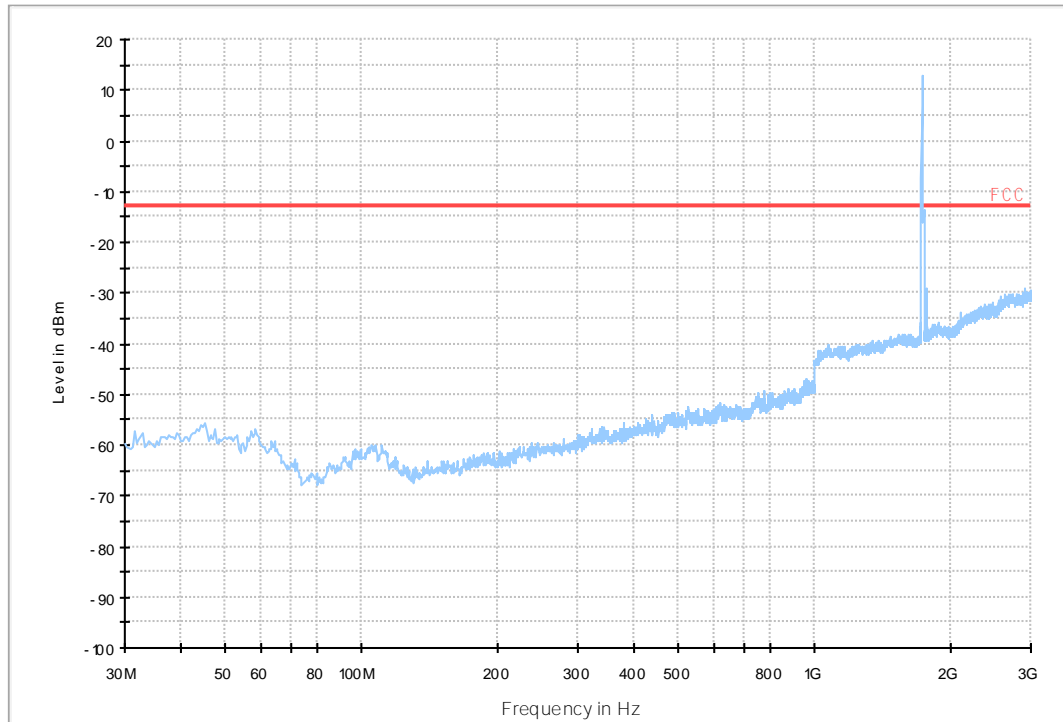
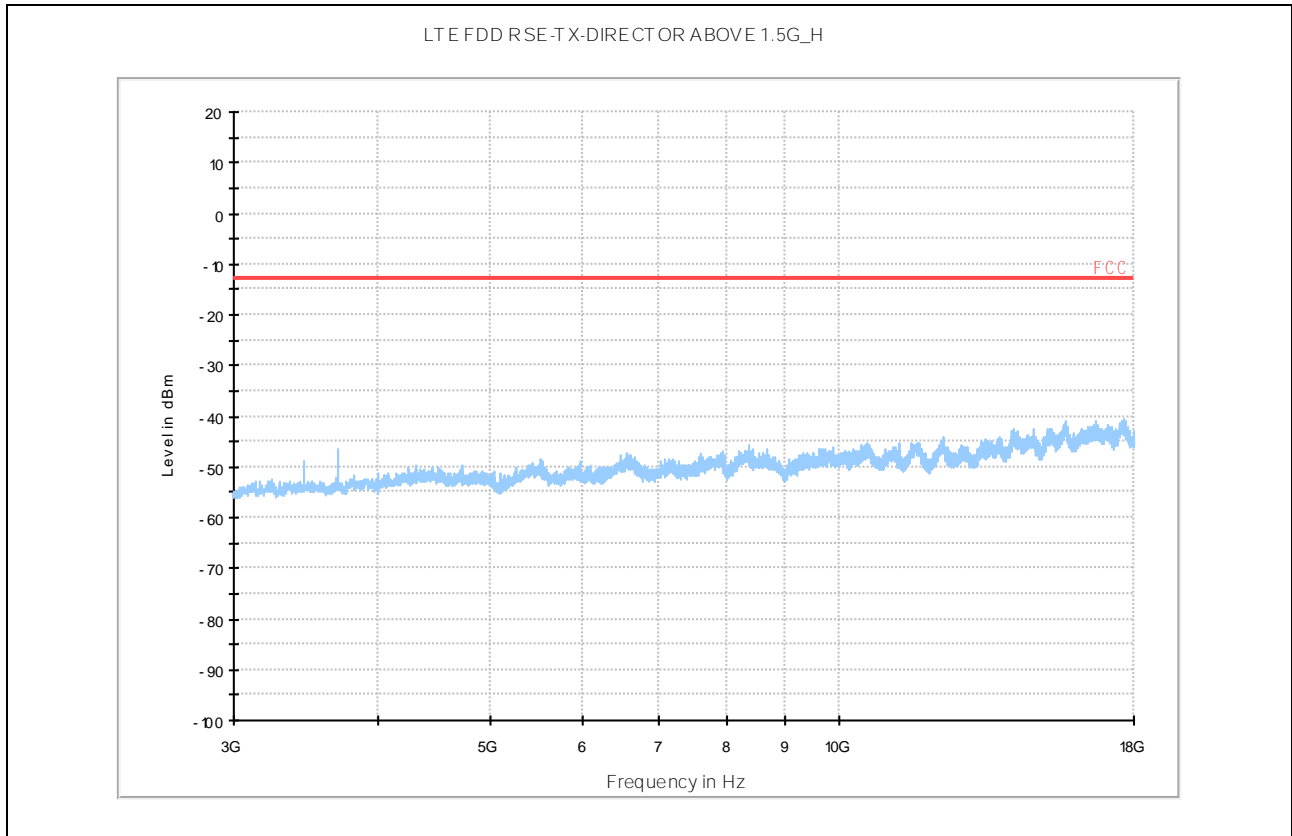


LTE FDD RSE-TX-DIRECTOR ABOVE 1.5G_L





8Appendix_H: Frequency Stability

8.1 For LTE

8.1.1 Frequency Error vs. Voltage:

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
Band4	LTE/TM1	1.4	LCH	TN	VL	46.07677	0.02693	PASS
					VN	197.58220	0.11550	PASS
					VH	37.92286	0.02217	PASS
			MCH	TN	VL	-30.16949	-0.01741	PASS
					VN	-99.43485	-0.05739	PASS
					VH	-79.36478	-0.04581	PASS
			HCH	TN	VL	107.54590	0.06130	PASS
					VN	-199.97120	-0.11399	PASS
					VH	-40.15446	-0.02289	PASS
		3	LCH	TN	VL	-4.76360	-0.00278	PASS
					VN	-6.62327	-0.00387	PASS
					VH	-2.51770	-0.00147	PASS
			MCH	TN	VL	-5.93662	-0.00343	PASS
					VN	0.77248	0.00045	PASS
					VH	0.14305	0.00008	PASS
			HCH	TN	VL	-4.17709	-0.00238	PASS
					VN	-6.07967	-0.00347	PASS
					VH	-10.01358	-0.00571	PASS
		5	LCH	TN	VL	-10.97202	-0.00641	PASS
					VN	0.21458	0.00013	PASS
					VH	2.47478	0.00145	PASS
			MCH	TN	VL	0.21458	0.00012	PASS
					VN	-2.90394	-0.00168	PASS
					VH	1.11580	0.00064	PASS
			HCH	TN	VL	-0.28610	-0.00016	PASS
					VN	-4.00543	-0.00229	PASS
					VH	-5.96523	-0.00340	PASS
		10	LCH	TN	VL	-5.20706	-0.00304	PASS
					VN	-7.18117	-0.00419	PASS
					VH	-1.41621	-0.00083	PASS
MCH	TN		VL	-1.00136	-0.00058	PASS		

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict		
					VN	-1.00136	-0.00058	PASS		
					VH	2.77519	0.00160	PASS		
					HCH	TN	VL	0.31471	0.00018	PASS
							VN	-4.09126	-0.00234	PASS
					VH	-3.31879	-0.00190	PASS		
					15	LCH	TN	VL	-5.77927	-0.00336
			VN	-6.07967				-0.00354	PASS	
			VH	-3.41892				-0.00199	PASS	
			MCH	TN		VL	-6.03676	-0.00348	PASS	
						VN	-0.82970	-0.00048	PASS	
						VH	0.22888	0.00013	PASS	
			HCH	TN	VL	-0.37193	-0.00021	PASS		
		VN			-4.26292	-0.00244	PASS			
		VH			2.04563	0.00117	PASS			
		20	LCH	TN	VL	-11.67297	-0.00679	PASS		
					VN	-6.40869	-0.00373	PASS		
					VH	-0.30041	-0.00017	PASS		
			MCH	TN	VL	0.04292	0.00002	PASS		
					VN	-3.71933	-0.00215	PASS		
					VH	2.84672	0.00164	PASS		
			HCH	TN	VL	-0.62943	-0.00036	PASS		
					VN	0.94414	0.00054	PASS		
					VH	-1.47343	-0.00084	PASS		
			LTE/TM2	1.4	LCH	TN	VL	0.42915	0.00025	PASS
							VN	53.00045	0.03098	PASS
							VH	28.75328	0.01681	PASS
		MCH			TN	VL	-39.91127	-0.02304	PASS	
						VN	-176.75400	-0.10202	PASS	
						VH	-142.70780	-0.08237	PASS	
		HCH			TN	VL	82.69787	0.04714	PASS	
						VN	-262.39870	-0.14957	PASS	
						VH	61.14006	0.03485	PASS	
		3			LCH	TN	VL	-2.78950	-0.00163	PASS
							VN	-6.78062	-0.00396	PASS
							VH	-4.06265	-0.00237	PASS
			MCH	TN	VL	-7.66754	-0.00443	PASS		
					VN	-5.56469	-0.00321	PASS		
					VH	-5.17845	-0.00299	PASS		



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict	
		5	HCH	TN	VL	-0.14305	-0.00008	PASS	
					VN	-10.54287	-0.00601	PASS	
					VH	1.07288	0.00061	PASS	
			LCH	TN	VL	-3.16143	-0.00185	PASS	
					VN	-3.84808	-0.00225	PASS	
					VH	-6.88076	-0.00402	PASS	
				MCH	TN	VL	2.73228	0.00158	PASS
						VN	-2.05994	-0.00119	PASS
						VH	-3.24726	-0.00187	PASS
		HCH	TN	VL	-1.01566	-0.00058	PASS		
				VN	-1.28746	-0.00073	PASS		
				VH	-4.20570	-0.00240	PASS		
		10	LCH	TN	VL	-5.86510	-0.00342	PASS	
					VN	-5.65052	-0.00329	PASS	
					VH	-4.77791	-0.00279	PASS	
			MCH	TN	VL	-1.20163	-0.00069	PASS	
					VN	-4.13418	-0.00239	PASS	
					VH	-6.07967	-0.00351	PASS	
			HCH	TN	VL	-0.85831	-0.00049	PASS	
					VN	-2.50339	-0.00143	PASS	
					VH	0.68665	0.00039	PASS	
		15	LCH	TN	VL	-1.53065	-0.00089	PASS	
					VN	-5.67913	-0.00331	PASS	
					VH	-0.31471	-0.00018	PASS	
			MCH	TN	VL	-0.75817	-0.00044	PASS	
					VN	-1.65939	-0.00096	PASS	
					VH	-5.10693	-0.00295	PASS	
			HCH	TN	VL	0.70095	0.00040	PASS	
					VN	-2.80380	-0.00160	PASS	
					VH	-2.10285	-0.00120	PASS	
		20	LCH	TN	VL	-3.08990	-0.00180	PASS	
					VN	-6.89506	-0.00401	PASS	
					VH	-1.98841	-0.00116	PASS	
			MCH	TN	VL	-1.94550	-0.00112	PASS	
					VN	-0.91553	-0.00053	PASS	
					VH	-0.81539	-0.00047	PASS	
			HCH	TN	VL	1.65939	0.00095	PASS	
					VN	-4.42028	-0.00253	PASS	

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					VH	4.22001	0.00242	PASS

8.1.2 Frequency Error vs. Temperature:

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
Band4	LTE/TM1	1.4	LCH	VN	-30	-3.30448	-0.00193	PASS
					-20	29.98352	0.01753	PASS
					-10	-67.76333	-0.03961	PASS
					0	96.88854	0.05664	PASS
					10	76.24626	0.04457	PASS
					20	197.58220	0.11550	PASS
					30	143.48030	0.08387	PASS
			40	-64.33010	-0.03760	PASS		
			50	-11.12938	-0.00651	PASS		
			MCH	VN	-30	-68.09235	-0.03930	PASS
					-20	-55.73273	-0.03217	PASS
					-10	-65.01675	-0.03753	PASS
					0	-163.04970	-0.09411	PASS
					10	-99.46346	-0.05741	PASS
		20			-99.43485	-0.05739	PASS	
		30			-187.66880	-0.10832	PASS	
		40	-105.27130	-0.06076	PASS			
		50	-209.45550	-0.12090	PASS			
		HCH	VN	-30	74.98741	0.04274	PASS	
				-20	-16.33644	-0.00931	PASS	
				-10	-116.98720	-0.06669	PASS	
				0	-14.70566	-0.00838	PASS	
				10	-24.37592	-0.01389	PASS	
				20	-199.97120	-0.11399	PASS	
				30	-48.89488	-0.02787	PASS	
		40	-11.65867	-0.00665	PASS			
		50	9.82761	0.00560	PASS			
		3	LCH	VN	-30	-8.89778	-0.00520	PASS
-20	2.44618				0.00143	PASS		
-10	-5.47886				-0.00320	PASS		
0	-3.79086				-0.00221	PASS		

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					10	-3.24726	-0.00190	PASS
					20	-6.62327	-0.00387	PASS
					30	-0.81539	-0.00048	PASS
					40	-4.43459	-0.00259	PASS
					50	-5.27859	-0.00308	PASS
			MCH	VN	-30	3.83377	0.00221	PASS
					-20	-6.38008	-0.00368	PASS
					-10	-3.37601	-0.00195	PASS
					0	0.51498	0.00030	PASS
					10	0.50068	0.00029	PASS
					20	0.77248	0.00045	PASS
					30	-1.88827	-0.00109	PASS
					40	-3.31879	-0.00192	PASS
					50	-2.46048	-0.00142	PASS
					HCH	VN	-30	-4.27723
			-20	-9.49860			-0.00542	PASS
			-10	-9.46999			-0.00540	PASS
			0	-6.45161			-0.00368	PASS
			10	-1.37329			-0.00078	PASS
			20	-6.07967			-0.00347	PASS
			30	-1.70231			-0.00097	PASS
			40	-9.94205			-0.00567	PASS
			LCH	VN	50	-8.74043	-0.00498	PASS
					-30	-7.93934	-0.00464	PASS
					-20	1.20163	0.00070	PASS
					-10	0.00000	0.00000	PASS
					0	-2.07424	-0.00121	PASS
					10	-5.19276	-0.00303	PASS
					20	0.21458	0.00013	PASS
					30	0.92983	0.00054	PASS
					40	-4.47750	-0.00261	PASS
					50	-5.77927	-0.00337	PASS
			MCH	VN	-30	-3.04699	-0.00176	PASS
-20	-0.22888	-0.00013			PASS			
-10	2.48909	0.00144			PASS			
0	-4.66347	-0.00269			PASS			
10	1.78814	0.00103			PASS			
20	-2.90394	-0.00168			PASS			
30	-2.73228	-0.00158			PASS			

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					40	-3.63350	-0.00210	PASS
					50	-5.32150	-0.00307	PASS
			HCH	VN	-30	-10.41412	-0.00594	PASS
					-20	-4.29153	-0.00245	PASS
					-10	-4.13418	-0.00236	PASS
					0	-9.52721	-0.00544	PASS
					10	-2.11716	-0.00121	PASS
					20	-4.00543	-0.00229	PASS
					30	-3.20435	-0.00183	PASS
					40	-8.85487	-0.00505	PASS
					50	-10.97202	-0.00626	PASS
					LCH	VN	-30	-4.50611
			-20	0.95844			0.00056	PASS
			-10	-0.74387			-0.00043	PASS
			0	-2.10285			-0.00123	PASS
		10	-8.55446	-0.00499			PASS	
		20	-7.18117	-0.00419			PASS	
		30	-3.66211	-0.00214			PASS	
		40	-3.04699	-0.00178			PASS	
		50	-3.49045	-0.00204			PASS	
		MCH	VN	-30	-3.00407	-0.00173	PASS	
				-20	0.68665	0.00040	PASS	
				-10	-1.14441	-0.00066	PASS	
				0	-0.35763	-0.00021	PASS	
				10	-2.61784	-0.00151	PASS	
				20	-1.00136	-0.00058	PASS	
				30	-0.88692	-0.00051	PASS	
				40	-2.37465	-0.00137	PASS	
				50	-3.17573	-0.00183	PASS	
				HCH	VN	-30	-2.08855	-0.00119
		-20	0.65804			0.00038	PASS	
		-10	-0.15736			-0.00009	PASS	
		0	1.88827			0.00108	PASS	
		10	0.07153			0.00004	PASS	
		20	-4.09126			-0.00234	PASS	
		30	-4.79221			-0.00274	PASS	
		40	-5.63621			-0.00322	PASS	
		50	0.32902	0.00019	PASS			
		15	LCH	VN	-30	-4.16279	-0.00242	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					-20	-1.00136	-0.00058	PASS
					-10	-2.70367	-0.00157	PASS
					0	-1.48773	-0.00087	PASS
					10	-4.00543	-0.00233	PASS
					20	-6.07967	-0.00354	PASS
					30	-4.76360	-0.00277	PASS
					40	-4.92096	-0.00287	PASS
					50	-2.90394	-0.00169	PASS
			MCH	VN	-30	-4.04835	-0.00234	PASS
					-20	1.55926	0.00090	PASS
					-10	-3.41892	-0.00197	PASS
					0	-0.78678	-0.00045	PASS
					10	-0.15736	-0.00009	PASS
					20	-0.82970	-0.00048	PASS
					30	-3.79086	-0.00219	PASS
					40	-4.20570	-0.00243	PASS
			HCH	VN	-30	-2.80380	-0.00160	PASS
					-20	3.00407	0.00172	PASS
					-10	-2.53200	-0.00145	PASS
					0	1.28746	0.00074	PASS
					10	-1.87397	-0.00107	PASS
					20	-4.26292	-0.00244	PASS
					30	-4.36306	-0.00250	PASS
					40	-2.53200	-0.00145	PASS
		20	LCH	VN	-30	-2.97546	-0.00173	PASS
					-20	-0.38624	-0.00022	PASS
					-10	-2.81811	-0.00164	PASS
					0	-4.86374	-0.00283	PASS
					10	-4.84943	-0.00282	PASS
					20	-6.40869	-0.00373	PASS
					30	-5.86510	-0.00341	PASS
					40	-3.41892	-0.00199	PASS
			MCH	VN	-30	-3.33309	-0.00192	PASS
					-20	-0.97275	-0.00056	PASS
					-10	0.05722	0.00003	PASS
					0	-0.37193	-0.00021	PASS



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict						
					10	-2.23160	-0.00129	PASS						
					20	-3.71933	-0.00215	PASS						
					30	-1.95980	-0.00113	PASS						
					40	-0.61512	-0.00036	PASS						
					50	-0.95844	-0.00055	PASS						
			HCH	VN				-30	-1.43051	-0.00082	PASS			
								-20	-3.14712	-0.00180	PASS			
								-10	0.18597	0.00011	PASS			
								0	-2.97546	-0.00171	PASS			
								10	-4.32015	-0.00248	PASS			
								20	0.94414	0.00054	PASS			
								30	-5.00679	-0.00287	PASS			
								40	-1.40190	-0.00080	PASS			
								50	-5.23567	-0.00300	PASS			
								LCH	VN				-30	-28.12386
	-20	51.61285	0.03017	PASS										
	-10	48.46573	0.02833	PASS										
	0	31.15654	0.01821	PASS										
	10	120.93540	0.07069	PASS										
	20	53.00045	0.03098	PASS										
	30	59.56650	0.03482	PASS										
	40	86.56025	0.05060	PASS										
	50	-33.20217	-0.01941	PASS										
	MCH	VN				-30	-115.97160						-0.06694	PASS
						-20	-210.95750						-0.12176	PASS
						-10	-44.94667						-0.02594	PASS
						0	-11.67297						-0.00674	PASS
						10	-88.09090	-0.05085	PASS					
						20	-176.75400	-0.10202	PASS					
						30	-187.09660	-0.10799	PASS					
						40	-49.81041	-0.02875	PASS					
	HCH	VN				50	-61.39755	-0.03544	PASS					
						-30	-13.91888	-0.00793	PASS					
-20						-128.80330	-0.07342	PASS						
-10						-171.18930	-0.09758	PASS						
0						25.00534	0.01425	PASS						
10						-58.65097	-0.03343	PASS						
20						-262.39870	-0.14957	PASS						
30	-211.21500	-0.12040	PASS											

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					40	-348.98760	-0.19893	PASS
					50	87.54730	0.04990	PASS
		3	LCH	VN	-30	-1.47343	-0.00086	PASS
					-20	-1.74522	-0.00102	PASS
					-10	-3.69072	-0.00216	PASS
					0	-10.52856	-0.00615	PASS
					10	-2.36034	-0.00138	PASS
					20	-6.78062	-0.00396	PASS
					30	-4.86374	-0.00284	PASS
					40	-8.72612	-0.00510	PASS
					50	0.11444	0.00007	PASS
			MCH	VN	-30	-4.79221	-0.00277	PASS
					-20	5.26428	0.00304	PASS
					-10	-6.42300	-0.00371	PASS
					0	-5.07832	-0.00293	PASS
					10	-3.23296	-0.00187	PASS
					20	-5.56469	-0.00321	PASS
					30	-4.32015	-0.00249	PASS
			HCH	VN	-30	-6.86646	-0.00392	PASS
					-20	-3.59058	-0.00205	PASS
		-10			-3.06129	-0.00175	PASS	
		0			-5.62191	-0.00321	PASS	
		10			-2.61784	-0.00149	PASS	
		20			-10.54287	-0.00601	PASS	
		30			-5.22137	-0.00298	PASS	
		5	LCH	VN	-30	-7.96795	-0.00465	PASS
					-20	-2.34604	-0.00137	PASS
					-10	-1.70231	-0.00099	PASS
					0	-4.13418	-0.00241	PASS
					10	-6.82354	-0.00398	PASS
					20	-3.84808	-0.00225	PASS
					30	-2.90394	-0.00170	PASS
					40	-4.87804	-0.00285	PASS
50	-8.11100				-0.00474	PASS		
MCH	VN		-30	-4.07696	-0.00235	PASS		

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict		
					-20	-3.07560	-0.00178	PASS		
					-10	-5.73635	-0.00331	PASS		
					0	-0.85831	-0.00050	PASS		
					10	-5.07832	-0.00293	PASS		
					20	-2.05994	-0.00119	PASS		
					30	-7.43866	-0.00429	PASS		
					40	-2.18868	-0.00126	PASS		
					50	-2.90394	-0.00168	PASS		
			HCH	VN	-30	-10.62870	-0.00606	PASS		
					-20	-3.50475	-0.00200	PASS		
					-10	-5.14984	-0.00294	PASS		
					0	-10.48565	-0.00598	PASS		
					10	-6.70910	-0.00383	PASS		
					20	-1.28746	-0.00073	PASS		
					30	-7.02381	-0.00401	PASS		
					40	-6.90937	-0.00394	PASS		
							-30	-4.57764	-0.00267	PASS
							-20	-7.18117	-0.00419	PASS
							-10	-4.32015	-0.00252	PASS
							0	-1.91688	-0.00112	PASS
							10	-5.04971	-0.00294	PASS
							20	-5.65052	-0.00329	PASS
							30	-7.79629	-0.00455	PASS
							40	-5.13554	-0.00299	PASS
				LCH	VN	50	-5.70774	-0.00333	PASS	
						-30	-4.30584	-0.00249	PASS	
						-20	-0.12875	-0.00007	PASS	
						-10	-2.01702	-0.00116	PASS	
						0	-2.84672	-0.00164	PASS	
						10	-2.28882	-0.00132	PASS	
						20	-4.13418	-0.00239	PASS	
						30	-1.93119	-0.00111	PASS	
		MCH	VN	40	-2.71797	-0.00157	PASS			
				50	-5.40733	-0.00312	PASS			
				-30	0.18597	0.00011	PASS			
				-20	1.37329	0.00078	PASS			
				-10	-3.30448	-0.00189	PASS			
				0	0.95844	0.00055	PASS			
				HCH	VN					



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict		
					10	-4.00543	-0.00229	PASS		
					20	-2.50339	-0.00143	PASS		
					30	-2.47478	-0.00141	PASS		
					40	-5.87940	-0.00336	PASS		
					50	1.02997	0.00059	PASS		
		15	LCH	VN	-30	-6.50883	-0.00379	PASS		
					-20	1.13010	0.00066	PASS		
					-10	-6.20842	-0.00361	PASS		
					0	-2.26021	-0.00132	PASS		
					10	-4.46320	-0.00260	PASS		
					20	-5.67913	-0.00331	PASS		
					30	-6.98090	-0.00406	PASS		
					40	-6.99520	-0.00407	PASS		
					50	-6.20842	-0.00361	PASS		
					MCH	VN	-30	-1.41621	-0.00082	PASS
							-20	-1.93119	-0.00111	PASS
							-10	-3.01838	-0.00174	PASS
							0	-1.43051	-0.00083	PASS
							10	-2.73228	-0.00158	PASS
							20	-1.65939	-0.00096	PASS
		30	-4.23431	-0.00244			PASS			
		40	-2.94685	-0.00170			PASS			
		HCH	VN	-30	-1.75953	-0.00101	PASS			
				-20	3.24726	0.00186	PASS			
				-10	-2.84672	-0.00163	PASS			
				0	1.74522	0.00100	PASS			
				10	0.21458	0.00012	PASS			
				20	-2.80380	-0.00160	PASS			
				30	-3.64780	-0.00209	PASS			
				40	0.68665	0.00039	PASS			
		20	LCH	VN	-30	-3.87669	-0.00225	PASS		
					-20	-3.63350	-0.00211	PASS		
					-10	-5.52177	-0.00321	PASS		
					0	-7.23839	-0.00421	PASS		
					10	-11.40118	-0.00663	PASS		
					20	-6.89506	-0.00401	PASS		
30	-9.26971				-0.00539	PASS				



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict	
					40	-7.95364	-0.00462	PASS	
					50	-8.33988	-0.00485	PASS	
			MCH	VN	-30	-0.62943	-0.00036	PASS	
						-20	-0.81539	-0.00047	PASS
						-10	-1.13010	-0.00065	PASS
						0	-2.43187	-0.00140	PASS
						10	-4.47750	-0.00258	PASS
						20	-0.91553	-0.00053	PASS
						30	-4.30584	-0.00249	PASS
						40	-1.98841	-0.00115	PASS
						50	-2.50339	-0.00144	PASS
					HCH	VN	-30	0.00000	0.00000
				-20			1.48773	0.00085	PASS
				-10			-3.01838	-0.00173	PASS
				0			-3.26157	-0.00187	PASS
				10			-2.20299	-0.00126	PASS
				20			-4.42028	-0.00253	PASS
				30			-3.73364	-0.00214	PASS
				40			-0.18597	-0.00011	PASS
				50	-3.06129	-0.00175	PASS		

END