

Appendix F: Frequency Stability Measurement

Frequency stability V.S. Temperature measurement

Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz RB 1 20MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.40	-30	39	0.0207	2.5	Pass
	-20	42	0.0223		
	-10	37	0.0197		
	0	35	0.0186		
	10	30	0.0160		
	20	36	0.0191		
	30	37	0.0197		
	40	33	0.0176		
	50	39	0.0207		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz RB 1 20MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.40	-30	36	0.0208	2.5	Pass
	-20	35	0.0202		
	-10	39	0.0225		
	0	28	0.0162		
	10	24	0.0139		
	20	39	0.0225		
	30	37	0.0214		
	40	38	0.0219		
	50	35	0.0202		

Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz RB 1 10MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.40	-30	37	0.0442	2.5	Pass
	-20	38	0.0454		
	-10	34	0.0406		
	0	32	0.0383		
	10	36	0.0430		
	20	32	0.0383		
	30	38	0.0454		
	40	37	0.0442		
	50	41	0.0490		
Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz RB 1 20MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.40	-30	56	0.0150	2.5	Pass
	-20	72	0.0114		
	-10	55	0.0142		
	0	49	0.0107		
	10	52	0.0114		
	20	49	0.0138		
	30	86	0.0134		
	40	74	0.0154		
	50	64	0.0166		

Reference Frequency: LTE Band 17 Middle channel=20175 channel=710MHz RB 1 10MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
7.40	-30	27	0.0380	2.5	Pass
	-20	25	0.0352		
	-10	26	0.0366		
	0	24	0.0338		
	10	21	0.0296		
	20	28	0.0394		
	30	29	0.0408		
	40	24	0.0338		
	50	25	0.0352		

Note: only show the test plots of the worst case.

Frequency stability V.S. Voltage measurement

Reference Frequency: LTE Band 2 Middle channel=18900 channel=1880MHz RB 1 20MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	8.50	42	0.0223	2.5	Pass
	7.40	35	0.0186		
	6.30	38	0.0202		
Reference Frequency: LTE Band 4 Middle channel=20175 channel=1732.5MHz RB 1 20MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	8.50	38	0.0219	2.5	Pass
	7.40	32	0.0185		
	6.30	36	0.0208		
Reference Frequency: LTE Band 5 Middle channel=20175 channel=836.5MHz RB 1 10MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	8.50	13	0.0191	2.5	Pass
	7.40	27	0.0239		
	6.30	23	0.0191		
Reference Frequency: LTE Band 7 Middle channel=21100 channel=2535MHz RB 1 20MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	8.50	32	0.0126	2.5	Pass
	7.40	41	0.0162		
	6.30	38	0.0150		
Reference Frequency: LTE Band 17 Middle channel=20175 channel=710MHz RB 1 10MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	8.50	20	0.0254	2.5	Pass
	7.40	20	0.0239		
	6.30	19	0.0254		

Note: only show the test plots of the worst case.