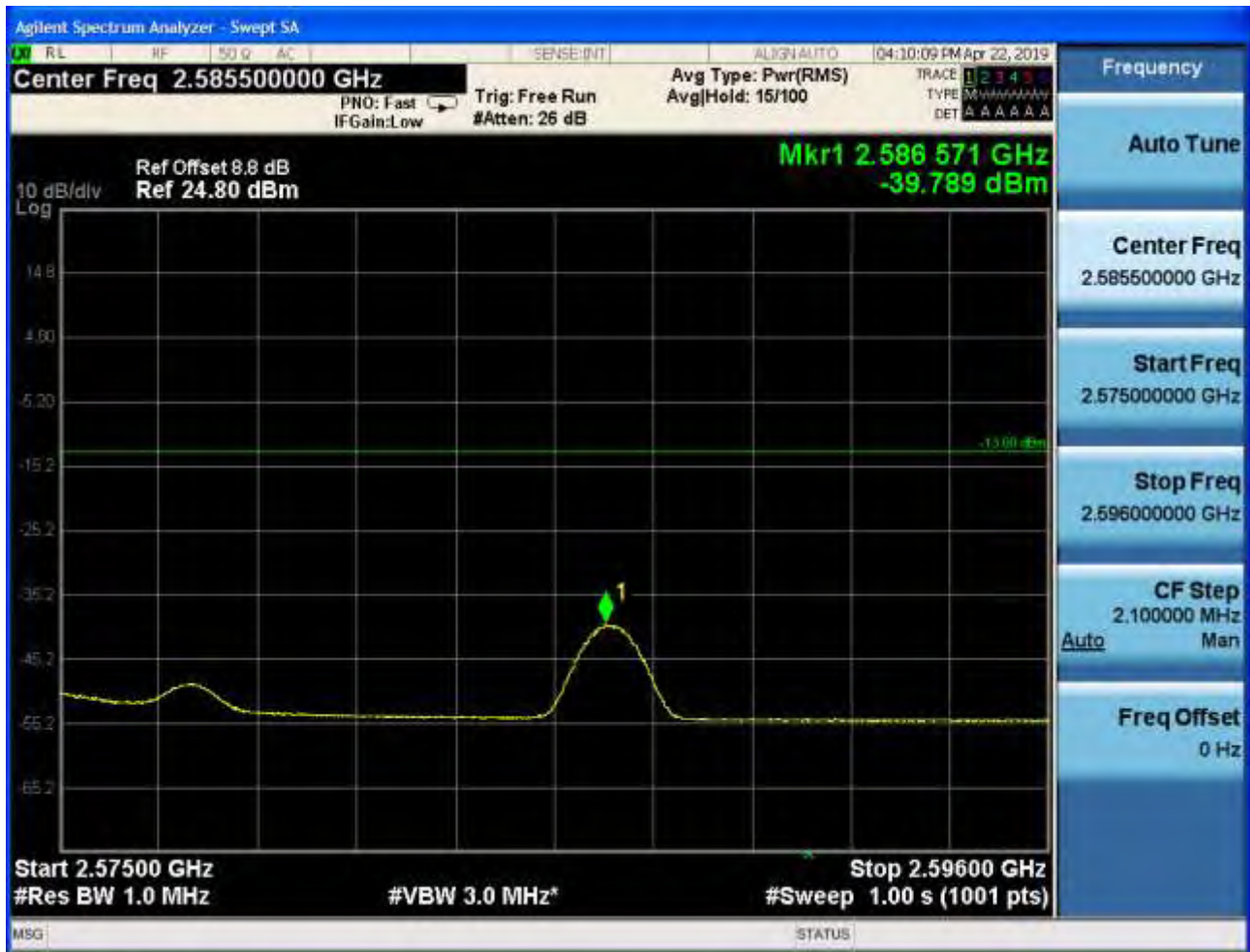




5.1.1.2.4.2.2 Test RB = RB1#99







5.1.1.2.4.2.3 Test RB = RB50#25







5.1.1.2.4.2.4 Test RB = RB100#0







6Appendix_F: Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Part I - Test Plots

6.1 For LTE

6.1.1 Test Band = Band7

6.1.1.1 Test Mode = LTE/TM1

6.2.1.1.1 Test Bandwidth = 5

6.2.1.1.1.1 Test Channel = LCH

6.2.1.1.1.1.1 Test RB = RB1#0







6.2.1.1.1.2 Test Channel = MCH

6.2.1.1.1.2.1 Test RB = RB1#0







6.2.1.1.1.3 Test Channel = HCH

6.2.1.1.1.3.1 Test RB = RB1#0







6.2.1.1.2 Test Bandwidth = 10

6.2.1.1.2.1 Test Channel = LCH

6.2.1.1.2.1.1 Test RB = RB1#0







6.2.1.1.2.2 Test Channel = MCH

6.2.1.1.2.2.1 Test RB = RB1#0







6.2.1.1.2.3 Test Channel = HCH

6.2.1.1.2.3.1 Test RB = RB1#0







6.2.1.1.3 Test Bandwidth = 15

6.2.1.1.3.1 Test Channel = LCH

6.2.1.1.3.1.1 Test RB = RB1#0







6.2.1.1.3.2 Test Channel = MCH

6.2.1.1.3.2.1 Test RB = RB1#0







6.2.1.1.3.3 Test Channel = HCH

6.2.1.1.3.3.1 Test RB = RB1#0







6.2.1.1.4 Test Bandwidth = 20

6.2.1.1.4.1 Test Channel = LCH

6.2.1.1.4.1.1 Test RB = RB1#0







6.2.1.1.4.2 Test Channel = MCH

6.2.1.1.4.2.1 Test RB = RB1#0







6.2.1.1.4.3 Test Channel = HCH

6.2.1.1.4.3.1 Test RB = RB1#0







6.2.1.2 Test Mode = LTE/TM2

6.2.1.2.1 Test Bandwidth = 5

6.2.1.2.1.1 Test Channel = LCH

6.2.1.2.1.1.1 Test RB = RB1#0







6.2.1.2.1.2 Test Channel = MCH

6.2.1.2.1.2.1 Test RB = RB1#0







6.2.1.2.1.3 Test Channel = HCH

6.2.1.2.1.3.1 Test RB = RB1#0







6.2.1.2.2 Test Bandwidth = 10

6.2.1.2.2.1 Test Channel = LCH

6.2.1.2.2.1.1 Test RB = RB1#0







6.2.1.2.2.2 Test Channel = MCH

6.2.1.2.2.2.1 Test RB = RB1#0



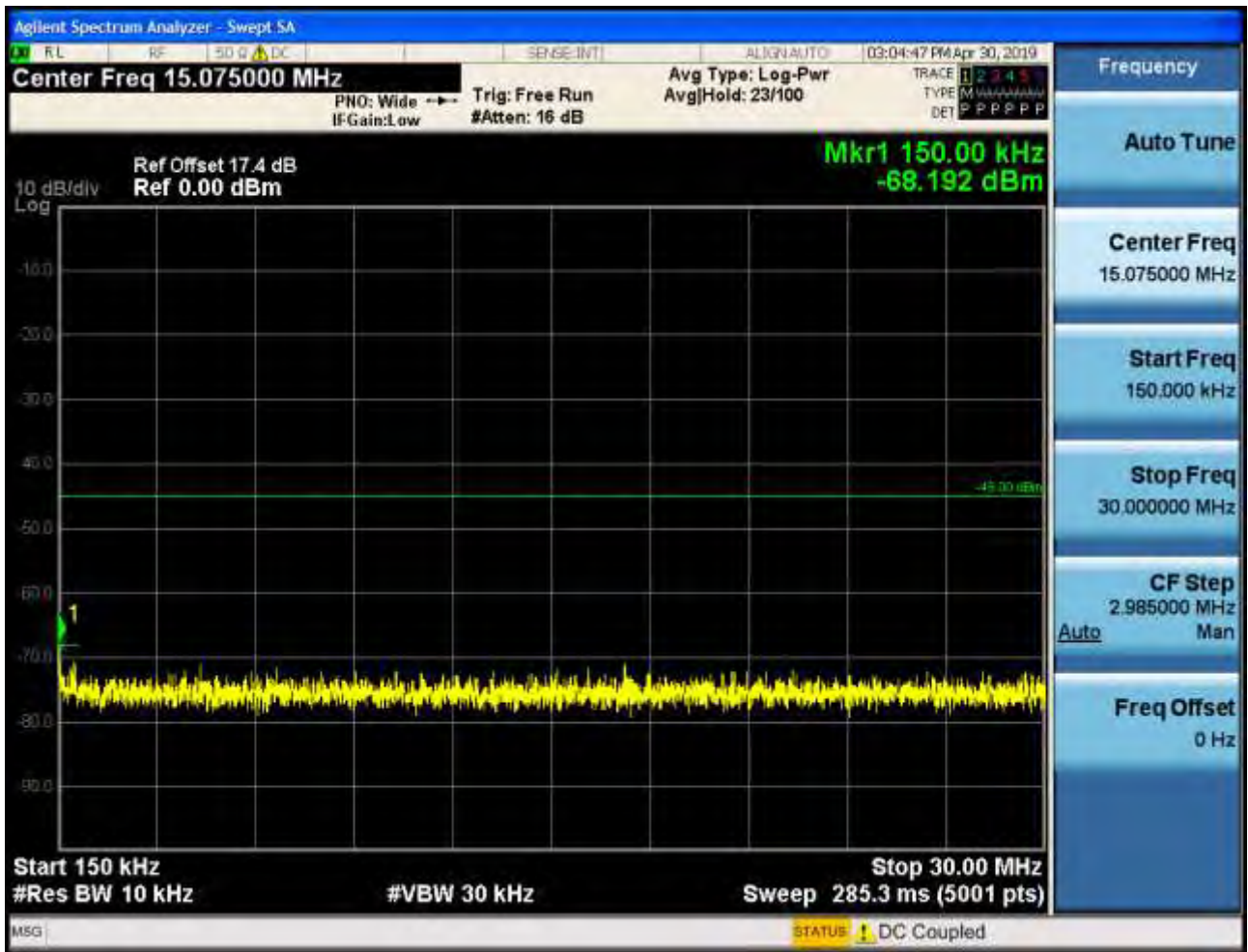




6.2.1.2.2.3 Test Channel = HCH

6.2.1.2.2.3.1 Test RB = RB1#0







6.2.1.2.3 Test Bandwidth = 15

6.2.1.2.3.1 Test Channel = LCH

6.2.1.2.3.1.1 Test RB = RB1#0







6.2.1.2.3.2 Test Channel = MCH

6.2.1.2.3.2.1 Test RB = RB1#0



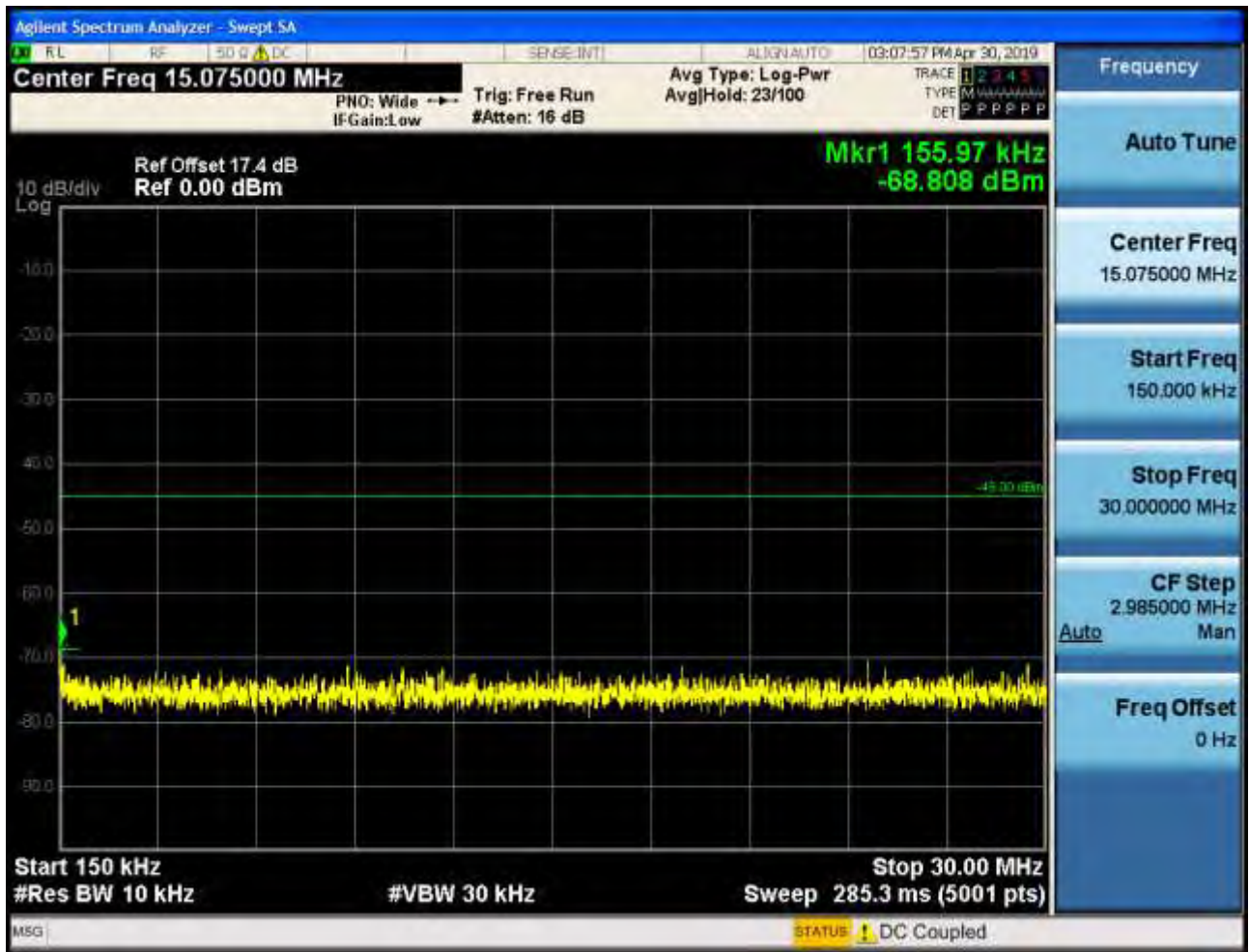




6.2.1.2.3.3 Test Channel = HCH

6.2.1.2.3.3.1 Test RB = RB1#0







6.2.1.2.4 Test Bandwidth = 20

6.2.1.2.4.1 Test Channel = LCH

6.2.1.2.4.1.1 Test RB = RB1#0







6.2.1.2.4.2 Test Channel = MCH

6.2.1.2.4.2.1 Test RB = RB1#0







6.2.1.2.4.3 Test Channel = HCH

6.2.1.2.4.3.1 Test RB = RB1#0







7Appendix_G: Field Strength of Spurious Radiation

Note: We tested all modes, but the data presented below is the worst case.

9kHz~150kHz, RBW = 200Hz, VBW = 600 Hz, Detector: PK

150kHz~30MHz, RBW = 9kHz, VBW = 30k Hz, Detector: PK

30MHz~1GHz, RBW = 100 kHz, VBW = 300 kHz. Detector: PK

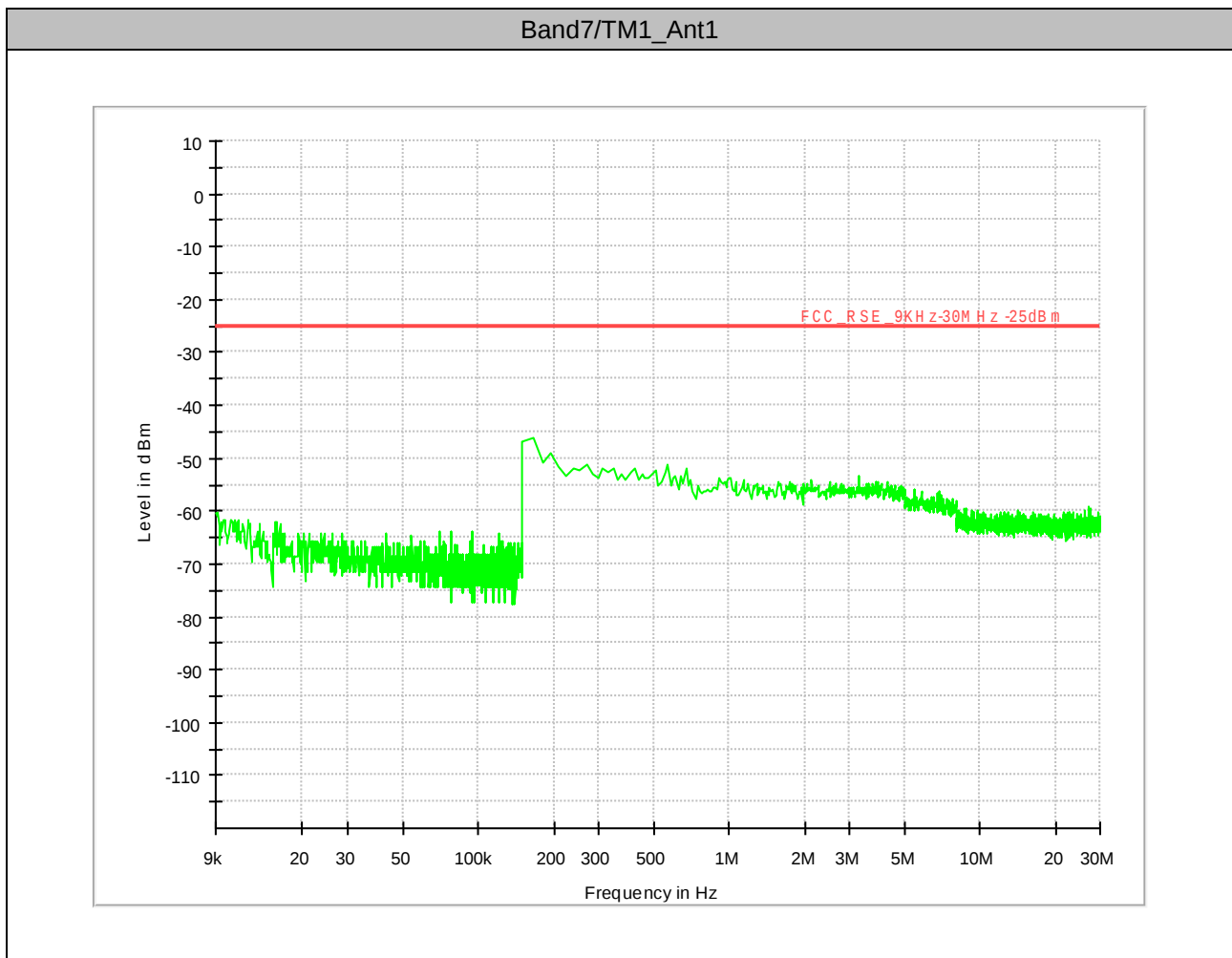
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

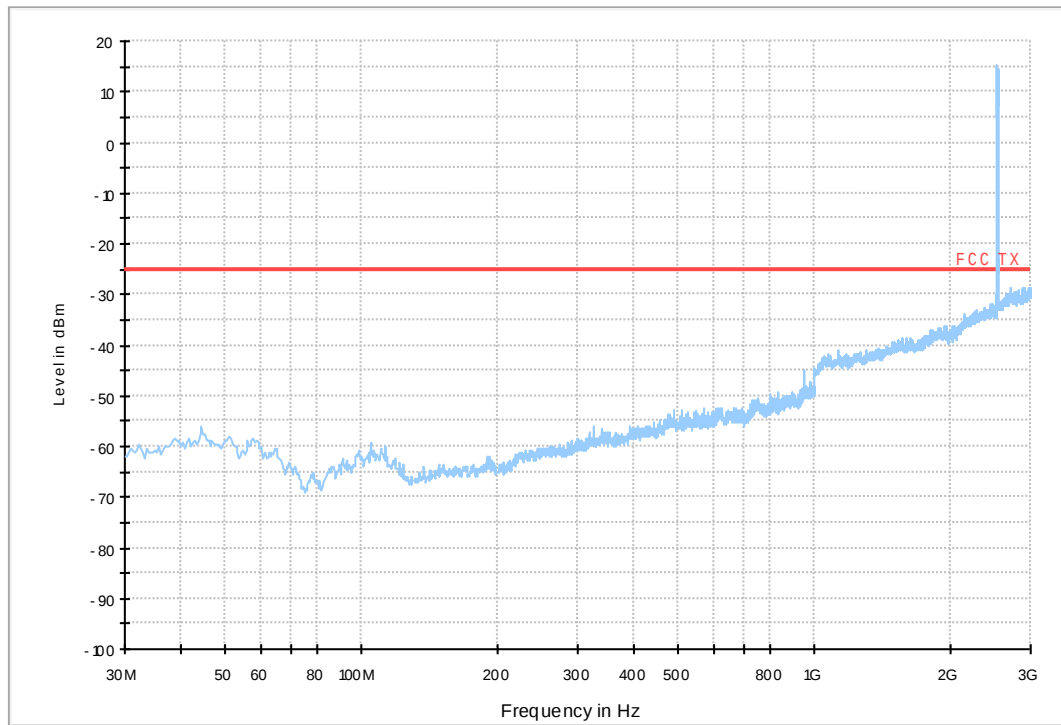
7.1 For LTE

7.1.1 Test Band = Band7

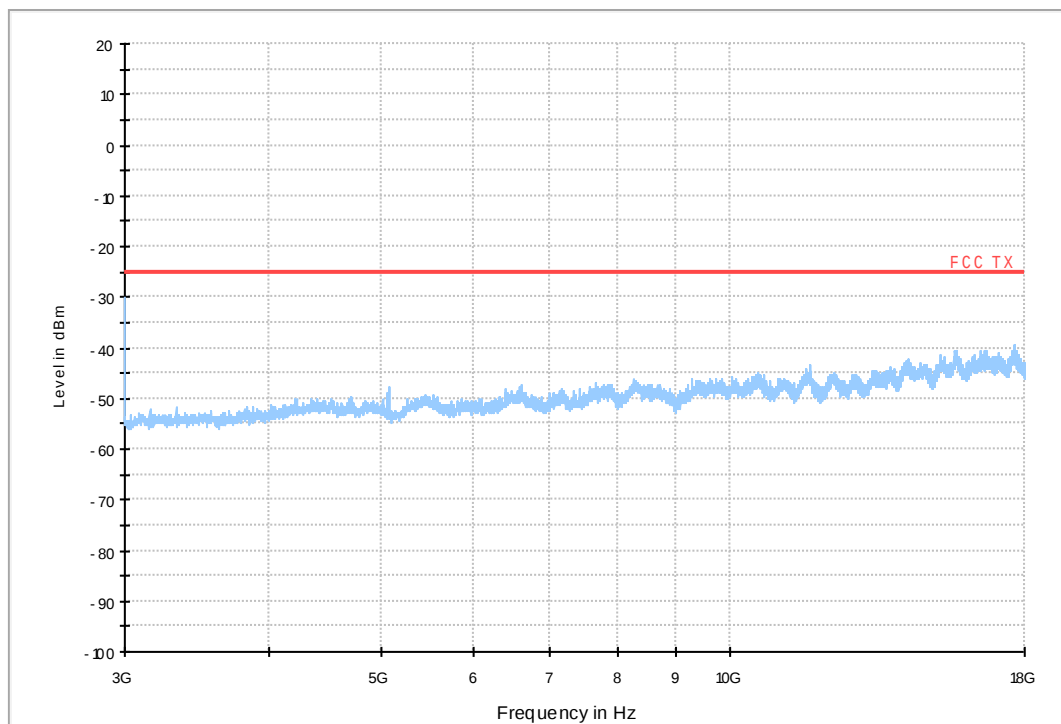
7.1.1.1 Test Bandwidth = 5



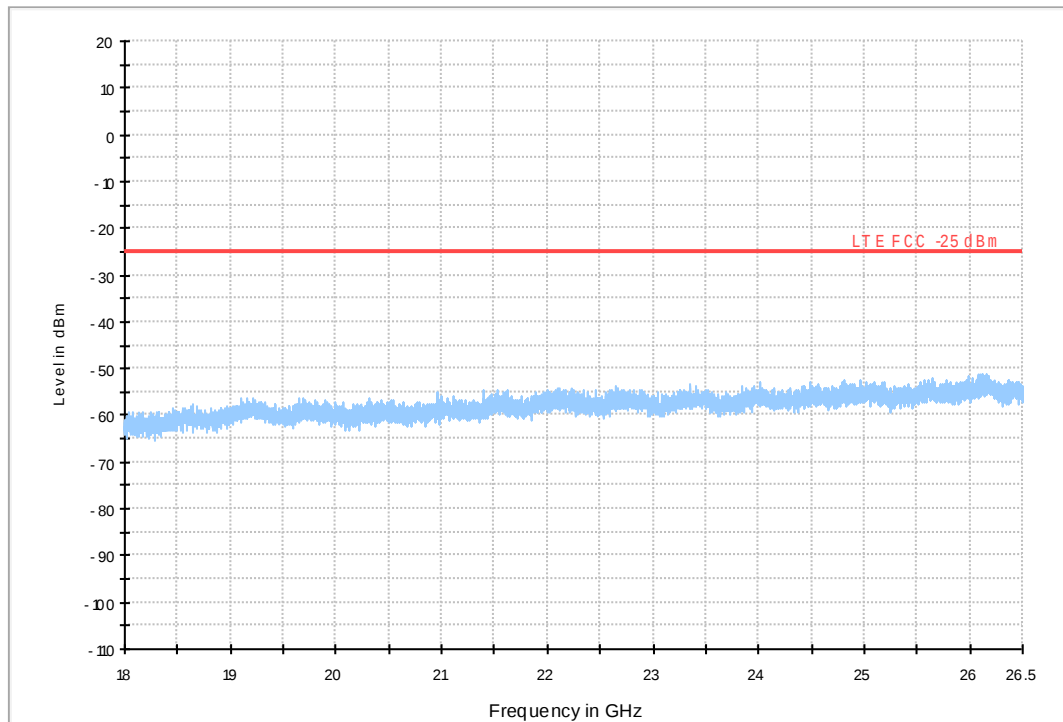
LTE Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_L -25dBm limit



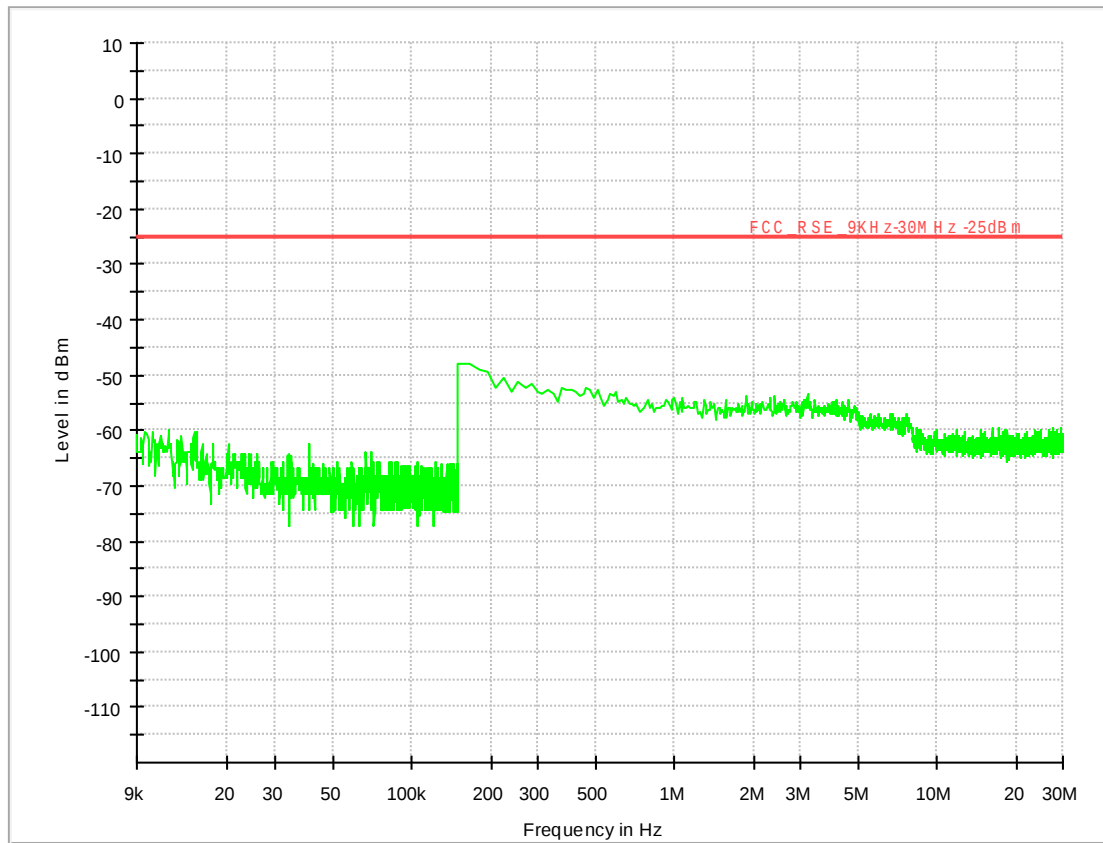
LTE FDD Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_H -25dBm limit



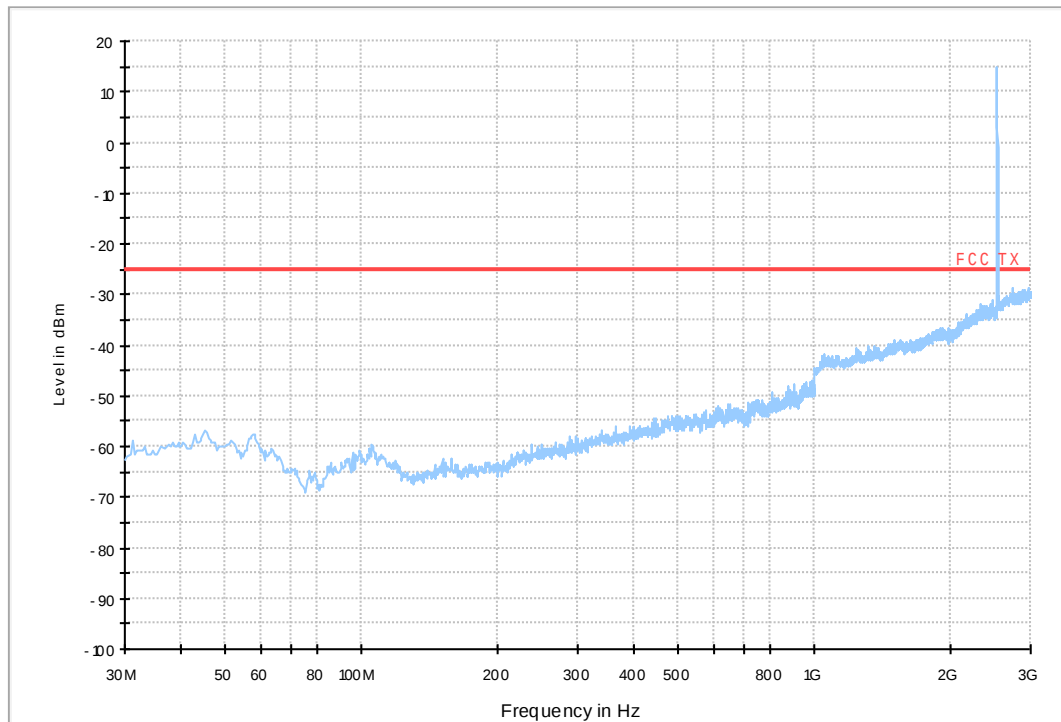
Copy of FCC 18-26.5G



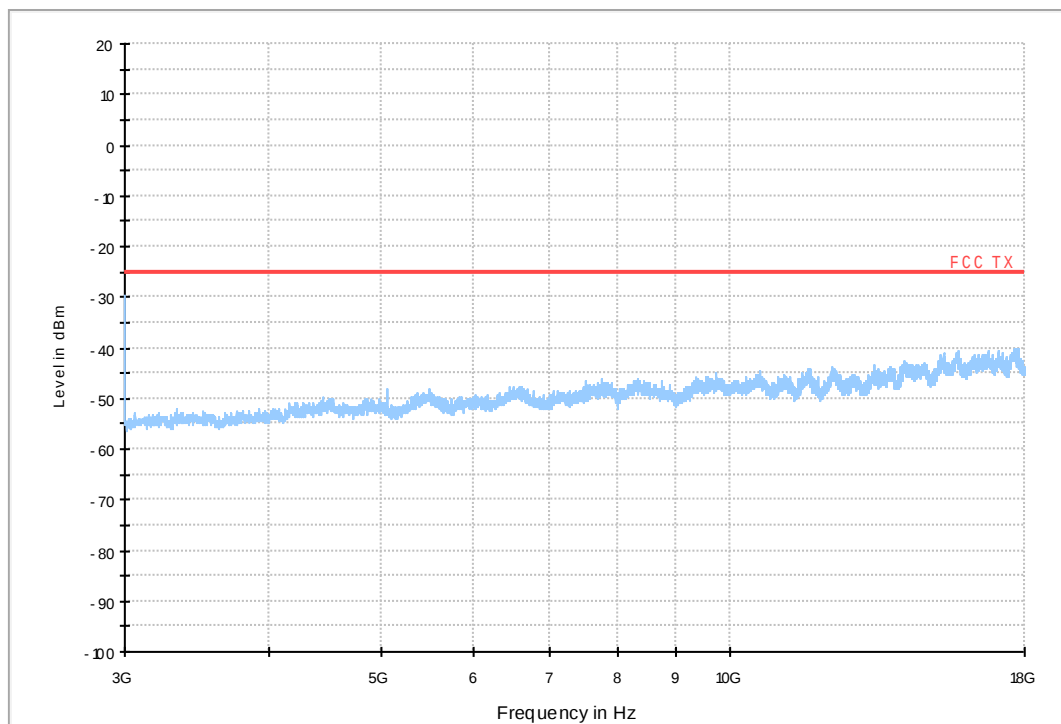
Band7/TM1_Ant2



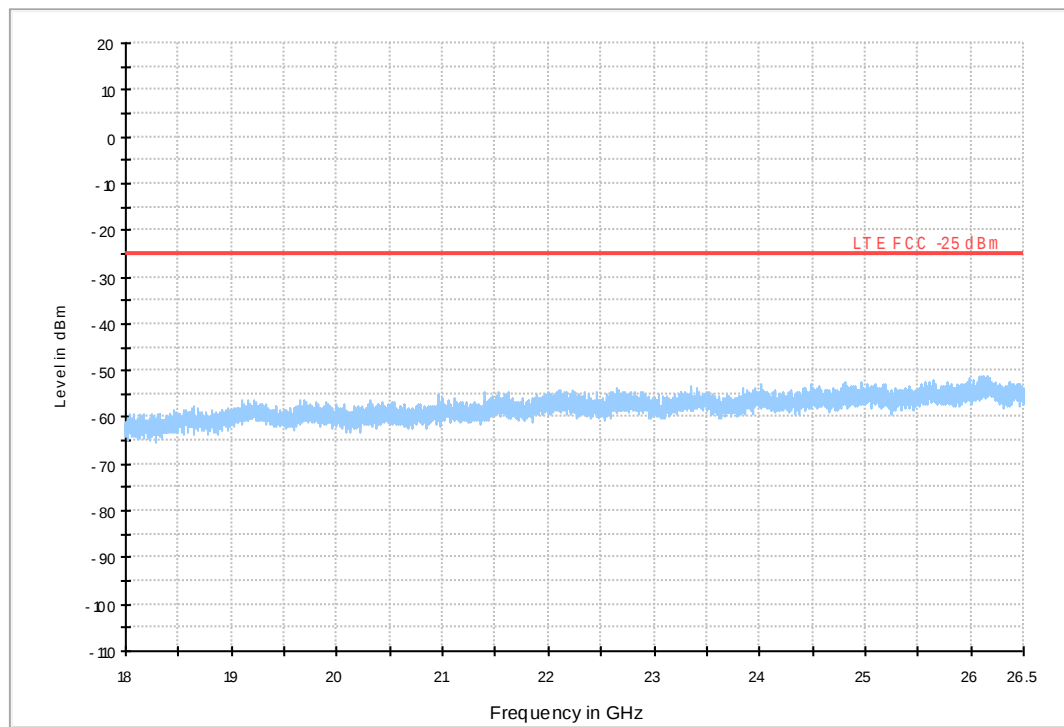
LTE Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_L -25dBm limit



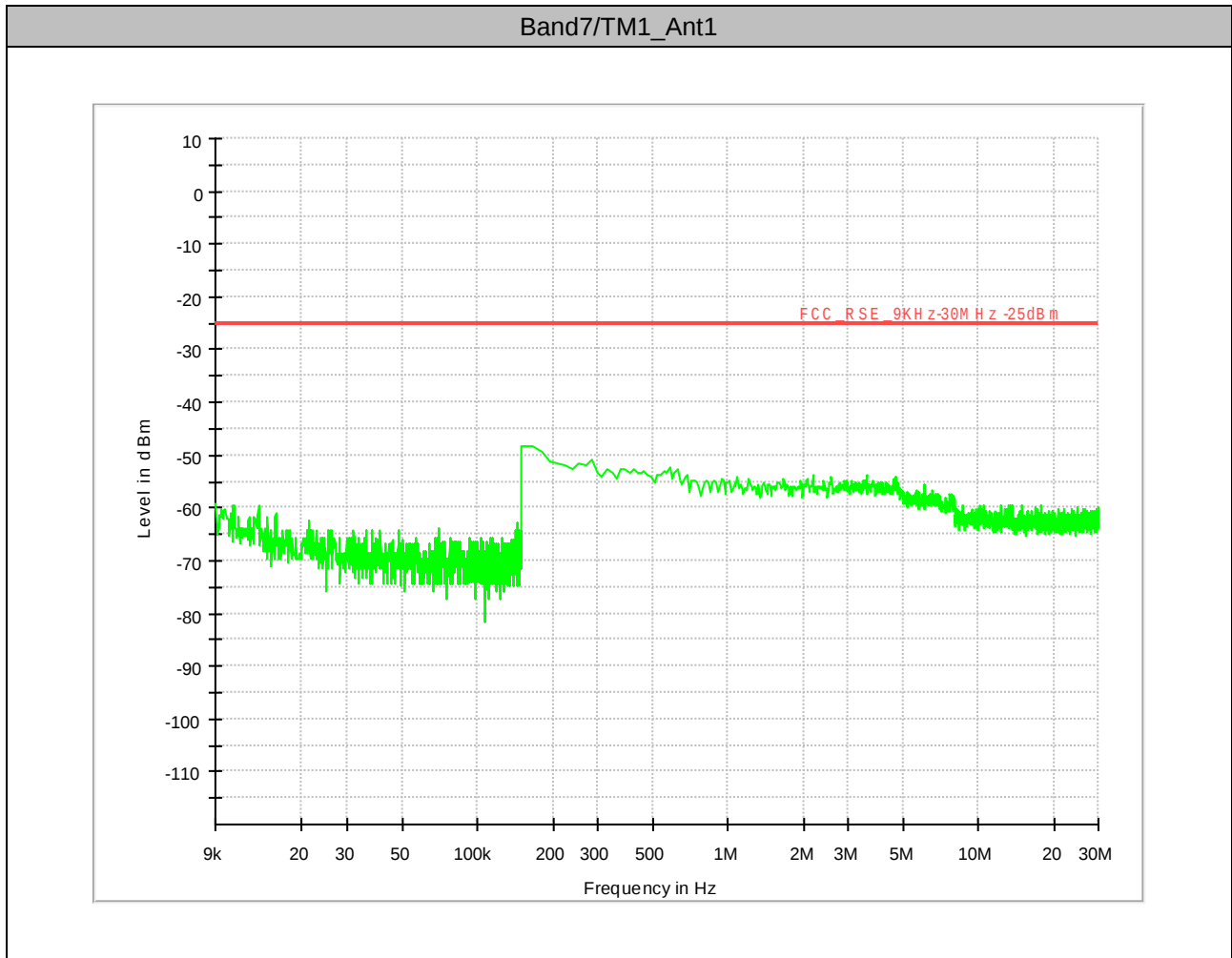
LTE FDD Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_H -25dBm limit



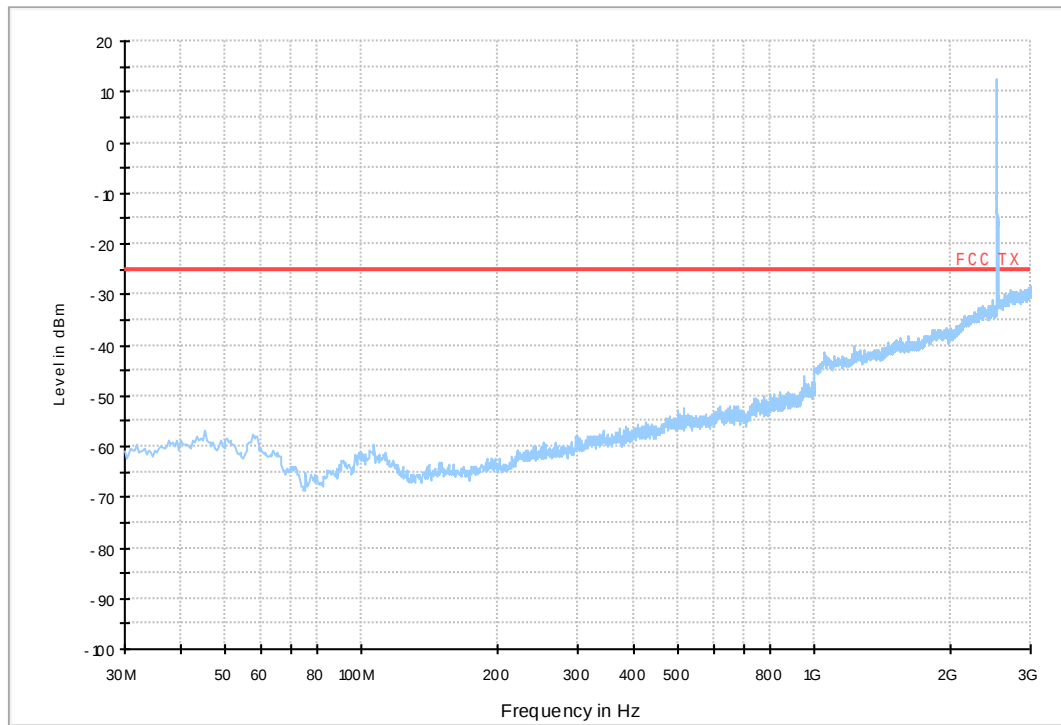
Copy of FCC 18-26.5G



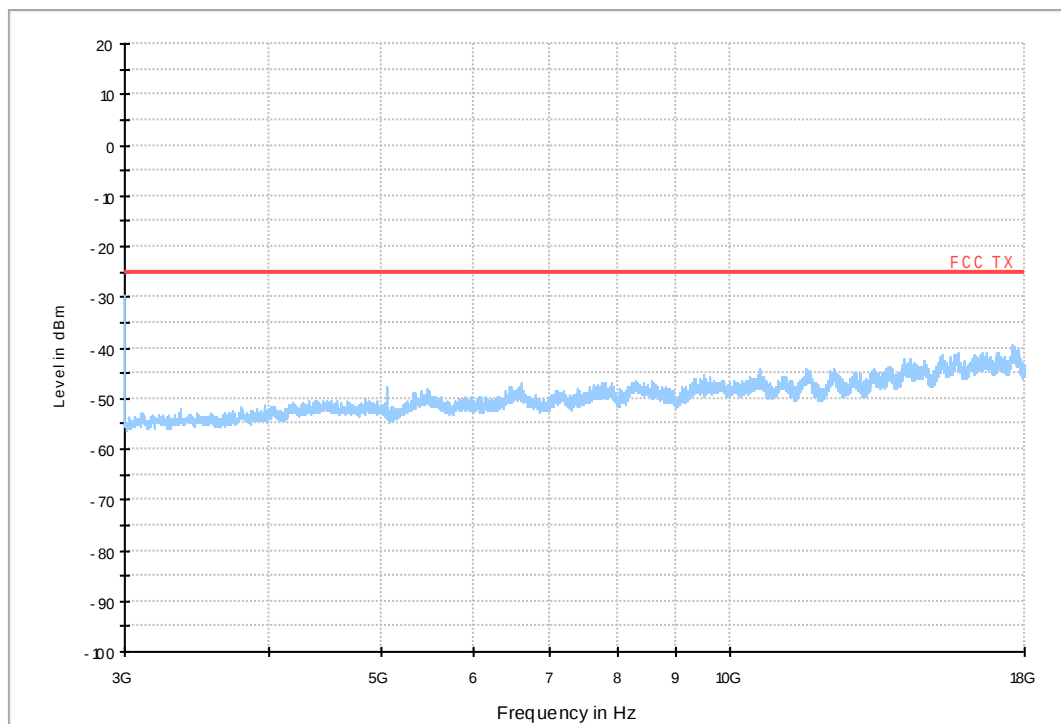
7.1.1.2 Test Bandwidth = 20



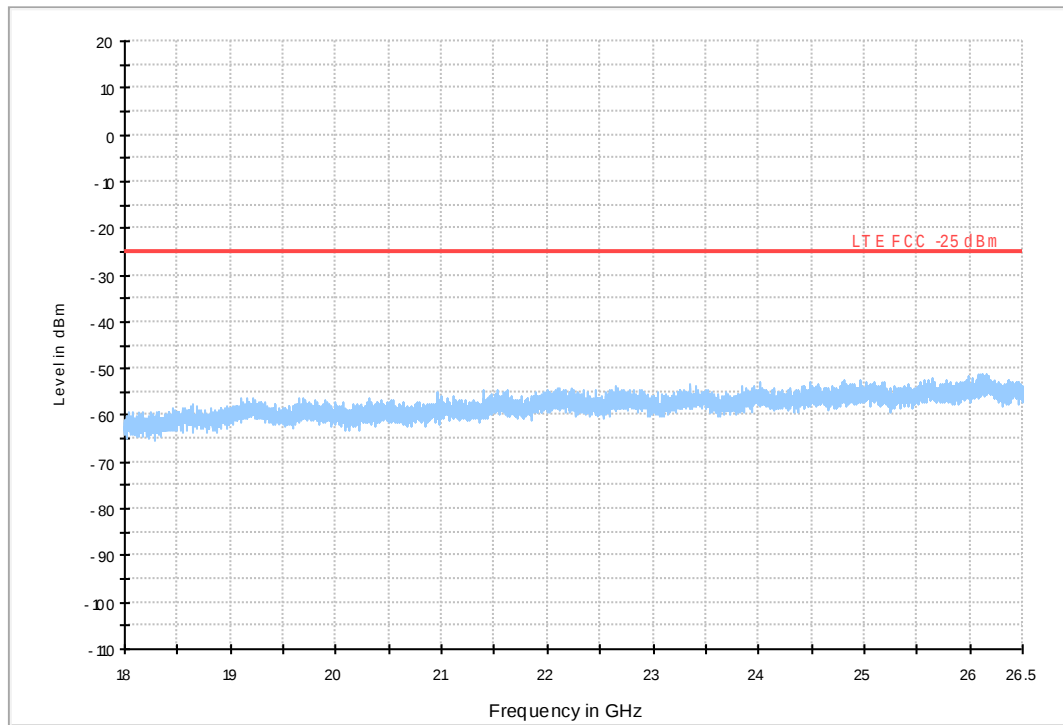
LTE Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_L -25dBm limit



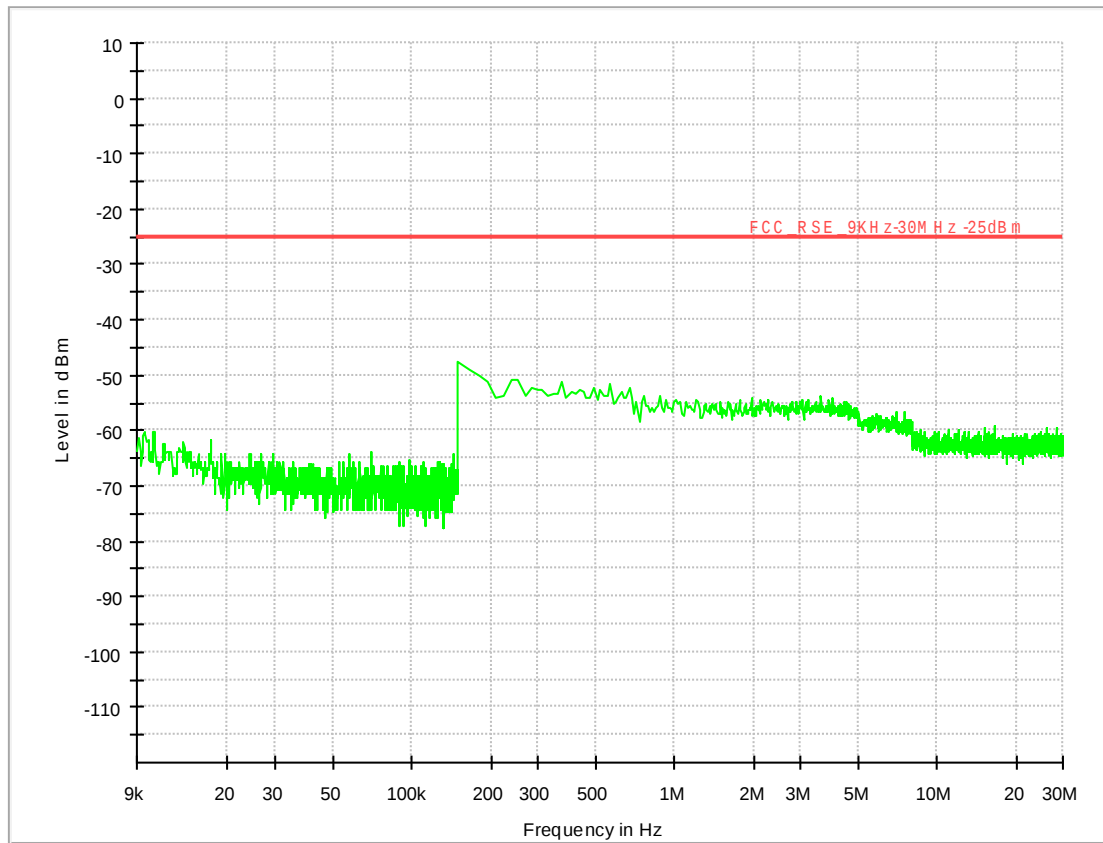
LTE FDD Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_H -25dBm limit



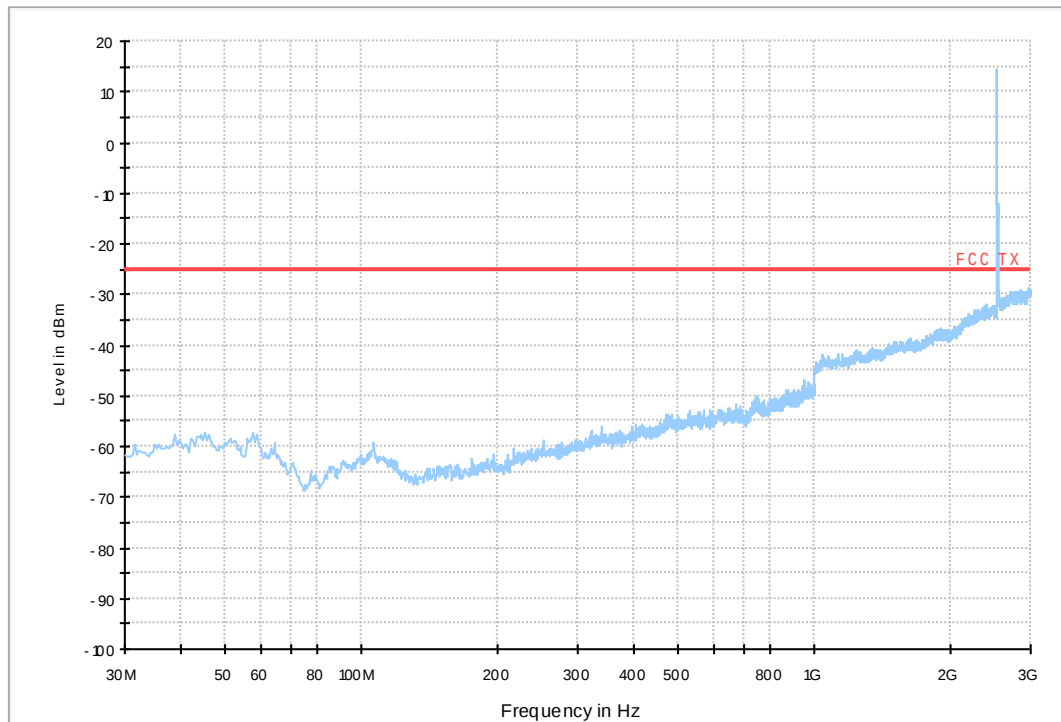
Copy of FCC 18-26.5G



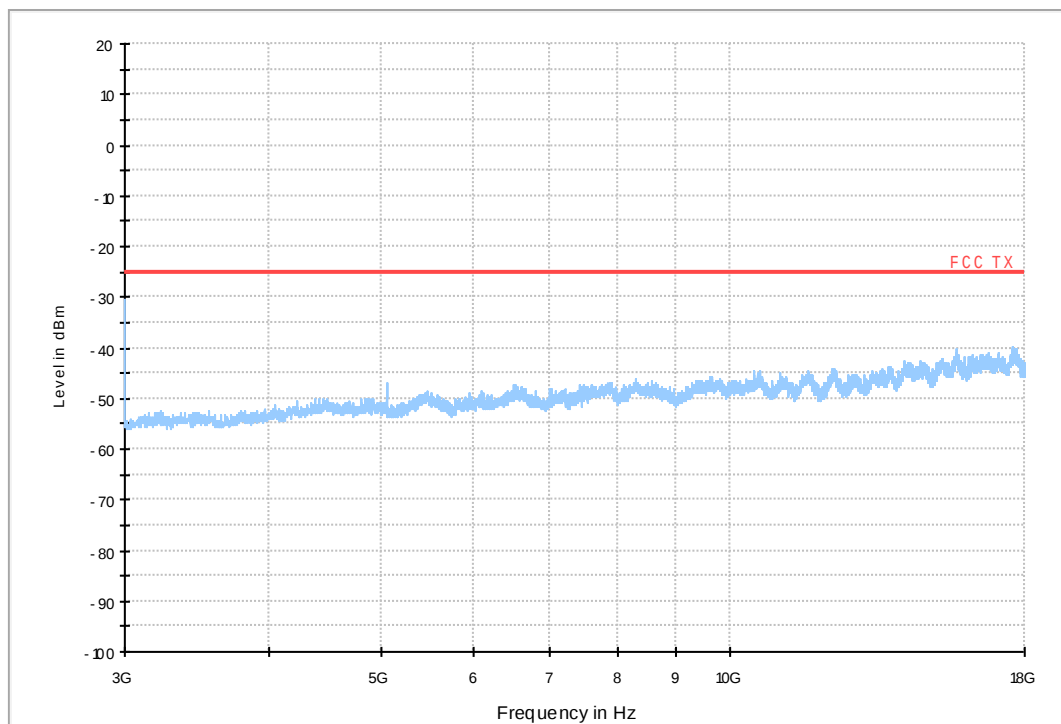
Band7/TM1_Ant2



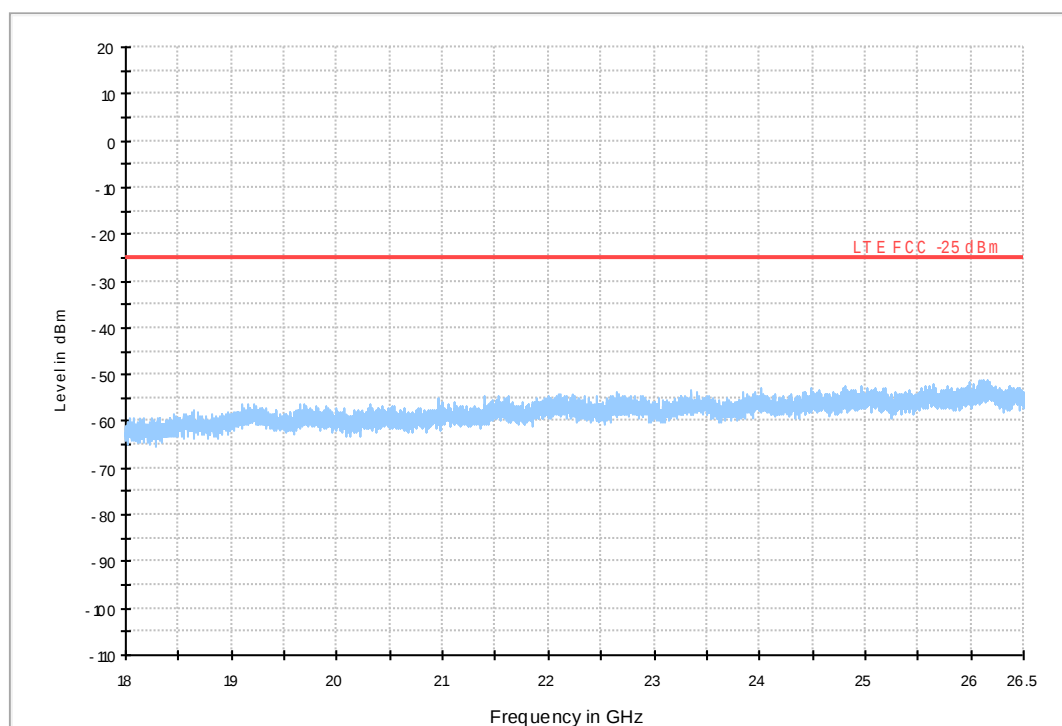
LTE Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_L -25dBm limit



LTE FDD Band 7 RSE-TX-DIRECTOR ABOVE 1.5G_H -25dBm limit



Copy of FCC 18-26.5G



8Appendix_H: Frequency Stability

8.1 For LTE

8.1.1Frequency Error vs. Voltage:

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
Band7	LTE/TM1	5	LCH	TN	VL	-16.92295	-0.00676	PASS
					VN	1.25885	0.00050	PASS
					VH	0.17166	0.00007	PASS
			MCH	TN	VL	-2.01702	-0.00080	PASS
					VN	-14.84871	-0.00586	PASS
					VH	-2.34604	-0.00093	PASS
			HCH	TN	VL	-6.36578	-0.00248	PASS
					VN	-21.51489	-0.00838	PASS
					VH	-9.26971	-0.00361	PASS
		10	LCH	TN	VL	-5.77927	-0.00231	PASS
					VN	-6.05106	-0.00242	PASS
					VH	-7.32422	-0.00292	PASS
			MCH	TN	VL	-2.26021	-0.00089	PASS
					VN	-2.57492	-0.00102	PASS
					VH	-15.73563	-0.00621	PASS
			HCH	TN	VL	-7.03812	-0.00274	PASS
					VN	-6.33717	-0.00247	PASS
					VH	-2.36034	-0.00092	PASS
		15	LCH	TN	VL	-4.10557	-0.00164	PASS
					VN	-4.76360	-0.00190	PASS
					VH	-3.49045	-0.00139	PASS
			MCH	TN	VL	0.41485	0.00016	PASS
					VN	2.43187	0.00096	PASS
					VH	4.73499	0.00187	PASS
			HCH	TN	VL	-6.48022	-0.00253	PASS
					VN	-20.74242	-0.00809	PASS
					VH	-10.39982	-0.00406	PASS
		20	LCH	TN	VL	-5.07832	-0.00202	PASS
					VN	-5.82218	-0.00232	PASS
					VH	-7.51018	-0.00299	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
	LTE/TM2		MCH	TN	VL	1.04427	0.00041	PASS
					VN	-2.04563	-0.00081	PASS
					VH	4.36306	0.00172	PASS
			HCH	TN	VL	-6.25134	-0.00244	PASS
					VN	-3.47614	-0.00136	PASS
					VH	-8.06808	-0.00315	PASS
		5	LCH	TN	VL	-4.00543	-0.00160	PASS
					VN	-21.25740	-0.00849	PASS
					VH	-15.63549	-0.00625	PASS
			MCH	TN	VL	1.78814	0.00071	PASS
					VN	-11.42979	-0.00451	PASS
					VH	1.94550	0.00077	PASS
			HCH	TN	VL	0.64373	0.00025	PASS
					VN	-15.26356	-0.00594	PASS
					VH	-5.10693	-0.00199	PASS
		10	LCH	TN	VL	1.20163	0.00048	PASS
					VN	-1.75953	-0.00070	PASS
					VH	0.14305	0.00006	PASS
			MCH	TN	VL	5.55039	0.00219	PASS
					VN	-1.74522	-0.00069	PASS
					VH	5.40733	0.00213	PASS
			HCH	TN	VL	0.30041	0.00012	PASS
					VN	-25.06256	-0.00977	PASS
					VH	-2.50339	-0.00098	PASS
		15	LCH	TN	VL	2.74658	0.00110	PASS
					VN	-5.82218	-0.00232	PASS
					VH	-0.02861	-0.00001	PASS
			MCH	TN	VL	3.61919	0.00143	PASS
					VN	-0.14305	-0.00006	PASS
					VH	-5.77927	-0.00228	PASS
			HCH	TN	VL	0.15736	0.00006	PASS
					VN	-8.76904	-0.00342	PASS
					VH	-1.64509	-0.00064	PASS
		20	LCH	TN	VL	0.02861	0.00001	PASS
					VN	-3.14712	-0.00125	PASS
					VH	0.41485	0.00017	PASS
			MCH	TN	VL	2.87533	0.00113	PASS
					VN	3.11851	0.00123	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			HCH	TN	VH	2.41756	0.00095	PASS
					VL	4.10557	0.00160	PASS
					VN	-3.67641	-0.00144	PASS
					VH	-0.41485	-0.00016	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
Band7	LTE/TM1	5	LCH	VN	-30	-1.38760	-0.00055	PASS
					-20	-1.17302	-0.00047	PASS
					-10	2.64645	0.00106	PASS
					0	0.37193	0.00015	PASS
					10	-0.67234	-0.00027	PASS
					20	1.25885	0.00050	PASS
					30	-1.57356	-0.00063	PASS
					40	1.47343	0.00059	PASS
					50	-2.68936	-0.00107	PASS
			MCH	VN	-30	-11.11507	-0.00438	PASS
					-20	-9.82761	-0.00388	PASS
					-10	-11.98769	-0.00473	PASS
					0	-9.98497	-0.00394	PASS
					10	-10.98633	-0.00433	PASS
					20	-14.84871	-0.00586	PASS
					30	-13.83305	-0.00546	PASS
					40	-11.88755	-0.00469	PASS
					50	-12.21657	-0.00482	PASS
			HCH	VN	-30	-22.02988	-0.00858	PASS
					-20	-21.85822	-0.00851	PASS
					-10	-20.98560	-0.00817	PASS
					0	-20.78533	-0.00810	PASS
					10	-40.65514	-0.01583	PASS
					20	-21.51489	-0.00838	PASS
					30	-21.04282	-0.00820	PASS
					40	-21.44337	-0.00835	PASS
					50	-21.27171	-0.00828	PASS
		10	LCH	VN	-30	-3.47614	-0.00139	PASS
					-20	-29.18243	-0.01165	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					-10	-6.98090	-0.00279	PASS
					0	-9.21249	-0.00368	PASS
					10	-5.92232	-0.00236	PASS
					20	-6.05106	-0.00242	PASS
					30	-7.06673	-0.00282	PASS
					40	-4.16279	-0.00166	PASS
					50	-5.33581	-0.00213	PASS
			MCH	VN	-30	-4.04835	-0.00160	PASS
					-20	-22.28737	-0.00879	PASS
					-10	-5.76496	-0.00227	PASS
					0	-3.97682	-0.00157	PASS
					10	-2.78950	-0.00110	PASS
					20	-2.57492	-0.00102	PASS
					30	-2.31743	-0.00091	PASS
					40	-4.84943	-0.00191	PASS
					50	-9.42707	-0.00372	PASS
			HCH	VN	-30	-4.19140	-0.00163	PASS
					-20	-19.75536	-0.00770	PASS
					-10	-9.65595	-0.00376	PASS
					0	-8.65459	-0.00337	PASS
					10	-7.89642	-0.00308	PASS
					20	-6.33717	-0.00247	PASS
					30	-27.49443	-0.01072	PASS
					40	-16.96587	-0.00661	PASS
					50	-8.89778	-0.00347	PASS
		15	LCH	VN	-30	-5.42164	-0.00216	PASS
					-20	-9.38415	-0.00374	PASS
					-10	-6.52313	-0.00260	PASS
					0	-6.43730	-0.00257	PASS
					10	-7.30991	-0.00292	PASS
					20	-4.76360	-0.00190	PASS
					30	-5.82218	-0.00232	PASS
					40	-6.49452	-0.00259	PASS
					50	-4.23431	-0.00169	PASS
			MCH	VN	-30	2.44618	0.00096	PASS
					-20	0.77248	0.00030	PASS
					-10	3.49045	0.00138	PASS
					0	-9.11236	-0.00359	PASS
					10	-6.73771	-0.00266	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					20	2.43187	0.00096	PASS
					30	-4.72069	-0.00186	PASS
					40	4.20570	0.00166	PASS
					50	3.60489	0.00142	PASS
			HCH	VN	-30	-11.00063	-0.00429	PASS
					-20	-16.46519	-0.00643	PASS
					-10	-19.26899	-0.00752	PASS
					0	-13.84735	-0.00540	PASS
					10	-14.16206	-0.00553	PASS
					20	-20.74242	-0.00809	PASS
					30	-20.11299	-0.00785	PASS
					40	-15.06329	-0.00588	PASS
					50	-14.19067	-0.00554	PASS
		20	LCH	VN	-30	-4.59194	-0.00183	PASS
					-20	-3.67641	-0.00146	PASS
					-10	-4.14848	-0.00165	PASS
					0	-4.90665	-0.00195	PASS
					10	-5.55039	-0.00221	PASS
					20	-5.82218	-0.00232	PASS
					30	-6.60896	-0.00263	PASS
					40	-5.83649	-0.00233	PASS
					50	-6.96659	-0.00278	PASS
			MCH	VN	-30	2.78950	0.00110	PASS
					-20	-0.74387	-0.00029	PASS
					-10	4.06265	0.00160	PASS
					0	-1.02997	-0.00041	PASS
					10	0.22888	0.00009	PASS
					20	-2.04563	-0.00081	PASS
					30	-2.18868	-0.00086	PASS
					40	1.24455	0.00049	PASS
					50	2.00272	0.00079	PASS
			HCH	VN	-30	-12.81738	-0.00501	PASS
					-20	-6.79493	-0.00265	PASS
					-10	-9.52721	-0.00372	PASS
					0	-7.09534	-0.00277	PASS
					10	-7.00951	-0.00274	PASS
					20	-3.47614	-0.00136	PASS
					30	-4.10557	-0.00160	PASS
					40	-6.65188	-0.00260	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
	LTE/TM2	5	LCH	VN	50	-9.58443	-0.00374	PASS
					-30	-20.52784	-0.00820	PASS
					-20	-23.91815	-0.00956	PASS
					-10	-22.53056	-0.00900	PASS
					0	-21.88683	-0.00875	PASS
					10	-20.42770	-0.00816	PASS
					20	-21.25740	-0.00849	PASS
					30	-22.05849	-0.00881	PASS
					40	-25.67768	-0.01026	PASS
					50	-21.72947	-0.00868	PASS
			MCH	VN	-30	62.02698	0.02447	PASS
					-20	-6.07967	-0.00240	PASS
					-10	-35.86292	-0.01415	PASS
					0	-11.65867	-0.00460	PASS
					10	-8.94070	-0.00353	PASS
					20	-11.42979	-0.00451	PASS
					30	-8.54015	-0.00337	PASS
					40	-10.21385	-0.00403	PASS
					50	-6.88076	-0.00271	PASS
			HCH	VN	-30	-18.66817	-0.00727	PASS
					-20	-36.47804	-0.01421	PASS
					-10	-20.99991	-0.00818	PASS
					0	-17.66682	-0.00688	PASS
					10	-19.29760	-0.00752	PASS
					20	-15.26356	-0.00594	PASS
					30	-21.14296	-0.00823	PASS
					40	-16.79420	-0.00654	PASS
					50	-14.19067	-0.00553	PASS
		10	LCH	VN	-30	-7.00951	-0.00280	PASS
					-20	-22.37320	-0.00893	PASS
					-10	-6.68049	-0.00267	PASS
					0	-7.15256	-0.00286	PASS
					10	-8.11100	-0.00324	PASS
					20	-1.75953	-0.00070	PASS
					30	-2.01702	-0.00081	PASS
					40	-6.23703	-0.00249	PASS
					50	-3.21865	-0.00128	PASS
			MCH	VN	-30	-0.05722	-0.00002	PASS
					-20	-6.99520	-0.00276	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					-10	-12.58850	-0.00497	PASS
					0	-1.64509	-0.00065	PASS
					10	-11.98769	-0.00473	PASS
					20	-1.74522	-0.00069	PASS
					30	-2.71797	-0.00107	PASS
					40	-10.80036	-0.00426	PASS
					50	-0.35763	-0.00014	PASS
			HCH	VN	-30	-4.77791	-0.00186	PASS
					-20	-14.41956	-0.00562	PASS
					-10	-12.38823	-0.00483	PASS
					0	-7.53880	-0.00294	PASS
					10	-8.54015	-0.00333	PASS
					20	-25.06256	-0.00977	PASS
					30	-6.59466	-0.00257	PASS
					40	-10.04219	-0.00392	PASS
					50	-8.01086	-0.00312	PASS
		15	LCH	VN	-30	-3.27587	-0.00131	PASS
					-20	-7.89642	-0.00315	PASS
					-10	-4.59194	-0.00183	PASS
					0	-5.55039	-0.00221	PASS
					10	-4.49181	-0.00179	PASS
					20	-5.82218	-0.00232	PASS
					30	-3.20435	-0.00128	PASS
					40	-14.61983	-0.00583	PASS
					50	-5.69344	-0.00227	PASS
			MCH	VN	-30	-0.65804	-0.00026	PASS
					-20	-7.39574	-0.00292	PASS
					-10	-1.27316	-0.00050	PASS
					0	3.50475	0.00138	PASS
					10	0.97275	0.00038	PASS
					20	-0.14305	-0.00006	PASS
					30	-7.69615	-0.00304	PASS
					40	-5.35011	-0.00211	PASS
					50	3.30448	0.00130	PASS
			HCH	VN	-30	-16.45088	-0.00642	PASS
					-20	-10.88619	-0.00425	PASS
					-10	-8.75473	-0.00342	PASS
					0	-10.68592	-0.00417	PASS
					10	-9.46999	-0.00370	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		20			20	-8.76904	-0.00342	PASS
					30	-15.99312	-0.00624	PASS
					40	-8.75473	-0.00342	PASS
					50	-7.93934	-0.00310	PASS
			LCH	VN	-30	-4.10557	-0.00164	PASS
					-20	-4.97818	-0.00198	PASS
					-10	-2.67506	-0.00107	PASS
					0	-4.16279	-0.00166	PASS
					10	-1.91688	-0.00076	PASS
					20	-3.14712	-0.00125	PASS
					30	-3.60489	-0.00144	PASS
					40	-4.83513	-0.00193	PASS
					50	-3.89099	-0.00155	PASS
			MCH	VN	-30	2.11716	0.00084	PASS
					-20	1.18732	0.00047	PASS
					-10	2.68936	0.00106	PASS
					0	1.05858	0.00042	PASS
					10	2.56062	0.00101	PASS
					20	3.11851	0.00123	PASS
					30	4.09126	0.00161	PASS
					40	3.23296	0.00128	PASS
					50	1.00136	0.00040	PASS
			HCH	VN	-30	-4.34875	-0.00170	PASS
					-20	-6.00815	-0.00235	PASS
					-10	-5.70774	-0.00223	PASS
					0	-3.54767	-0.00139	PASS
					10	-5.12123	-0.00200	PASS
					20	-3.67641	-0.00144	PASS
					30	-3.44753	-0.00135	PASS
					40	-6.83784	-0.00267	PASS
					50	-6.66618	-0.00260	PASS

END