



Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
BAND17	LTE/TM1	5	LCH	RB1#0	22.23	16.88	34.7	PASS
				RB1#13	23.17	17.82	34.7	PASS
				RB1#24	22.03	16.68	34.7	PASS
				RB12#0	22.3	16.95	34.7	PASS
				RB12#6	22.24	16.89	34.7	PASS
				RB12#13	22.04	16.69	34.7	PASS
				RB25#0	22.16	16.81	34.7	PASS
			MCH	RB1#0	22.07	16.72	34.7	PASS
				RB1#13	23.62	18.27	34.7	PASS
				RB1#24	22.52	17.17	34.7	PASS
				RB12#0	22.43	17.08	34.7	PASS
				RB12#6	22.89	17.54	34.7	PASS
				RB12#13	22.45	17.1	34.7	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
			HCH	RB25#0	22.66	17.31	34.7	PASS
				RB1#0	22.42	17.07	34.7	PASS
				RB1#13	23.47	18.12	34.7	PASS
				RB1#24	21.32	15.97	34.7	PASS
				RB12#0	22.86	17.51	34.7	PASS
				RB12#6	22.87	17.52	34.7	PASS
				RB12#13	21.85	16.5	34.7	PASS
				RB25#0	22.52	17.17	34.7	PASS
		10	LCH	RB1#0	22.73	17.38	34.7	PASS
				RB1#25	23.41	18.06	34.7	PASS
				RB1#49	23.97	18.62	34.7	PASS
				RB25#0	22.08	16.73	34.7	PASS
				RB25#13	22.5	17.15	34.7	PASS
				RB25#25	22.39	17.04	34.7	PASS
				RB50#0	22.38	17.03	34.7	PASS
			MCH	RB1#0	22.61	17.26	34.7	PASS
				RB1#25	23.7	18.35	34.7	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
				RB1#49	23.74	18.39	34.7	PASS
				RB25#0	22.2	16.85	34.7	PASS
				RB25#13	22.7	17.35	34.7	PASS
				RB25#25	22.54	17.19	34.7	PASS
				RB50#0	22.65	17.3	34.7	PASS
			HCH	RB1#0	22.7	17.35	34.7	PASS
				RB1#25	23.64	18.29	34.7	PASS
				RB1#49	22.48	17.13	34.7	PASS
				RB25#0	22.4	17.05	34.7	PASS
				RB25#13	22.86	17.51	34.7	PASS
				RB25#25	22.34	16.99	34.7	PASS
				RB50#0	22.71	17.36	34.7	PASS
	LTE/TM2	5	LCH	RB1#0	21.01	15.66	34.7	PASS
				RB1#13	22.17	16.82	34.7	PASS
				RB1#24	20.82	15.47	34.7	PASS
				RB12#0	20.33	14.98	34.7	PASS
				RB12#6	20.36	15.01	34.7	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
				RB12#13	20.25	14.9	34.7	PASS
				RB25#0	20.27	14.92	34.7	PASS
			MCH	RB1#0	20.79	15.44	34.7	PASS
				RB1#13	22.4	17.05	34.7	PASS
				RB1#24	21.32	15.97	34.7	PASS
				RB12#0	20.56	15.21	34.7	PASS
				RB12#6	21	15.65	34.7	PASS
				RB12#13	20.58	15.23	34.7	PASS
				RB25#0	20.86	15.51	34.7	PASS
			HCH	RB1#0	21.38	16.03	34.7	PASS
				RB1#13	22.75	17.4	34.7	PASS
				RB1#24	20.21	14.86	34.7	PASS
				RB12#0	20.96	15.61	34.7	PASS
				RB12#6	21.05	15.7	34.7	PASS
				RB12#13	20.32	14.97	34.7	PASS
				RB25#0	20.75	15.4	34.7	PASS
		10	LCH	RB1#0	21.58	16.23	34.7	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
				RB1#25	22.1	16.75	34.7	PASS
				RB1#49	23.13	17.78	34.7	PASS
				RB25#0	20.52	15.17	34.7	PASS
				RB25#13	20.69	15.34	34.7	PASS
				RB25#25	20.61	15.26	34.7	PASS
				RB50#0	20.59	15.24	34.7	PASS
			MCH	RB1#0	21.47	16.12	34.7	PASS
				RB1#25	22.47	17.12	34.7	PASS
				RB1#49	22.66	17.31	34.7	PASS
				RB25#0	20.6	15.25	34.7	PASS
				RB25#13	20.81	15.46	34.7	PASS
				RB25#25	20.61	15.26	34.7	PASS
				RB50#0	20.8	15.45	34.7	PASS
			HCH	RB1#0	21.44	16.09	34.7	PASS
				RB1#25	22.24	16.89	34.7	PASS
				RB1#49	21.17	15.82	34.7	PASS
				RB25#0	20.49	15.14	34.7	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
				RB25#13	21.02	15.67	34.7	PASS
				RB25#25	20.44	15.09	34.7	PASS
				RB50#0	20.89	15.54	34.7	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,

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

Note2:

$$\text{SET Span} = 1.5 \times \text{OBW}$$

$$\text{SET RBW} = 1\% \text{ of the OBW, not to exceed 1MHz}$$

$$\text{SET VBW} \geq 3 \times \text{RBW}$$

SET Sweep time=auto-couple.

Detector:RMS

2Appendix_B: Peak-to-Average Ratio

Part I - Test Results

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	4.84	13	PASS
				RB1#13	4.33	13	PASS
				RB1#24	4.9	13	PASS
				RB12#0	5.54	13	PASS
				RB12#6	5.5	13	PASS
				RB12#13	5.34	13	PASS
				RB25#0	5.84	13	PASS
			MCH	RB1#0	5.01	13	PASS
				RB1#13	3.44	13	PASS
				RB1#24	4.28	13	PASS
				RB12#0	5.12	13	PASS
				RB12#6	4.49	13	PASS
				RB12#13	4.95	13	PASS
				RB25#0	5.34	13	PASS
			HCH	RB1#0	4.35	13	PASS
				RB1#13	3.92	13	PASS
				RB1#24	5.43	13	PASS
				RB12#0	4.49	13	PASS
				RB12#6	4.8	13	PASS
				RB12#13	5.75	13	PASS
				RB25#0	5.46	13	PASS
		10	LCH	RB1#0	4.86	13	PASS
				RB1#25	3.82	13	PASS
				RB1#49	3.26	13	PASS
				RB25#0	5.61	13	PASS
				RB25#13	4.95	13	PASS
				RB25#25	5.2	13	PASS
				RB50#0	5.85	13	PASS
			MCH	RB1#0	4.59	13	PASS
				RB1#25	3.37	13	PASS

Test Band(For LTE)	Test Mode	Test Bandwidth (MHz)	Test Channel	Test RB	Measured[dB]	Limit [dB]	Verdict
				RB1#49	4.14	13	PASS
				RB25#0	5.42	13	PASS
				RB25#13	4.64	13	PASS
				RB25#25	5.13	13	PASS
				RB50#0	5.63	13	PASS
			HCH	RB1#0	4.36	13	PASS
				RB1#25	3.28	13	PASS
				RB1#49	4.56	13	PASS
				RB25#0	5.15	13	PASS
				RB25#13	4.55	13	PASS
				RB25#25	5.22	13	PASS
				RB50#0	5.56	13	PASS
	LTE/TM2	5	LCH	RB1#0	5.85	13	PASS
				RB1#13	5.66	13	PASS
				RB1#24	5.56	13	PASS
				RB12#0	6.44	13	PASS
				RB12#6	6.48	13	PASS
				RB12#13	6.37	13	PASS
				RB25#0	6.92	13	PASS
			MCH	RB1#0	5.92	13	PASS
				RB1#13	4.73	13	PASS
				RB1#24	5.38	13	PASS
				RB12#0	6.25	13	PASS
				RB12#6	5.88	13	PASS
				RB12#13	5.92	13	PASS
				RB25#0	6.34	13	PASS
			HCH	RB1#0	5.07	13	PASS
				RB1#13	4.78	13	PASS
				RB1#24	6.23	13	PASS
				RB12#0	5.59	13	PASS
				RB12#6	5.94	13	PASS
				RB12#13	6.6	13	PASS
				RB25#0	6.4	13	PASS
		10	LCH	RB1#0	4.88	13	PASS
				RB1#25	4.95	13	PASS
				RB1#49	4.12	13	PASS
				RB25#0	6.54	13	PASS
				RB25#13	6.43	13	PASS
				RB25#25	6.22	13	PASS

Test Band(For LTE)	Test Mode	Test Bandwidth (MHz)	Test Channel	Test RB	Measured[dB]	Limit [dB]	Verdict
				RB50#0	6.75	13	PASS
				RB1#0	4.88	13	PASS
			MCH	RB1#25	4.66	13	PASS
				RB1#49	5.12	13	PASS
				RB25#0	6.57	13	PASS
				RB25#13	5.99	13	PASS
				RB25#25	6	13	PASS
				RB50#0	6.7	13	PASS
			HCH	RB1#0	5.06	13	PASS
				RB1#25	4.37	13	PASS
				RB1#49	5.27	13	PASS
				RB25#0	6.43	13	PASS
				RB25#13	5.81	13	PASS
				RB25#25	6.32	13	PASS
				RB50#0	6.67	13	PASS

3Appendix_C: Modulation Characteristics

Part I - Test Plots

3.1 For LTE

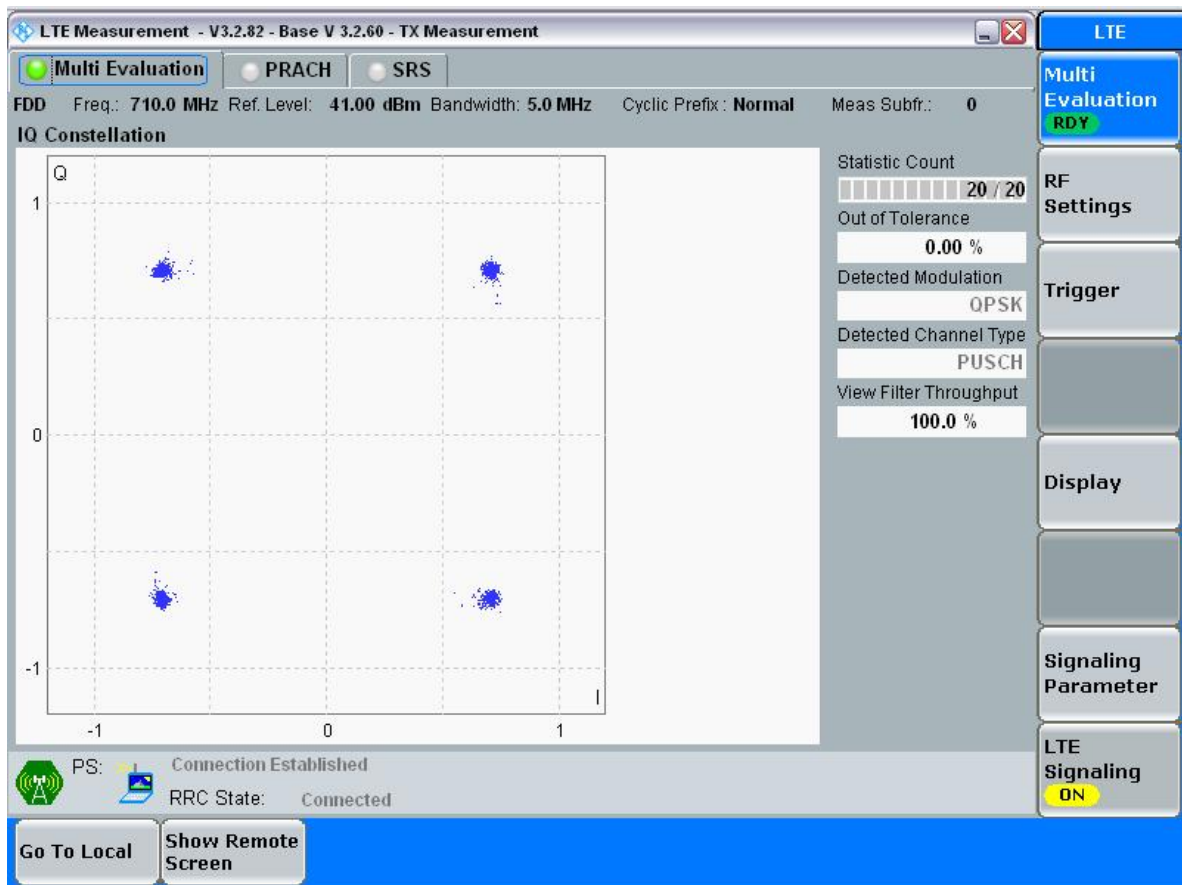
3.1.1 Test Band = BAND17

3.1.1.1 Test Mode = LTE/TM1

3.1.1.1.1 Test Bandwidth = 5

3.1.1.1.1.1 Test Channel = MCH

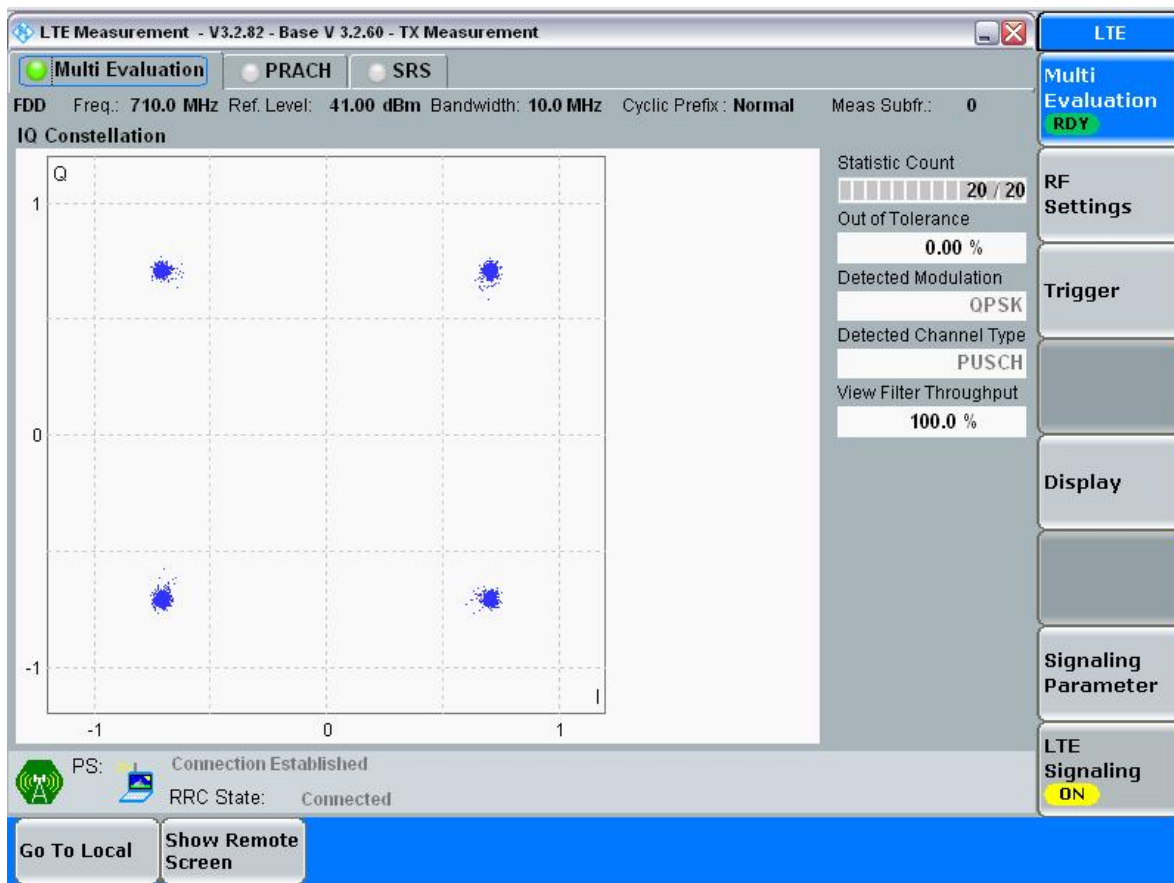
3.1.1.1.1.1.1 Test RB = RB25#0



3.1.1.1.2 Test Bandwidth = 10

3.1.1.1.2.1 Test Channel = MCH

3.1.1.1.2.1.1 Test RB = RB50#0

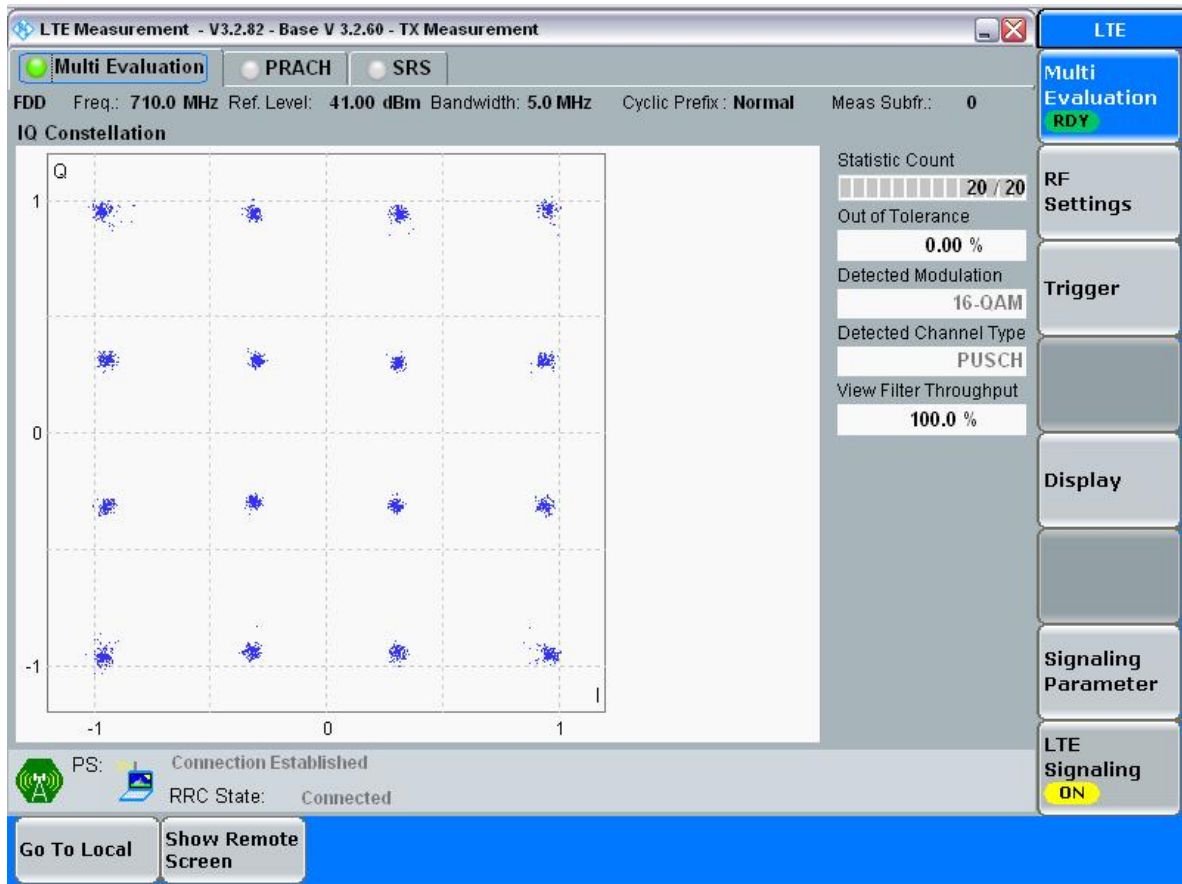


3.1.1.2 Test Mode = LTE/TM2

3.1.1.2.1 Test Bandwidth = 5

3.1.1.2.1.1 Test Channel = MCH

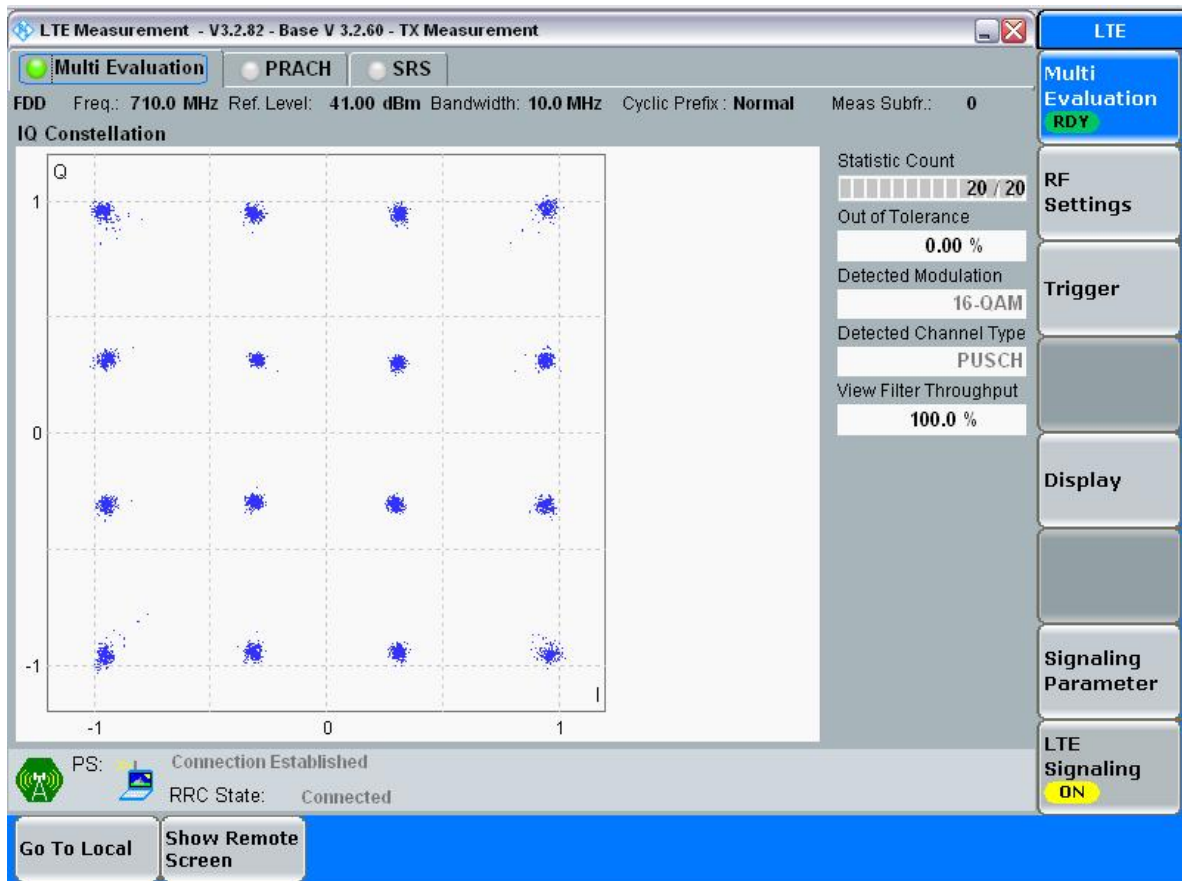
3.1.1.2.1.1.1 Test RB = RB25#0



3.1.1.2.2 Test Bandwidth = 10

3.1.1.2.2.1 Test Channel = MCH

3.1.1.2.2.1.1 Test RB = RB50#0



4Appendix_D: Bandwidth

Part I - Test Results

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	4.89	Pass
			MCH	RB25#0	4.50	4.87	Pass
			HCH	RB25#0	4.49	4.85	Pass
		10	LCH	RB50#0	9.00	9.61	Pass
			MCH	RB50#0	8.98	9.60	Pass
			HCH	RB50#0	8.95	9.57	Pass
	LTE/TM2	5	LCH	RB25#0	4.51	4.87	Pass
			MCH	RB25#0	4.51	4.88	Pass
			HCH	RB25#0	4.48	4.85	Pass
		10	LCH	RB50#0	9.01	9.73	Pass
			MCH	RB50#0	8.99	9.60	Pass
			HCH	RB50#0	8.96	9.56	Pass

Part II - Test Plots

4.1 For LTE

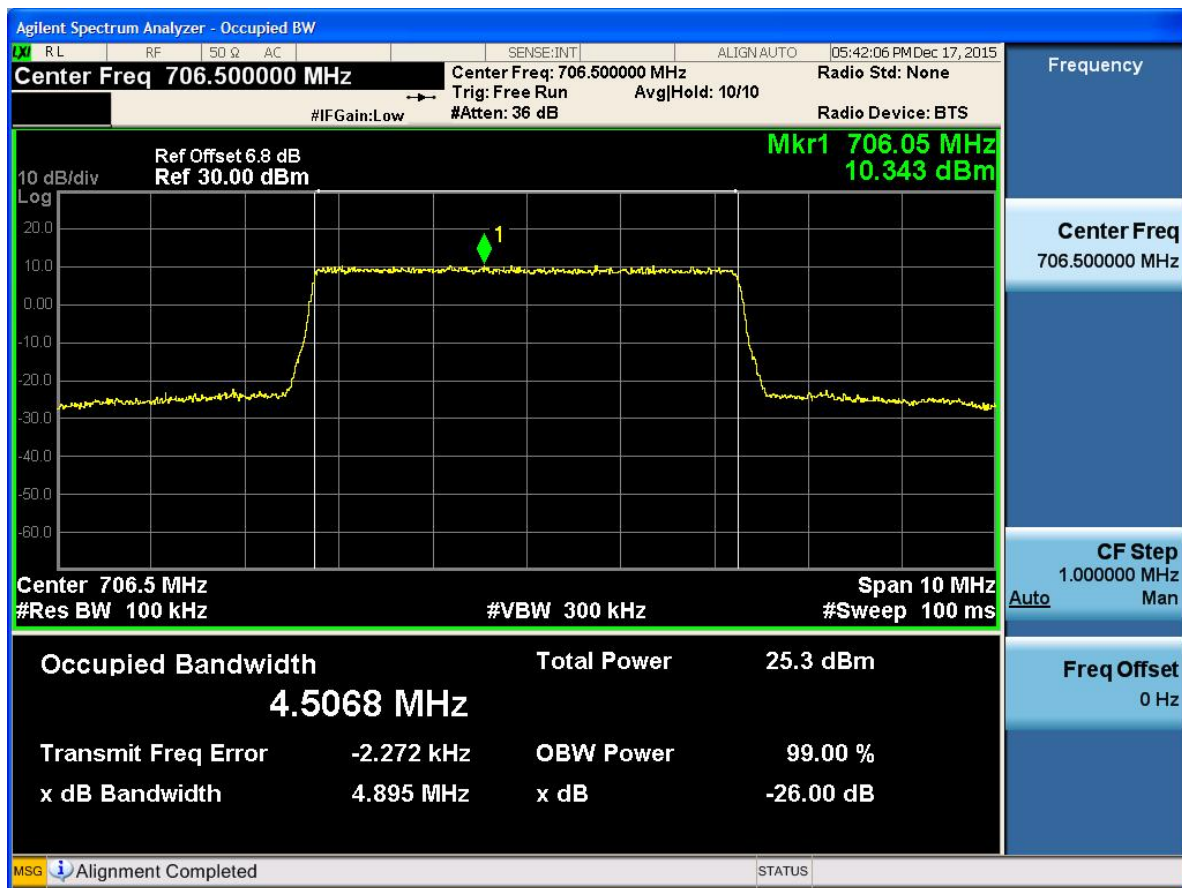
4.1.1 Test Band = BAND17

4.1.1.1 Test Mode = LTE/TM1

4.1.1.1.1 Test Bandwidth = 5

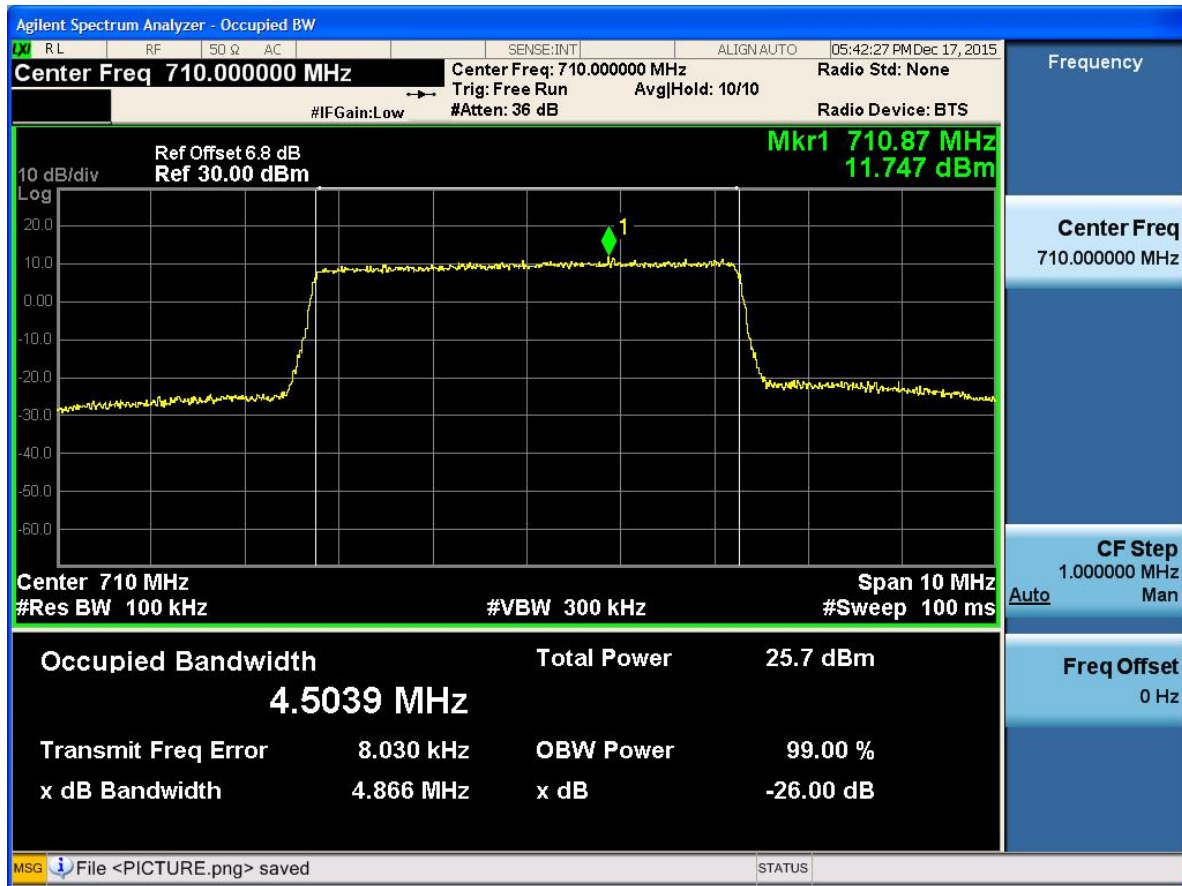
4.1.1.1.1.1 Test Channel = LCH

4.1.1.1.1.1.1 Test RB = RB25#0



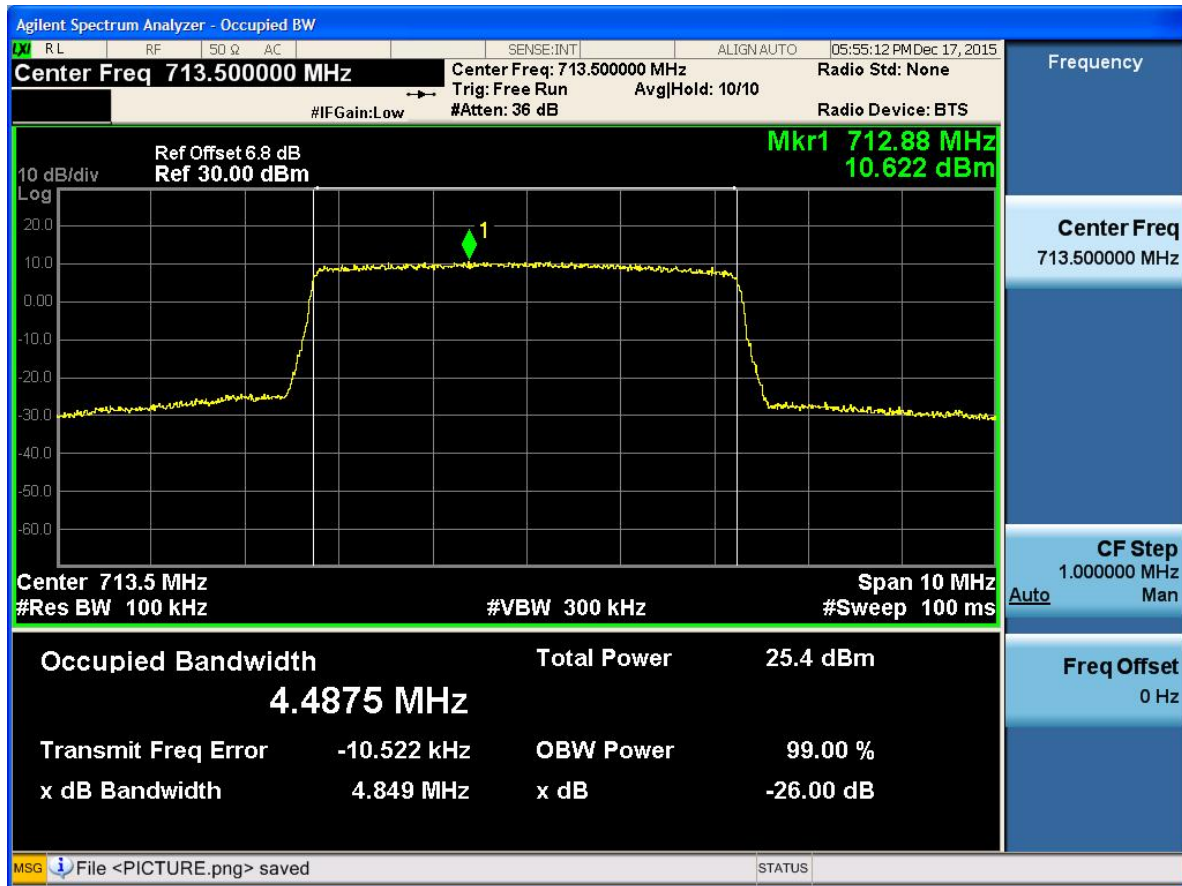
4.1.1.1.1.2 Test Channel = MCH

4.1.1.1.1.2.1 Test RB = RB25#0



4.1.1.1.1.3 Test Channel = HCH

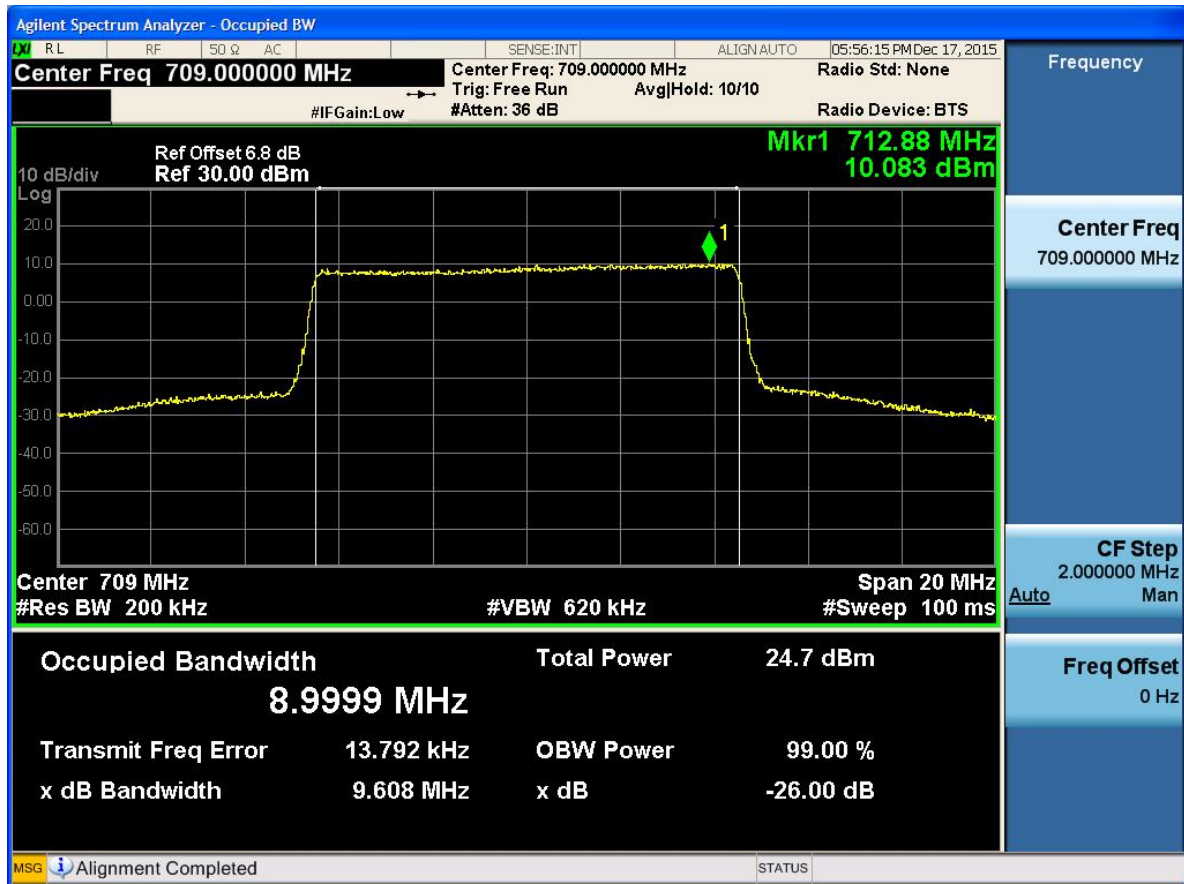
4.1.1.1.1.3.1 Test RB = RB25#0



4.1.1.1.2 Test Bandwidth = 10

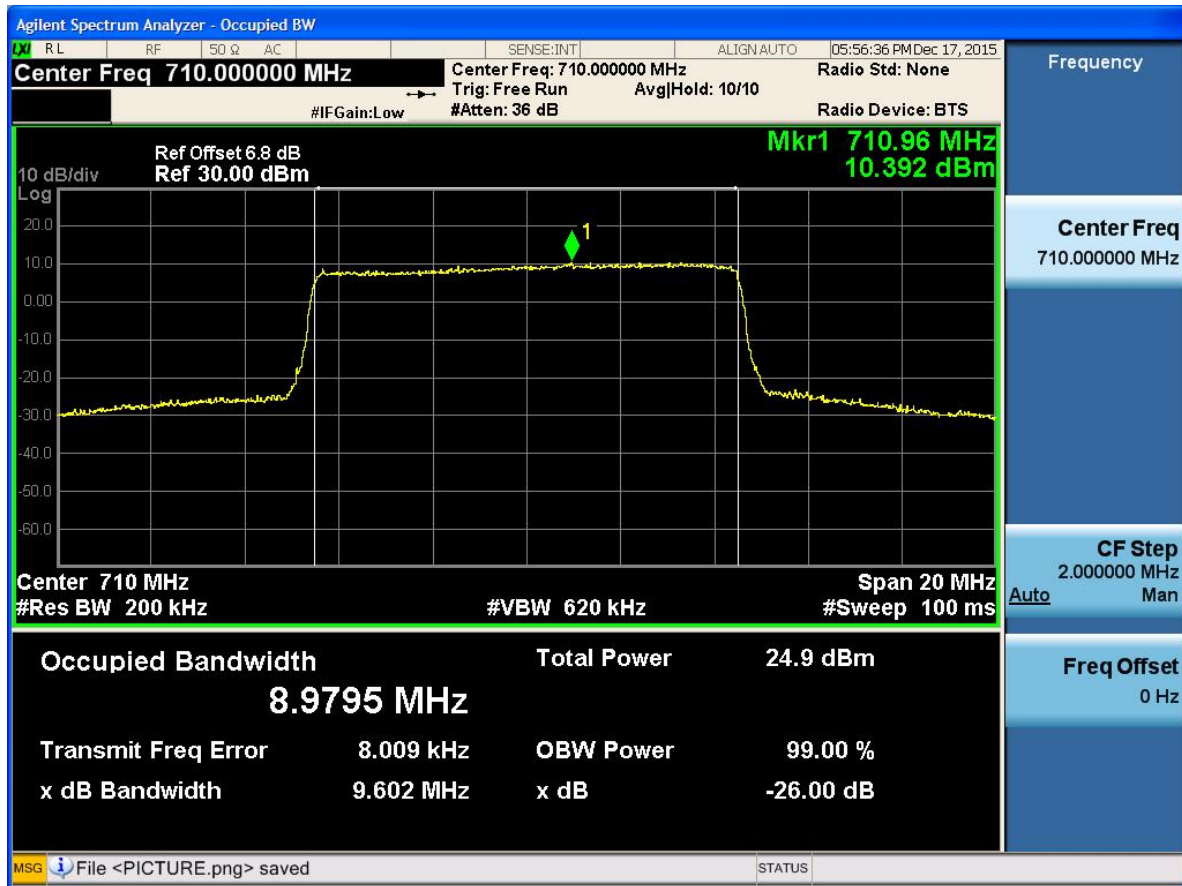
4.1.1.1.2.1 Test Channel = LCH

4.1.1.1.2.1.1 Test RB = RB50#0



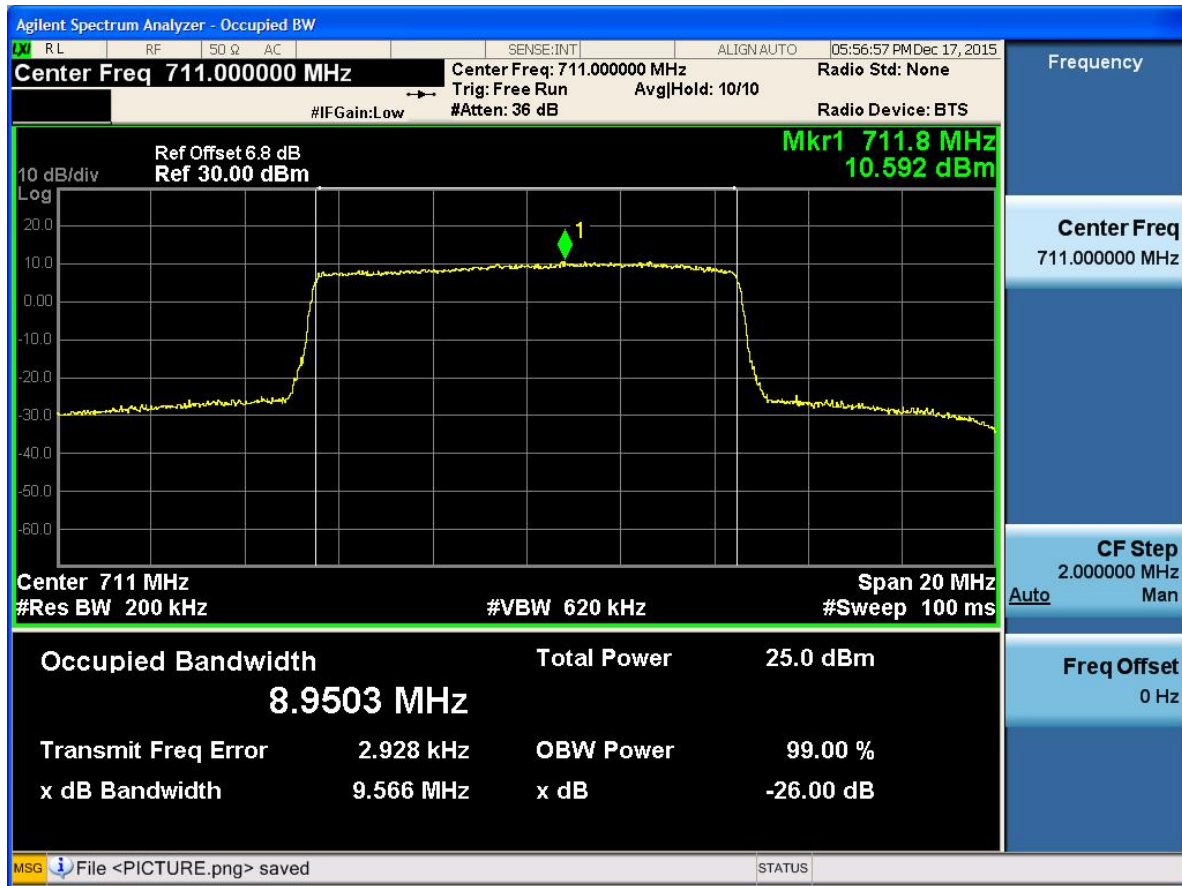
4.1.1.1.2.2 Test Channel = MCH

4.1.1.1.2.2.1 Test RB = RB50#0



4.1.1.1.2.3 Test Channel = HCH

4.1.1.1.2.3.1 Test RB = RB50#0

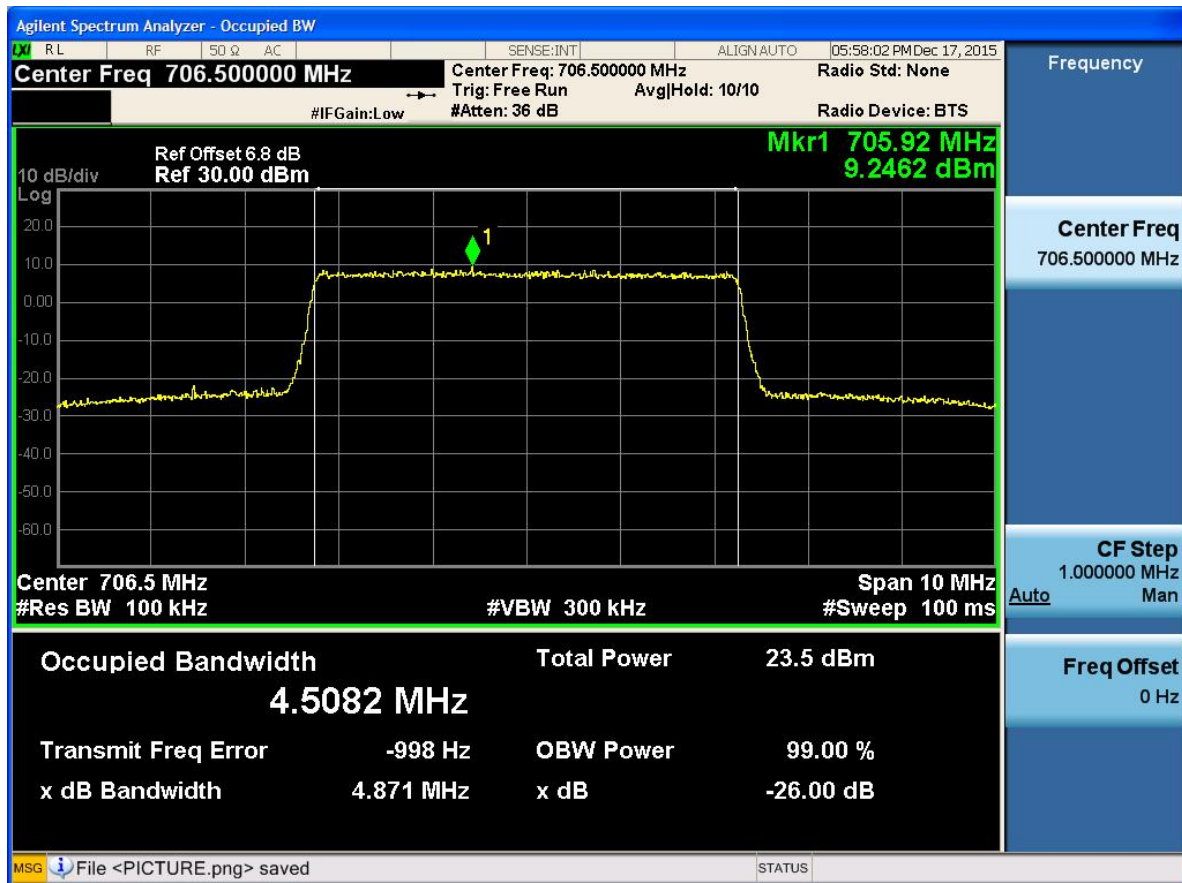


4.1.1.2 Test Mode = LTE/TM2

4.1.1.2.1 Test Bandwidth = 5

4.1.1.2.1.1 Test Channel = LCH

4.1.1.2.1.1.1 Test RB = RB25#0



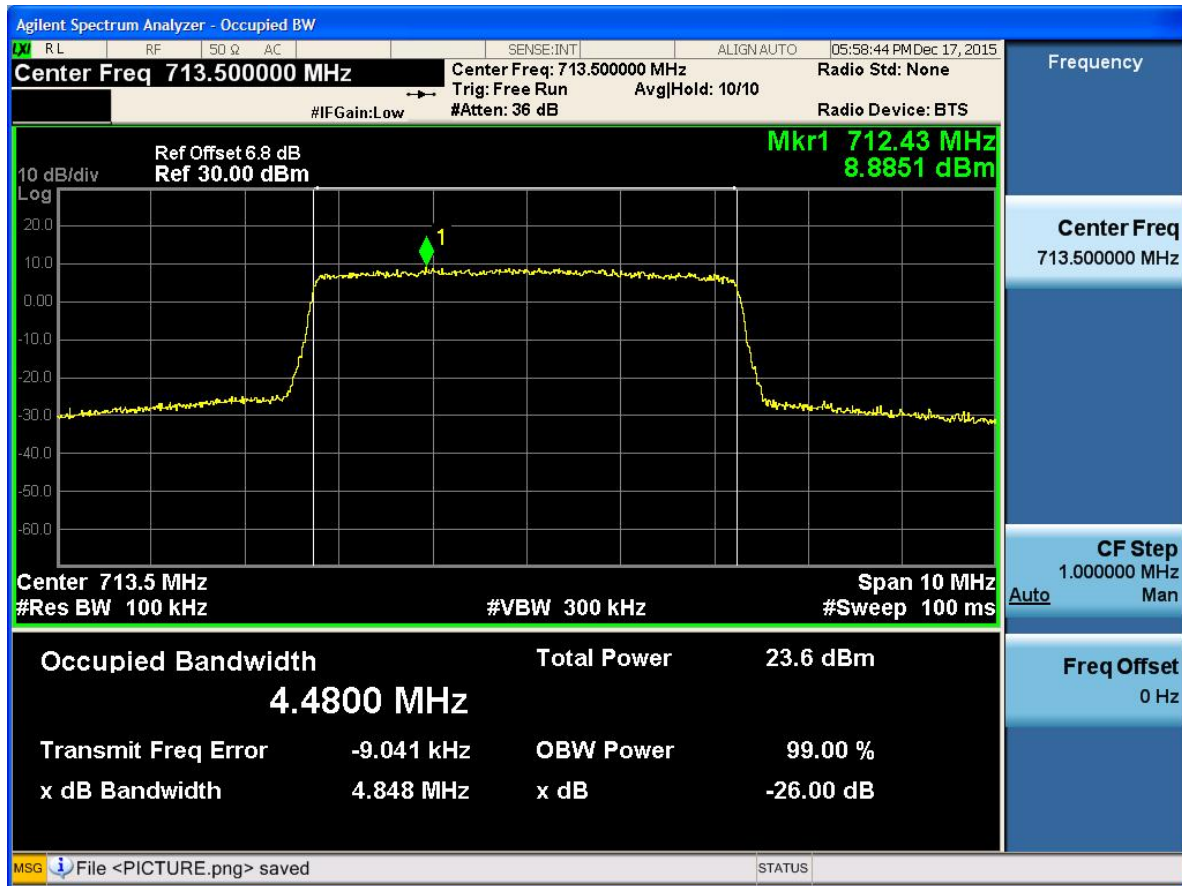
4.1.1.2.1.2 Test Channel = MCH

4.1.1.2.1.2.1 Test RB = RB25#0



4.1.1.2.1.3 Test Channel = HCH

4.1.1.2.1.3.1 Test RB = RB25#0



4.1.1.2.2 Test Bandwidth = 10

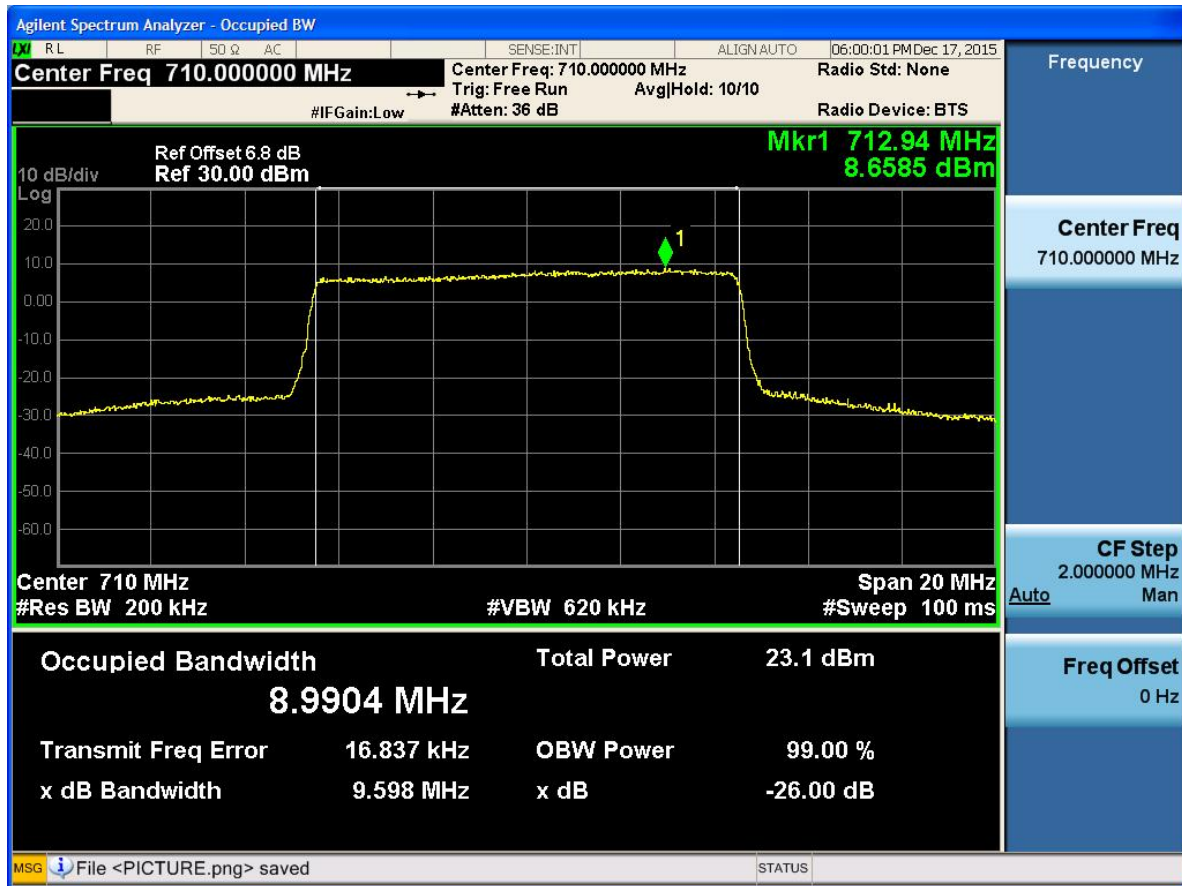
4.1.1.2.2.1 Test Channel = LCH

4.1.1.2.2.1.1 Test RB = RB50#0



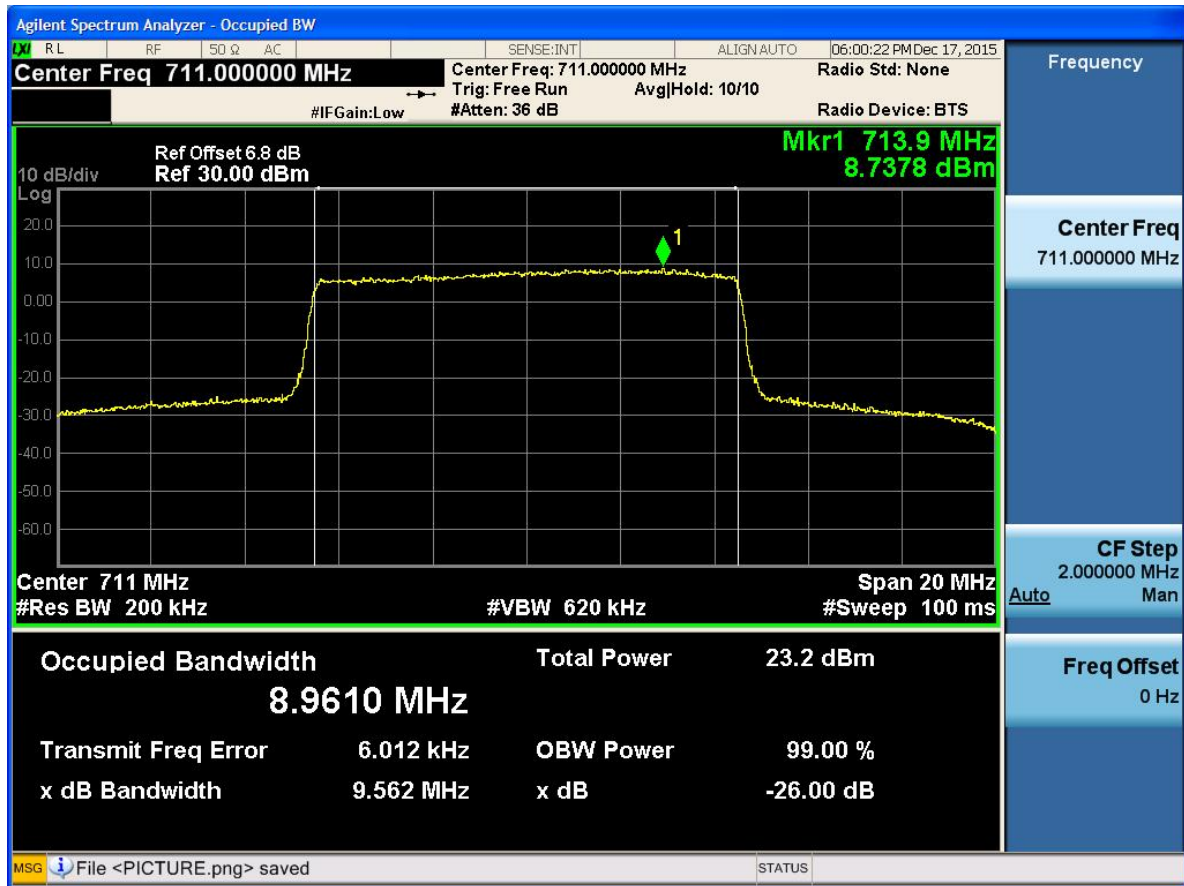
4.1.1.2.2.2 Test Channel = MCH

4.1.1.2.2.2.1 Test RB = RB50#0



4.1.1.2.2.3 Test Channel = HCH

4.1.1.2.2.3.1 Test RB = RB50#0



5Appendix_E: Band Edges Compliance

Part I - Test Plots

5.1 For LTE

5.1.1 Test Band = BAND17

5.1.1.1 Test Mode = LTE/TM1

5.1.1.1.1 Test Bandwidth = 5

5.1.1.1.1.1 Test Channel = LCH

5.1.1.1.1.1.1 Test RB = RB1#0



5.1.1.1.1.2 Test RB = RB1#24





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 06:01:42 PM Dec 17, 2015

Center Freq 704.000000 MHz PNO: Far Trig: Free Run Avg Type: Pwr(RMS) TRACE 1 2 3 4 5 6
IF Gain: Low #Atten: 36 dB Avg|Hold: 8/100 TYPE M DET A A A A A

Ref Offset 6.8 dB Mkr1 703.280 MHz
Ref 30.00 dBm -27.741 dBm

10 dB/div Log

-13.00 dBm

Center 704.000 MHz Span 2.000 MHz
#Res BW 51 kHz #VBW 150 kHz* #Sweep 1.00 s (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq
704.000000 MHz

Start Freq
703.000000 MHz

Stop Freq
705.000000 MHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

5.1.1.1.1.4 Test RB = RB25#0



5.1.1.1.1.2 Test Channel = HCH

5.1.1.1.1.2.1 Test RB = RB1#0



5.1.1.1.1.2.2 Test RB = RB1#24



5.1.1.1.1.2.3 Test RB = RB12#6





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 06:02:59 PM Dec 17, 2015

Center Freq 716.000000 MHz PNO: Far Trig: Free Run Avg Type: Pwr(RMS) TRACE 1 2 3 4 5 6
IF Gain: Low #Atten: 36 dB Avg Hold: 8/100 TYPE M DET A A A A A A

Ref Offset 6.8 dB Mkr1 716.000 MHz
Ref 30.00 dBm -29.864 dBm

10 dB/div
Log

Center 716.000 MHz
#Res BW 51 kHz #VBW 150 kHz* #Sweep 1.00 s (1001 pts) Span 2.000 MHz

MSG STATUS

Frequency

Auto Tune

Center Freq
716.000000 MHz

Start Freq
715.000000 MHz

Stop Freq
717.000000 MHz

CF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

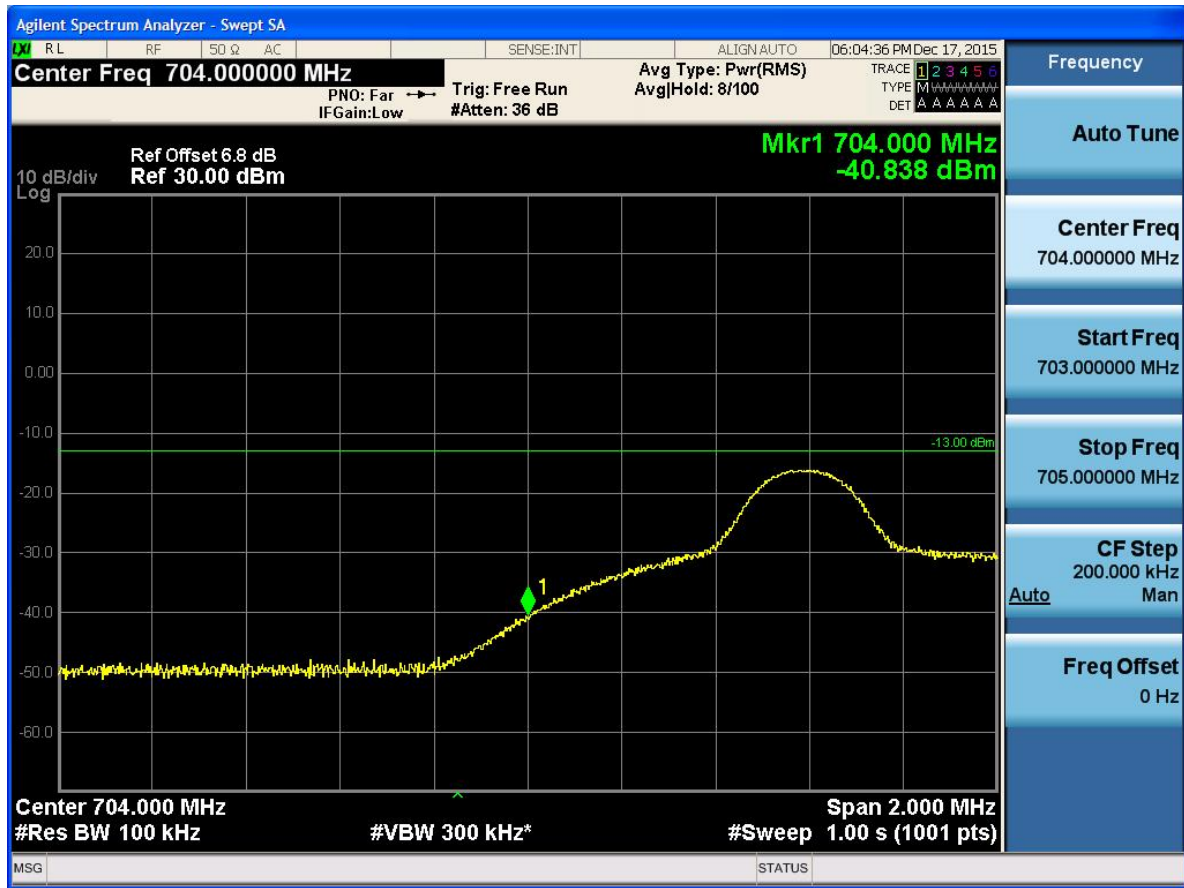
5.1.1.1.2 Test Bandwidth = 10

5.1.1.1.2.1 Test Channel = LCH

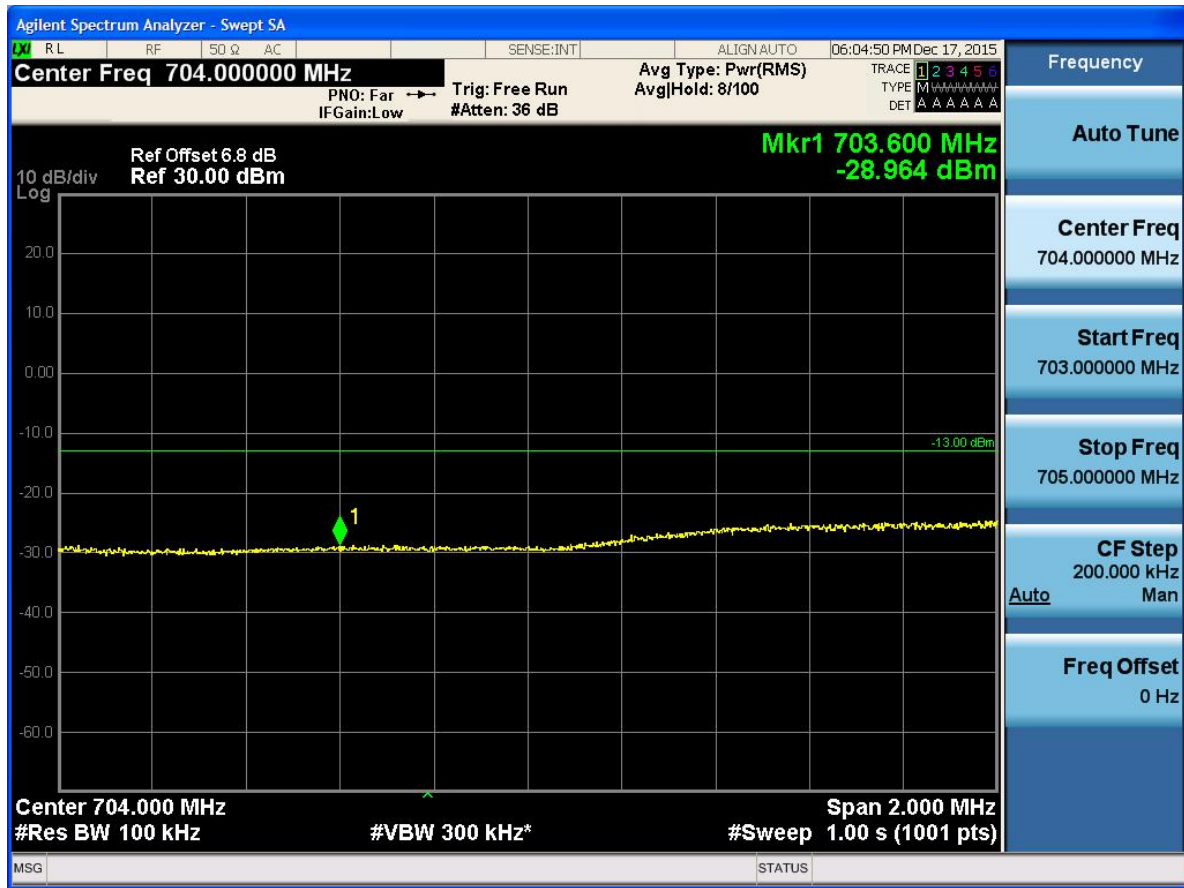
5.1.1.1.2.1.1 Test RB = RB1#0



5.1.1.1.2.1.2 Test RB = RB1#49



5.1.1.1.2.1.3 Test RB = RB25#13



5.1.1.1.2.1.4 Test RB = RB50#0

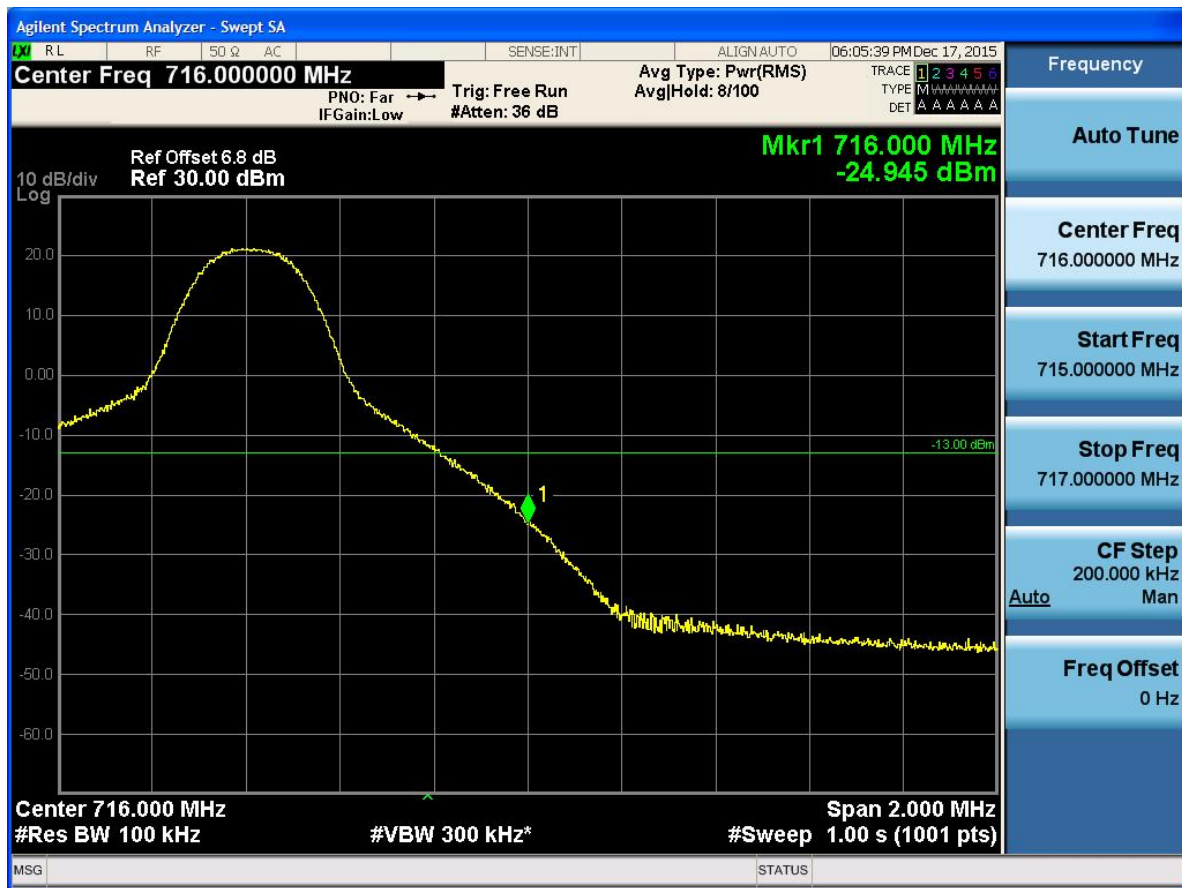


5.1.1.1.2.2 Test Channel = HCH

5.1.1.1.2.2.1 Test RB = RB1#0



5.1.1.1.2.2.2 Test RB = RB1#49



5.1.1.1.2.2.3 Test RB = RB25#13



5.1.1.1.2.2.4 Test RB = RB50#0

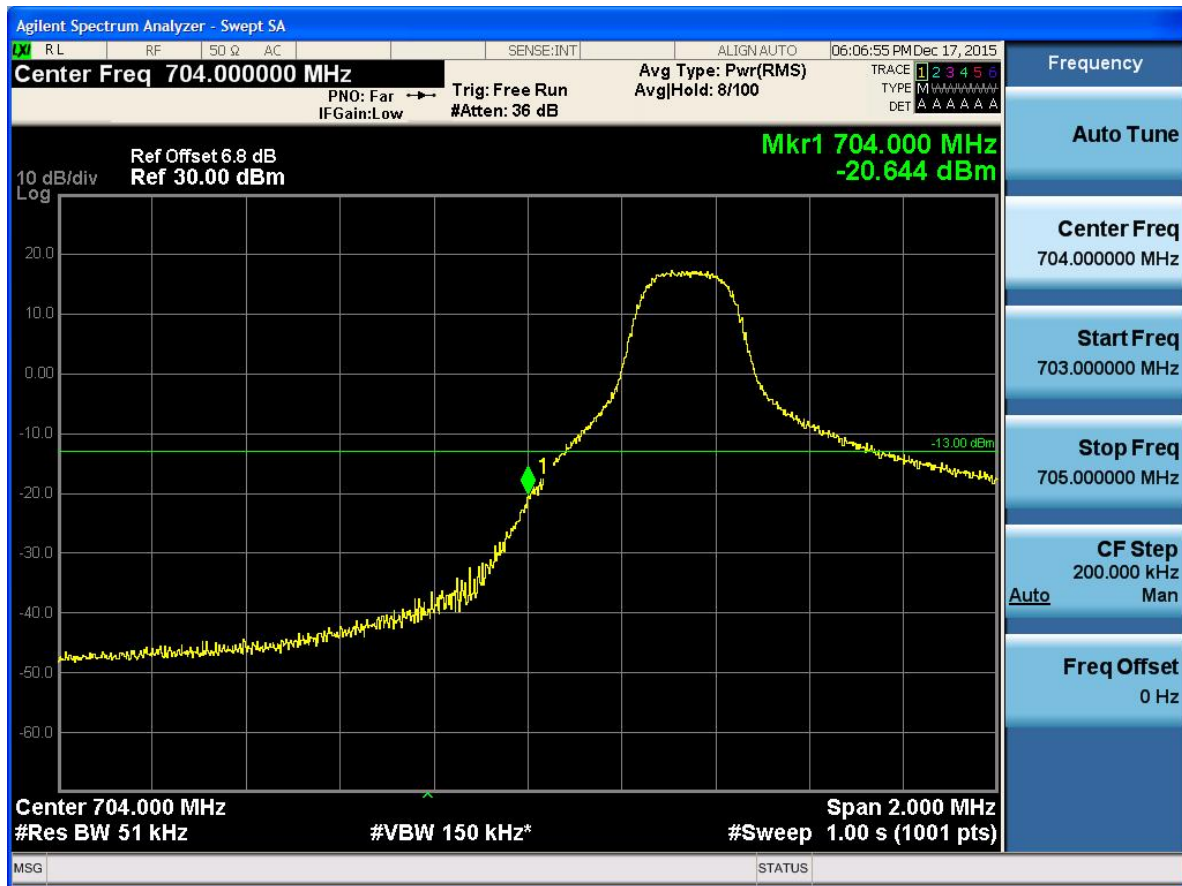


5.1.1.2 Test Mode = LTE/TM2

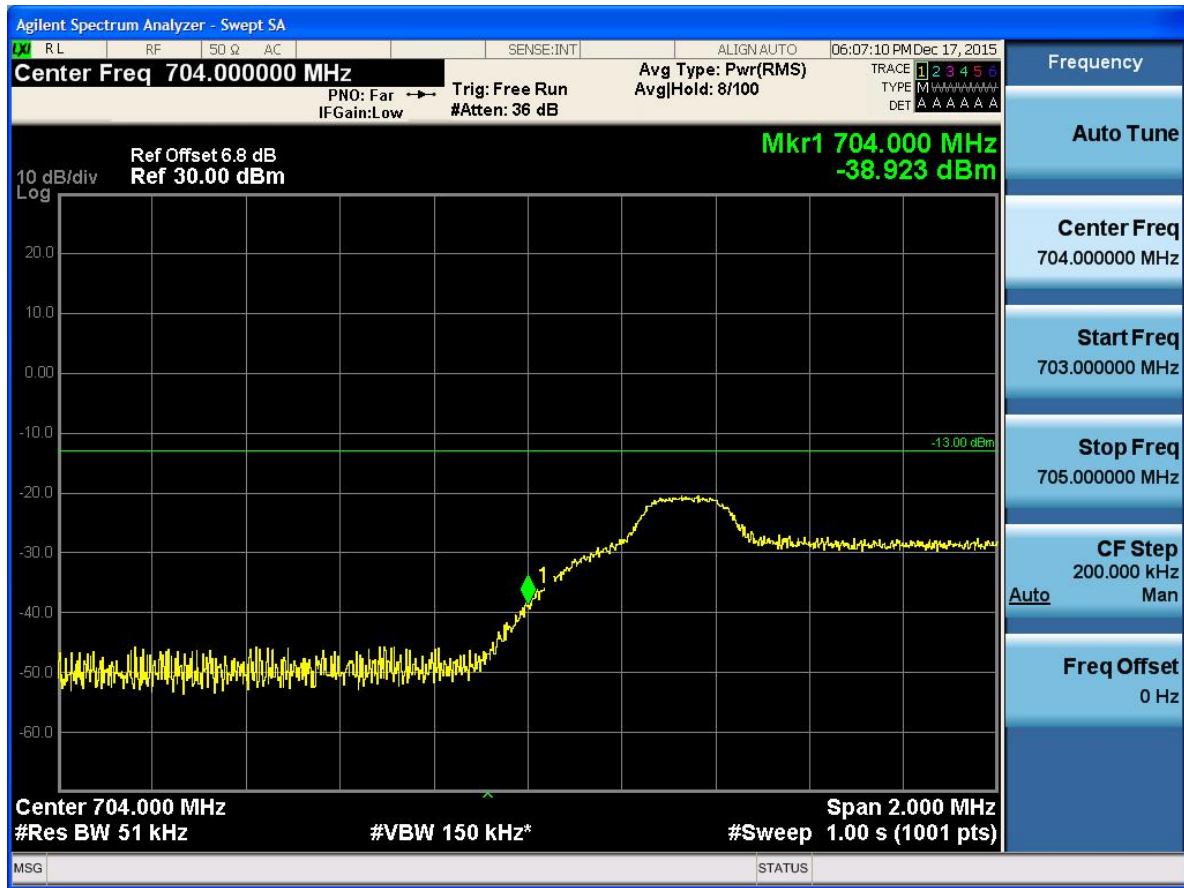
5.1.1.2.1 Test Bandwidth = 5

5.1.1.2.1.1 Test Channel = LCH

5.1.1.2.1.1.1 Test RB = RB1#0



5.1.1.2.1.1.2 Test RB = RB1#24



5.1.1.2.1.1.3 Test RB = RB12#6

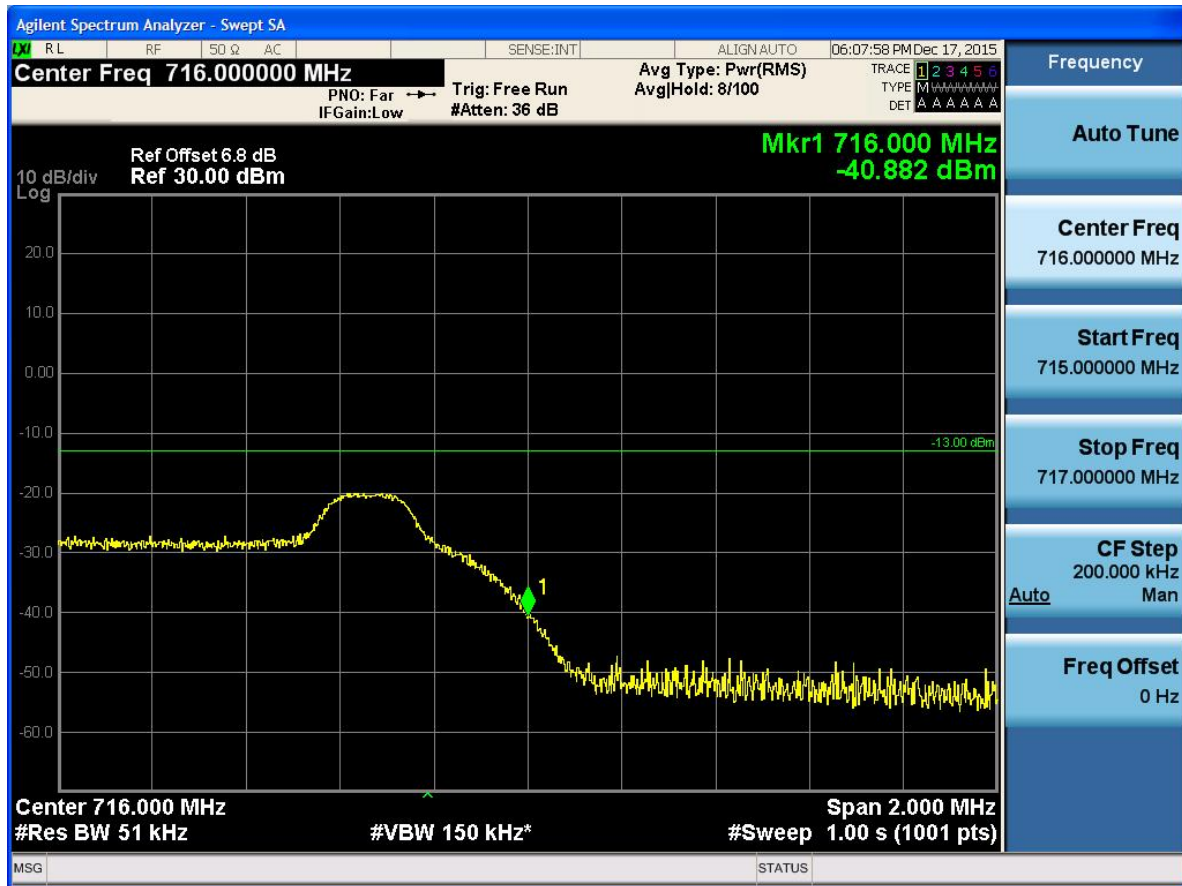


5.1.1.2.1.1.4 Test RB = RB25#0



5.1.1.2.1.2 Test Channel = HCH

5.1.1.2.1.2.1 Test RB = RB1#0



5.1.1.2.1.2.2 Test RB = RB1#24



5.1.1.2.1.2.3 Test RB = RB12#6



5.1.1.2.1.2.4 Test RB = RB25#0



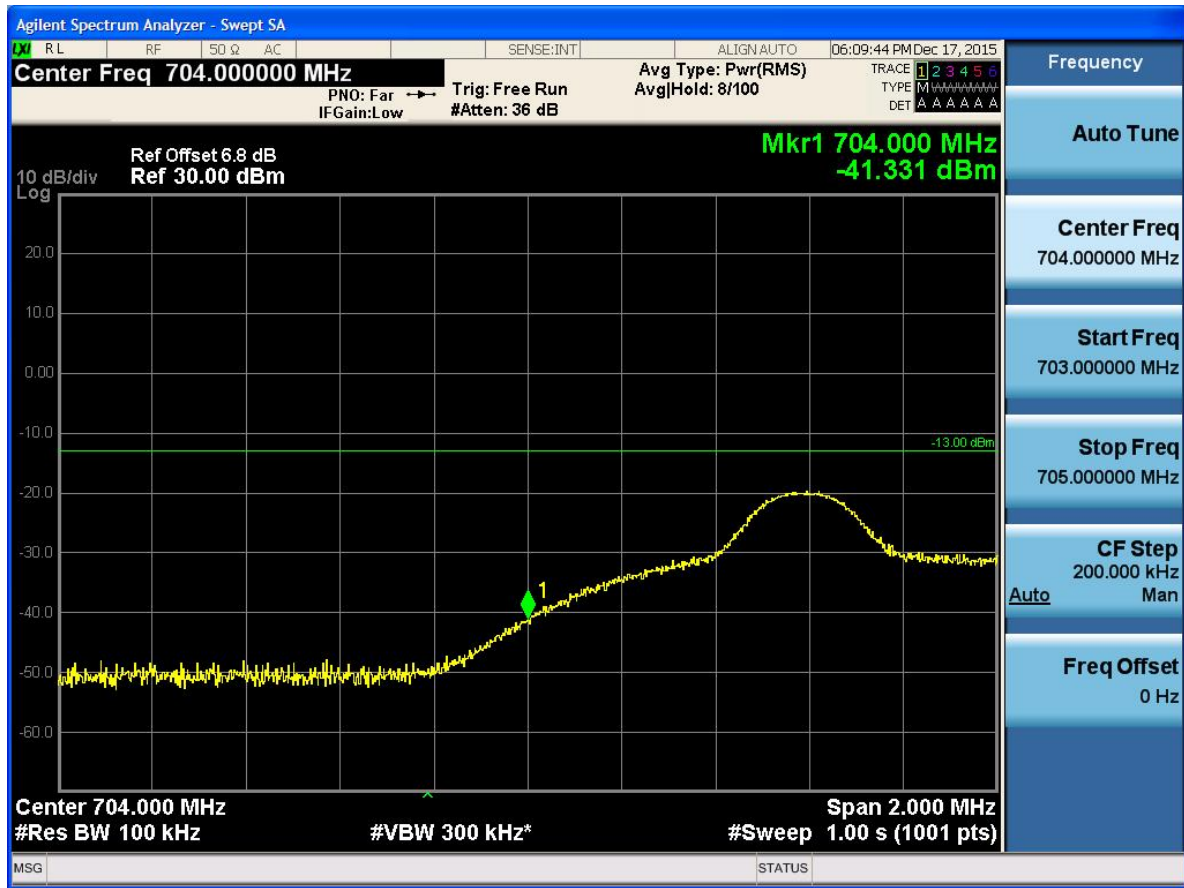
5.1.1.2.2 Test Bandwidth = 10

5.1.1.2.2.1 Test Channel = LCH

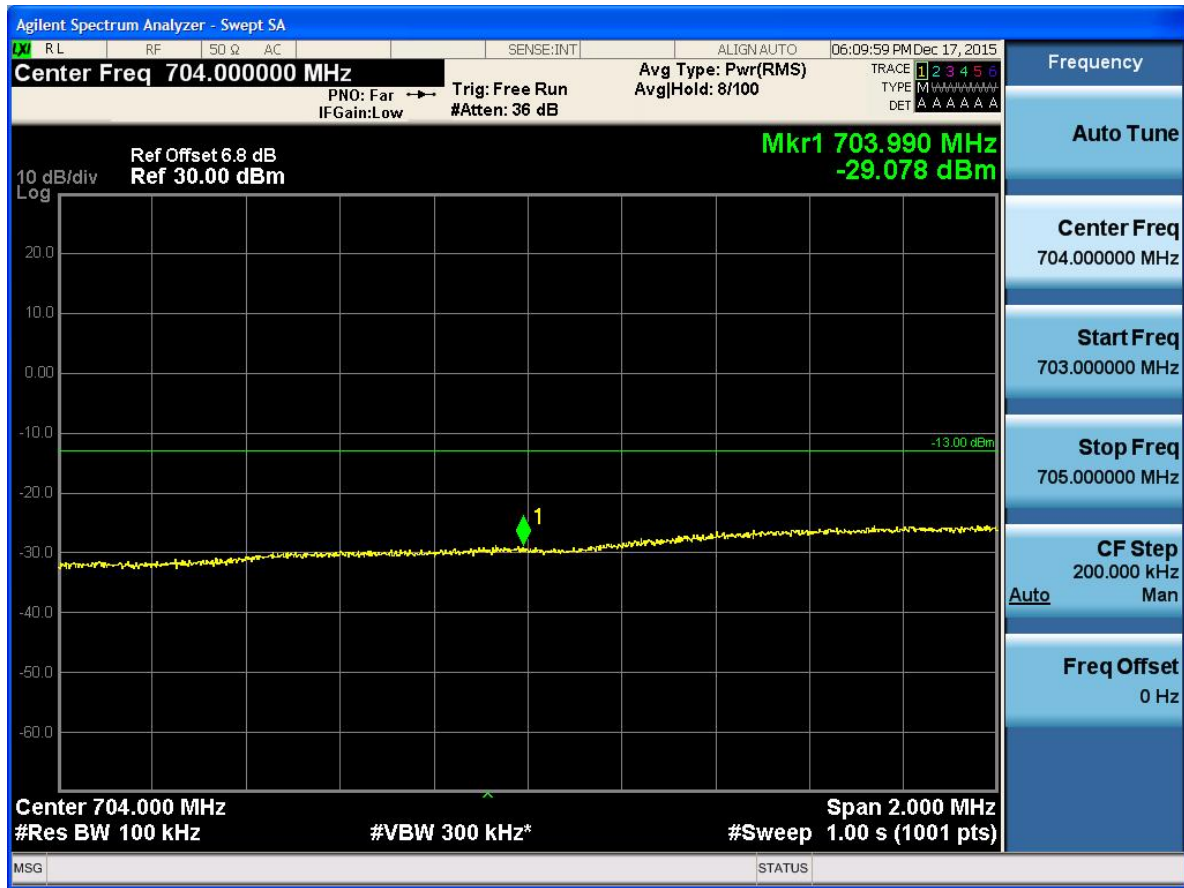
5.1.1.2.2.1.1 Test RB = RB1#0



5.1.1.2.2.1.2 Test RB = RB1#49



5.1.1.2.2.1.3 Test RB = RB25#13

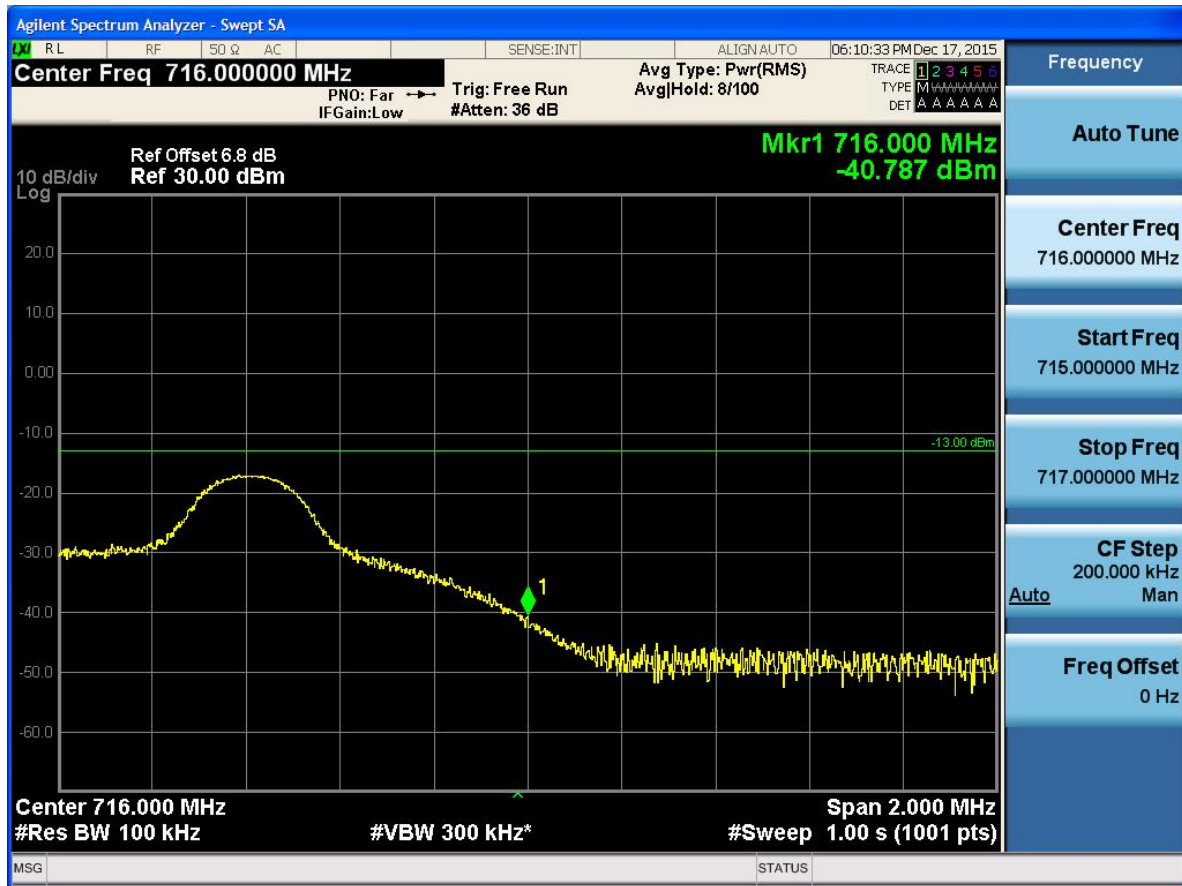


5.1.1.2.2.1.4 Test RB = RB50#0



5.1.1.2.2.2 Test Channel = HCH

5.1.1.2.2.2.1 Test RB = RB1#0





Agilent Spectrum Analyzer - Swept SA

Center Freq 716.000000 MHz

Ref Offset 6.8 dB
Ref 30.00 dBm

10 dB/div
Log

Mkr1 716.000 MHz
-24.502 dBm

Center Freq 716.000000 MHz

Start Freq 715.000000 MHz

Stop Freq 717.000000 MHz

CF Step 200.000 kHz

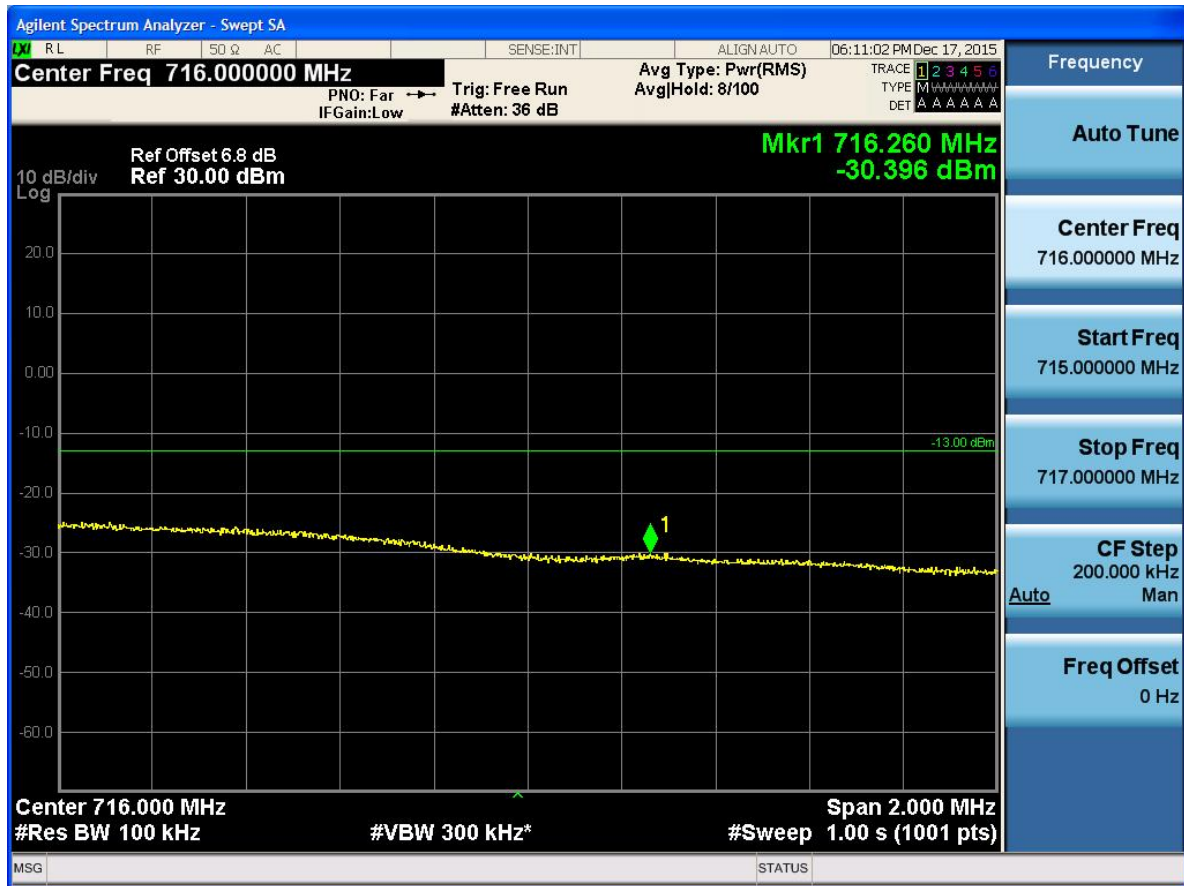
Auto

Freq Offset 0 Hz

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

Span 2.000 MHz
#Sweep 1.00 s (1001 pts)

5.1.1.2.2.3 Test RB = RB25#13



5.1.1.2.2.4 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

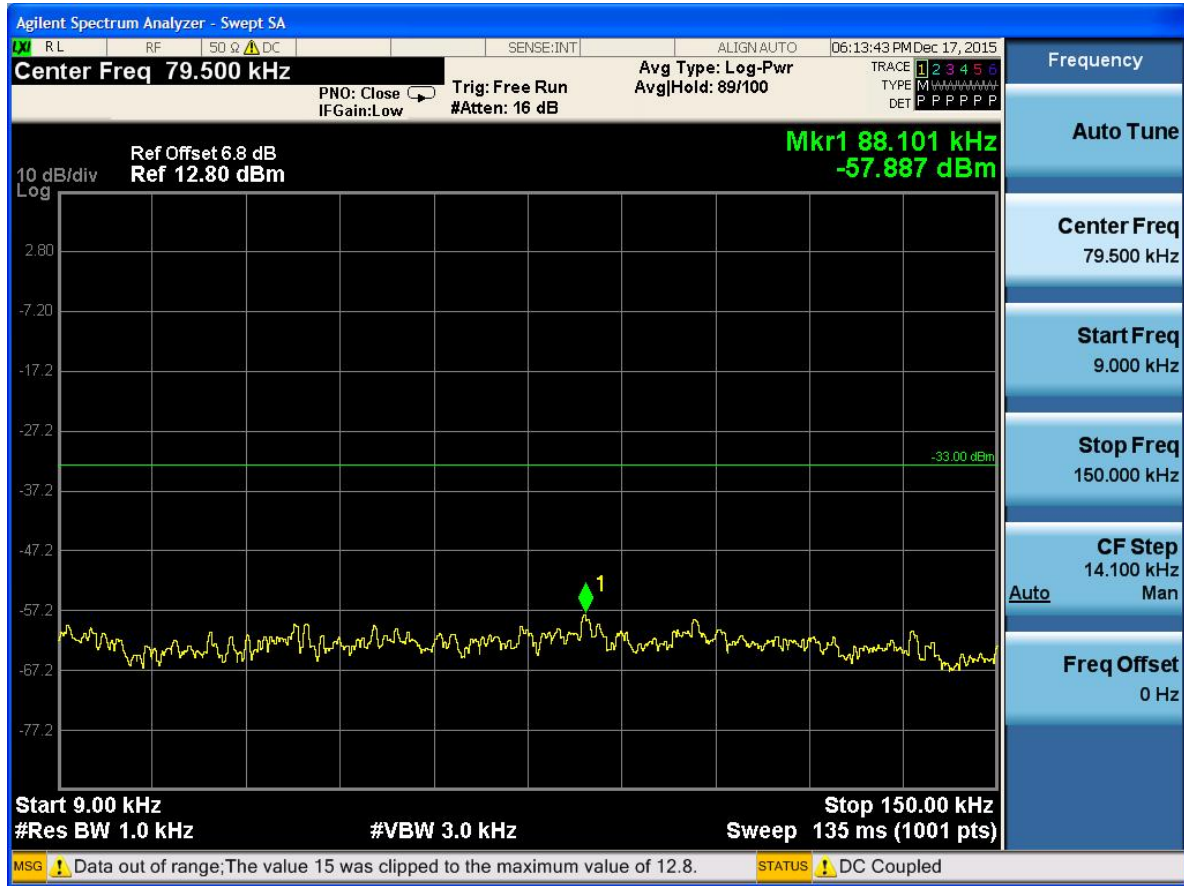
6.1.1 Test Band = BAND17

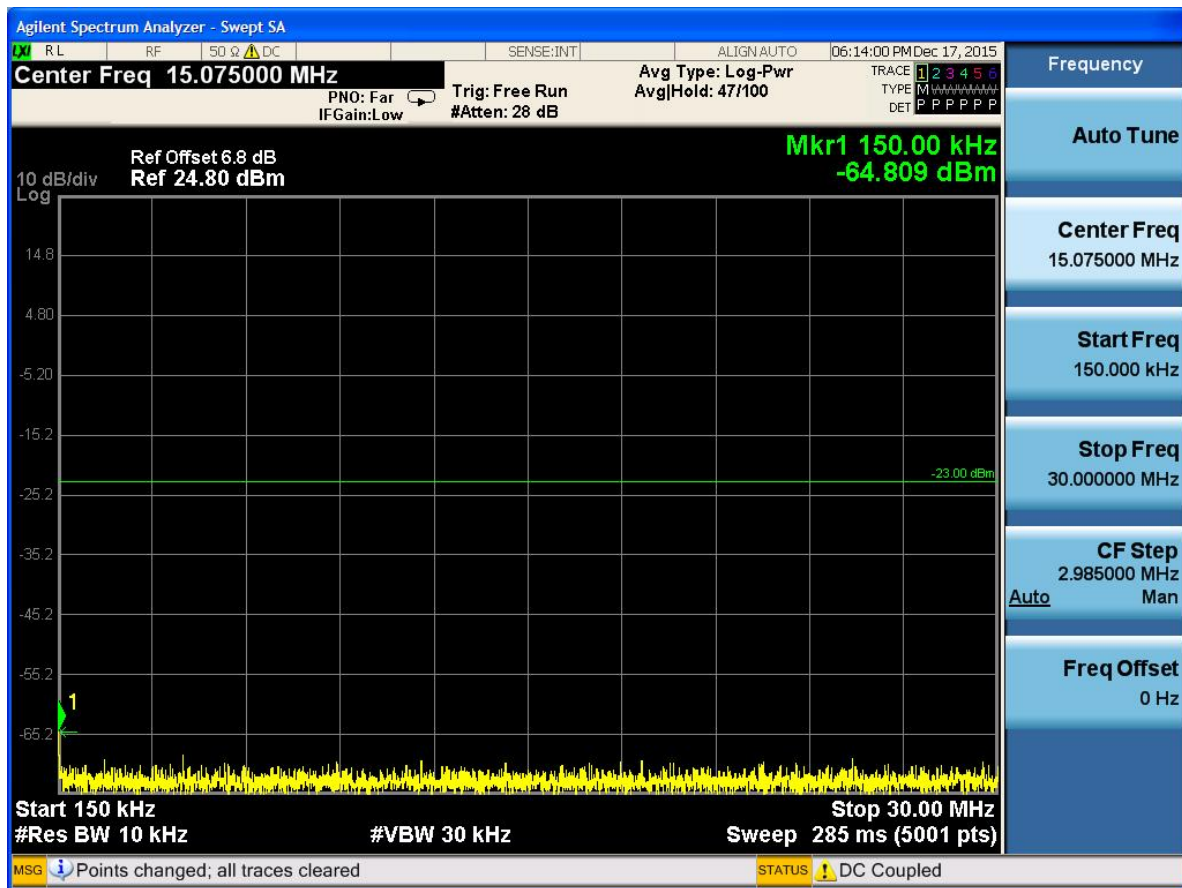
6.1.1.1 Test Mode = LTE/TM1

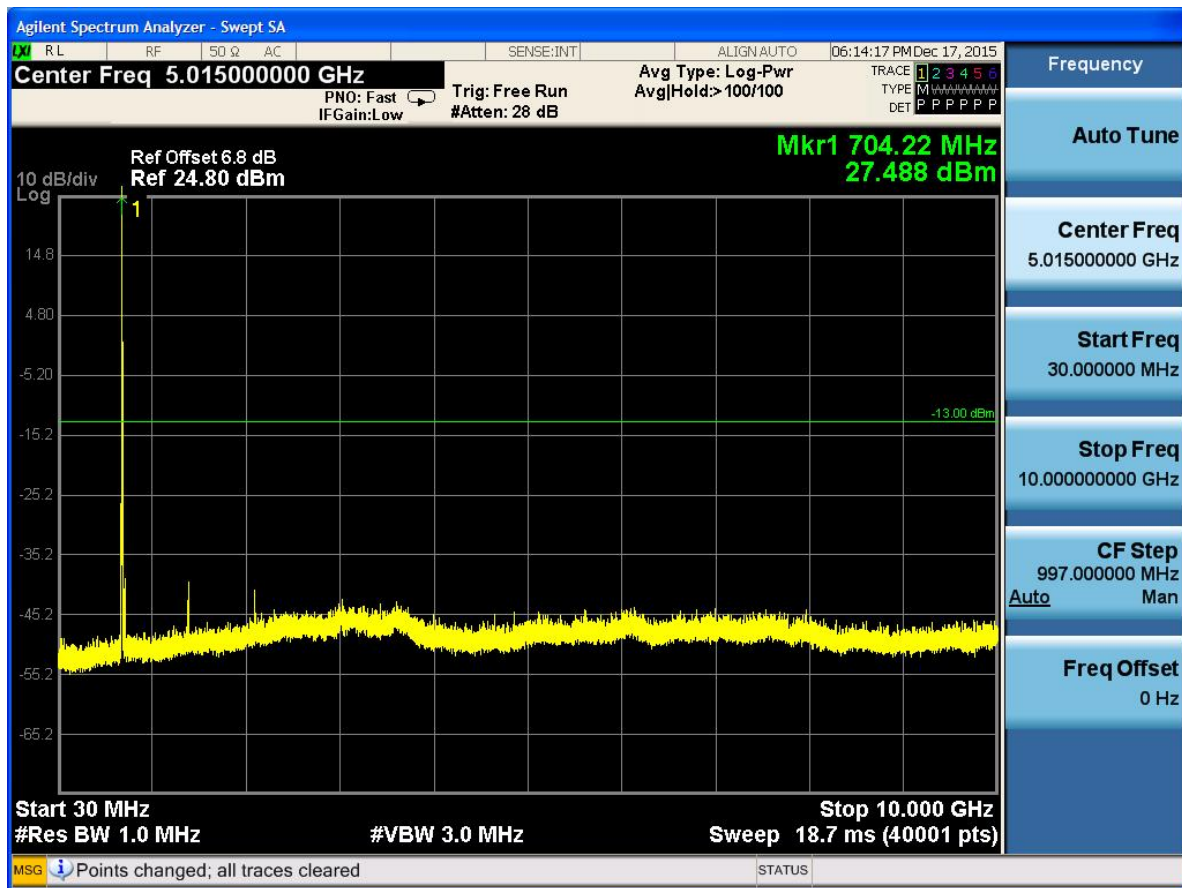
6.1.1.1.1 Test Bandwidth = 5

6.1.1.1.1.1 Test Channel = LCH

6.1.1.1.1.1.1 Test RB = RB1#0

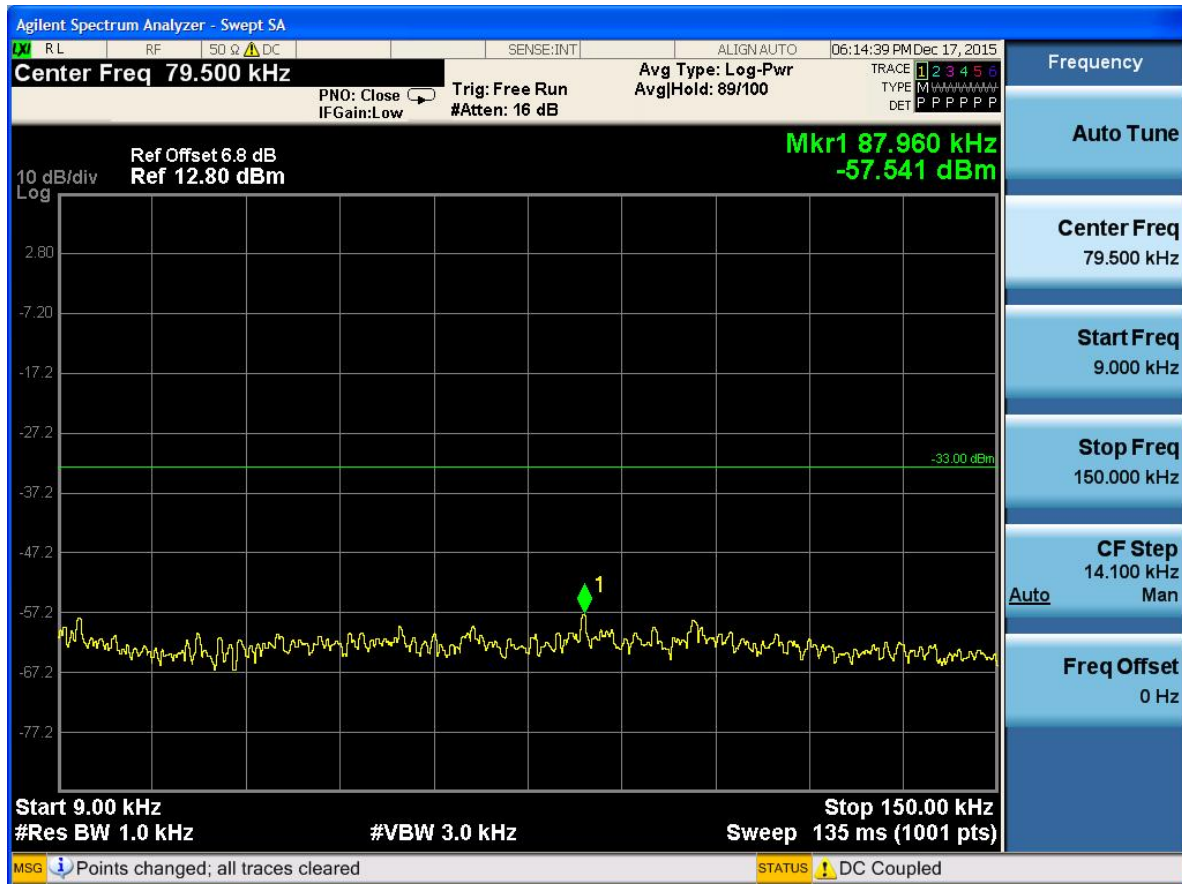




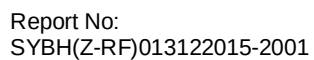


6.1.1.1.1.2 Test Channel = MCH

6.1.1.1.1.2.1 Test RB = RB1#0

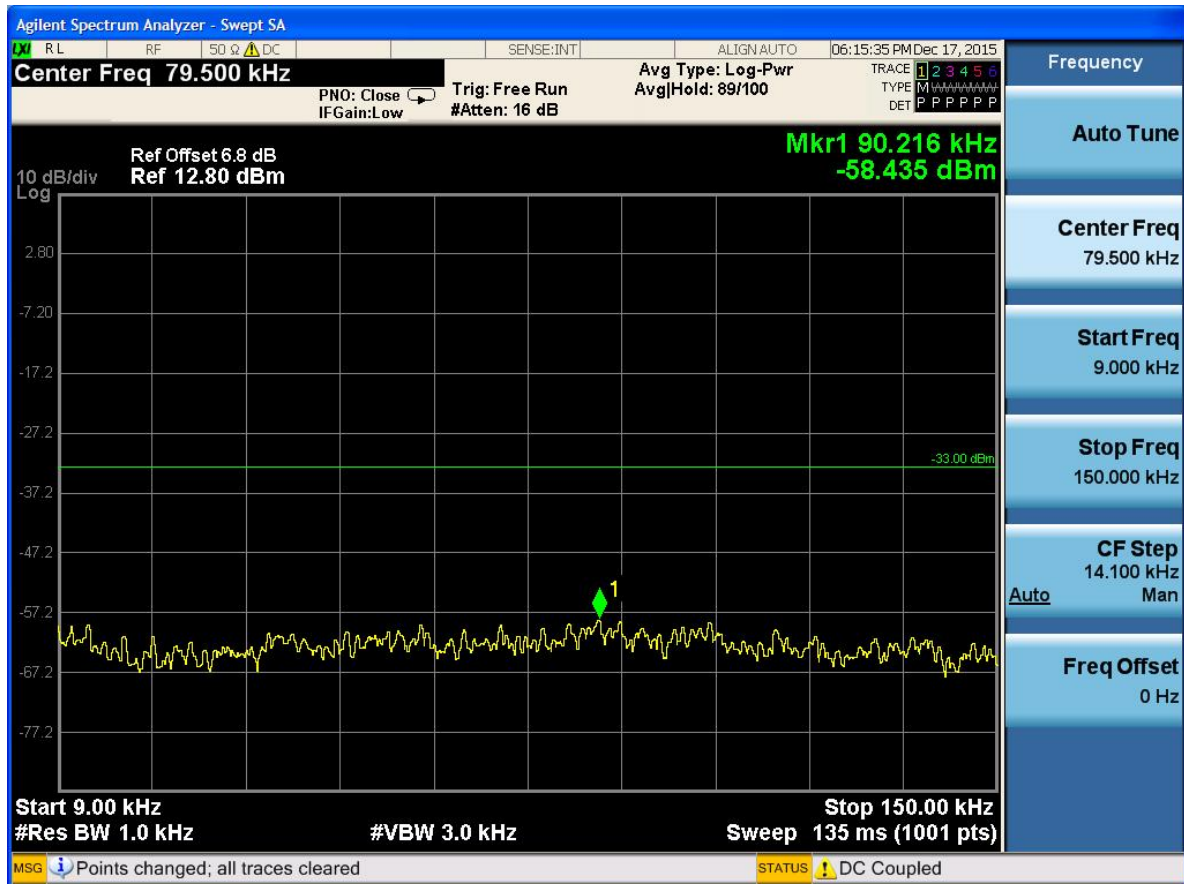




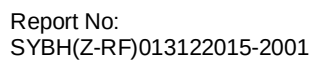


6.1.1.1.1.3 Test Channel = HCH

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

