

7Appendix_G: Field Strength of Spurious Radiation

Note:

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

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

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

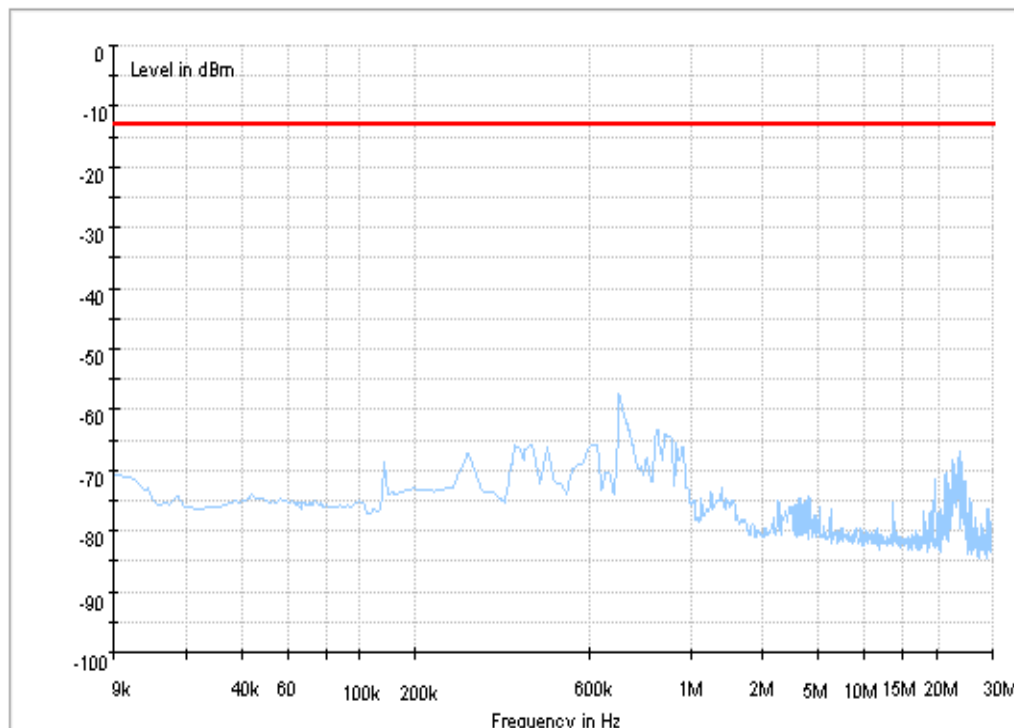
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

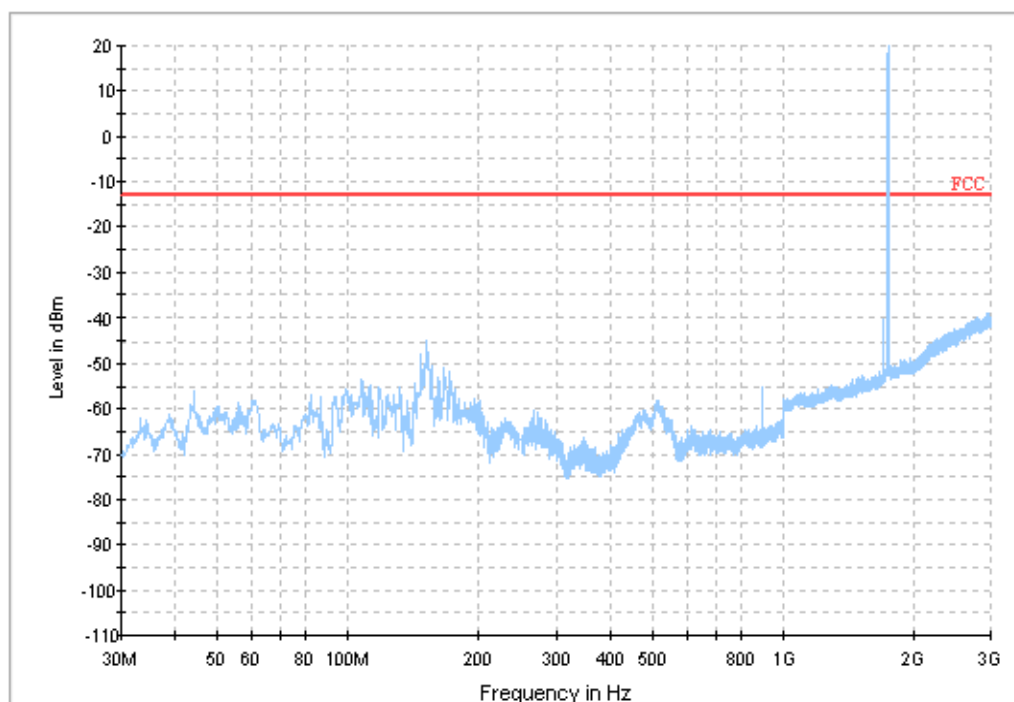
7.1 For LTE

7.1.1 Test Band = BAND4

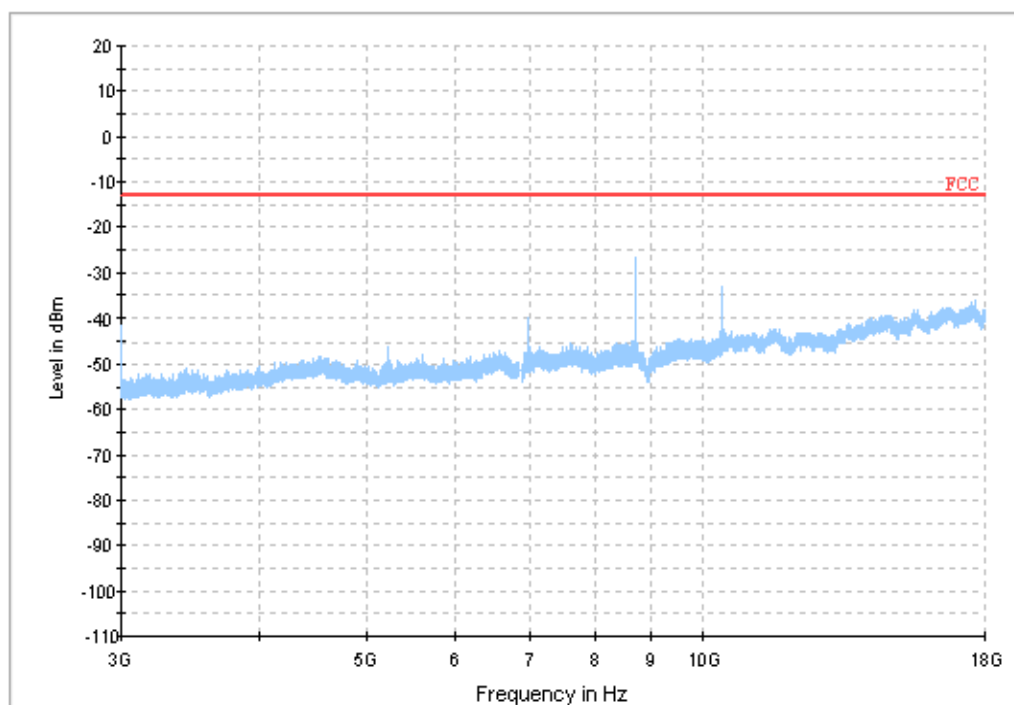
7.1.1.1 Test Bandwidth = 1.4

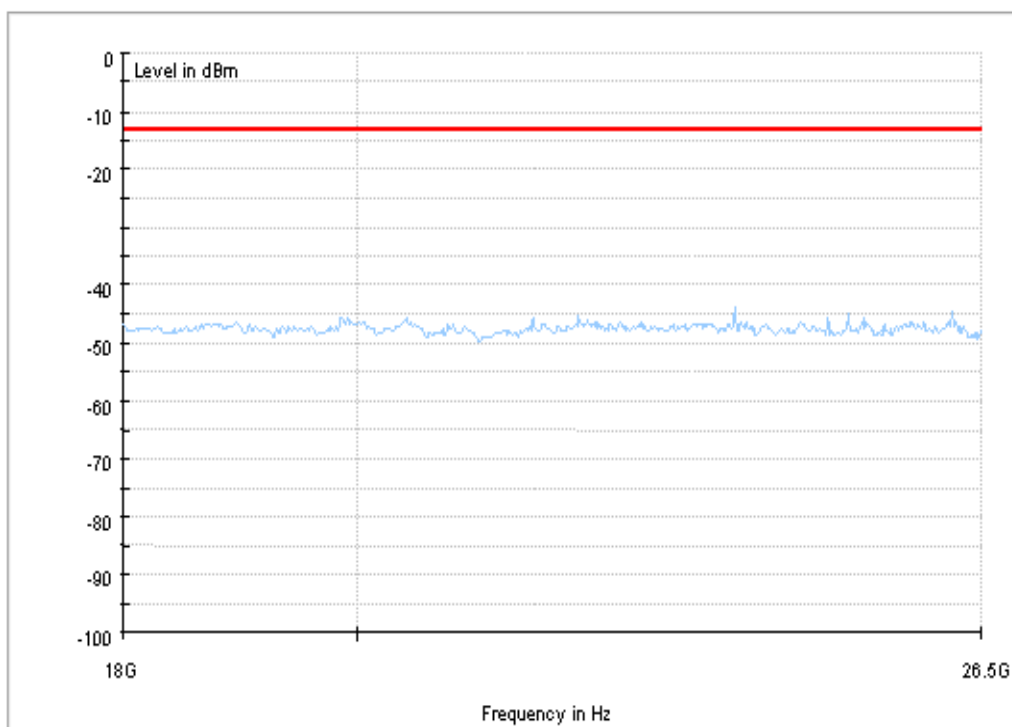


Copy of FCC PART27 LTE Band 4_L

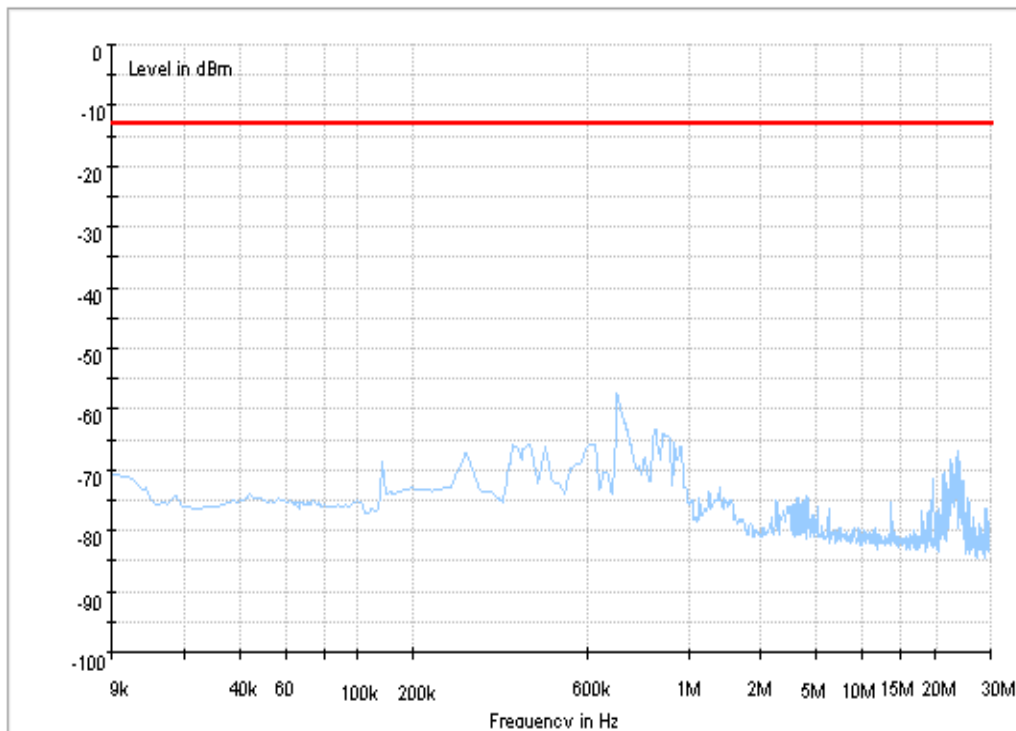


Copy of FCC PART27 LTE Band 4_H

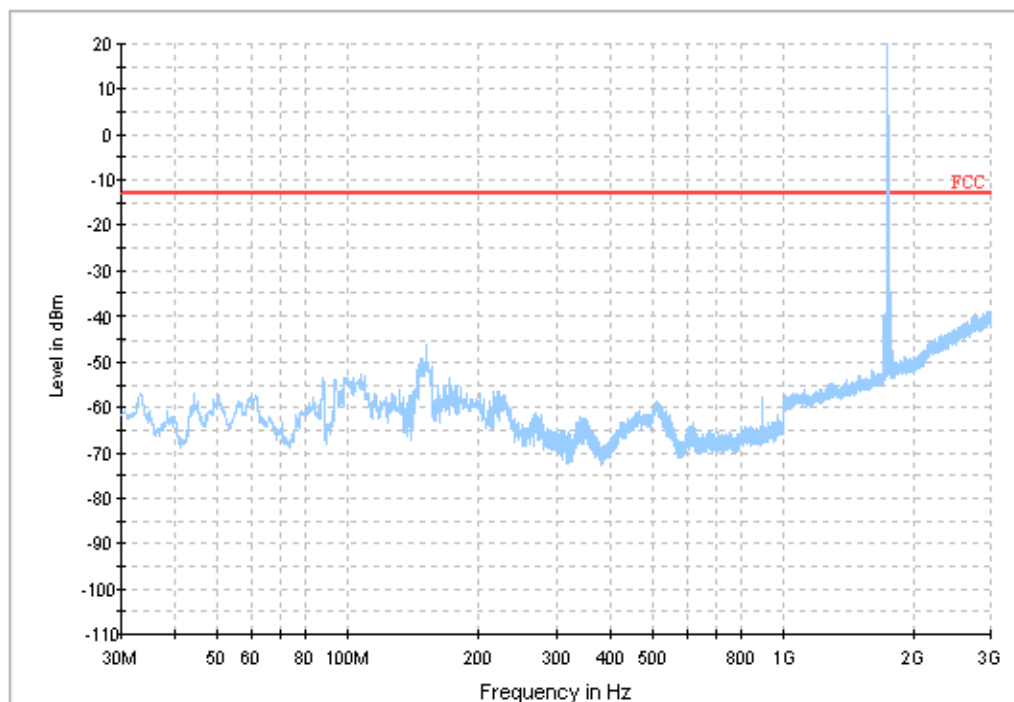




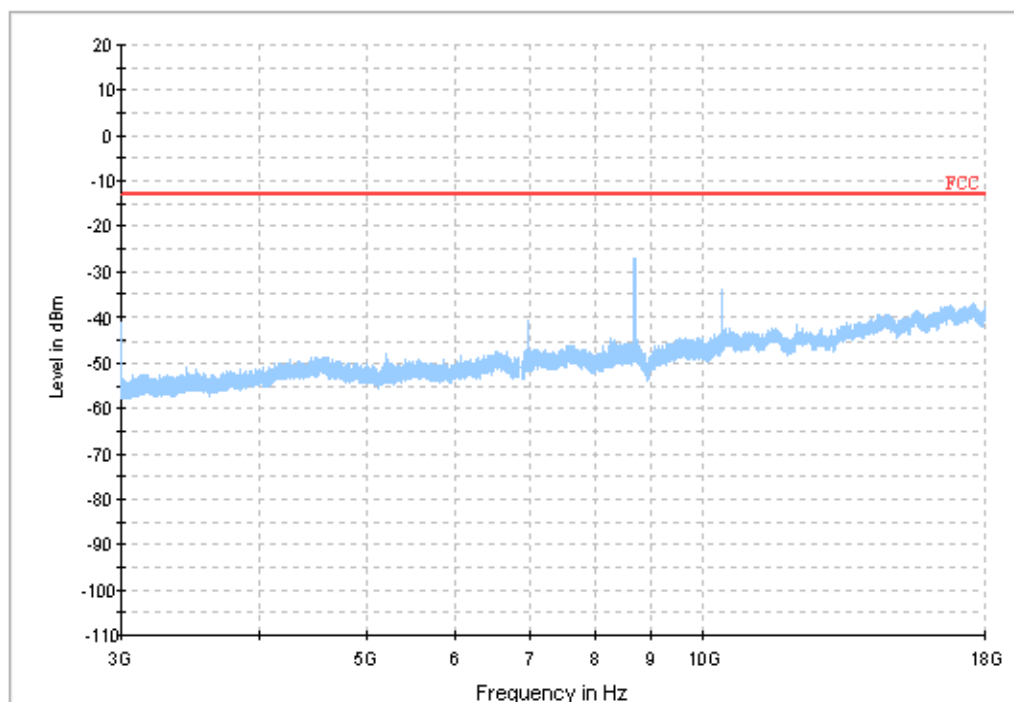
7.1.1.2 Test Bandwidth = 5

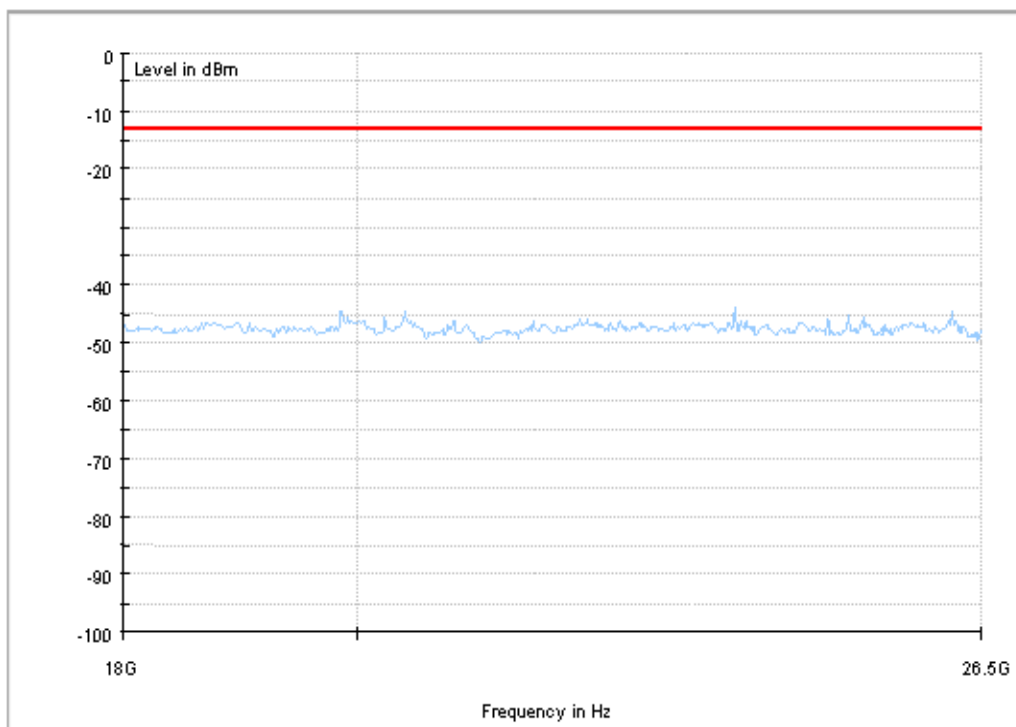


Copy of FCC PART27 LTE Band 4_L

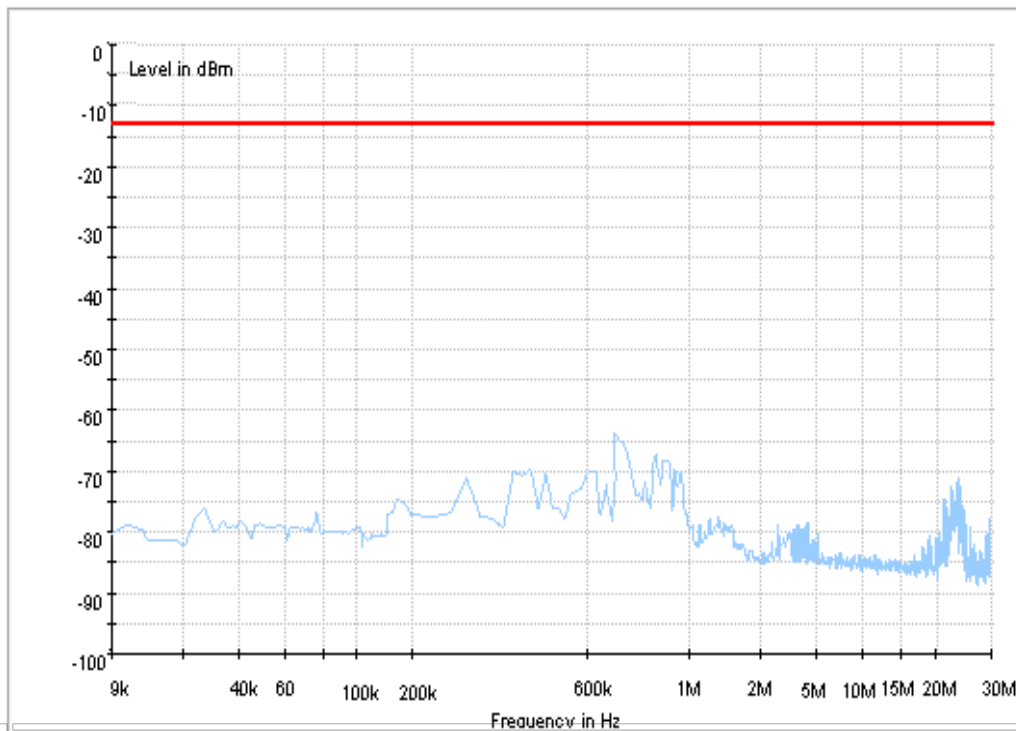


Copy of FCC PART27 LTE Band 4_H

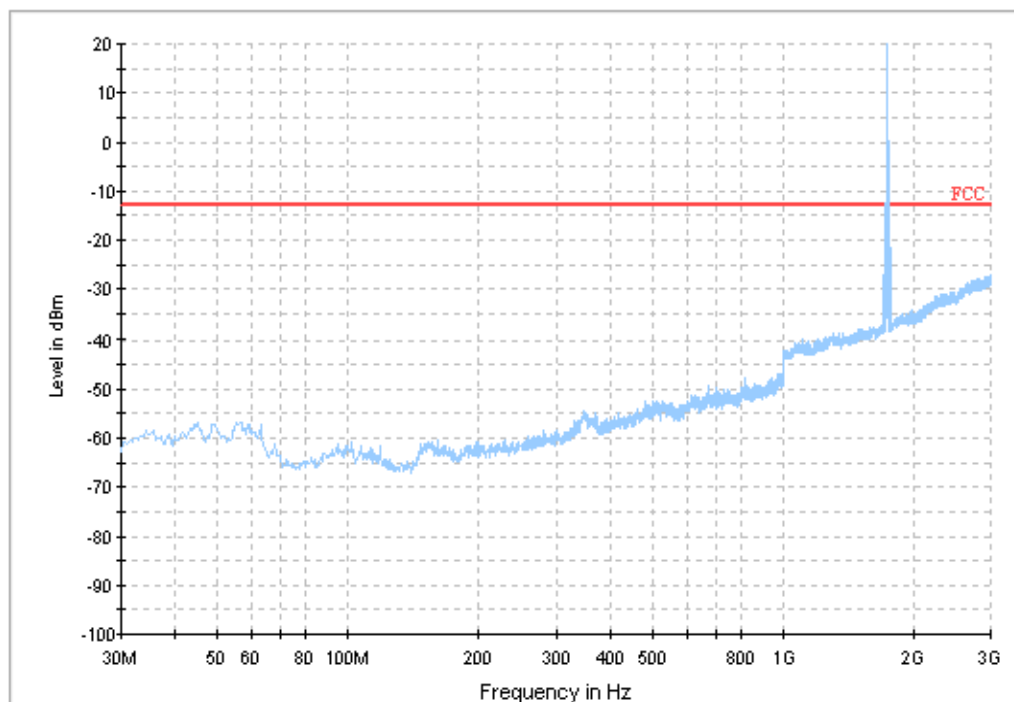




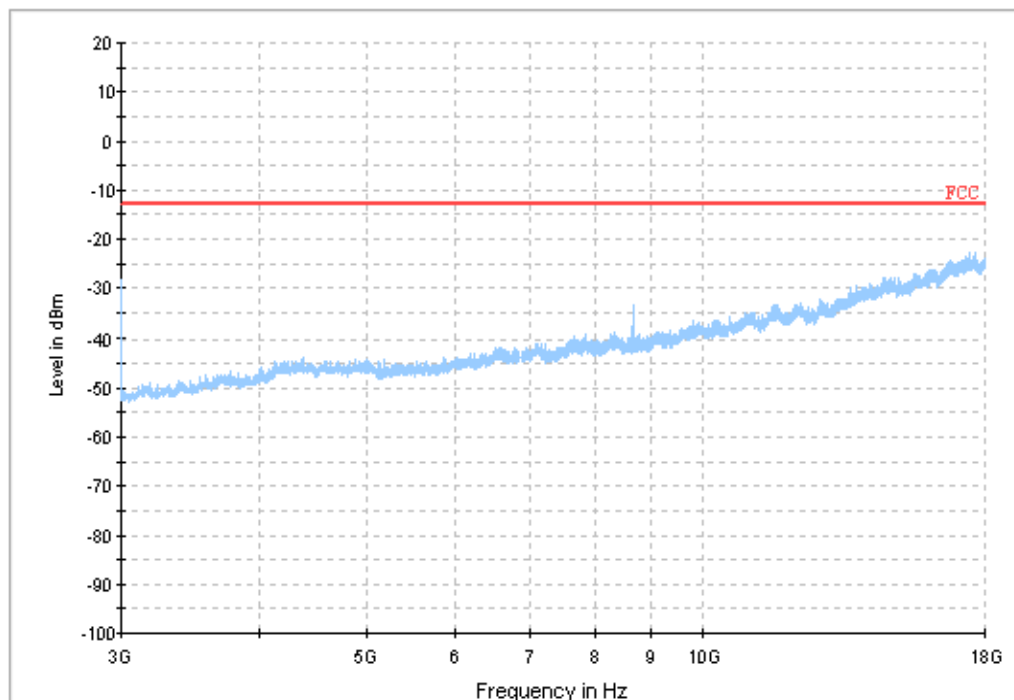
7.1.1.3 Test Bandwidth = 20

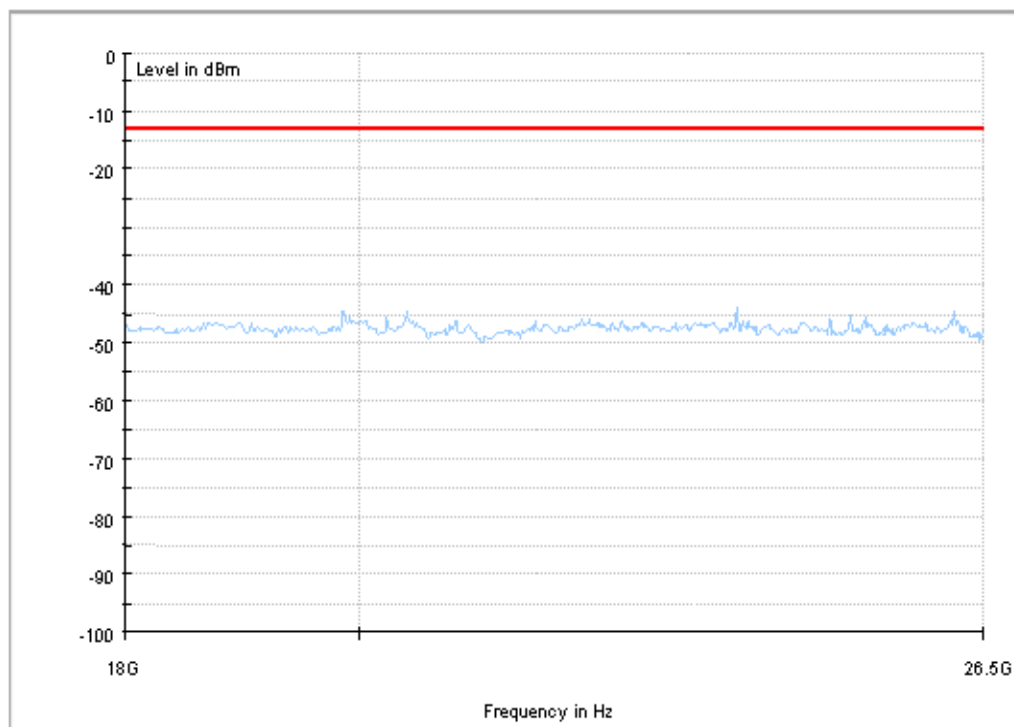


Copy of RSE-TX-DIRECTOR ABOVE 1.5G_L



Copy of RSE-TX-DIRECTOR ABOVE 1.5G_H





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
BAND4	LTE/TM1	1.4	LCH	TN	VL	-3.19	-0.00186	PASS
					VN	-0.77	-0.00045	PASS
					VH	-3.13	-0.00183	PASS
			MCH	TN	VL	2.1	0.00121	PASS
					VN	3.23	0.00186	PASS
					VH	1.43	0.00083	PASS
			HCH	TN	VL	-3.76	-0.00214	PASS
					VN	-3.81	-0.00217	PASS
					VH	-5.04	-0.00287	PASS
		3	LCH	TN	VL	-3.58	-0.00209	PASS
					VN	-3.36	-0.00196	PASS
					VH	-3.2	-0.00187	PASS
			MCH	TN	VL	1.19	0.00069	PASS
					VN	3.02	0.00174	PASS
					VH	4.89	0.00282	PASS
			HCH	TN	VL	-6.17	-0.00352	PASS
					VN	-6.47	-0.00369	PASS
					VH	-9.08	-0.00518	PASS
		5	LCH	TN	VL	-3.66	-0.00214	PASS
					VN	-4.23	-0.00247	PASS
					VH	-5.94	-0.00347	PASS
			MCH	TN	VL	0.97	0.00056	PASS
					VN	1.07	0.00062	PASS
					VH	1.3	0.00075	PASS
			HCH	TN	VL	-4.21	-0.0024	PASS
					VN	-3.25	-0.00185	PASS
					VH	-3.15	-0.0018	PASS
		10	LCH	TN	VL	-0.59	-0.00034	PASS
					VN	-0.06	-0.00003	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
	LTE/TM2			TN	VH	1.52	0.00089	PASS
					VL	2.39	0.00138	PASS
					VN	0	0	PASS
			MCH	TN	VH	1.82	0.00105	PASS
					VL	4.23	0.00242	PASS
					VN	2.83	0.00162	PASS
			HCH	TN	VH	2.19	0.00125	PASS
					VL	-6.07	-0.00353	PASS
					VN	-6.28	-0.00366	PASS
			LCH	TN	VH	-5.19	-0.00302	PASS
					VL	0.62	0.00036	PASS
					VN	0.87	0.0005	PASS
		15	MCH	TN	VH	1.97	0.00114	PASS
					VL	-3.22	-0.00184	PASS
					VN	-2.85	-0.00163	PASS
			HCH	TN	VH	-2.26	-0.00129	PASS
					VL	-2.85	-0.00166	PASS
					VN	-0.53	-0.00031	PASS
			LCH	TN	VH	-2.65	-0.00154	PASS
					VL	1.04	0.0006	PASS
					VN	0.4	0.00023	PASS
		20	MCH	TN	VH	-1	-0.00058	PASS
					VL	1	0.00057	PASS
					VN	3.43	0.00197	PASS
			HCH	TN	VH	1.93	0.00111	PASS
					VL	-3.63	-0.00212	PASS
					VN	-5.72	-0.00334	PASS
			LCH	TN	VH	-4.76	-0.00278	PASS
					VL	4.55	0.00263	PASS
					VN	2.23	0.00129	PASS
		1.4	MCH	TN	VH	3.58	0.00207	PASS
					VL	-1.82	-0.00104	PASS
					VN	0.14	0.00008	PASS
			HCH	TN	VH	-1.46	-0.00083	PASS
					VL	-1.93	-0.00113	PASS
					VN	-2.96	-0.00173	PASS
			LCH	TN	VH	-0.92	-0.00054	PASS
					VL	2.45	0.00141	PASS
					VN	1.92	0.00111	PASS
		3	MCH	TN	VH	-0.92	-0.00054	PASS
					VL	2.45	0.00141	PASS
					VN	1.92	0.00111	PASS
			LCH	TN	VH	-0.92	-0.00054	PASS
					VL	2.45	0.00141	PASS
					VN	1.92	0.00111	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	2.8	0.00162	PASS
					VL	-8.6	-0.0049	PASS
					VN	-5.06	-0.00289	PASS
					VH	-6.18	-0.00352	PASS
		5	LCH	TN	VL	-5.29	-0.00309	PASS
					VN	-5.08	-0.00297	PASS
					VH	-4.59	-0.00268	PASS
			MCH	TN	VL	-2.17	-0.00125	PASS
					VN	1.93	0.00111	PASS
					VH	0.79	0.00046	PASS
			HCH	TN	VL	-4.06	-0.00232	PASS
					VN	-5.08	-0.0029	PASS
					VH	-2.85	-0.00163	PASS
		10	LCH	TN	VL	3.02	0.00176	PASS
					VN	2.16	0.00126	PASS
					VH	3.68	0.00215	PASS
			MCH	TN	VL	0.99	0.00057	PASS
					VN	0.76	0.00044	PASS
					VH	1.66	0.00096	PASS
			HCH	TN	VL	2.57	0.00147	PASS
					VN	5.11	0.00292	PASS
					VH	5.06	0.00289	PASS
		15	LCH	TN	VL	-7.18	-0.00418	PASS
					VN	-5.69	-0.00331	PASS
					VH	-7.68	-0.00447	PASS
			MCH	TN	VL	1.02	0.00059	PASS
					VN	-0.3	-0.00017	PASS
					VH	2.52	0.00145	PASS
			HCH	TN	VL	-4.53	-0.00259	PASS
					VN	-4.28	-0.00245	PASS
					VH	-2.13	-0.00122	PASS
		20	LCH	TN	VL	-5.01	-0.00291	PASS
					VN	-4.43	-0.00258	PASS
					VH	-2.65	-0.00154	PASS
			MCH	TN	VL	0.64	0.00037	PASS
					VN	0.46	0.00027	PASS
					VH	-0.8	-0.00046	PASS
			HCH	TN	VL	2.07	0.00119	PASS
					VN	2.46	0.00141	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					VH	2.19	0.00126	PASS

8.1.2 Frequency Error vs. Temperature:

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	VN	-30	-0.14	-0.00008	PASS
					-20	-3.26	-0.0019	PASS
					-10	-6.62	-0.00385	PASS
					0	5.08	0.00296	PASS
					10	4.82	0.00281	PASS
					20	3.33	0.00194	PASS
					30	-4.41	-0.00257	PASS
					40	2.95	0.00172	PASS
					50	-1.95	-0.00114	PASS
			MCH	VN	-30	-6.31	-0.00364	PASS
					-20	-8.37	-0.00483	PASS
					-10	-0.89	-0.00051	PASS
					0	-6.04	-0.00349	PASS
					10	-13.62	-0.00786	PASS
					20	-1	-0.00058	PASS
					30	-13.02	-0.00752	PASS
					40	-3.99	-0.0023	PASS
					50	0.01	0.00001	PASS
			HCH	VN	-30	15.45	0.00884	PASS
					-20	-2.66	-0.00152	PASS
					-10	6.12	0.0035	PASS
					0	-4.22	-0.00241	PASS
					10	4.01	0.00229	PASS
					20	-0.73	-0.00042	PASS
					30	0.11	0.00006	PASS
					40	1.47	0.00084	PASS
					50	-2.7	-0.00155	PASS
		3	LCH	VN	-30	0.44	0.00026	PASS
					-20	-2.63	-0.00153	PASS
					-10	-2.7	-0.00157	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					0	-0.57	-0.00033	PASS
					10	-4.43	-0.00258	PASS
					20	10.46	0.00608	PASS
					30	3.2	0.00186	PASS
					40	2.62	0.00152	PASS
					50	0.87	0.00051	PASS
			MCH	VN	-30	-4.65	-0.00268	PASS
					-20	-7.28	-0.0042	PASS
					-10	-5.39	-0.00311	PASS
					0	-8.15	-0.0047	PASS
					10	-4.91	-0.00283	PASS
					20	-6.82	-0.00394	PASS
					30	1.09	0.00063	PASS
					40	-3.89	-0.00225	PASS
					50	7.15	0.00413	PASS
			HCH	VN	-30	-2.93	-0.00168	PASS
					-20	-0.94	-0.00054	PASS
					-10	1.03	0.00059	PASS
					0	1.24	0.00071	PASS
					10	4.91	0.00281	PASS
					20	8.47	0.00485	PASS
					30	6.38	0.00366	PASS
					40	-11.77	-0.00674	PASS
					50	10.83	0.00621	PASS
		5	LCH	VN	-30	-7.11	-0.00416	PASS
					-20	-1.54	-0.0009	PASS
					-10	-6.75	-0.00395	PASS
					0	-21.07	-0.01232	PASS
					10	-8.68	-0.00507	PASS
					20	-10.97	-0.00641	PASS
					30	-5.21	-0.00305	PASS
					40	-14.78	-0.00864	PASS
					50	-25.89	-0.01513	PASS
			MCH	VN	-30	-0.44	-0.00025	PASS
					-20	-5.91	-0.00341	PASS
					-10	7.41	0.00428	PASS
					0	-5.55	-0.0032	PASS
					10	-5.61	-0.00324	PASS
					20	-4.09	-0.00236	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					30	-6.39	-0.00369	PASS
					40	-27.31	-0.01576	PASS
					50	-10.09	-0.00582	PASS
			HCH	VN	-30	7.6	0.00433	PASS
					-20	2.03	0.00116	PASS
					-10	3.63	0.00207	PASS
					0	-9.34	-0.00532	PASS
					10	12.33	0.00703	PASS
					20	-6.09	-0.00347	PASS
					30	-5.88	-0.00335	PASS
					40	12.92	0.00736	PASS
					50	9.11	0.00519	PASS
			LCH	VN	-30	-10.26	-0.00599	PASS
					-20	-8.97	-0.00524	PASS
					-10	9.04	0.00528	PASS
					0	1.49	0.00087	PASS
					10	20.1	0.01174	PASS
					20	8.14	0.00476	PASS
					30	-0.26	-0.00015	PASS
					40	-0.37	-0.00022	PASS
					50	-2.99	-0.00175	PASS
		10	MCH	VN	-30	-7.41	-0.00428	PASS
					-20	-9.03	-0.00521	PASS
					-10	-2.33	-0.00134	PASS
					0	1.09	0.00063	PASS
					10	-16.95	-0.00978	PASS
					20	-9.74	-0.00562	PASS
					30	2.03	0.00117	PASS
					40	-0.17	-0.0001	PASS
					50	-2.27	-0.00131	PASS
			HCH	VN	-30	4.11	0.00234	PASS
					-20	6.34	0.00362	PASS
					-10	-12.12	-0.00691	PASS
					0	-8.33	-0.00475	PASS
					10	8.75	0.00499	PASS
					20	-16.14	-0.0092	PASS
					30	11.39	0.0065	PASS
					40	1.66	0.00095	PASS
					50	-1.06	-0.0006	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		15	LCH	VN	-30	-2.89	-0.00169	PASS
					-20	-4.05	-0.00236	PASS
					-10	7.58	0.00443	PASS
					0	-11.74	-0.00686	PASS
					10	-21.49	-0.01255	PASS
					20	13.18	0.0077	PASS
					30	-5.09	-0.00297	PASS
					40	10.41	0.00608	PASS
					50	-3.2	-0.00187	PASS
			MCH	VN	-30	-22.62	-0.01306	PASS
					-20	-2.93	-0.00169	PASS
					-10	-6.35	-0.00367	PASS
					0	2.75	0.00159	PASS
					10	-9.37	-0.00541	PASS
					20	-14.12	-0.00815	PASS
					30	-4.92	-0.00284	PASS
					40	-13.13	-0.00758	PASS
					50	-10.97	-0.00633	PASS
			HCH	VN	-30	11.83	0.00675	PASS
					-20	-0.51	-0.00029	PASS
					-10	-8.55	-0.00488	PASS
					0	11.54	0.00658	PASS
					10	-4.42	-0.00252	PASS
					20	7.21	0.00411	PASS
					30	6.67	0.00381	PASS
					40	9.9	0.00565	PASS
					50	-15.59	-0.0089	PASS
		20	LCH	VN	-30	4.72	0.00275	PASS
					-20	2.88	0.00168	PASS
					-10	-8.94	-0.00521	PASS
					0	-10.24	-0.00597	PASS
					10	-13.02	-0.00759	PASS
					20	-15.64	-0.00912	PASS
					30	1.16	0.00068	PASS
					40	0.96	0.00056	PASS
					50	7.17	0.00418	PASS
			MCH	VN	-30	0.04	0.00002	PASS
					-20	-0.64	-0.00037	PASS
					-10	0.46	0.00027	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					0	3.59	0.00207	PASS
					10	3.62	0.00209	PASS
					20	0.46	0.00027	PASS
					30	-0.8	-0.00046	PASS
					40	-3.39	-0.00196	PASS
					50	-3.4	-0.00196	PASS
			HCH	VN	-30	15.03	0.00859	PASS
					-20	6.97	0.00398	PASS
					-10	7.2	0.00411	PASS
					0	-2.65	-0.00151	PASS
					10	7.84	0.00448	PASS
					20	-3.35	-0.00191	PASS
					30	-2.53	-0.00145	PASS
					40	0.43	0.00025	PASS
					50	-9.3	-0.00531	PASS
	LTE/TM2	1.4	LCH	VN	-30	5.16	0.003	PASS
					-20	-2.43	-0.00141	PASS
					-10	-7.91	-0.00461	PASS
					0	-5.04	-0.00293	PASS
					10	-3.99	-0.00232	PASS
					20	11.86	0.00691	PASS
					30	-3.43	-0.002	PASS
					40	2.22	0.00129	PASS
					50	-3.81	-0.00222	PASS
			MCH	VN	-30	3.28	0.00189	PASS
					-20	-11.9	-0.00687	PASS
					-10	4.12	0.00238	PASS
					0	-4.46	-0.00257	PASS
					10	-0.59	-0.00034	PASS
					20	-4.45	-0.00257	PASS
					30	-5.98	-0.00345	PASS
					40	3.86	0.00223	PASS
					50	4.41	0.00255	PASS
			HCH	VN	-30	-0.9	-0.00052	PASS
					-20	0.23	0.00013	PASS
					-10	1.16	0.00066	PASS
					0	-1.46	-0.00084	PASS
					10	-0.47	-0.00027	PASS
					20	-11.67	-0.00668	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					30	7.75	0.00443	PASS
					40	-1.06	-0.00061	PASS
					50	-10.11	-0.00579	PASS
		3	LCH	VN	-30	-1.27	-0.00074	PASS
					-20	2.09	0.00122	PASS
					-10	5.49	0.00319	PASS
					0	1.32	0.00077	PASS
					10	0.67	0.00039	PASS
					20	3.95	0.0023	PASS
					30	2.8	0.00163	PASS
					40	-2.43	-0.00141	PASS
					50	-1.29	-0.00075	PASS
			MCH	VN	-30	-5.61	-0.00324	PASS
					-20	-1.56	-0.0009	PASS
					-10	-4.38	-0.00253	PASS
					0	-4.12	-0.00238	PASS
					10	3.63	0.0021	PASS
					20	5.21	0.00301	PASS
					30	-1.57	-0.00091	PASS
					40	12.19	0.00704	PASS
					50	6.94	0.00401	PASS
			HCH	VN	-30	-10.23	-0.00586	PASS
					-20	-0.51	-0.00029	PASS
					-10	2.07	0.00119	PASS
					0	9.46	0.00542	PASS
					10	8.67	0.00497	PASS
					20	5.44	0.00312	PASS
					30	4.31	0.00247	PASS
					40	4.26	0.00244	PASS
					50	-7.87	-0.00451	PASS
		5	LCH	VN	-30	-2.5	-0.00146	PASS
					-20	-0.83	-0.00049	PASS
					-10	-4.28	-0.0025	PASS
					0	0.94	0.00054	PASS
					10	-0.1	-0.00006	PASS
					20	-3.53	-0.00204	PASS
					30	-2.85	-0.00162	PASS
					40	-3.13	-0.00178	PASS
					50	-2.9	-0.00165	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			MCH	VN	-30	-2.78	-0.00162	PASS
					-20	-2.75	-0.00161	PASS
					-10	4.35	0.00254	PASS
					0	-3.15	-0.00182	PASS
					10	-0.62	-0.00036	PASS
					20	3.16	0.00182	PASS
					30	2.99	0.00171	PASS
					40	2.2	0.00125	PASS
					50	4.89	0.00279	PASS
			HCH	VN	-30	-0.37	-0.00022	PASS
					-20	0.96	0.00056	PASS
					-10	-0.14	-0.00008	PASS
					0	0.77	0.00044	PASS
					10	3.73	0.00215	PASS
					20	-2.42	-0.0014	PASS
					30	-3.13	-0.00179	PASS
					40	0.62	0.00035	PASS
					50	-0.51	-0.00029	PASS
		10	LCH	VN	-30	-1.8	-0.00105	PASS
					-20	4.39	0.00256	PASS
					-10	0.57	0.00033	PASS
					0	0.03	0.00002	PASS
					10	-0.84	-0.00048	PASS
					20	-1.2	-0.00069	PASS
					30	-2.16	-0.00123	PASS
					40	-1.6	-0.00091	PASS
					50	1.04	0.00059	PASS
			MCH	VN	-30	-1.06	-0.00062	PASS
					-20	0.14	0.00008	PASS
					-10	-0.23	-0.00013	PASS
					0	-0.2	-0.00012	PASS
					10	-0.21	-0.00012	PASS
					20	0.64	0.00037	PASS
					30	1.66	0.00095	PASS
					40	2.07	0.00118	PASS
					50	1.42	0.00081	PASS
			HCH	VN	-30	-1.12	-0.00065	PASS
					-20	-2.86	-0.00166	PASS
					-10	-1.76	-0.00102	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					0	-1.75	-0.00101	PASS
					10	-1.4	-0.00081	PASS
					20	3.42	0.00197	PASS
					30	1.4	0.0008	PASS
					40	6.22	0.00356	PASS
					50	-1.49	-0.00085	PASS
		15	LCH	VN	-30	-3.02	-0.00177	PASS
					-20	6.05	0.00354	PASS
					-10	2.79	0.00163	PASS
					0	-1.13	-0.00065	PASS
					10	4.63	0.00267	PASS
					20	-2.12	-0.00122	PASS
					30	-0.47	-0.00027	PASS
					40	1.17	0.00067	PASS
					50	1.69	0.00096	PASS
			MCH	VN	-30	0.41	0.00024	PASS
					-20	3.65	0.00213	PASS
					-10	-1.27	-0.00074	PASS
					0	2.33	0.00134	PASS
					10	0.1	0.00006	PASS
					20	1.19	0.00069	PASS
					30	0.63	0.00036	PASS
					40	0.07	0.00004	PASS
					50	2.02	0.00115	PASS
			HCH	VN	-30	-3.4	-0.00199	PASS
					-20	-1.66	-0.00097	PASS
					-10	-1.42	-0.00083	PASS
					0	-3	-0.00173	PASS
					10	-1.42	-0.00082	PASS
					20	3.06	0.00177	PASS
					30	-0.62	-0.00035	PASS
					40	2.7	0.00154	PASS
					50	-0.54	-0.00031	PASS
		20	LCH	VN	-30	-0.6	-0.00035	PASS
					-20	1.76	0.00103	PASS
					-10	-0.3	-0.00017	PASS
					0	2.72	0.00157	PASS
					10	-0.26	-0.00015	PASS
					20	2.59	0.00149	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					30	0.86	0.00049	PASS
					40	5.71	0.00326	PASS
					50	-3.4	-0.00194	PASS
			MCH	VN	-30	1	0.00058	PASS
					-20	-0.97	-0.00056	PASS
					-10	-1.1	-0.00064	PASS
					0	1.29	0.00074	PASS
					10	2.22	0.00128	PASS
					20	-0.46	-0.00027	PASS
					30	-1.12	-0.00064	PASS
					40	-1.44	-0.00082	PASS
					50	-1.6	-0.00092	PASS
			HCH	VN	-30	-1.42	-0.00083	PASS
					-20	-1.89	-0.0011	PASS
					-10	0.04	0.00002	PASS
					0	-0.43	-0.00025	PASS
					10	-0.8	-0.00046	PASS
					20	0.51	0.00029	PASS
					30	-1.57	-0.0009	PASS
					40	-0.97	-0.00056	PASS
					50	-3.48	-0.00199	PASS

END