



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]	EIRP[dBm]	Verdict
BAND40	LTE/TM1	5	LCH	RB1#0	22.02	23.17	PASS
				RB1#13	22.08	22.95	PASS
				RB1#24	22.09	23.16	PASS
				RB12#0	21.11	22.28	PASS
				RB12#6	21.01	22.26	PASS
				RB12#13	21.16	22.31	PASS
				RB25#0	21.14	22.05	PASS
			MCH	RB1#0	22.09	23.15	PASS
				RB1#13	22.12	23.02	PASS
				RB1#24	22.04	23.06	PASS
				RB12#0	21.15	22.41	PASS
				RB12#6	21.1	22.17	PASS
				RB12#13	21.06	22.02	PASS
				RB25#0	20.86	21.80	PASS
			HCH	RB1#0	22.11	23.29	PASS
				RB1#13	22.01	22.92	PASS
				RB1#24	22.04	23.07	PASS
				RB12#0	21.1	22.08	PASS
				RB12#6	21.06	22.01	PASS
				RB12#13	21.11	22.02	PASS
				RB25#0	21.14	22.18	PASS
		10	LCH/ MCH/ HCH	RB1#0	22.05	23.21	PASS
				RB1#25	22.03	22.90	PASS
				RB1#49	22.19	23.30	PASS
				RB25#0	20.98	22.16	PASS
				RB25#13	21.13	21.99	PASS
				RB25#25	21.02	22.07	PASS
				RB50#0	21.14	22.04	PASS
	LTE/TM2	5	LCH	RB1#0	21.24	22.27	PASS
				RB1#13	21.31	22.20	PASS
				RB1#24	21.26	22.14	PASS
				RB12#0	20.11	21.31	PASS
				RB12#6	19.99	21.20	PASS

				RB12#13	20.2	21.19	PASS
				RB25#0	20.07	21.18	PASS
			MCH	RB1#0	21.14	22.18	PASS
				RB1#13	21.13	22.28	PASS
				RB1#24	21.19	22.42	PASS
				RB12#0	19.94	21.09	PASS
				RB12#6	20.1	21.22	PASS
				RB12#13	20.05	21.15	PASS
				RB25#0	20.08	21.06	PASS
			HCH	RB1#0	21.26	22.34	PASS
				RB1#13	21.16	22.03	PASS
				RB1#24	21.09	22.32	PASS
				RB12#0	20.15	21.34	PASS
				RB12#6	20.06	21.23	PASS
				RB12#13	20.16	21.34	PASS
				RB25#0	20.07	21.08	PASS
		10	LCH/ MCH/ HCH	RB1#0	21.17	22.25	PASS
				RB1#25	20.87	21.74	PASS
				RB1#49	21.34	22.40	PASS
				RB25#0	19.98	21.10	PASS
				RB25#13	20.06	20.95	PASS
				RB25#25	20.12	21.11	PASS
				RB50#0	20.08	21.04	PASS

Test Band(LTE)	Test Mode	Test Bandwidth	Test Channel	Test RB	Measured[dBm/5MHz]	EIRP[dBm/5MHz]	Limit [dBm/5MHz]	Verdict
BAND 40	LTE/TM1	5	LCH	RB25#0	21.14	22.05	23.98	PASS
			MCH	RB25#0	20.86	21.80	23.98	PASS
			HCH	RB25#0	21.14	22.18	23.98	PASS
		10	LCH/MCH/HCH	RB50#0	21.14	22.08	23.98	PASS
	LTE/TM2	5	LCH	RB25#0	20.07	21.18	23.98	PASS
			MCH	RB25#0	20.08	21.06	23.98	PASS
			HCH	RB25#0	20.07	21.08	23.98	PASS
		10	LCH/MCH/HCH	RB50#0	20.08	21.16	23.98	PASS



			HCH	#0				S
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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:

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

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

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

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
BAND40	LTE/TM1	5	LCH	RB1#0	5.4	13	PASS
				RB1#13	5.34	13	PASS
				RB1#24	5.41	13	PASS
				RB12#0	5.48	13	PASS
				RB12#6	5.55	13	PASS
				RB12#13	5.46	13	PASS
				RB25#0	6.54	13	PASS
			MCH	RB1#0	5.69	13	PASS
				RB1#13	5.62	13	PASS
				RB1#24	5.67	13	PASS
				RB12#0	6.1	13	PASS
				RB12#6	6.05	13	PASS
				RB12#13	6.11	13	PASS
				RB25#0	6.24	13	PASS
			HCH	RB1#0	5.23	13	PASS
				RB1#13	5.18	13	PASS
				RB1#24	5.2	13	PASS
				RB12#0	6.21	13	PASS
				RB12#6	6.1	13	PASS
				RB12#13	6.09	13	PASS
				RB25#0	6.2	13	PASS
		10	LCH/ MCH/ HCH	RB1#0	4.85	13	PASS
				RB1#25	4.85	13	PASS
				RB1#49	4.83	13	PASS
				RB25#0	6.69	13	PASS
				RB25#13	6.6	13	PASS
				RB25#25	6.66	13	PASS
				RB50#0	6.7	13	PASS
	LTE/TM2	5	LCH	RB1#0	6.94	13	PASS
				RB1#13	6.87	13	PASS
				RB1#24	6.94	13	PASS
				RB12#0	7.23	13	PASS
				RB12#6	7.28	13	PASS



Test Band(For LTE)	Test Mode	Test Bandwidth (MHz)	Test Channel	Test RB	Measured[dB]	Limit [dB]	Verdict
				RB12#13	7.31	13	PASS
				RB25#0	7.3	13	PASS
			MCH	RB1#0	5.93	13	PASS
				RB1#13	5.87	13	PASS
				RB1#24	5.89	13	PASS
				RB12#0	6.46	13	PASS
				RB12#6	6.44	13	PASS
				RB12#13	6.53	13	PASS
				RB25#0	6.85	13	PASS
			HCH	RB1#0	5.91	13	PASS
				RB1#13	5.87	13	PASS
				RB1#24	5.89	13	PASS
				RB12#0	7.03	13	PASS
				RB12#6	7.03	13	PASS
				RB12#13	6.83	13	PASS
				RB25#0	6.99	13	PASS
		10	LCH/ MCH/ HCH	RB1#0	6.03	13	PASS
				RB1#25	6.15	13	PASS
				RB1#49	5.99	13	PASS
				RB25#0	7.11	13	PASS
				RB25#13	7.08	13	PASS
				RB25#25	7.16	13	PASS
				RB50#0	6.98	13	PASS

3Appendix_C: Modulation Characteristics

Part I - Test Plots

3.1 For LTE

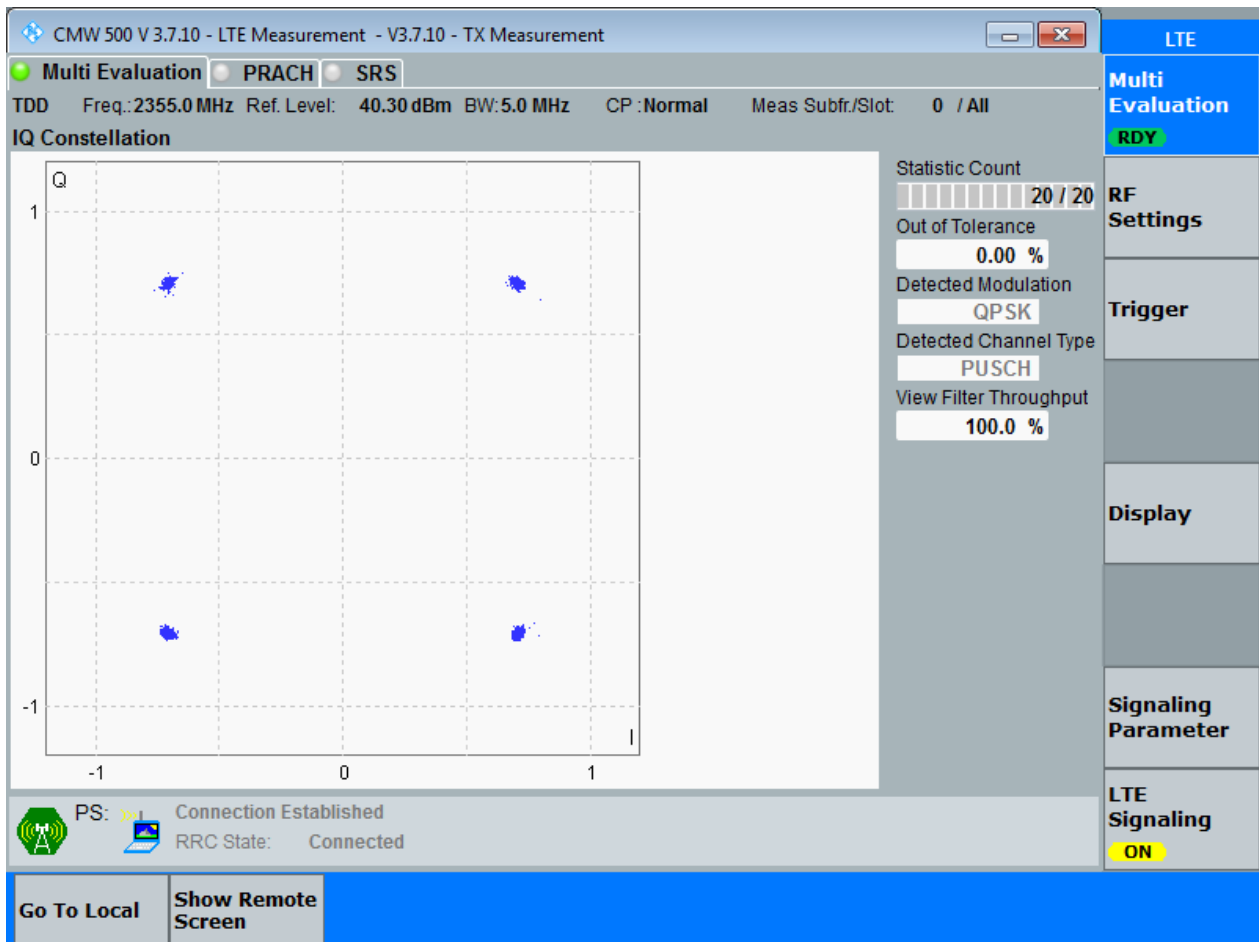
3.1.1 Test Band = BAND40

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

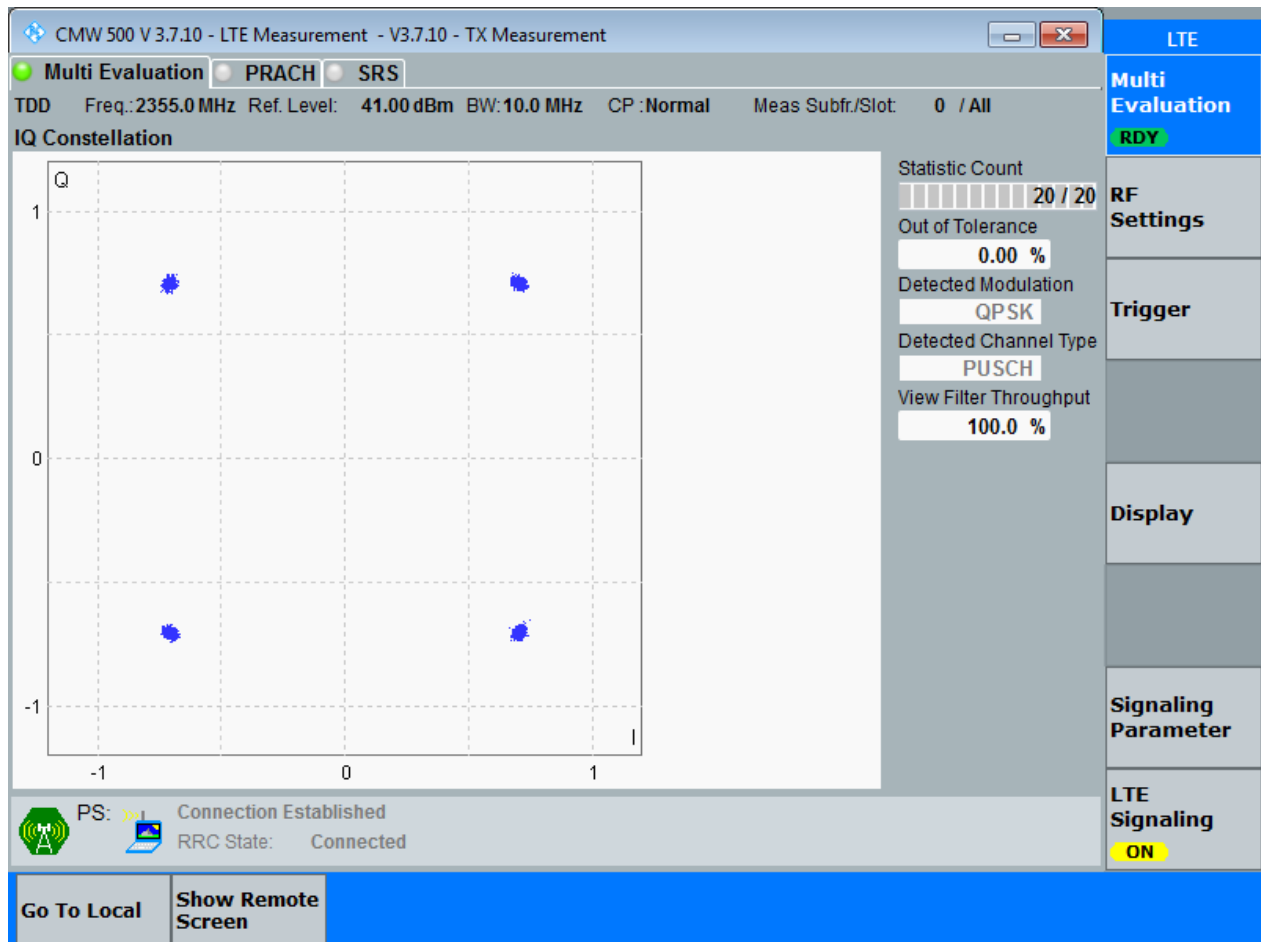
3.1.1.1.1.1.1 Test RB = RB25#0



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

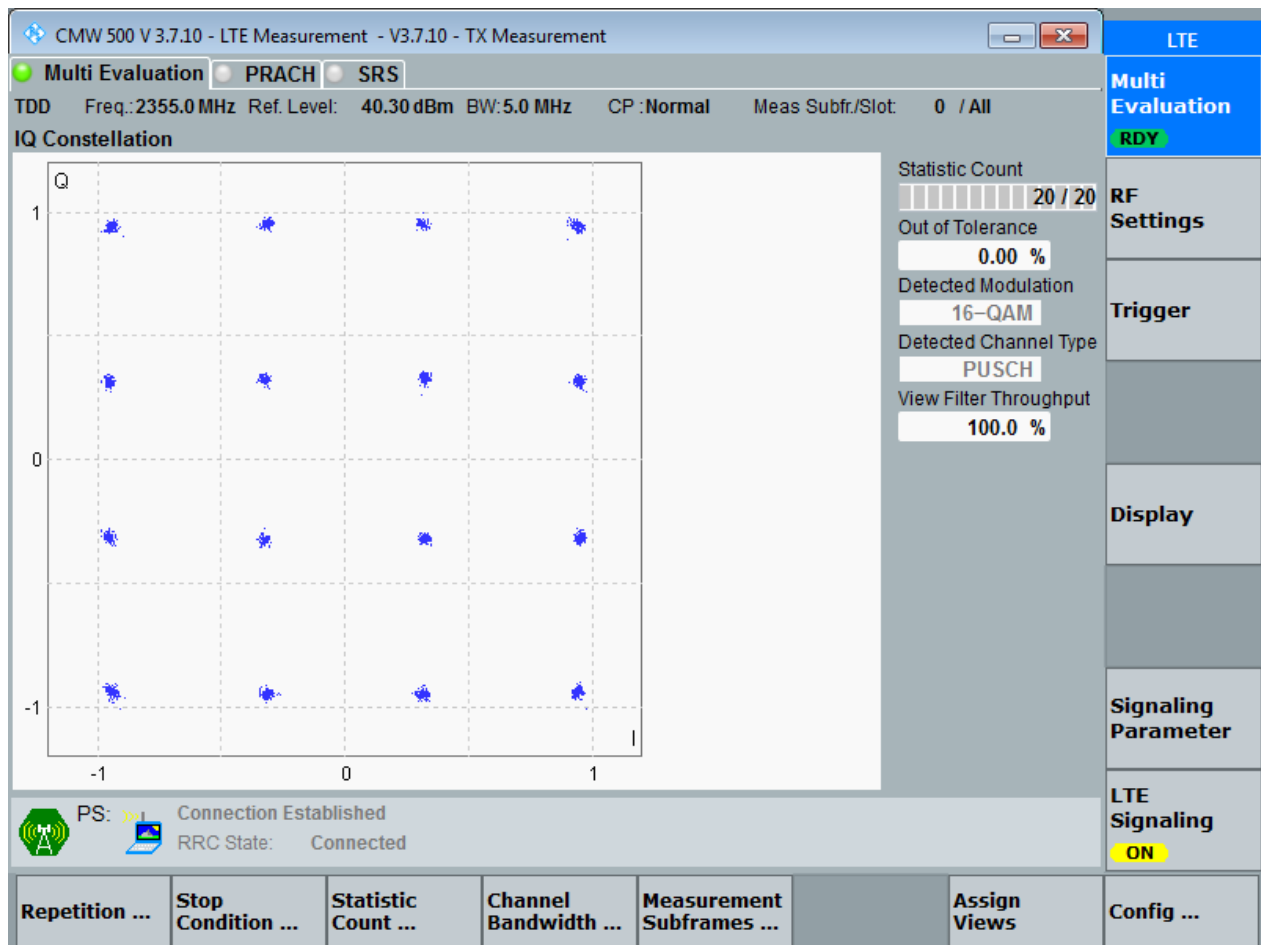


3.1.1.2 Test Mode = LTE/TM2

3.1.1.2.1 Test Bandwidth = 5

3.1.1.2.1.1 Test Channel = MCH

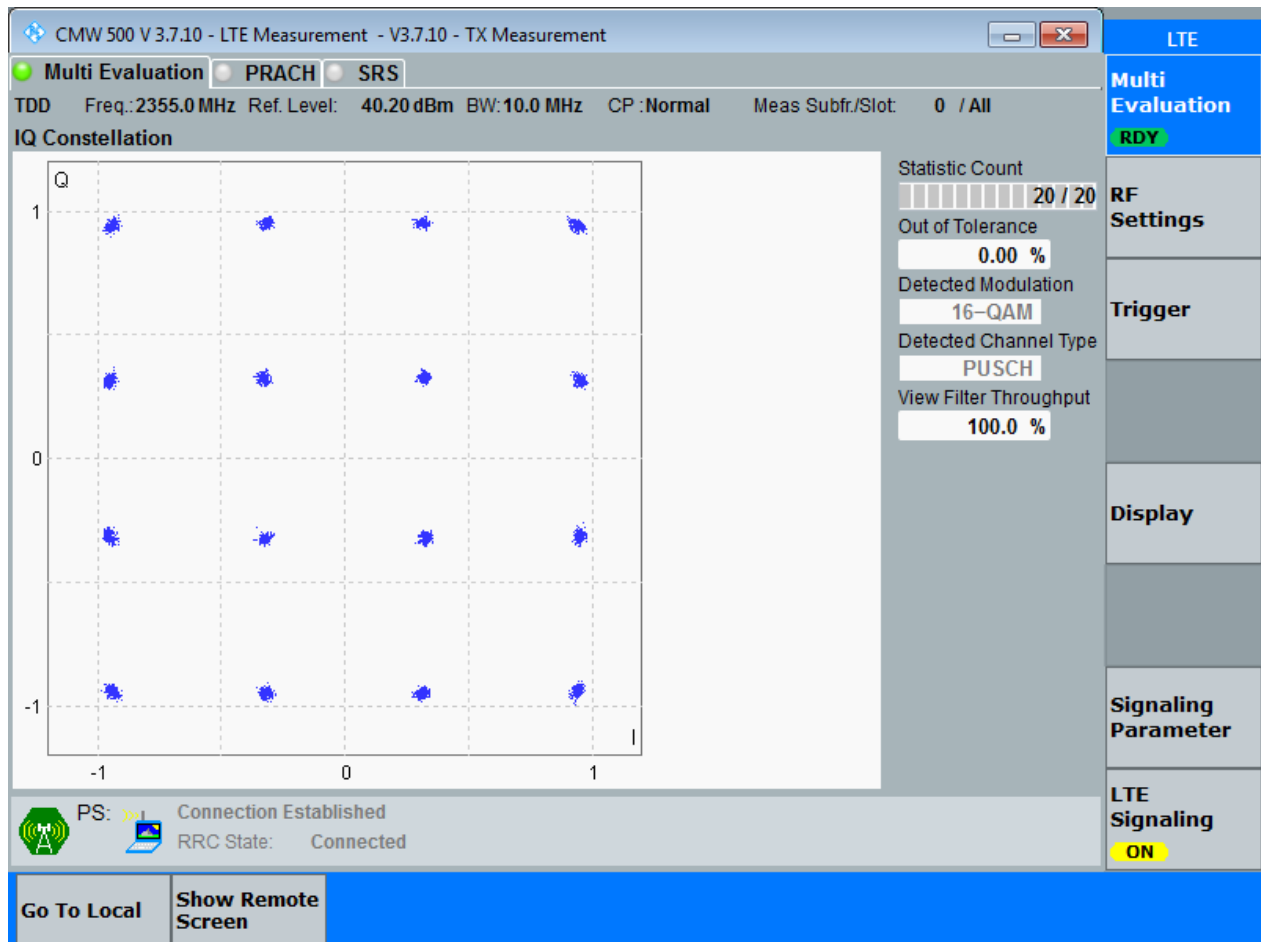
3.1.1.2.1.1.1 Test RB = RB25#0



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
BAND40	LTE/TM1	5	LCH	RB25#0	4.53	5.00	Pass
			MCH	RB25#0	4.51	5.06	Pass
			HCH	RB25#0	4.50	5.20	Pass
		10	LCH/ MCH/ HCH	RB50#0	8.98	9.93	Pass
	LTE/TM2	5	LCH	RB25#0	4.51	4.98	Pass
			MCH	RB25#0	4.51	4.94	Pass
			HCH	RB25#0	4.50	4.98	Pass
		10	LCH/ MCH/ HCH	RB50#0	8.99	9.89	Pass



Part II - Test Plots

4.1 For LTE

4.1.1 Test Band = BAND40

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

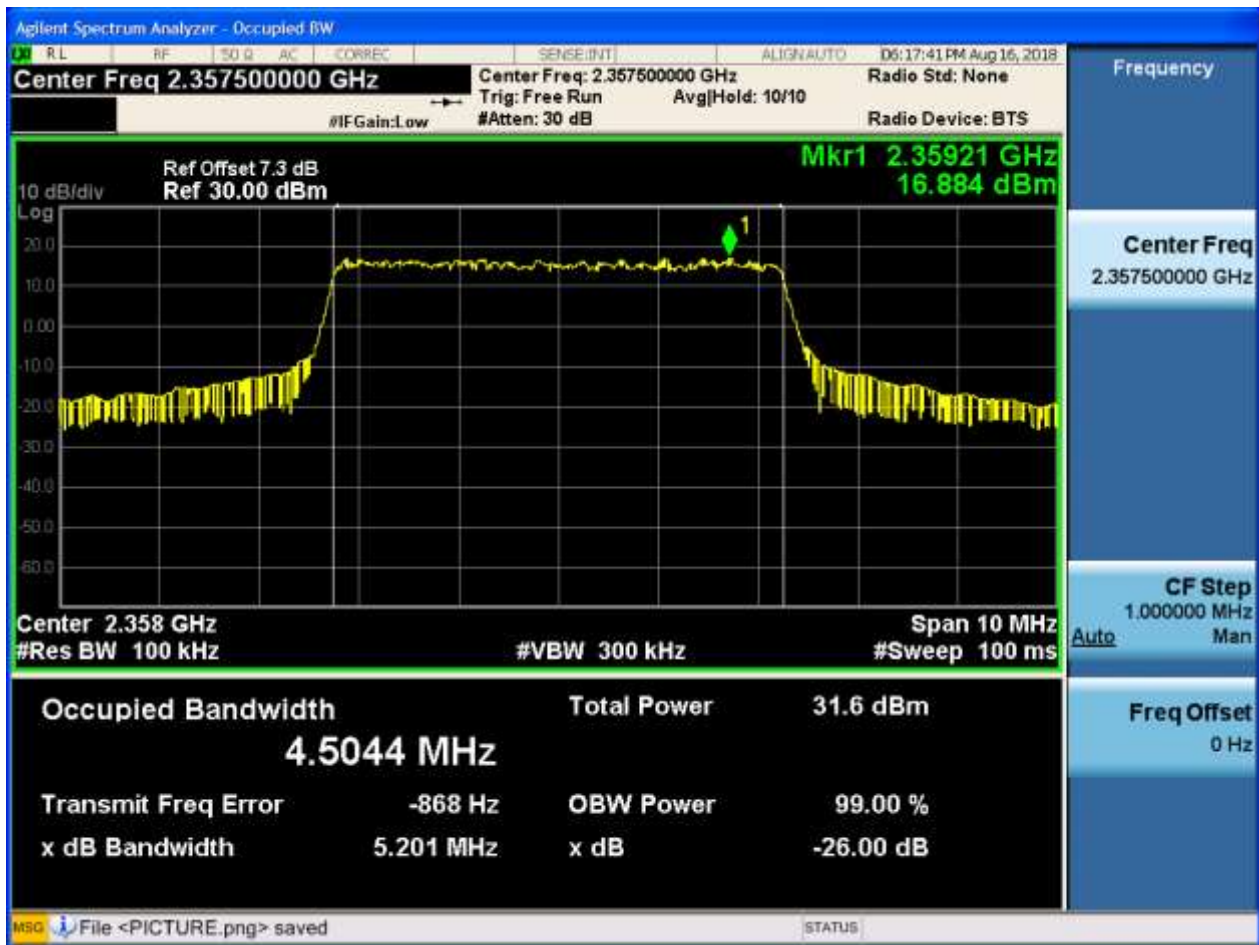
4.1.1.1.1.2.1 Test RB = RB25#0





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

4.1.1.1.2.2 Test Channel = LCH/MCH/HCH

4.1.1.1.2.2.1 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

4.1.1.2.2.2 Test Channel = LCH/MCH/HCH

4.1.1.2.2.2.1 Test RB = RB50#0





5.1.1.1.1.2 Test RB = RB1#24



5.1.1.1.1.3 Test RB = RB12#6



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



5.1.1.1.2.4 Test RB = RB25#0



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



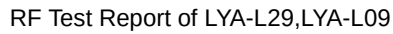
5.1.1.1.2.1.2 Test RB = RB1#49





5.1.1.1.2.1.3 Test RB = RB25#13





The screenshot shows the Keysight Spectrum Analyzer software interface. The main display is a plot of the signal spectrum. The y-axis represents power in dBm, ranging from -60.0 to 15.2. The x-axis represents frequency in GHz, ranging from 2.350000 to 2.352000. A signal is visible, starting at approximately -50 dBm and rising to a plateau at -29.93 dBm. The signal is labeled 'Mkr1 2.349 995 GHz'. The plot is titled 'Scale/Div 10 dB' and 'Log'. The center frequency is 2.350000 GHz, and the span is 2.000 MHz. The video bandwidth is 300 kHz. The interface includes various control panels for settings like Center Frequency, Span, Scale, and Video BW. The bottom status bar shows the date and time as Aug 11, 2019, 8:40:01 AM.

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





5.1.1.1.2.3 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



5.1.1.2.2.2 Test RB = RB1#49





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 = BAND40

6.1.1.1 Test Mode = LTE/TM1

6.1.1.1.1 Test Bandwidth = 5

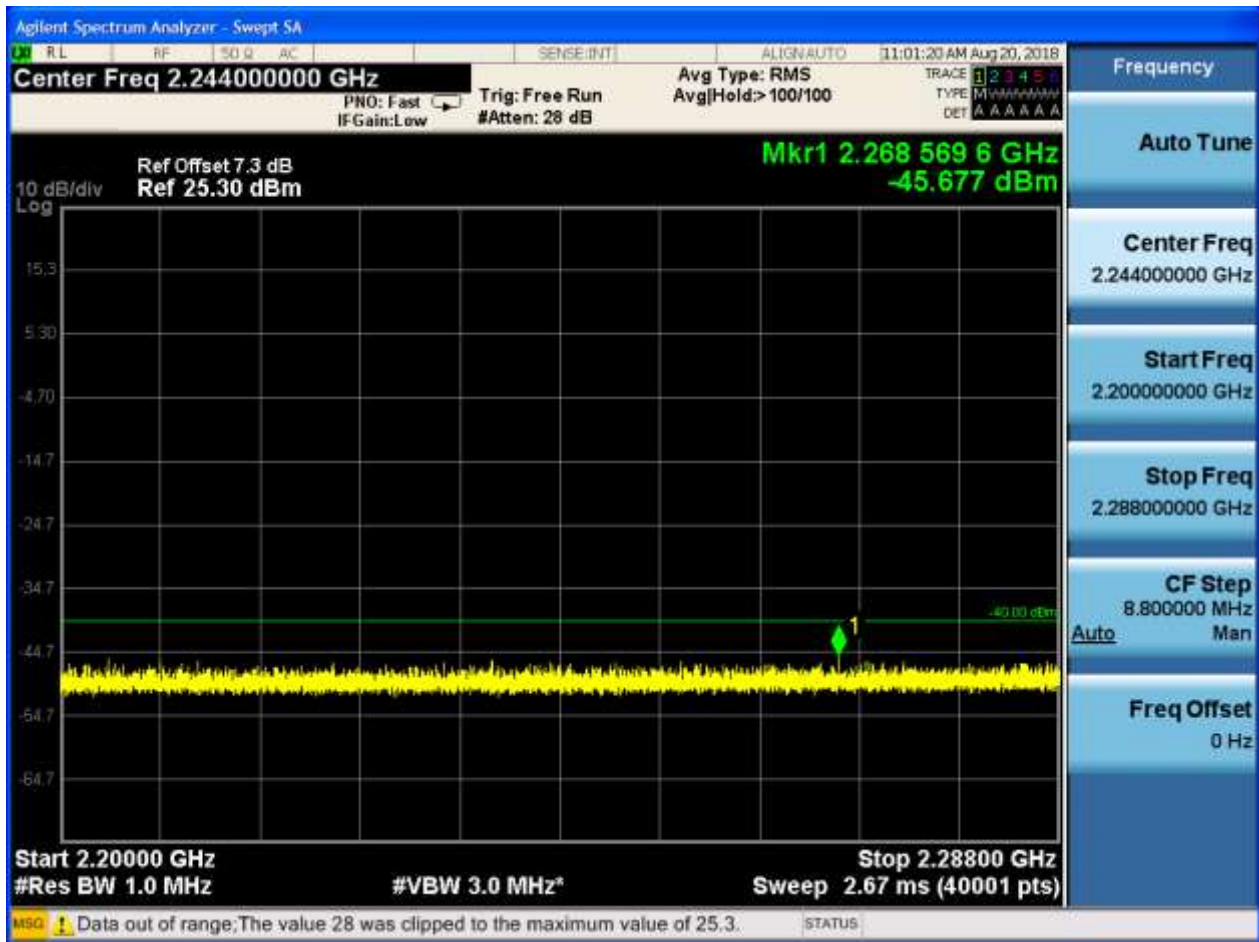
6.1.1.1.1.1 Test Channel = LCH

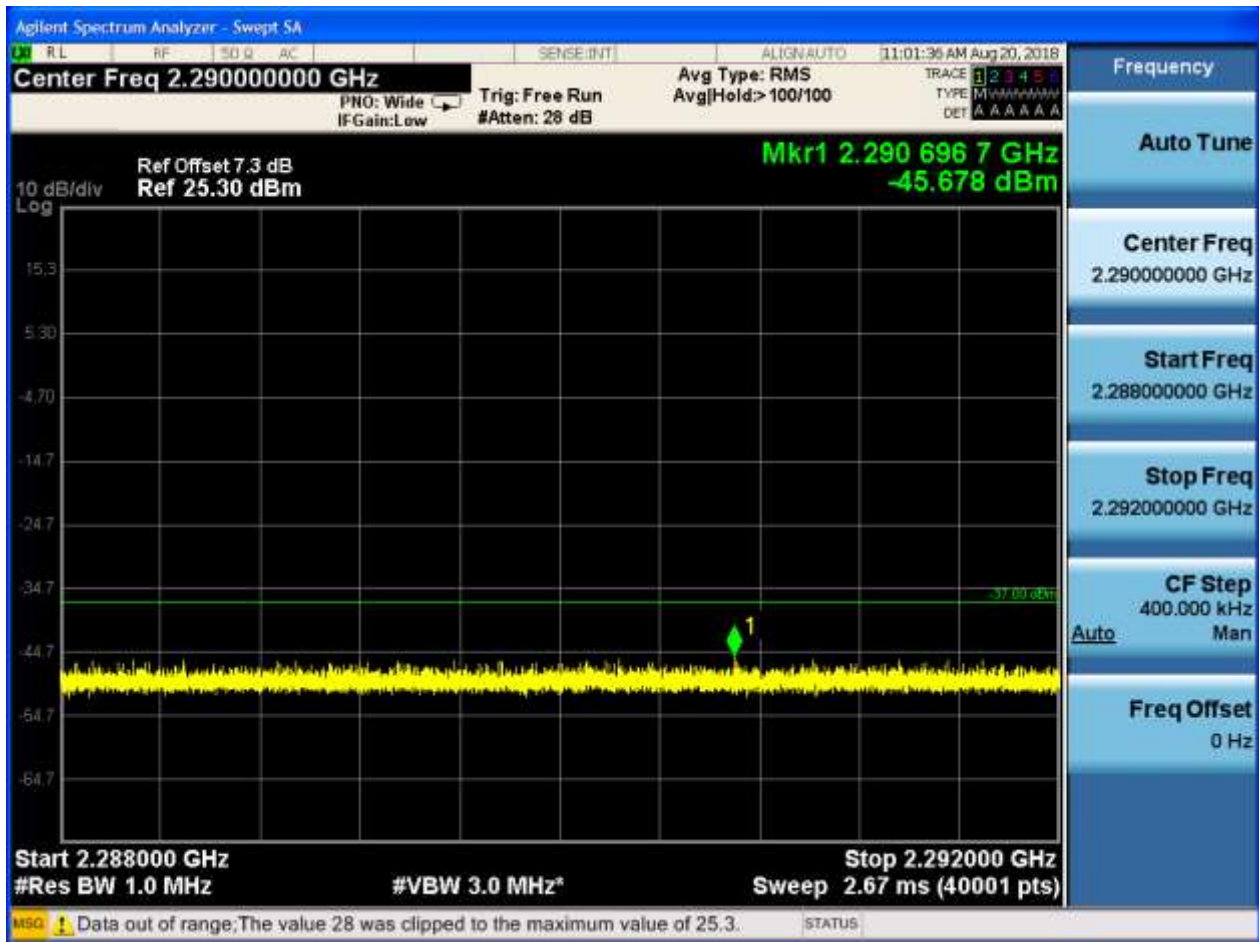
6.1.1.1.1.1.1 Test RB = RB1#0

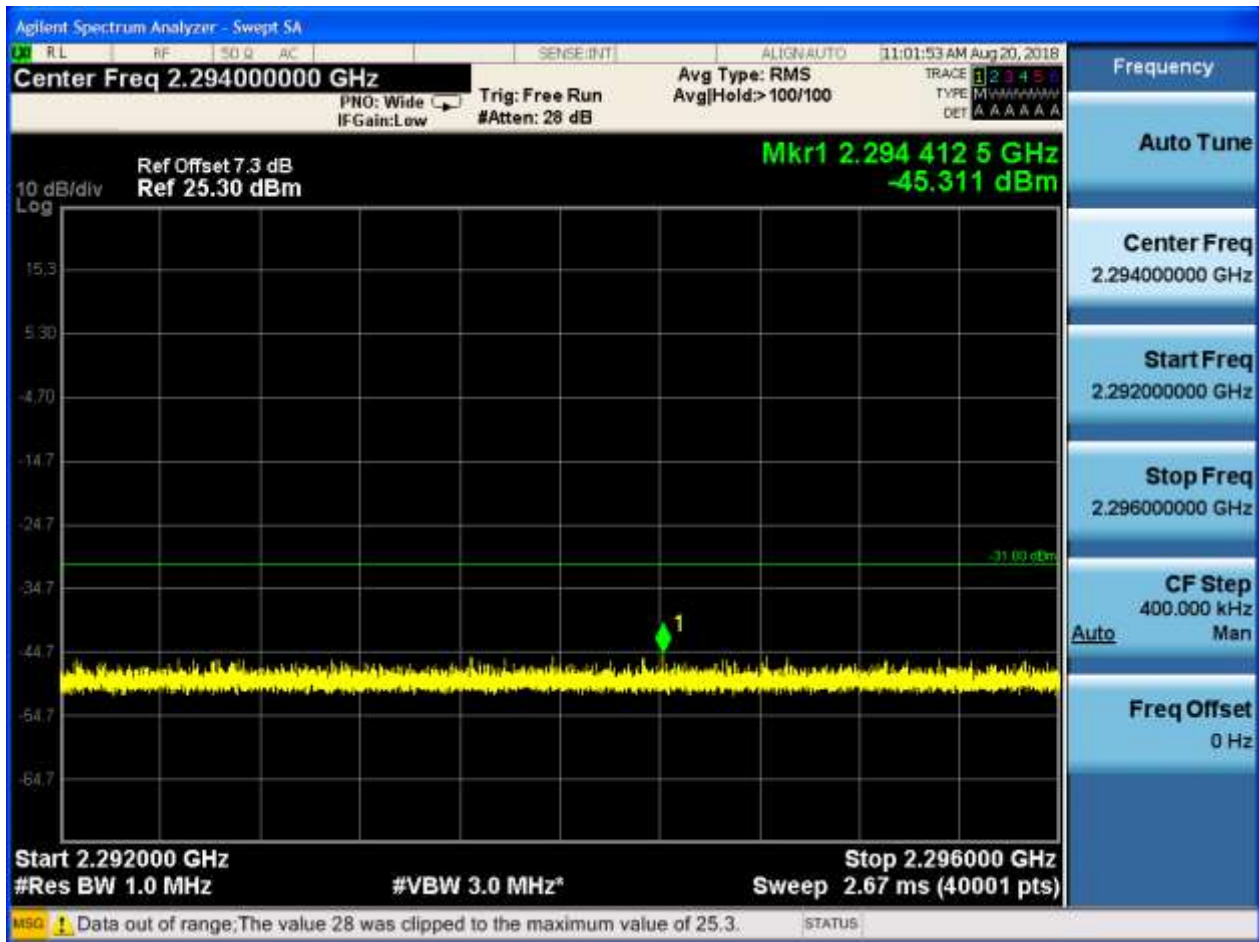


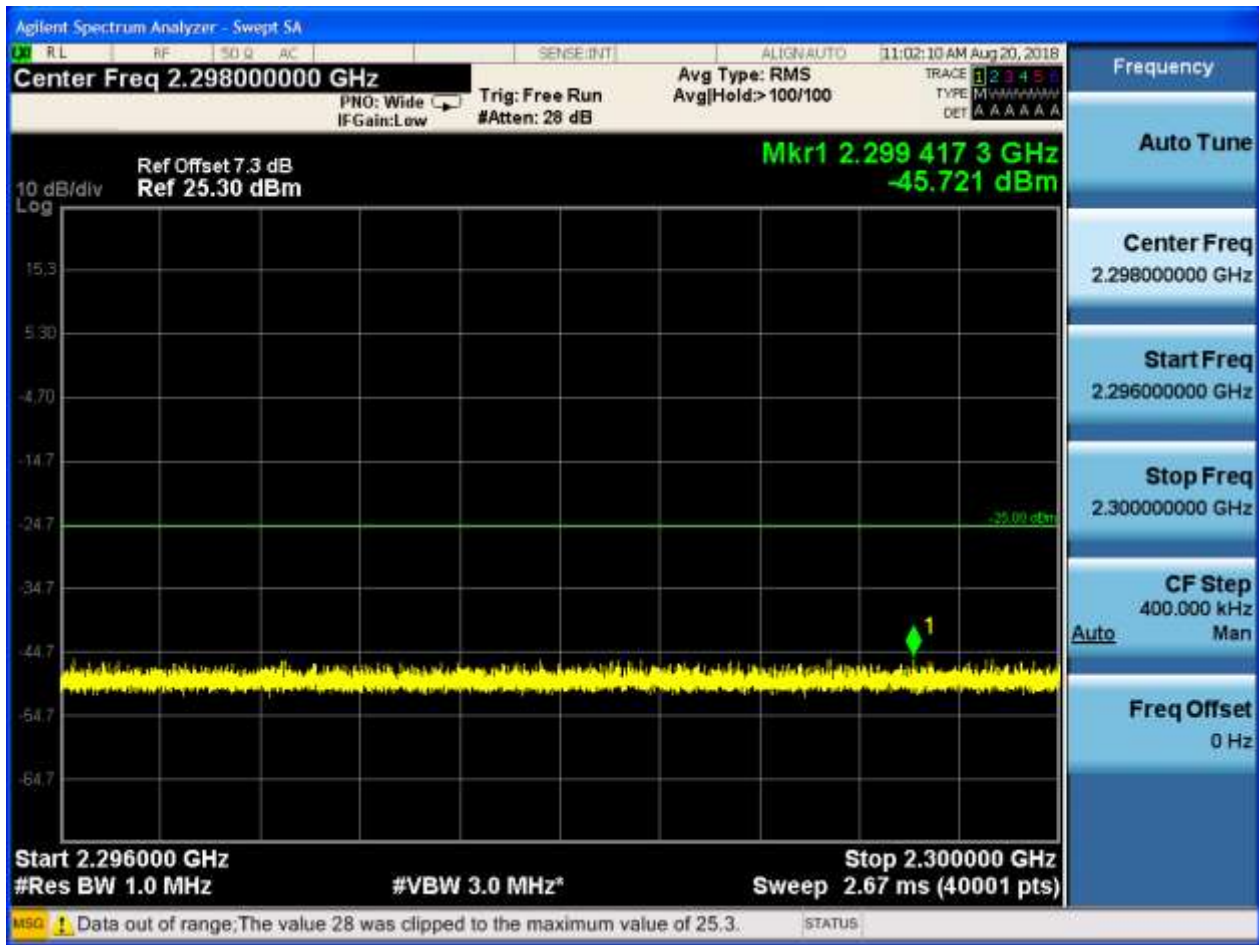


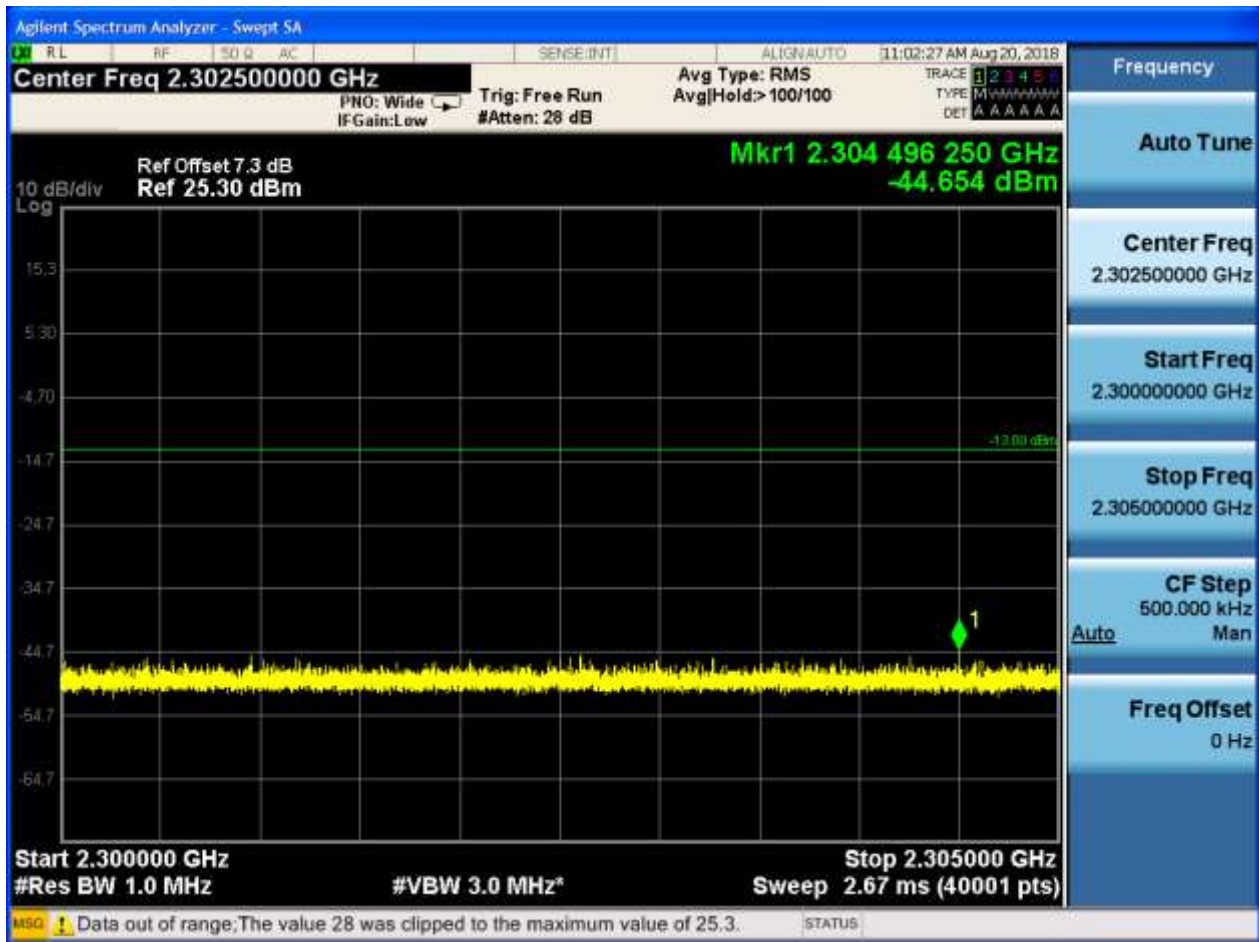


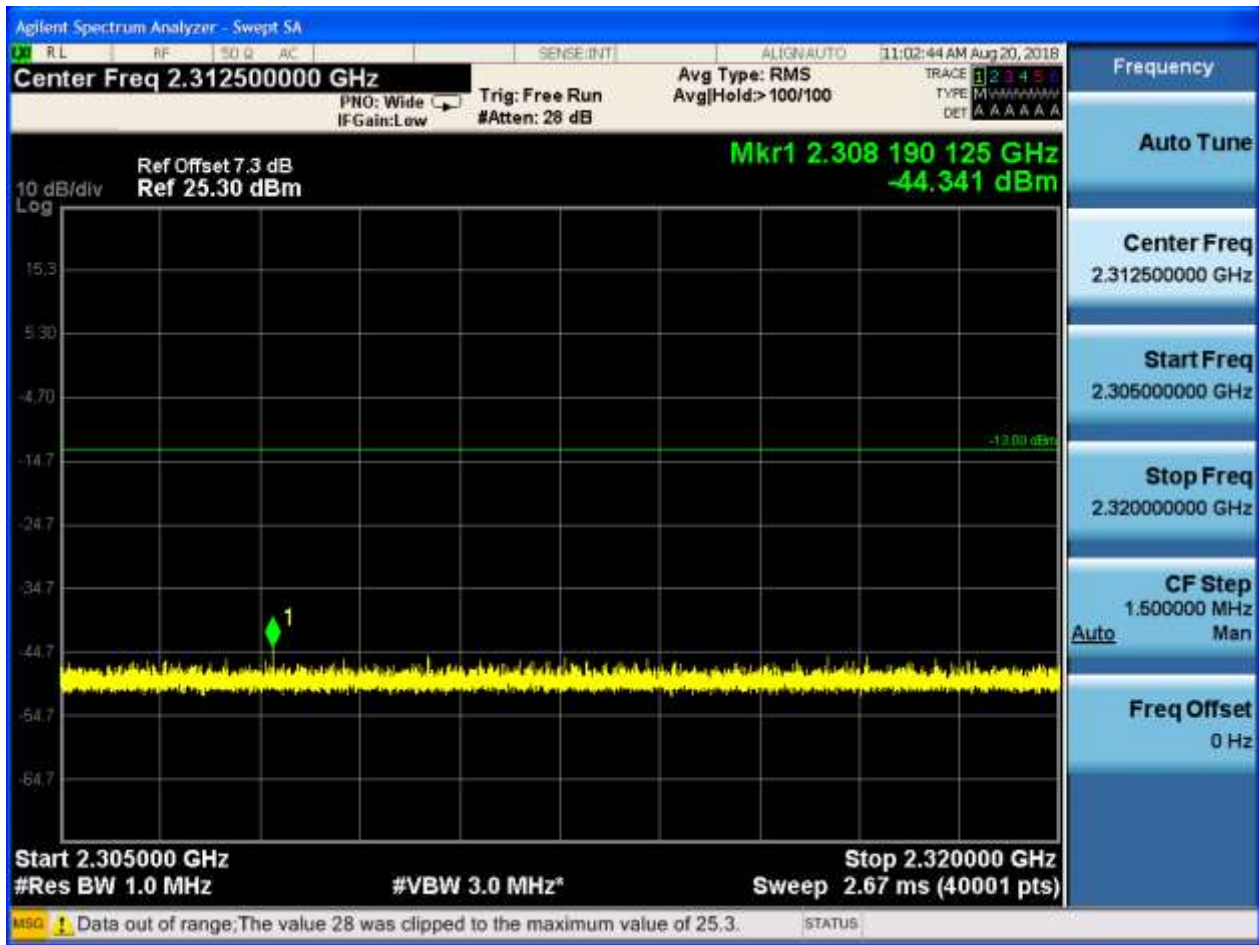




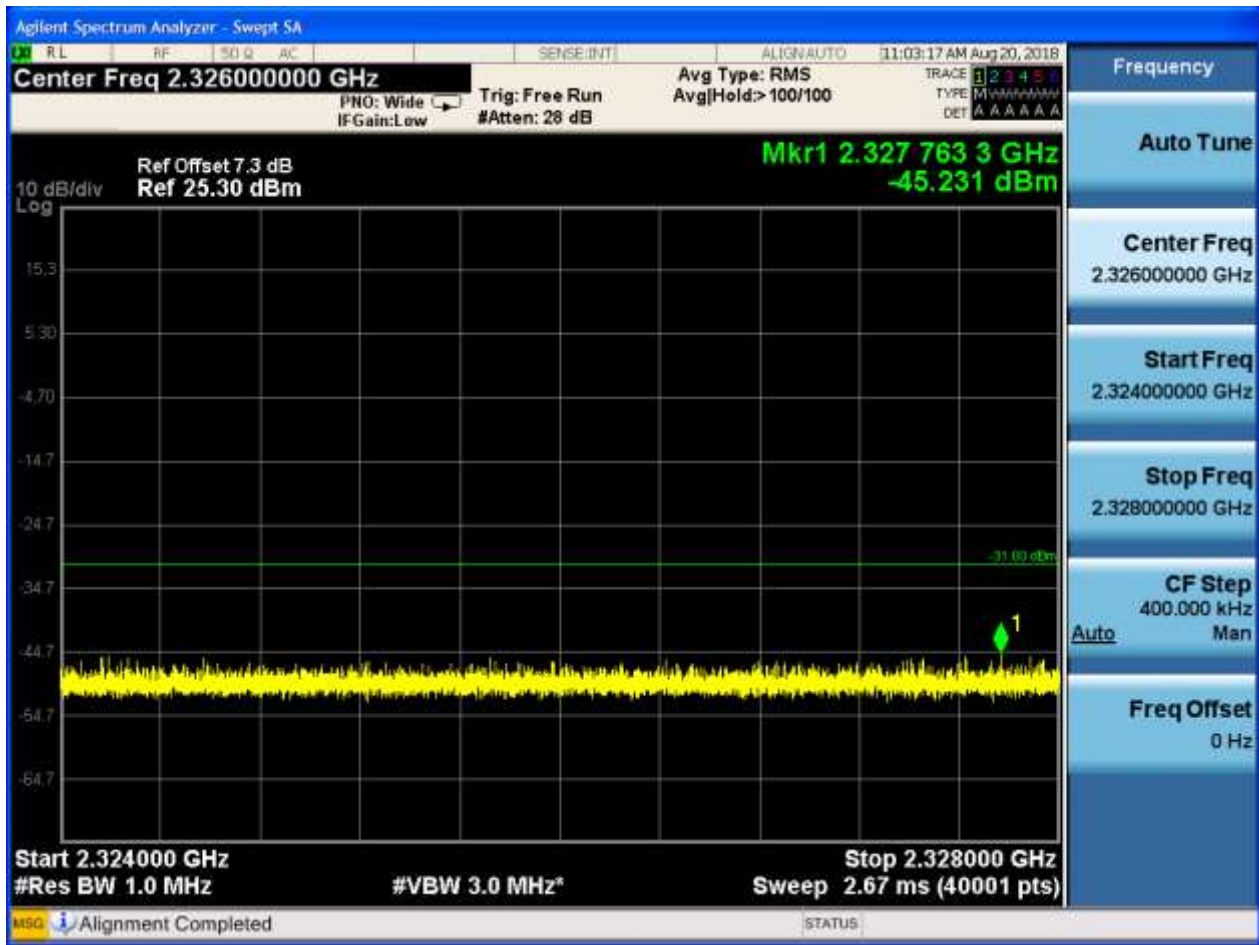


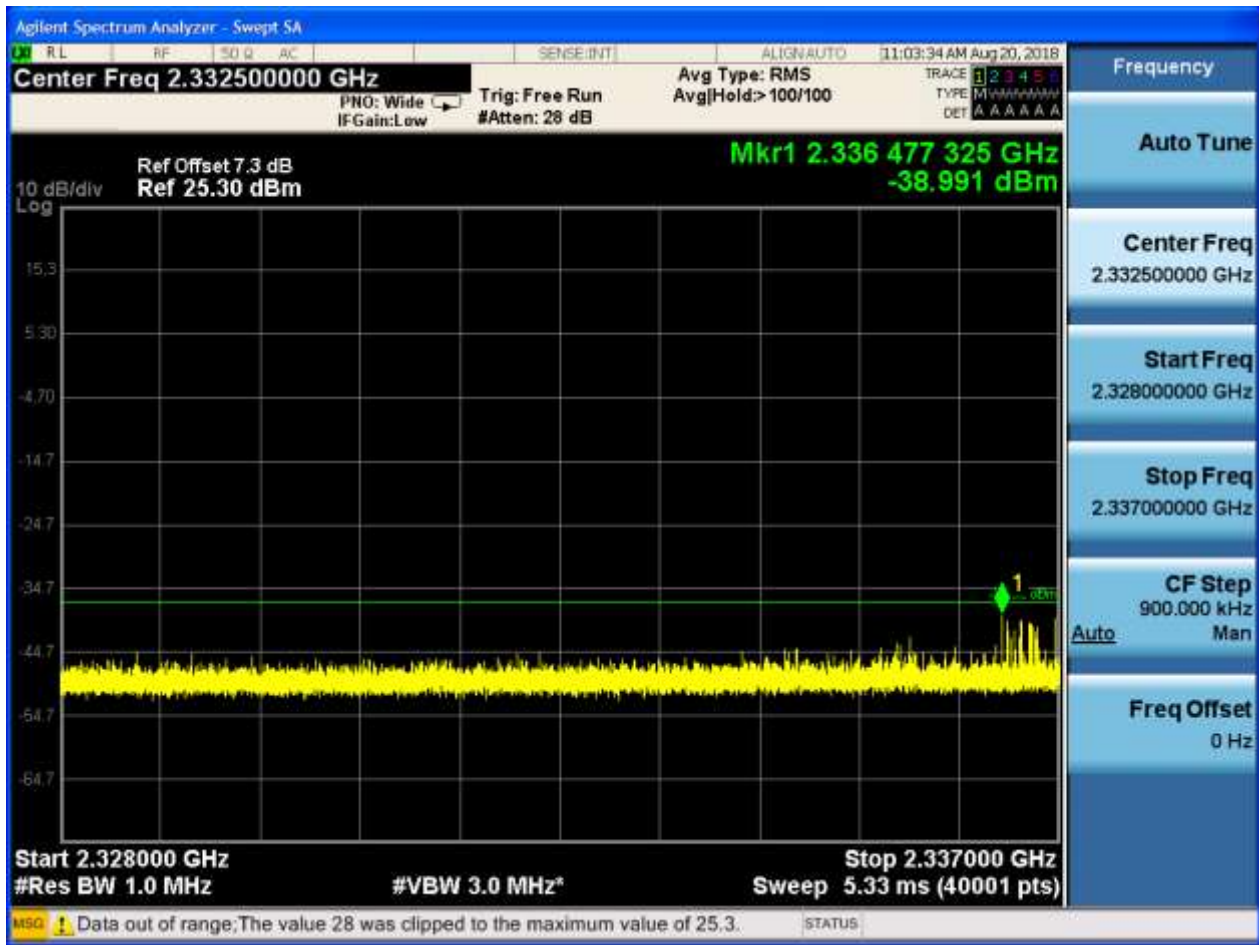






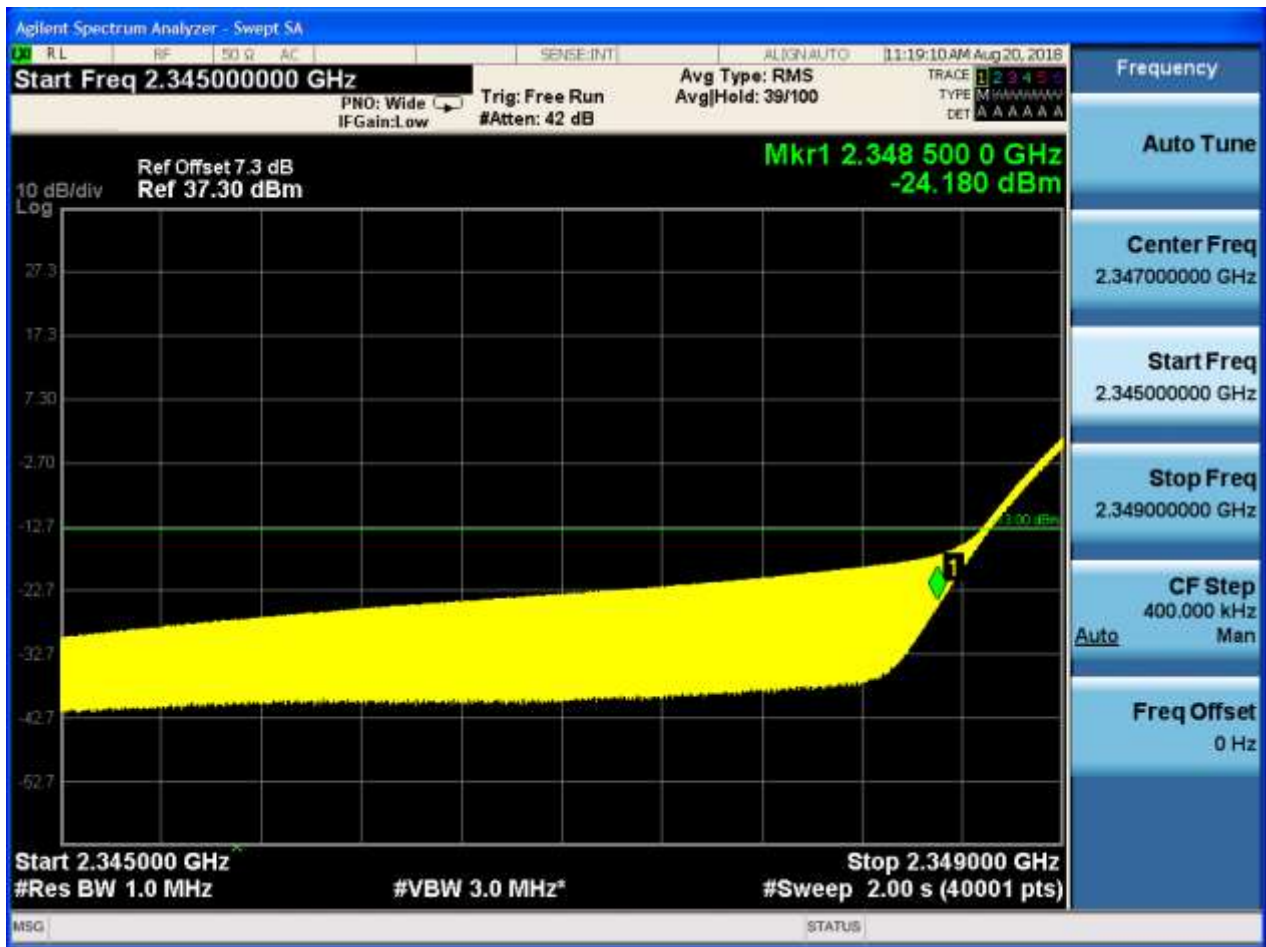


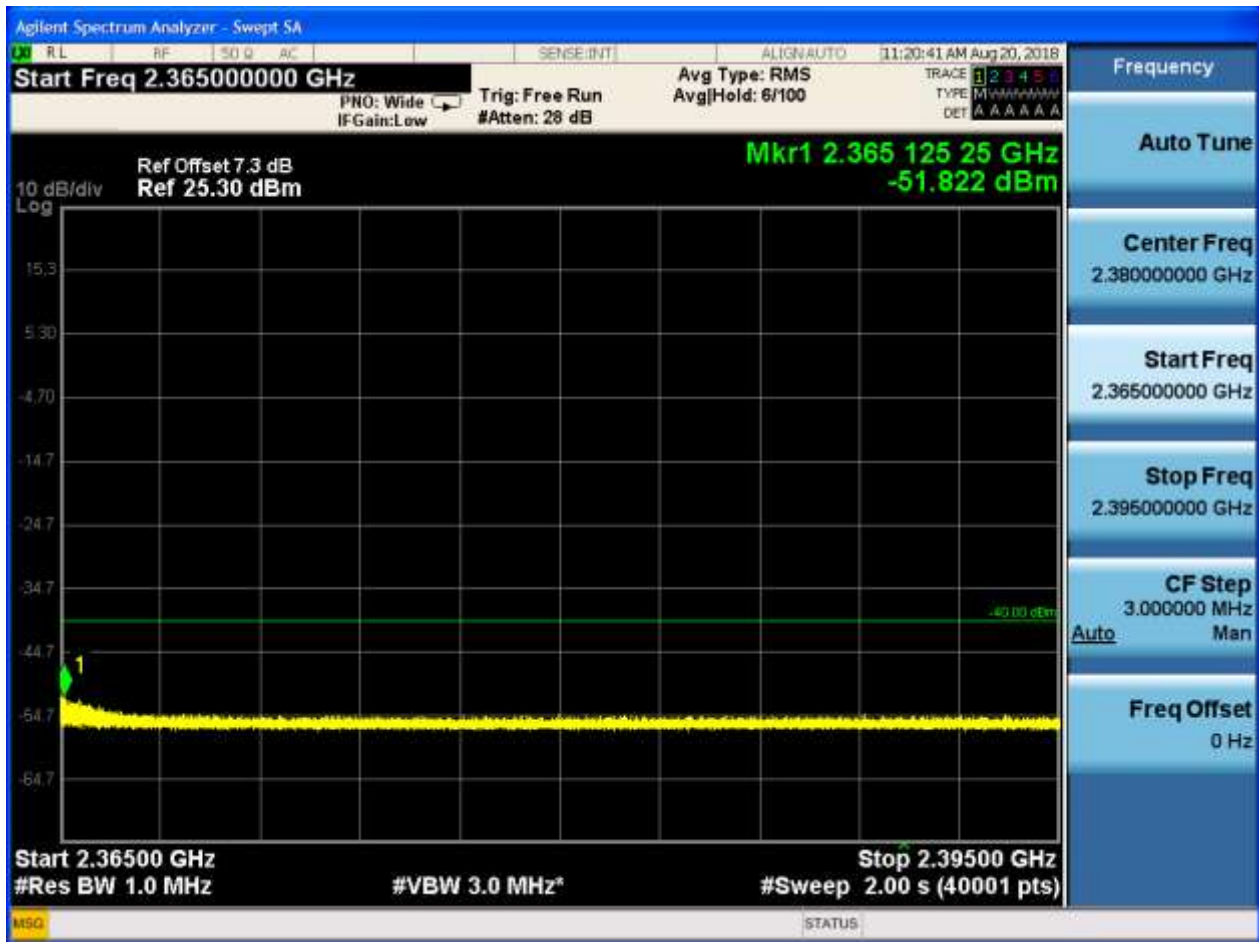










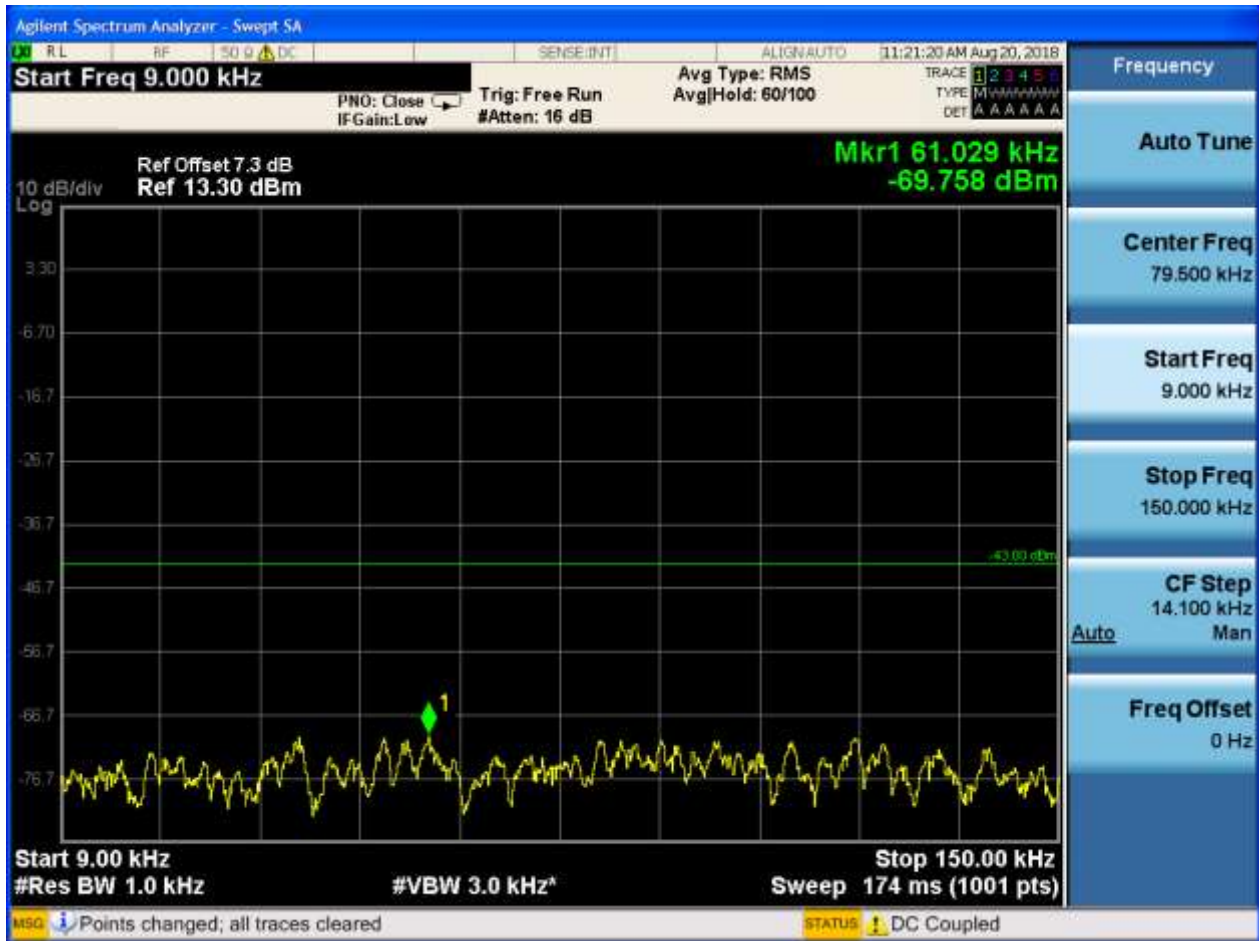




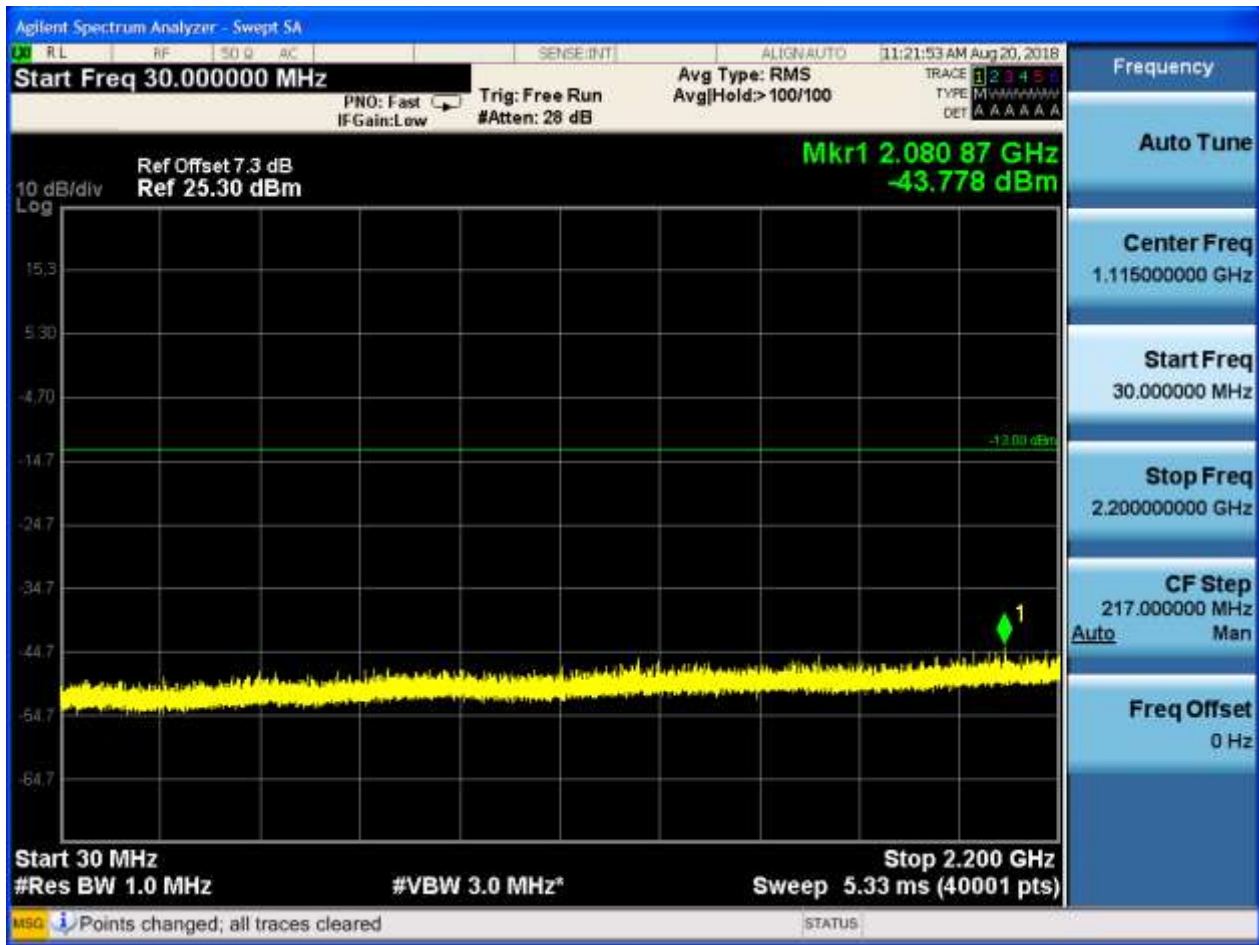


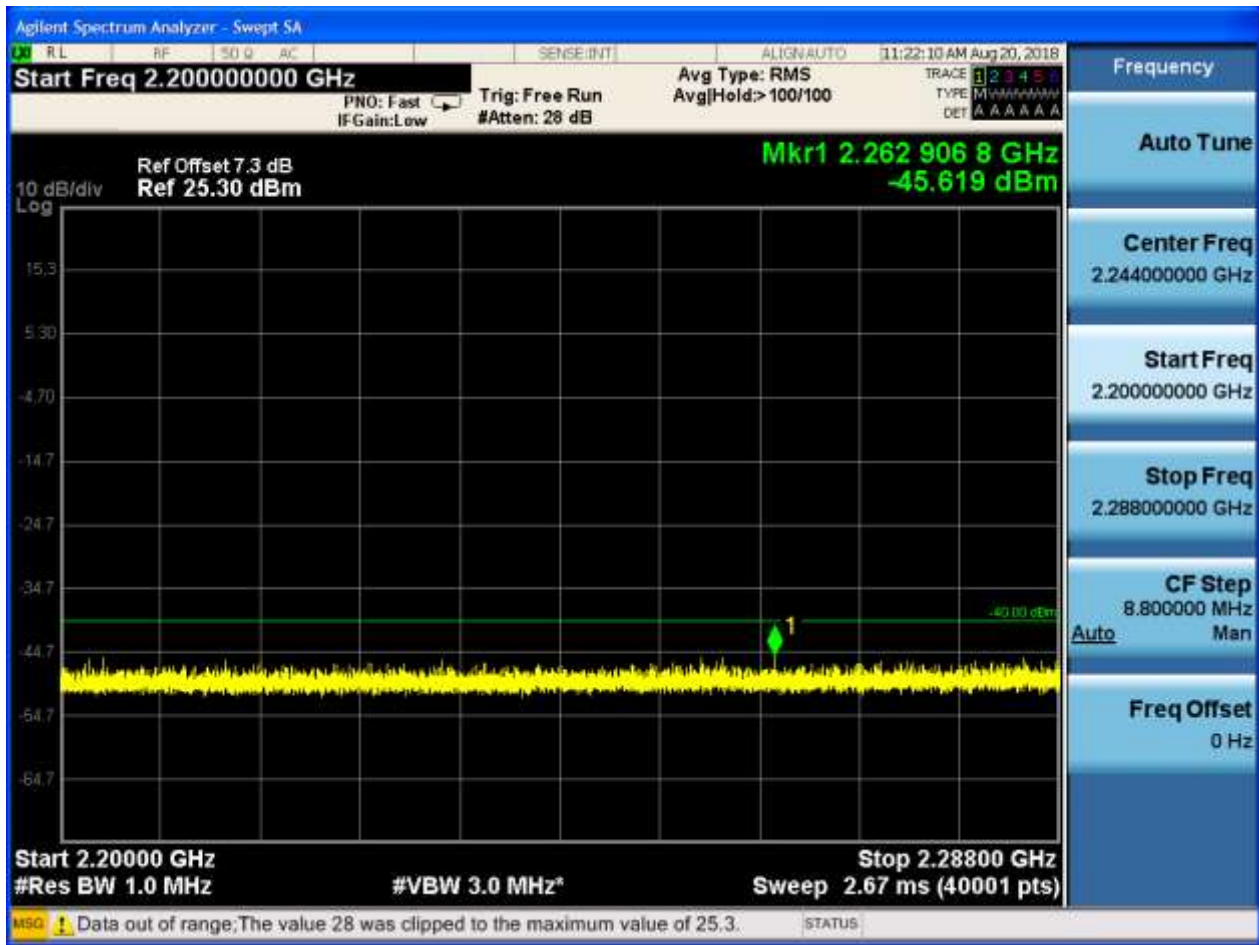
6.1.1.1.1.2 Test Channel = MCH

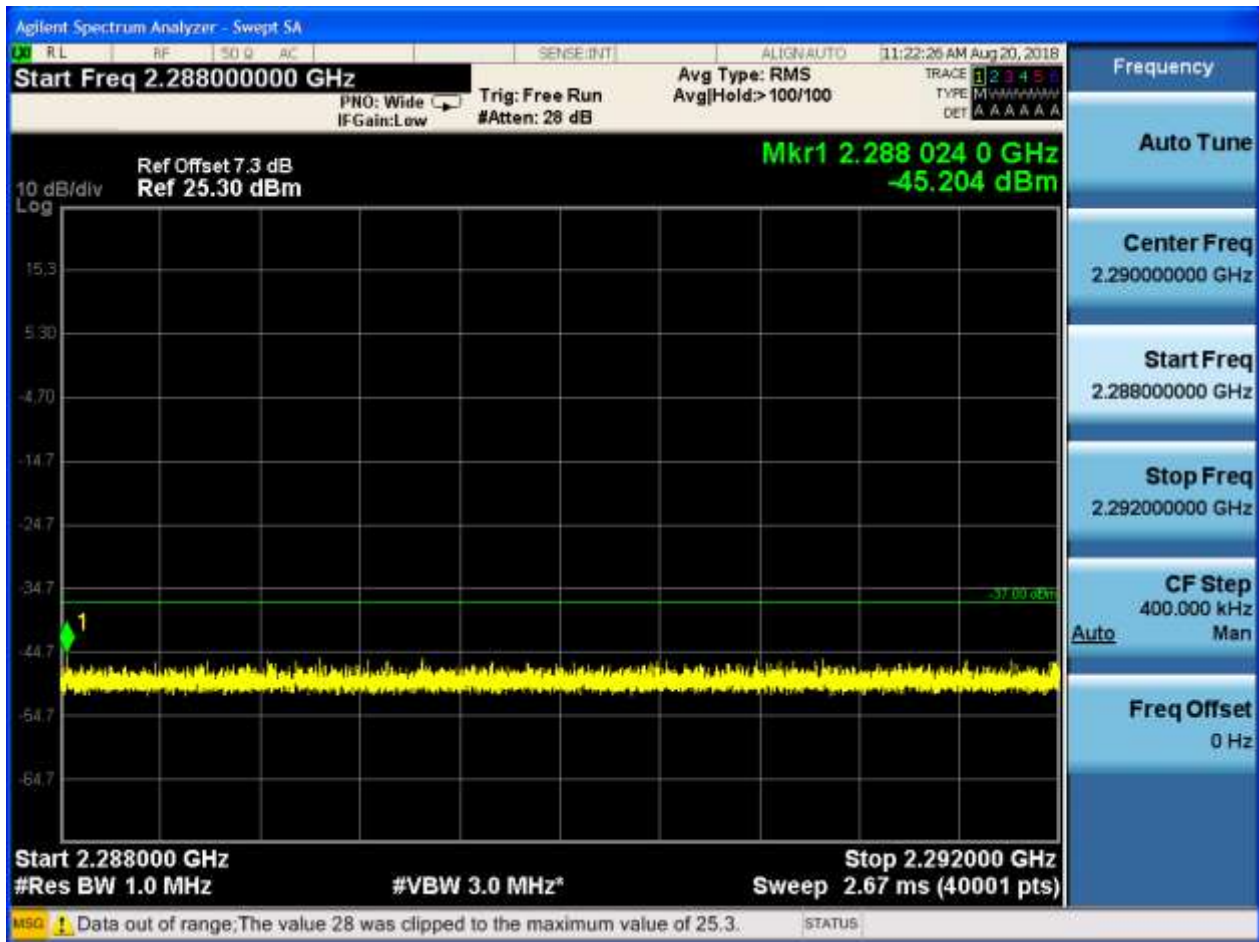
6.1.1.1.1.2.1 Test RB = RB1#0

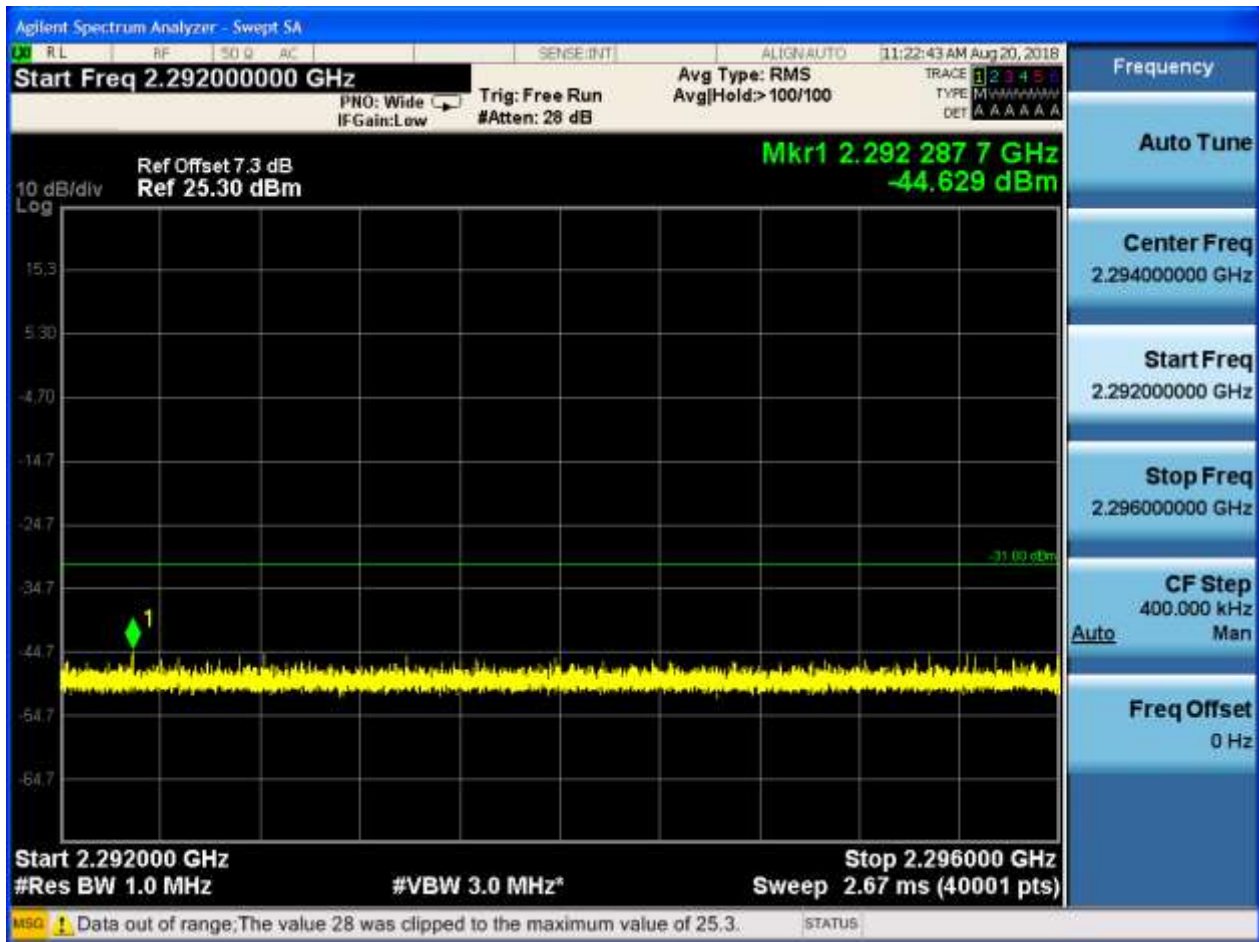


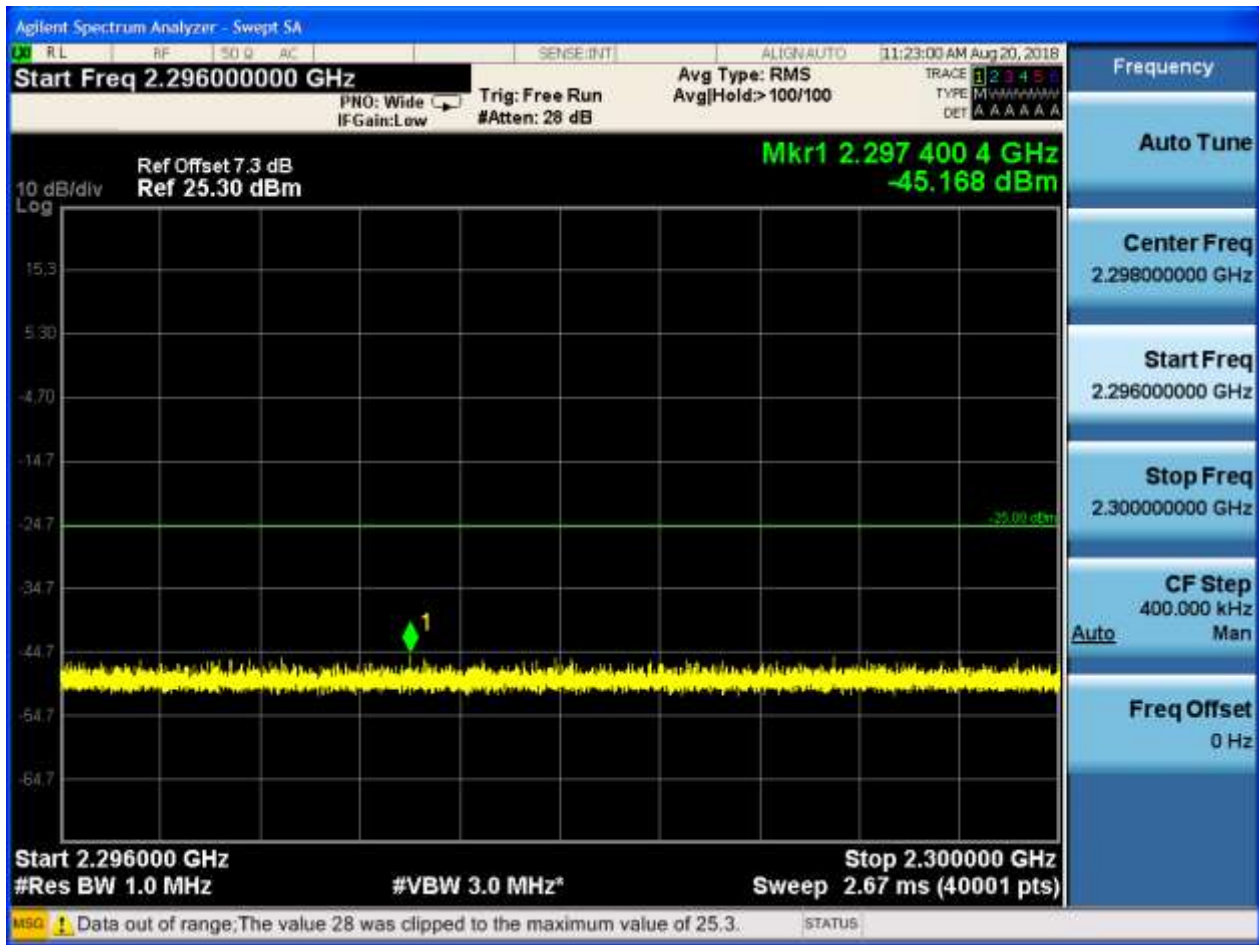


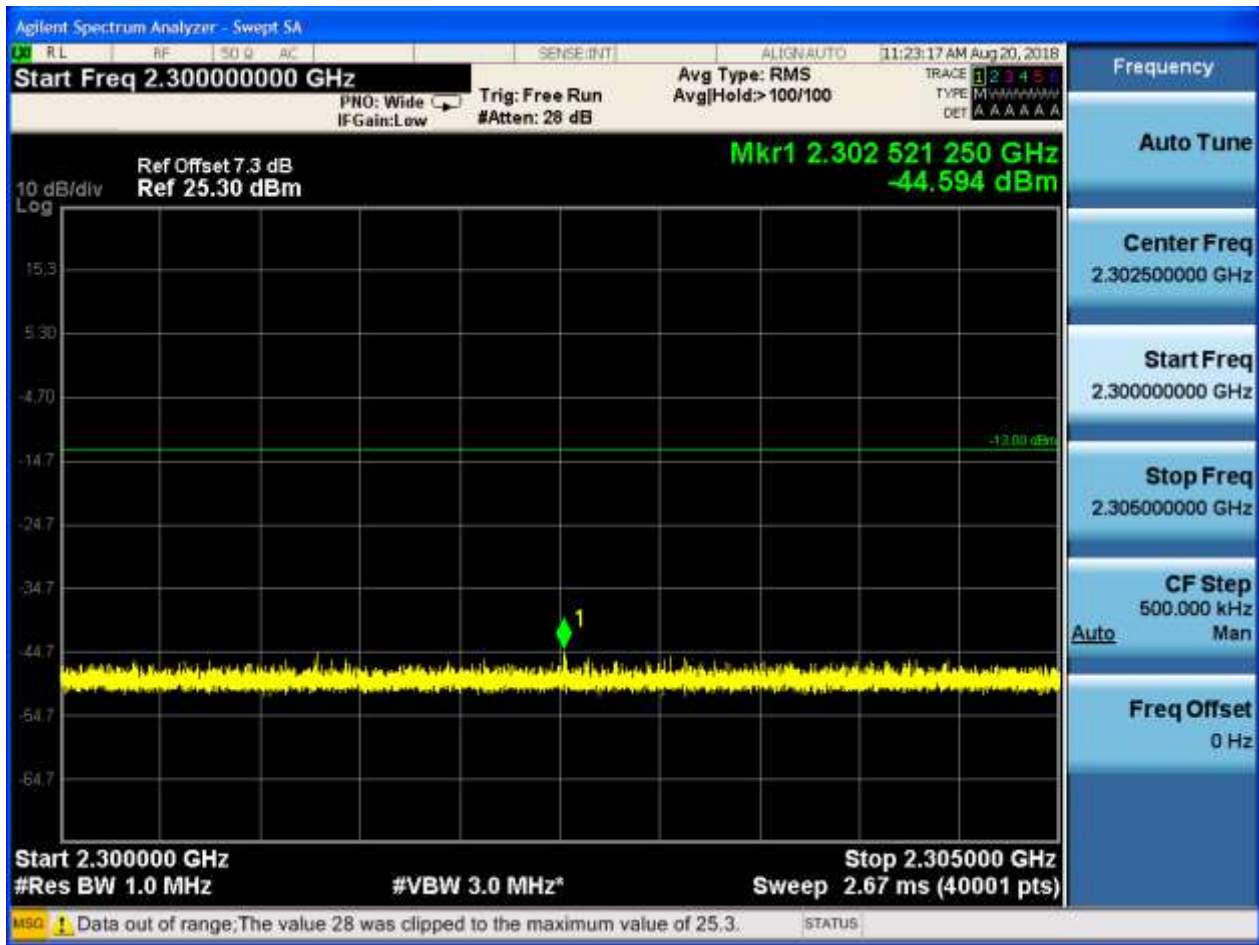


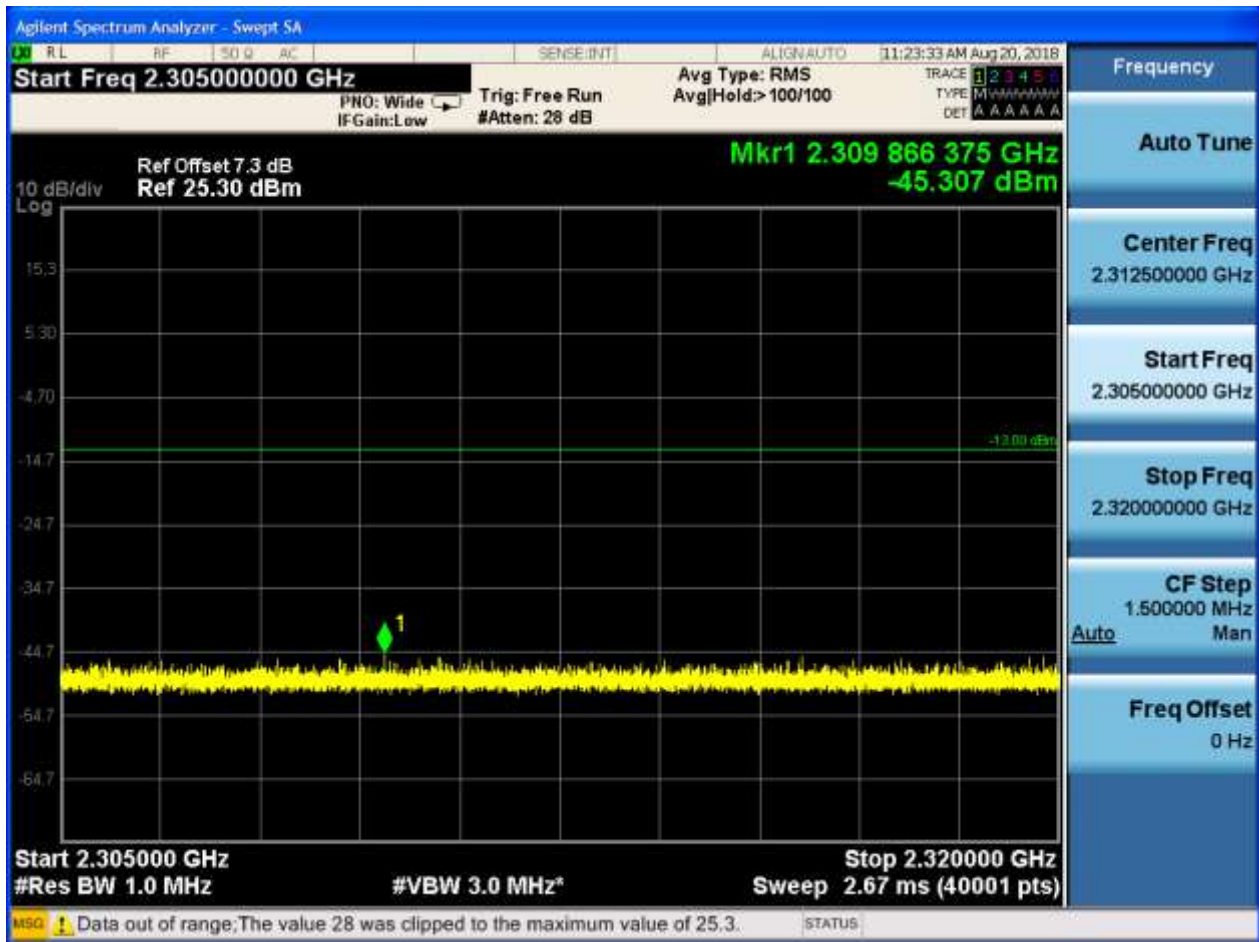


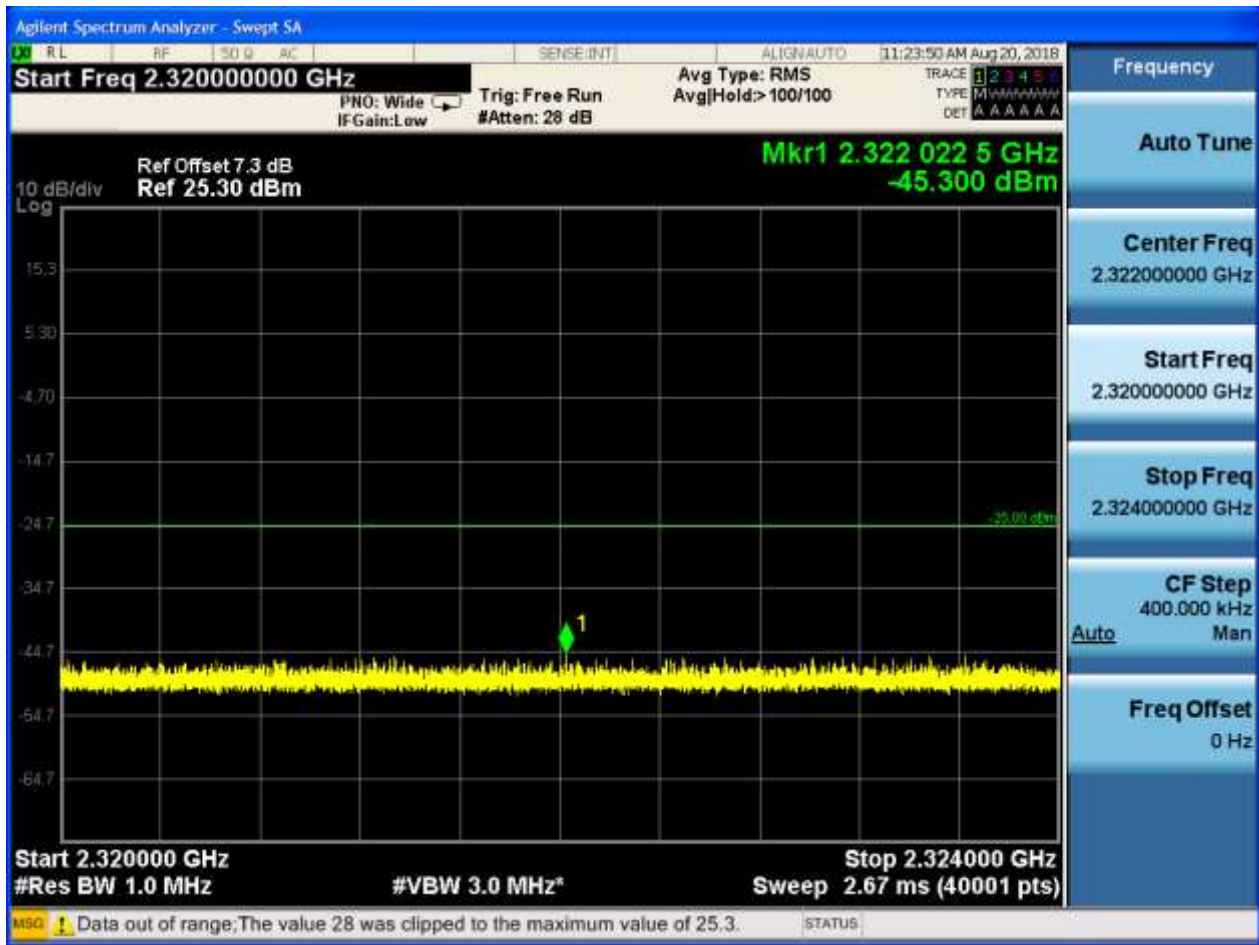


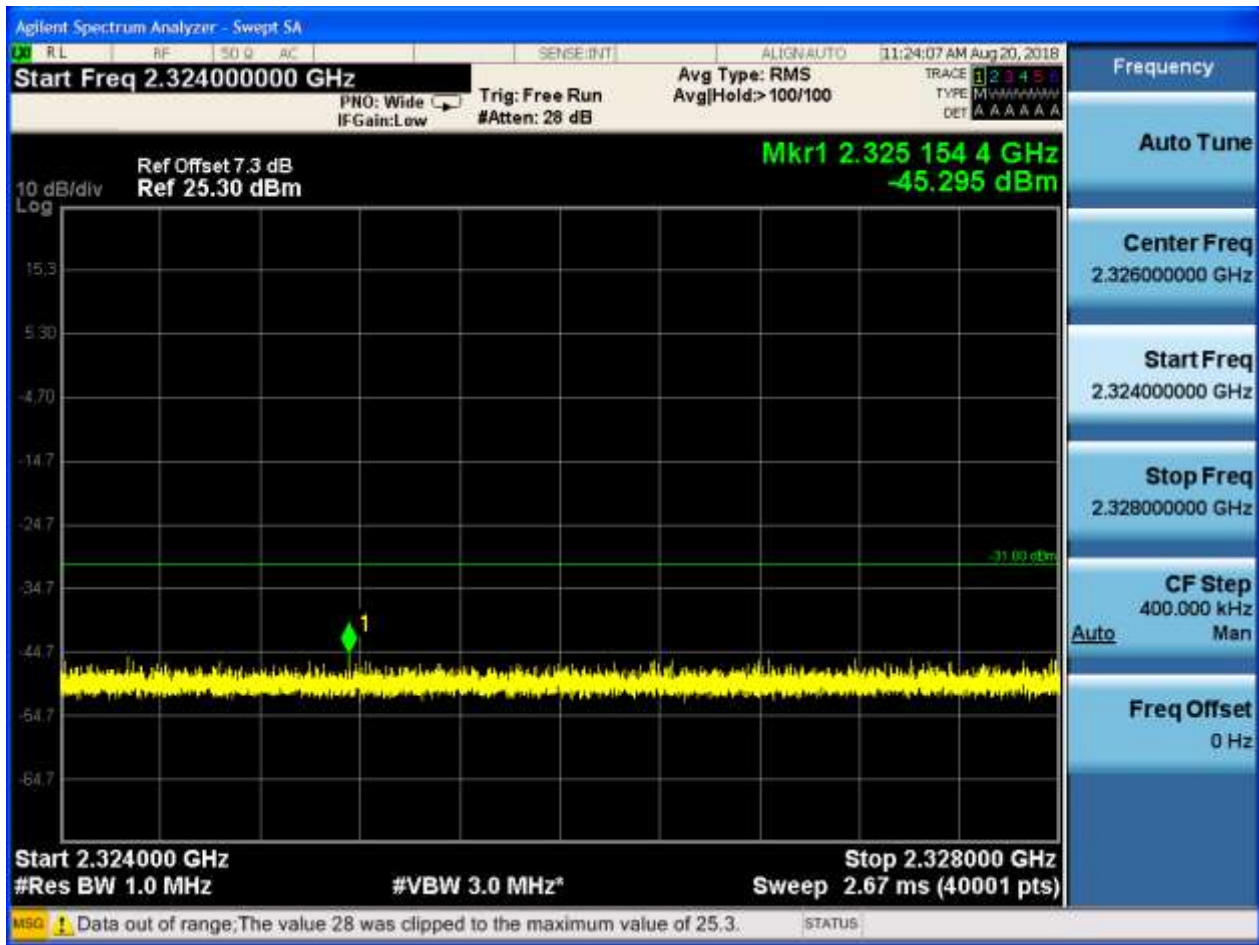


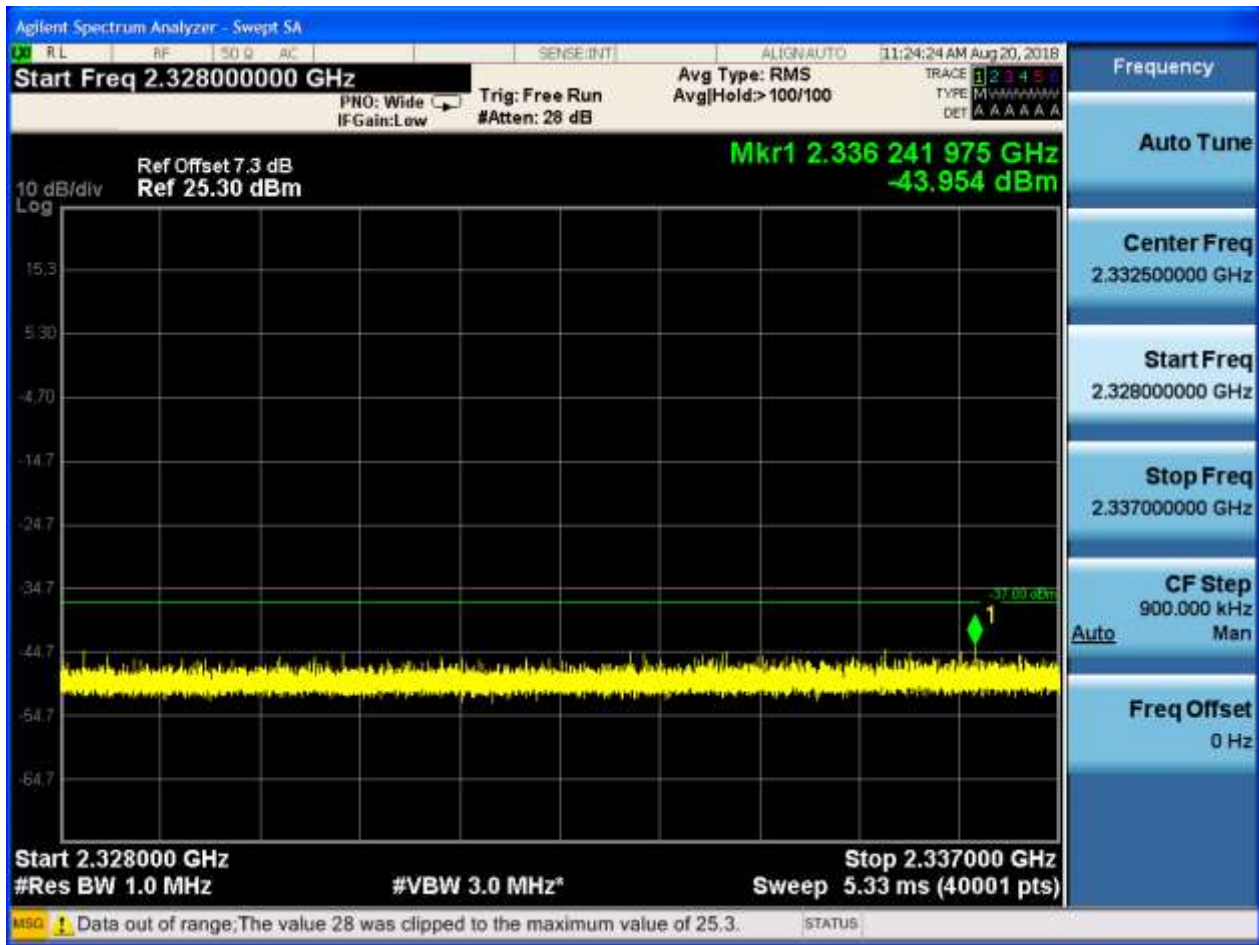


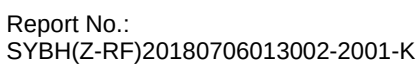
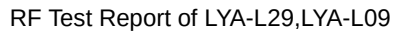






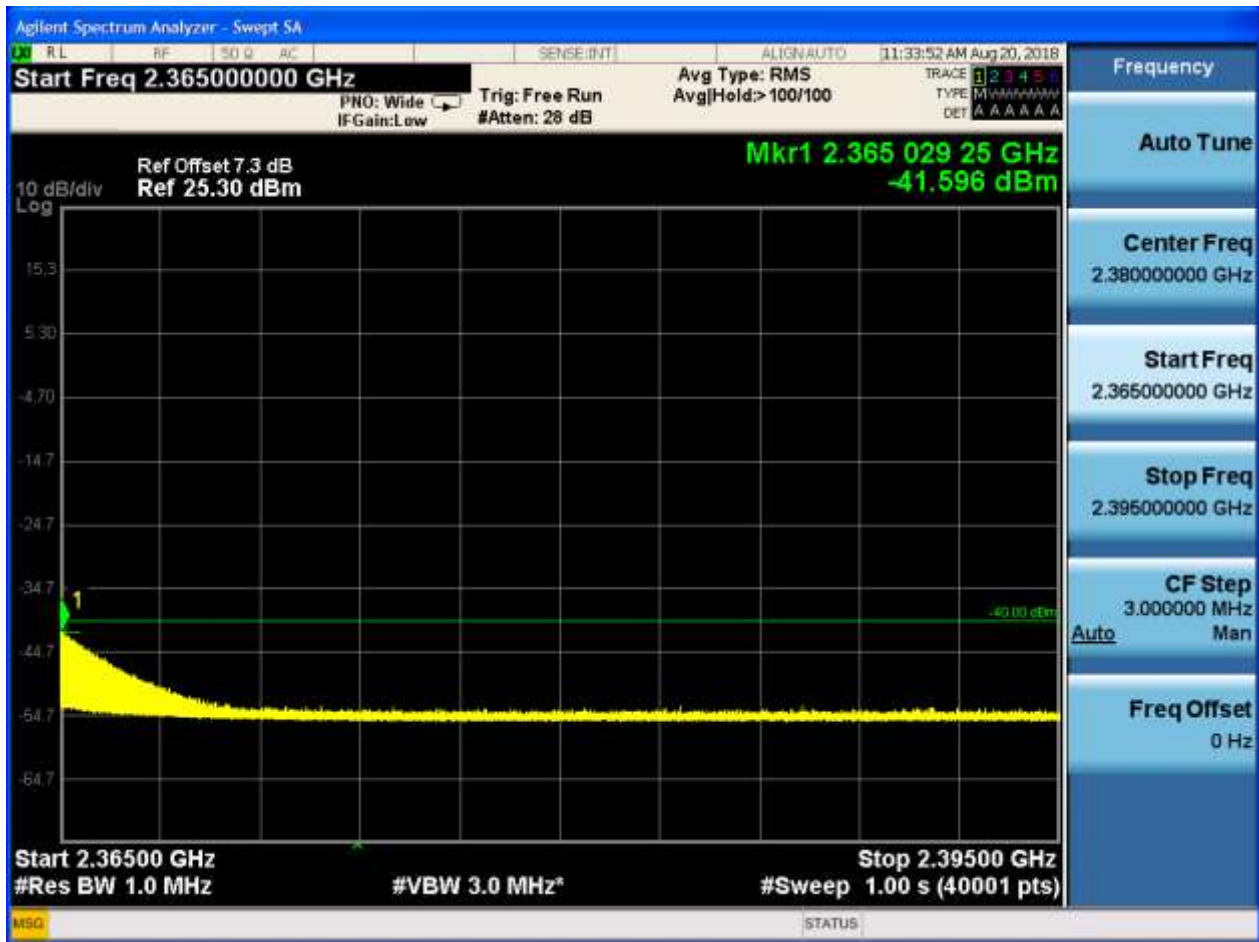














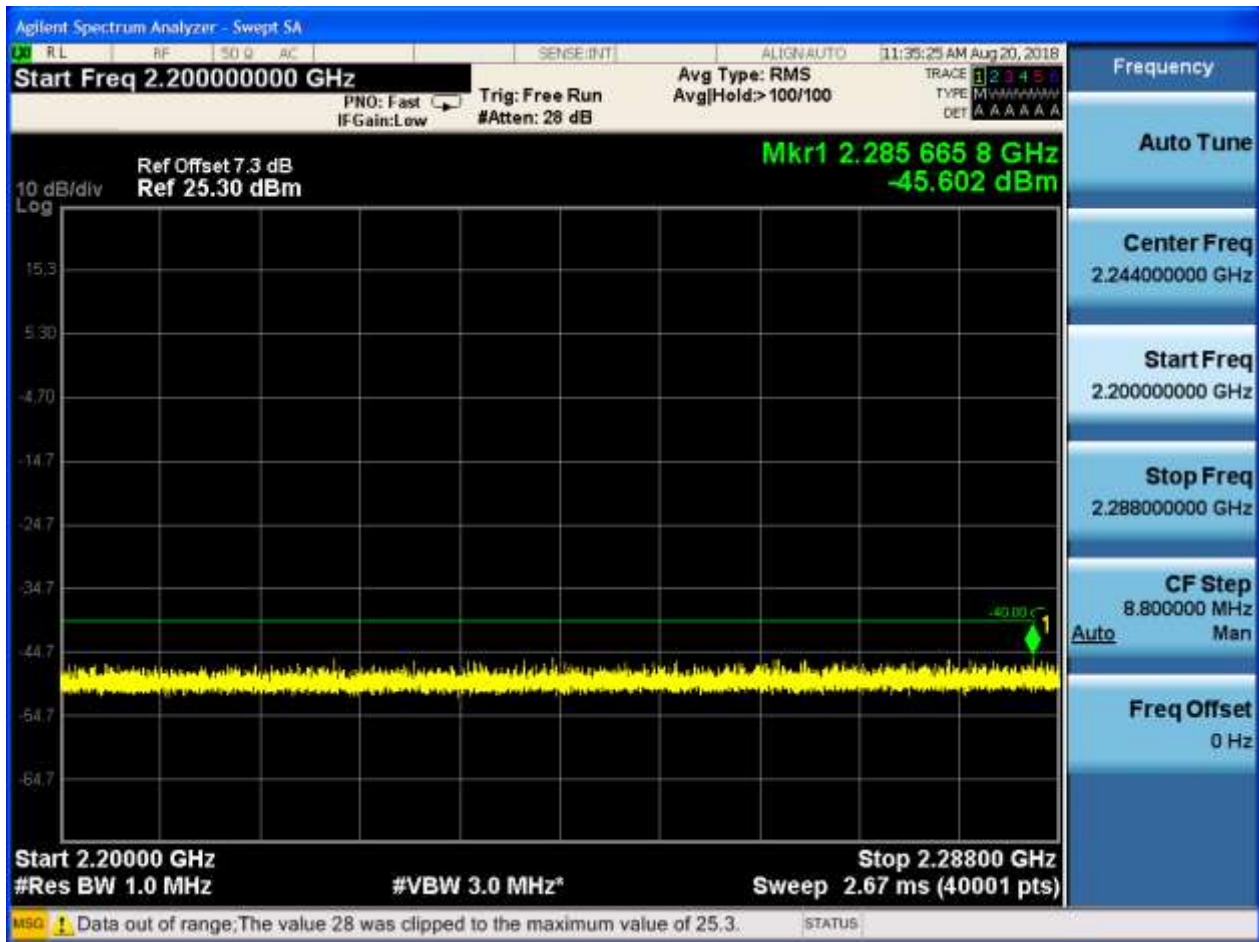
6.1.1.1.1.3 Test Channel = HCH

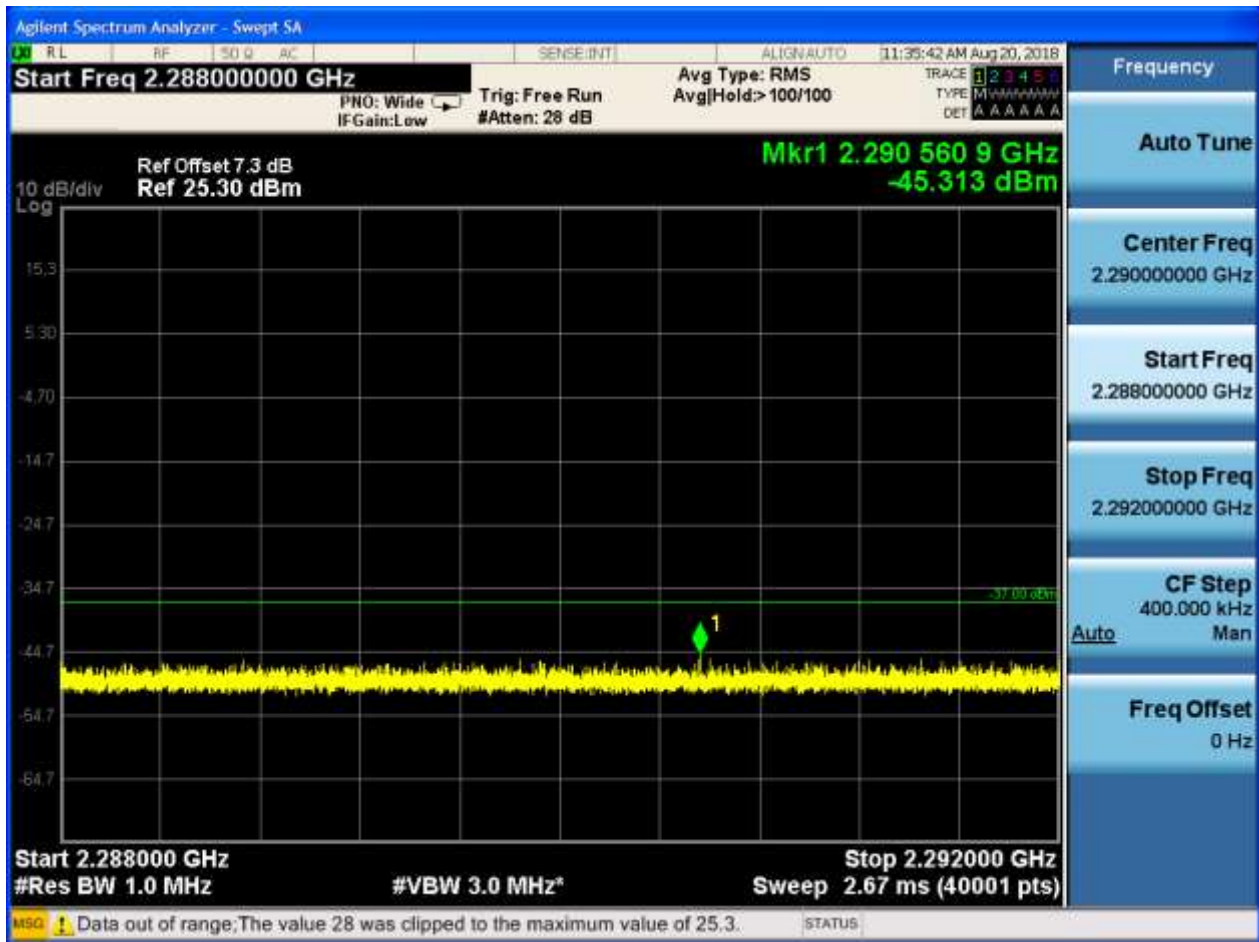
6.1.1.1.1.3.1 Test RB = RB1#0

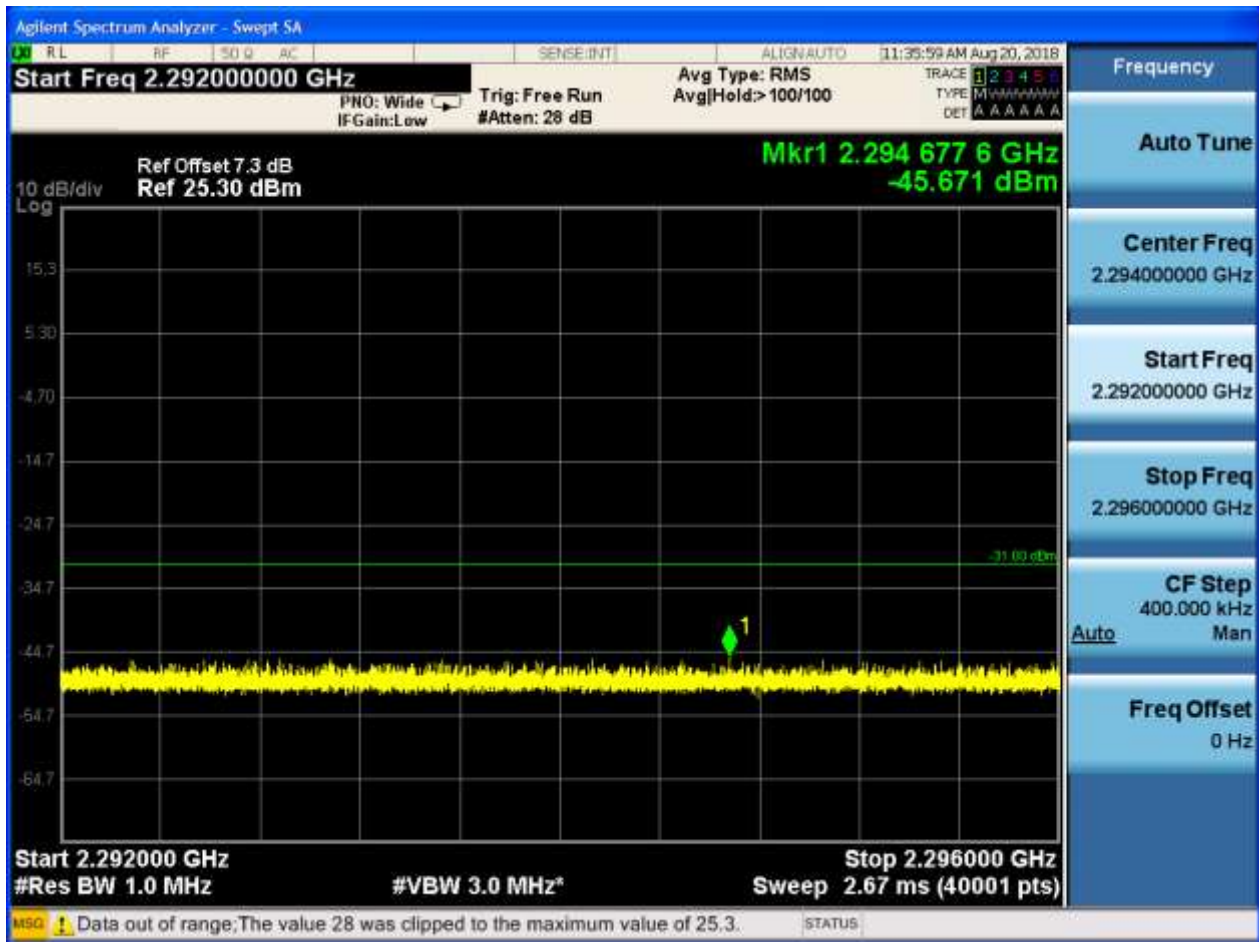


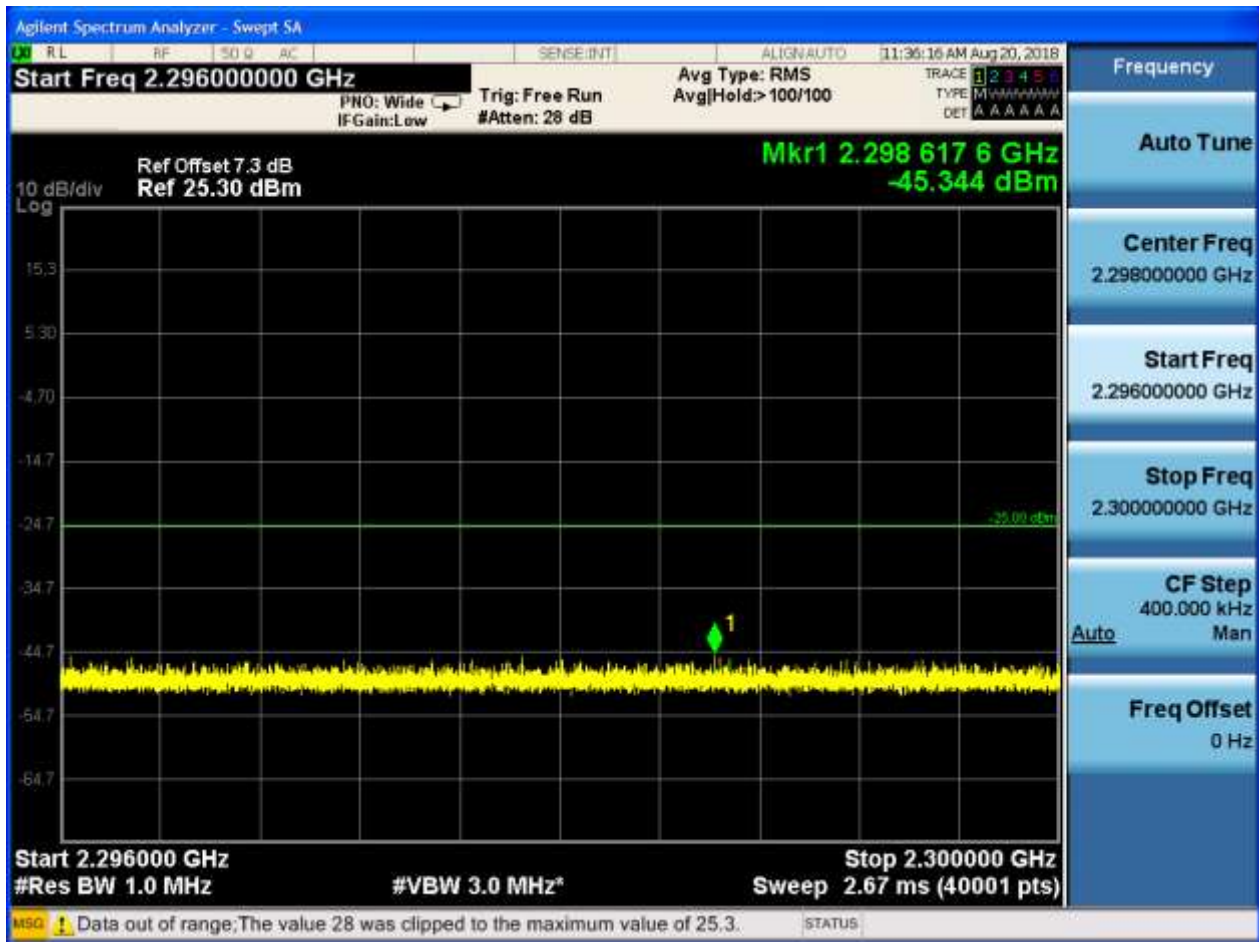


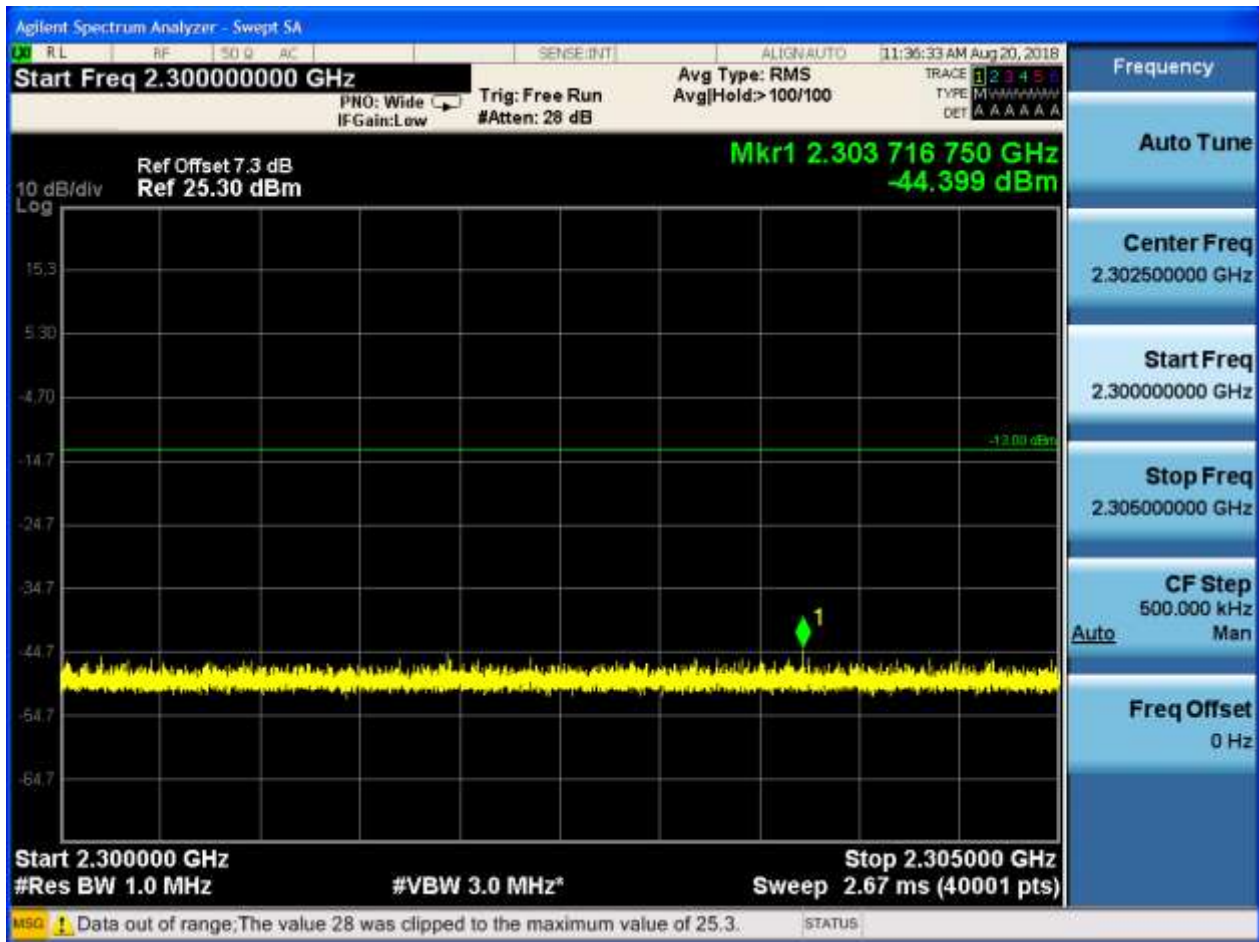


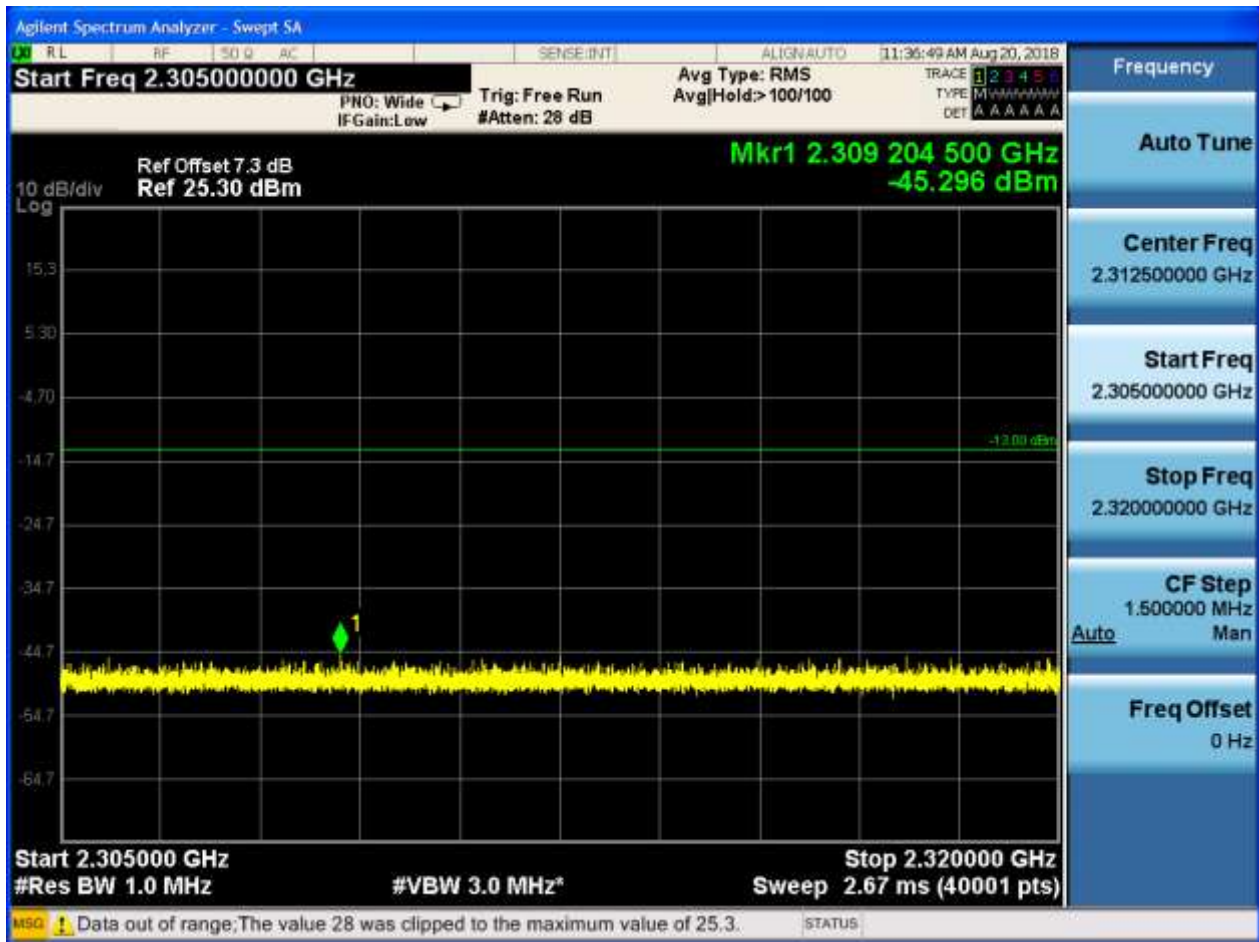




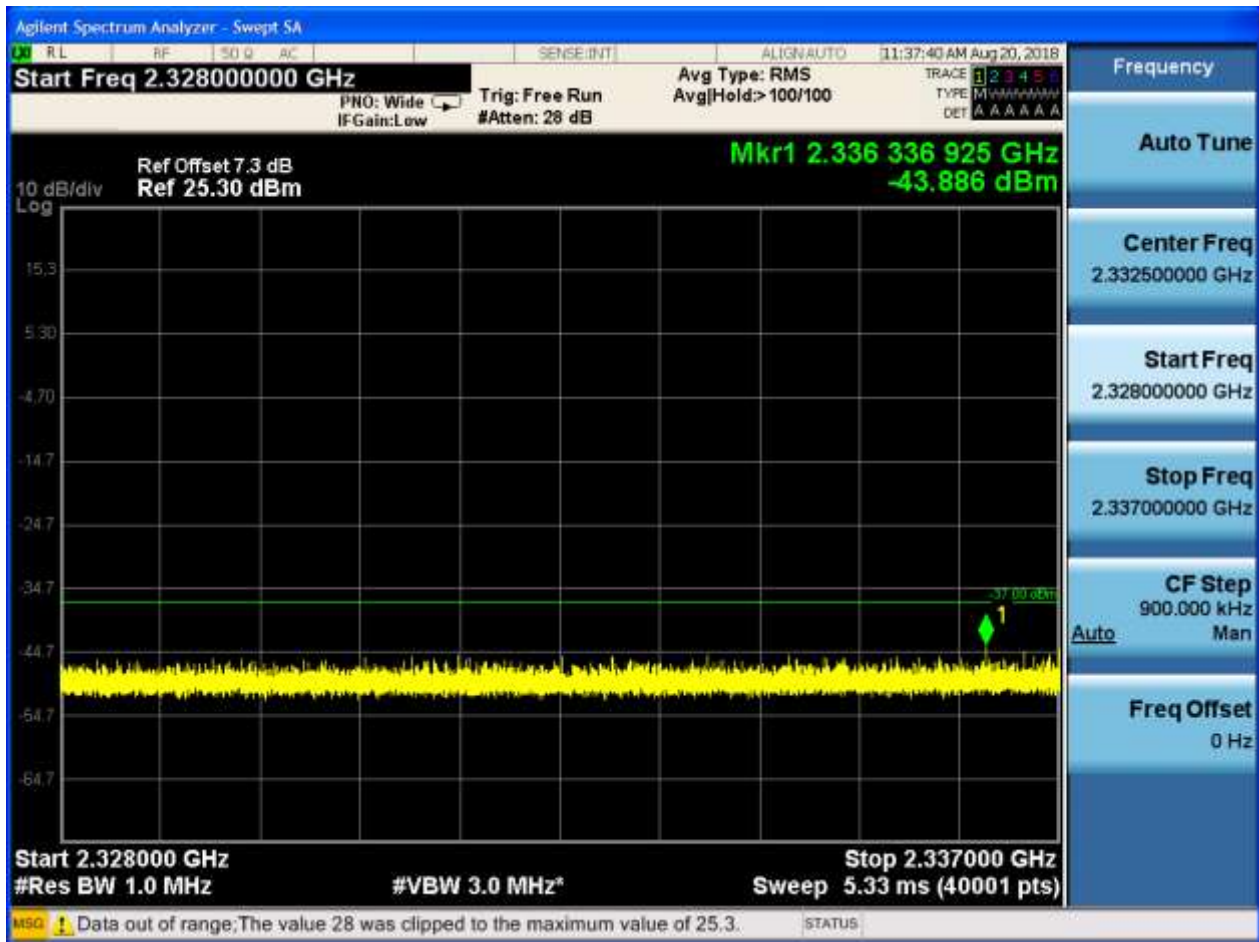


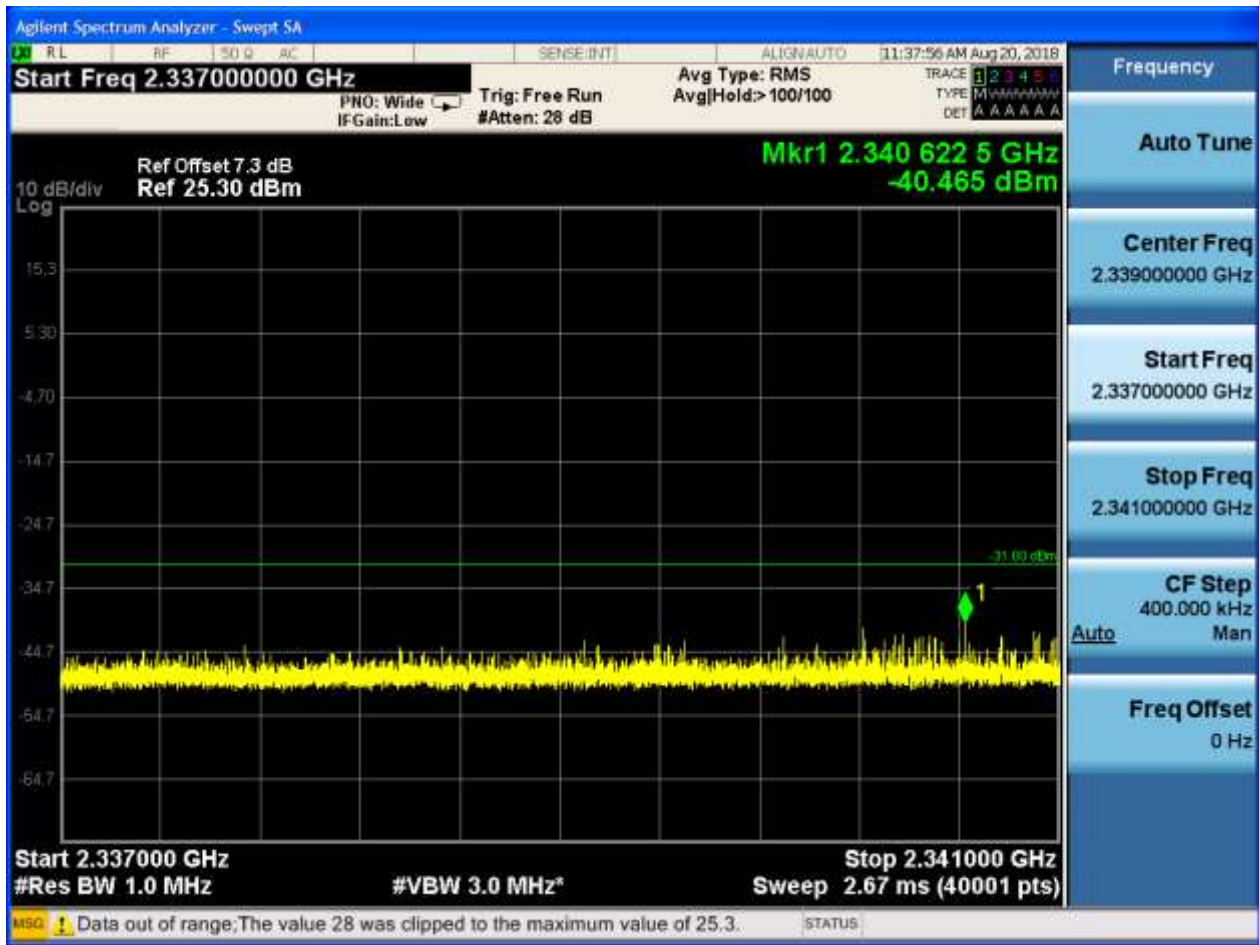


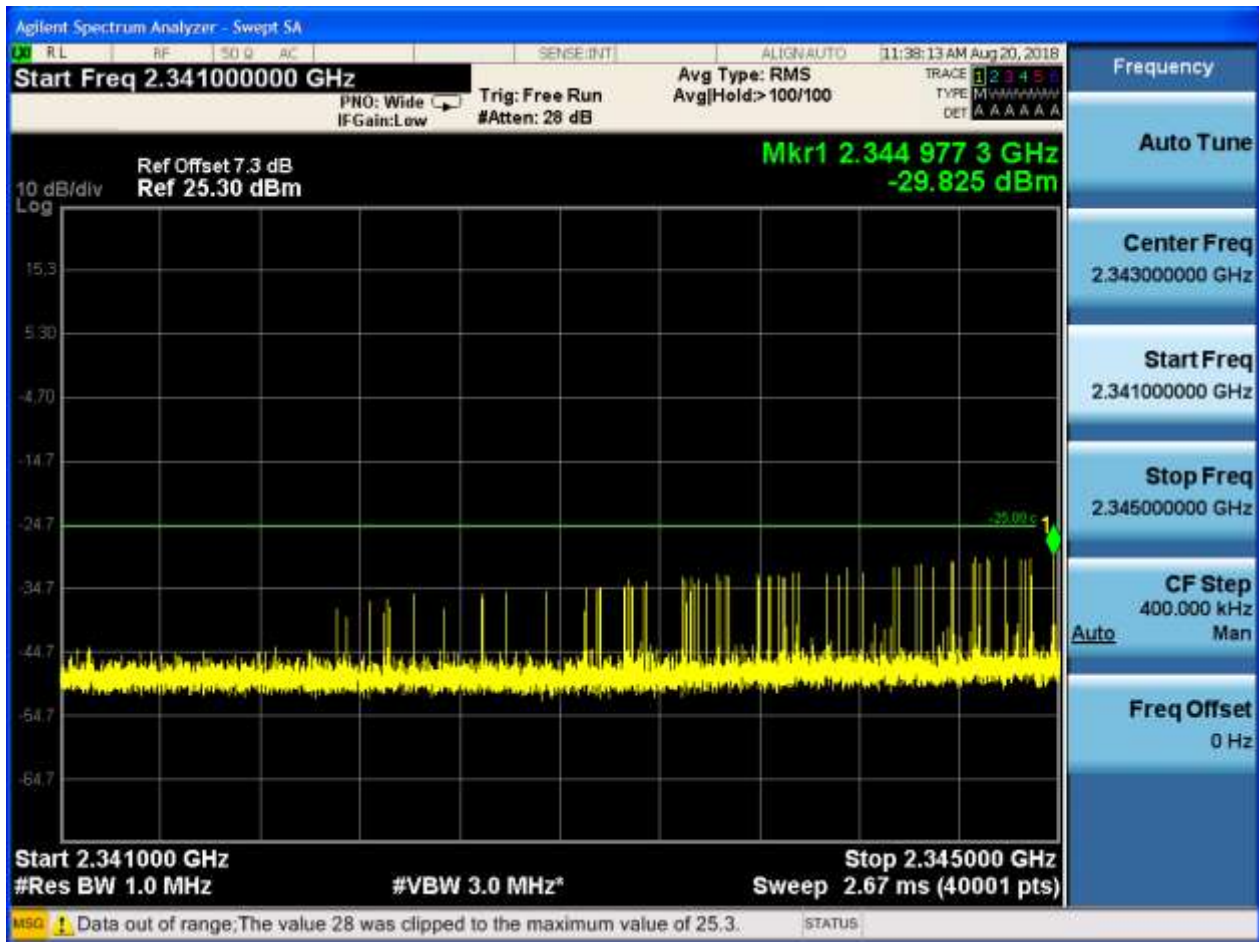




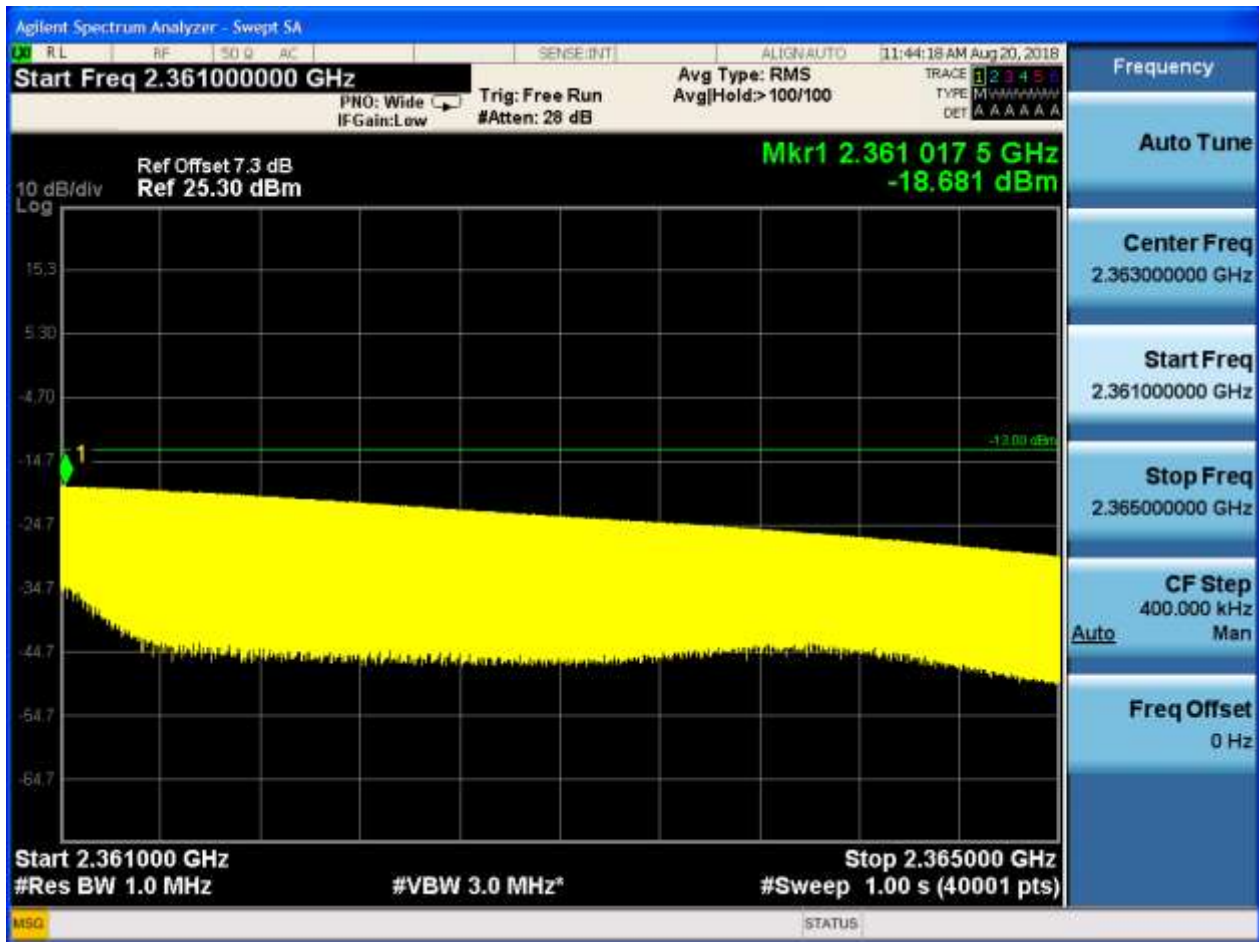


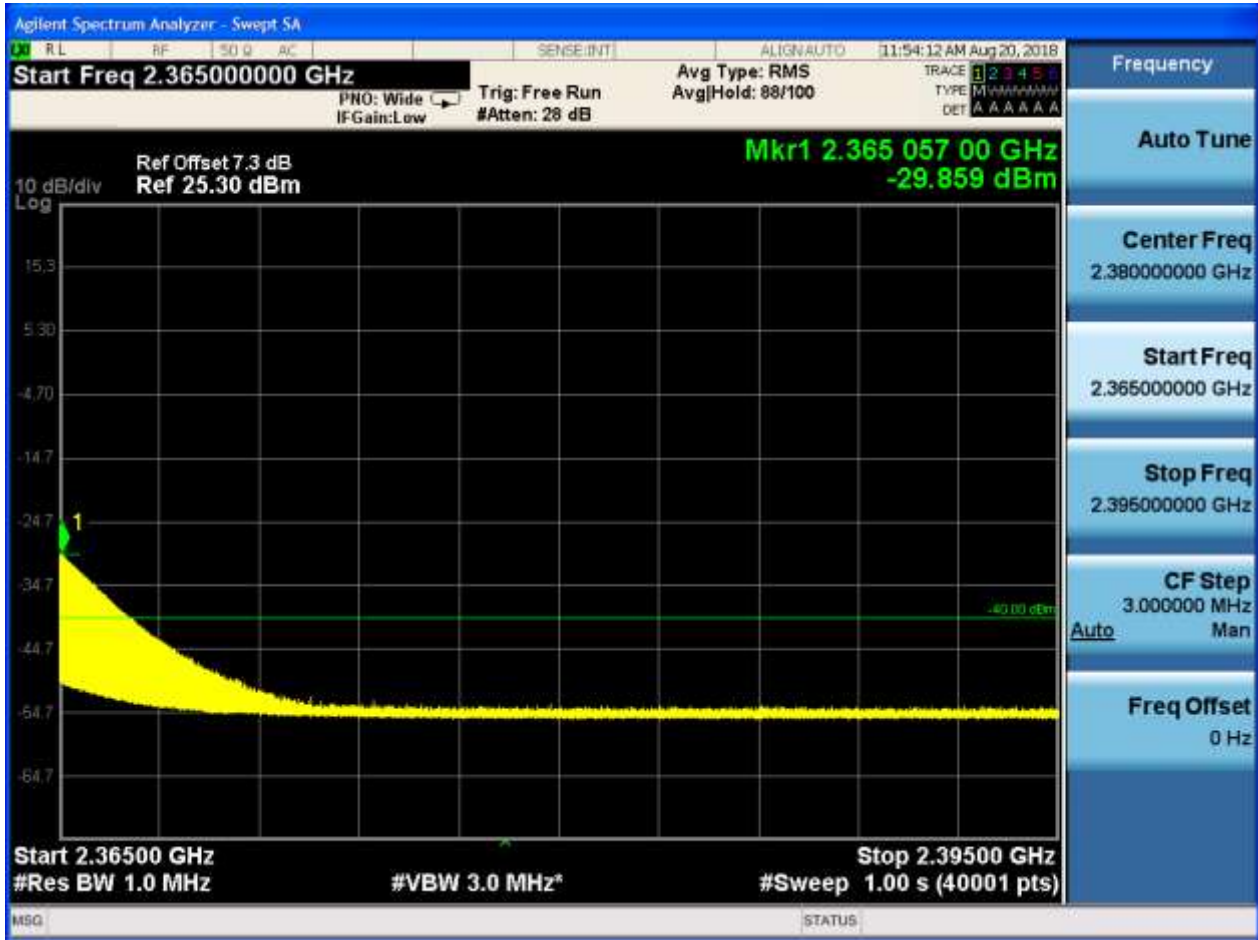












note: In the 1 MHz band immediately outside and adjacent to the channel edge, the unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for base station and fixed subscriber equipment and 2% for mobile subscriber equipment. Beyond the 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth is allowed to be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz 1%/2% of the occupied bandwidth, as

applicable.



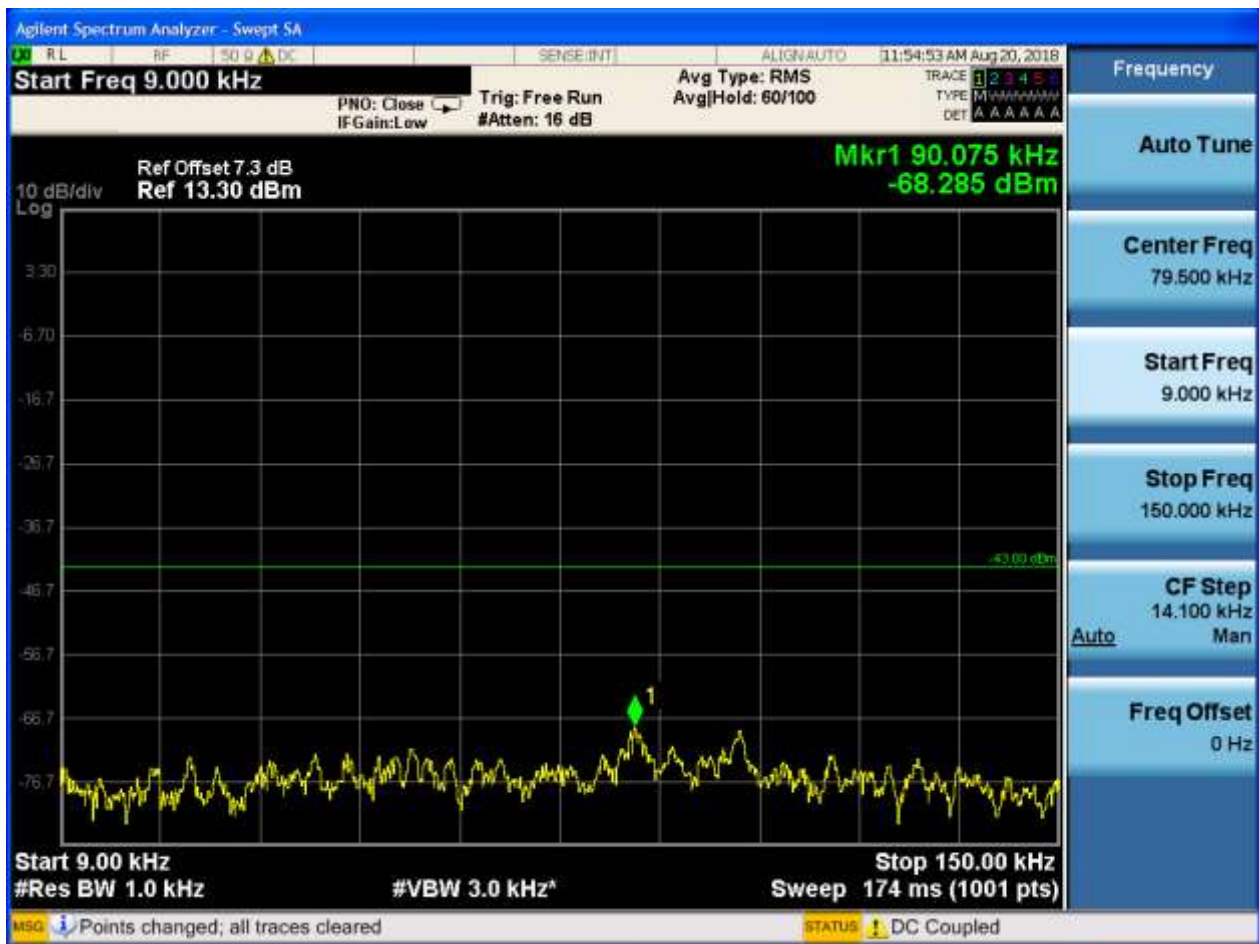




6.1.1.1.2 Test Bandwidth = 10

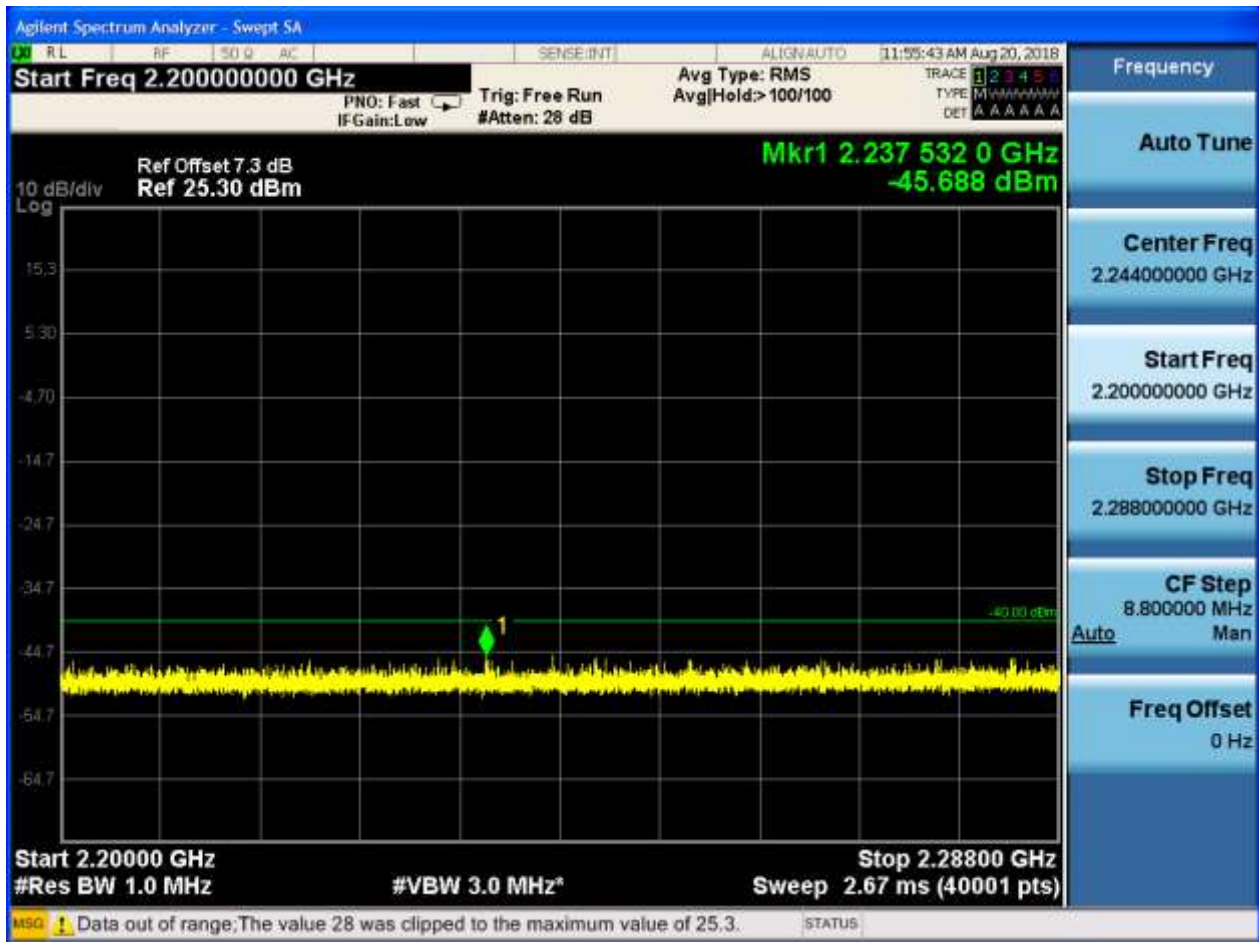
6.1.1.1.2.1 Test Channel = LCH/MCH/HCH

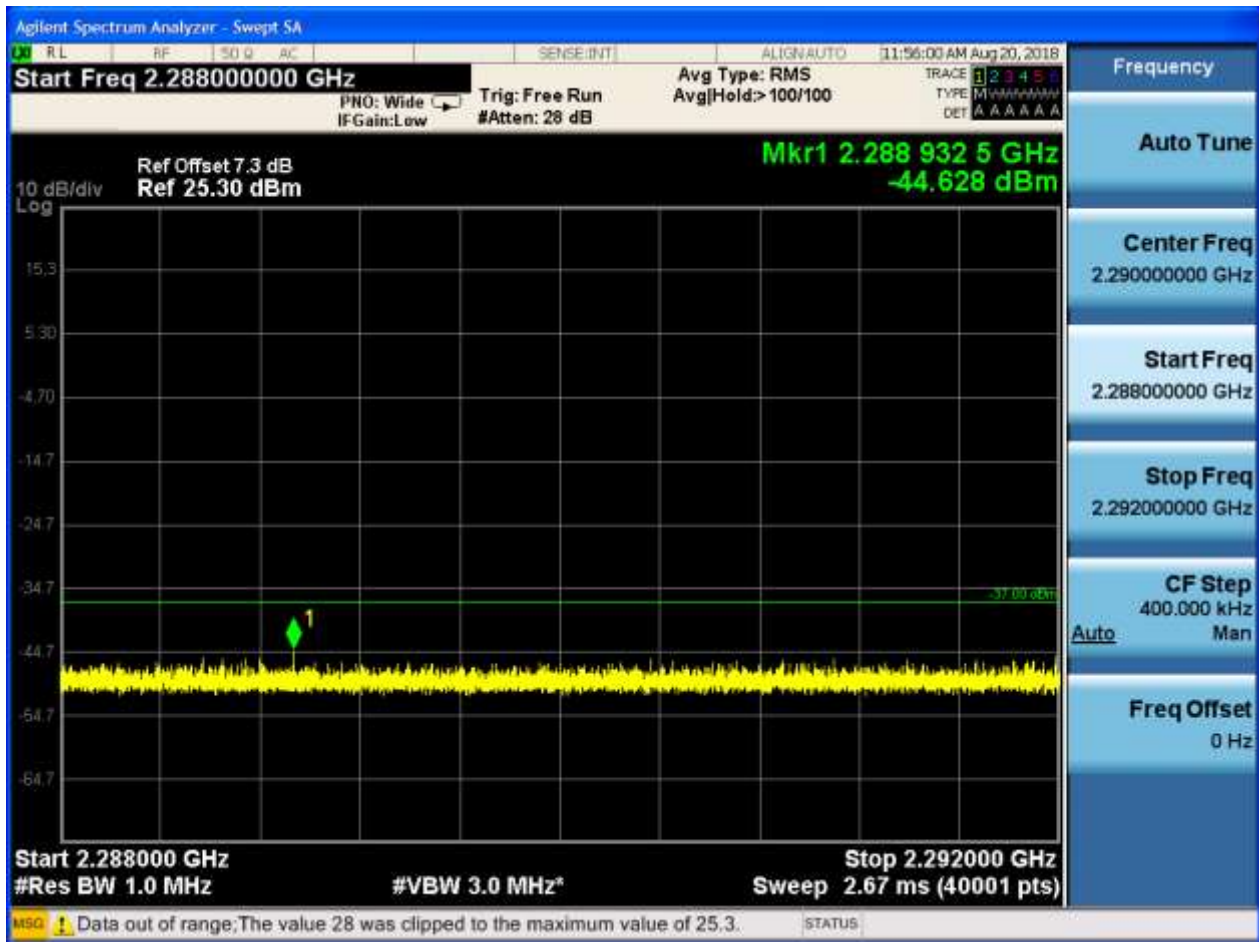
6.1.1.1.2.1.1 Test RB = RB1#0



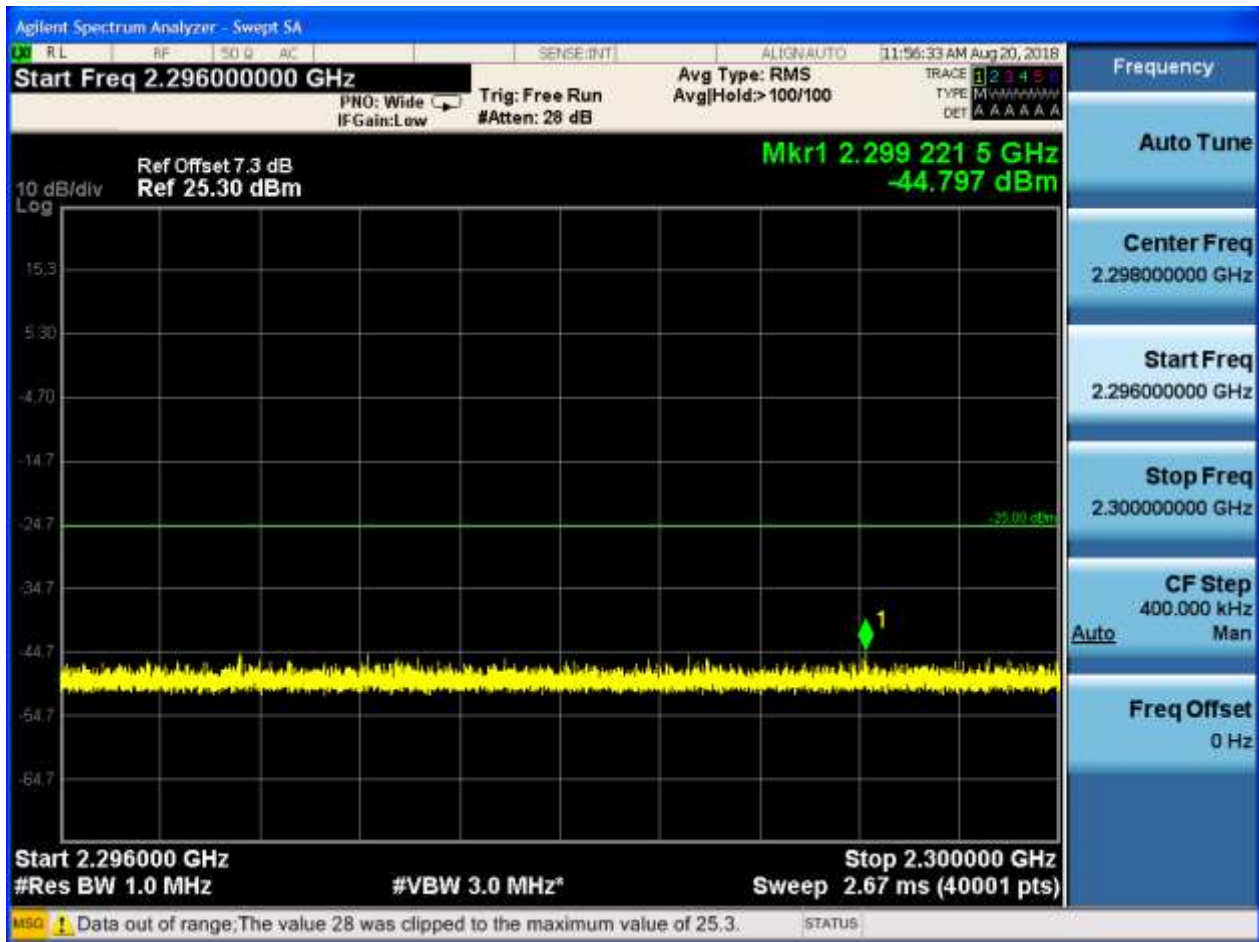


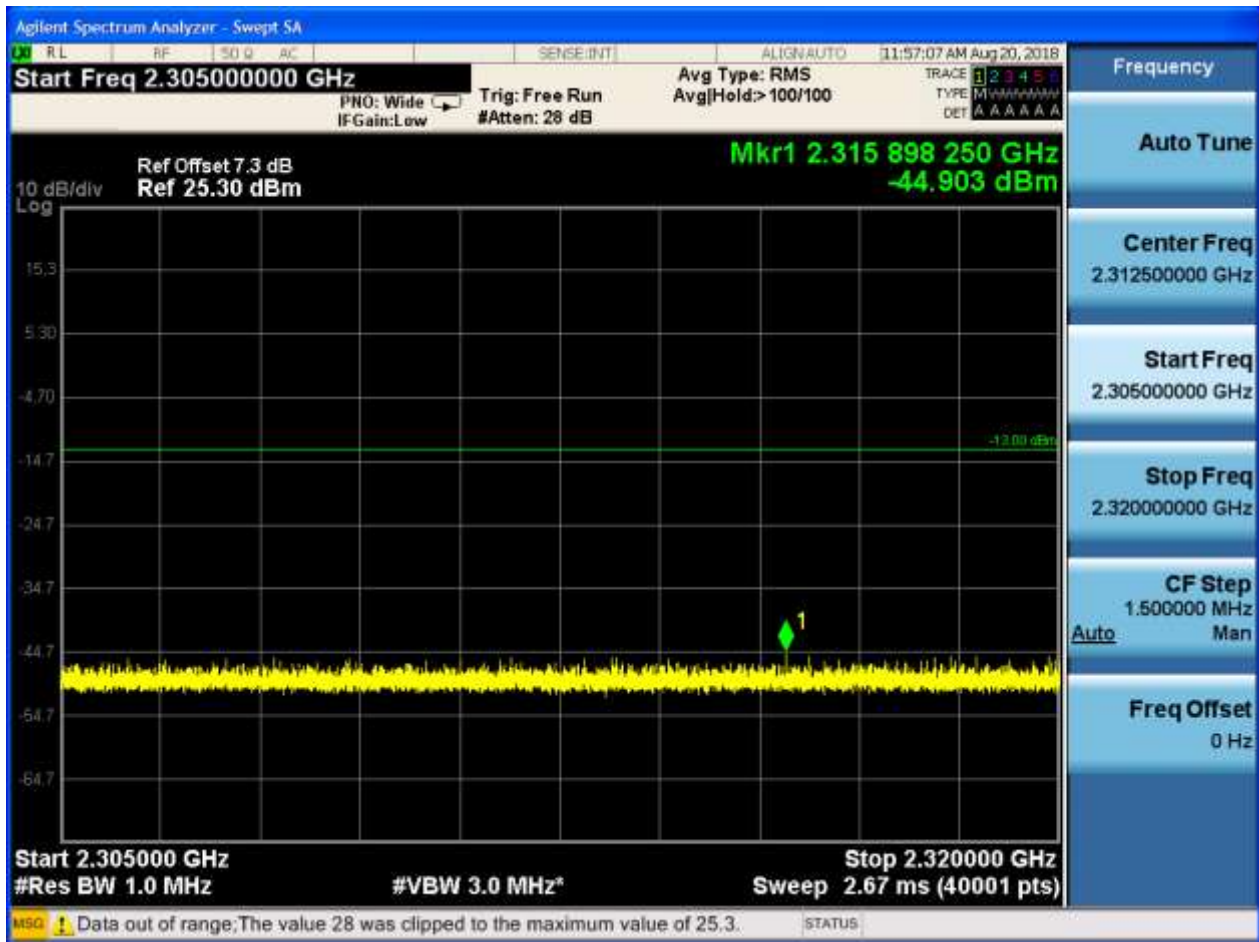


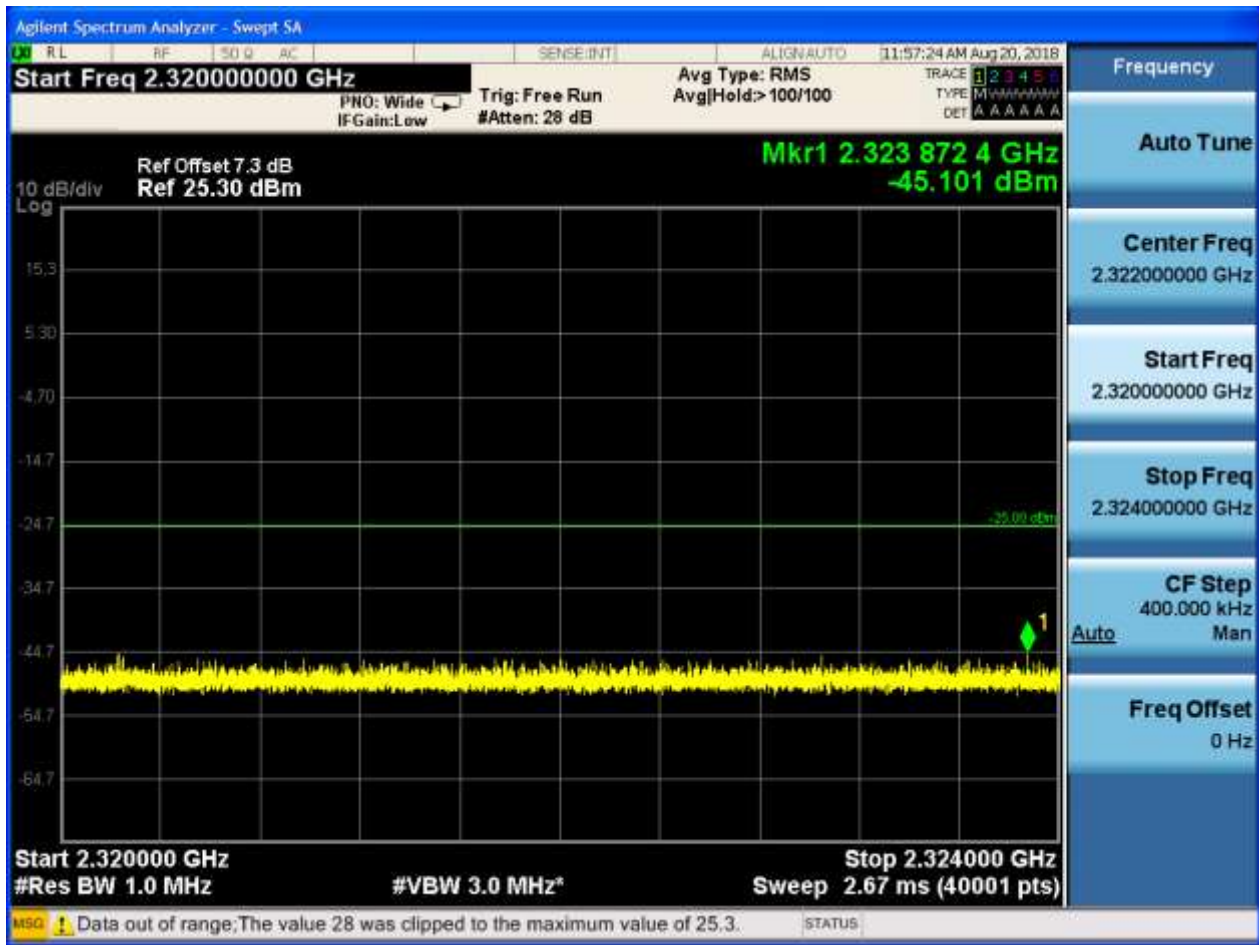


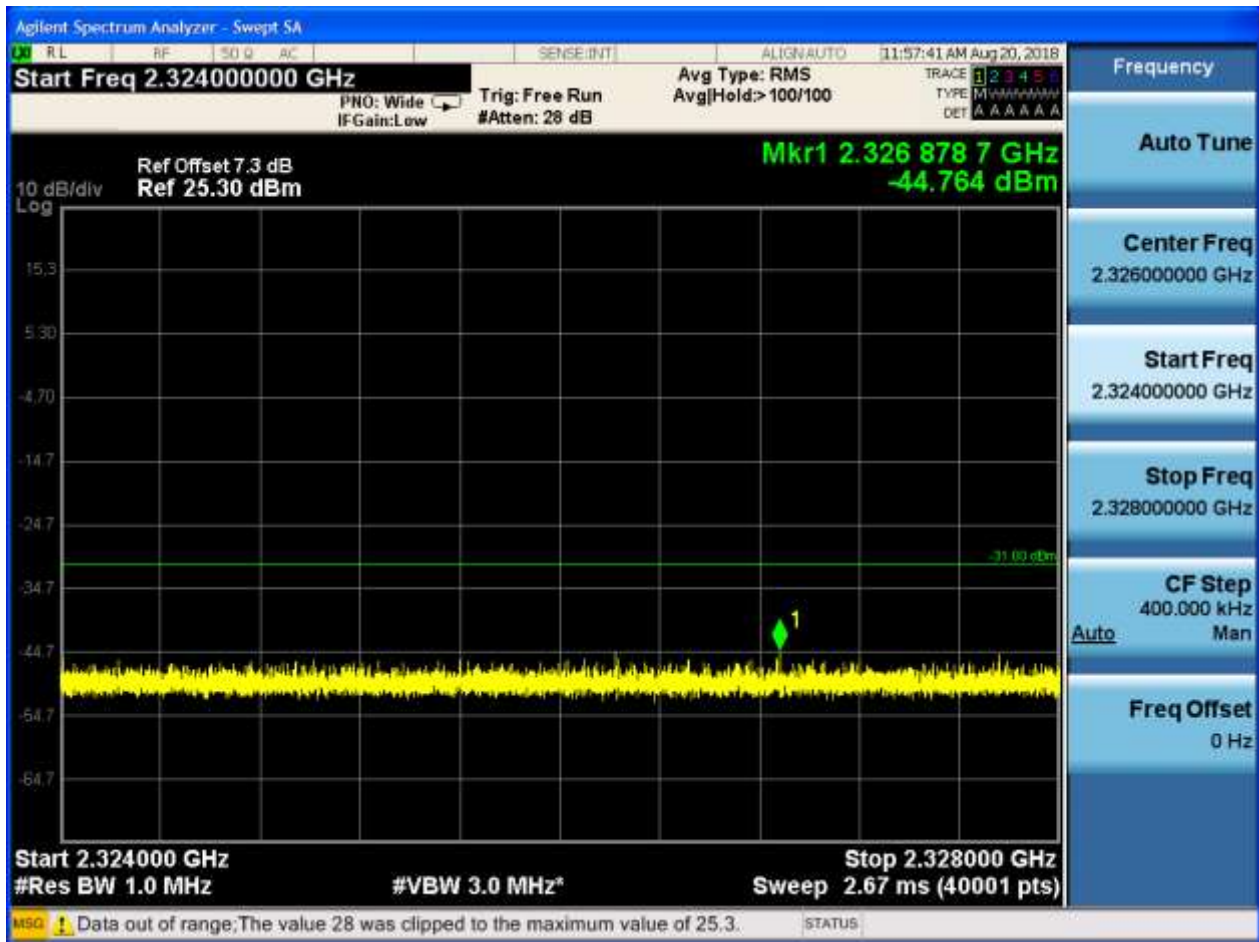


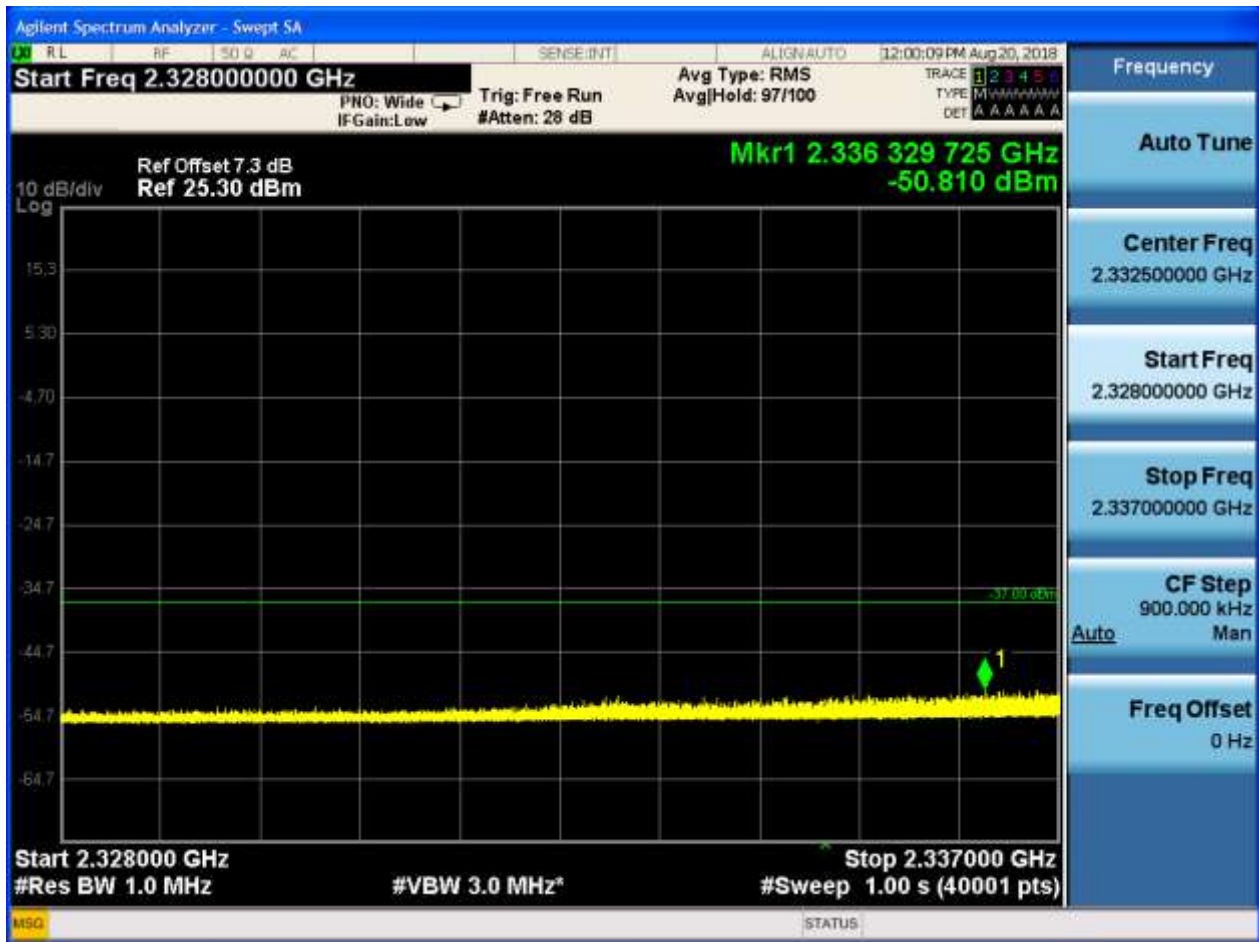






















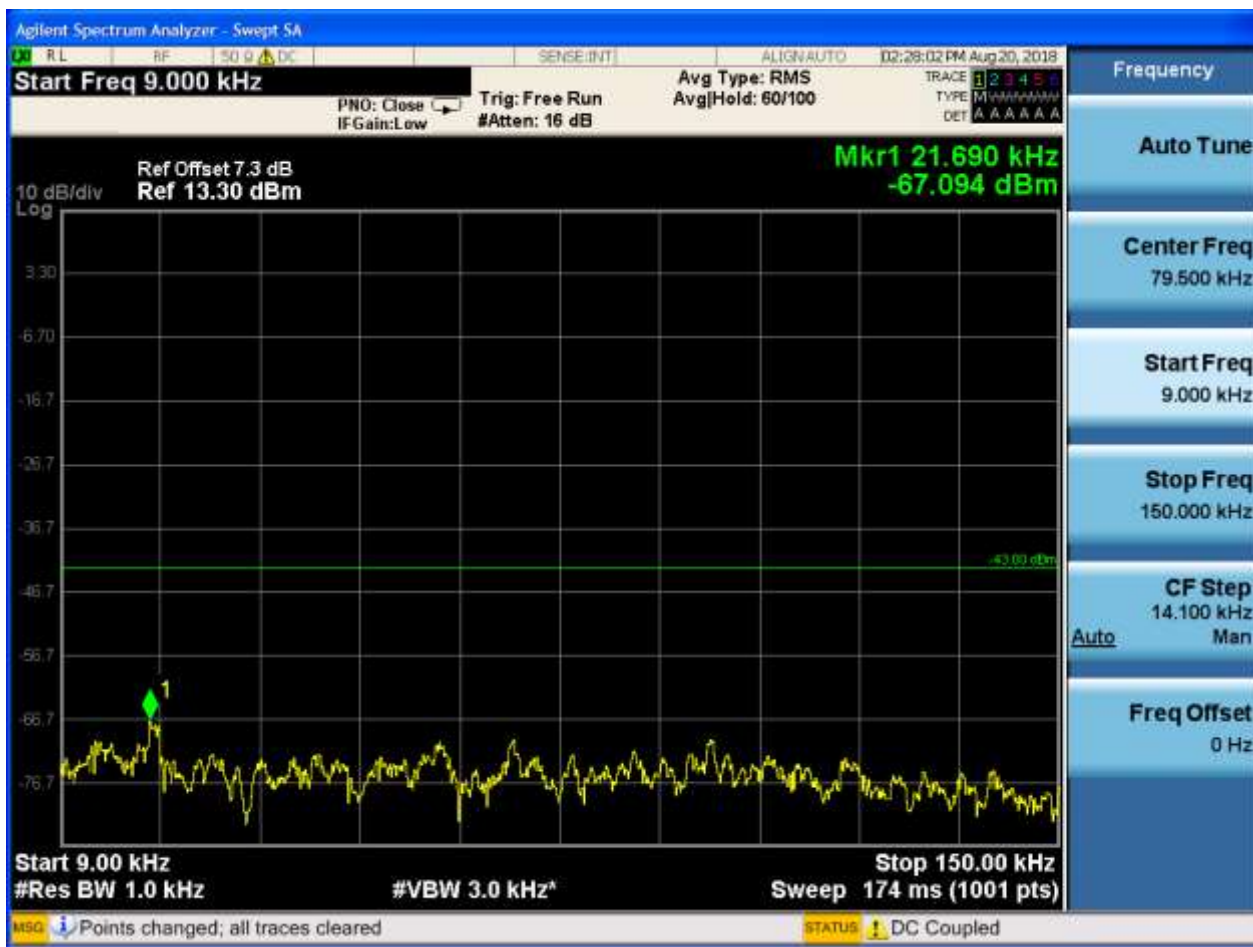


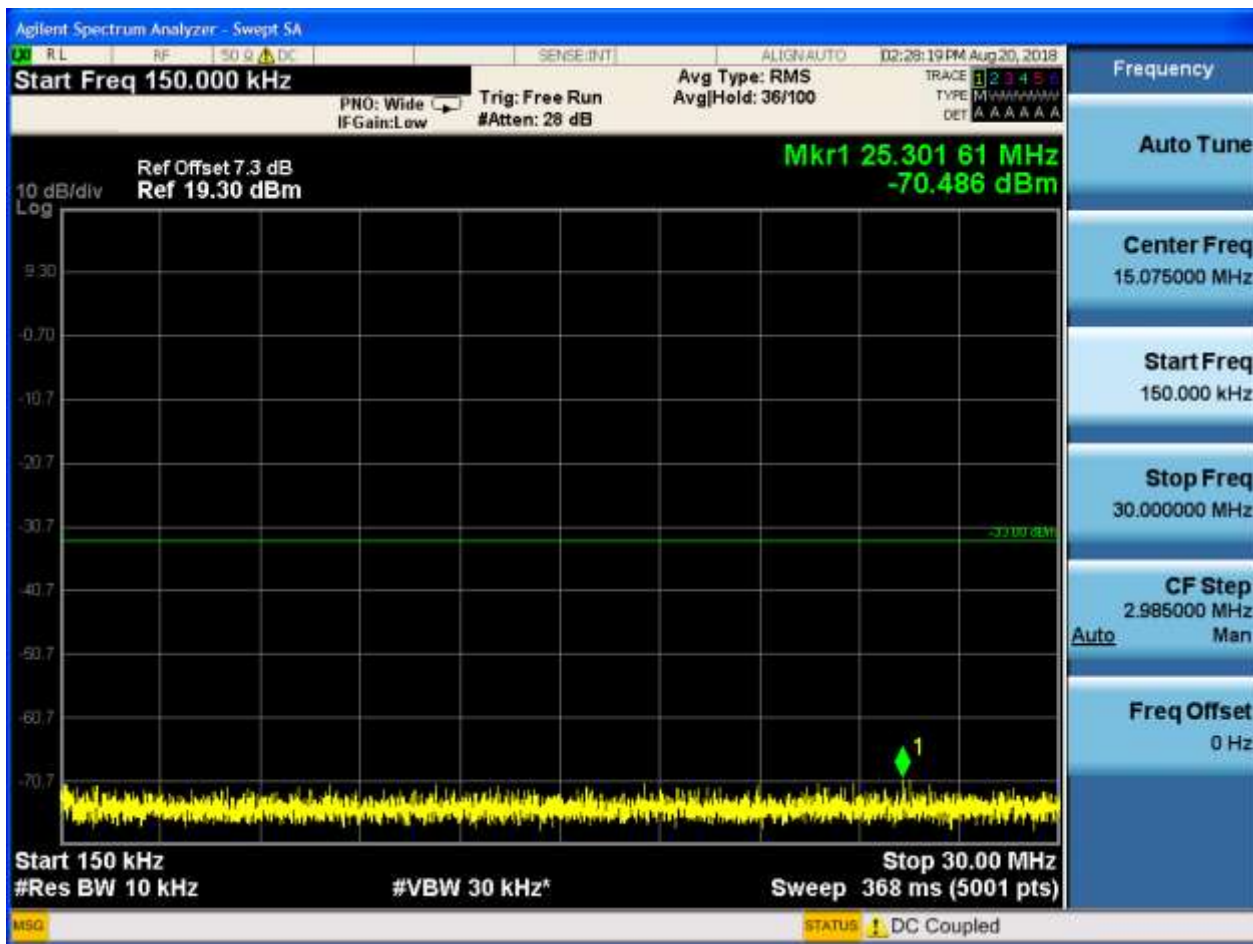
6.1.1.2 Test Mode = LTE/TM2

6.1.1.2.1 Test Bandwidth = 5

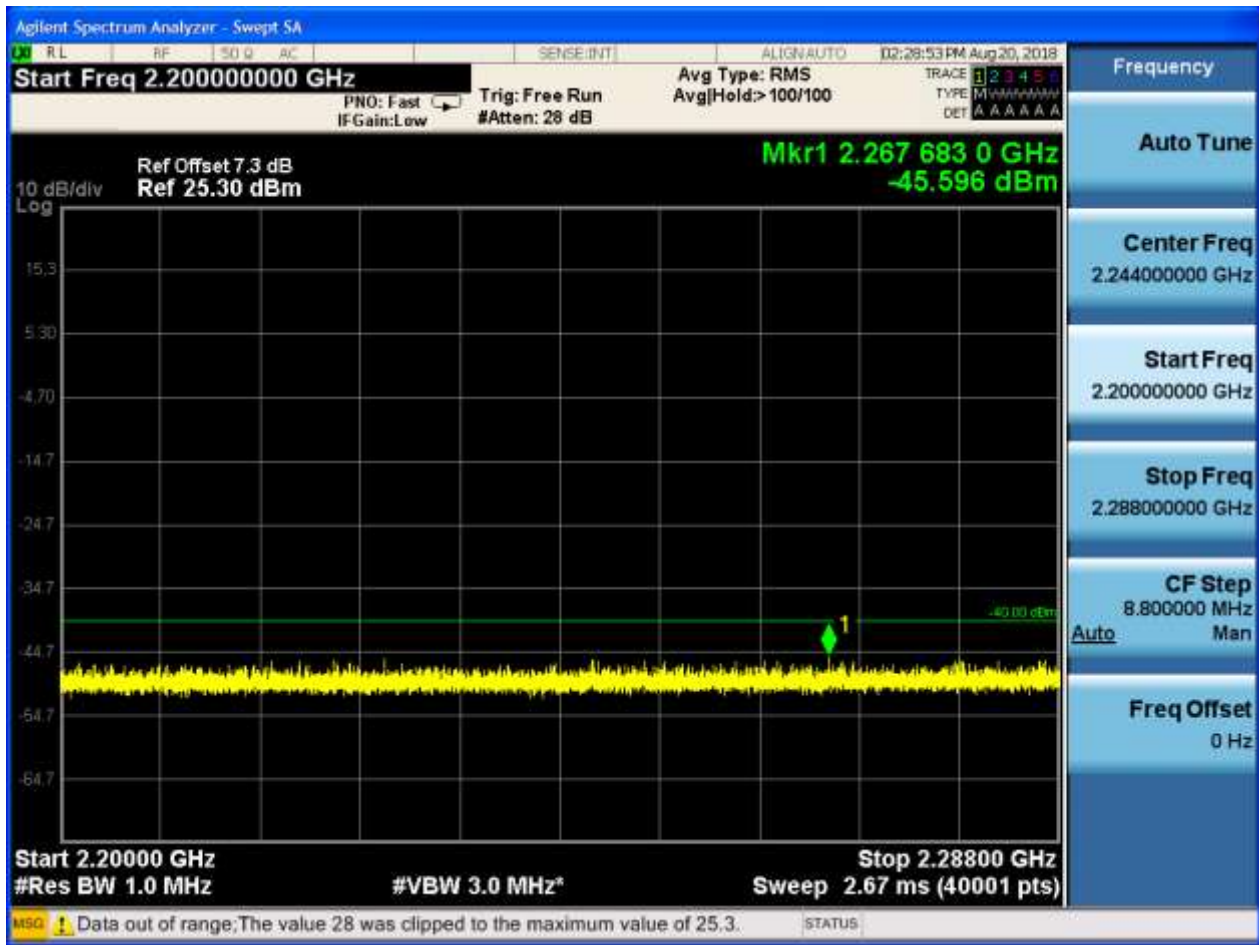
6.1.1.2.1.1 Test Channel = LCH

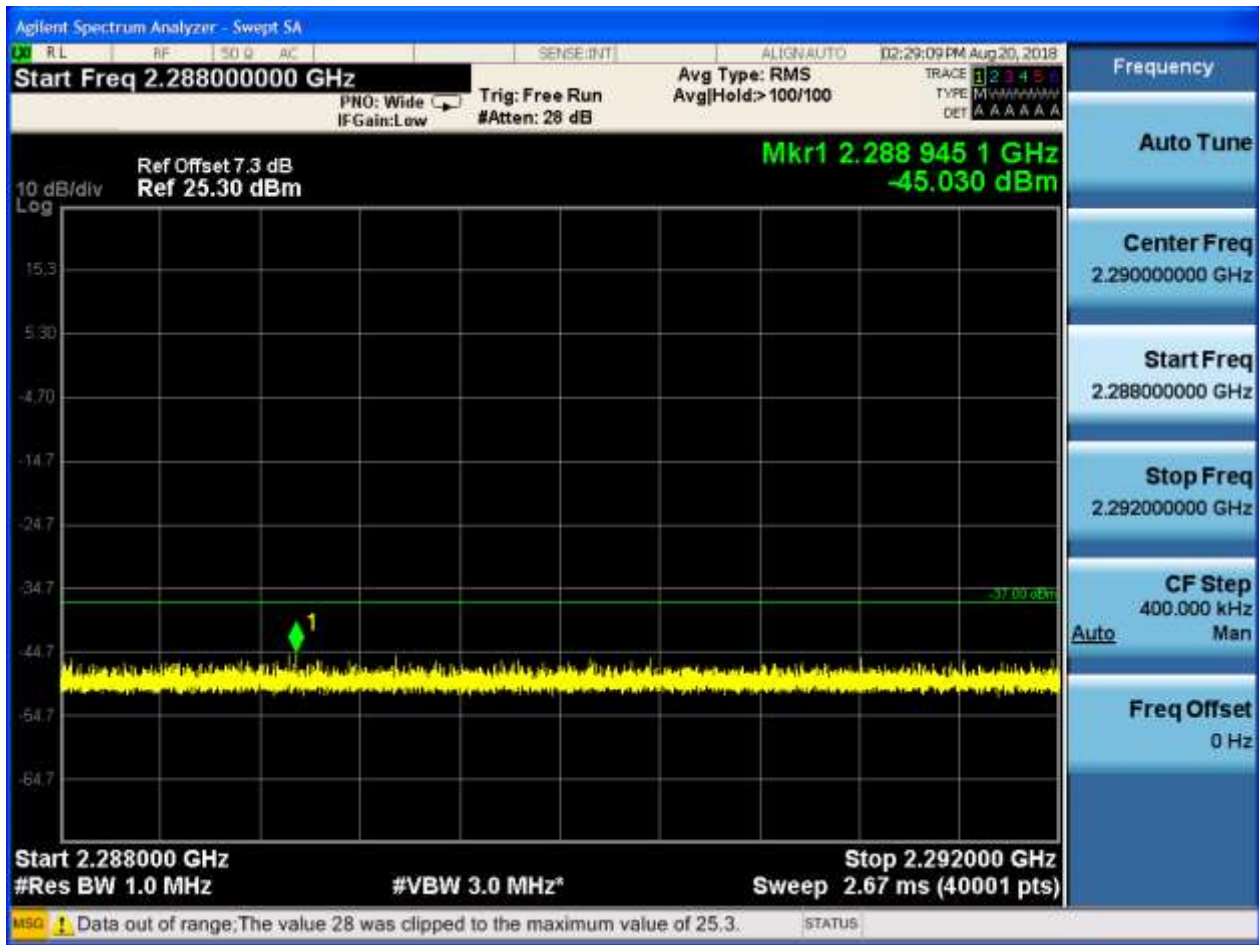
6.1.1.2.1.1.1 Test RB = RB1#0



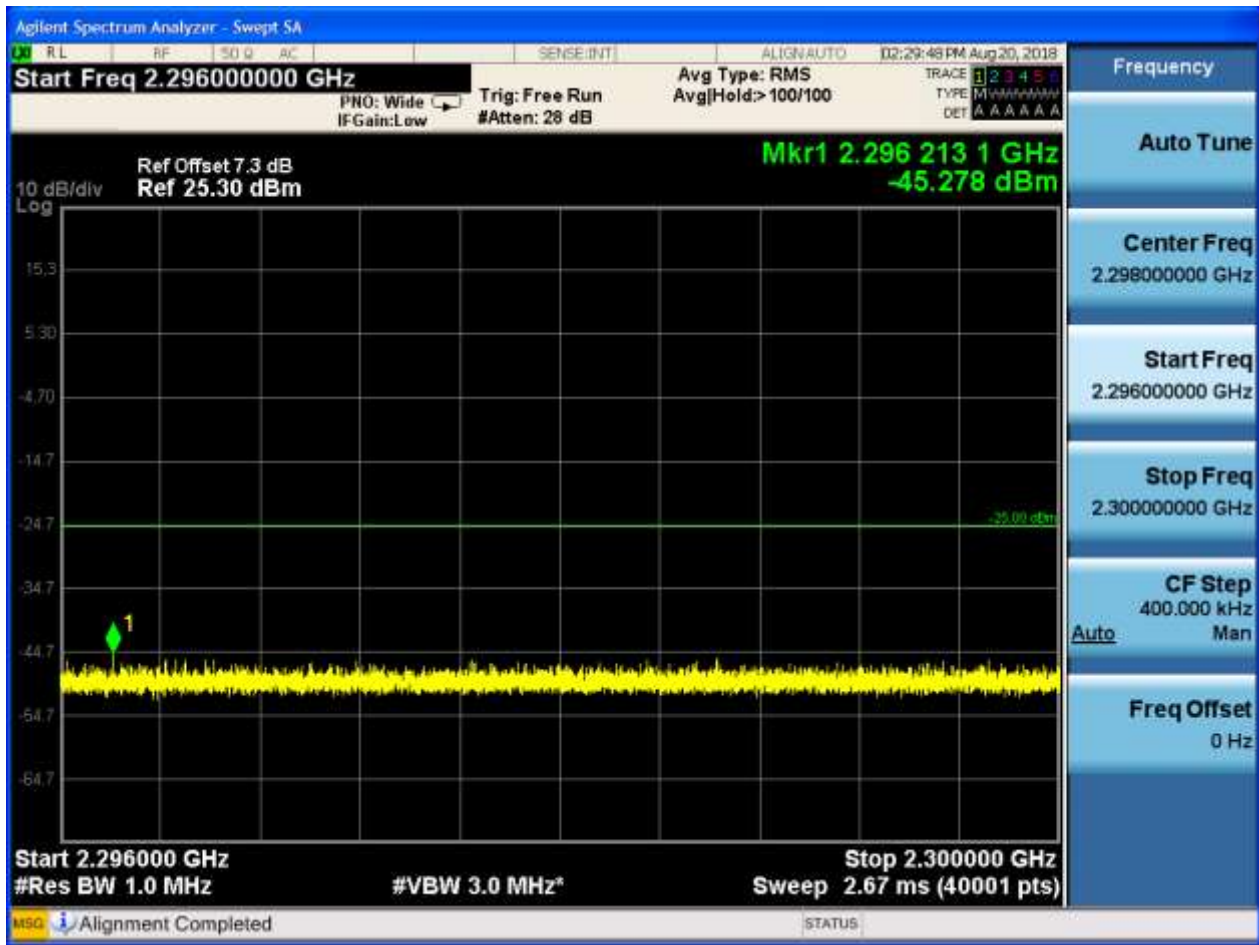


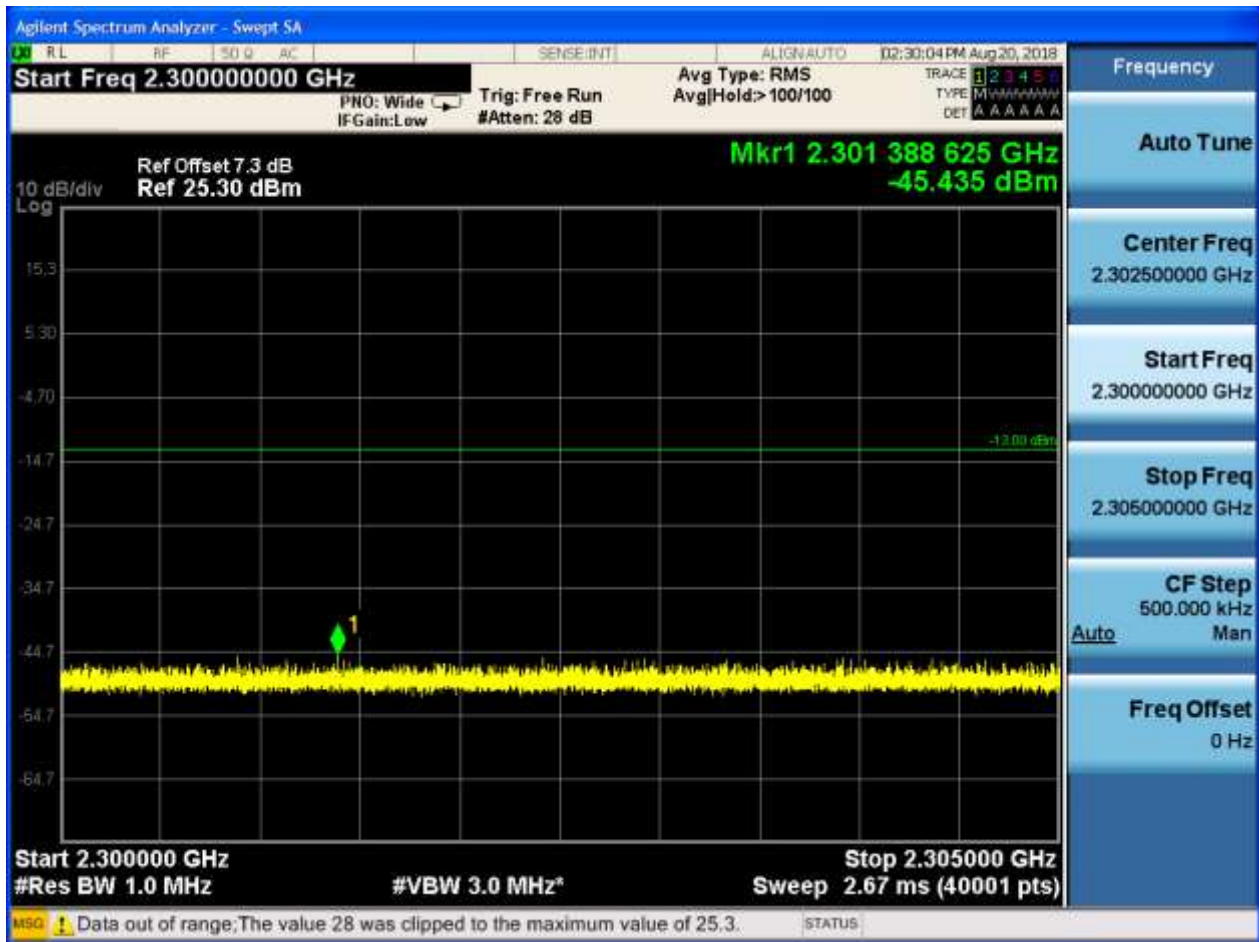


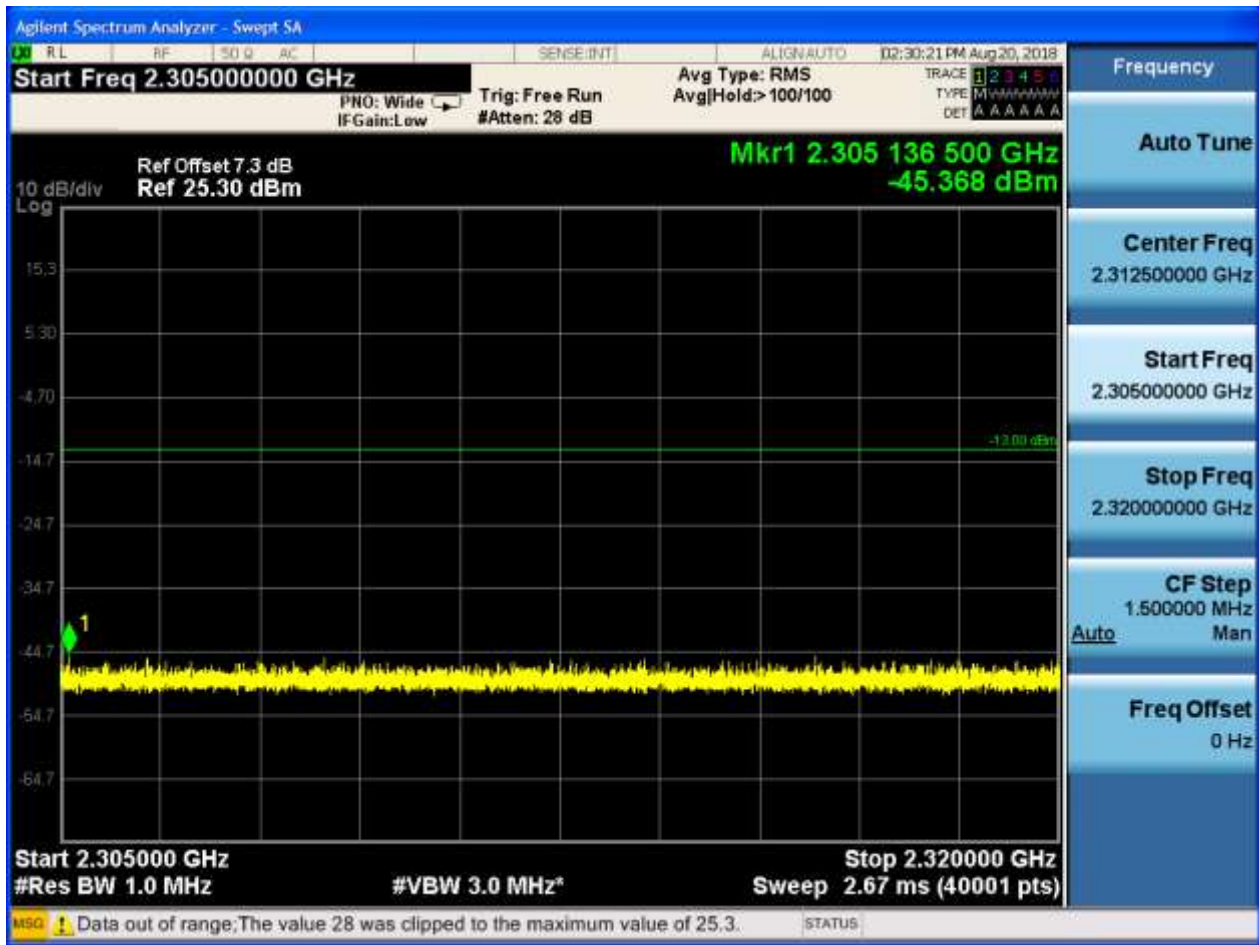


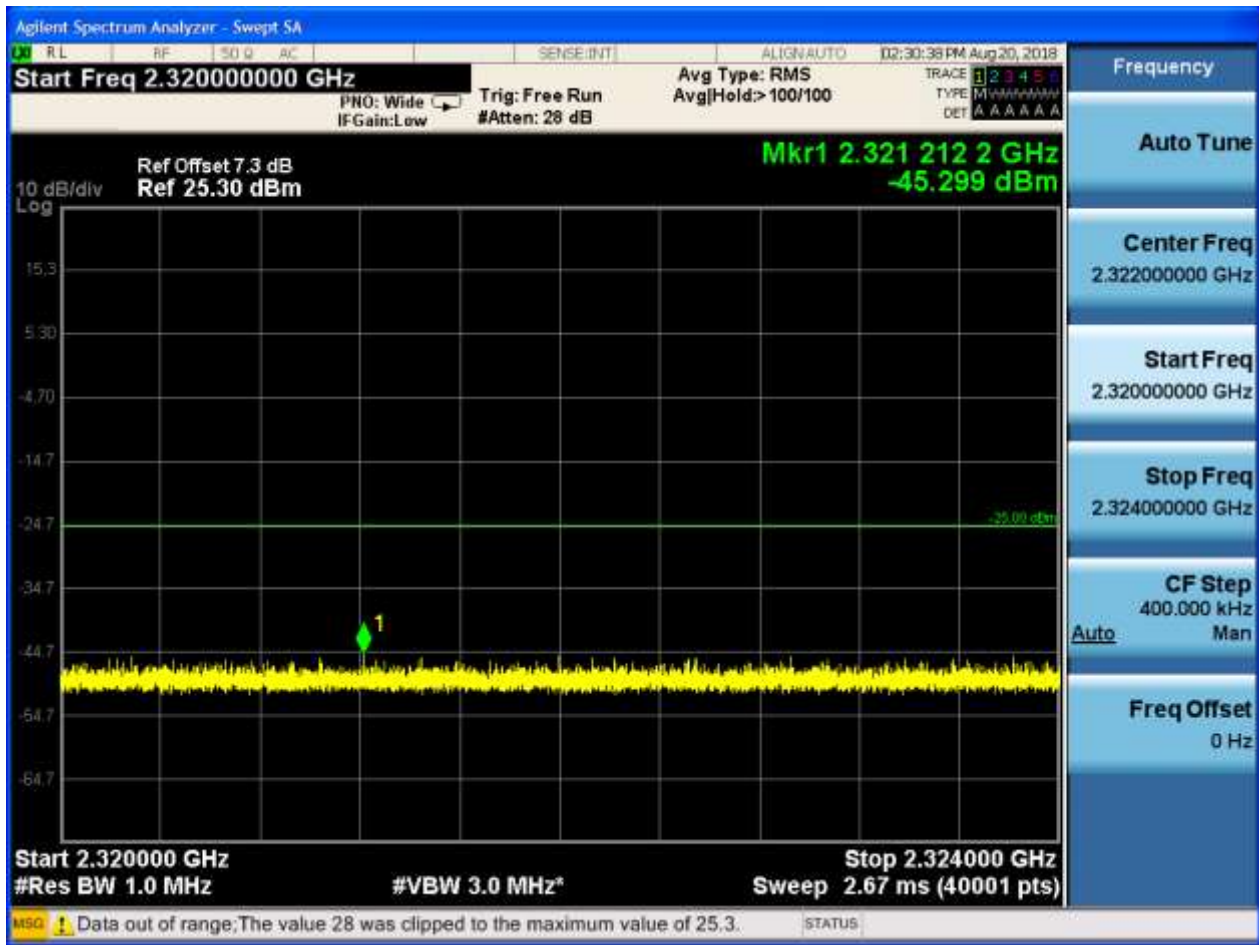


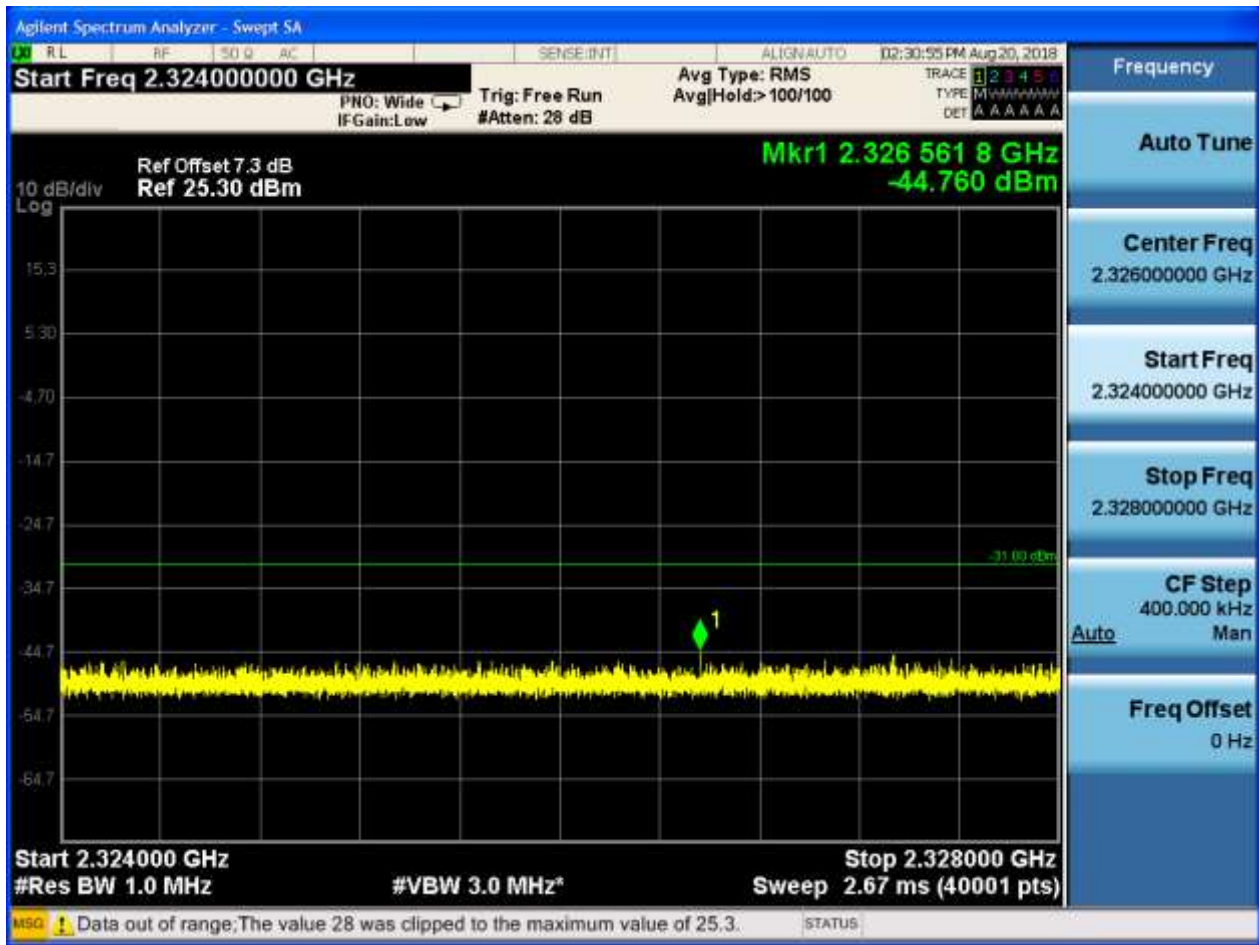


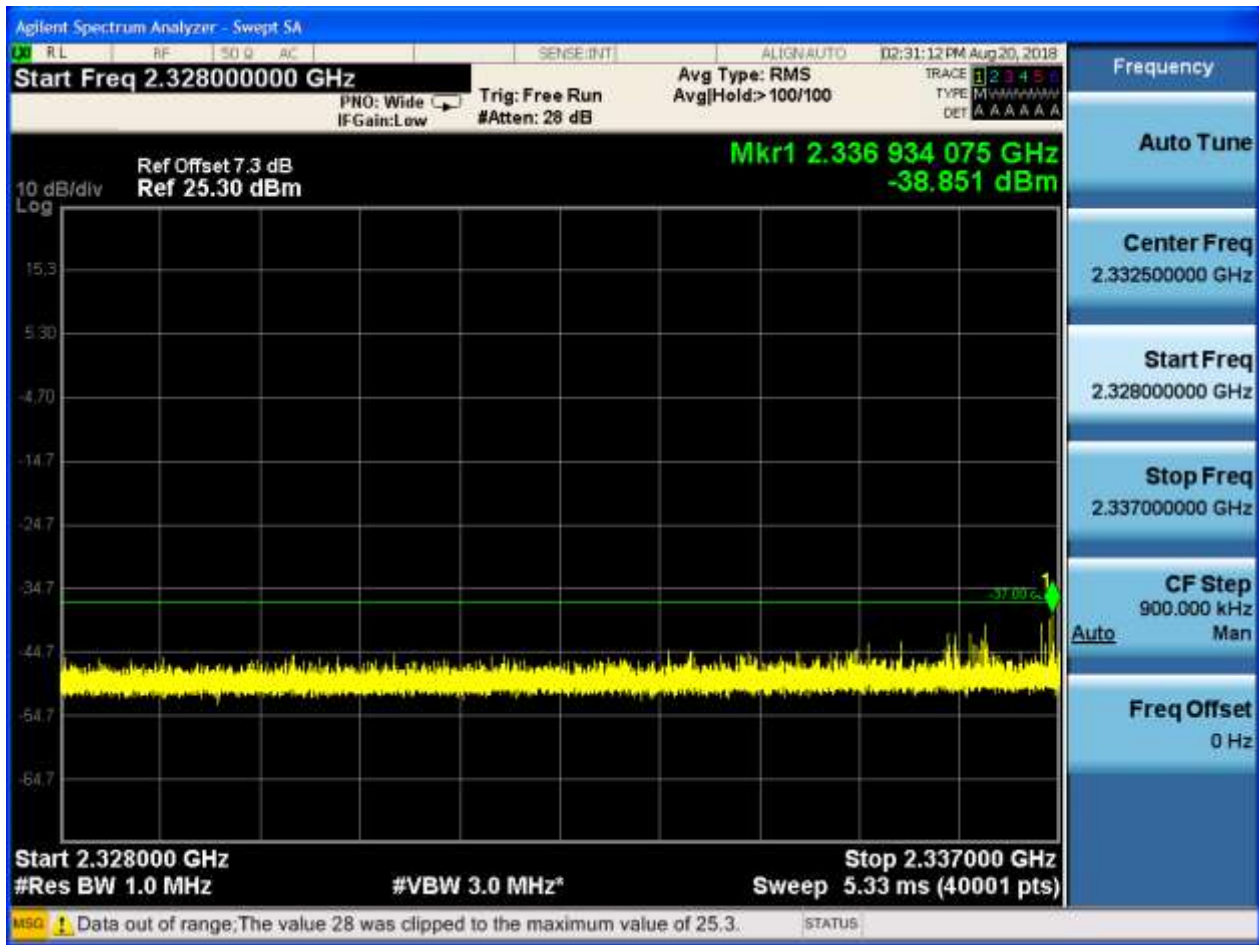






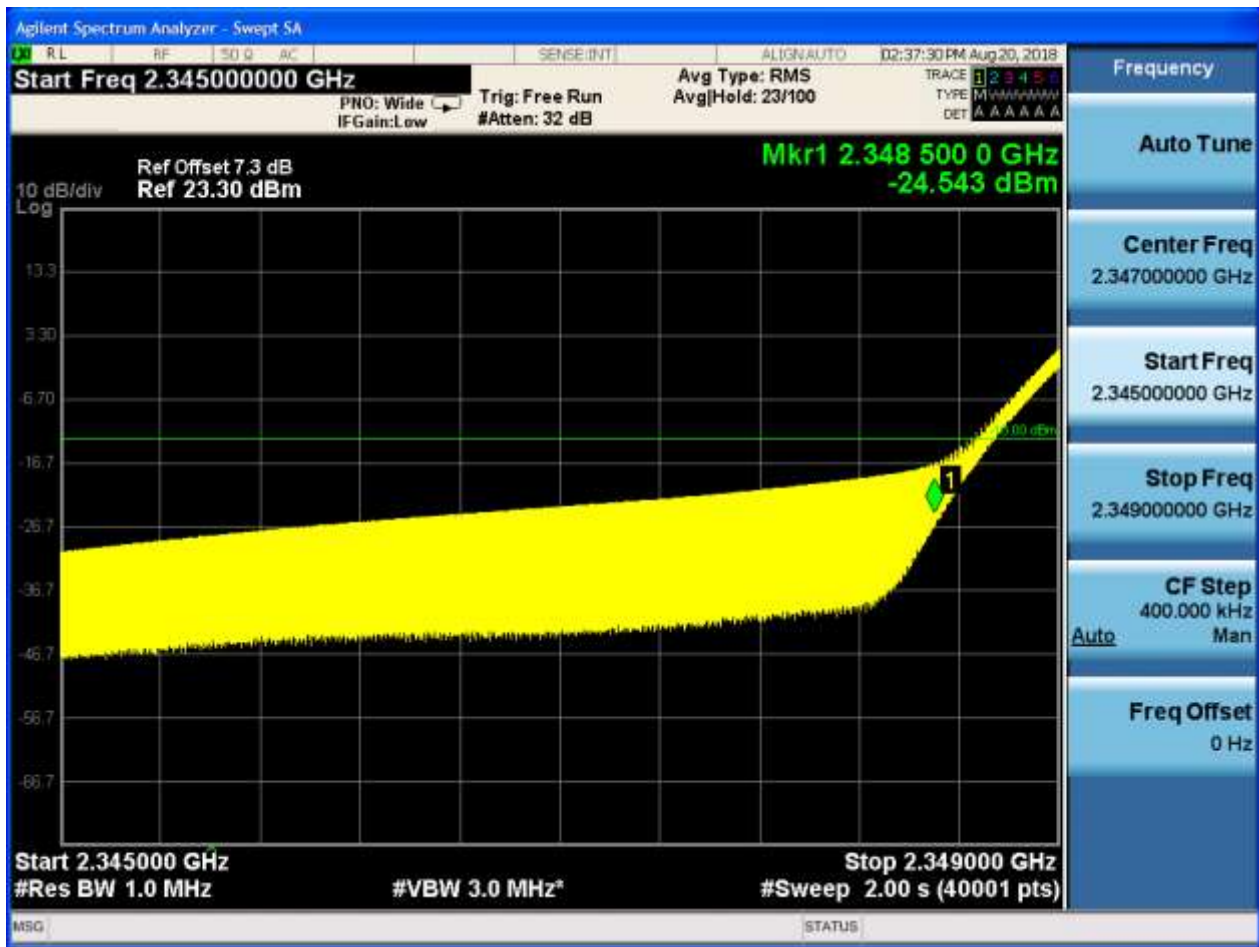




















6.1.1.2.1.2 Test Channel = MCH

6.1.1.2.1.2.1 Test RB = RB1#0



