QAM-132322-1RB#0-Range1:30~1000MHz



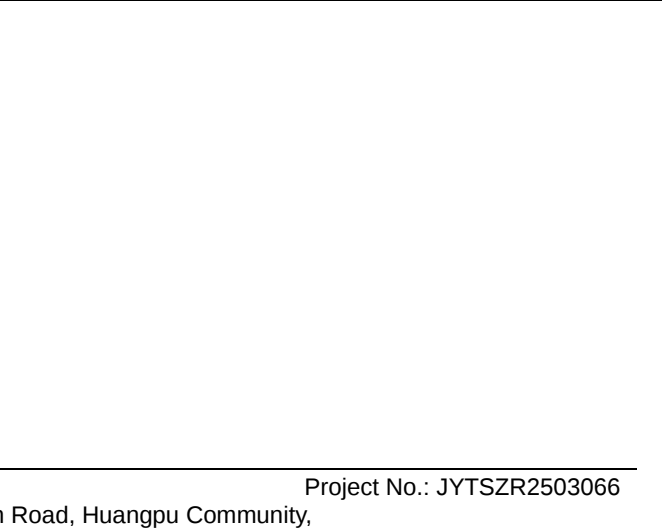
Band66-1.4MHz-16QAM-132322-1RB#0-Range2:1000~20000MHz

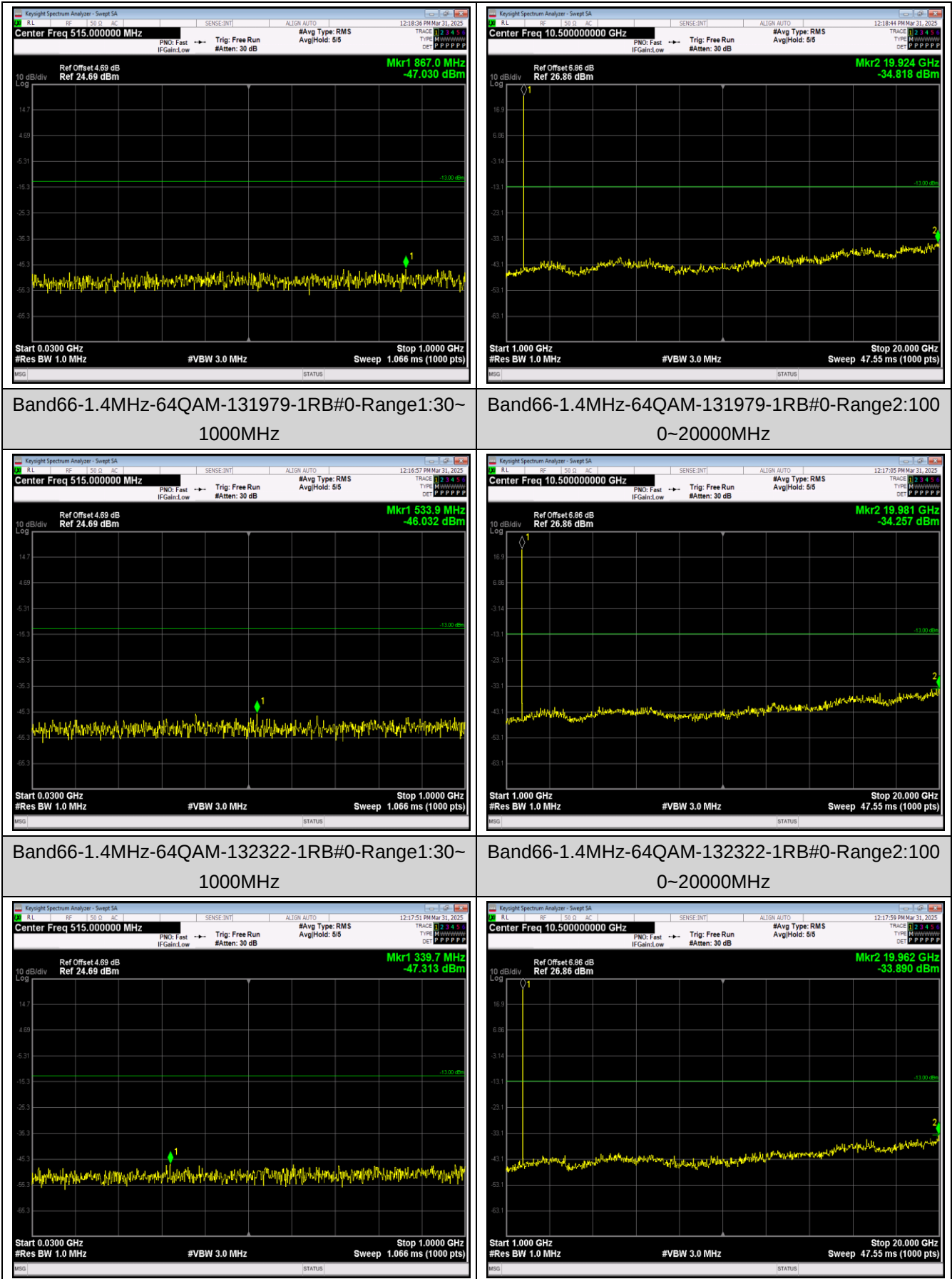


Band66-1.4MHz-16QAM-132665-1RB#0-Range1:30~1000MHz

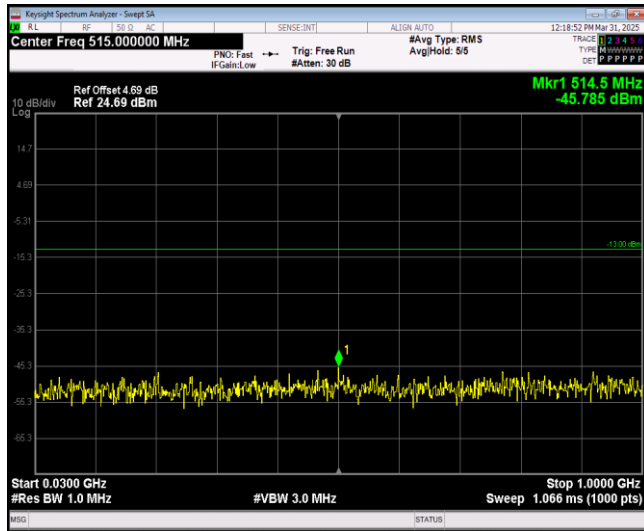


Band66-1.4MHz-16QAM-132665-1RB#0-Range2:1000~20000MHz

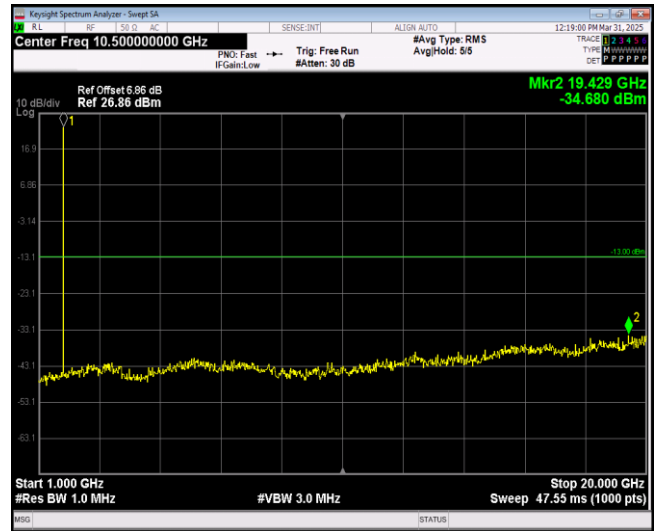




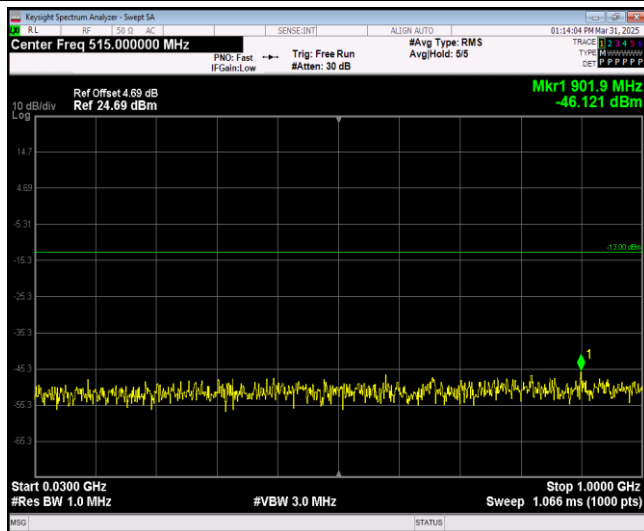
Band66-1.4MHz-64QAM-132665-1RB#0-Range1:30~1000MHz



Band66-1.4MHz-64QAM-132665-1RB#0-Range2:1000~20000MHz



Band66-20MHz-QPSK-132072-1RB#0-Range1:30~1000MHz



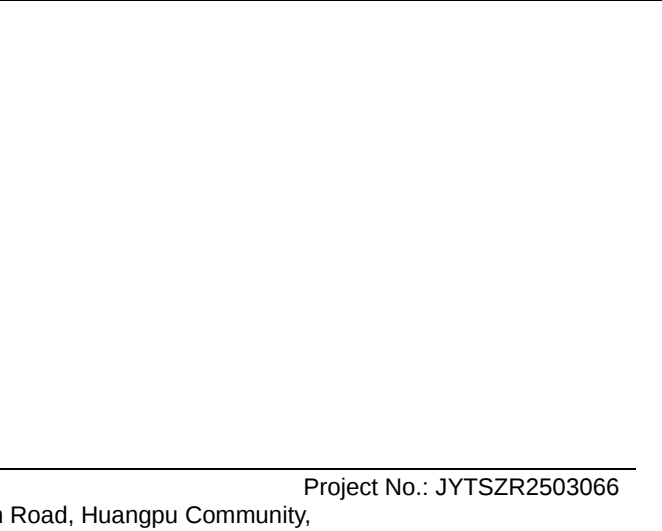
Band66-20MHz-QPSK-132072-1RB#0-Range2:1000~20000MHz

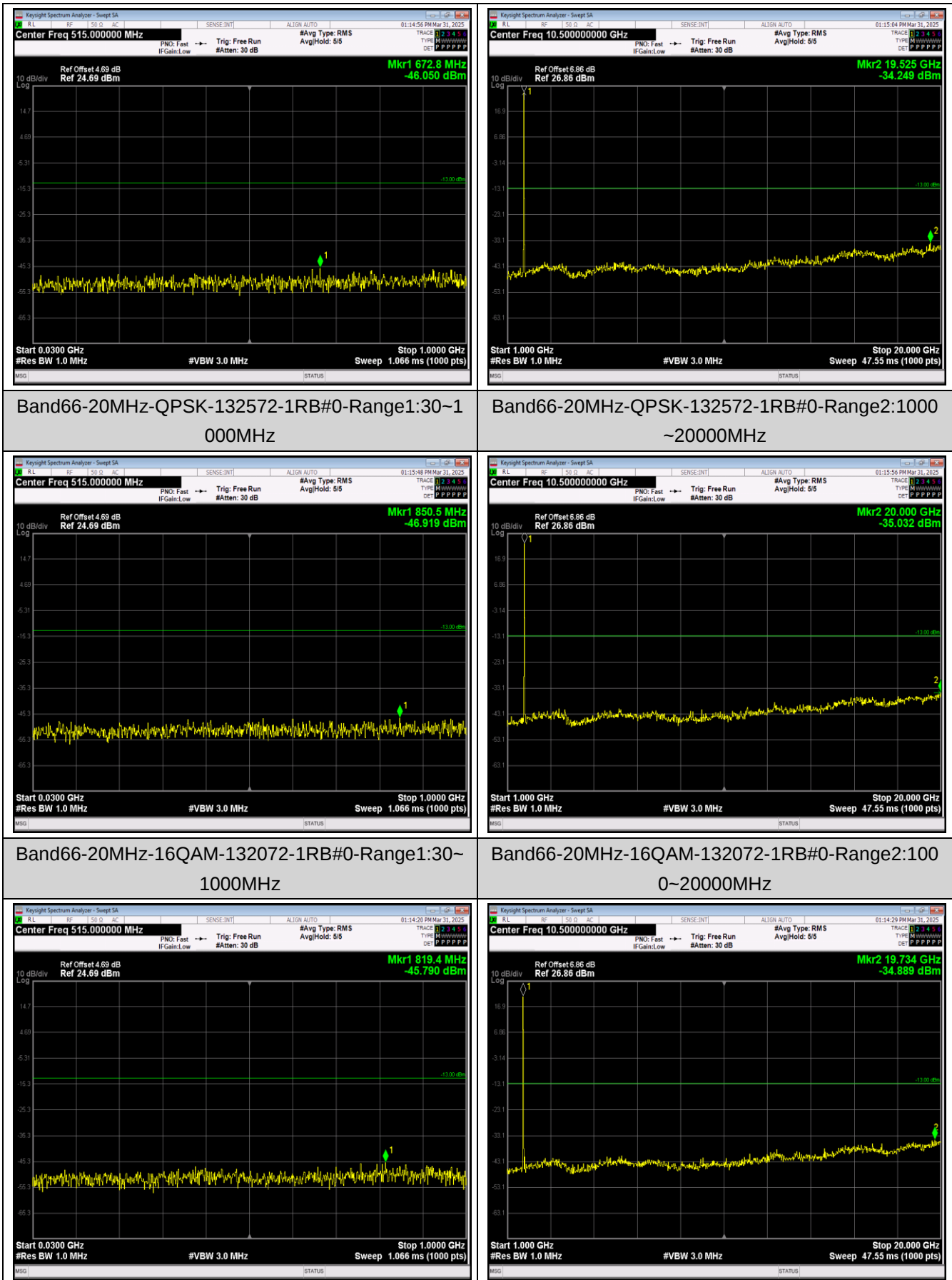


Band66-20MHz-QPSK-132322-1RB#0-Range1:30~1000MHz

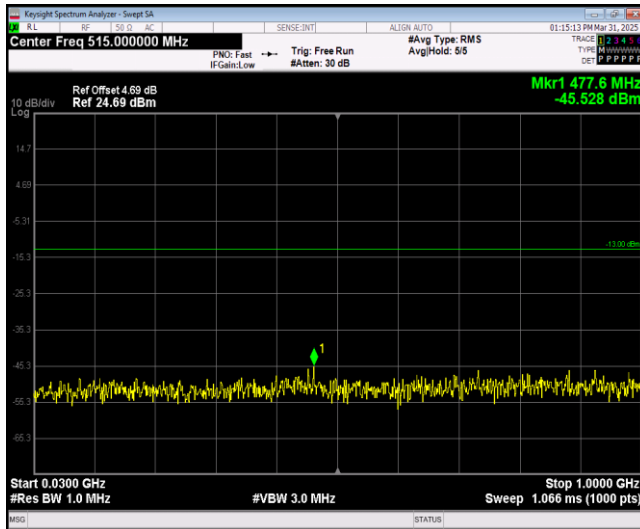


Band66-20MHz-QPSK-132322-1RB#0-Range2:1000~20000MHz

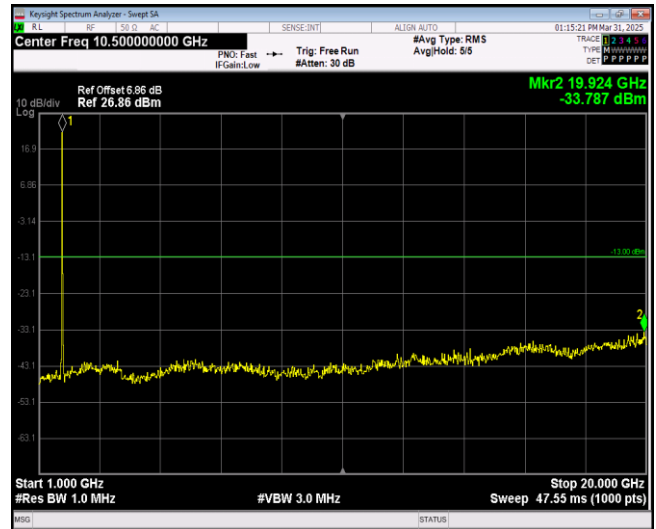




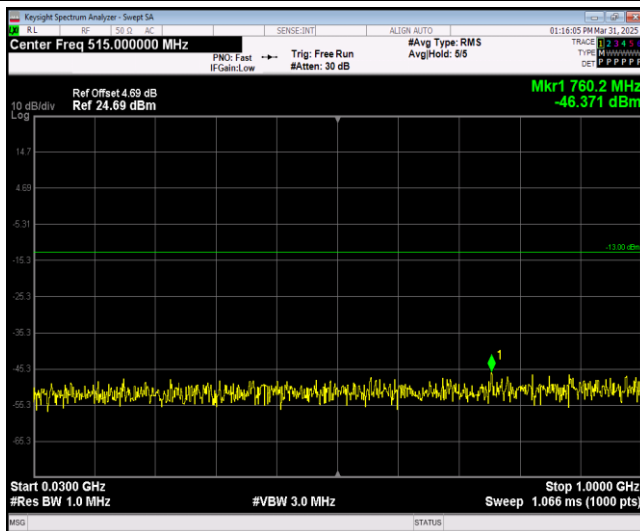
Band66-20MHz-16QAM-132322-1RB#0-Range1:30~
1000MHz



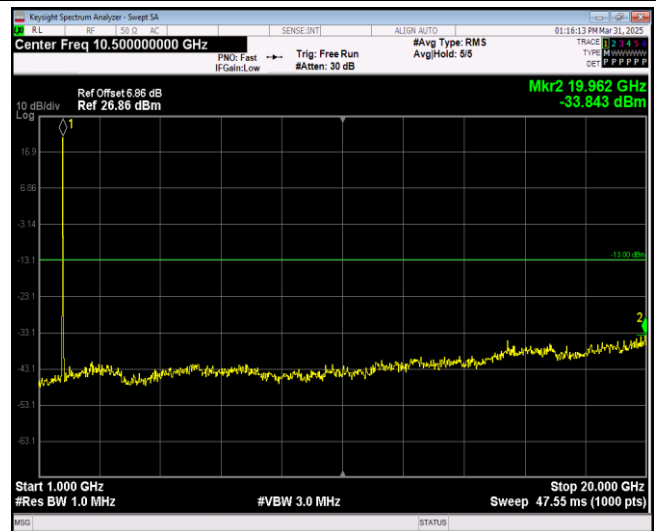
Band66-20MHz-16QAM-132322-1RB#0-Range2:100
0~20000MHz



Band66-20MHz-16QAM-132572-1RB#0-Range1:30~
1000MHz

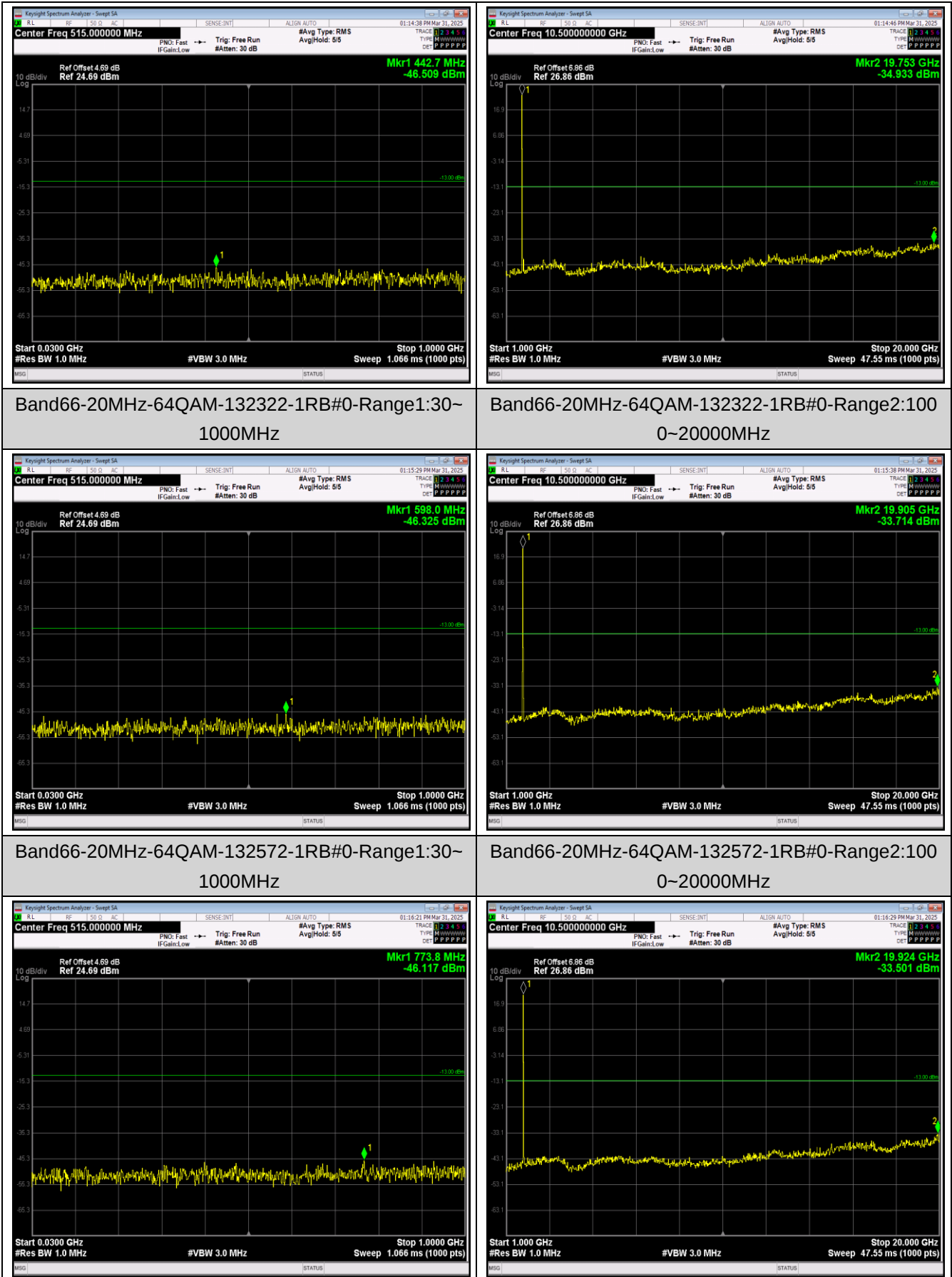


Band66-20MHz-16QAM-132572-1RB#0-Range2:100
0~20000MHz



Band66-20MHz-64QAM-132072-1RB#0-Range1:30~
1000MHz

Band66-20MHz-64QAM-132072-1RB#0-Range2:100
0~20000MHz



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	-30.83	-0.016399	Within authorized band for Band 2	Pass
	-20	-29.21	-0.015537		
	-10	-25.85	-0.013750		
	0	-26.29	-0.013984		
	10	-23.46	-0.012479		
	20	-19.23	-0.010229		
	30	-21.59	-0.011484		
	40	-20.90	-0.011117		
	50	-19.54	-0.010394		
16QAM					
3.85	-30	-5.44	-0.002894	Within authorized band for Band 2	Pass
	-20	-8.98	-0.004777		
	-10	9.36	0.004979		
	0	8.61	0.004580		
	10	15.13	0.008048		
	20	17.15	0.009122		
	30	18.67	0.009931		
	40	22.52	0.011979		
	50	23.82	0.012670		
64QAM					
3.85	-30	47.25	0.025133	Within authorized band for Band 2	Pass
	-20	-6.28	-0.003340		
	-10	5.75	0.003059		
	0	17.91	0.009527		
	10	19.10	0.010160		
	20	27.62	0.014691		
	30	28.64	0.015234		
	40	35.36	0.018809		
	50	40.98	0.021798		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-36.45	-0.019388	Within authorized band for Band 2	Pass
	3.85	-31.56	-0.016787		
	4.40	-32.44	-0.017255		
16QAM					
25	3.00	-13.07	-0.006952	Within authorized band for Band 2	Pass
	3.85	-17.04	-0.009064		
	4.40	-7.55	-0.004016		
64QAM					
25	3.00	37.52	0.019957	Within authorized band for Band 2	Pass
	3.85	35.61	0.018941		
	4.40	44.66	0.023755		
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					
3.85	-30	5.94	0.003429	Within authorized band for Band 4	Pass
	-20	-10.77	-0.006216		
	-10	-14.62	-0.008439		
	0	-23.39	-0.013501		
	10	-32.84	-0.018955		
	20	-42.63	-0.024606		
	30	-16.68	-0.009628		
	40	-25.94	-0.014973		
	50	-34.36	-0.019833		
16QAM					
3.85	-30	-16.45	-0.009495	Within authorized band for Band 4	Pass
	-20	-25.13	-0.014505		
	-10	-32.76	-0.018909		
	0	7.87	0.004543		
	10	-8.96	-0.005172		
	20	-16.97	-0.009795		
	30	-19.01	-0.010973		
	40	-26.42	-0.015250		
	50	-38.47	-0.022205		
64QAM					
3.85	-30	-25.48	-0.014707	Within authorized band for Band 4	Pass
	-20	-29.61	-0.017091		
	-10	-36.99	-0.021351		
	0	13.55	0.007821		
	10	9.10	0.005253		
	20	-5.05	-0.002915		
	30	-7.50	-0.004329		
	40	-13.43	-0.007752		
	50	-16.19	-0.009345		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-35.83	-0.020681	Within authorized band for Band 4	Pass
	3.85	-28.97	-0.016722		
	4.40	-43.19	-0.024929		
16QAM					
25	3.00	-51.86	-0.029934	Within authorized band for Band 4	Pass
	3.85	-45.83	-0.026453		
	4.40	-13.40	-0.007734		
64QAM					
25	3.00	-15.42	-0.008900	Within authorized band for Band 4	Pass
	3.85	-7.22	-0.004167		
	4.40	-16.24	-0.009374		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-23.06	-0.027567	±2.5	Pass
	-20	-24.50	-0.029289		
	-10	-21.92	-0.026204		
	0	-22.56	-0.026970		
	10	-23.15	-0.027675		
	20	-22.27	-0.026623		
	30	-22.24	-0.026587		
	40	-21.17	-0.025308		
	50	-23.00	-0.027496		
16QAM					
3.85	-30	-19.21	-0.022965	±2.5	Pass
	-20	-20.43	-0.024423		
	-10	-20.90	-0.024985		
	0	-19.80	-0.023670		
	10	-20.31	-0.024280		
	20	-19.54	-0.023359		
	30	-18.12	-0.021662		
	40	-18.30	-0.021877		
	50	-17.29	-0.020669		
64QAM					
3.85	-30	-16.31	-0.019498	±2.5	Pass
	-20	-16.88	-0.020179		
	-10	-18.41	-0.022008		
	0	-17.65	-0.021100		
	10	-15.45	-0.018470		
	20	-15.01	-0.017944		
	30	-13.65	-0.016318		
	40	-14.20	-0.016975		
	50	-14.16	-0.016928		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-19.67	-0.023515	±2.5	Pass
	3.85	-15.69	-0.018757		
	4.40	-21.06	-0.025176		
16QAM					
25	3.00	-21.50	-0.025702	±2.5	Pass
	3.85	-21.99	-0.026288		
	4.40	-20.36	-0.024340		
64QAM					
25	3.00	-21.44	-0.025631	±2.5	Pass
	3.85	-15.98	-0.019103		
	4.40	-18.01	-0.021530		
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	-32.80	-0.012939	Within authorized band for Band 7	Pass
	-20	-29.40	-0.011598		
	-10	-35.76	-0.014107		
	0	-28.01	-0.011049		
	10	-31.56	-0.012450		
	20	-31.33	-0.012359		
	30	-33.13	-0.013069		
	40	-31.69	-0.012501		
	50	-38.12	-0.015037		
16QAM					
3.85	-30	-19.04	-0.007511	Within authorized band for Band 7	Pass
	-20	-21.97	-0.008667		
	-10	-15.66	-0.006178		
	0	-13.98	-0.005515		
	10	-17.17	-0.006773		
	20	-10.56	-0.004166		
	30	-8.77	-0.003460		
	40	-6.85	-0.002702		
	50	3.35	0.001321		
64QAM					
3.85	-30	11.16	0.004402	Within authorized band for Band 7	Pass
	-20	15.01	0.005921		
	-10	21.23	0.008375		
	0	14.71	0.005803		
	10	19.53	0.007704		
	20	21.63	0.008533		
	30	19.86	0.007834		
	40	25.59	0.010095		
	50	25.19	0.009937		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-24.60	-0.009704	Within authorized band for Band 7	Pass
	3.85	8.88	0.003503		
	4.40	-28.84	-0.011377		
16QAM					
25	3.00	-26.12	-0.010304	Within authorized band for Band 7	Pass
	3.85	-29.44	-0.011613		
	4.40	-19.21	-0.007578		
64QAM					
25	3.00	13.22	0.005215	Within authorized band for Band 7	Pass
	3.85	-3.86	-0.001523		
	4.40	10.73	0.004233		
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	-9.30	-0.005330	Within authorized band for Band 66	Pass
	-20	-8.75	-0.005014		
	-10	-13.38	-0.007668		
	0	-15.89	-0.009106		
	10	-17.09	-0.009794		
	20	-20.31	-0.011639		
	30	-24.12	-0.013822		
	40	-26.75	-0.015330		
	50	-28.45	-0.016304		
16QAM					
3.85	-30	-35.00	-0.020057	Within authorized band for Band 66	Pass
	-20	-38.94	-0.022315		
	-10	18.58	0.010648		
	0	14.42	0.008264		
	10	10.74	0.006155		
	20	11.93	0.006837		
	30	8.25	0.004728		
	40	8.91	0.005106		
	50	9.20	0.005272		
64QAM					
3.85	-30	-5.41	-0.003100	Within authorized band for Band 66	Pass
	-20	-6.48	-0.003713		
	-10	-4.62	-0.002648		
	0	-7.71	-0.004418		
	10	-5.64	-0.003232		
	20	4.98	0.002854		
	30	-5.82	-0.003335		
	40	-3.72	-0.002132		
	50	-8.00	-0.004585		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	5.14	0.002946	Within authorized band for Band 66	Pass
	3.85	-35.09	-0.020109		
	4.40	-7.01	-0.004017		
16QAM					
25	3.00	-35.20	-0.020172	Within authorized band for Band 66	Pass
	3.85	-29.97	-0.017175		
	4.40	-33.69	-0.019307		
64QAM					
25	3.00	4.38	0.002510	Within authorized band for Band 66	Pass
	3.85	6.38	0.003656		
	4.40	-4.78	-0.002739		
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
Band2	20MHz	64QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band4	20MHz	64QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band5	10MHz	64QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band7	20MHz	64QAM	21100	100RB#0	PASS	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS
Band66	20MHz	64QAM	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

