



# 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.

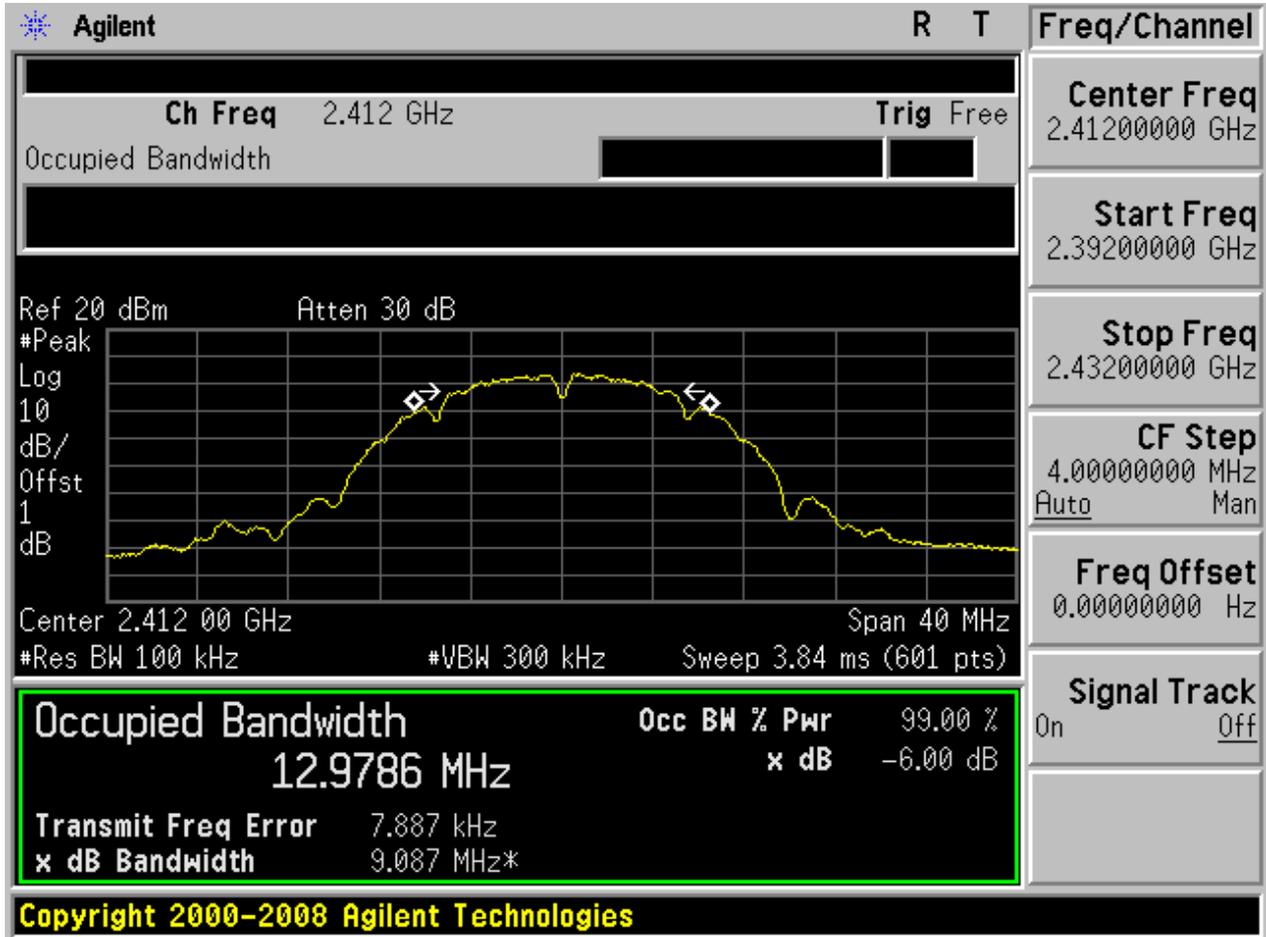
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	9.09	pass
11B	M	2437	Ant 1	8.17	pass
11B	H	2462	Ant 1	8.61	pass
11G	L	2412	Ant 1	16.57	pass
11G	M	2437	Ant 1	16.62	pass
11G	H	2462	Ant 1	16.57	pass
11N20	L	2412	Ant 1	17.81	pass
11N20	M	2437	Ant 1	17.84	pass
11N20	H	2462	Ant 1	17.82	pass

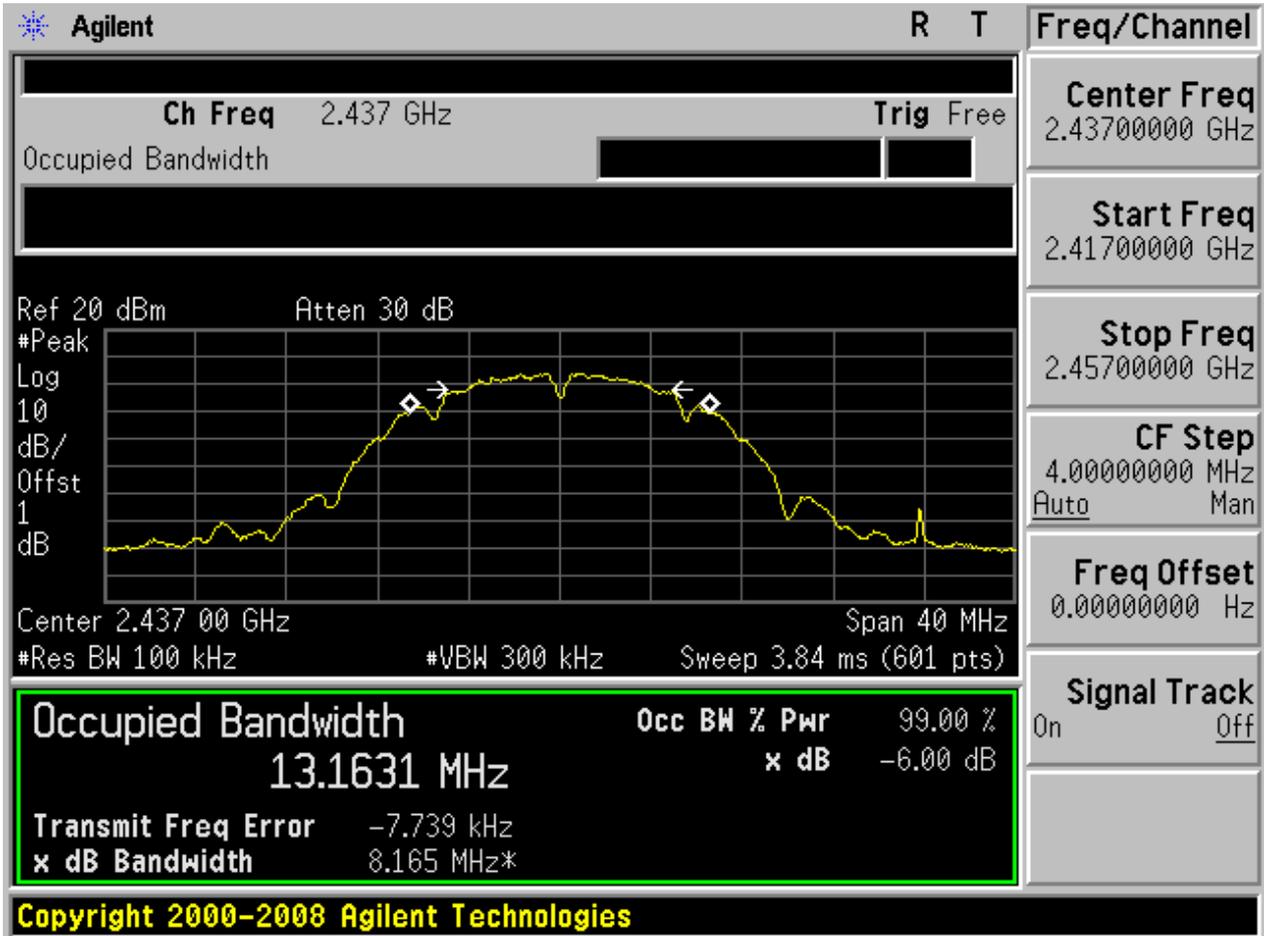
Part II - Test Plots

2.1 11B\_L@Ant 1



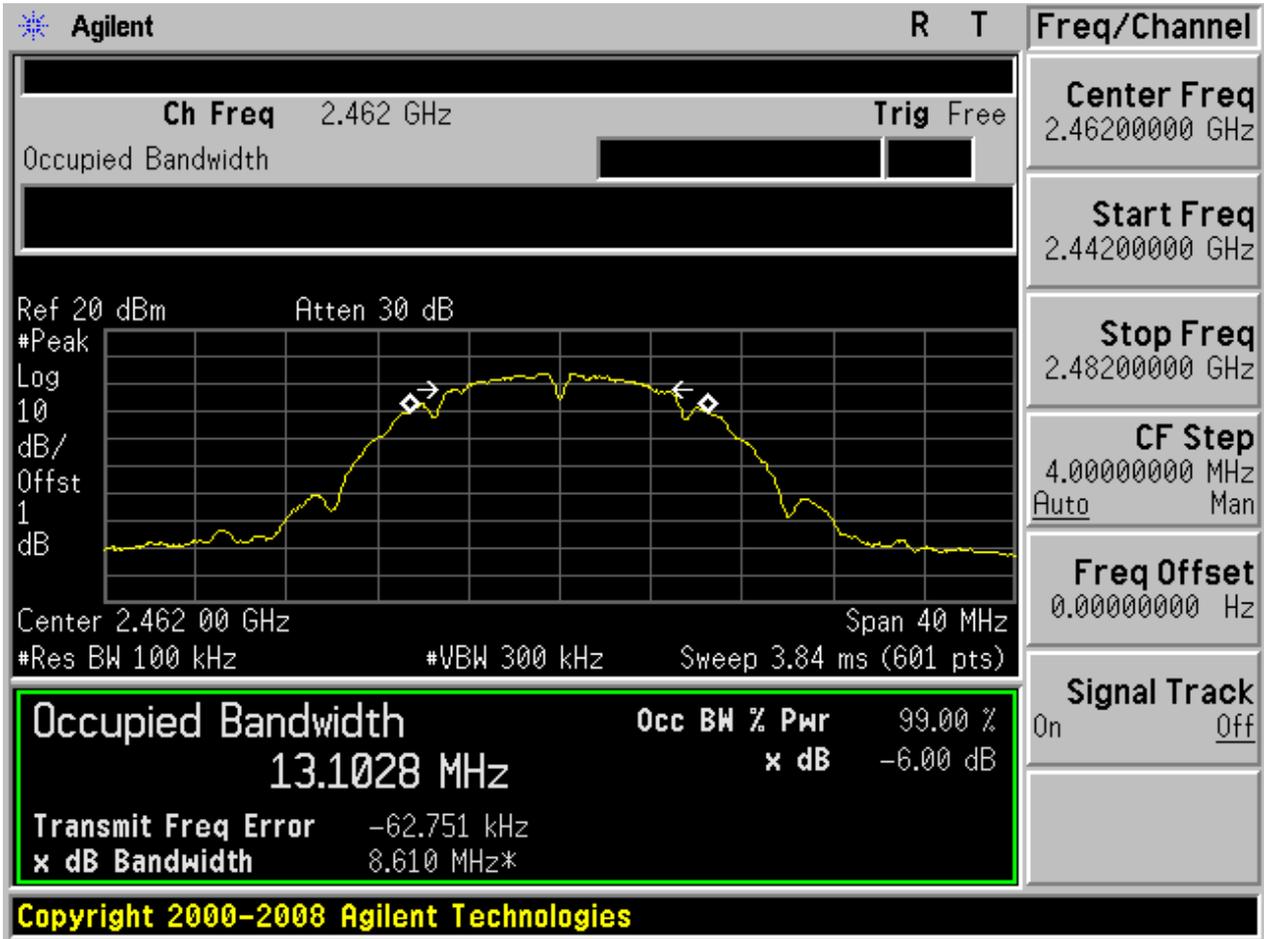


2.2 11B\_M@Ant 1



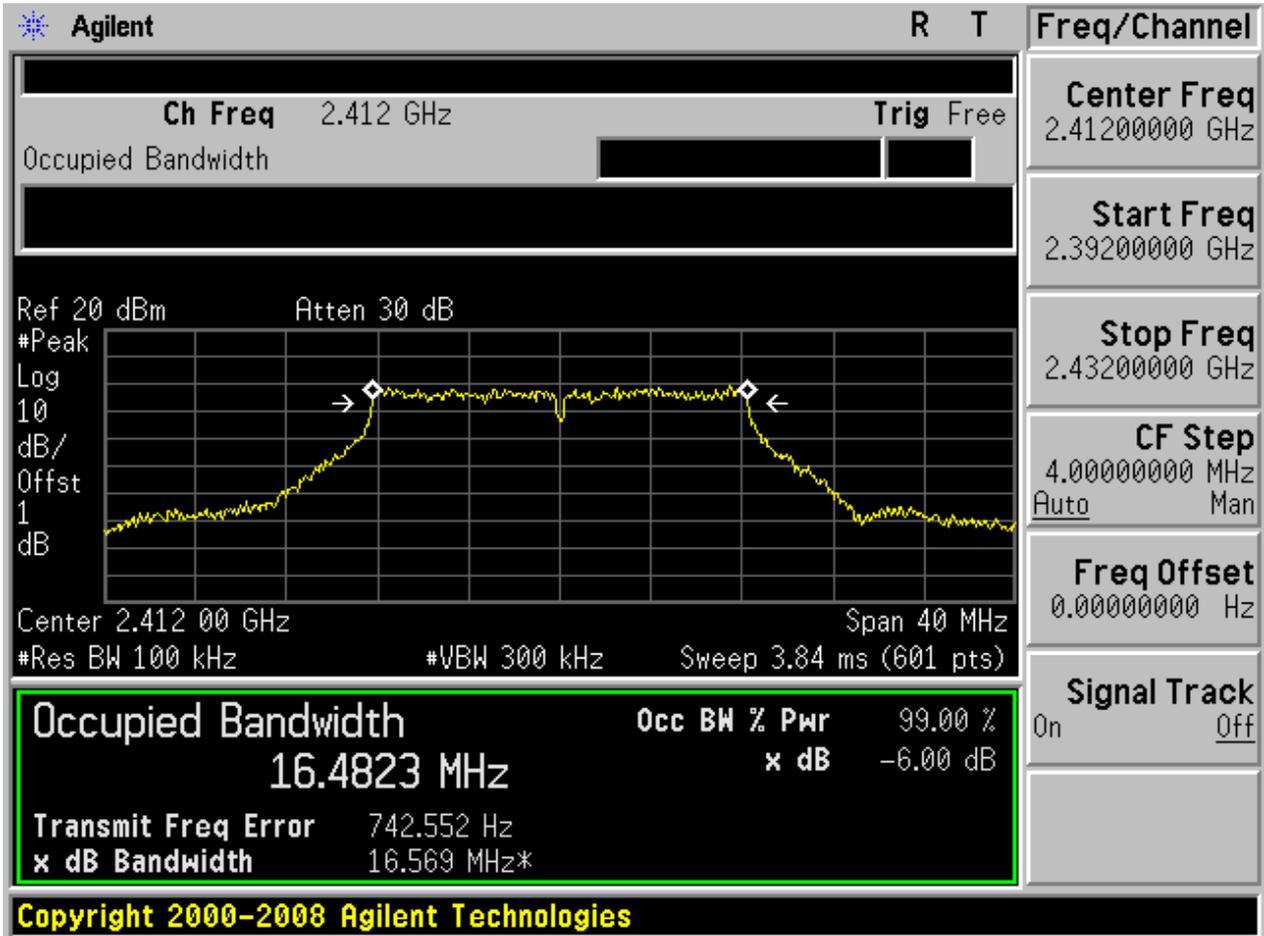


2.3 11B\_H@Ant 1



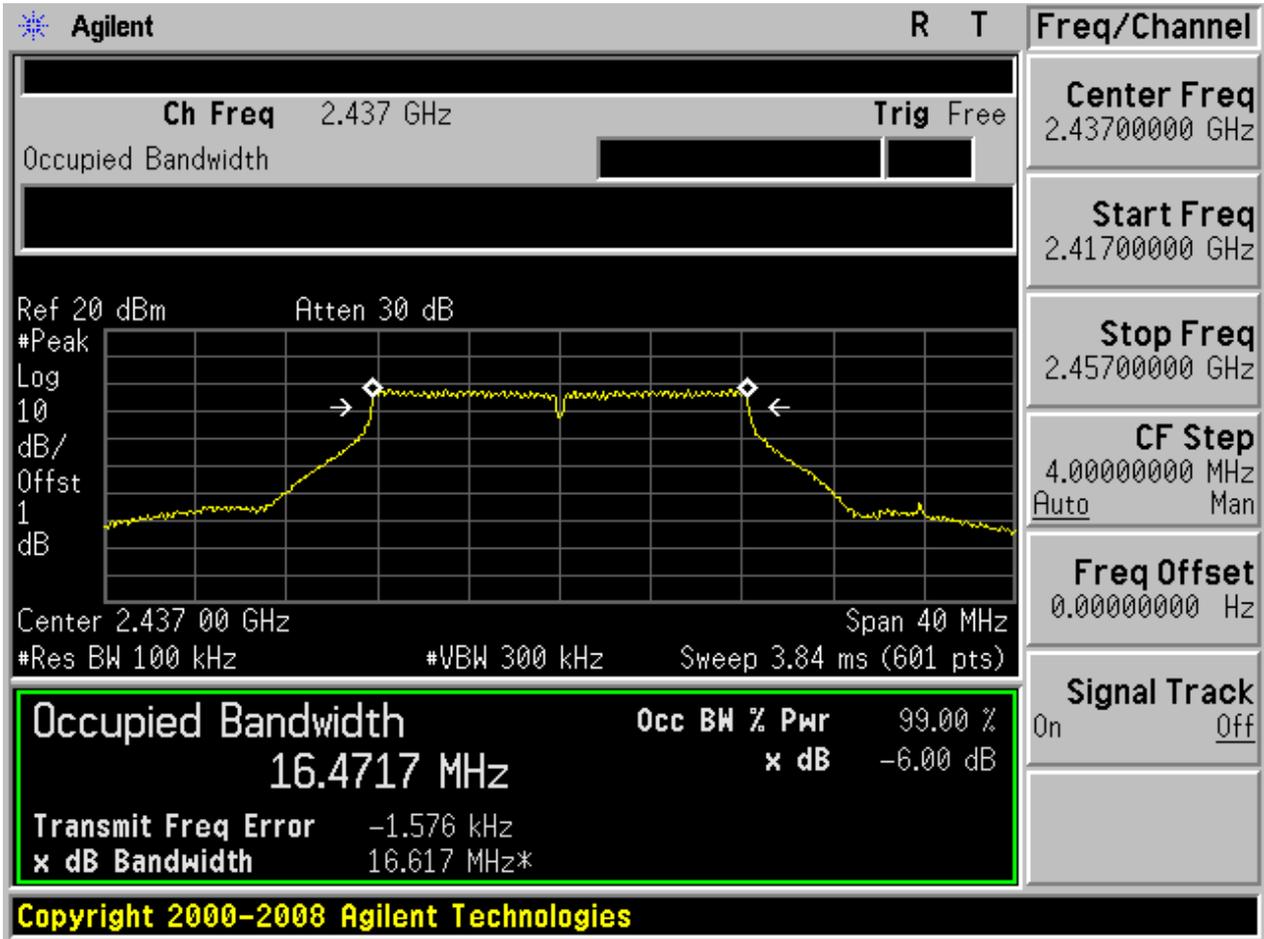


2.4 11G\_L@Ant 1



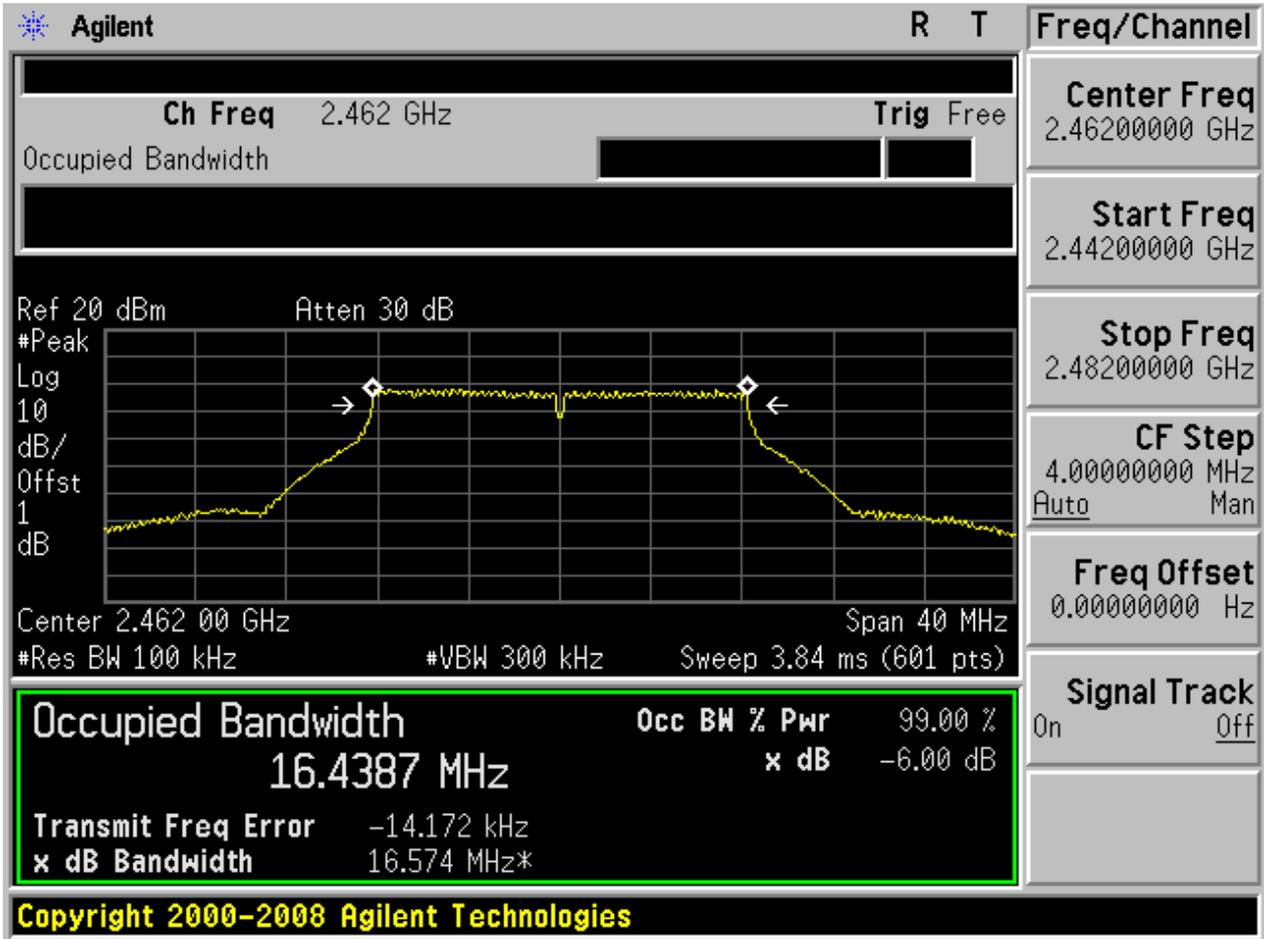


2.5 11G\_M@Ant 1



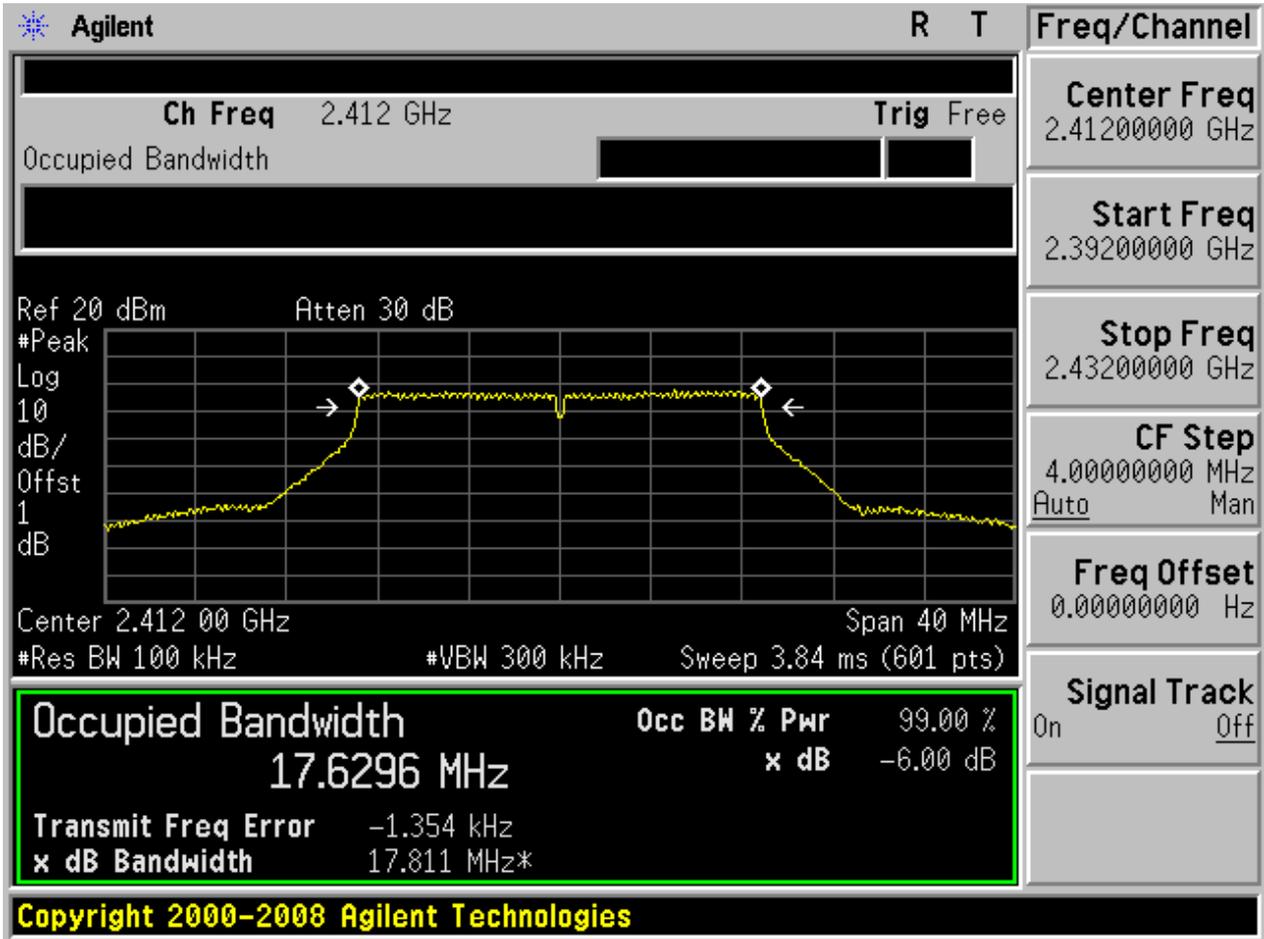


2.6 11G\_H@Ant 1



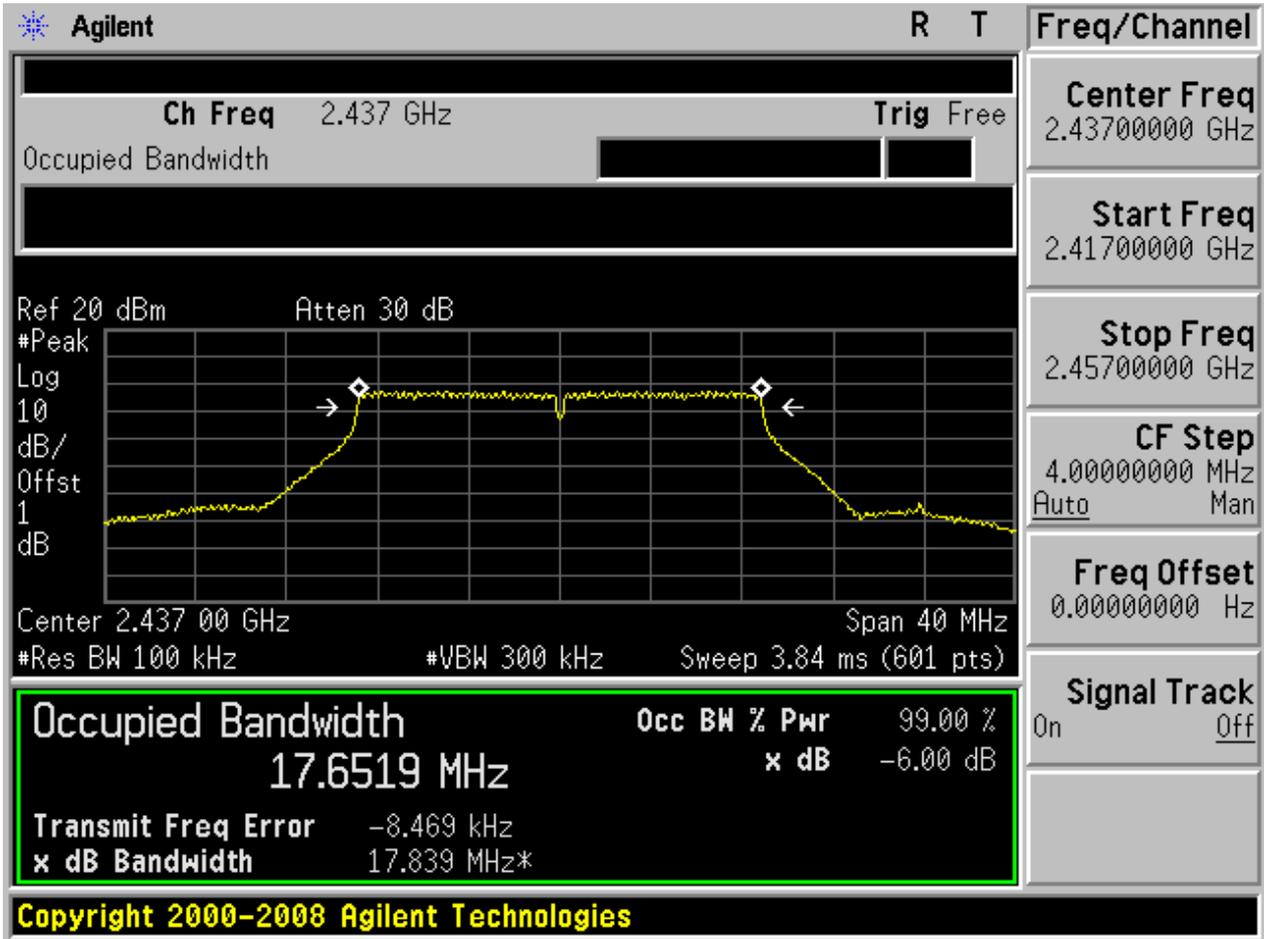


2.7 11N20\_L@Ant 1



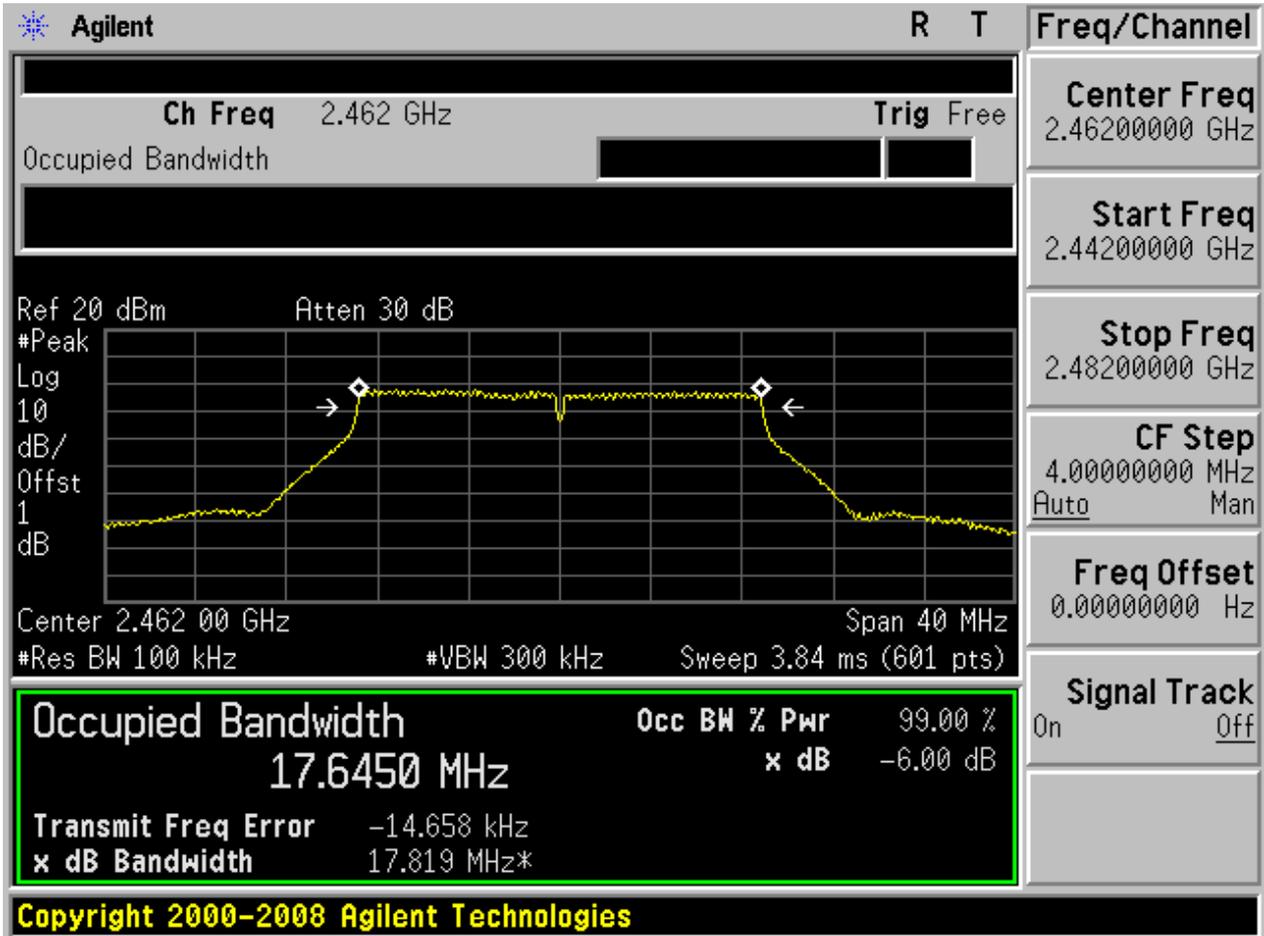


2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1





## Appendix B: Occupied Bandwidth

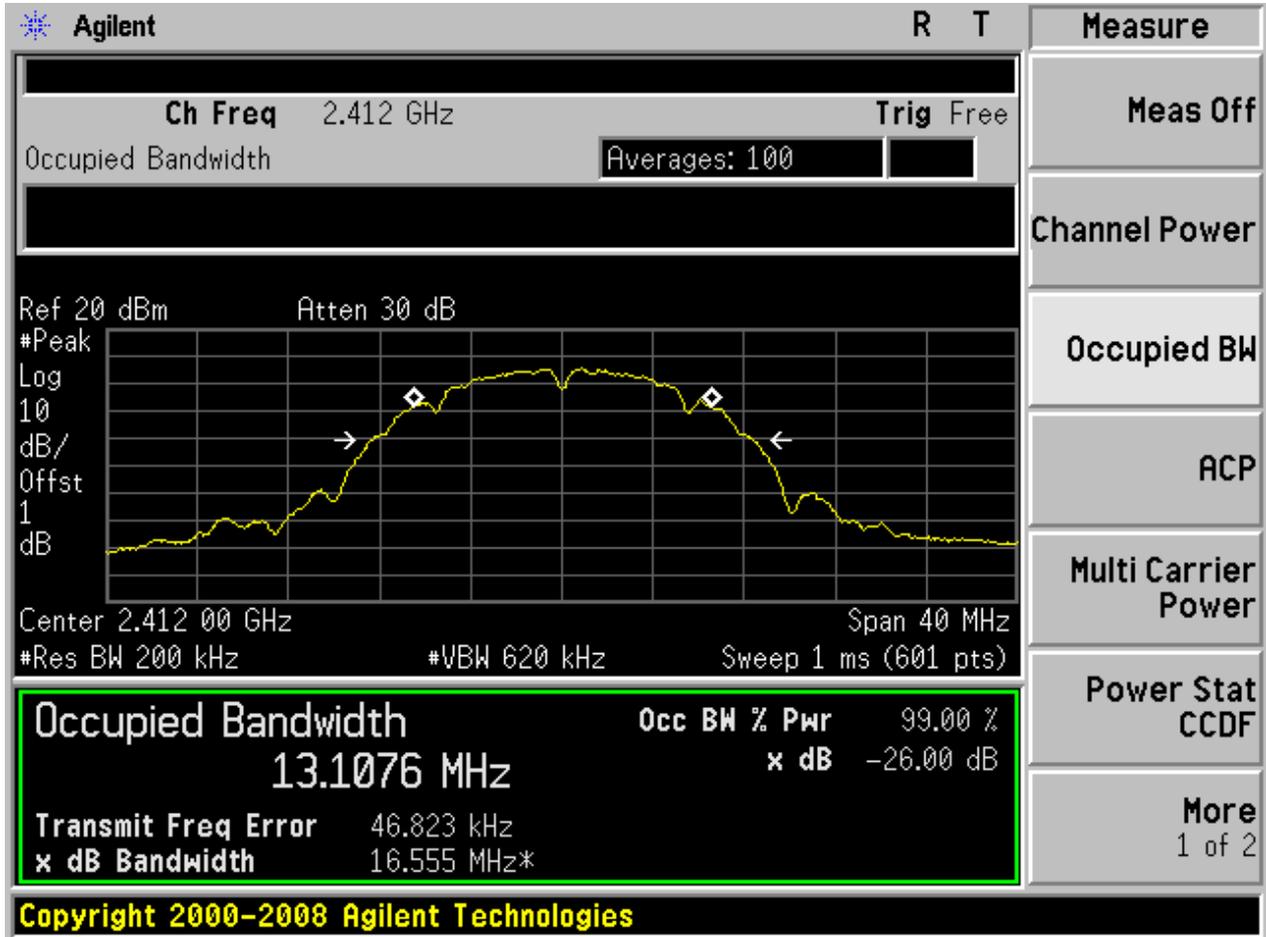
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	13.11	pass
11B	M	2437	Ant 1	13.11	pass
11B	H	2462	Ant 1	13.11	pass
11G	L	2412	Ant 1	16.51	pass
11G	M	2437	Ant 1	16.47	pass
11G	H	2462	Ant 1	16.49	pass
11N20	L	2412	Ant 1	17.68	pass
11N20	M	2437	Ant 1	17.66	pass
11N20	H	2462	Ant 1	17.70	pass

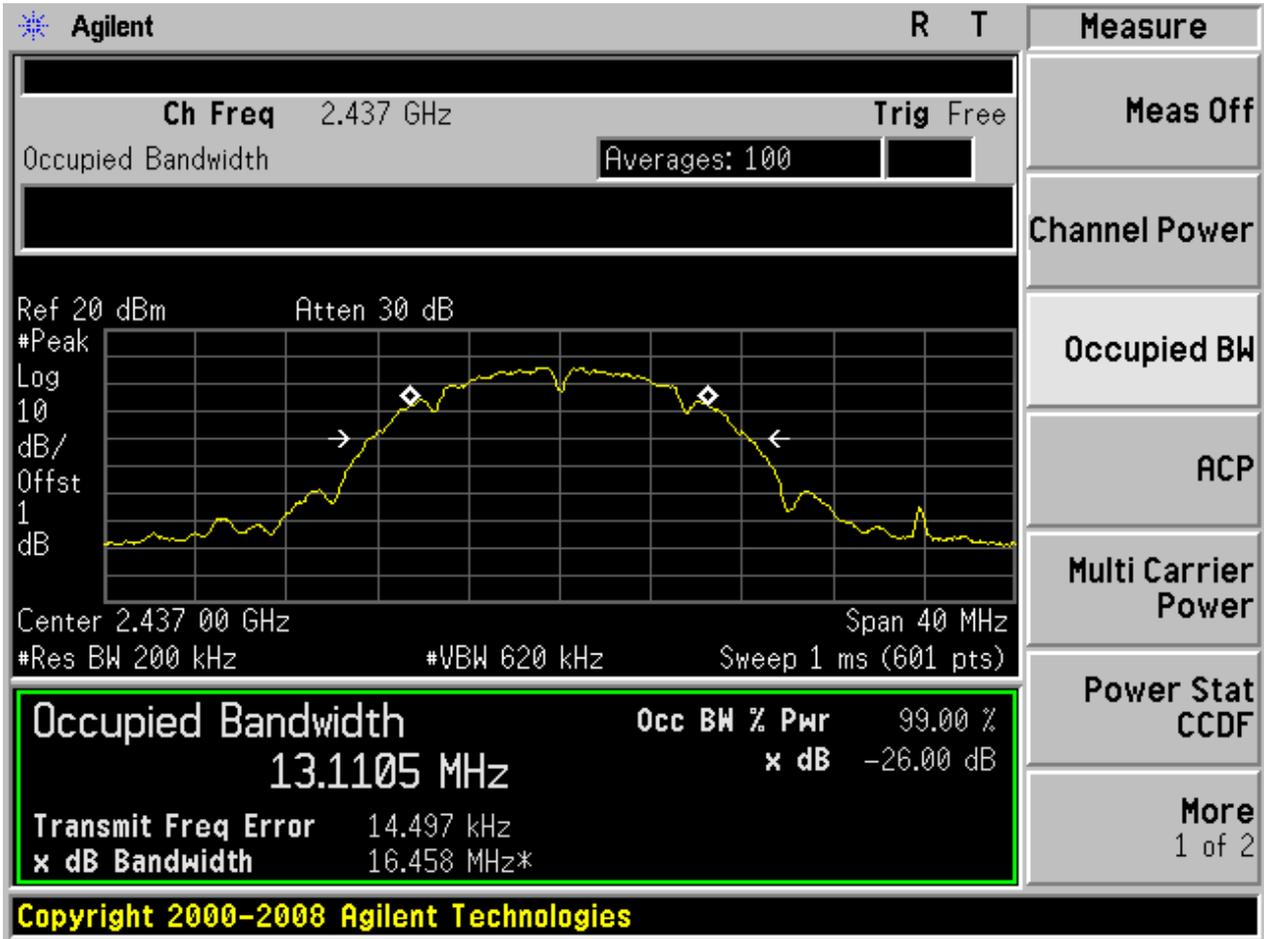
Part II - Test Plots

2.1 11B\_L@Ant 1



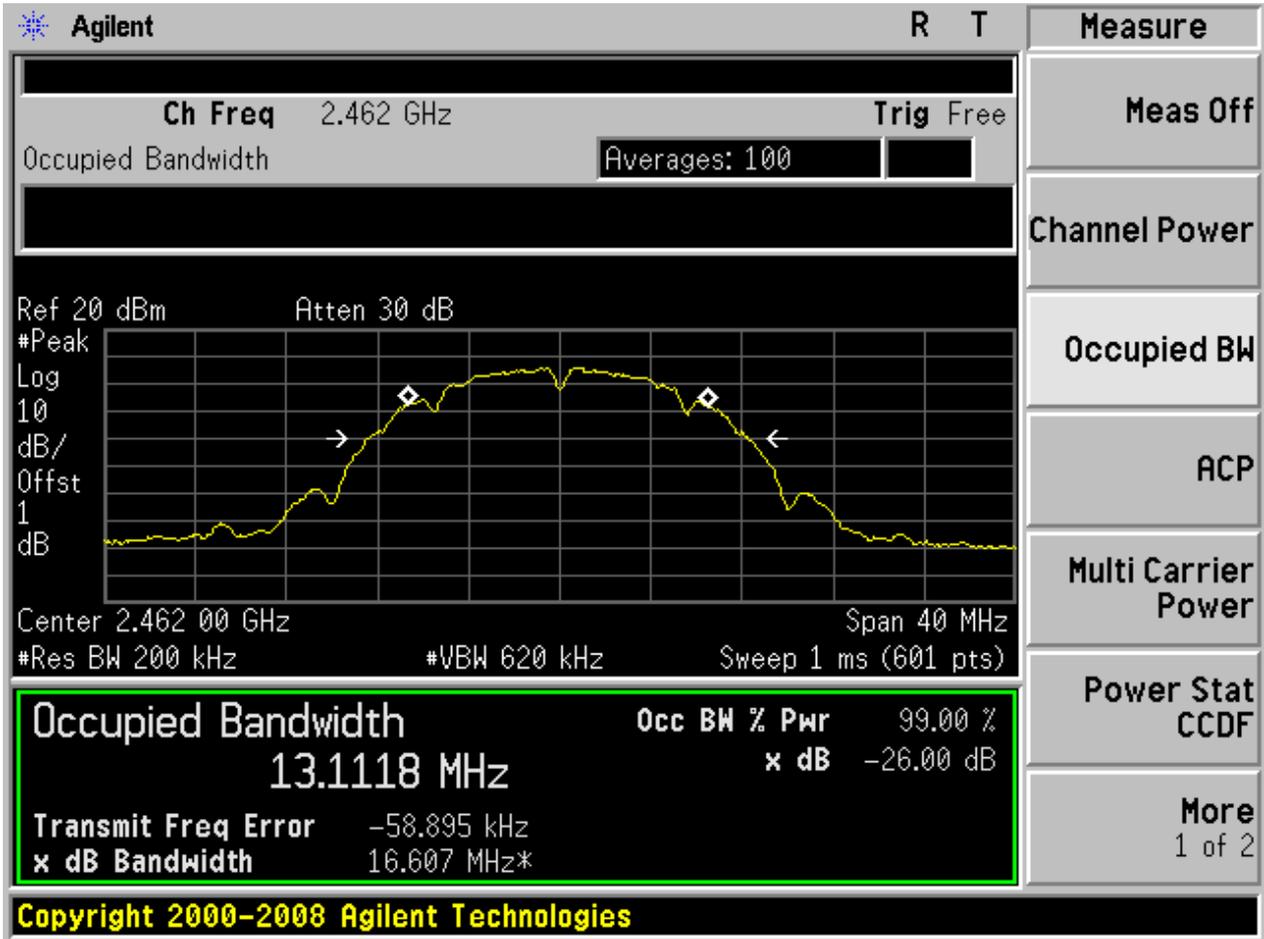


2.2 11B\_M@Ant 1



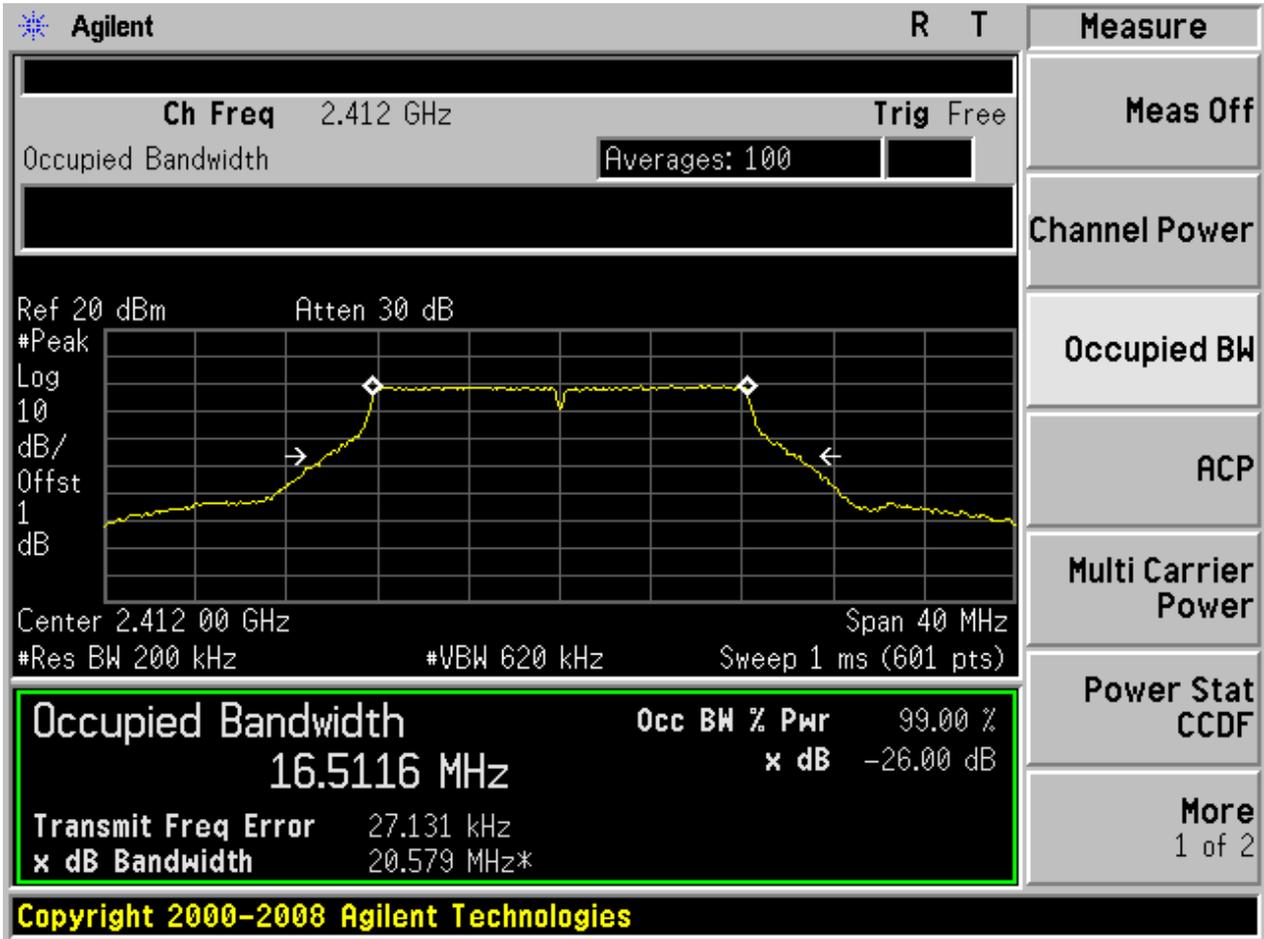


2.3 11B\_H@Ant 1



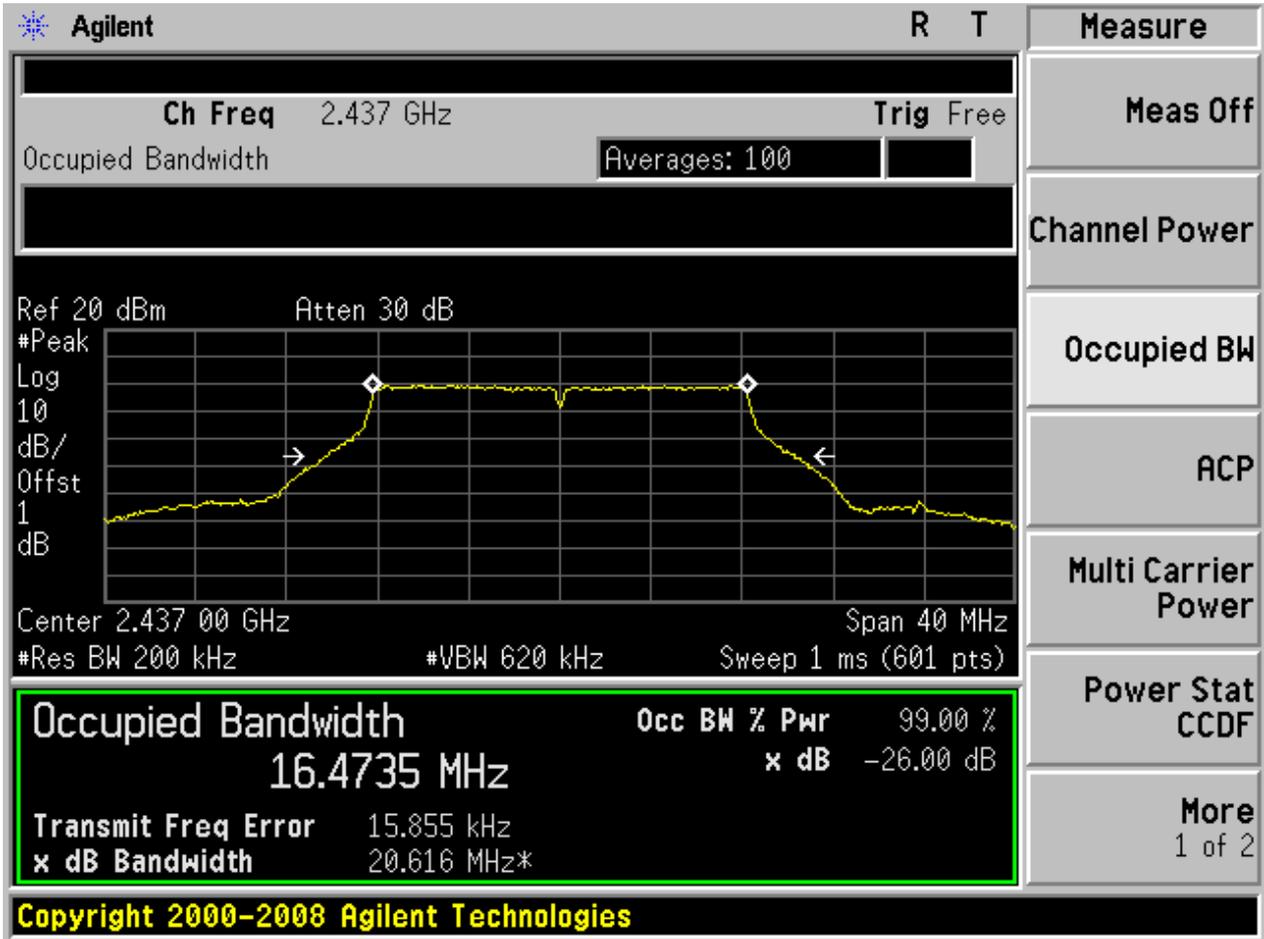


2.4 11G\_L@Ant 1



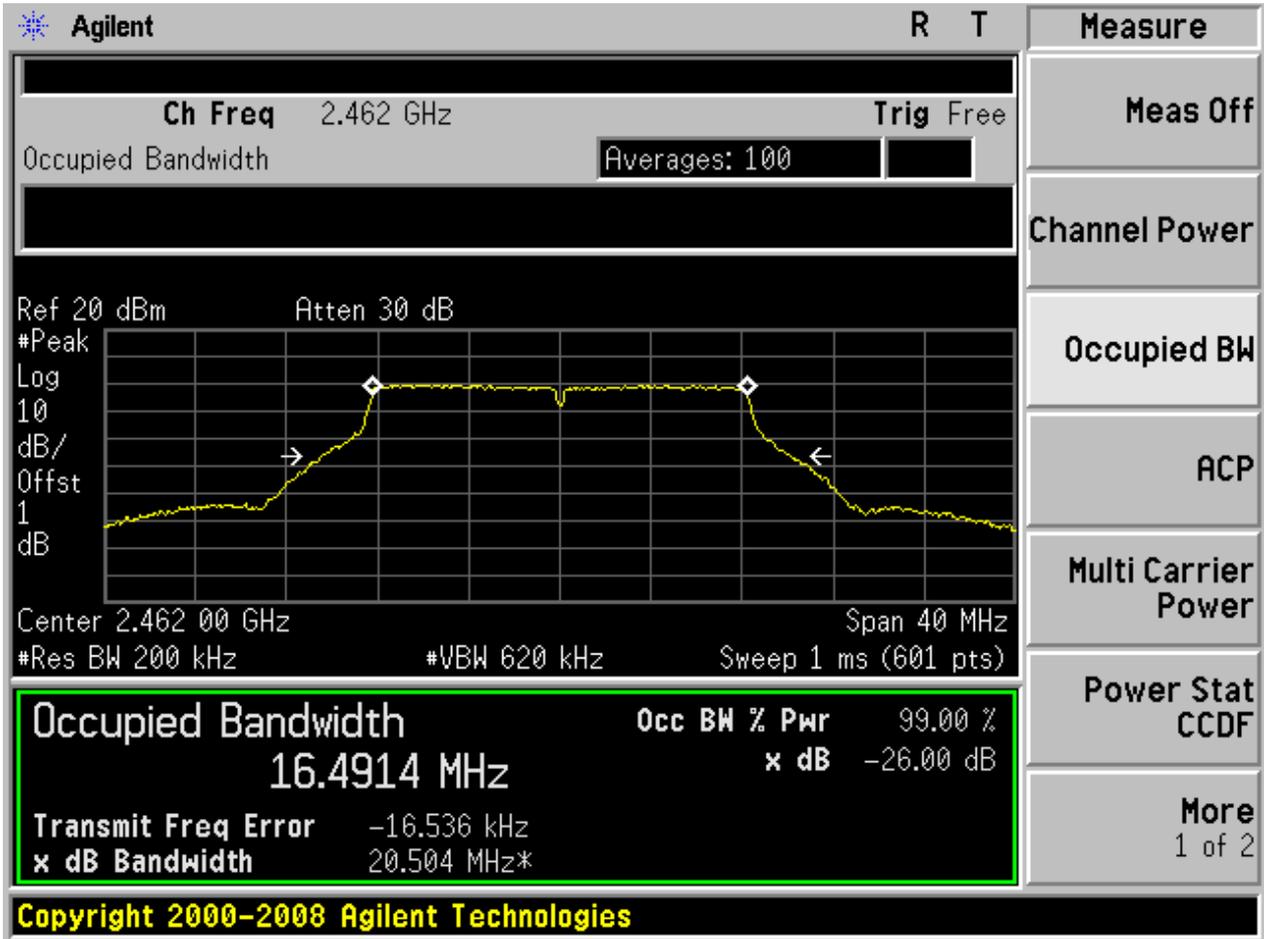


2.5 11G\_M@Ant 1



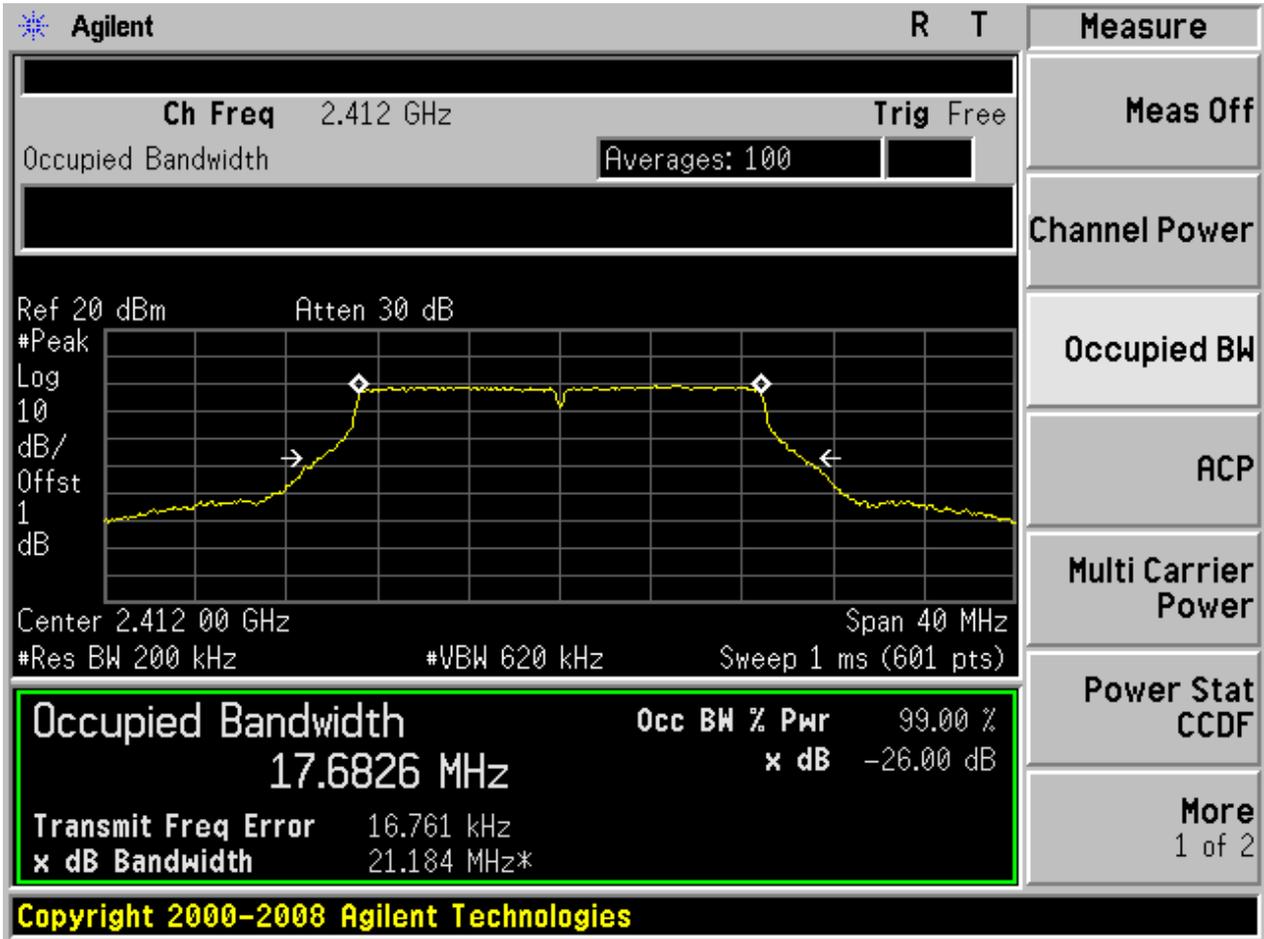


2.6 11G\_H@Ant 1



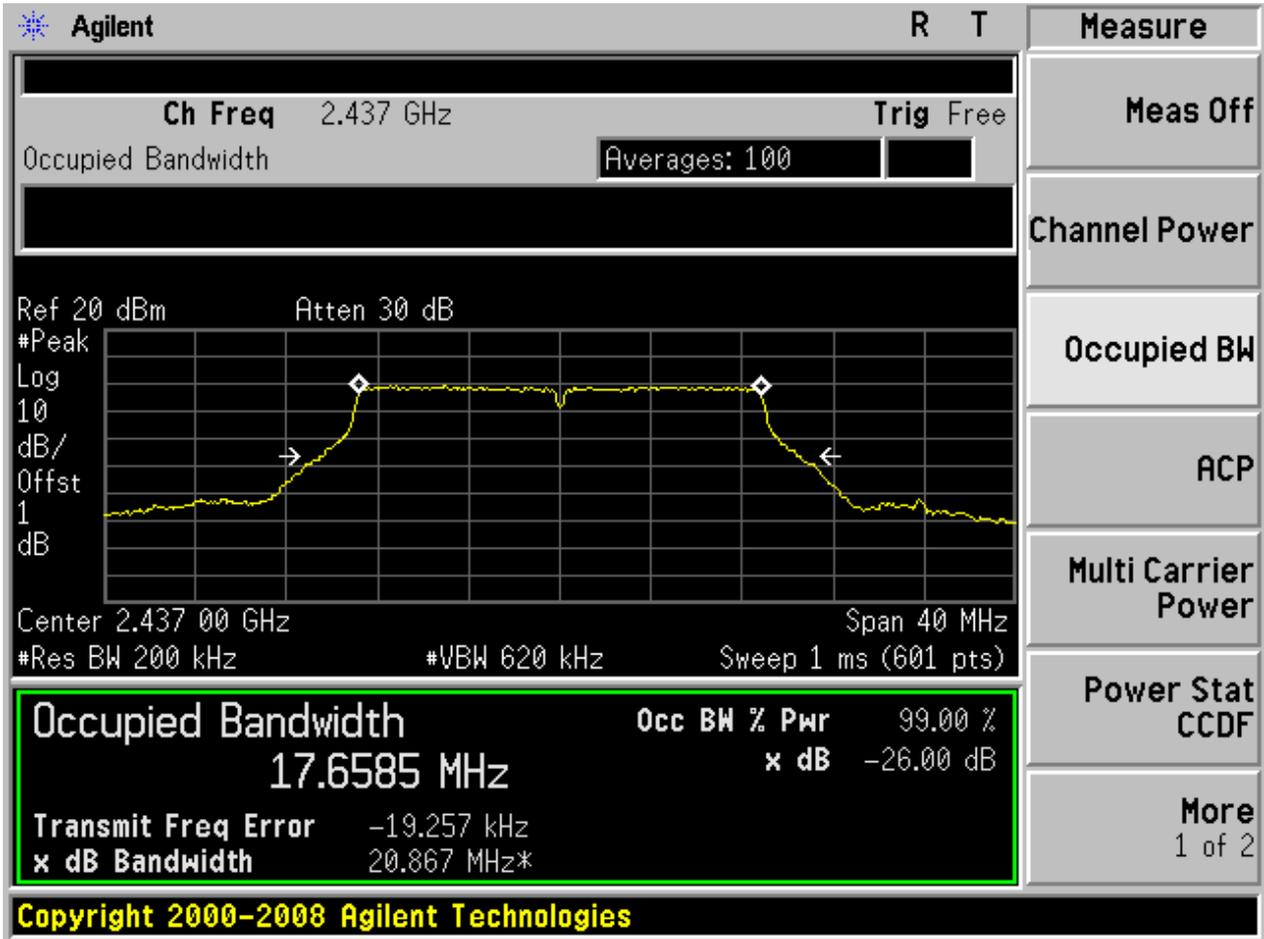


2.7 11N20\_L@Ant 1



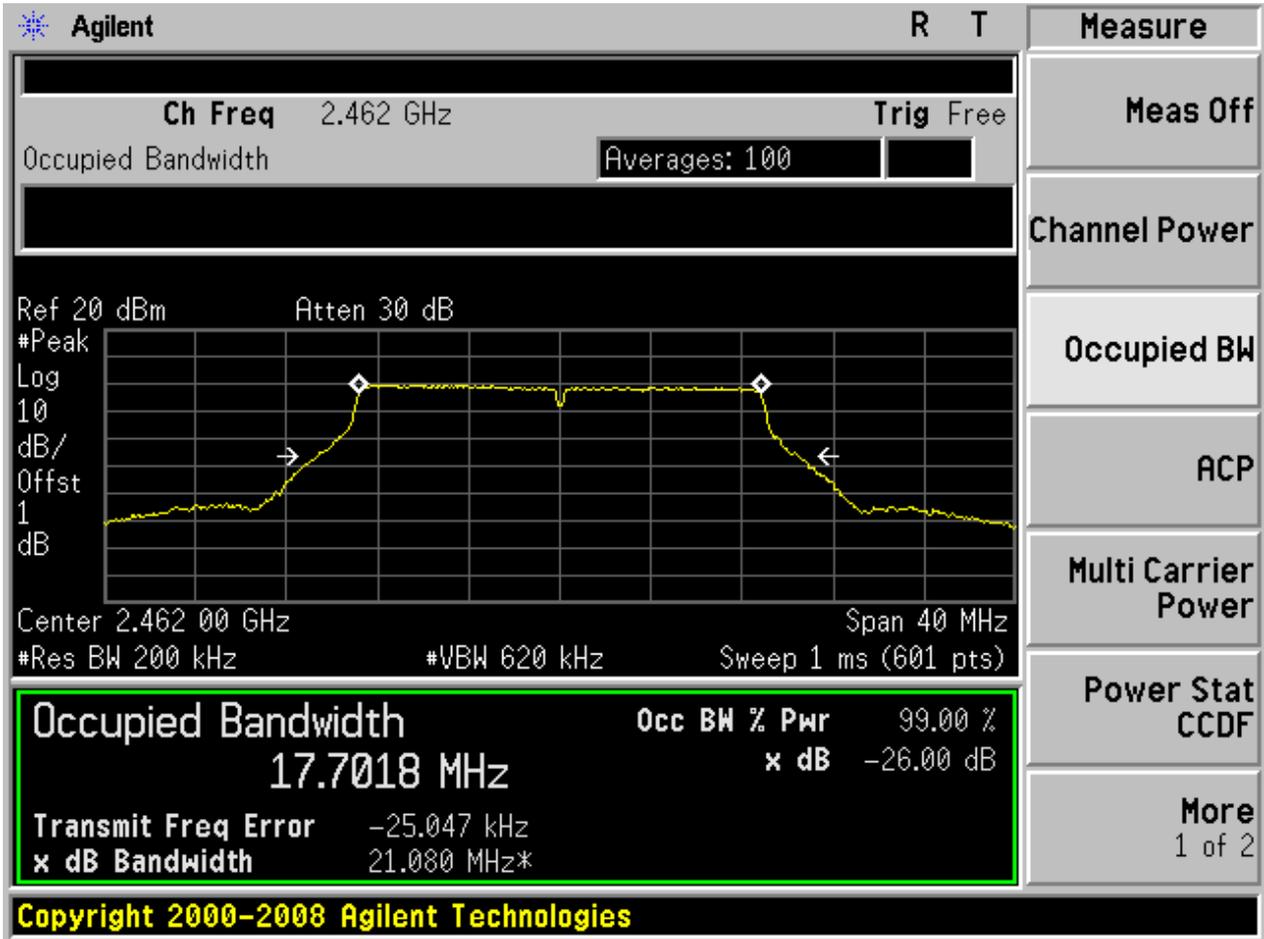


2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1



## Appendix C: Duty cycle

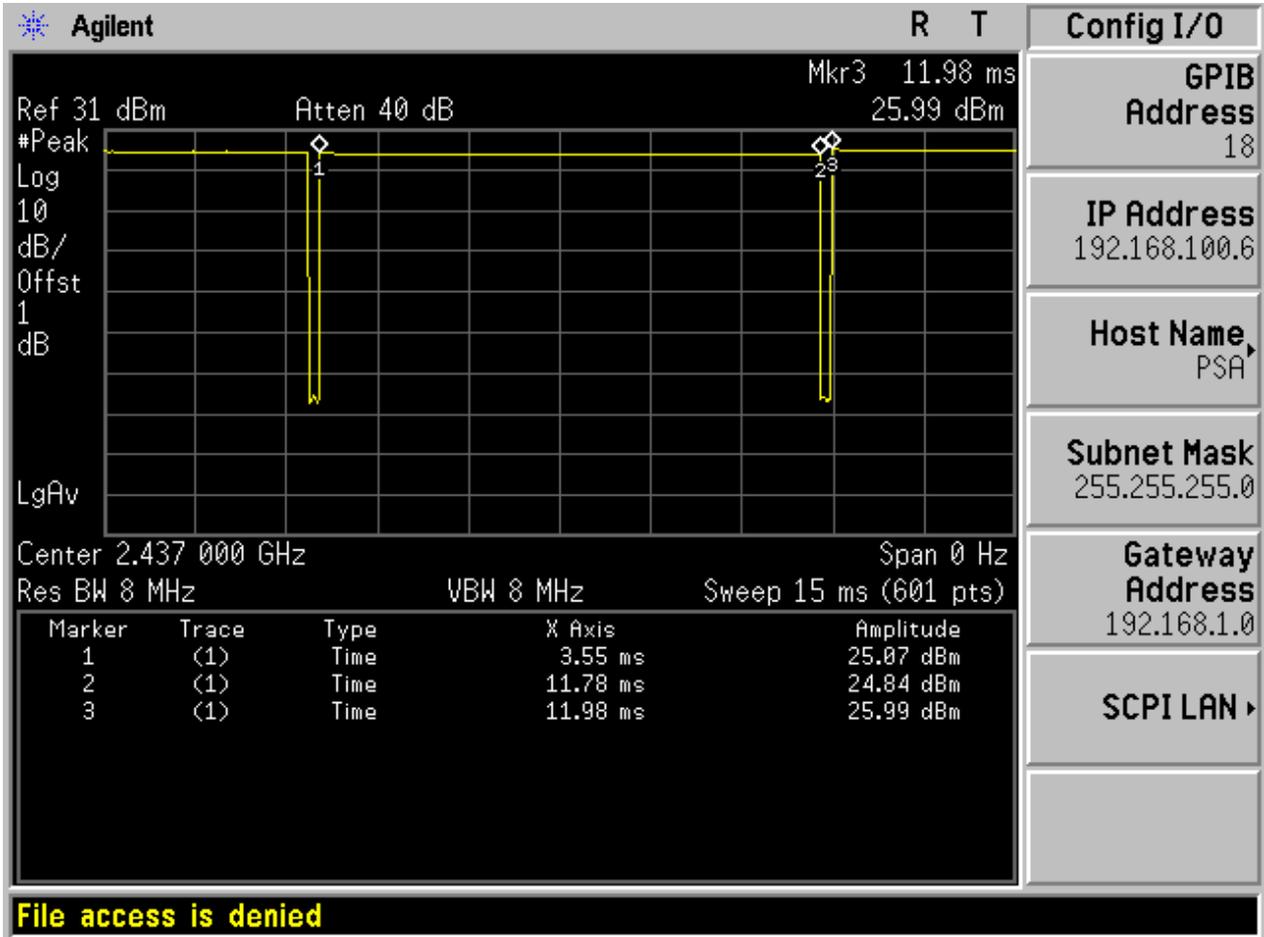
### Part I - Test Results

Test Mode	TX Freq. [MHz]	Ant	Duty cycle [%]
11B	CH1,CH6,CH11	Ant 1	97.6
11G	CH1,CH6,CH11	Ant 1	87
11N20SISO	CH1,CH6,CH11	Ant 1	86.5

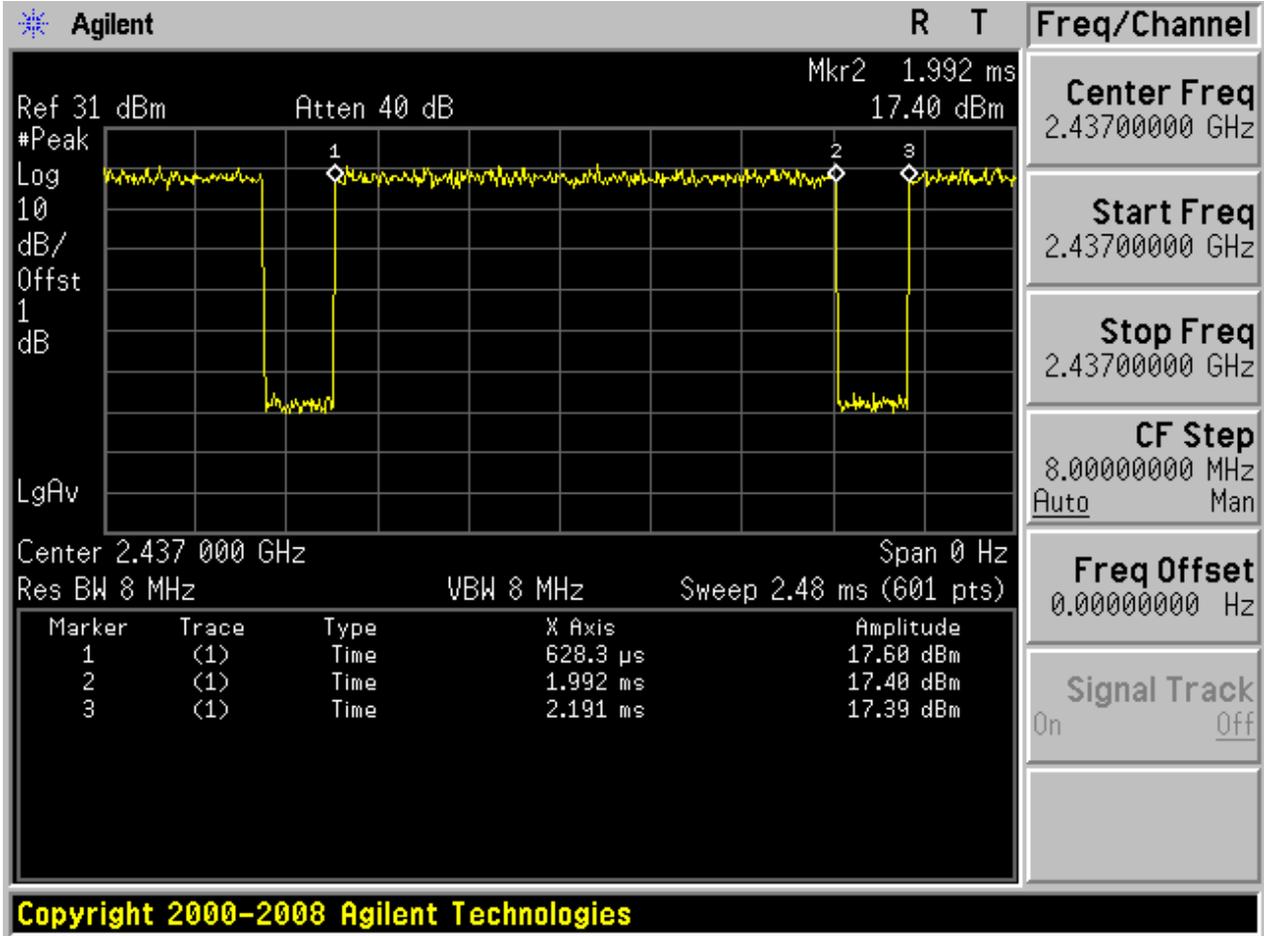


Part II - Test Plots

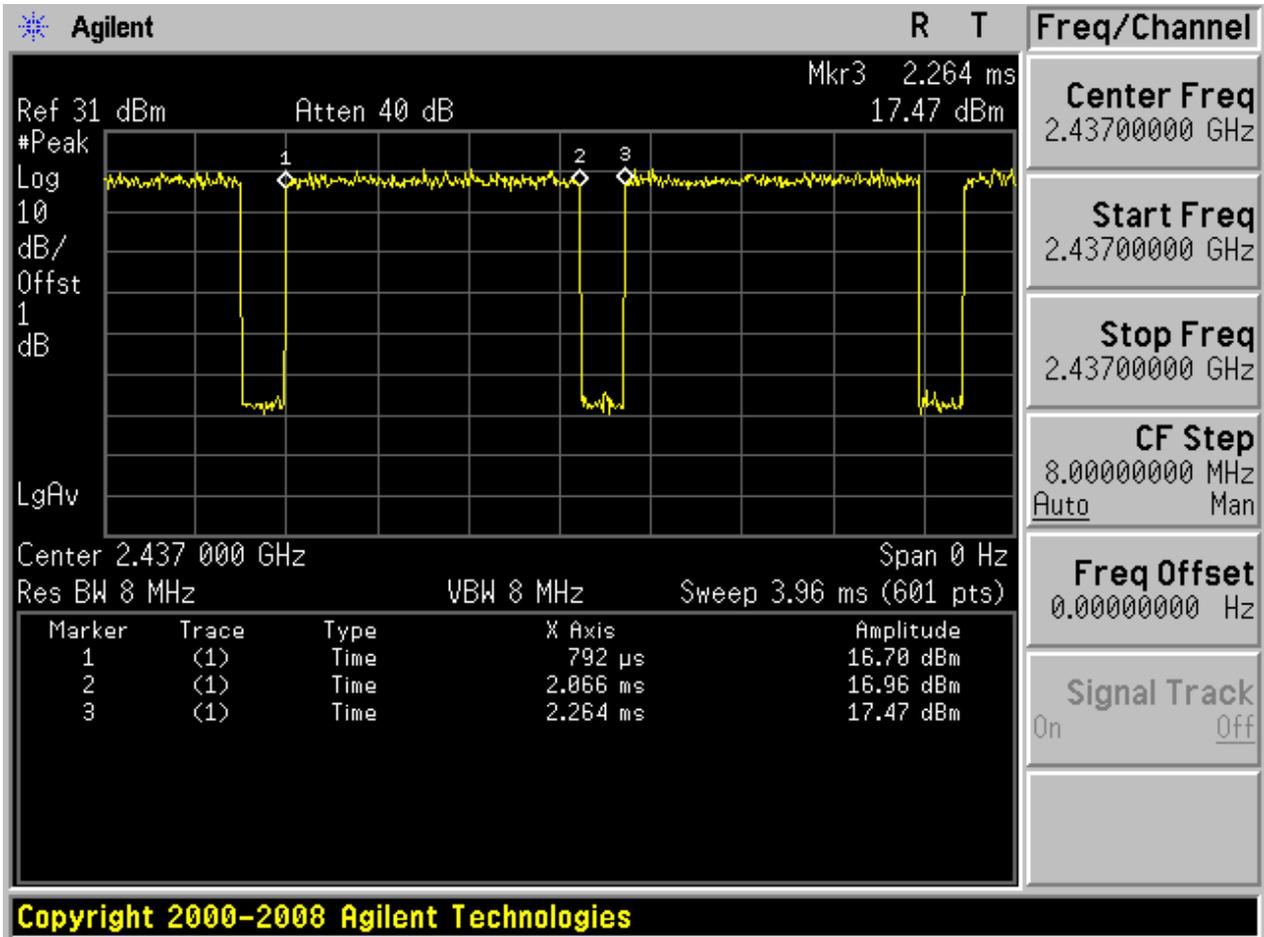
11B\_ANT1



11G\_ANT1



11N20SISO\_ANT1



## Appendix D: Maximum Conducted Average Output Power

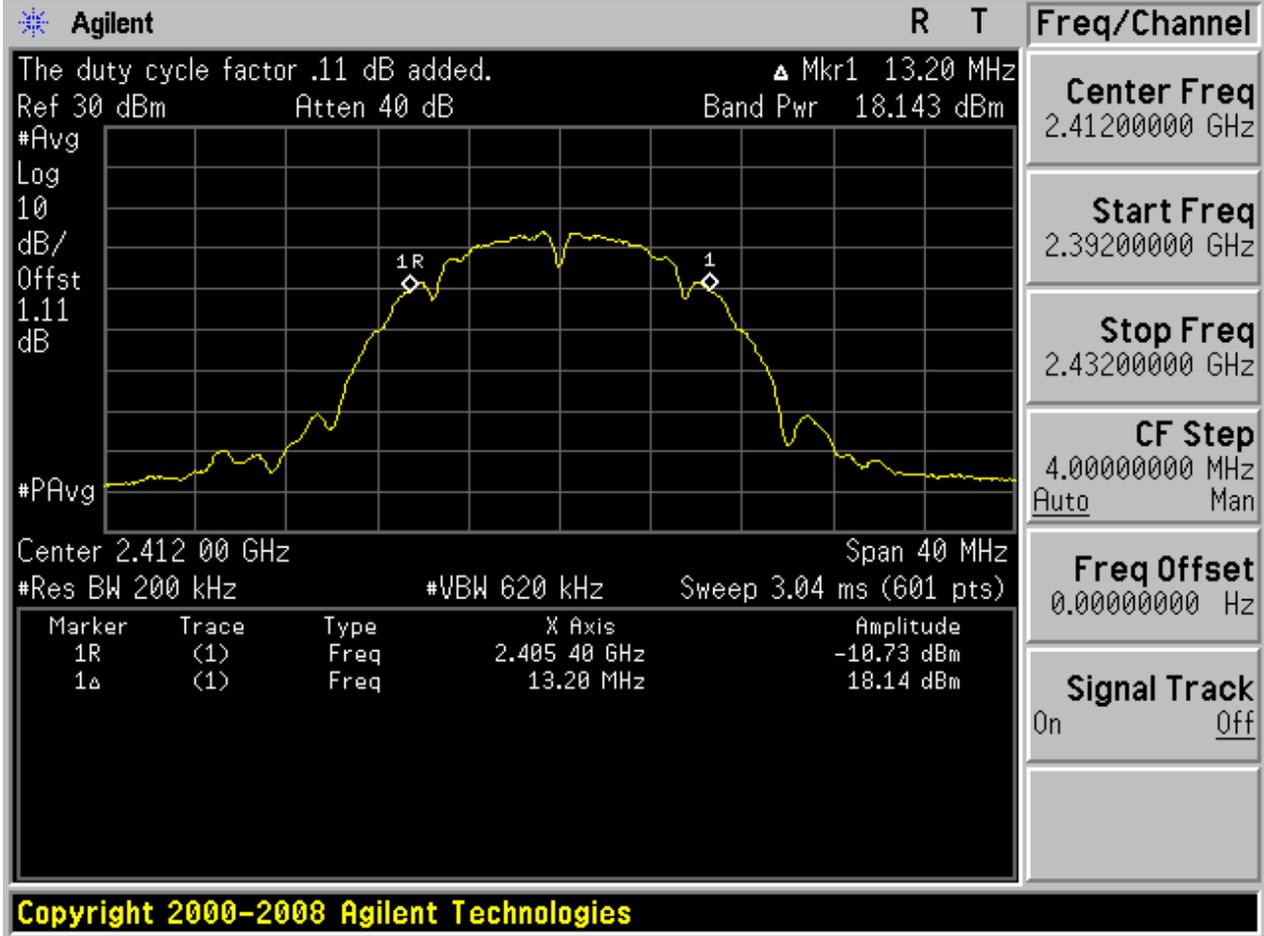
### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	18.14	pass
11B	M	2437	Ant 1	18.49	pass
11B	H	2462	Ant 1	18.53	pass
11G	L	2412	Ant 1	16.13	pass
11G	M	2437	Ant 1	16.62	pass
11G	H	2462	Ant 1	16.44	pass
11N20	L	2412	Ant 1	16.13	pass
11N20	M	2437	Ant 1	16.34	pass
11N20	H	2462	Ant 1	16.45	pass



Part II - Test Plots

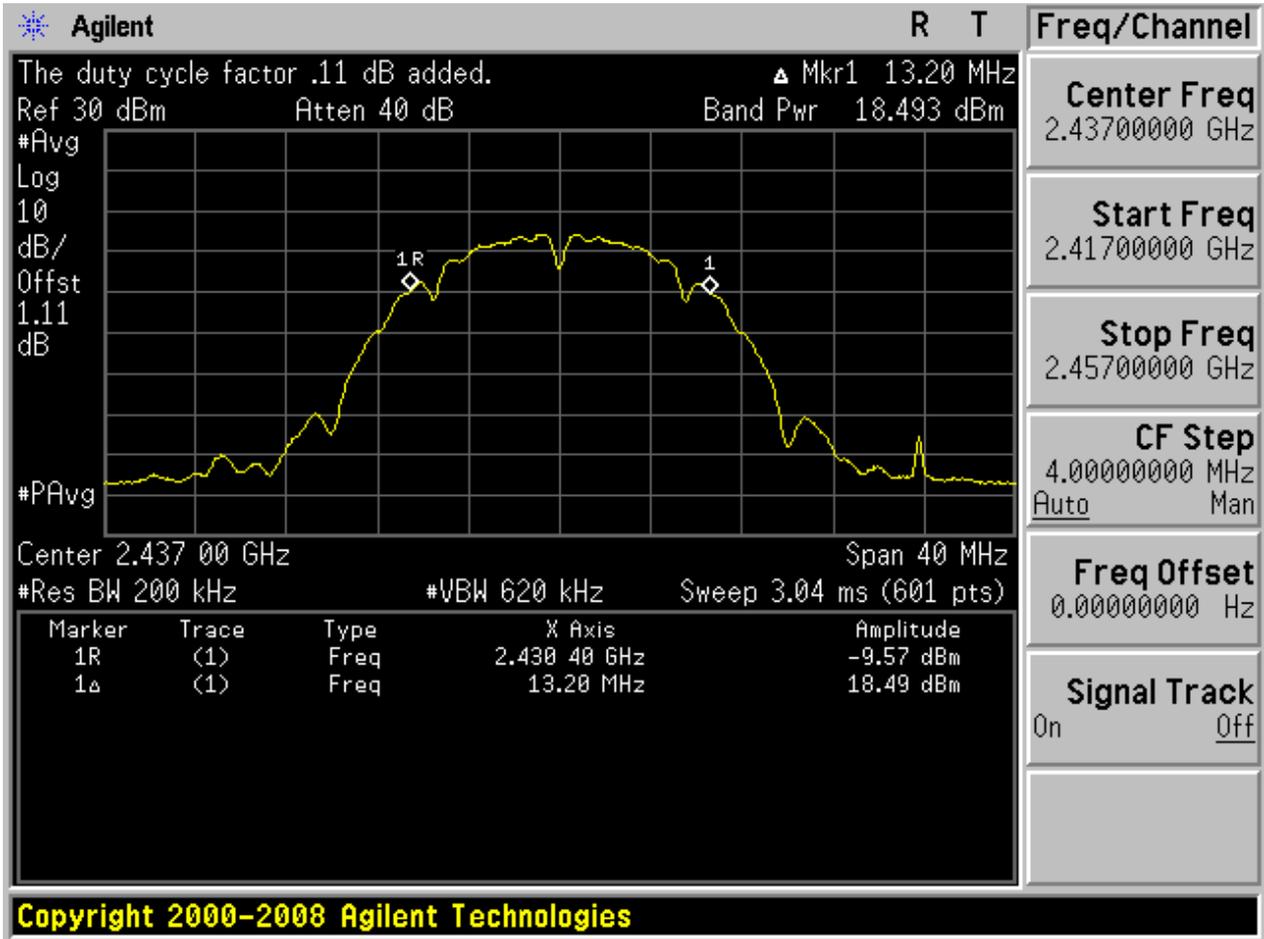
2.1 11B\_L@Ant 1



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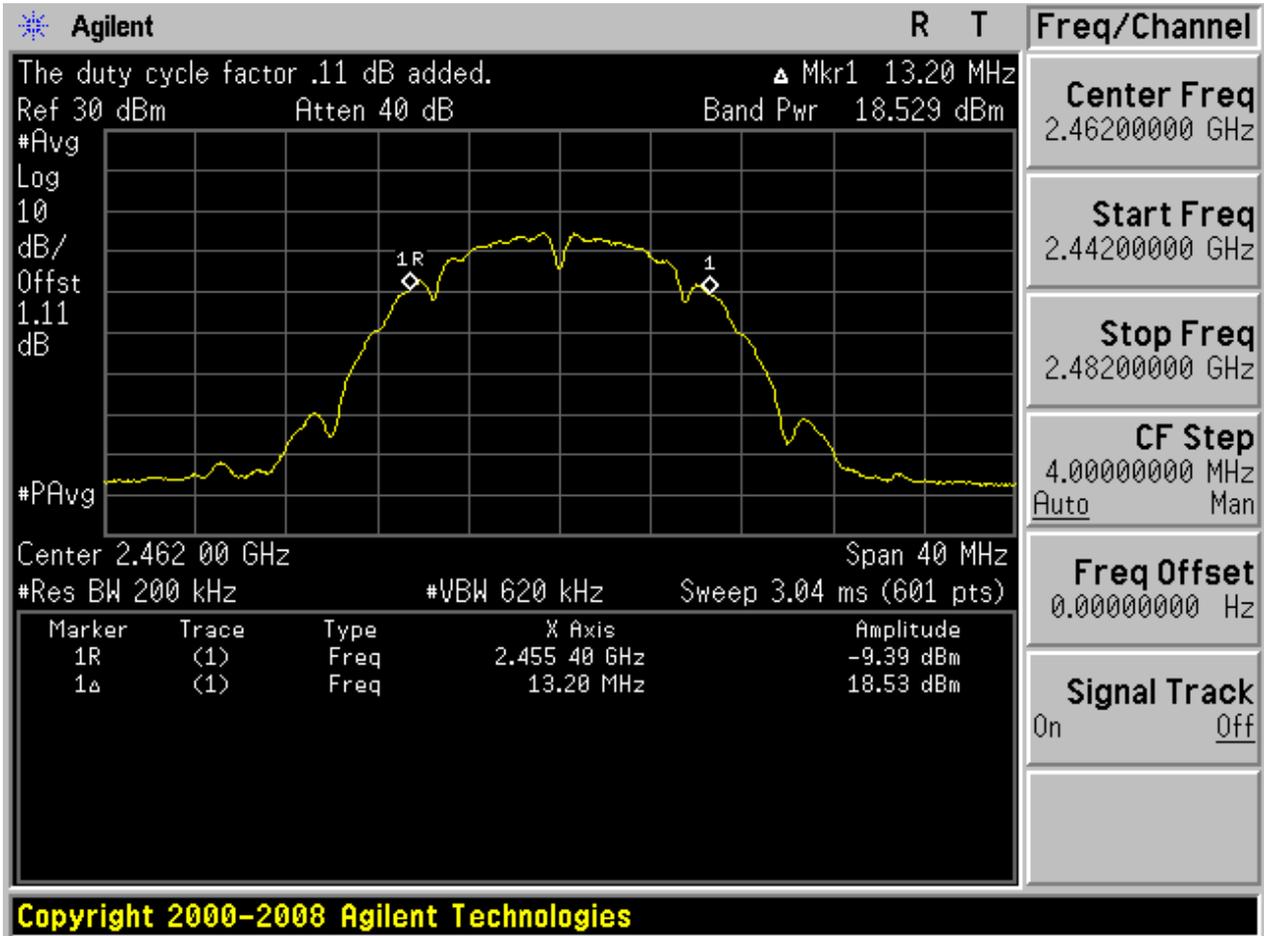


2.3 11B\_M@Ant 1





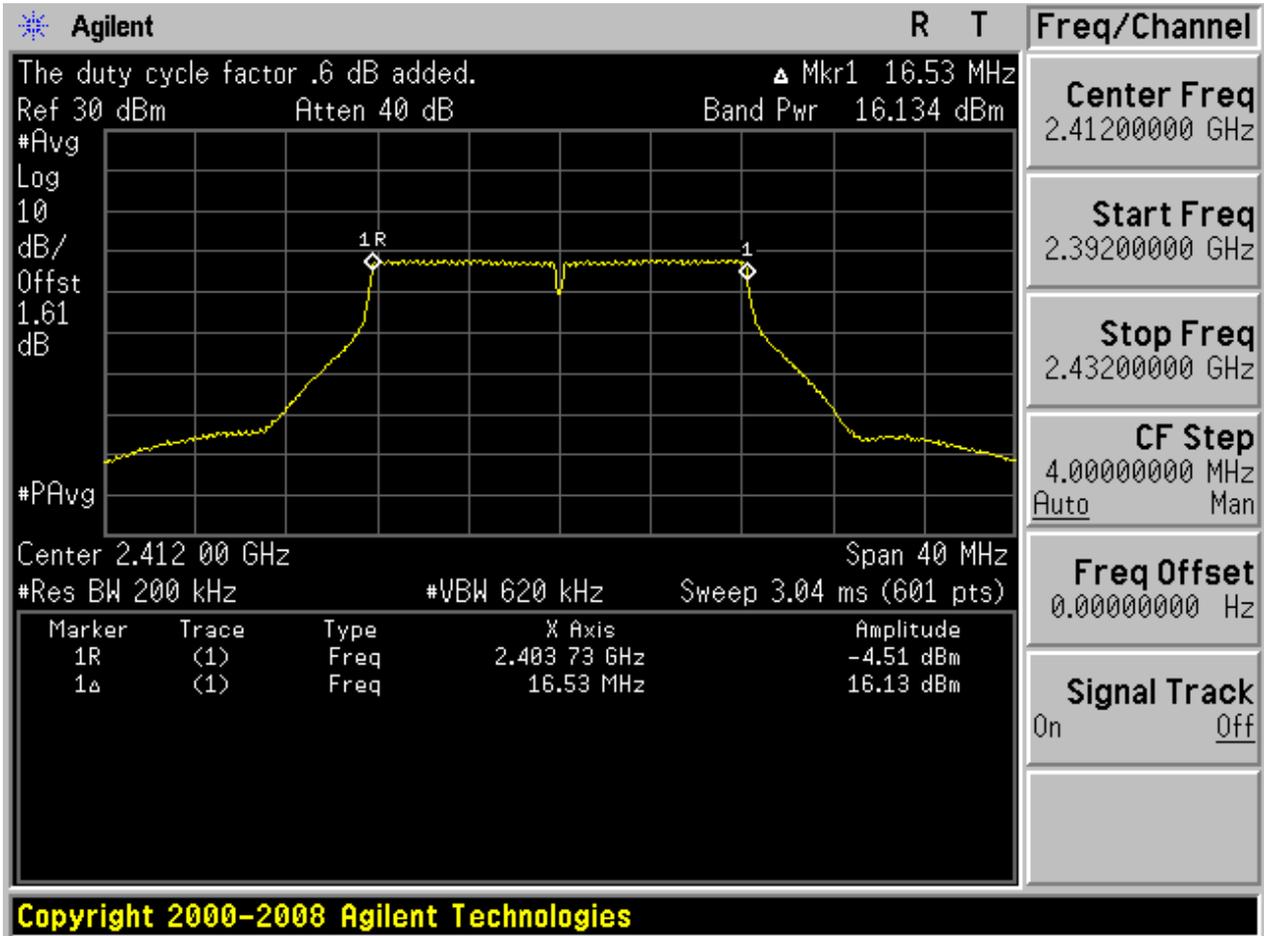
2.5 11B\_H@Ant 1



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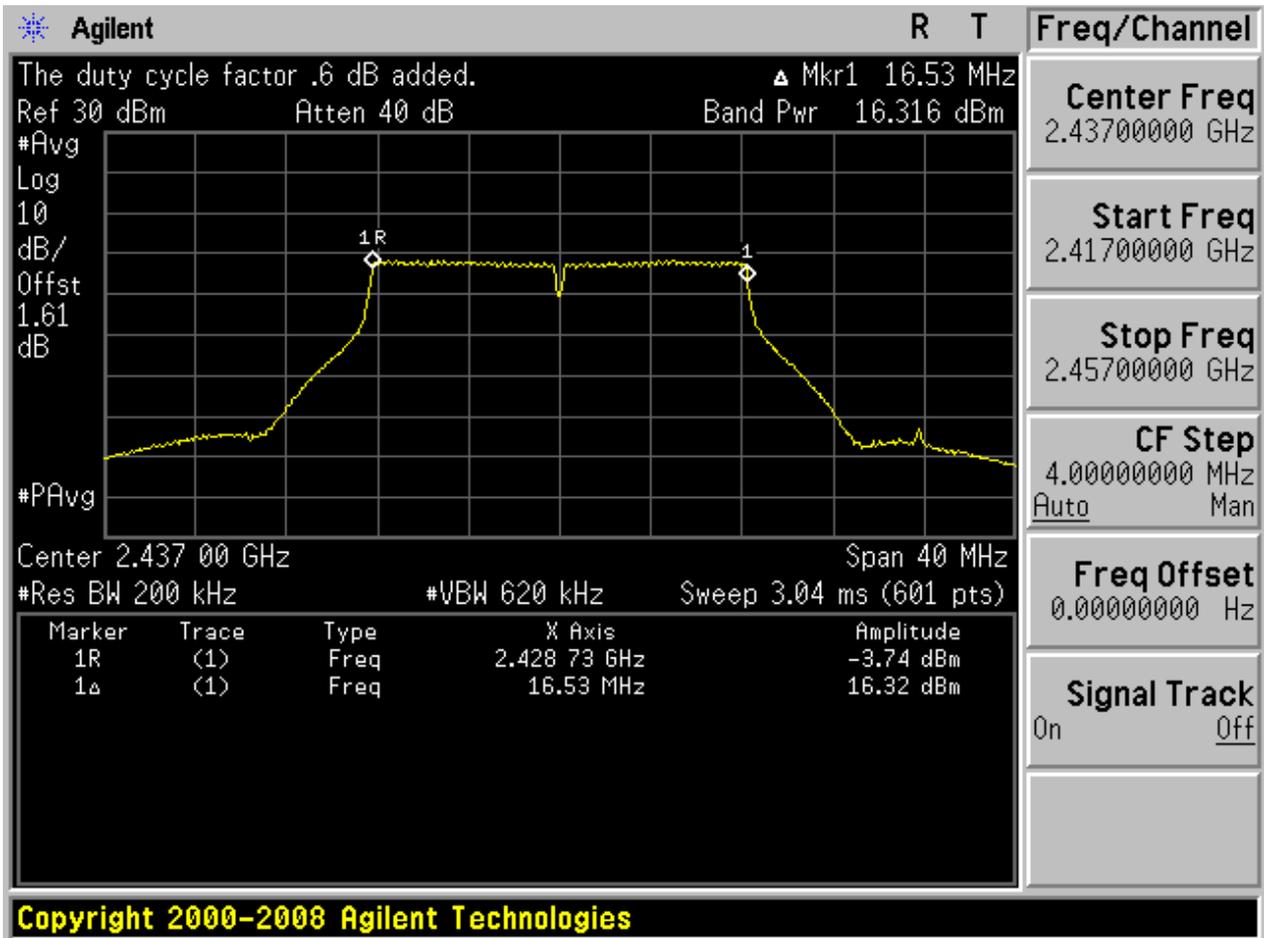
2.7 11G\_L@Ant 1



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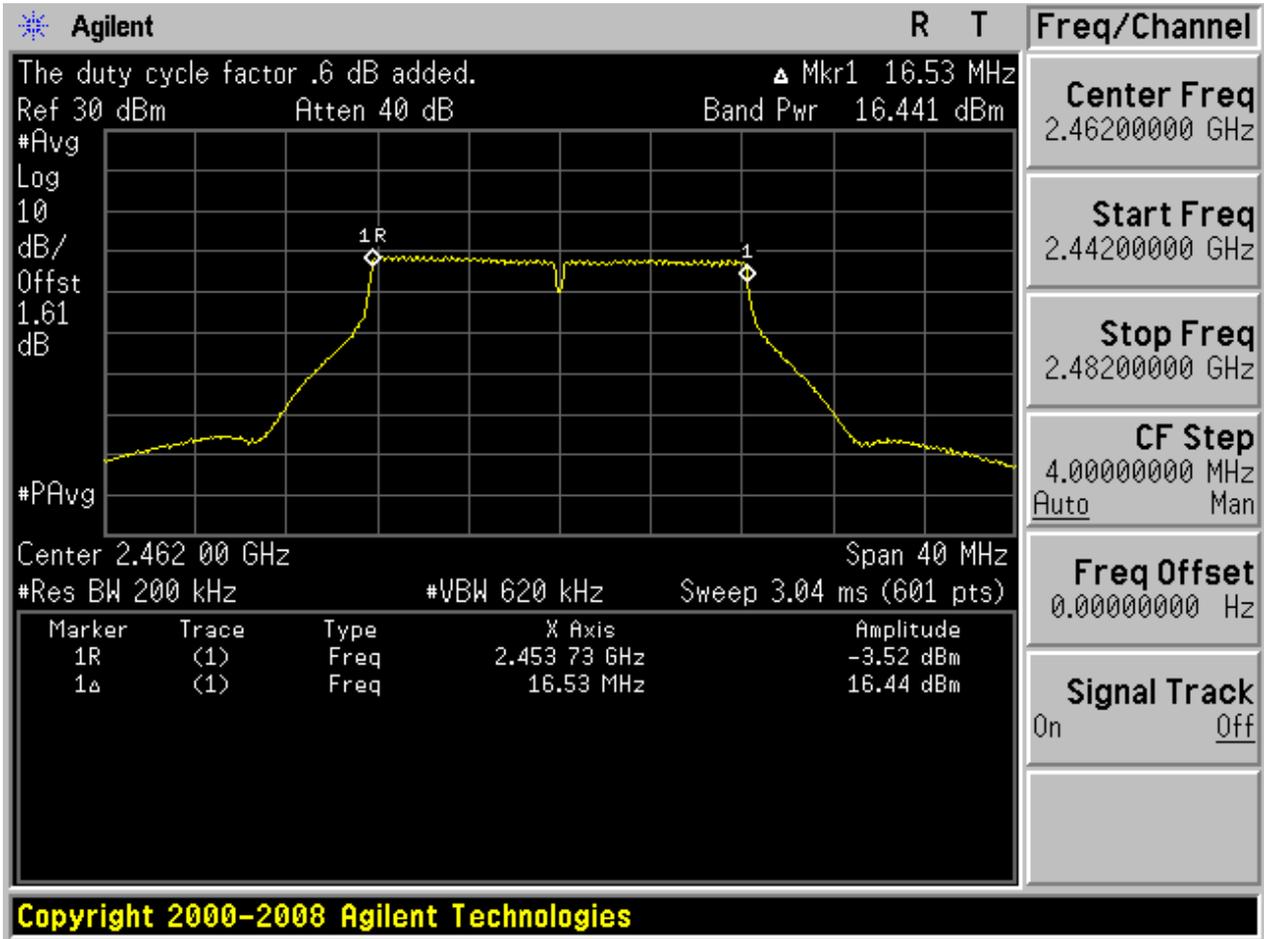
2.9 11G\_M@Ant 1



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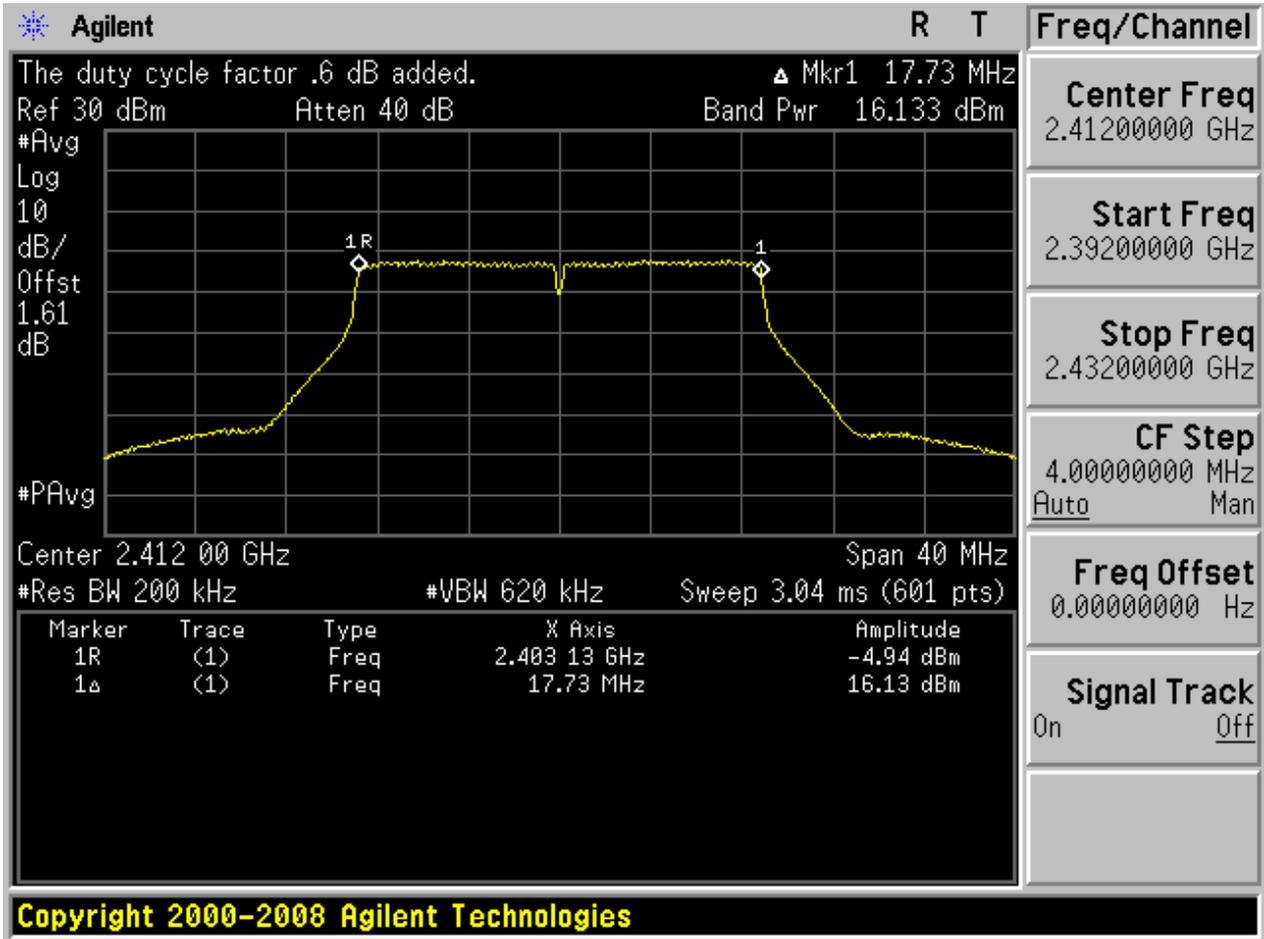


2.11 11G\_H@Ant 1





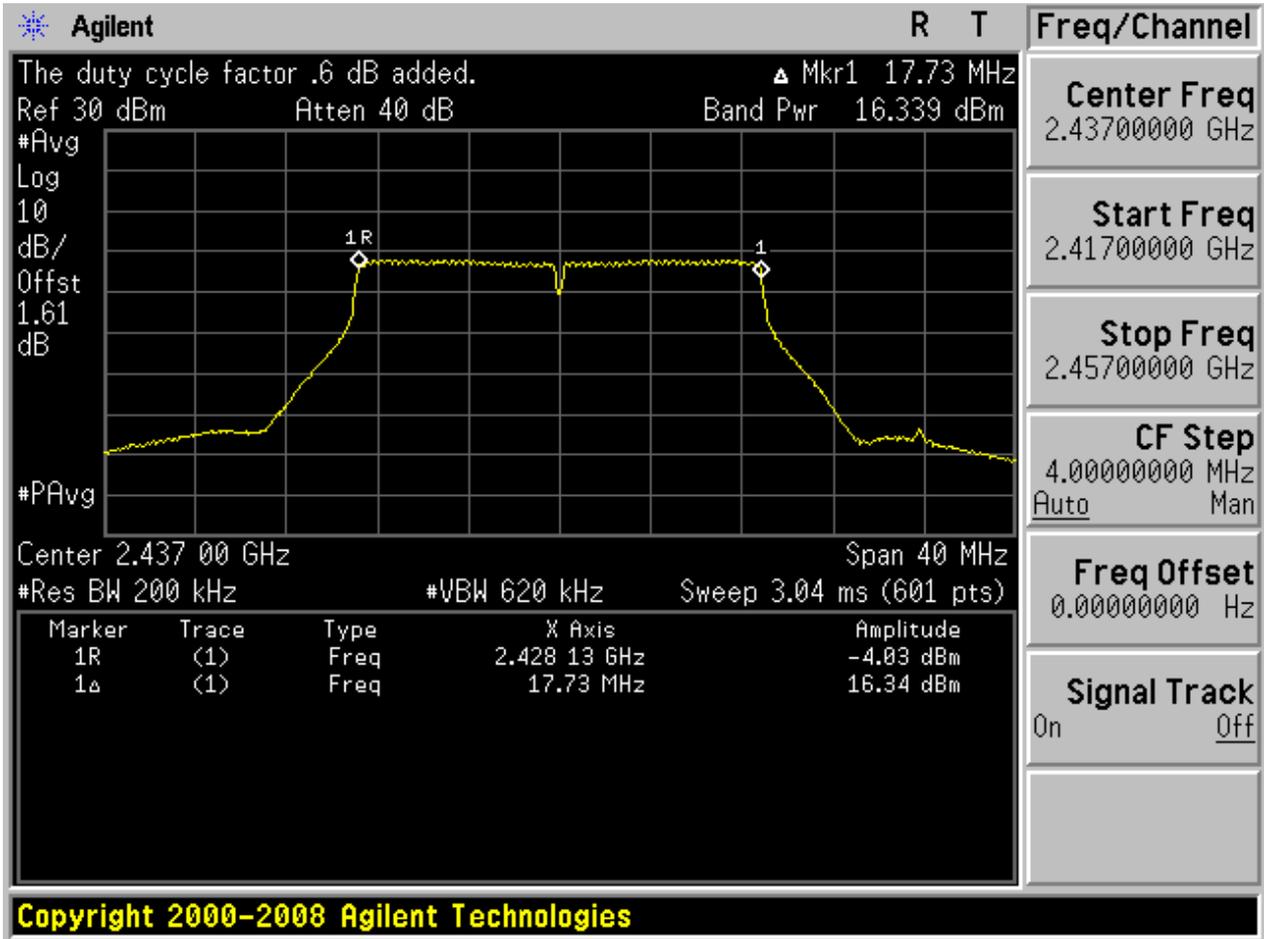
2.13 11N20\_L@Ant 1



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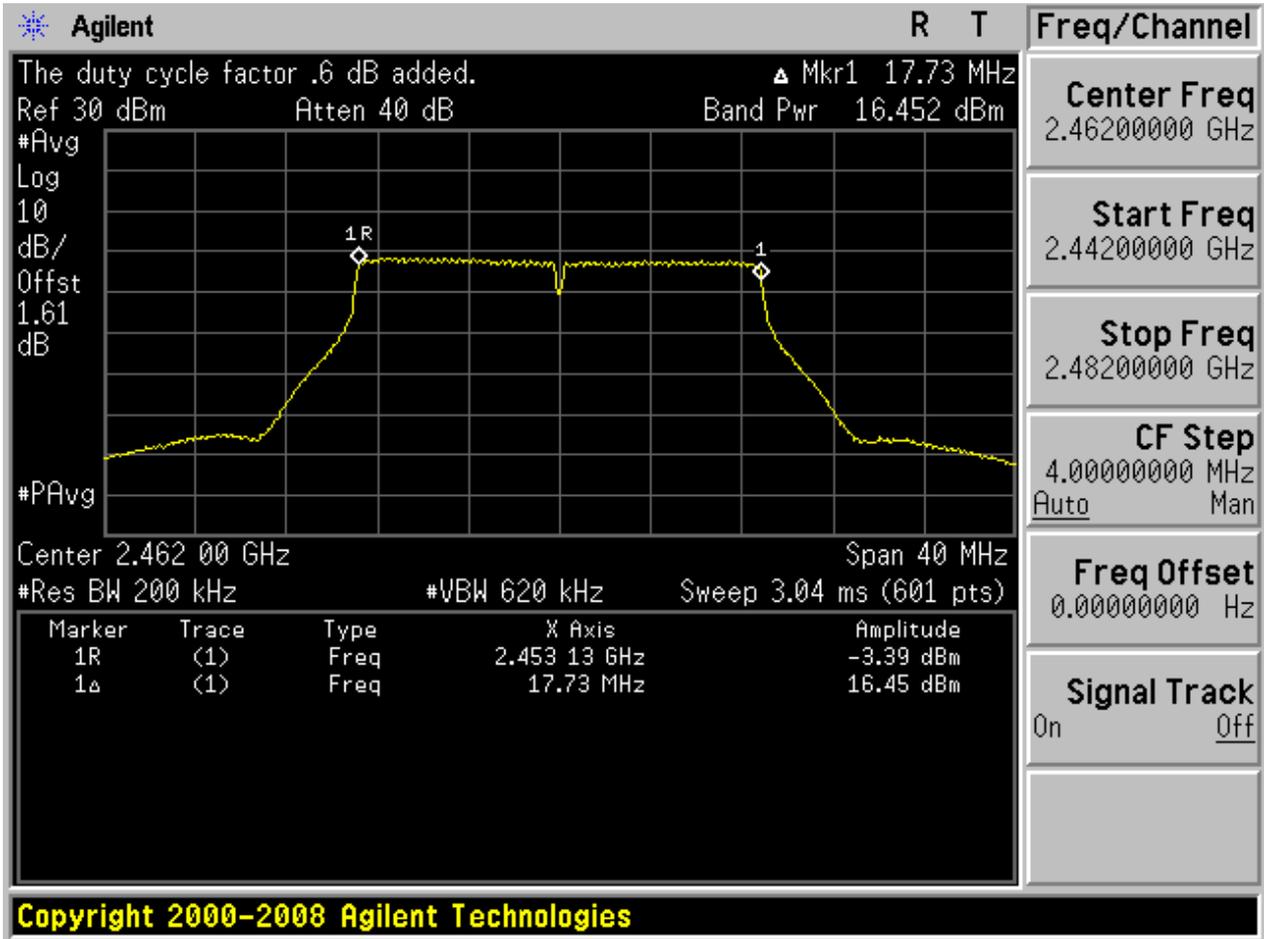
2.15 11N20\_M@Ant 1



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2.17 11N20\_H@Ant 1



Copyright 2000-2008 Agilent Technologies



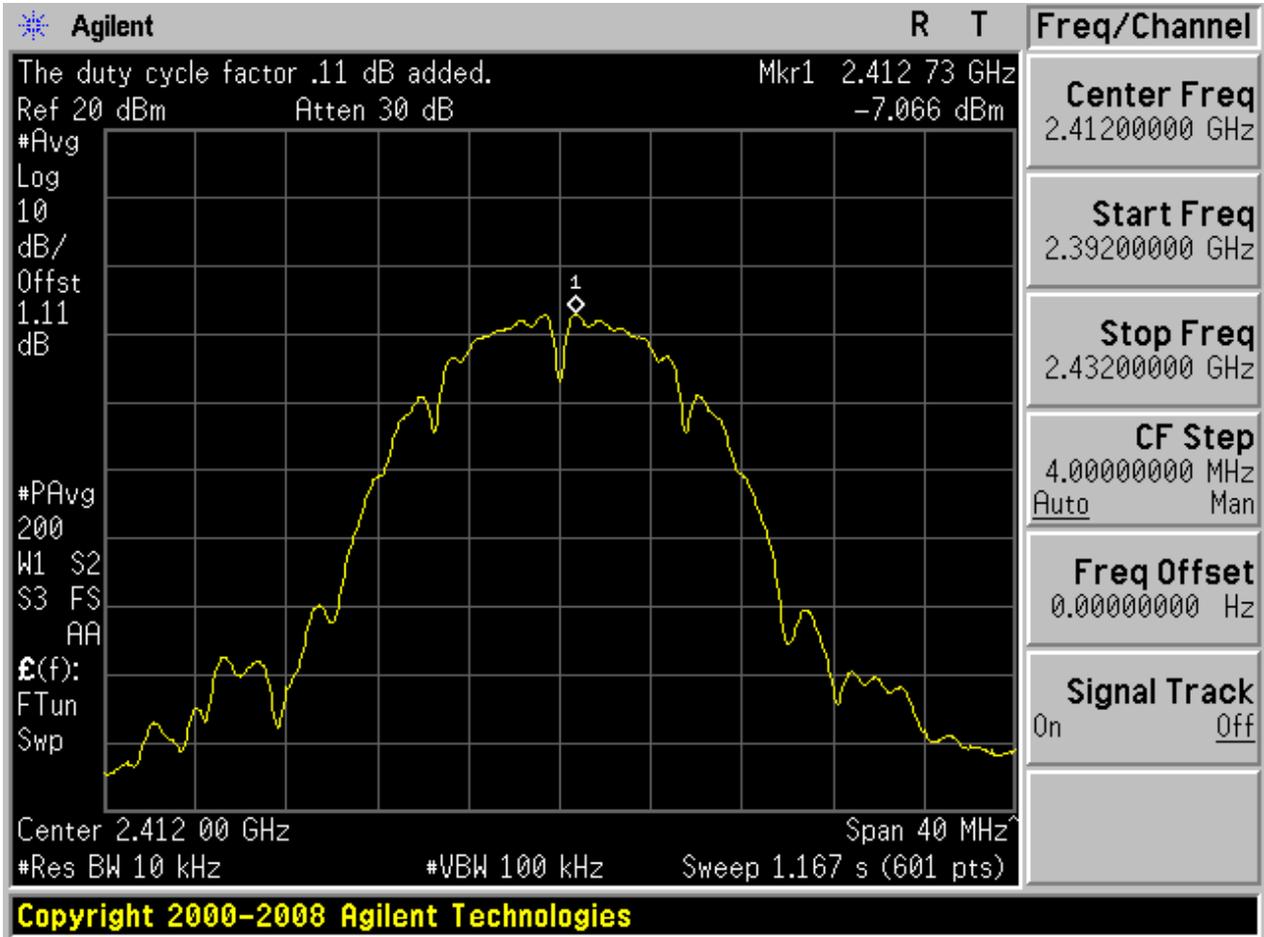
## Appendix E: Maximum Power Spectral Density Level

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-7.07	pass
11B	M	2437	Ant 1	-6.96	pass
11B	H	2462	Ant 1	-6.76	pass
11G	L	2412	Ant 1	-14.93	pass
11G	M	2437	Ant 1	-14.87	pass
11G	H	2462	Ant 1	-14.27	pass
11N20	L	2412	Ant 1	-15.13	pass
11N20	M	2437	Ant 1	-9.29	pass
11N20	H	2462	Ant 1	-14.40	pass

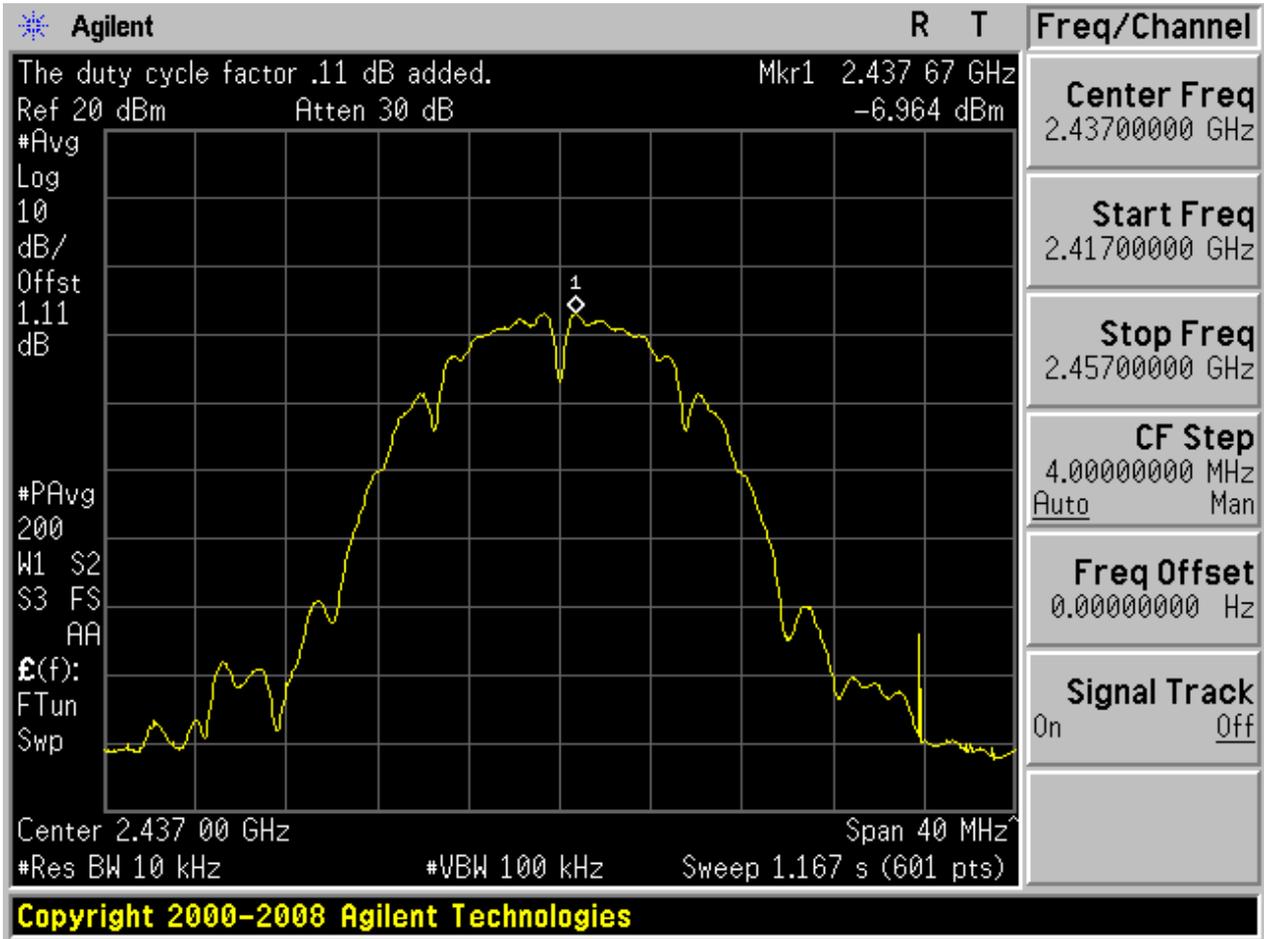
**Part II - Test Plots**

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



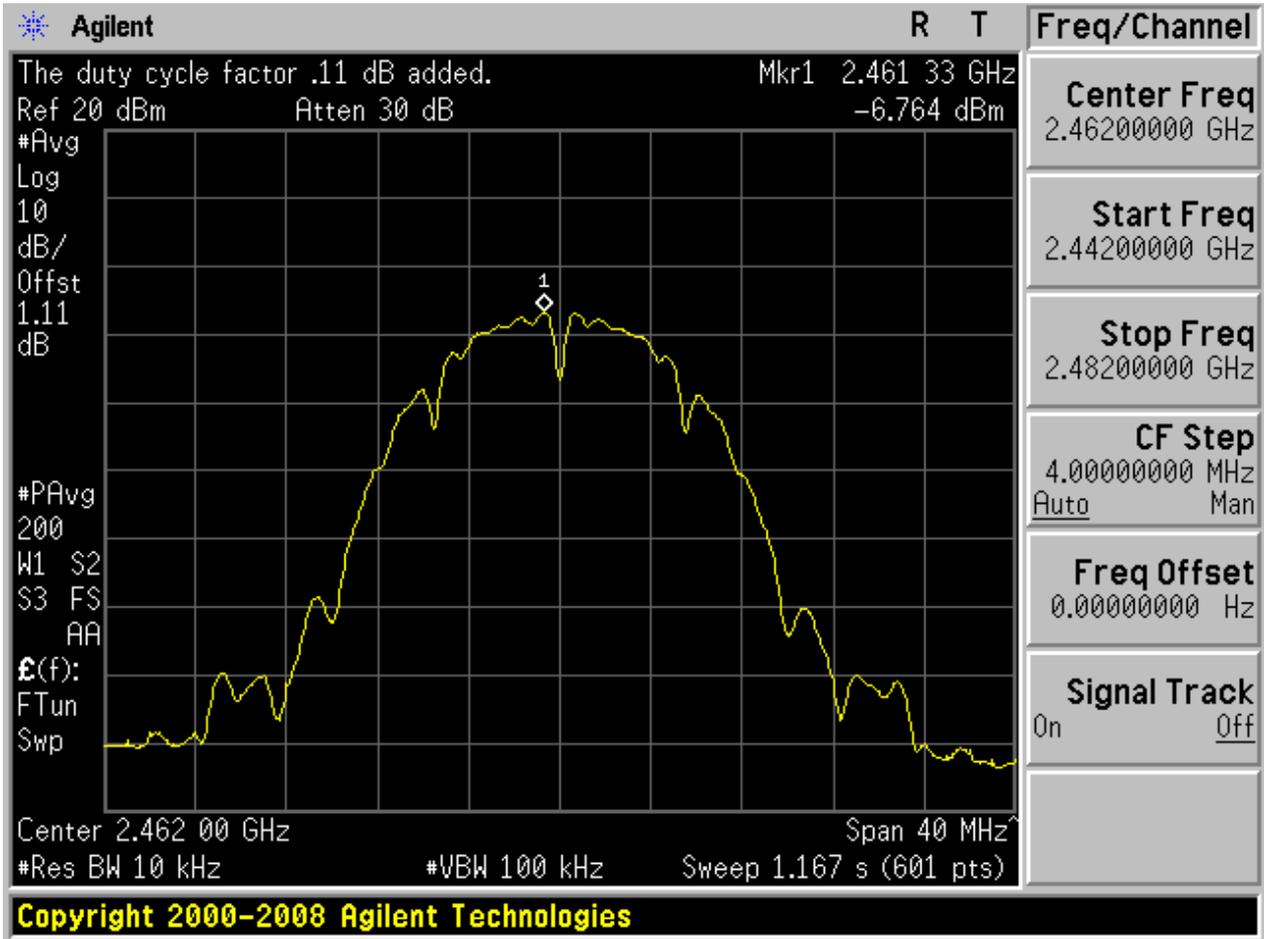


2.3 11B\_M@Ant 1



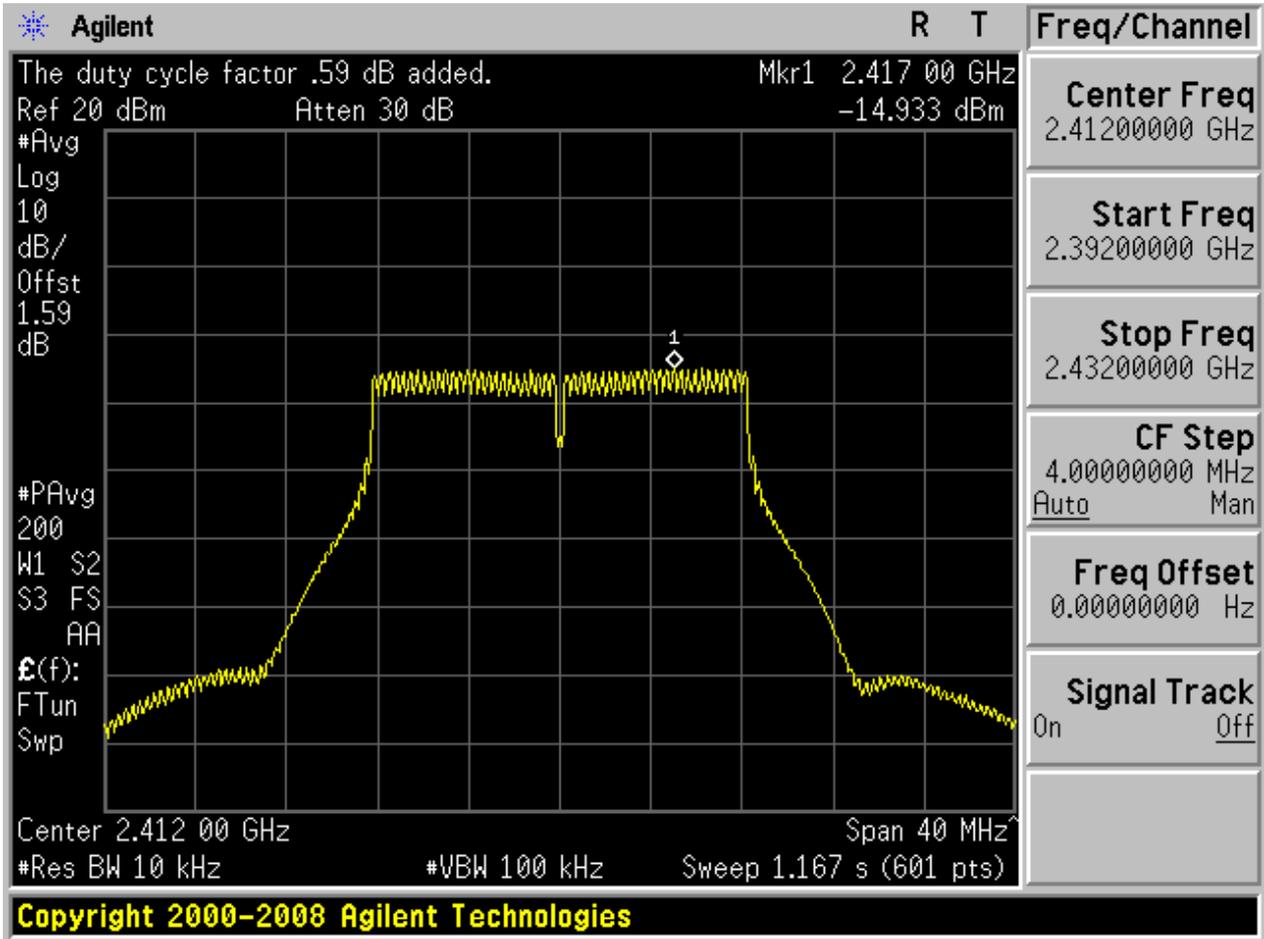


2.5 11B\_H@Ant 1



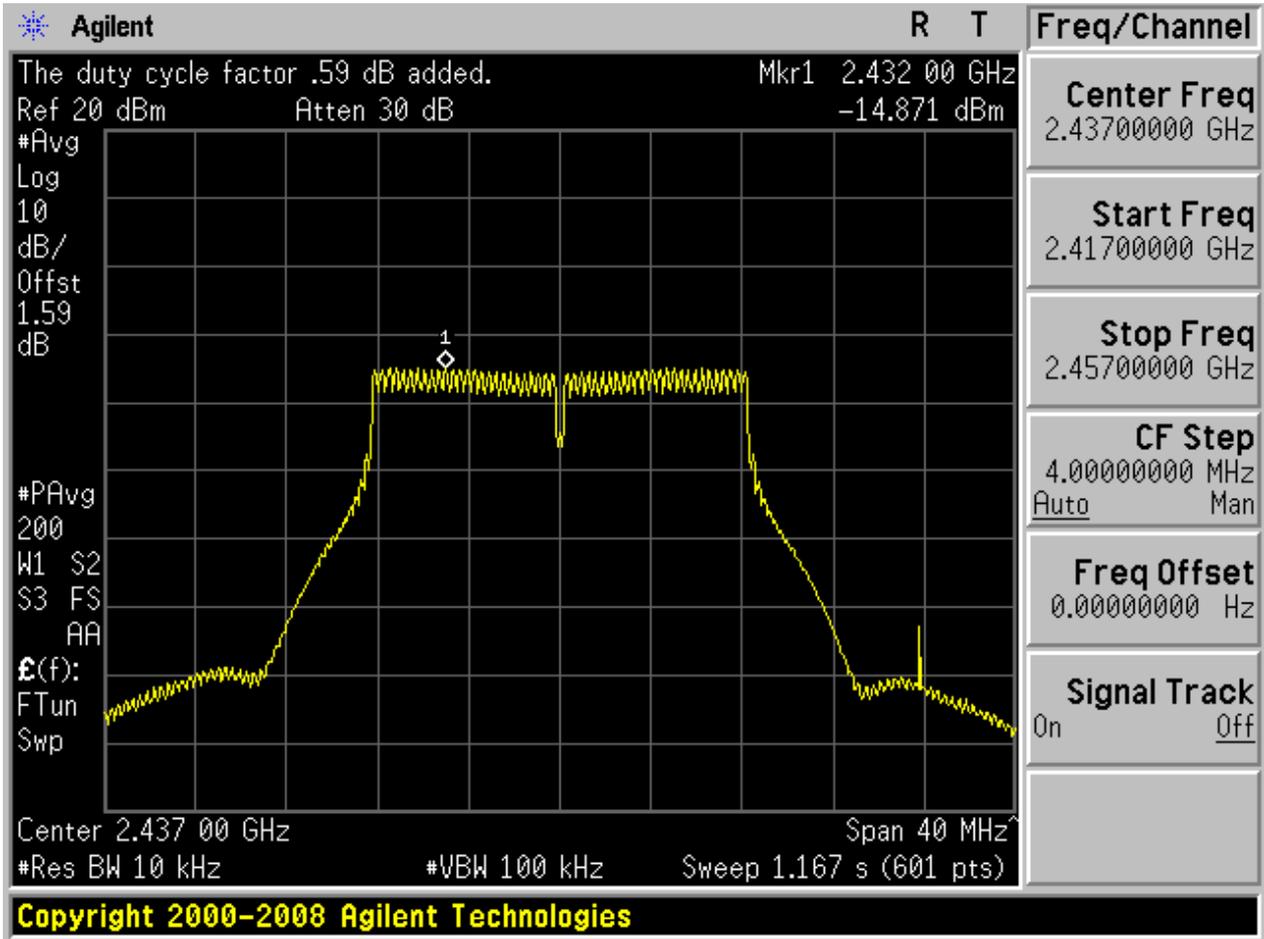


2.7 11G\_L@Ant 1



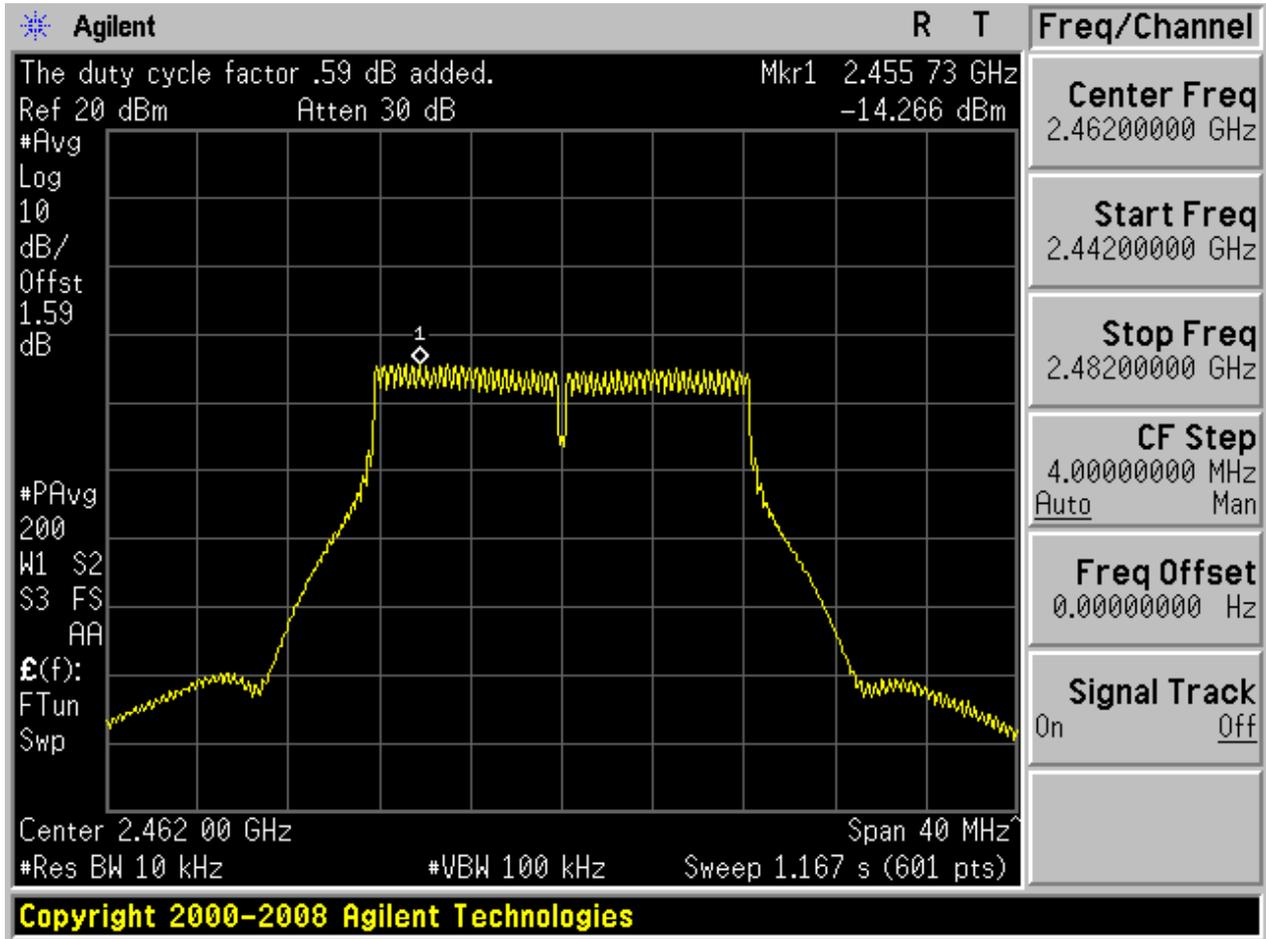


2.9 11G\_M@Ant 1



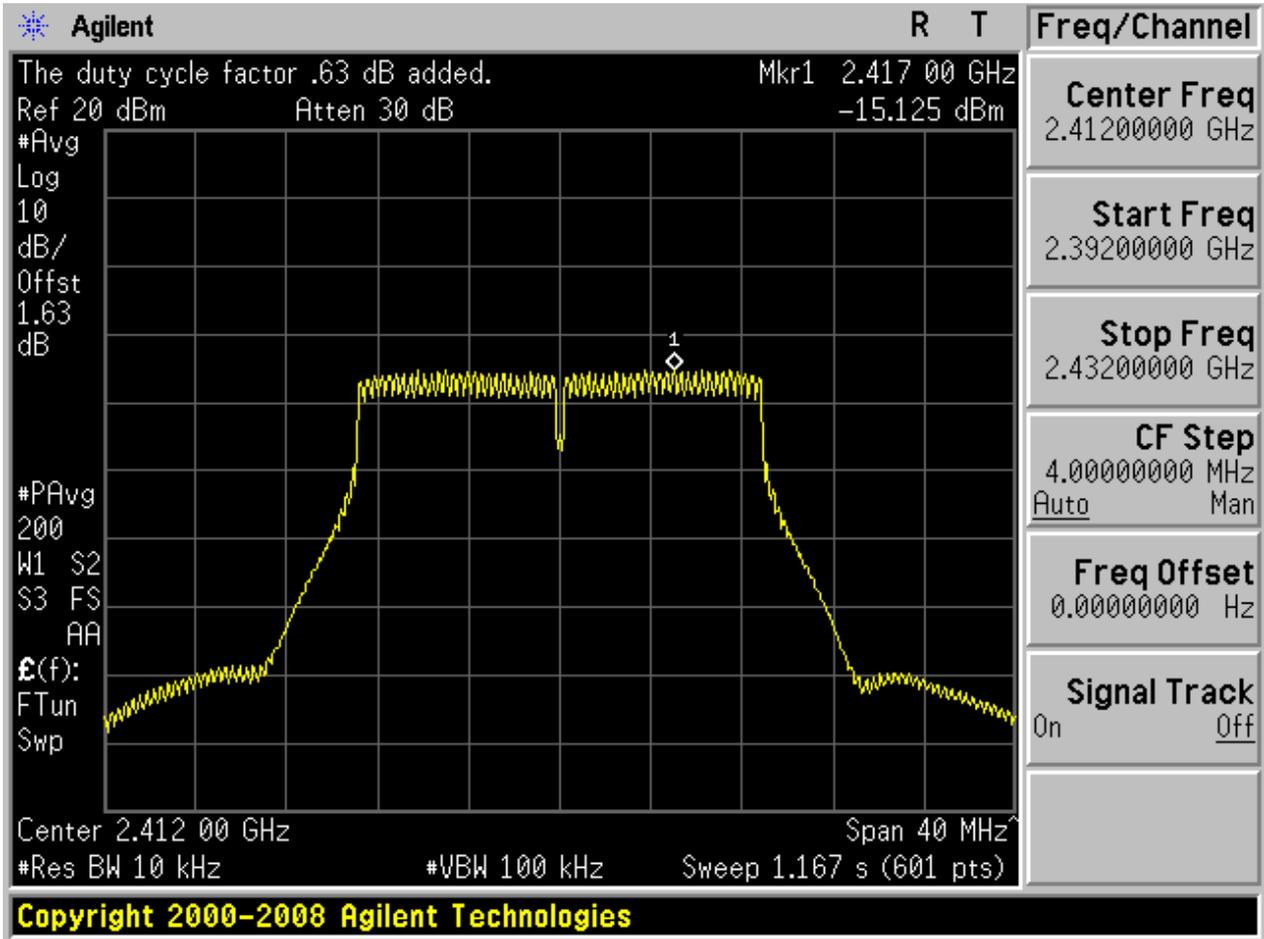


2.11 11G\_H@Ant 1



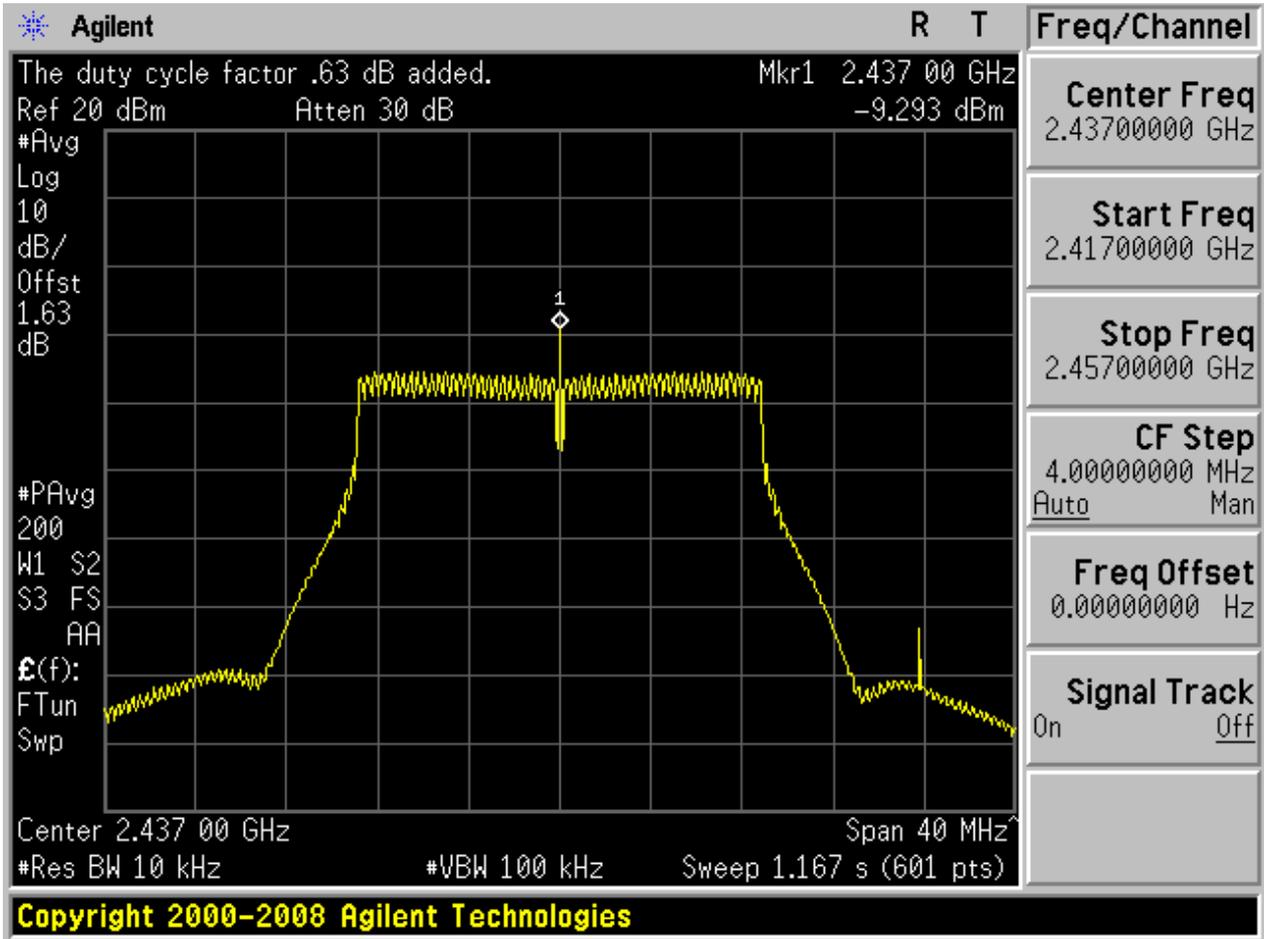


2.13 11N20\_L@Ant 1



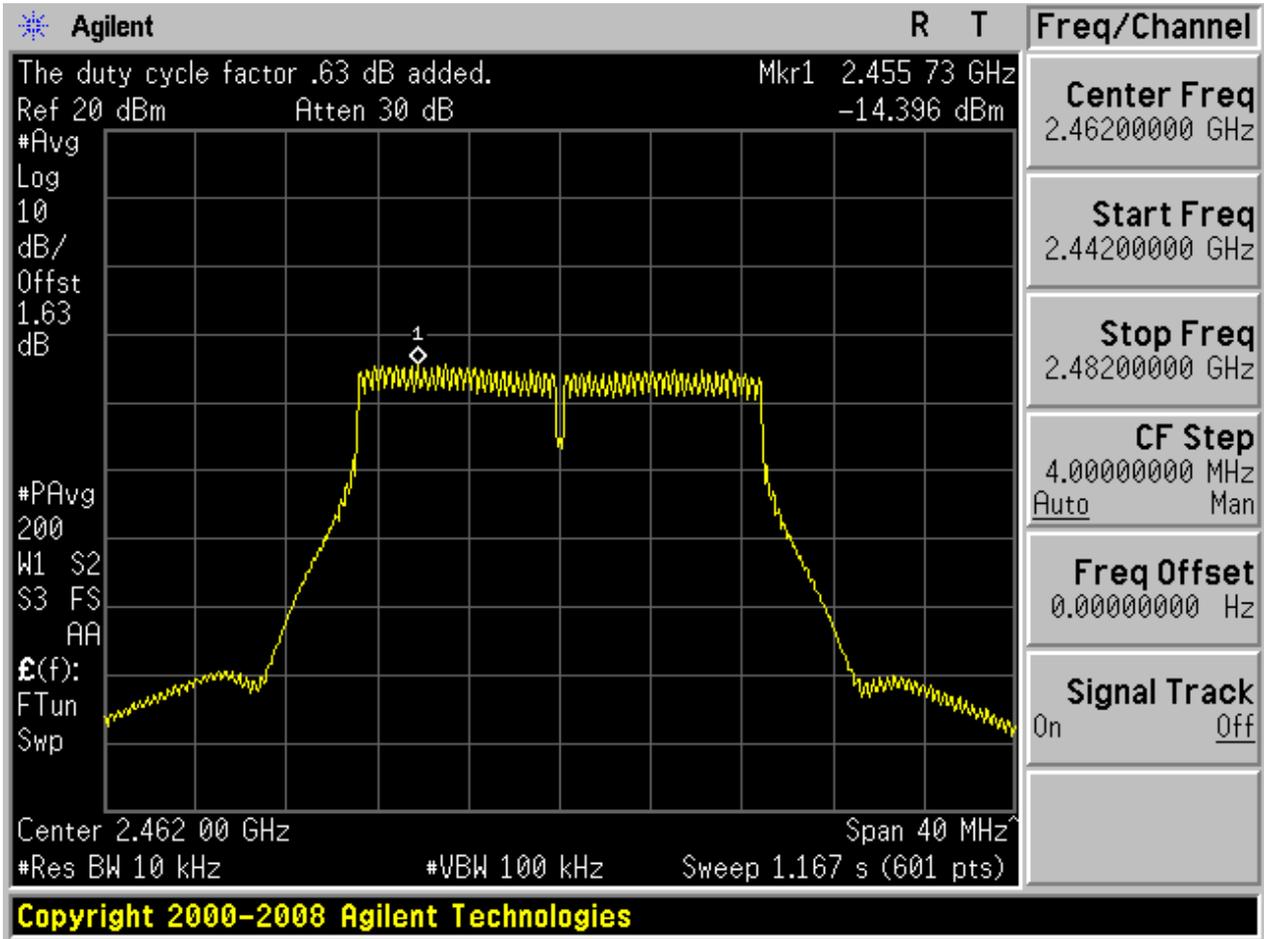


2.15 11N20\_M@Ant 1





2.17 11N20\_H@Ant 1





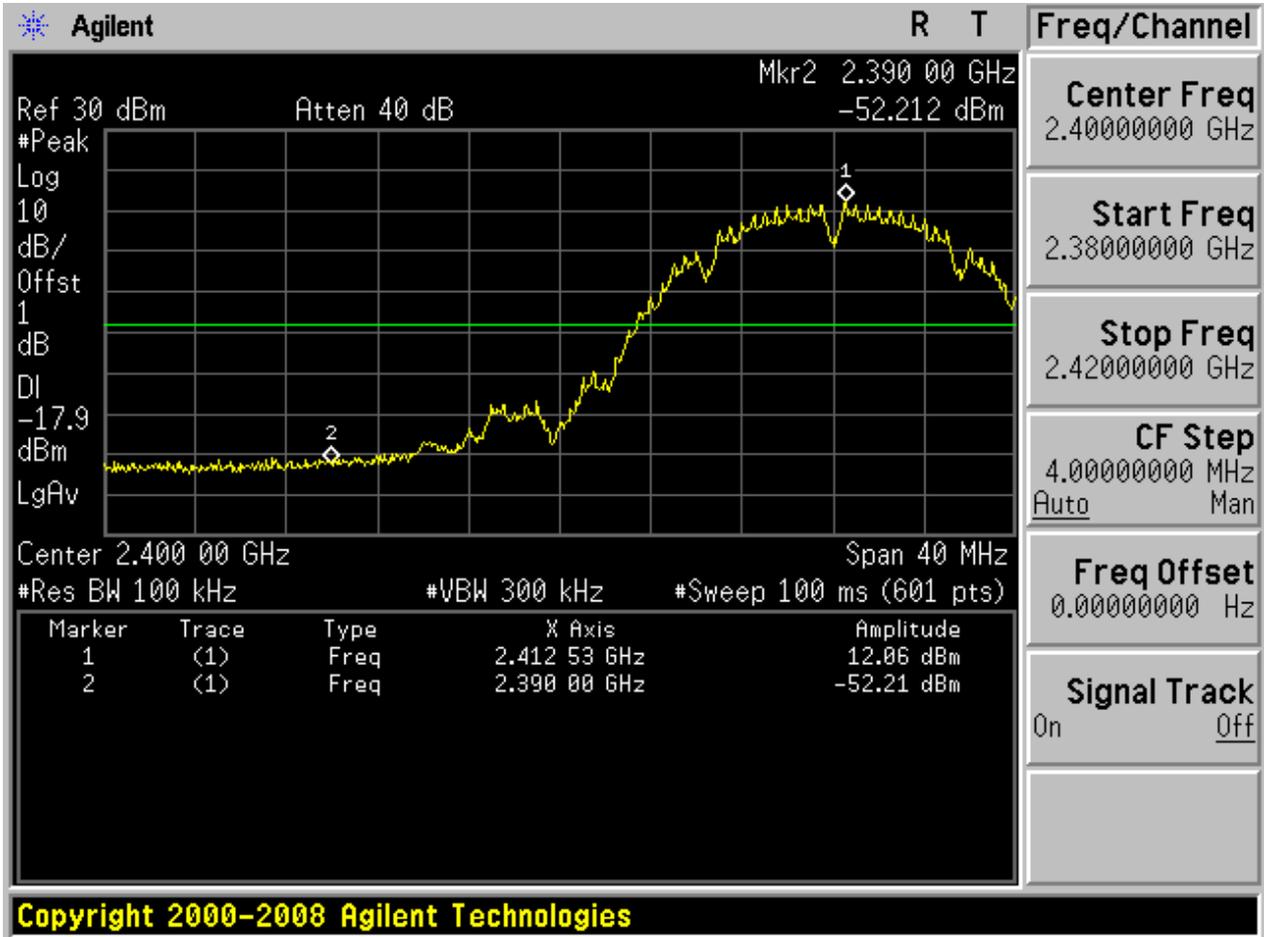
## Appendix F: Band Edges Compliance

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	12.06	-52.21	pass
11B	H	2462	Ant 1	12.19	-50.26	pass
11G	L	2412	Ant 1	3.69	-49.93	pass
11G	H	2462	Ant 1	4.55	-48.70	pass
11N20	L	2412	Ant 1	3.54	-49.66	pass
11N20	H	2462	Ant 1	4.56	-48.16	pass

Part II - Test Plots

2.1 11B\_L@Ant 1



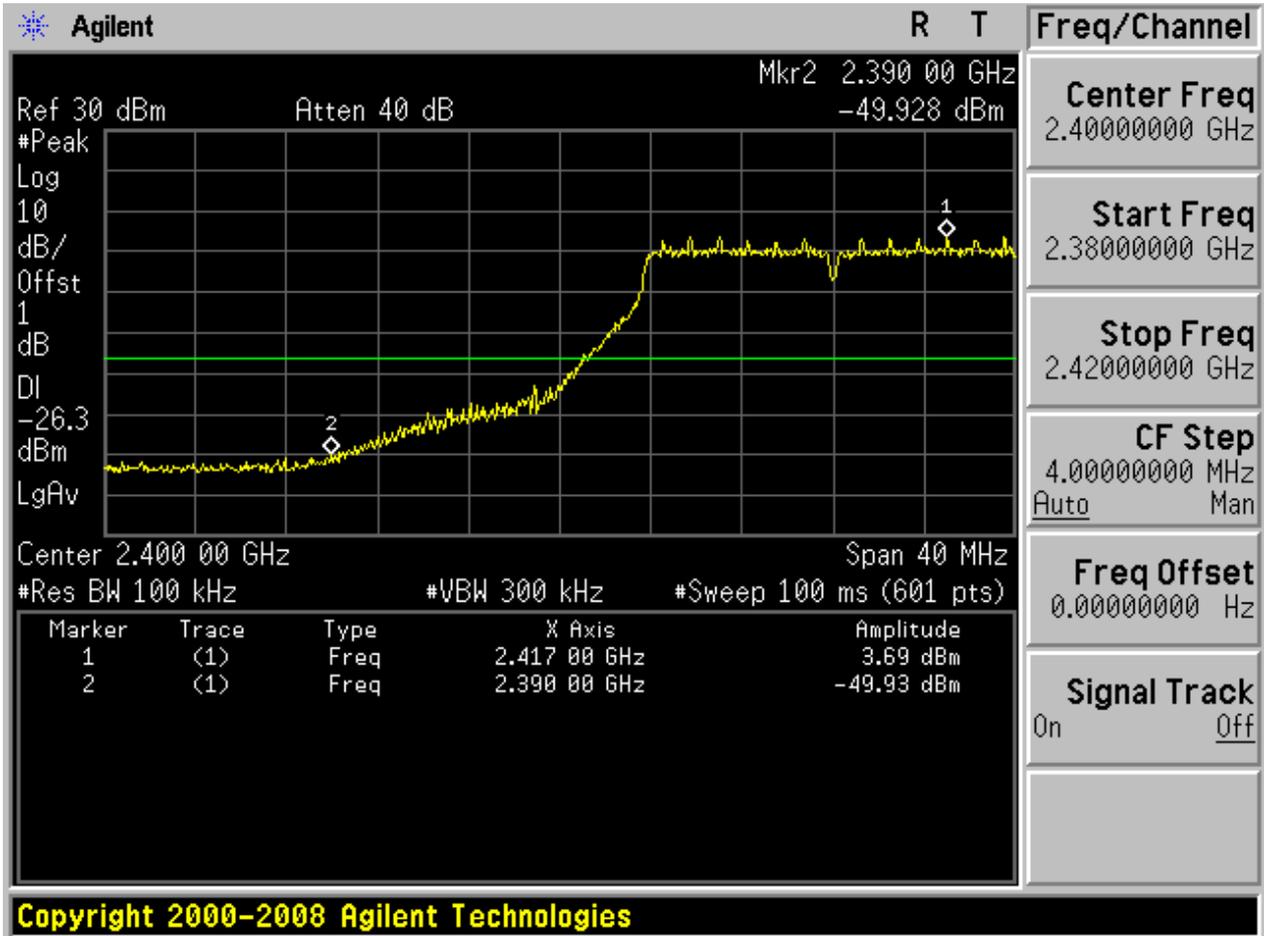


2.3 11B\_H@Ant 1



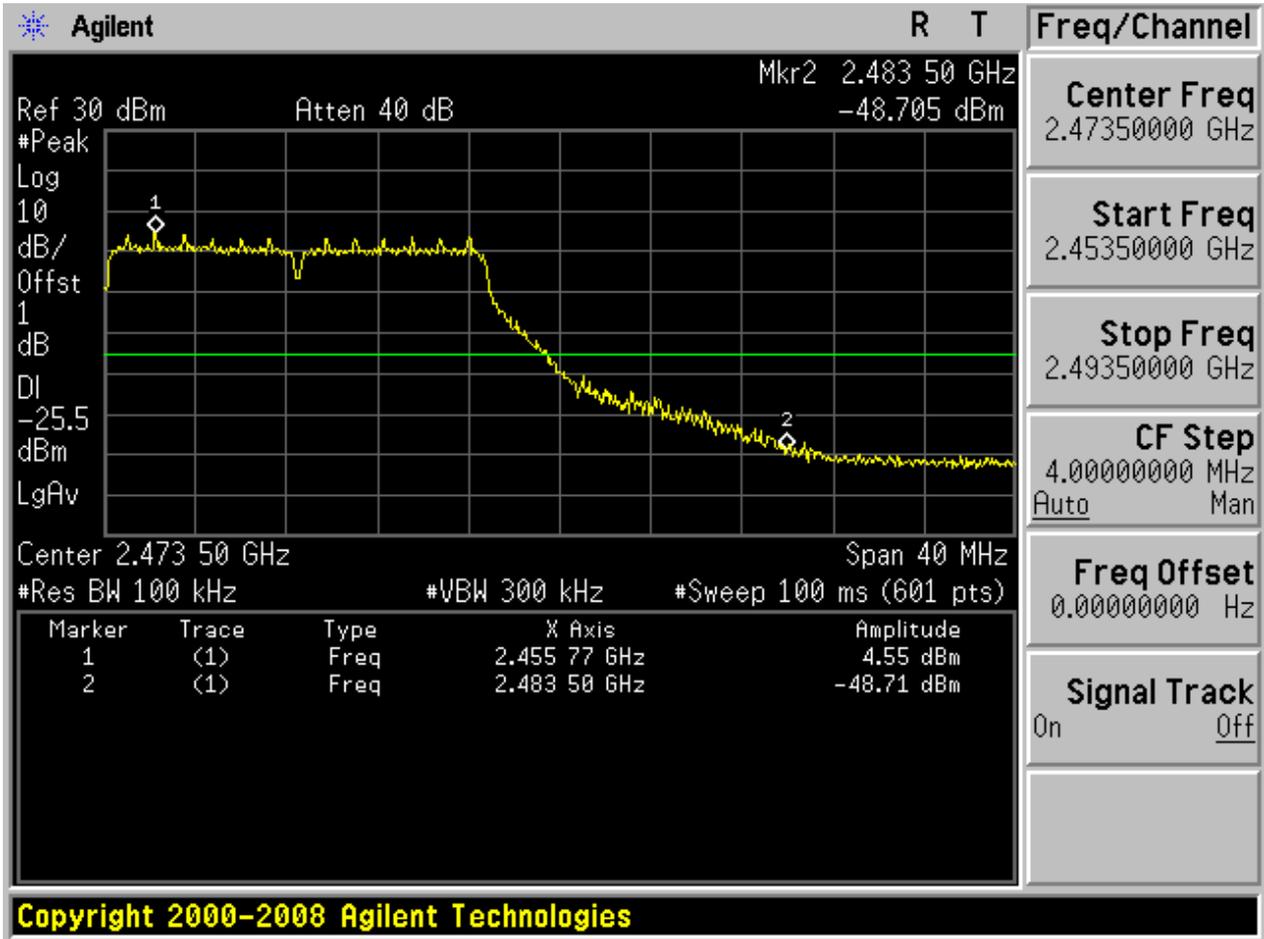


2.5 11G\_L@Ant 1



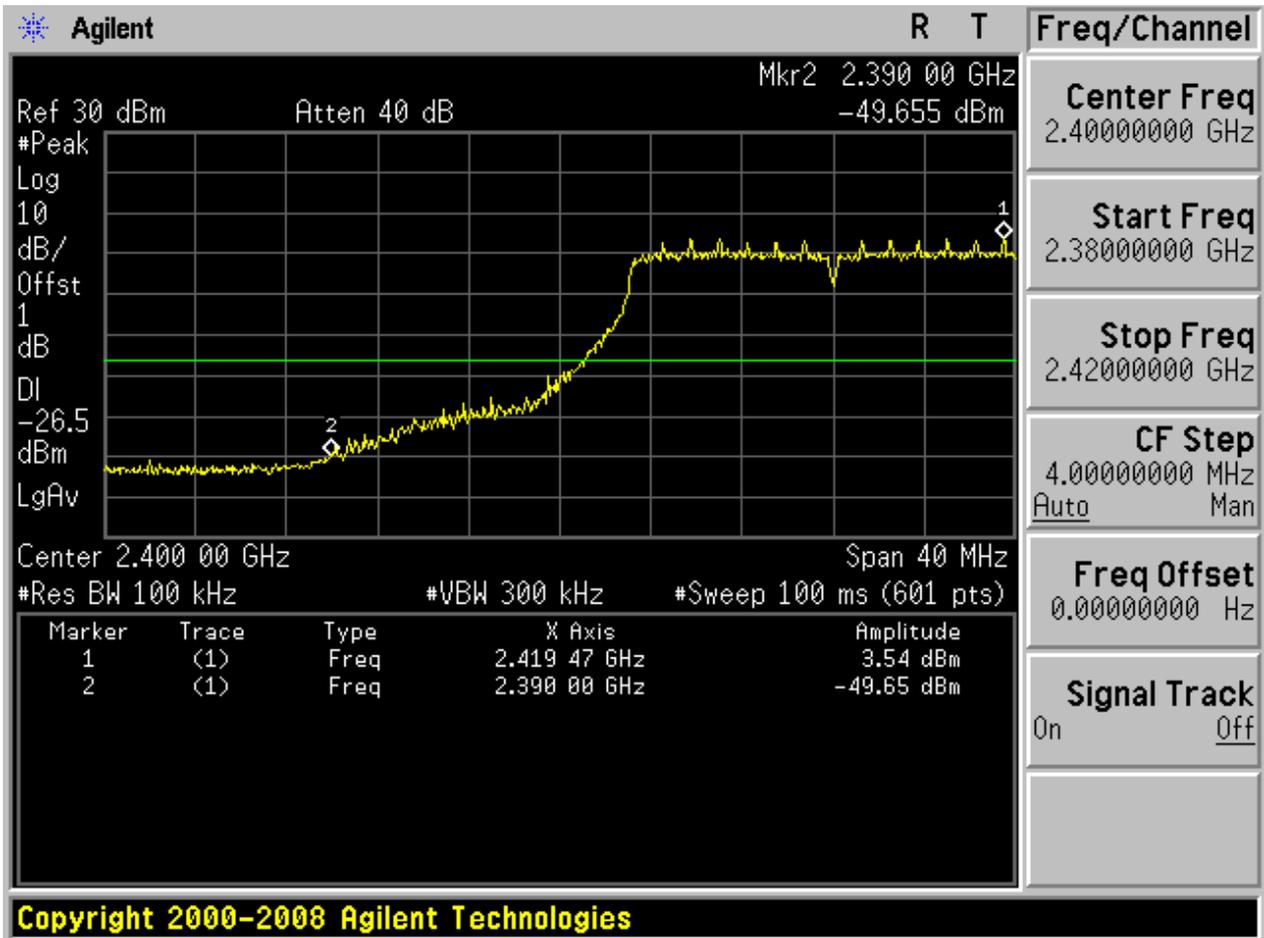


2.7 11G\_H@Ant 1



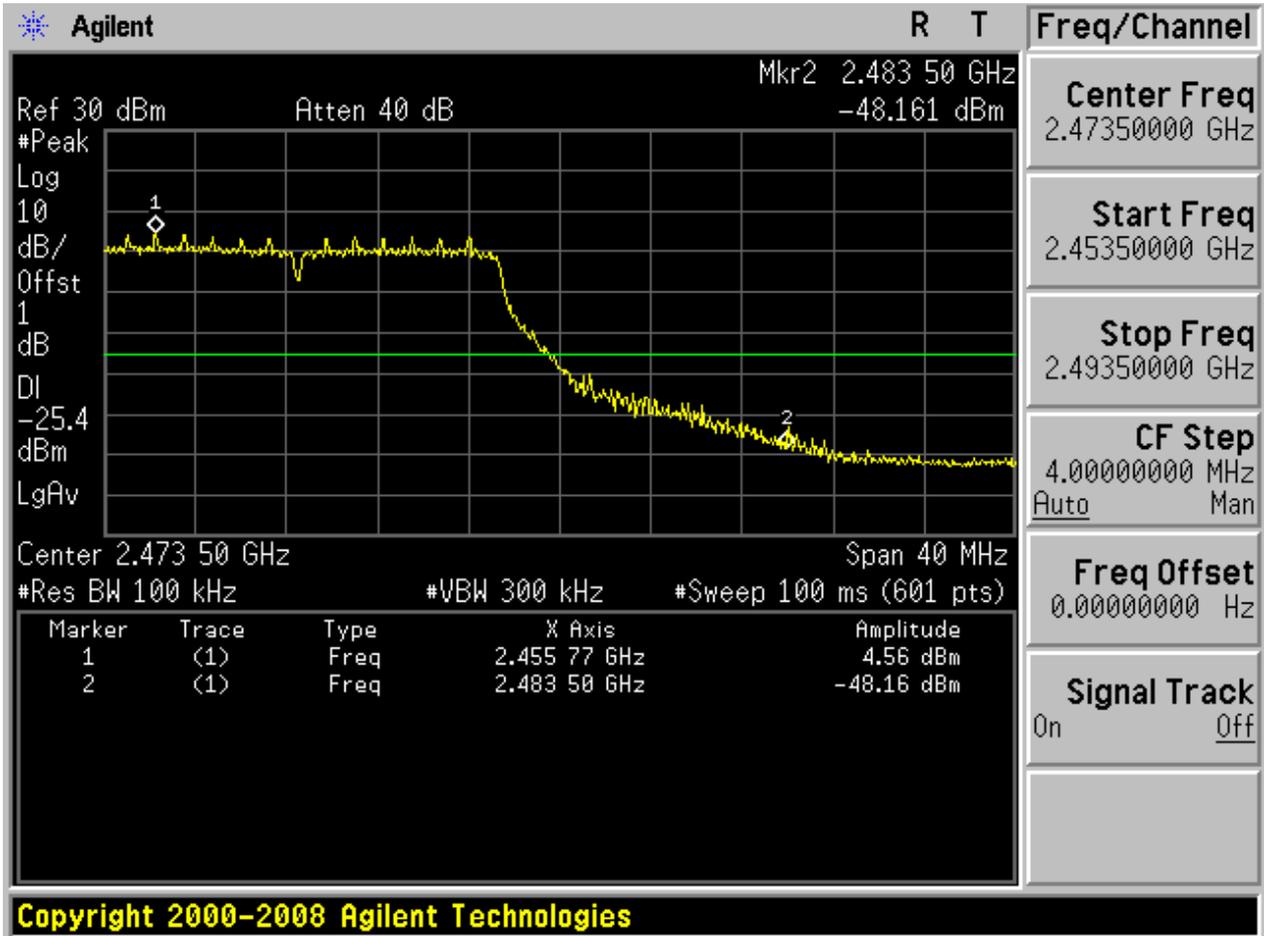


2.9 11N20\_L@Ant 1





2.11 11N20\_H@Ant 1



## 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

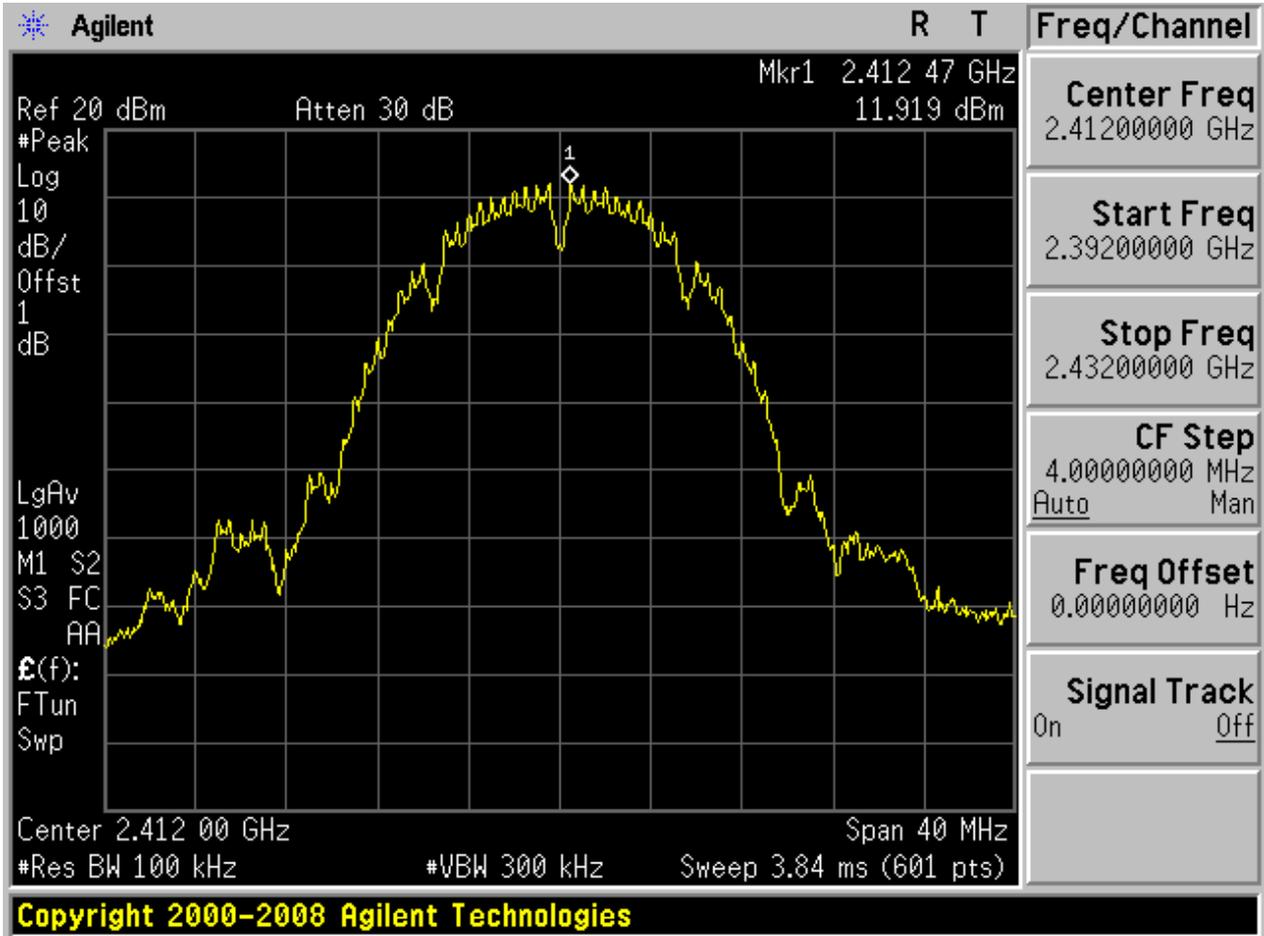
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	11.92	<limit	pass
11B	M	2437	Ant 1	12.10	<limit	pass
11B	H	2462	Ant 1	12.41	<limit	pass
11G	L	2412	Ant 1	3.81	<limit	pass
11G	M	2437	Ant 1	4.15	<limit	pass
11G	H	2462	Ant 1	4.56	<limit	pass
11N20	L	2412	Ant 1	3.90	<limit	pass
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11N20	H	2462	Ant 1	4.59	<limit	pass



Part II - Test Plots

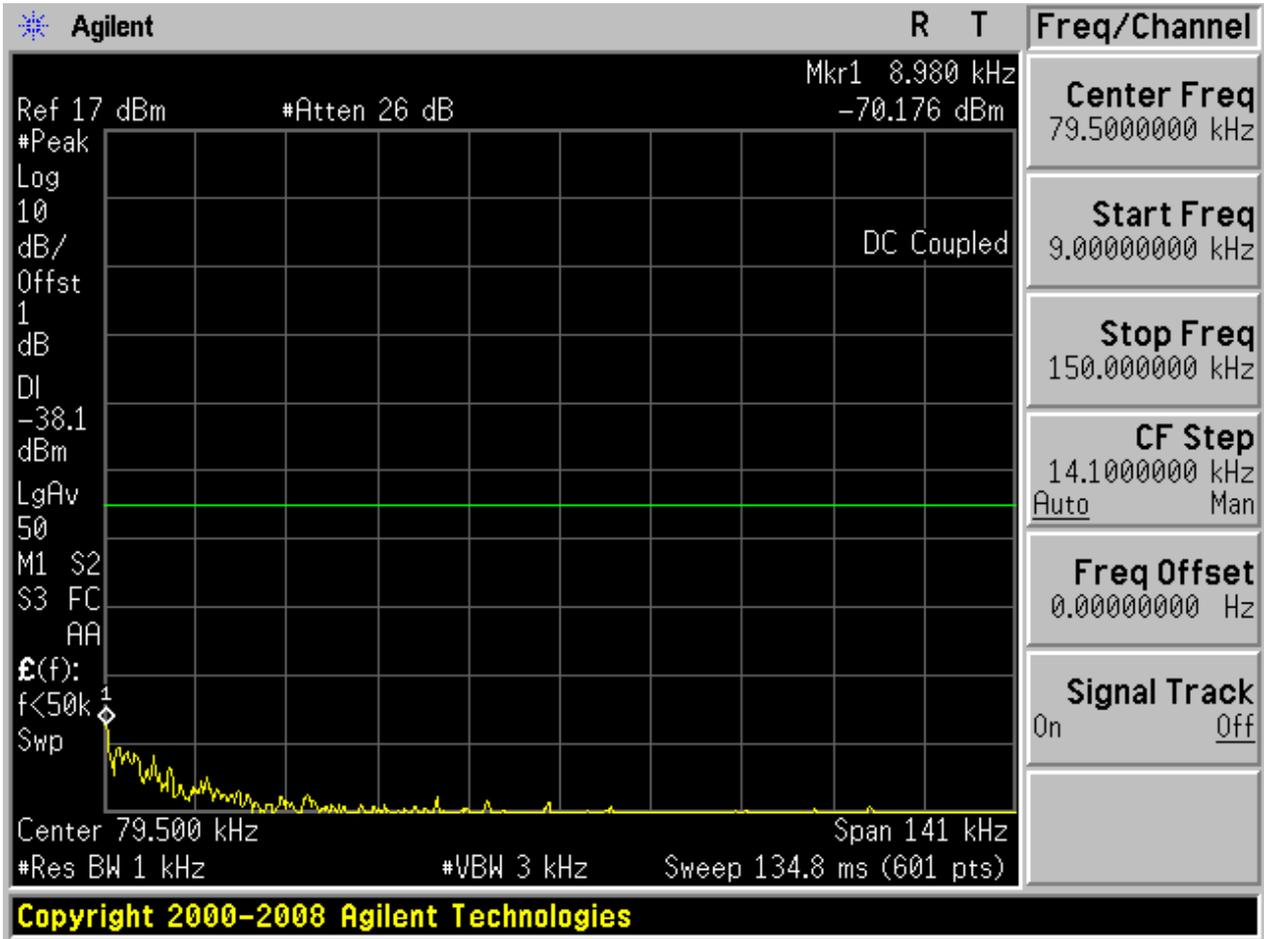
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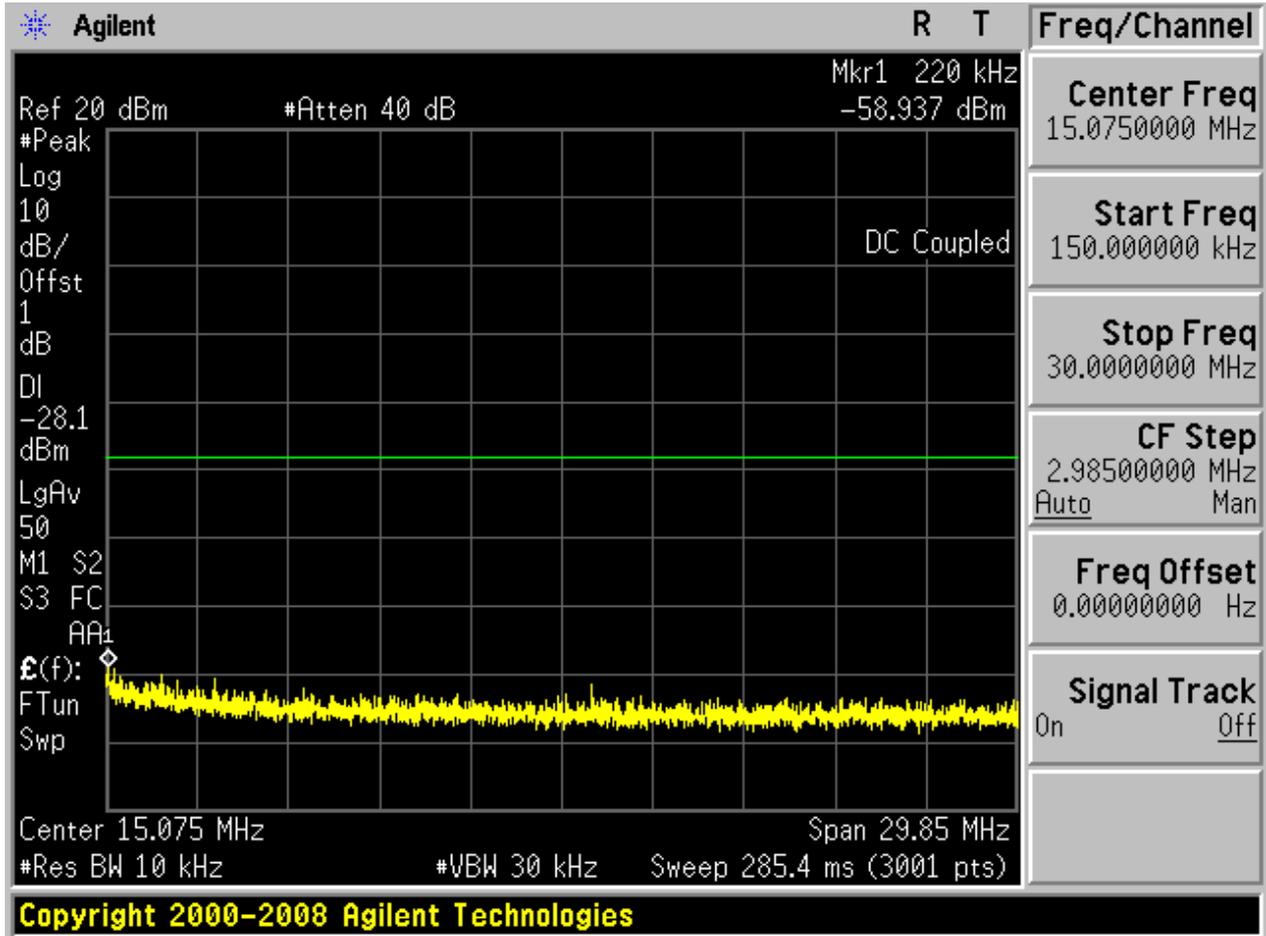
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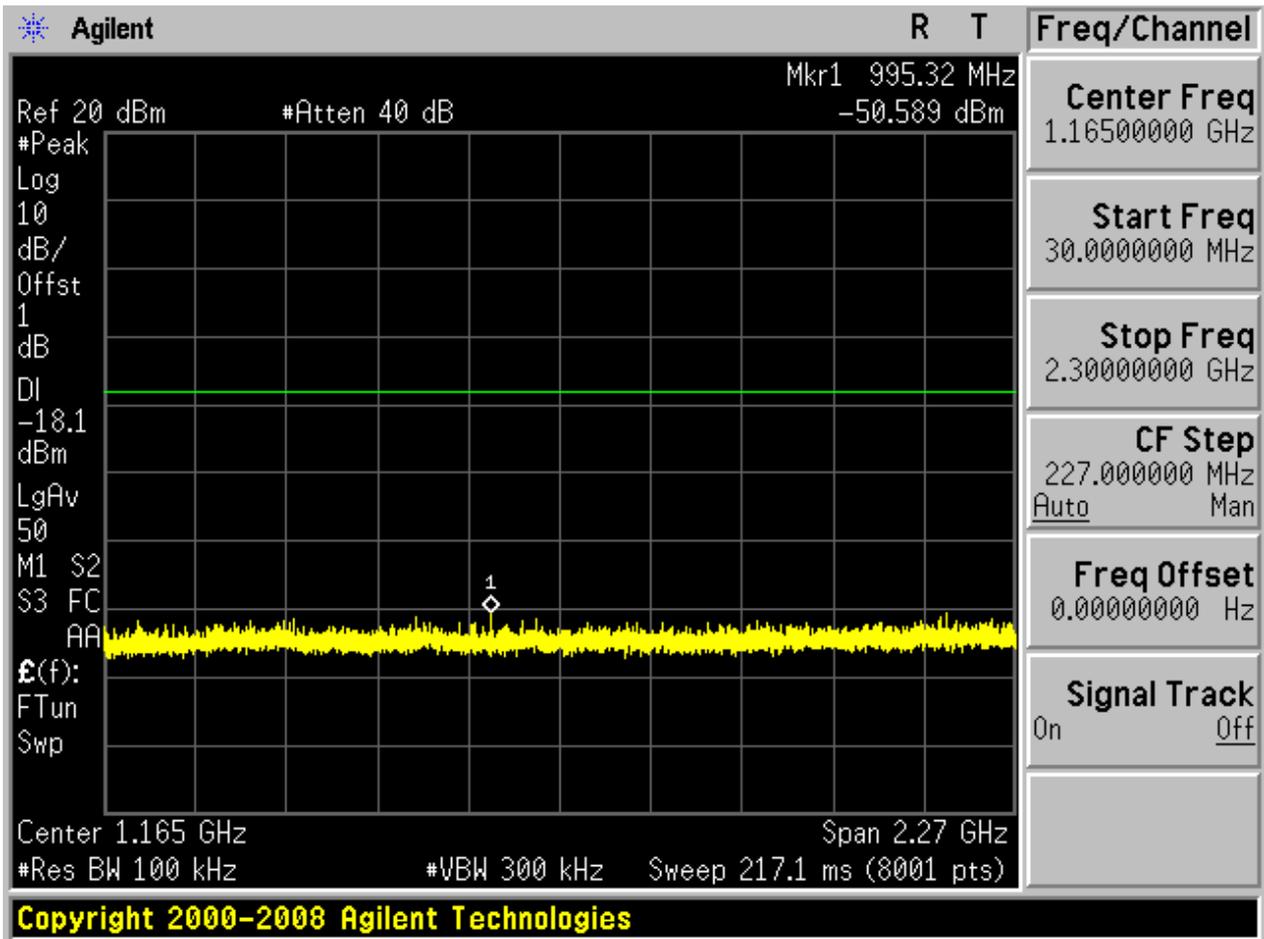


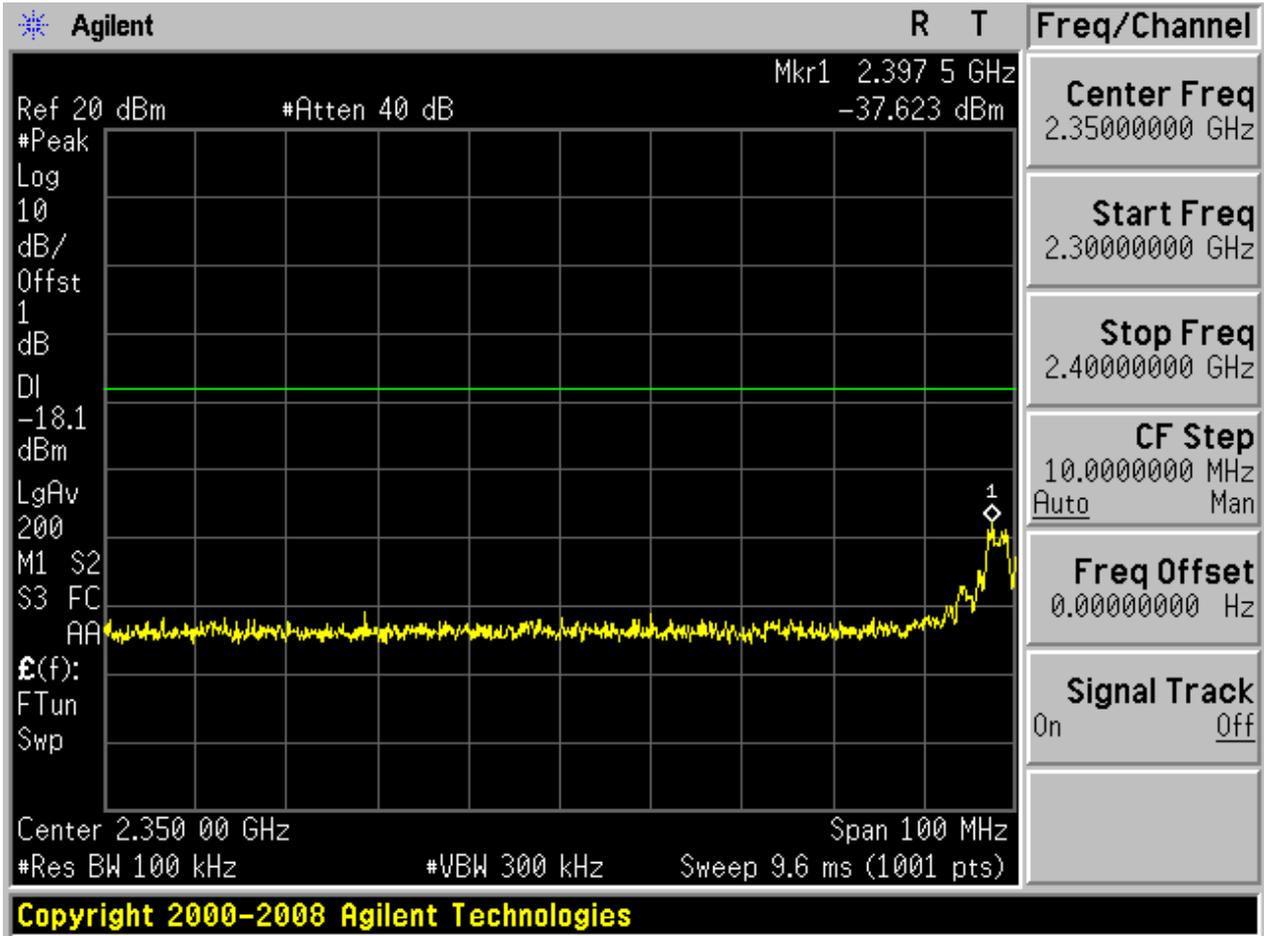


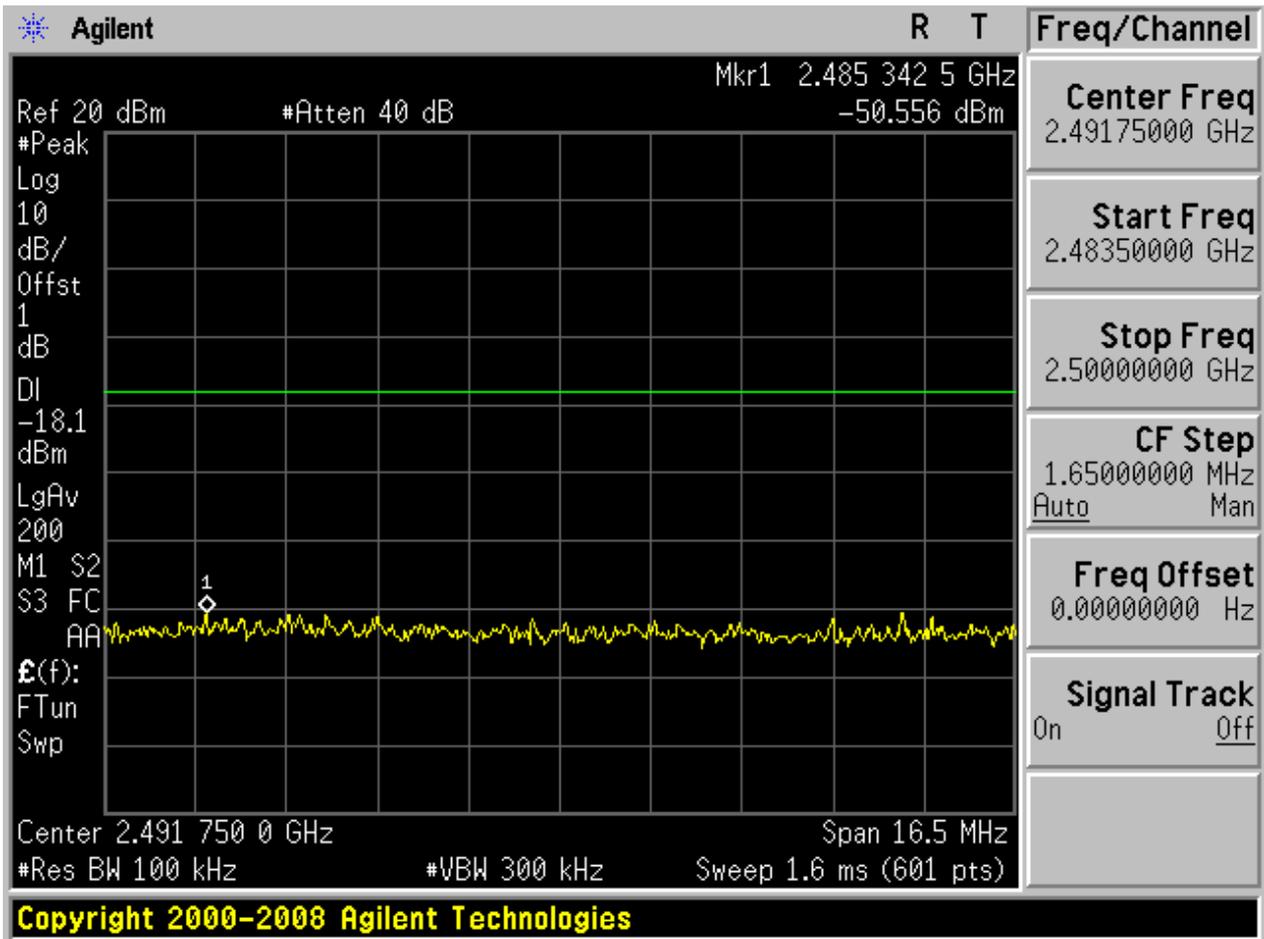
Puw:

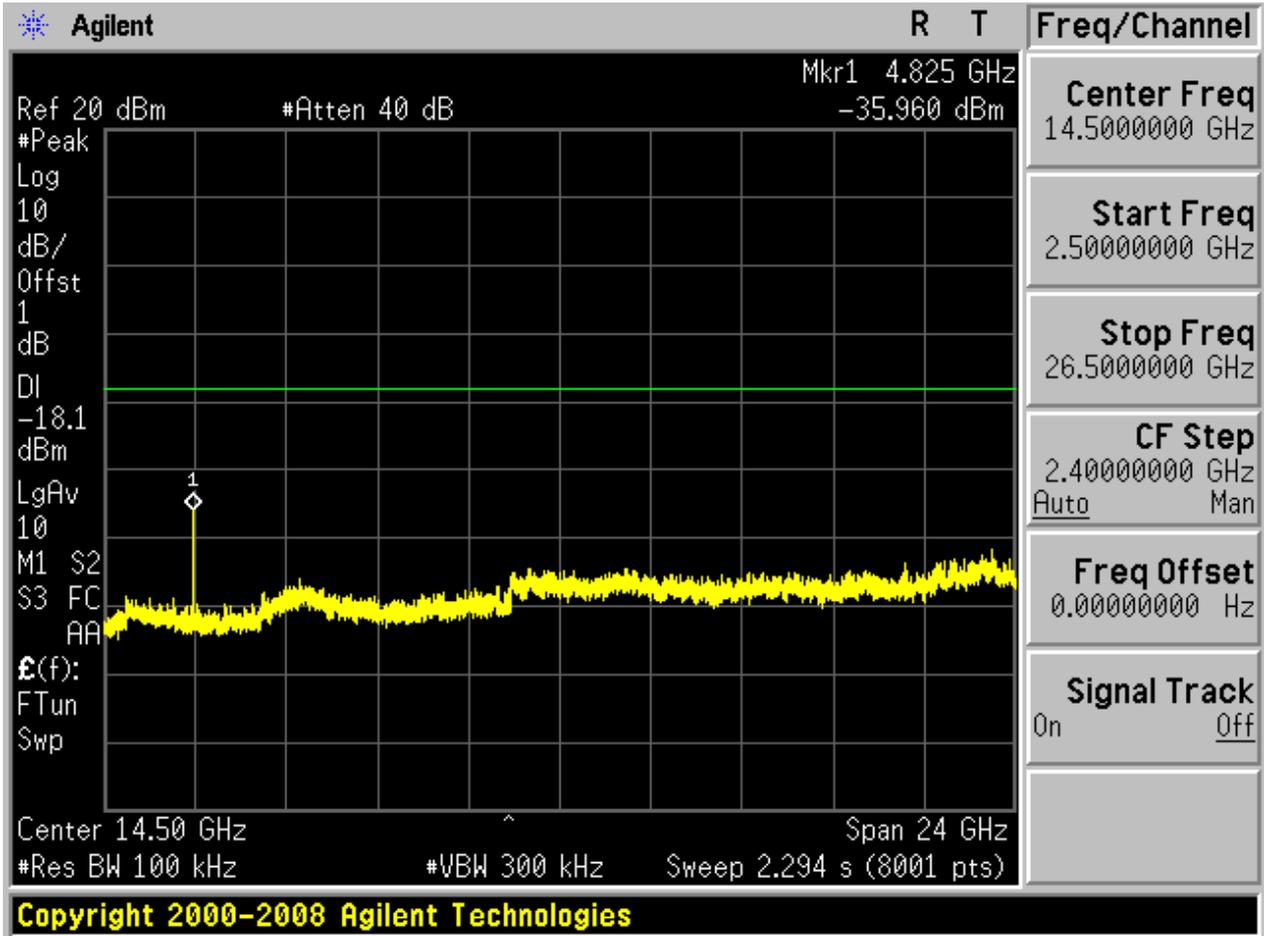








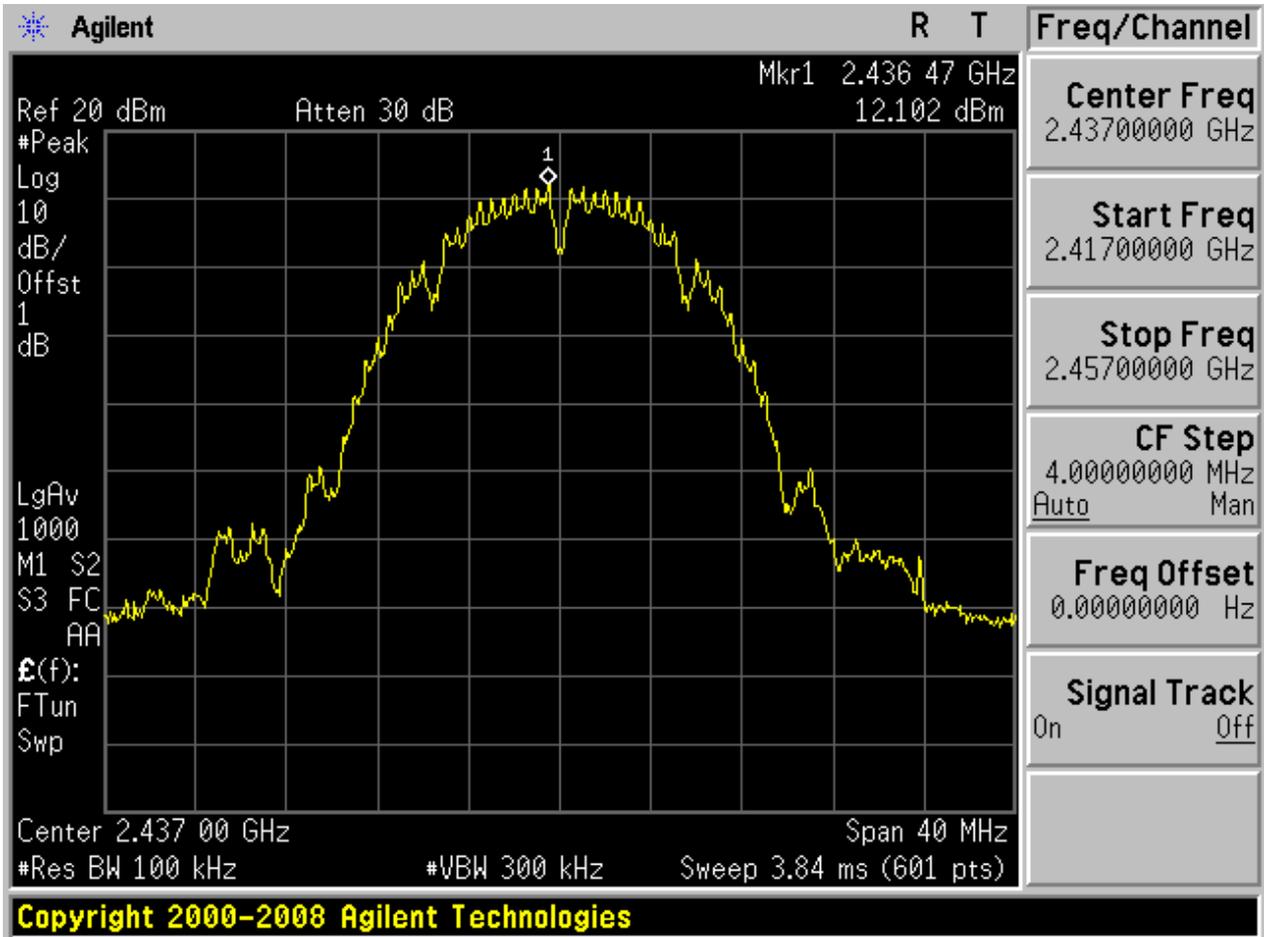






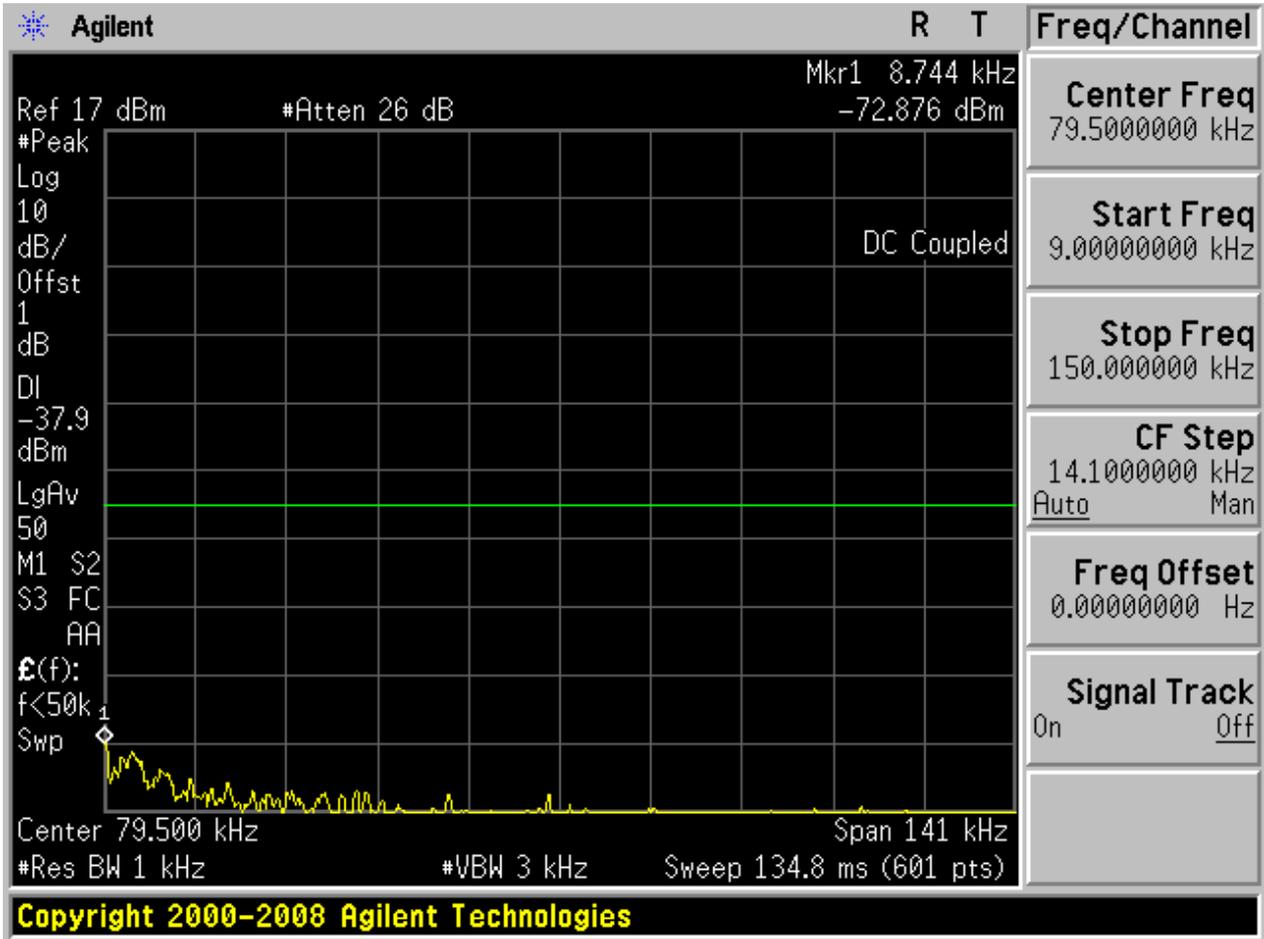
### 2.3 11B\_M@Ant 1

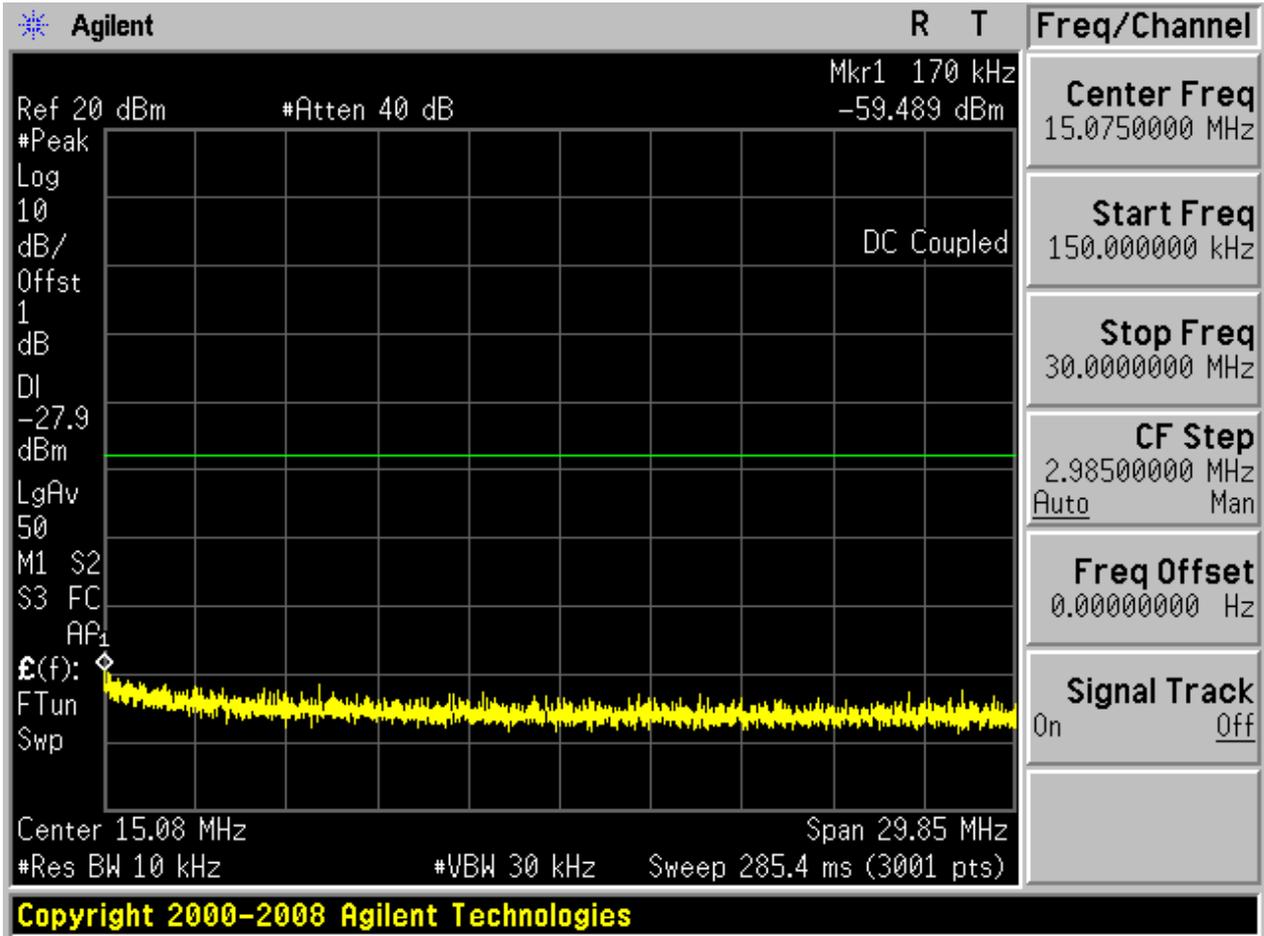
Pref:

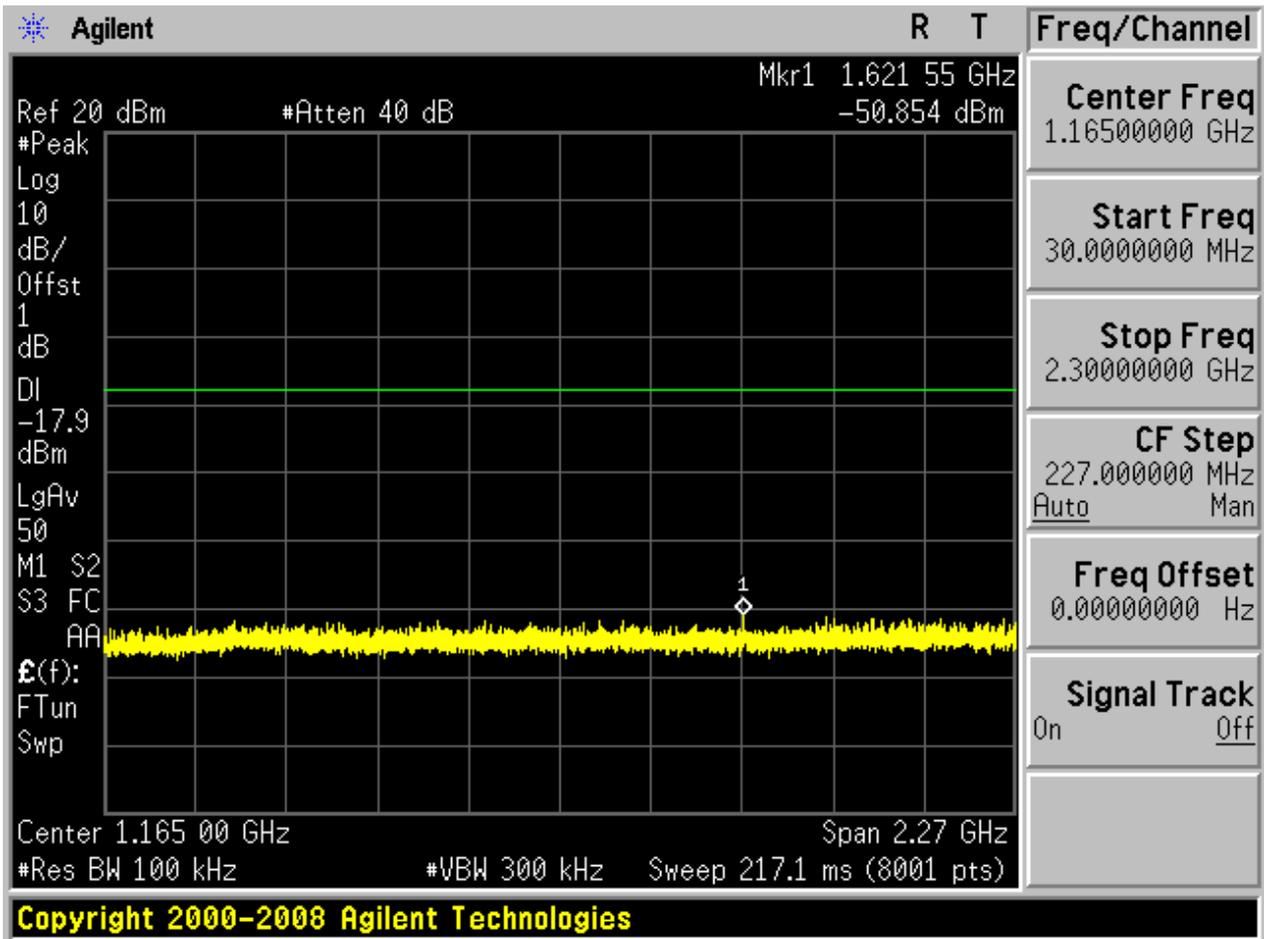


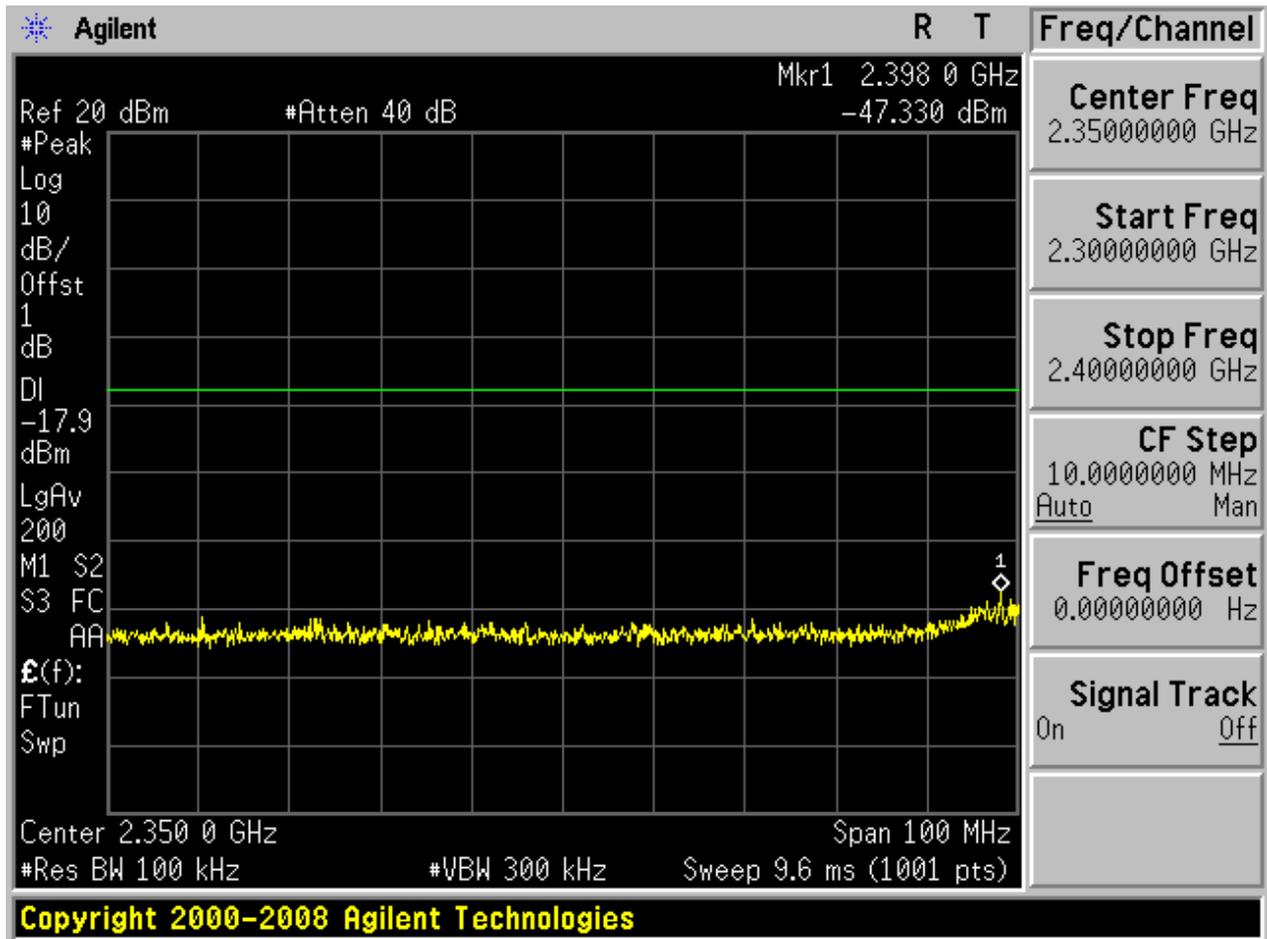


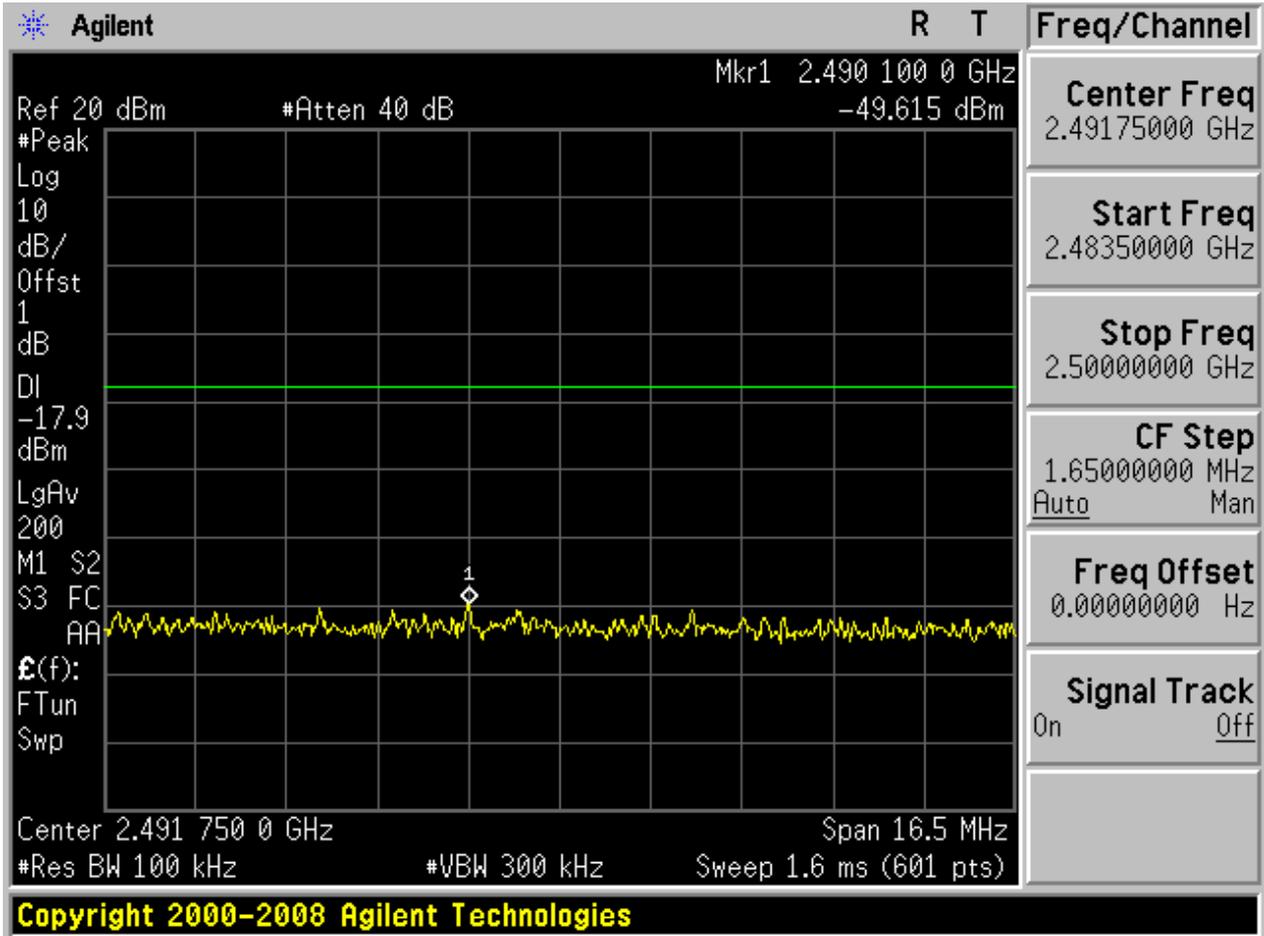
Puw:

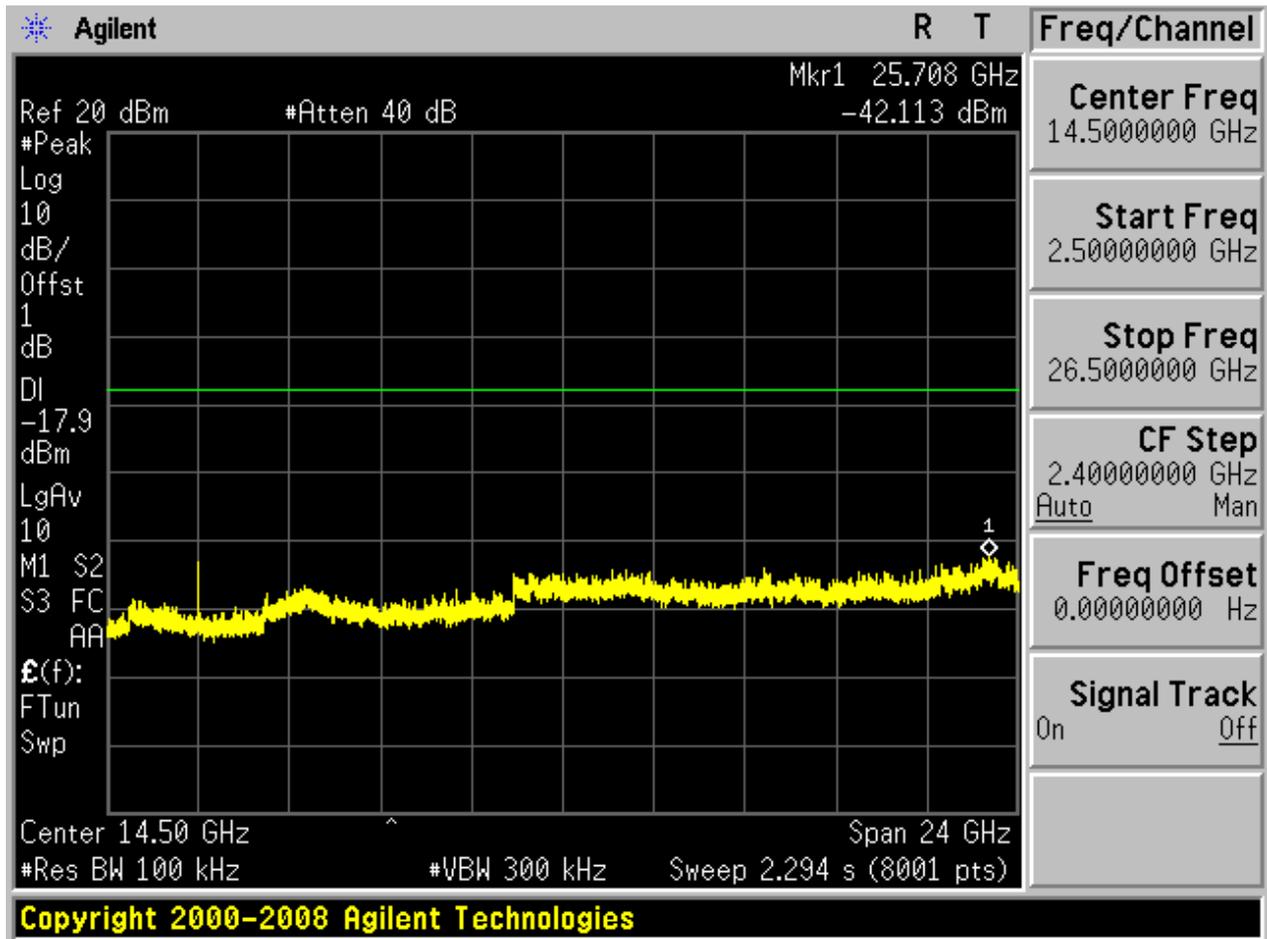








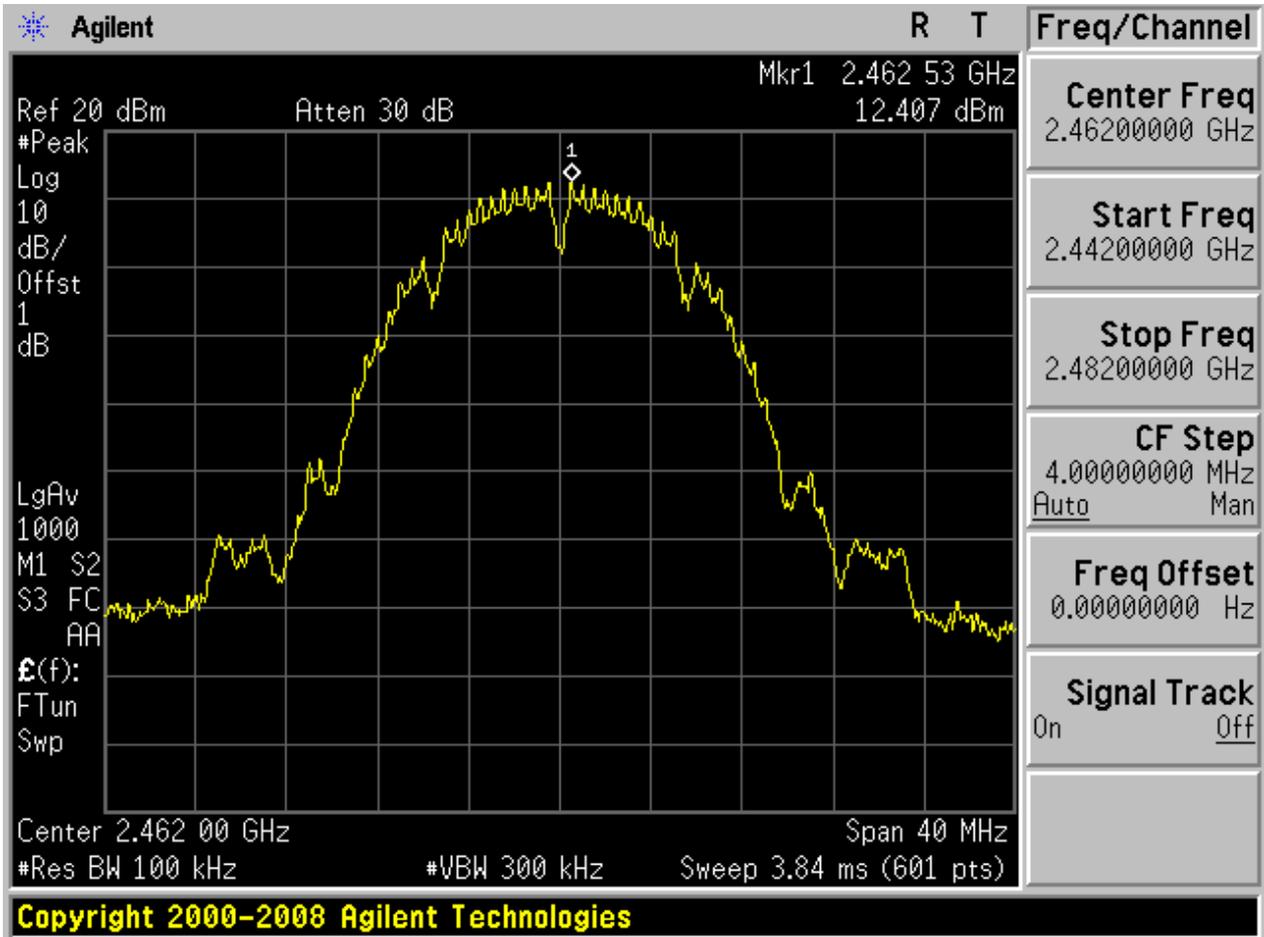






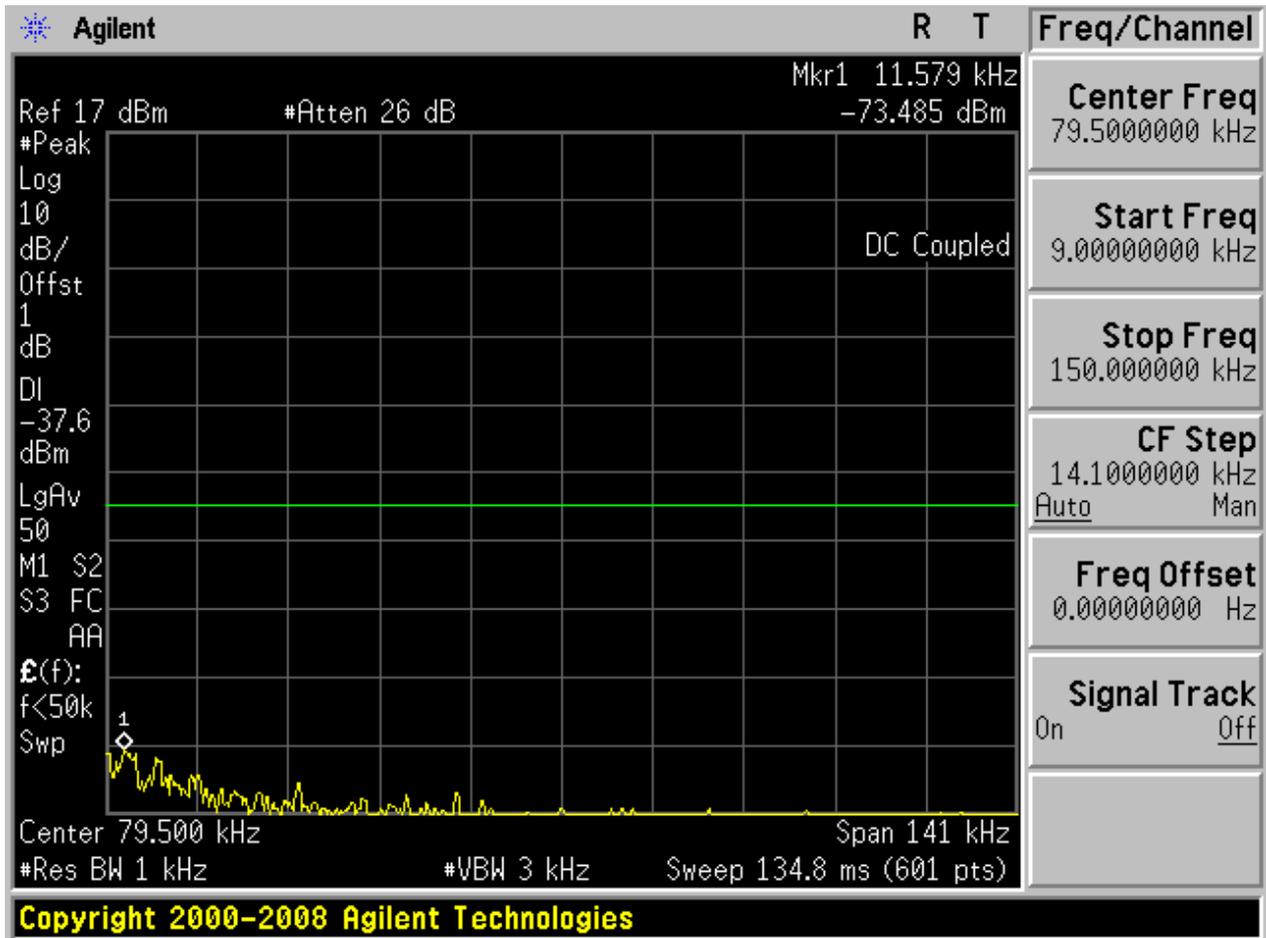
2.5 11B\_H@Ant 1

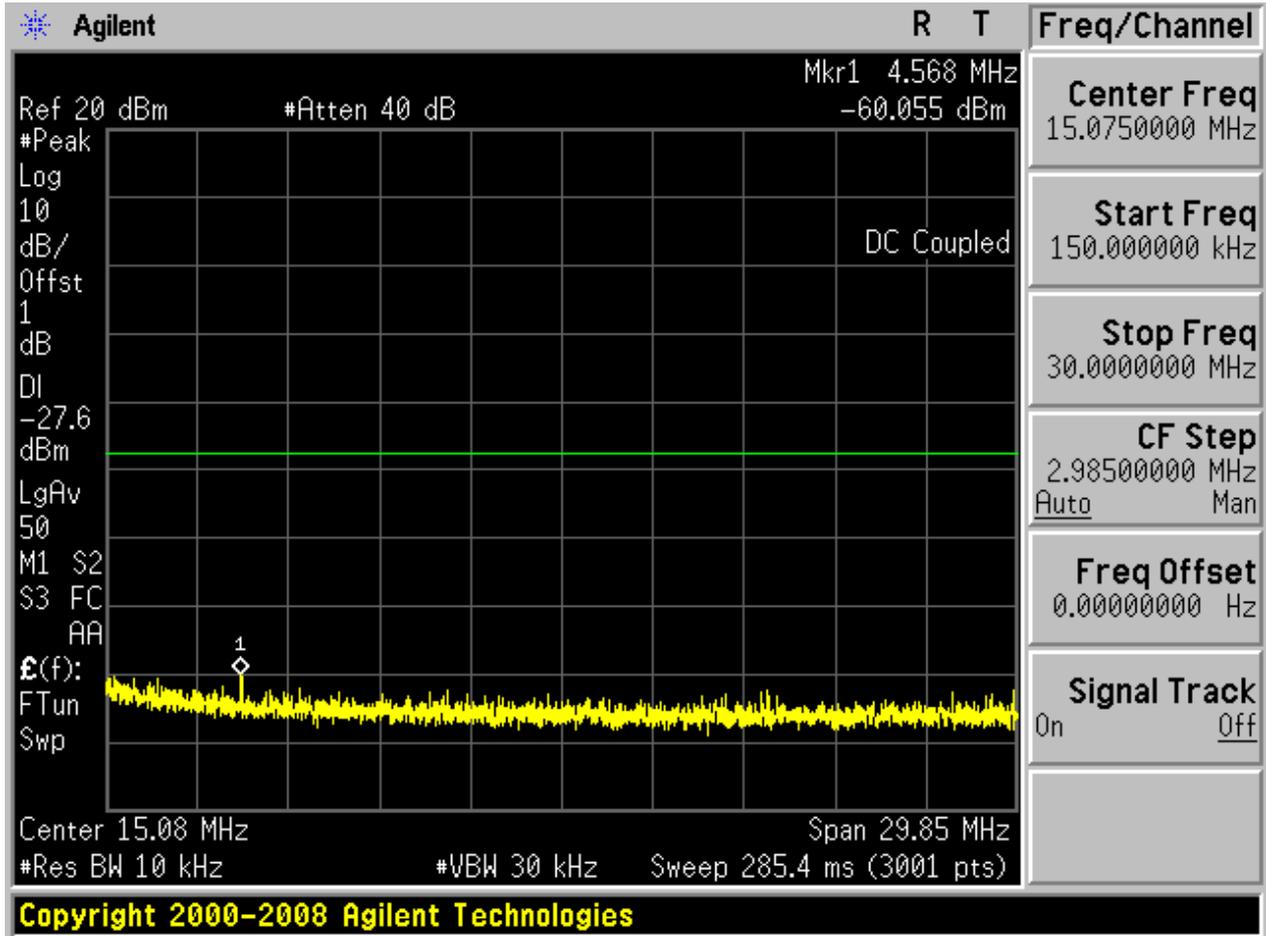
Pref:

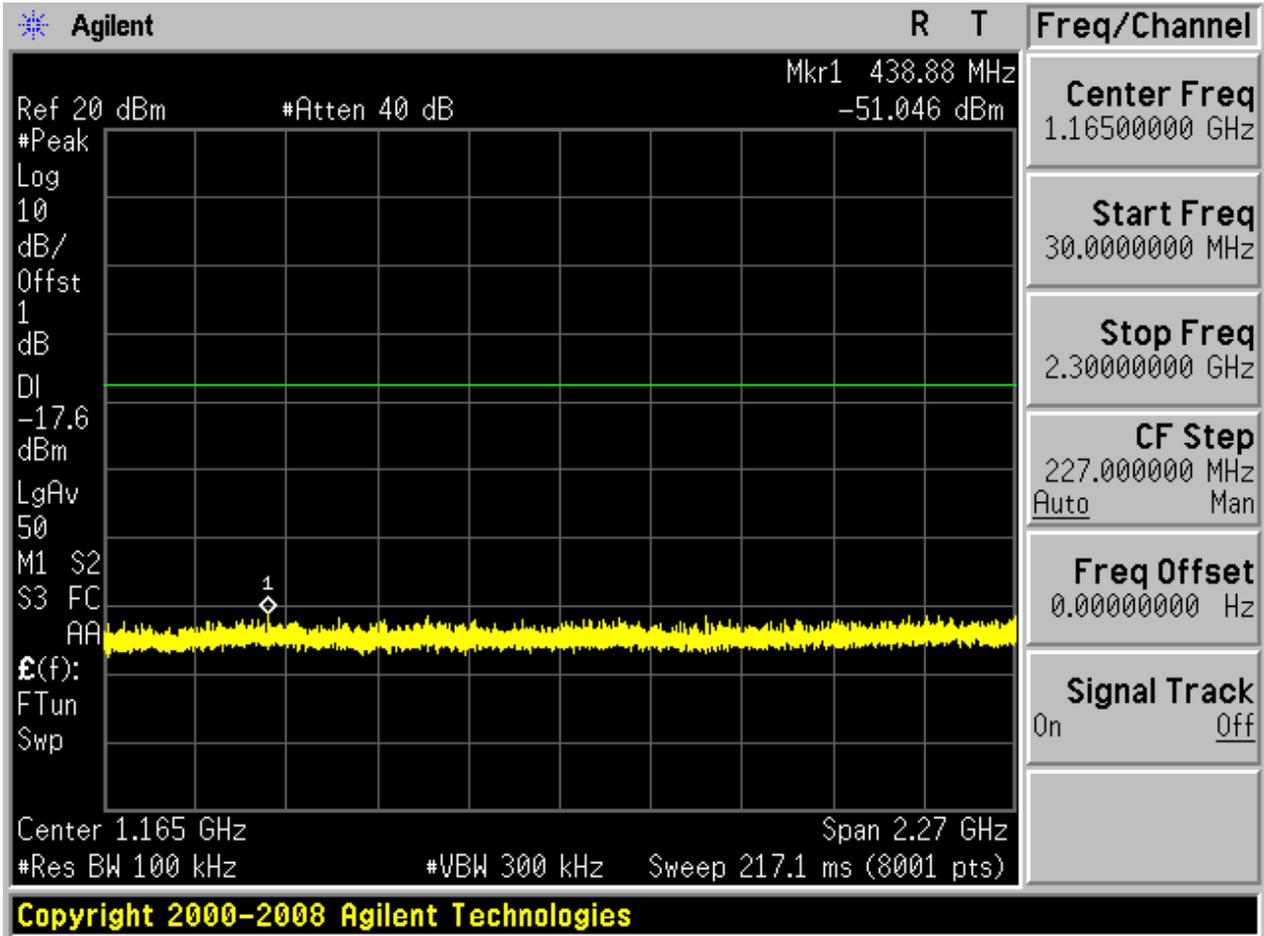


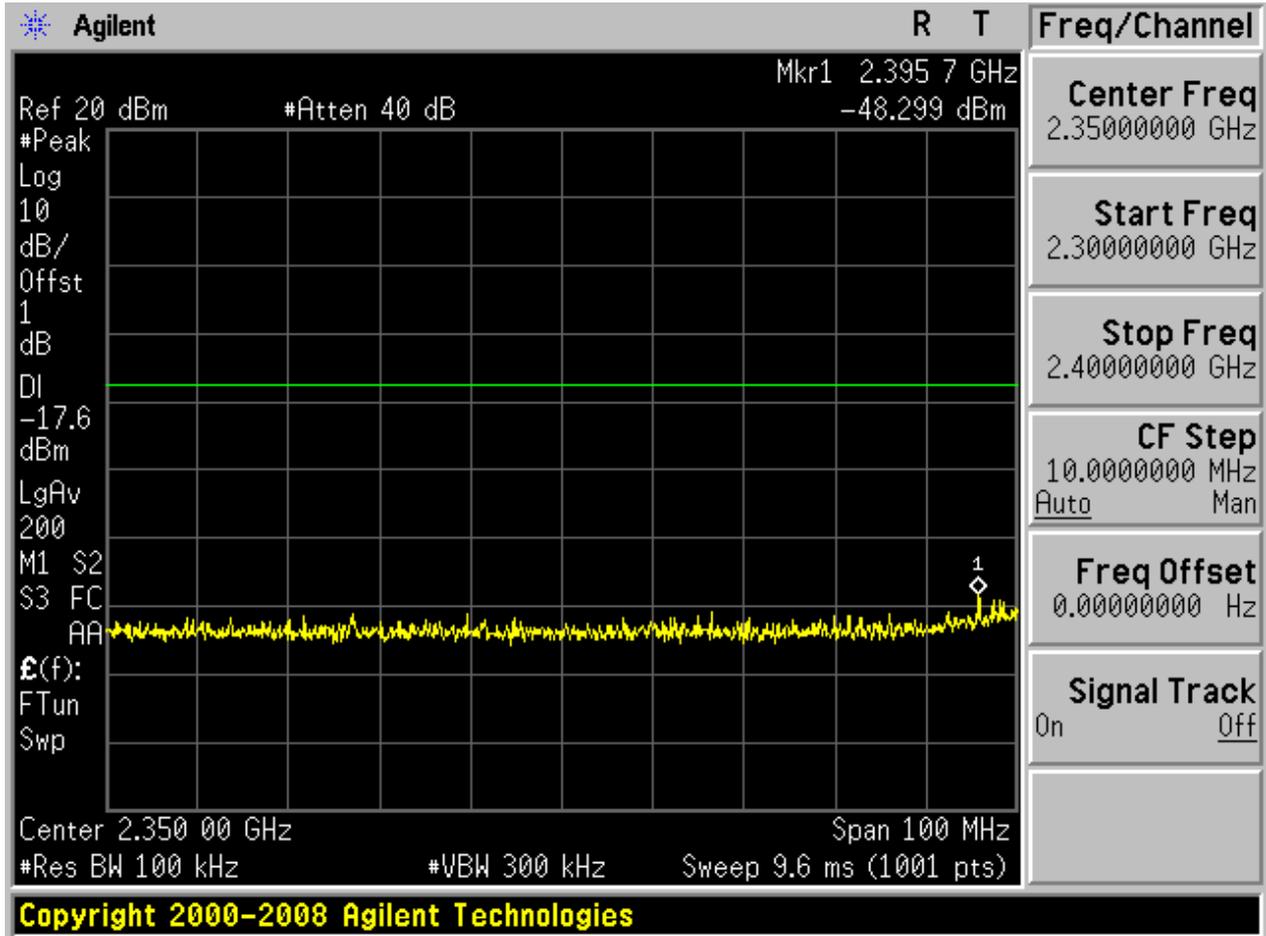


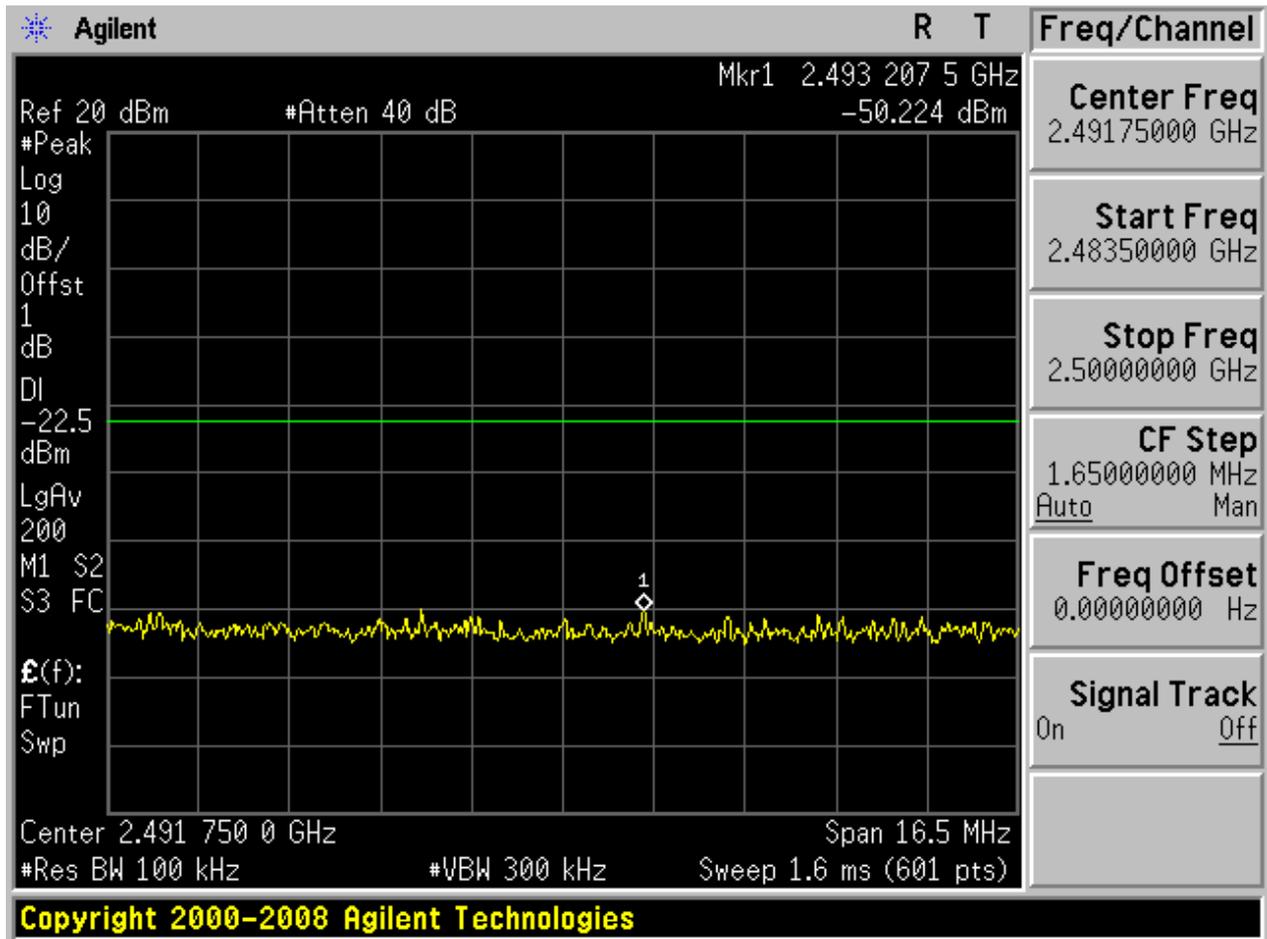
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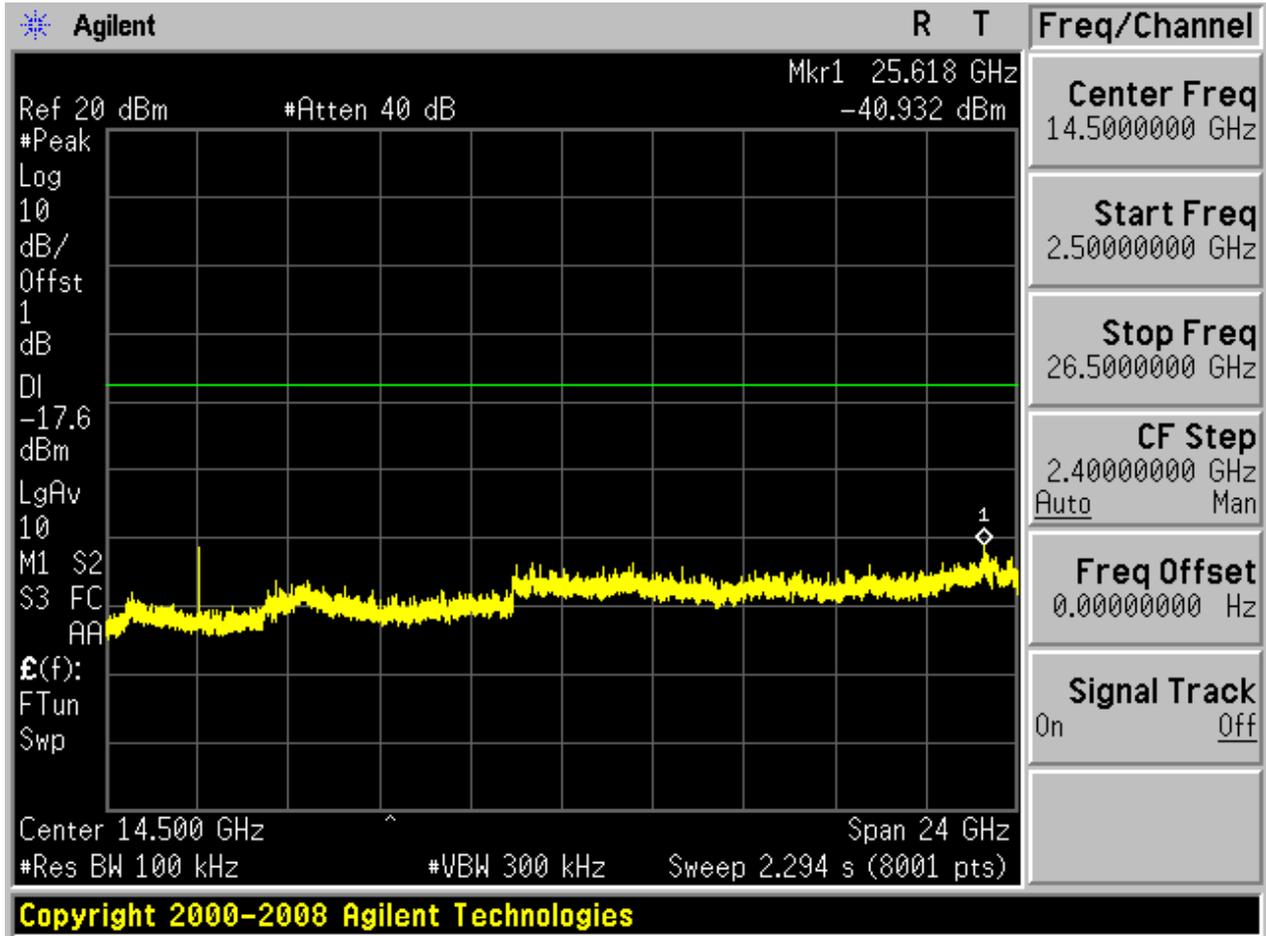








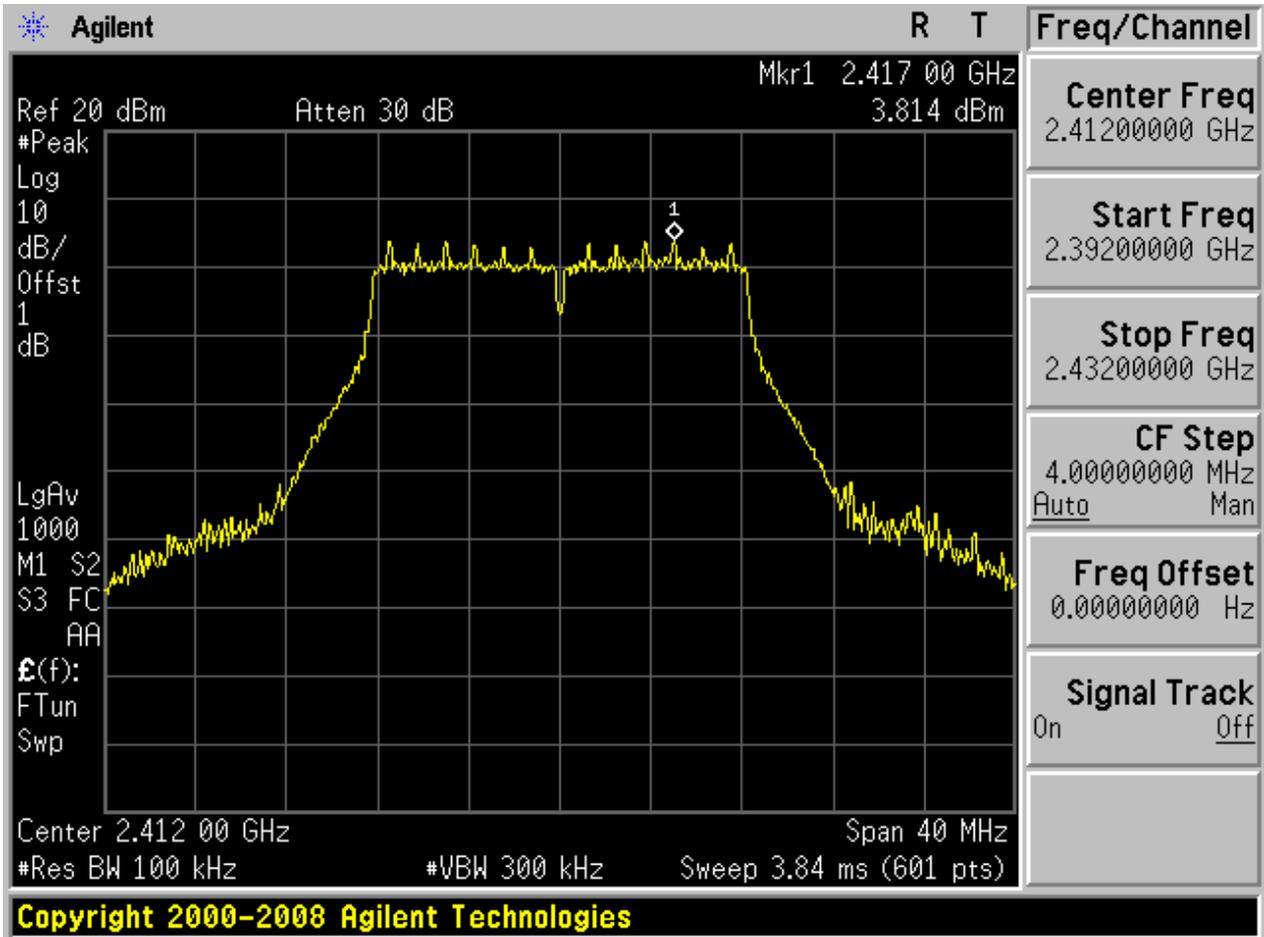






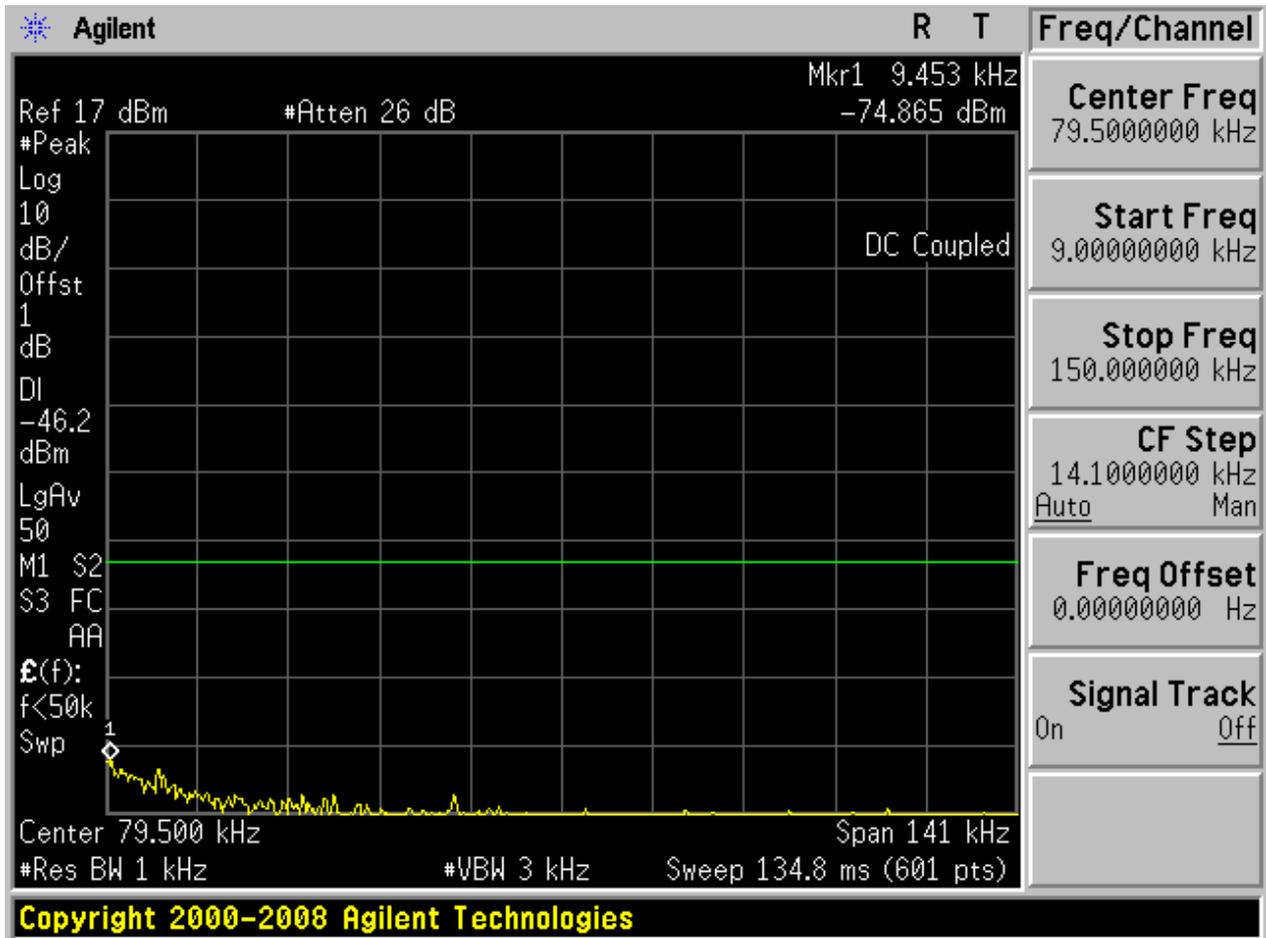
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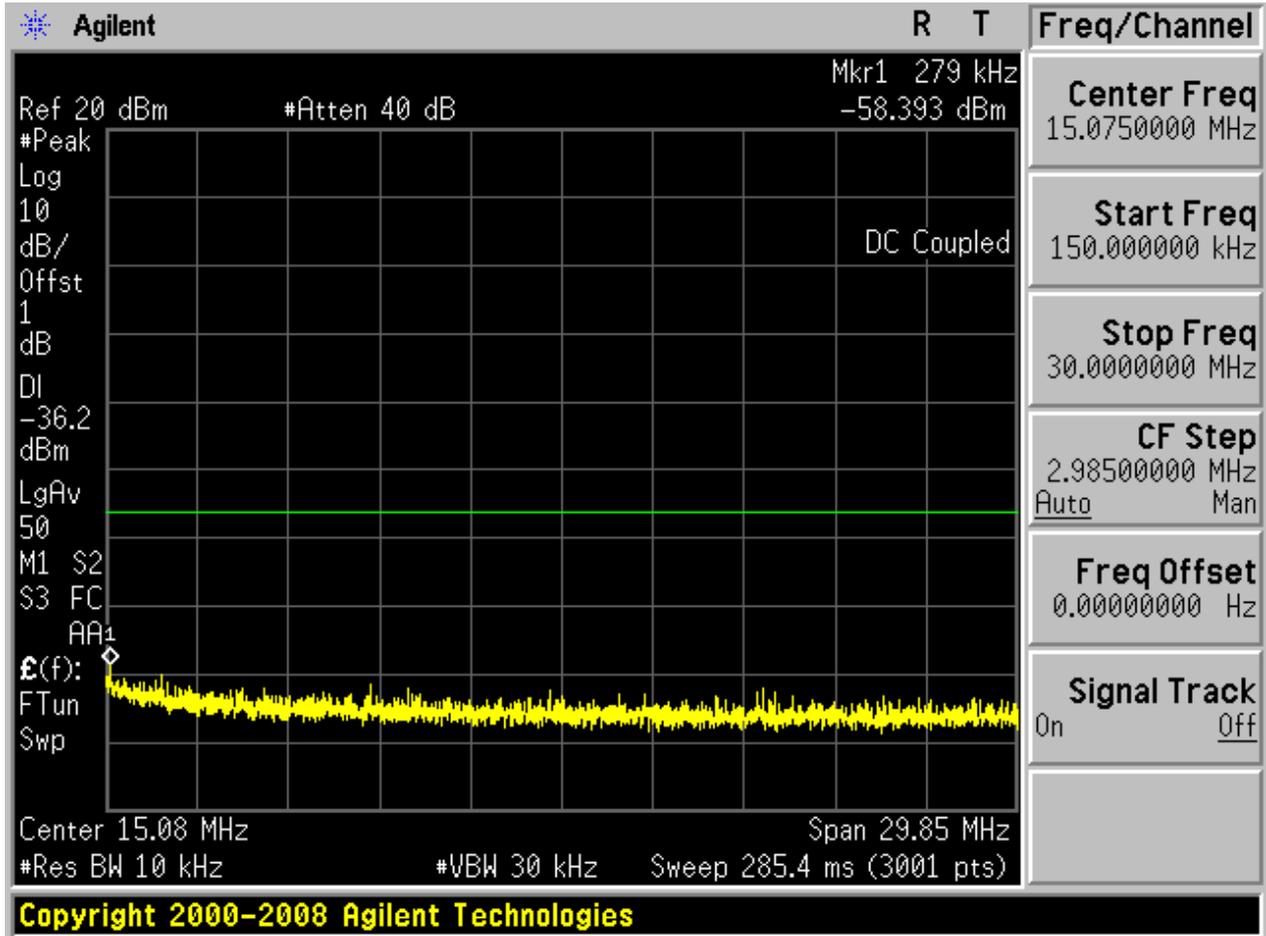
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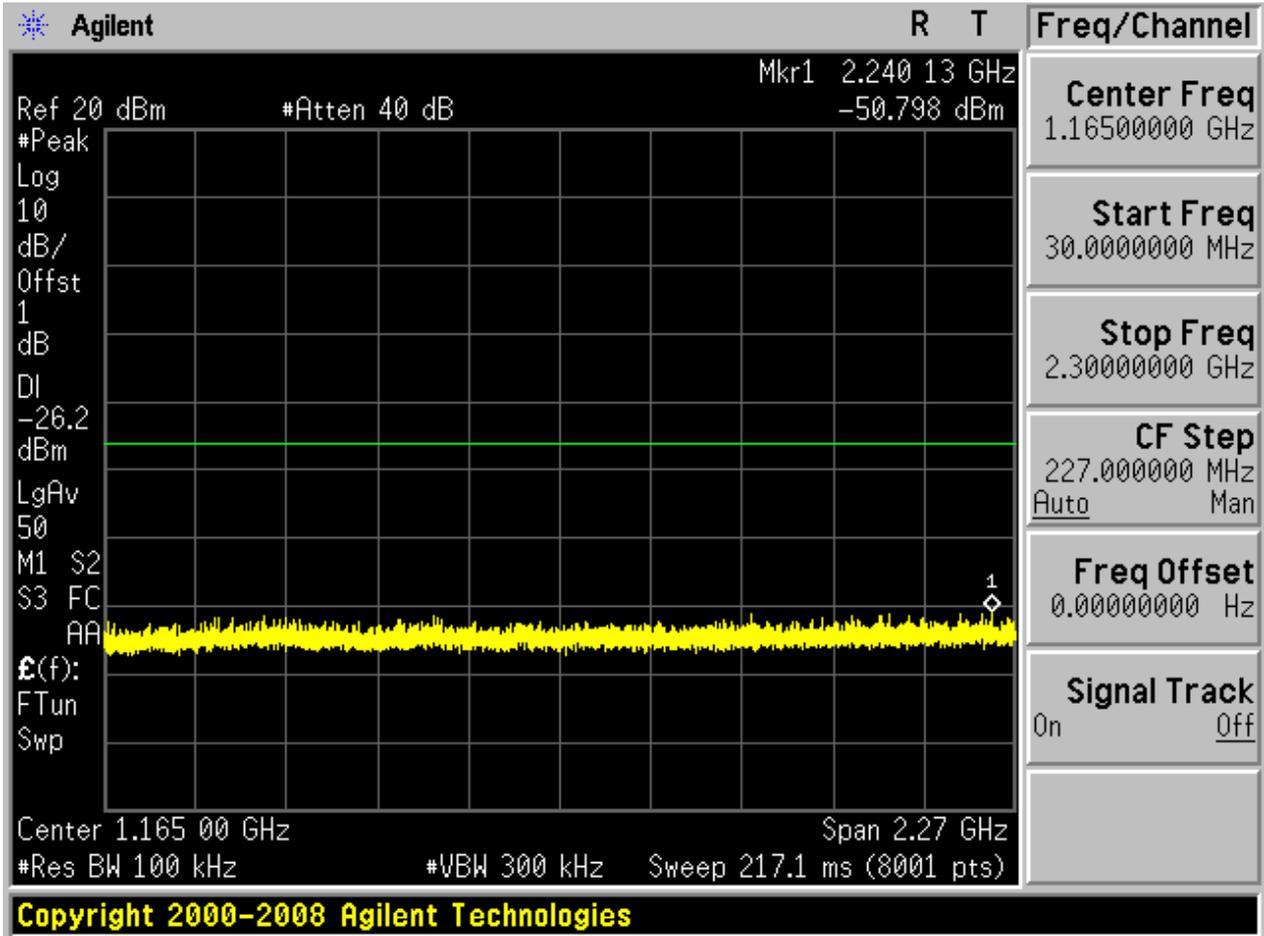


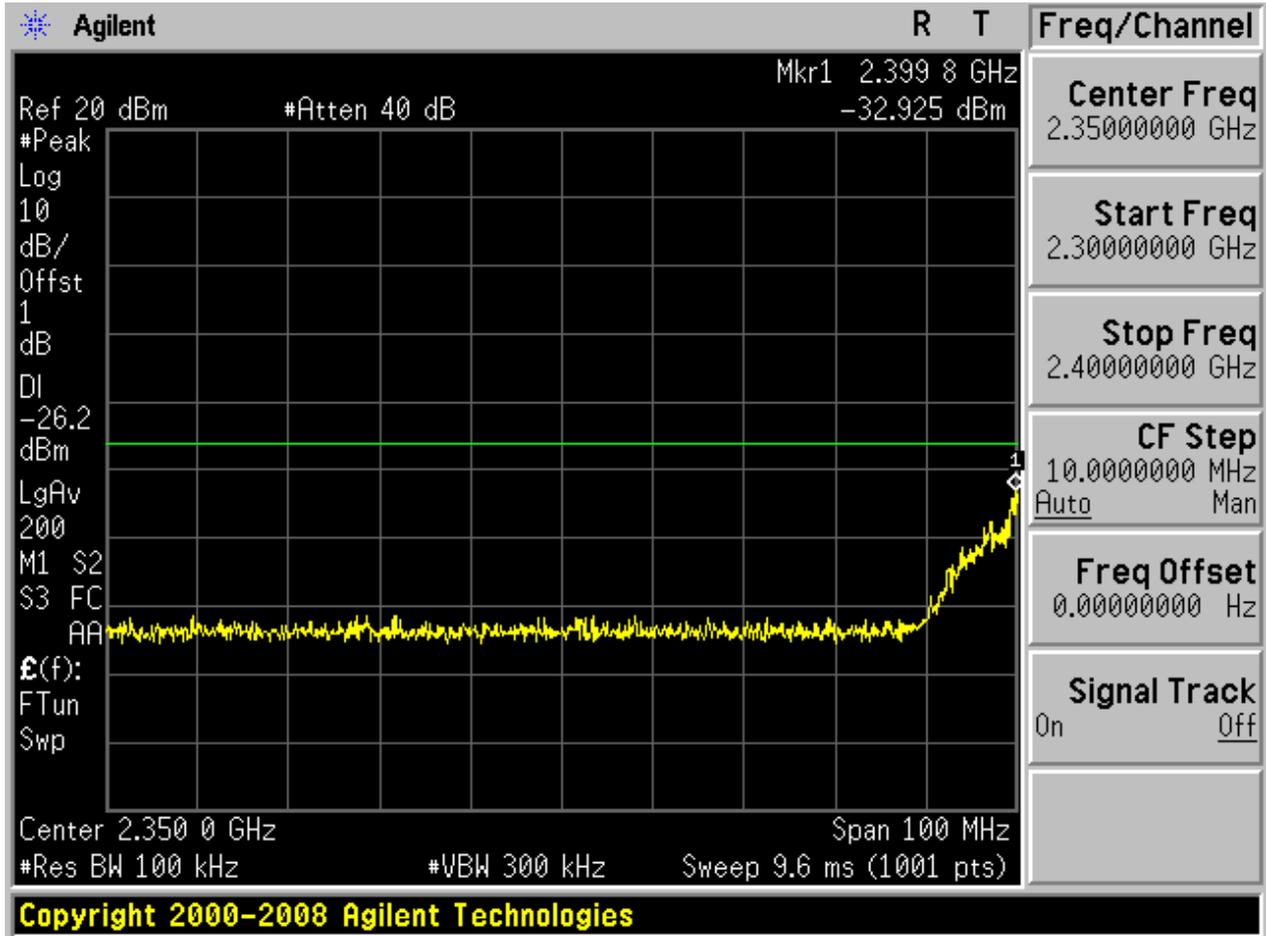


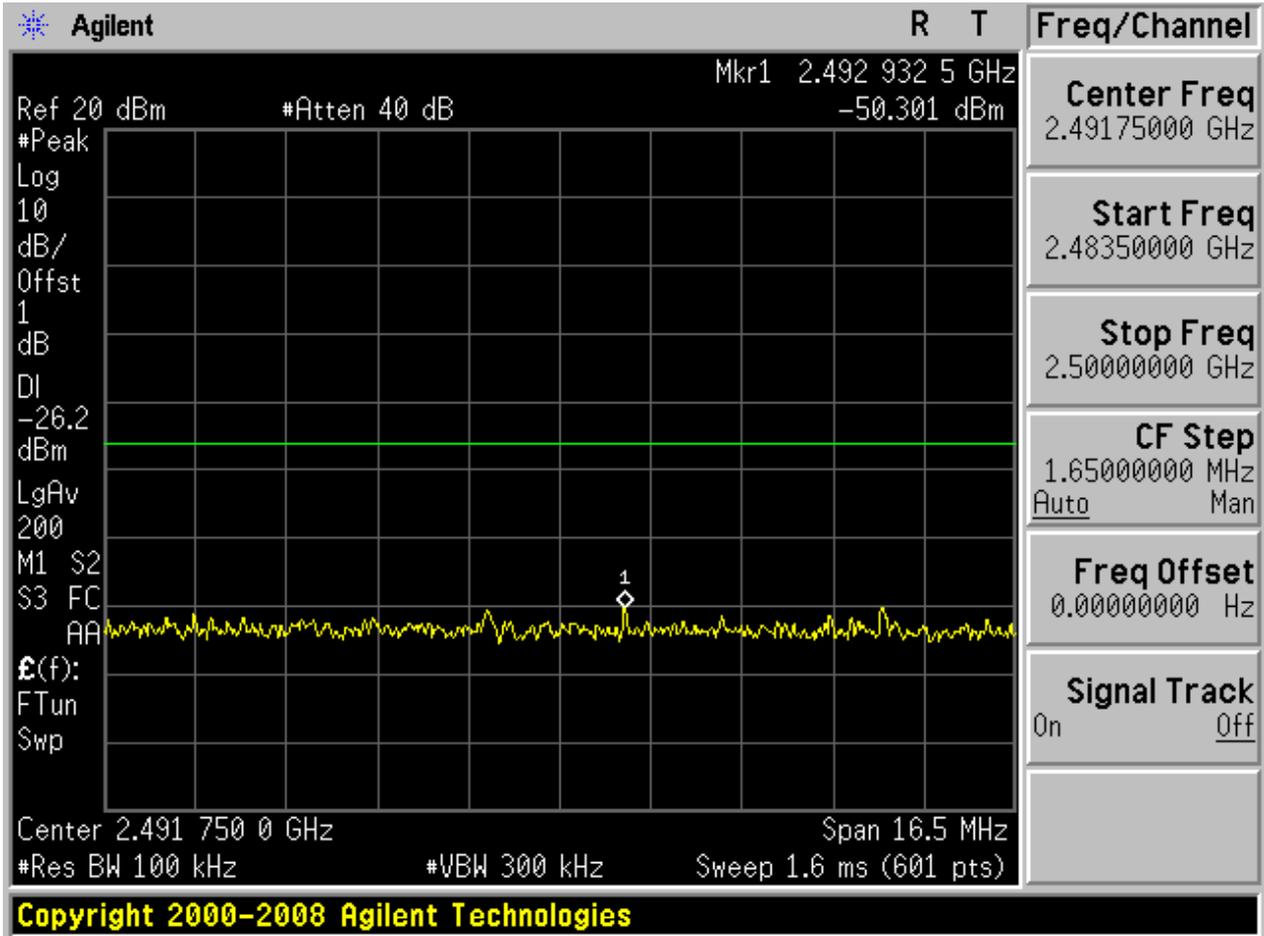
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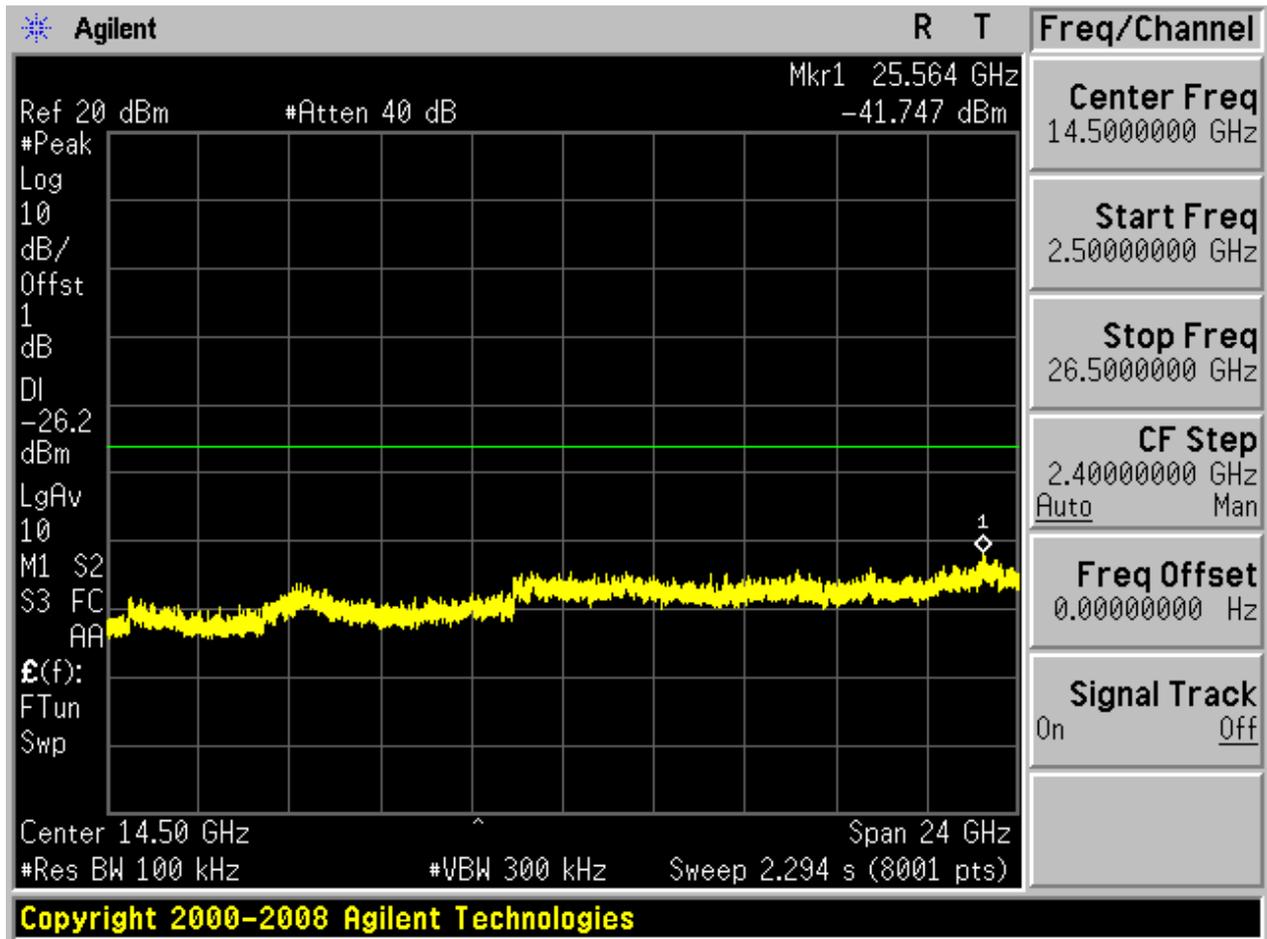








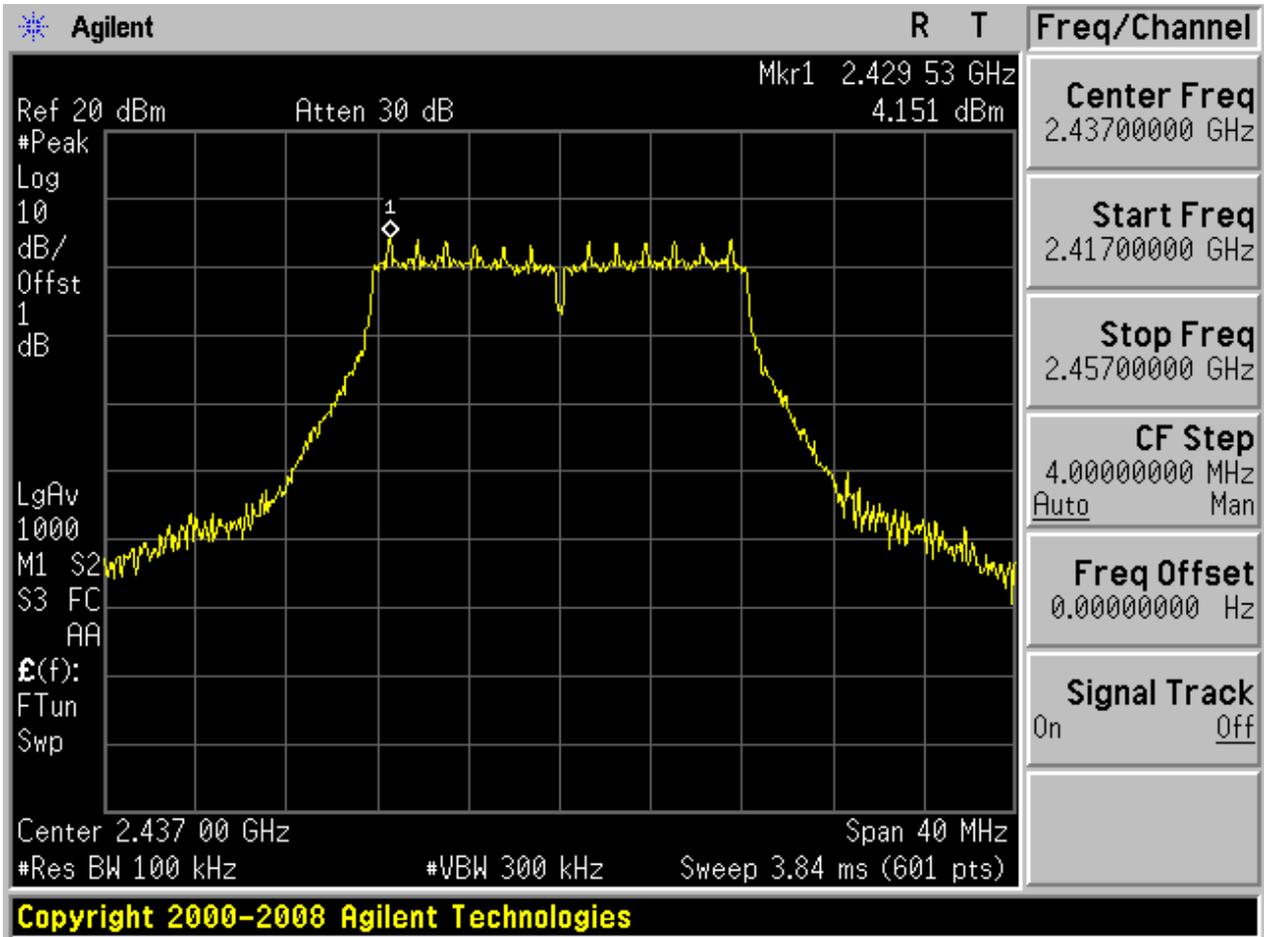






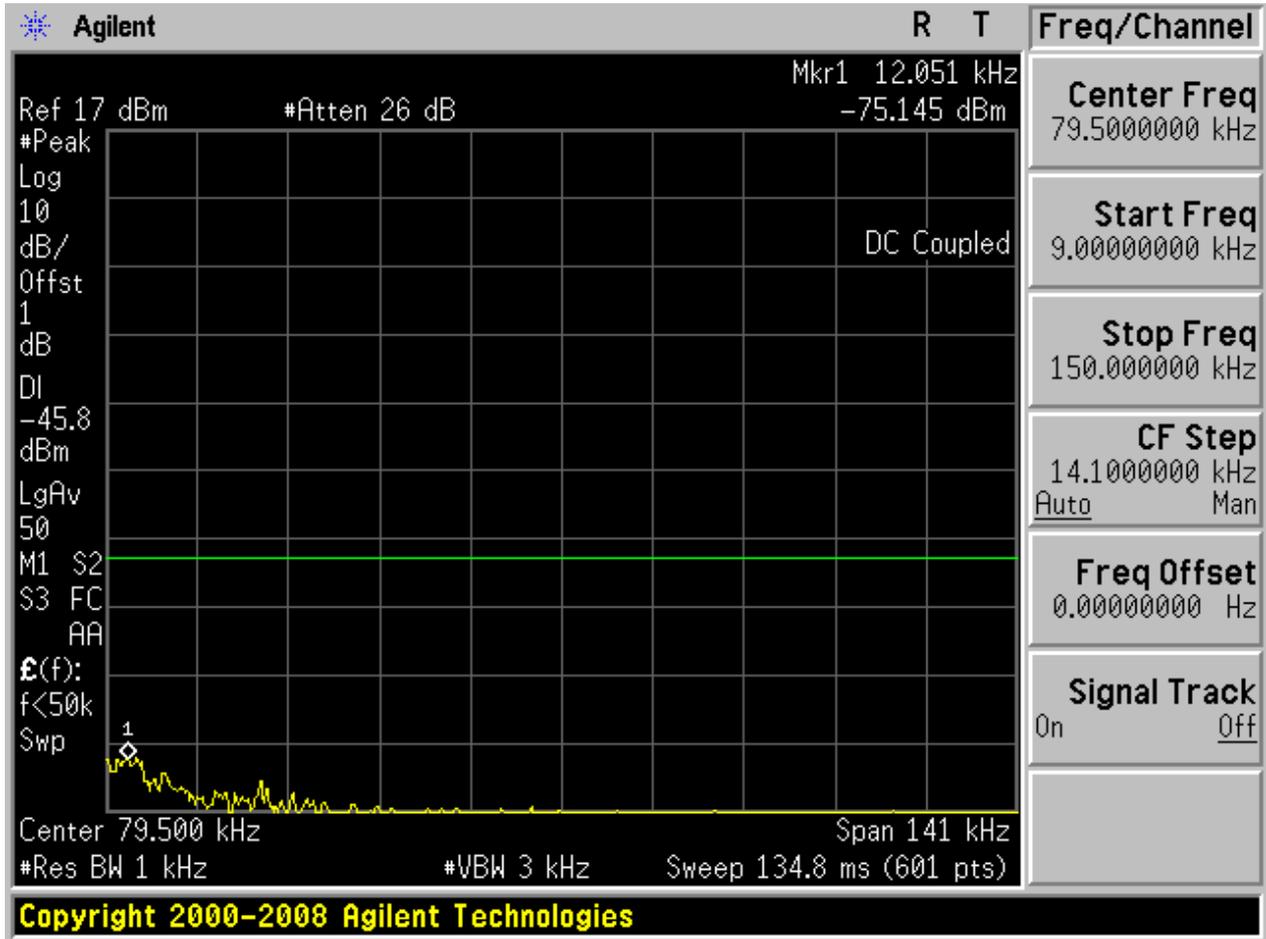
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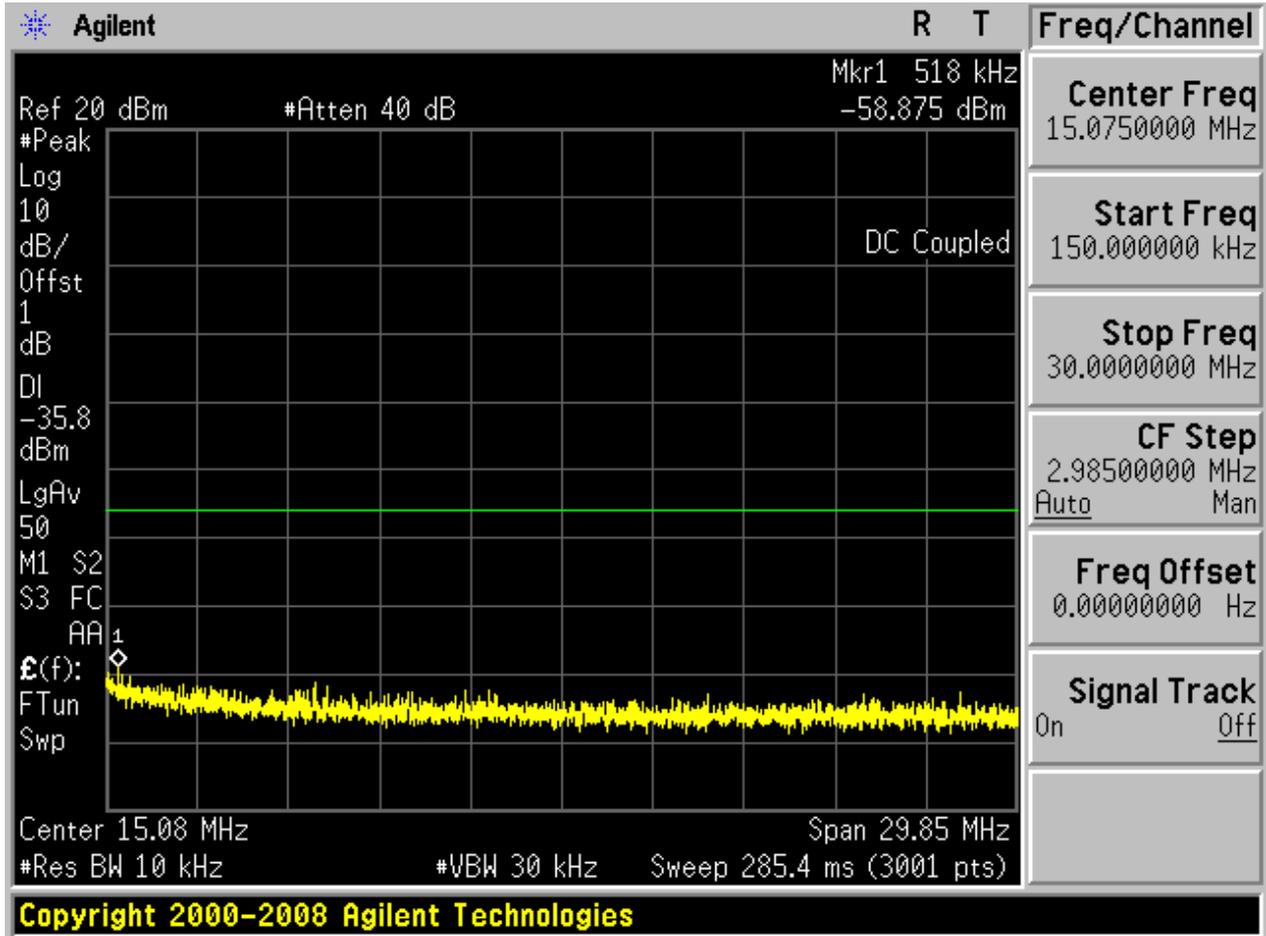
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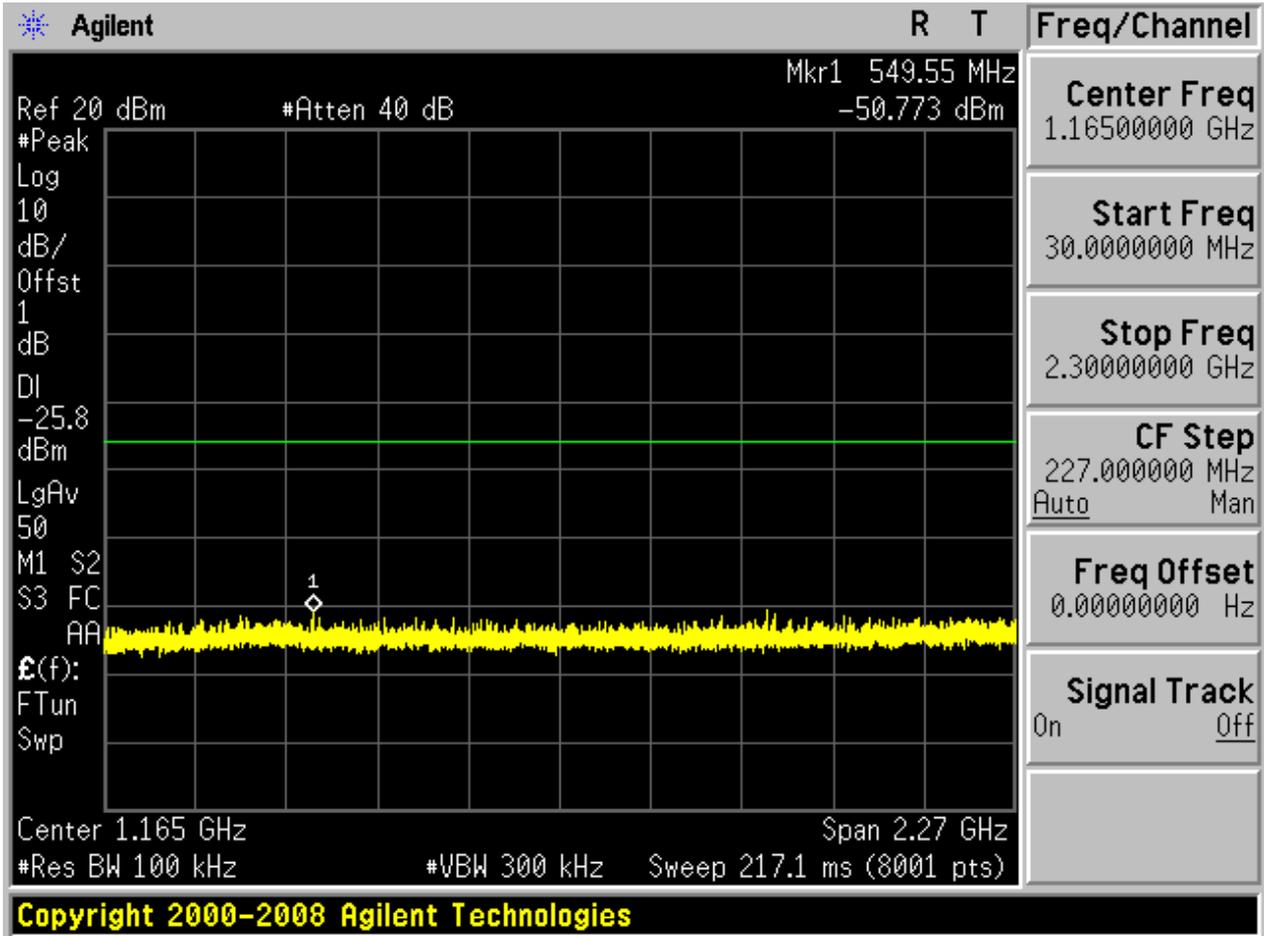


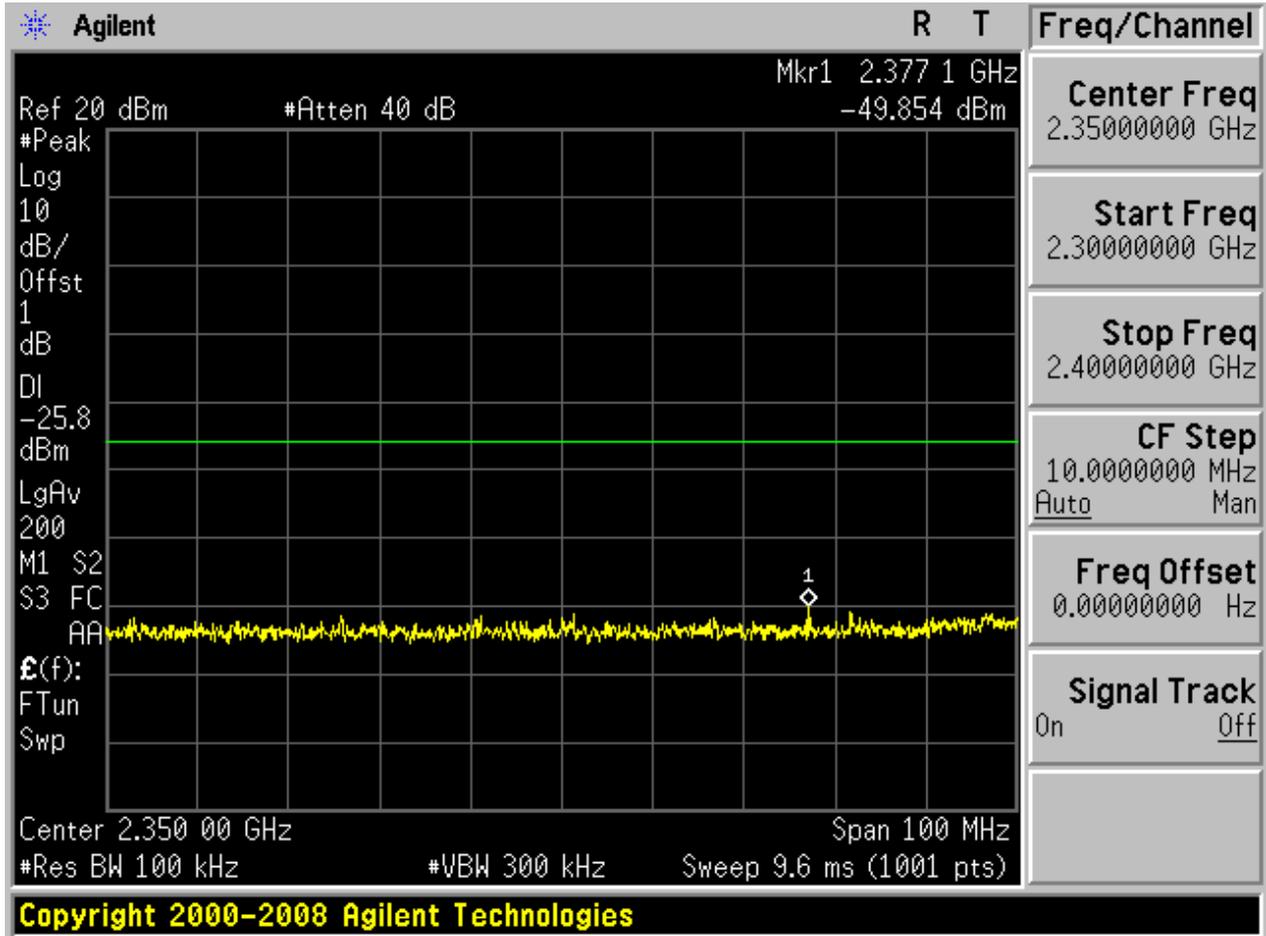


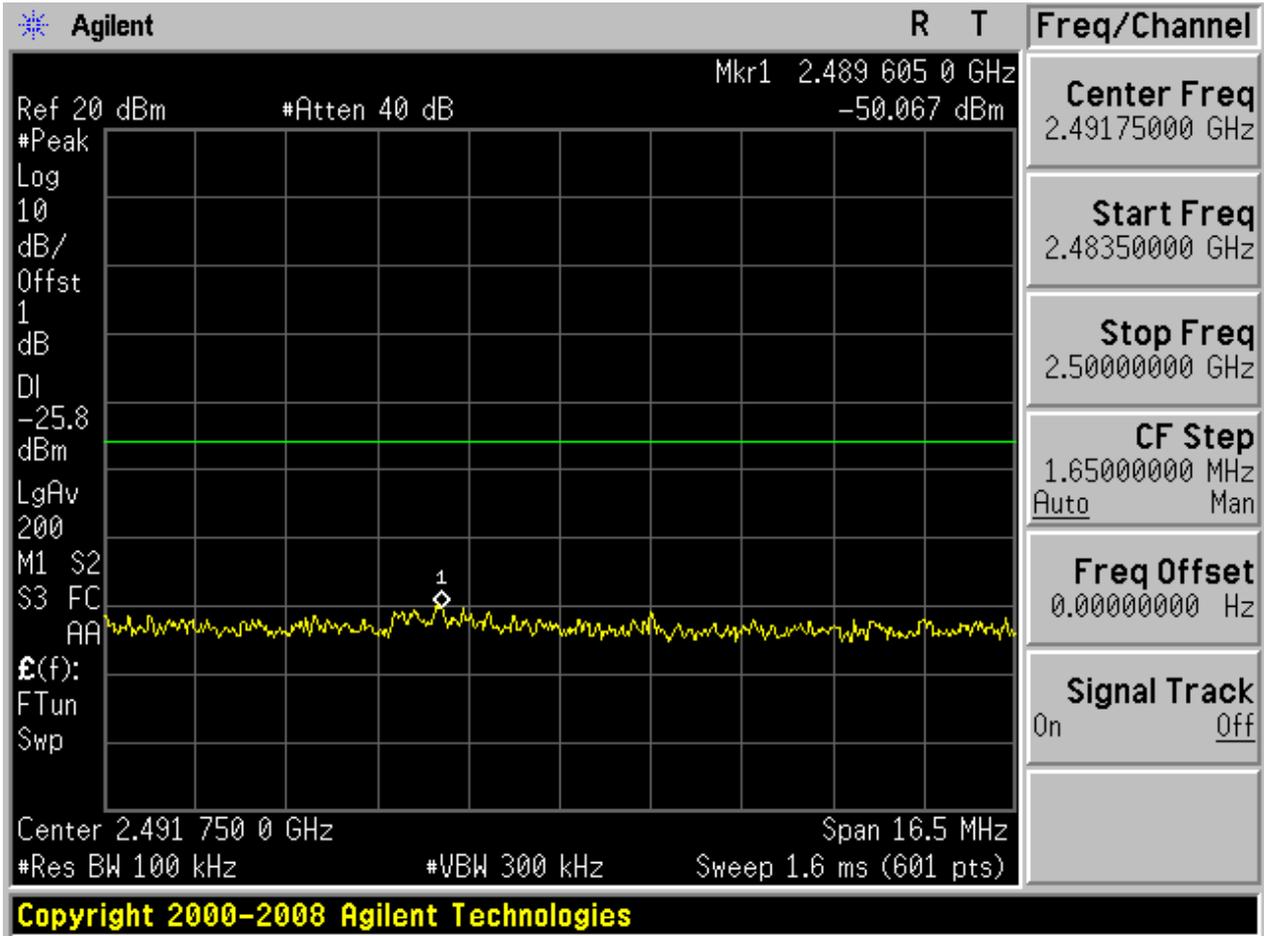
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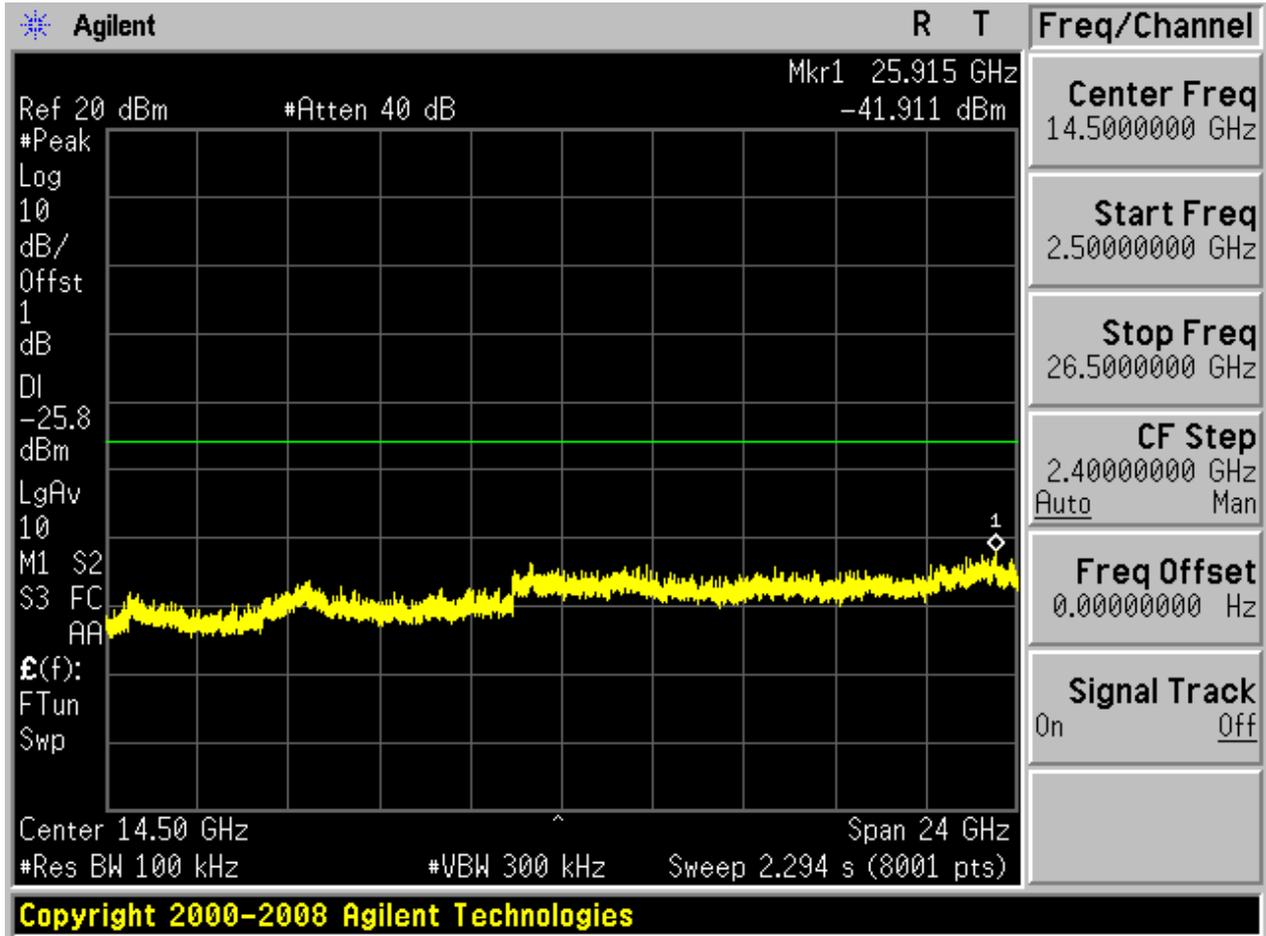








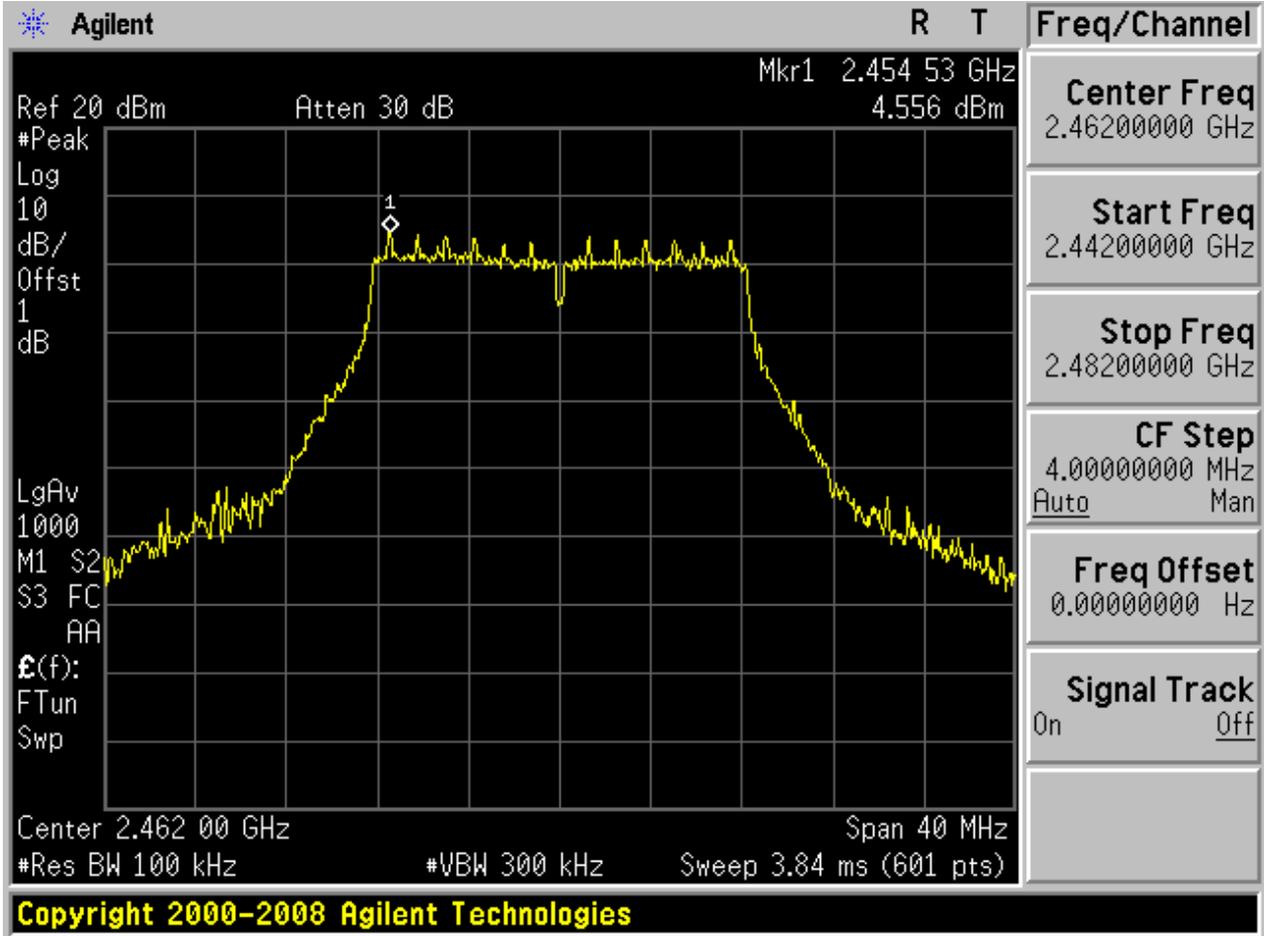






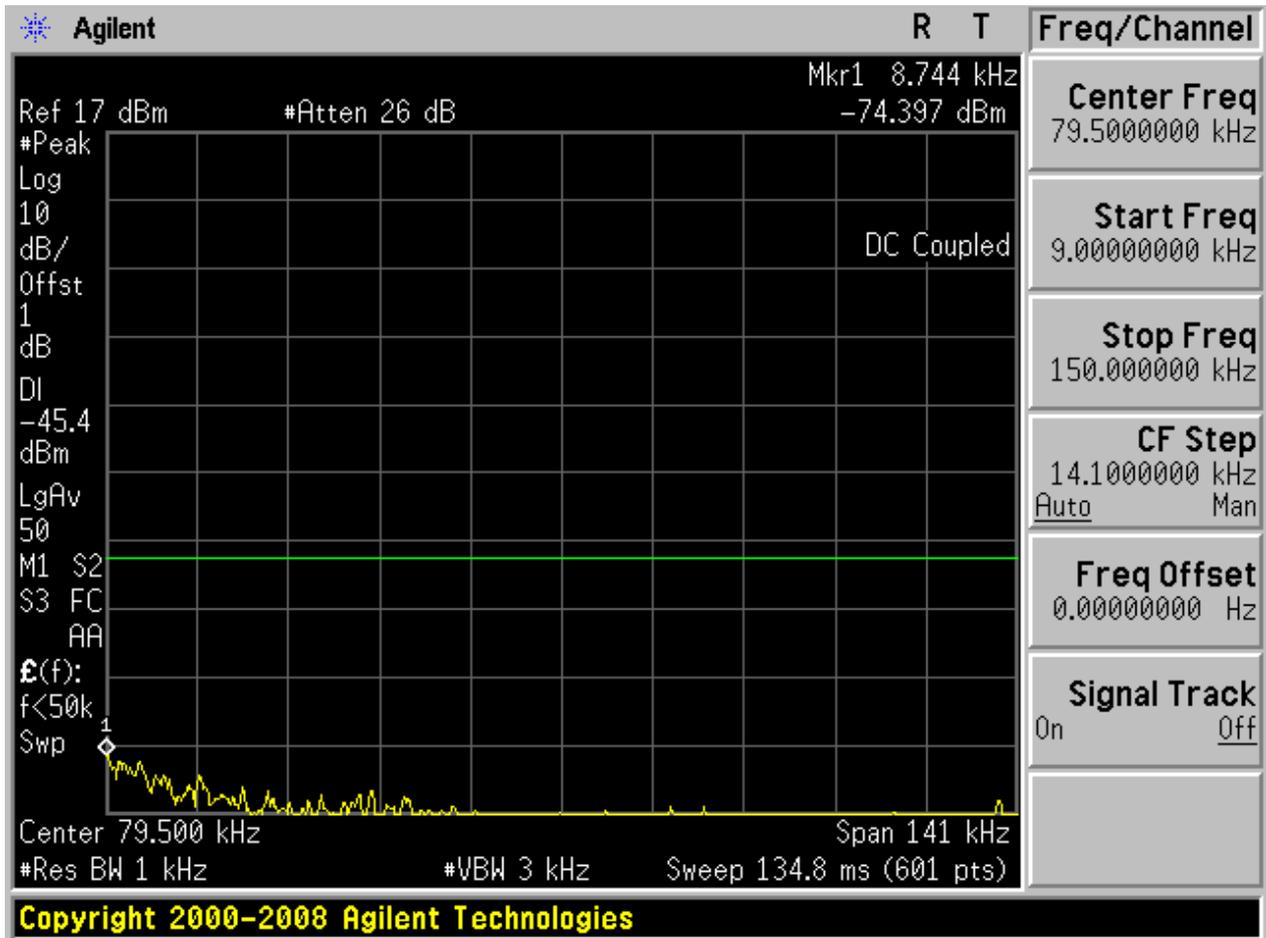
2.11 11G\_H@Ant 1

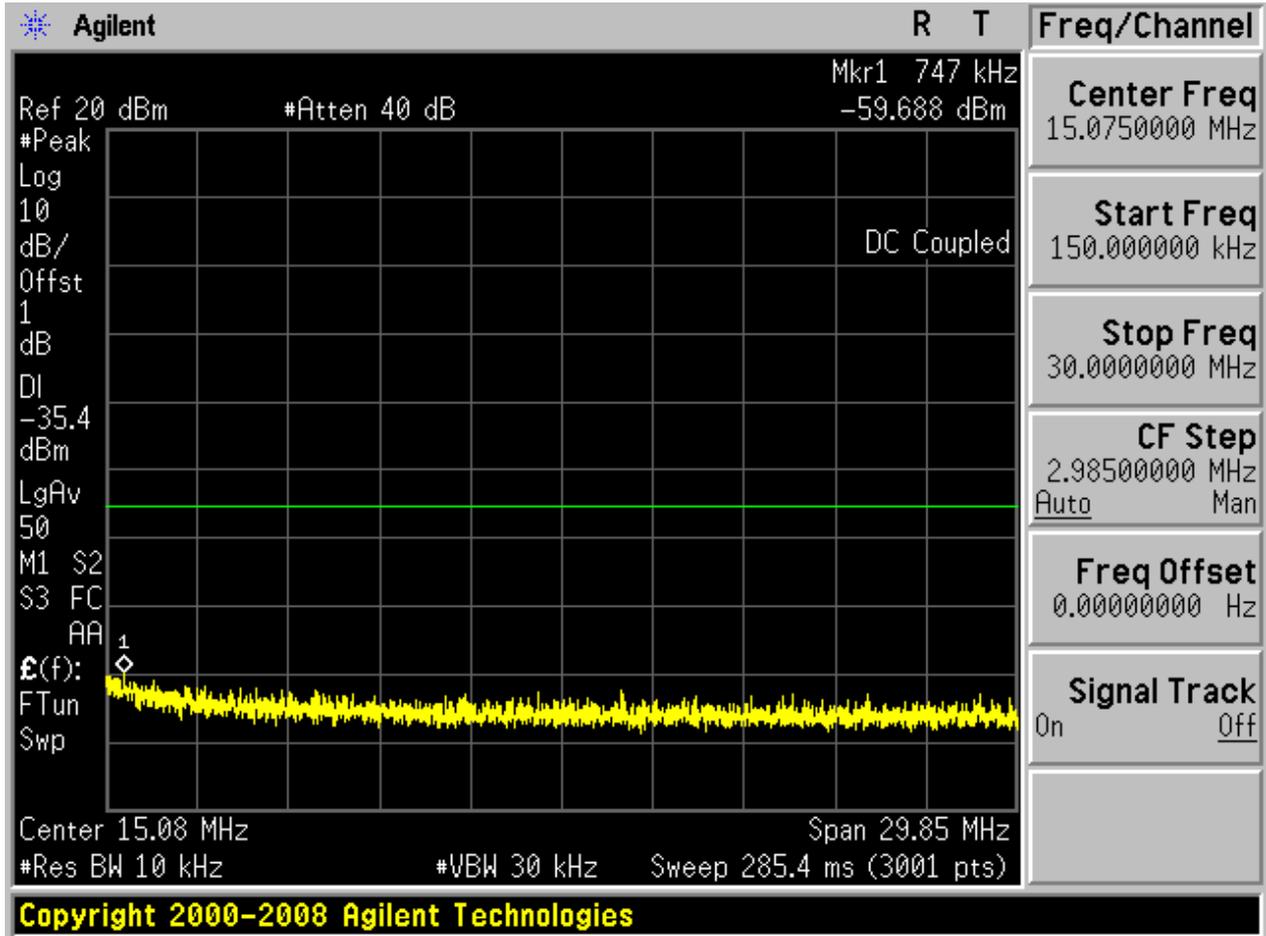
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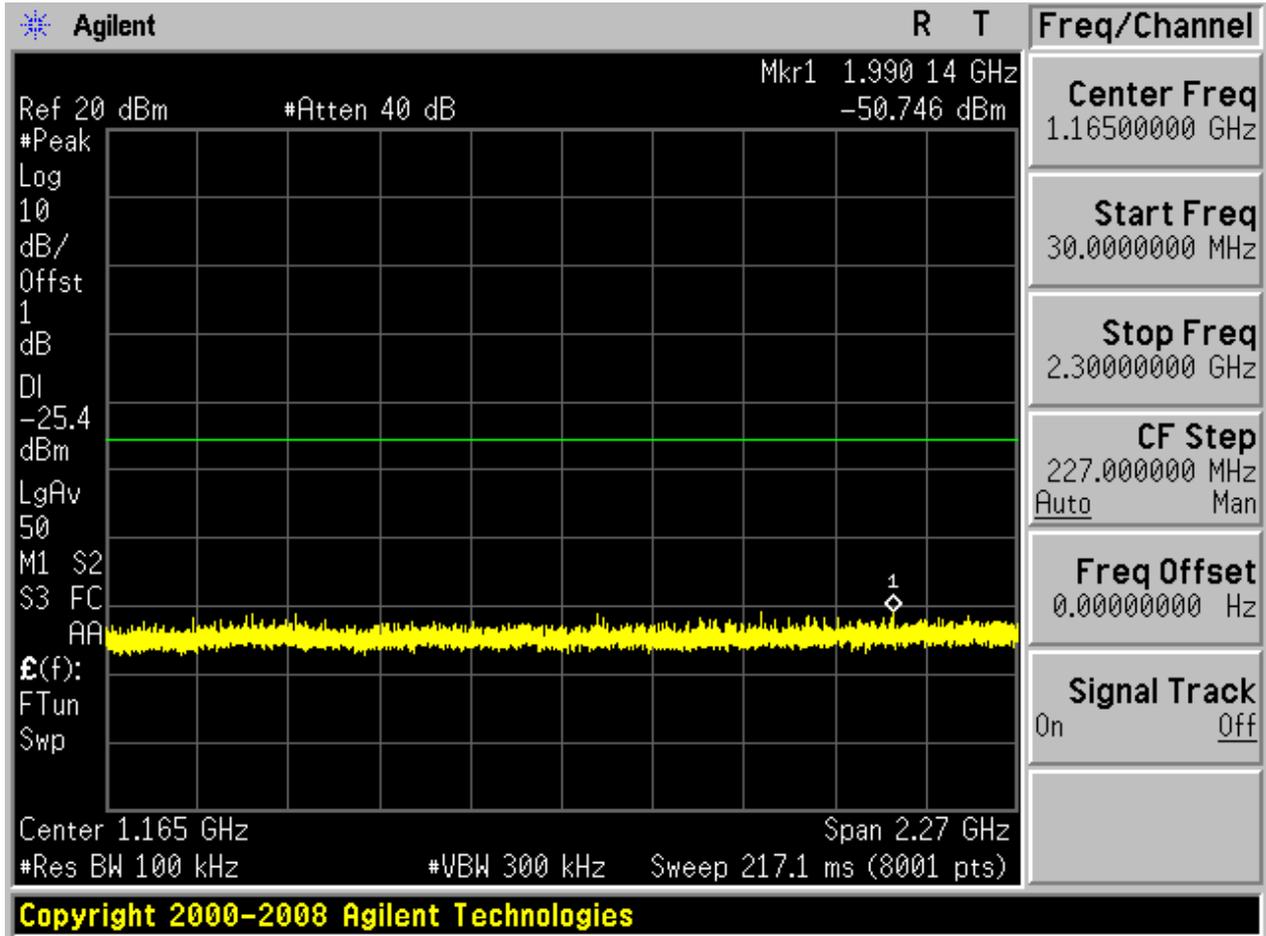


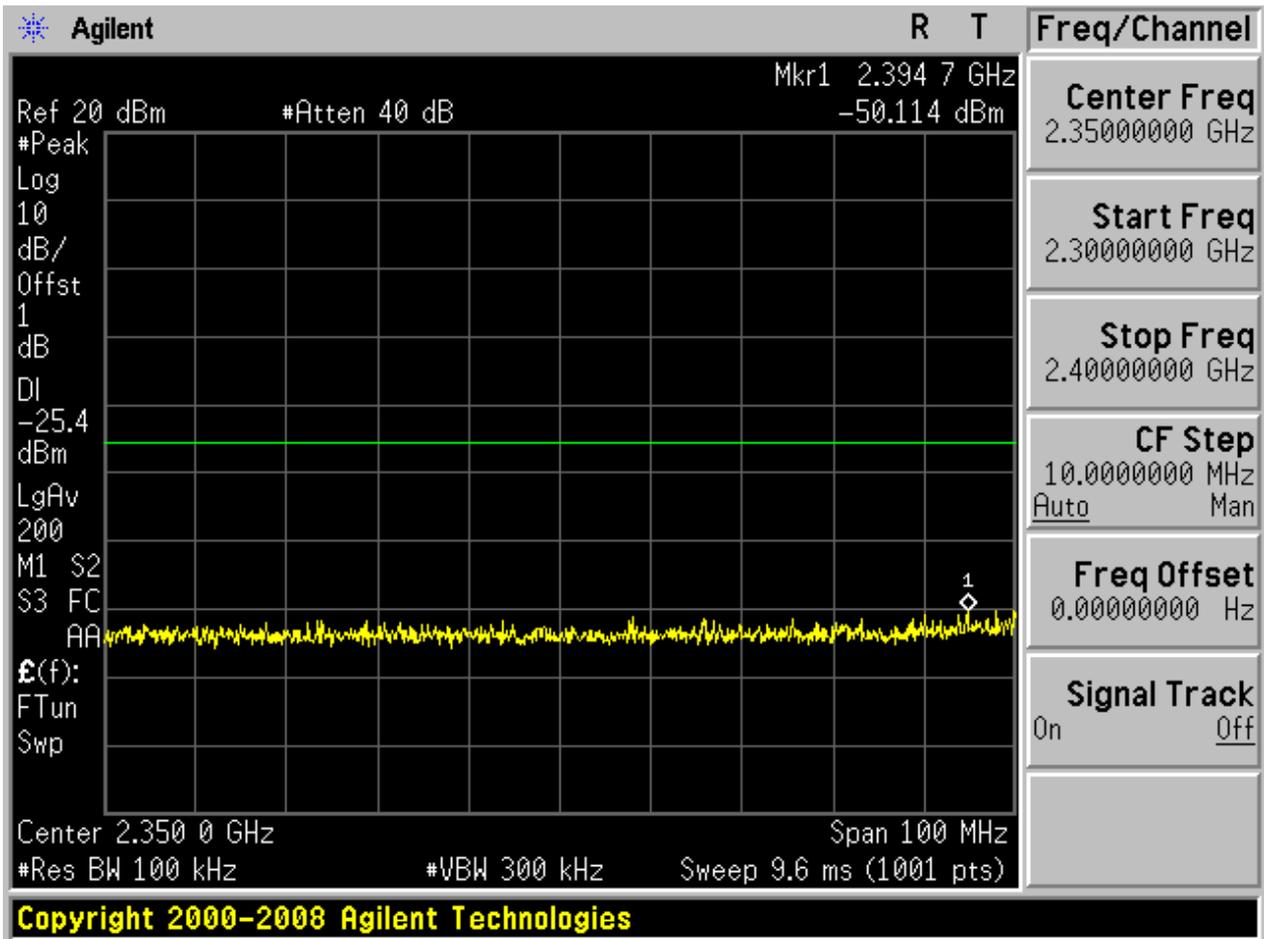


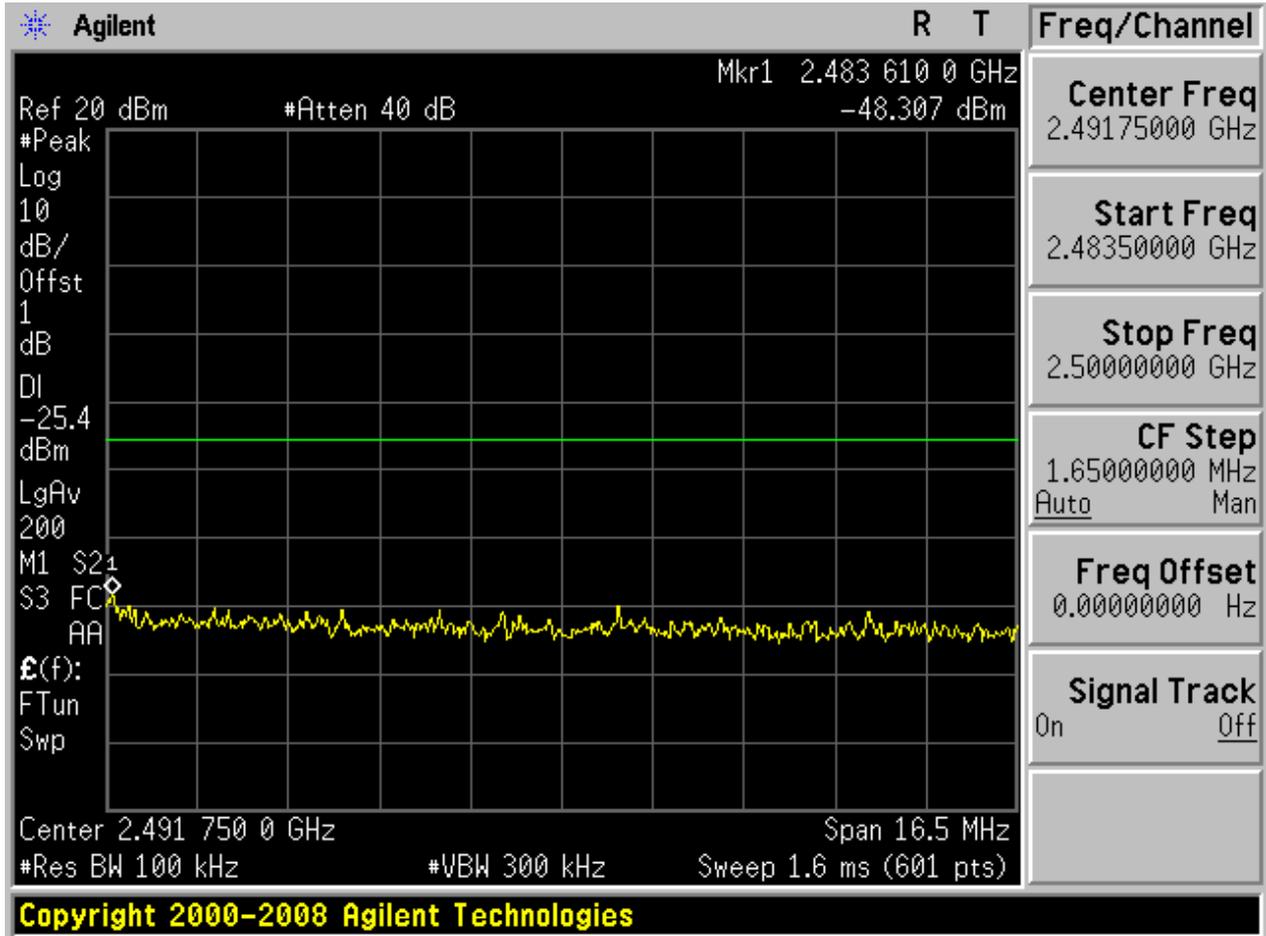
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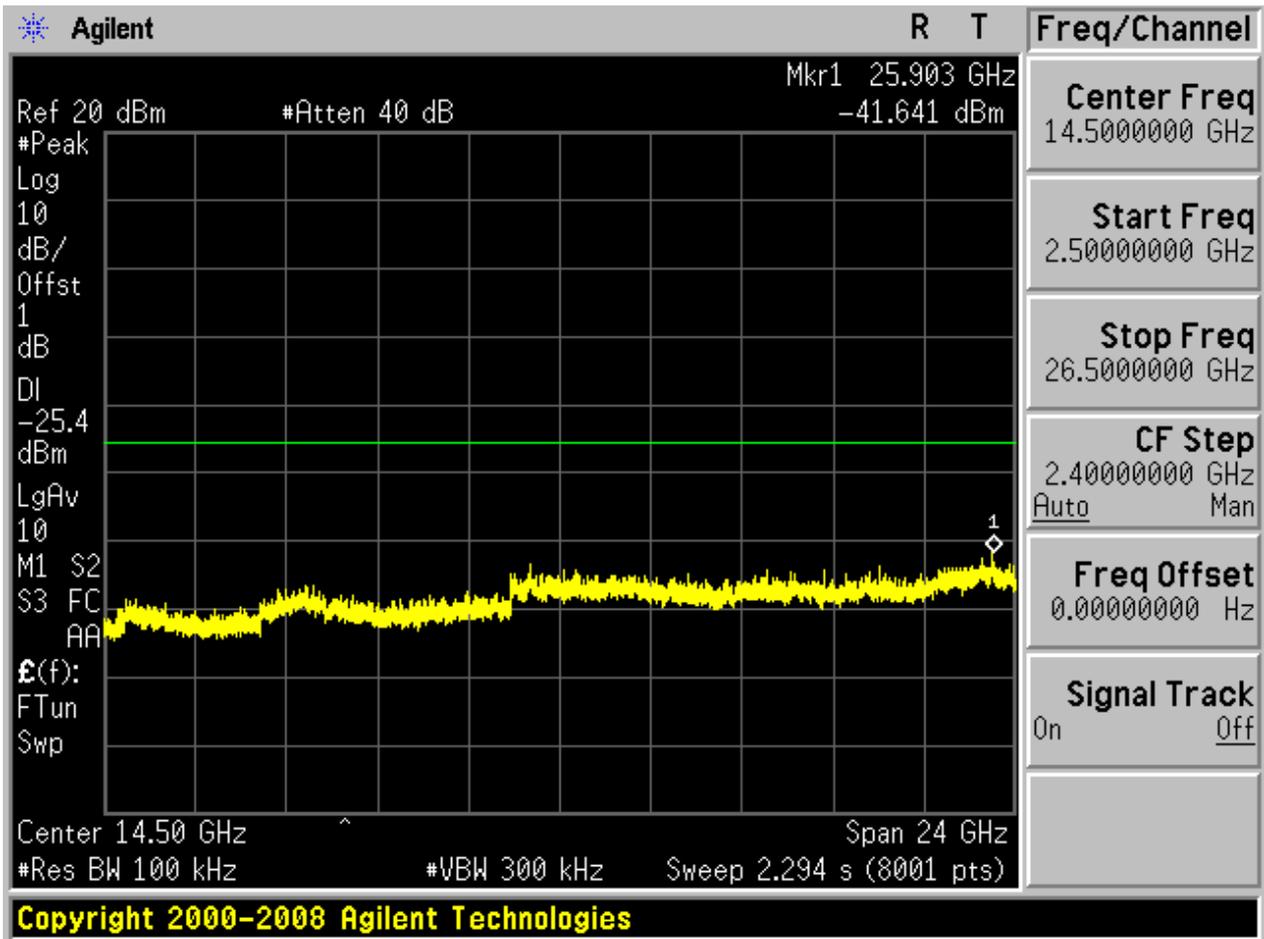






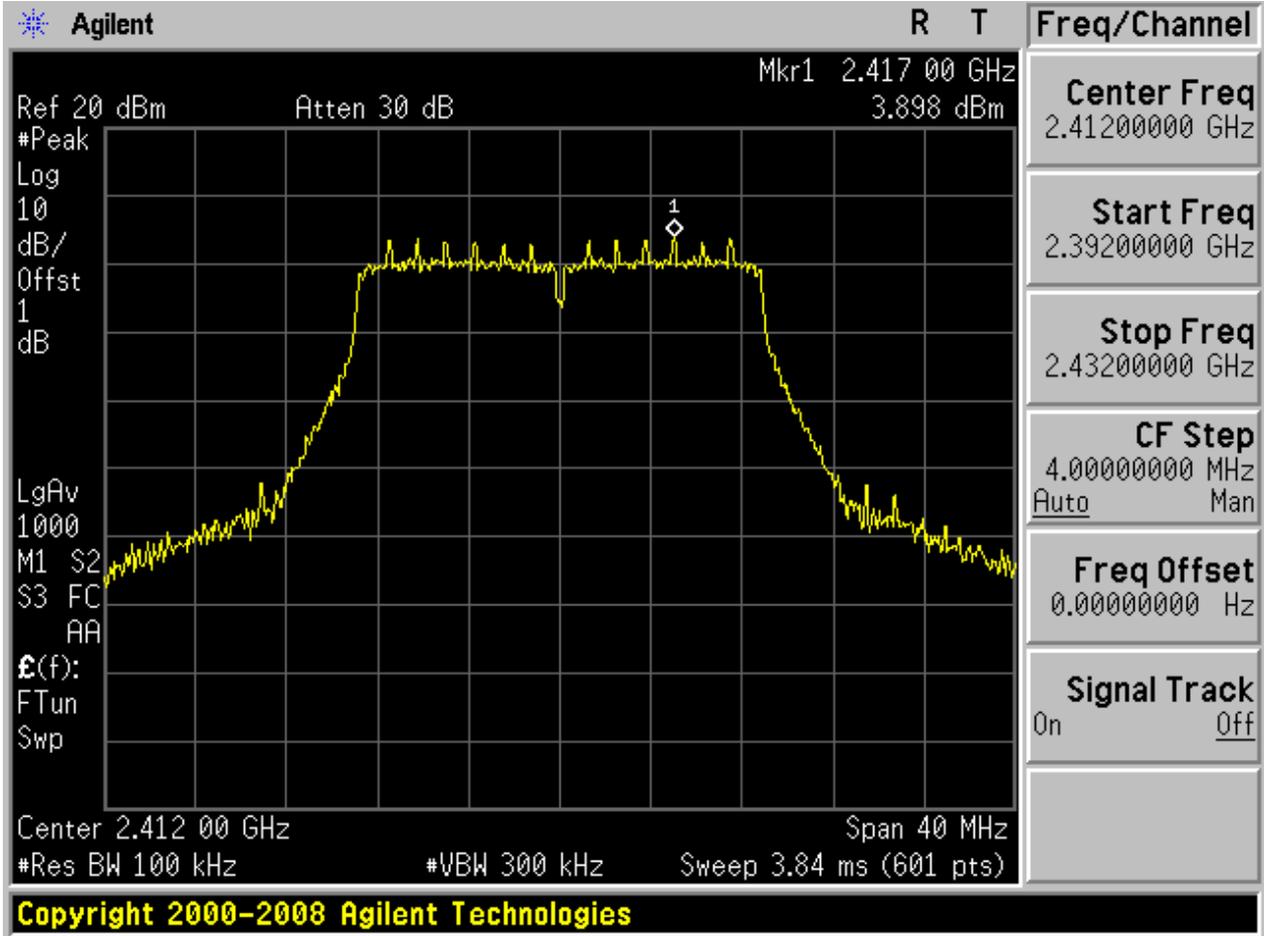






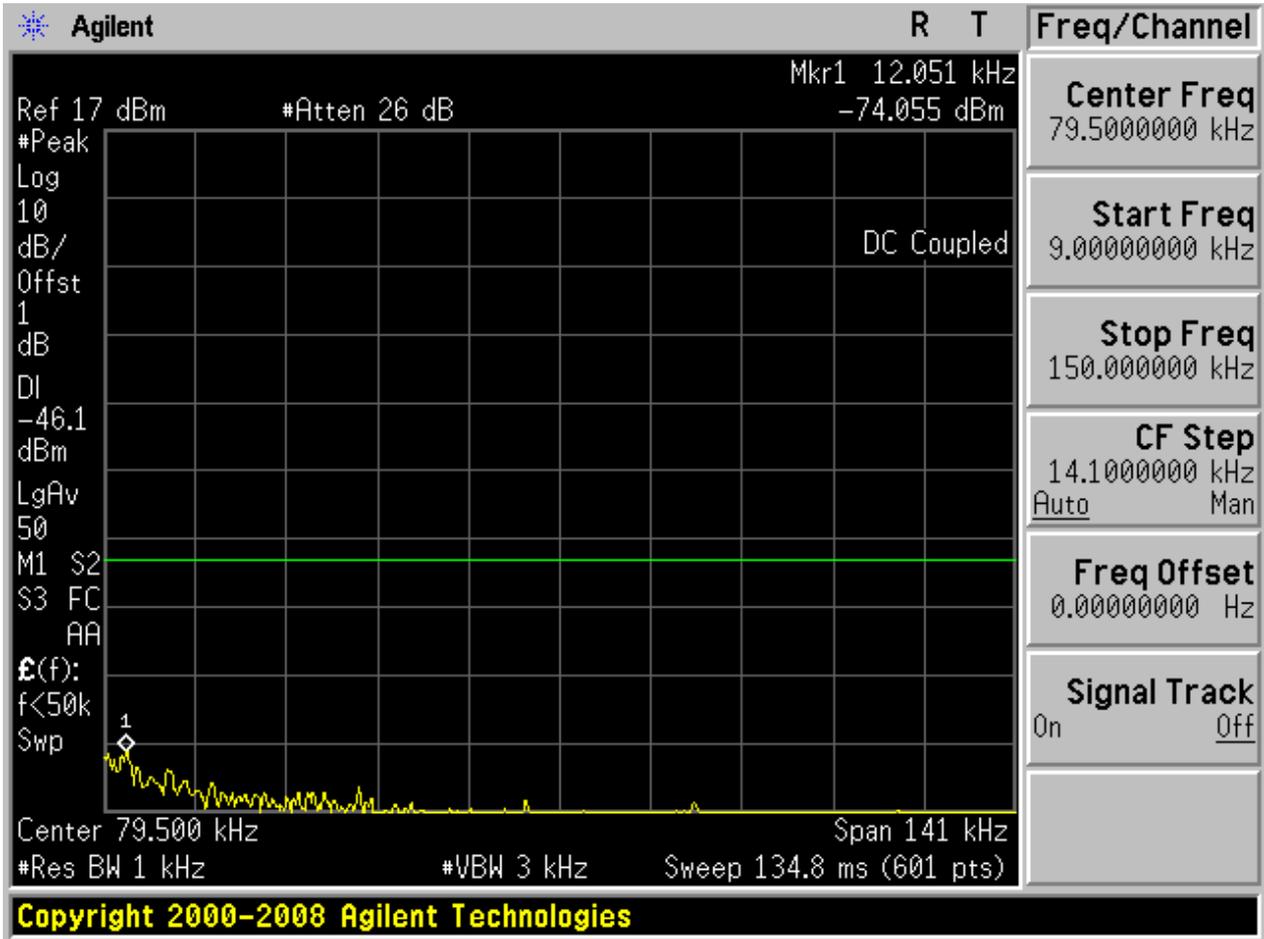
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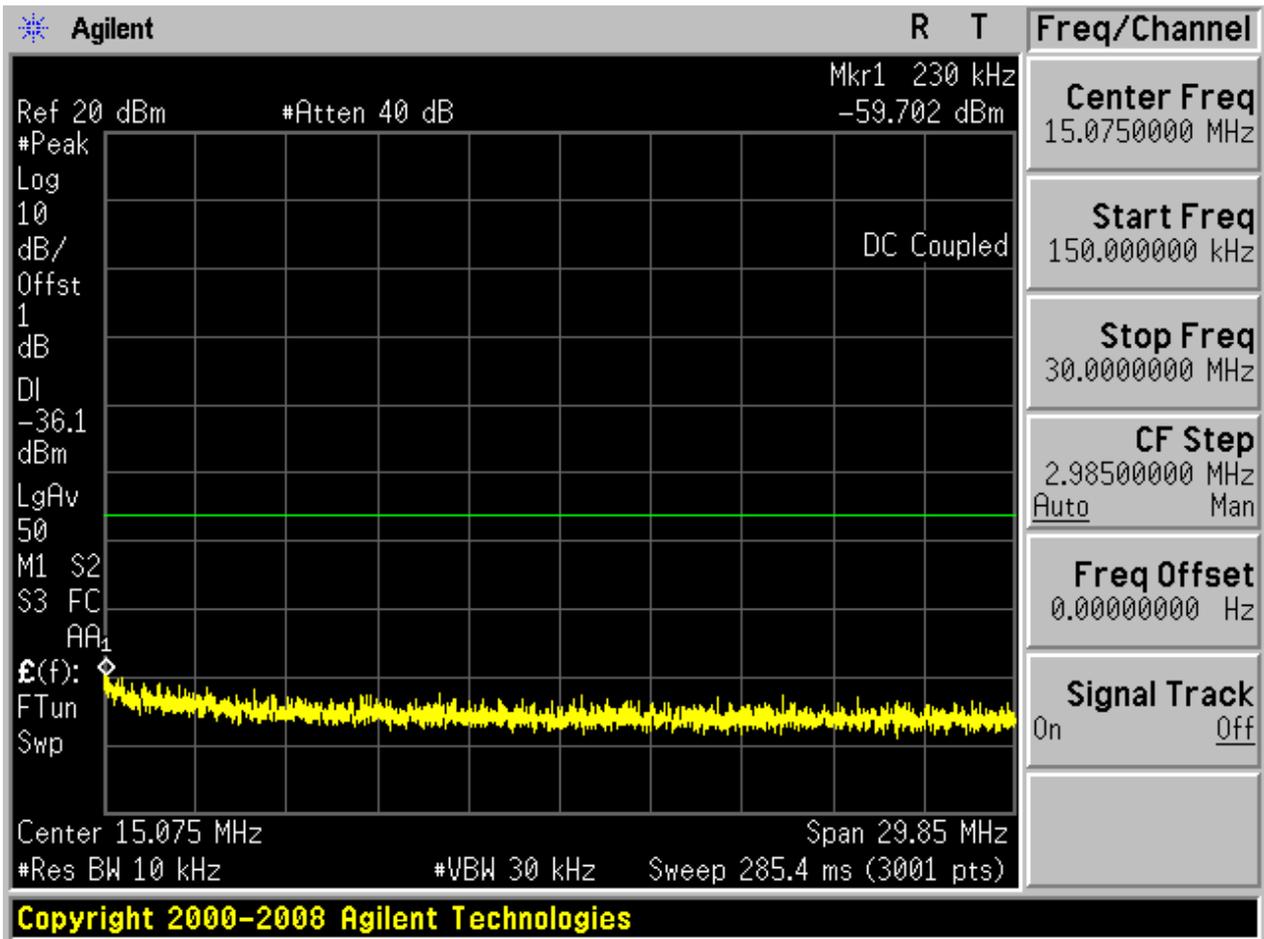
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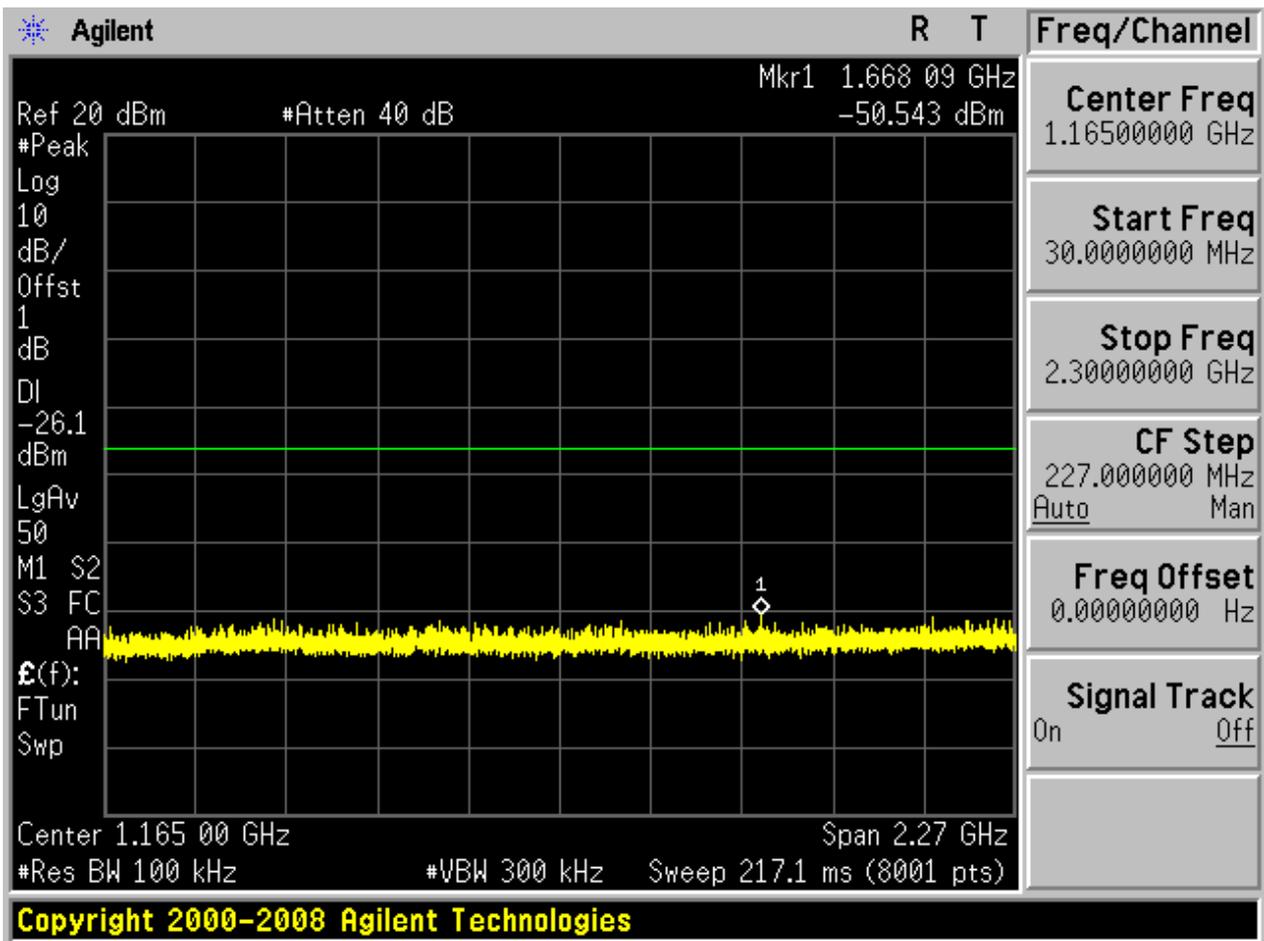


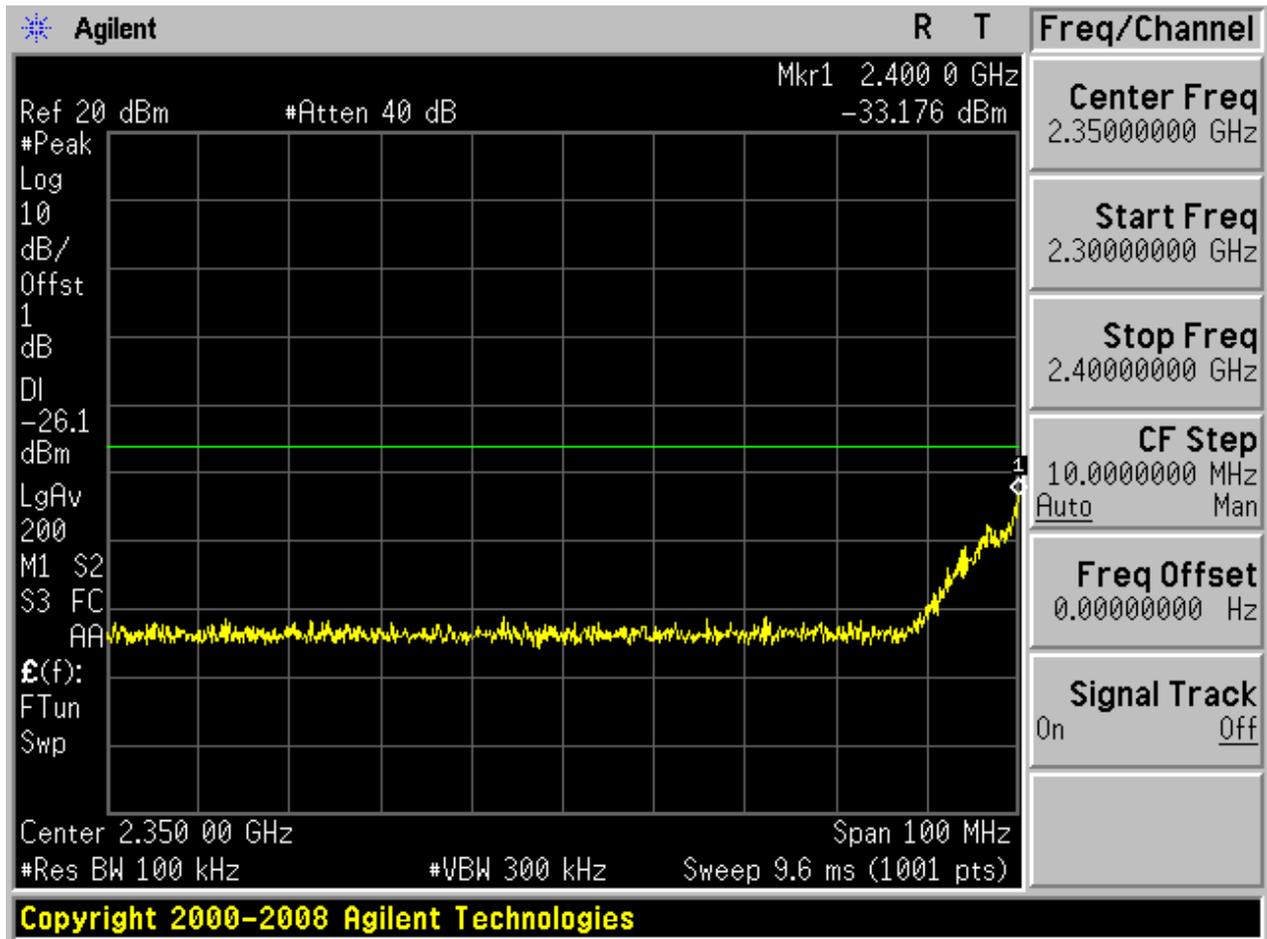


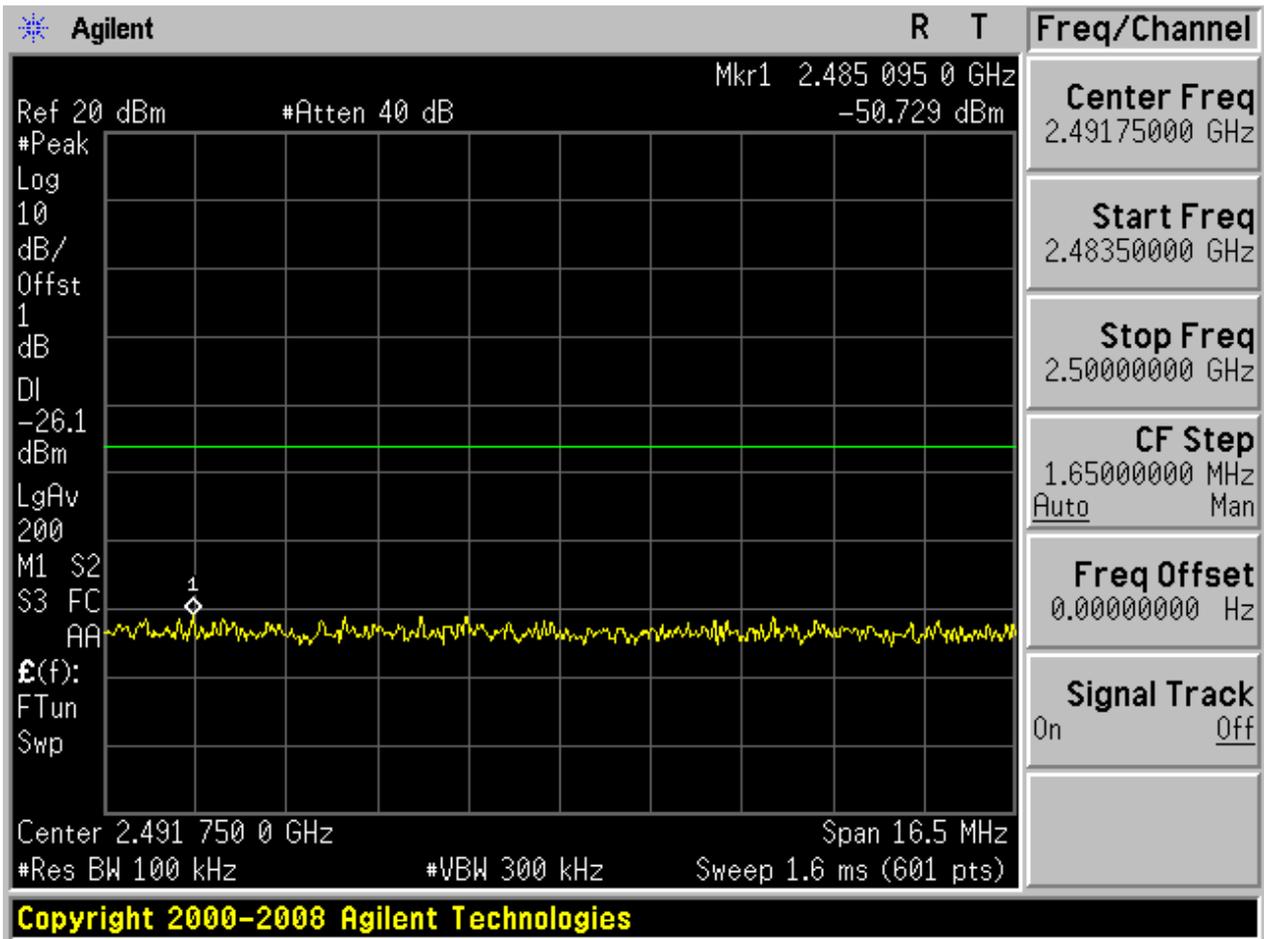
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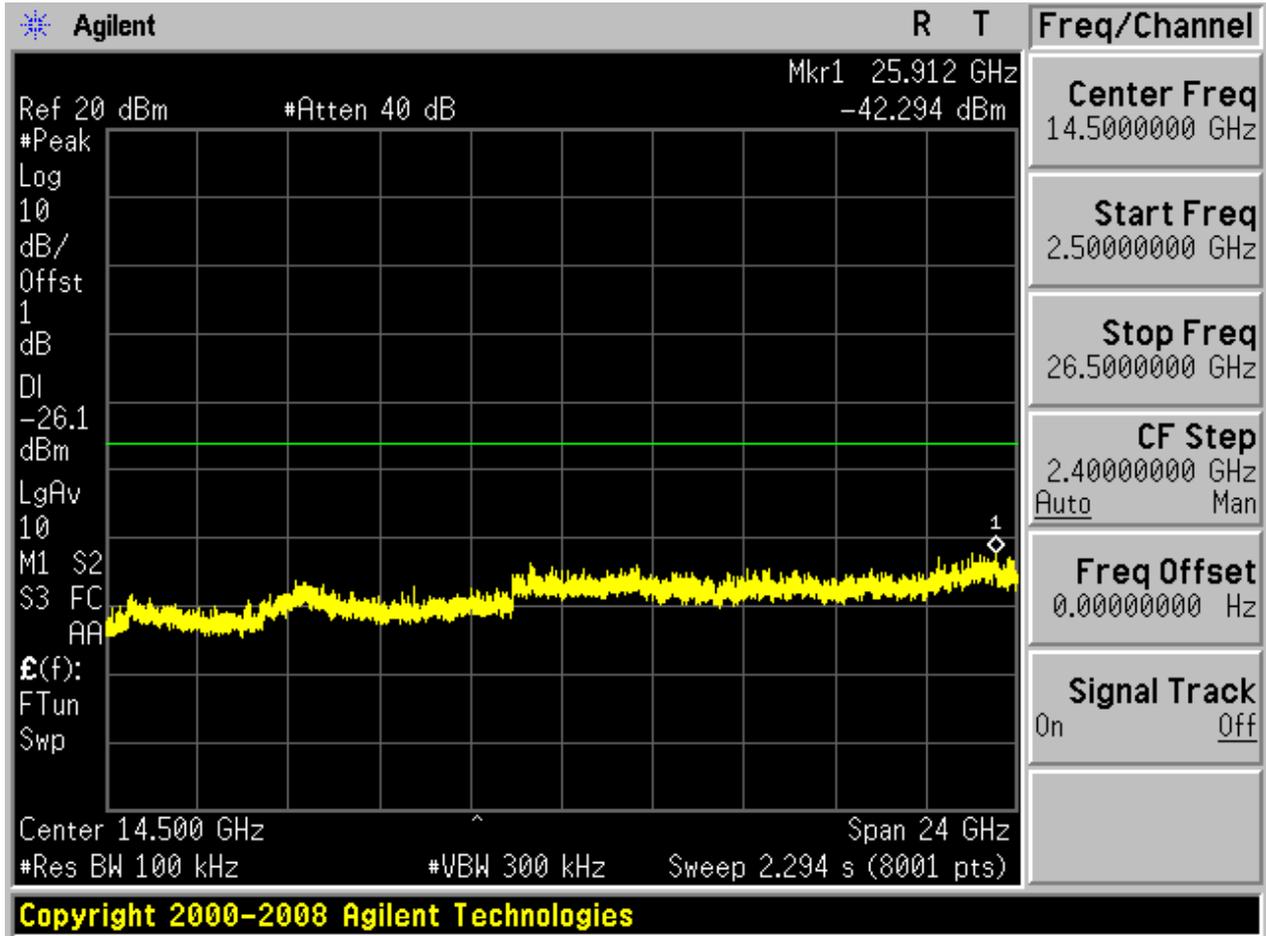






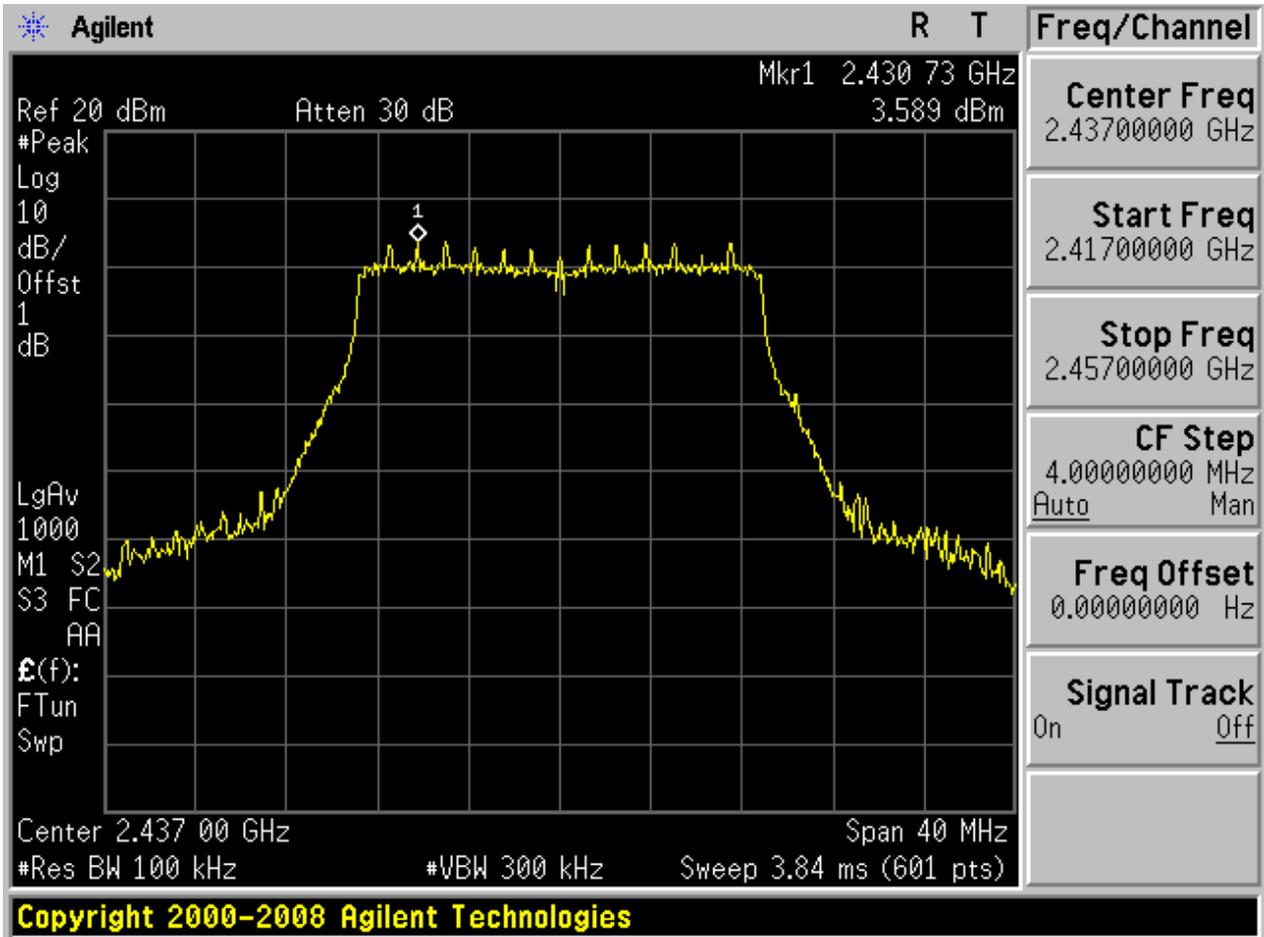






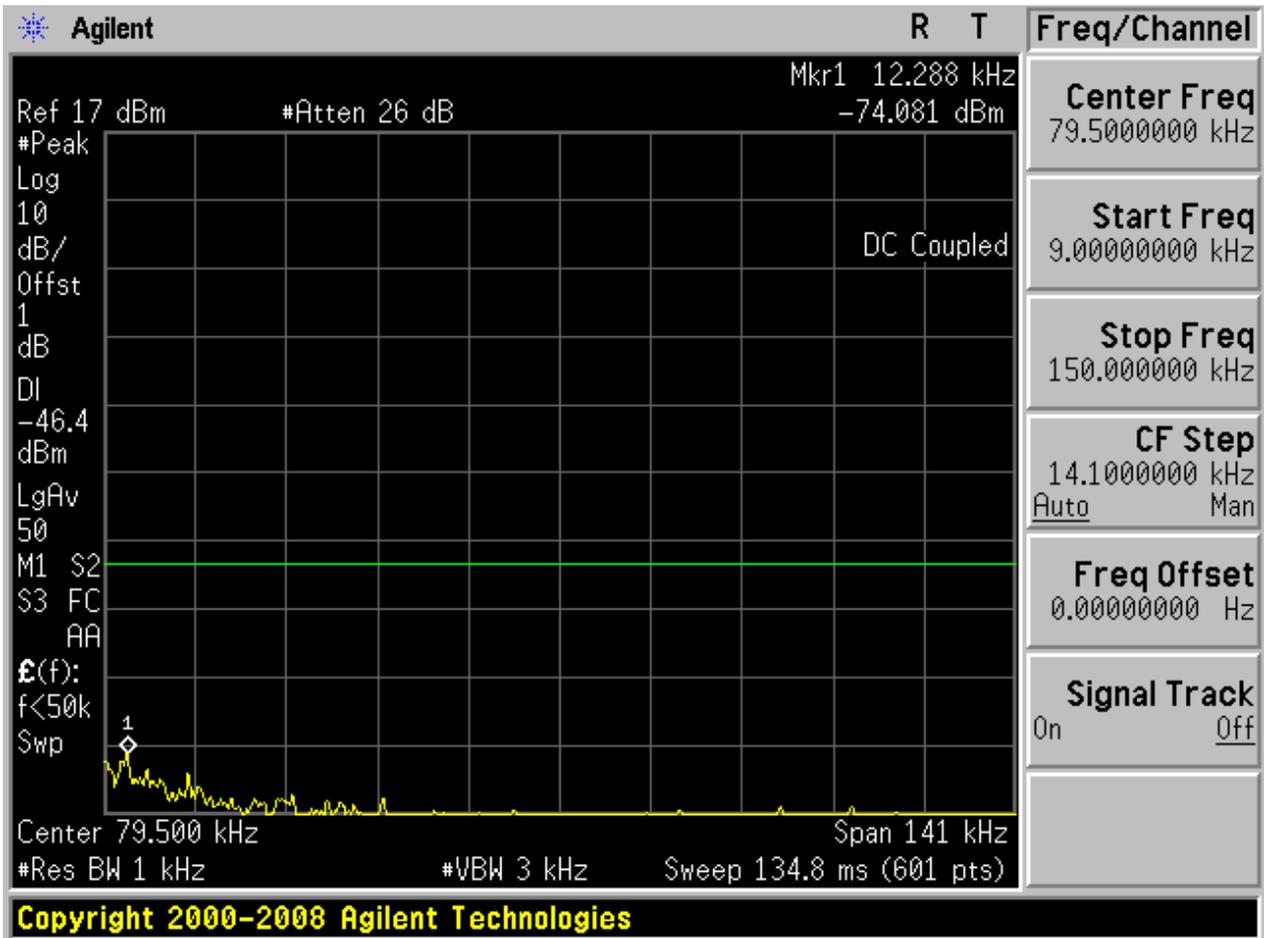
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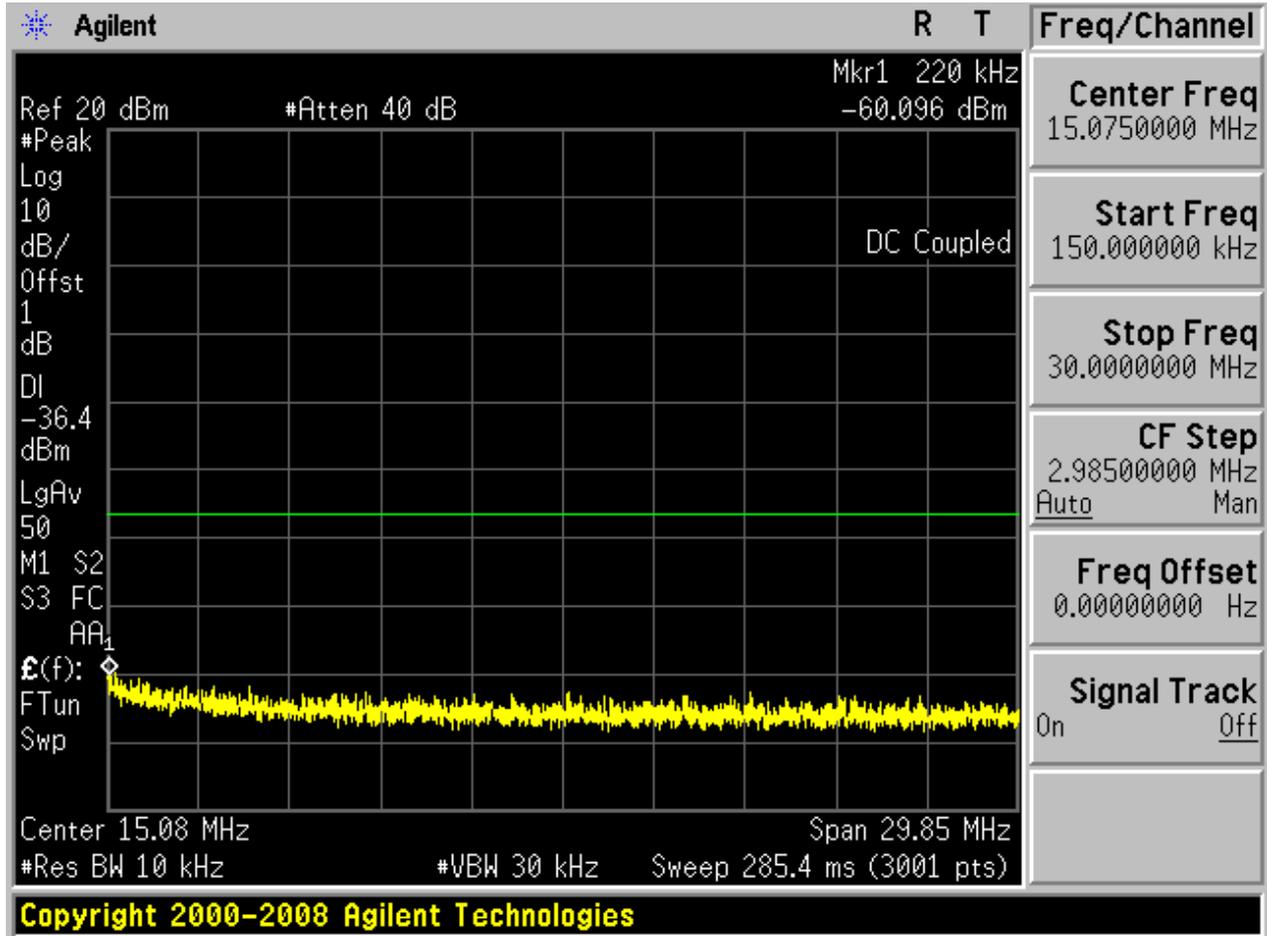
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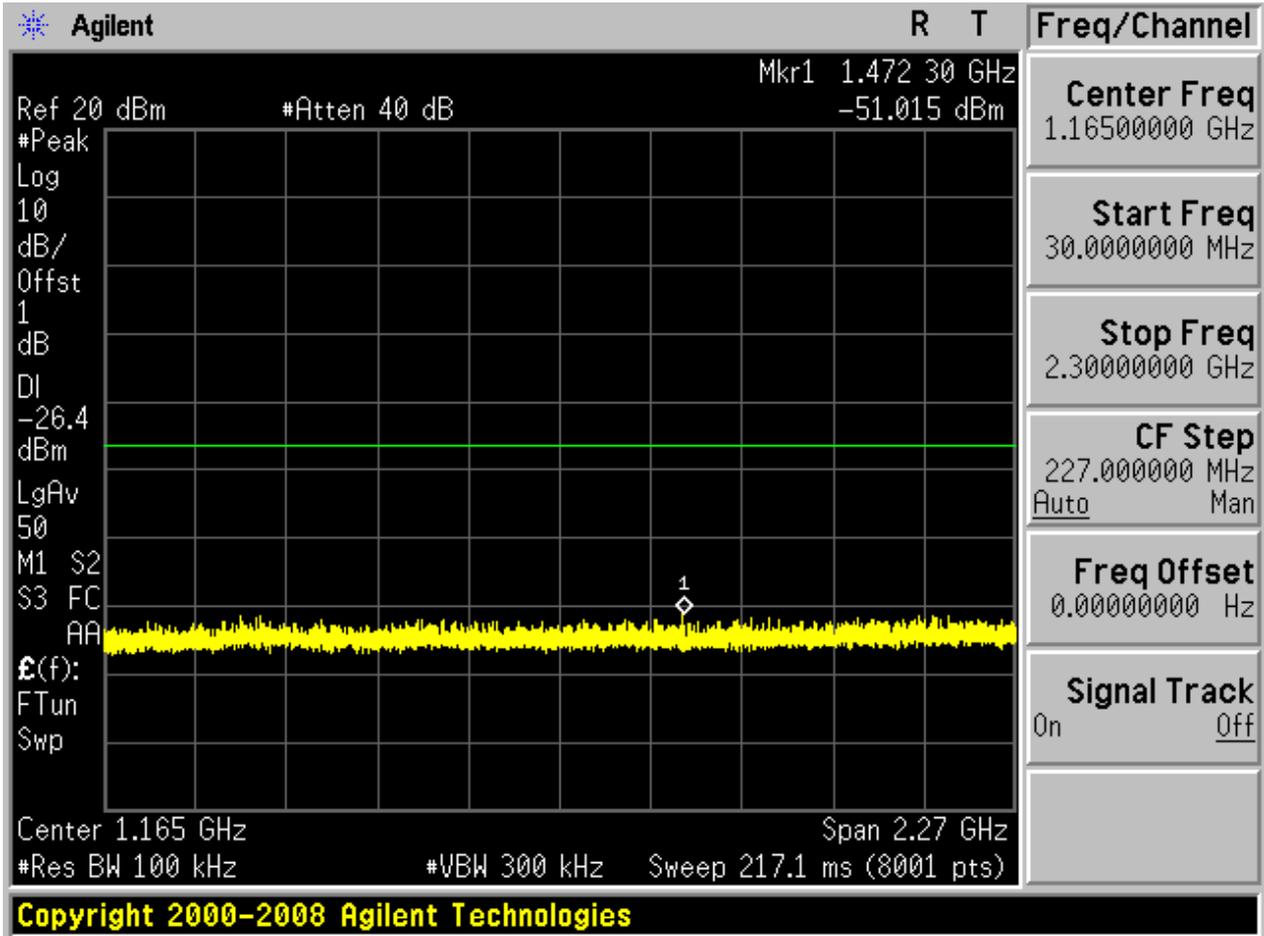


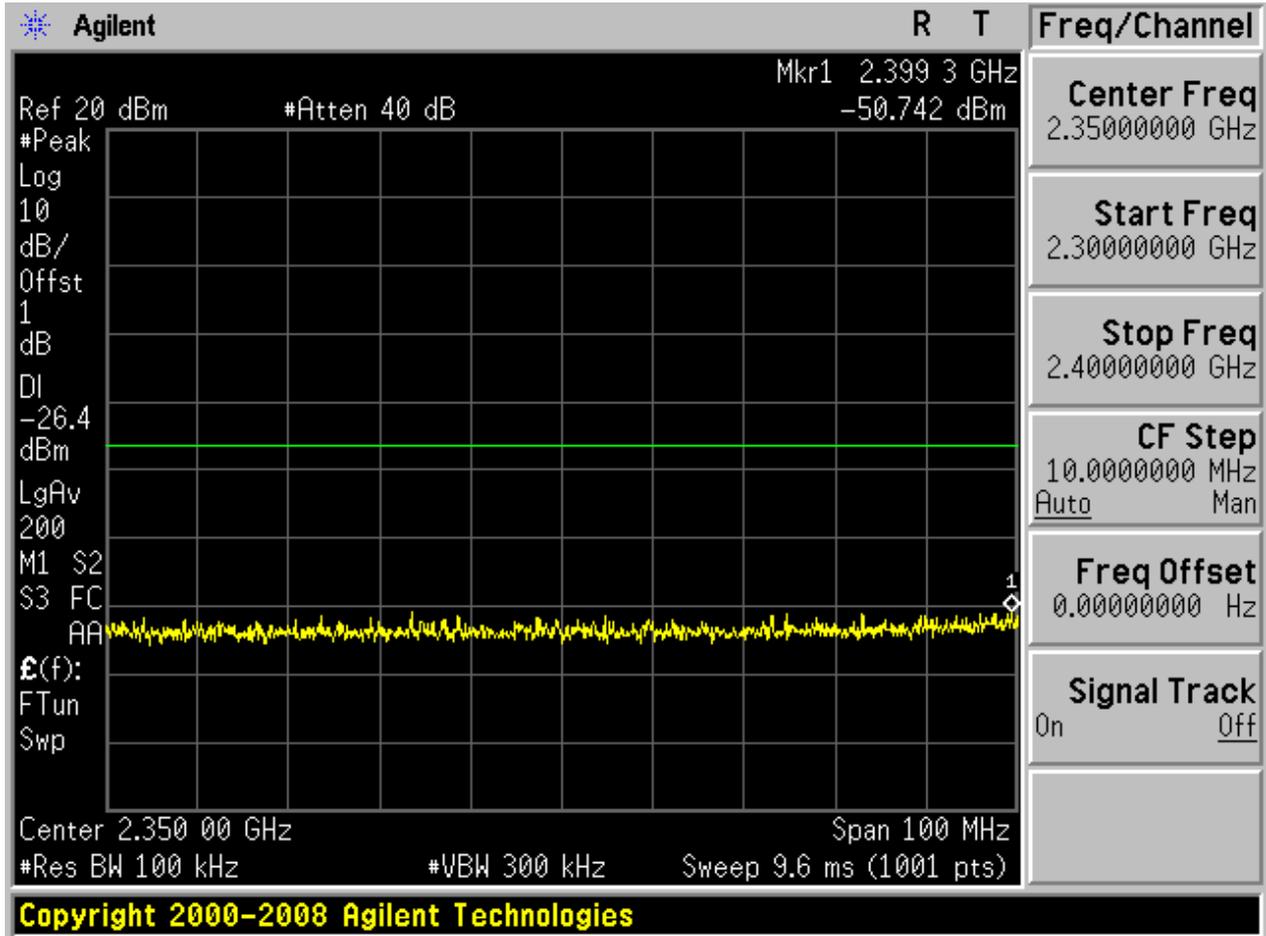


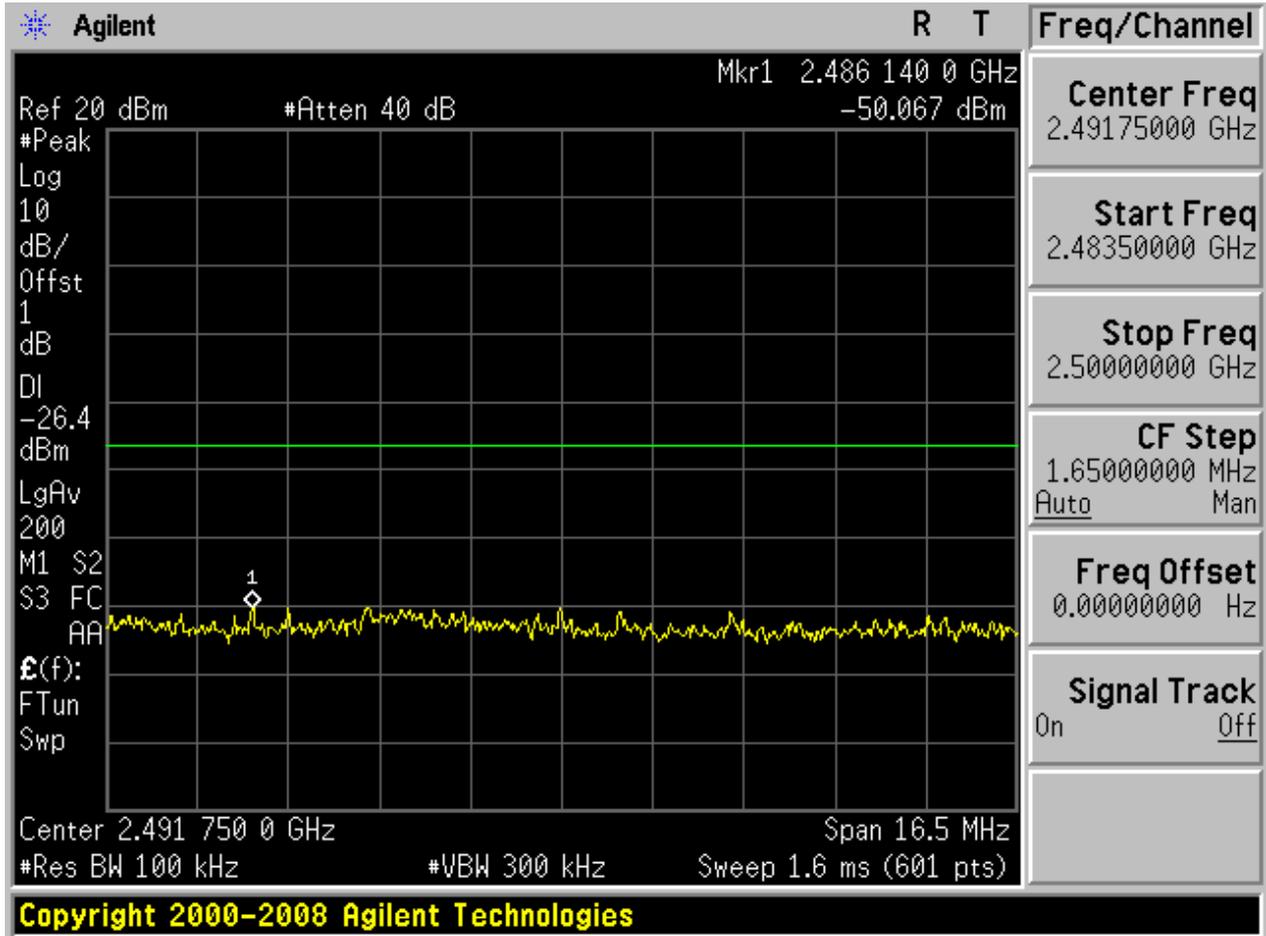
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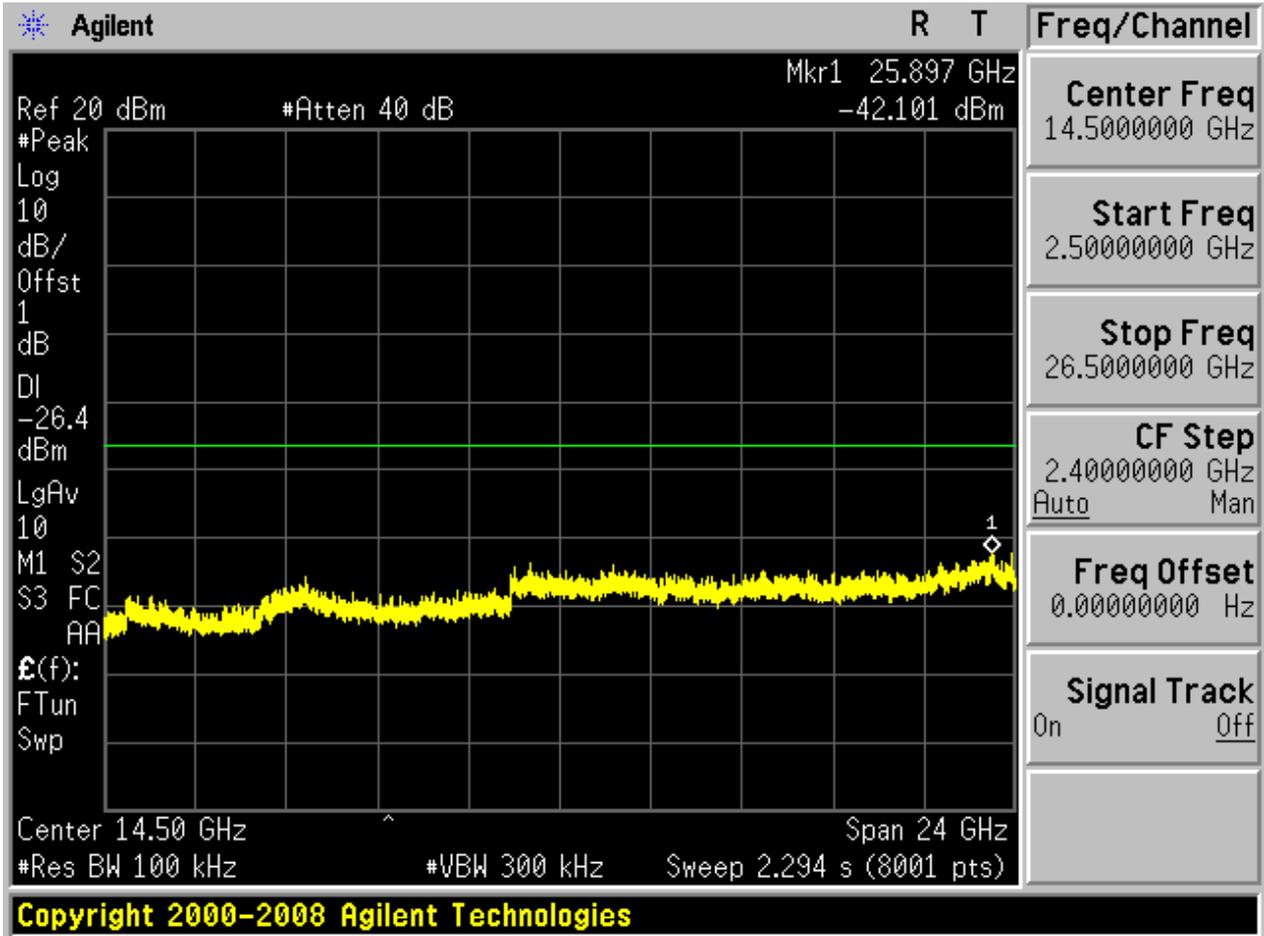








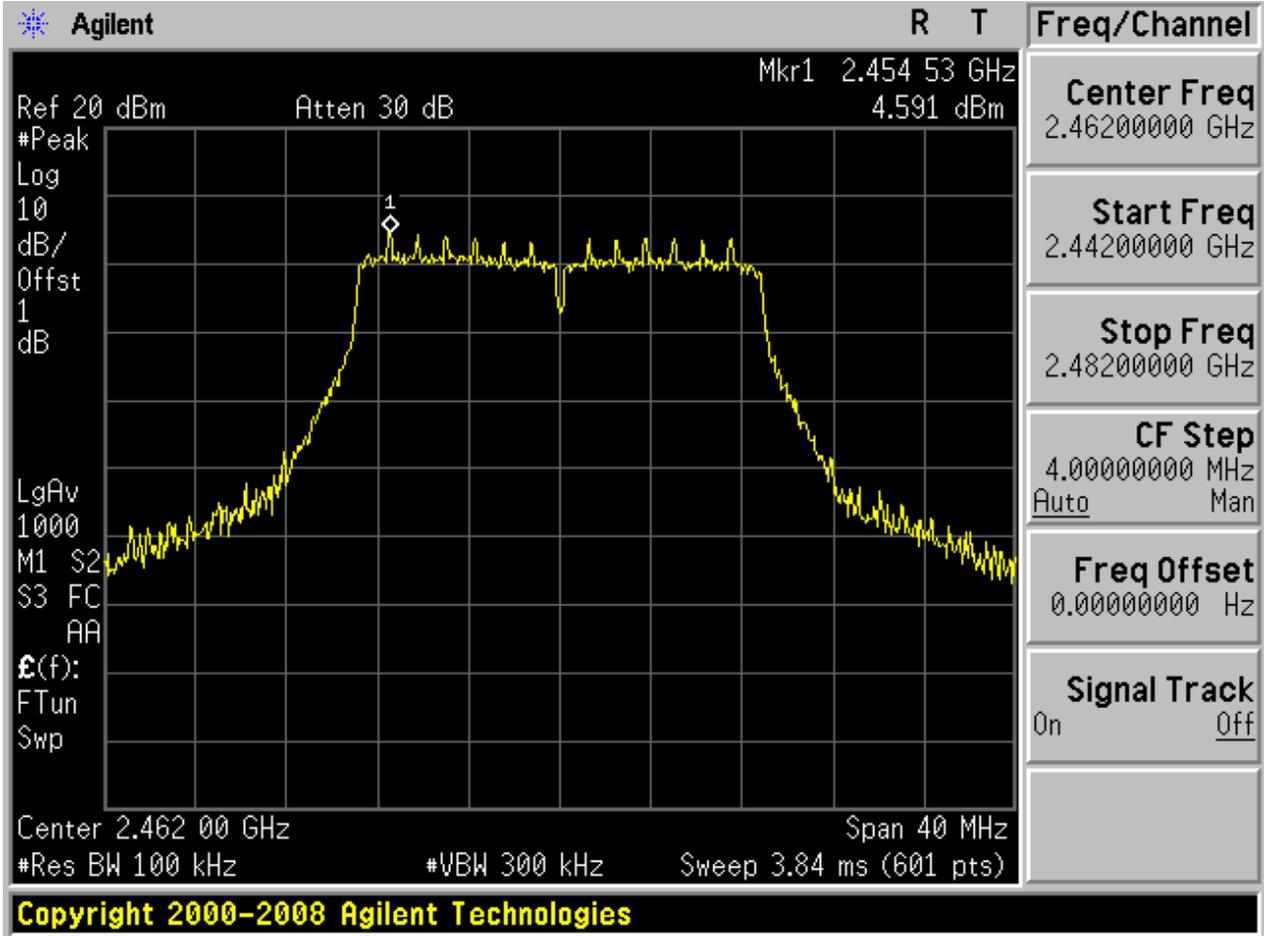






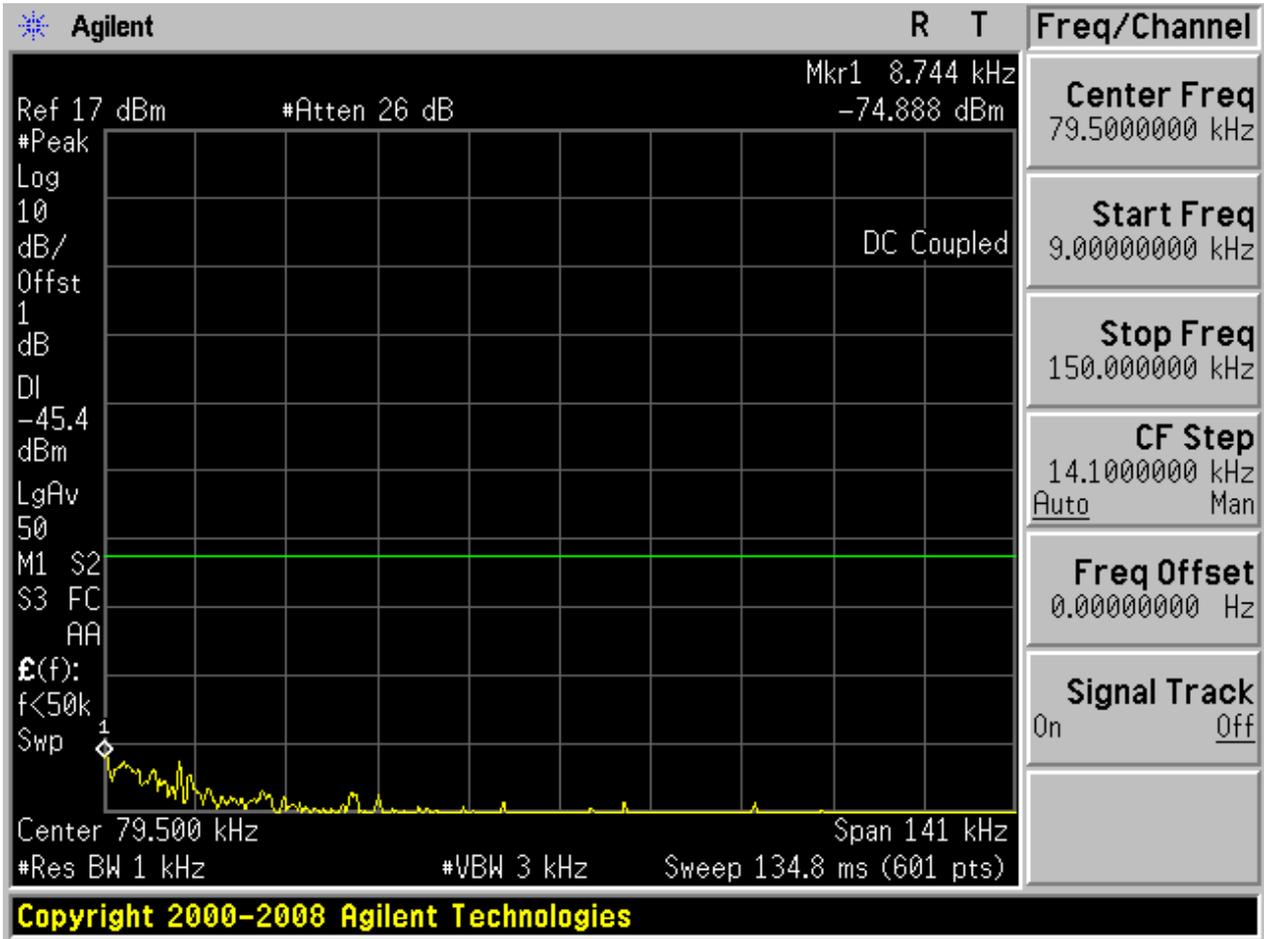
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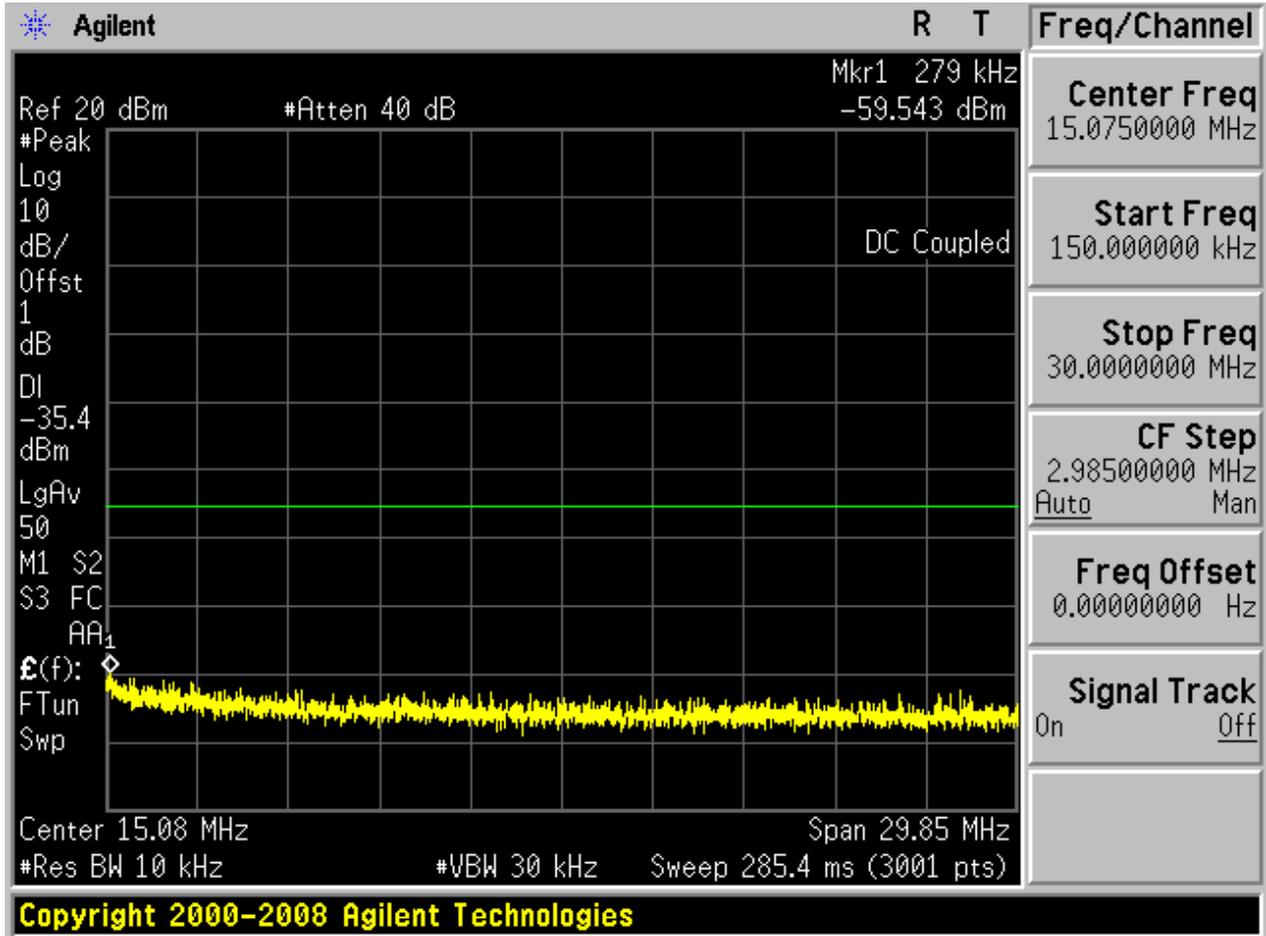
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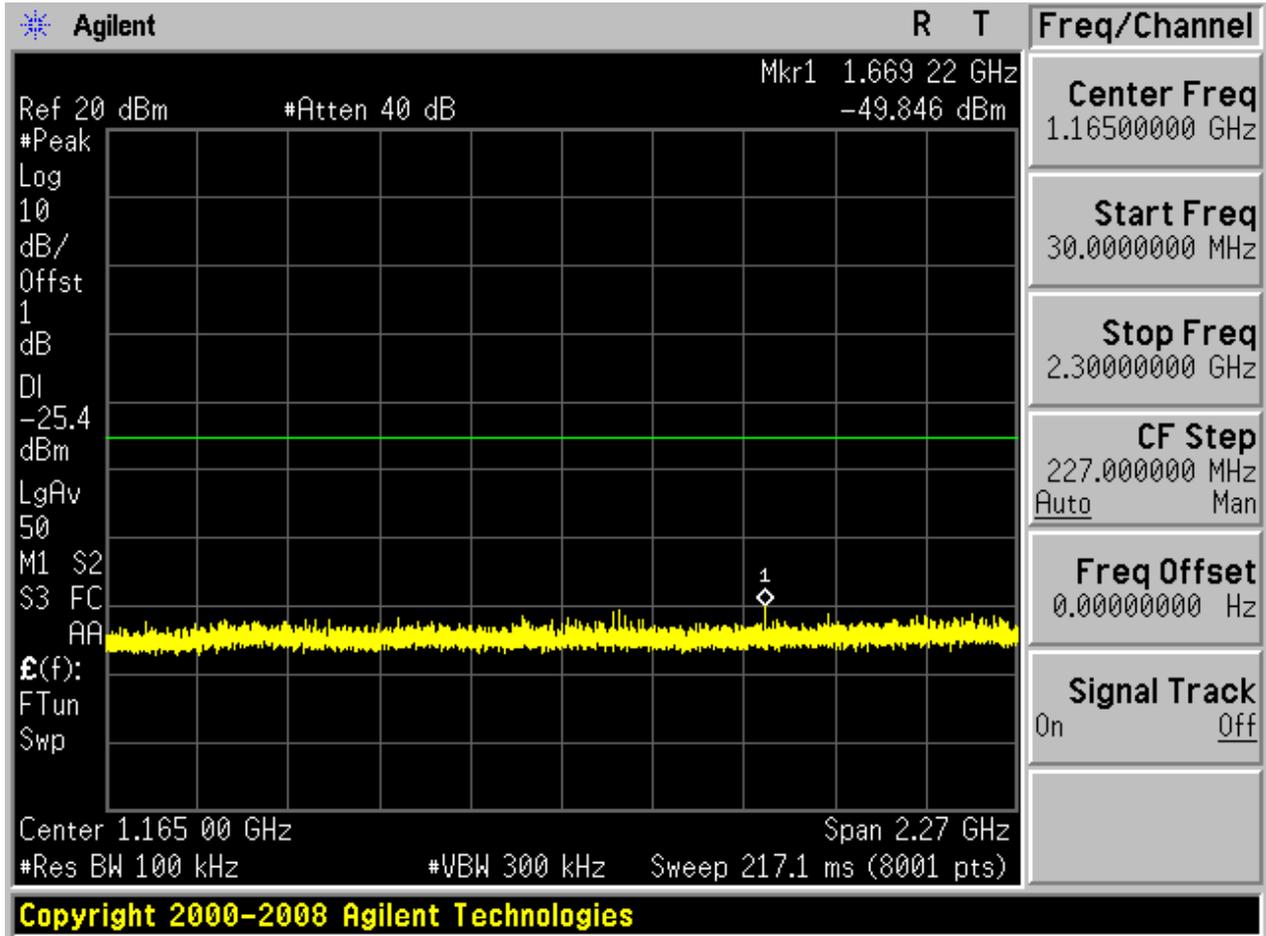


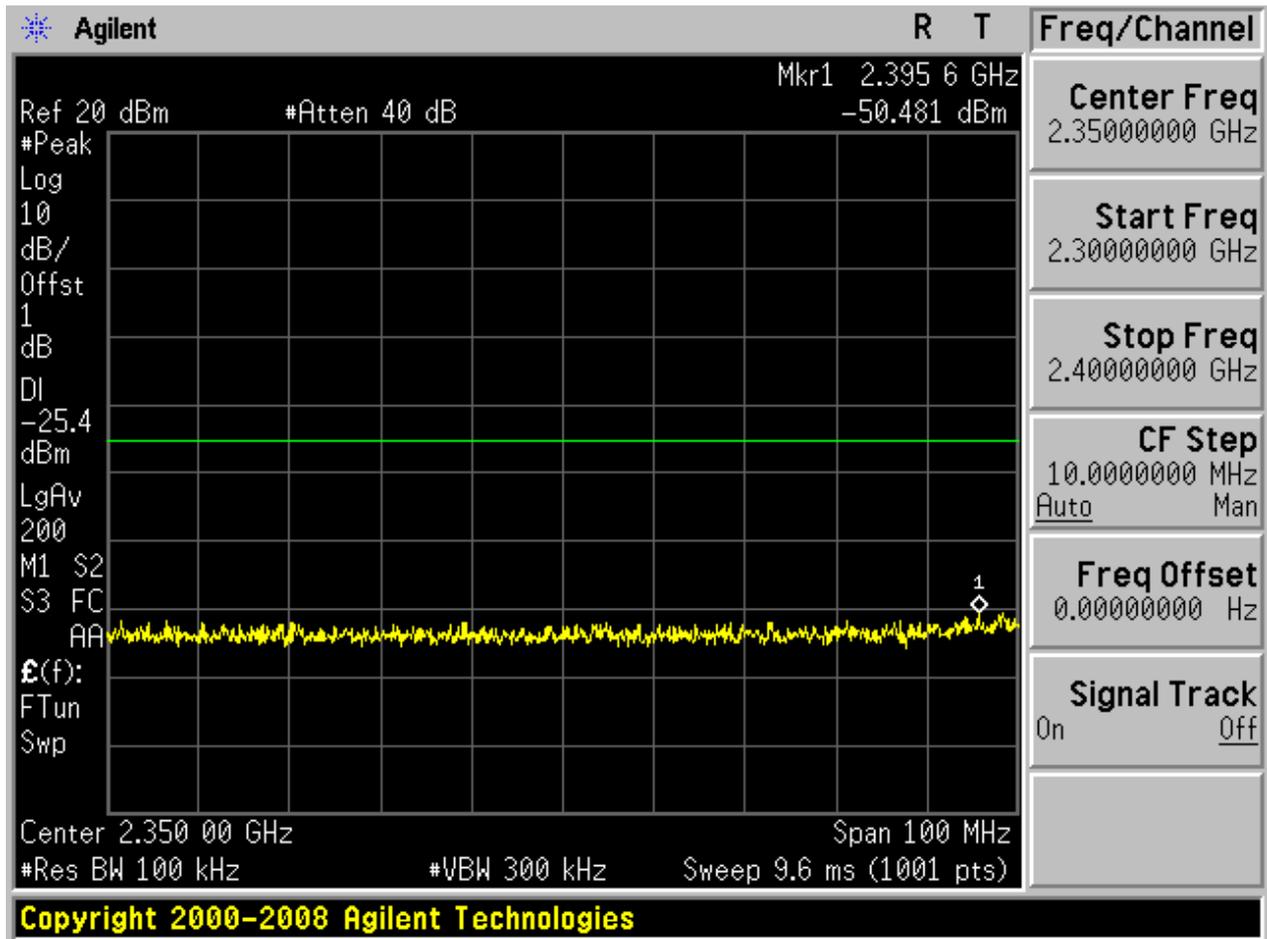


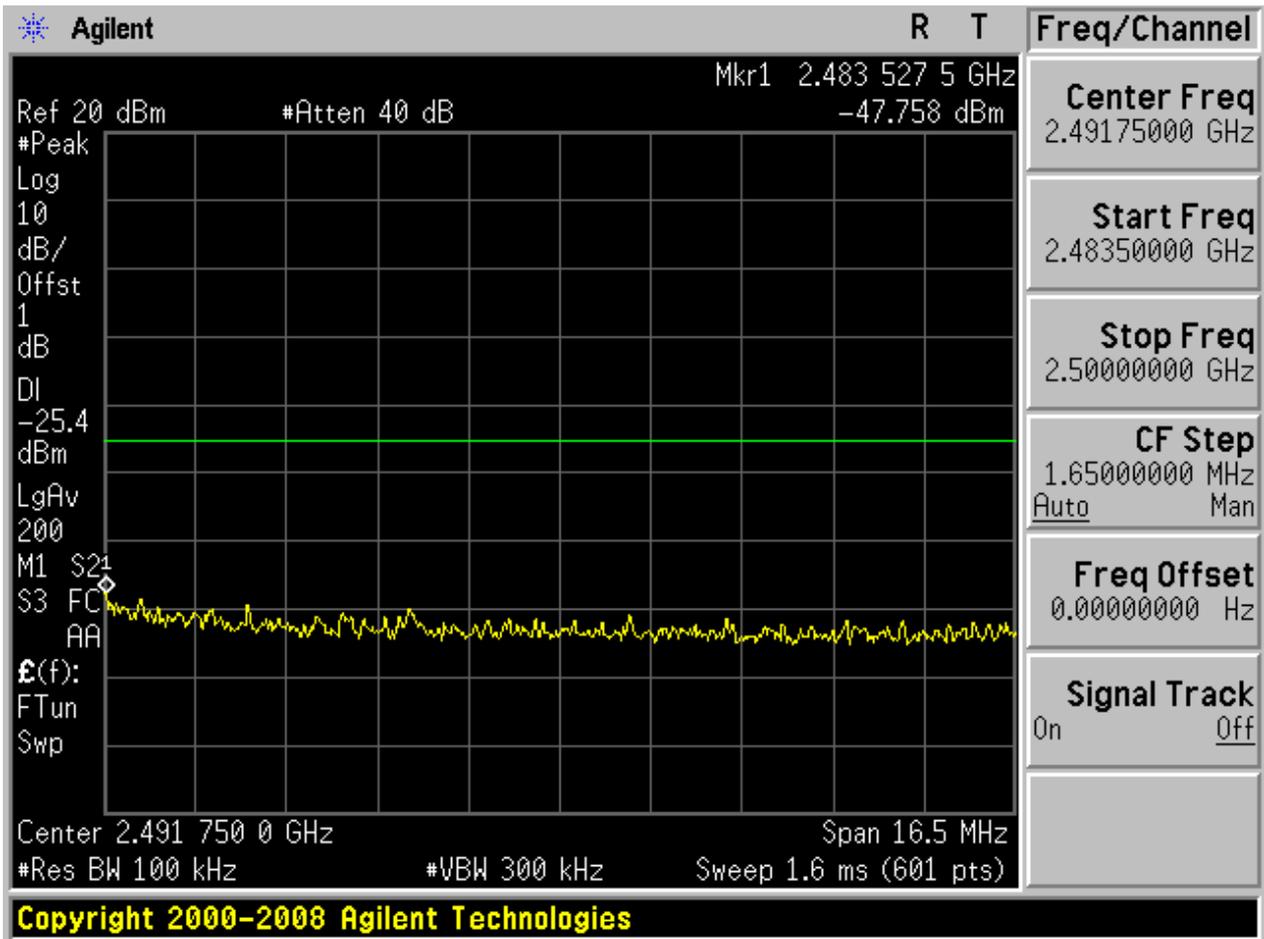
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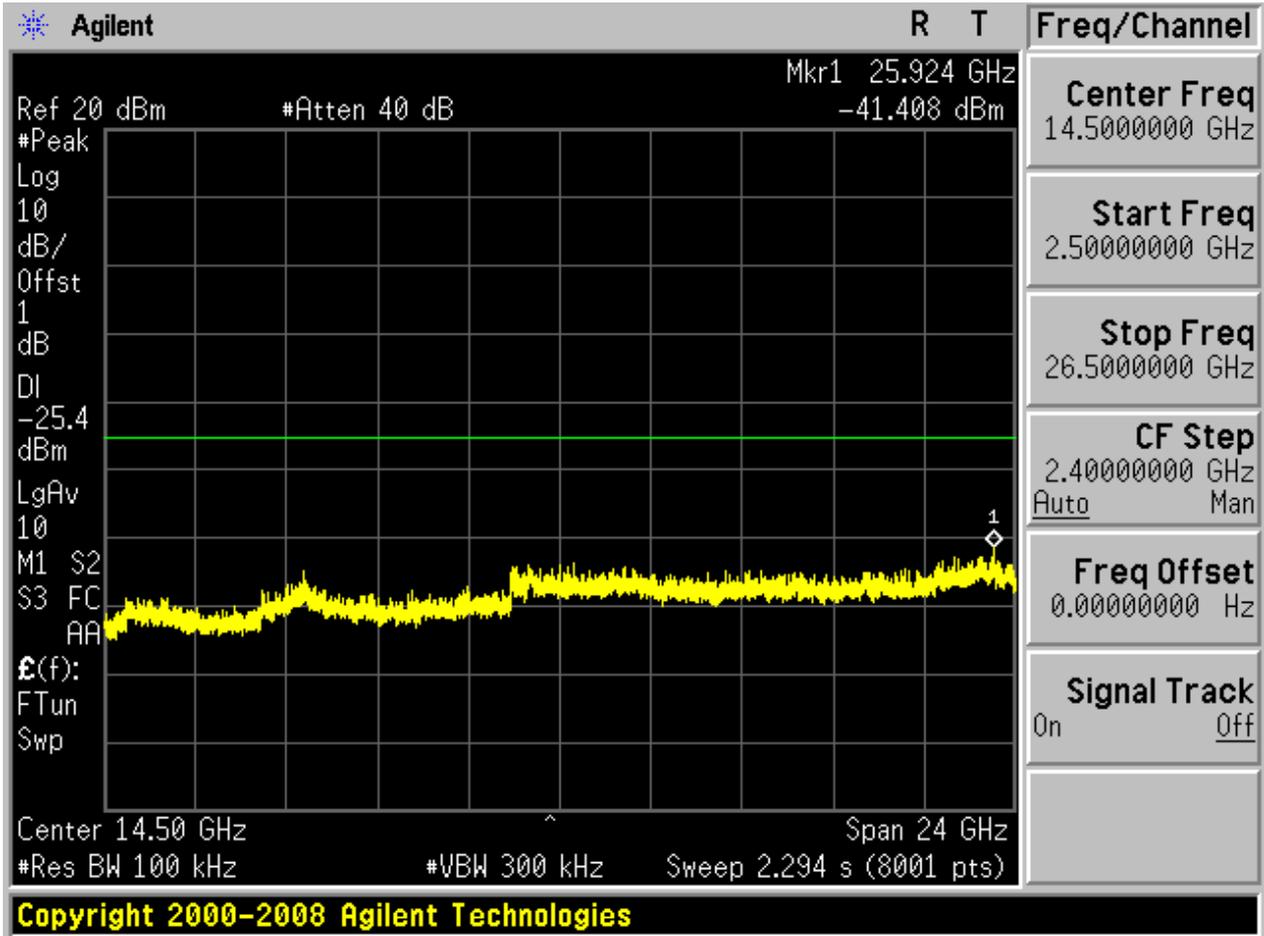












## Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

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



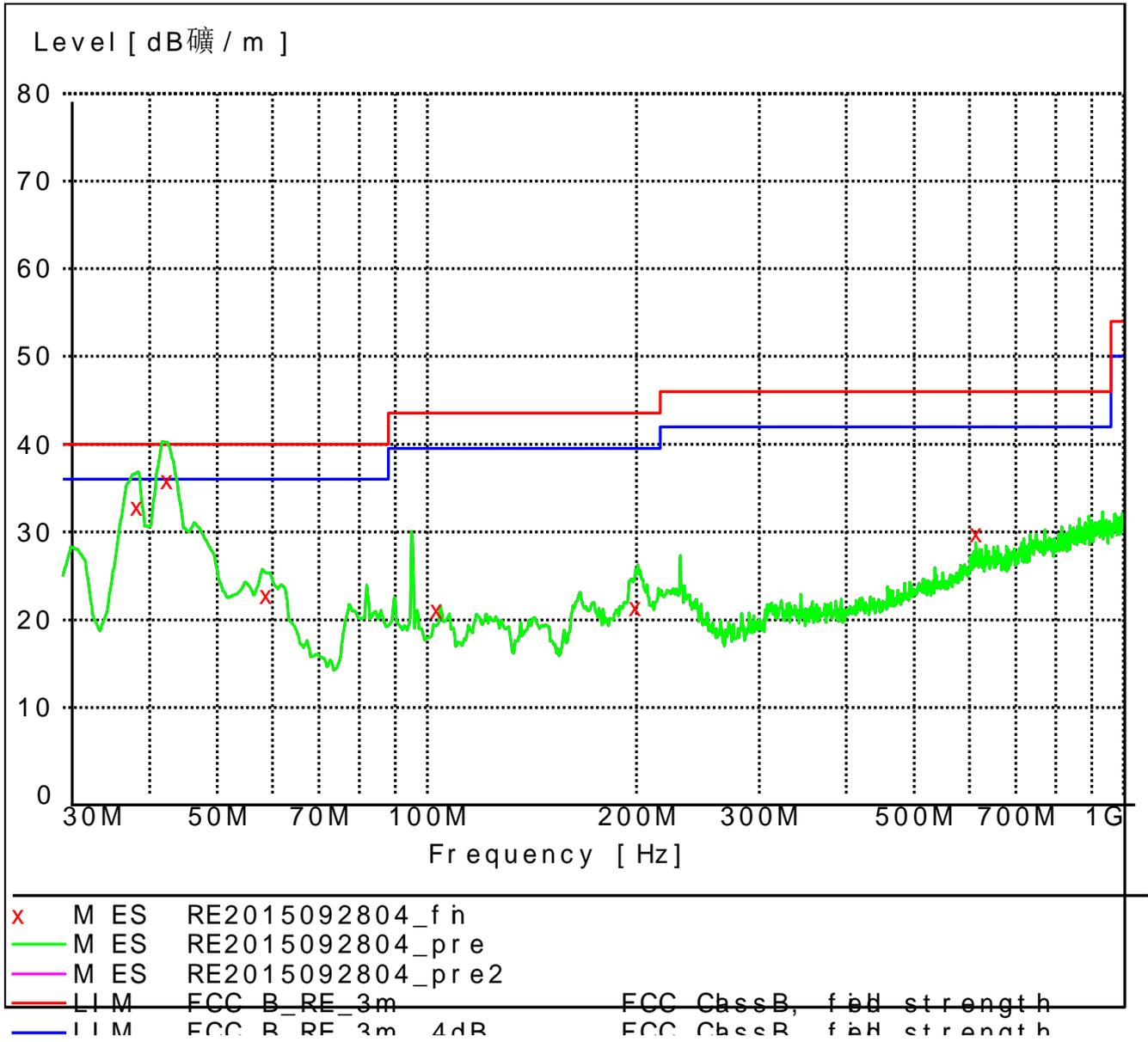
**Part 1: Testing Range of “9 kHz to 30MHz”**

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

**Part 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).



Frequency	Level	Transd	Limit	Margin	Det.	Height	Azimuth	Polarization
MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB		cm	deg	
38.420000	32.80	15.3	40.0	7.2	QP	114.0	28.00	VERTICAL
42.420000	35.90	15.2	40.0	4.1	QP	100.0	266.00	VERTICAL
58.836000	22.80	13.4	40.0	17.2	QP	114.0	360.00	VERTICAL
103.596000	21.10	13.5	43.5	22.4	QP	200.0	16.00	HORIZONTAL
199.820000	21.40	12.3	43.5	22.1	QP	100.0	169.00	VERTICAL
615.756000	29.80	21.8	46.0	16.2	QP	100.0	234.00	HORIZONTAL



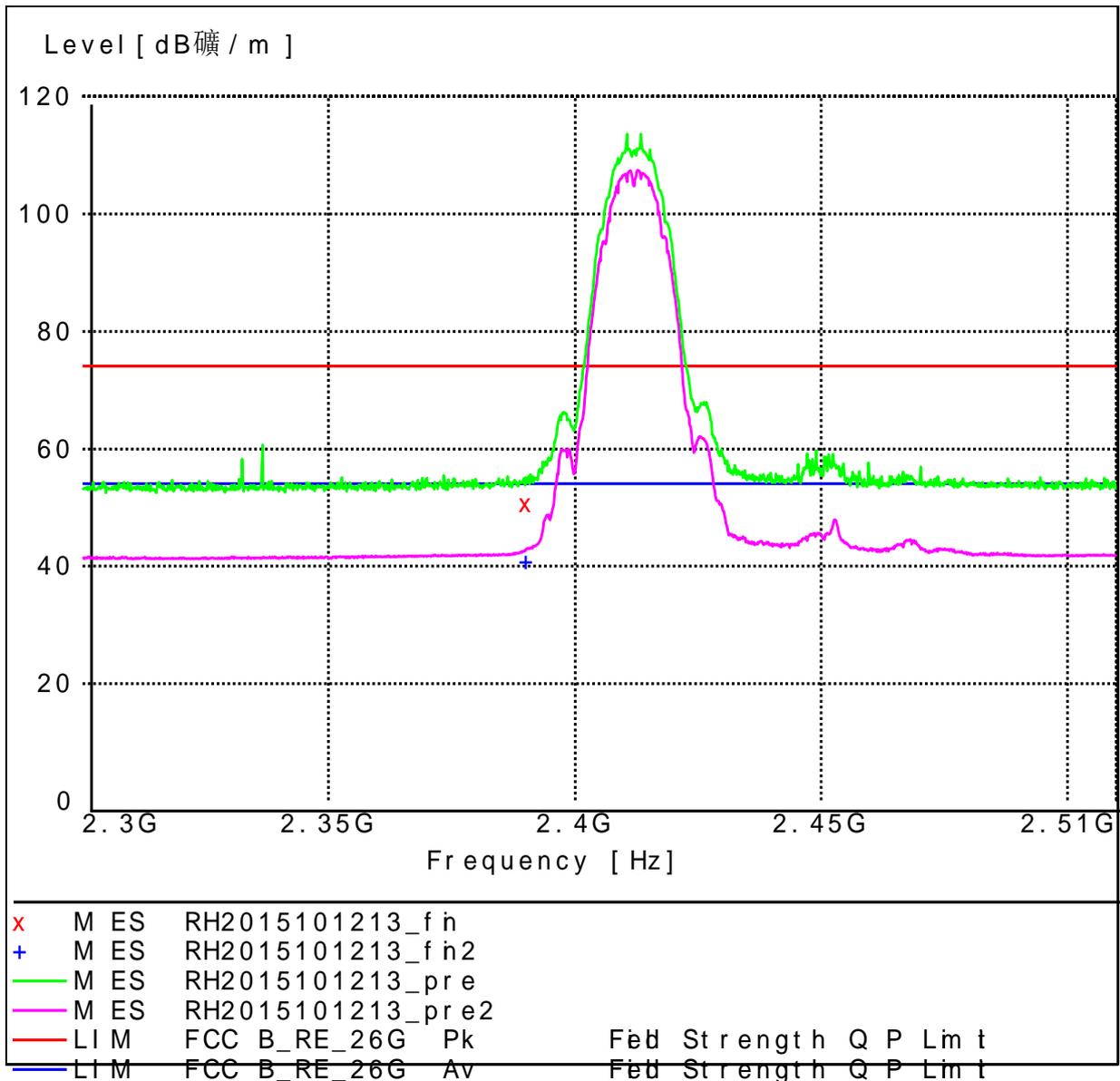
**Part 3: Testing Range of “18 GHz to 26.5 GHz”**

NOTE1: No peak found in the Test Range of “18 GHz to 26.5GHz”

**Part 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.

**11B Channel 1**



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



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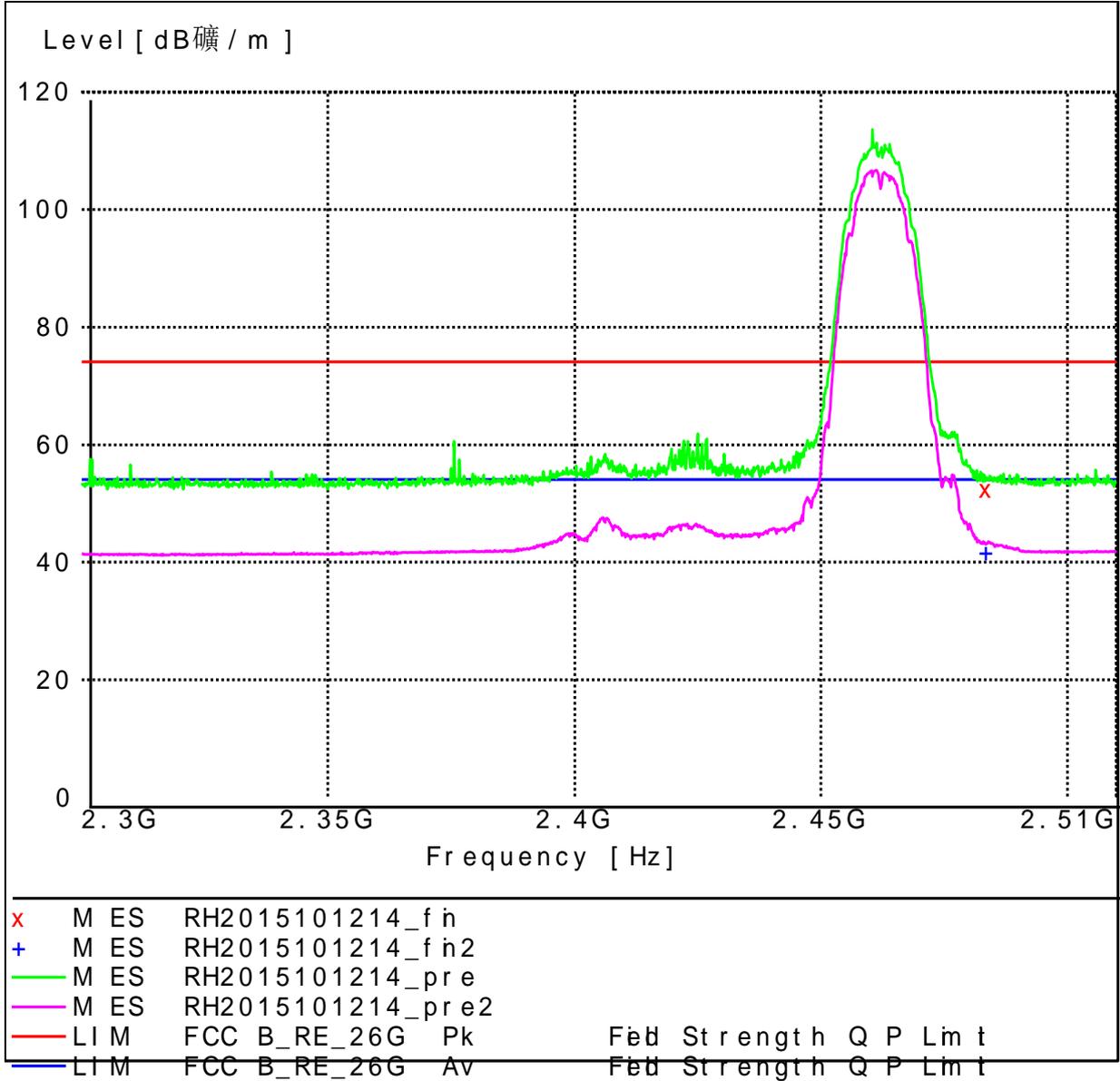
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No.MK.	Frequency	Level	Transd	Limit	Margin Det.	Height	Azimuth	Polarization
	MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB	cm	deg	
1.	2390.000000	50.80	34.8	74.0	23.2 PK	198.0	62.00	VERTICAL
2.	2390.000000	40.80	34.8	54.0	13.2 AV	124.0	360.00	HORIZONTAL

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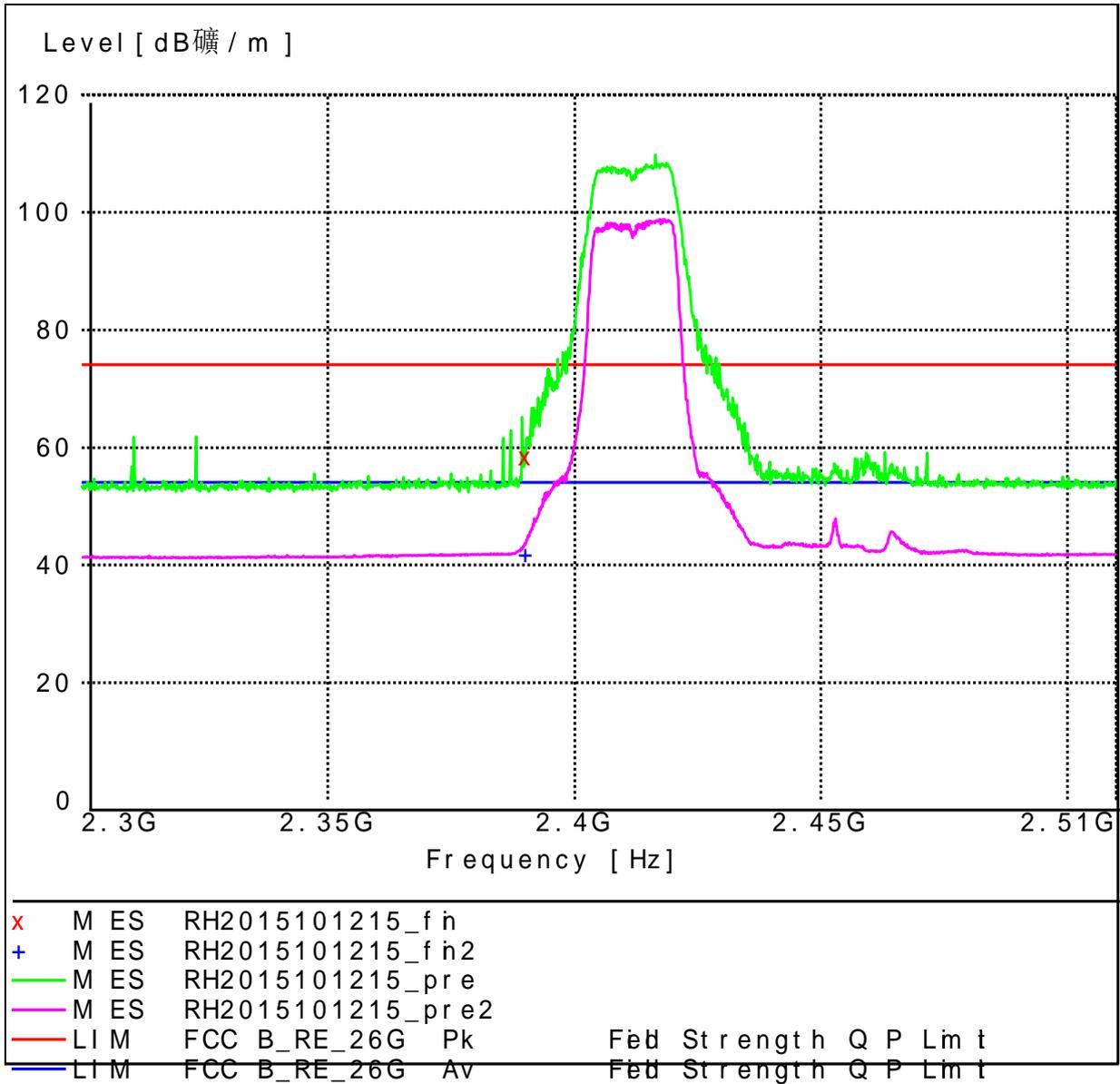
11B Channel 11



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

No.MK.	Frequency	Level	Transd	Limit	Margin Det.	Height	Azimuth	Polarization	
	MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB	cm	deg		
1.	2483.500000	52.50	35.1	74.0	21.5	PK	100.0	234.00	HORIZONTAL
2.	2483.500000	41.60	35.1	54.0	12.4	AV	100.0	232.00	HORIZONTAL

11G Channel 1



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



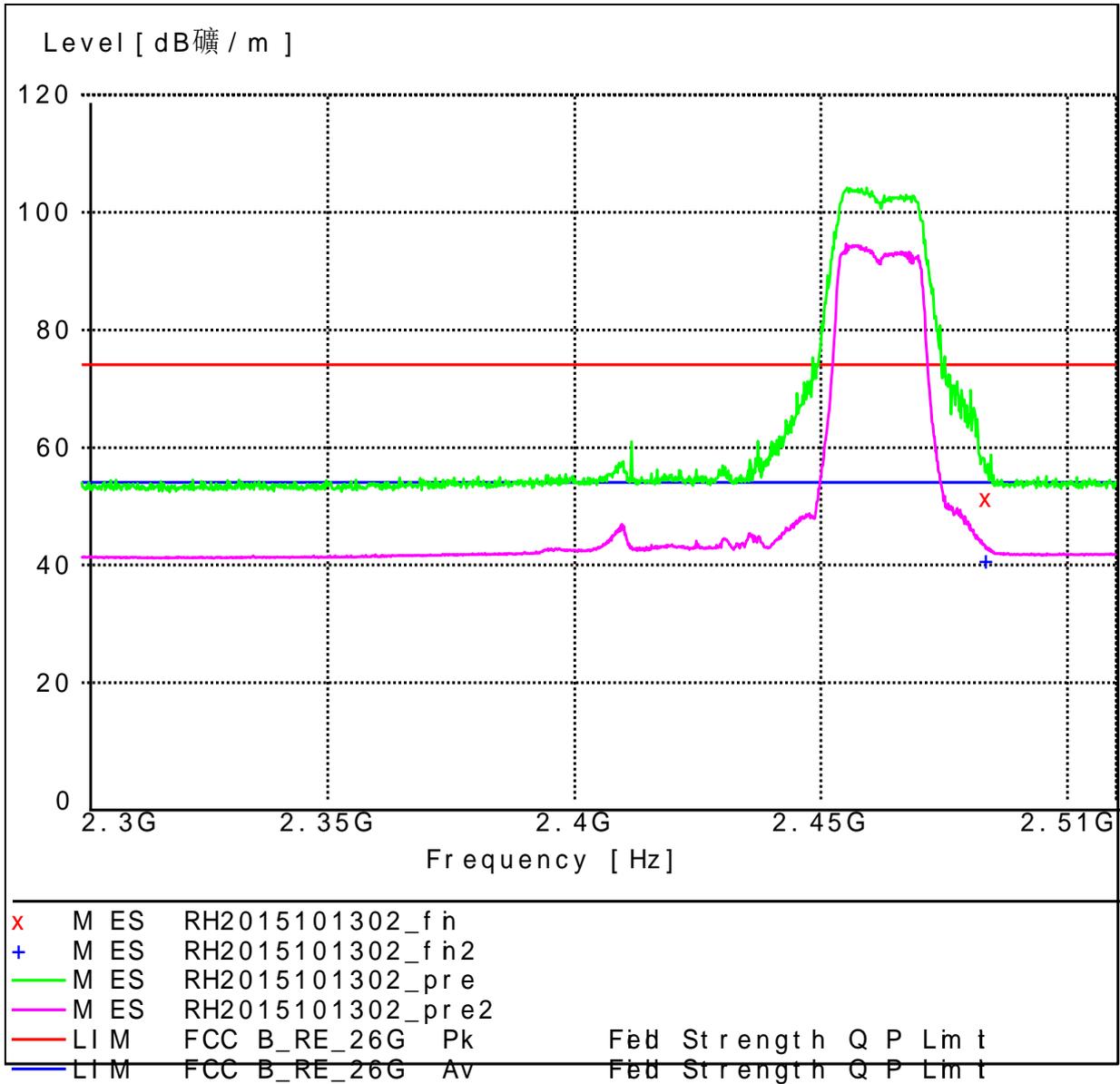
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No.MK.	Frequency	Level	Transd	Limit	Margin Det.	Height	Azimuth	Polarization
	MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB	cm	deg	
1.	2390.000000	58.50	34.8	74.0	15.5 PK	200.0	177.00	HORIZONTAL
2.	2390.000000	41.80	34.8	54.0	12.2 AV	101.0	227.00	HORIZONTAL

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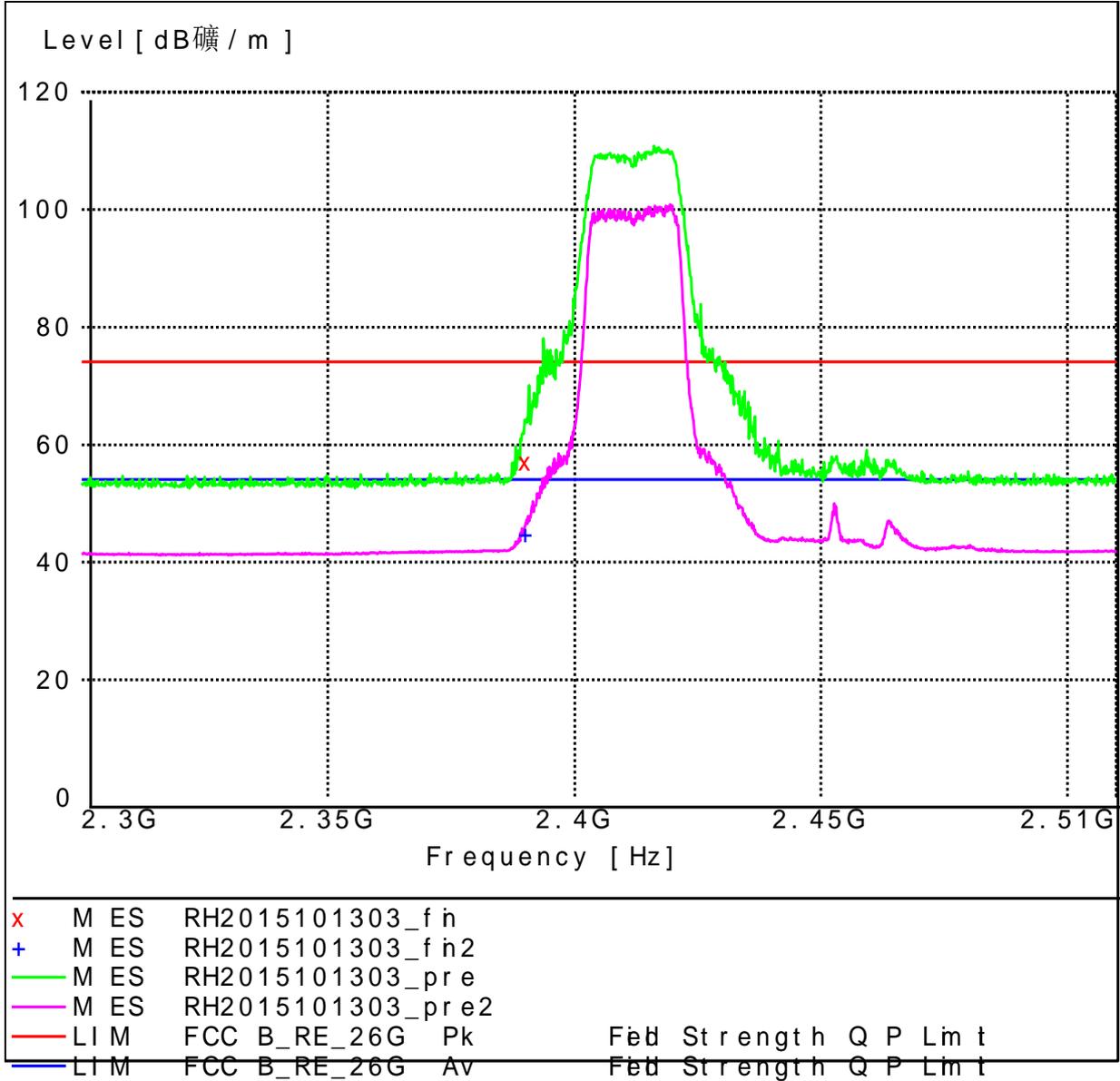
**11G Channel 11**



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

No.MK.	Frequency	Level	Transd	Limit	Margin Det.	Height	Azimuth	Polarization
	MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB	cm	deg	
1.	2483.500000	51.40	35.1	74.0	22.6 PK	110.0	286.00	HORIZONTAL
2.	2483.500000	40.80	35.1	54.0	13.2 AV	100.0	158.00	HORIZONTAL

11N20 Channel 1



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



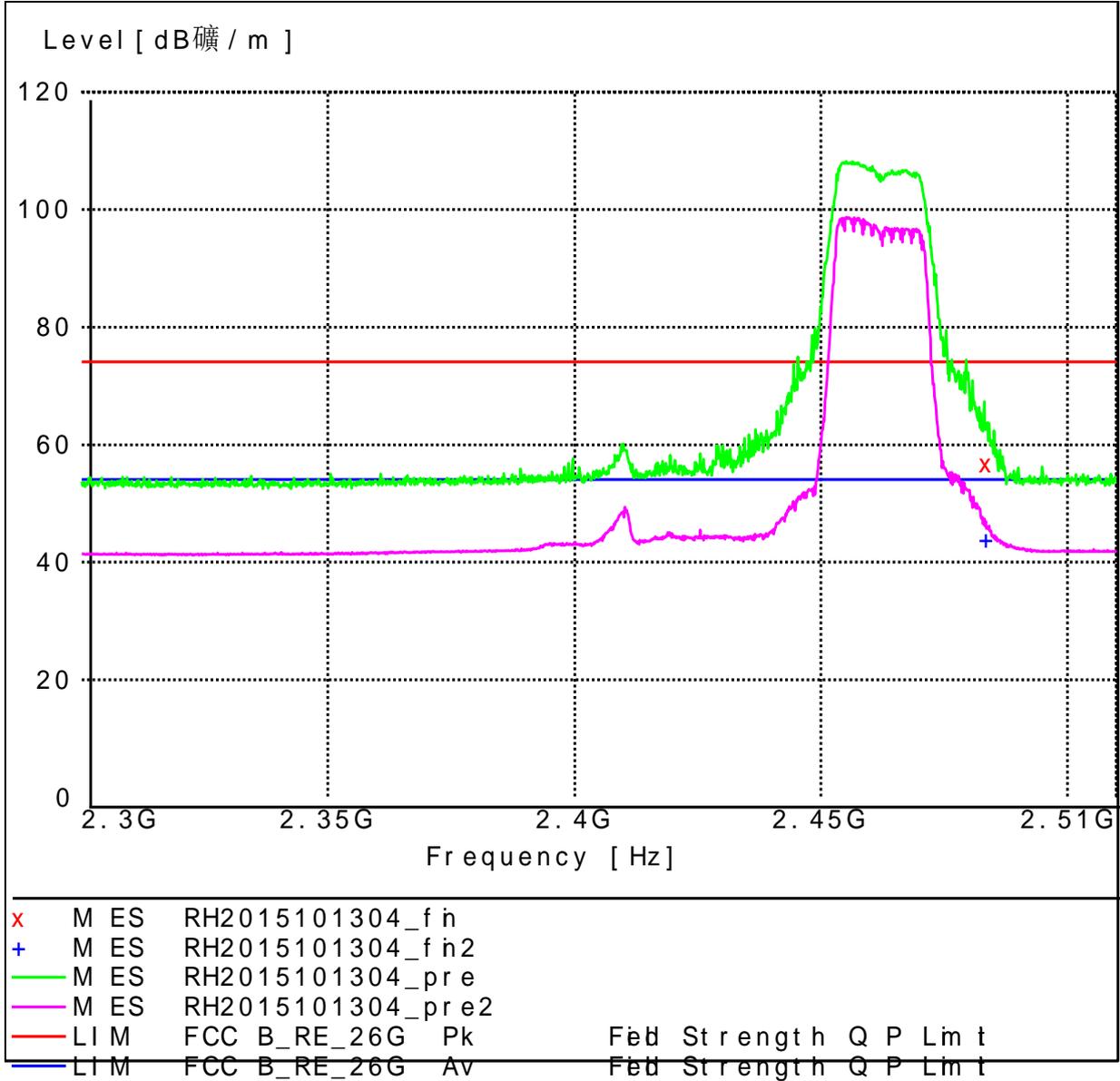
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No.MK.	Frequency	Level	Transd	Limit	Margin Det.	Height	Azimuth	Polarization
	MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB	cm	deg	
1.	2390.000000	57.10	34.8	74.0	16.9 PK	100.0	348.00	HORIZONTAL
2.	2390.000000	44.80	34.8	54.0	9.2 AV	119.0	338.00	HORIZONTAL

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11N20 Channel 11

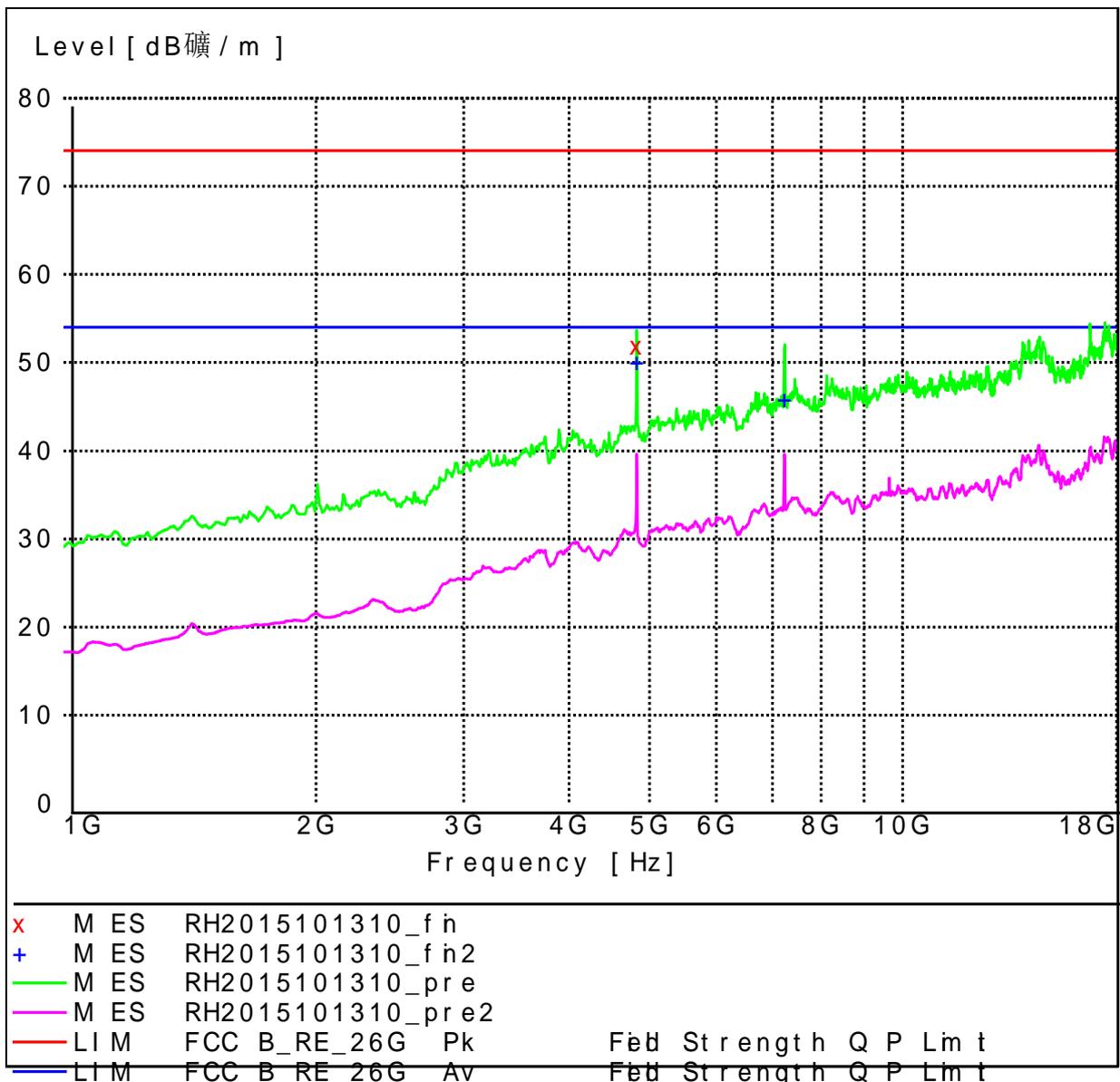


Note: The peak exceeds the limit line is carrier frequency.

No.MK.	Frequency	Level	Transd	Limit	Margin Det.	Height	Azimuth	Polarization
	MHz	dBμV/m	dB	dBμV/m	dB	cm	deg	
1.	2483.500000	56.70	35.1	74.0	17.3	PK	100.0	0.00
2.	2483.500000	43.90	35.1	54.0	10.1	AV	100.0	346.00

**Part 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).

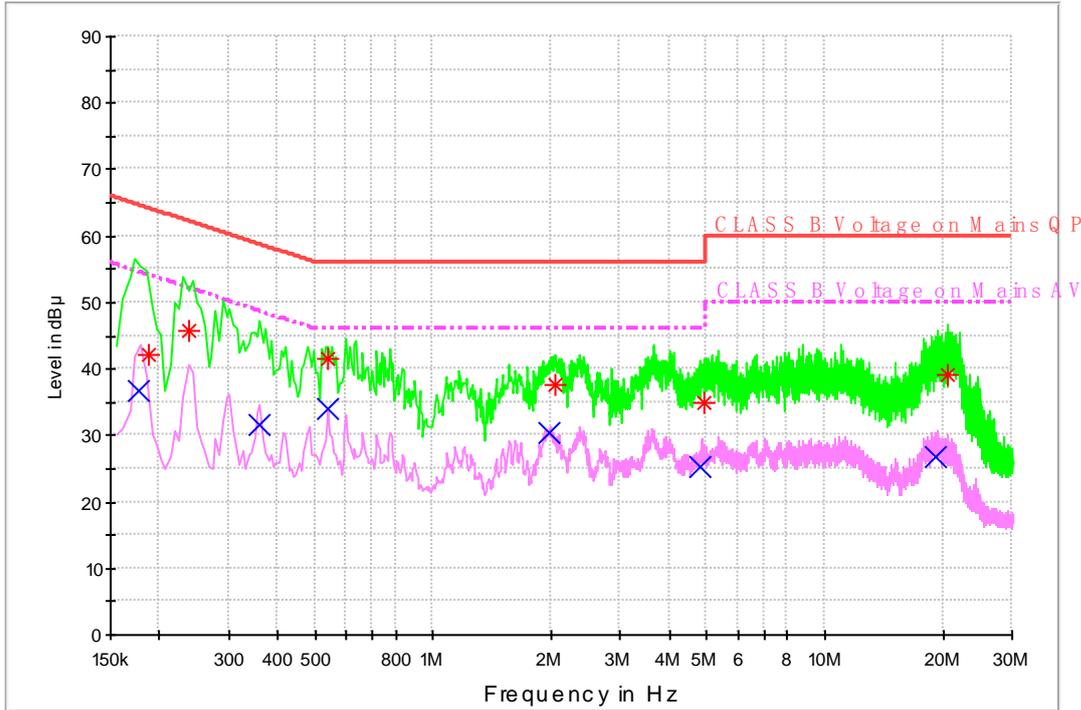


## Appendix I: Conducted Emission at Power Port

Note: RBW =9 kHz, VBW = 30 kHz

### Channel 39

CLASS B Voltage with ENV216



### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Correct Factor dB	Limit dBuV	Margin dB	Line
0.187706	42.1	9.8	64.1	22.0	L1
0.238299	45.7	9.8	62.2	16.5	L1
0.539403	41.6	9.7	56.0	14.4	L1
2.039424	37.7	9.8	56.0	18.3	L1
4.928364	34.8	10.0	56.0	21.2	L1
20.604909	39.0	10.1	60.0	21.0	L1

## Final Result 2

Frequency (MHz)	Average (dB $\mu$ V)	Correct Factor dB	Limit dB $\mu$ V	Margin dB	Line
0.177589	36.8	9.8	54.6	17.8	L1
0.360231	31.5	9.8	48.7	17.2	L1
0.536181	34.1	9.7	46.0	11.9	L1
1.964532	30.4	9.8	46.0	15.6	L1
4.781913	25.1	9.9	46.0	20.9	L1
19.246779	26.8	10.2	50.0	23.2	L1

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END