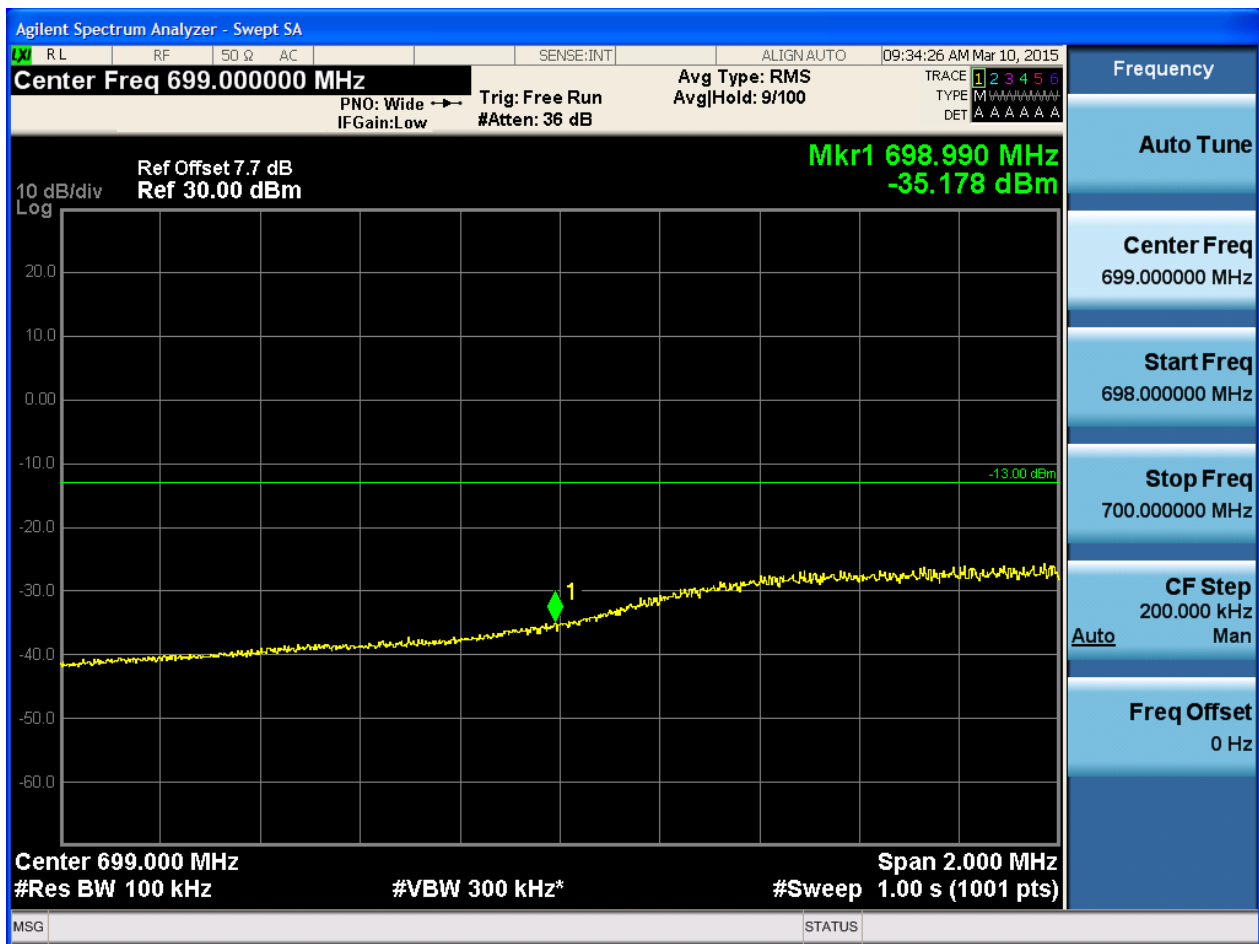


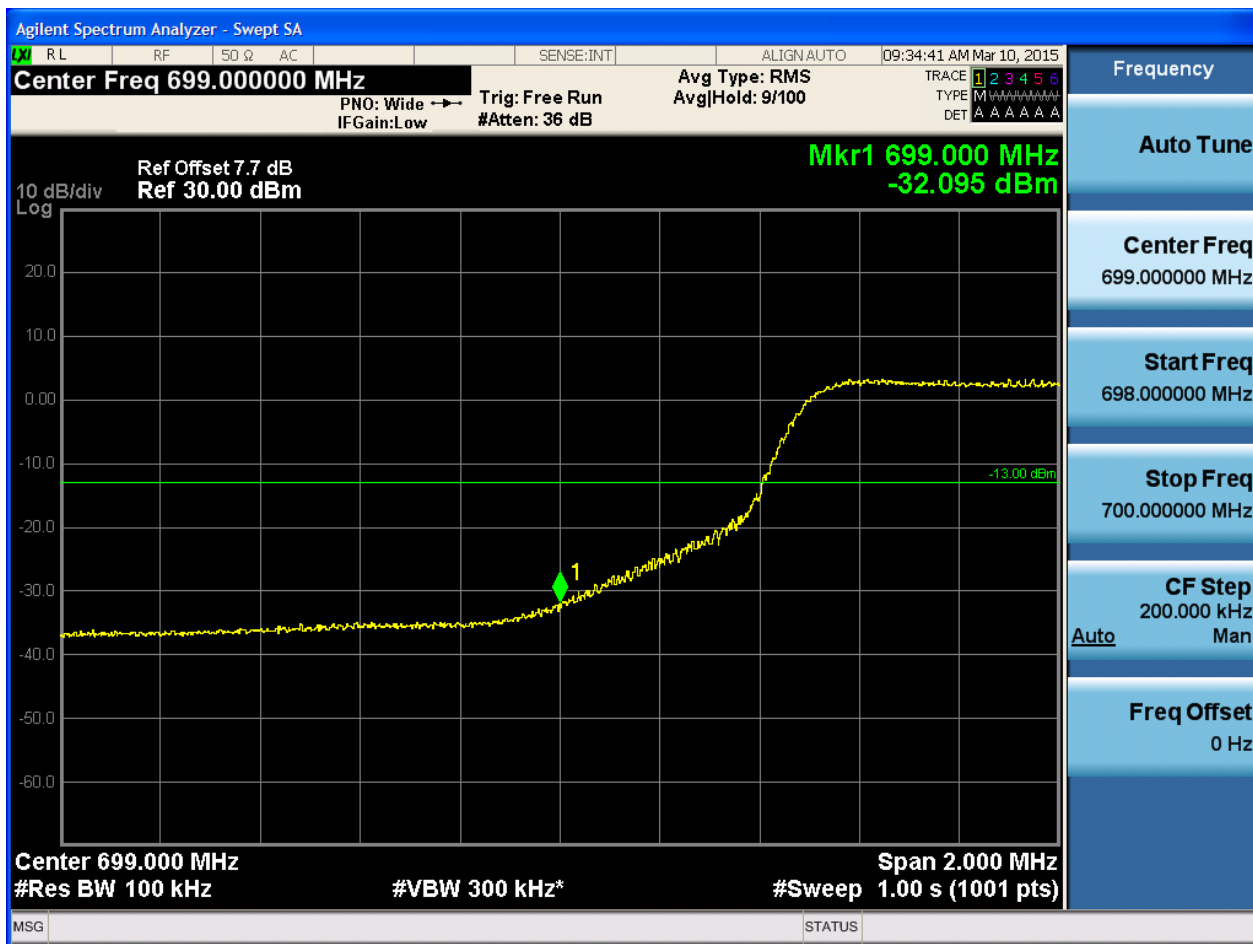


5.1.1.2.4.1.3 Test RB = RB25#13



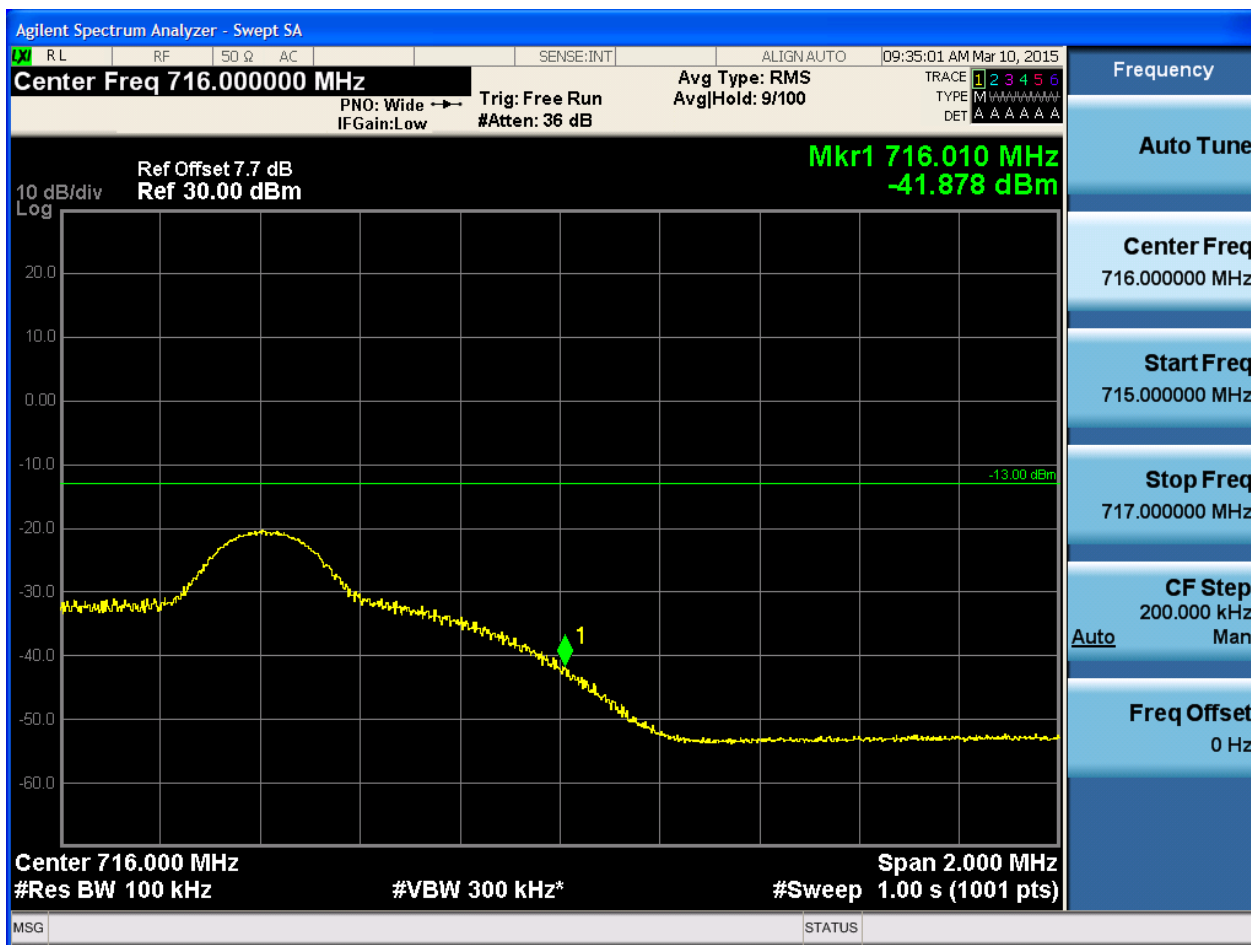


5.1.1.2.4.1.4 Test RB = RB50#0



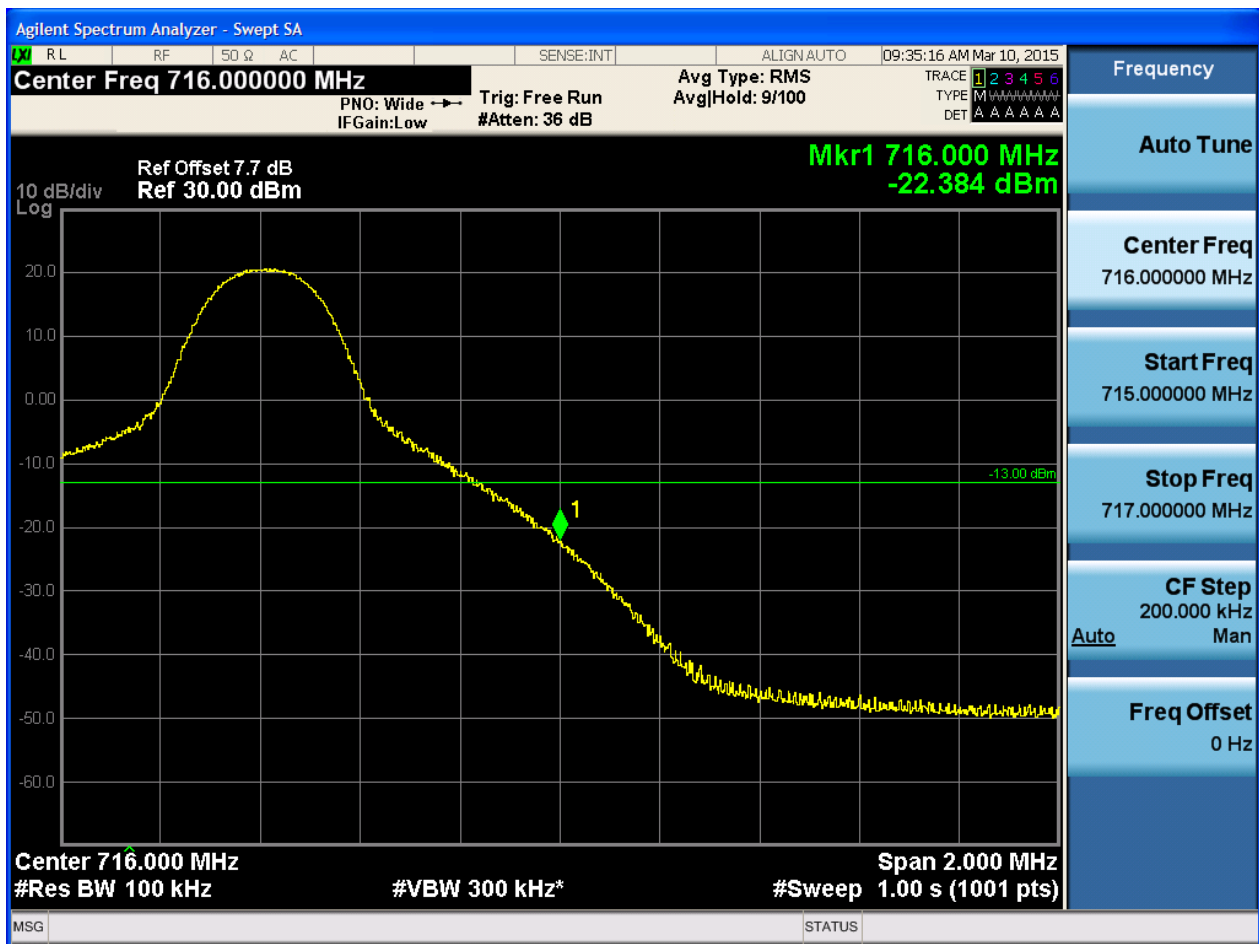
5.1.1.2.4.2 Test Channel = HCH

5.1.1.2.4.2.1 Test RB = RB1#0





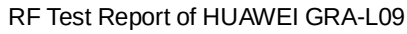
5.1.1.2.4.2.2 Test RB = RB1#49





5.1.1.2.4.2.3 Test RB = RB25#13





Agilent Spectrum Analyzer - Swept SA

Center Freq 716.000000 MHz

Ref Offset 7.7 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 716.000 MHz
-33.059 dBm

Center 716.000 MHz
#Res BW 100 kHz
#VBW 300 kHz*

Span 2.000 MHz
#Sweep 1.00 s (1001 pts)

Frequency

Auto Tune

Center Freq
716.000000 MHz

Start Freq
715.000000 MHz

Stop Freq
717.000000 MHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

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

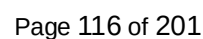
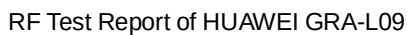
6.1.1 Test Band = BAND12

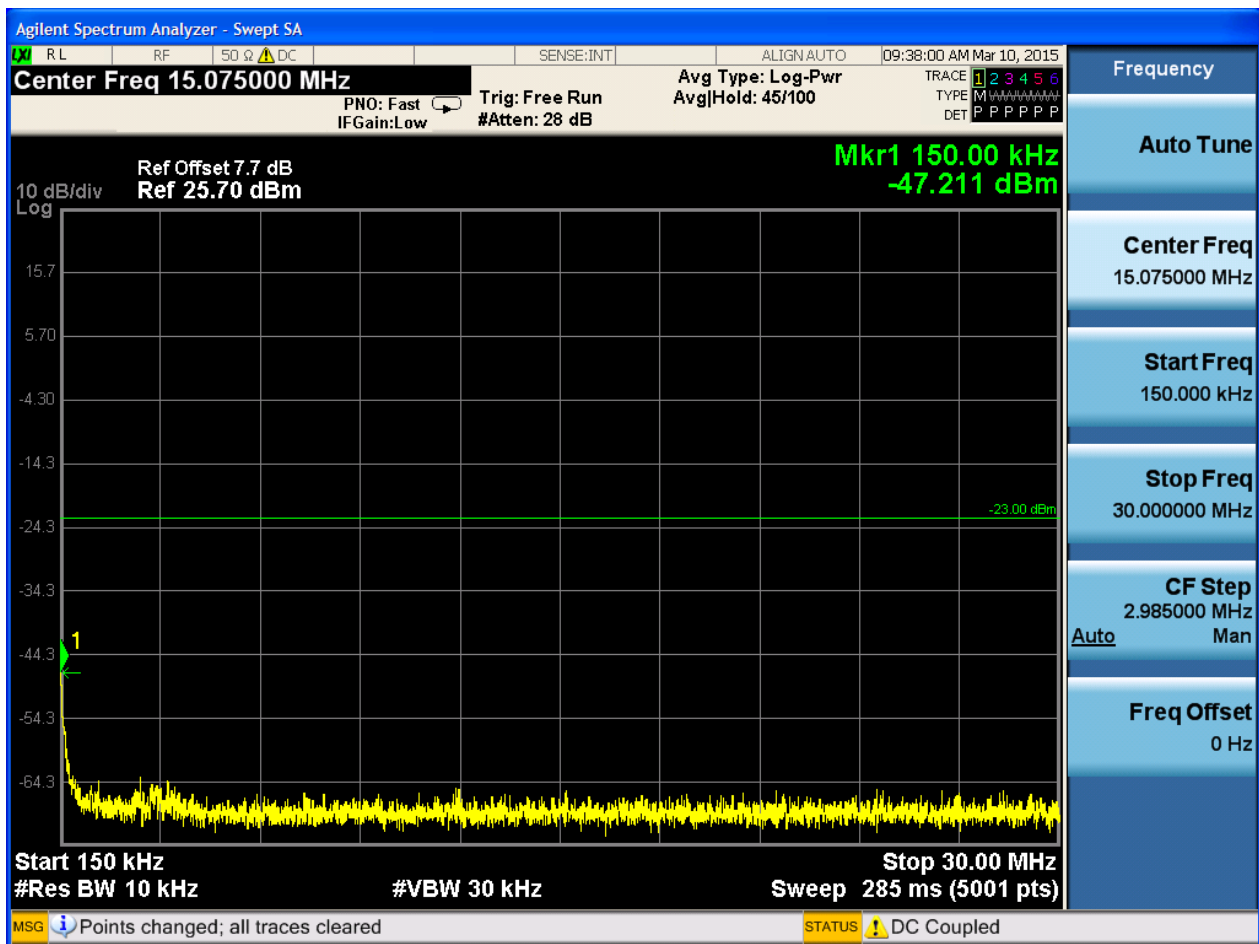
6.1.1.1 Test Mode = LTE/TM1

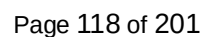
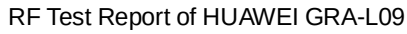
6.1.1.1.1 Test Bandwidth = 1.4

6.1.1.1.1.1 Test Channel = LCH

6.1.1.1.1.1.1 Test RB = RB1#0

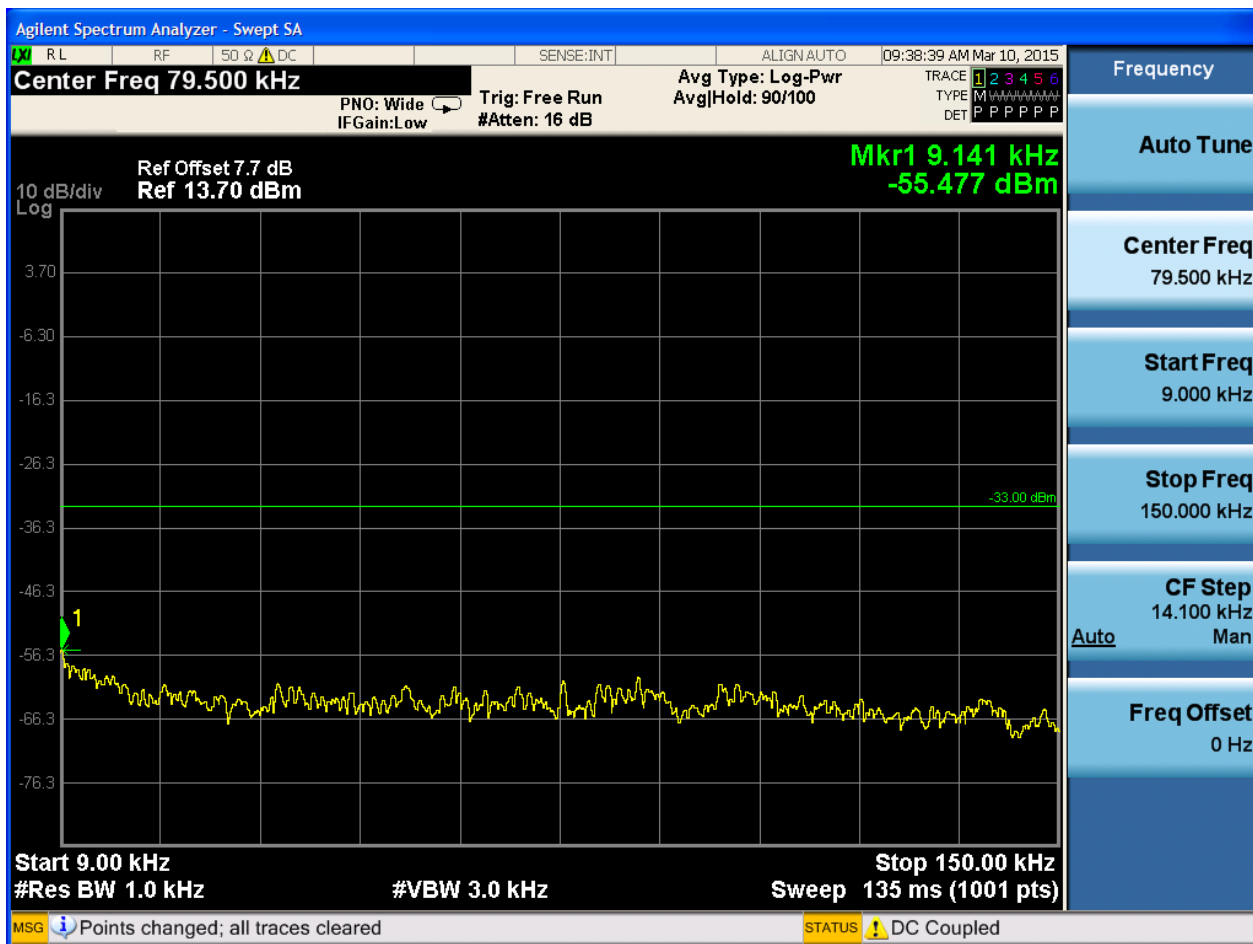


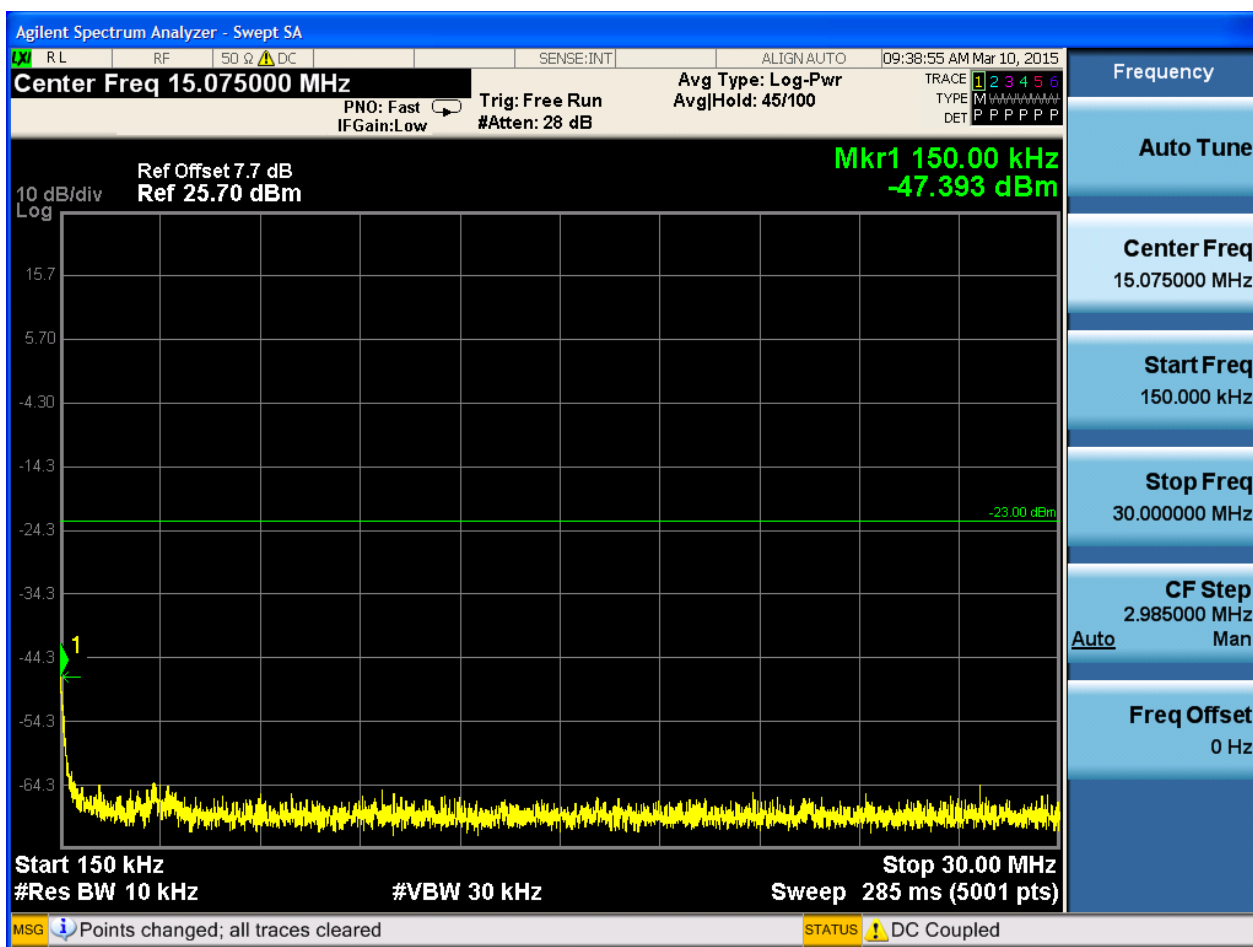


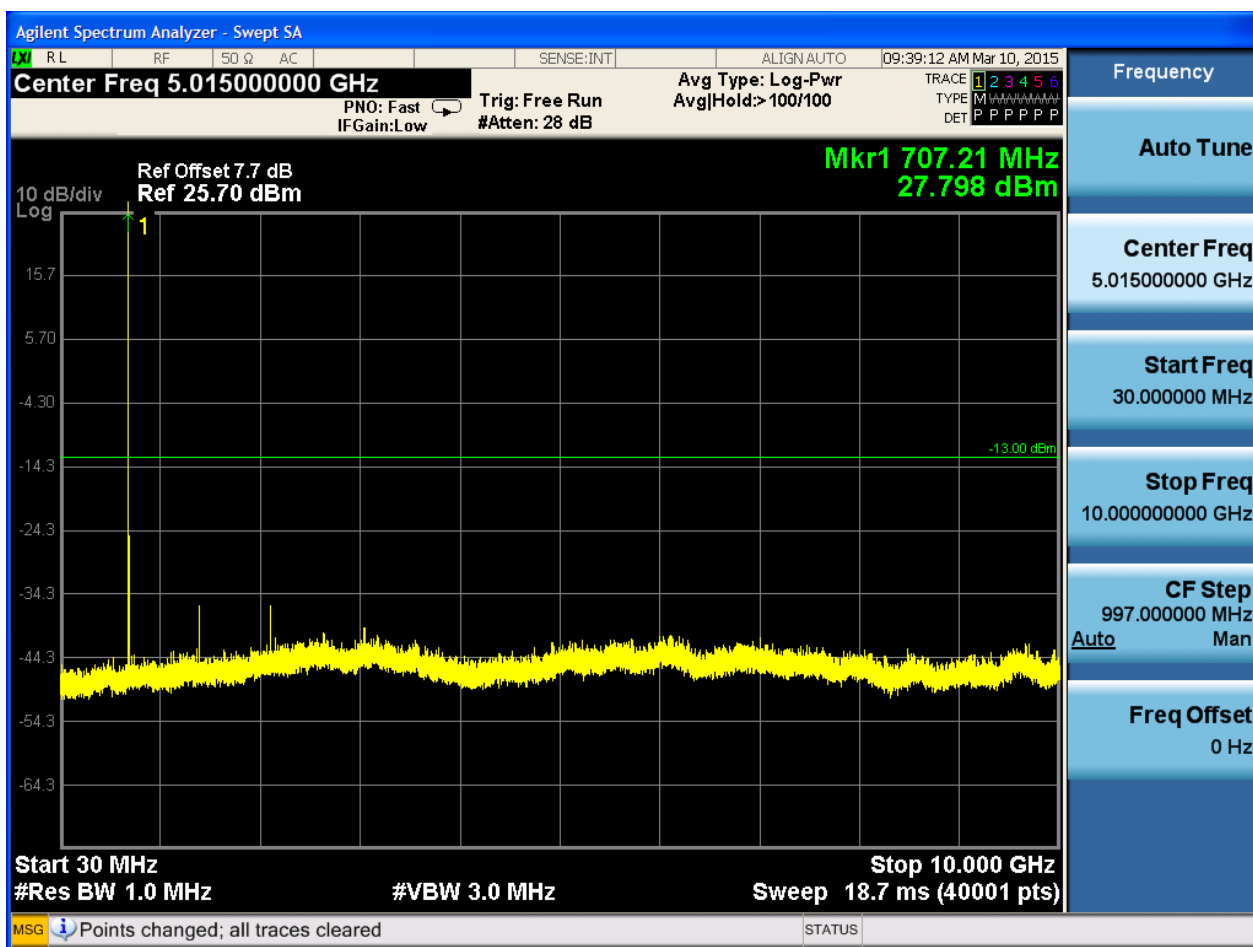


6.1.1.1.1.2 Test Channel = MCH

6.1.1.1.1.2.1 Test RB = RB1#0



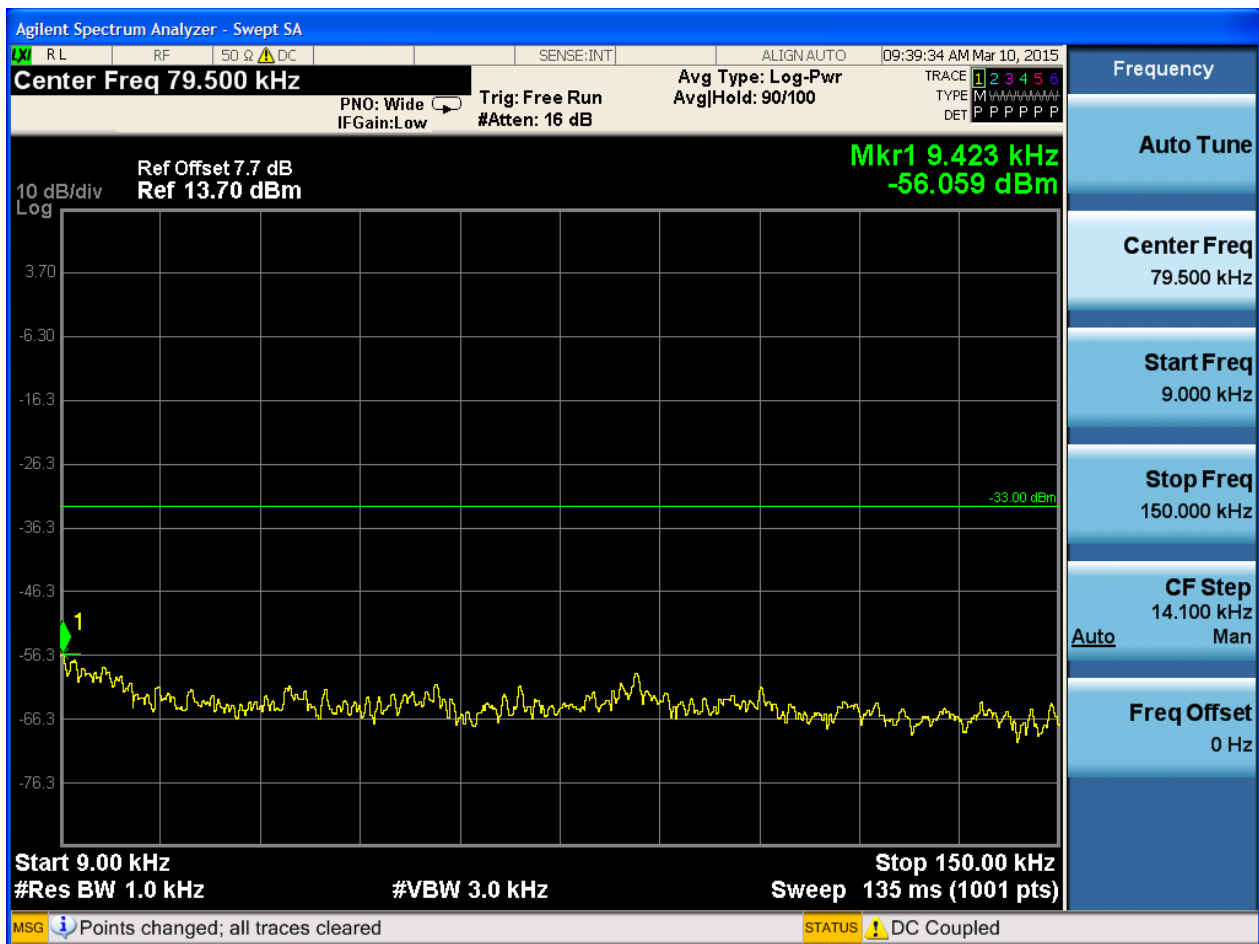


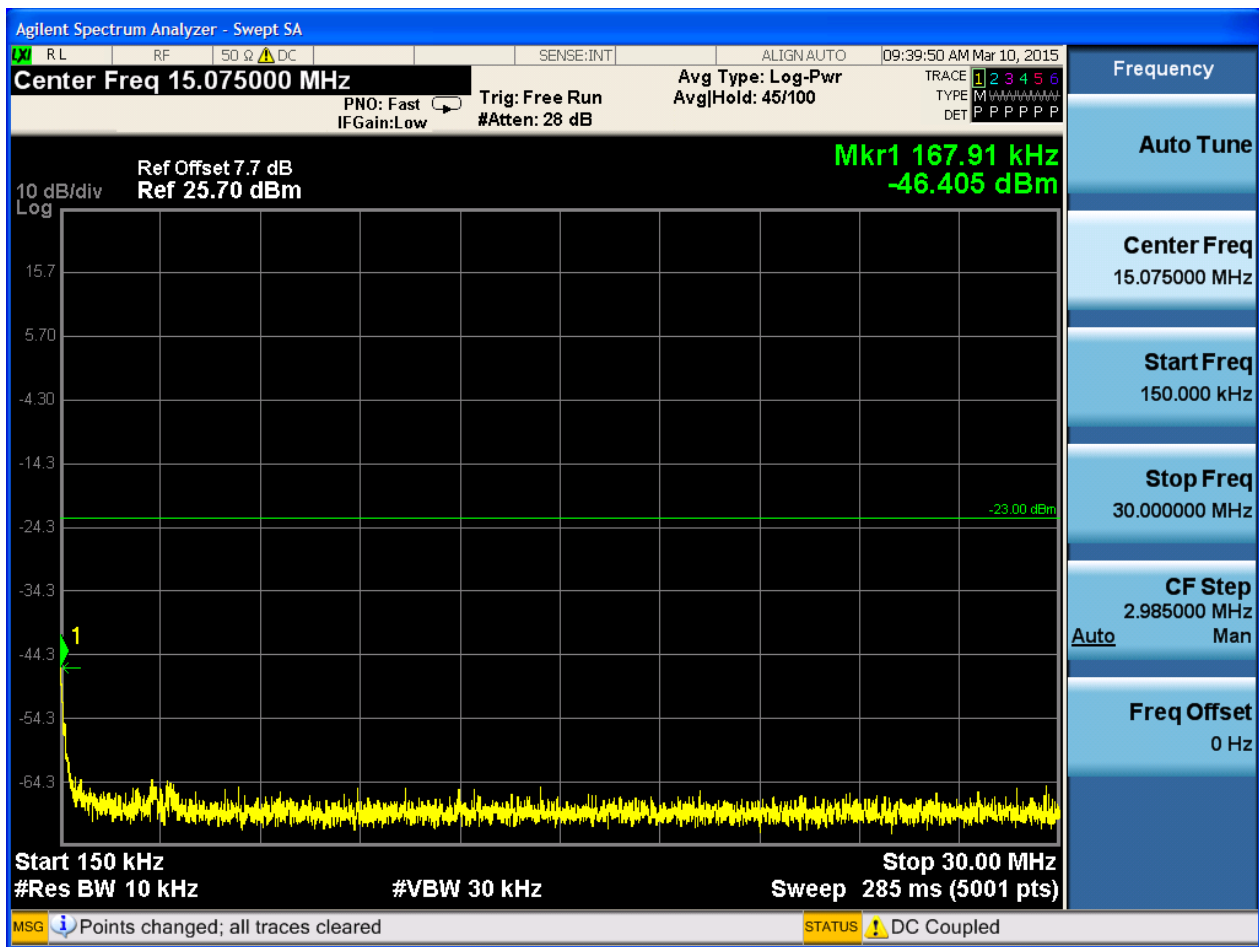


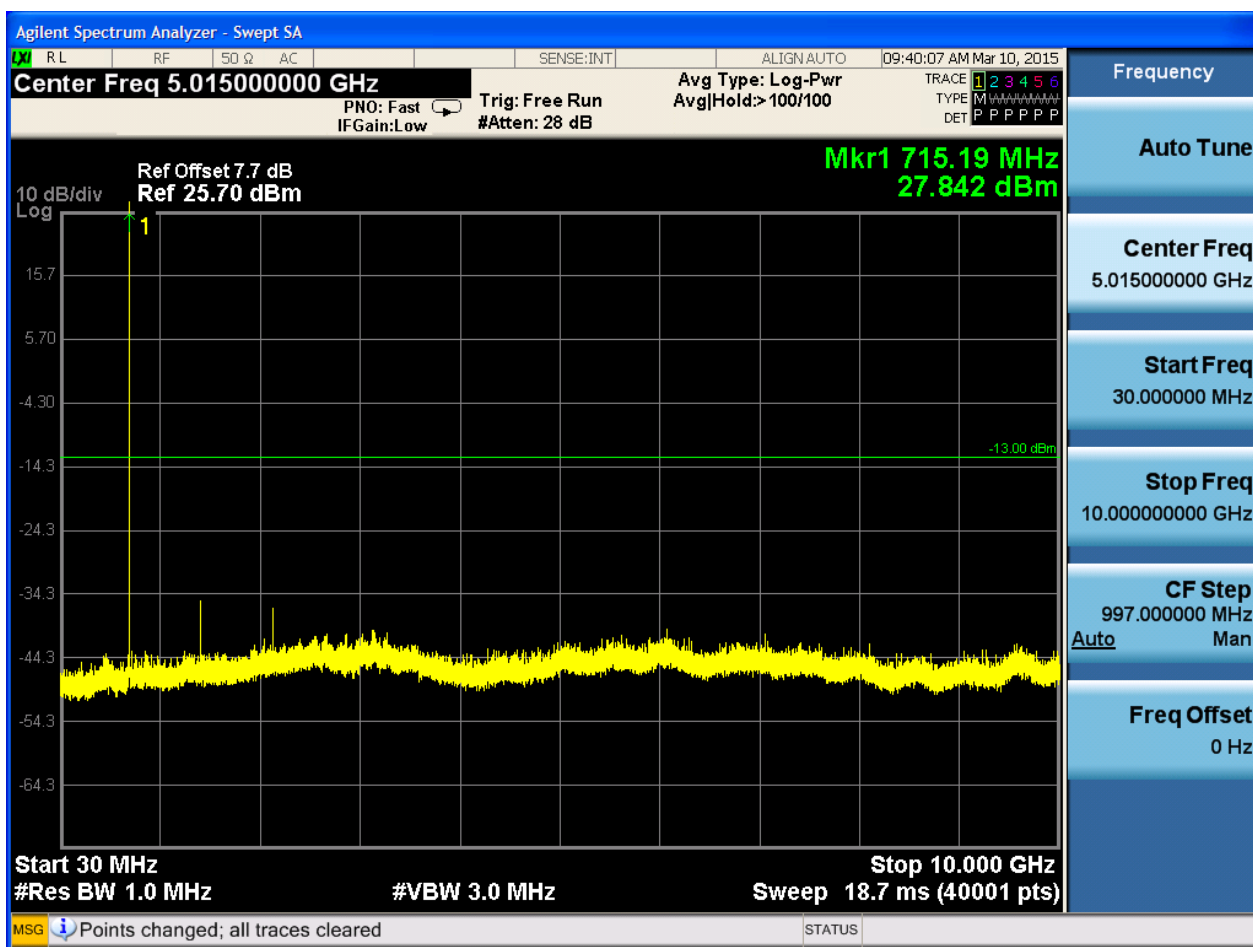


6.1.1.1.1.3 Test Channel = HCH

6.1.1.1.1.3.1 Test RB = RB1#0



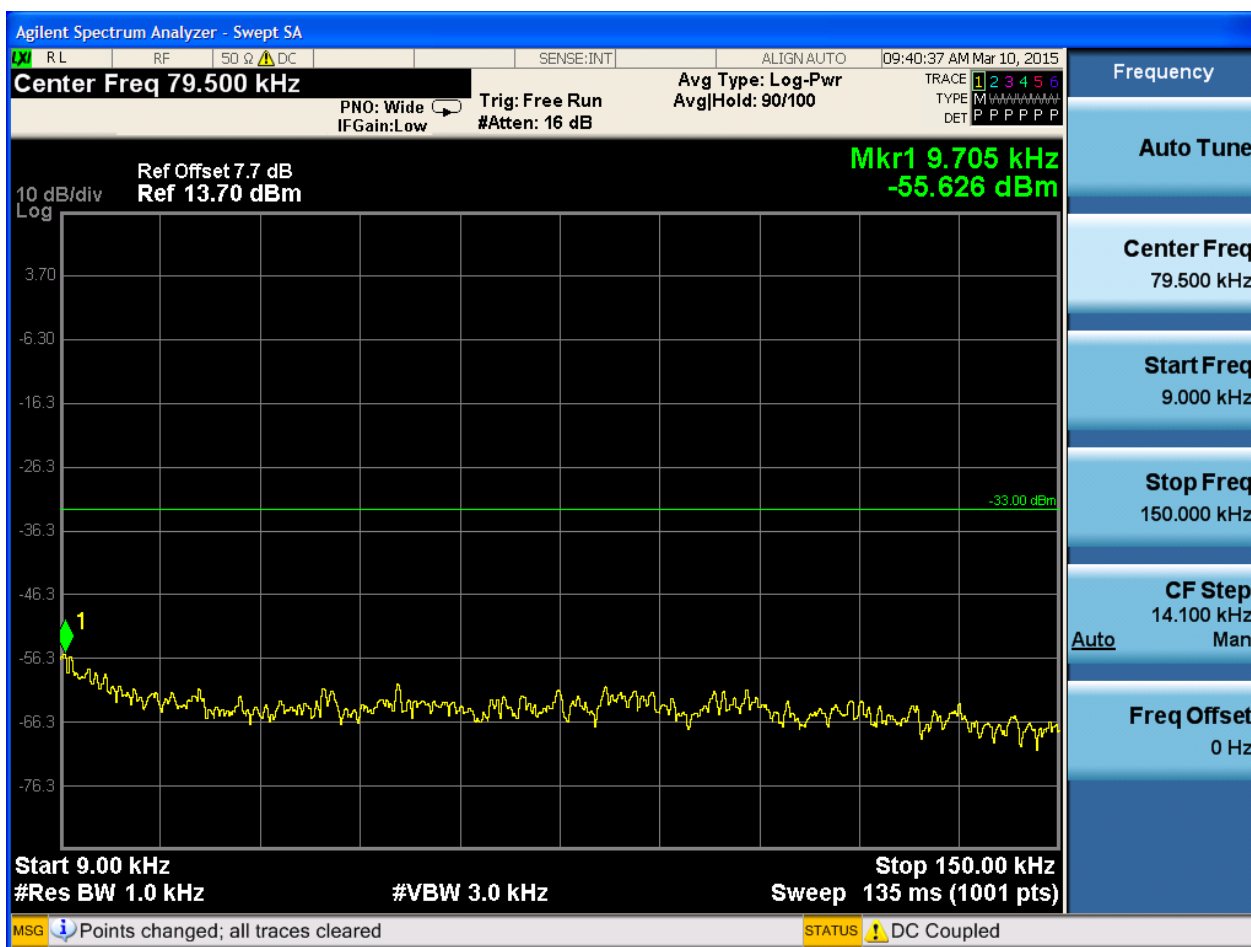


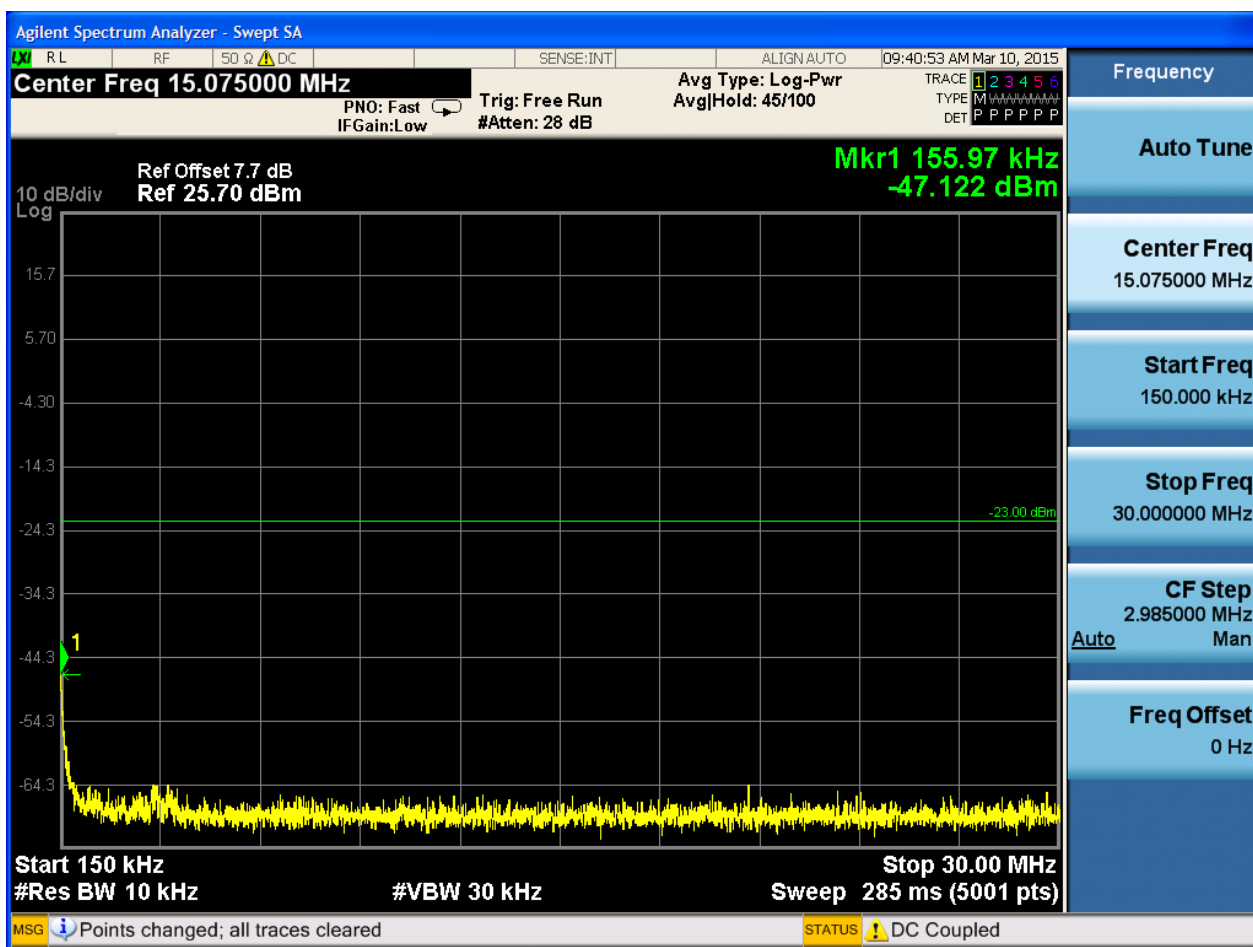


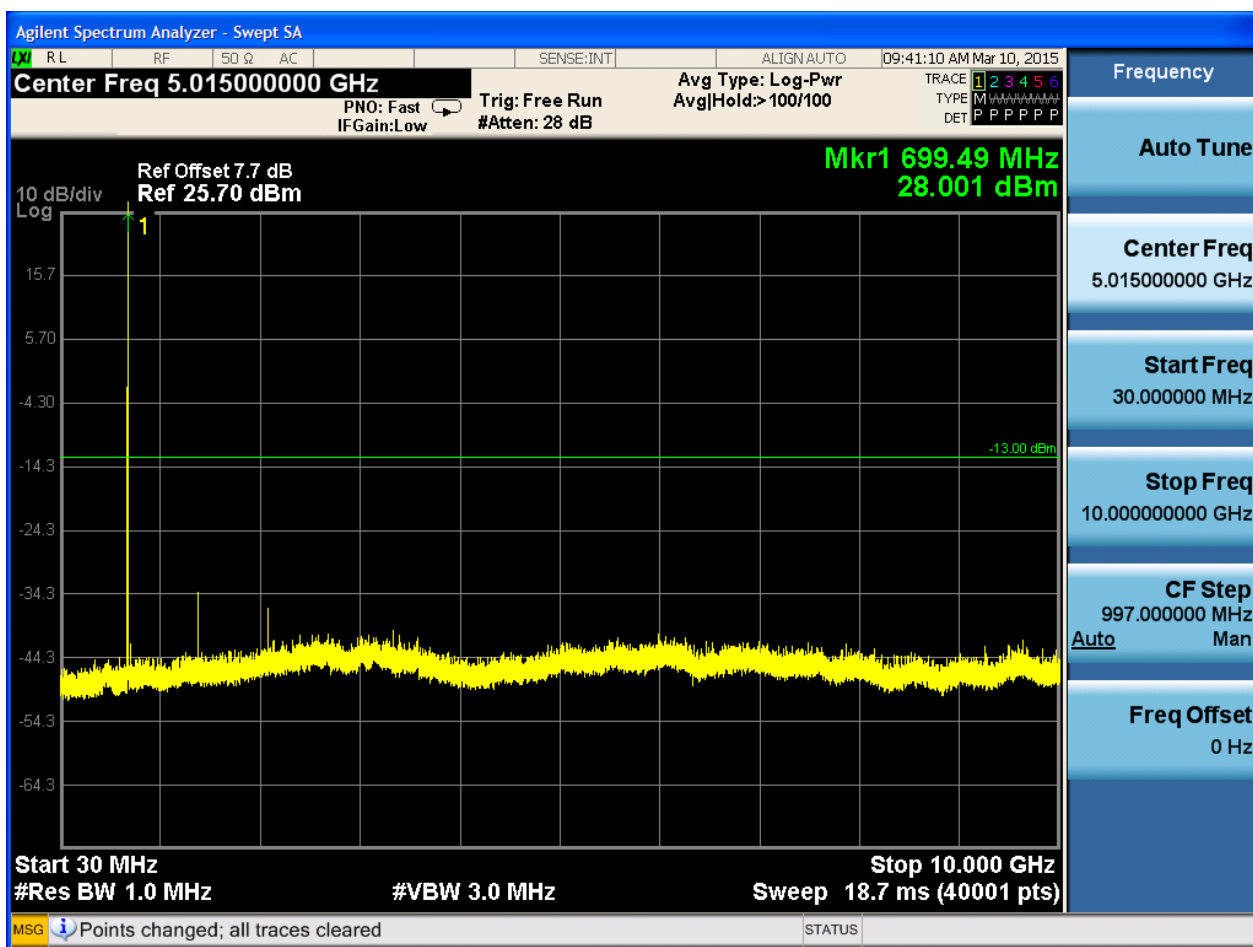
6.1.1.1.2 Test Bandwidth = 3

6.1.1.1.2.1 Test Channel = LCH

6.1.1.1.2.1.1 Test RB = RB1#0



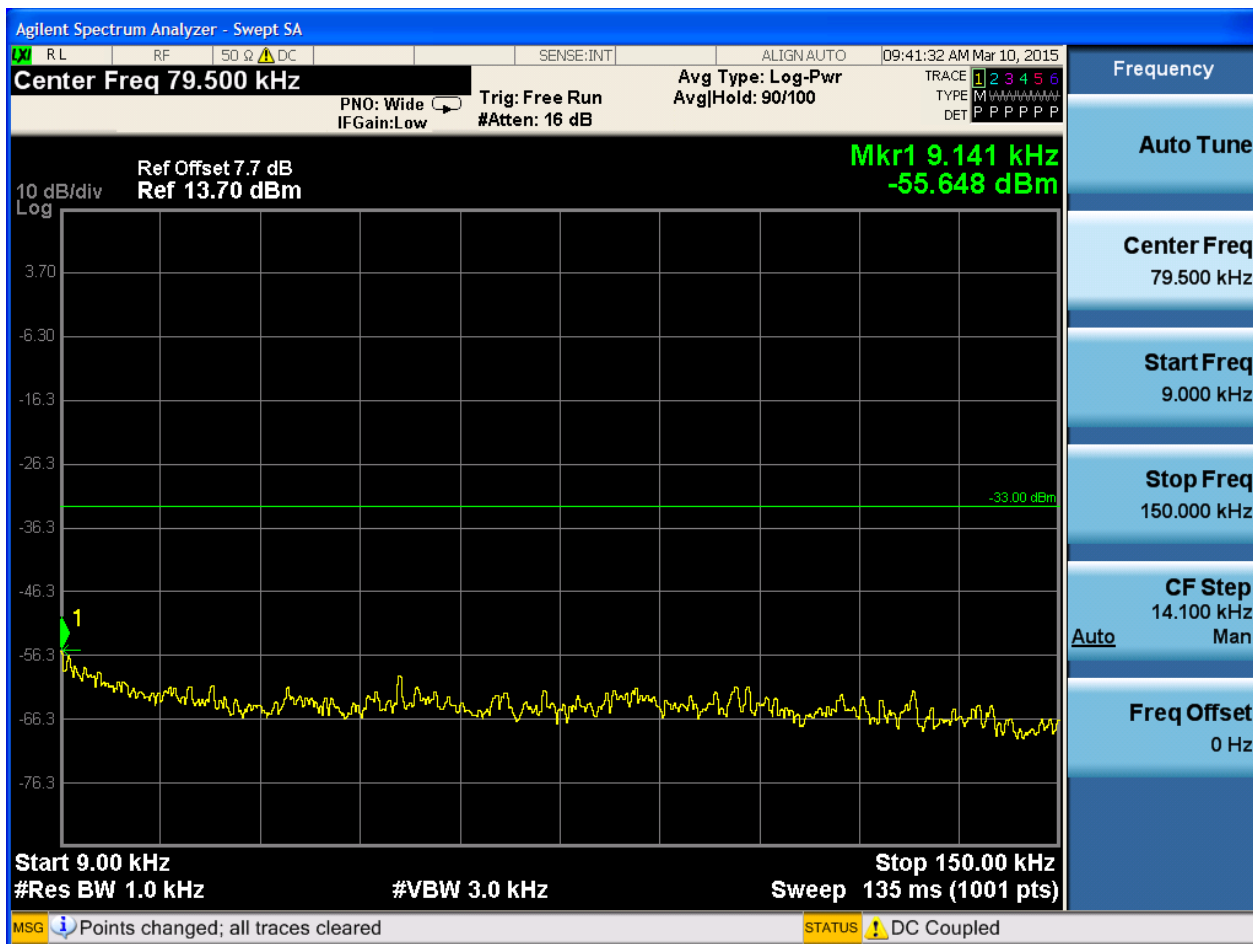


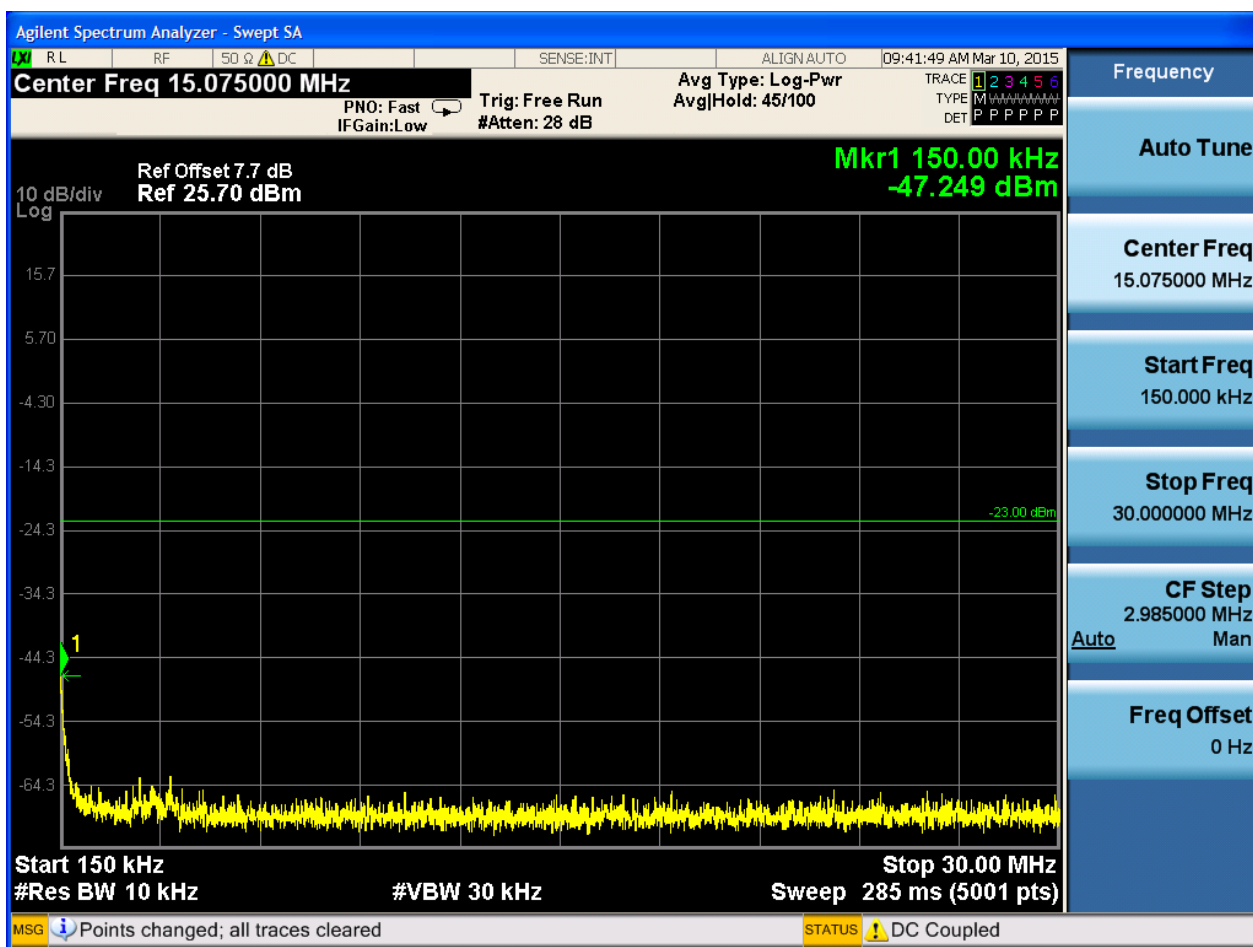


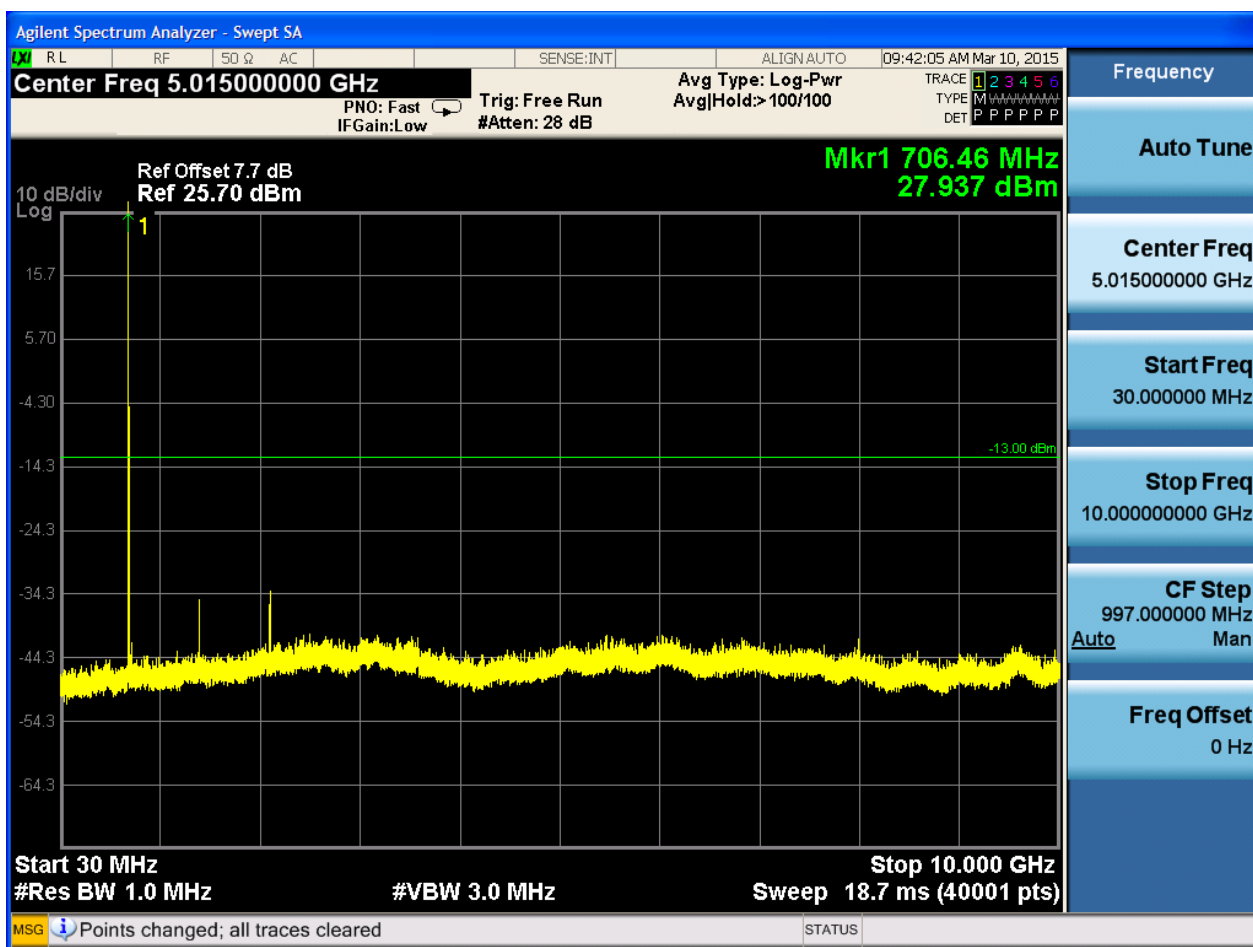


6.1.1.1.2.2 Test Channel = MCH

6.1.1.1.2.2.1 Test RB = RB1#0

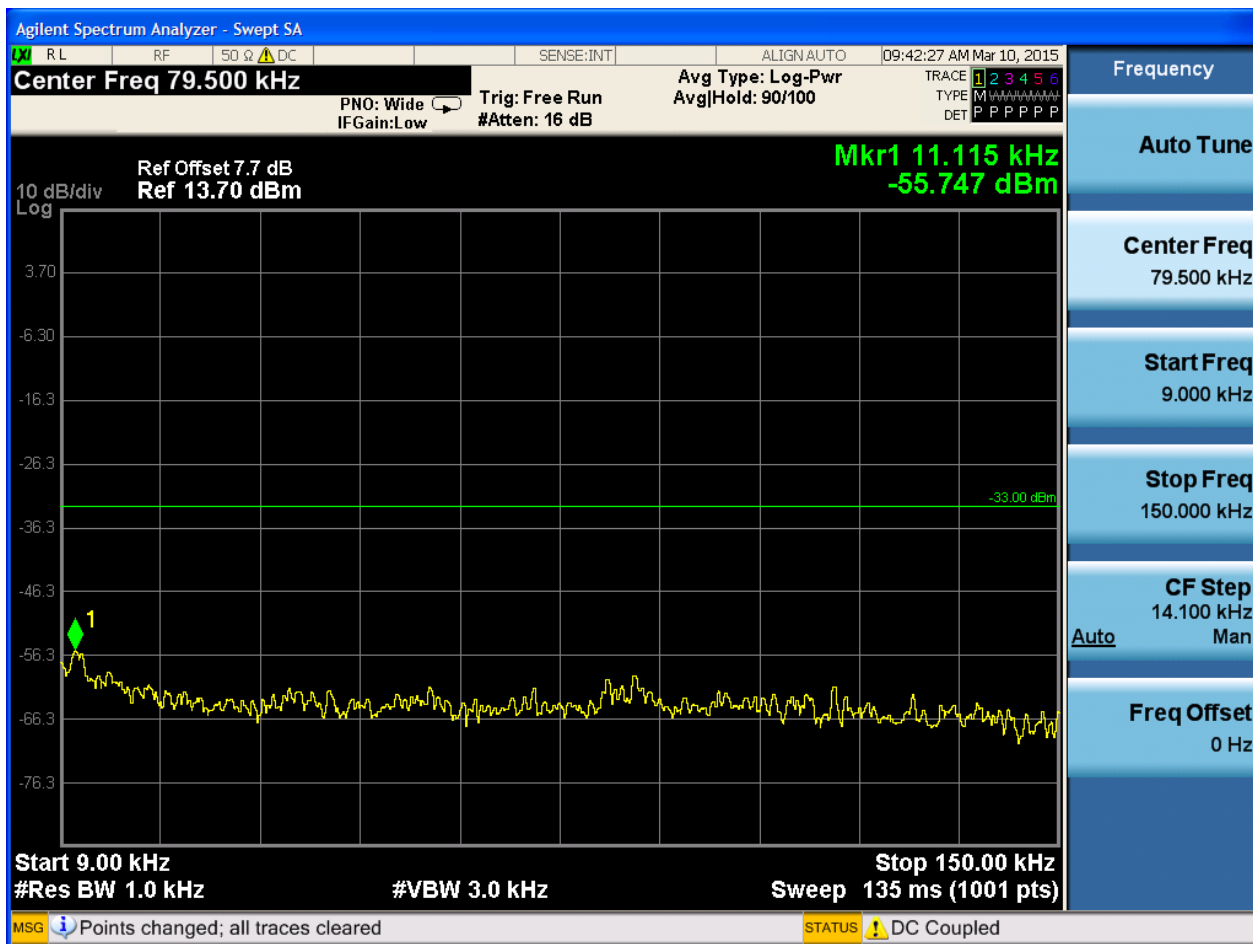


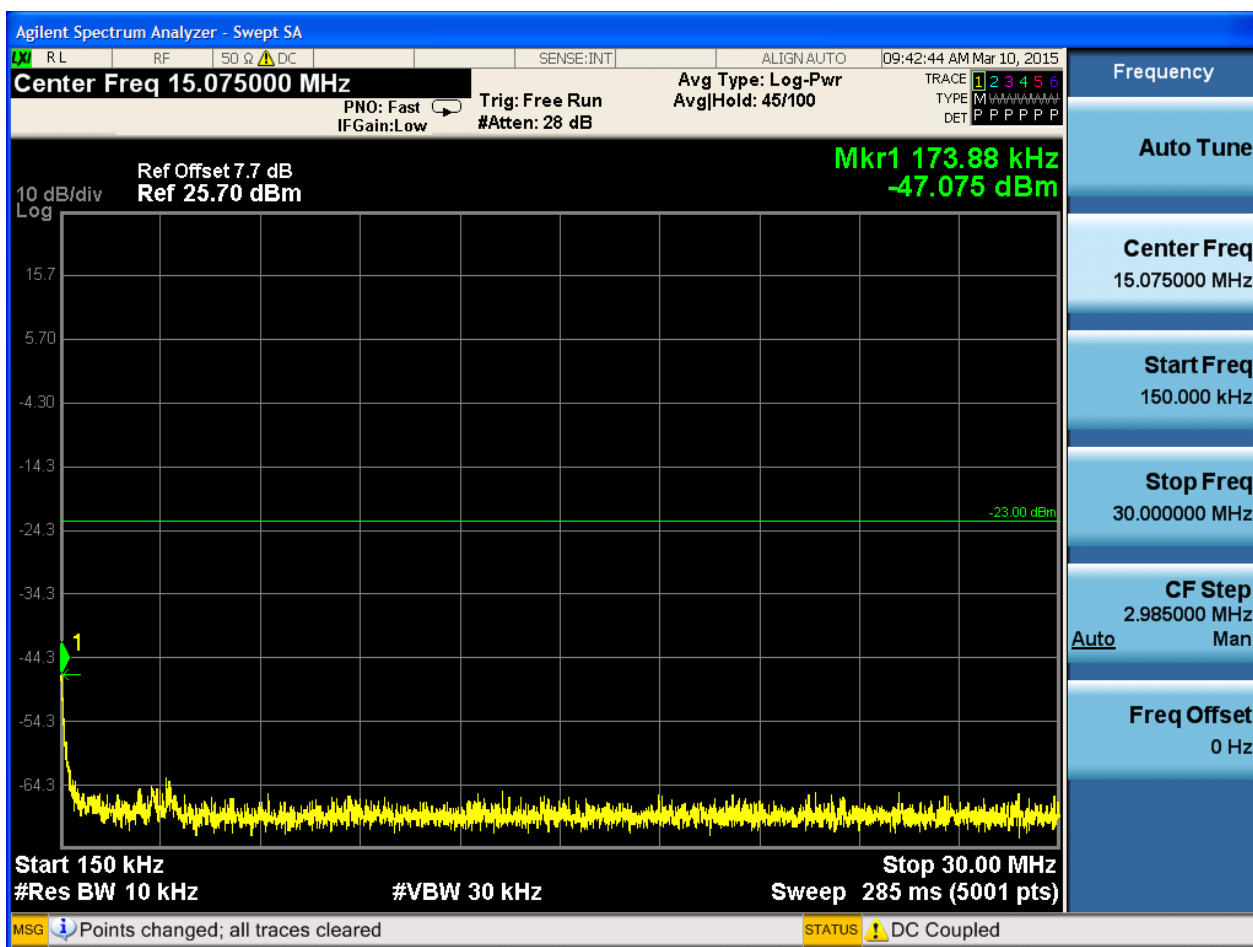


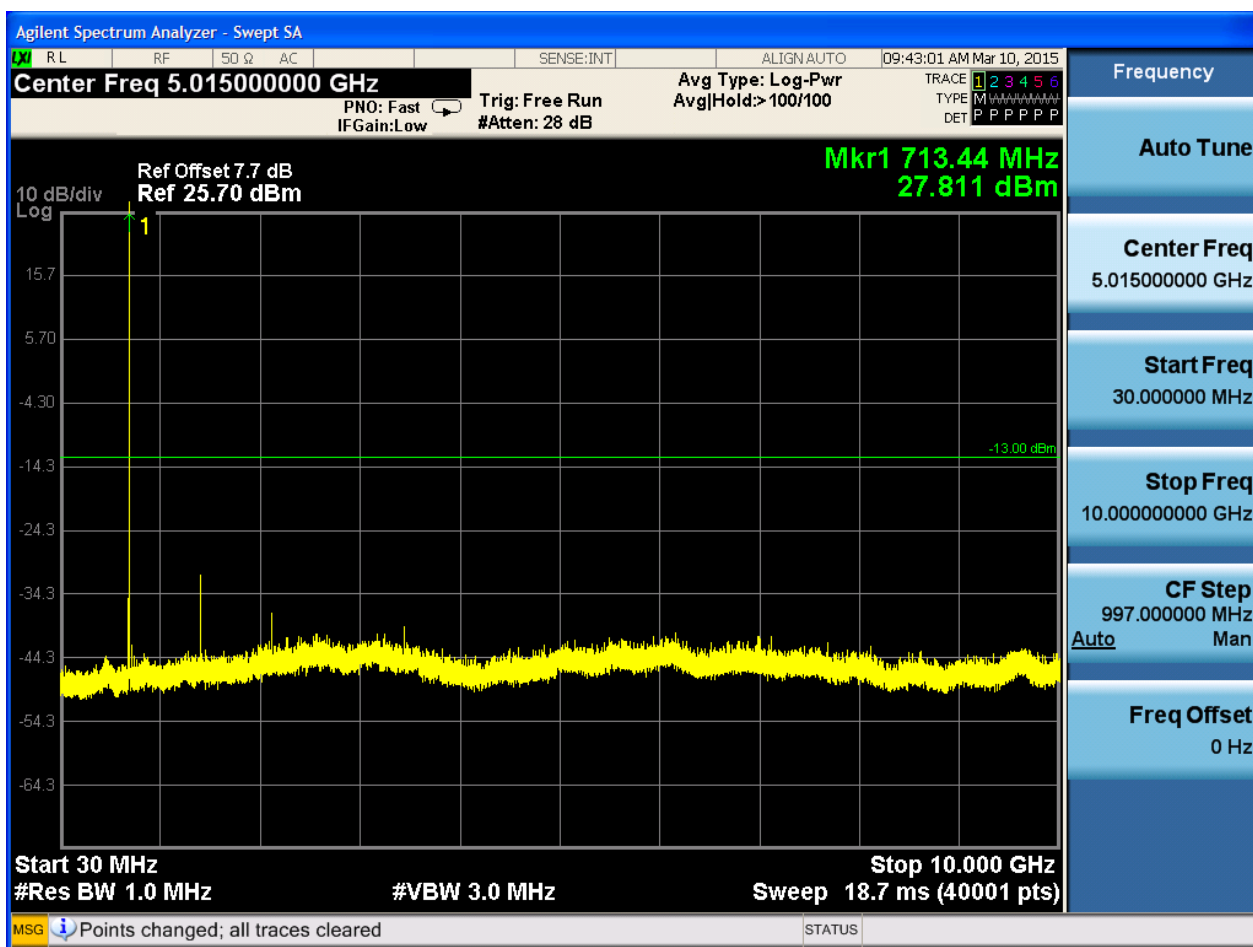


6.1.1.1.2.3 Test Channel = HCH

6.1.1.1.2.3.1 Test RB = RB1#0



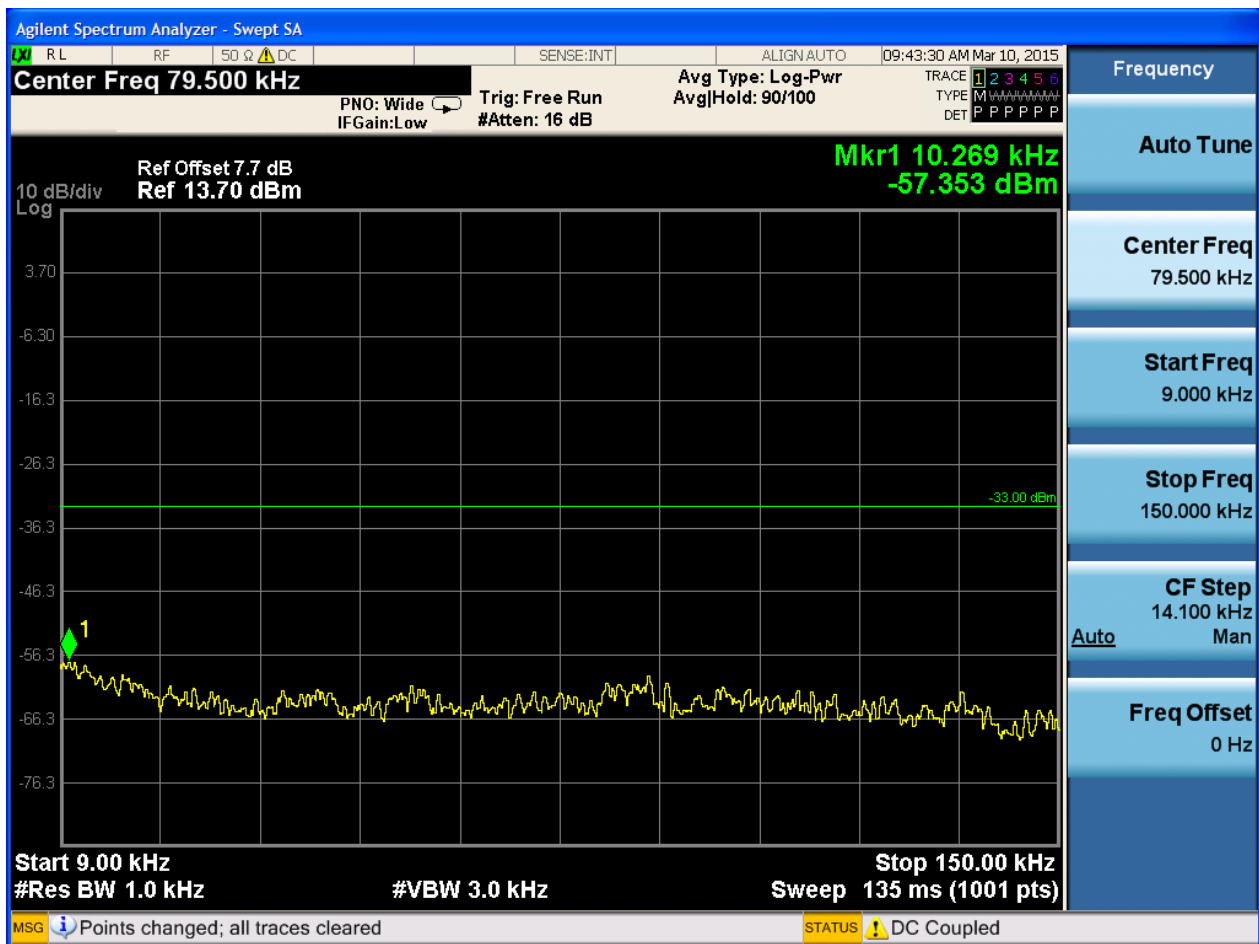


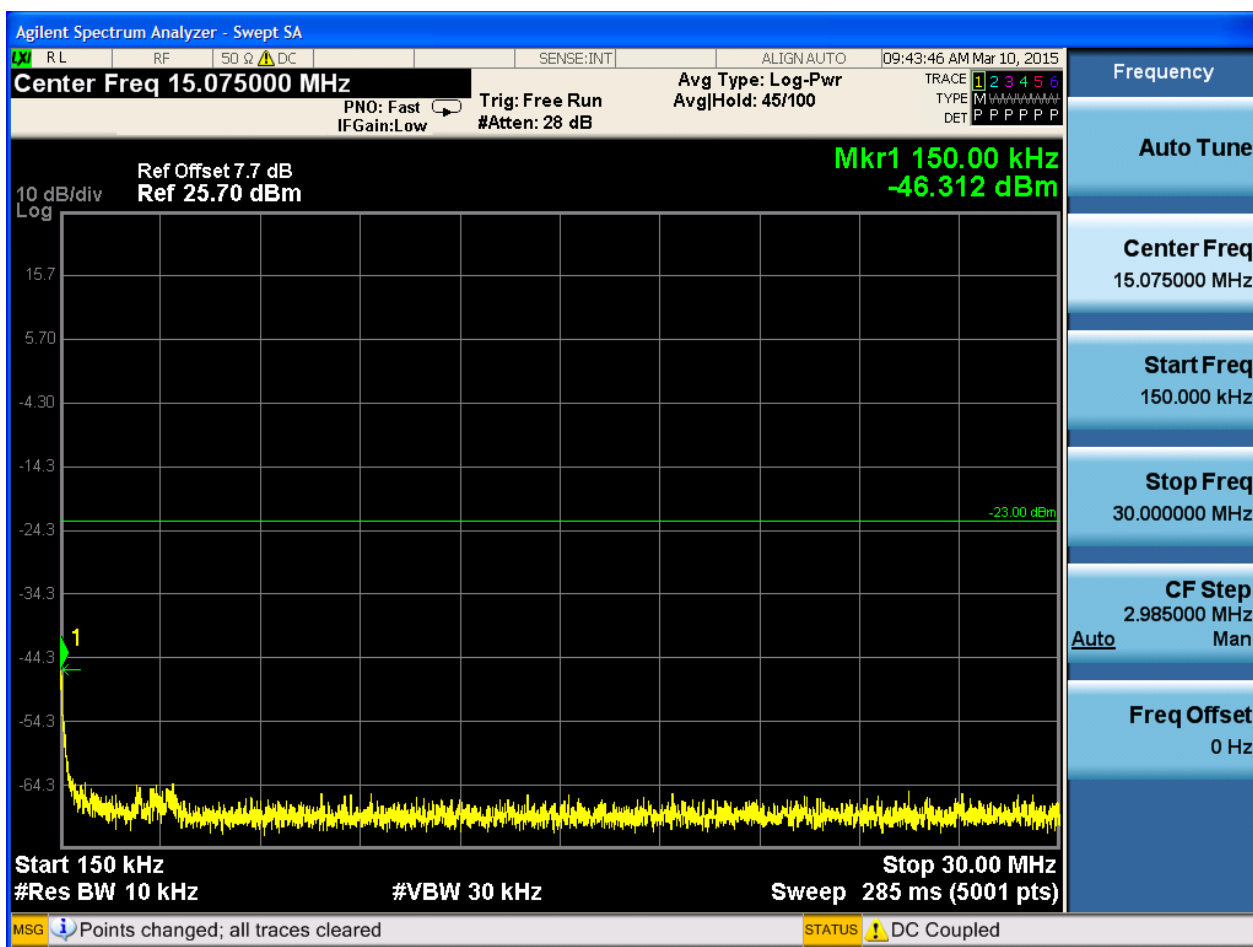


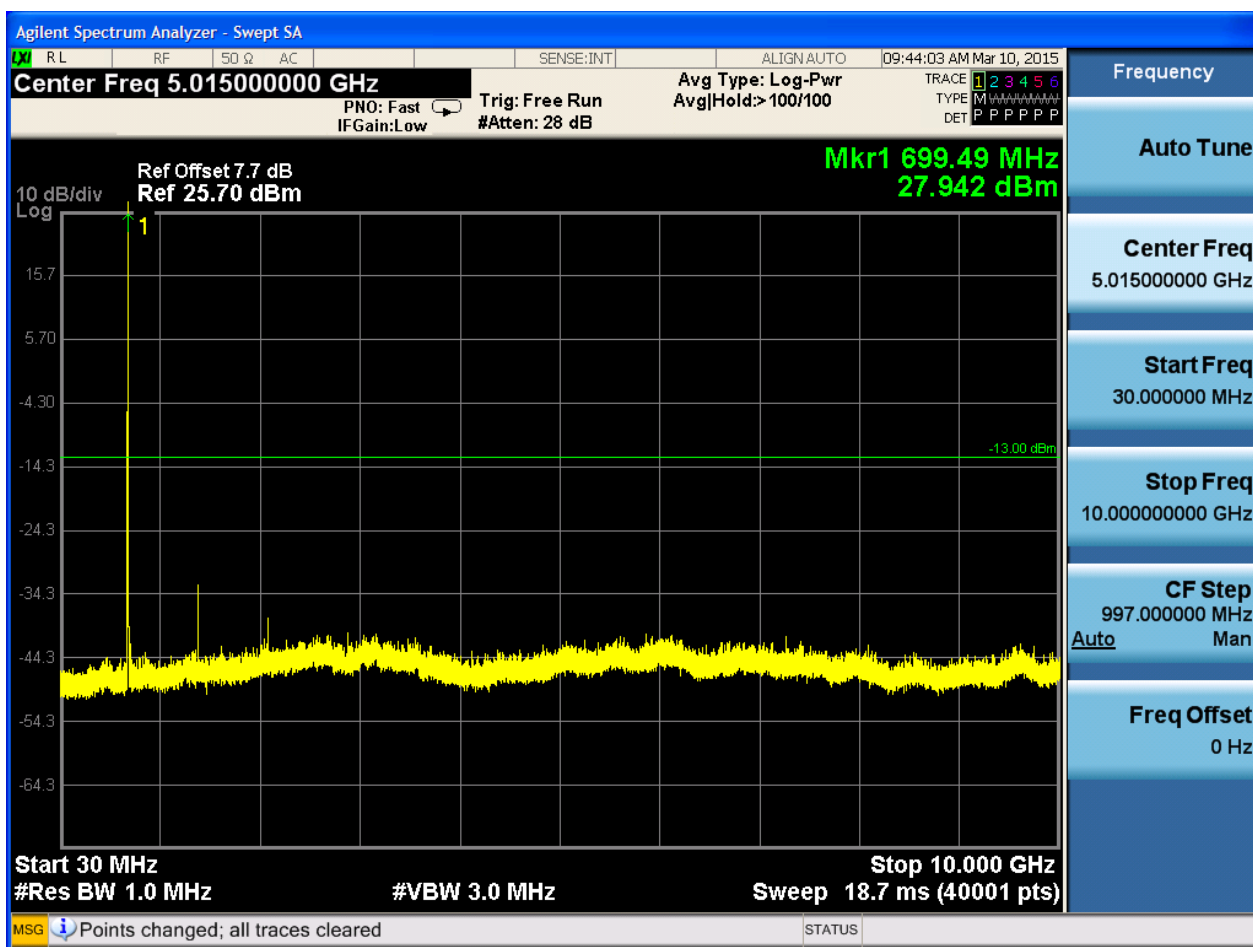
6.1.1.1.3 Test Bandwidth = 5

6.1.1.1.3.1 Test Channel = LCH

6.1.1.1.3.1.1 Test RB = RB1#0



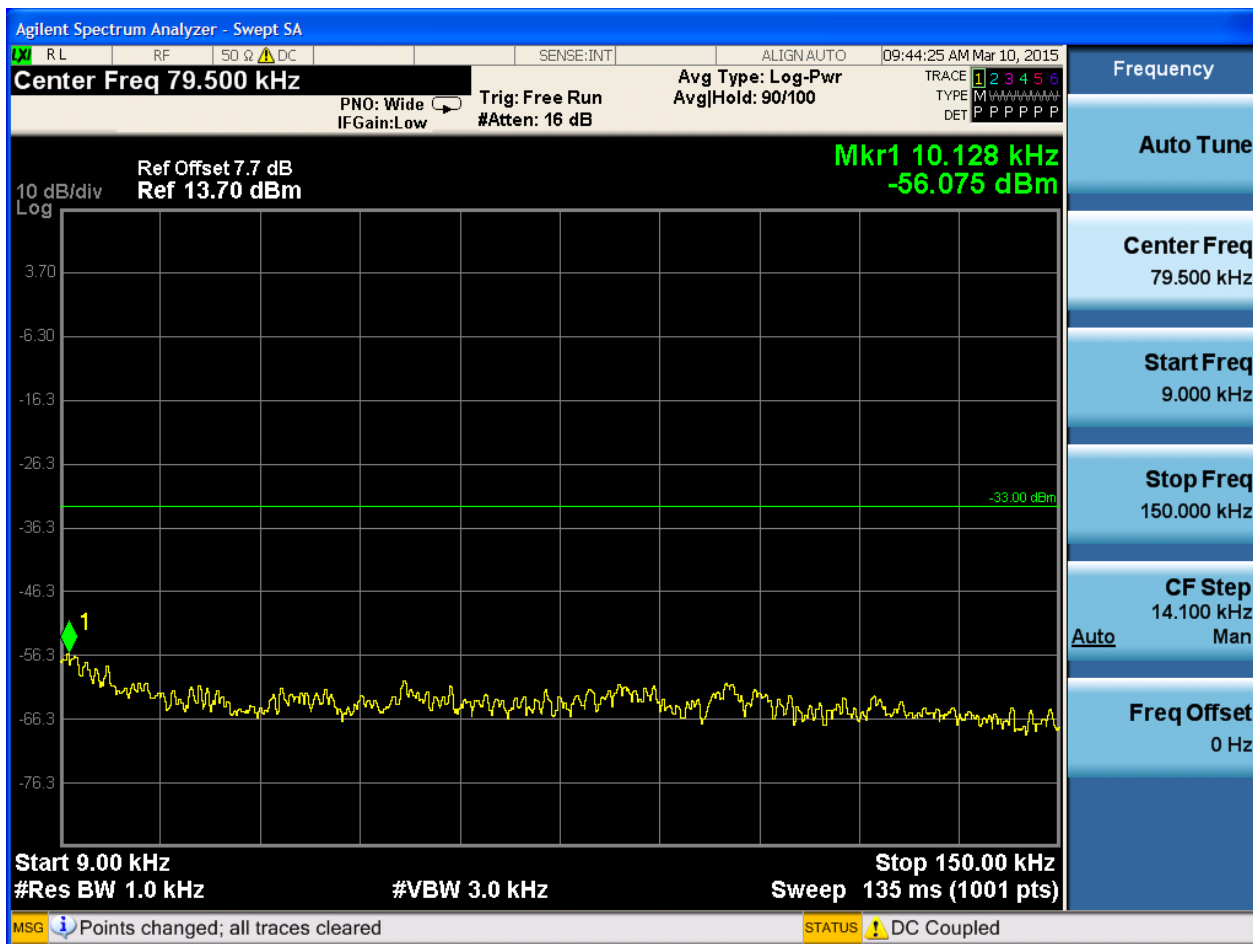


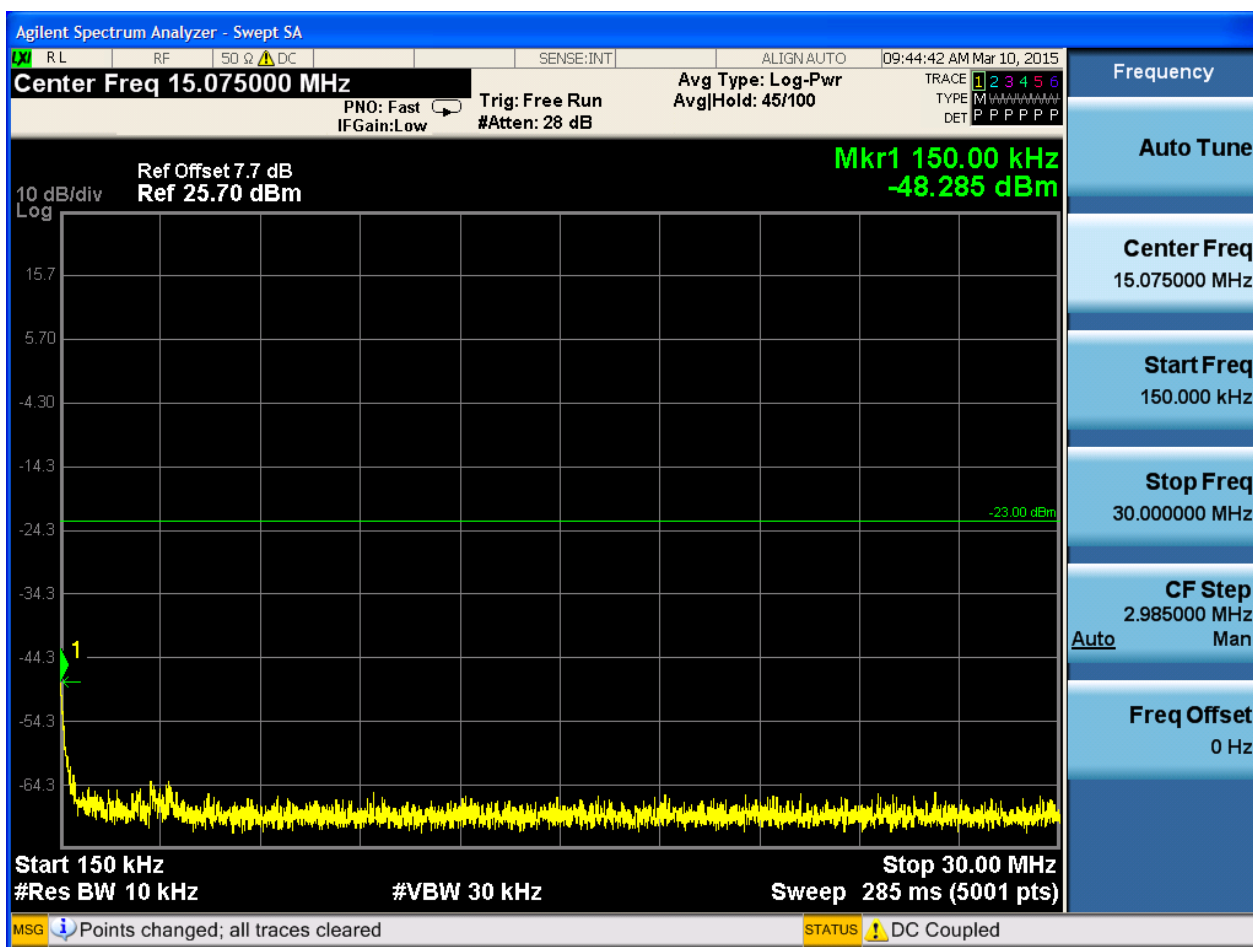


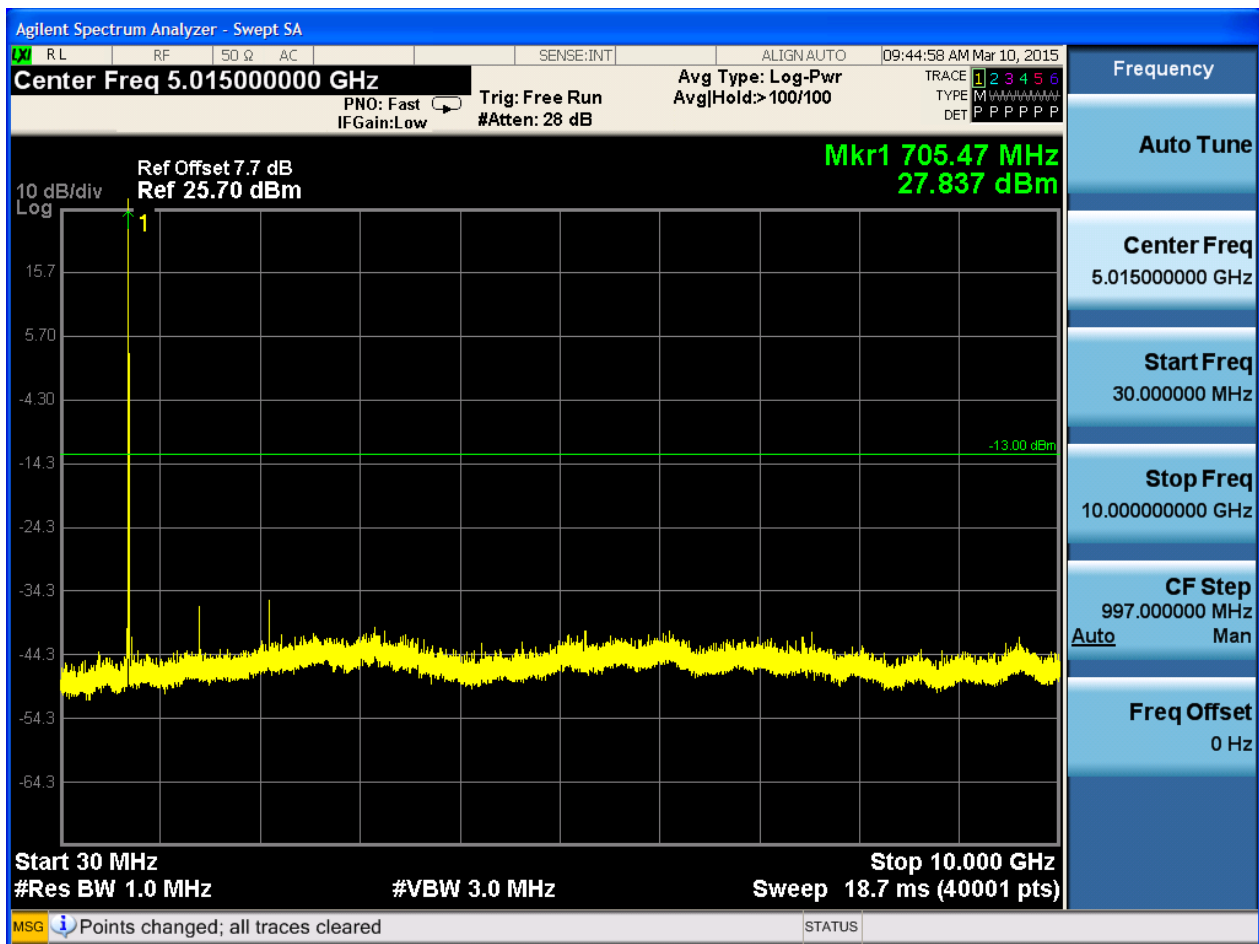


6.1.1.1.3.2 Test Channel = MCH

6.1.1.1.3.2.1 Test RB = RB1#0



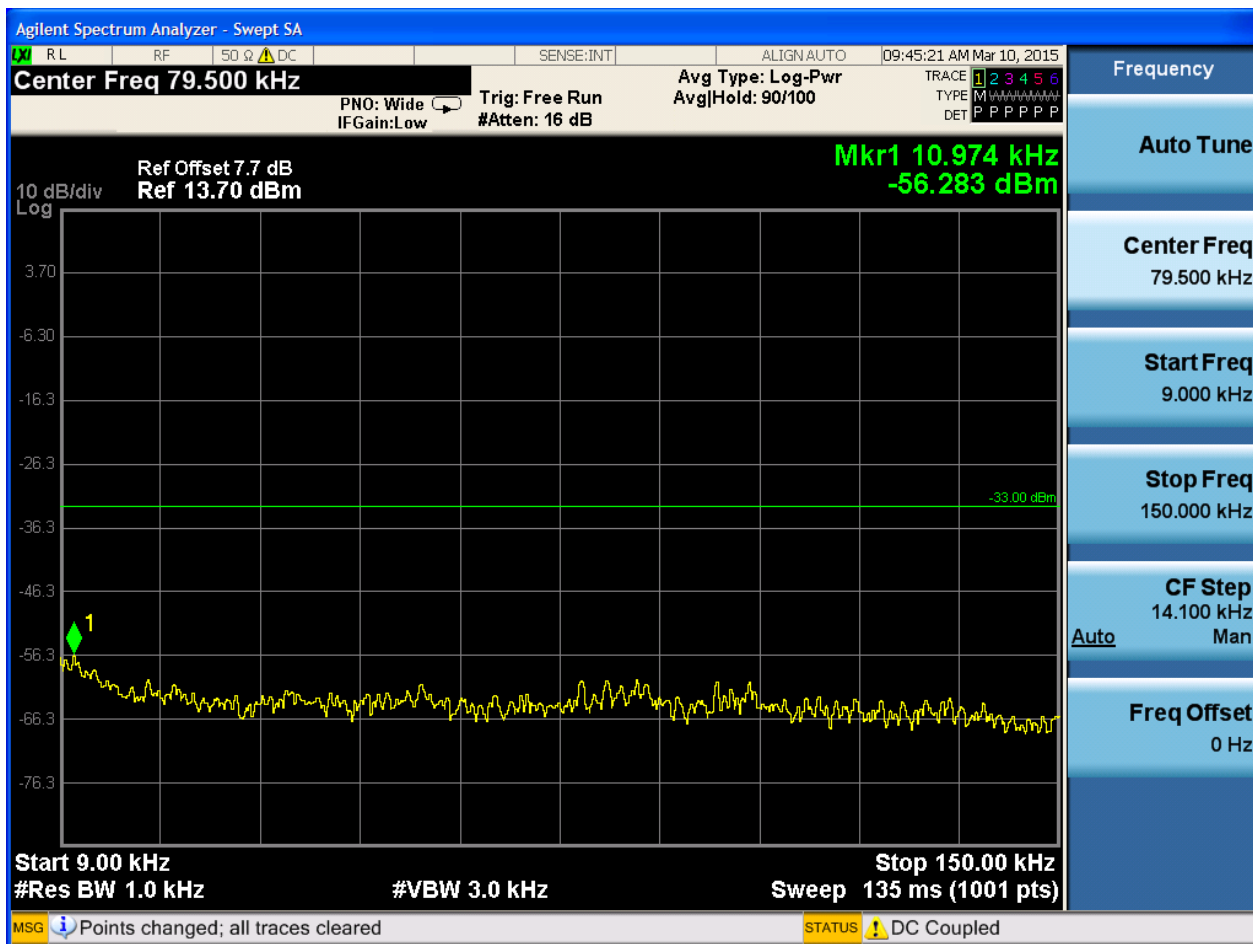


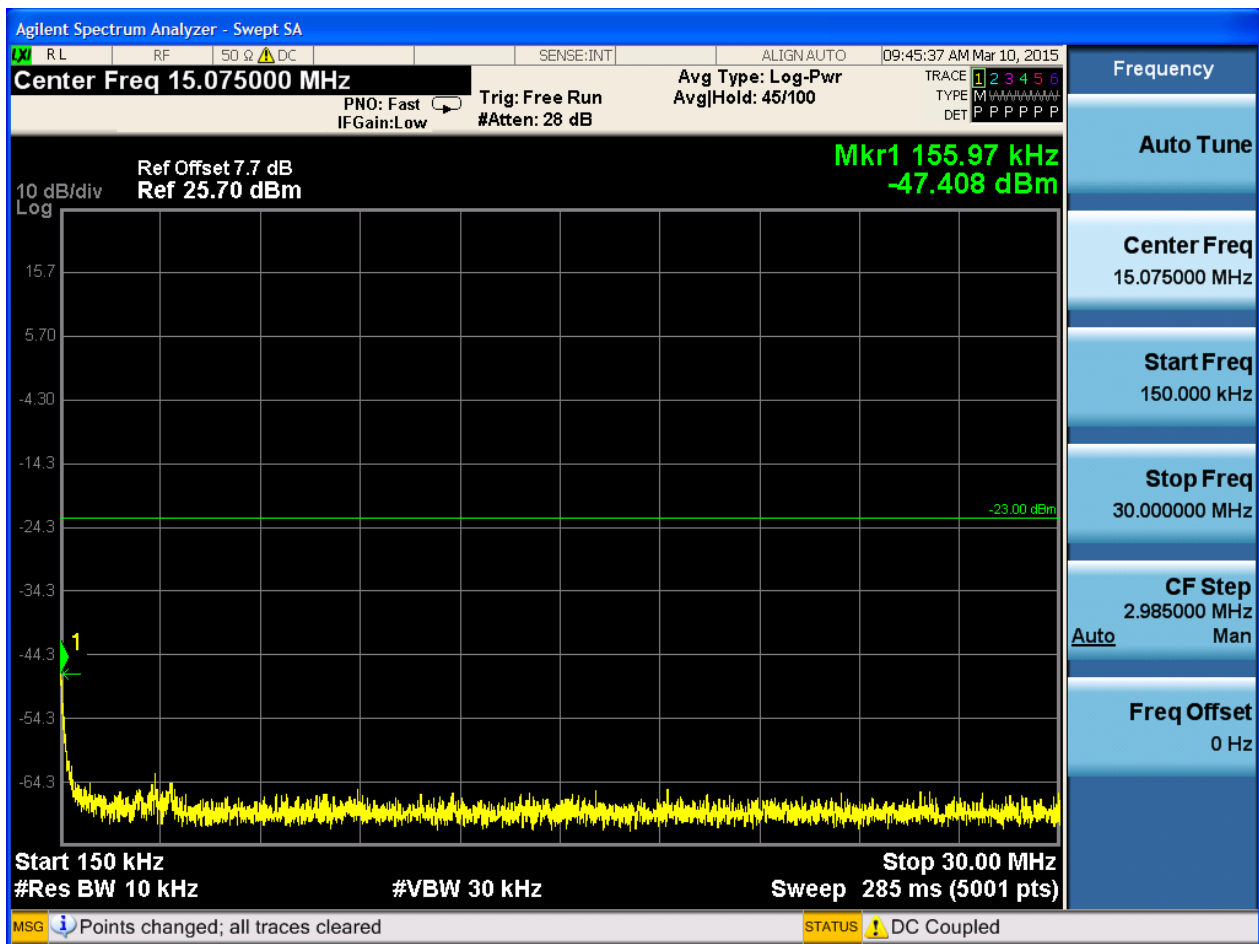


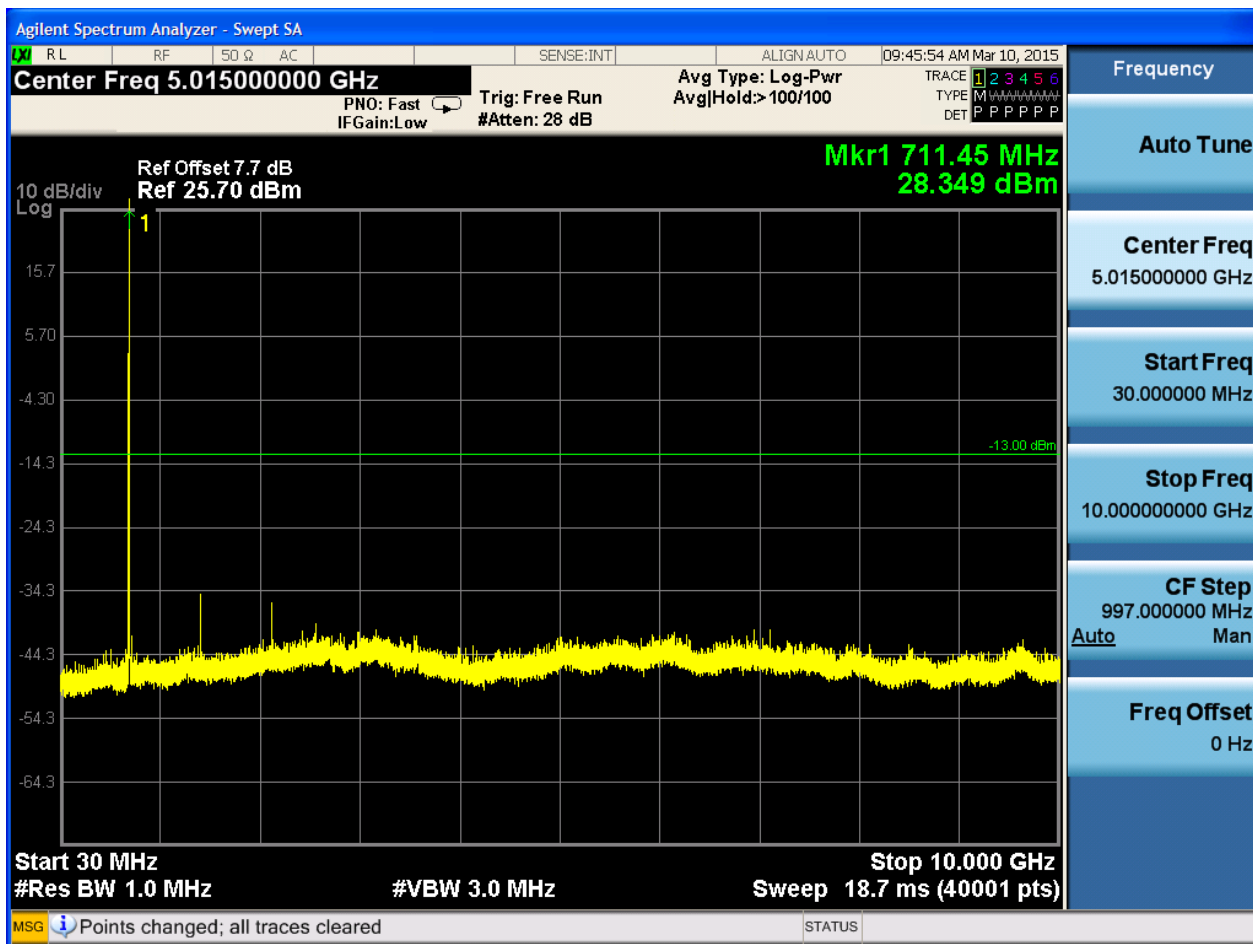


6.1.1.1.3.3 Test Channel = HCH

6.1.1.1.3.3.1 Test RB = RB1#0



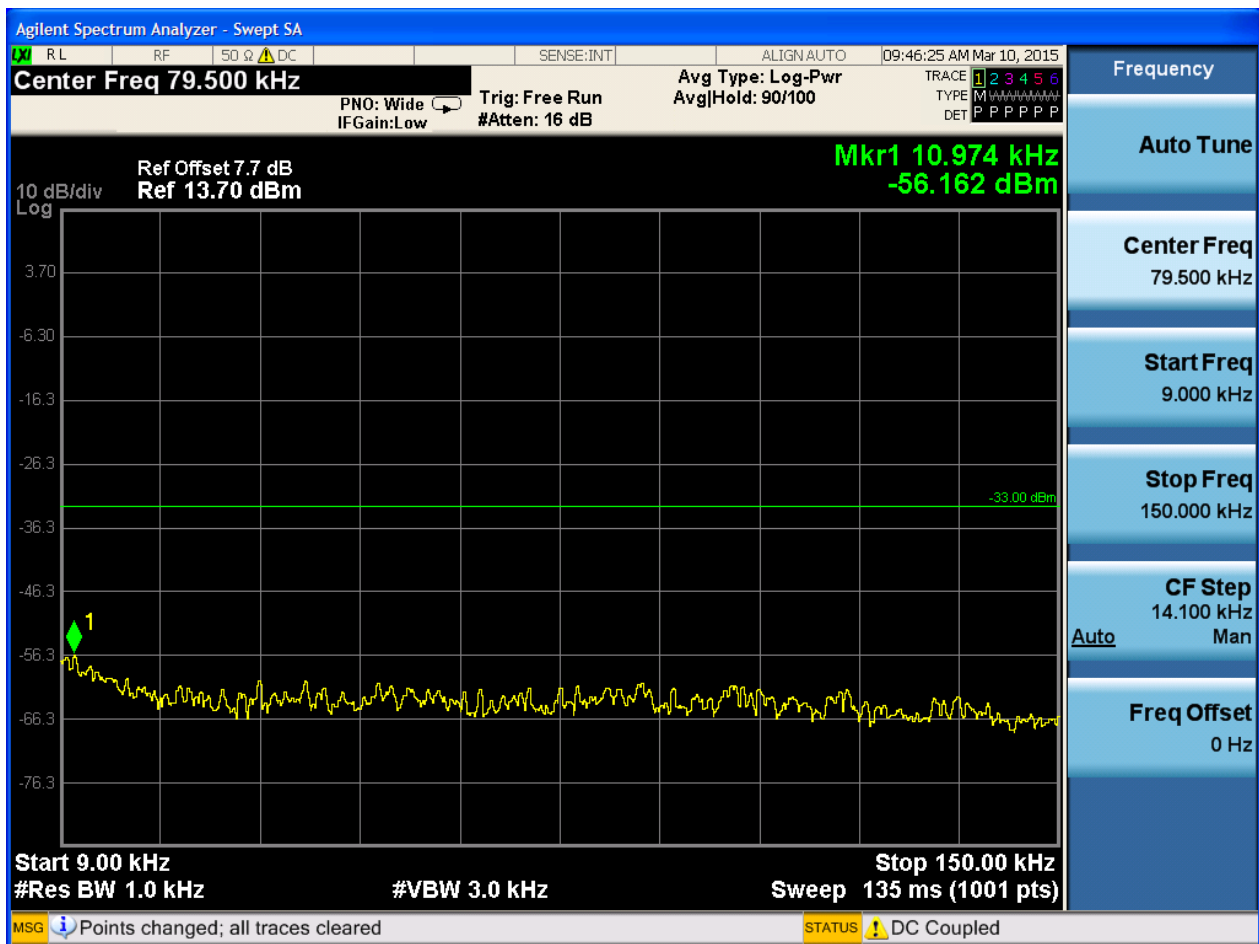


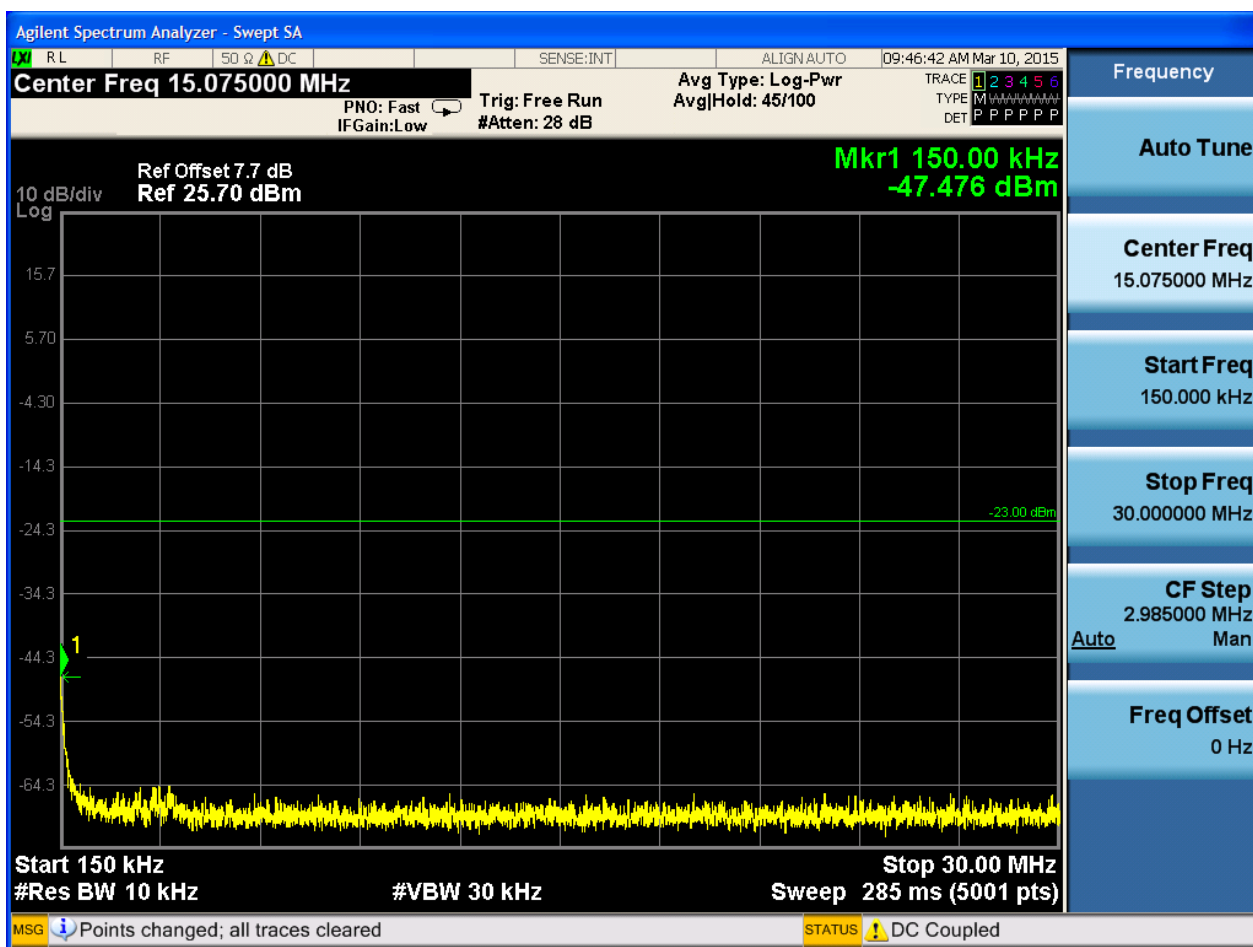


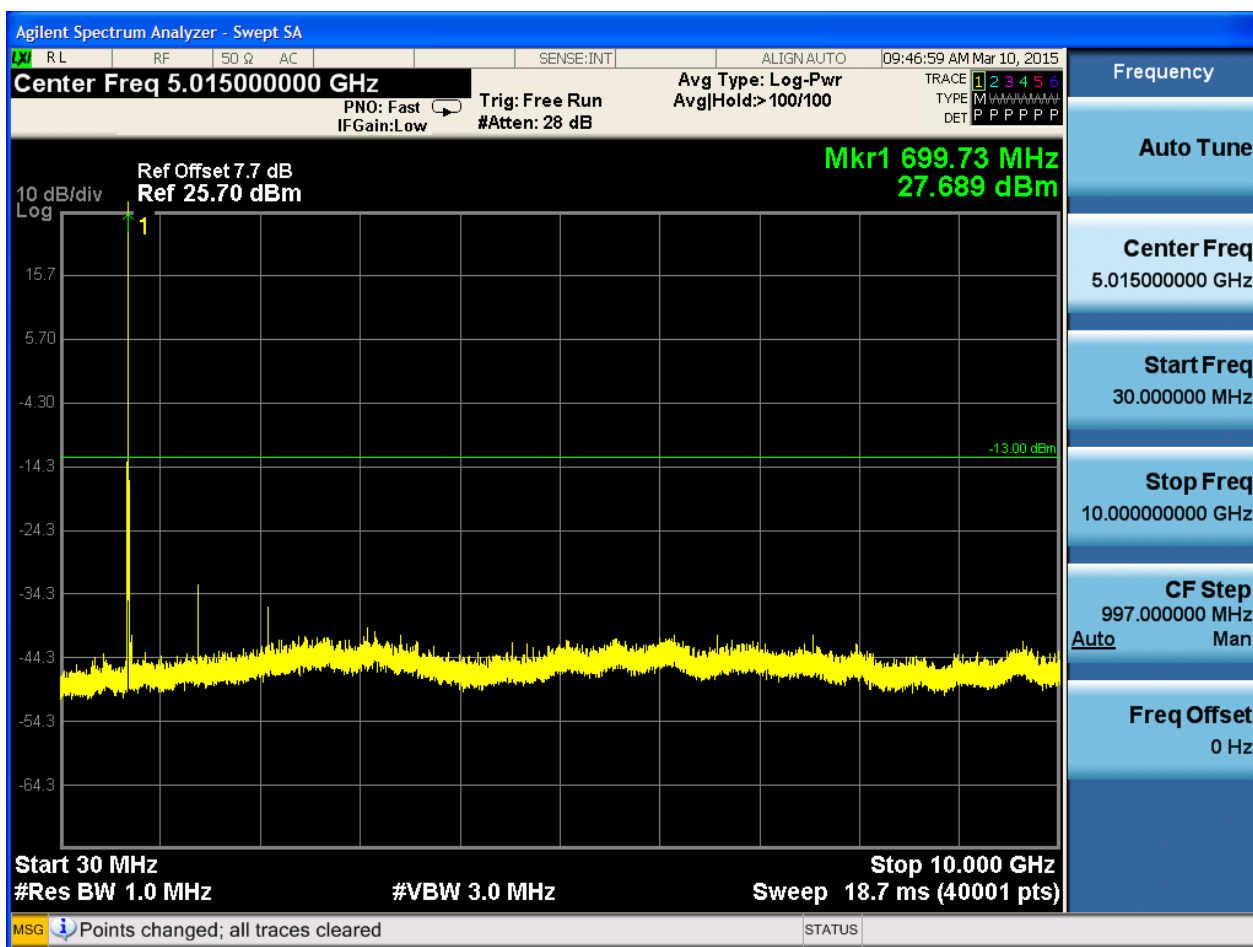
6.1.1.1.4 Test Bandwidth = 10

6.1.1.1.4.1 Test Channel = LCH

6.1.1.1.4.1.1 Test RB = RB1#0



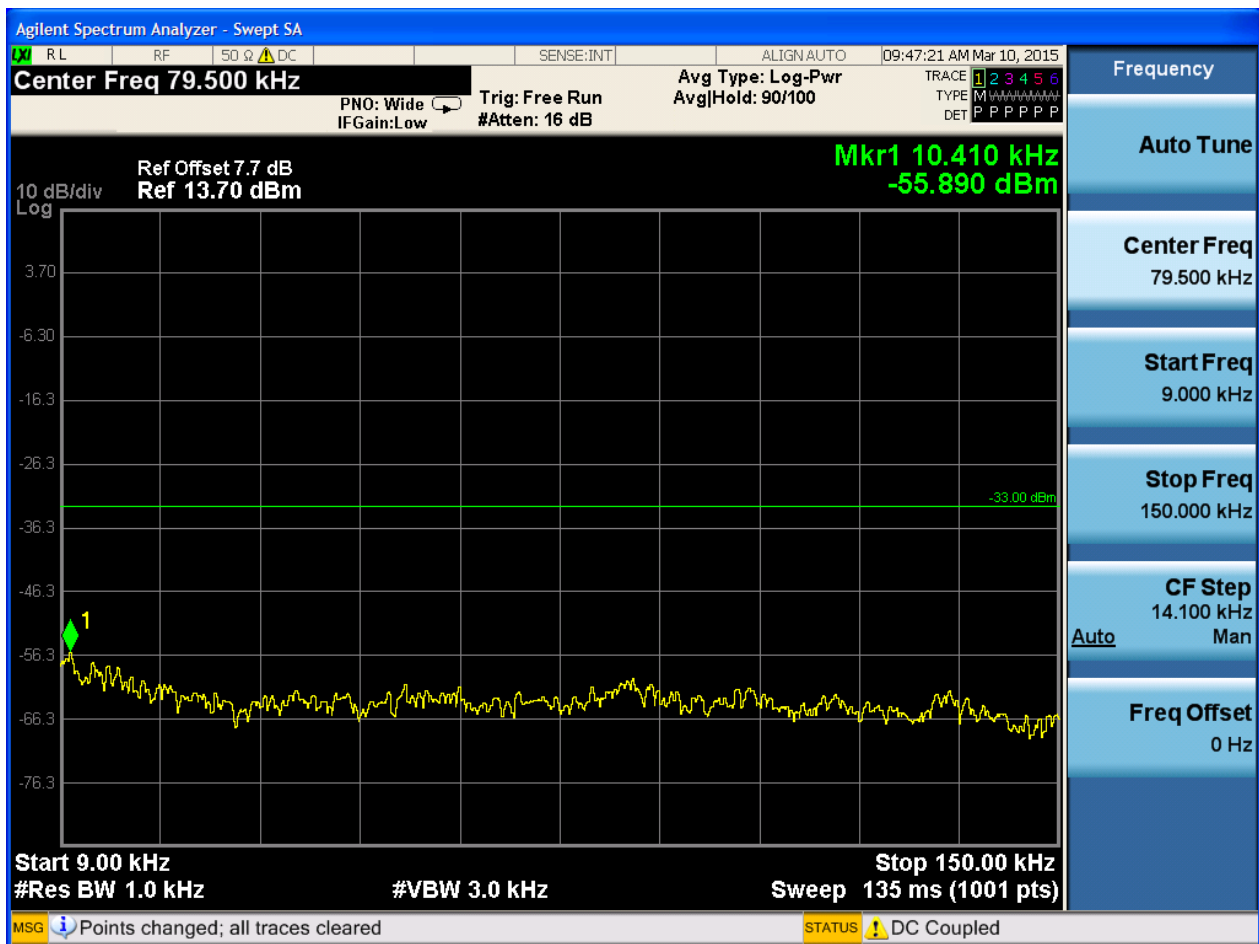


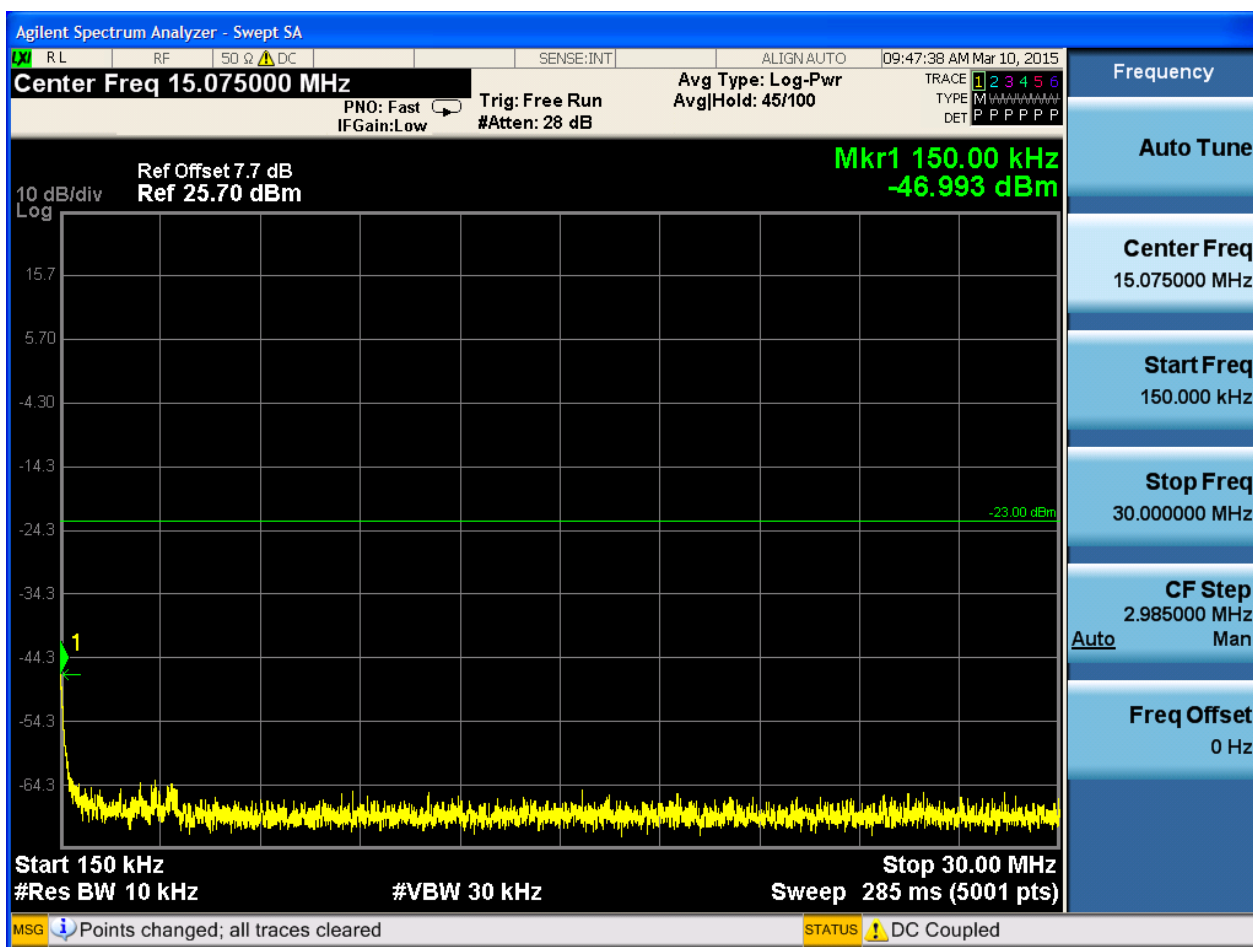


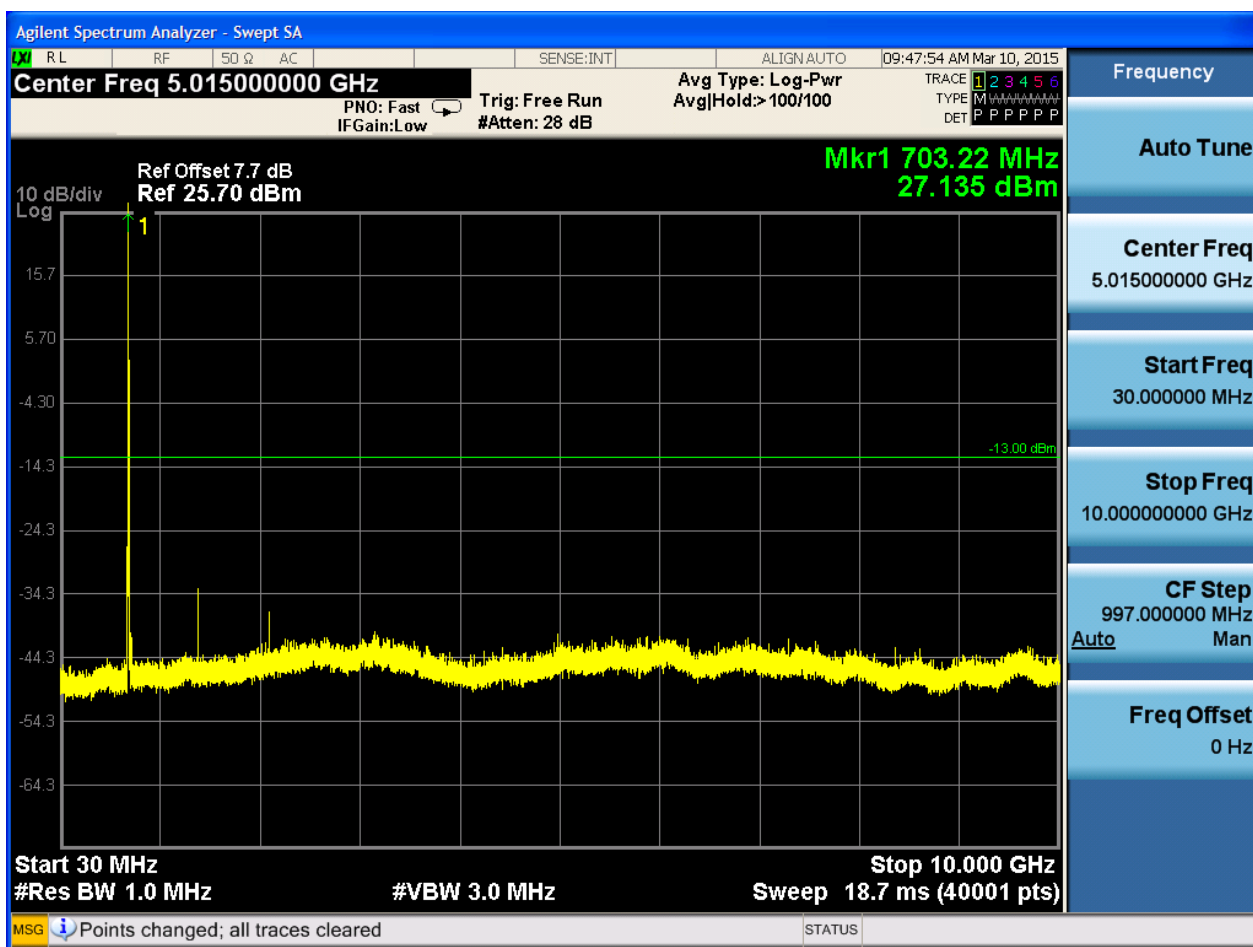


6.1.1.1.4.2 Test Channel = MCH

6.1.1.1.4.2.1 Test RB = RB1#0



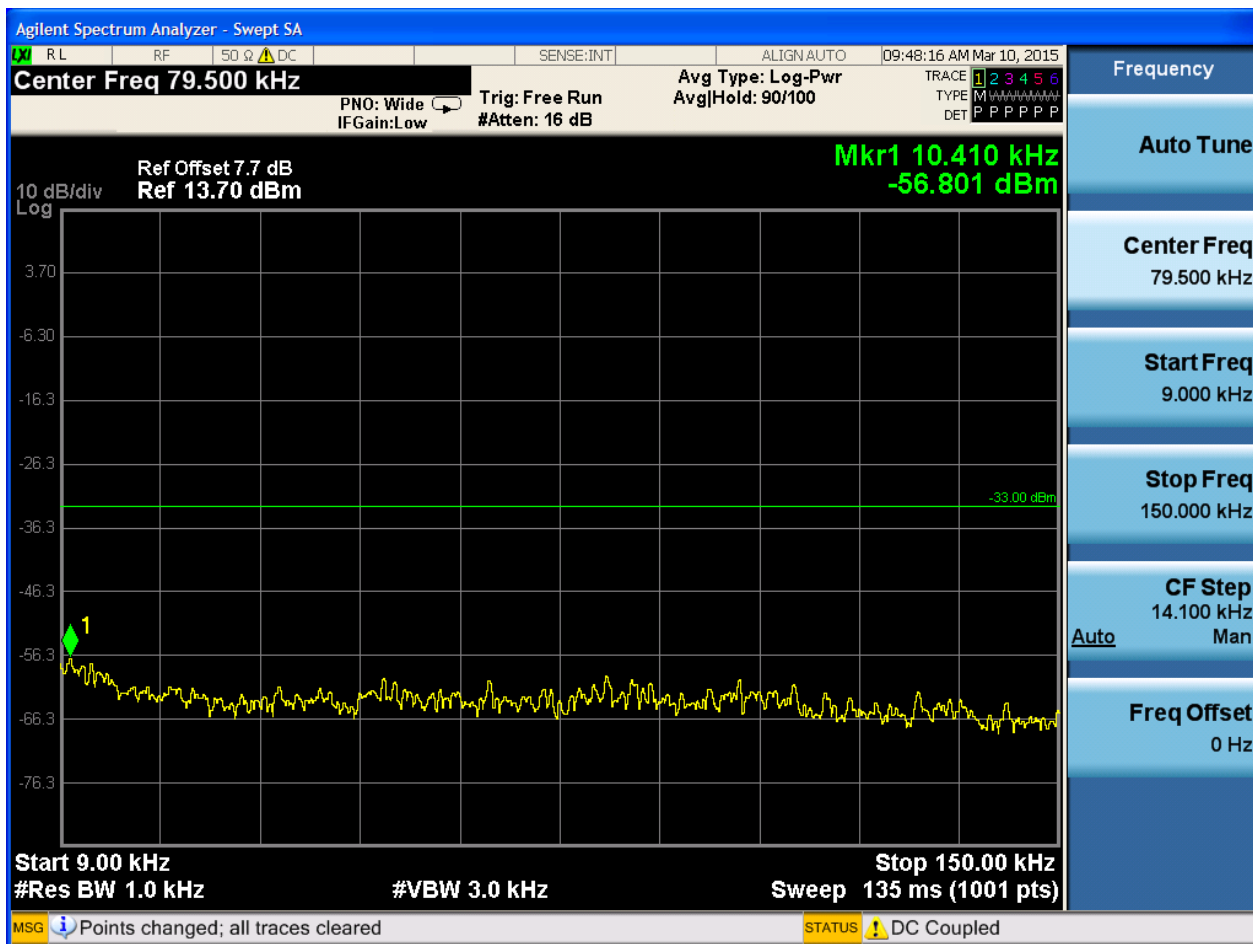


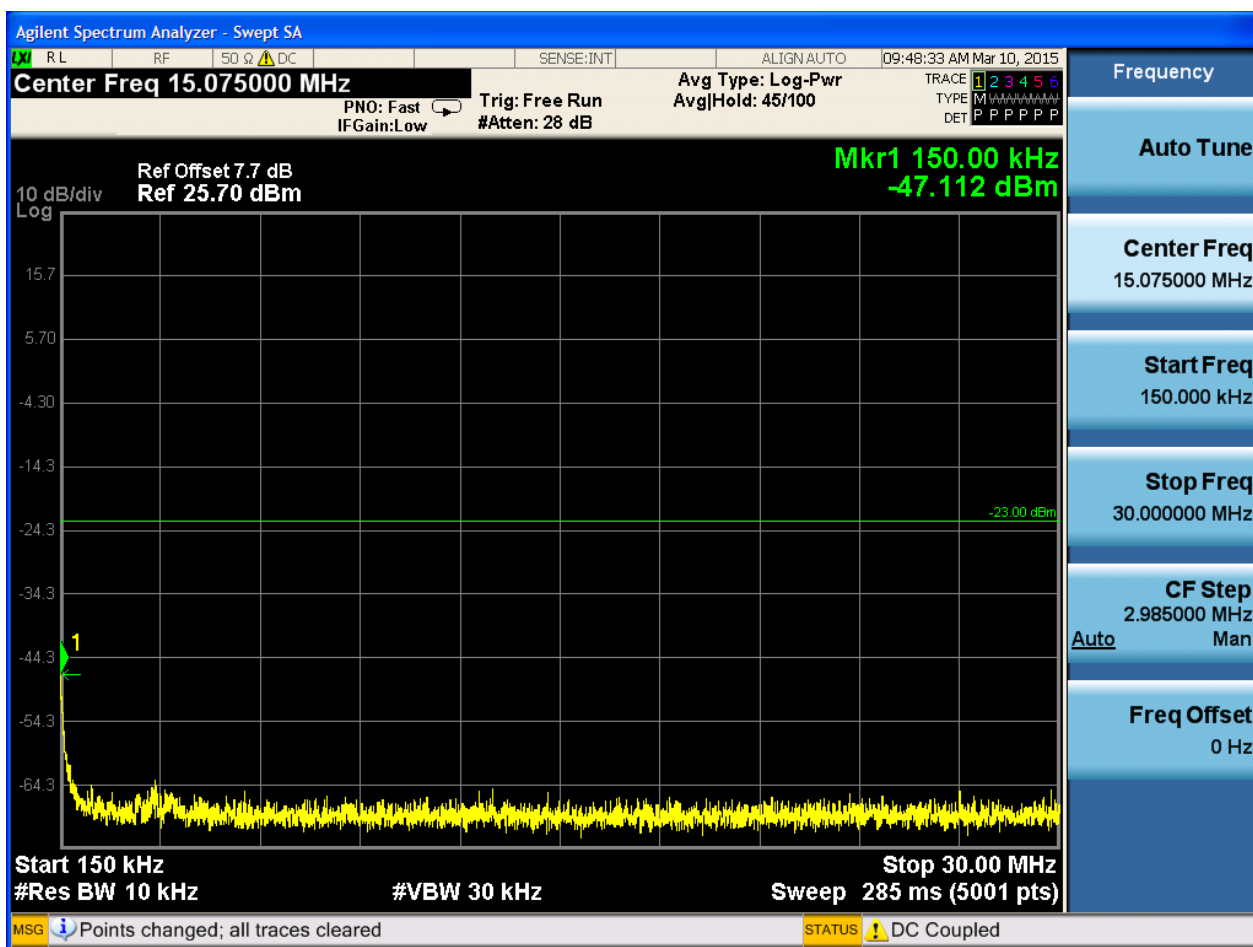


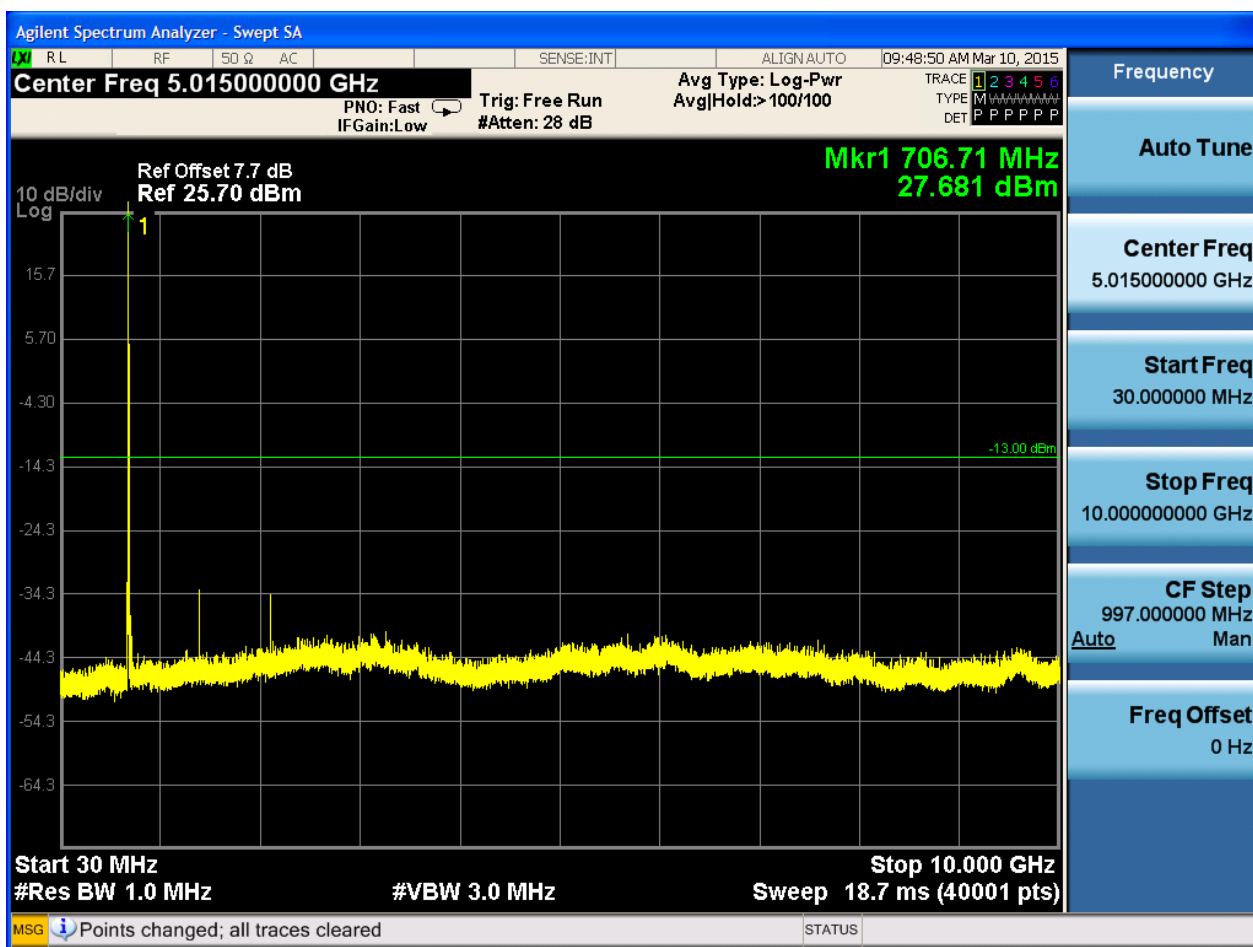


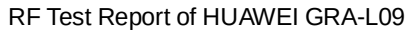
6.1.1.1.4.3 Test Channel = HCH

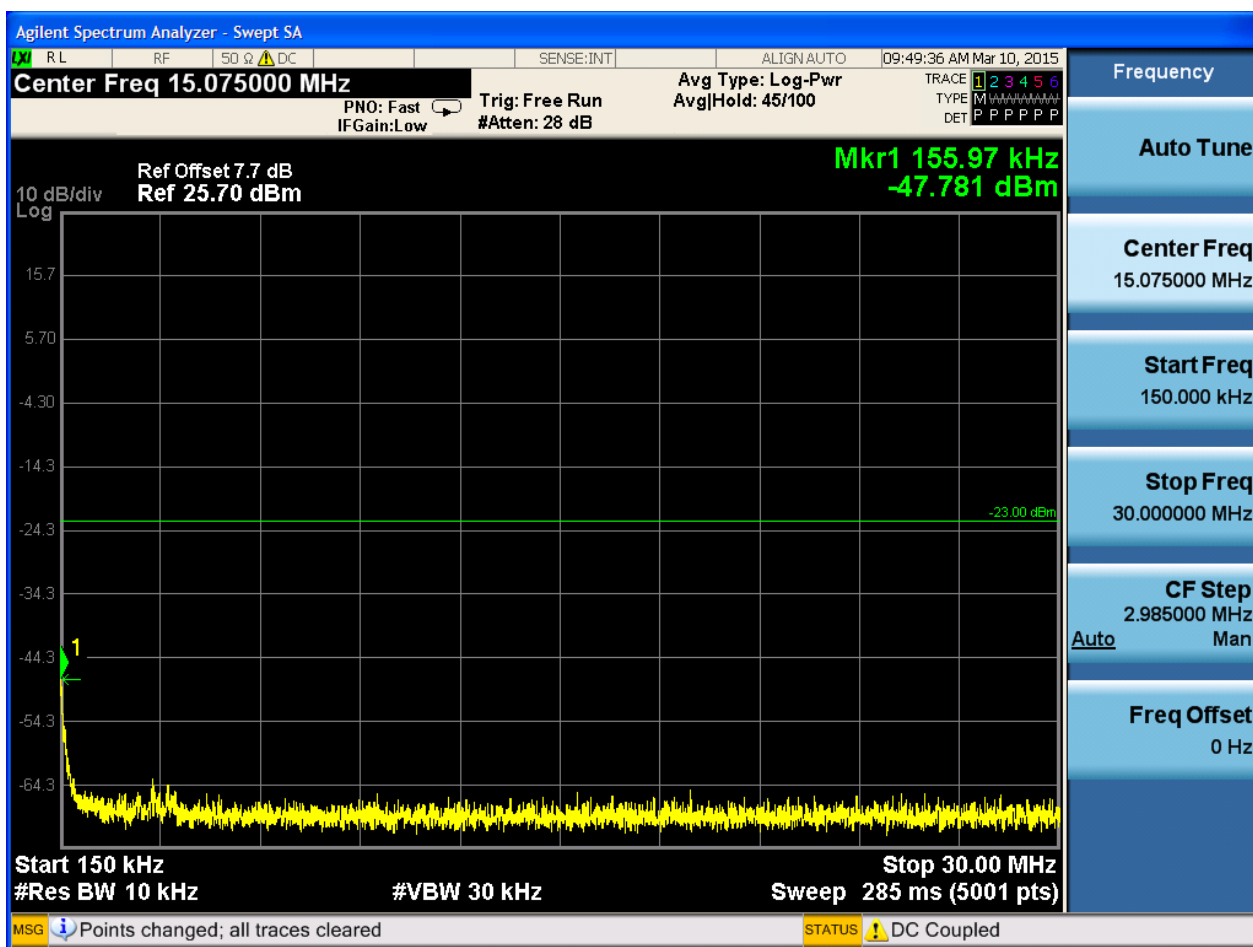
6.1.1.1.4.3.1 Test RB = RB1#0

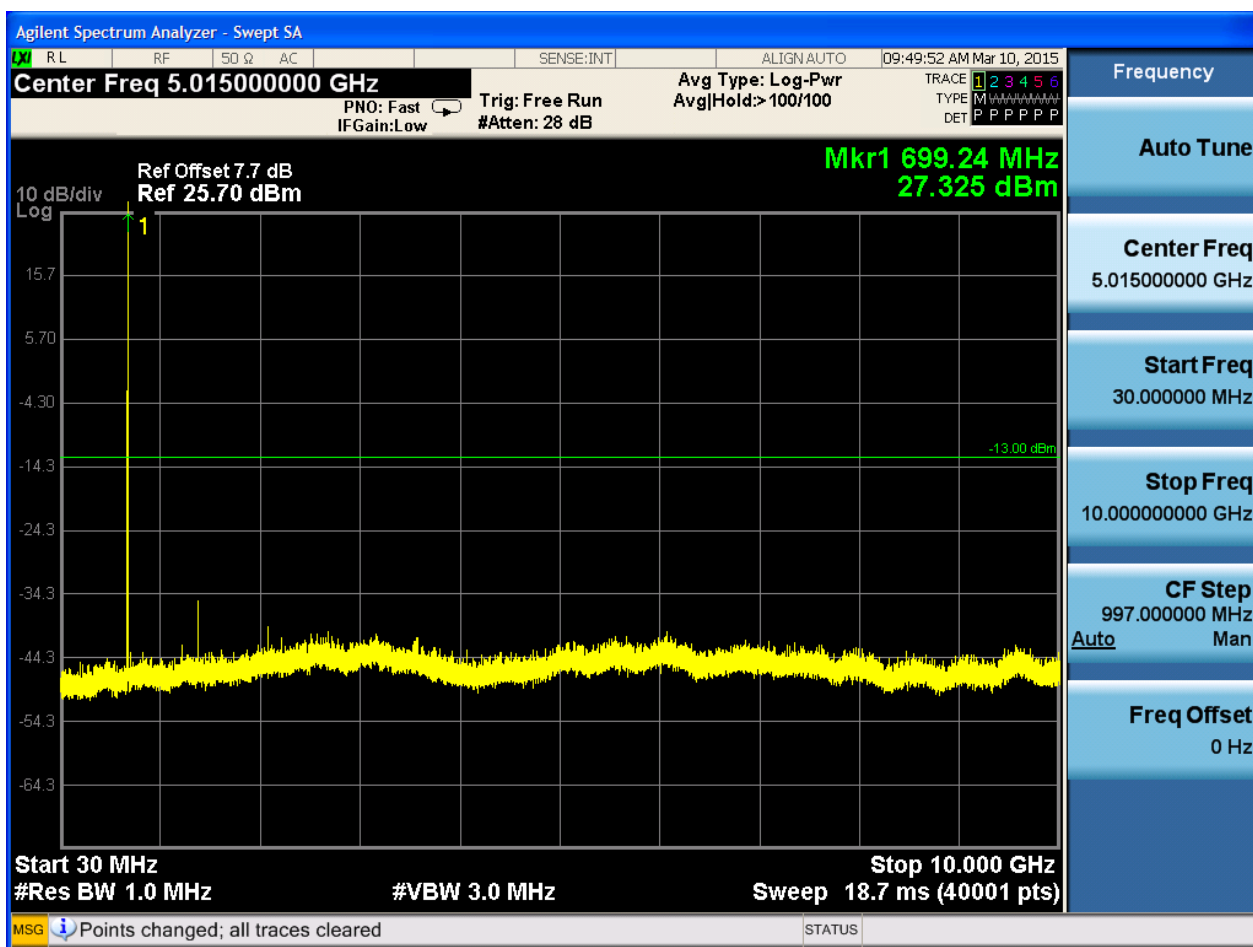








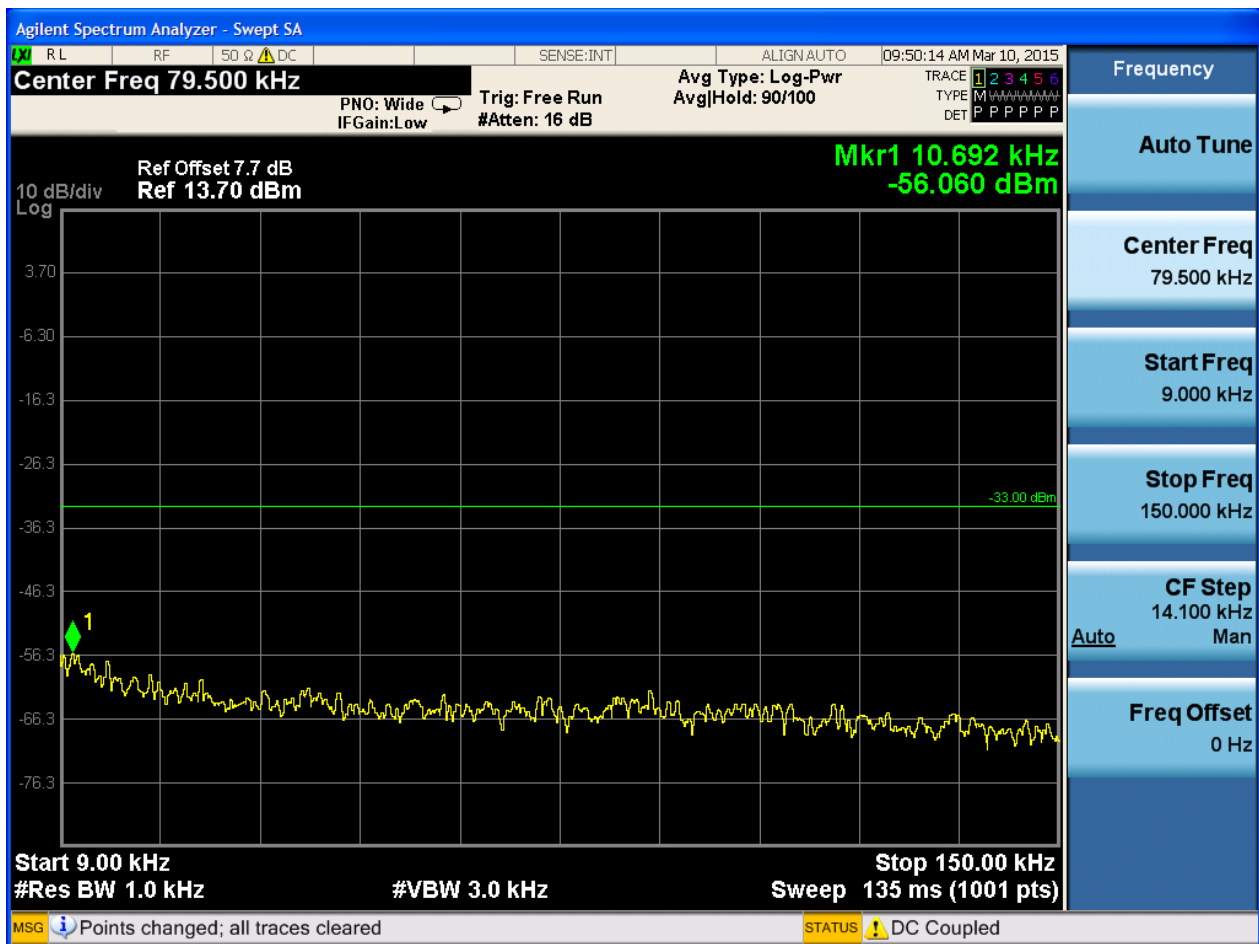


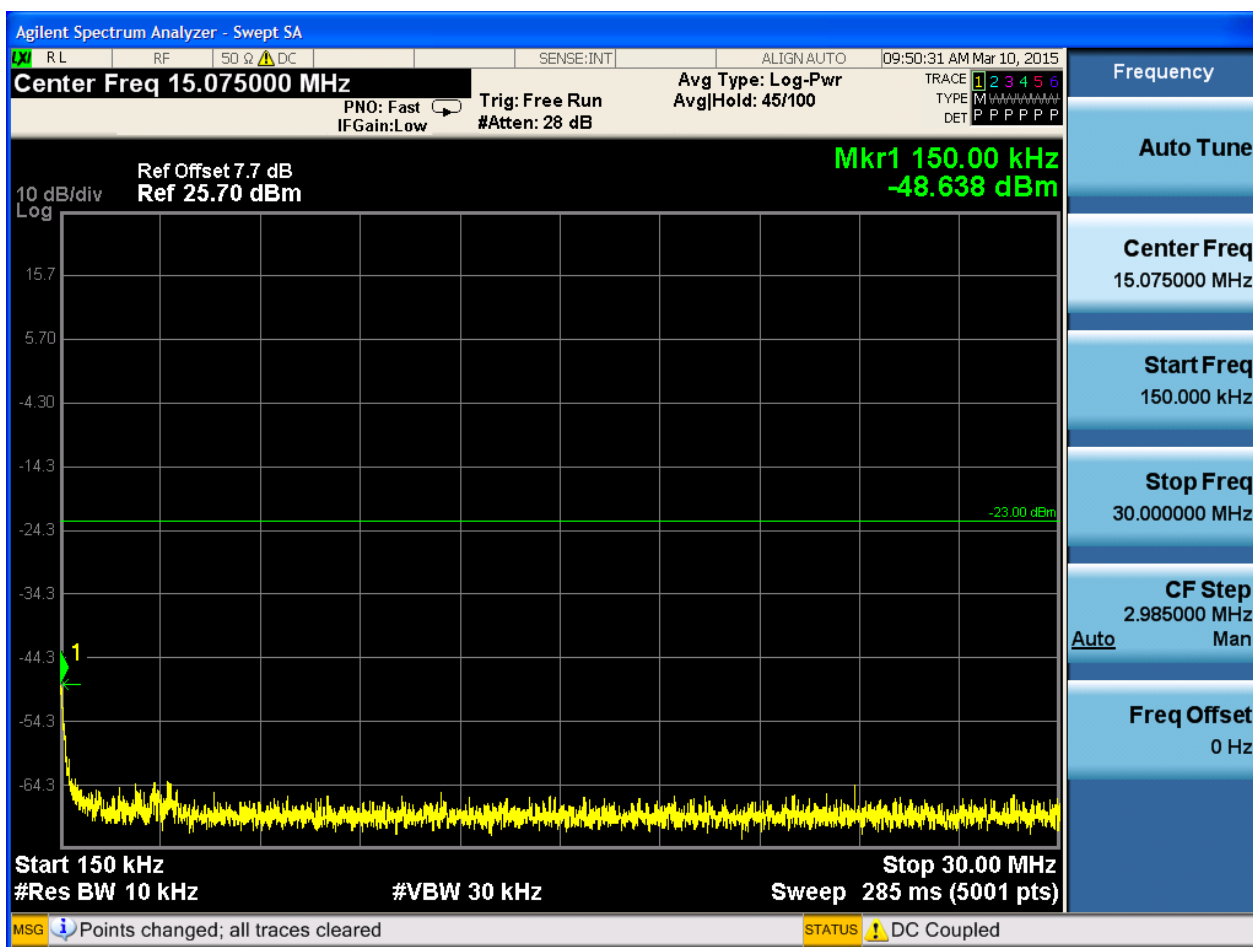


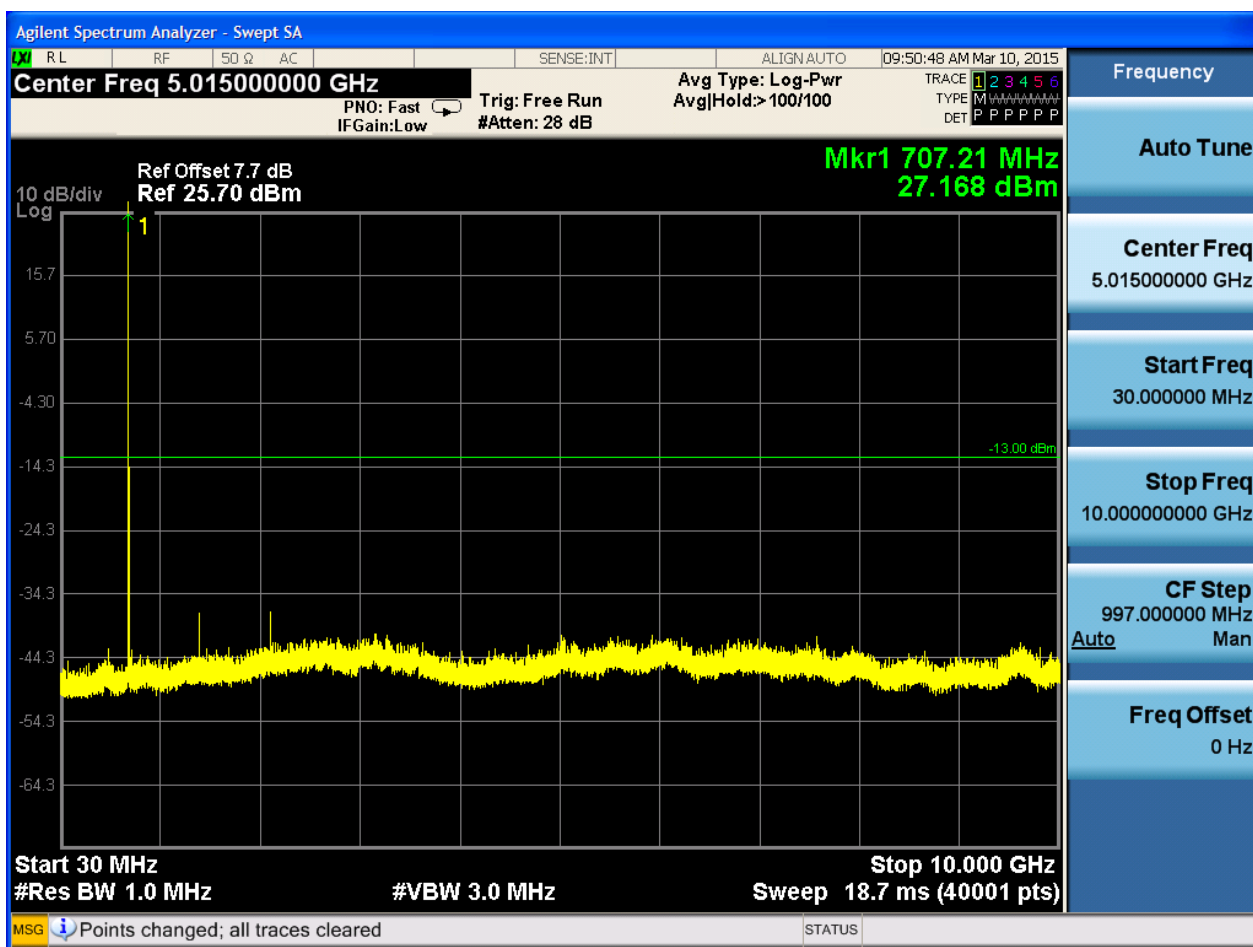


6.1.1.2.1.2 Test Channel = MCH

6.1.1.2.1.2.1 Test RB = RB1#0



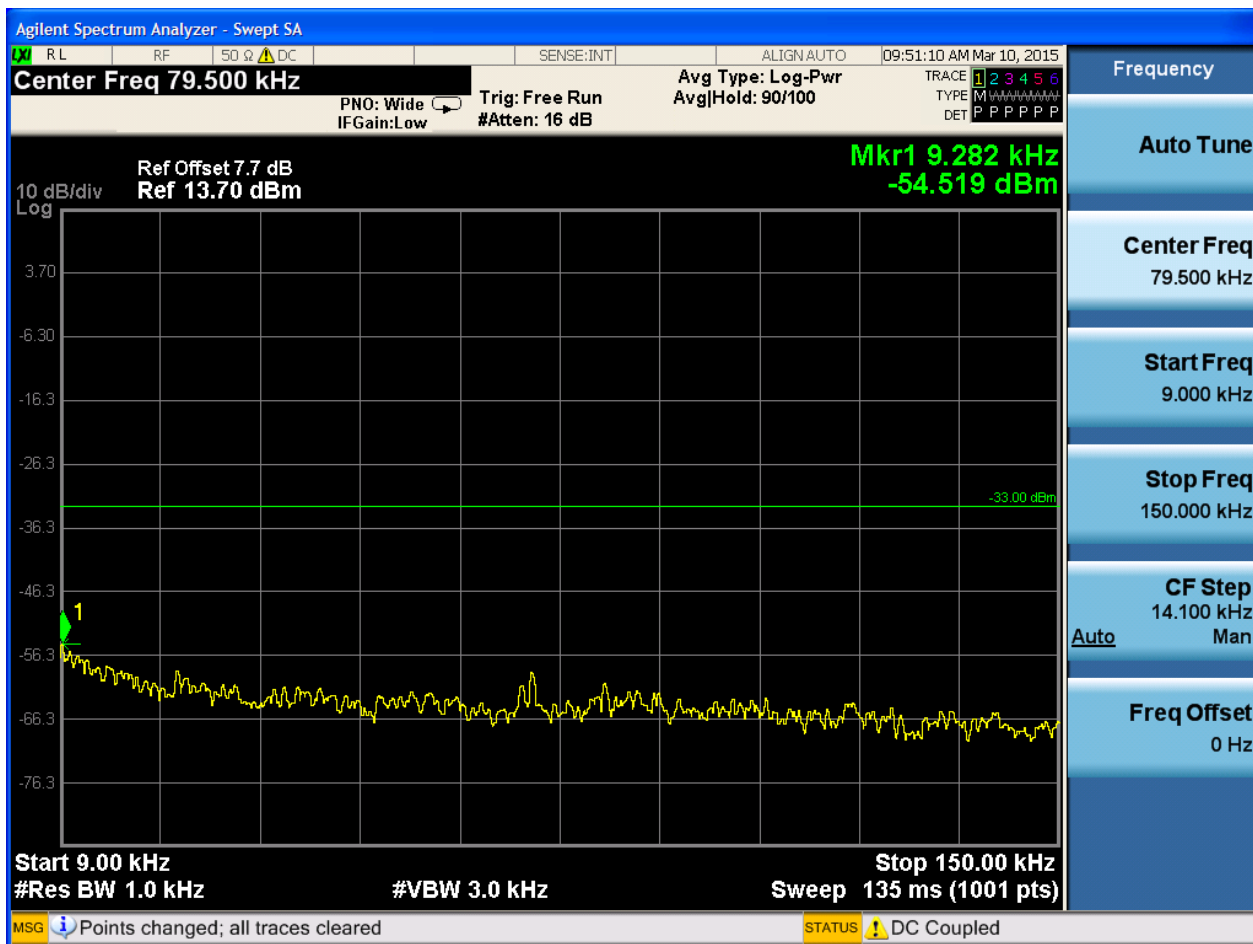


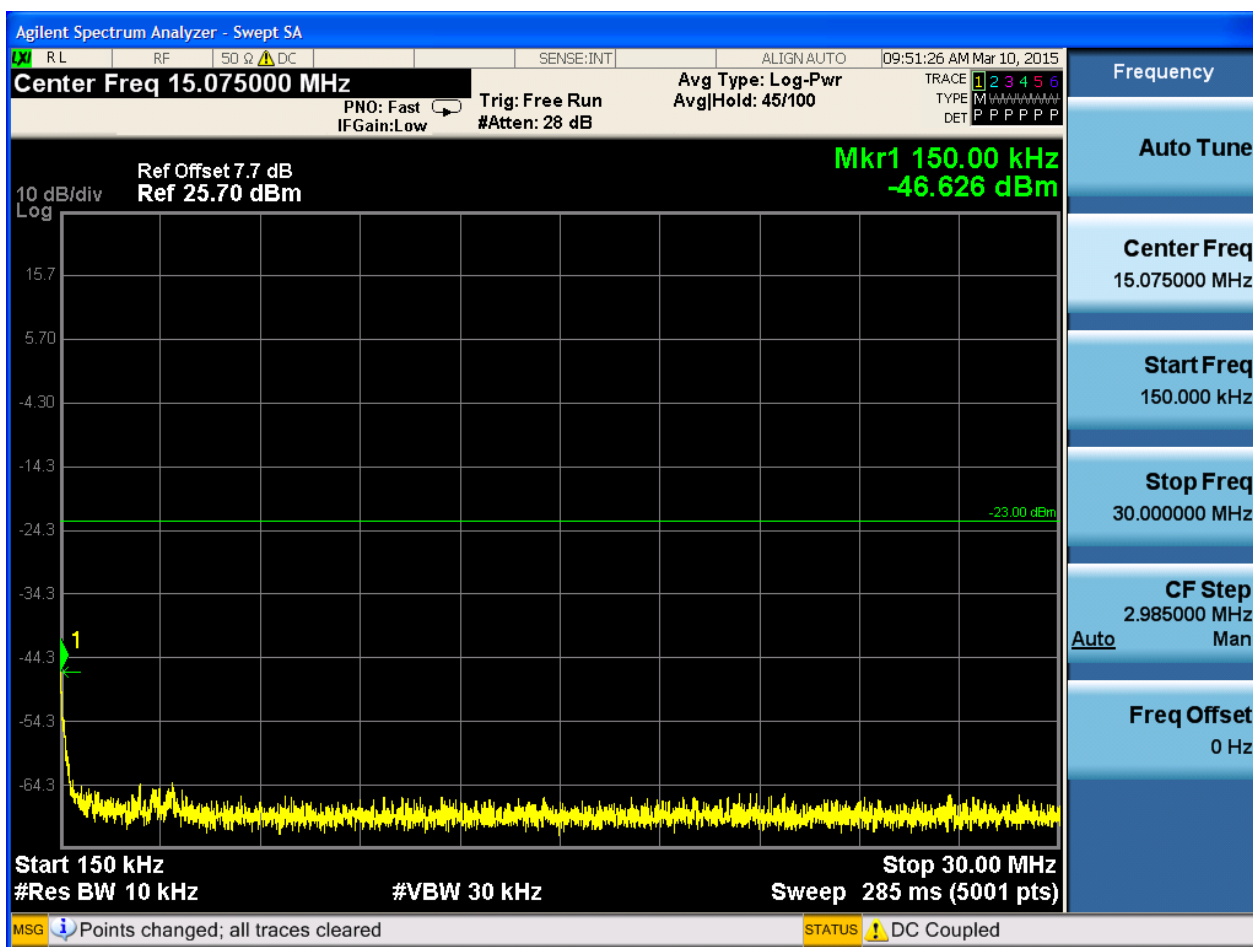


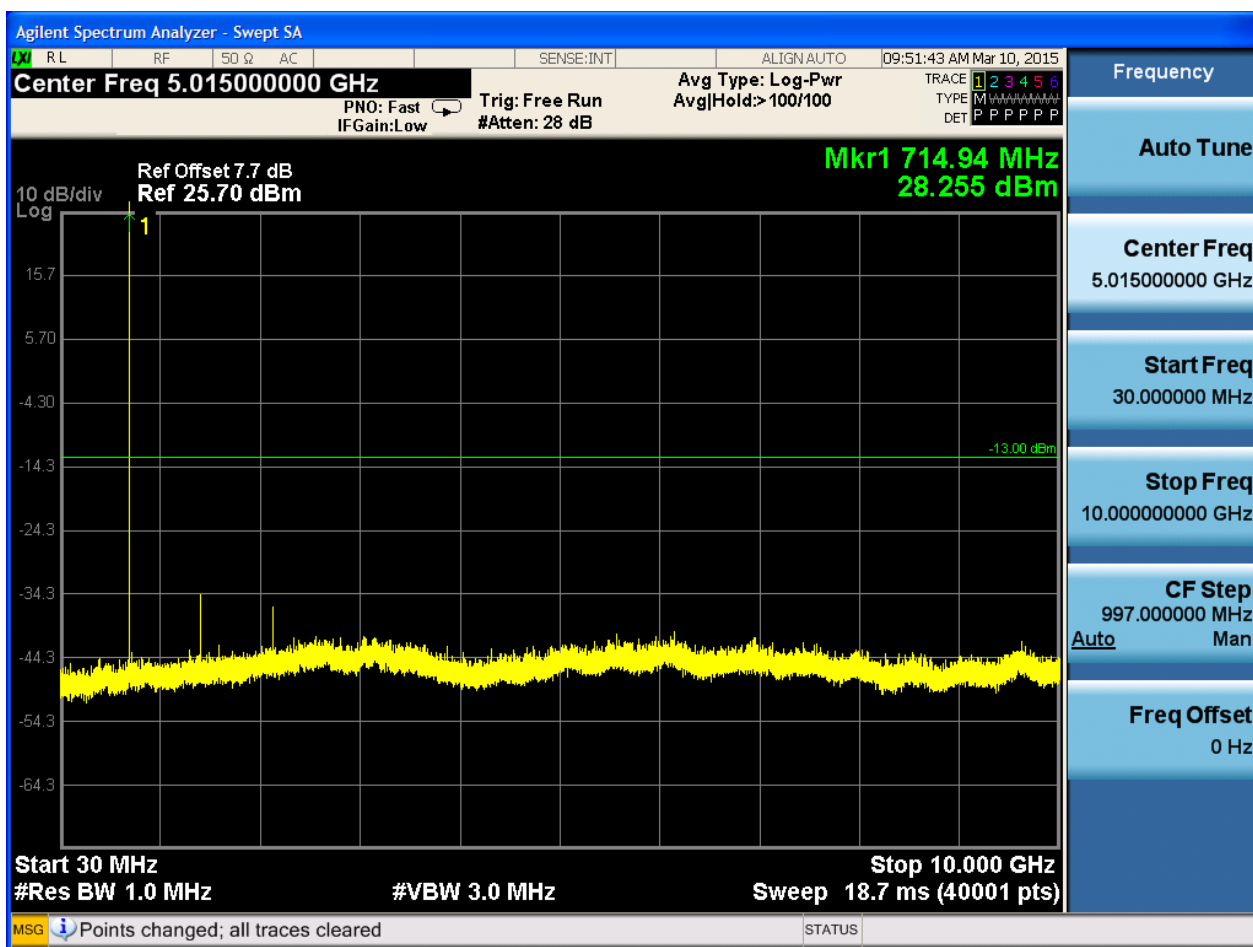


6.1.1.2.1.3 Test Channel = HCH

6.1.1.2.1.3.1 Test RB = RB1#0



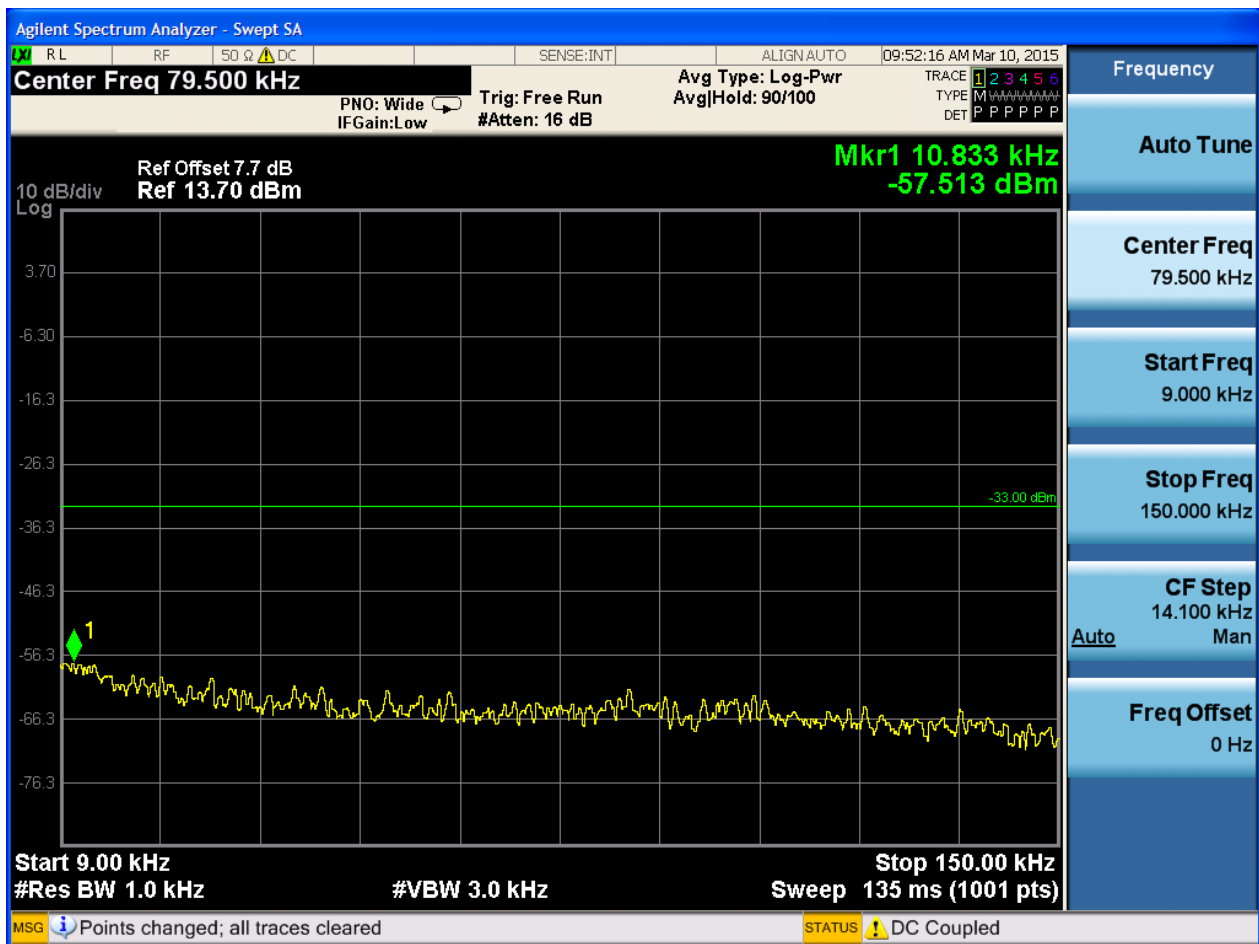


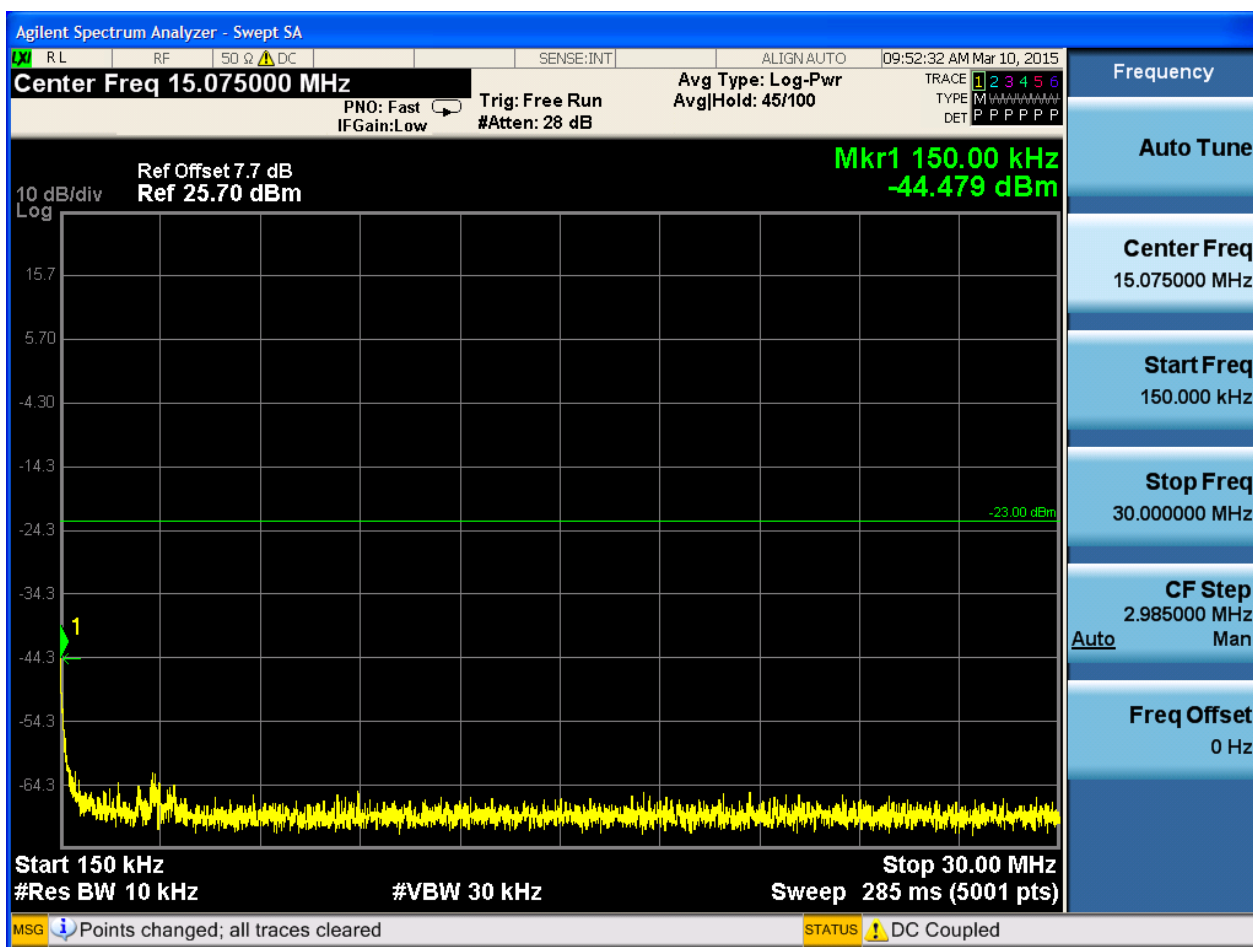


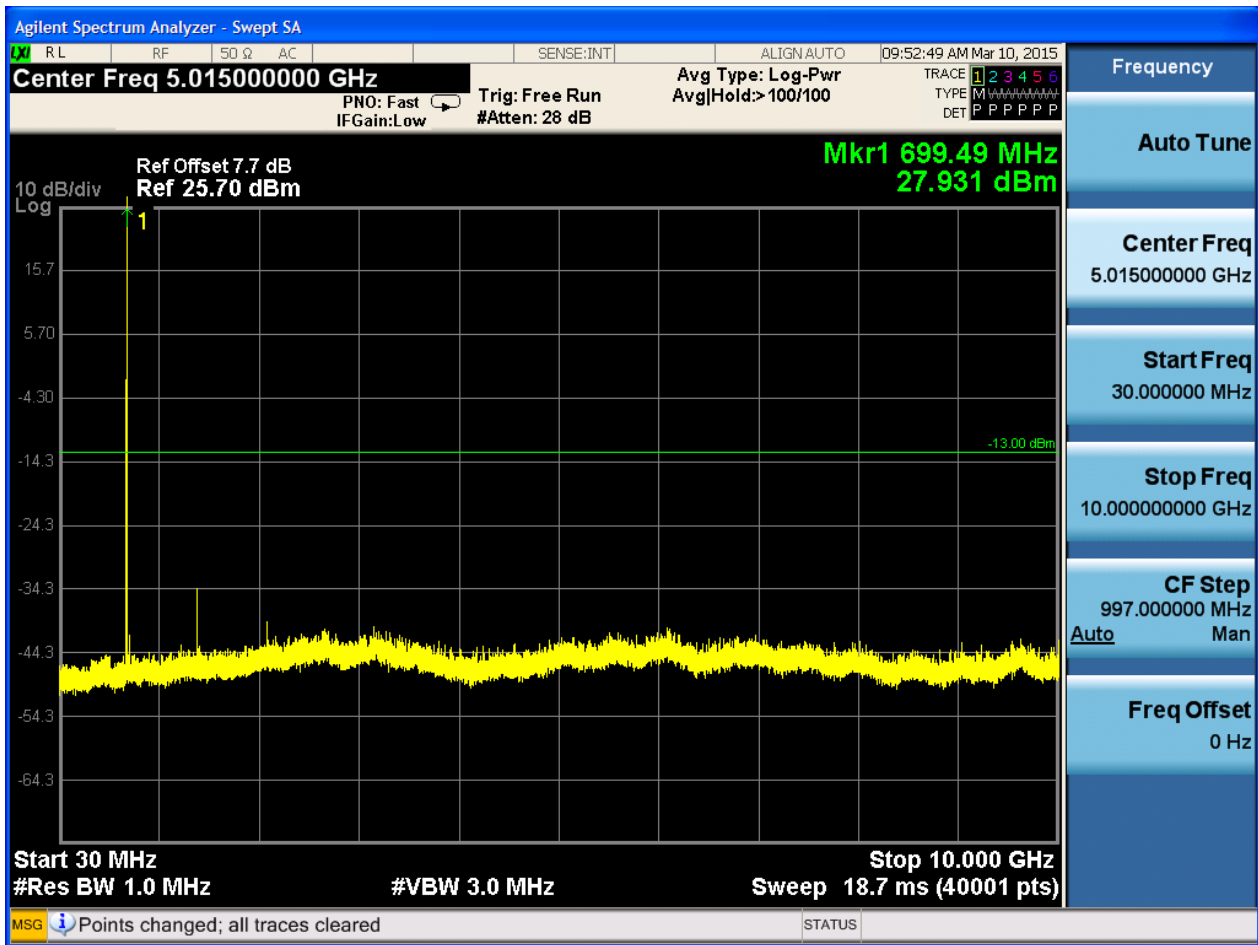
6.1.1.2.2 Test Bandwidth = 3

6.1.1.2.2.1 Test Channel = LCH

6.1.1.2.2.1.1 Test RB = RB1#0



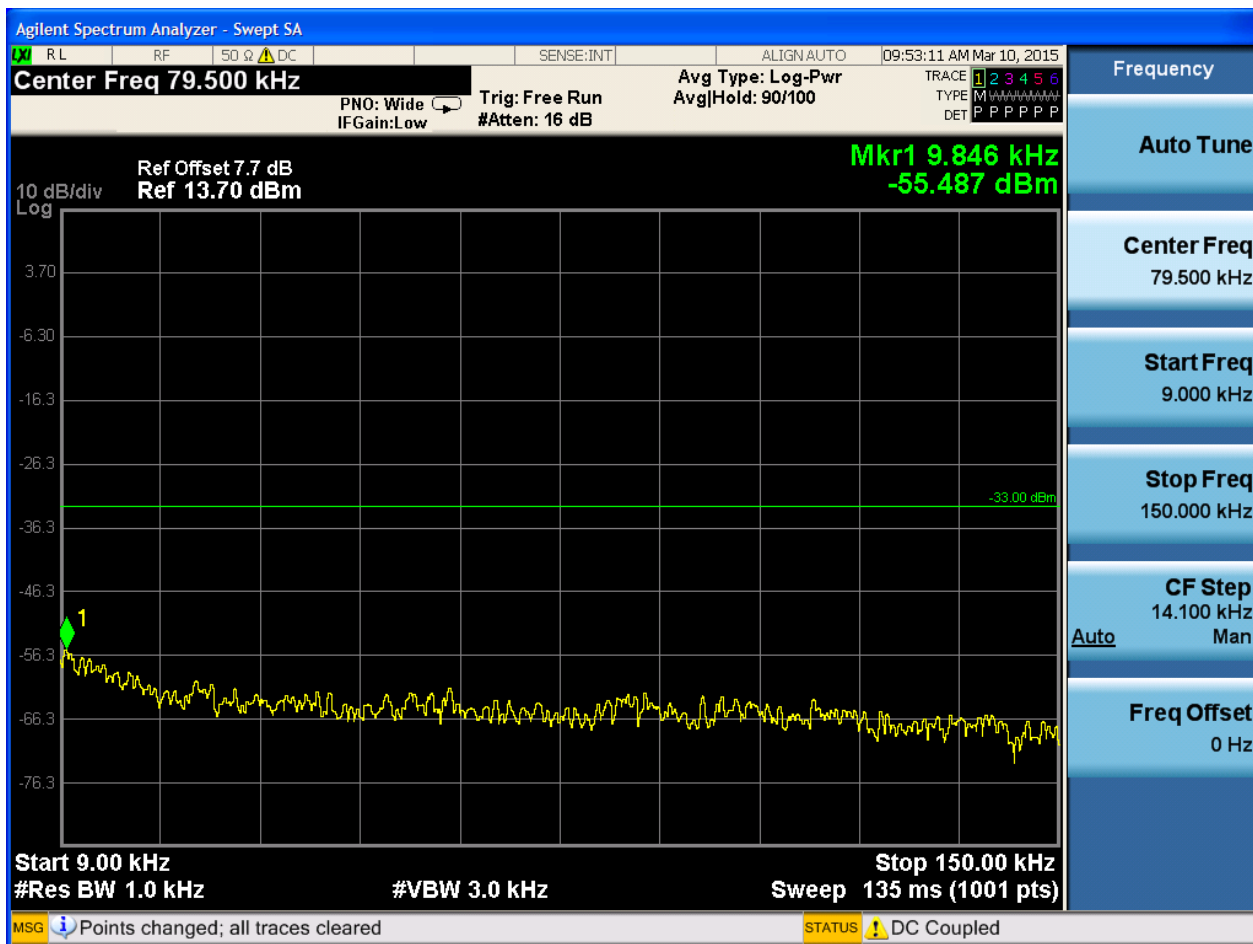


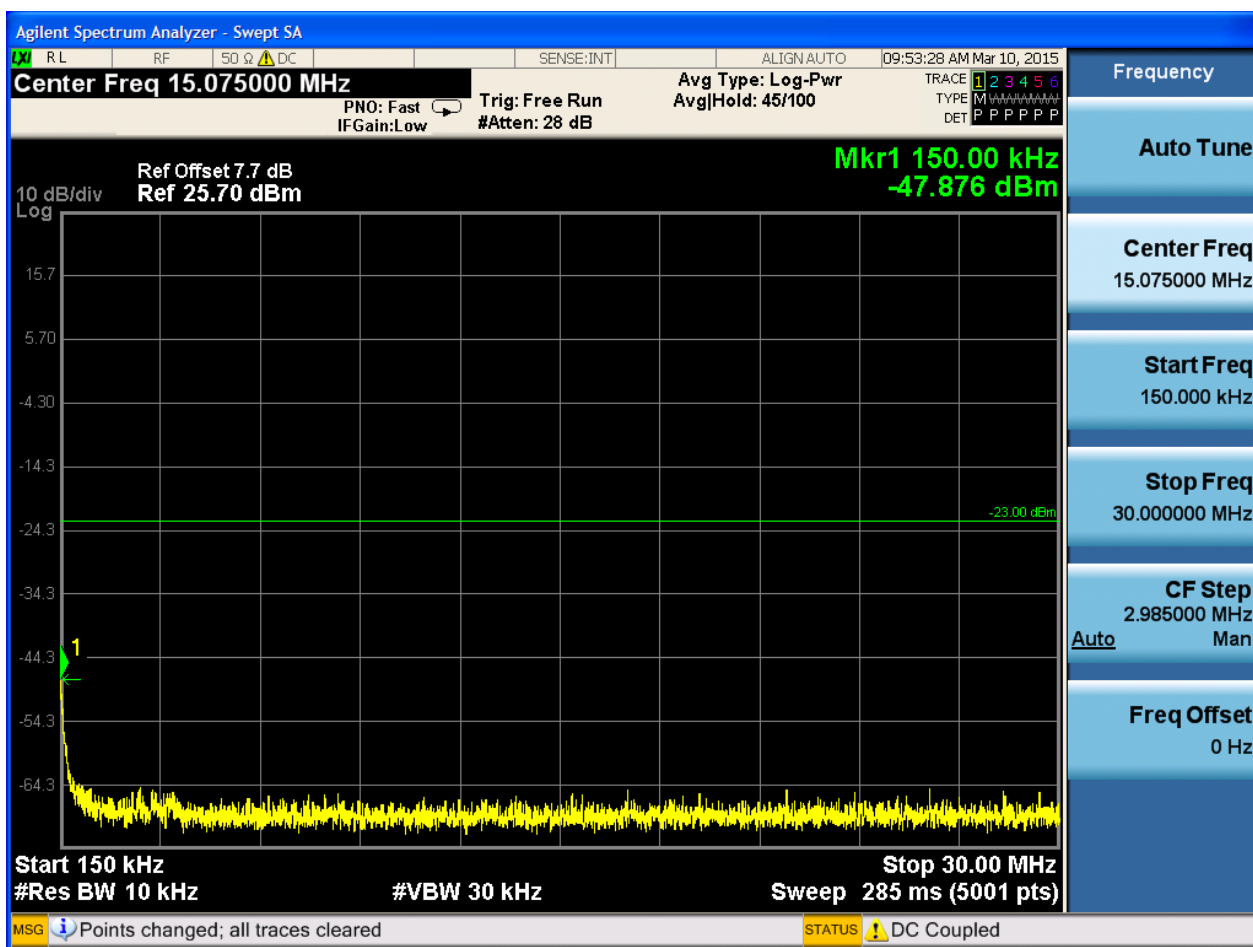


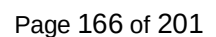
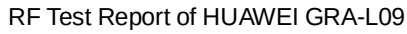


6.1.1.2.2.2 Test Channel = MCH

6.1.1.2.2.2.1 Test RB = RB1#0



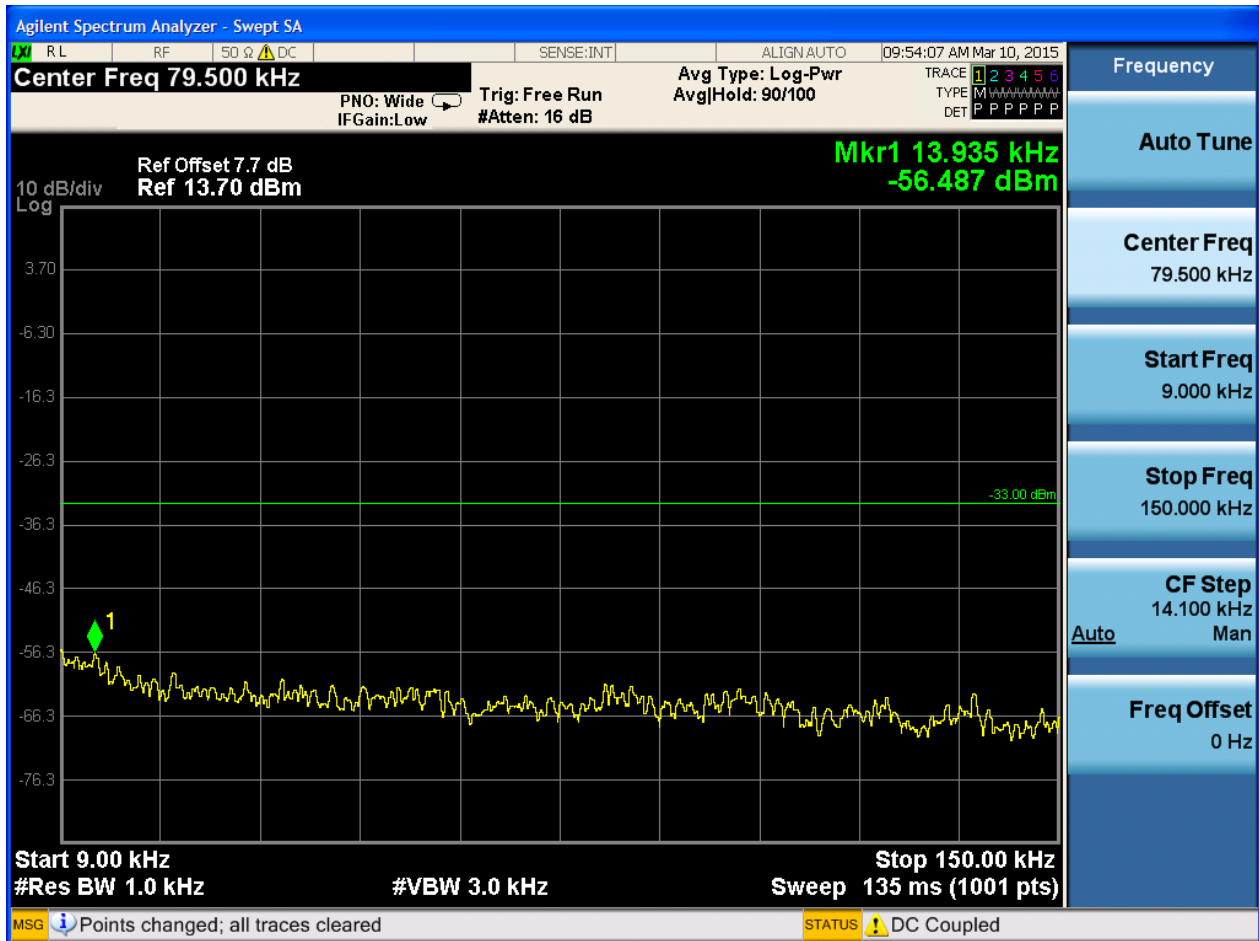


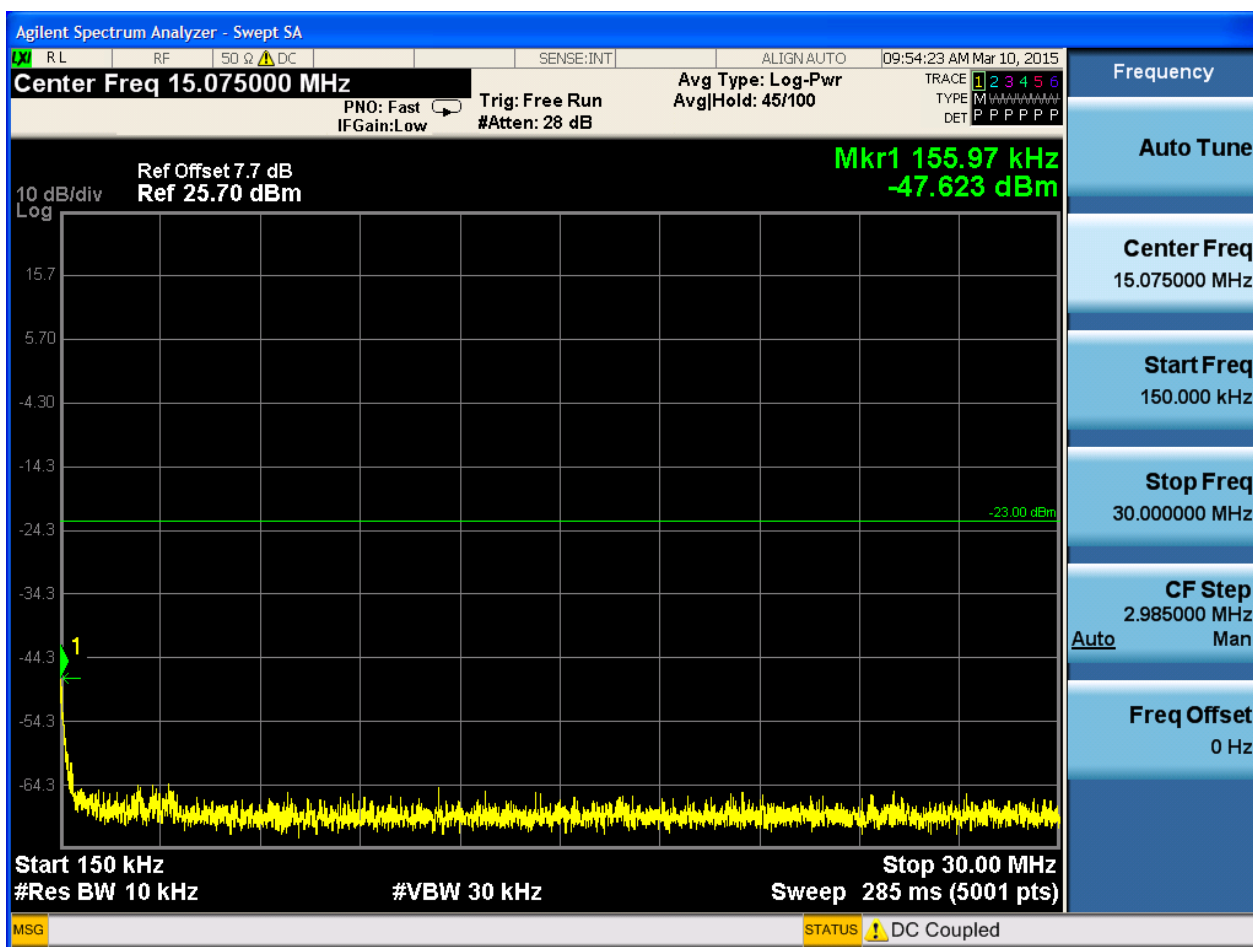


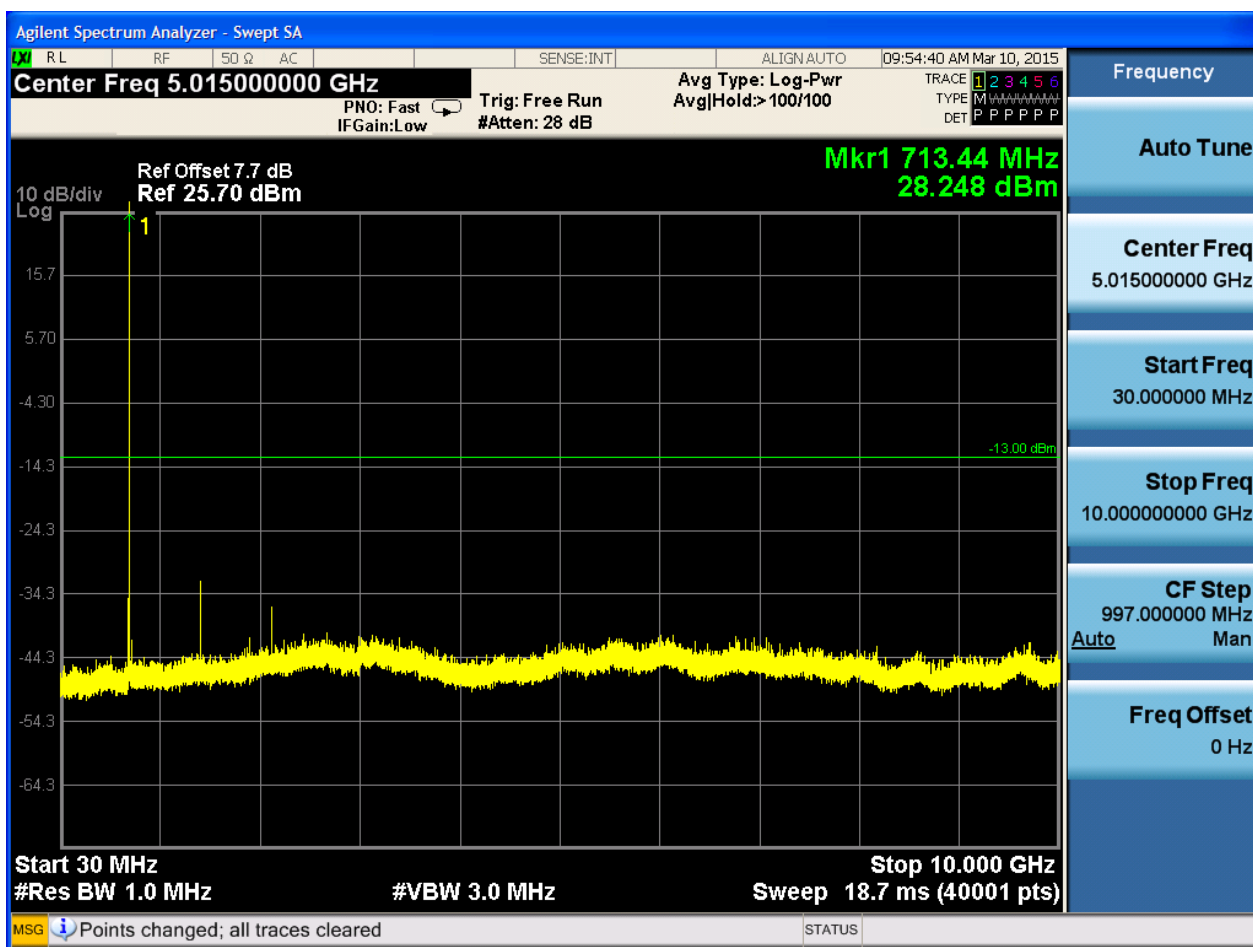


6.1.1.2.2.3 Test Channel = HCH

6.1.1.2.2.3.1 Test RB = RB1#0



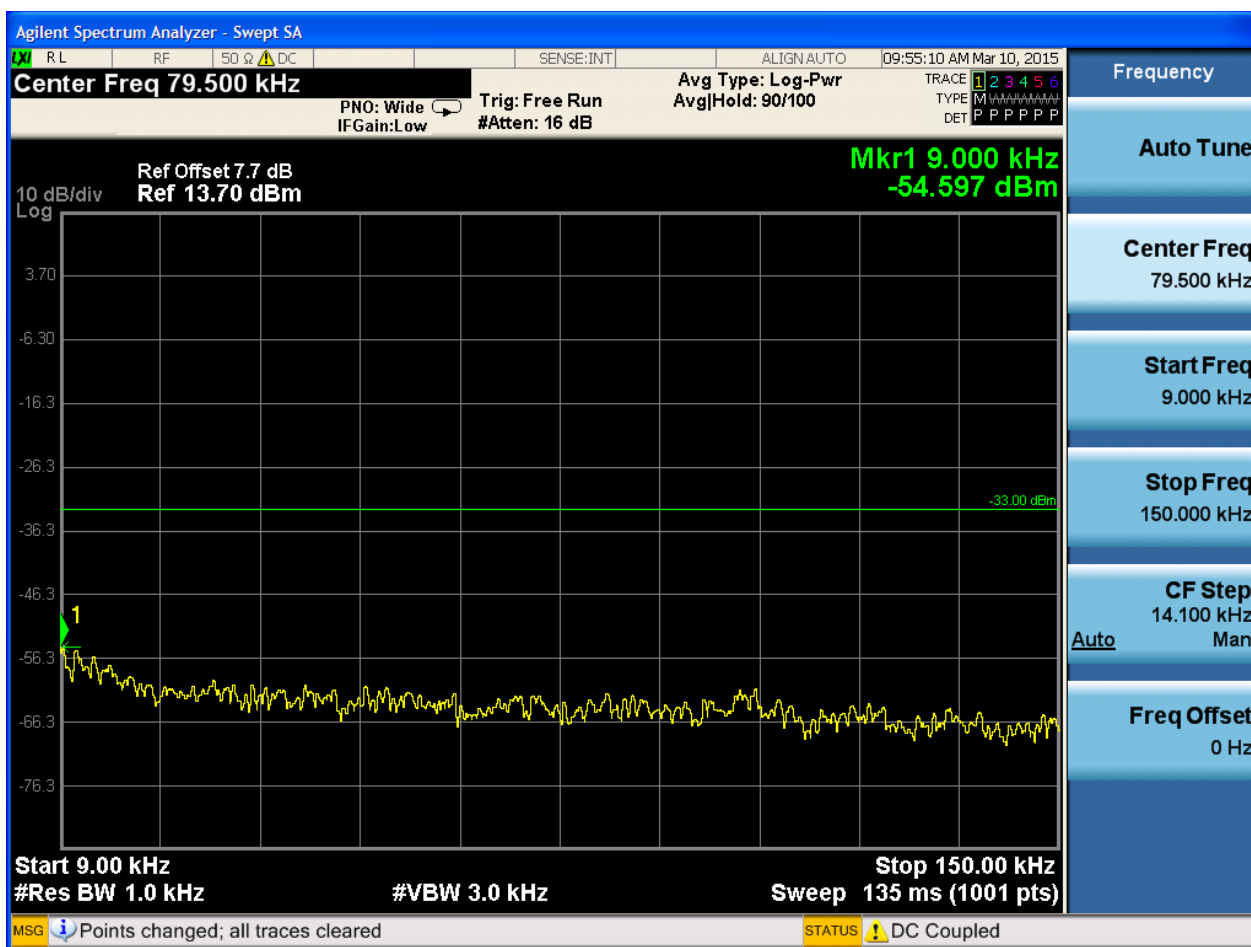


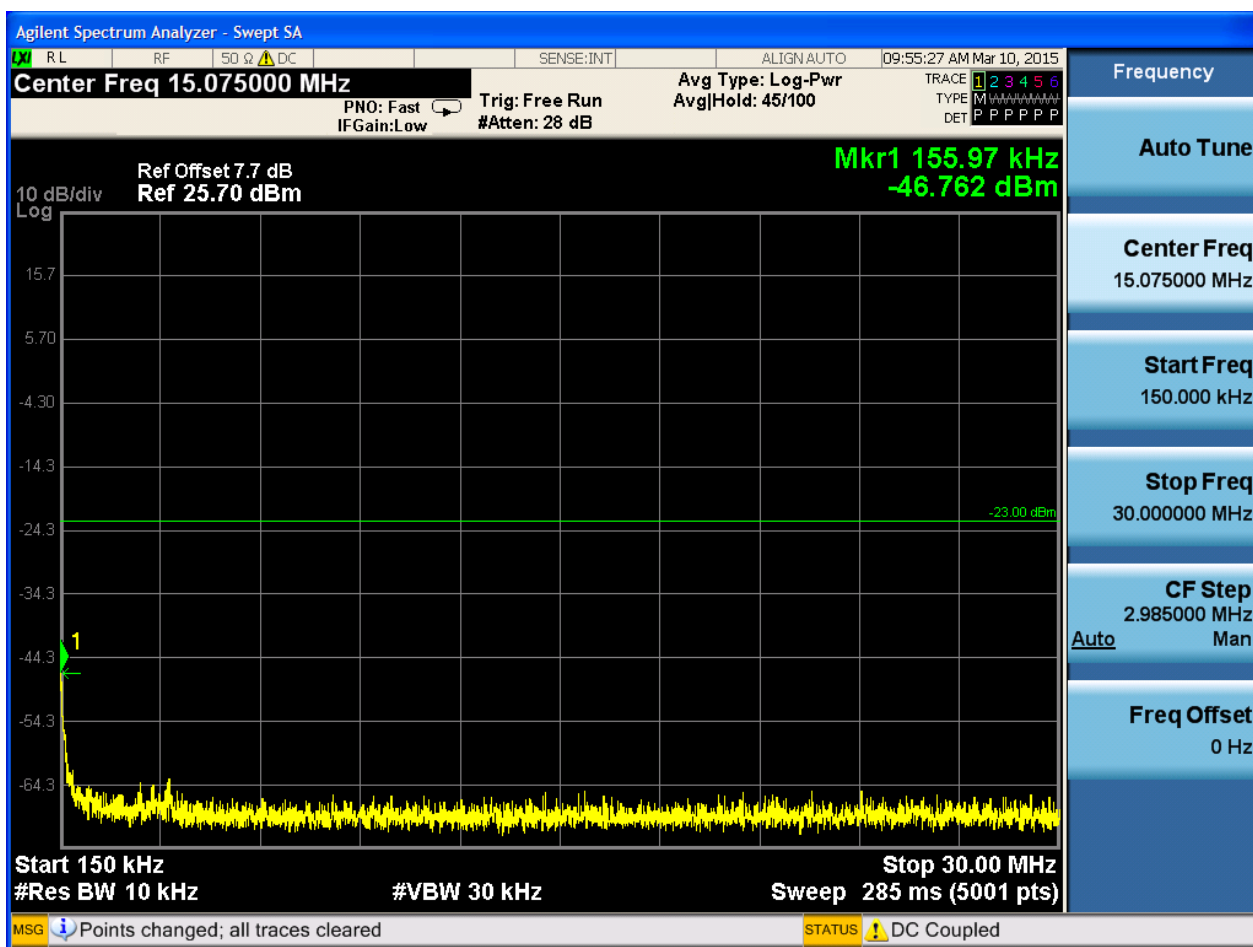


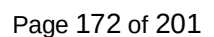
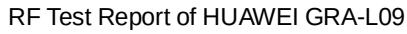
6.1.1.2.3 Test Bandwidth = 5

6.1.1.2.3.1 Test Channel = LCH

6.1.1.2.3.1.1 Test RB = RB1#0

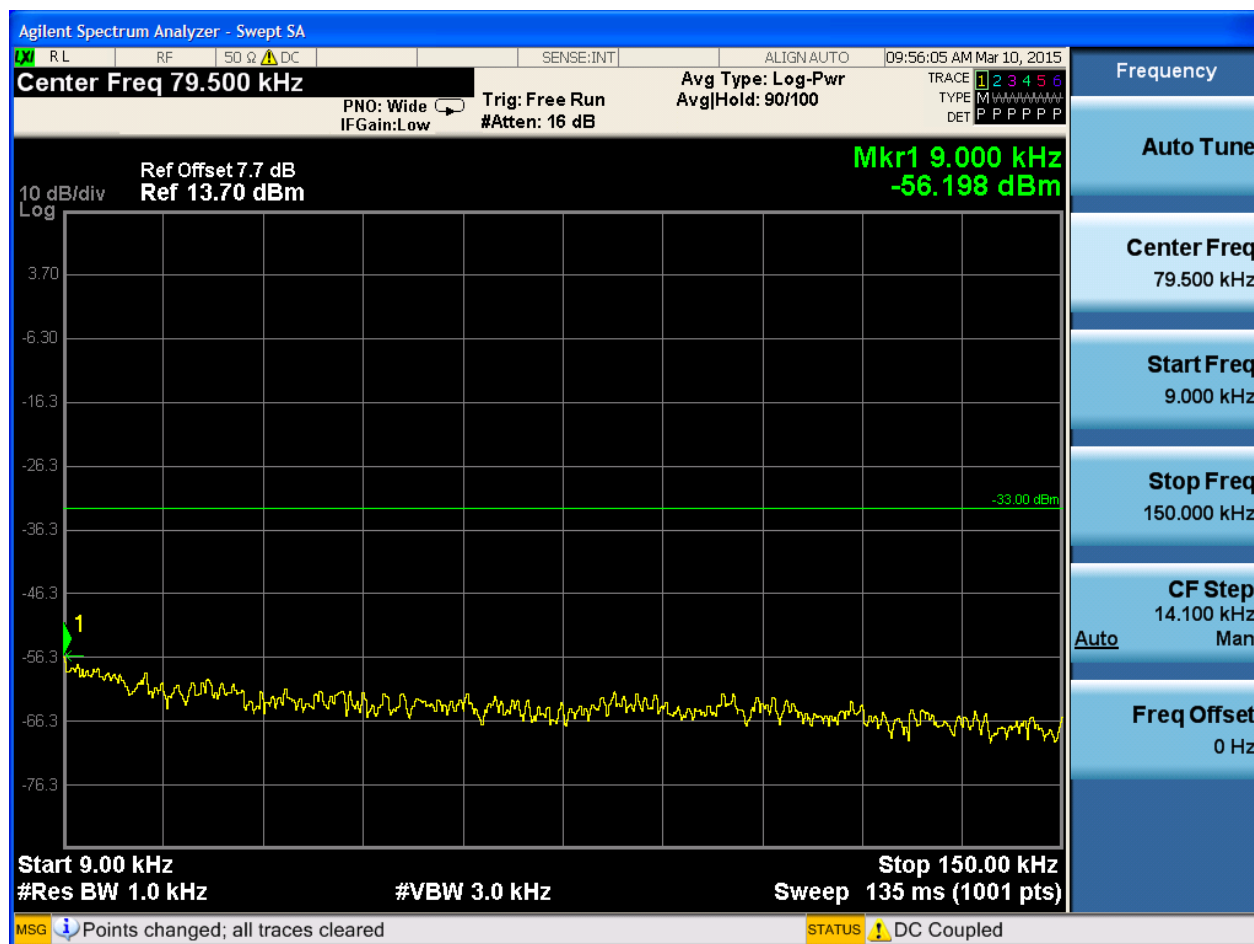


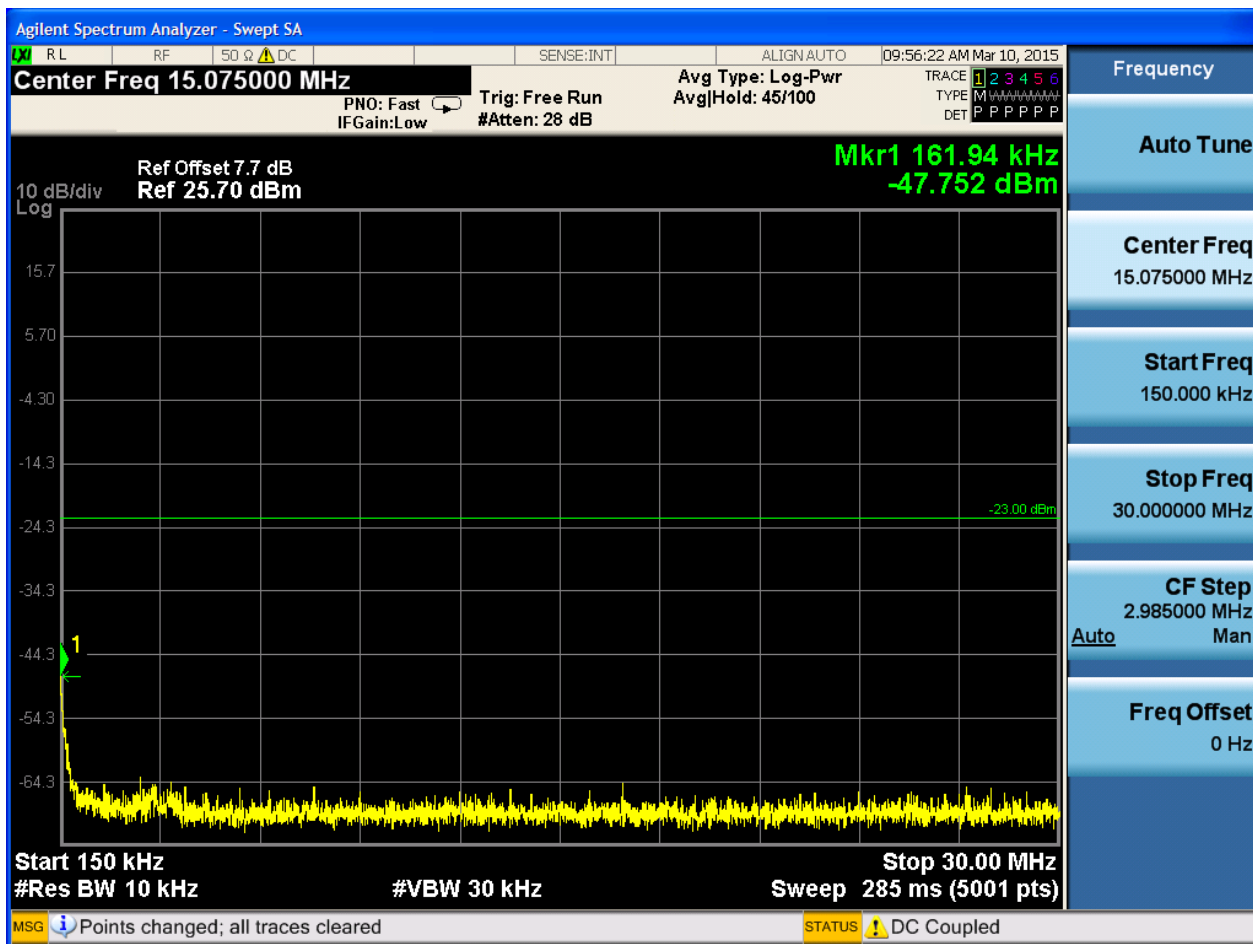


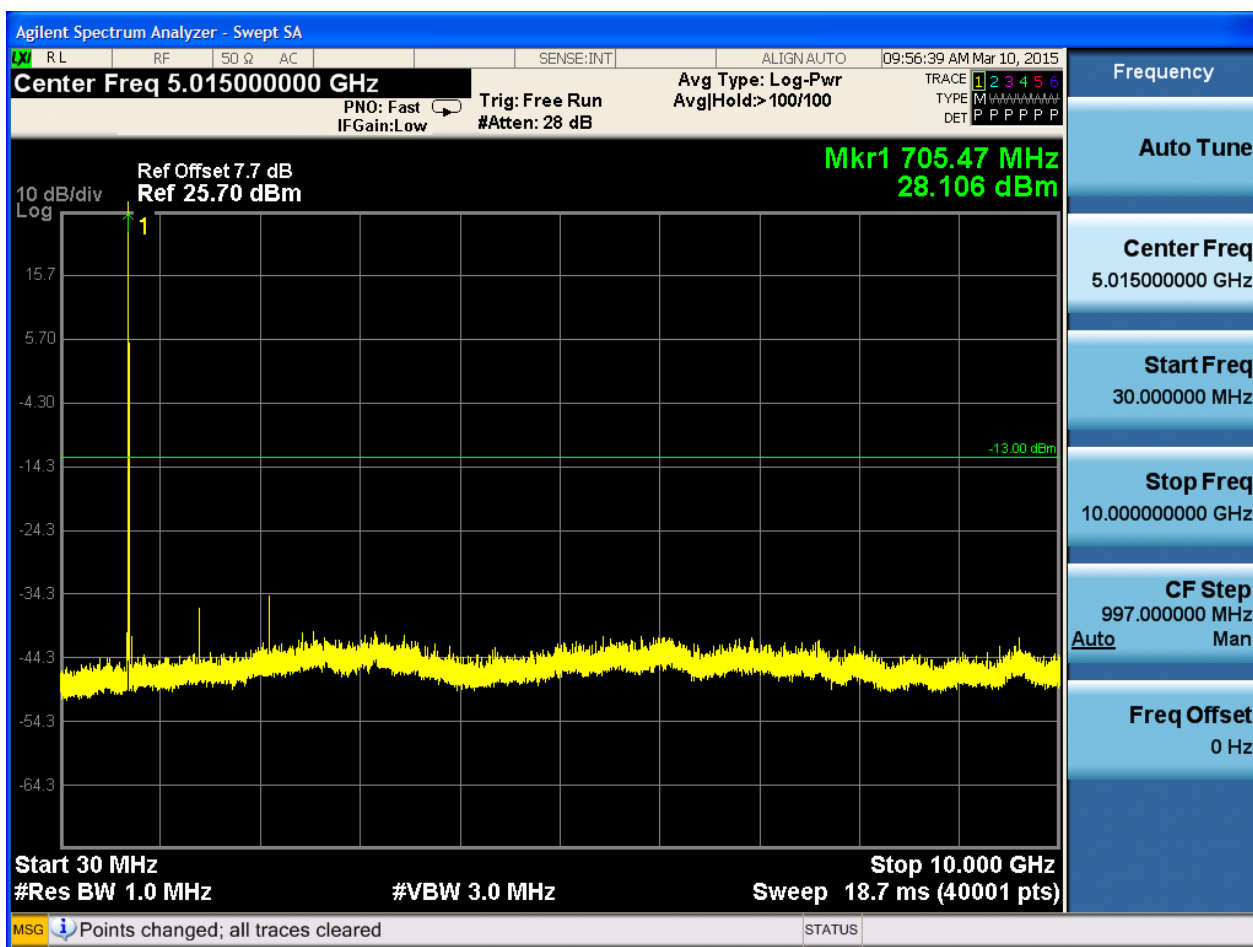


6.1.1.2.3.2 Test Channel = MCH

6.1.1.2.3.2.1 Test RB = RB1#0



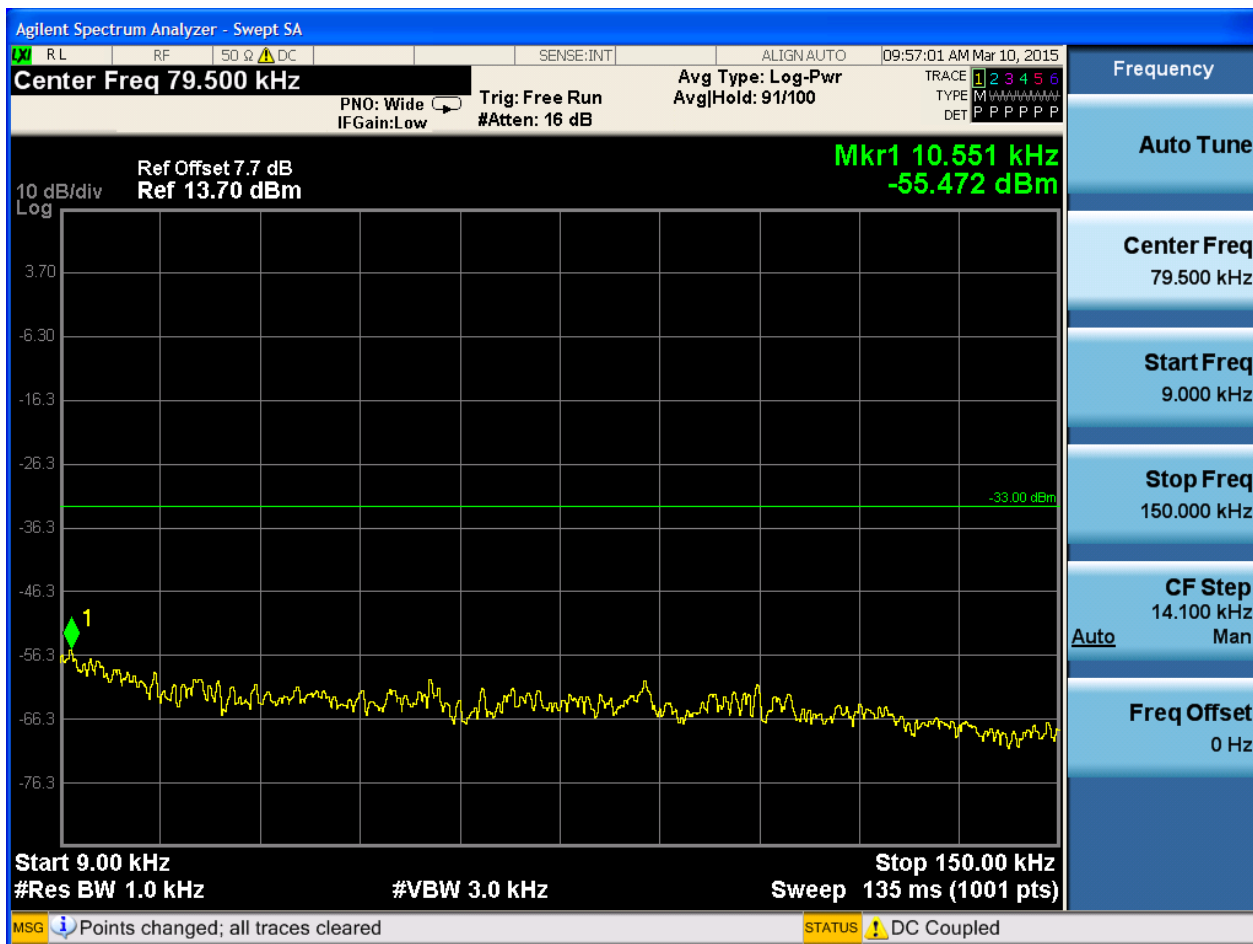


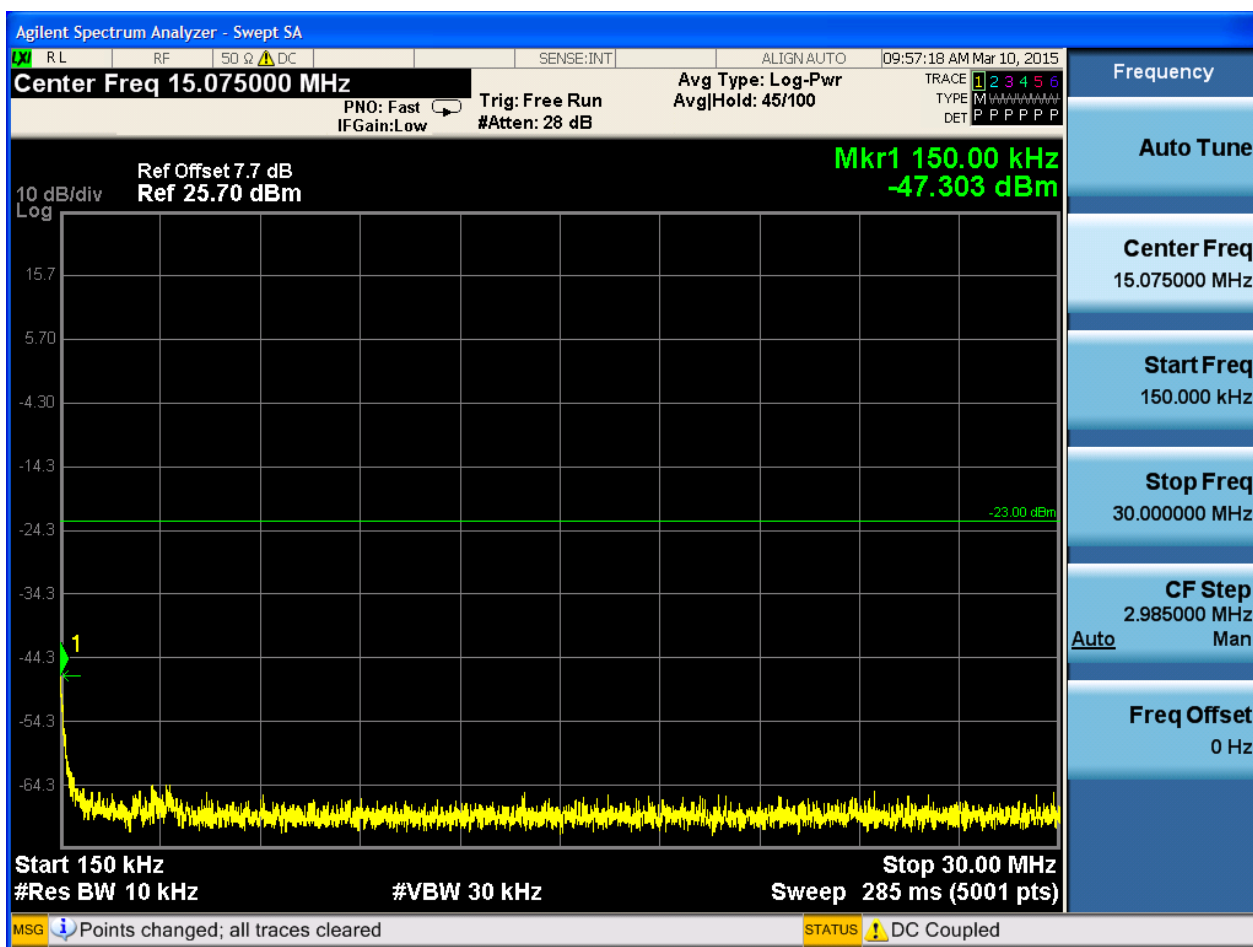


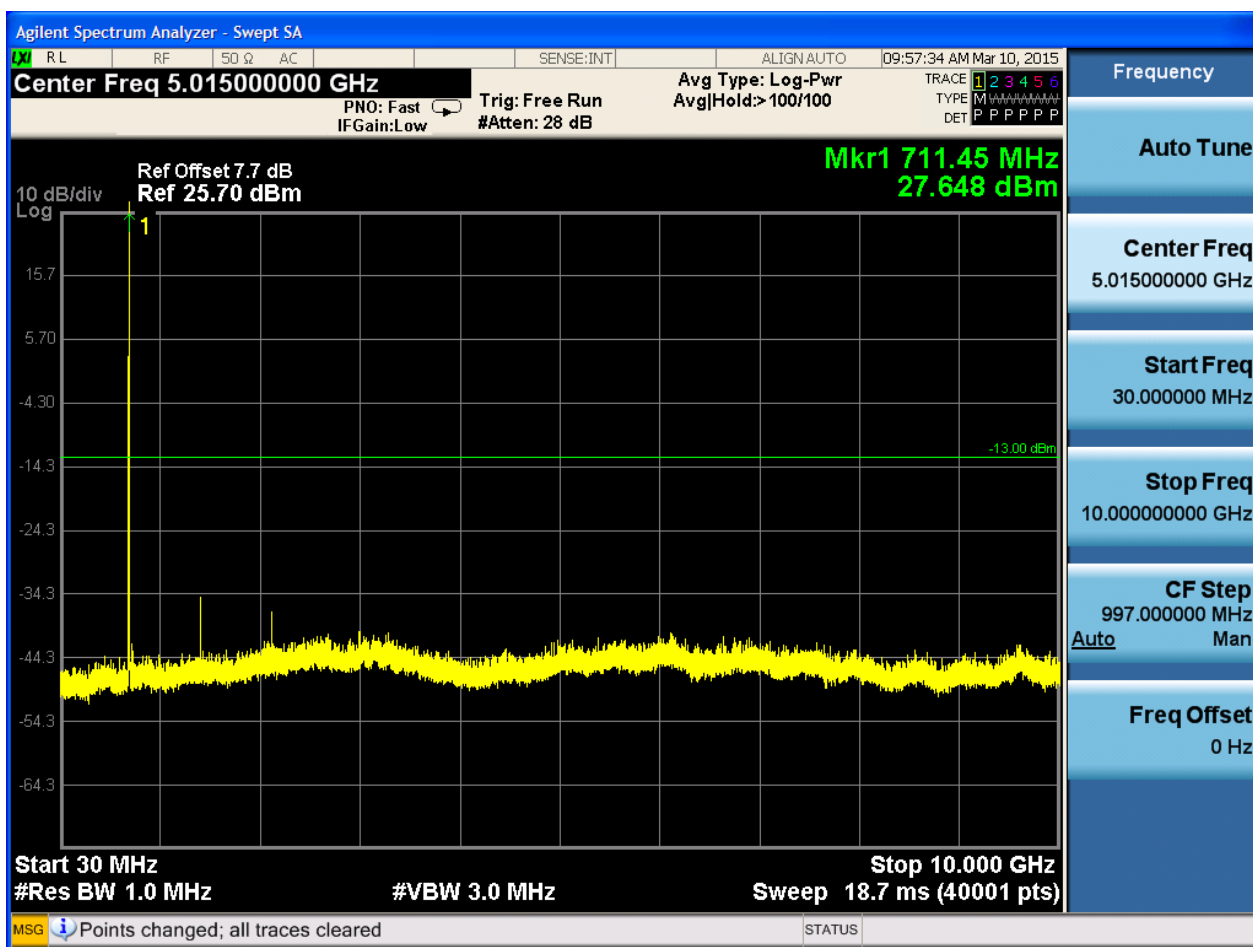


6.1.1.2.3.3 Test Channel = HCH

6.1.1.2.3.3.1 Test RB = RB1#0



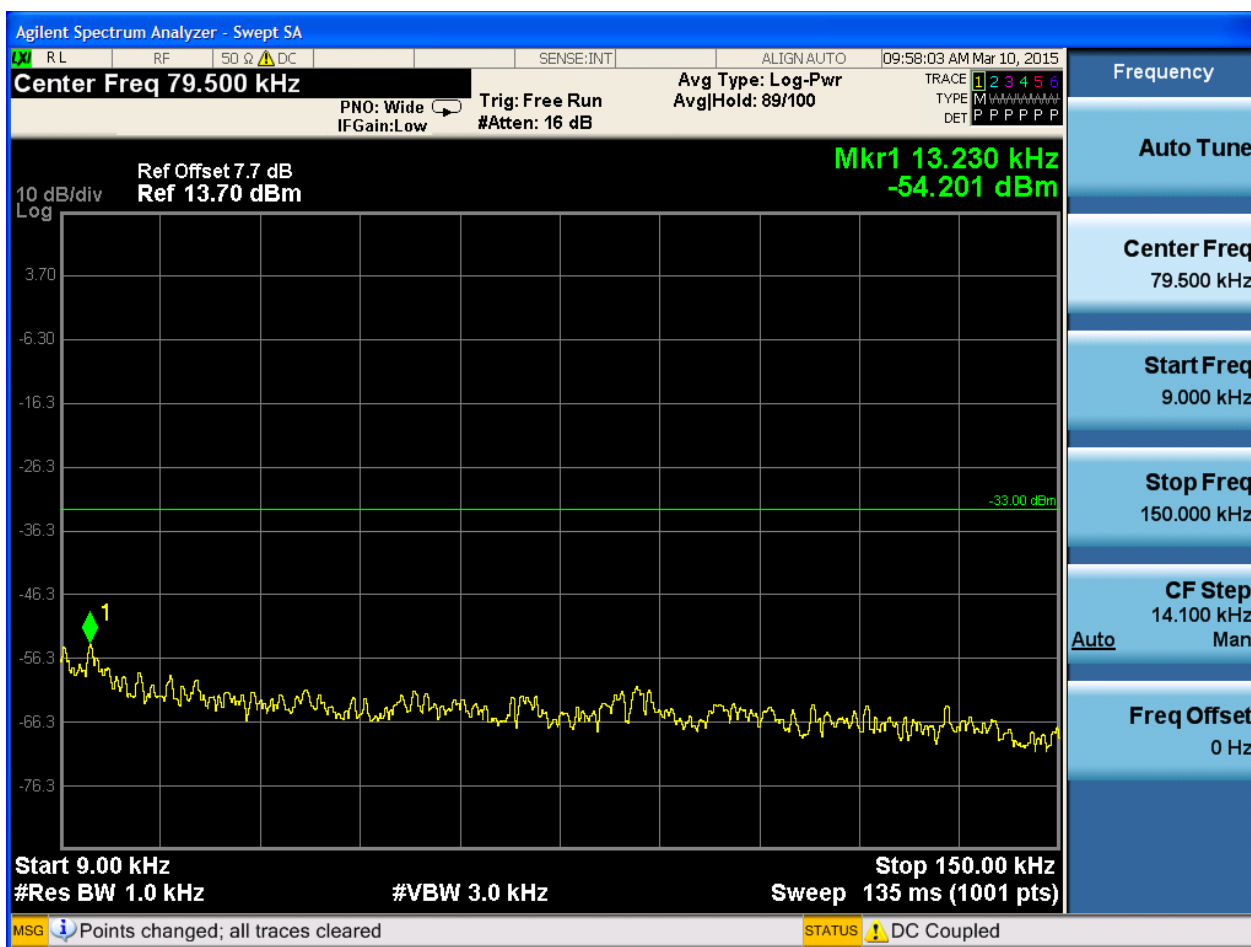


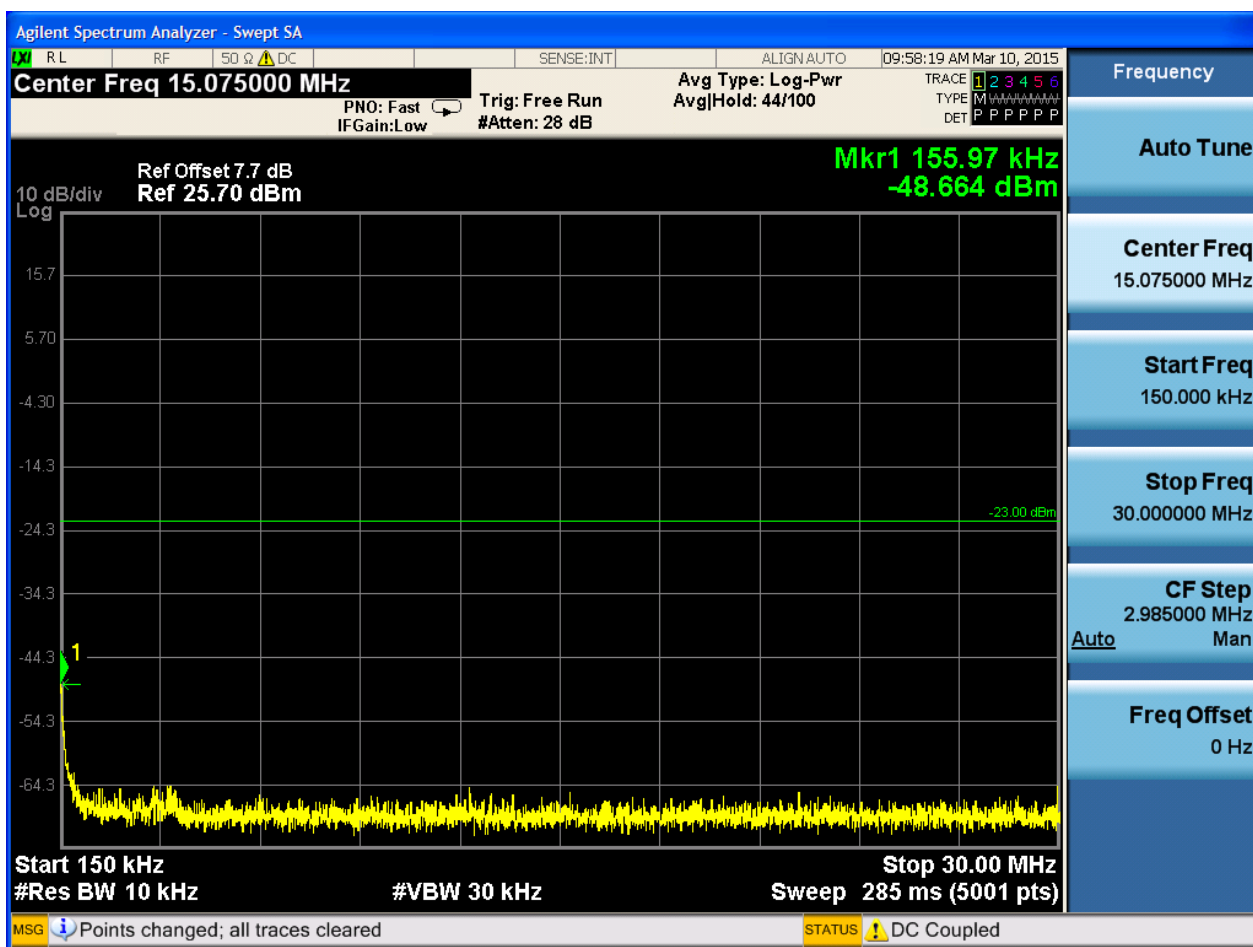


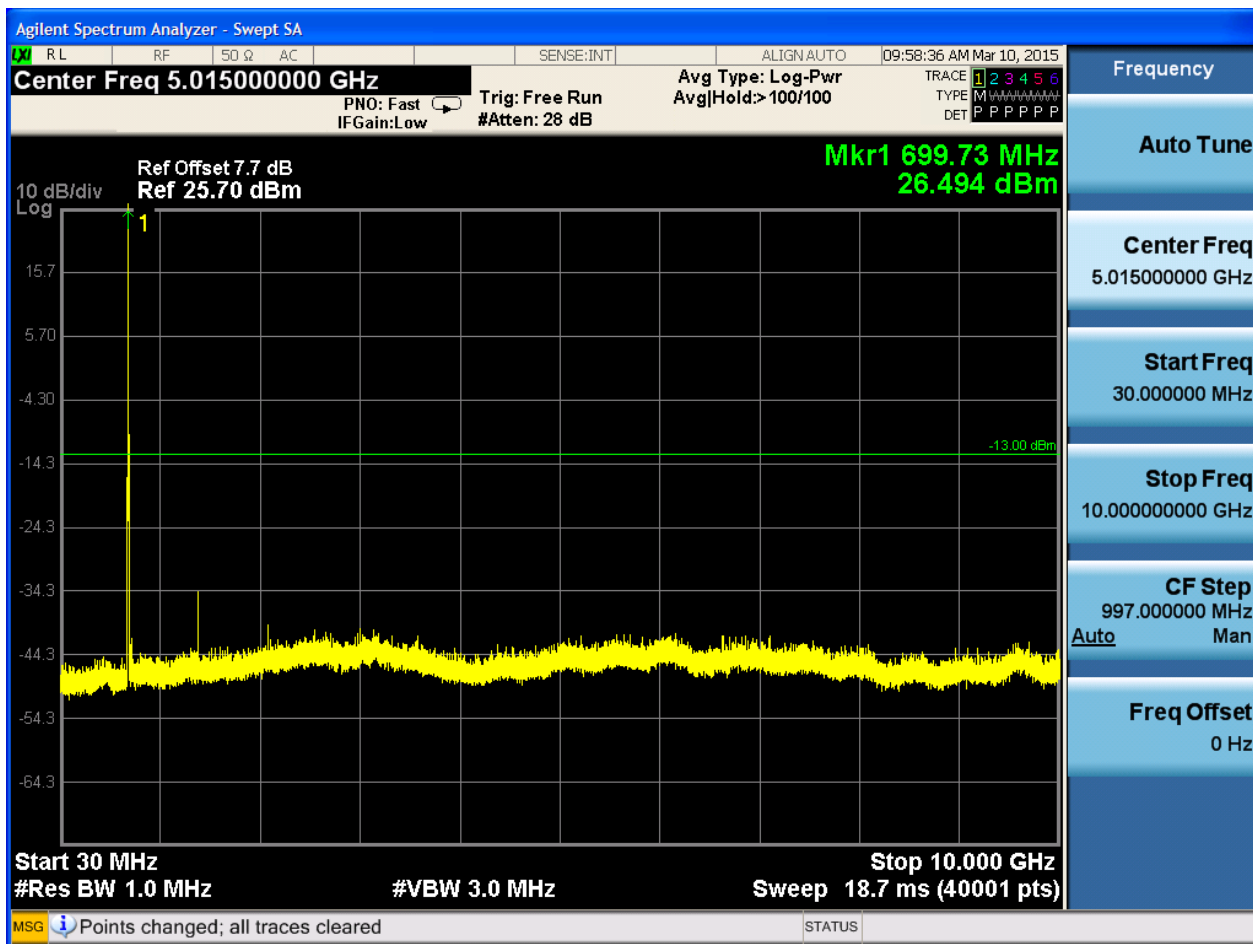
6.1.1.2.4 Test Bandwidth = 10

6.1.1.2.4.1 Test Channel = LCH

6.1.1.2.4.1.1 Test RB = RB1#0



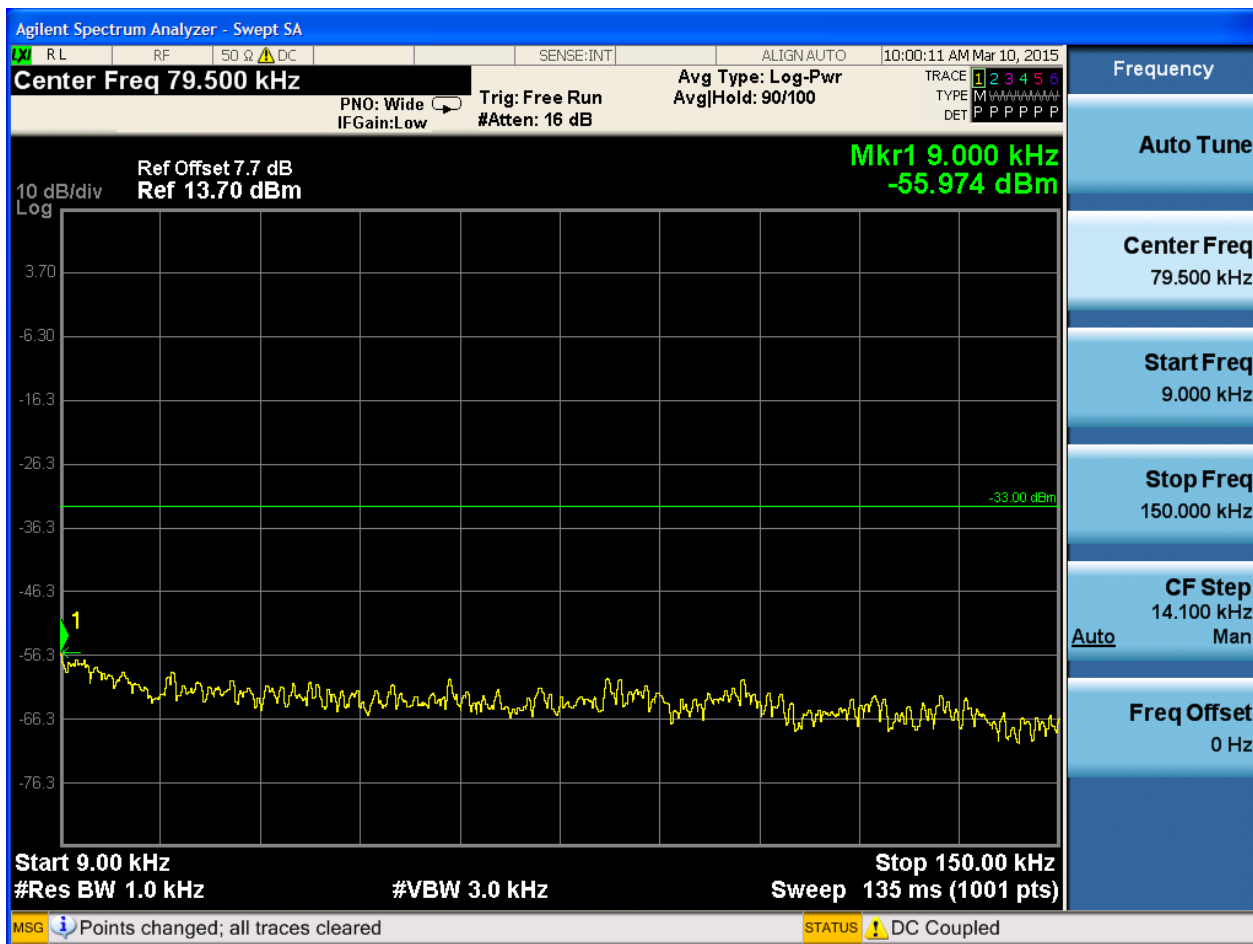


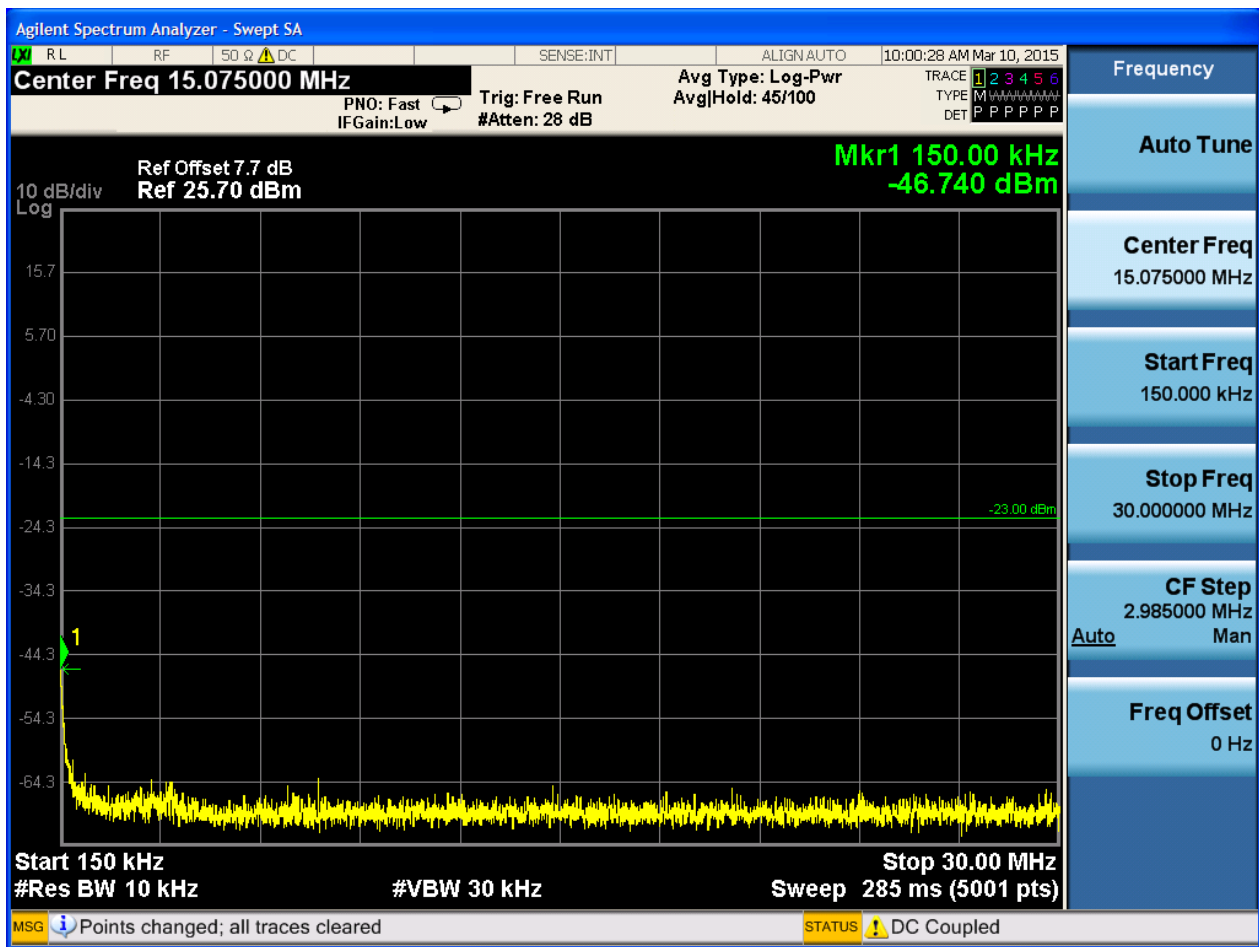


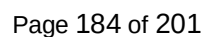
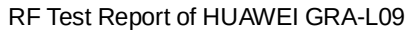


6.1.1.2.4.2 Test Channel = MCH

6.1.1.2.4.2.1 Test RB = RB1#0



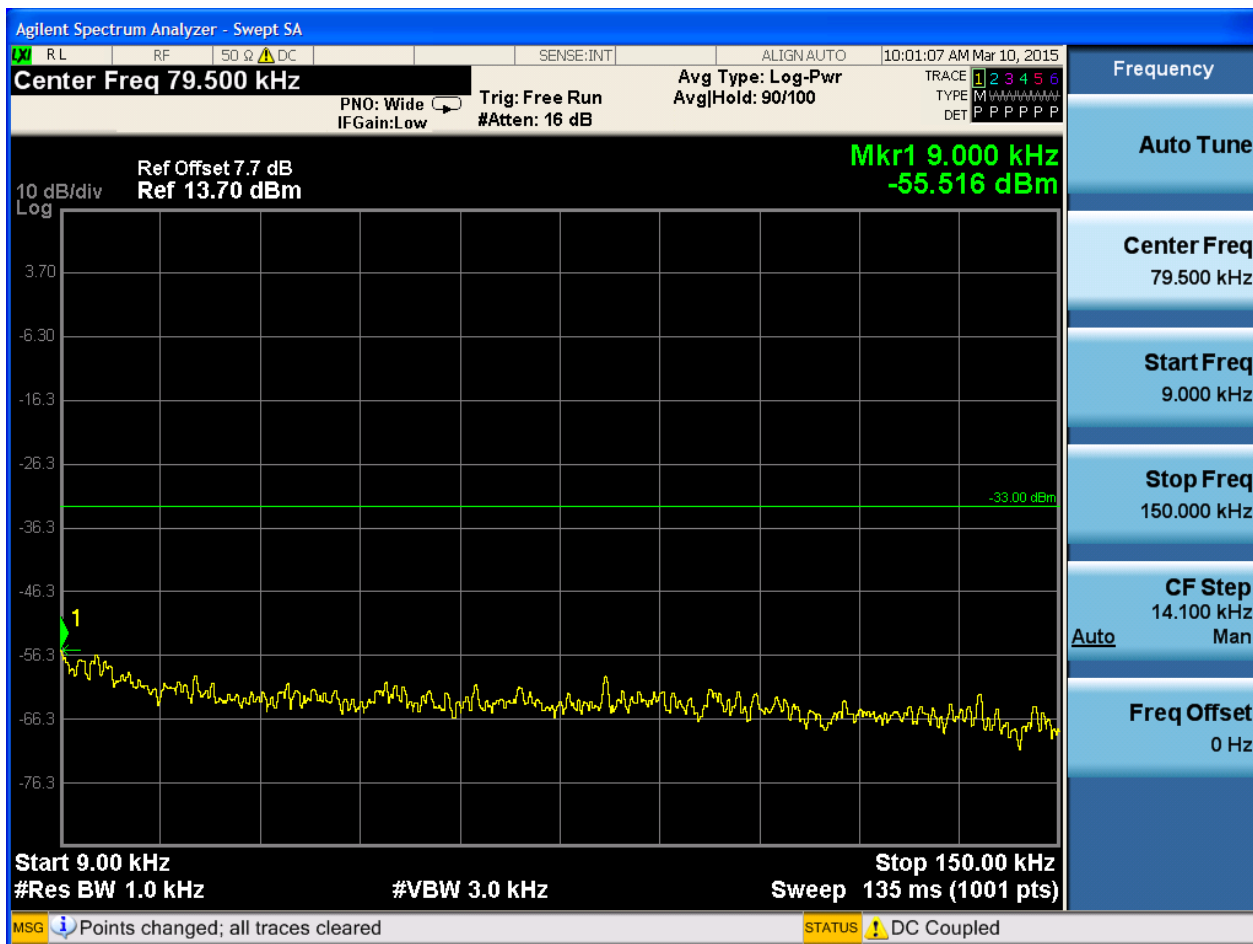


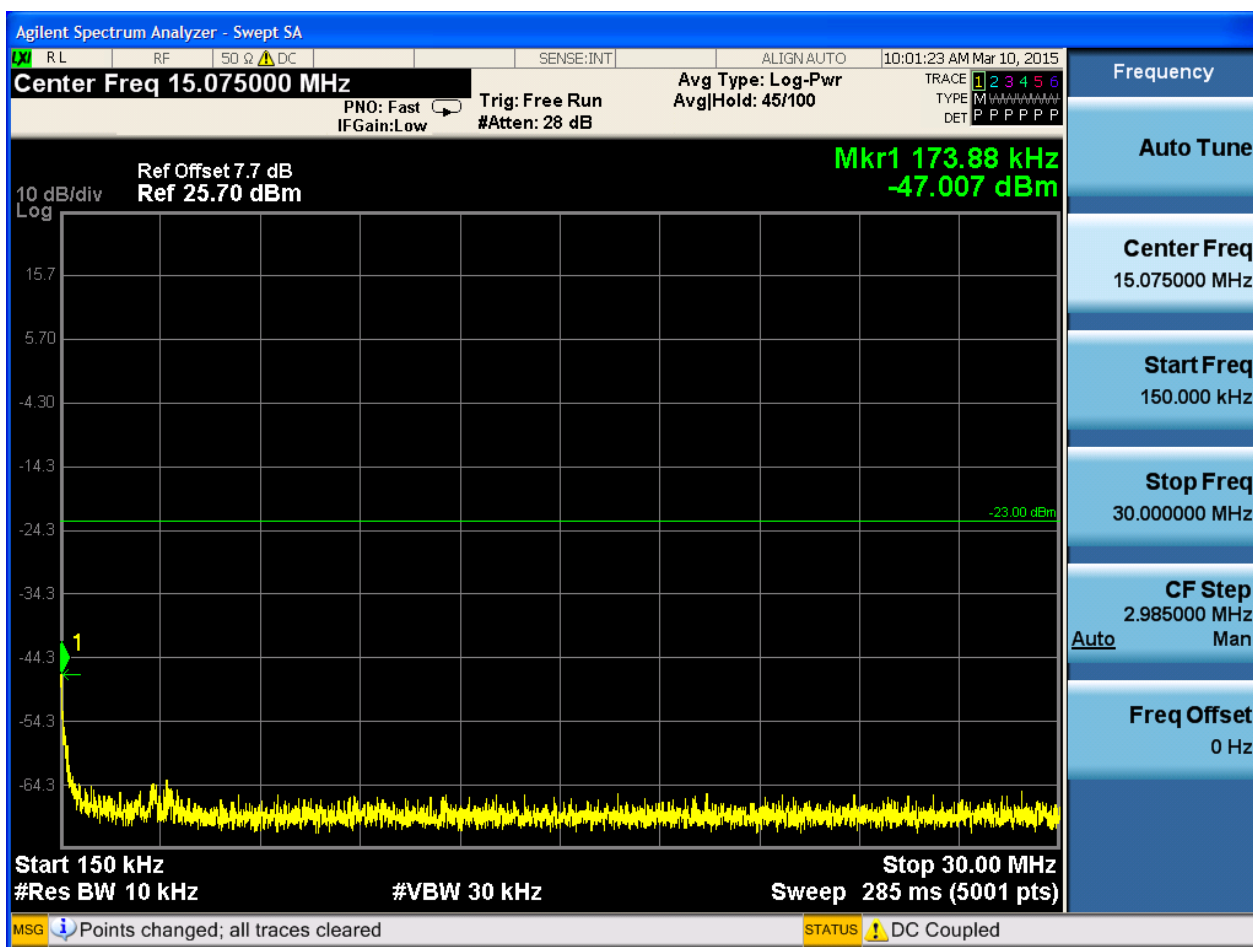


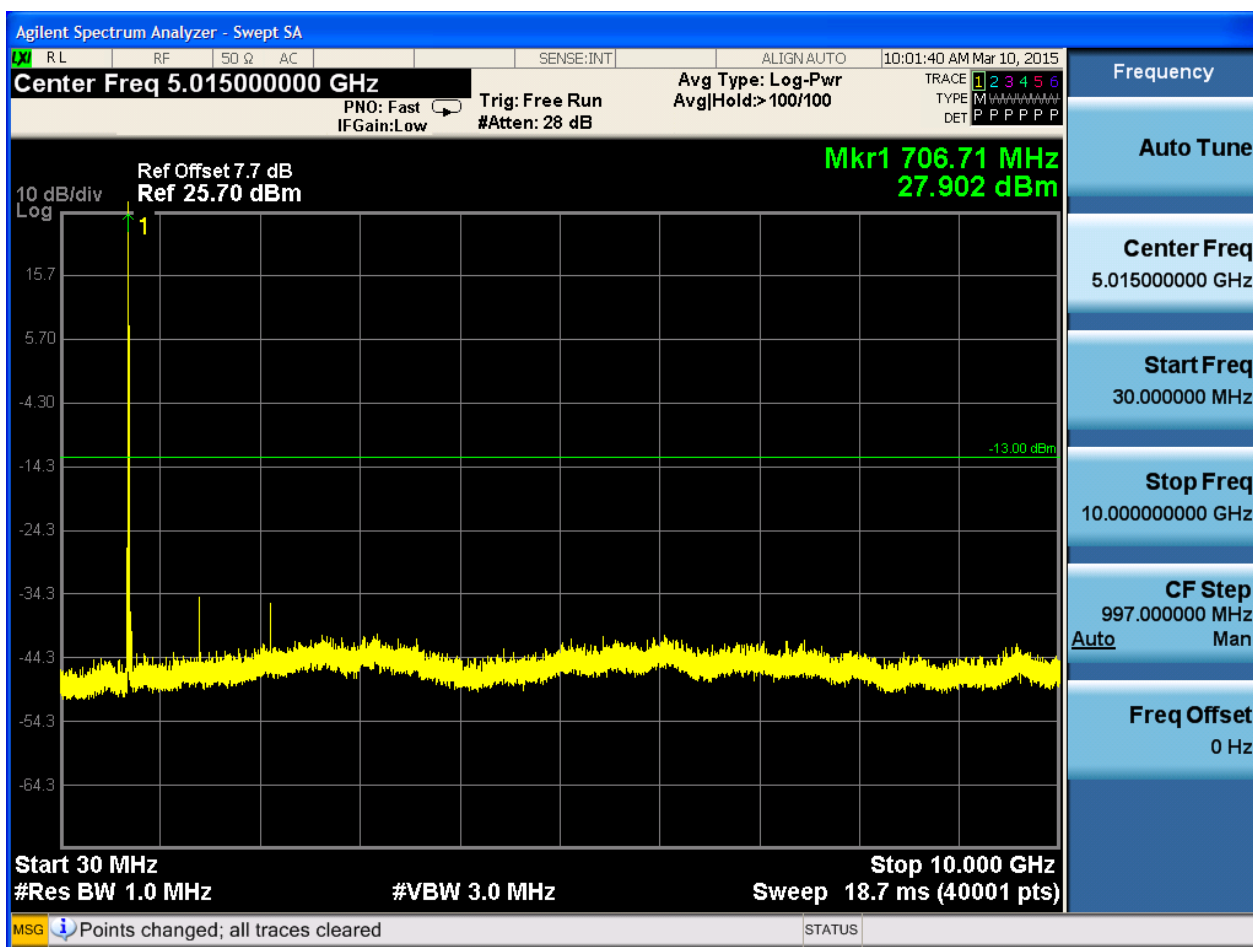


6.1.1.2.4.3 Test Channel = HCH

6.1.1.2.4.3.1 Test RB = RB1#0







7Appendix_G: Field Strength of Spurious Radiation

Note:

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

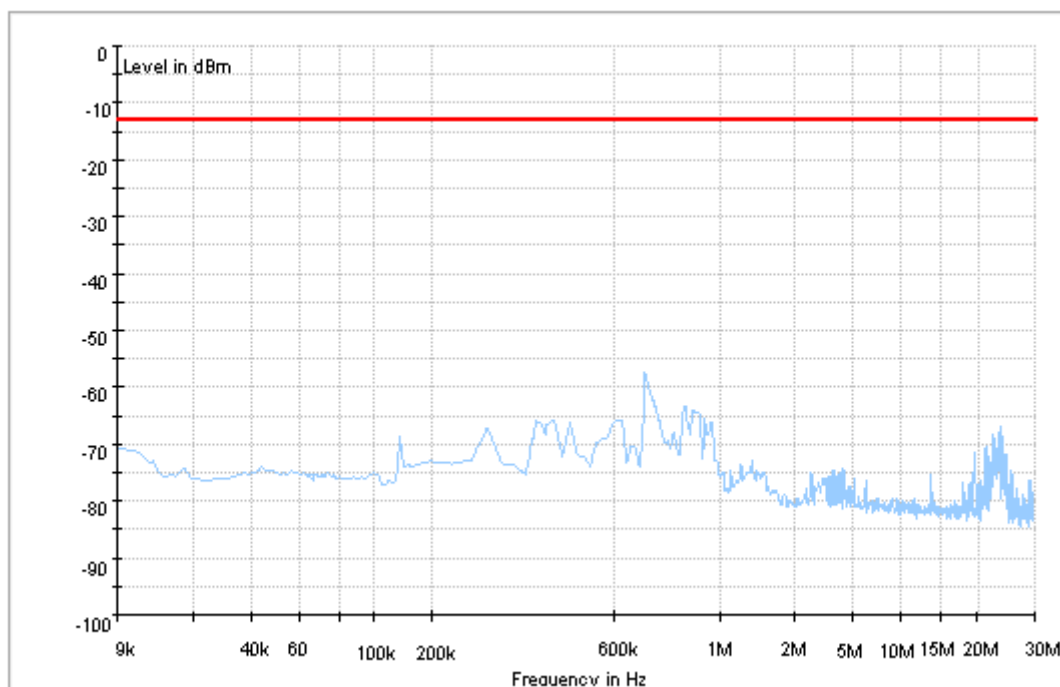
We tested all modes, but the data presented below is the worst case.

Part I - Test Plots

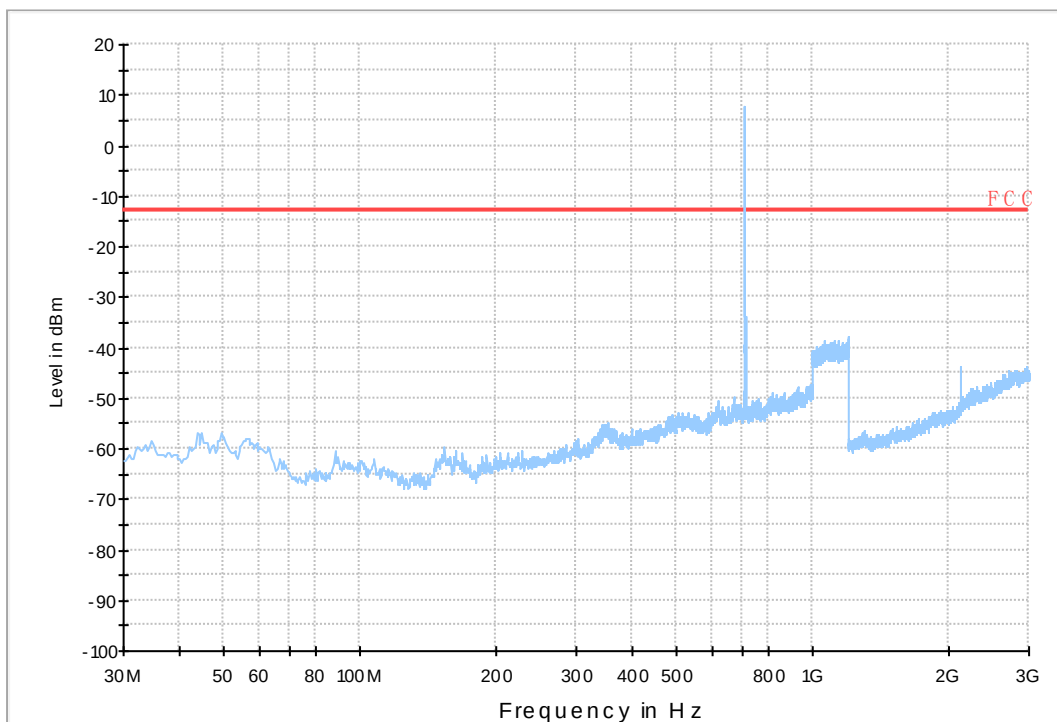
7.1 For LTE

7.1.1 Test Band = BAND12

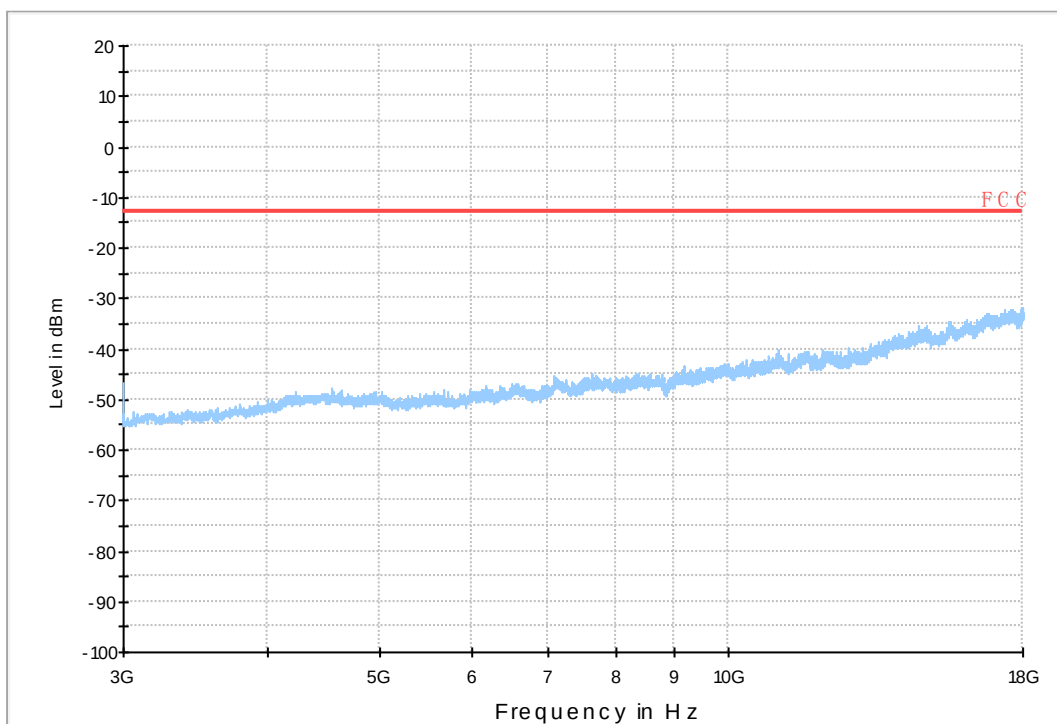
7.1.1.1 Test Bandwidth = 1.4



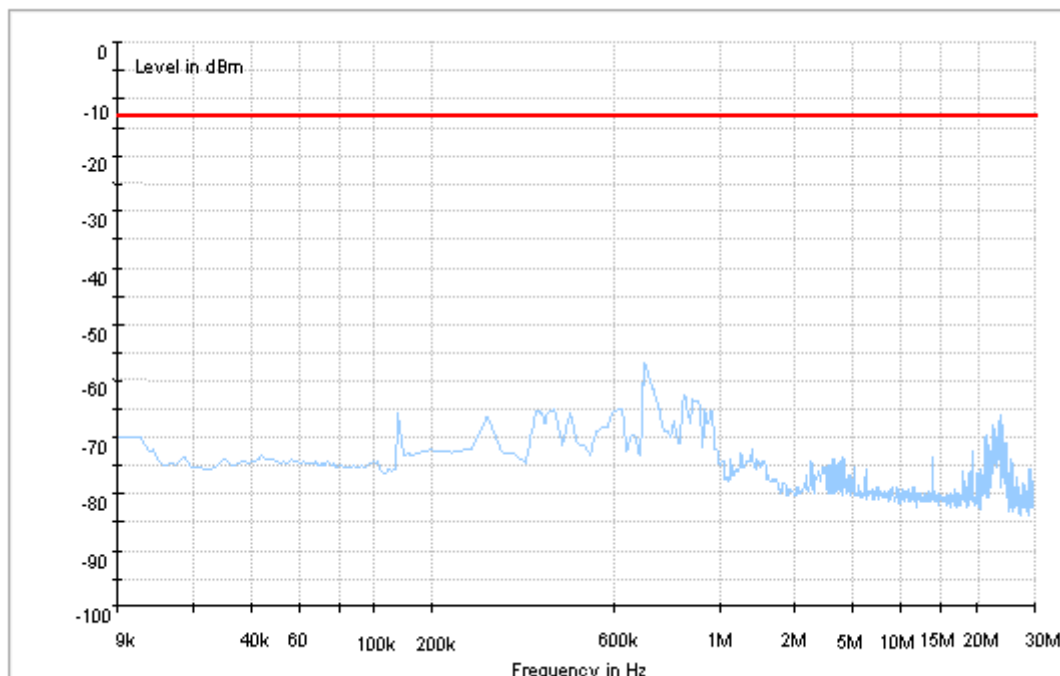
Copy of RSE-TX-DIRECTOR BELOW 1G_L



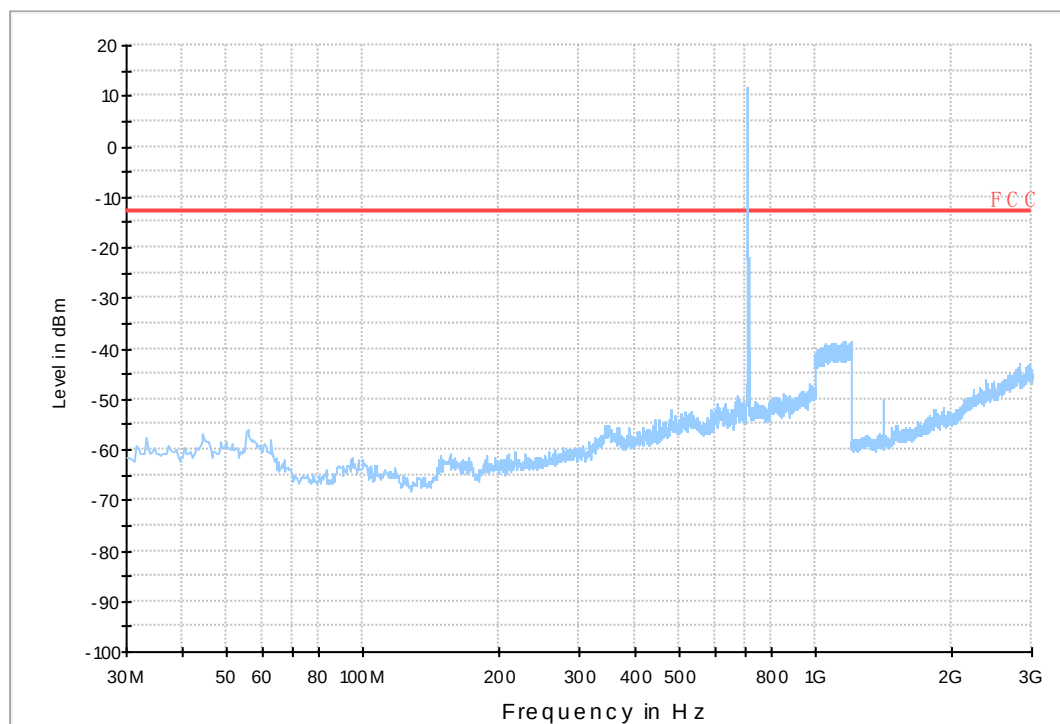
Copy of RSE-TX-DIRECTOR BELOW 1G_H



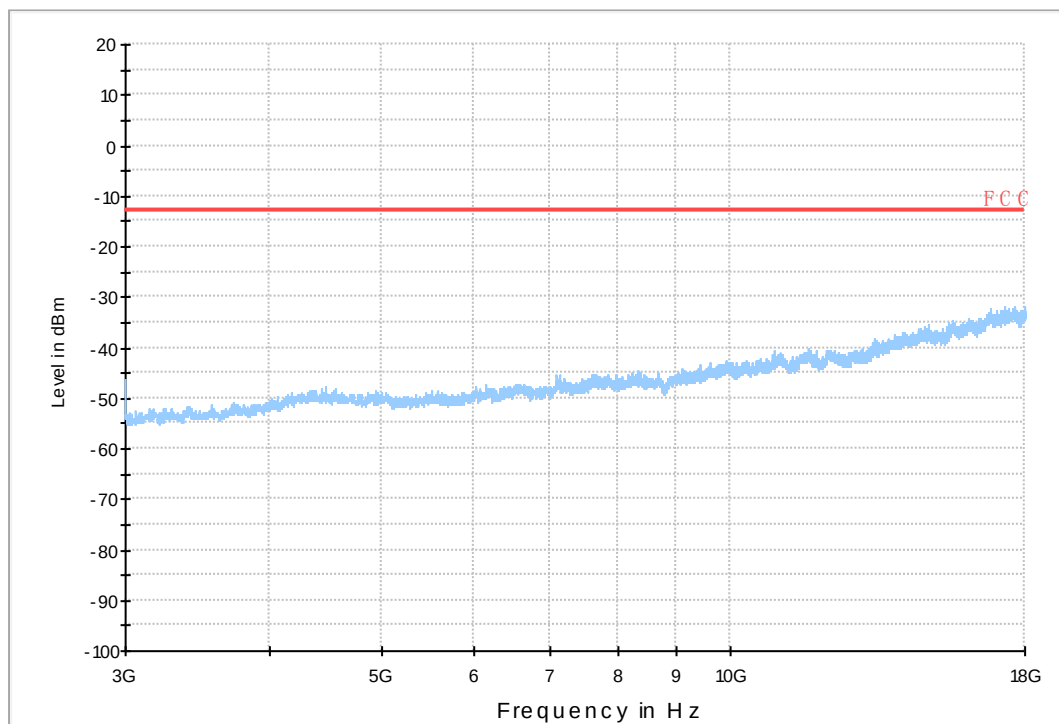
7.1.1.2 Test Bandwidth = 5



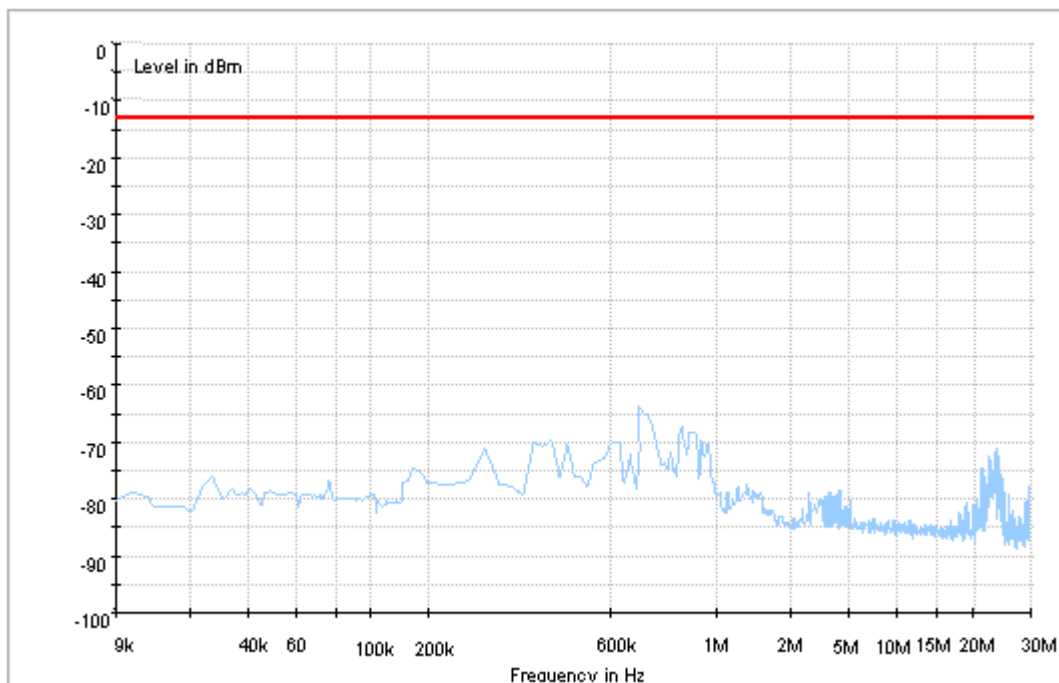
Copy of RSE-TX-DIRECTOR BELOW 1G_L



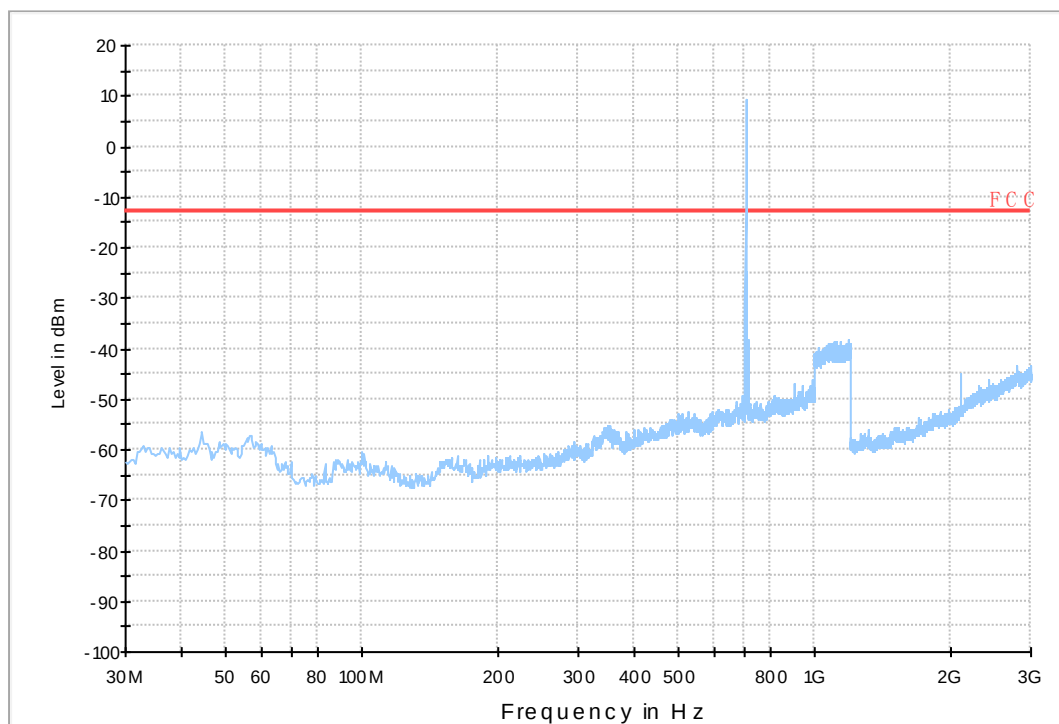
Copy of RSE-TX-DIRECTOR BELOW 1G_H



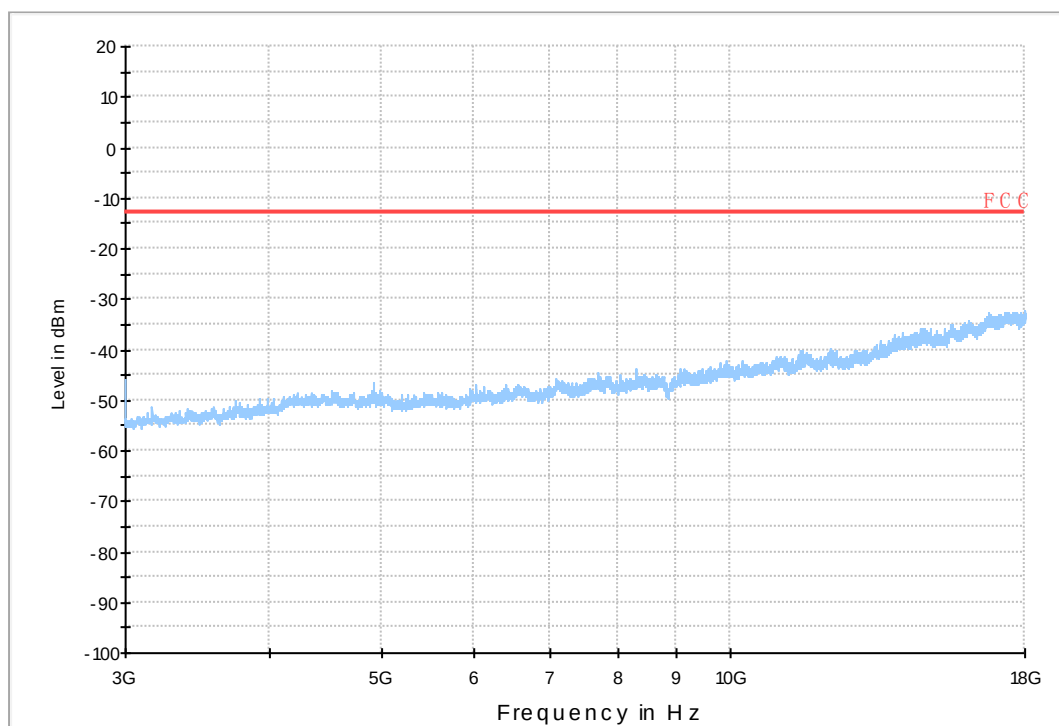
7.1.1.3 Test Bandwidth = 10



Copy of RSE-TX-DIRECTOR BELOW 1G_L



Copy of RSE-TX-DIRECTOR BELOW 1G_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
BAND12	LTE/TM1	1.4	LCH	TN	VL	-29.95	-0.0428	PASS
					VN	-11.63	-0.01662	PASS
					VH	35.19	0.05029	PASS
			MCH	TN	VL	-44.99	-0.06359	PASS
					VN	11.64	0.01645	PASS
					VH	152.89	0.2161	PASS
			HCH	TN	VL	0.27	0.00038	PASS
					VN	15.89	0.02221	PASS
					VH	-15.16	-0.02119	PASS
		3	LCH	TN	VL	-1.22	-0.00174	PASS
					VN	4.89	0.00698	PASS
					VH	1.67	0.00238	PASS
			MCH	TN	VL	1.27	0.0018	PASS
					VN	-4.92	-0.00695	PASS
					VH	-3.46	-0.00489	PASS
			HCH	TN	VL	-1.4	-0.00196	PASS
					VN	0.3	0.00042	PASS
					VH	1.37	0.00192	PASS
		5	LCH	TN	VL	-2.23	-0.00318	PASS
					VN	1.7	0.00242	PASS
					VH	0.53	0.00076	PASS
			MCH	TN	VL	3.95	0.00558	PASS
					VN	1.27	0.0018	PASS
					VH	-0.21	-0.0003	PASS
			HCH	TN	VL	1.43	0.002	PASS
					VN	-1.7	-0.00238	PASS
					VH	-2.52	-0.00353	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		10	LCH	TN	VL	0.49	0.0007	PASS
					VN	3.46	0.00491	PASS
					VH	1.07	0.00152	PASS
			MCH	TN	VL	3.38	0.00478	PASS
					VN	-3.93	-0.00555	PASS
					VH	-1.44	-0.00204	PASS
			HCH	TN	VL	-3.23	-0.00454	PASS
					VN	-1.23	-0.00173	PASS
					VH	0.79	0.00111	PASS
	LTE/TM2	1.4	LCH	TN	VL	-42.84	-0.06123	PASS
					VN	-9.83	-0.01405	PASS
					VH	-103.31	-0.14765	PASS
			MCH	TN	VL	-107.03	-0.15128	PASS
					VN	-8.45	-0.01194	PASS
					VH	-2.03	-0.00287	PASS
			HCH	TN	VL	33.57	0.04693	PASS
					VN	-72.13	-0.10084	PASS
					VH	-86.45	-0.12086	PASS
		3	LCH	TN	VL	-0.86	-0.00123	PASS
					VN	-1.02	-0.00146	PASS
					VH	-0.6	-0.00086	PASS
			MCH	TN	VL	2.53	0.00358	PASS
					VN	0.37	0.00052	PASS
					VH	213.58	0.30188	PASS
			HCH	TN	VL	-0.83	-0.00116	PASS
					VN	3.28	0.00459	PASS
					VH	-5.65	-0.00791	PASS
		5	LCH	TN	VL	1.7	0.00242	PASS
					VN	-2.65	-0.00378	PASS
					VH	1.37	0.00195	PASS
			MCH	TN	VL	-1.89	-0.00267	PASS
					VN	3.55	0.00502	PASS
					VH	0.96	0.00136	PASS
			HCH	TN	VL	0.92	0.00129	PASS
					VN	-4.36	-0.00611	PASS
					VH	-0.09	-0.00013	PASS
		10	LCH	TN	VL	-2.69	-0.00382	PASS
					VN	2.52	0.00358	PASS
					VH	-0.76	-0.00108	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	1.03	0.00146	PASS
					VN	1.54	0.00218	PASS
					VH	-0.93	-0.00131	PASS
			HCH	TN	VL	0.31	0.00044	PASS
					VN	3.39	0.00477	PASS
					VH	-3.23	-0.00454	PASS

8.1.2Frequency Error vs. Voltage:

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
BAND12	LTE/TM1	1.4	LCH	VN	-30	-18.54	-0.0265	PASS
					-20	-105.87	-0.15131	PASS
					-10	73.17	0.10457	PASS
					0	38.44	0.05494	PASS
					10	-2.78	-0.00397	PASS
					20	-181.56	-0.25948	PASS
					30	7.5	0.01072	PASS
					40	1.02	0.00146	PASS
					50	0.59	0.00084	PASS
			MCH	VN	-30	3.72	0.00526	PASS
					-20	32.47	0.04589	PASS
					-10	-3.65	-0.00516	PASS
					0	-7.3	-0.01032	PASS
					10	-84.36	-0.11924	PASS
					20	-26.65	-0.03767	PASS
					30	-6.61	-0.00934	PASS
					40	-13.33	-0.01884	PASS
					50	74.56	0.10539	PASS
			HCH	VN	-30	102.07	0.1427	PASS
					-20	-130.36	-0.18225	PASS
					-10	4.71	0.00658	PASS
					0	-67.28	-0.09406	PASS
					10	63.96	0.08942	PASS
					20	-2.6	-0.00363	PASS
					30	-81.45	-0.11387	PASS
					40	63.16	0.0883	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		3	LCH	VN	50	3.28	0.00459	PASS
					-30	2.35	0.00335	PASS
					-20	-1.82	-0.0026	PASS
					-10	-1.27	-0.00181	PASS
					0	1.49	0.00213	PASS
					10	3.95	0.00564	PASS
					20	0.8	0.00114	PASS
					30	1.66	0.00237	PASS
					40	-2.1	-0.003	PASS
					50	0	0	PASS
			MCH	VN	-30	7.82	0.01105	PASS
					-20	-95.57	-0.13508	PASS
					-10	-1.69	-0.00239	PASS
					0	48.74	0.06889	PASS
					10	-28.07	-0.03967	PASS
					20	-9.74	-0.01377	PASS
					30	11.7	0.01654	PASS
					40	-162.58	-0.2298	PASS
					50	25.91	0.03662	PASS
			HCH	VN	-30	9.27	0.01297	PASS
					-20	-5.06	-0.00708	PASS
					-10	1.49	0.00209	PASS
					0	12.17	0.01703	PASS
					10	1.83	0.00256	PASS
					20	-4.49	-0.00628	PASS
					30	-2.26	-0.00316	PASS
					40	2.78	0.00389	PASS
					50	-2.66	-0.00372	PASS
		5	LCH	VN	-30	0.82	0.00117	PASS
					-20	-0.24	-0.00034	PASS
					-10	1.27	0.00181	PASS
					0	0.11	0.00016	PASS
					10	-1.96	-0.00279	PASS
					20	1.1	0.00157	PASS
					30	-0.62	-0.00088	PASS
					40	-76.06	-0.10842	PASS
					50	-0.5	-0.00071	PASS
			MCH	VN	-30	-0.26	-0.00037	PASS
					-20	2.26	0.00319	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					-10	1.39	0.00196	PASS
					0	0.79	0.00112	PASS
					10	-2.35	-0.00332	PASS
					20	-5.21	-0.00736	PASS
					30	-4.96	-0.00701	PASS
					40	-0.01	-0.00001	PASS
					50	-2.93	-0.00414	PASS
			HCH	VN	-30	-0.67	-0.00094	PASS
					-20	-0.36	-0.0005	PASS
					-10	-0.17	-0.00024	PASS
					0	-0.43	-0.0006	PASS
					10	0.46	0.00064	PASS
					20	0.74	0.00104	PASS
					30	-0.34	-0.00048	PASS
					40	-0.96	-0.00135	PASS
					50	4.03	0.00565	PASS
		10	LCH	VN	-30	-0.46	-0.00065	PASS
					-20	2.68	0.00381	PASS
					-10	-6.37	-0.00905	PASS
					0	0.26	0.00037	PASS
					10	-7.04	-0.01	PASS
					20	-0.96	-0.00136	PASS
					30	0.74	0.00105	PASS
					40	-3.66	-0.0052	PASS
					50	4.72	0.0067	PASS
			MCH	VN	-30	-5.95	-0.00841	PASS
					-20	-0.57	-0.00081	PASS
					-10	-1.04	-0.00147	PASS
					0	-0.03	-0.00004	PASS
					10	3.4	0.00481	PASS
					20	2.95	0.00417	PASS
					30	-3.55	-0.00502	PASS
					40	-1.02	-0.00144	PASS
					50	3.28	0.00464	PASS
			HCH	VN	-30	-0.46	-0.00065	PASS
					-20	0.36	0.00051	PASS
					-10	-3.12	-0.00439	PASS
					0	-2.09	-0.00294	PASS
					10	-1.87	-0.00263	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					20	-2.56	-0.0036	PASS
					30	-2.42	-0.0034	PASS
					40	-1.32	-0.00186	PASS
					50	-4.38	-0.00616	PASS
BAND12	LTE/TM2	1.4	LCH	VN	-30	80.21	0.11463	PASS
					-20	-8.21	-0.01173	PASS
					-10	-2.22	-0.00317	PASS
					0	-8.5	-0.01215	PASS
					10	55.5	0.07932	PASS
					20	145.45	0.20787	PASS
					30	28.1	0.04016	PASS
					40	3.19	0.00456	PASS
					50	59.02	0.08435	PASS
			MCH	VN	-30	-13.23	-0.0187	PASS
					-20	150.69	0.21299	PASS
					-10	-67.29	-0.09511	PASS
					0	-66.46	-0.09394	PASS
					10	-30.4	-0.04297	PASS
					20	-20.93	-0.02958	PASS
					30	-47.66	-0.06736	PASS
					40	62.34	0.08811	PASS
					50	-62.37	-0.08816	PASS
			HCH	VN	-30	-20.7	-0.02894	PASS
					-20	89.96	0.12577	PASS
					-10	-57.22	-0.07999	PASS
					0	19.34	0.02704	PASS
					10	-39.57	-0.05532	PASS
					20	6.25	0.00874	PASS
					30	-14.25	-0.01992	PASS
					40	73.06	0.10214	PASS
					50	-106.26	-0.14855	PASS
		3	LCH	VN	-30	-1.07	-0.00153	PASS
					-20	-3.62	-0.00517	PASS
					-10	0.3	0.00043	PASS
					0	0.41	0.00059	PASS
					10	-12.45	-0.01777	PASS
					20	4.25	0.00607	PASS
					30	8.31	0.01186	PASS
					40	-1.02	-0.00146	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			MCH	VN	50	1.8	0.00257	PASS
					-30	-0.07	-0.0001	PASS
					-20	119.36	0.16871	PASS
					-10	-0.56	-0.00079	PASS
					0	39.21	0.05542	PASS
					10	-4.61	-0.00652	PASS
					20	-7	-0.00989	PASS
					30	11.52	0.01628	PASS
					40	0.8	0.00113	PASS
					50	-5.74	-0.00811	PASS
			HCH	VN	-30	-145.6	-0.20378	PASS
					-20	-13.89	-0.01944	PASS
					-10	10.63	0.01488	PASS
					0	1.73	0.00242	PASS
					10	-17.04	-0.02385	PASS
					20	1.6	0.00224	PASS
					30	68.42	0.09576	PASS
					40	-6.21	-0.00869	PASS
					50	-6.15	-0.00861	PASS
		5	LCH	VN	-30	-4.51	-0.00643	PASS
					-20	-2.33	-0.00332	PASS
					-10	2.07	0.00295	PASS
					0	-5.04	-0.00718	PASS
					10	2.59	0.00369	PASS
					20	2.46	0.00351	PASS
					30	-2.65	-0.00378	PASS
					40	6.09	0.00868	PASS
					50	-4.62	-0.00659	PASS
			MCH	VN	-30	6.57	0.00929	PASS
					-20	2.16	0.00305	PASS
					-10	-8.64	-0.01221	PASS
					0	-0.11	-0.00016	PASS
					10	0.24	0.00034	PASS
					20	1.06	0.0015	PASS
					30	-1.14	-0.00161	PASS
					40	1.24	0.00175	PASS
					50	-6.84	-0.00967	PASS
			HCH	VN	-30	-0.93	-0.0013	PASS
					-20	-0.86	-0.00121	PASS

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					-10	1.32	0.00185	PASS
					0	-2.86	-0.00401	PASS
					10	-0.17	-0.00024	PASS
					20	-0.13	-0.00018	PASS
					30	-1.49	-0.00209	PASS
					40	0.07	0.0001	PASS
					50	-1.4	-0.00196	PASS
		10	LCH	VN	-30	-0.46	-0.00065	PASS
					-20	2.68	0.00381	PASS
					-10	-6.37	-0.00905	PASS
					0	0.26	0.00037	PASS
					10	-7.04	-0.01	PASS
					20	-0.96	-0.00136	PASS
					30	0.74	0.00105	PASS
					40	-3.66	-0.0052	PASS
					50	4.72	0.0067	PASS
			MCH	VN	-30	0.19	0.00027	PASS
					-20	-1.43	-0.00203	PASS
					-10	-1.67	-0.00237	PASS
					0	2.55	0.00362	PASS
					10	-0.47	-0.00067	PASS
					20	-0.77	-0.00109	PASS
					30	-2.96	-0.0042	PASS
					40	-3.19	-0.00453	PASS
					50	-4.23	-0.00601	PASS
			HCH	VN	-30	-2.22	-0.00314	PASS
					-20	-4.82	-0.00681	PASS
					-10	0.49	0.00069	PASS
					0	-0.37	-0.00052	PASS
					10	0.64	0.0009	PASS
					20	1.27	0.0018	PASS
					30	-5.11	-0.00722	PASS
					40	1.86	0.00263	PASS
					50	-0.84	-0.00119	PASS

END