











## Appendix F: Frequency Stability

### Test Result

Voltage							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	VN	NT	-3.26	-0.003955	±2.5	PASS
GSM850	128	VL	NT	-5.71	-0.006928	±2.5	PASS
GSM850	128	VH	NT	-4.36	-0.005290	±2.5	PASS
GSM850	190	VN	NT	-2.55	-0.003048	±2.5	PASS
GSM850	190	VL	NT	-1.29	-0.001542	±2.5	PASS
GSM850	190	VH	NT	-3.13	-0.003741	±2.5	PASS
GSM850	251	VN	NT	-3.00	-0.003534	±2.5	PASS
GSM850	251	VL	NT	-4.58	-0.005396	±2.5	PASS
GSM850	251	VH	NT	-1.52	-0.001791	±2.5	PASS
GPRS850	128	VN	NT	-4.58	-0.005557	±2.5	PASS
GPRS850	128	VL	NT	-1.87	-0.002269	±2.5	PASS
GPRS850	128	VH	NT	1.16	0.001407	±2.5	PASS
GPRS850	190	VN	NT	-5.94	-0.007100	±2.5	PASS
GPRS850	190	VL	NT	-3.97	-0.004745	±2.5	PASS
GPRS850	190	VH	NT	-2.94	-0.003514	±2.5	PASS
GPRS850	251	VN	NT	-3.81	-0.004489	±2.5	PASS
GPRS850	251	VL	NT	-3.58	-0.004218	±2.5	PASS
GPRS850	251	VH	NT	-3.45	-0.004065	±2.5	PASS
EGPRS850	128	VN	NT	-7.97	-0.009670	±2.5	PASS
EGPRS850	128	VL	NT	-7.10	-0.008614	±2.5	PASS
EGPRS850	128	VH	NT	-4.42	-0.005363	±2.5	PASS
EGPRS850	190	VN	NT	-9.40	-0.011236	±2.5	PASS
EGPRS850	190	VL	NT	-9.40	-0.011236	±2.5	PASS
EGPRS850	190	VH	NT	-9.27	-0.011081	±2.5	PASS
EGPRS850	251	VN	NT	-8.56	-0.010085	±2.5	PASS
EGPRS850	251	VL	NT	-8.46	-0.009967	±2.5	PASS
EGPRS850	251	VH	NT	-10.04	-0.011828	±2.5	PASS
GSM1900	512	VN	NT	-4.33	-0.002340	±2.5	PASS
GSM1900	512	VL	NT	-0.74	-0.000400	±2.5	PASS
GSM1900	512	VH	NT	1.65	0.000892	±2.5	PASS
GSM1900	661	VN	NT	-1.23	-0.000654	±2.5	PASS
GSM1900	661	VL	NT	-0.52	-0.000277	±2.5	PASS
GSM1900	661	VH	NT	0.32	0.000170	±2.5	PASS
GSM1900	810	VN	NT	-4.39	-0.002299	±2.5	PASS

GSM1900	810	VL	NT	-2.62	-0.001372	±2.5	PASS
GSM1900	810	VH	NT	-3.20	-0.001676	±2.5	PASS
GPRS1900	512	VN	NT	-3.20	-0.001730	±2.5	PASS
GPRS1900	512	VL	NT	-1.36	-0.000735	±2.5	PASS
GPRS1900	512	VH	NT	-0.90	-0.000486	±2.5	PASS
GPRS1900	661	VN	NT	-3.29	-0.001750	±2.5	PASS
GPRS1900	661	VL	NT	-4.49	-0.002388	±2.5	PASS
GPRS1900	661	VH	NT	-7.33	-0.003899	±2.5	PASS
GPRS1900	810	VN	NT	-6.75	-0.003534	±2.5	PASS
GPRS1900	810	VL	NT	-1.42	-0.000744	±2.5	PASS
GPRS1900	810	VH	NT	-4.46	-0.002335	±2.5	PASS
EGPRS1900	512	VN	NT	-5.75	-0.003108	±2.5	PASS
EGPRS1900	512	VL	NT	-7.23	-0.003908	±2.5	PASS
EGPRS1900	512	VH	NT	-7.97	-0.004308	±2.5	PASS
EGPRS1900	661	VN	NT	-4.94	-0.002628	±2.5	PASS
EGPRS1900	661	VL	NT	-8.27	-0.004399	±2.5	PASS
EGPRS1900	661	VH	NT	-8.88	-0.004723	±2.5	PASS
EGPRS1900	810	VN	NT	-9.75	-0.005105	±2.5	PASS
EGPRS1900	810	VL	NT	-13.46	-0.007048	±2.5	PASS
EGPRS1900	810	VH	NT	-10.75	-0.005629	±2.5	PASS

Temperature							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	NV	-30	-4.33	-0.005254	±2.5	PASS
GSM850	128	NV	-20	-4.94	-0.005994	±2.5	PASS
GSM850	128	NV	-10	-4.39	-0.005326	±2.5	PASS
GSM850	128	NV	0	-5.29	-0.006418	±2.5	PASS
GSM850	128	NV	10	-4.94	-0.005994	±2.5	PASS
GSM850	128	NV	20	-5.20	-0.006309	±2.5	PASS
GSM850	128	NV	30	-8.27	-0.010034	±2.5	PASS
GSM850	128	NV	40	-4.04	-0.004902	±2.5	PASS

GSM850	128	NV	50	-1.90	-0.002305	±2.5	PASS
GSM850	190	NV	-30	-1.29	-0.001542	±2.5	PASS
GSM850	190	NV	-20	-3.23	-0.003861	±2.5	PASS
GSM850	190	NV	-10	-2.10	-0.002510	±2.5	PASS
GSM850	190	NV	0	-0.84	-0.001004	±2.5	PASS
GSM850	190	NV	10	-3.13	-0.003741	±2.5	PASS
GSM850	190	NV	20	-4.10	-0.004901	±2.5	PASS
GSM850	190	NV	30	-1.84	-0.002199	±2.5	PASS
GSM850	190	NV	40	-1.78	-0.002128	±2.5	PASS
GSM850	190	NV	50	-1.84	-0.002199	±2.5	PASS
GSM850	251	NV	-30	-3.36	-0.003959	±2.5	PASS
GSM850	251	NV	-20	-3.97	-0.004677	±2.5	PASS
GSM850	251	NV	-10	0.23	0.000271	±2.5	PASS
GSM850	251	NV	0	5.13	0.006044	±2.5	PASS
GSM850	251	NV	10	-2.78	-0.003275	±2.5	PASS
GSM850	251	NV	20	-1.32	-0.001555	±2.5	PASS
GSM850	251	NV	30	-0.10	-0.000118	±2.5	PASS
GSM850	251	NV	40	-2.32	-0.002733	±2.5	PASS
GSM850	251	NV	50	-2.58	-0.003040	±2.5	PASS
GPRS850	128	NV	-30	-0.48	-0.000582	±2.5	PASS
GPRS850	128	NV	-20	-6.10	-0.007401	±2.5	PASS
GPRS850	128	NV	-10	-4.91	-0.005957	±2.5	PASS
GPRS850	128	NV	0	-6.88	-0.008347	±2.5	PASS
GPRS850	128	NV	10	-6.42	-0.007789	±2.5	PASS
GPRS850	128	NV	20	-5.33	-0.006467	±2.5	PASS
GPRS850	128	NV	30	-4.62	-0.005605	±2.5	PASS
GPRS850	128	NV	40	-5.20	-0.006309	±2.5	PASS
GPRS850	128	NV	50	-6.42	-0.007789	±2.5	PASS
GPRS850	190	NV	-30	-4.29	-0.005128	±2.5	PASS
GPRS850	190	NV	-20	-1.74	-0.002080	±2.5	PASS
GPRS850	190	NV	-10	-3.36	-0.004016	±2.5	PASS
GPRS850	190	NV	0	-7.07	-0.008451	±2.5	PASS
GPRS850	190	NV	10	-6.42	-0.007674	±2.5	PASS
GPRS850	190	NV	20	-8.30	-0.009921	±2.5	PASS
GPRS850	190	NV	30	-8.36	-0.009993	±2.5	PASS
GPRS850	190	NV	40	-5.26	-0.006287	±2.5	PASS
GPRS850	190	NV	50	-4.00	-0.004781	±2.5	PASS
GPRS850	251	NV	-30	-4.75	-0.005596	±2.5	PASS
GPRS850	251	NV	-20	-6.52	-0.007681	±2.5	PASS
GPRS850	251	NV	-10	-4.26	-0.005019	±2.5	PASS
GPRS850	251	NV	0	-5.84	-0.006880	±2.5	PASS

GPRS850	251	NV	10	-4.78	-0.005631	±2.5	PASS
GPRS850	251	NV	20	-6.49	-0.007646	±2.5	PASS
GPRS850	251	NV	30	-1.42	-0.001673	±2.5	PASS
GPRS850	251	NV	40	-2.78	-0.003275	±2.5	PASS
GPRS850	251	NV	50	-4.16	-0.004901	±2.5	PASS
EGPRS850	128	NV	-30	-10.46	-0.012691	±2.5	PASS
EGPRS850	128	NV	-20	-8.68	-0.010531	±2.5	PASS
EGPRS850	128	NV	-10	-8.49	-0.010301	±2.5	PASS
EGPRS850	128	NV	0	-7.36	-0.008930	±2.5	PASS
EGPRS850	128	NV	10	-6.20	-0.007522	±2.5	PASS
EGPRS850	128	NV	20	-7.78	-0.009439	±2.5	PASS
EGPRS850	128	NV	30	-9.46	-0.011478	±2.5	PASS
EGPRS850	128	NV	40	-6.81	-0.008263	±2.5	PASS
EGPRS850	128	NV	50	-7.43	-0.009015	±2.5	PASS
EGPRS850	190	NV	-30	-8.75	-0.010459	±2.5	PASS
EGPRS850	190	NV	-20	-10.46	-0.012503	±2.5	PASS
EGPRS850	190	NV	-10	-10.14	-0.012120	±2.5	PASS
EGPRS850	190	NV	0	-8.17	-0.009766	±2.5	PASS
EGPRS850	190	NV	10	-6.42	-0.007674	±2.5	PASS
EGPRS850	190	NV	20	-7.81	-0.009335	±2.5	PASS
EGPRS850	190	NV	30	-9.65	-0.011535	±2.5	PASS
EGPRS850	190	NV	40	-9.98	-0.011929	±2.5	PASS
EGPRS850	190	NV	50	-8.27	-0.009885	±2.5	PASS
EGPRS850	251	NV	-30	-9.85	-0.011605	±2.5	PASS
EGPRS850	251	NV	-20	-11.36	-0.013384	±2.5	PASS
EGPRS850	251	NV	-10	-10.62	-0.012512	±2.5	PASS
EGPRS850	251	NV	0	-8.81	-0.010379	±2.5	PASS
EGPRS850	251	NV	10	-11.95	-0.014079	±2.5	PASS
EGPRS850	251	NV	20	-11.30	-0.013313	±2.5	PASS
EGPRS850	251	NV	30	-11.82	-0.013926	±2.5	PASS
EGPRS850	251	NV	40	-15.21	-0.017919	±2.5	PASS
EGPRS850	251	NV	50	-3.52	-0.004147	±2.5	PASS
GSM1900	512	NV	-30	1.07	0.000578	±2.5	PASS
GSM1900	512	NV	-20	-9.01	-0.004870	±2.5	PASS
GSM1900	512	NV	-10	-3.29	-0.001778	±2.5	PASS
GSM1900	512	NV	0	-3.91	-0.002113	±2.5	PASS
GSM1900	512	NV	10	-3.84	-0.002075	±2.5	PASS
GSM1900	512	NV	20	-7.68	-0.004151	±2.5	PASS
GSM1900	512	NV	30	-5.55	-0.003000	±2.5	PASS
GSM1900	512	NV	40	-6.23	-0.003367	±2.5	PASS
GSM1900	512	NV	50	-8.14	-0.004400	±2.5	PASS

GSM1900	661	NV	-30	0.00	0.000000	±2.5	PASS
GSM1900	661	NV	-20	-1.55	-0.000824	±2.5	PASS
GSM1900	661	NV	-10	-7.10	-0.003777	±2.5	PASS
GSM1900	661	NV	0	-3.68	-0.001957	±2.5	PASS
GSM1900	661	NV	10	-2.81	-0.001495	±2.5	PASS
GSM1900	661	NV	20	-7.36	-0.003915	±2.5	PASS
GSM1900	661	NV	30	-2.36	-0.001255	±2.5	PASS
GSM1900	661	NV	40	-5.26	-0.002798	±2.5	PASS
GSM1900	661	NV	50	-1.81	-0.000963	±2.5	PASS
GSM1900	810	NV	-30	0.94	0.000492	±2.5	PASS
GSM1900	810	NV	-20	-5.42	-0.002838	±2.5	PASS
GSM1900	810	NV	-10	-8.36	-0.004377	±2.5	PASS
GSM1900	810	NV	0	-8.81	-0.004613	±2.5	PASS
GSM1900	810	NV	10	-3.49	-0.001827	±2.5	PASS
GSM1900	810	NV	20	-5.13	-0.002686	±2.5	PASS
GSM1900	810	NV	30	-9.72	-0.005090	±2.5	PASS
GSM1900	810	NV	40	-8.75	-0.004582	±2.5	PASS
GSM1900	810	NV	50	-3.33	-0.001744	±2.5	PASS
GPRS1900	512	NV	-30	-9.30	-0.005026	±2.5	PASS
GPRS1900	512	NV	-20	3.07	0.001659	±2.5	PASS
GPRS1900	512	NV	-10	1.74	0.000940	±2.5	PASS
GPRS1900	512	NV	0	-0.16	-0.000086	±2.5	PASS
GPRS1900	512	NV	10	-0.55	-0.000297	±2.5	PASS
GPRS1900	512	NV	20	-2.49	-0.001346	±2.5	PASS
GPRS1900	512	NV	30	-5.39	-0.002913	±2.5	PASS
GPRS1900	512	NV	40	-7.81	-0.004221	±2.5	PASS
GPRS1900	512	NV	50	-5.20	-0.002811	±2.5	PASS
GPRS1900	661	NV	-30	-1.16	-0.000617	±2.5	PASS
GPRS1900	661	NV	-20	0.36	0.000191	±2.5	PASS
GPRS1900	661	NV	-10	5.33	0.002835	±2.5	PASS
GPRS1900	661	NV	0	0.71	0.000378	±2.5	PASS
GPRS1900	661	NV	10	-3.91	-0.002080	±2.5	PASS
GPRS1900	661	NV	20	6.81	0.003622	±2.5	PASS
GPRS1900	661	NV	30	0.06	0.000032	±2.5	PASS
GPRS1900	661	NV	40	-3.55	-0.001888	±2.5	PASS
GPRS1900	661	NV	50	-44.07	-0.023441	±2.5	PASS
GPRS1900	810	NV	-30	-0.87	-0.000456	±2.5	PASS
GPRS1900	810	NV	-20	-0.23	-0.000120	±2.5	PASS
GPRS1900	810	NV	-10	-4.58	-0.002398	±2.5	PASS
GPRS1900	810	NV	0	-2.62	-0.001372	±2.5	PASS
GPRS1900	810	NV	10	-0.03	-0.000016	±2.5	PASS

GPRS1900	810	NV	20	-2.39	-0.001251	±2.5	PASS
GPRS1900	810	NV	30	-8.88	-0.004650	±2.5	PASS
GPRS1900	810	NV	40	0.26	0.000136	±2.5	PASS
GPRS1900	810	NV	50	-5.62	-0.002943	±2.5	PASS
EGPRS1900	512	NV	-30	-11.56	-0.006248	±2.5	PASS
EGPRS1900	512	NV	-20	-8.59	-0.004643	±2.5	PASS
EGPRS1900	512	NV	-10	-1.00	-0.000540	±2.5	PASS
EGPRS1900	512	NV	0	-3.58	-0.001935	±2.5	PASS
EGPRS1900	512	NV	10	-8.46	-0.004572	±2.5	PASS
EGPRS1900	512	NV	20	-6.13	-0.003313	±2.5	PASS
EGPRS1900	512	NV	30	-4.78	-0.002584	±2.5	PASS
EGPRS1900	512	NV	40	-7.55	-0.004081	±2.5	PASS
EGPRS1900	512	NV	50	-7.55	-0.004081	±2.5	PASS
EGPRS1900	661	NV	-30	-6.30	-0.003351	±2.5	PASS
EGPRS1900	661	NV	-20	-9.01	-0.004793	±2.5	PASS
EGPRS1900	661	NV	-10	0.94	0.000500	±2.5	PASS
EGPRS1900	661	NV	0	-4.36	-0.002319	±2.5	PASS
EGPRS1900	661	NV	10	-5.59	-0.002973	±2.5	PASS
EGPRS1900	661	NV	20	1.00	0.000532	±2.5	PASS
EGPRS1900	661	NV	30	-6.52	-0.003468	±2.5	PASS
EGPRS1900	661	NV	40	-6.23	-0.003314	±2.5	PASS
EGPRS1900	661	NV	50	-4.10	-0.002181	±2.5	PASS
EGPRS1900	810	NV	-30	-9.72	-0.005090	±2.5	PASS
EGPRS1900	810	NV	-20	-12.07	-0.006320	±2.5	PASS
EGPRS1900	810	NV	-10	-6.72	-0.003519	±2.5	PASS
EGPRS1900	810	NV	0	-10.75	-0.005629	±2.5	PASS
EGPRS1900	810	NV	10	-9.59	-0.005021	±2.5	PASS
EGPRS1900	810	NV	20	-7.33	-0.003838	±2.5	PASS
EGPRS1900	810	NV	30	-13.14	-0.006880	±2.5	PASS
EGPRS1900	810	NV	40	-8.27	-0.004330	±2.5	PASS
EGPRS1900	810	NV	50	-54.85	-0.028720	±2.5	PASS

## Appendix G: Modulation Characteristics

### Test Result

Band	Channel	Result	Verdict
GSM850	128	PASS	PASS
GSM850	190	PASS	PASS
GSM850	251	PASS	PASS
GPRS850	128	PASS	PASS
GPRS850	190	PASS	PASS
GPRS850	251	PASS	PASS
EGPRS850	128	PASS	PASS
EGPRS850	190	PASS	PASS
EGPRS850	251	PASS	PASS
GSM1900	512	PASS	PASS
GSM1900	661	PASS	PASS
GSM1900	810	PASS	PASS
GPRS1900	512	PASS	PASS
GPRS1900	661	PASS	PASS
GPRS1900	810	PASS	PASS
EGPRS1900	512	PASS	PASS
EGPRS1900	661	PASS	PASS
EGPRS1900	810	PASS	PASS