



5.1.1.2.4.2.4 Test RB = RB50#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

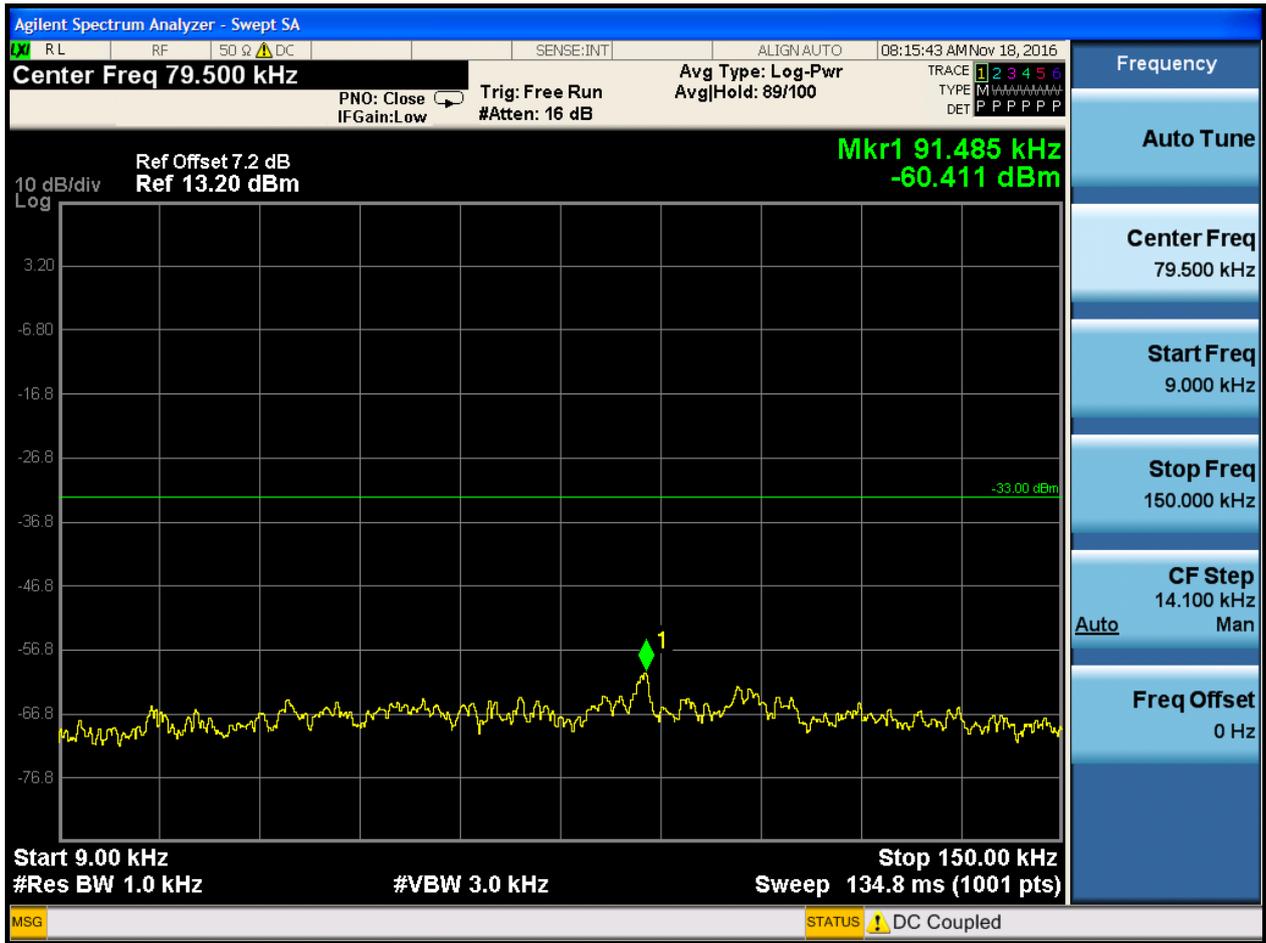
6.1.1 Test Band = BAND12

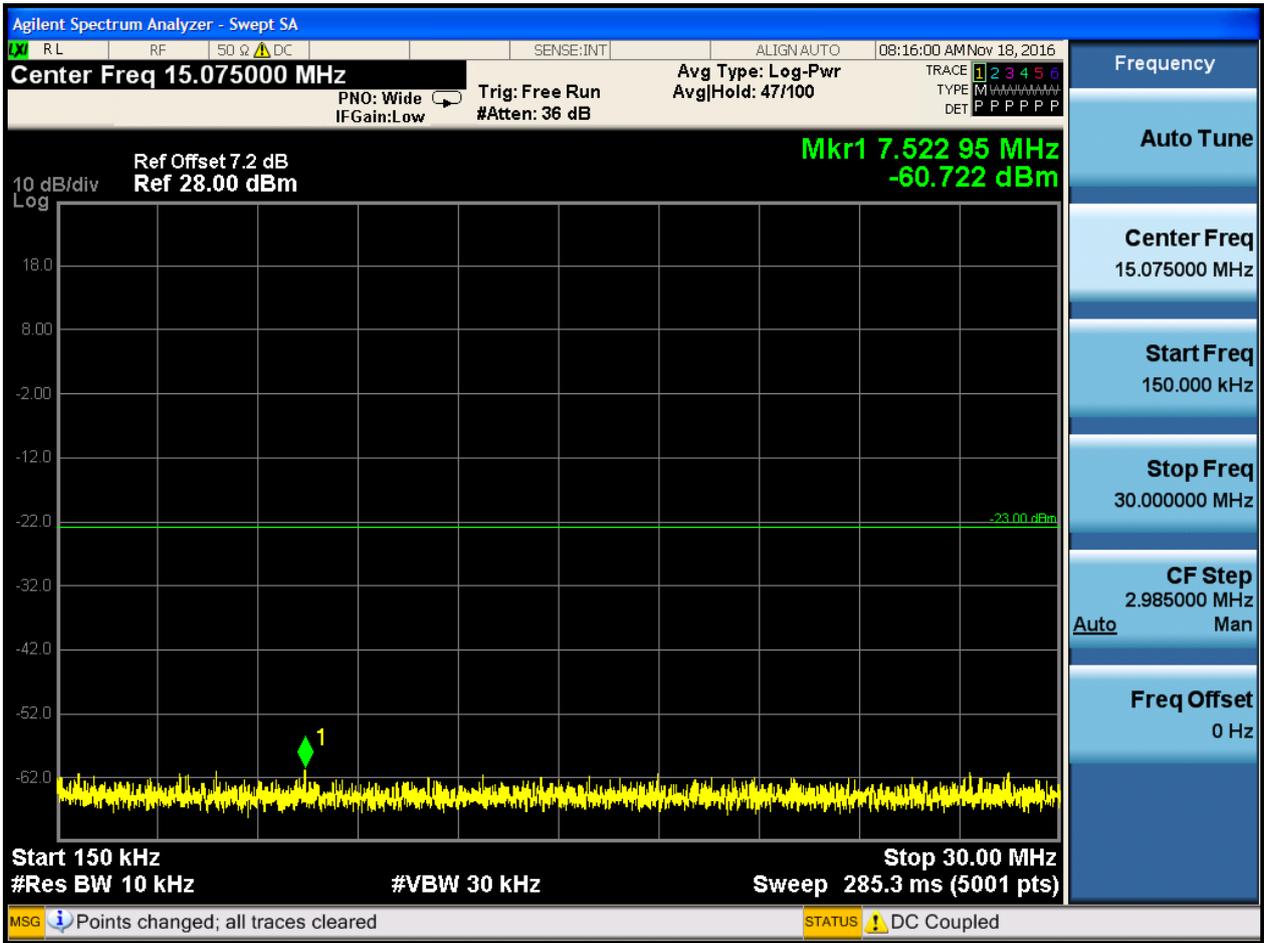
6.1.1.1 Test Mode = LTE/TM1

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

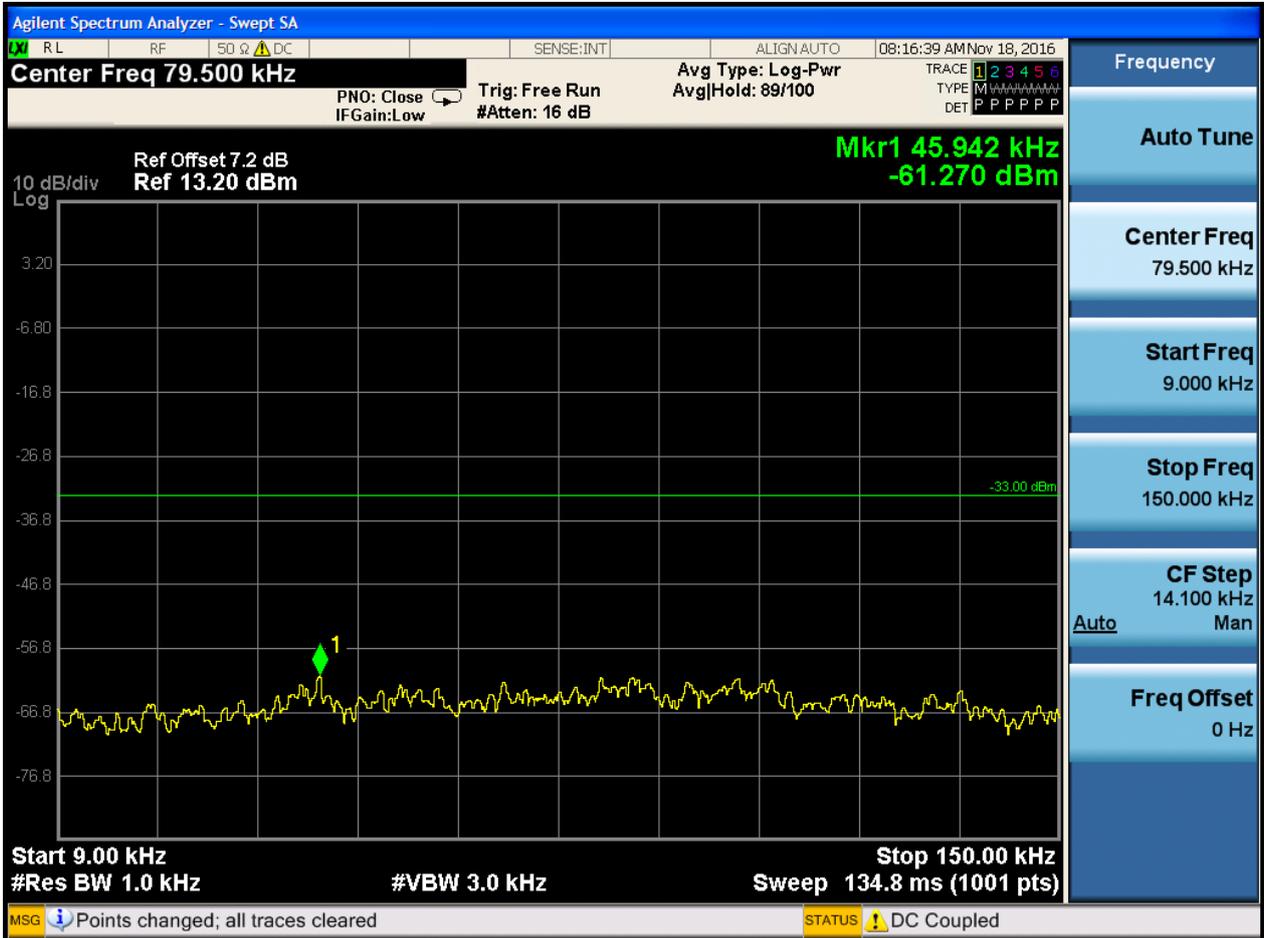


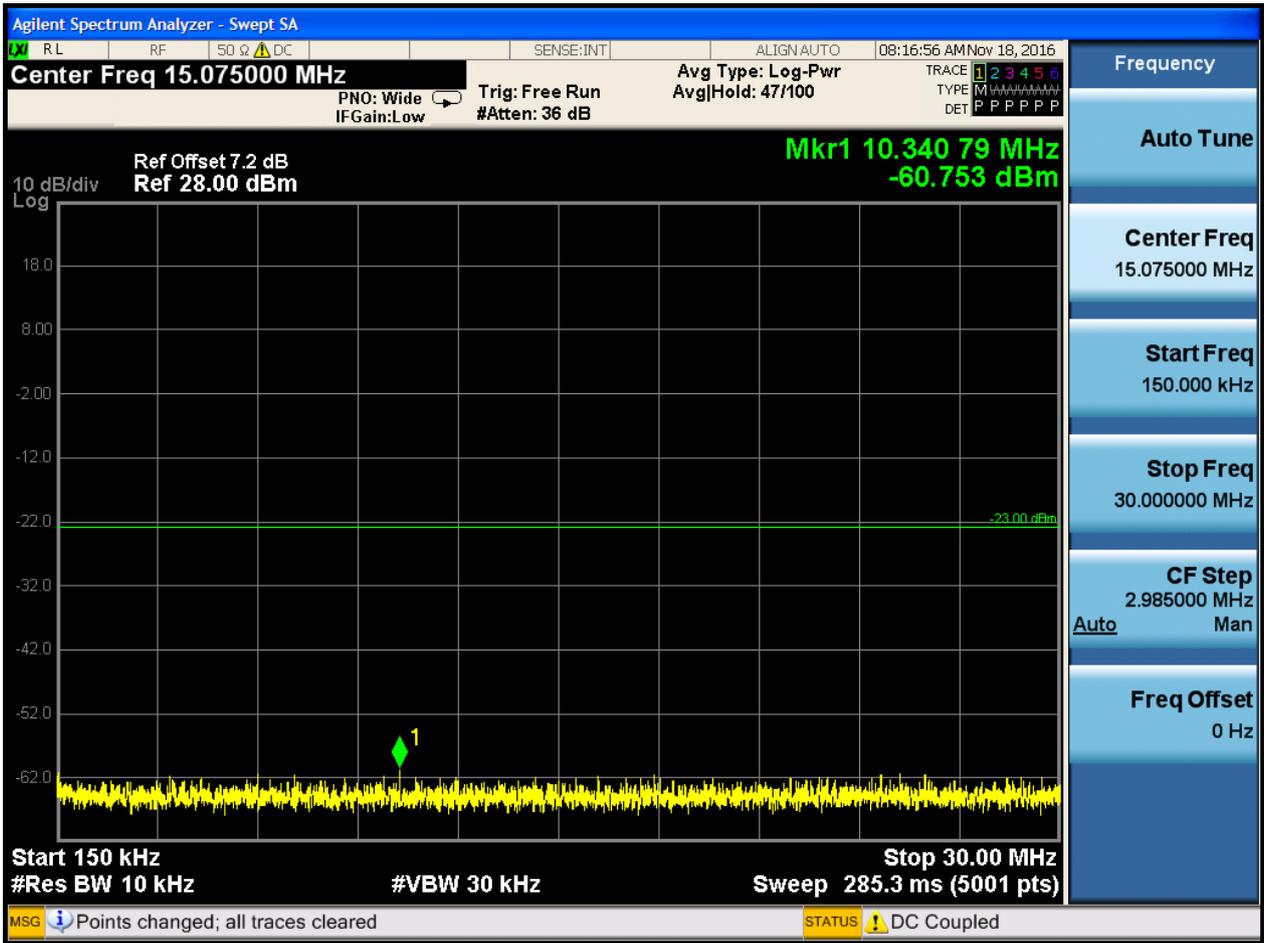


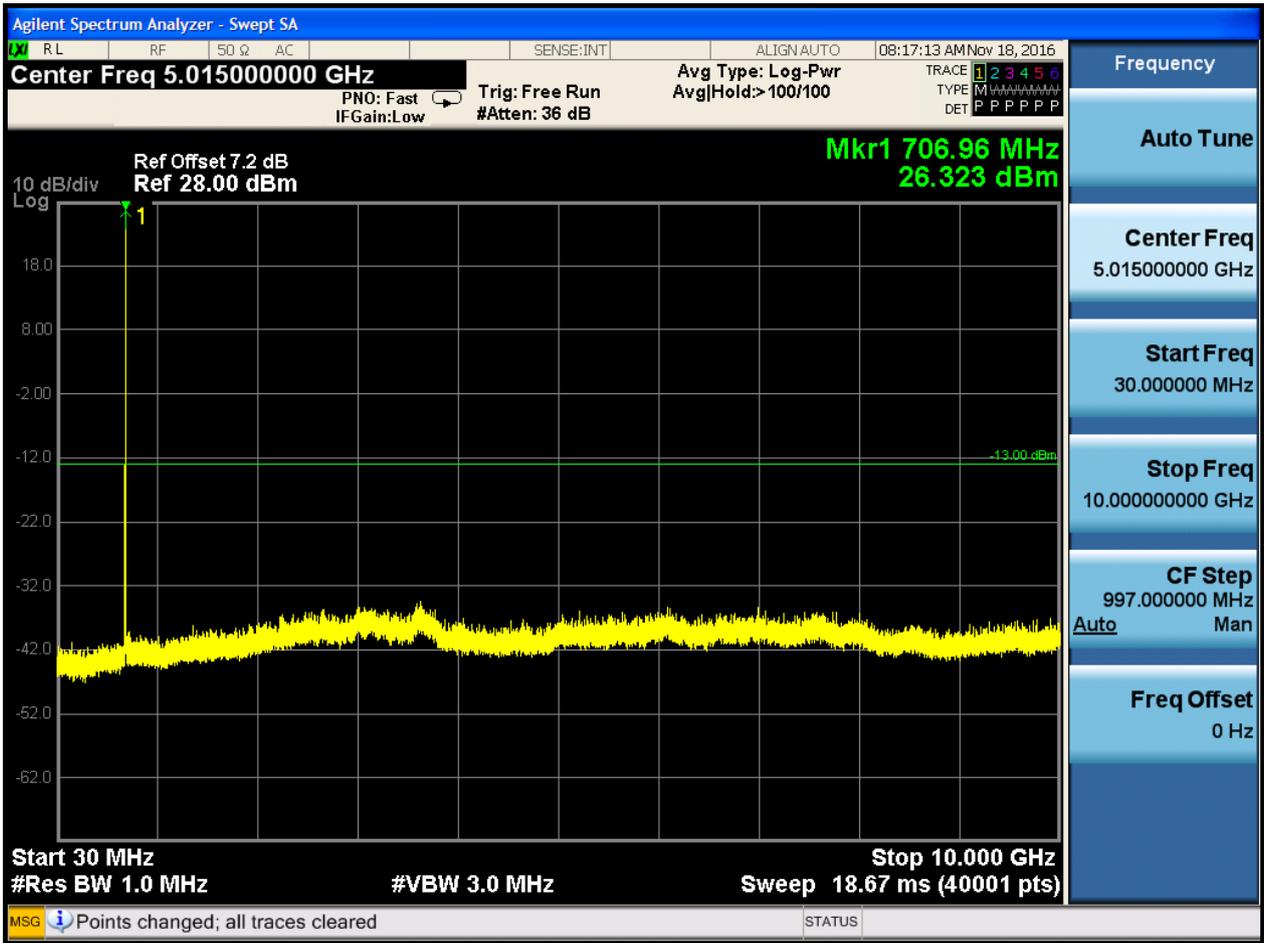


6.1.1.1.1.2 Test Channel = MCH

6.1.1.1.1.2.1 Test RB = RB1#0



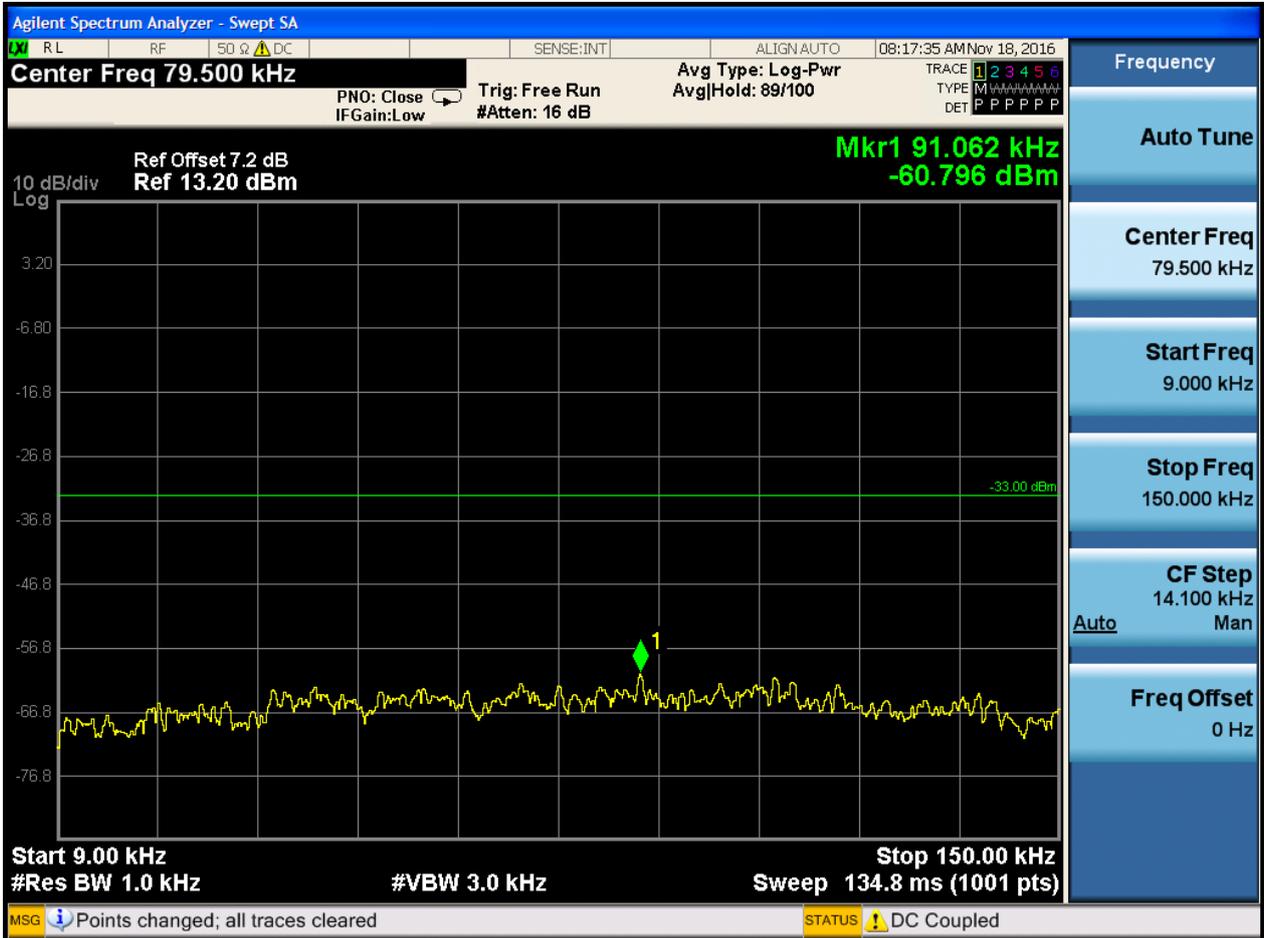


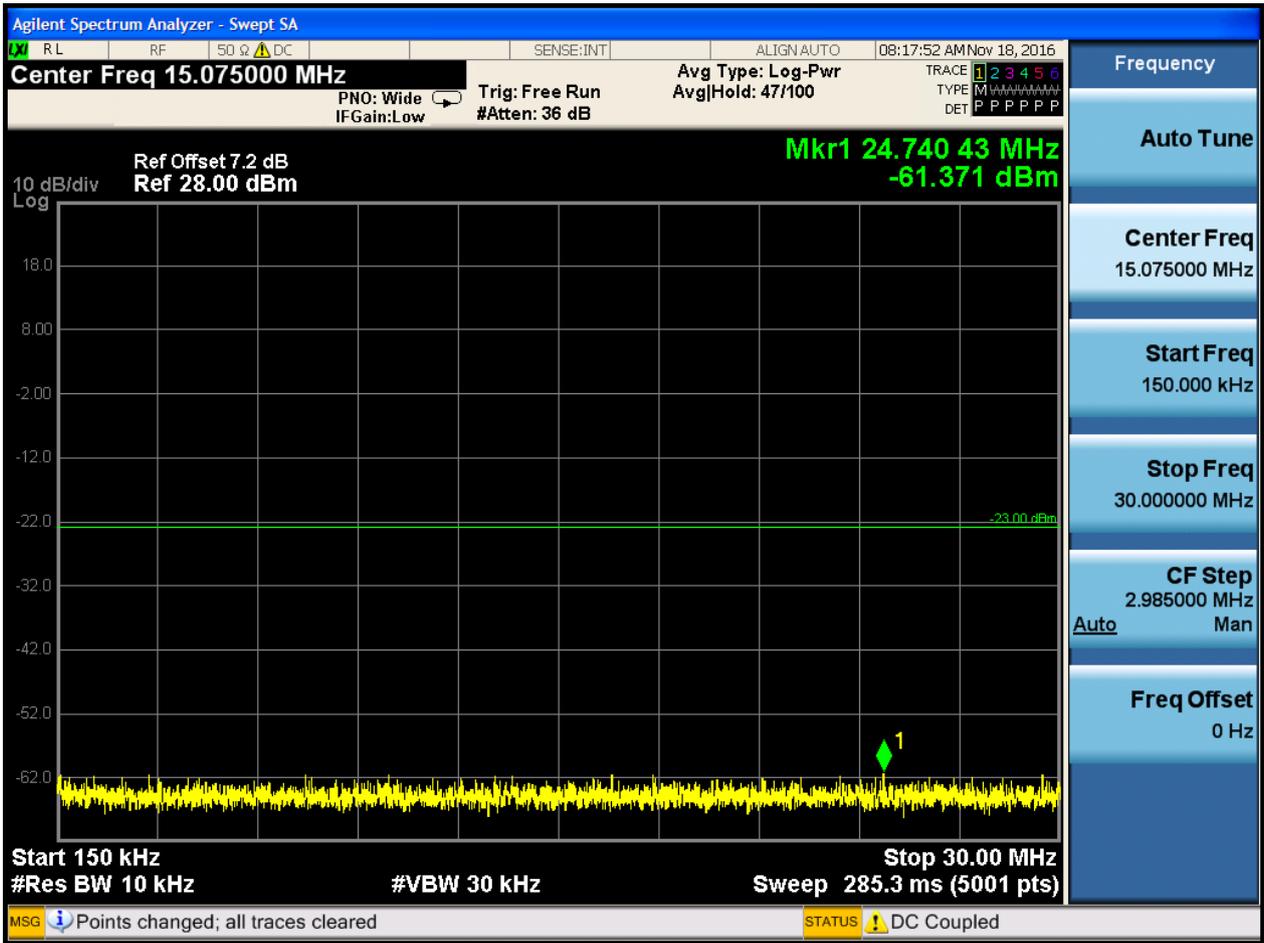


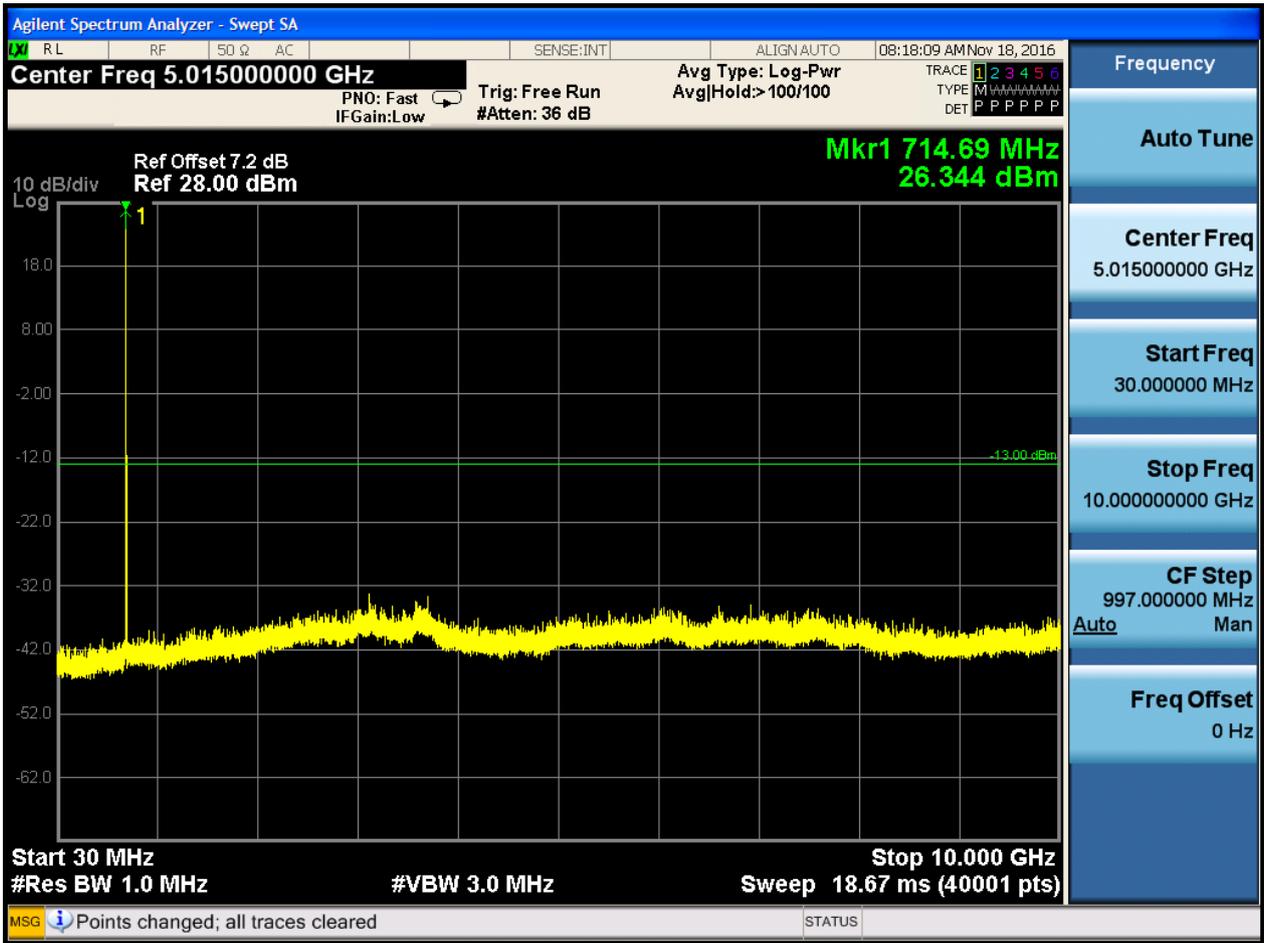


6.1.1.1.1.3 Test Channel = HCH

6.1.1.1.1.3.1 Test RB = RB1#0





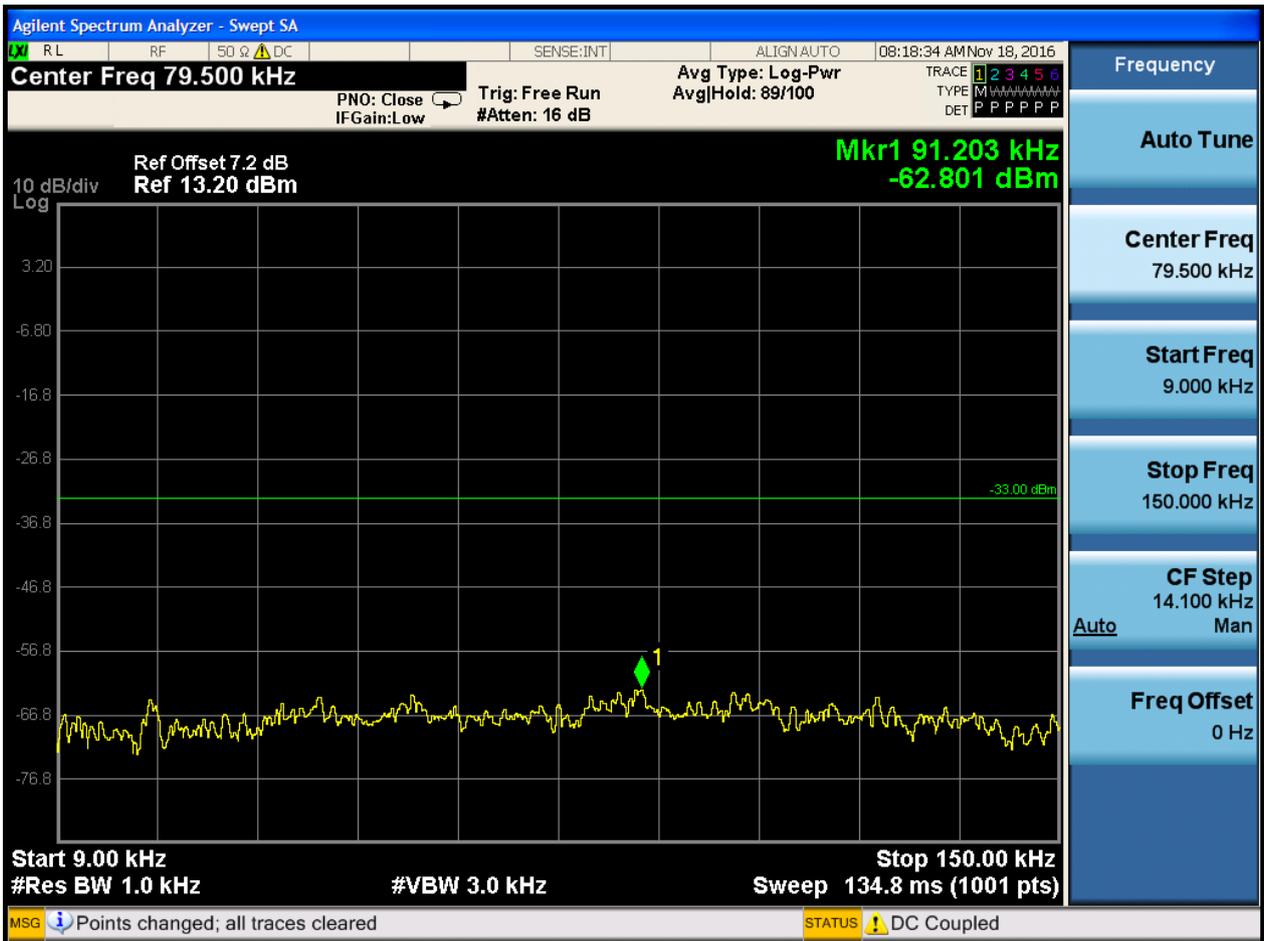


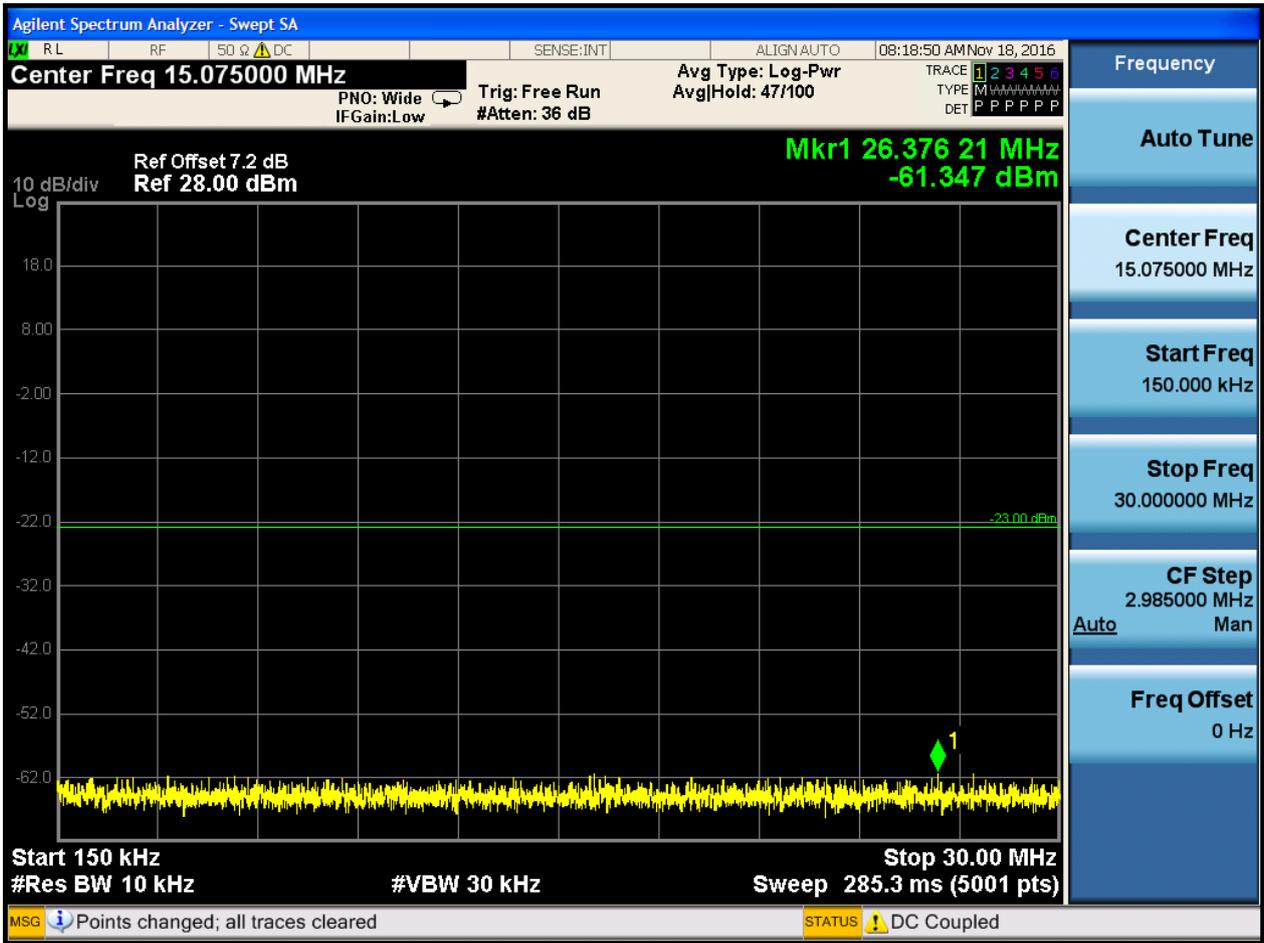


6.1.1.1.2 Test Bandwidth = 3

6.1.1.1.2.1 Test Channel = LCH

6.1.1.1.2.1.1 Test RB = RB1#0

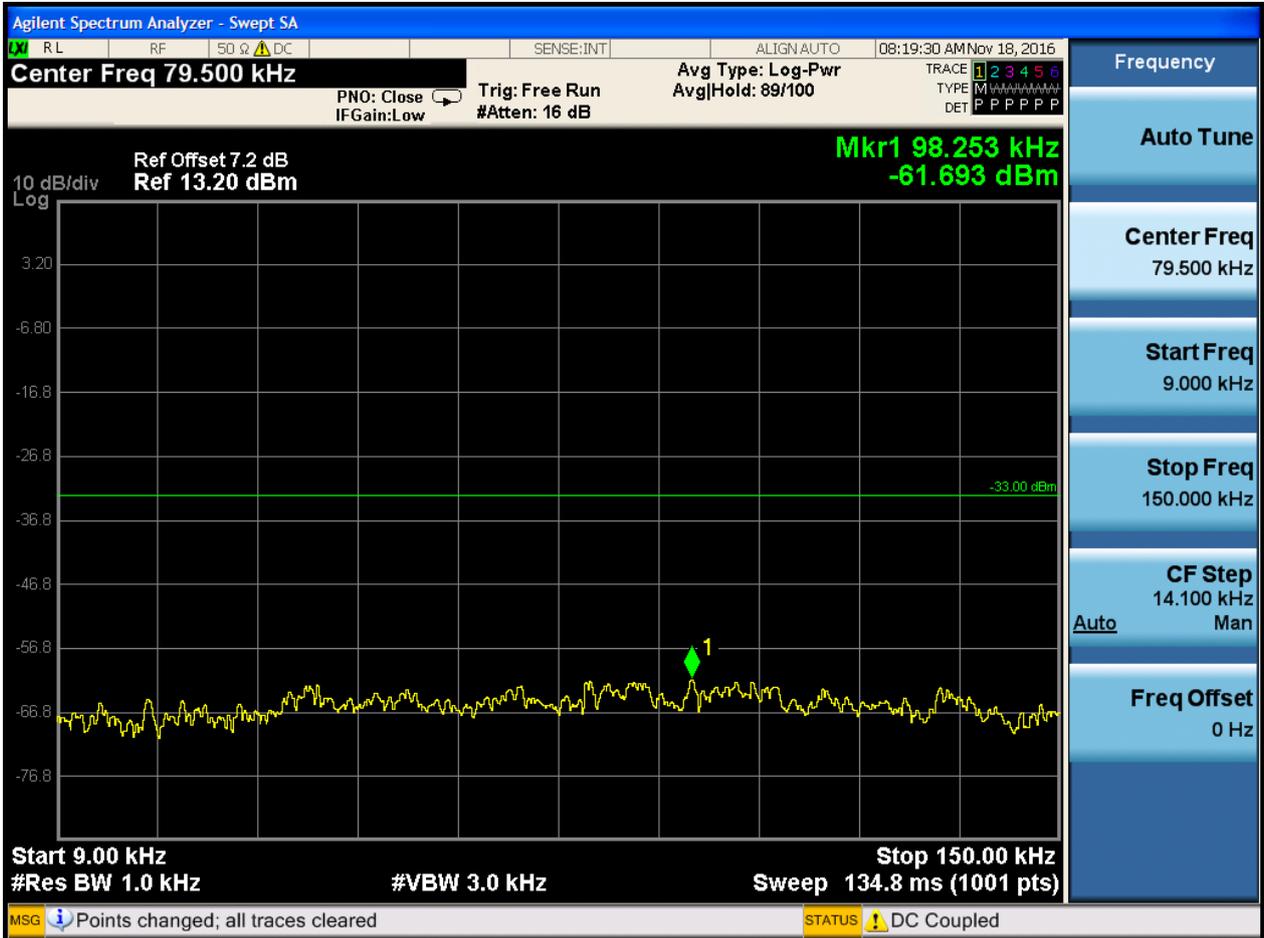


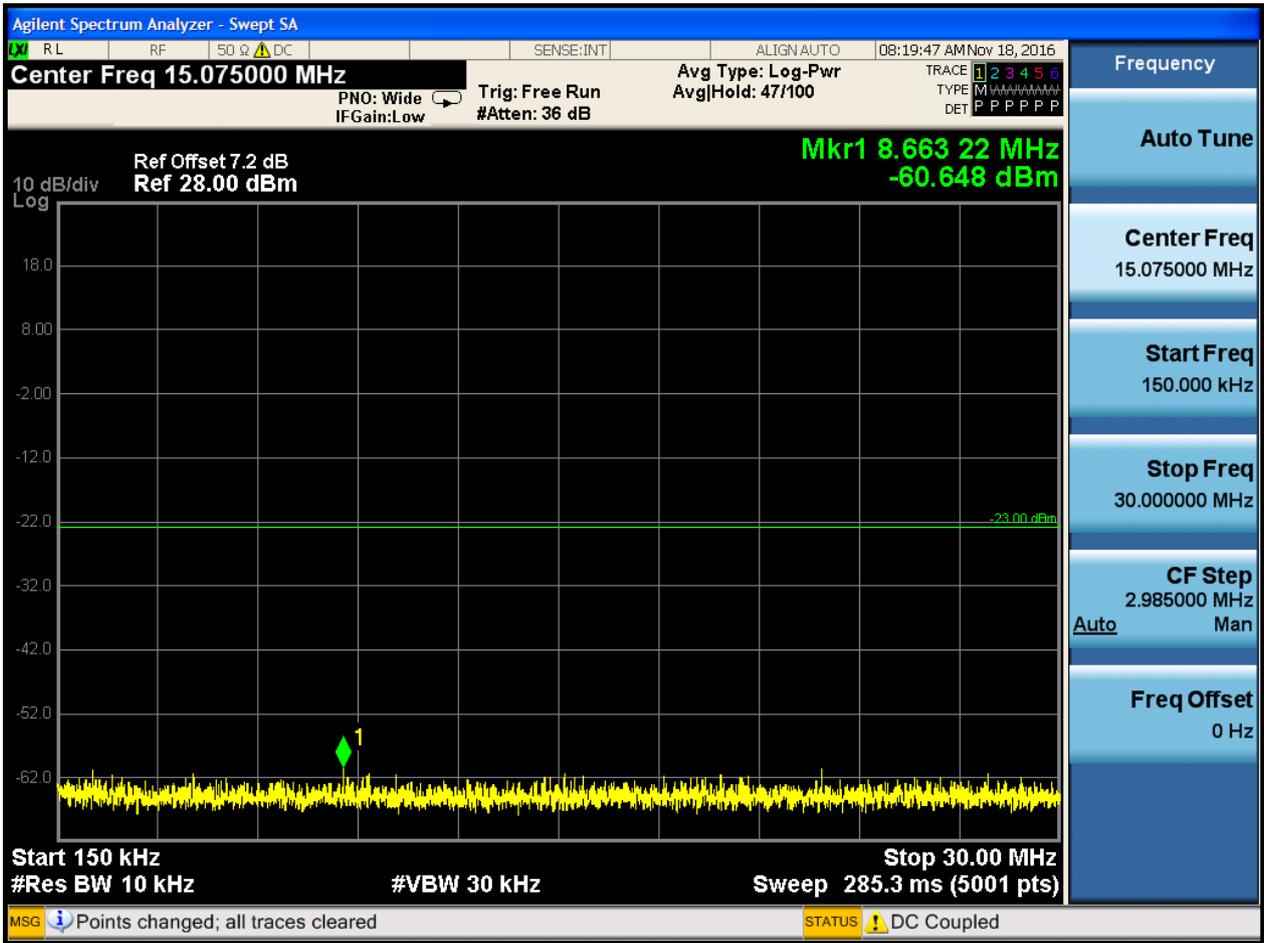


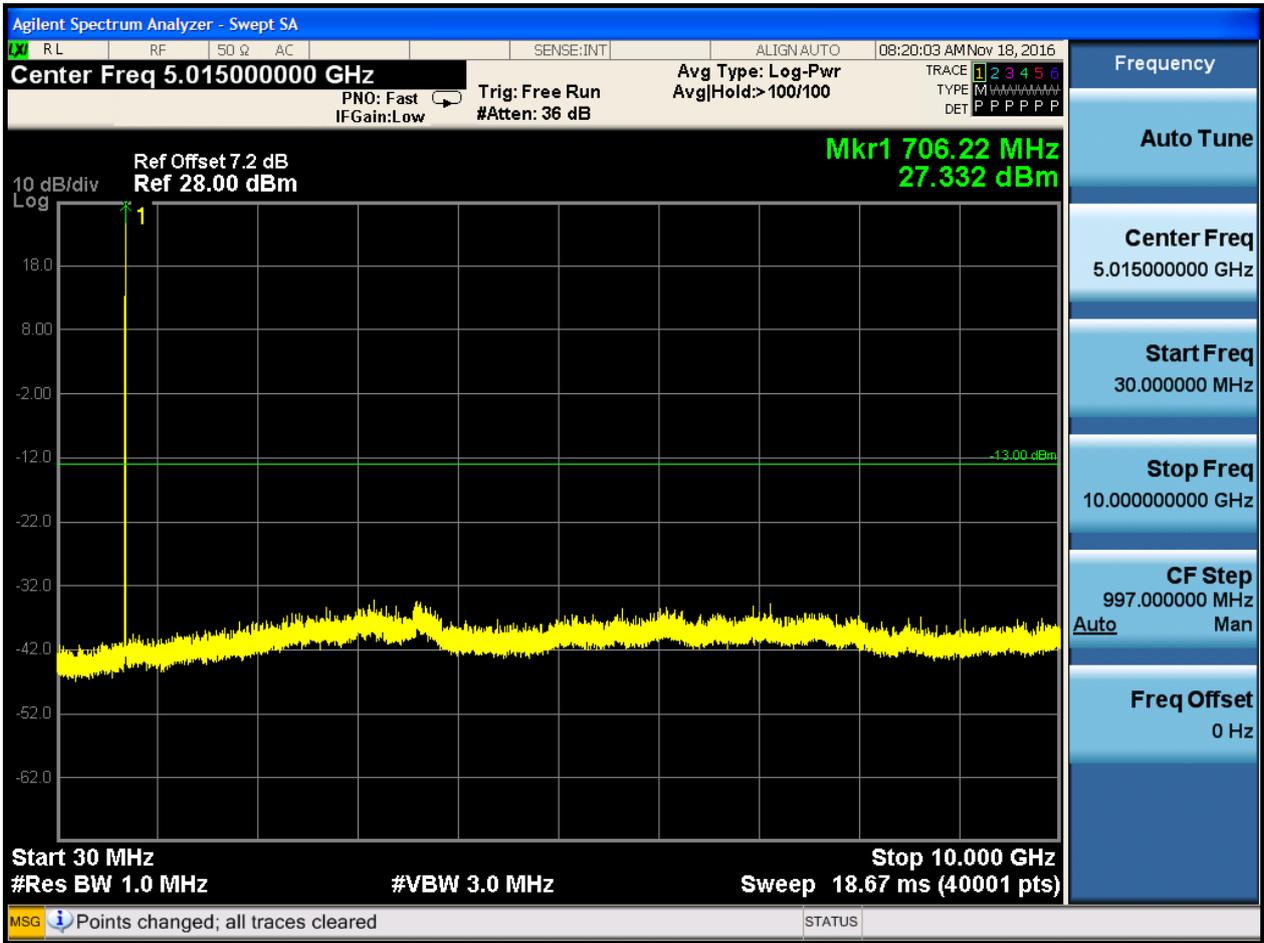


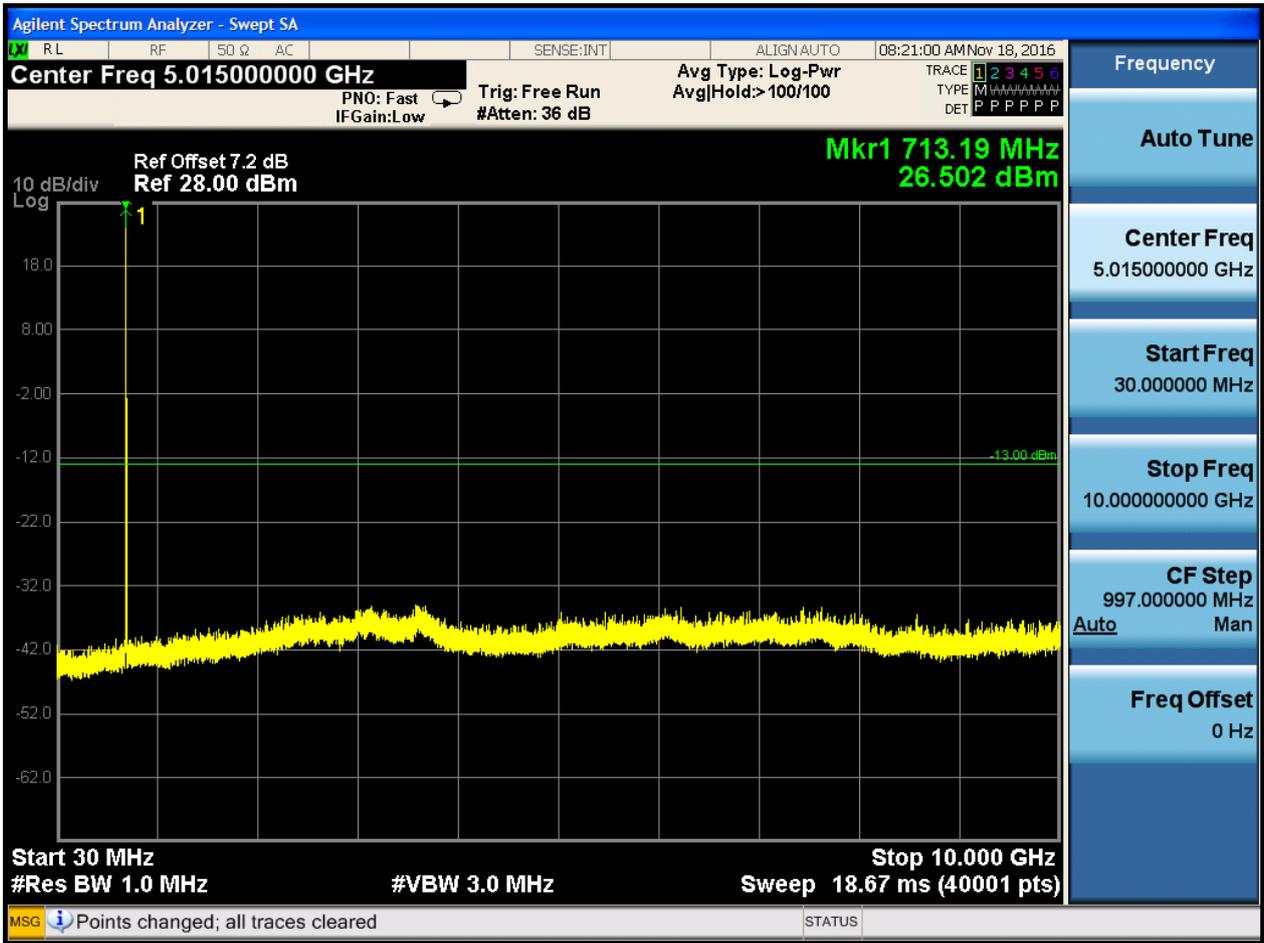
6.1.1.1.2.2 Test Channel = MCH

6.1.1.1.2.2.1 Test RB = RB1#0







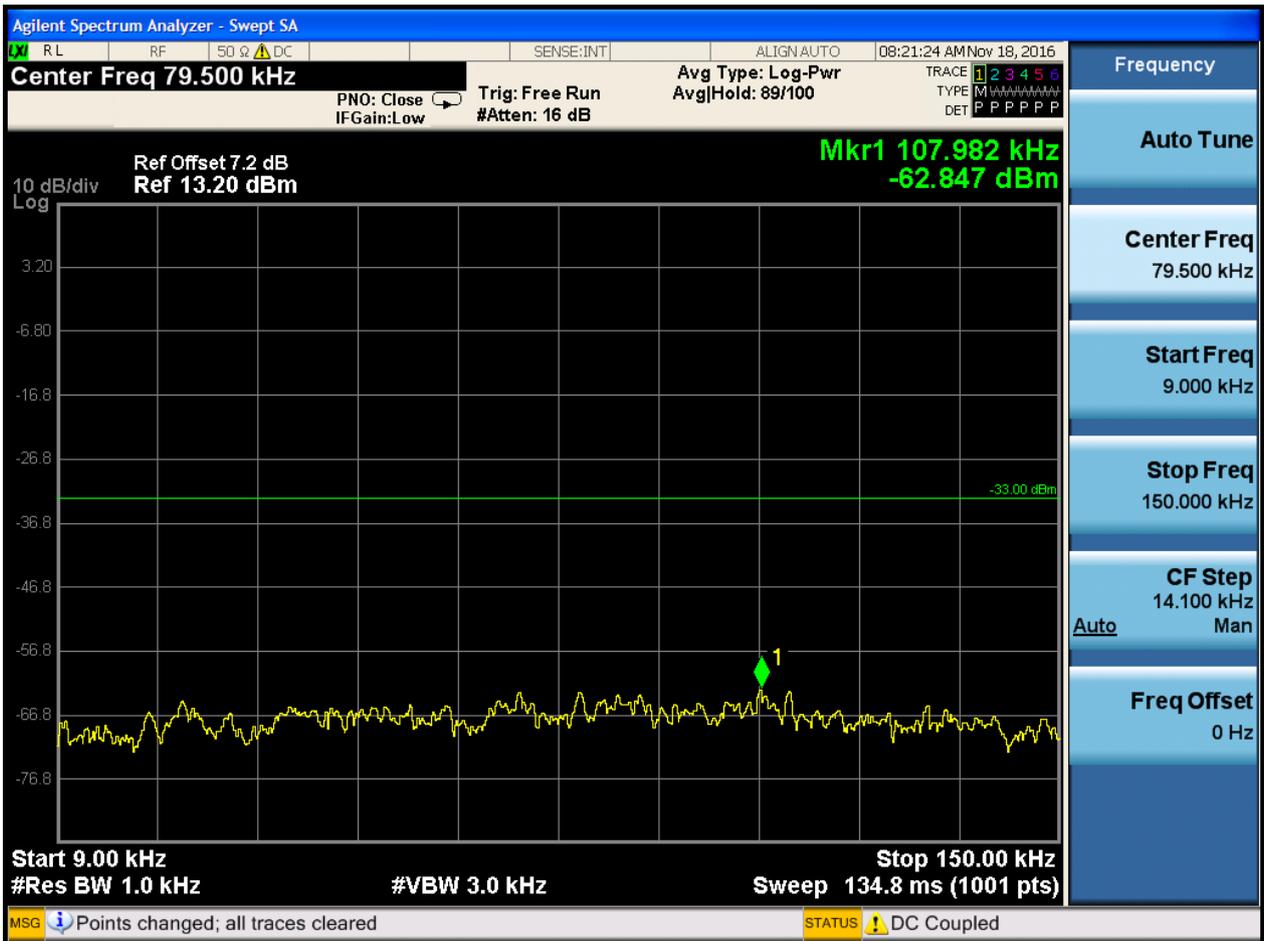


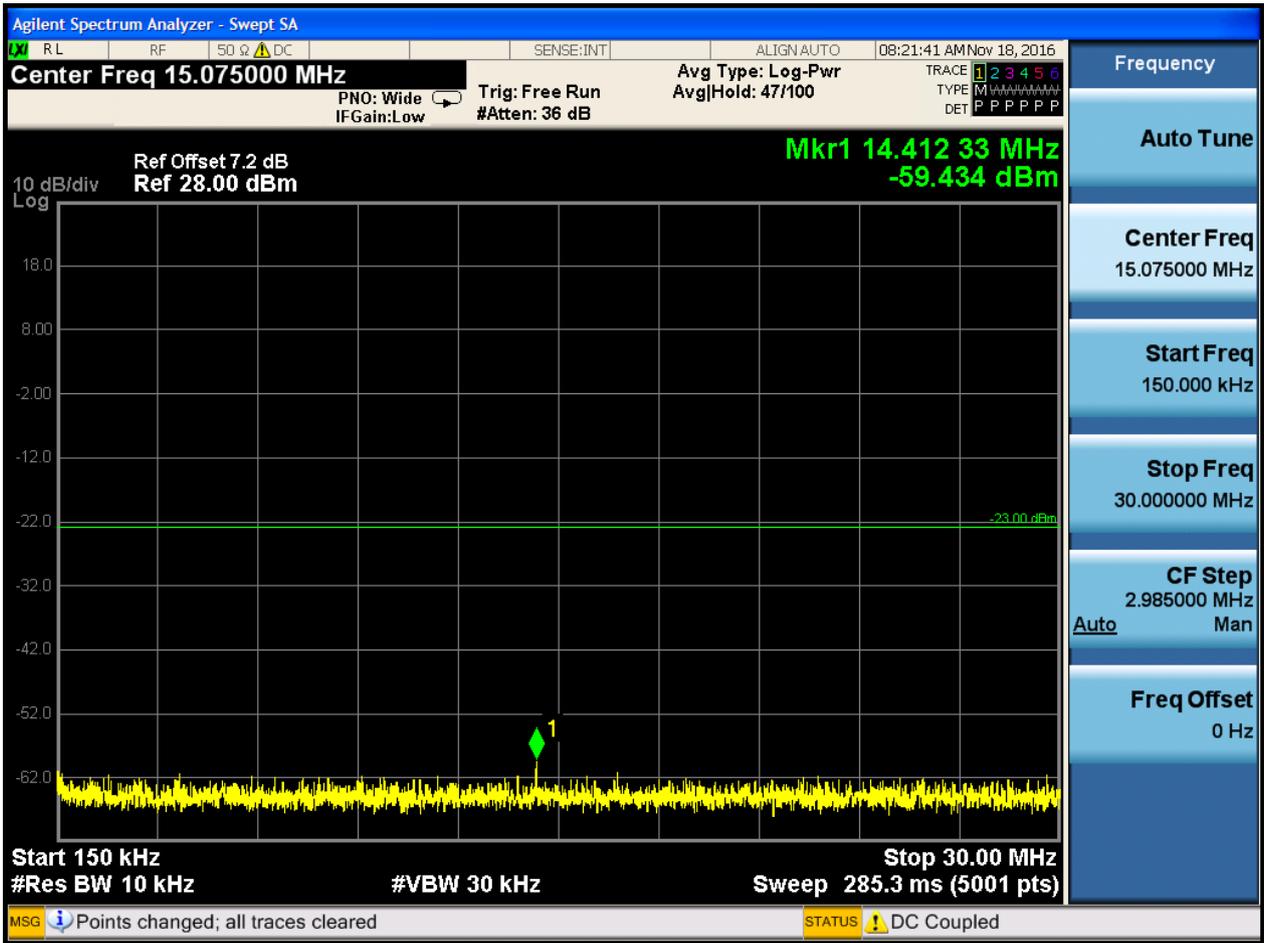


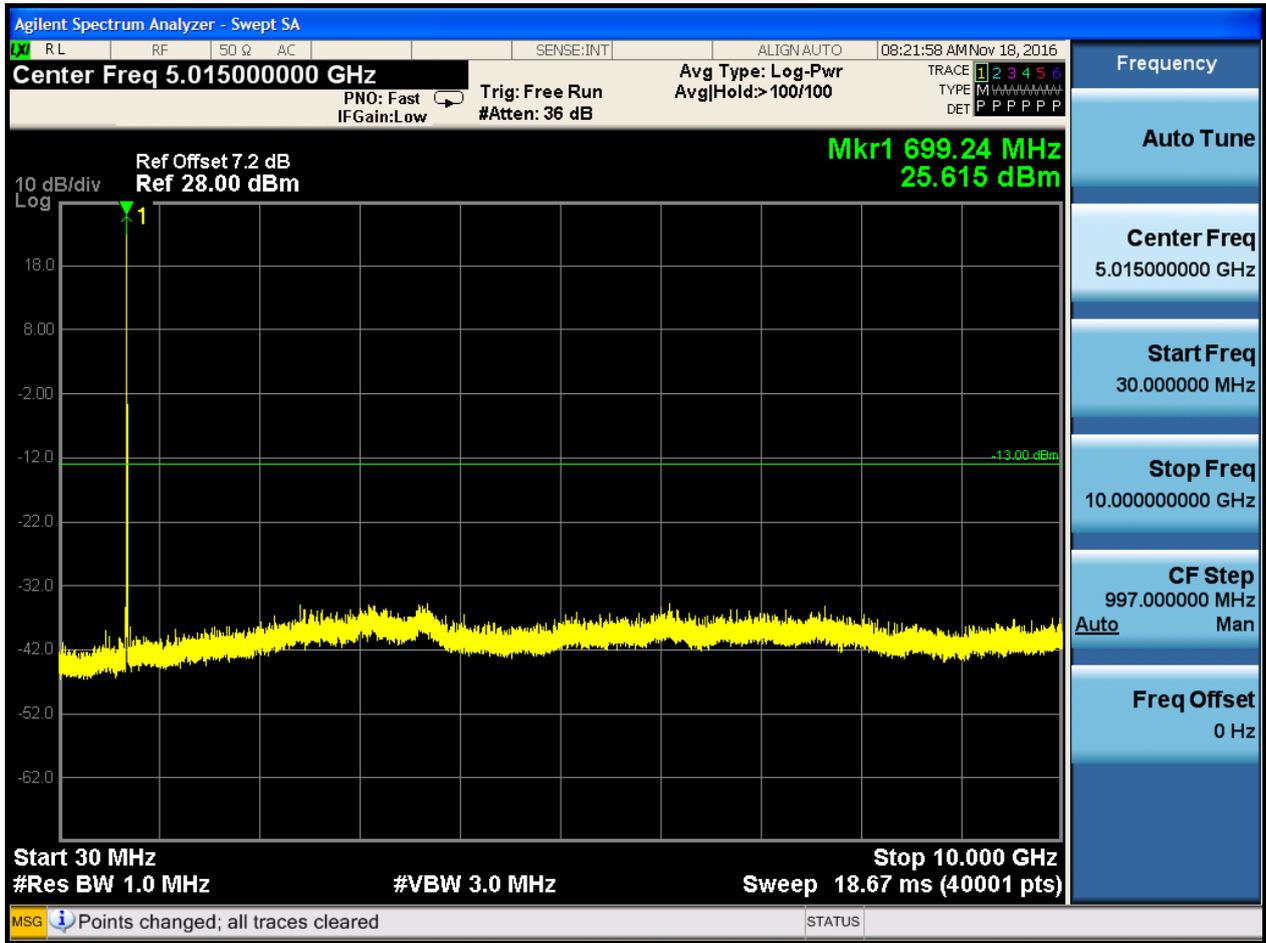
6.1.1.1.3 Test Bandwidth = 5

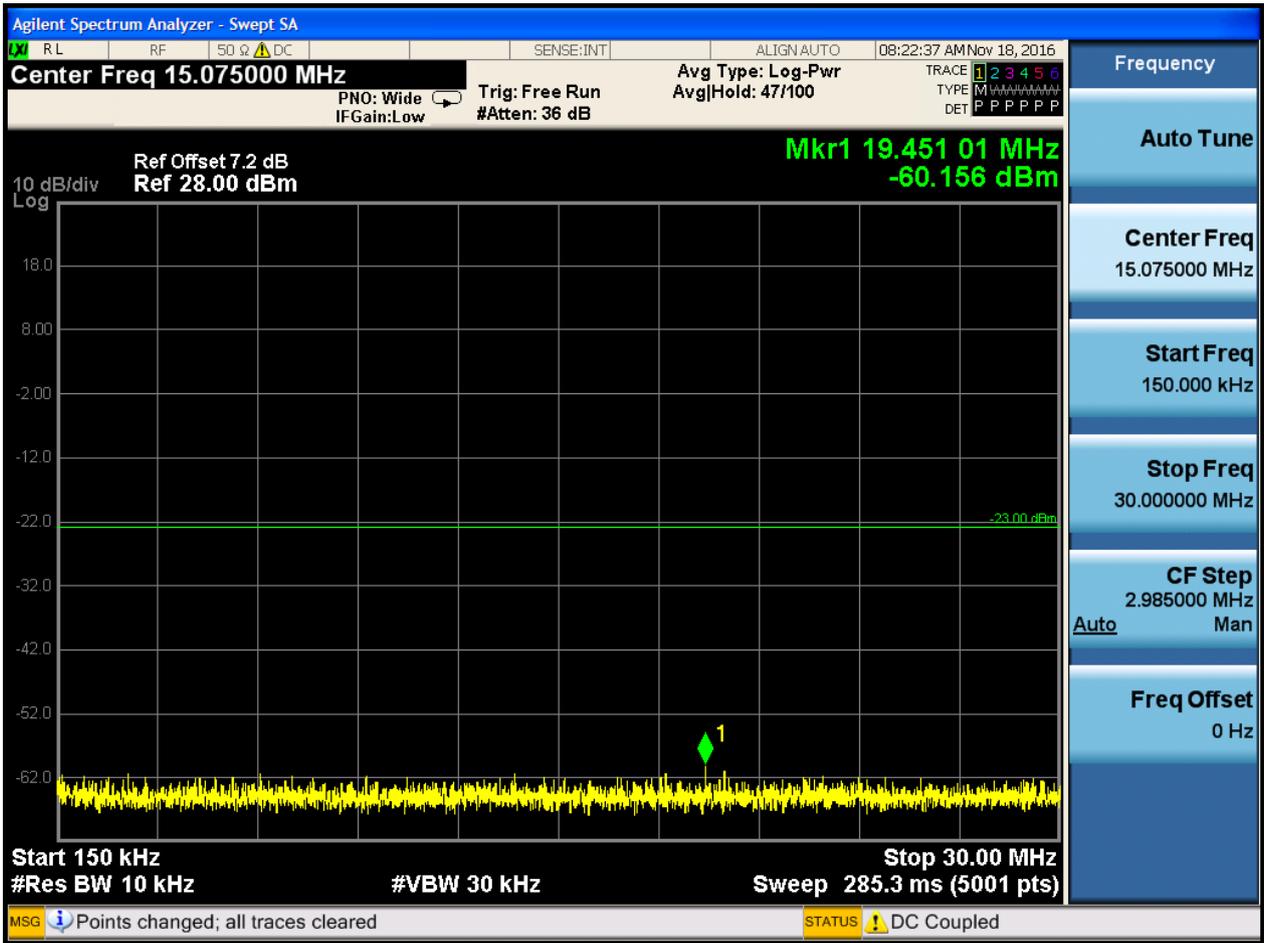
6.1.1.1.3.1 Test Channel = LCH

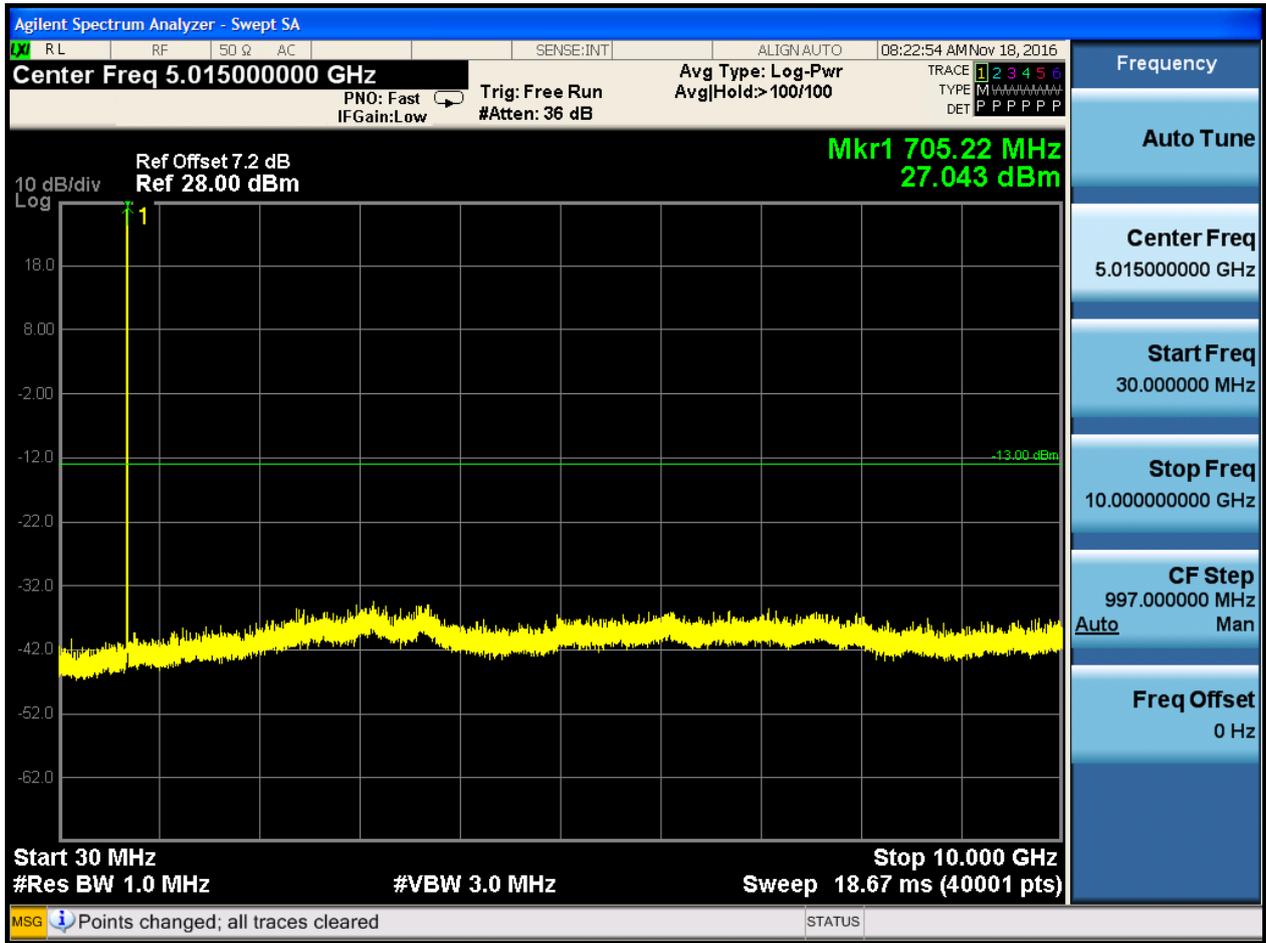
6.1.1.1.3.1.1 Test RB = RB1#0

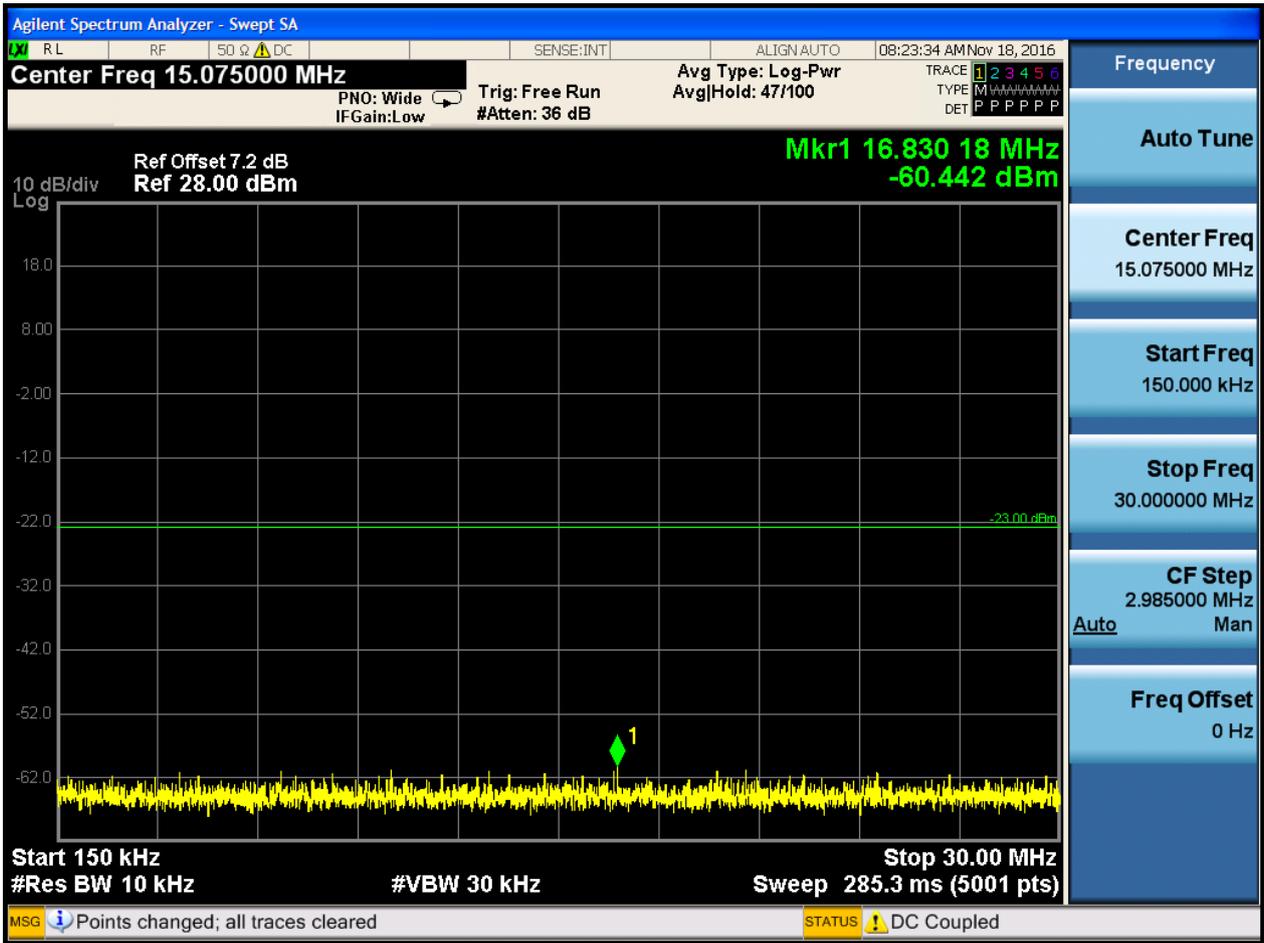










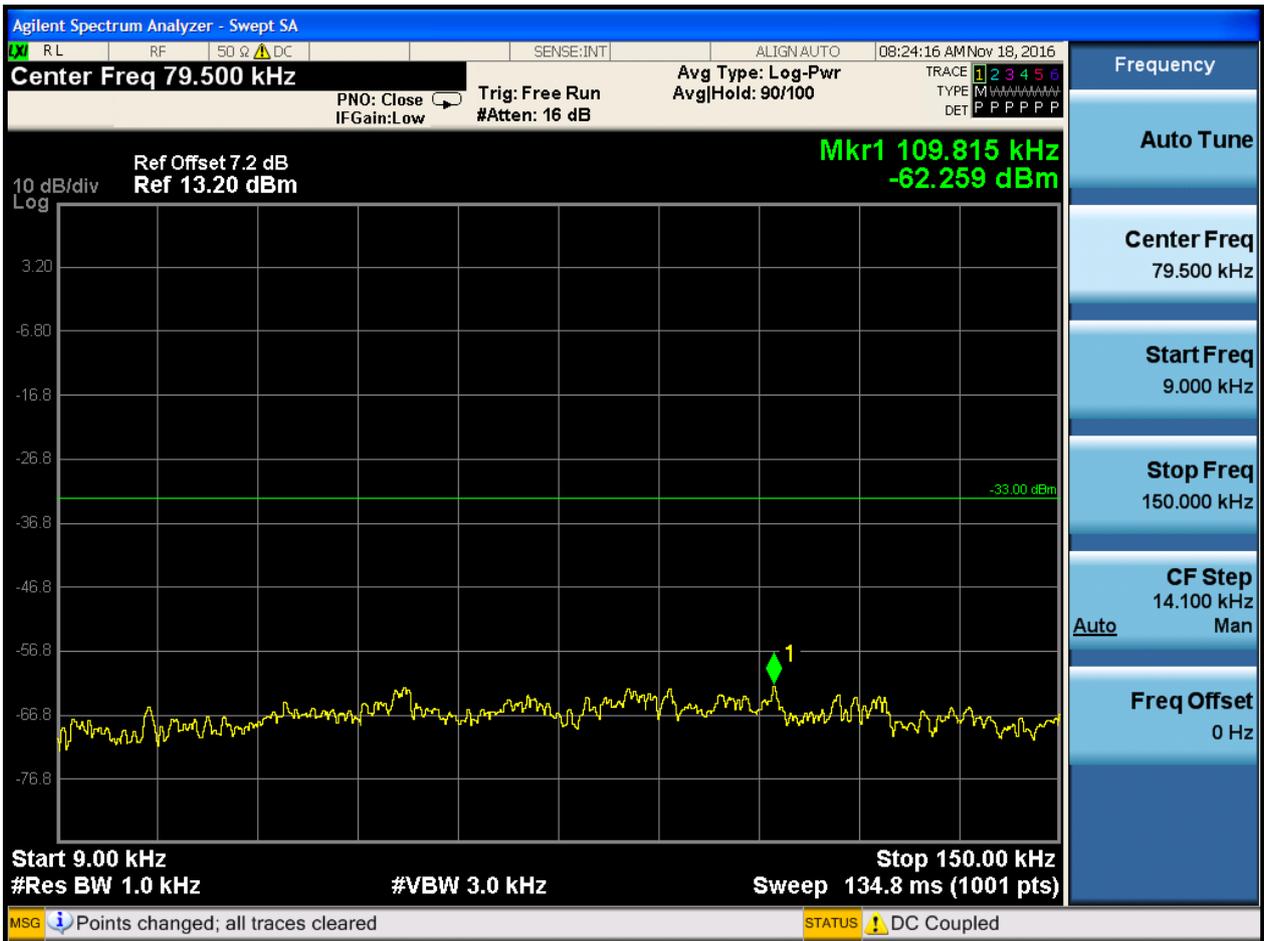


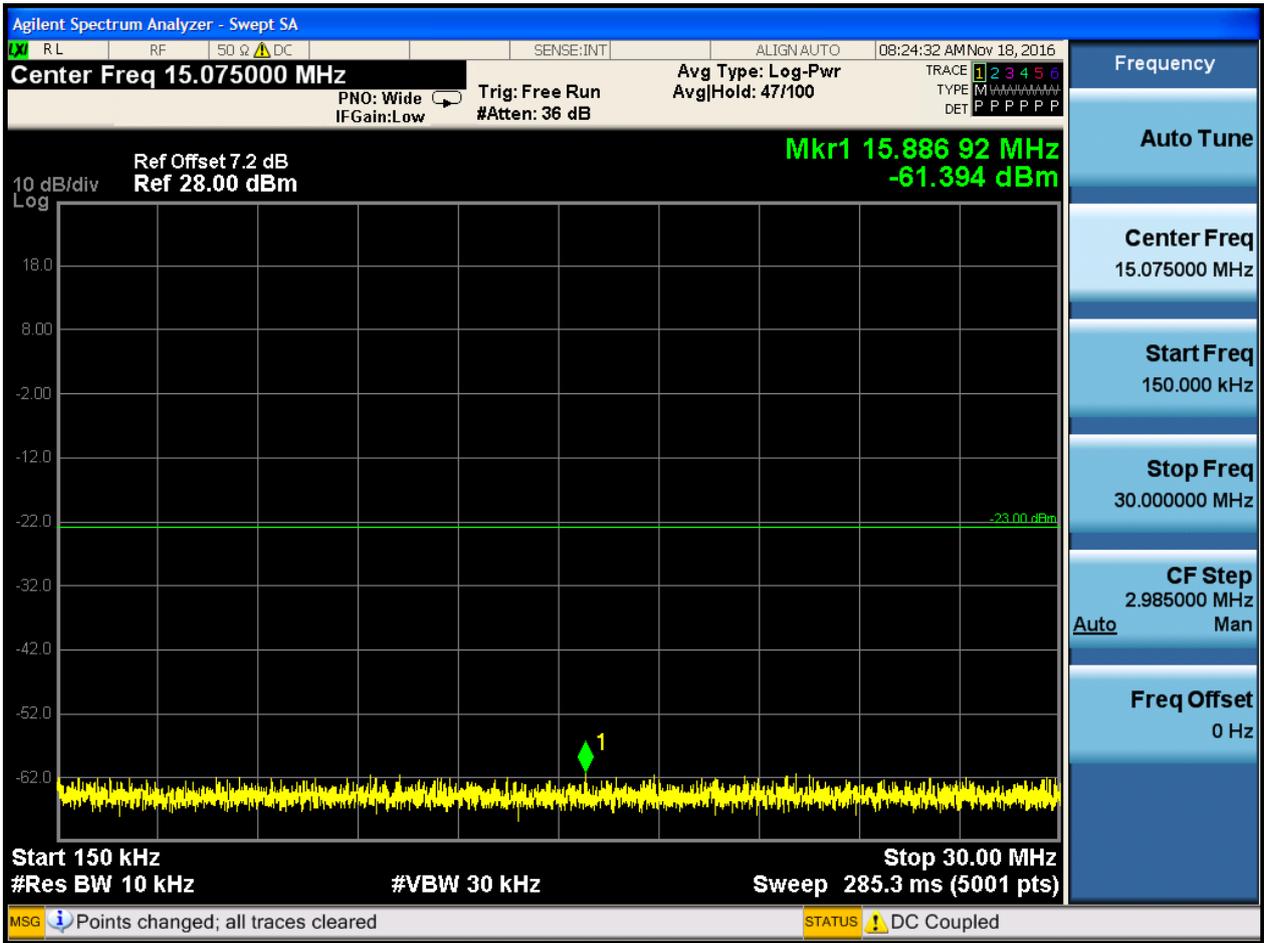


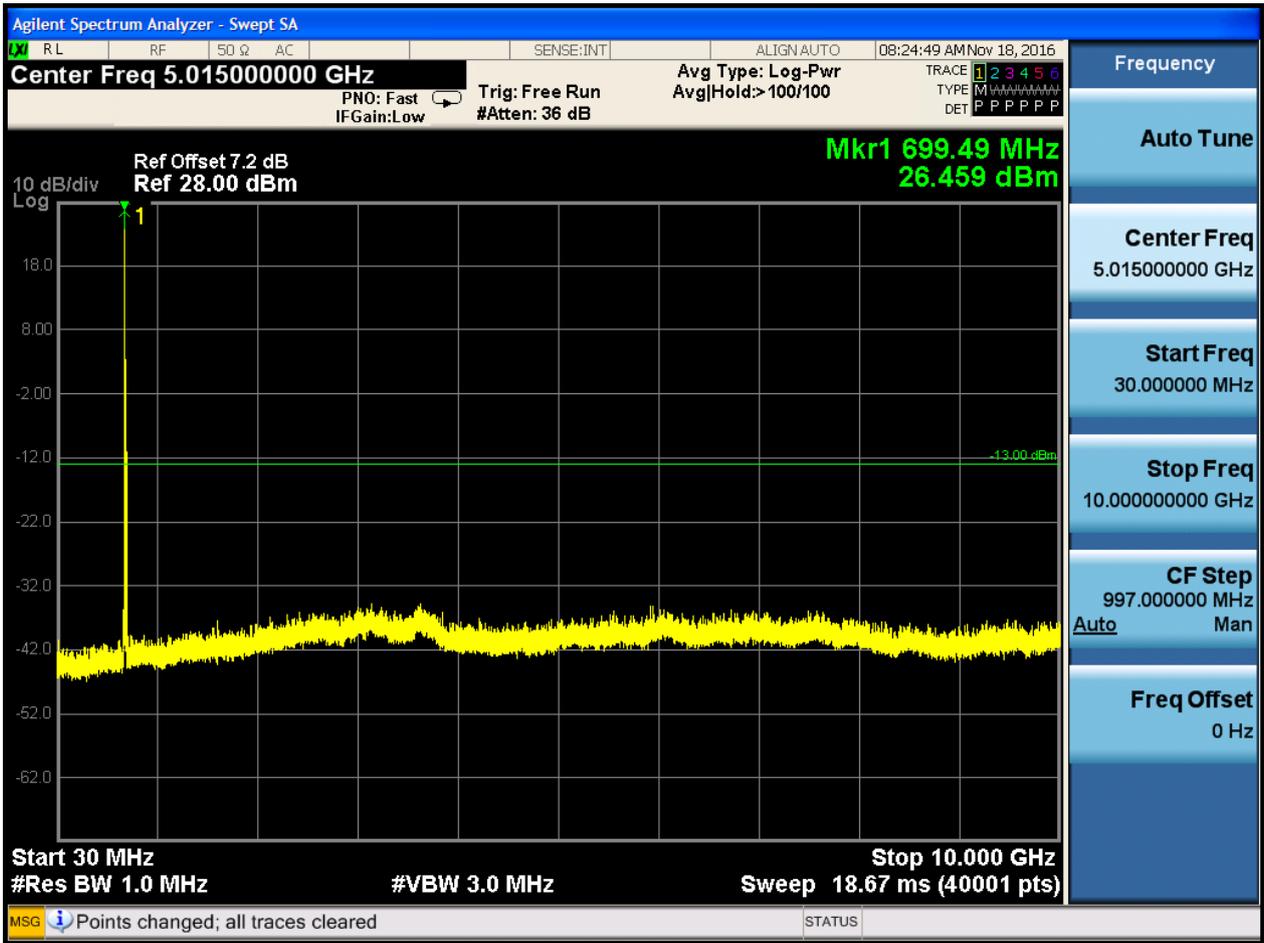
6.1.1.1.4 Test Bandwidth = 10

6.1.1.1.4.1 Test Channel = LCH

6.1.1.1.4.1.1 Test RB = RB1#0



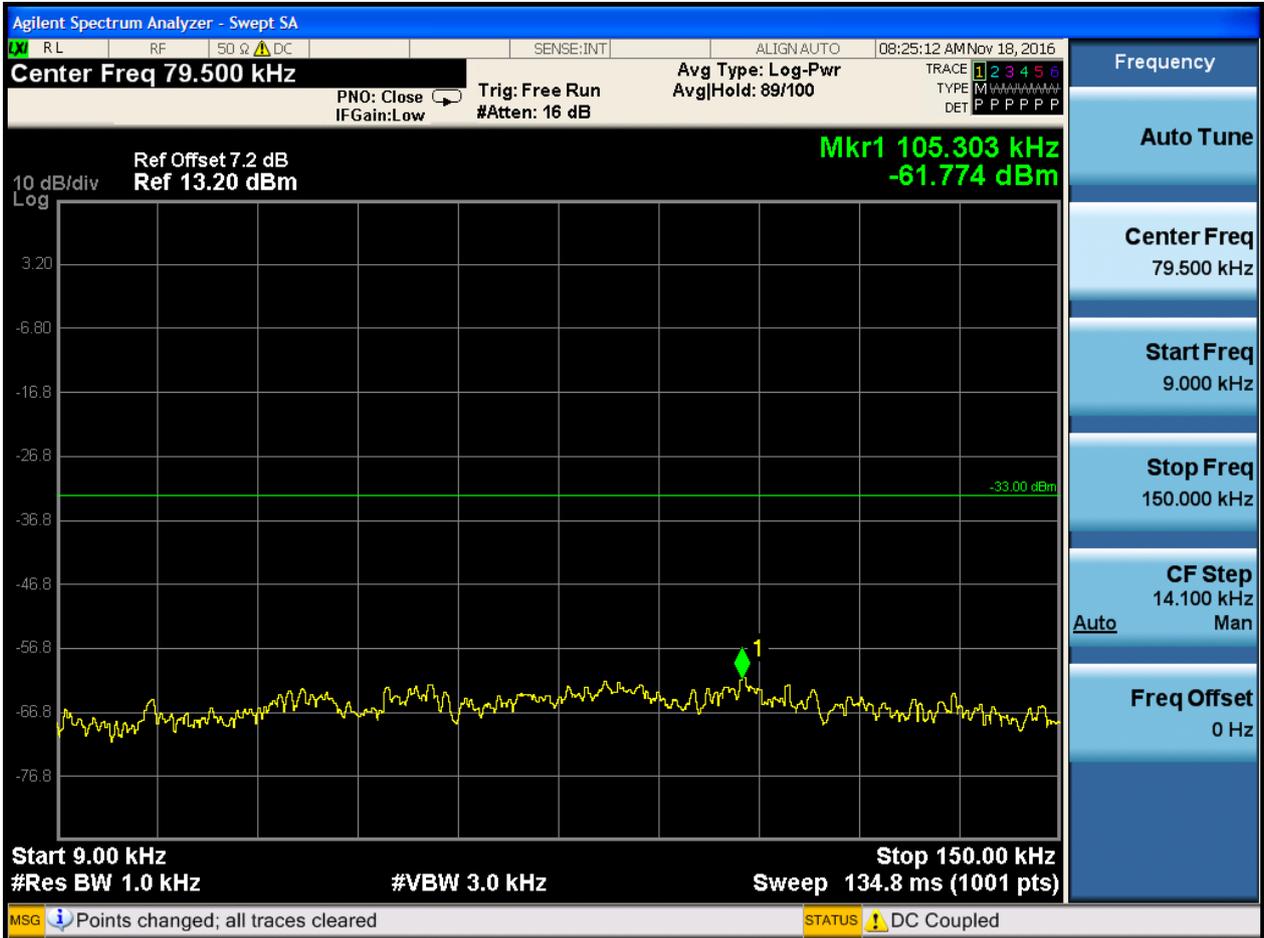


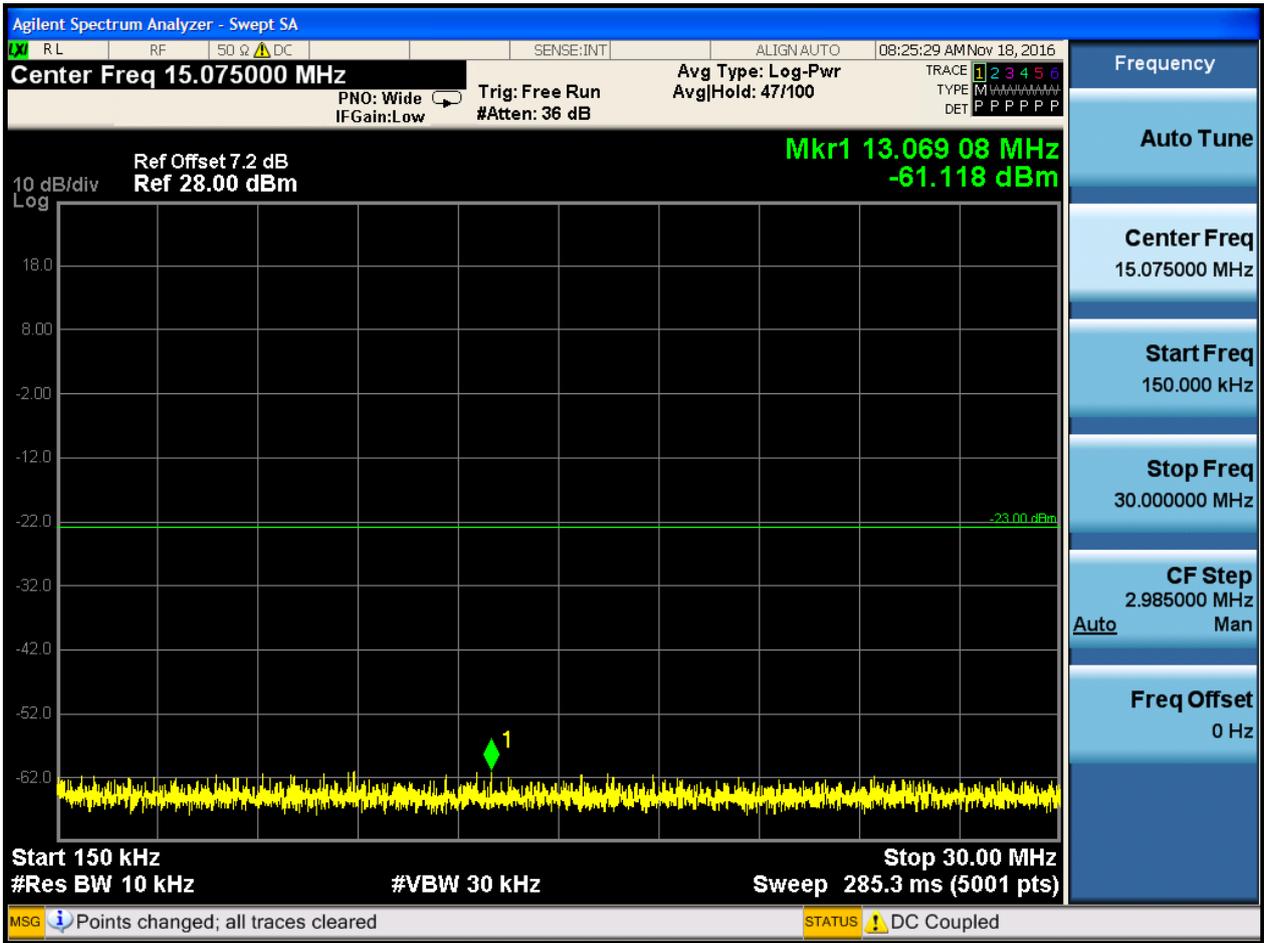


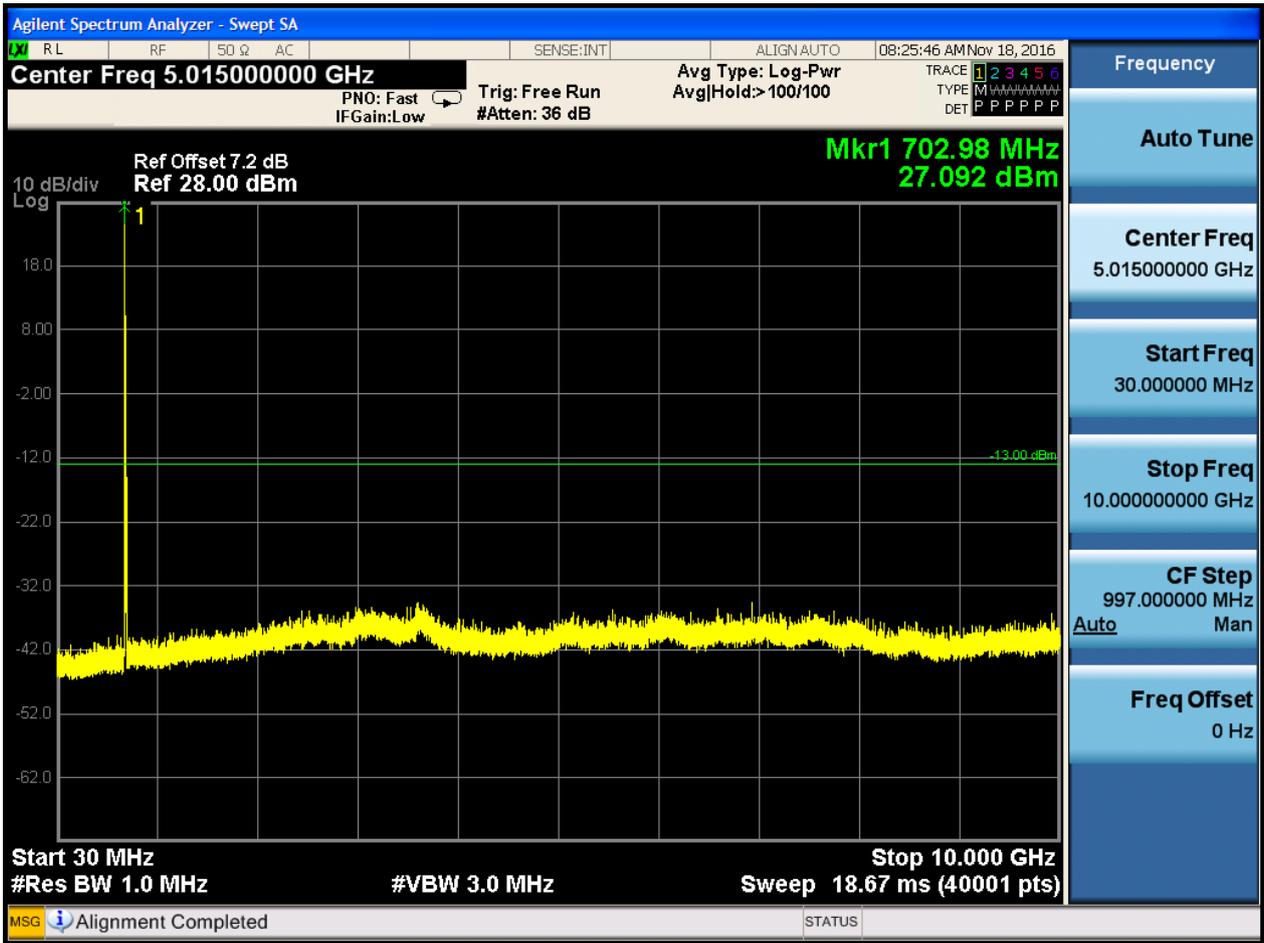


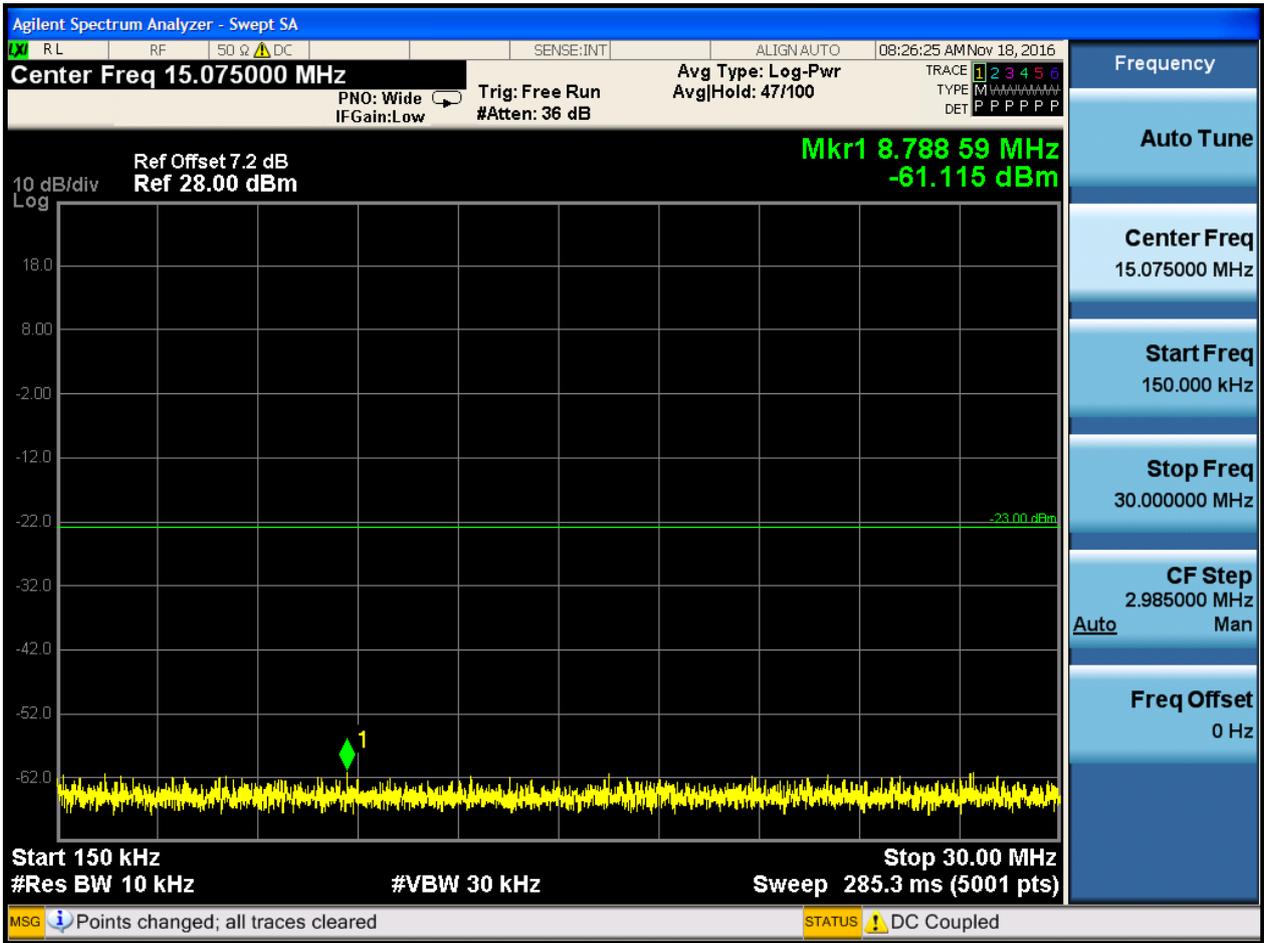
6.1.1.1.4.2 Test Channel = MCH

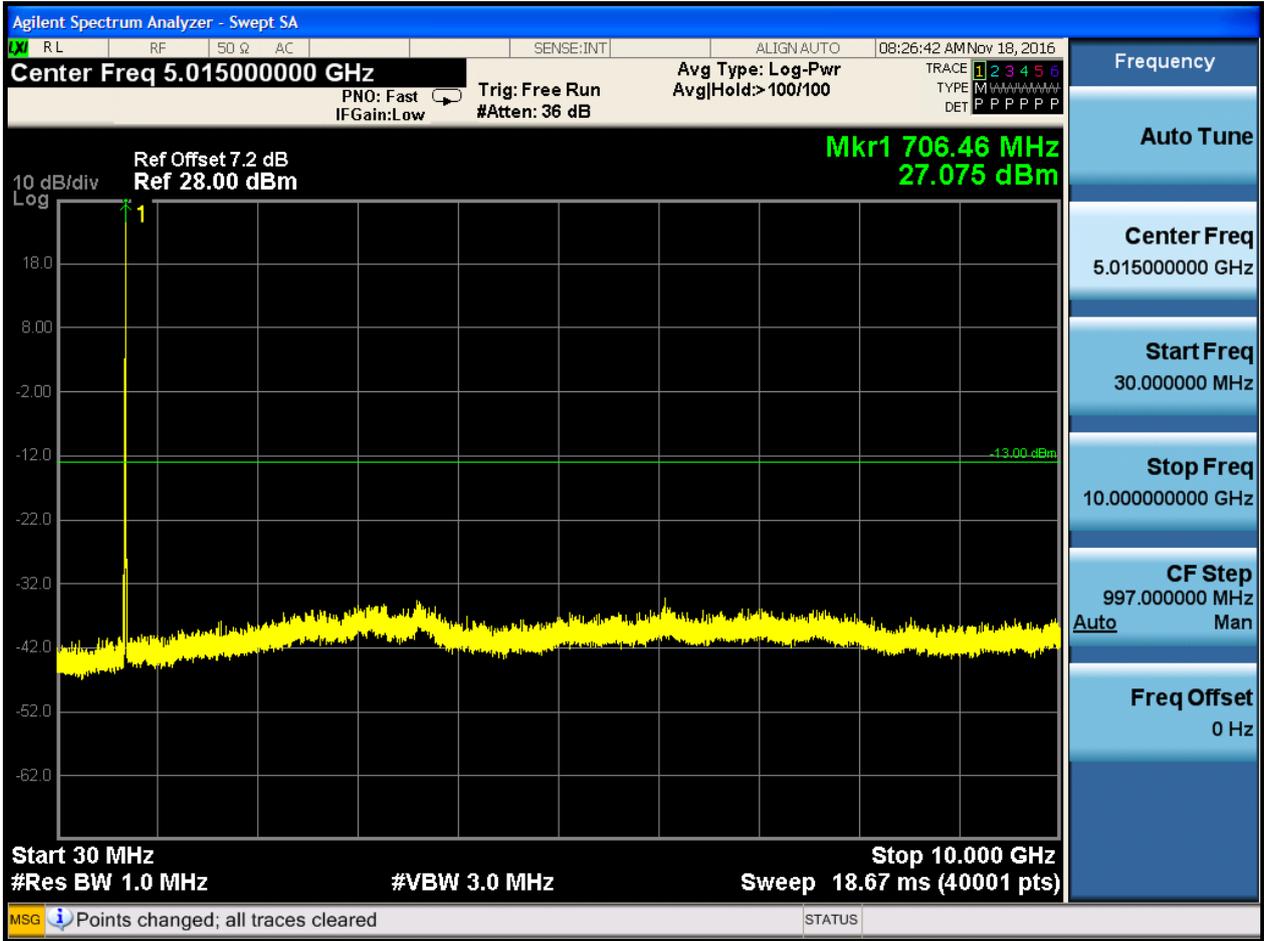
6.1.1.1.4.2.1 Test RB = RB1#0











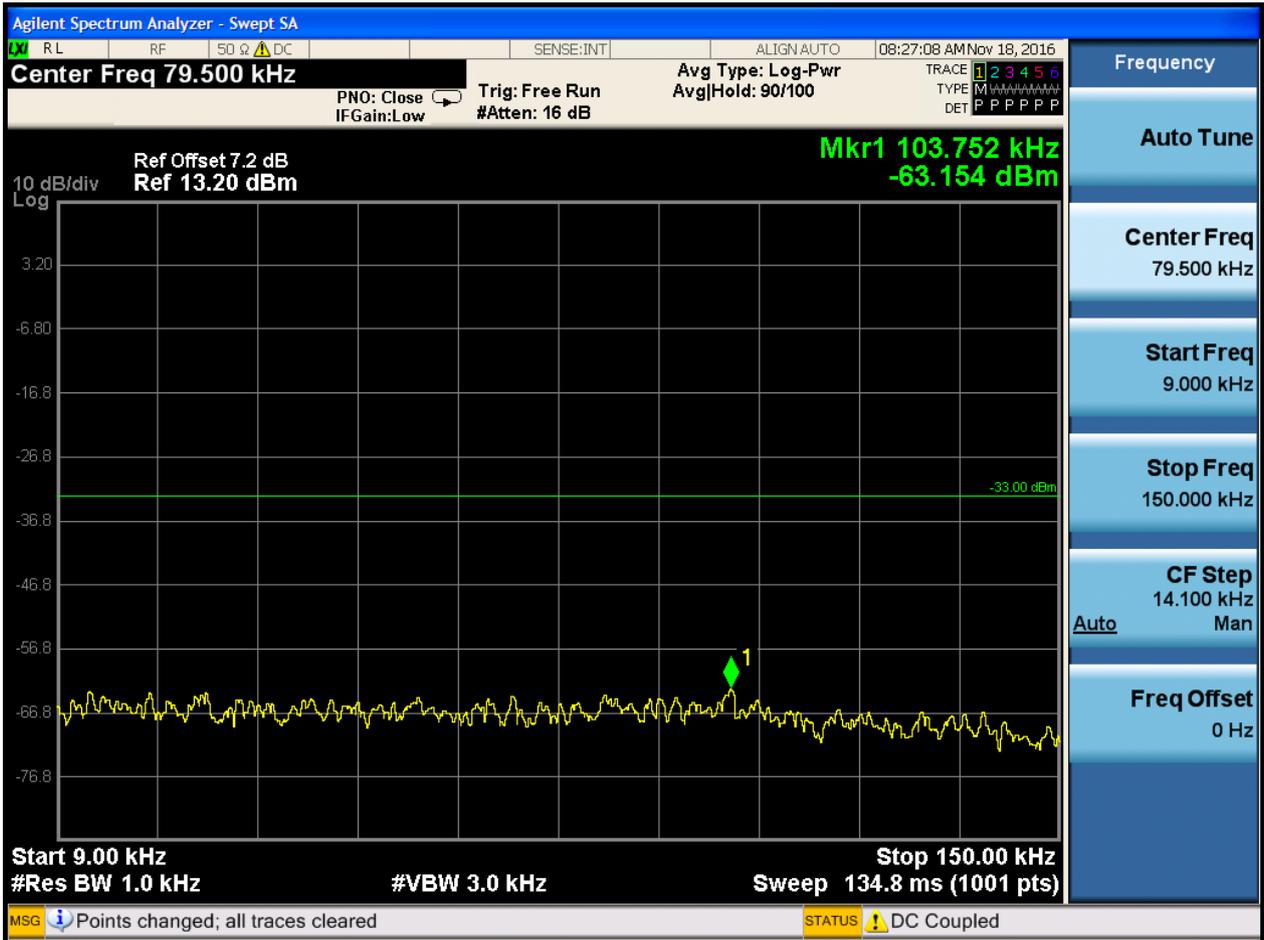


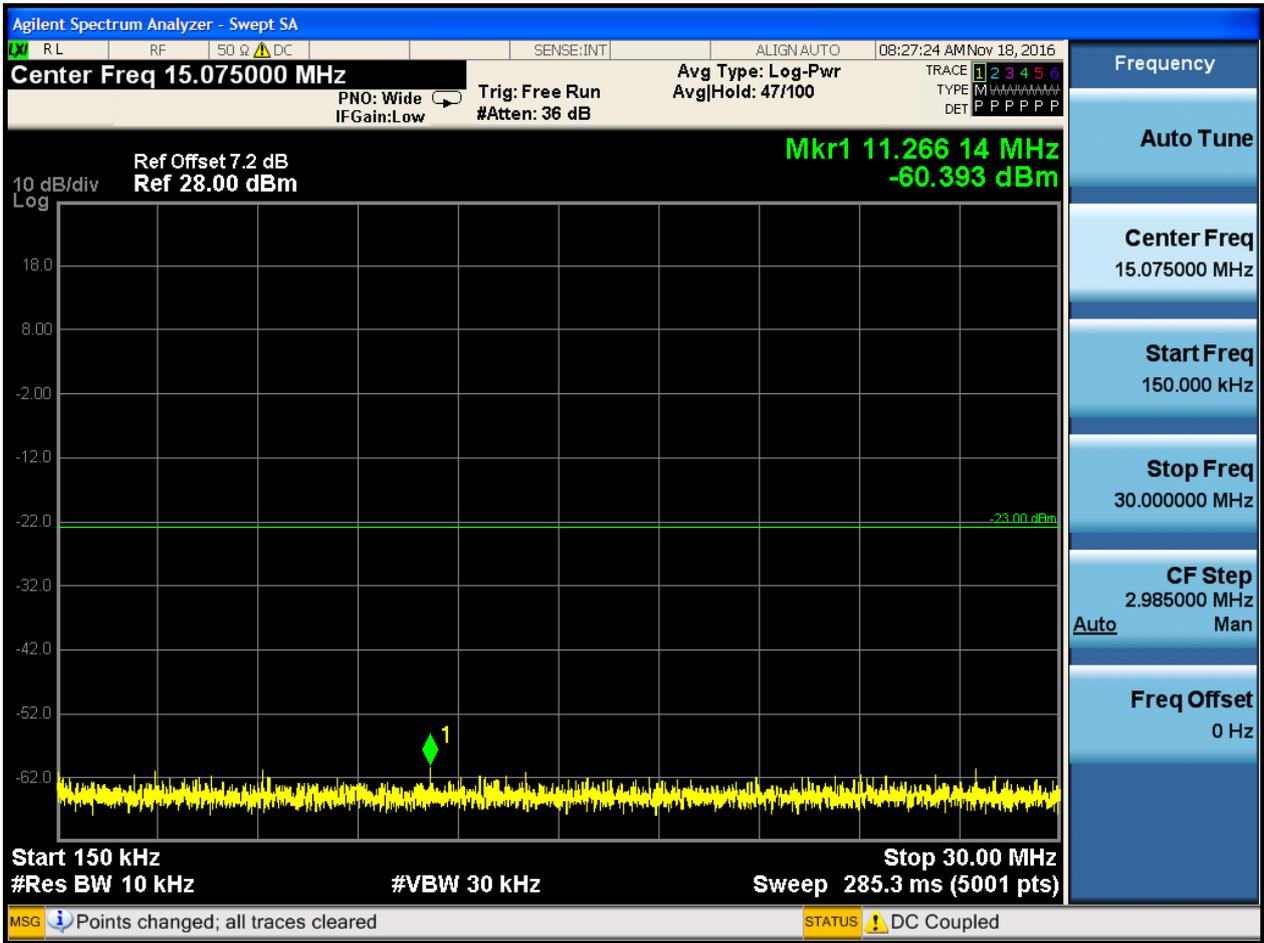
6.1.1.2 Test Mode = LTE/TM2

6.1.1.2.1 Test Bandwidth = 1.4

6.1.1.2.1.1 Test Channel = LCH

6.1.1.2.1.1.1 Test RB = RB1#0

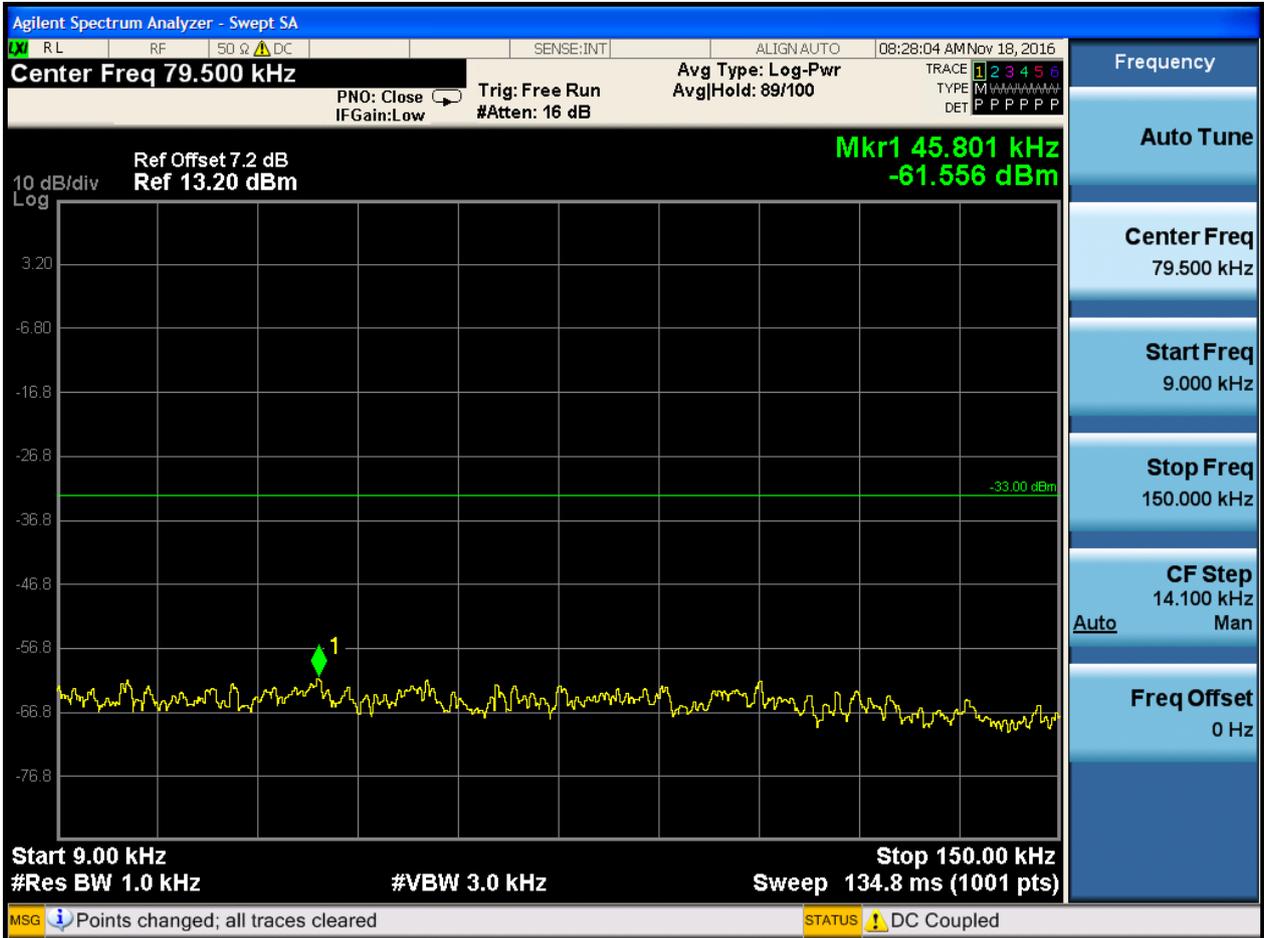


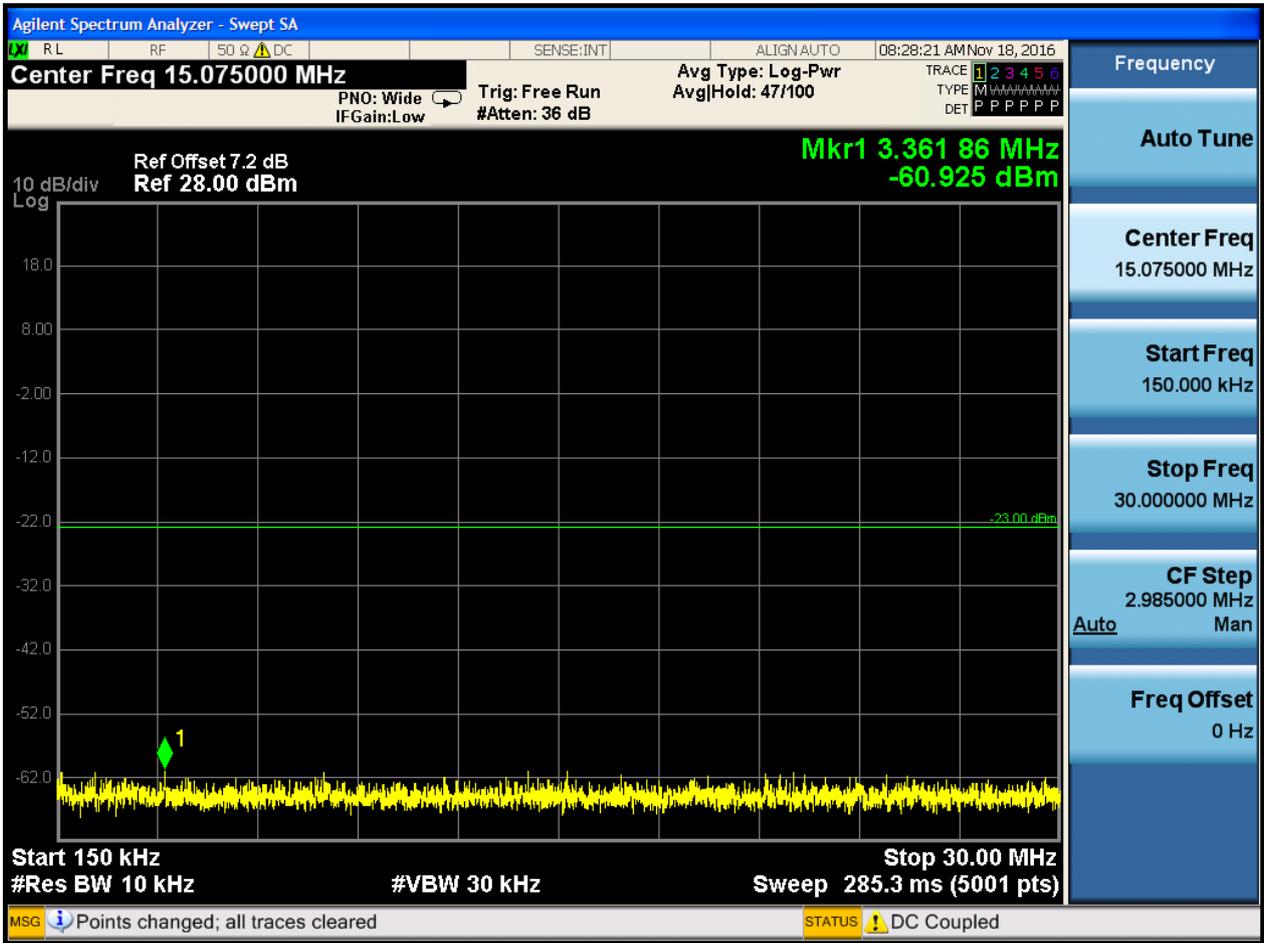


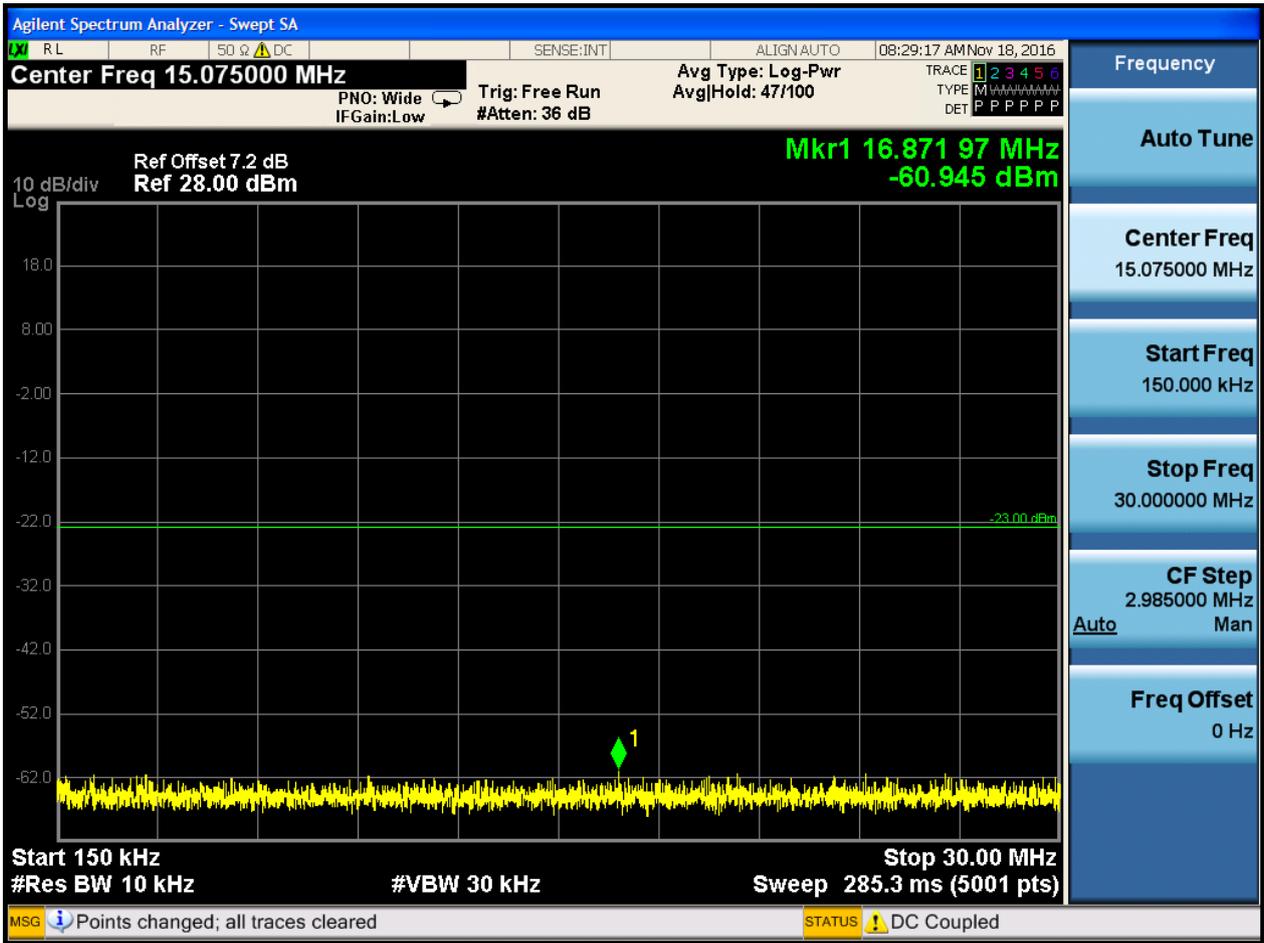


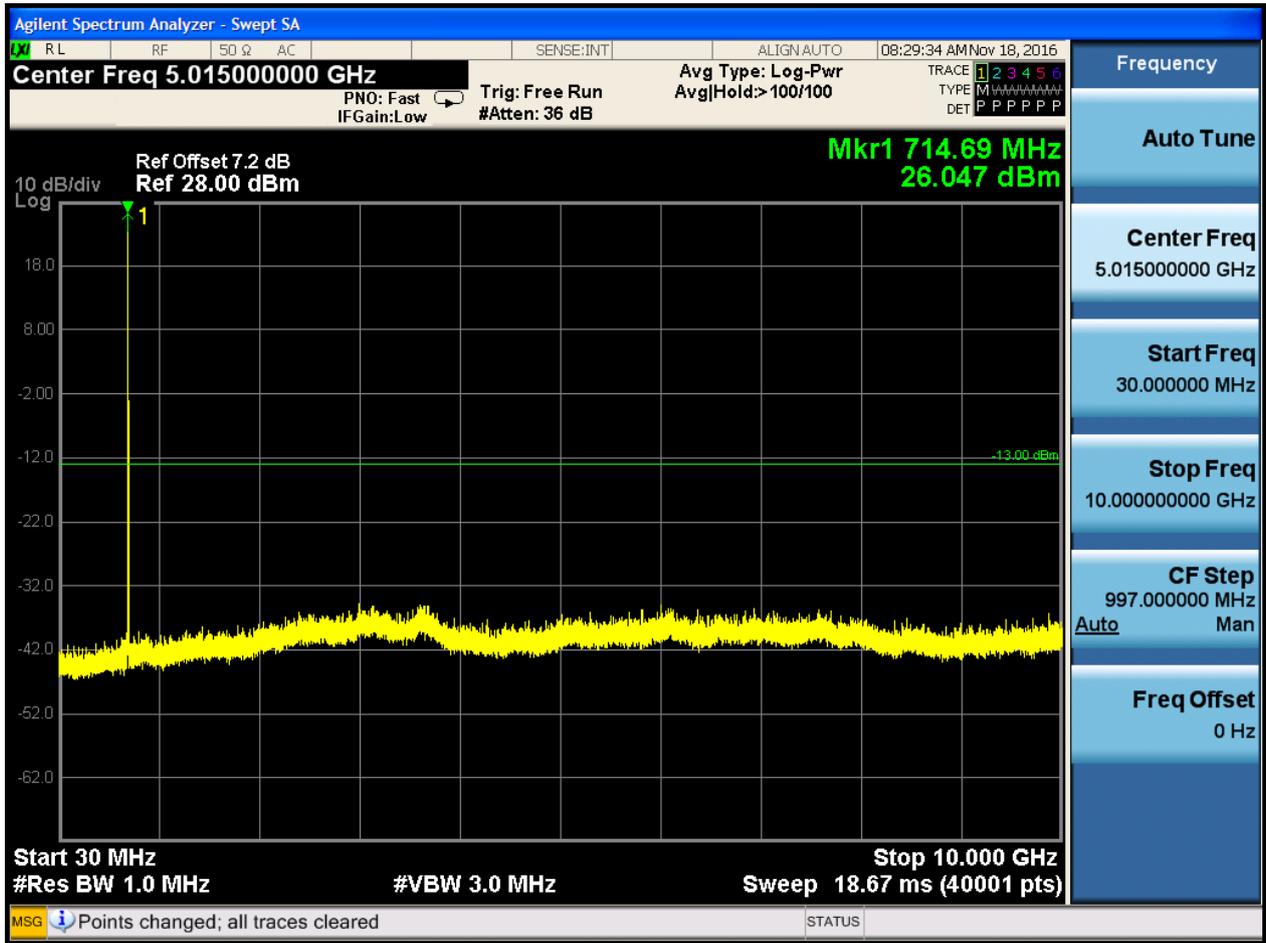
6.1.1.2.1.2 Test Channel = MCH

6.1.1.2.1.2.1 Test RB = RB1#0







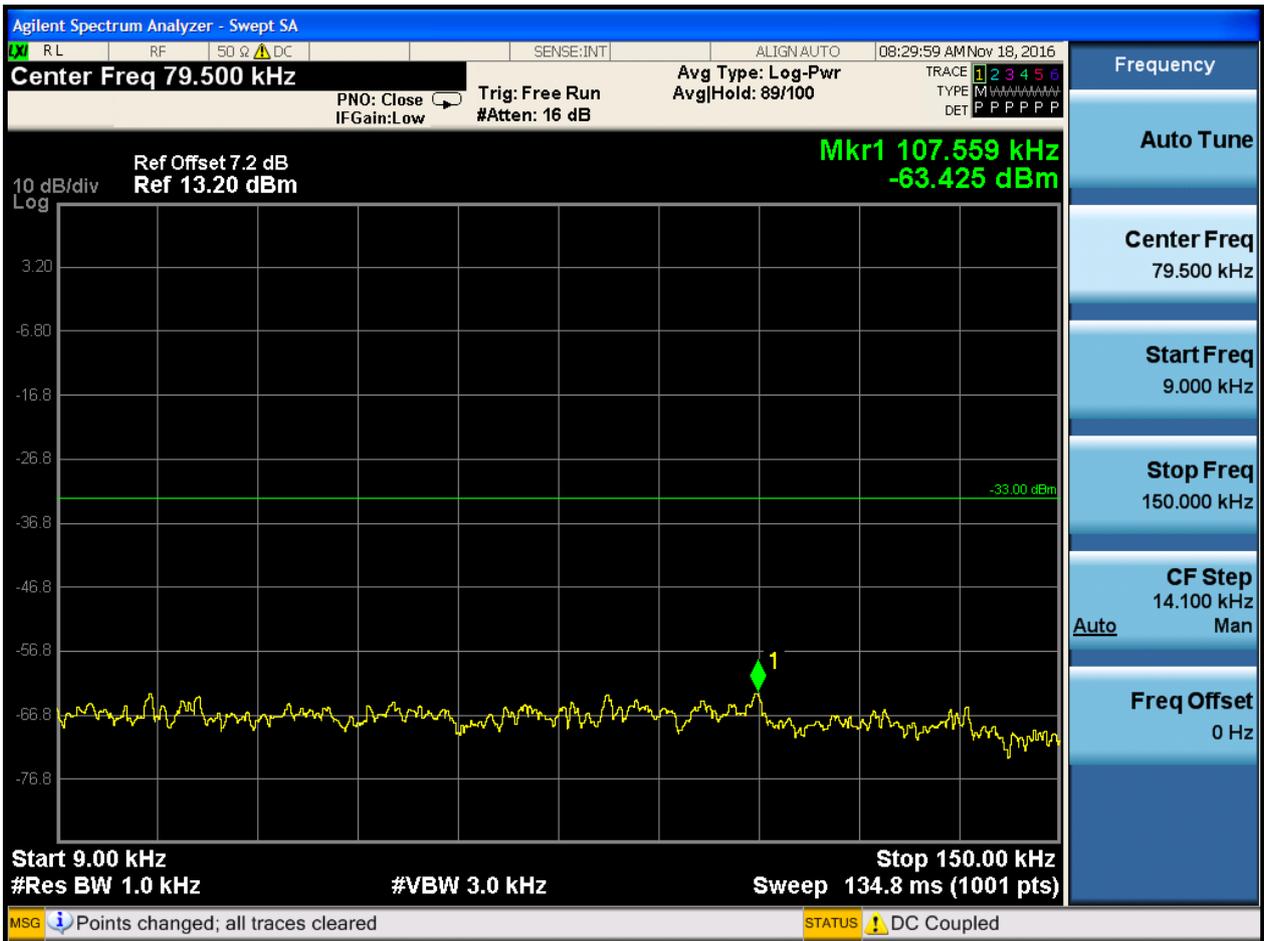


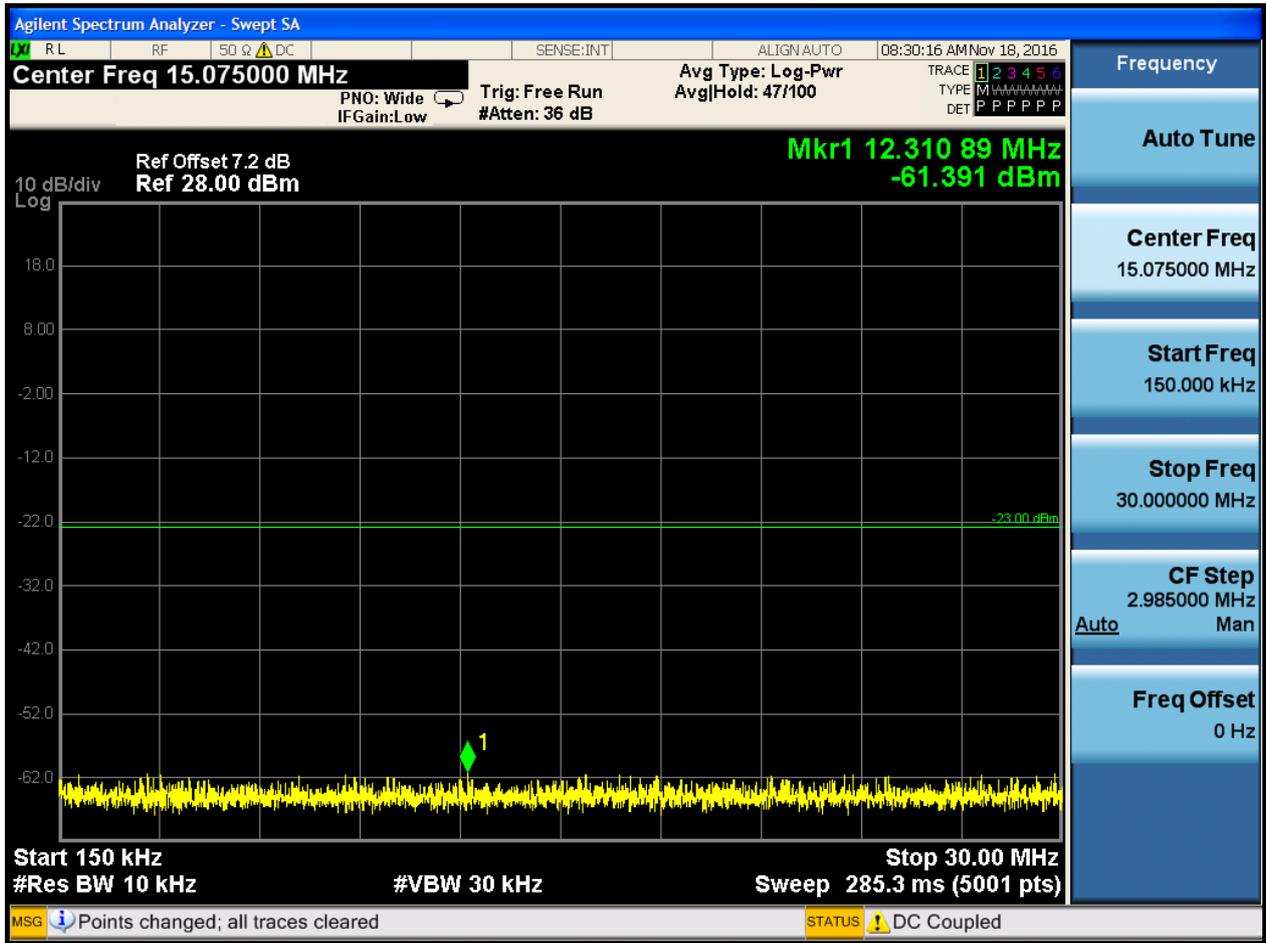


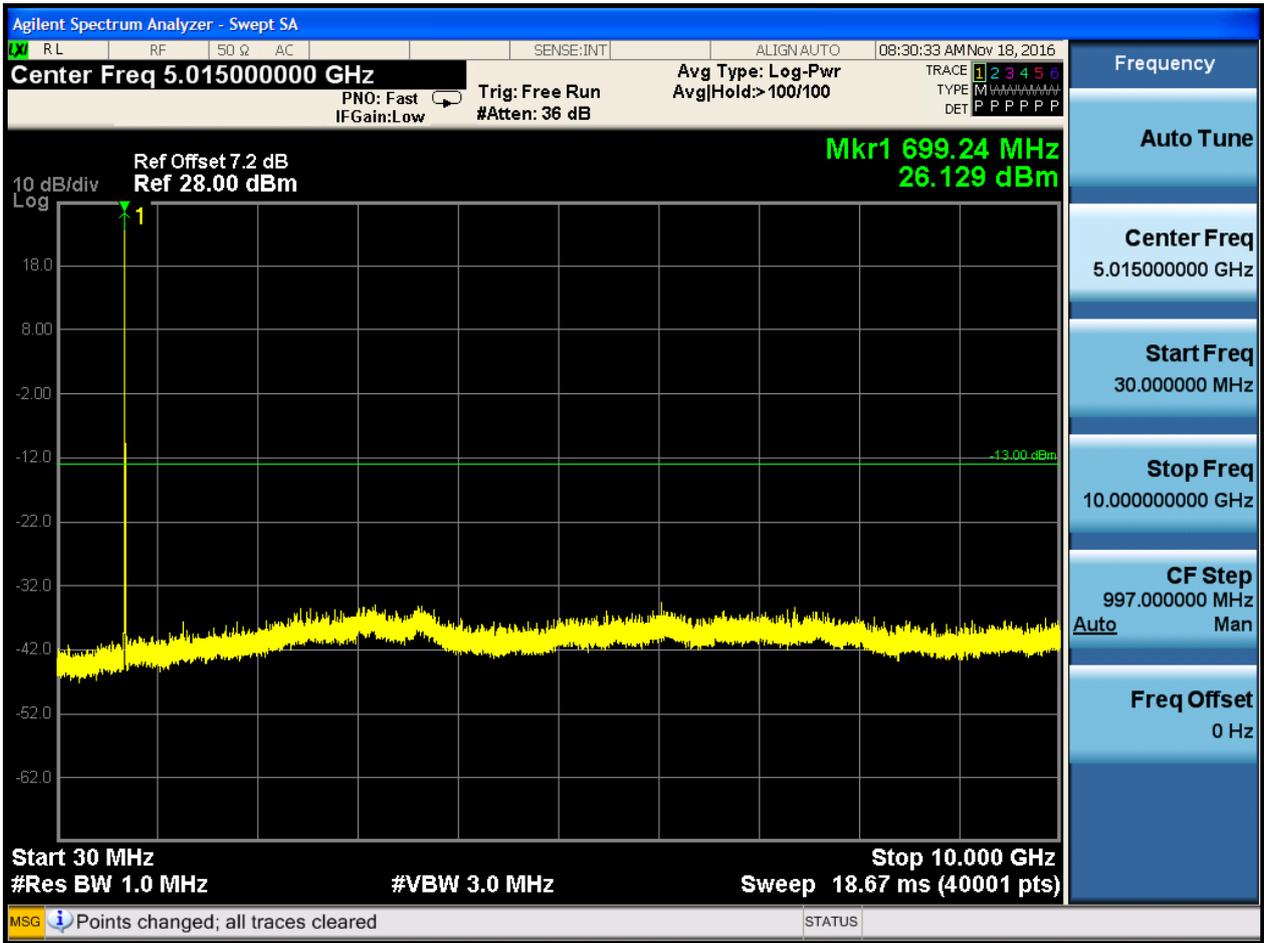
6.1.1.2.2 Test Bandwidth = 3

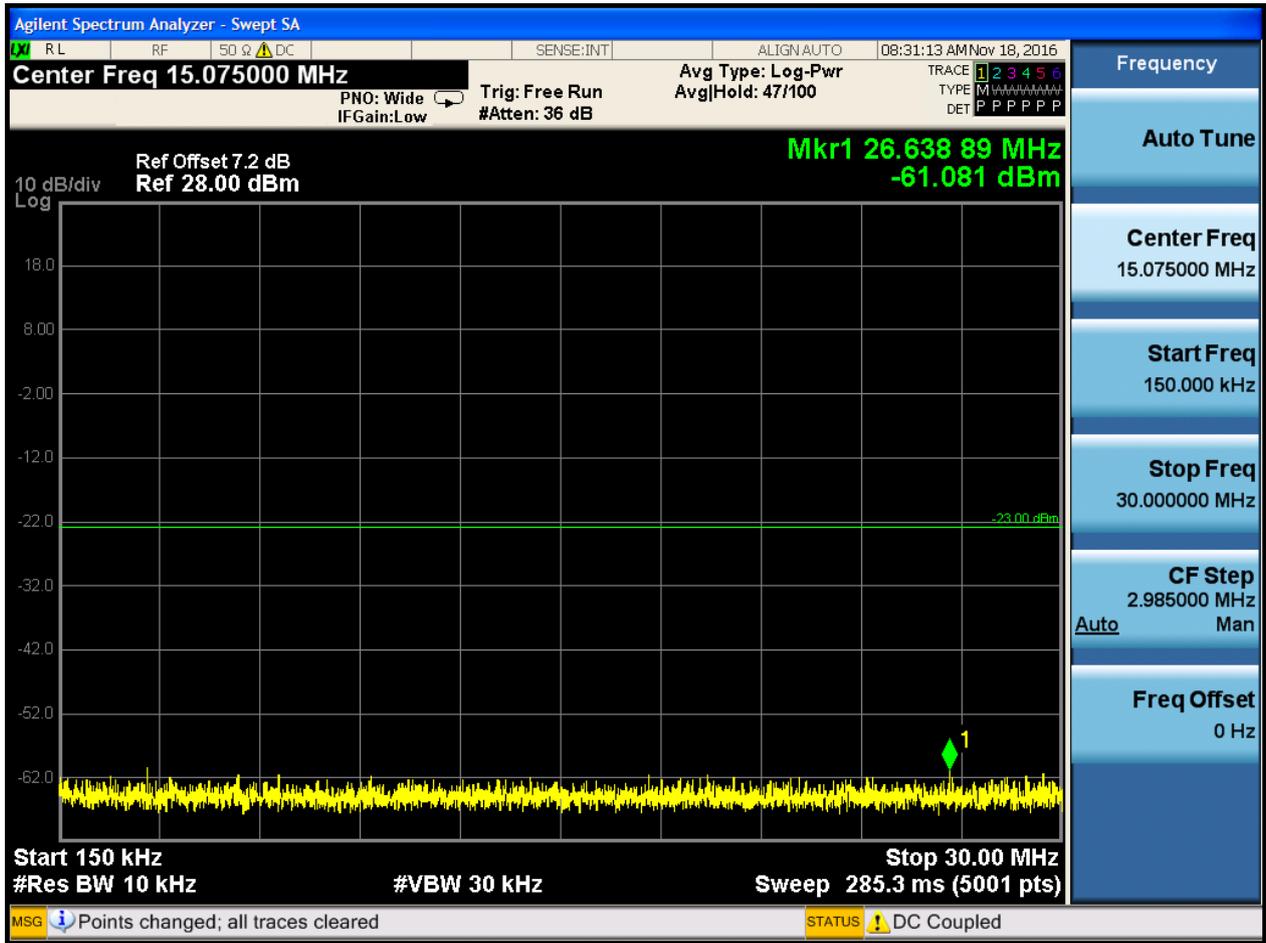
6.1.1.2.2.1 Test Channel = LCH

6.1.1.2.2.1.1 Test RB = RB1#0





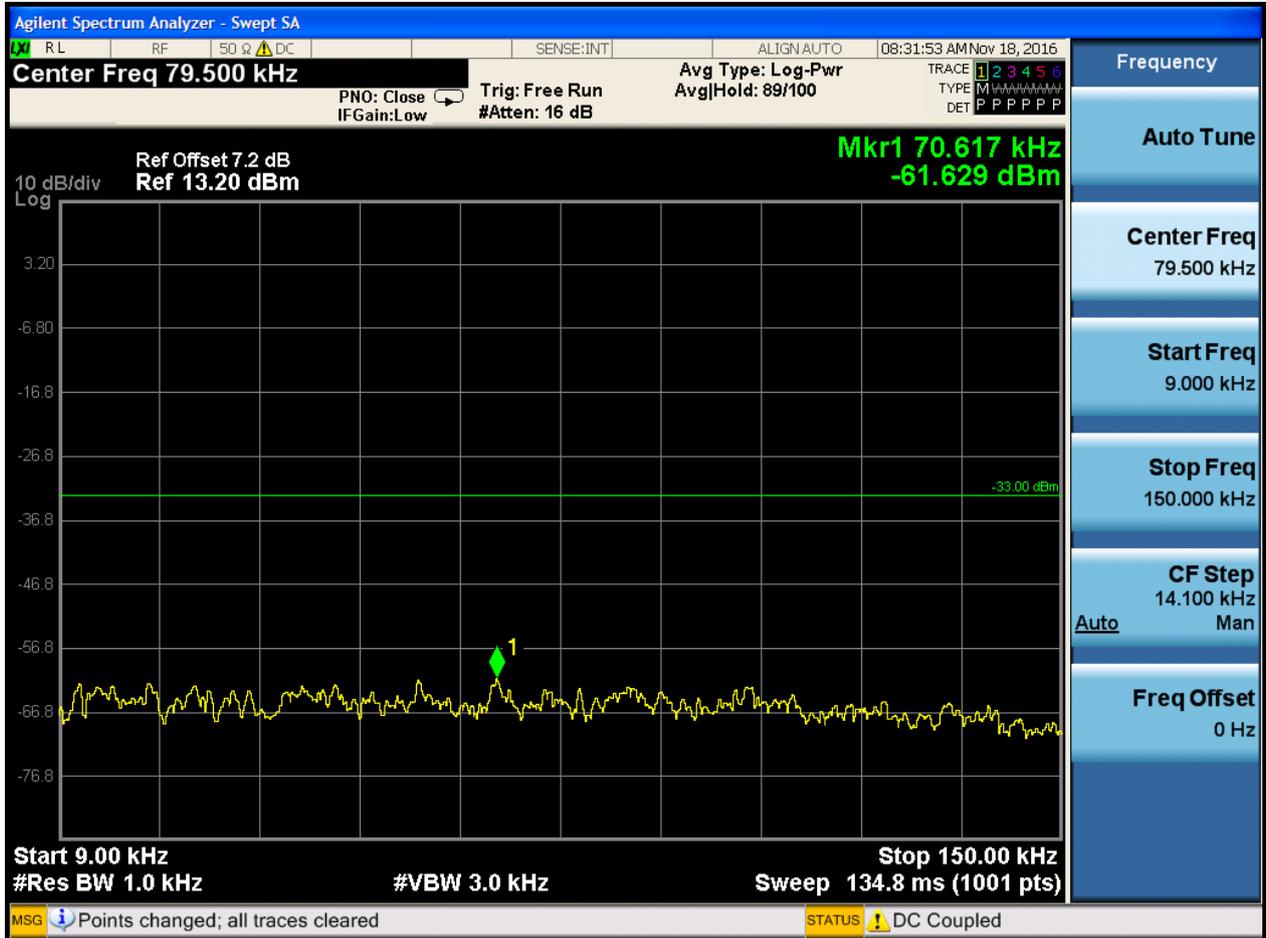


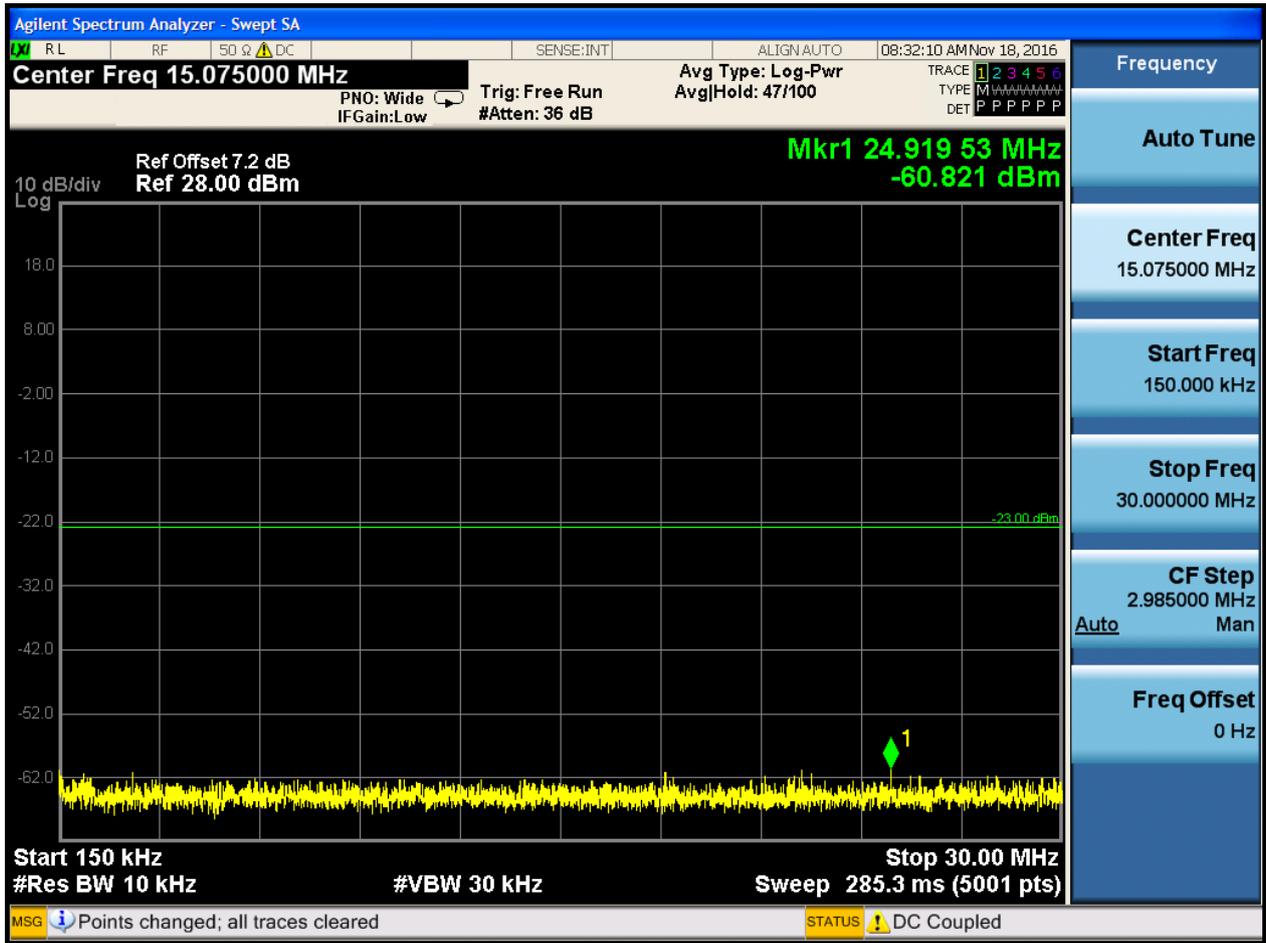


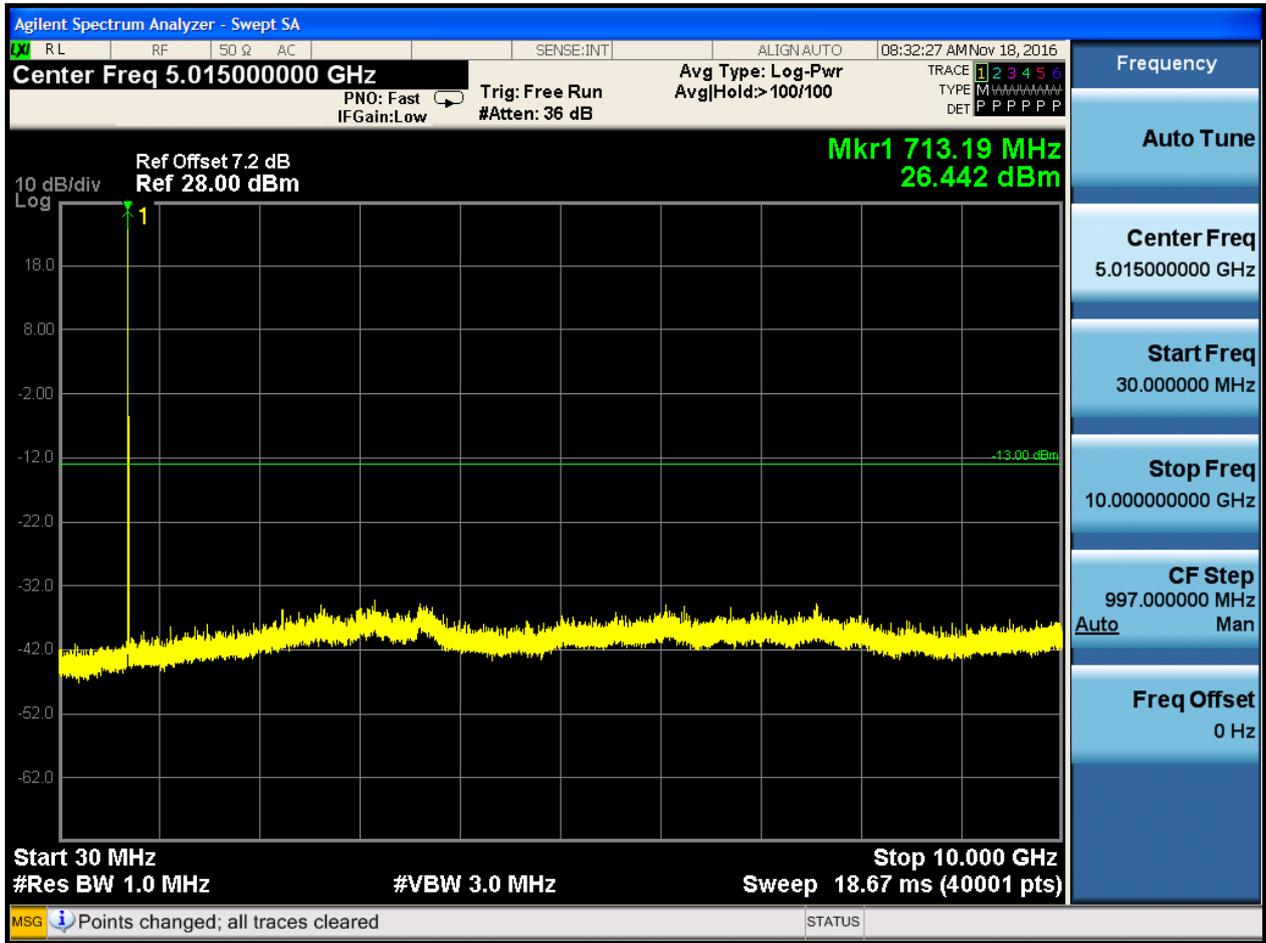


6.1.1.2.2.3 Test Channel = HCH

6.1.1.2.2.3.1 Test RB = RB1#0





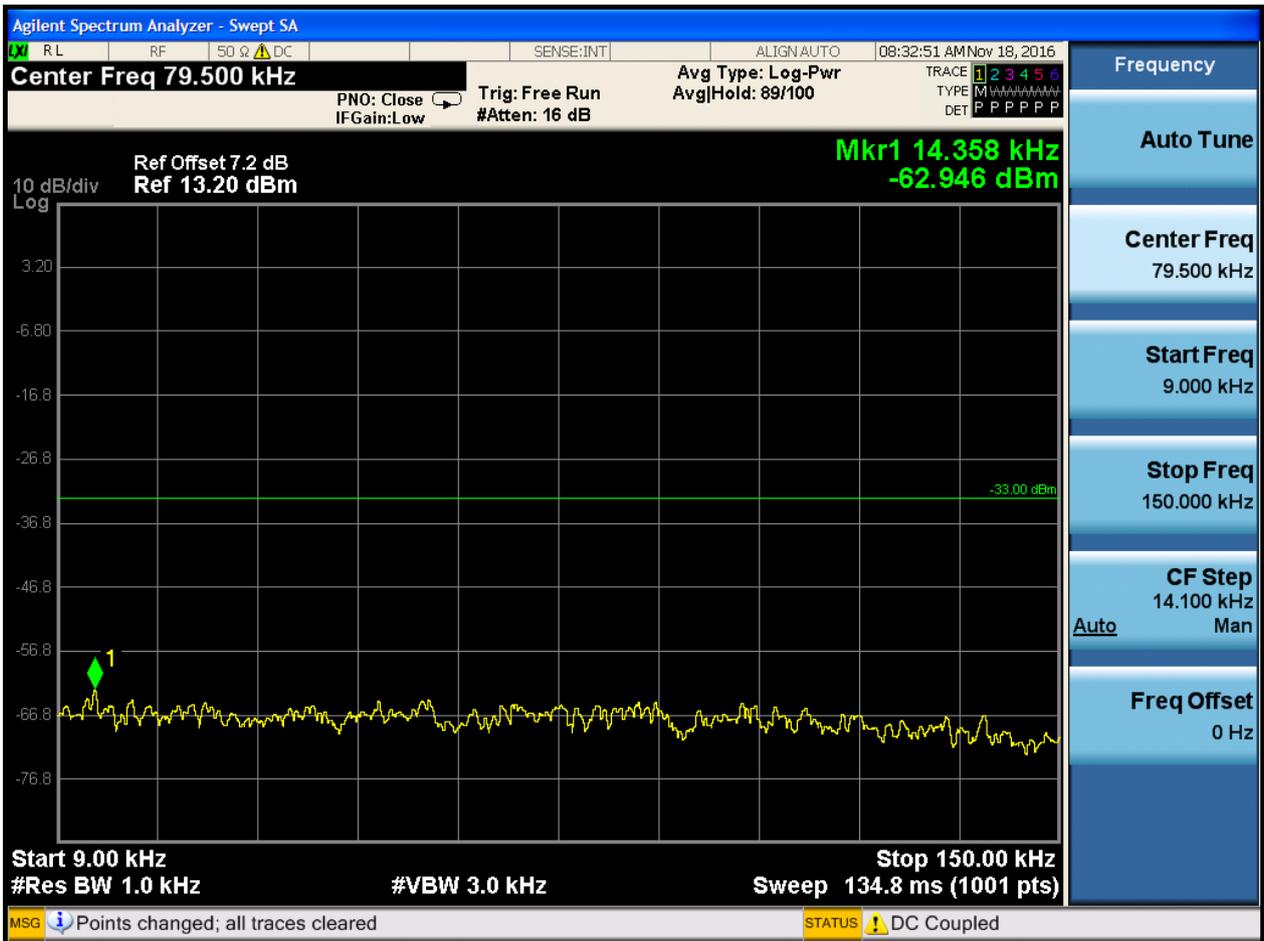


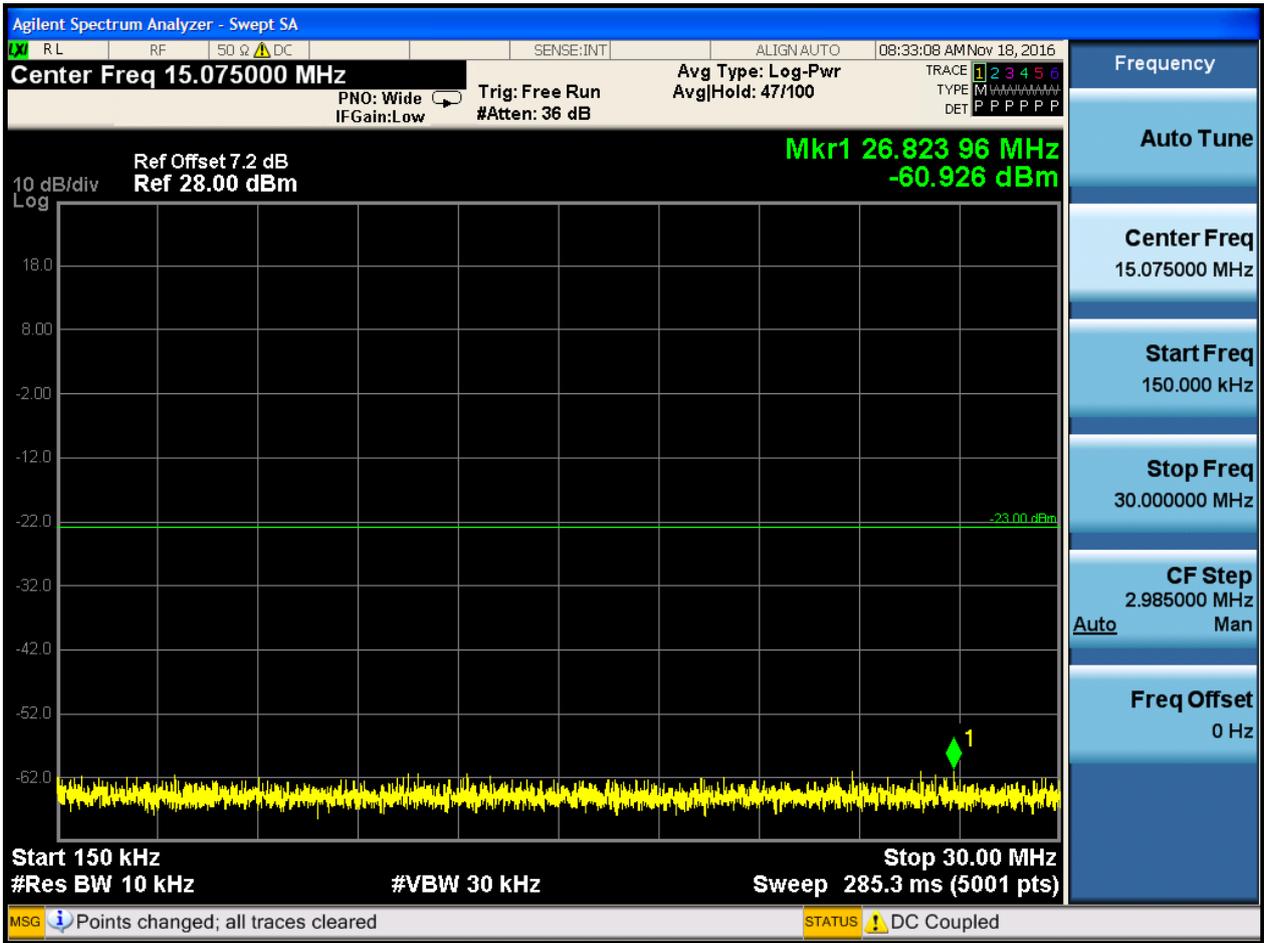


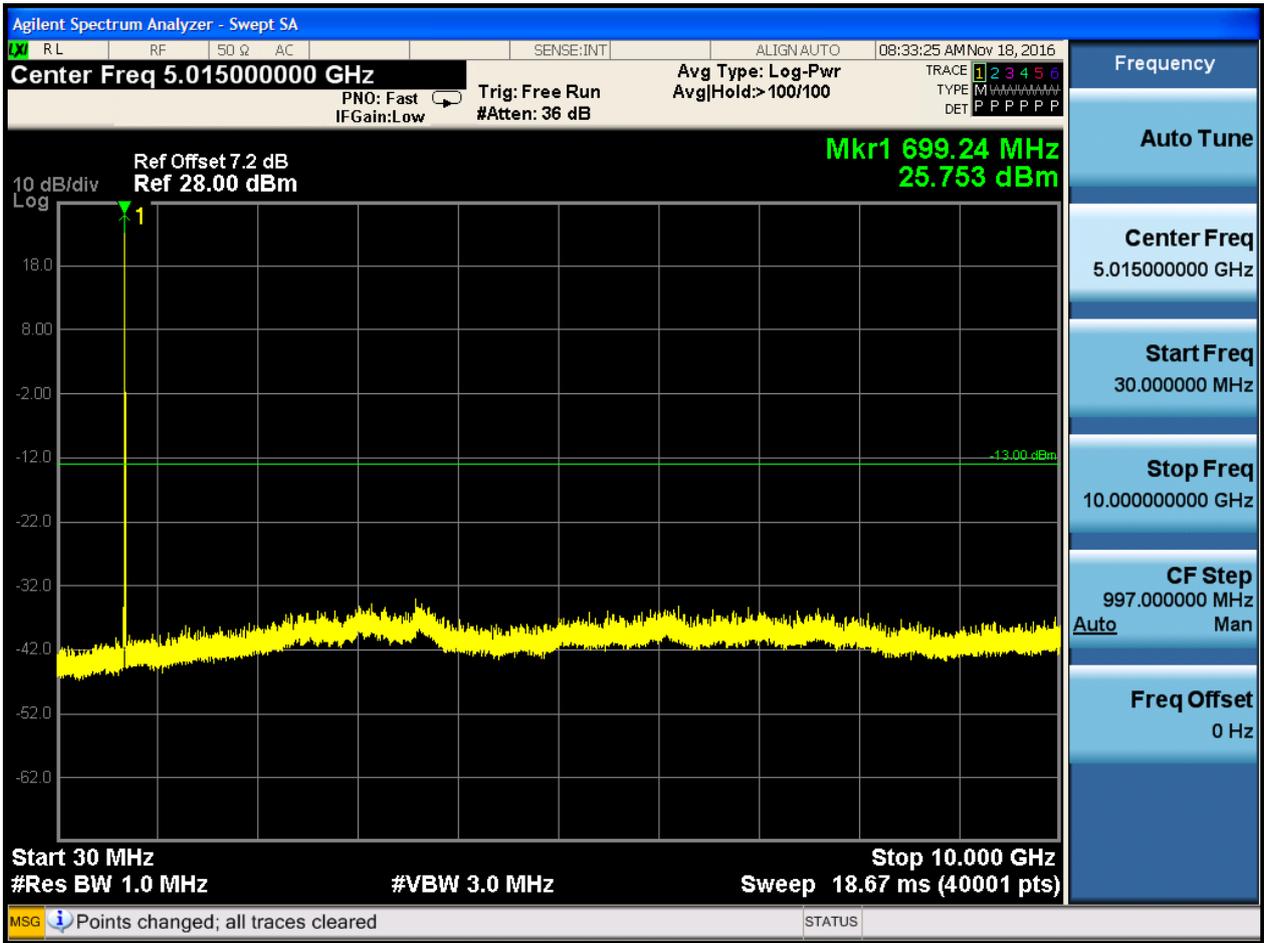
6.1.1.2.3 Test Bandwidth = 5

6.1.1.2.3.1 Test Channel = LCH

6.1.1.2.3.1.1 Test RB = RB1#0



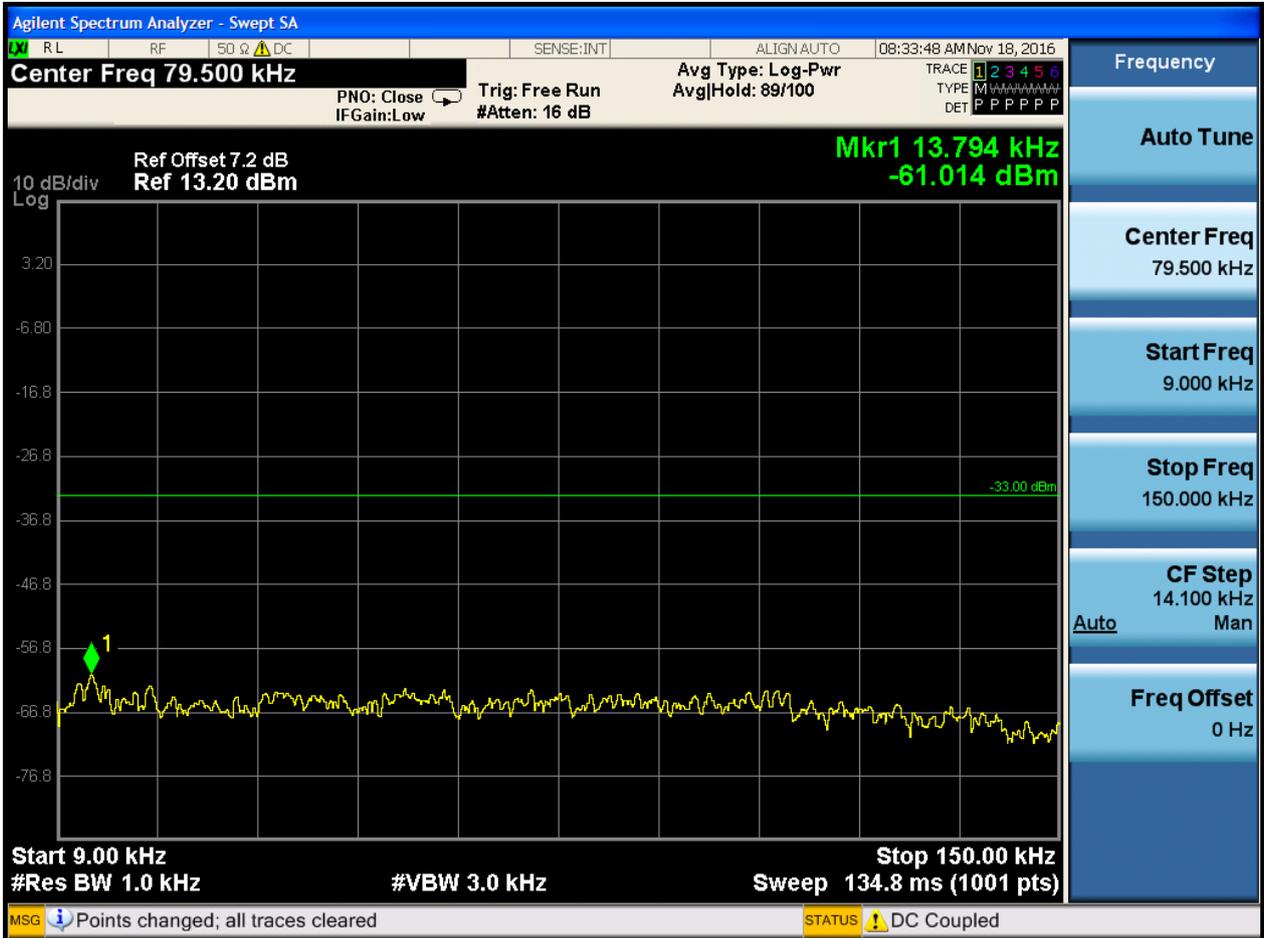


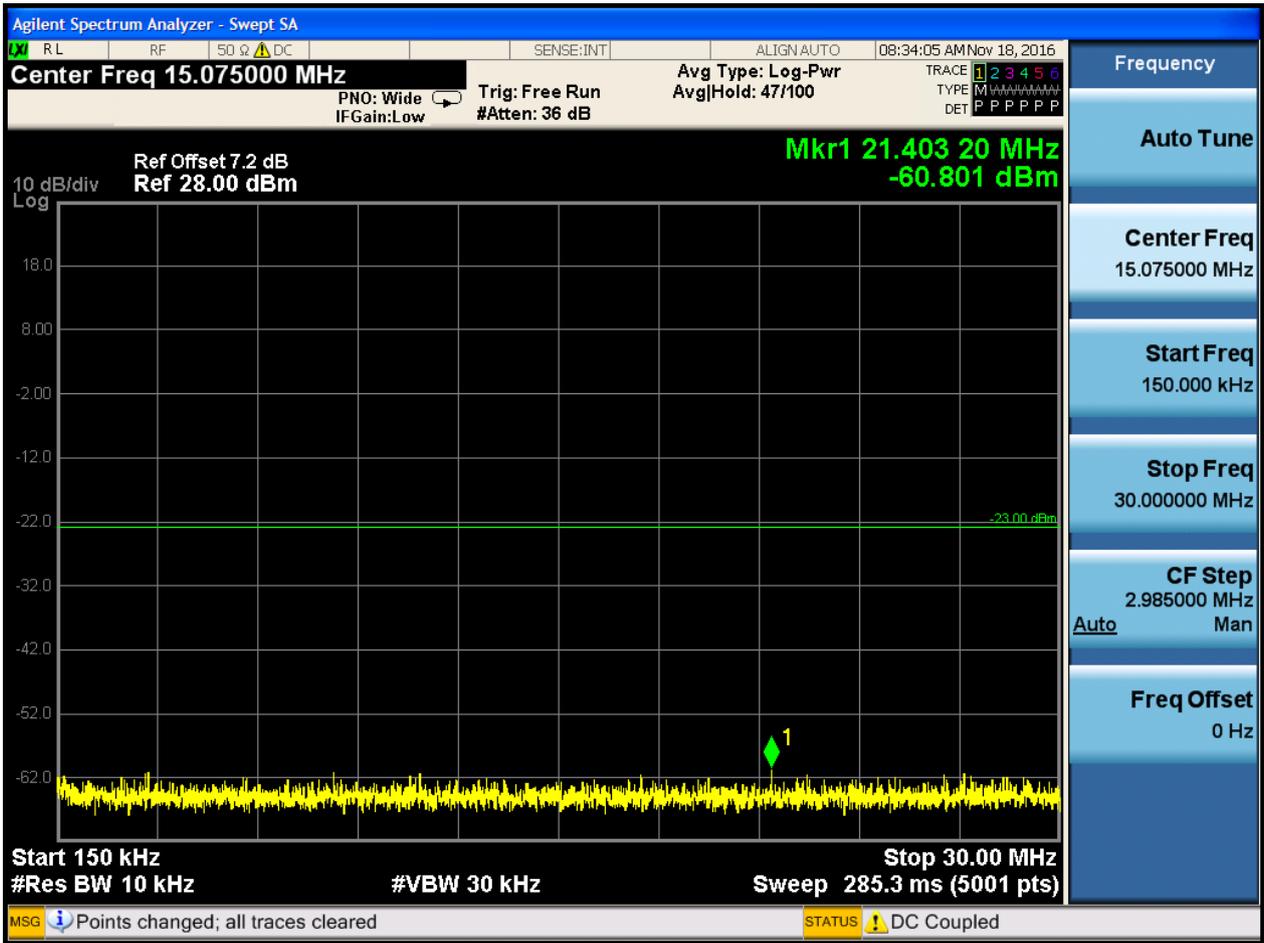


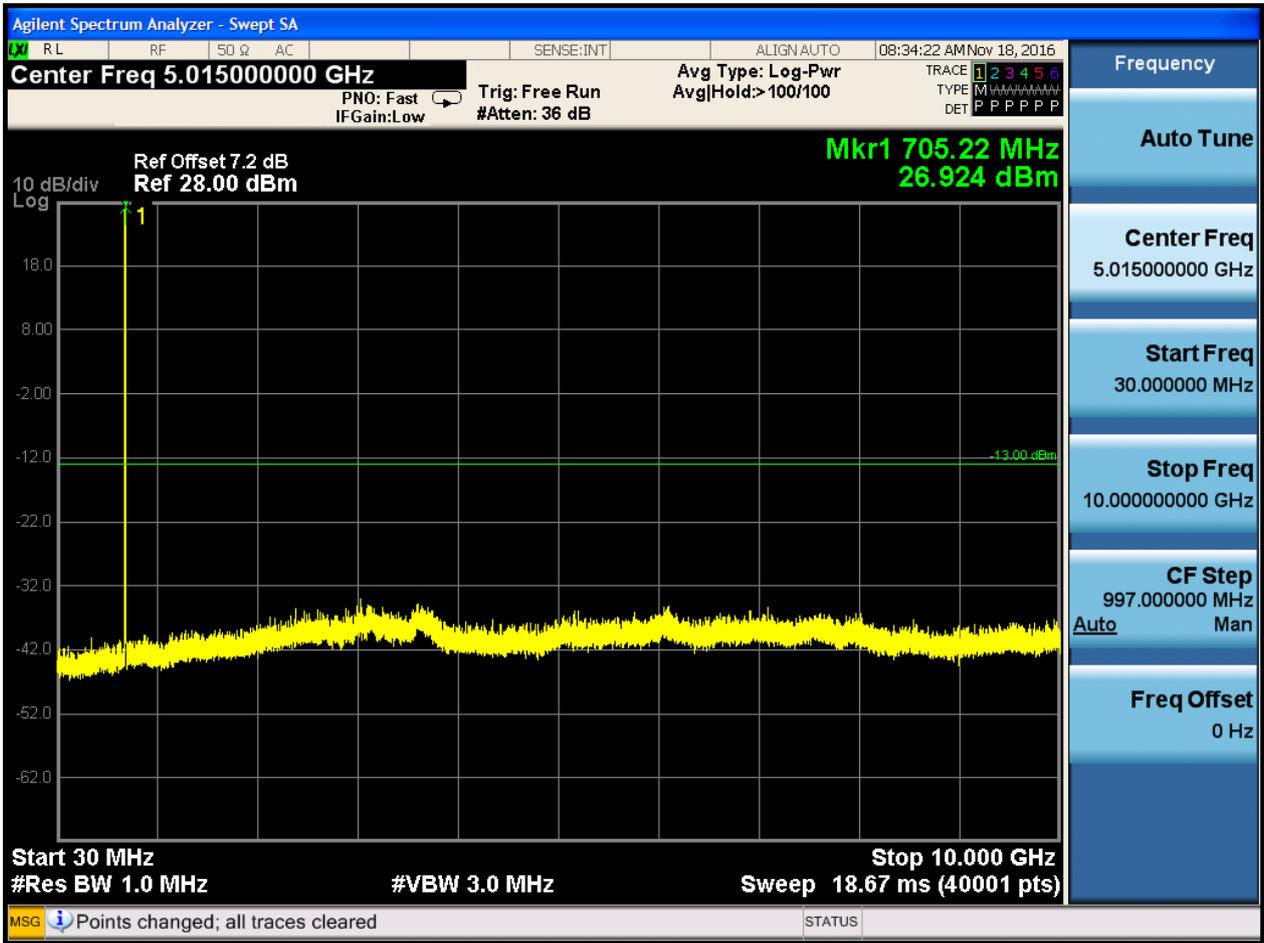


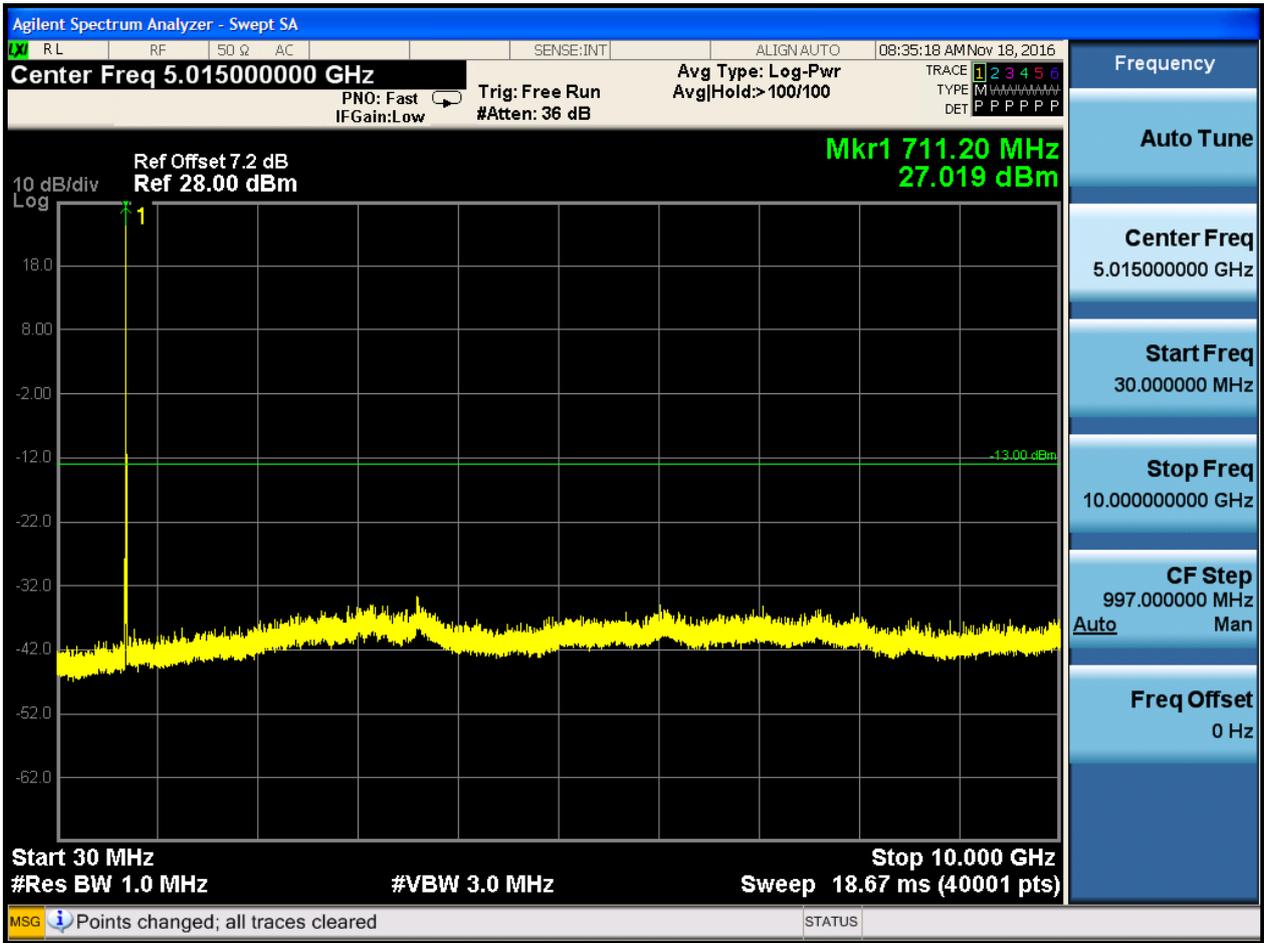
6.1.1.2.3.2 Test Channel = MCH

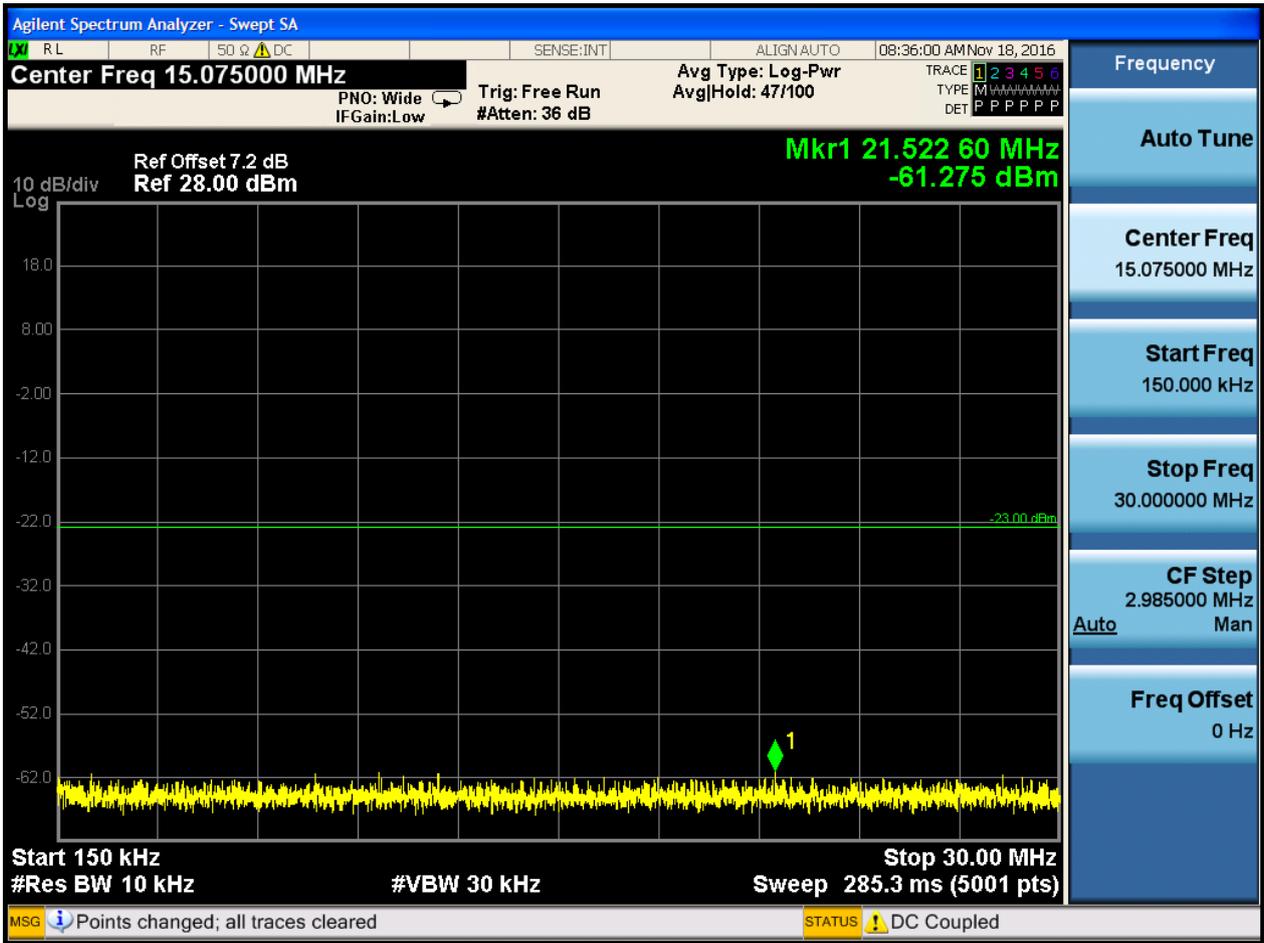
6.1.1.2.3.2.1 Test RB = RB1#0

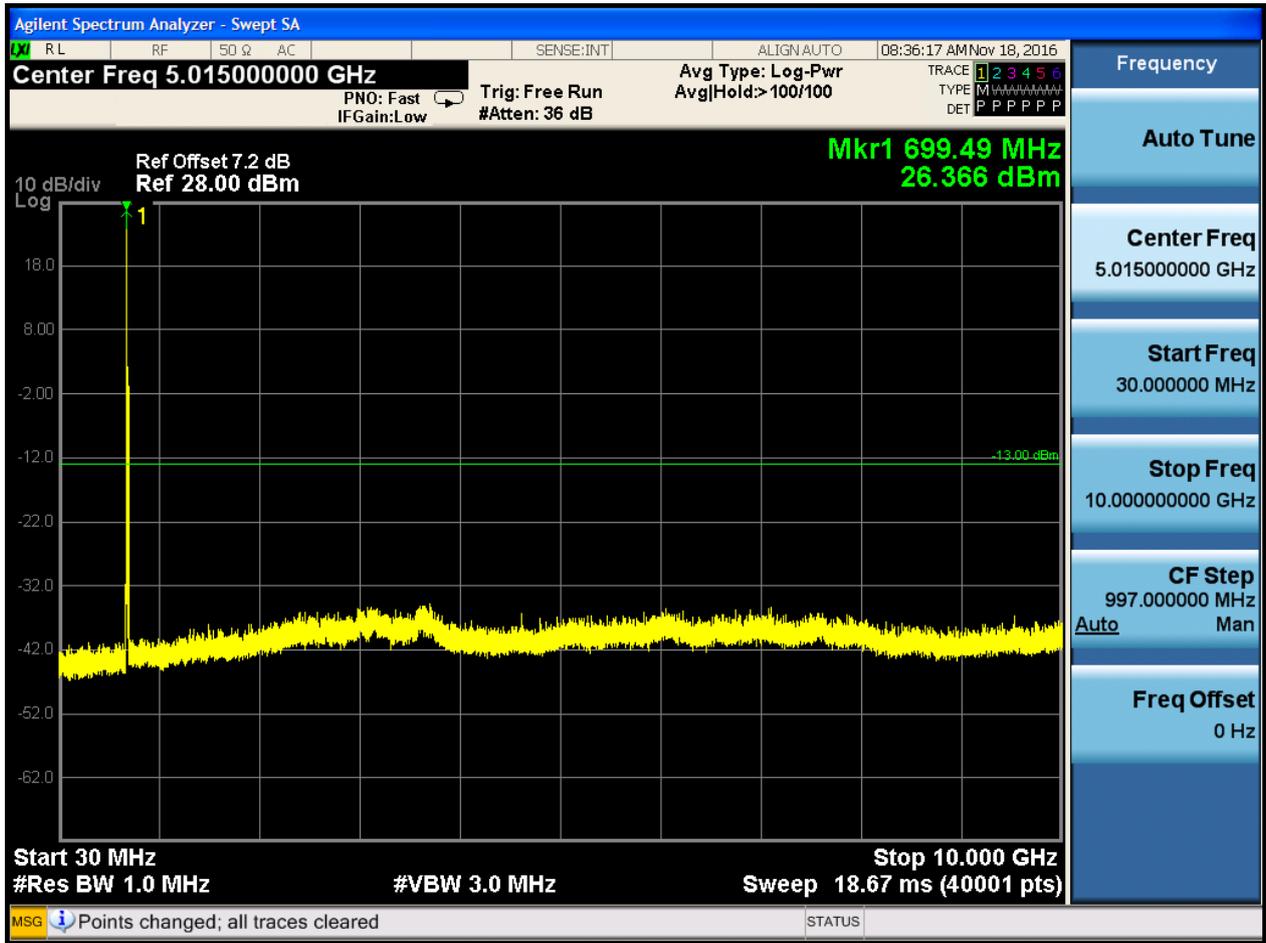


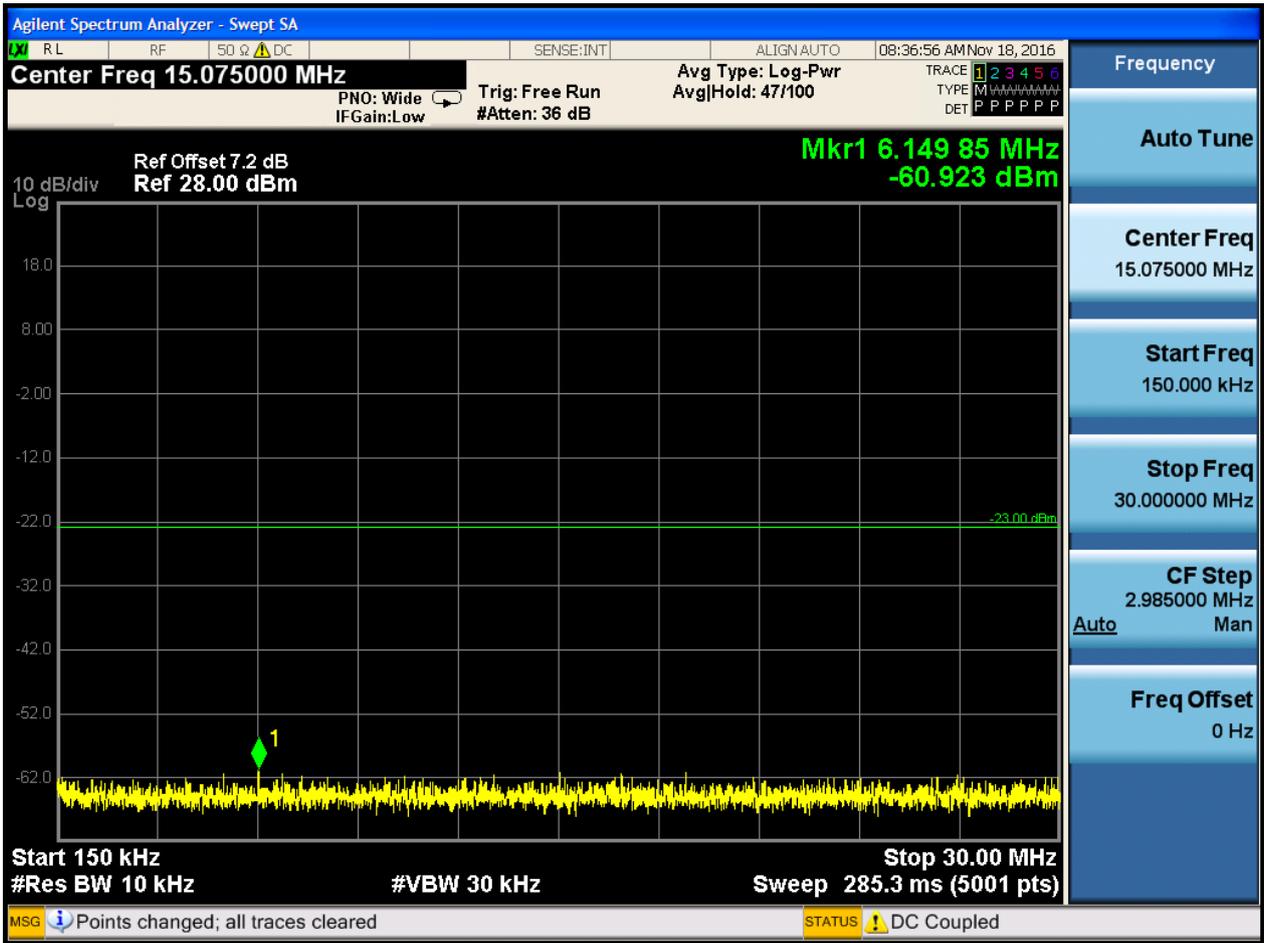


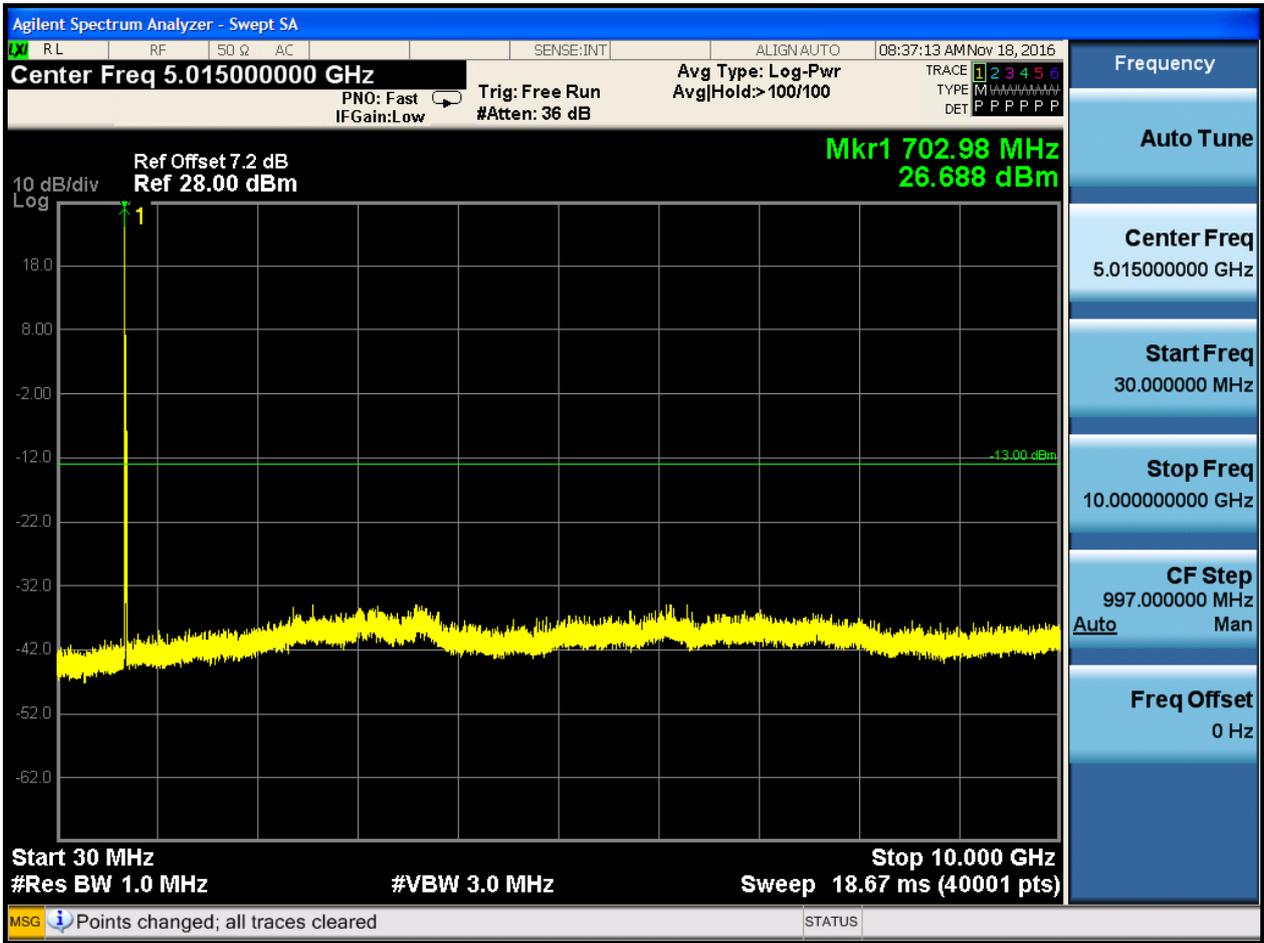








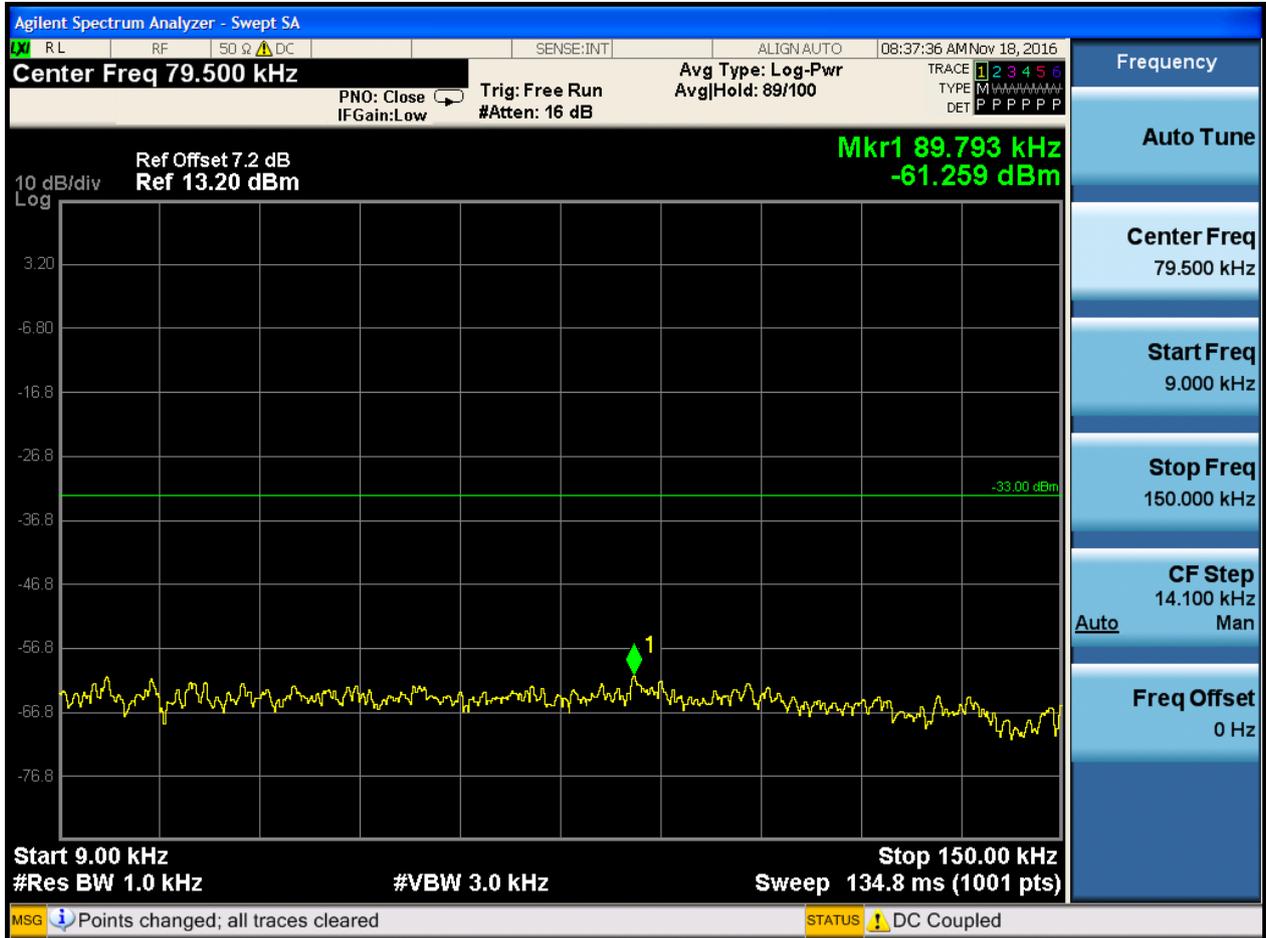


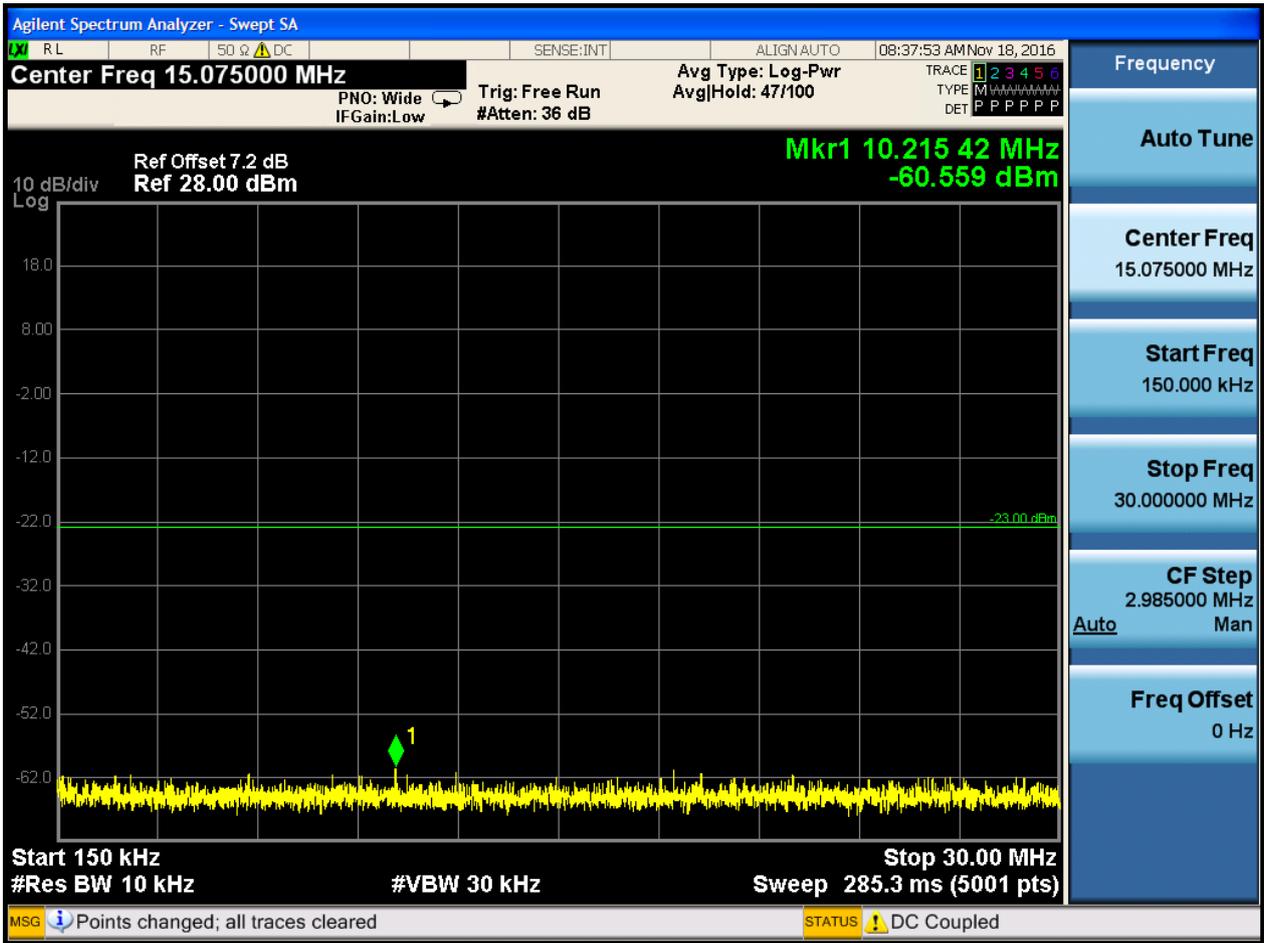


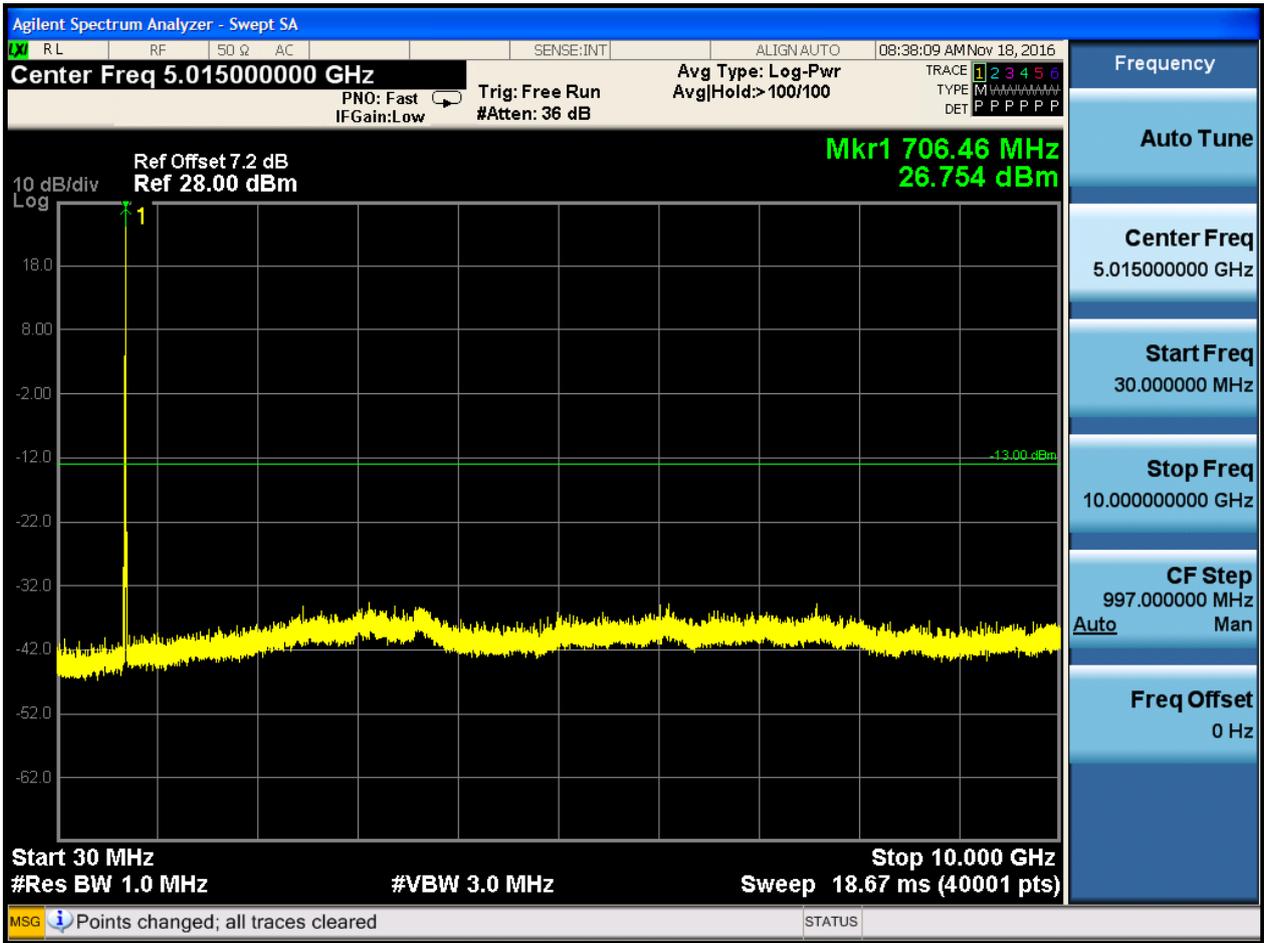


6.1.1.2.4.3 Test Channel = HCH

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

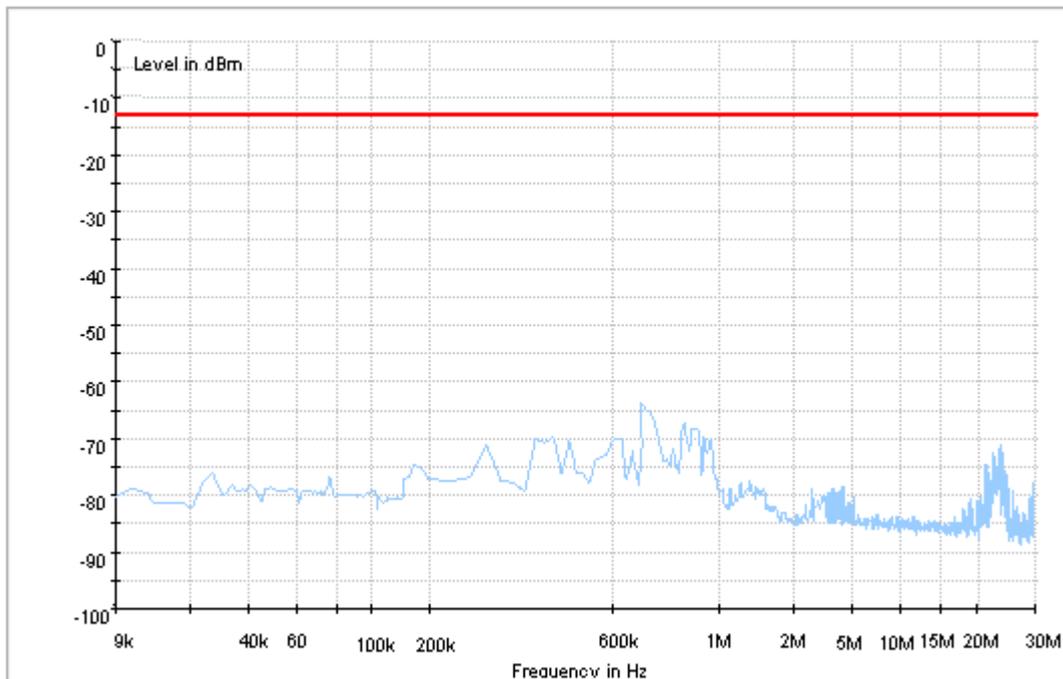
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

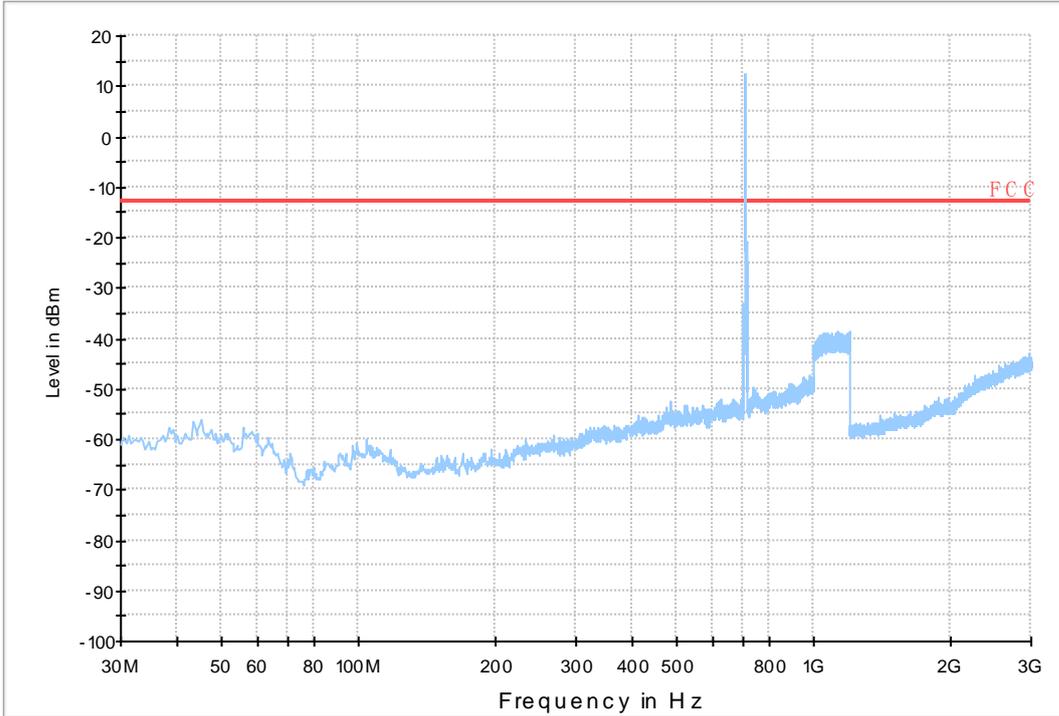
7.1 For LTE

7.1.1 Test Band = BAND12_Ant1

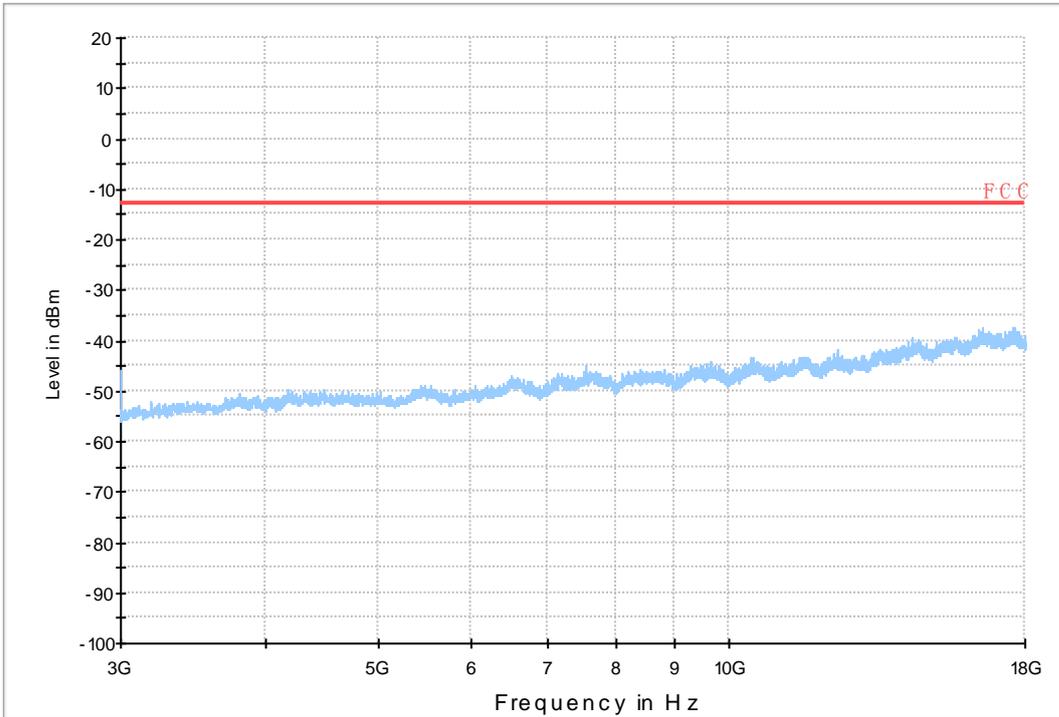
7.1.1.1 Test Bandwidth = 1.4



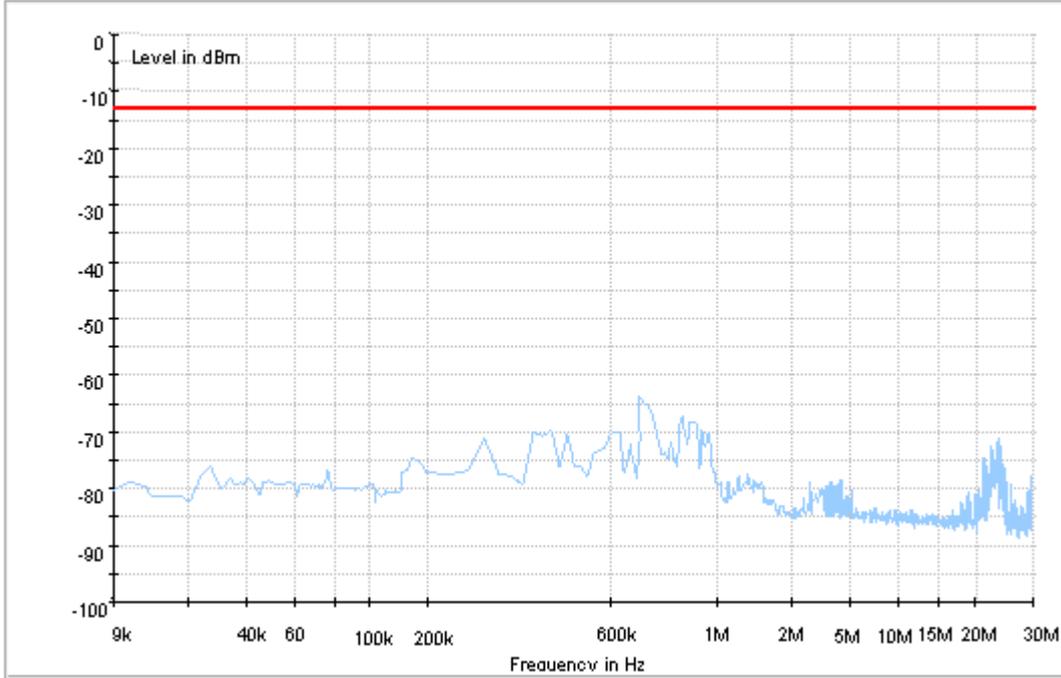
Copy of RSE-TX-DIRECTOR BELOW 1G_L



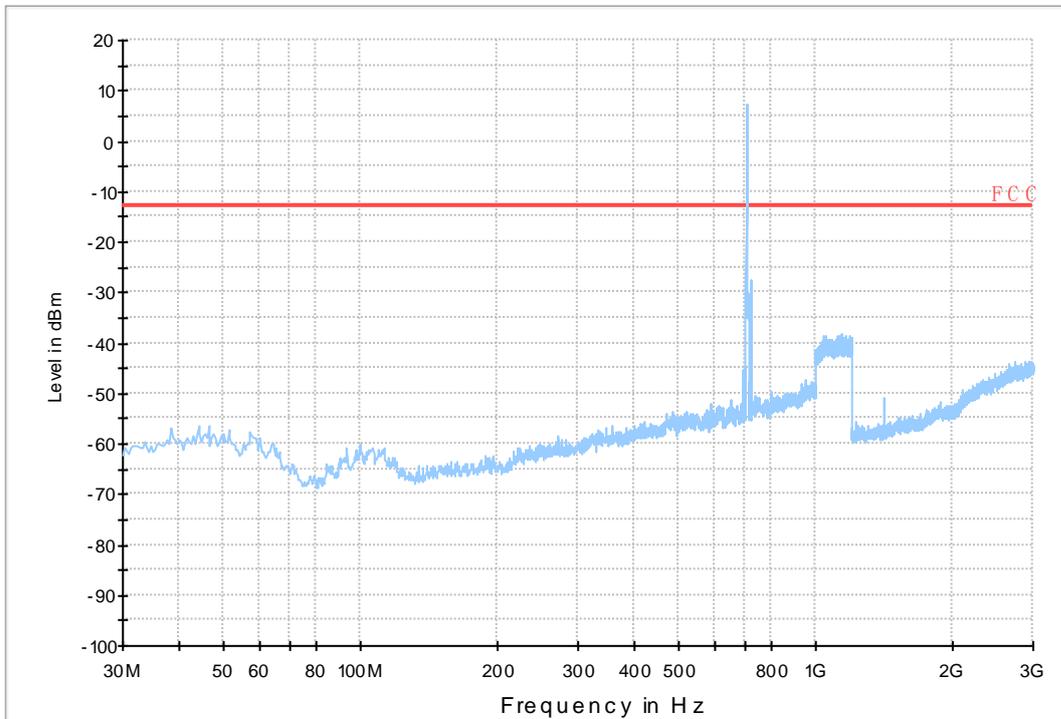
Copy of RSE-TX-DIRECTOR BELOW 1G_H



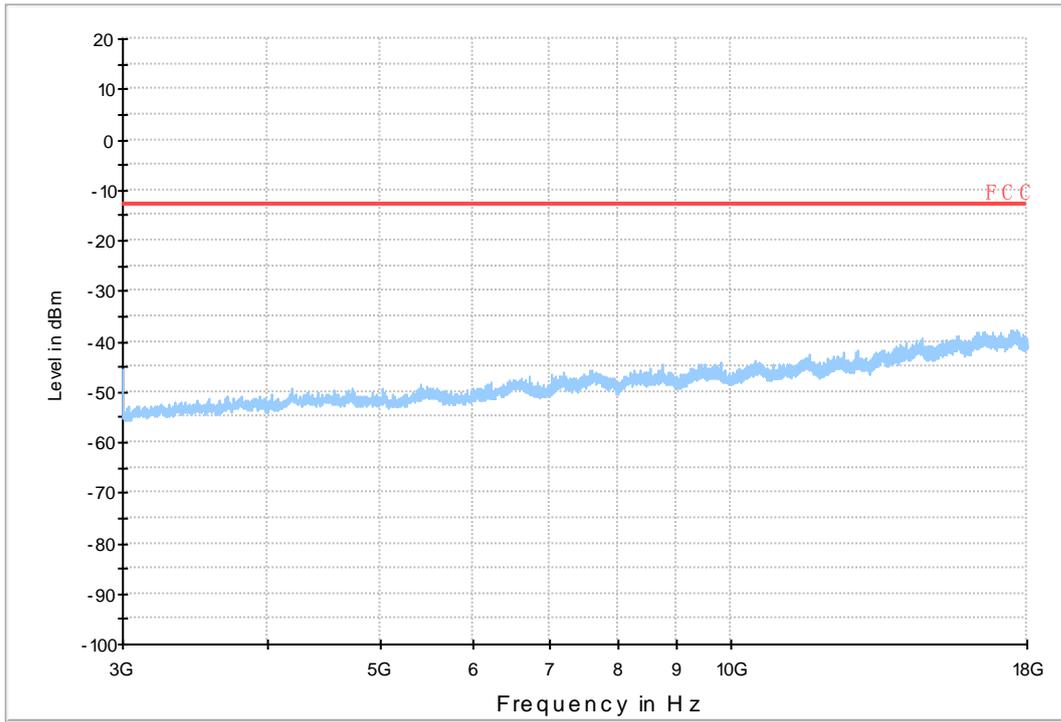
7.1.1.2 Test Bandwidth = 10



Copy of RSE-TX-DIRECTOR BELOW 1G_L

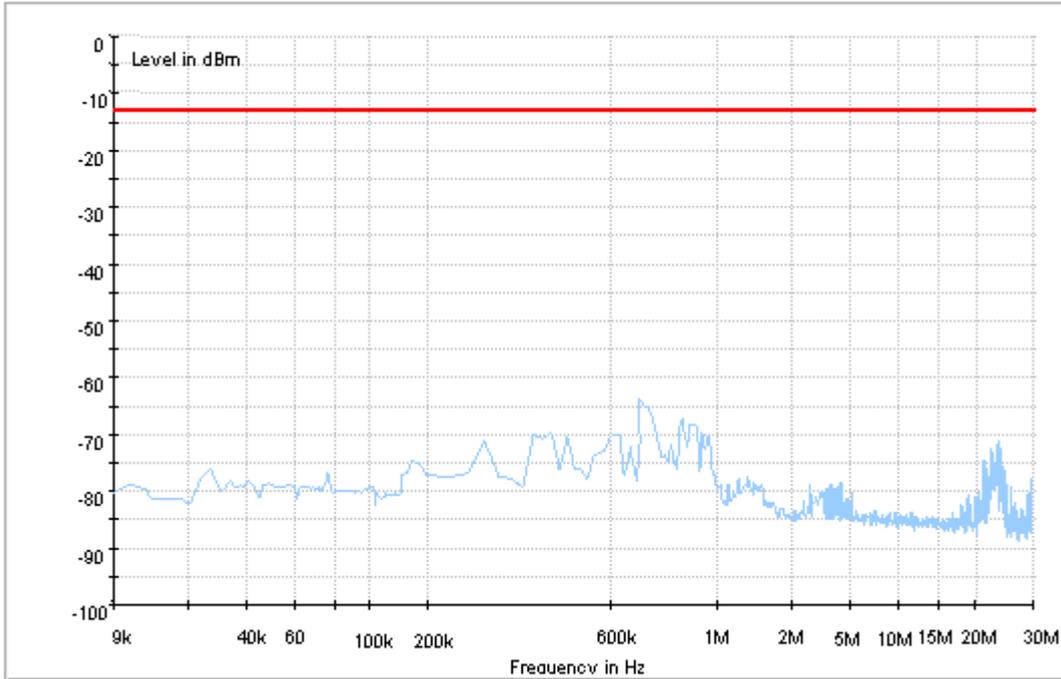


Copy of RSE-TX-DIRECTOR BELOW 1G_H

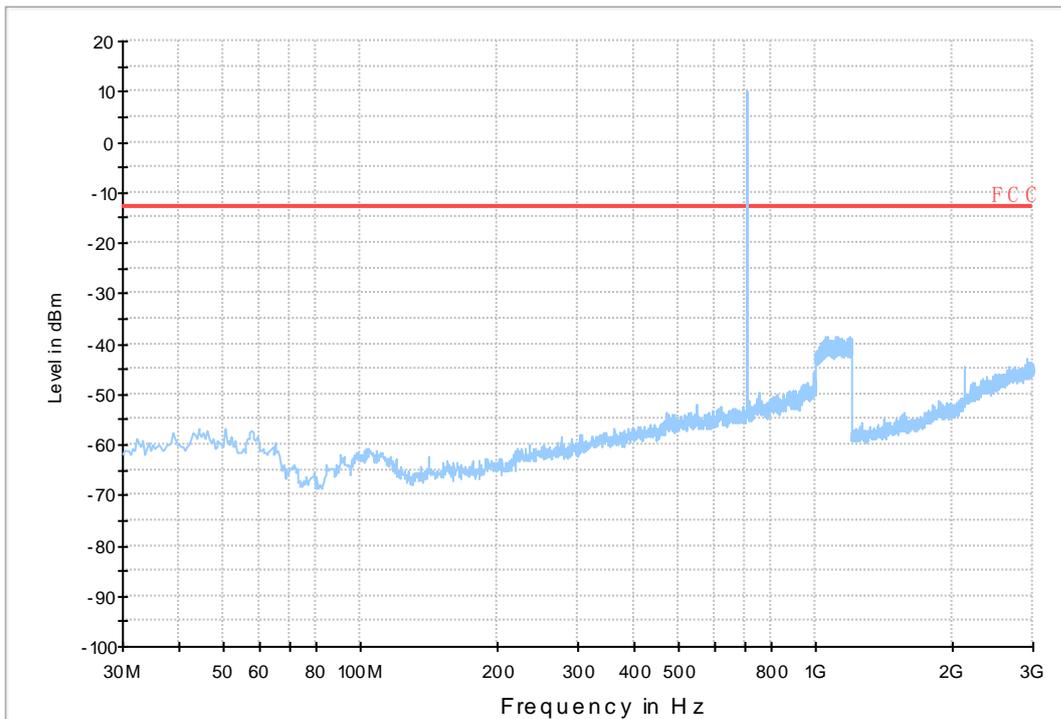


7.1.2 Test Band = BAND12__Ant2

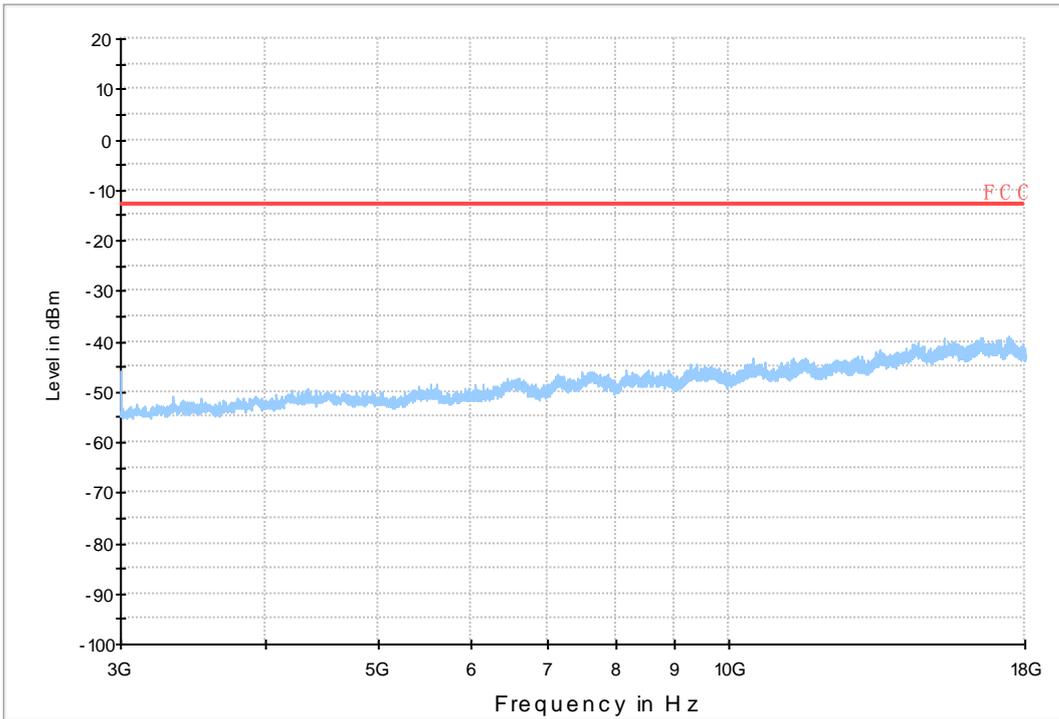
7.1.2.1 Test Bandwidth = 1.4



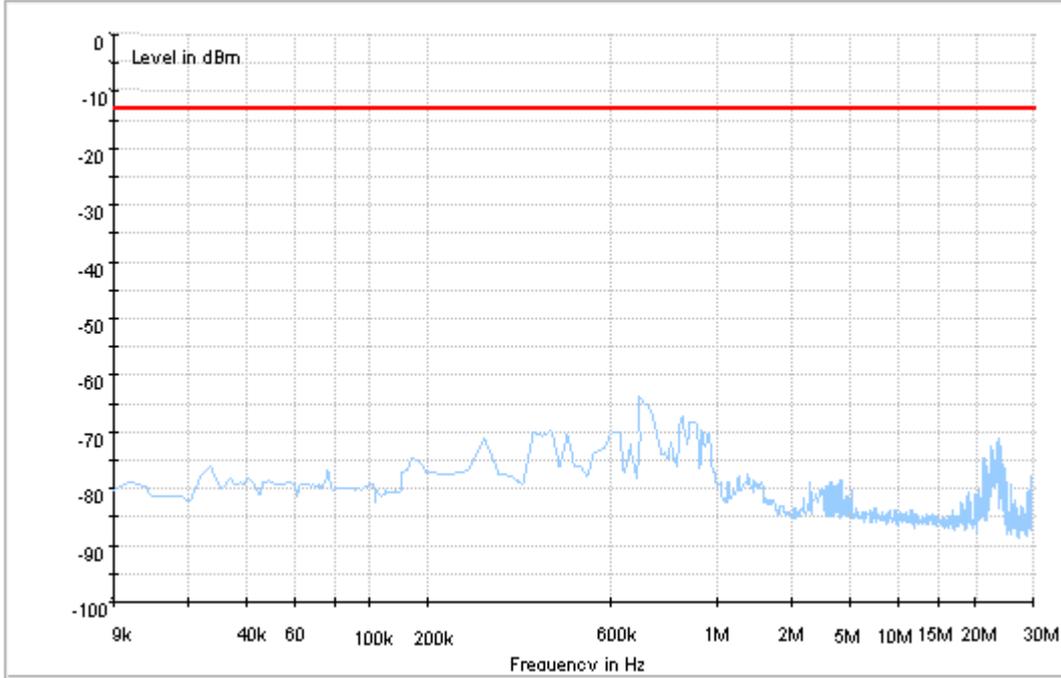
Copy of RSE-TX-DIRECTOR BELOW 1G_L



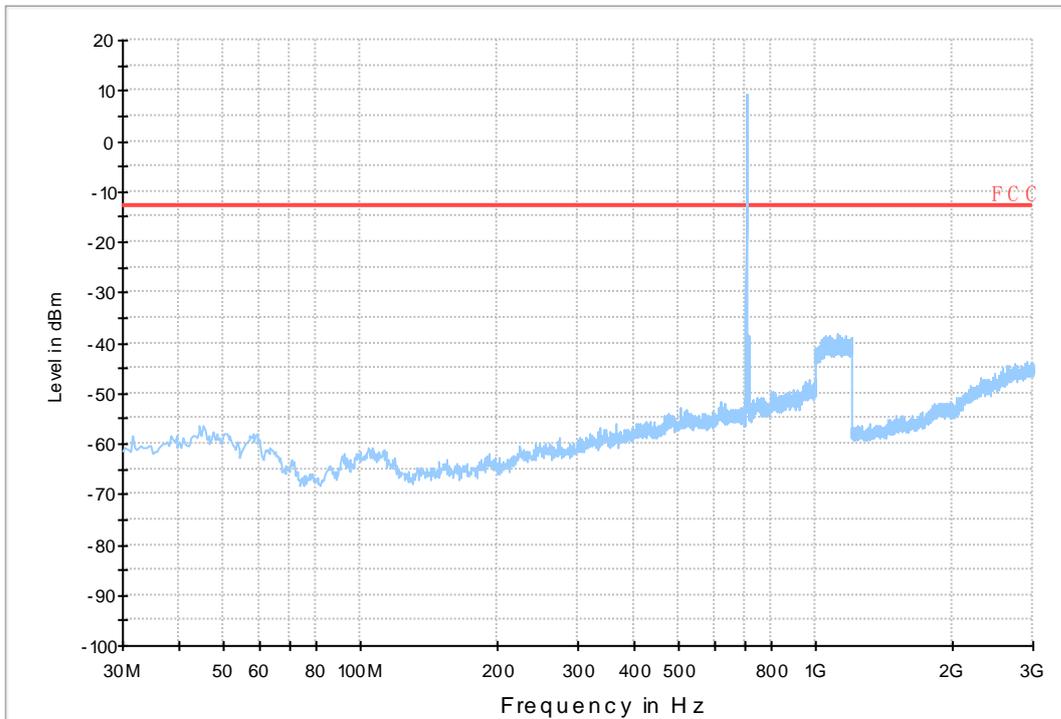
Copy of RSE-TX-DIRECTOR BELOW 1G_H



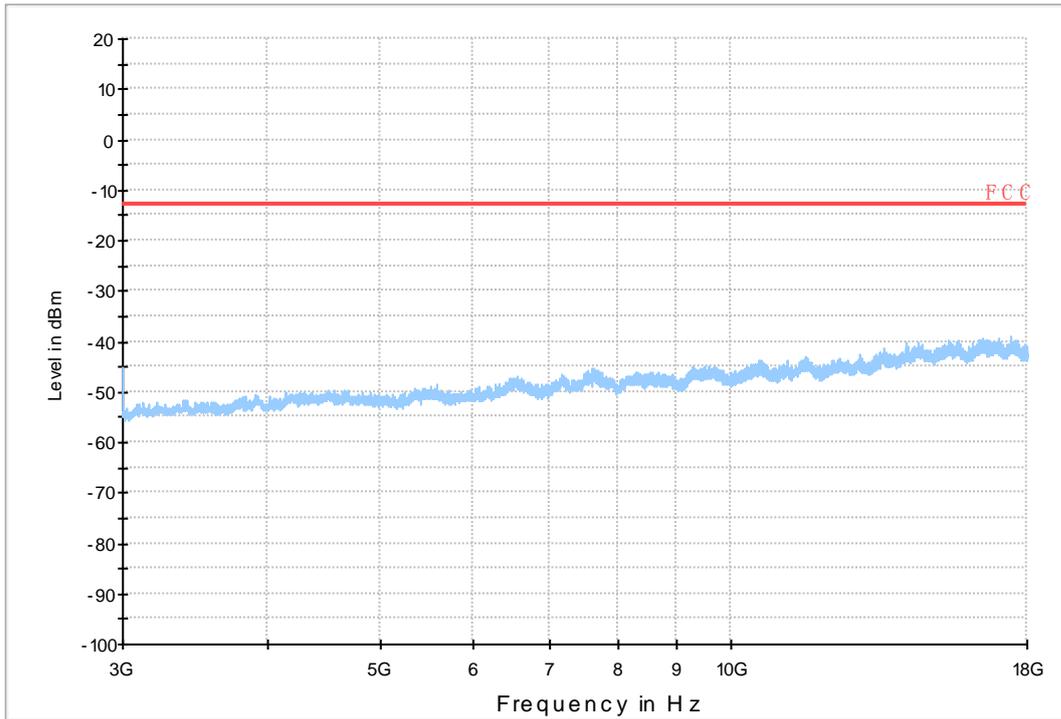
7.1.2.2 Test Bandwidth = 10



Copy of RSE-TX-DIRECTOR BELOW 1G_L



Copy of RSE-TX-DIRECTOR BELOW 1G_H



8Appendix_H: Frequency Stability

8.1 For LTE

8.1.1 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
BAND12	LTE/TM1	1.4	LCH	TN	VL	3.66	0.00523	PASS
					VN	2.17	0.0031	PASS
					VH	16.35	0.02337	PASS
			MCH	TN	VL	24.12	0.03411	PASS
					VN	3.08	0.00433	PASS
					VH	-3.09	-0.00437	PASS
			HCH	TN	VL	-10.71	-0.01496	PASS
					VN	8.56	0.01195	PASS
					VH	2.60	0.00363	PASS
		3	LCH	TN	VL	3.29	0.0047	PASS
					VN	3.23	0.00461	PASS
					VH	-4.16	-0.00594	PASS
			MCH	TN	VL	1.29	0.00182	PASS
					VN	1.87	0.00264	PASS
					VH	-7.55	-0.01067	PASS
			HCH	TN	VL	2.95	0.00413	PASS
					VN	1.44	0.00202	PASS
					VH	-0.30	-0.00042	PASS
		5	LCH	TN	VL	-0.07	-0.0001	PASS
					VN	-0.51	-0.00073	PASS
					VH	-1.22	-0.00174	PASS
			MCH	TN	VL	-4.92	-0.00695	PASS
					VN	-0.23	-0.00033	PASS
					VH	-0.27	-0.00038	PASS
			HCH	TN	VL	-1.75	-0.00245	PASS
					VN	0.14	0.0002	PASS
					VH	-0.56	-0.00078	PASS
		10	LCH	TN	VL	2.36	0.00335	PASS
					VN	-0.20	-0.00028	PASS
					VH	0.56	0.0008	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	1.65	0.00233	PASS		
					VN	1.79	0.00253	PASS		
					VH	-0.99	-0.0014	PASS		
			HCH	TN	VL	0.23	0.00032	PASS		
					VN	0.70	0.00098	PASS		
					VH	0.44	0.00062	PASS		
		LTE/TM2	1.4	LCH	TN	VL	-10.03	-0.01433	PASS	
						VN	8.38	0.01198	PASS	
						VH	0.30	0.00043	PASS	
				MCH	TN	VL	-20.21	-0.02857	PASS	
						VN	21.79	0.0308	PASS	
						VH	1.32	0.00187	PASS	
				HCH	TN	VL	-19.05	-0.02663	PASS	
						VN	-5.76	-0.00805	PASS	
						VH	3.55	0.00496	PASS	
				3	LCH	TN	VL	-1.24	-0.00177	PASS
							VN	-0.43	-0.00061	PASS
							VH	-2.89	-0.00413	PASS
	MCH		TN		VL	-1.79	-0.00253	PASS		
					VN	1.30	0.00184	PASS		
					VH	2.35	0.00332	PASS		
	HCH		TN	VL	1.62	0.00227	PASS			
				VN	-1.07	-0.0015	PASS			
				VH	-2.20	-0.00308	PASS			
	5	LCH	TN	VL	-1.17	-0.00167	PASS			
				VN	-2.89	-0.00412	PASS			
				VH	0.63	0.0009	PASS			
		MCH	TN	VL	2.07	0.00293	PASS			
				VN	-1.72	-0.00243	PASS			
				VH	-5.85	-0.00827	PASS			
		HCH	TN	VL	0.76	0.00107	PASS			
				VN	0.64	0.0009	PASS			
				VH	1.77	0.00248	PASS			
	10	LCH	TN	VL	0.36	0.00051	PASS			
				VN	-1.32	-0.00188	PASS			
				VH	-2.13	-0.00303	PASS			
		MCH	TN	VL	0.39	0.00055	PASS			
				VN	-2.62	-0.0037	PASS			
				VH	0.74	0.00105	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	-0.76	-0.00107	PASS
					VN	0.87	0.00122	PASS
					VH	-0.13	-0.00018	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
BAND12	LTE/TM1	1.4	LCH	VN	-30	4.37	0.00621	PASS
					-20	10.23	0.01448	PASS
					-10	3.52	0.00503	PASS
					0	2.75	0.00393	PASS
					10	-2.72	-0.00389	PASS
					20	5.56	0.00795	PASS
					30	0.33	0.00047	PASS
					40	-0.49	-0.0007	PASS
					50	9.31	0.01331	PASS
			MCH	VN	-30	8.64	0.01221	PASS
					-20	8.98	0.01269	PASS
					-10	5.74	0.00811	PASS
		0			3.28	0.00464	PASS	
		10			-7.48	-0.01057	PASS	
		20			-11.16	-0.01577	PASS	
		30			-4.05	-0.00572	PASS	
		40			-7.21	-0.01019	PASS	
		50			4.26	0.00602	PASS	
		HCH	VN	-30	3.72	0.0052	PASS	
				-20	7.25	0.01014	PASS	
				-10	2.55	0.00356	PASS	
				0	3.78	0.00528	PASS	
				10	1.66	0.00232	PASS	
				20	1.29	0.0018	PASS	
				30	12.33	0.01724	PASS	
				40	-5.01	-0.007	PASS	
				50	5.44	0.00761	PASS	
3	LCH	VN	-30	-2.02	-0.00288	PASS		
			-20	-0.03	-0.00004	PASS		
			-10	1.16	0.00166	PASS		
			0	1.39	0.00198	PASS		
			10	7.17	0.01024	PASS		
			20	-0.3	-0.00043	PASS		
			30	0.03	0.00004	PASS		
			40	2.86	0.00408	PASS		
			50	2.07	0.00296	PASS		



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			MCH	VN	-30	-2.73	-0.00386	PASS
					-20	-1.03	-0.00146	PASS
					-10	-0.06	-0.00008	PASS
					0	-0.84	-0.00119	PASS
					10	-8.33	-0.01177	PASS
					20	4.02	0.00568	PASS
					30	0.13	0.00018	PASS
					40	1.79	0.00253	PASS
					50	-0.36	-0.00051	PASS
			HCH	VN	-30	-4.16	-0.00582	PASS
					-20	1.47	0.00206	PASS
					-10	3.26	0.00456	PASS
					0	-0.06	-0.00008	PASS
					10	-1.52	-0.00213	PASS
					20	2.29	0.00321	PASS
					30	-0.93	-0.0013	PASS
					40	-2.26	-0.00316	PASS
					50	0.1	0.00014	PASS
		5	LCH	VN	-30	4.56	0.0065	PASS
					-20	-1.32	-0.00188	PASS
					-10	-0.31	-0.00044	PASS
					0	0.87	0.00124	PASS
					10	-1.12	-0.0016	PASS
					20	4.61	0.00657	PASS
					30	2.09	0.00298	PASS
					40	5.05	0.0072	PASS
					50	-1.34	-0.00191	PASS
			MCH	VN	-30	3.55	0.00502	PASS
					-20	-3.23	-0.00457	PASS
					-10	0.66	0.00093	PASS
					0	5.22	0.00738	PASS
					10	-6.09	-0.00861	PASS
					20	1.42	0.00201	PASS
					30	1.06	0.0015	PASS
					40	-1.09	-0.00154	PASS
					50	0.13	0.00018	PASS
		HCH	VN	-30	4.38	0.00626	PASS	
				-20	10.13	0.01448	PASS	
				-10	3.52	0.00503	PASS	

Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
					0	2.75	0.00393	PASS
					10	-2.72	-0.00389	PASS
					20	5.56	0.00795	PASS
					30	0.33	0.00047	PASS
					40	-0.49	-0.0007	PASS
					50	9.31	0.01331	PASS
			LCH	VN	-30	8.64	0.01221	PASS
					-20	8.98	0.01269	PASS
					-10	5.74	0.00811	PASS
					0	3.28	0.00464	PASS
					10	-7.48	-0.01057	PASS
					20	-11.16	-0.01577	PASS
		MCH	VN	30	-4.05	-0.00572	PASS	
				40	-7.21	-0.01019	PASS	
				50	4.26	0.00602	PASS	
				-30	3.72	0.0052	PASS	
				-20	7.25	0.01014	PASS	
				-10	2.55	0.00356	PASS	
				0	3.78	0.00528	PASS	
				10	1.66	0.00232	PASS	
		HCH	VN	20	1.29	0.0018	PASS	
				30	12.33	0.01724	PASS	
				40	-5.01	-0.007	PASS	
				50	5.44	0.00761	PASS	
	-30			-2.02	-0.00288	PASS		
	-20			-0.03	-0.00004	PASS		
	-10			1.16	0.00166	PASS		
	0			1.39	0.00198	PASS		
	LCH	VN	10	7.17	0.01024	PASS		
			20	-0.3	-0.00043	PASS		
			30	0.03	0.00004	PASS		
			40	2.86	0.00408	PASS		
			50	2.07	0.00296	PASS		
-30			-2.73	-0.00386	PASS			
LTE/TM2	1.4	LCH	VN	-20	-1.03	-0.00146	PASS	
				-10	-0.06	-0.00008	PASS	
				0	-0.84	-0.00119	PASS	
				10	-8.33	-0.01177	PASS	
				20	4.02	0.00568	PASS	



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict	
					30	0.13	0.00018	PASS	
					40	1.79	0.00253	PASS	
					50	-0.36	-0.00051	PASS	
			MCH	VN	-30	-4.16	-0.00582	PASS	
					-20	1.47	0.00206	PASS	
					-10	3.26	0.00456	PASS	
					0	-0.06	-0.00008	PASS	
					10	-1.52	-0.00213	PASS	
					20	2.29	0.00321	PASS	
					30	-0.93	-0.0013	PASS	
					40	-2.26	-0.00316	PASS	
					50	0.1	0.00014	PASS	
					HCH	VN	-30	4.56	0.0065
			-20	-1.32			-0.00188	PASS	
			-10	-0.31			-0.00044	PASS	
			0	0.87			0.00124	PASS	
			10	-1.12			-0.0016	PASS	
			20	4.61			0.00657	PASS	
		30	2.09	0.00298			PASS		
		3		LCH	VN	-30	3.55	0.00502	PASS
						-20	-3.23	-0.00457	PASS
						-10	0.66	0.00093	PASS
						0	5.22	0.00738	PASS
						10	-6.09	-0.00861	PASS
						20	1.42	0.00201	PASS
						30	1.06	0.0015	PASS
						40	-1.09	-0.00154	PASS
						50	0.13	0.00018	PASS
				MCH	VN	-30	4.38	0.00626	PASS
						-20	10.13	0.01448	PASS
						-10	3.52	0.00503	PASS
						0	2.75	0.00393	PASS
						10	-2.72	-0.00389	PASS
20	5.56					0.00795	PASS		
30	0.33	0.00047	PASS						
40	-0.49	-0.0007	PASS						
50	9.31	0.01331	PASS						



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict	
			HCH	VN	-30	8.64	0.01221	PASS	
					-20	8.98	0.01269	PASS	
					-10	5.74	0.00811	PASS	
					0	3.28	0.00464	PASS	
					10	-7.48	-0.01057	PASS	
					20	-11.16	-0.01577	PASS	
					30	-4.05	-0.00572	PASS	
					40	-7.21	-0.01019	PASS	
					50	4.26	0.00602	PASS	
		5	LCH		VN	-30	3.72	0.0052	PASS
						-20	7.25	0.01014	PASS
						-10	2.55	0.00356	PASS
						0	3.78	0.00528	PASS
						10	1.66	0.00232	PASS
						20	1.29	0.0018	PASS
						30	12.33	0.01724	PASS
						40	-5.01	-0.007	PASS
						50	5.44	0.00761	PASS
			MCH		VN	-30	-2.02	-0.00288	PASS
						-20	-0.03	-0.00004	PASS
						-10	1.16	0.00166	PASS
						0	1.39	0.00198	PASS
						10	7.17	0.01024	PASS
						20	-0.3	-0.00043	PASS
						30	0.03	0.00004	PASS
						40	2.86	0.00408	PASS
						50	2.07	0.00296	PASS
		HCH		VN	-30	-2.73	-0.00386	PASS	
					-20	-1.03	-0.00146	PASS	
					-10	-0.06	-0.00008	PASS	
					0	-0.84	-0.00119	PASS	
					10	-8.33	-0.01177	PASS	
					20	4.02	0.00568	PASS	
30	0.13				0.00018	PASS			
40	1.79				0.00253	PASS			
50	-0.36				-0.00051	PASS			
10	LCH		VN	-30	-4.16	-0.00582	PASS		
				-20	1.47	0.00206	PASS		
				-10	3.26	0.00456	PASS		



Test Band	Test Mode	Test Bandwidth (MHz)	Test Channel	Test Volt.	Test Temp .	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict		
					0	-0.06	-0.00008	PASS		
					10	-1.52	-0.00213	PASS		
					20	2.29	0.00321	PASS		
					30	-0.93	-0.0013	PASS		
					40	-2.26	-0.00316	PASS		
					50	0.1	0.00014	PASS		
			MCH	VN	-30	4.56	0.0065	PASS		
							-20	-1.32	-0.00188	PASS
							-10	-0.31	-0.00044	PASS
							0	0.87	0.00124	PASS
							10	-1.12	-0.0016	PASS
							20	4.62	0.00657	PASS
							30	2.09	0.00298	PASS
							40	5.06	0.0072	PASS
			HCH	VN	50	-1.32	-0.00191	PASS		
							-30	3.55	0.00502	PASS
							-20	-3.23	-0.00457	PASS
							-10	0.67	0.00093	PASS
							0	5.22	0.00738	PASS
							10	-6.09	-0.00861	PASS
							20	1.42	0.00201	PASS
							30	1.06	0.0015	PASS
					40	-1.09	-0.00153	PASS		
					50	0.15	0.00019	PASS		

END