



Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	ERP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	22.51	22.11	38.5	PASS
		MCH	22.45	22.05	38.5	PASS
		HCH	22.35	21.95	38.5	PASS

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	22.37	24.47	33	PASS
		MCH	22.54	24.64	33	PASS
		HCH	22.49	24.59	33	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
BAND17 BAND17	LTE/TM1	5	LCH	RB1#0	22.04	21.75	34.8	PASS
				RB1#13	22	21.71	34.8	PASS
				RB1#24	21.75	21.46	34.8	PASS
				RB12#0	20.99	20.7	34.8	PASS
				RB12#6	21.02	20.73	34.8	PASS
				RB12#13	21	20.71	34.8	PASS
				RB25#0	21.06	20.77	34.8	PASS
			MCH	RB1#0	21.86	21.57	34.8	PASS
				RB1#13	21.99	21.7	34.8	PASS
				RB1#24	22.21	21.92	34.8	PASS
				RB12#0	20.96	20.67	34.8	PASS
				RB12#6	20.83	20.54	34.8	PASS
				RB12#13	21.09	20.8	34.8	PASS
				RB25#0	20.8	20.51	34.8	PASS
			HCH	RB1#0	21.68	21.39	34.8	PASS
				RB1#13	22.19	21.9	34.8	PASS
				RB1#24	22.29	22	34.8	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured [dBm]	EIRP [dBm]	Limit [dBm]	Verdict	
				RB12#0	21.28	20.99	34.8	PASS	
				RB12#6	21.41	21.12	34.8	PASS	
				RB12#13	21.32	21.03	34.8	PASS	
				RB25#0	21.3	21.01	34.8	PASS	
		10	LCH	RB1#0	22.3	22.01	34.8	PASS	
				RB1#25	21.96	21.67	34.8	PASS	
				RB1#49	22.08	21.79	34.8	PASS	
				RB25#0	21.28	20.99	34.8	PASS	
				RB25#13	21.27	20.98	34.8	PASS	
				RB25#25	21.11	20.82	34.8	PASS	
				RB50#0	21.19	20.9	34.8	PASS	
				MCH	RB1#0	22.25	21.96	34.8	PASS
					RB1#25	22.09	21.8	34.8	PASS
					RB1#49	22.21	21.92	34.8	PASS
RB25#0	21.33	21.04	34.8		PASS				
RB25#13	21.31	21.02	34.8		PASS				
RB25#25	21.21	20.92	34.8		PASS				

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
				RB50#0	21.23	20.94	34.8	PASS
			HCH	RB1#0	22.4	22.11	34.8	PASS
				RB1#25	22.08	21.79	34.8	PASS
				RB1#49	22.19	21.9	34.8	PASS
				RB25#0	21.29	21	34.8	PASS
				RB25#13	21.39	21.1	34.8	PASS
				RB25#25	21.36	21.07	34.8	PASS
				RB50#0	21.39	21.1	34.8	PASS
	LTE/TM2	5	LCH	RB1#0	21	20.71	34.8	PASS
				RB1#13	21.16	20.87	34.8	PASS
				RB1#24	20.99	20.7	34.8	PASS
				RB12#0	20.84	20.55	34.8	PASS
				RB12#6	20.9	20.61	34.8	PASS
				RB12#13	20.92	20.63	34.8	PASS
				RB25#0	20.81	20.52	34.8	PASS
MCH	RB1#0	21.01	20.72	34.8	PASS			
	RB1#13	20.86	20.57	34.8	PASS			

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured [dBm]	EIRP [dBm]	Limit [dBm]	Verdict		
				RB1#24	20.97	20.68	34.8	PASS		
				RB12#0	20.97	20.68	34.8	PASS		
				RB12#6	20.85	20.56	34.8	PASS		
				RB12#13	20.87	20.58	34.8	PASS		
				RB25#0	20.85	20.56	34.8	PASS		
			HCH	RB1#0	20.85	20.56	34.8	PASS		
				RB1#13	21.34	21.05	34.8	PASS		
				RB1#24	21.43	21.14	34.8	PASS		
				RB12#0	20.75	20.46	34.8	PASS		
				RB12#6	20.95	20.66	34.8	PASS		
		10	LCH	RB12#13	20.92	20.63	34.8	PASS		
				RB25#0	20.88	20.59	34.8	PASS		
				RB1#0	21.2	20.91	34.8	PASS		
				RB1#25	21.1	20.81	34.8	PASS		
				RB1#49	21.19	20.9	34.8	PASS		
						RB25#0	21.03	20.74	34.8	PASS
						RB25#13	21.03	20.74	34.8	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
				RB25#25	20.86	20.57	34.8	PASS
				RB50#0	20.96	20.67	34.8	PASS
			MCH	RB1#0	21.26	20.97	34.8	PASS
				RB1#25	21	20.71	34.8	PASS
				RB1#49	21.26	20.97	34.8	PASS
				RB25#0	21.04	20.75	34.8	PASS
				RB25#13	21.02	20.73	34.8	PASS
				RB25#25	20.92	20.63	34.8	PASS
				RB50#0	20.98	20.69	34.8	PASS
				HCH	RB1#0	21.28	20.99	34.8
			RB1#25		20.88	20.59	34.8	PASS
			RB1#49		21.07	20.78	34.8	PASS
			RB25#0		21.04	20.75	34.8	PASS
			RB25#13		20.99	20.7	34.8	PASS
			RB25#25		20.96	20.67	34.8	PASS
			RB50#0		21	20.71	34.8	PASS

Note1:

a, For getting the ERP (Efficient Radiated Power) or EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,



$ERP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBd]$

$EIRP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBi]$

b, SGP=Signal Generator Level

Note2: $RBW > emission\ bandwidth$, $VBW > 3 \times RBW$.

Detector: RMS



2Appendix_B: Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
WCDMA1900	UMTS/TM1	LCH	3.26	13	PASS
		MCH	3.11	13	PASS
		HCH	3.03	13	PASS

Test Band(For LTE)	Test Mode	Test Bandwidth (MHz)	Test Channel	Test RB	Measured[dB]	Limit [dB]	Verdict
BAND17	LTE/TM1	5	LCH	RB1#0	5.14	13	PASS
				RB1#13	4.86	13	PASS
				RB1#24	3.56	13	PASS
				RB12#0	5.55	13	PASS
				RB12#6	5.49	13	PASS
				RB12#13	5.46	13	PASS
			RB25#0	5.72	13	PASS	
			MCH	RB1#0	4.87	13	PASS
				RB1#13	3.61	13	PASS
				RB1#24	4.7	13	PASS
				RB12#0	4.53	13	PASS
				RB12#6	4.58	13	PASS
				RB12#13	5.11	13	PASS
			RB25#0	5.73	13	PASS	
			HCH	RB1#0	4.68	13	PASS
				RB1#13	4.62	13	PASS
				RB1#24	4.76	13	PASS
				RB12#0	5.26	13	PASS
		RB12#6		5.23	13	PASS	
		RB12#13		5.52	13	PASS	
		RB25#0	5.48	13	PASS		
		10	LCH	RB1#0	5.22	13	PASS
				RB1#25	3.48	13	PASS
				RB1#49	4.76	13	PASS
				RB25#0	5.4	13	PASS
				RB25#13	5.07	13	PASS
				RB25#25	5.14	13	PASS
			RB50#0	5.61	13	PASS	
			MCH	RB1#0	4.98	13	PASS
				RB1#25	3.44	13	PASS
RB1#49	4.86			13	PASS		
RB25#0	5.29			13	PASS		
RB25#13	4.97			13	PASS		
RB25#25	5.17	13		PASS			
RB50#0	6.12	13	PASS				
HCH	RB1#0	4.88	13	PASS			
	RB1#25	4.58	13	PASS			
	RB1#49	4.89	13	PASS			

Test Band(For LTE)	Test Mode	Test Bandwidth (MHz)	Test Channel	Test RB	Measured[dB]	Limit [dB]	Verdict	
	LTE/TM2	5	LCH	RB25#0	5.18	13	PASS	
				RB25#13	5.13	13	PASS	
				RB25#25	5.32	13	PASS	
				RB50#0	5.41	13	PASS	
			MCH	RB1#0	6.07	13	PASS	
				RB1#13	5.74	13	PASS	
				RB1#24	5.68	13	PASS	
				RB12#0	6.27	13	PASS	
		HCH	RB12#6	6.17	13	PASS		
			RB12#13	6.14	13	PASS		
			RB25#0	6.79	13	PASS		
			RB1#0	5.77	13	PASS		
		10	LCH	5	RB1#13	4.32	13	PASS
					RB1#24	5.65	13	PASS
					RB12#0	5.93	13	PASS
					RB12#6	5.81	13	PASS
	MCH		RB12#13	5.94	13	PASS		
			RB25#0	6.47	13	PASS		
			RB1#0	4.93	13	PASS		
			RB1#13	4.79	13	PASS		
	10	LCH	10	RB1#24	5.15	13	PASS	
				RB12#0	5.95	13	PASS	
				RB12#6	5.86	13	PASS	
				RB12#13	5.95	13	PASS	
		MCH	RB25#0	6.61	13	PASS		
			RB1#0	6.25	13	PASS		
			RB1#25	4.58	13	PASS		
			RB1#49	5.87	13	PASS		
	10	LCH	10	RB25#0	6.39	13	PASS	
				RB25#13	6.02	13	PASS	
				RB25#25	6.1	13	PASS	
				RB50#0	6.17	13	PASS	
MCH		RB1#0	5.6	13	PASS			
		RB1#25	4.15	13	PASS			
		RB1#49	5.48	13	PASS			
		RB25#0	5.76	13	PASS			
10	MCH	10	RB25#13	5.64	13	PASS		
			RB25#25	5.77	13	PASS		
			RB50#0	6.3	13	PASS		



Test Band(For LTE)	Test Mode	Test Bandwidth (MHz)	Test Channel	Test RB	Measured[dB]	Limit [dB]	Verdict
			HCH	RB1#0	4.76	13	PASS
				RB1#25	4.62	13	PASS
				RB1#49	4.98	13	PASS
				RB25#0	5.78	13	PASS
				RB25#13	5.69	13	PASS
				RB25#25	5.78	13	PASS
				RB50#0	6.44	13	PASS

3Appendix_C: Modulation Characteristics

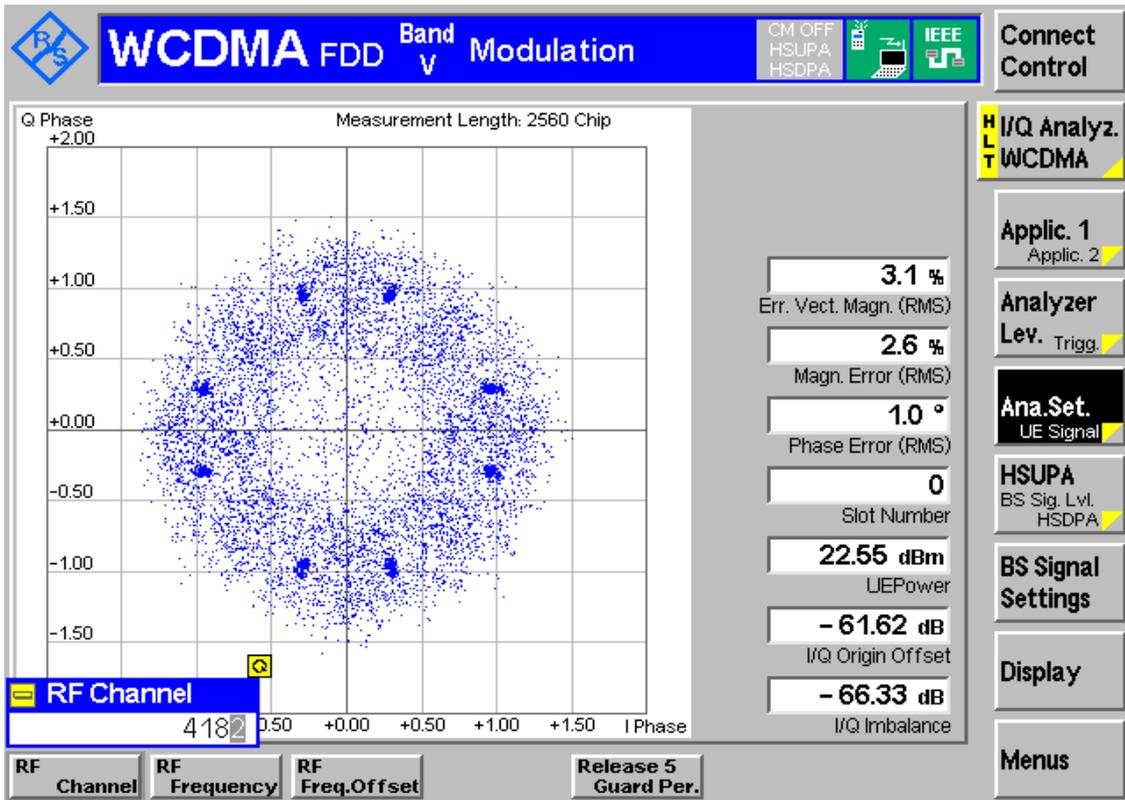
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA850

3.1.1.1 Test Mode = UMTS/TM1

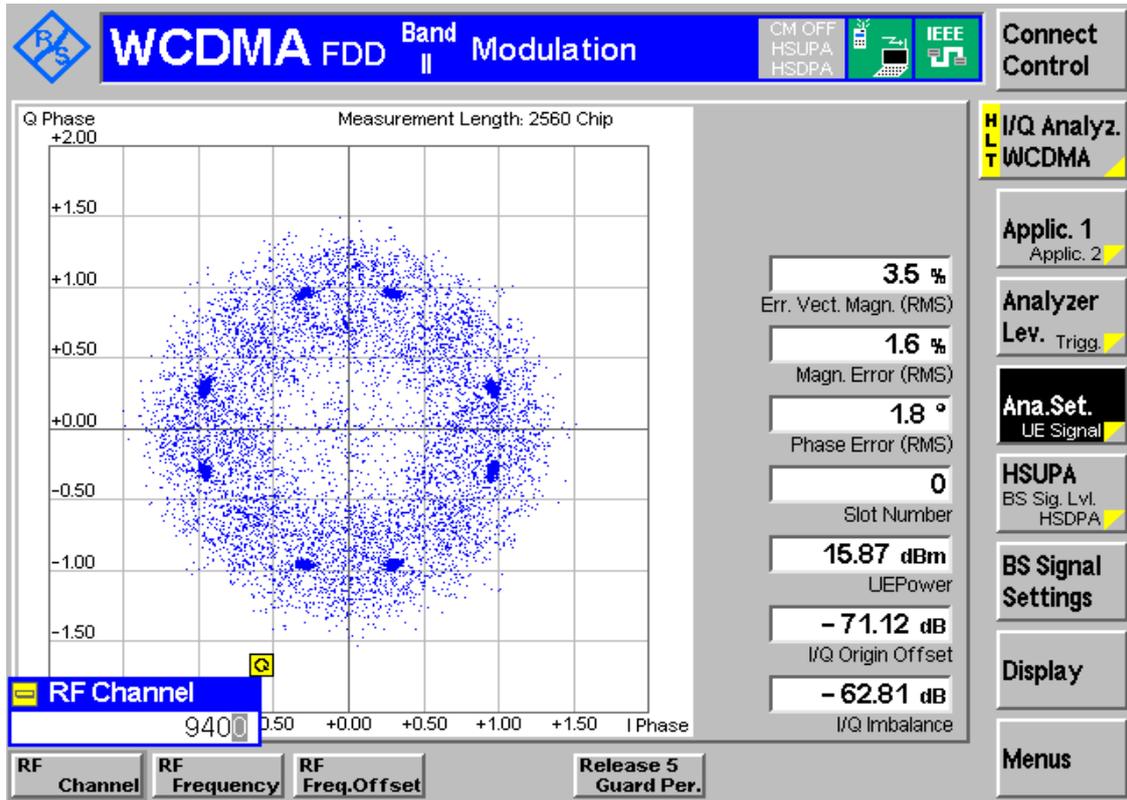
3.1.1.1.1 Test Channel = MCH



3.2.1 Test Band = WCDMA1900

3.2.1.1 Test Mode = UMTS/TM1

3.2.1.1.1 Test Channel = MCH



3.3 For LTE

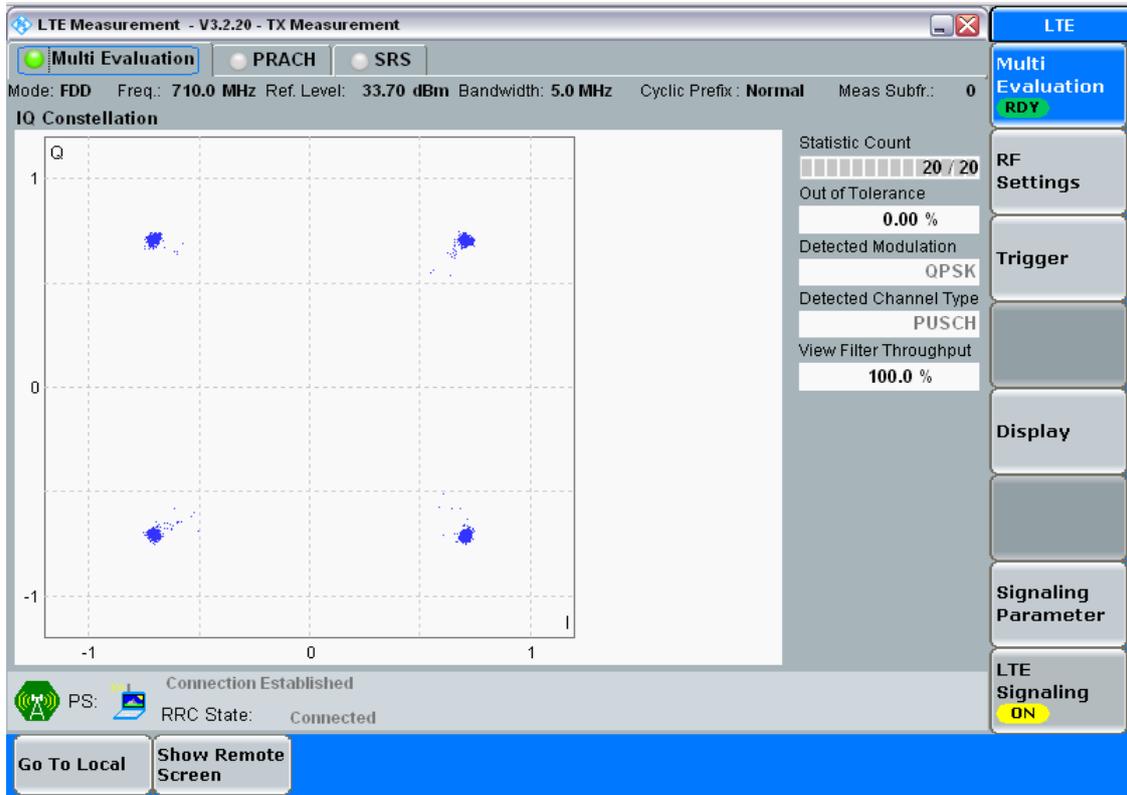
3.3.1 Test Band = BAND17

3.3.1.1 Test Mode = LTE/TM1

3.3.1.1.1 Test Bandwidth = 5

3.3.1.1.1.1 Test Channel = MCH

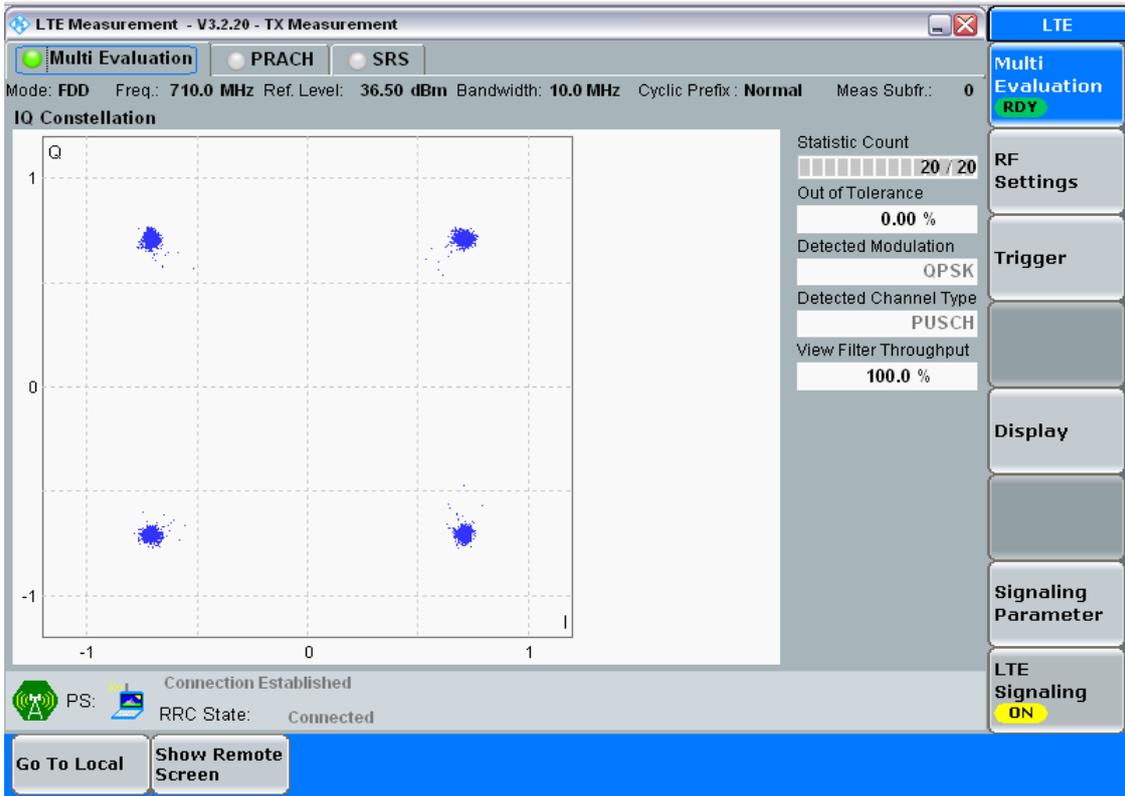
3.3.1.1.1.1.1 Test RB = RB25#0



3.3.1.1.2 Test Bandwidth = 10

3.3.1.1.2.1 Test Channel = MCH

3.3.1.1.2.1.1 Test RB = RB50#0

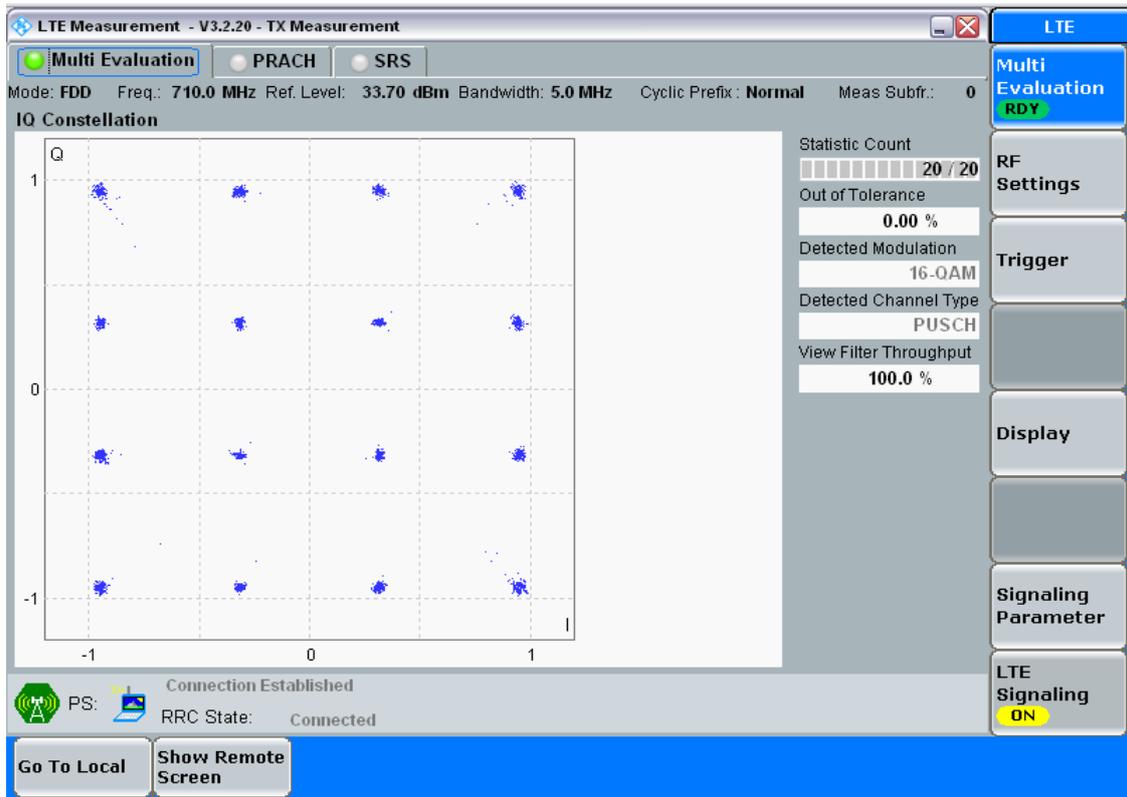


3.3.1.2 Test Mode = LTE/TM2

3.3.1.2.1 Test Bandwidth = 5

3.3.1.2.1.1 Test Channel = MCH

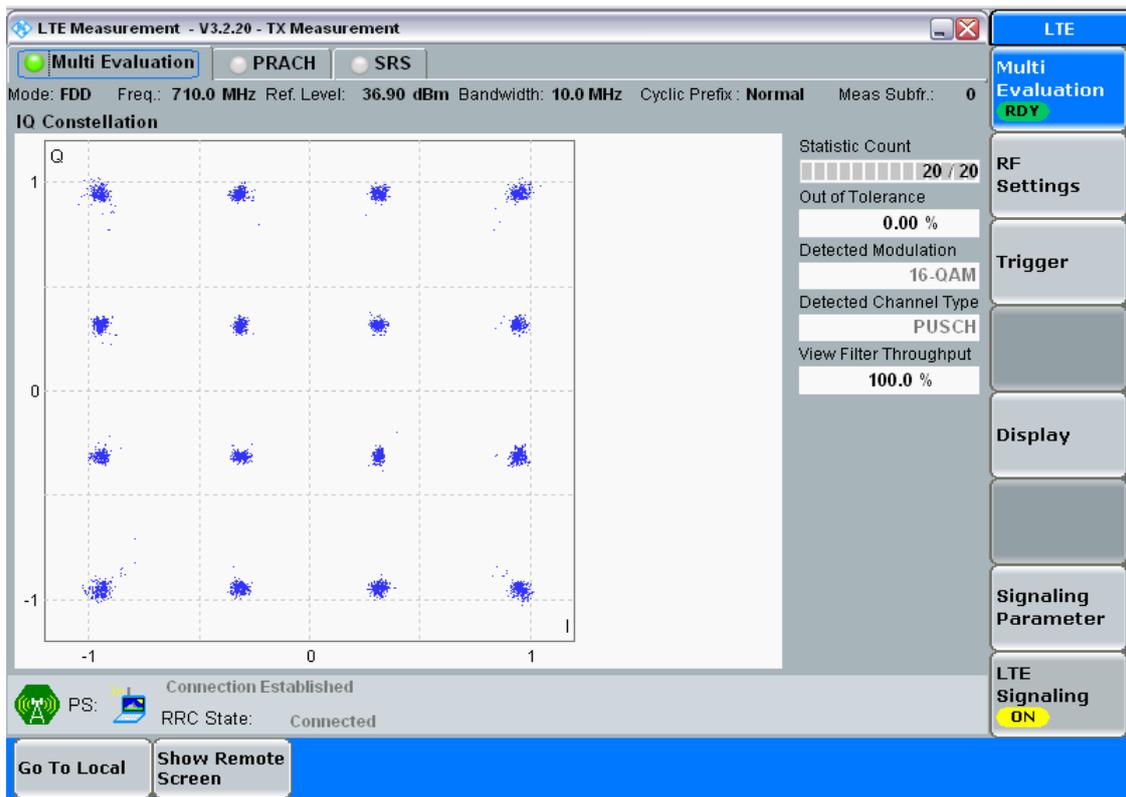
3.3.1.2.1.1.1 Test RB = RB25#0



3.3.2.2.2 Test Bandwidth = 10

3.3.2.2.2.1 Test Channel = MCH

3.3.2.2.2.1.1 Test RB = RB50#0



4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA850	UMTS/TM1	LCH	4.14	4.72	Pass
		MCH	4.14	4.70	Pass
		HCH	4.13	4.72	Pass
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA1900	UMTS/TM1	LCH	4.14	4.71	Pass
		MCH	4.15	4.70	Pass
		HCH	4.14	4.71	Pass

Test Band	Test Mode	Test Bandwidth	Test Channel	Test RB	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
BAND17	LTE/TM1	5	LCH	RB25#0	4.51	4.82	Pass
			MCH	RB25#0	4.50	4.84	Pass
			HCH	RB25#0	4.50	4.86	Pass
		10	LCH	RB50#0	8.98	9.61	Pass
			MCH	RB50#0	8.98	9.57	Pass
			HCH	RB50#0	8.97	9.55	Pass
	LTE/TM2	5	LCH	RB25#0	4.50	4.83	Pass
			MCH	RB25#0	4.49	4.86	Pass
			HCH	RB25#0	4.51	4.86	Pass
		10	LCH	RB50#0	8.97	9.57	Pass
			MCH	RB50#0	8.96	9.54	Pass
			HCH	RB50#0	8.98	9.55	Pass

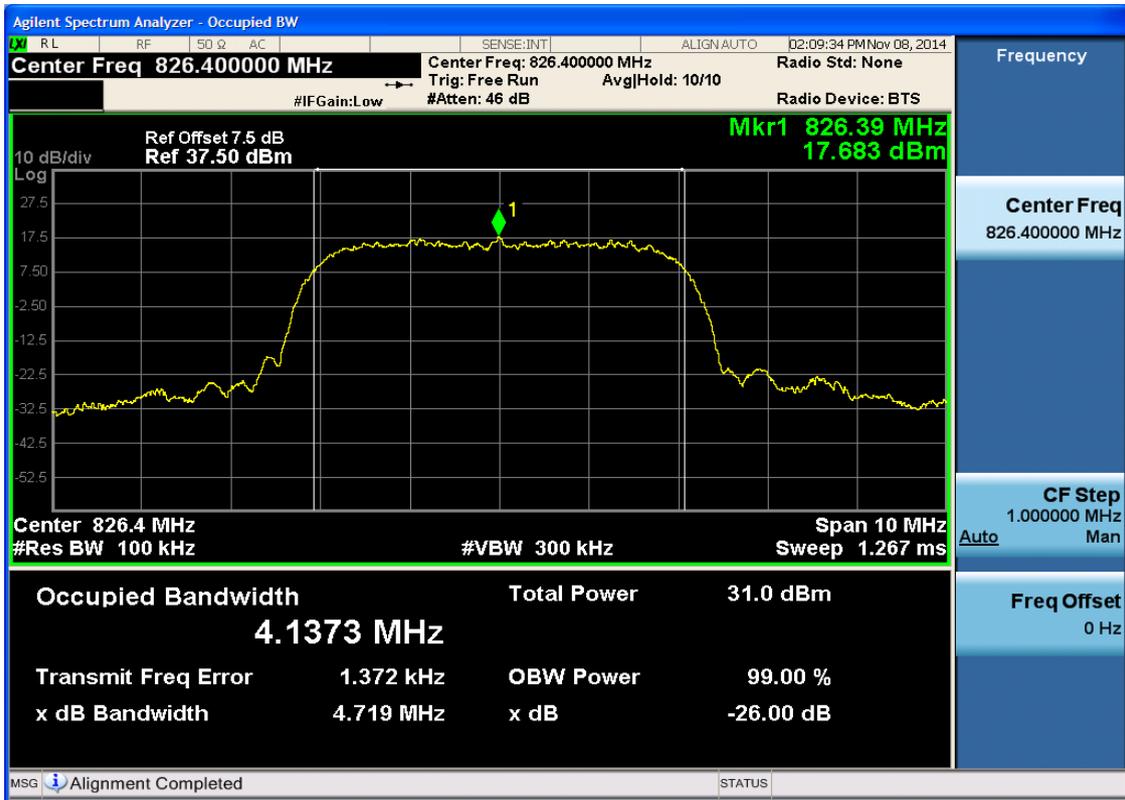
Part II - Test Plots

4.1 For UMTS

4.1.1 Test Band = WCDMA850

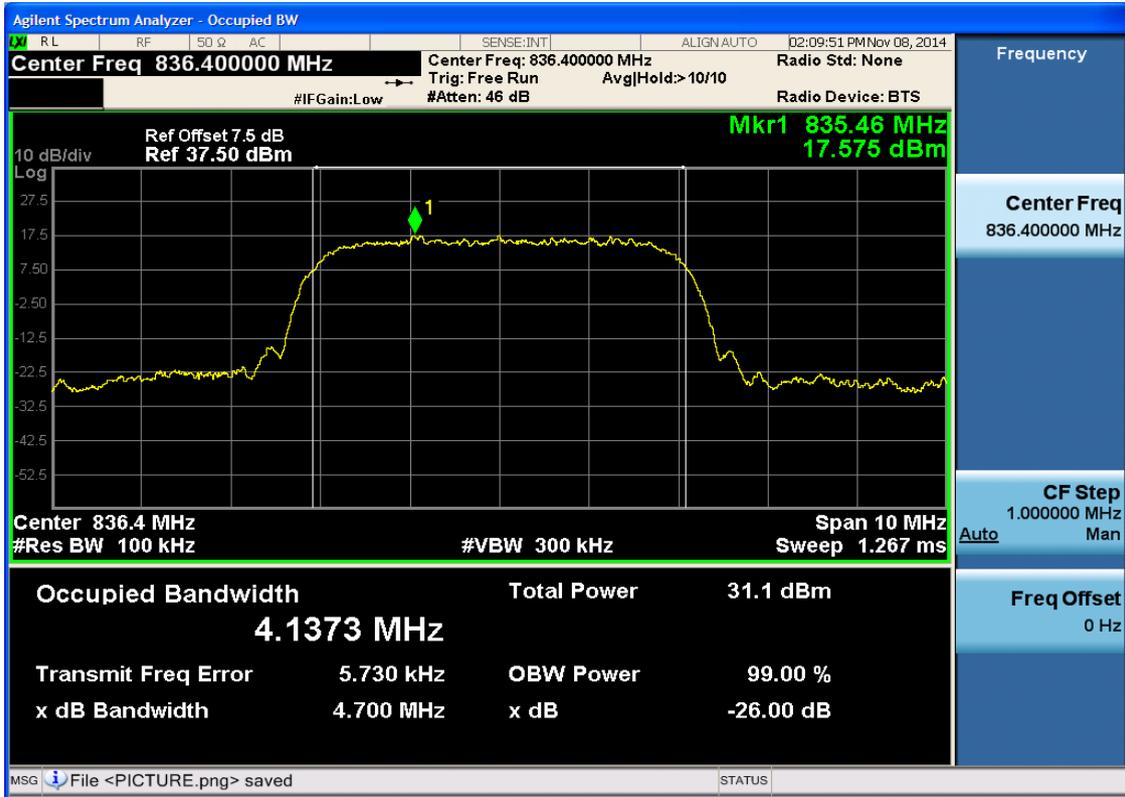
4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH

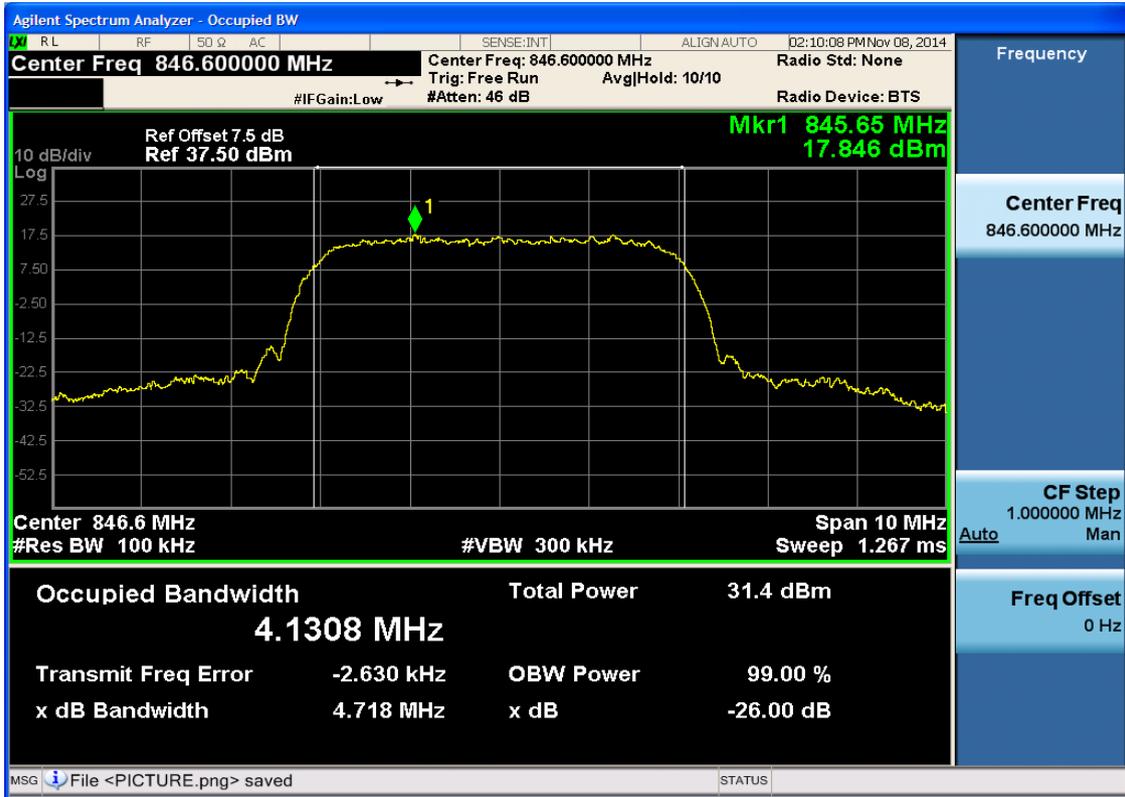




4.1.1.1.2 Test Channel = MCH



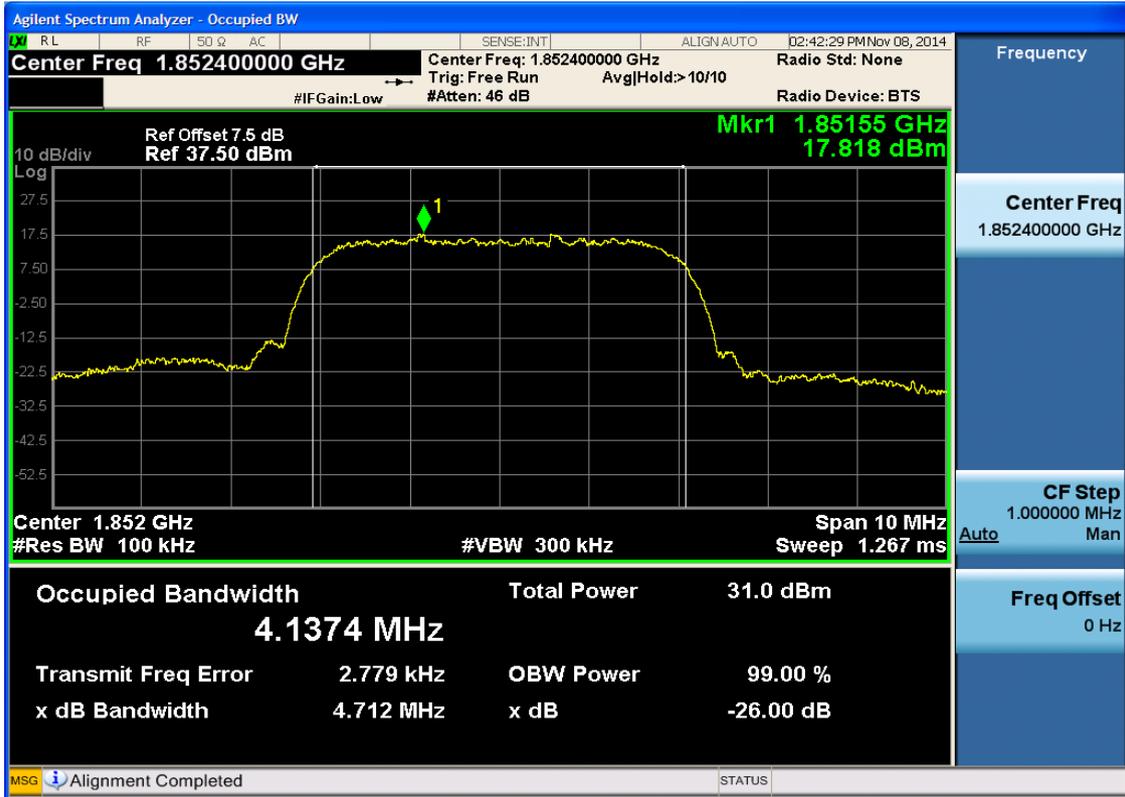
4.1.1.1.3 Test Channel = HCH



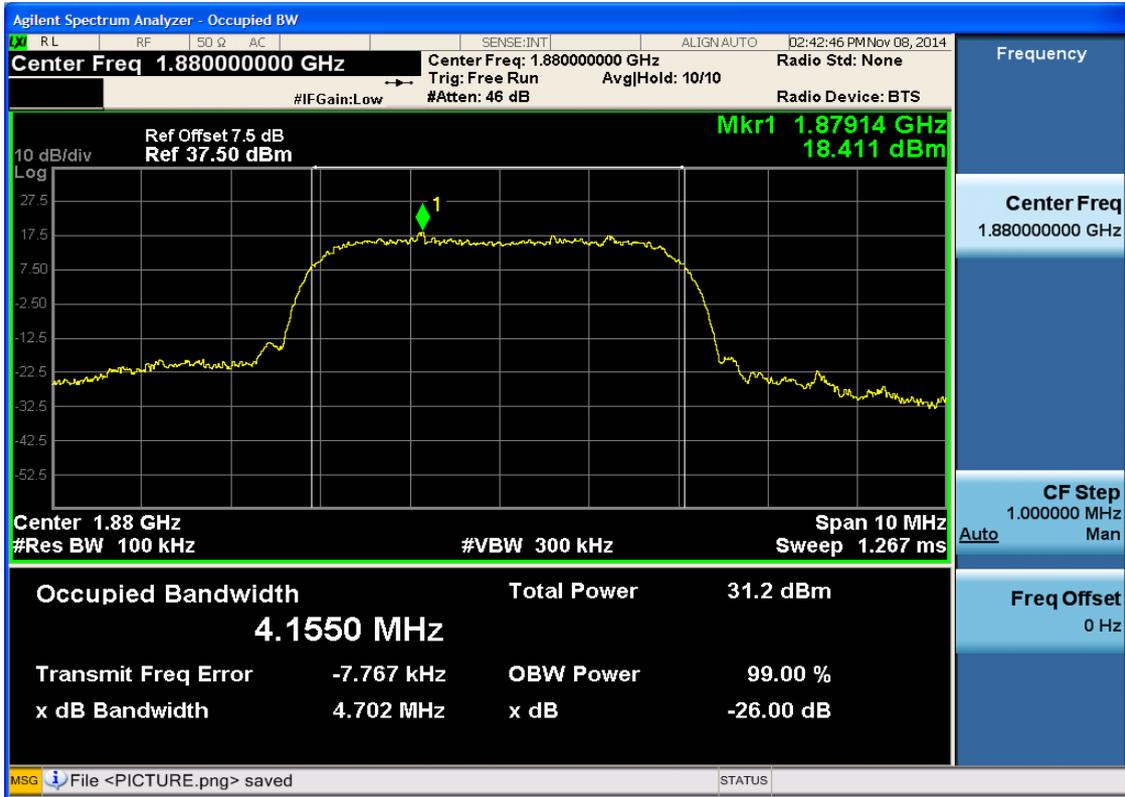
4.2.1 Test Band = WCDMA1900

4.2.1.1 Test Mode = UMTS/TM1

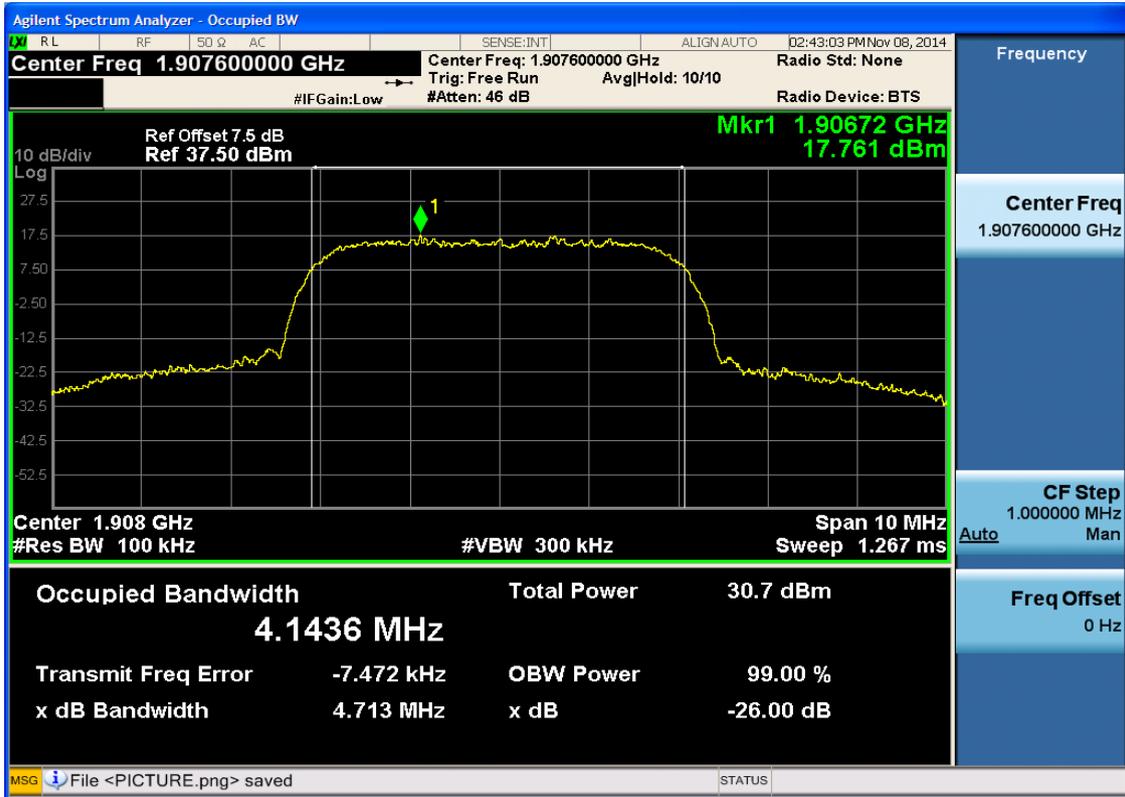
4.2.1.1.1 Test Channel = LCH



4.2.1.1.2 Test Channel = MCH



4.2.1.1.3 Test Channel = HCH





4.3 For LTE

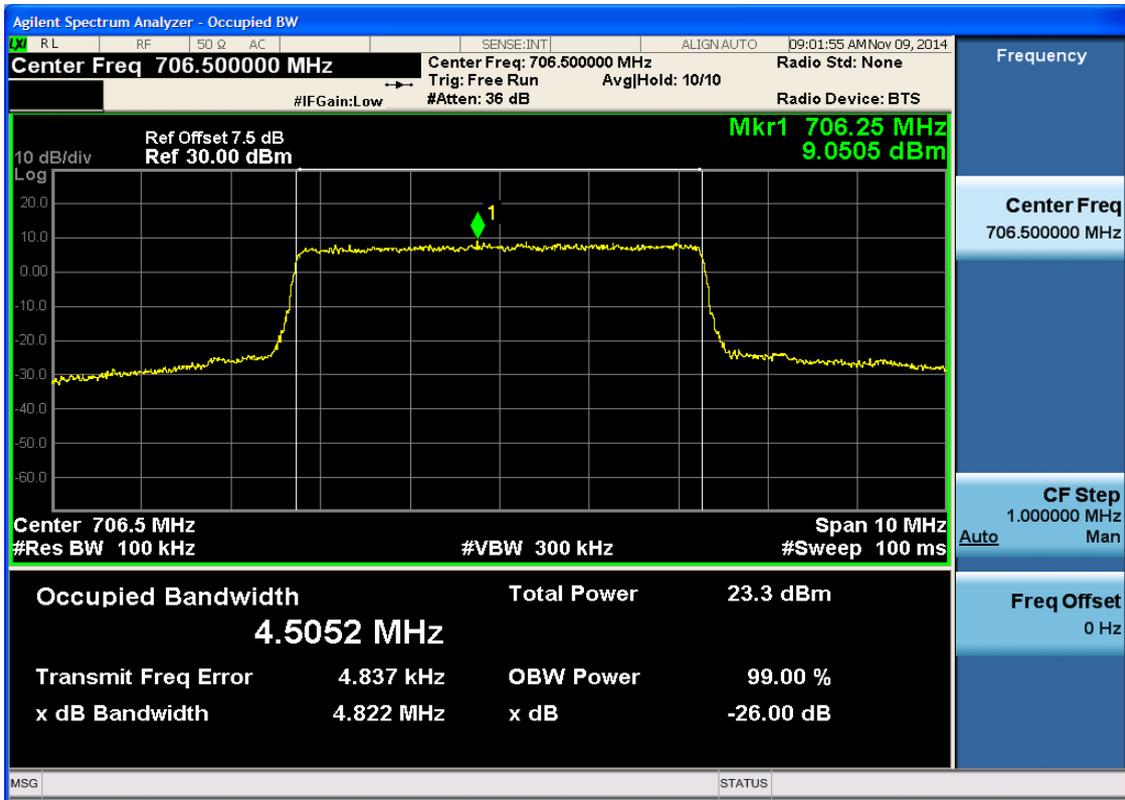
4.3.2 Test Band = BAND17

4.3.2.1 Test Mode = LTE/TM1

4.3.2.1.1 Test Bandwidth = 5

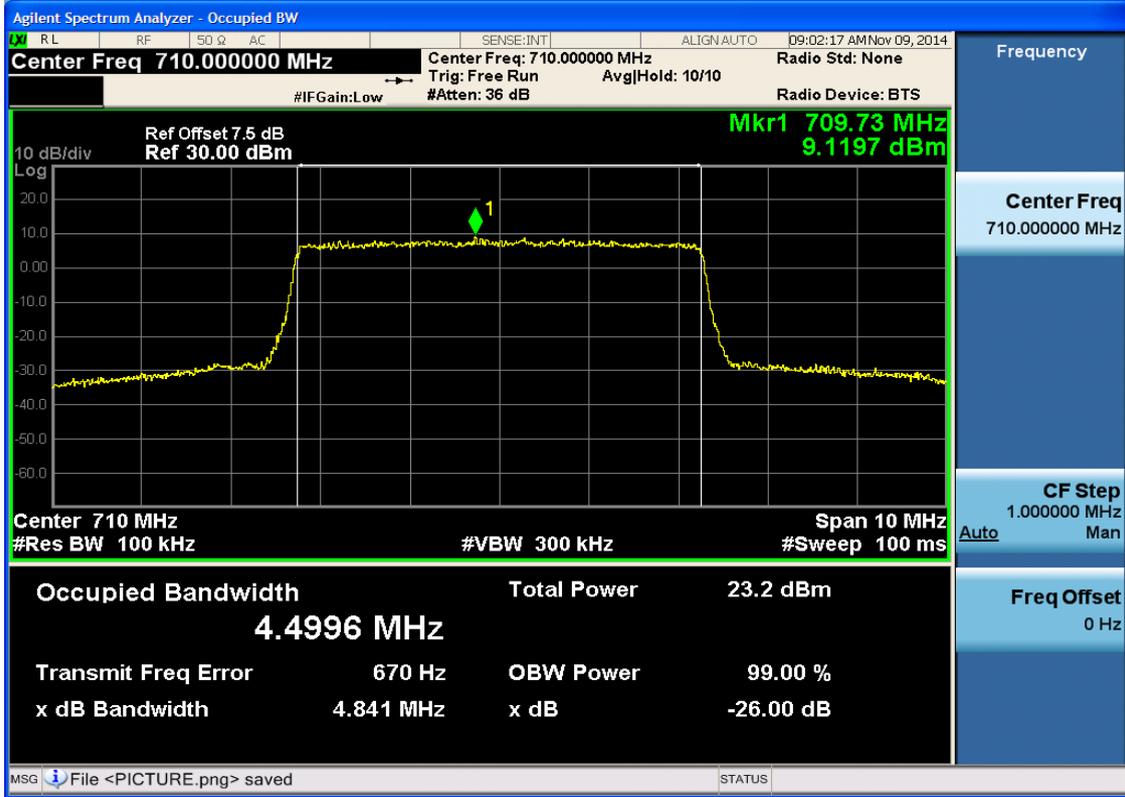
4.3.2.1.1.1 Test Channel = LCH

4.3.2.1.1.1.1 Test RB = RB25#0



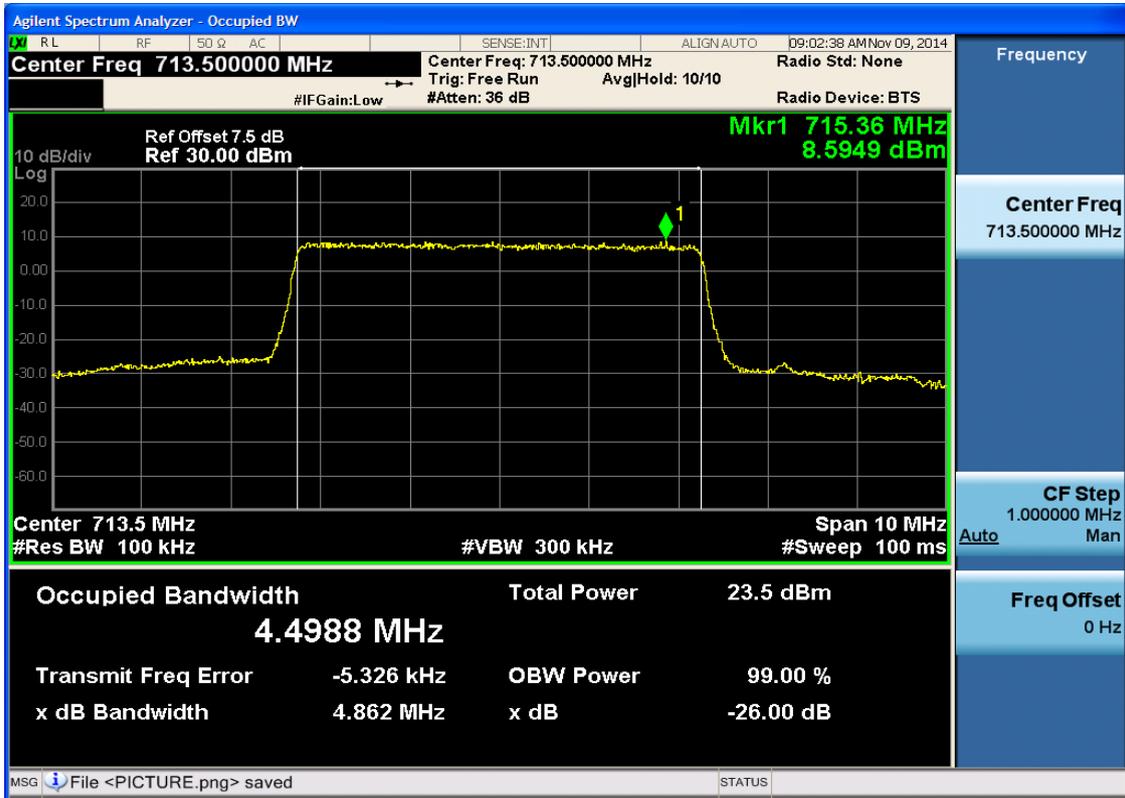
4.3.2.1.1.2 Test Channel = MCH

4.3.2.1.1.2.1 Test RB = RB25#0



4.3.2.1.1.3 Test Channel = HCH

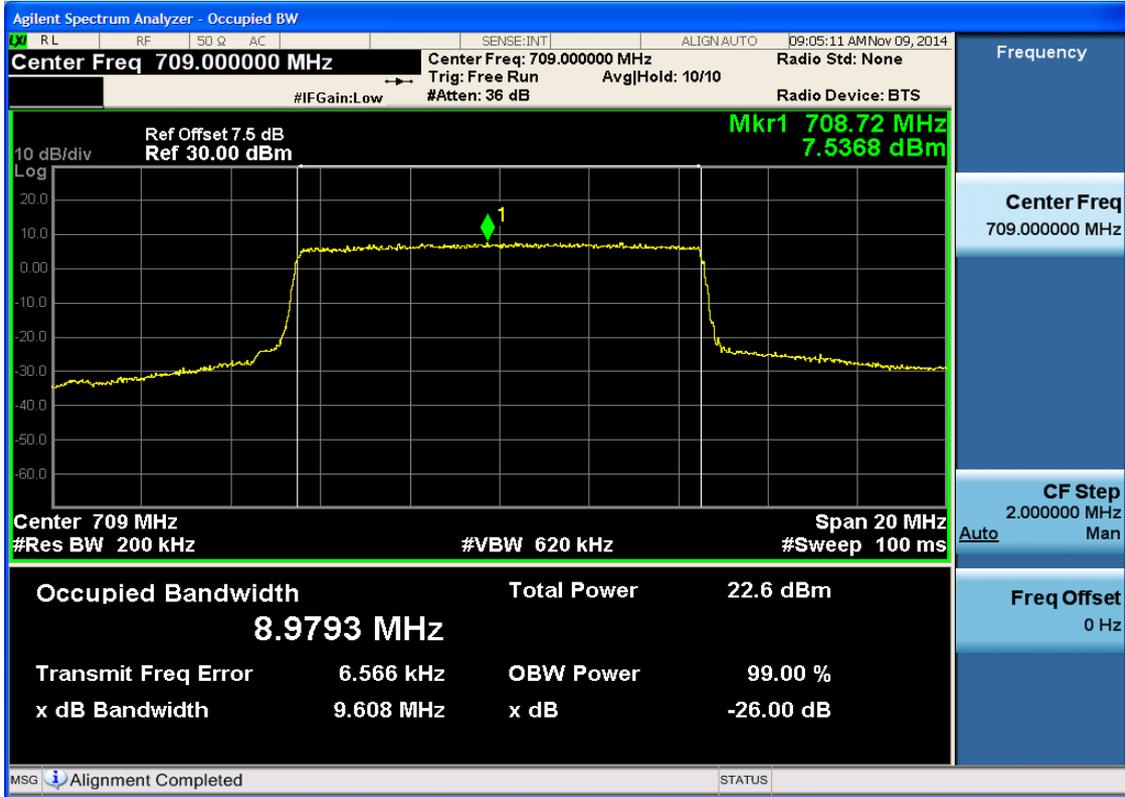
4.3.2.1.1.3.1 Test RB = RB25#0



4.3.2.1.2 Test Bandwidth = 10

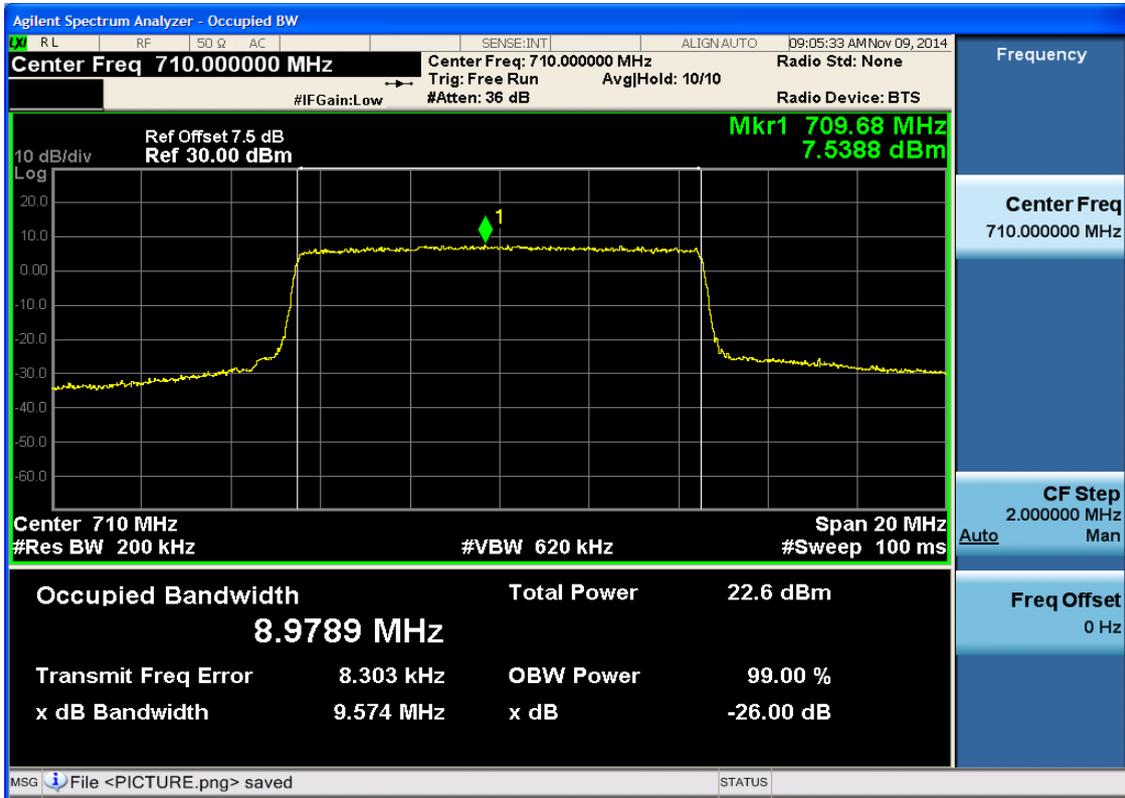
4.3.2.1.2.1 Test Channel = LCH

4.3.2.1.2.1.1 Test RB = RB50#0



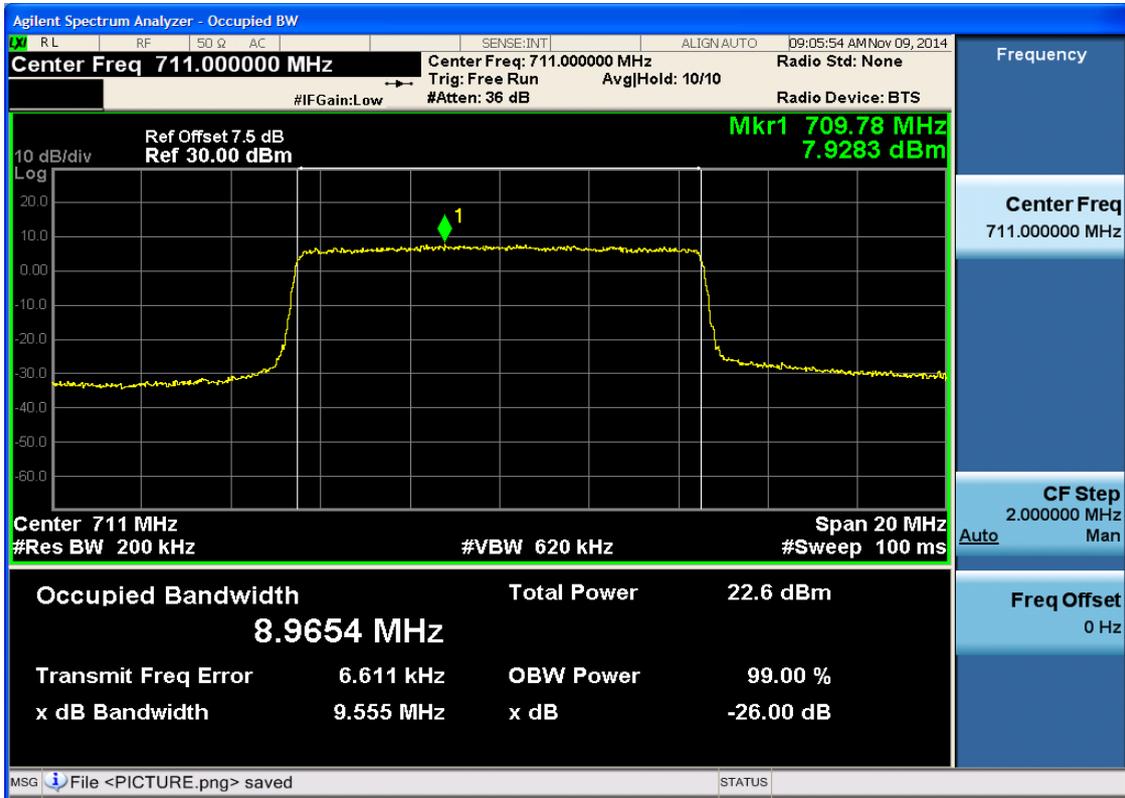
4.3.2.1.2.2 Test Channel = MCH

4.3.2.1.2.2.1 Test RB = RB50#0



4.3.2.1.2.3 Test Channel = HCH

4.3.2.1.2.3.1 Test RB = RB50#0

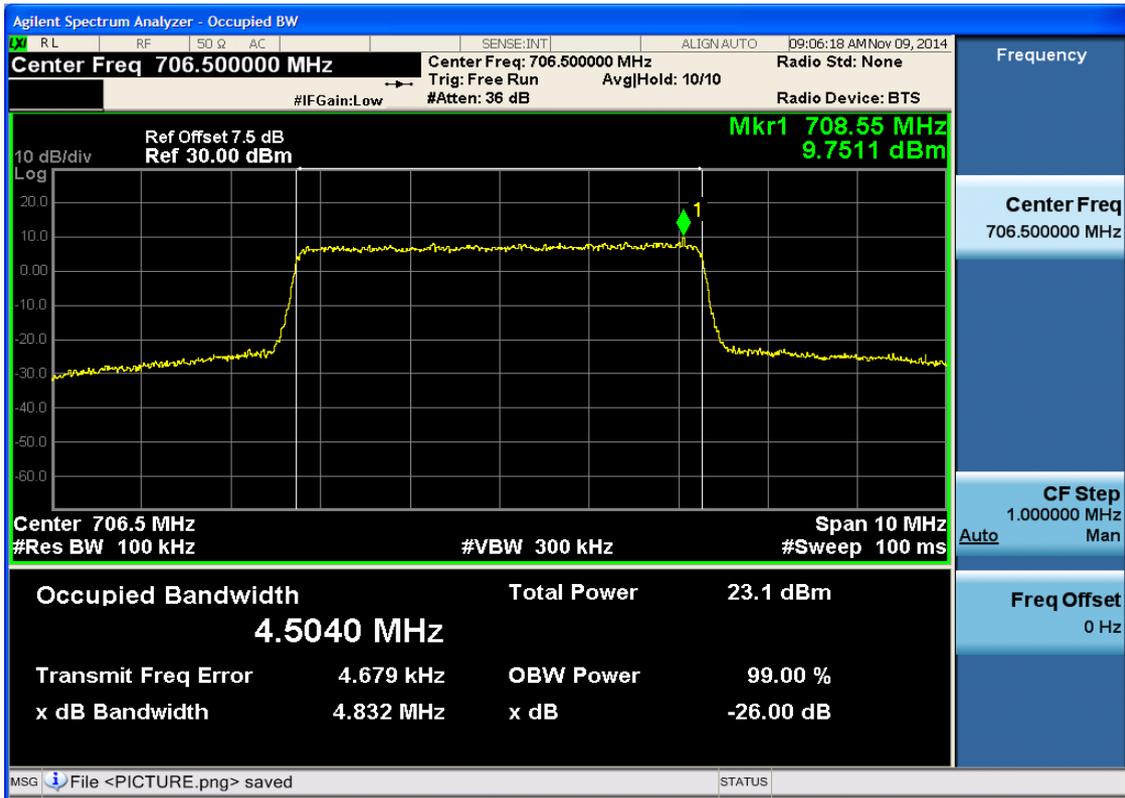


4.3.2.2 Test Mode = LTE/TM2

4.3.2.2.1 Test Bandwidth = 5

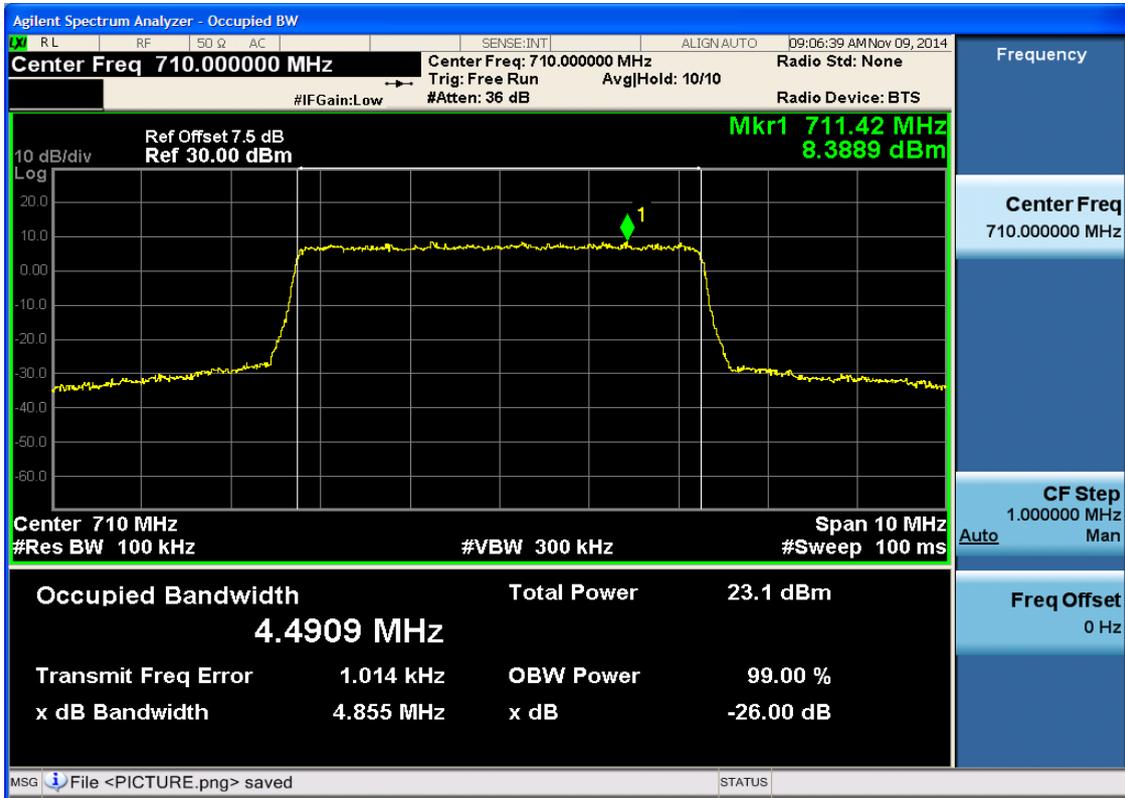
4.3.2.2.1.1 Test Channel = LCH

4.3.2.2.1.1.1 Test RB = RB25#0



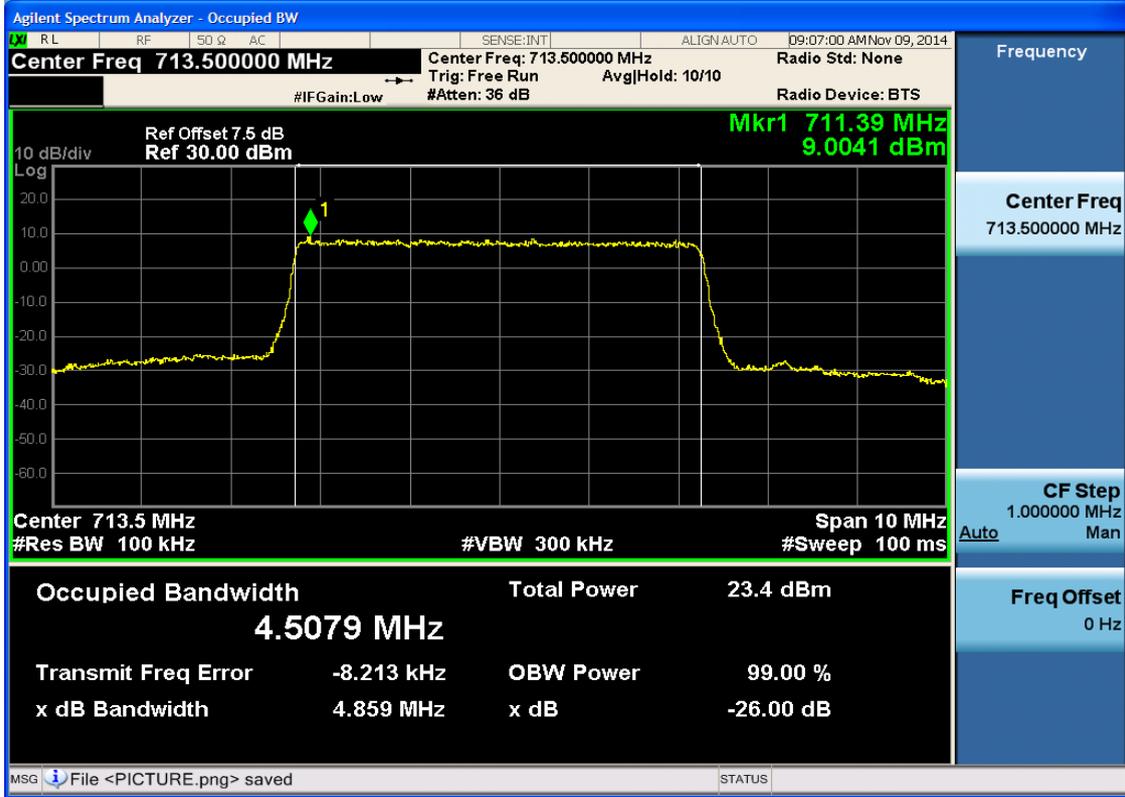
4.3.2.2.1.2 Test Channel = MCH

4.3.2.2.1.2.1 Test RB = RB25#0



4.3.2.2.1.3 Test Channel = HCH

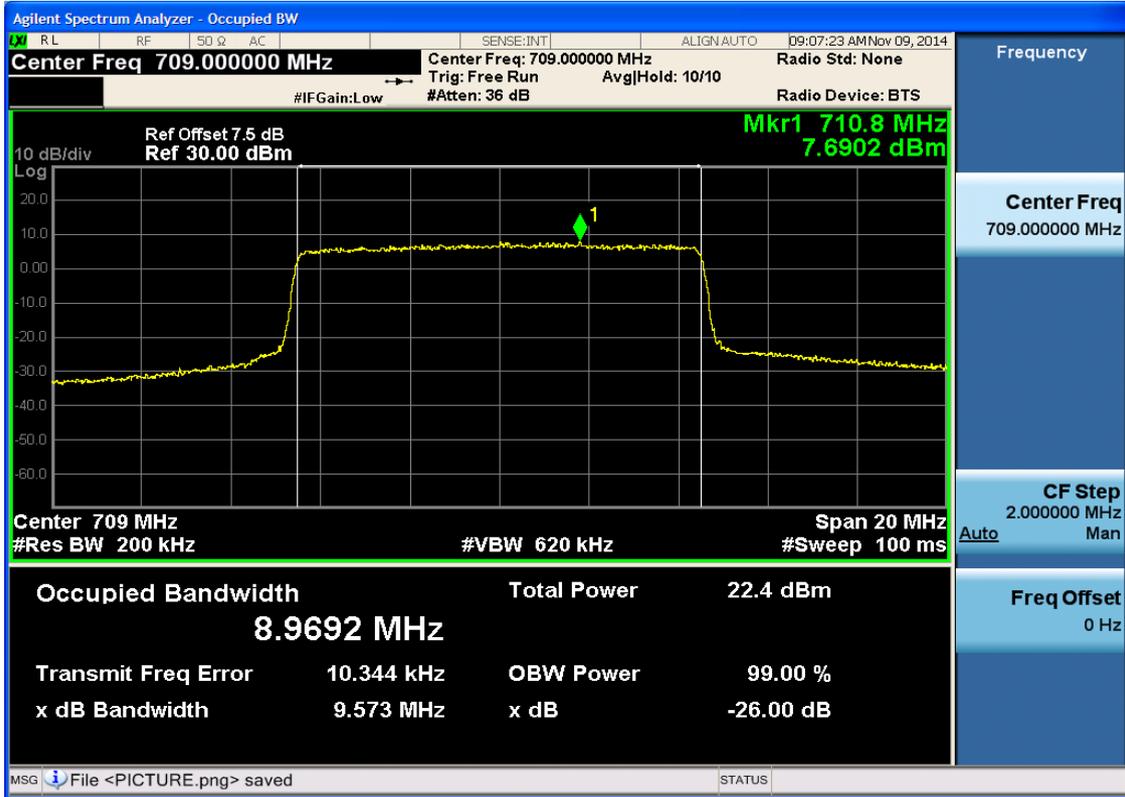
4.3.2.2.1.3.1 Test RB = RB25#0



4.3.2.2.2 Test Bandwidth = 10

4.3.2.2.2.1 Test Channel = LCH

4.3.2.2.2.1.1 Test RB = RB50#0



4.3.2.2.2 Test Channel = MCH

4.3.2.2.2.1 Test RB = RB50#0



4.3.2.2.2.3 Test Channel = HCH

4.3.2.2.2.3.1 Test RB = RB50#0



5Appendix_E: Band Edges Compliance

Part I - Test Plots

5.1 For UMTS

5.1.1 Test Band = WCDMA850

5.1.1.1 Test Mode = UMTS/TM1

5.1.1.1.1 Test Channel = LCH



5.1.1.1.2 Test Channel = HCH





5.2.1 Test Band = WCDMA1900

5.2.1.1 Test Mode = UMTS/TM1

5.2.1.1.1 Test Channel = LCH



5.2.1.1.2 Test Channel = HCH



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.

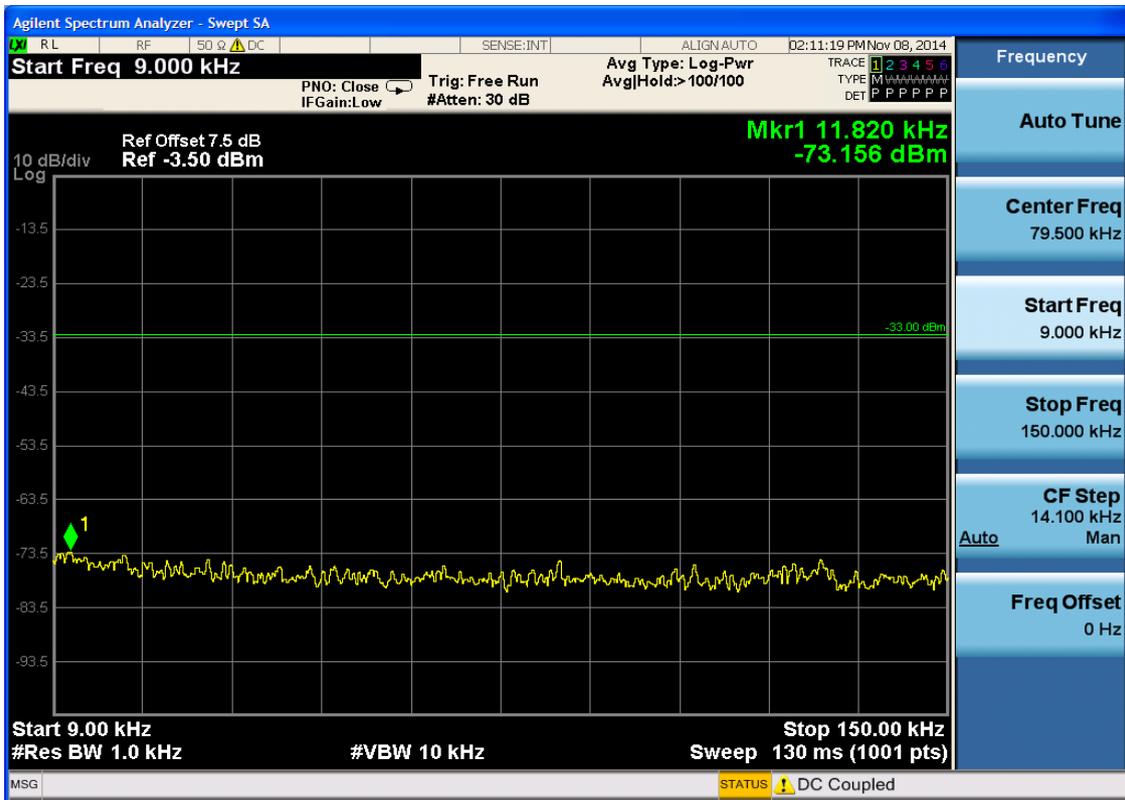
Part I - Test Plots

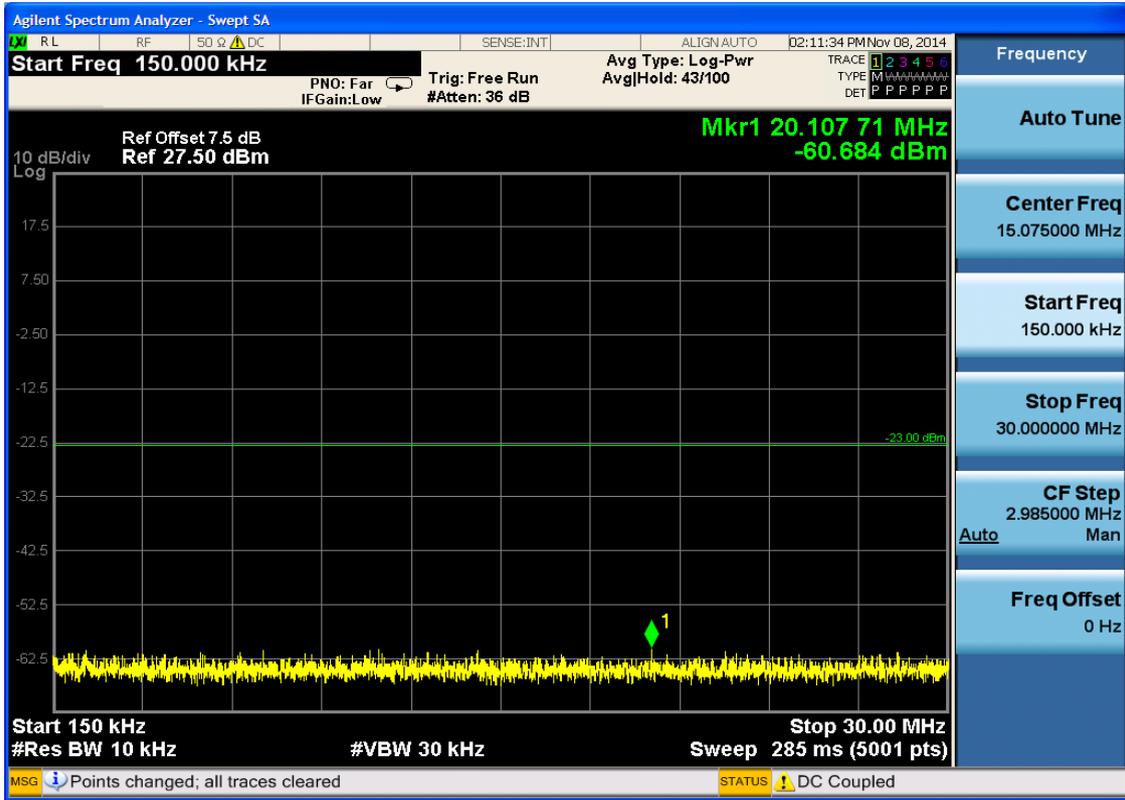
6.1 For UMTS

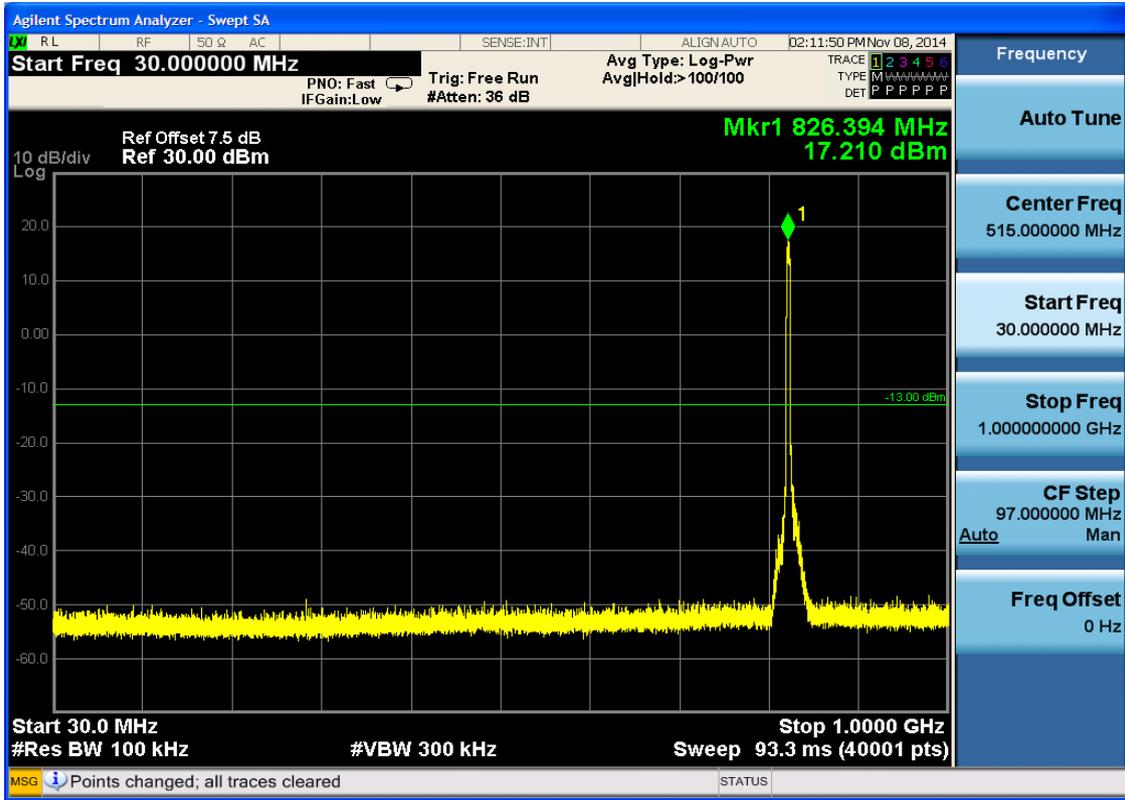
6.1.1 Test Band = WCDMA850

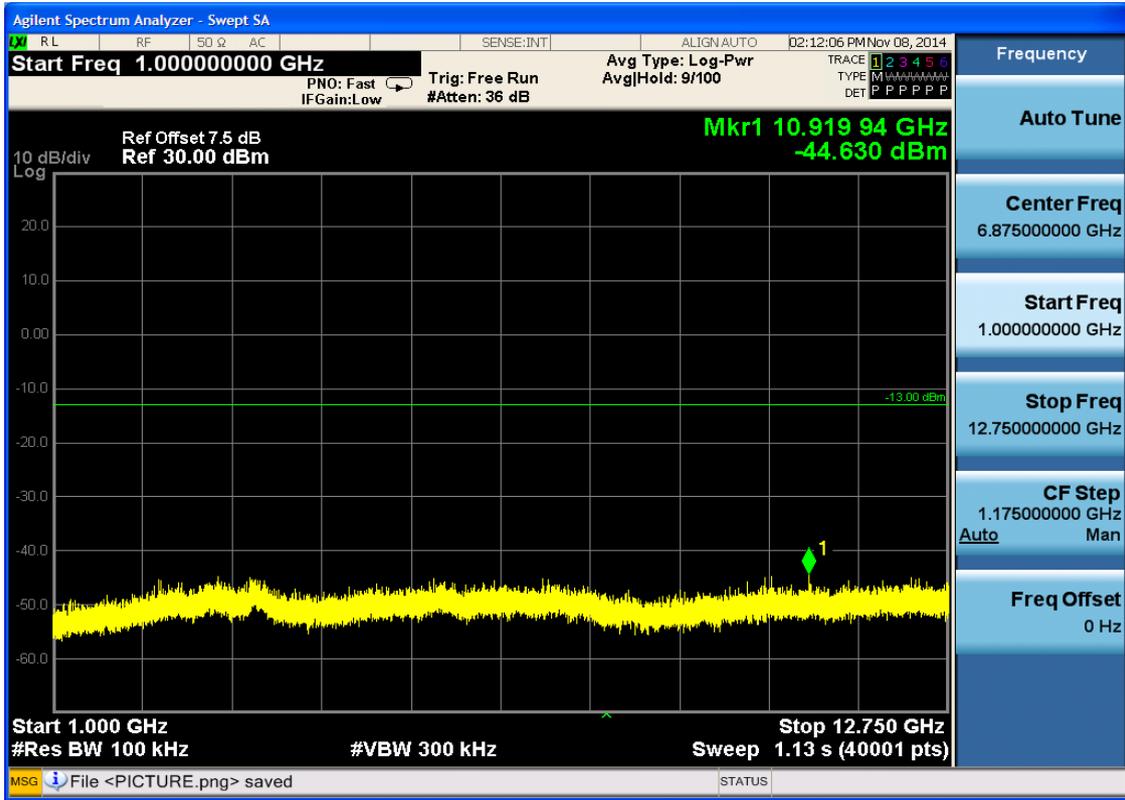
6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH

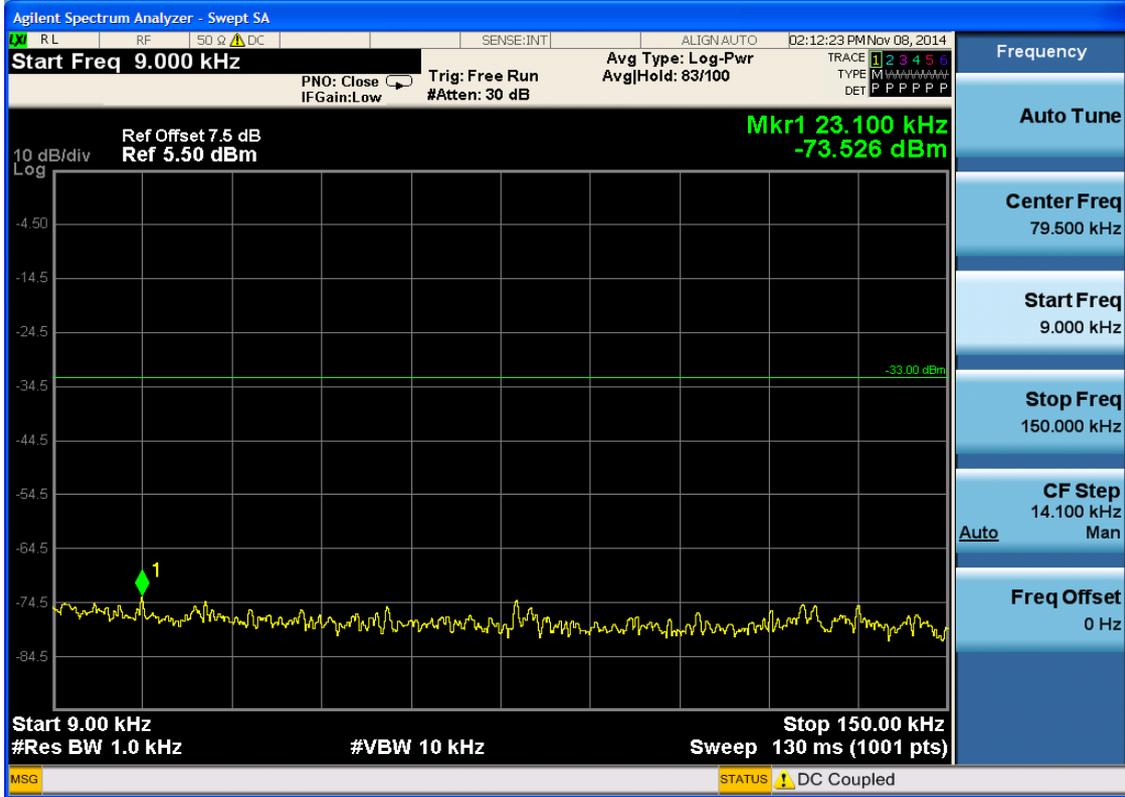


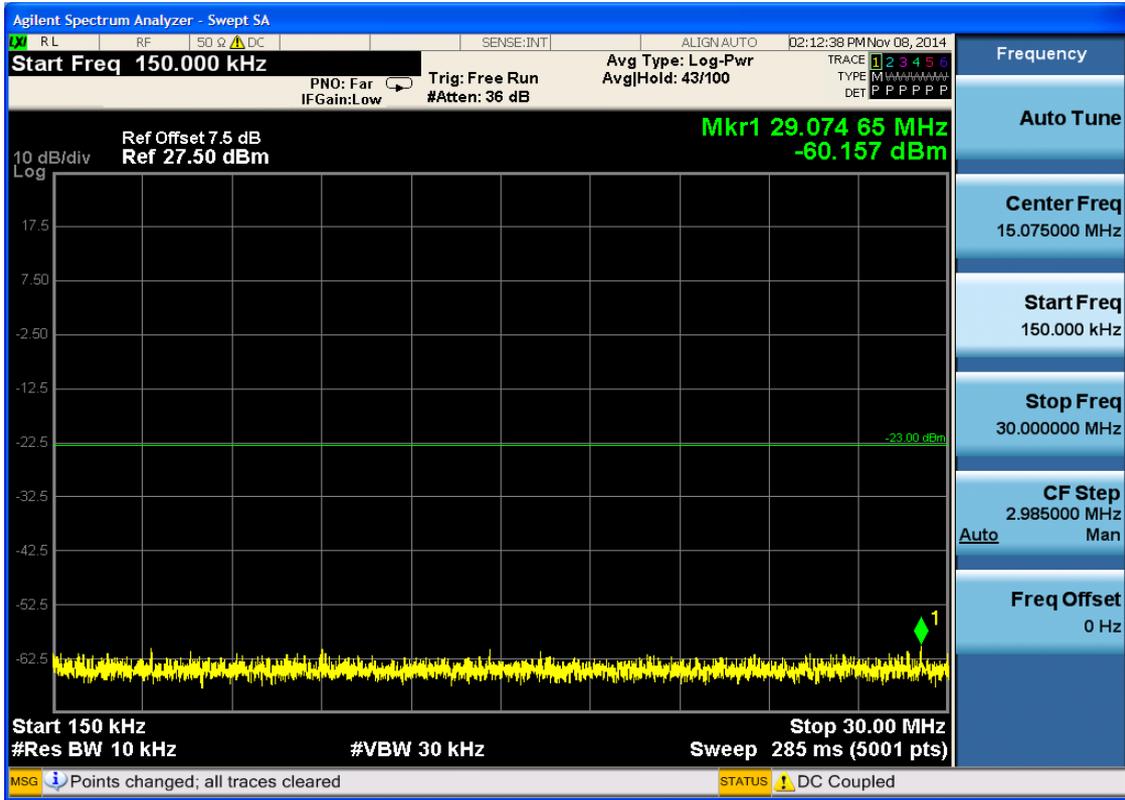


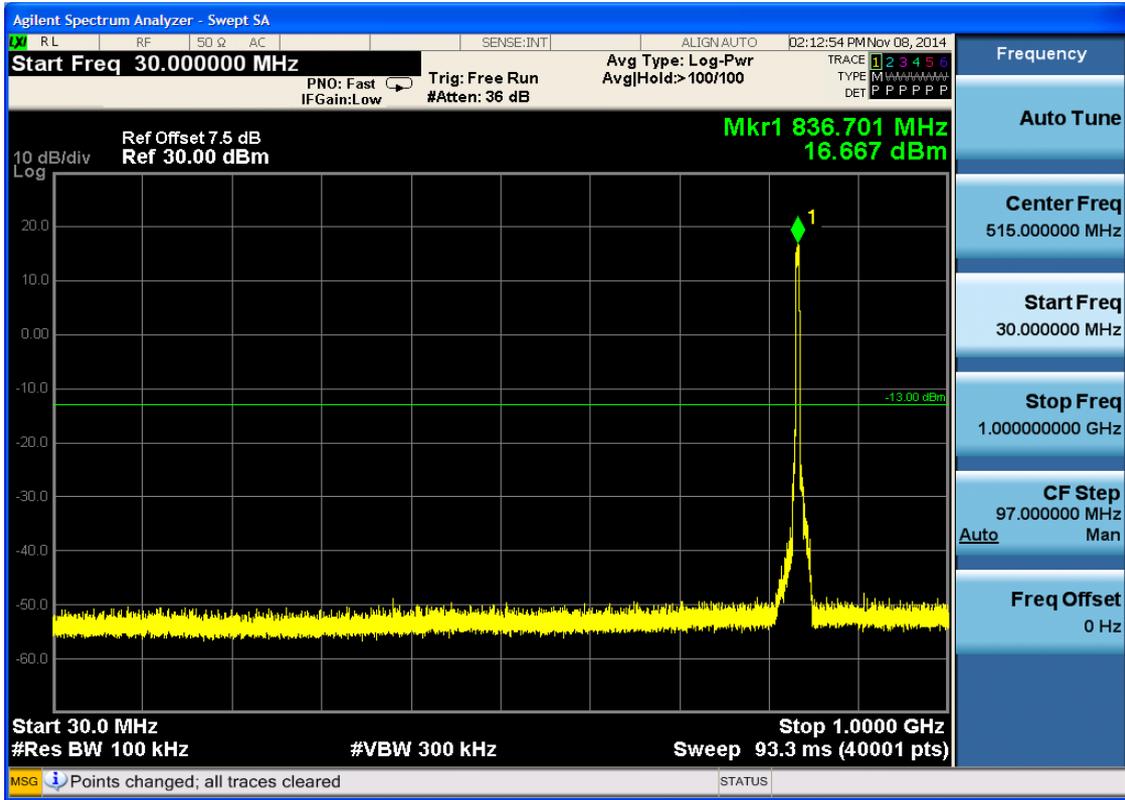


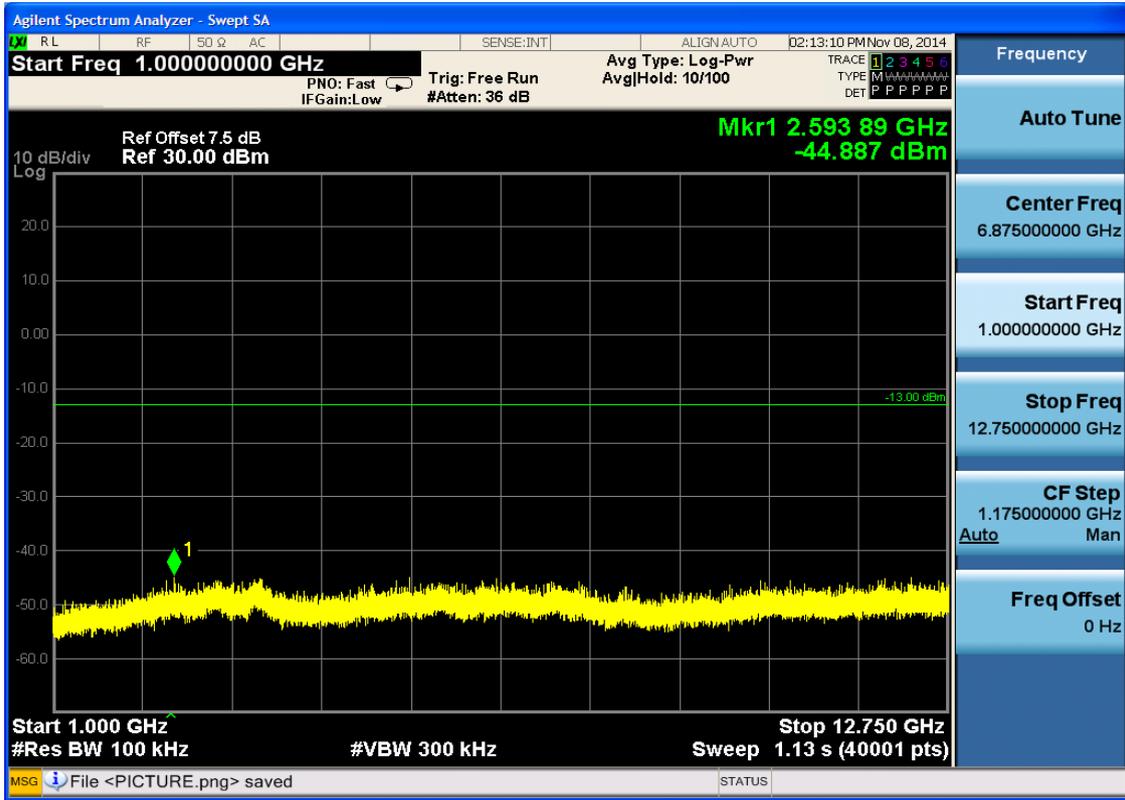


6.1.1.1.2 Test Channel = MCH

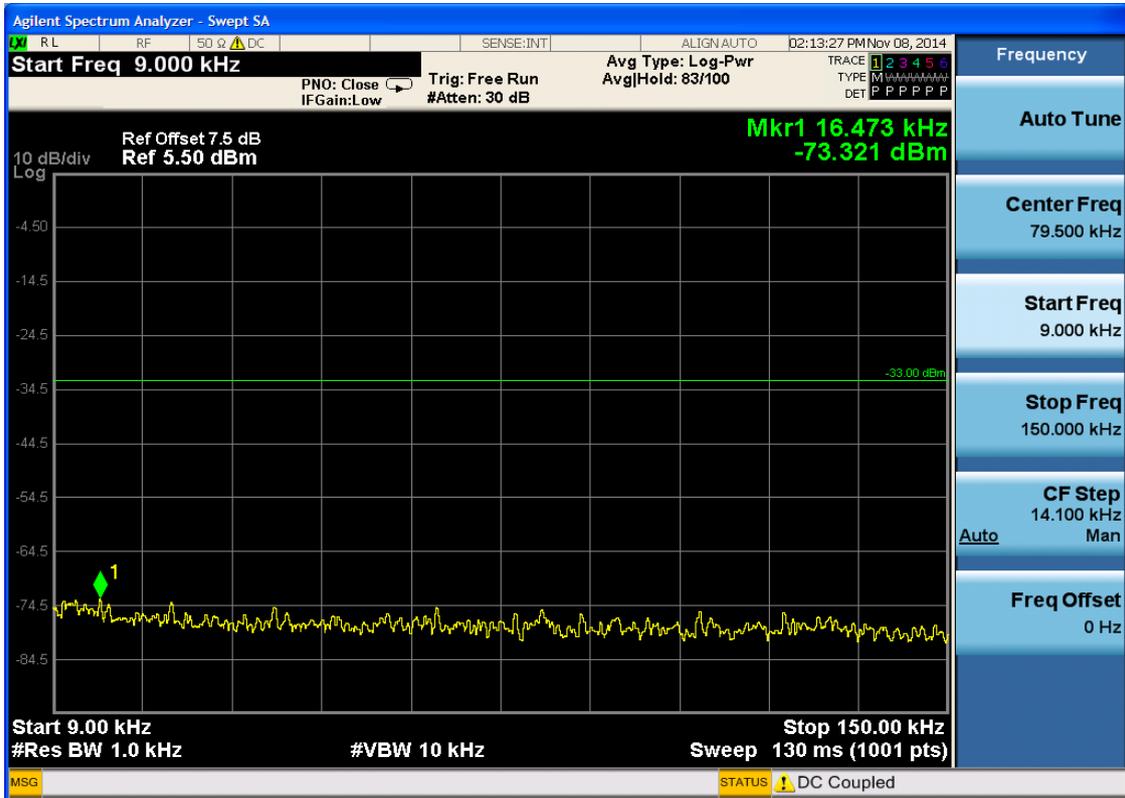


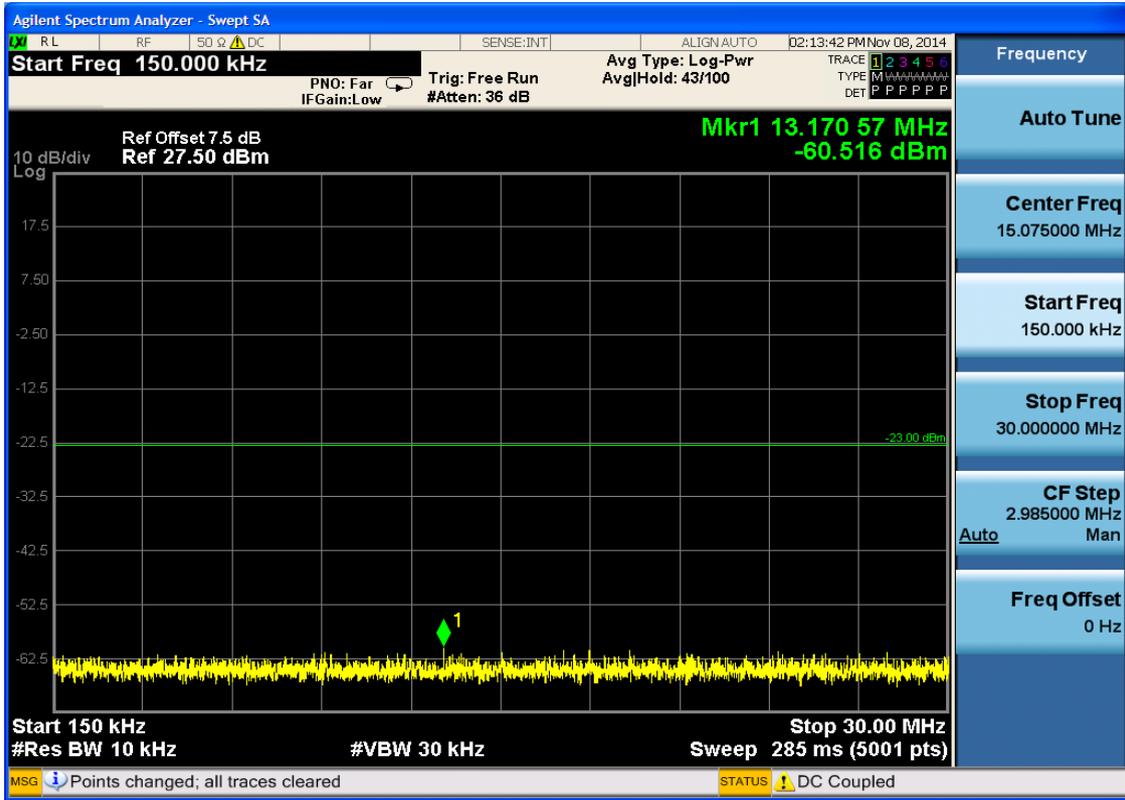


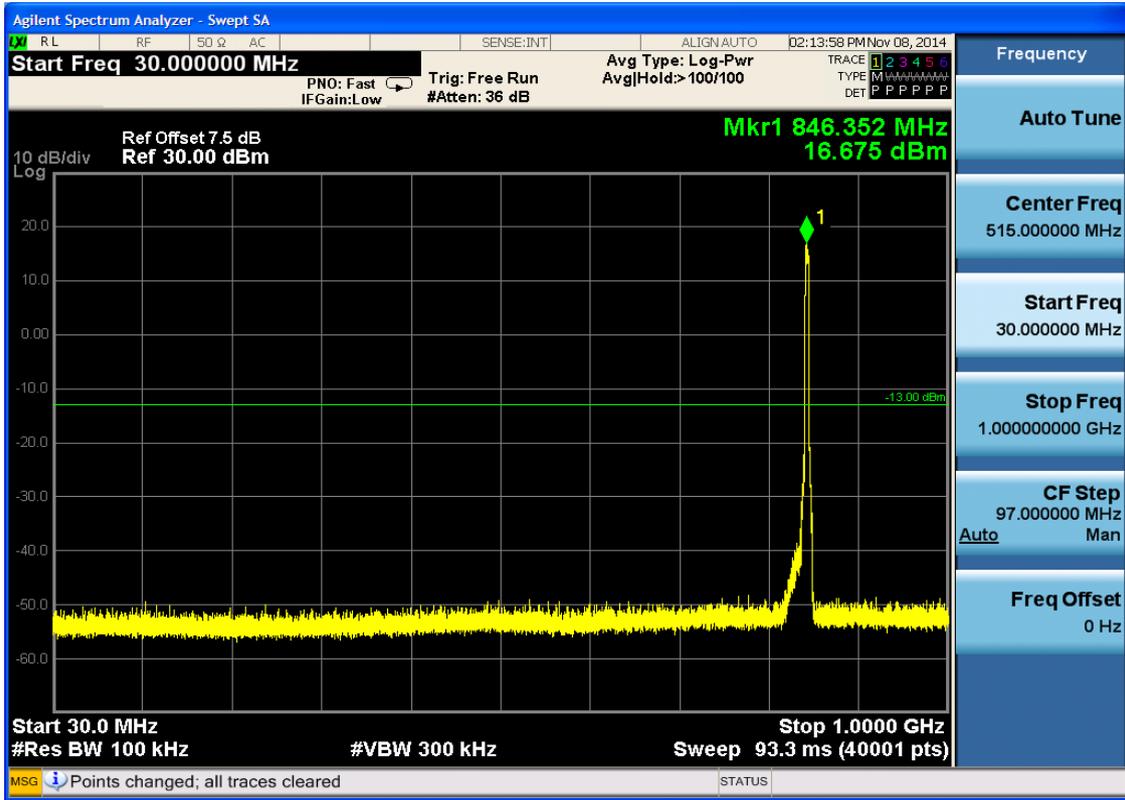


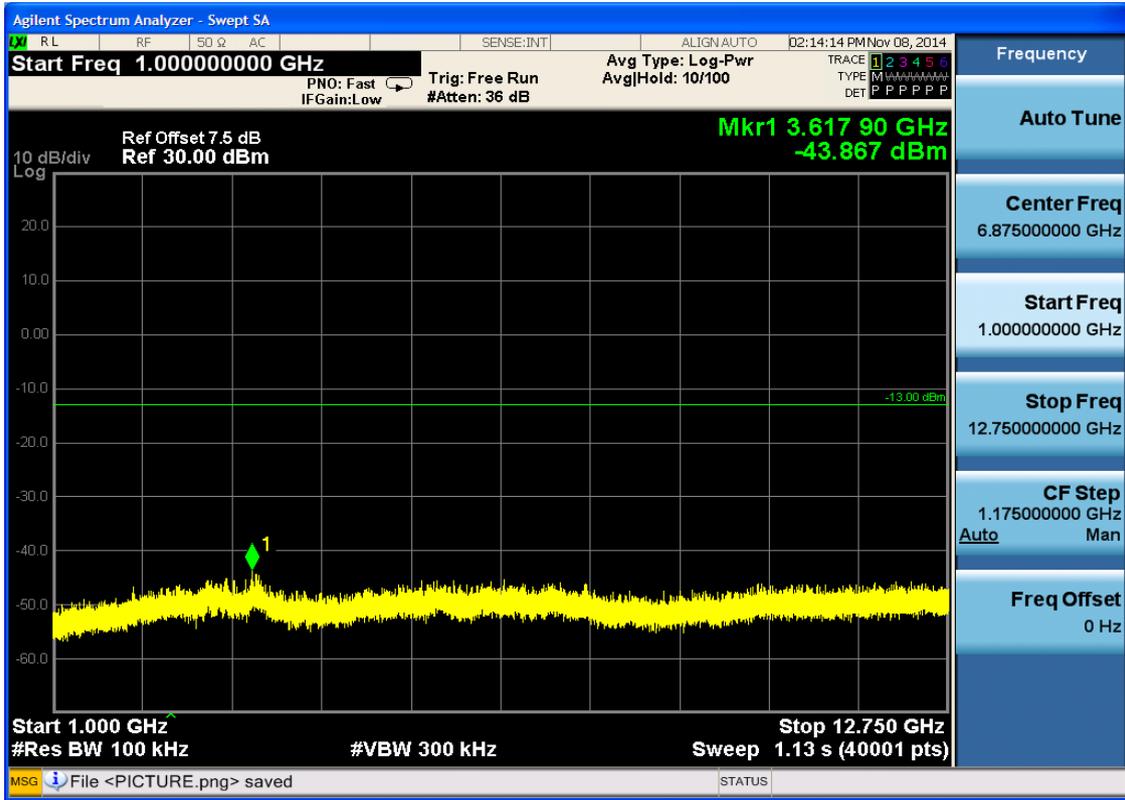


6.1.1.1.3 Test Channel = HCH







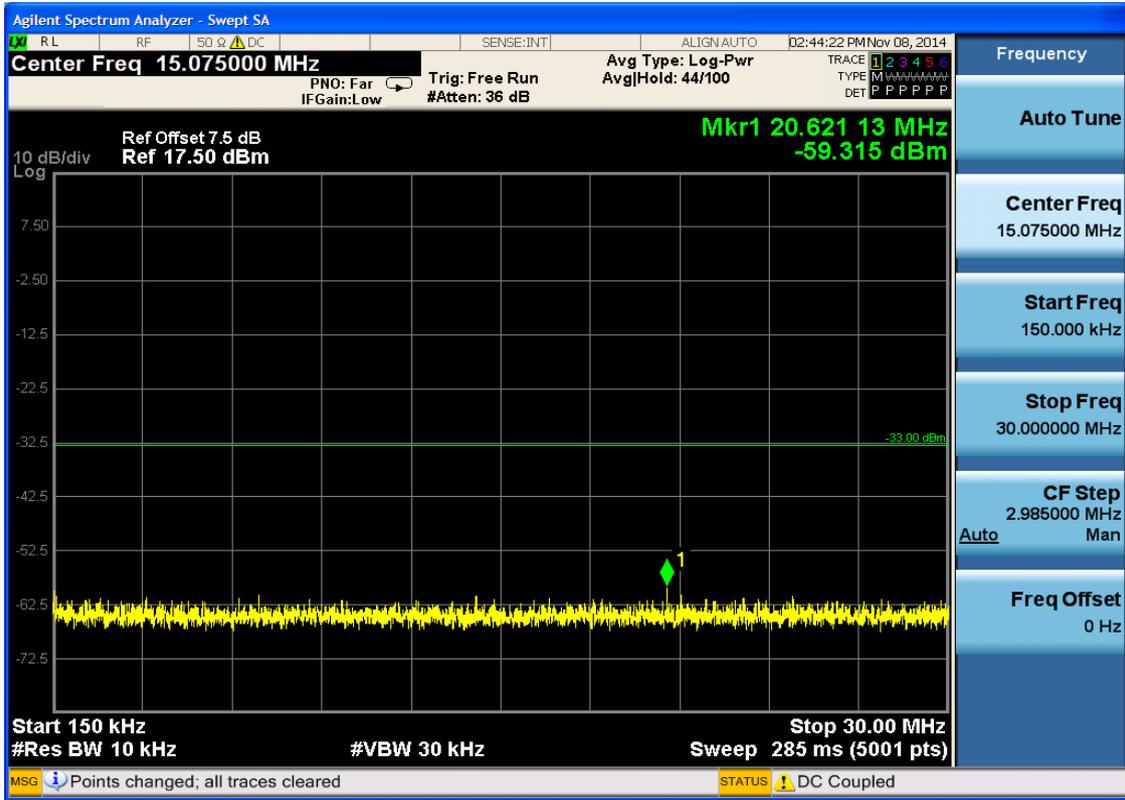


6.2.1 Test Band = WCDMA1900

6.2.1.1 Test Mode = UMTS/TM1

6.2.1.1.1 Test Channel = LCH

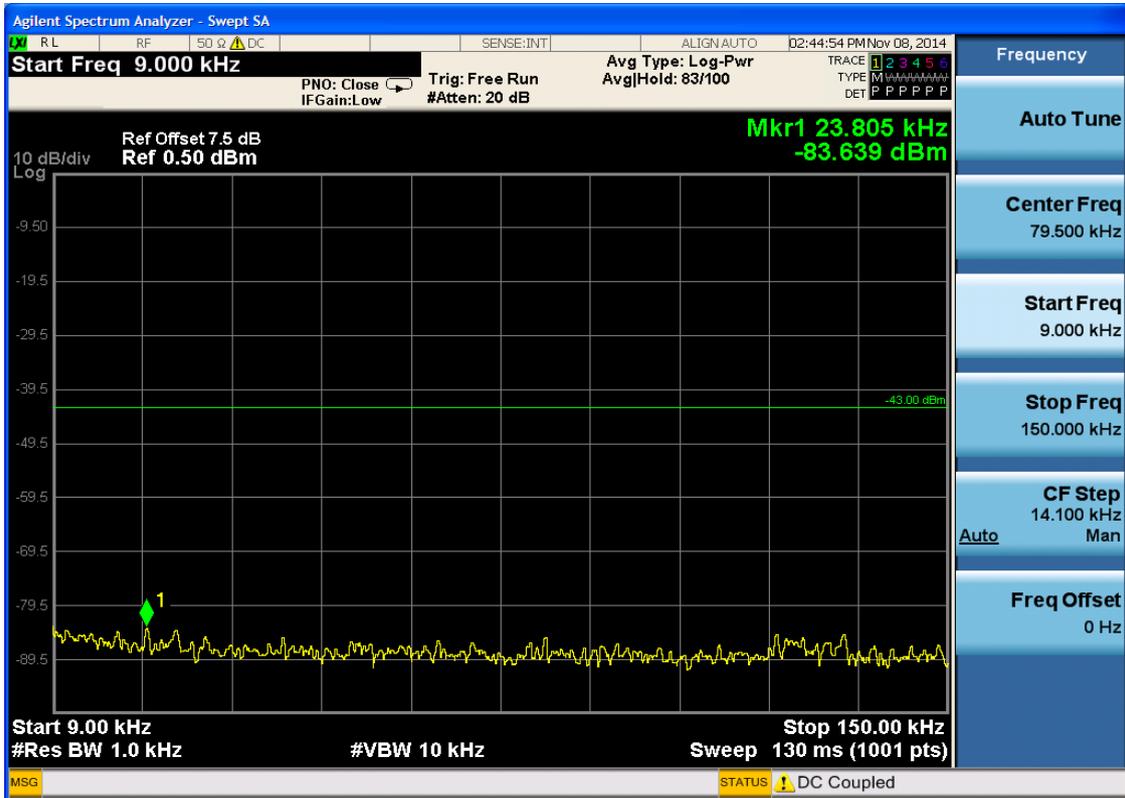


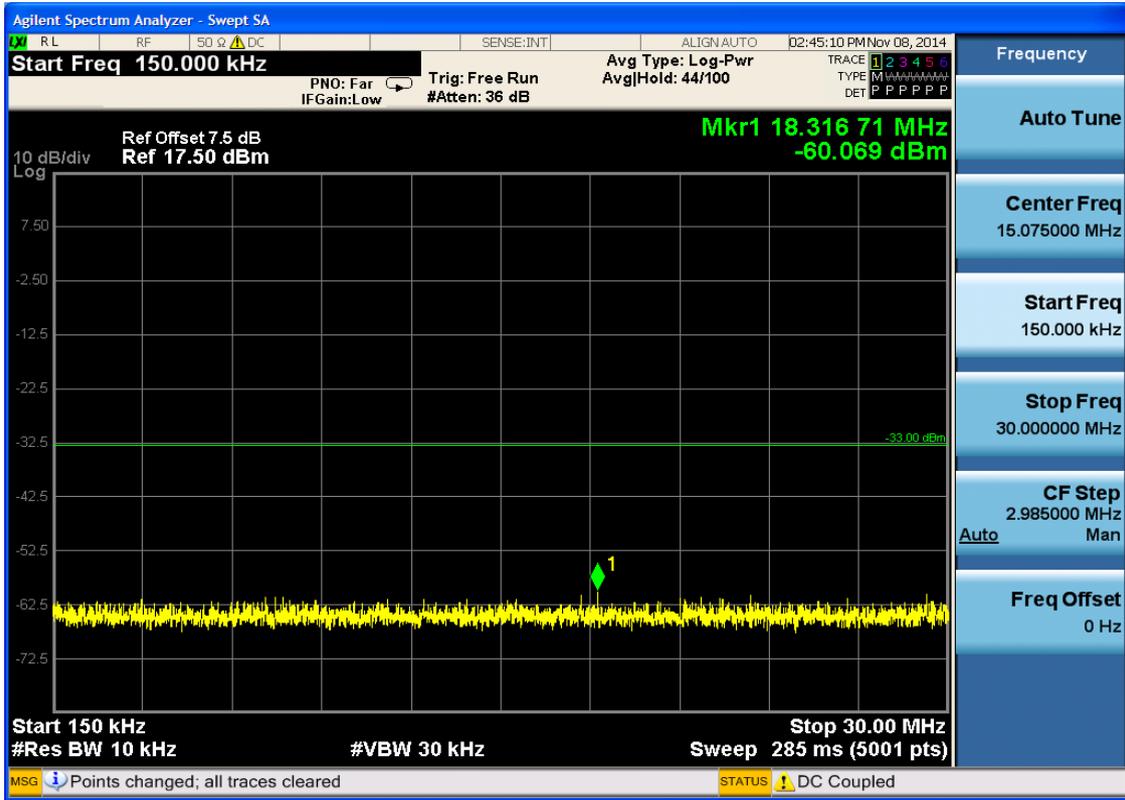






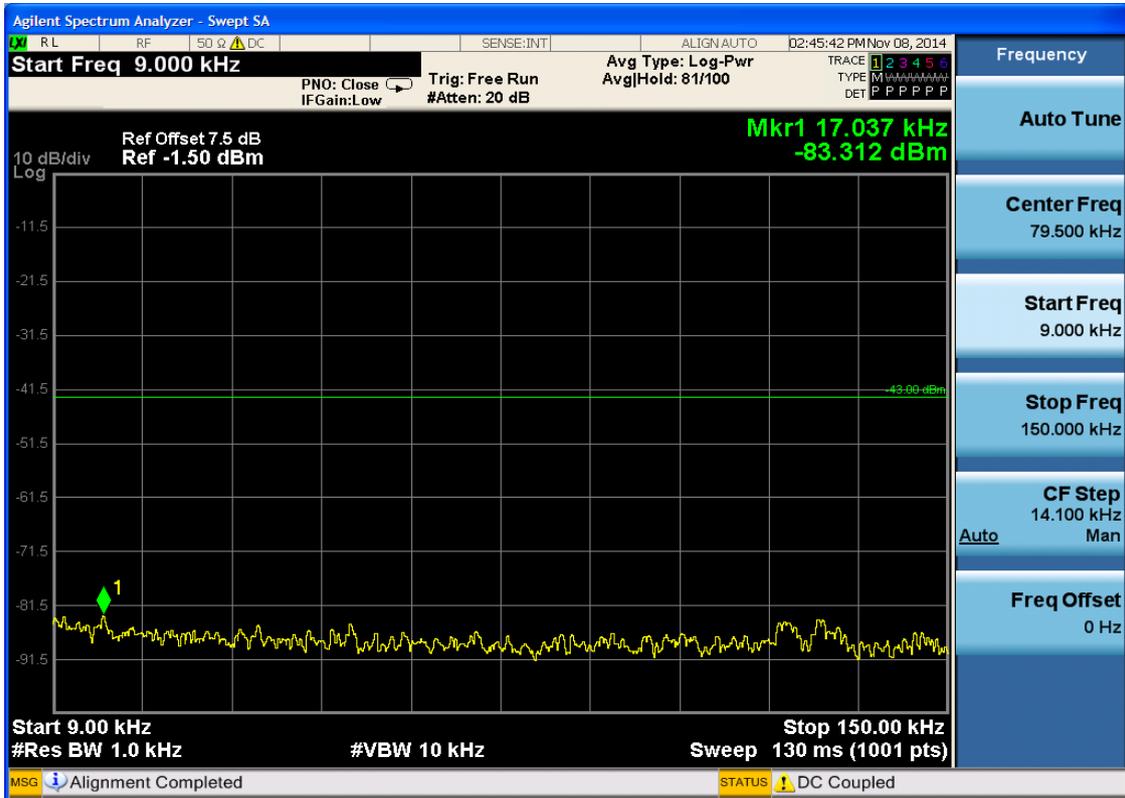
6.2.1.1.2 Test Channel = MCH

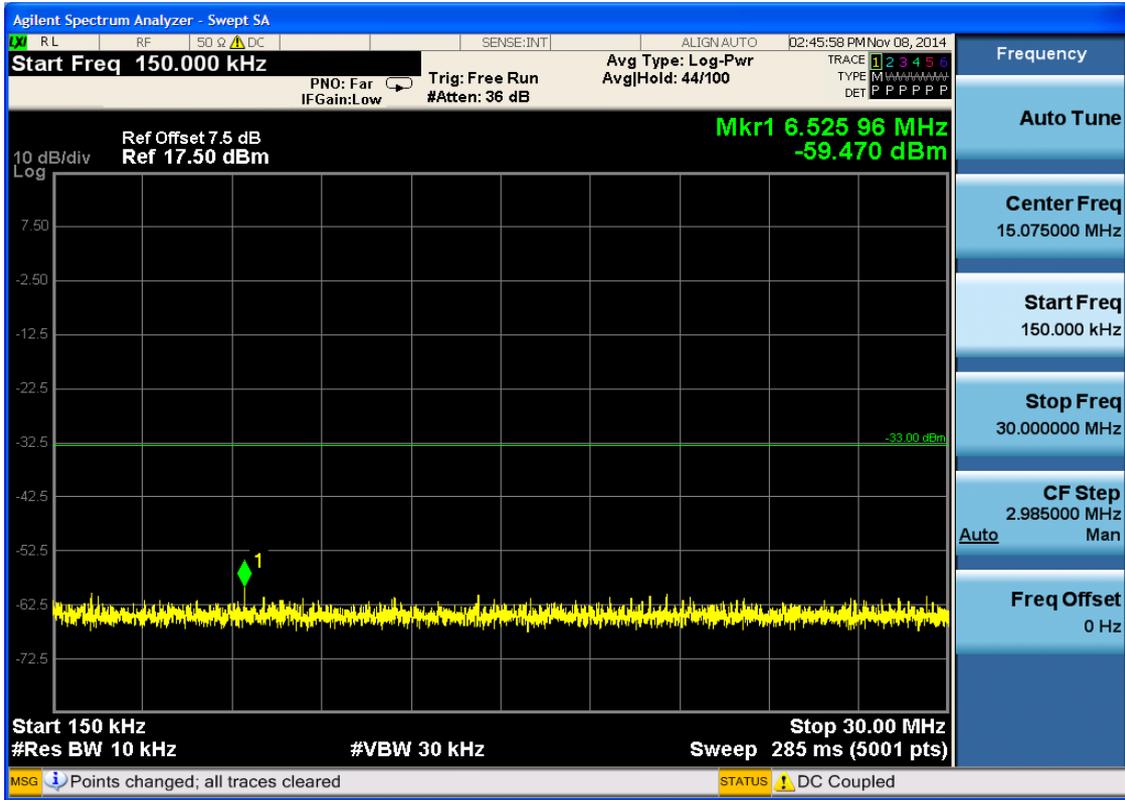






6.2.1.1.3 Test Channel = HCH







6.3 For LTE

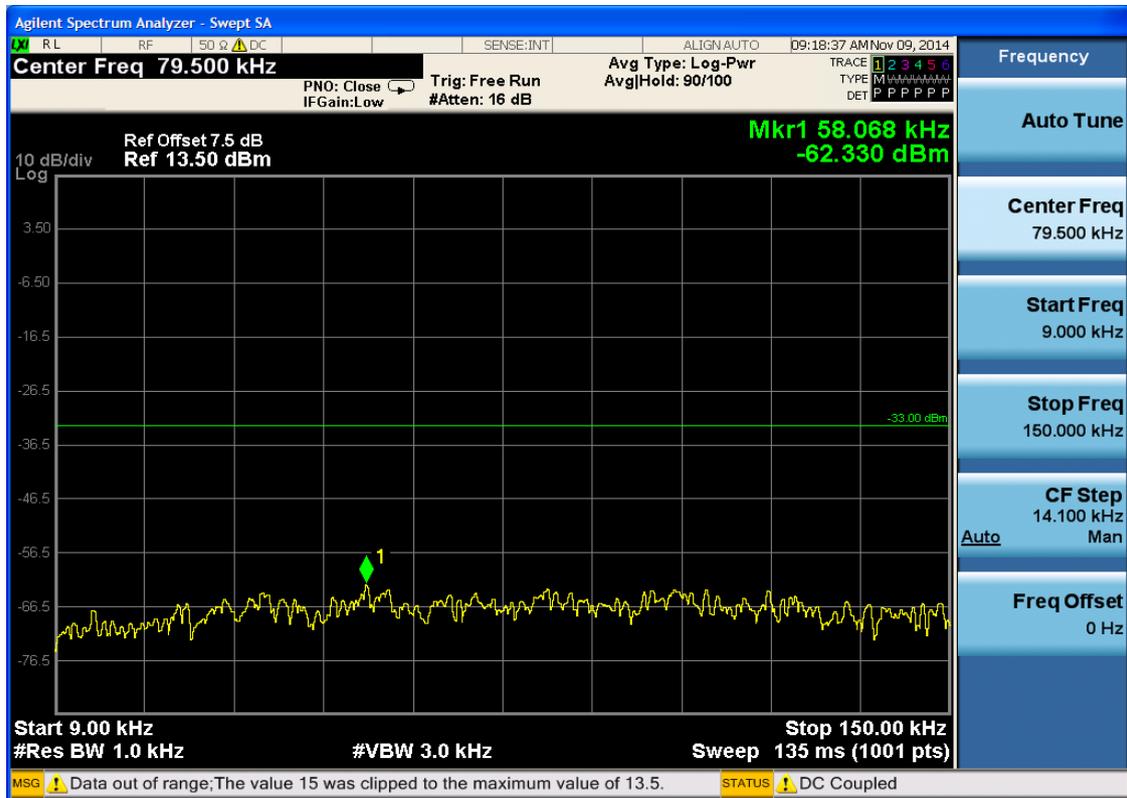
6.3.1 Test Band = BAND17

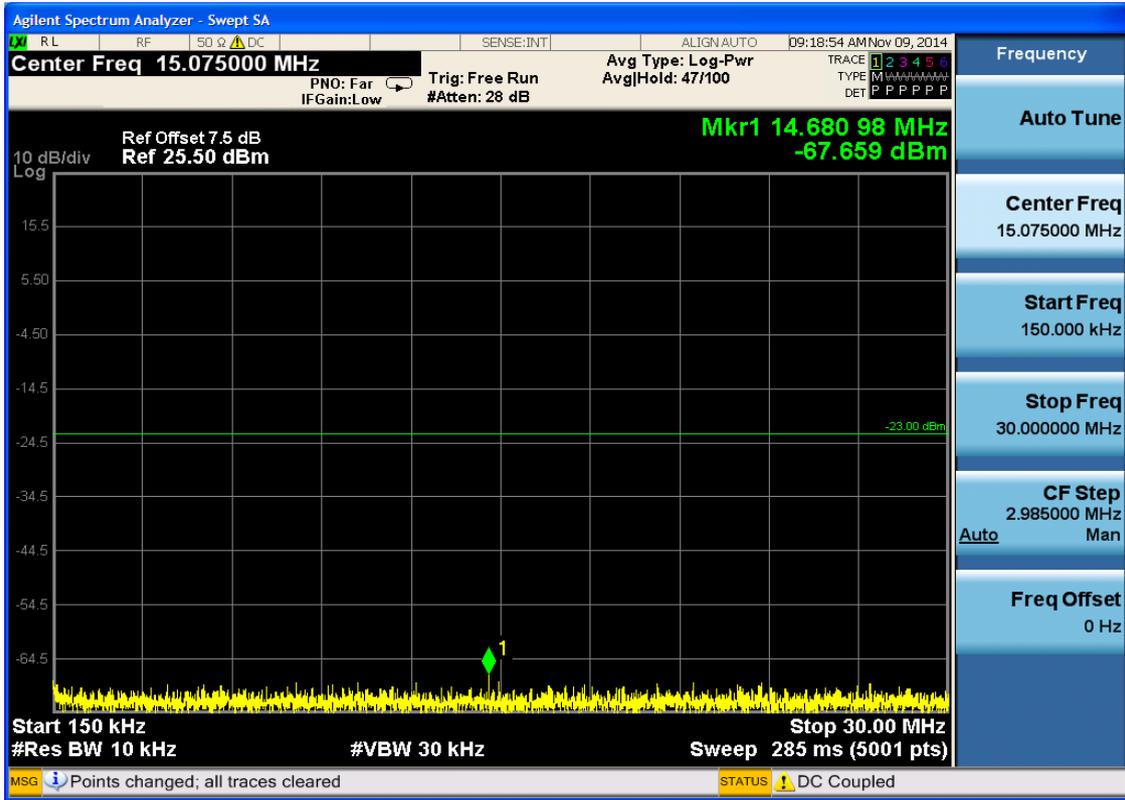
6.3.1.1 Test Mode = LTE/TM1

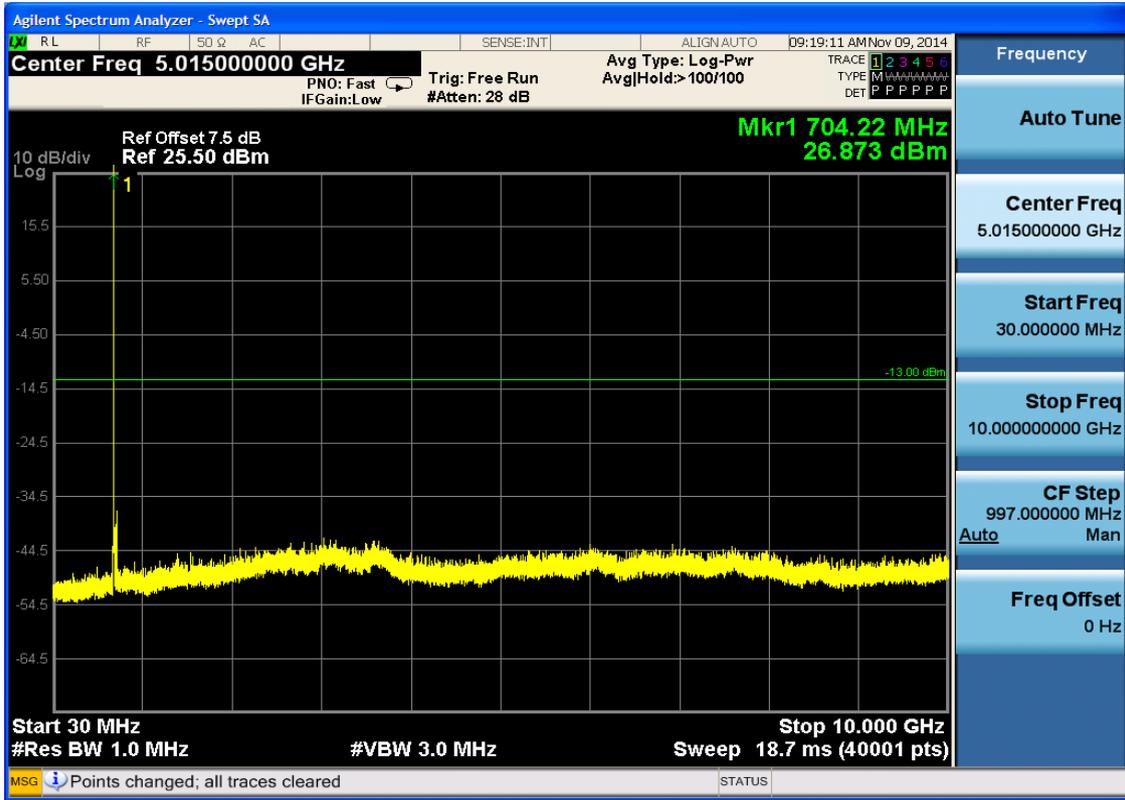
6.3.1.1.1 Test Bandwidth = 5

6.3.1.1.1.1 Test Channel = LCH

6.3.1.1.1.1.1 Test RB = RB1#0



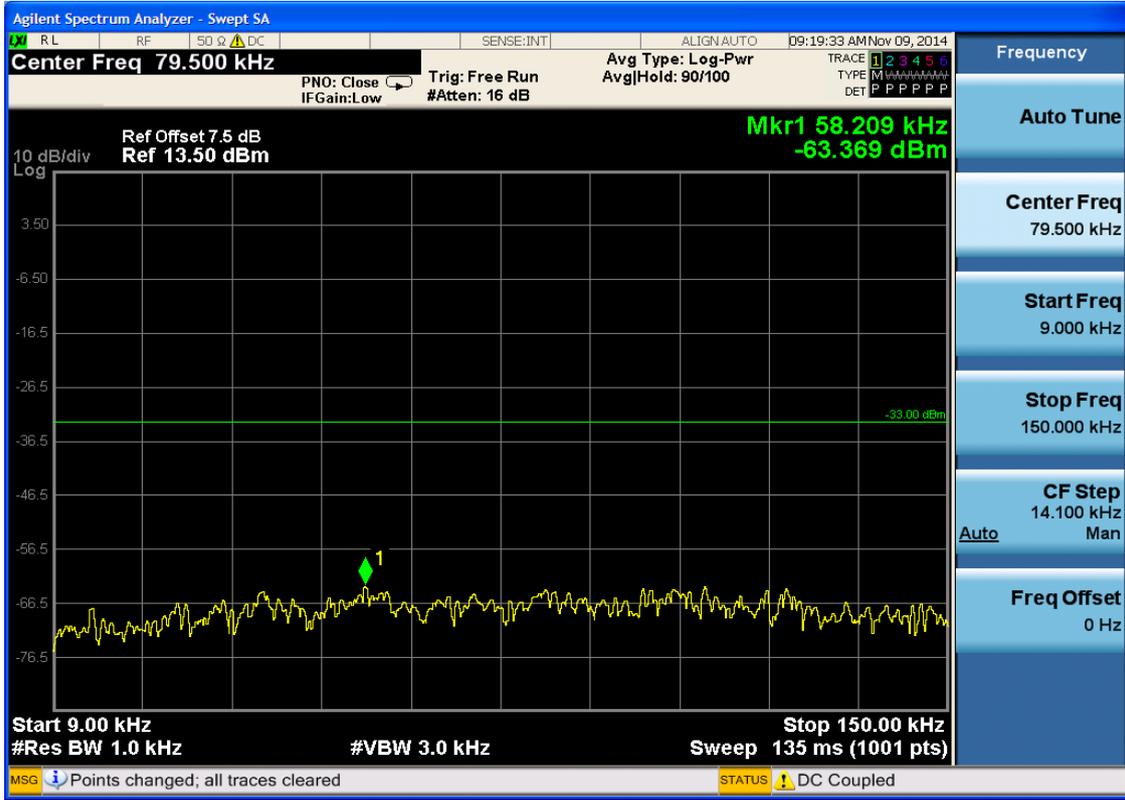




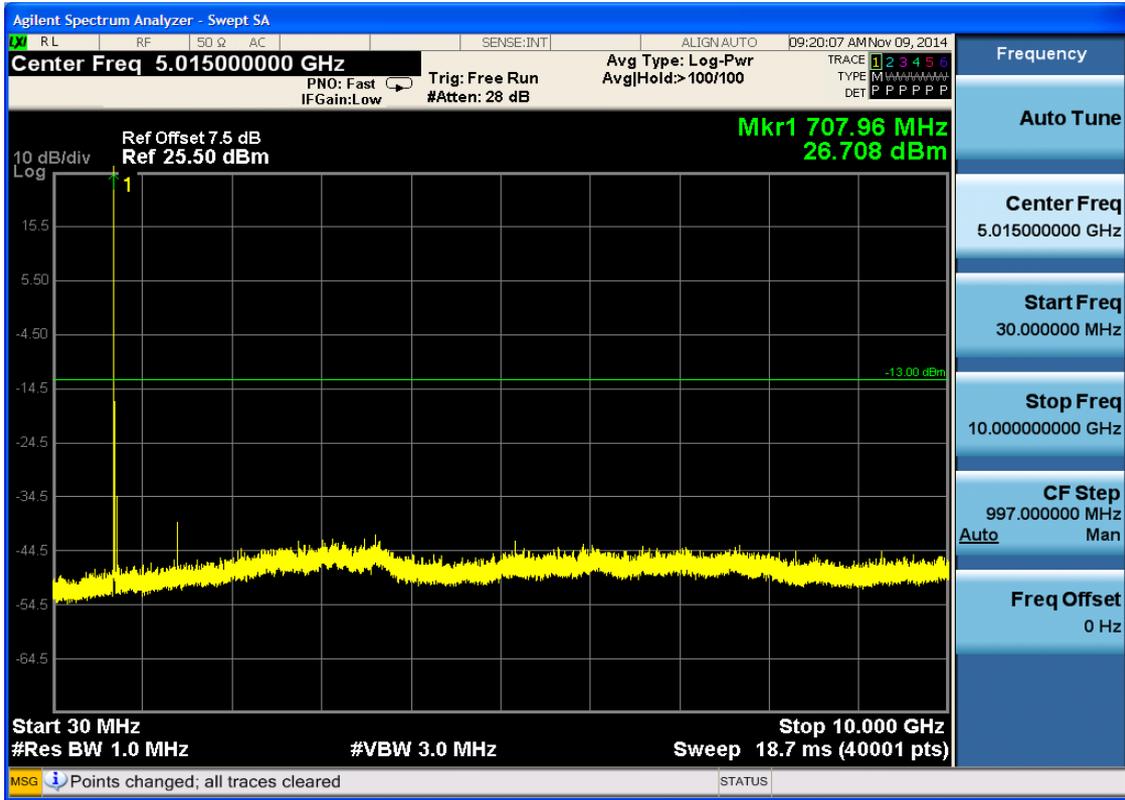


6.3.1.1.1.2 Test Channel = MCH

6.3.1.1.1.2.1 Test RB = RB1#0

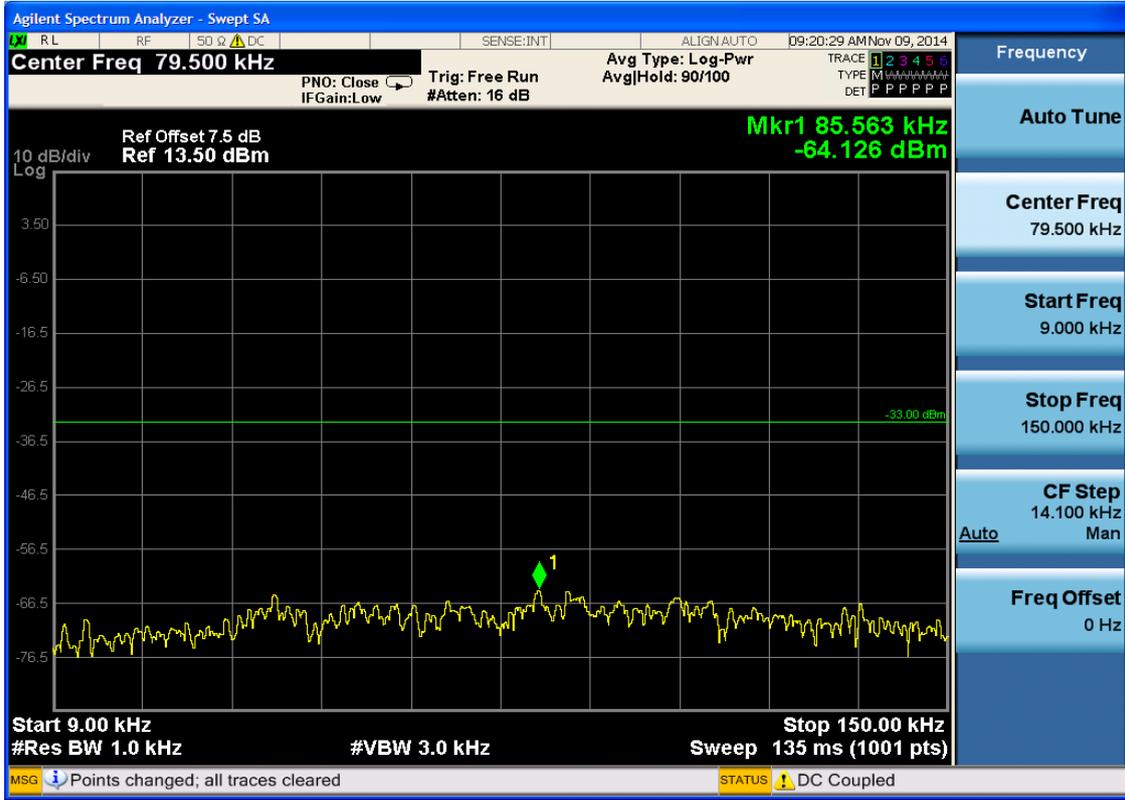




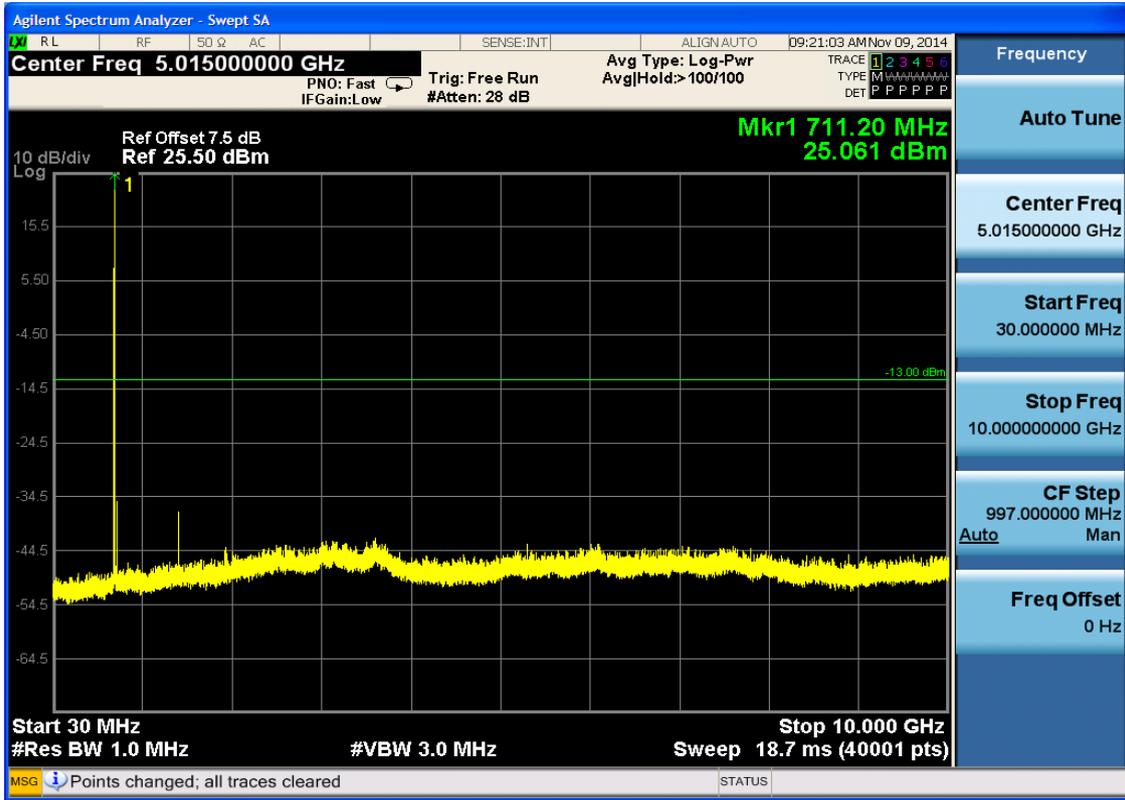


6.3.1.1.1.3 Test Channel = HCH

6.3.1.1.1.3.1 Test RB = RB1#0



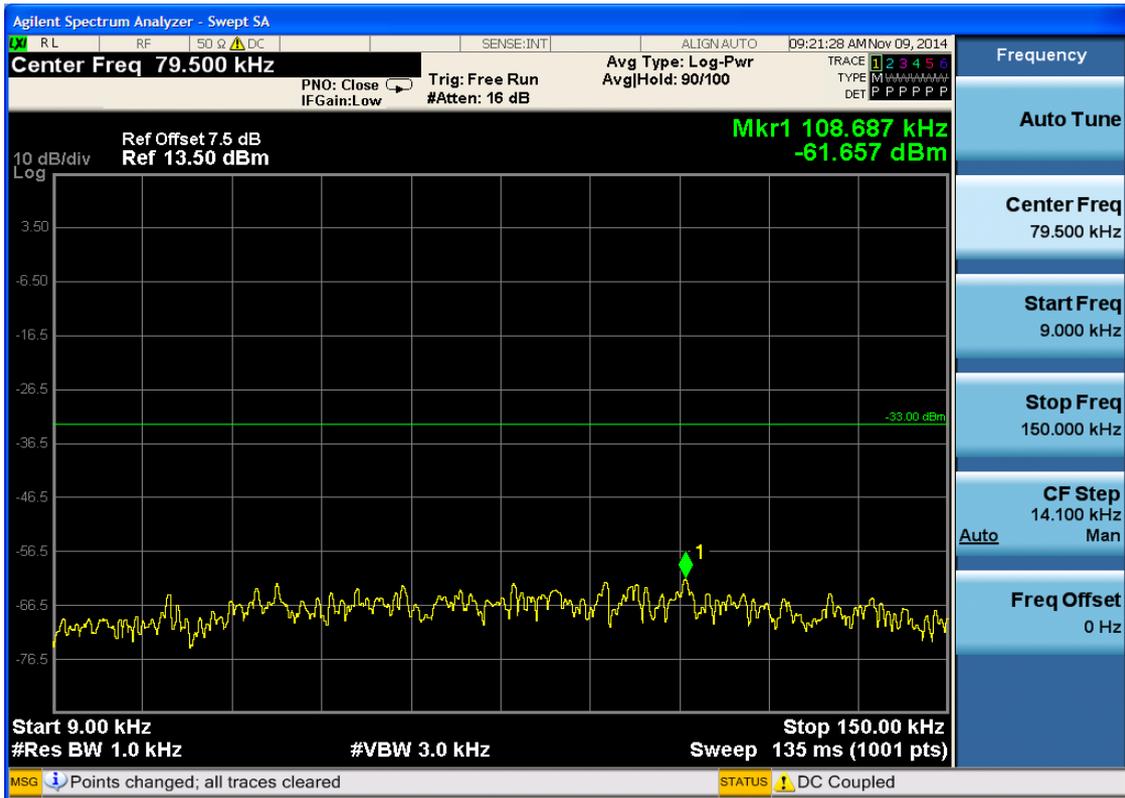


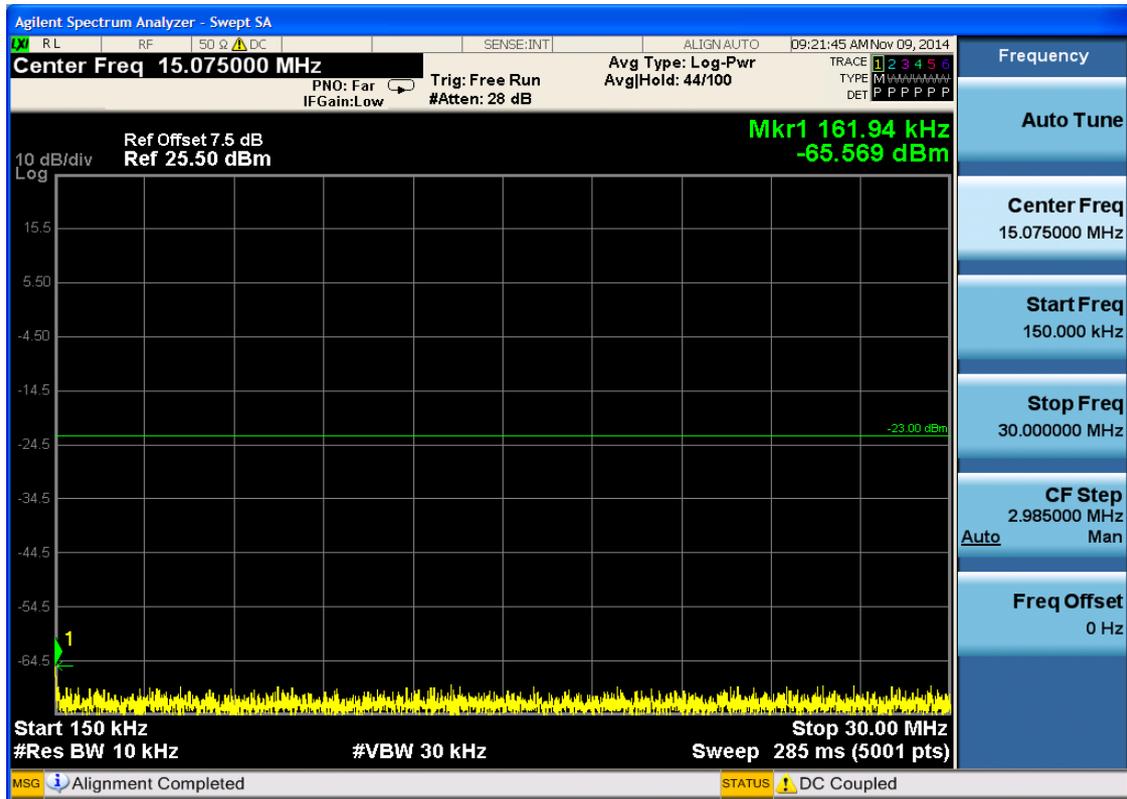


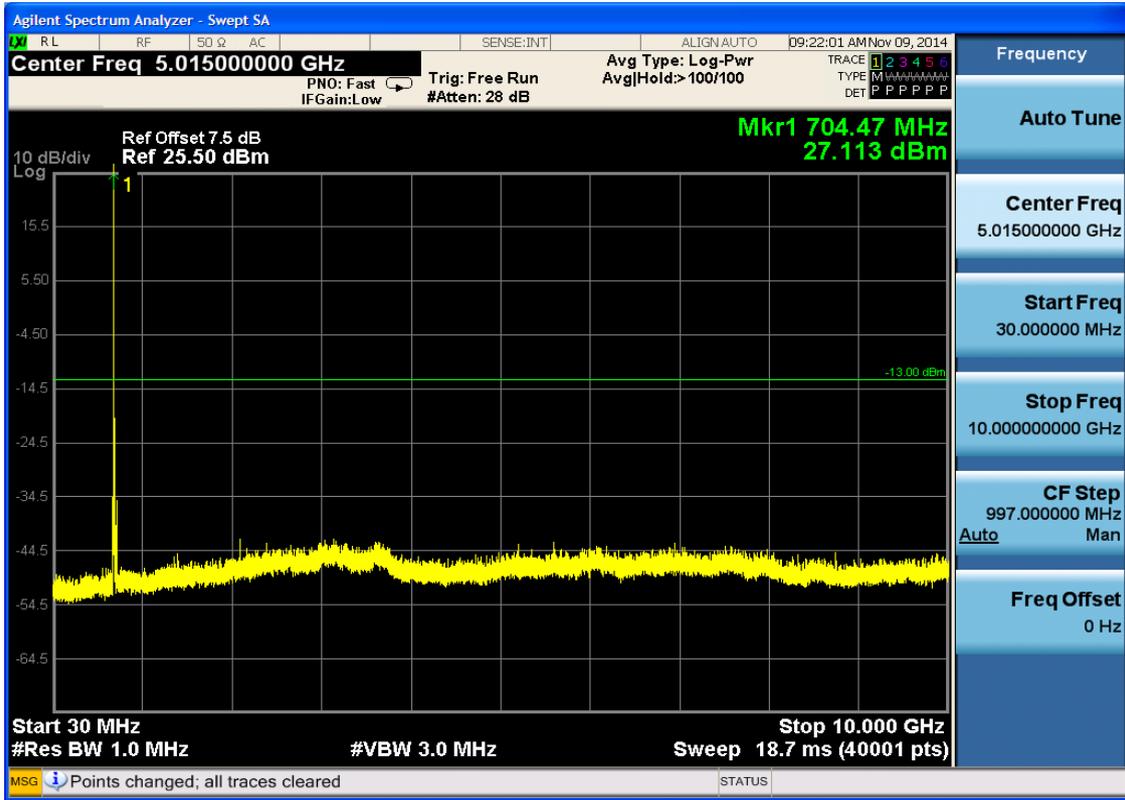
6.3.1.1.2 Test Bandwidth = 10

6.3.1.1.2.1 Test Channel = LCH

6.3.1.1.2.1.1 Test RB = RB1#0

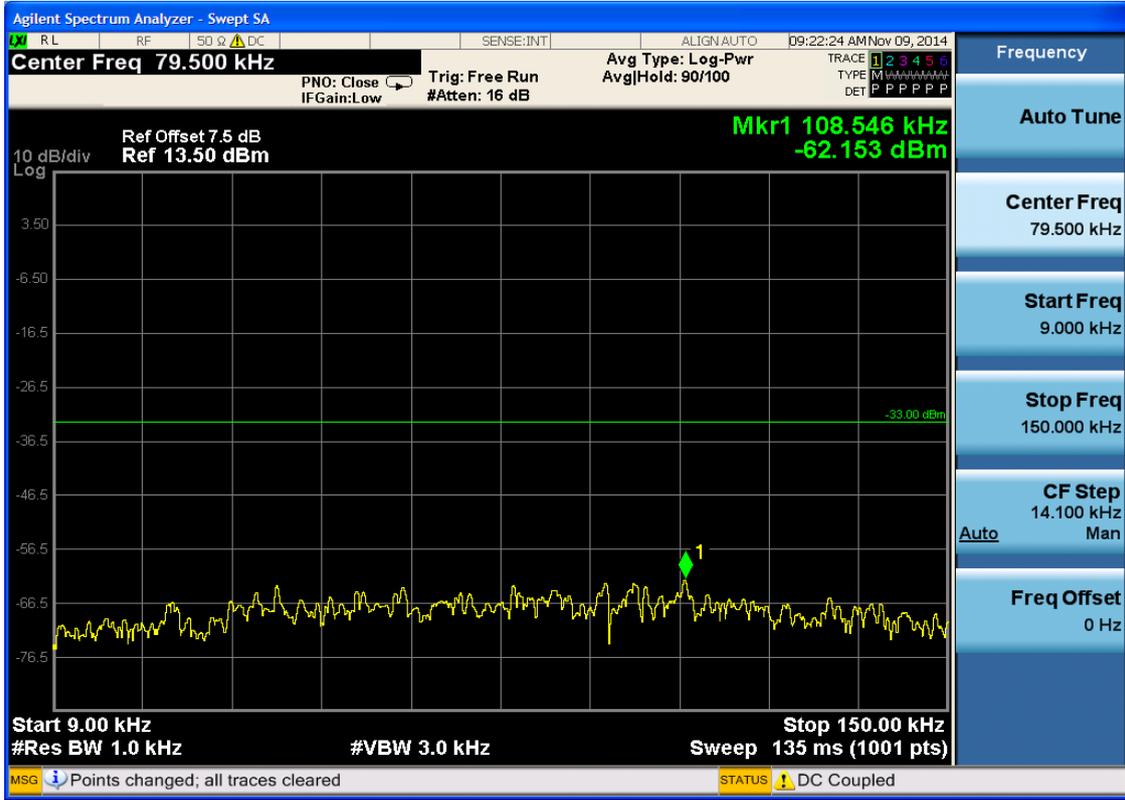






6.3.1.1.2.2 Test Channel = MCH

6.3.1.1.2.2.1 Test RB = RB1#0

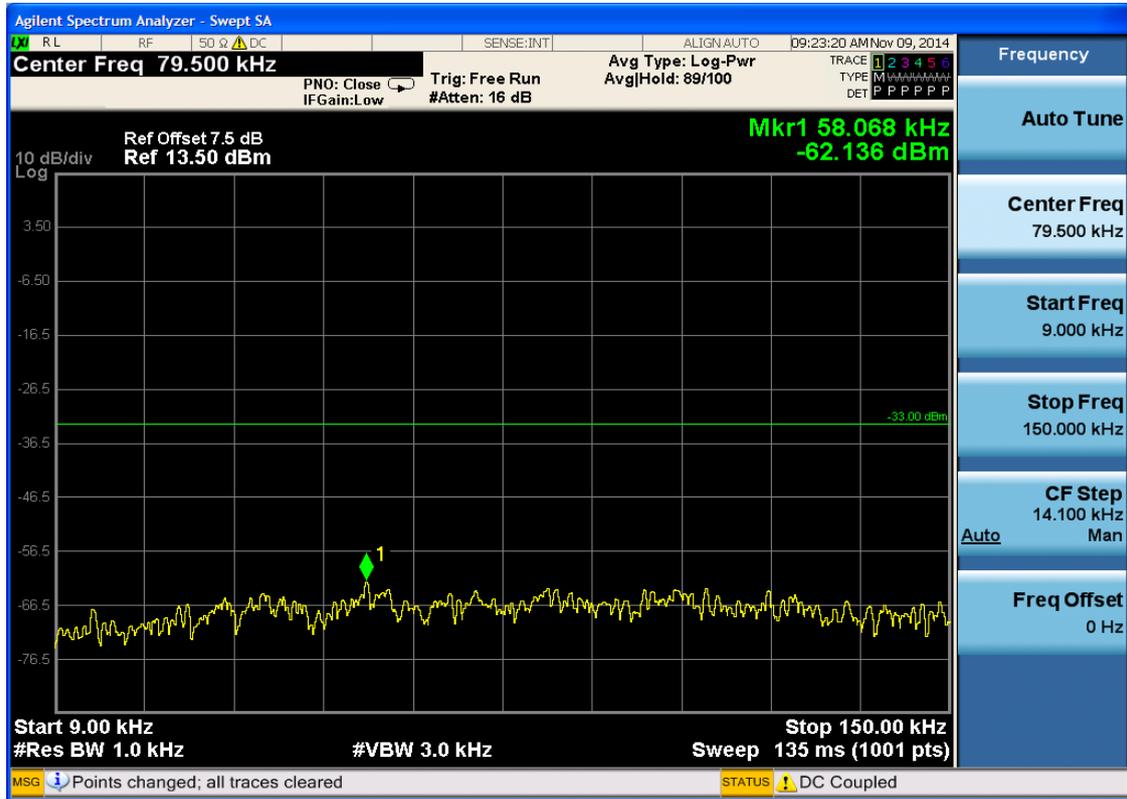






6.3.1.1.2.3 Test Channel = HCH

6.3.1.1.2.3.1 Test RB = RB1#0





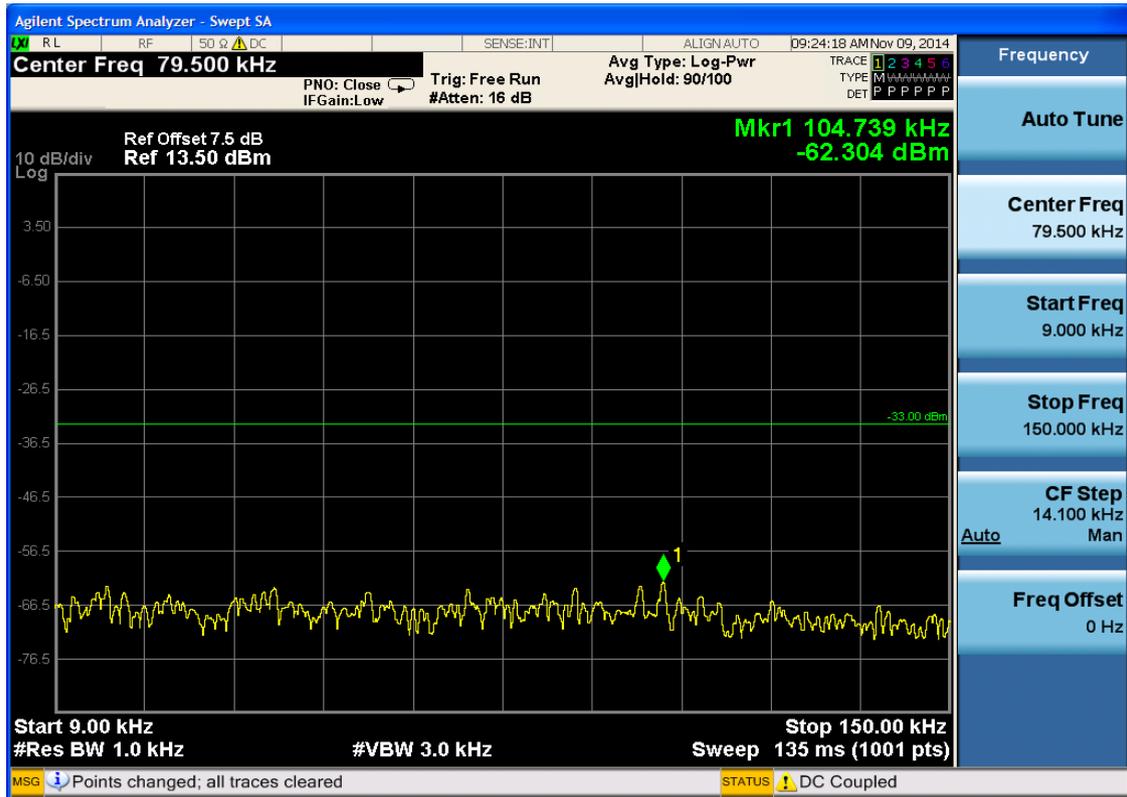


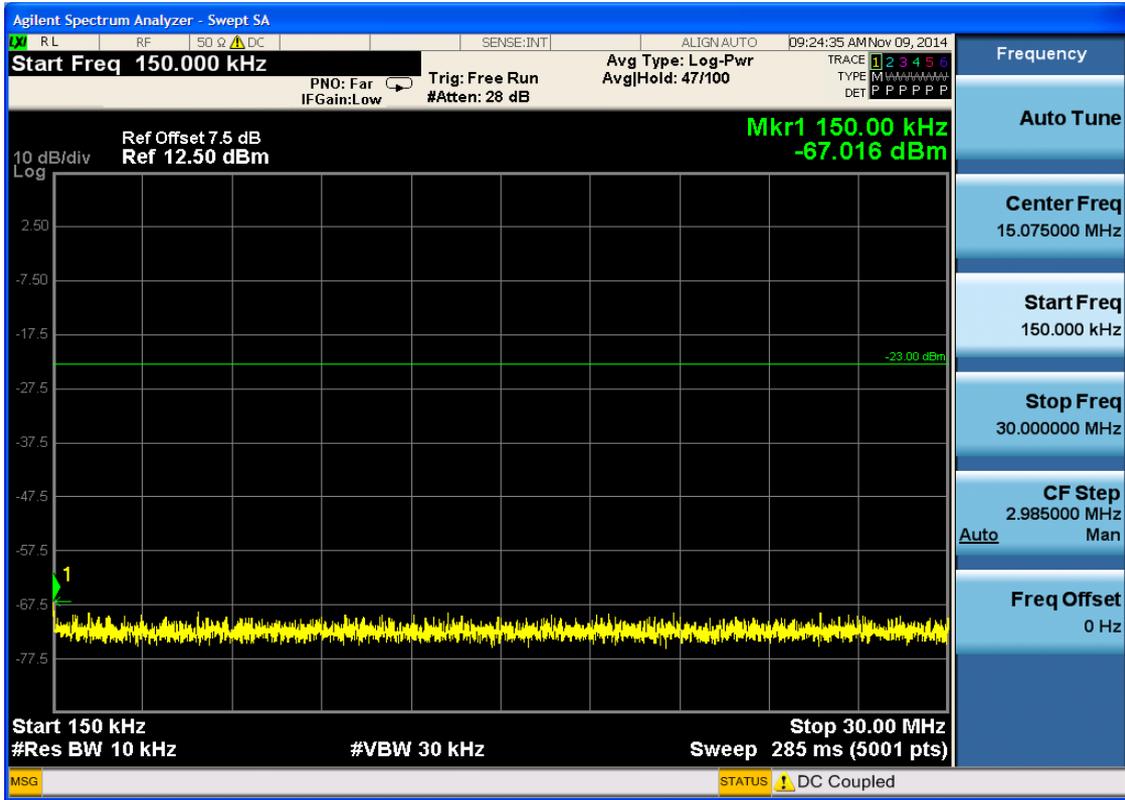
6.3.1.2 Test Mode = LTE/TM2

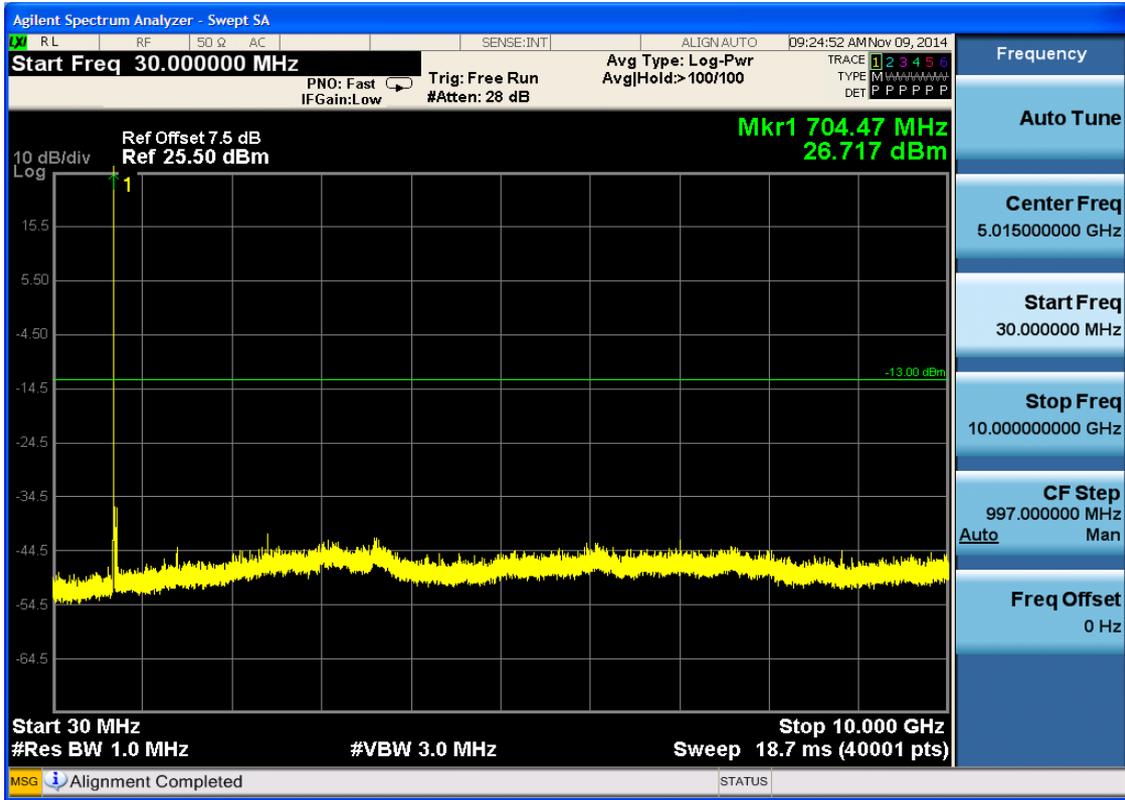
6.3.1.2.1 Test Bandwidth = 5

6.3.1.2.1.1 Test Channel = LCH

6.3.1.2.1.1.1 Test RB = RB1#0

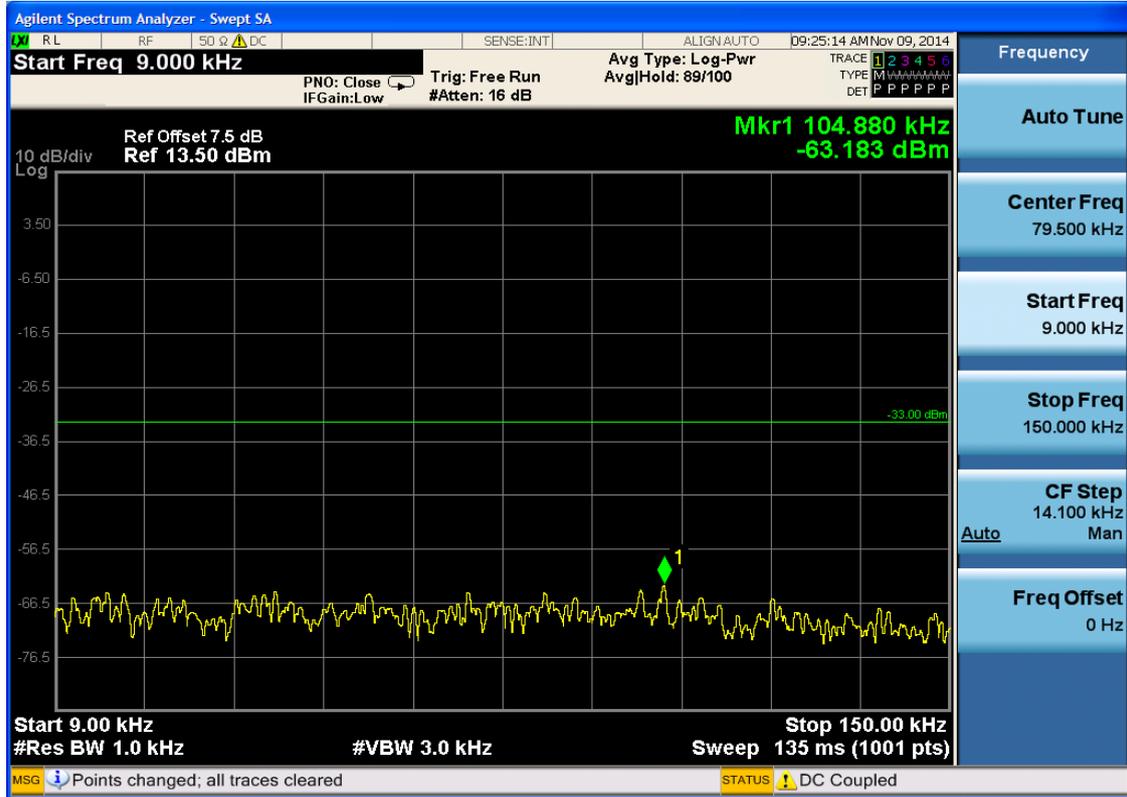


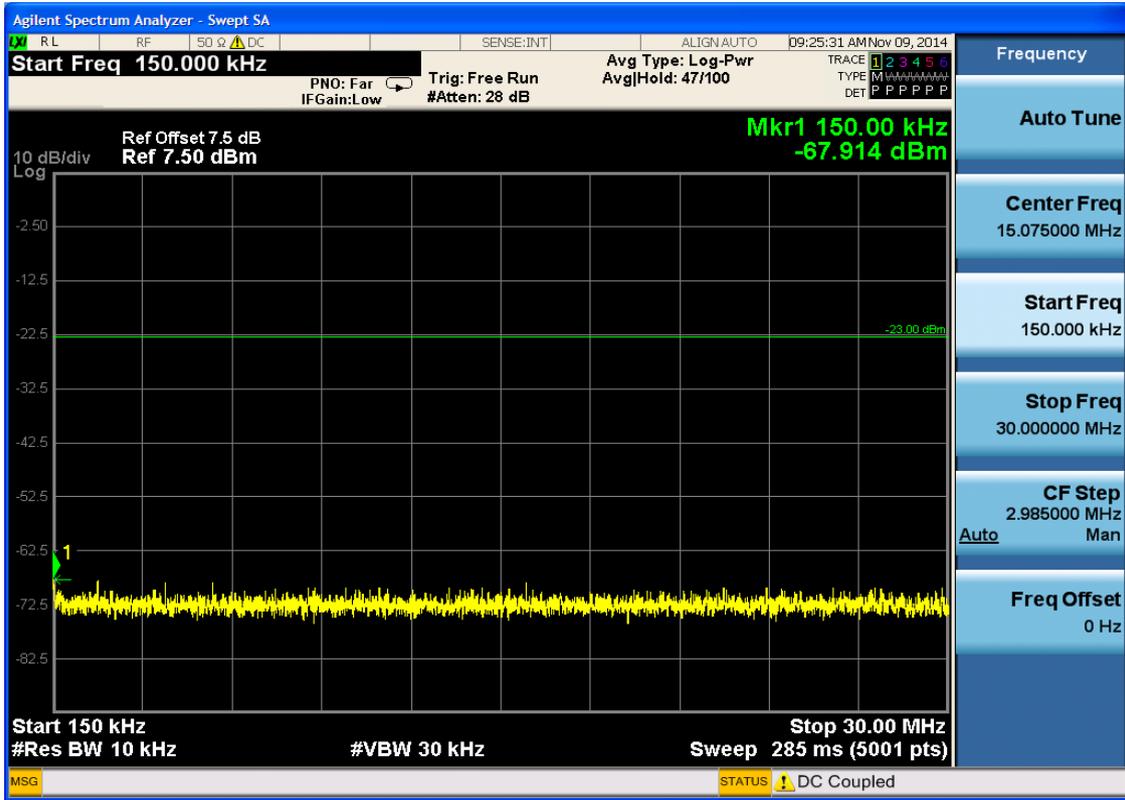


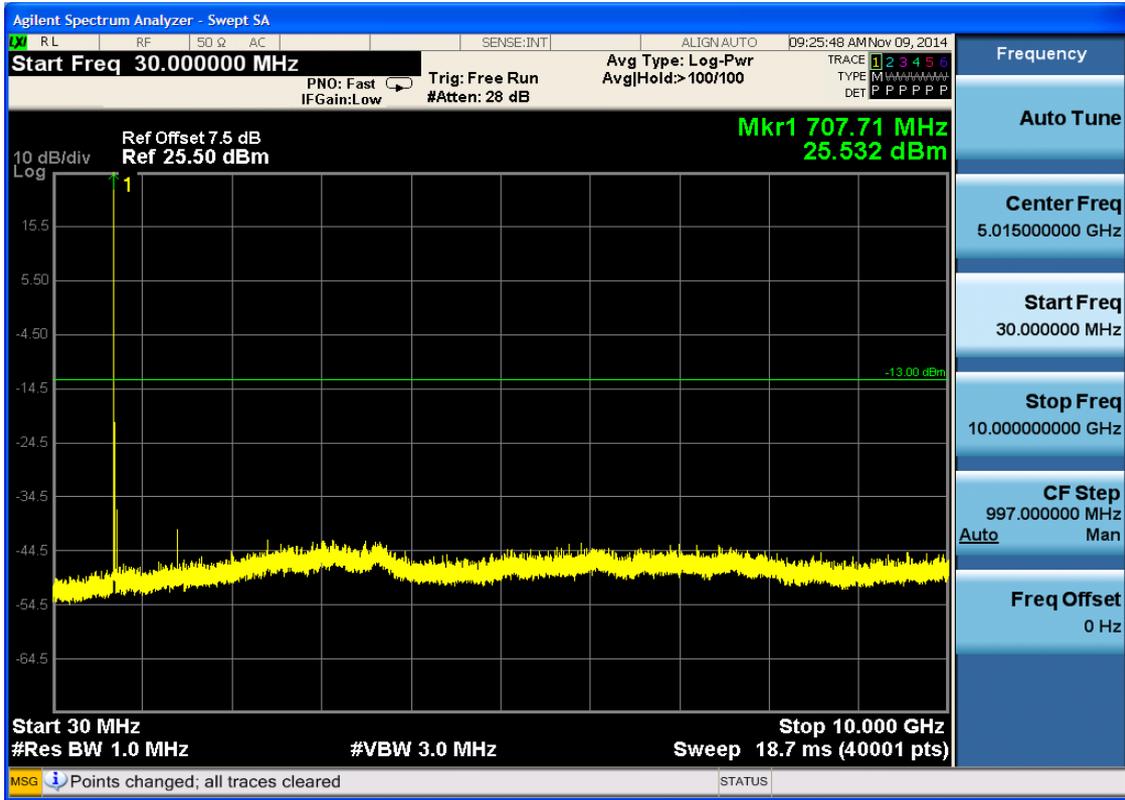


6.3.1.2.1.2 Test Channel = MCH

6.3.1.2.1.2.1 Test RB = RB1#0

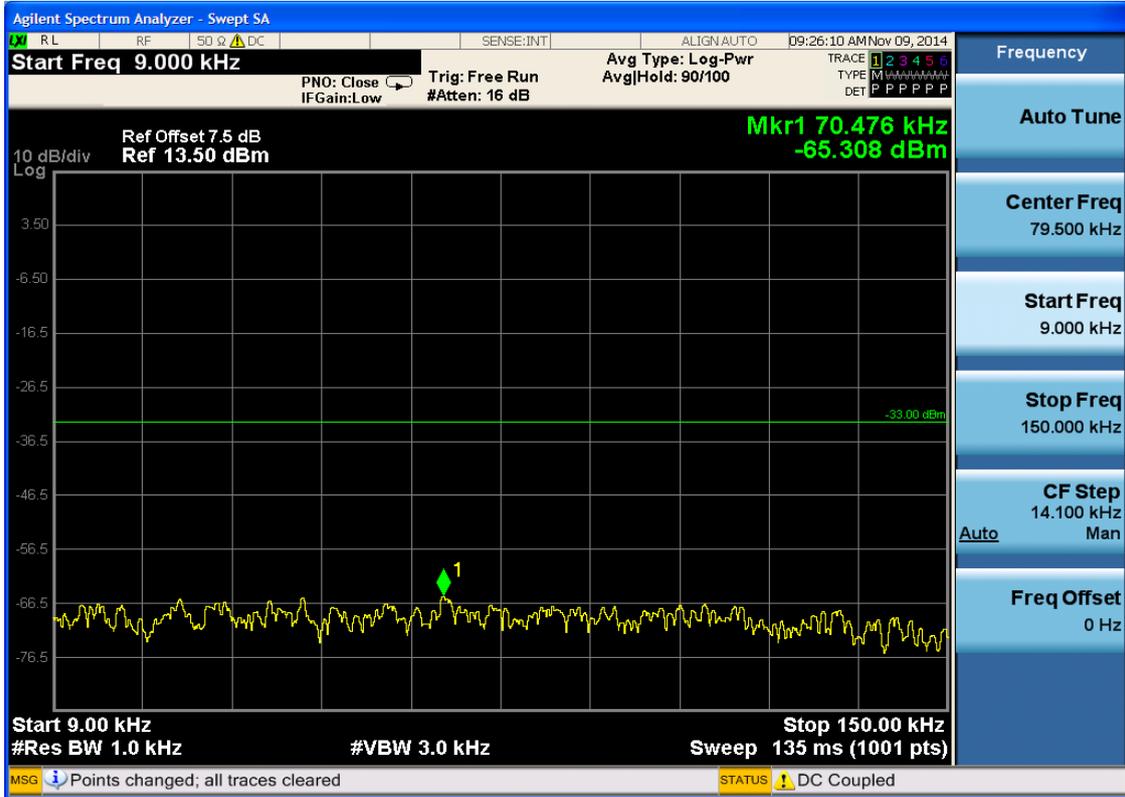




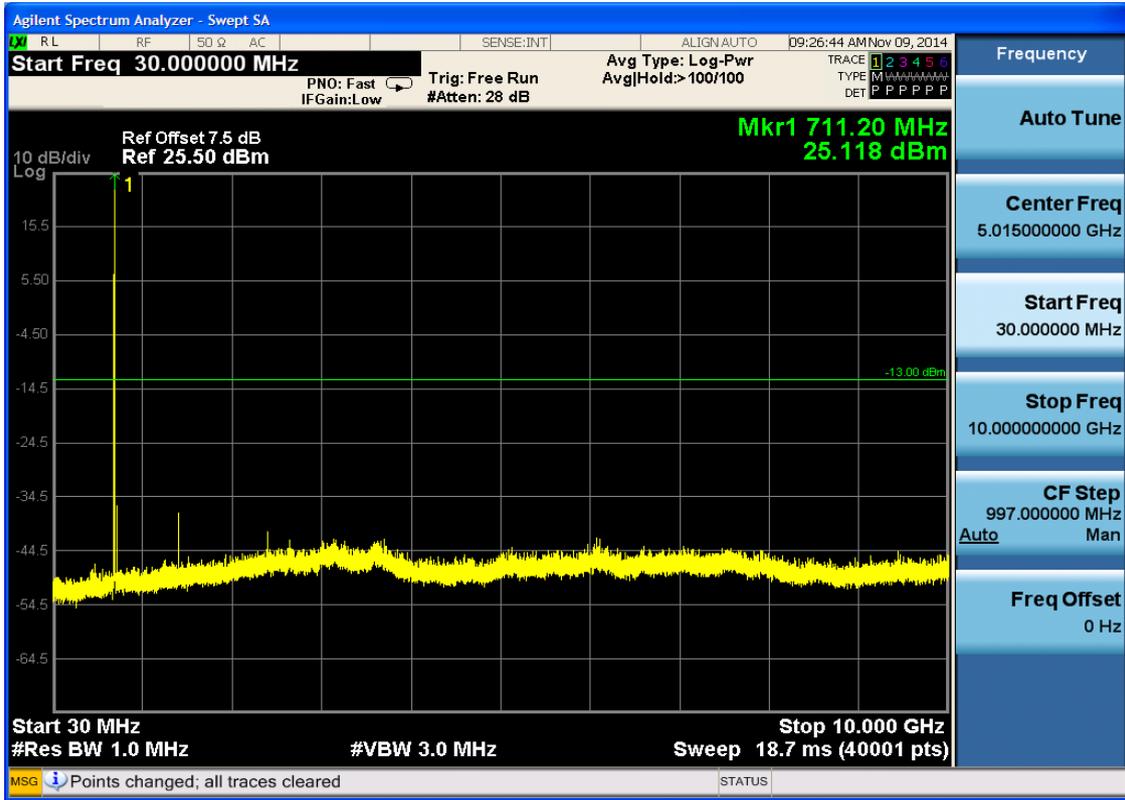


6.3.1.2.1.3 Test Channel = HCH

6.3.1.2.1.3.1 Test RB = RB1#0



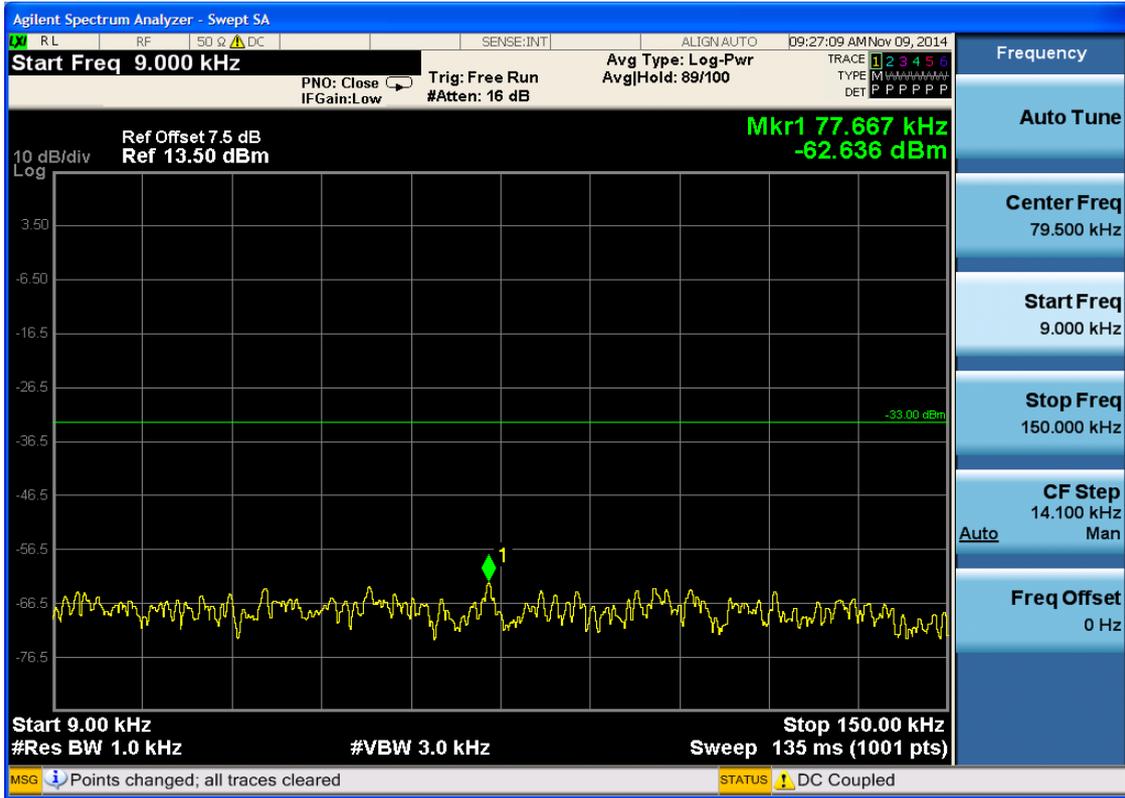


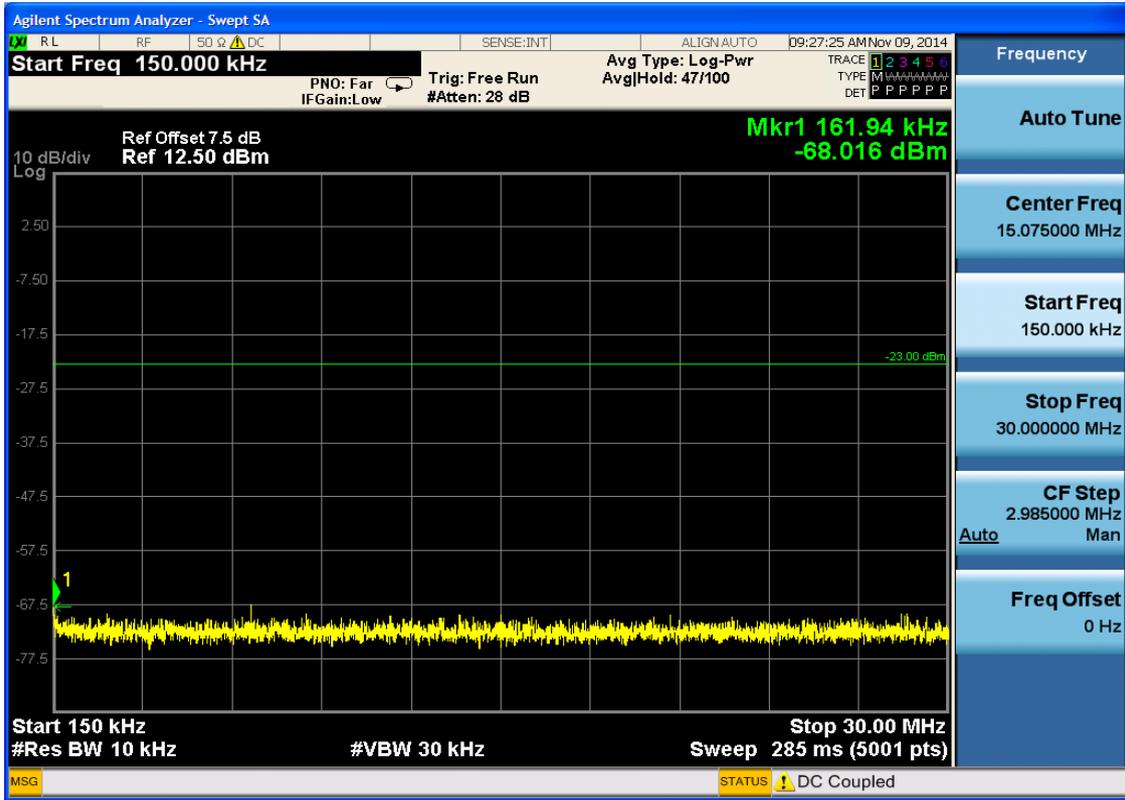


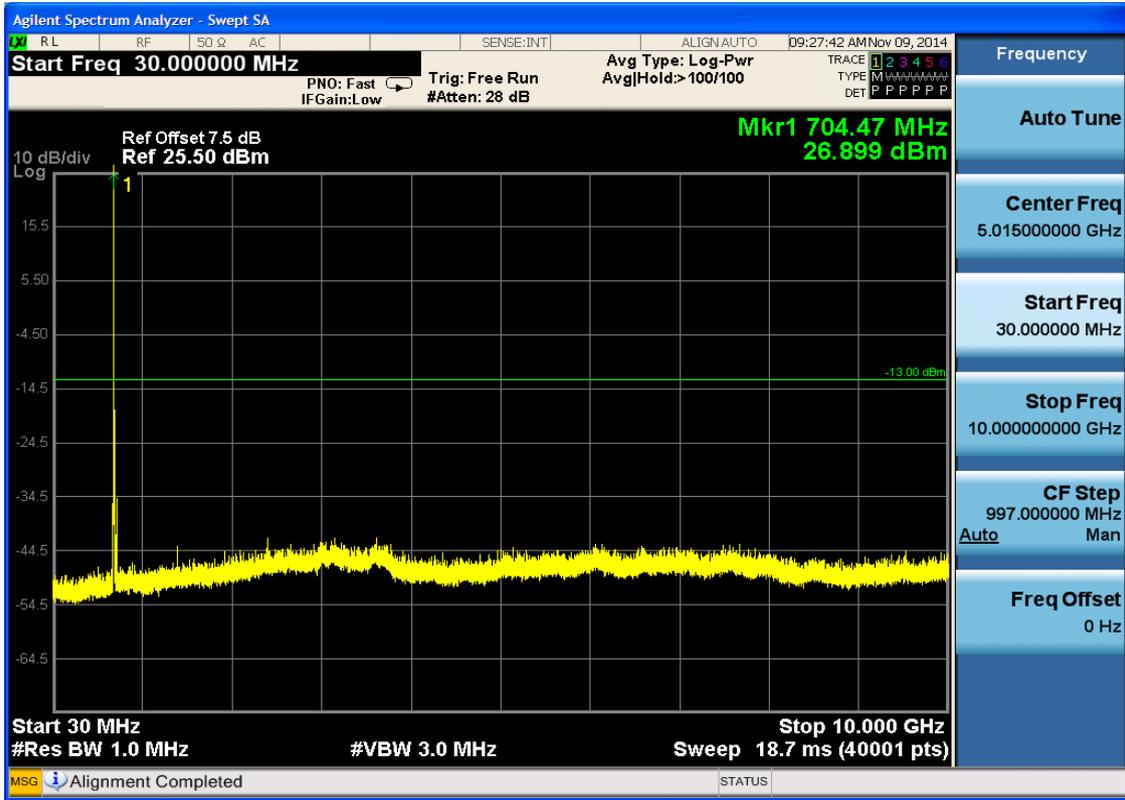
6.3.1.2.2 Test Bandwidth = 10

6.3.1.2.2.1 Test Channel = LCH

6.3.1.2.2.1.1 Test RB = RB1#0







6.3.1.2.2.2 Test Channel = MCH

6.3.1.2.2.2.1 Test RB = RB1#0

