



# Appendix for Test report



## Appendix A: DTS (6 dB) Bandwidth

In this document, the "DTS6dBBW" refers to the measured "DTS (6 dB) Bandwidth" value. In this Appendix, the "fc(DTS6dBBW)" refers to the centre of the measured "DTS6dBBW". The introduction of the "fc(DTS6dBBW)" is due to that other measurements use it as the spectrum analyzer setting.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

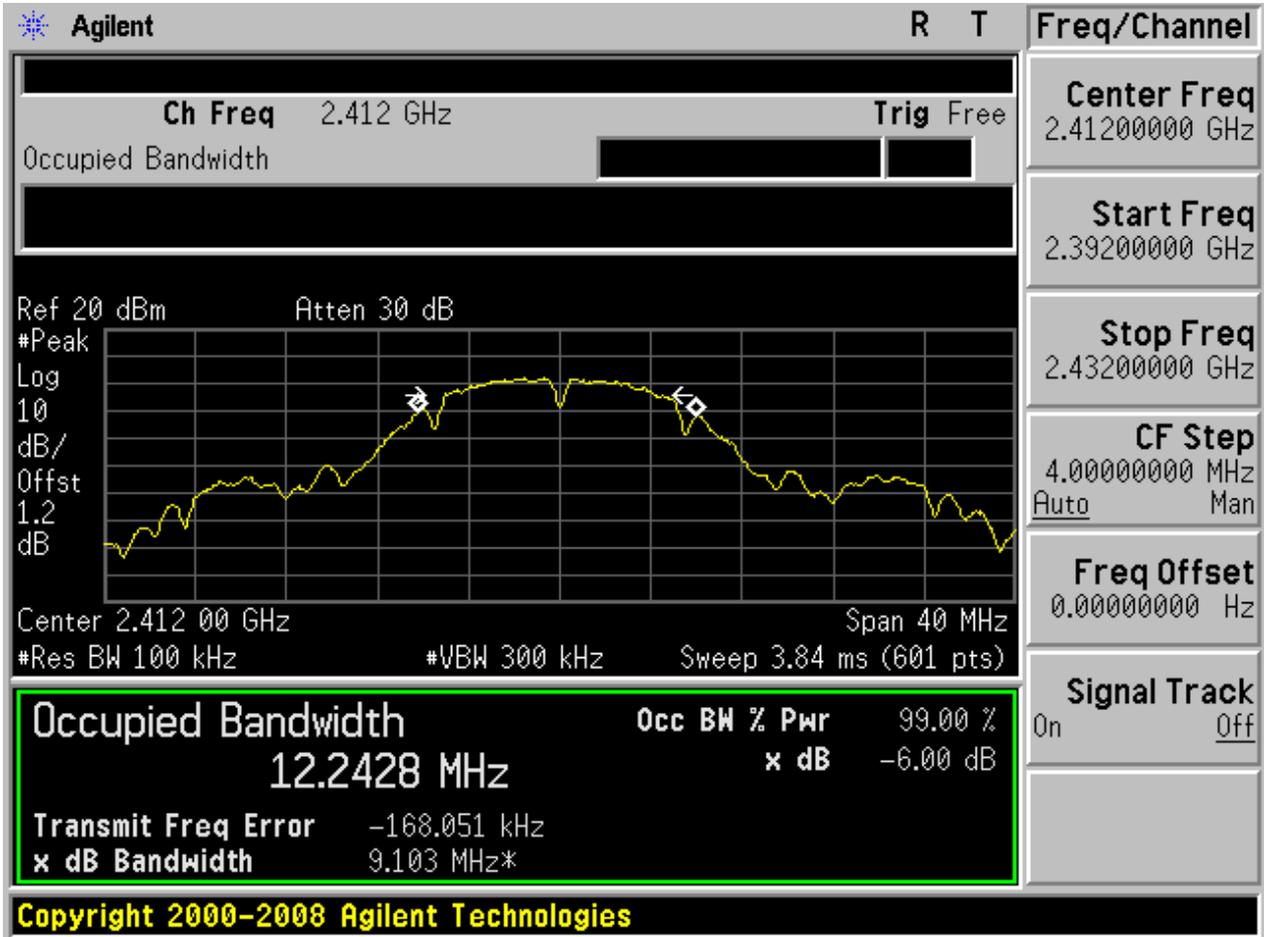
### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	9.10	pass
11B	M	2437	Ant 1	8.68	pass
11B	H	2462	Ant 1	8.39	pass
11G	L	2412	Ant 1	16.52	pass
11G	M	2437	Ant 1	15.36	pass
11G	H	2462	Ant 1	16.44	pass
11N20	L	2412	Ant 1	17.74	pass
11N20	M	2437	Ant 1	17.68	pass
11N20	H	2462	Ant 1	17.02	pass
11N40	L	2422	Ant 1	36.57	pass
11N40	M	2437	Ant 1	35.82	pass
11N40	H	2452	Ant 1	36.52	pass



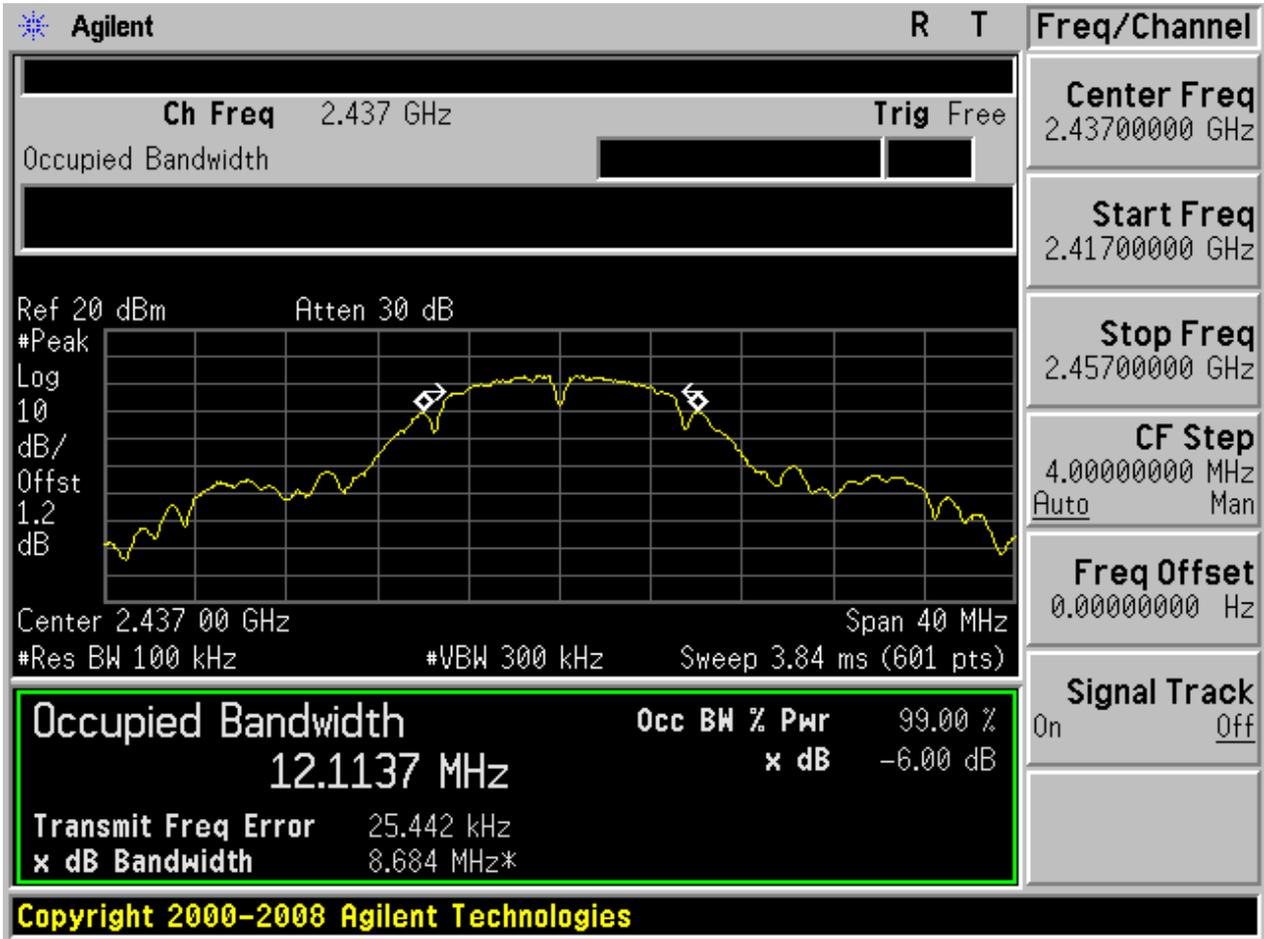
Part II - Test Plots

2.1 11B\_L@Ant 1



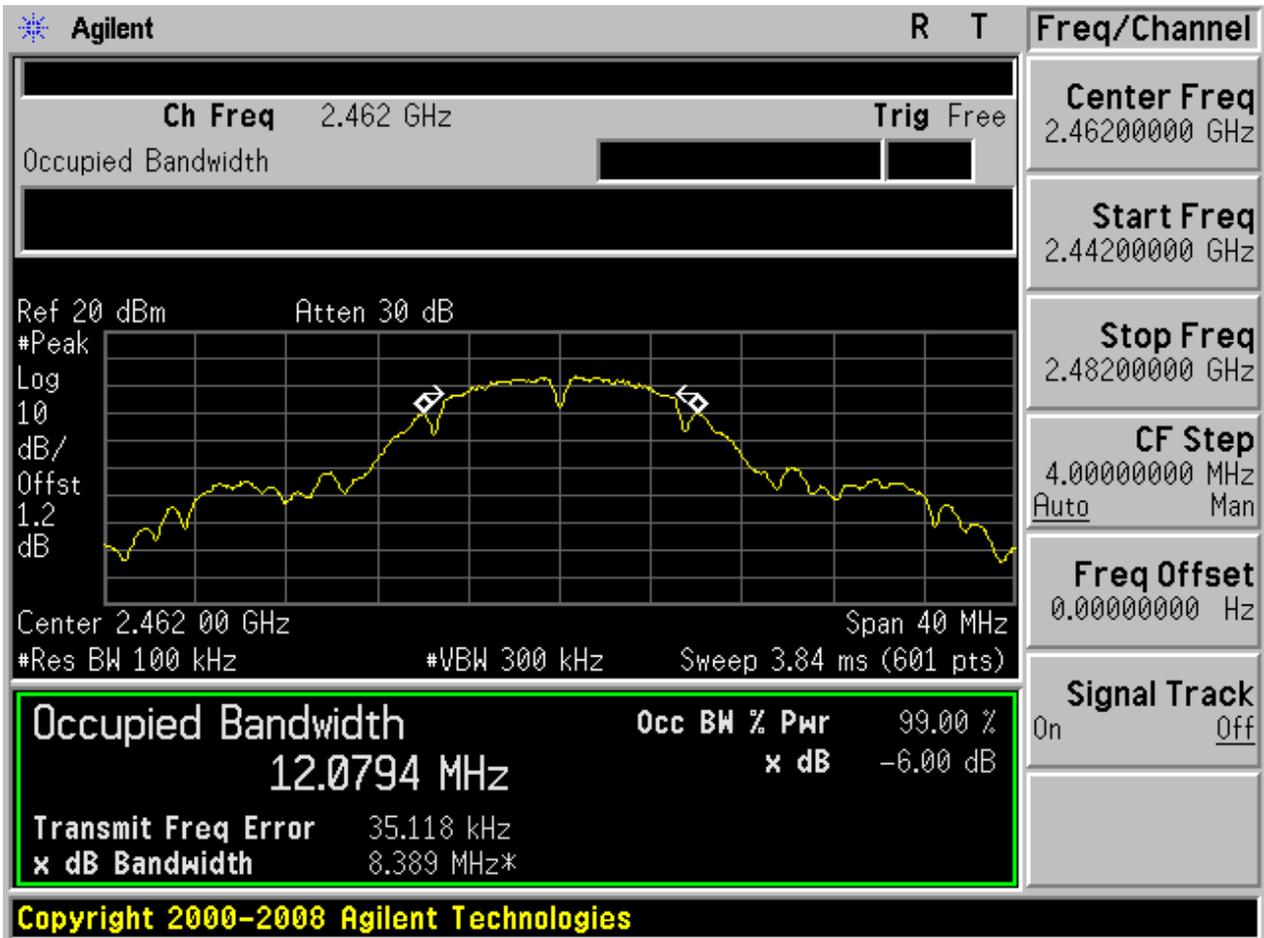


2.2 11B\_M@Ant 1



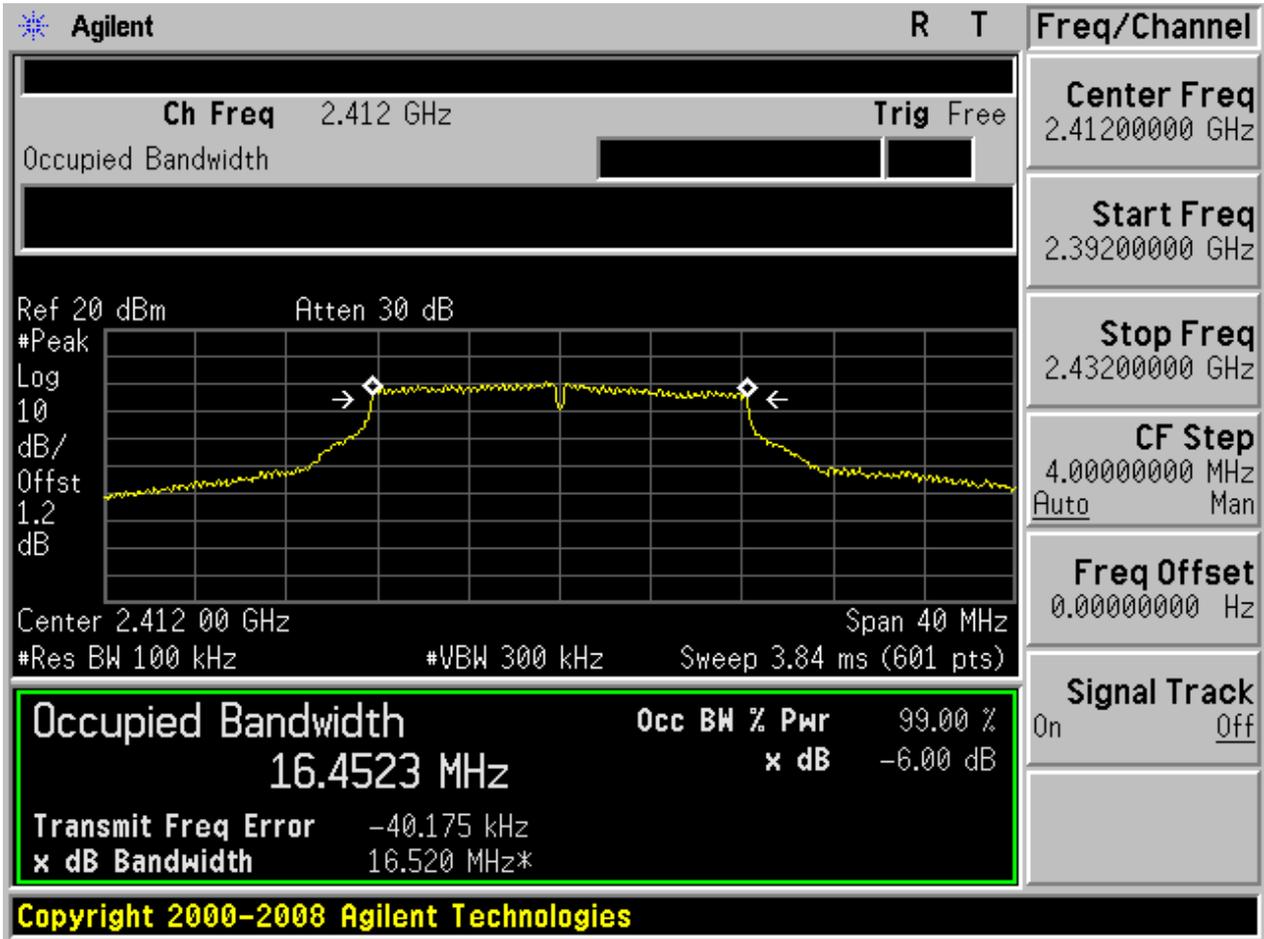


2.3 11B\_H@Ant 1



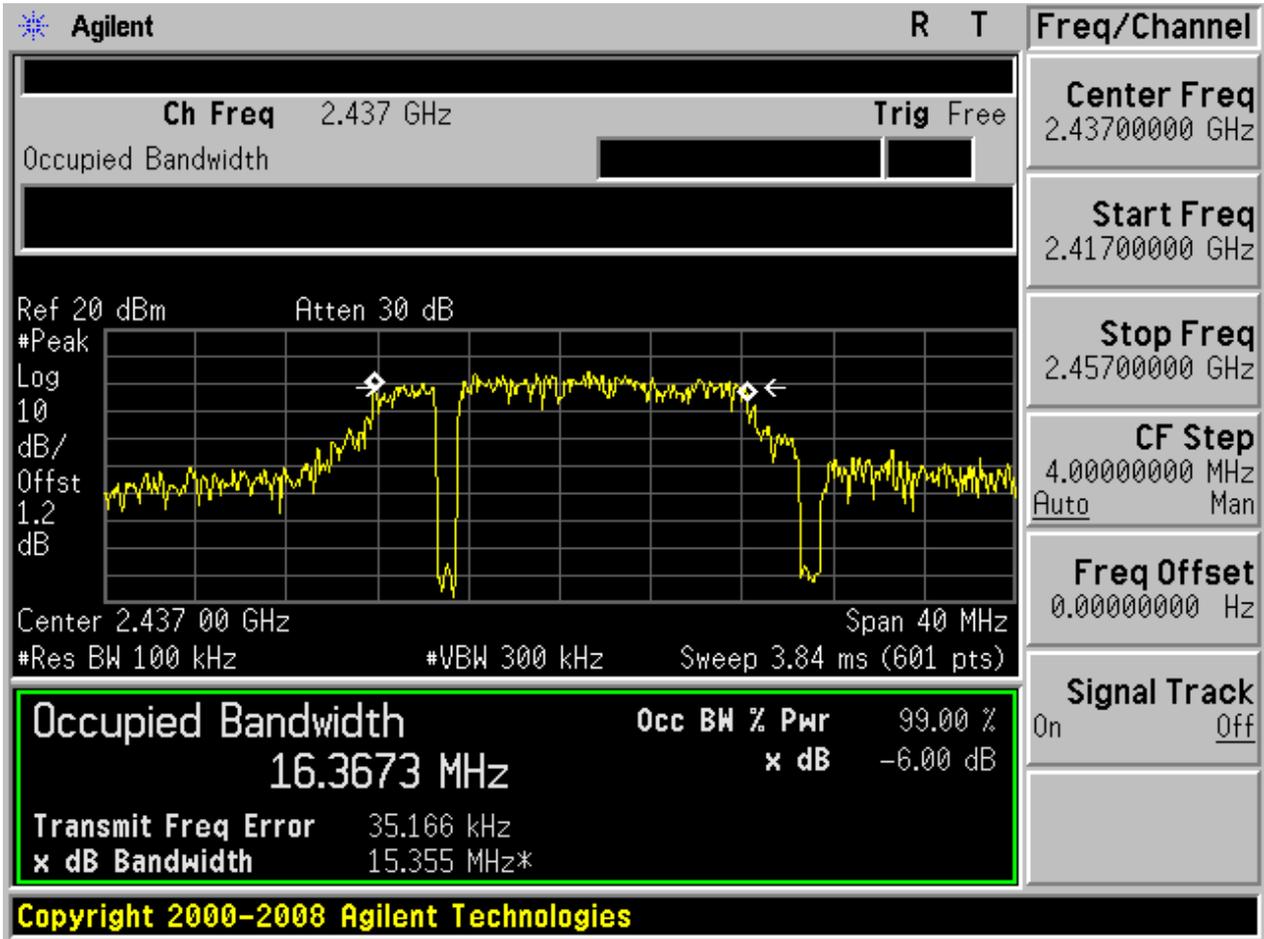


2.4 11G\_L@Ant 1



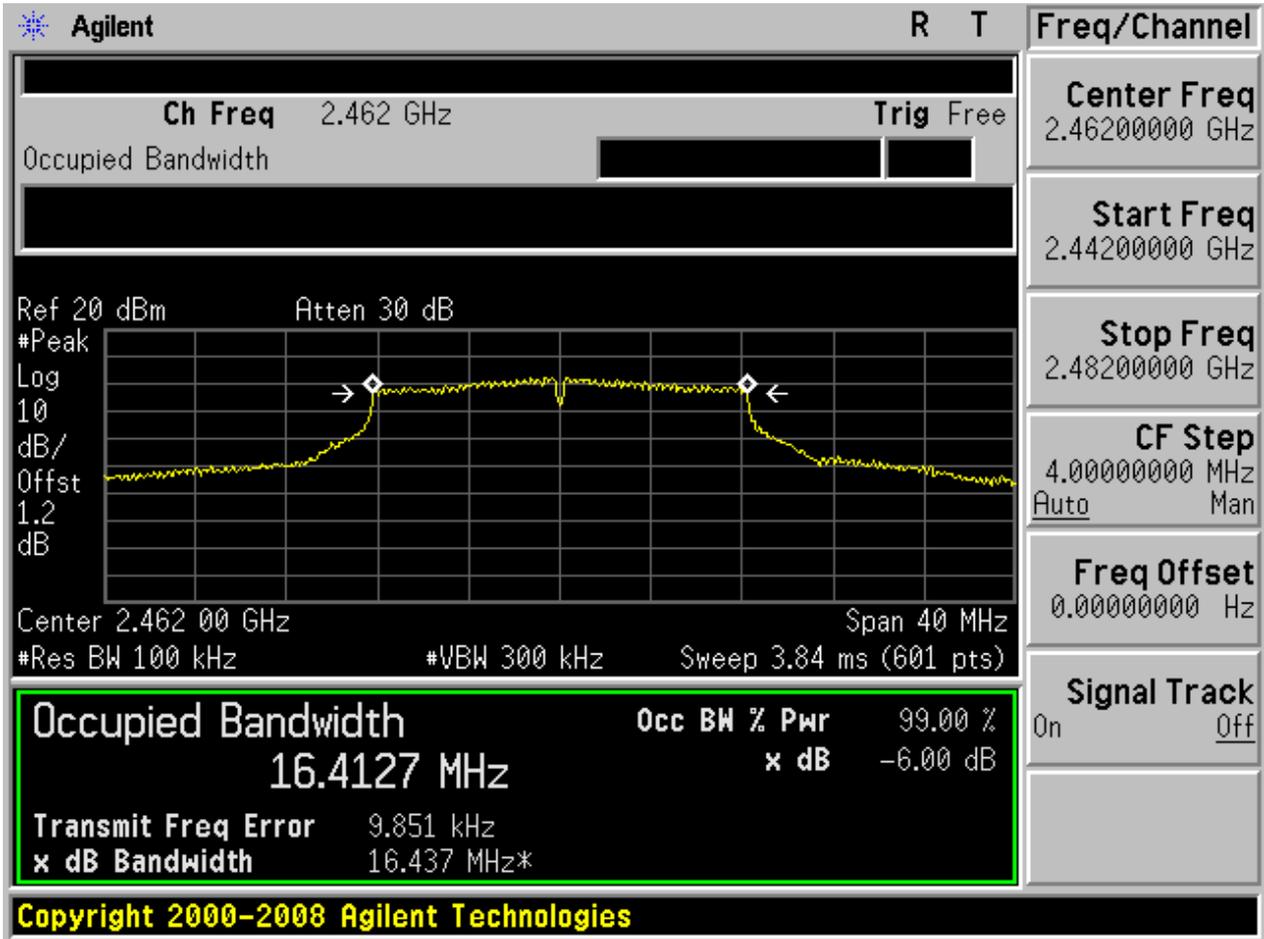


2.5 11G\_M@Ant 1



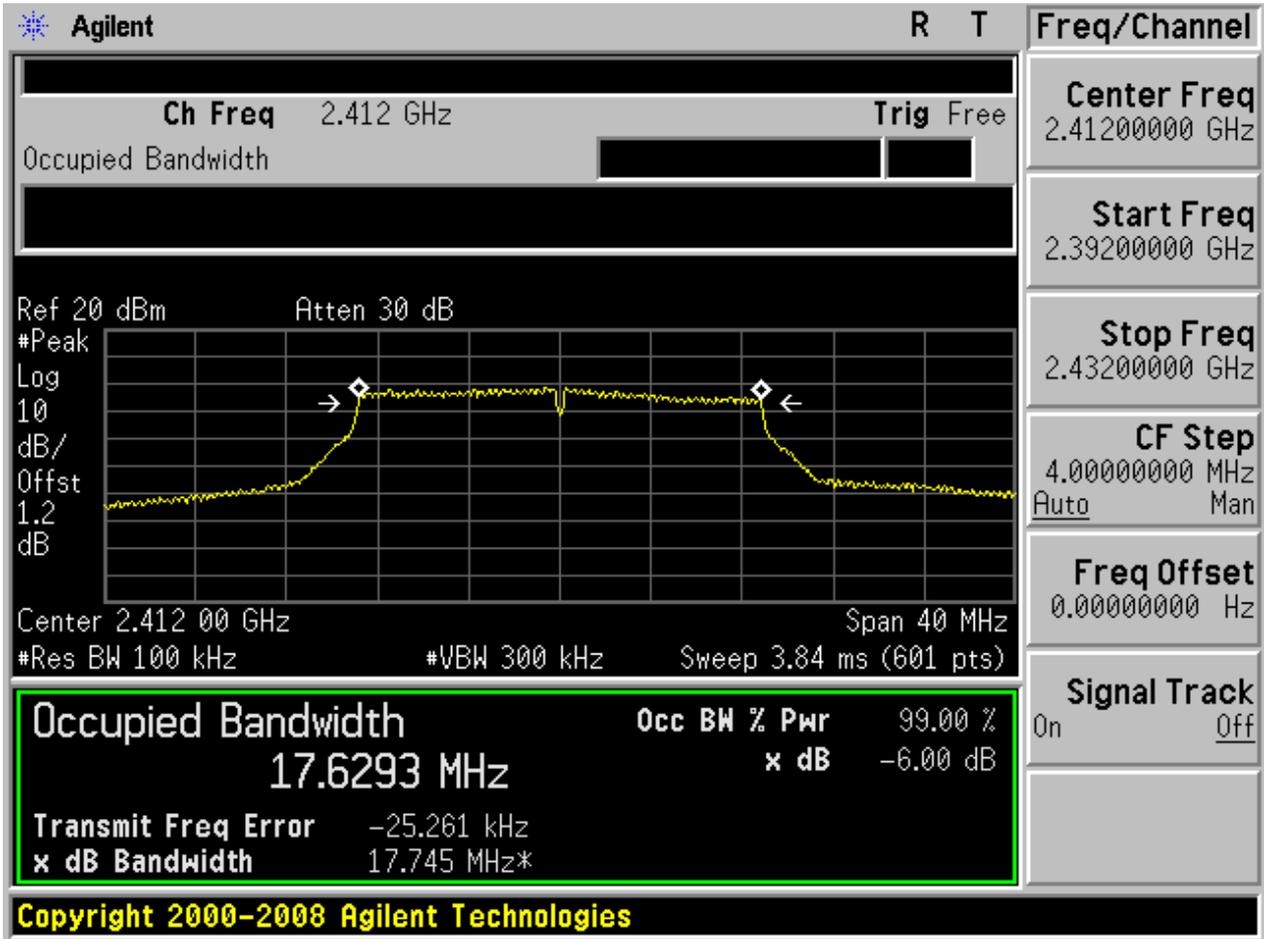


2.6 11G\_H@Ant 1



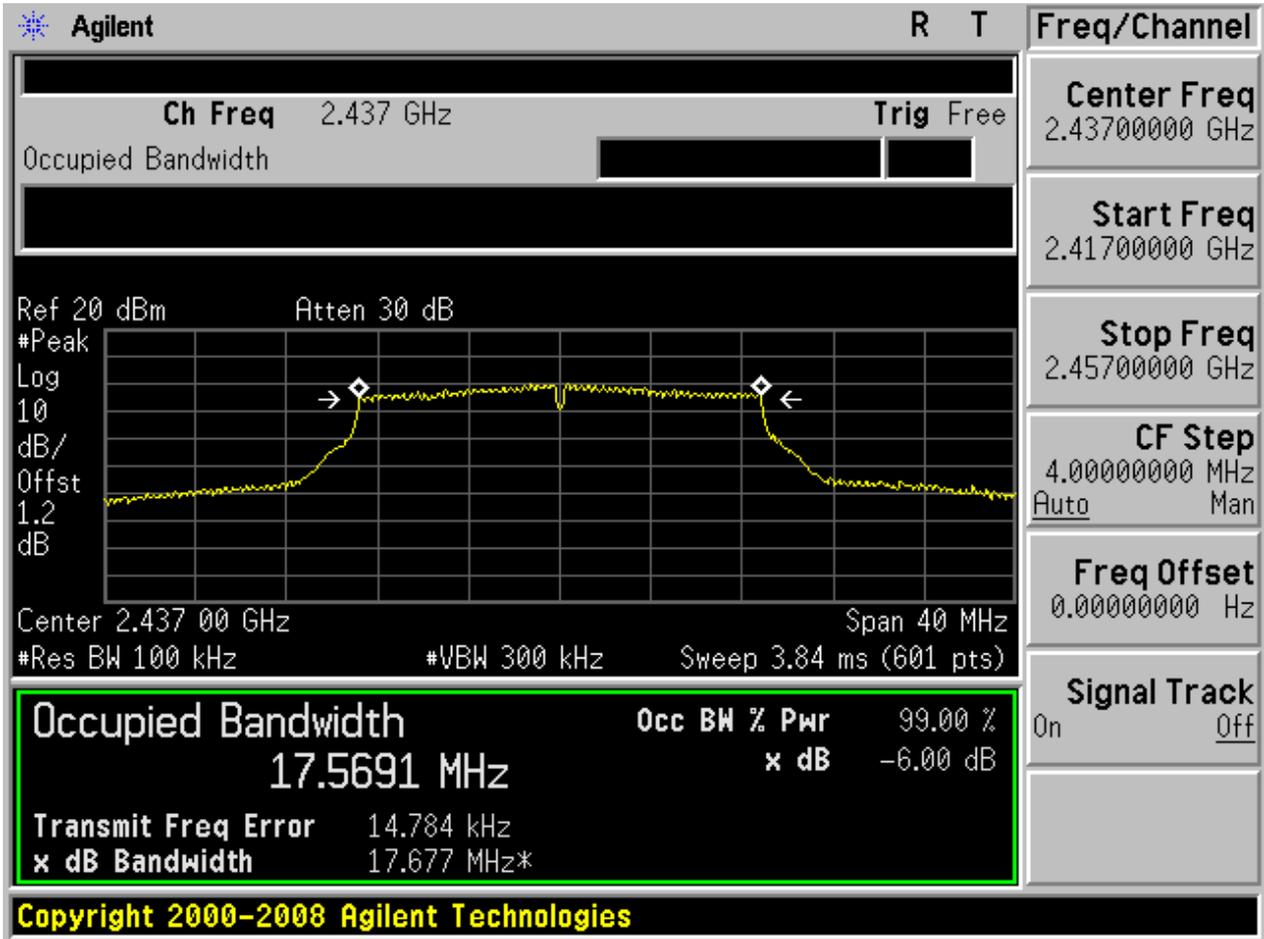


2.7 11N20\_L@Ant 1



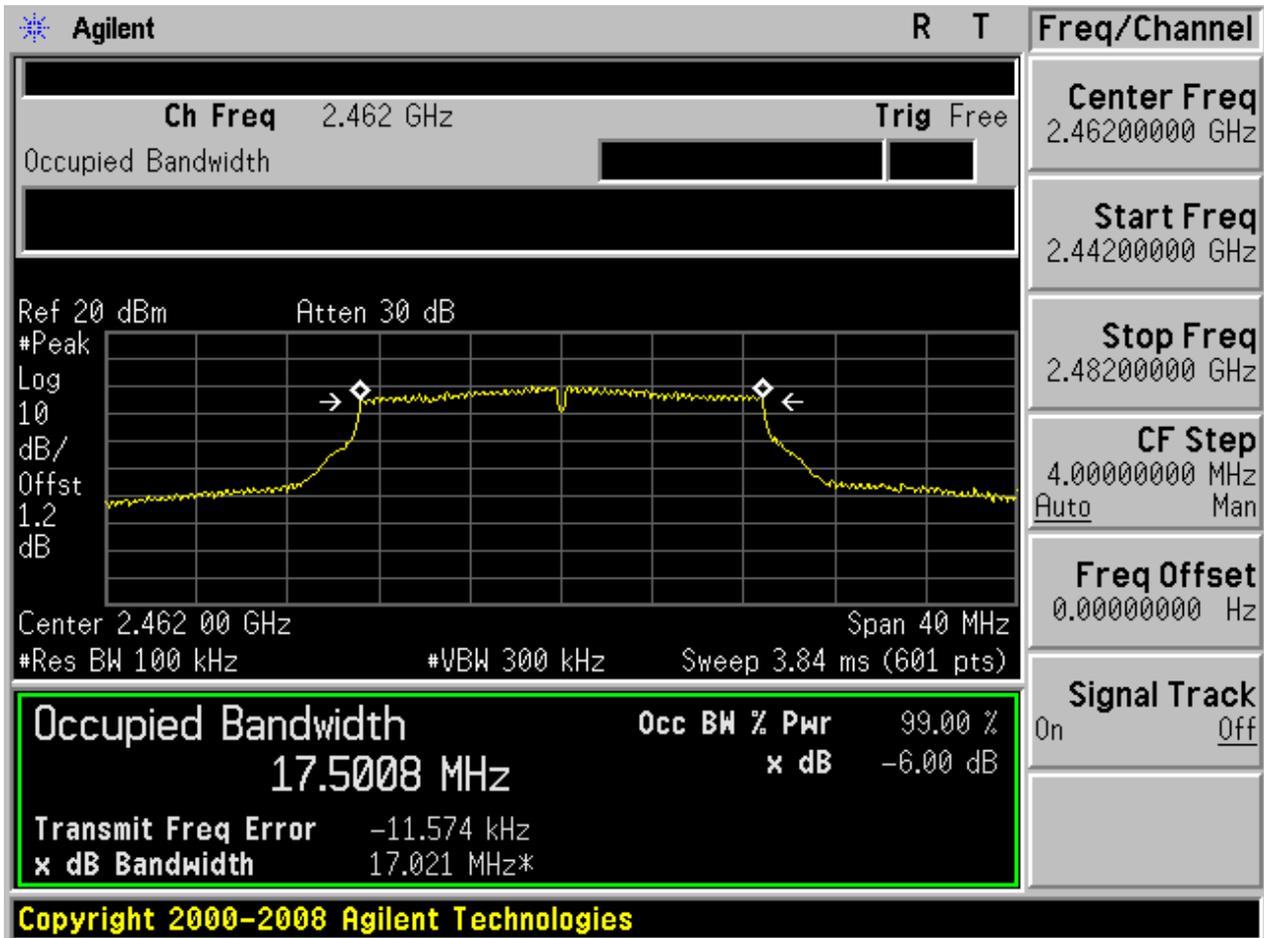


2.8 11N20\_M@Ant 1



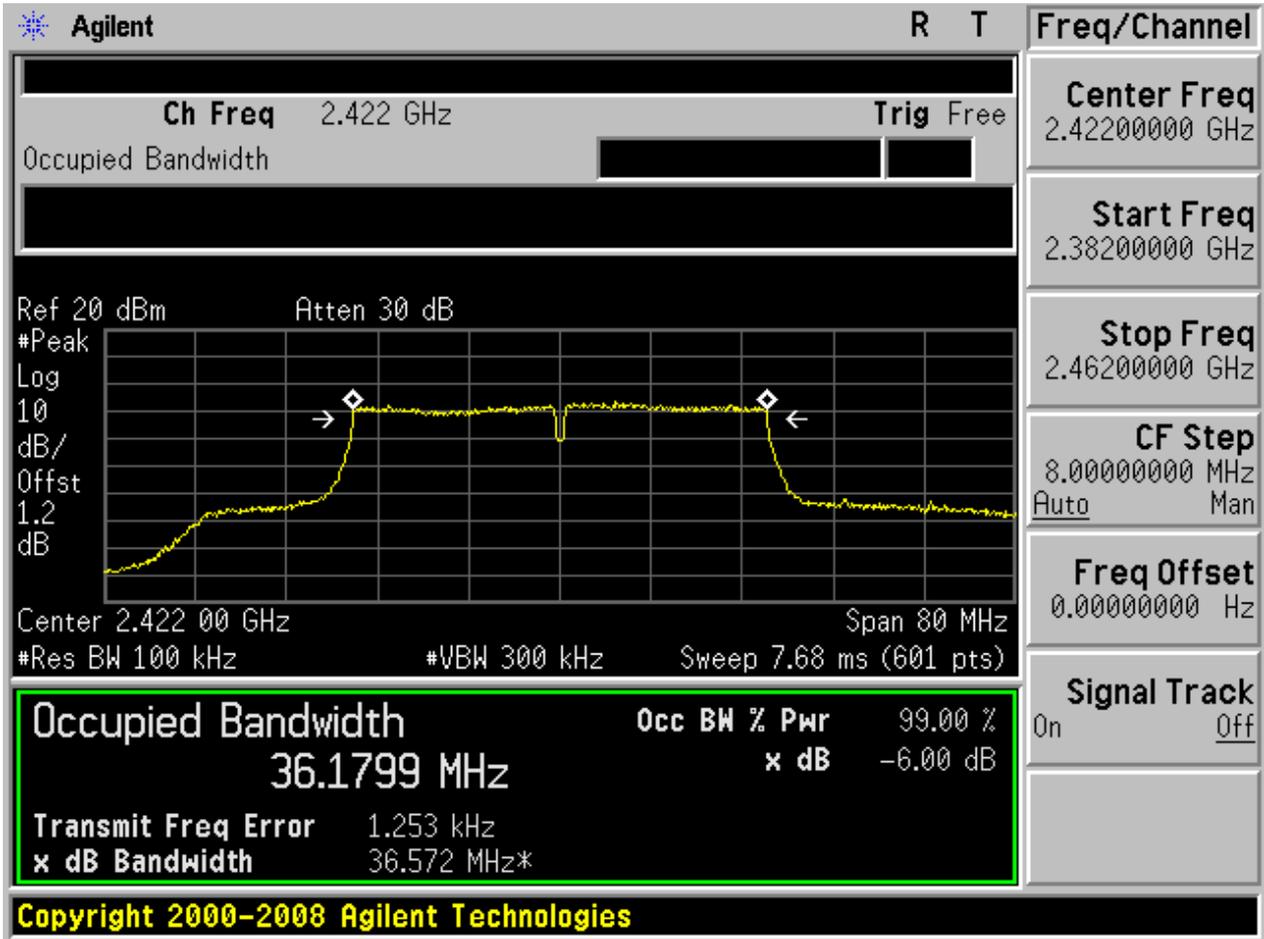


2.9 11N20\_H@Ant 1



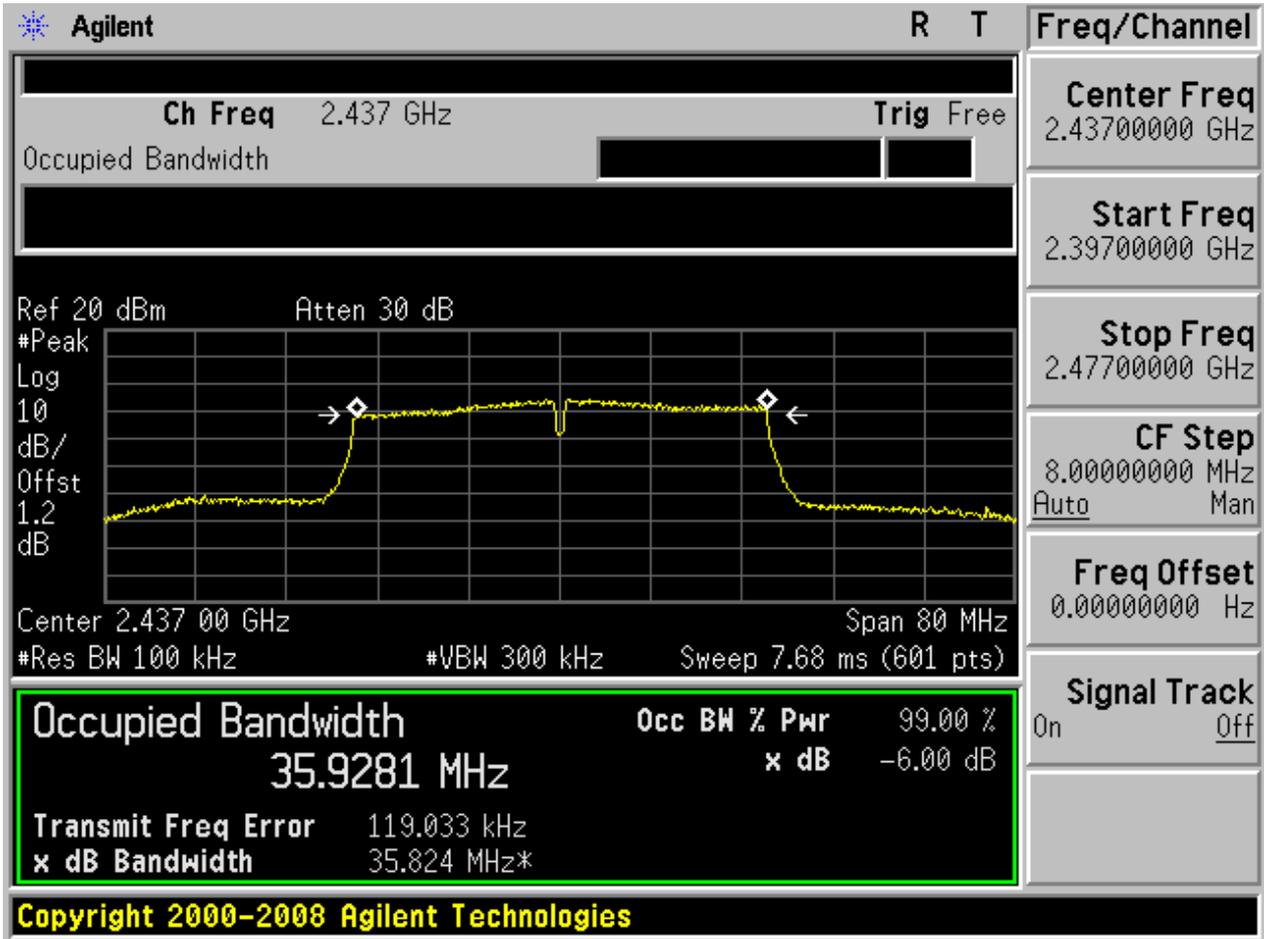


2.10 11N40\_L@Ant 1



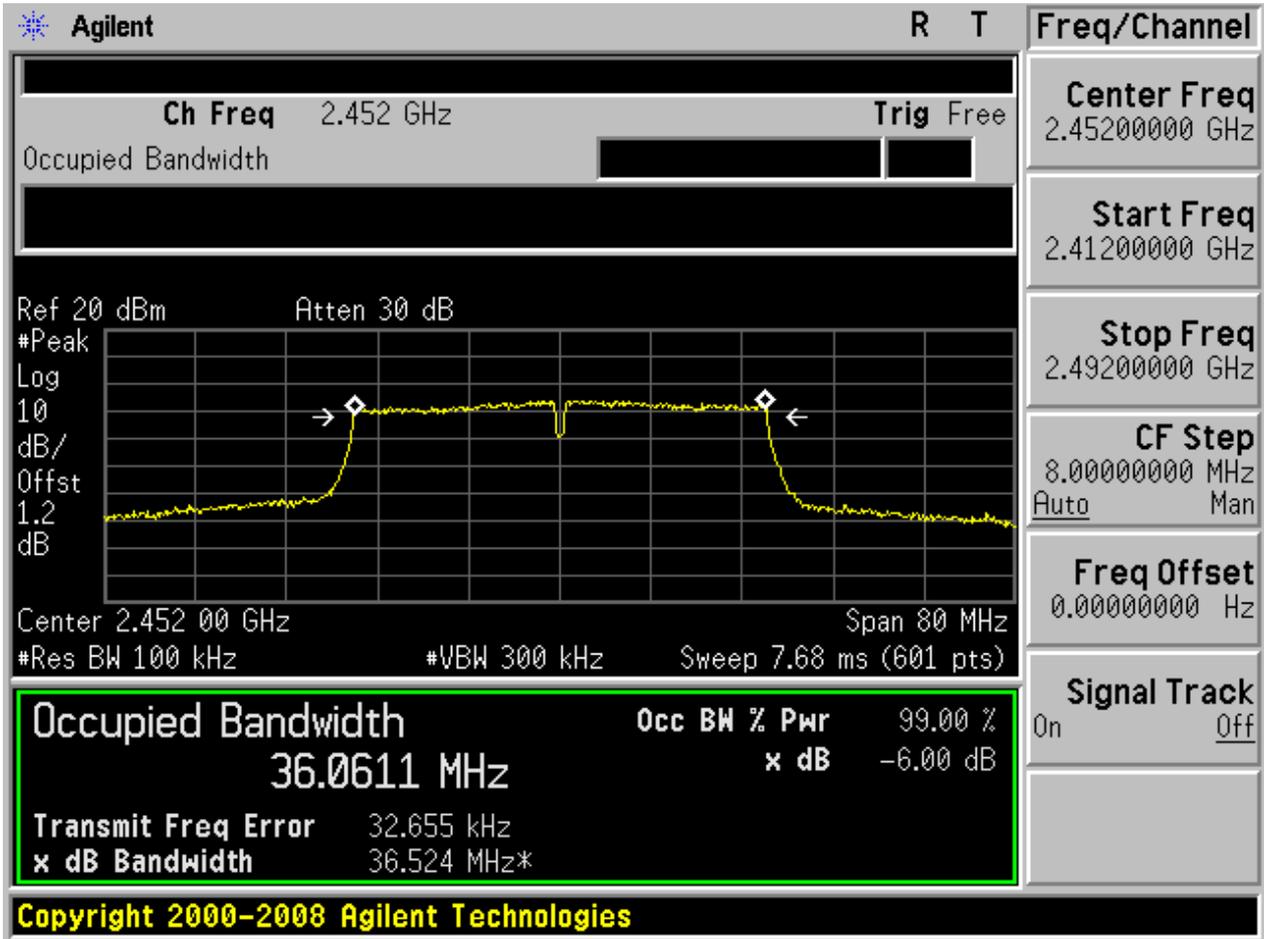


2.11 11N40\_M@Ant 1





2.12 11N40\_H@Ant 1





## Appendix B: Occupied Bandwidth

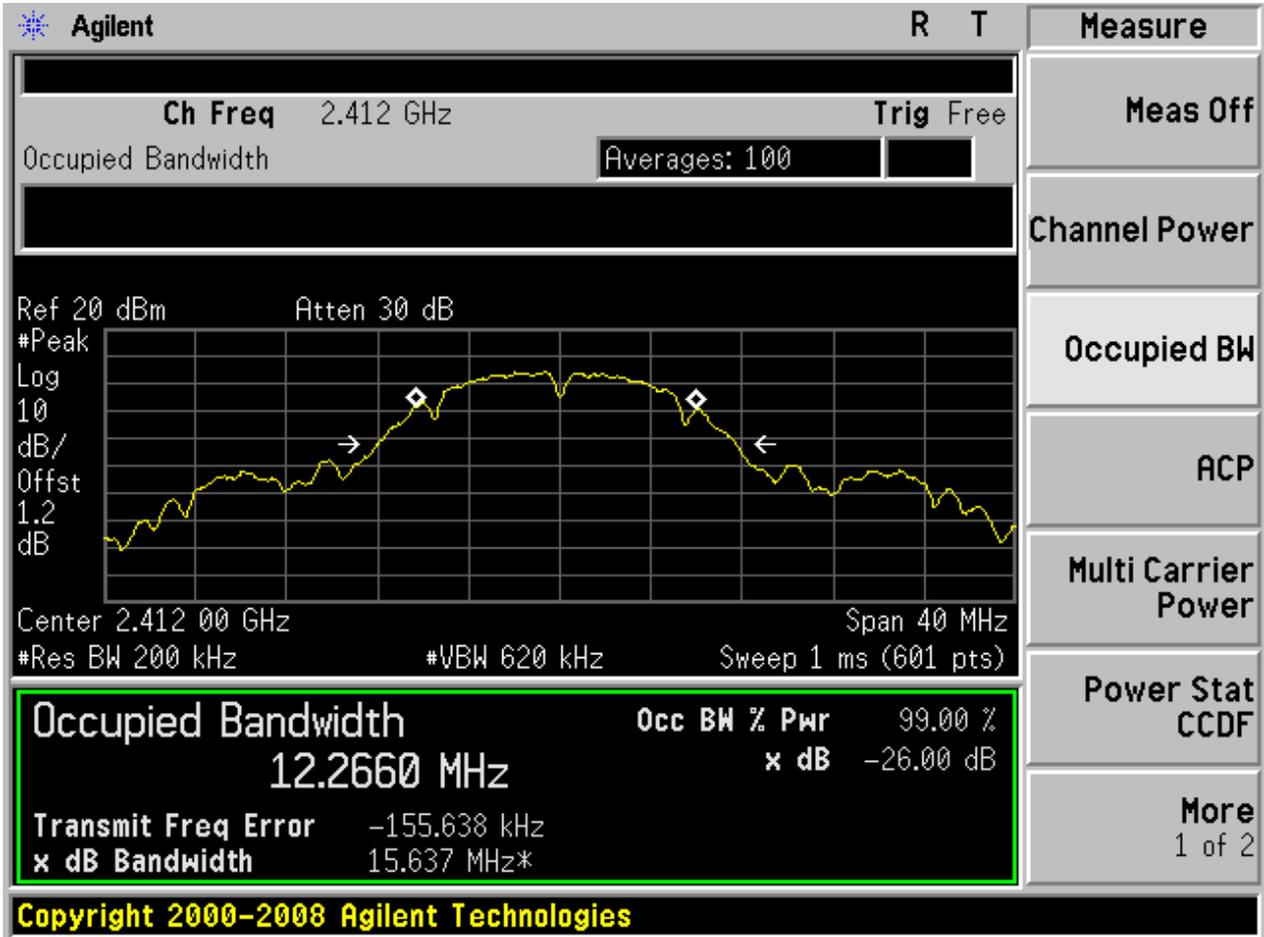
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	12.27	pass
11B	M	2437	Ant 1	12.11	pass
11B	H	2462	Ant 1	12.06	pass
11G	L	2412	Ant 1	16.50	pass
11G	M	2437	Ant 1	16.45	pass
11G	H	2462	Ant 1	16.48	pass
11N20	L	2412	Ant 1	17.64	pass
11N20	M	2437	Ant 1	17.60	pass
11N20	H	2462	Ant 1	17.63	pass
11N40	L	2422	Ant 1	36.14	pass
11N40	M	2437	Ant 1	35.89	pass
11N40	H	2452	Ant 1	36.06	pass

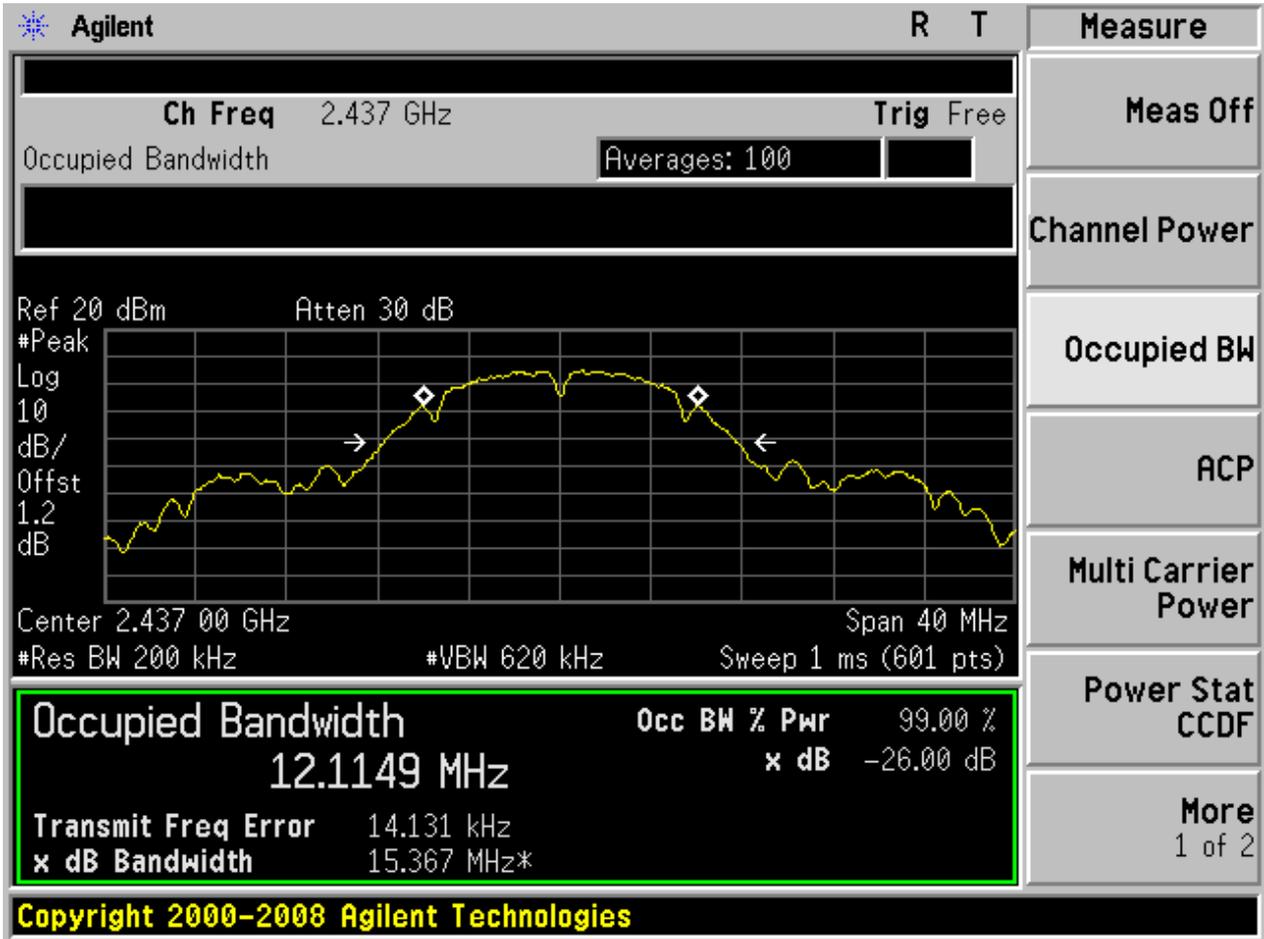
Part II - Test Plots

2.1 11B\_L@Ant 1



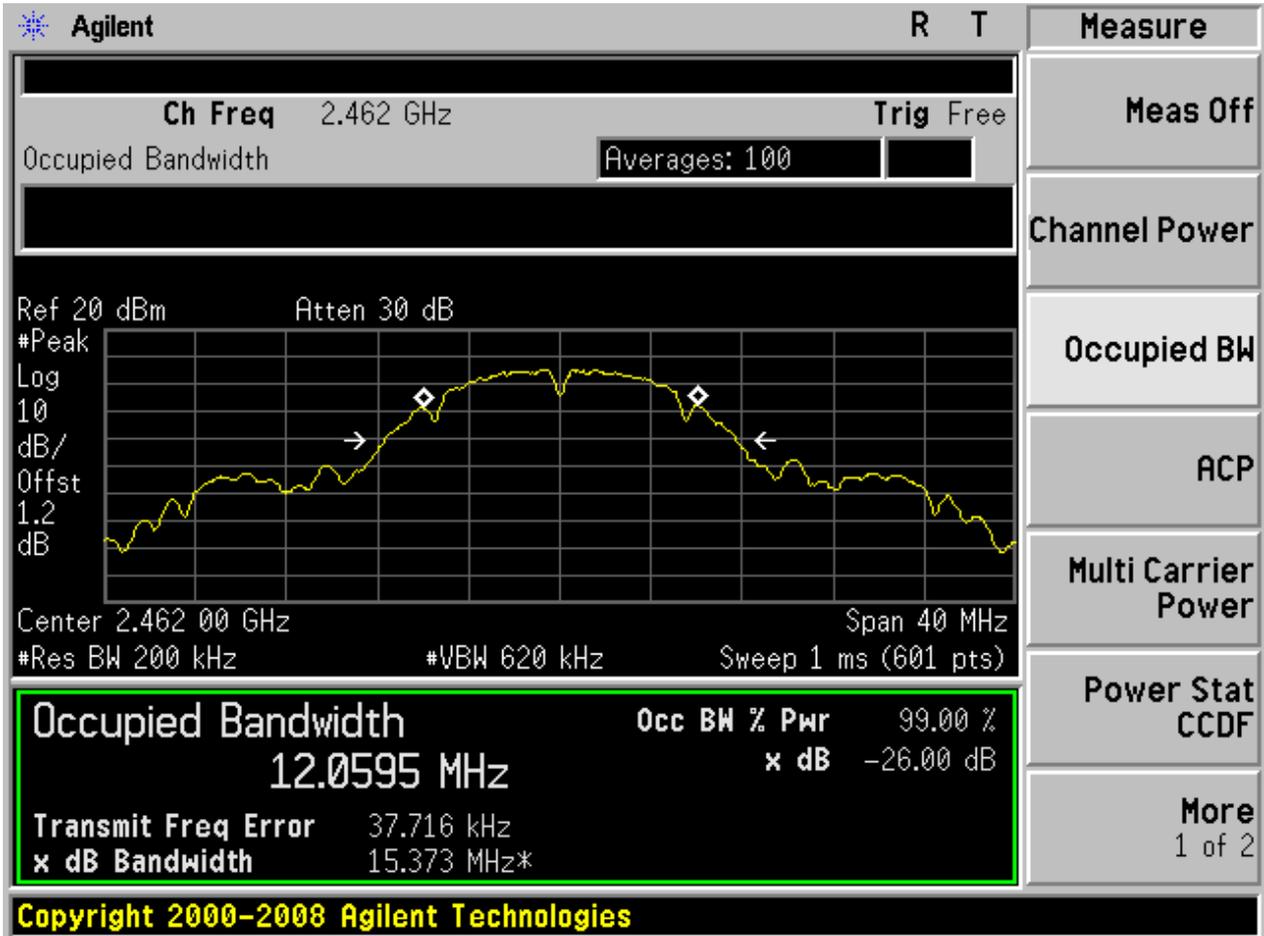


2.2 11B\_M@Ant 1

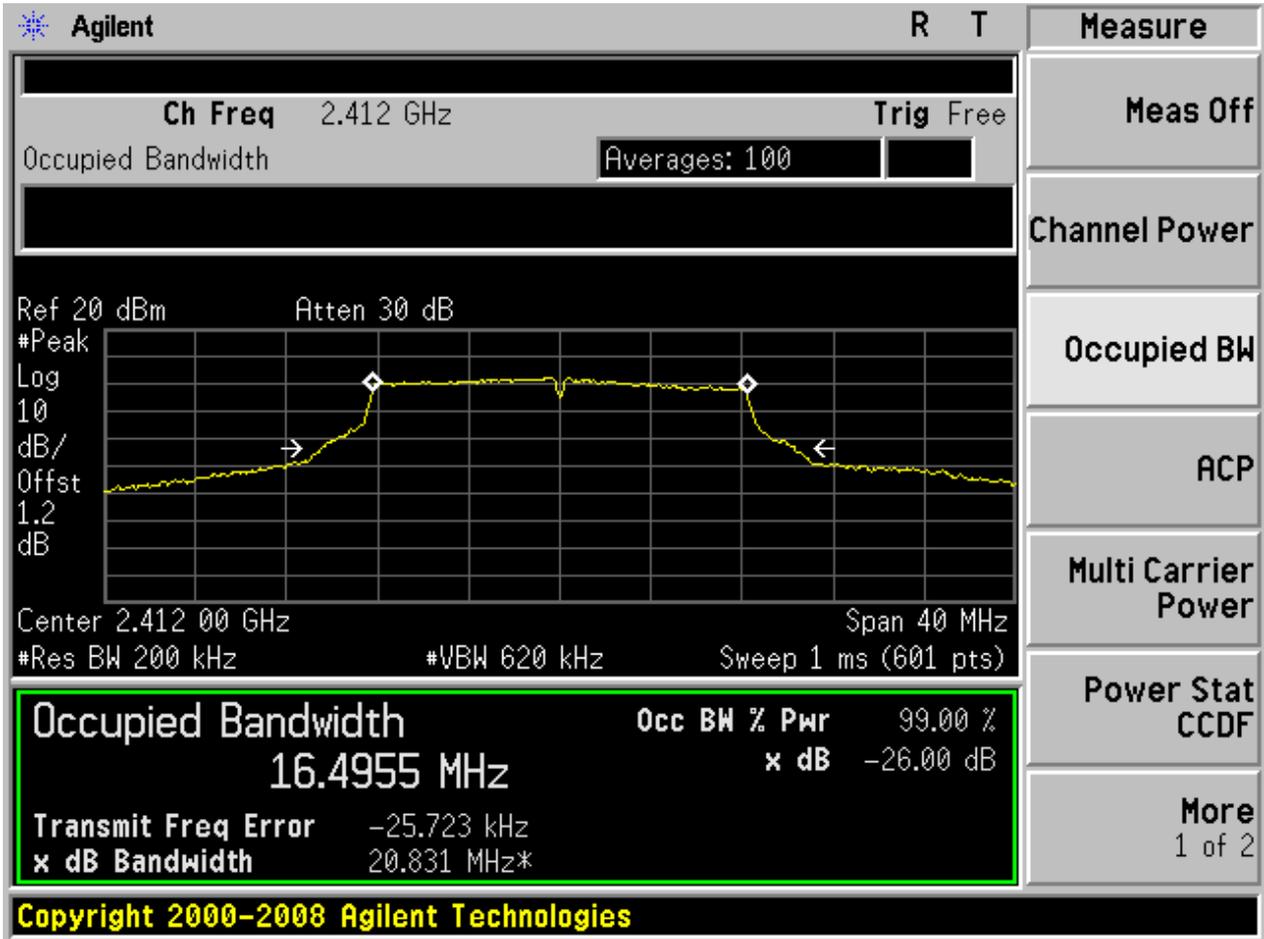




2.3 11B\_H@Ant 1

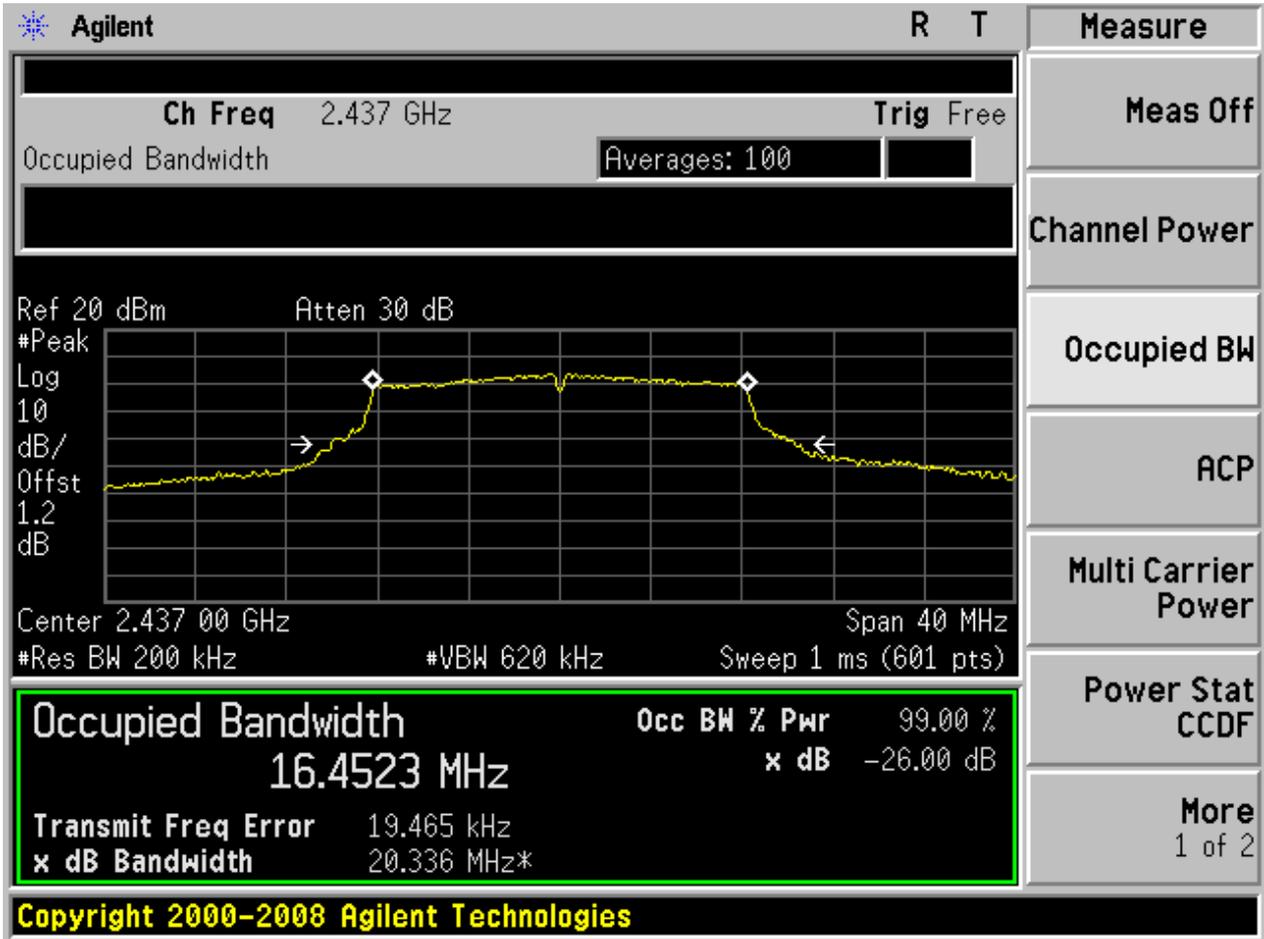


2.4 11G\_L@Ant 1



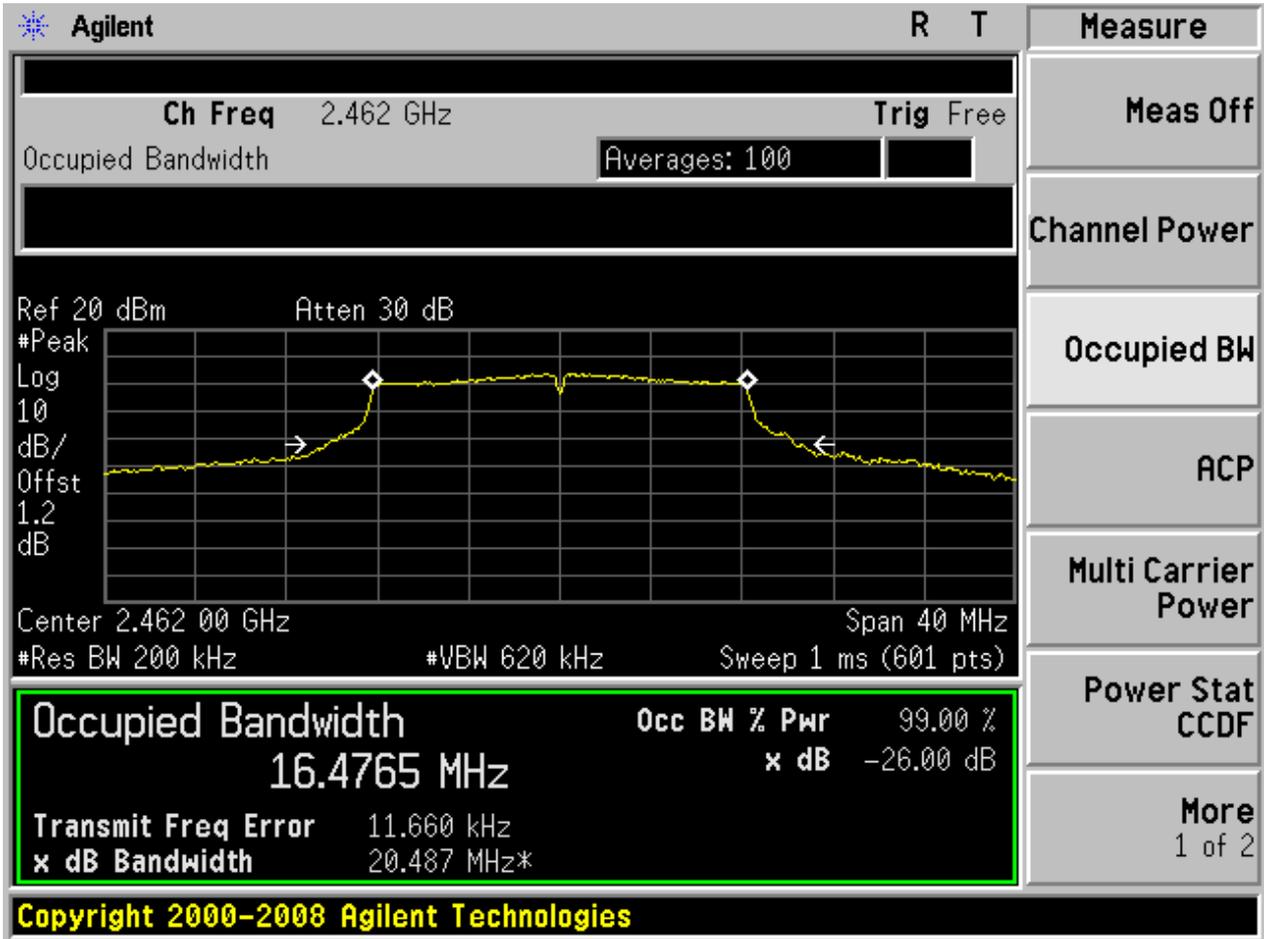


2.5 11G\_M@Ant 1



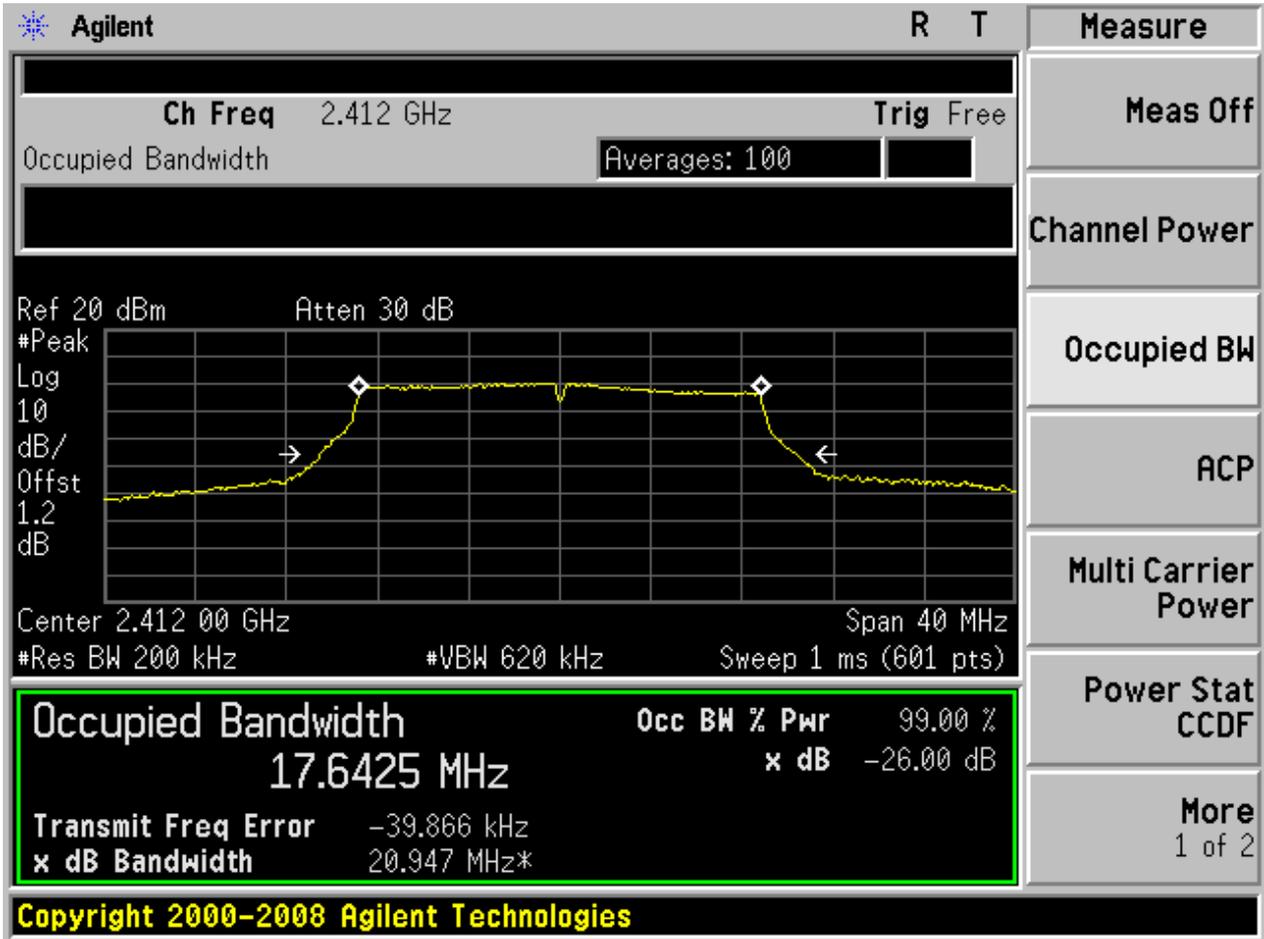


2.6 11G\_H@Ant 1



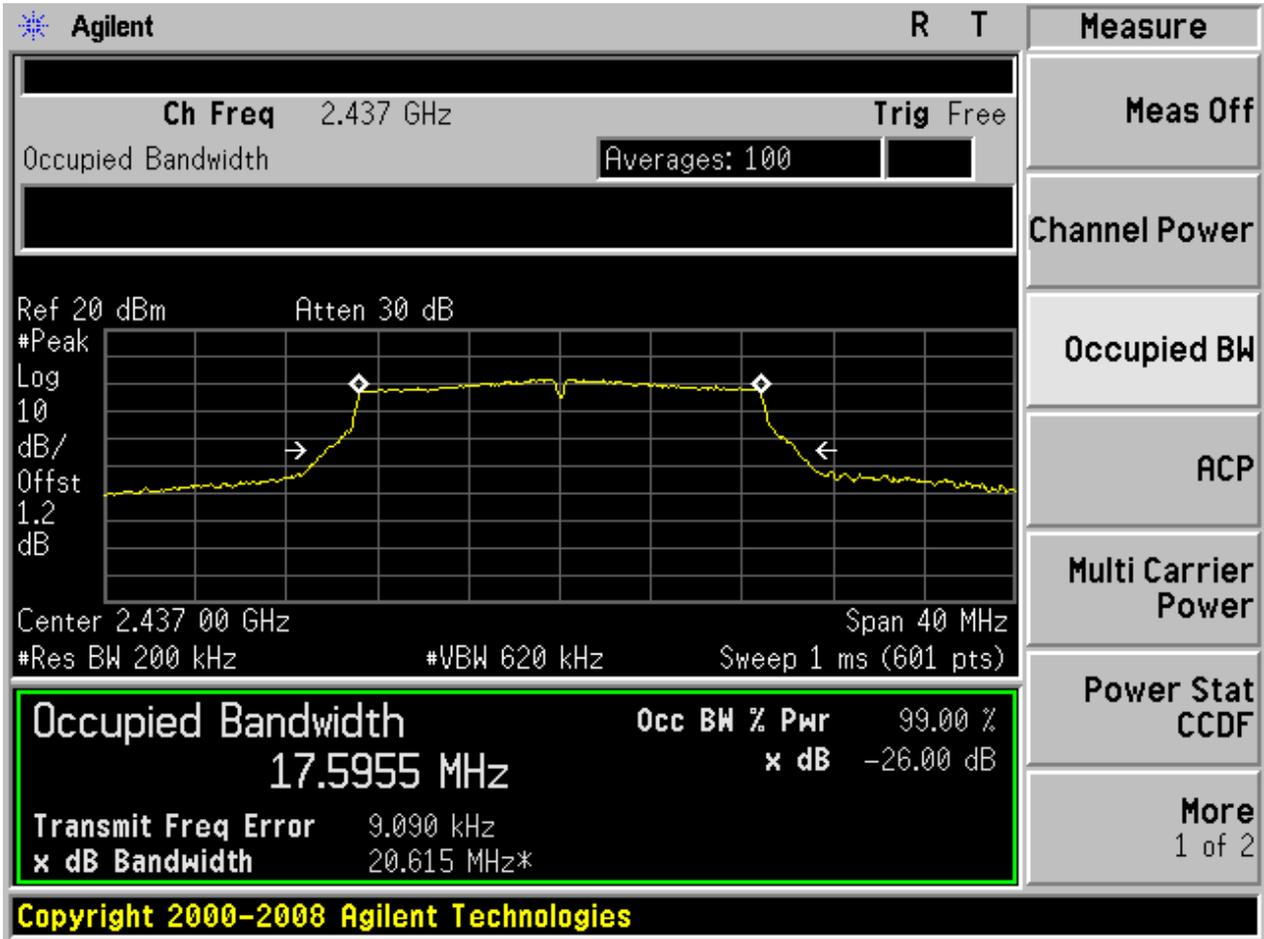


2.7 11N20\_L@Ant 1



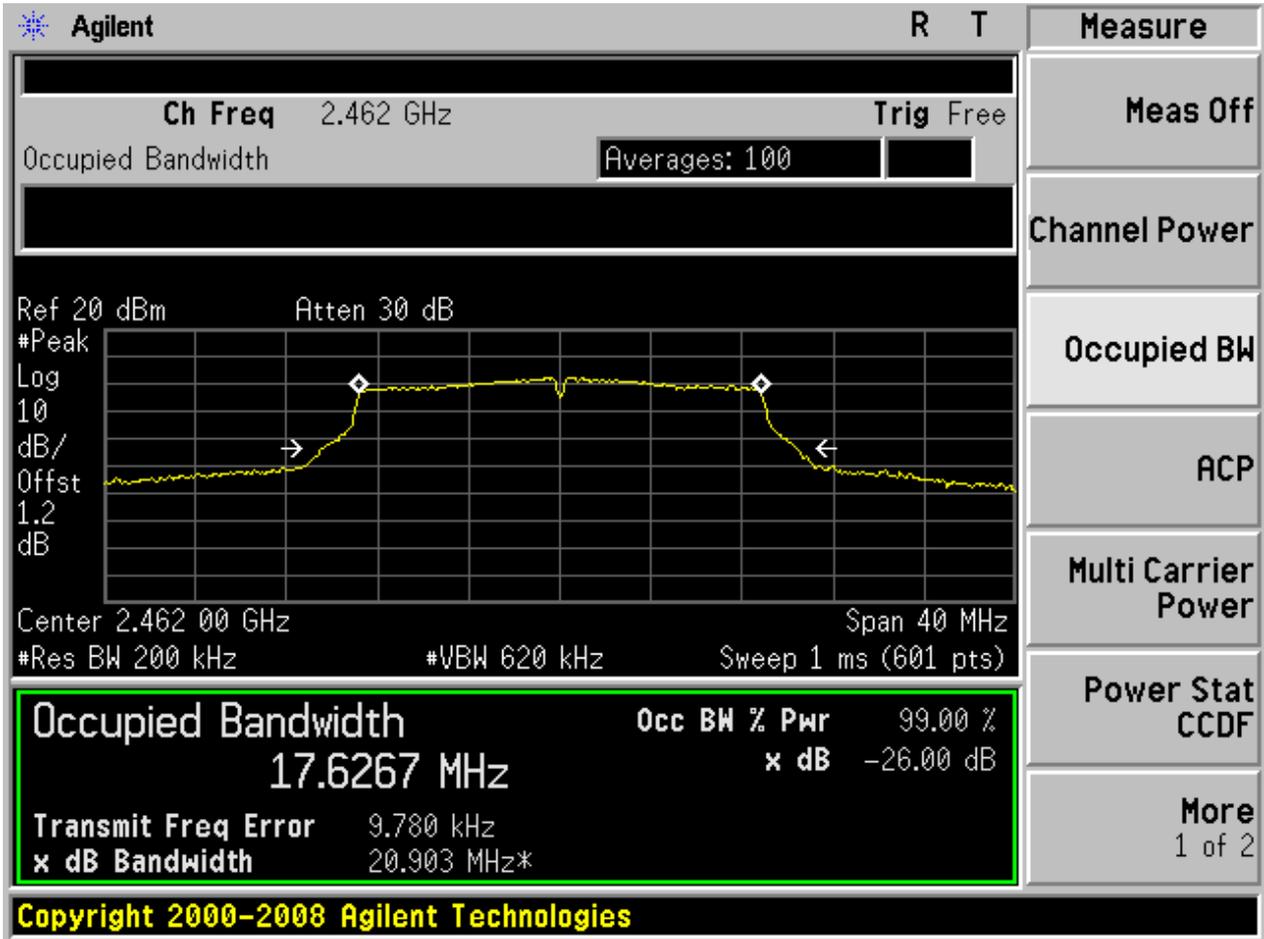


2.8 11N20\_M@Ant 1



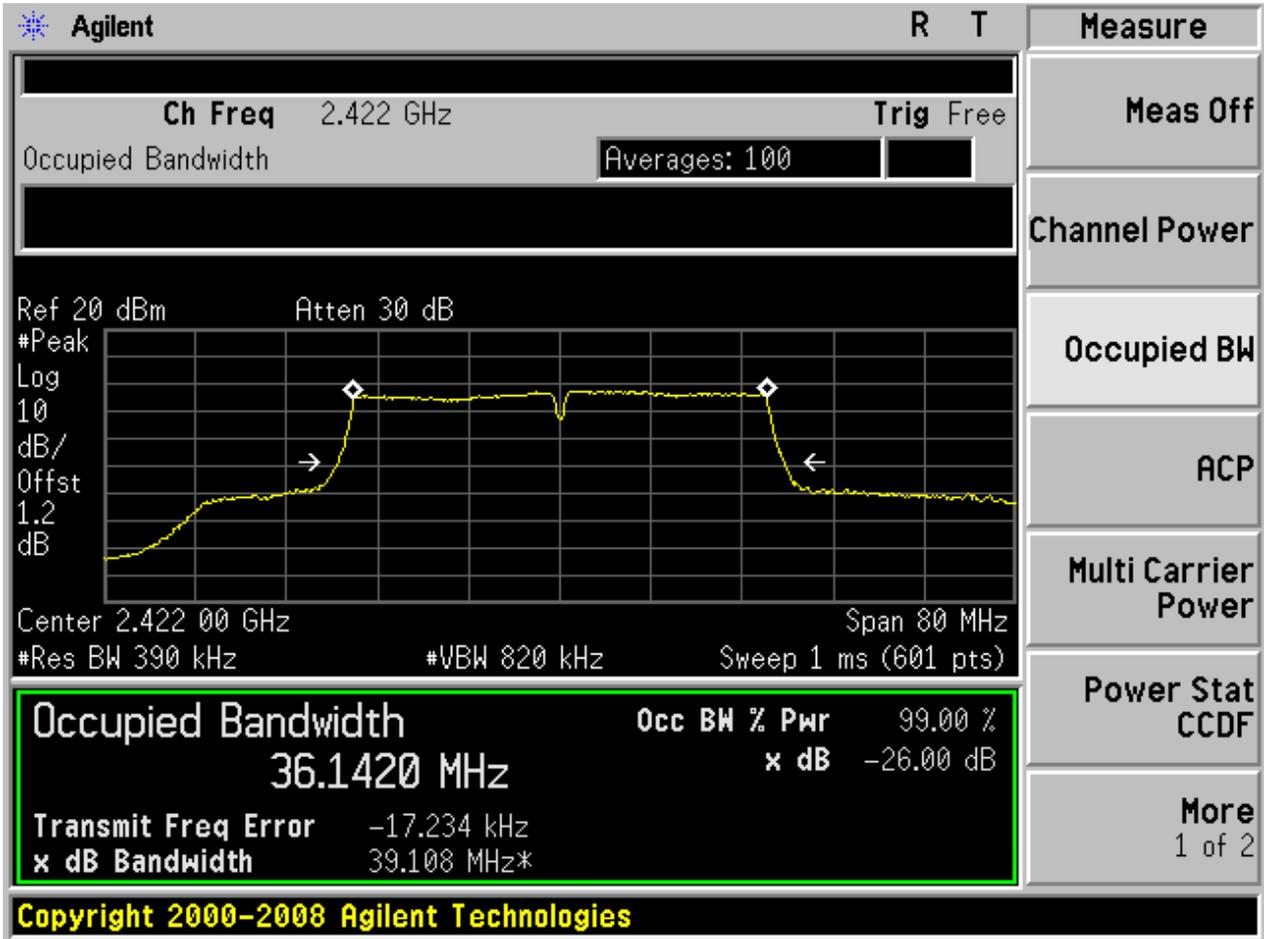


2.9 11N20\_H@Ant 1



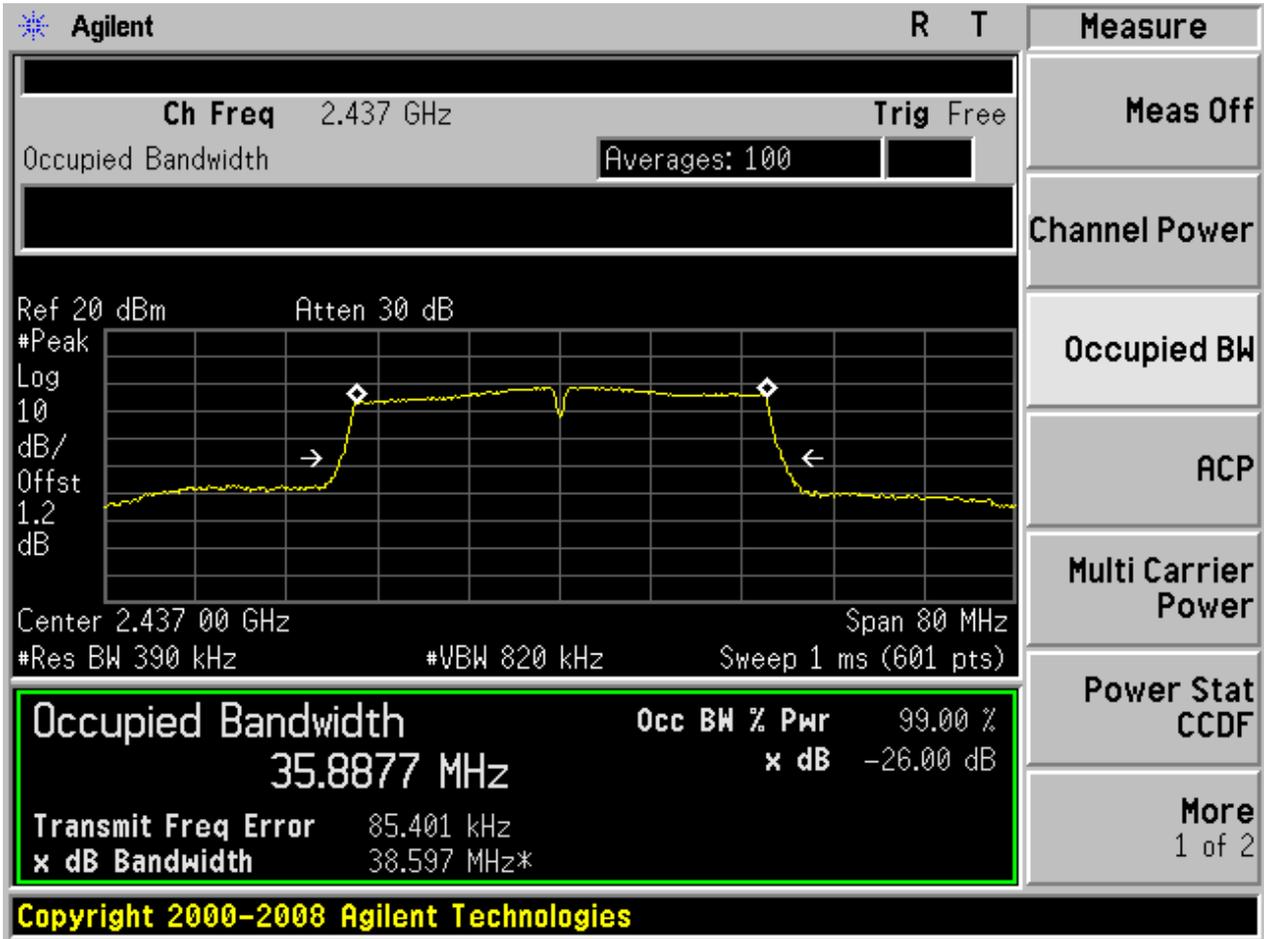


2.10 11N40\_L@Ant 1



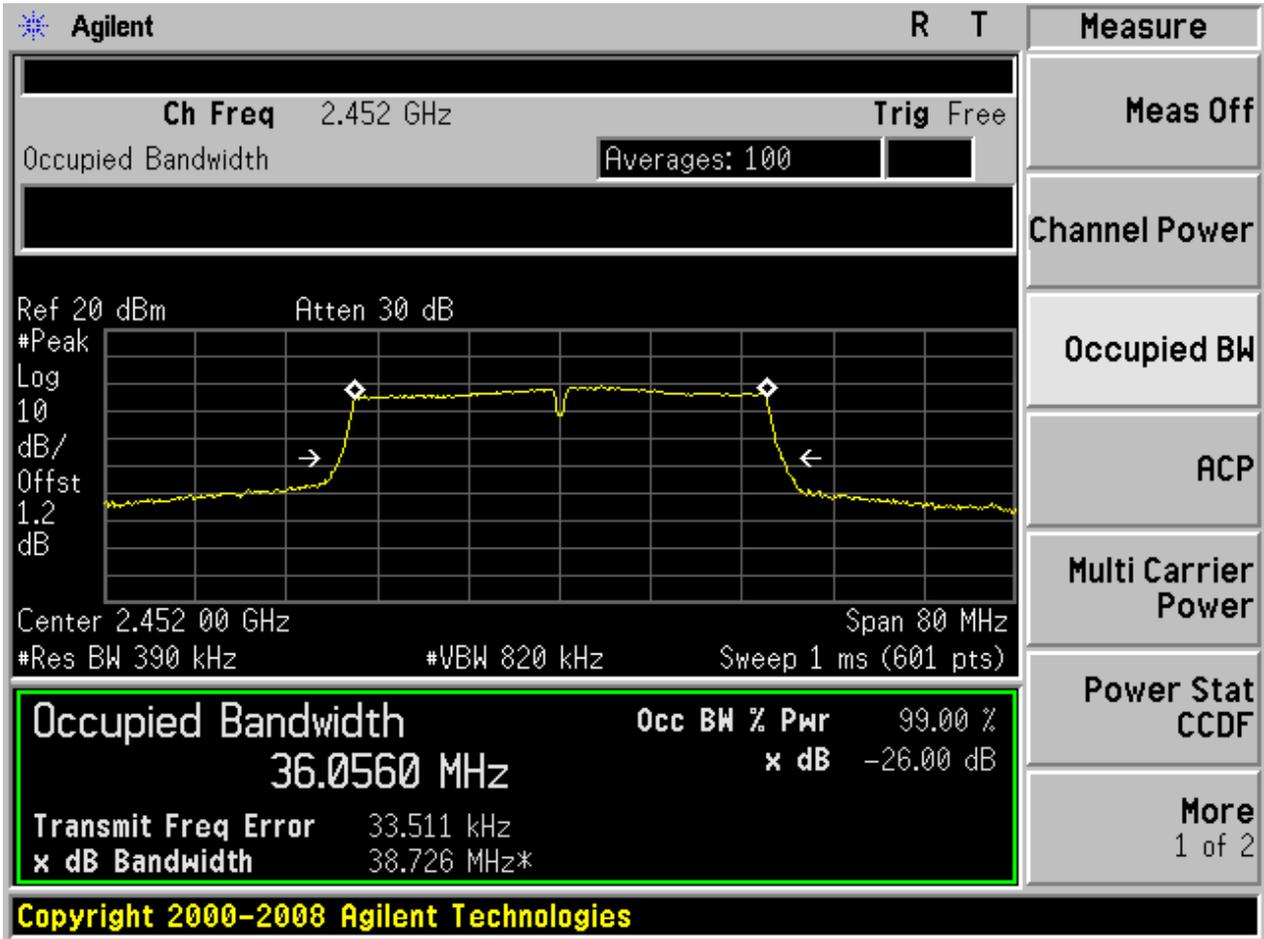


2.11 11N40\_M@Ant 1





2.12 11N40\_H@Ant 1





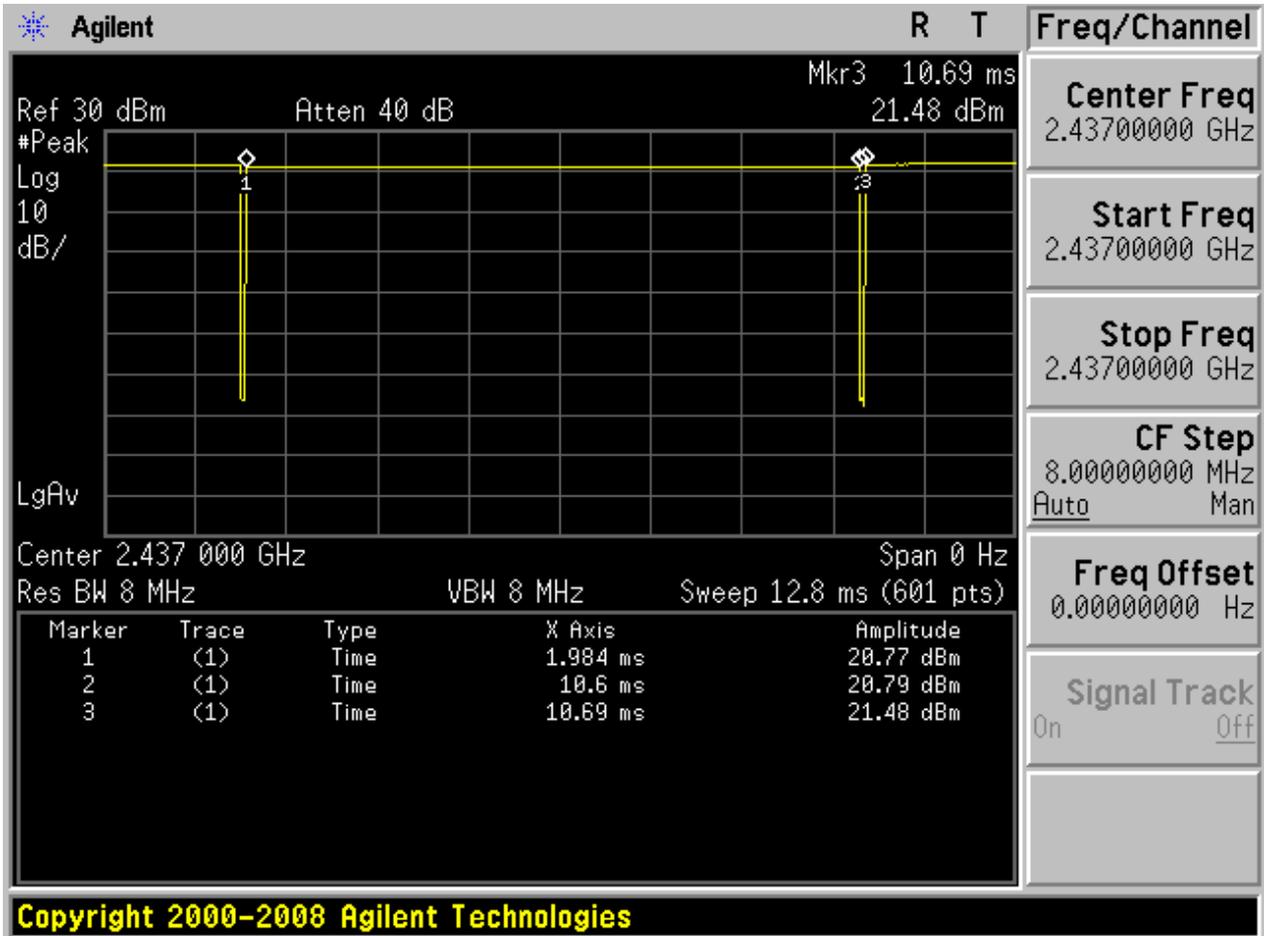
## Appendix C: Duty cycle

### Part I - Test Results

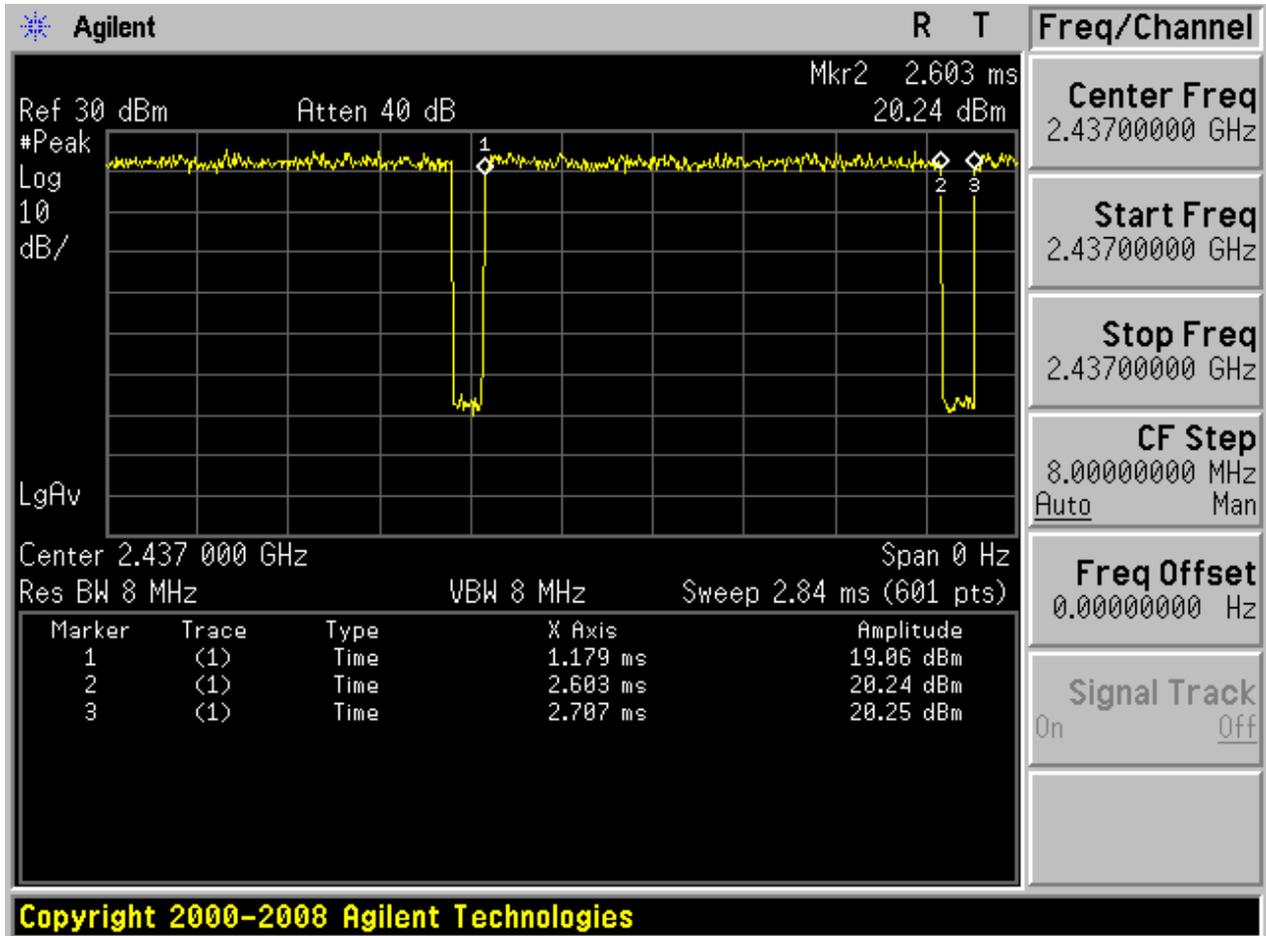
Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6,CH11	Ant 1	98.9
11G	CH1,CH6,CH11	Ant 1	93.2
11N20SISO	CH1,CH6,CH11	Ant 1	92.8
11N40SISO	CH3,CH6,CH9	Ant 1	86

**Part II - Test Plots**

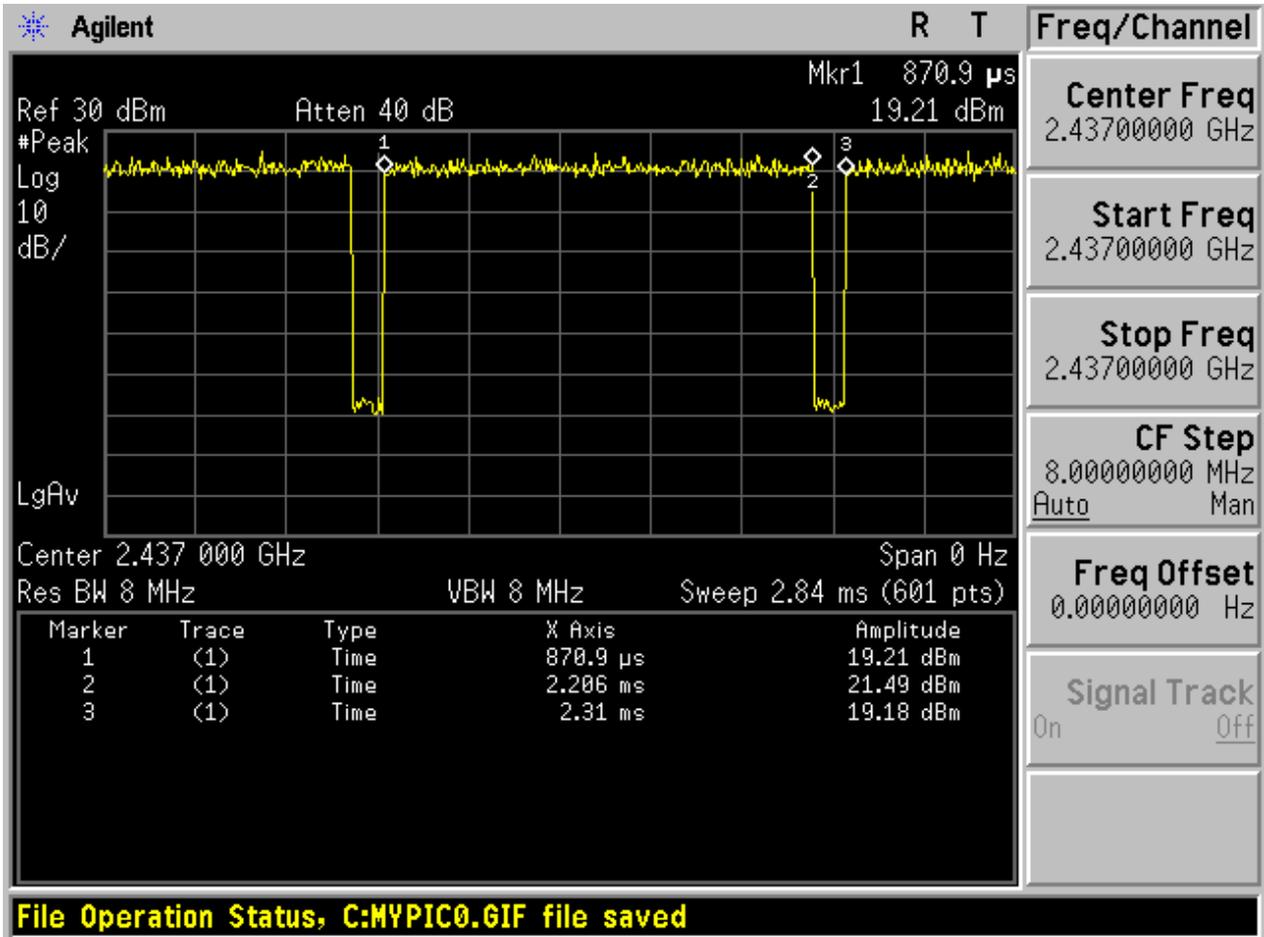
**2.1 11B\_M@Ant 1**



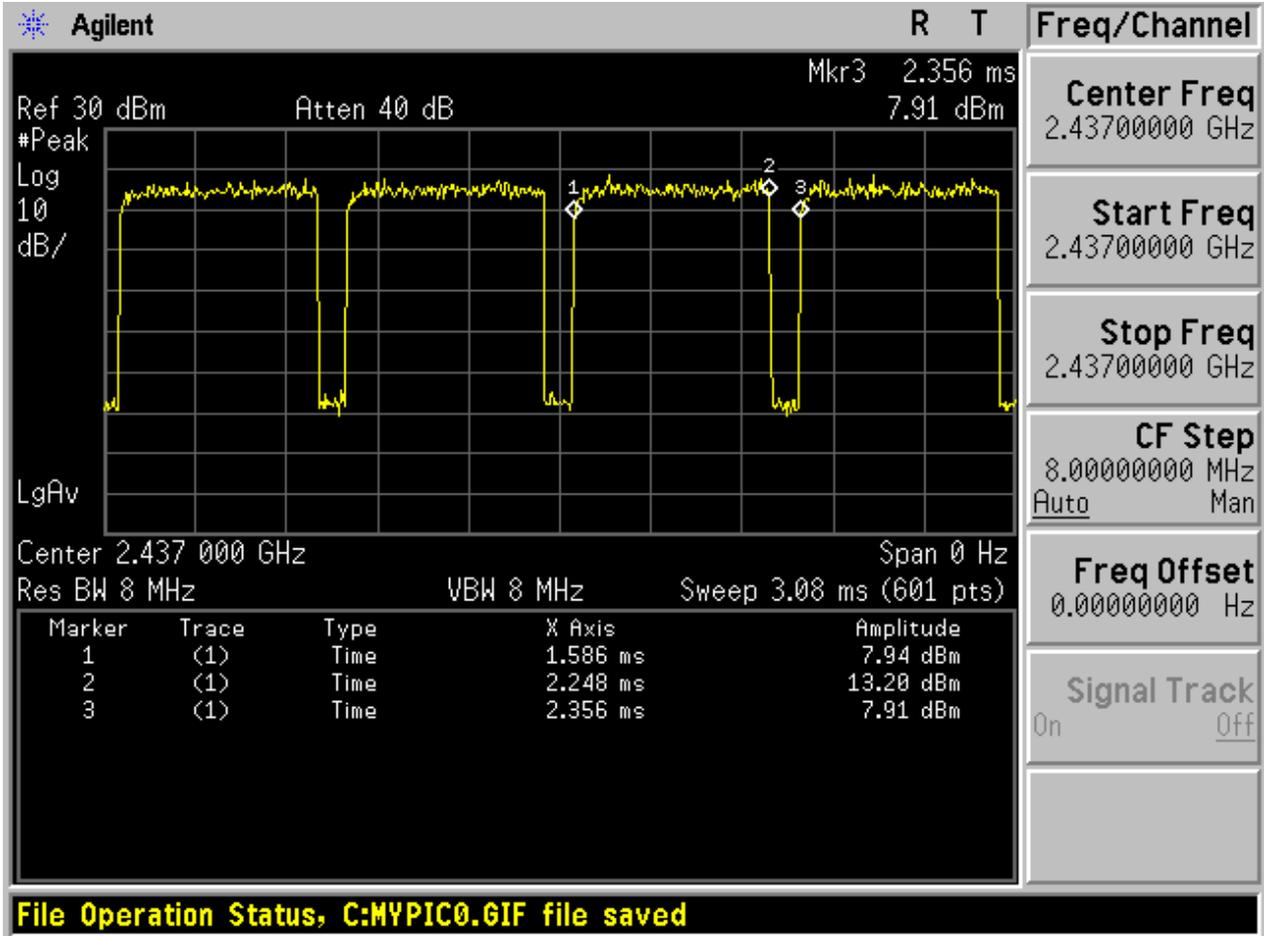
2.1 11G\_M@Ant 1



2.1 11N20SISO\_M@Ant 1



2.1 1140SISO\_M@Ant 1





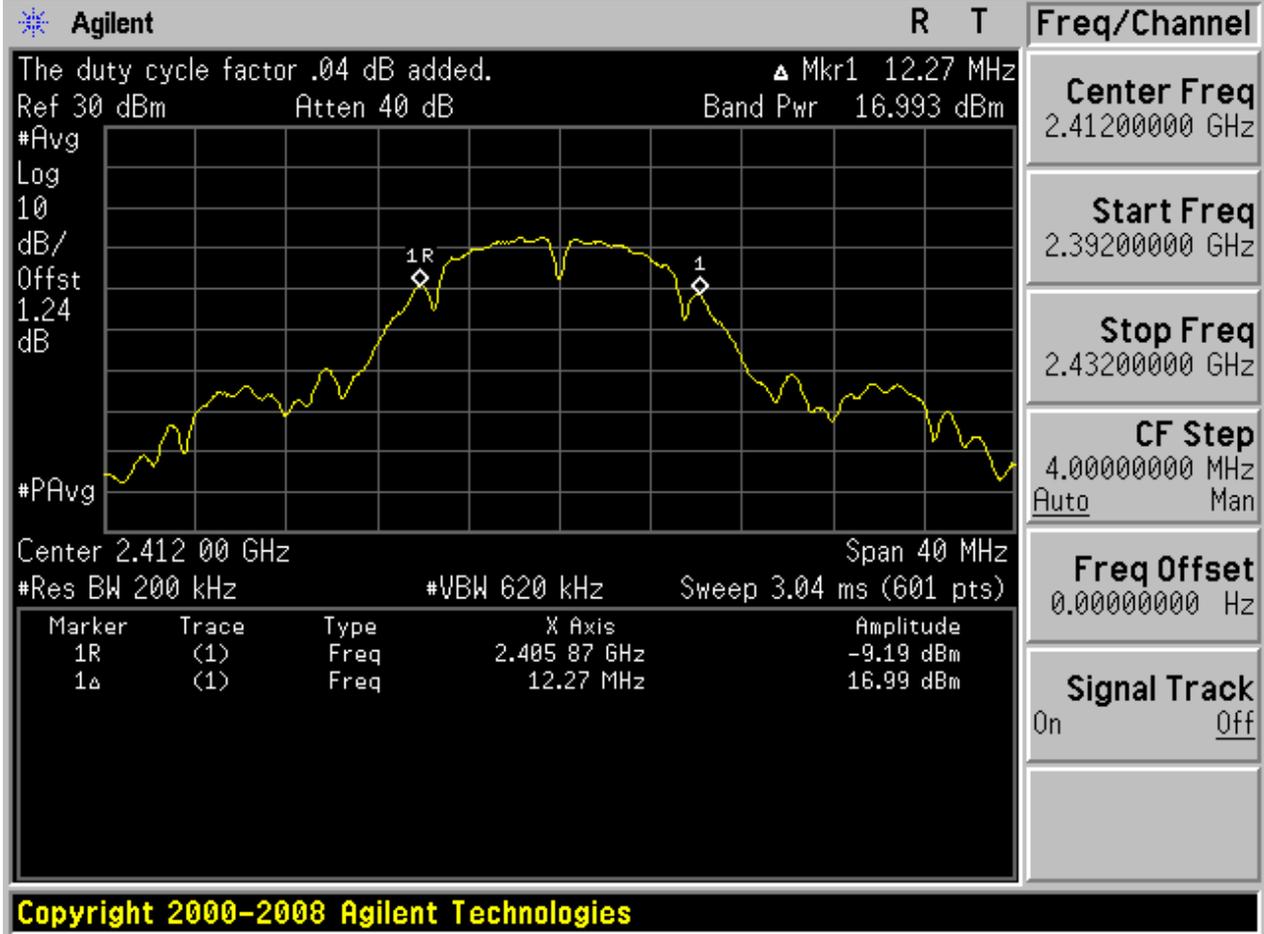
## Appendix D: Maximum Conducted Average Output Power

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	16.99	pass
11B	M	2437	Ant 1	17.73	pass
11B	H	2462	Ant 1	17.88	pass
11G	L	2412	Ant 1	17.77	pass
11G	M	2437	Ant 1	18.68	pass
11G	H	2462	Ant 1	19.12	pass
11N20	L	2412	Ant 1	16.32	pass
11N20	M	2437	Ant 1	17.15	pass
11N20	H	2462	Ant 1	17.64	pass
11N40	L	2422	Ant 1	13.52	pass
11N40	M	2437	Ant 1	14.12	pass
11N40	H	2452	Ant 1	14.40	pass

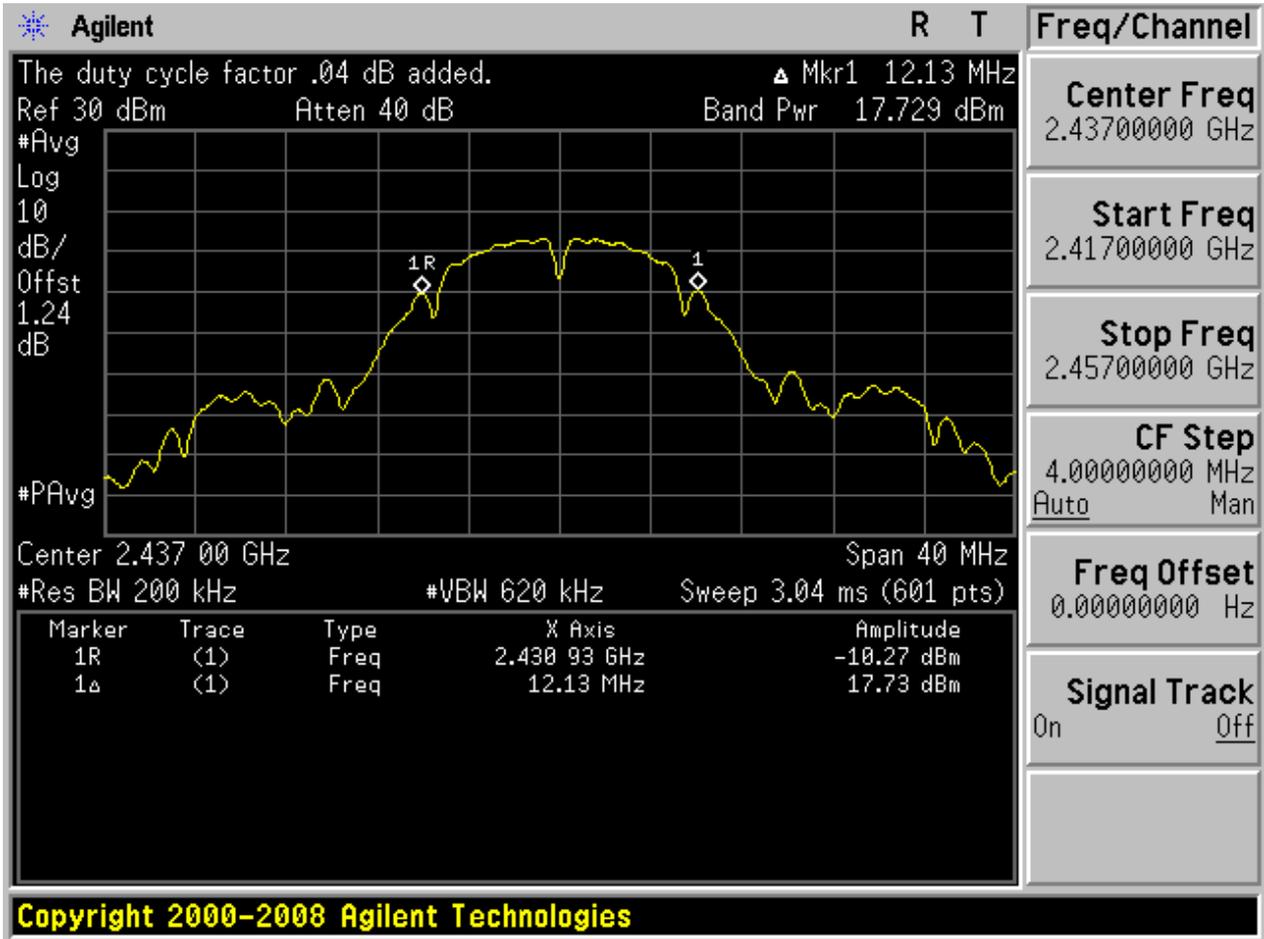
**Part II - Test Plots**

**2.1 11B\_L@Ant 1**



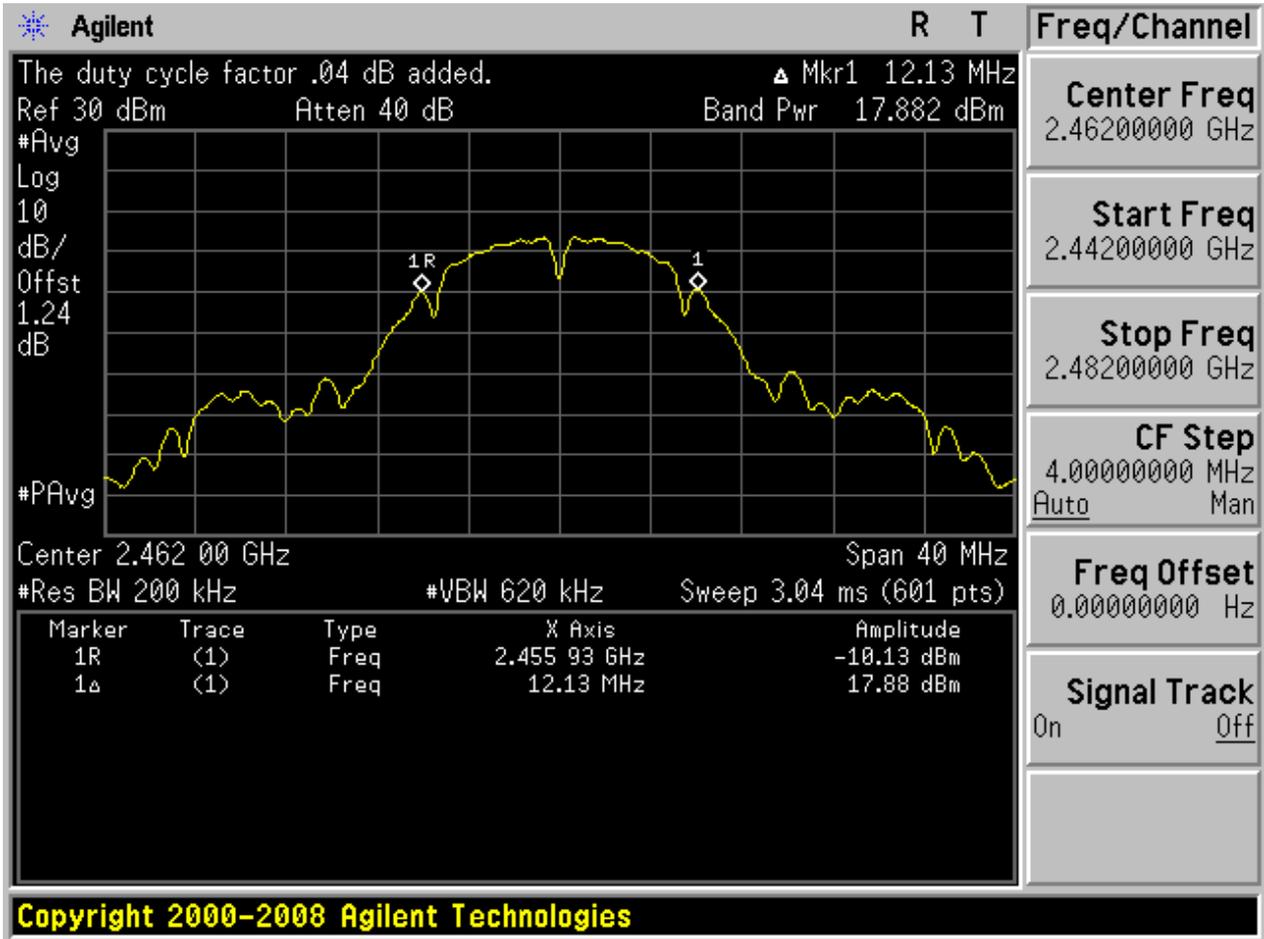


2.2 11B\_M@Ant 1





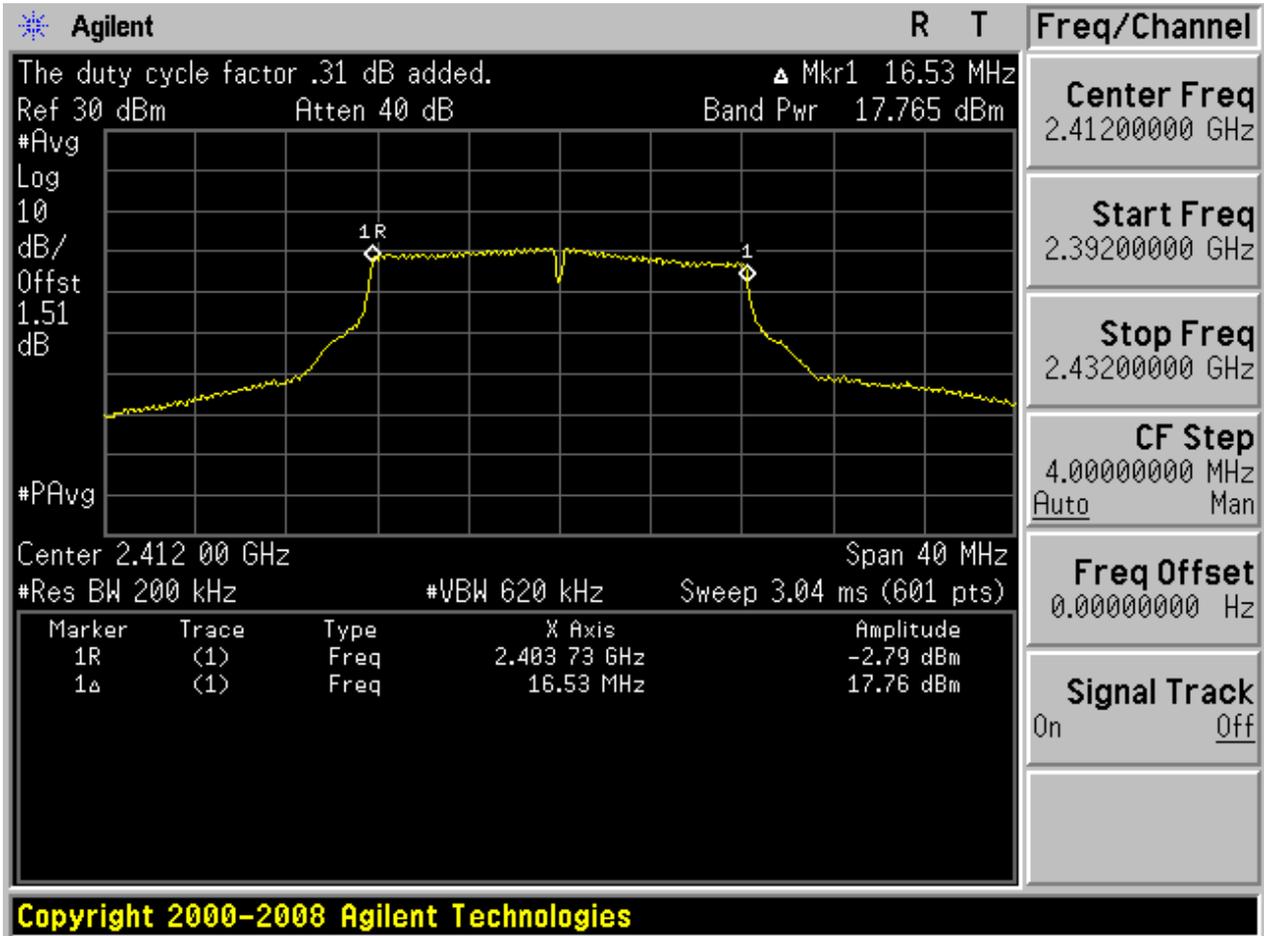
2.3 11B\_H@Ant 1



Copyright 2000-2008 Agilent Technologies



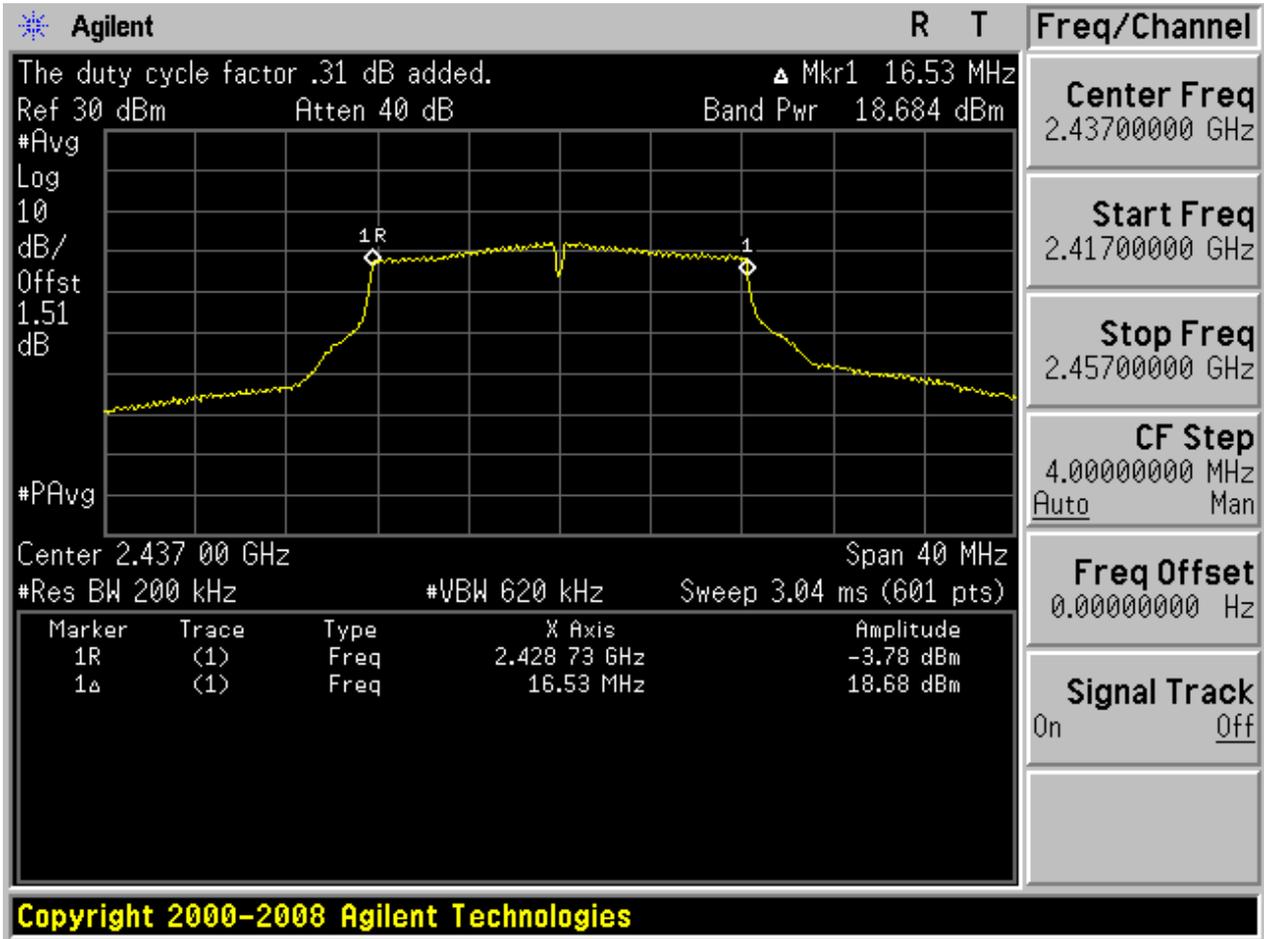
2.4 11G\_L@Ant 1



Copyright 2000-2008 Agilent Technologies

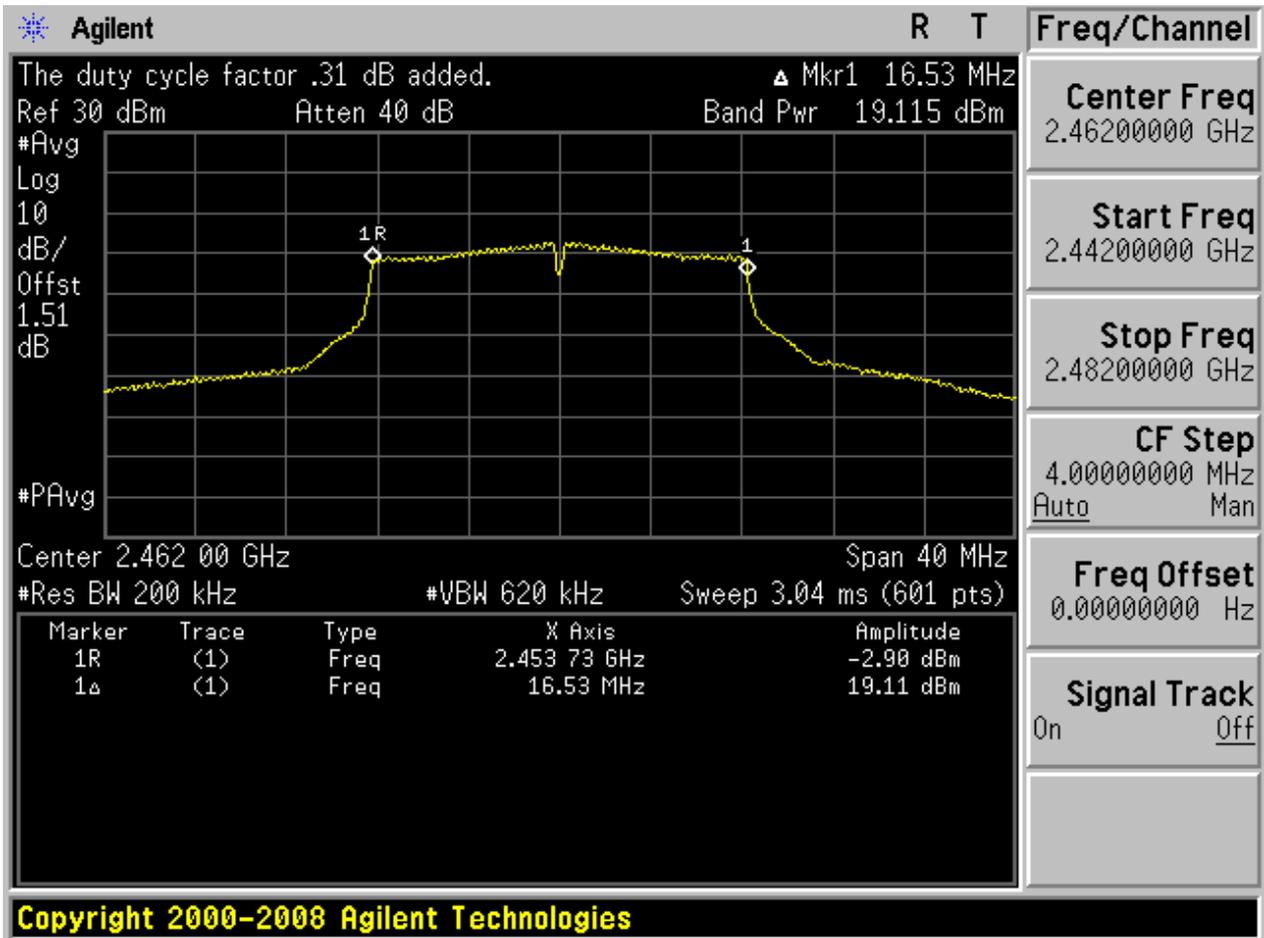


2.5 11G\_M@Ant 1



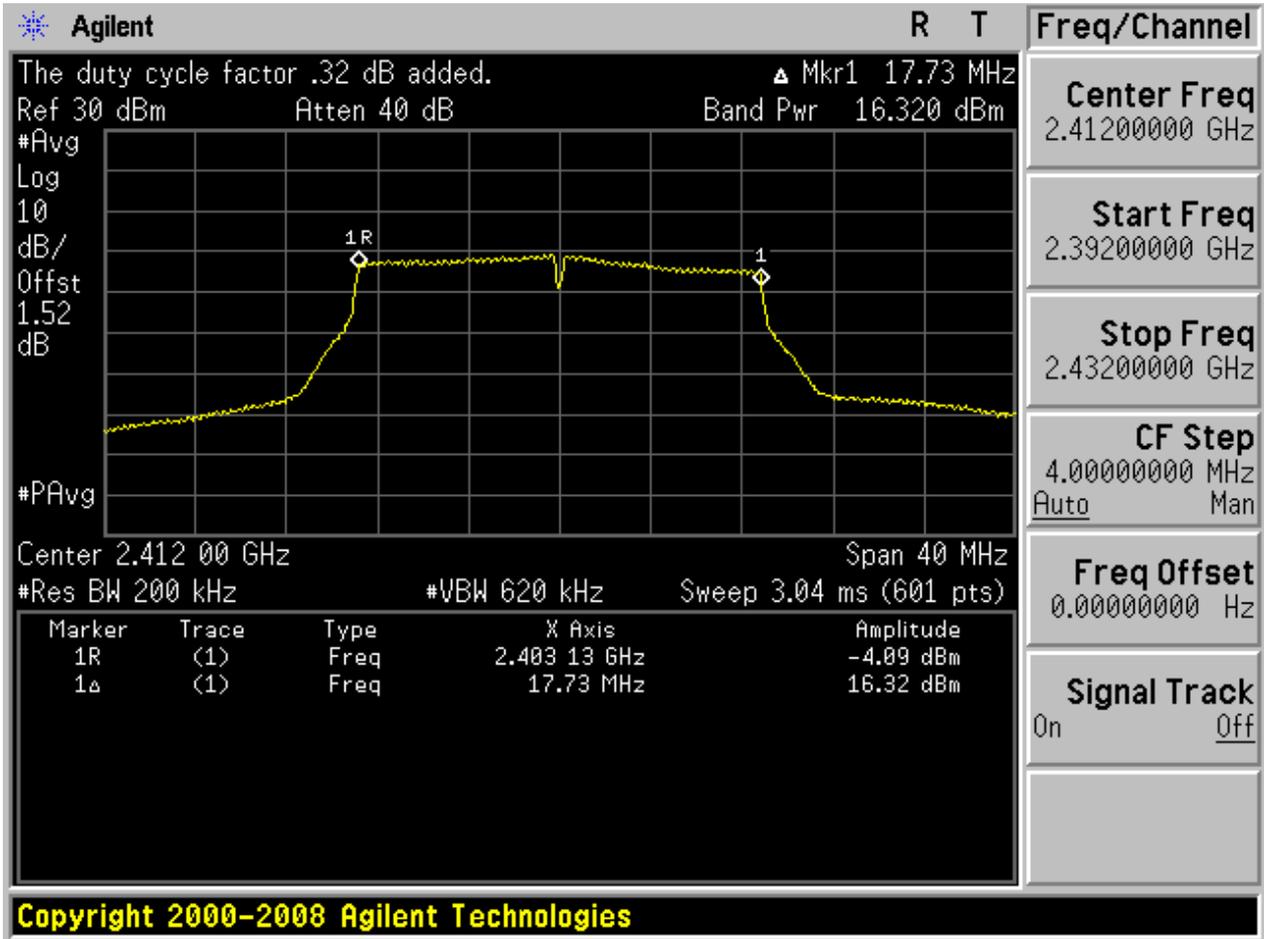


2.6 11G\_H@Ant 1



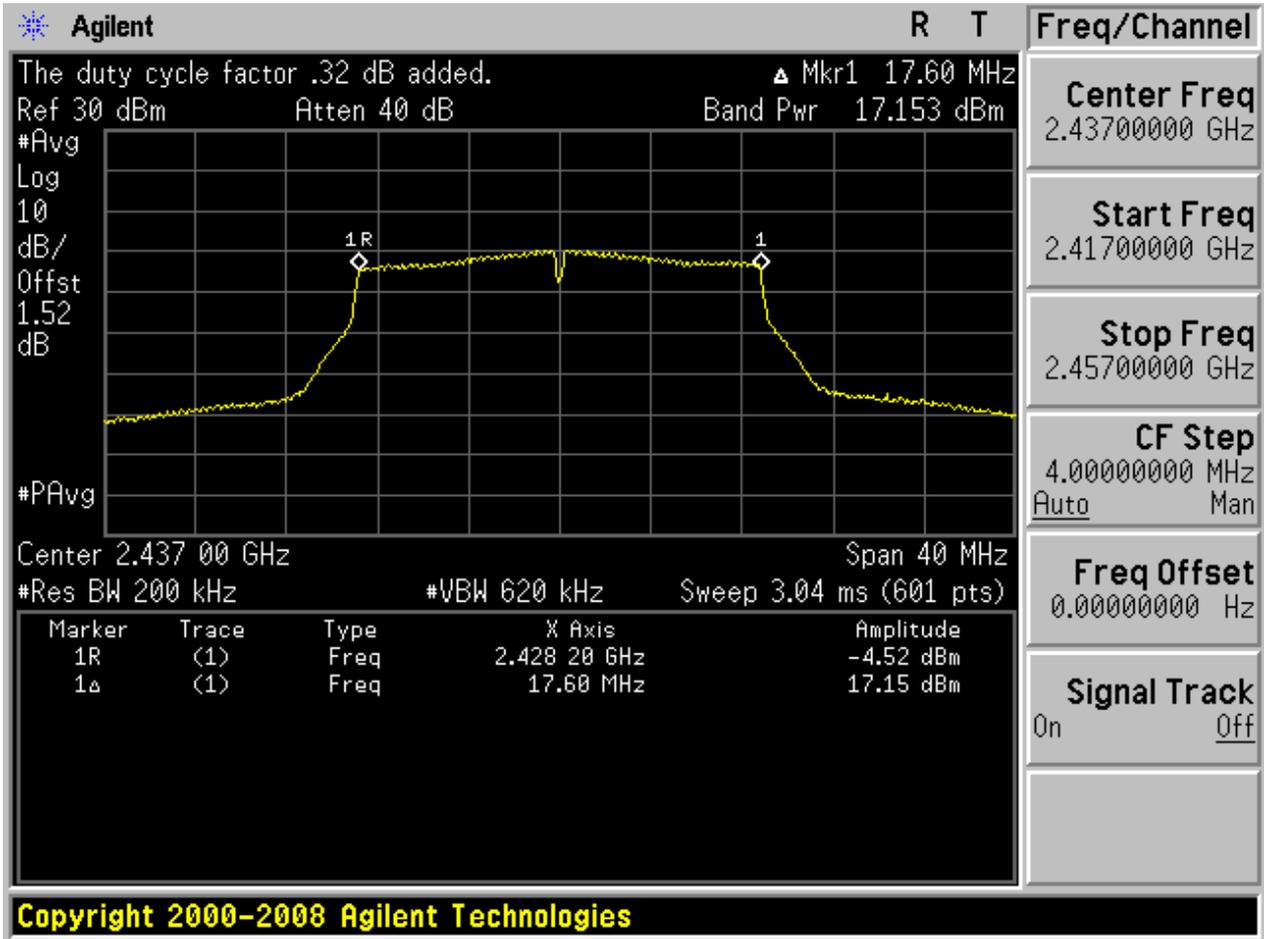


2.7 11N20\_L@Ant 1



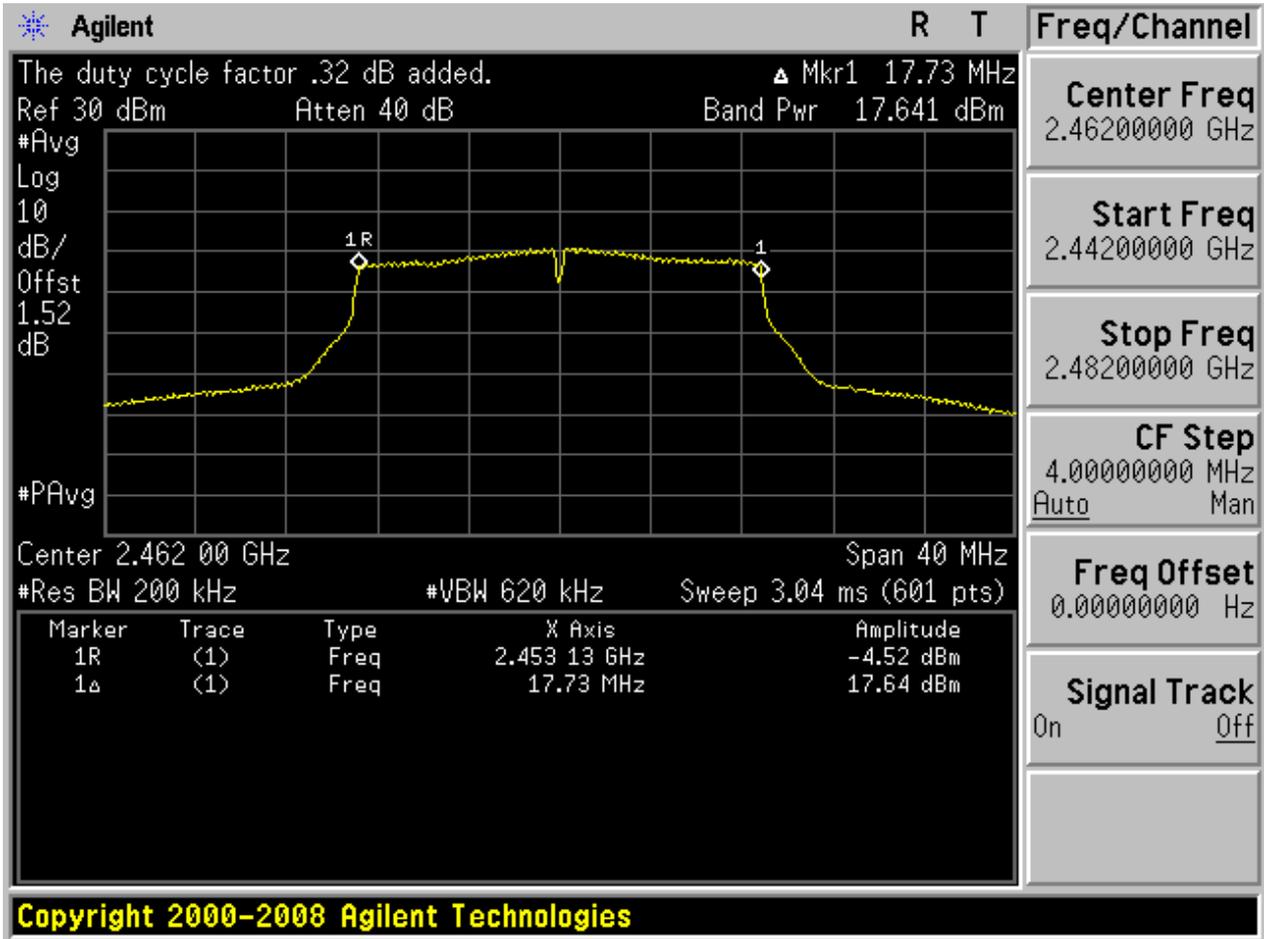


2.8 11N20\_M@Ant 1





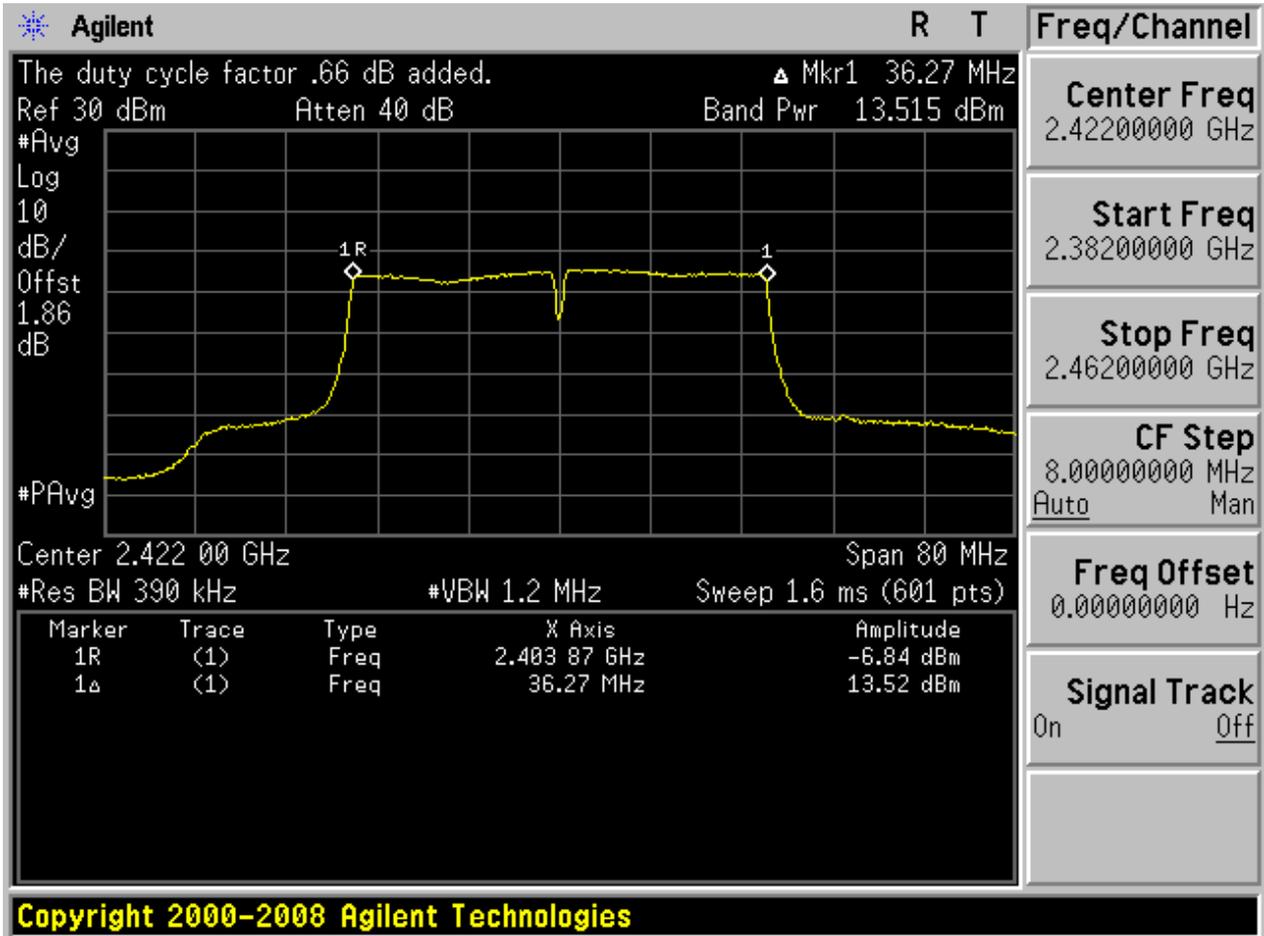
2.9 11N20\_H@Ant 1



Copyright 2000-2008 Agilent Technologies



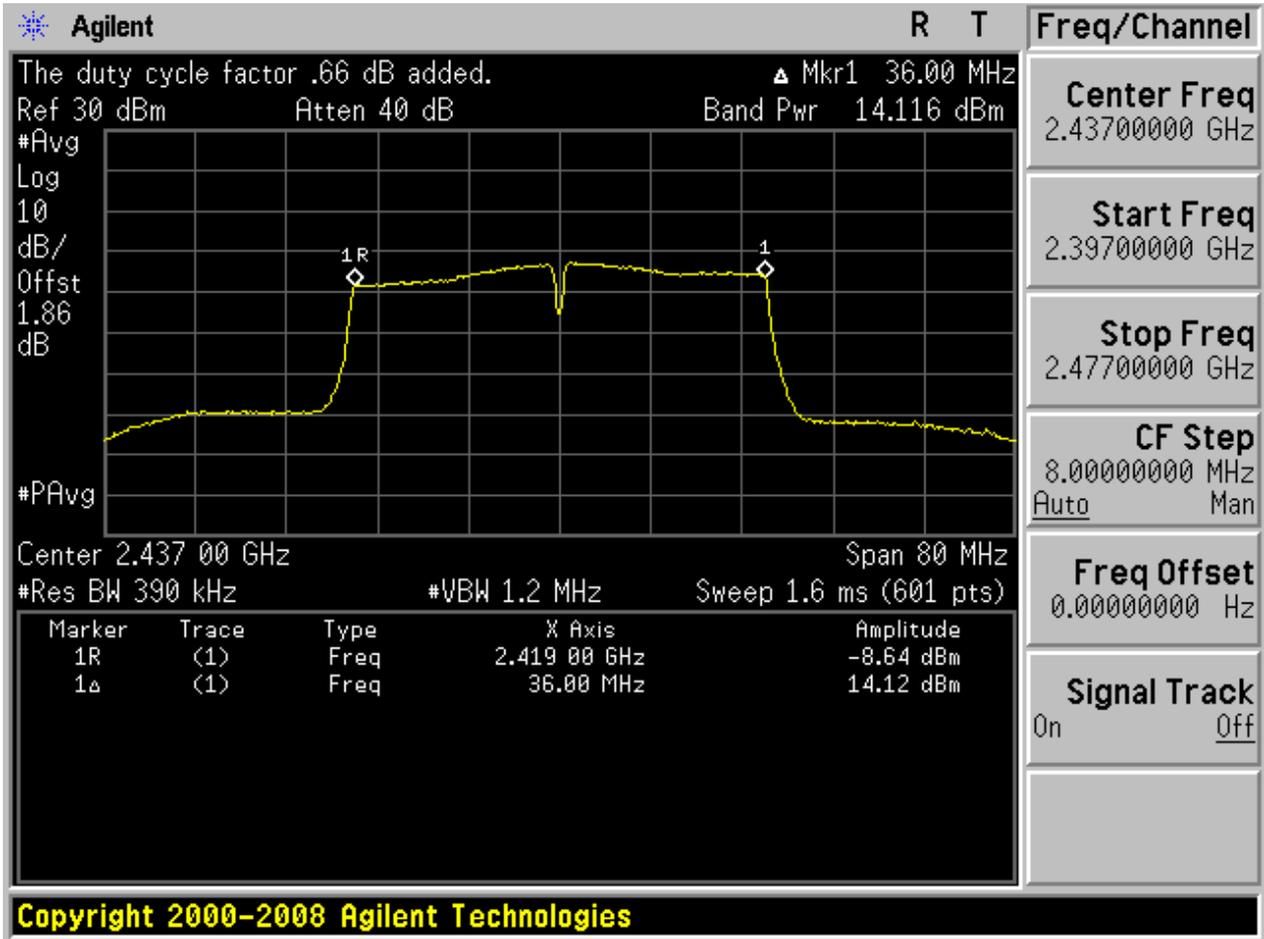
2.10 11N40\_L@Ant 1



Copyright 2000-2008 Agilent Technologies



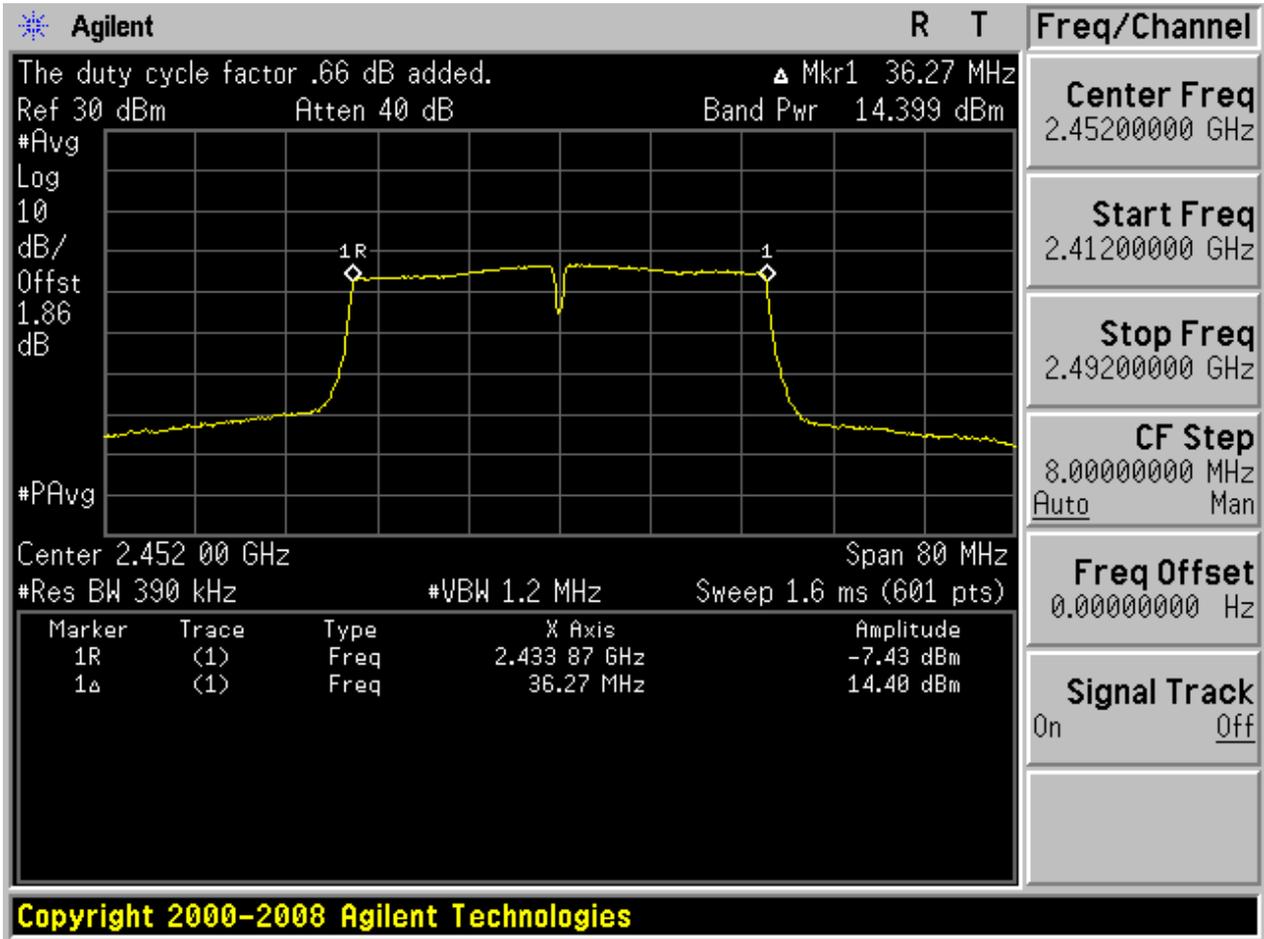
2.11 11N40\_M@Ant 1



Copyright 2000-2008 Agilent Technologies



2.12 11N40\_H@Ant 1



Copyright 2000-2008 Agilent Technologies



## Appendix E: Maximum Power Spectral Density Level

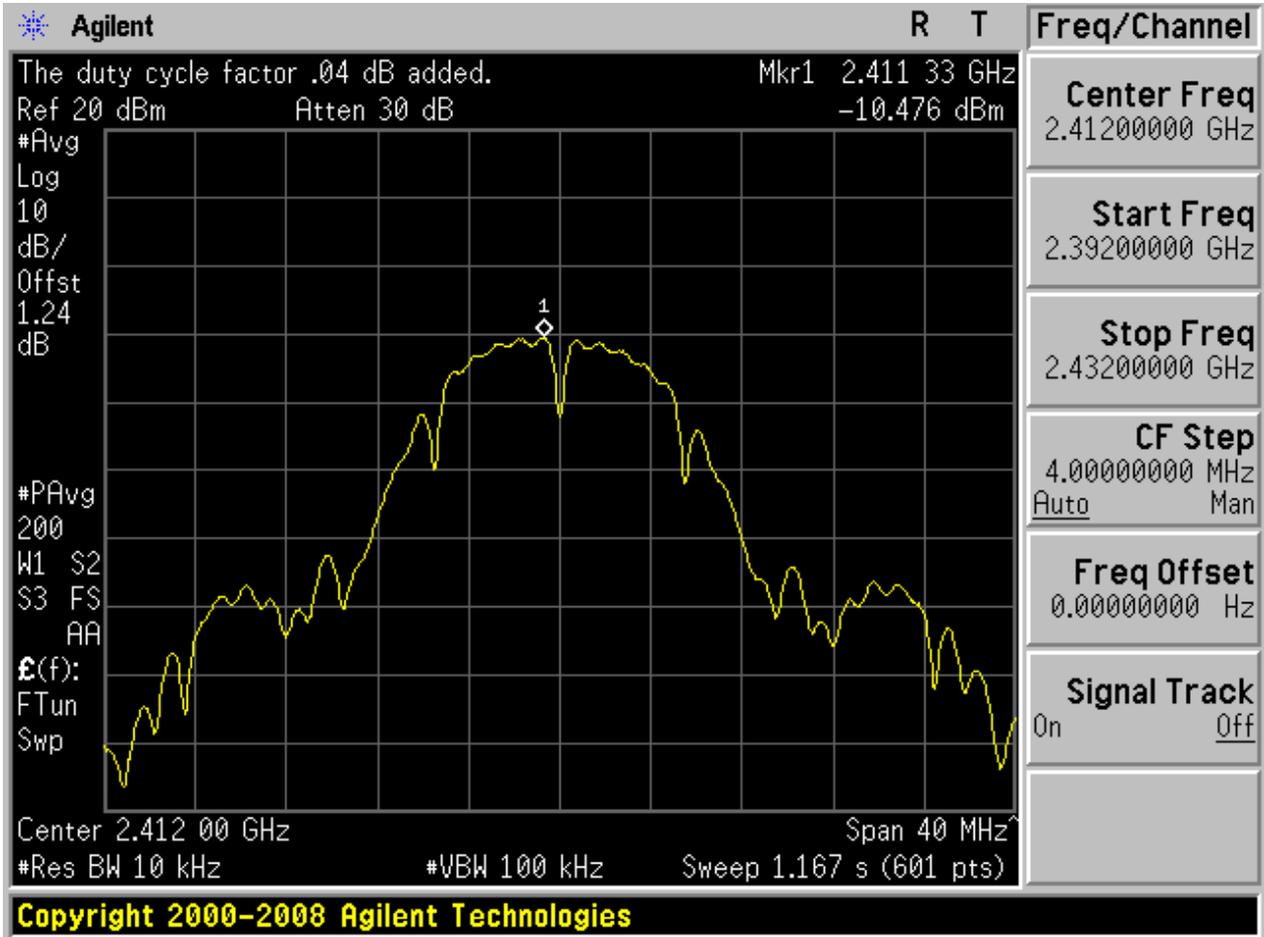
### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-10.48	pass
11B	M	2437	Ant 1	-9.59	pass
11B	H	2462	Ant 1	-9.50	pass
11G	L	2412	Ant 1	-10.67	pass
11G	M	2437	Ant 1	-9.52	pass
11G	H	2462	Ant 1	-9.05	pass
11N20	L	2412	Ant 1	-12.92	pass
11N20	M	2437	Ant 1	-11.53	pass
11N20	H	2462	Ant 1	-10.93	pass
11N40	L	2422	Ant 1	-19.11	pass
11N40	M	2437	Ant 1	-17.82	pass
11N40	H	2452	Ant 1	-17.97	pass



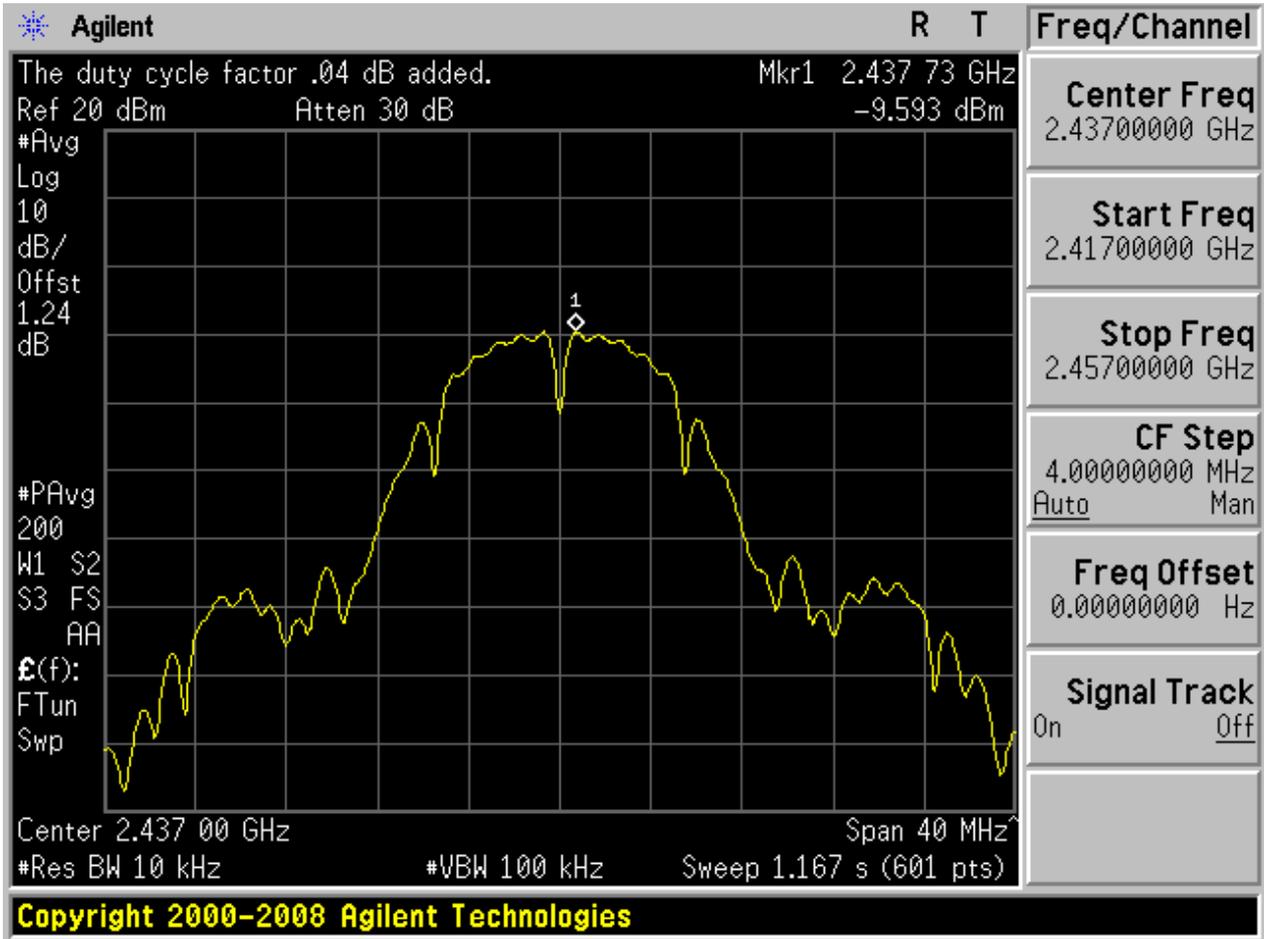
Part II - Test Plots

2.1 11B\_L@Ant 1



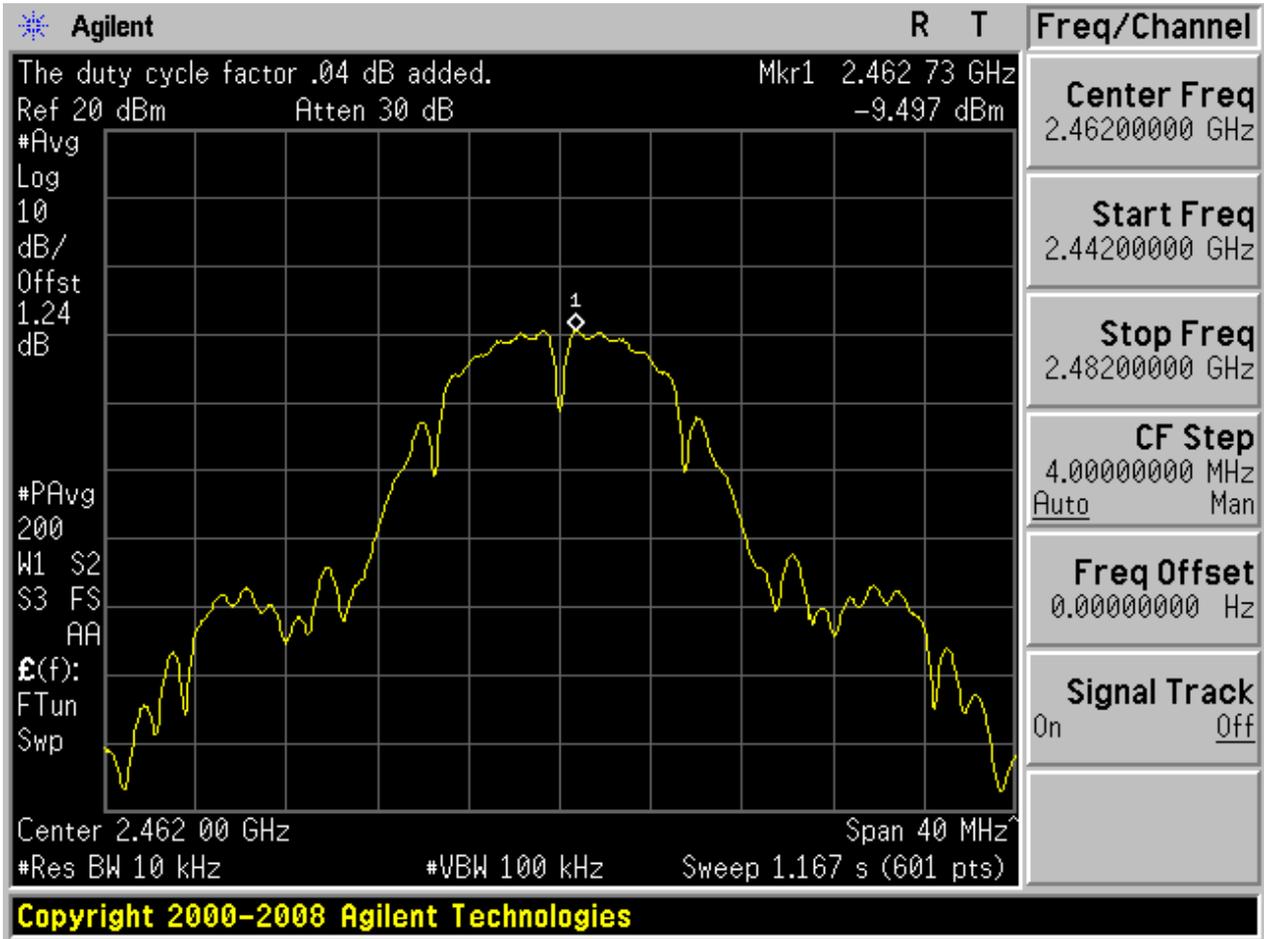


2.2 11B\_M@Ant 1



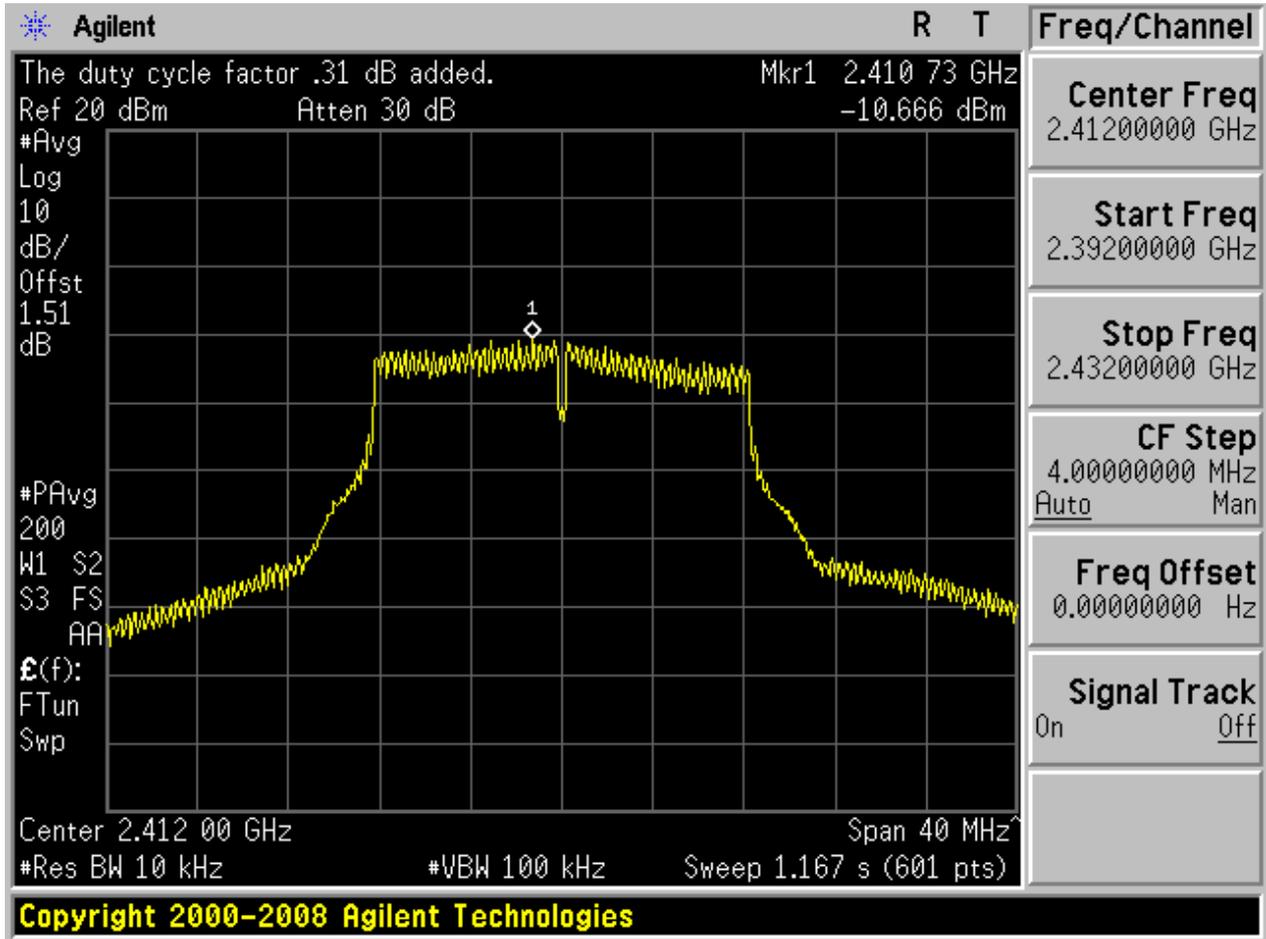


2.3 11B\_H@Ant 1



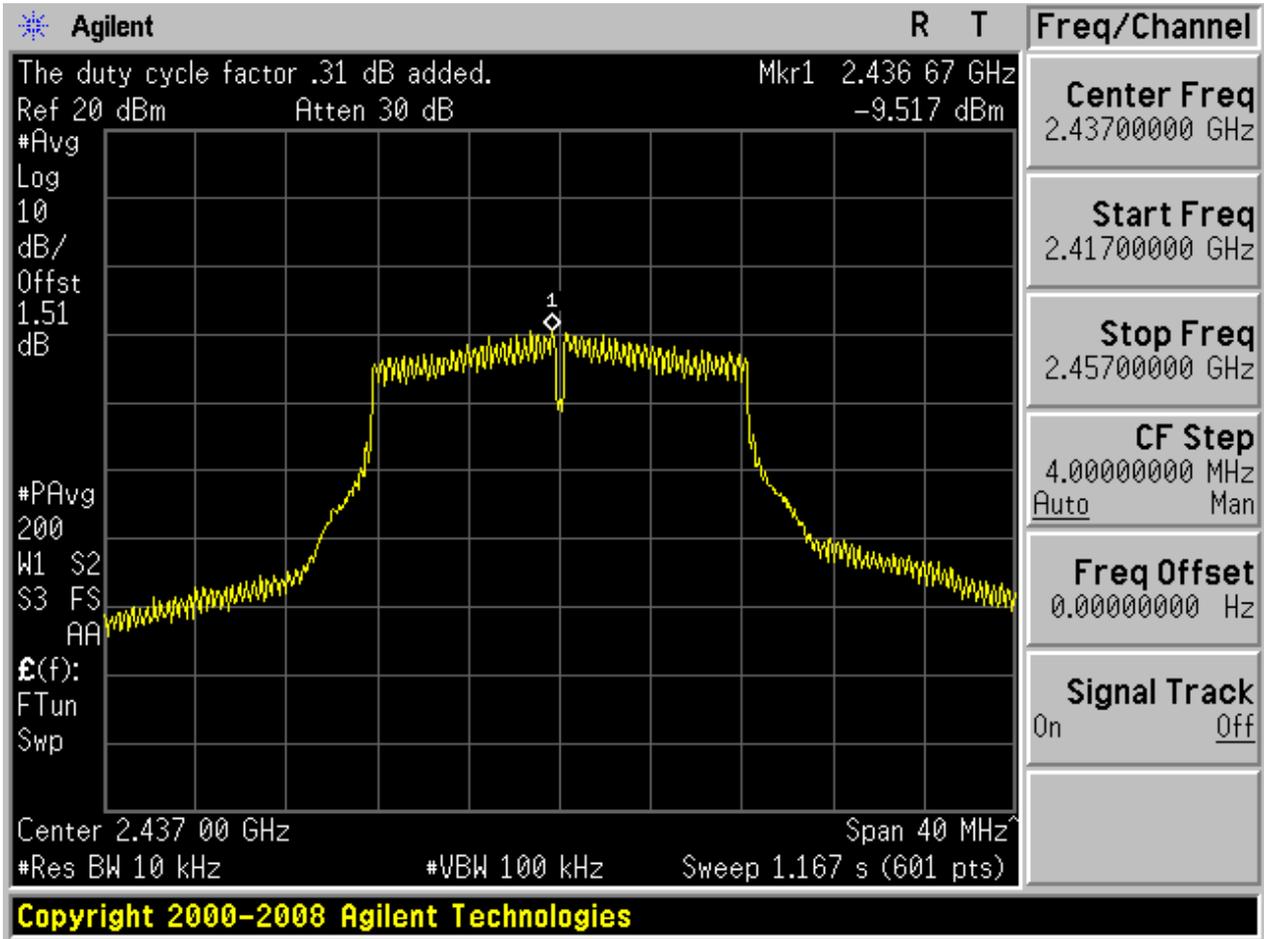


2.4 11G\_L@Ant 1

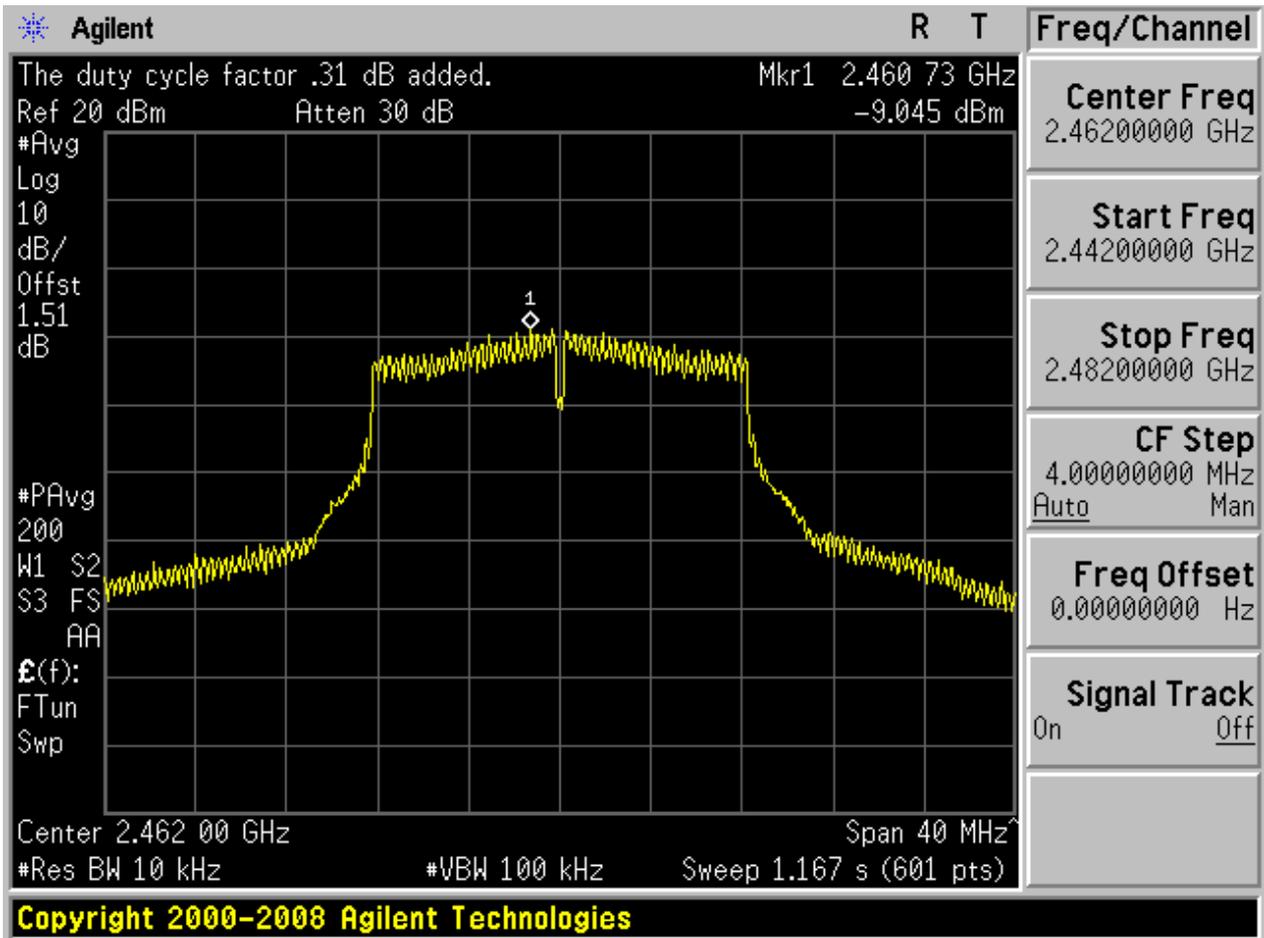




2.5 11G\_M@Ant 1

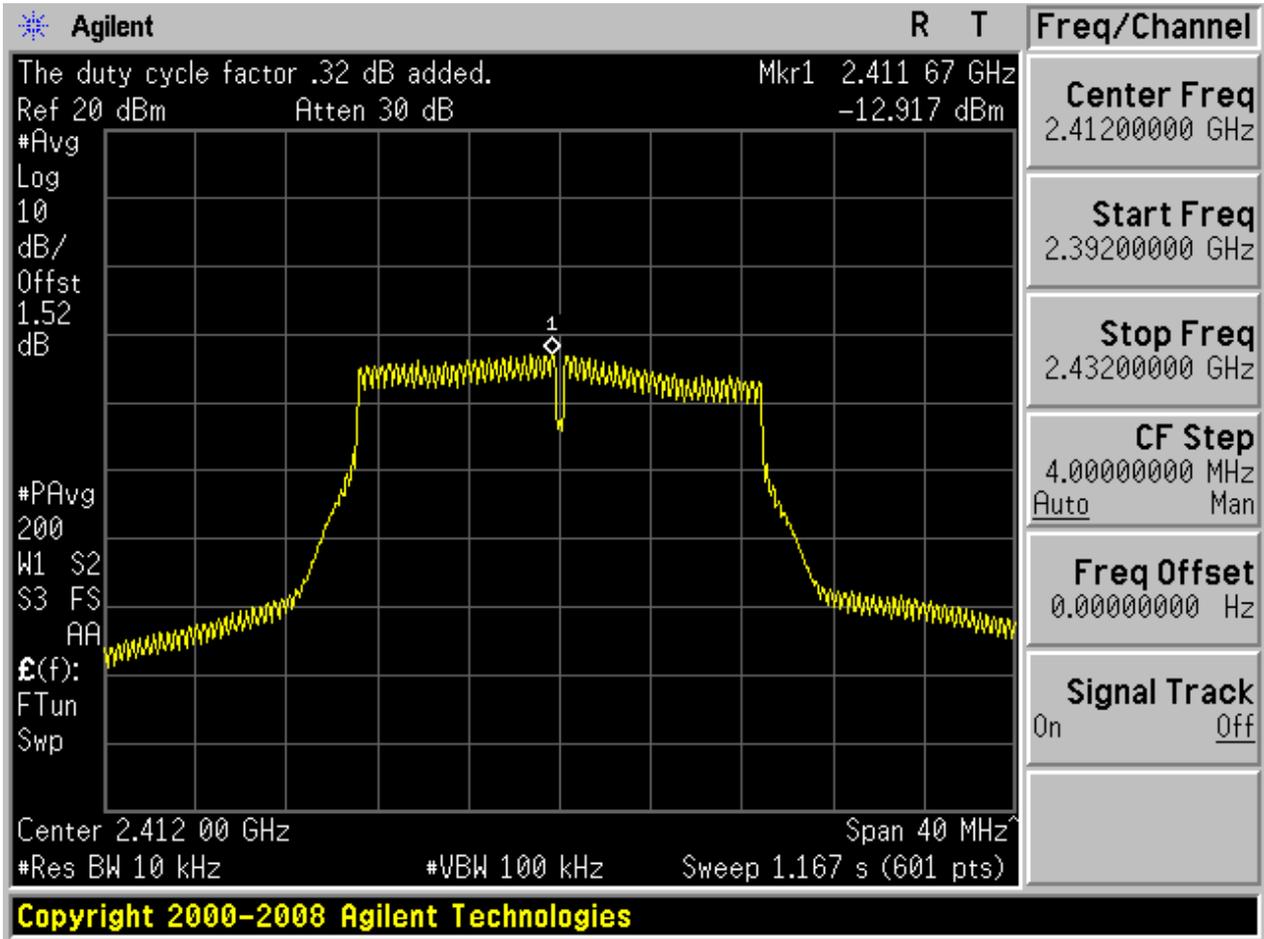


2.6 11G\_H@Ant 1



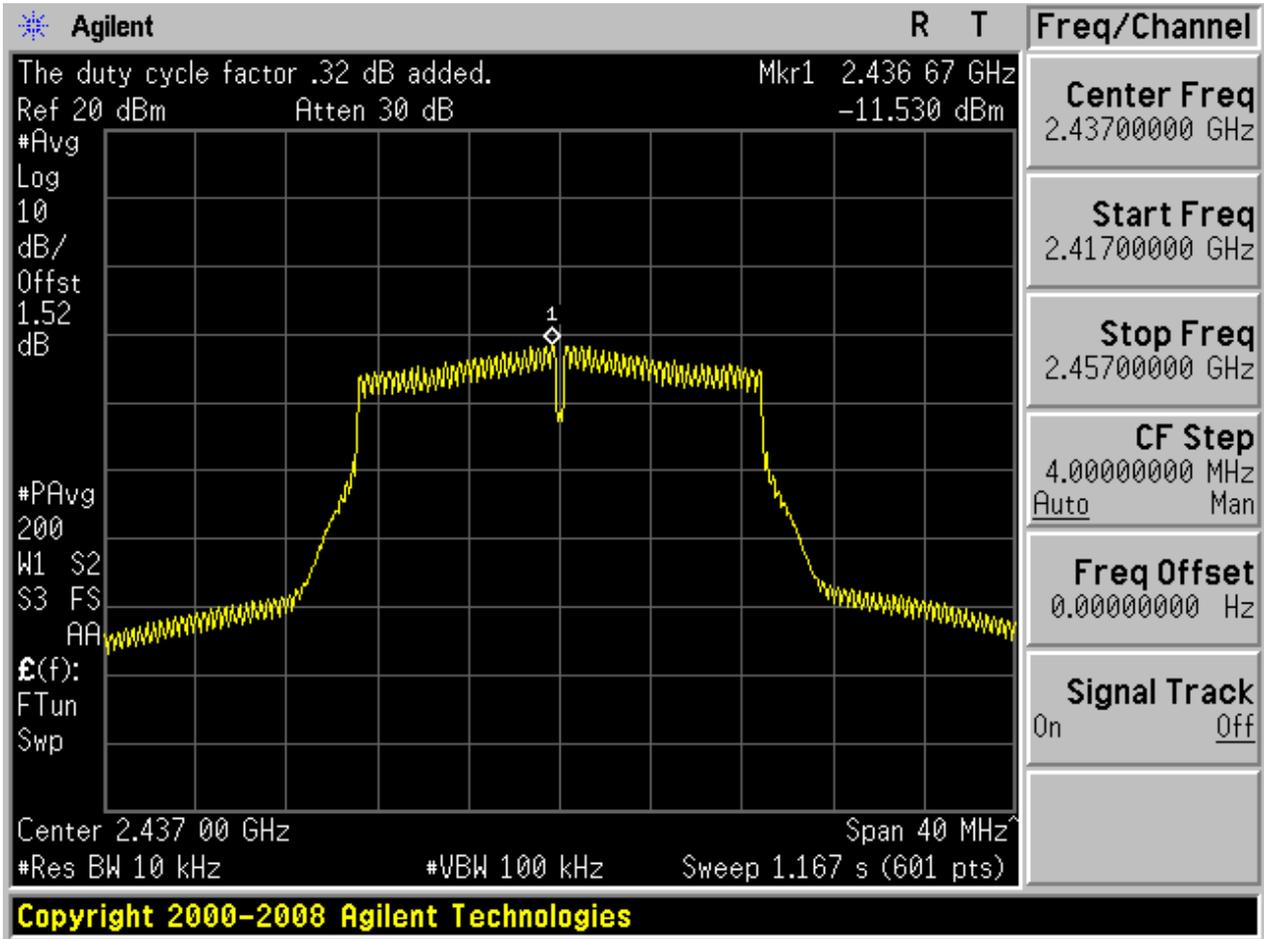


2.7 11N20\_L@Ant 1



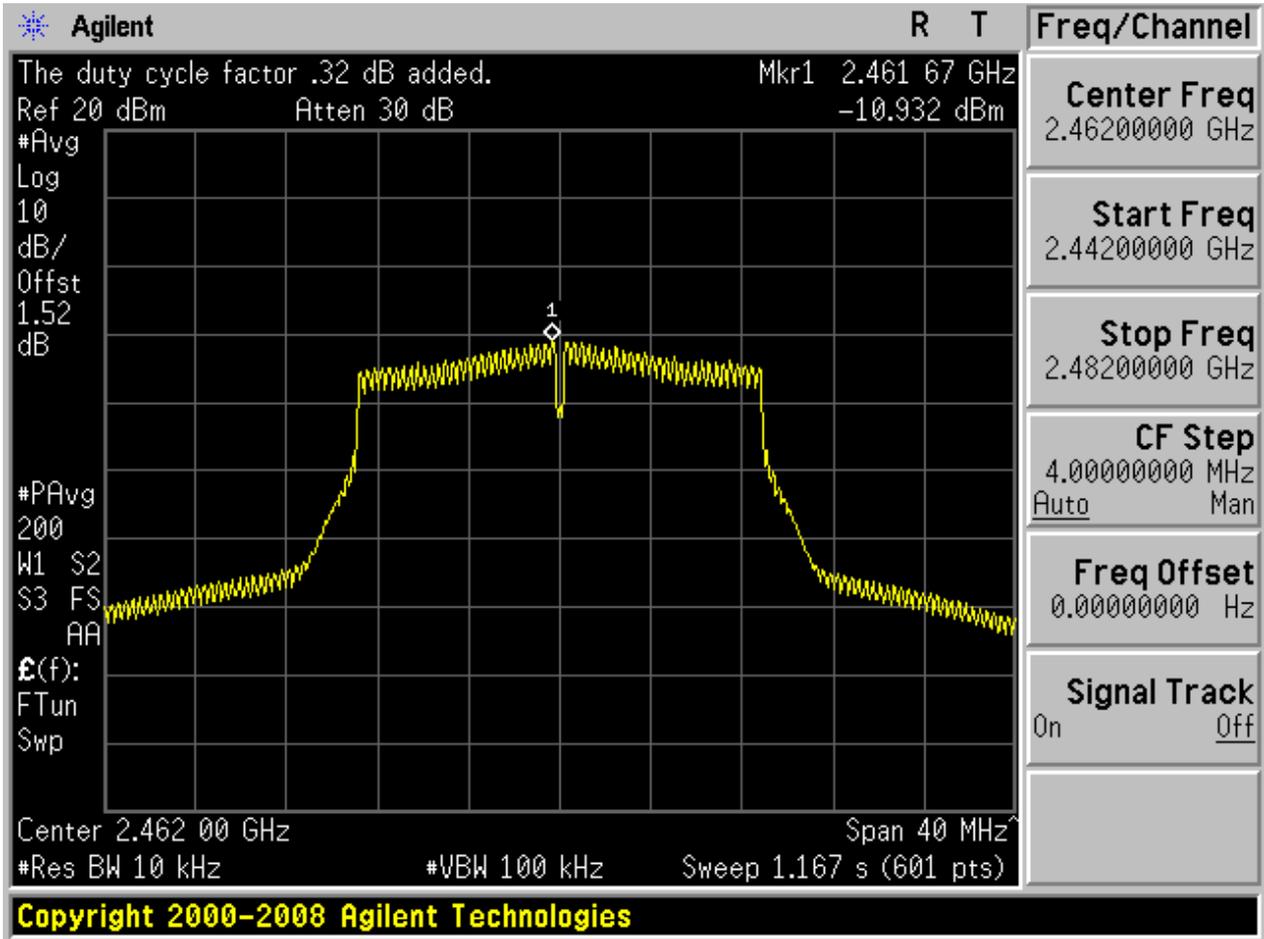


2.8 11N20\_M@Ant 1



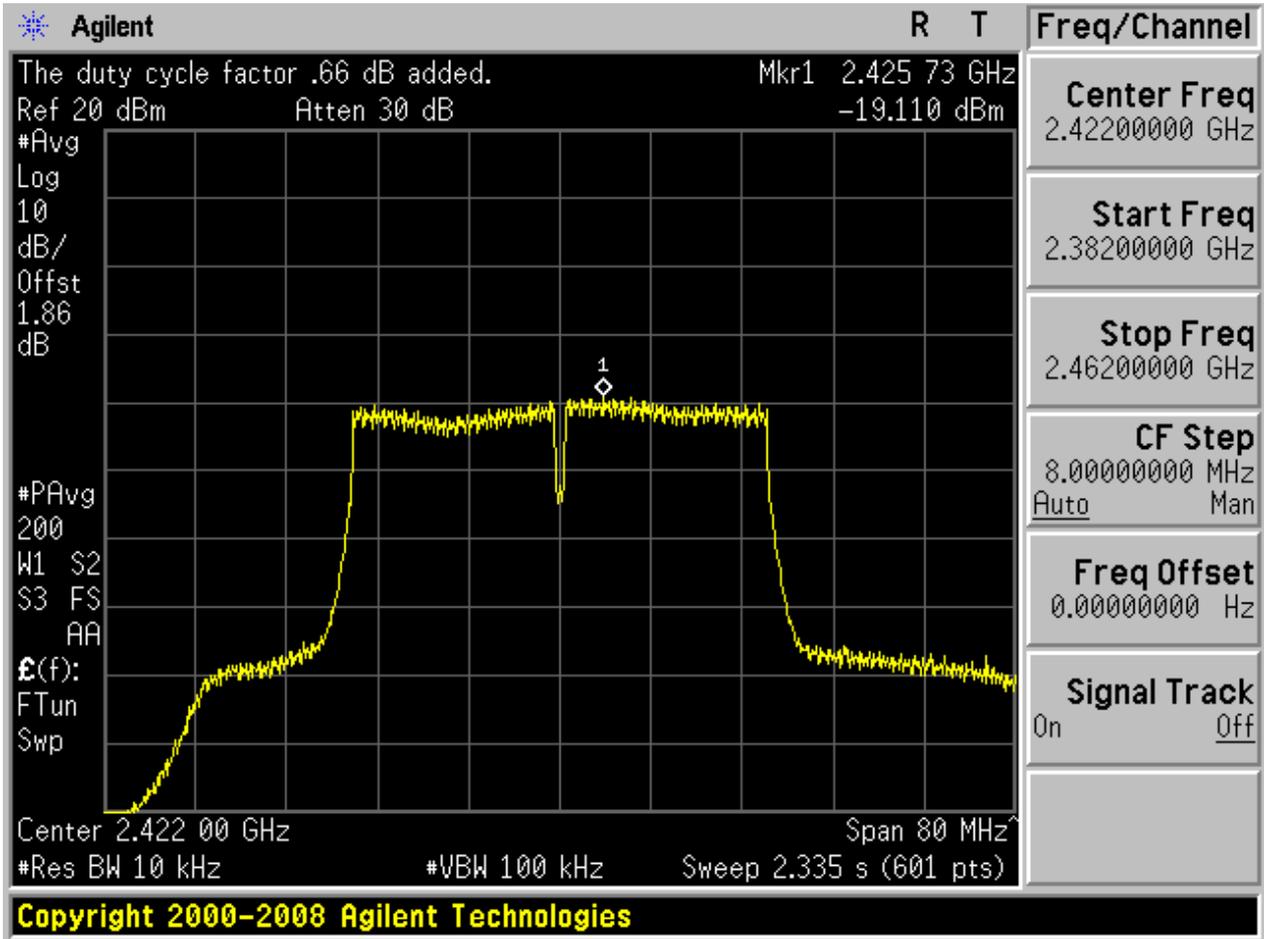


2.9 11N20\_H@Ant 1



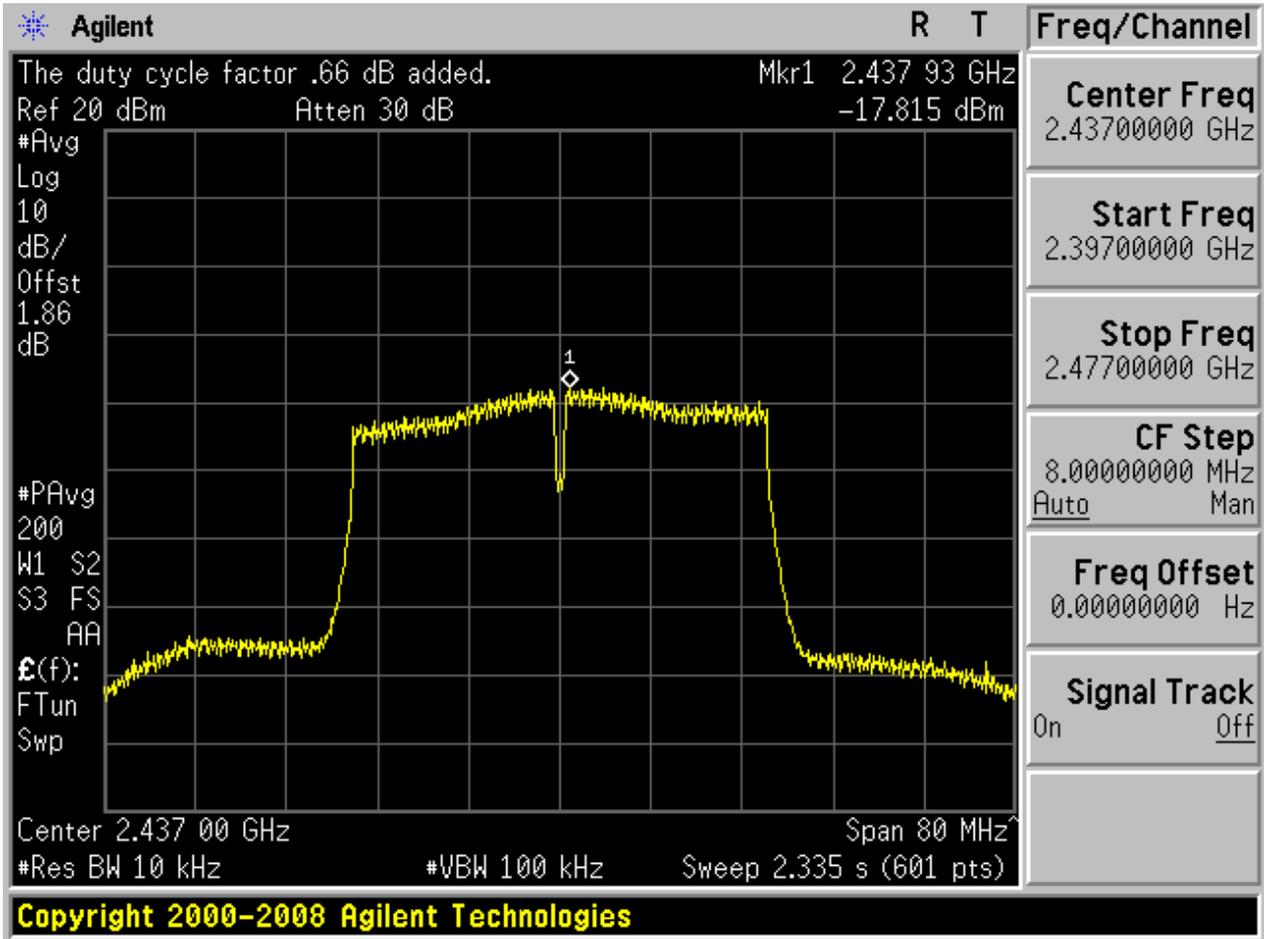


2.19 11N40\_L@Ant 1



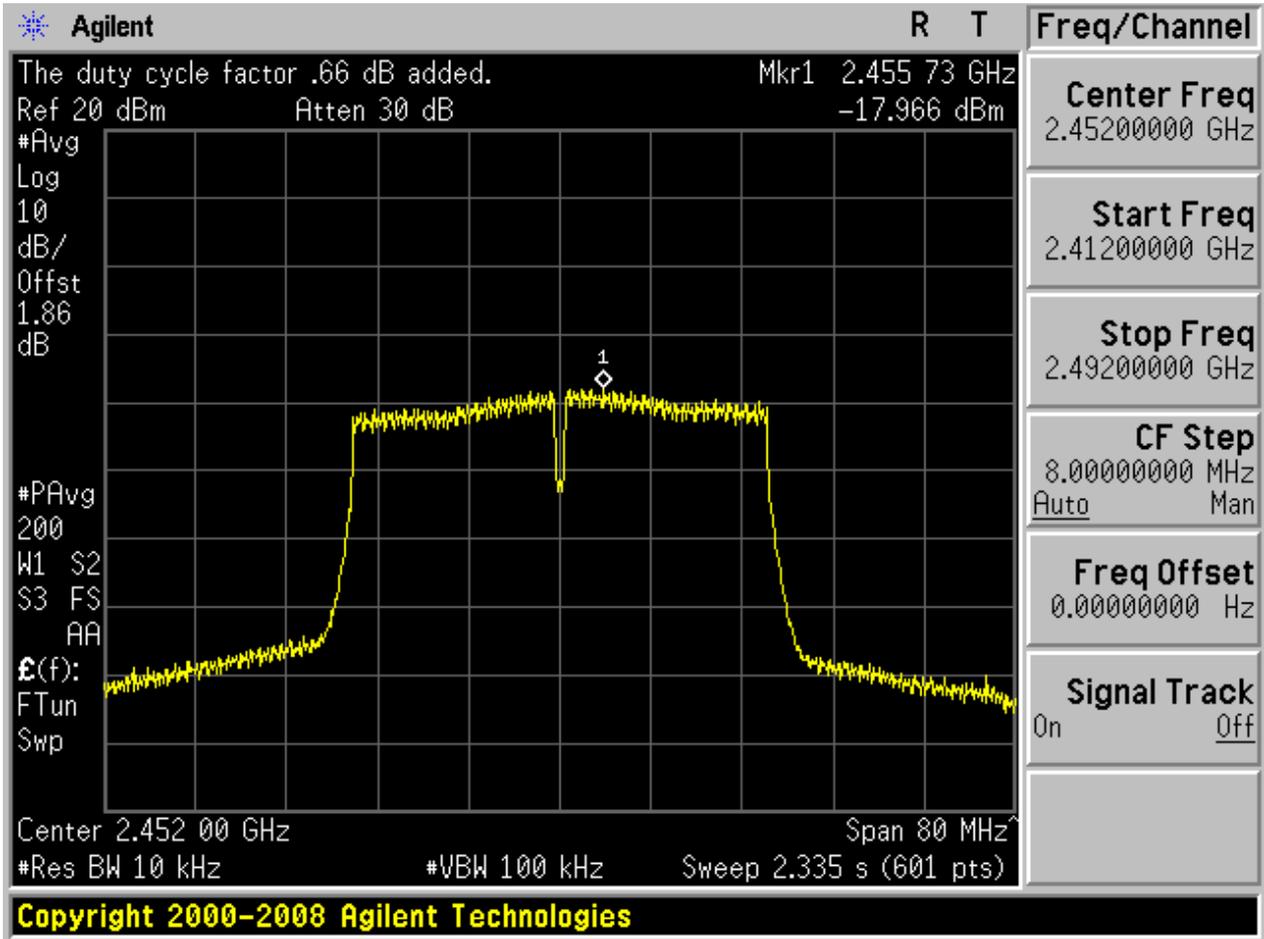


2.21 11N40\_M@Ant 1





2.23 11N40\_H@Ant 1





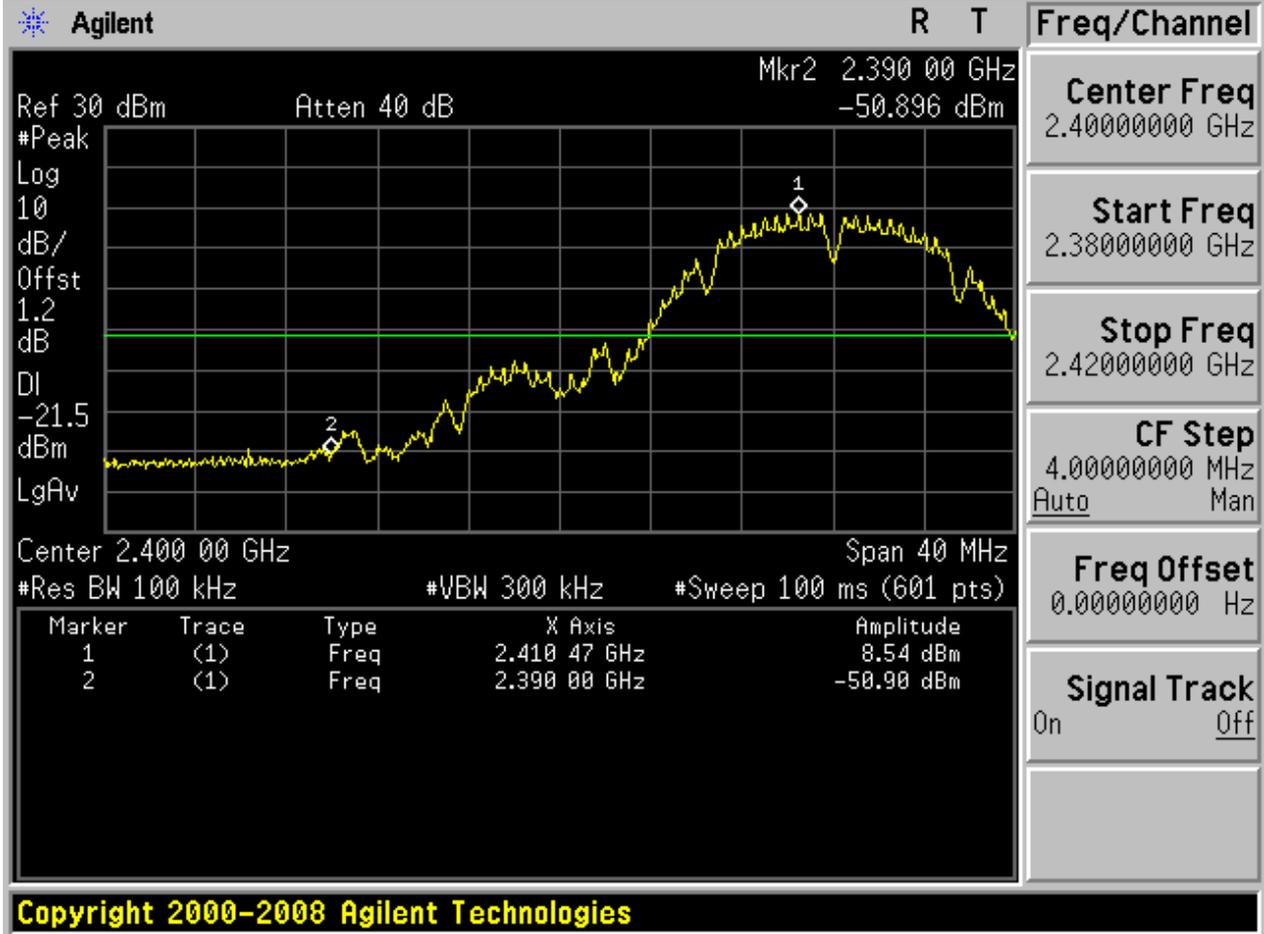
## Appendix F: Band Edges Compliance

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	8.54	-51.08	pass
11B	H	2462	Ant 1	9.30	-43.83	pass
11G	L	2412	Ant 1	7.07	-38.92	pass
11G	H	2462	Ant 1	7.53	-30.90	pass
11N20	L	2412	Ant 1	5.98	-42.14	pass
11N20	H	2462	Ant 1	6.32	-32.39	pass
11N40	L	2422	Ant 1	-.25	-43.56	pass
11N40	H	2452	Ant 1	.39	-40.05	pass

Part II - Test Plots

2.1 11B\_L@Ant 1



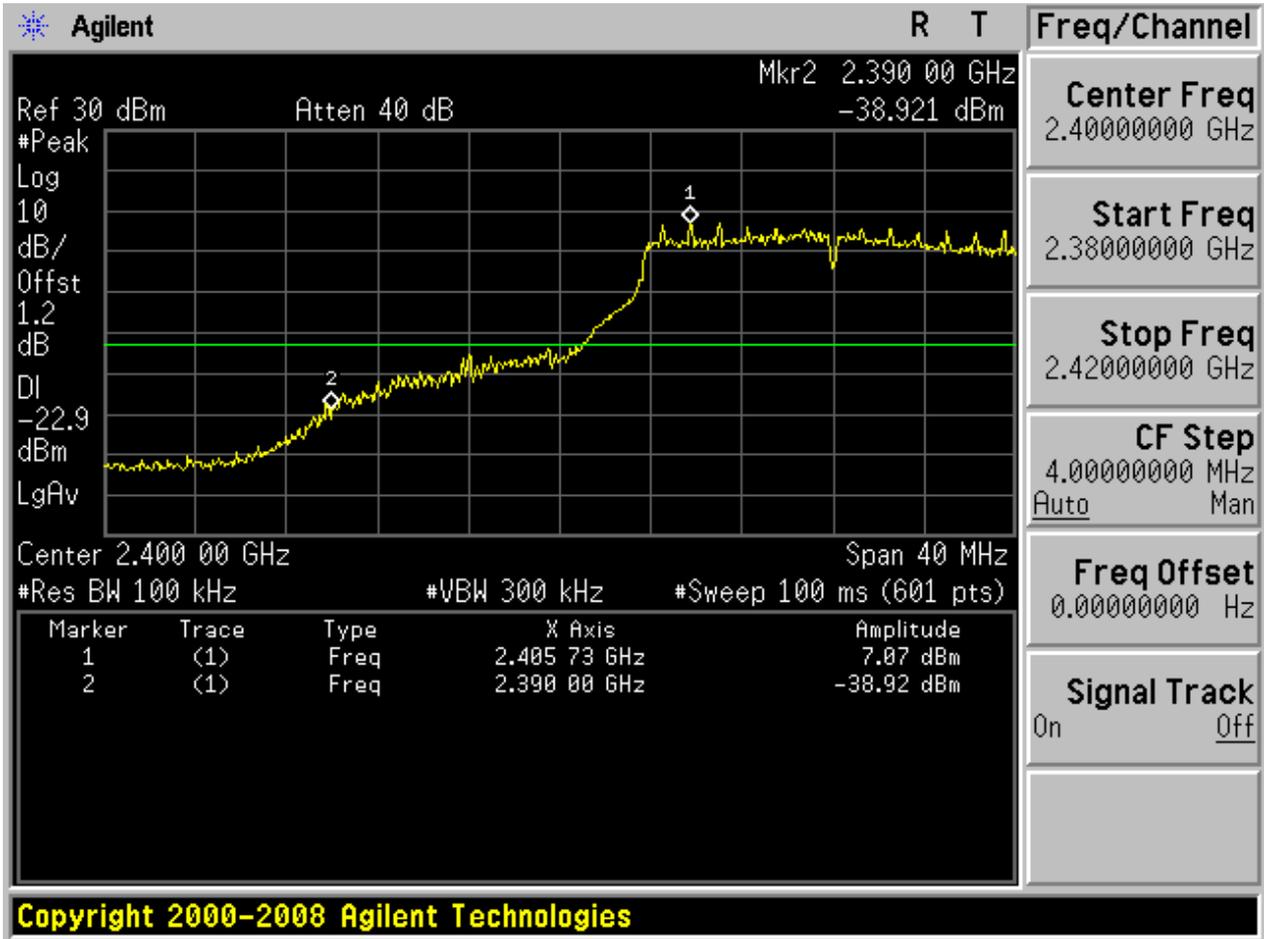


2.3 11B\_H@Ant 1





2.5 11G\_L@Ant 1



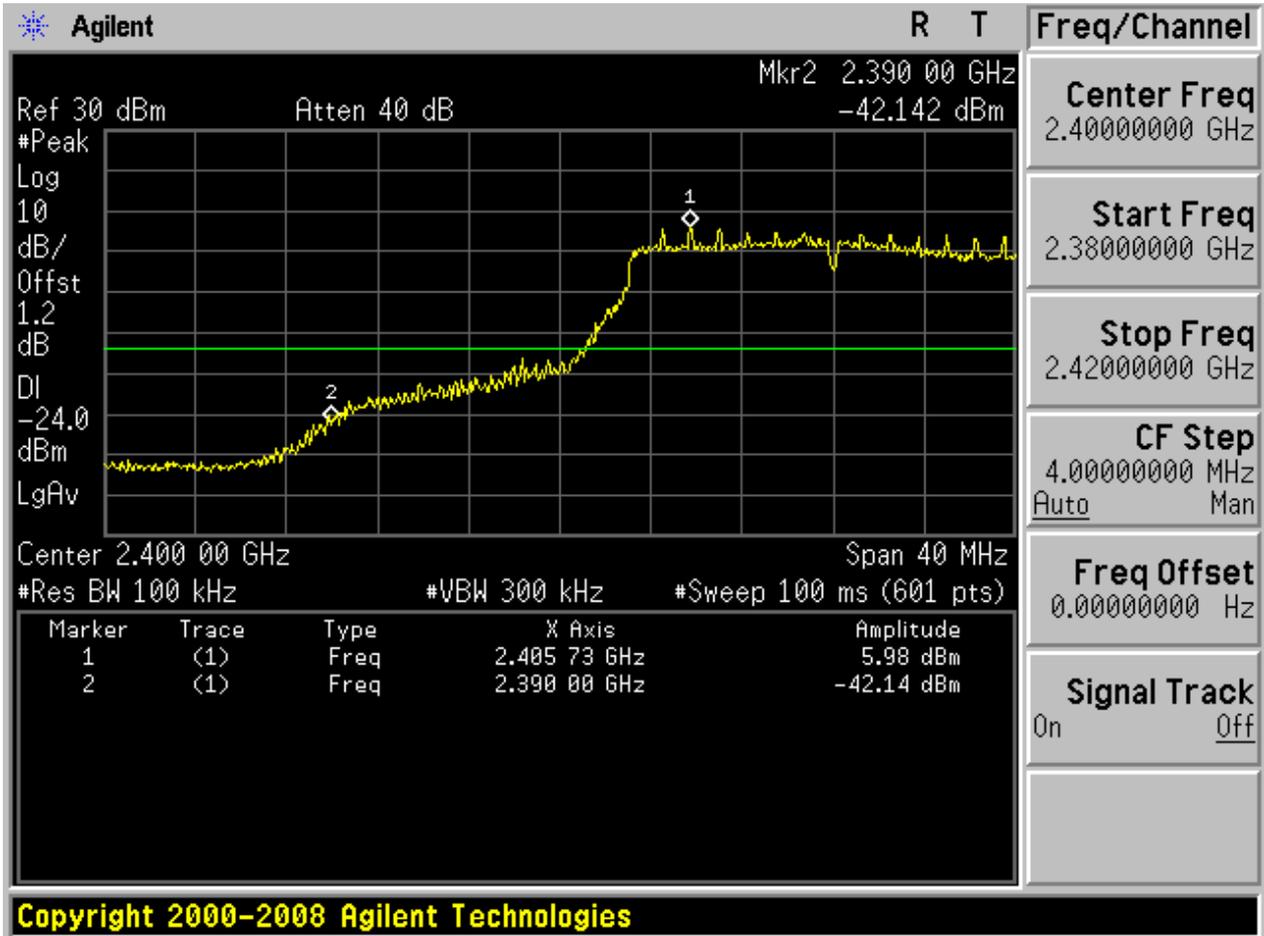


2.7 11G\_H@Ant 1





2.9 11N20\_L@Ant 1



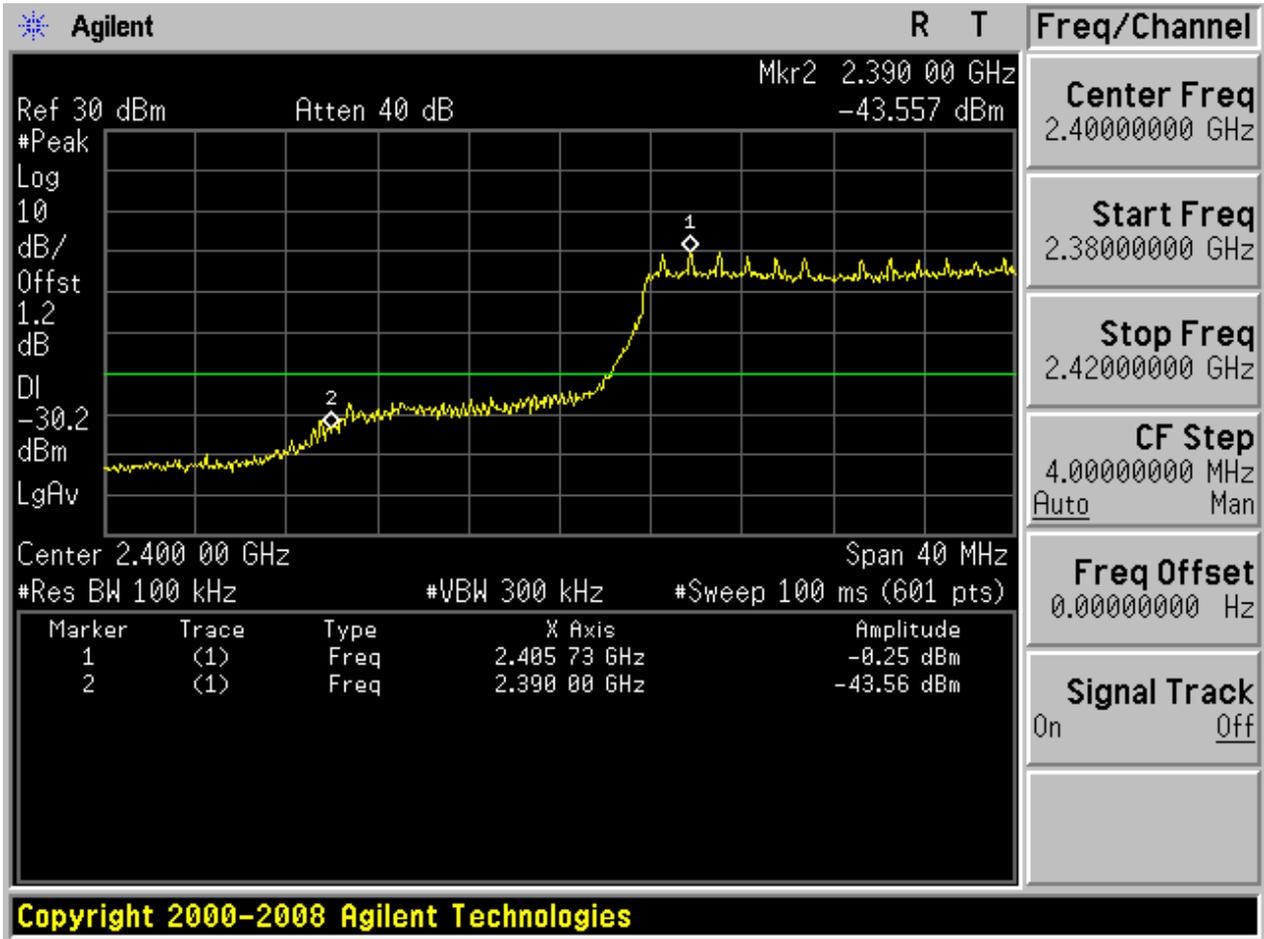


2.11 11N20\_H@Ant 1



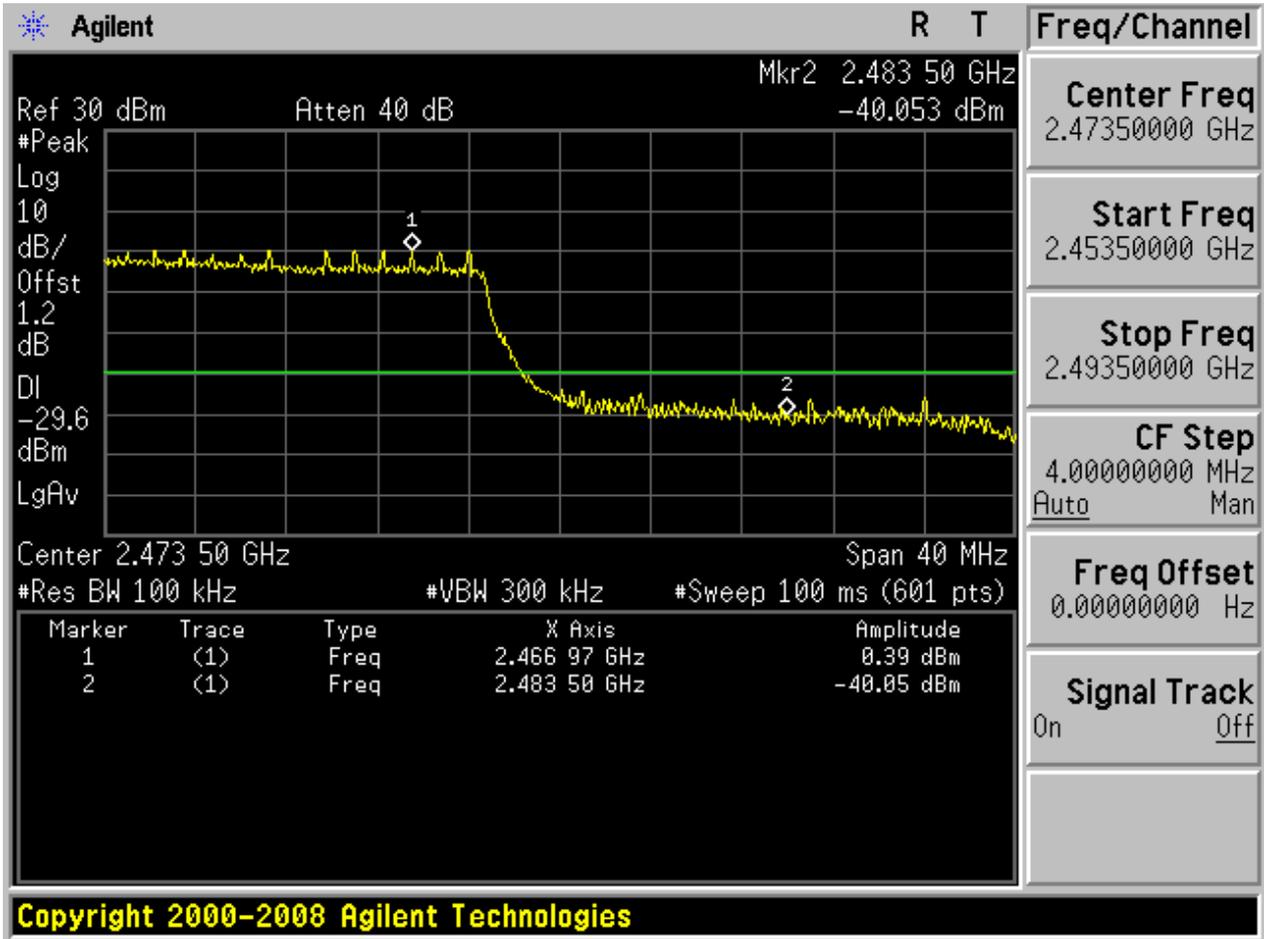


2.17 11N40\_L@Ant 1





2.19 11N40\_H@Ant 1



## Appendix G: Unwanted Emissions into Non-Restricted Frequency

### Bands

In this Appendix, the "Pref", which is used as the reference level, refers to the peak power level in any 100 kHz bandwidth within the fundamental emission, the "Puw" refers to the maximum emission power in 100 kHz band segments outside of the authorized frequency band.

Considering that the higher ratio of RBW to the span for the frequency ranges below 30 MHz makes the results determination be complicated, a narrower RBW other than 100 kHz is used for these ranges. The measured value should add a RBW correction factor (RBWCF) where  $RBWCF [dB] = 10 \times \lg(100 [kHz]/\text{narrower RBW [kHz]})$ . As to this Appendix, the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain and used as respective results for each chain, due to the relative-limit requirement.

In the result table, the "< Limit" denotes that "The Puw [dBm] is less than Pref[dBm]-20[dBm], see test plots for detailed".

### Part I - Test Results

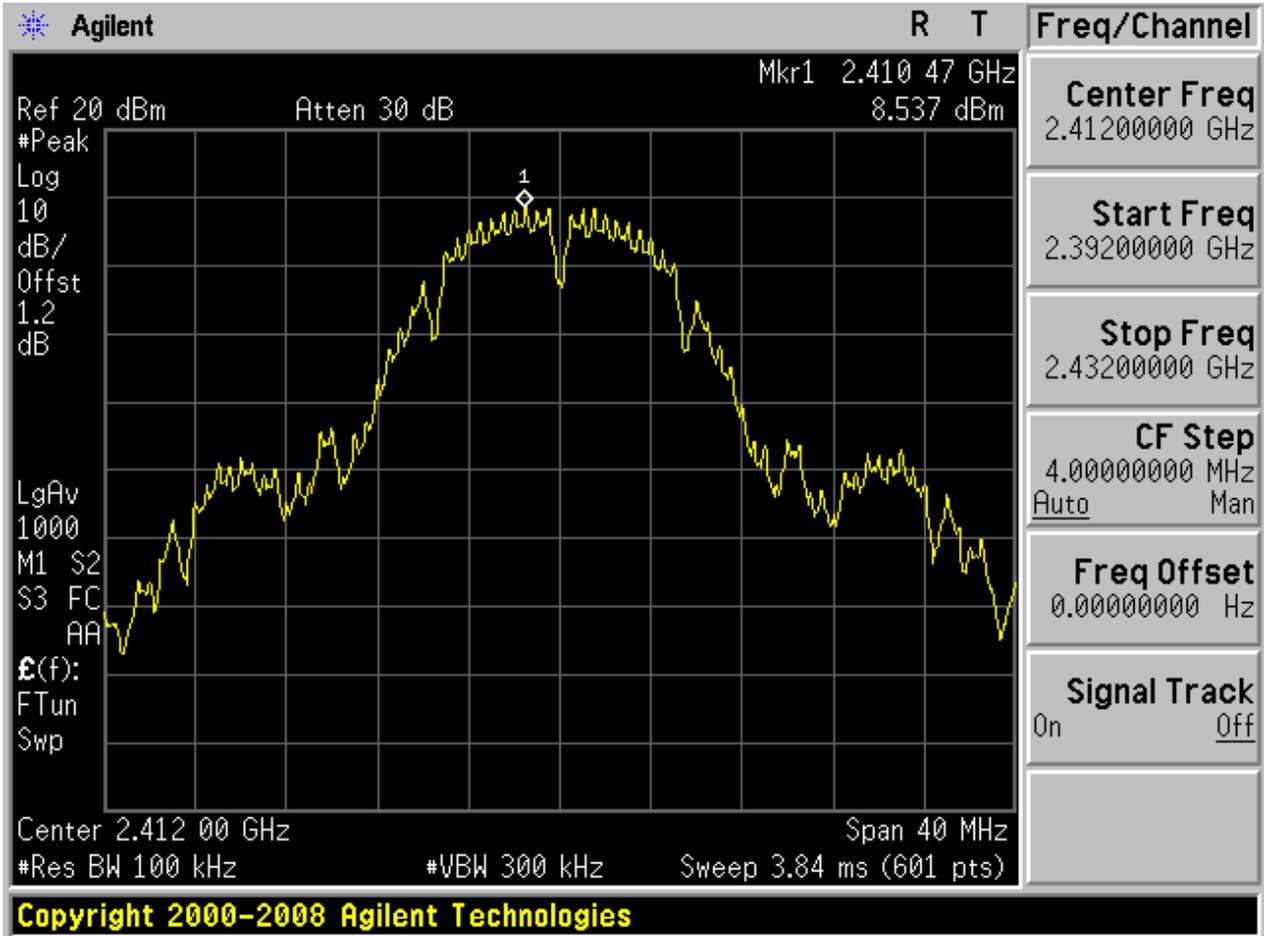
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	8.54	<limit	pass
11B	M	2437	Ant 1	9.31	<limit	pass
11B	H	2462	Ant 1	9.53	<limit	pass
11G	L	2412	Ant 1	7.27	<limit	pass
11G	M	2437	Ant 1	7.63	<limit	pass
11G	H	2462	Ant 1	7.68	<limit	pass
11N20	L	2412	Ant 1	6.20	<limit	pass
11N20	M	2437	Ant 1	6.40	<limit	pass
11N20	H	2462	Ant 1	6.79	<limit	pass
11N40	L	2422	Ant 1	0.28	<limit	pass
11N40	M	2437	Ant 1	0.66	<limit	pass
11N40	H	2452	Ant 1	0.76	<limit	pass



Part II - Test Plots

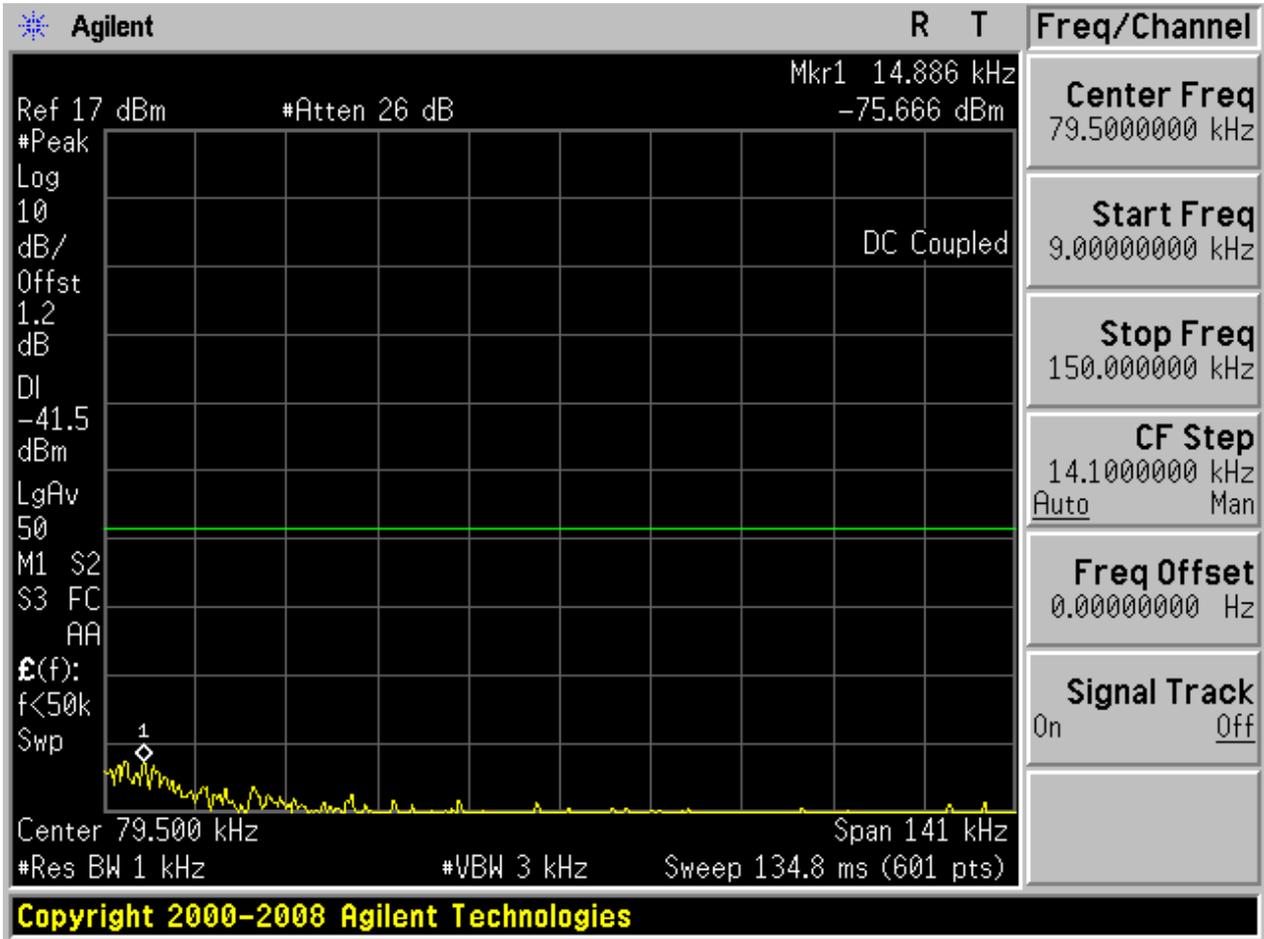
2.1 11B\_L@Ant 1

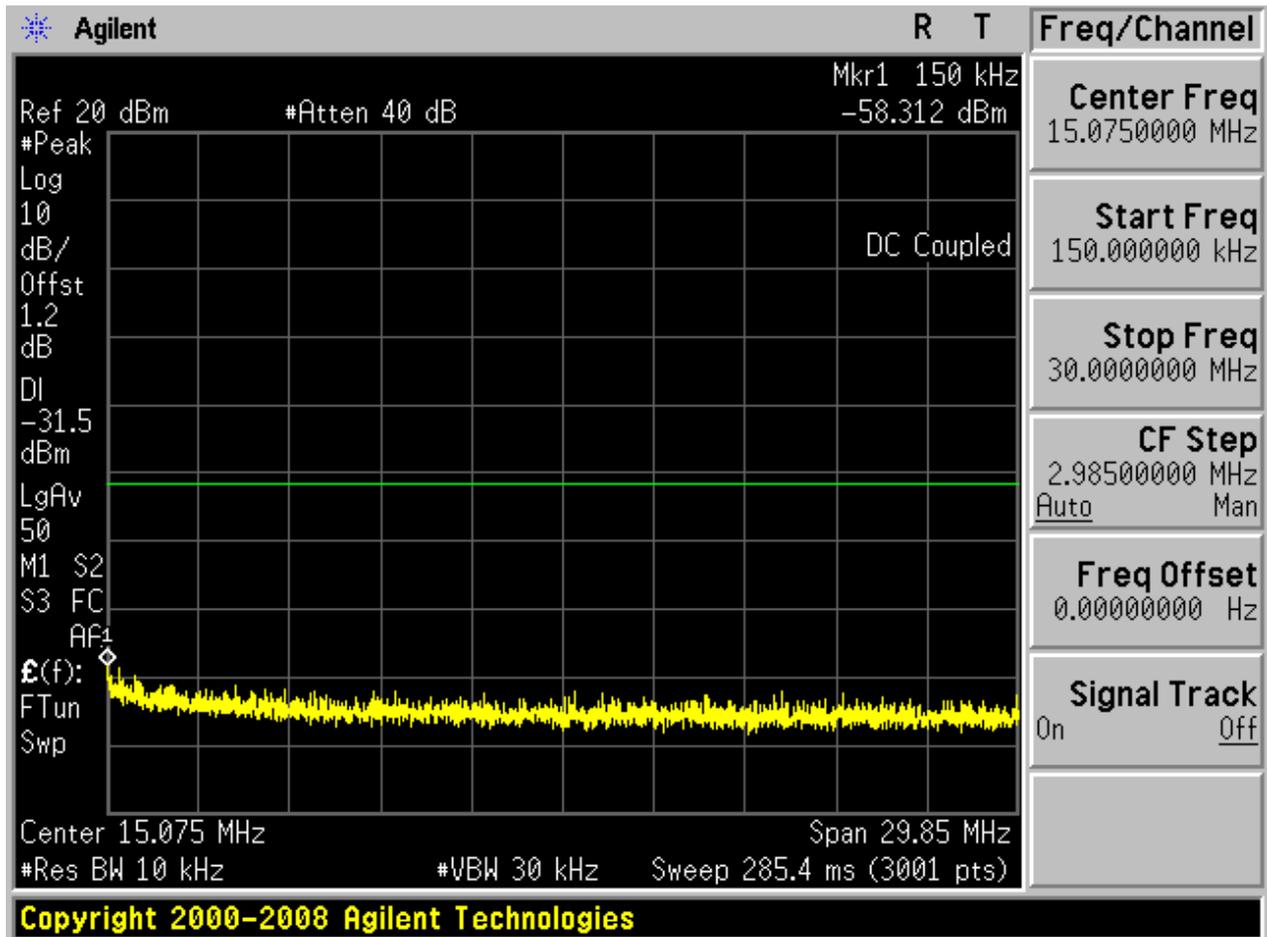
Pref:

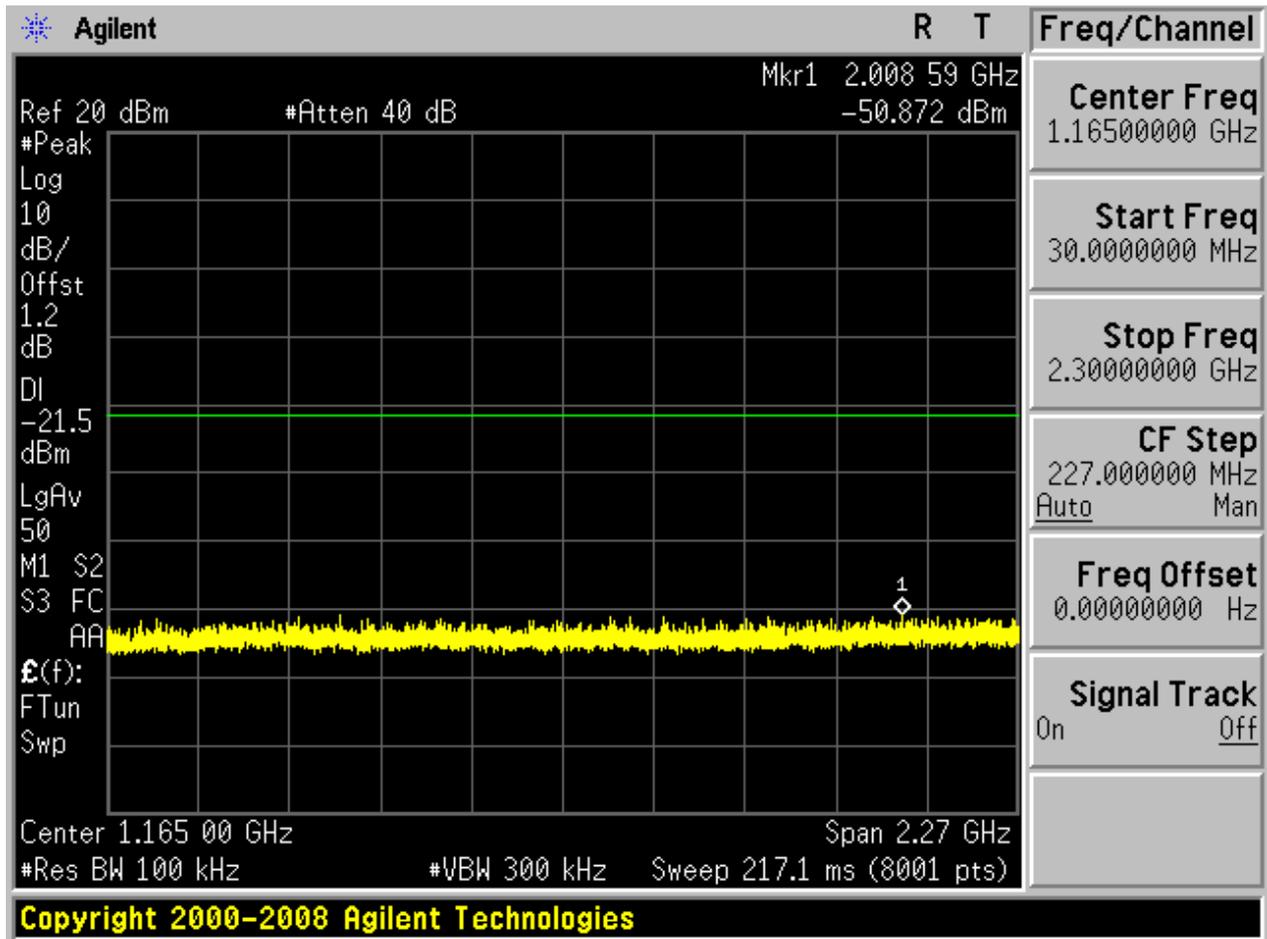


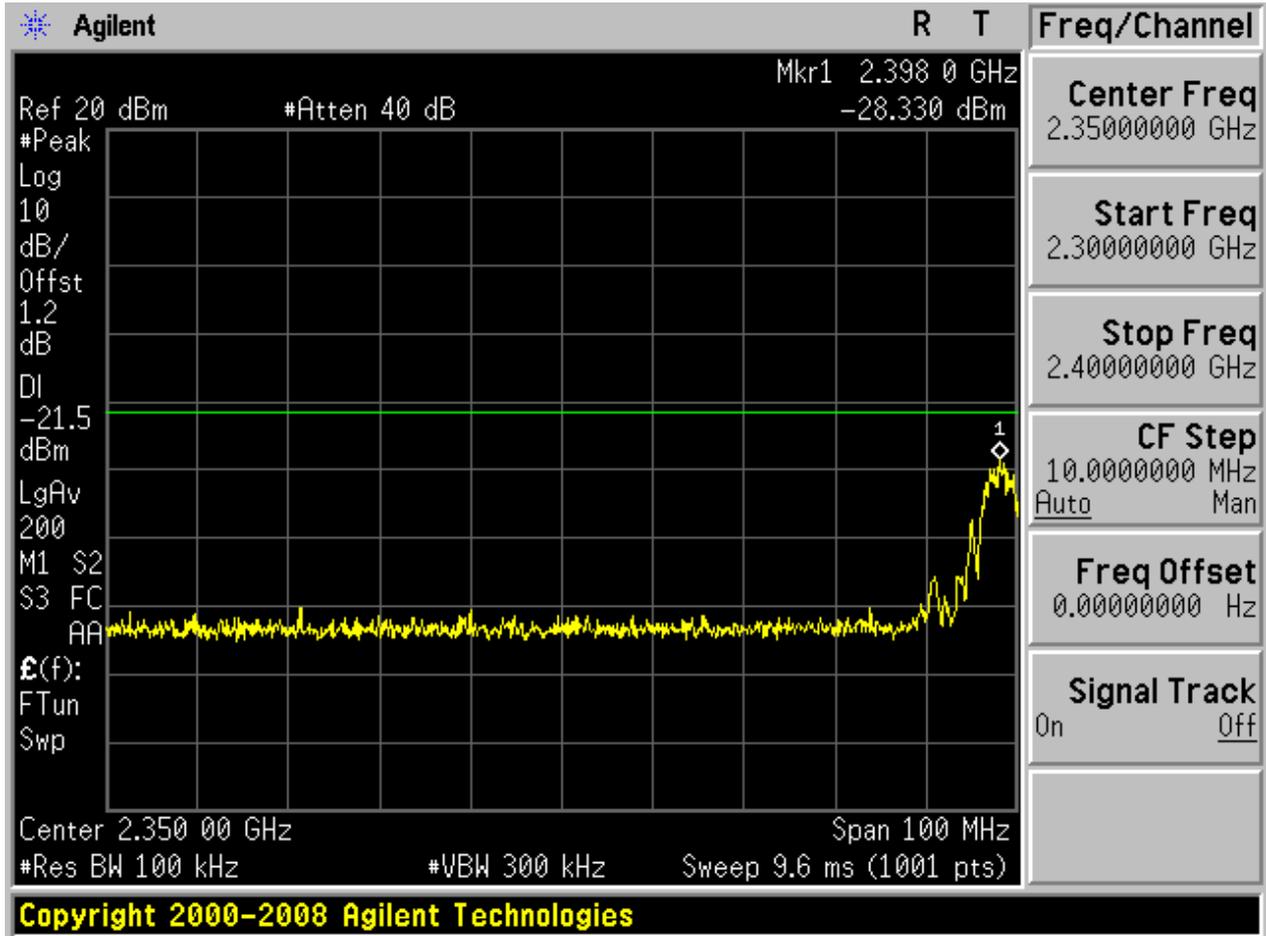


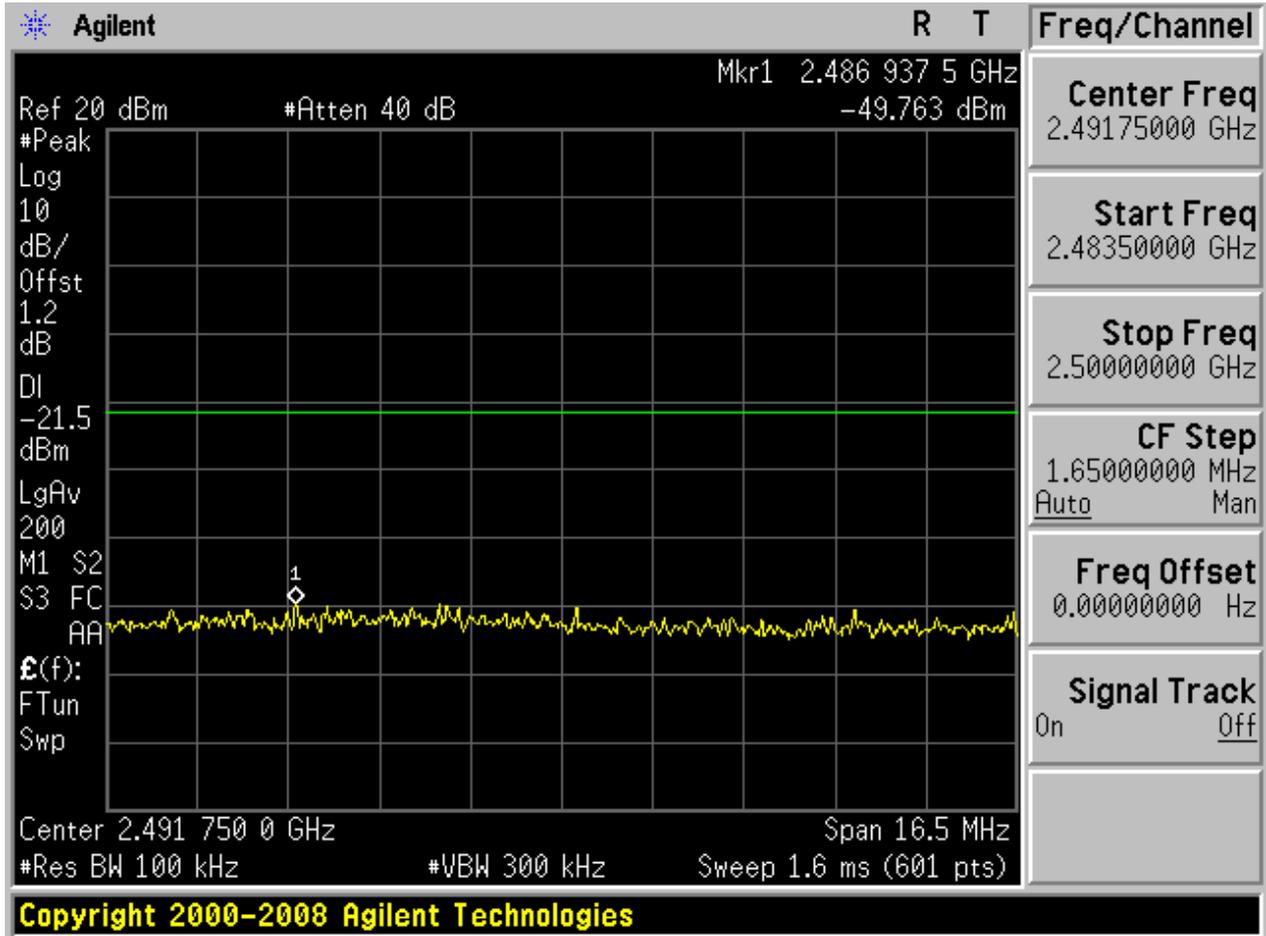
Puw:

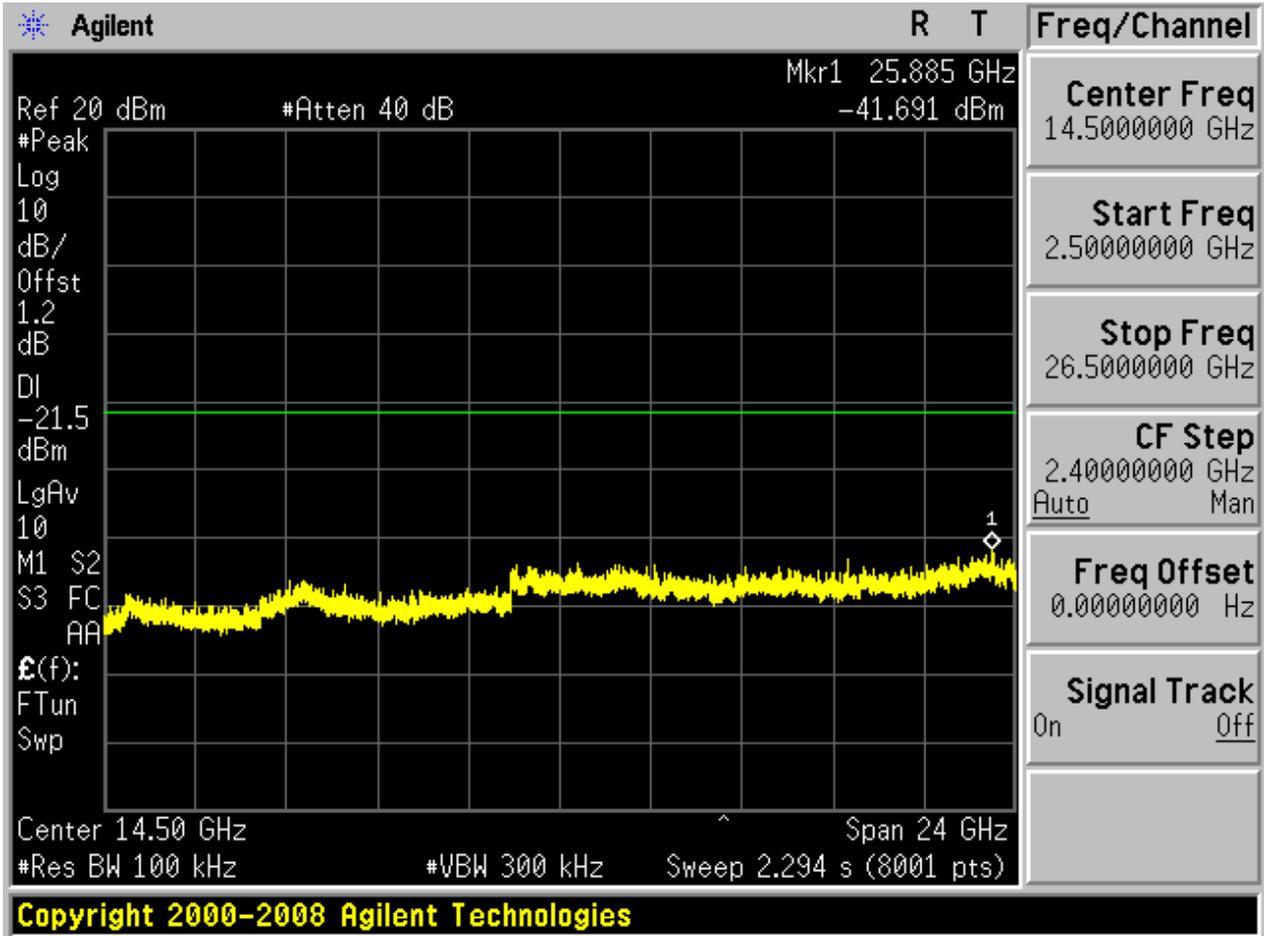








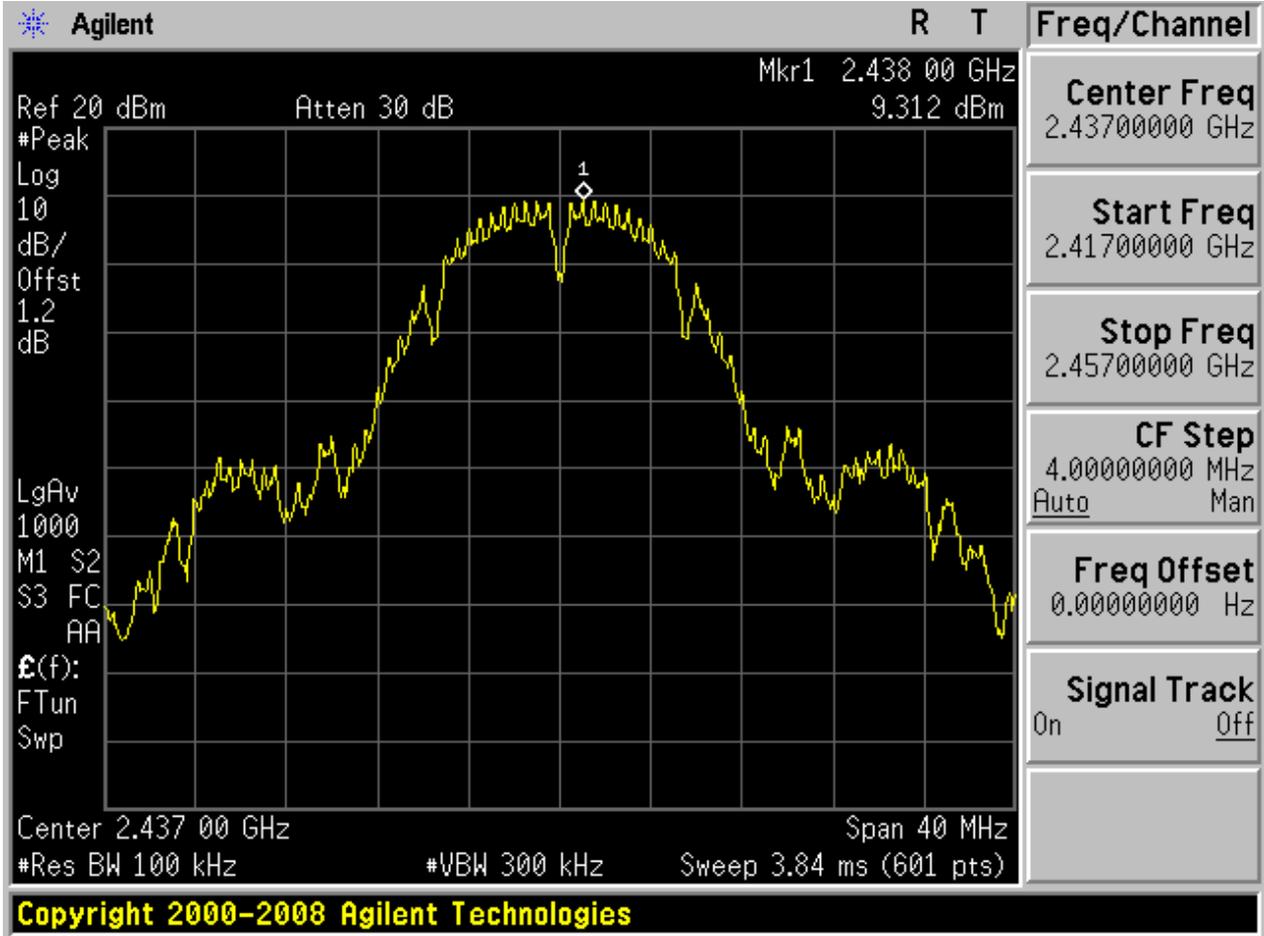






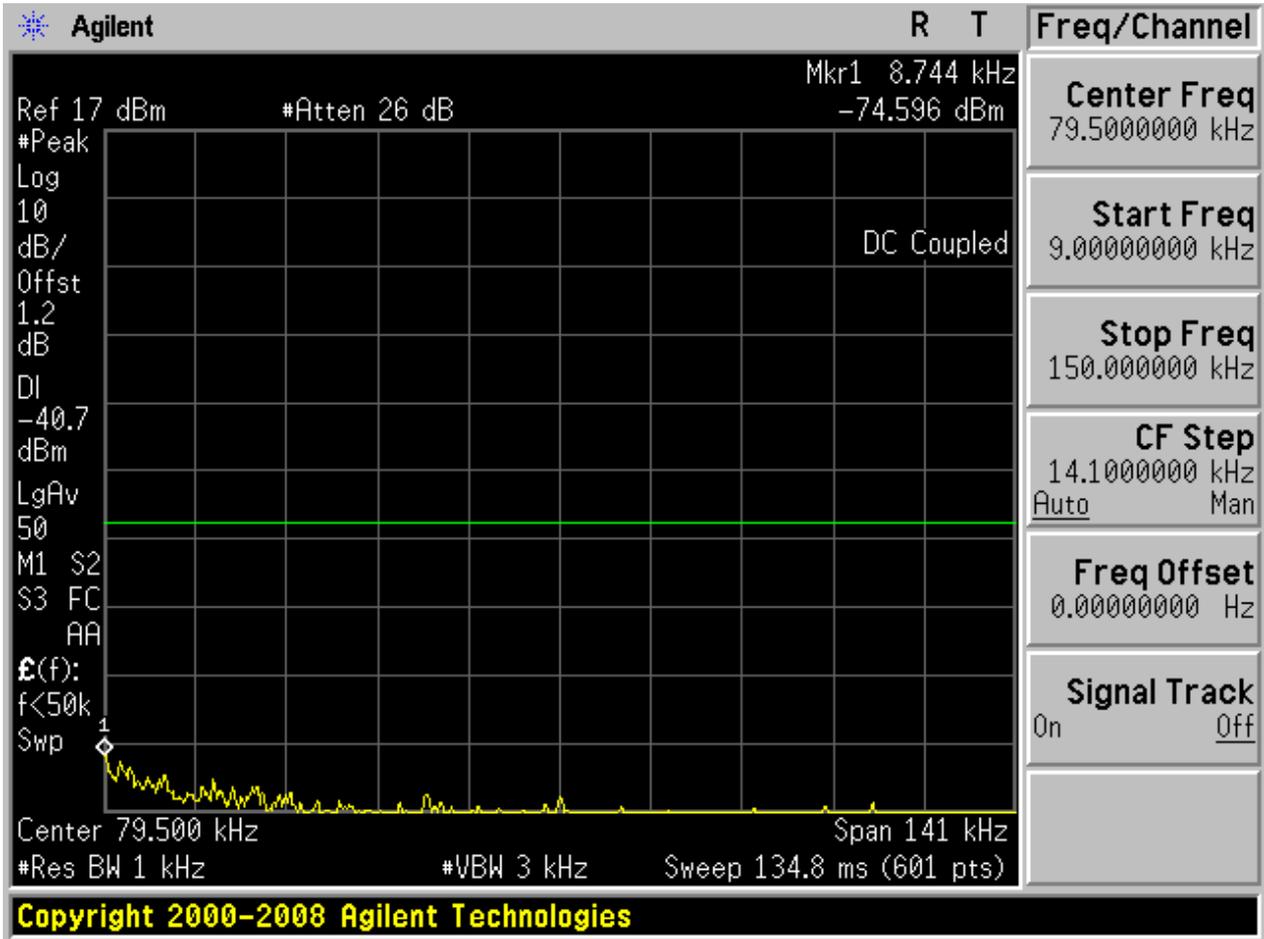
2.2 11B\_M@Ant 1

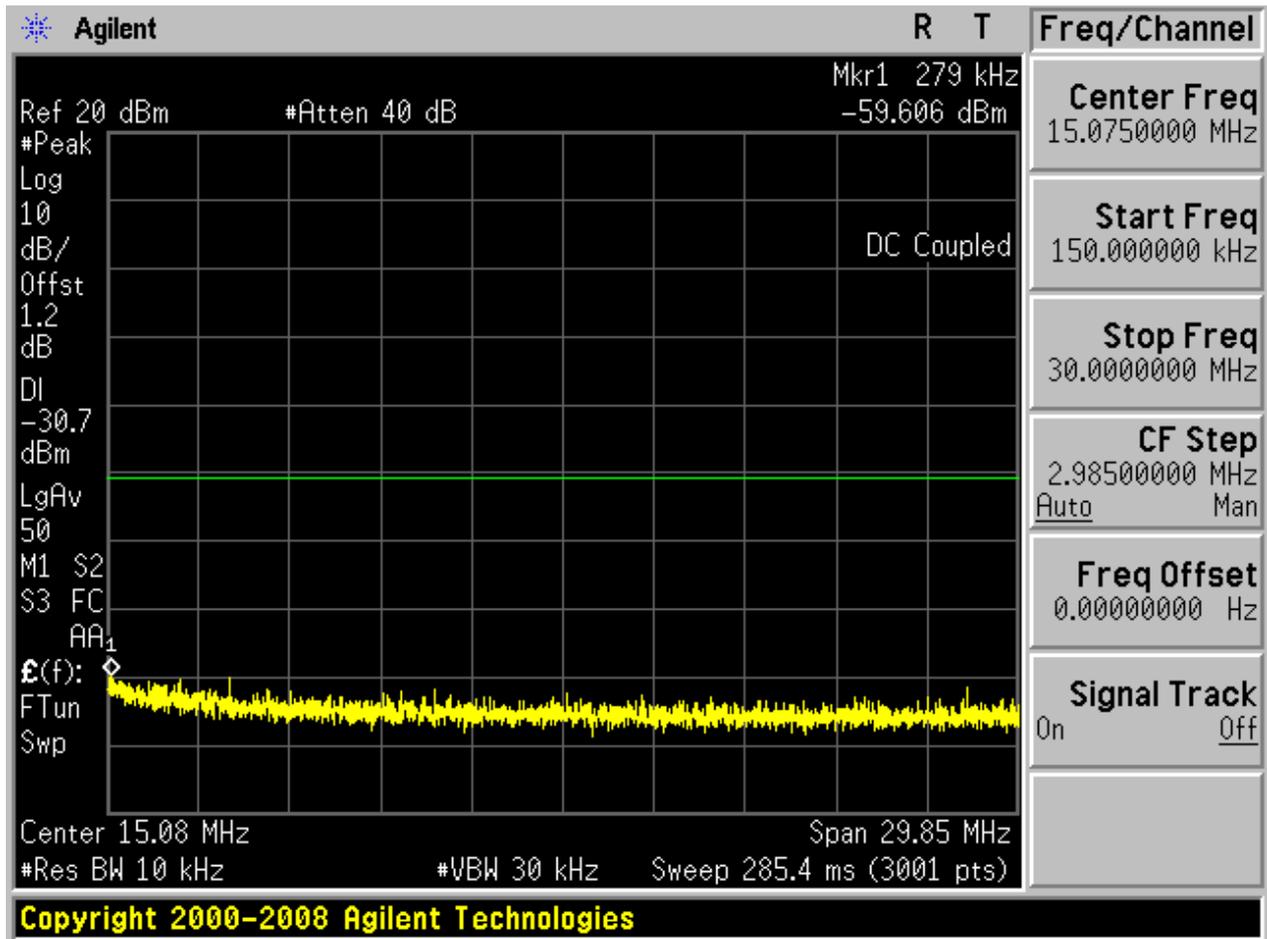
Pref:

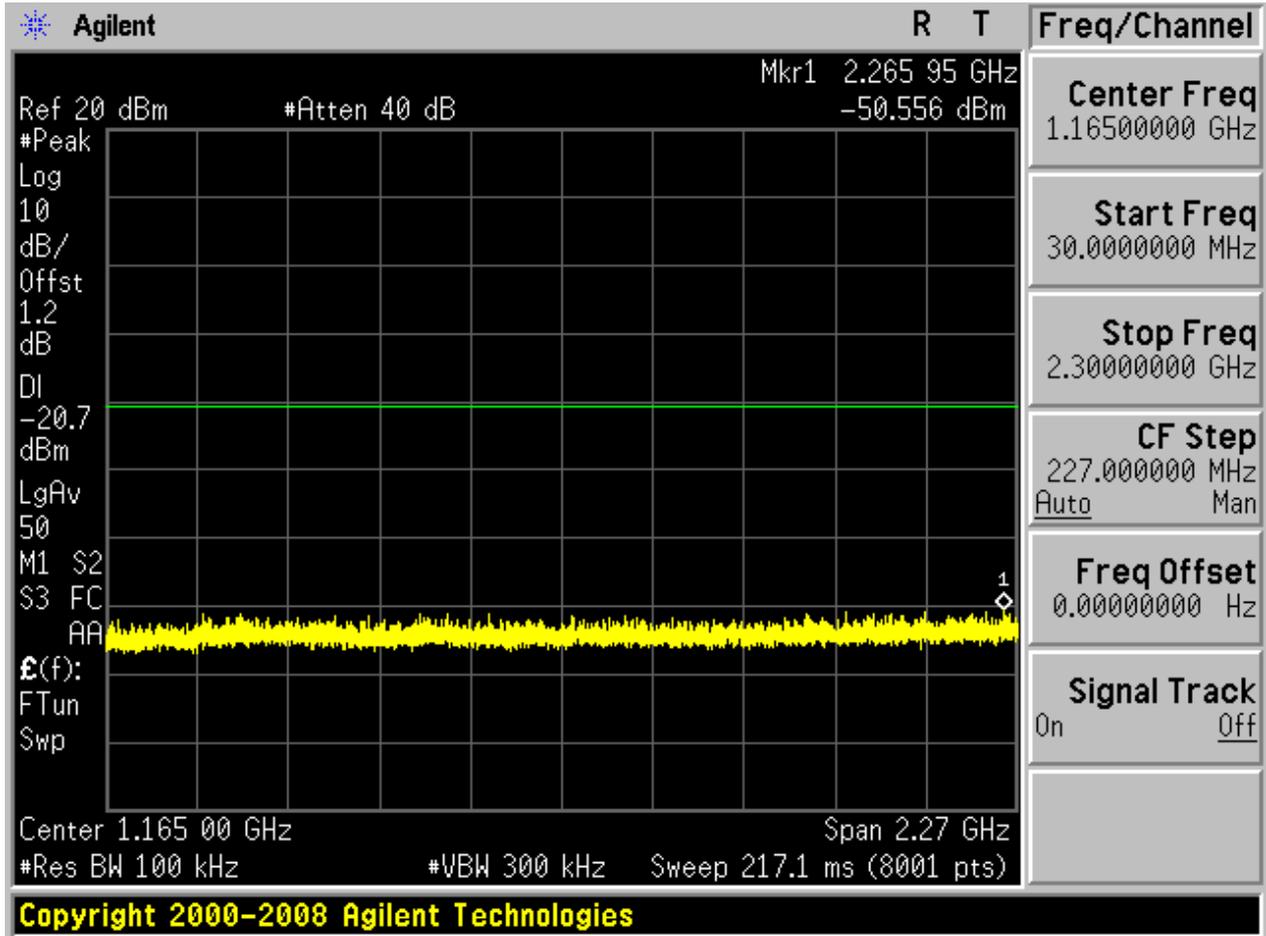


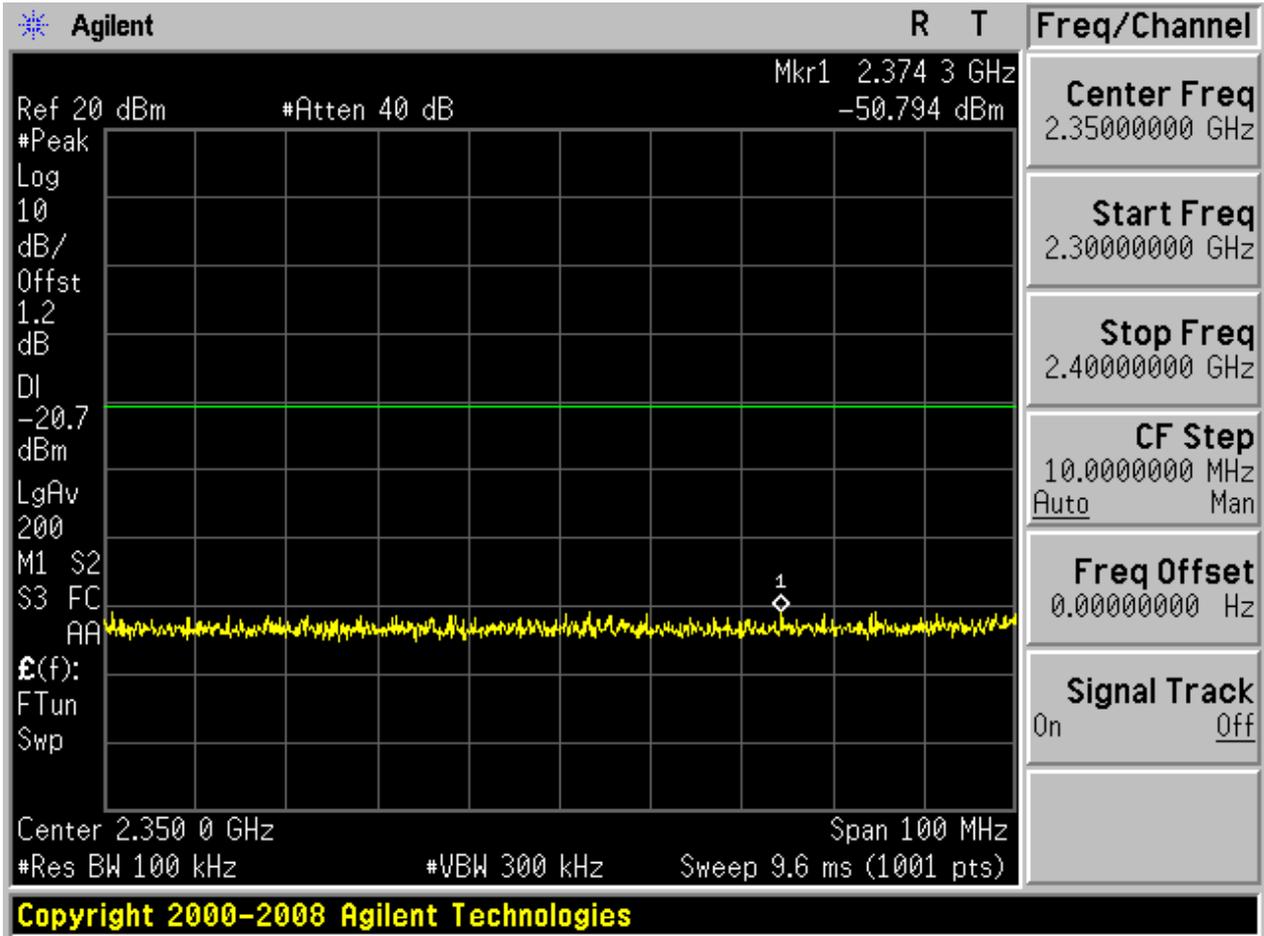


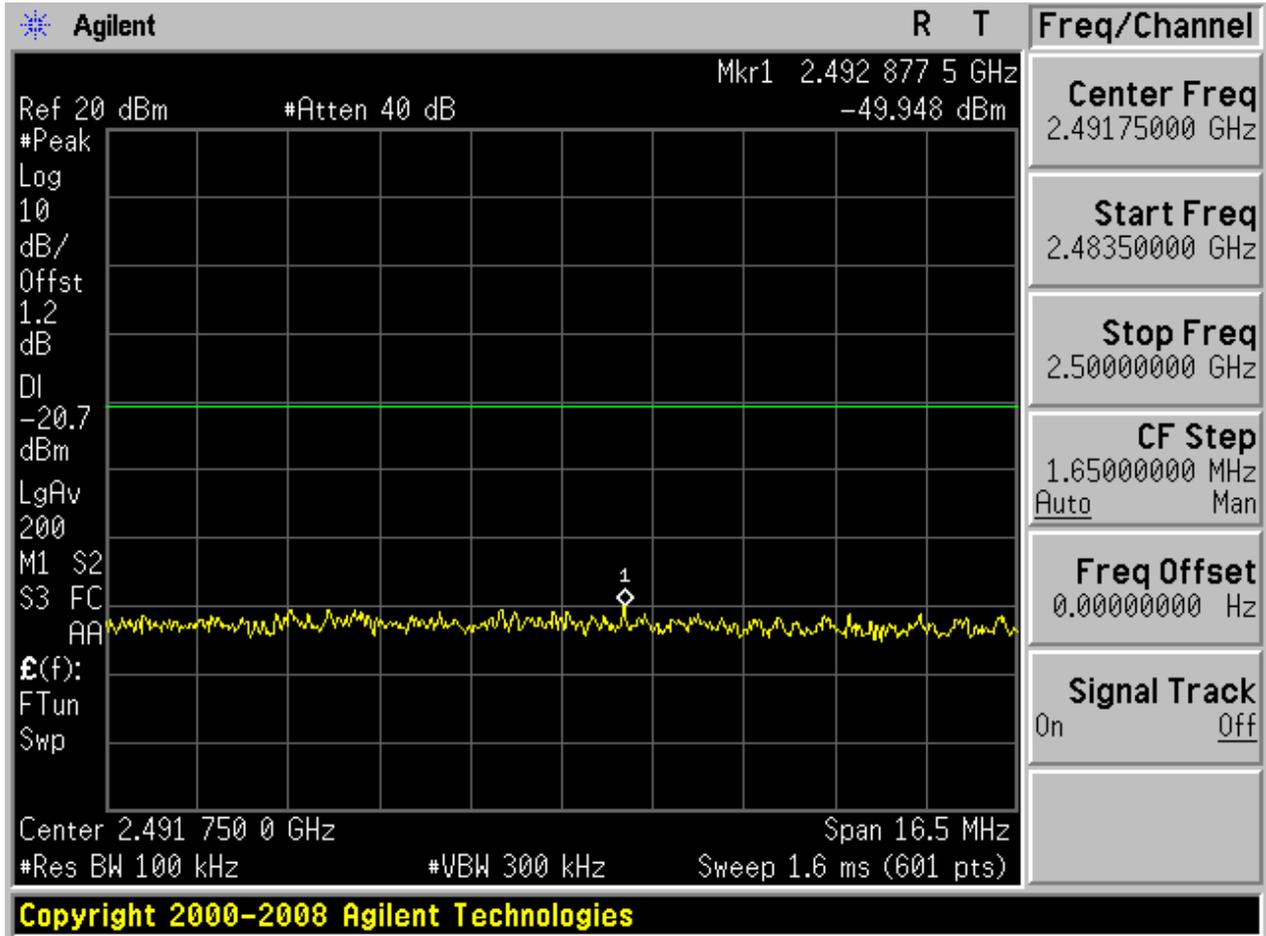
Puw:

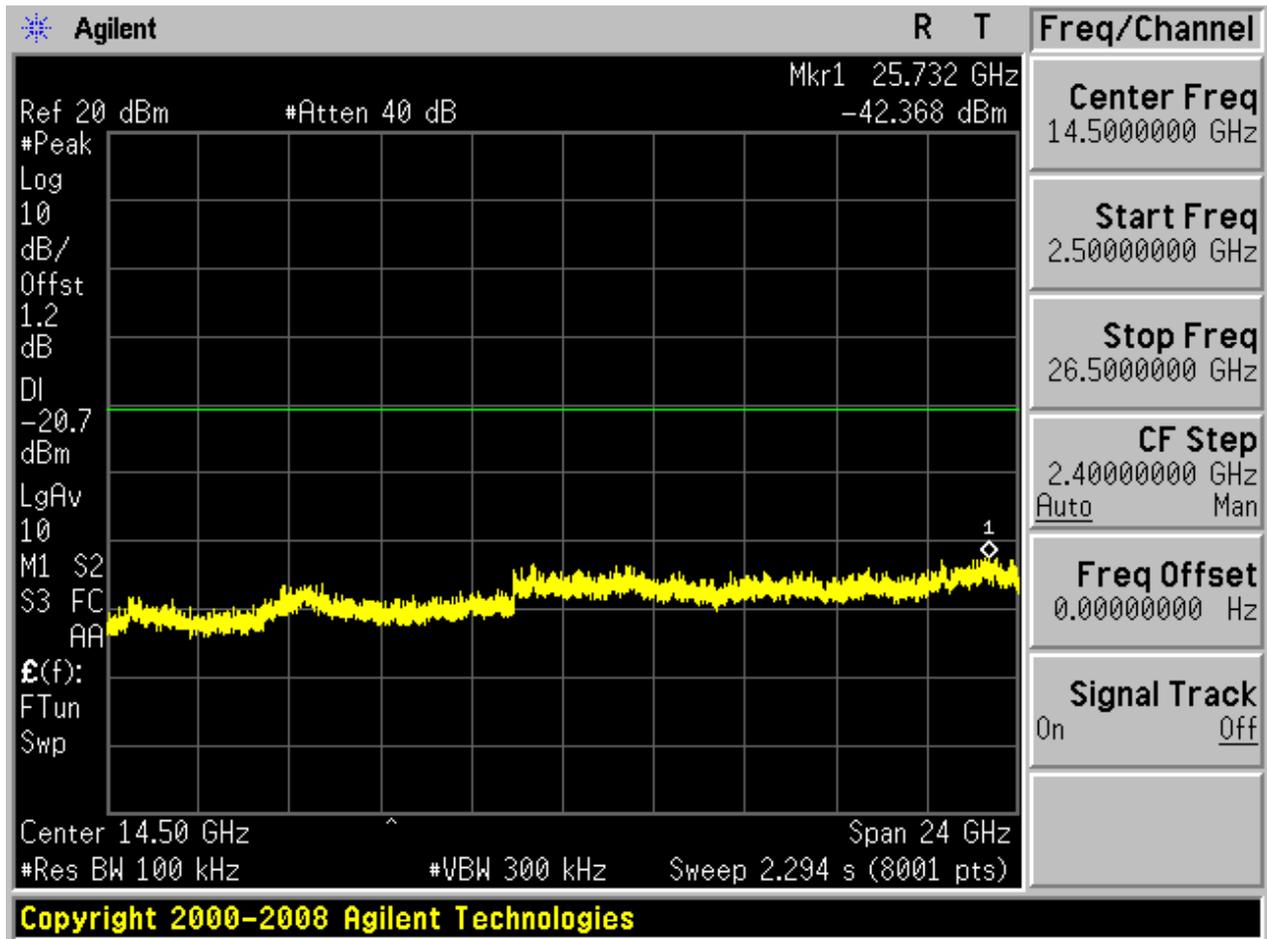








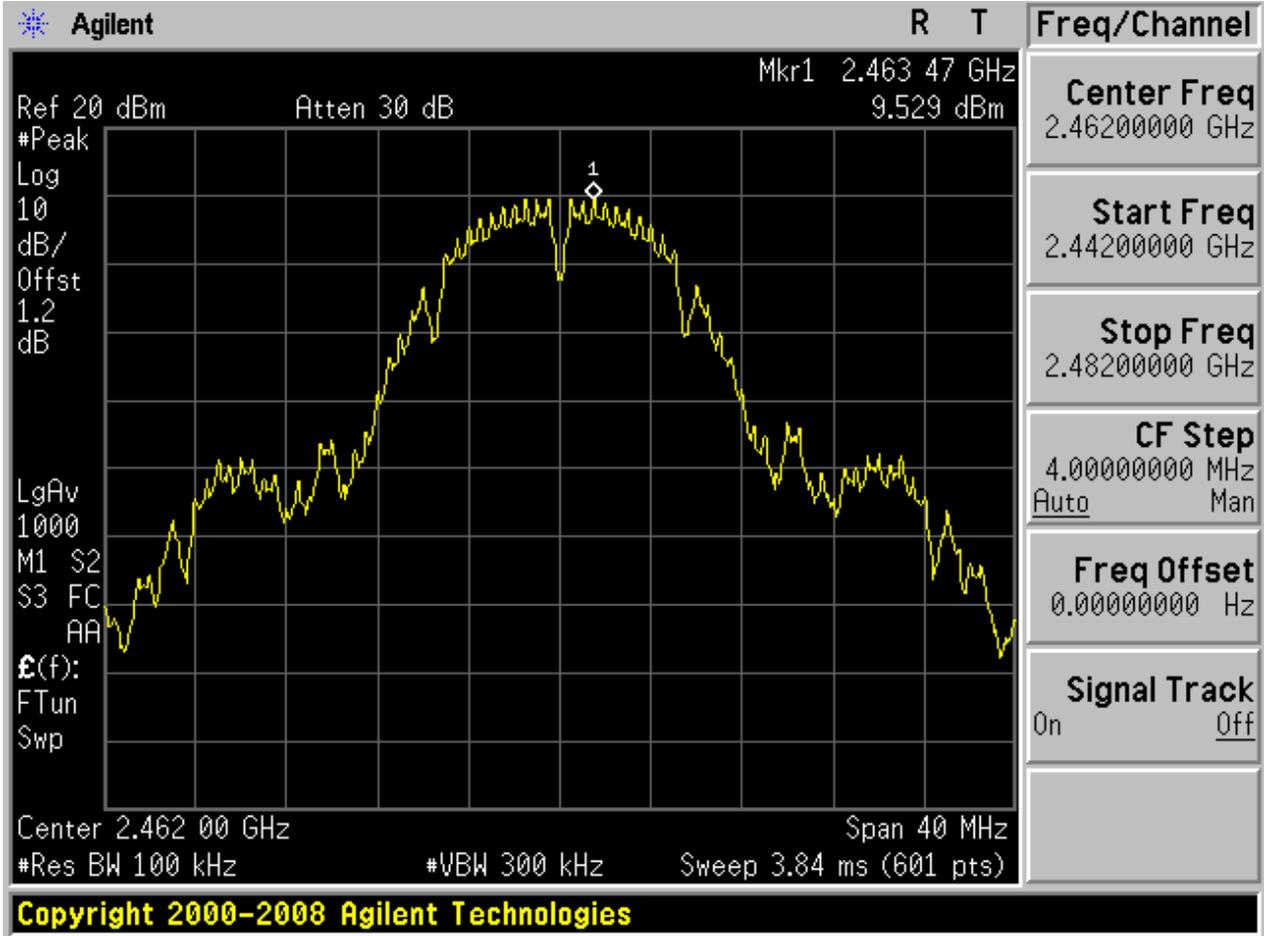






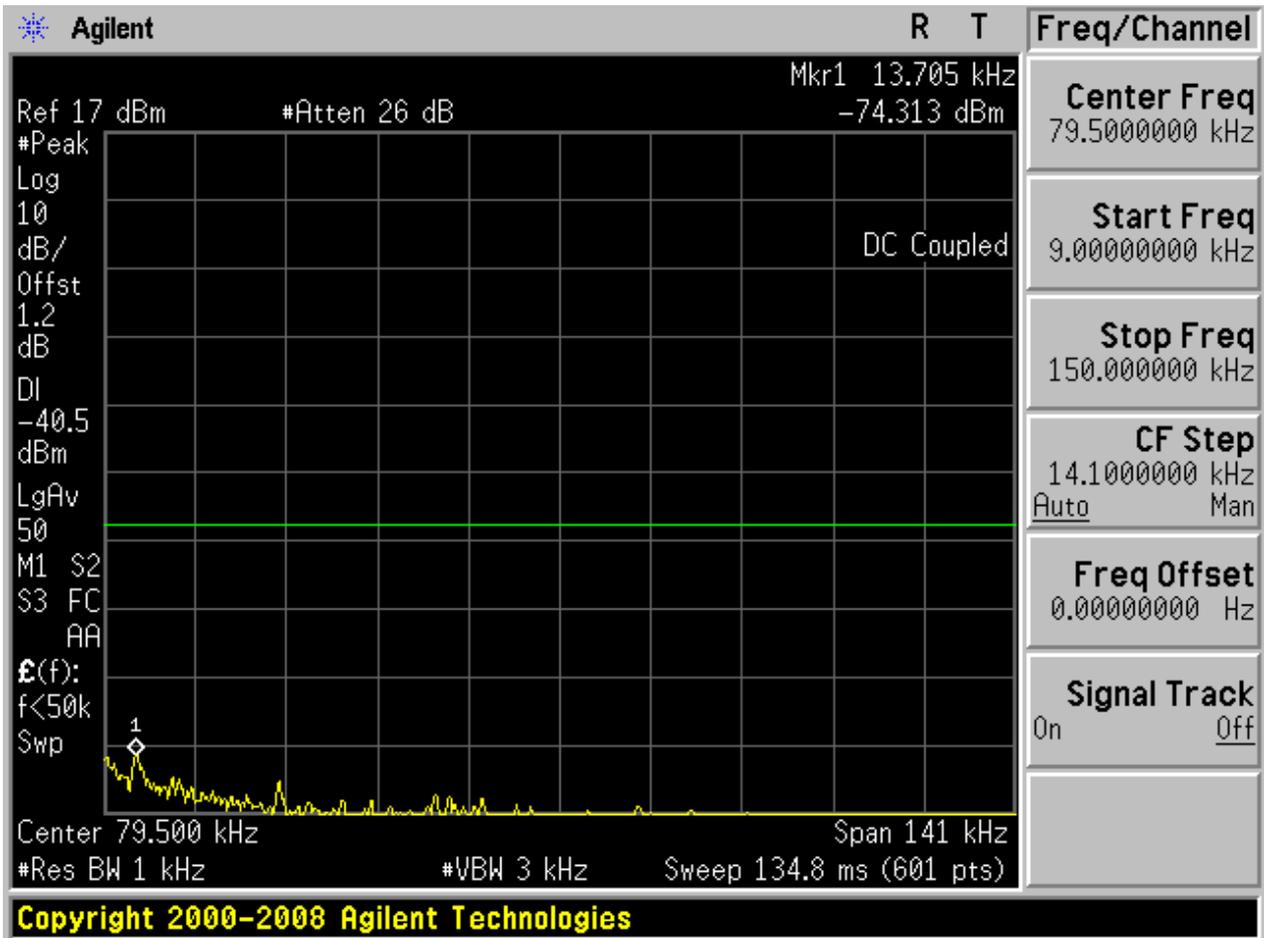
### 2.3 11B\_H@Ant 1

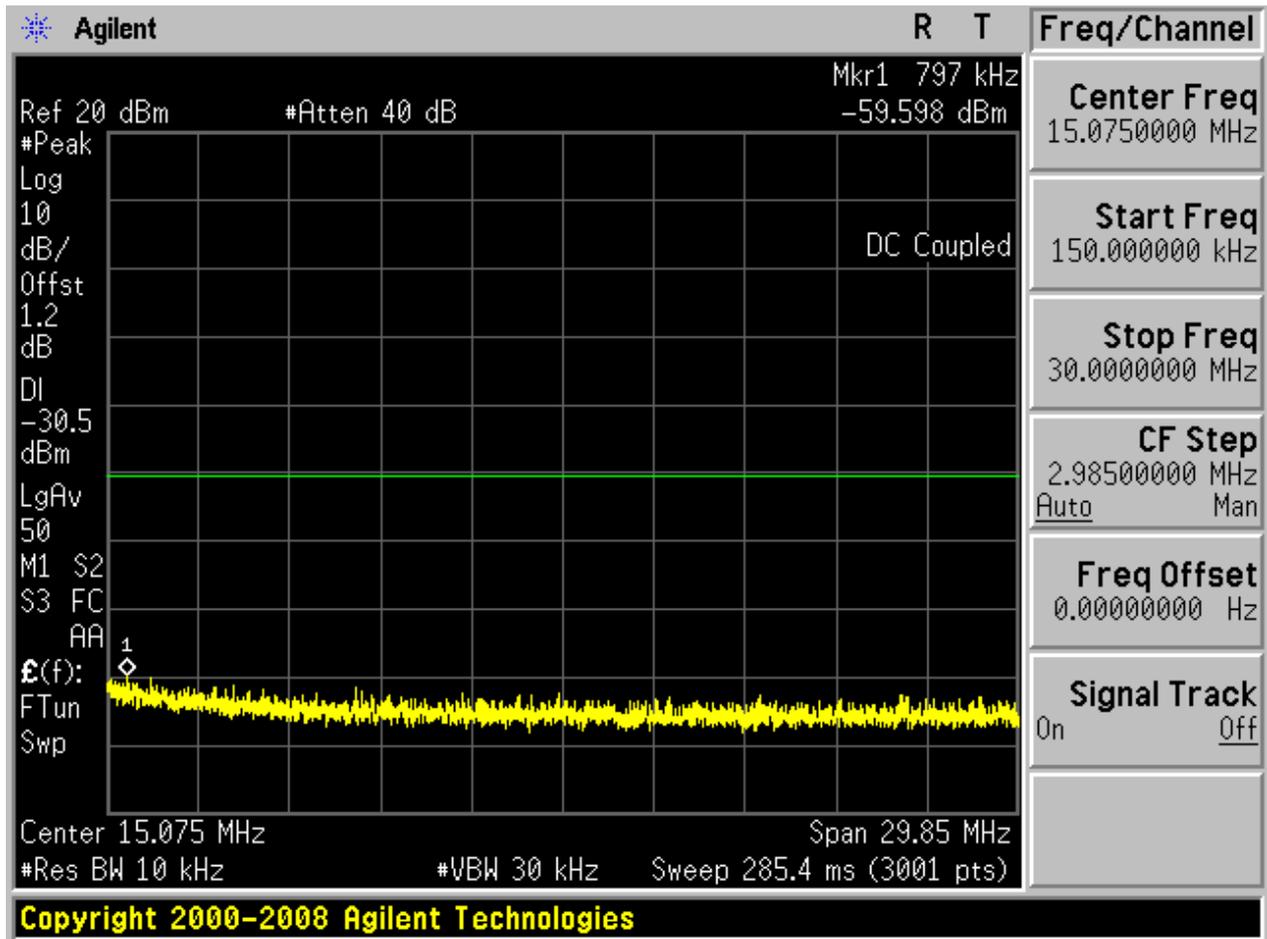
Pref:

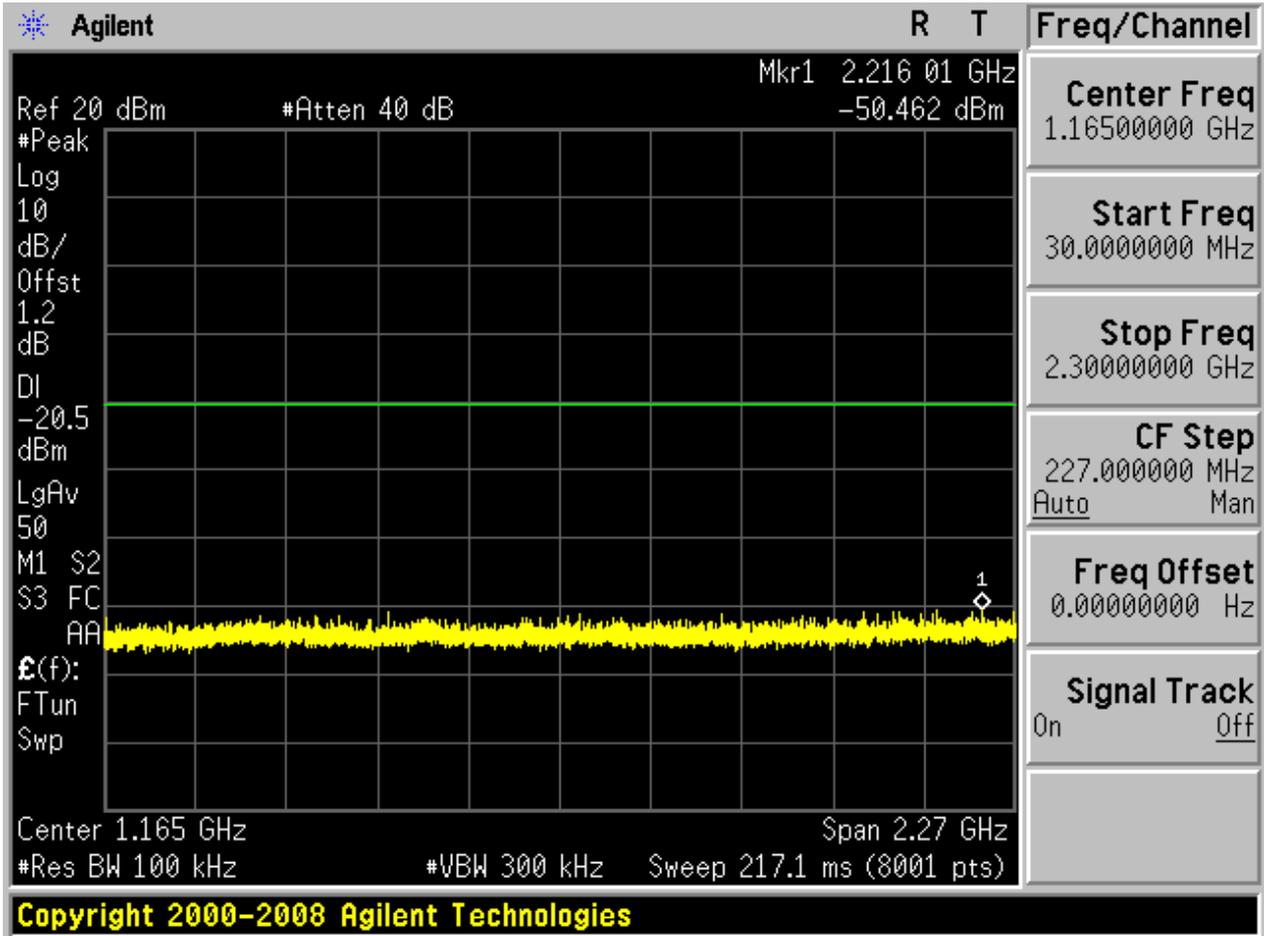


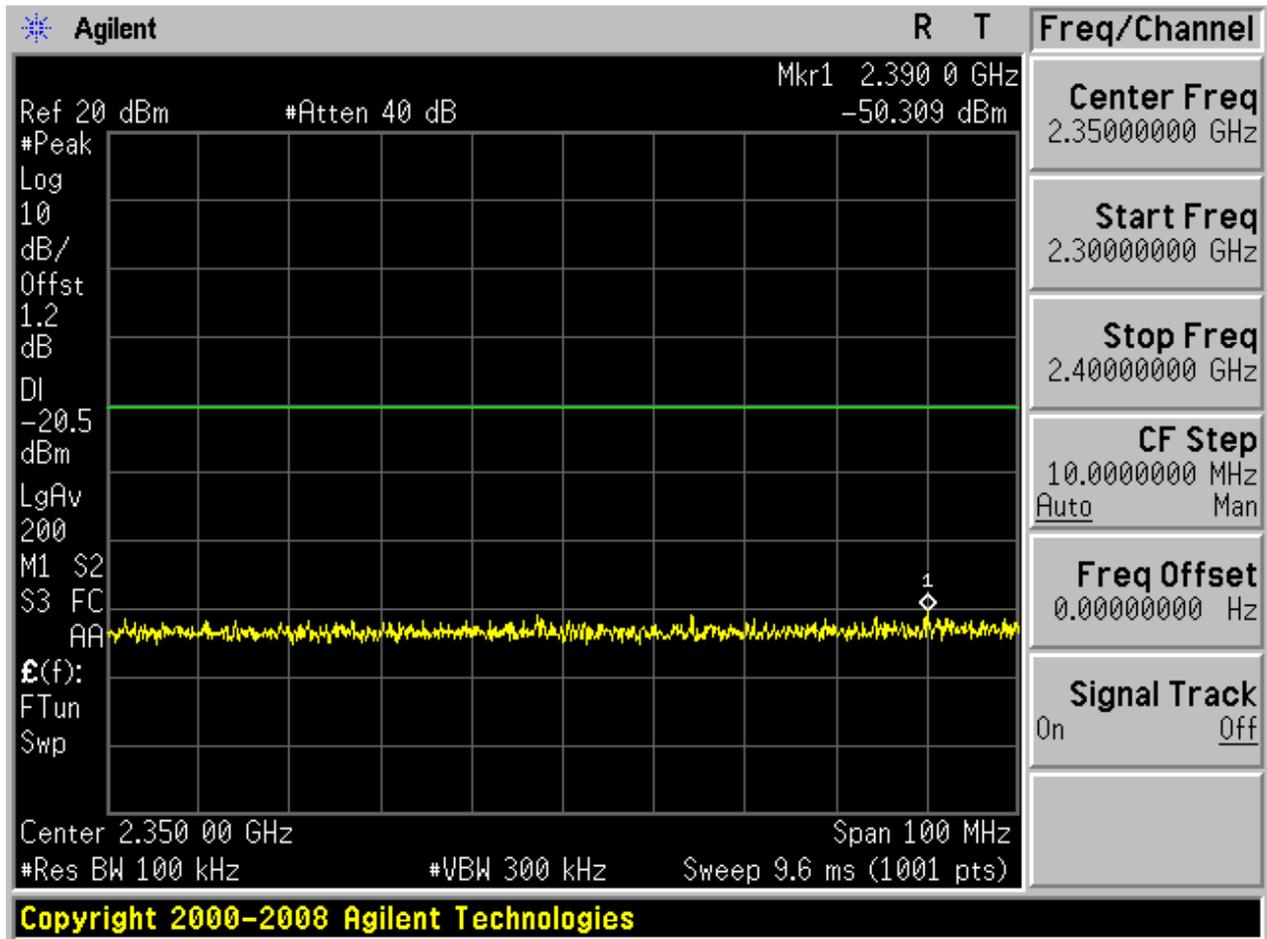


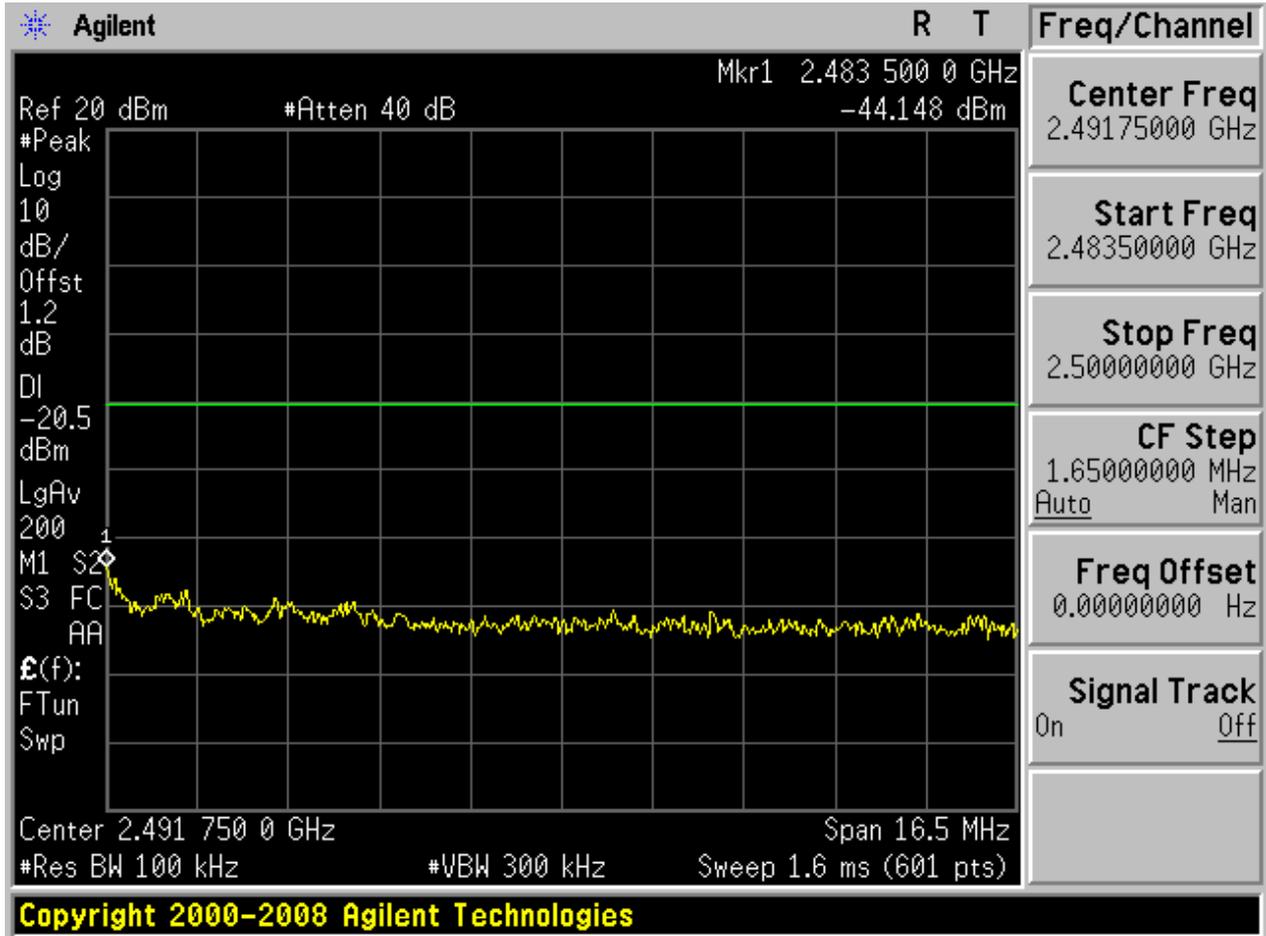
Puw:

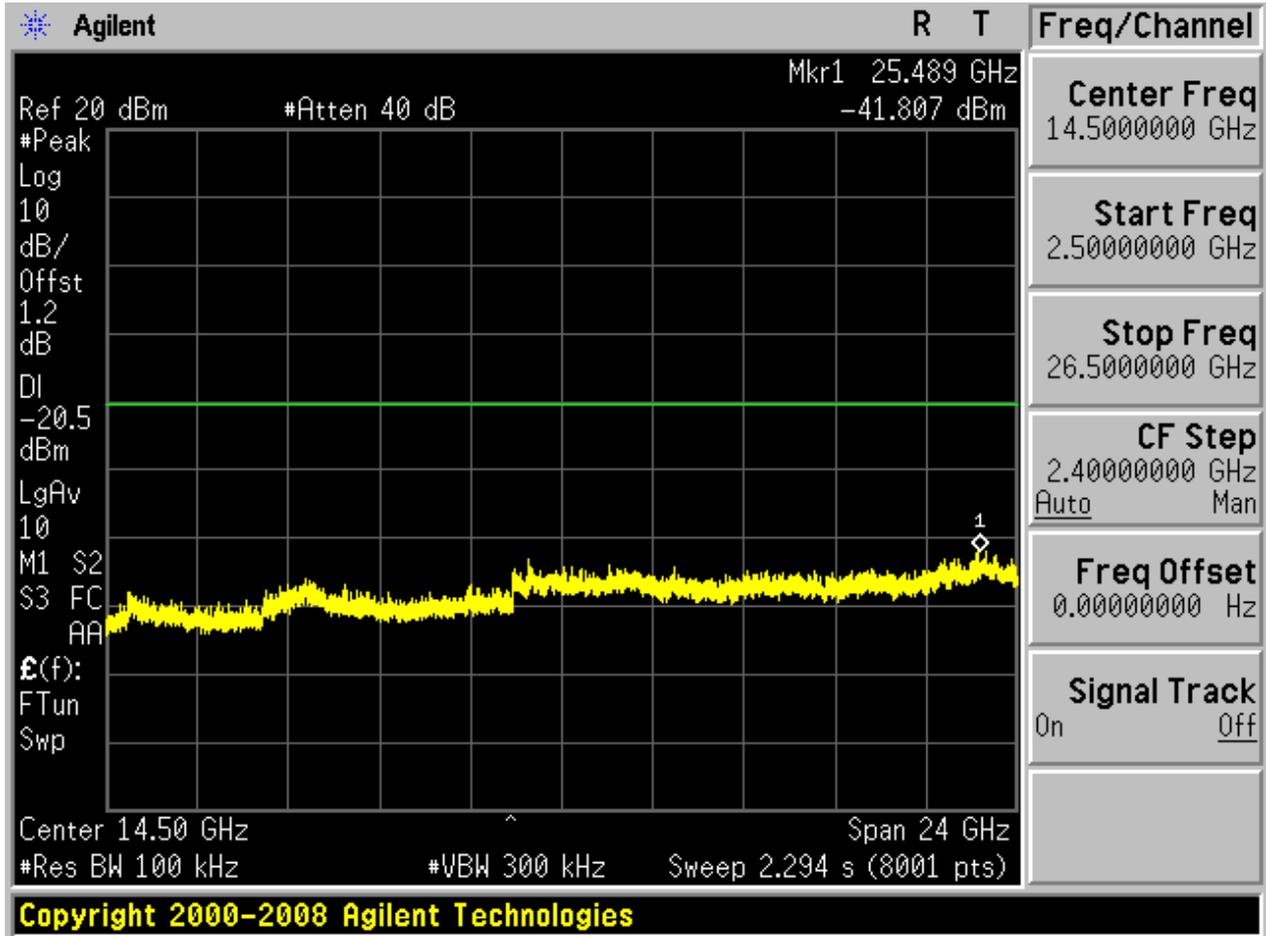








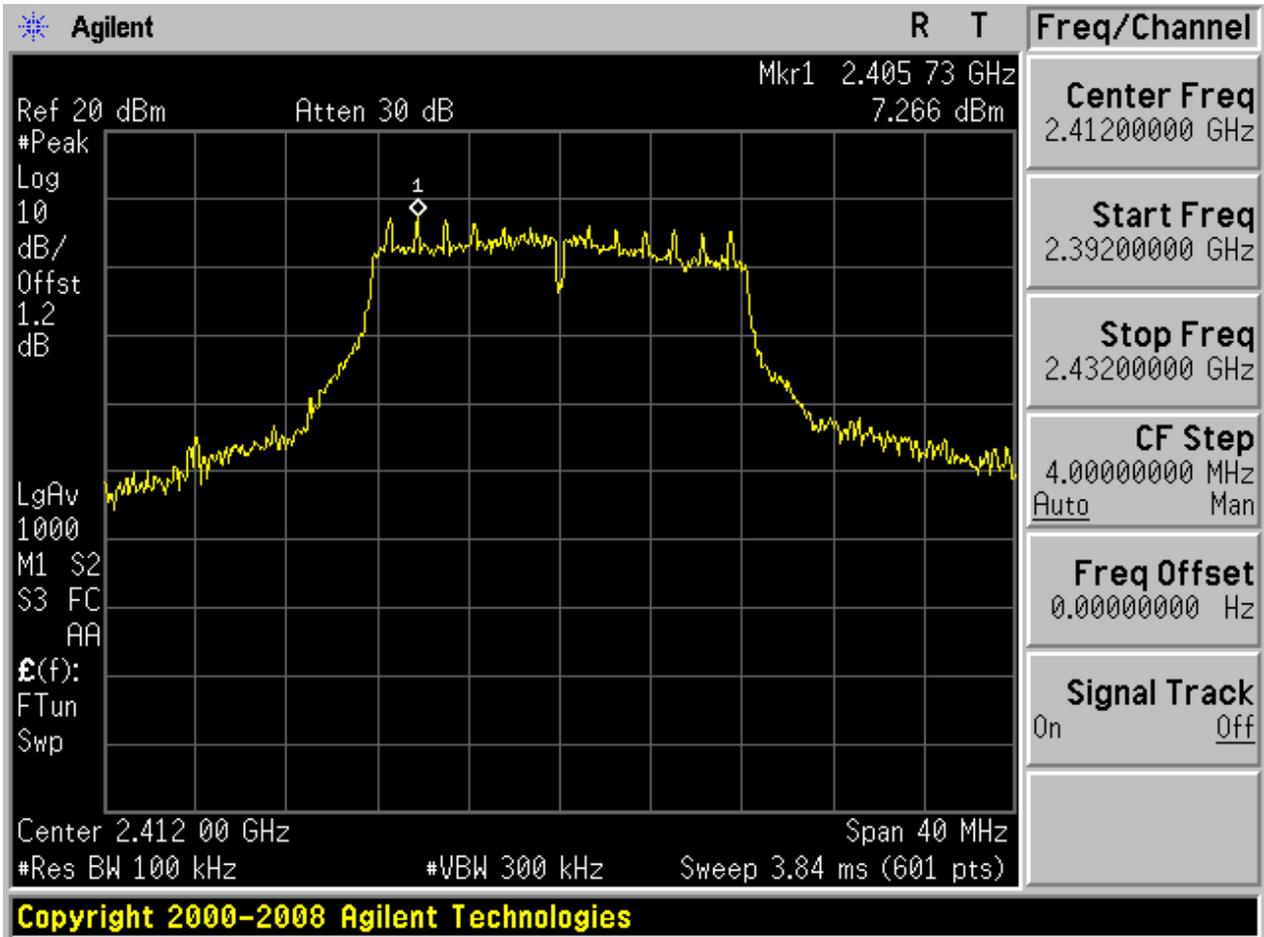






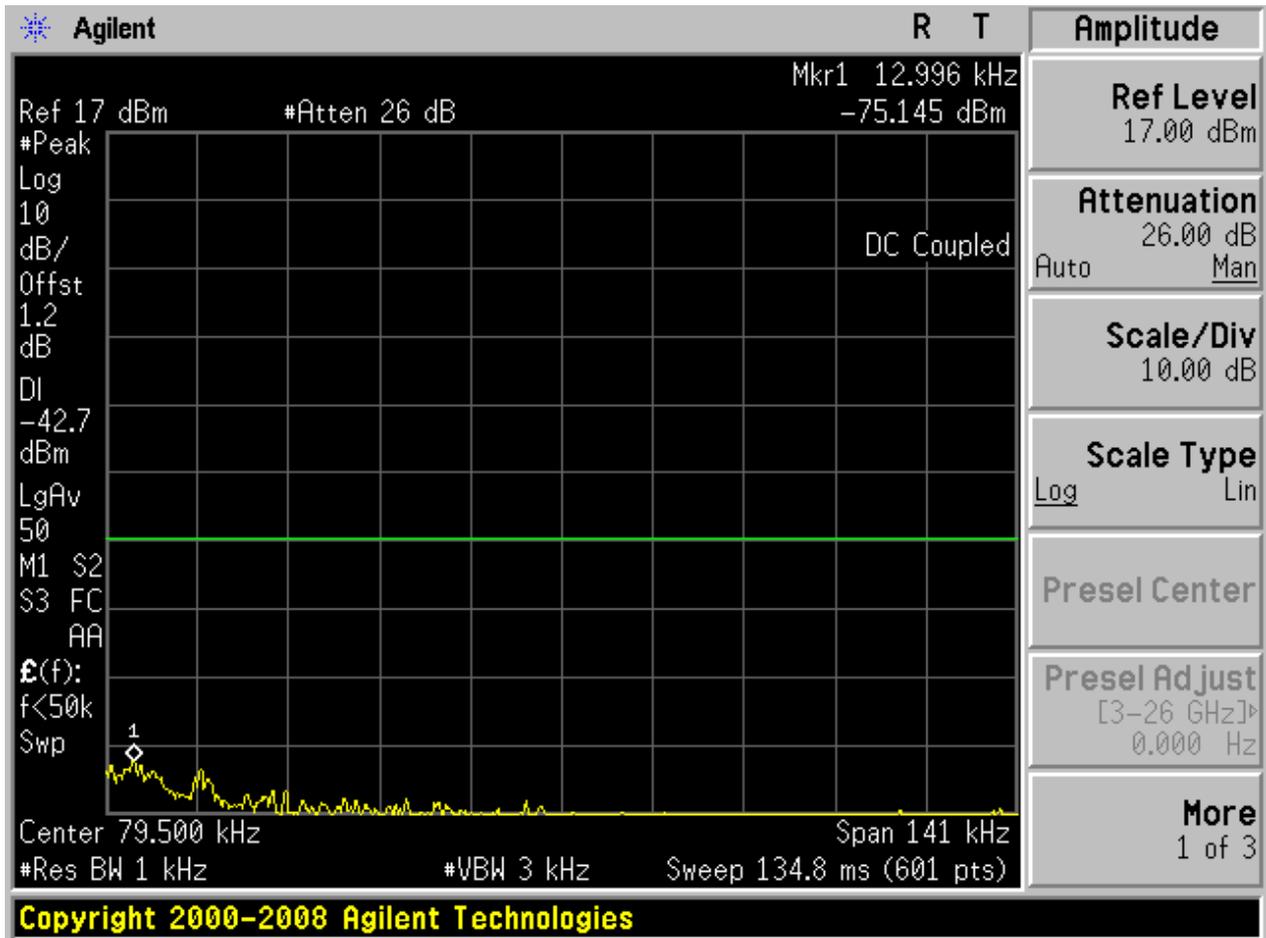
### 2.4 11G\_L@Ant 1

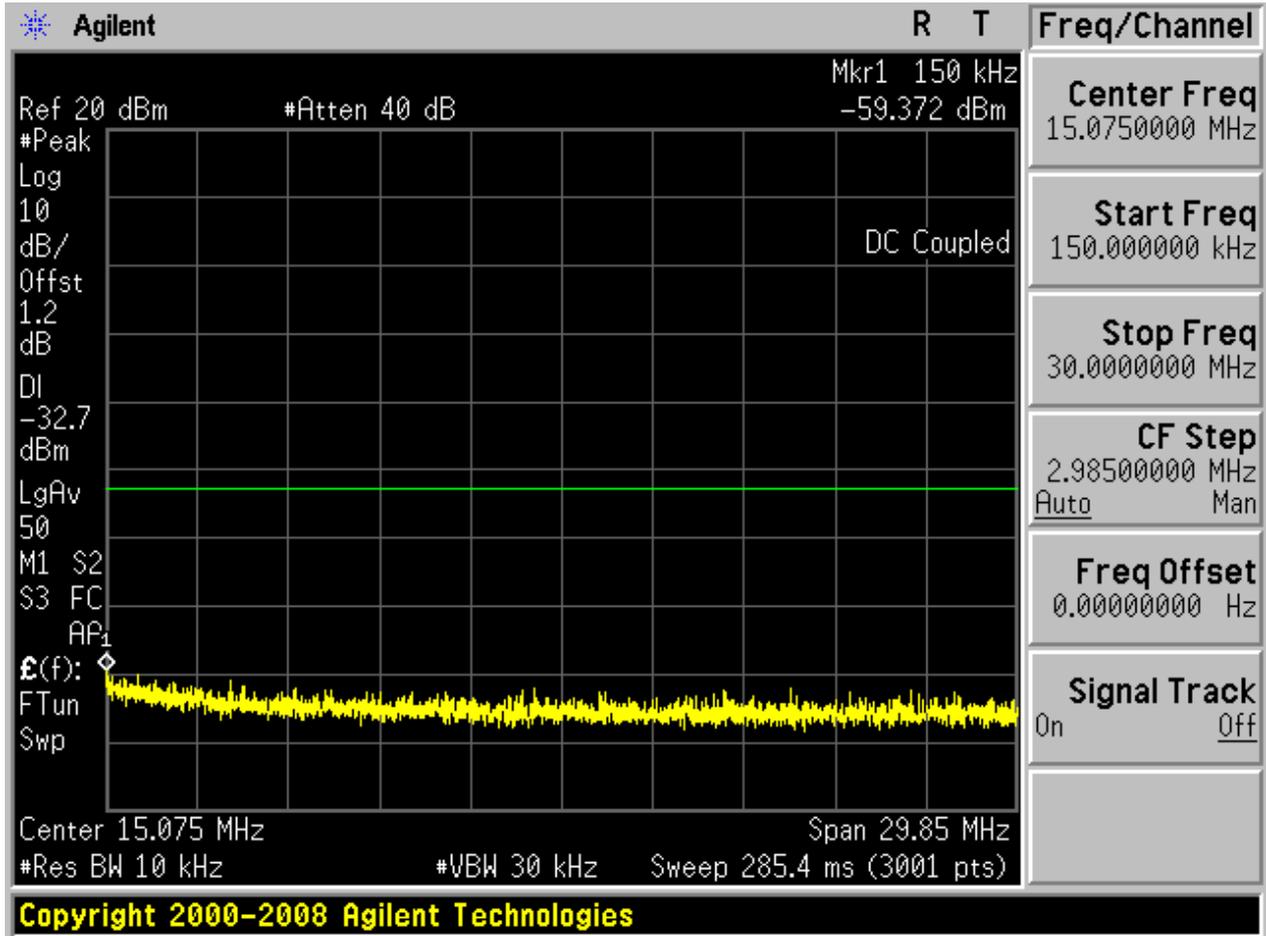
Pref:

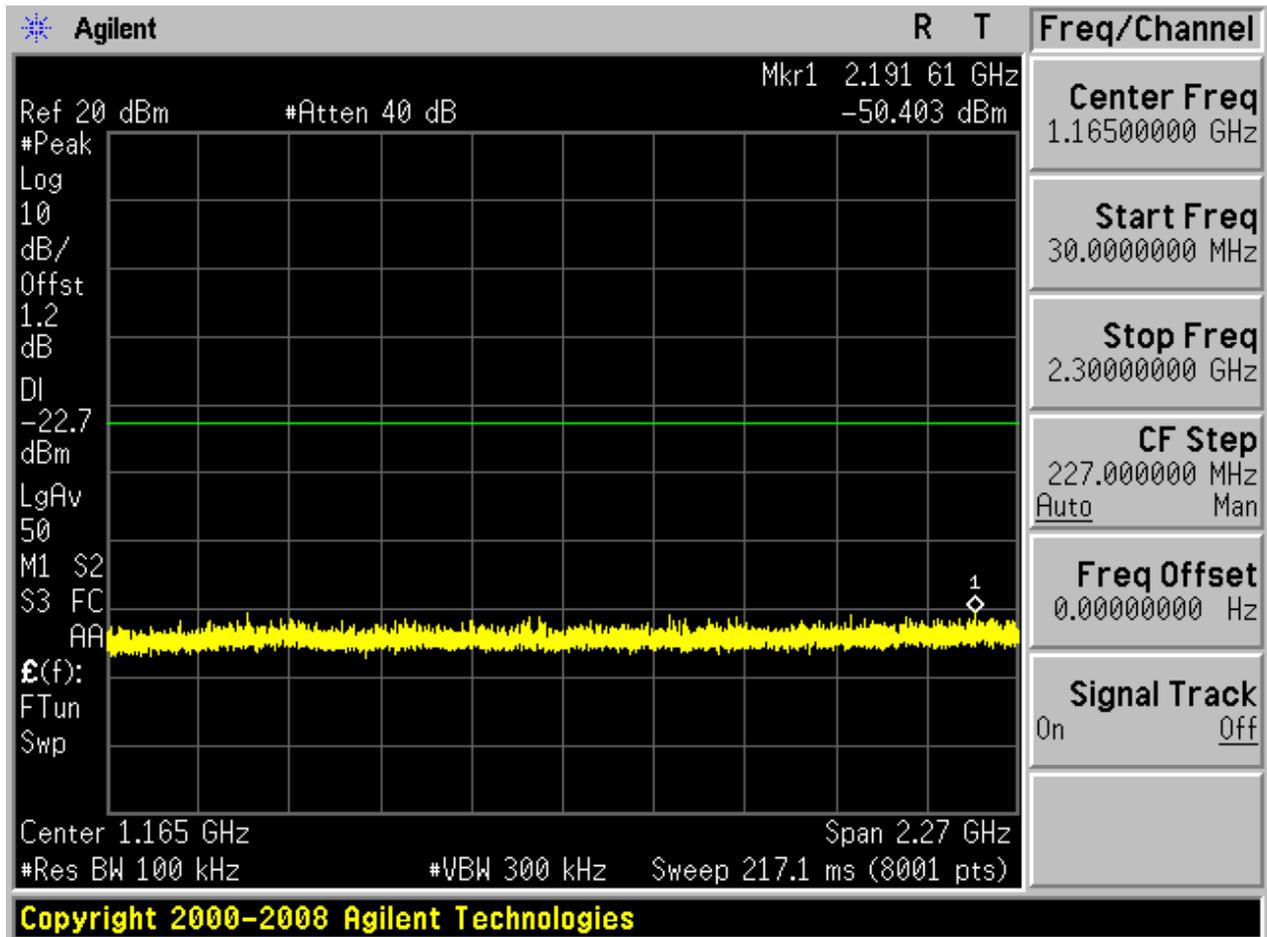


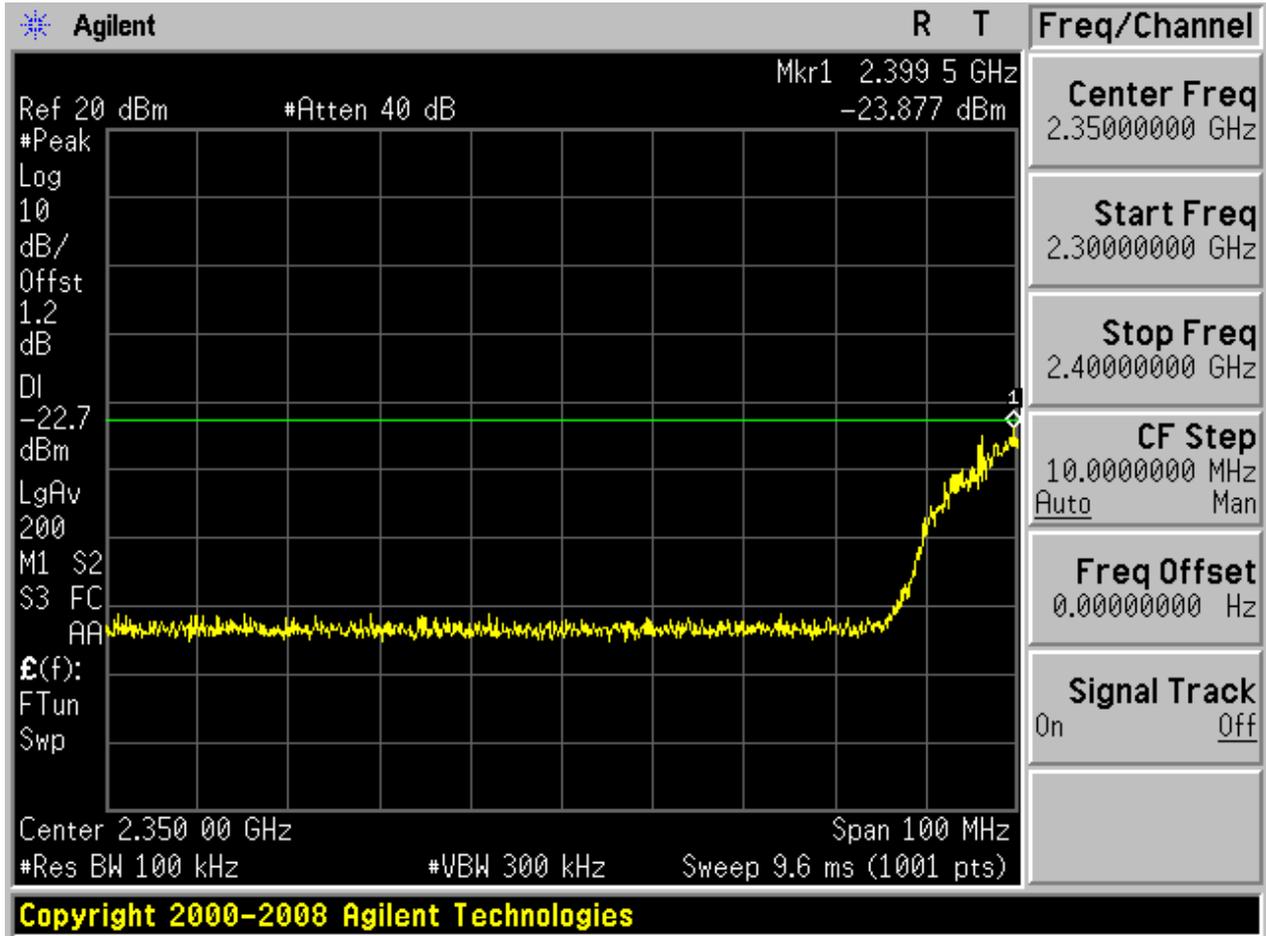


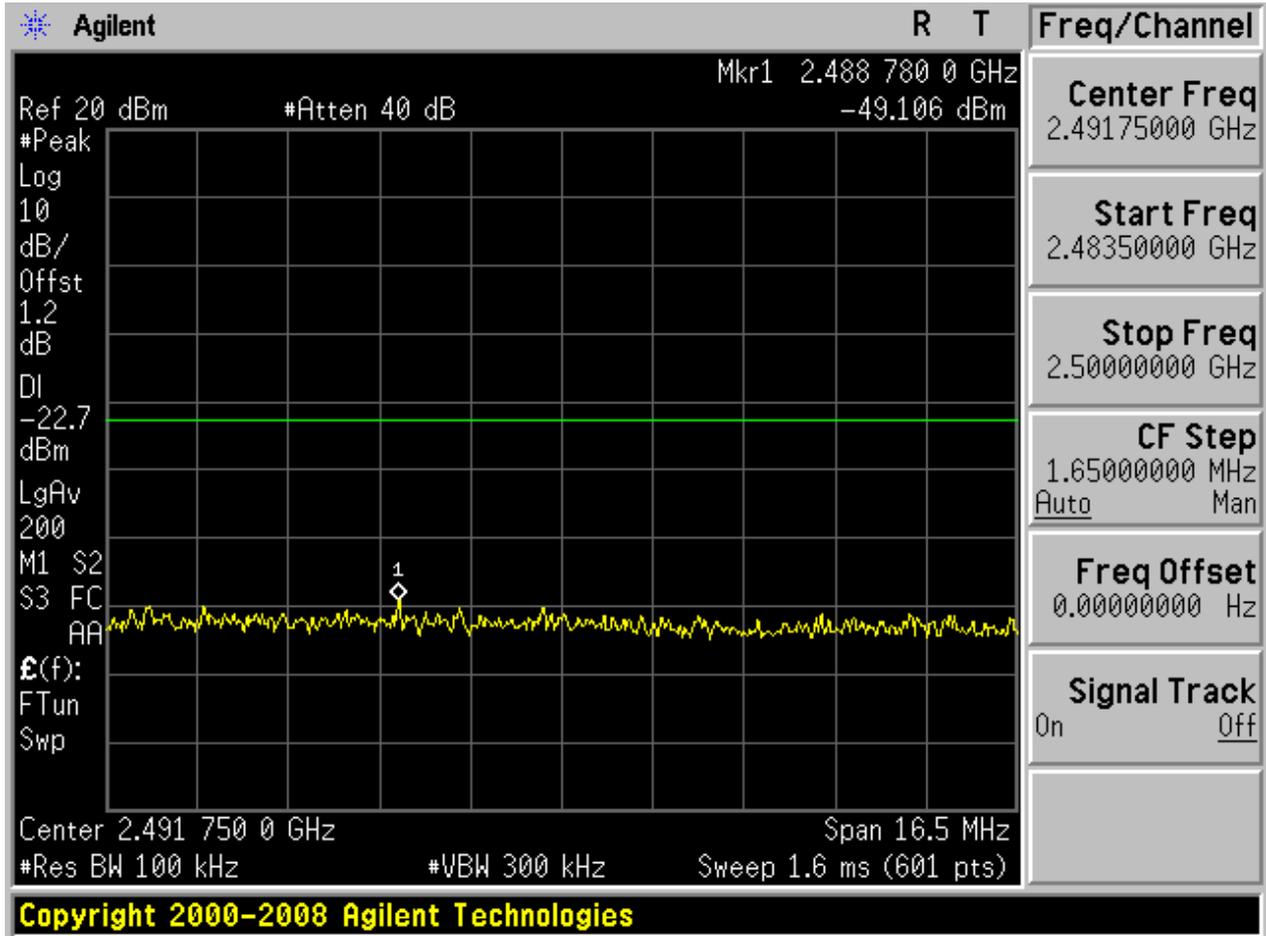
Puw:

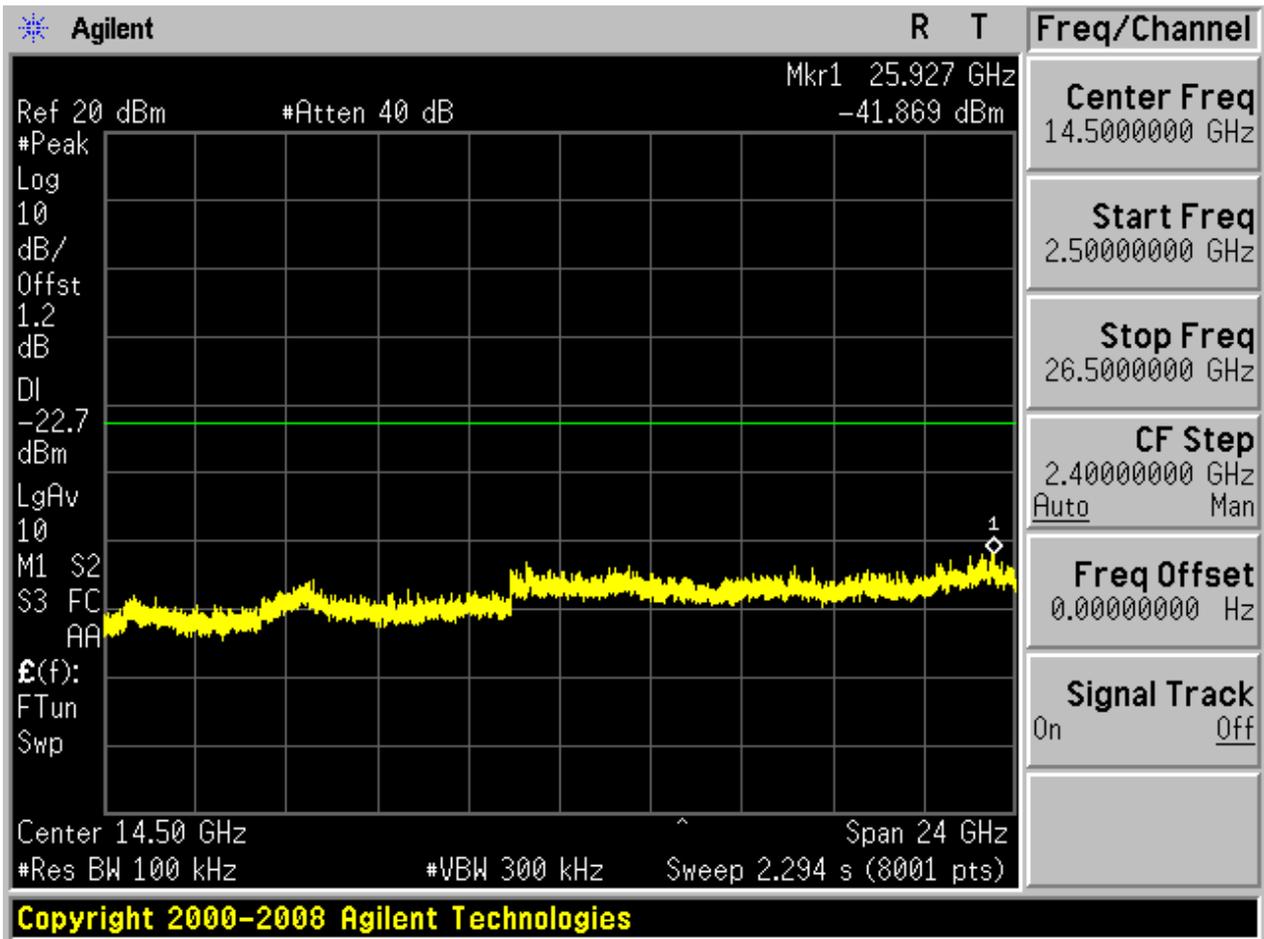








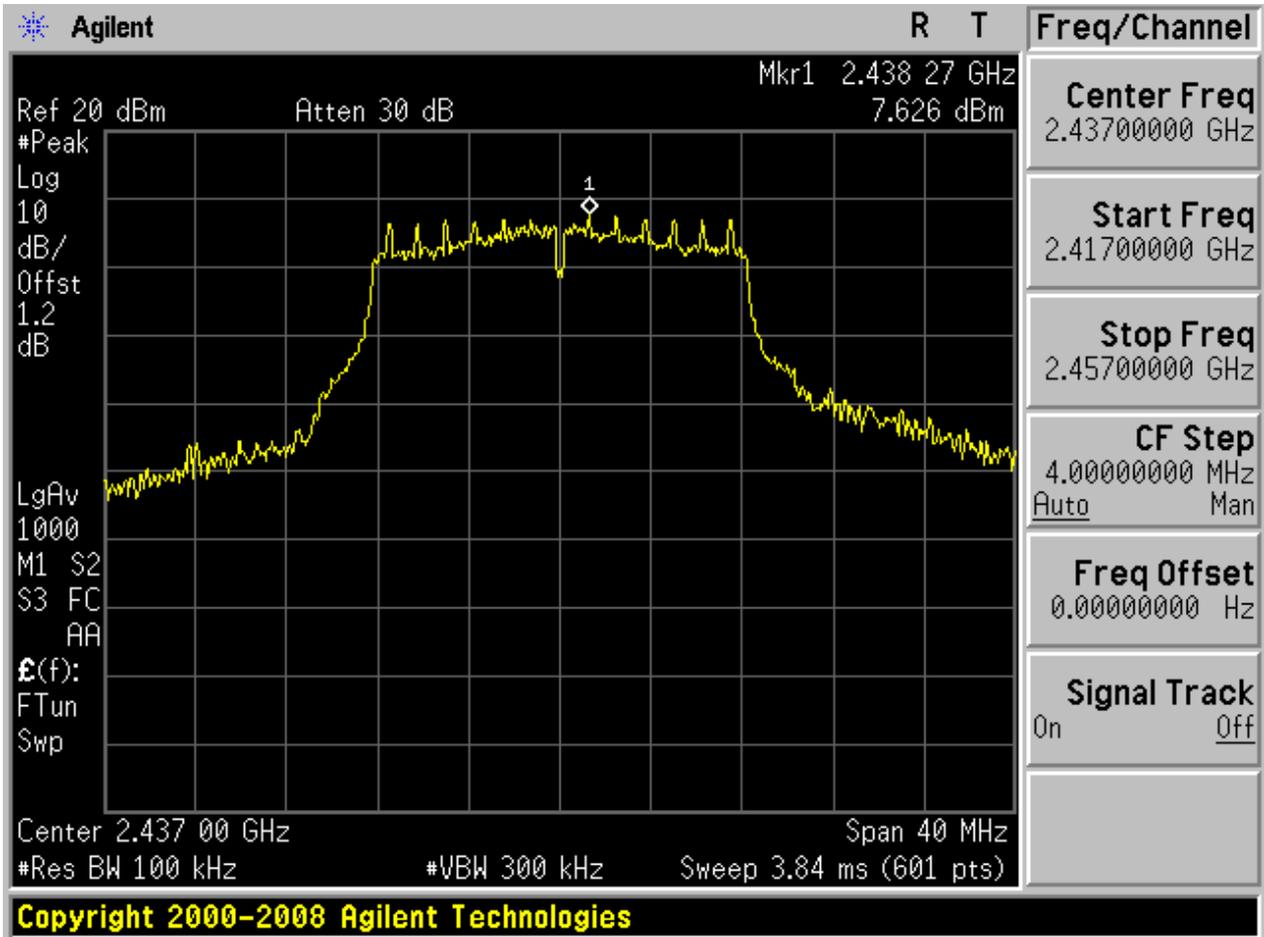






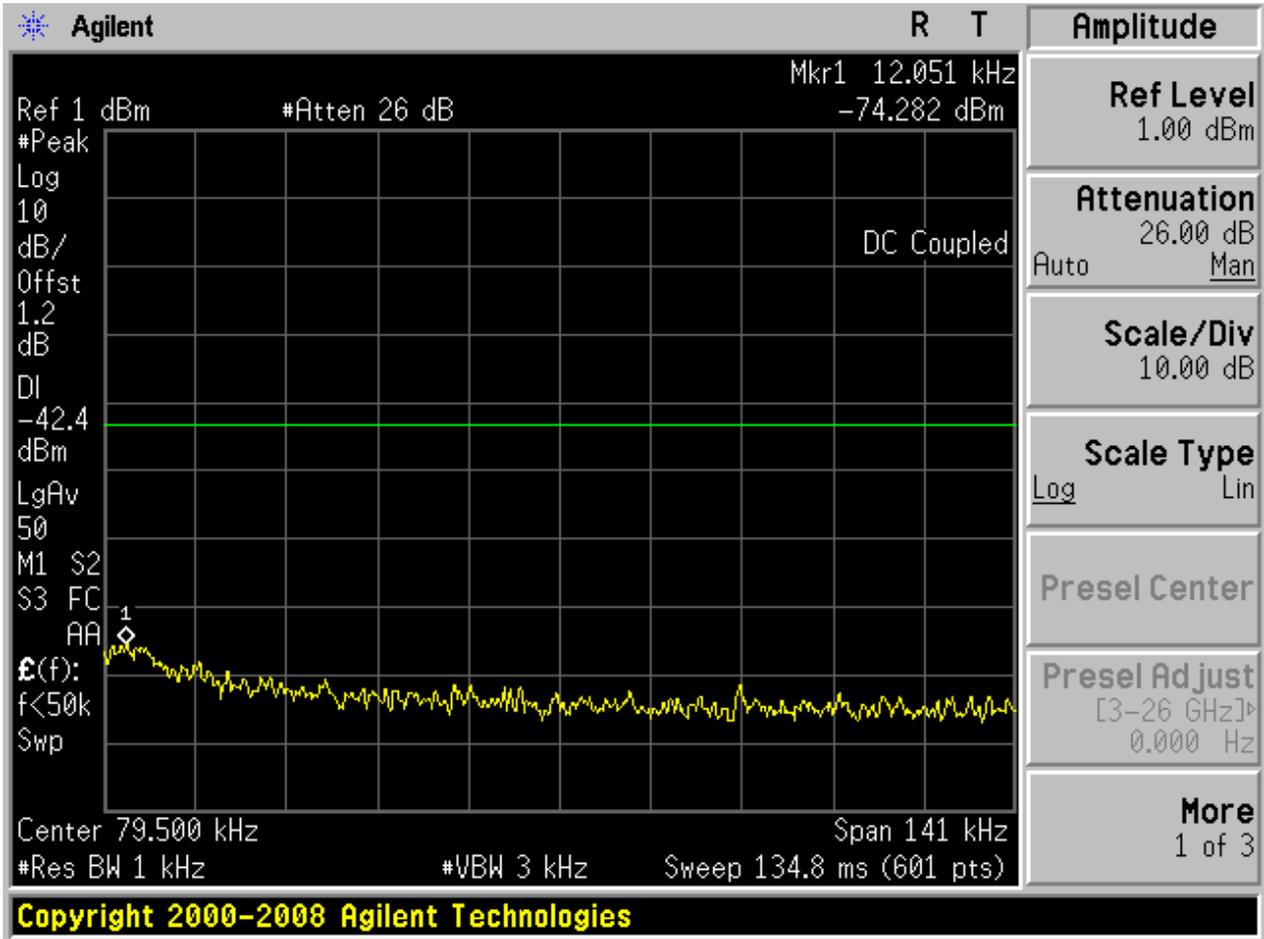
2.5 11G\_M@Ant 1

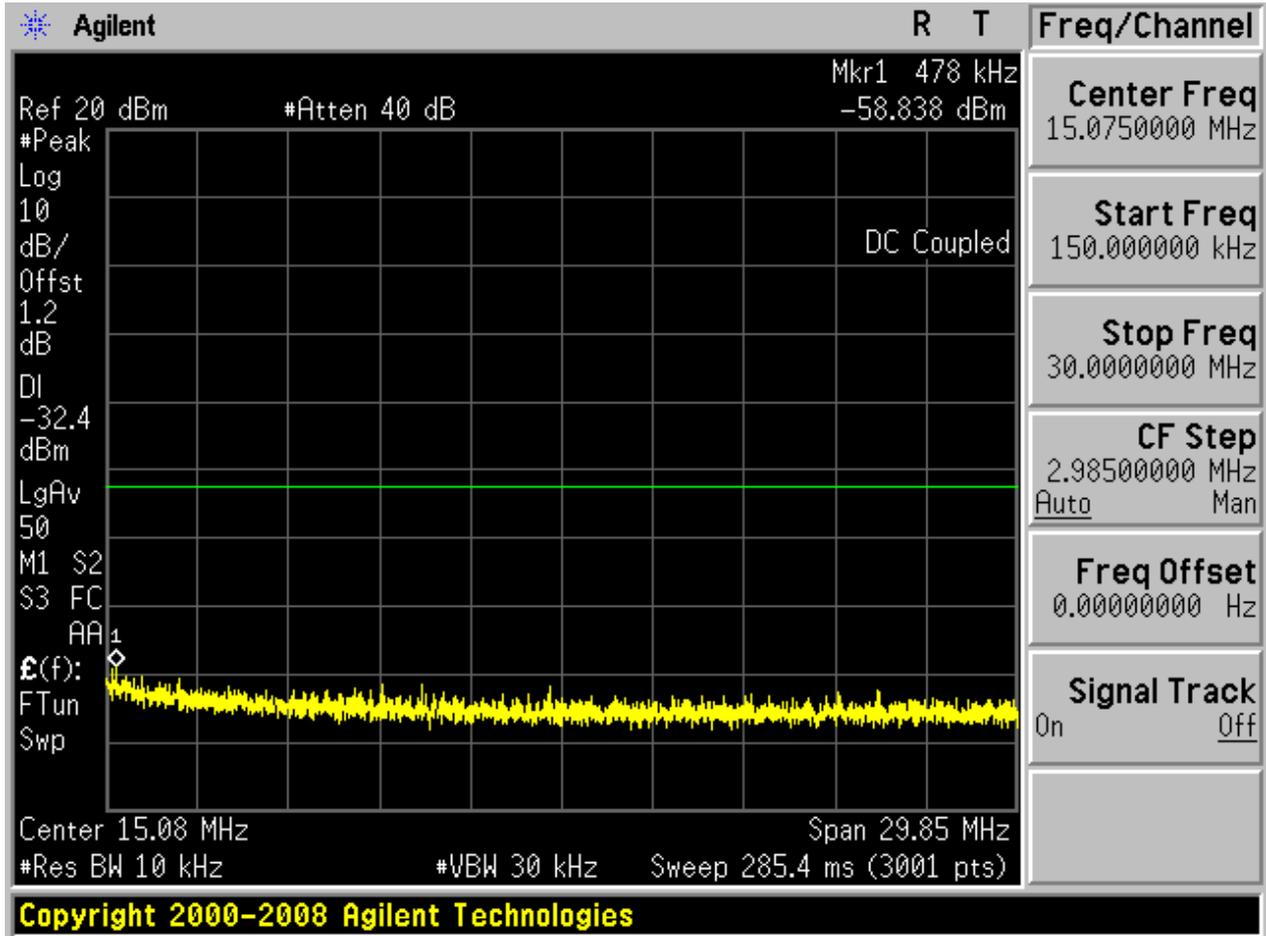
Pref:

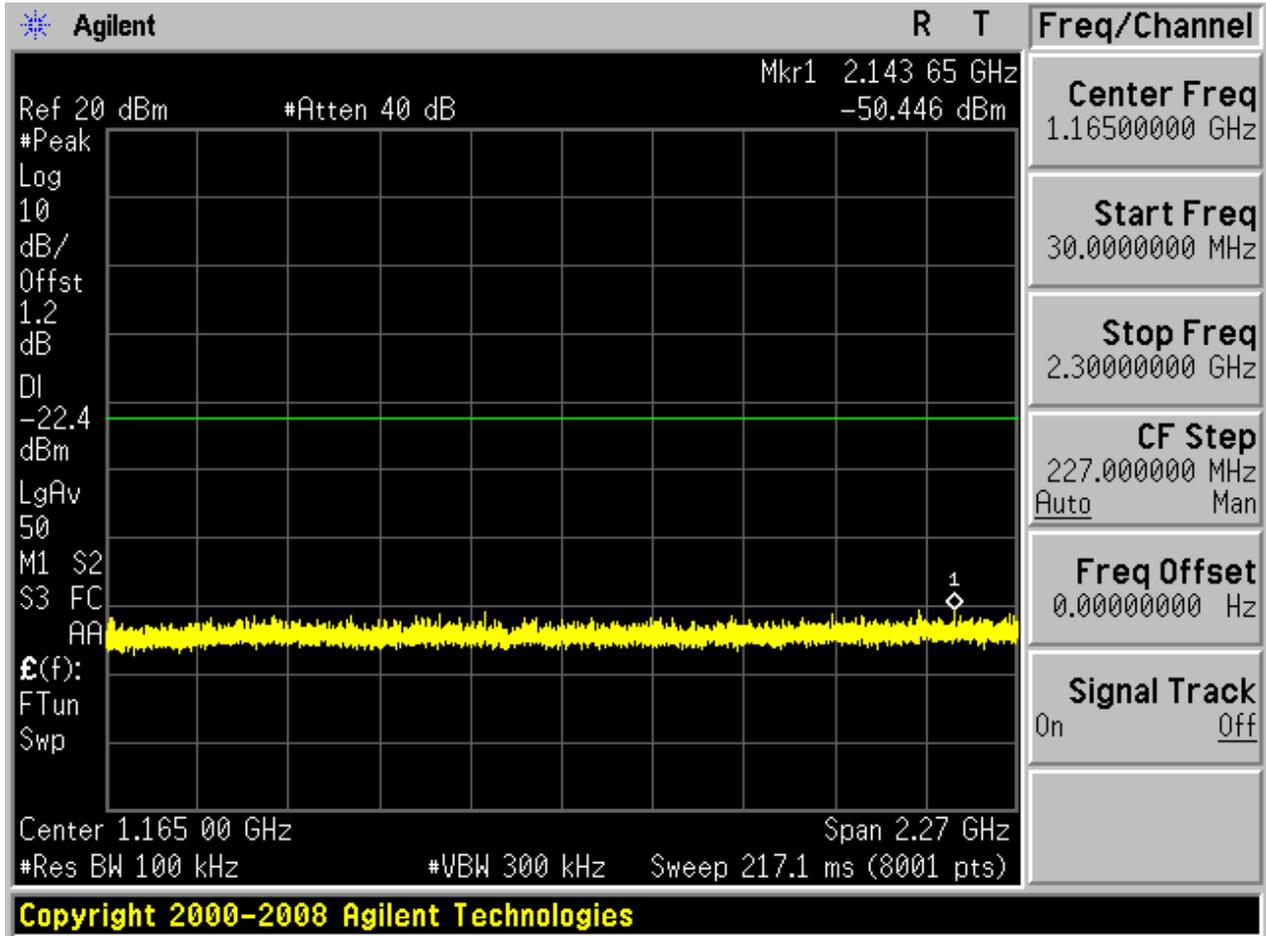


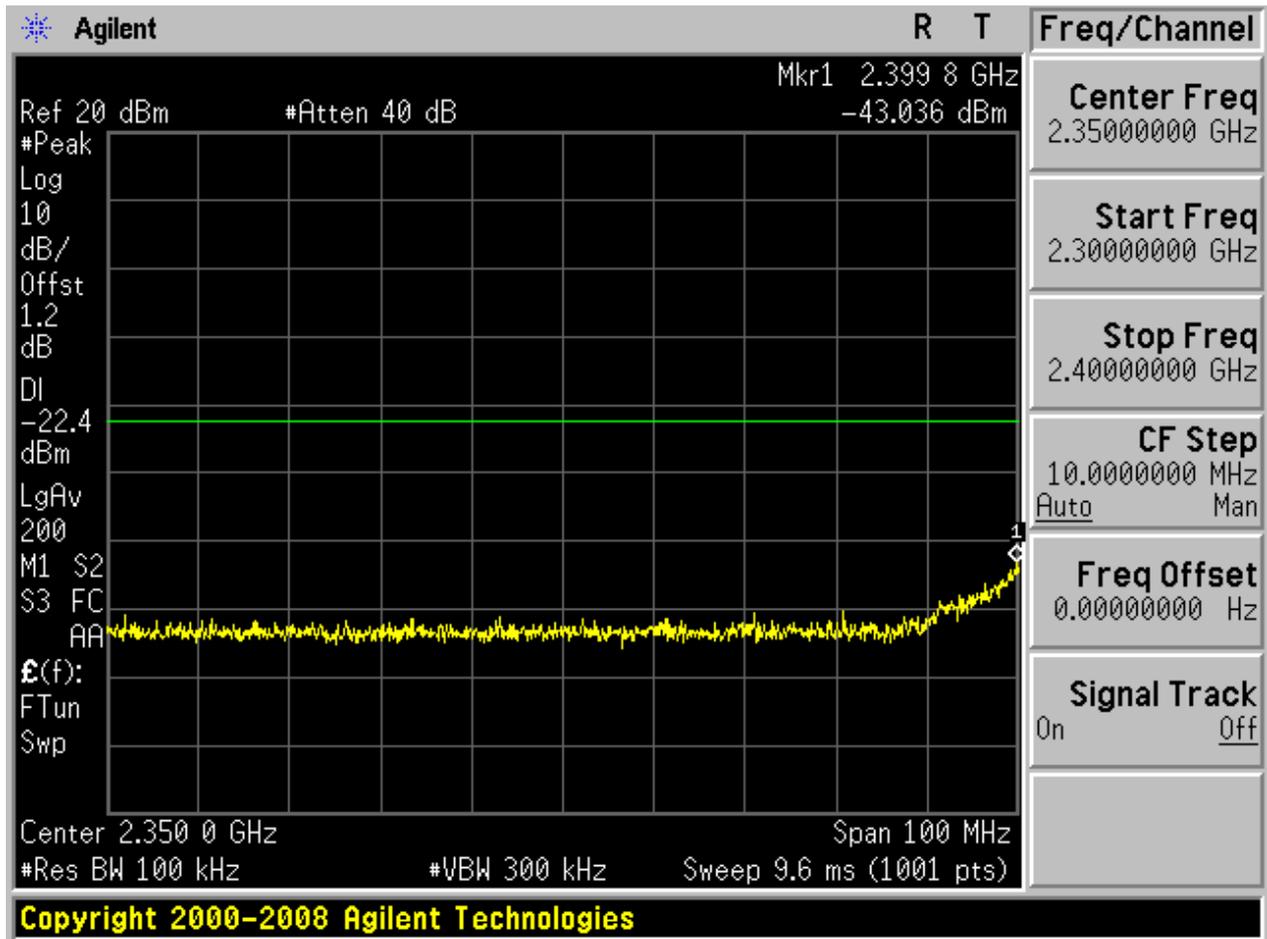


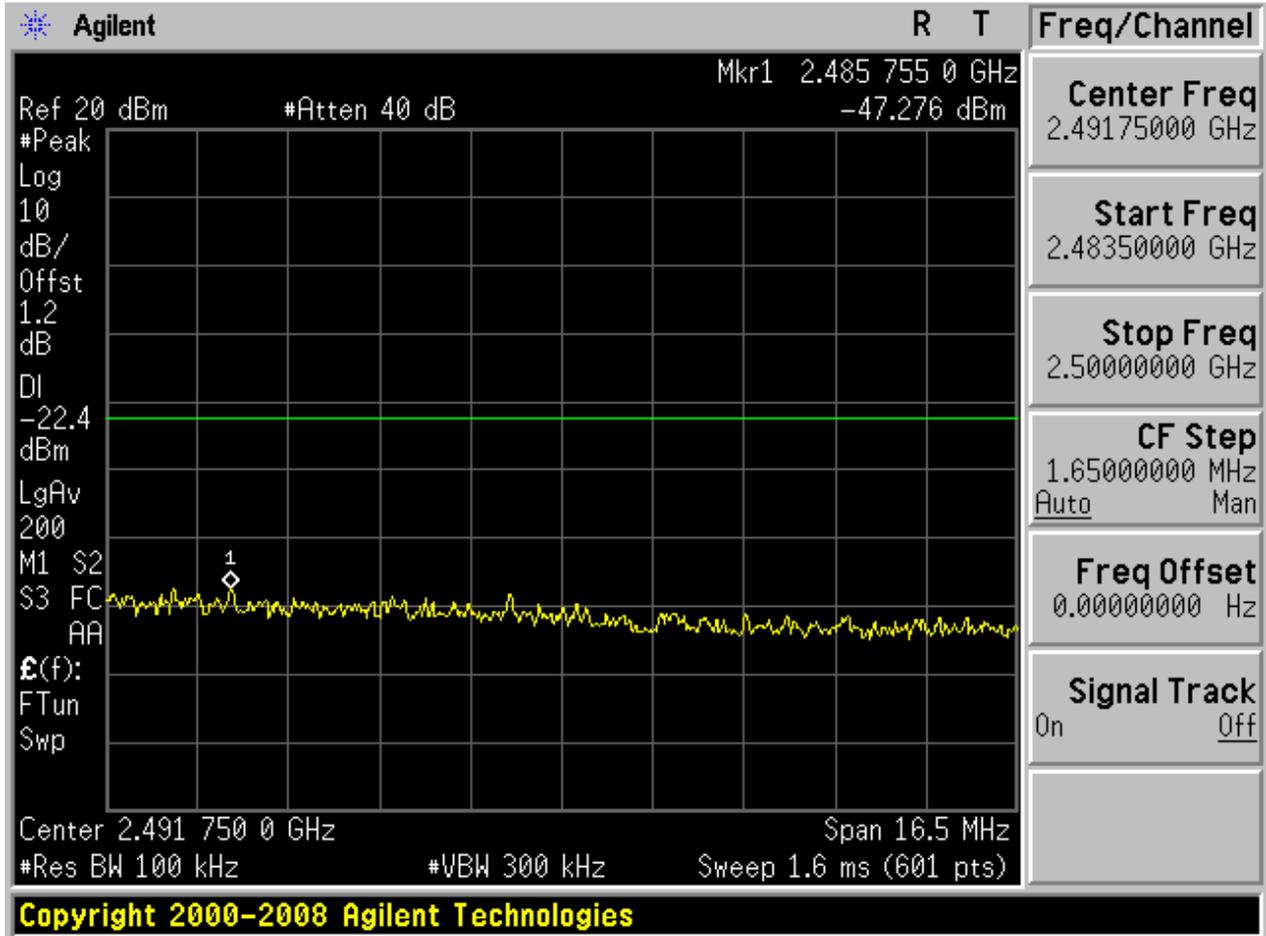
Puw:

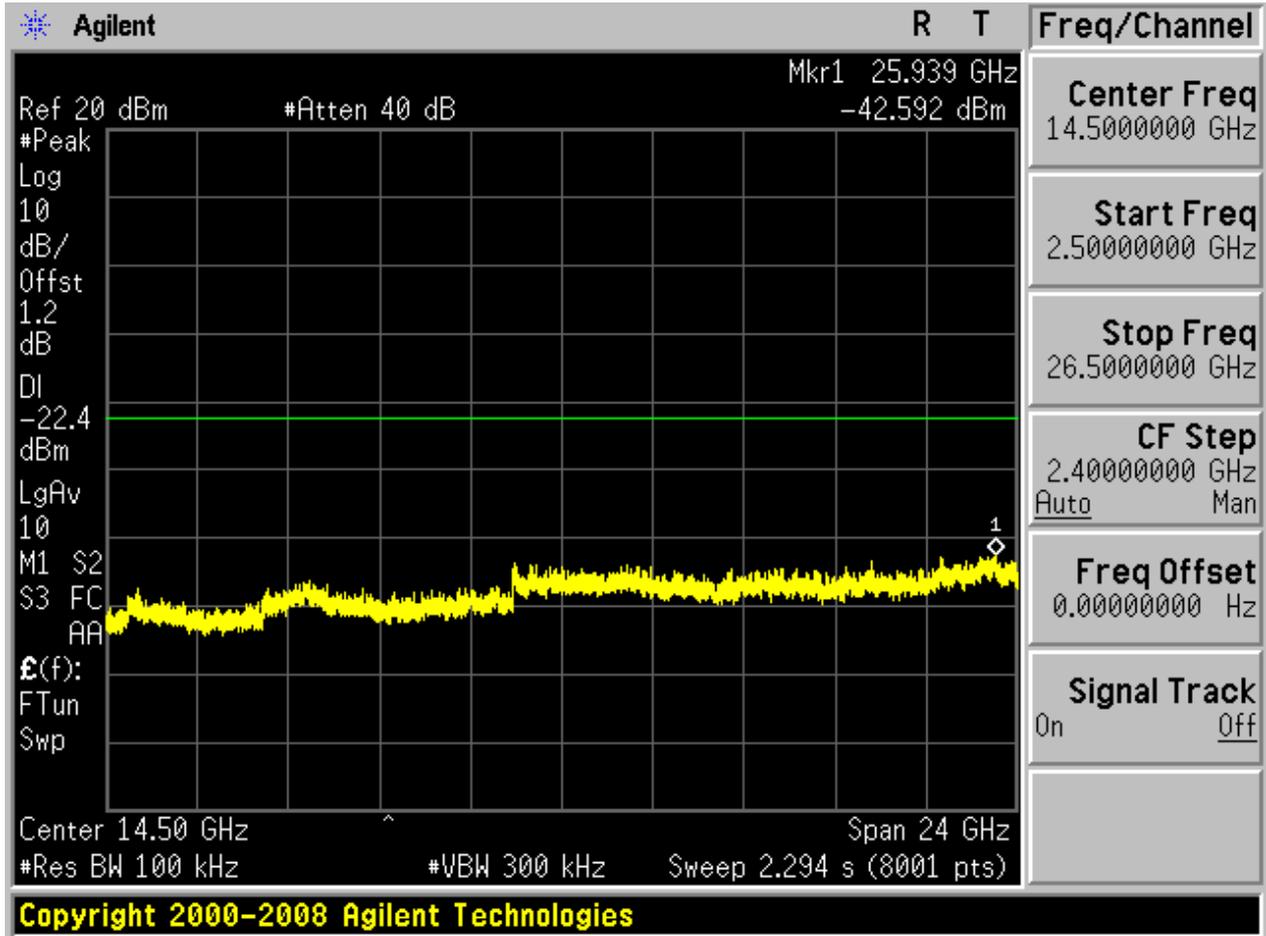








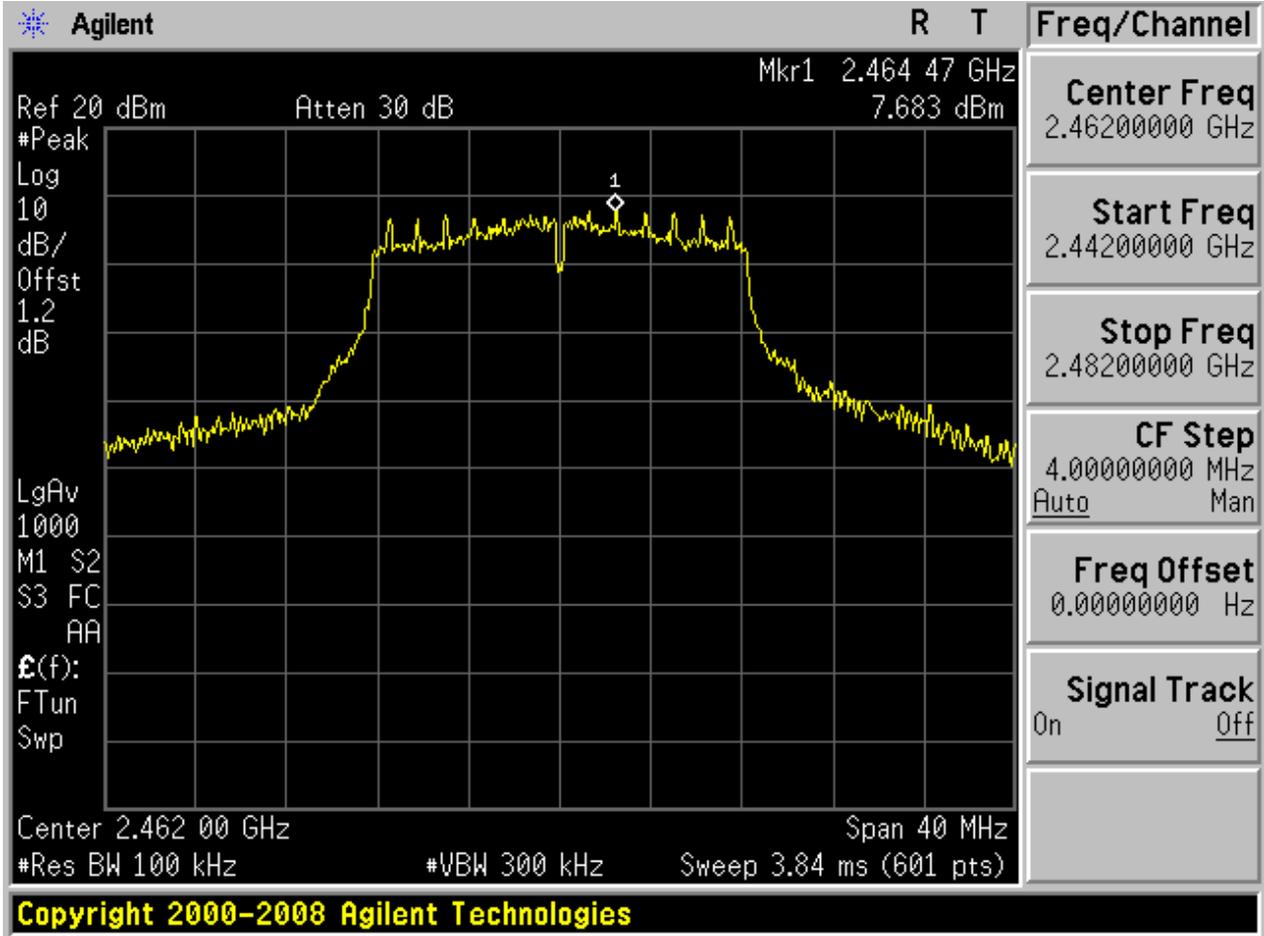






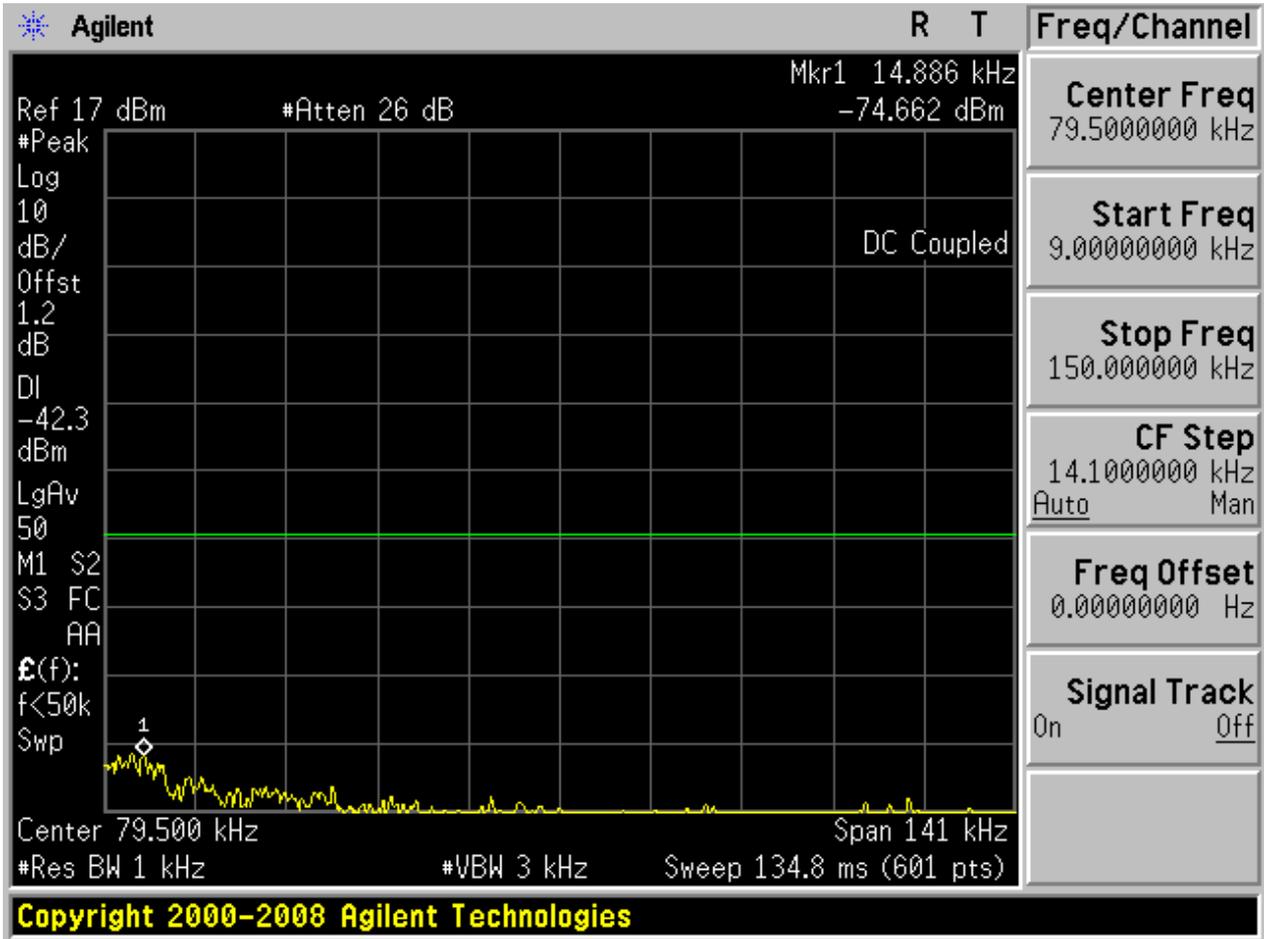
2.6 11G\_H@Ant 1

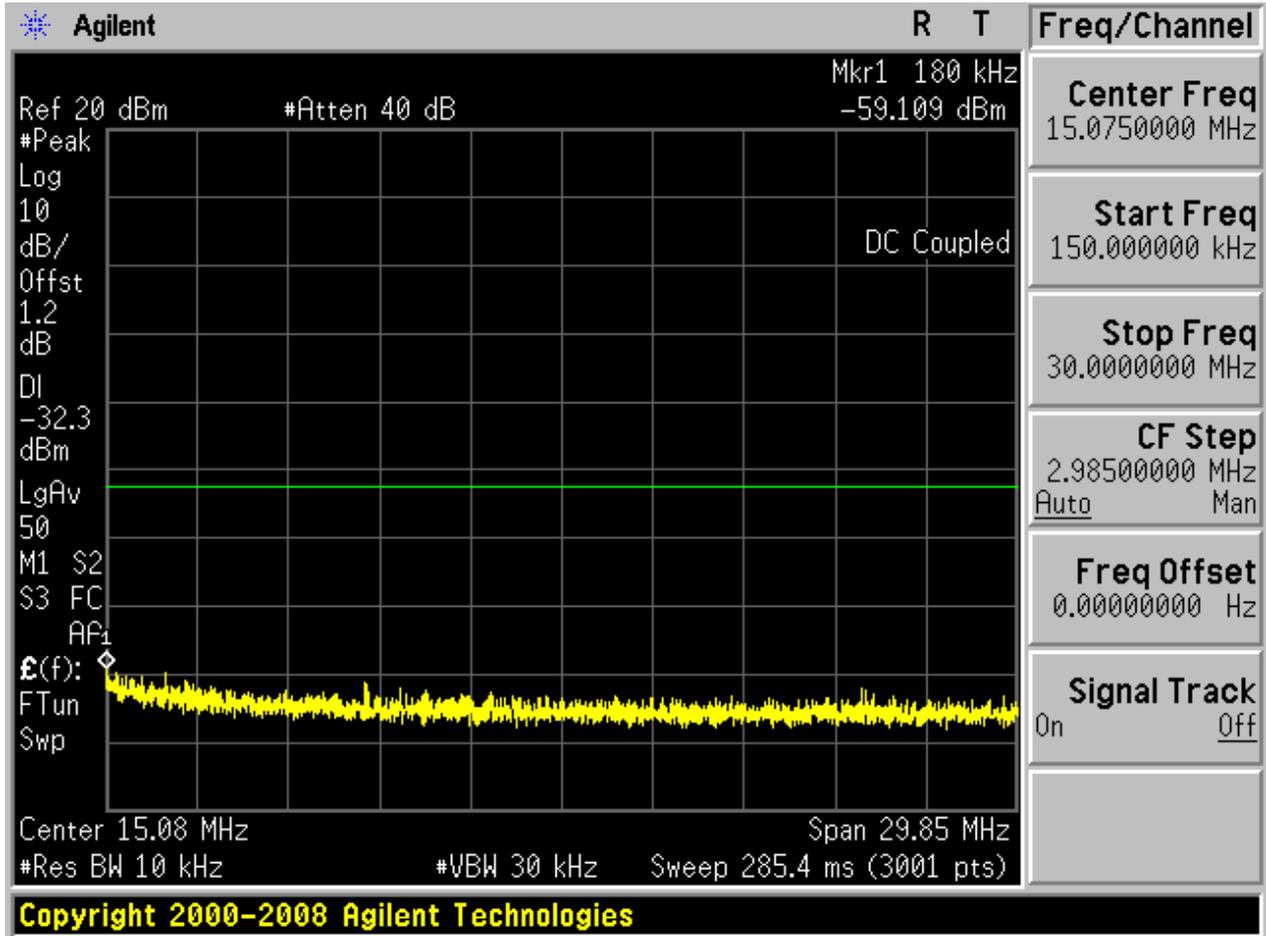
Pref:

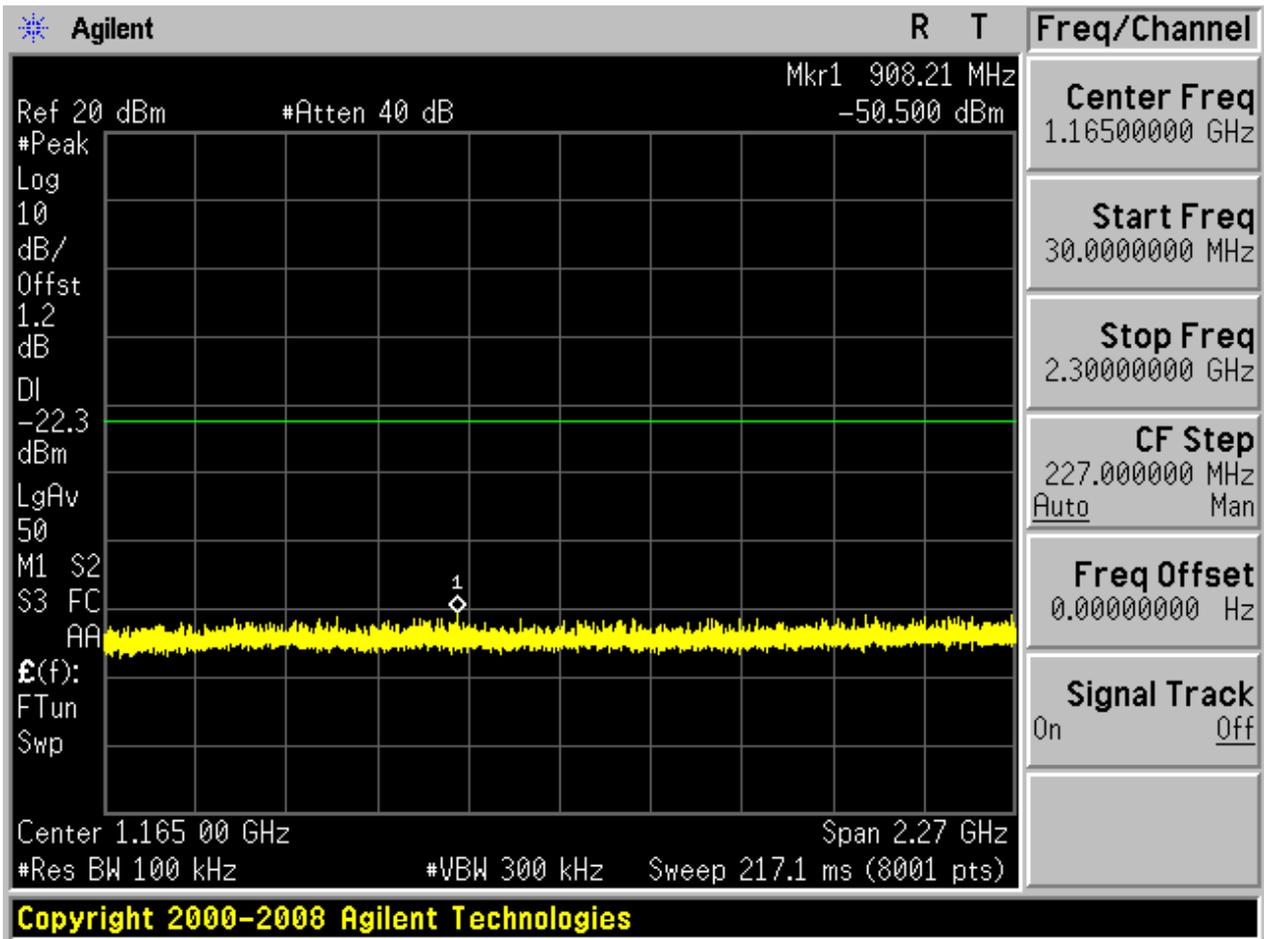


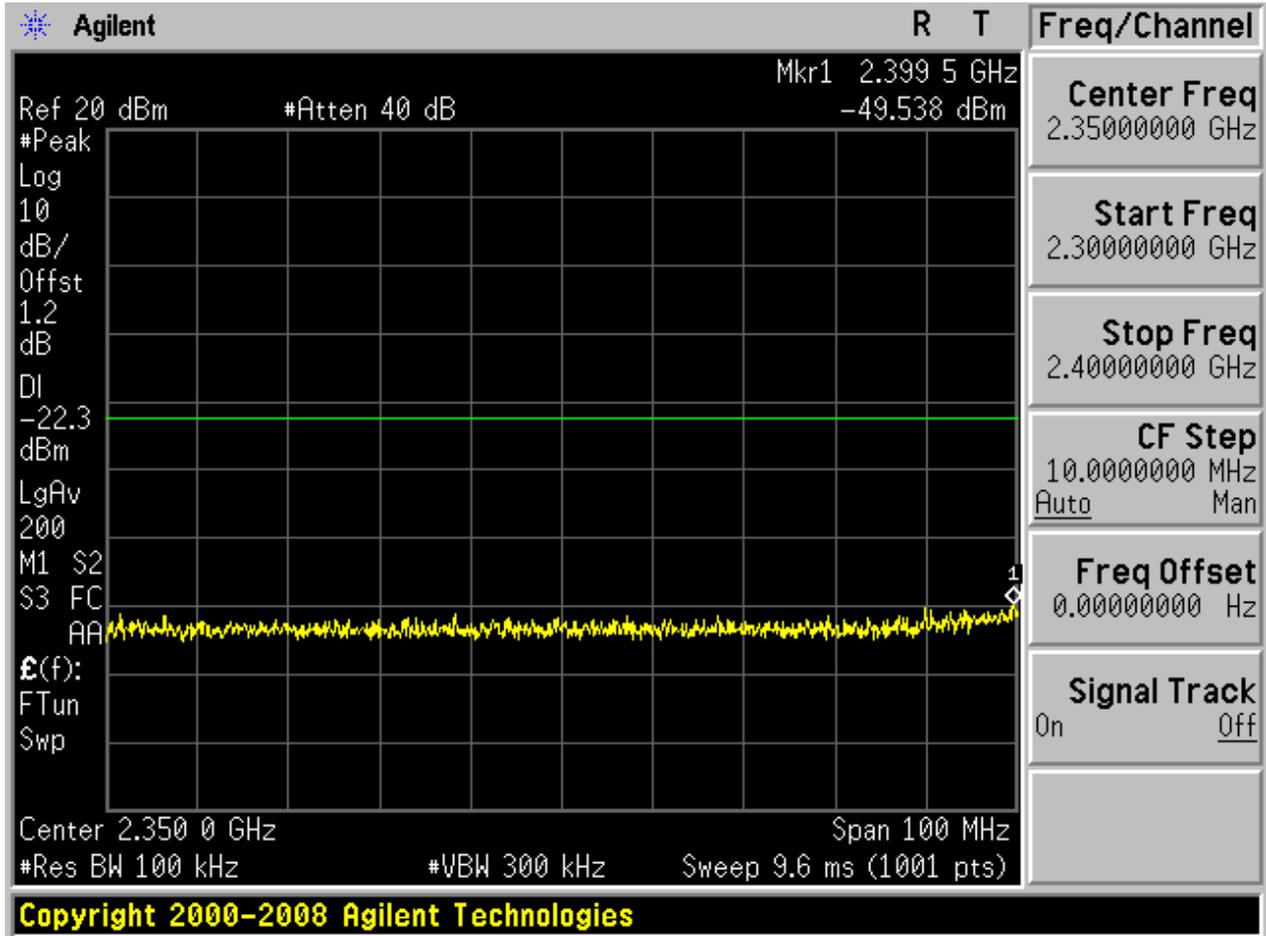


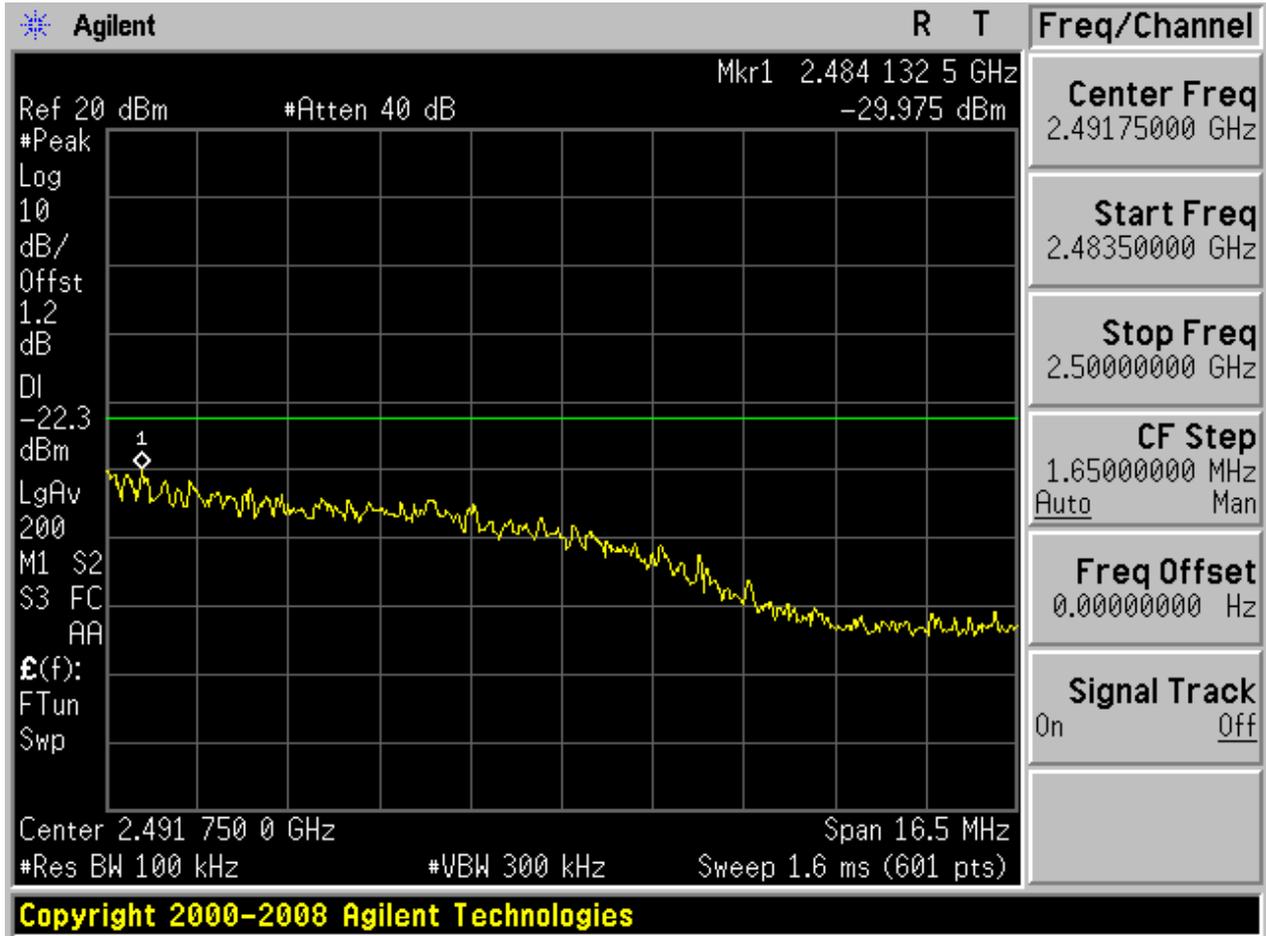
Puw:

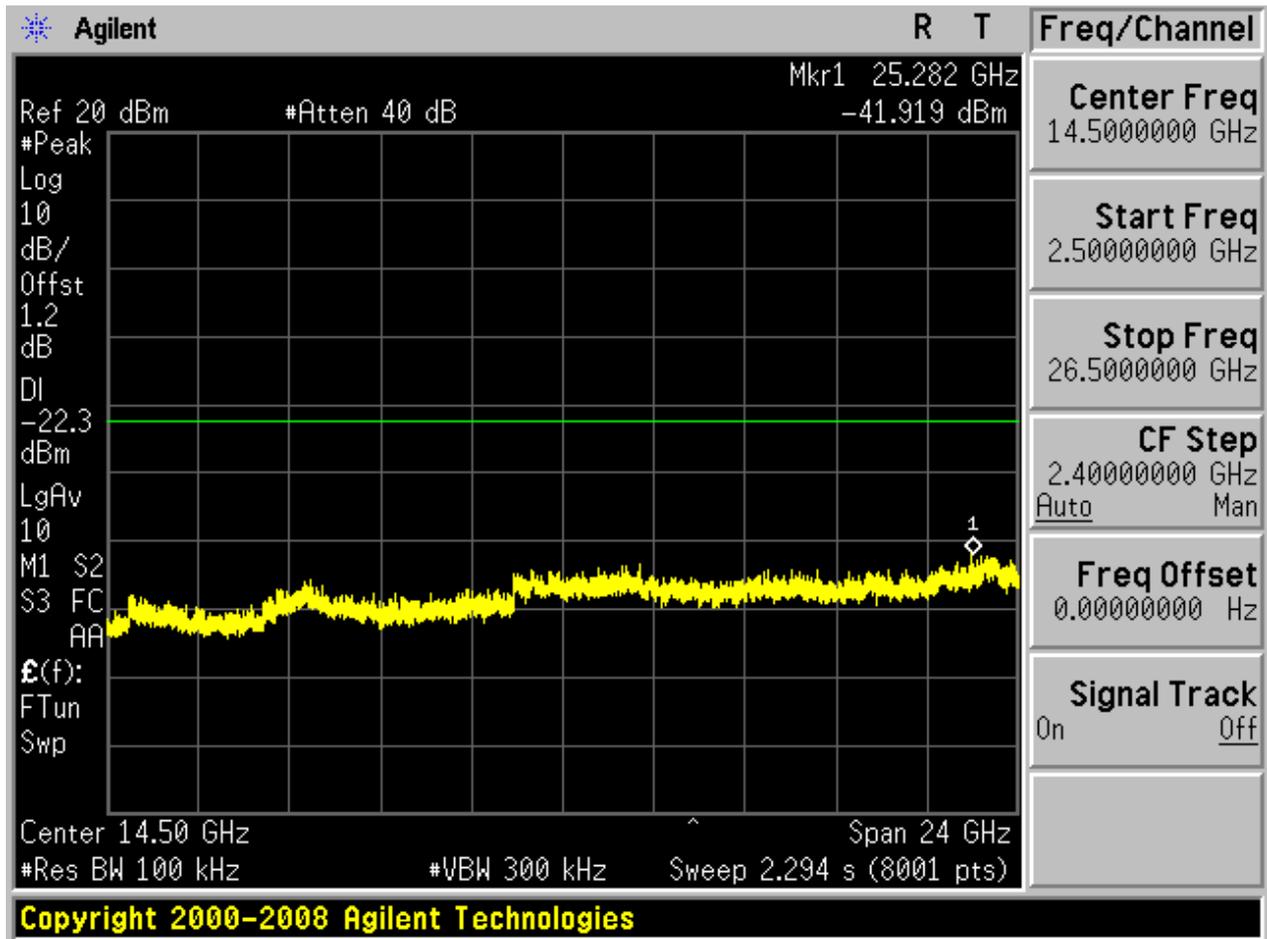








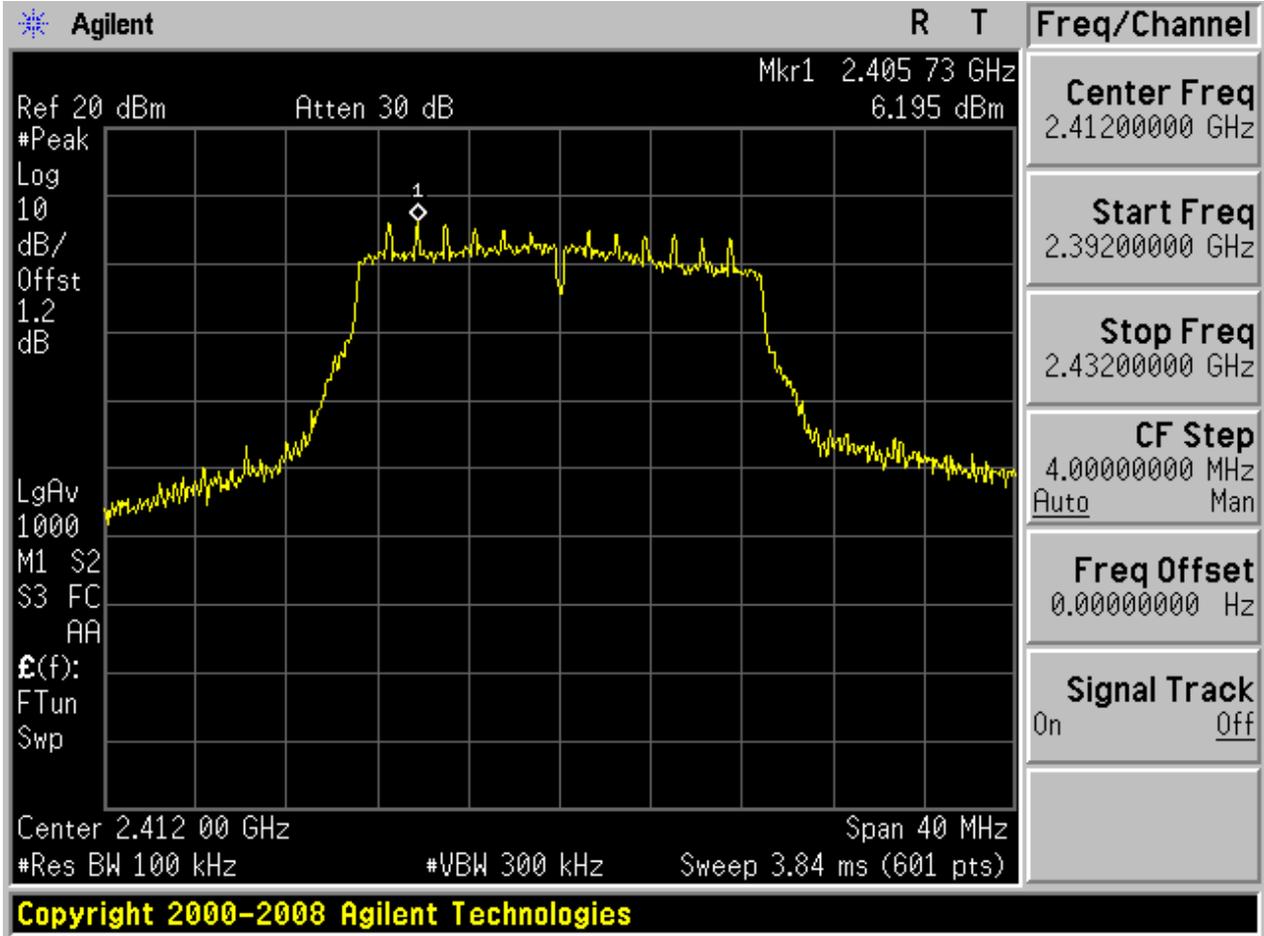






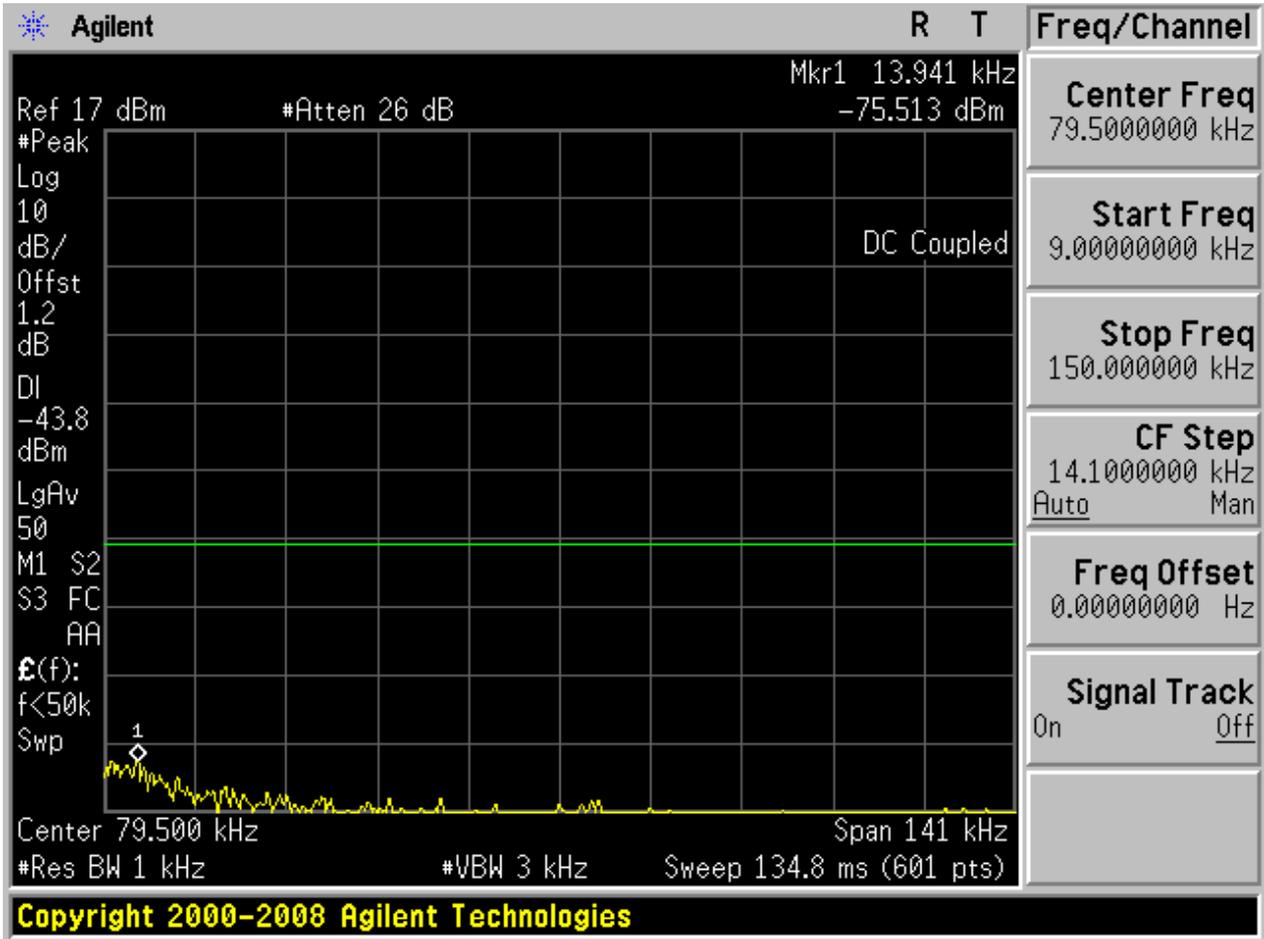
2.7 11N20\_L@Ant 1

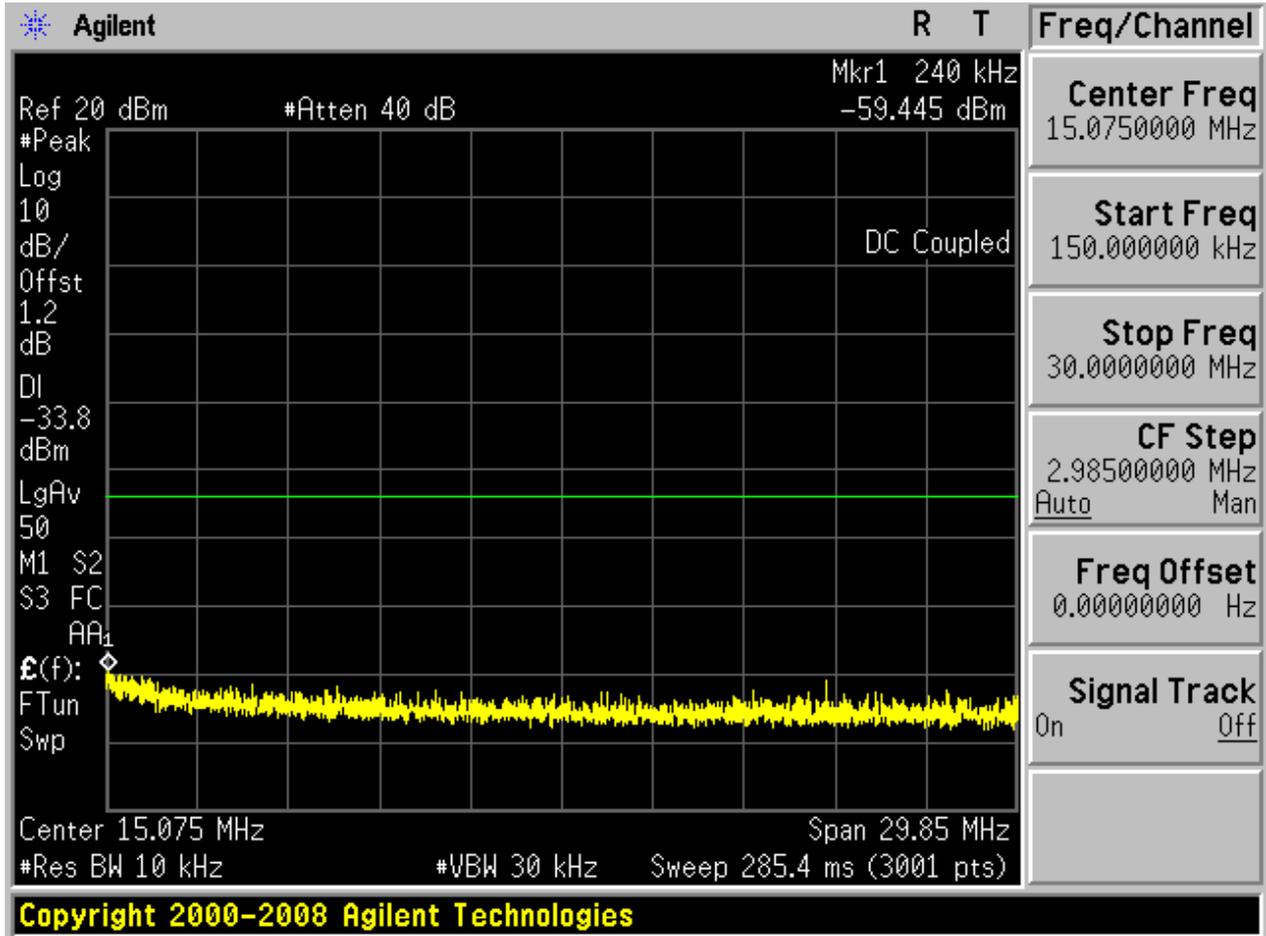
Pref:

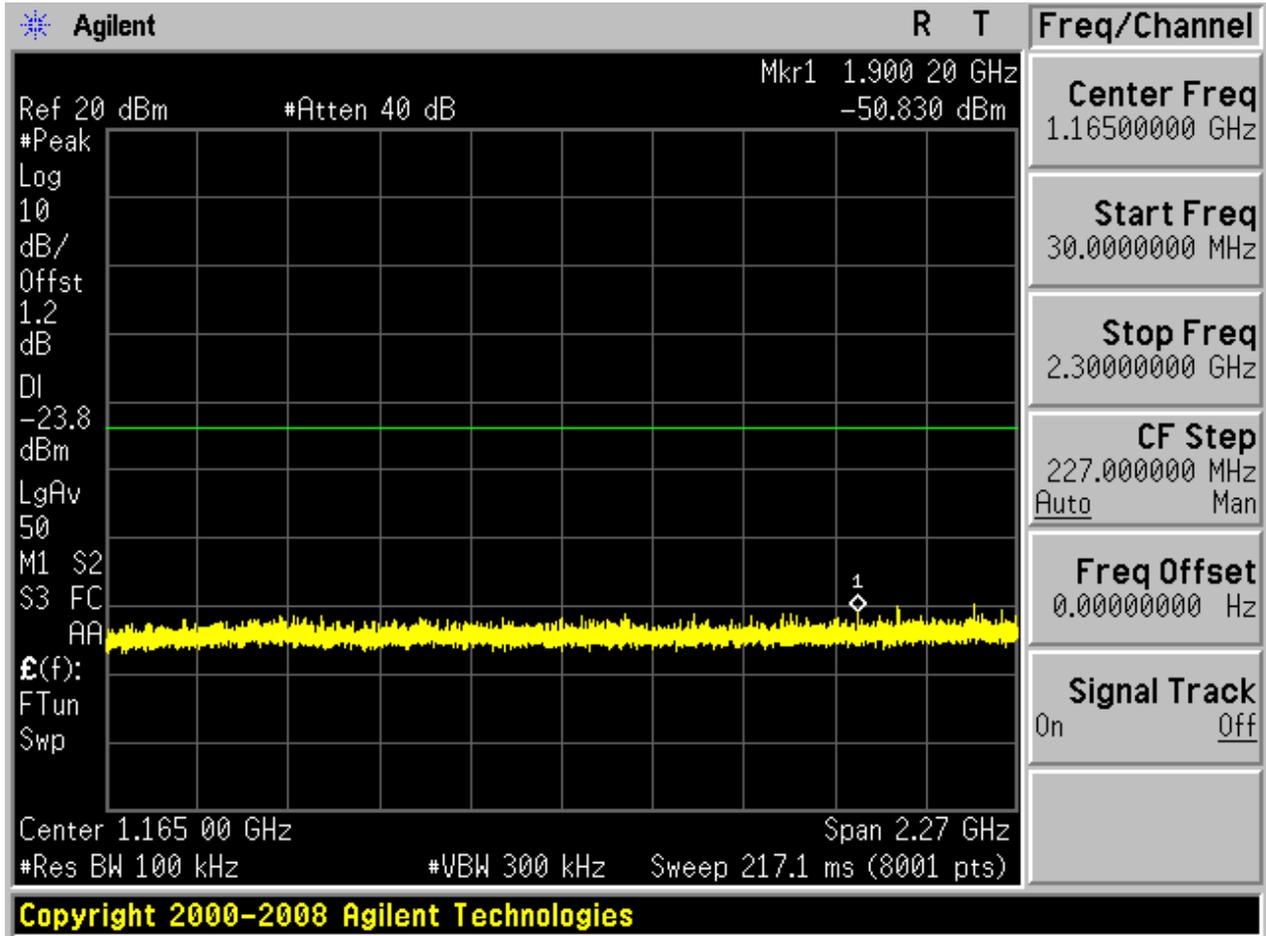


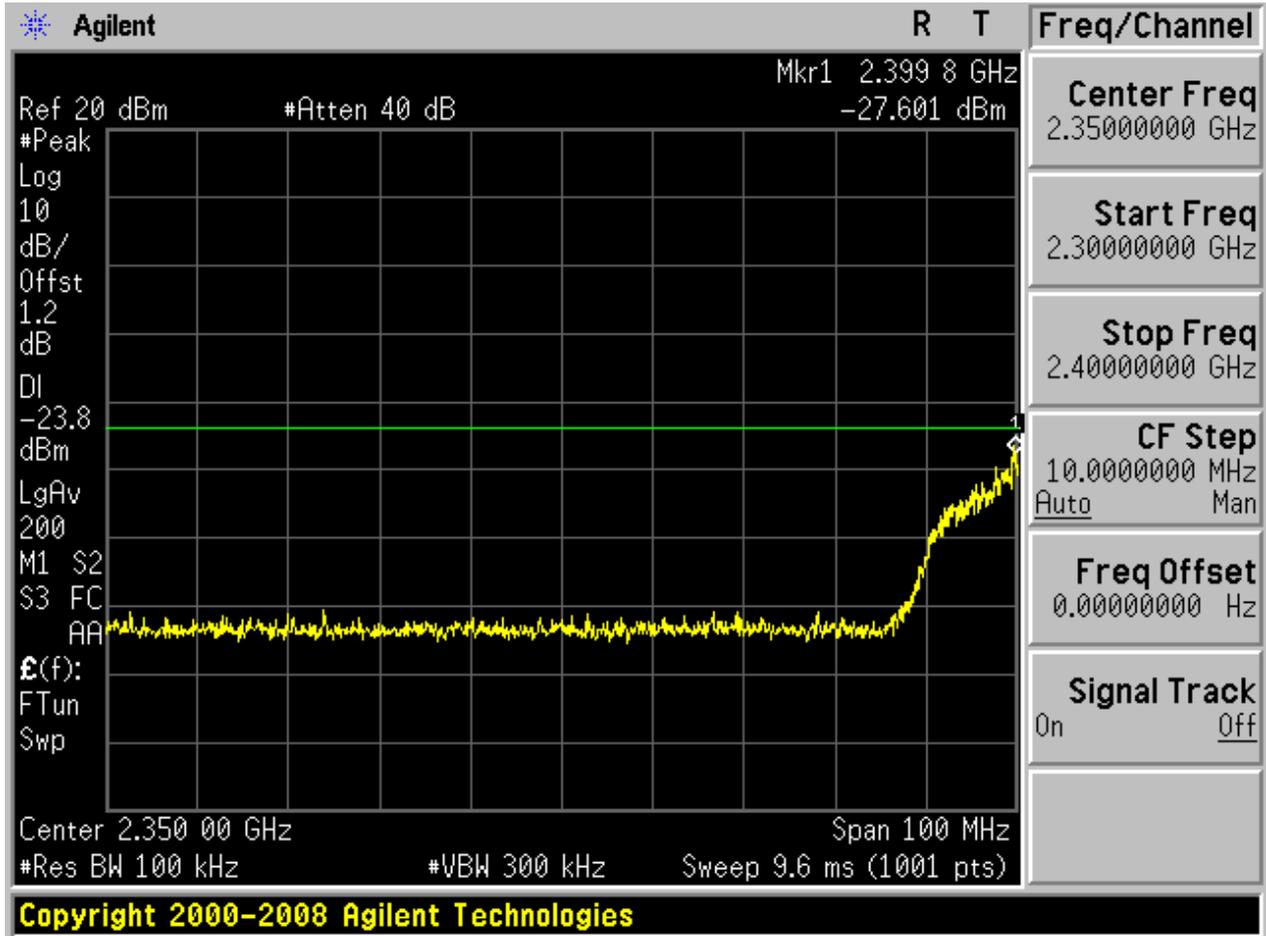


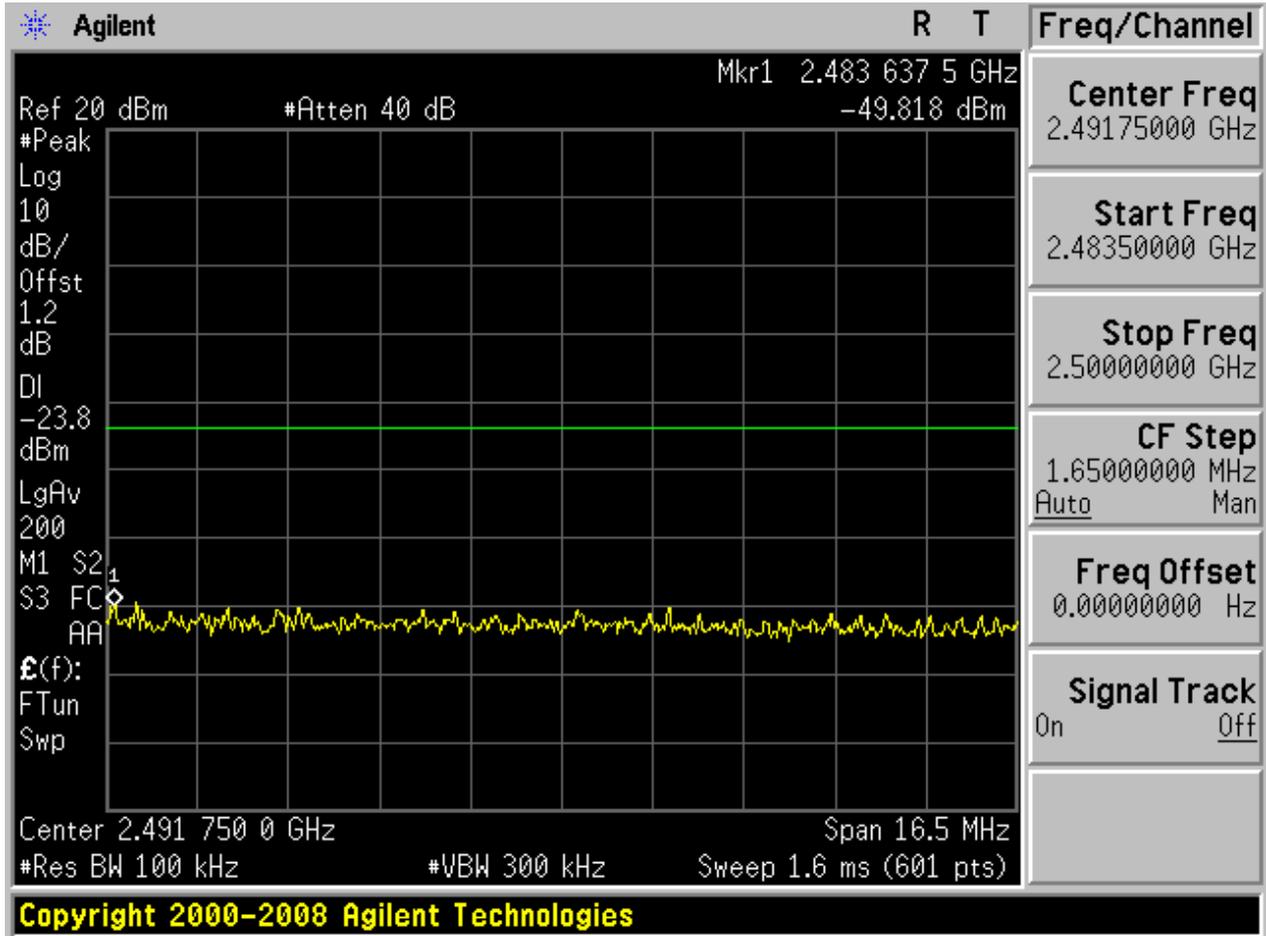
Puw:









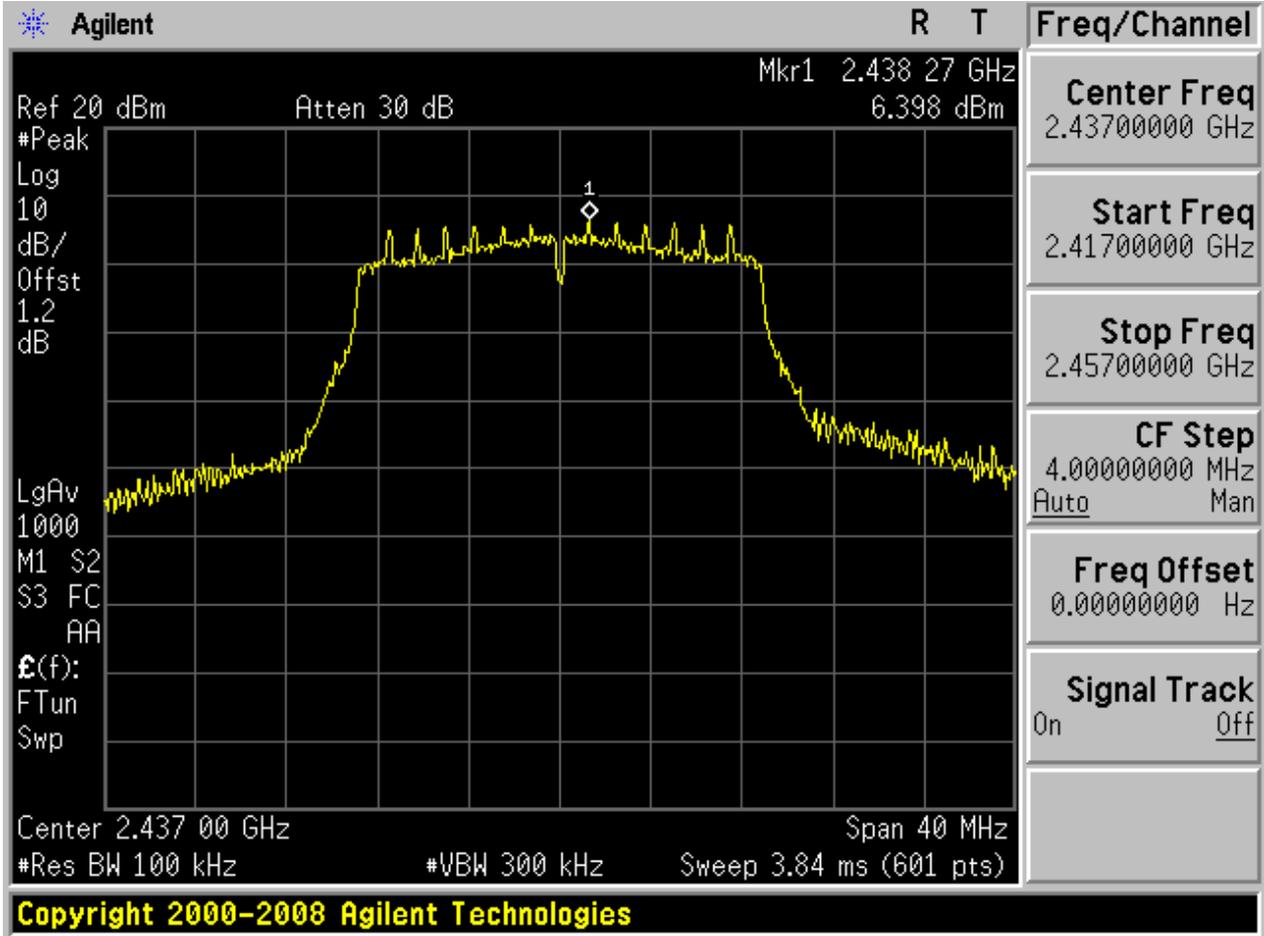






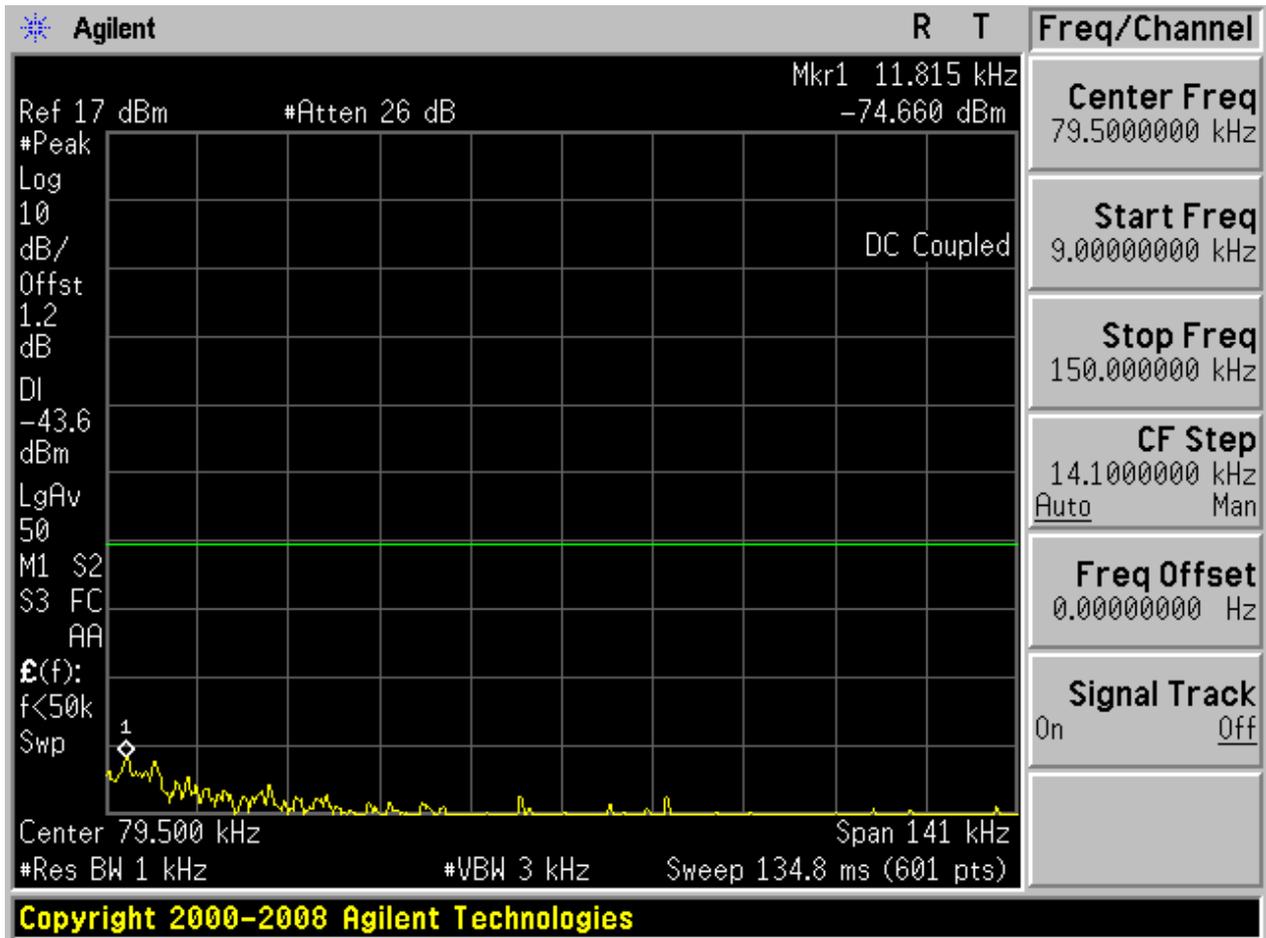
2.8 11N20\_M@Ant 1

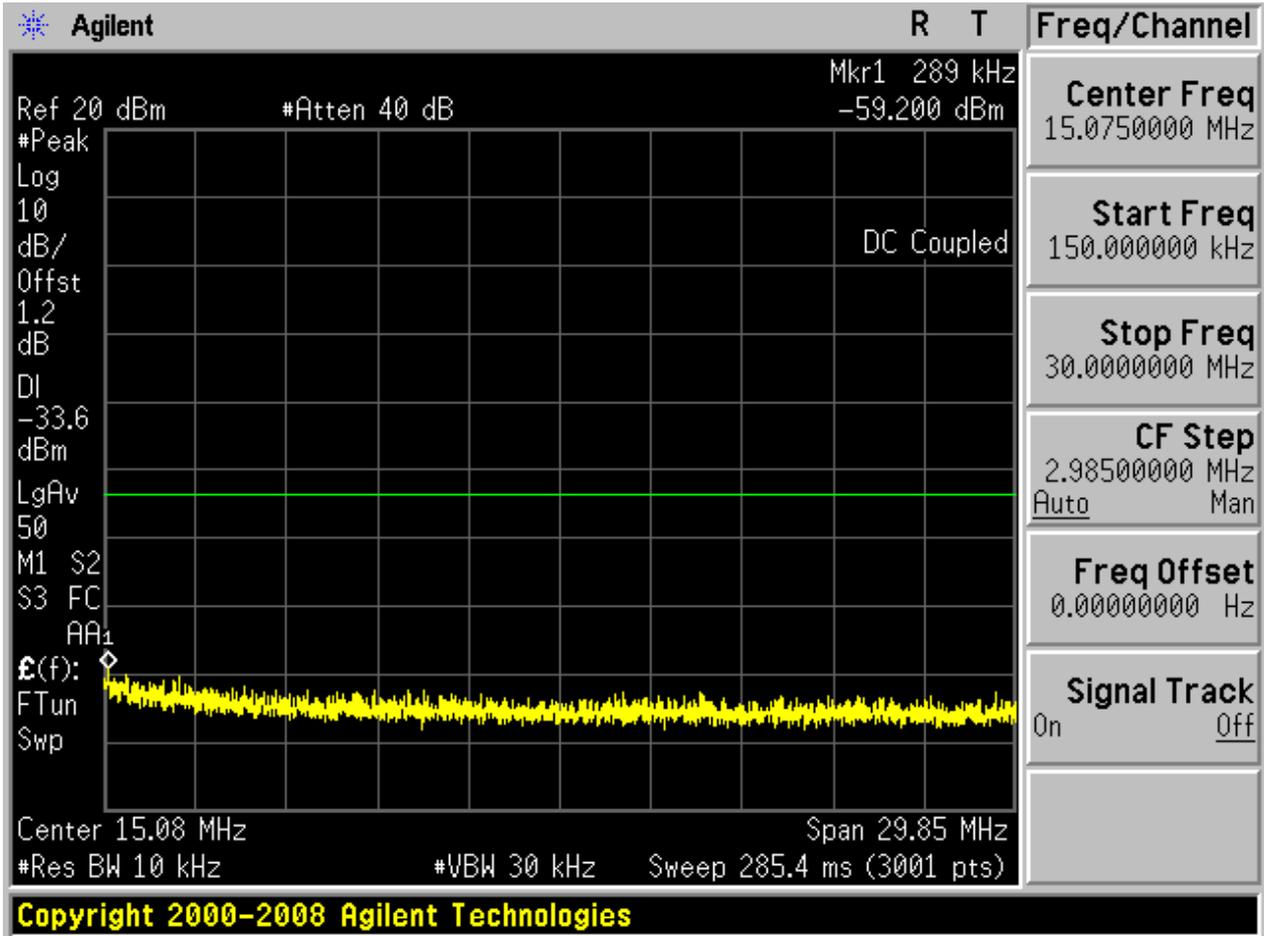
Pref:

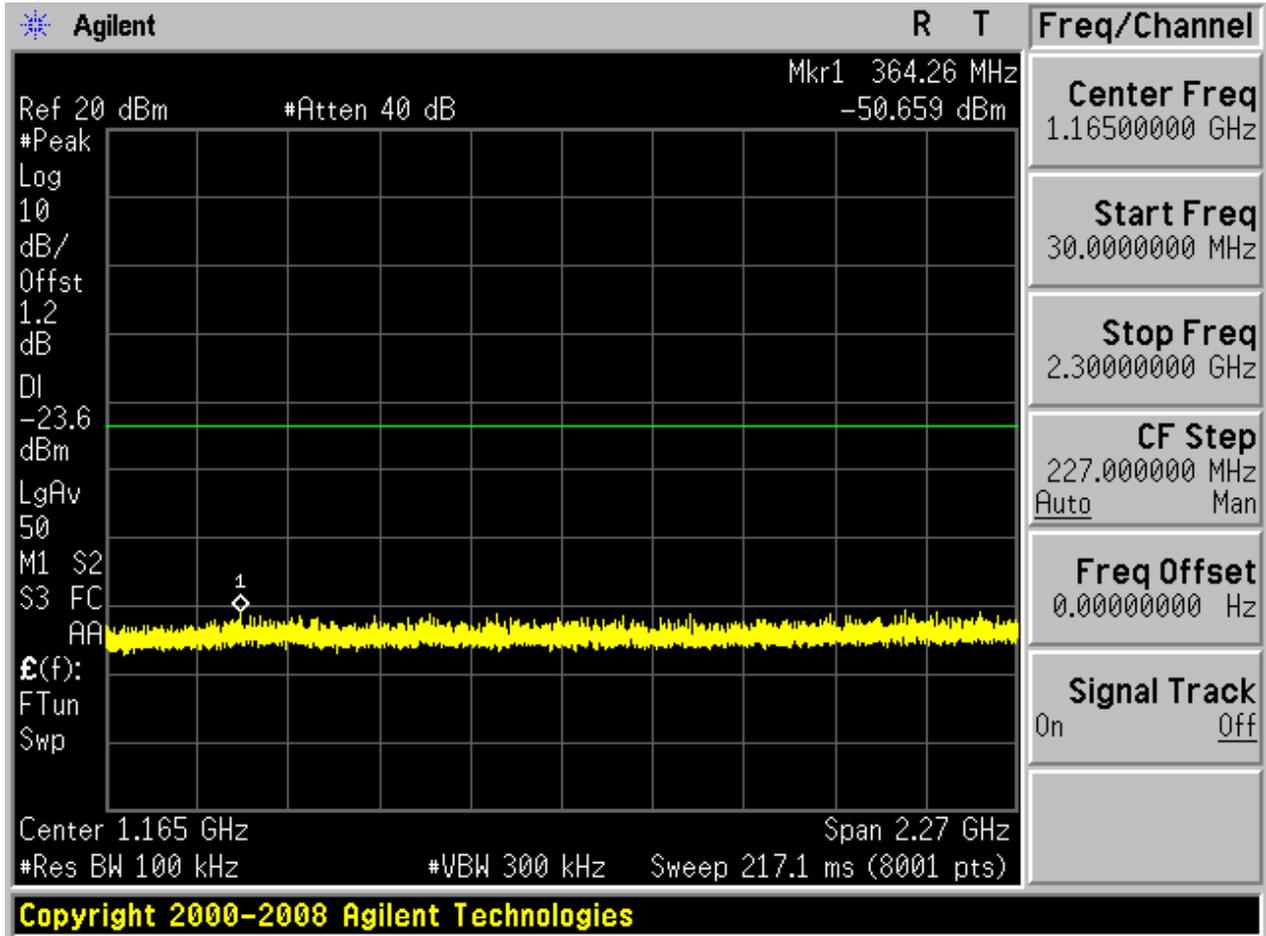


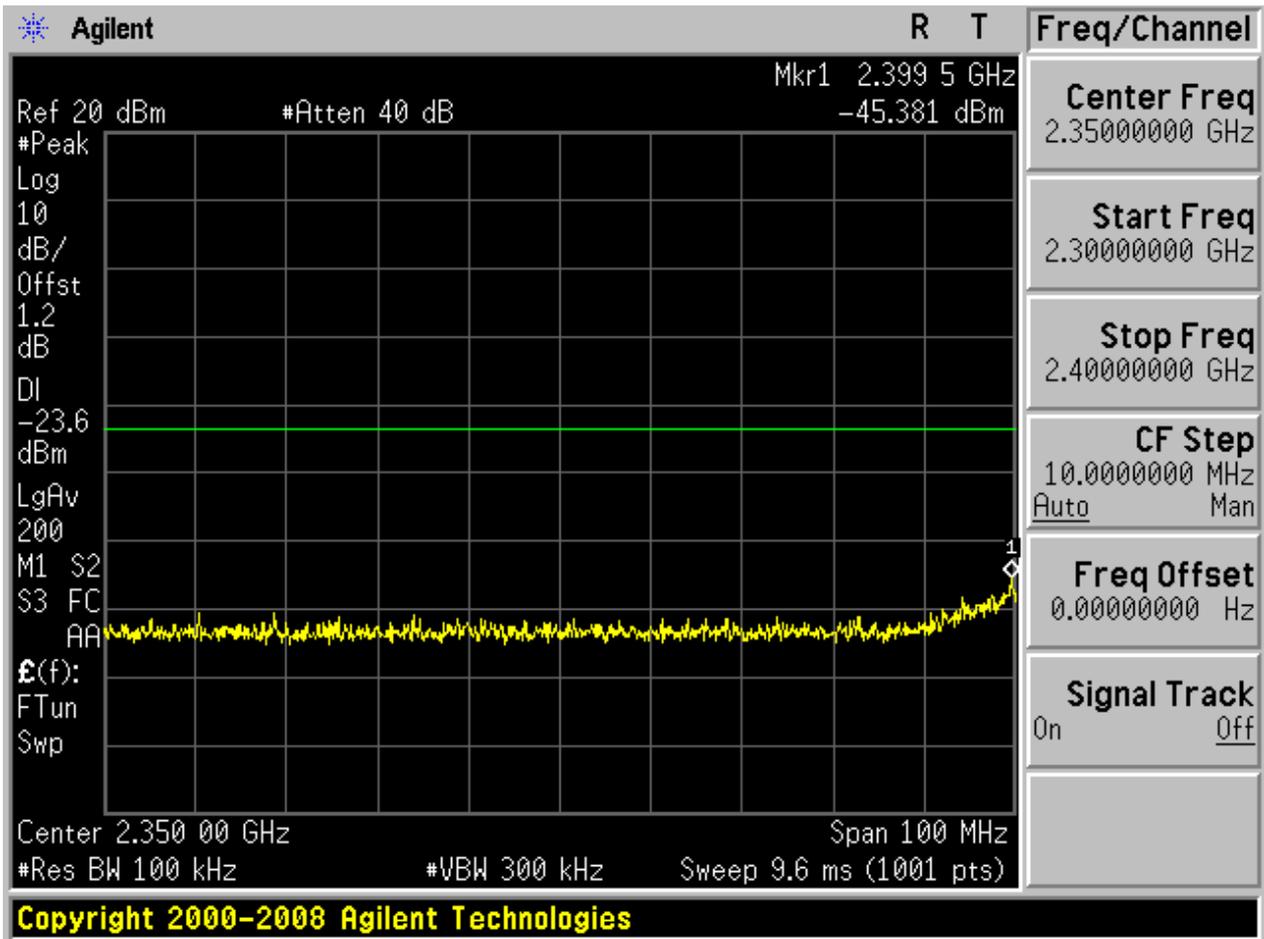


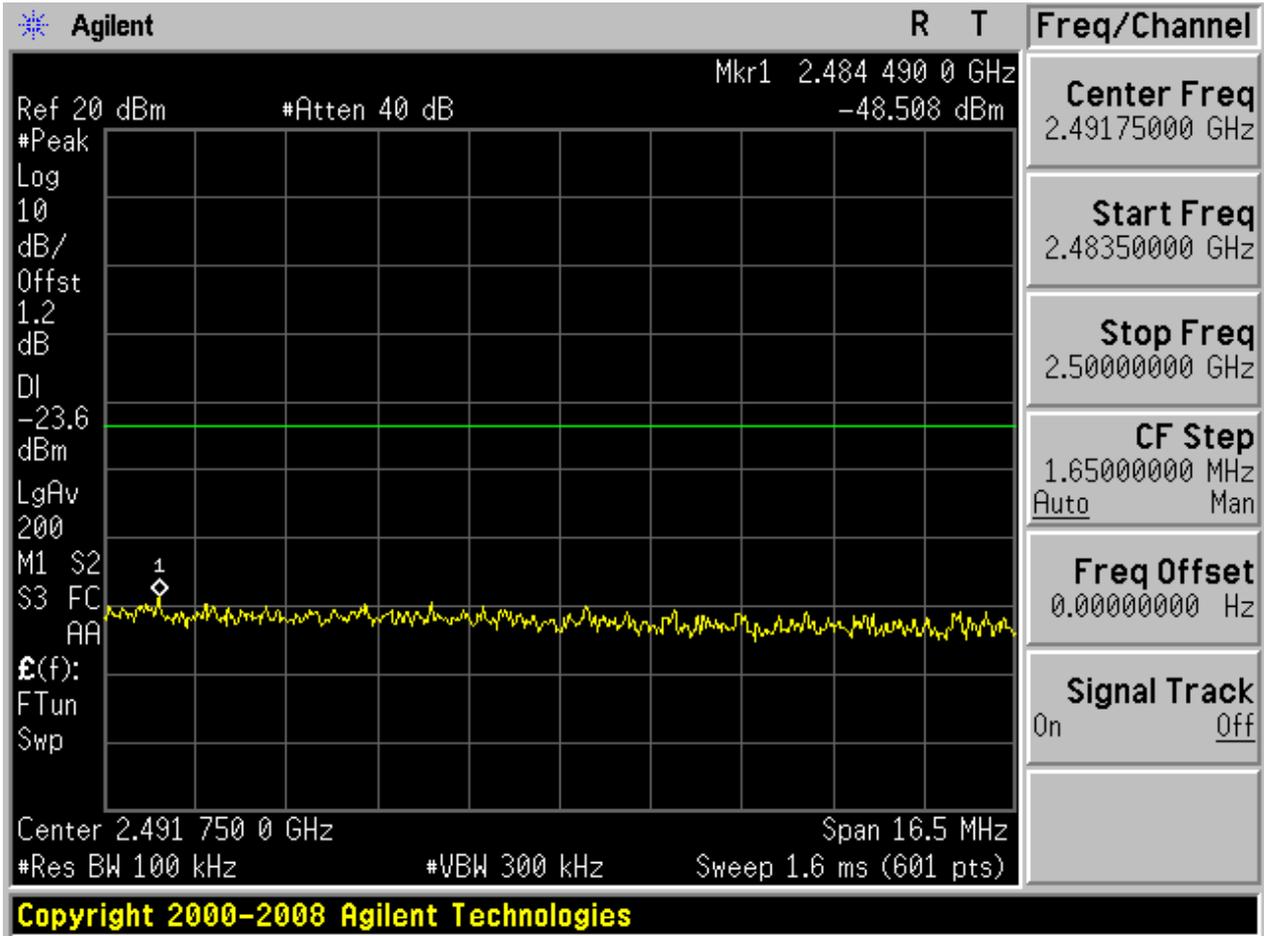
Puw:

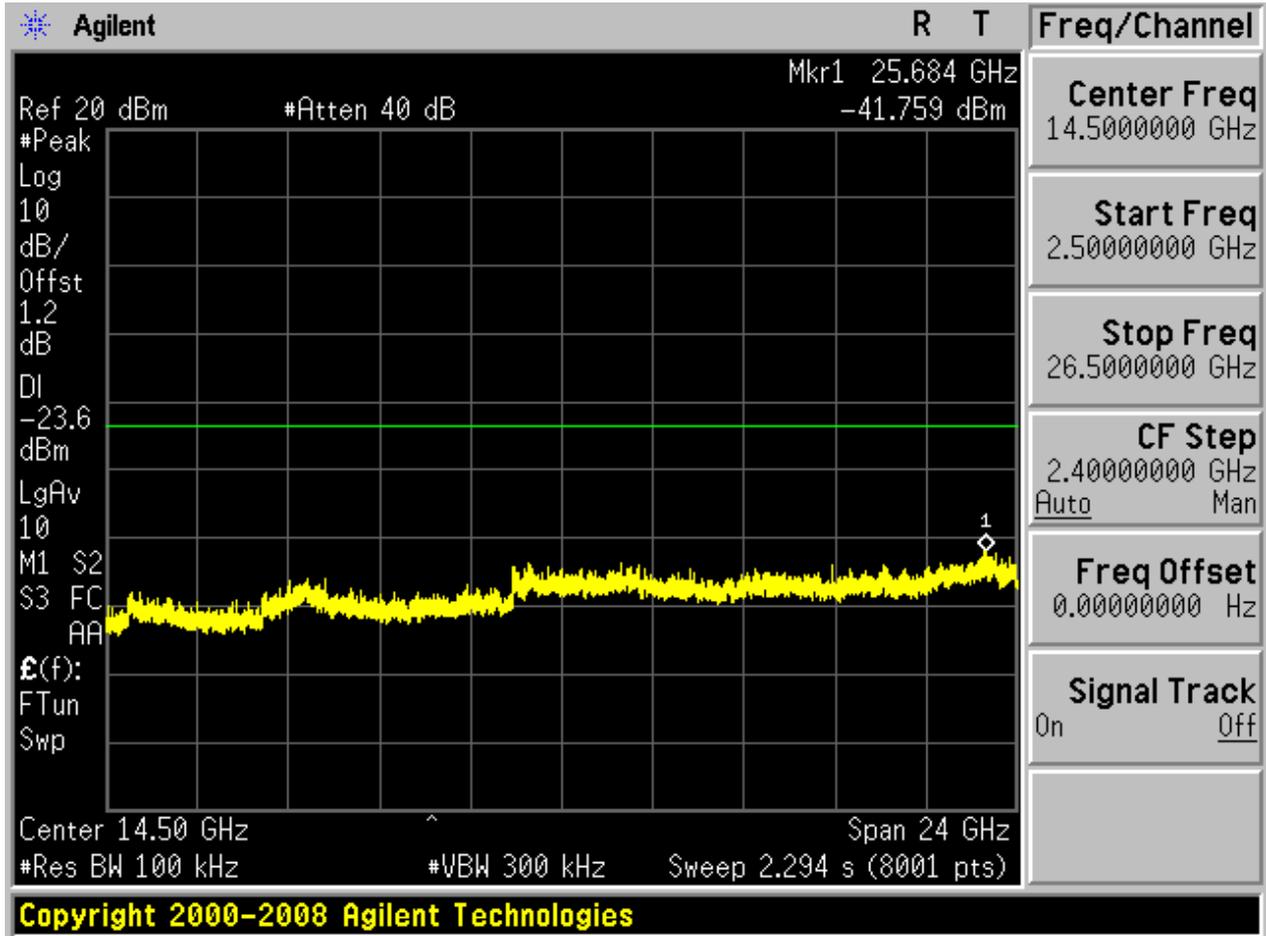








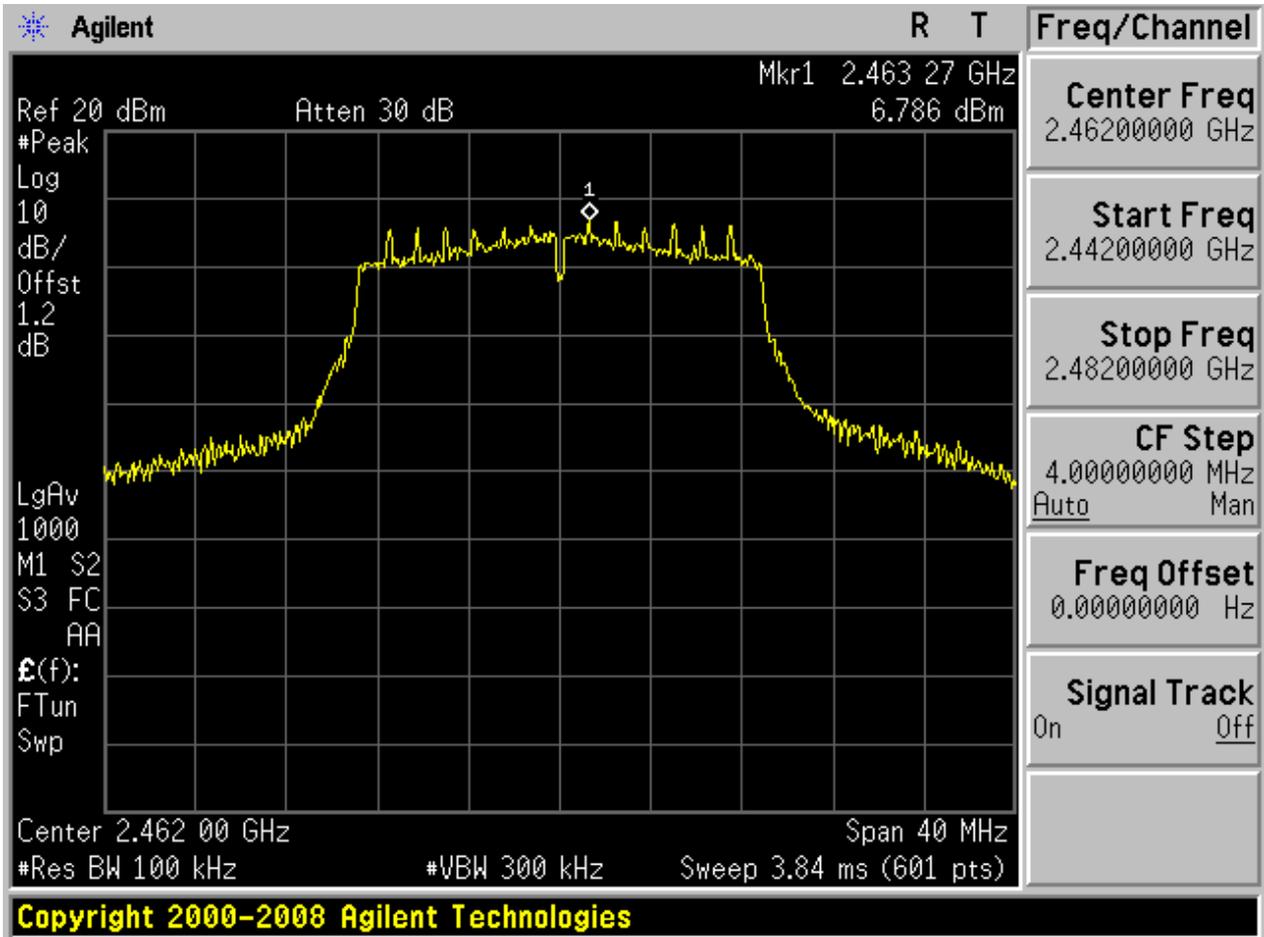






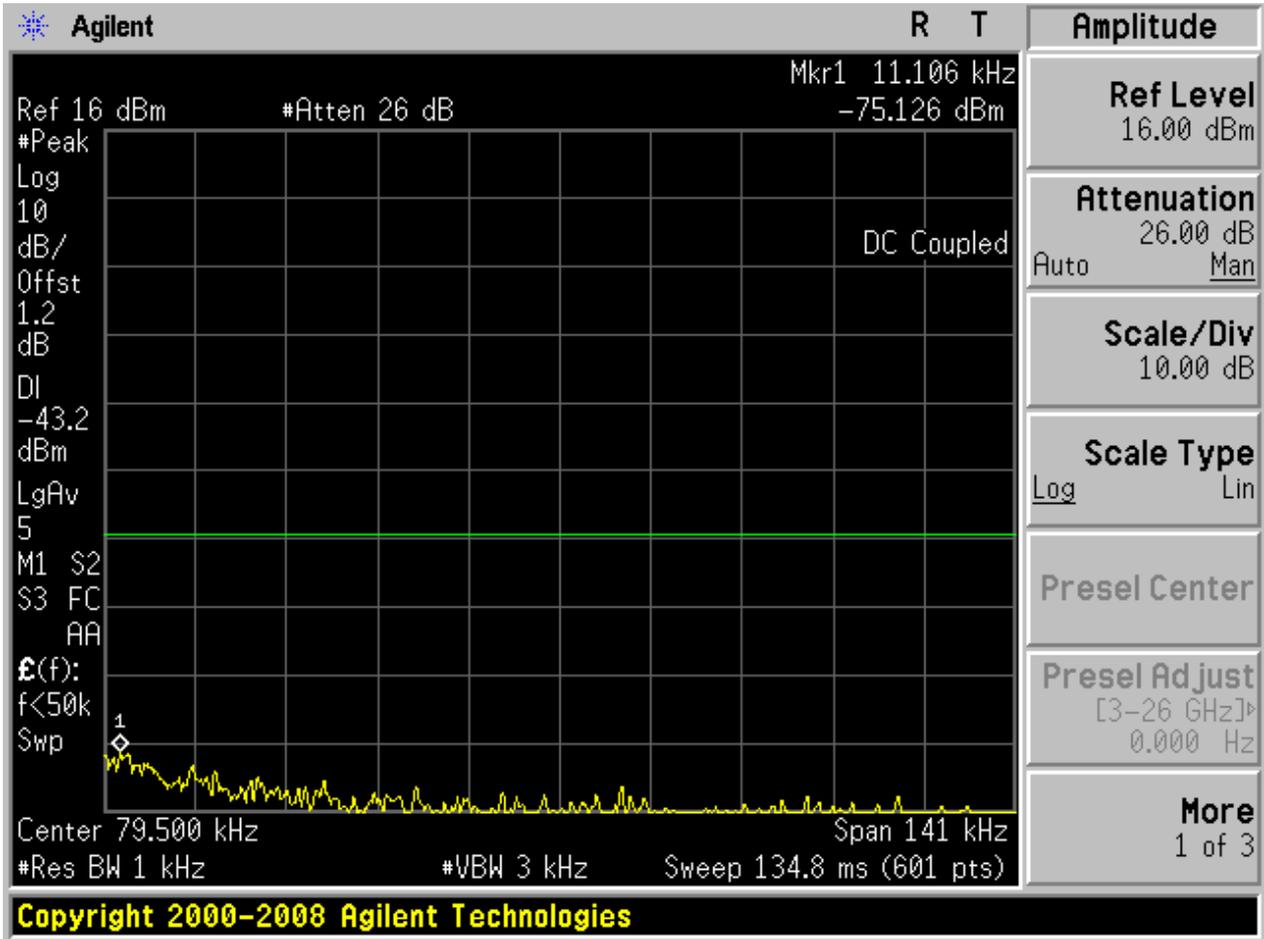
### 2.9 11N20\_H@Ant 1

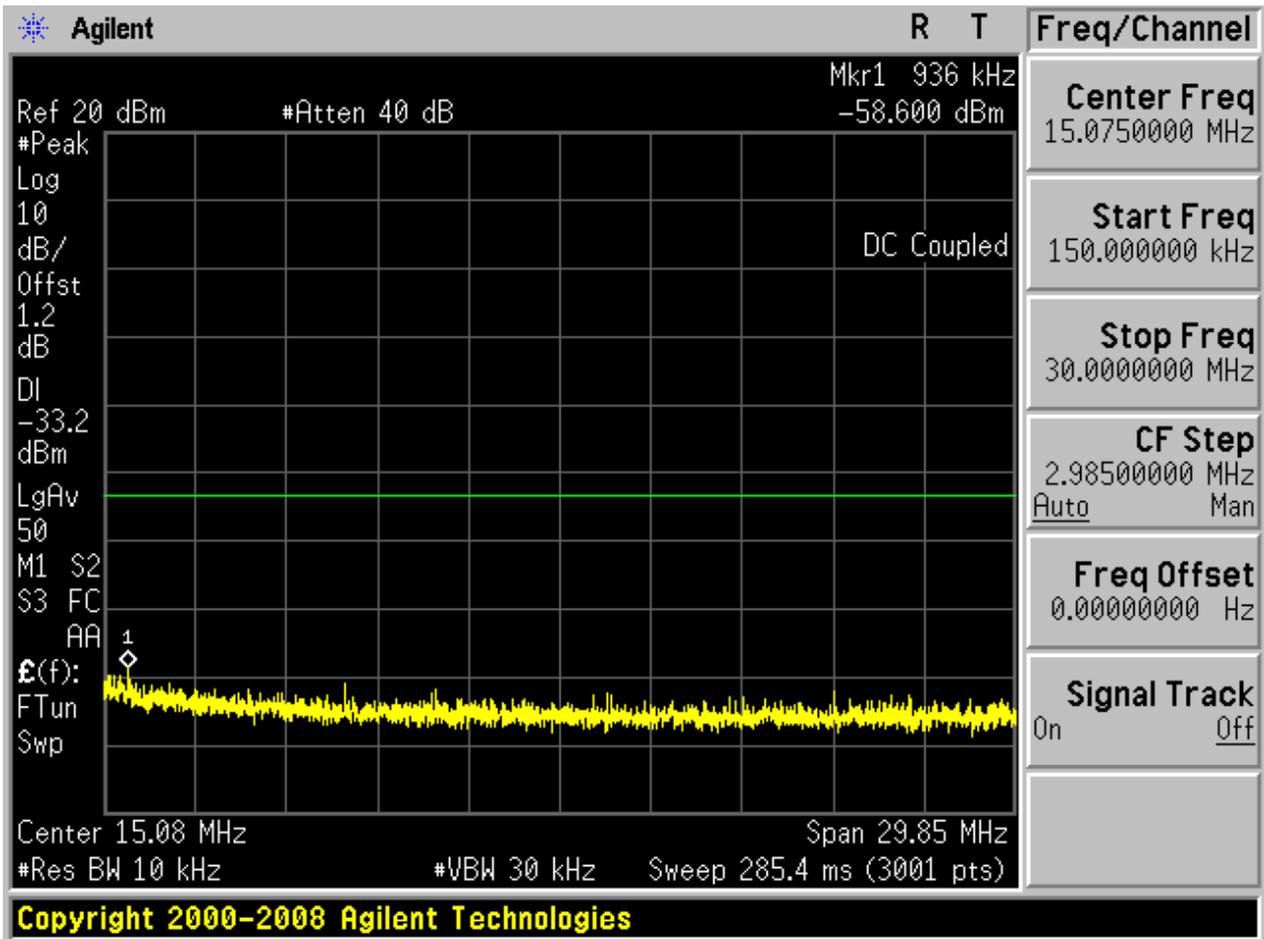
Pref:

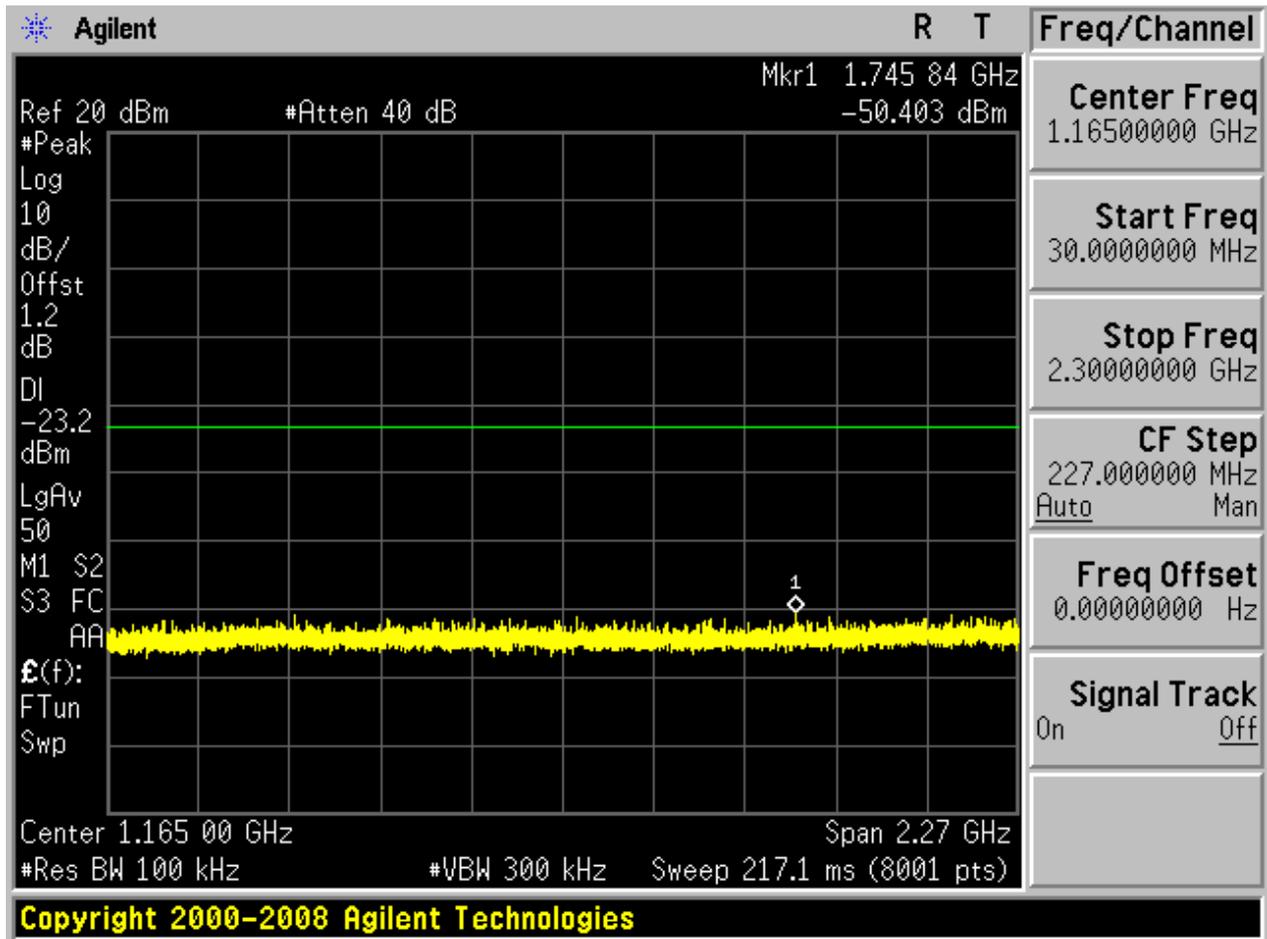


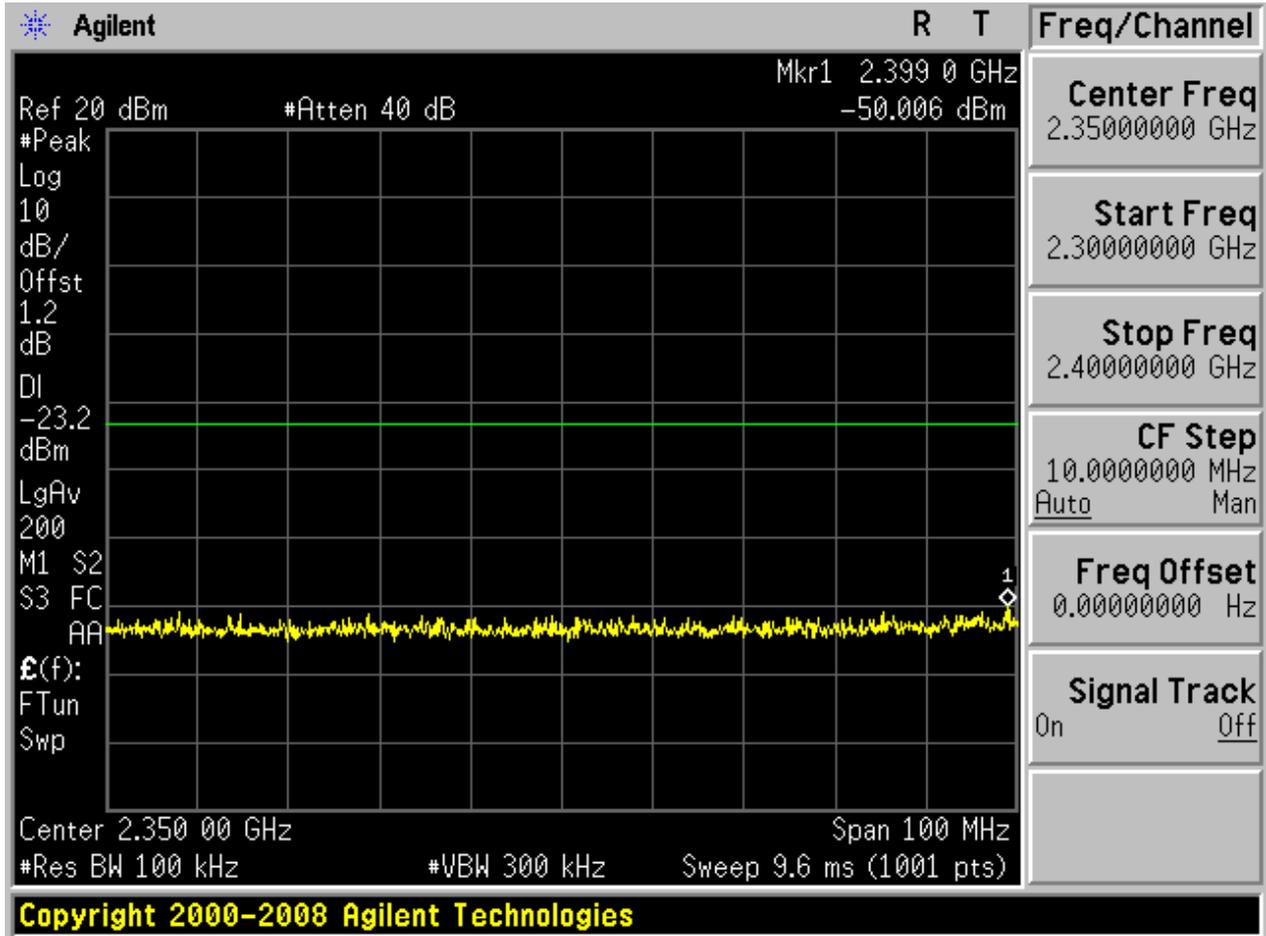


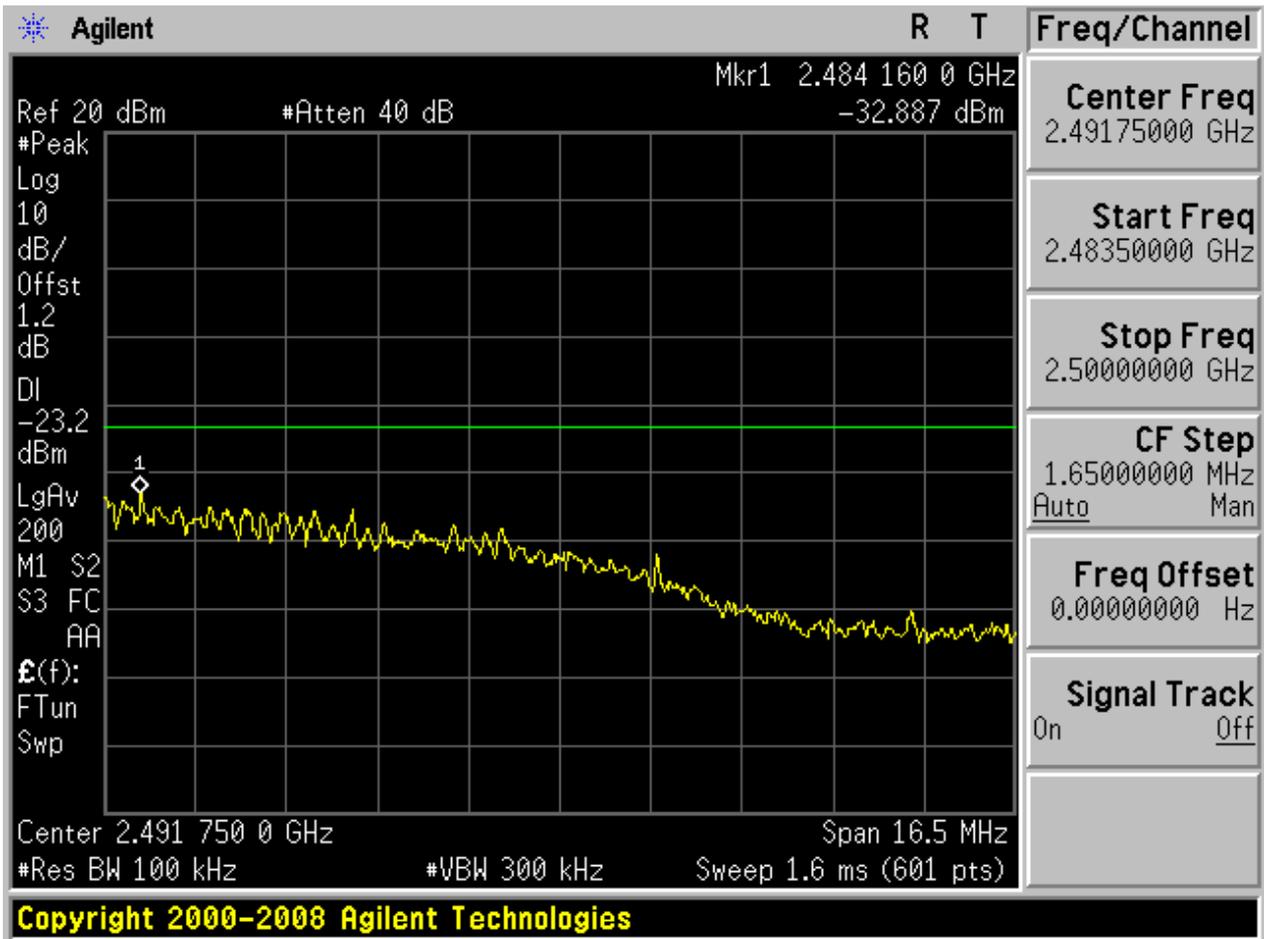
Puw:

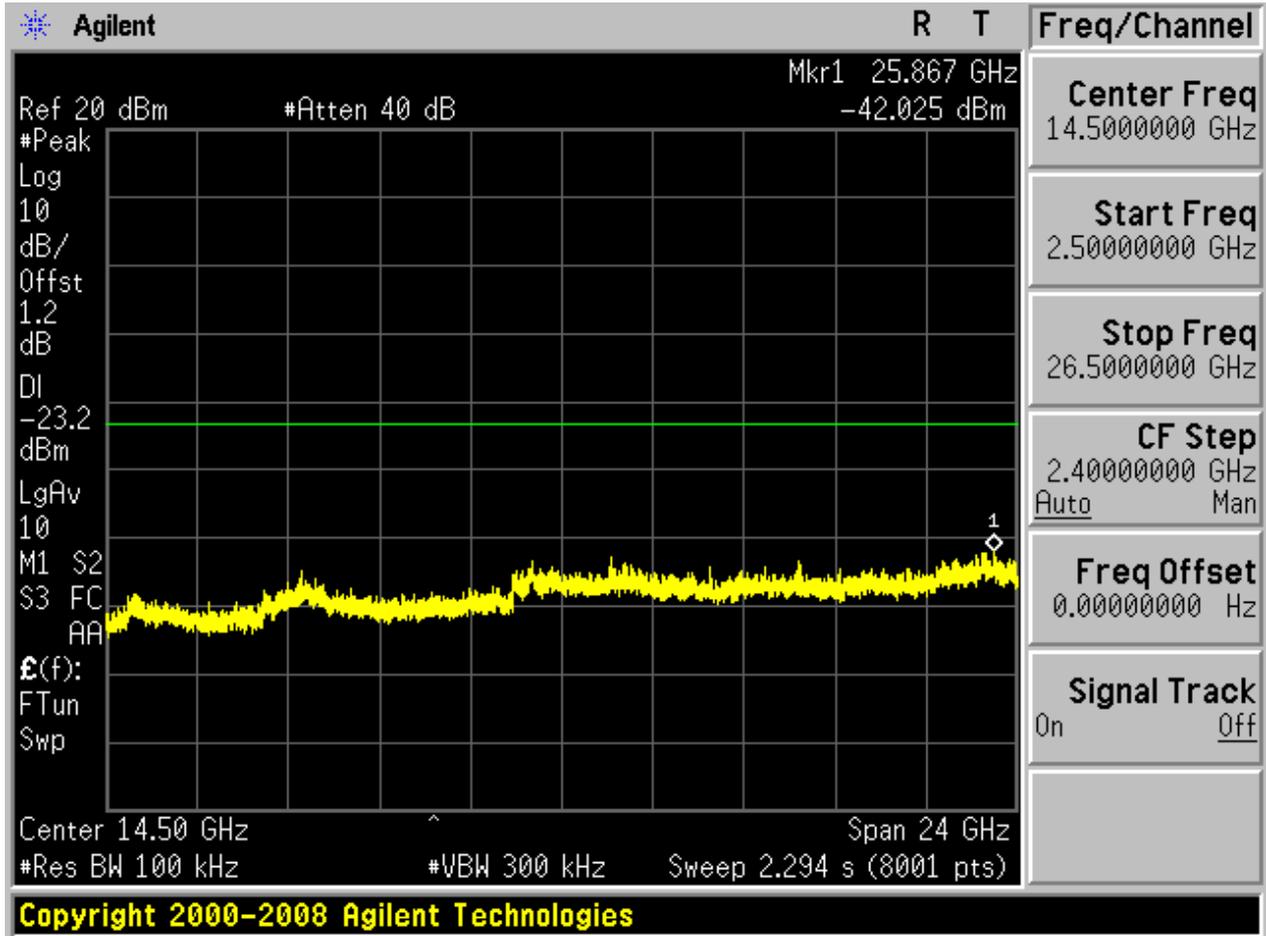






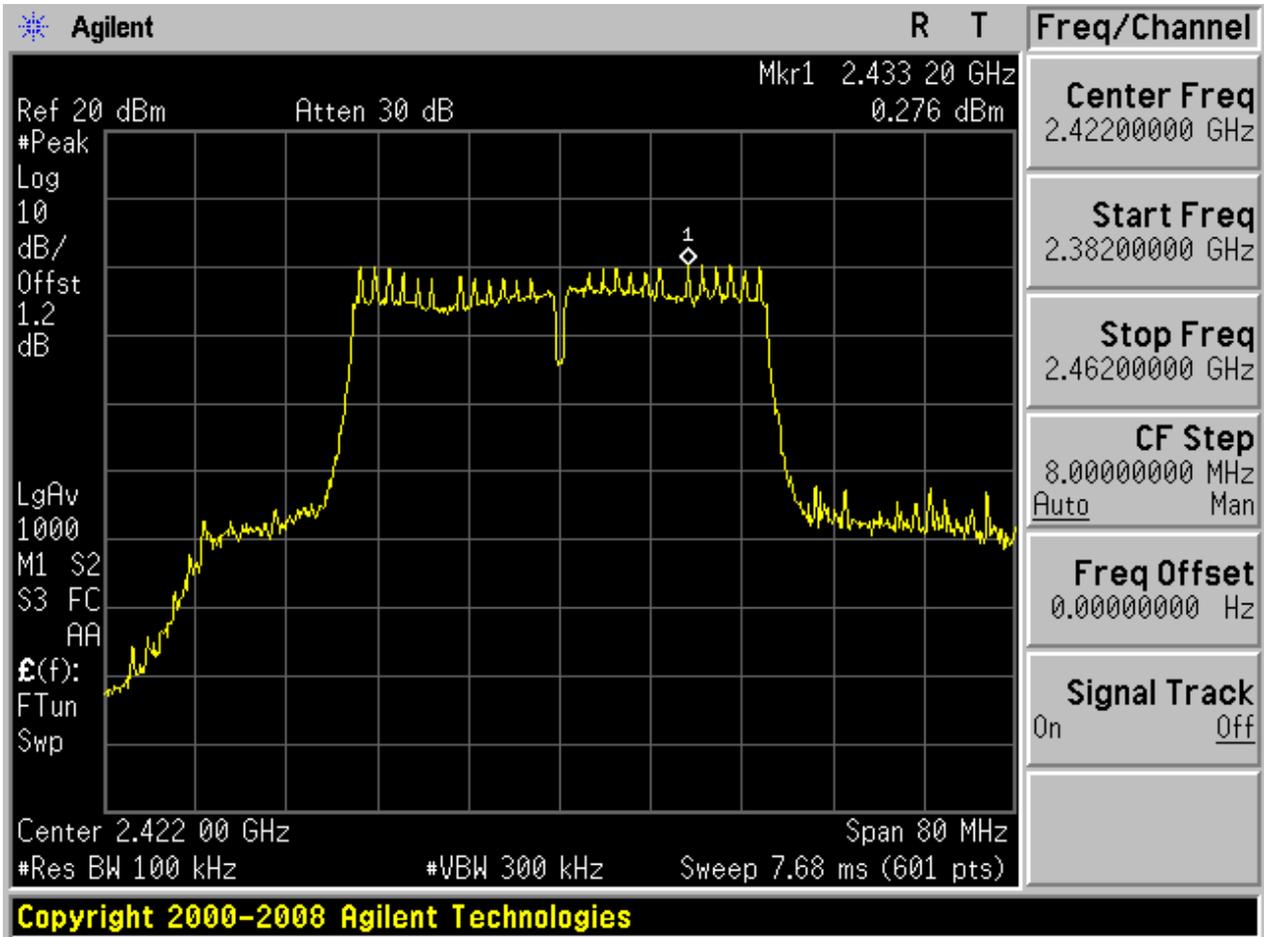






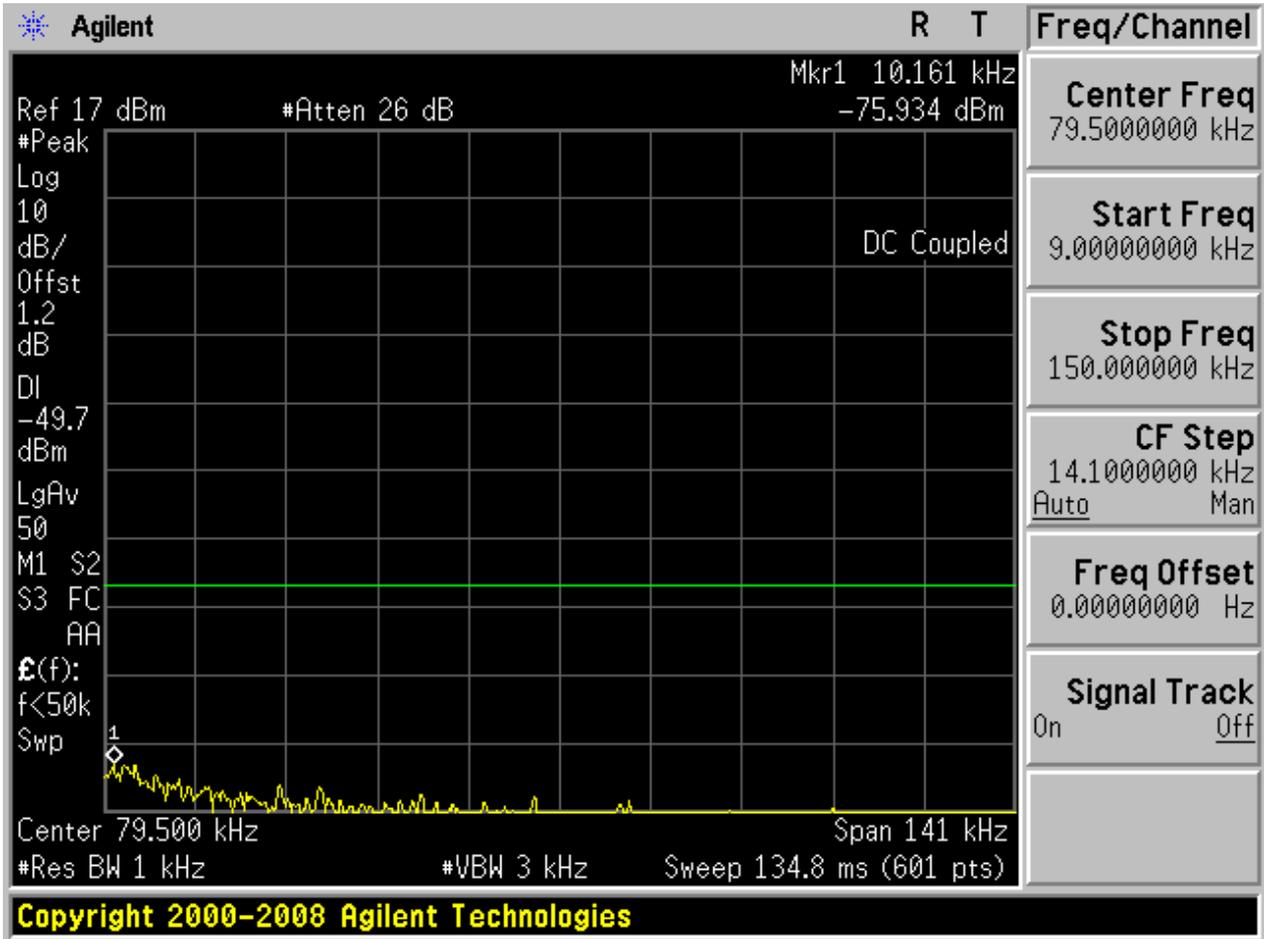
2.19 11N40\_L@Ant 1

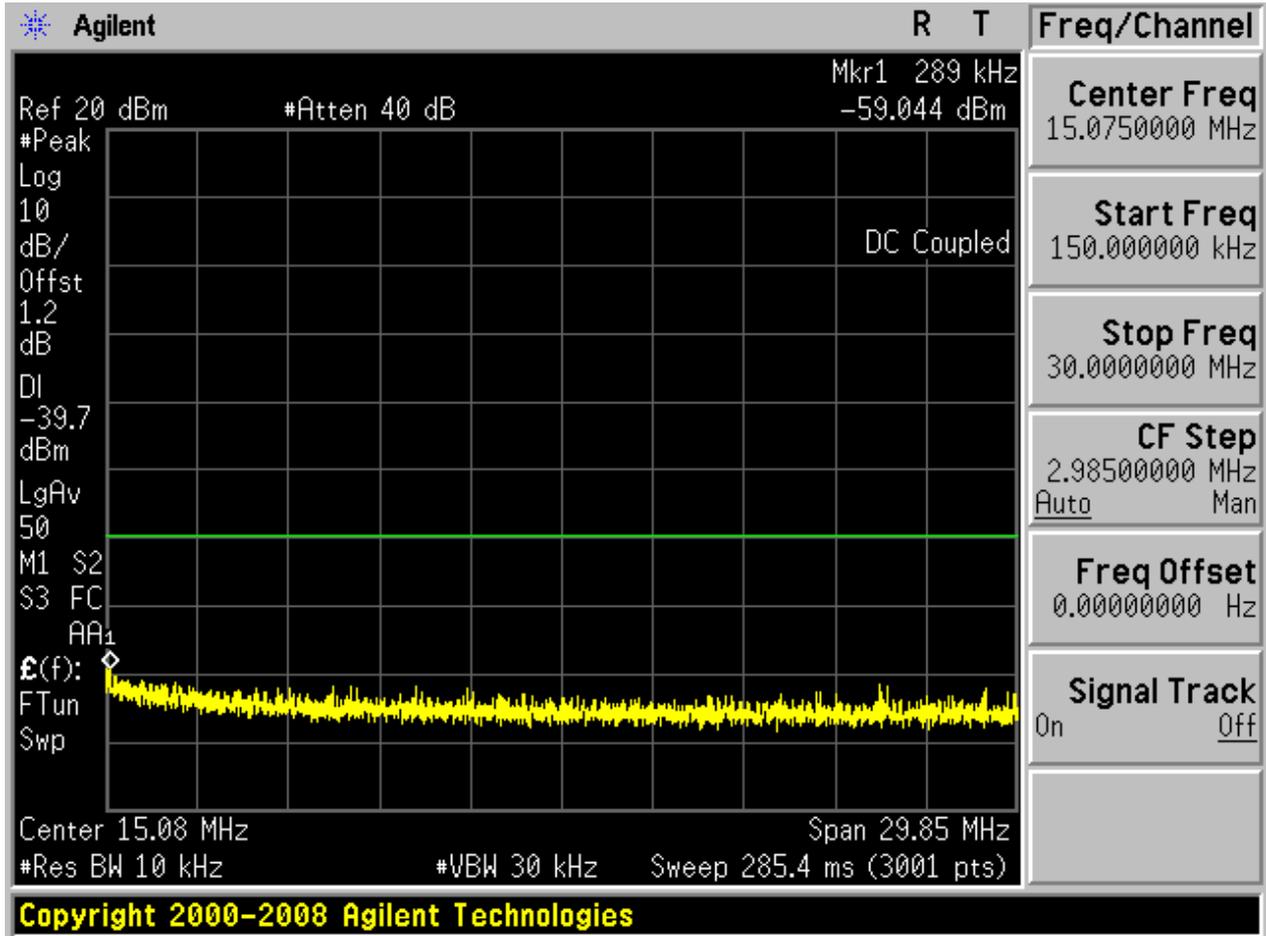
Pref:

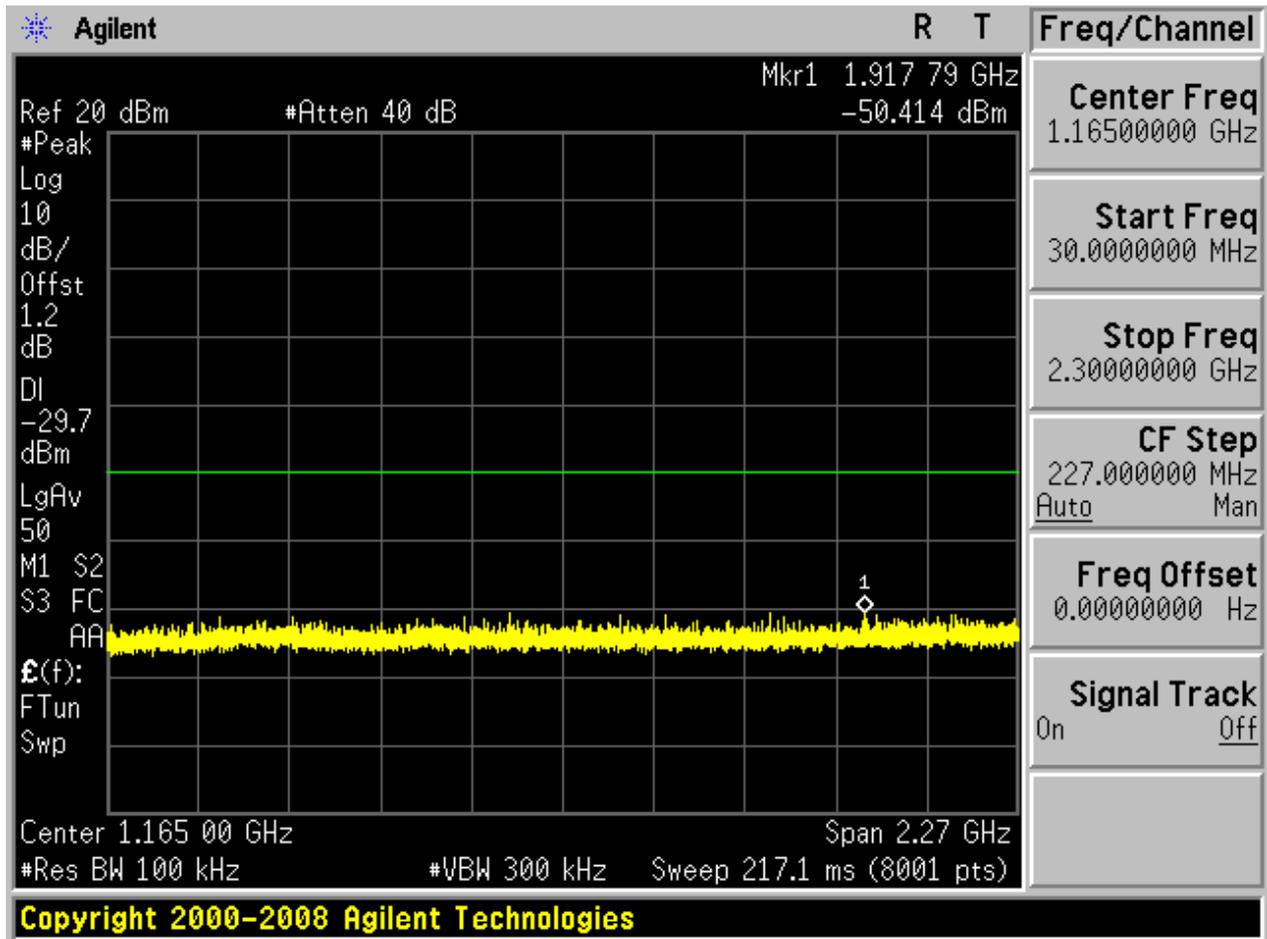


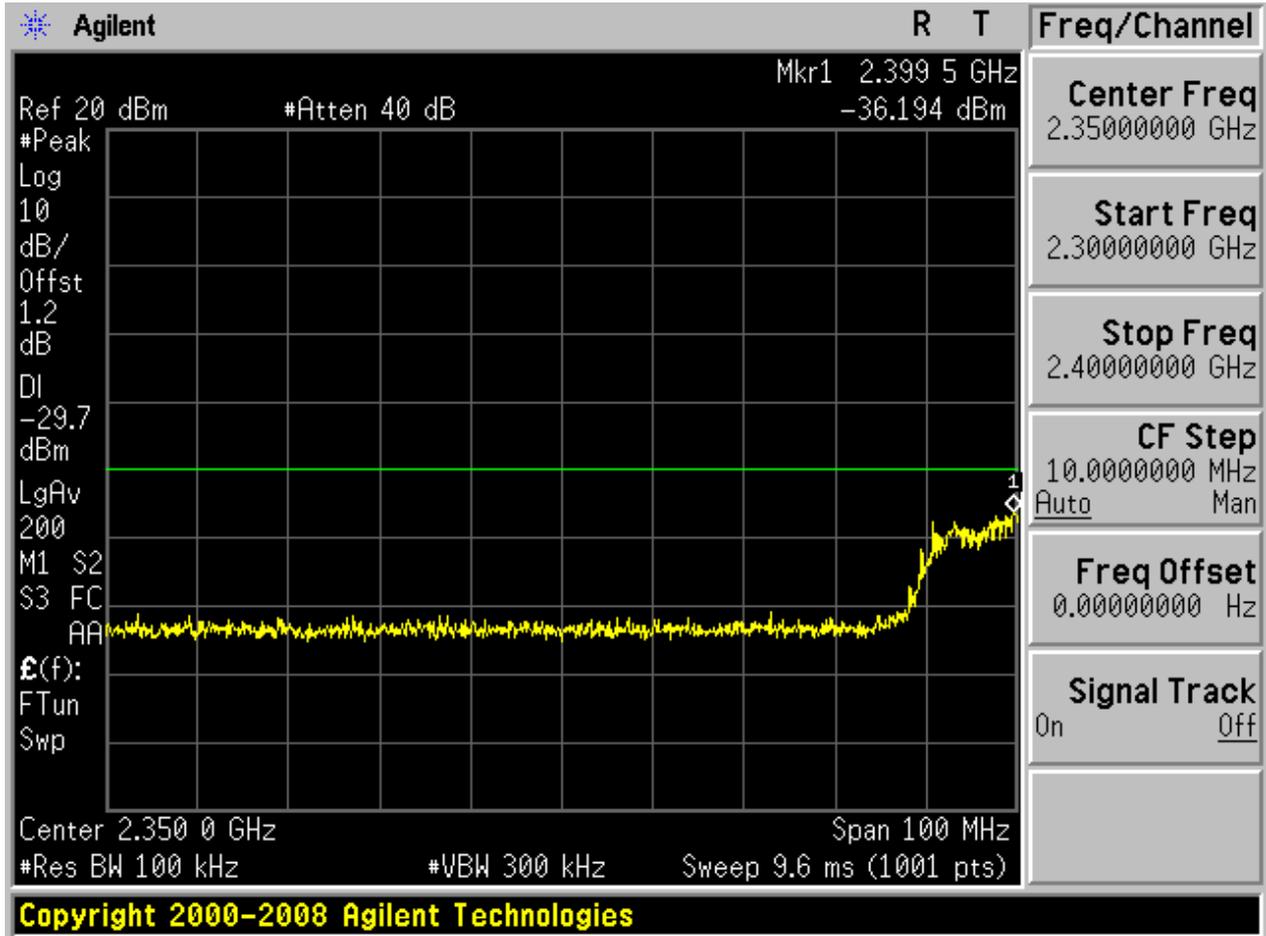


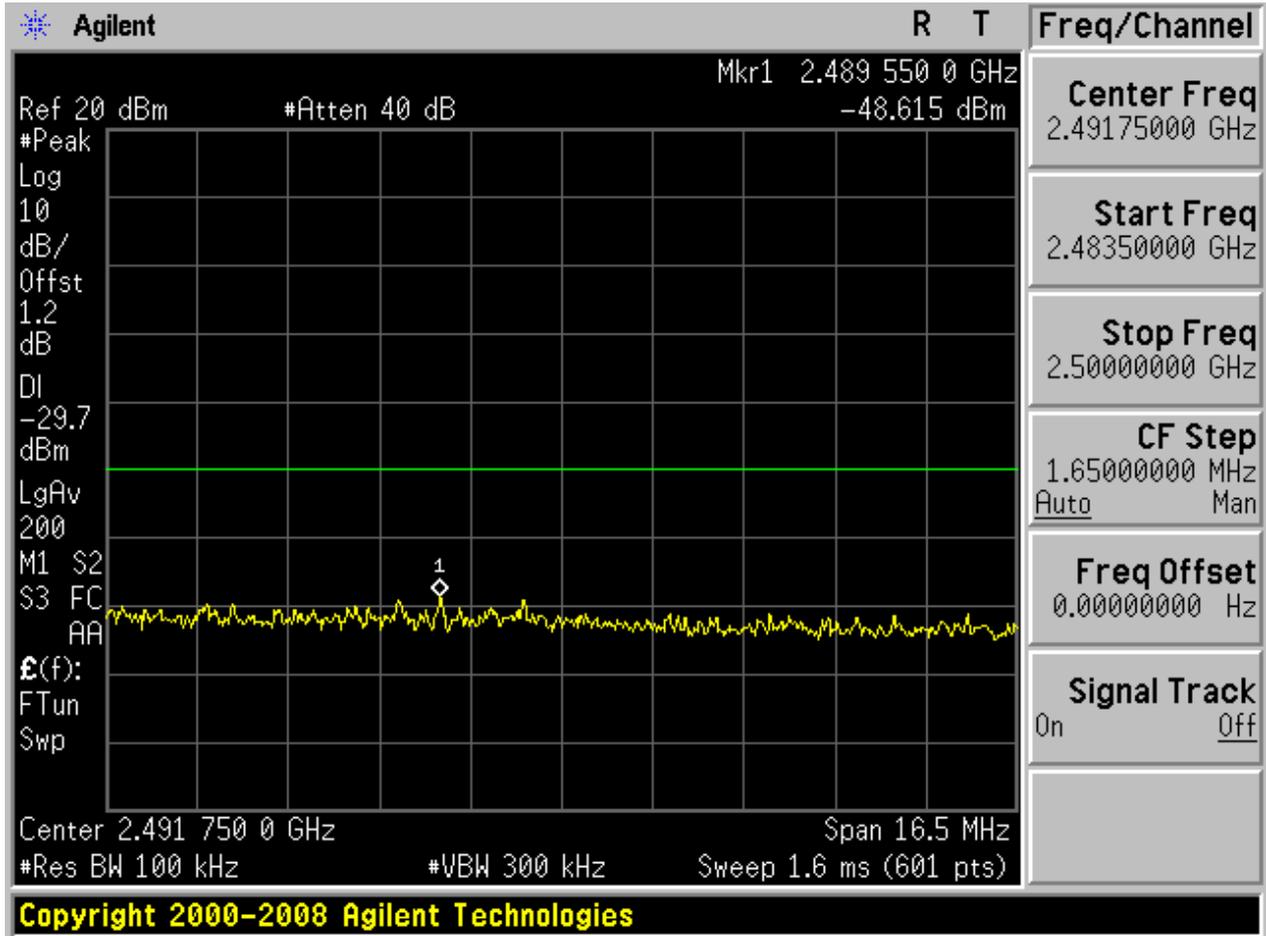
Puw:

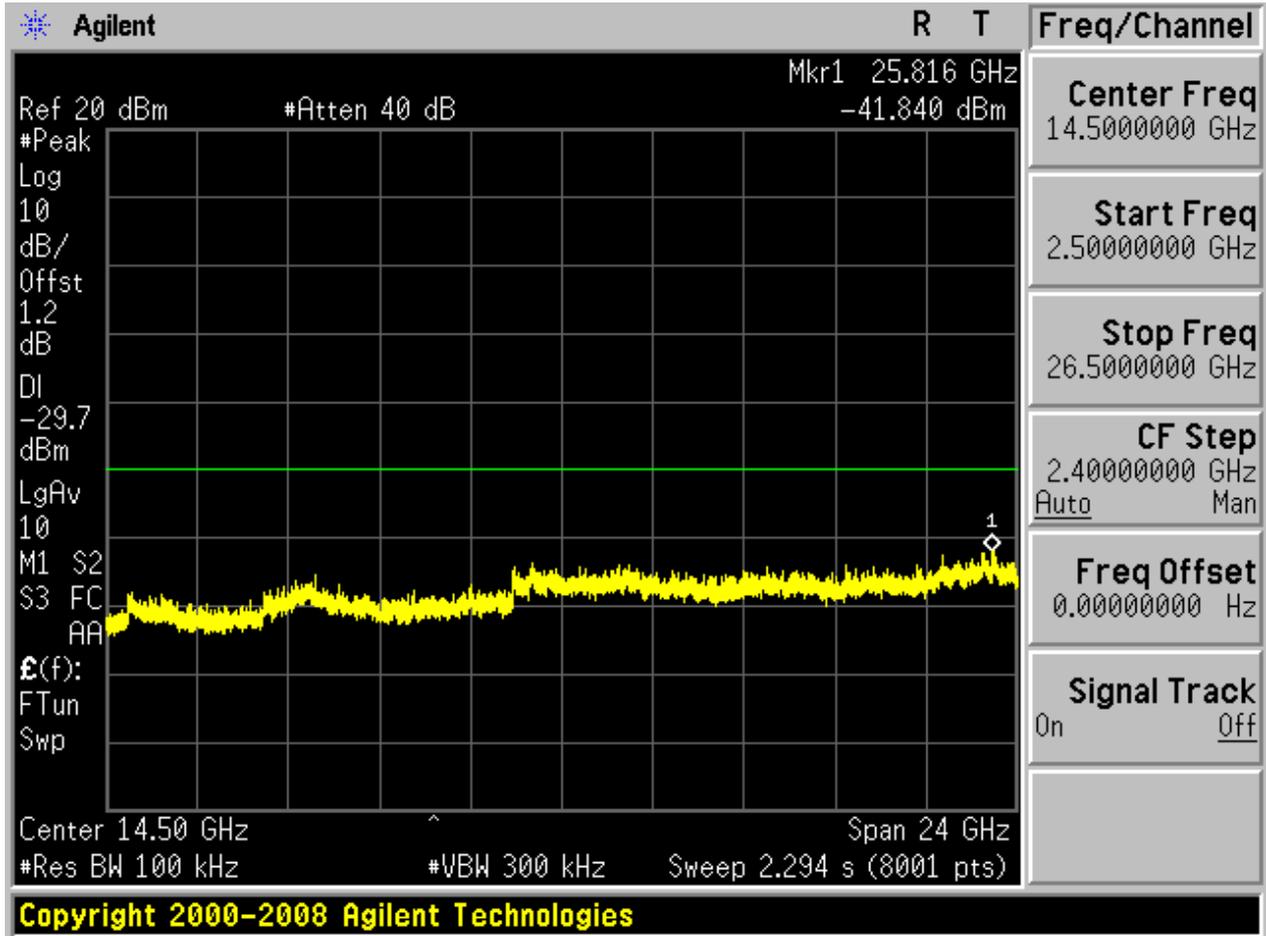






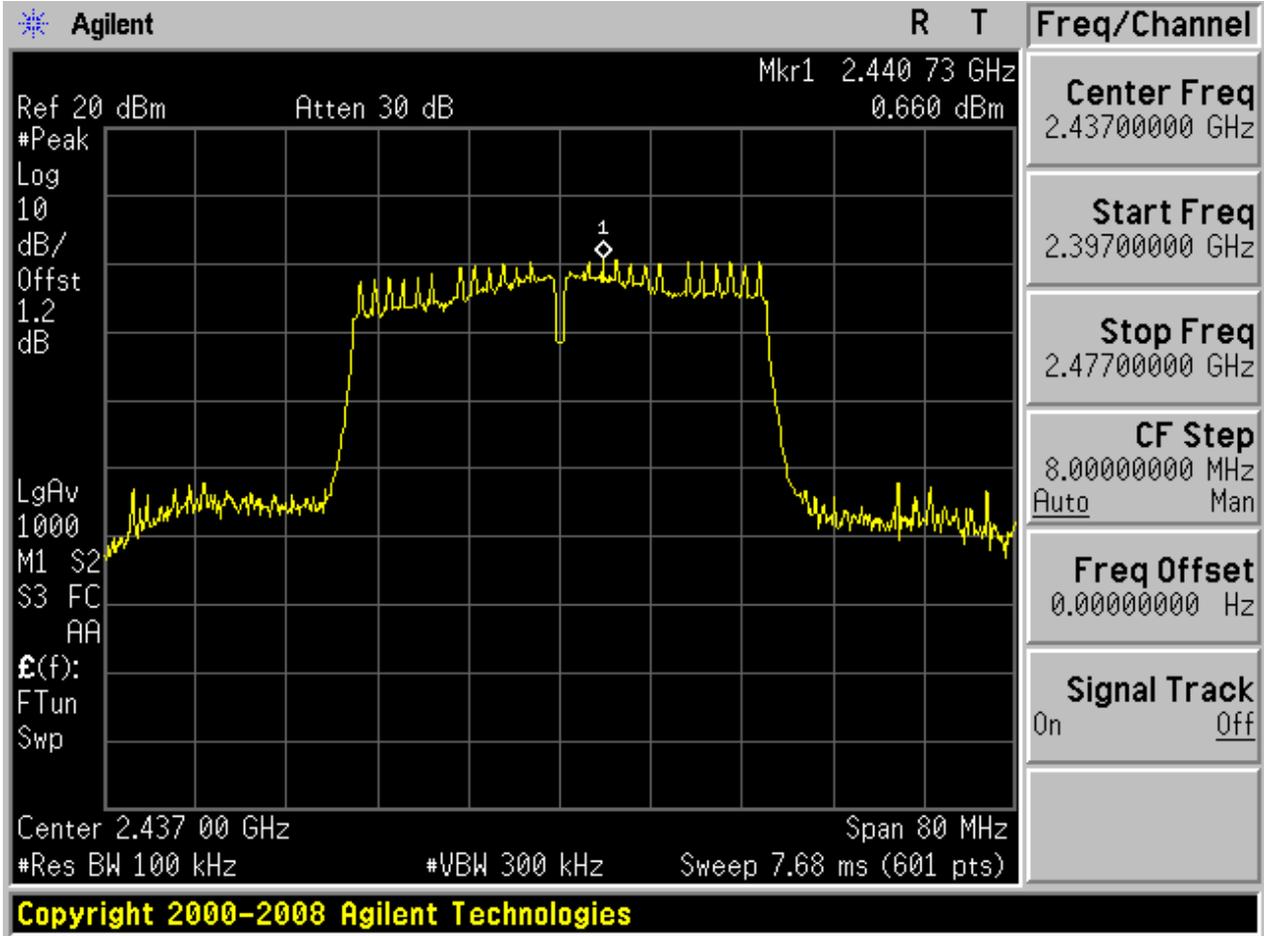






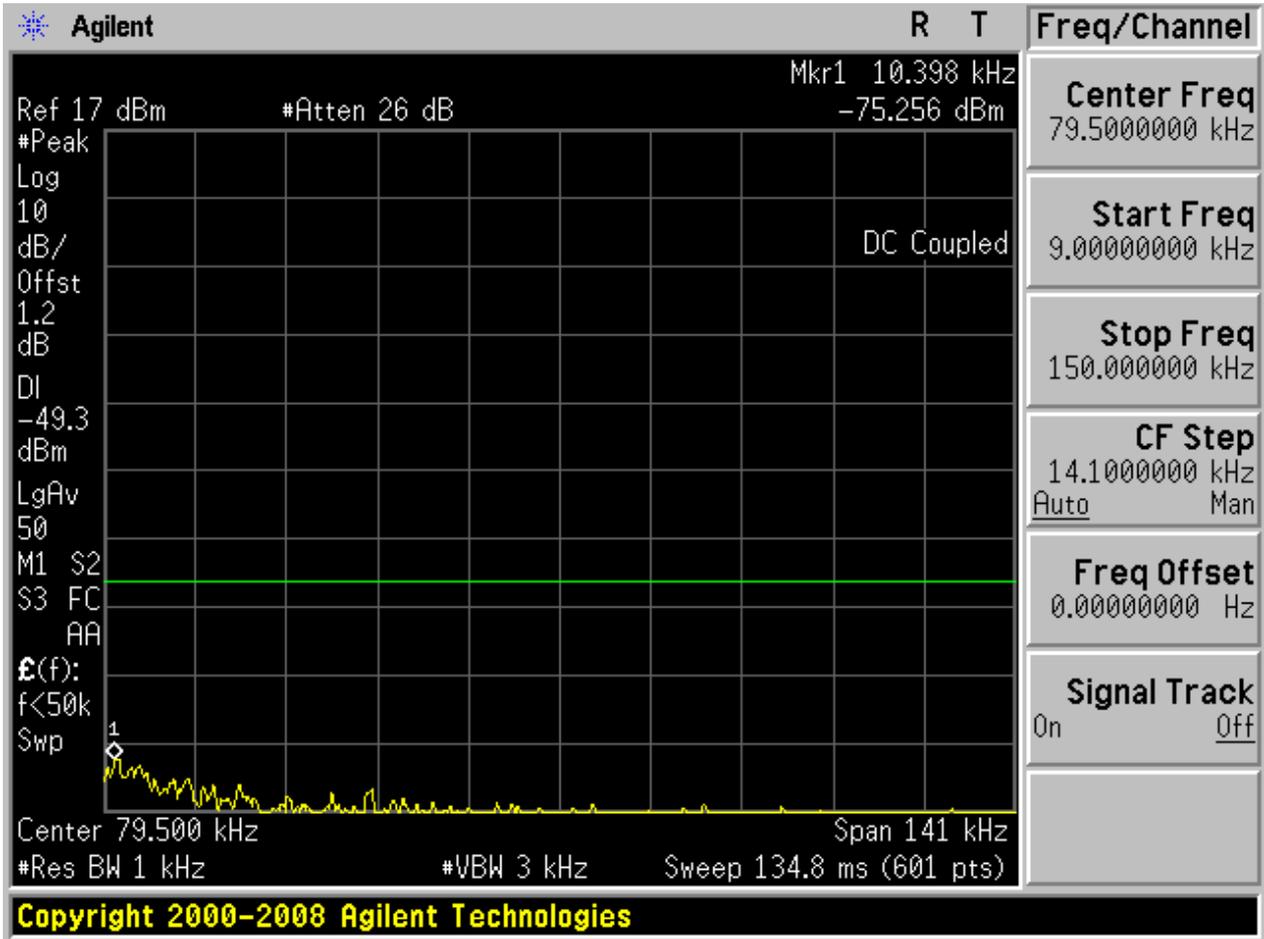
2.21 11N40\_M@Ant 1

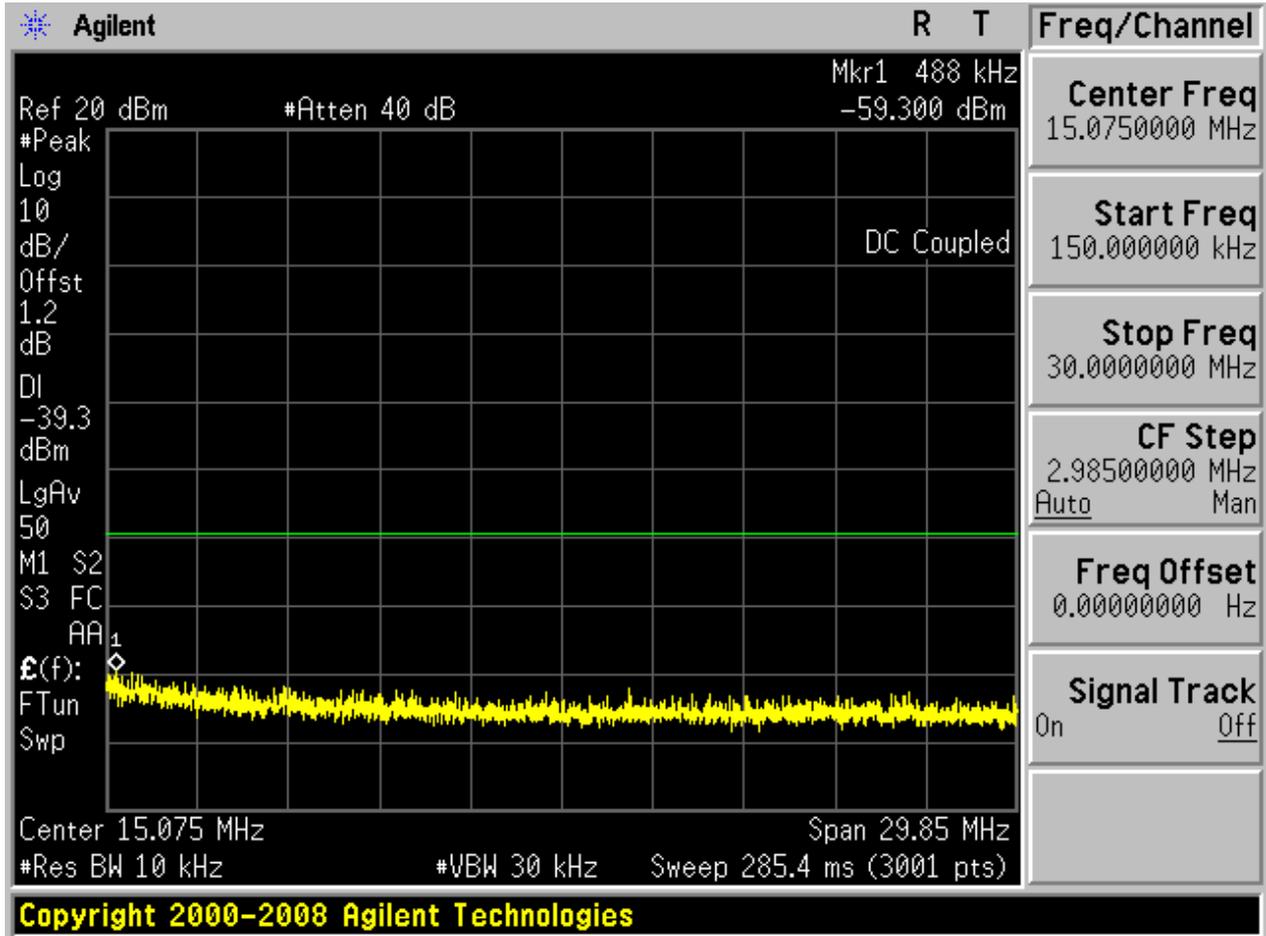
Pref:

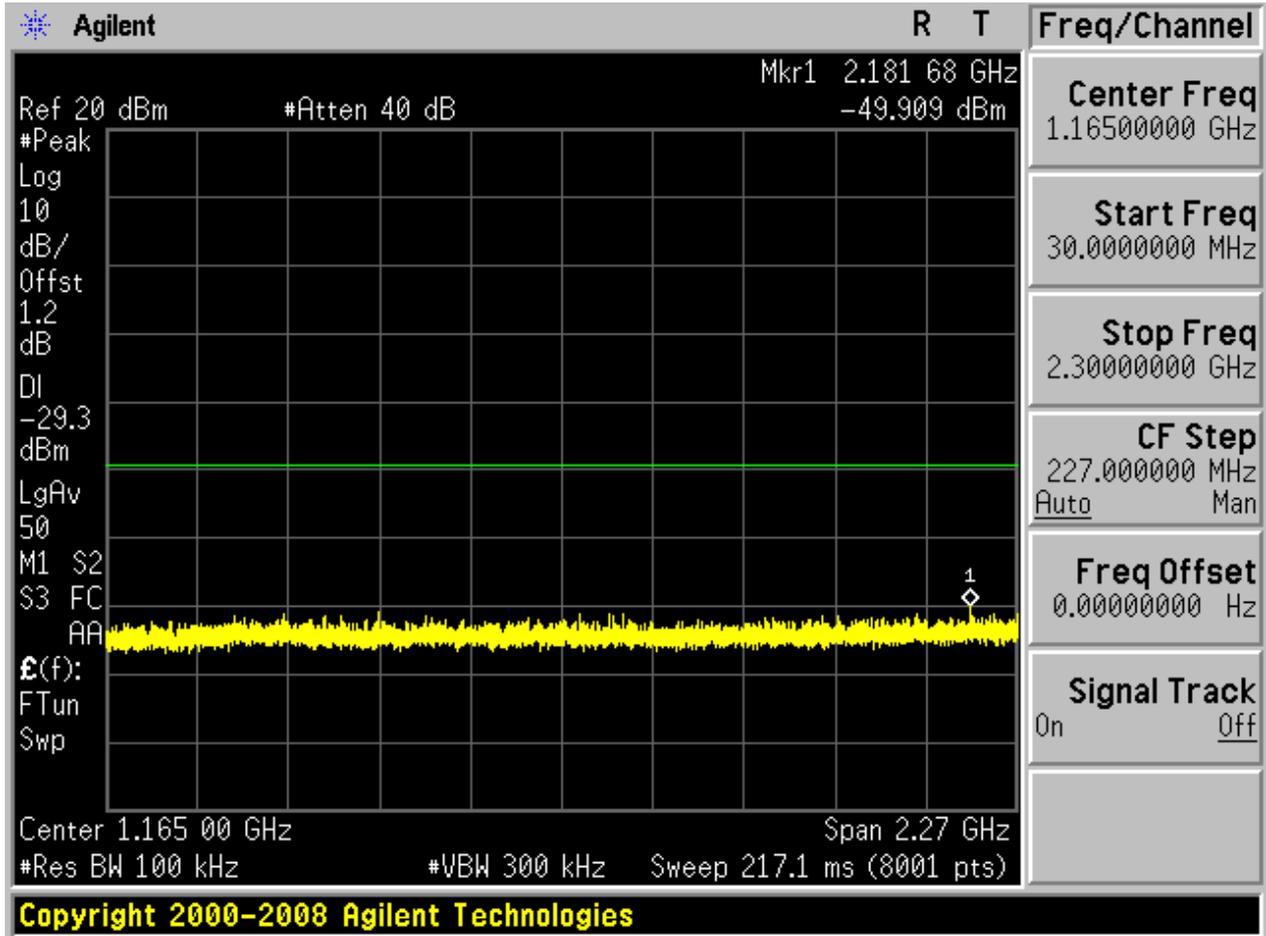


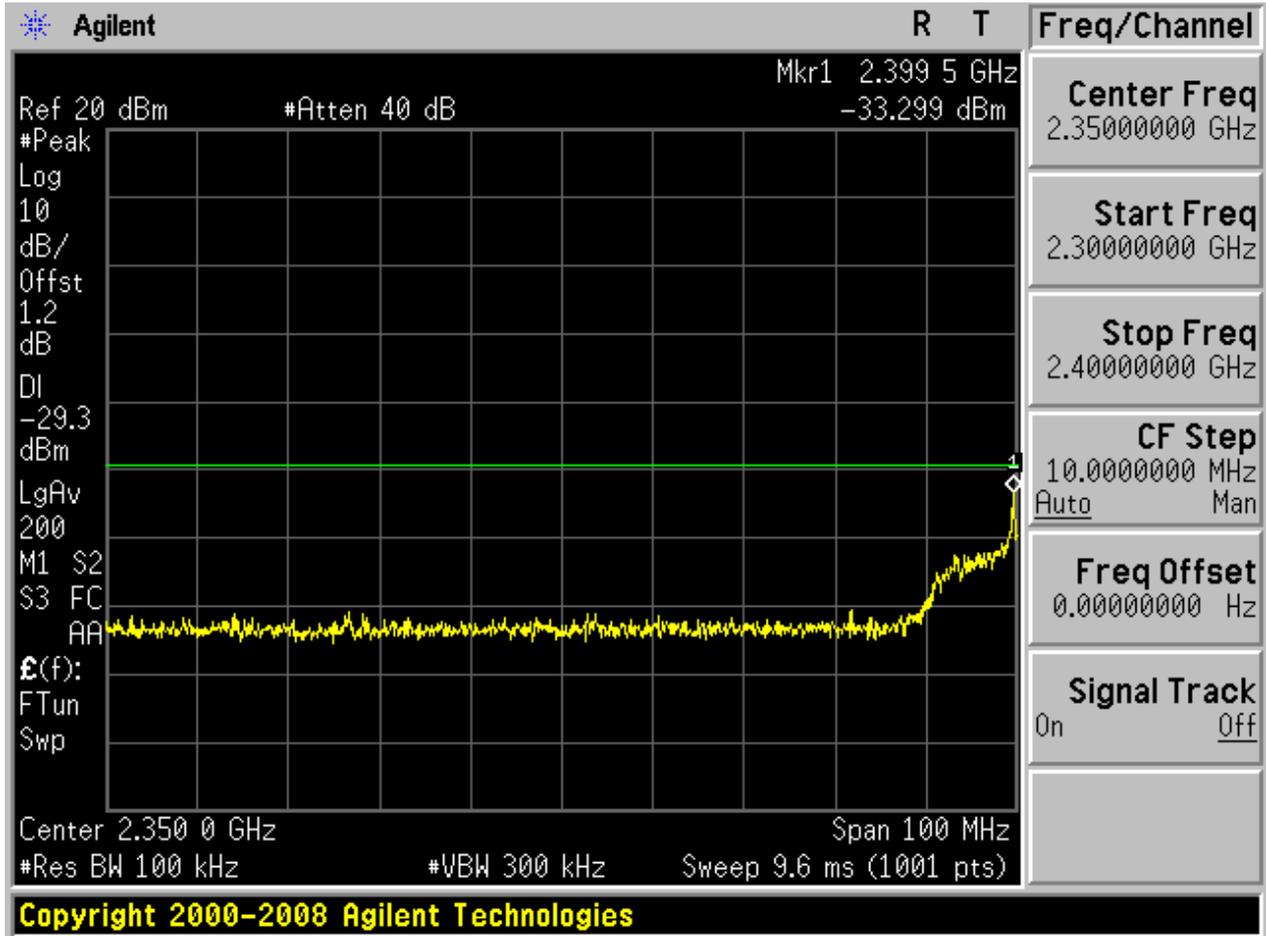


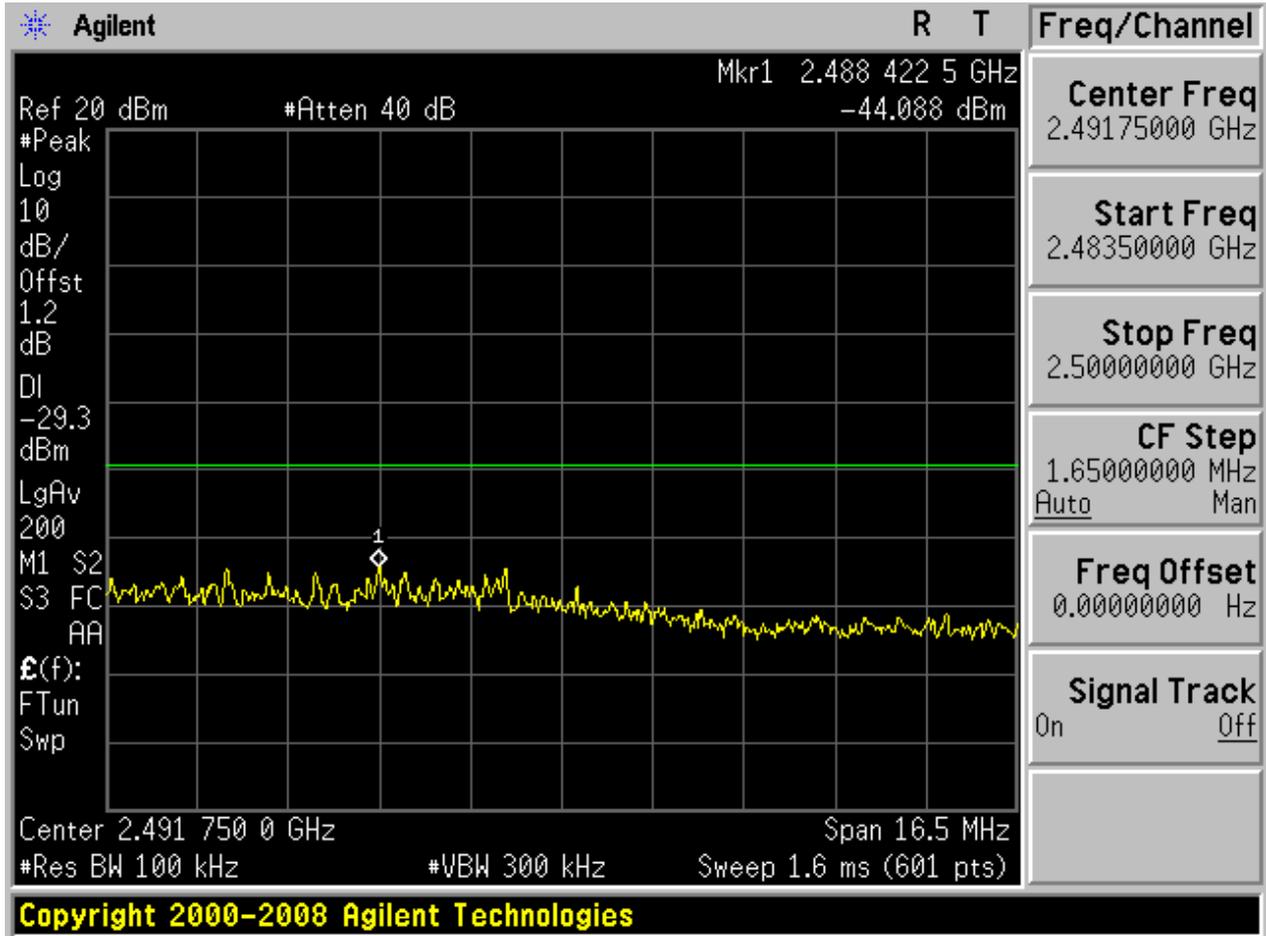
Puw:

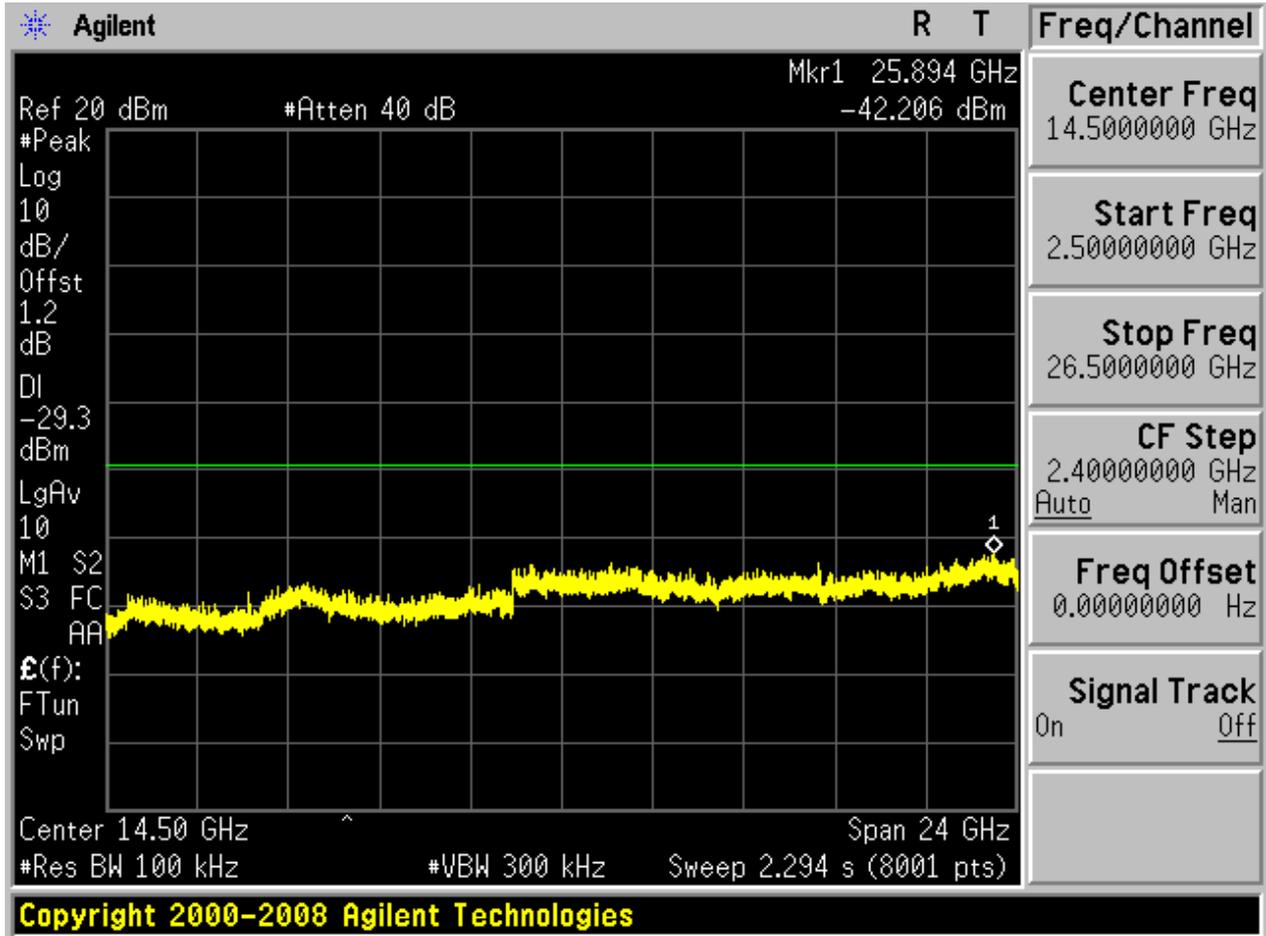






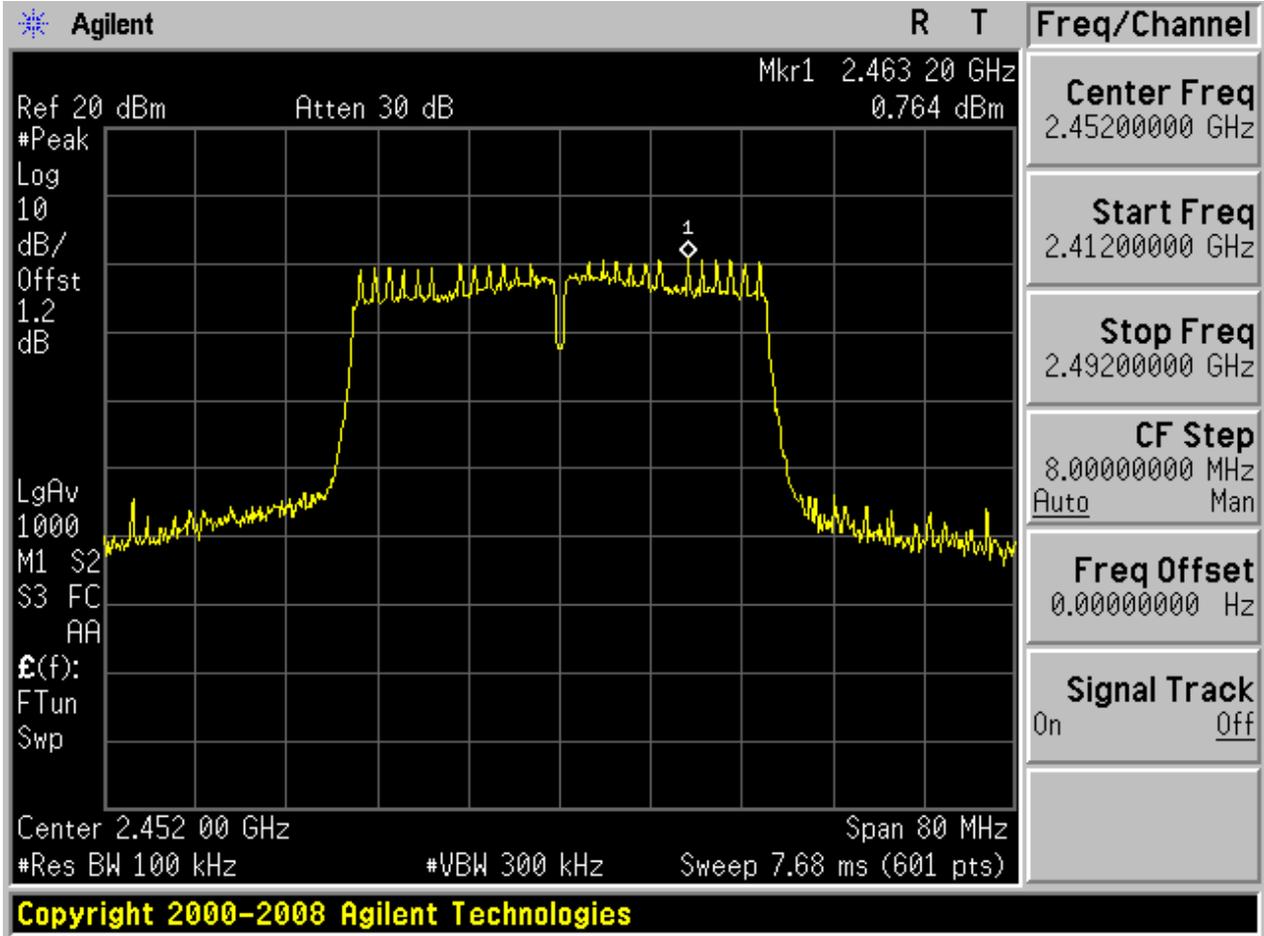






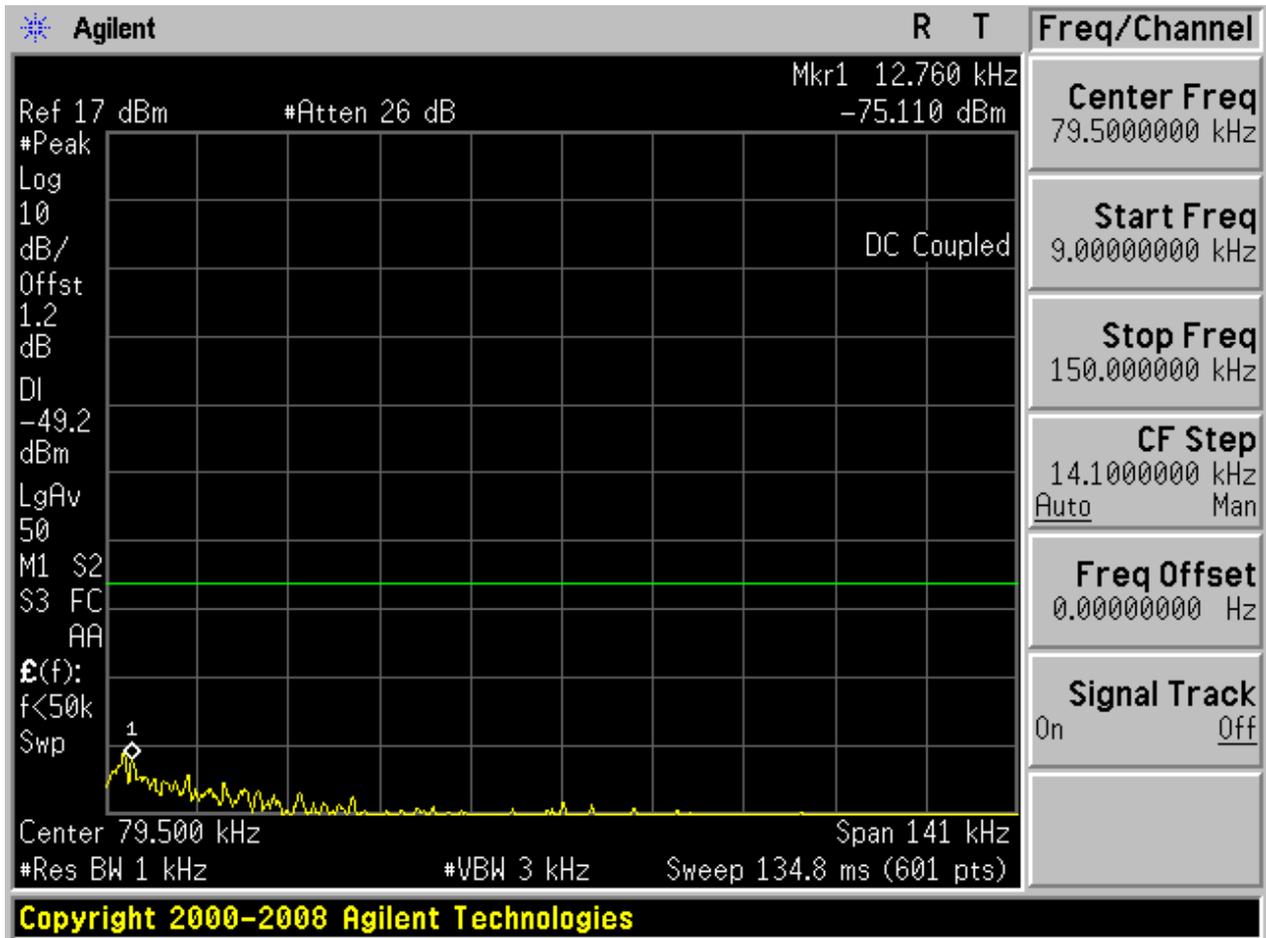
2.23 11N40\_H@Ant 1

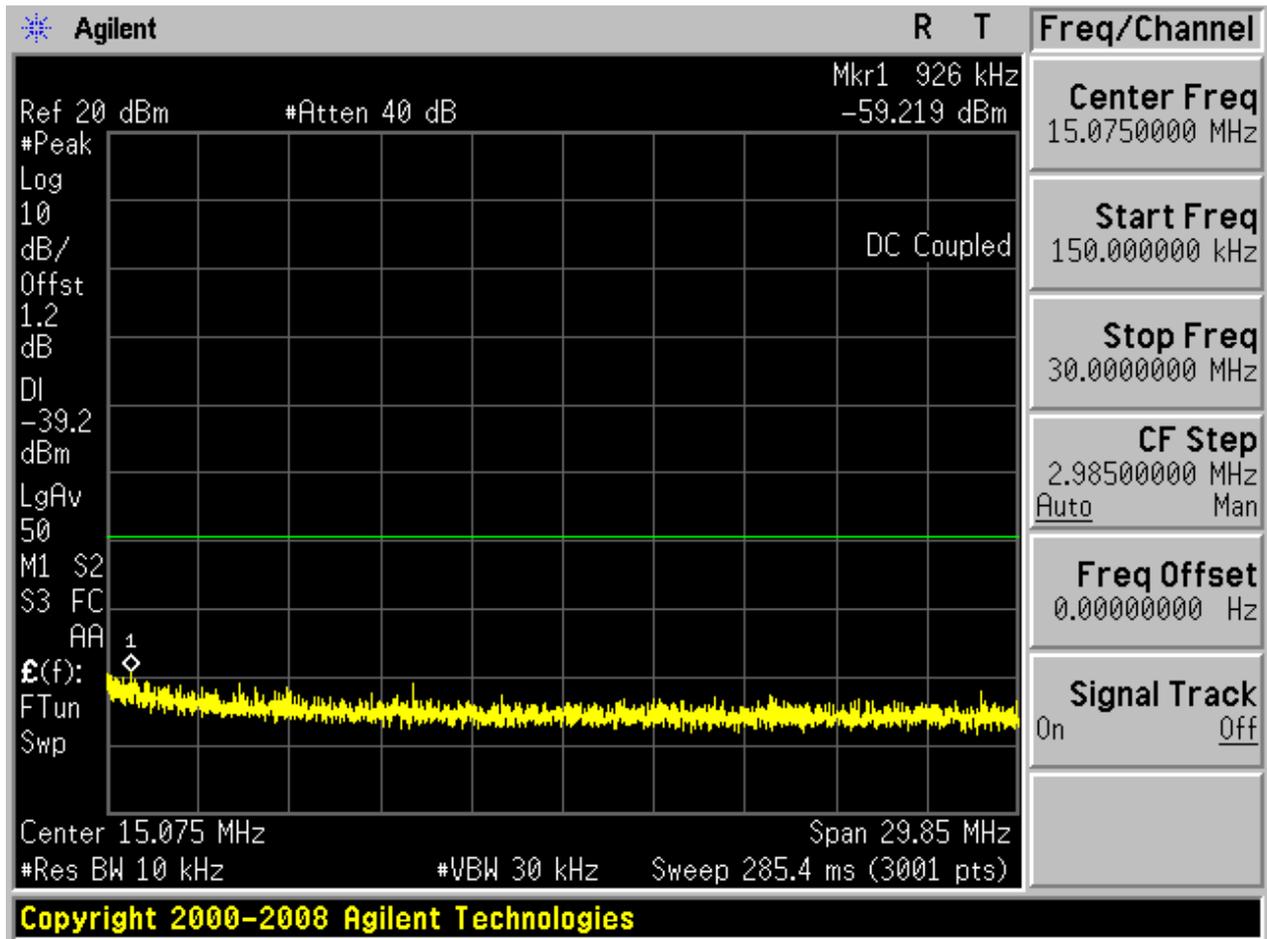
Pref:

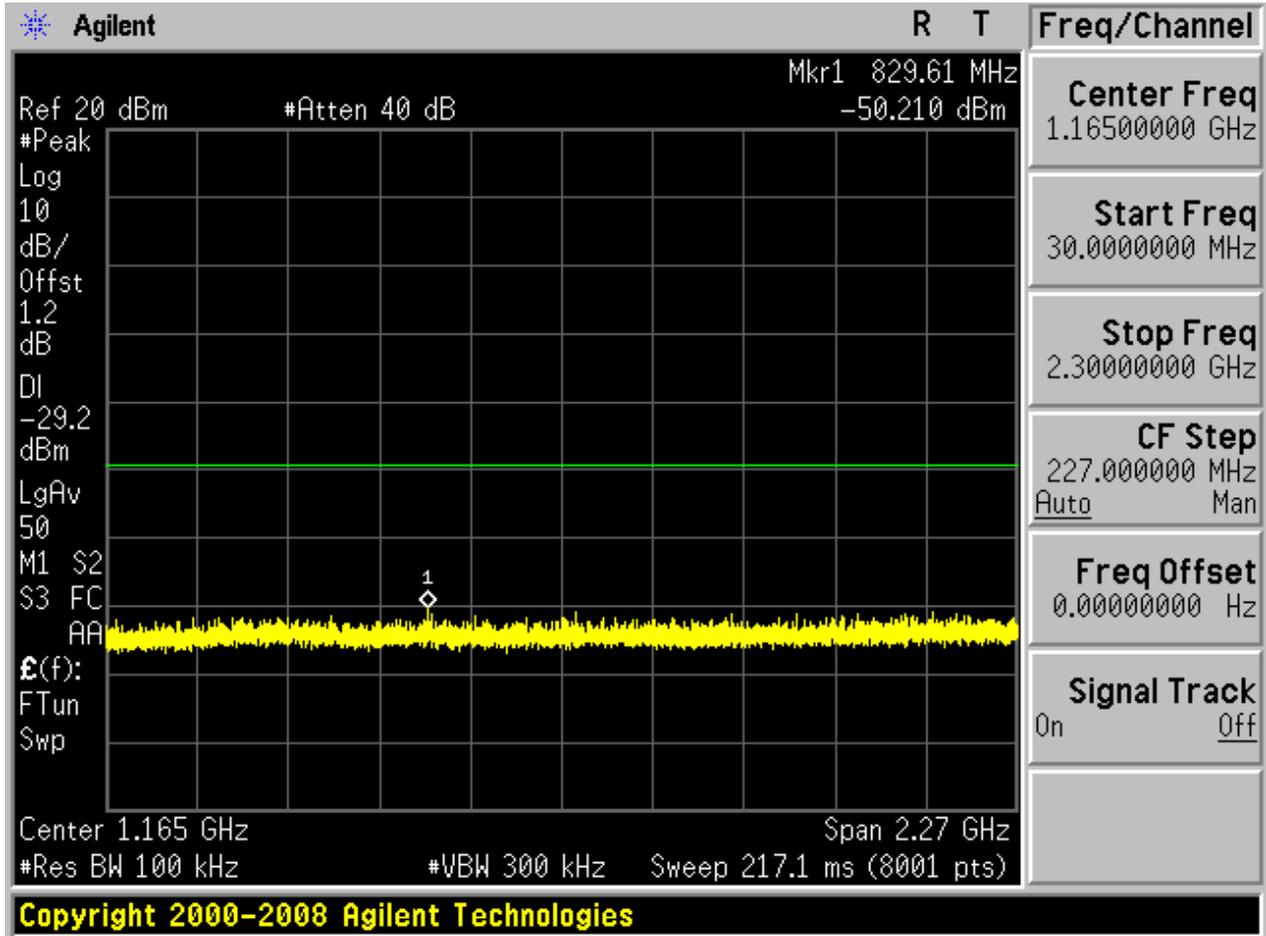


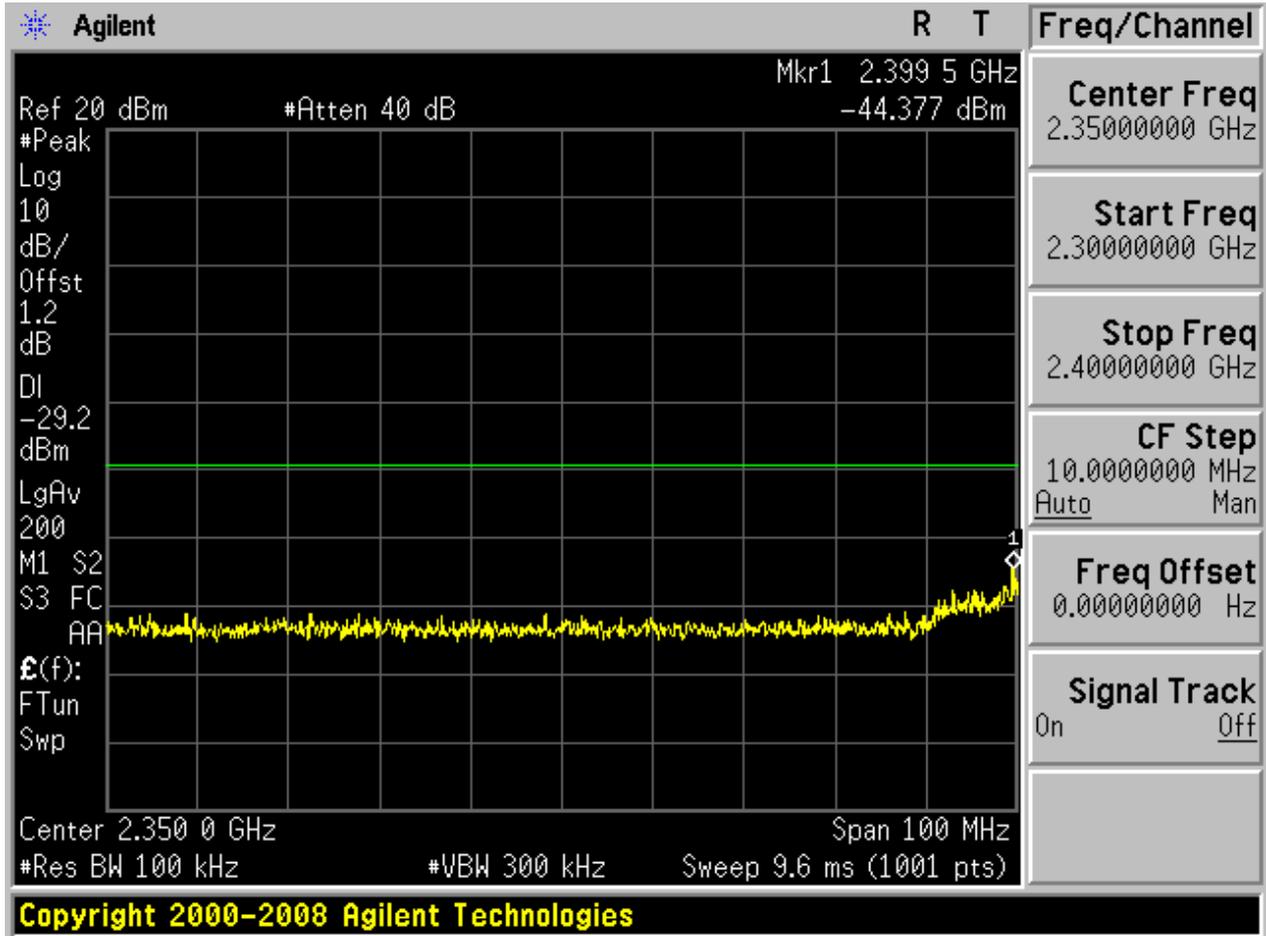


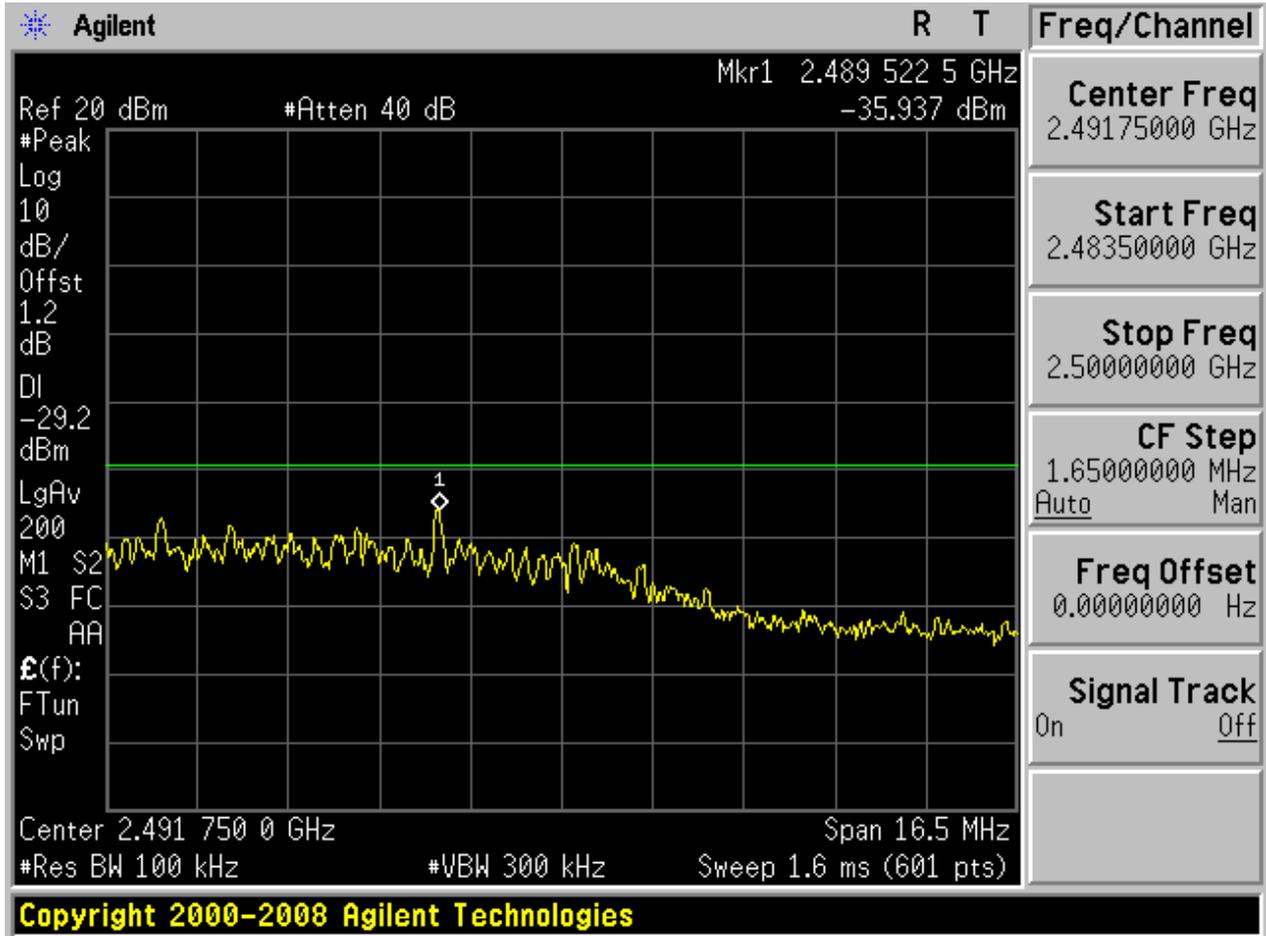
Puw:

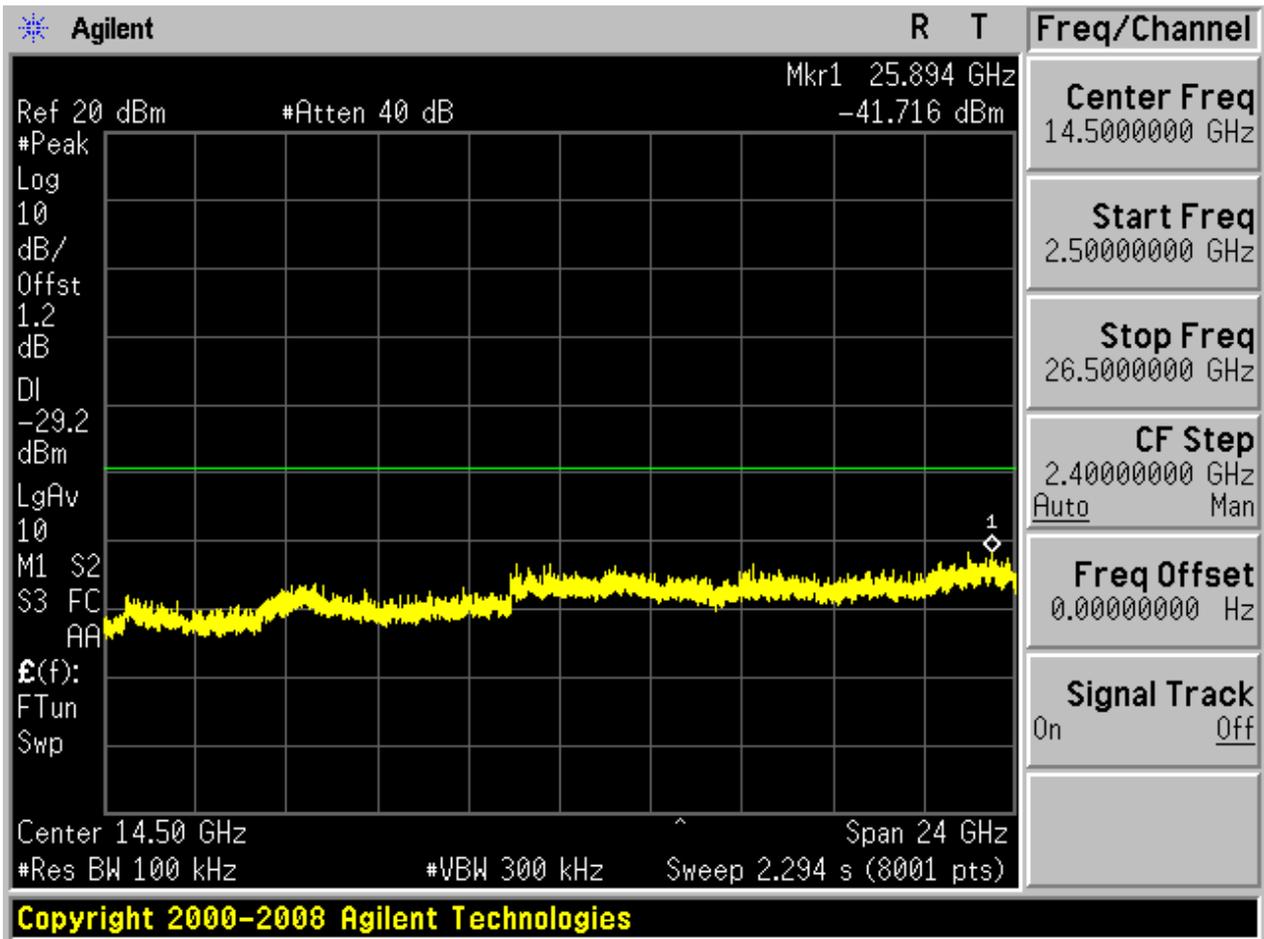














## Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

Note: We tested all modes, but the data presented below is the worst case. Below 1GHz, RBW = 100 kHz, VBW = 300 kHz.

Above 1GHz, RBW = 1 MHz, VBW = 3 MHz.

The simultaneous transmission has been considered

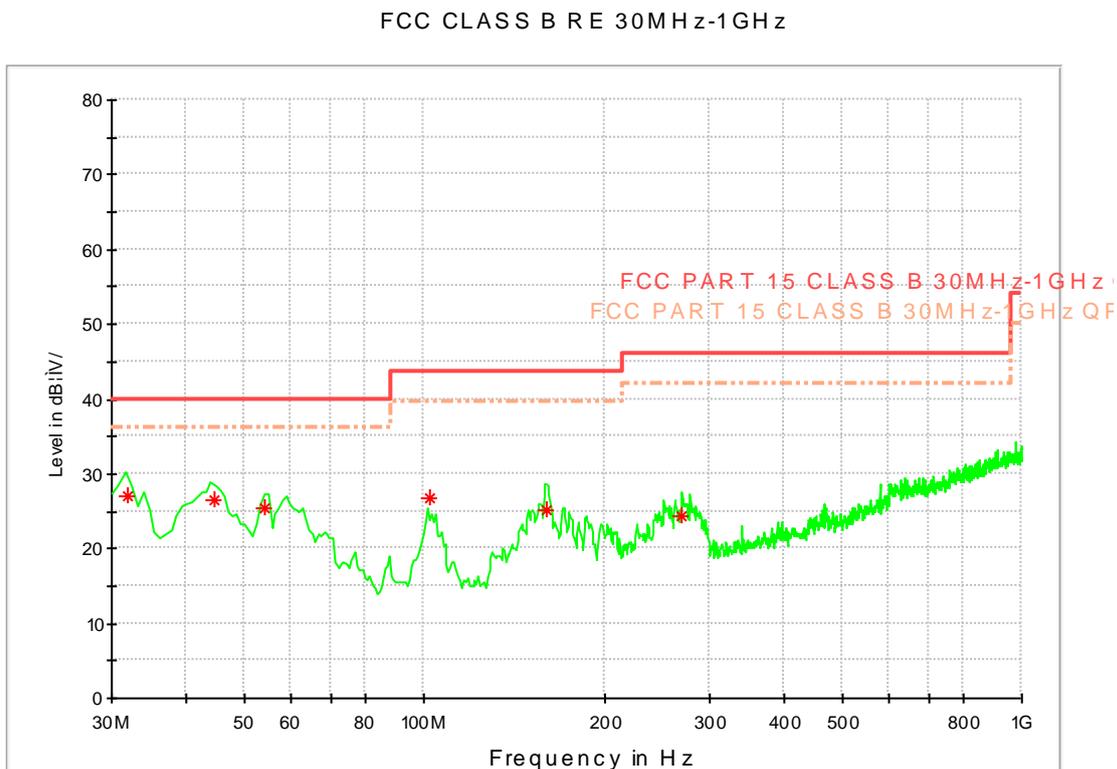
### 7.1Part 1: Testing Range of “9 kHz to 30MHz”

NOTE1: No peak found in the Test Range of “9 kHz to 30MHz”

### 7.2Part 2: Testing Range of “30 MHz to 1 GHz”

Note 1: The test results and plot for testing range of “30 MHz to 1 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.

Note 2: The emissions in this range are mainly from the Platform Device (Notepad PC and its ancillary components).





## Final Result 1

Frequency (MHz)	QuasiPeak	Bandwidth	Height	Polarization	Azimuth	Corr.	Margin	Limit (dB $\mu$ )
31.805440	27.1	120.000	100.0	V	110.0	13.9	12.9	40.0
44.709120	26.6	120.000	100.0	V	184.0	14.9	13.4	40.0
54.253760	25.5	120.000	100.0	V	289.0	14.7	14.5	40.0
101.90144	26.8	120.000	155.0	V	224.0	13.6	16.7	43.5
160.84416	25.1	120.000	100.0	V	273.0	10.8	18.4	43.5
269.88992	24.5	120.000	122.0	H	279.0	14.8	21.5	46.0

**7.3Part 3: Testing Range of “18 GHz to 26.5 GHz”**

NOTE: No peak found in the Test Range of “18 GHz to 26.5GHz”

#### 7.4Part 4: Testing Range of “2.3GHz to 2.5GHz”

Note 1: The testing range of “2.3 GHz to 2.5 GHz” is for checking radiated emissions located in restricted bands near the EUT operating bands.

Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB $\mu$ V/m) and Average Limit (54 dB $\mu$ V/m).

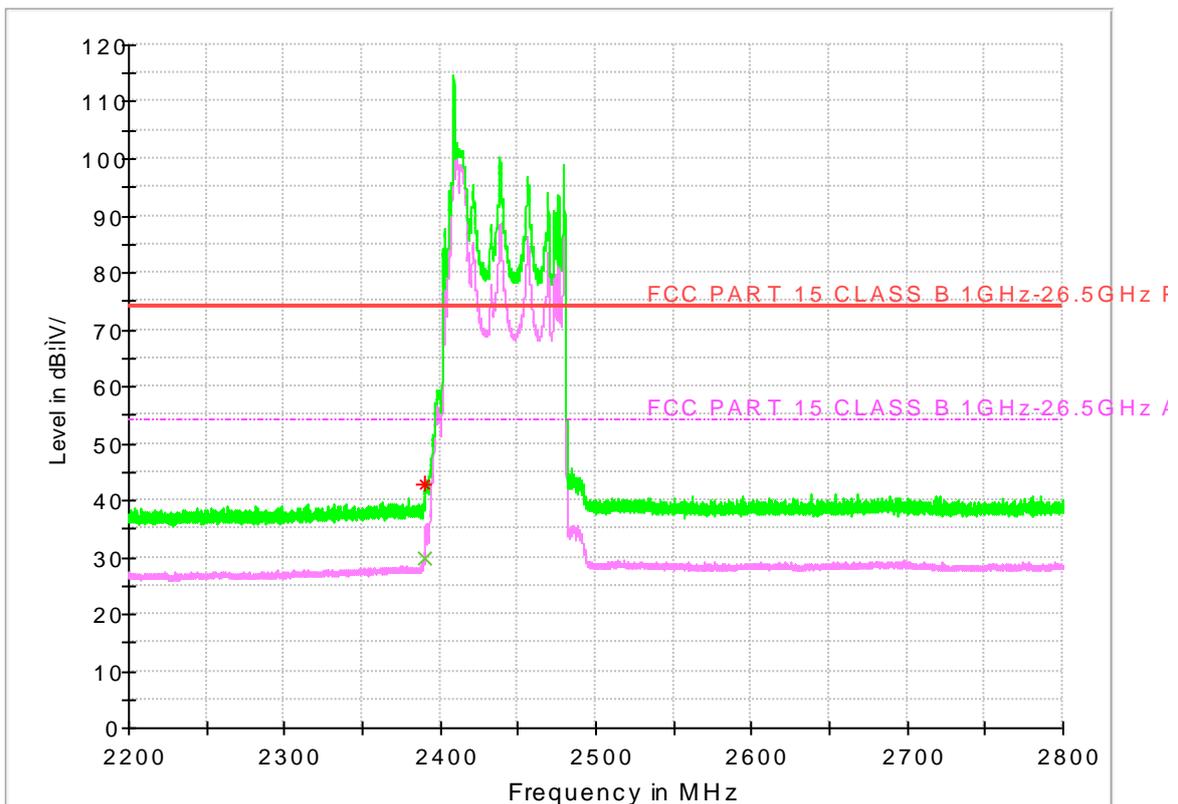
Note 3: The peak spike exceeds the limit line is EUT’s operating frequency.

Test Mode:

#### 7.4.1Test Mode: 11B

##### 7.4.1.1Channel 1

Full Spectrum



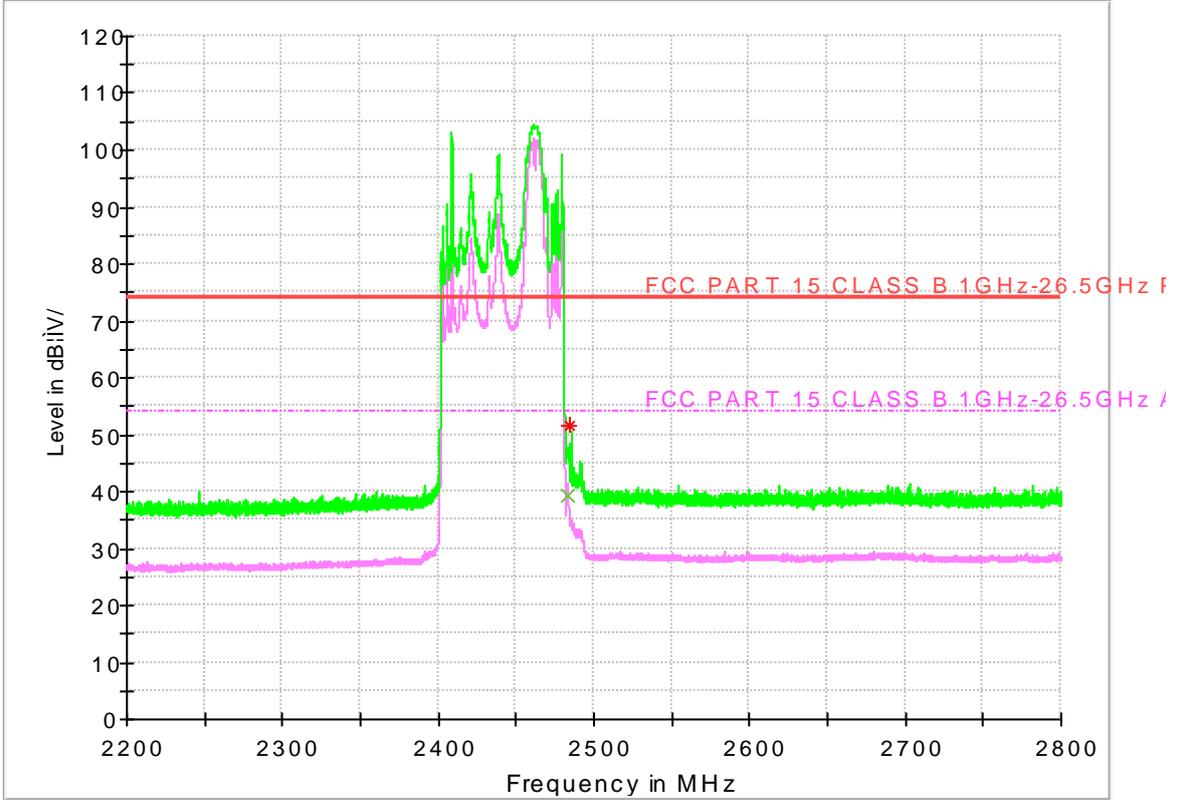


Note: The peak exceeds the limit line is carrier frequency.

Frequency (MHz)	MaxPeak	Average	Limit (dBμV/	Margin	Meas. Time	Band width	Height	Pol	Azimuth	Corr. (dB)
2389.961600	42.63	---	74.00	31.37	15000.0	1000.000	100.0	H	24.0	-7.6
2390.021200	---	29.75	54.00	24.25	15000.0	1000.000	100.0	H	21.0	-7.6

7.4.1.2 Channel 11

Full Spectrum



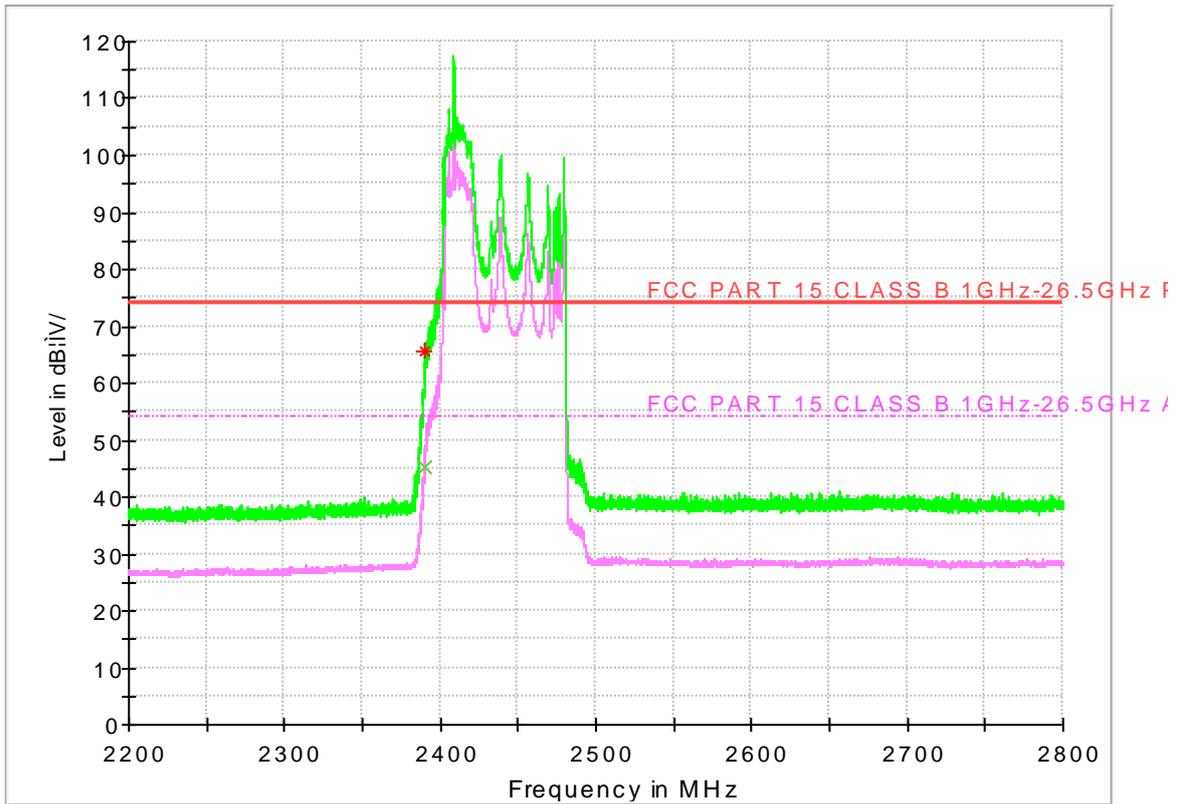
Note: The peak exceeds the limit line is carrier frequency.

Frequency (MHz)	MaxPeak	Average	Limit (dBµV)	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
2483.548400	---	39.16	54.00	14.84	15000.0	1000.000	100.0	H	339.0	-5.4
2483.580800	51.49	---	74.00	22.51	15000.0	1000.000	100.0	H	339.0	-5.9

7.4.1 Test Mode: 11G

7.4.1.1 Channel 1

Full Spectrum

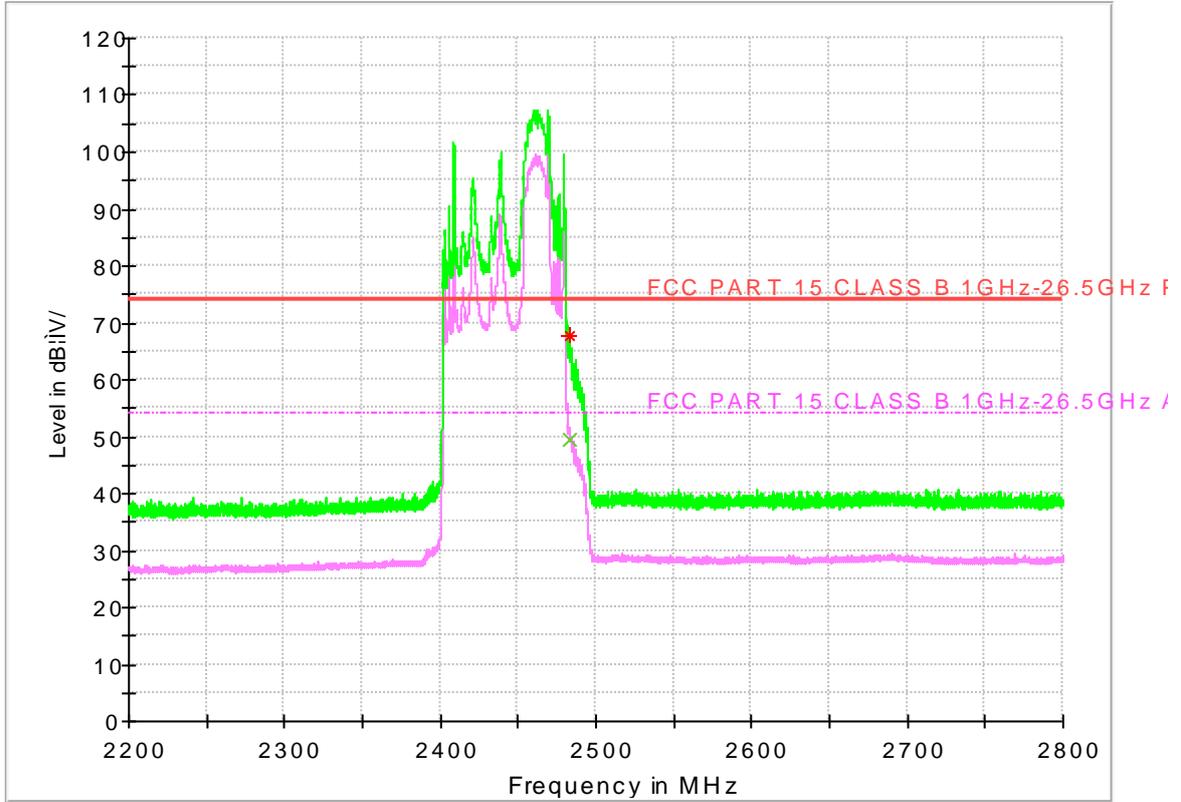


Note: The peak exceeds the limit line is carrier frequency.

Frequency (MHz)	MaxPeak	Average	Limit (dBµV)	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
2390.049600	---	45.35	54.00	8.65	15000.0	1000.000	100.0	H	300.0	-7.6
2390.098000	65.75	---	74.00	8.25	15000.0	1000.000	100.0	H	296.0	-7.6

### 7.4.1.2 Channel 11

Full Spectrum



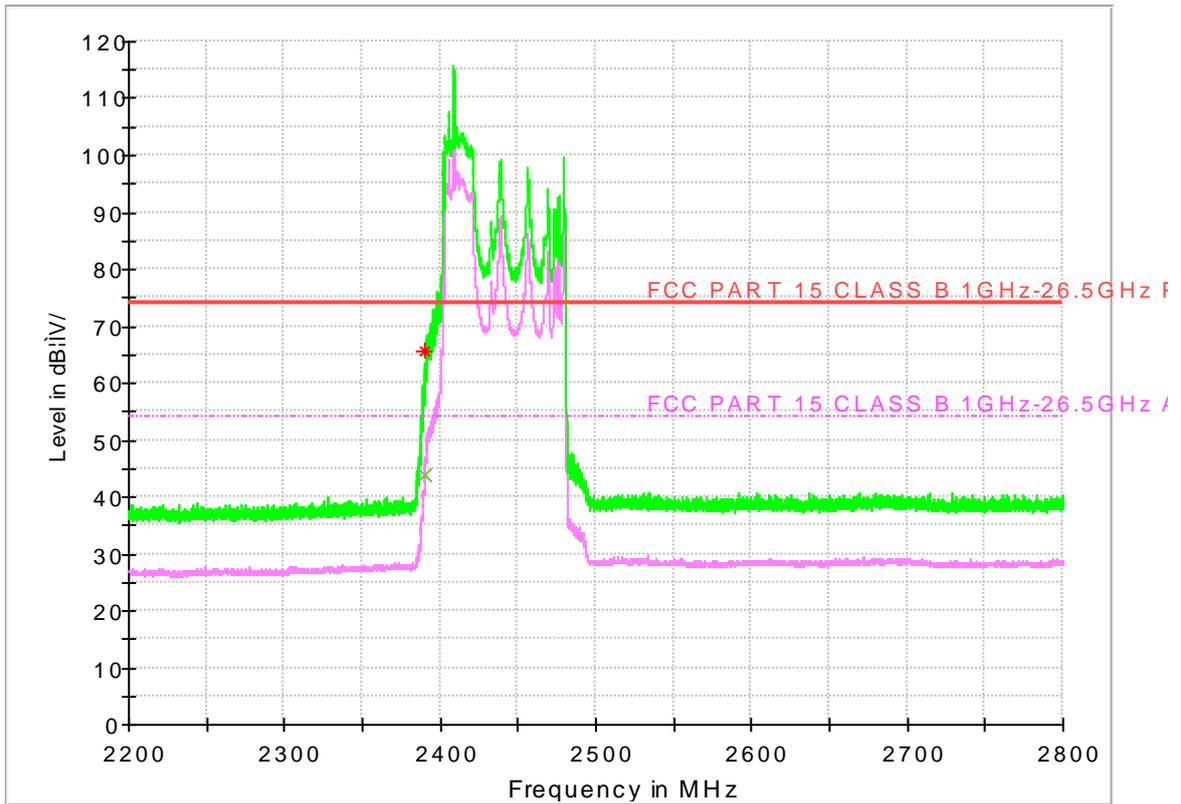
Note: The peak exceeds the limit line is carrier frequency.

Frequency (MHz)	MaxPeak	Average	Limit (dBµV)	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
2483.467200	---	49.37	54.00	4.63	15000.0	1000.000	100.0	H	337.0	-5.4
2483.800000	67.81	---	74.00	6.19	15000.0	1000.000	100.0	H	338.0	-5.6

**7.4.1 Test Mode: 11N**

**7.4.1.1 Channel 1**

Full Spectrum

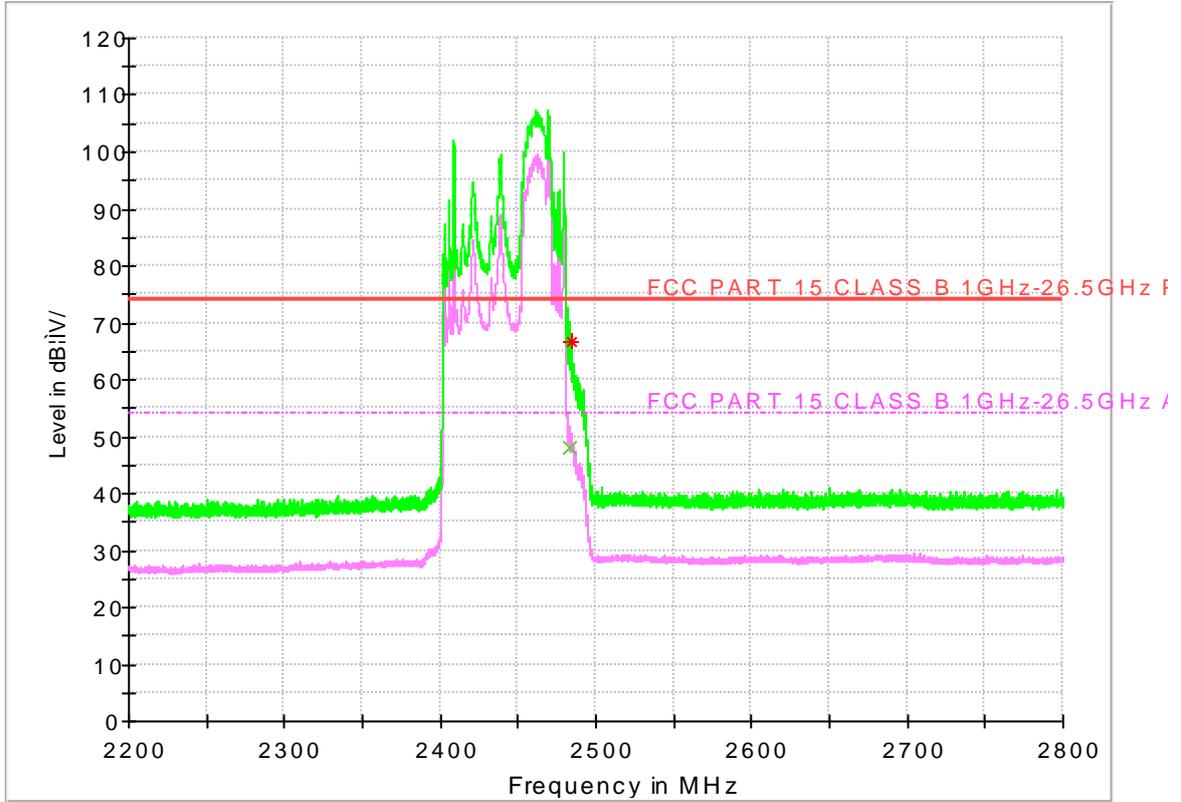


Note: The peak exceeds the limit line is carrier frequency.

Frequency (MHz)	MaxPeak	Average	Limit (dBµV)	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr. (dB)
2389.939600	---	43.71	54.00	10.29	15000.0	1000.000	118.0	H	256.0	-7.6
2390.064000	65.60	---	74.00	8.40	15000.0	1000.000	100.0	H	-20.0	-7.6

### 7.4.1.2 Channel 11

Full Spectrum



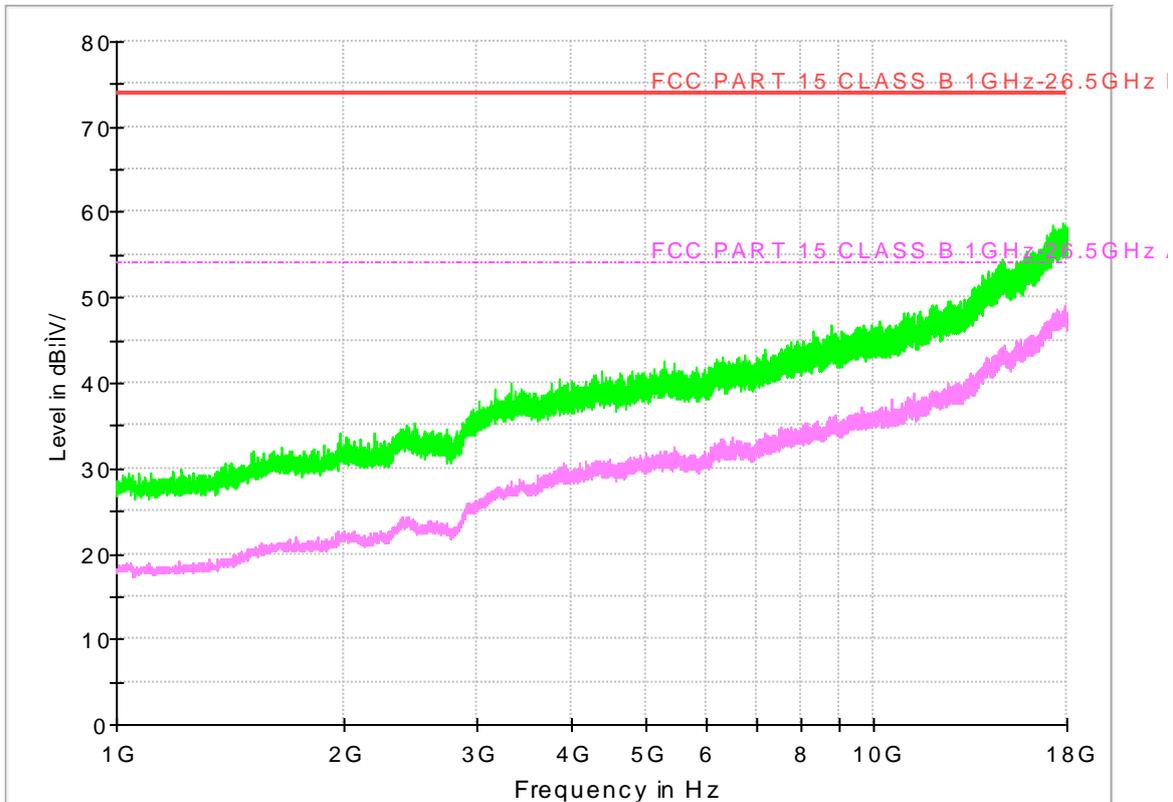
Note: The peak exceeds the limit line is carrier frequency.

Frequency (MHz)	MaxPeak	Average	Limit (dBµV)	Margin	Meas. Time	Band width	Height	Pol	Azimuth	Corr. (dB)
2483.590000	---	48.16	54.00	5.84	15000.0	1000.000	100.0	H	337.0	-5.5
2483.860400	66.64	---	74.00	7.36	15000.0	1000.000	100.0	H	337.0	-5.7

### 7.5Part 5: Testing Range of “1 GHz to 18 GHz”

- Note 1: The test results and plot for testing range of “1 GHz to 18 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.
- Note 2: The testing range of “1 GHz to 18 GHz” is for checking radiated emissions located in restricted bands faraway from the EUT operating bands.
- Note 3: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB $\mu$ V/m) and Average Limit (54 dB $\mu$ V/m).

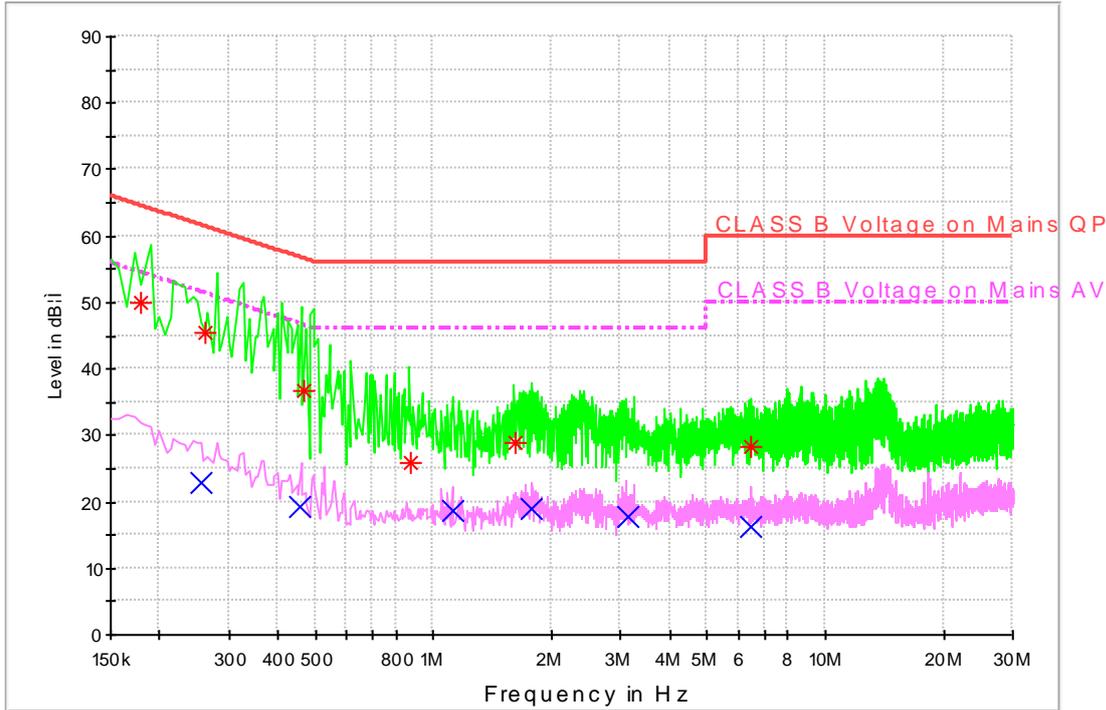
Full Spectrum



## Appendix I: Conducted Emission at Power Port

Note: RBW =9 kHz, VBW = 30 kHz

CLASS B Voltage with ENV216



### Final Result 1

Frequency	QuasiPeak	Line	Corr.	Margin	Limit
0.178206	49.9	N	9.8	14.7	64.6
0.261620	45.3	N	9.8	16.1	61.4
0.468752	36.7	L1	9.8	19.9	56.5
0.874292	26.0	L1	9.8	30.0	56.0
1.620255	28.8	N	9.8	27.2	56.0
6.410986	28.3	N	10.0	31.7	60.0



## Final Result 2

Frequency	QuasiPeak	Line	Corr.	Margin	Limit
0.255288	23.0	N	9.8	28.6	51.6
0.455286	19.2	L1	9.8	27.6	46.8
1.113537	18.7	N	9.8	27.3	46.0
1.782149	18.9	N	9.8	27.1	46.0
3.142715	17.7	N	9.8	28.3	46.0
6.418512	16.4	N	10.0	33.6	50.0

Note: Level= Reading level+ Transd (cable loss + correction factor).The reading level is used to calculate by software which is not shown in the sheet.

---

END