



# Appendix for Testreport



## 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.

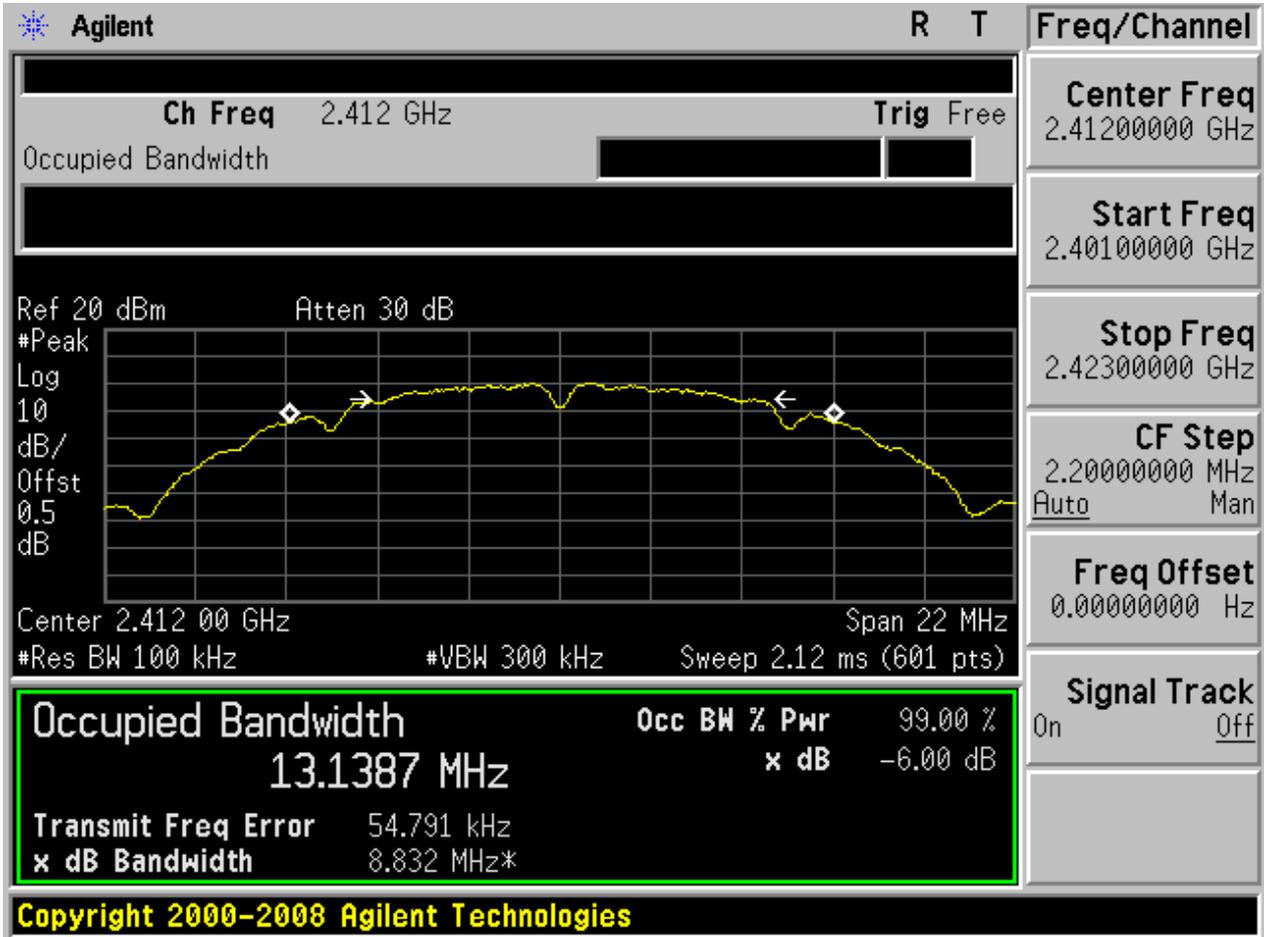
### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.83	pass
11B	M	2437	Ant 1	8.14	pass
11B	H	2462	Ant 1	8.13	pass
11G	L	2412	Ant 1	16.58	pass
11G	M	2437	Ant 1	16.55	pass
11G	H	2462	Ant 1	16.58	pass
11N20	L	2412	Ant 1	17.76	pass
11N20	M	2437	Ant 1	17.80	pass
11N20	H	2462	Ant 1	17.80	pass



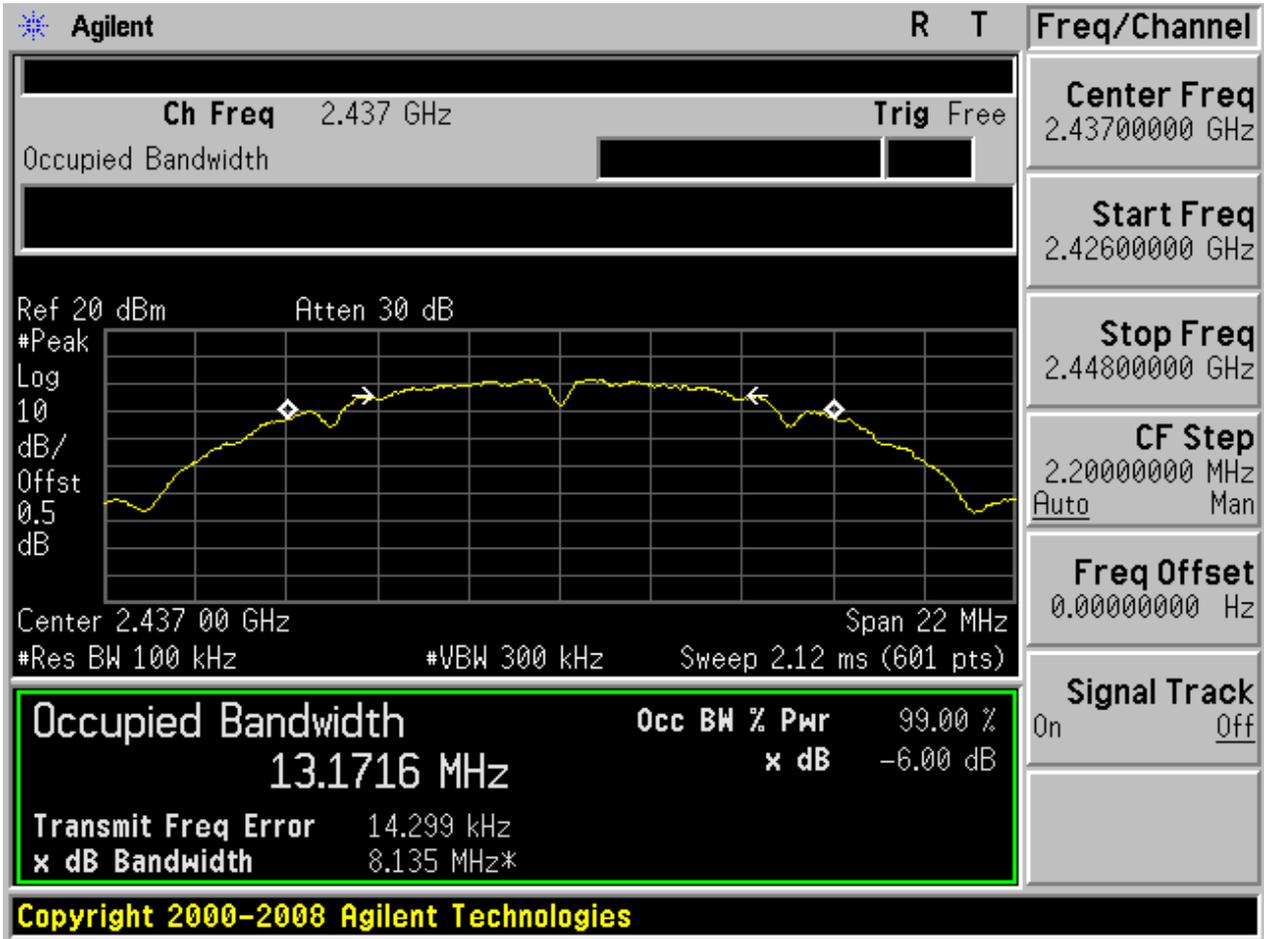
Part II - Test Plots

2.1 11B\_L@Ant 1

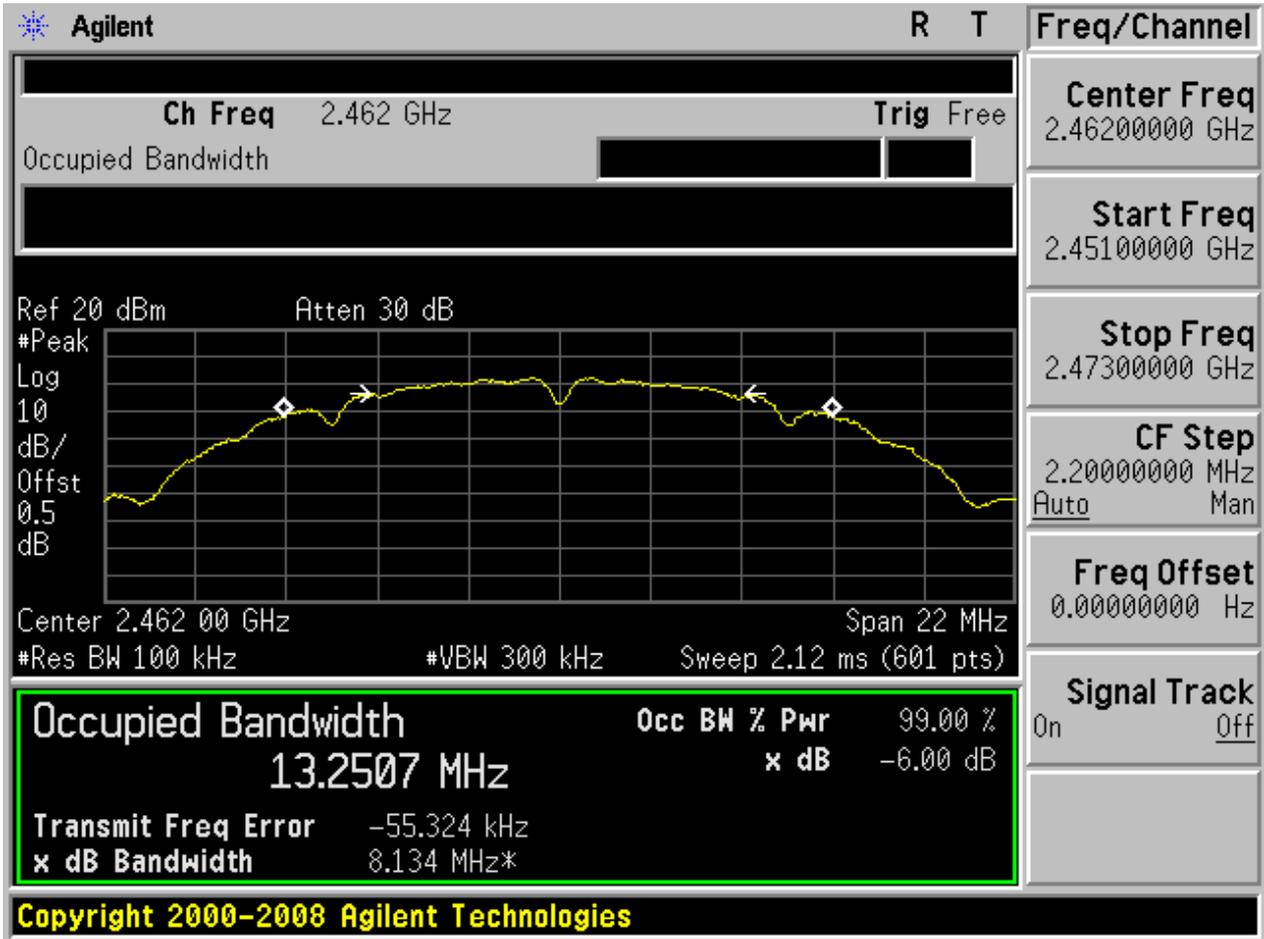




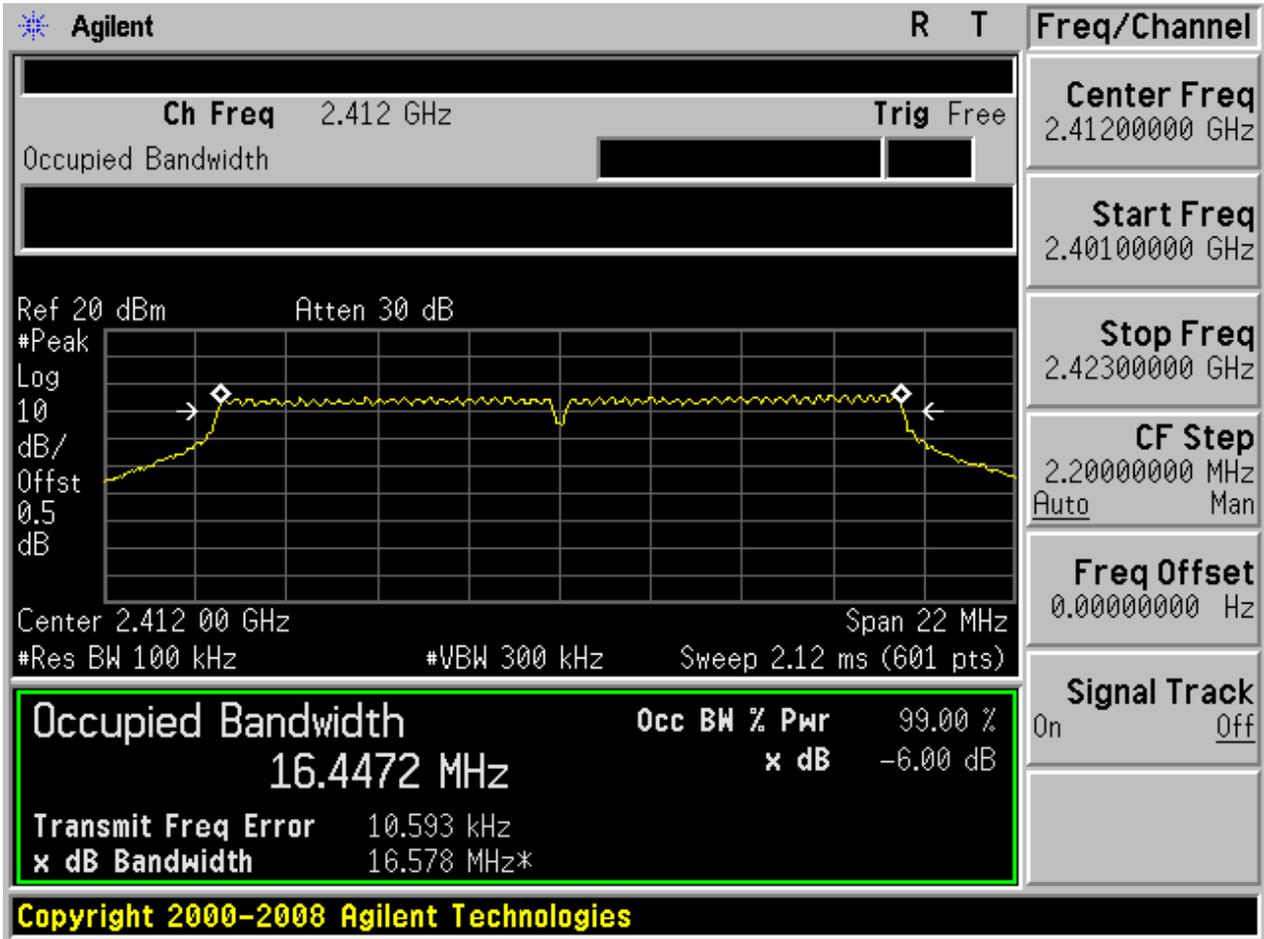
2.2 11B\_M@Ant 1



2.3 11B\_H@Ant 1

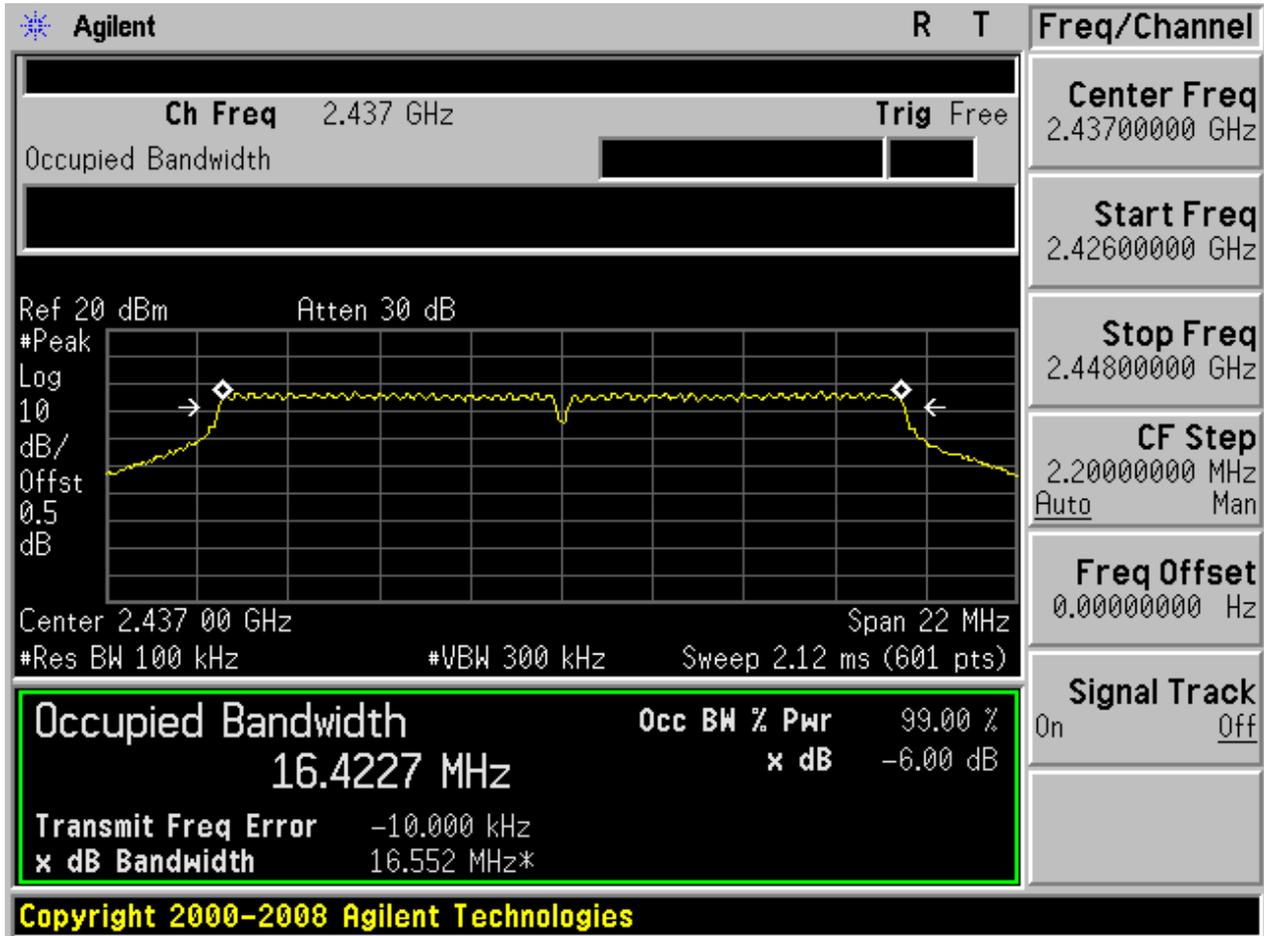


2.4 11G\_L@Ant 1



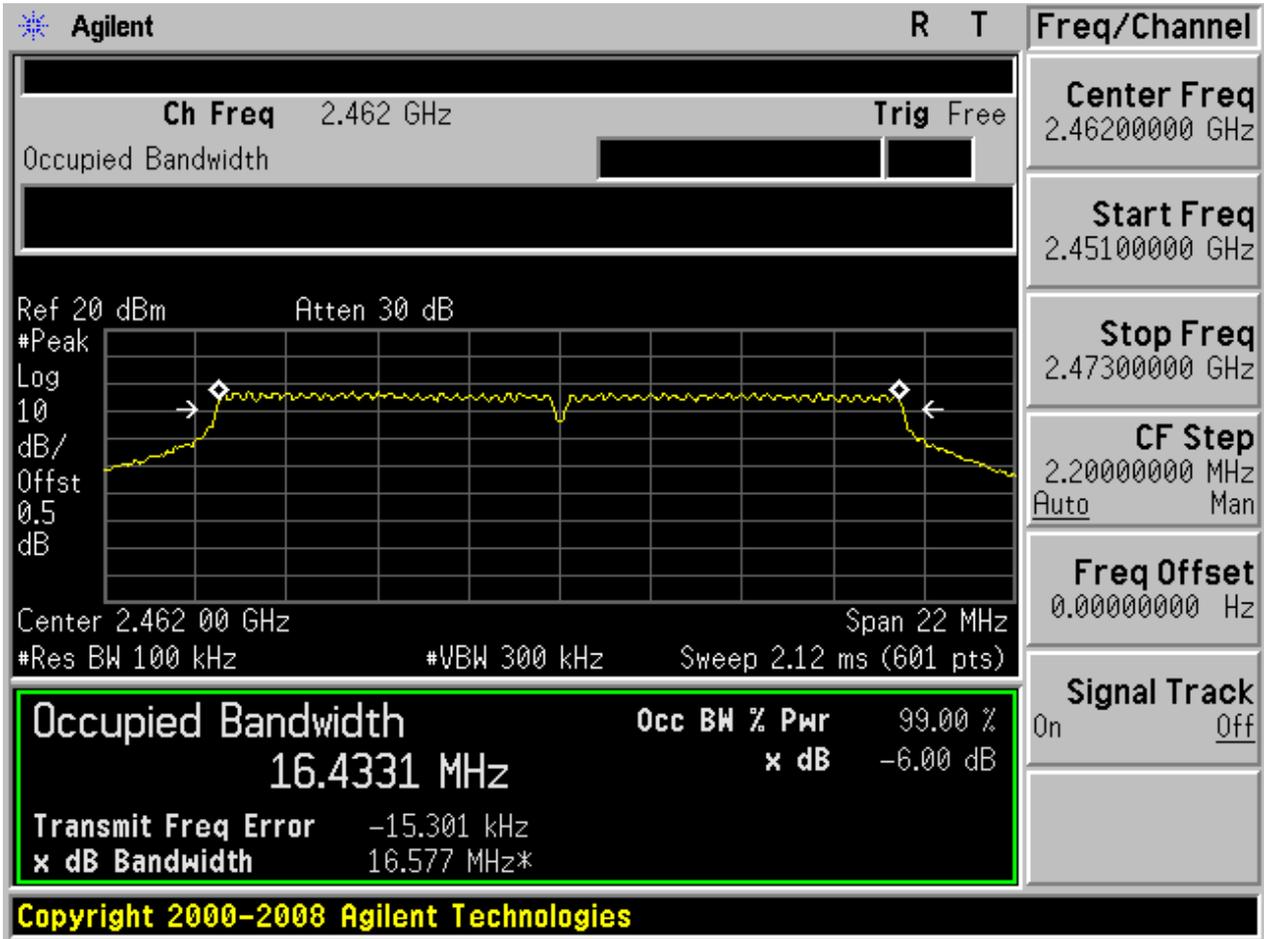


## 2.5 11G\_M@Ant 1



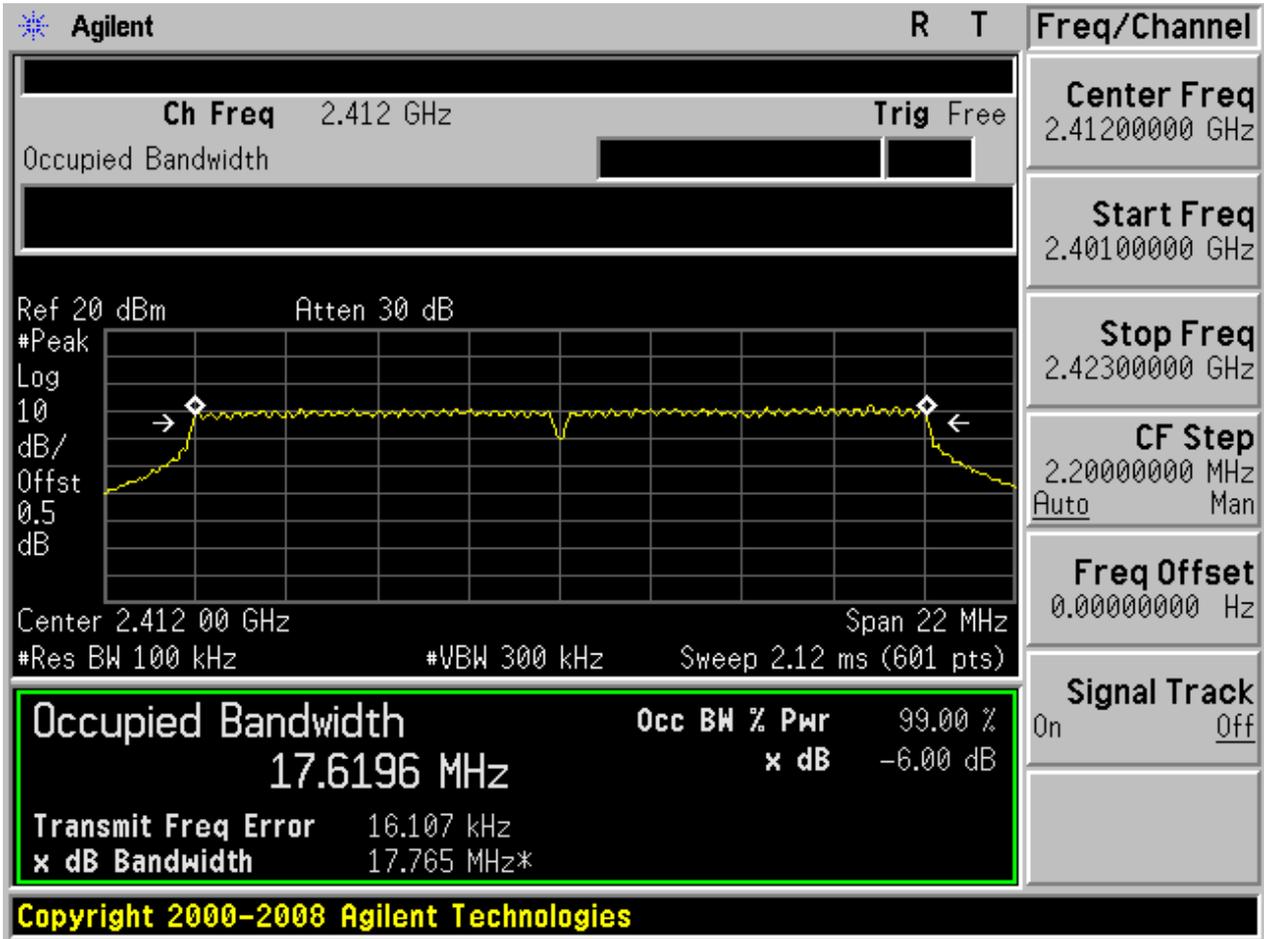


2.6 11G\_H@Ant 1



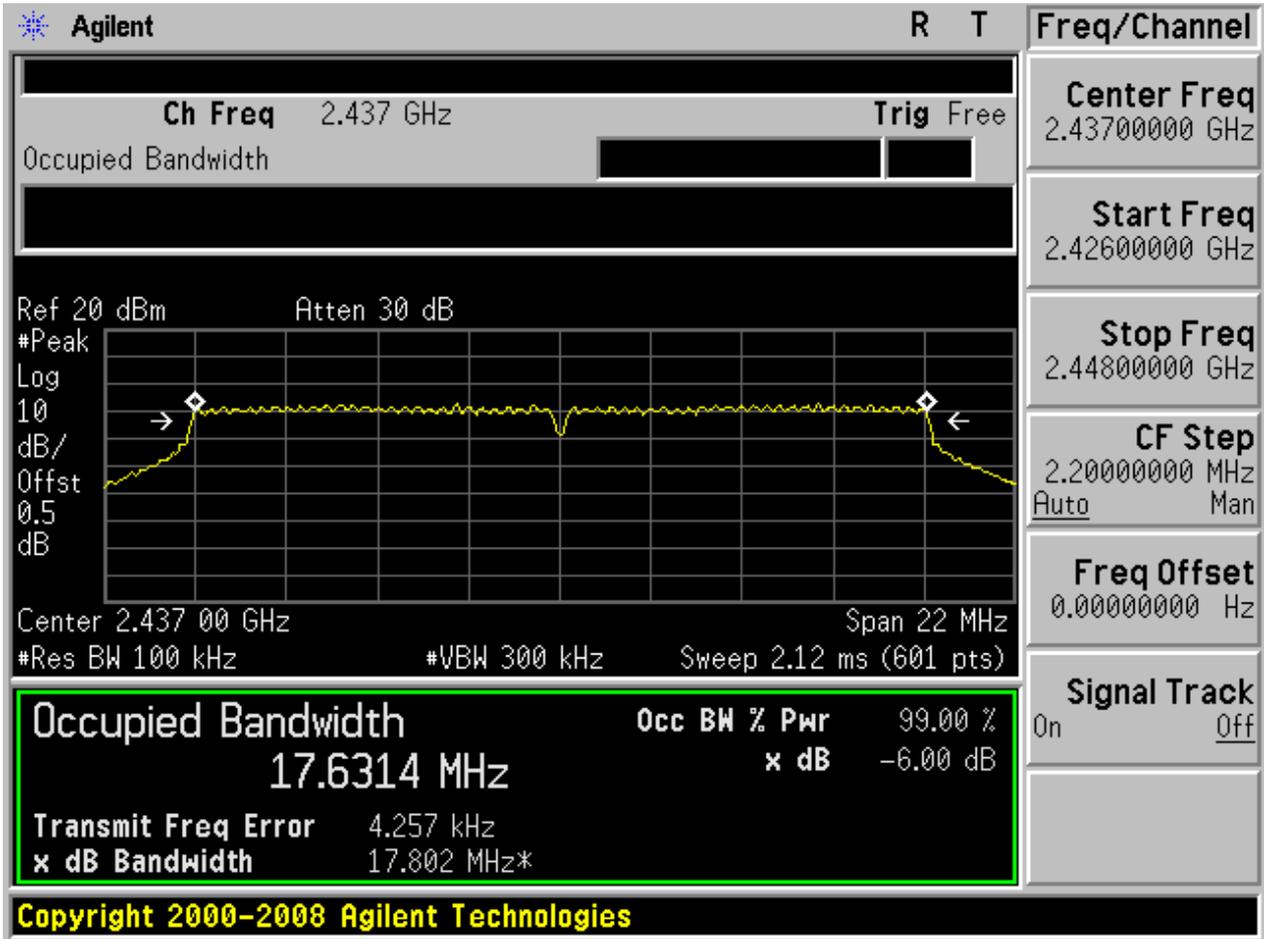


2.7 11N20\_L@Ant 1



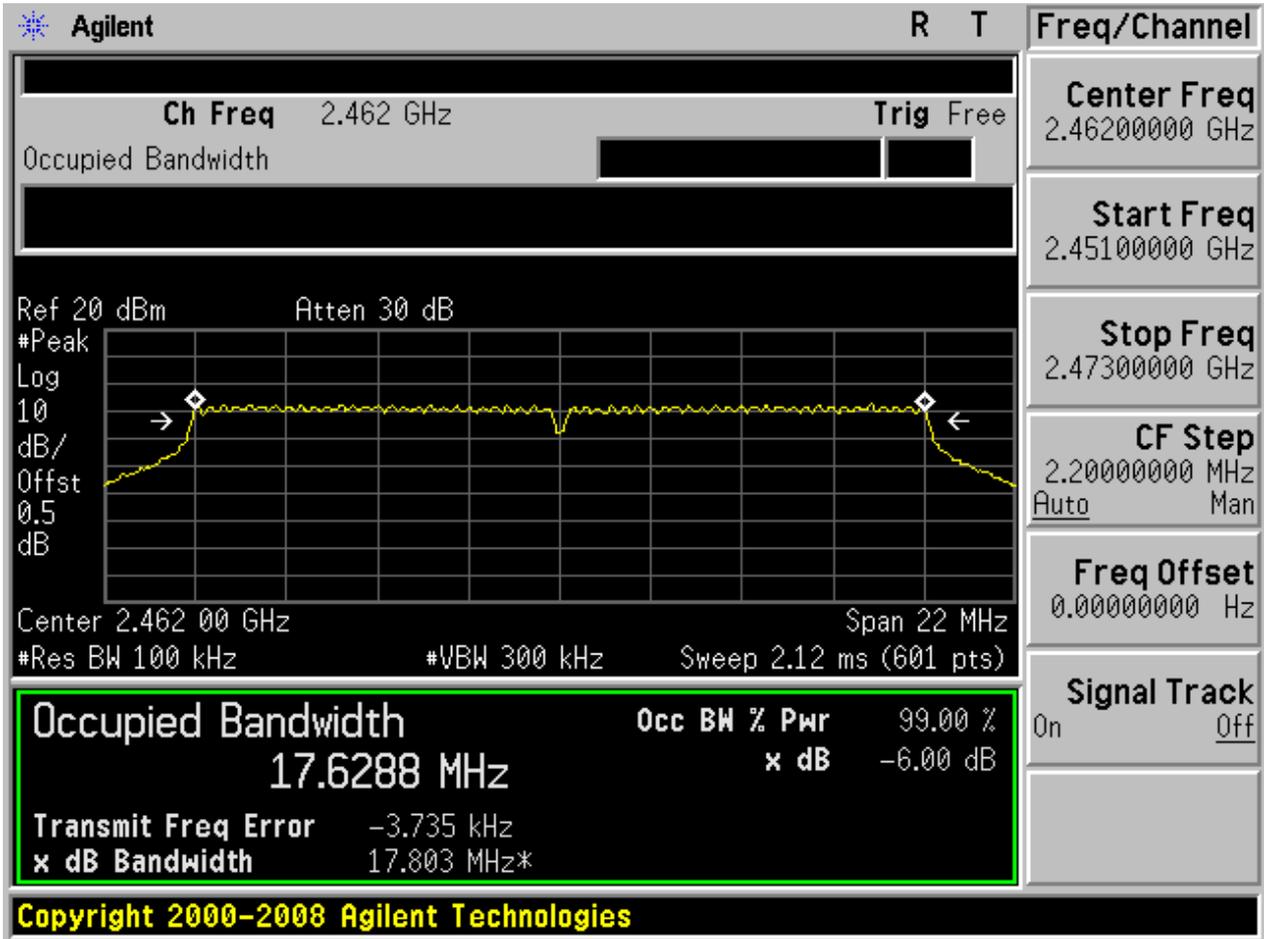


2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1





## Appendix B: Occupied Bandwidth

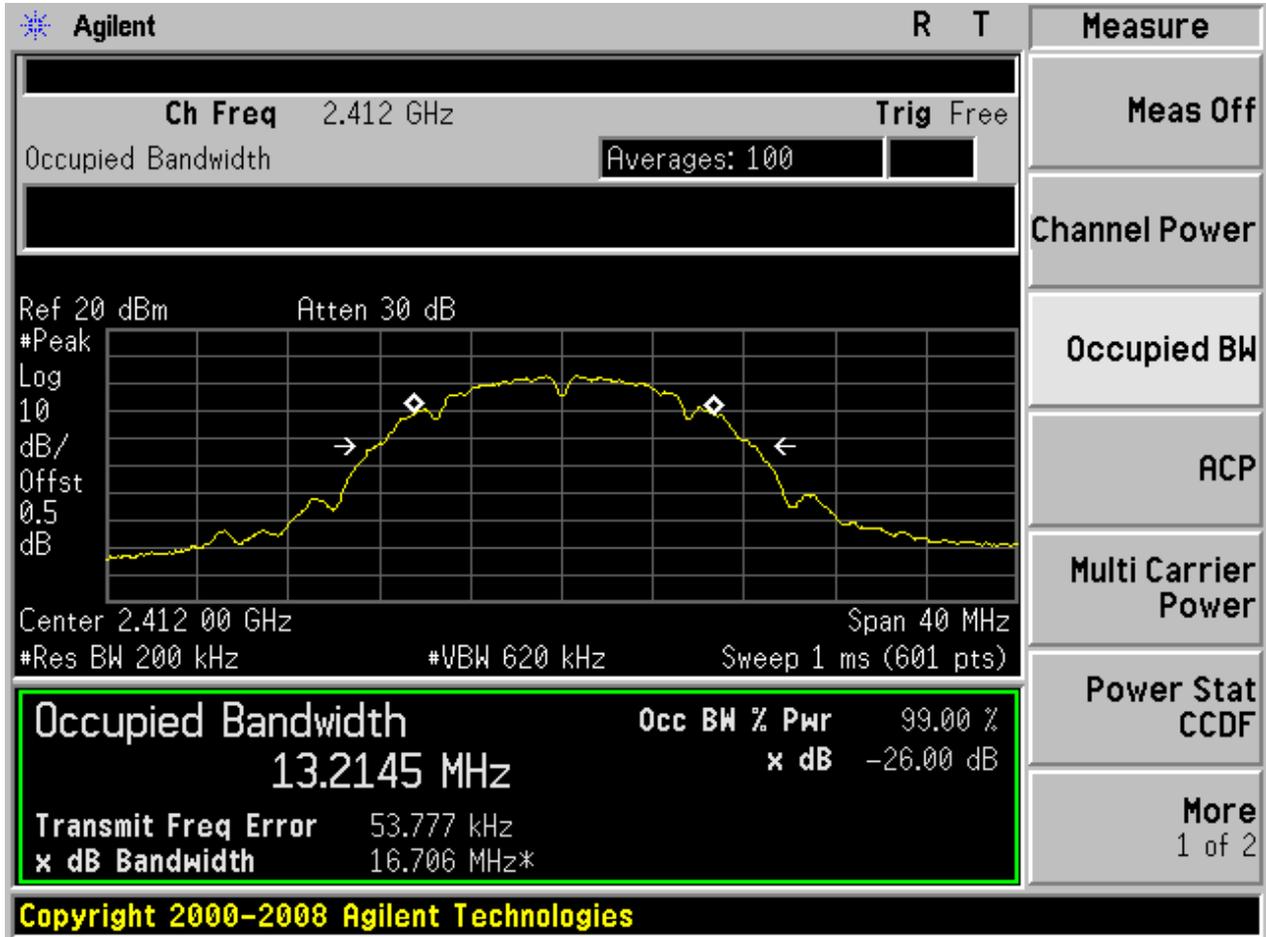
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

### Part I - Test Results

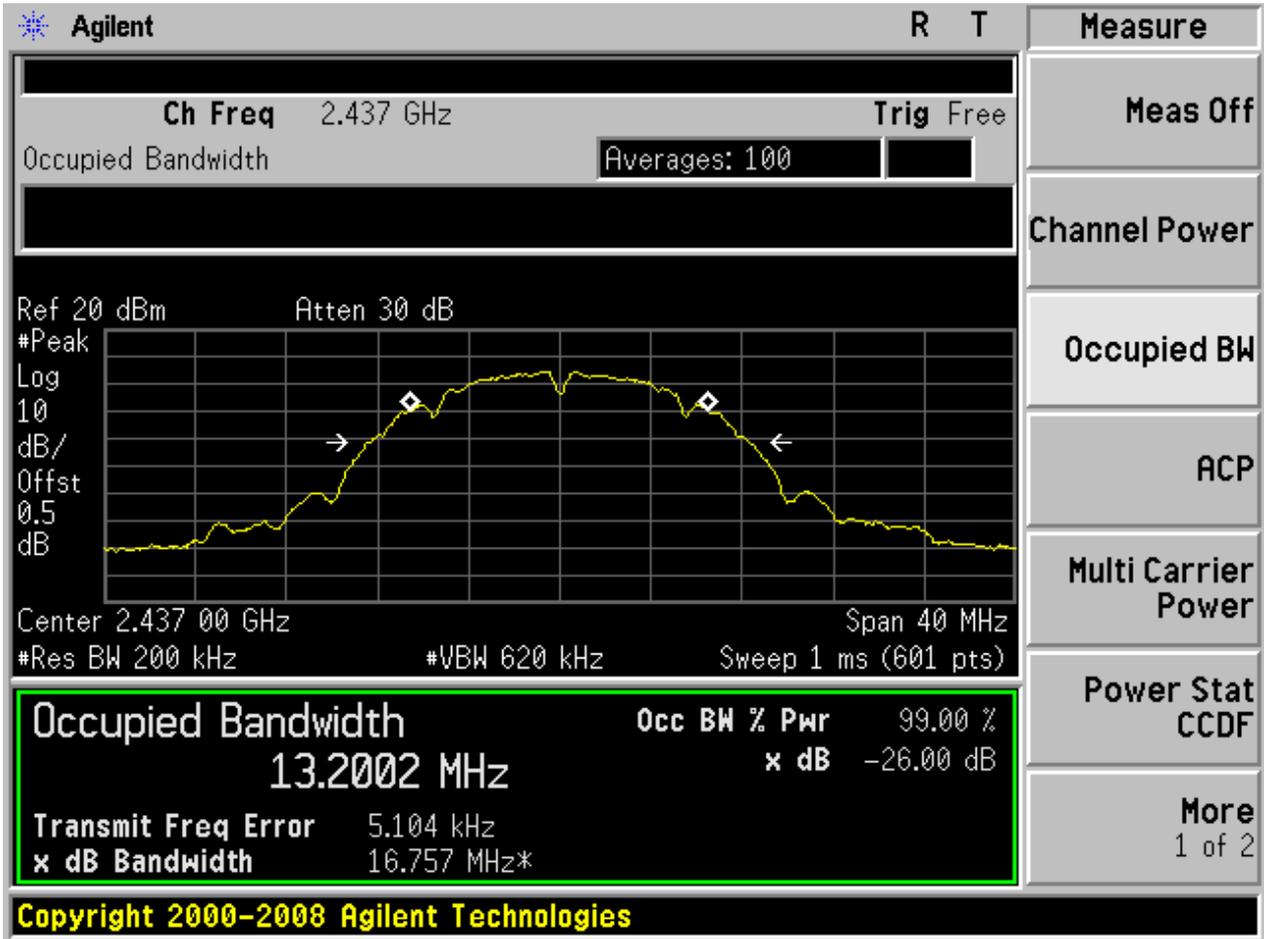
Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	13.21	pass
11B	M	2437	Ant 1	13.20	pass
11B	H	2462	Ant 1	13.29	pass
11G	L	2412	Ant 1	16.54	pass
11G	M	2437	Ant 1	16.49	pass
11G	H	2462	Ant 1	16.50	pass
11N20	L	2412	Ant 1	17.68	pass
11N20	M	2437	Ant 1	17.64	pass
11N20	H	2462	Ant 1	17.68	pass

Part II - Test Plots

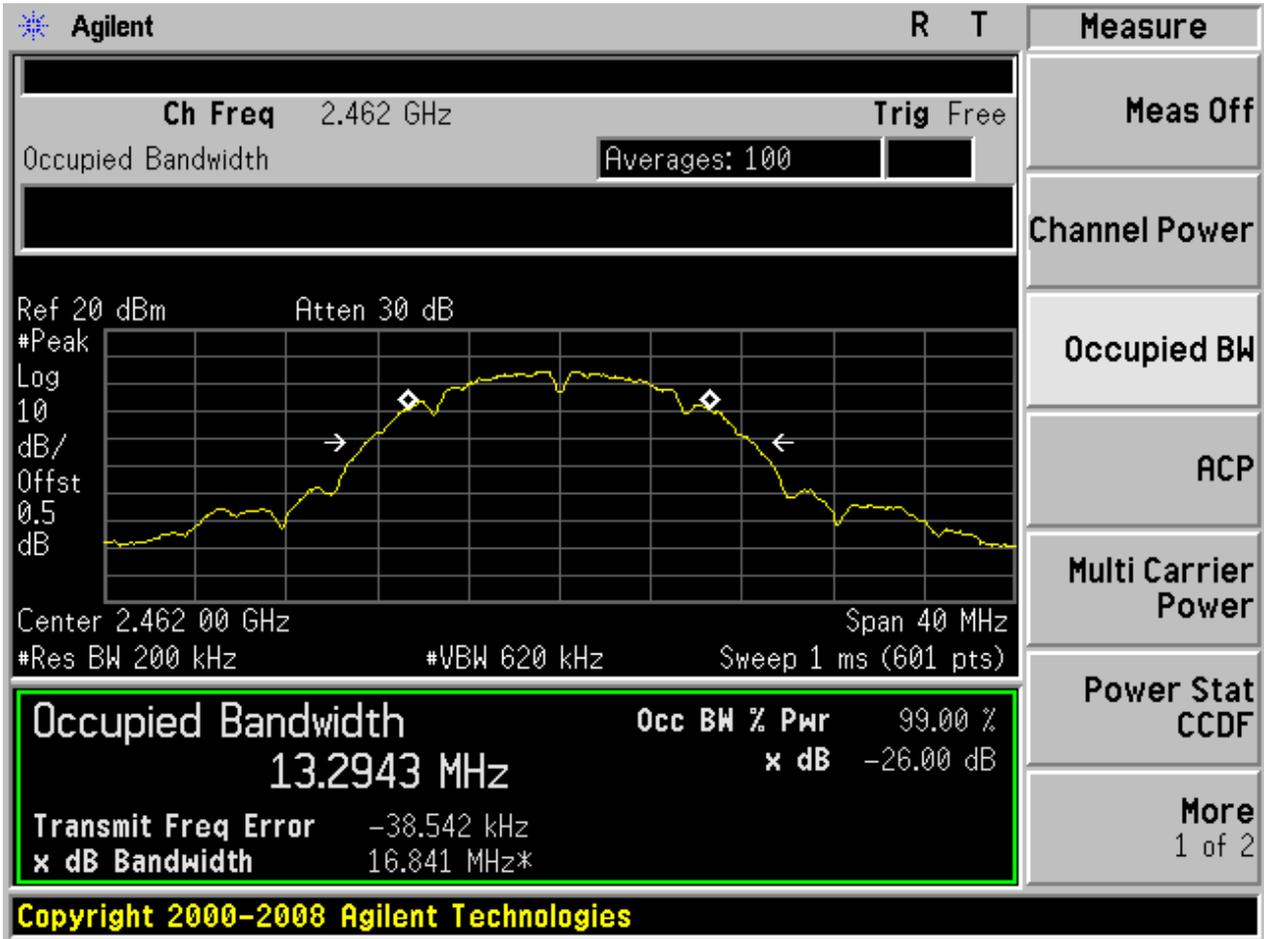
2.1 11B\_L@Ant 1



2.2 11B\_M@Ant 1

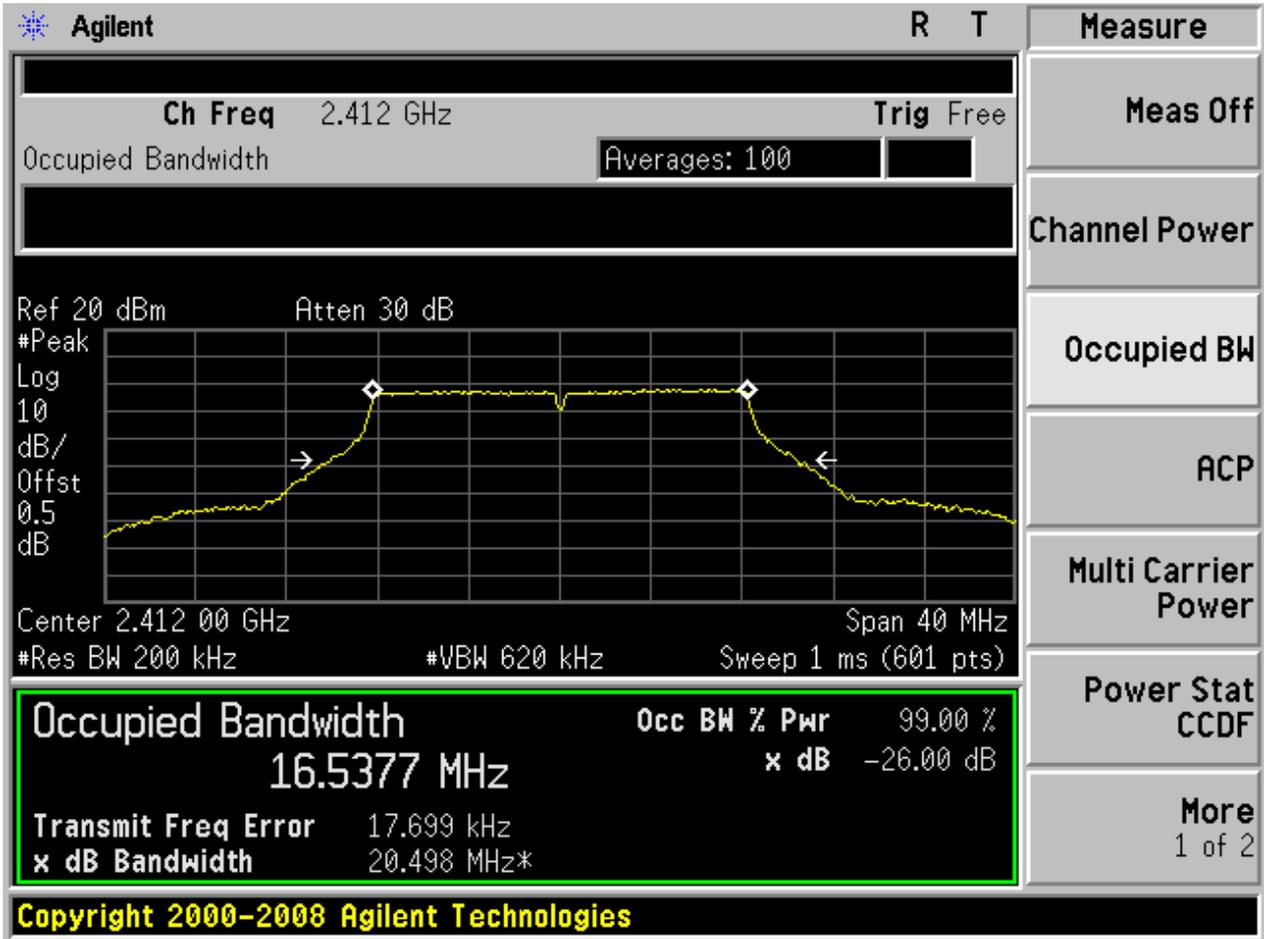


2.3 11B\_H@Ant 1

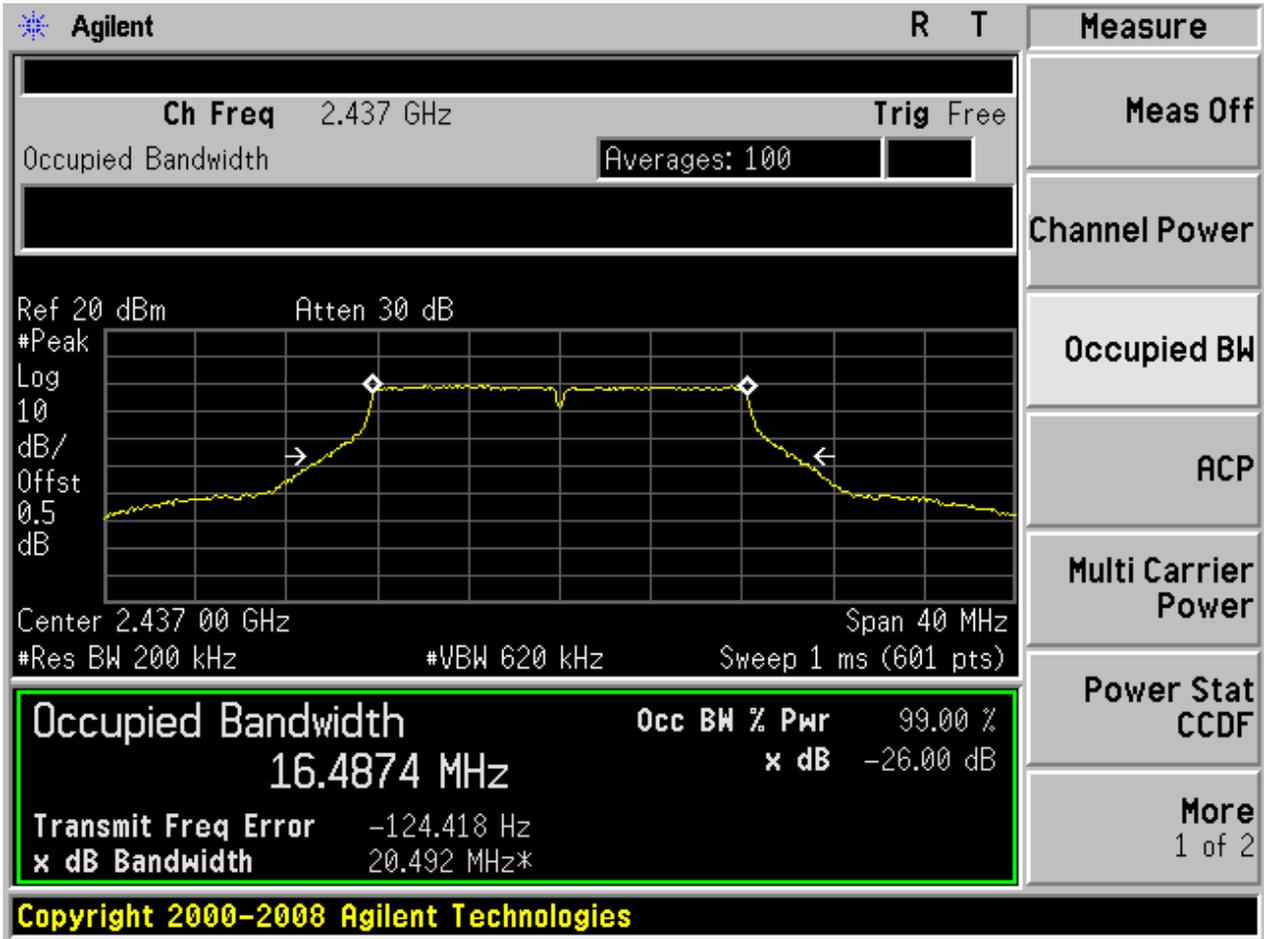




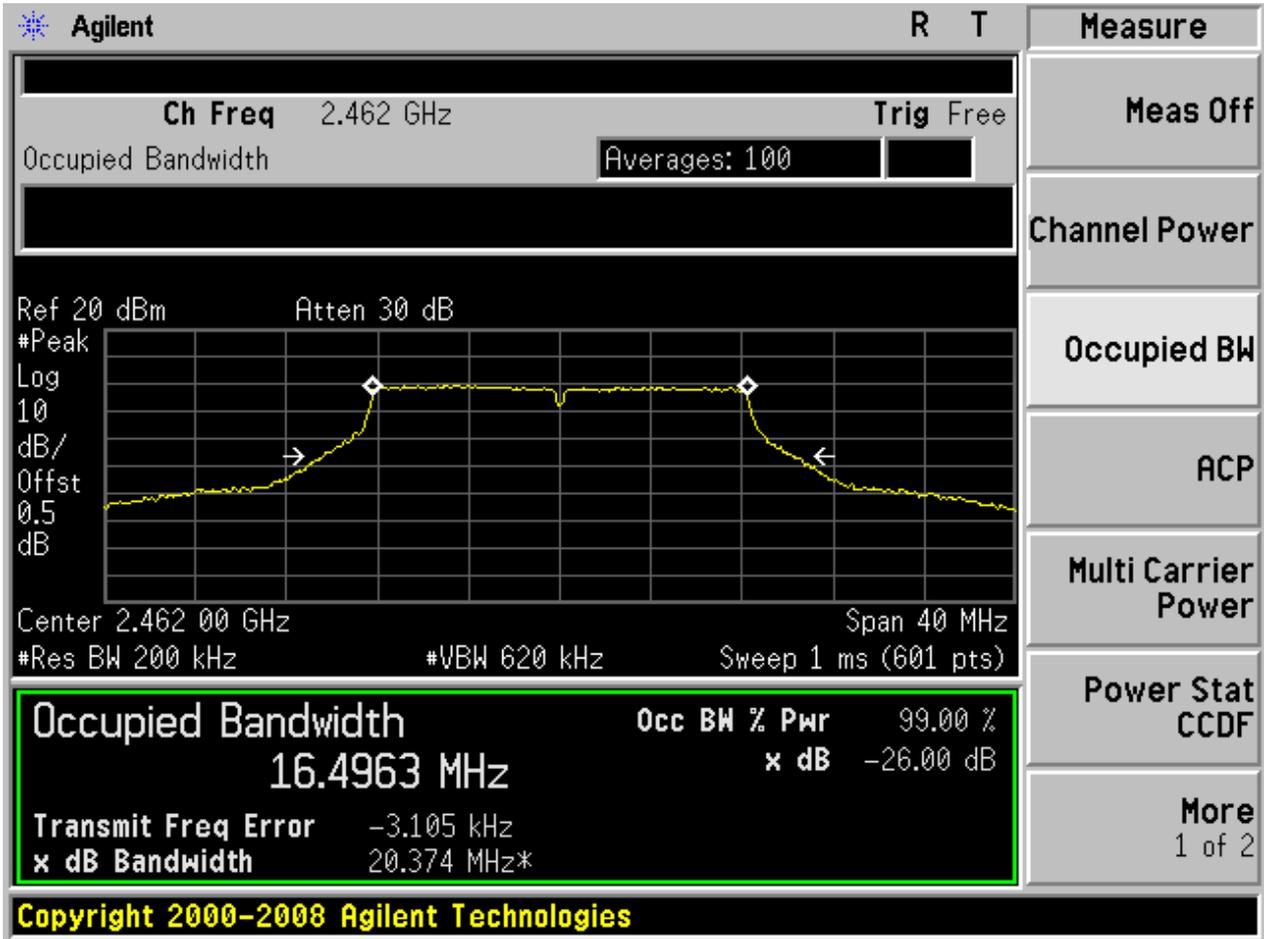
2.4 11G\_L@Ant 1



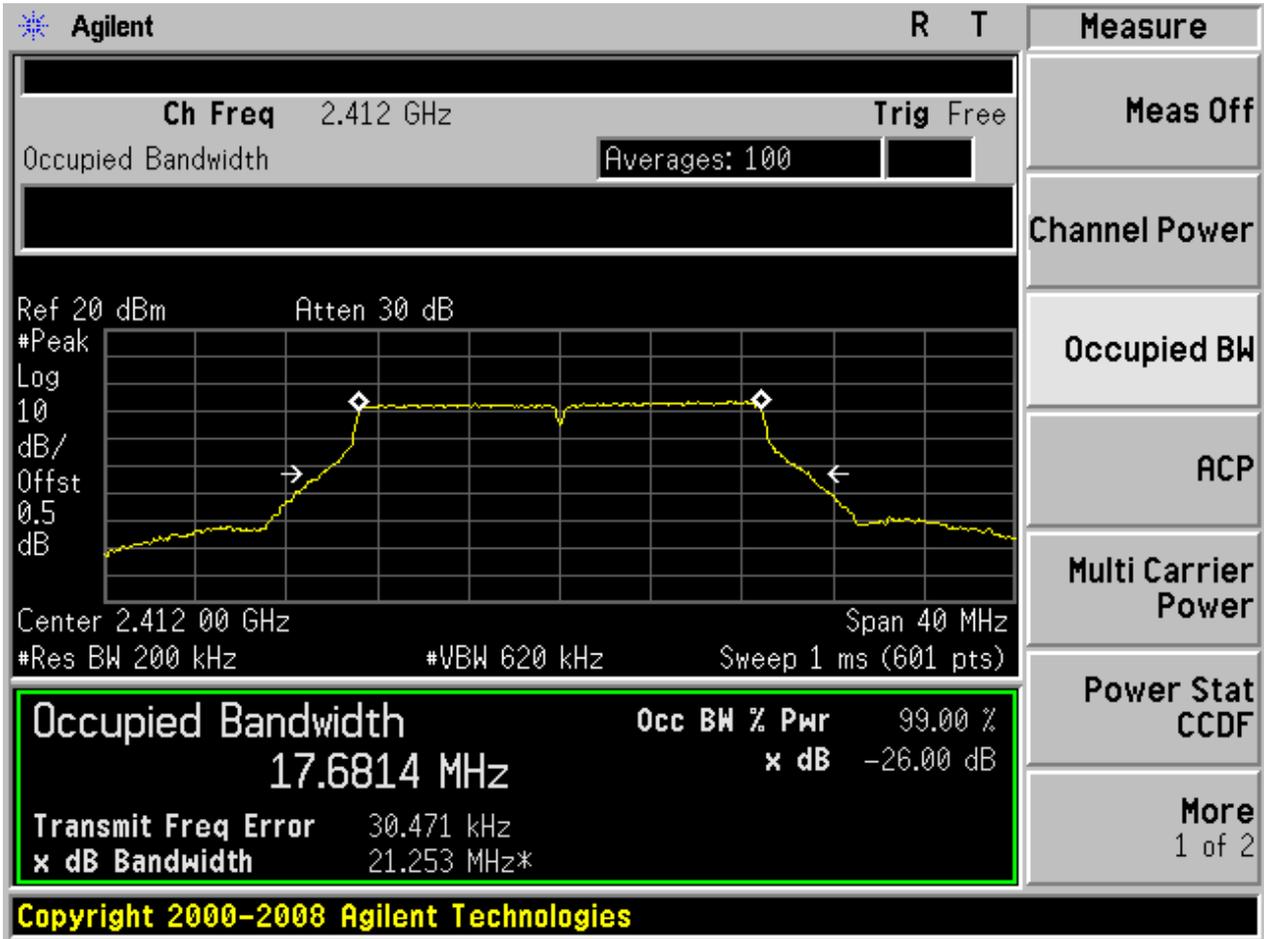
2.5 11G\_M@Ant 1



2.6 11G\_H@Ant 1

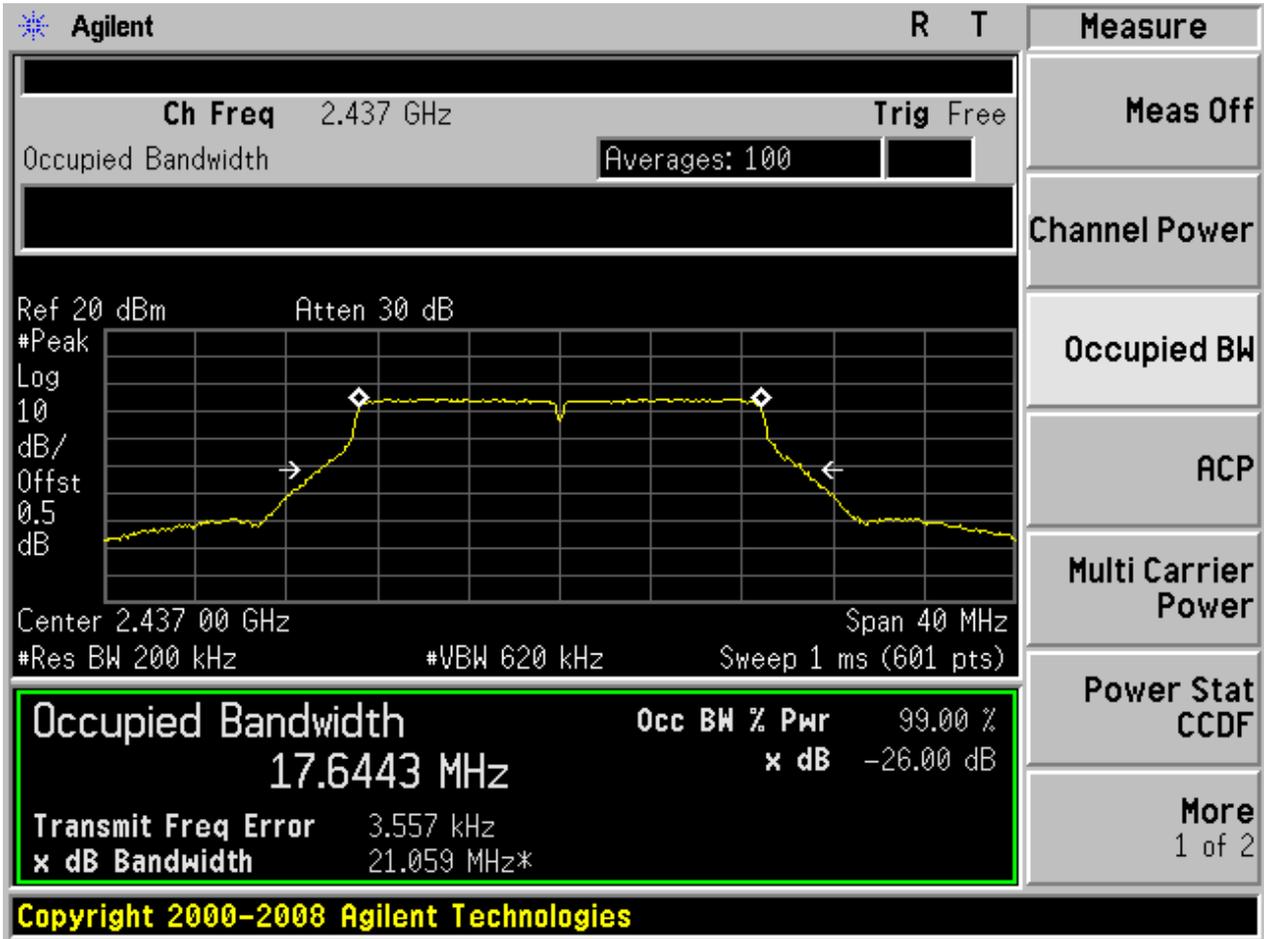


2.7 11N20\_L@Ant 1

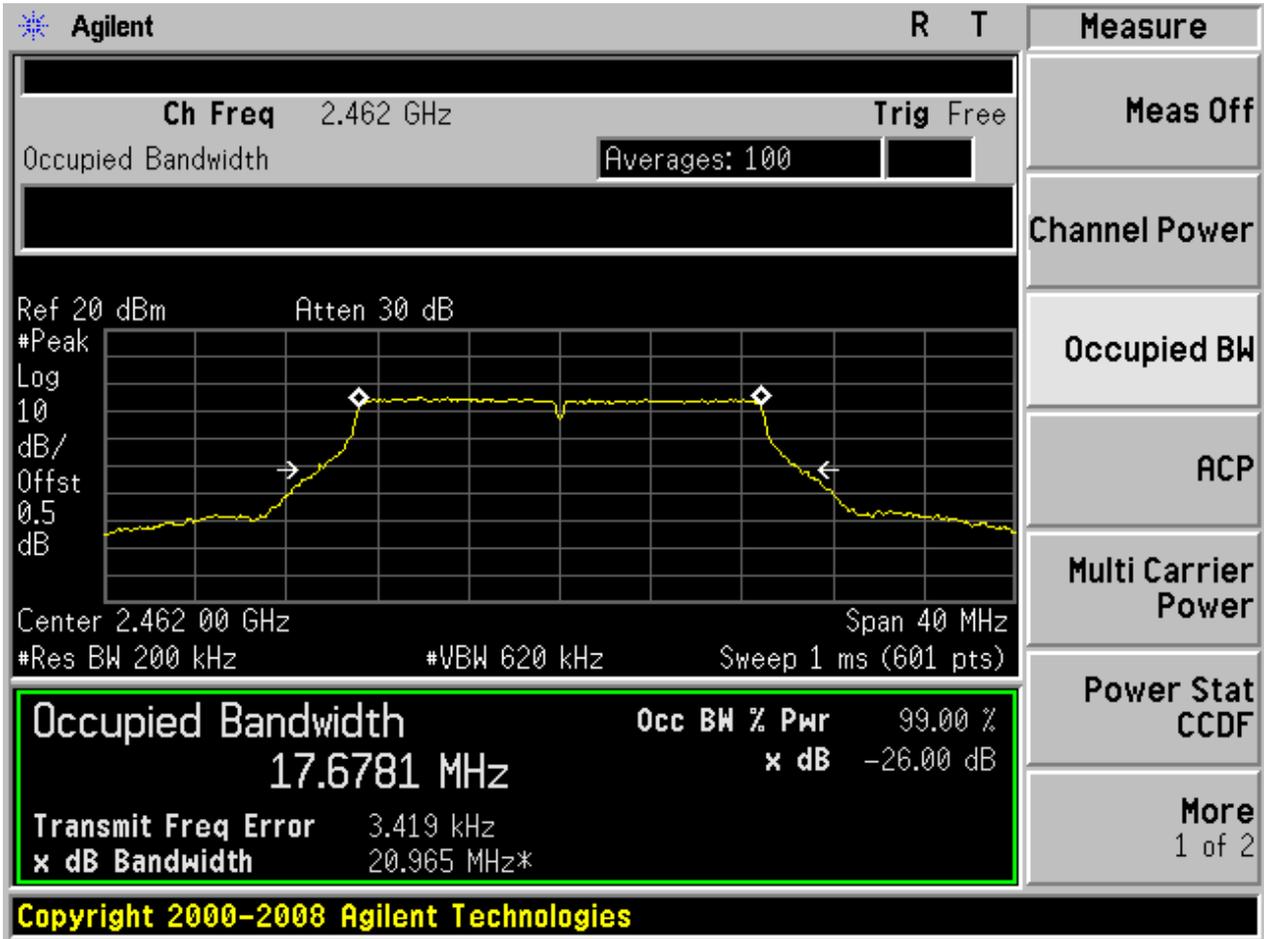




2.8 11N20\_M@Ant 1



2.9 11N20\_H@Ant 1





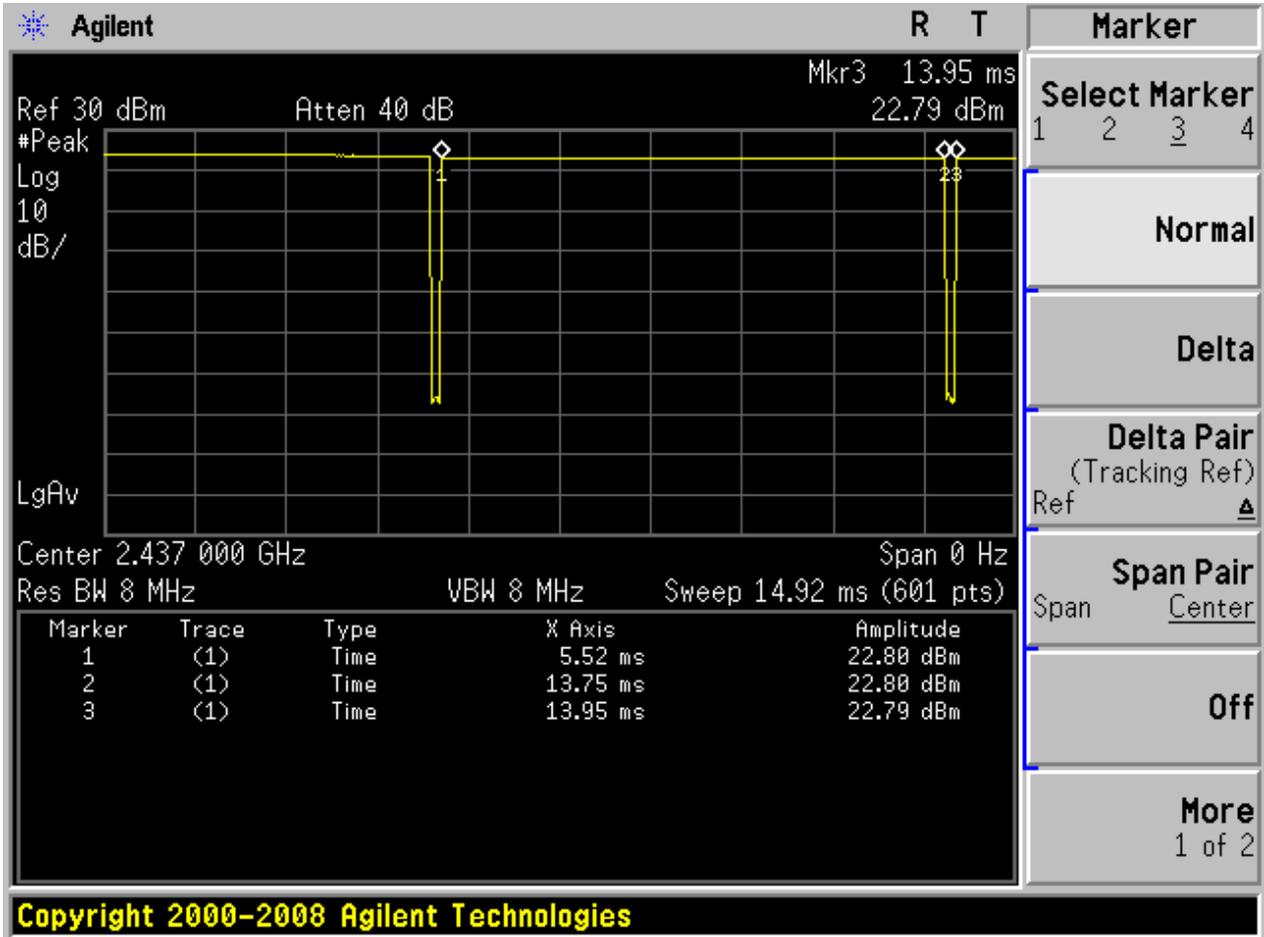
## Appendix C: Duty Cycle

### Part I - Test Results

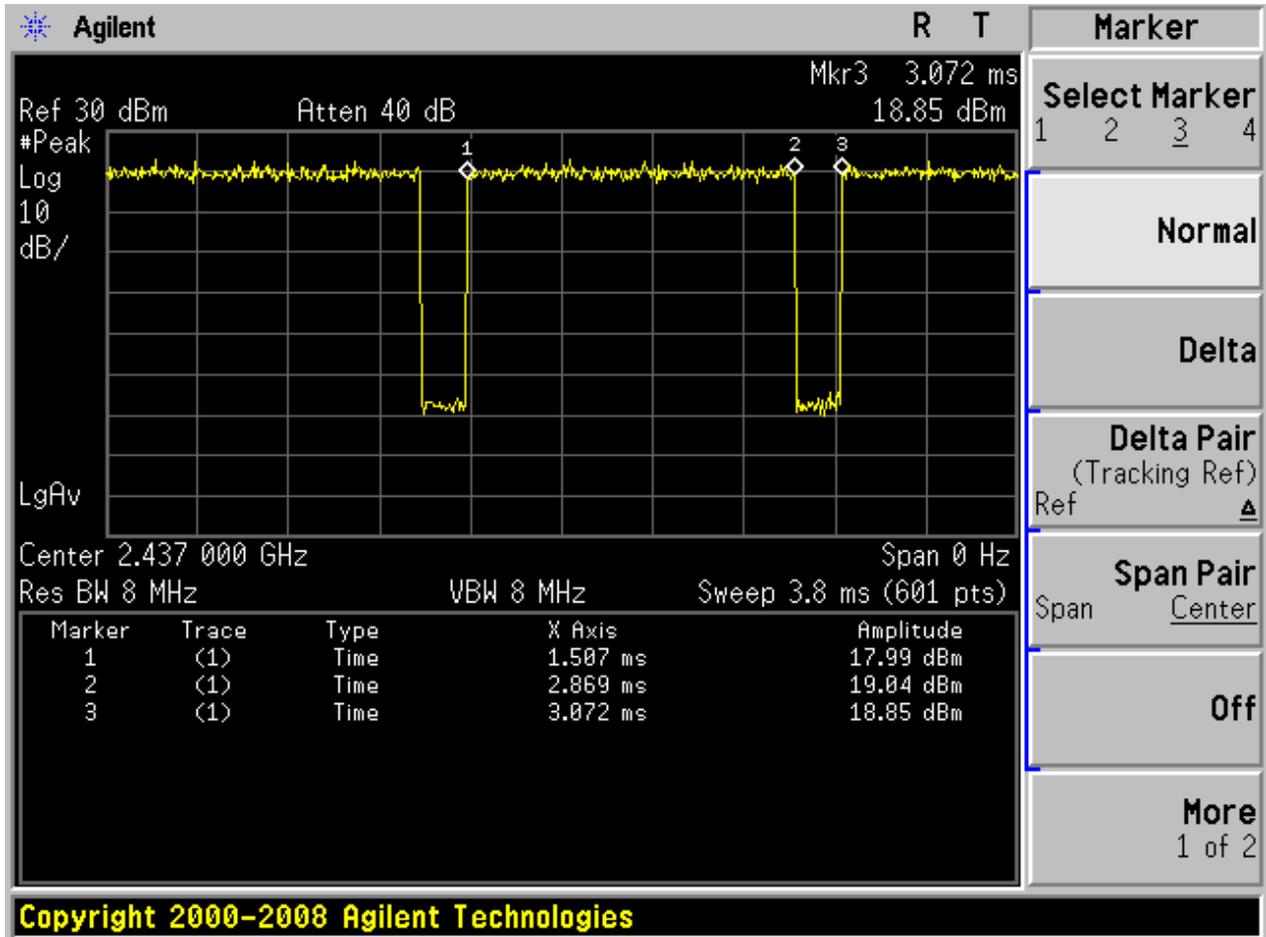
Test Mode	TX Freq. [MHz]	Duty cycle [%]
11B	Ant 1: CH1,CH6,CH11	98
11G	Ant 1: CH1,CH6,CH11	87
11N_20M_SISO	Ant 1: CH1,CH6,CH11	86

**Part II - Test Plots**

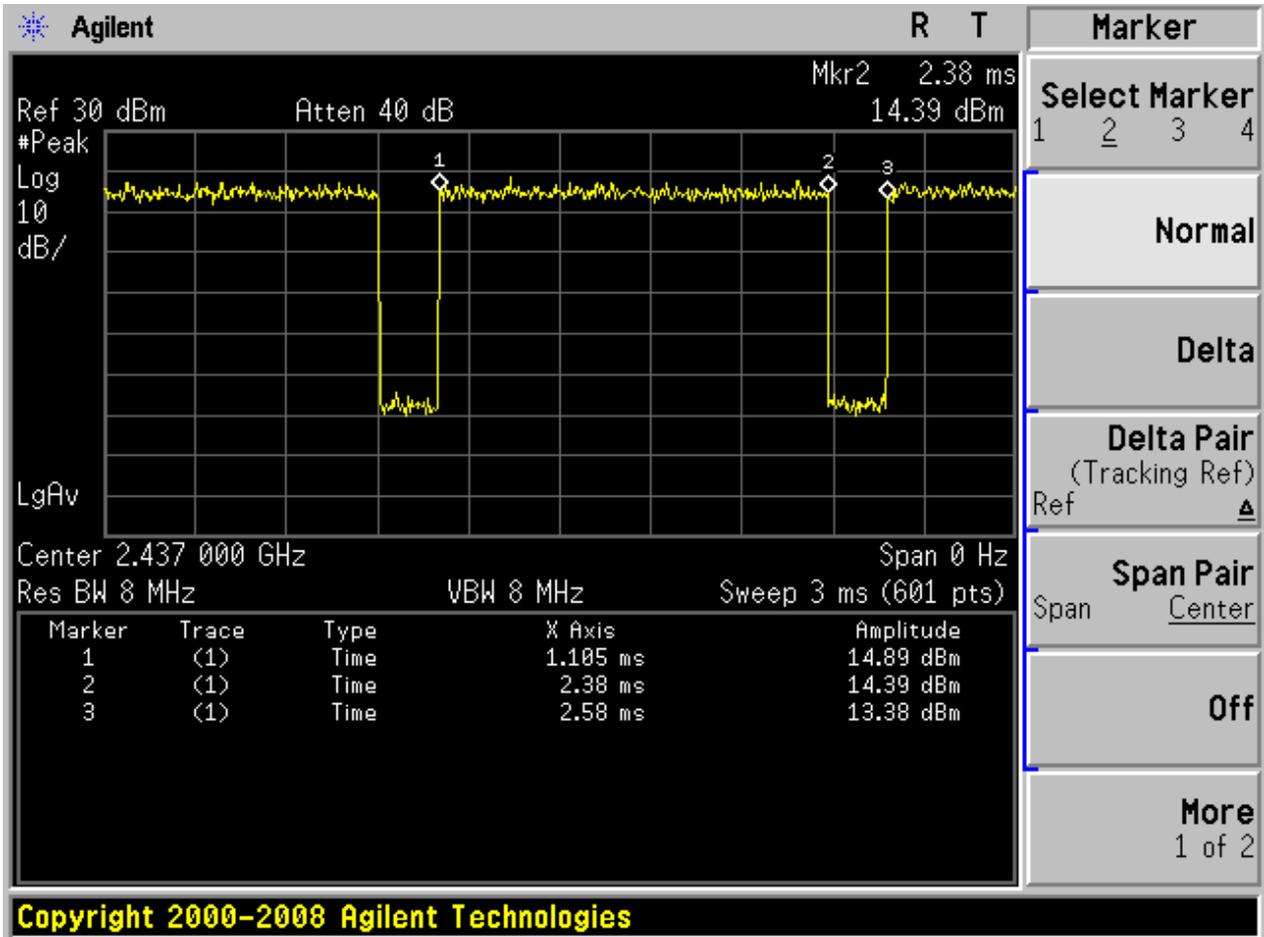
**2.1 11B**



2.2 11G



2.3 11N20



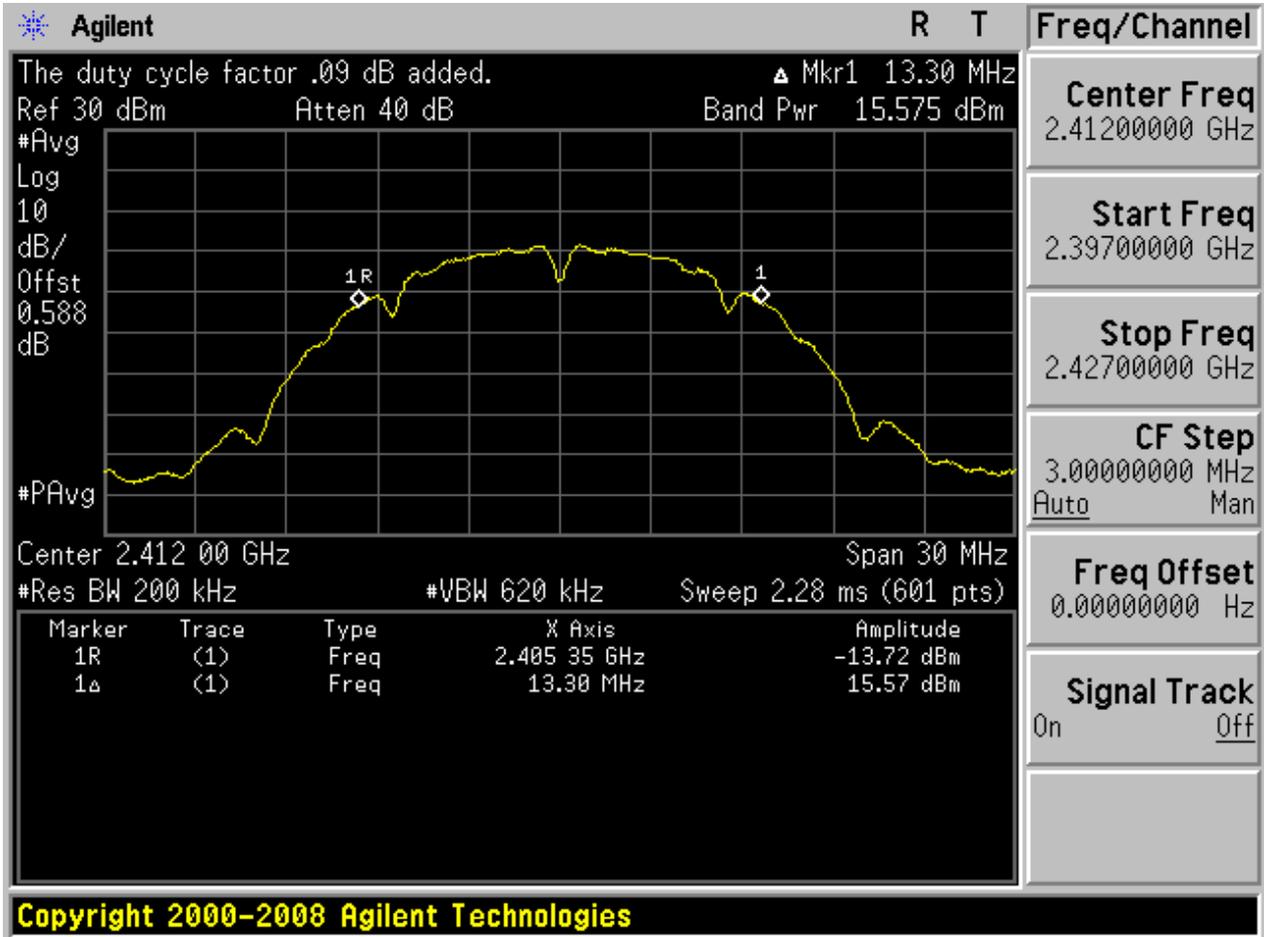
## Appendix D: Maximum Conducted Average Output Power

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	15.58	pass
11B	M	2437	Ant 1	16.95	pass
11B	H	2462	Ant 1	17.38	pass
11G	L	2412	Ant 1	14.69	pass
11G	M	2437	Ant 1	16.14	pass
11G	H	2462	Ant 1	16.06	pass
11N20	L	2412	Ant 1	10.62	pass
11N20	M	2437	Ant 1	11.80	pass
11N20	H	2462	Ant 1	11.94	pass

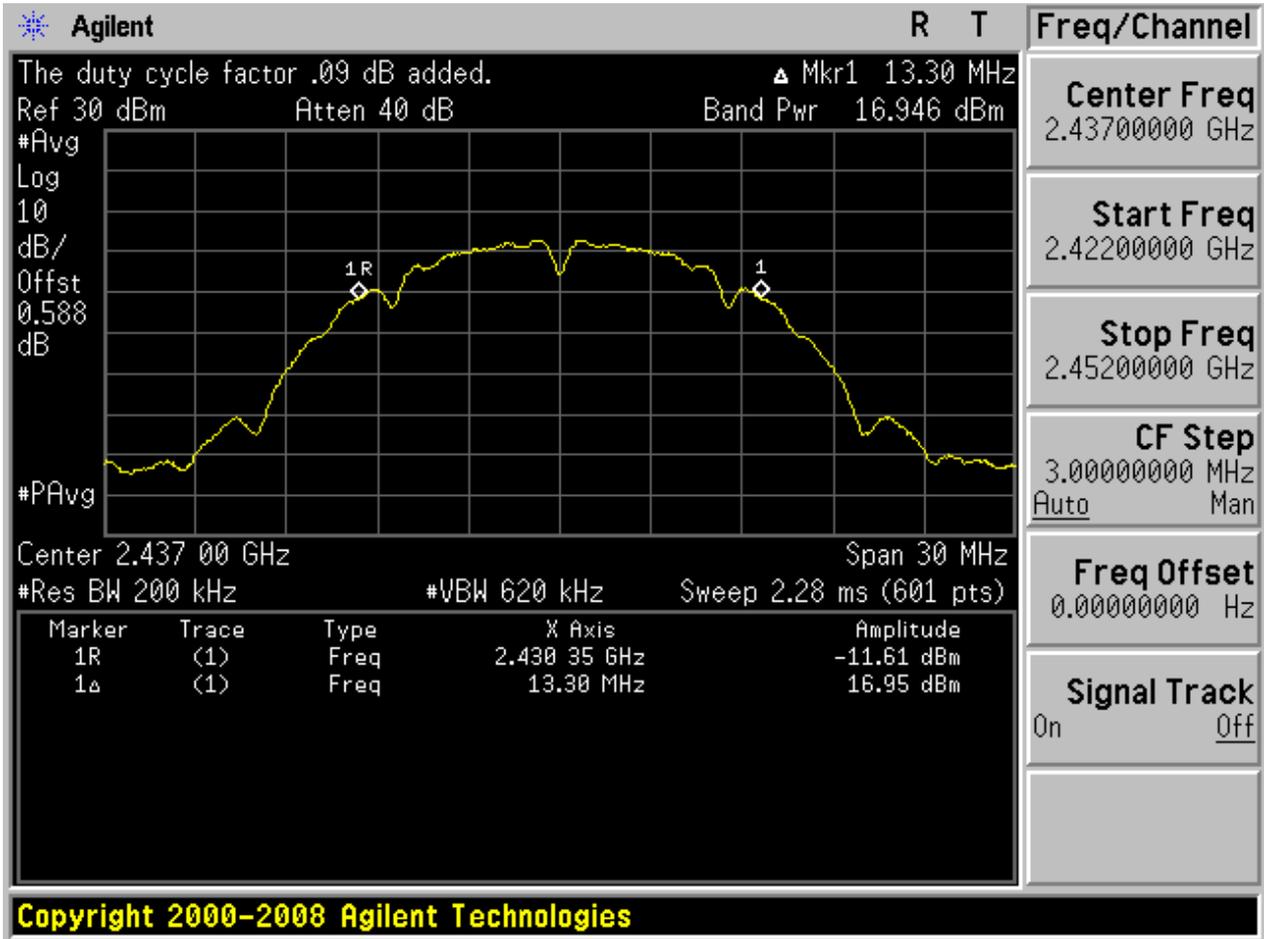
**Part II - Test Plots**

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





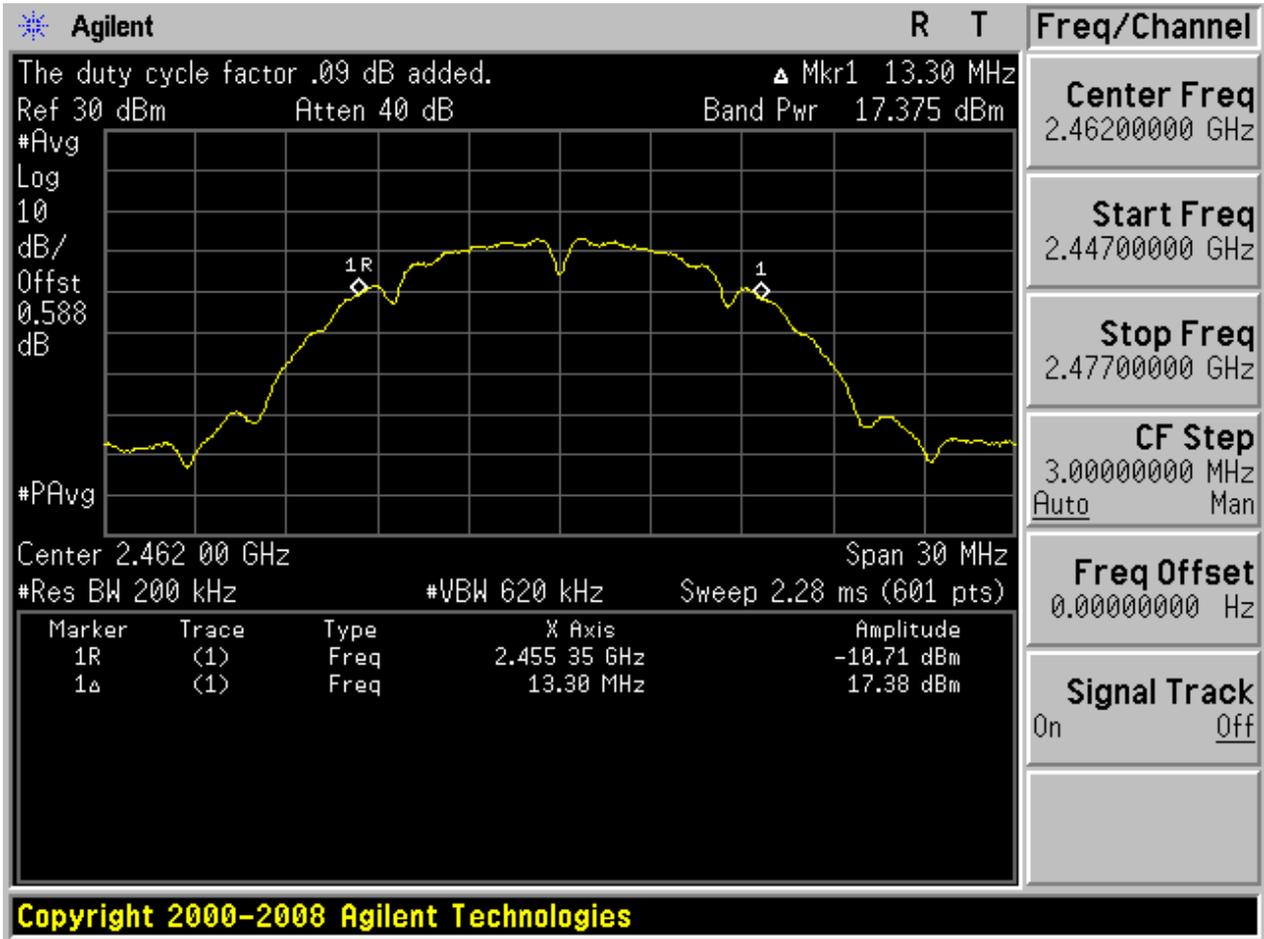
2.2 11B\_M@Ant 1



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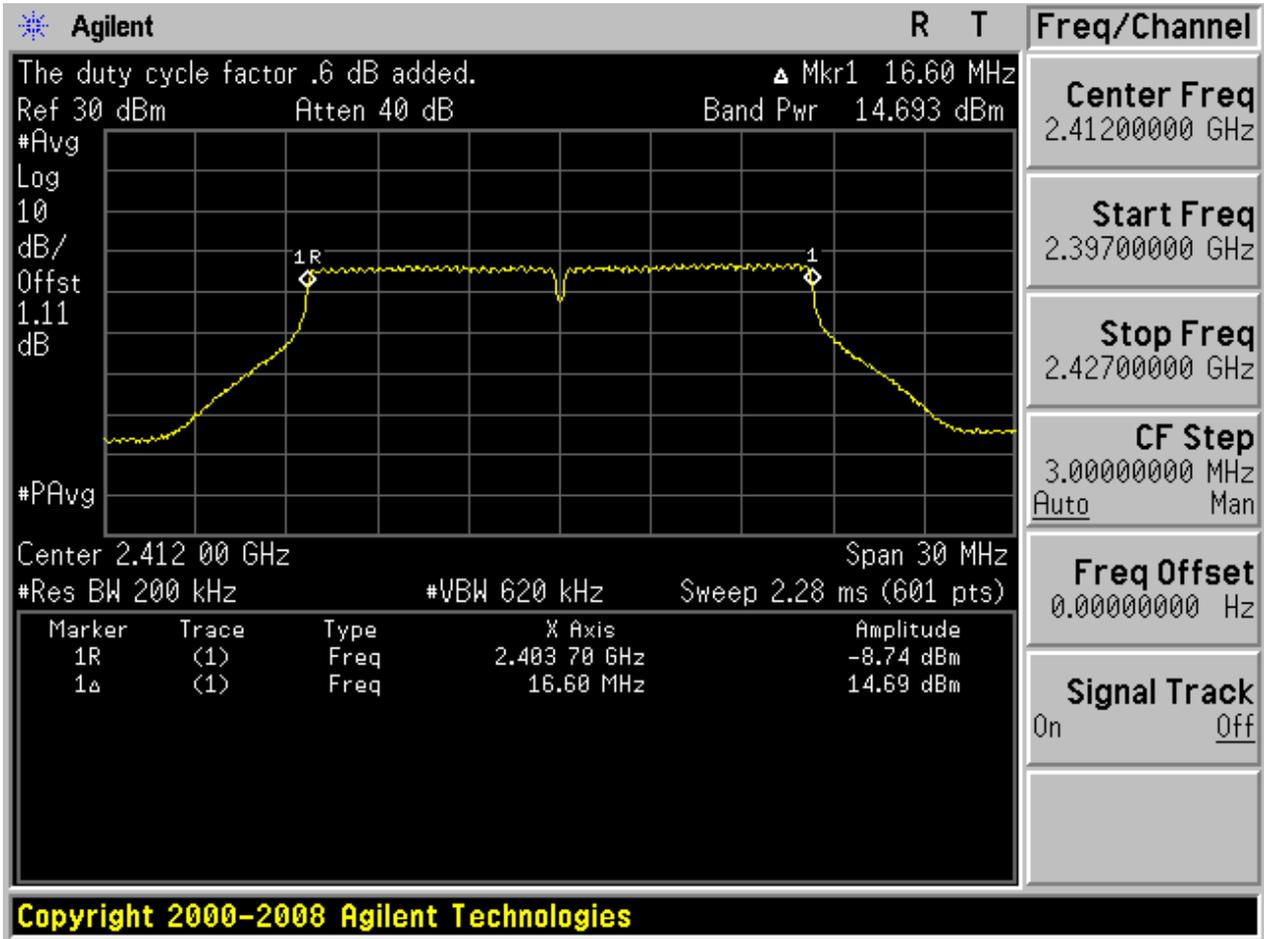
2.3 11B\_H@Ant 1



Copyright 2000-2008 Agilent Technologies



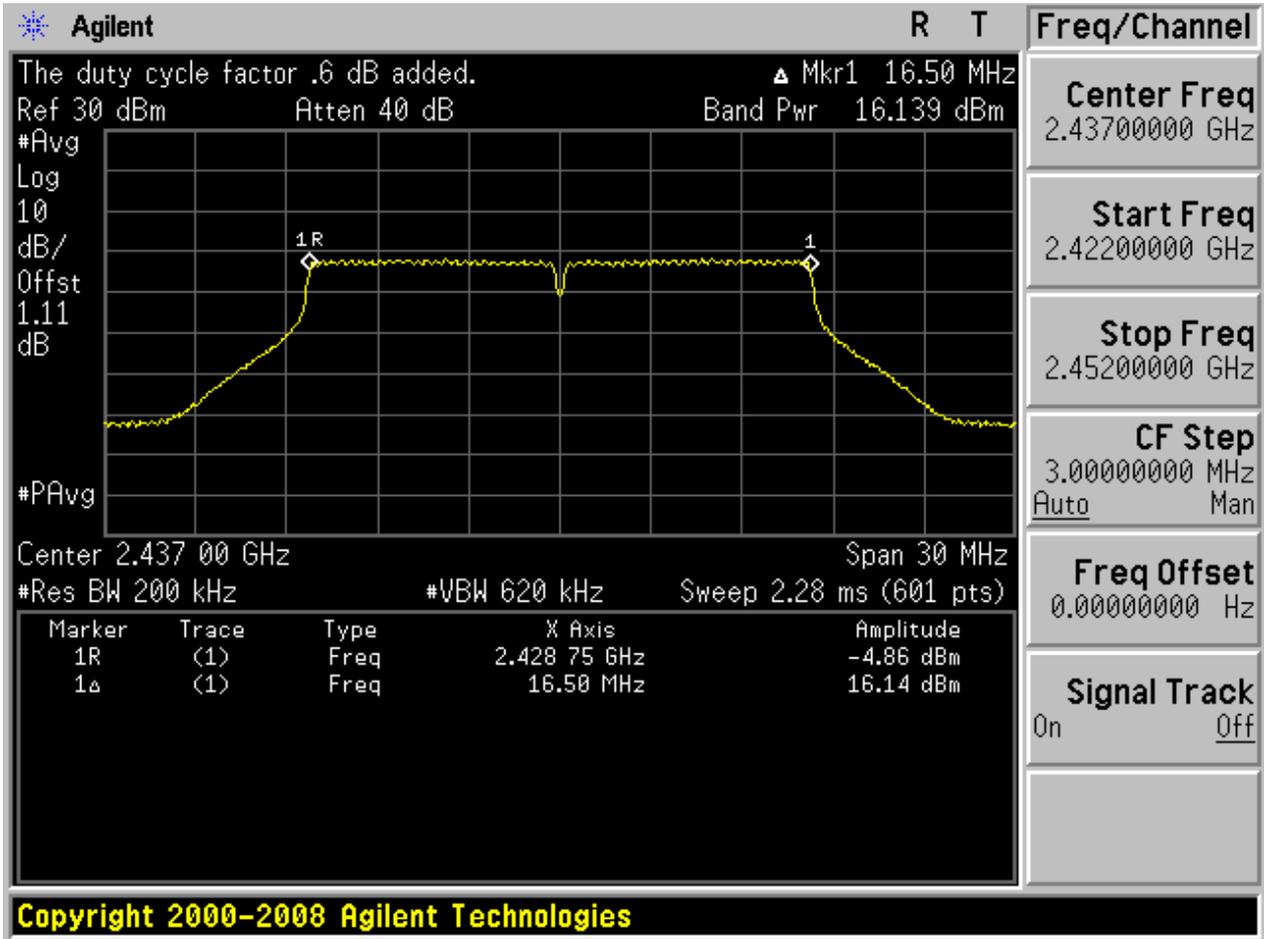
2.4 11G\_L@Ant 1



Copyright 2000-2008 Agilent Technologies

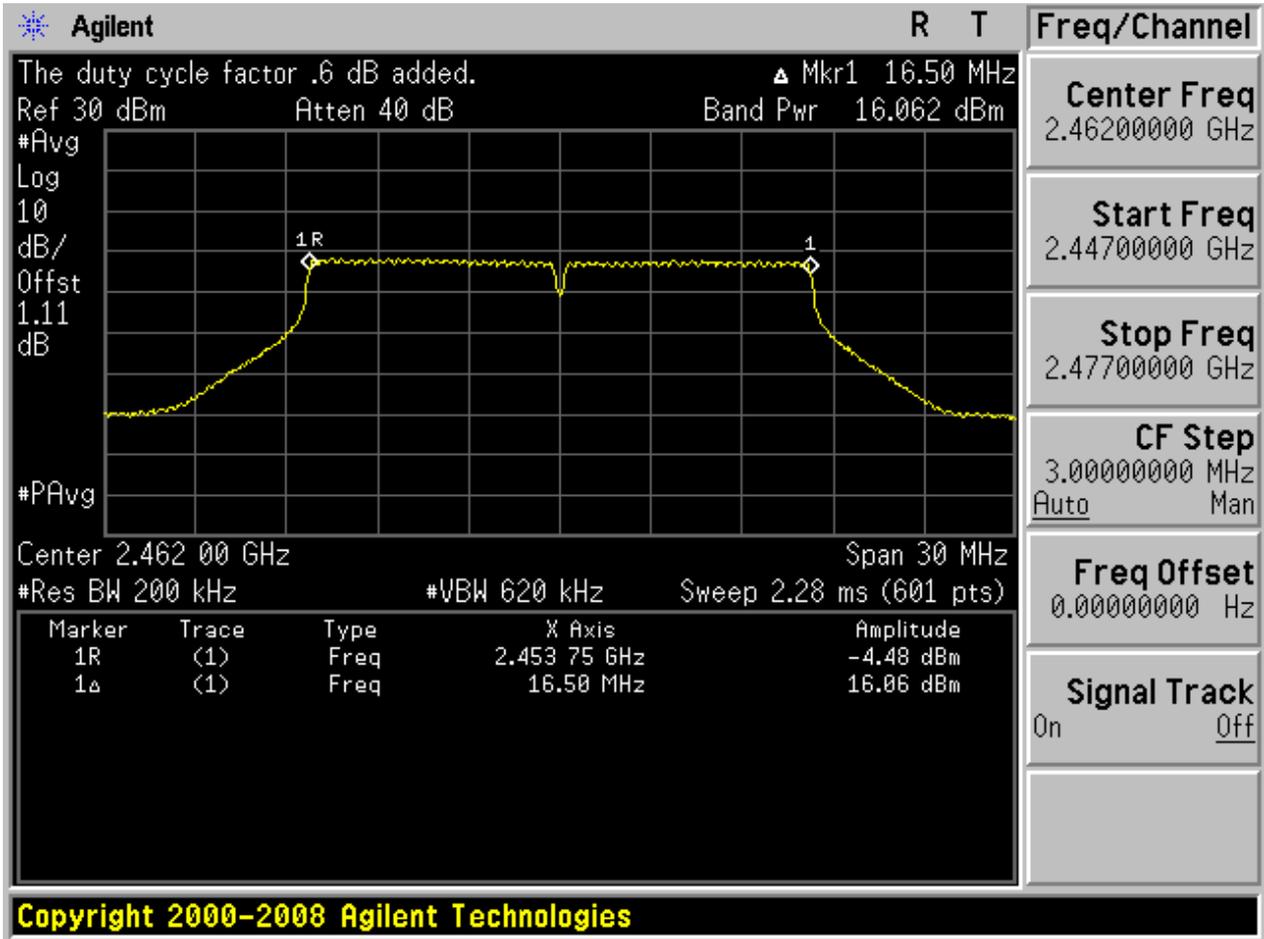


2.5 11G\_M@Ant 1



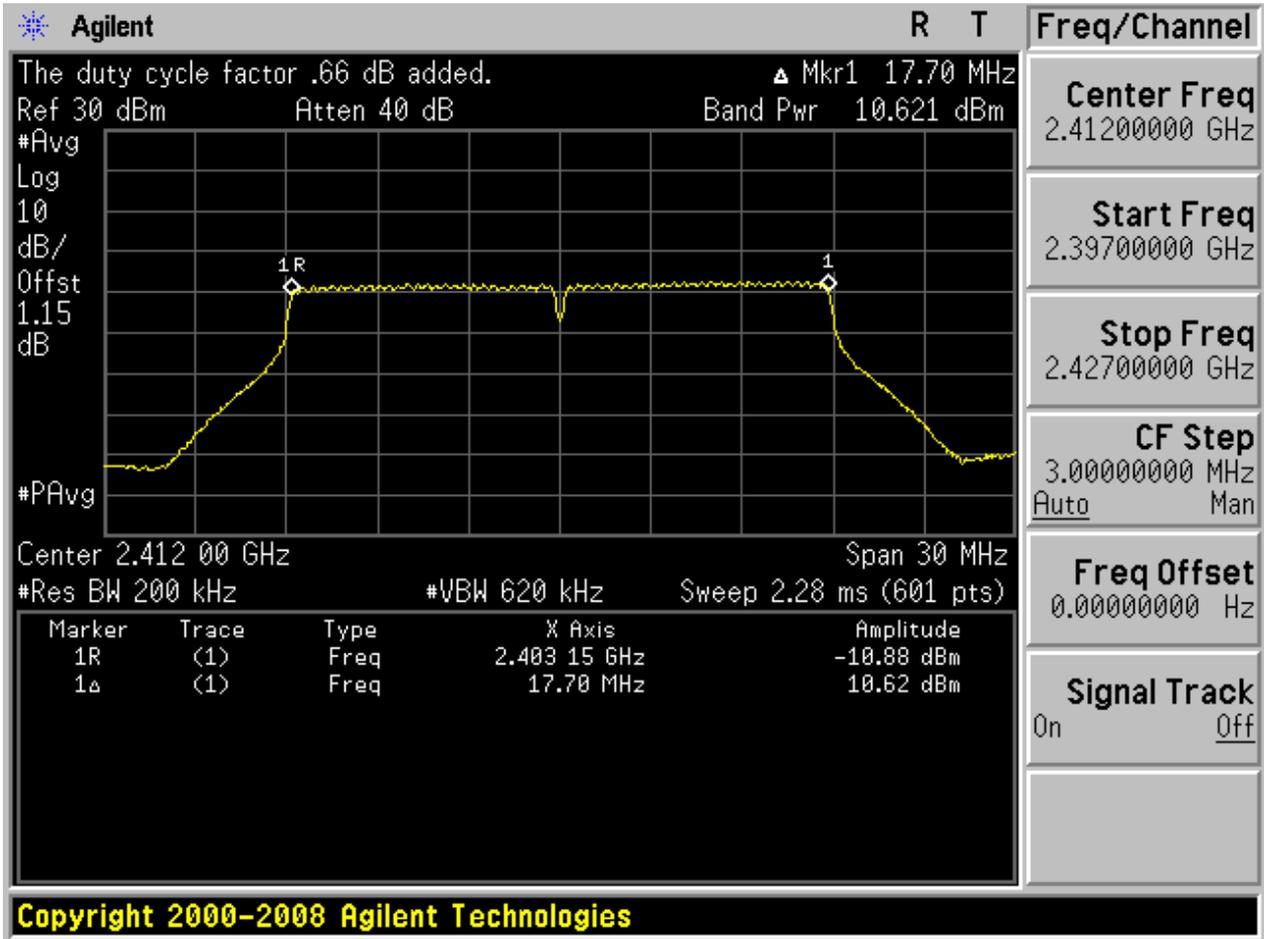


2.6 11G\_H@Ant 1



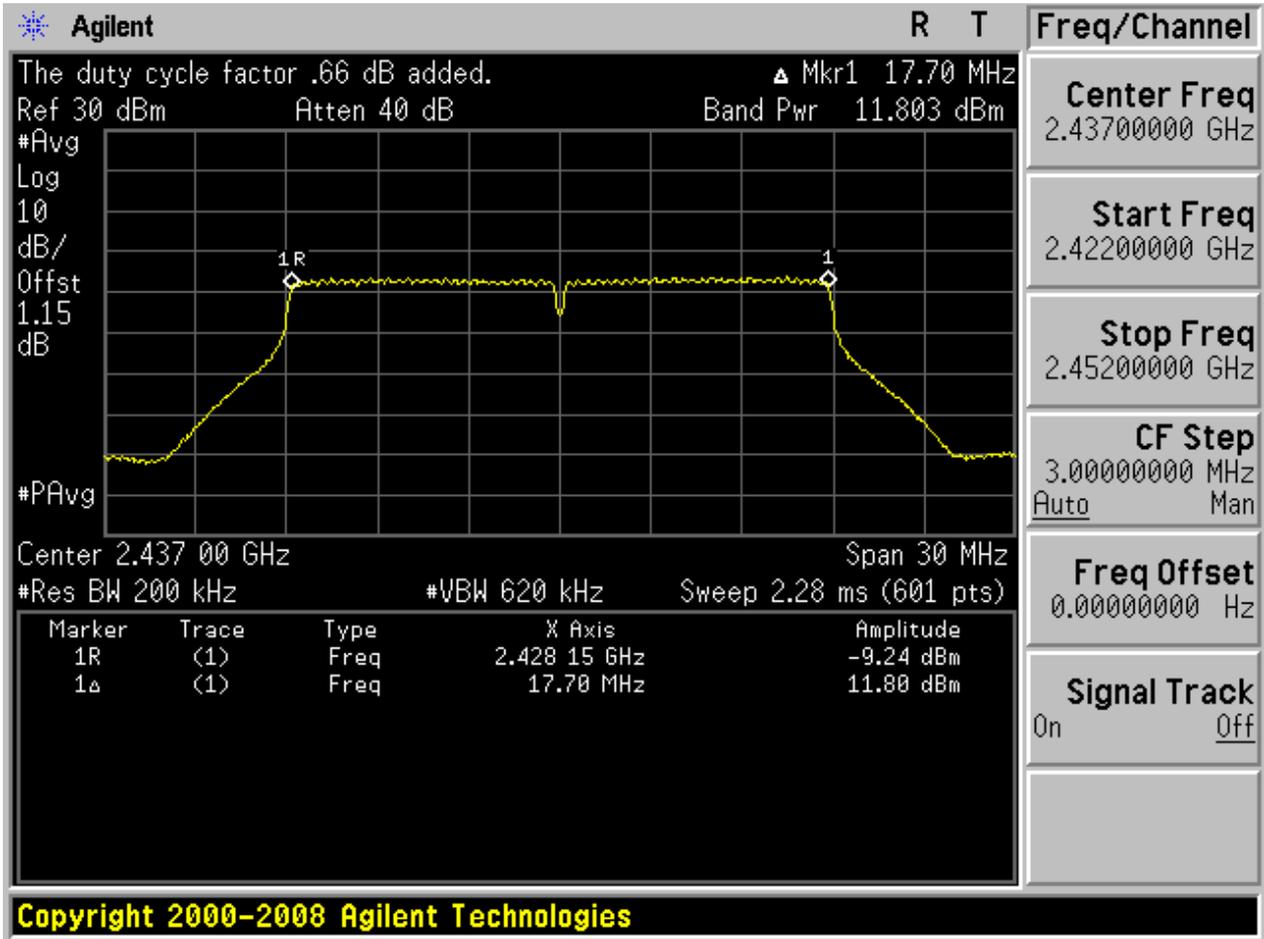


2.7 11N20\_L@Ant 1



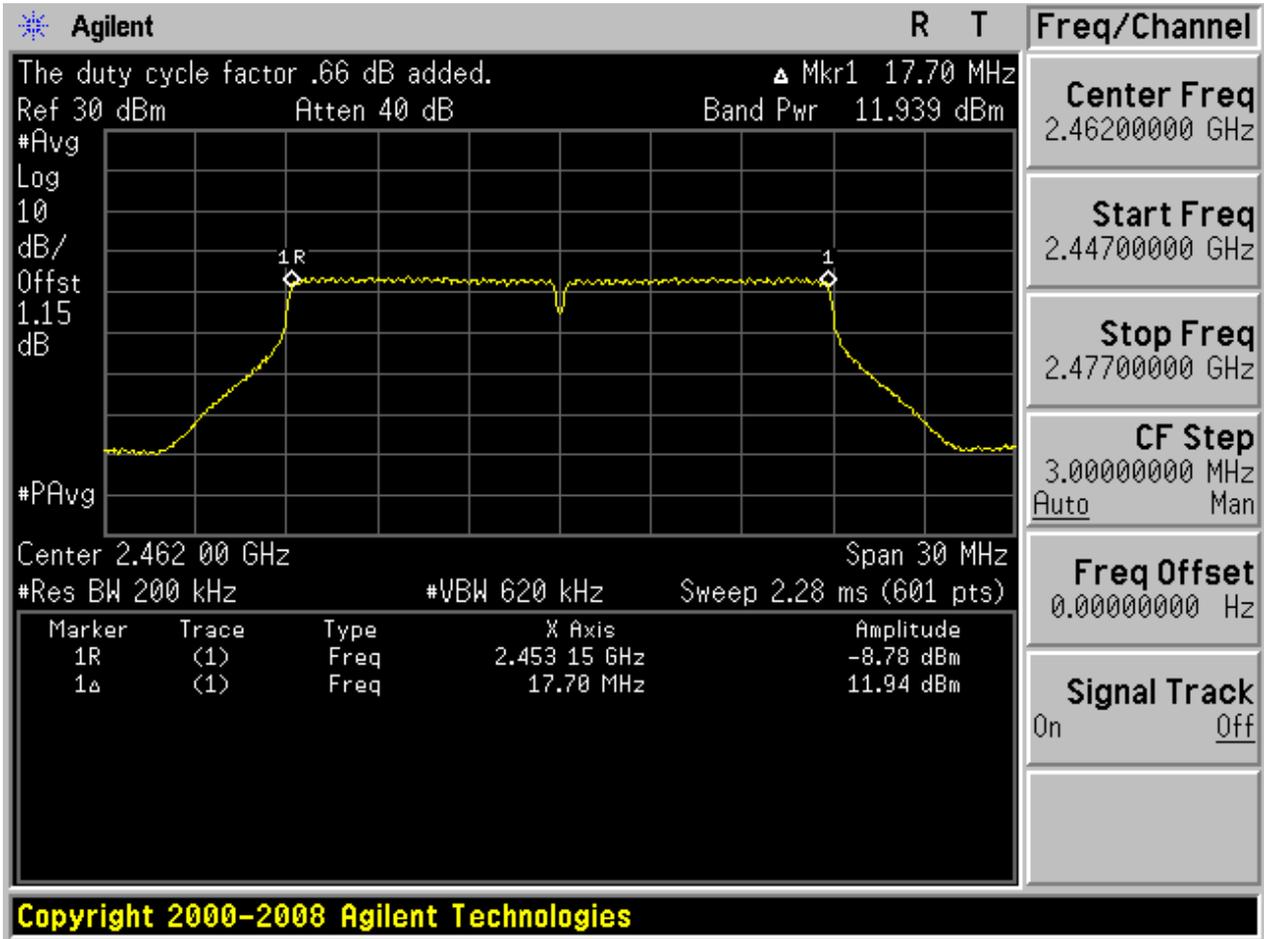


2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1





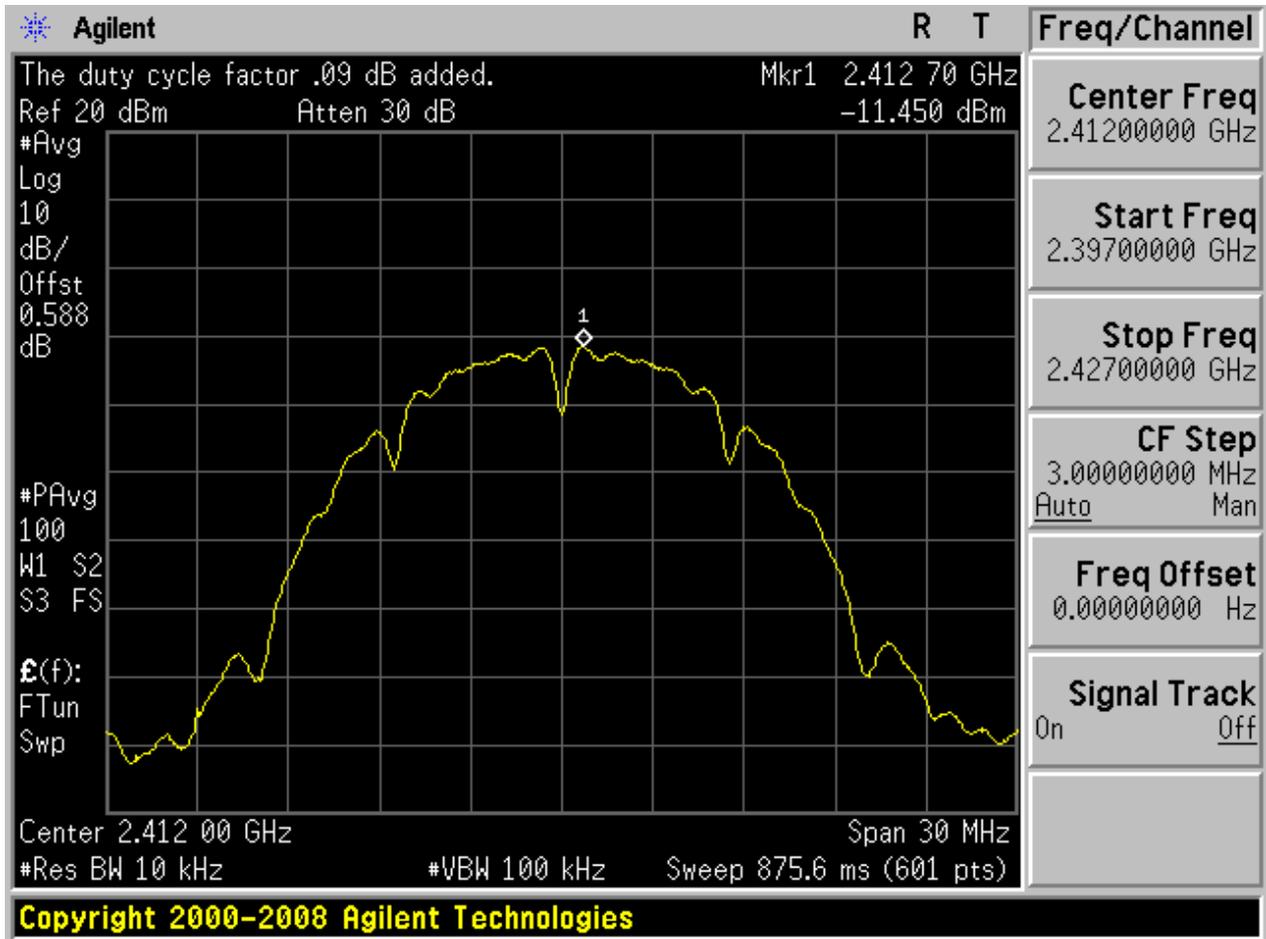
## Appendix E: Maximum Power Spectral Density Level

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-11.45	pass
11B	M	2437	Ant 1	-10.10	pass
11B	H	2462	Ant 1	-9.60	pass
11G	L	2412	Ant 1	-14.91	pass
11G	M	2437	Ant 1	-13.86	pass
11G	H	2462	Ant 1	-13.58	pass
11N20	L	2412	Ant 1	-19.16	pass
11N20	M	2437	Ant 1	-18.30	pass
11N20	H	2462	Ant 1	-18.26	pass

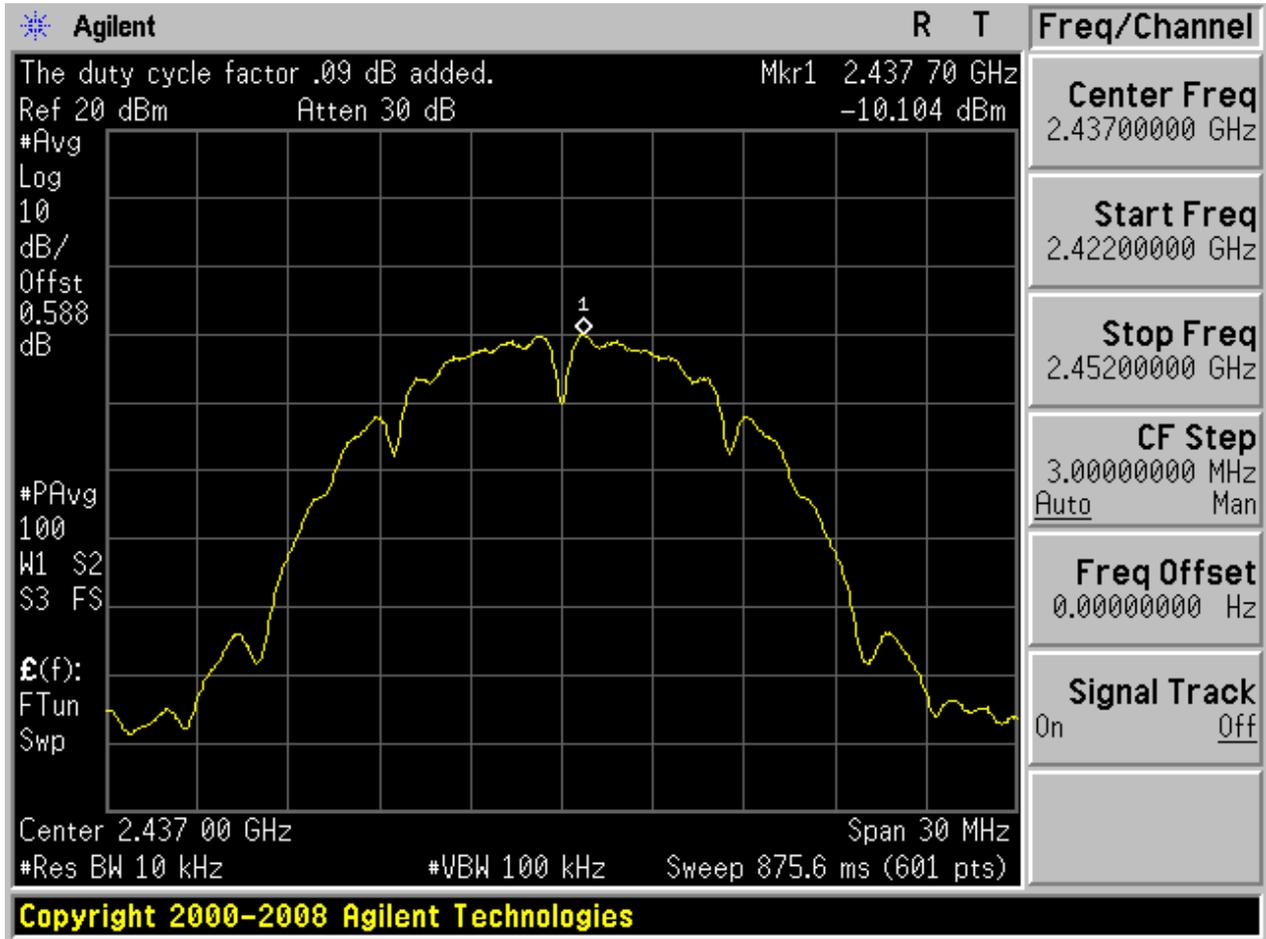
**Part II - Test Plots**

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



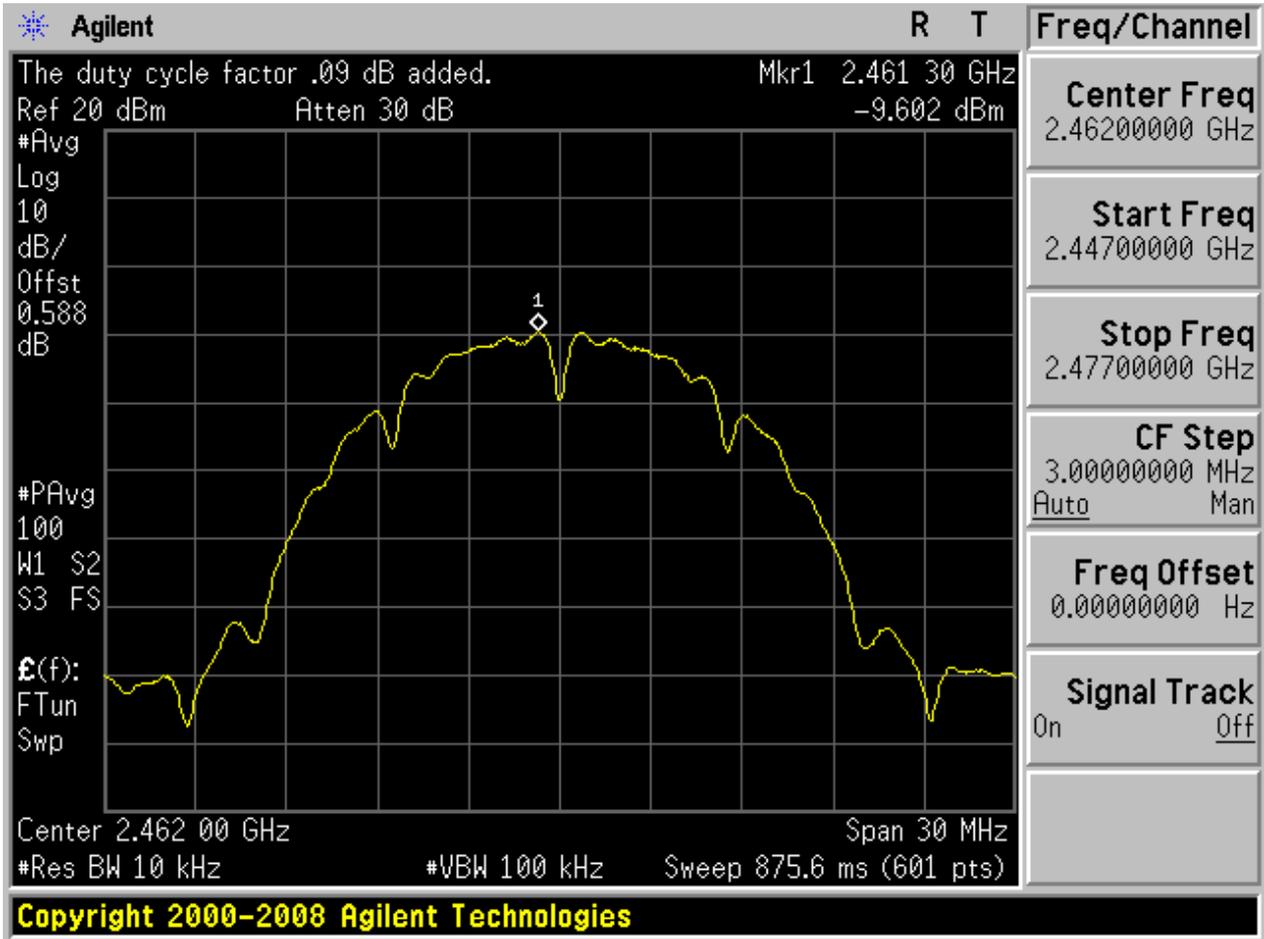


2.2 11B\_M@Ant 1



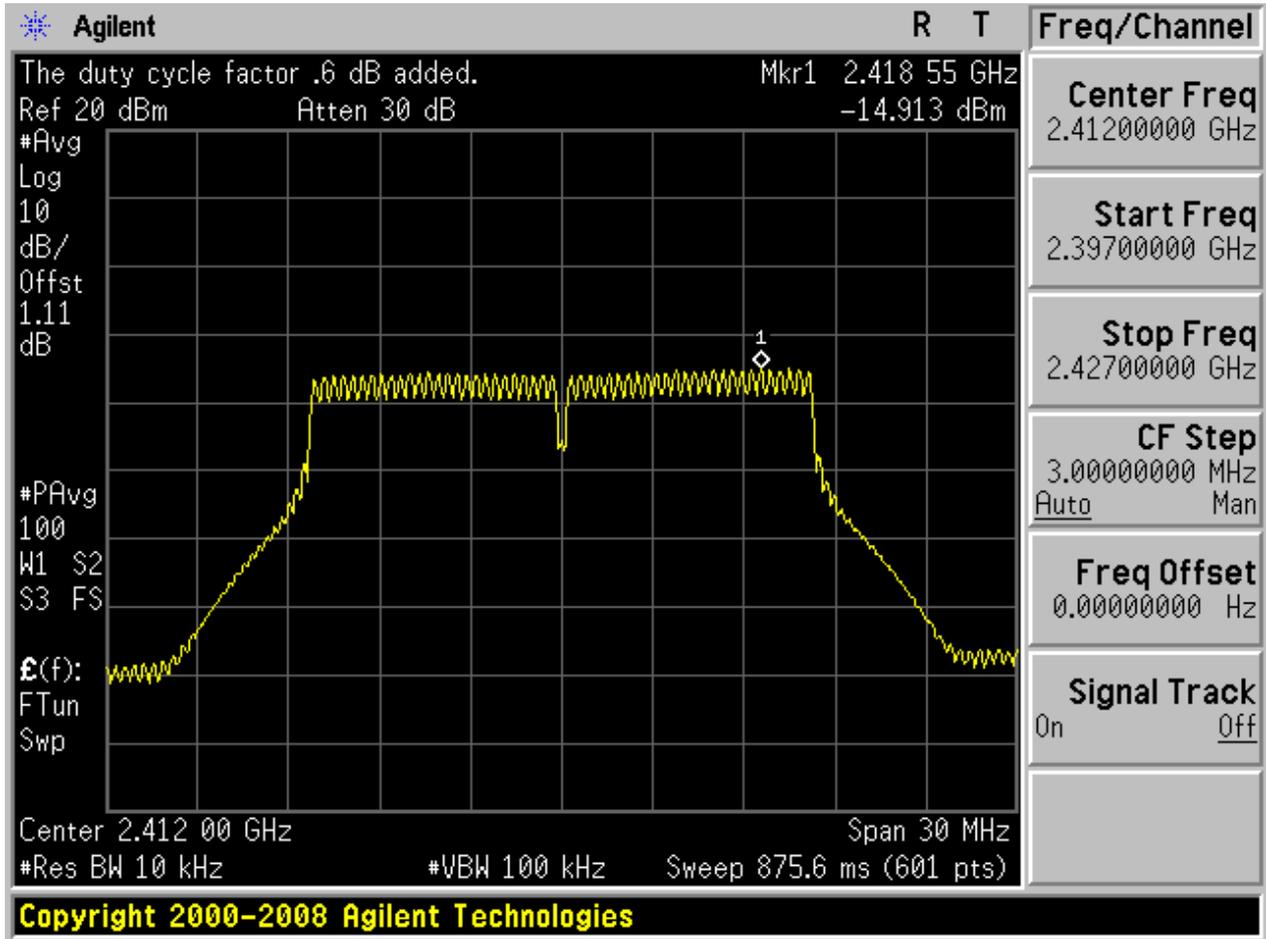


2.3 11B\_H@Ant 1



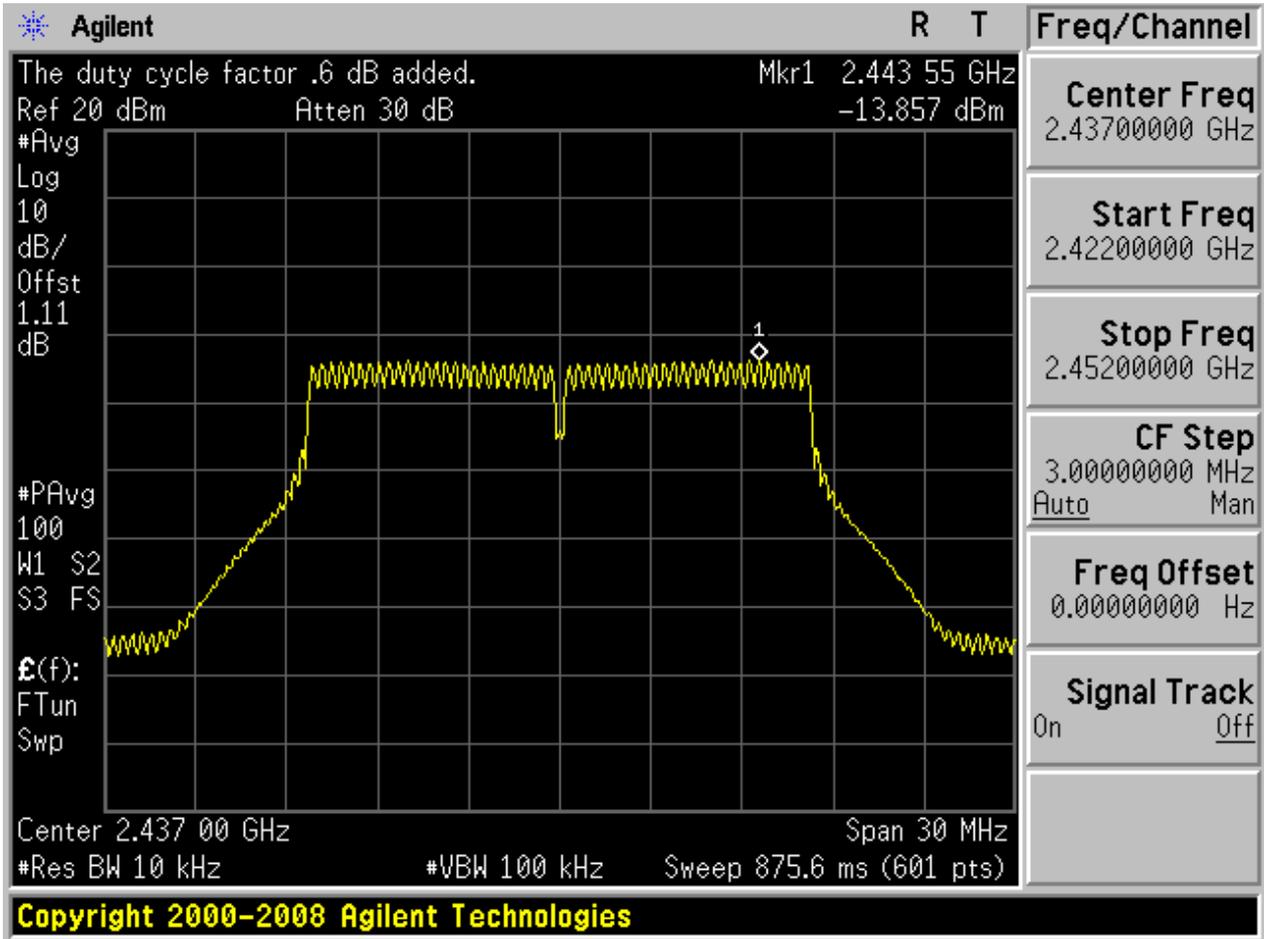


2.4 11G\_L@Ant 1



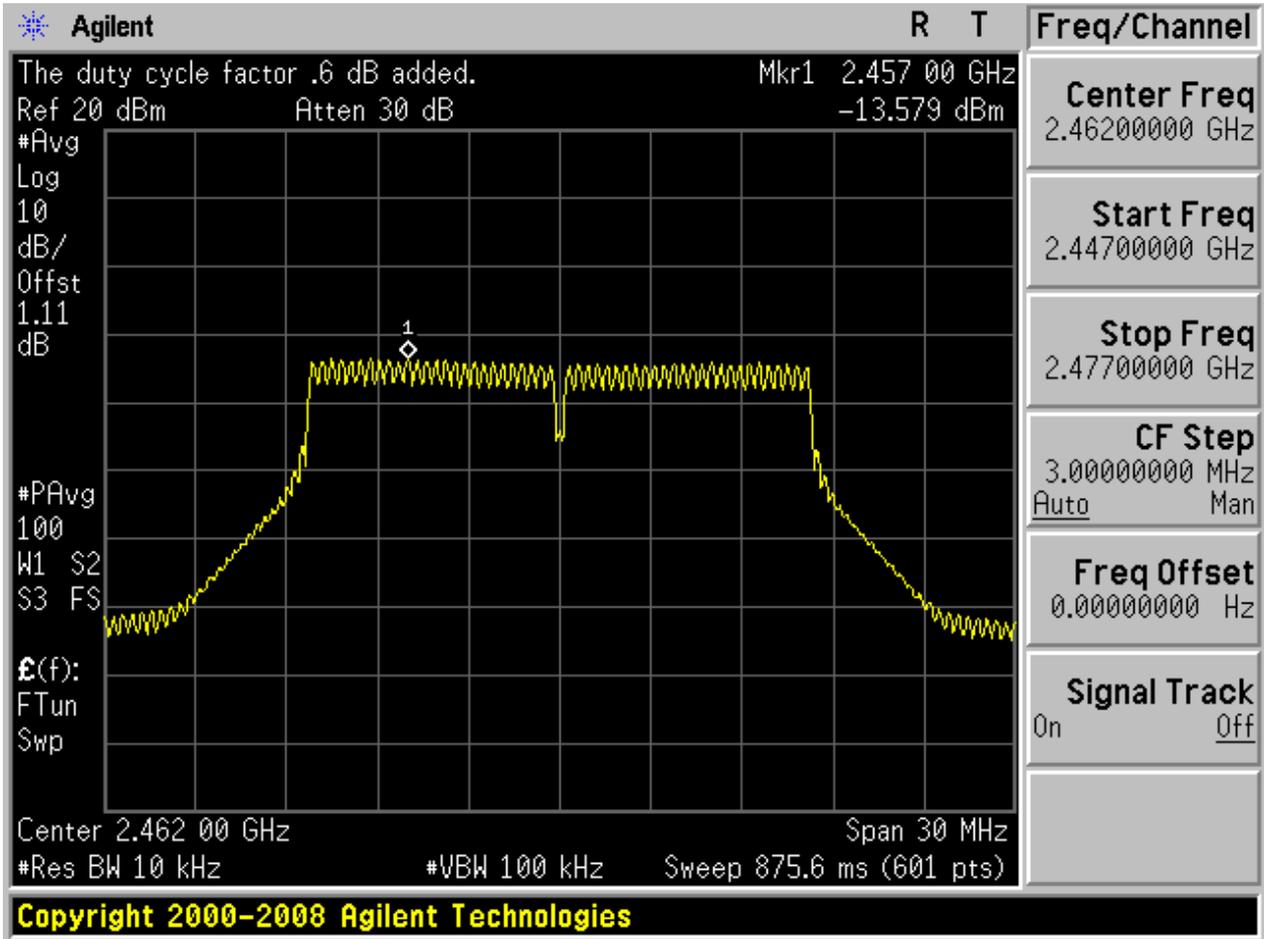


2.5 11G\_M@Ant 1



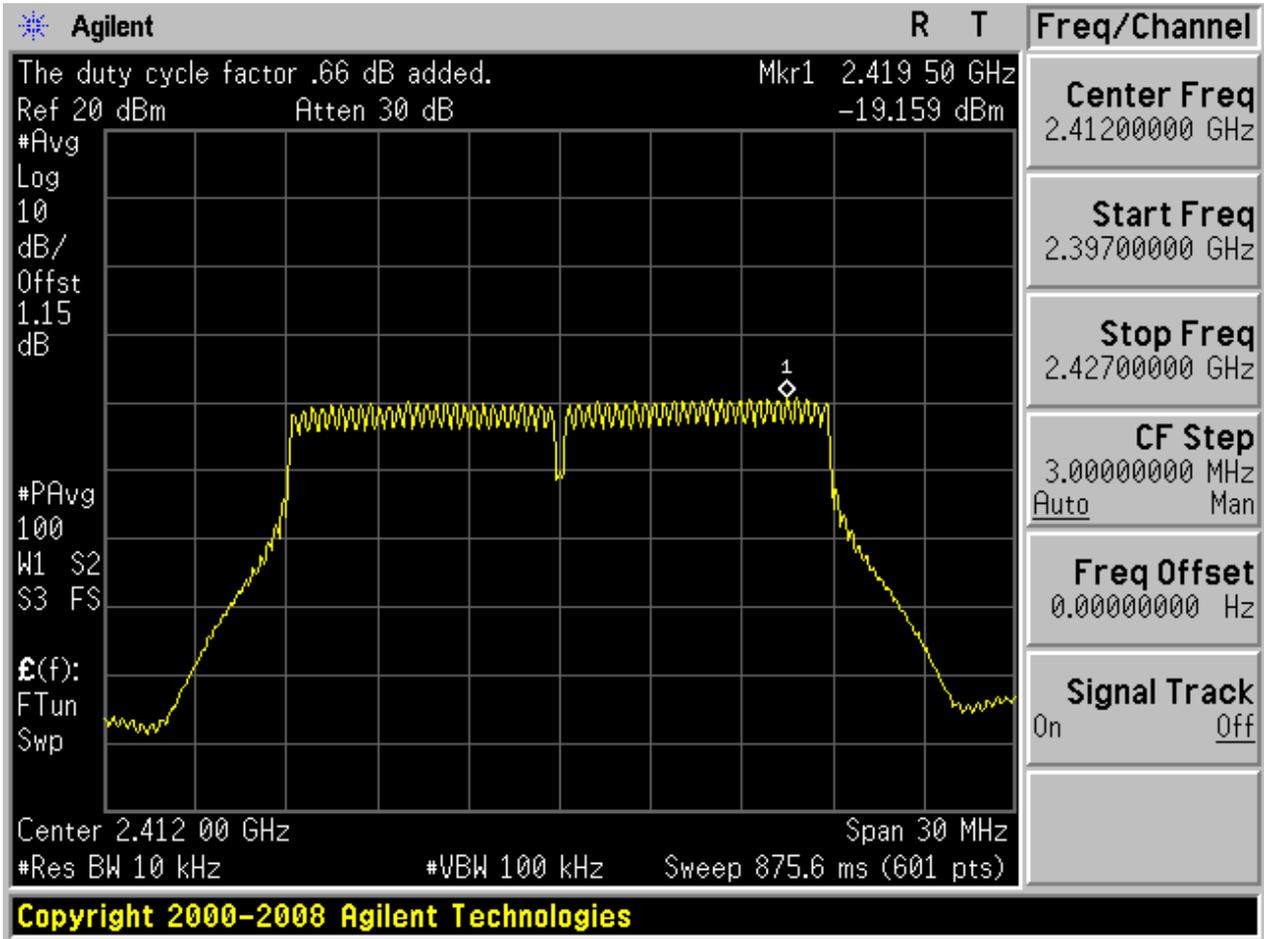


2.6 11G\_H@Ant 1



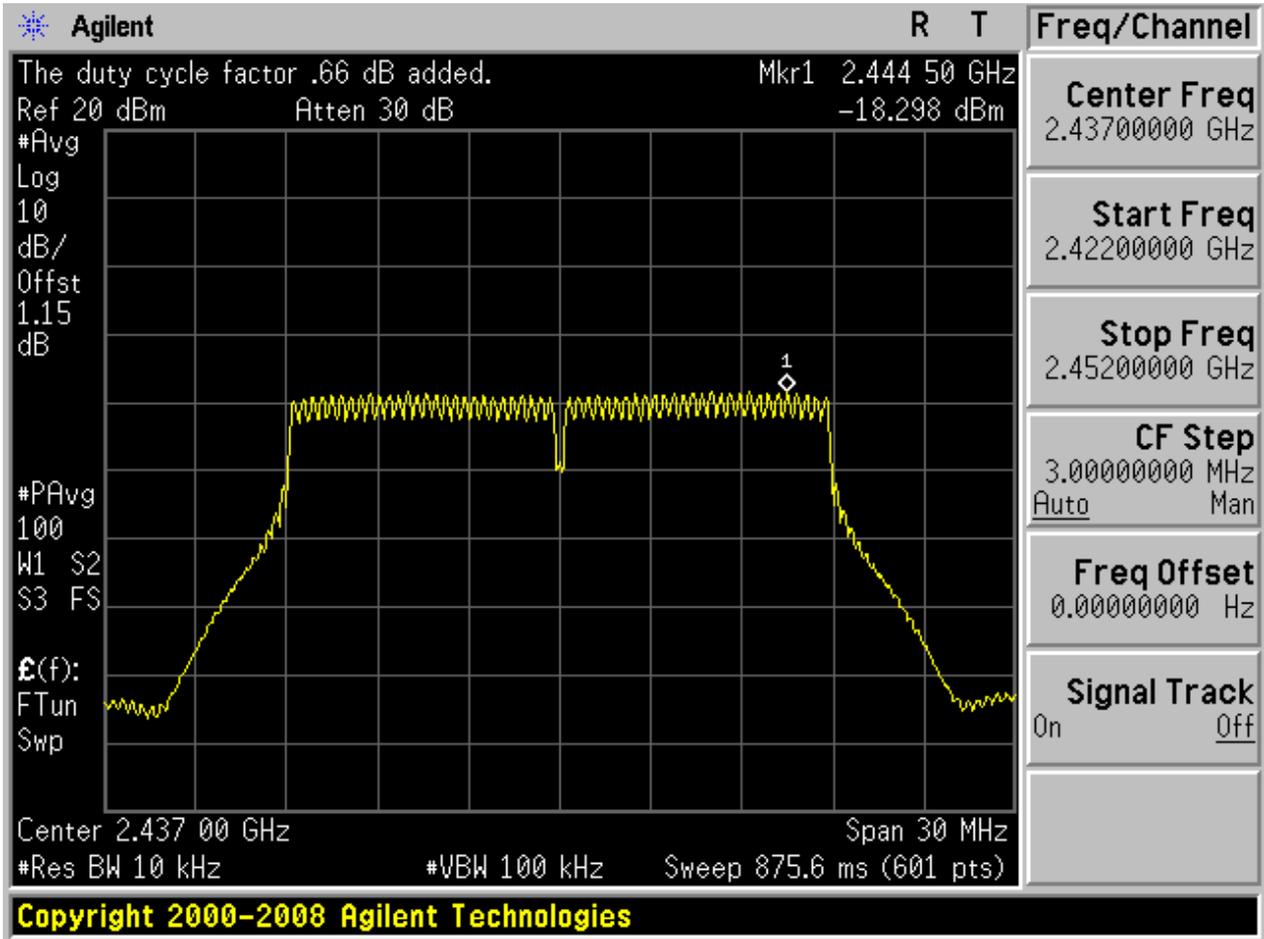


2.7 11N20\_L@Ant 1



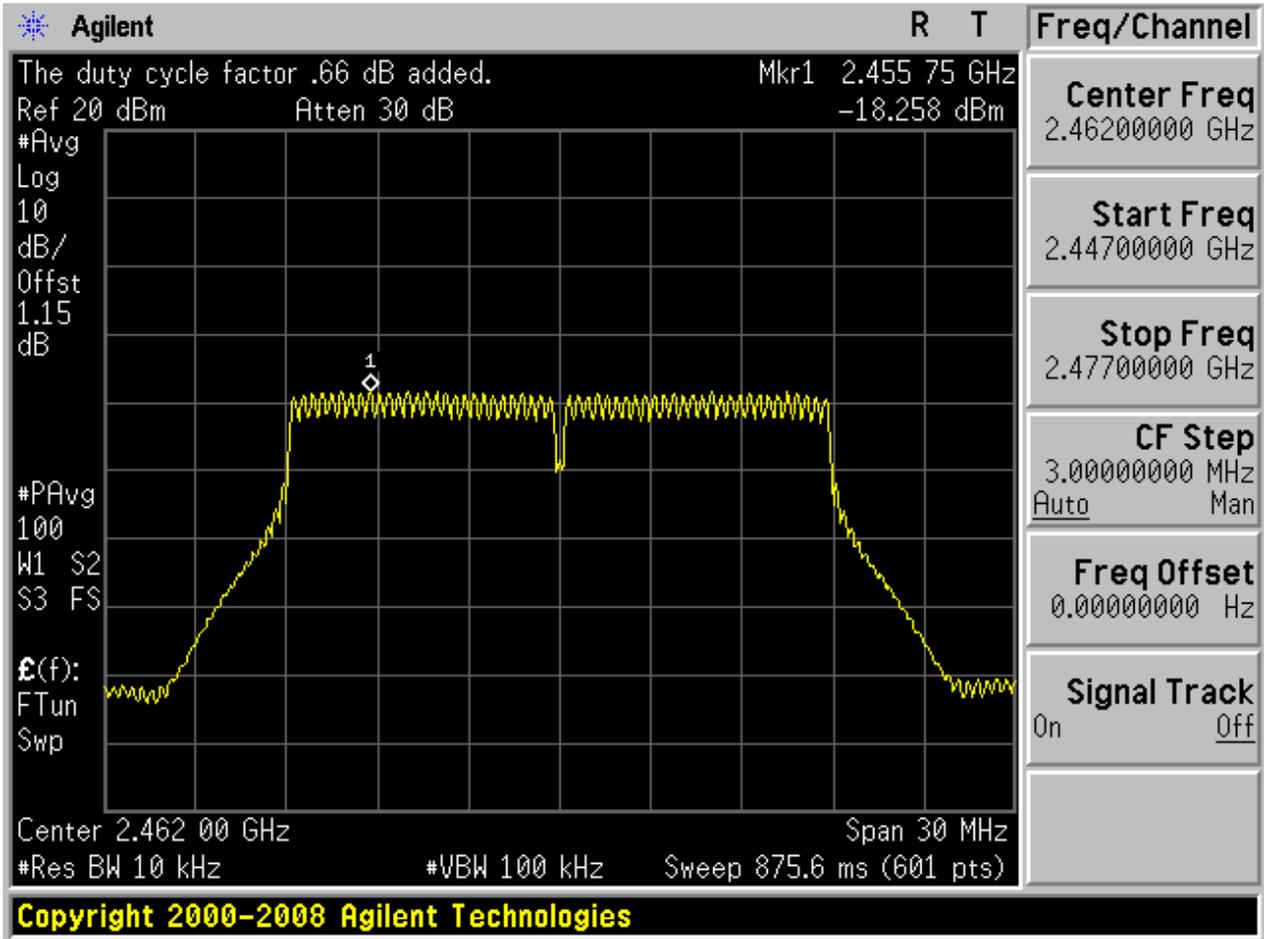


2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1





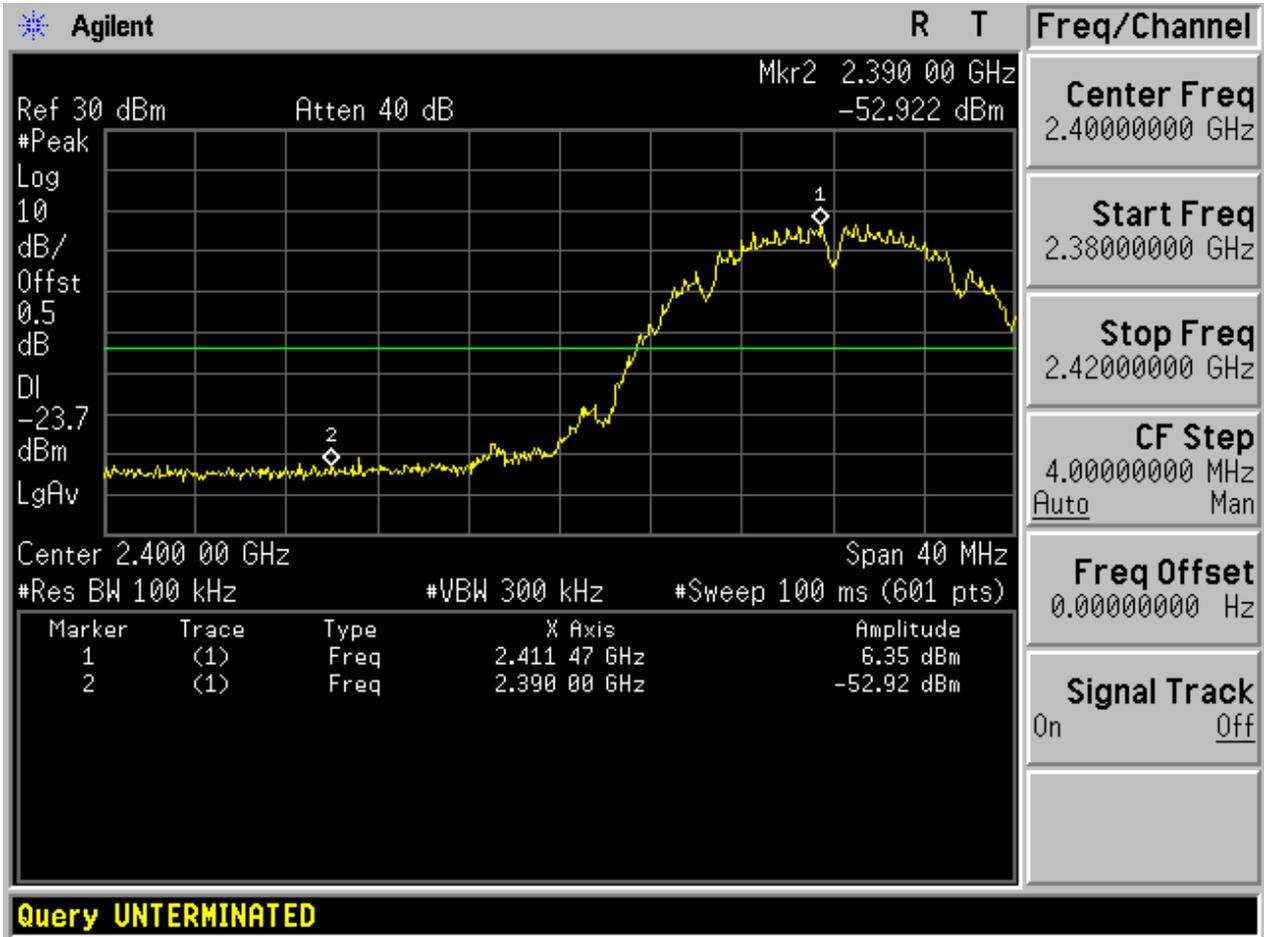
## Appendix F: Band Edges Compliance

### Part I - Test Results

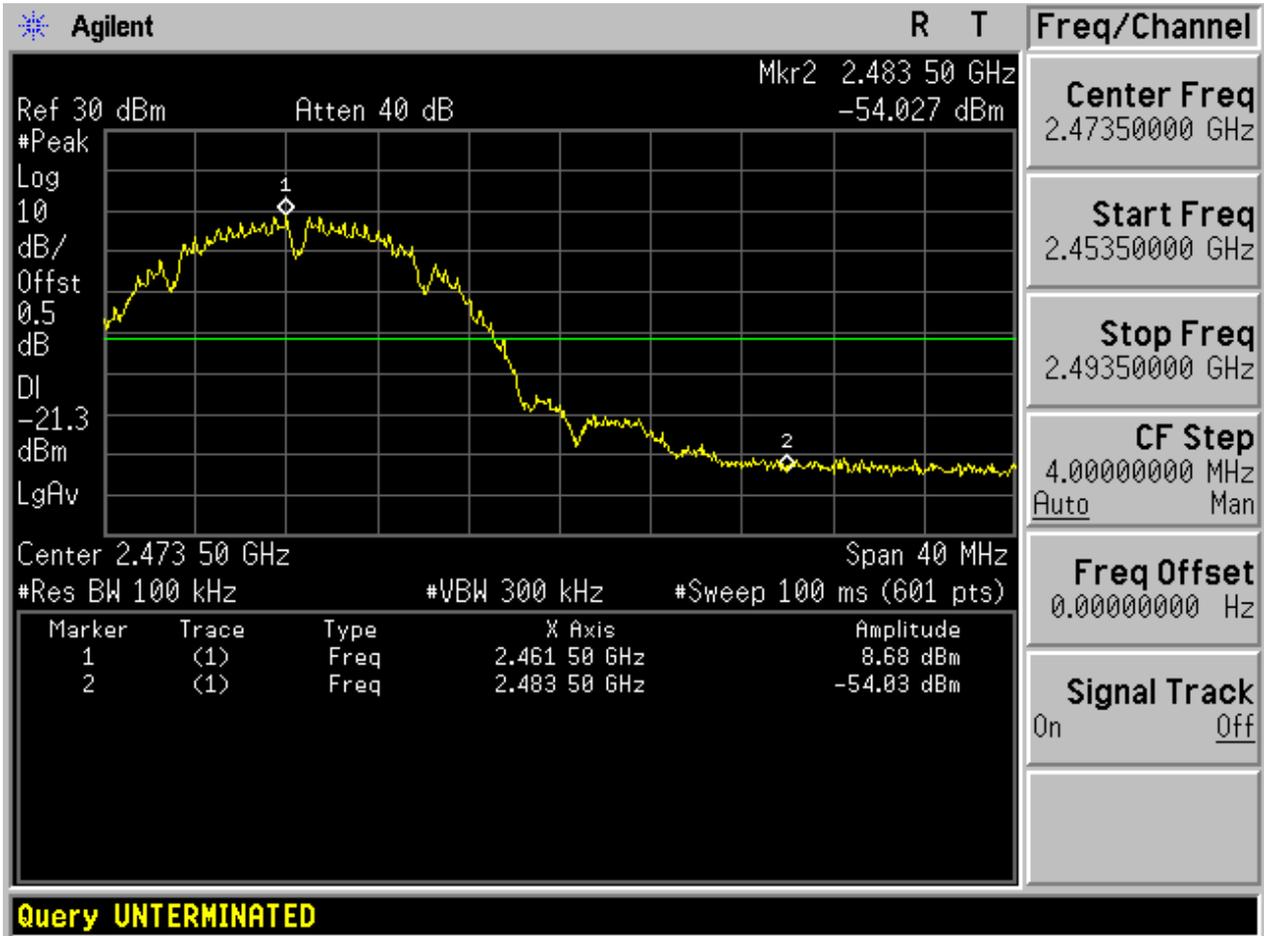
Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	6.35	-52.92	pass
11B	H	2462	Ant 1	6.68	-54.03	pass
11G	L	2412	Ant 1	3.42	-53.88	pass
11G	H	2462	Ant 1	4.95	-44.46	pass
11N20	L	2412	Ant 1	-0.60	-55.81	pass
11N20	H	2462	Ant 1	0.52	-49.58	pass

Part II - Test Plots

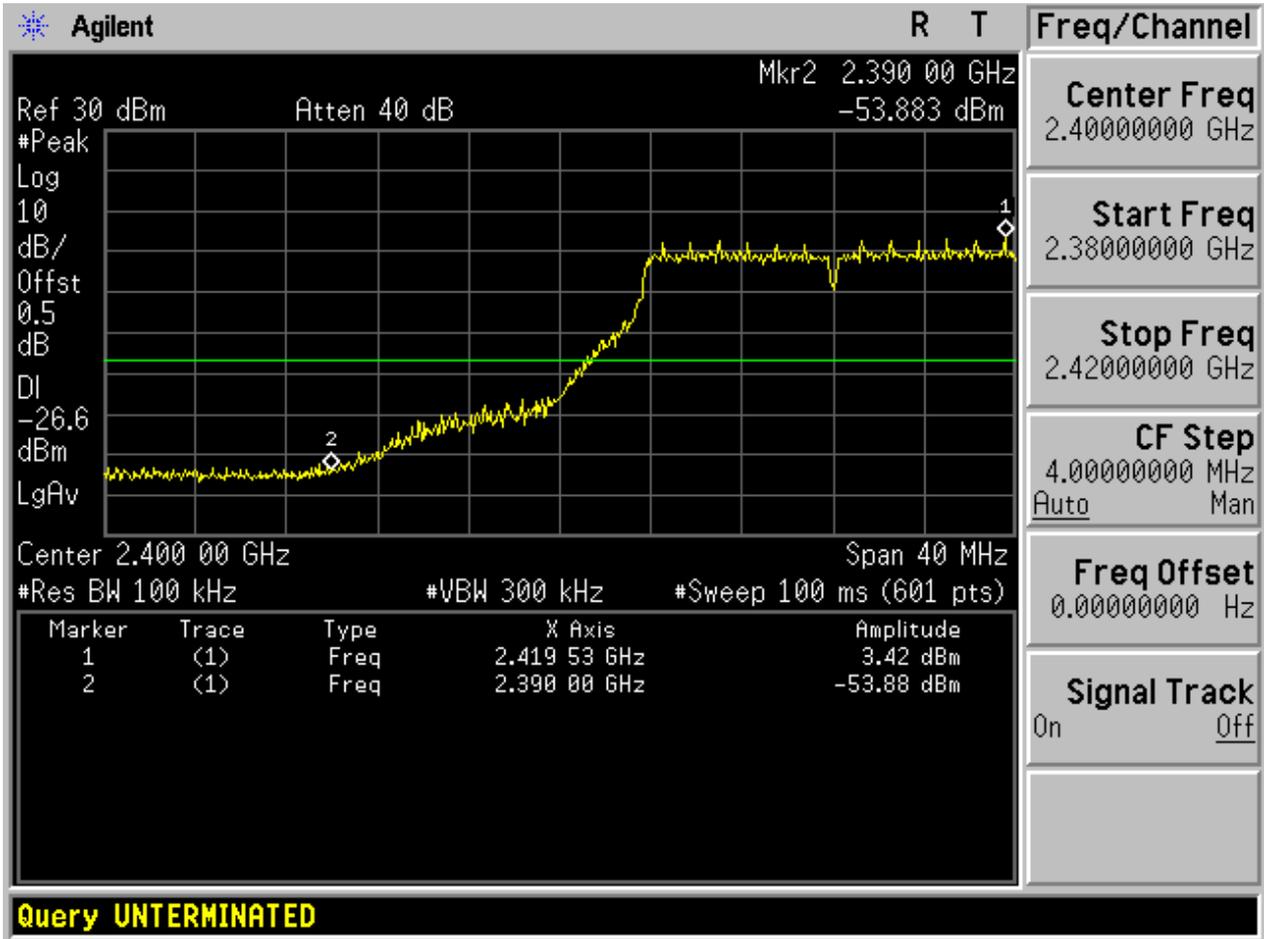
2.1 11B\_L@Ant 1



2.2 11B\_H@Ant 1

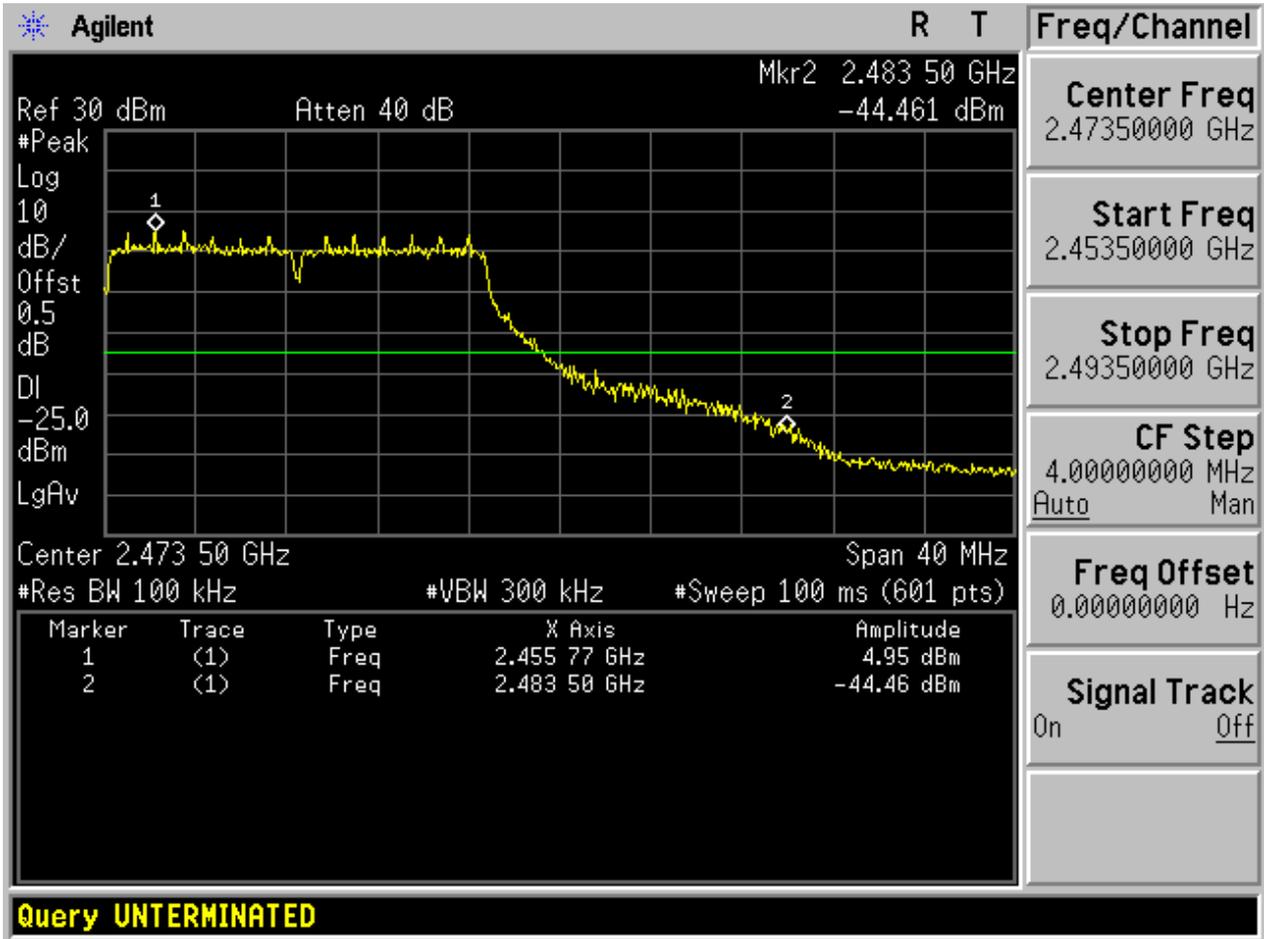


2.3 11G\_L@Ant 1

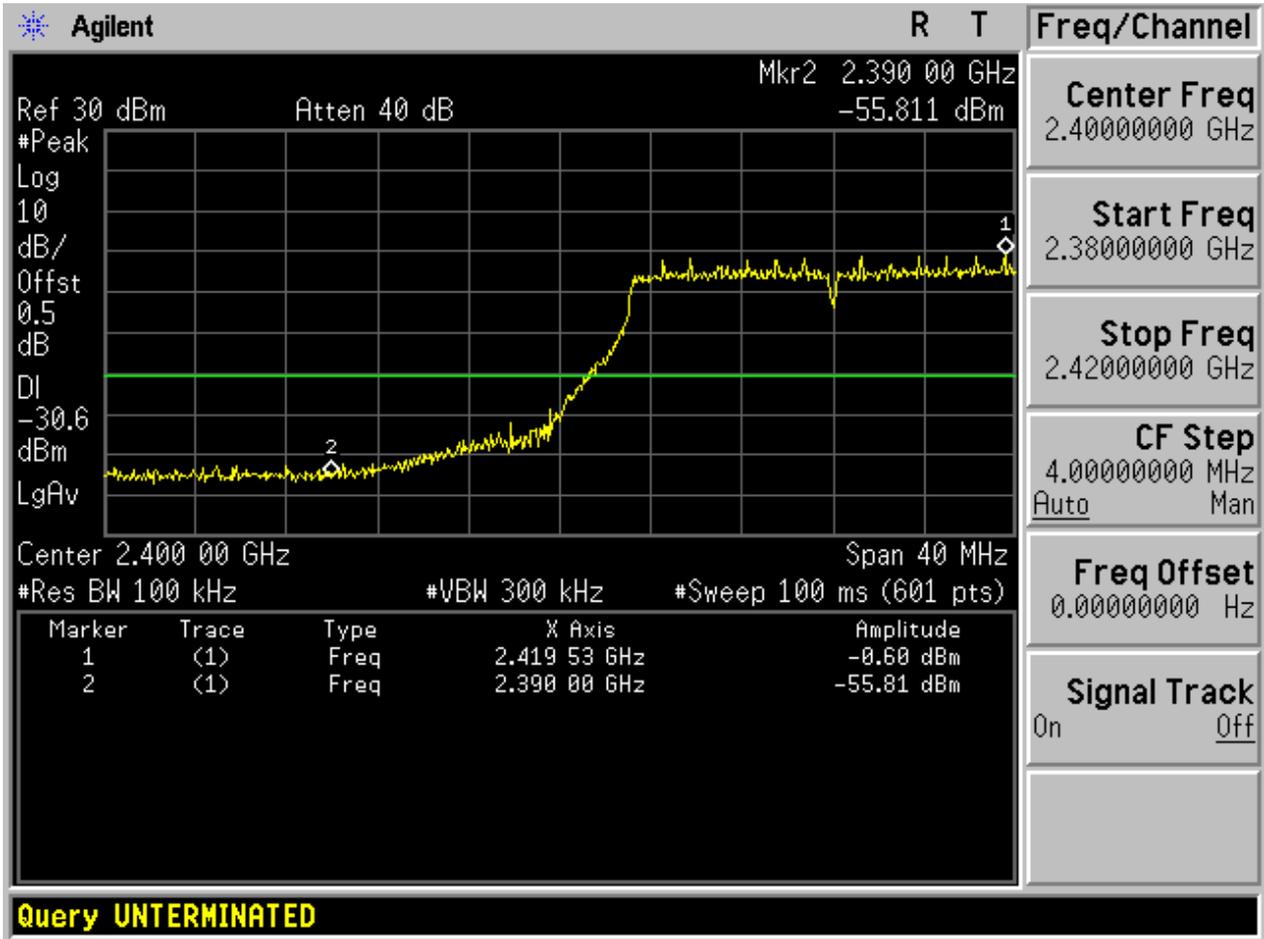




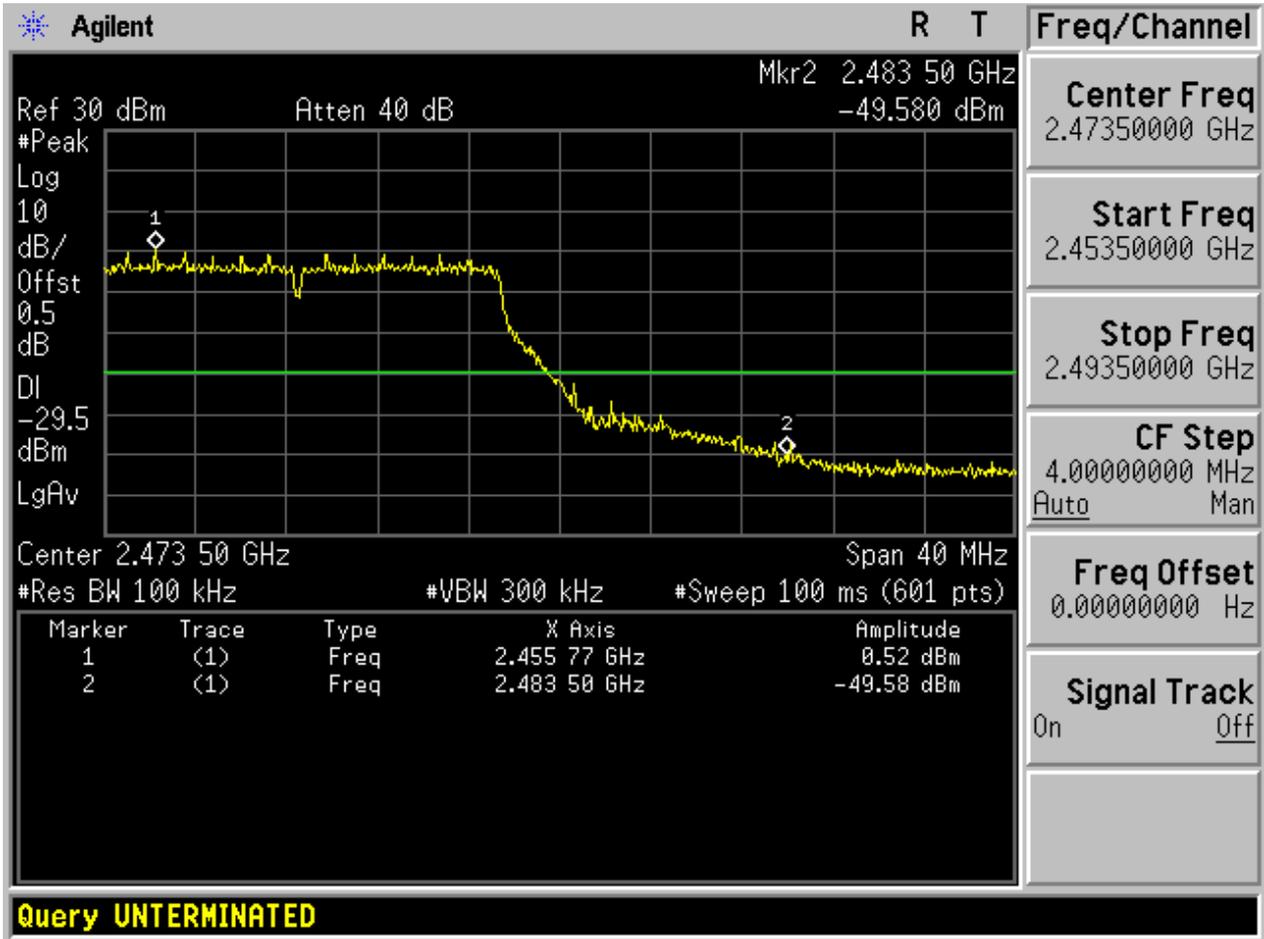
2.4 11G\_H@Ant 1



2.5 11N20\_L@Ant 1



2.6 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

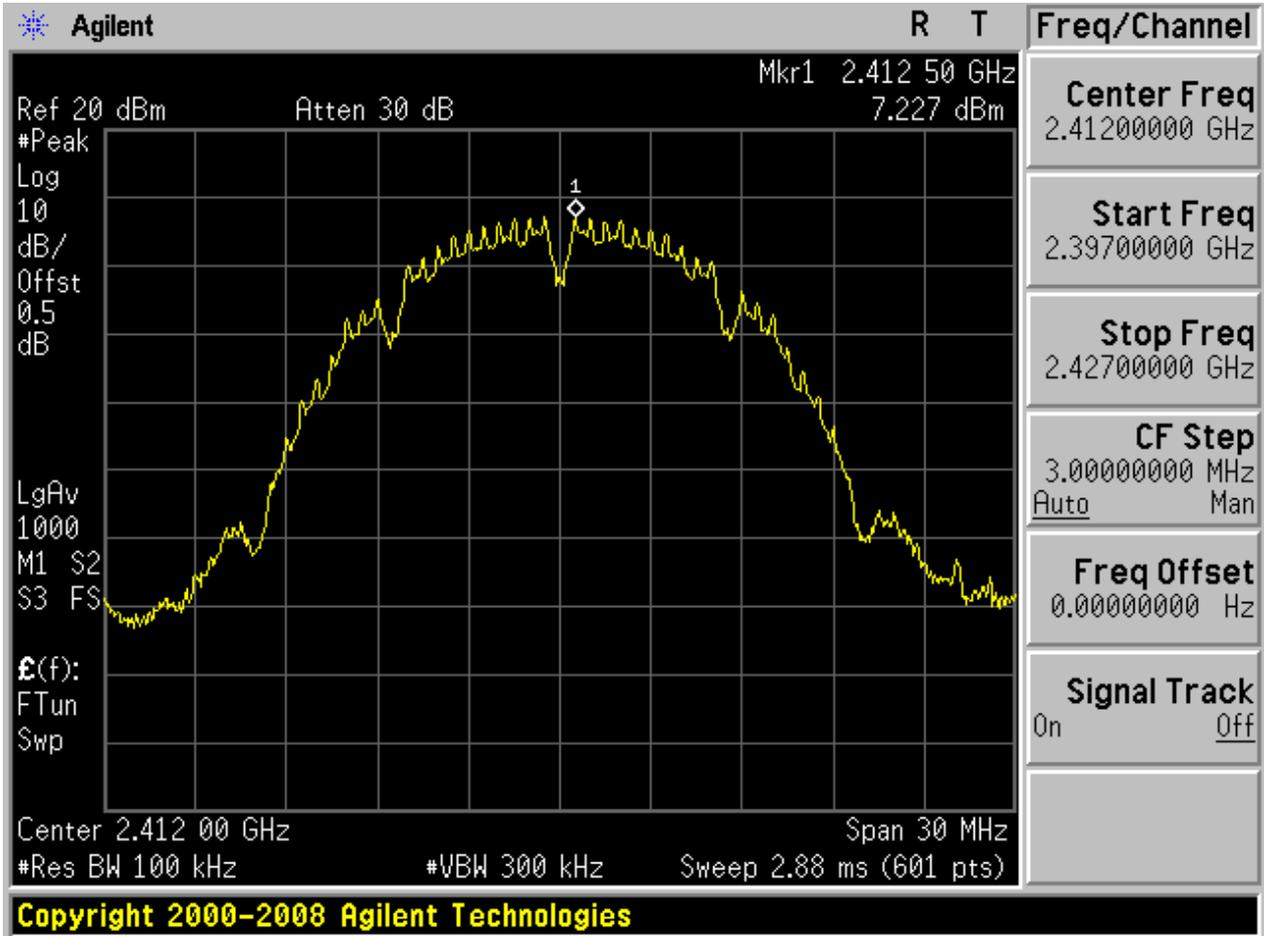
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	7.23	<limit	pass
11B	M	2437	Ant 1	8.76	<limit	pass
11B	H	2462	Ant 1	9.21	<limit	pass
11G	L	2412	Ant 1	3.55	<limit	pass
11G	M	2437	Ant 1	4.75	<limit	pass
11G	H	2462	Ant 1	4.97	<limit	pass
11N20	L	2412	Ant 1	-0.49	<limit	pass
11N20	M	2437	Ant 1	0.36	<limit	pass
11N20	H	2462	Ant 1	0.69	<limit	pass



Part II - Test Plots

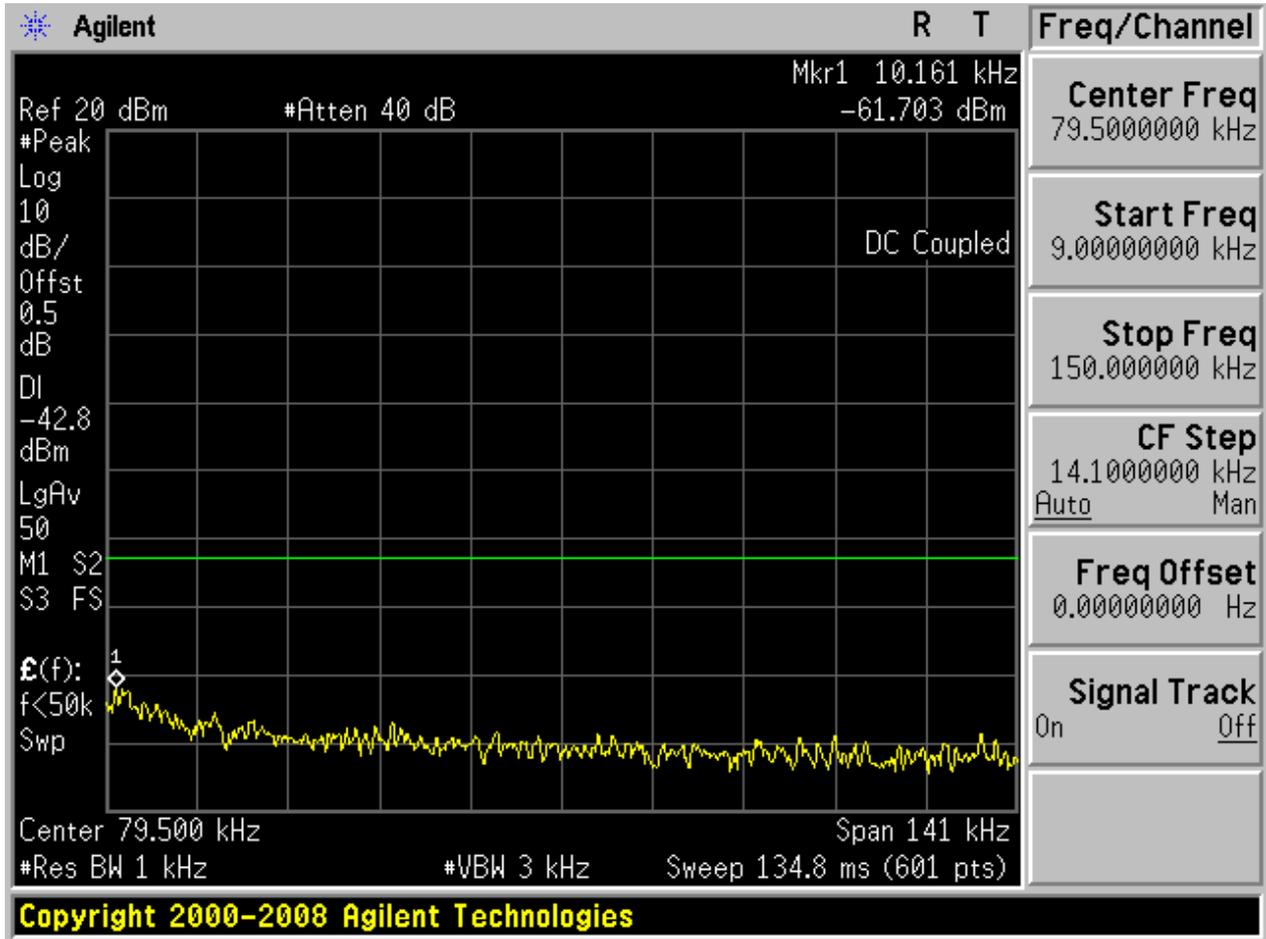
2.1 11B\_L@Ant 1

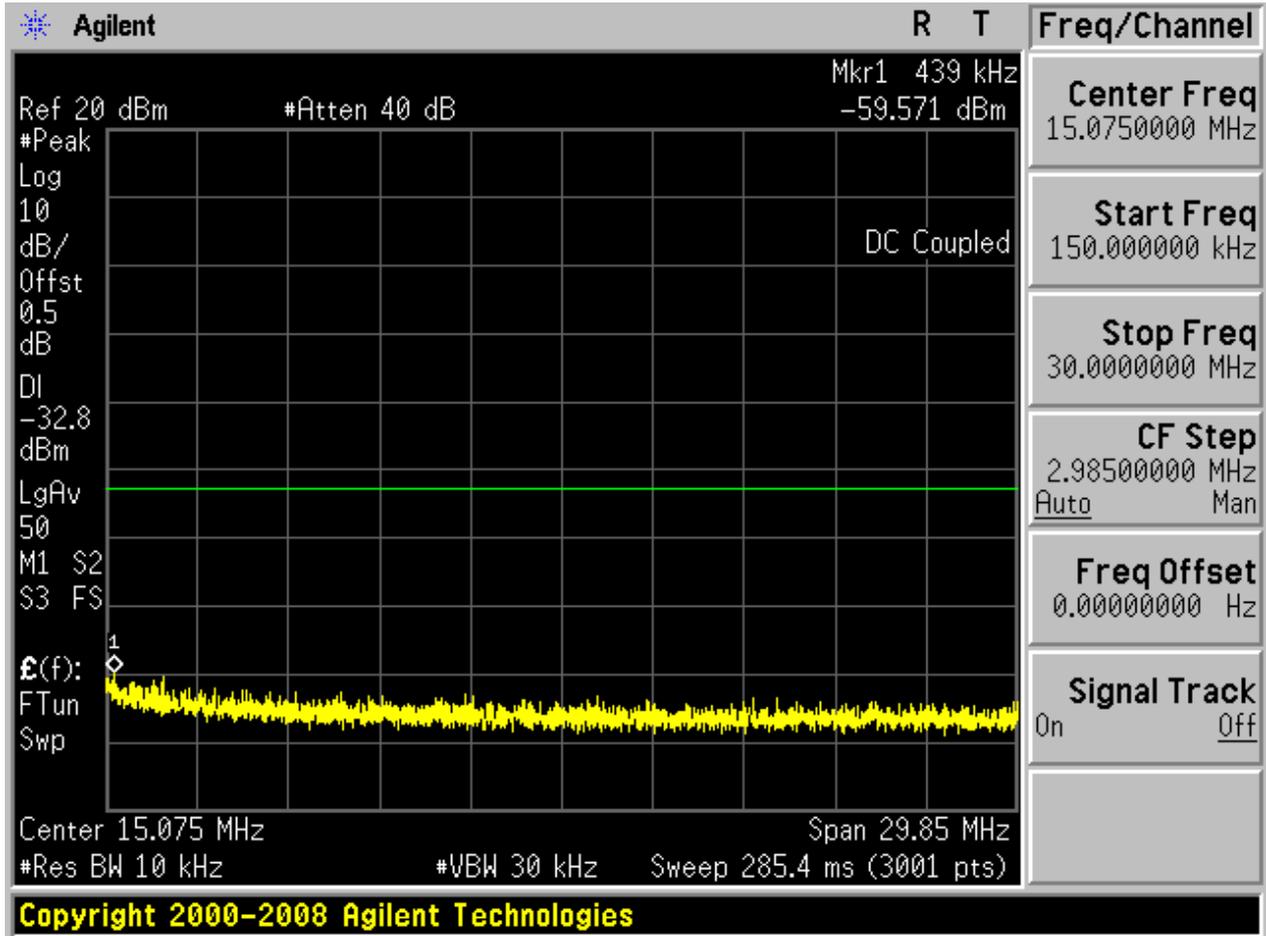
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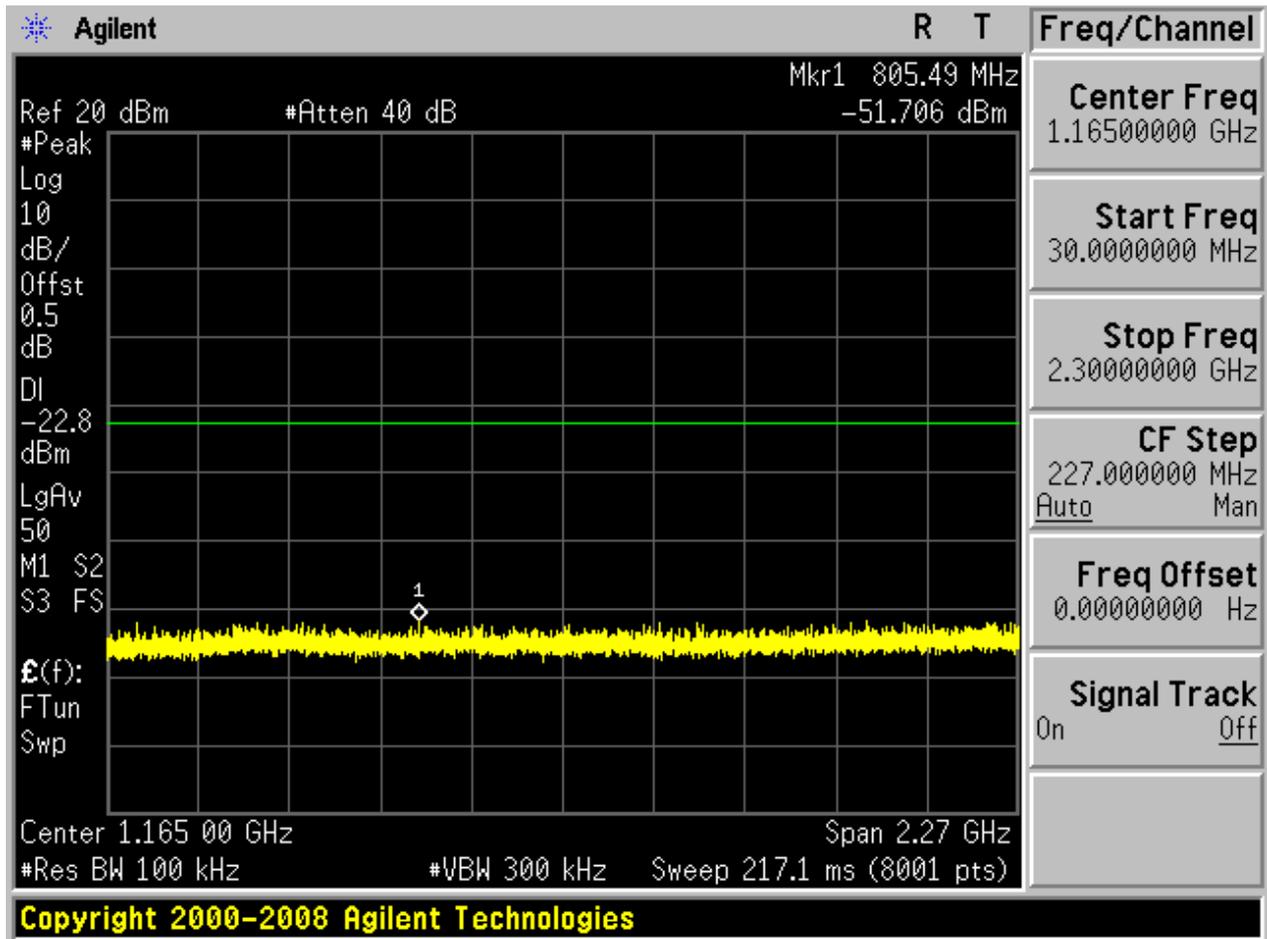


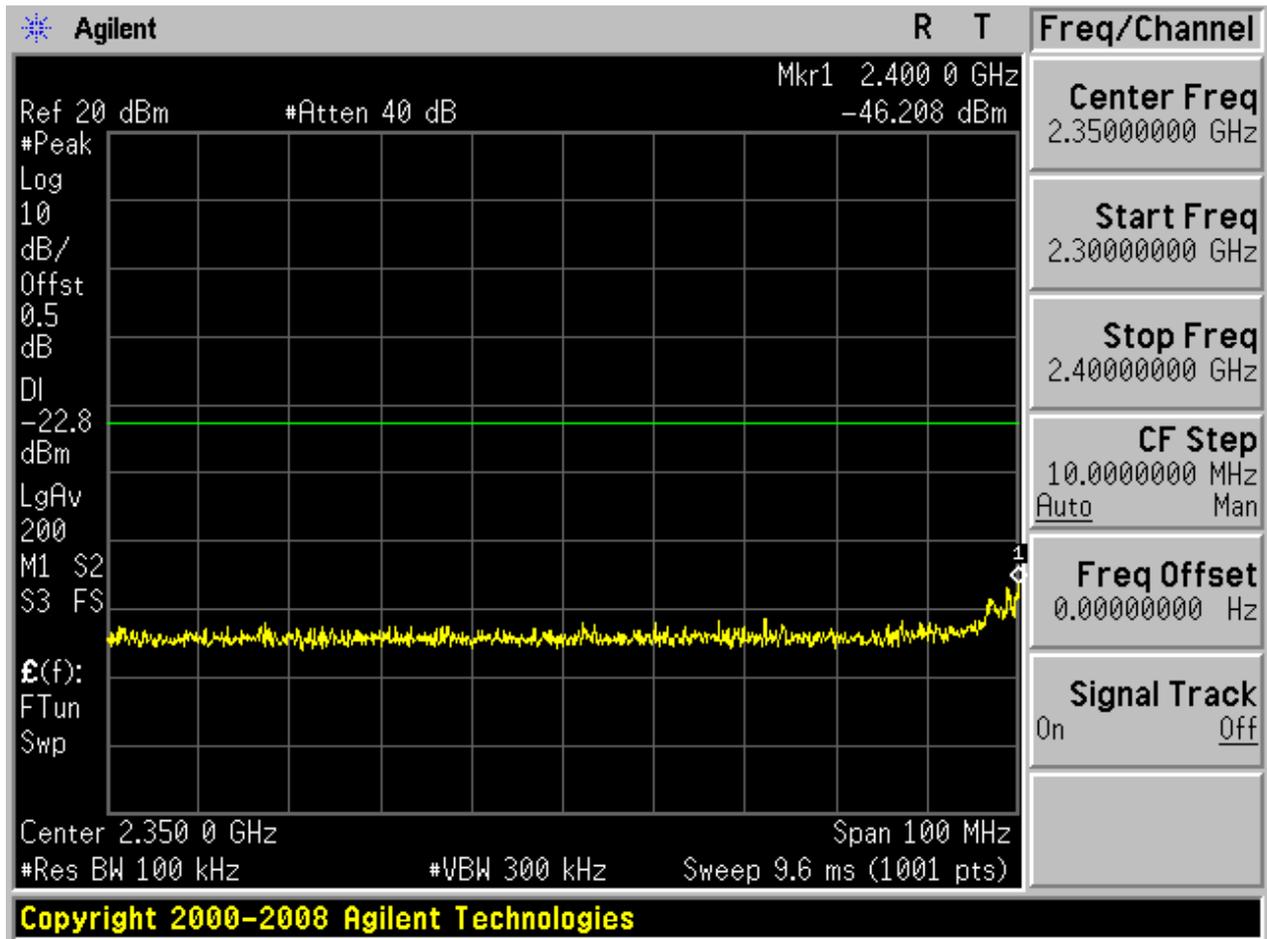


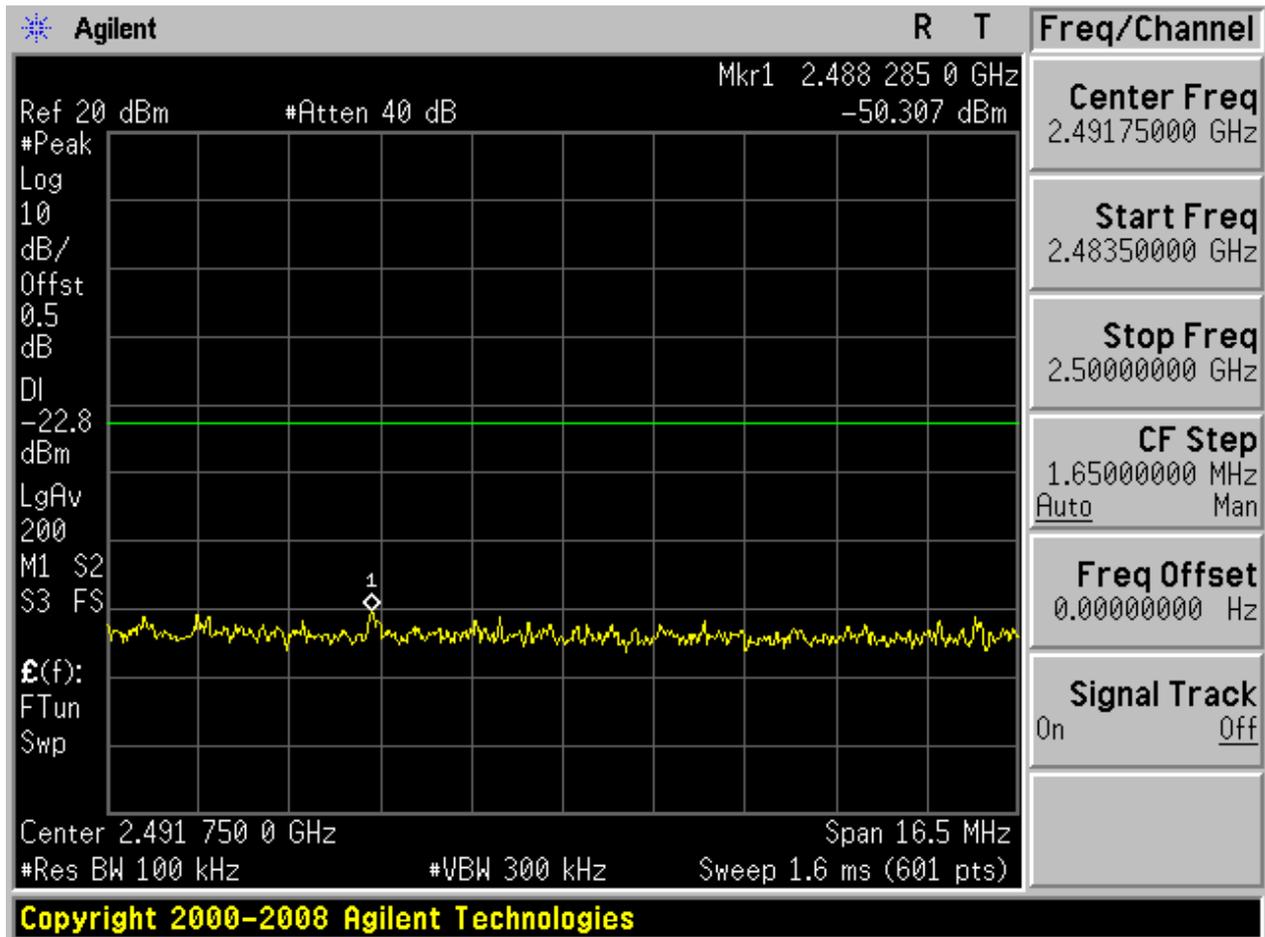
Puw:

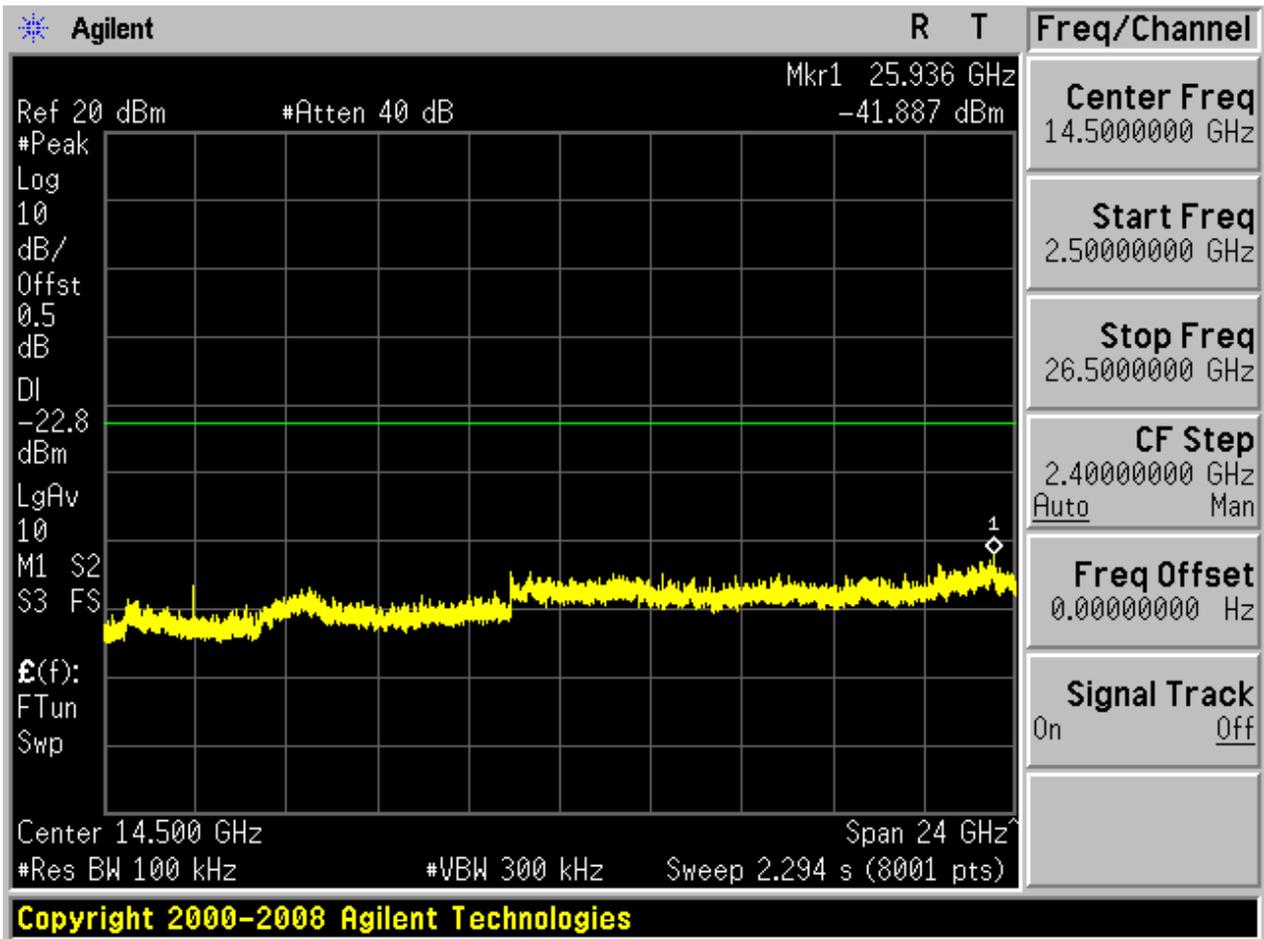








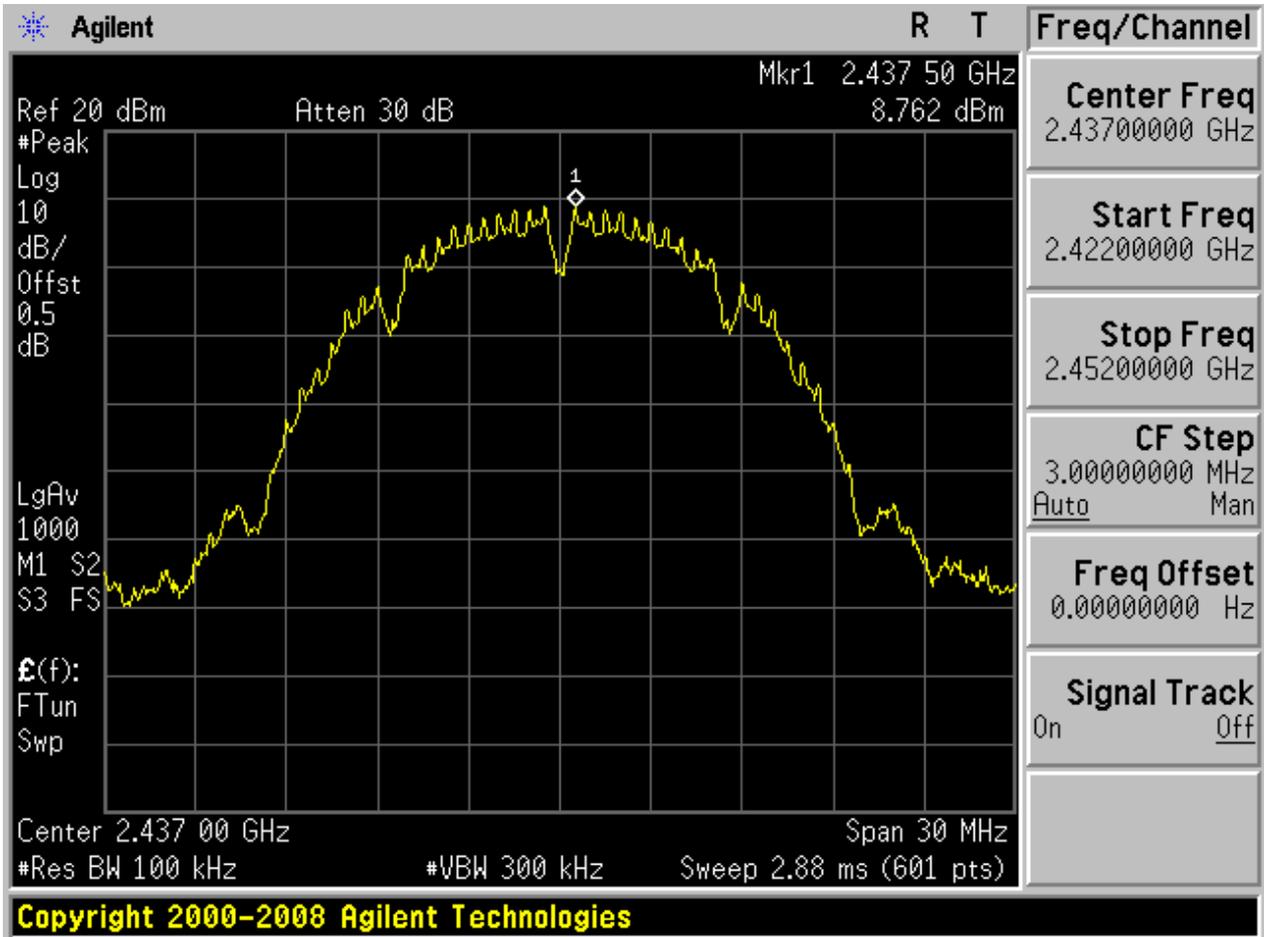






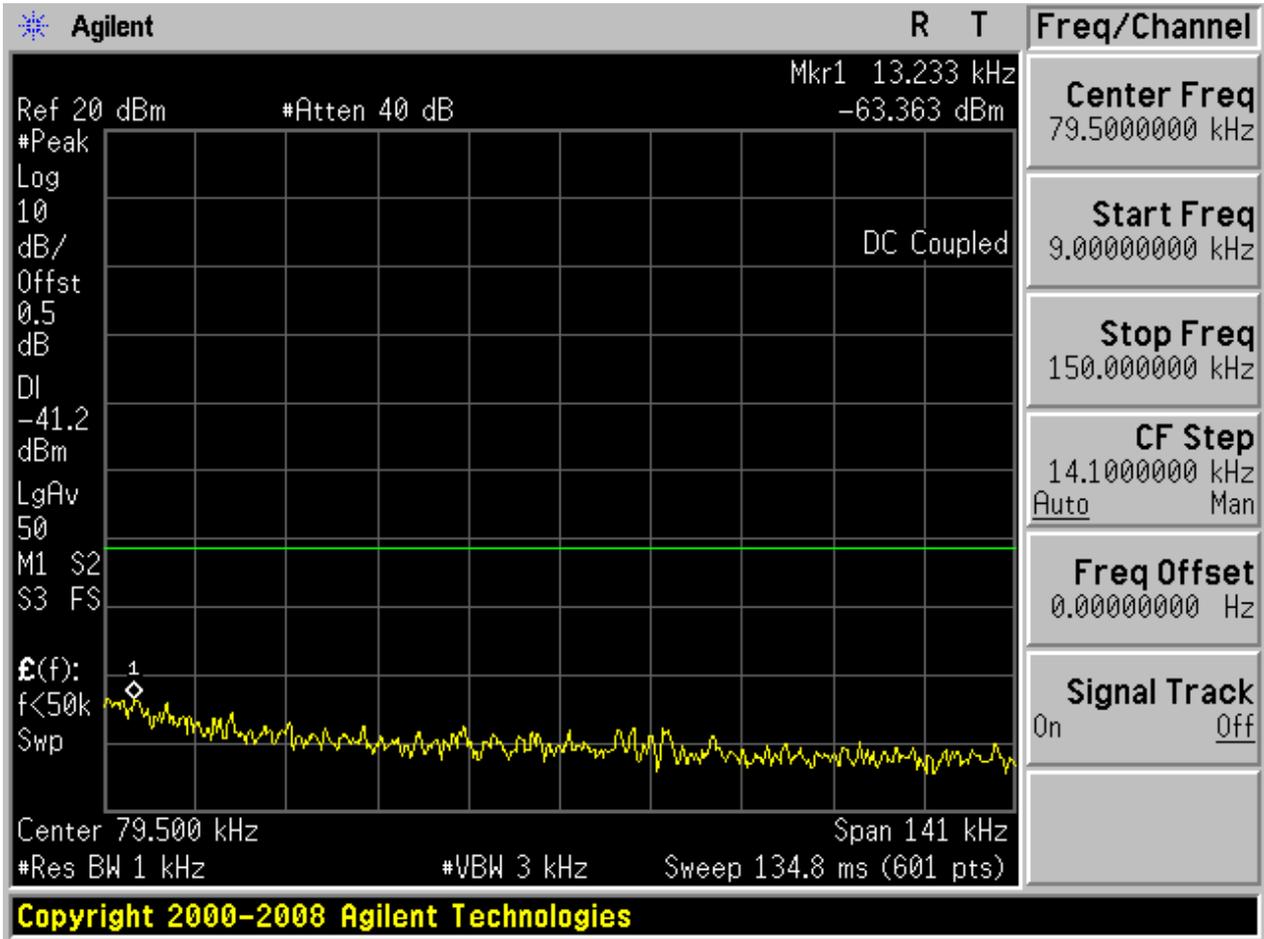
2.2 11B\_M@Ant 1

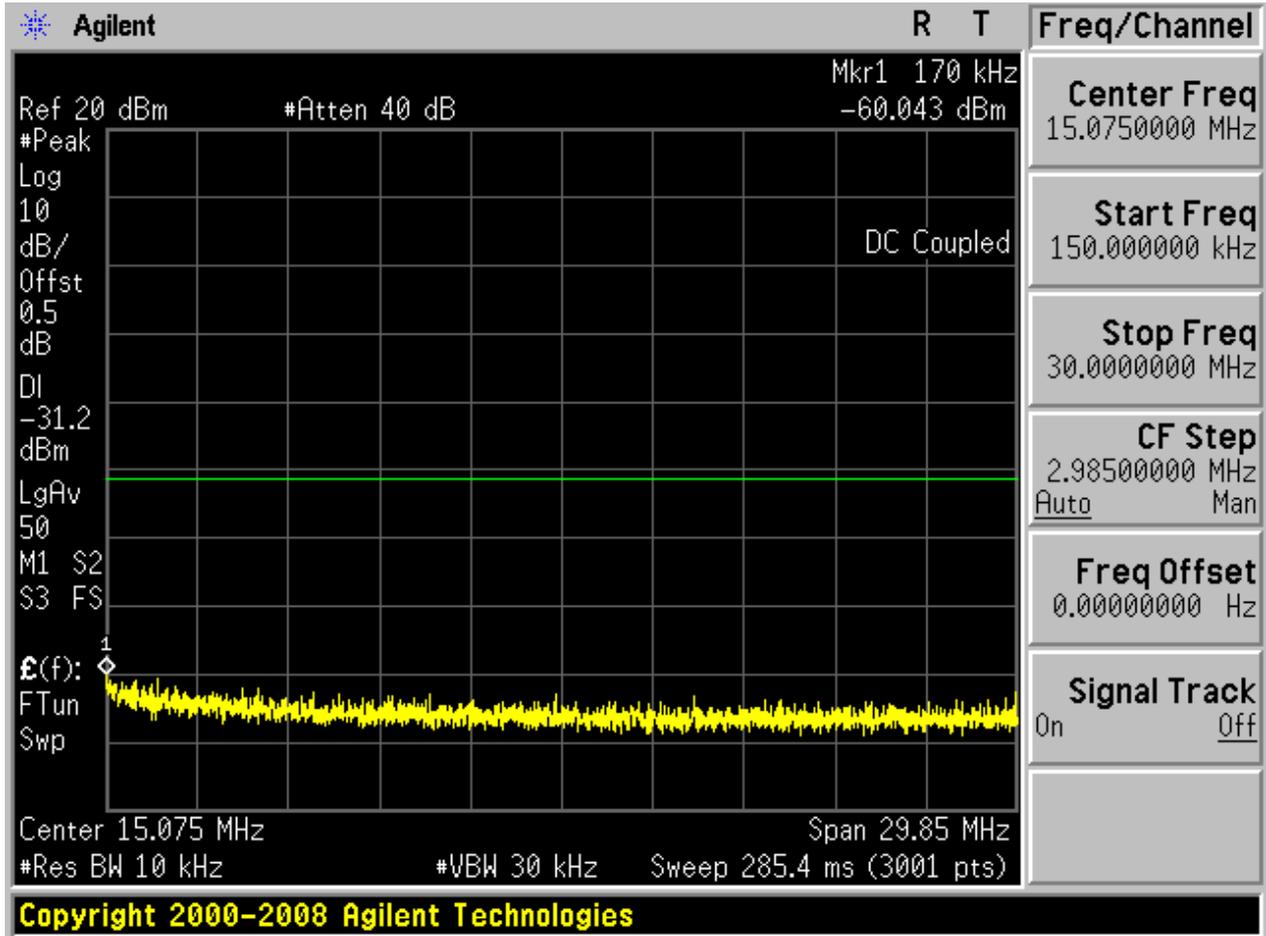
Pref:

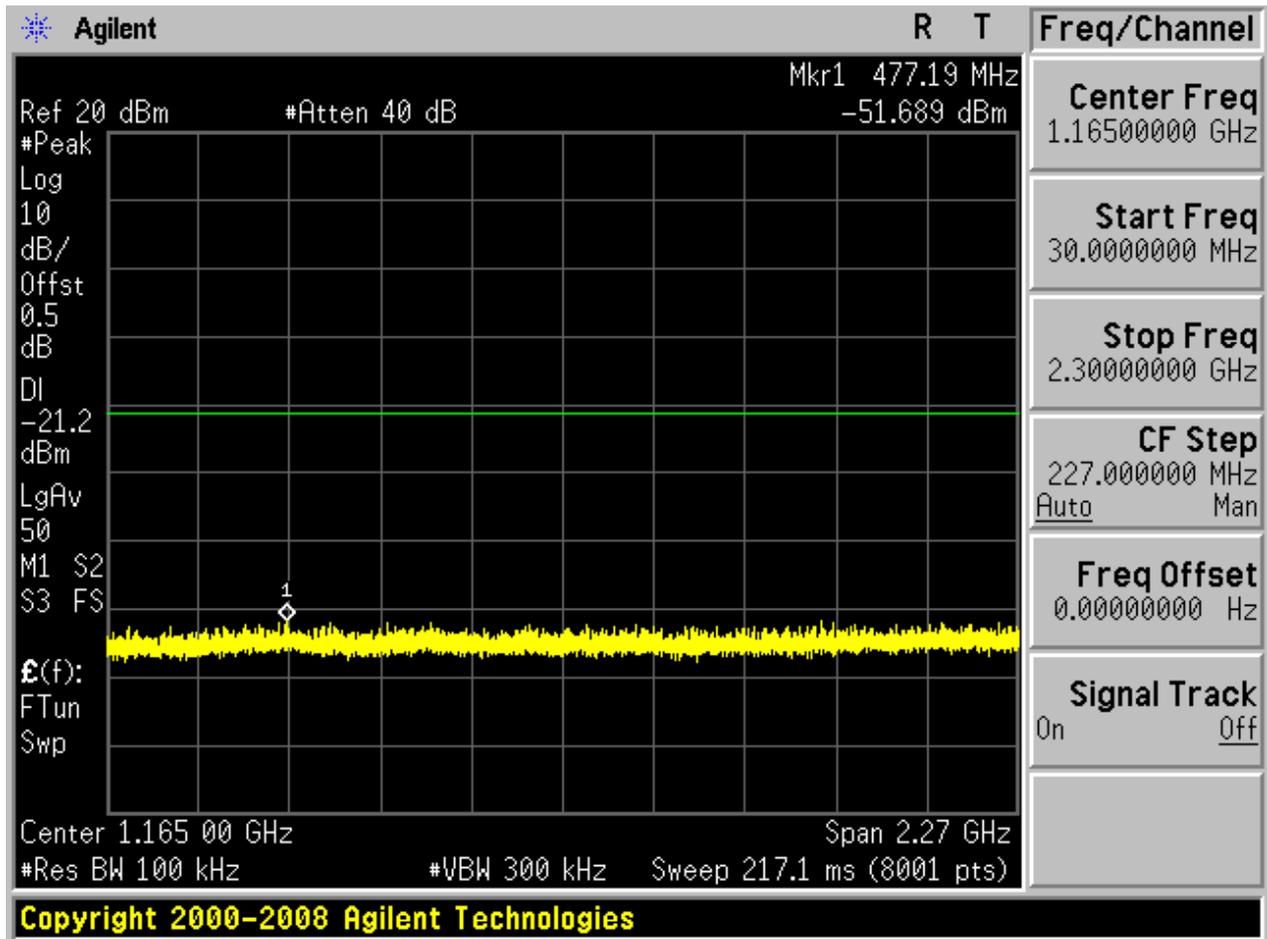


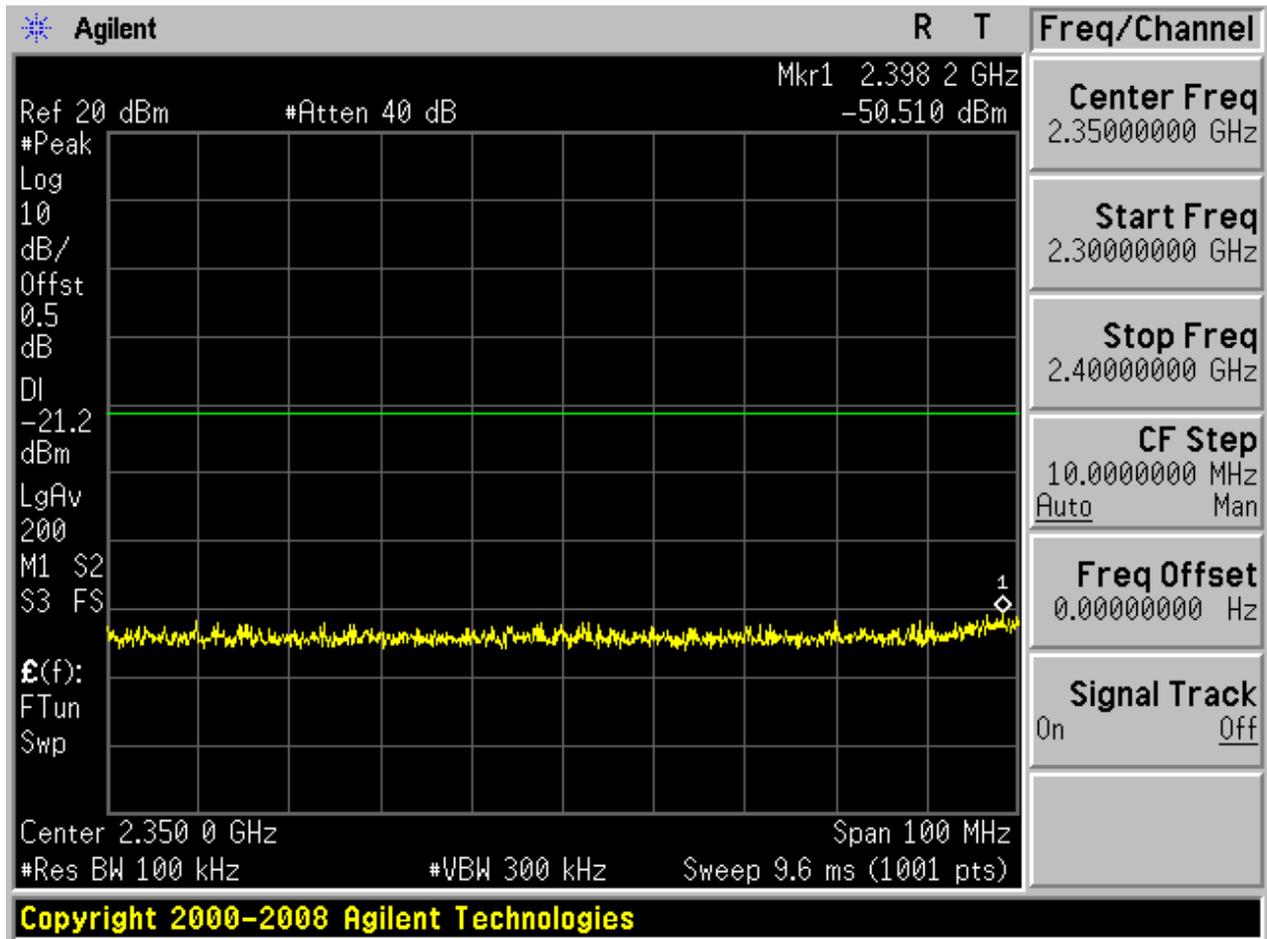


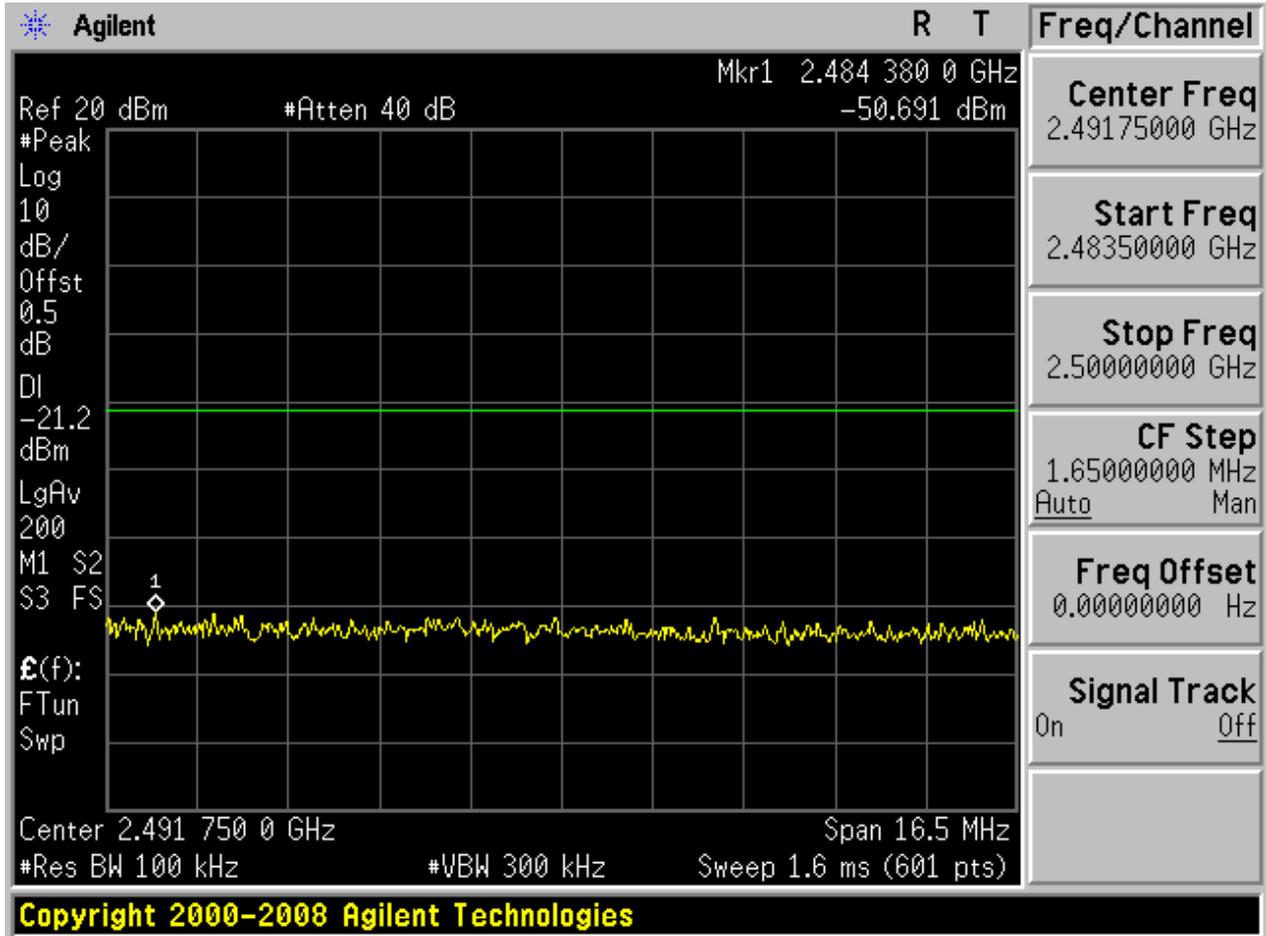
Puw:

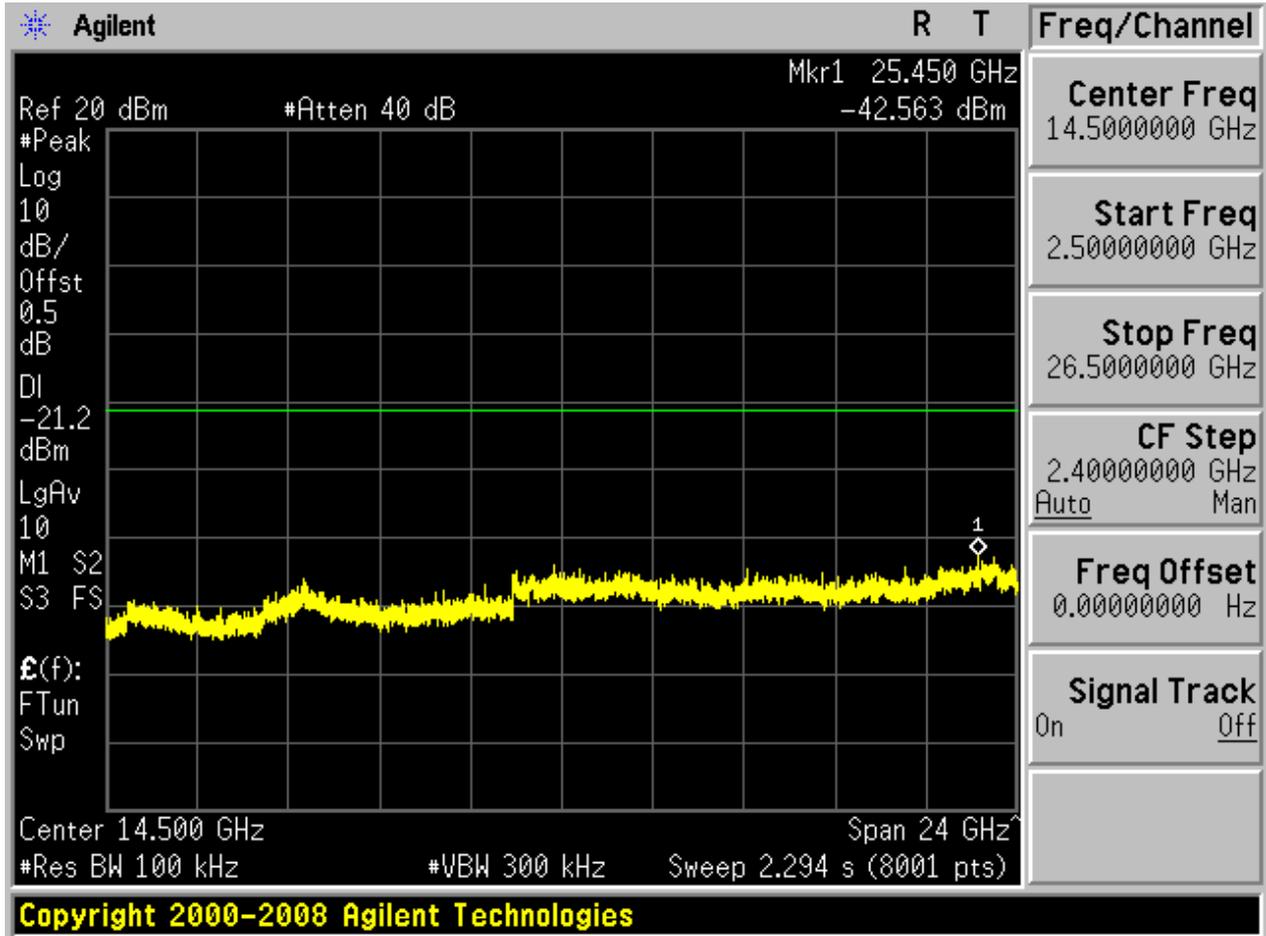








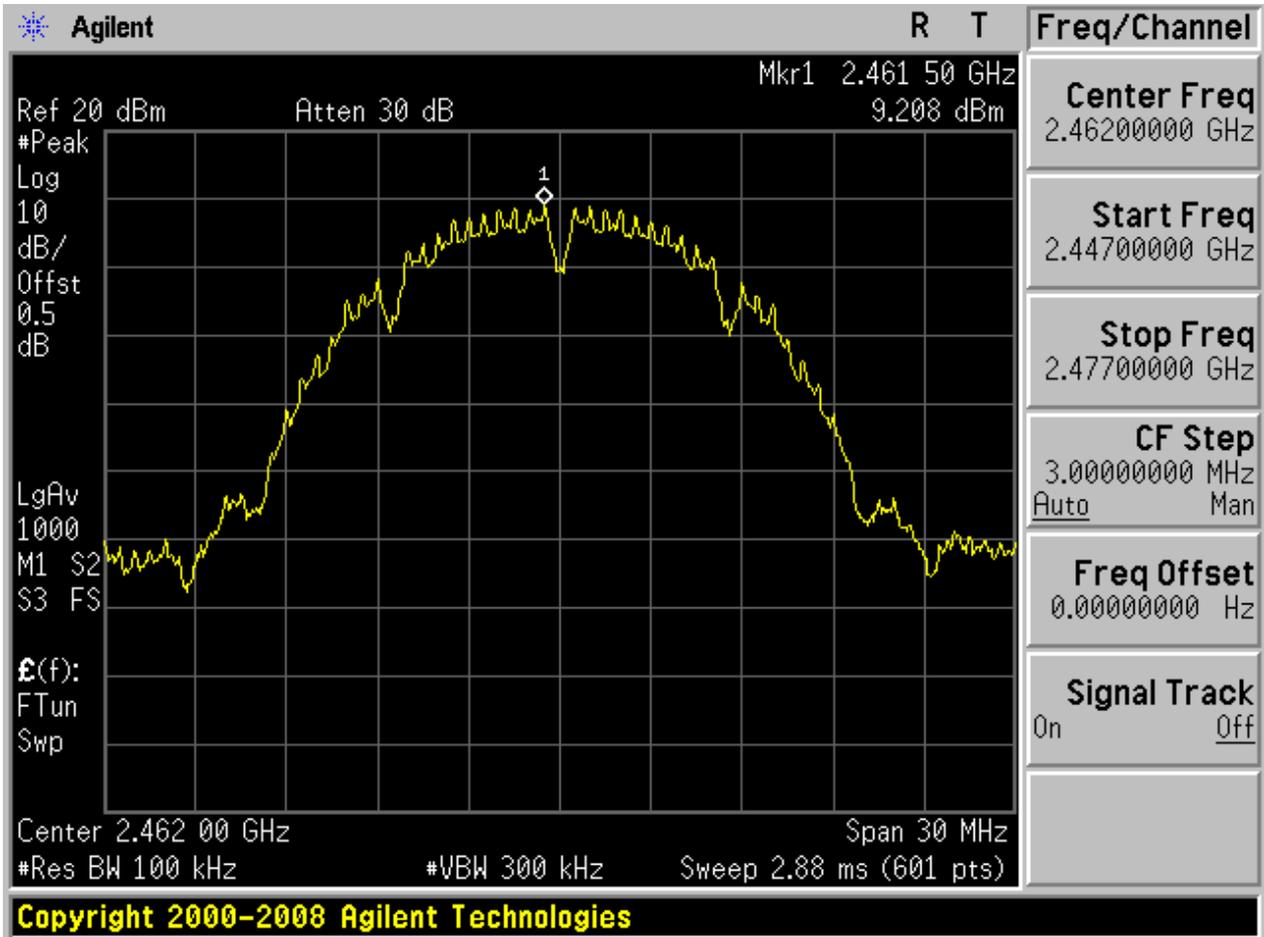






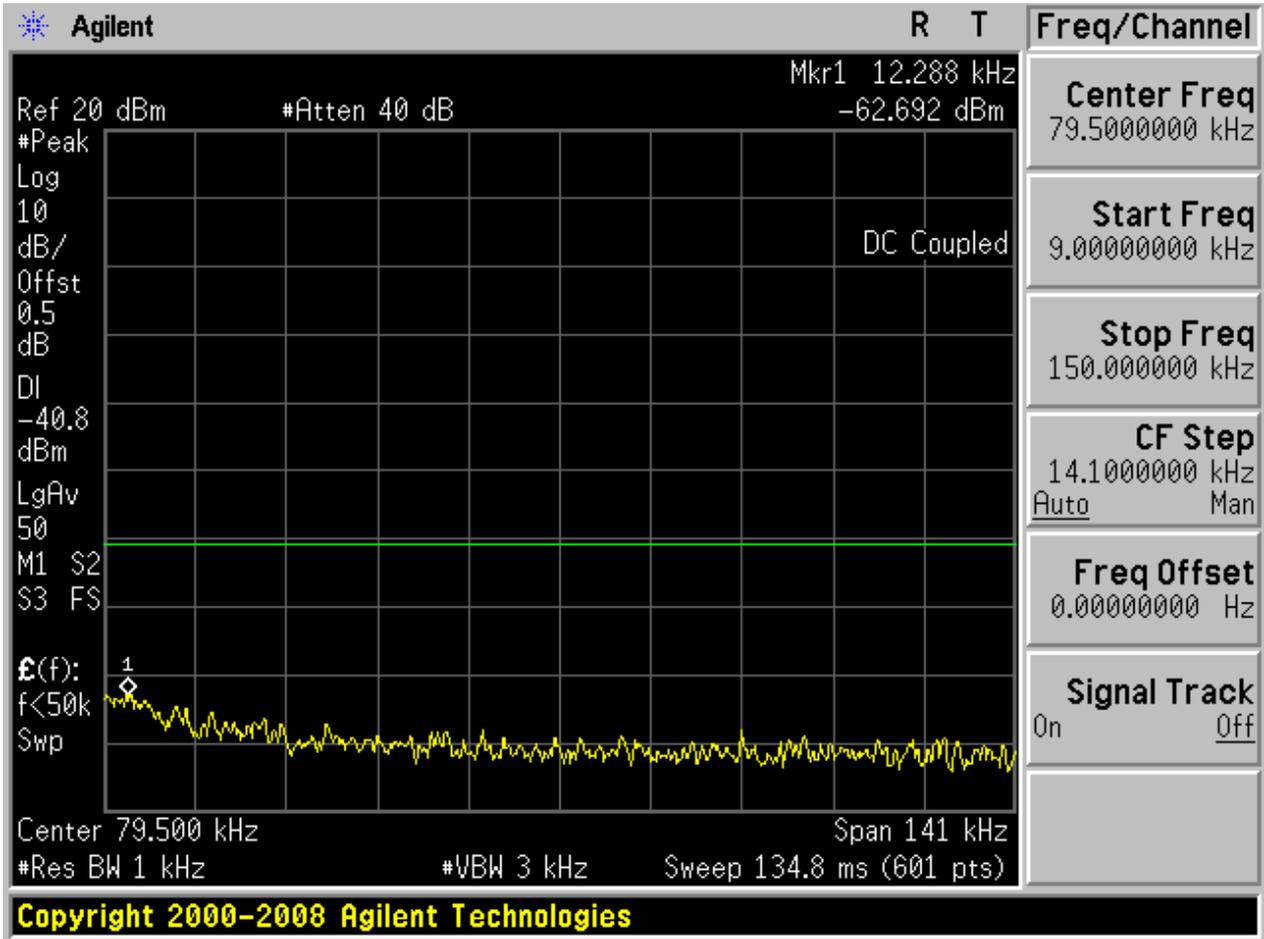
### 2.3 11B\_H@Ant 1

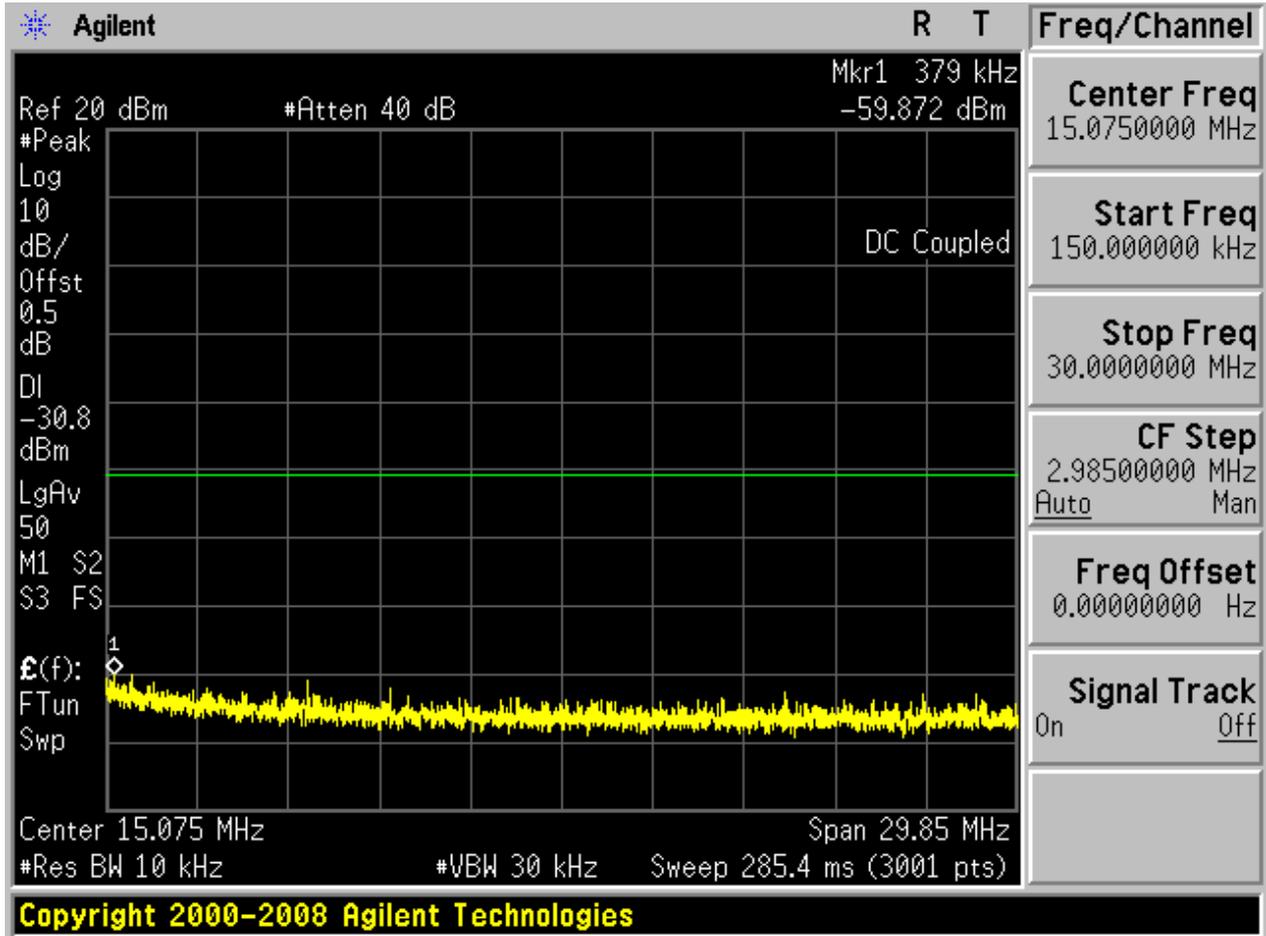
Pref:

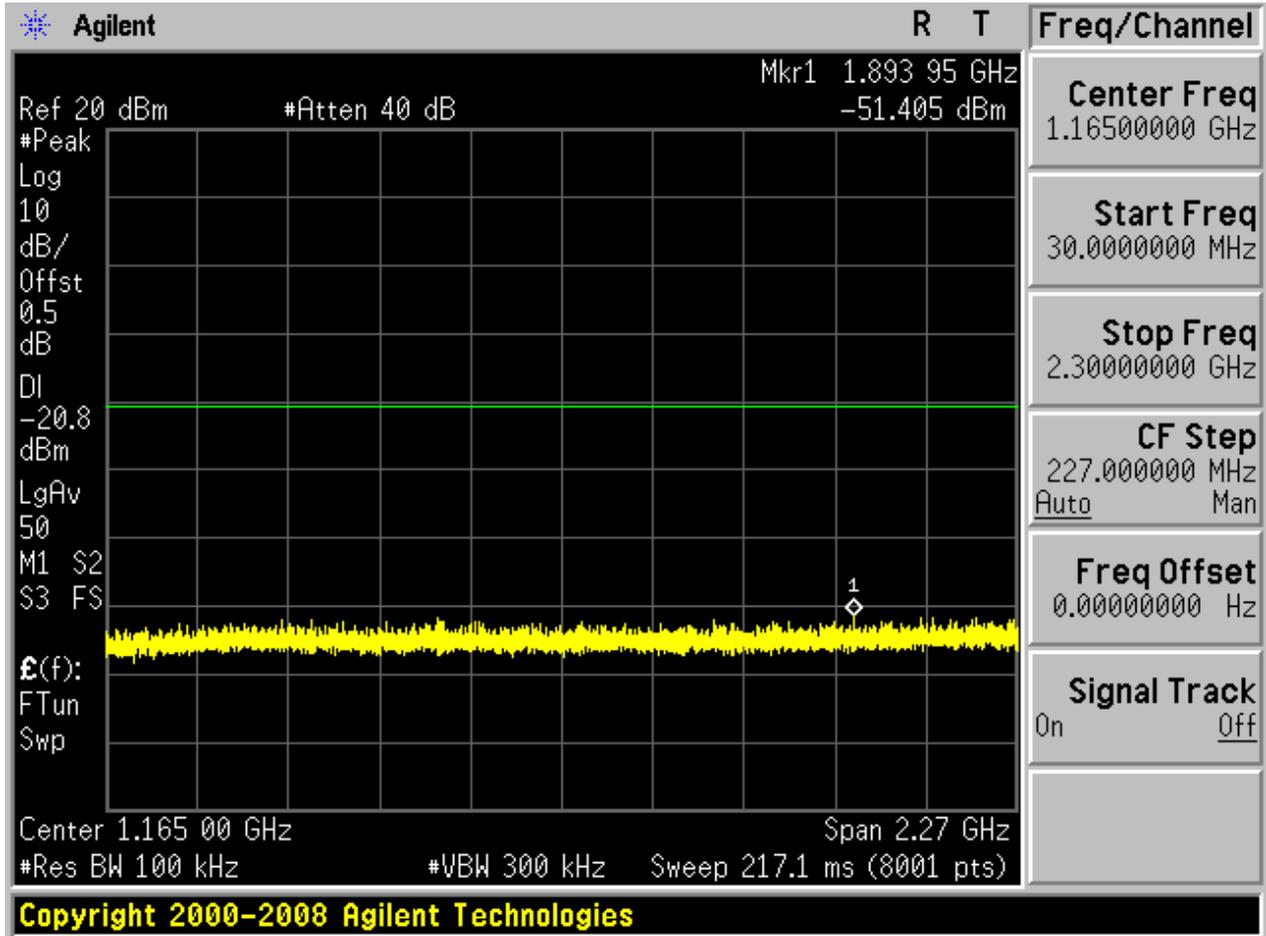


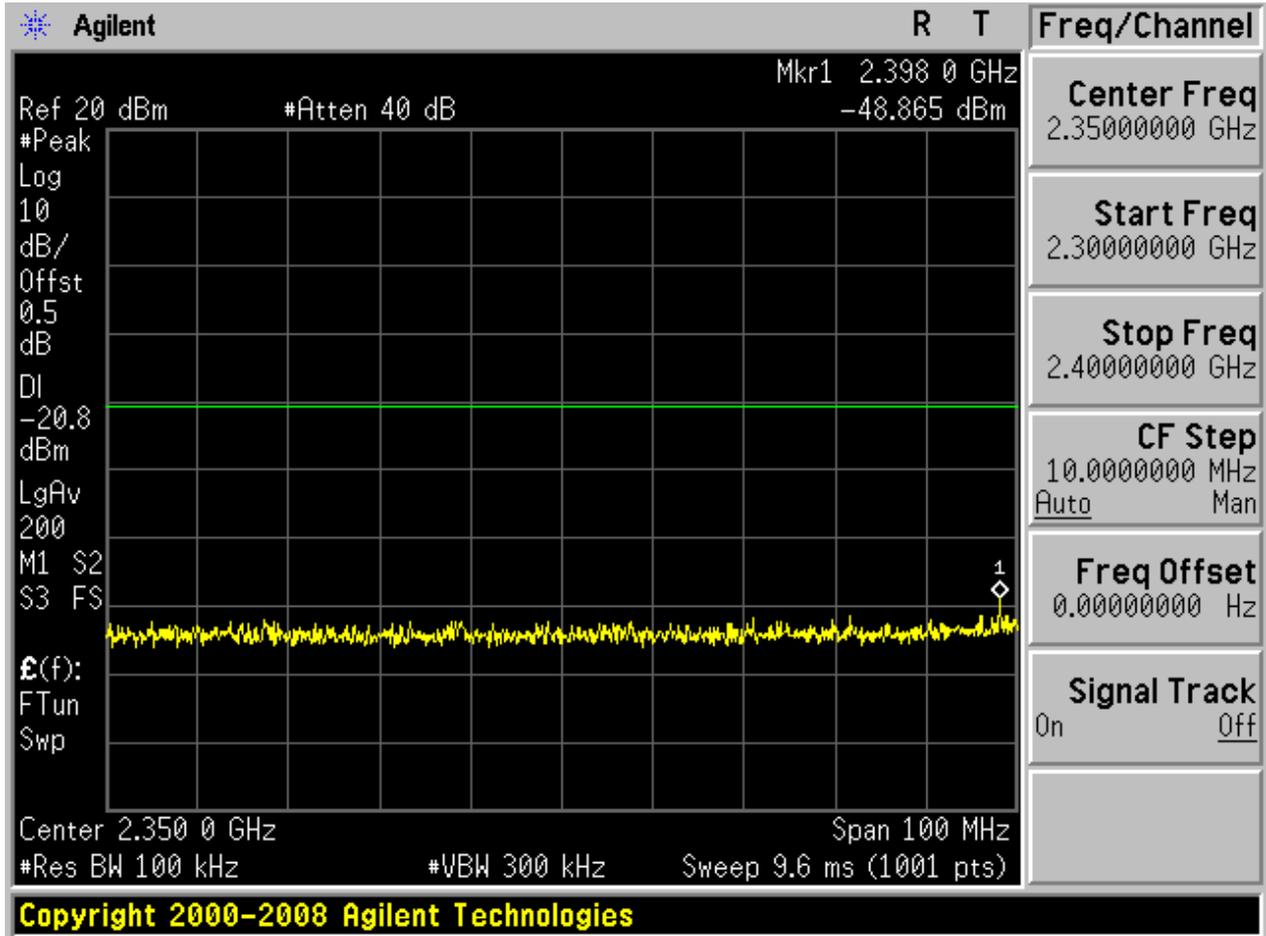


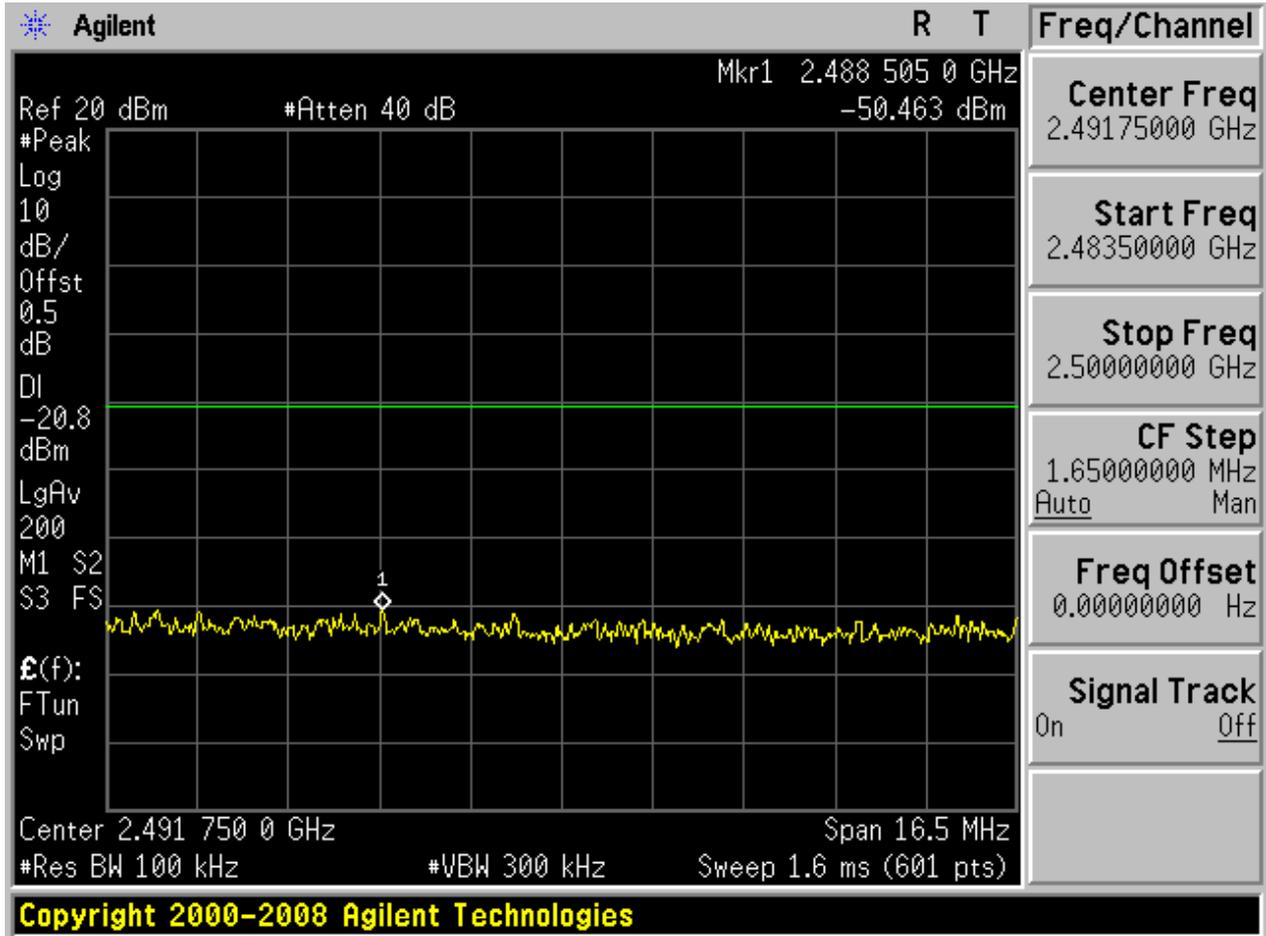
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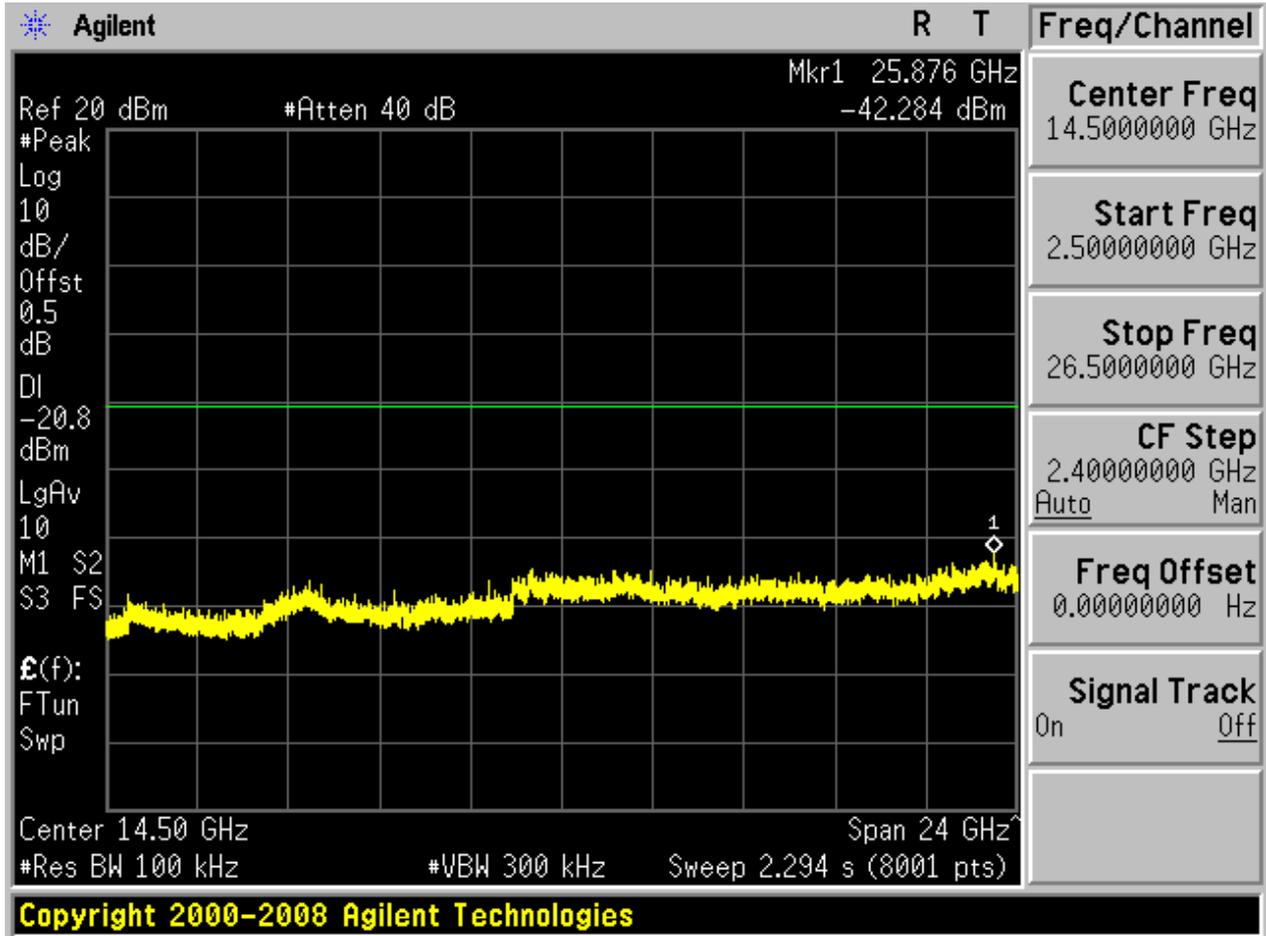






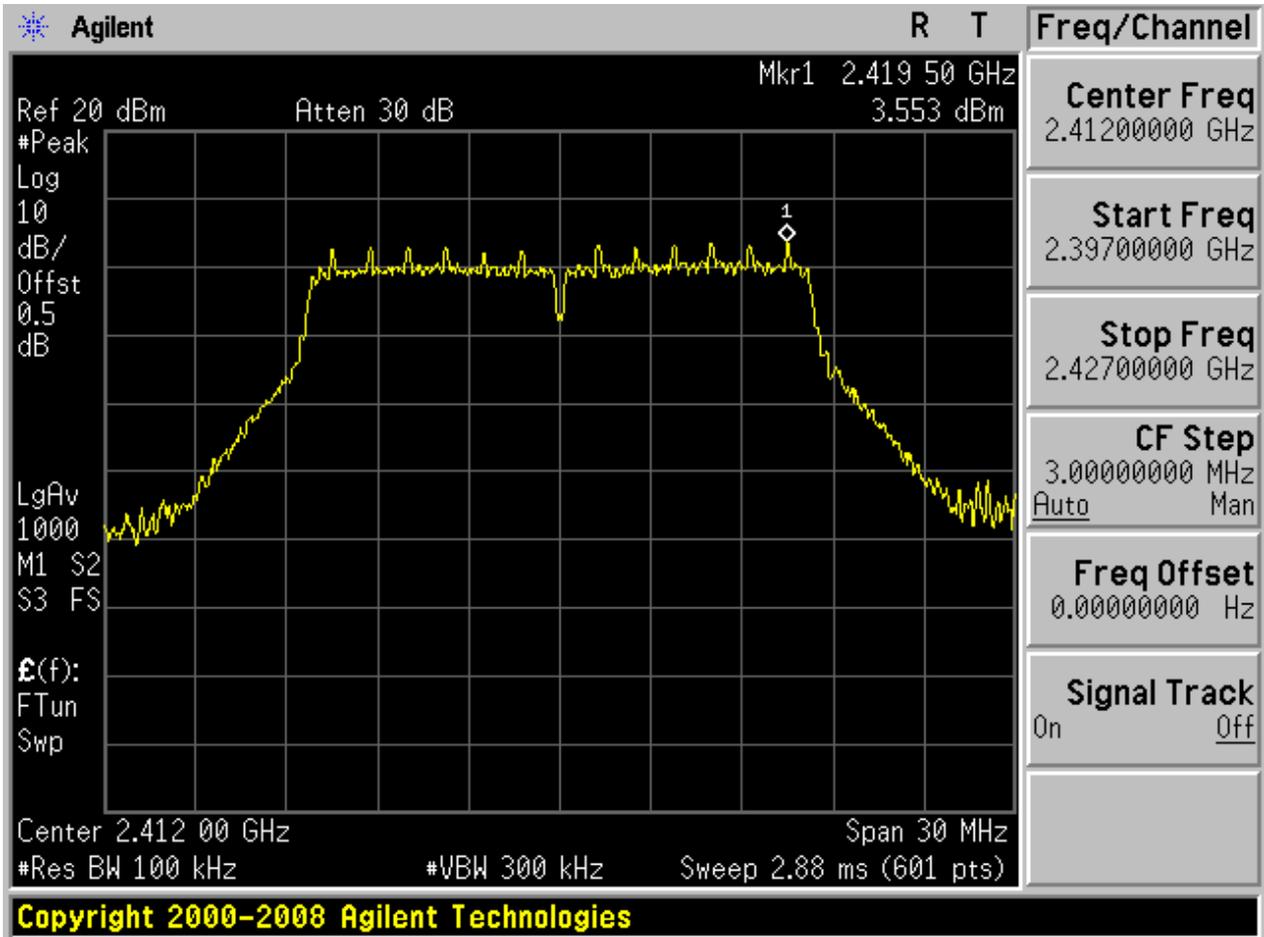






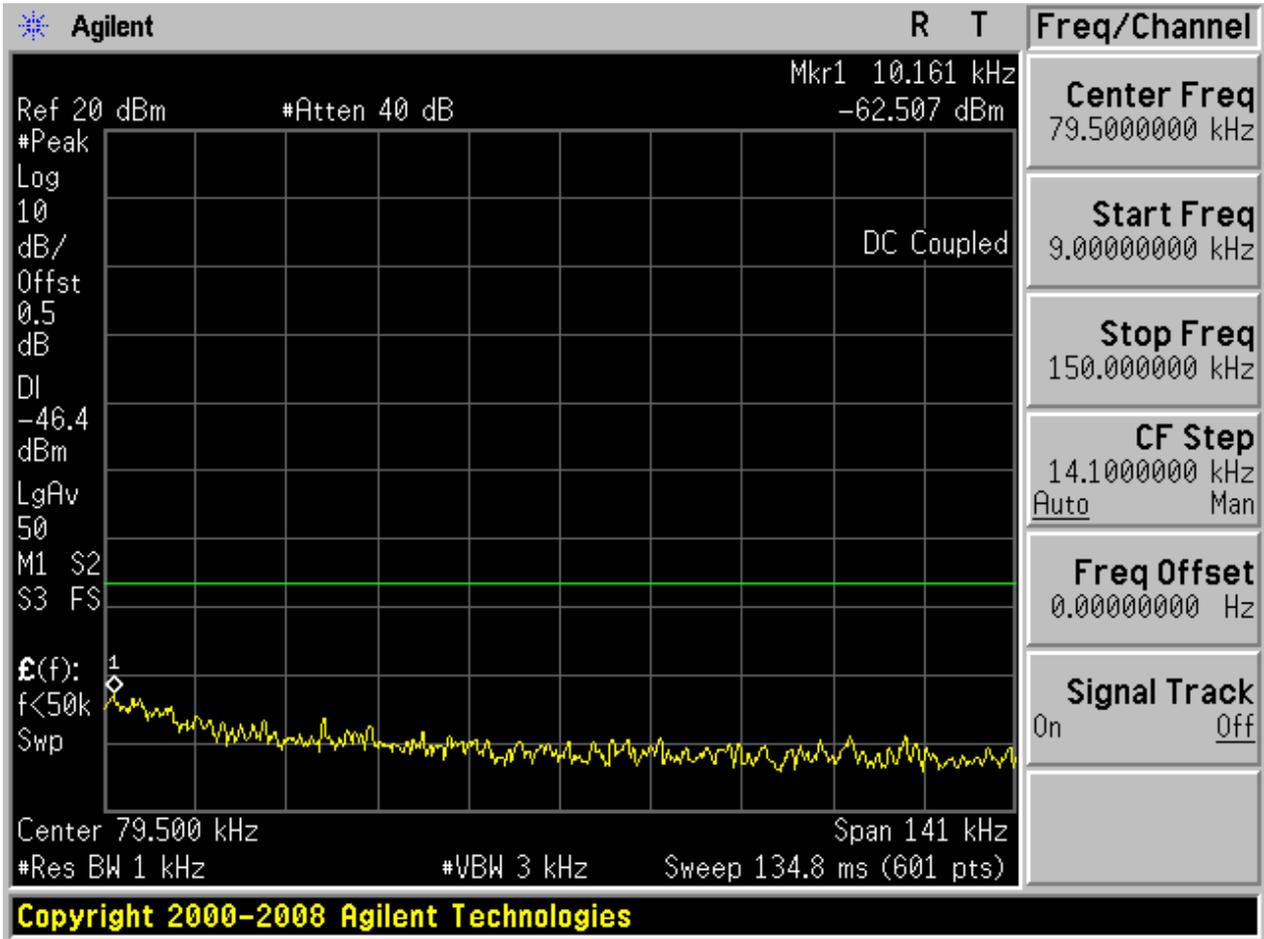
2.4 11G\_L@Ant 1

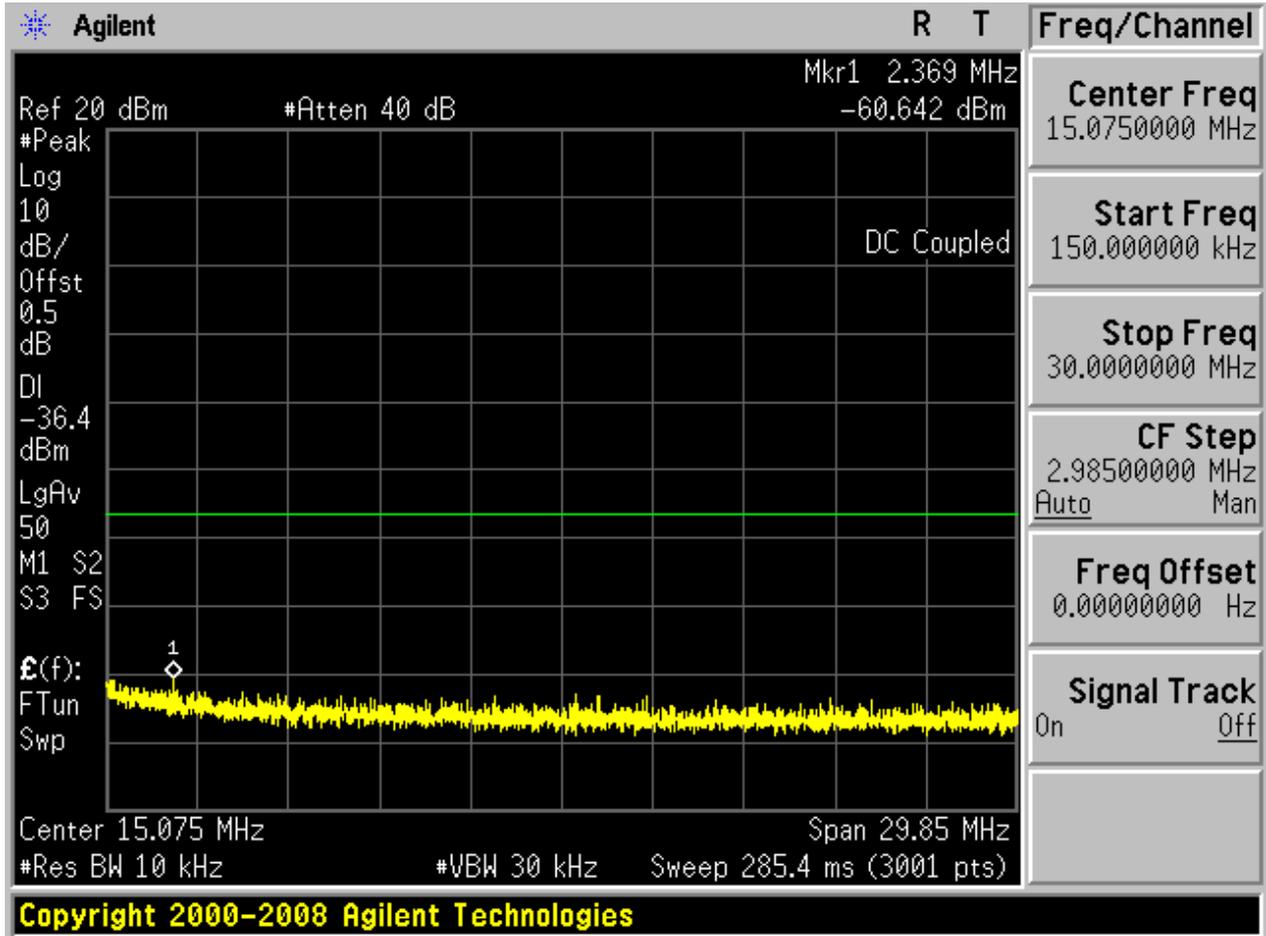
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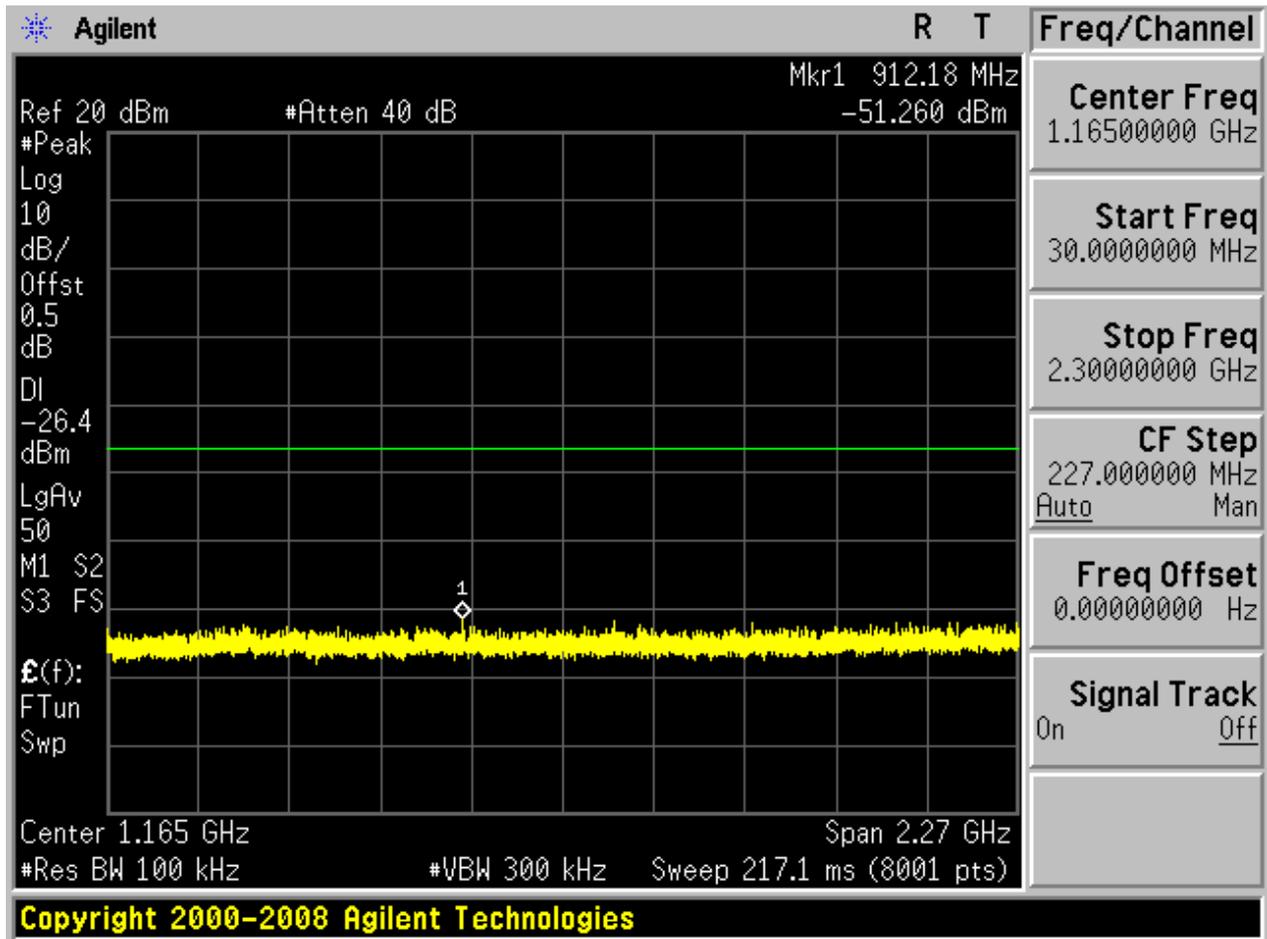


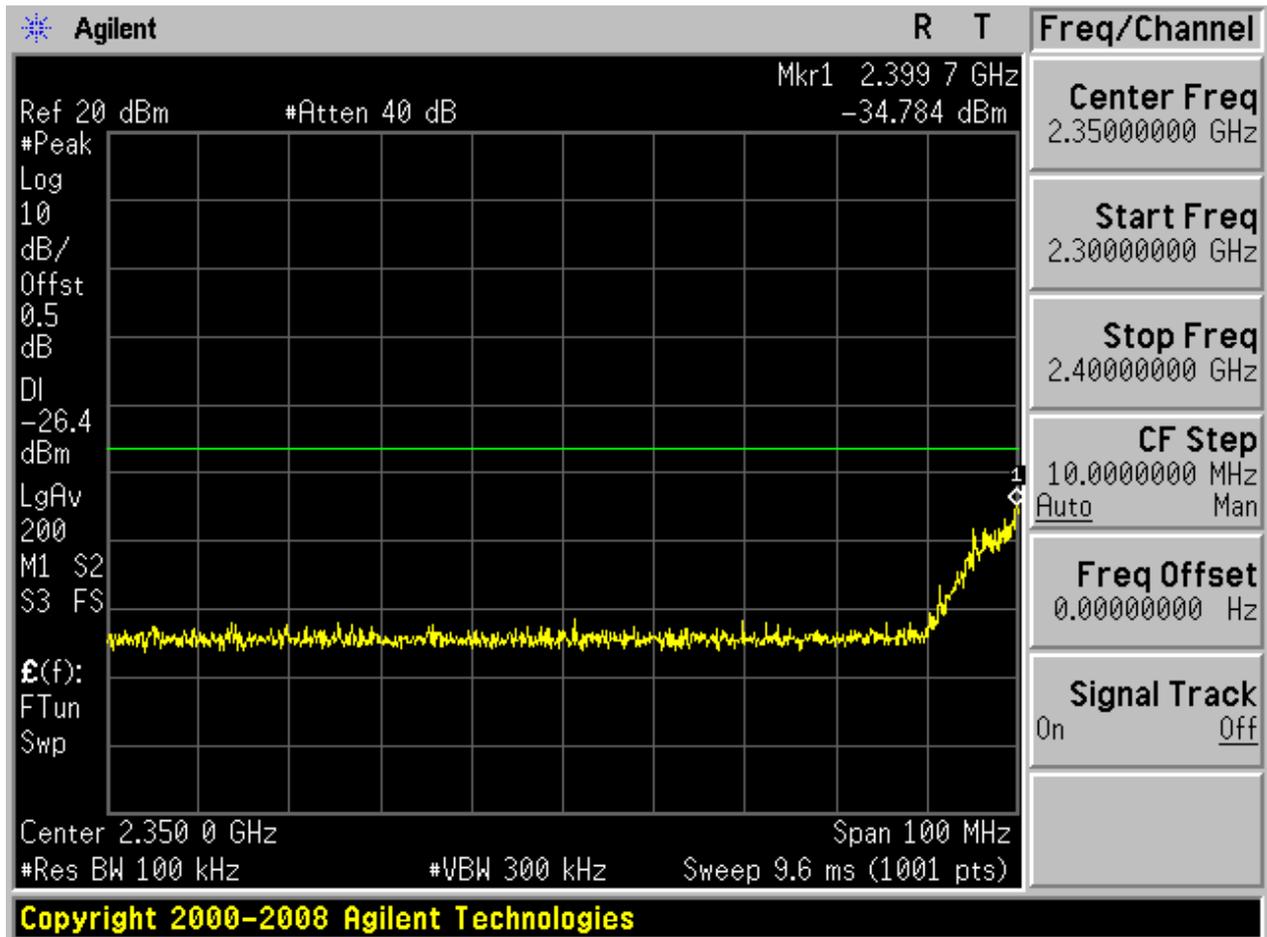


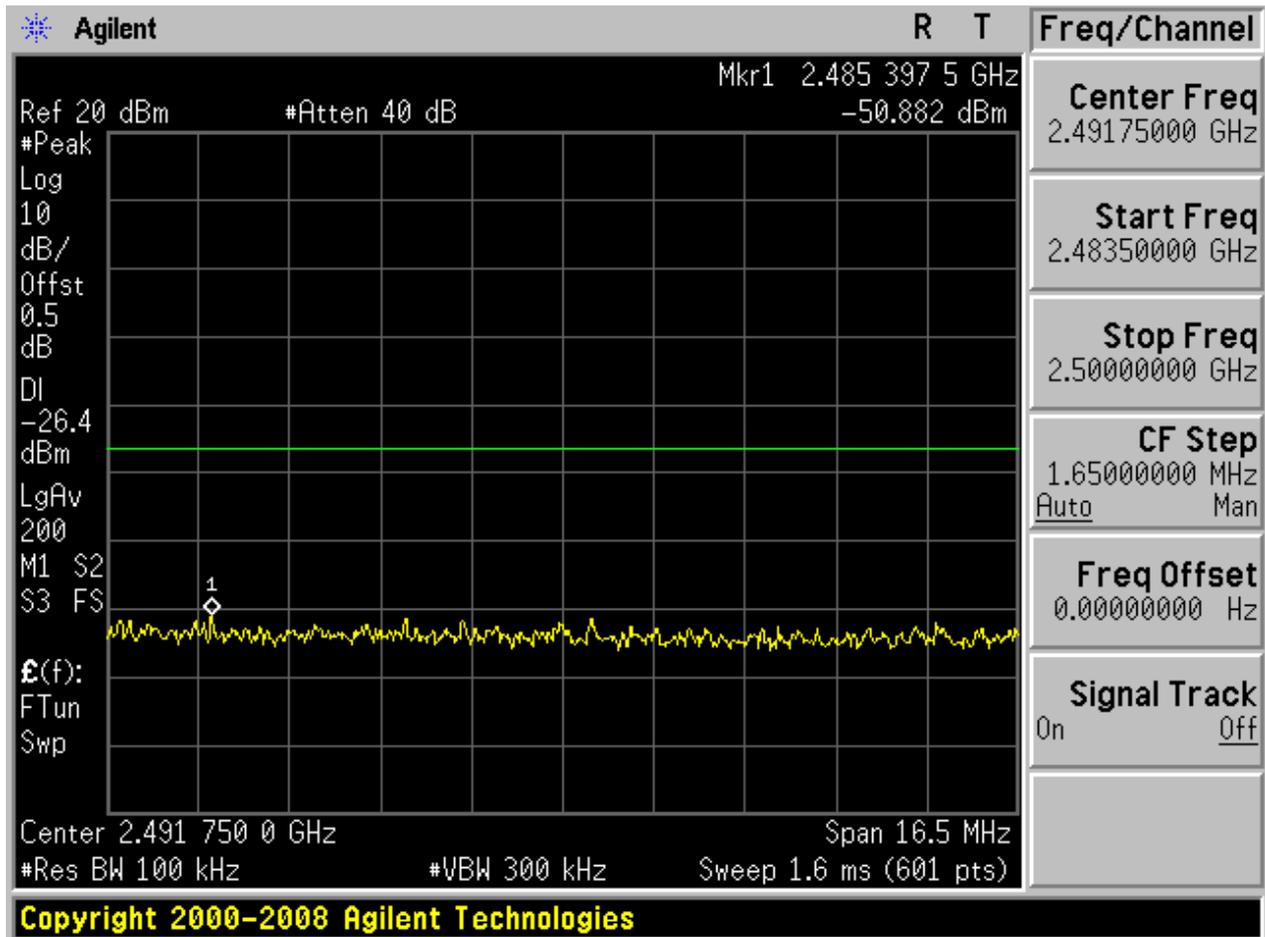
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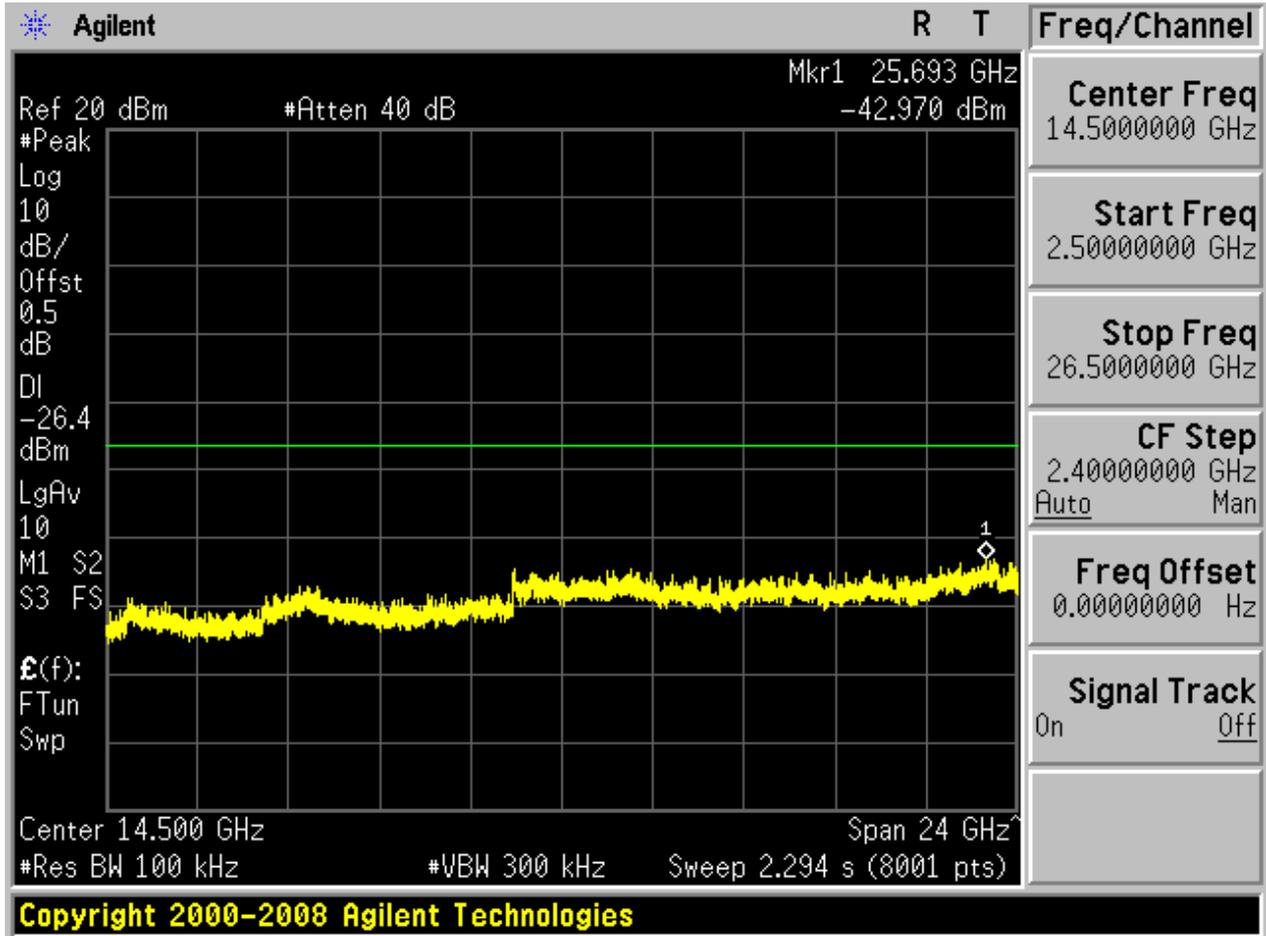








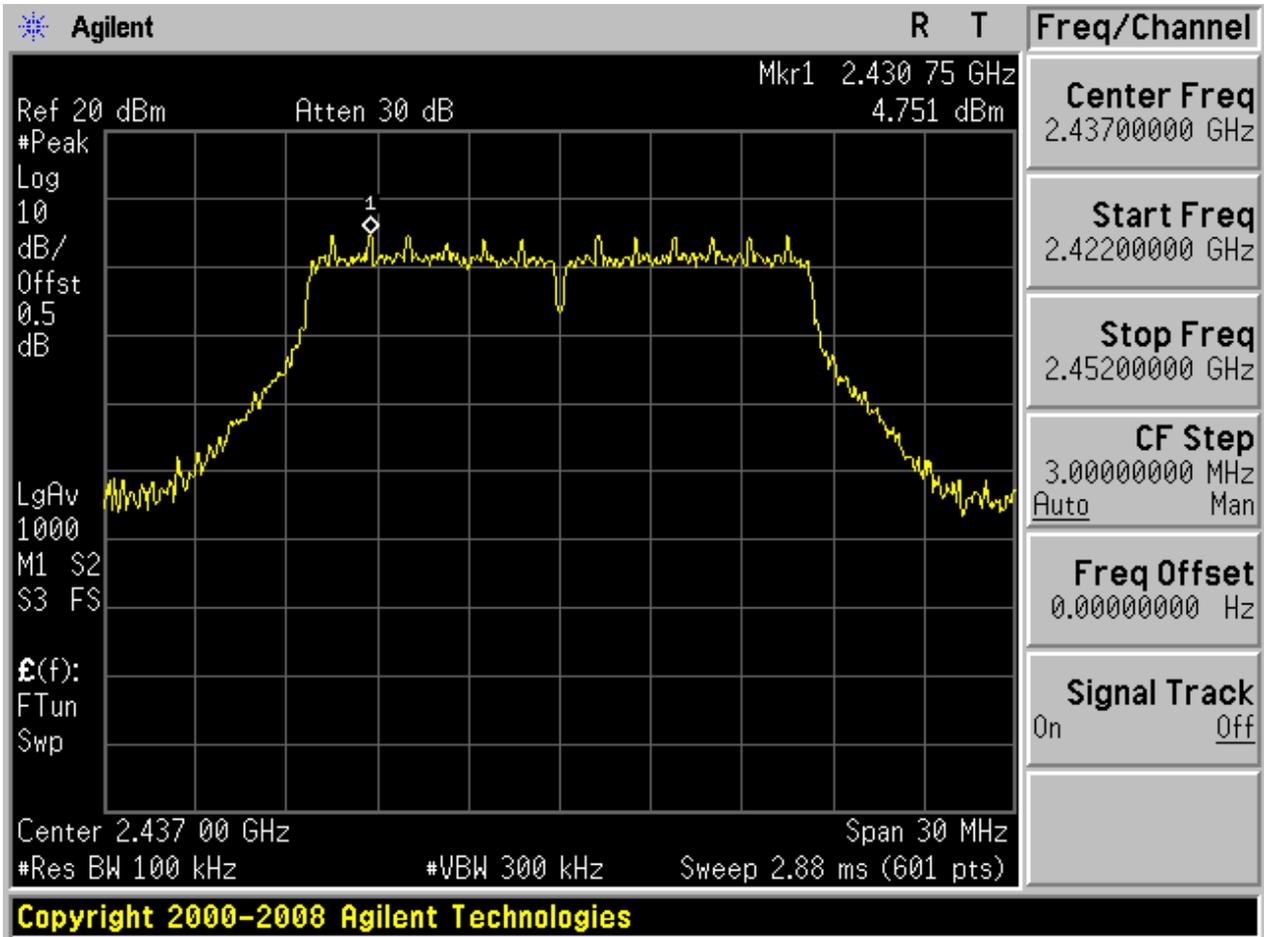






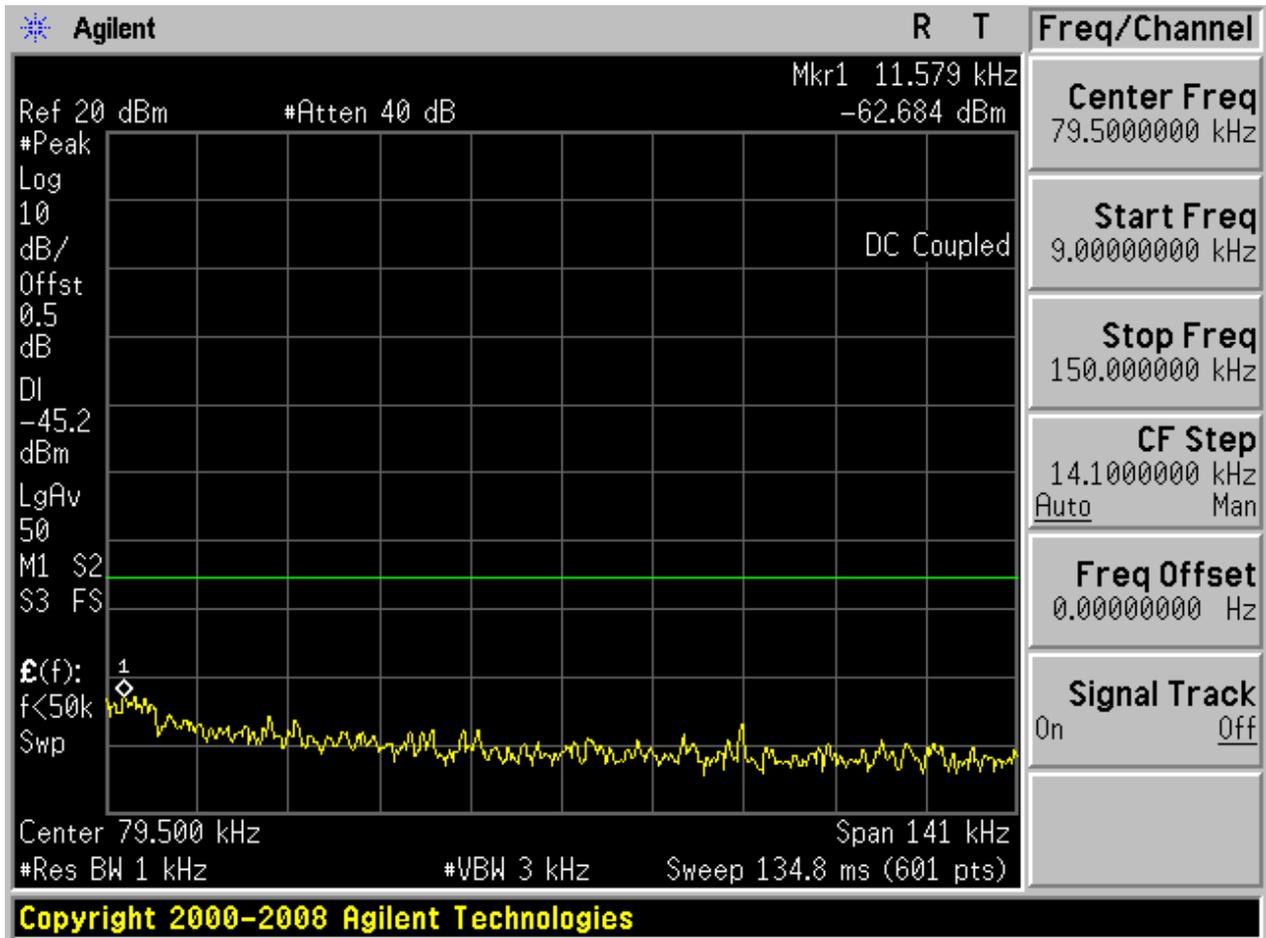
2.5 11G\_M@Ant 1

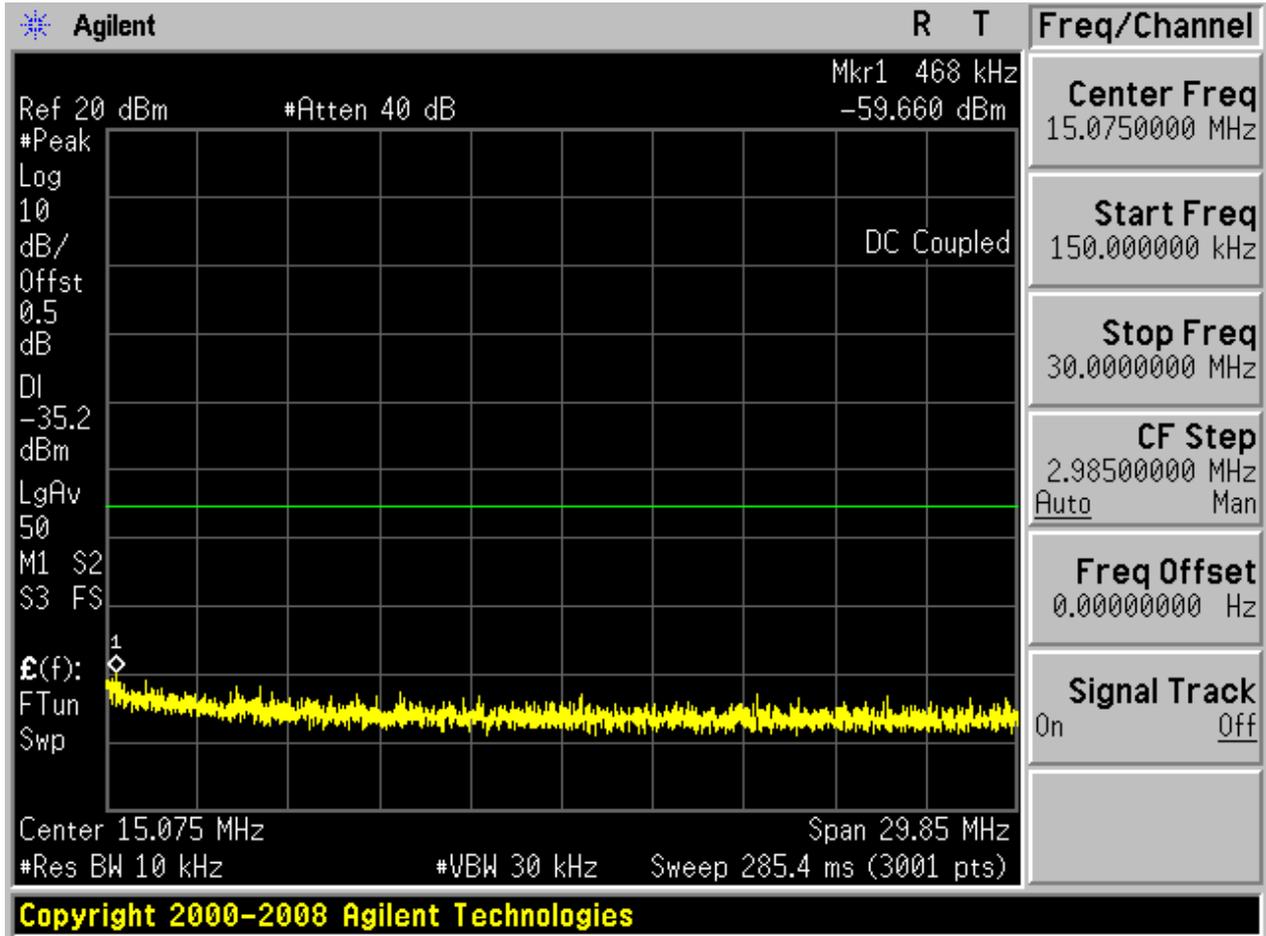
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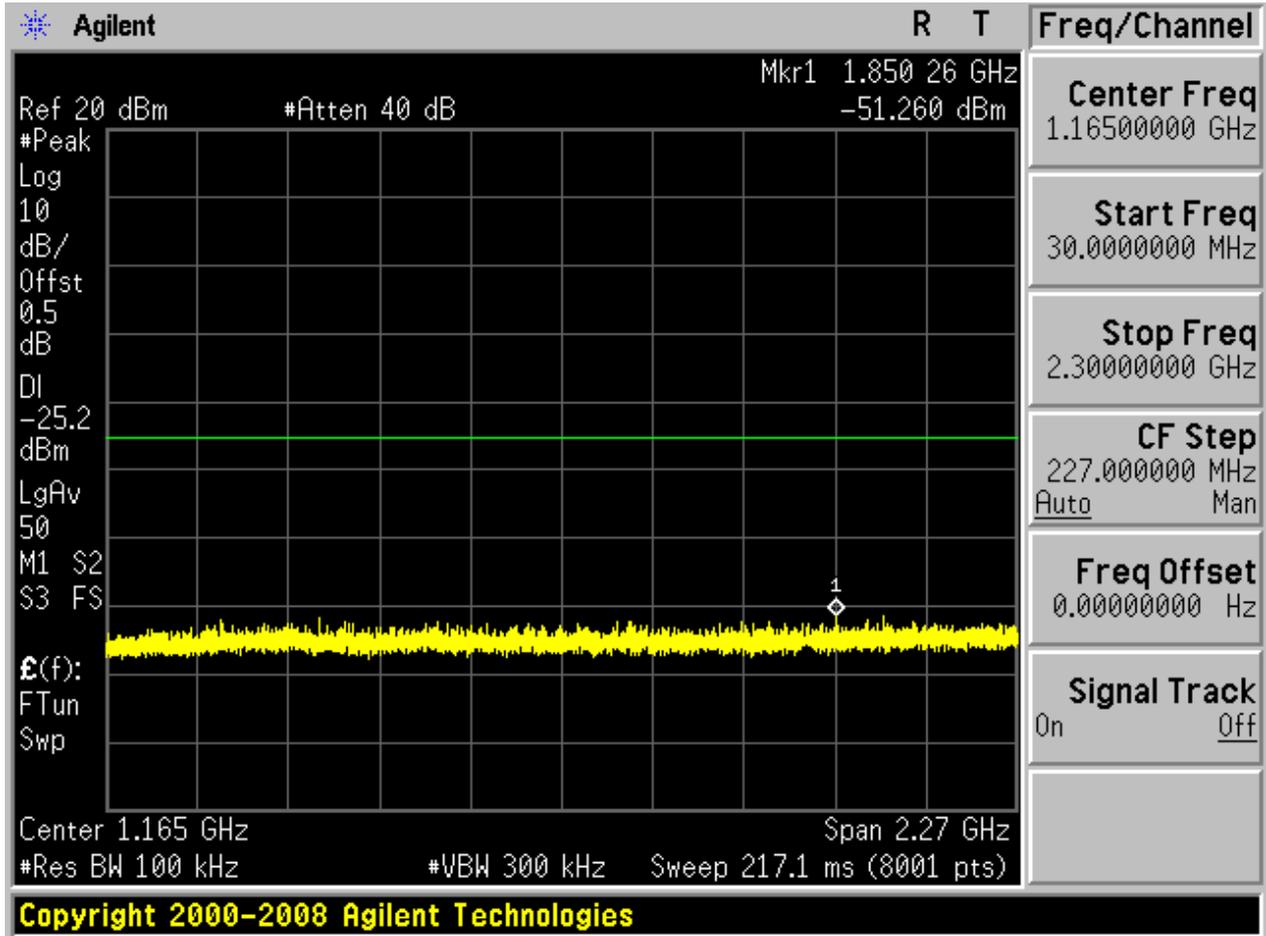


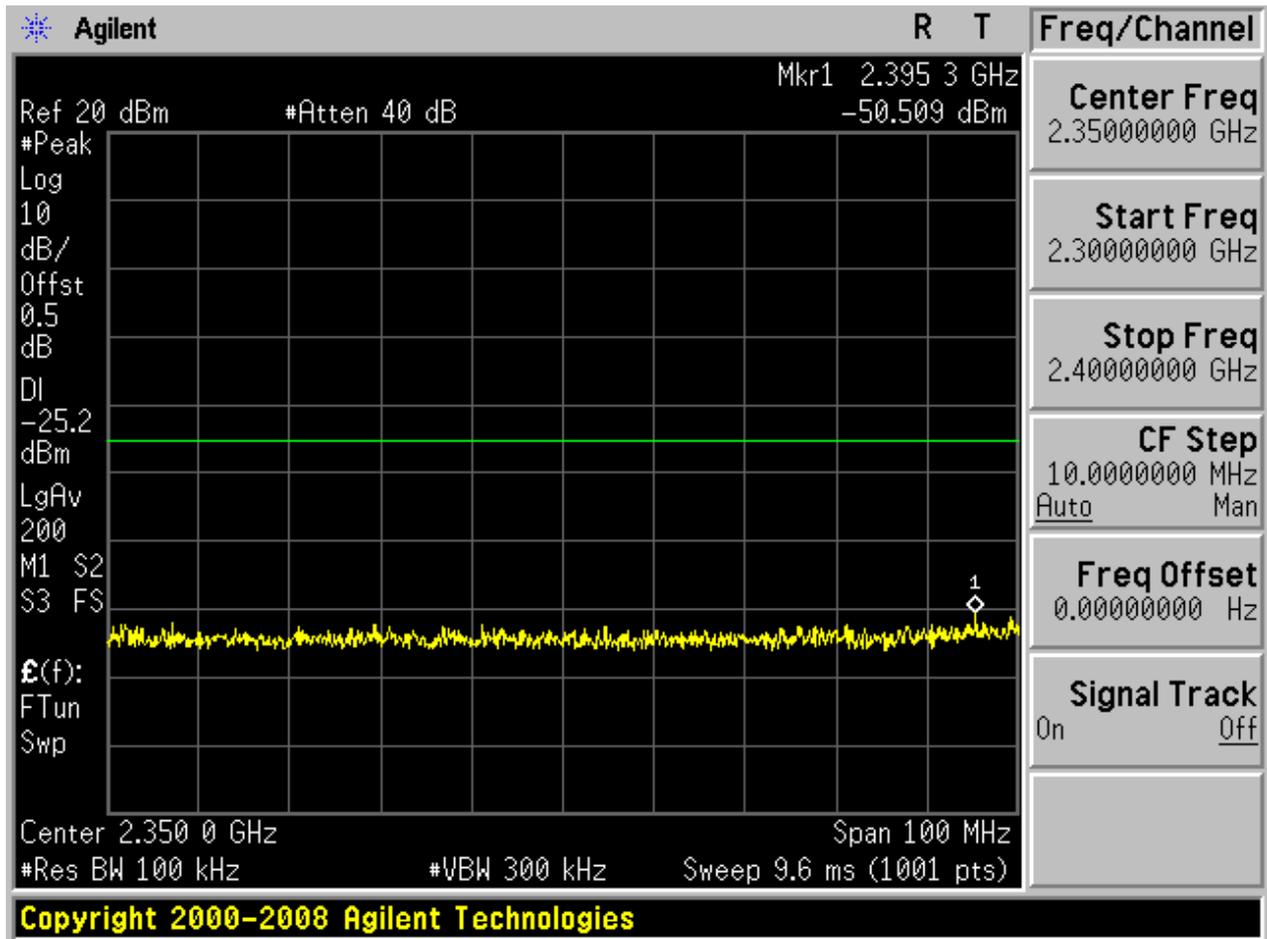


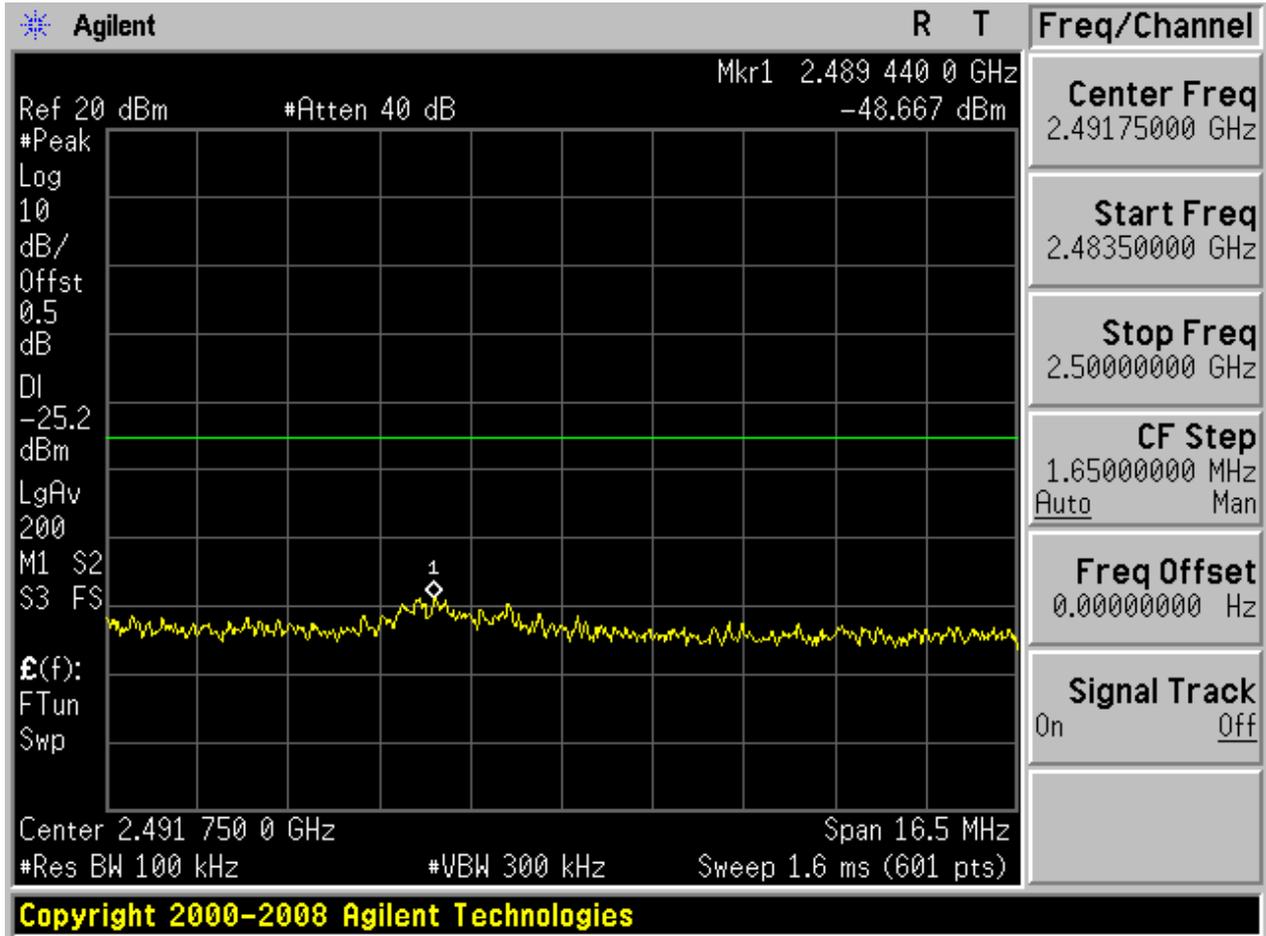
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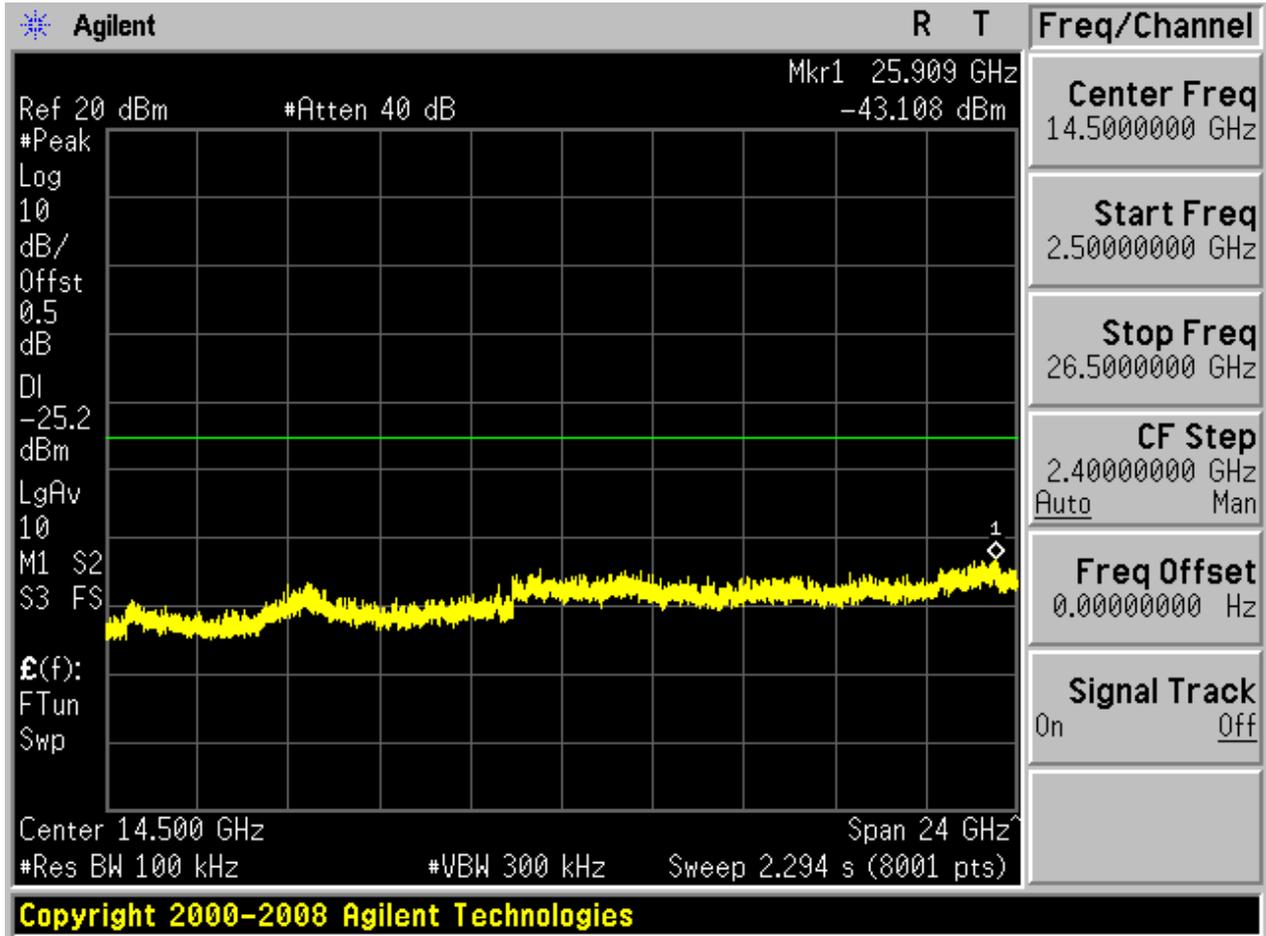








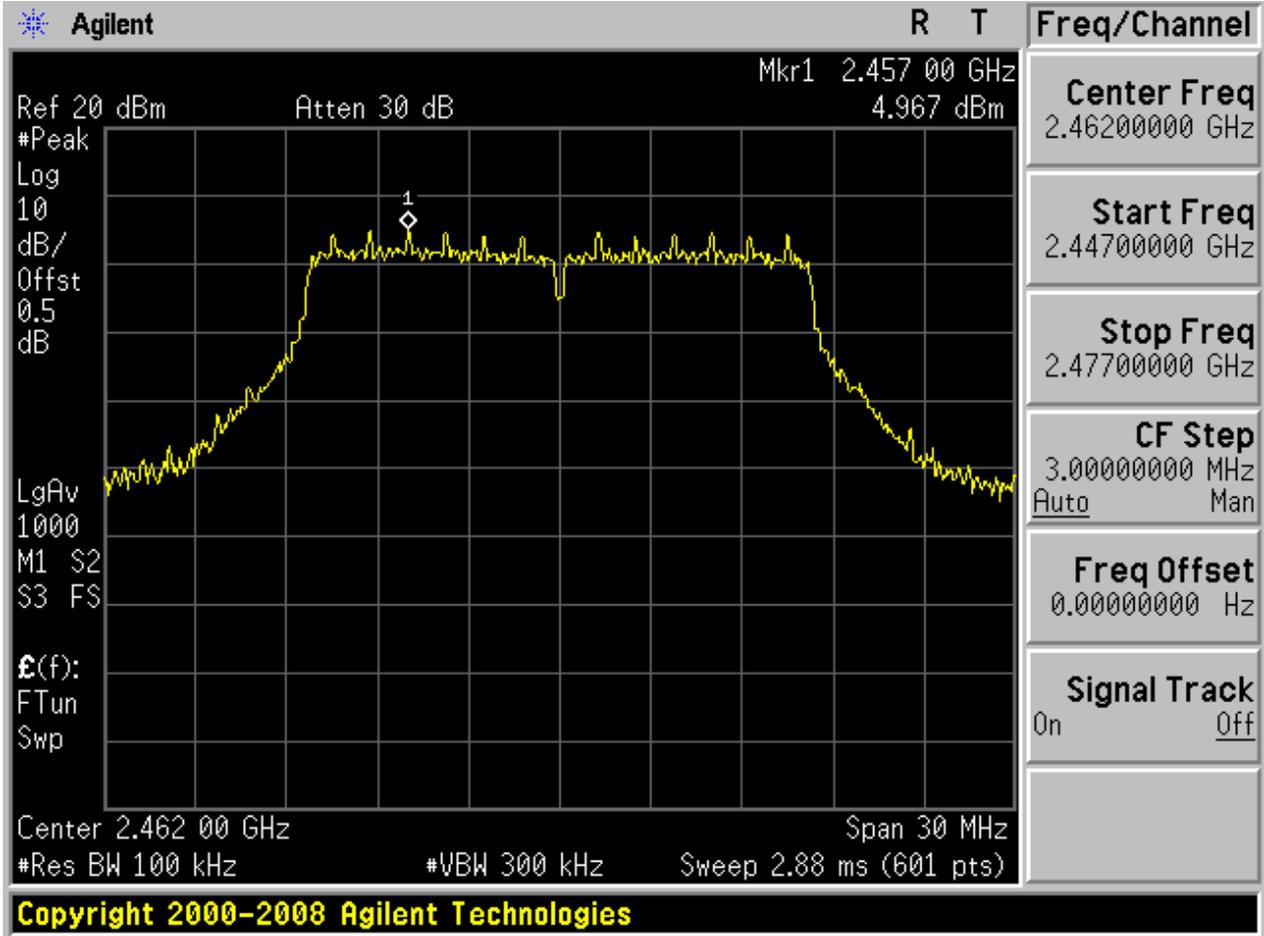






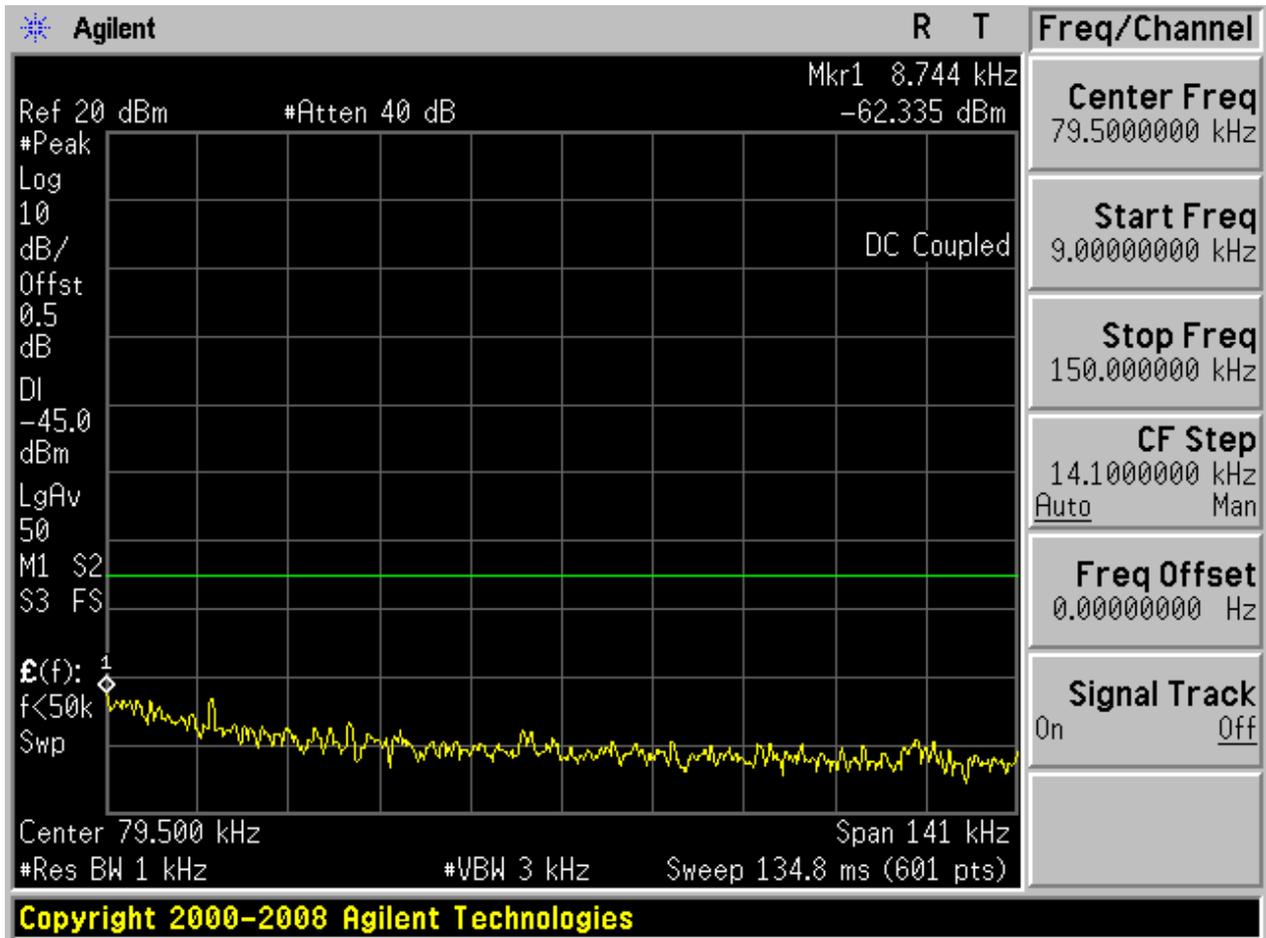
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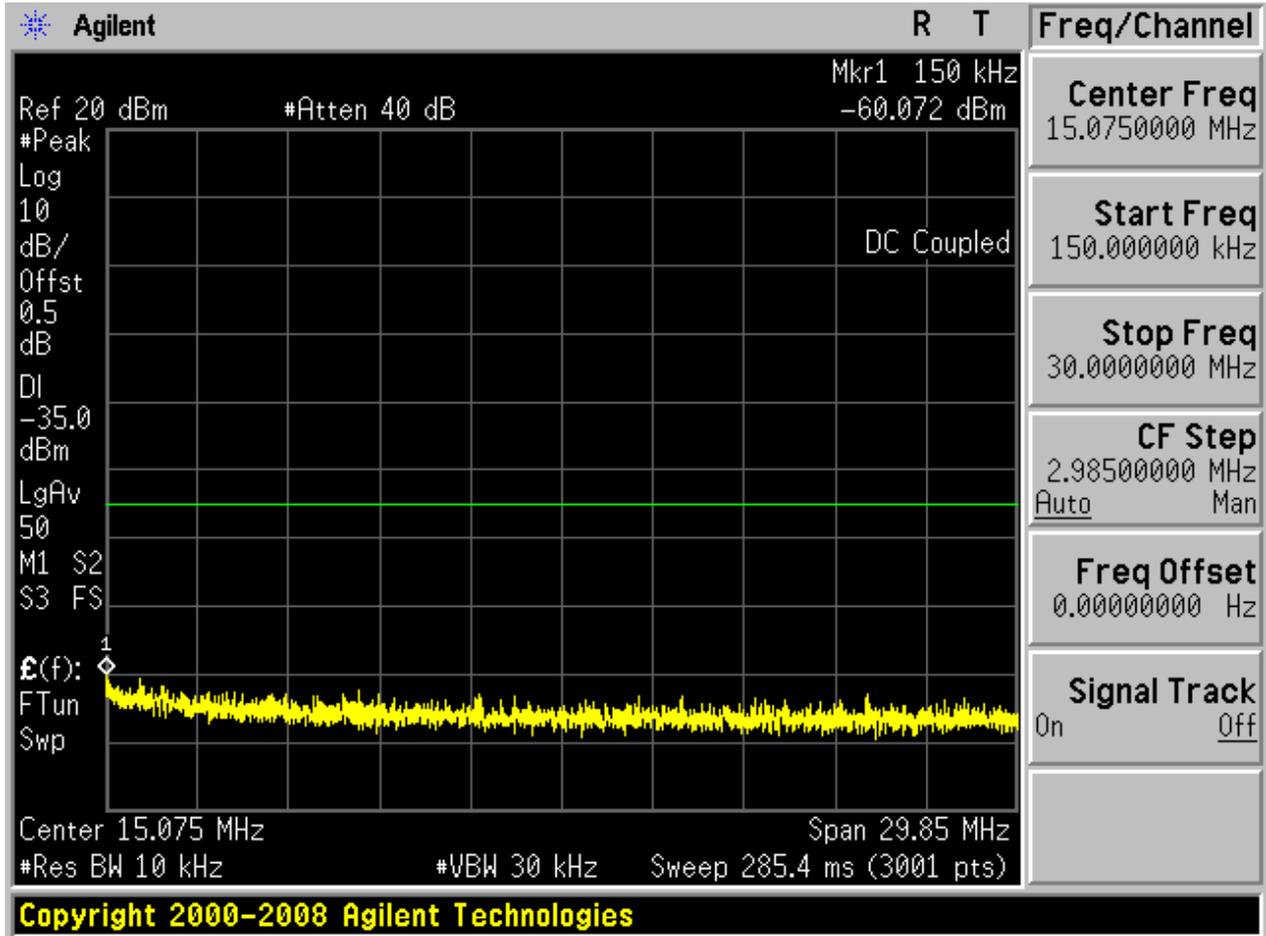
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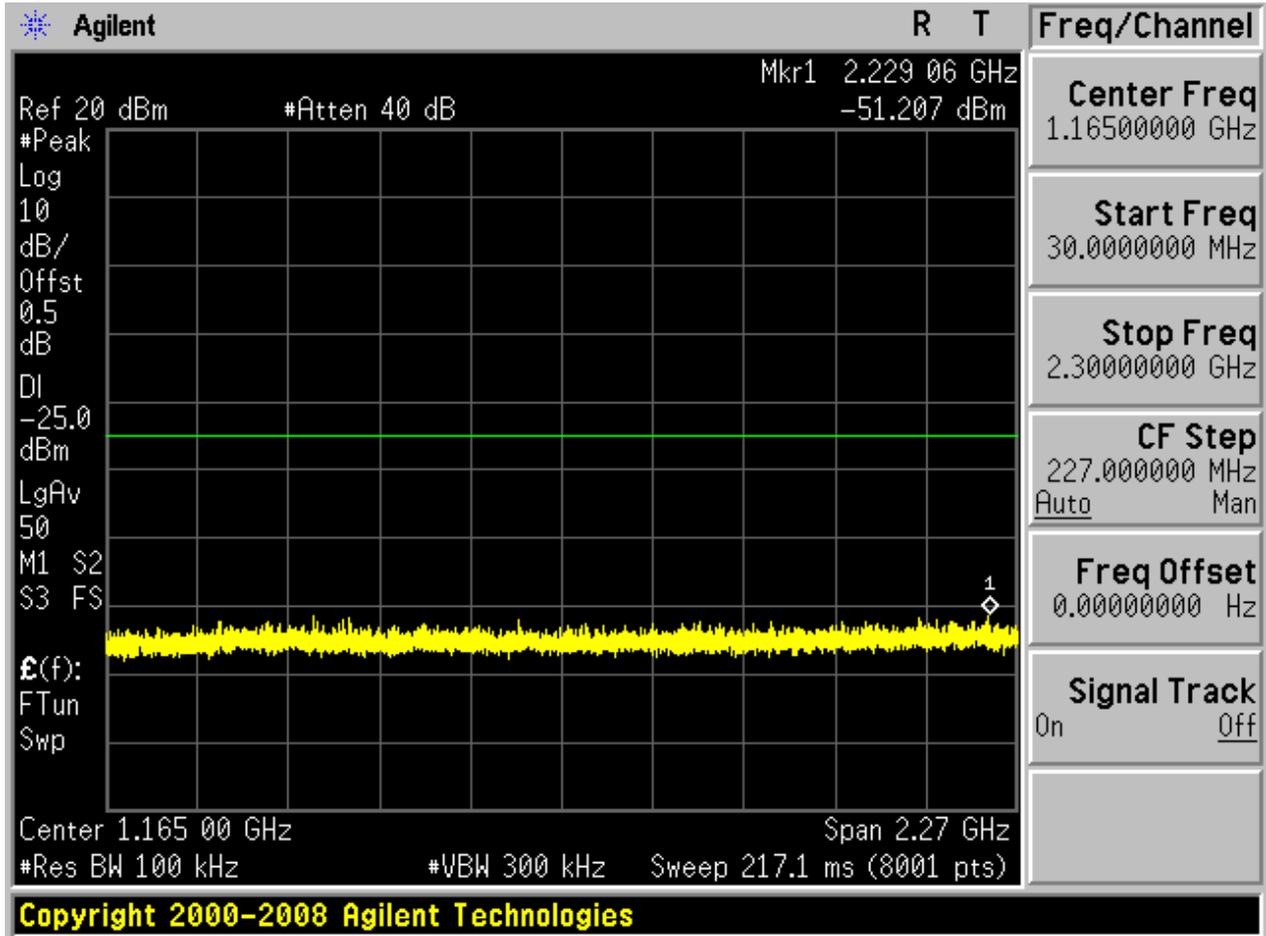


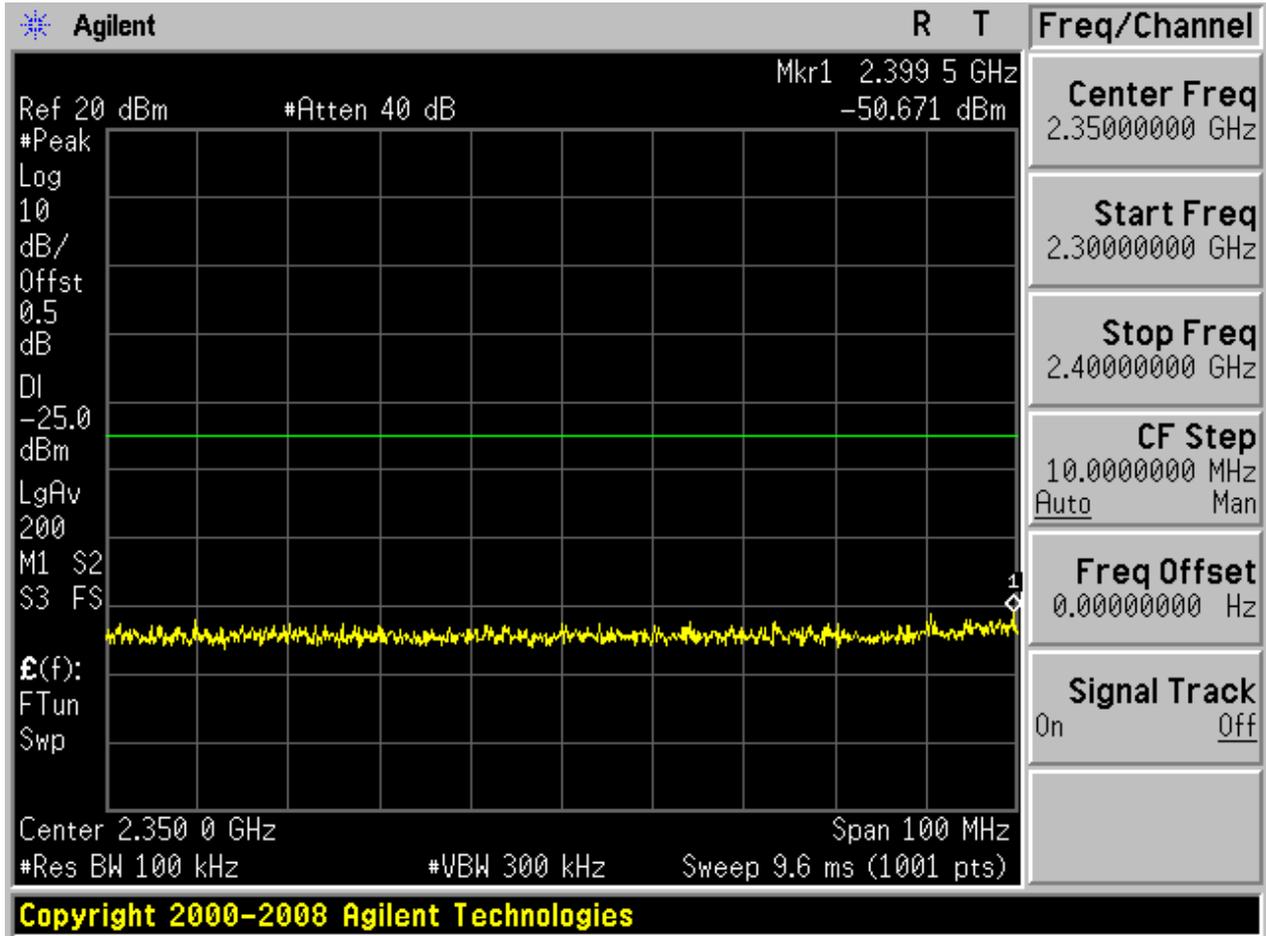


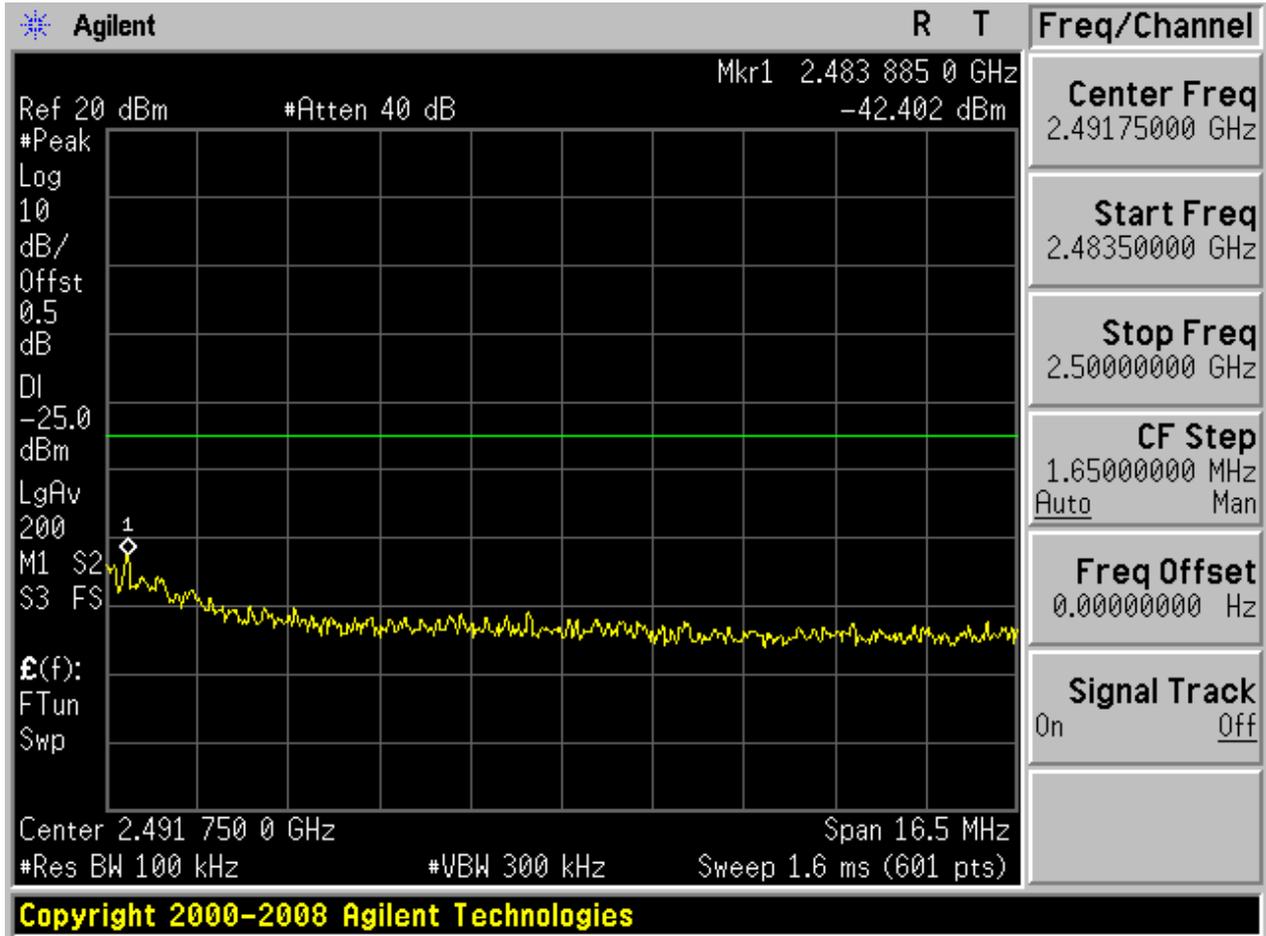
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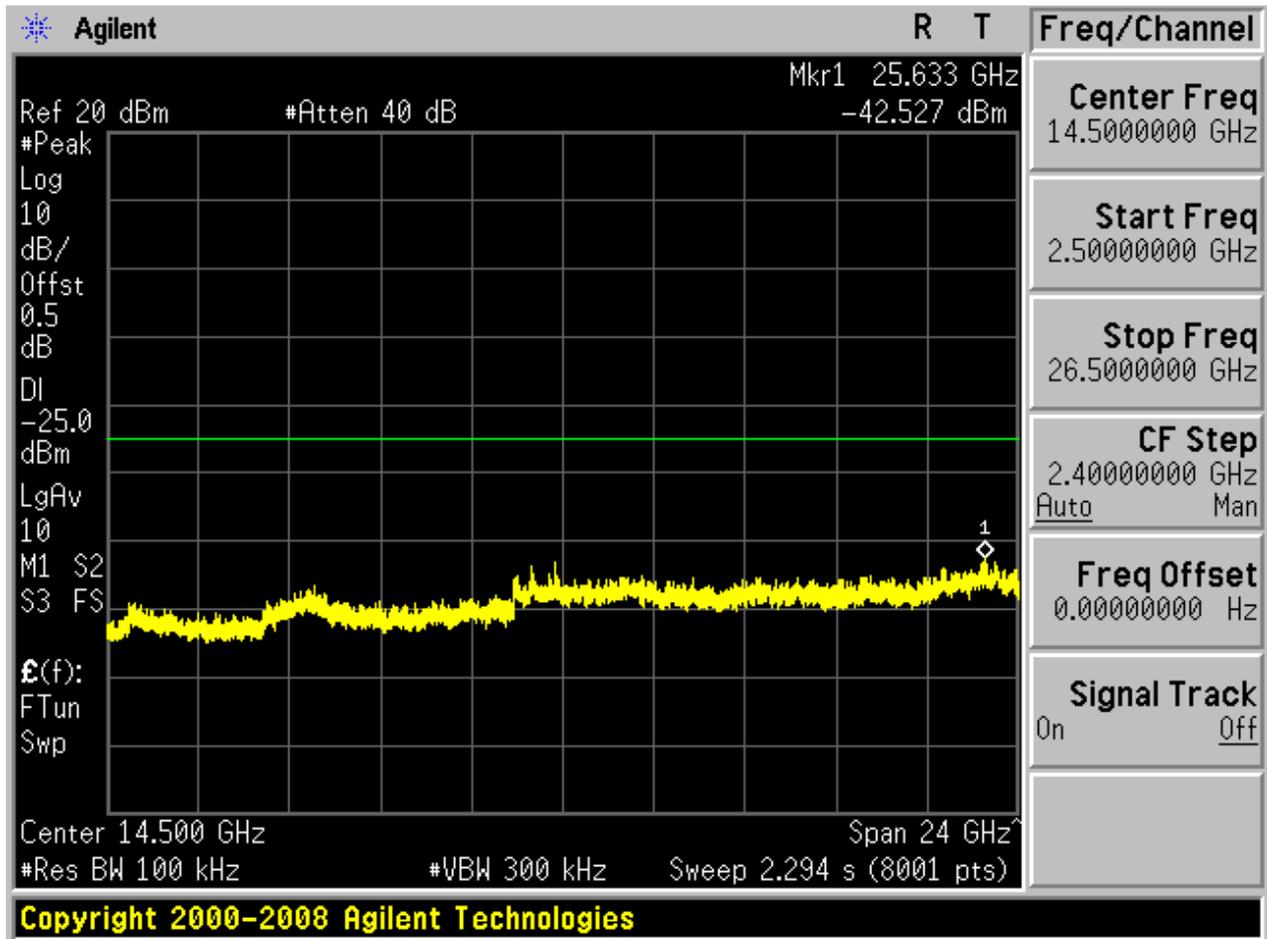








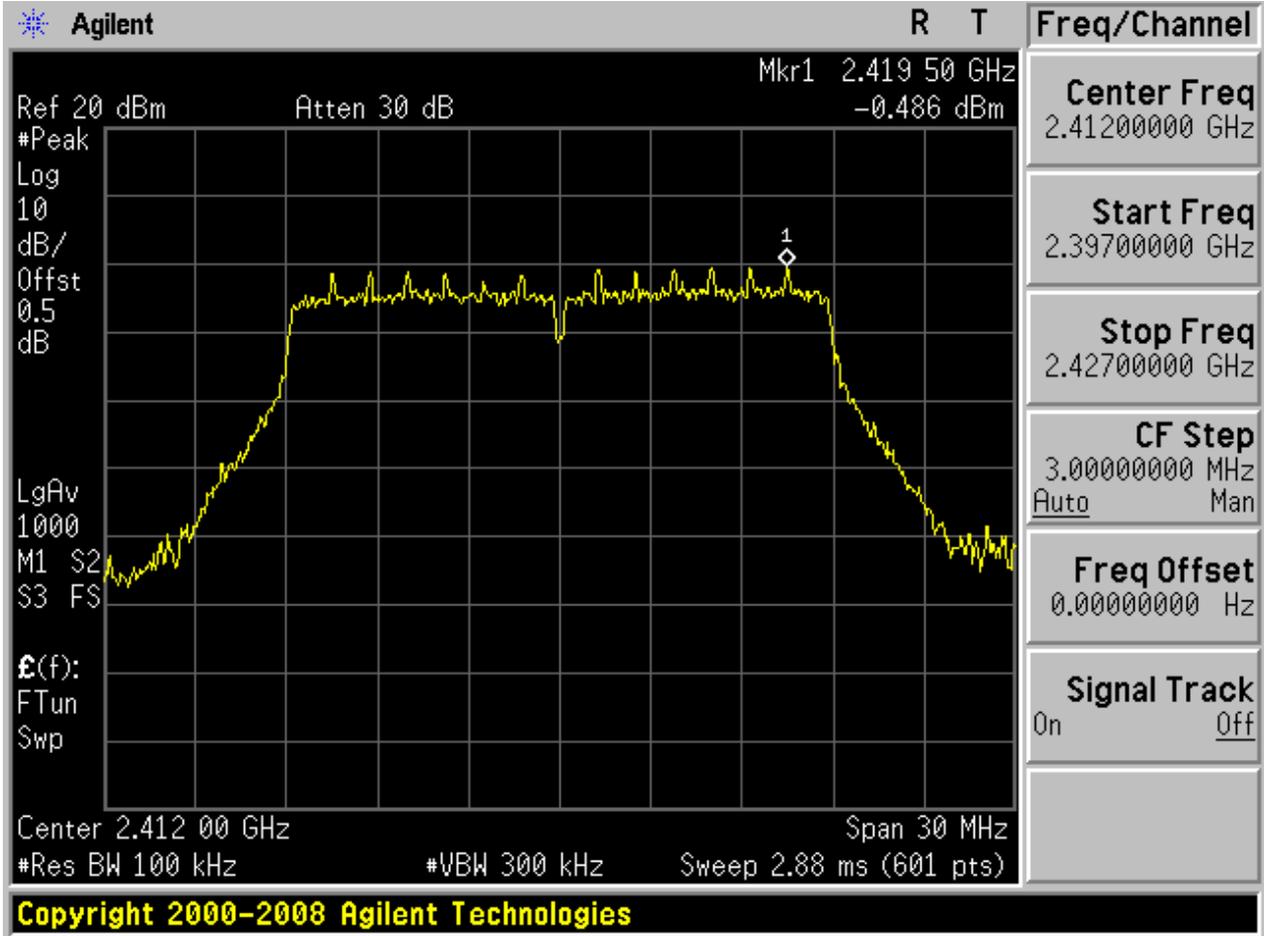






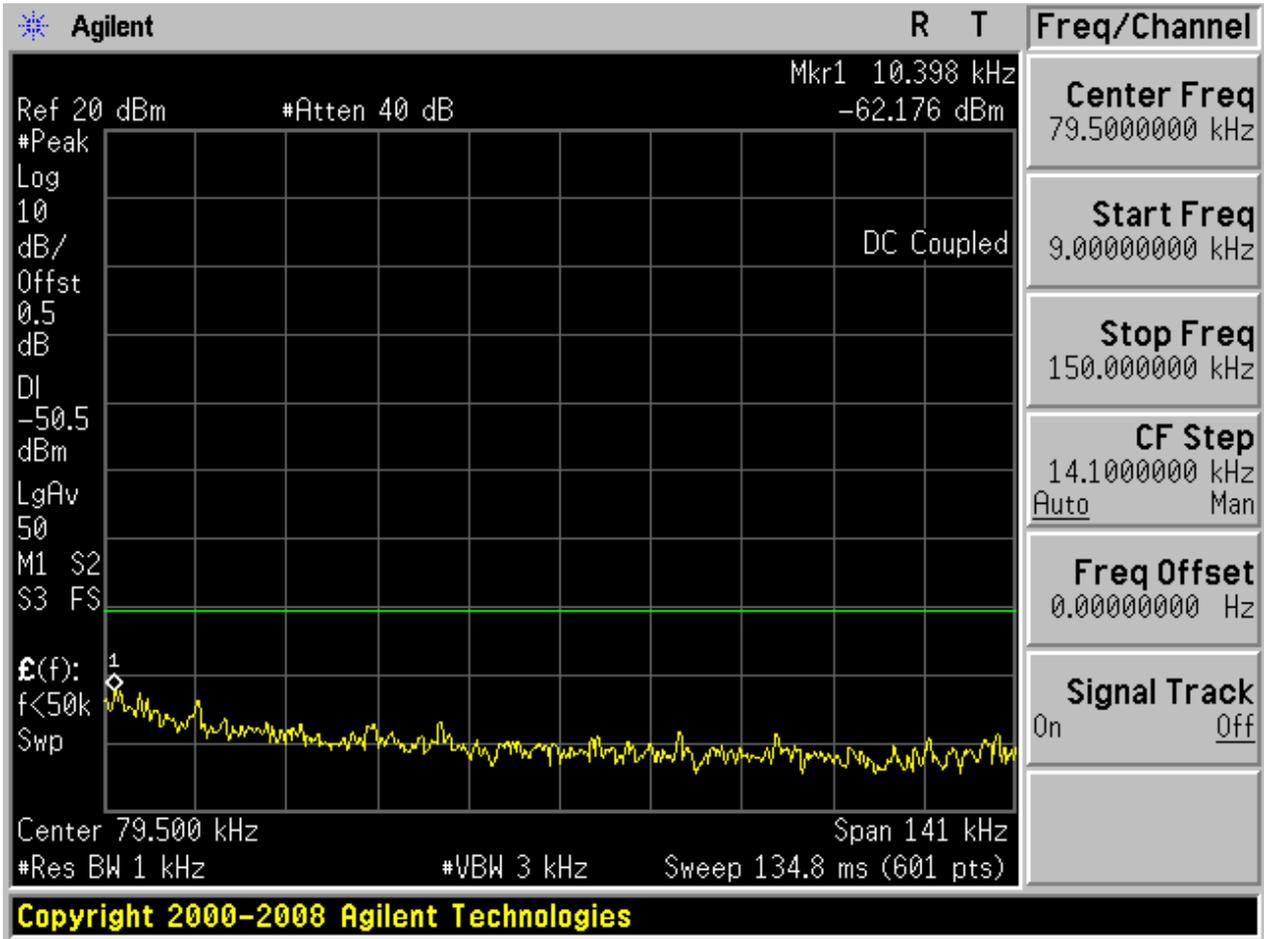
2.7 11N20\_L@Ant 1

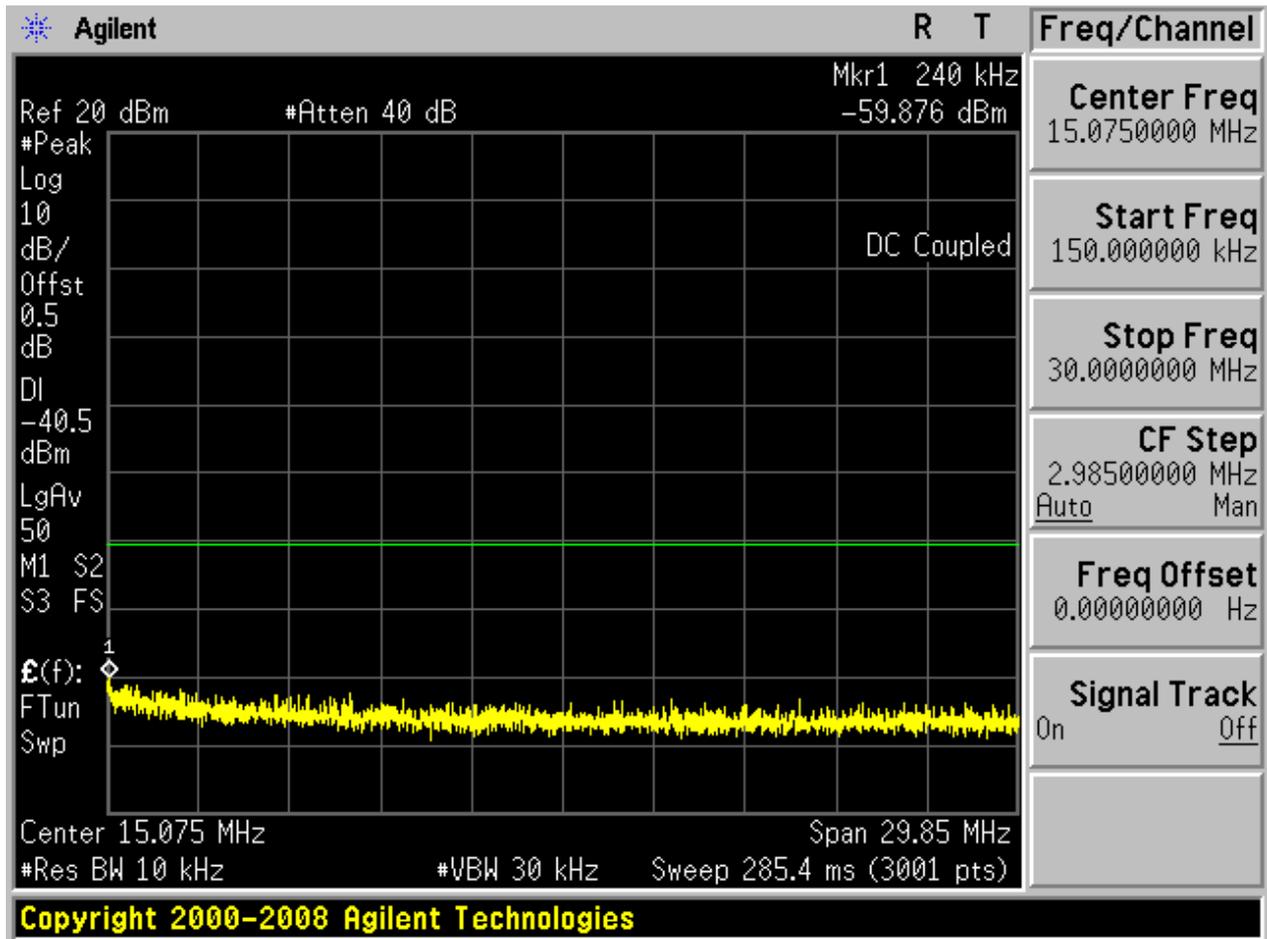
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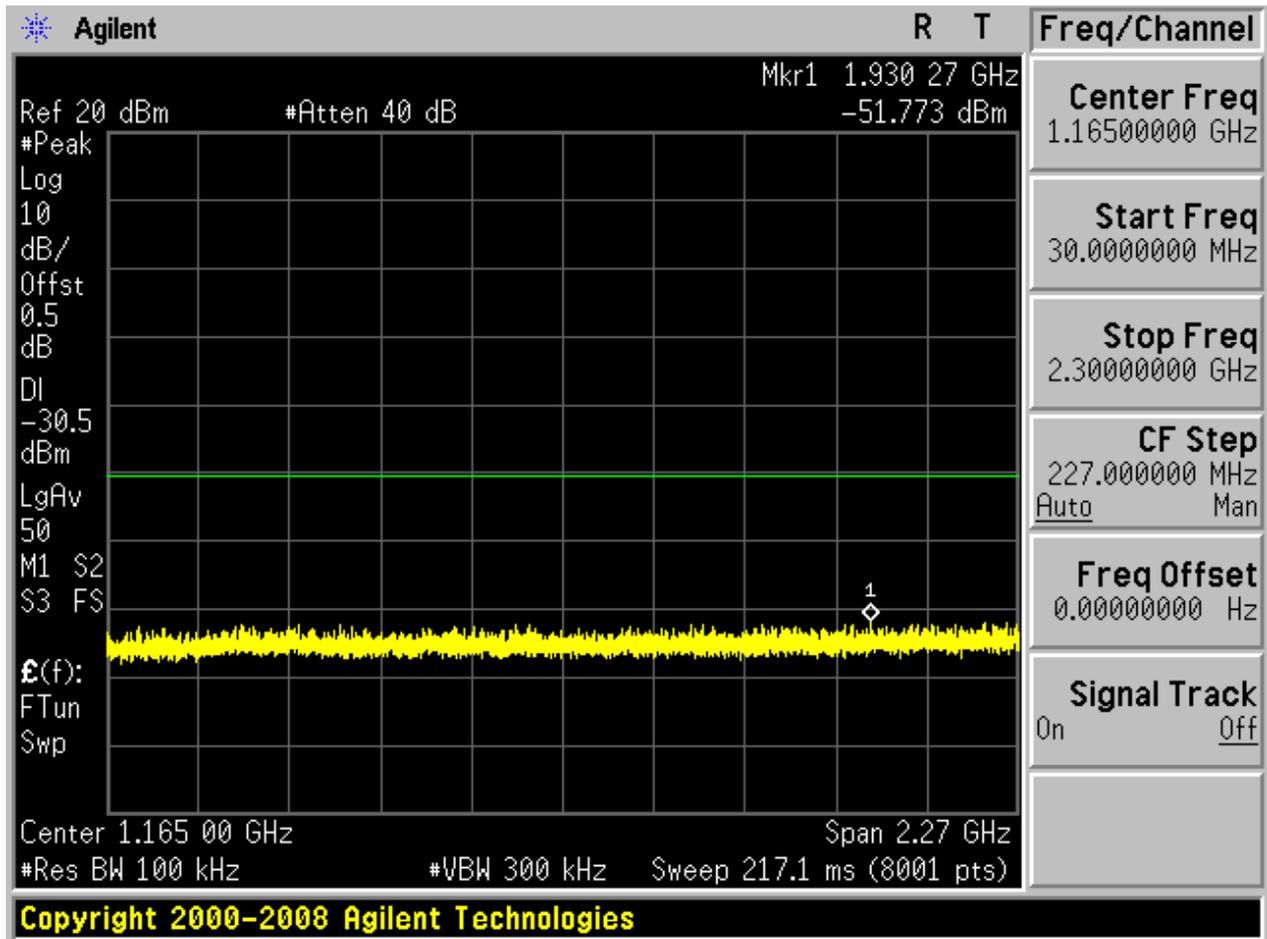


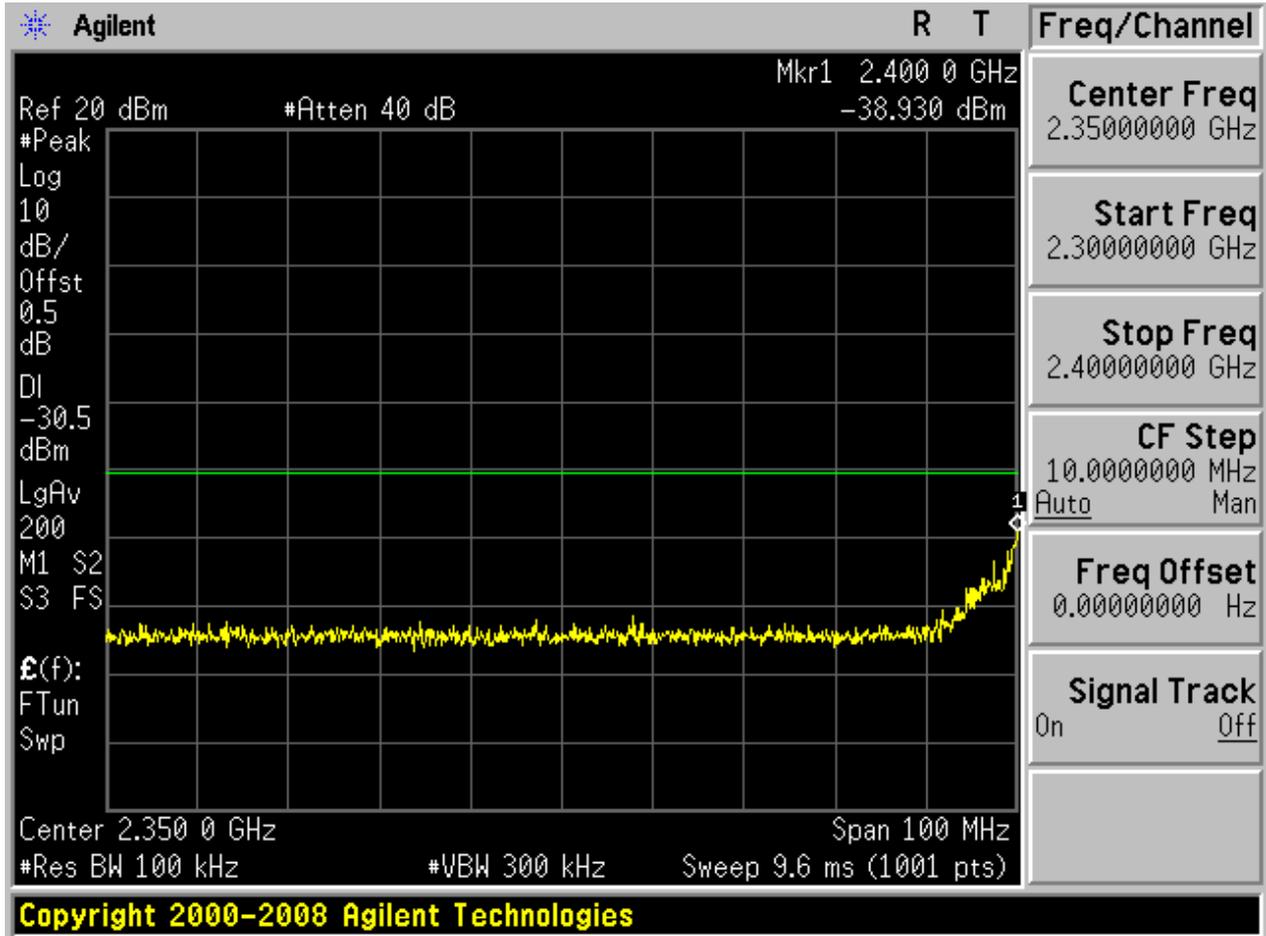


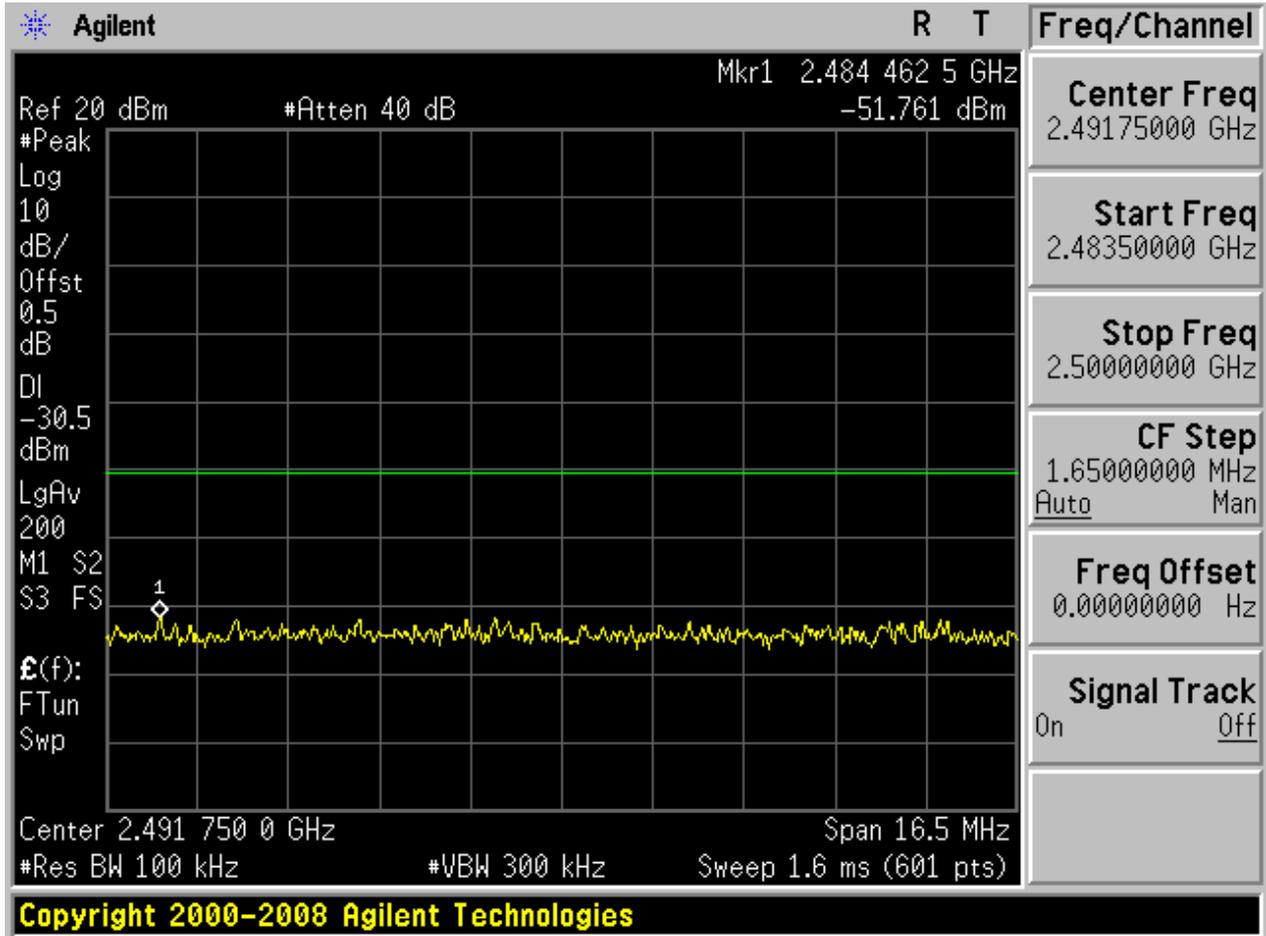
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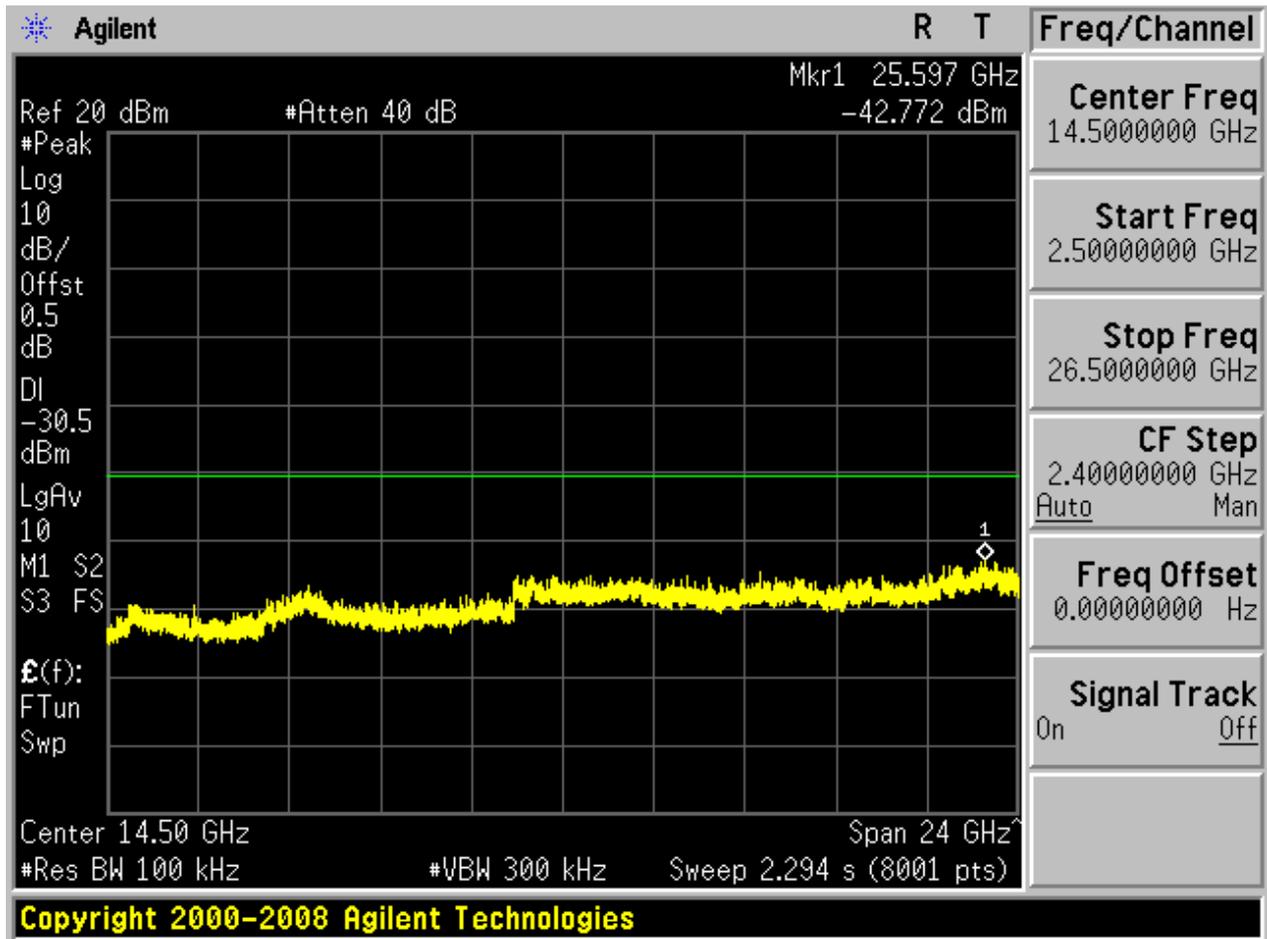








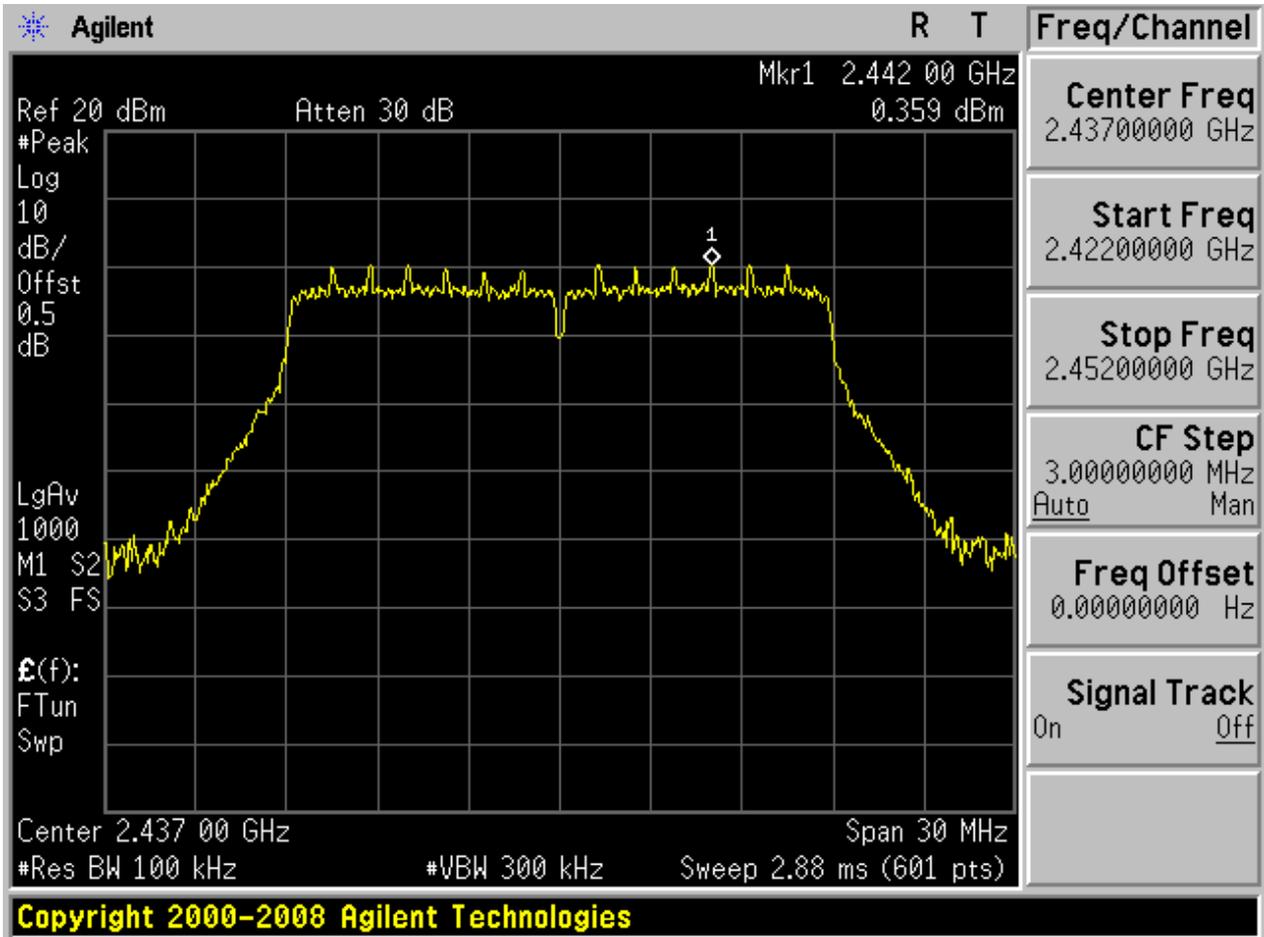






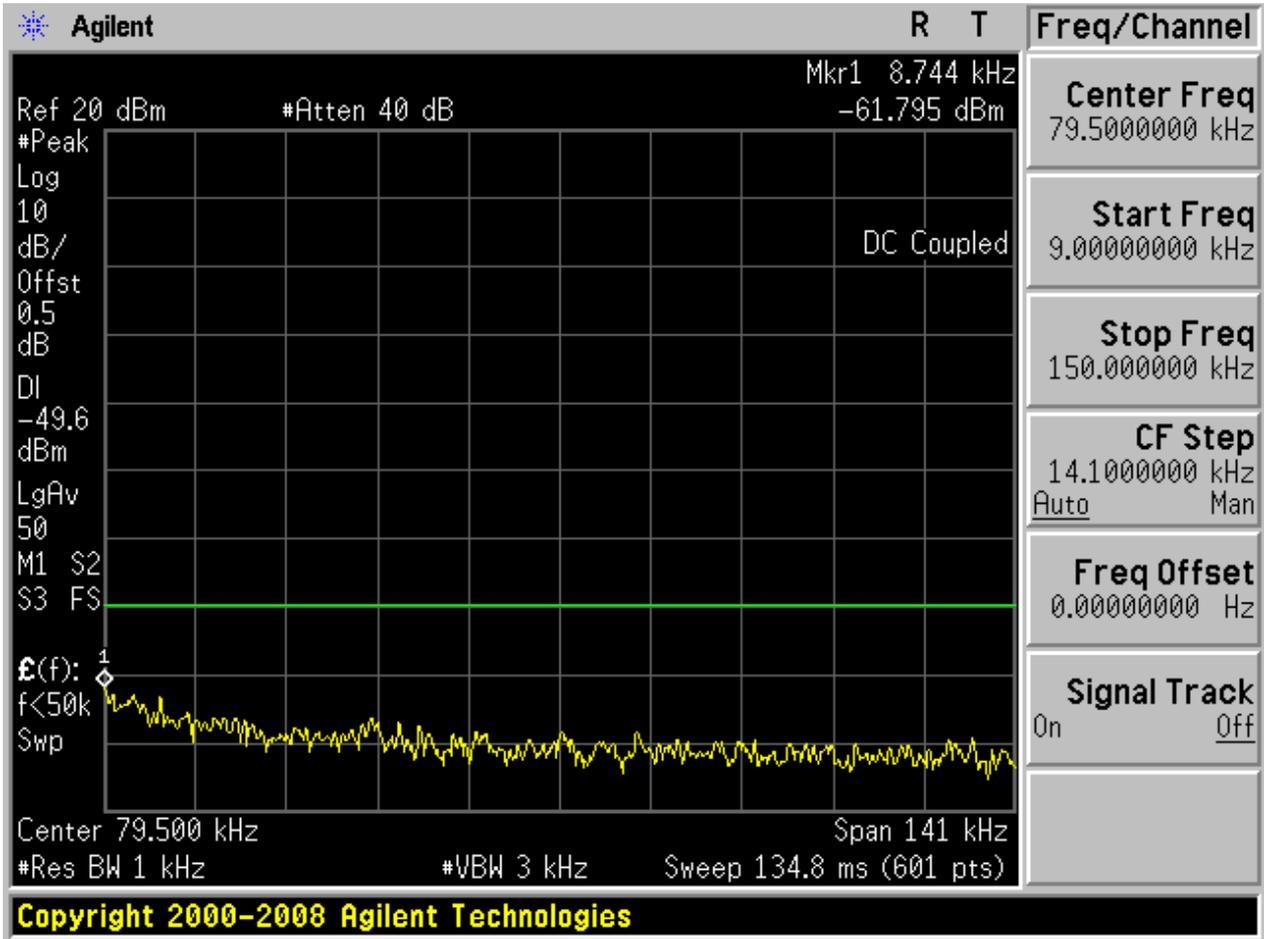
2.8 11N20\_M@Ant 1

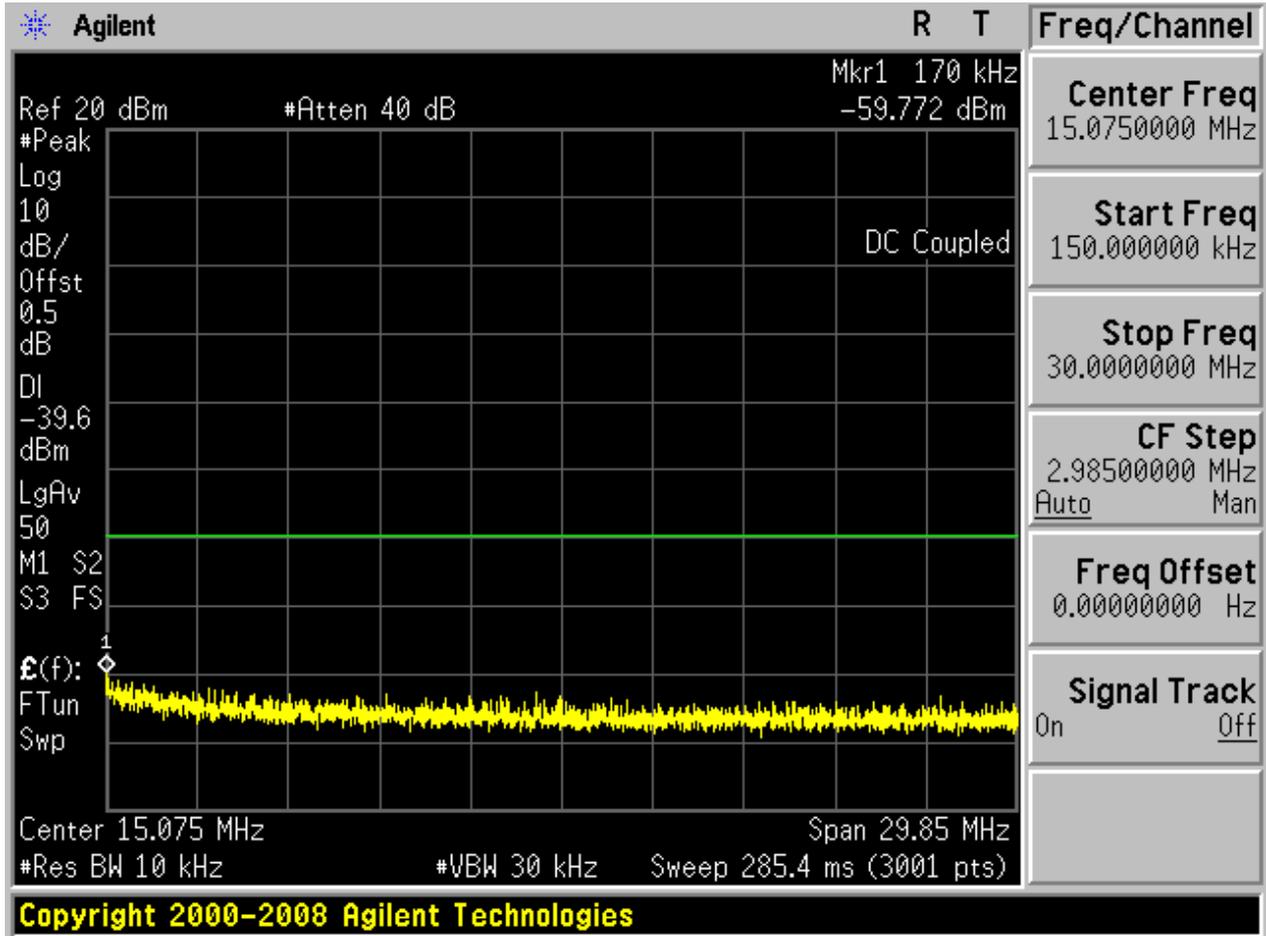
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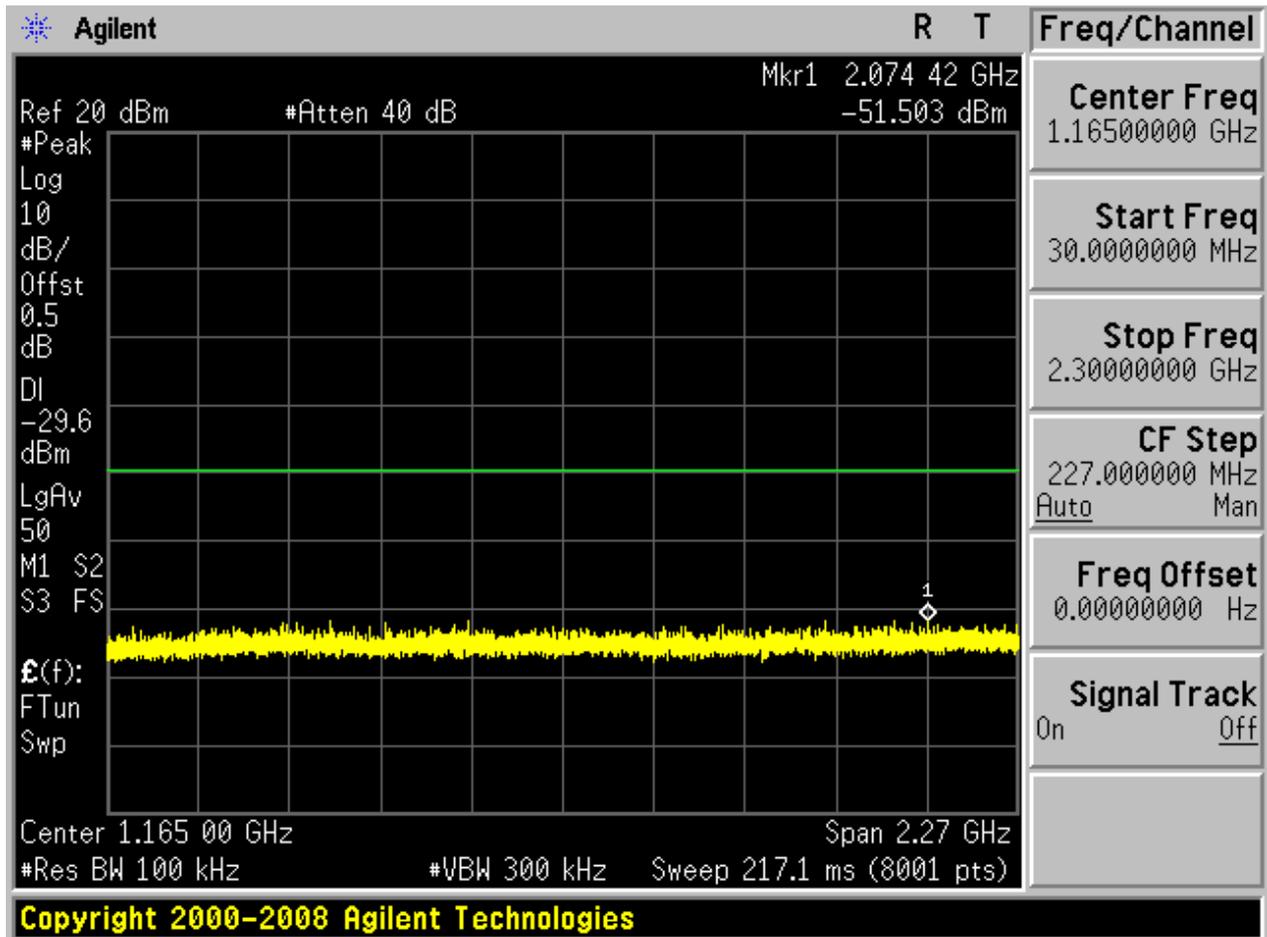


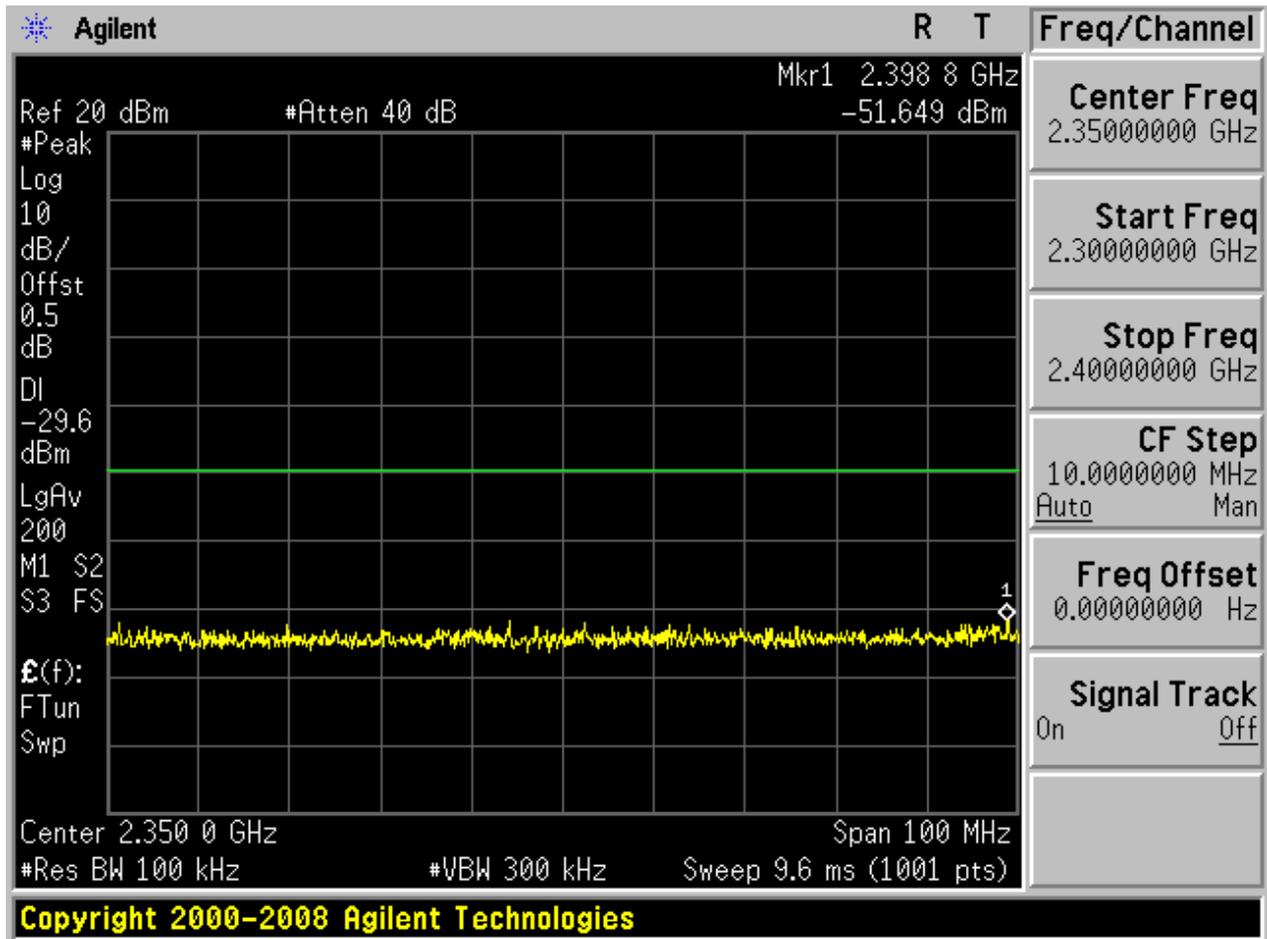


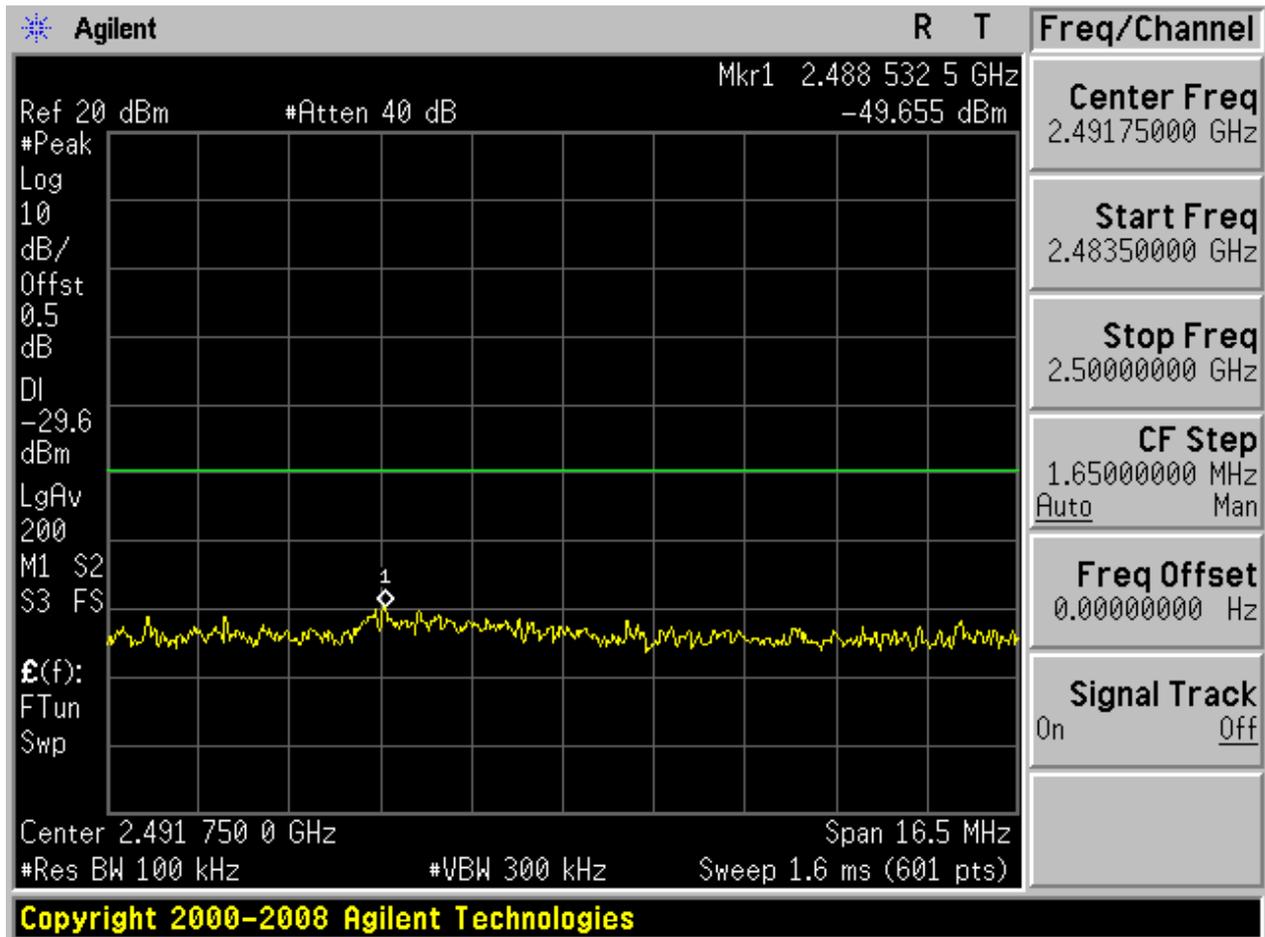
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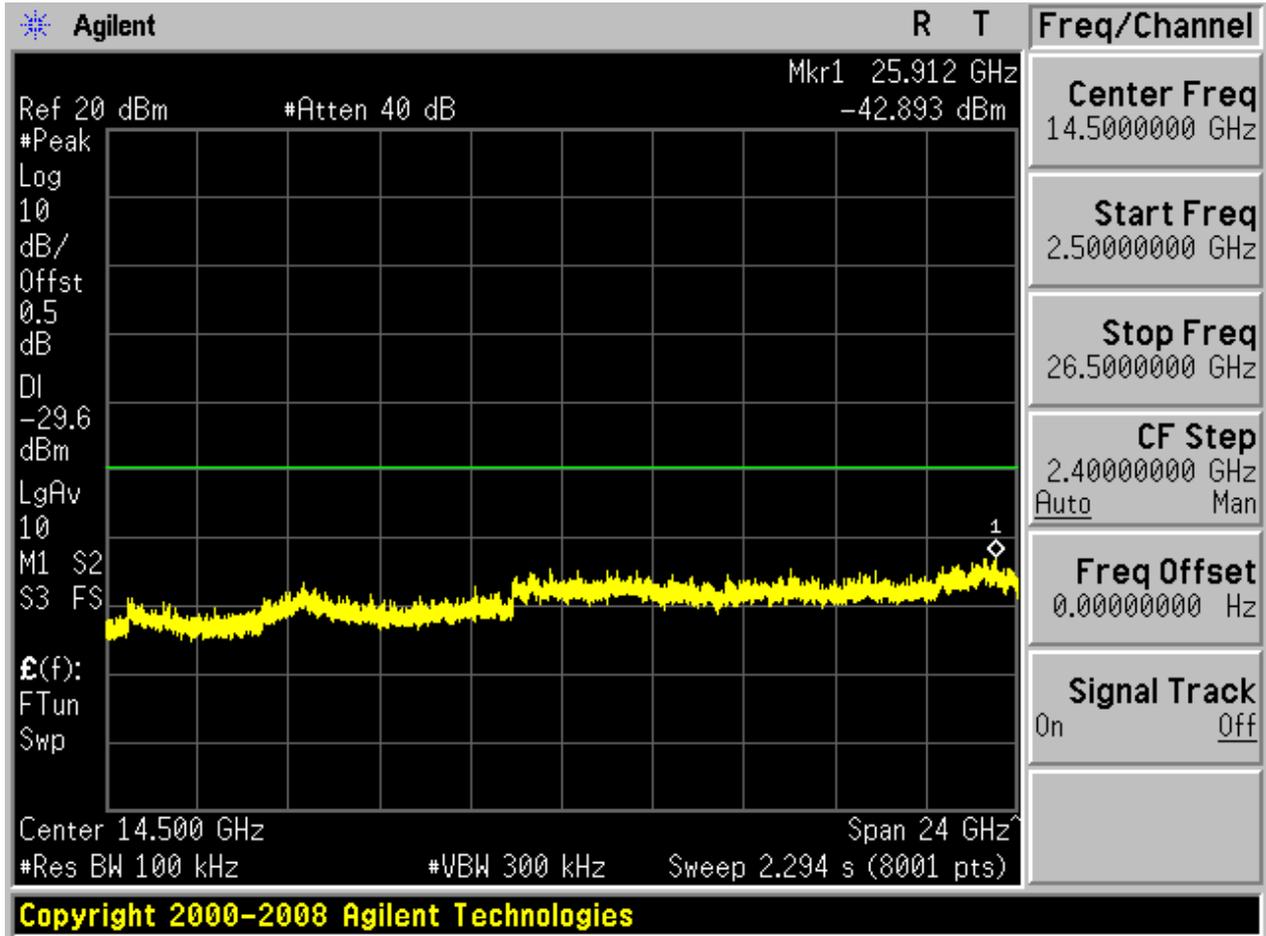








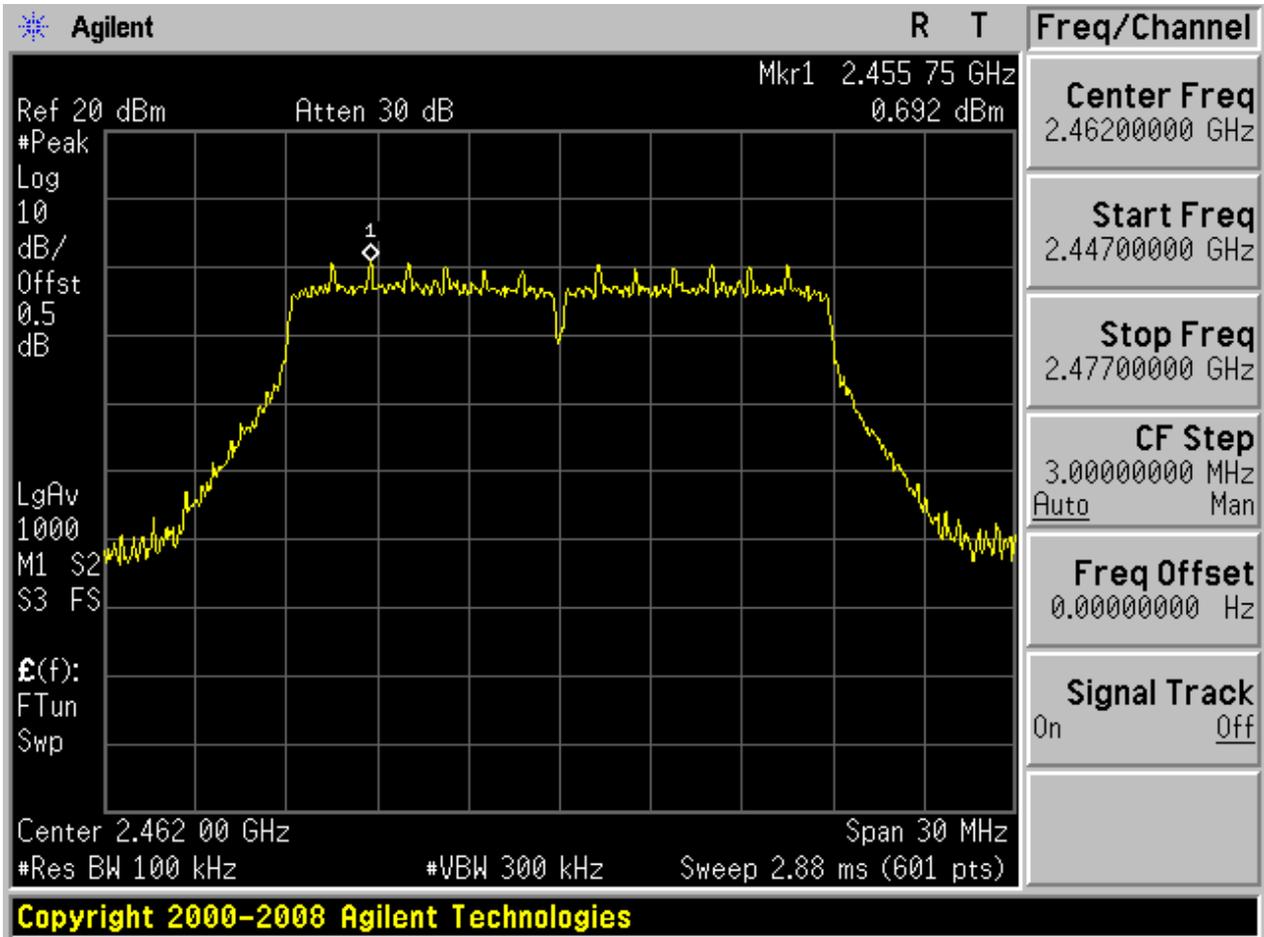






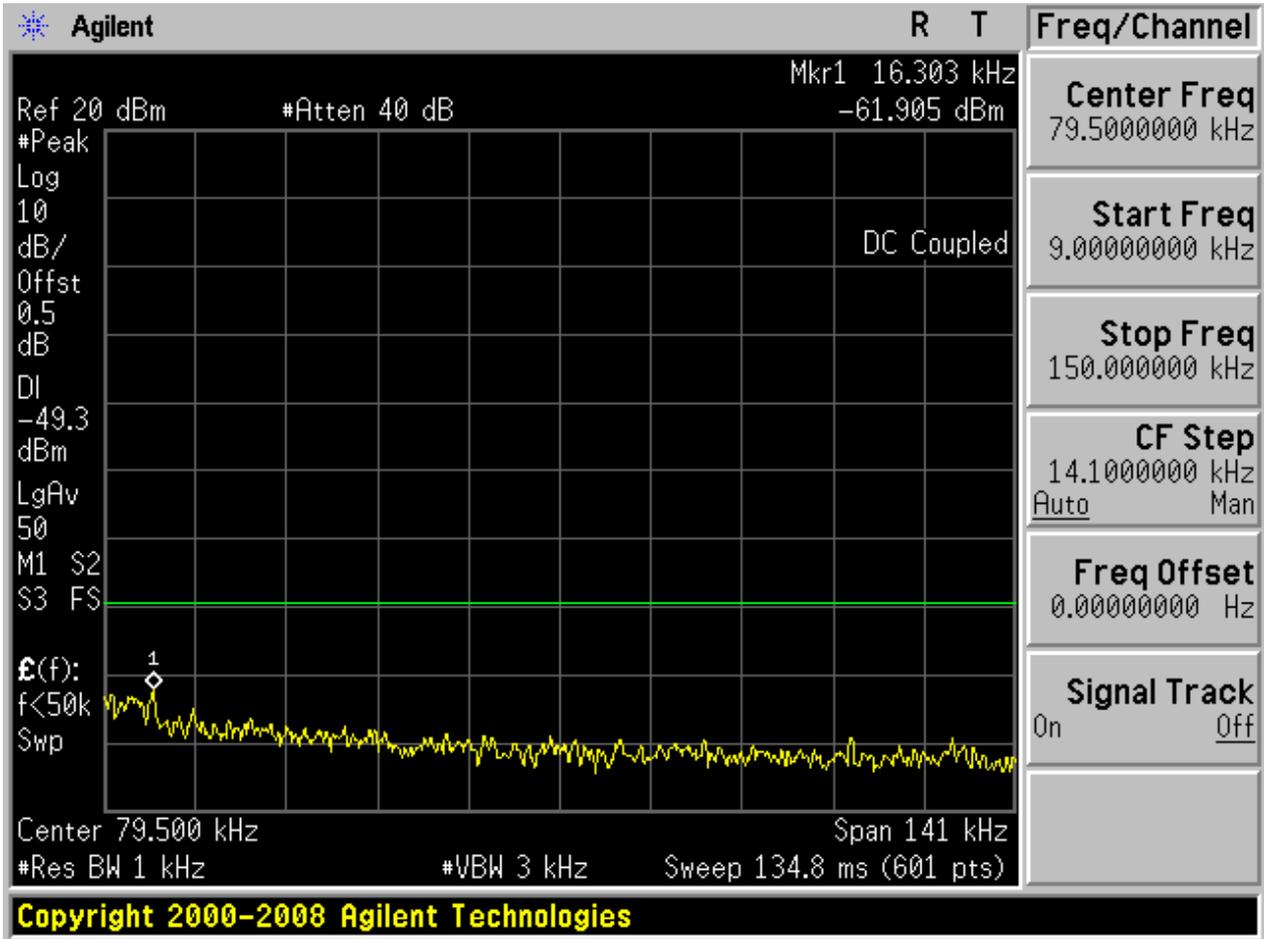
### 2.9 11N20\_H@Ant 1

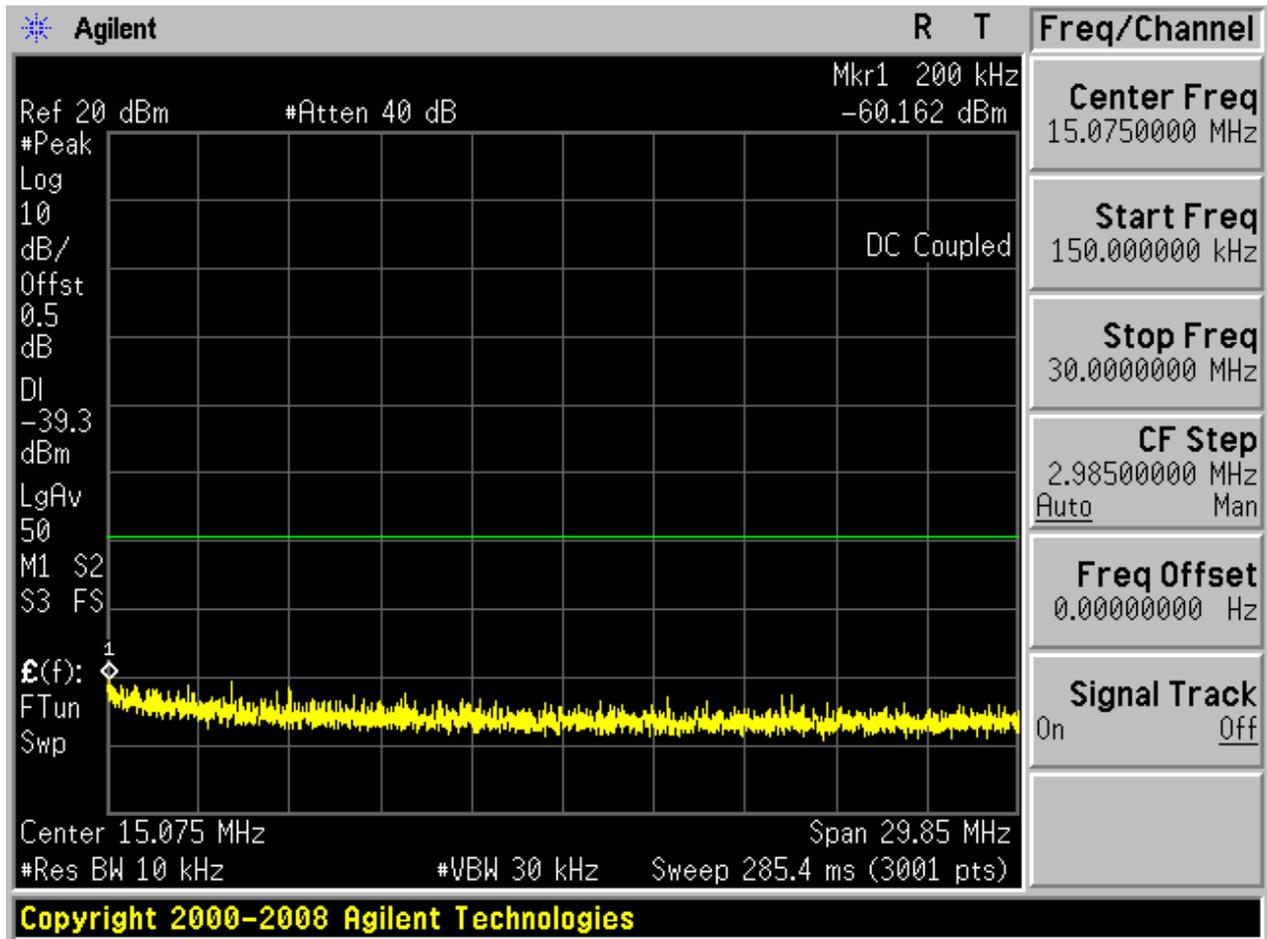
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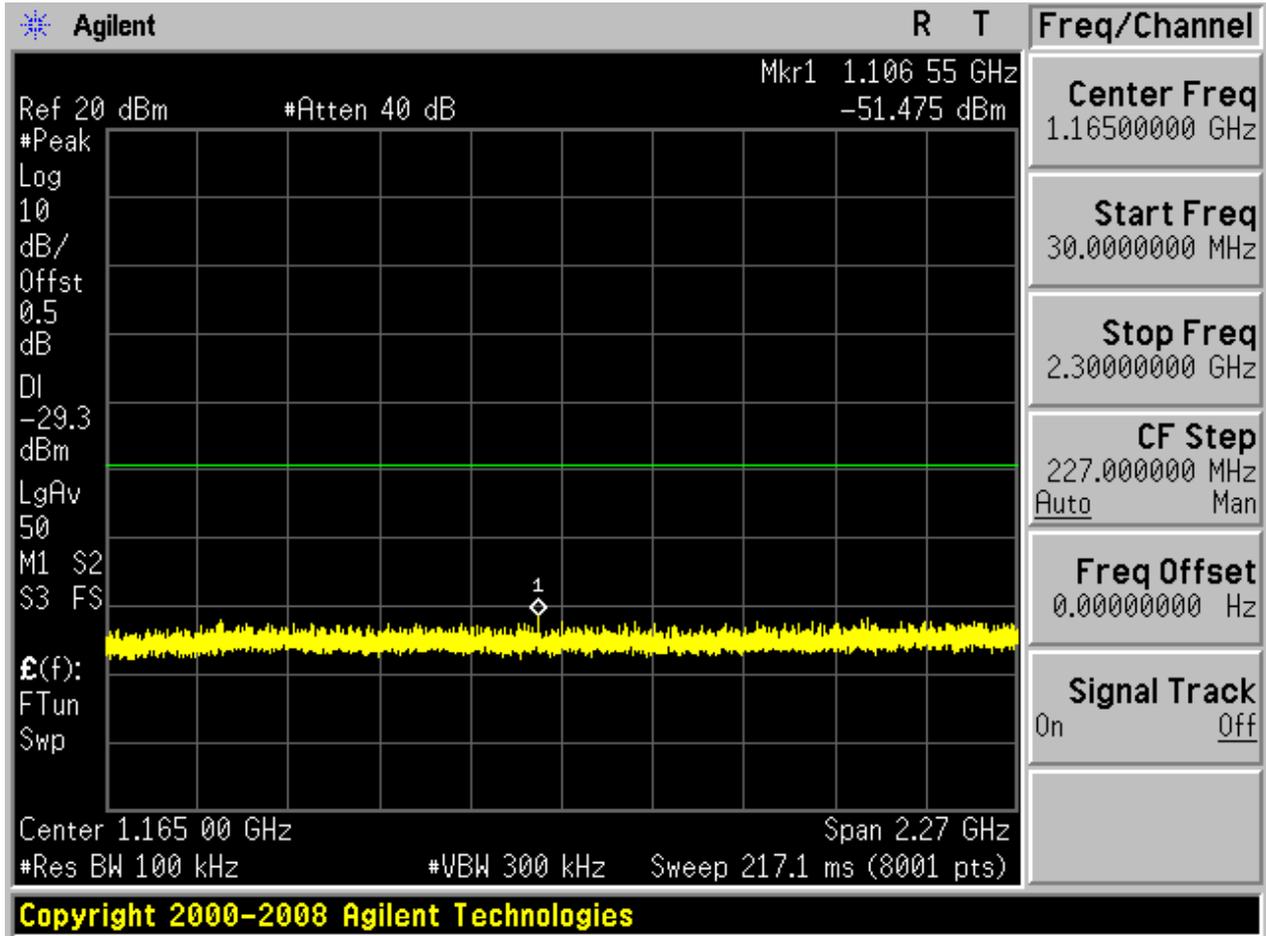


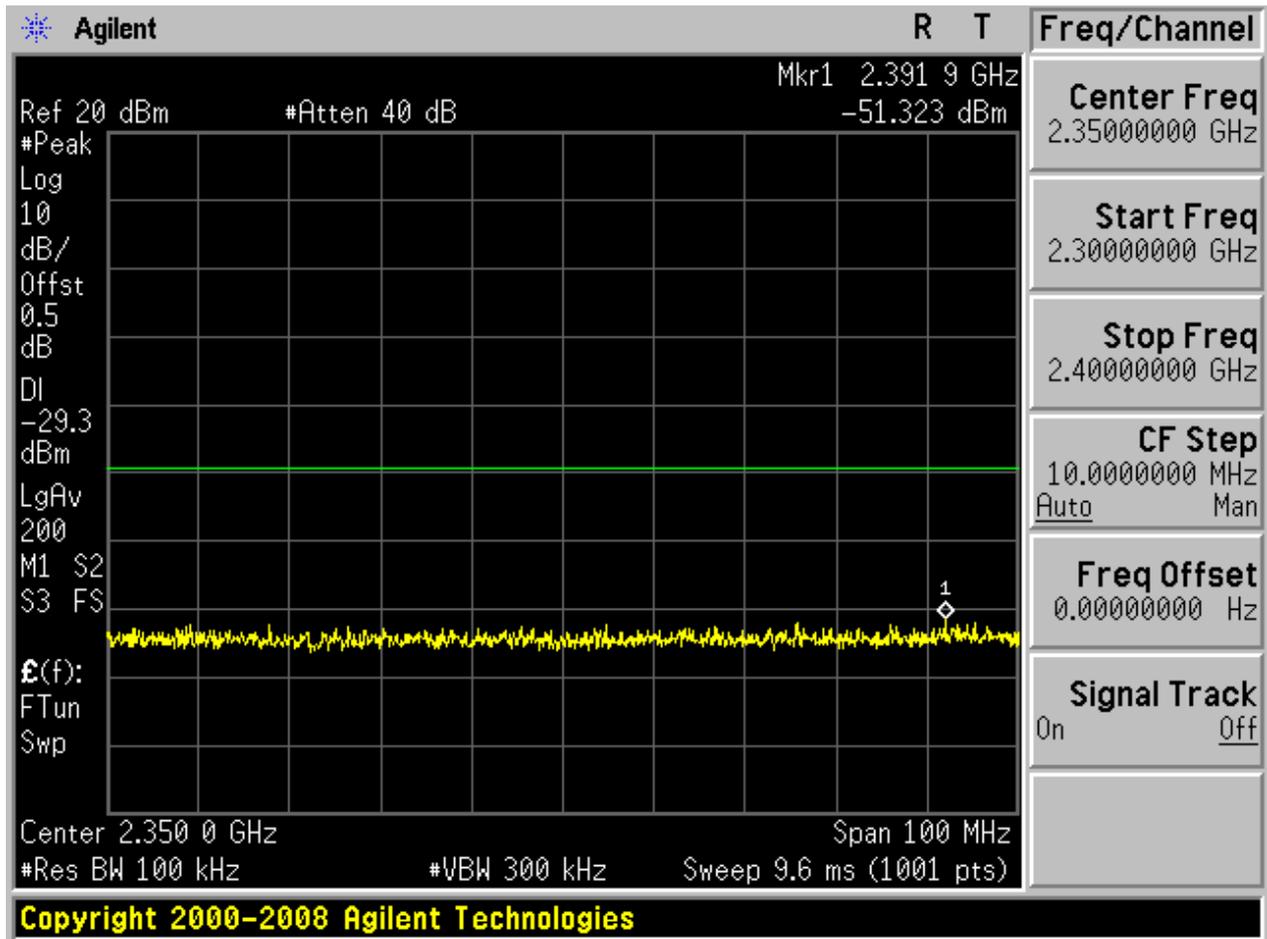


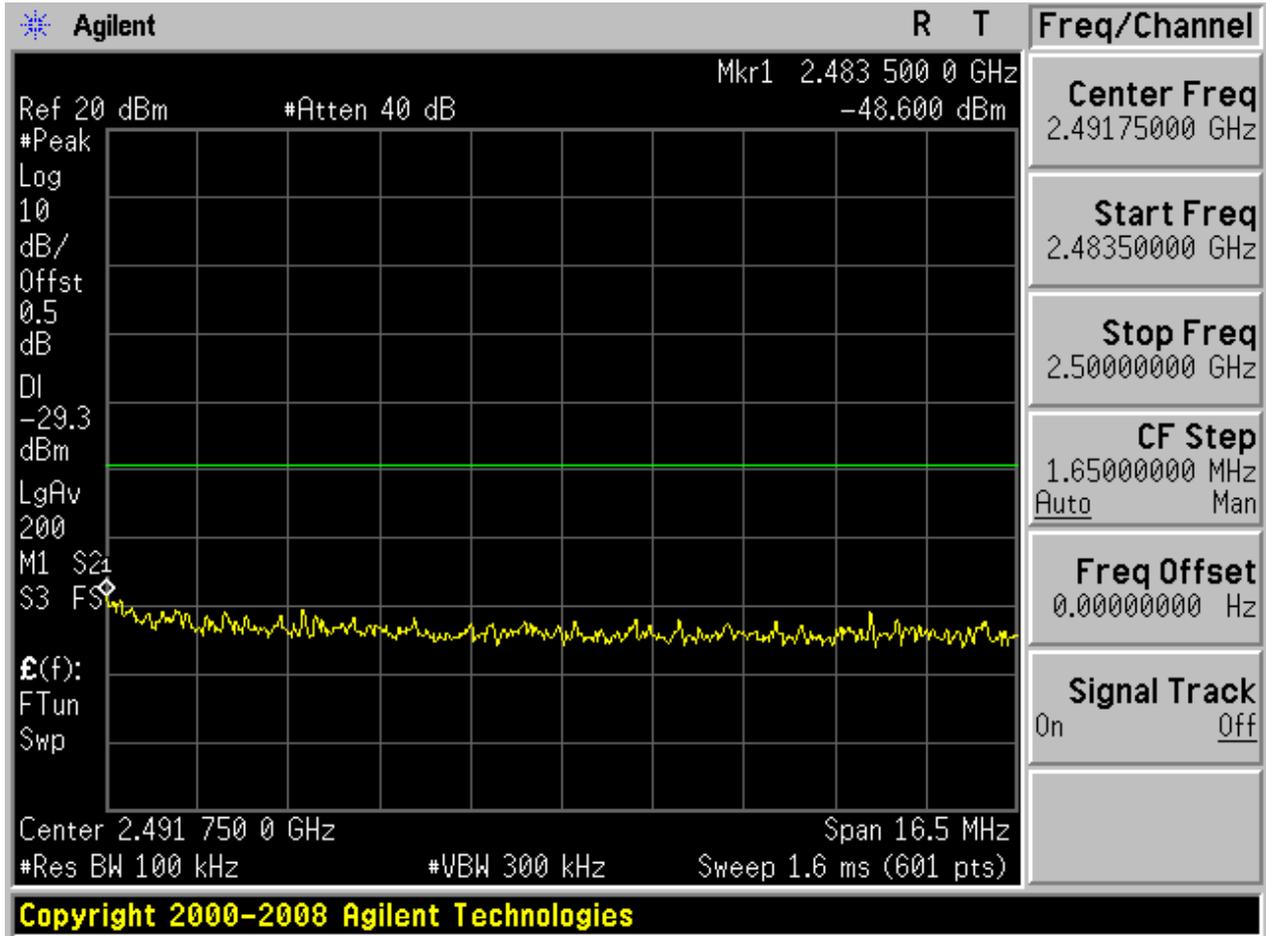
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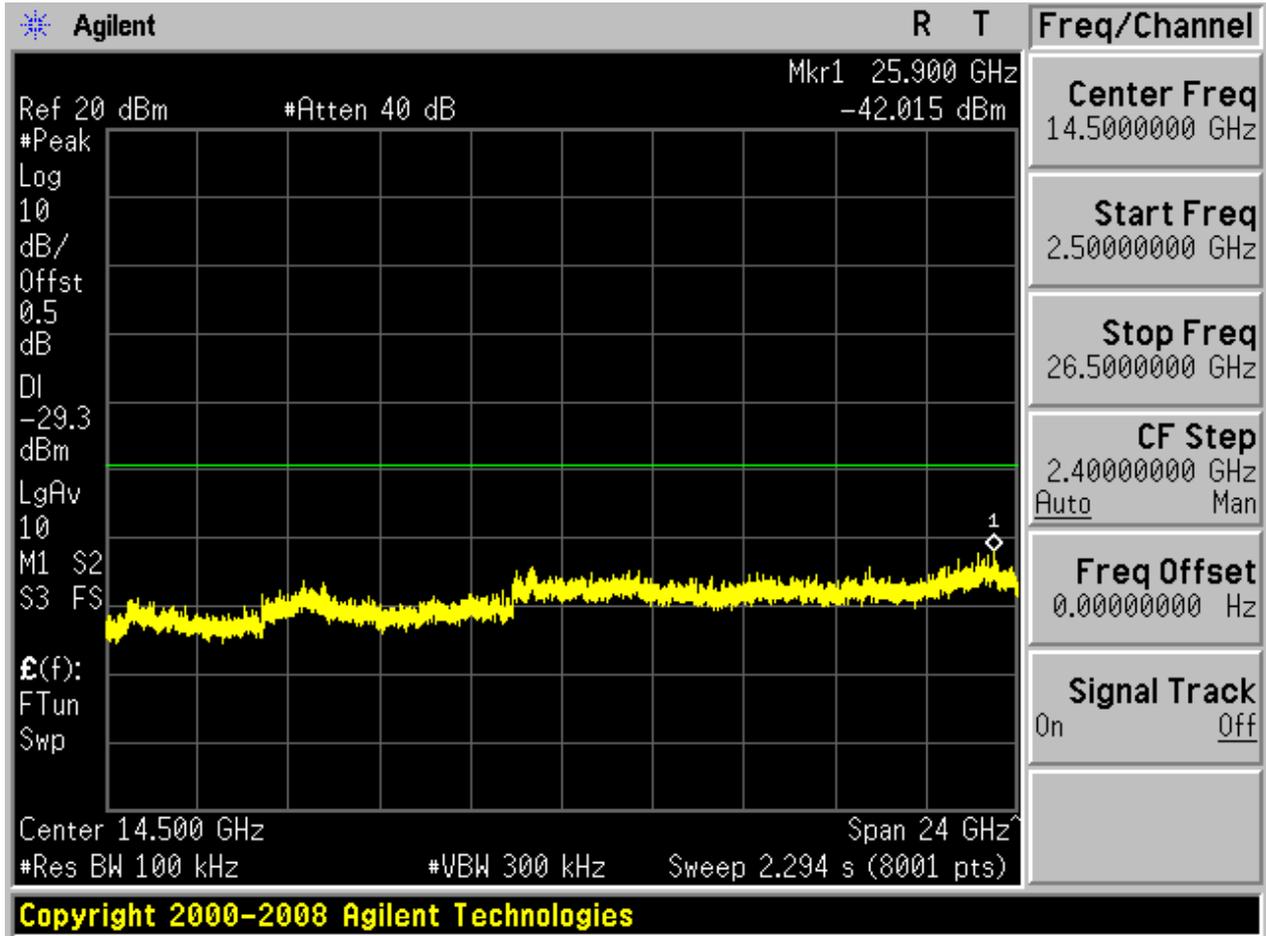












## Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

Note: Below 1GHz, RBW = 100 kHz, VBW = 300 kHz.

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

The simultaneous transmission has been considered

We tested all modes, but the data presented below is the worst case.

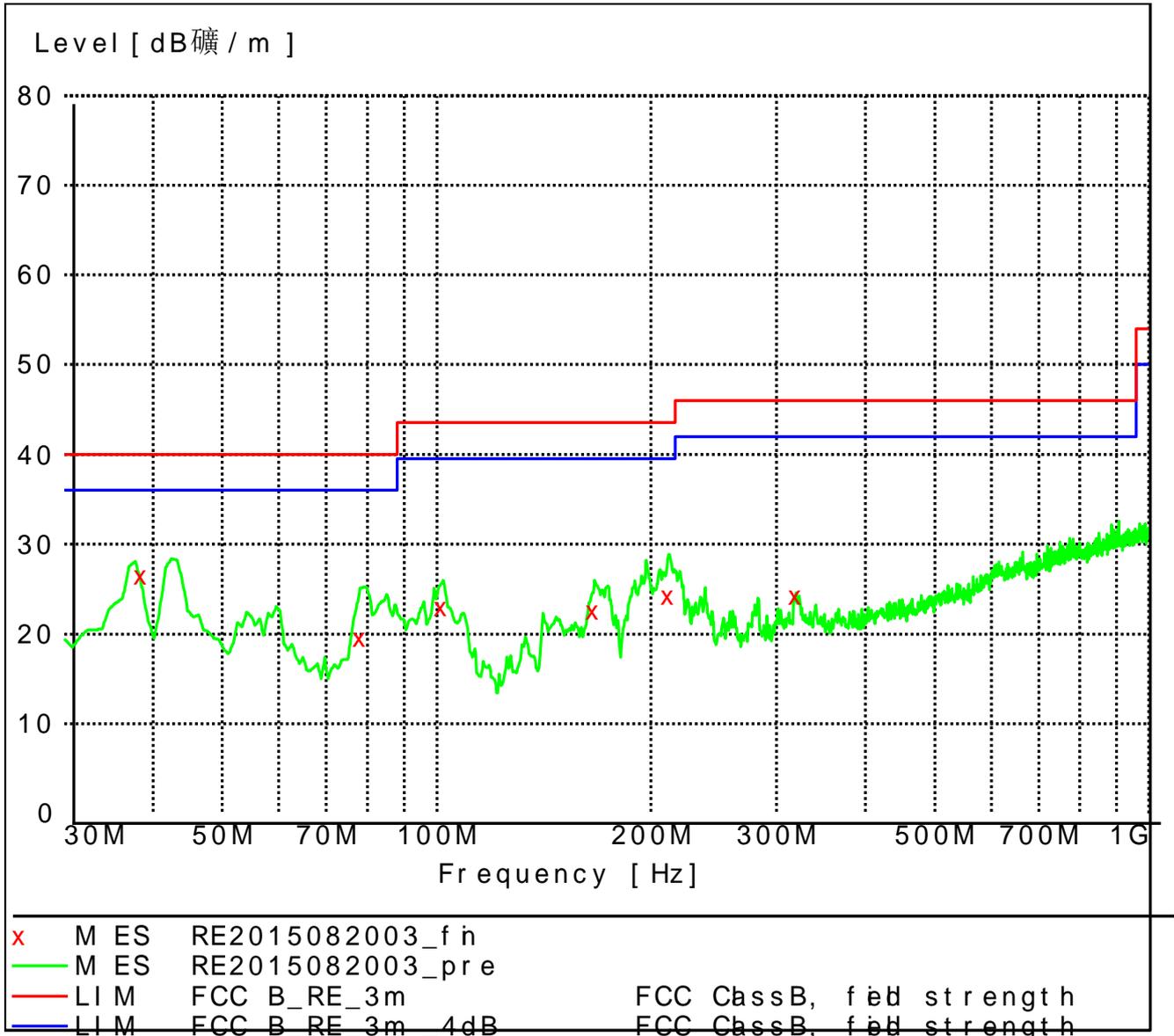
### Part 1: Testing Range of “9 kHz to 30MHz”

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 MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Height cm	Azimuth deg	Plarization
38.480000	26.50	15.3	40.0	13.5	100.0	0.00	VERTICAL
77.992000	19.60	10.5	40.0	20.4	129.0	133.00	VERTICAL
101.328000	23.00	13.5	43.5	20.5	123.0	28.00	VERTICAL
165.736000	22.60	10.3	43.5	20.9	100.0	294.00	VERTICAL
211.284000	24.20	12.5	43.5	19.3	100.0	0.00	VERTICAL
318.968000	24.20	15.6	46.0	21.8	100.0	274.00	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”

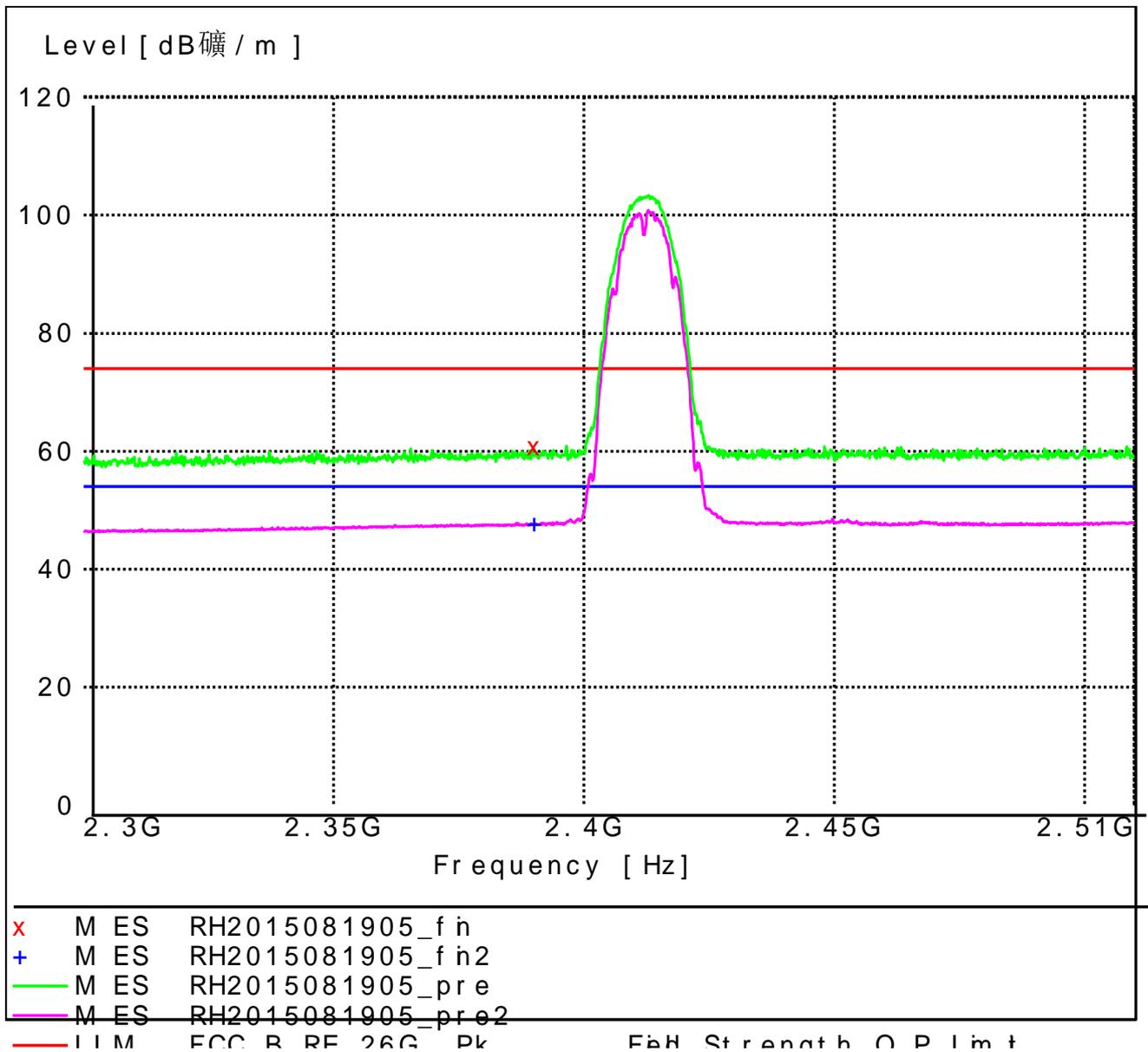


### Part 4: Testing Range of “2.3GHz to 2.5GHz”

- 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.

Test Mode: 11b

#### Channel 1





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

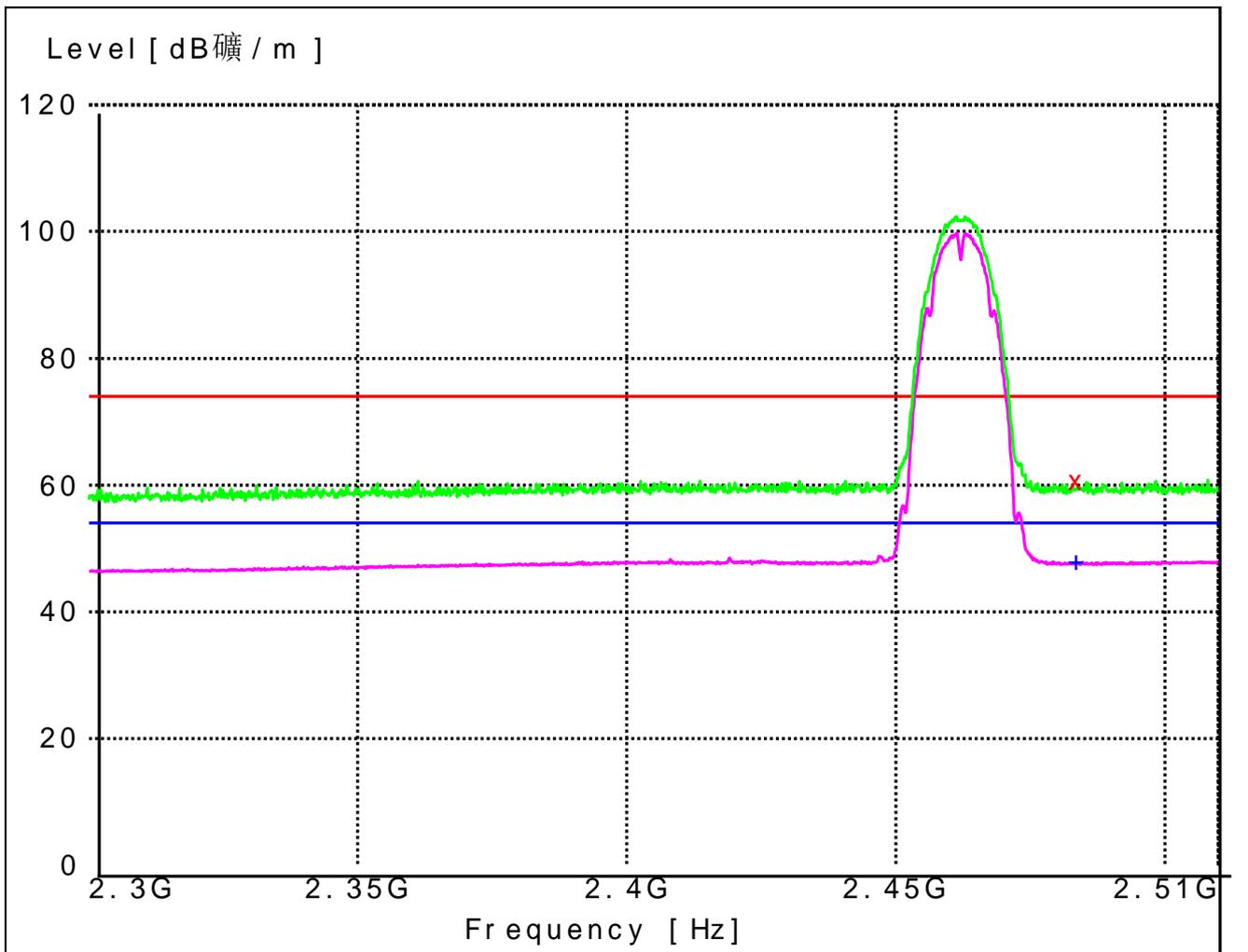
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2390.000000	60.90	34.8	74.0	13.1	PK	100.0	293.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2390.000000	47.80	34.8	54.0	6.2	AV	100.0	279.00	VERTICAL

Channel 11



x	M ES	RH2015081906_f n						
+	M ES	RH2015081906_f n2						
—	M ES	RH2015081906_pre						
—	M ES	RH2015081906_pre2						
—	LIM	FCC B RE 26G_Pk						Field Strength O P Limit



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

MEASUREMENT RESULT: PK Detector

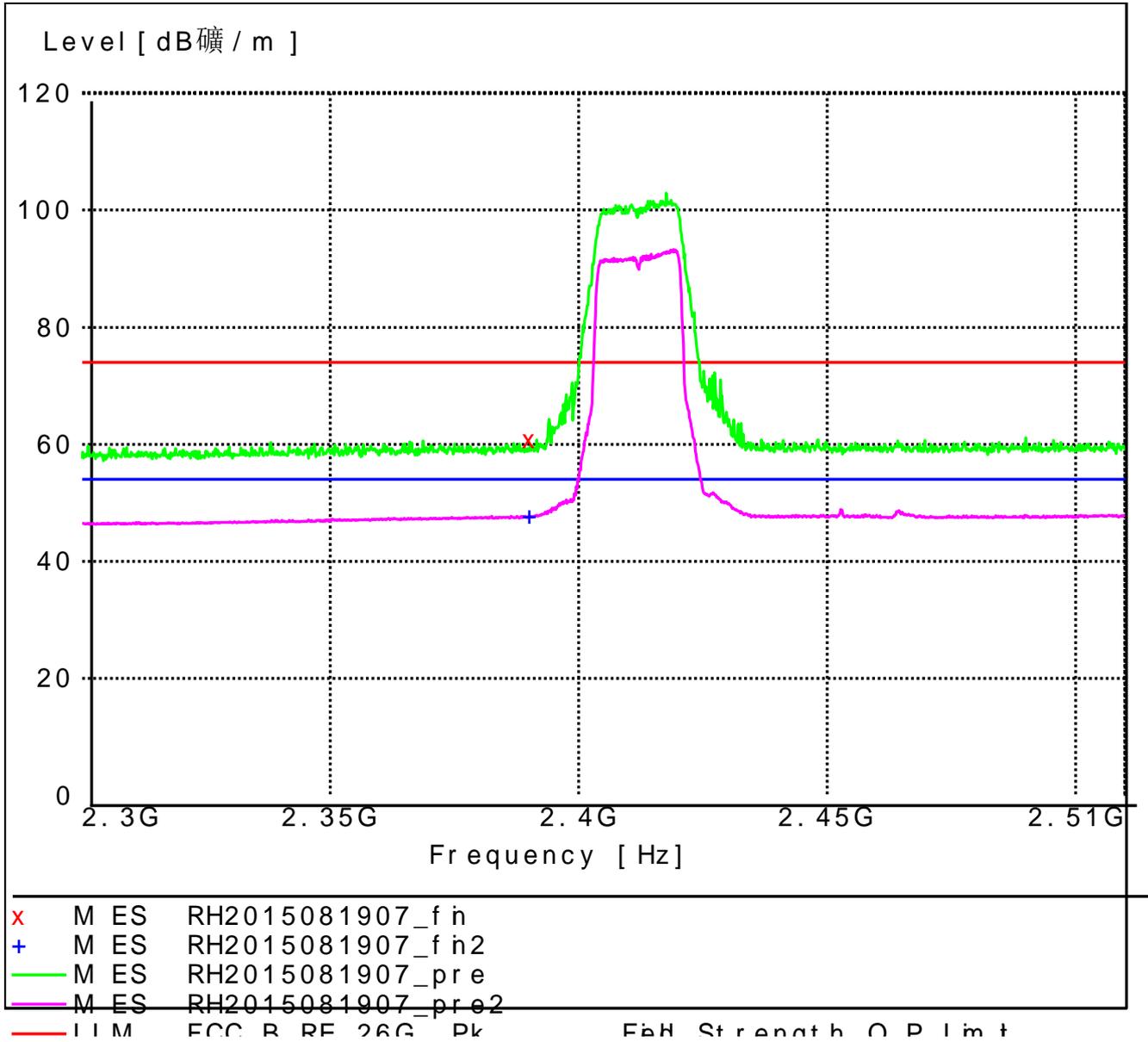
Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2483.500000	60.80	35.1	74.0	13.2	PK	100.0	0.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2483.500000	47.90	35.1	54.0	6.1	AV	100.0	354.00	HORIZONTAL

Test Mode: 11g

Channel 1



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

MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dB <sub>μ</sub> V/m	Transd dB	Limit dB <sub>μ</sub> V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2390.000000	60.80	34.8	74.0	13.2	PK	100.0	278.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

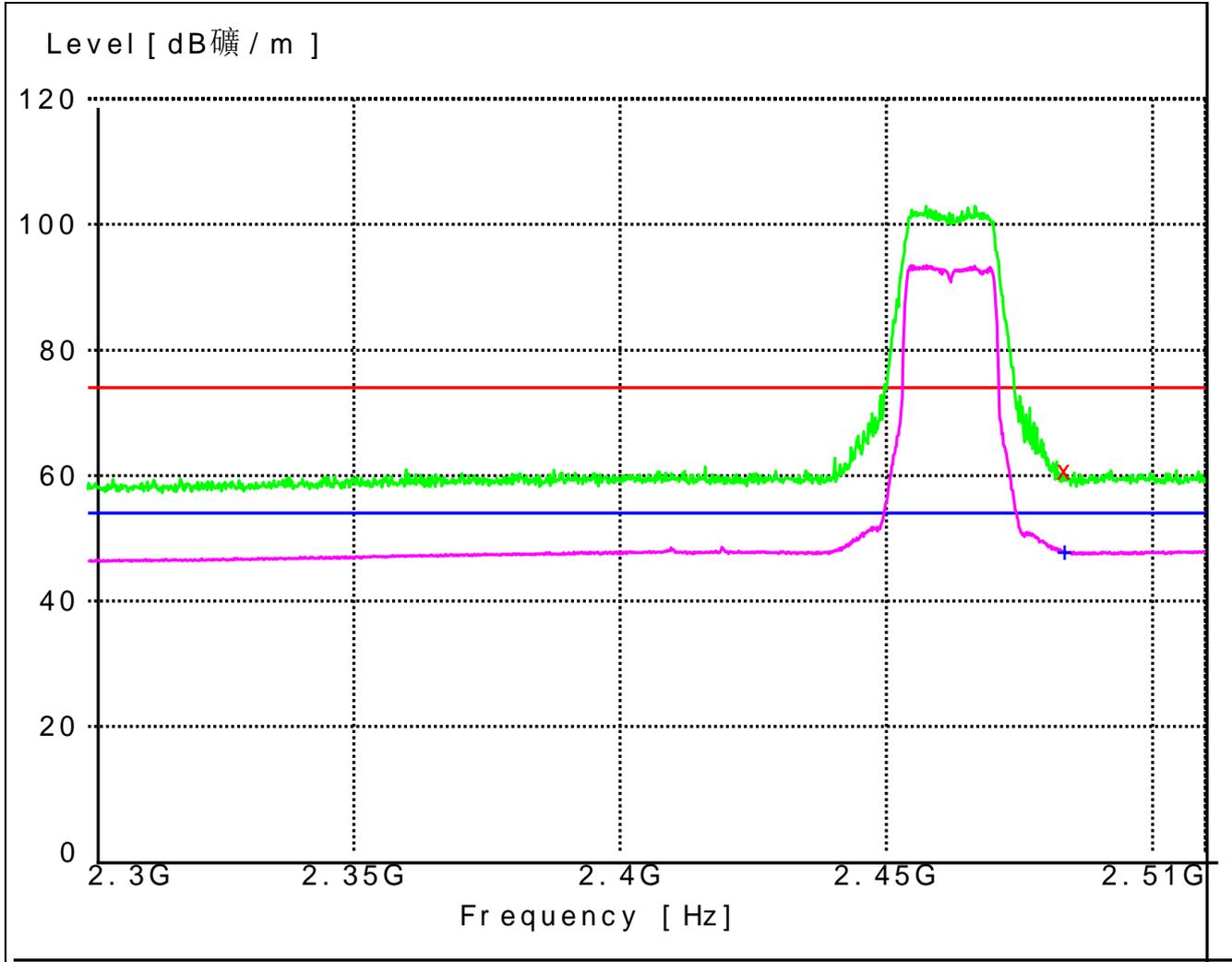


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Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2390.000000	47.80	34.8	54.0	6.2	AV	100.0	150.00	VERTICAL

Channel 11



x M ES RH2015081908\_f h  
 + M ES RH2015081908\_f h2  
 — M ES RH2015081908\_pre  
 — M ES RH2015081908\_pre2  
 — LIM FCC R F 26G Pk EIR Strength O P Limit

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

MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2483.500000	60.80	35.1	74.0	13.2	PK	100.0	227.00	HORIZONTAL

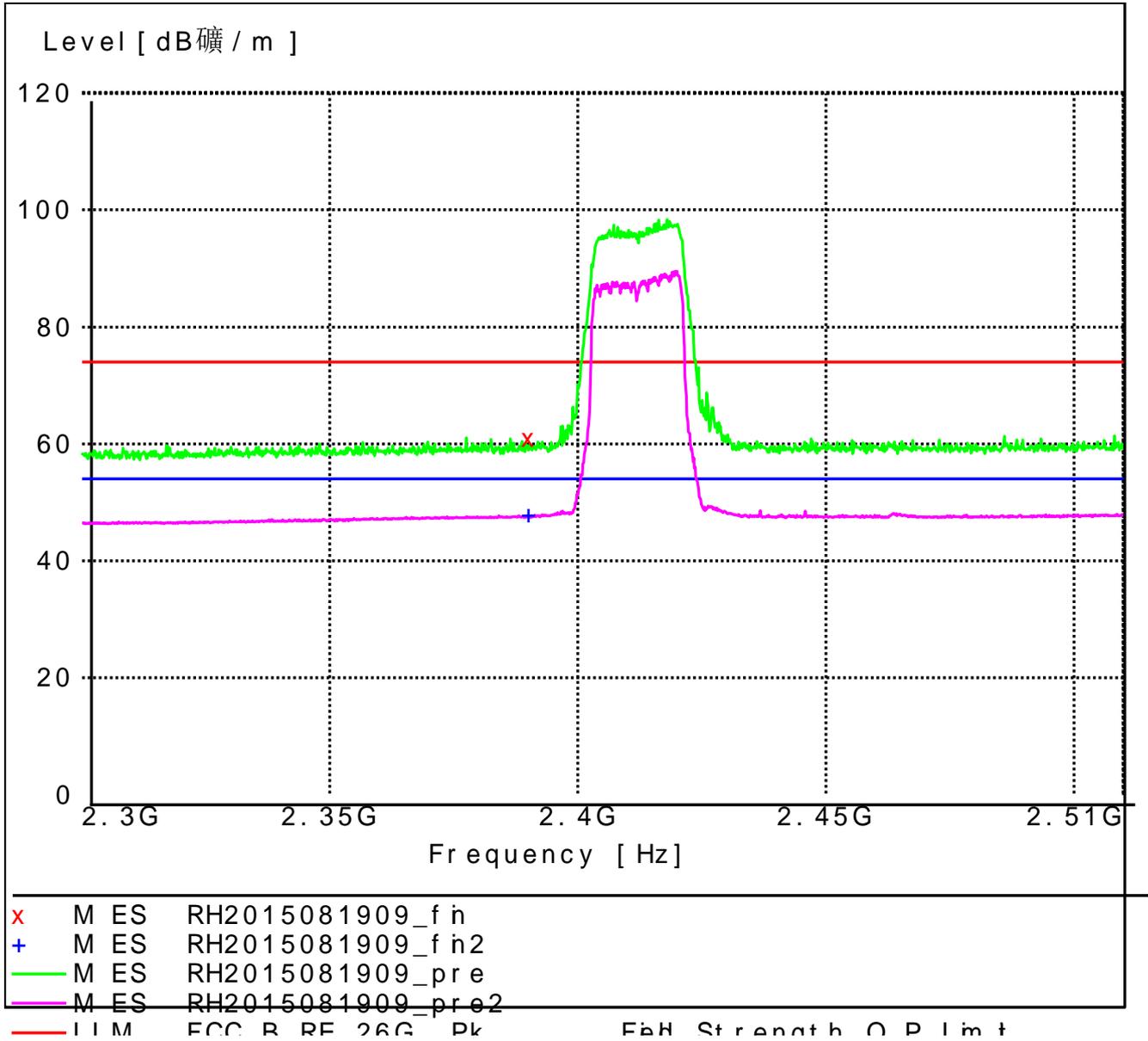
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2483.500000	48.00	35.1	54.0	6.0	AV	100.0	2.00	HORIZONTAL



Test Mode: 11N

Channel 1



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

MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dB <sub>μ</sub> V/m	Transd dB	Limit dB <sub>μ</sub> V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2390.000000	61.10	34.8	74.0	12.9	PK	100.0	254.00	VERTICAL

MEASUREMENT RESULT: AV Detector

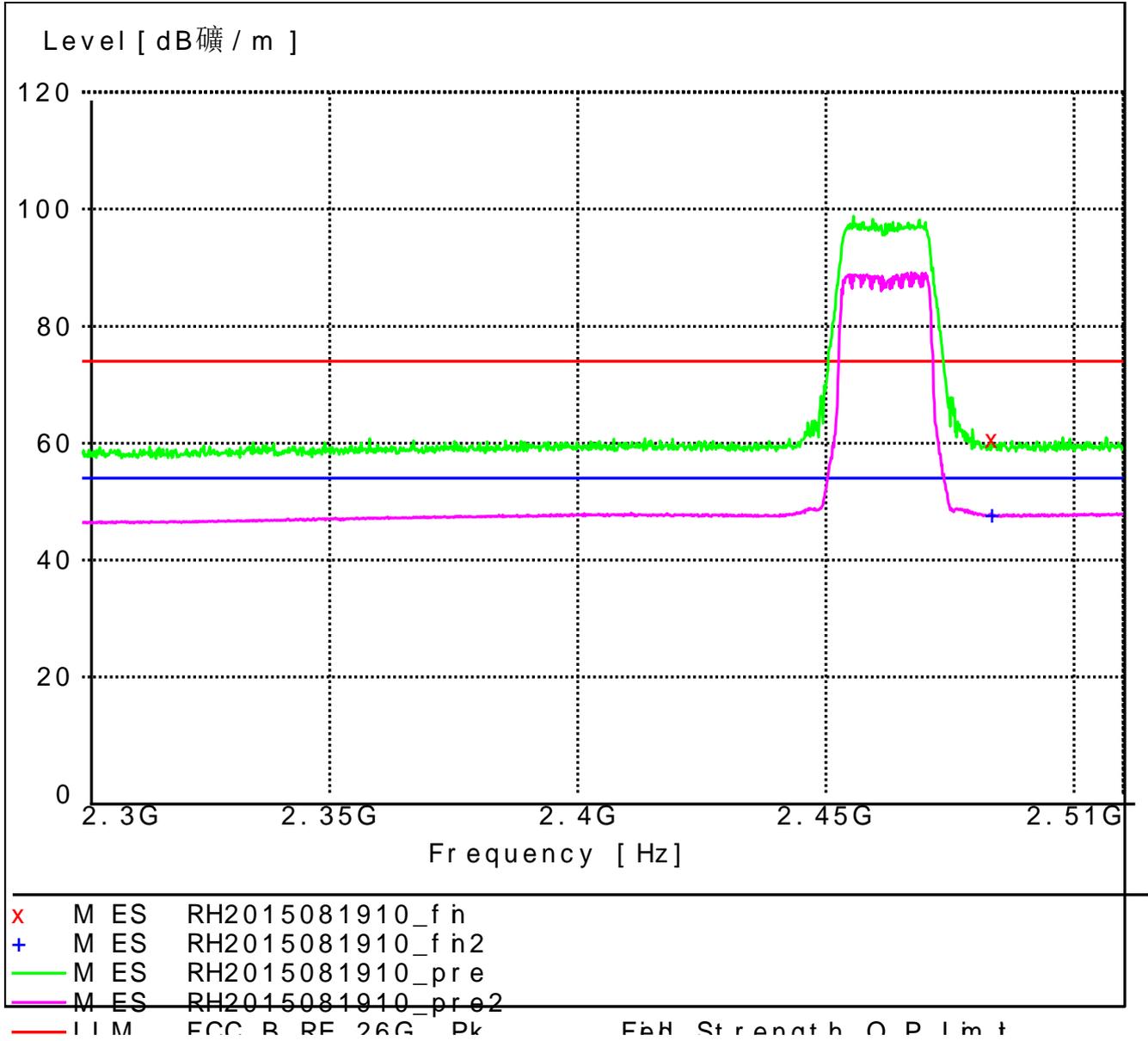


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Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2390.000000	47.90	34.8	54.0	6.1	AV	100.0	330.00	HORIZONTAL

Channel 11



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

MEASUREMENT RESULT: PK Detector

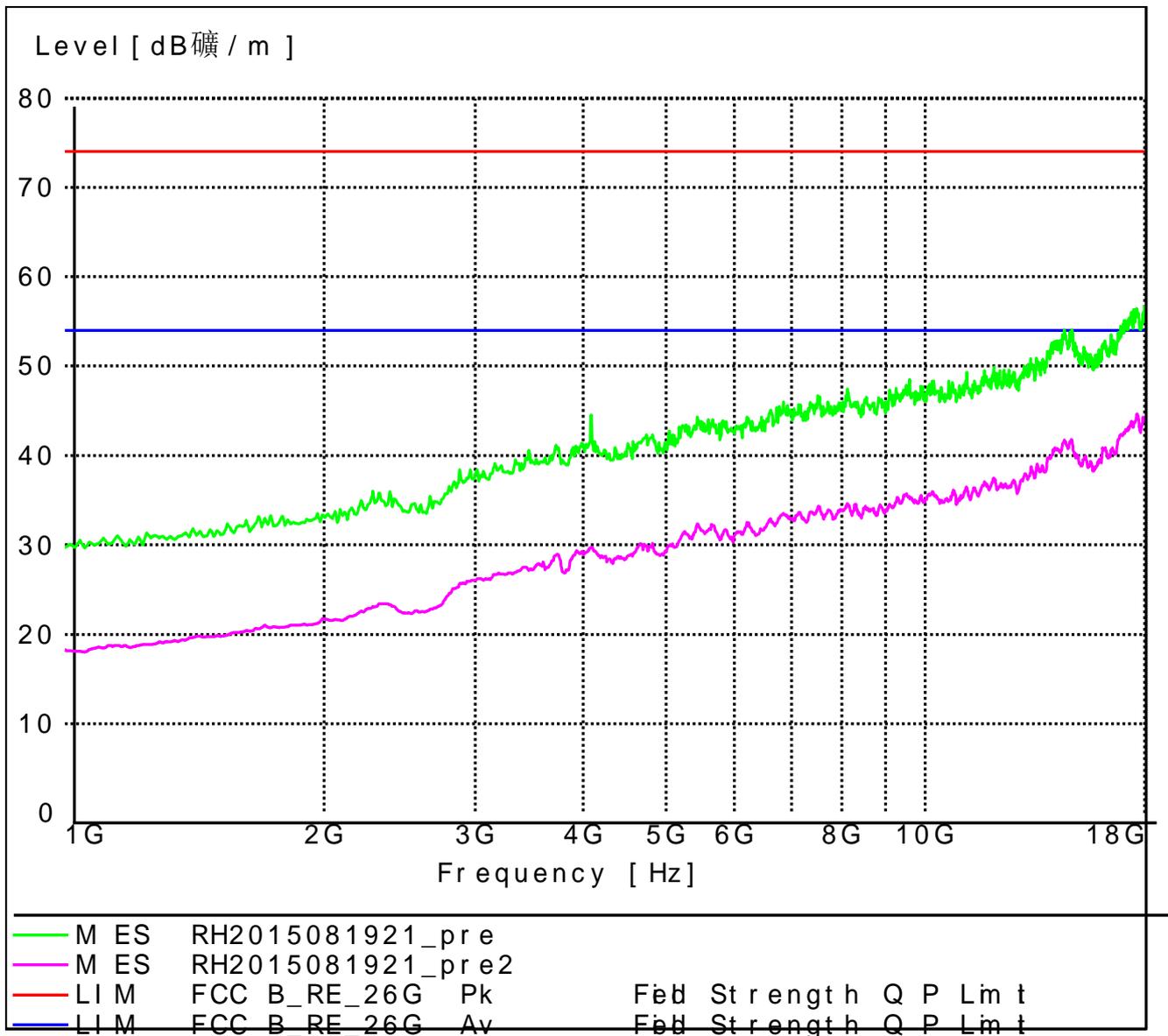
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2483.500000	60.70	35.1	74.0	13.3	PK	100.0	62.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
2483.500000	47.80	35.1	54.0	6.2	AV	100.0	133.00	VERTICAL

**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).



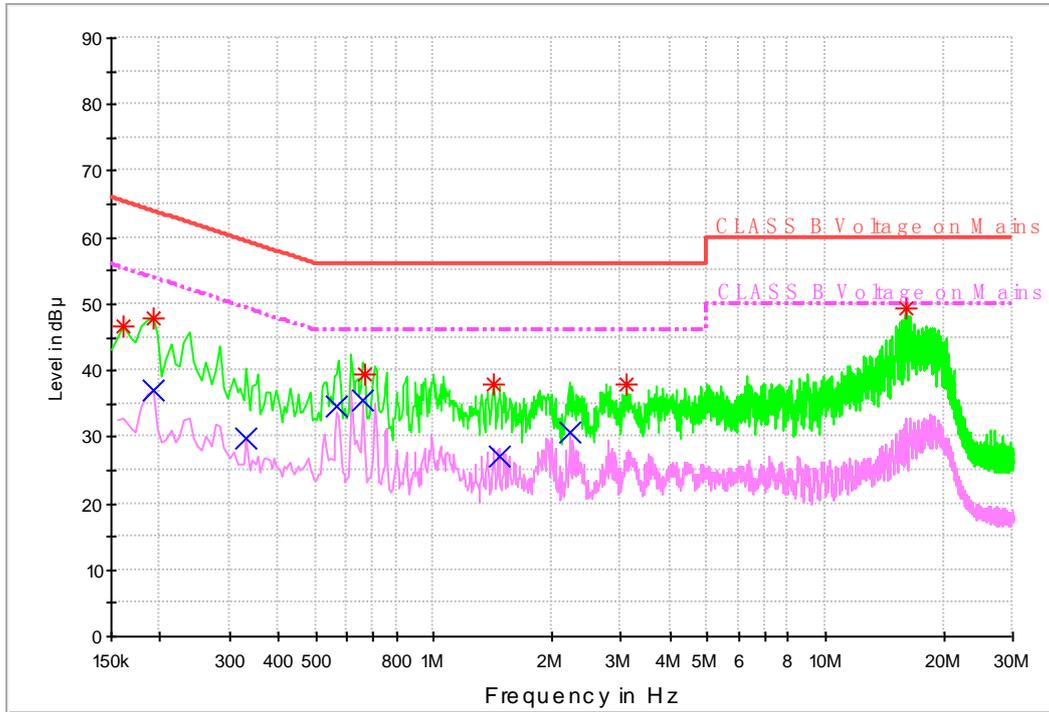


## Appendix I: Conducted Emission at Power Port

Note: RBW = 9 kHz, VBW = 30 kHz

# Channel 6

CLASS B Voltage with ENV216



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.161940	46.8	9.8	65.7	18.9	N	FLO
0.191790	47.7	9.8	65.4	17.7	L1	FLO
0.663939	39.5	9.8	56.0	16.5	N	FLO
1.412655	38.0	9.8	56.0	18.0	L1	FLO
3.105150	38.0	9.8	56.0	18.0	N	FLO
15.937665	49.3	10.2	60.0	10.7	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.191790	36.9	9.8	55.3	27.1	L1	FLO
0.332085	29.7	9.8	48.2	24.7	N	FLO
0.564360	34.7	9.8	46.0	11.3	L1	FLO
0.658839	35.5	9.8	46.0	10.5	N	FLO
1.465965	27.1	9.8	46.0	18.9	N	FLO
2.221590	30.7	9.8	46.0	21.6	L1	FLO

END