



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 = BAND41

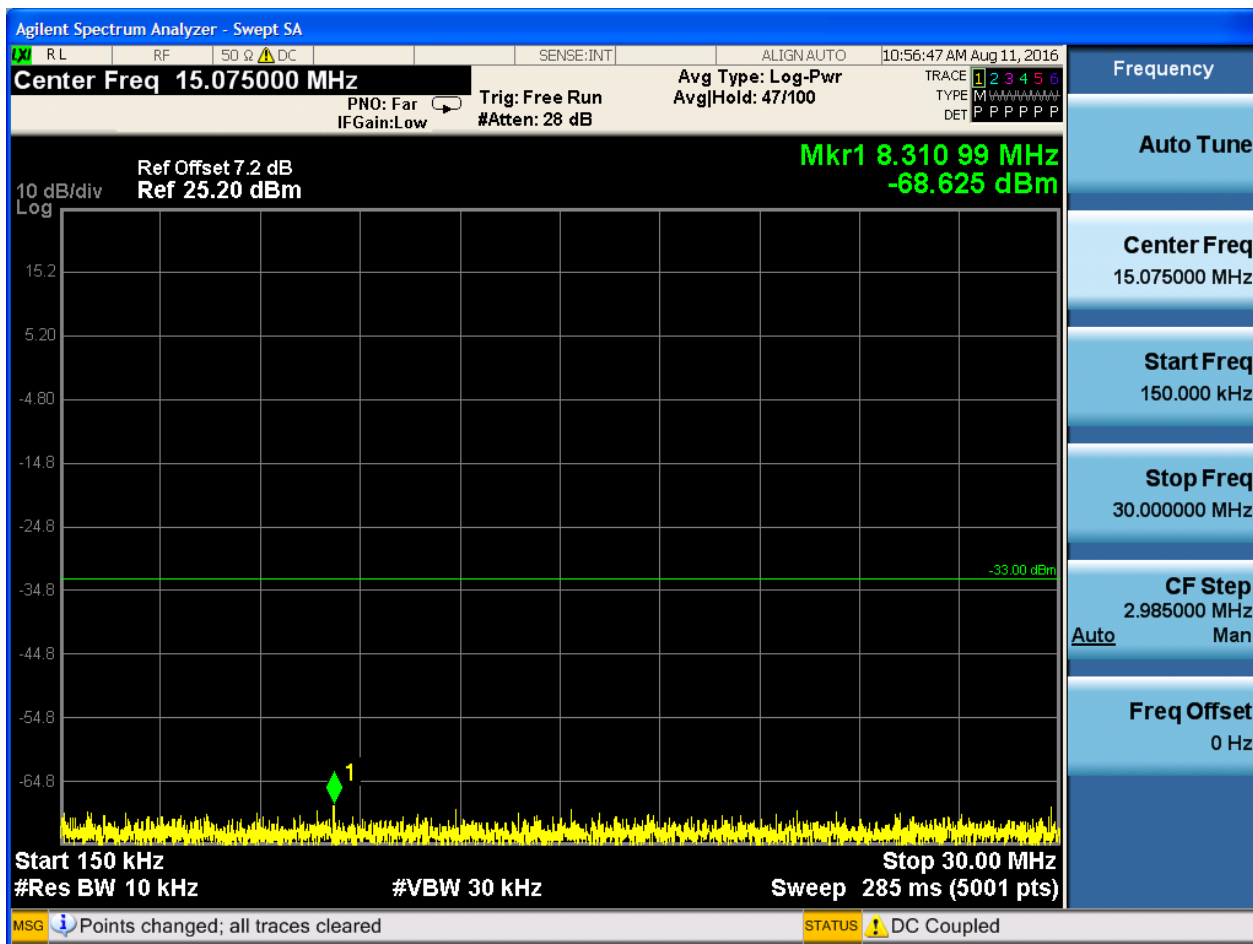
6.1.1.1 Test Mode = LTE/TM1

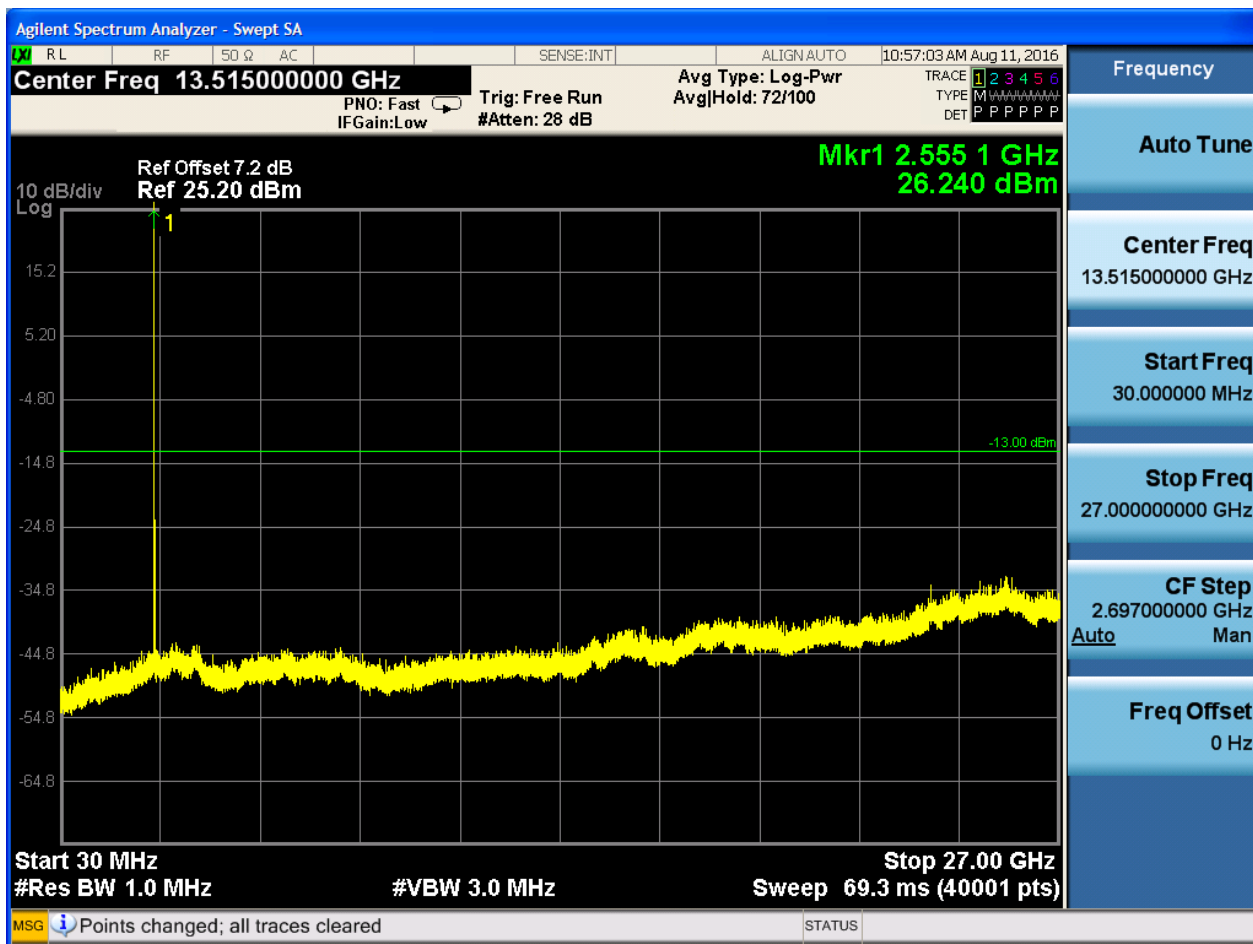
6.1.1.1.1 Test Bandwidth = 5

6.1.1.1.1.1 Test Channel = LCH

6.1.1.1.1.1.1 Test RB = RB1#0

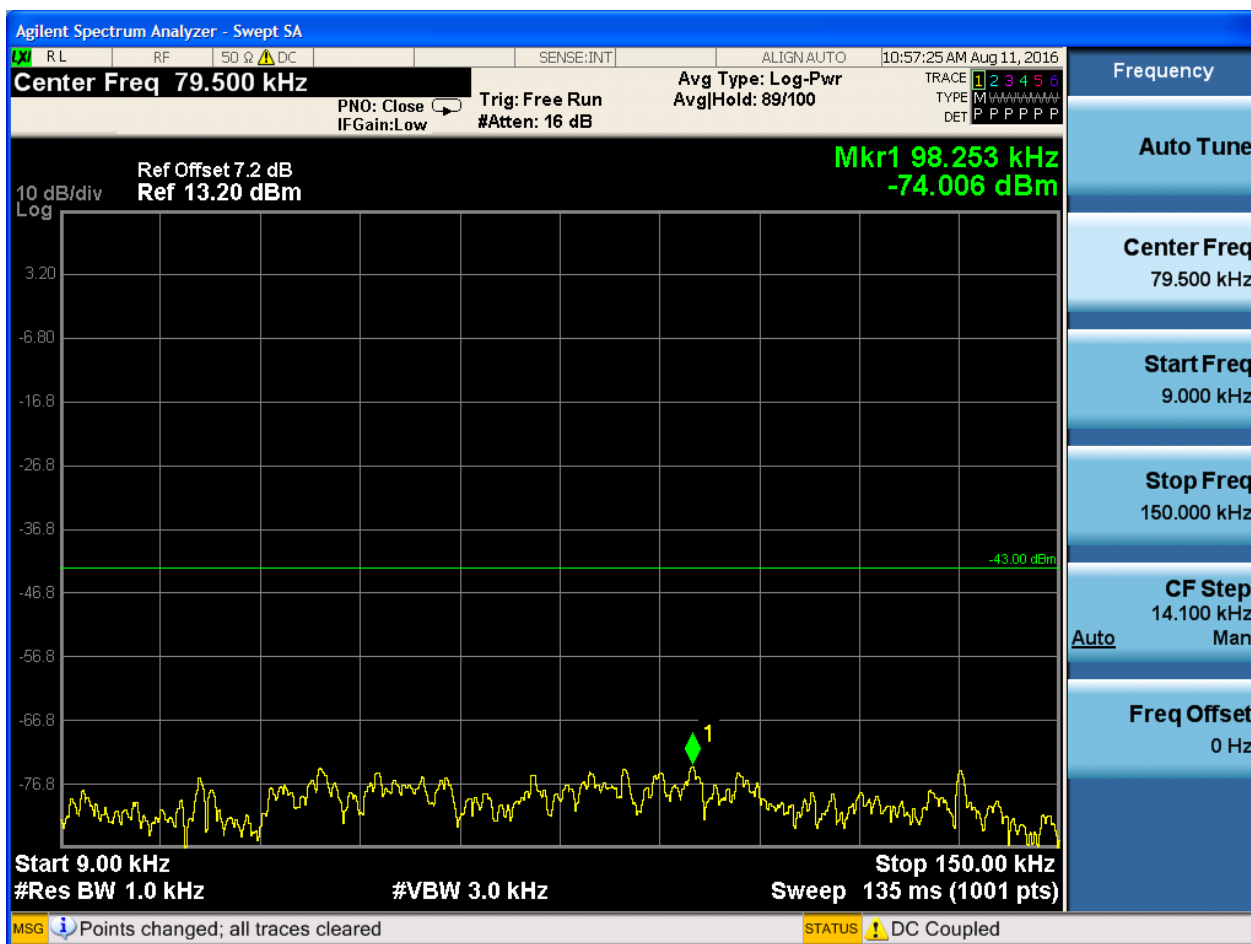


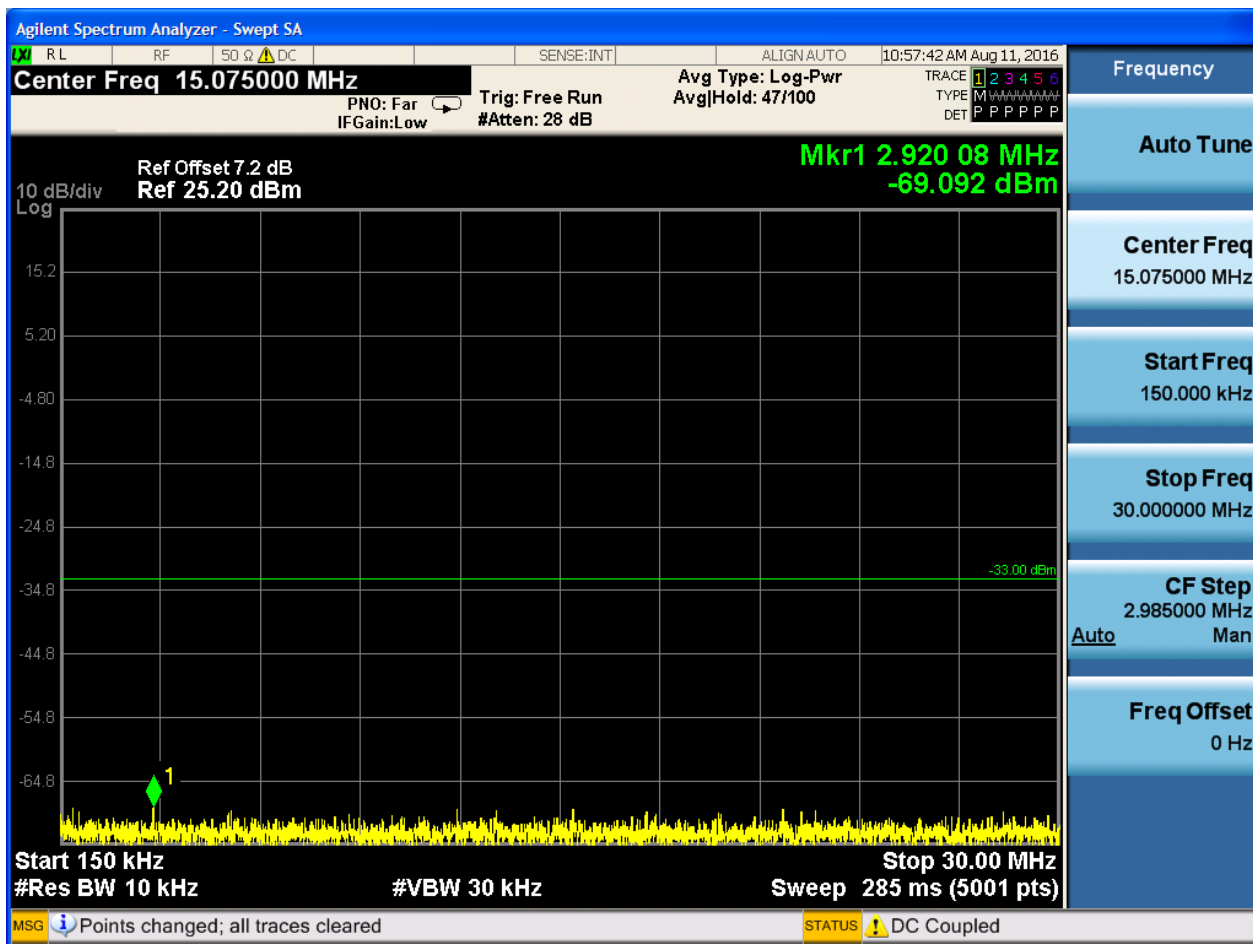


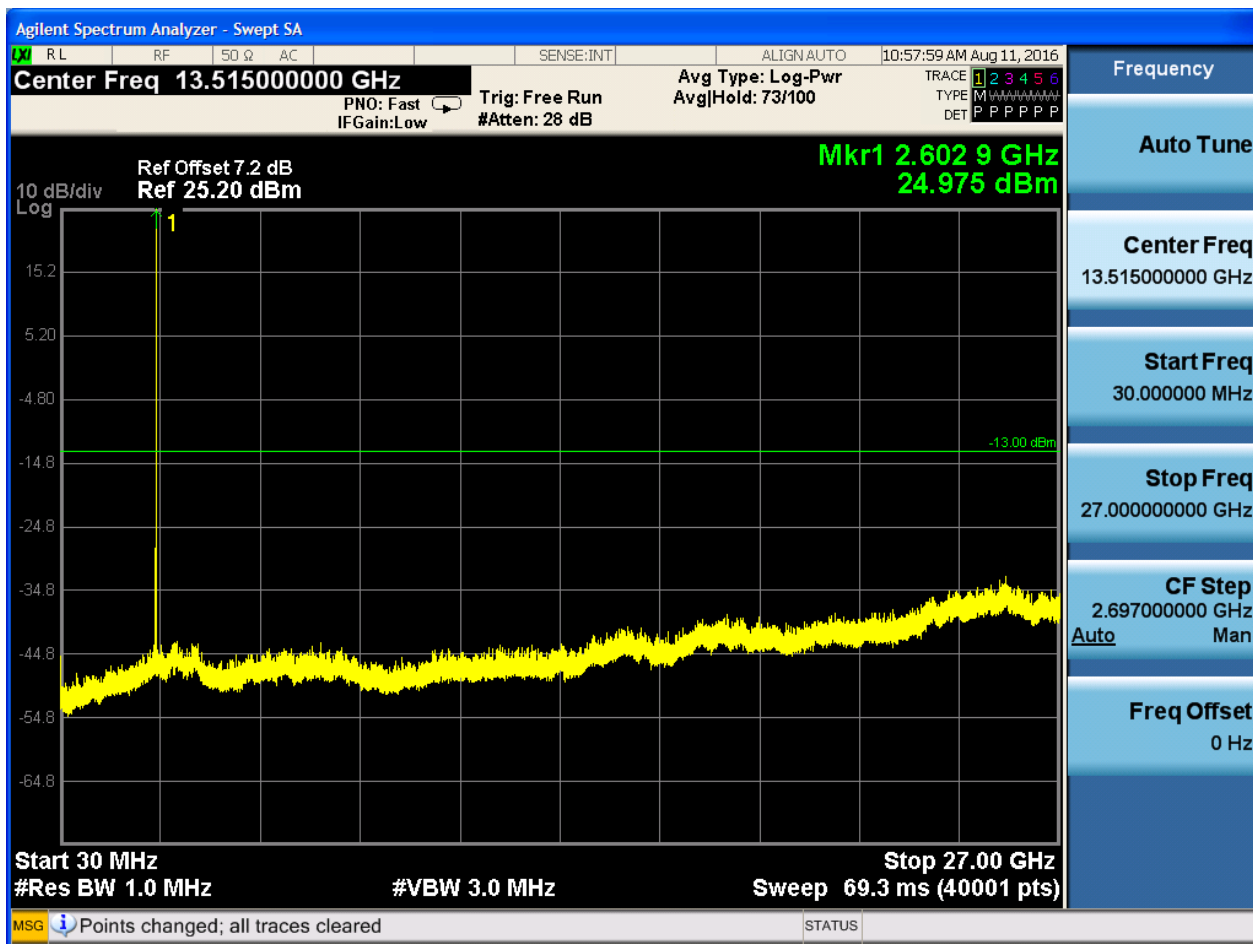


6.1.1.1.1.2 Test Channel = MCH

6.1.1.1.1.2.1 Test RB = RB1#0

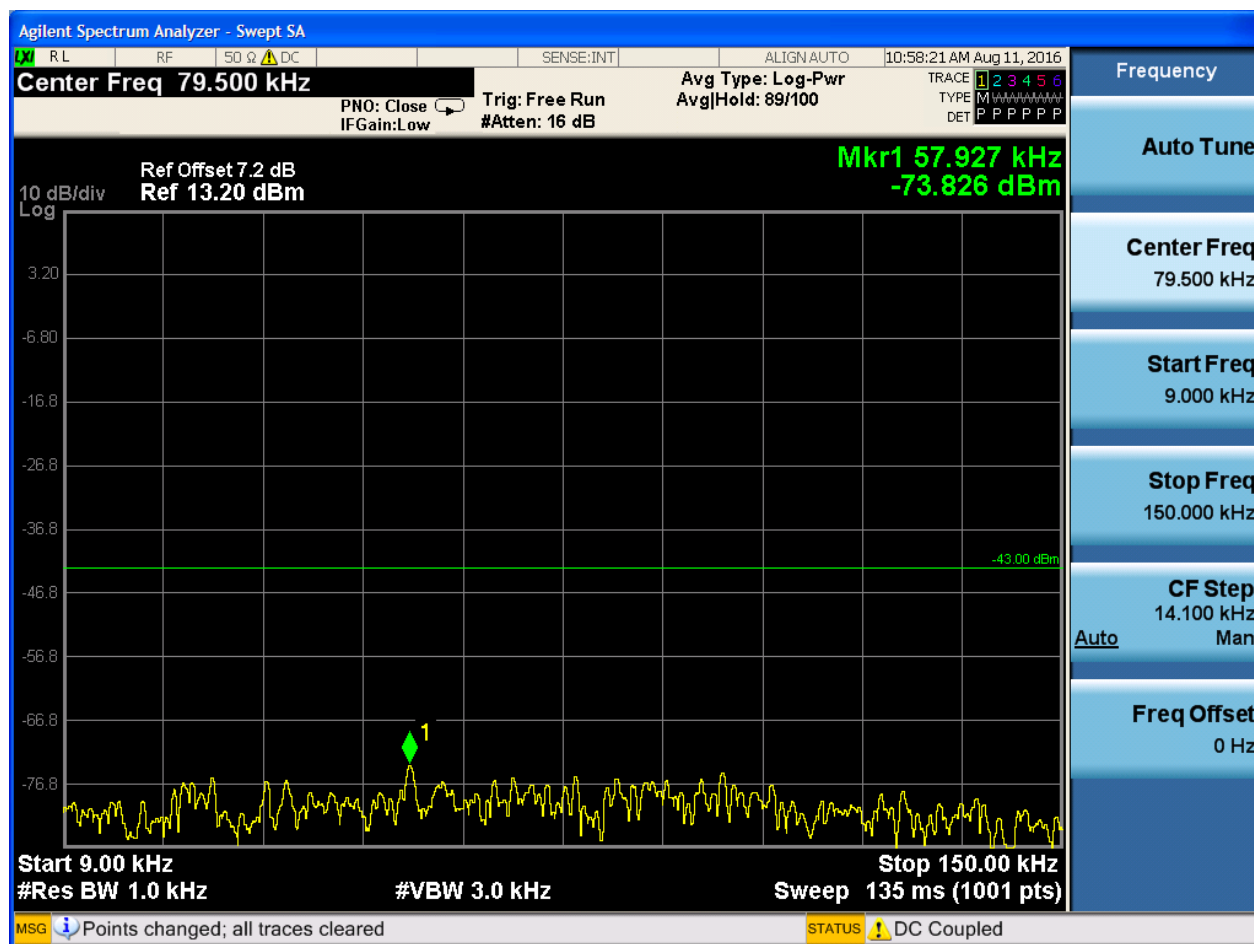




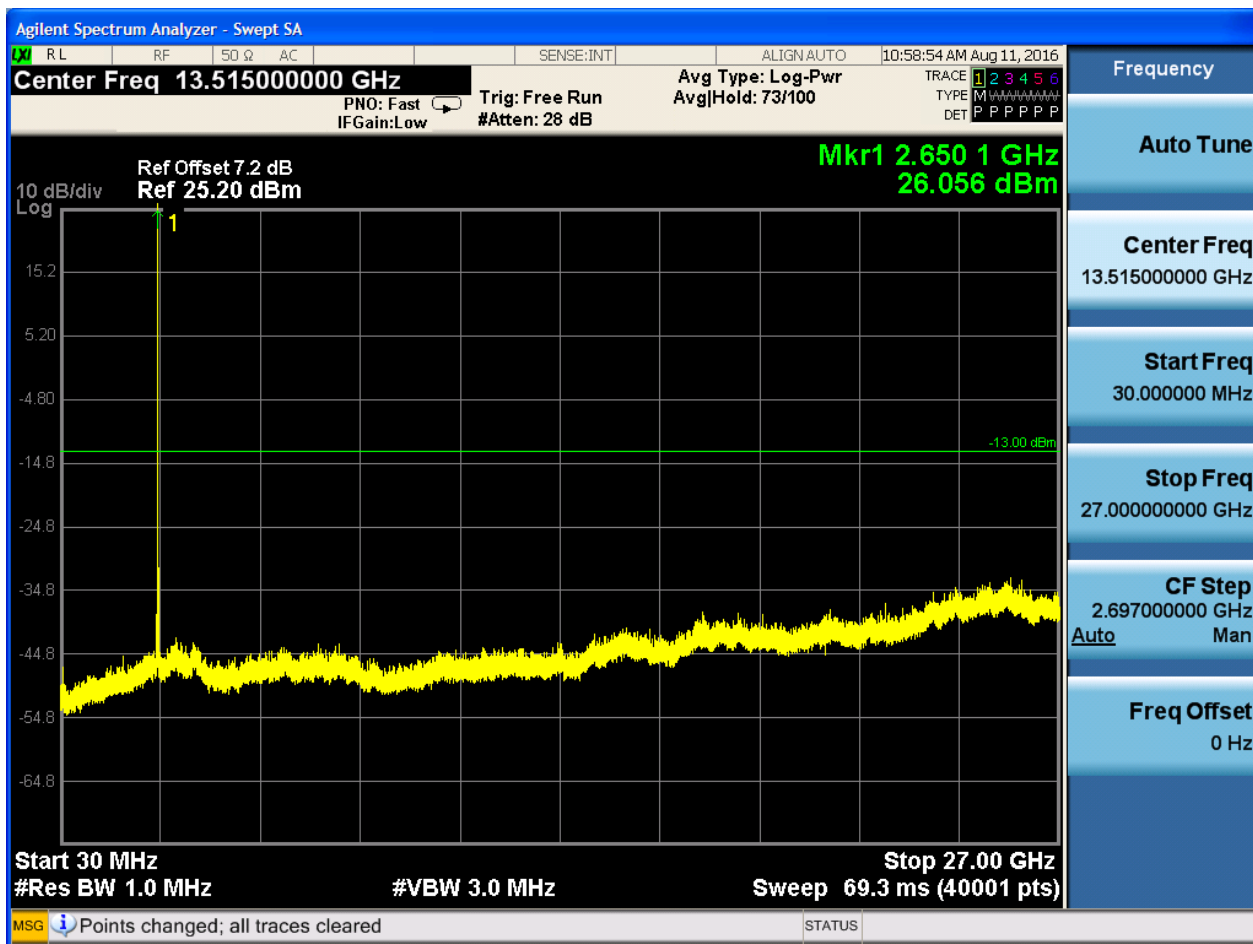


6.1.1.1.1.3 Test Channel = HCH

6.1.1.1.1.3.1 Test RB = RB1#0



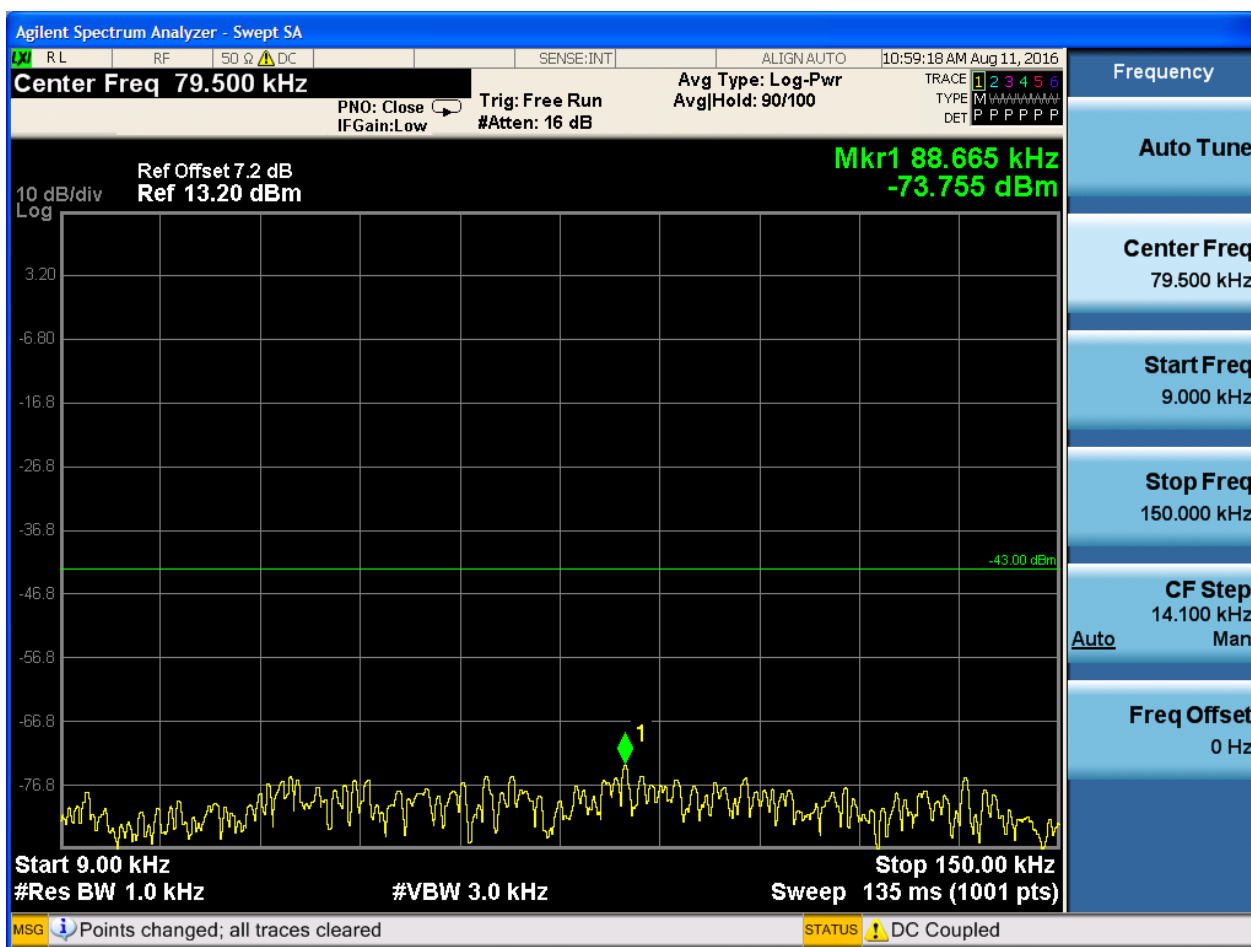


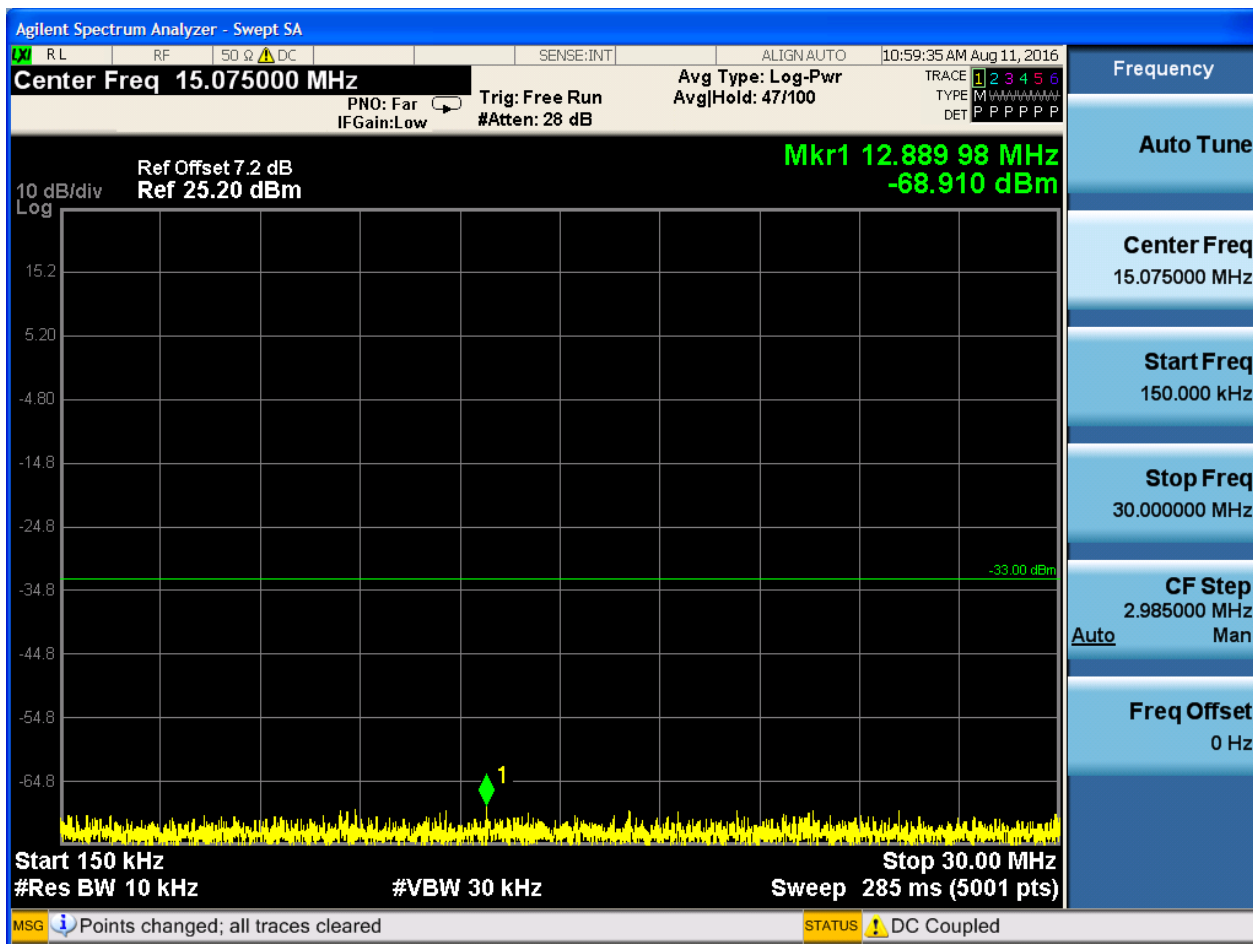


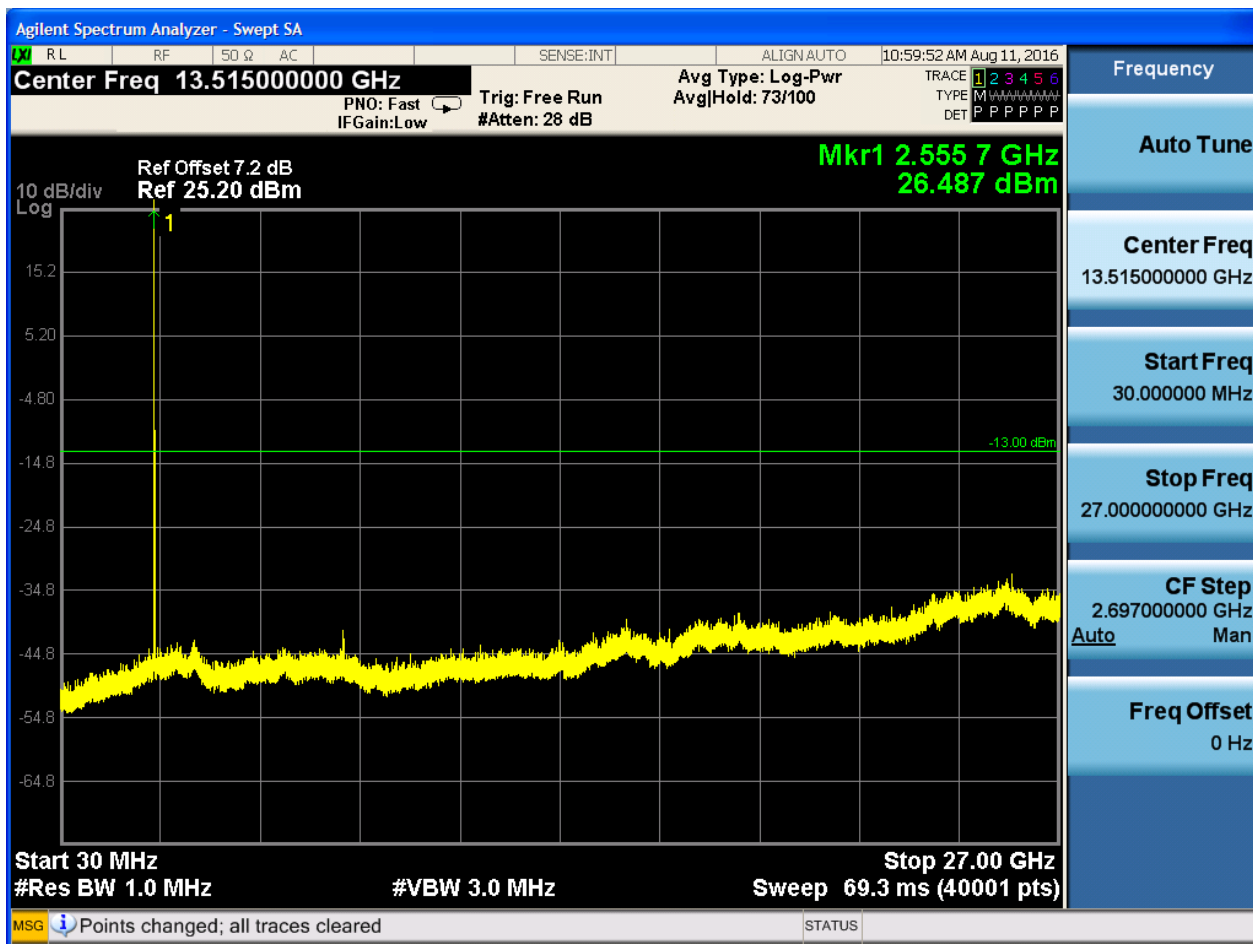
6.1.1.1.2 Test Bandwidth = 10

6.1.1.1.2.1 Test Channel = LCH

6.1.1.1.2.1.1 Test RB = RB1#0



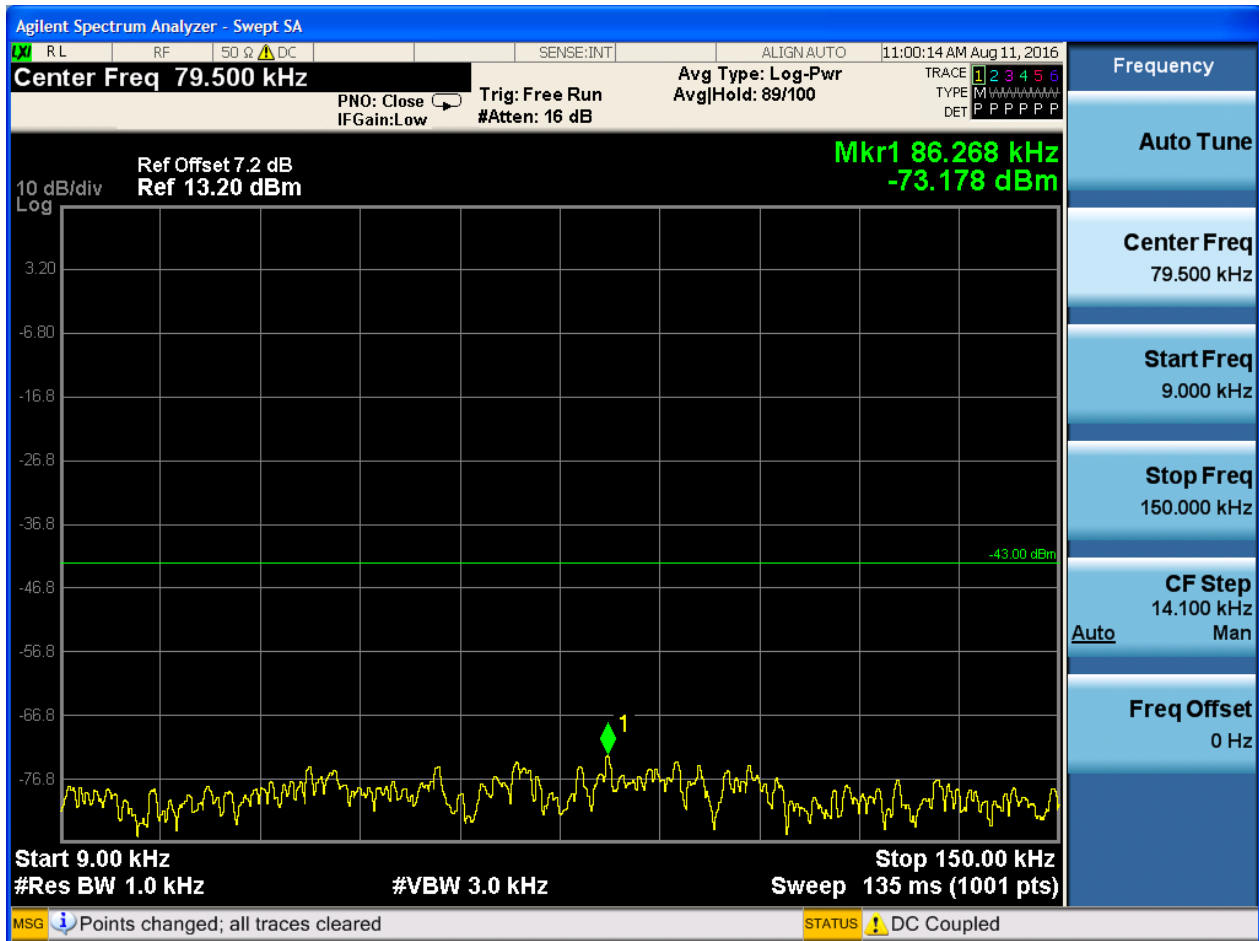


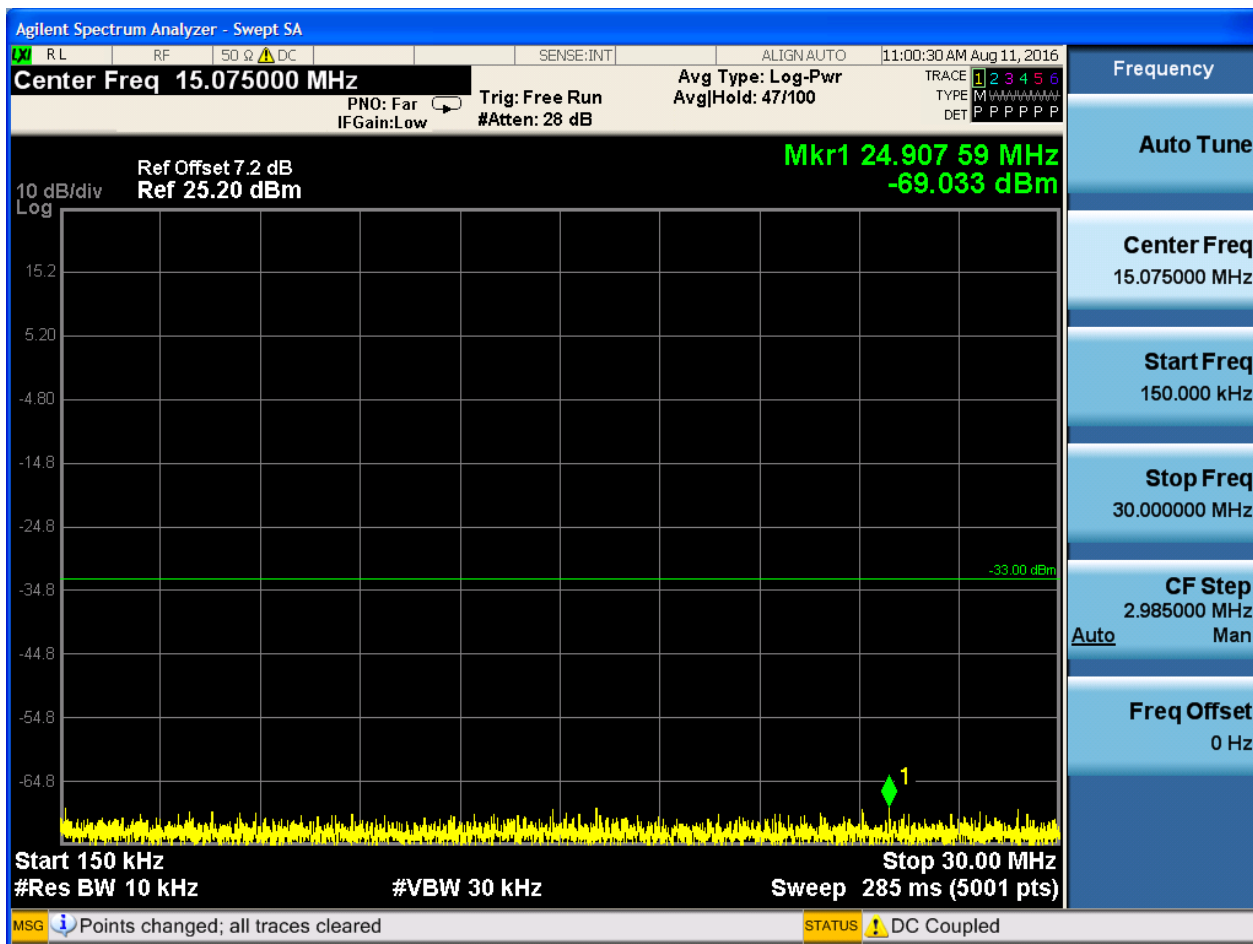


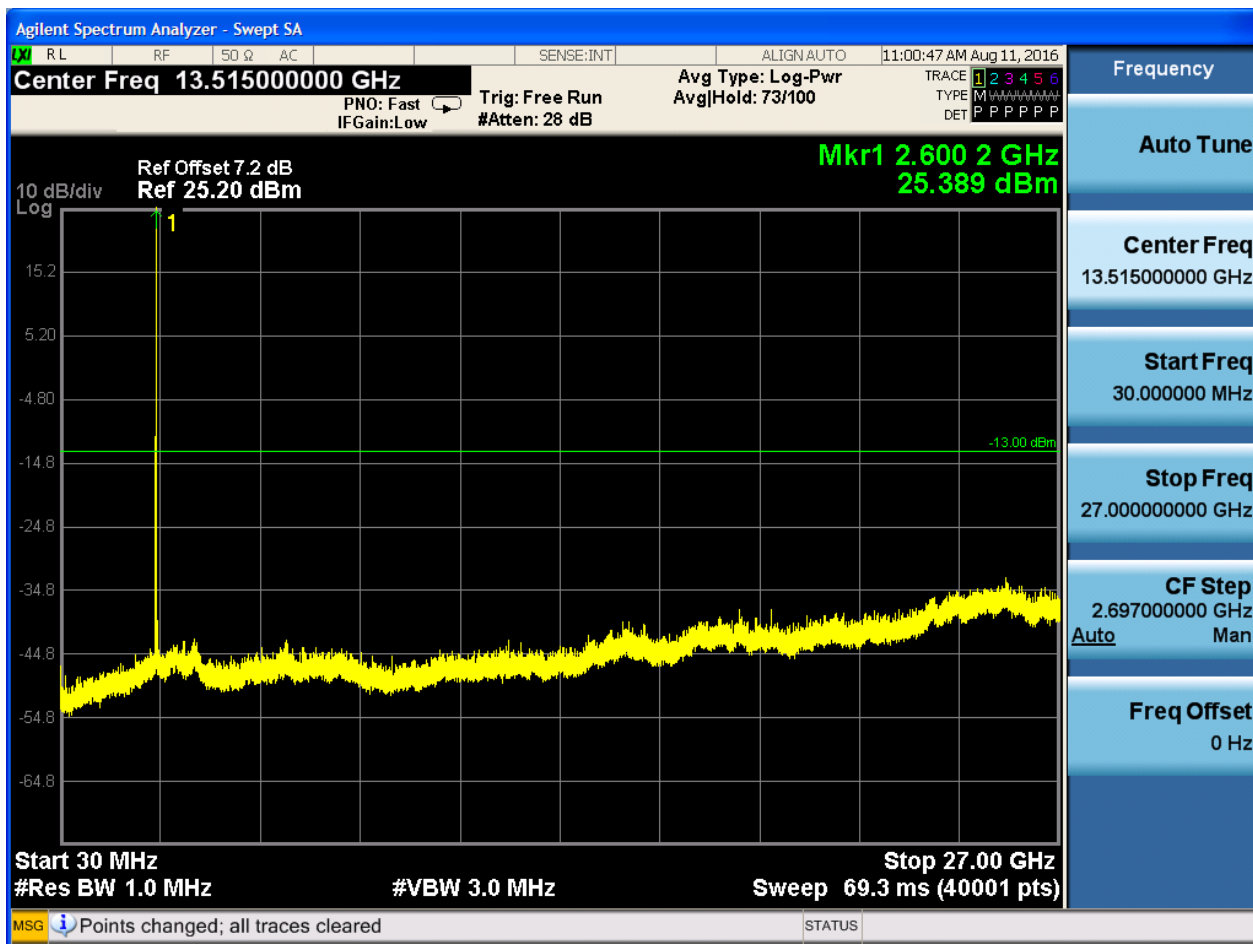


6.1.1.1.2.2 Test Channel = MCH

6.1.1.1.2.2.1 Test RB = RB1#0

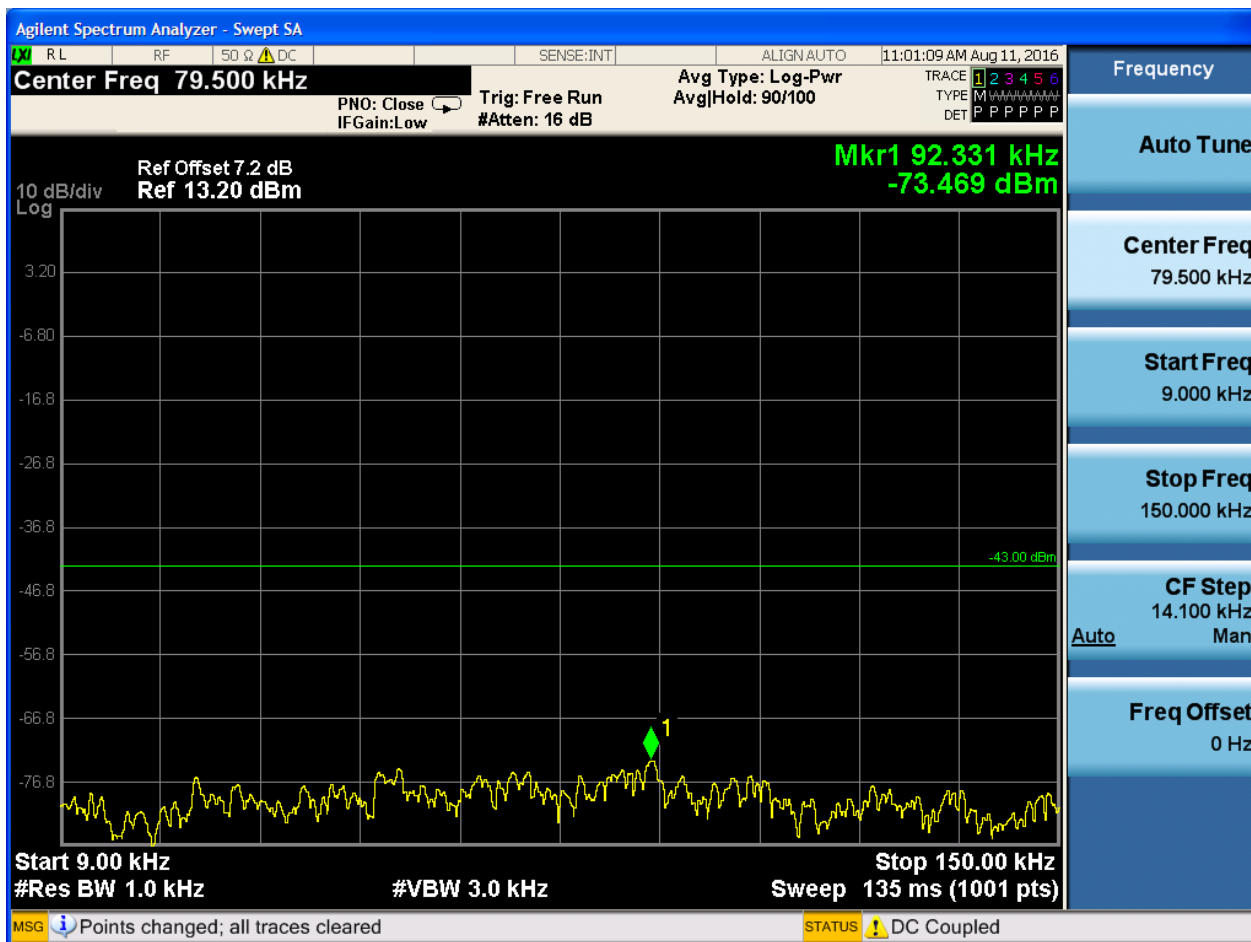


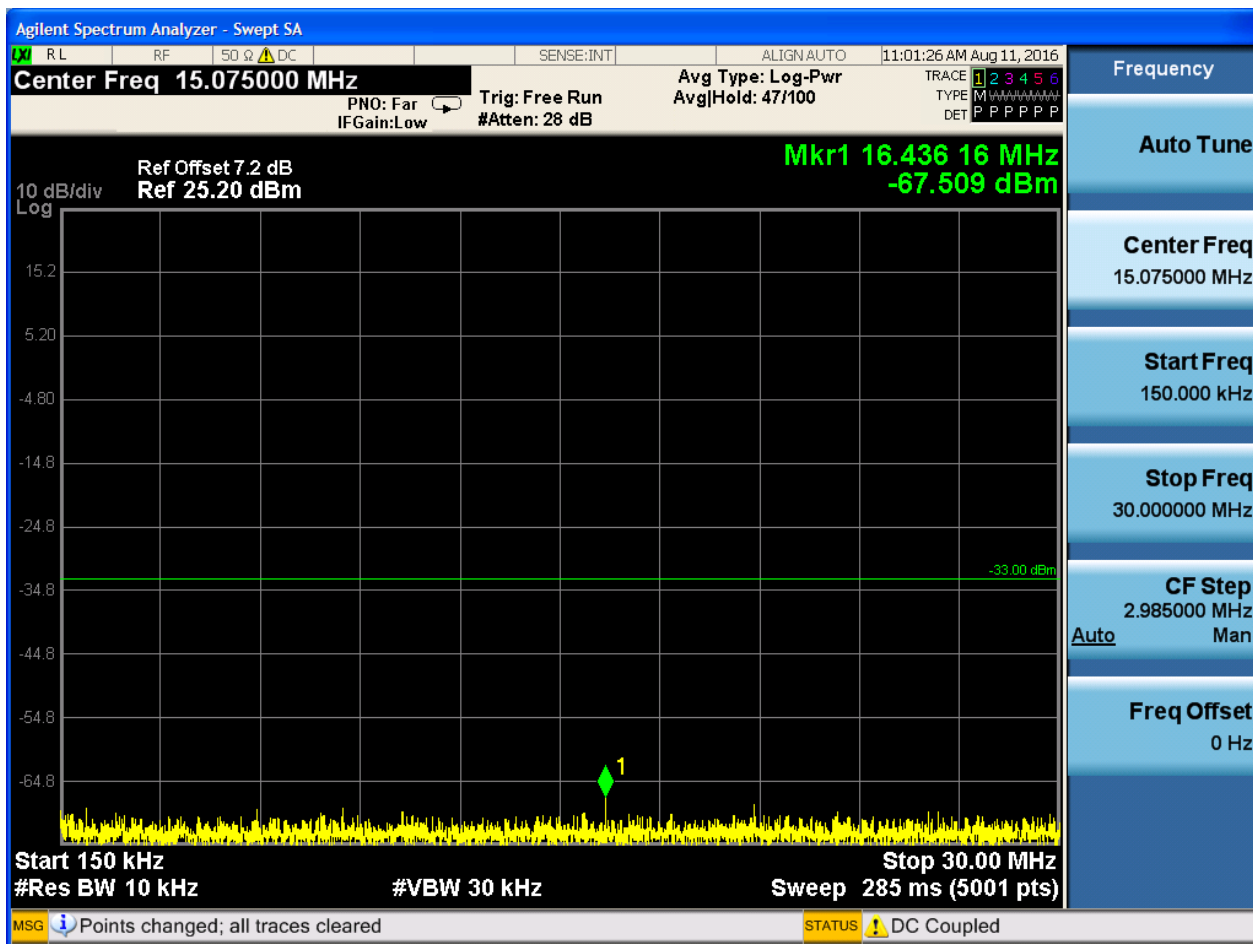


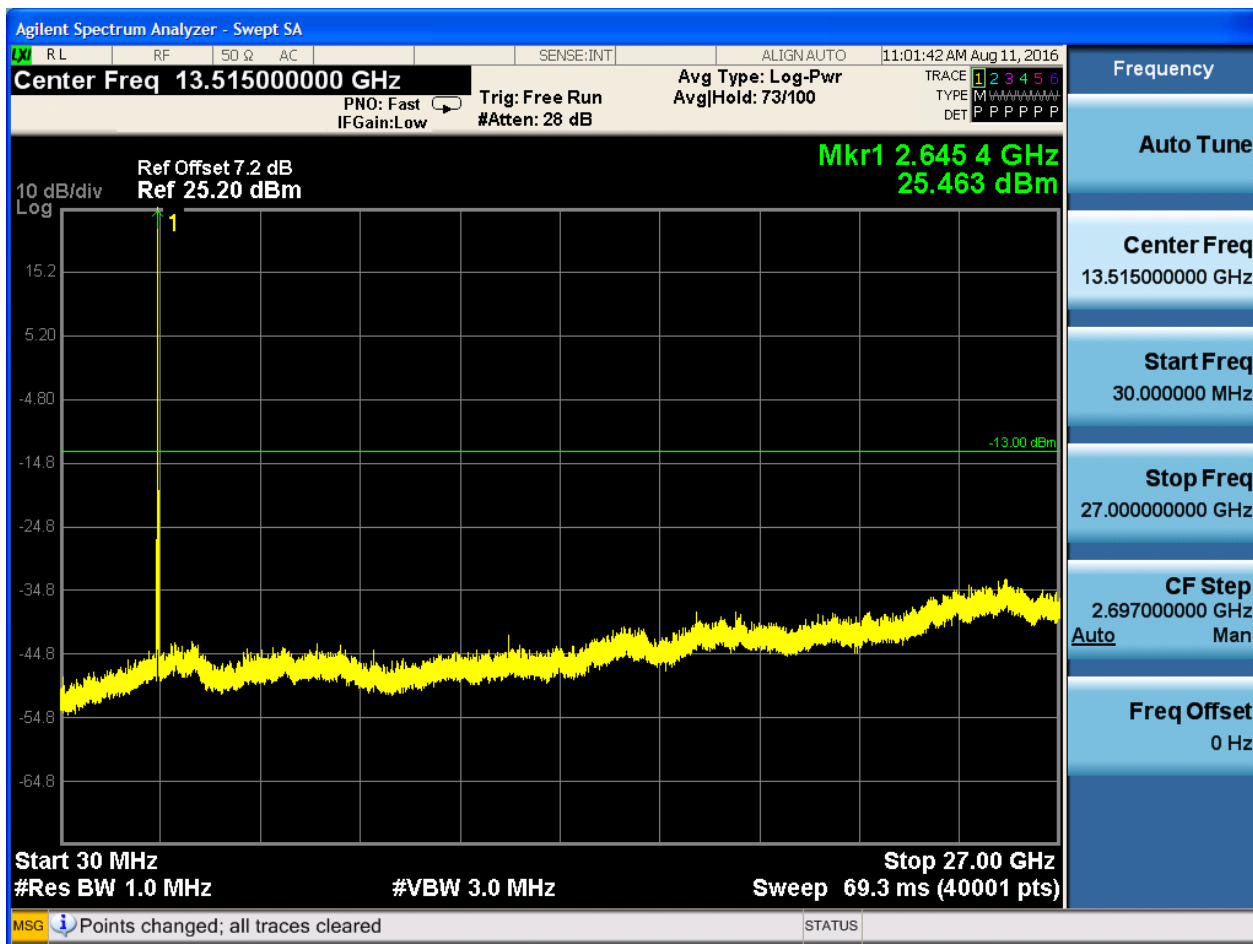


6.1.1.1.2.3 Test Channel = HCH

6.1.1.1.2.3.1 Test RB = RB1#0



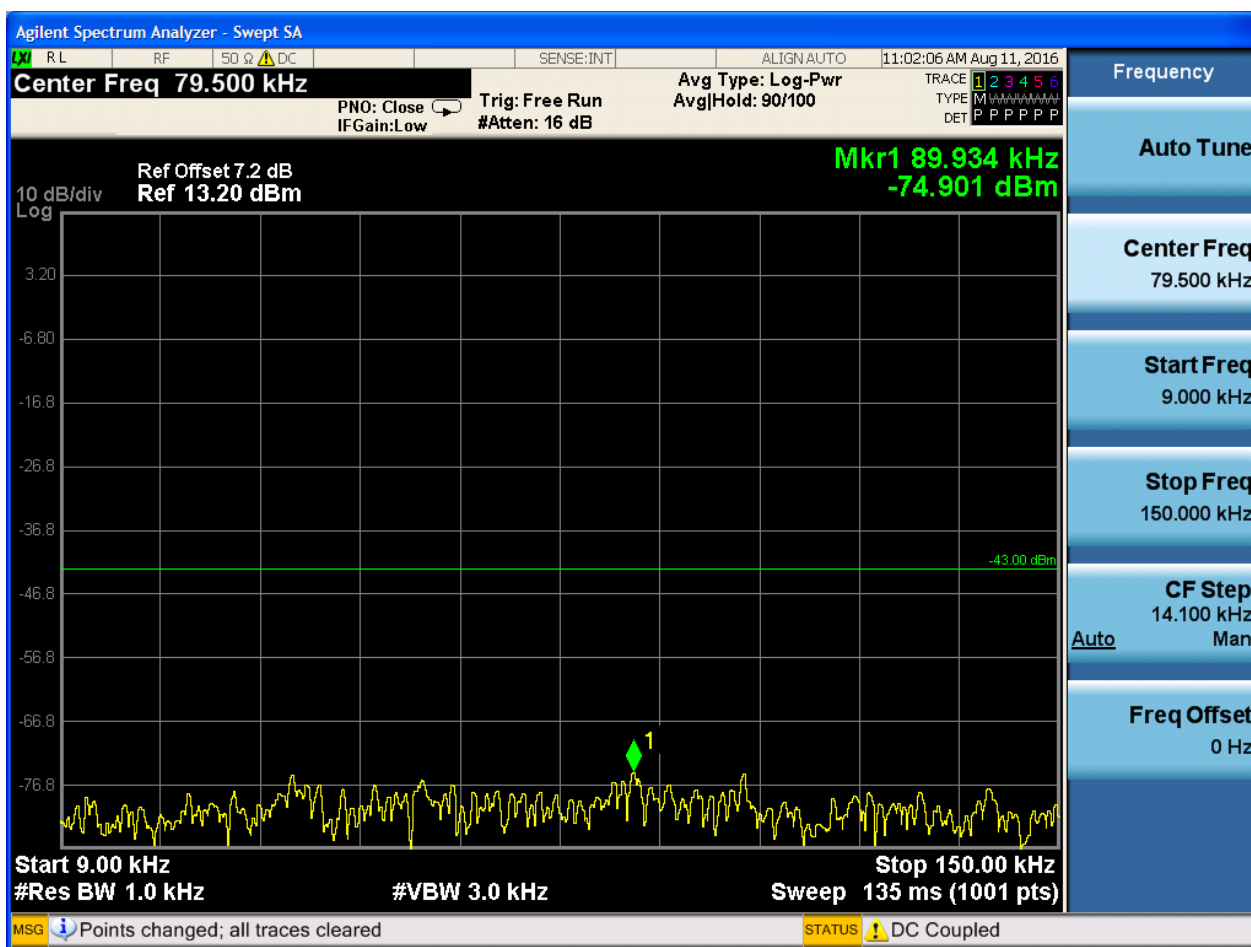


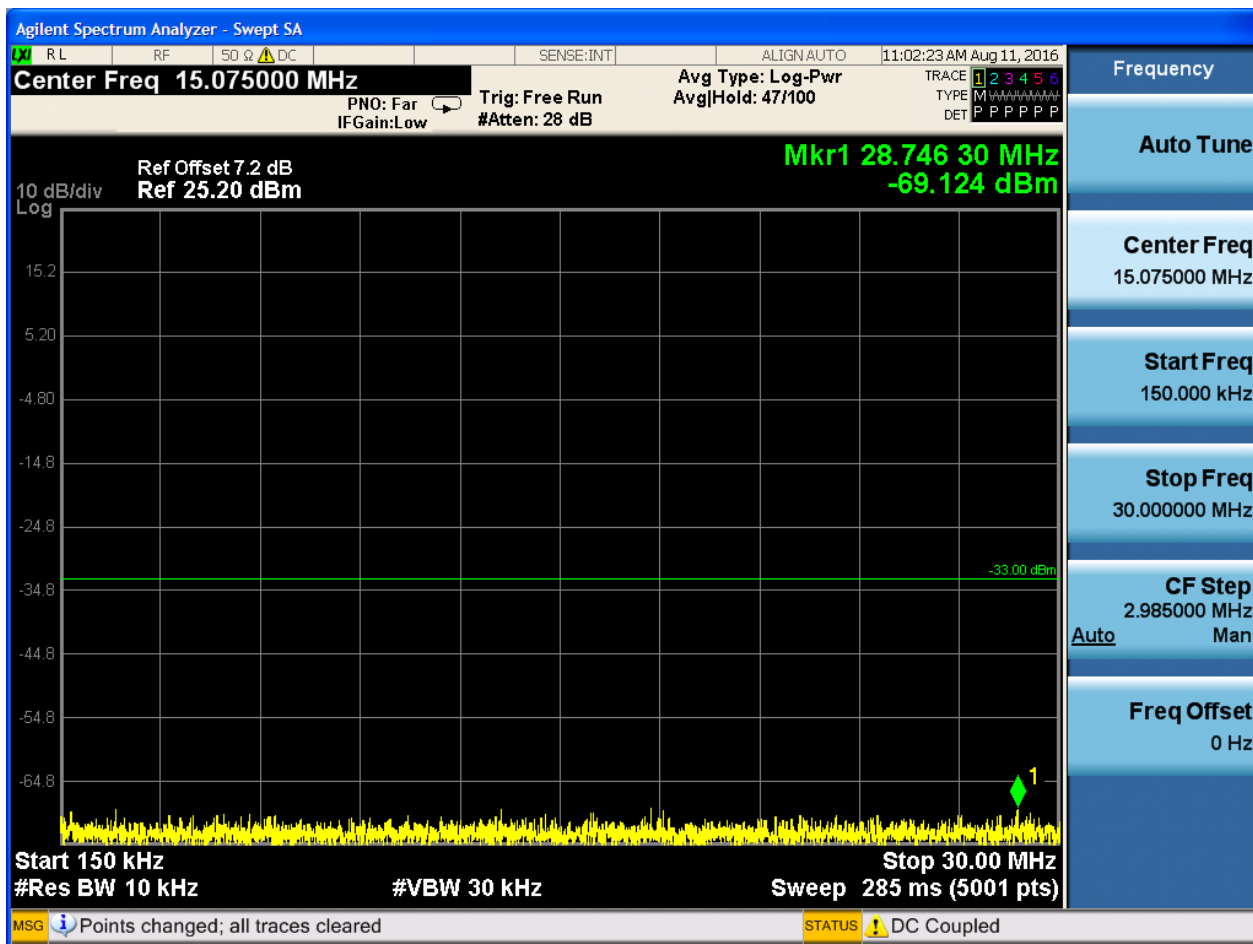


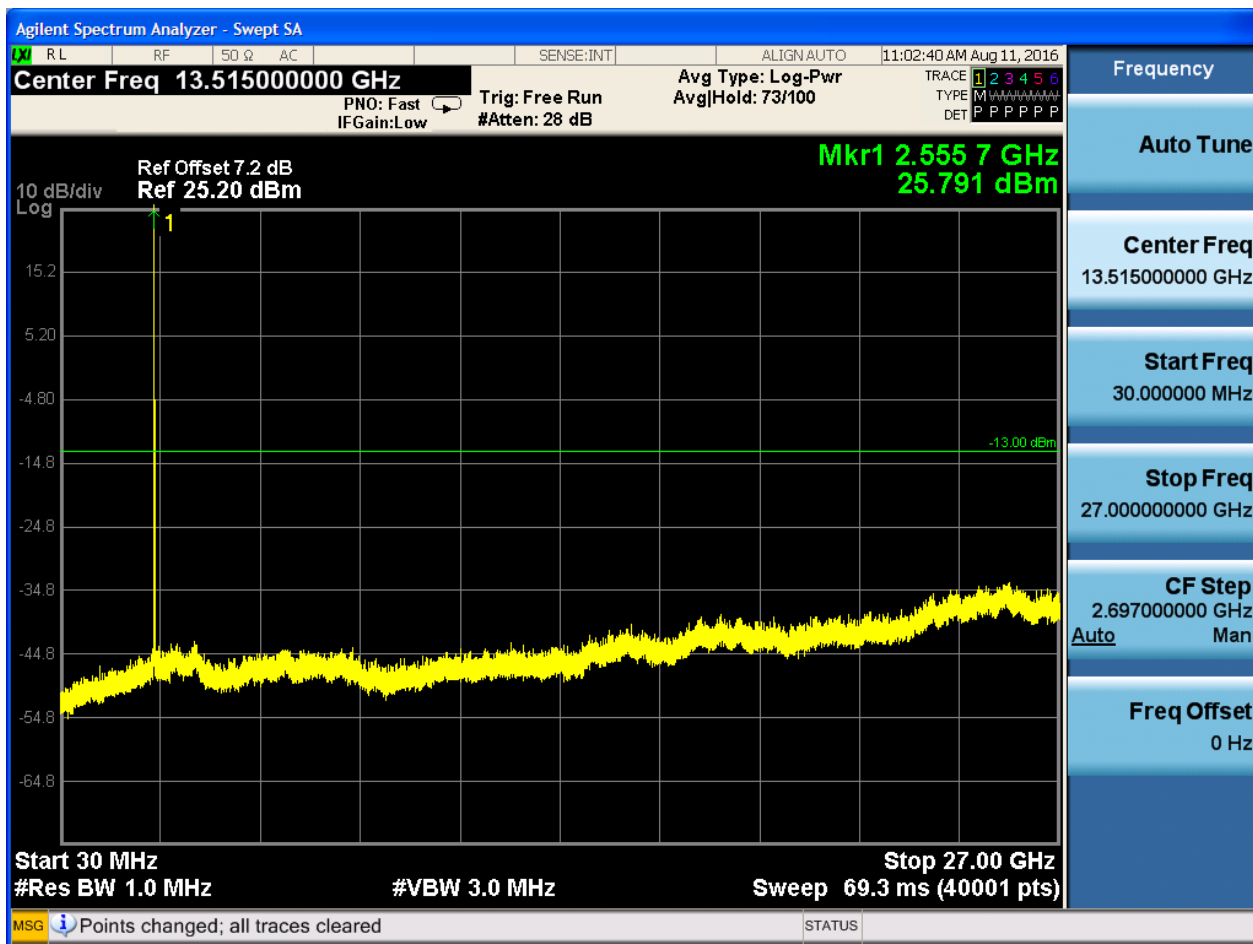
6.1.1.1.3 Test Bandwidth = 15

6.1.1.1.3.1 Test Channel = LCH

6.1.1.1.3.1.1 Test RB = RB1#0

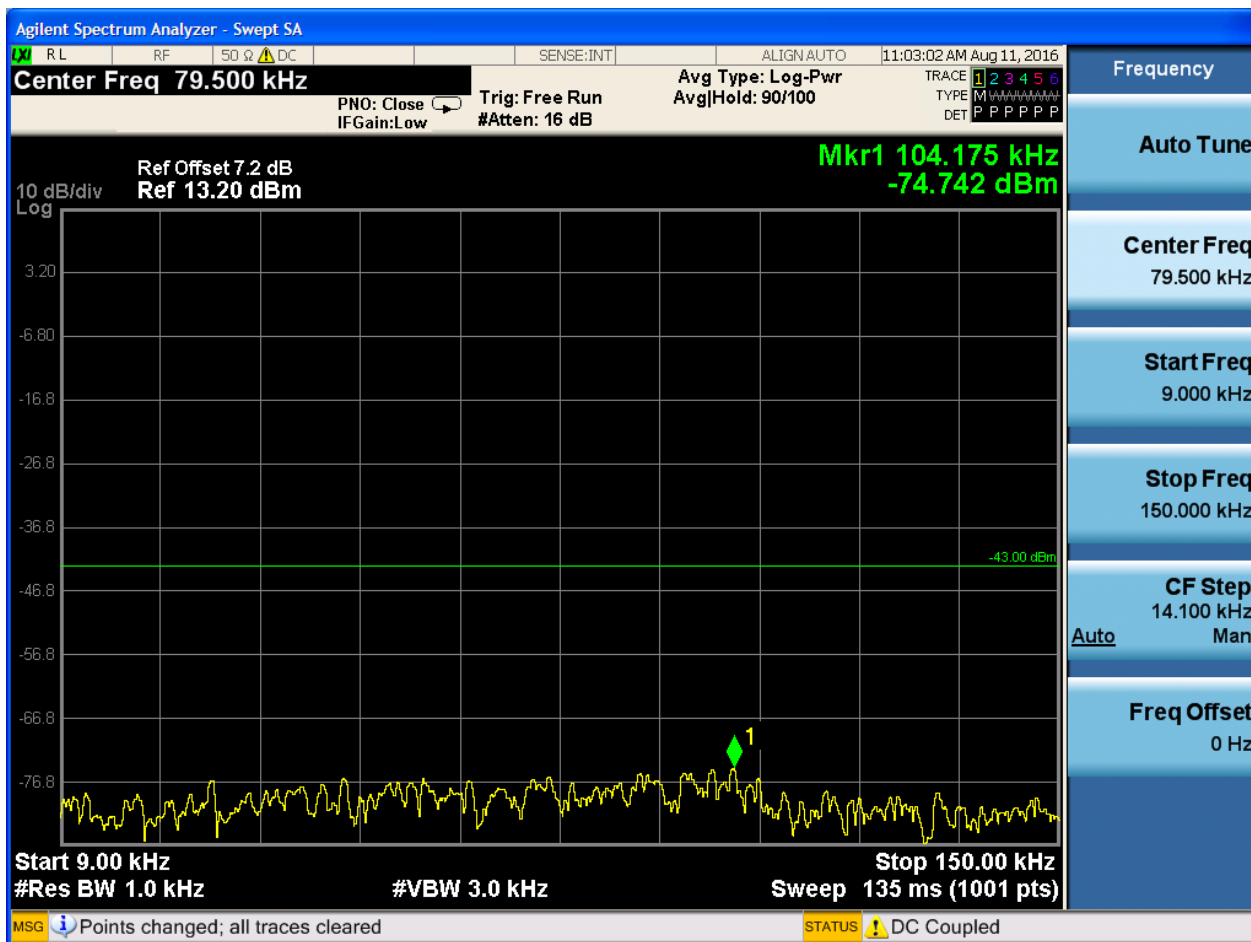


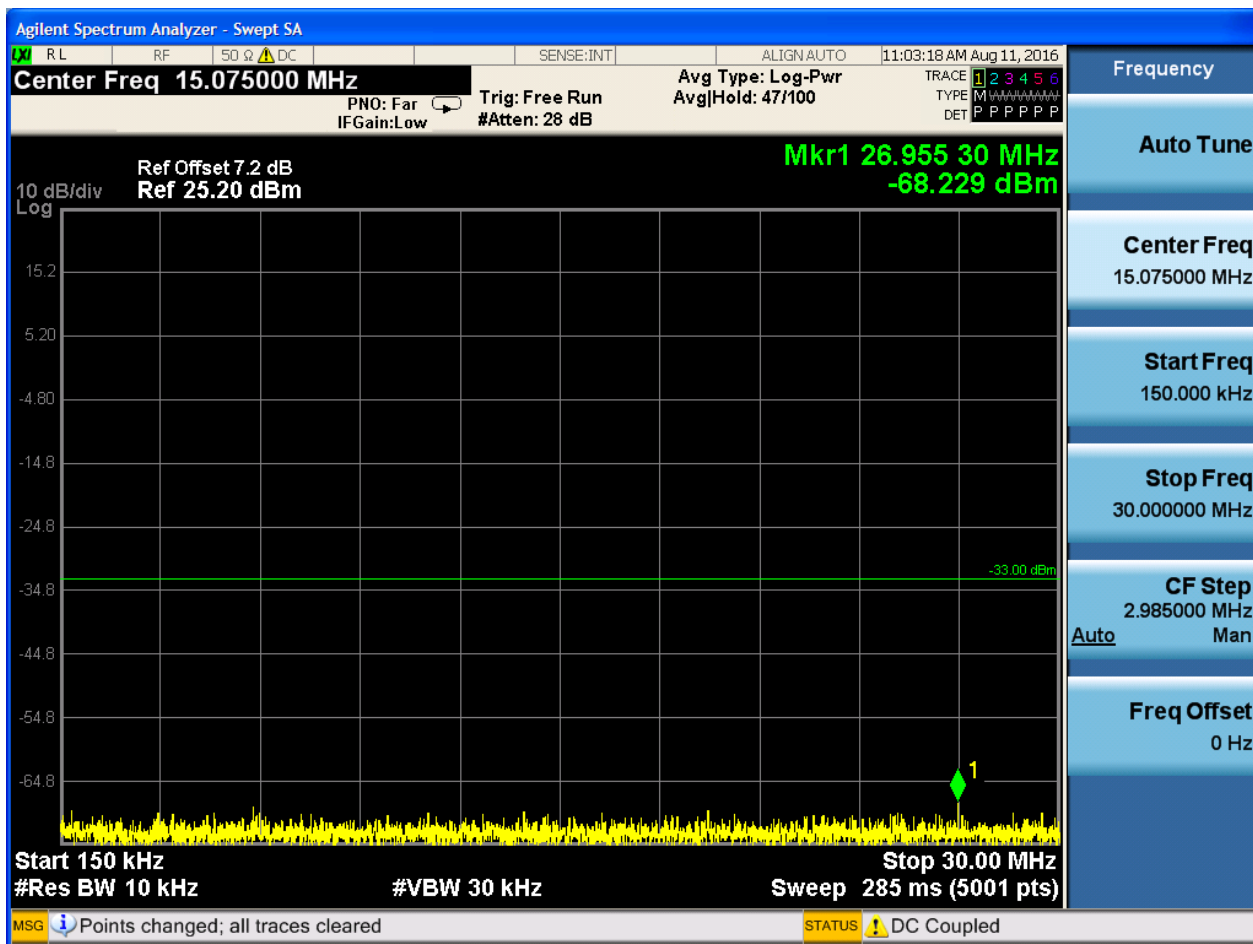


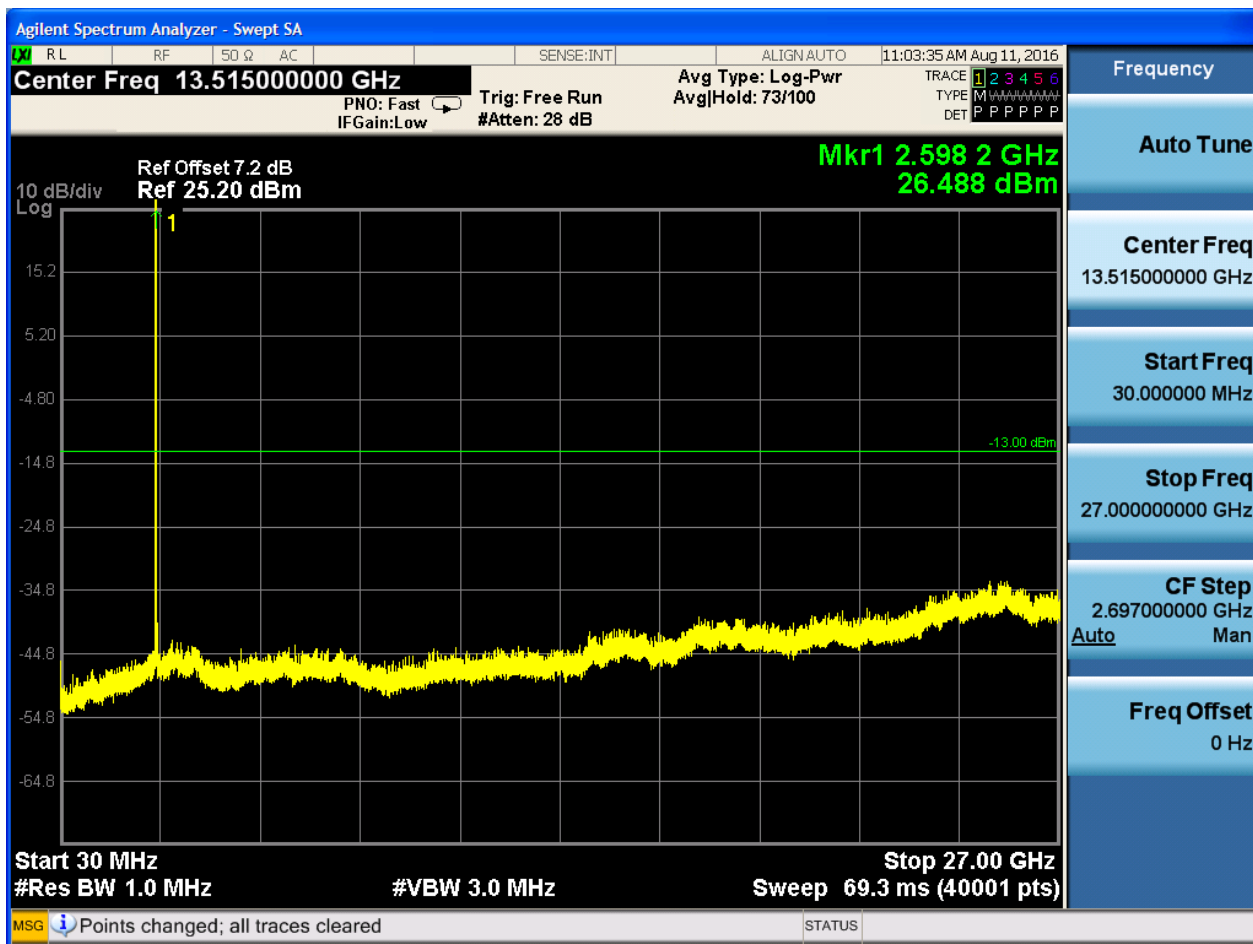


6.1.1.1.3.2 Test Channel = MCH

6.1.1.1.3.2.1 Test RB = RB1#0



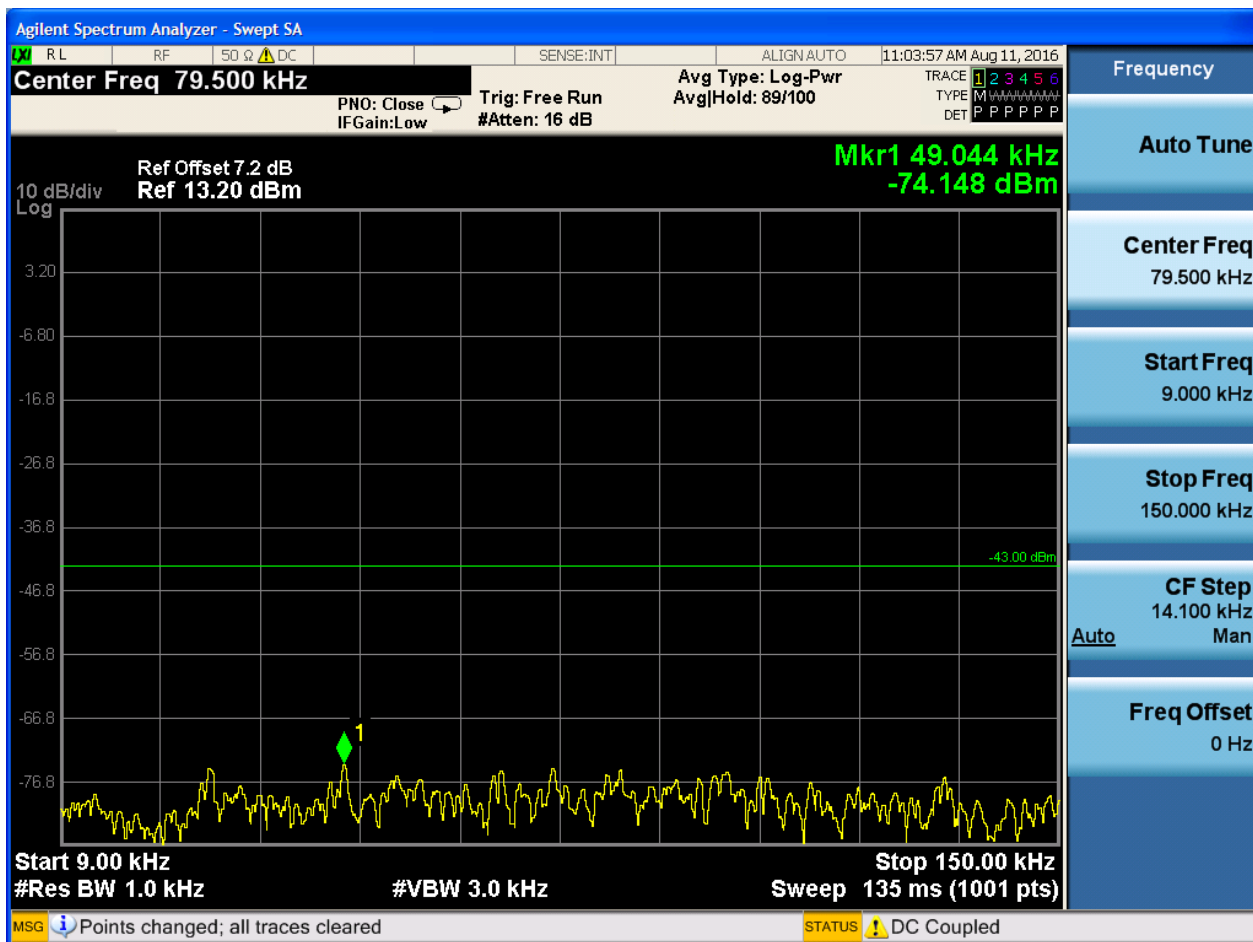




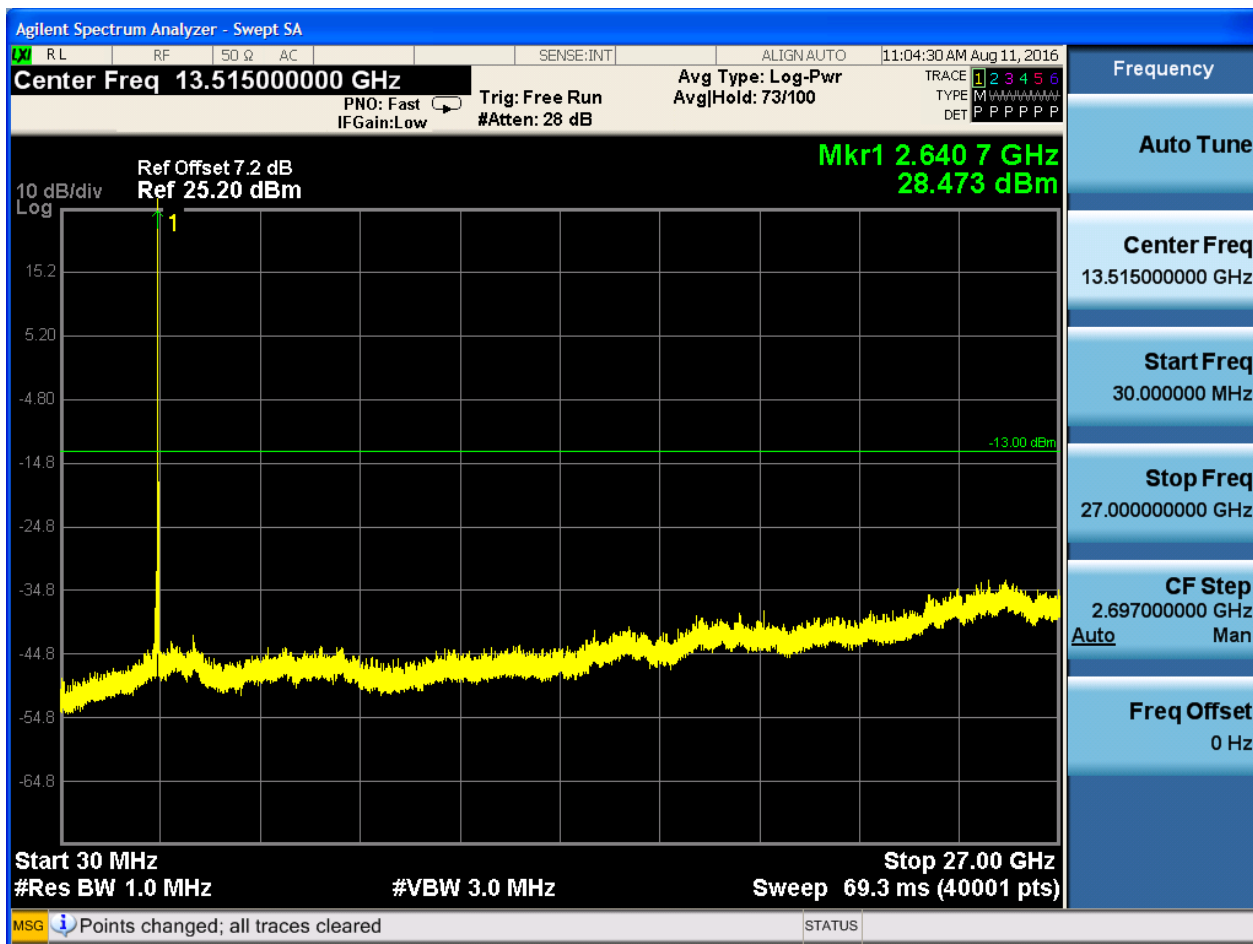


6.1.1.1.3.3 Test Channel = HCH

6.1.1.1.3.3.1 Test RB = RB1#0



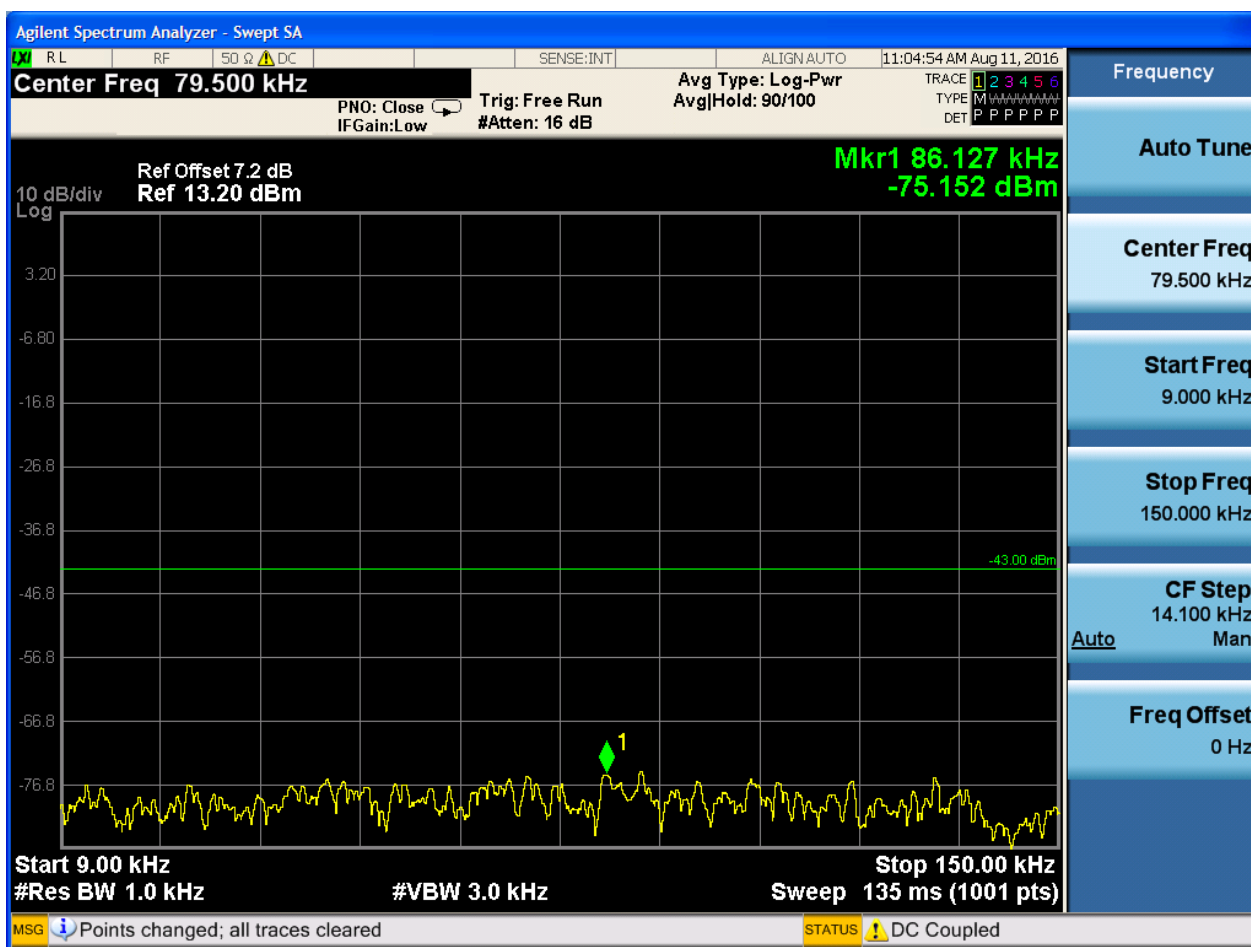


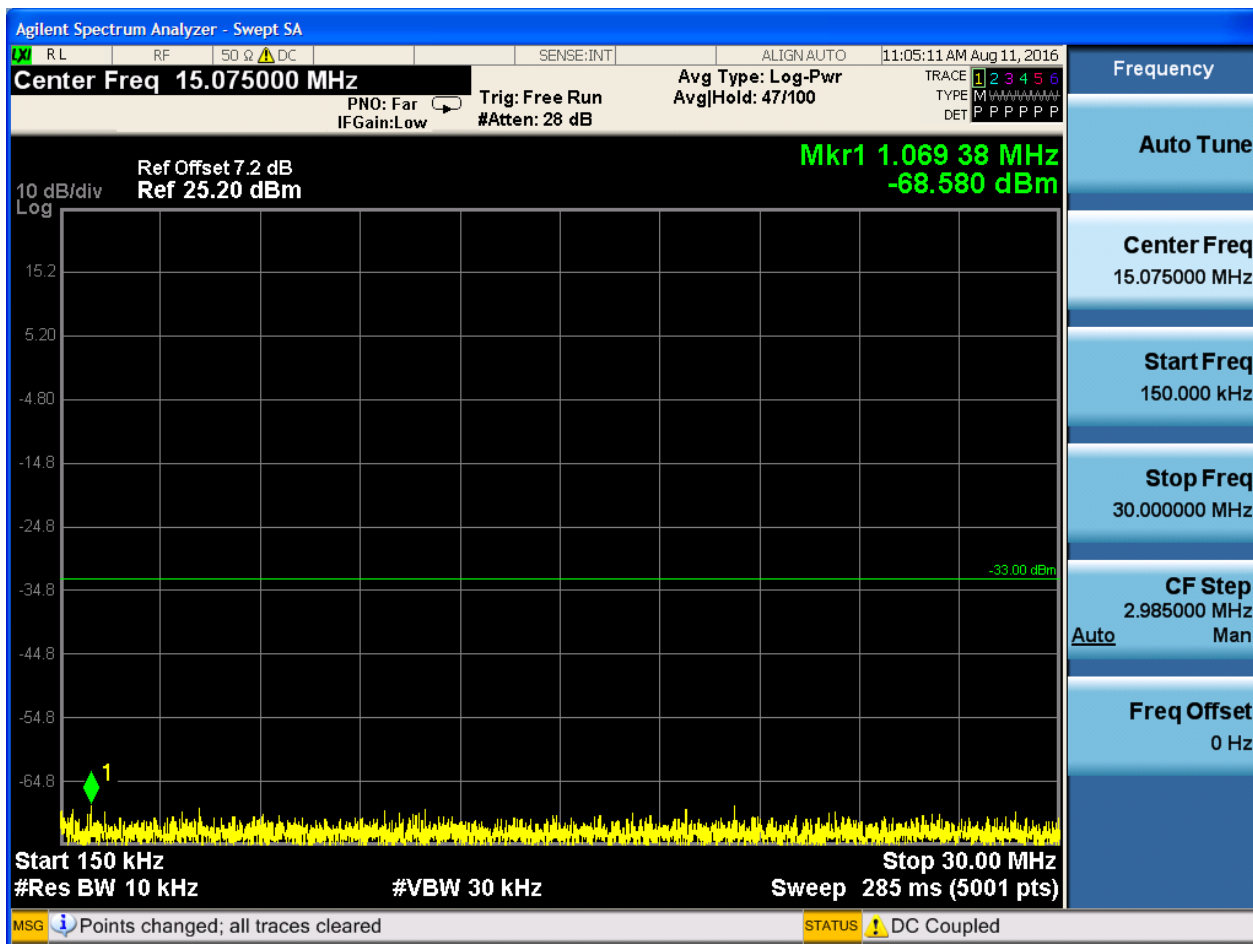


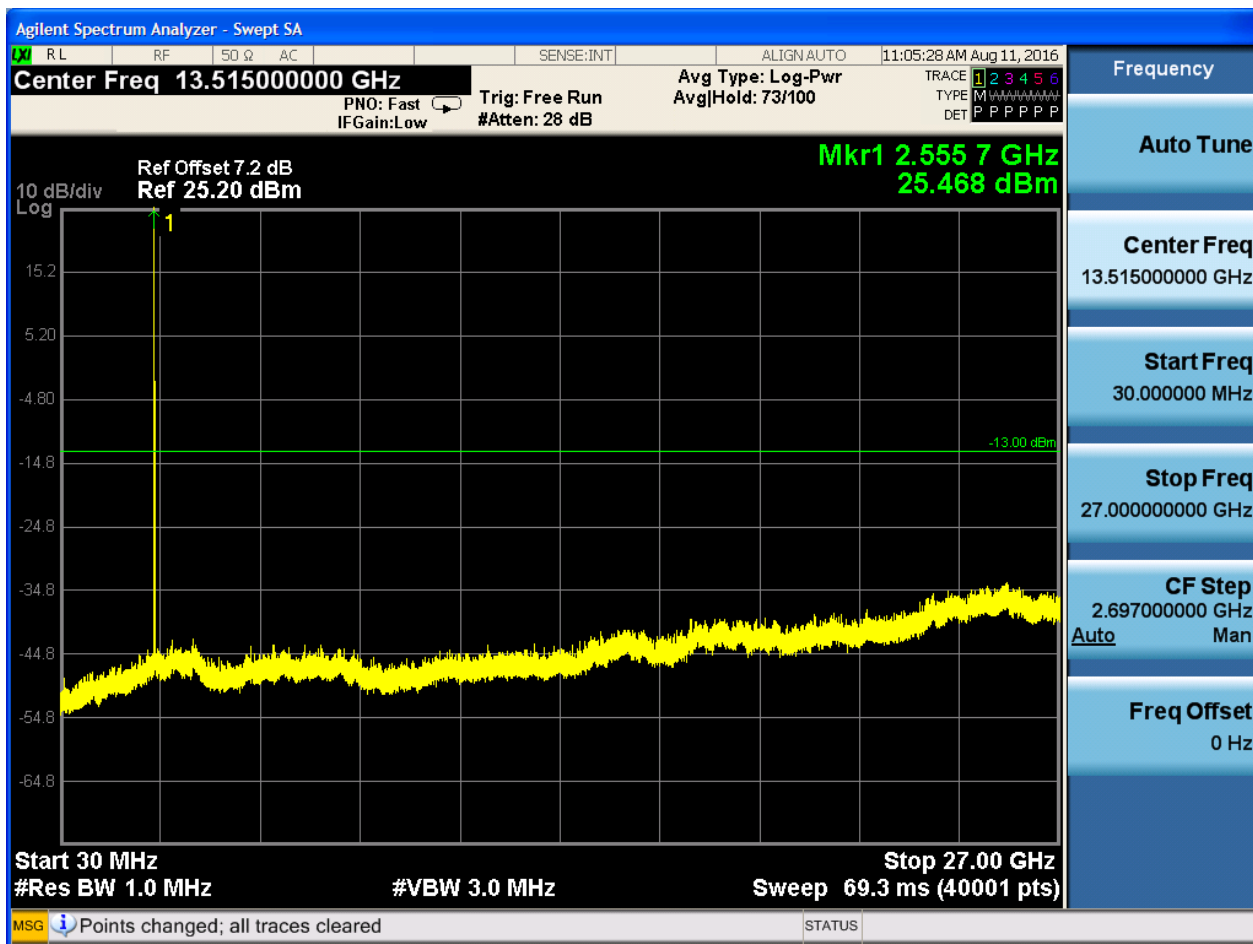
6.1.1.1.4 Test Bandwidth = 20

6.1.1.1.4.1 Test Channel = LCH

6.1.1.1.4.1.1 Test RB = RB1#0



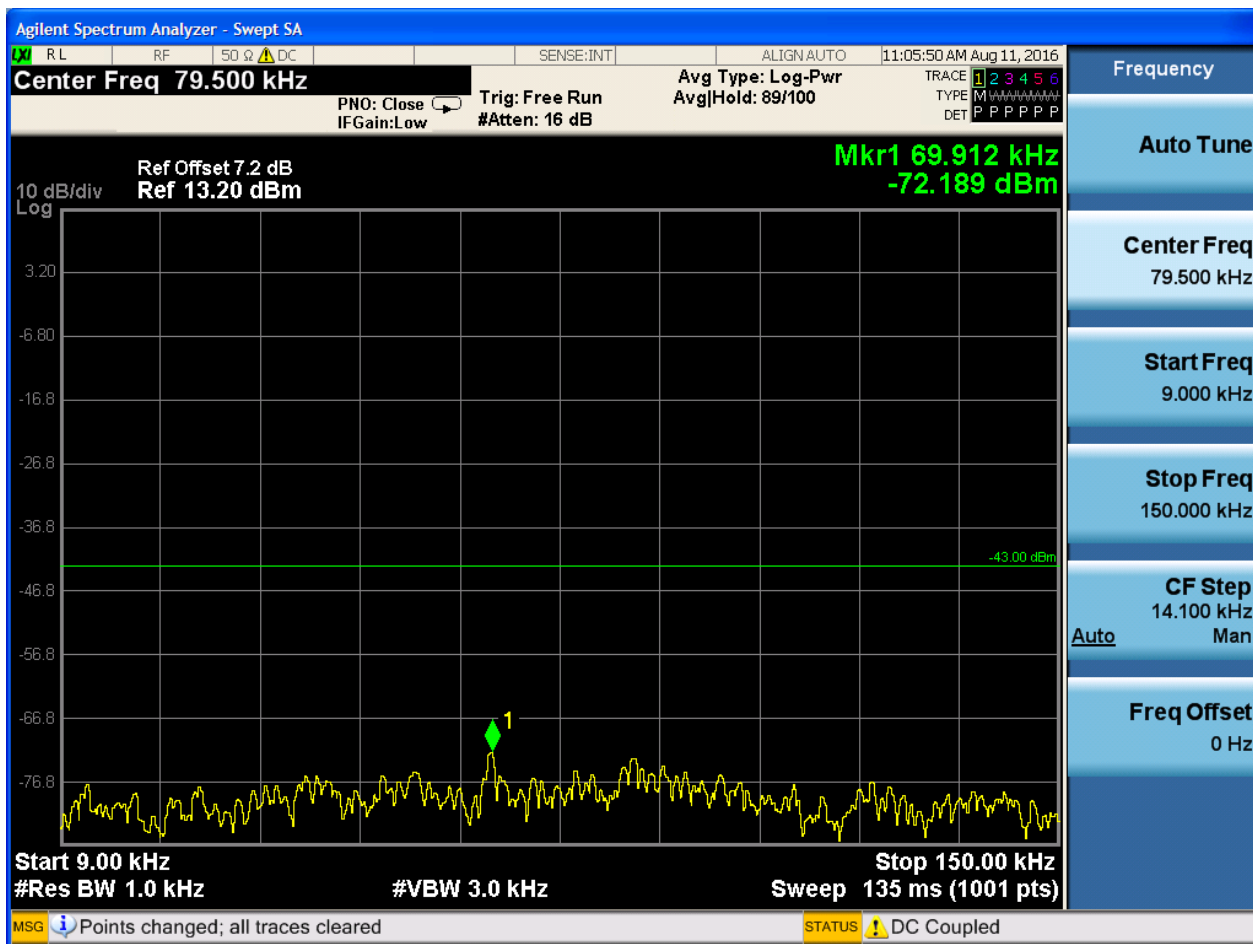


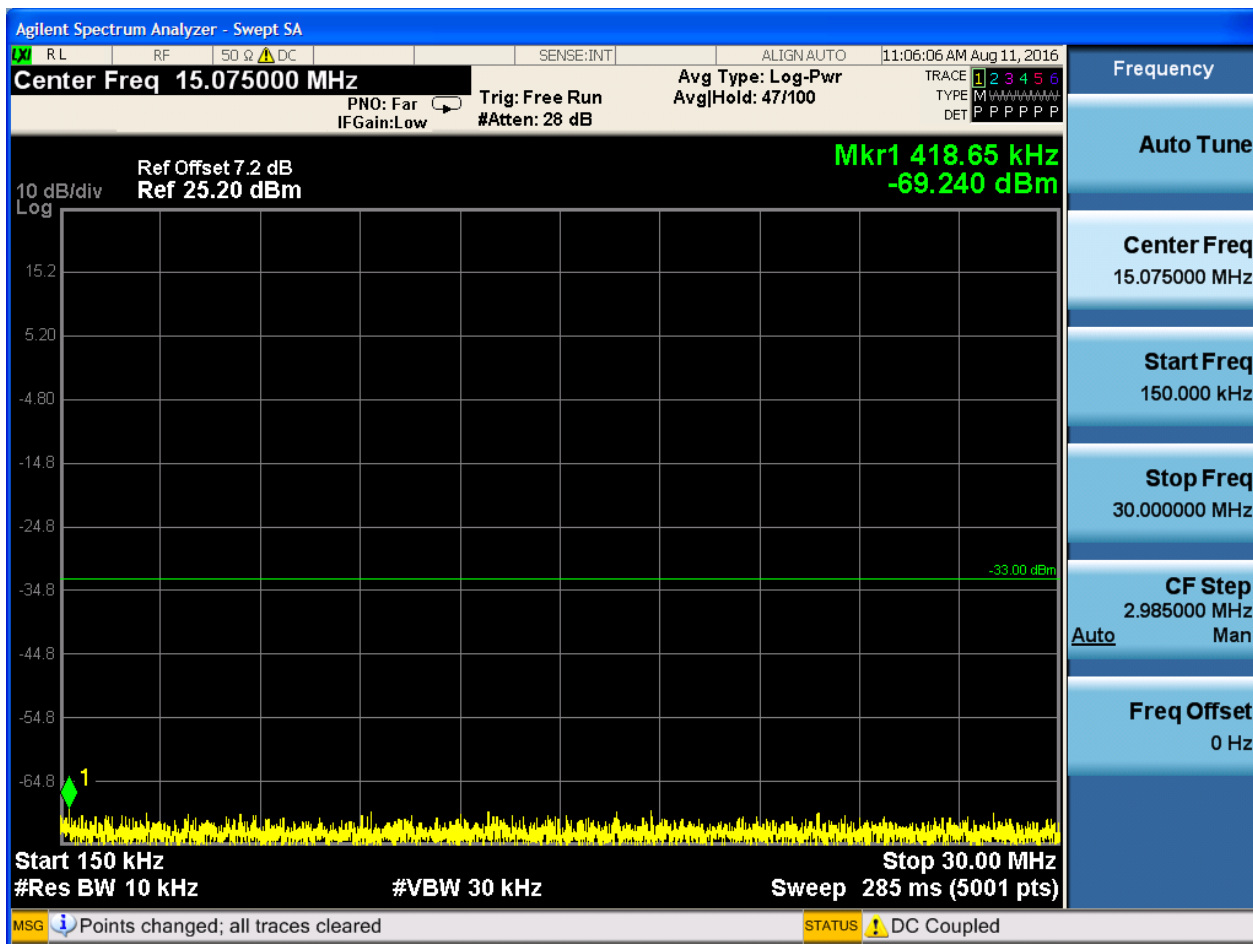


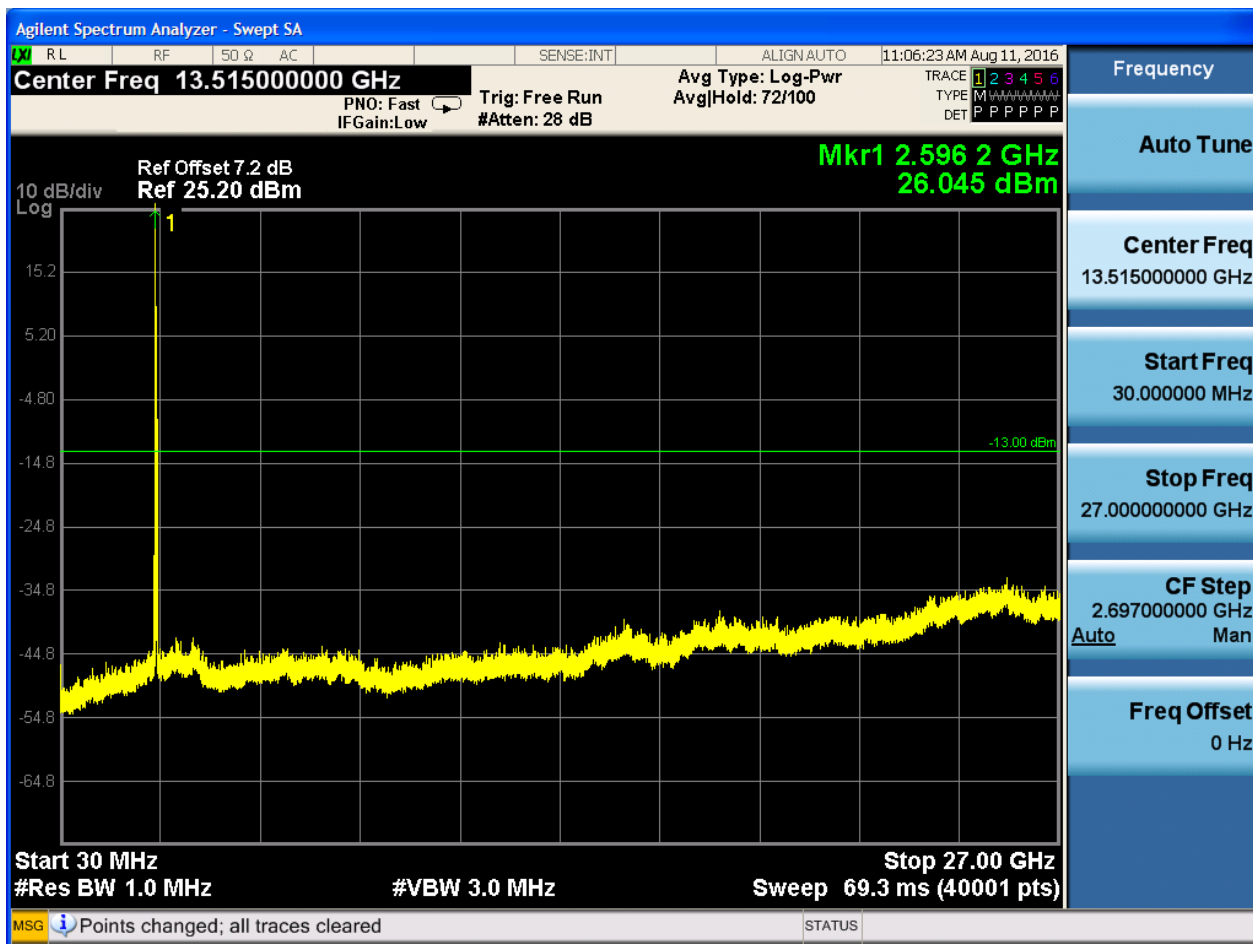


6.1.1.1.4.2 Test Channel = MCH

6.1.1.1.4.2.1 Test RB = RB1#0

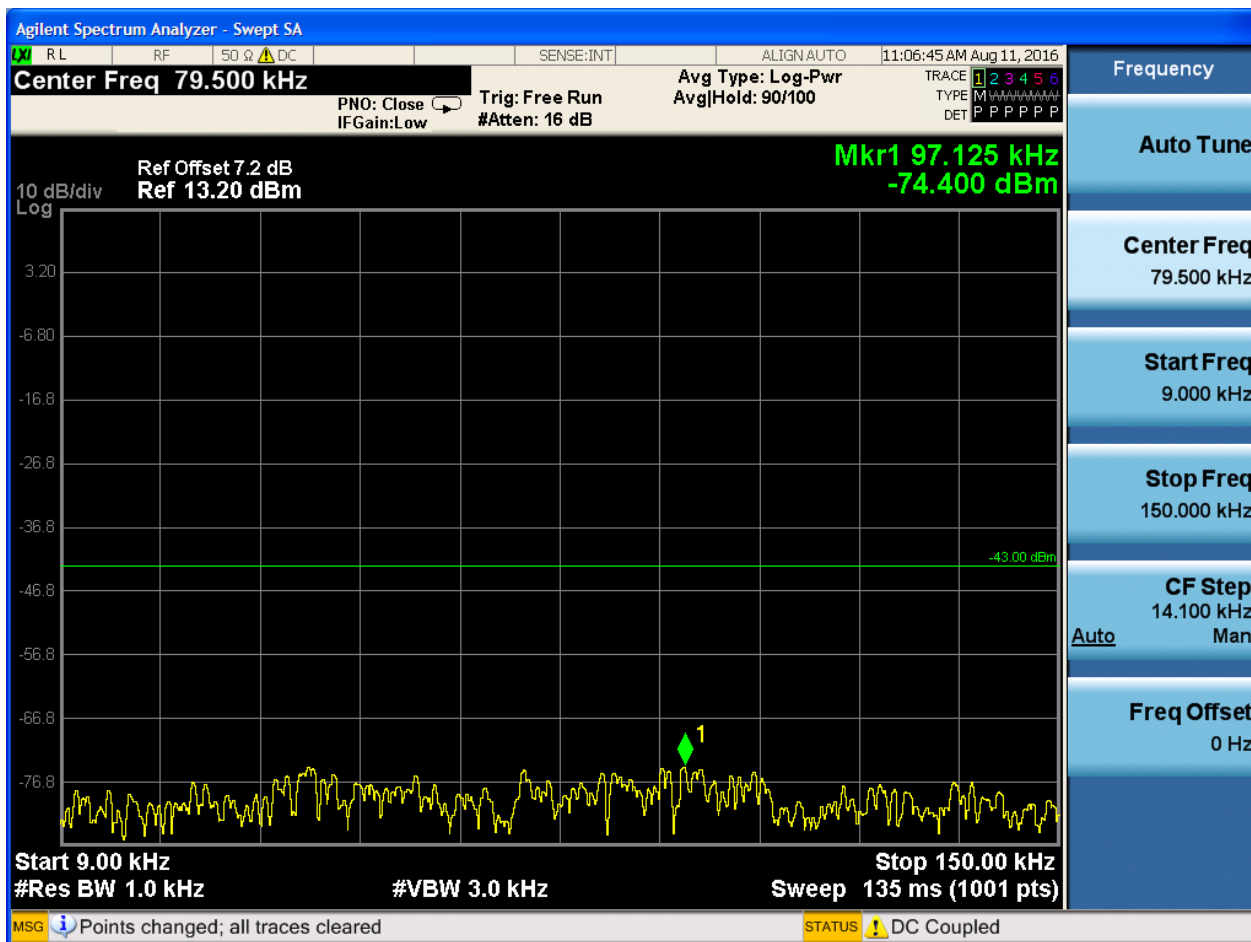


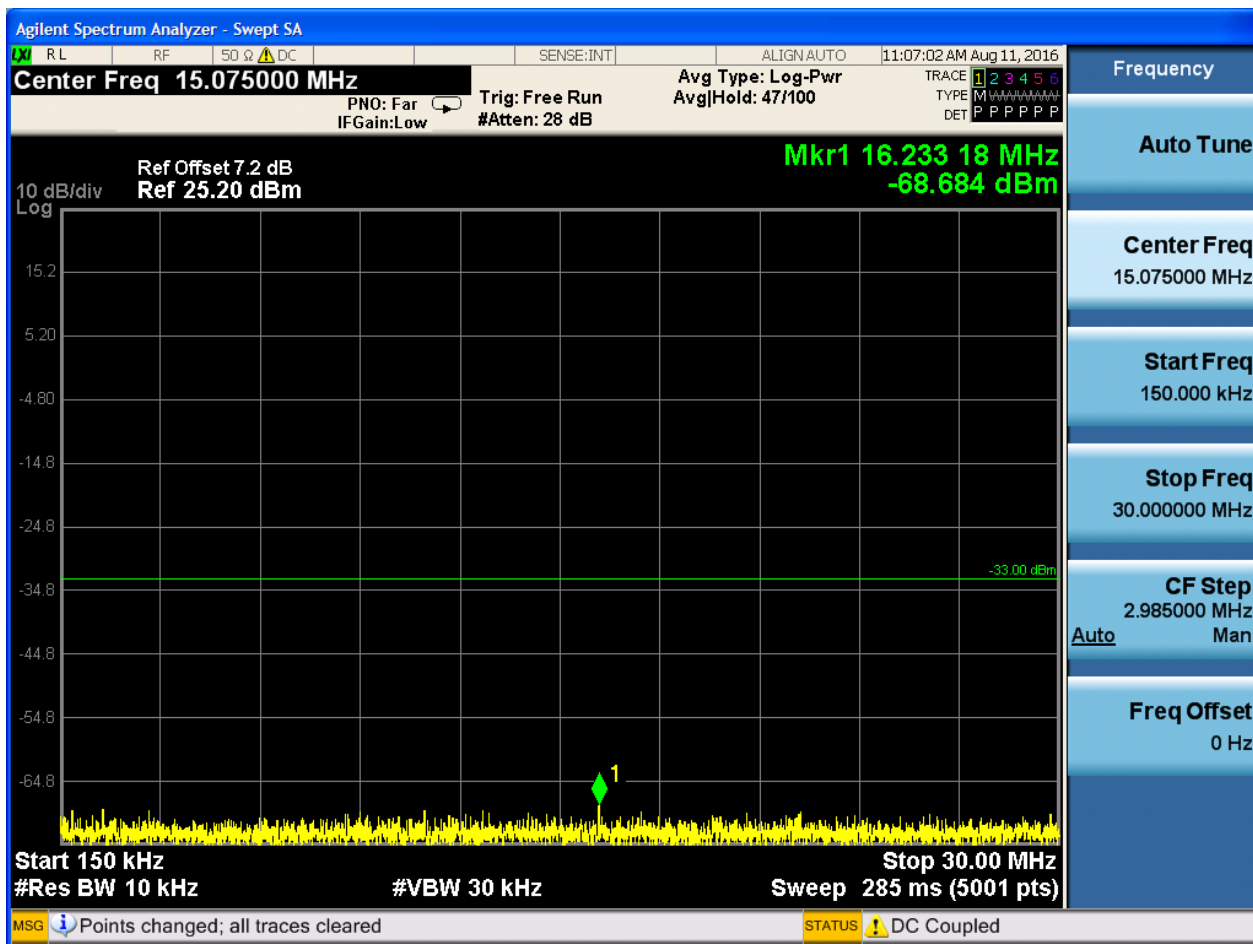


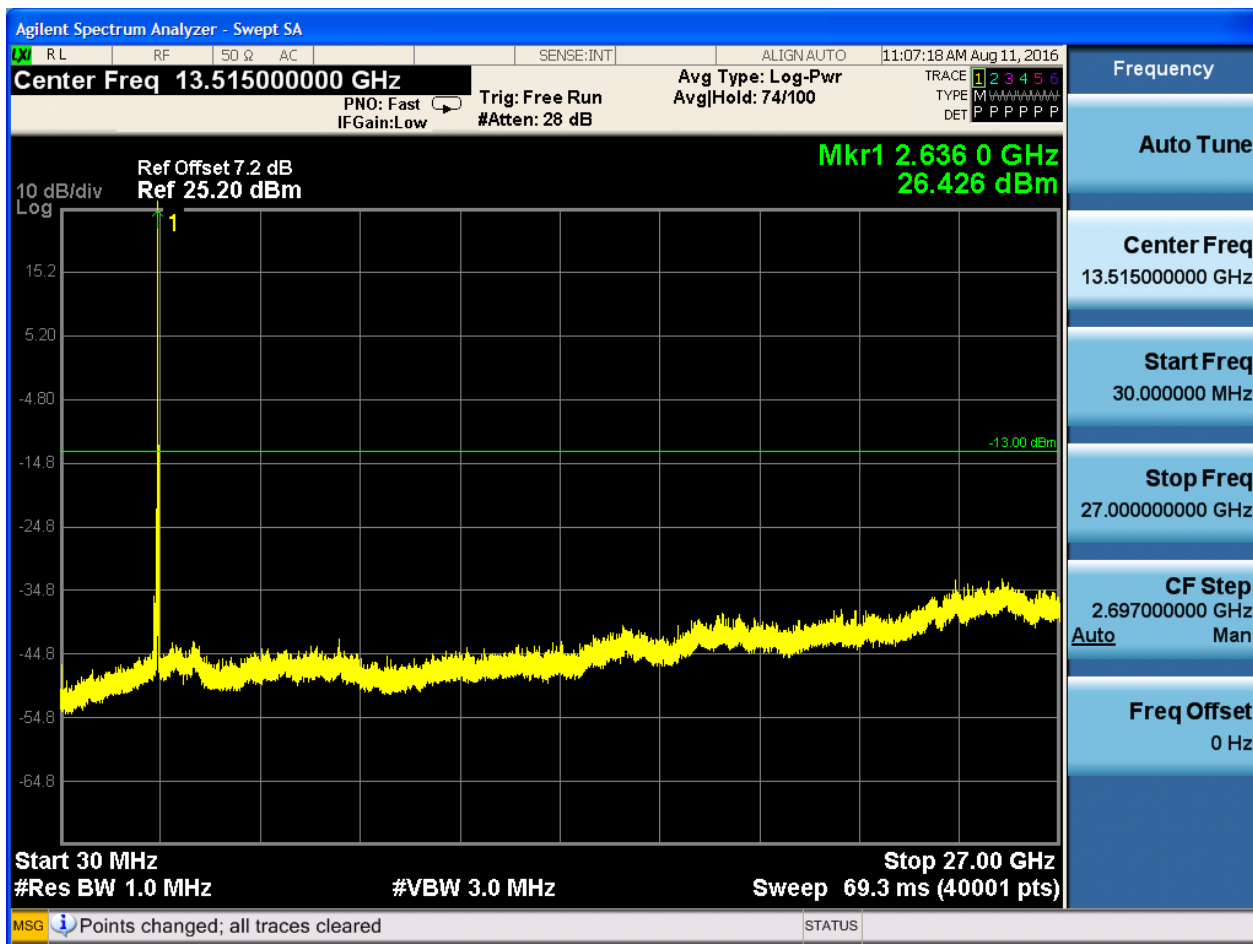


6.1.1.1.4.3 Test Channel = HCH

6.1.1.1.4.3.1 Test RB = RB1#0







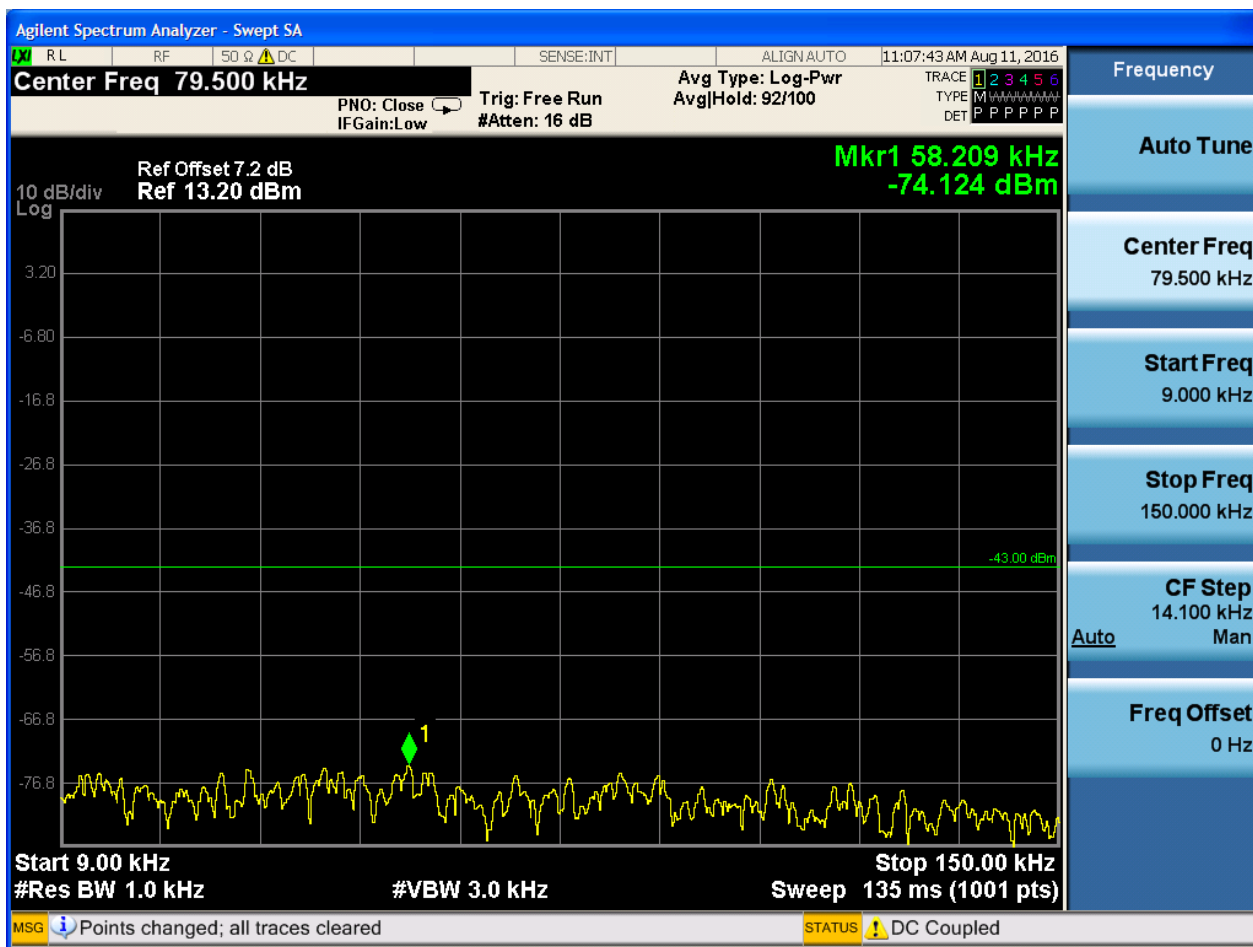


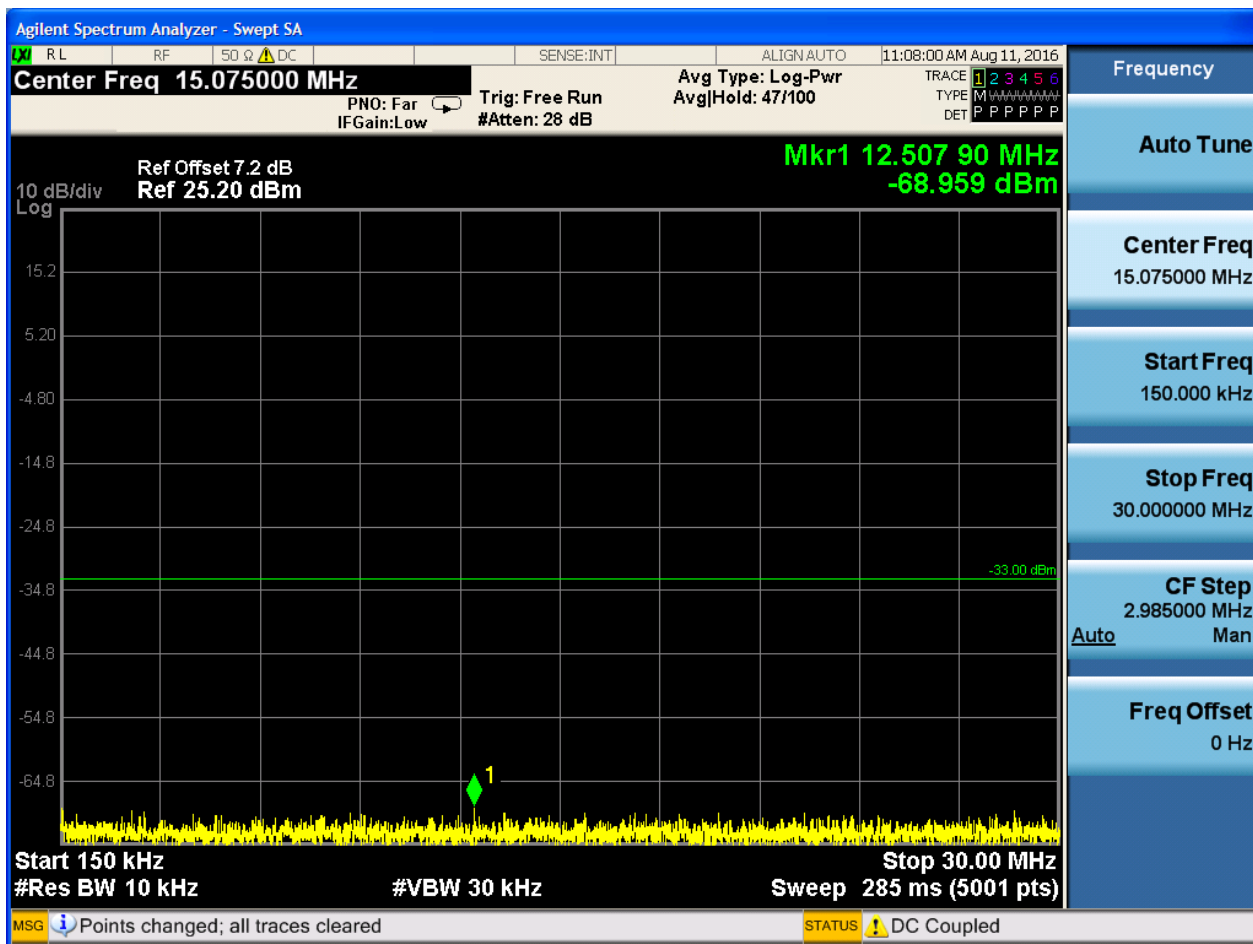
6.1.1.2 Test Mode = LTE/TM2

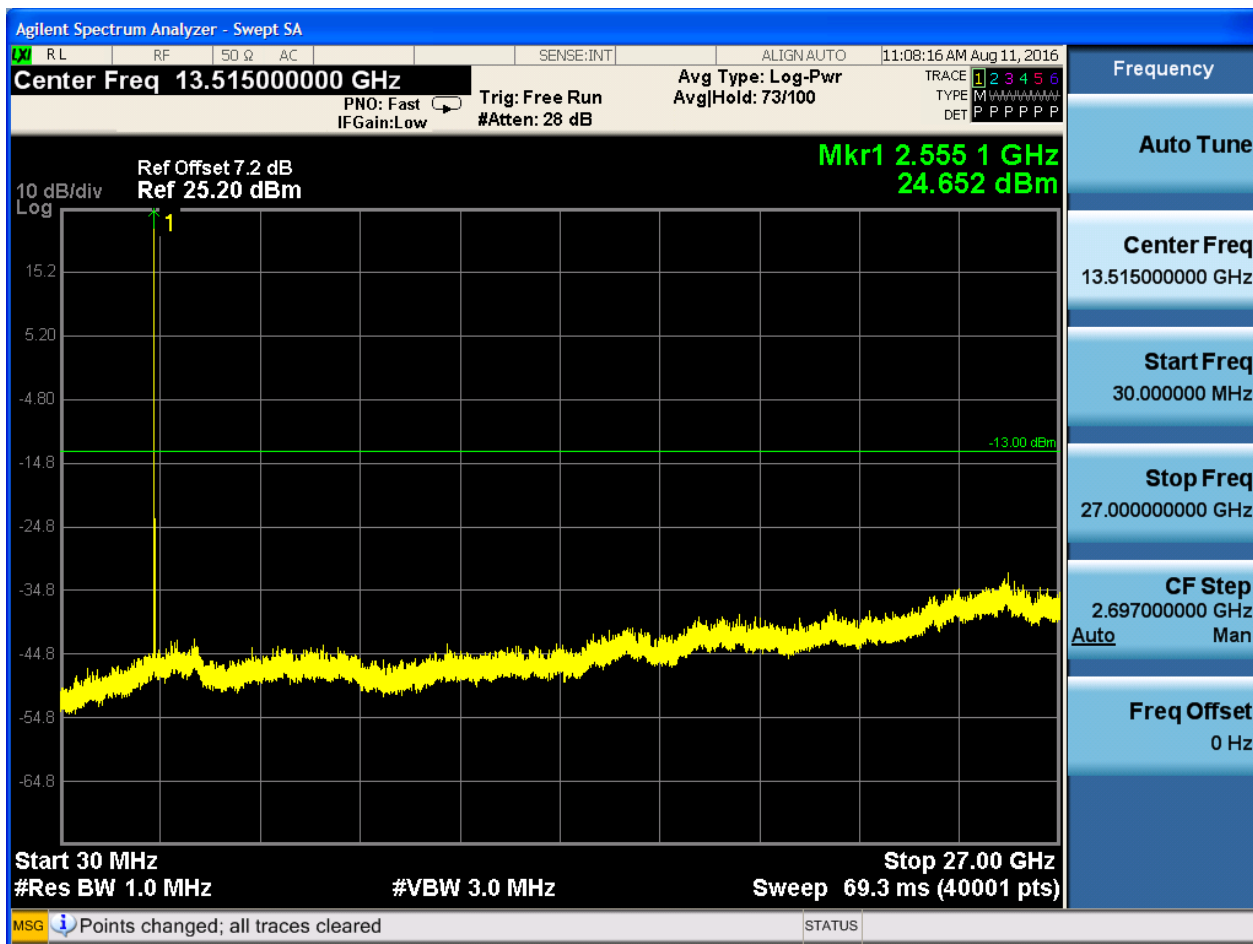
6.1.1.2.1 Test Bandwidth = 5

6.1.1.2.1.1 Test Channel = LCH

6.1.1.2.1.1.1 Test RB = RB1#0

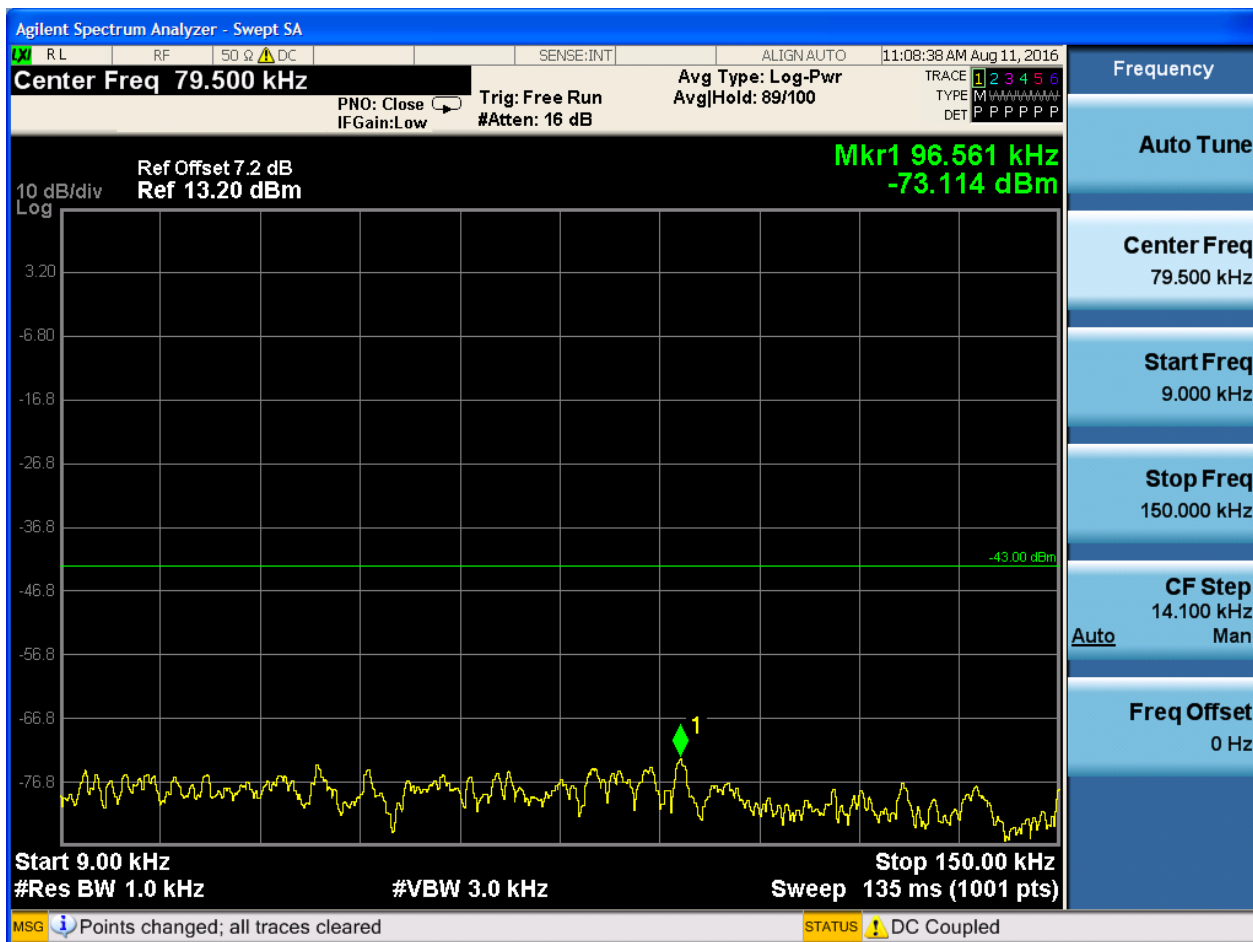


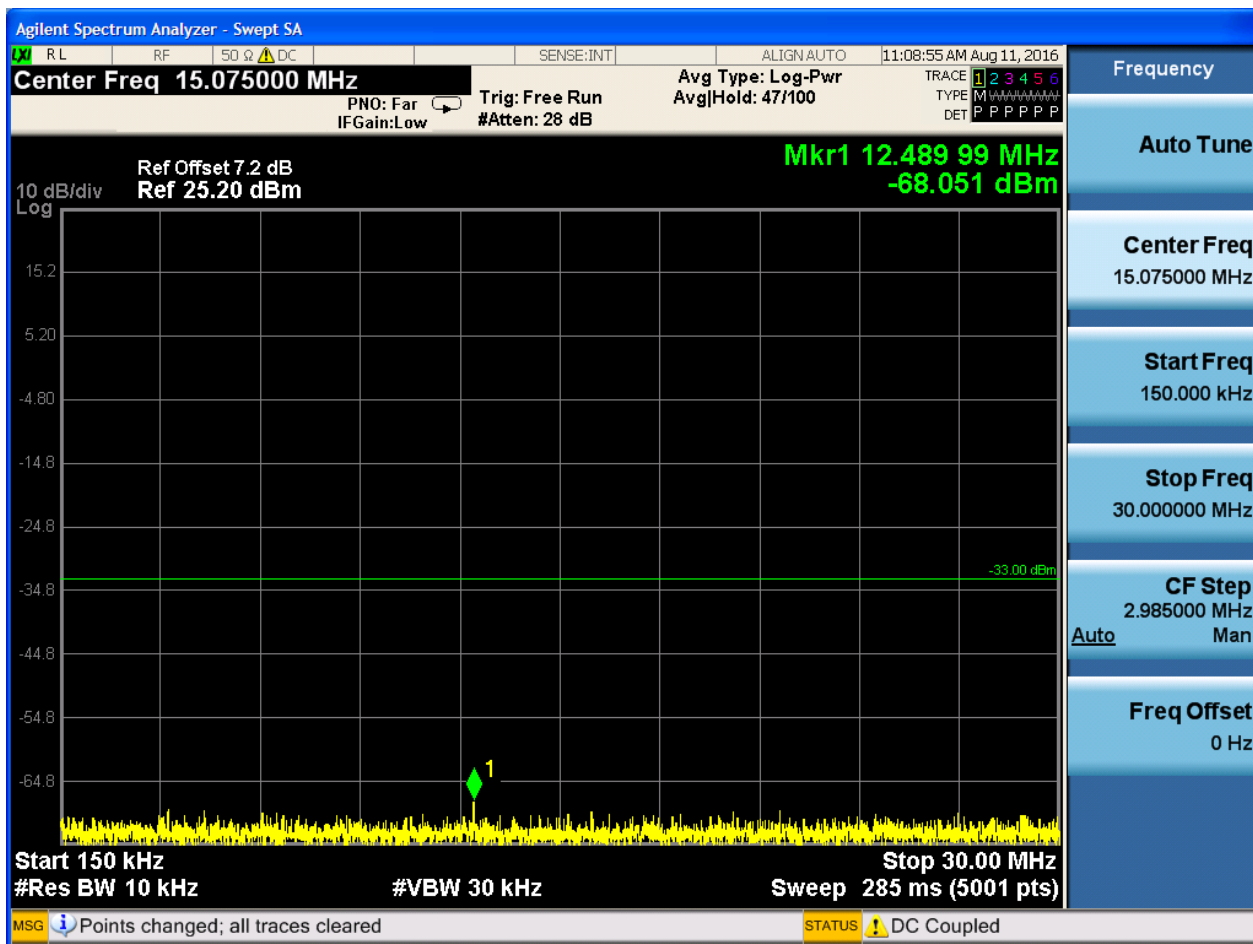


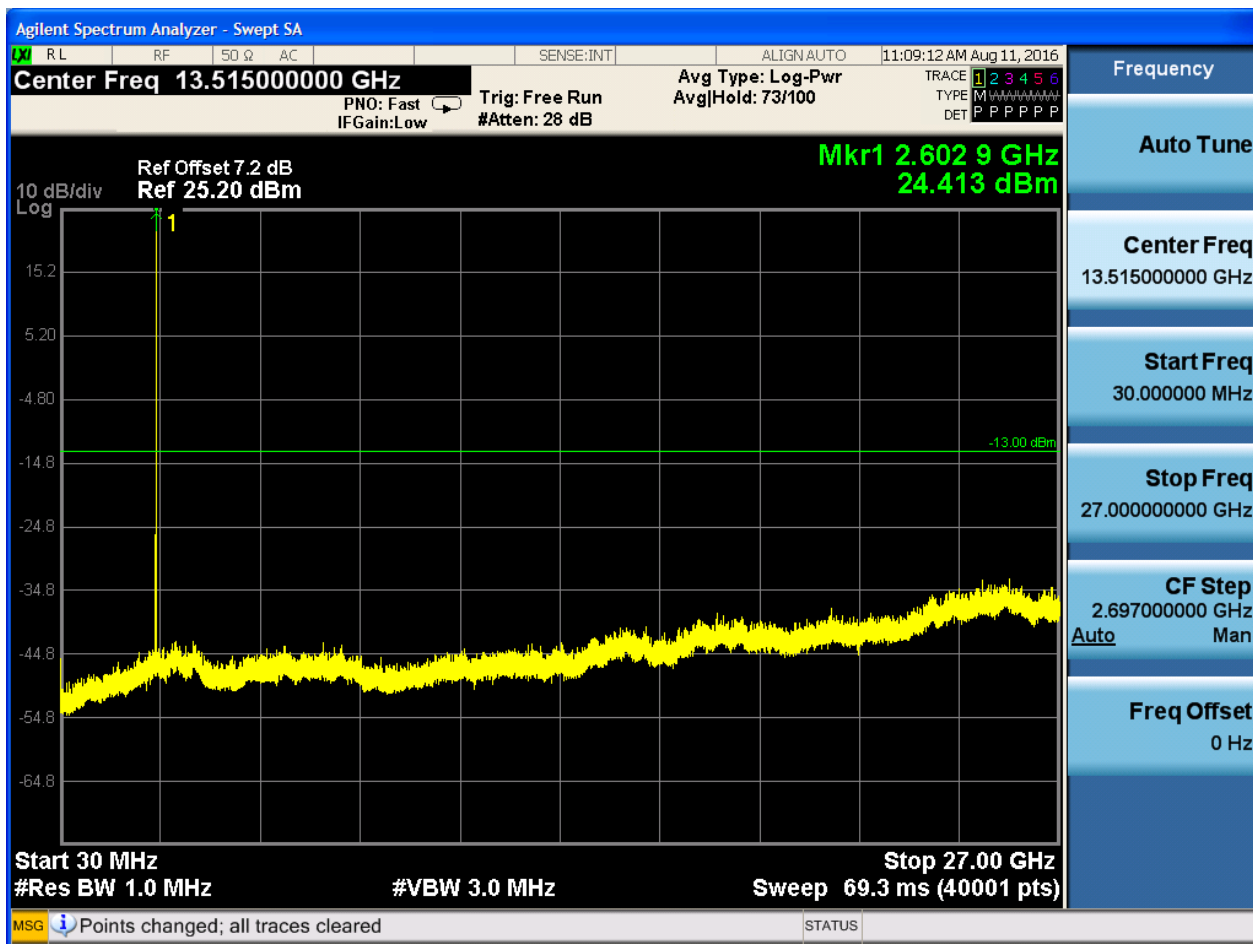


6.1.1.2.1.2 Test Channel = MCH

6.1.1.2.1.2.1 Test RB = RB1#0



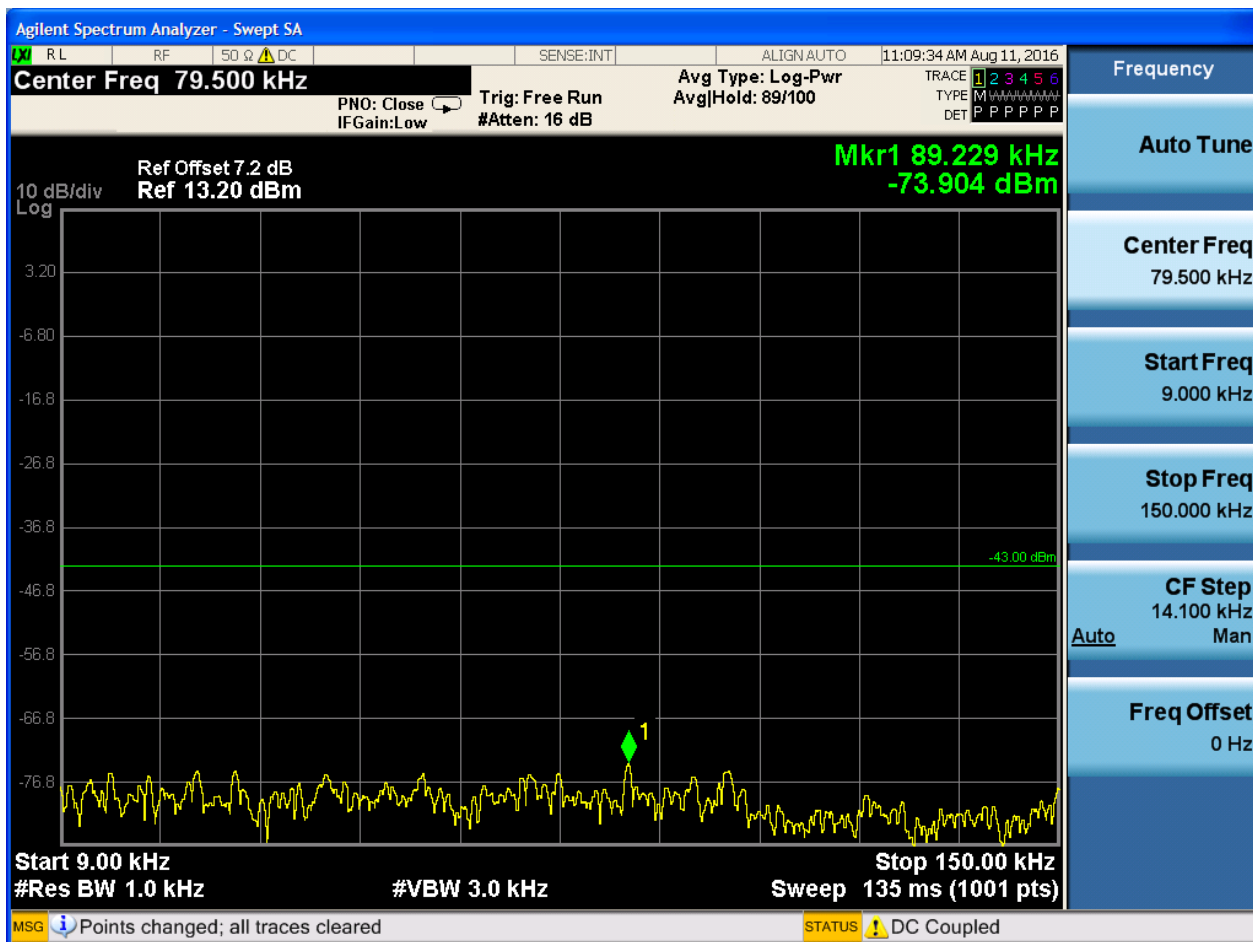


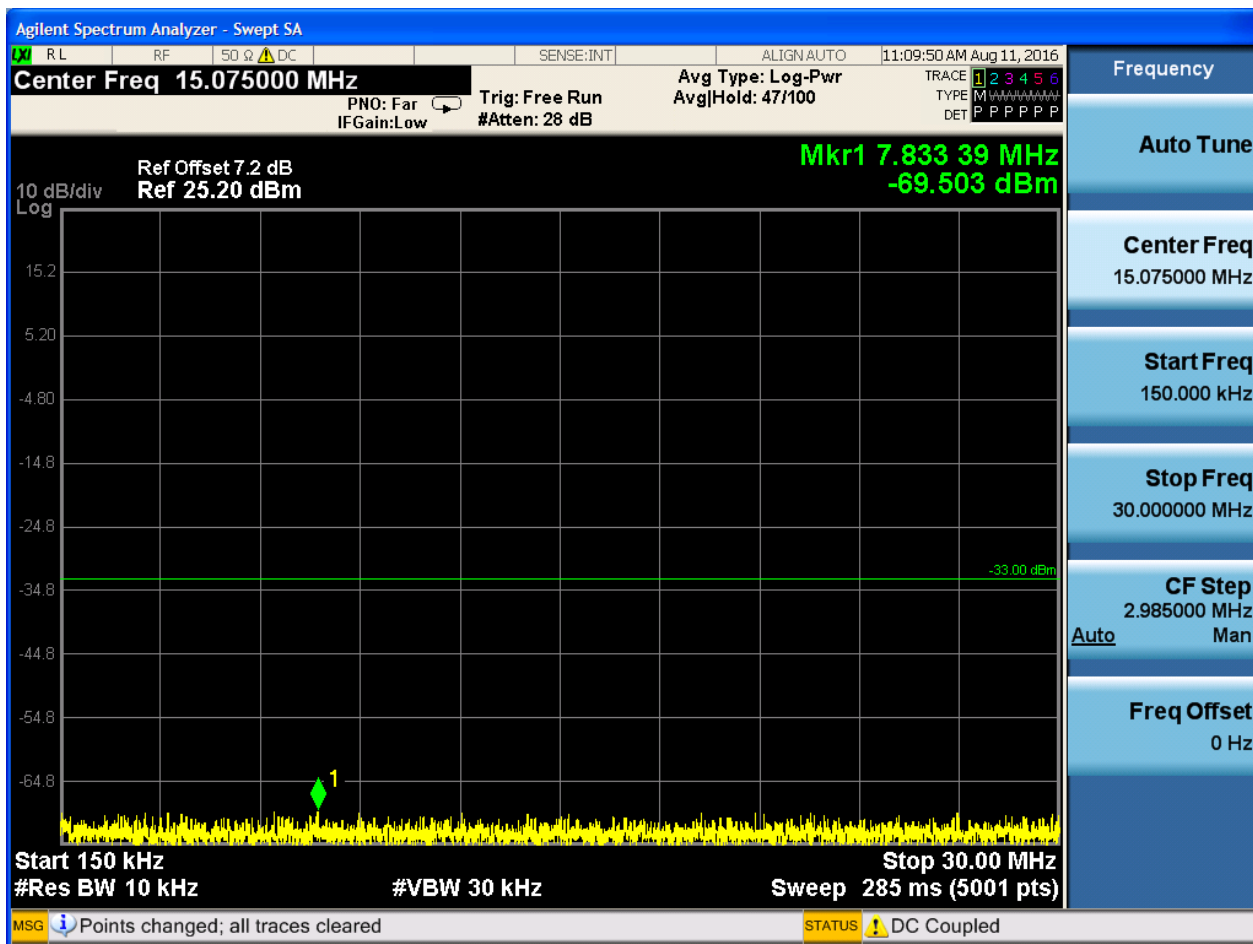


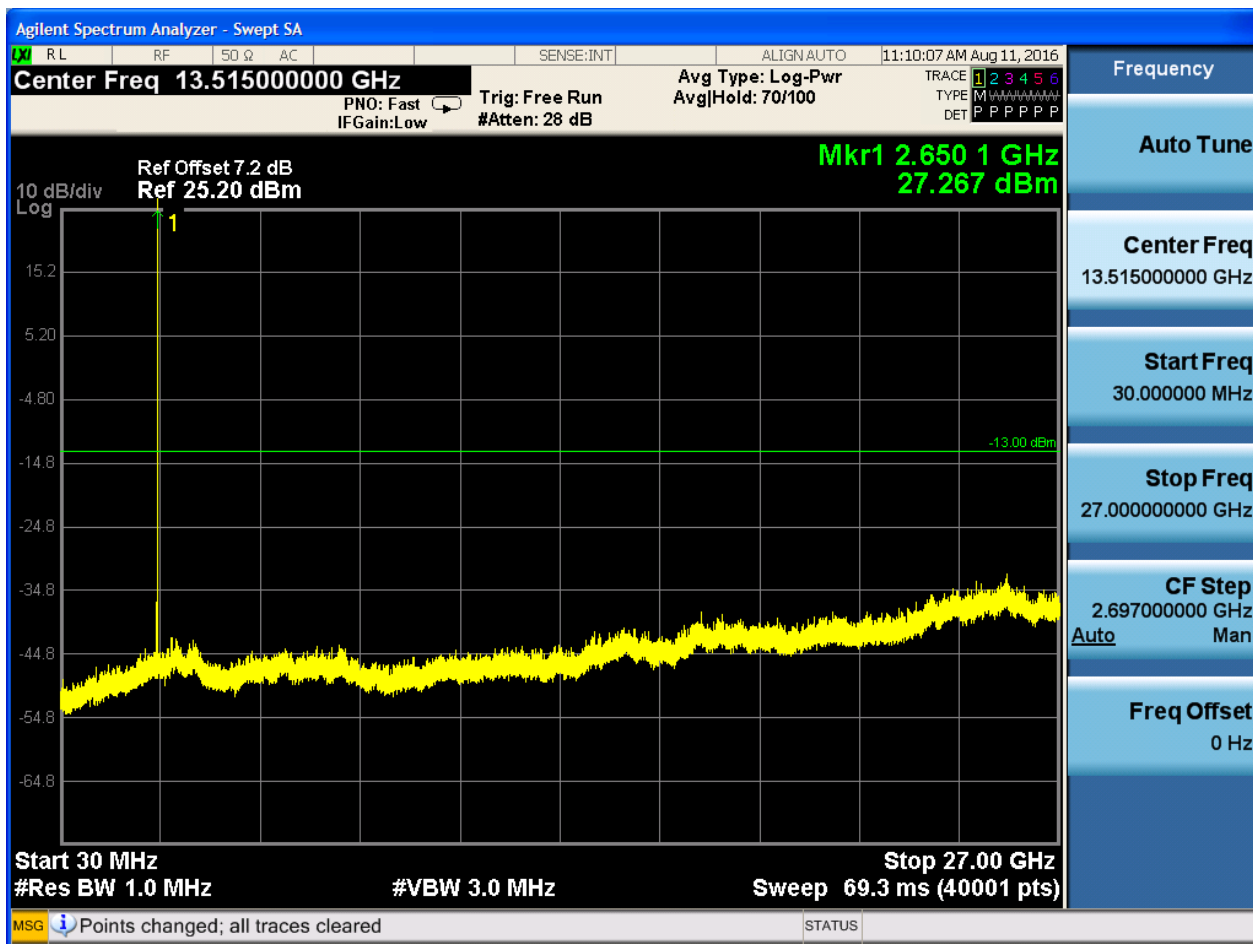


6.1.1.2.1.3 Test Channel = HCH

6.1.1.2.1.3.1 Test RB = RB1#0



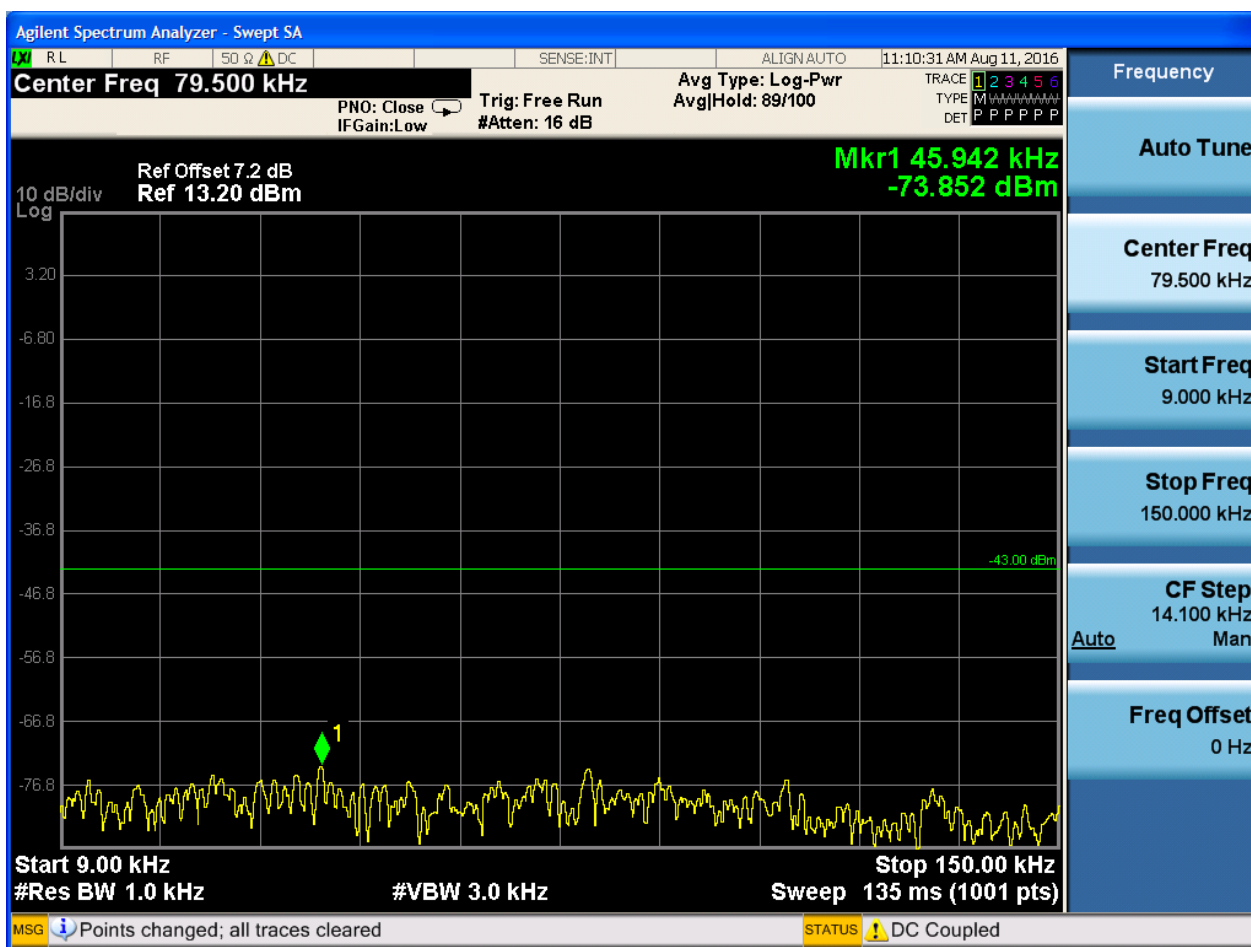


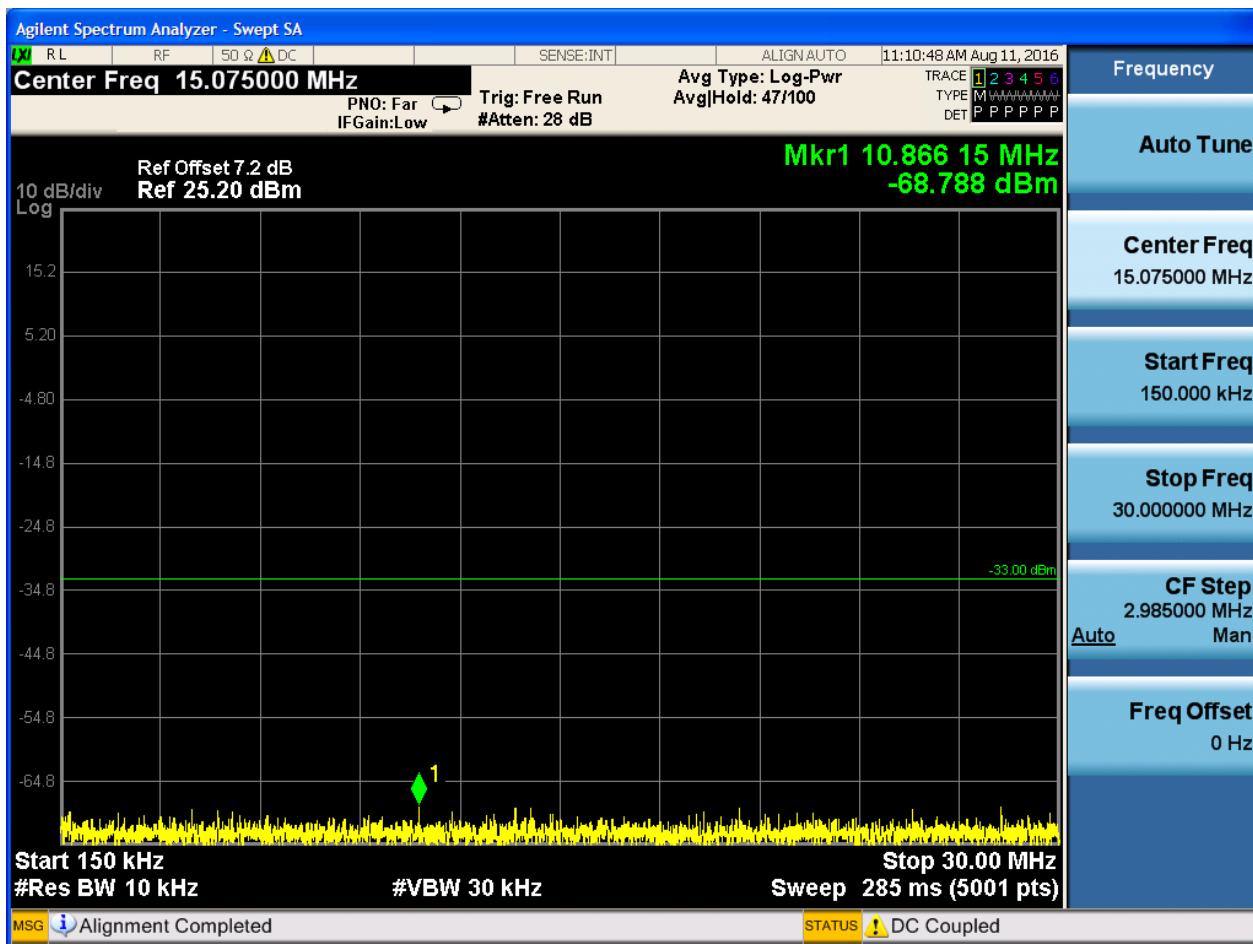


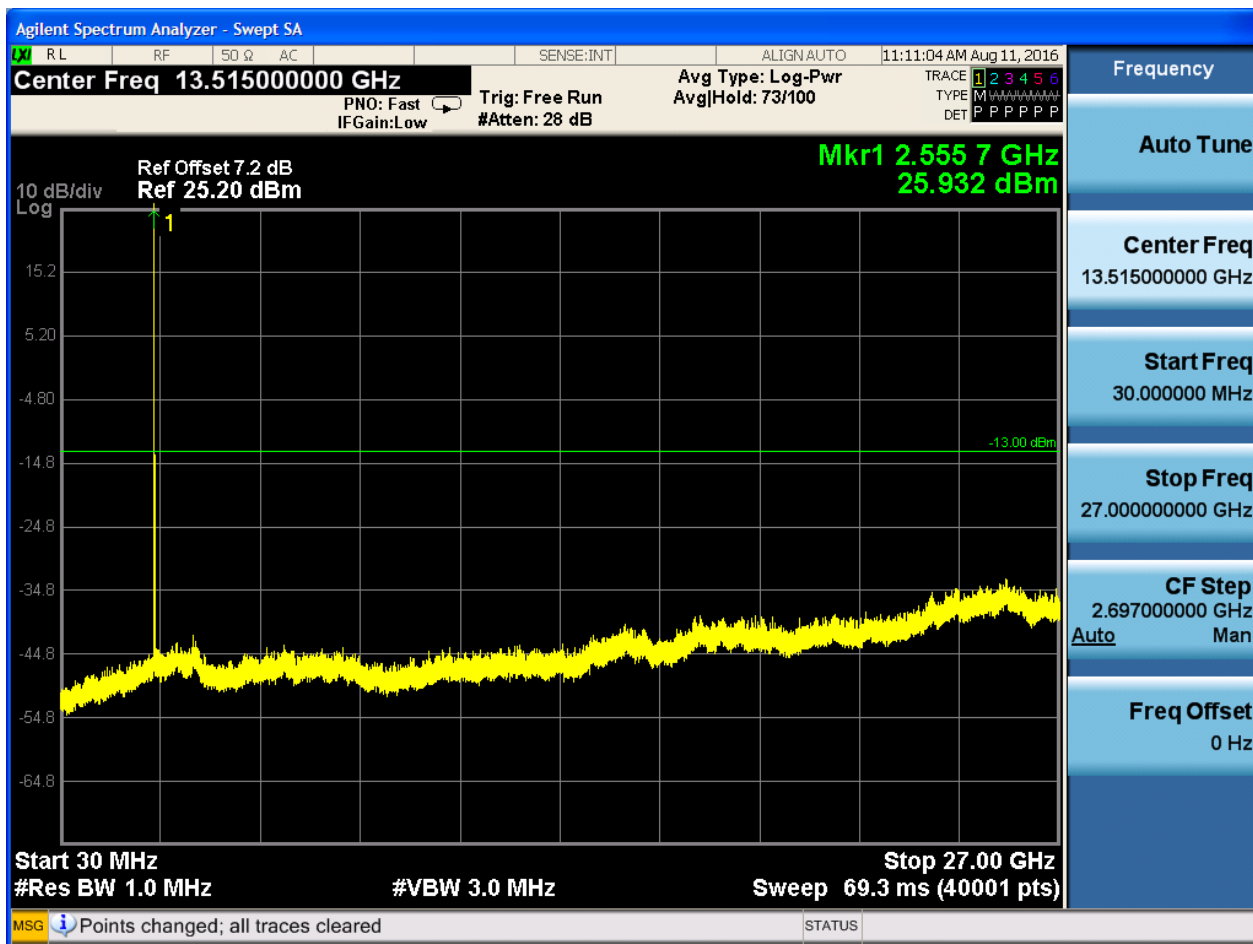
6.1.1.2.2 Test Bandwidth = 10

6.1.1.2.2.1 Test Channel = LCH

6.1.1.2.2.1.1 Test RB = RB1#0

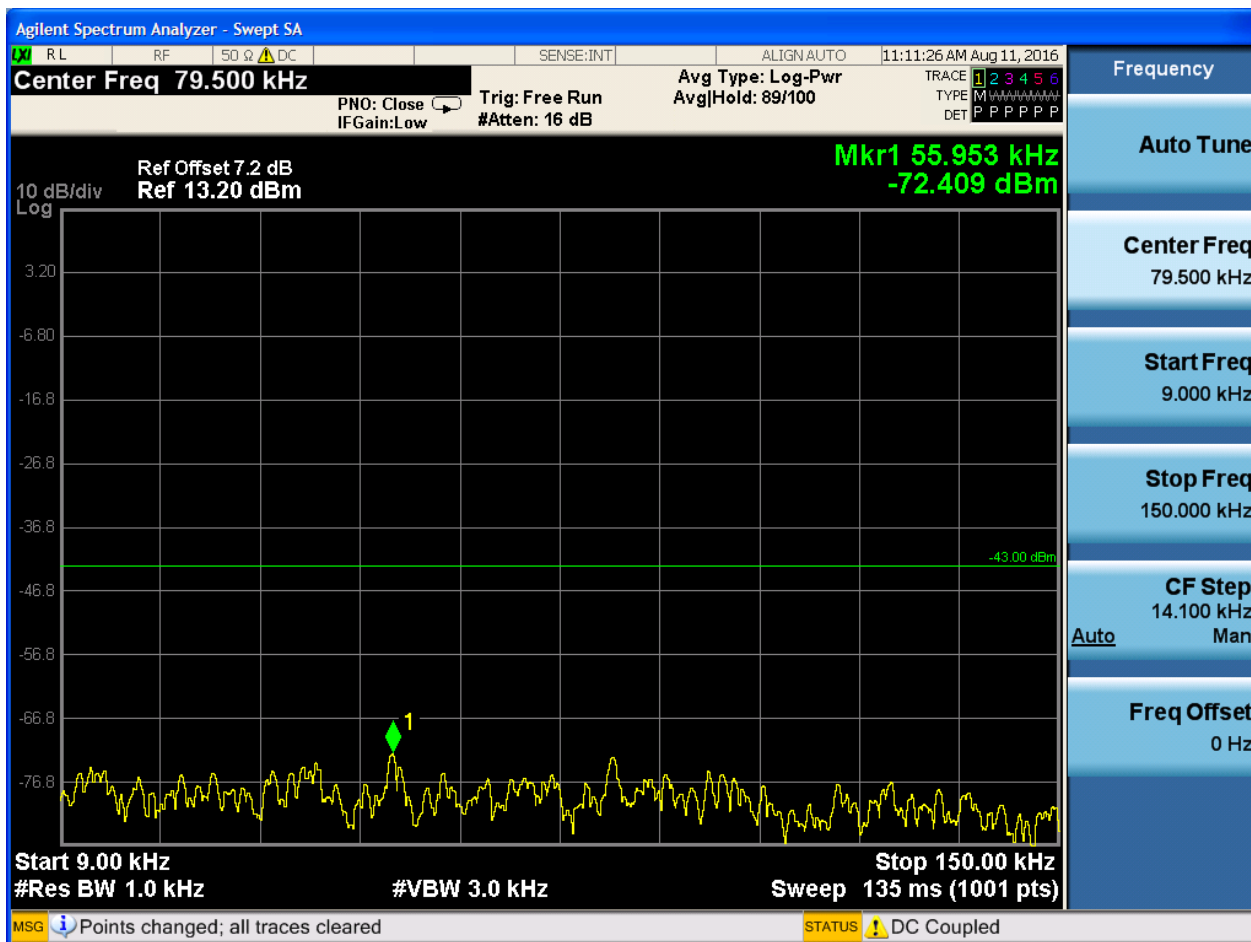


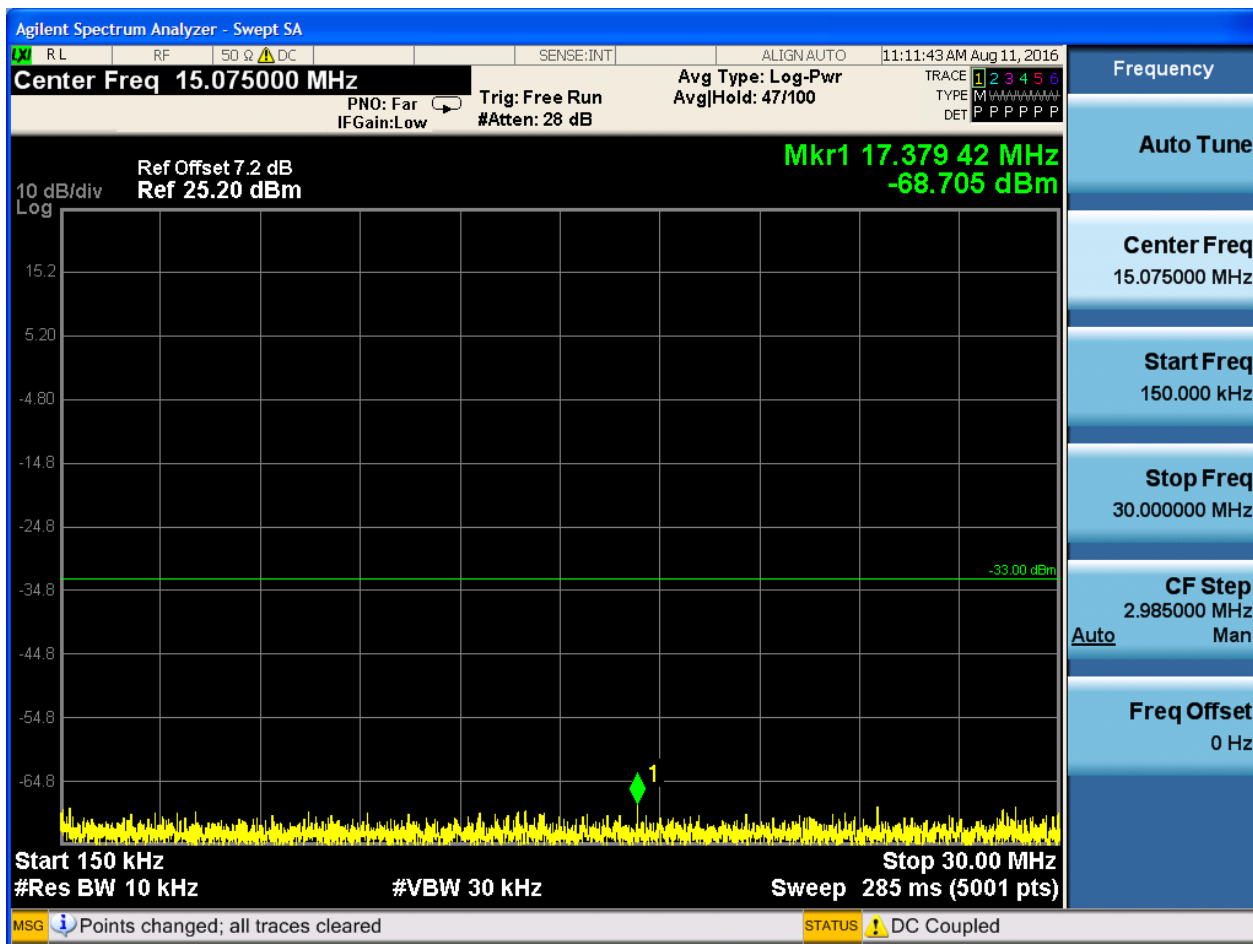


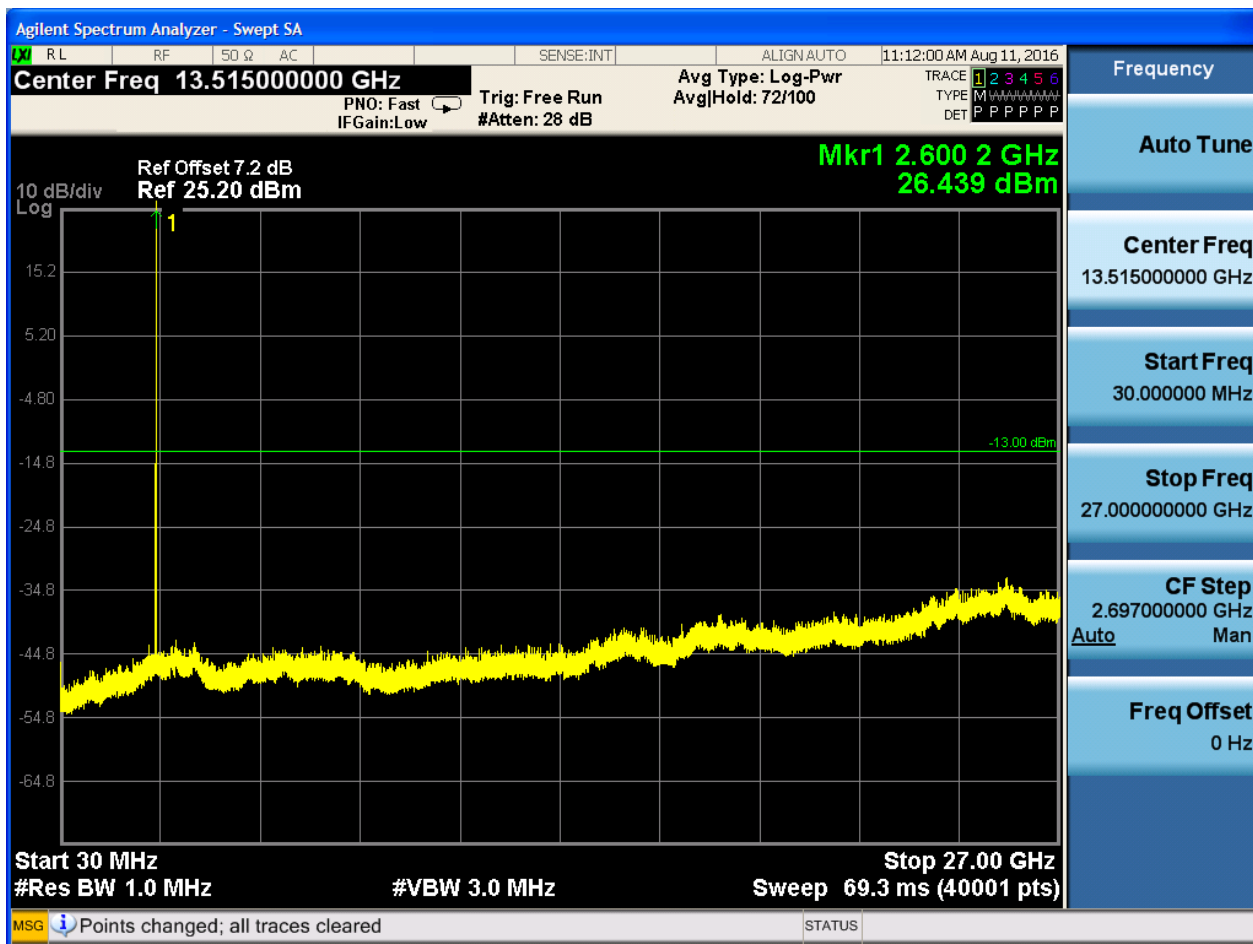


6.1.1.2.2.2 Test Channel = MCH

6.1.1.2.2.2.1 Test RB = RB1#0

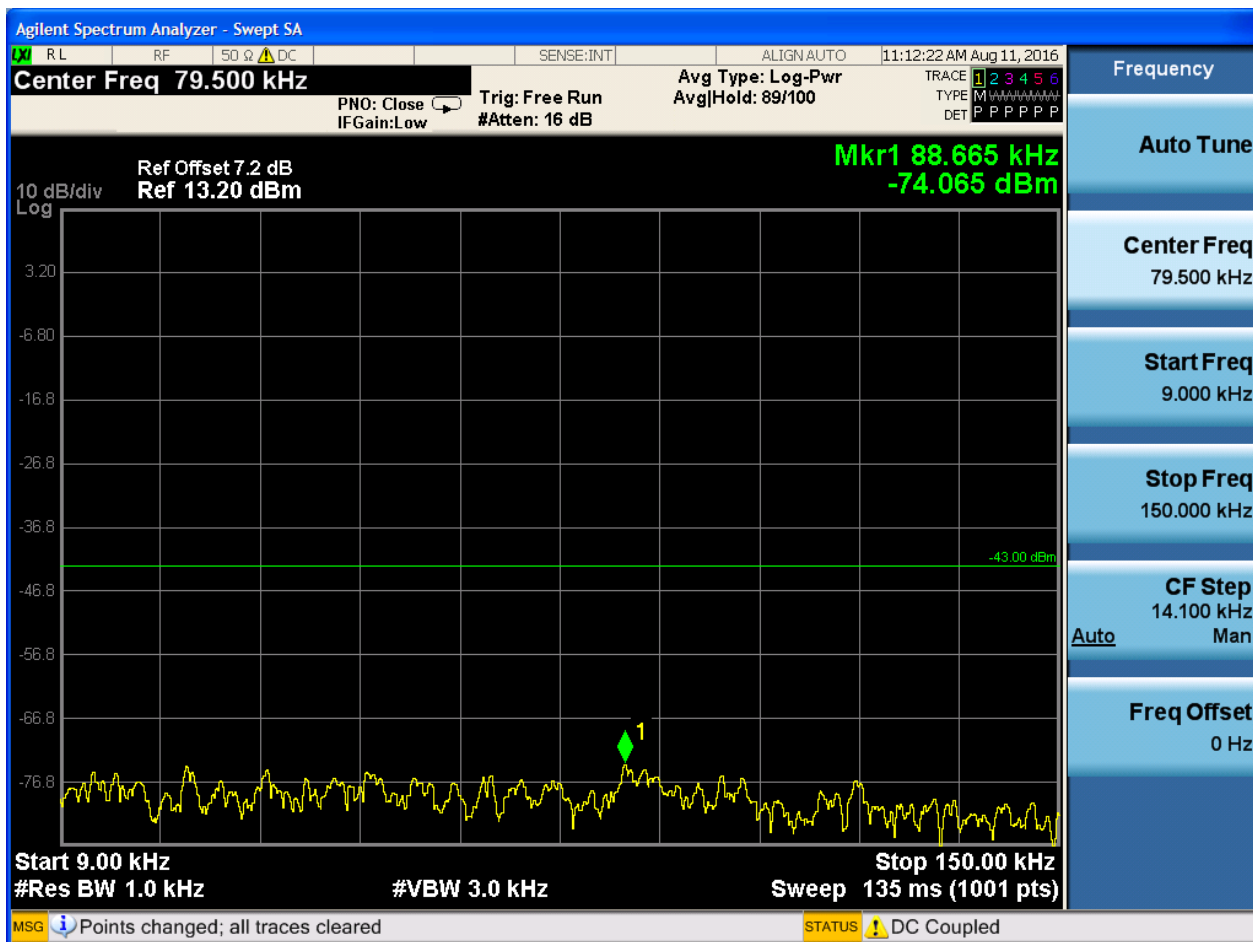


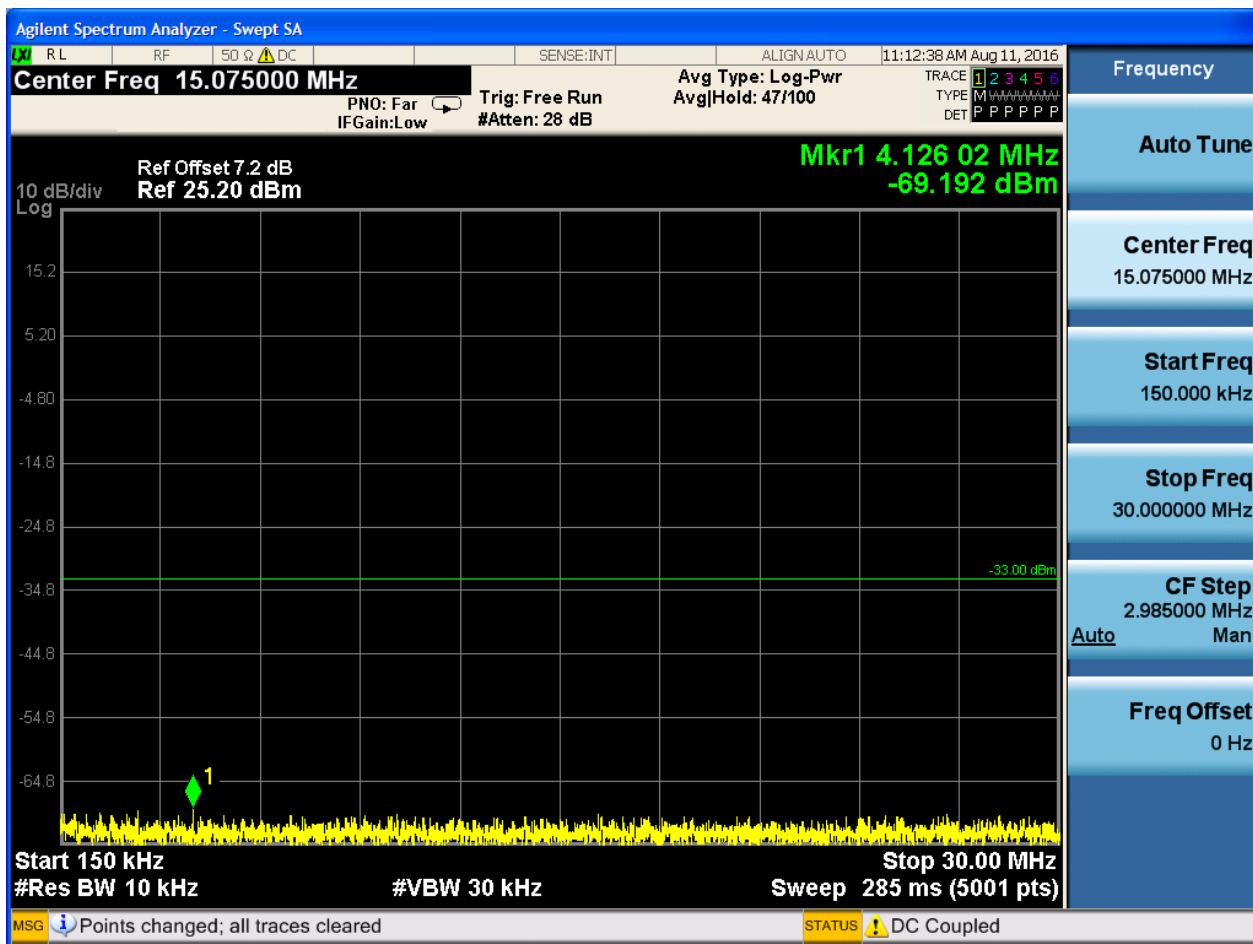


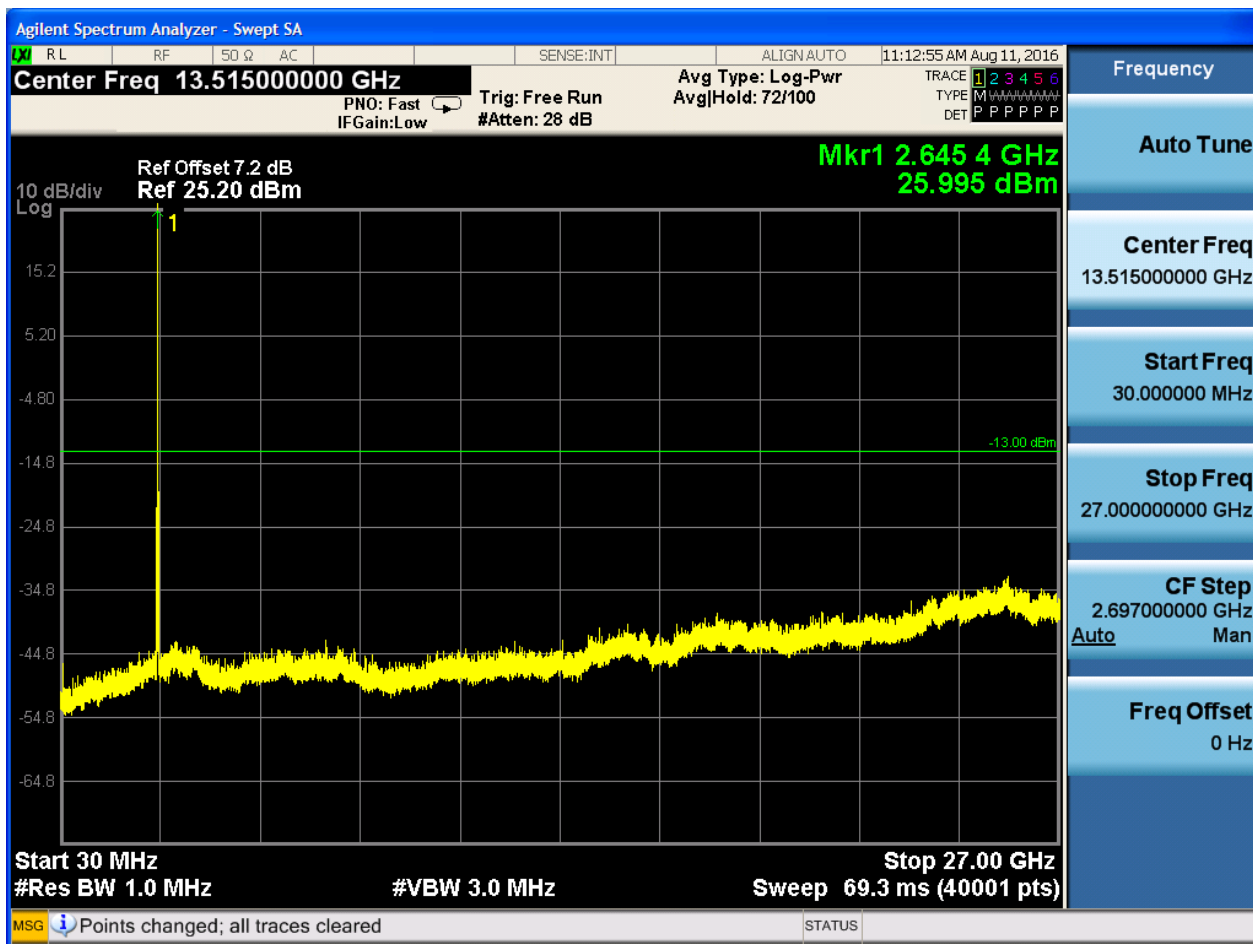


6.1.1.2.2.3 Test Channel = HCH

6.1.1.2.2.3.1 Test RB = RB1#0



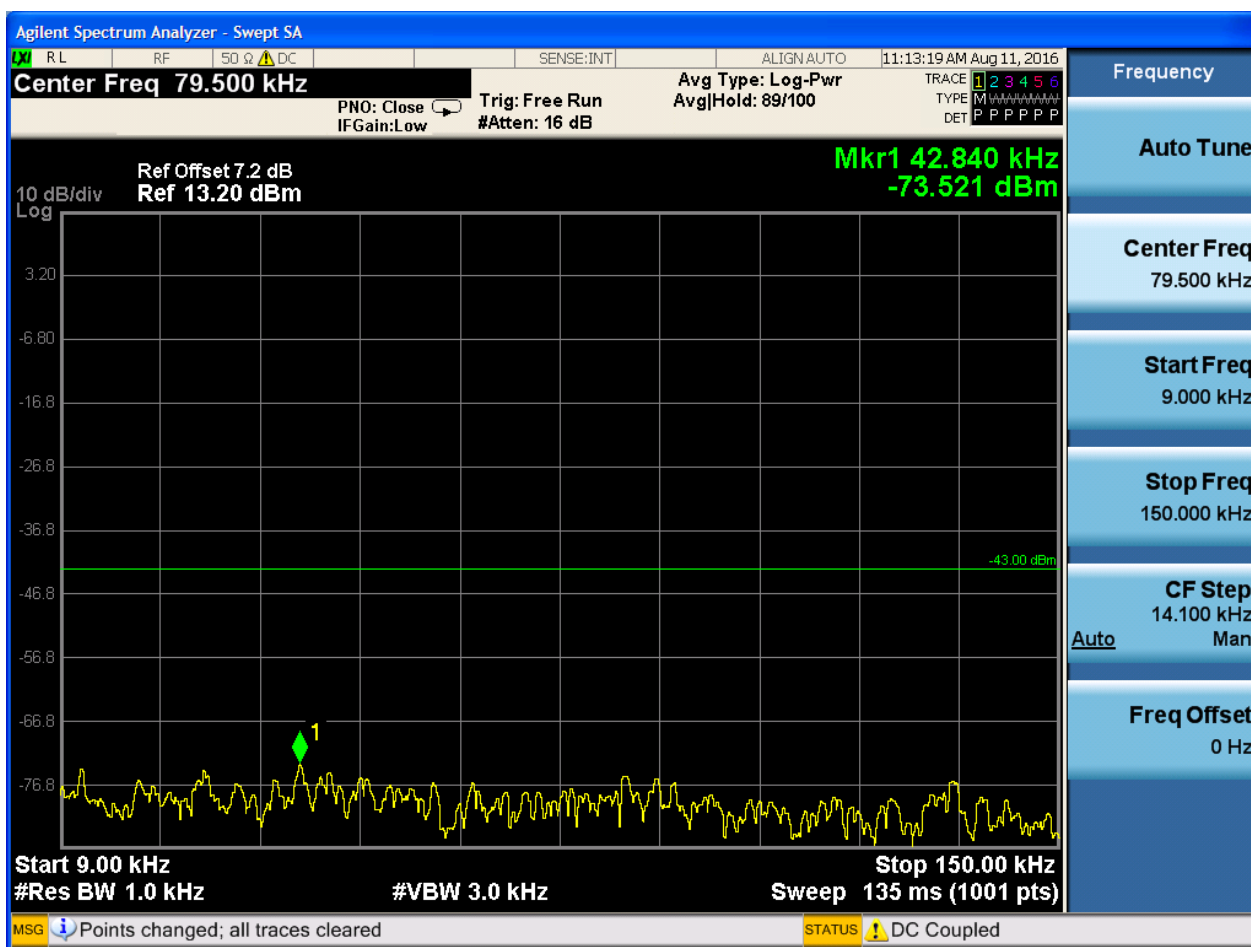


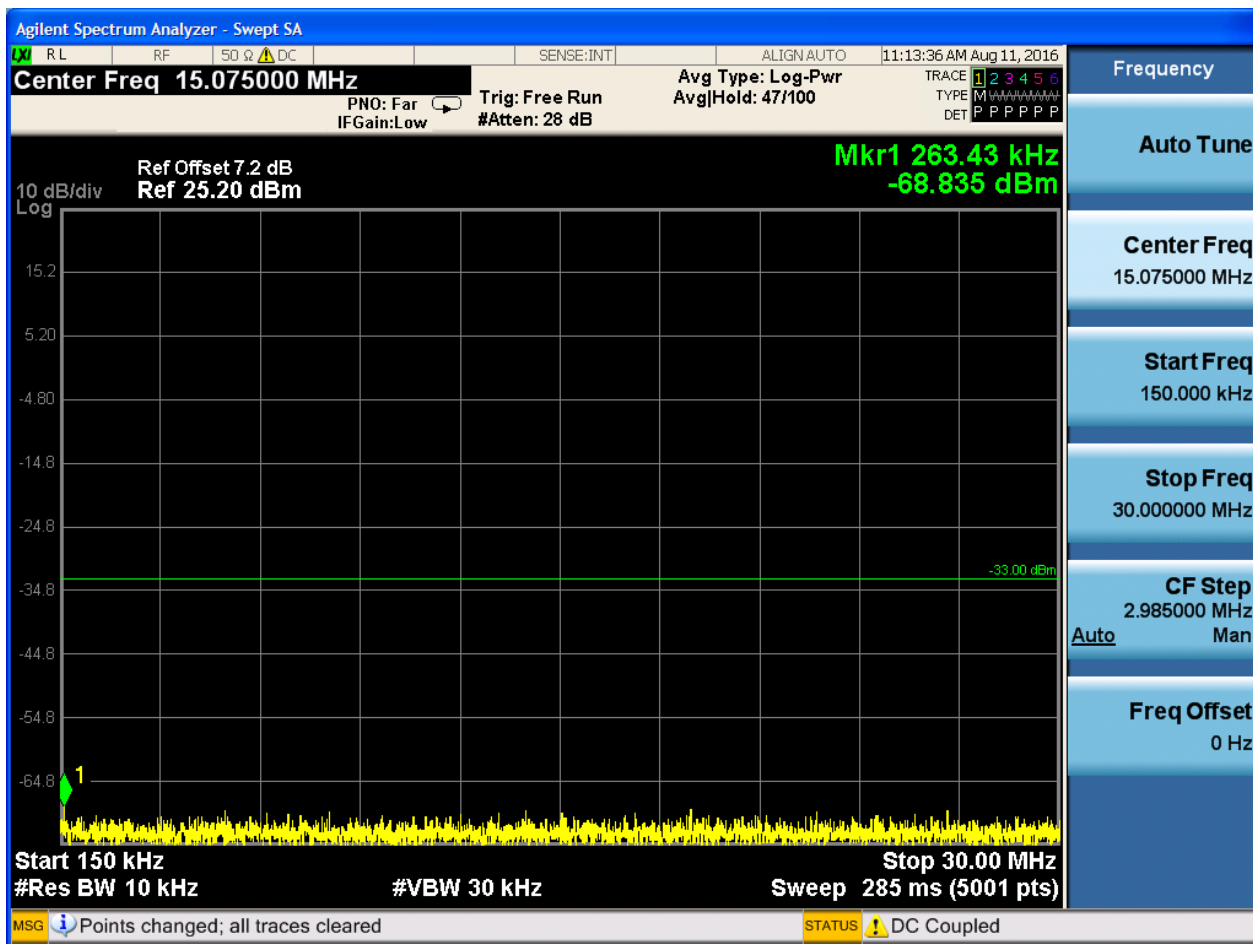


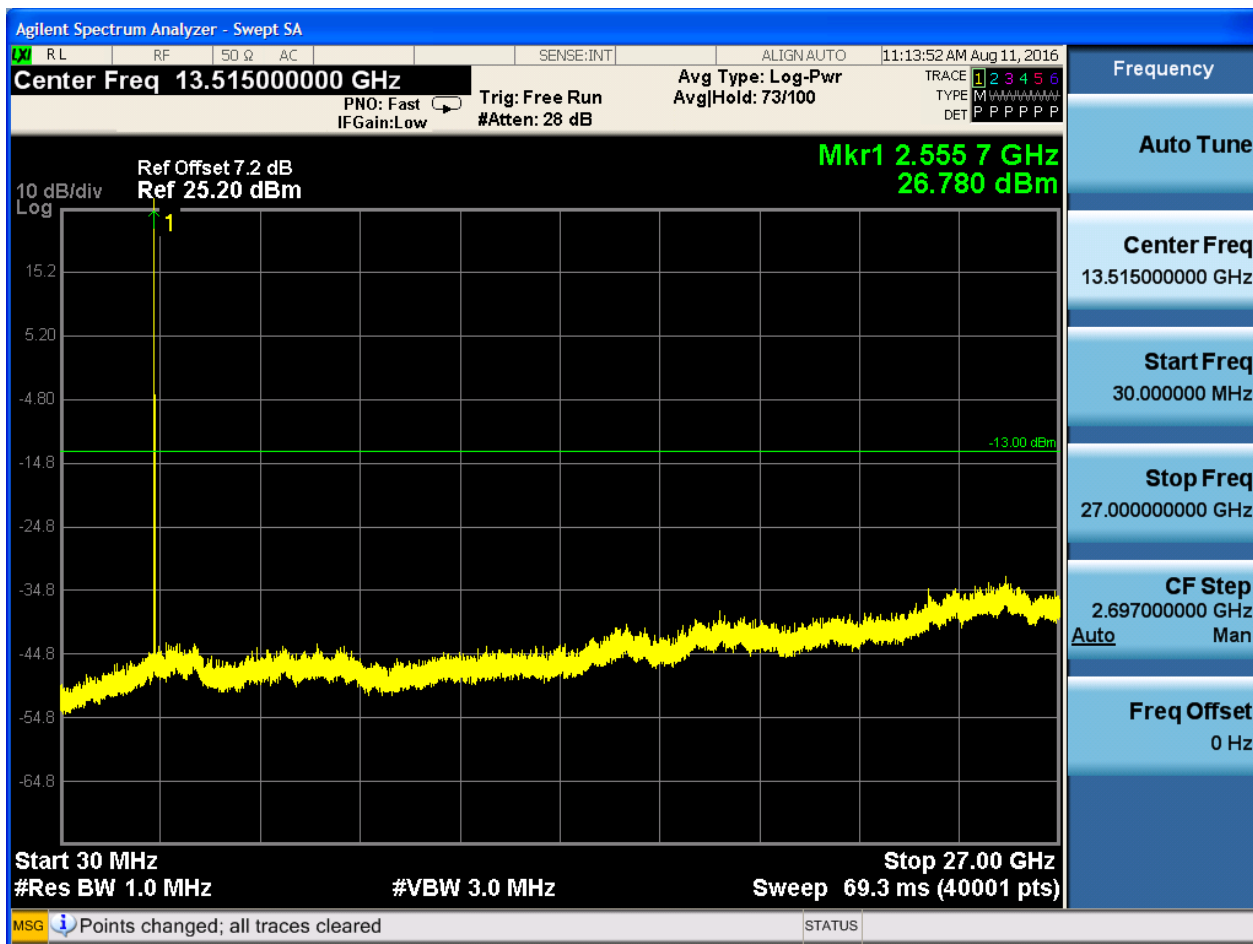
6.1.1.2.3 Test Bandwidth = 15

6.1.1.2.3.1 Test Channel = LCH

6.1.1.2.3.1.1 Test RB = RB1#0

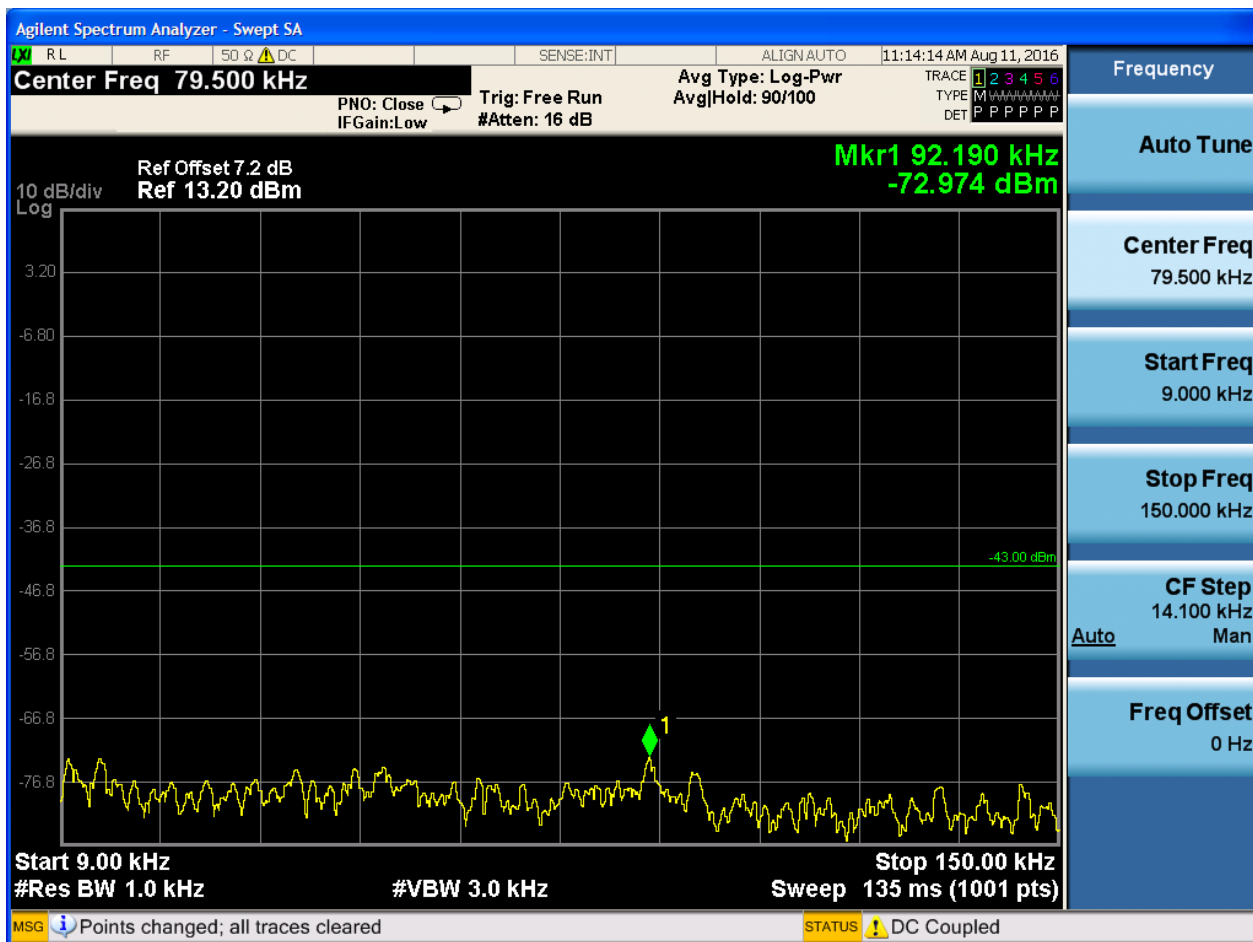




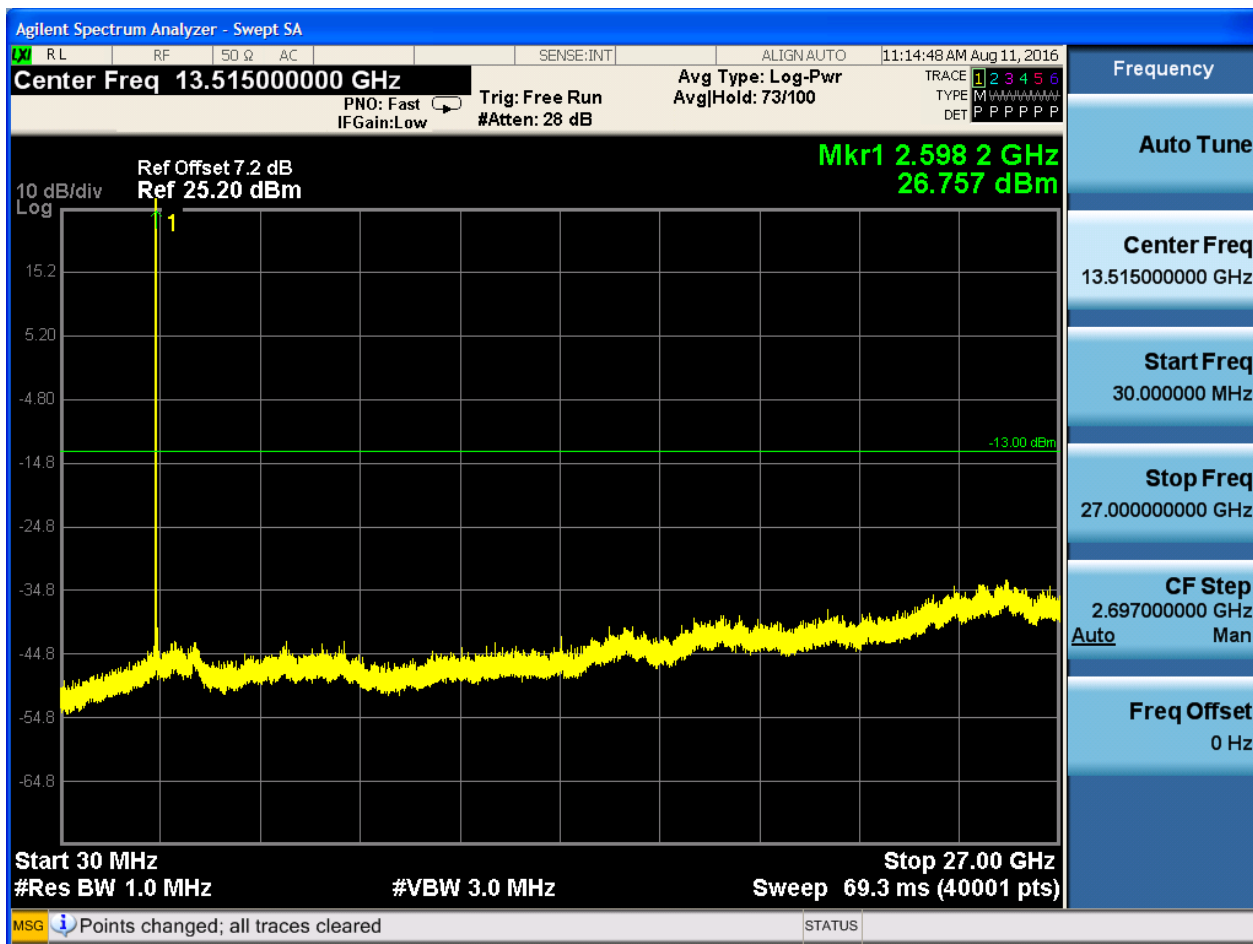


6.1.1.2.3.2 Test Channel = MCH

6.1.1.2.3.2.1 Test RB = RB1#0

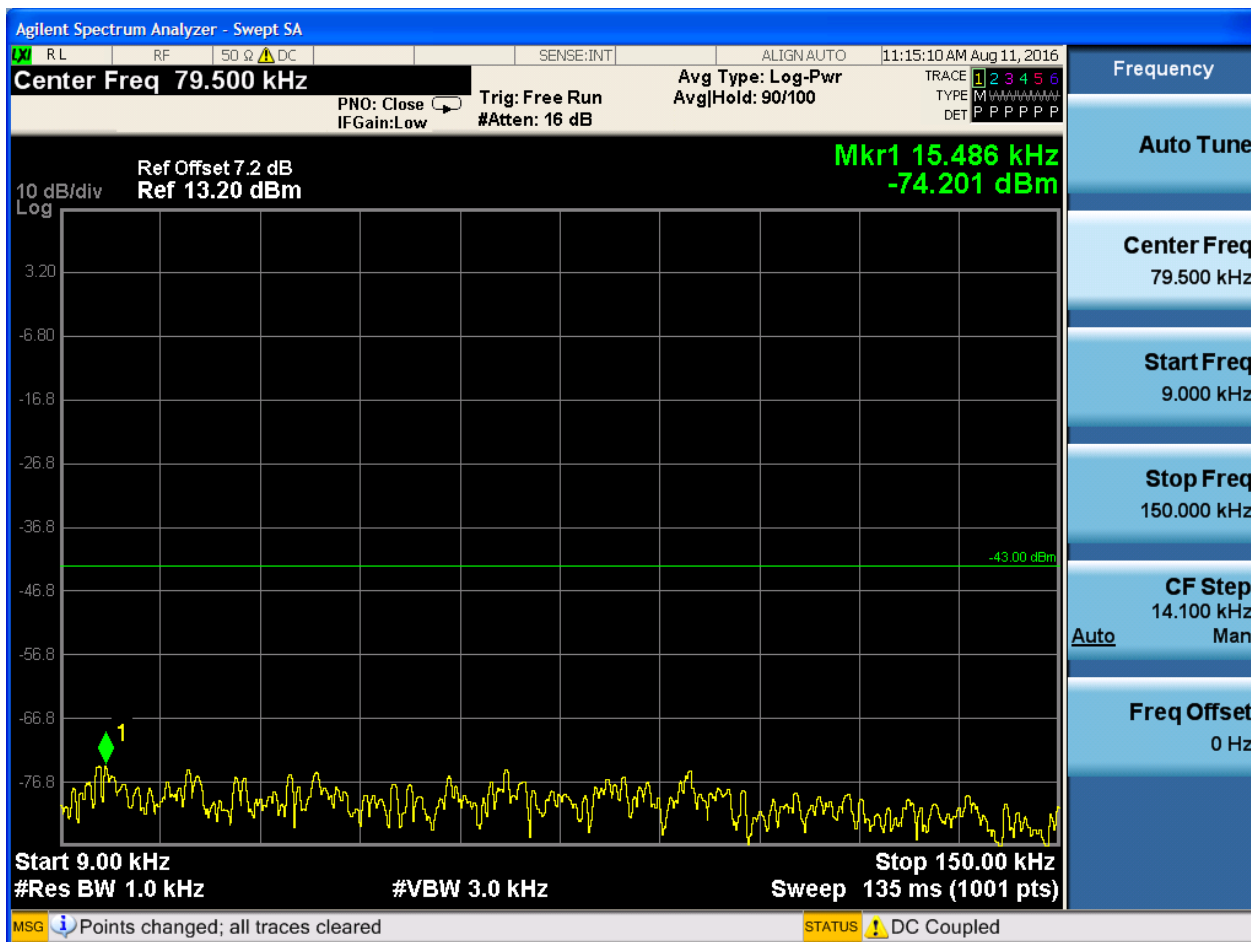


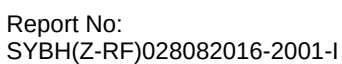


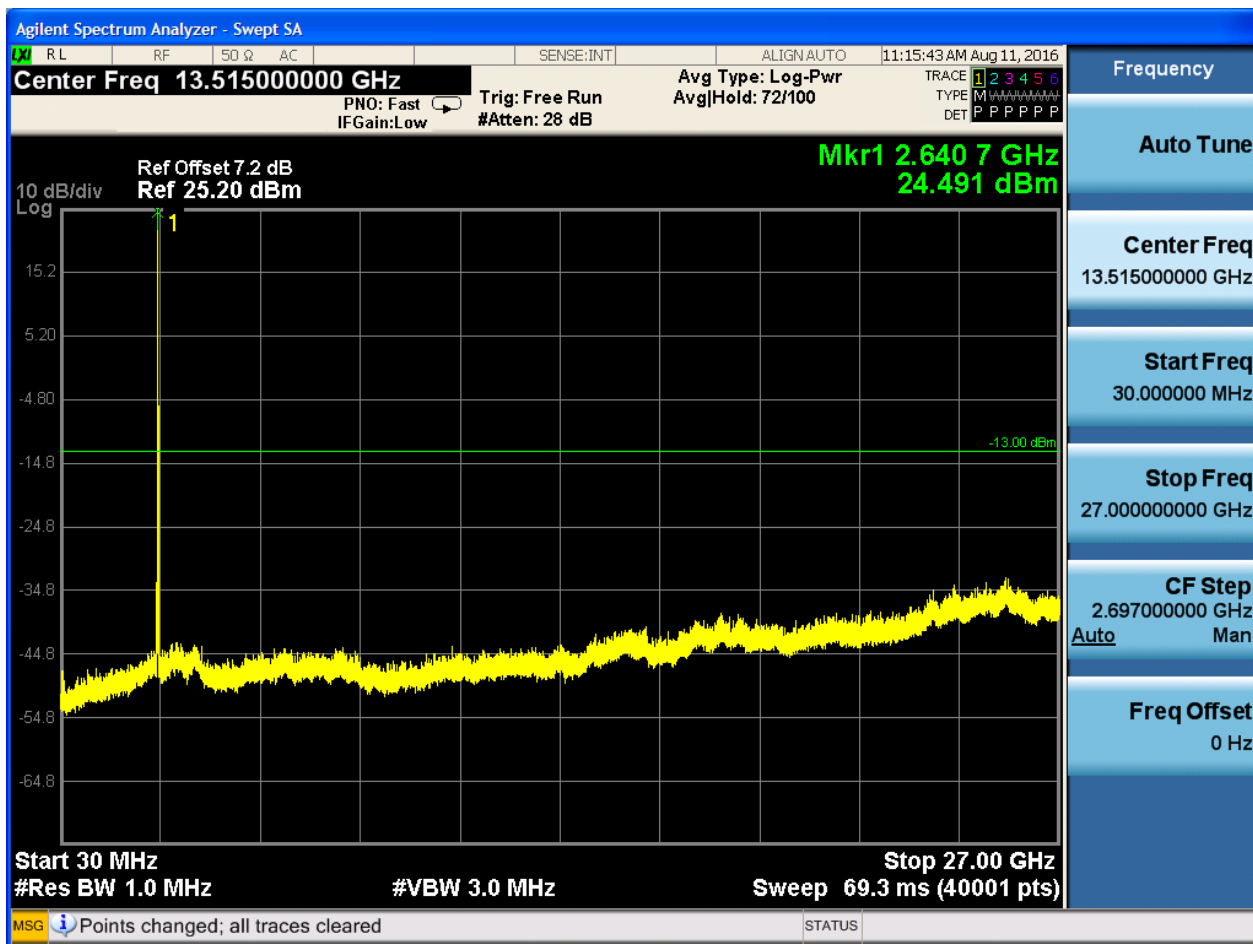


6.1.1.2.3.3 Test Channel = HCH

6.1.1.2.3.3.1 Test RB = RB1#0





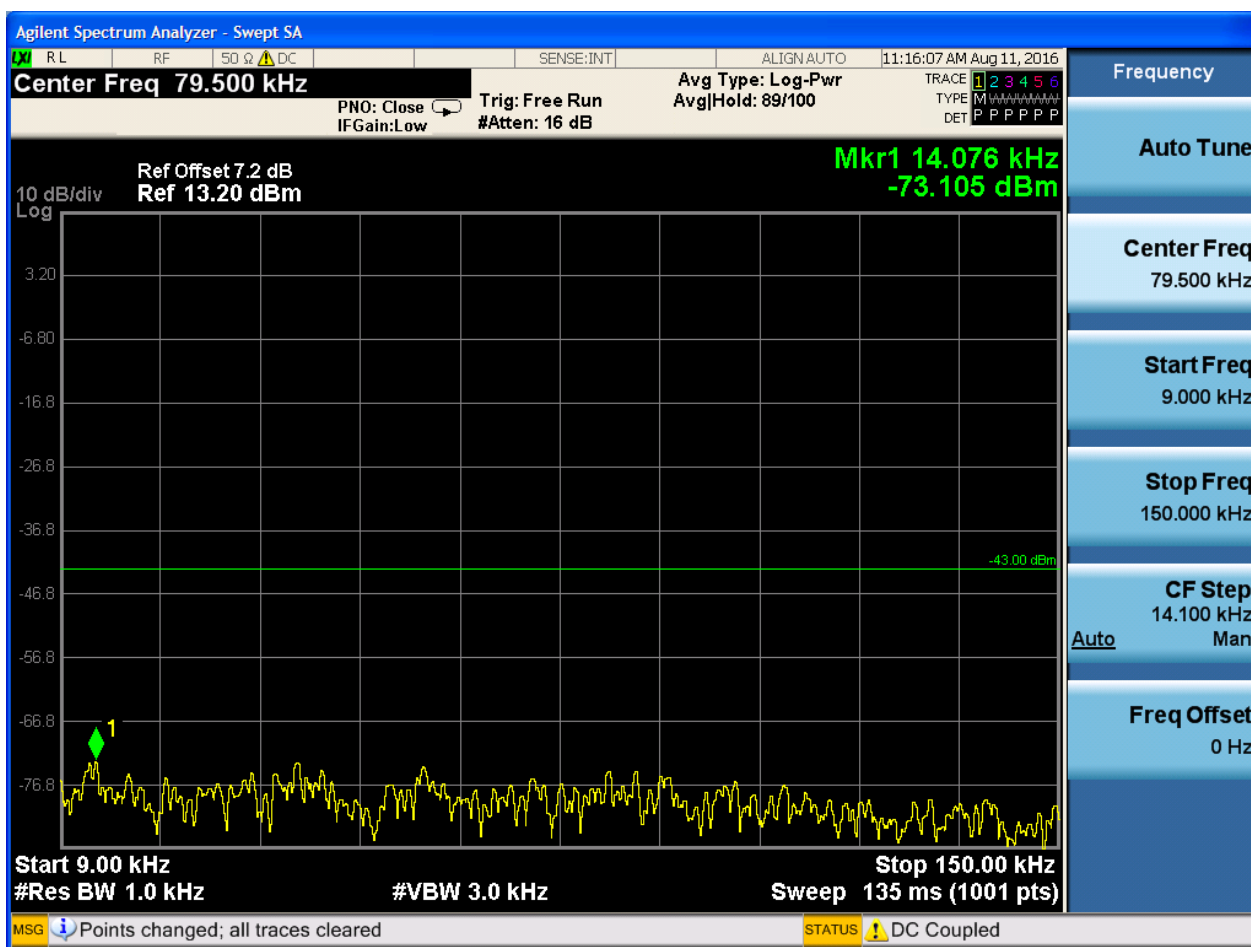


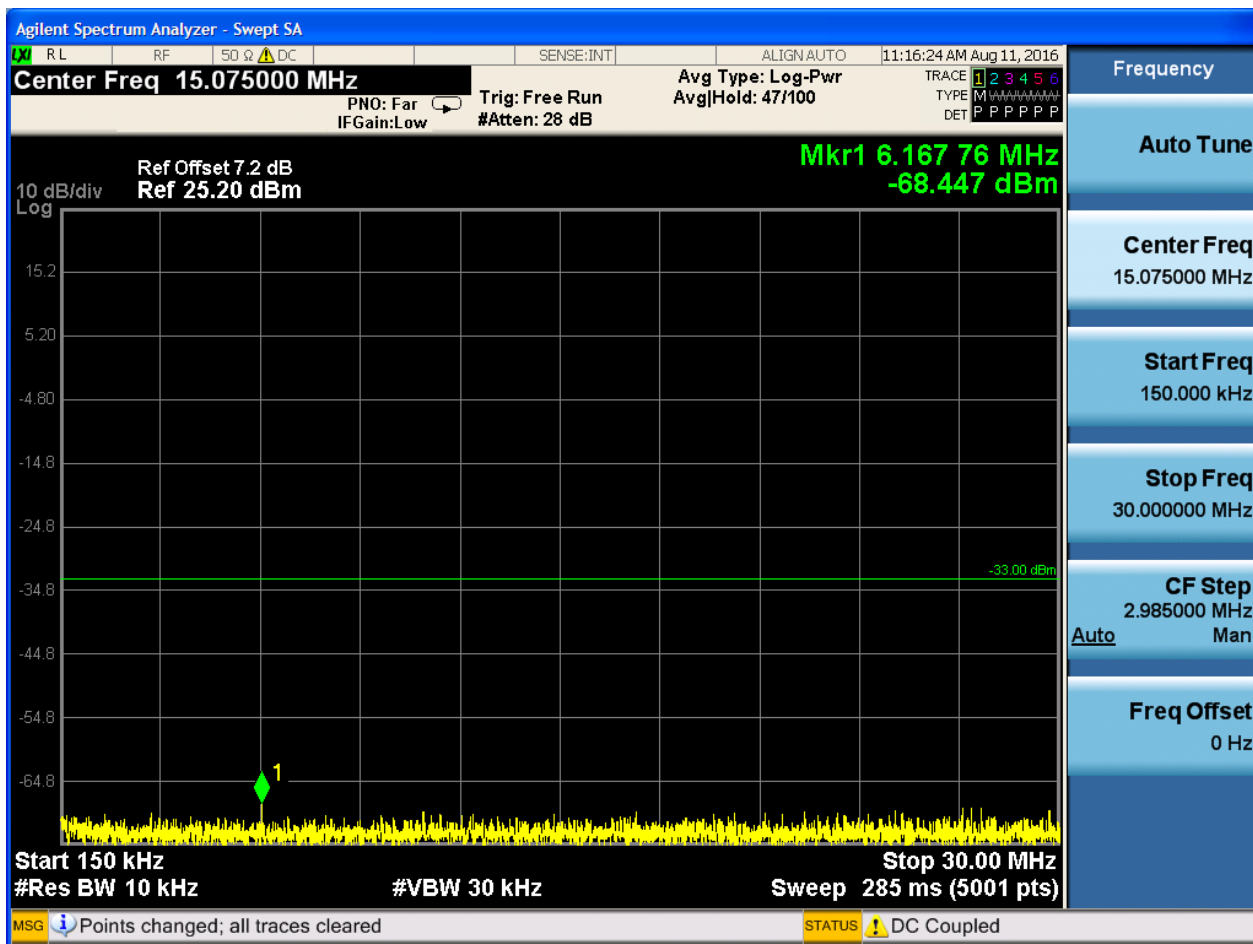


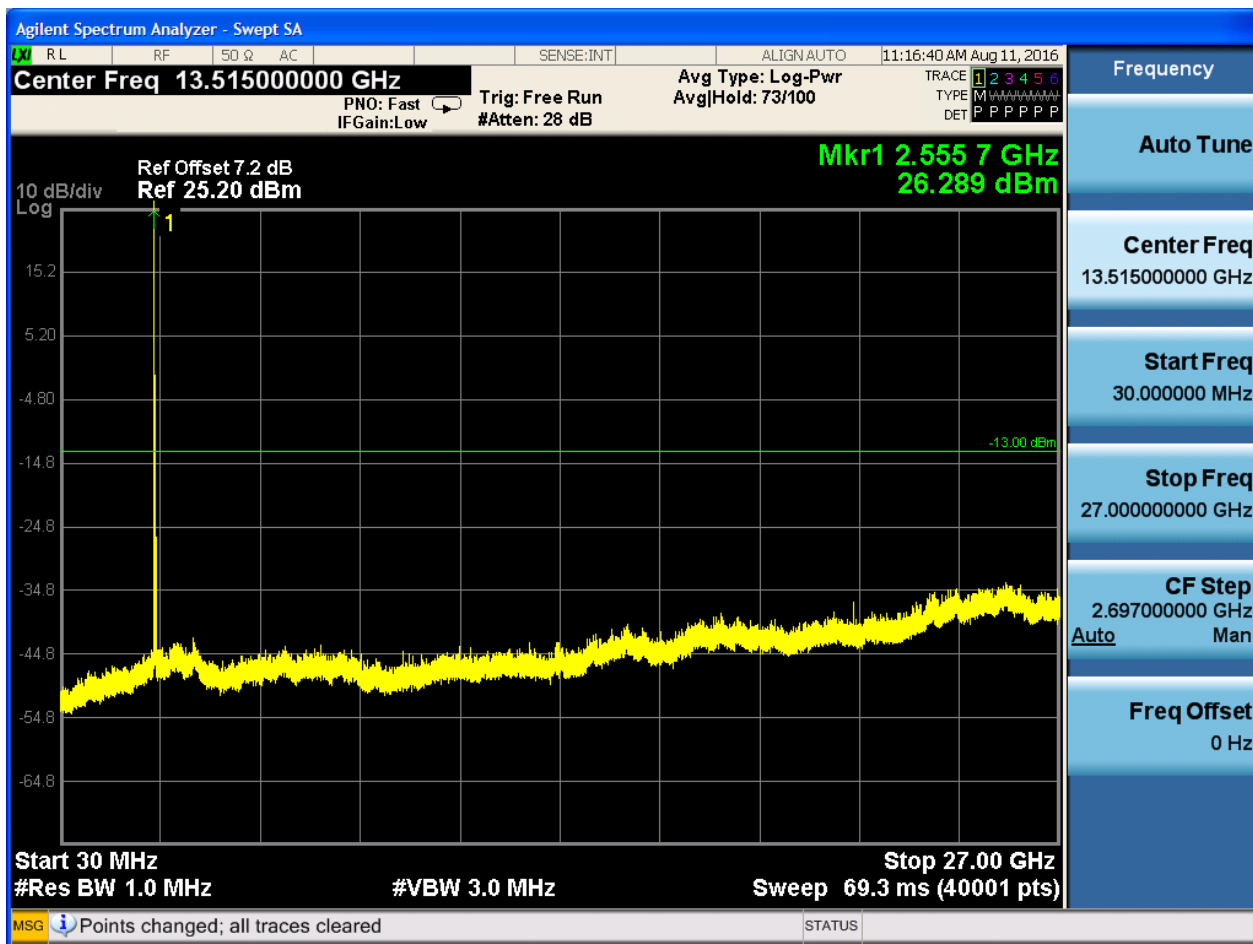
6.1.1.2.4 Test Bandwidth = 20

6.1.1.2.4.1 Test Channel = LCH

6.1.1.2.4.1.1 Test RB = RB1#0

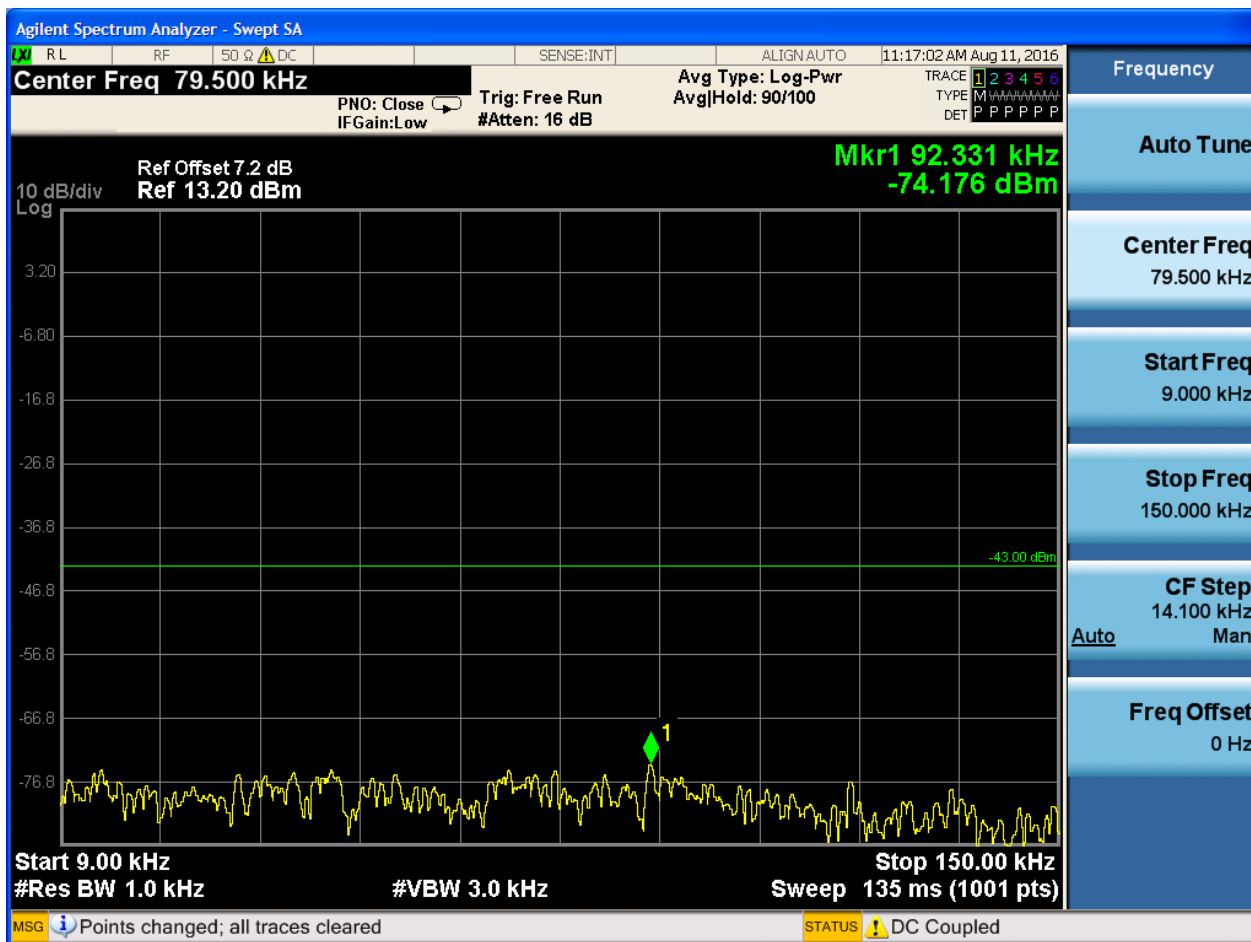


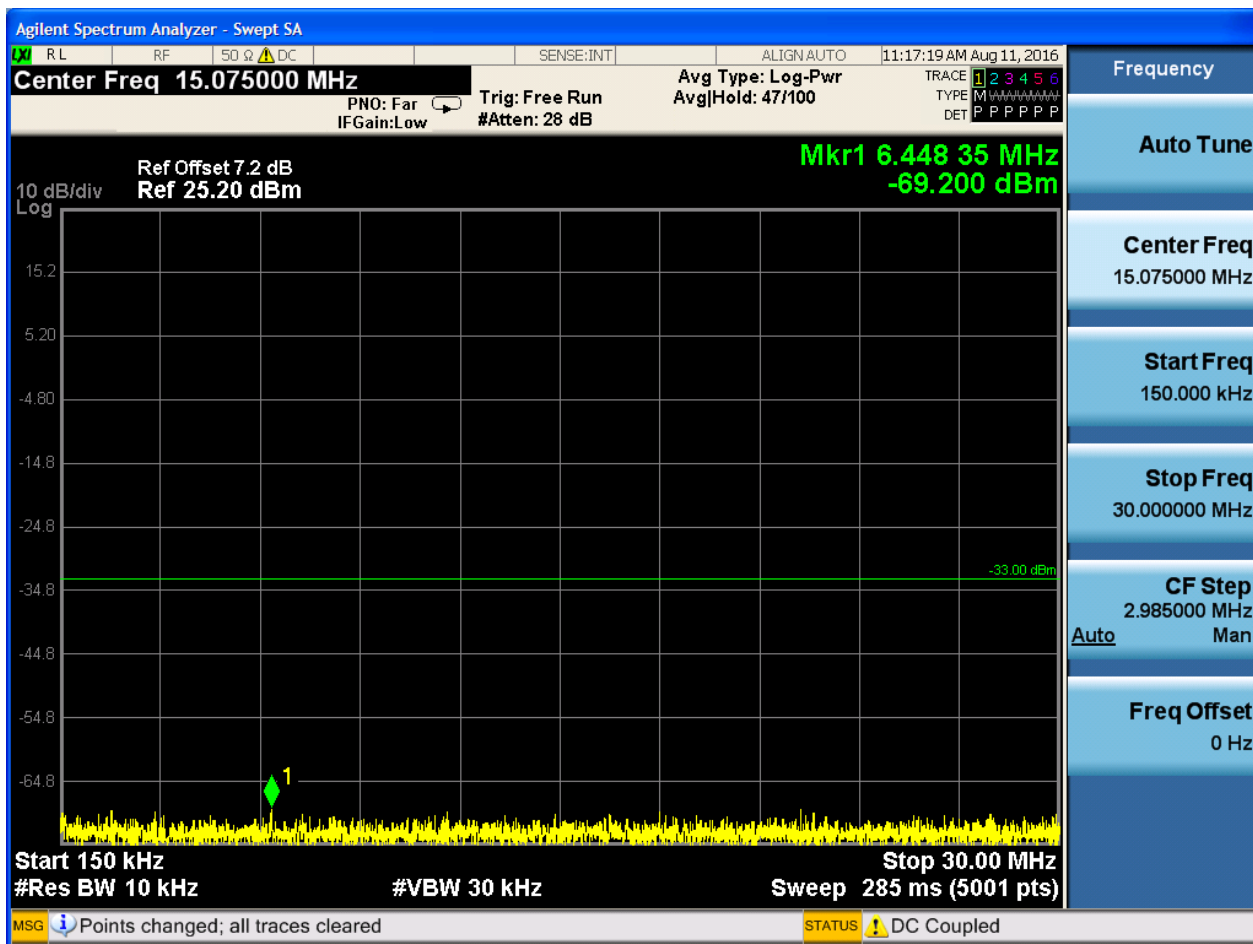


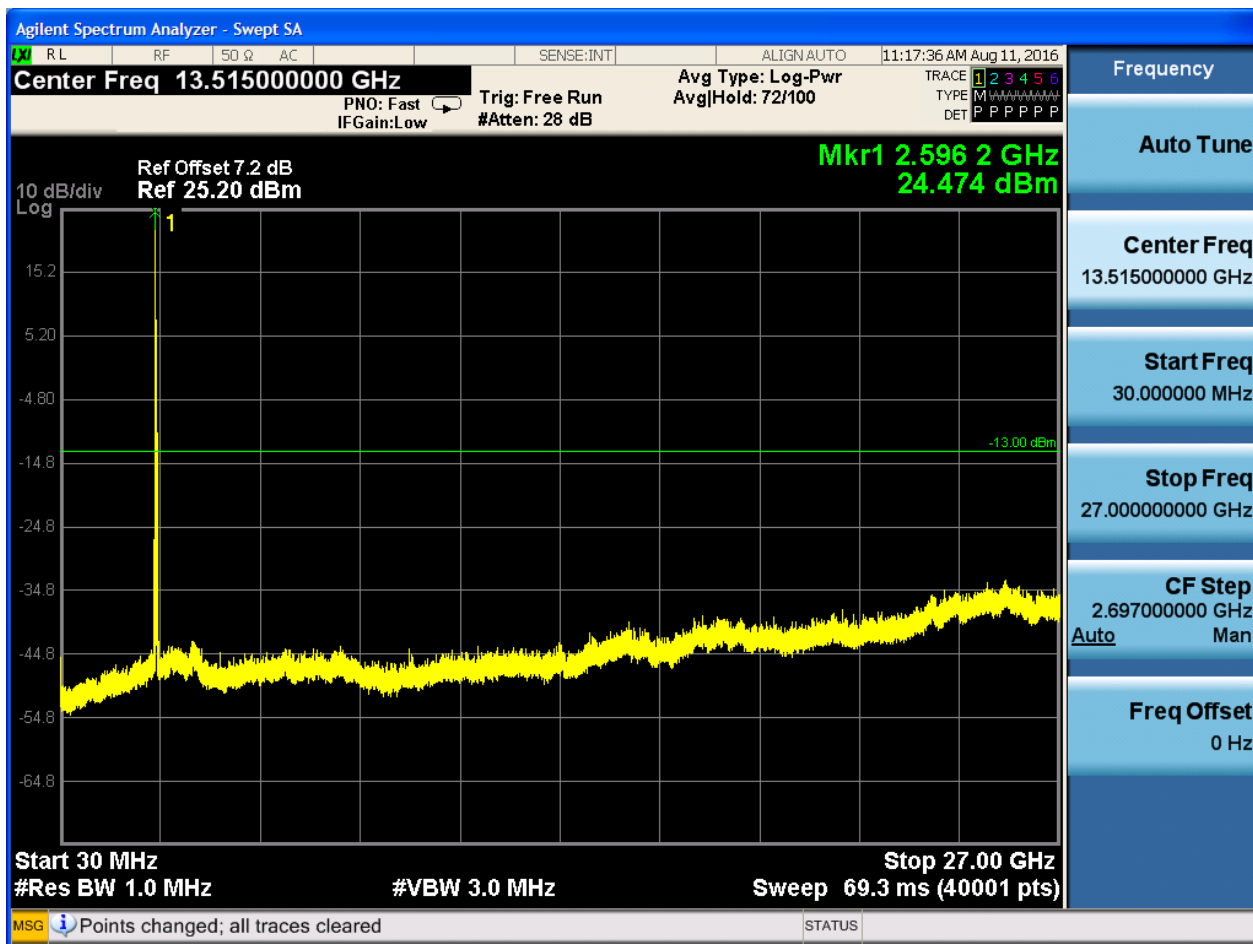


6.1.1.2.4.2 Test Channel = MCH

6.1.1.2.4.2.1 Test RB = RB1#0

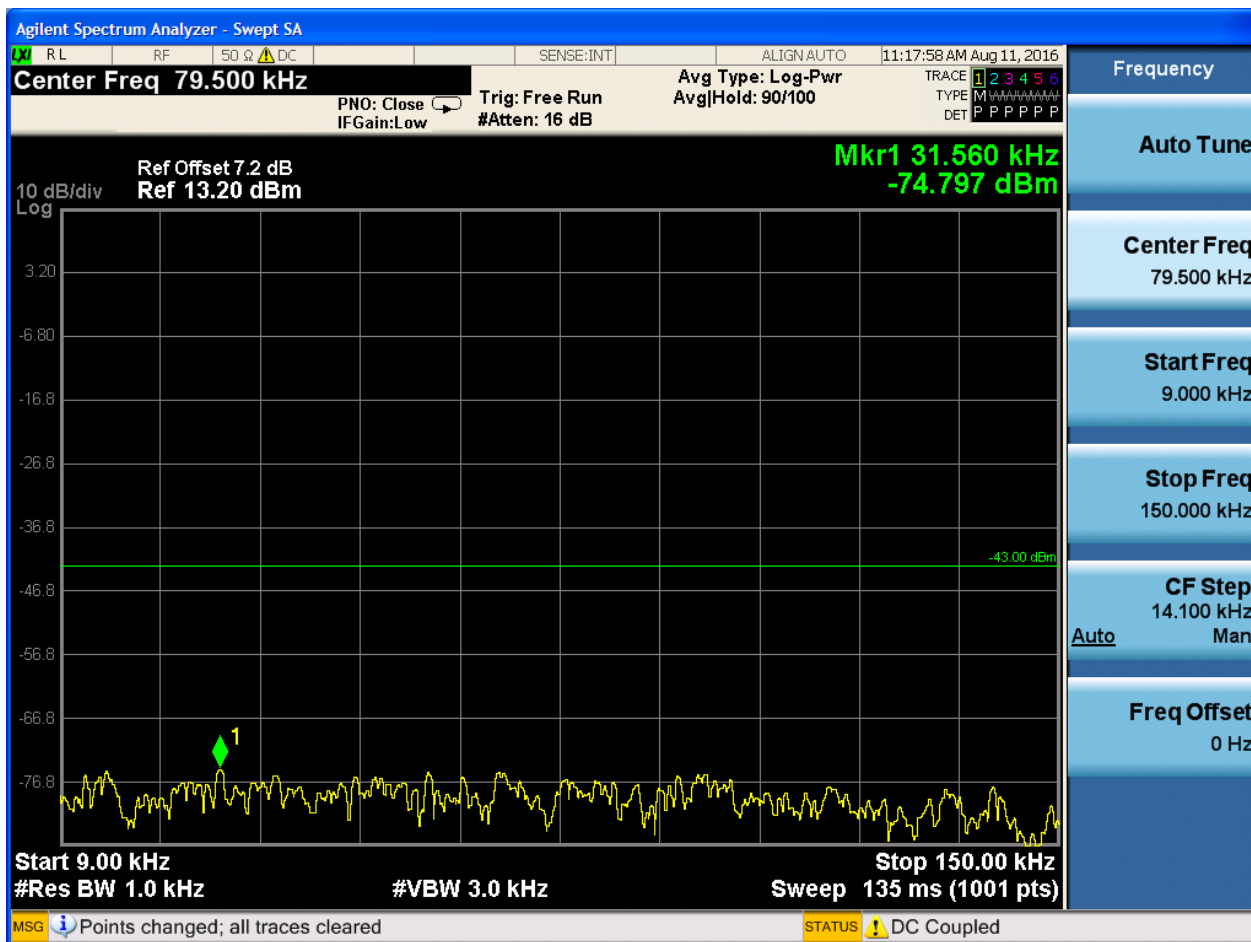


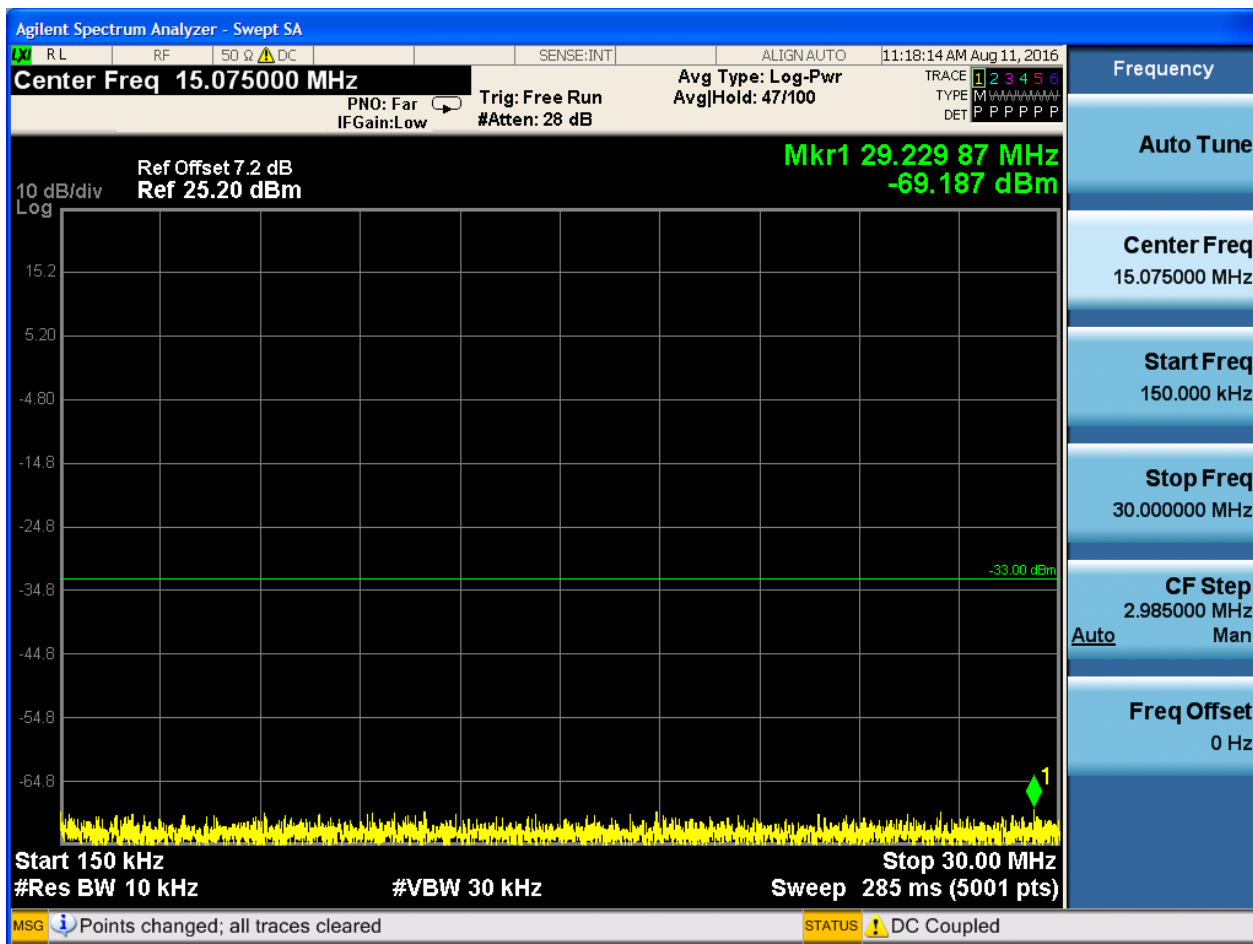


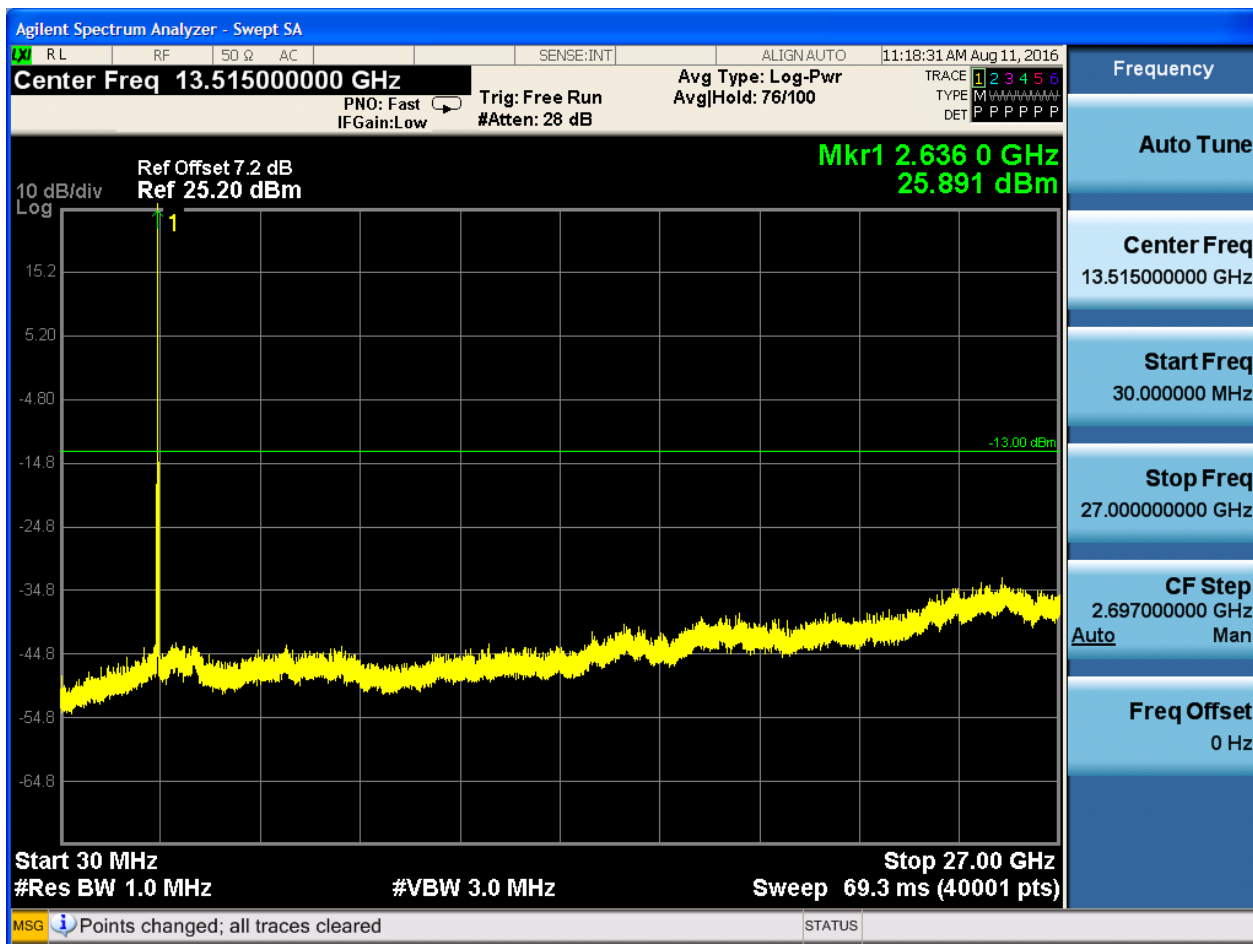


6.1.1.2.4.3 Test Channel = HCH

6.1.1.2.4.3.1 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, 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

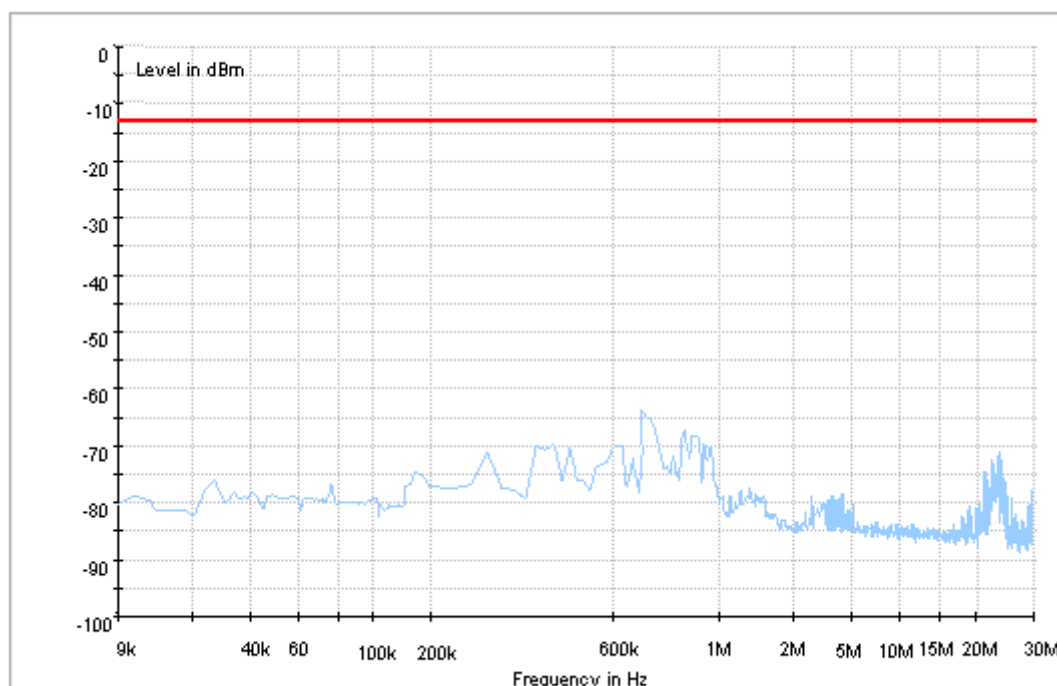
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

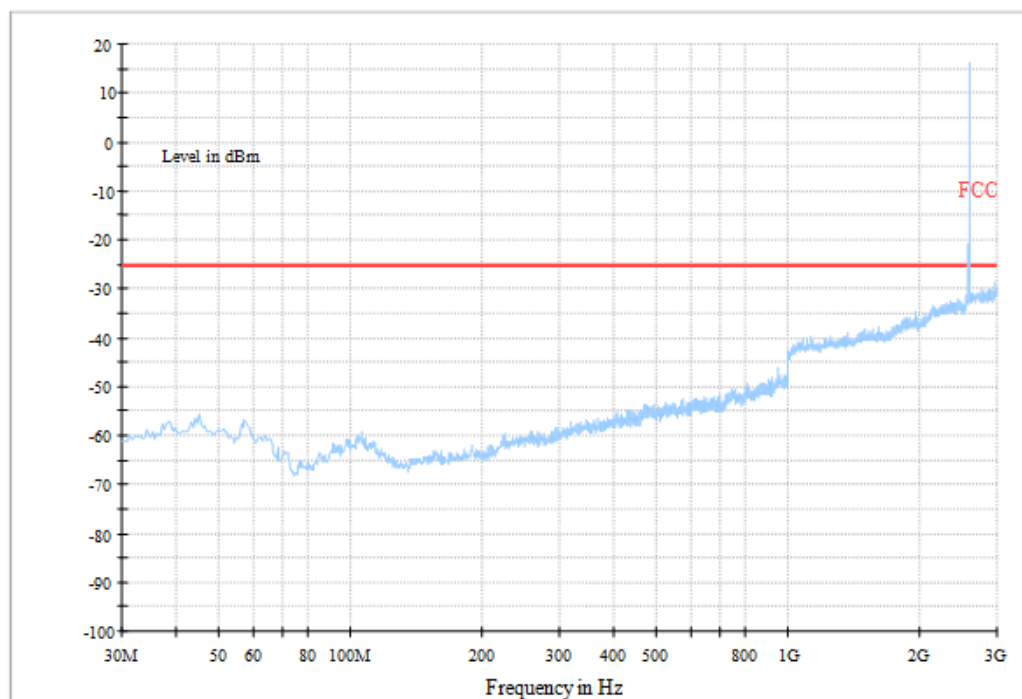
7.1 For LTE

7.1.1 Test Band = BAND41_Ant1

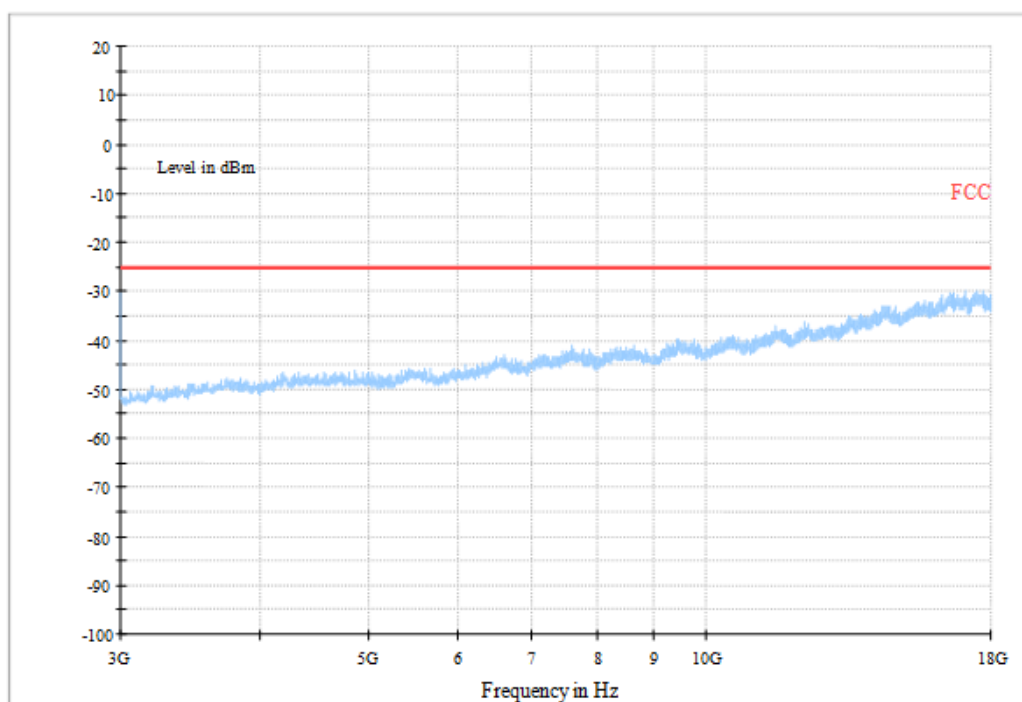
7.1.1.1 Test Bandwidth = 5

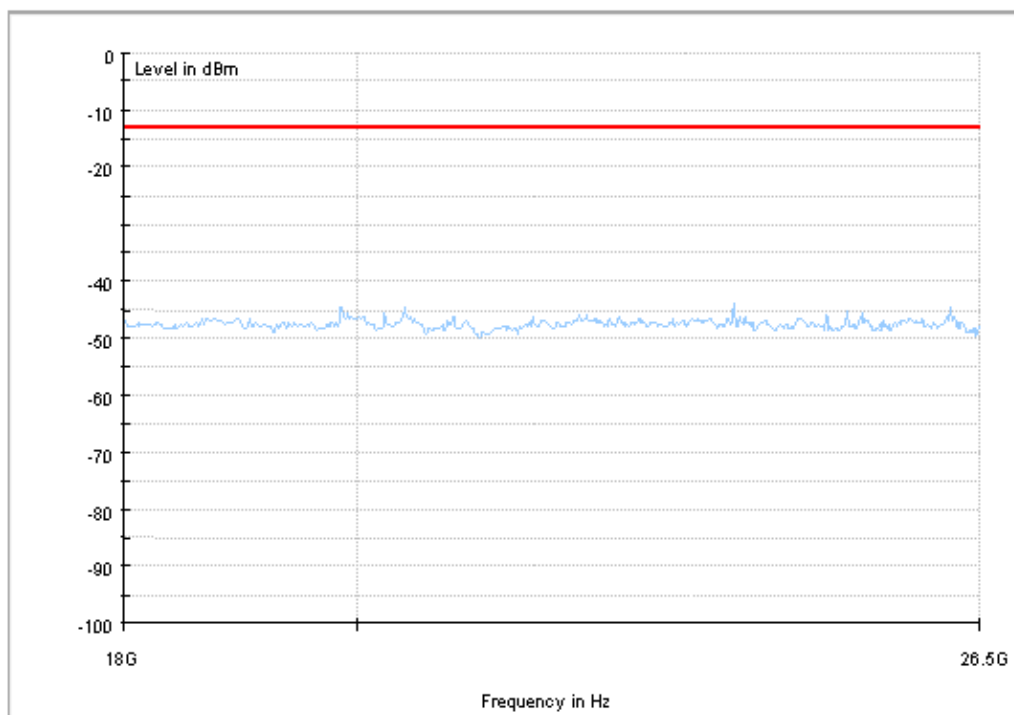


Copy of RSE-TX-DIRECTOR ABOVE 1.5G_L

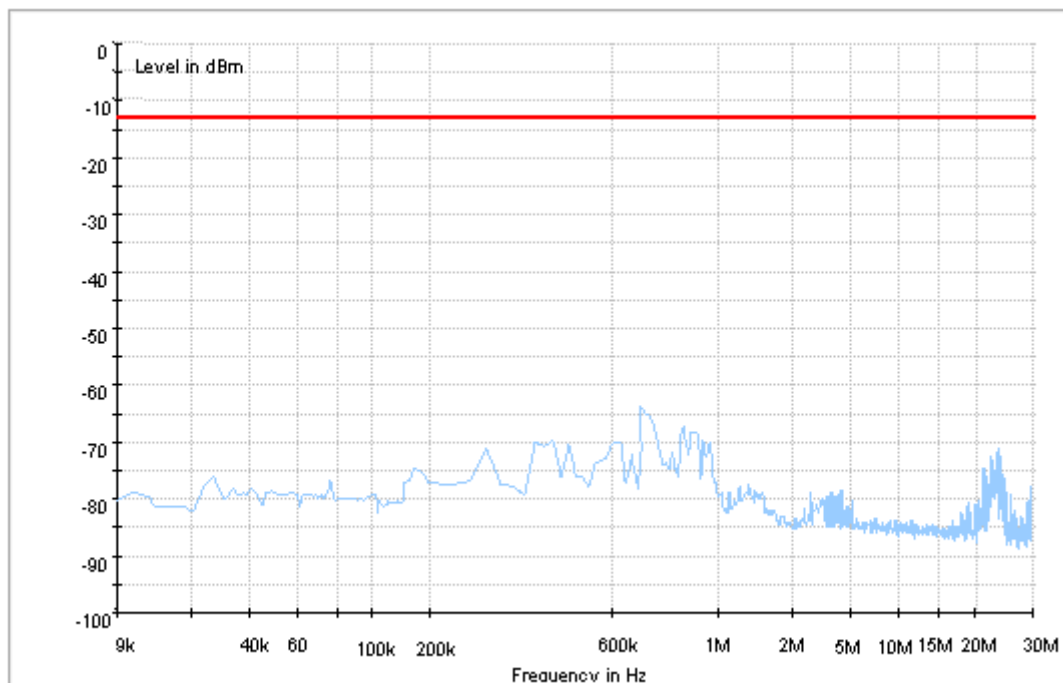


Copy of RSE-TX-DIRECTOR ABOVE 1.5G_H

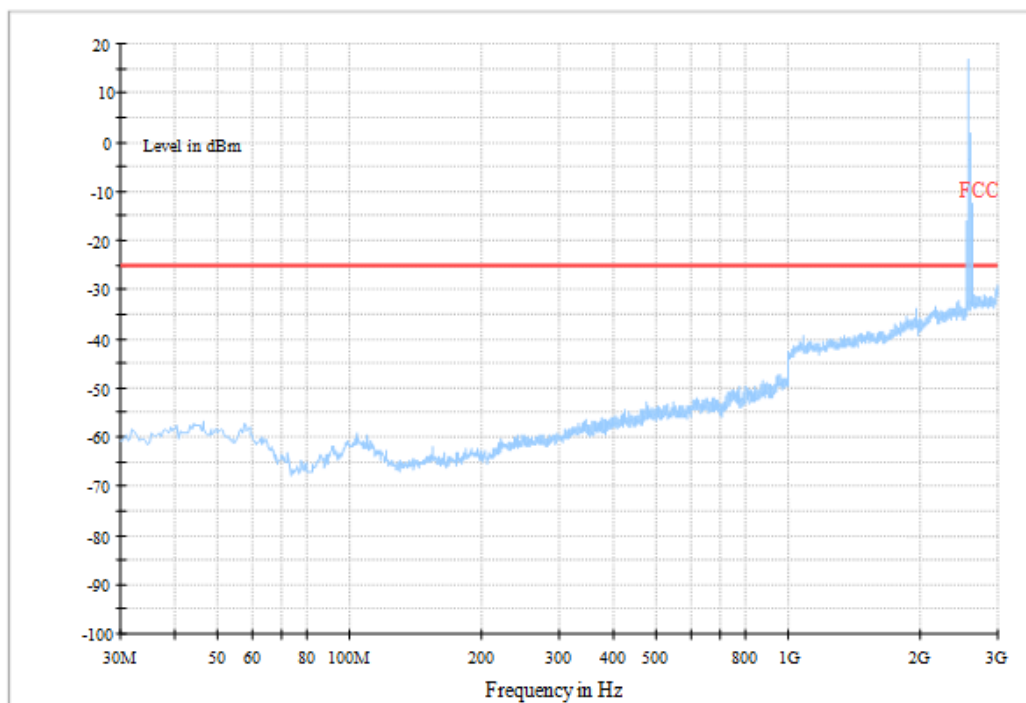




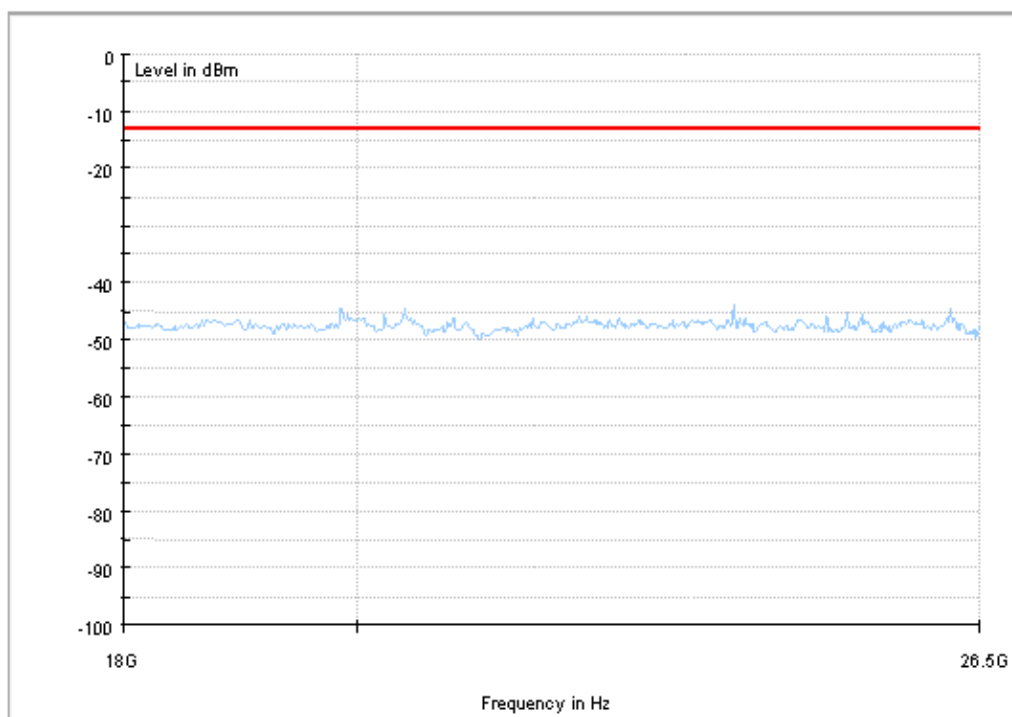
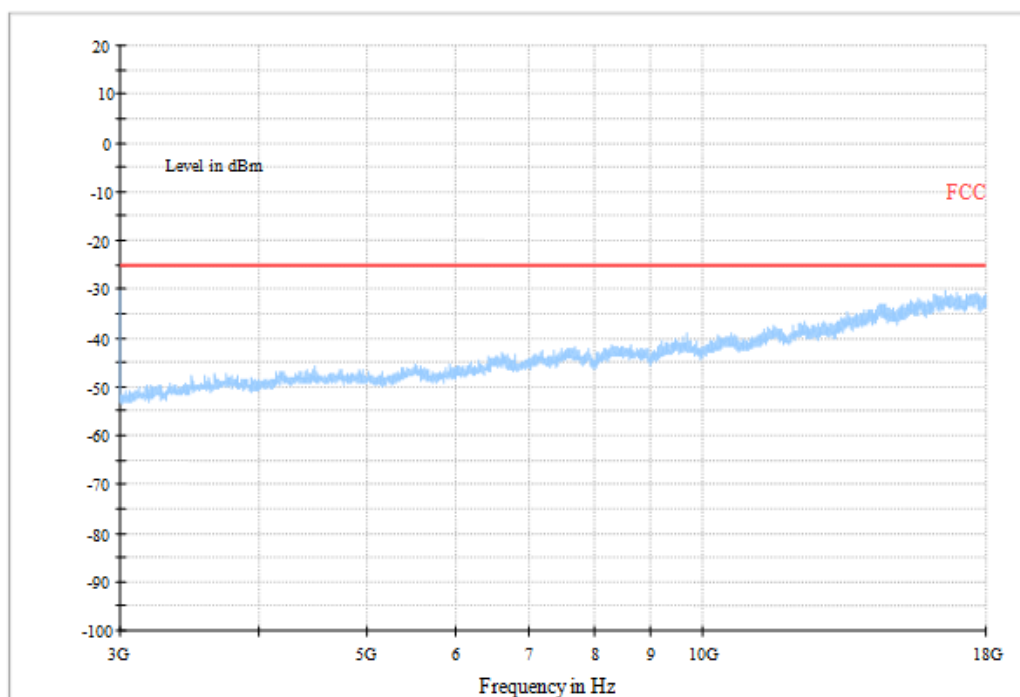
7.1.1.2 Test Bandwidth = 20



Copy of RSE-TX-DIRECTOR.ABOVE 1.5G_L

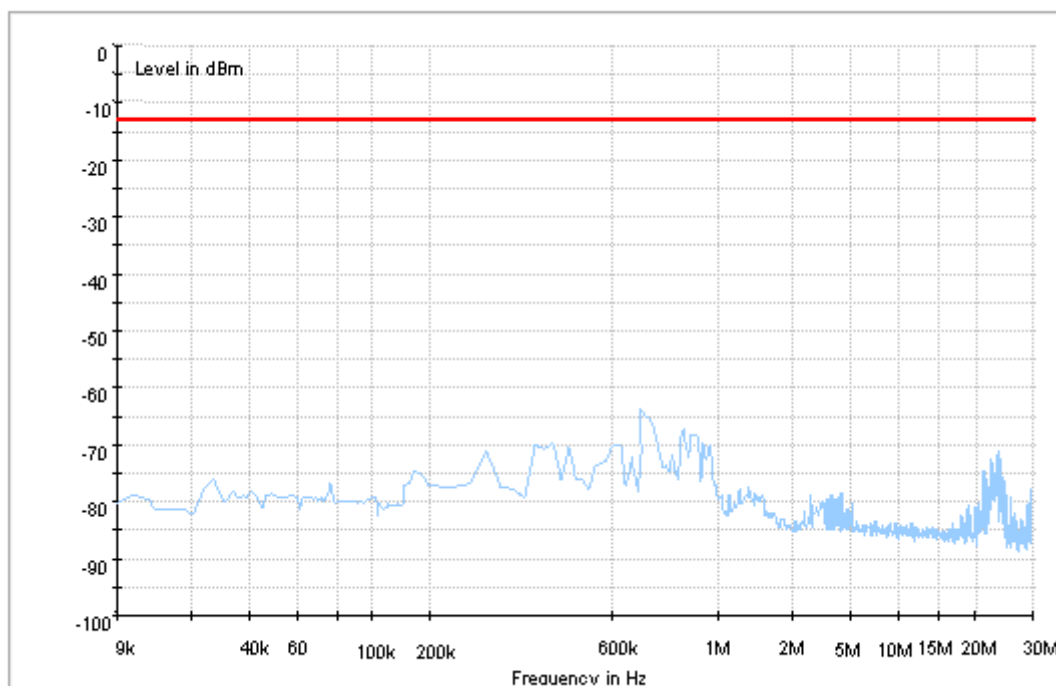


Copy of RSE-TX-DIRECTOR.ABOVE 1.5G_H

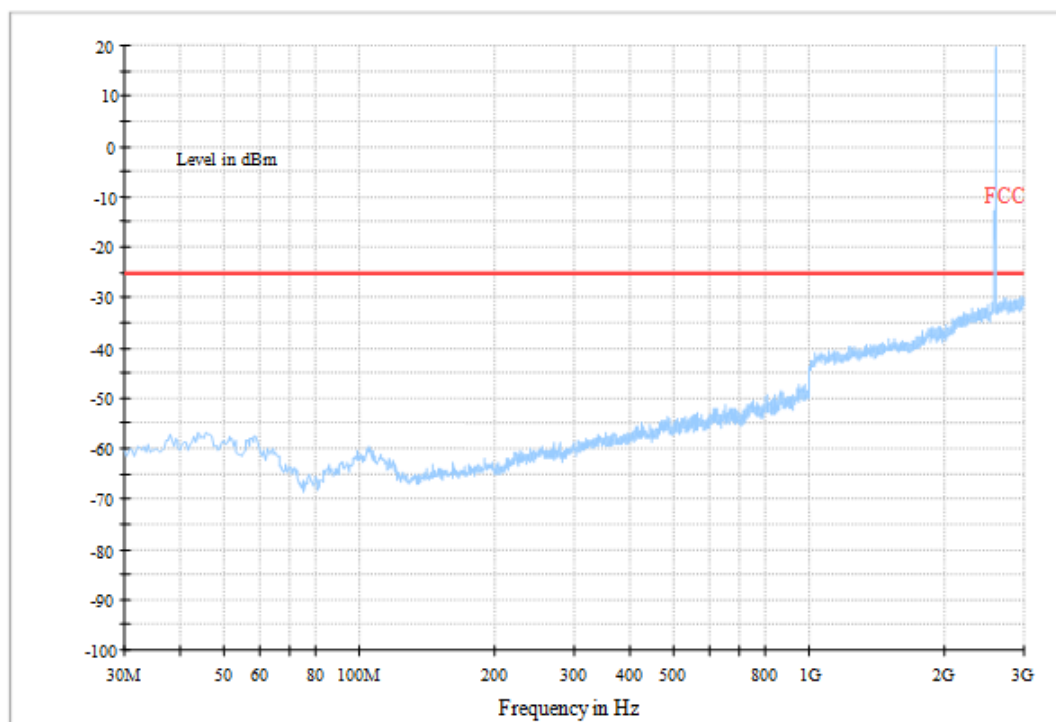


7.1.2 Test Band = BAND41_Ant2

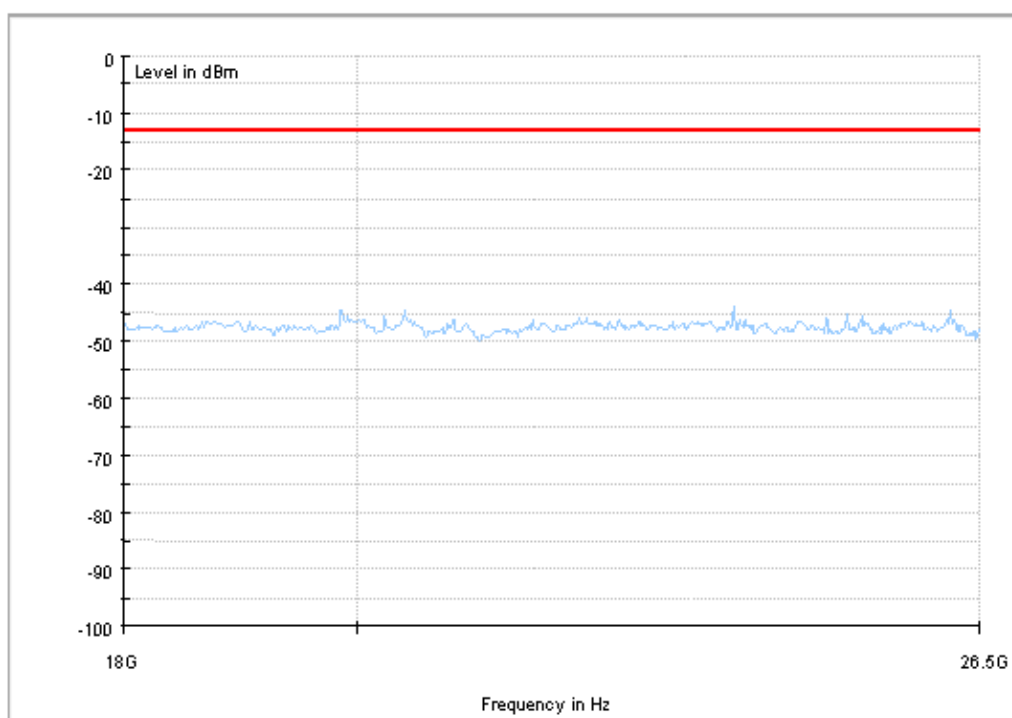
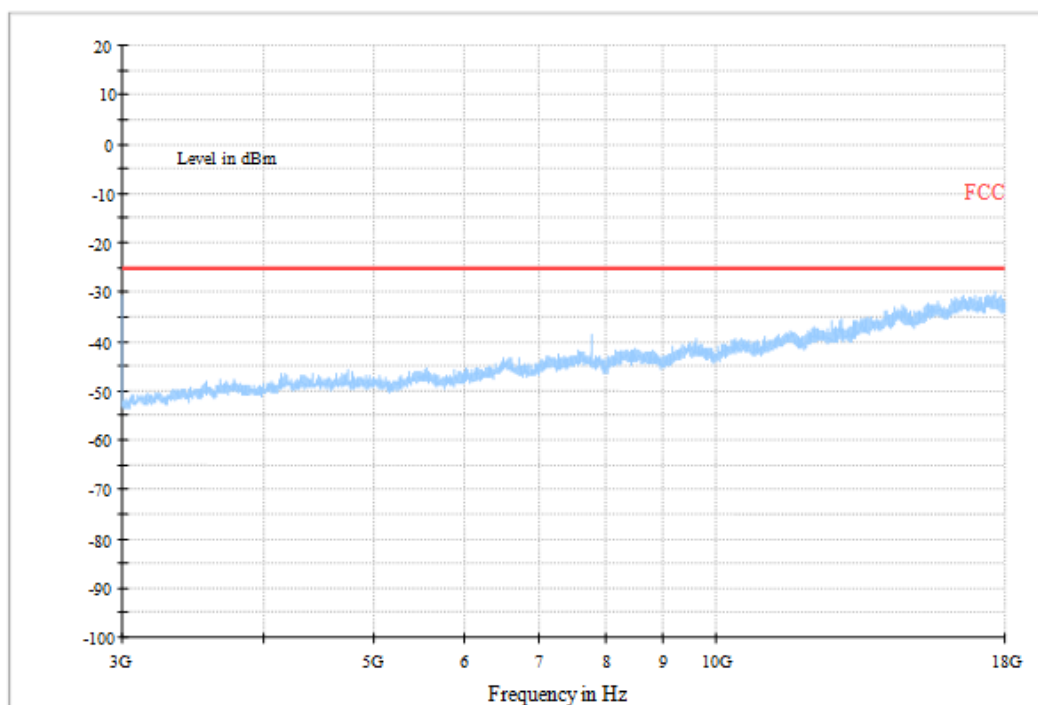
7.1.2.1 Test Bandwidth = 5



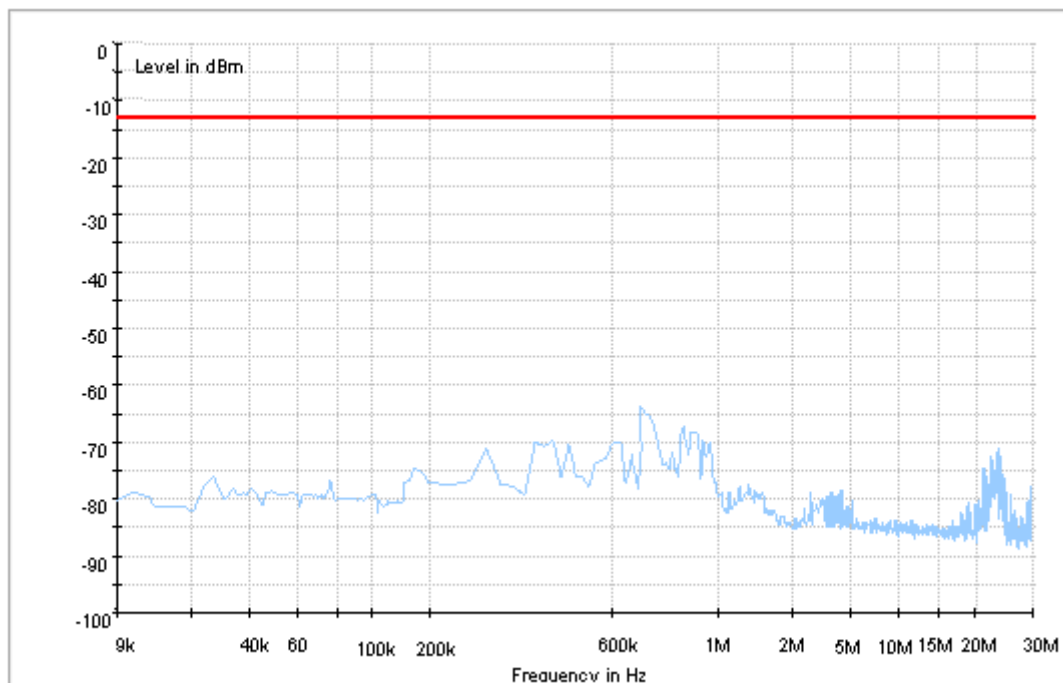
Copy of RSE-TX-DIRECTOR ABOVE 1.5G_L



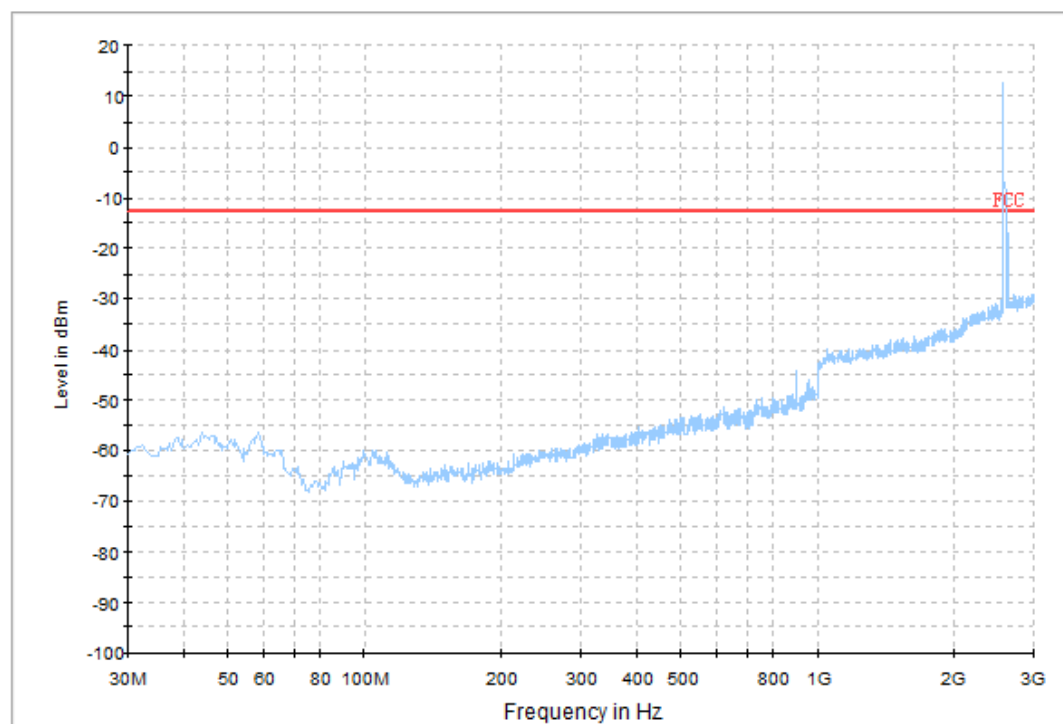
Copy of RSE-TX-DIRECTOR ABOVE 1.5G_H



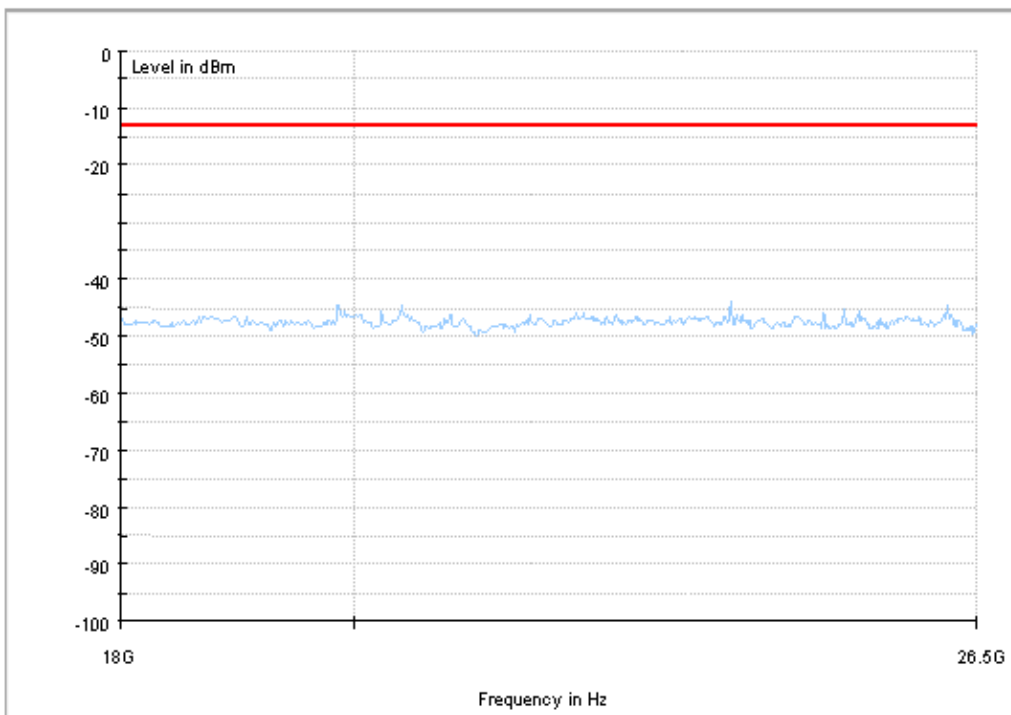
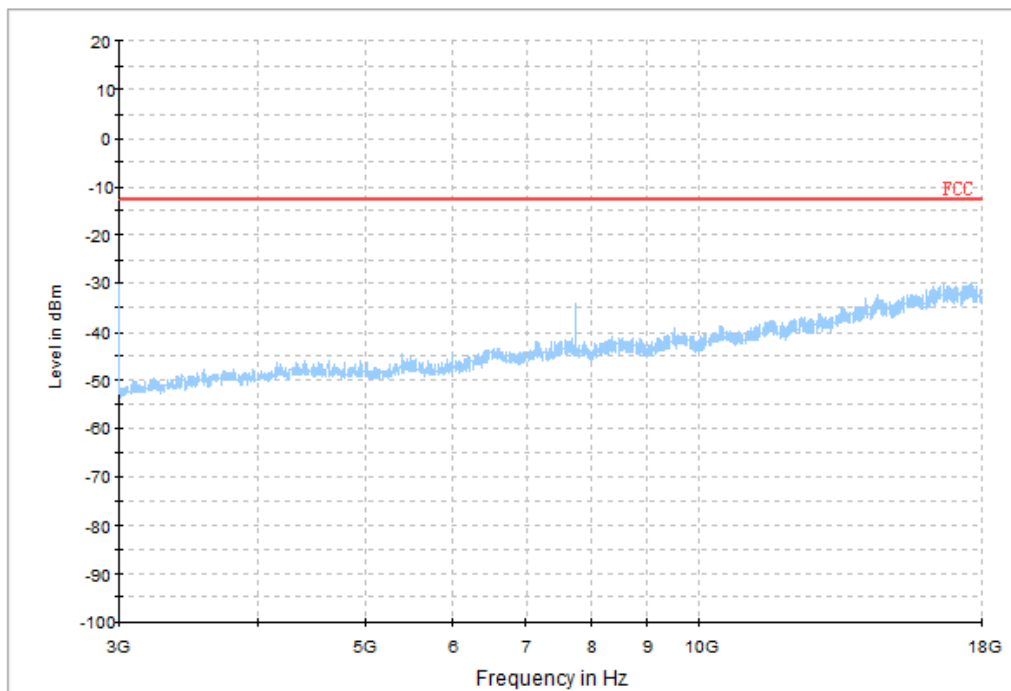
7.1.2.2 Test Bandwidth = 20



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
BAND41	LTE/TM1	5	LCH	TN	VL	-4.49	-0.00176	PASS
					VN	-4.78	-0.00187	PASS
					VH	-1.97	-0.00077	PASS
			MCH	TN	VL	8.45	0.00324	PASS
					VN	9.14	0.00351	PASS
					VH	13.52	0.00519	PASS
			HCH	TN	VL	-2.40	-0.0009	PASS
					VN	4.25	0.0016	PASS
					VH	-2.75	-0.00104	PASS
		10	LCH	TN	VL	-0.36	-0.00014	PASS
					VN	-4.56	-0.00178	PASS
					VH	1.26	0.00049	PASS
			MCH	TN	VL	-2.19	-0.00084	PASS
					VN	-3.56	-0.00137	PASS
					VH	-10.81	-0.00415	PASS
			HCH	TN	VL	1.17	0.00044	PASS
					VN	0.97	0.00037	PASS
					VH	-6.14	-0.00232	PASS
		15	LCH	TN	VL	-1.76	-0.00069	PASS
					VN	-3.72	-0.00145	PASS
					VH	-0.39	-0.00015	PASS
			MCH	TN	VL	-0.36	-0.00014	PASS
					VN	-0.86	-0.00033	PASS
					VH	1.53	0.00059	PASS
			HCH	TN	VL	0.93	0.00035	PASS
					VN	-2.22	-0.00084	PASS
					VH	-3.91	-0.00148	PASS
		20	LCH	TN	VL	1.95	0.00076	PASS
					VN	-2.22	-0.00087	PASS
					VH	-3.78	-0.00147	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			MCH	TN	VL	2.78	0.00107	PASS
					VN	-0.30	-0.00012	PASS
					VH	-0.96	-0.00037	PASS
			HCH	TN	VL	-2.78	-0.00105	PASS
					VN	-5.34	-0.00202	PASS
					VH	2.66	0.00101	PASS
		5	LCH	TN	VL	-3.66	-0.00143	PASS
					VN	-0.43	-0.00017	PASS
					VH	-3.10	-0.00121	PASS
			MCH	TN	VL	-1.33	-0.00051	PASS
					VN	-9.47	-0.00364	PASS
					VH	-4.58	-0.00176	PASS
			HCH	TN	VL	-3.89	-0.00147	PASS
					VN	2.16	0.00081	PASS
					VH	-4.65	-0.00175	PASS
		10	LCH	TN	VL	-9.48	-0.0037	PASS
					VN	-0.57	-0.00022	PASS
					VH	-1.46	-0.00057	PASS
			MCH	TN	VL	-5.29	-0.00203	PASS
					VN	4.28	0.00164	PASS
					VH	1.59	0.00061	PASS
			HCH	TN	VL	-4.43	-0.00167	PASS
					VN	-0.10	-0.00004	PASS
					VH	2.55	0.00096	PASS
		15	LCH	TN	VL	-2.02	-0.00079	PASS
					VN	1.42	0.00055	PASS
					VH	-0.19	-0.00007	PASS
			MCH	TN	VL	-6.97	-0.00268	PASS
					VN	-0.43	-0.00017	PASS
					VH	1.07	0.00041	PASS
			HCH	TN	VL	1.85	0.0007	PASS
					VN	-1.97	-0.00074	PASS
					VH	-2.49	-0.00094	PASS
	LTE/TM2	20	LCH	TN	VL	-2.70	-0.00105	PASS
					VN	2.22	0.00087	PASS
					VH	-1.80	-0.0007	PASS
			MCH	TN	VL	2.06	0.00079	PASS
					VN	-3.19	-0.00122	PASS
					VH	-1.06	-0.00041	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			HCH	TN	VL	-1.66	-0.00063	PASS
					VN	-0.56	-0.00021	PASS
					VH	-25.38	-0.0096	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
BAND41	LTE/TM1	5	LCH	VN	-30	-1.46	-0.00057	PASS
					-20	-8.88	-0.00347	PASS
					-10	-7.75	-0.00303	PASS
					0	-7.81	-0.00305	PASS
					10	2.68	0.00105	PASS
					20	-4.09	-0.0016	PASS
					30	-11.10	-0.00434	PASS
					40	-3.78	-0.00148	PASS
					50	1.65	0.00065	PASS
			MCH	VN	-30	-7.95	-0.00305	PASS
					-20	4.73	0.00182	PASS
					-10	-4.56	-0.00175	PASS
					0	-8.40	-0.00322	PASS
					10	-5.14	-0.00197	PASS
					20	-10.44	-0.00401	PASS
					30	-7.72	-0.00296	PASS
					40	-2.89	-0.00111	PASS
					50	-8.75	-0.00336	PASS
			HCH	VN	-30	-2.78	-0.00105	PASS
					-20	-1.06	-0.0004	PASS
					-10	-6.77	-0.00255	PASS
					0	-4.19	-0.00158	PASS
					10	2.25	0.00085	PASS
					20	-1.42	-0.00054	PASS
					30	-4.55	-0.00172	PASS
					40	-3.16	-0.00119	PASS
					50	-1.12	-0.00042	PASS
		10	LCH	VN	-30	1.82	0.00071	PASS
					-20	-1.80	-0.0007	PASS
					-10	-1.46	-0.00057	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					0	-0.49	-0.00019	PASS
					10	-3.20	-0.00125	PASS
					20	-5.88	-0.0023	PASS
					30	0.00	0	PASS
					40	-5.15	-0.00201	PASS
					50	-1.06	-0.00041	PASS
			MCH	VN	-30	-5.55	-0.00213	PASS
					-20	-2.85	-0.00109	PASS
					-10	-10.47	-0.00402	PASS
					0	0.33	0.00013	PASS
					10	1.34	0.00051	PASS
					20	-4.05	-0.00155	PASS
					30	-5.42	-0.00208	PASS
					40	3.92	0.0015	PASS
					50	-4.31	-0.00165	PASS
			HCH	VN	-30	4.99	0.00188	PASS
					-20	-3.96	-0.00149	PASS
					-10	5.81	0.00219	PASS
					0	-3.98	-0.0015	PASS
					10	-1.87	-0.00071	PASS
					20	-0.59	-0.00022	PASS
					30	-1.63	-0.00062	PASS
					40	-7.02	-0.00265	PASS
					50	-5.25	-0.00198	PASS
		15	LCH	VN	-30	-0.21	-0.00008	PASS
					-20	-2.45	-0.00096	PASS
					-10	3.38	0.00132	PASS
					0	-6.54	-0.00255	PASS
					10	0.23	0.00009	PASS
					20	-0.43	-0.00017	PASS
					30	0.51	0.00002	PASS
					40	-3.76	-0.00147	PASS
					50	-2.93	-0.00114	PASS
			MCH	VN	-30	-5.76	-0.00221	PASS
					-20	-5.34	-0.00205	PASS
					-10	-5.97	-0.00229	PASS
					0	-8.40	-0.00322	PASS
					10	-6.92	-0.00266	PASS
					20	-2.02	-0.00078	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					30	-4.12	-0.00158	PASS
					40	-5.81	-0.00223	PASS
					50	-4.79	-0.00184	PASS
			HCH	VN	-30	-2.39	-0.0009	PASS
					-20	-2.45	-0.00093	PASS
					-10	-1.29	-0.00049	PASS
					0	-1.57	-0.00059	PASS
					10	-3.43	-0.0013	PASS
					20	-5.64	-0.00213	PASS
					30	-2.89	-0.00109	PASS
					40	-4.94	-0.00187	PASS
					50	-2.33	-0.00088	PASS
			LCH	VN	-30	2.13	0.00083	PASS
					-20	-1.33	-0.00052	PASS
					-10	-1.95	-0.00076	PASS
					0	1.69	0.00066	PASS
					10	-1.86	-0.00073	PASS
					20	-1.42	-0.00055	PASS
					30	-0.29	-0.00011	PASS
					40	-1.33	-0.00052	PASS
					50	0.74	0.00029	PASS
			MCH	VN	-30	0.39	0.00015	PASS
					-20	-5.28	-0.00203	PASS
					-10	-6.58	-0.00253	PASS
					0	-3.98	-0.00153	PASS
					10	-4.51	-0.00173	PASS
					20	-2.27	-0.00087	PASS
					30	-2.50	-0.00096	PASS
					40	-8.51	-0.00327	PASS
					50	-5.45	-0.00209	PASS
		20	HCH	VN	-30	-2.35	-0.00089	PASS
					-20	-1.57	-0.00059	PASS
					-10	-5.21	-0.00197	PASS
					0	-5.75	-0.00217	PASS
					10	-5.32	-0.00201	PASS
					20	-3.52	-0.00133	PASS
					30	-5.44	-0.00206	PASS
					40	-1.12	-0.00042	PASS
					50	-1.57	-0.00059	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	-30	2.80	0.00109	PASS
					-20	-2.37	-0.00093	PASS
					-10	-3.28	-0.00128	PASS
					0	-5.39	-0.00211	PASS
					10	-5.09	-0.00199	PASS
					20	-3.25	-0.00127	PASS
					30	-1.33	-0.00052	PASS
					40	-0.19	-0.00007	PASS
					50	-1.97	-0.00077	PASS
			MCH	VN	-30	-12.67	-0.00486	PASS
					-20	-7.40	-0.00284	PASS
					-10	-12.93	-0.00496	PASS
					0	-14.76	-0.00567	PASS
					10	-3.36	-0.00129	PASS
					20	-1.72	-0.00066	PASS
					30	-7.01	-0.00269	PASS
					40	-6.32	-0.00243	PASS
					50	-10.14	-0.00389	PASS
			HCH	VN	-30	-0.37	-0.00014	PASS
					-20	-1.33	-0.0005	PASS
					-10	0.43	0.00016	PASS
					0	-7.87	-0.00297	PASS
					10	-4.69	-0.00177	PASS
					20	-0.34	-0.00013	PASS
					30	-0.77	-0.00029	PASS
					40	-4.46	-0.00168	PASS
					50	-4.42	-0.00167	PASS
		10	LCH	VN	-30	-6.57	-0.00257	PASS
					-20	-6.04	-0.00236	PASS
					-10	-1.33	-0.00052	PASS
					0	-6.12	-0.00239	PASS
					10	-4.33	-0.00169	PASS
					20	-1.06	-0.00041	PASS
					30	-5.79	-0.00226	PASS
					40	-2.22	-0.00087	PASS
					50	-1.86	-0.00073	PASS
			MCH	VN	-30	-0.84	-0.00032	PASS
					-20	-9.50	-0.00365	PASS
					-10	-1.54	-0.00059	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					0	-7.04	-0.0027	PASS
					10	-3.76	-0.00144	PASS
					20	-3.43	-0.00132	PASS
					30	-17.52	-0.00673	PASS
					40	-4.75	-0.00182	PASS
					50	-8.54	-0.00328	PASS
			HCH	VN	-30	0.01	0	PASS
					-20	0.97	0.00037	PASS
					-10	-5.35	-0.00202	PASS
					0	0.96	0.00036	PASS
					10	-0.49	-0.00018	PASS
					20	-3.32	-0.00125	PASS
					30	-6.24	-0.00235	PASS
					40	-1.19	-0.00045	PASS
					50	-4.22	-0.00159	PASS
		15	LCH	VN	-30	1.73	0.00068	PASS
					-20	-5.84	-0.00228	PASS
					-10	-2.37	-0.00092	PASS
					0	-0.53	-0.00021	PASS
					10	2.00	0.00078	PASS
					20	-2.00	-0.00078	PASS
					30	-6.08	-0.00237	PASS
					40	-2.45	-0.00096	PASS
					50	1.95	0.00076	PASS
			MCH	VN	-30	-4.21	-0.00162	PASS
					-20	-5.85	-0.00225	PASS
					-10	-10.94	-0.0042	PASS
					0	-9.47	-0.00364	PASS
					10	-15.65	-0.00601	PASS
					20	-9.77	-0.00375	PASS
					30	-17.55	-0.00674	PASS
					40	-8.96	-0.00344	PASS
					50	-3.63	-0.00139	PASS
			HCH	VN	-30	-4.15	-0.00157	PASS
					-20	-9.51	-0.00359	PASS
					-10	-2.40	-0.00091	PASS
					0	-7.15	-0.0027	PASS
					10	-0.33	-0.00012	PASS
					20	-2.62	-0.00099	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					30	-2.30	-0.00087	PASS
					40	-3.56	-0.00134	PASS
					50	-1.37	-0.00052	PASS
		20	LCH	VN	-30	-1.46	-0.00057	PASS
					-20	0.39	0.00015	PASS
					-10	-2.09	-0.00081	PASS
					0	-1.56	-0.00061	PASS
					10	-0.34	-0.00013	PASS
					20	-0.87	-0.00034	PASS
					30	-2.42	-0.00094	PASS
					40	-1.54	-0.0006	PASS
					50	-1.42	-0.00055	PASS
			MCH	VN	-30	1.03	0.0004	PASS
					-20	-7.22	-0.00277	PASS
					-10	-9.24	-0.00355	PASS
					0	-9.23	-0.00354	PASS
					10	-9.41	-0.00361	PASS
					20	-6.68	-0.00256	PASS
					30	-2.75	-0.00106	PASS
					40	-6.62	-0.00254	PASS
					50	-7.32	-0.00281	PASS
			HCH	VN	-30	0.07	0.00003	PASS
					-20	1.72	0.00065	PASS
					-10	-1.53	-0.00058	PASS
					0	-3.95	-0.00149	PASS
					10	0.19	0.00007	PASS
					20	-1.66	-0.00063	PASS
					30	0.03	0.00001	PASS
					40	0.01	0	PASS
					50	-4.65	-0.00176	PASS

END