



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.

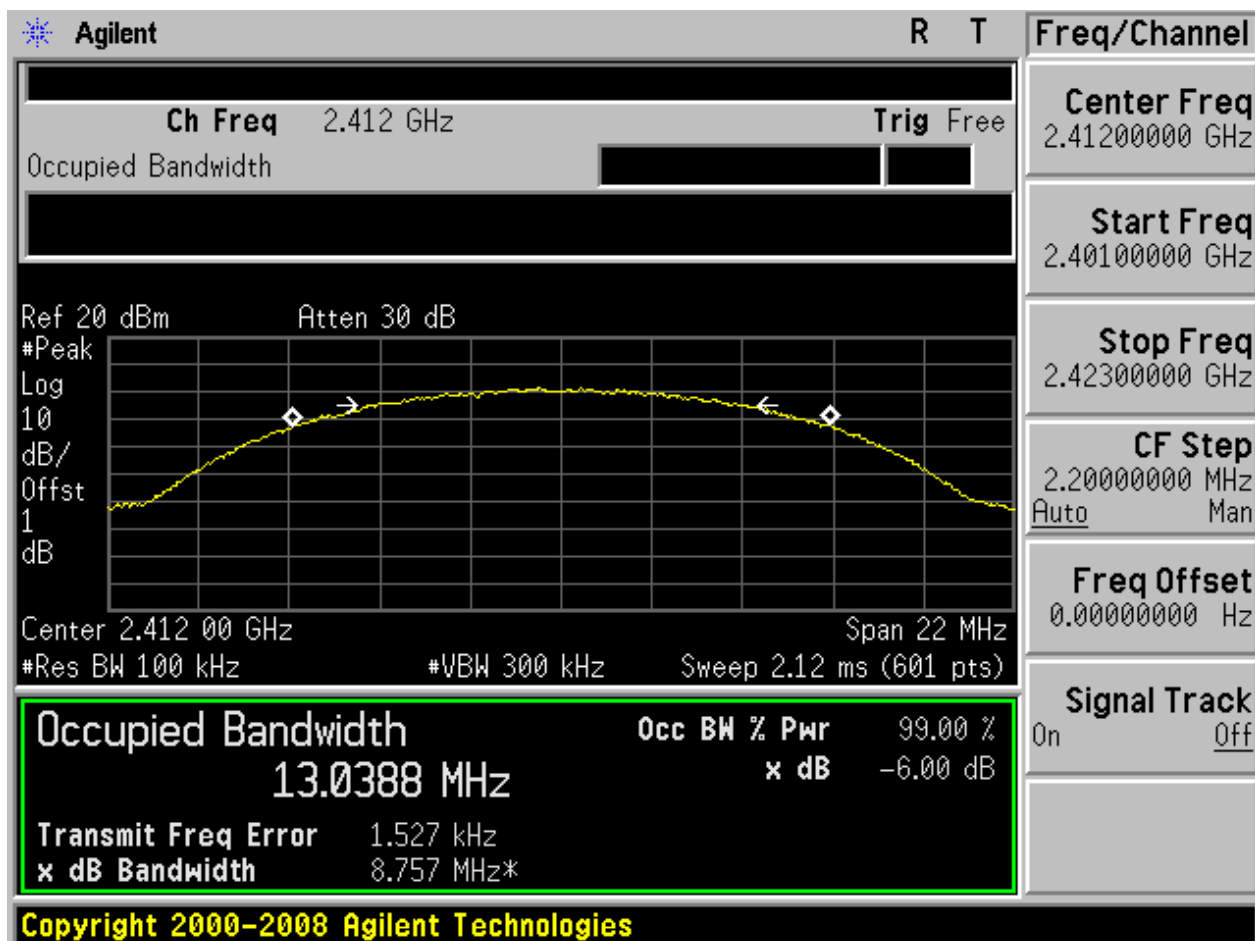
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.76	pass
11B	M	2437	Ant 1	9.18	pass
11B	H	2462	Ant 1	8.84	pass
11G	L	2412	Ant 1	16.53	pass
11G	M	2437	Ant 1	16.53	pass
11G	H	2462	Ant 1	16.56	pass
11N20	L	2412	Ant 1	17.73	pass
11N20	M	2437	Ant 1	17.75	pass
11N20	H	2462	Ant 1	17.73	pass



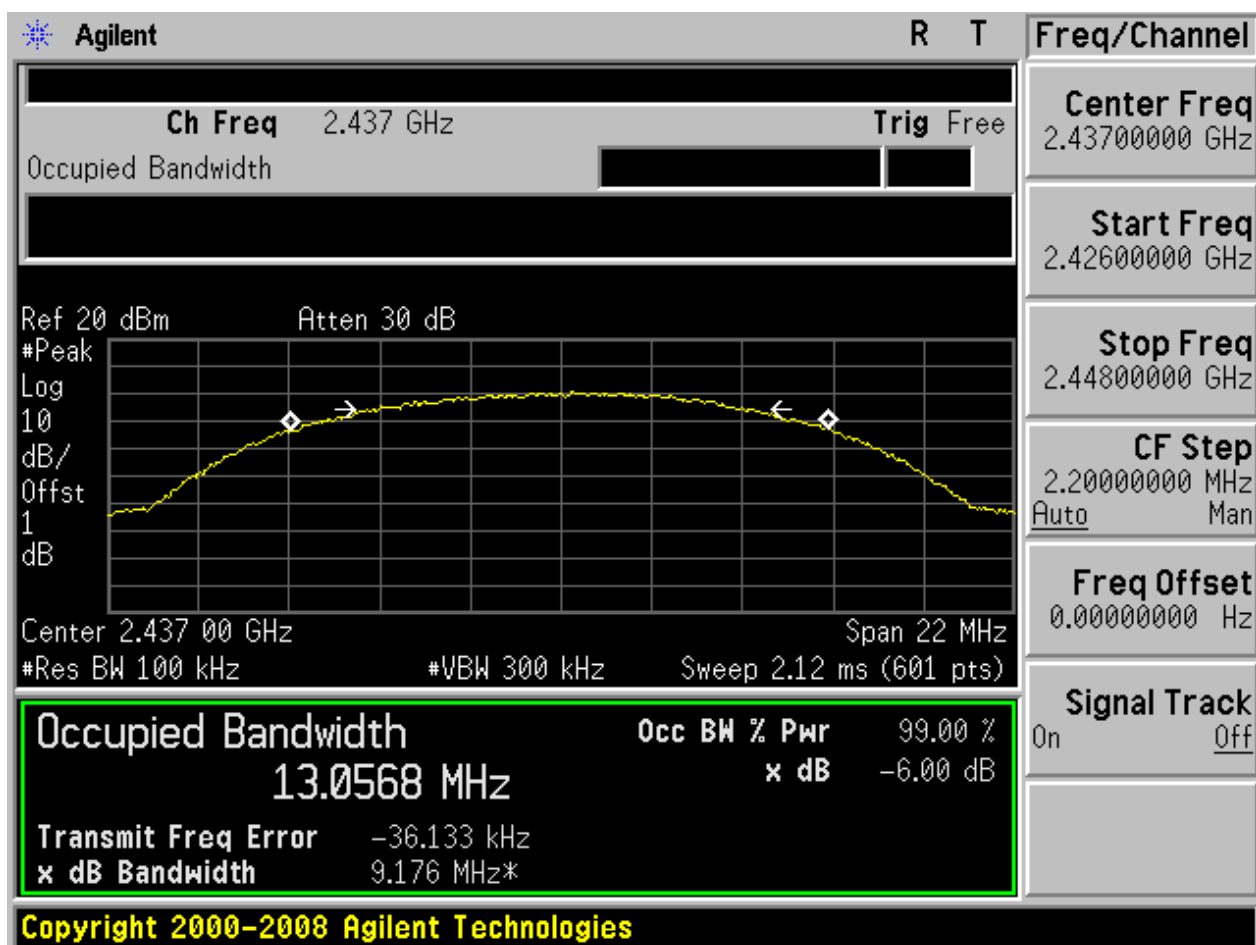
Part II - Test Plots

2.1 11B_L@Ant 1



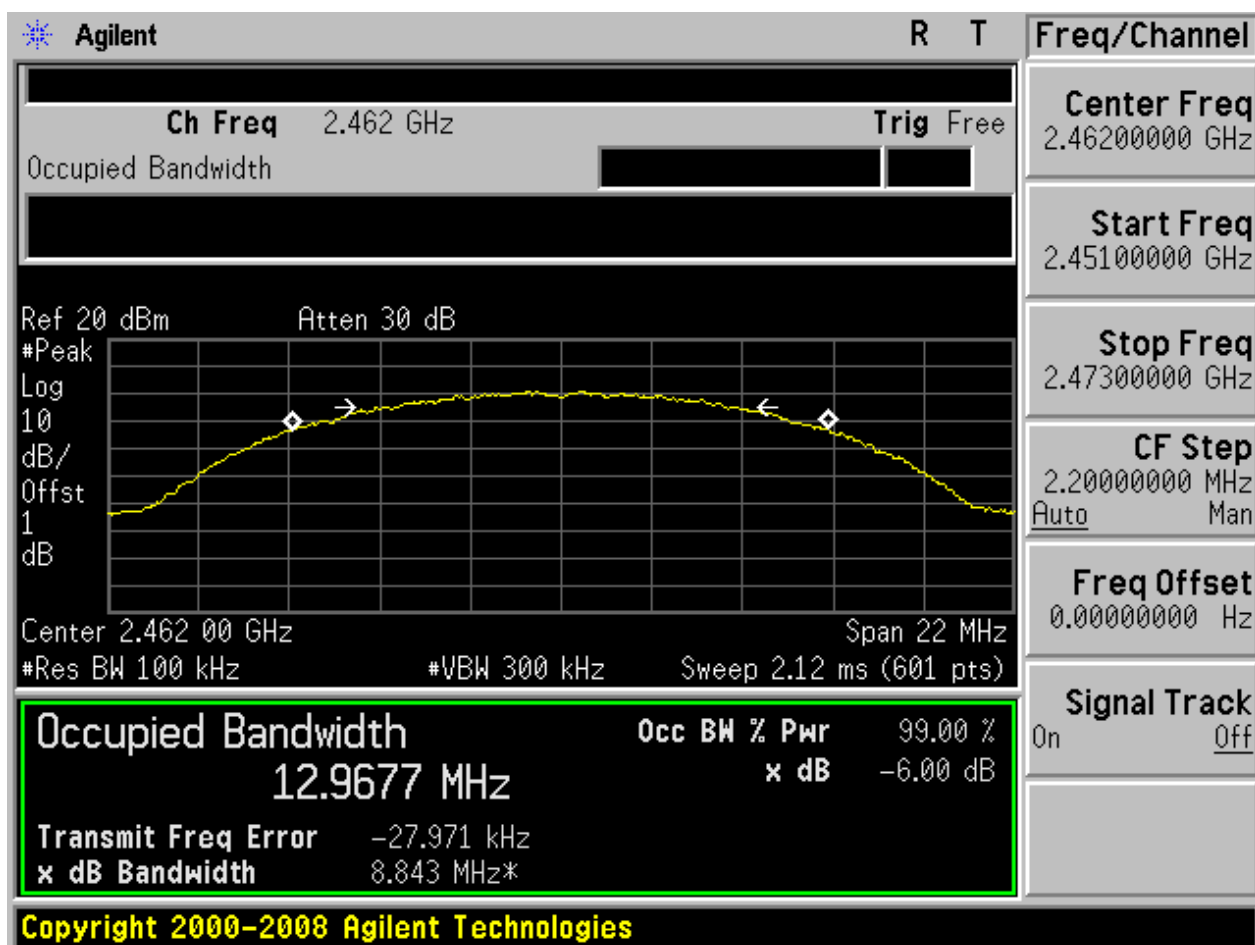


2.2 11B_M@Ant 1



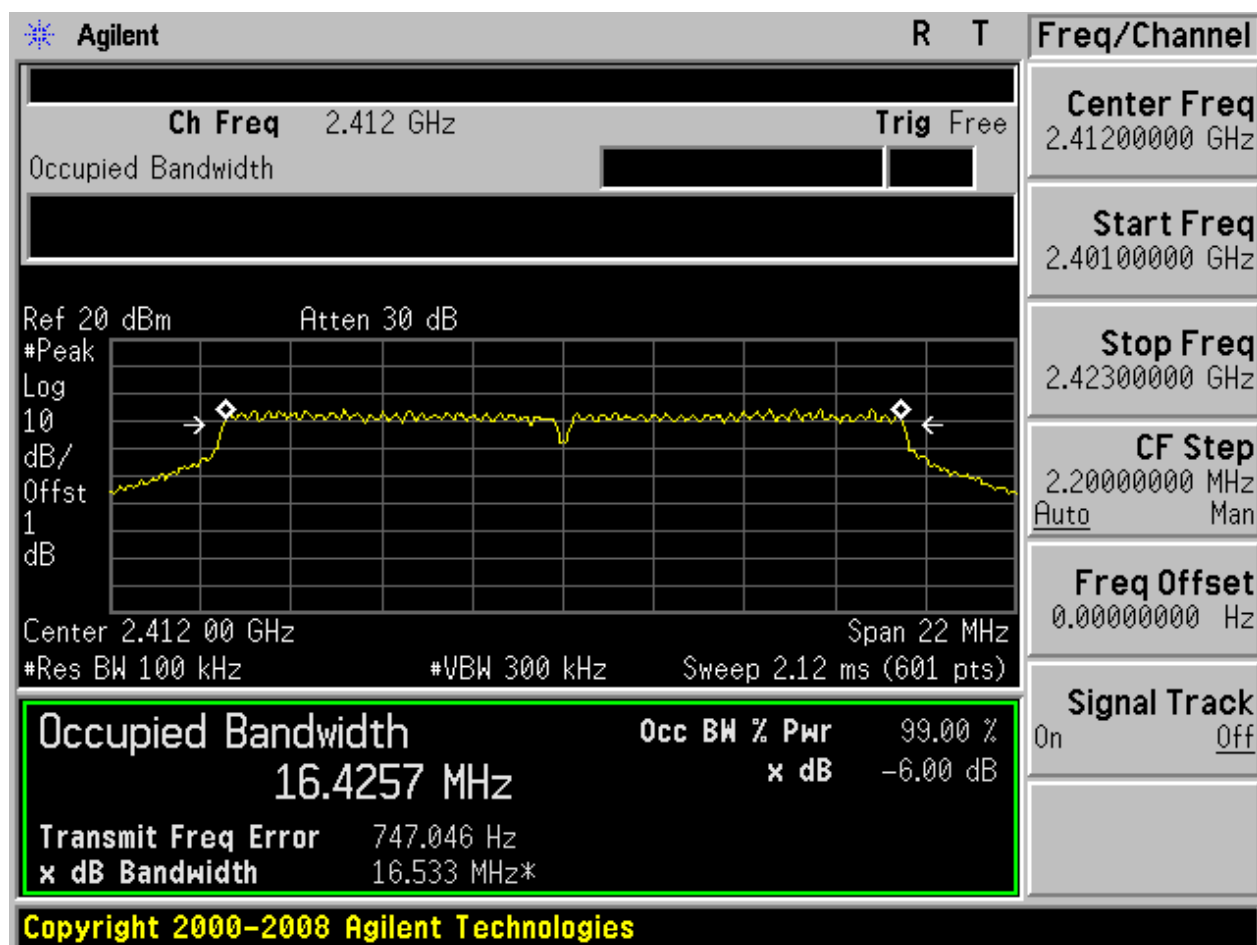


2.3 11B_H@Ant 1



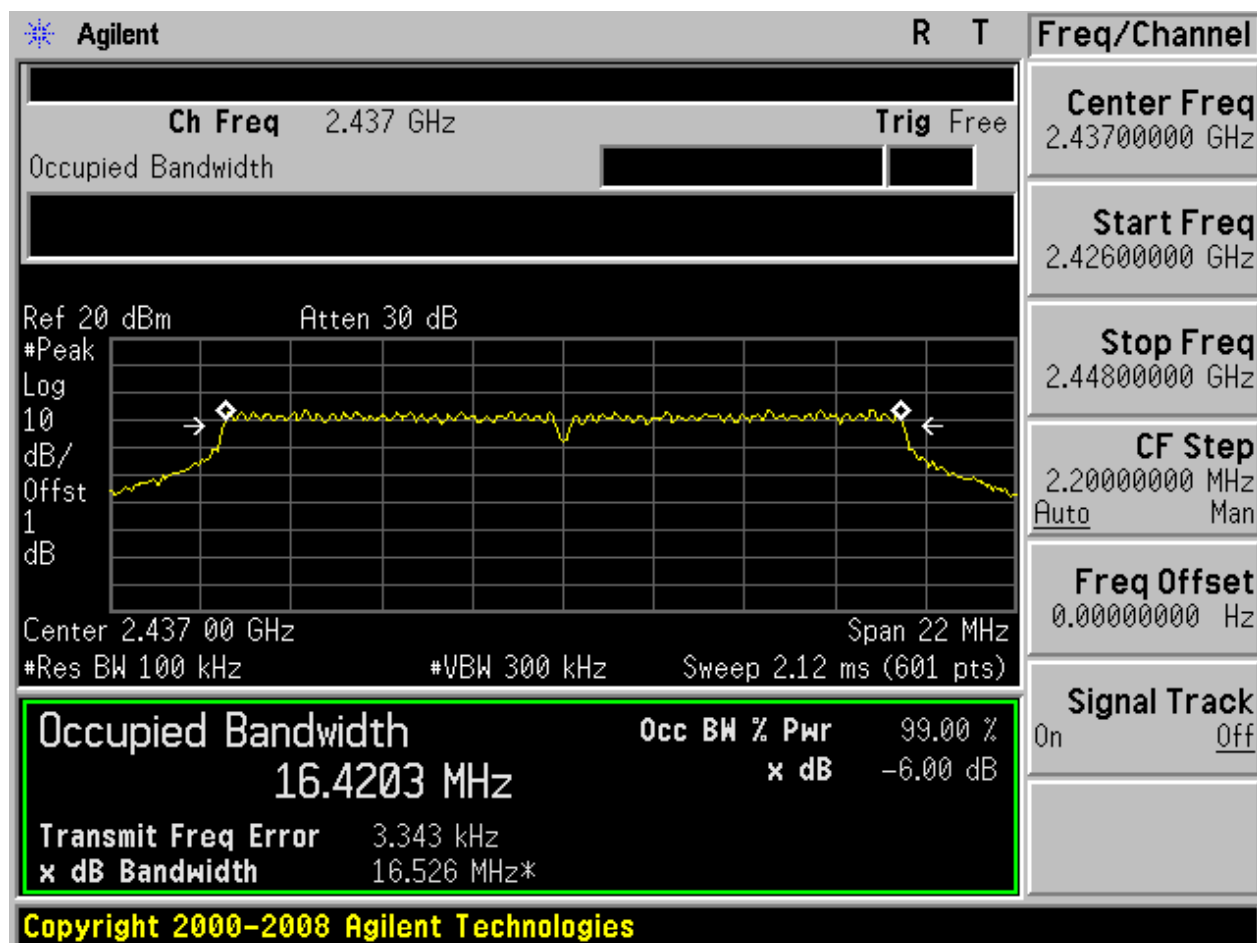


2.4 11G_L@Ant 1



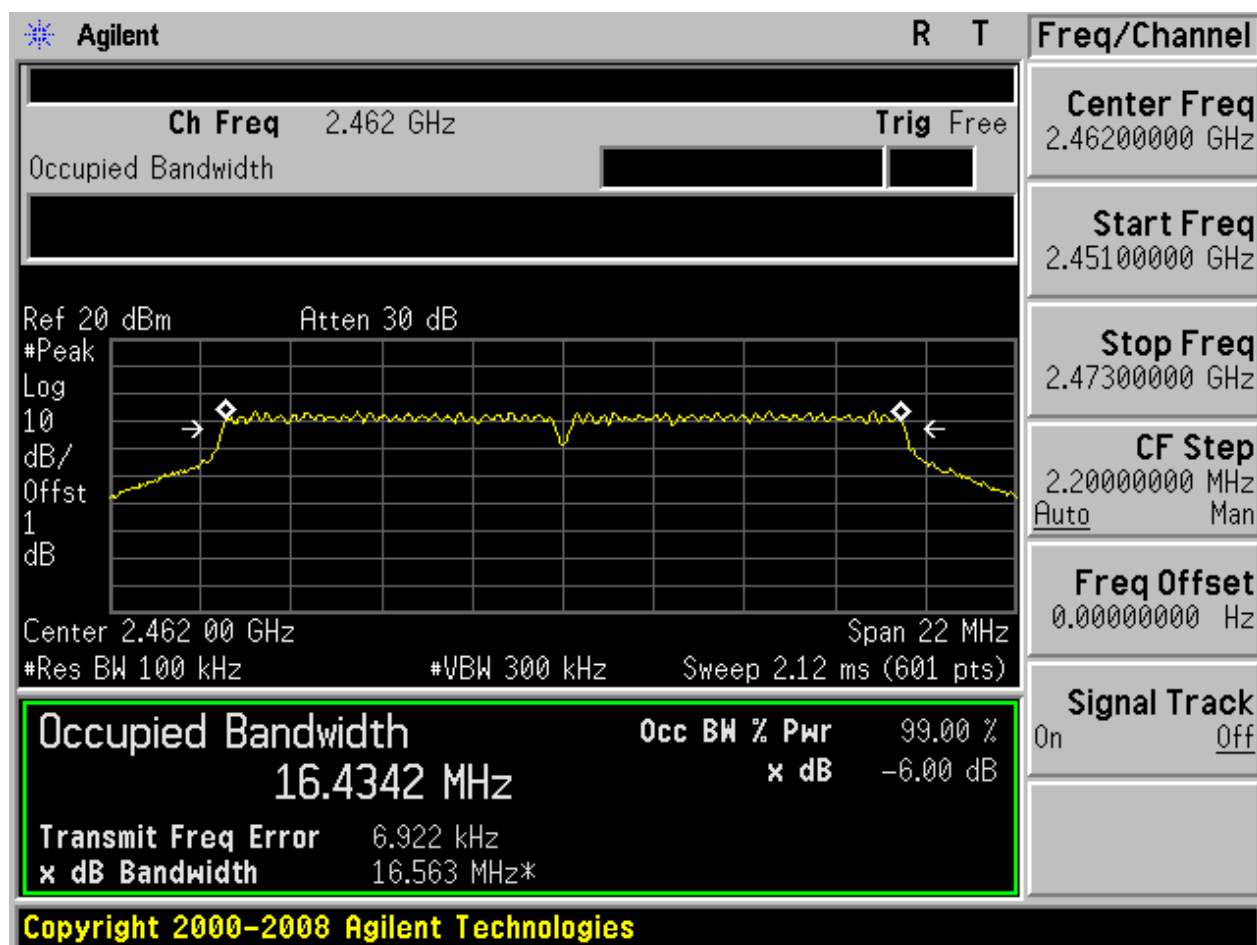


2.5 11G_M@Ant 1



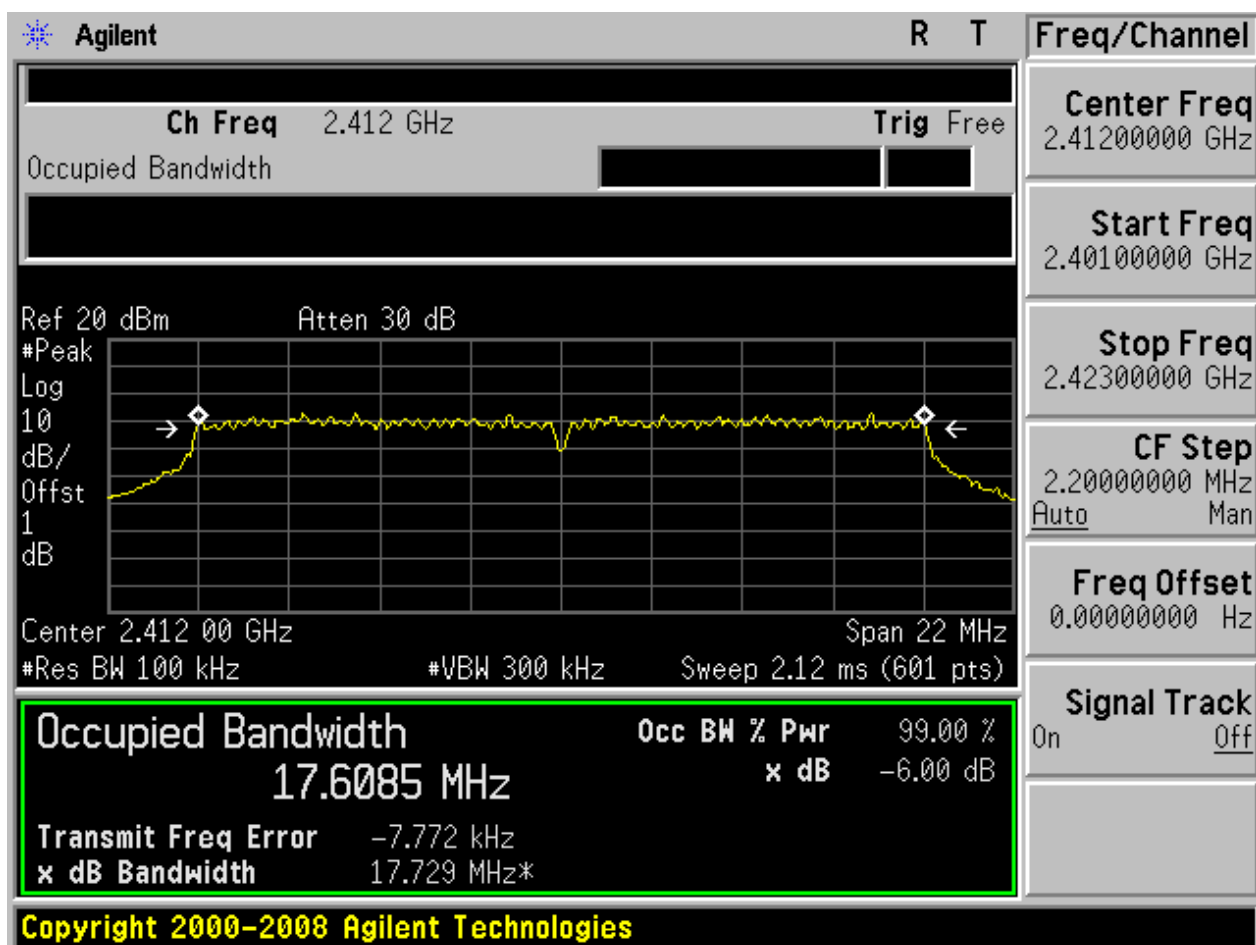


2.6 11G_H@Ant 1



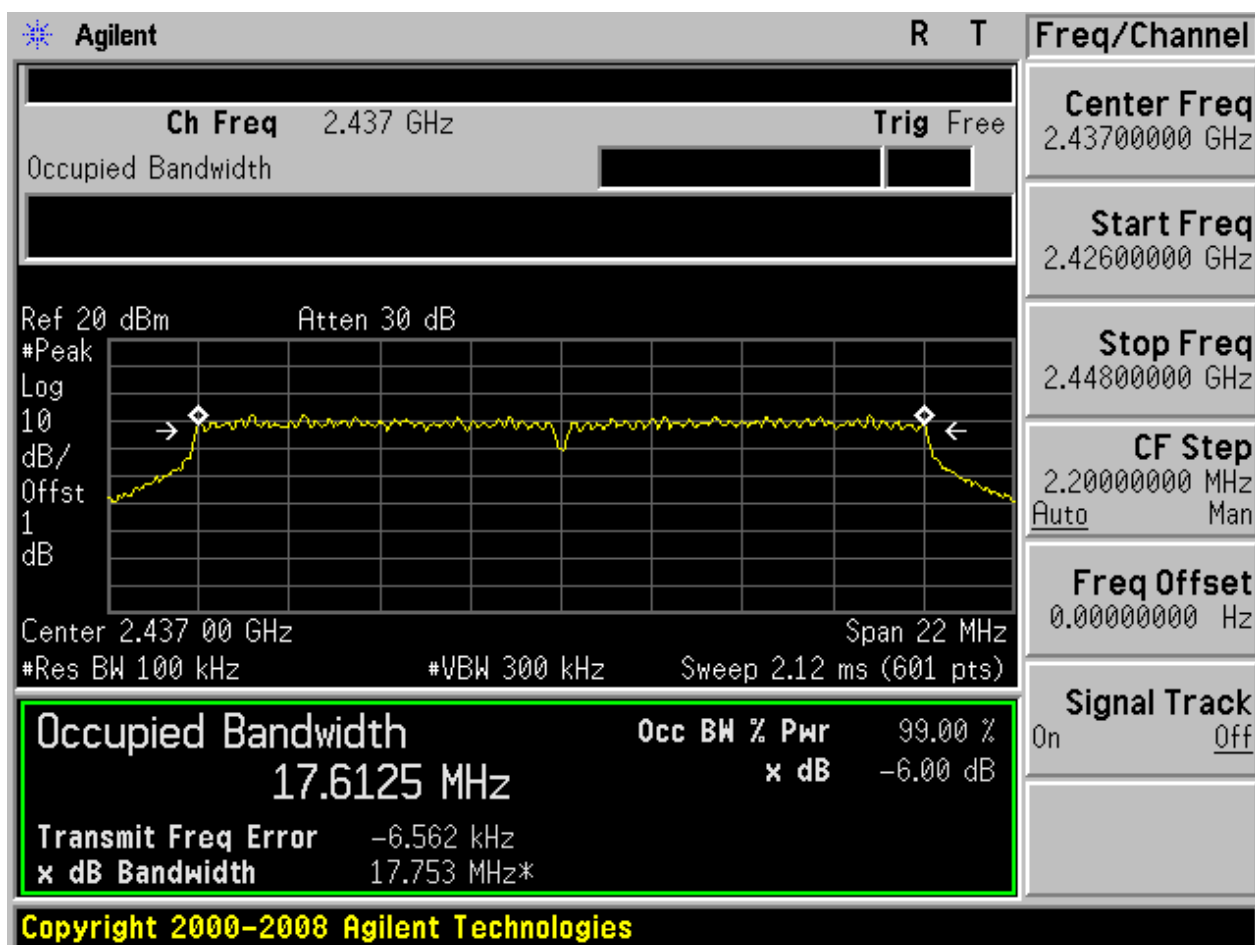


2.7 11N20_L@Ant 1



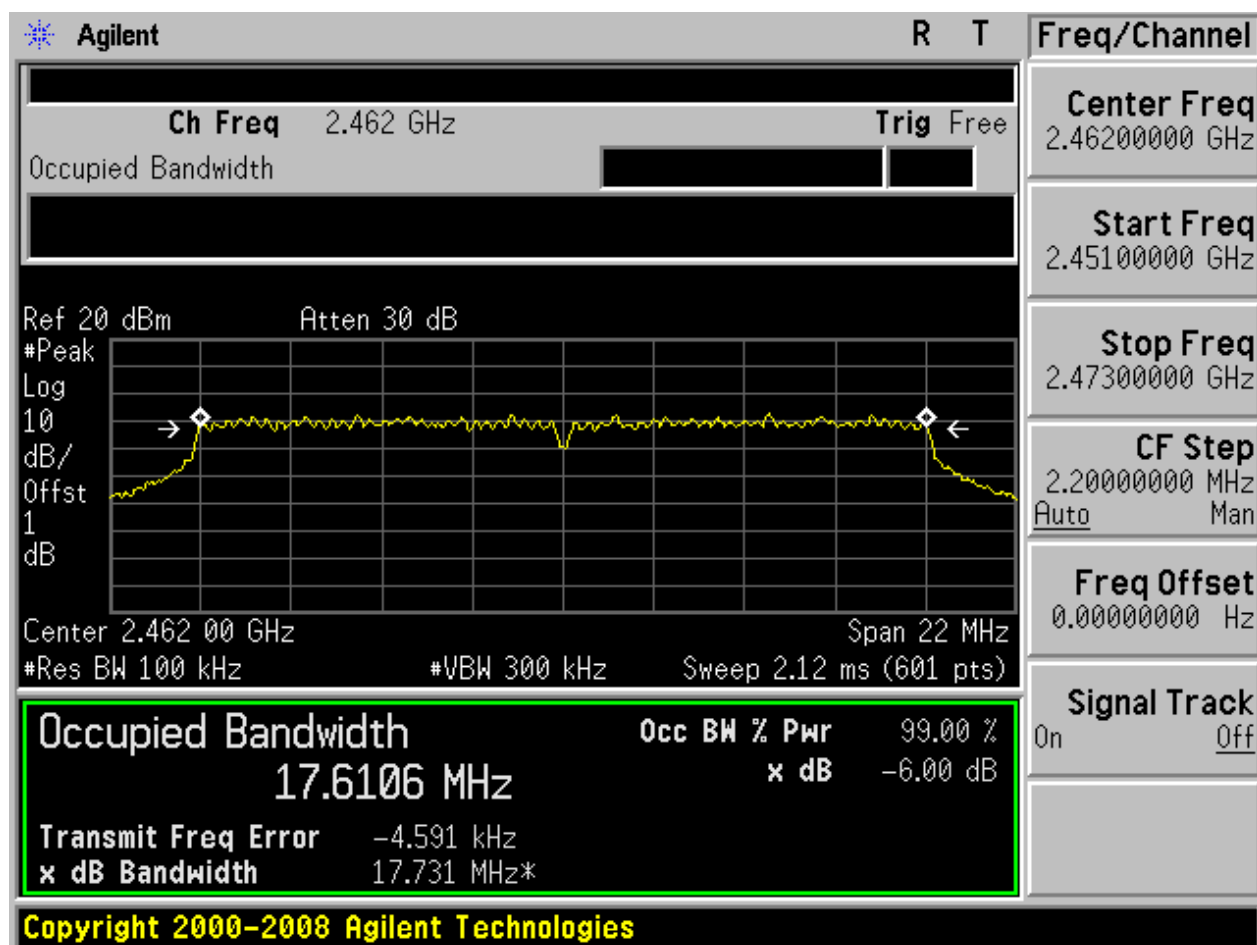


2.8 11N20_M@Ant 1





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.

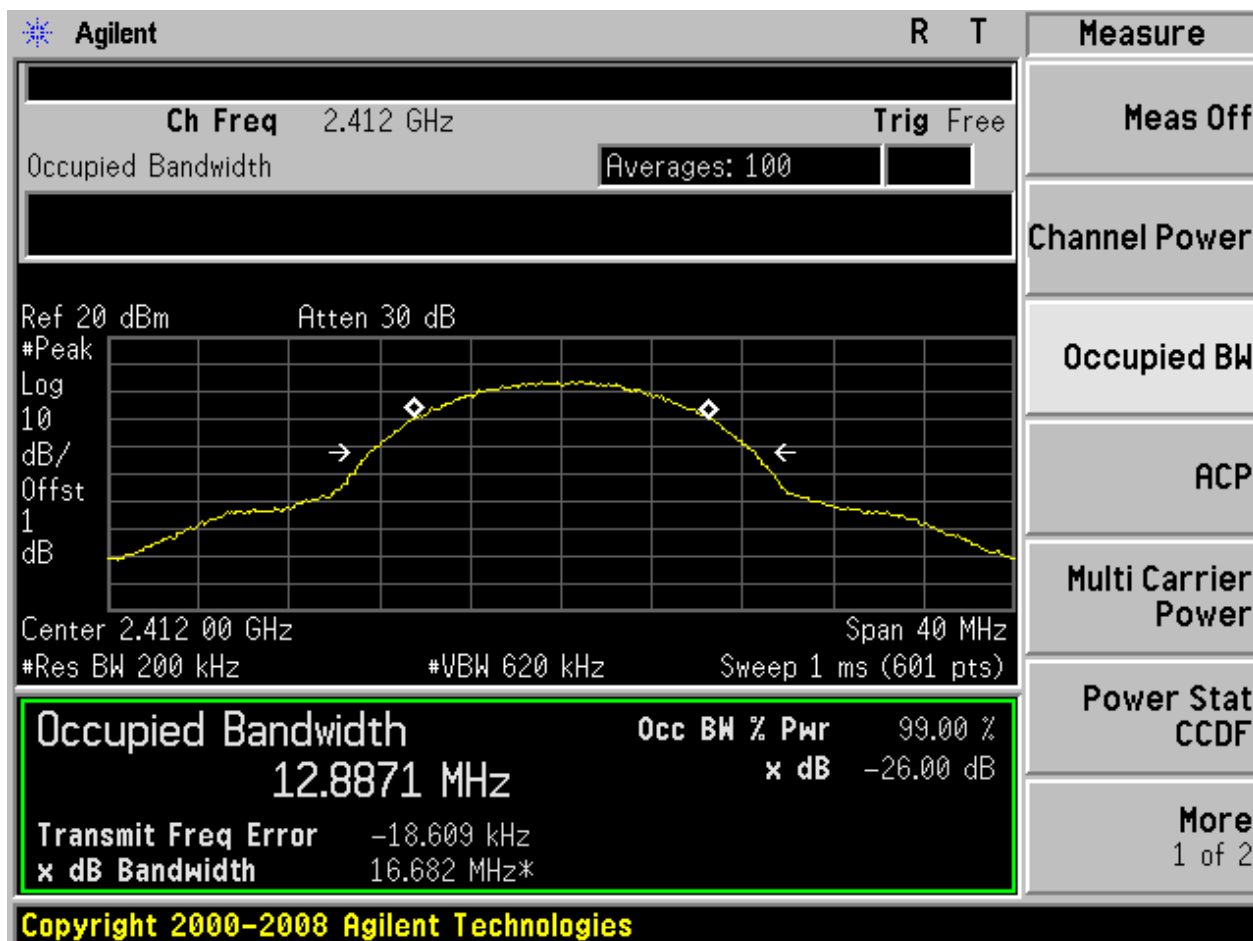
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	12.89	pass
11B	M	2437	Ant 1	13.08	pass
11B	H	2462	Ant 1	12.73	pass
11G	L	2412	Ant 1	16.54	pass
11G	M	2437	Ant 1	16.40	pass
11G	H	2462	Ant 1	16.34	pass
11N20	L	2412	Ant 1	17.41	pass
11N20	M	2437	Ant 1	17.57	pass
11N20	H	2462	Ant 1	17.59	pass



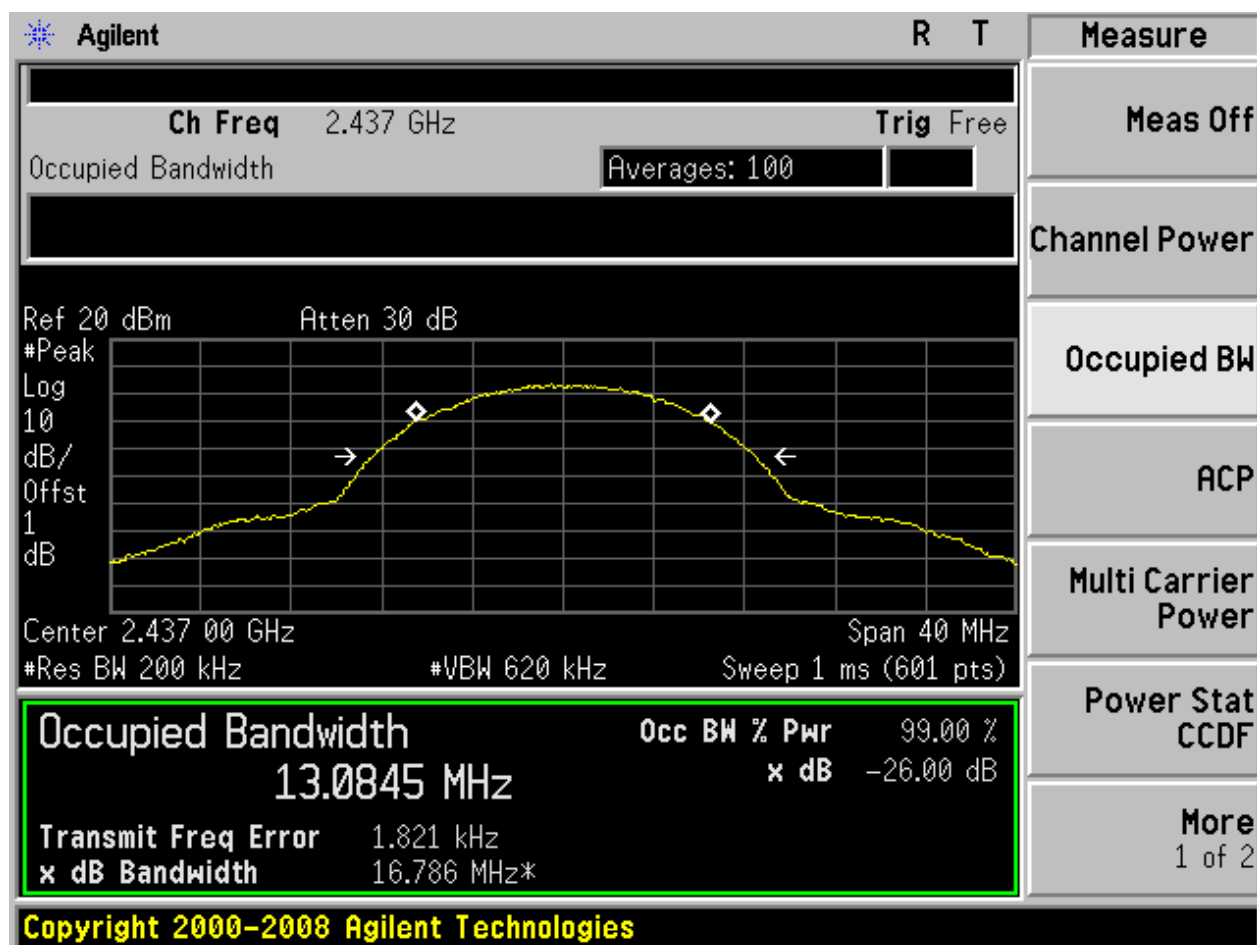
Part II - Test Plots

2.1 11B_L@Ant 1



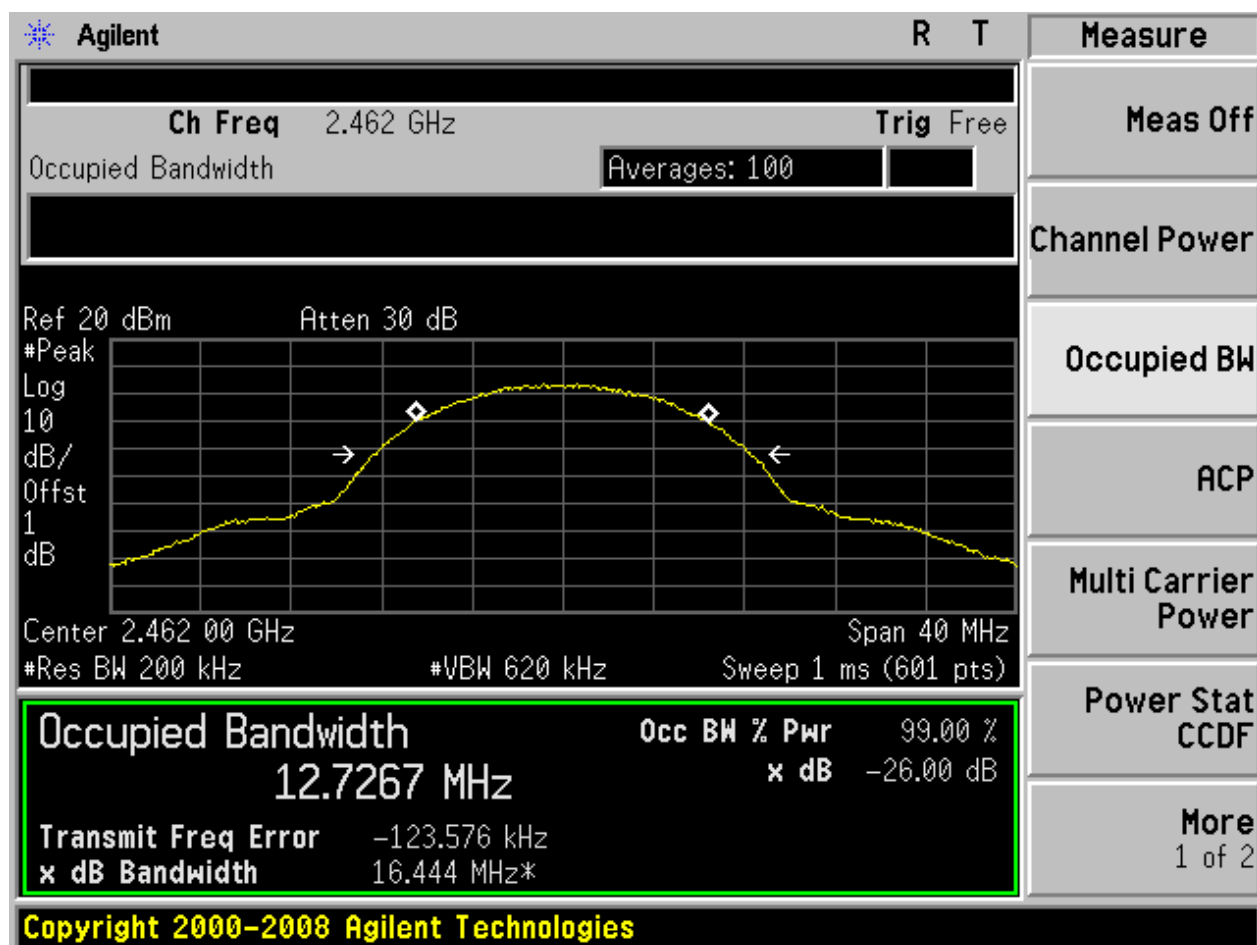


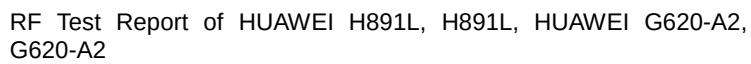
2.2 11B_M@Ant 1





2.3 11B_H@Ant 1





Agilent R T

Ch Freq 2.412 GHz **Trig** Free

Occupied Bandwidth Averages: 100

Ref 20 dBm Atten 30 dB

#Peak Log 10 dB/Offst 1 dB

Center 2.412 00 GHz Span 40 MHz

#Res BW 200 kHz #VBW 620 kHz Sweep 1 ms (601 pts)

Occupied Bandwidth 16.5391 MHz

Occ BW % Pwr 99.00 %

x dB -26.00 dB

Transmit Freq Error 3.660 kHz

x dB Bandwidth 20.455 MHz*

Measure

Meas Off

Channel Power

Occupied BW

ACP

Multi Carrier Power

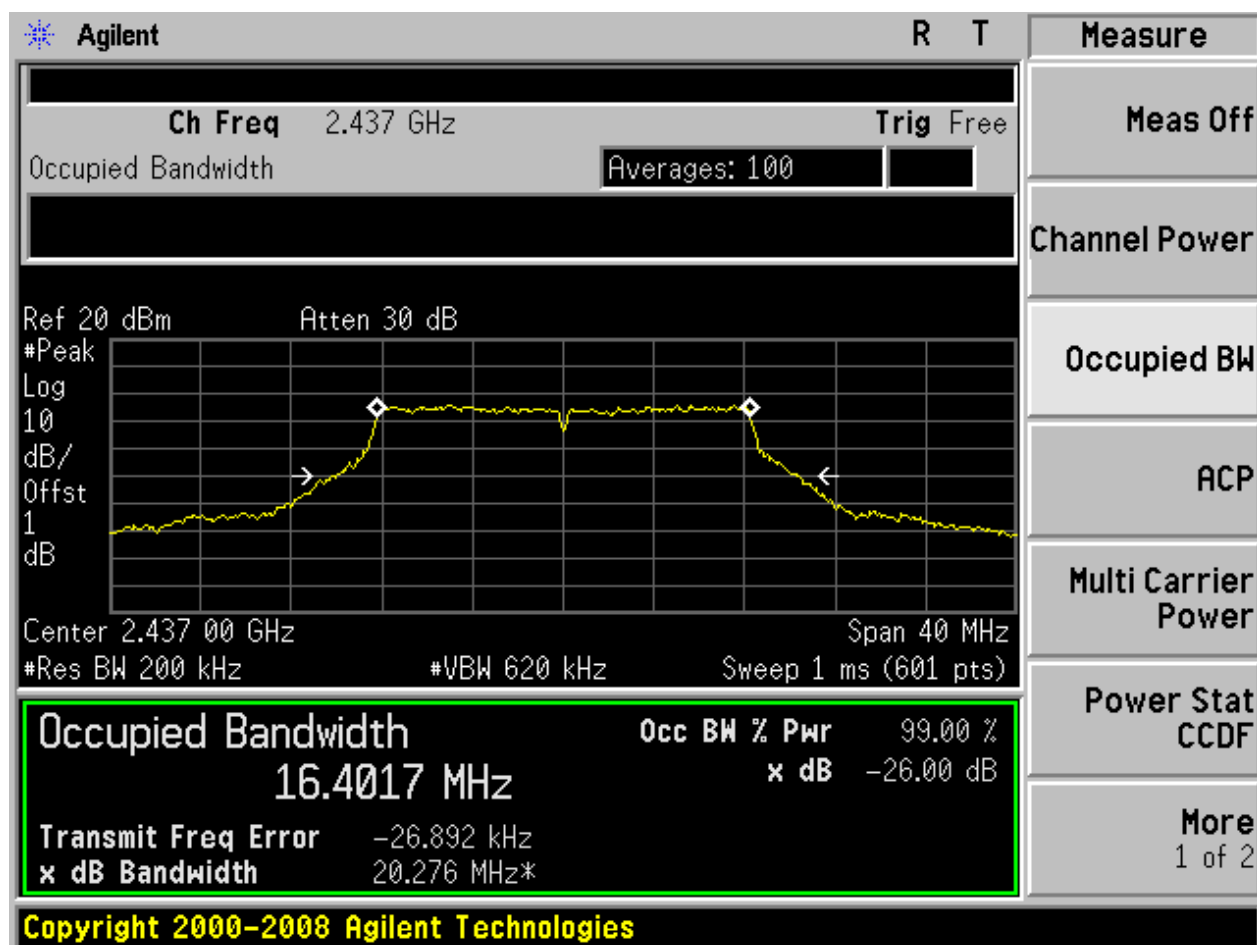
Power Stat CCDF

More 1 of 2

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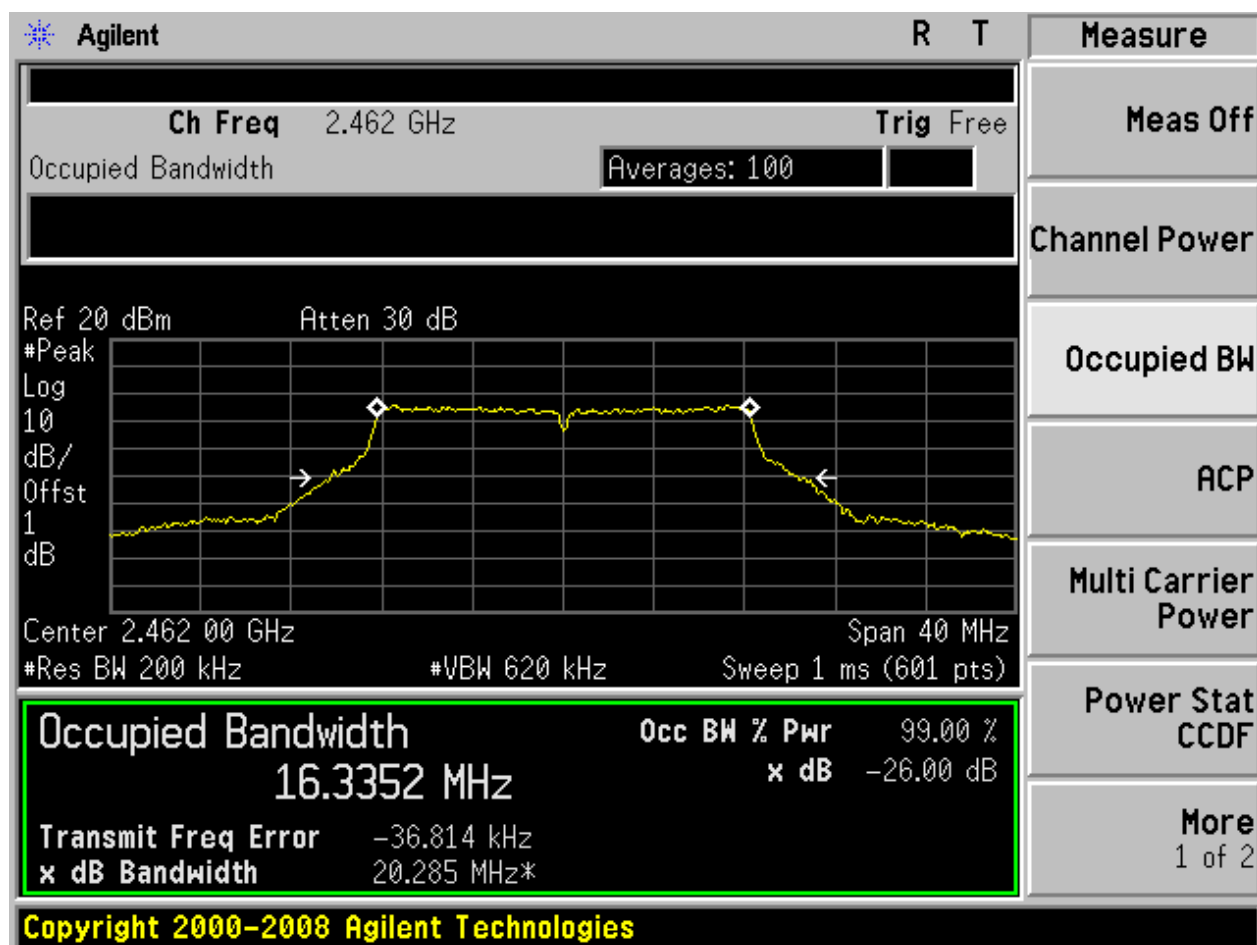


2.5 11G_M@Ant 1



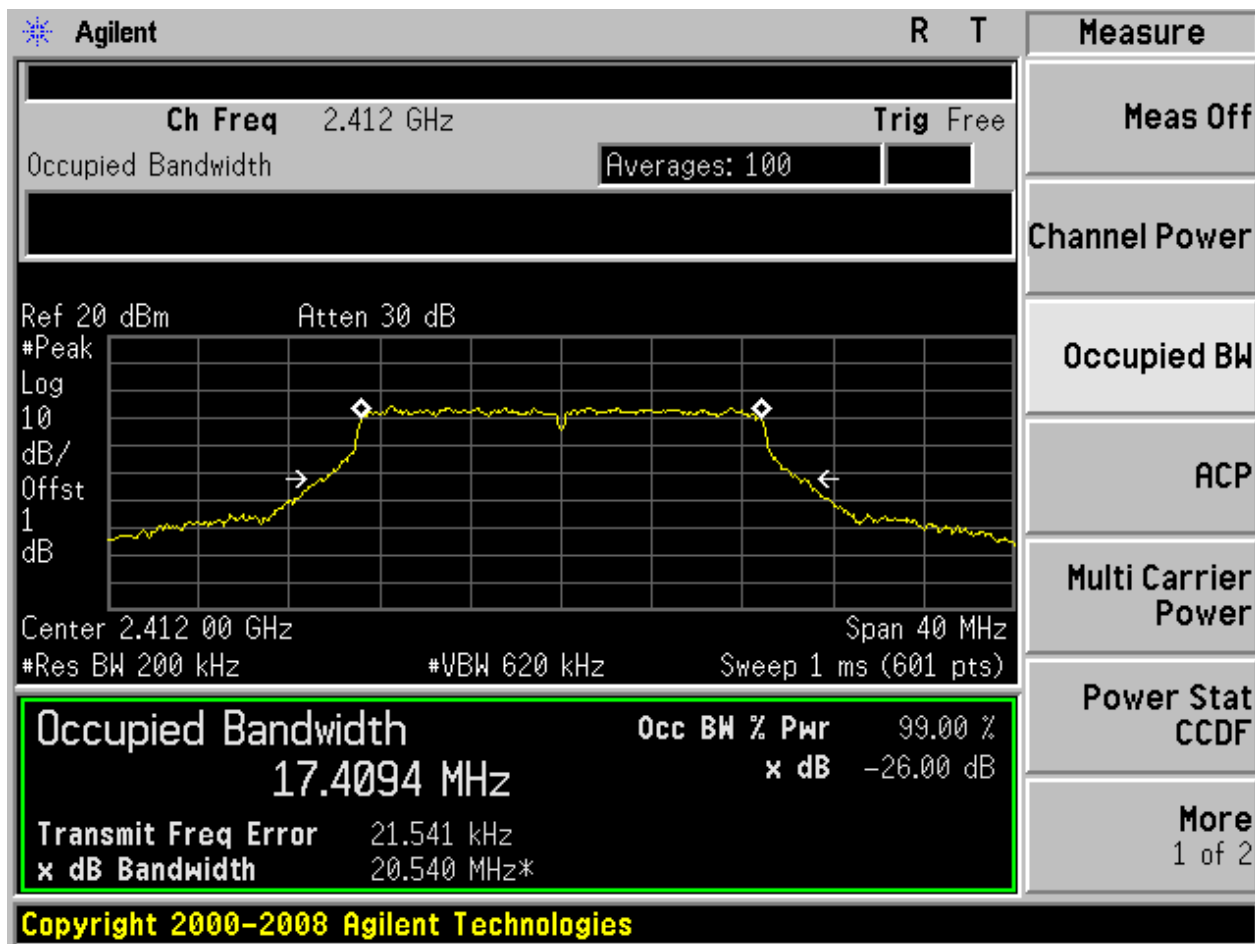


2.6 11G_H@Ant 1



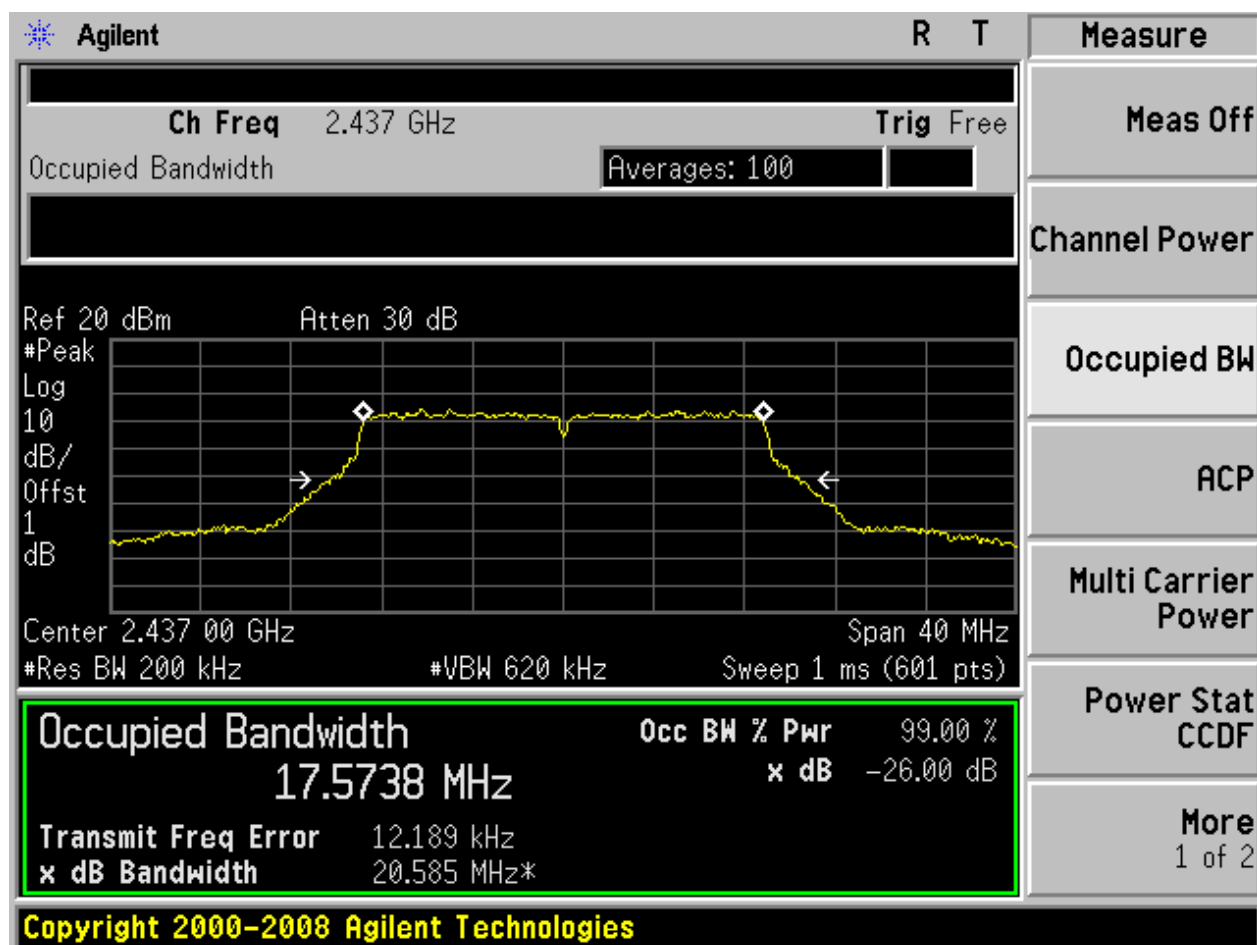


2.7 11N20_L@Ant 1



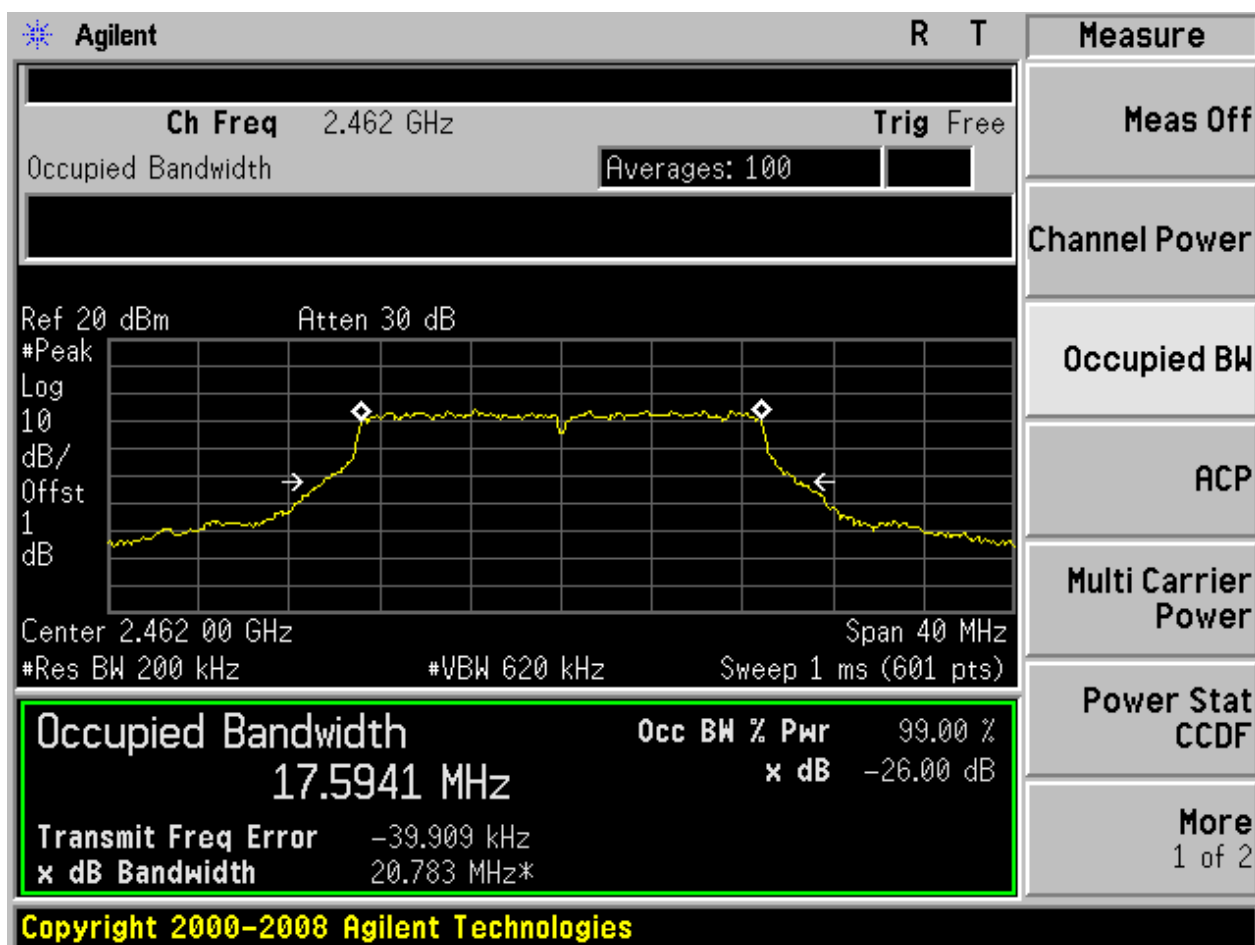


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1





Appendix C: Maximum Conducted Average Output Power

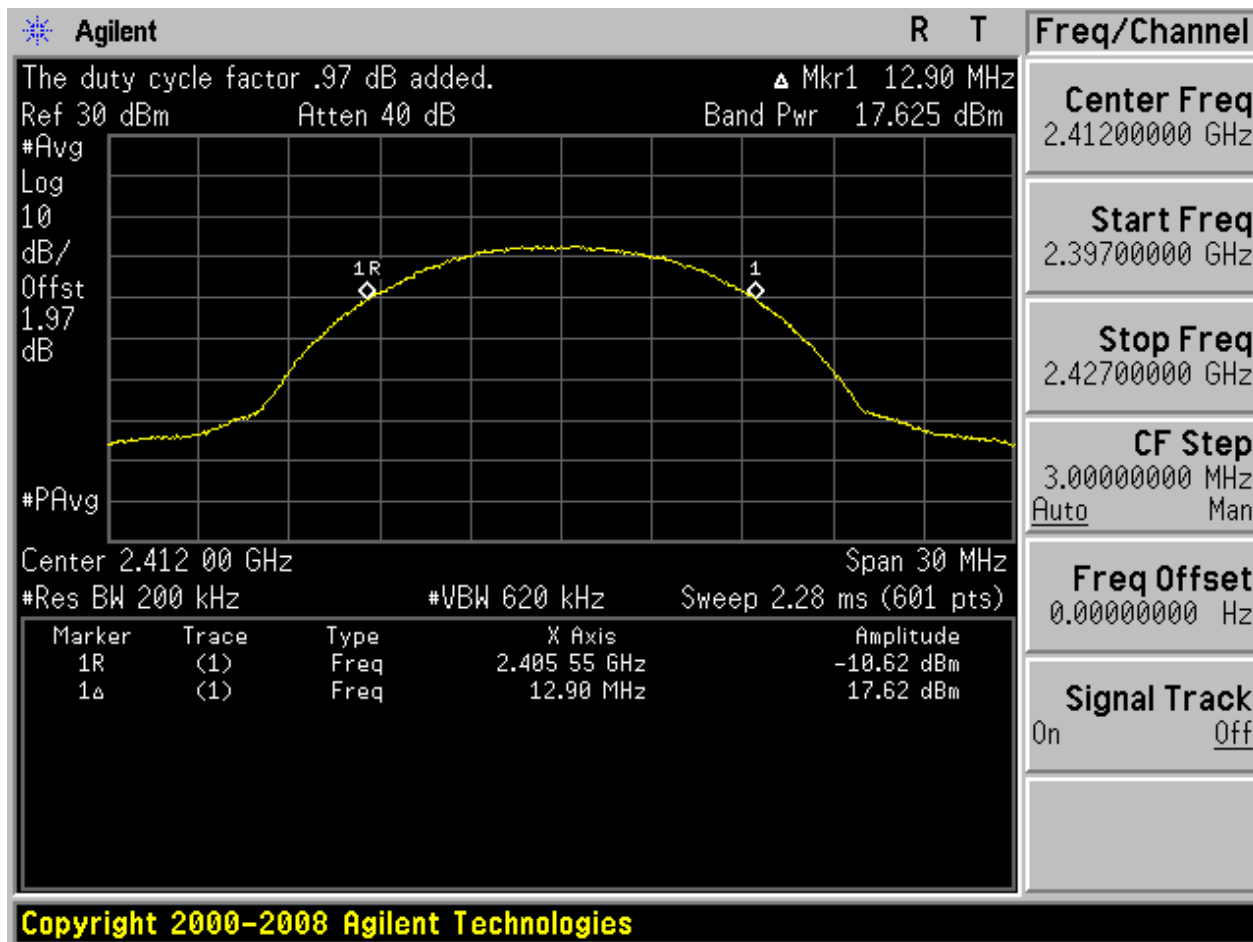
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	17.63	pass
11B	M	2437	Ant 1	17.12	pass
11B	H	2462	Ant 1	17.07	pass
11G	L	2412	Ant 1	15.11	pass
11G	M	2437	Ant 1	14.63	pass
11G	H	2462	Ant 1	14.63	pass
11N20	L	2412	Ant 1	13.38	pass
11N20	M	2437	Ant 1	13.15	pass
11N20	H	2462	Ant 1	13.13	pass



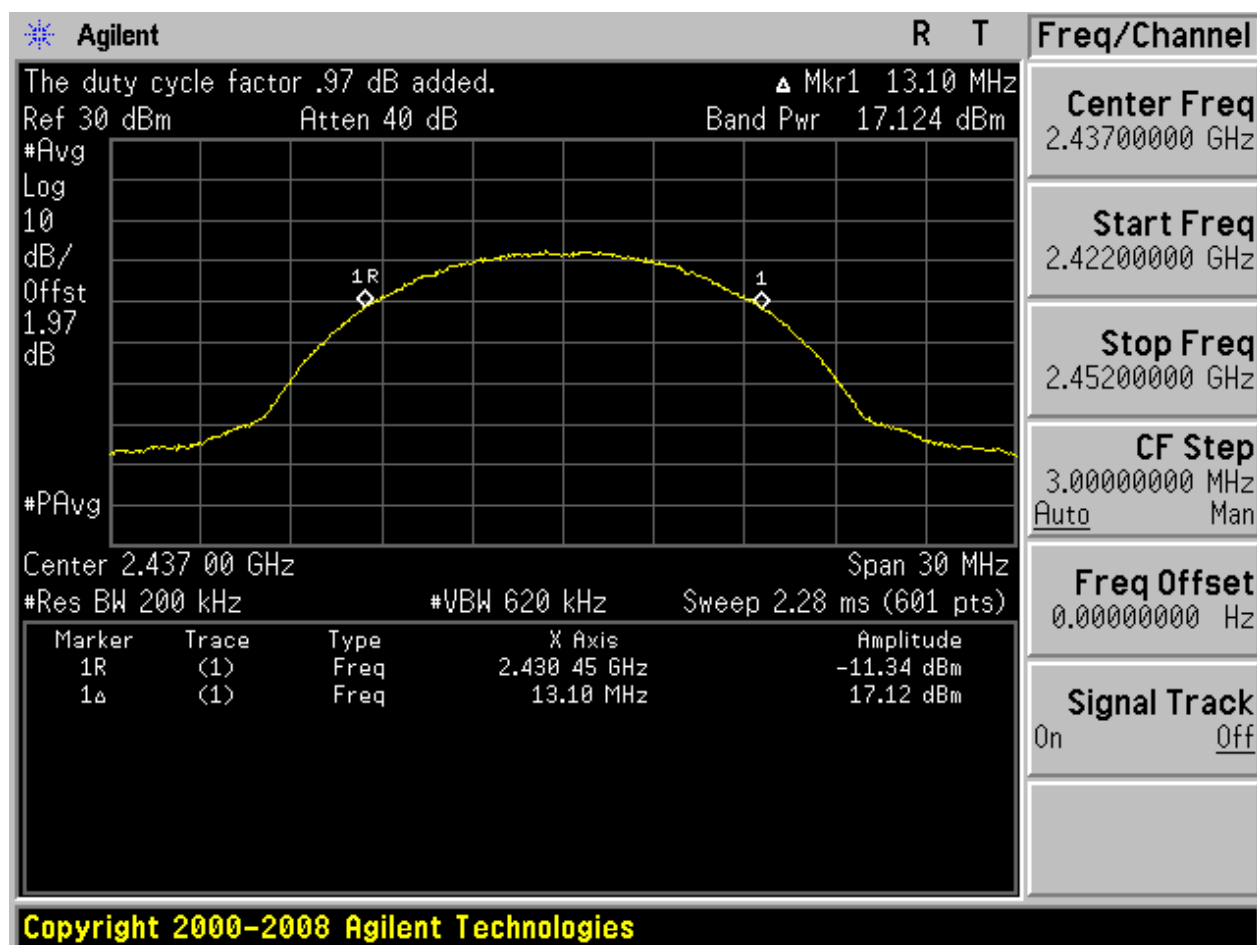
Part II - Test Plots

2.1 11B_L@Ant 1



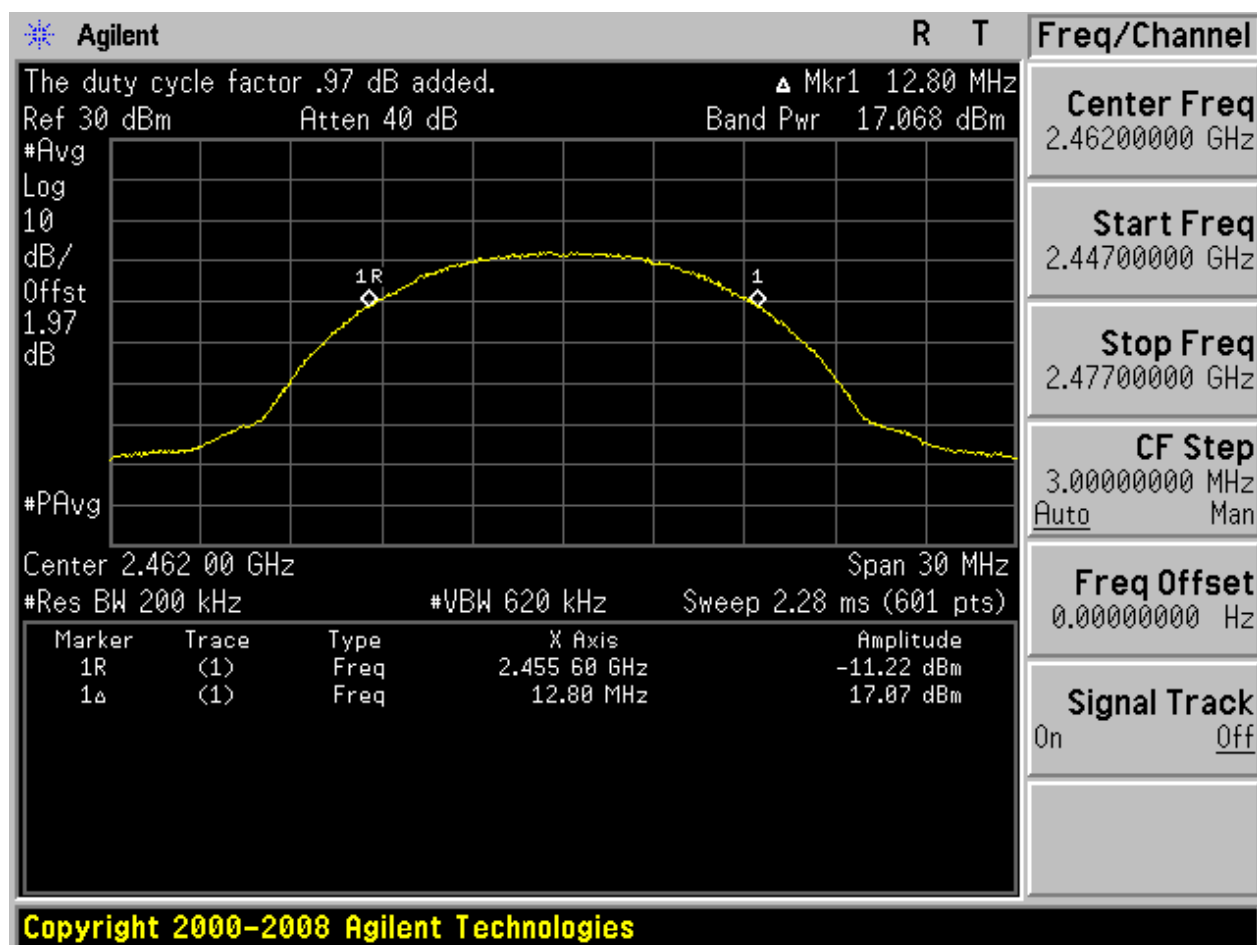


2.2 11B_M@Ant 1



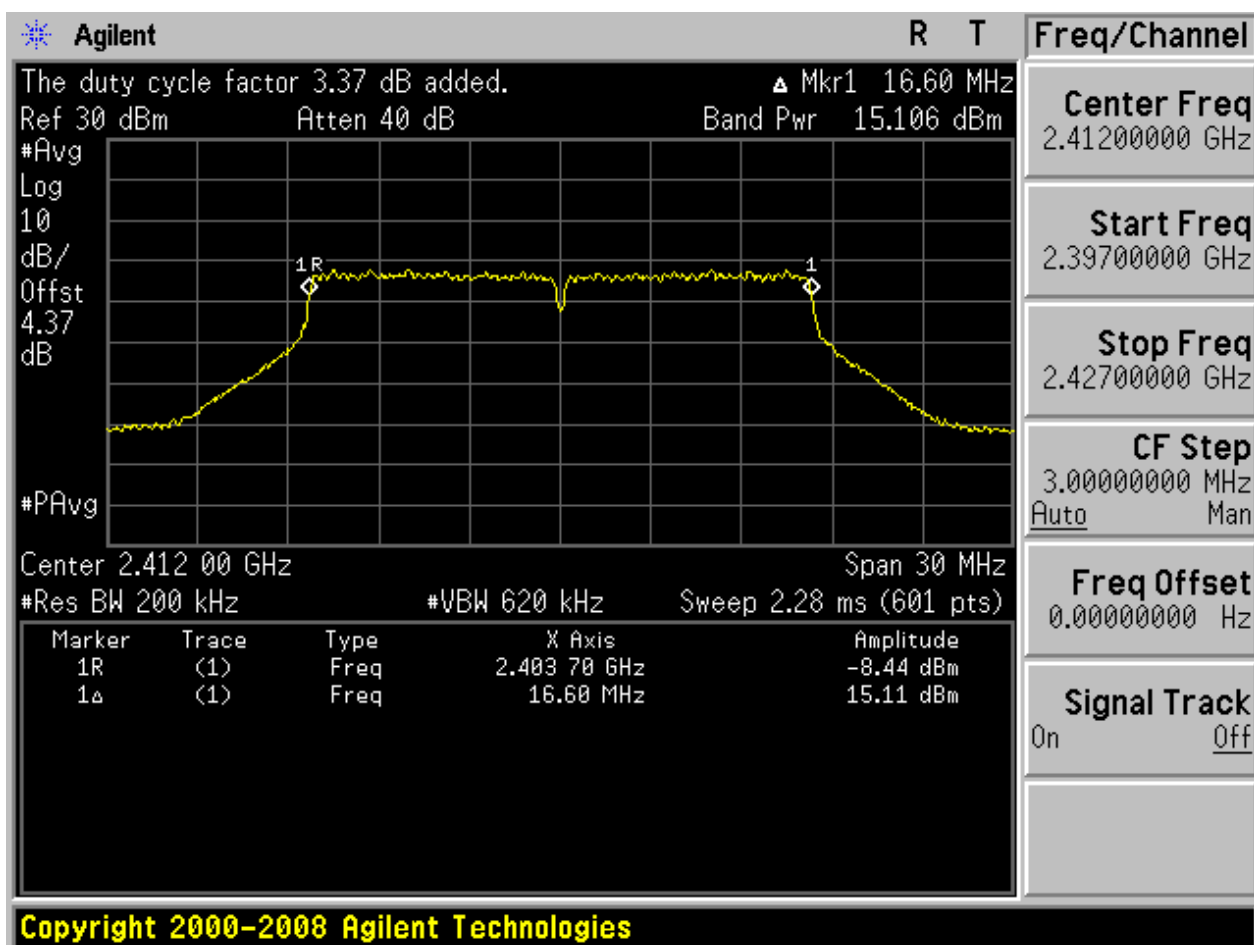


2.3 11B_H@Ant 1



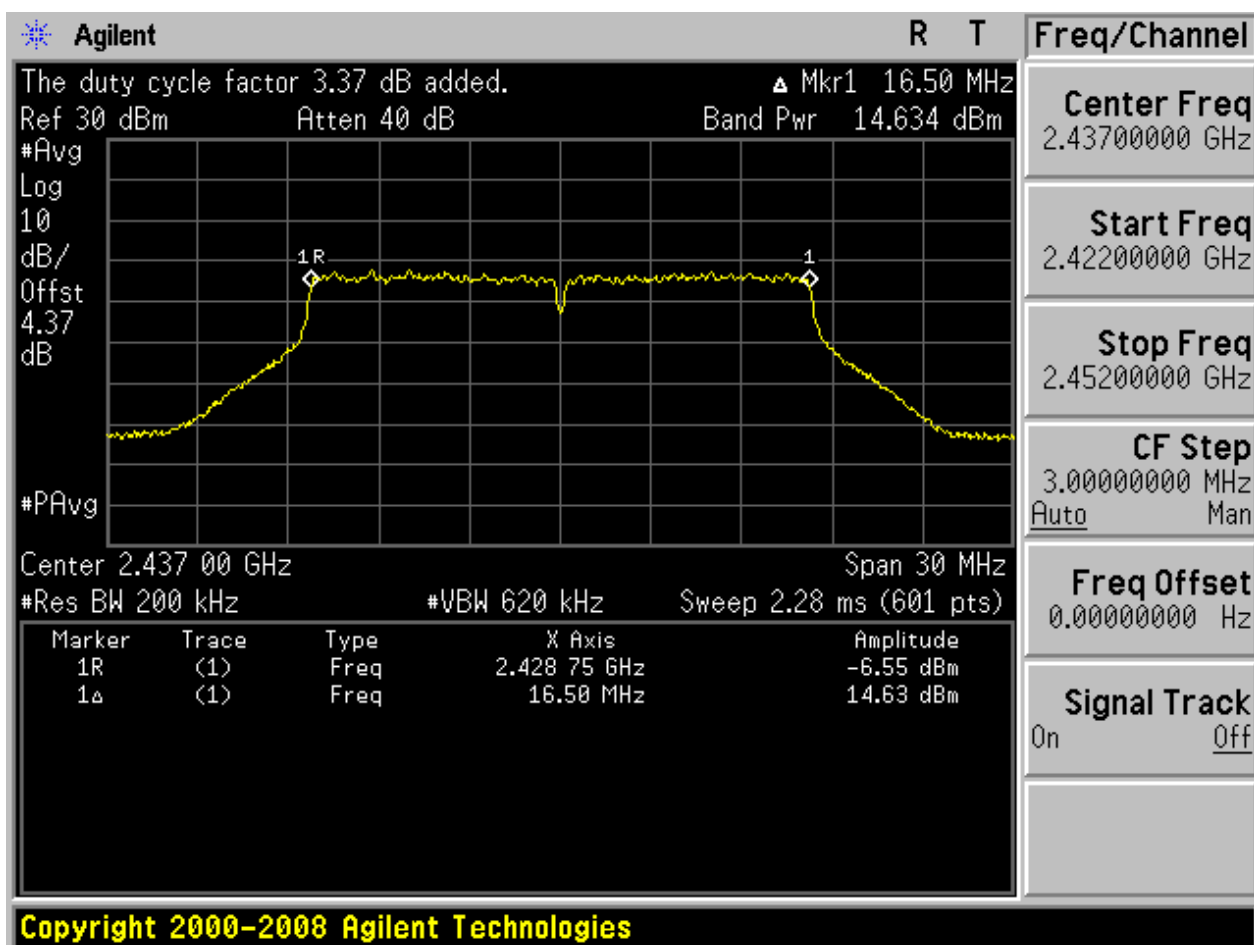


2.4 11G_L@Ant 1



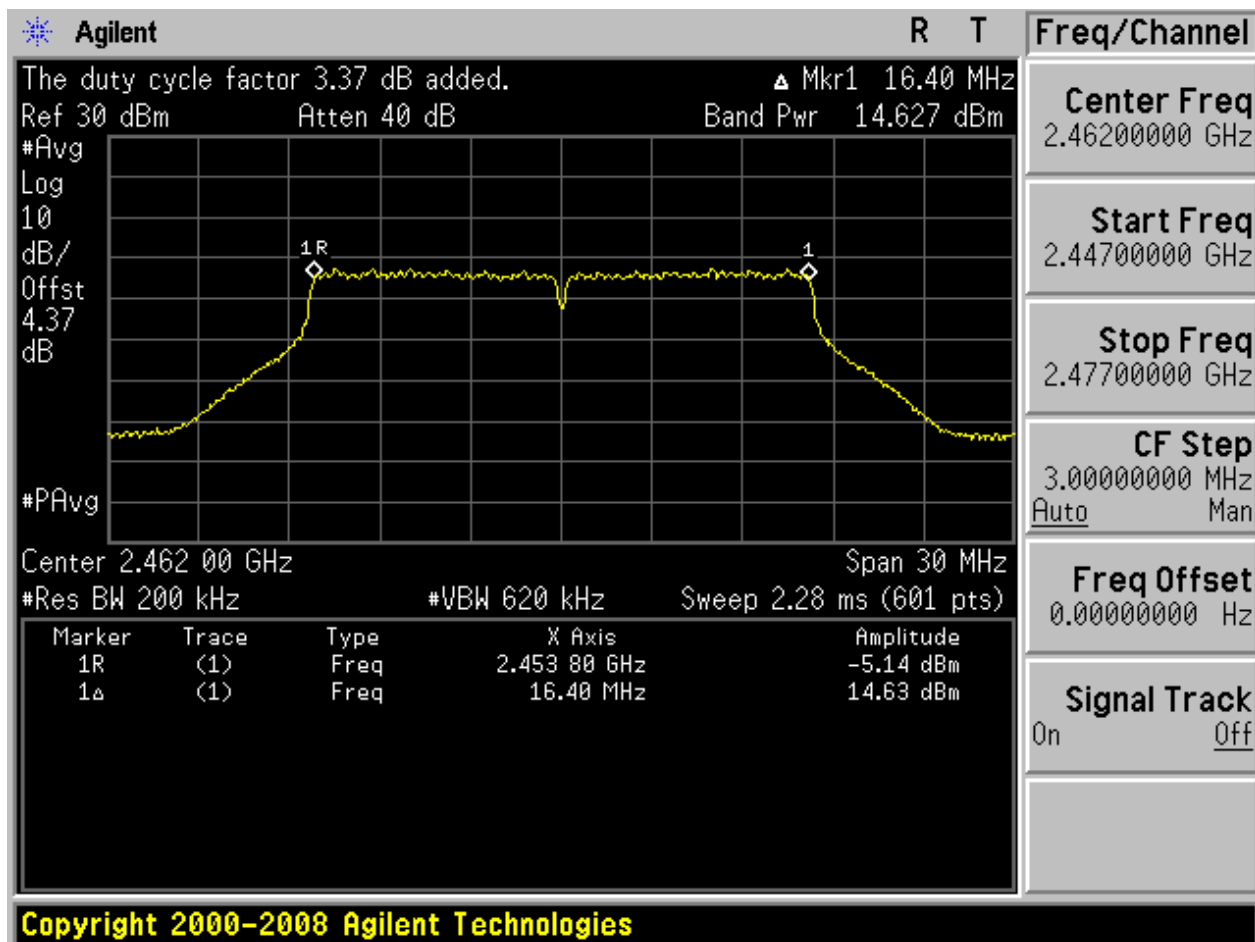


2.5 11G_M@Ant 1



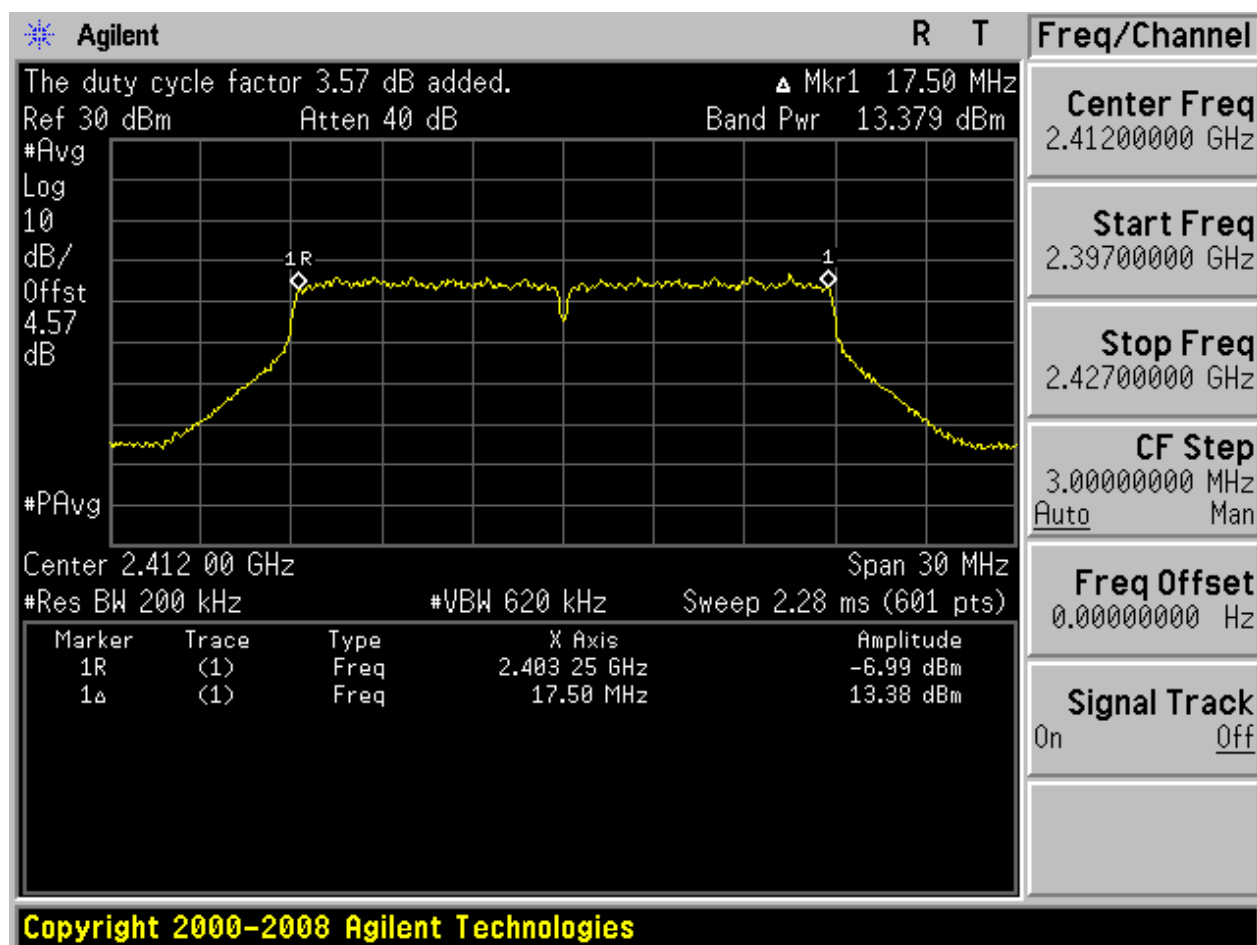


2.6 11G_H@Ant 1

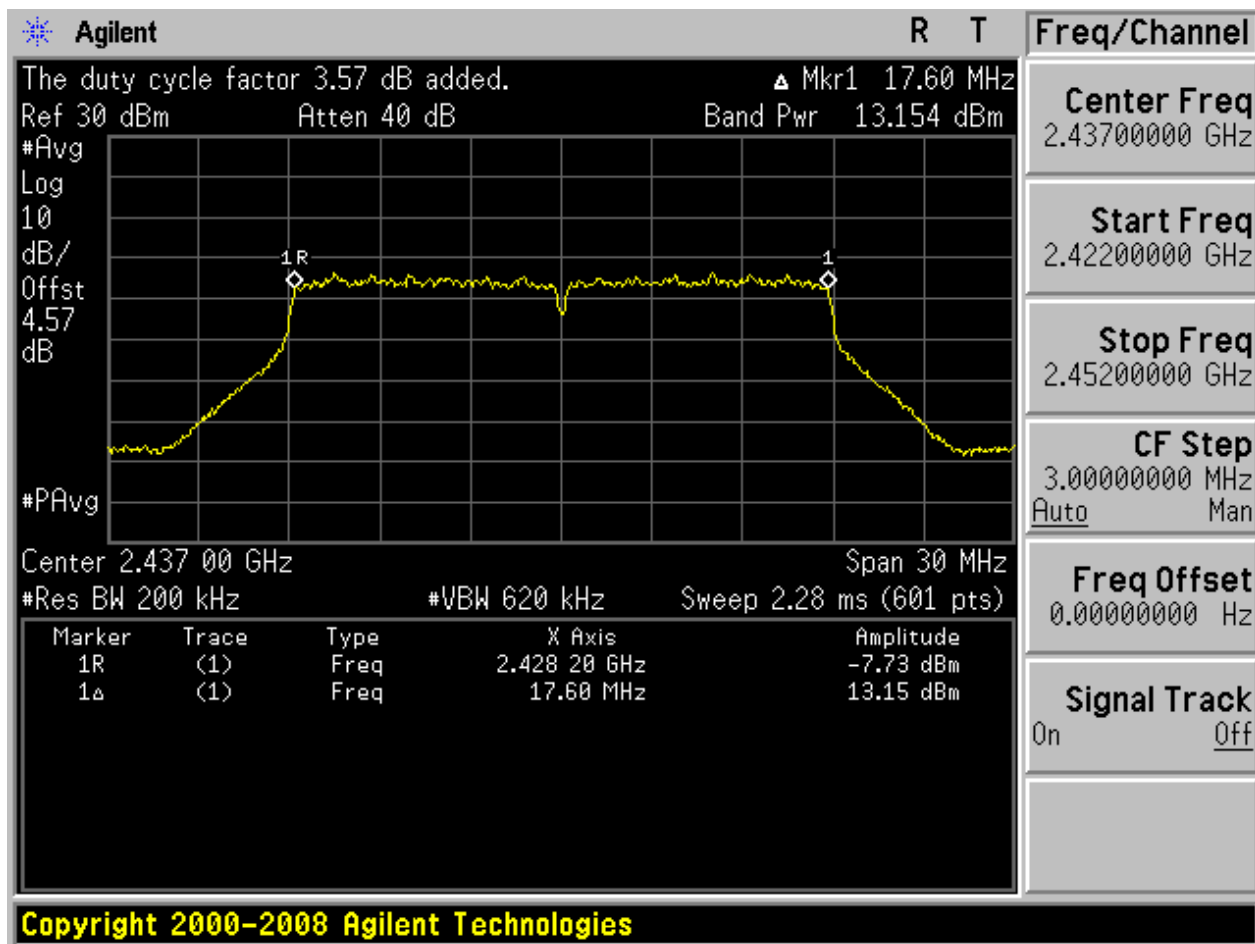




2.7 11N20_L@Ant 1

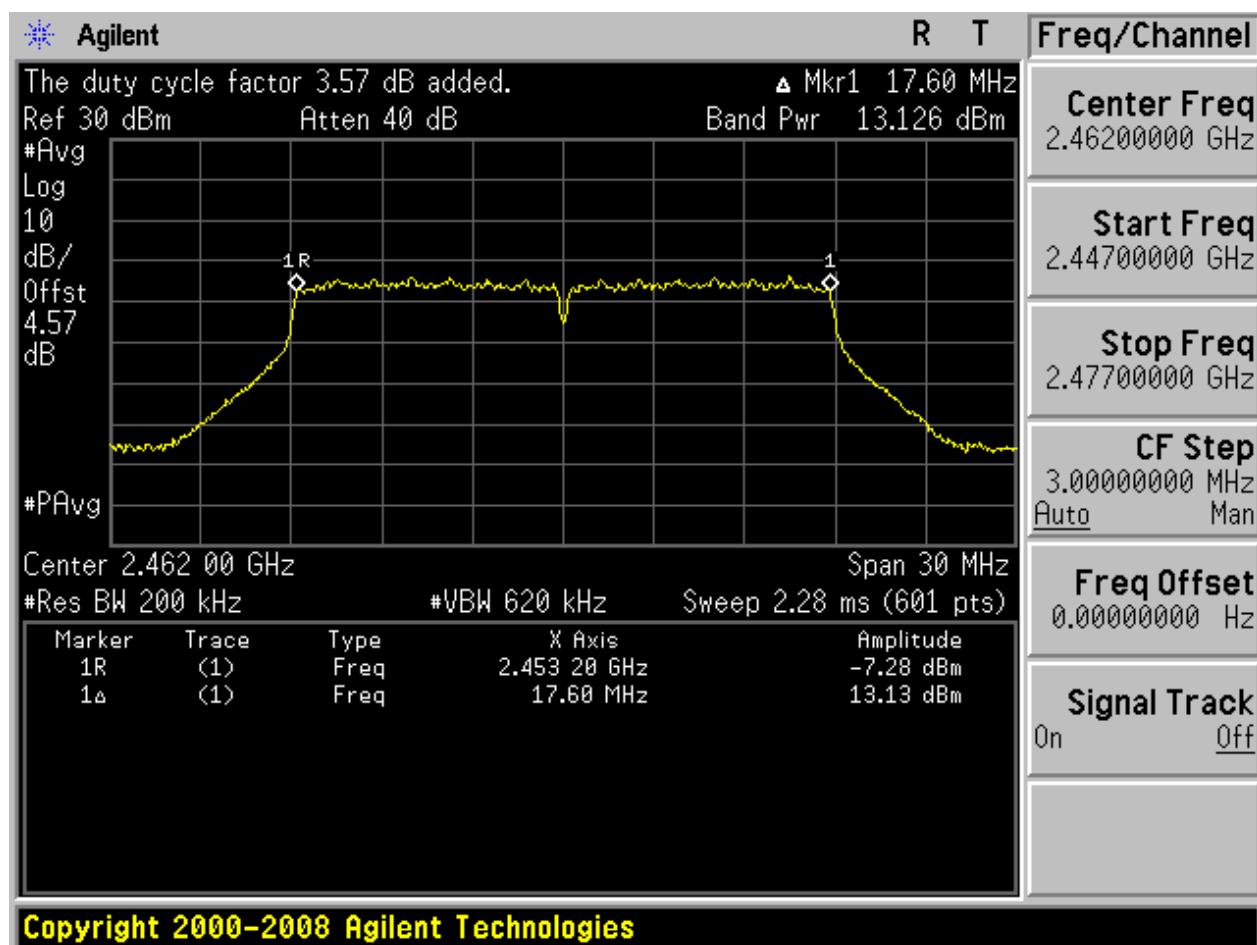


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1





Appendix D: Maximum Power Spectral Density Level

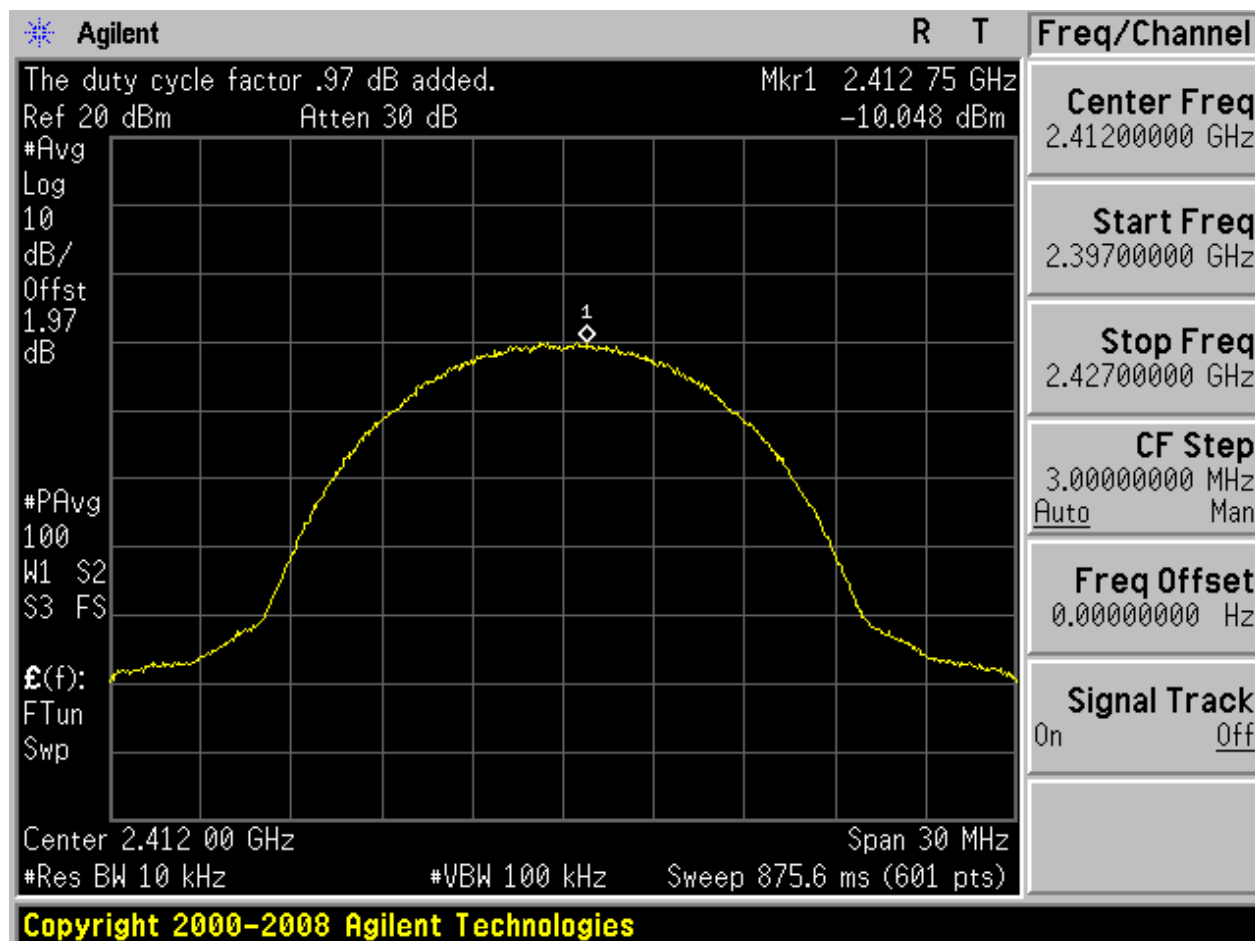
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-10.05	pass
11B	M	2437	Ant 1	-10.47	pass
11B	H	2462	Ant 1	-10.44	pass
11G	L	2412	Ant 1	-13.03	pass
11G	M	2437	Ant 1	-13.50	pass
11G	H	2462	Ant 1	-13.53	pass
11N20	L	2412	Ant 1	-13.98	pass
11N20	M	2437	Ant 1	-14.28	pass
11N20	H	2462	Ant 1	-14.15	pass



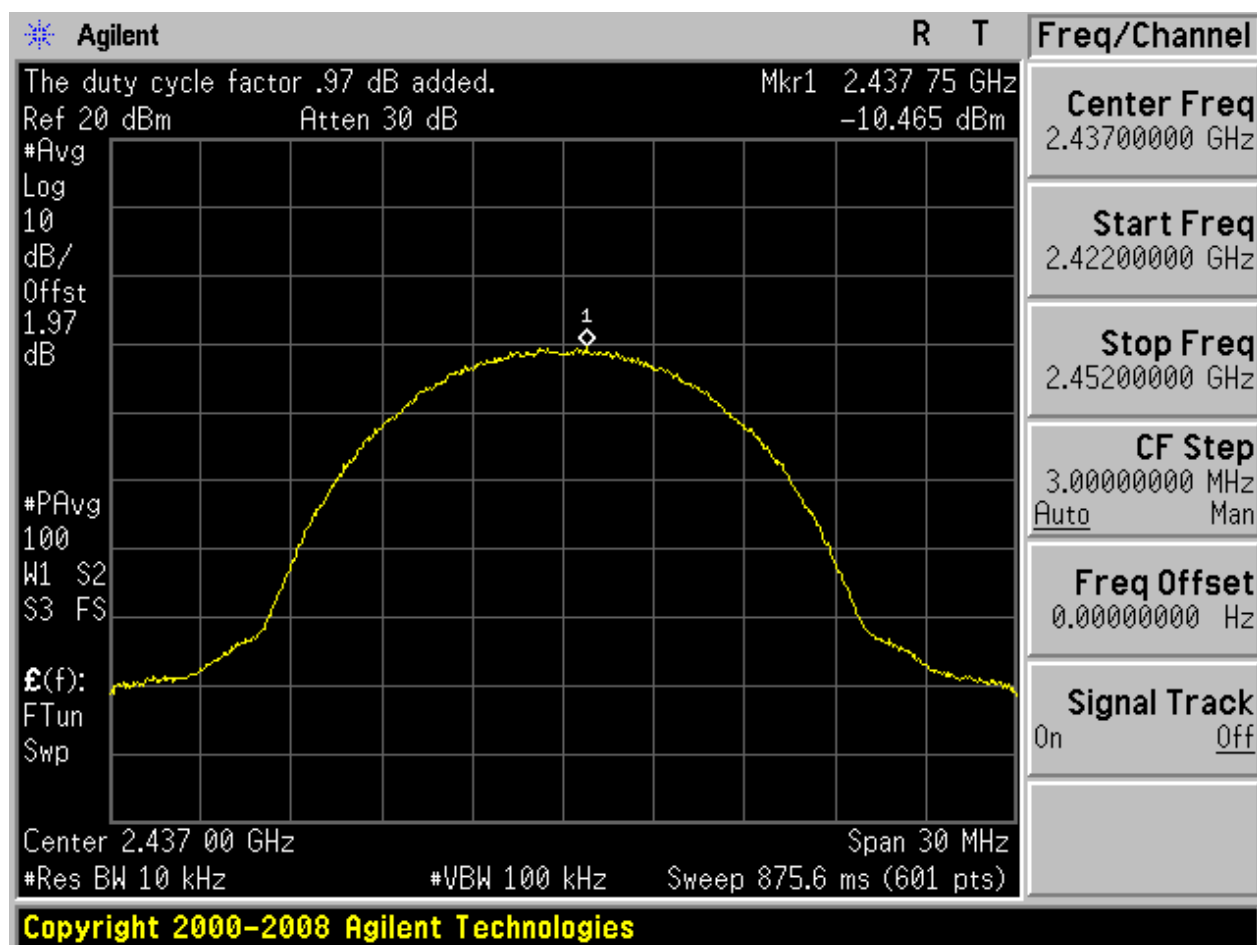
Part II - Test Plots

2.1 11B_L@Ant 1



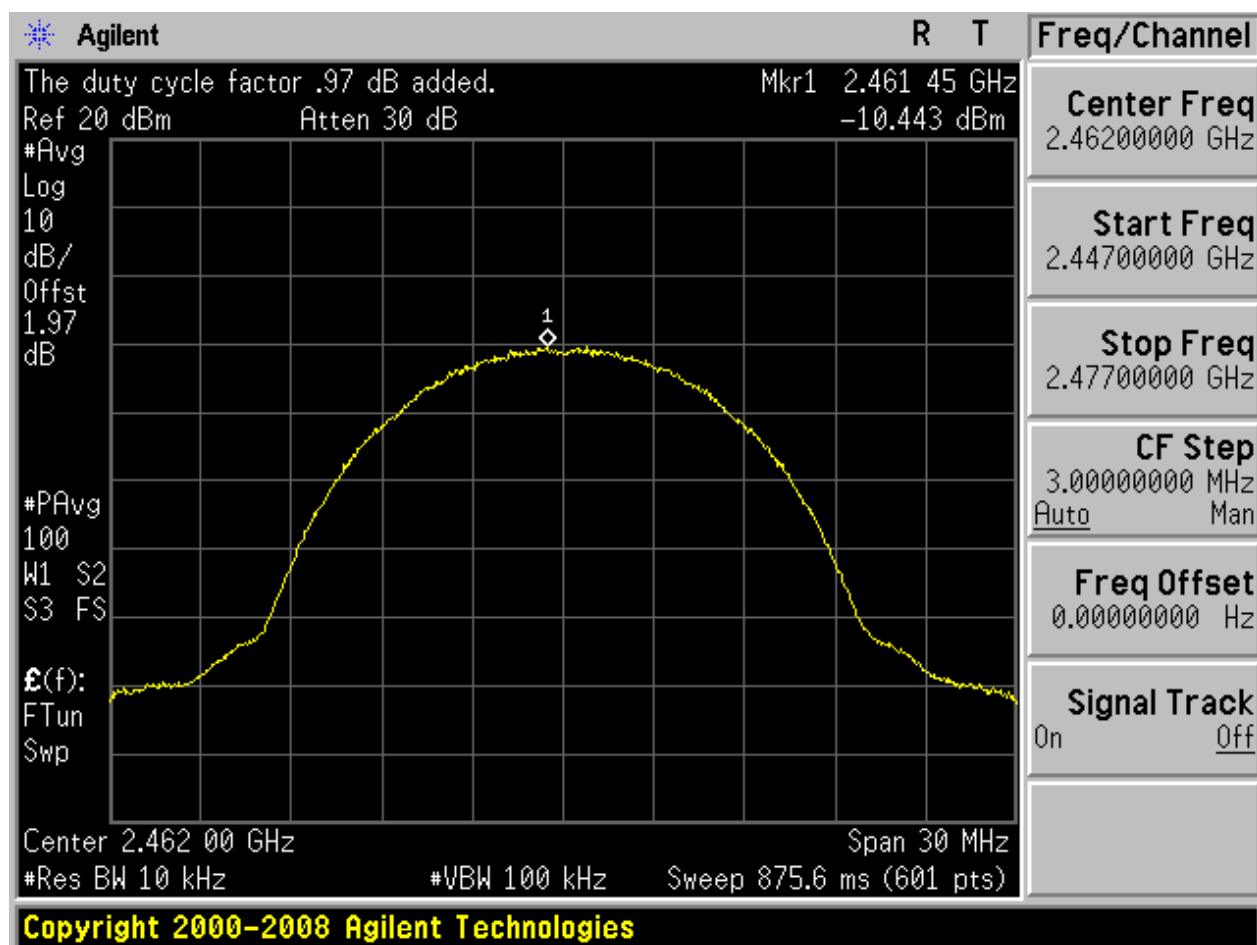


2.2 11B_M@Ant 1



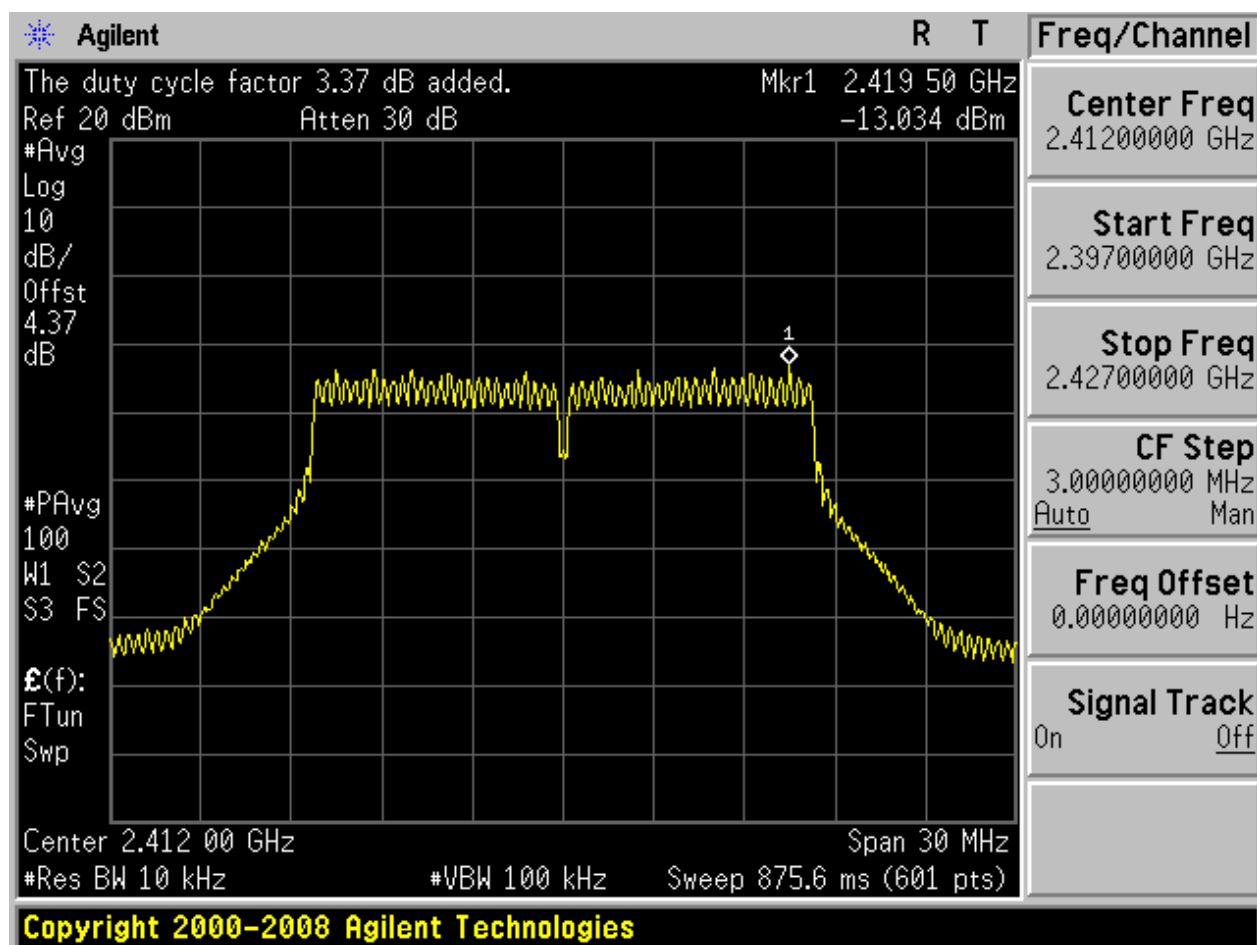


2.3 11B_H@Ant 1



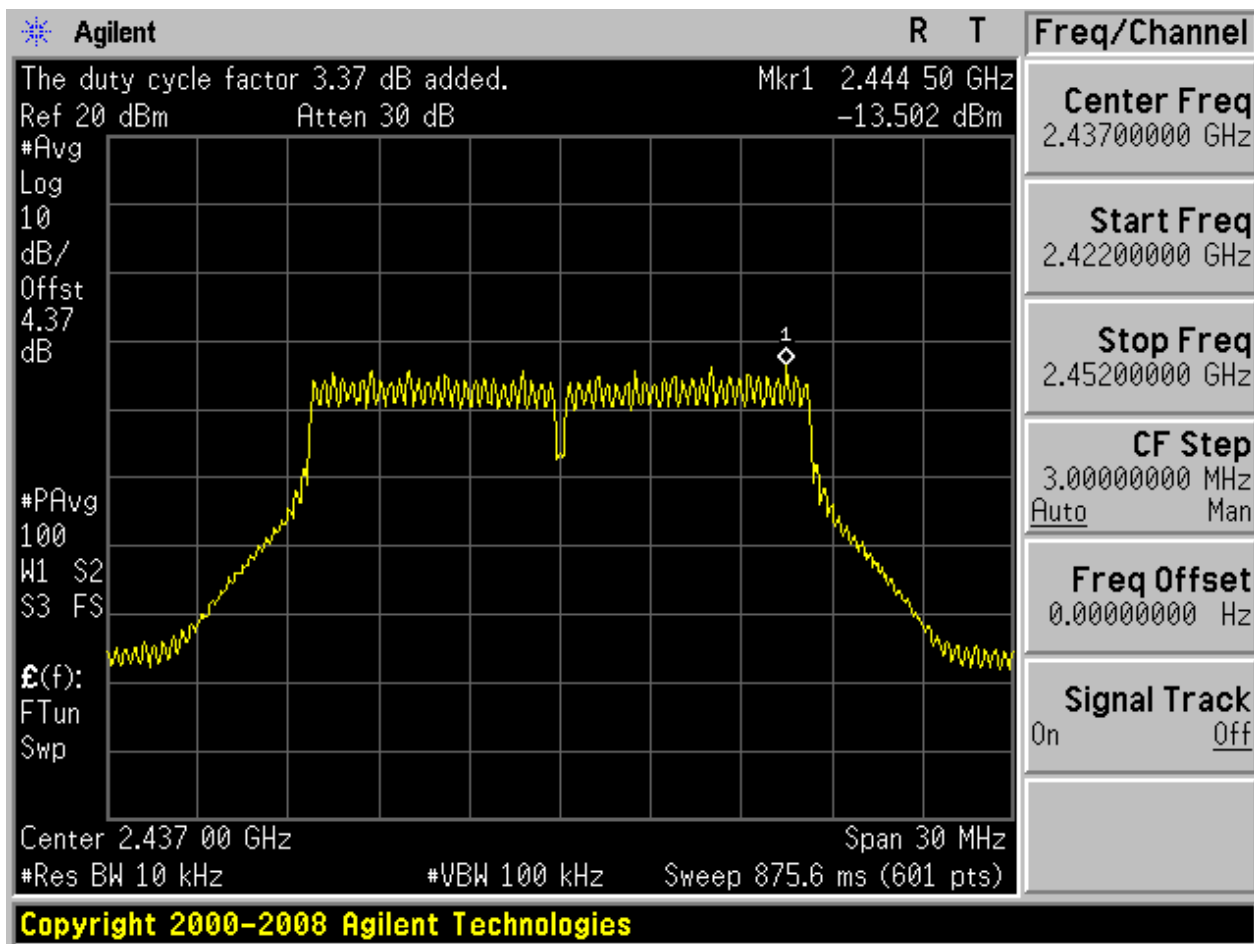


2.4 11G_L@Ant 1



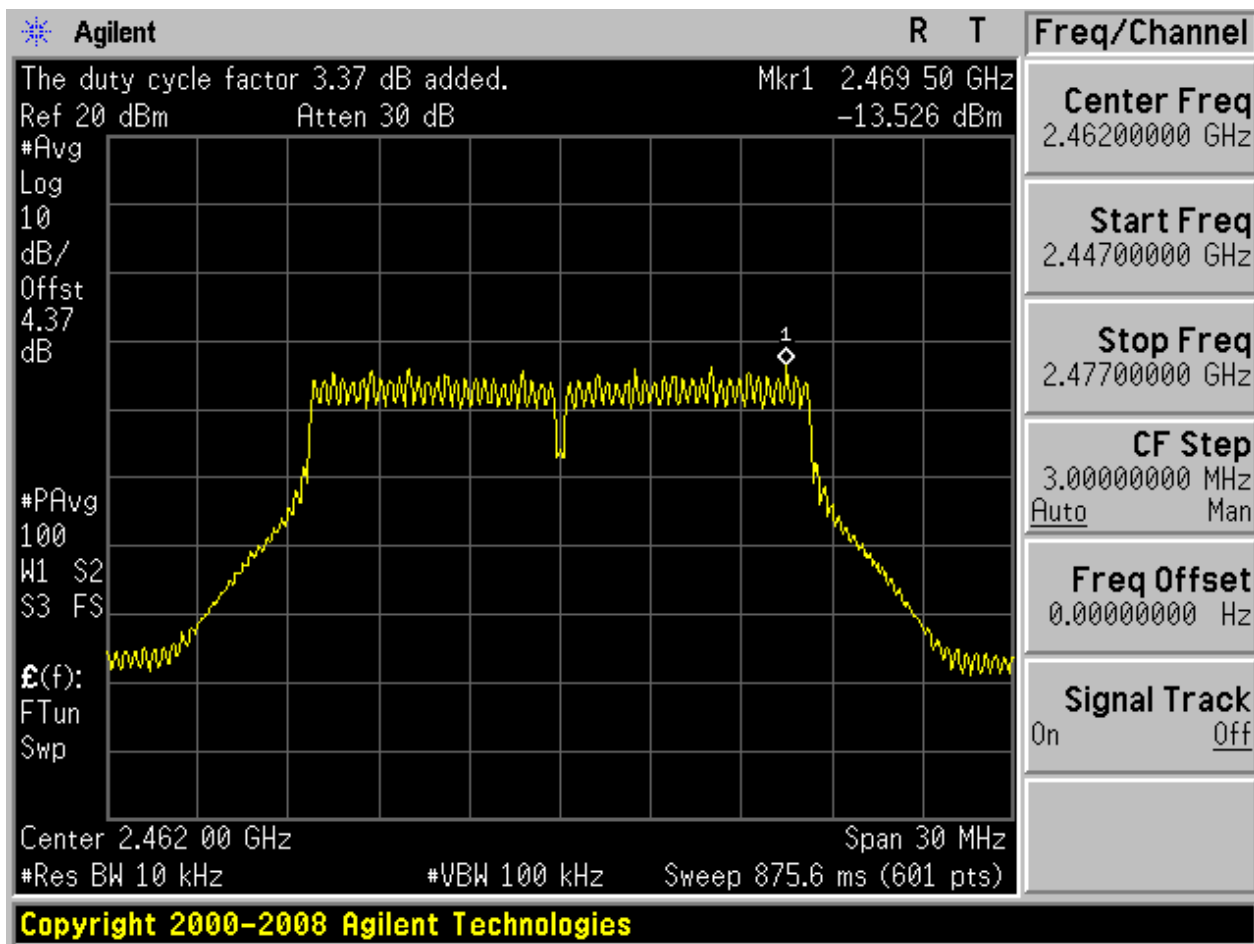


2.5 11G_M@Ant 1



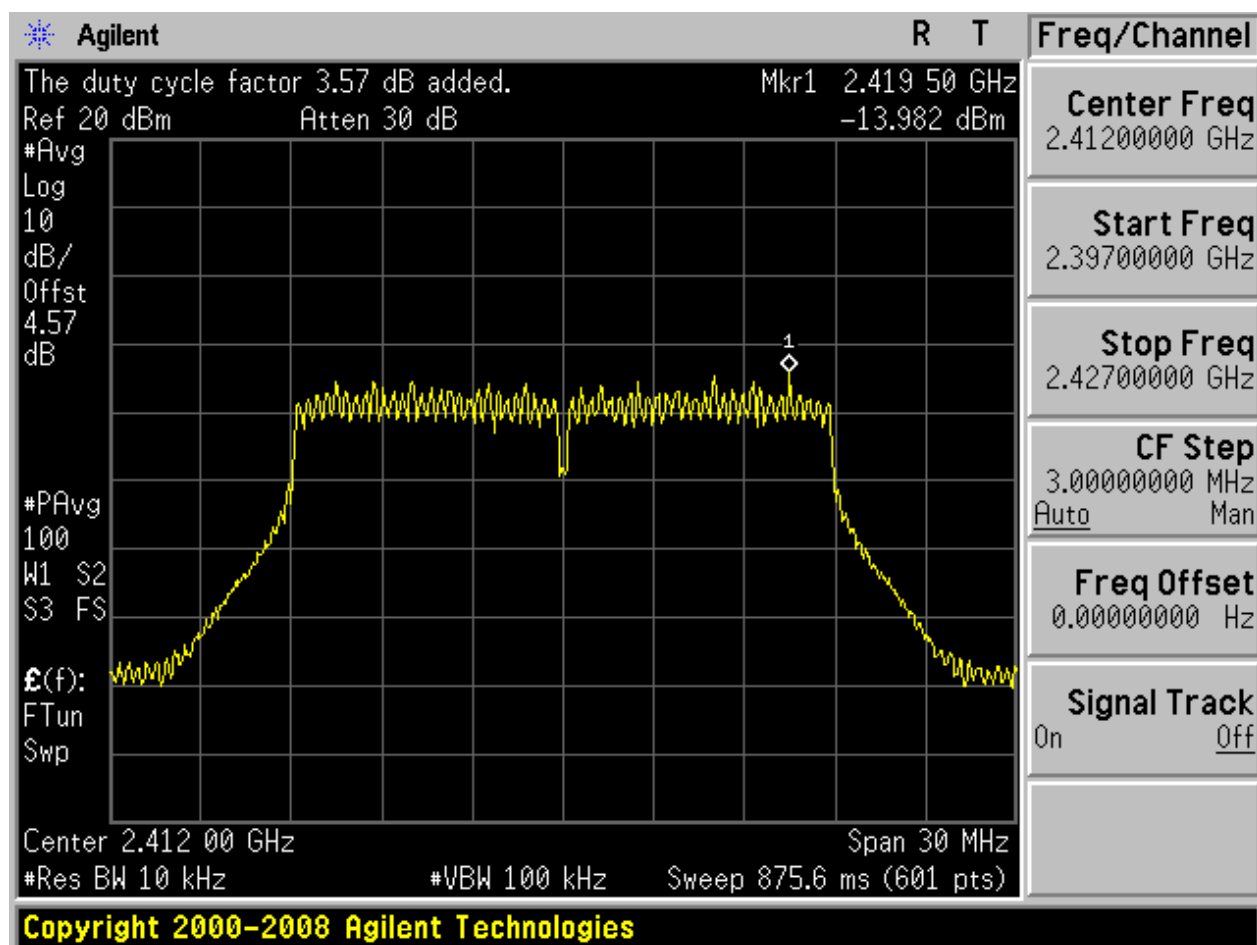


2.6 11G_H@Ant 1



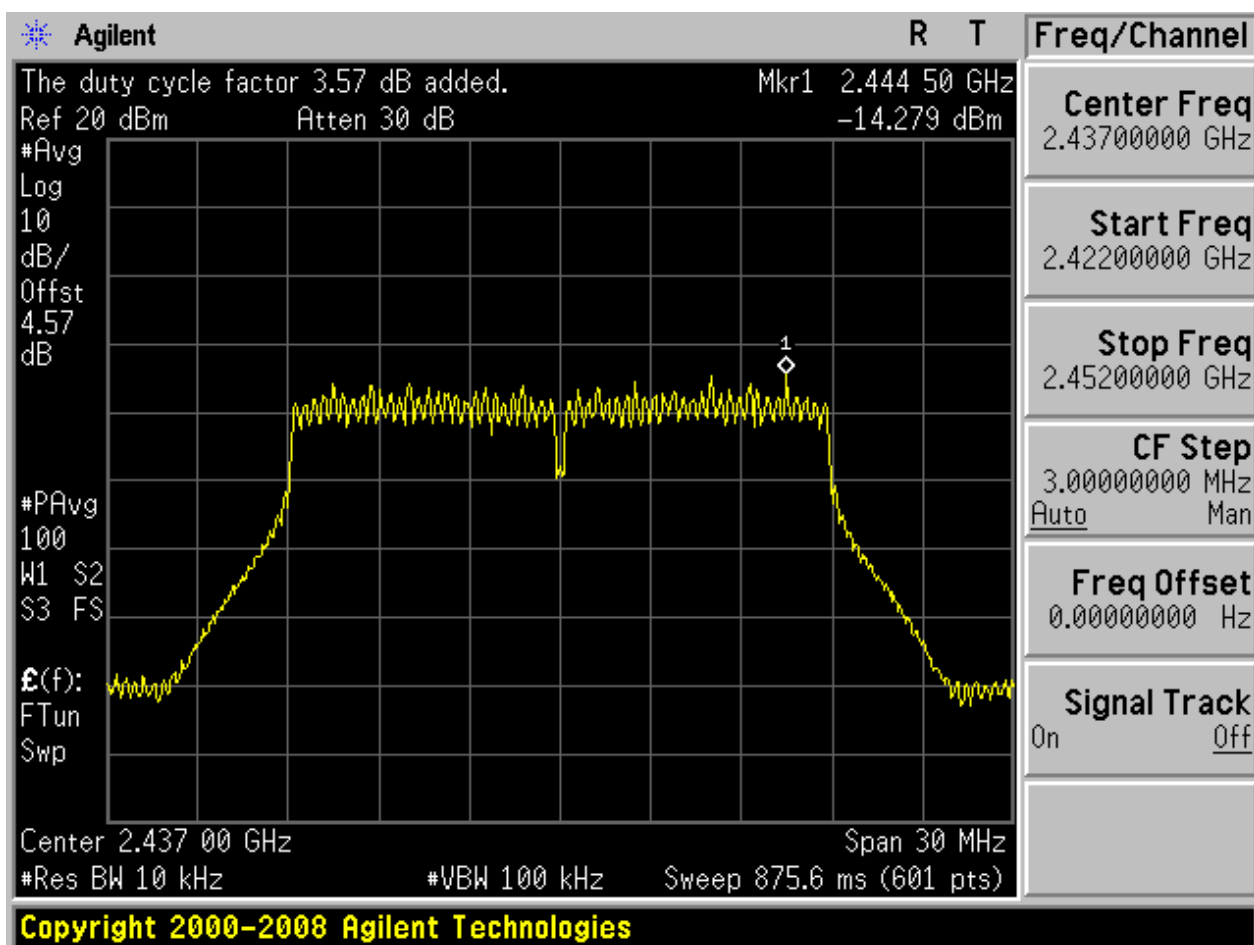


2.7 11N20_L@Ant 1



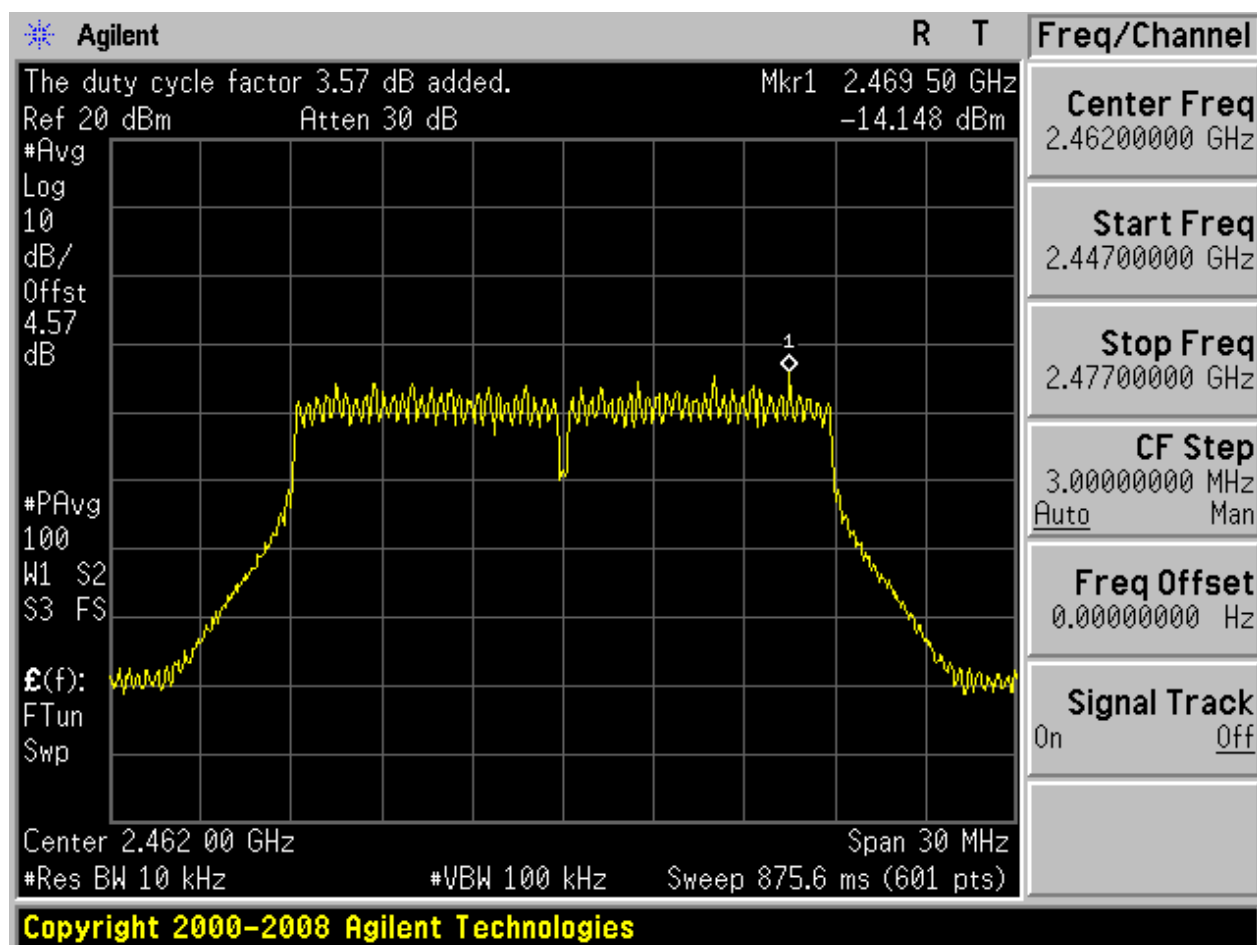


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



Appendix E: Band Edges Compliance

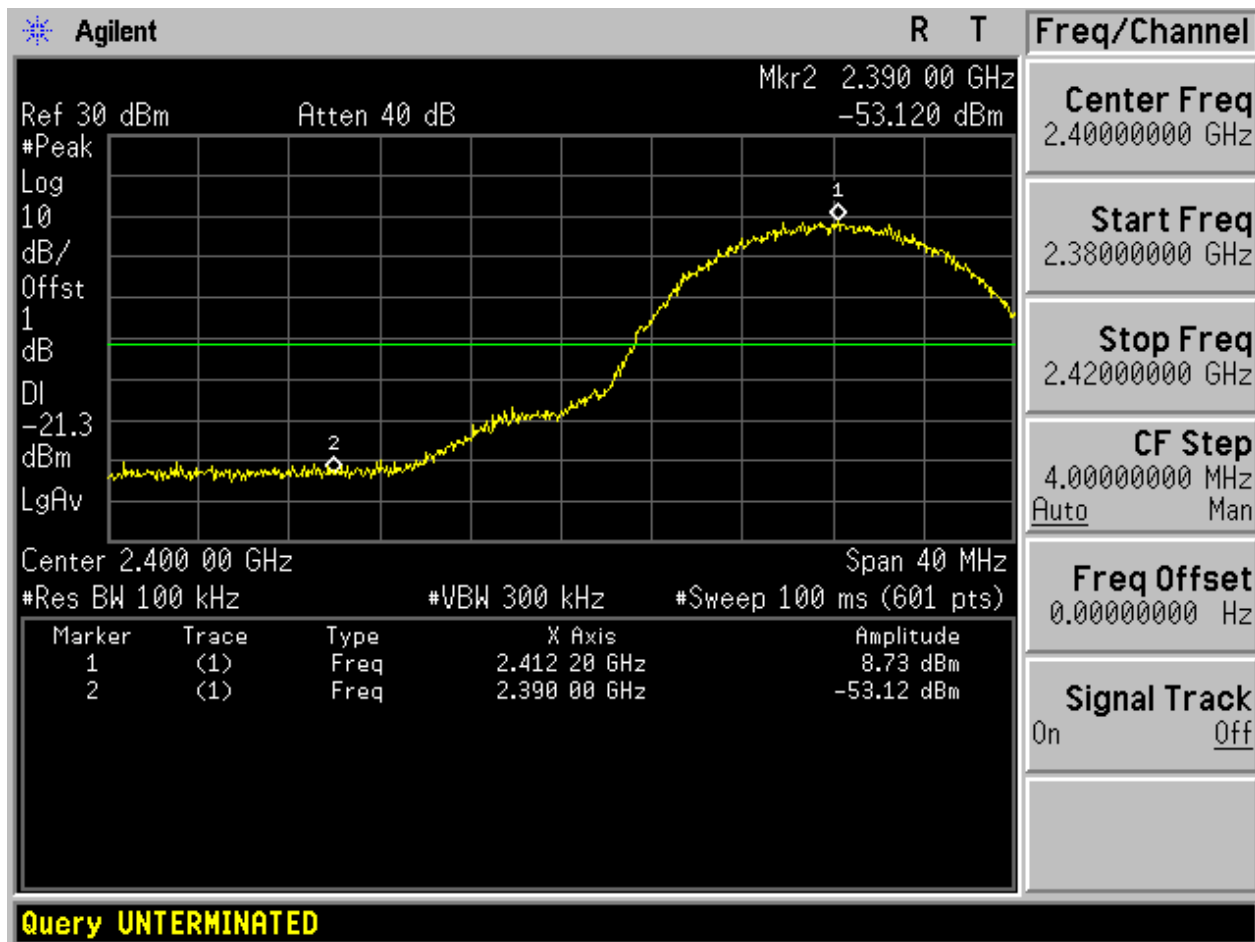
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	8.74	-53.12	pass
11B	H	2462	Ant 1	8.19	-52.36	pass
11G	L	2412	Ant 1	3.56	-45.87	pass
11G	H	2462	Ant 1	3.20	-47.10	pass
11N20	L	2412	Ant 1	1.88	-49.91	pass
11N20	H	2462	Ant 1	1.39	-50.59	pass



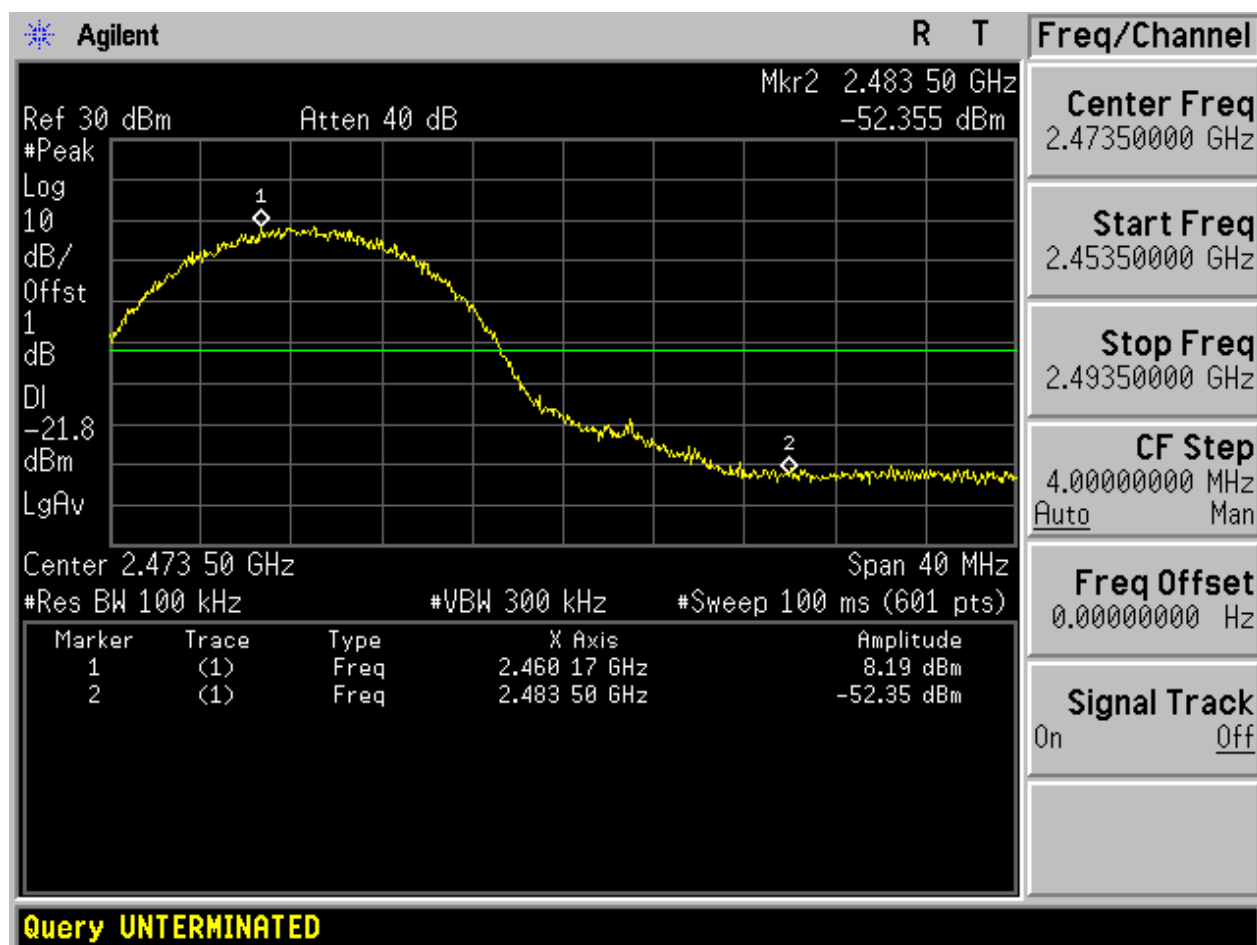
Part II - Test Plots

2.1 11B_L@Ant 1



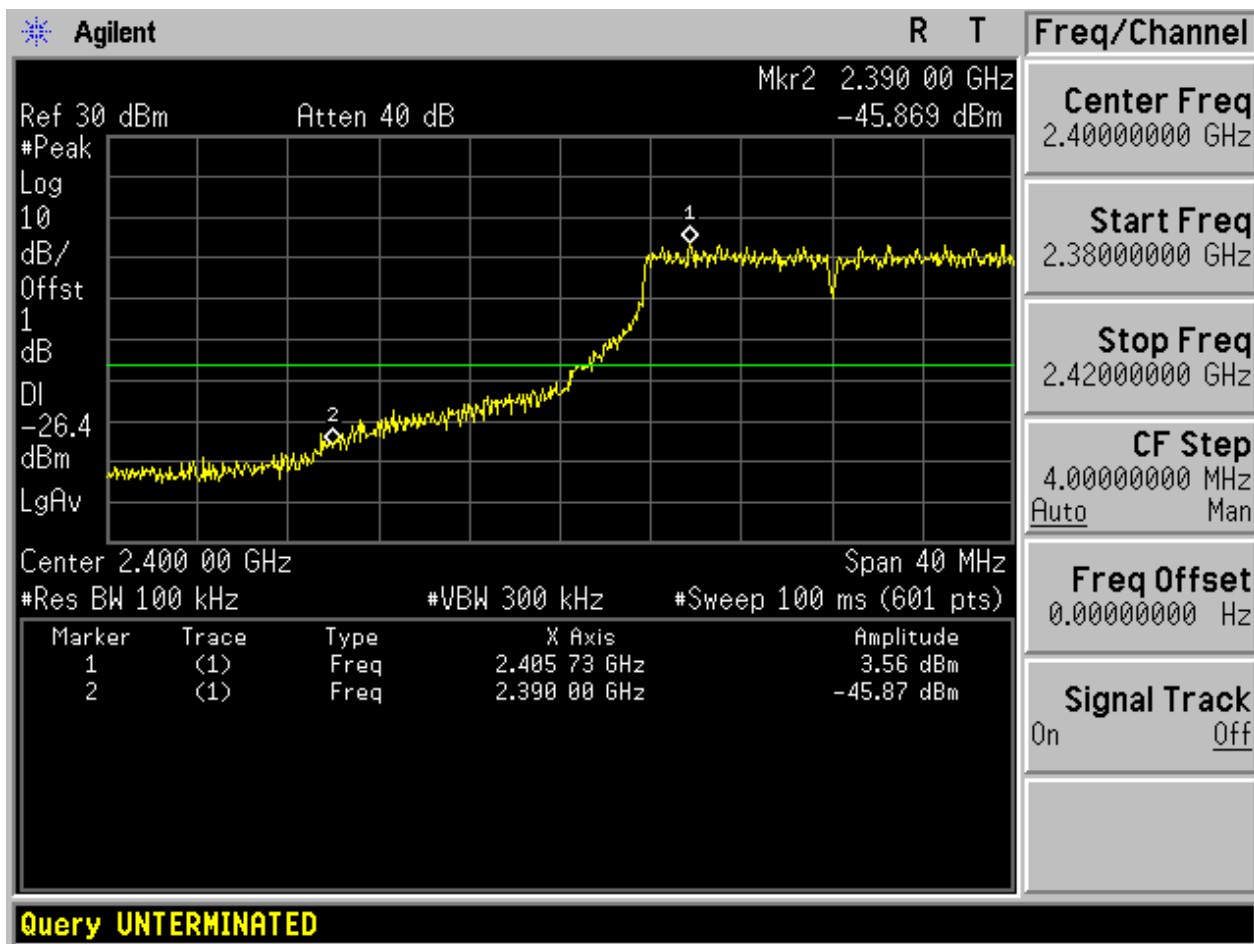


2.2 11B_H@Ant 1

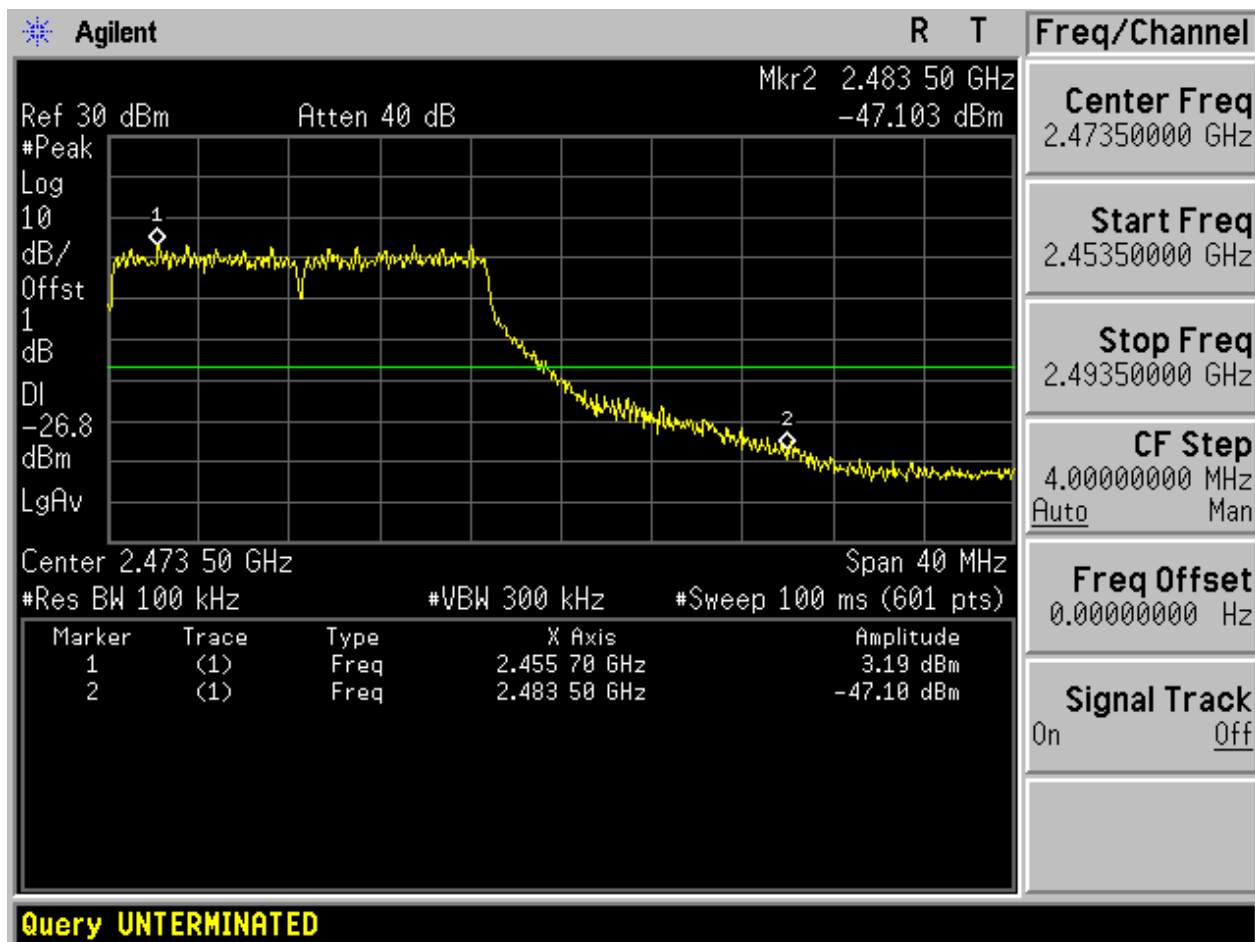




2.3 11G_L@Ant 1

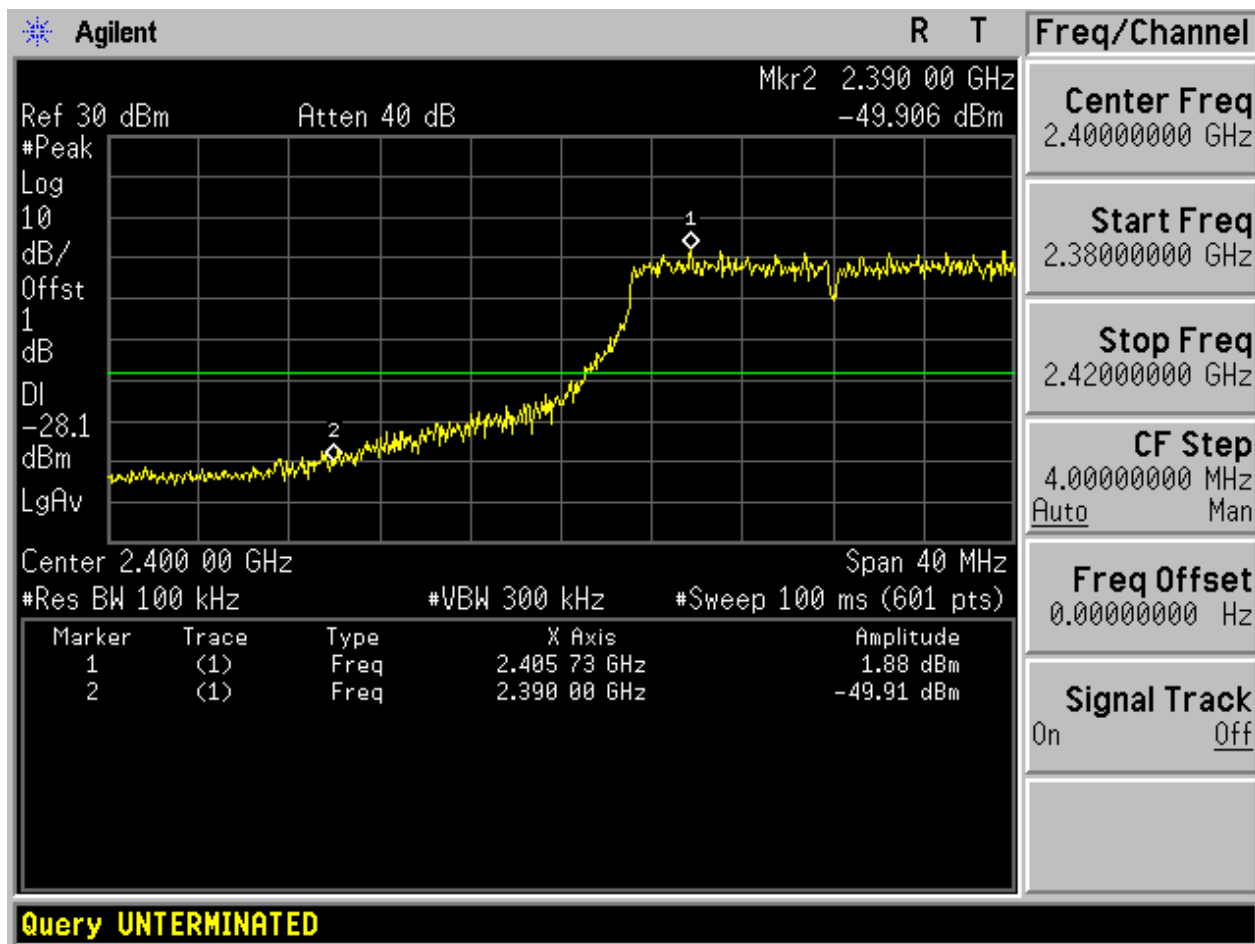


2.4 11G_H@Ant 1



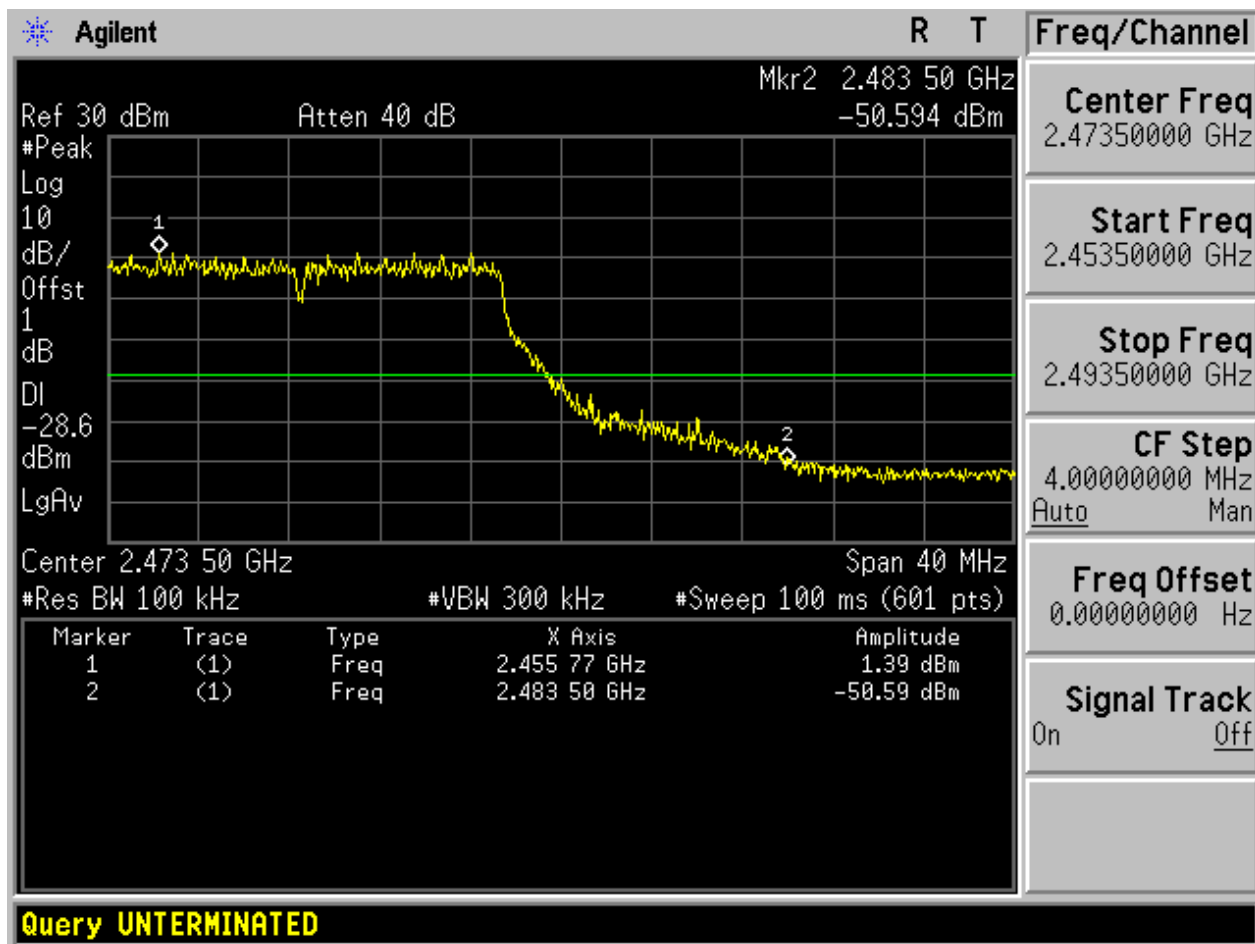


2.5 11N20_L@Ant 1





2.6 11N20_H@Ant 1





Appendix F: 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

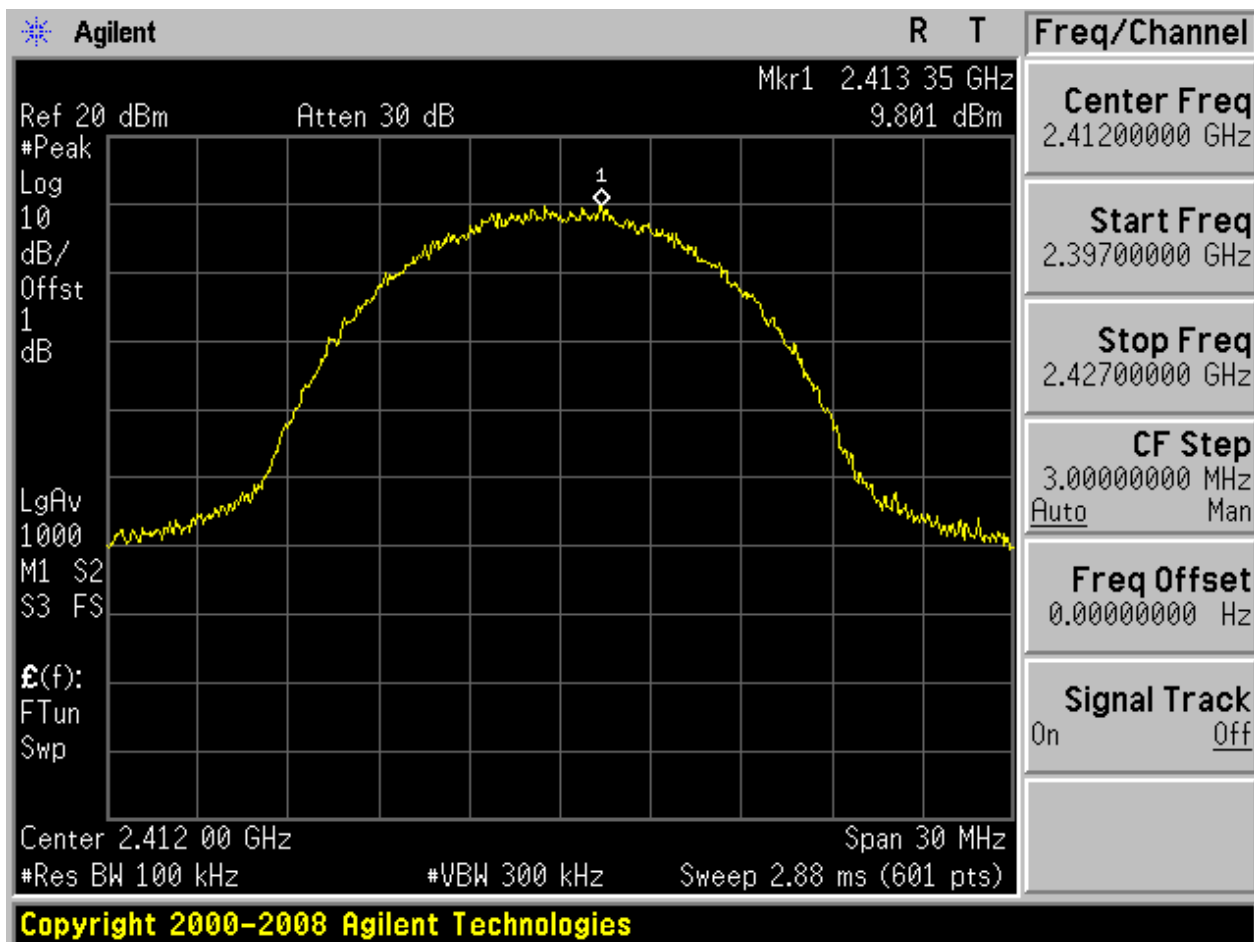
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	9.80	<limit	pass
11B	M	2437	Ant 1	9.01	<limit	pass
11B	H	2462	Ant 1	9.43	<limit	pass
11G	L	2412	Ant 1	4.16	<limit	pass
11G	M	2437	Ant 1	3.45	<limit	pass
11G	H	2462	Ant 1	3.59	<limit	pass
11N20	L	2412	Ant 1	2.23	<limit	pass
11N20	M	2437	Ant 1	1.80	<limit	pass
11N20	H	2462	Ant 1	1.87	<limit	pass



Part II - Test Plots

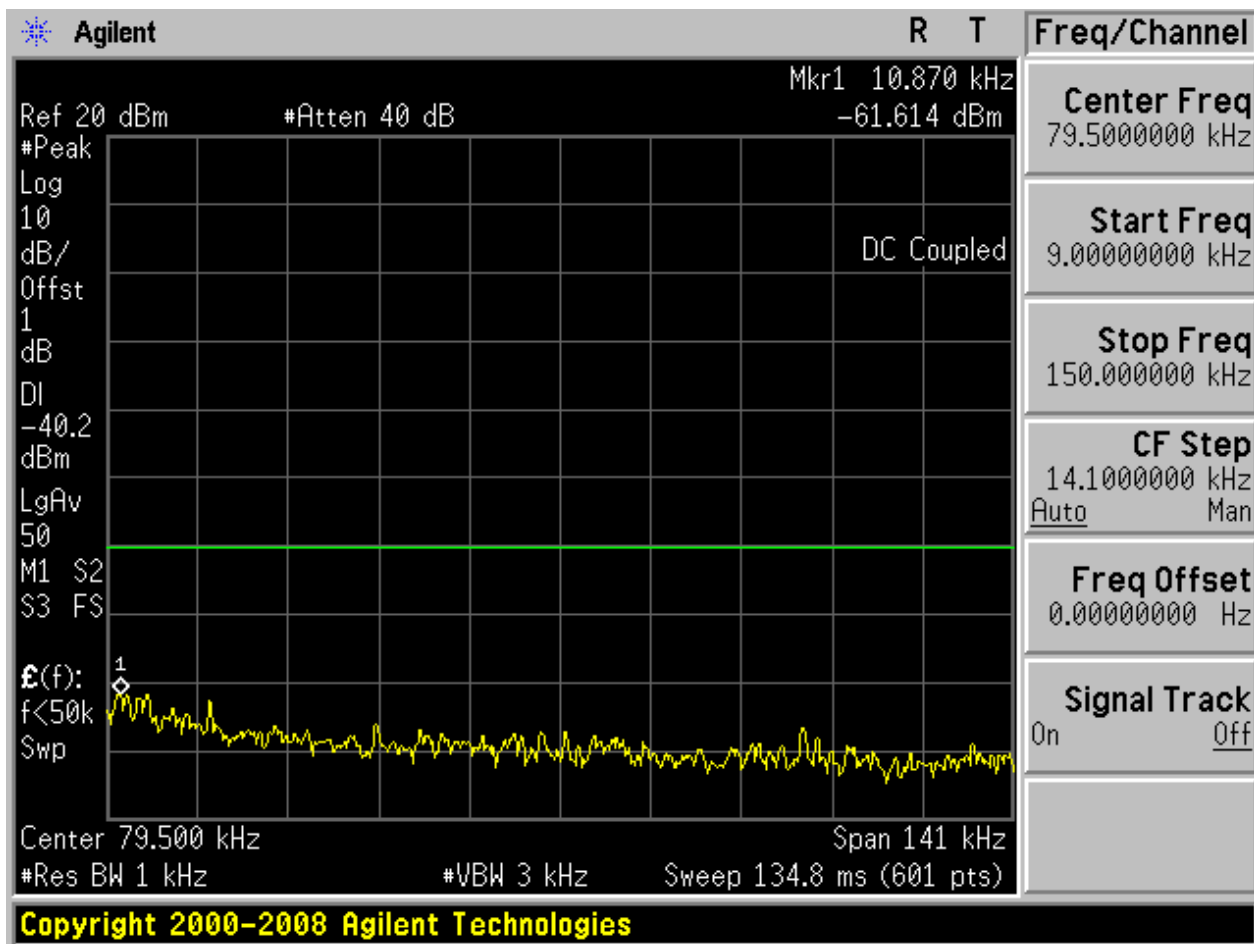
2.1 11B_L@Ant 1

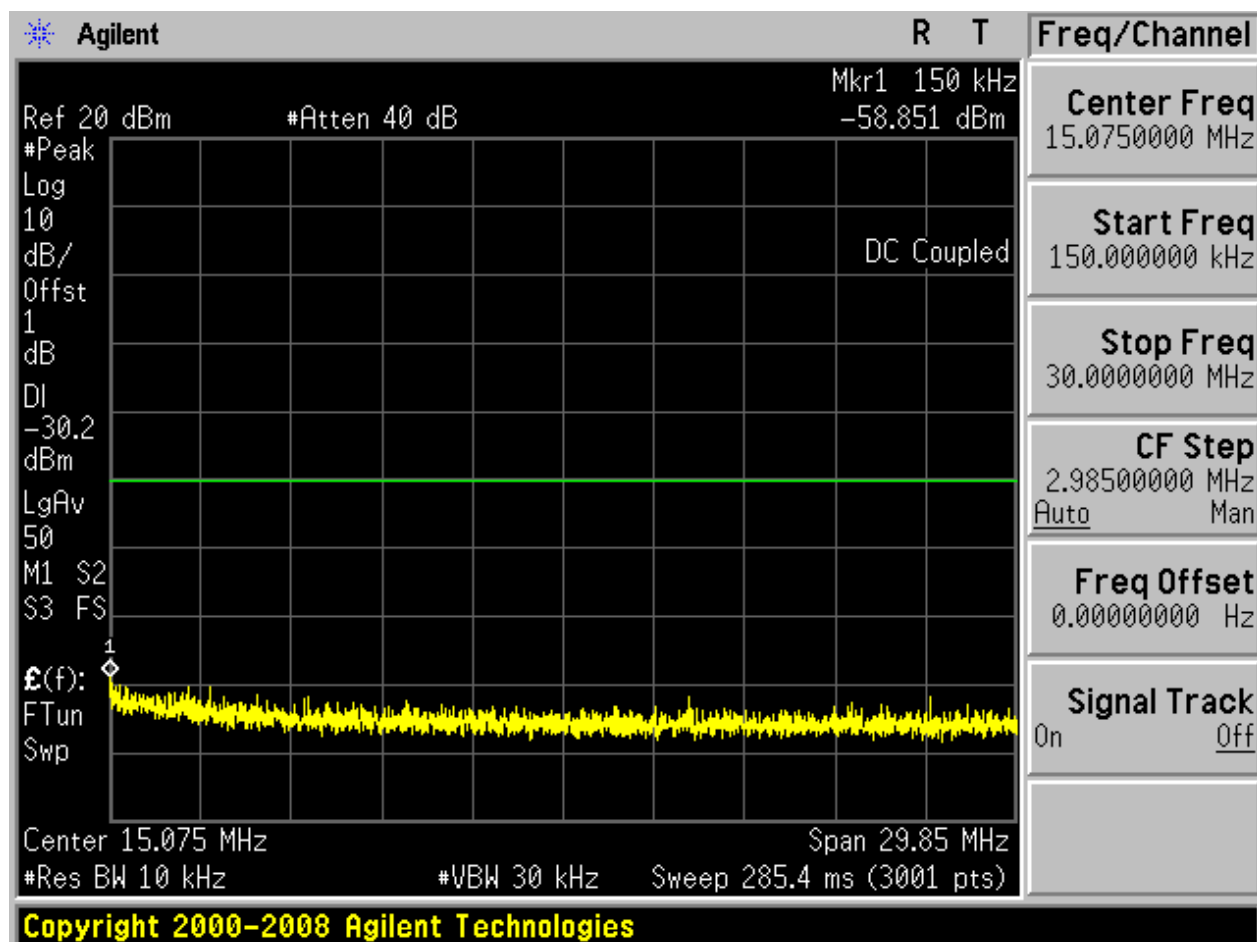
Pref:

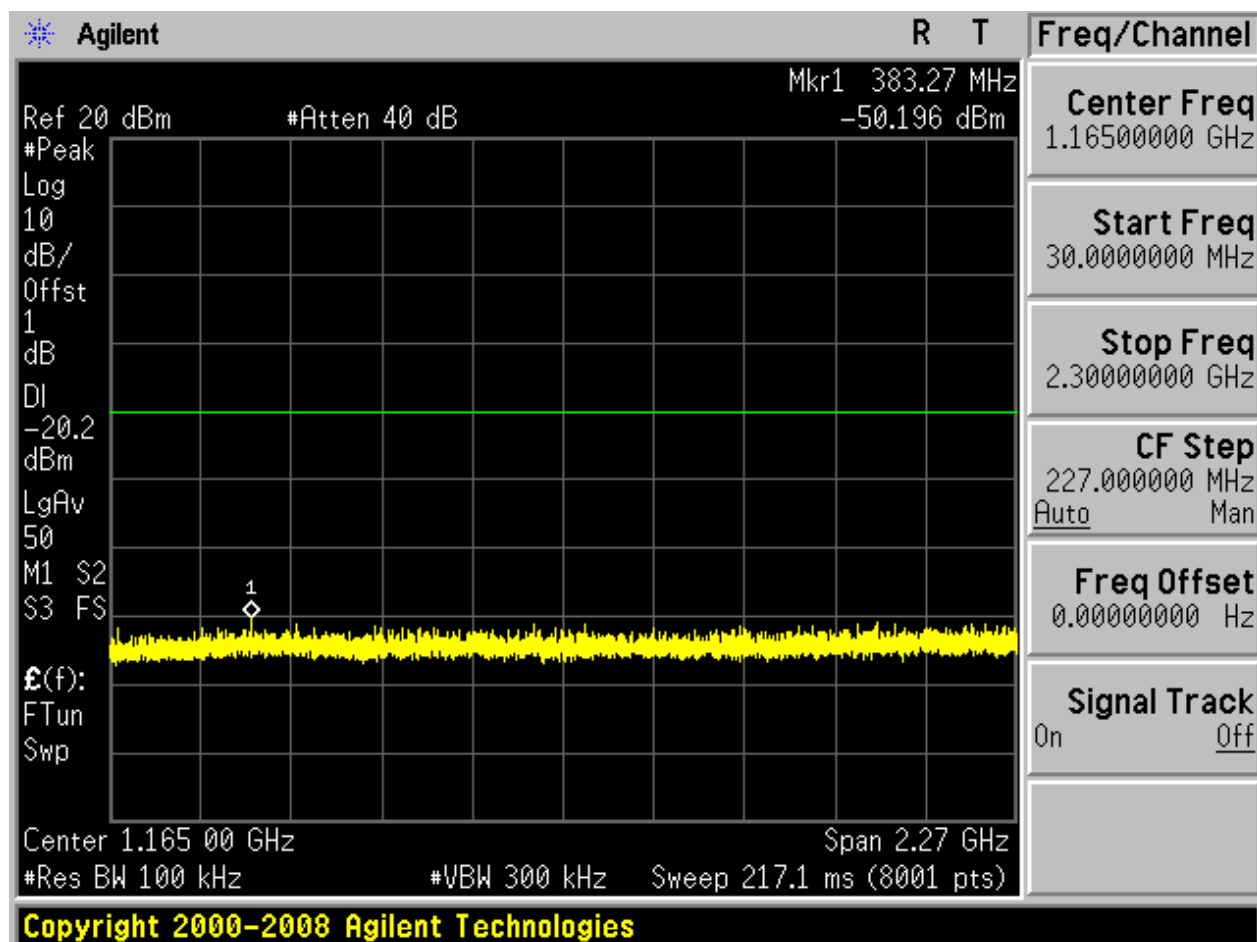


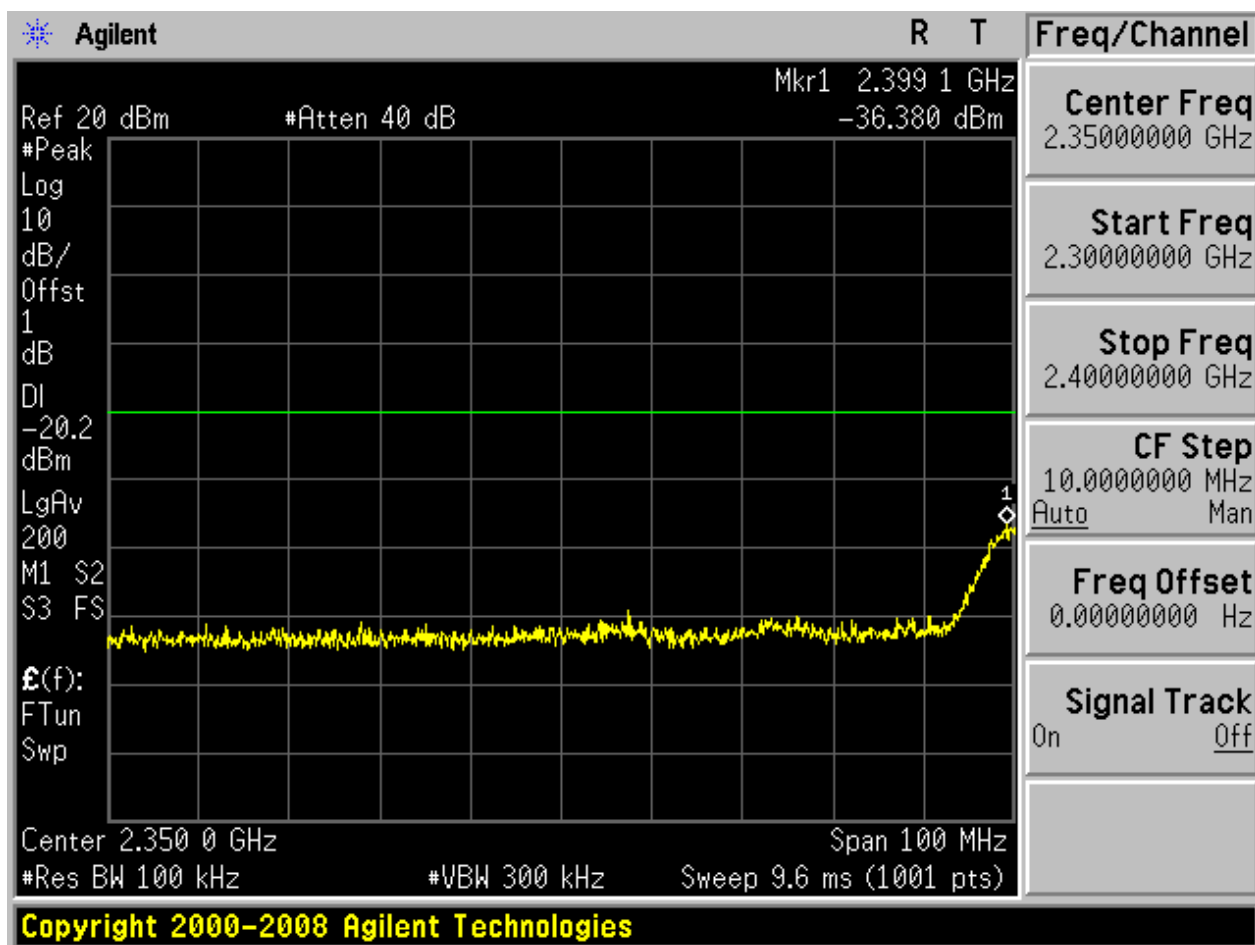


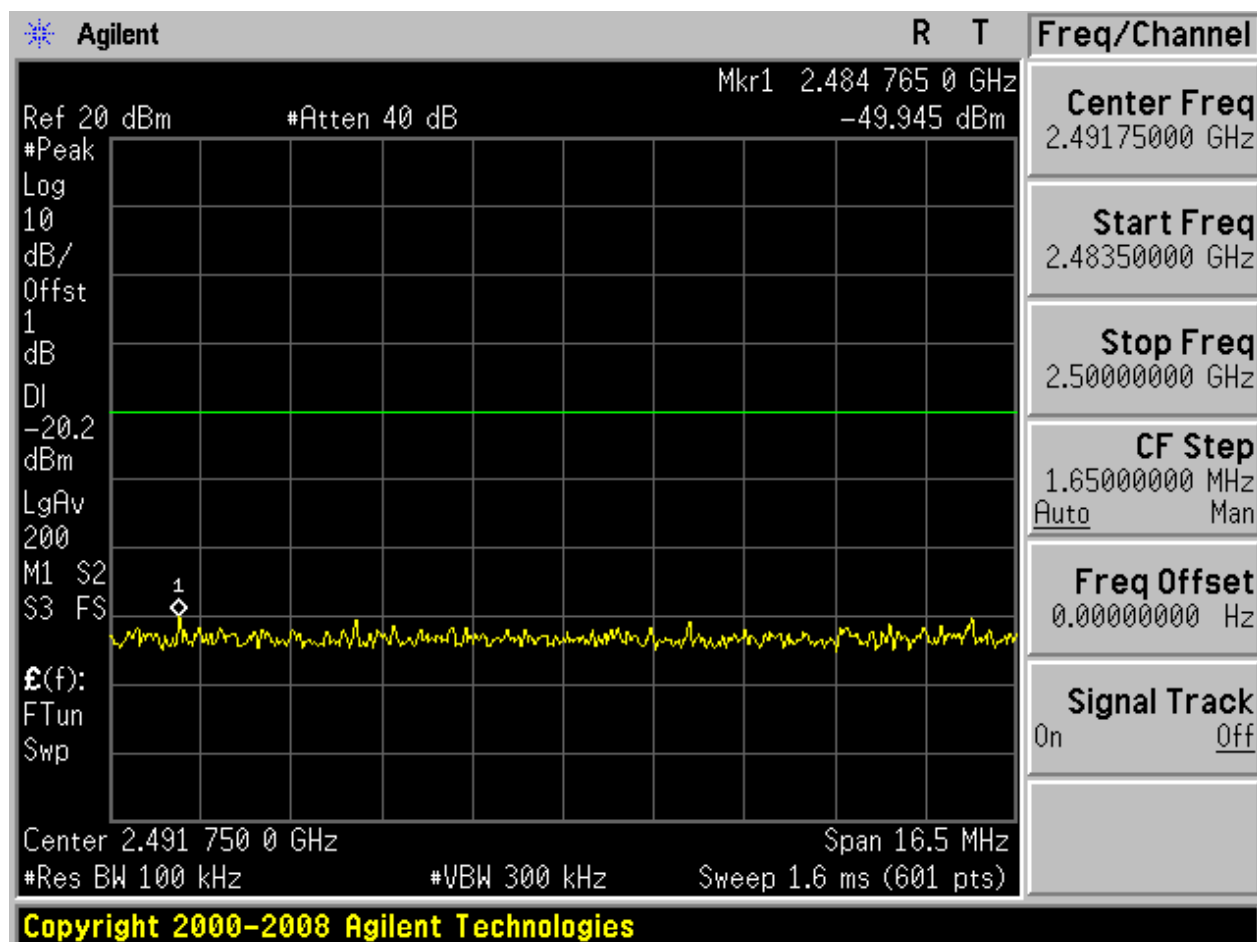
Puw:

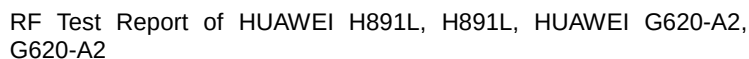








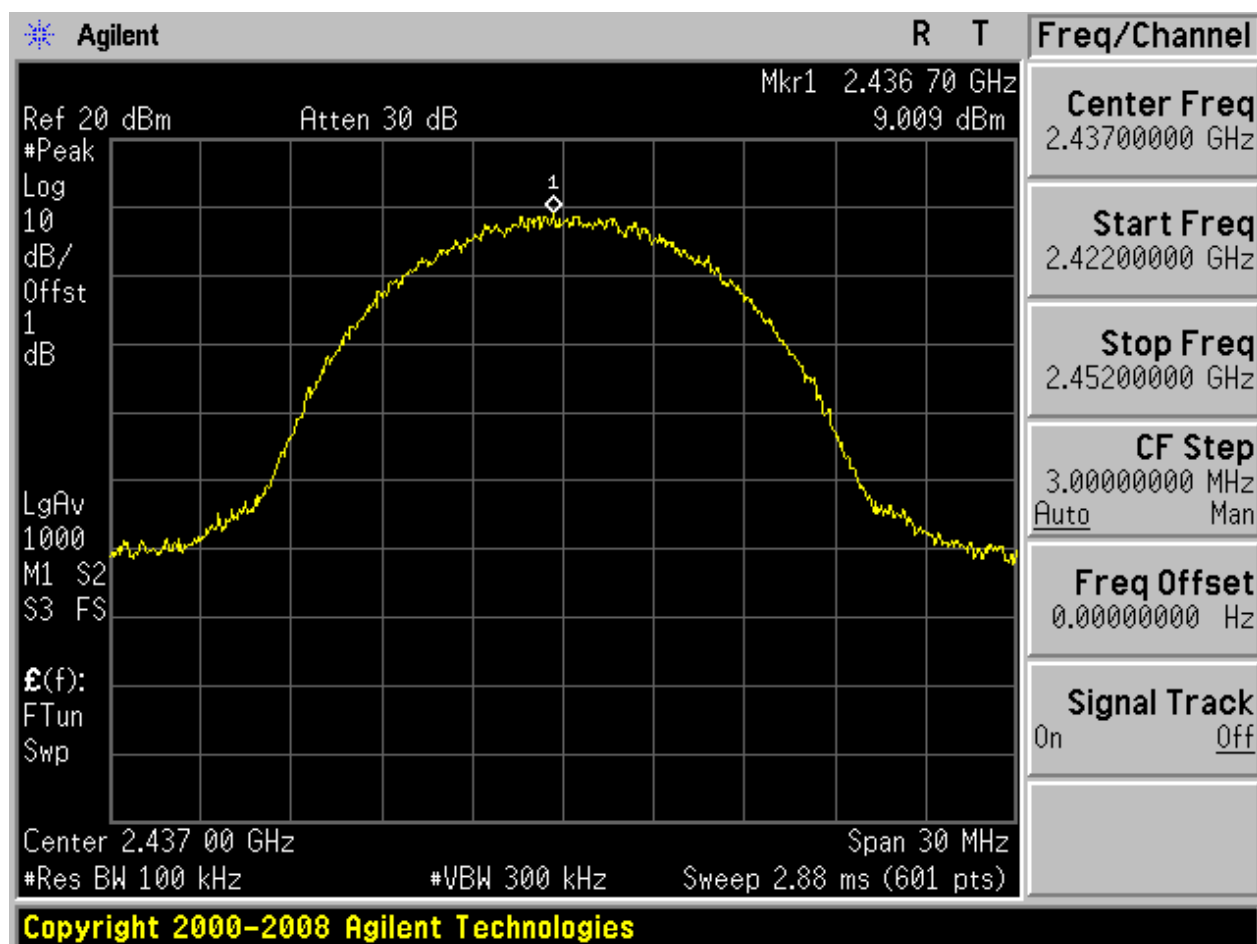






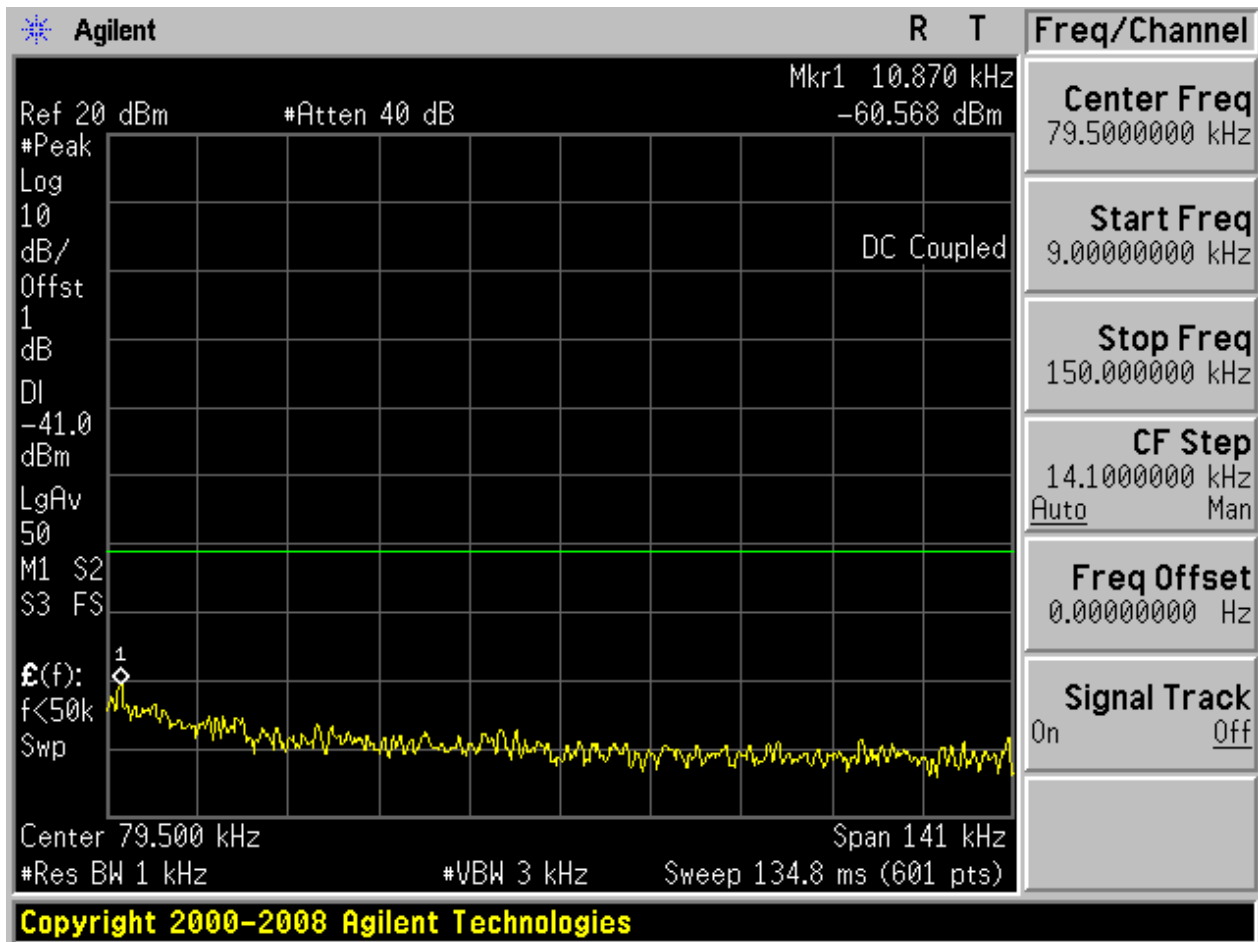
2.2 11B_M@Ant 1

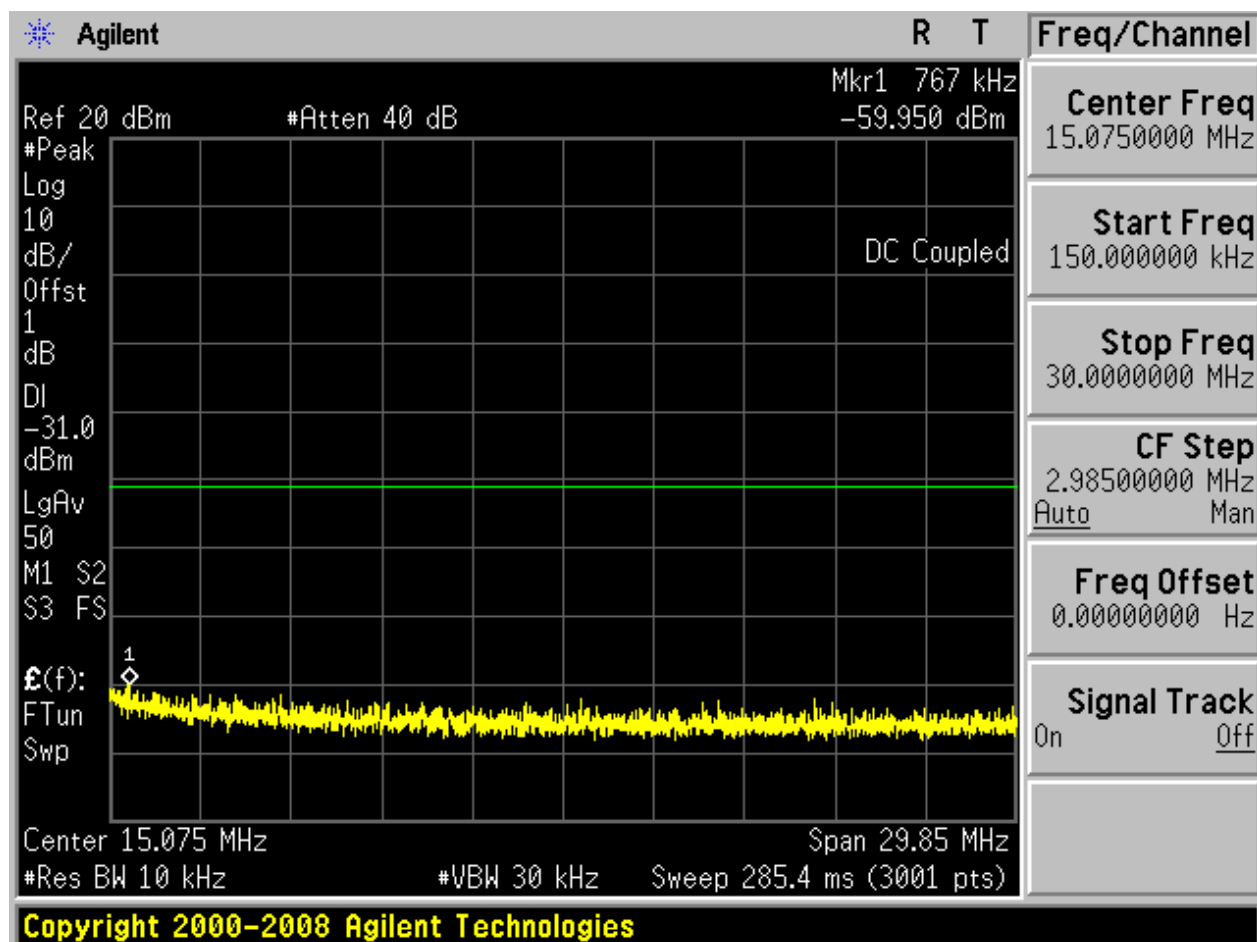
Pref:

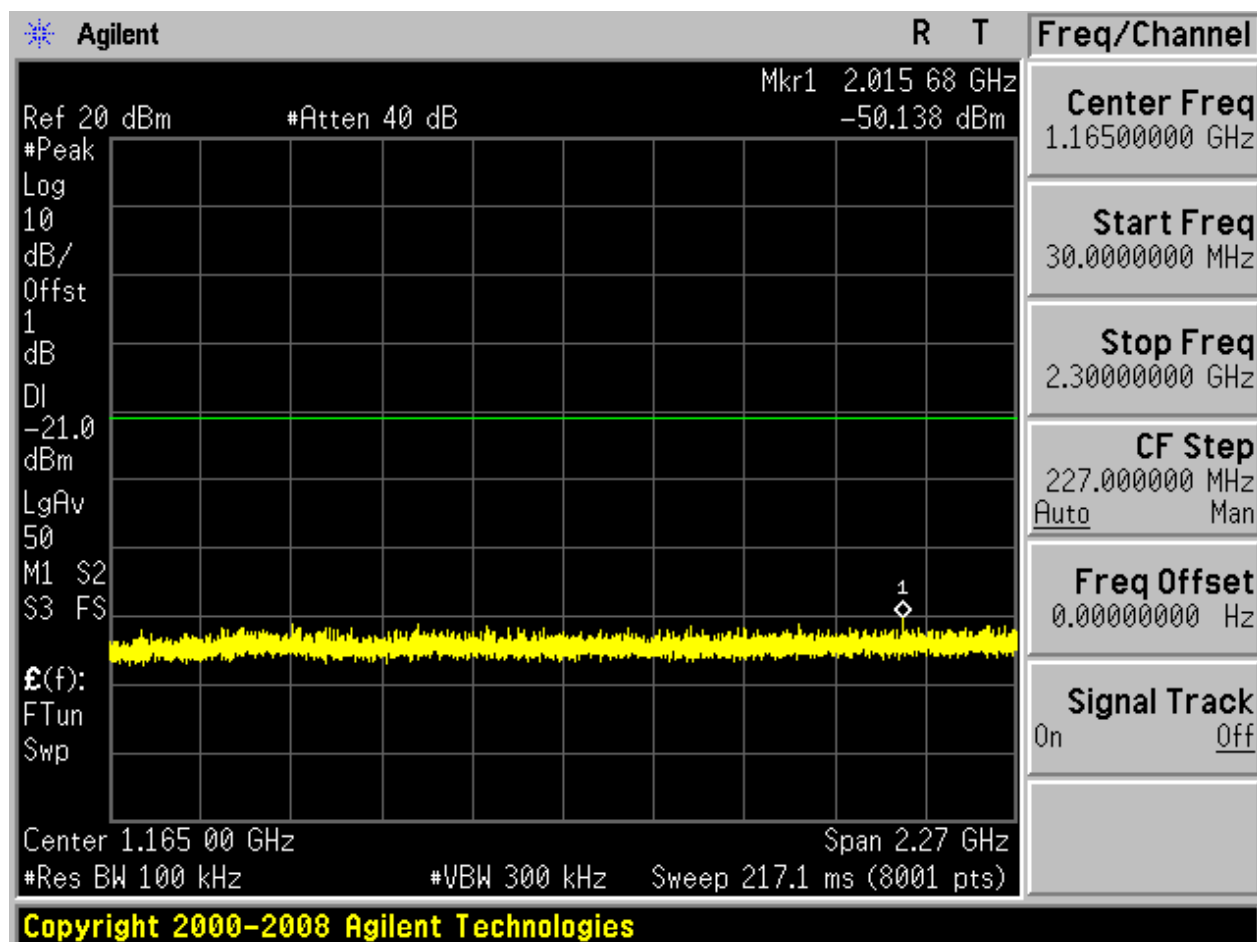


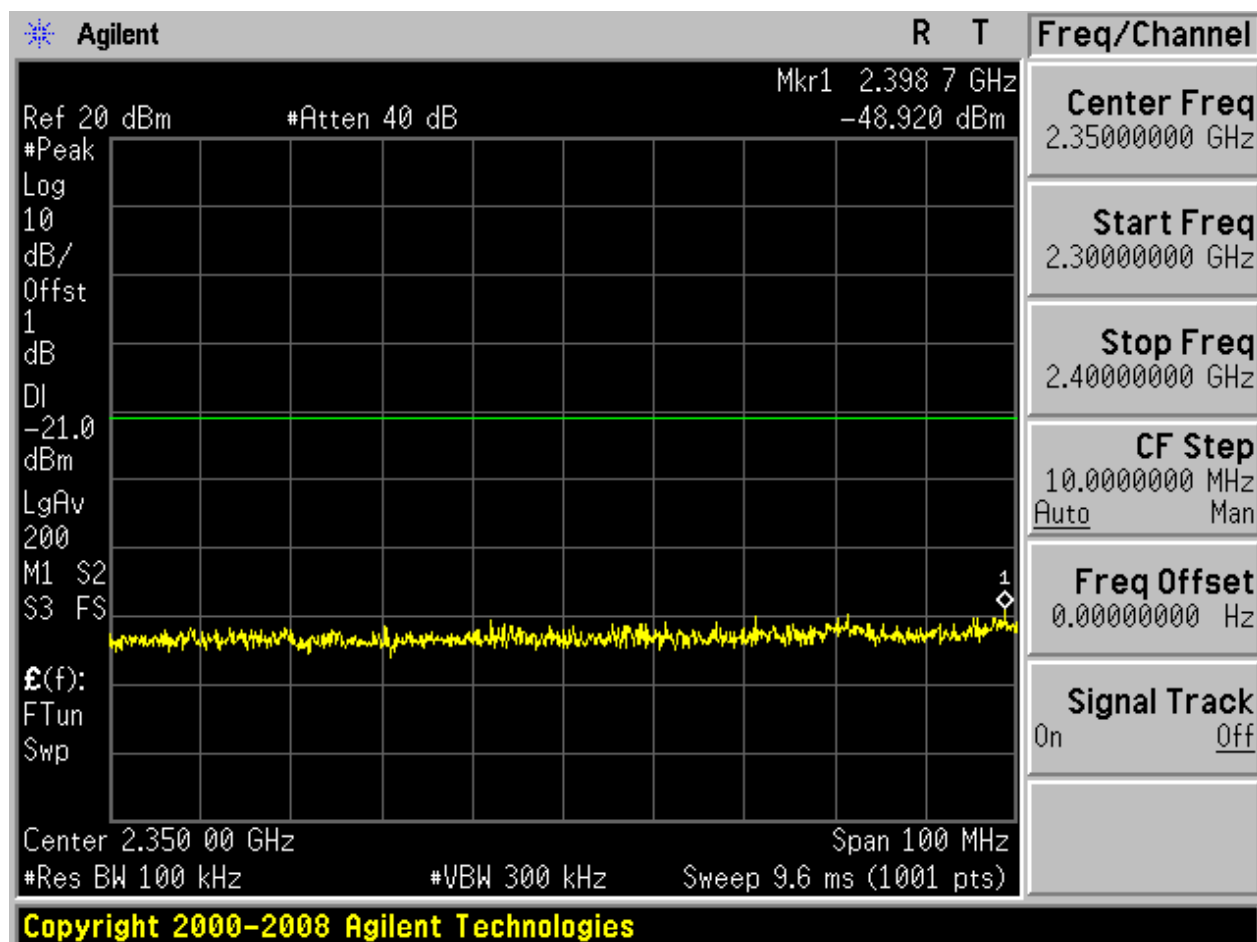


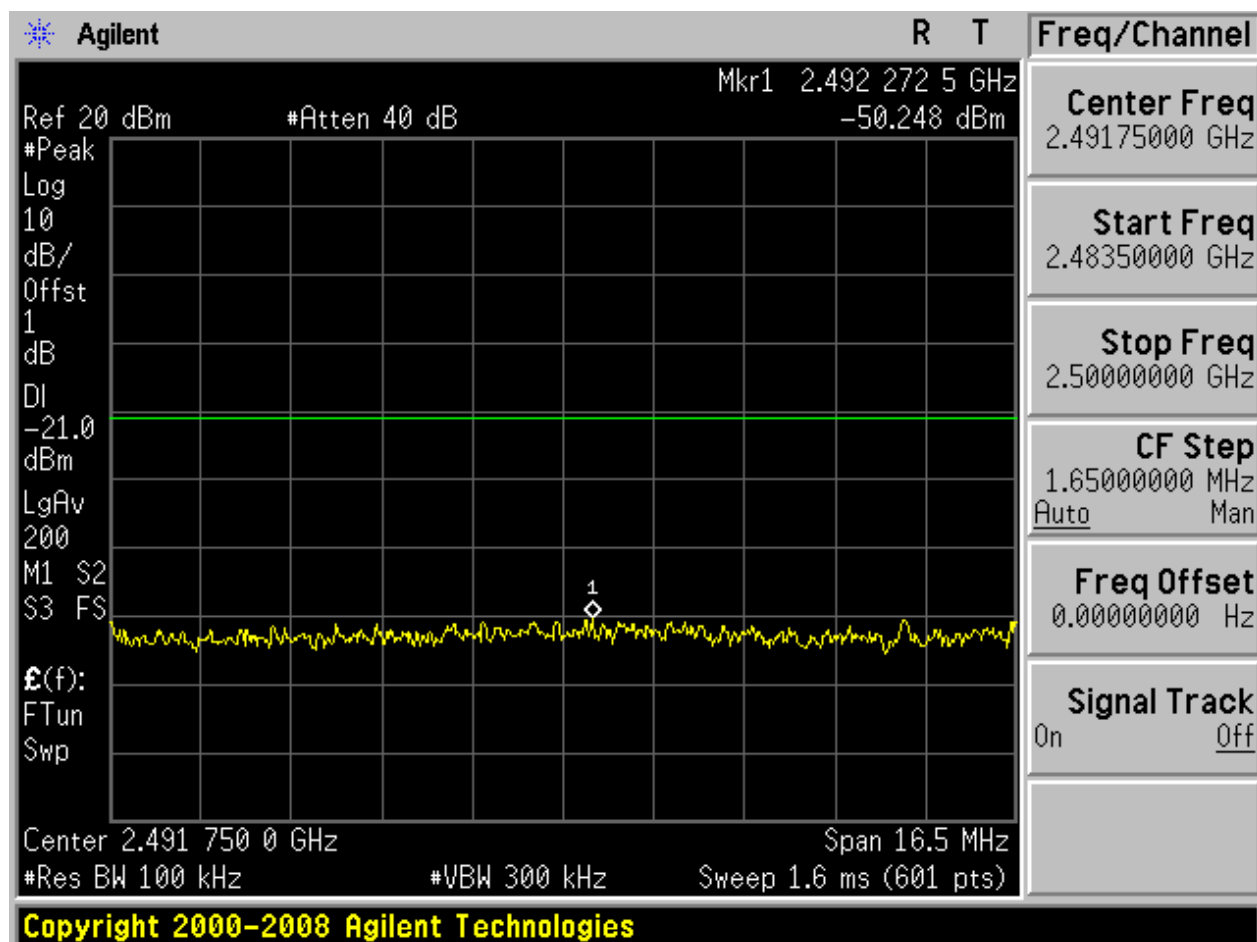
Puw:

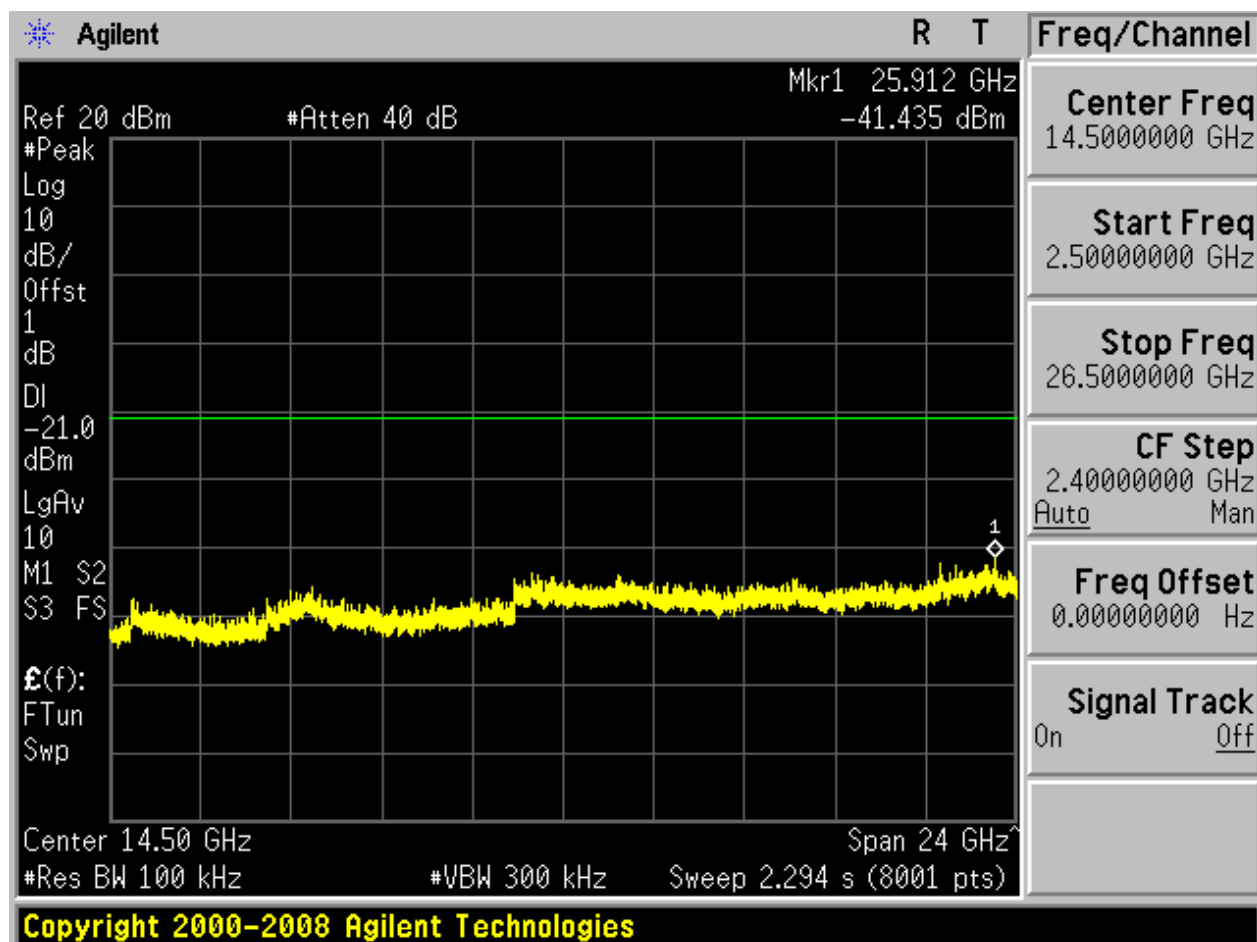








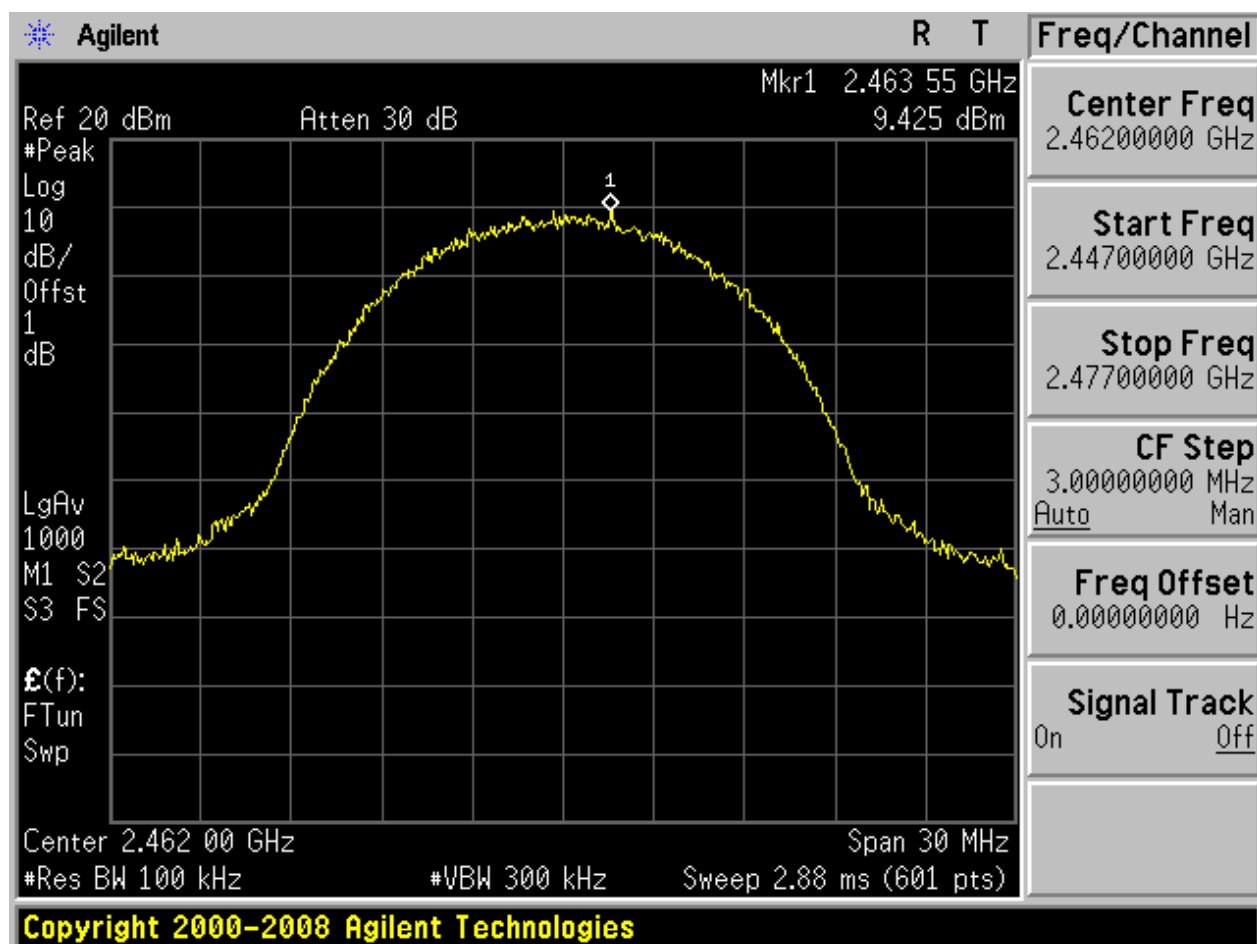






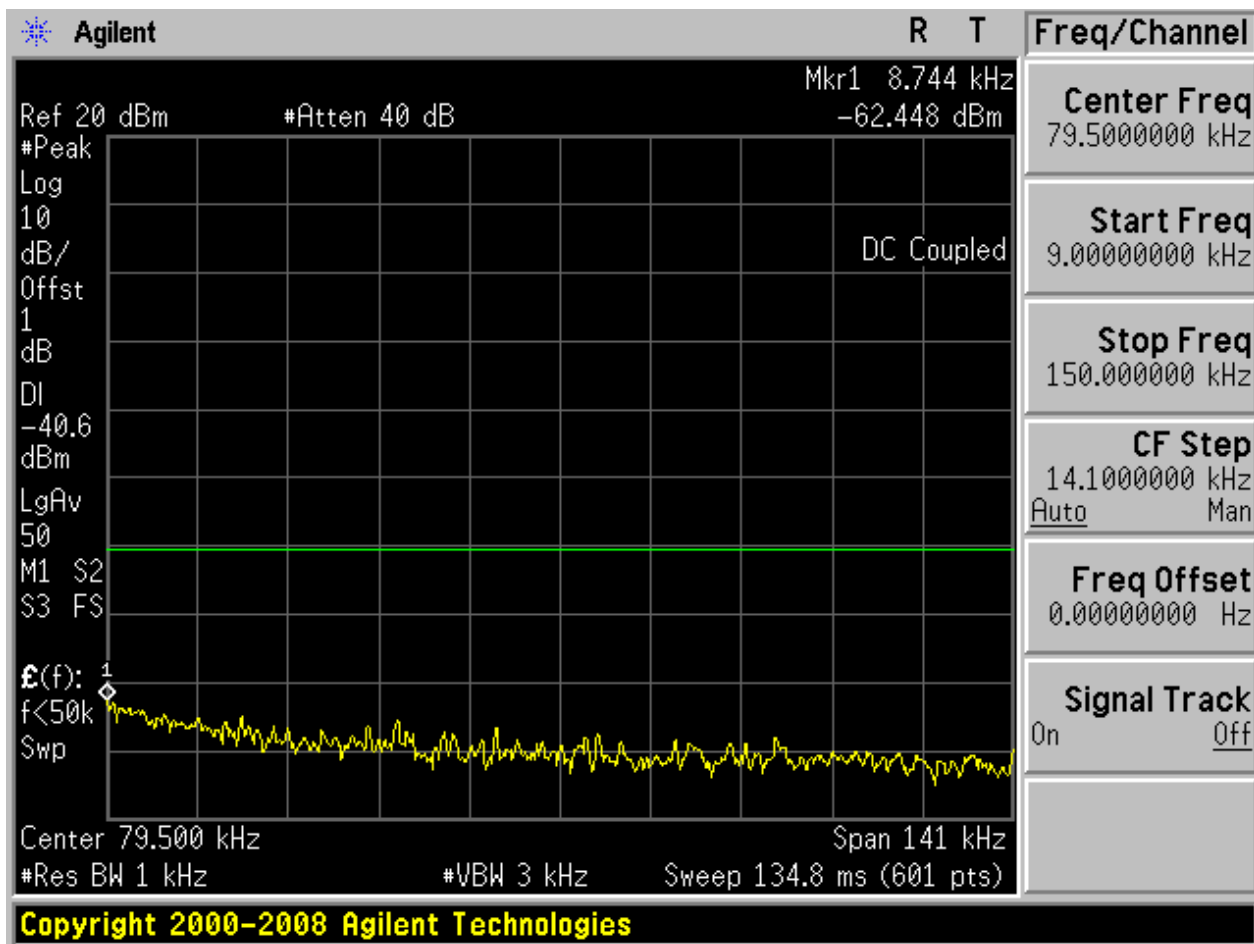
2.3 11B_H@Ant 1

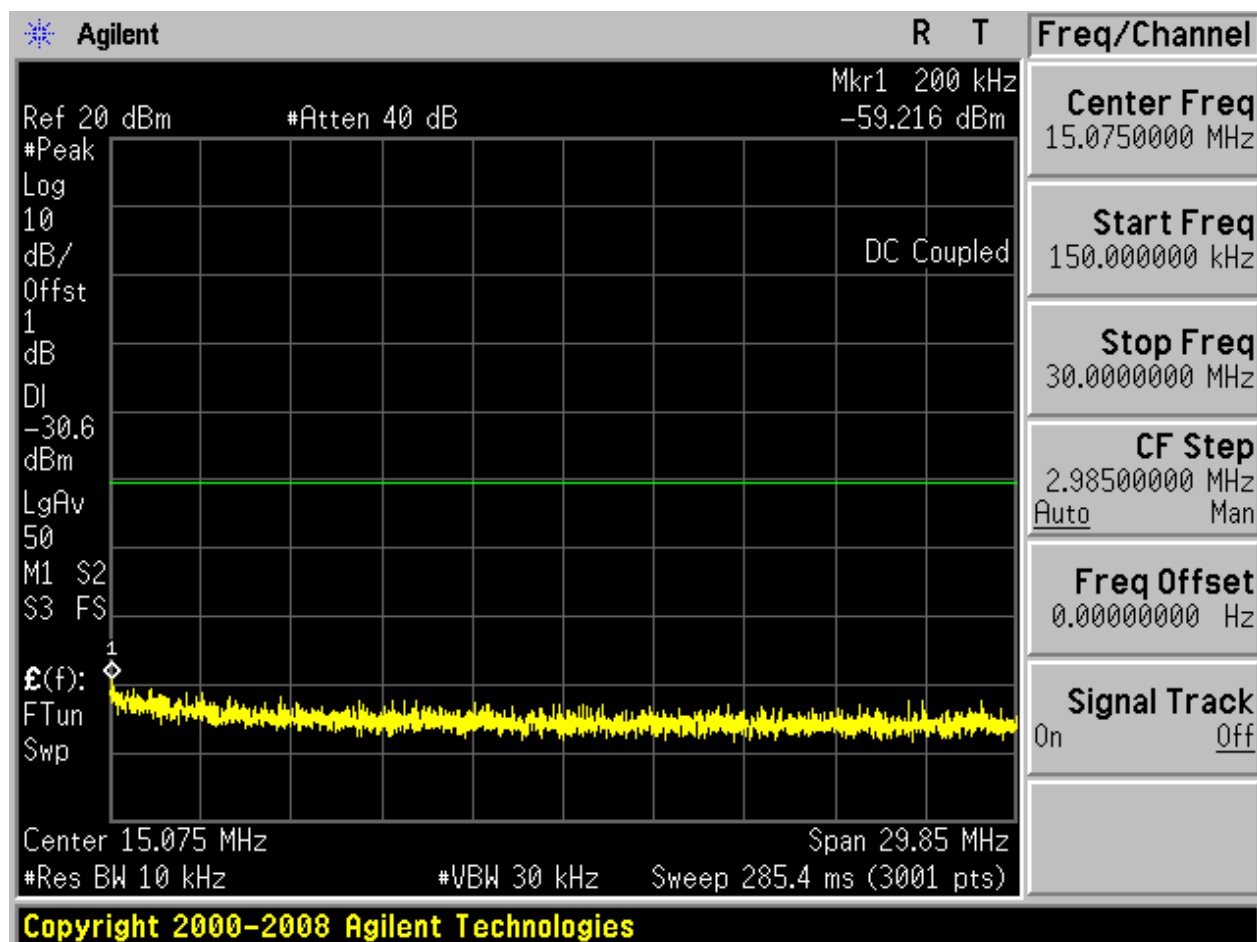
Pref:

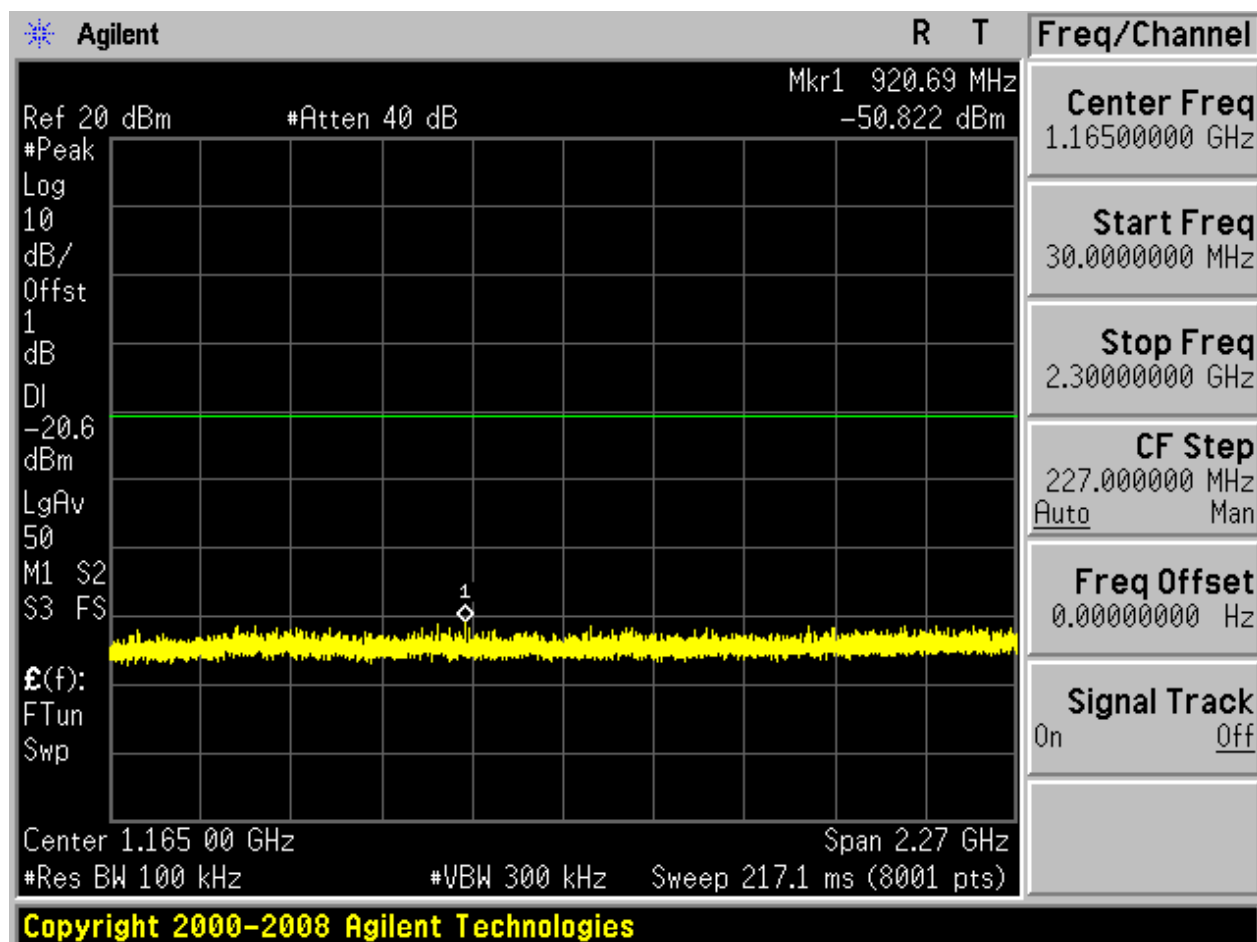


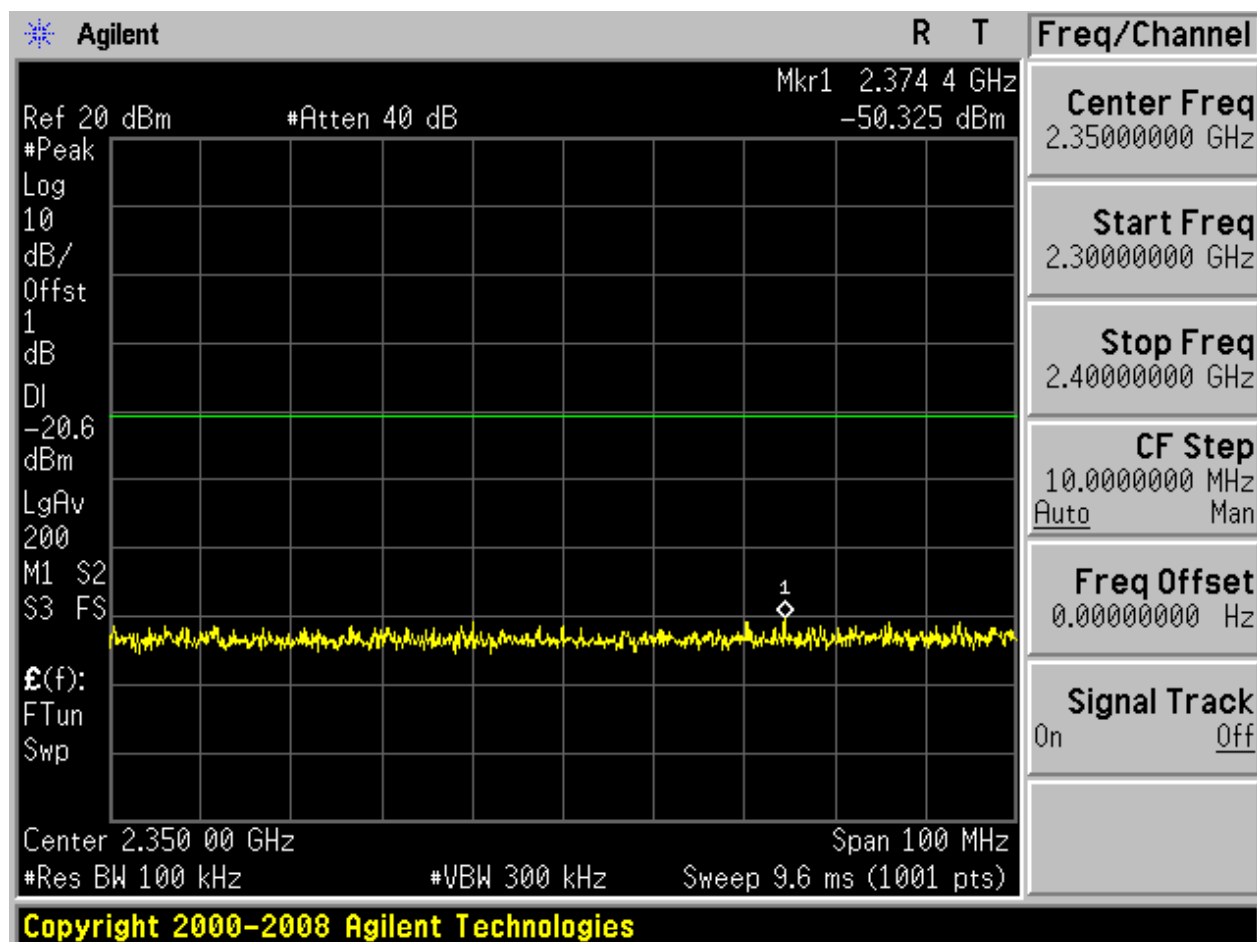


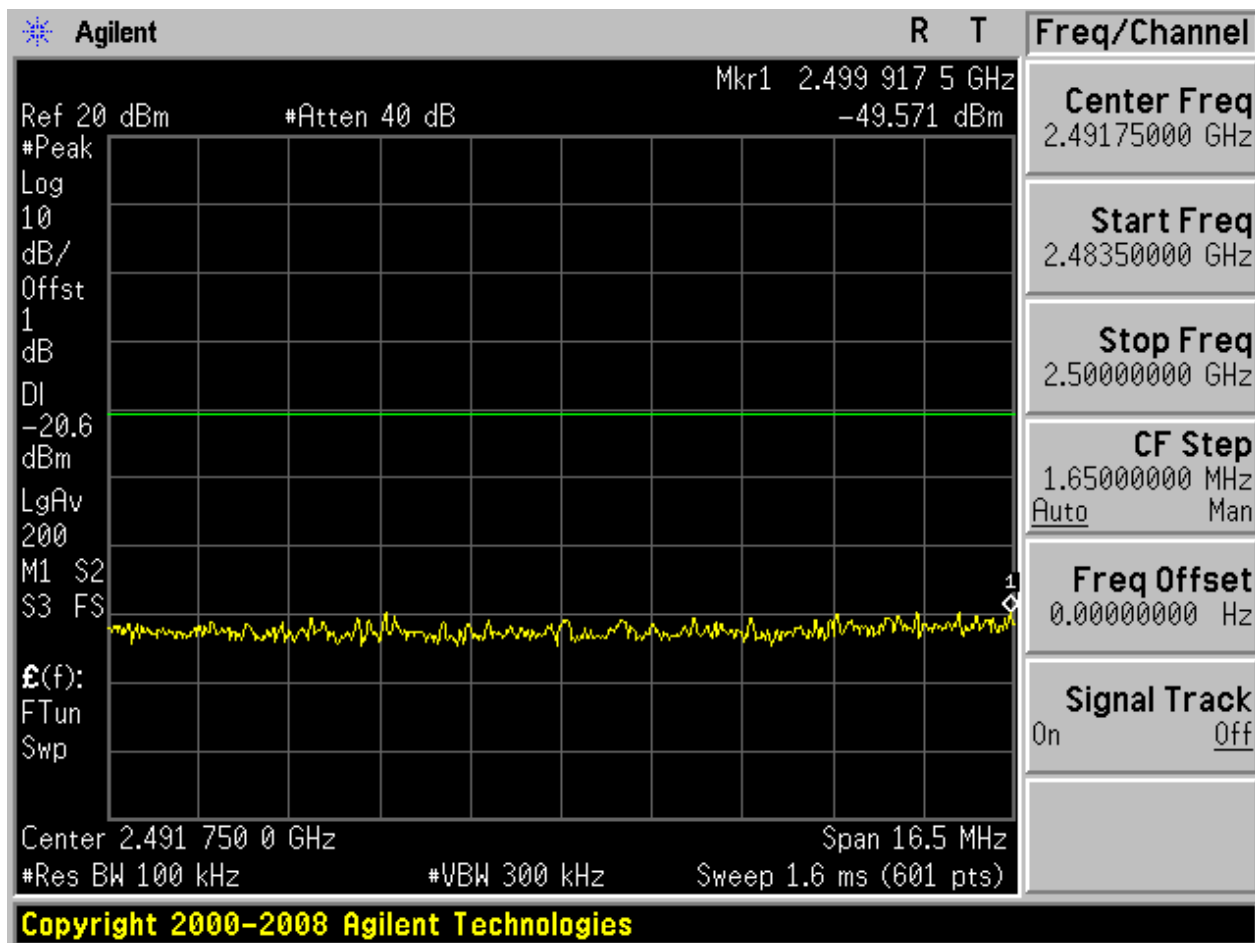
Puw:

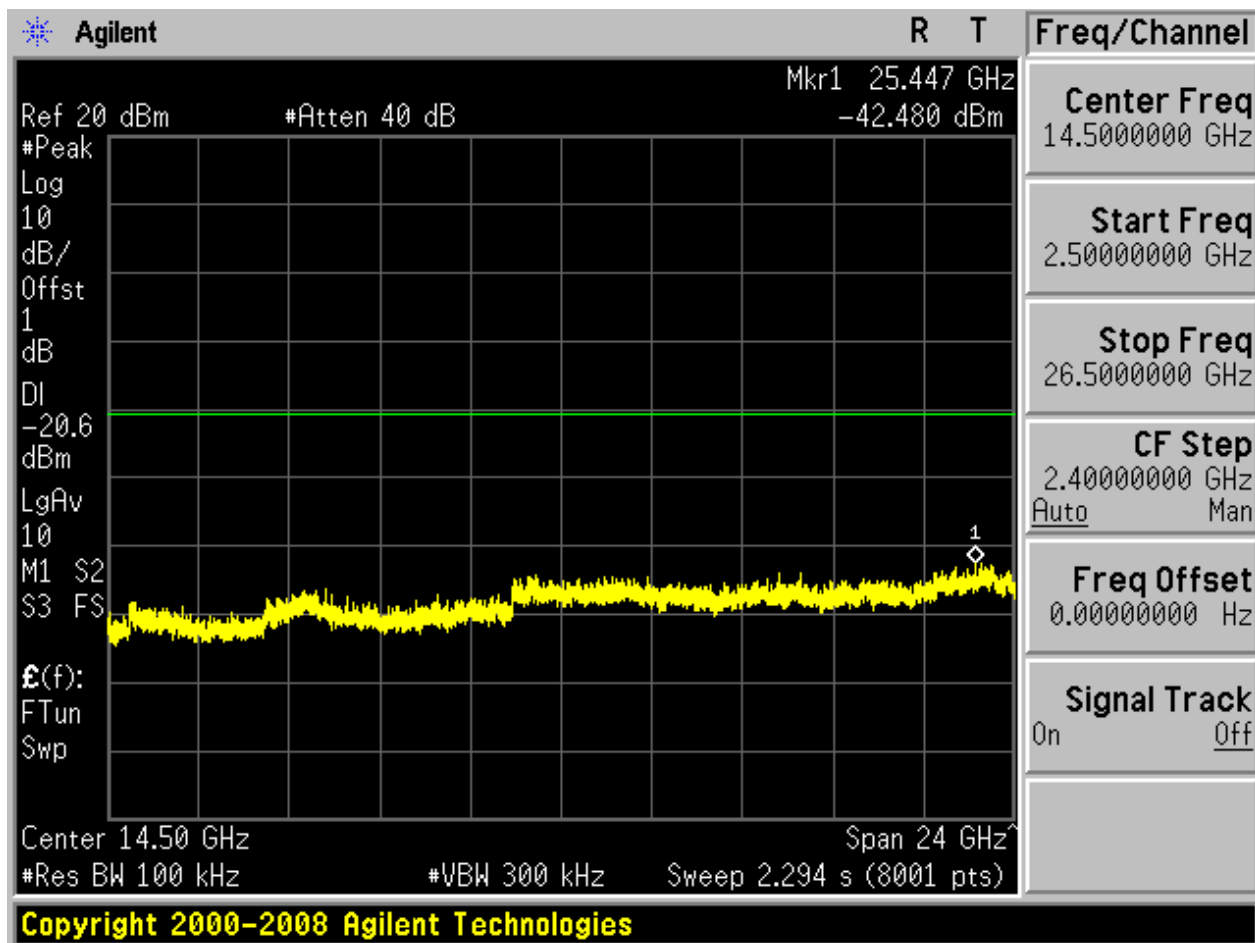








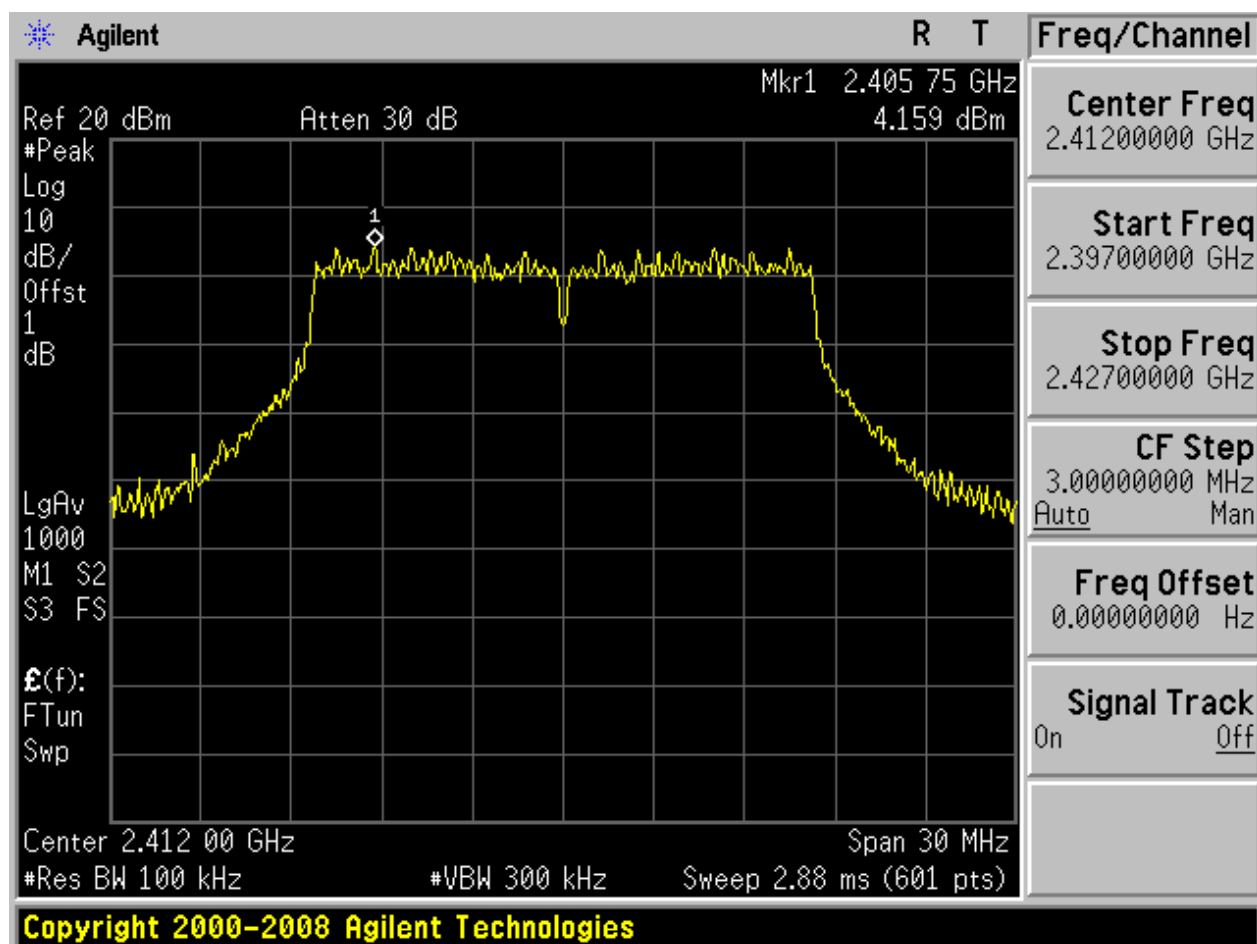






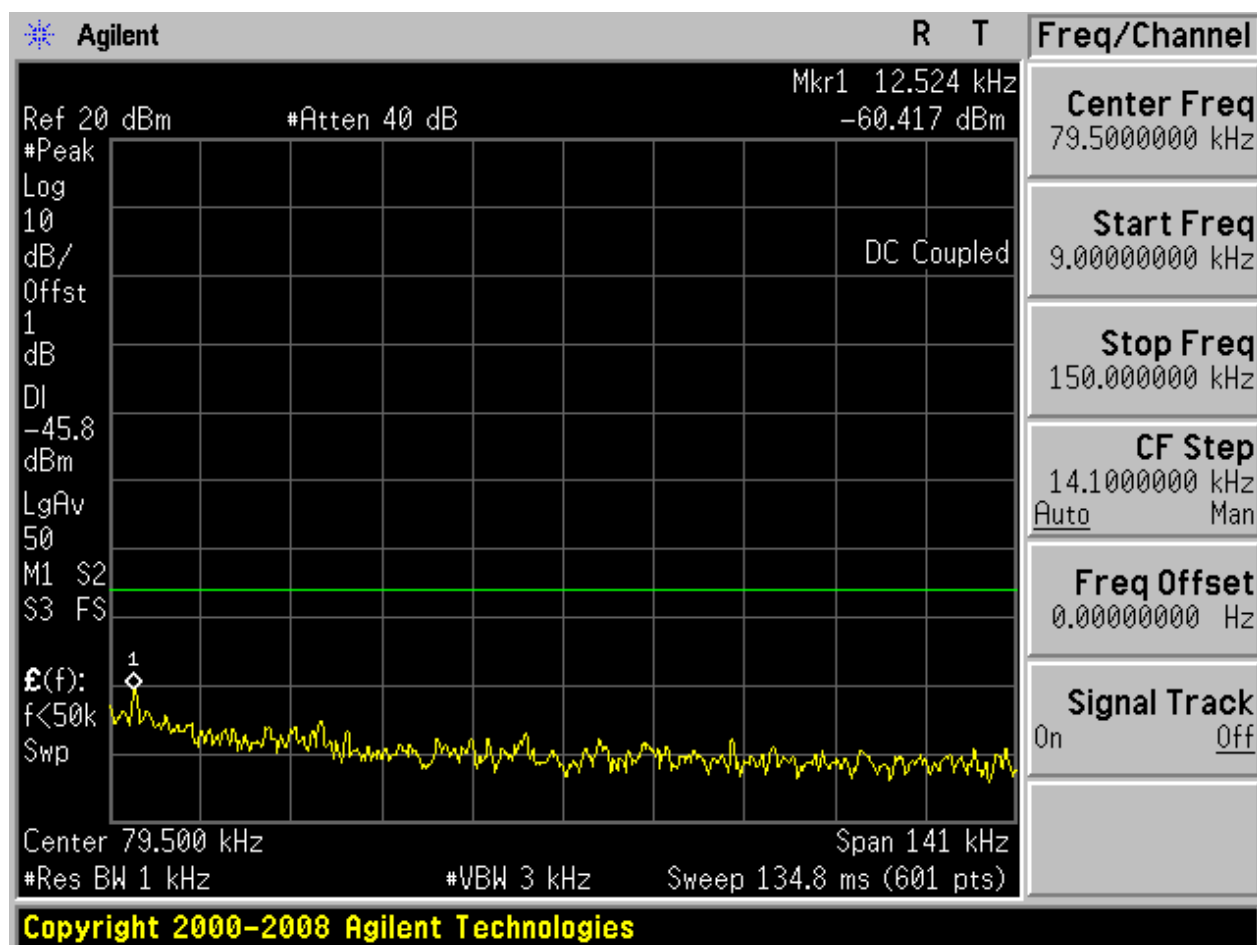
2.4 11G_L@Ant 1

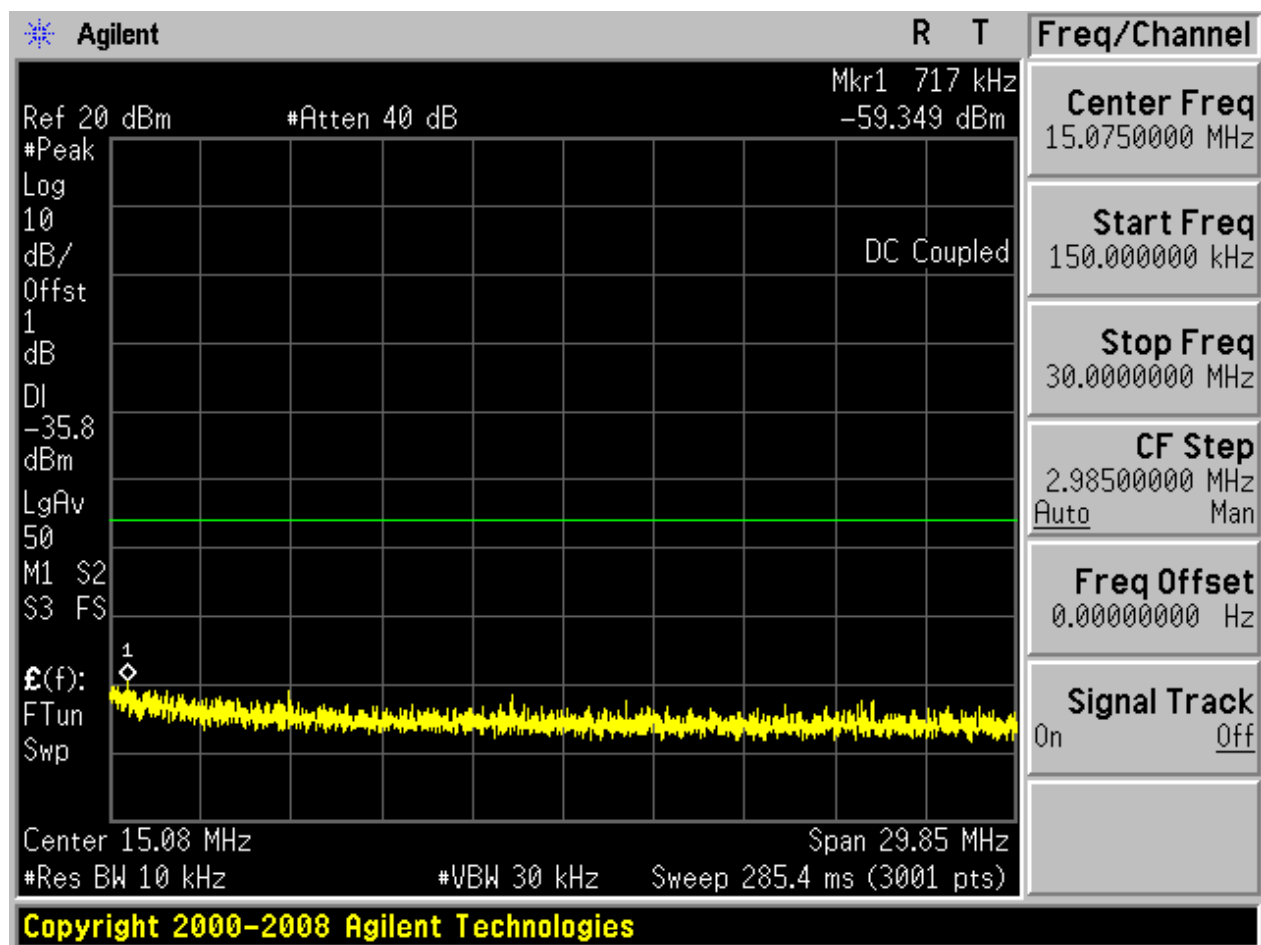
Pref:

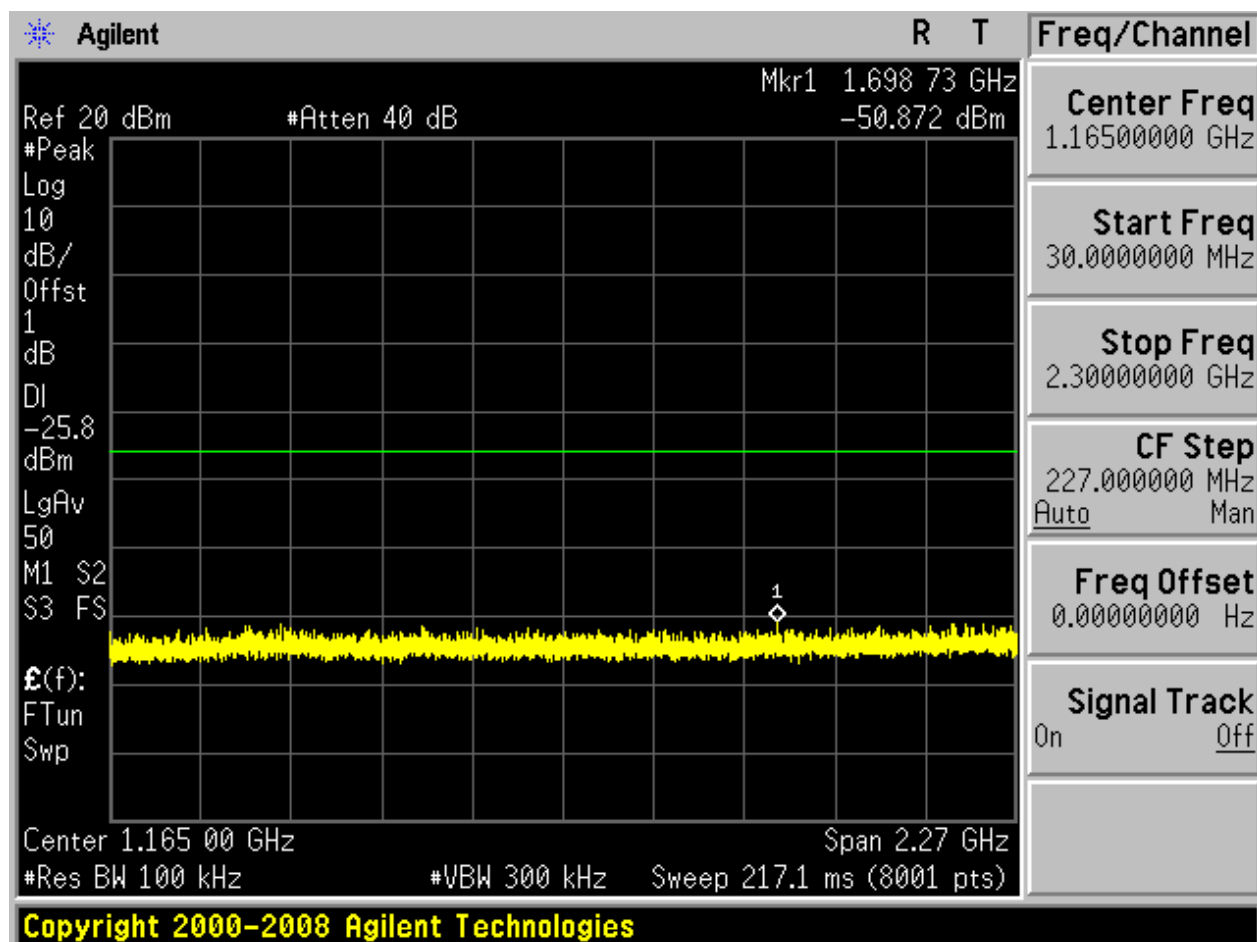


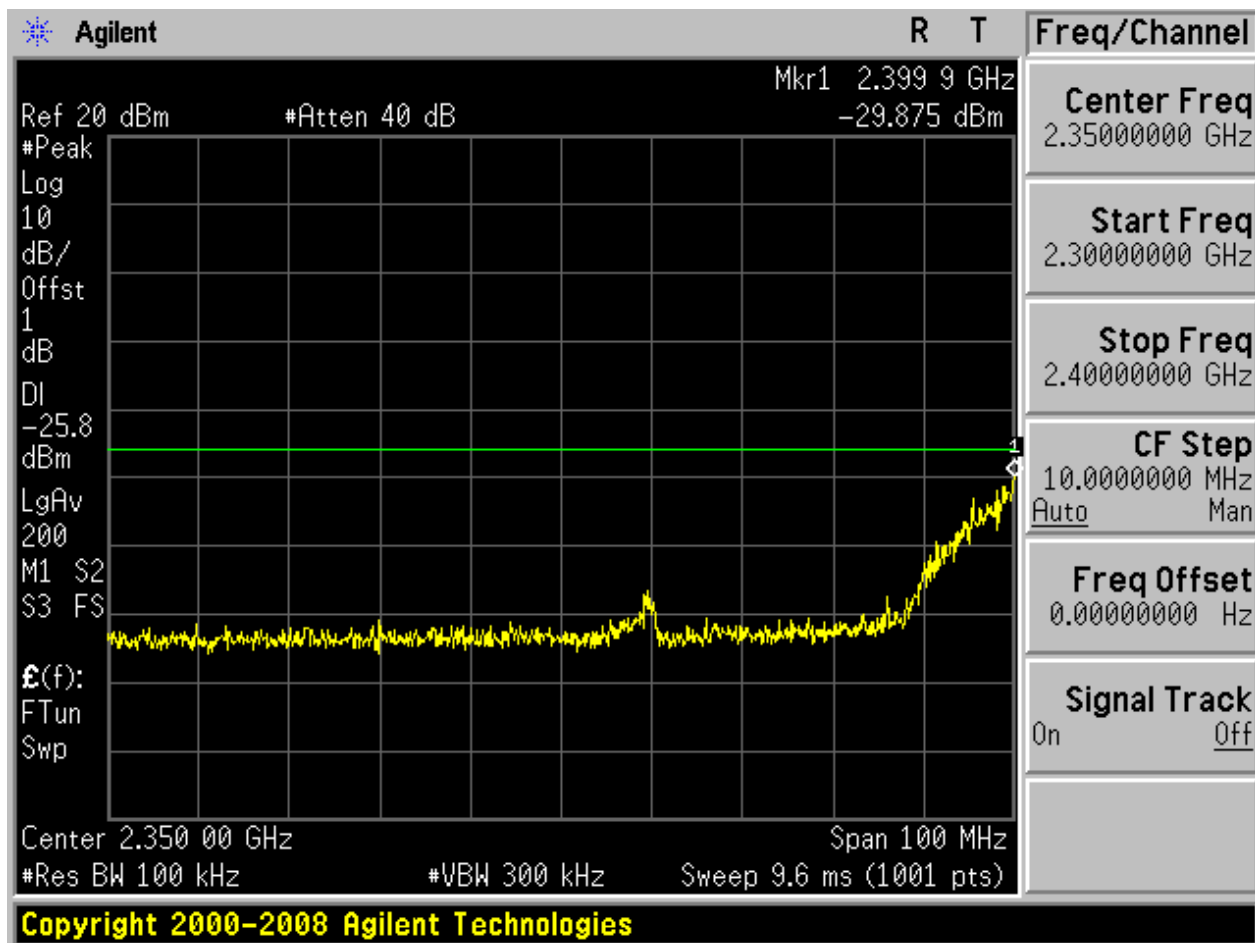


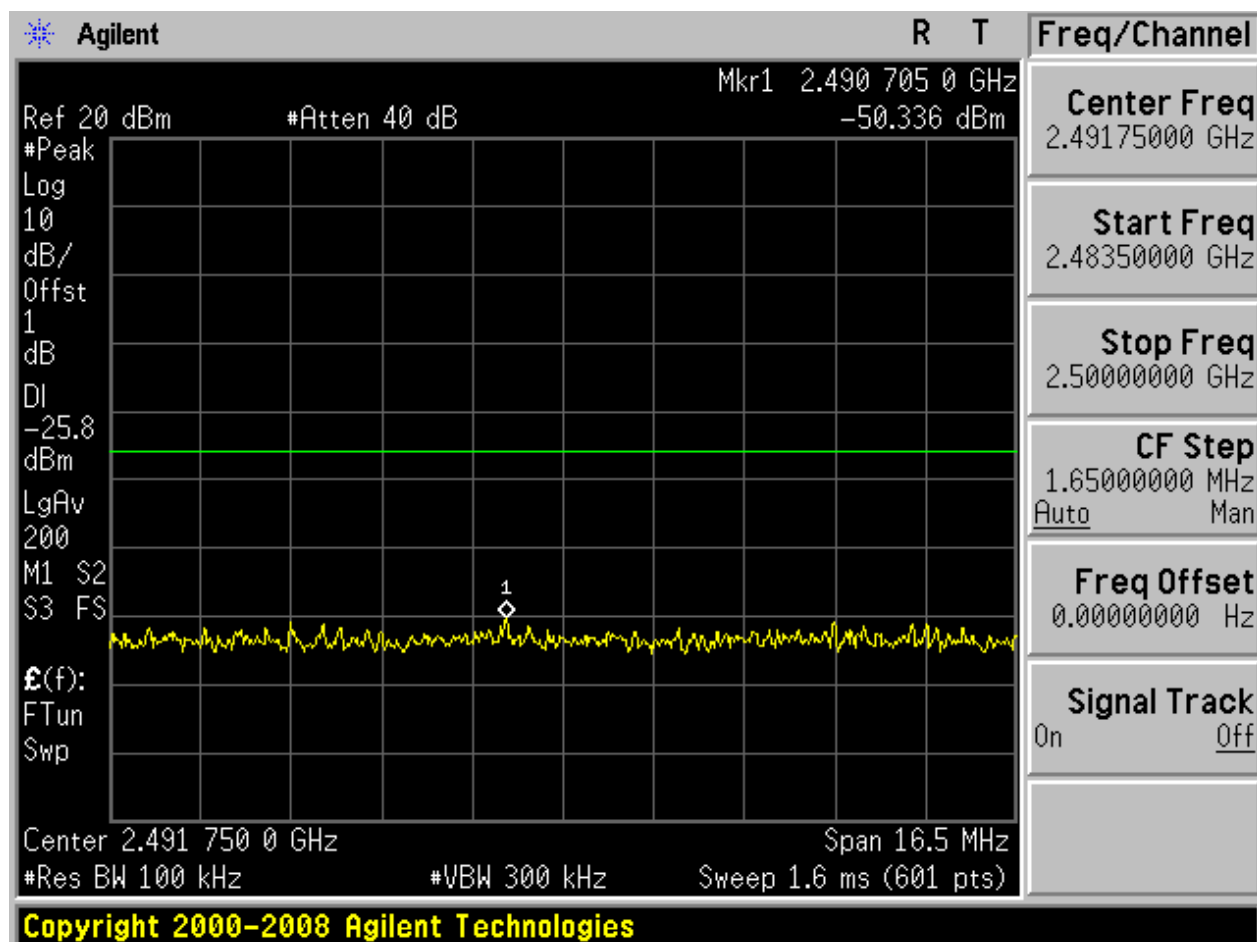
Puw:

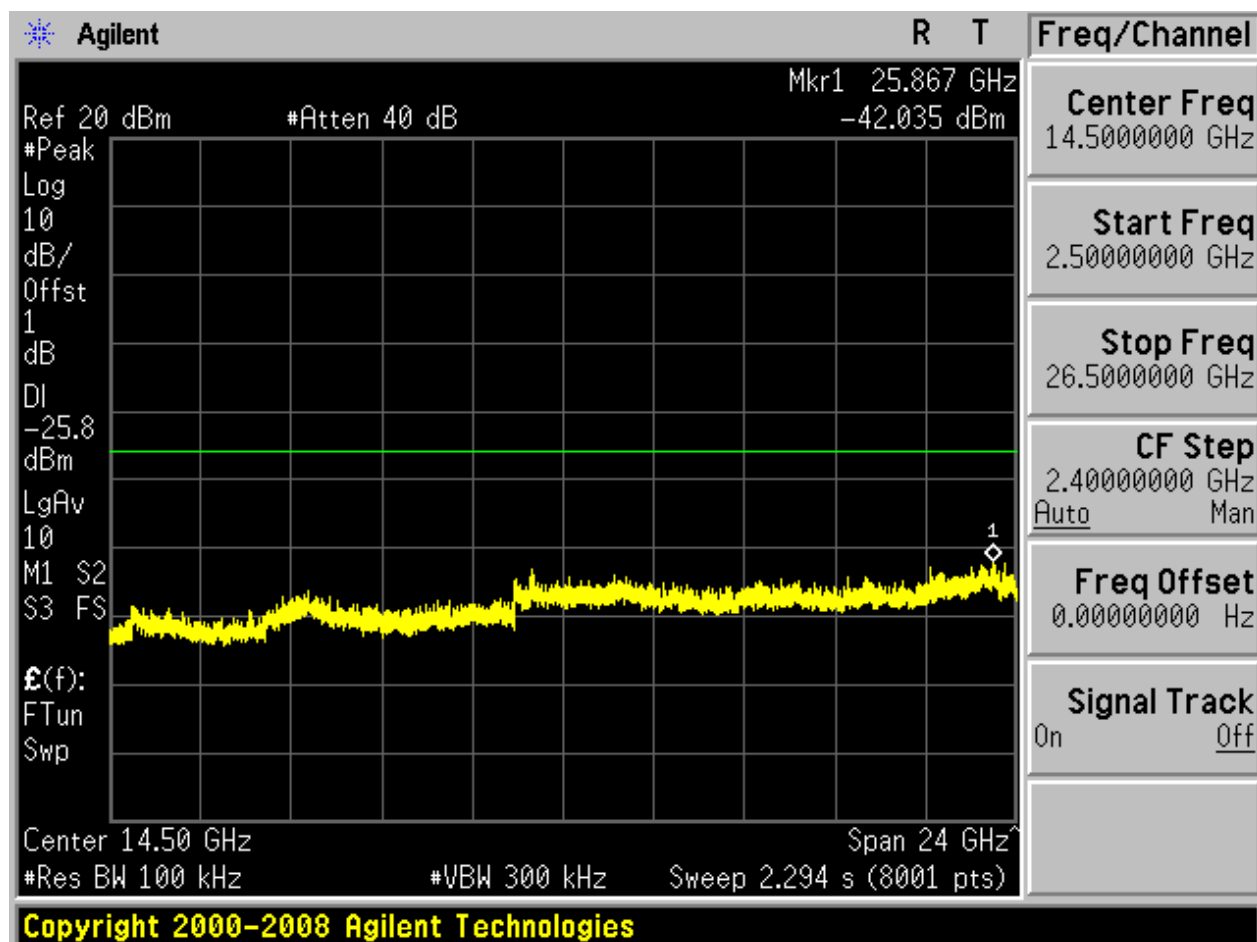








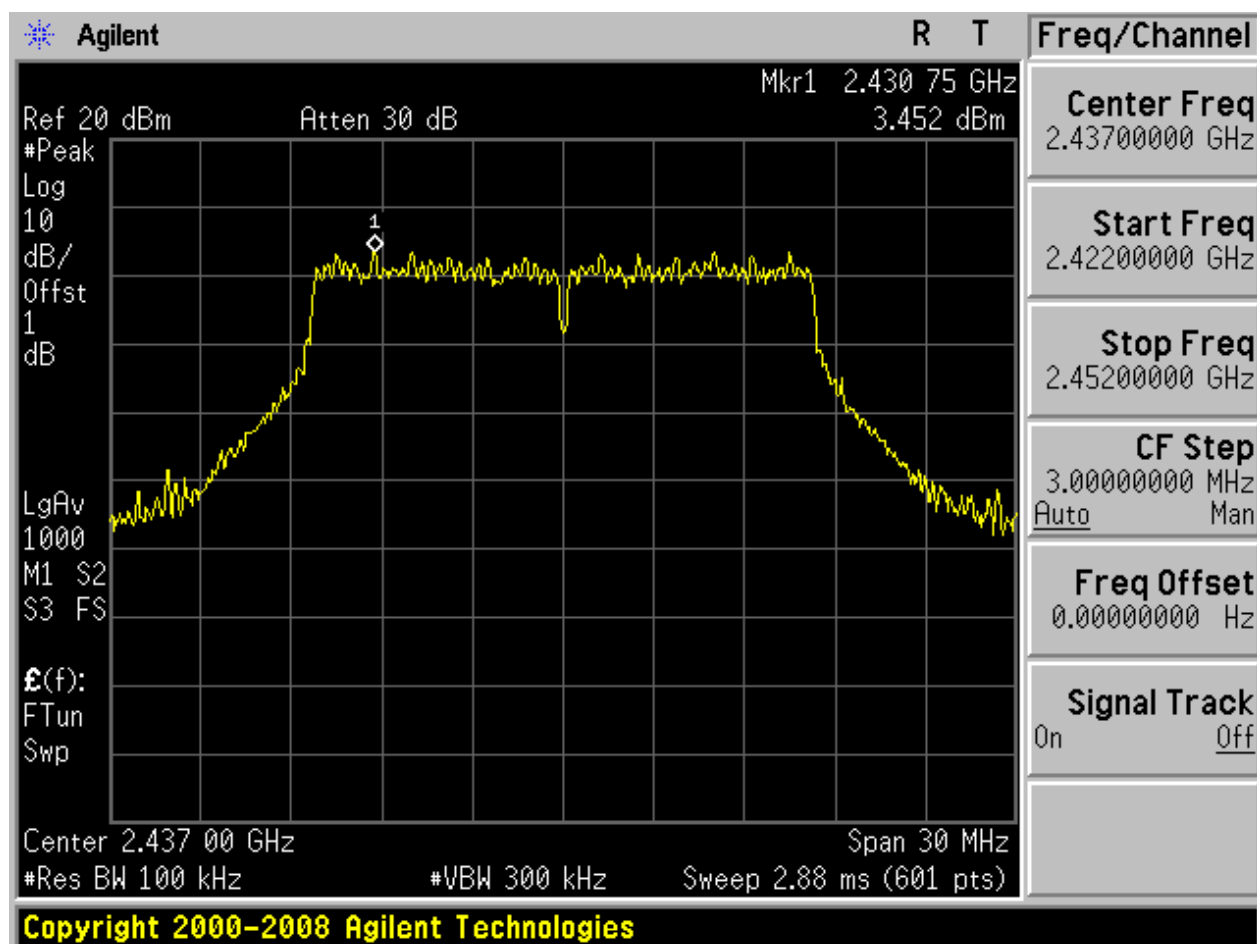






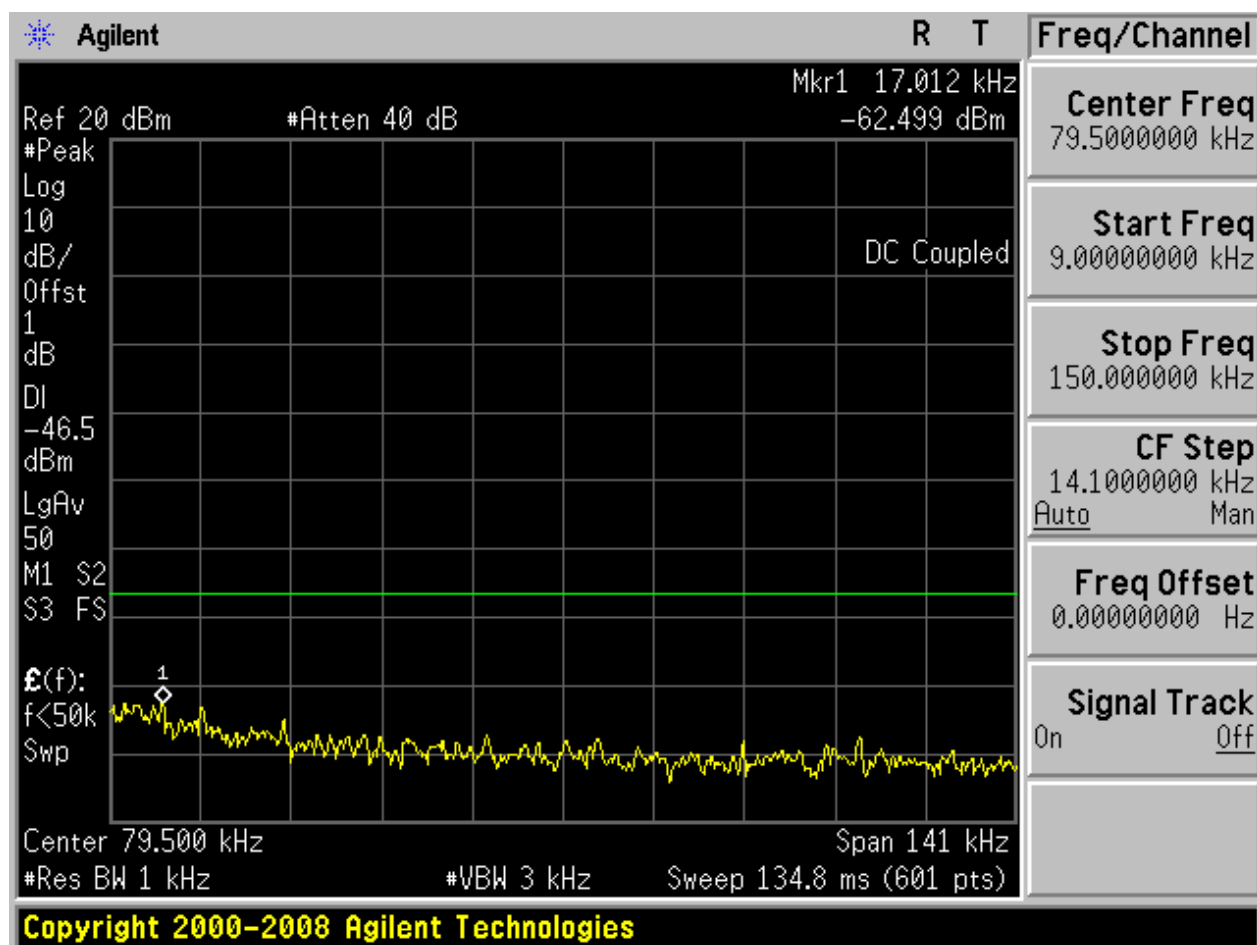
2.5 11G_M@Ant 1

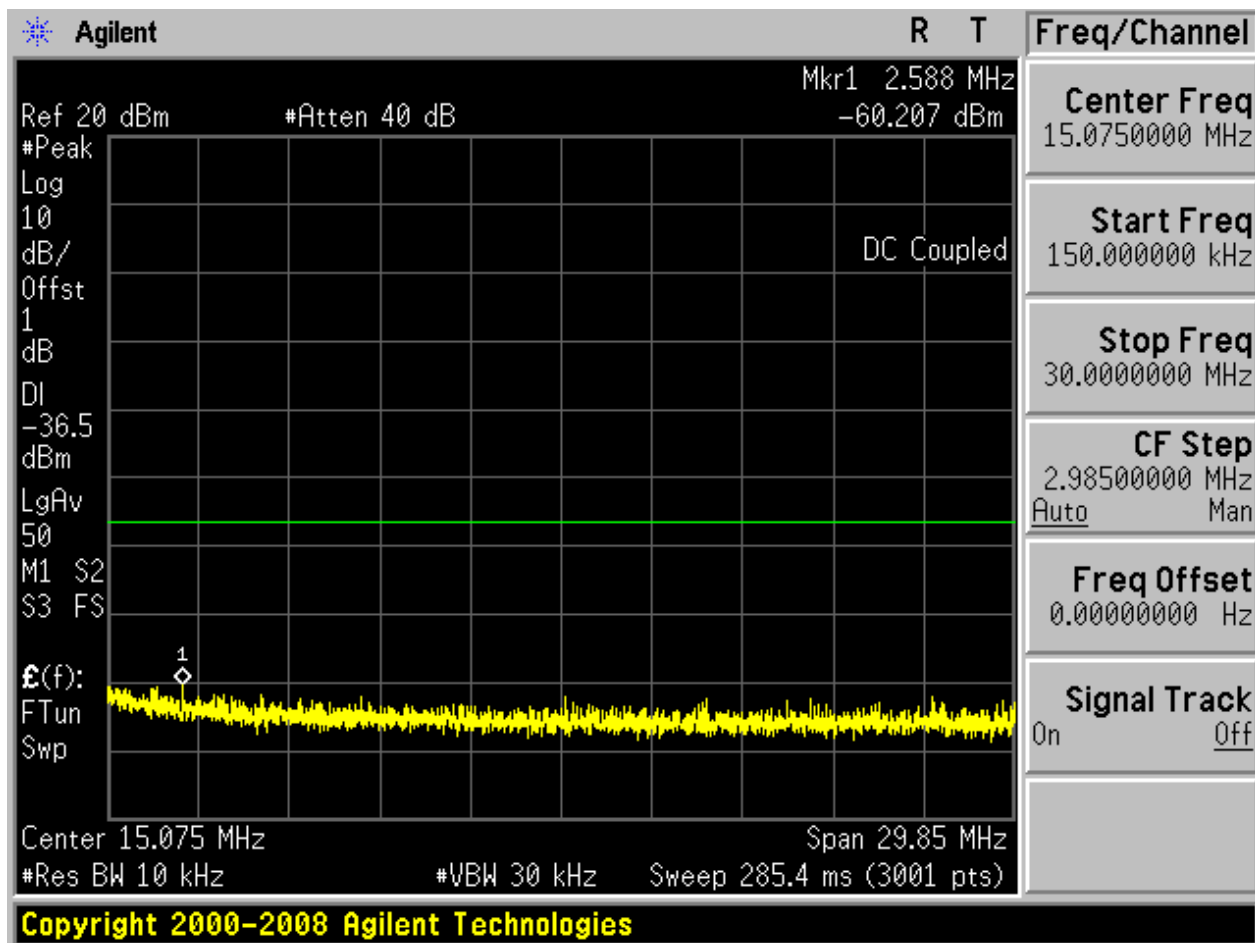
Pref:

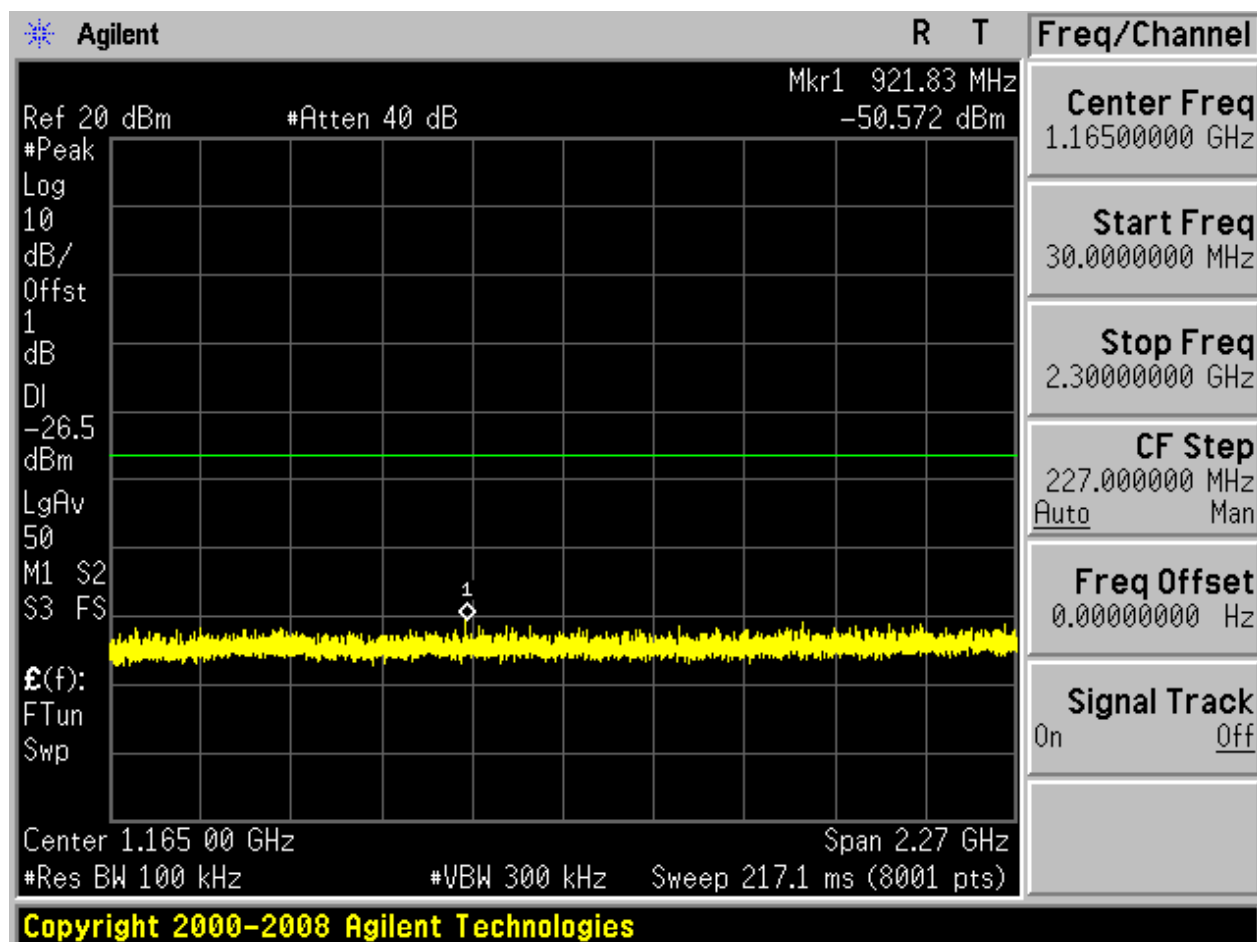


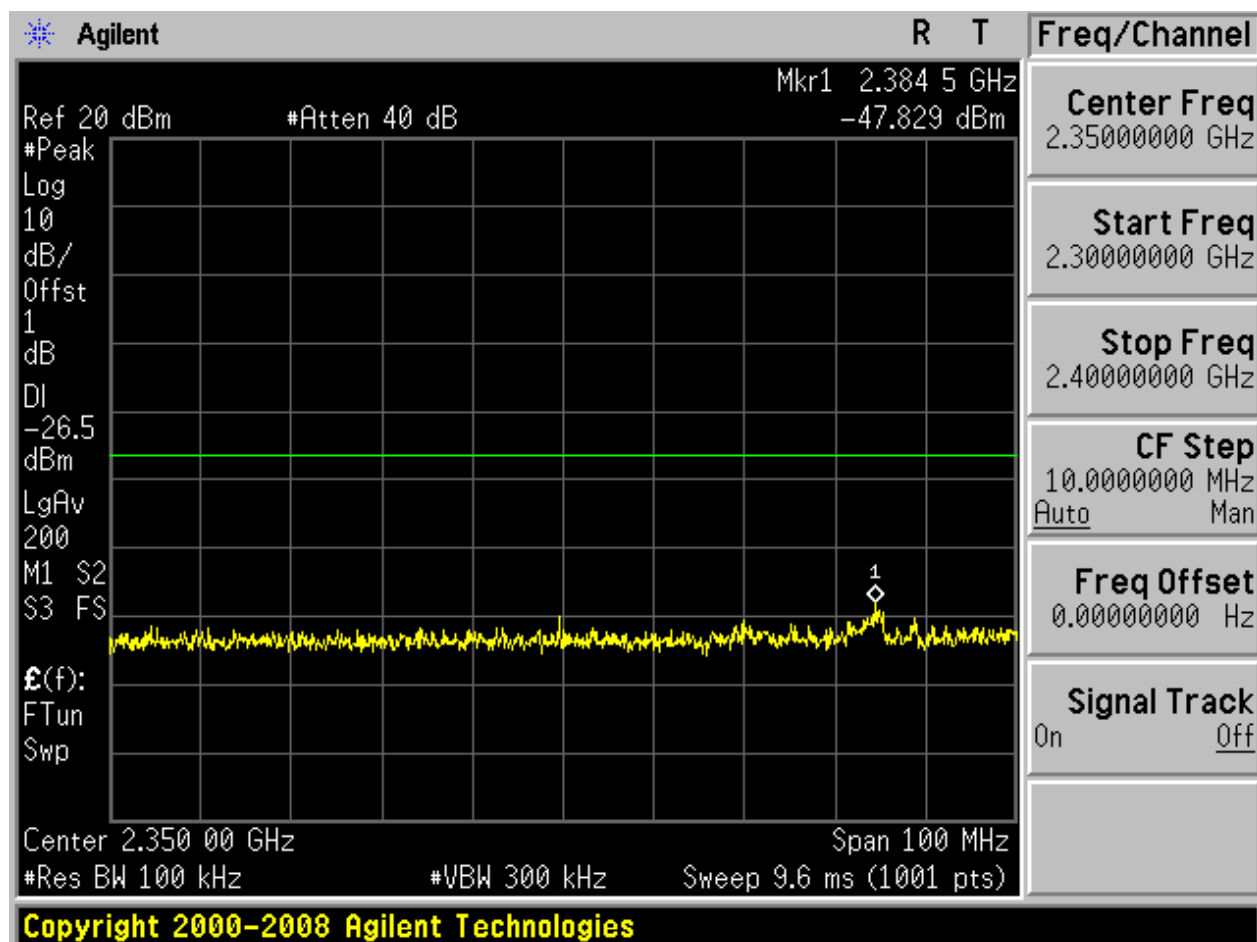


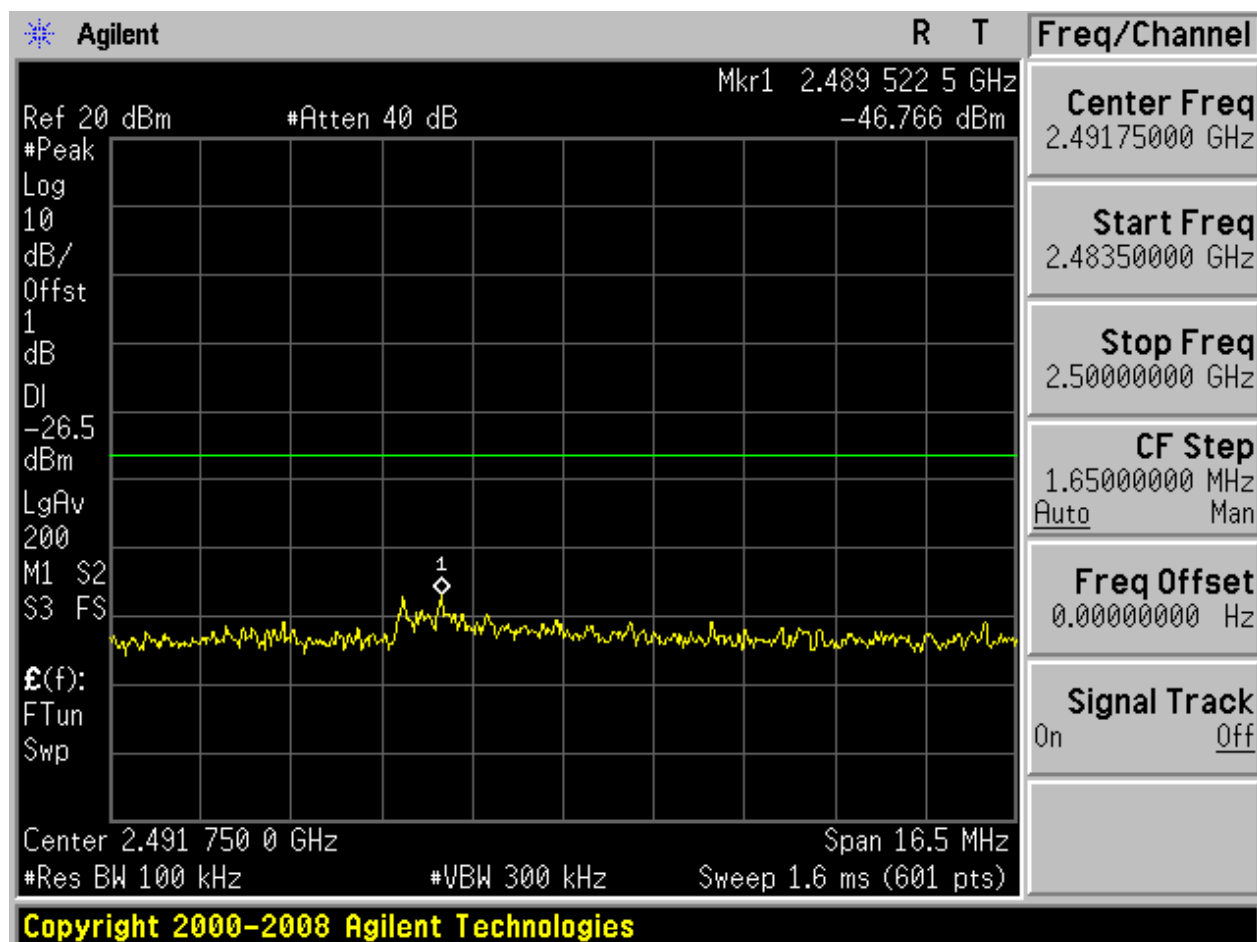
Puw:

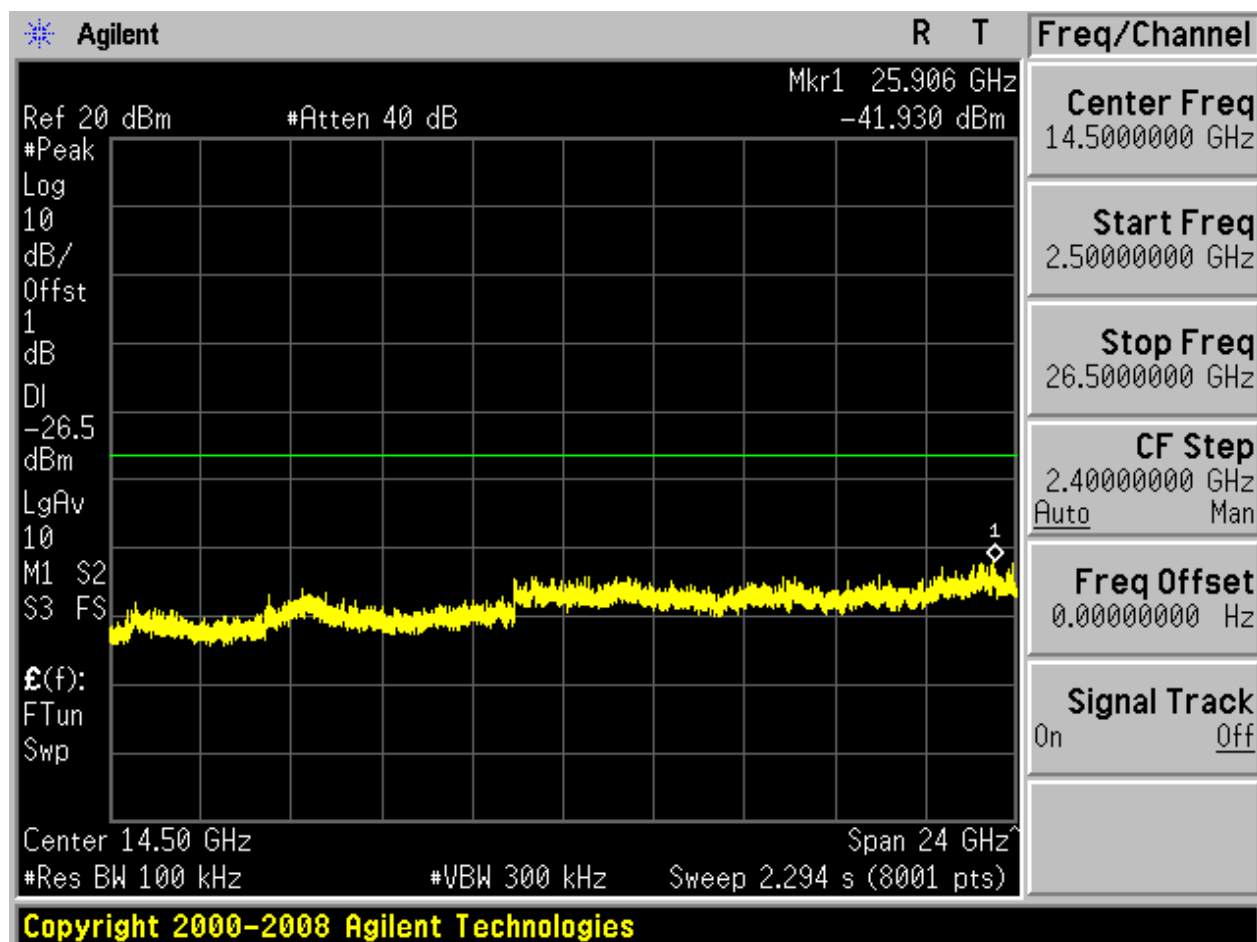








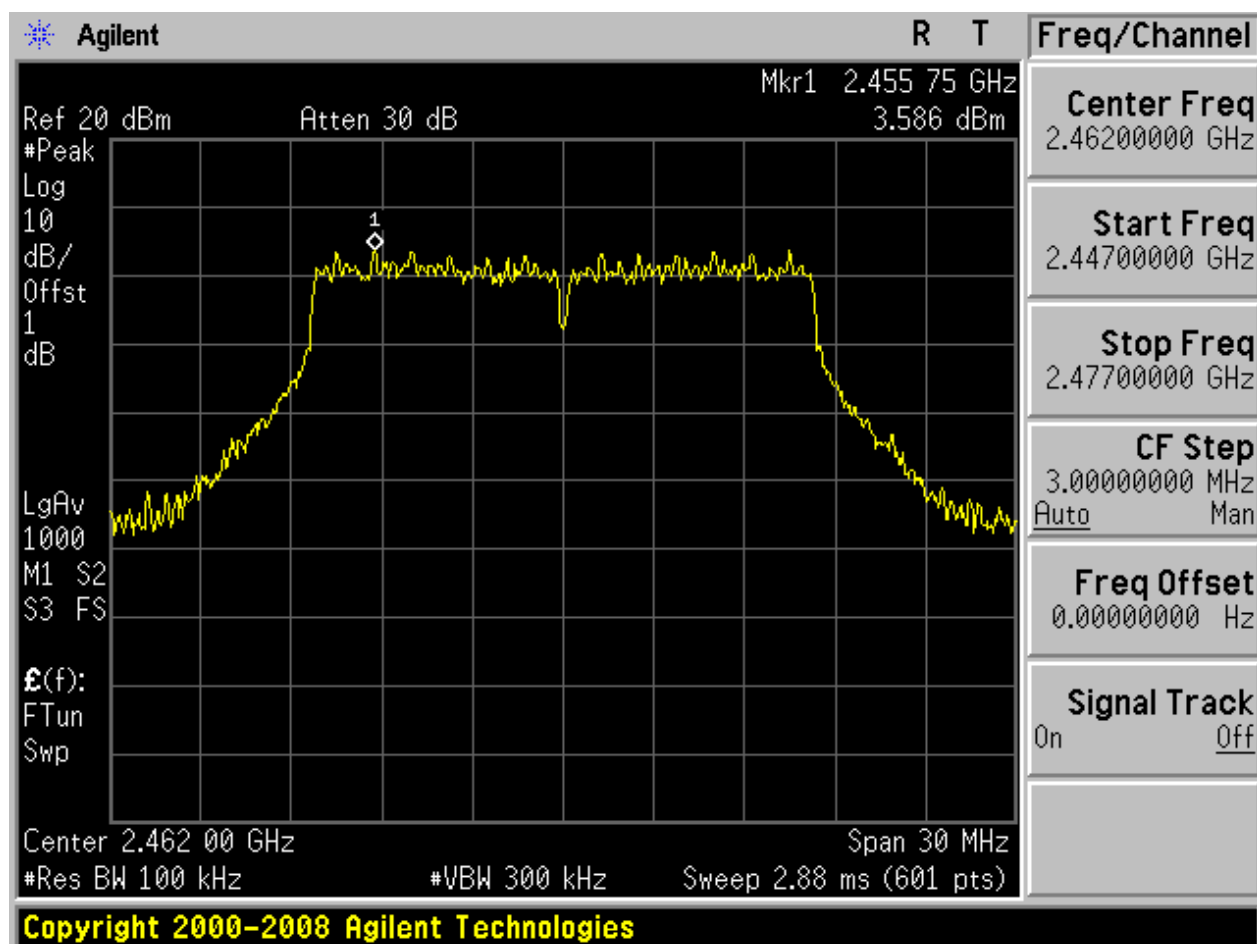






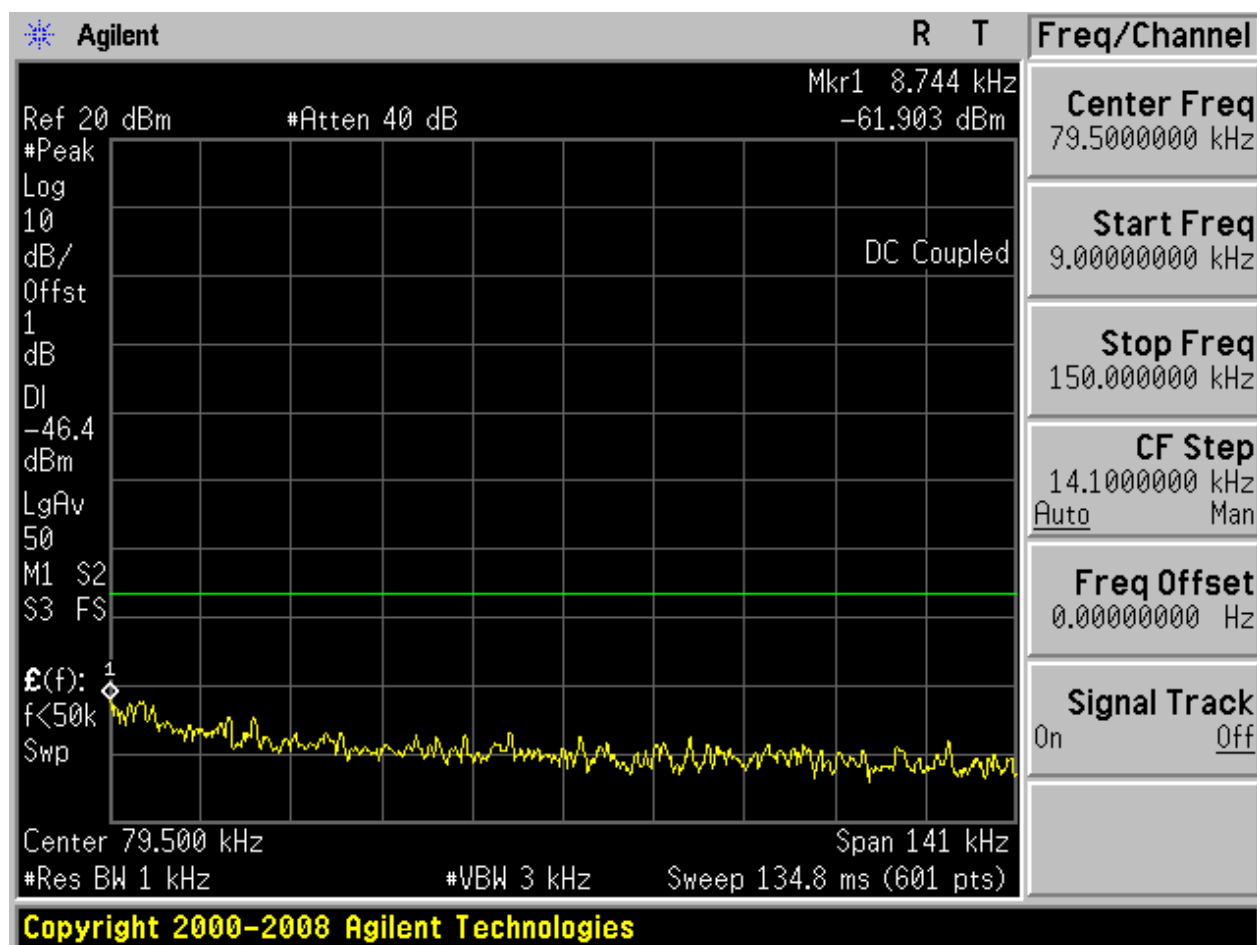
2.6 11G_H@Ant 1

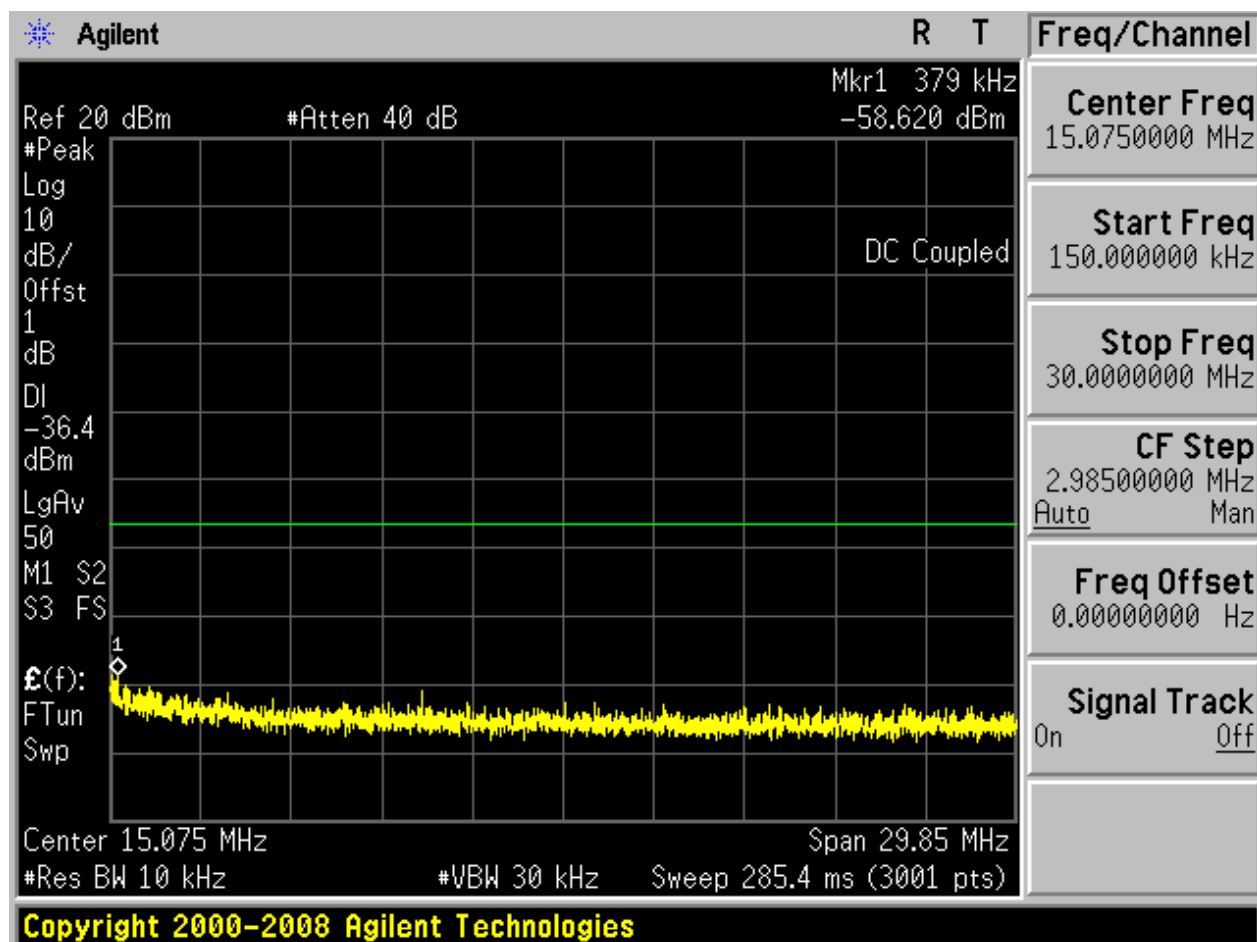
Pref:

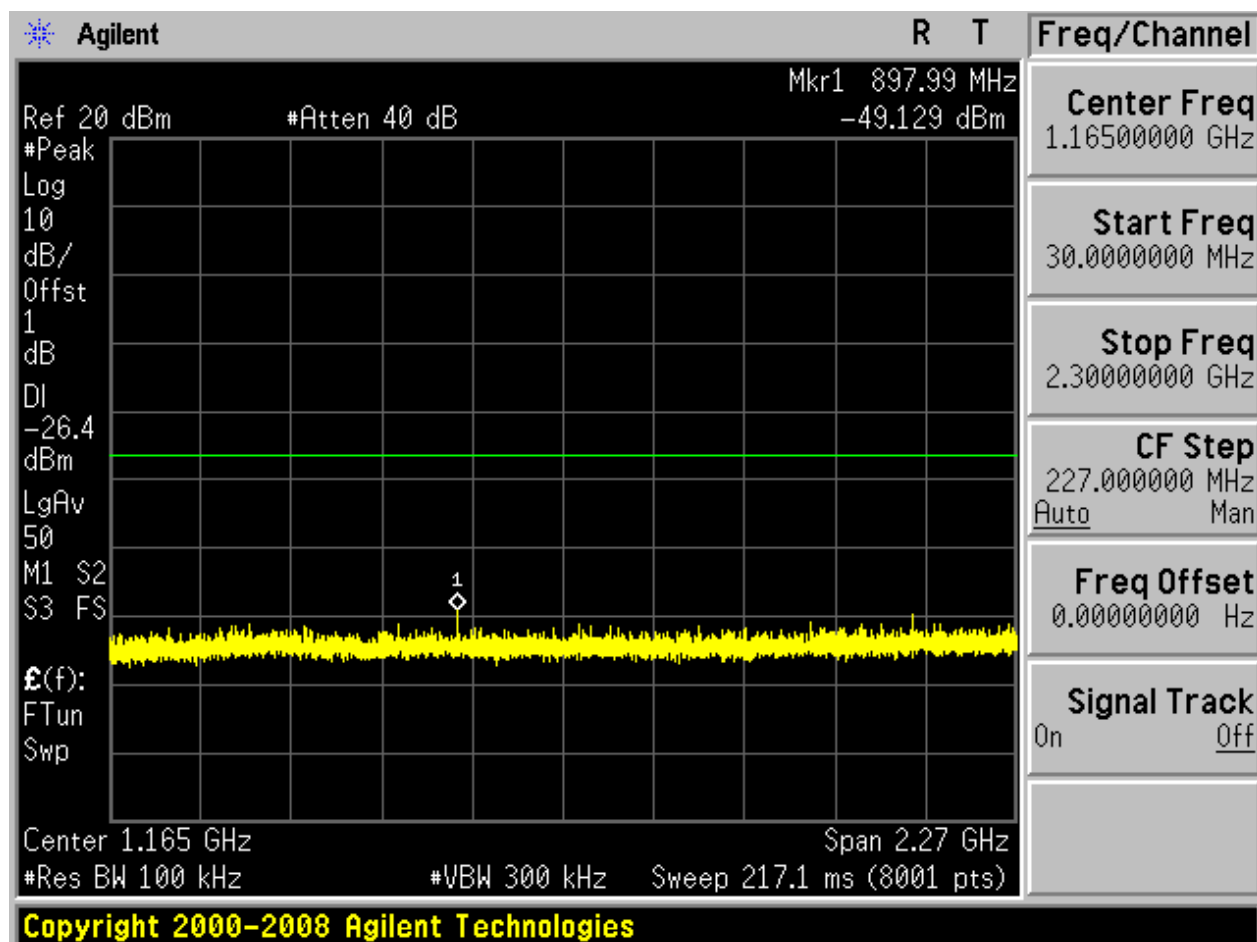


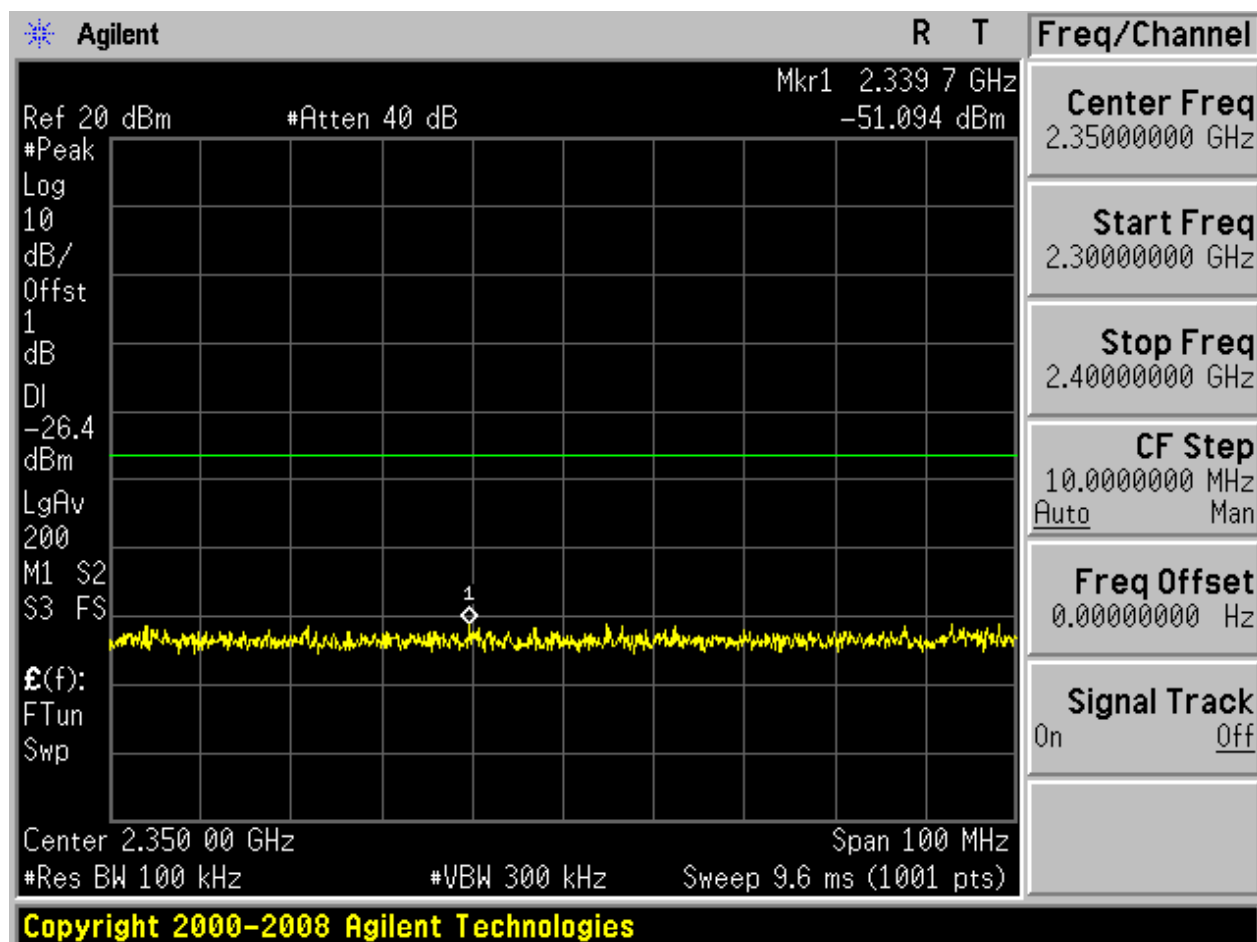


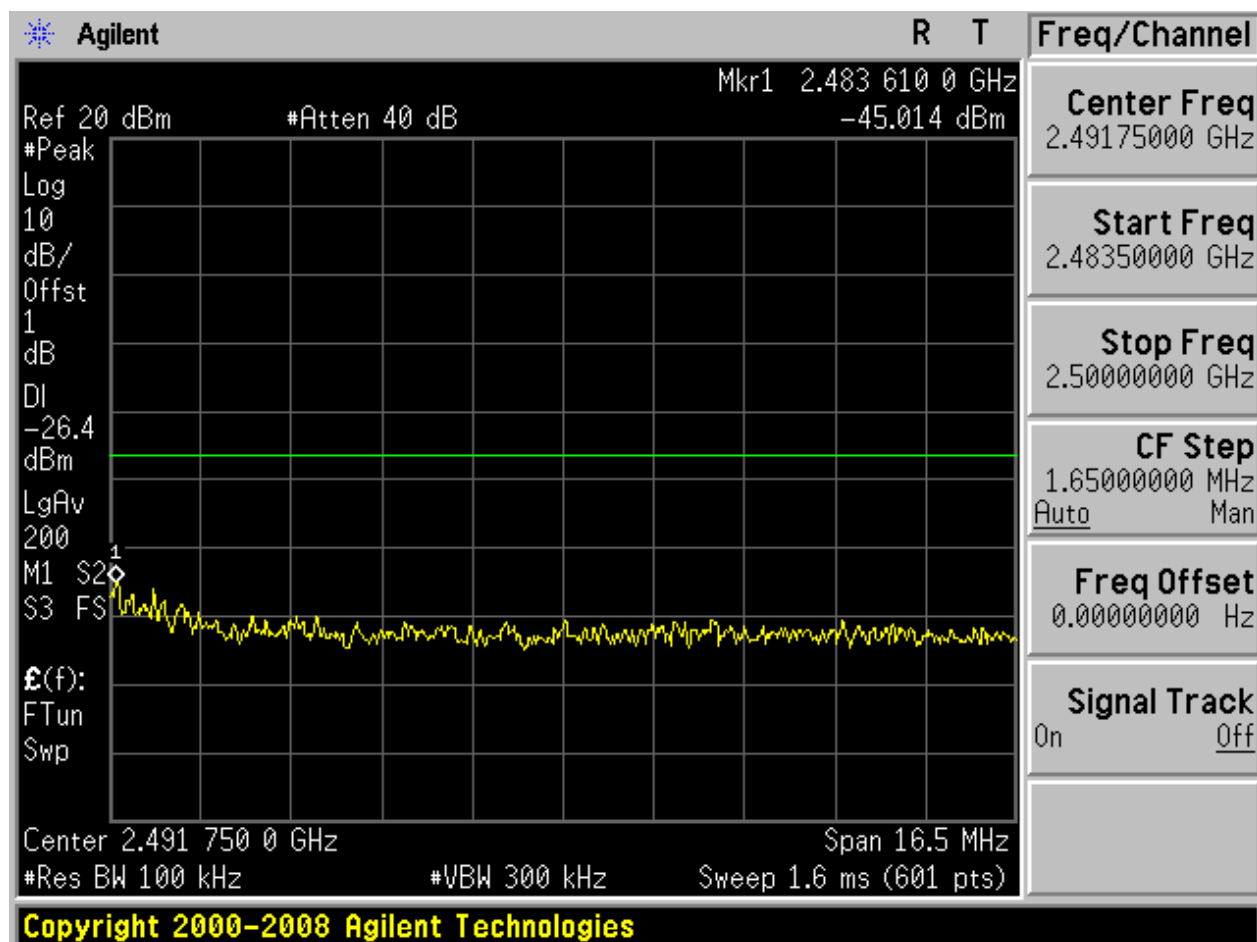
Puw:

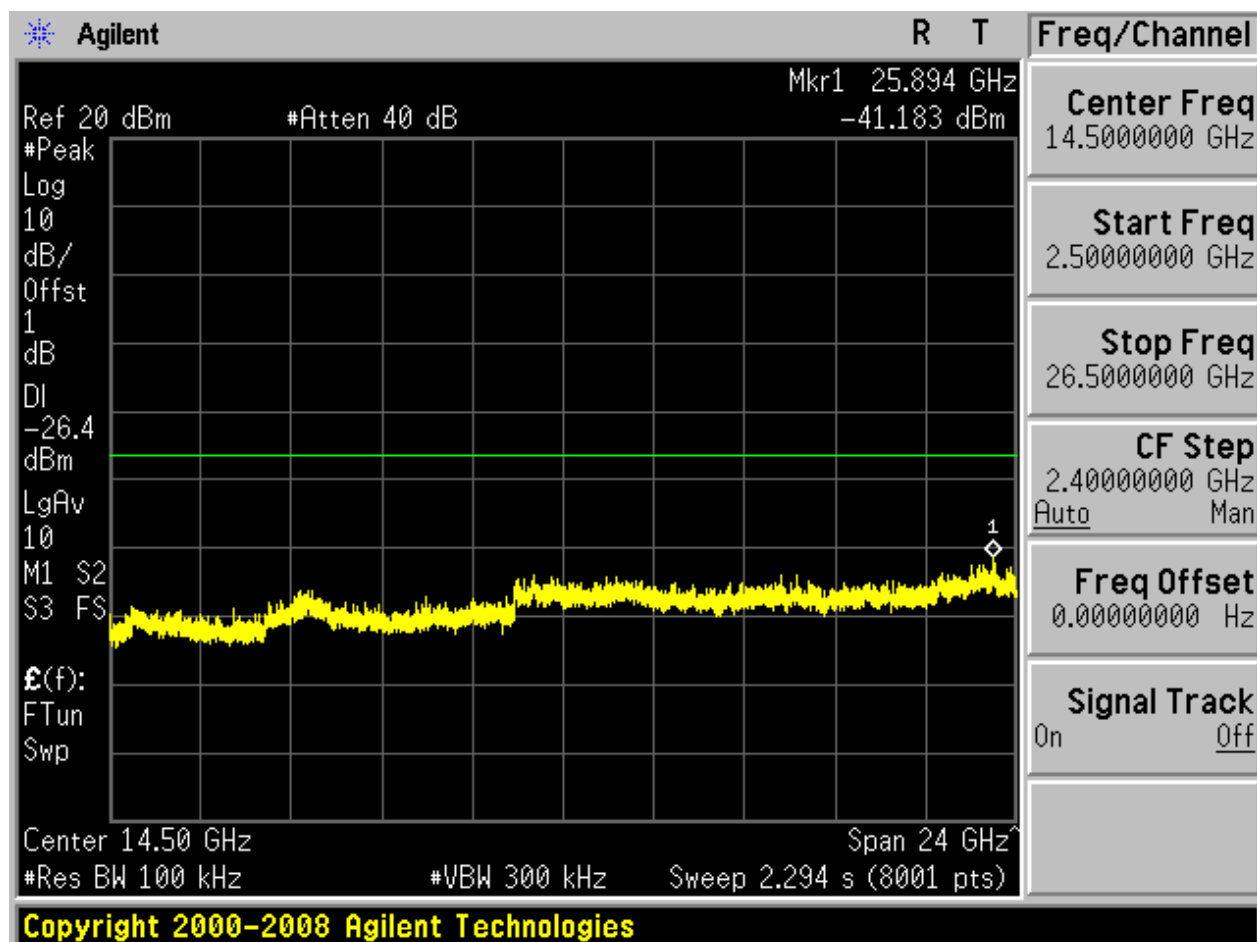








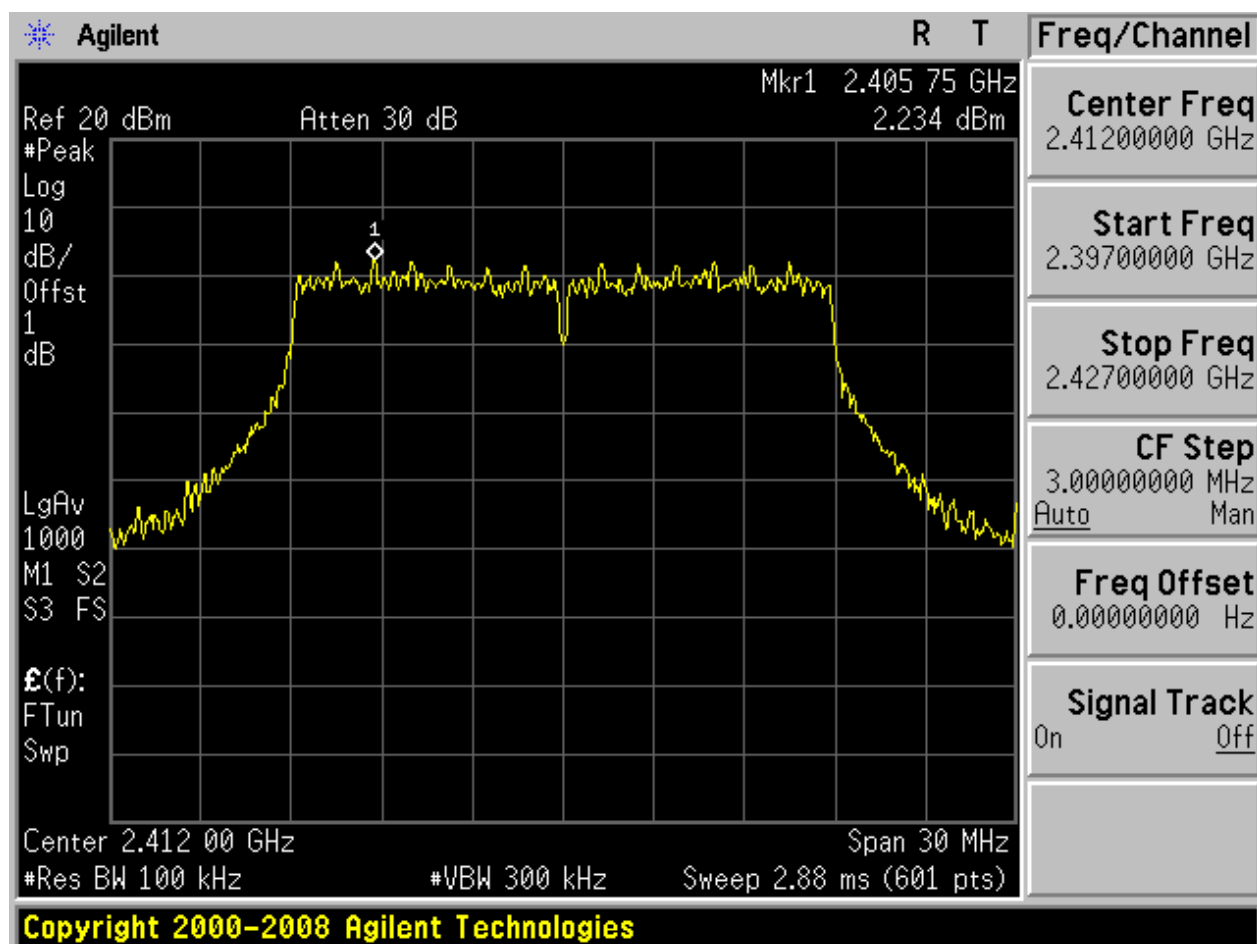






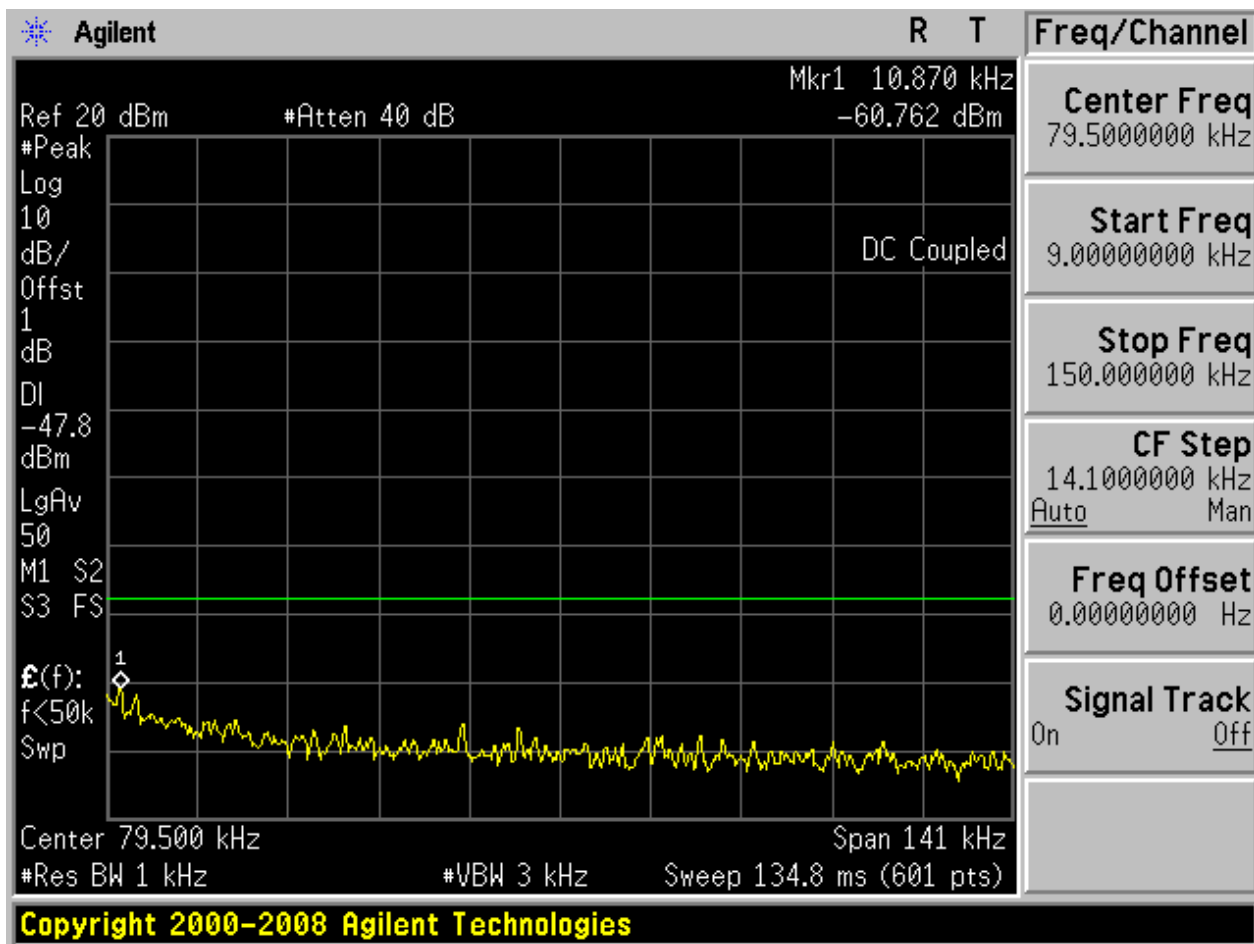
2.7 11N20_L@Ant 1

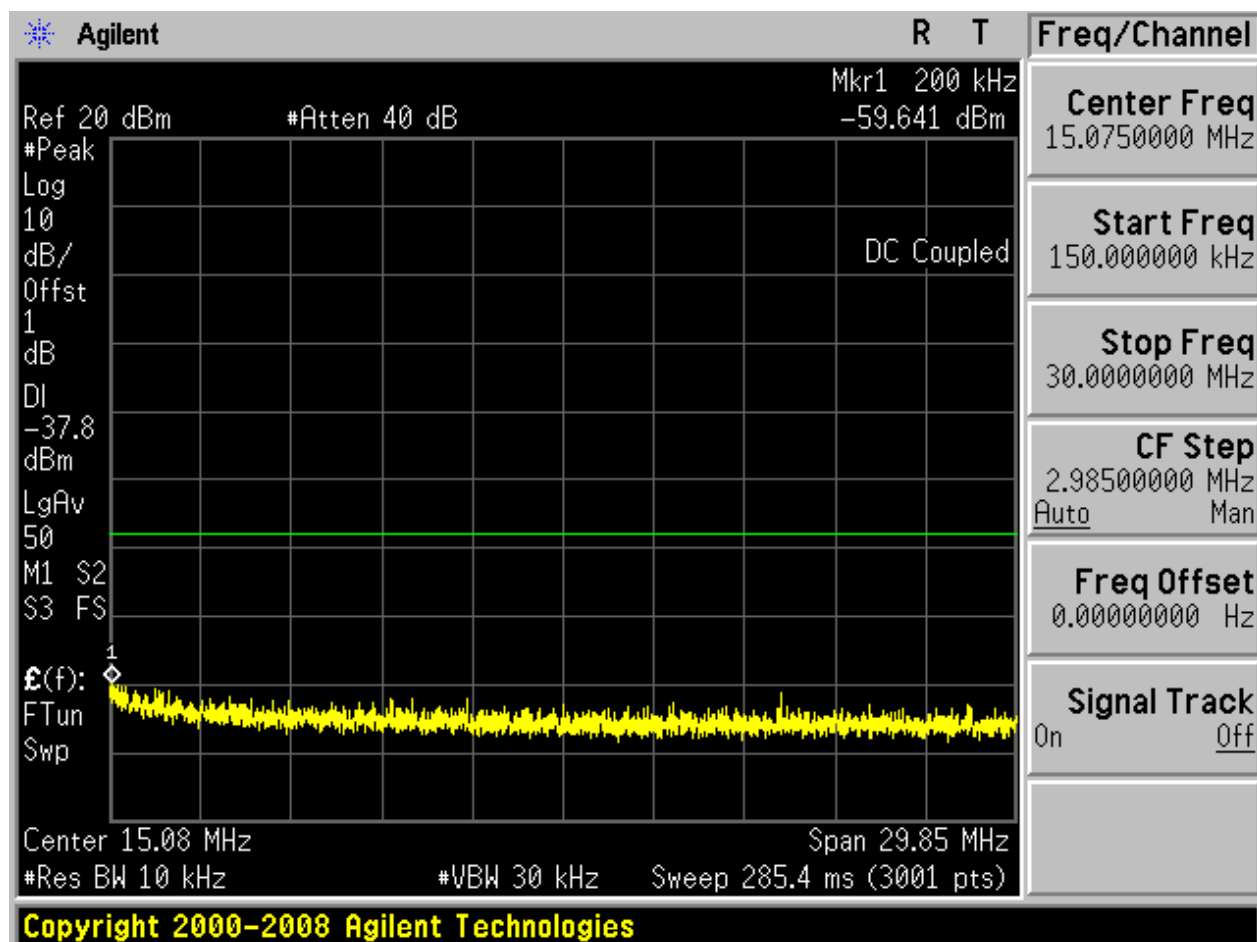
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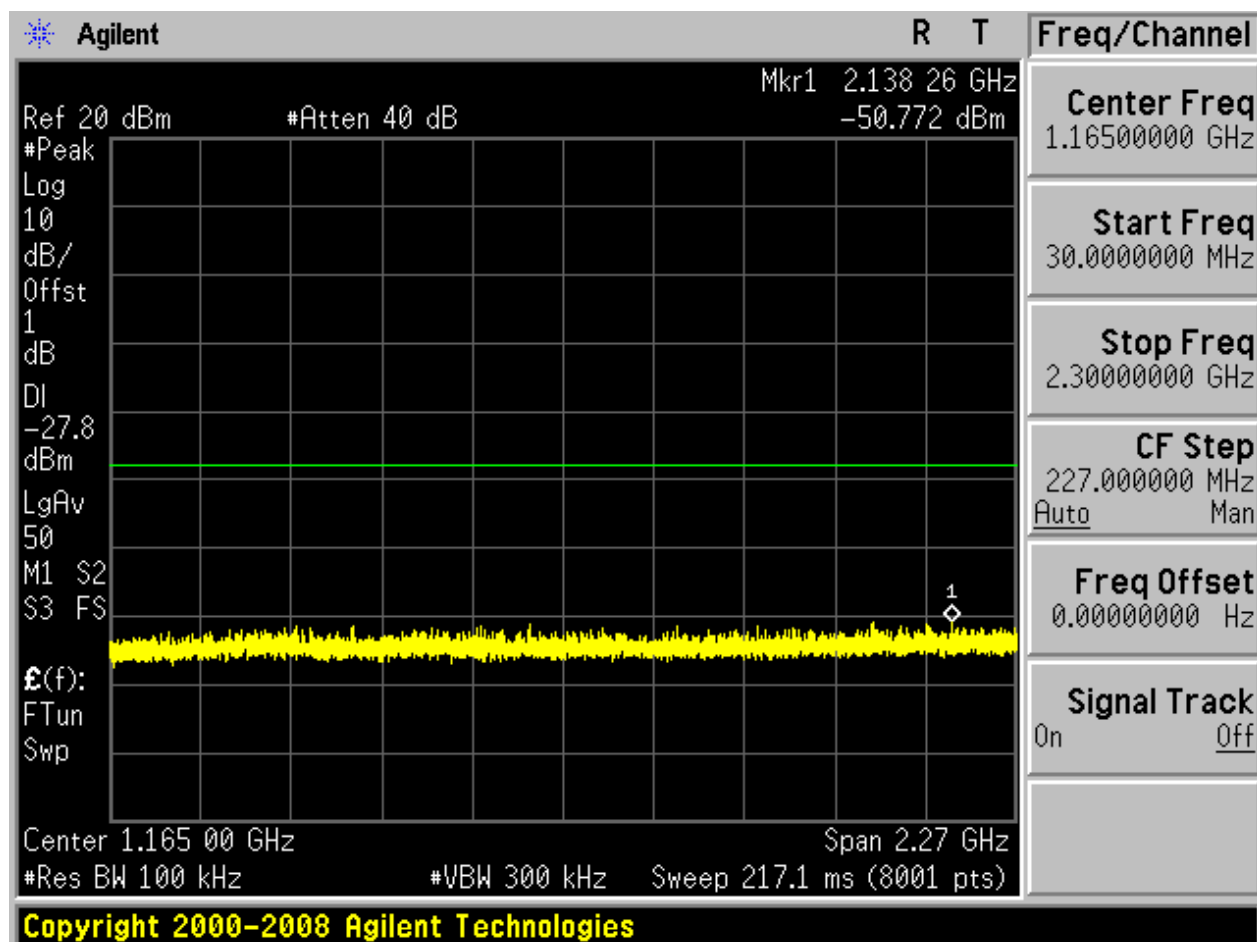


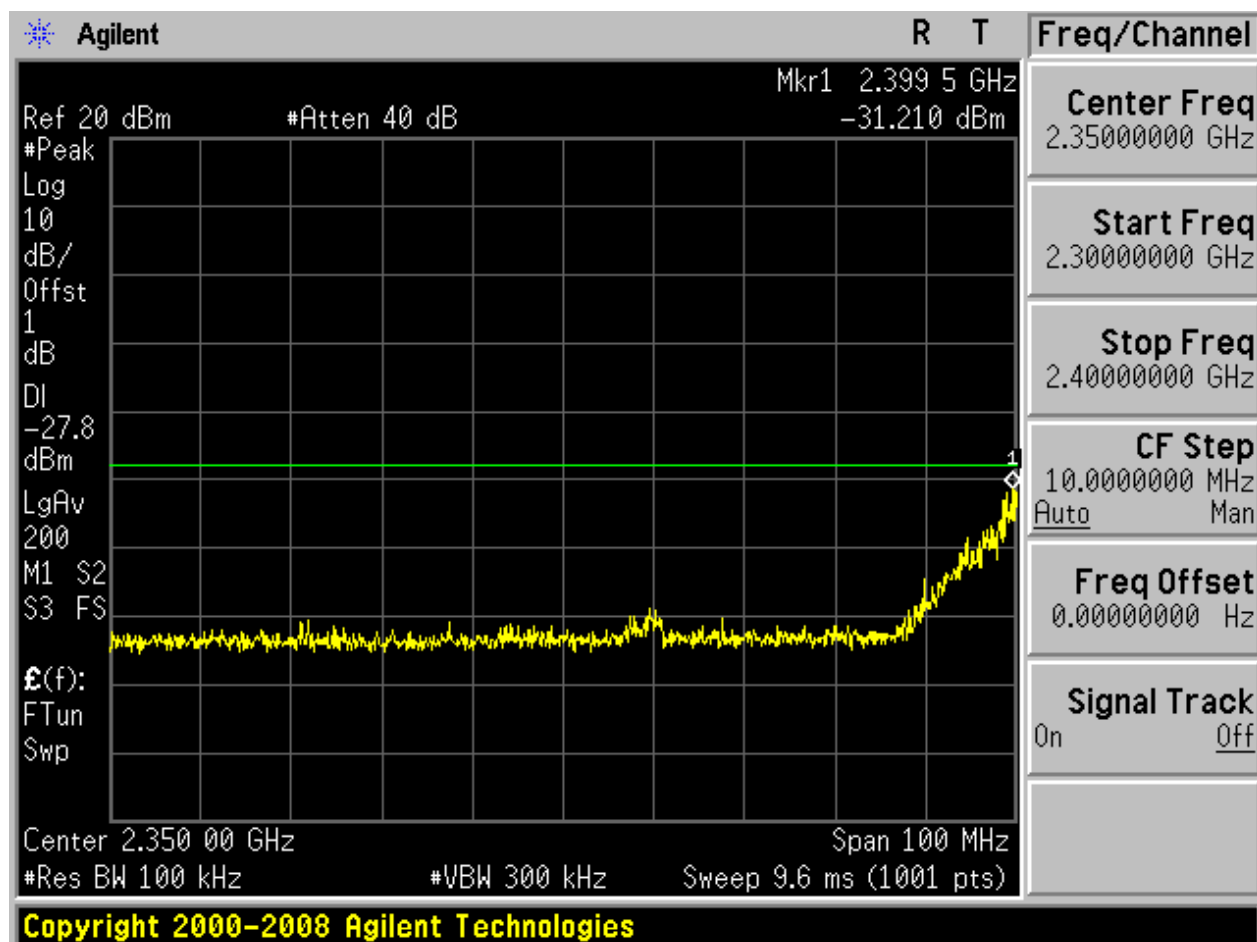


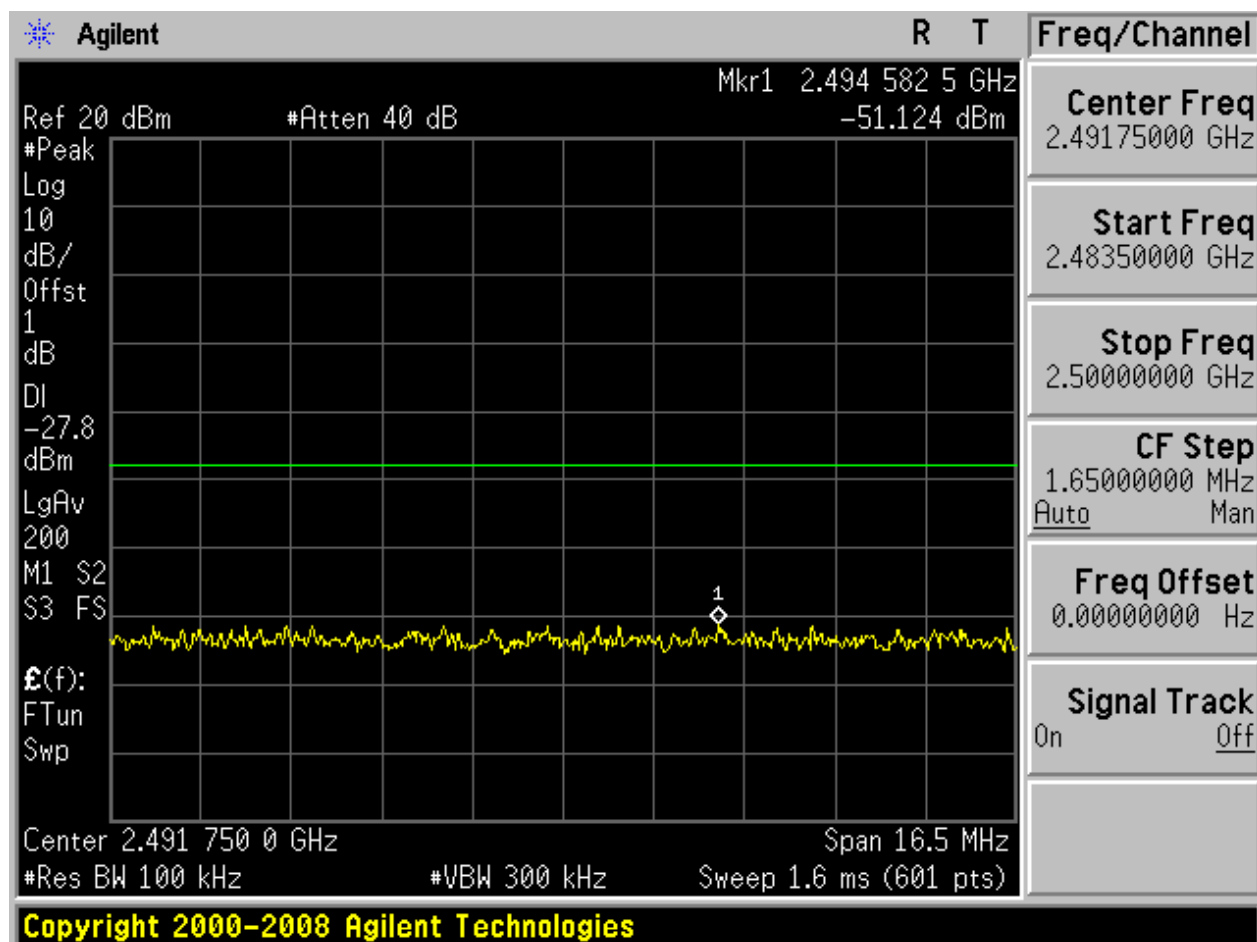
Puw:

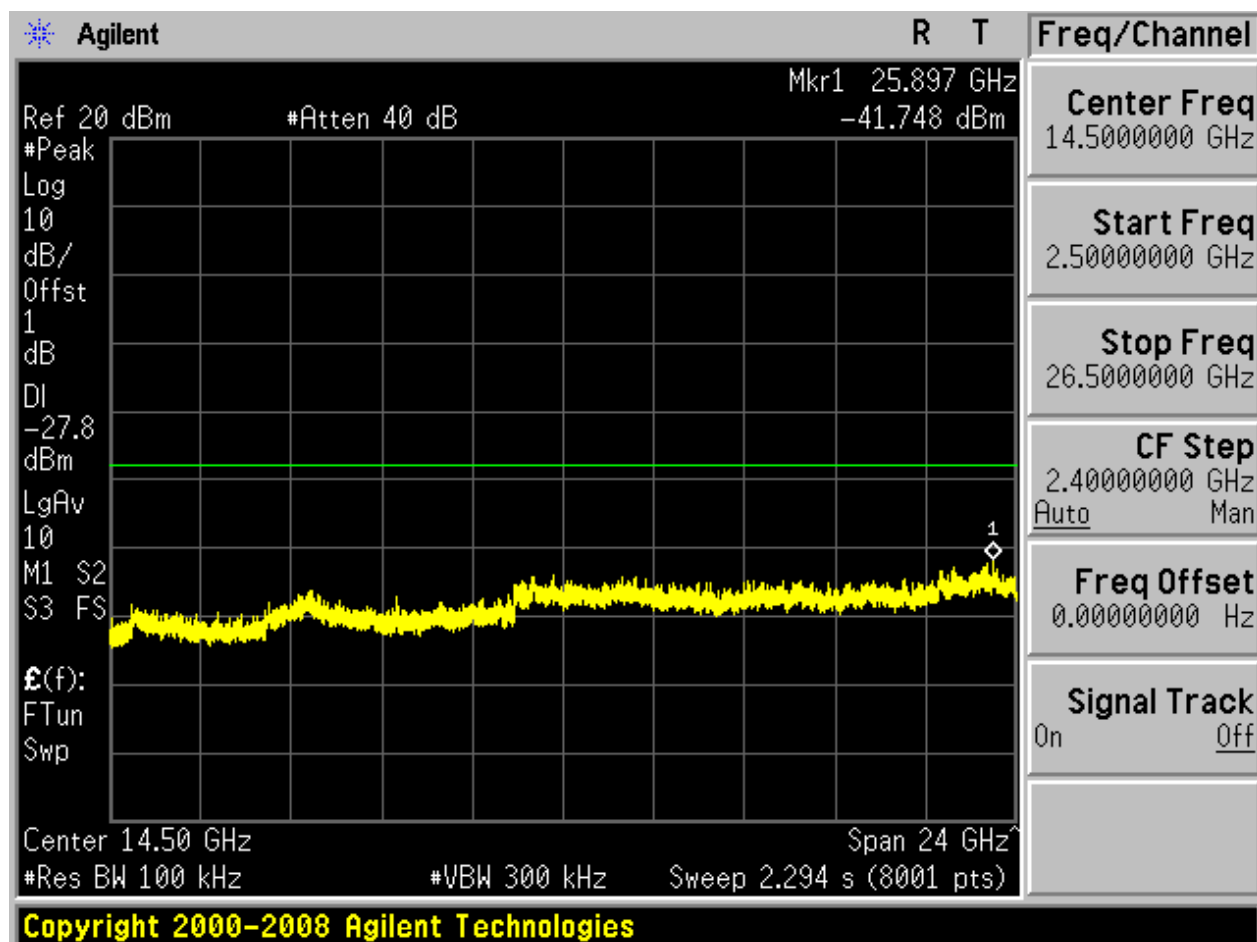








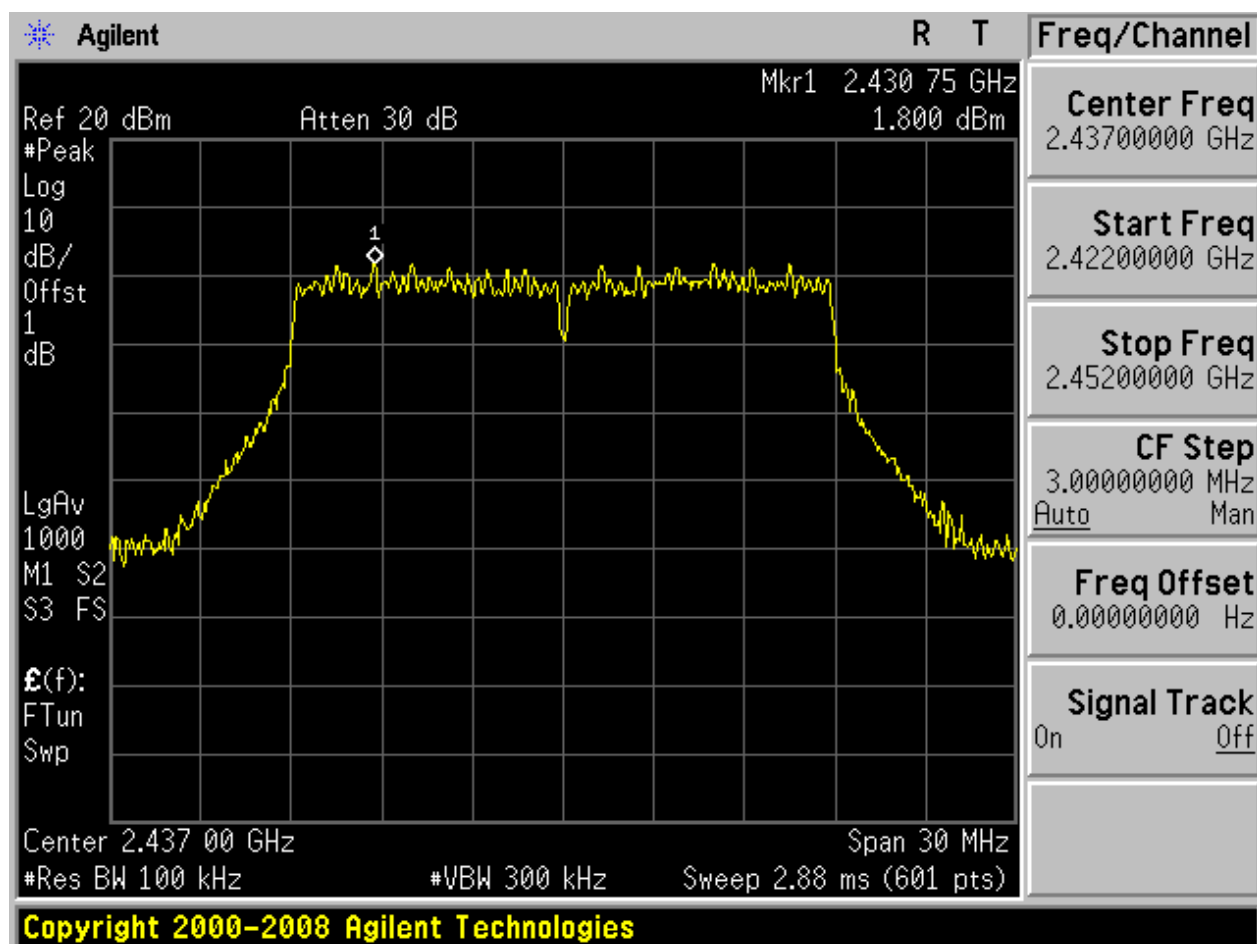






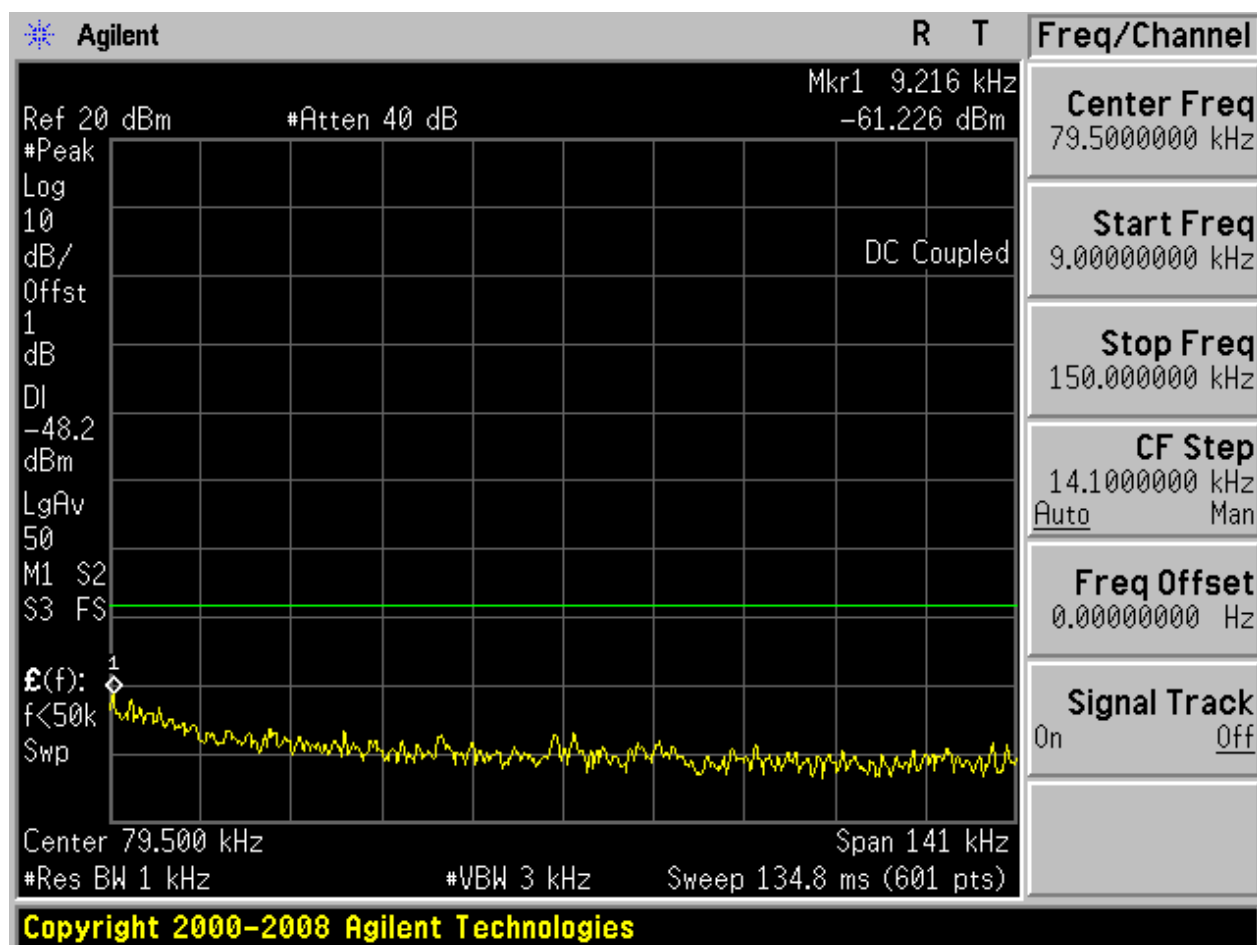
2.8 11N20_M@Ant 1

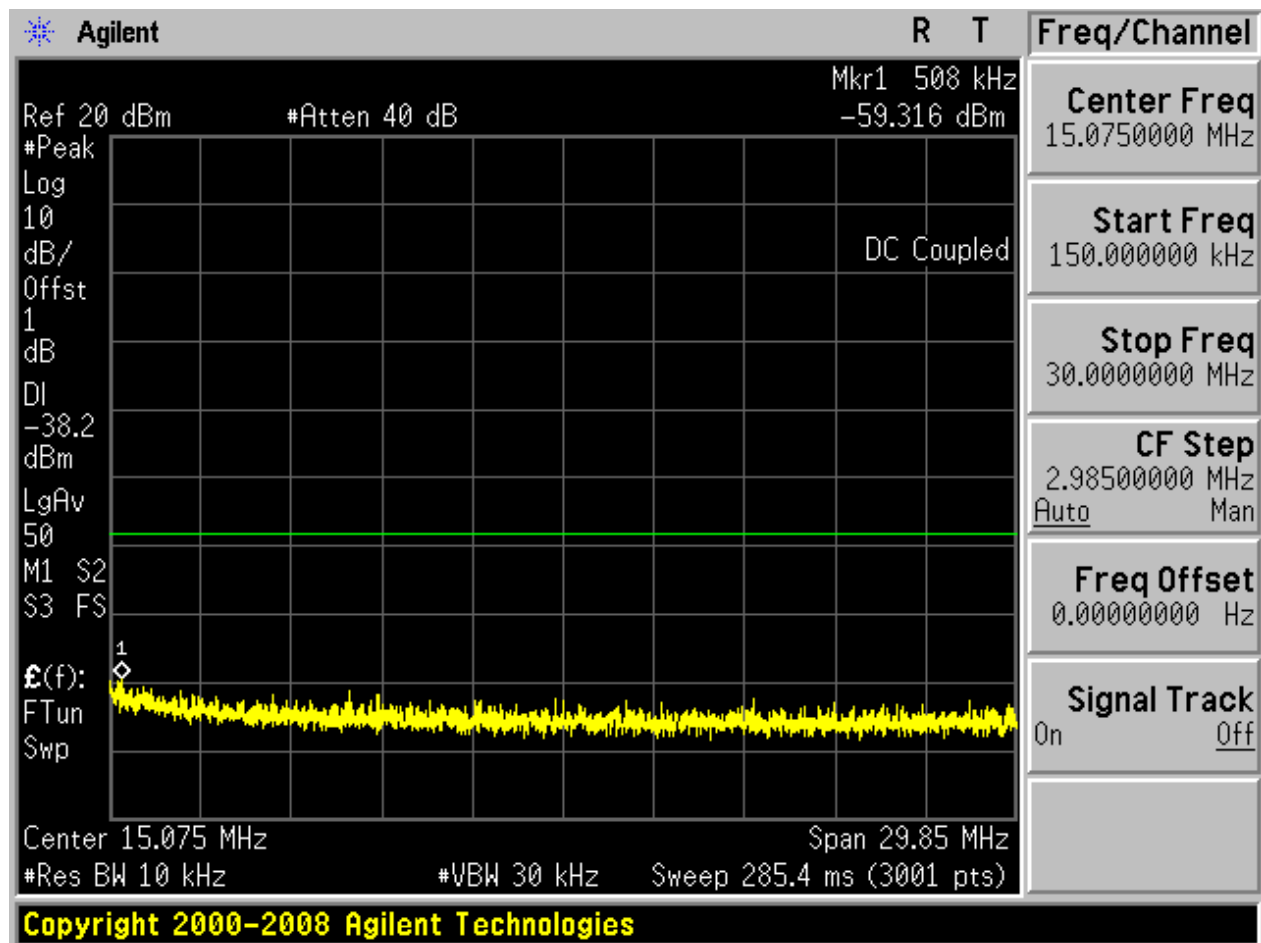
Pref:

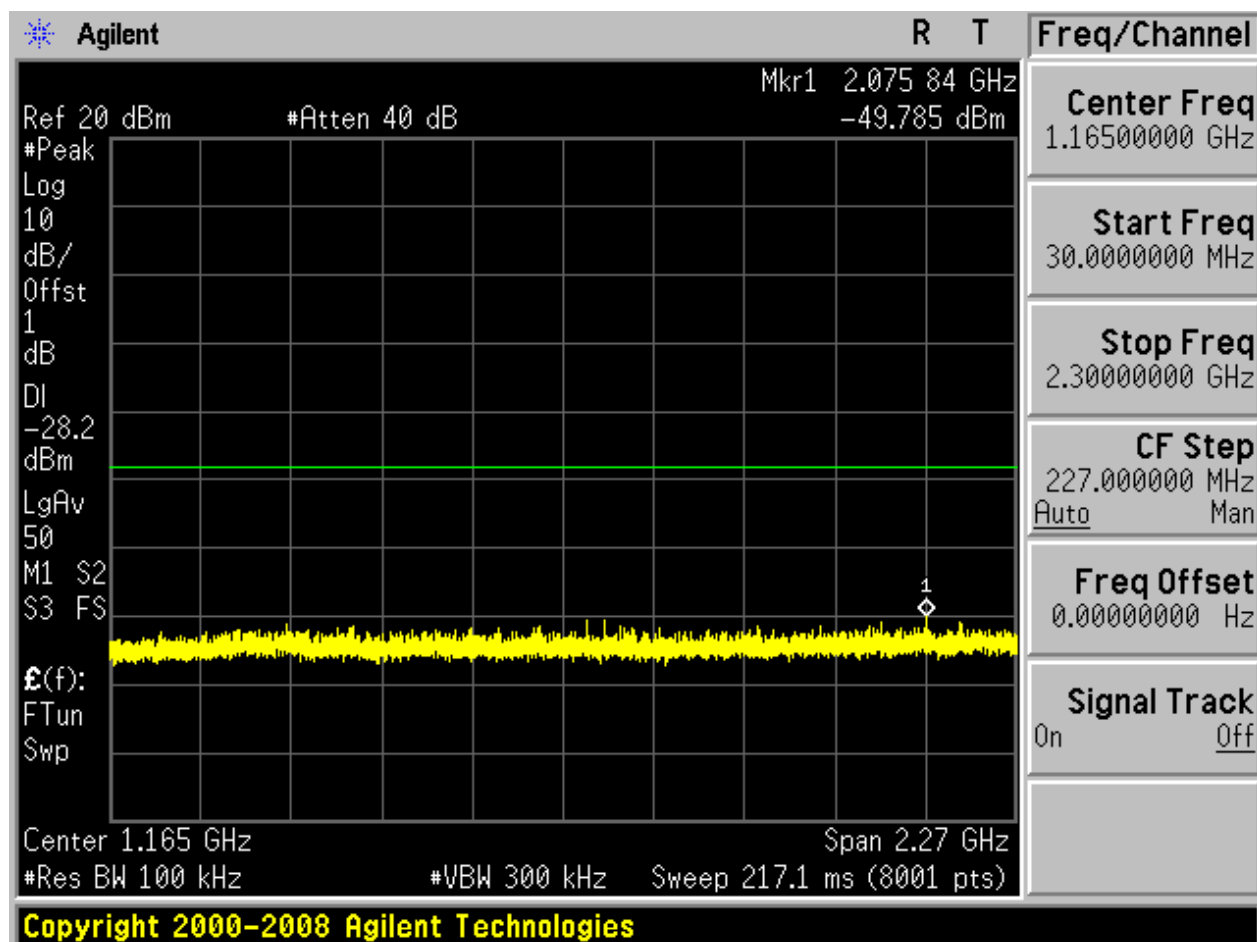


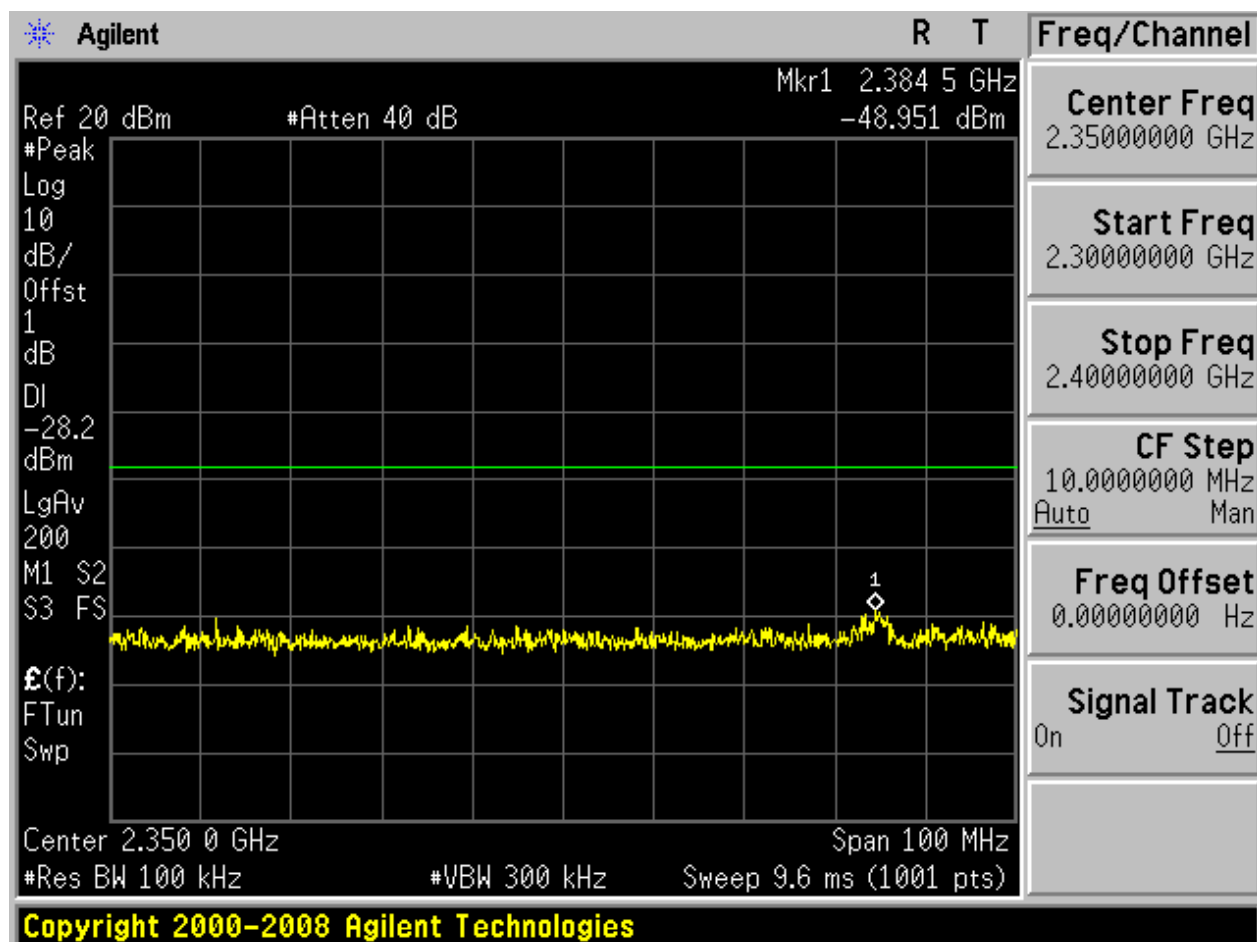


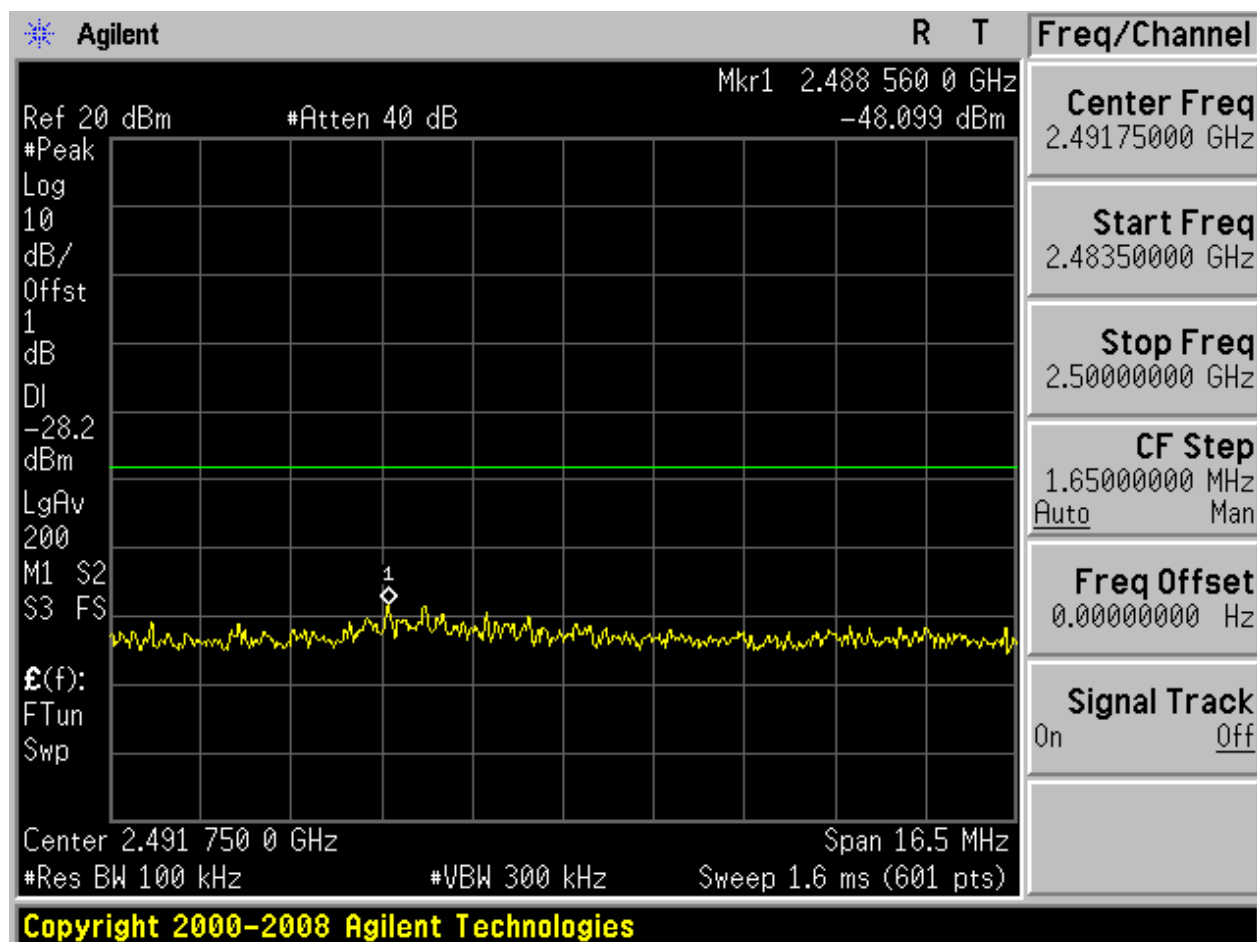
Puw:

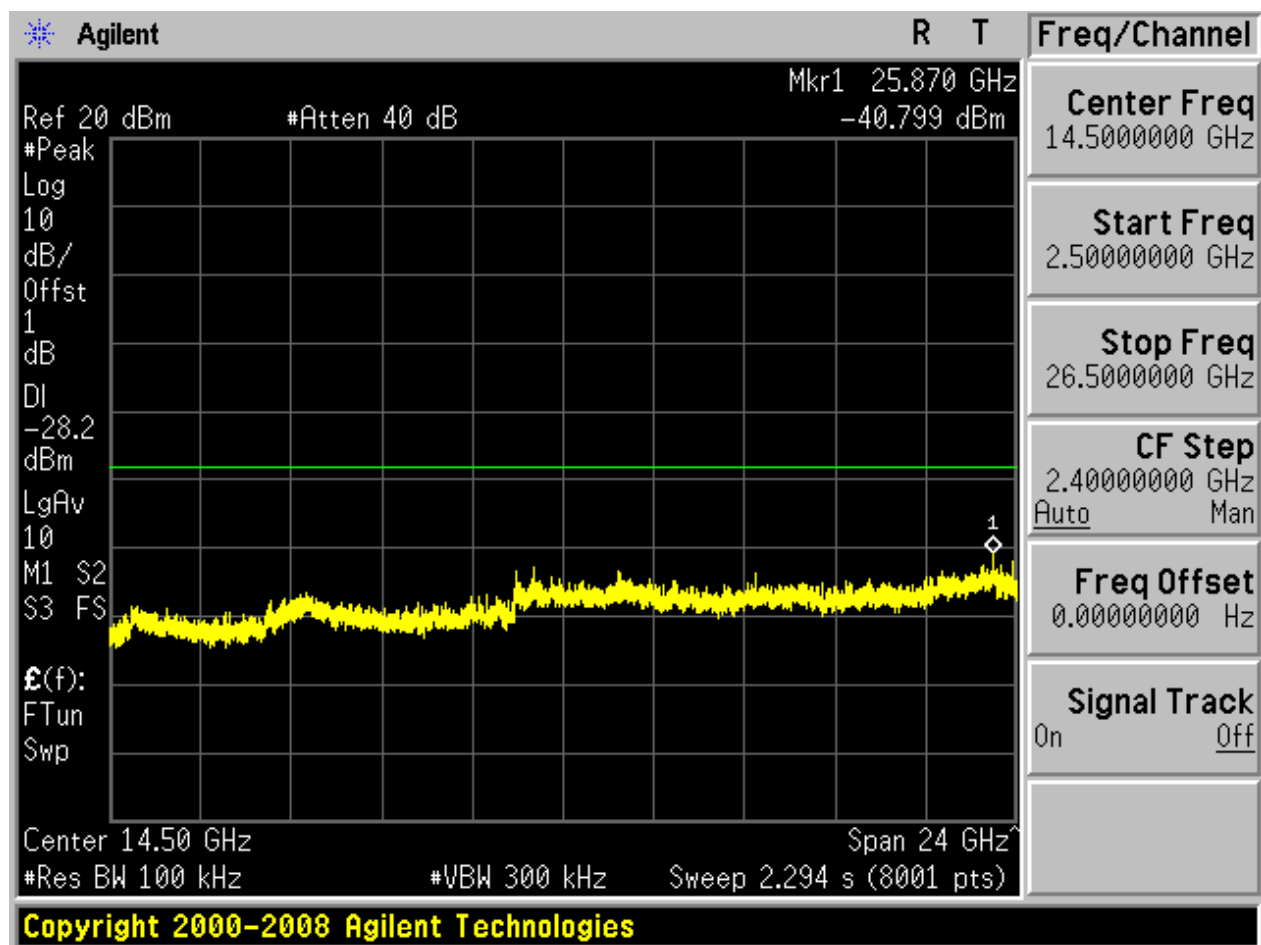








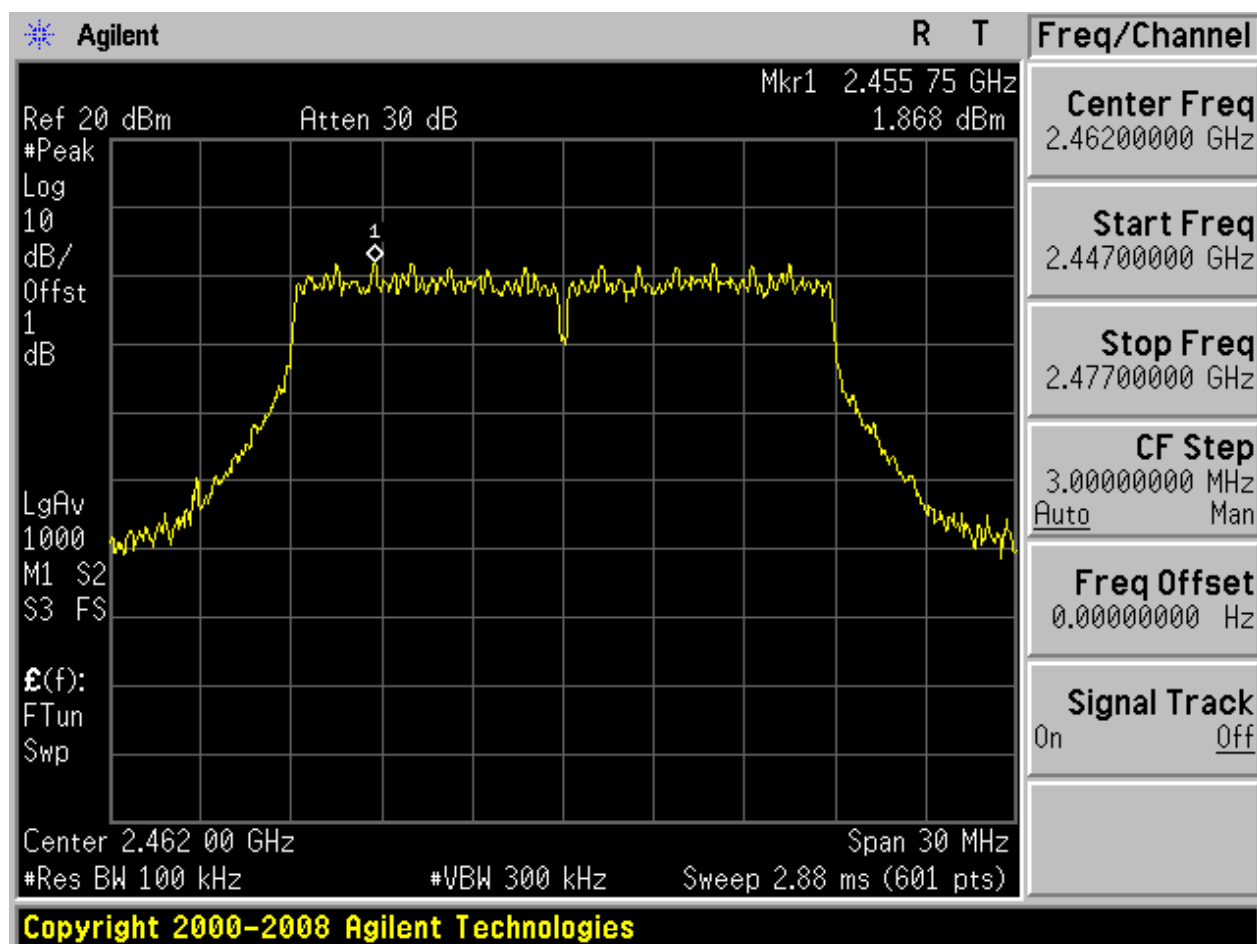






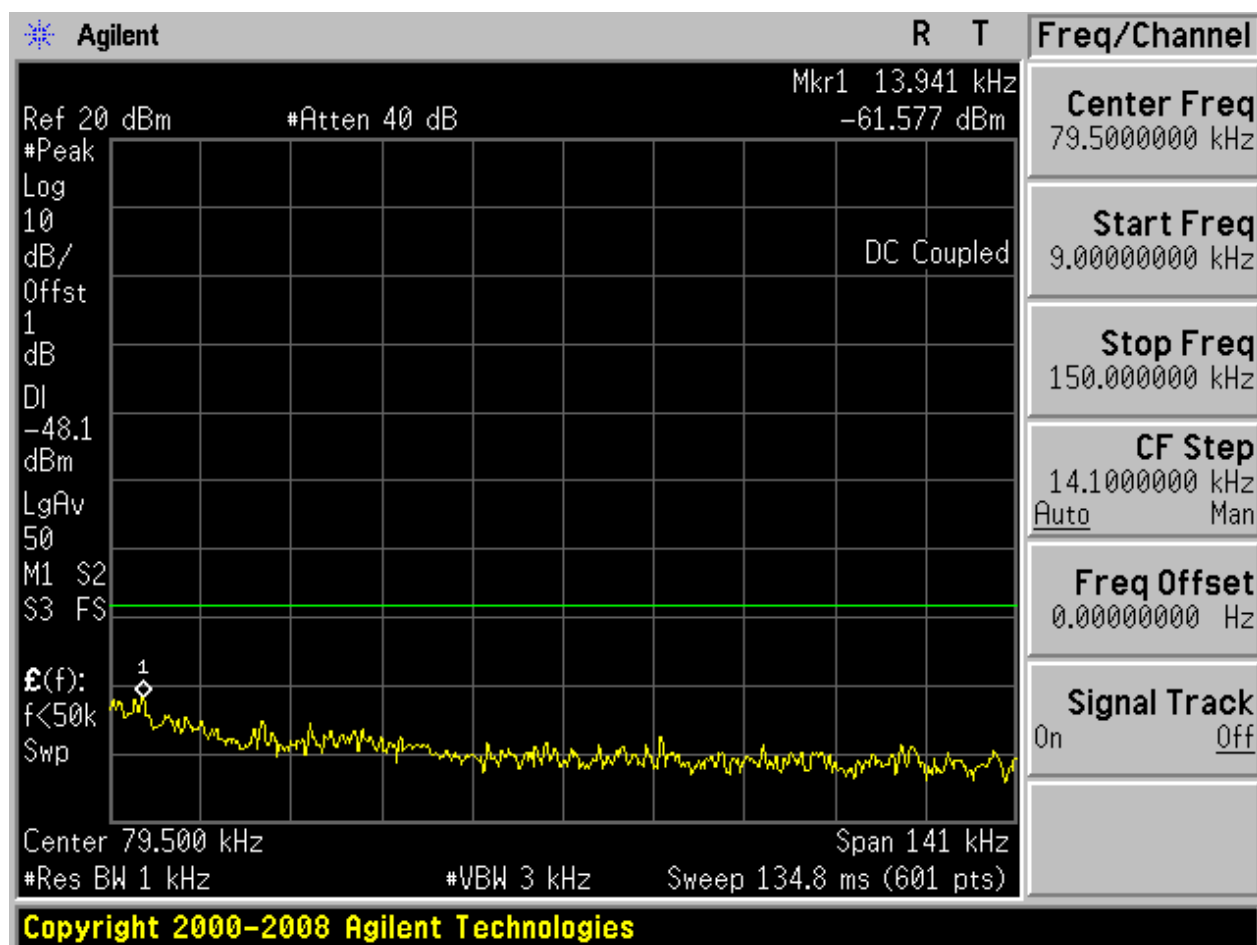
2.9 11N20_H@Ant 1

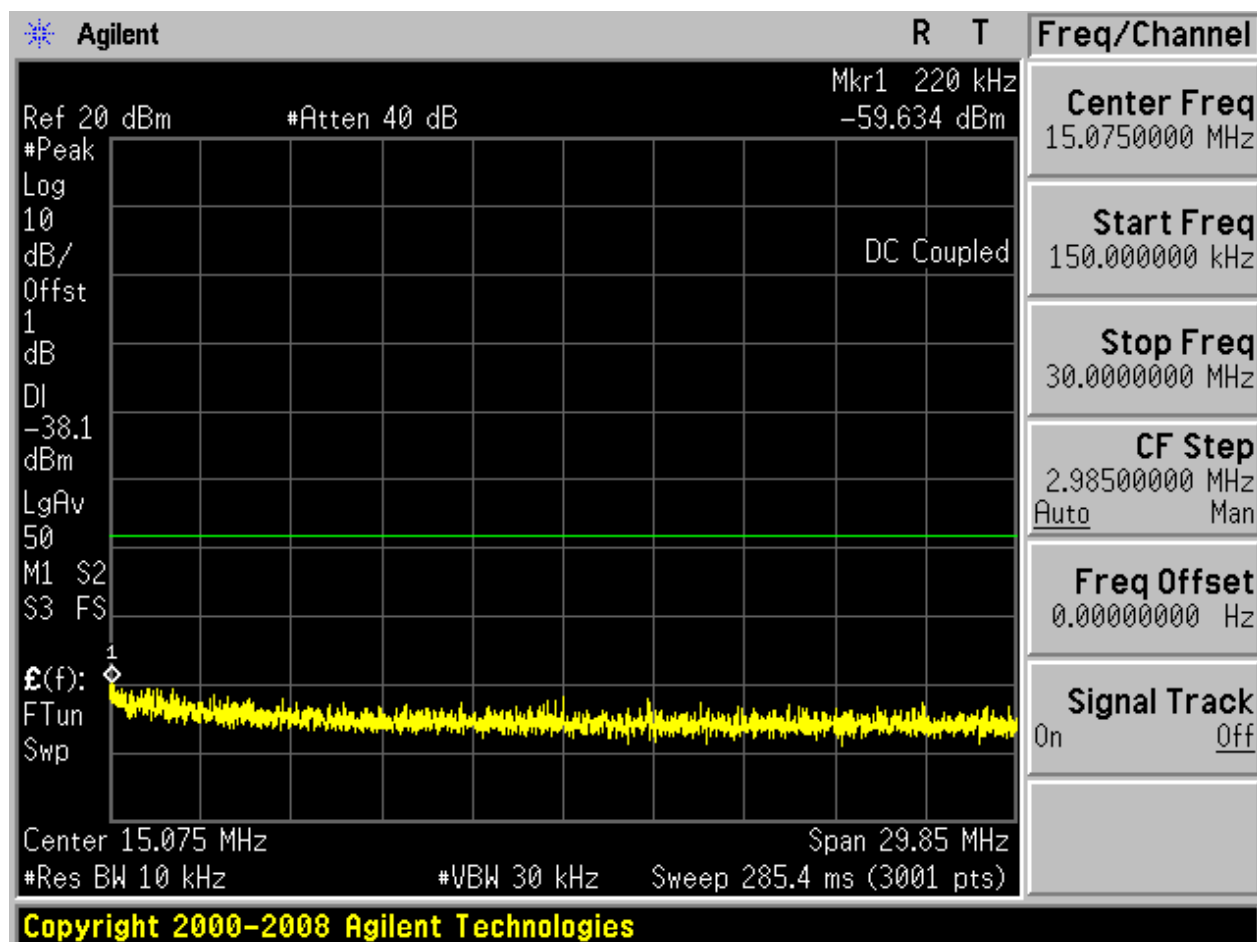
Pref:

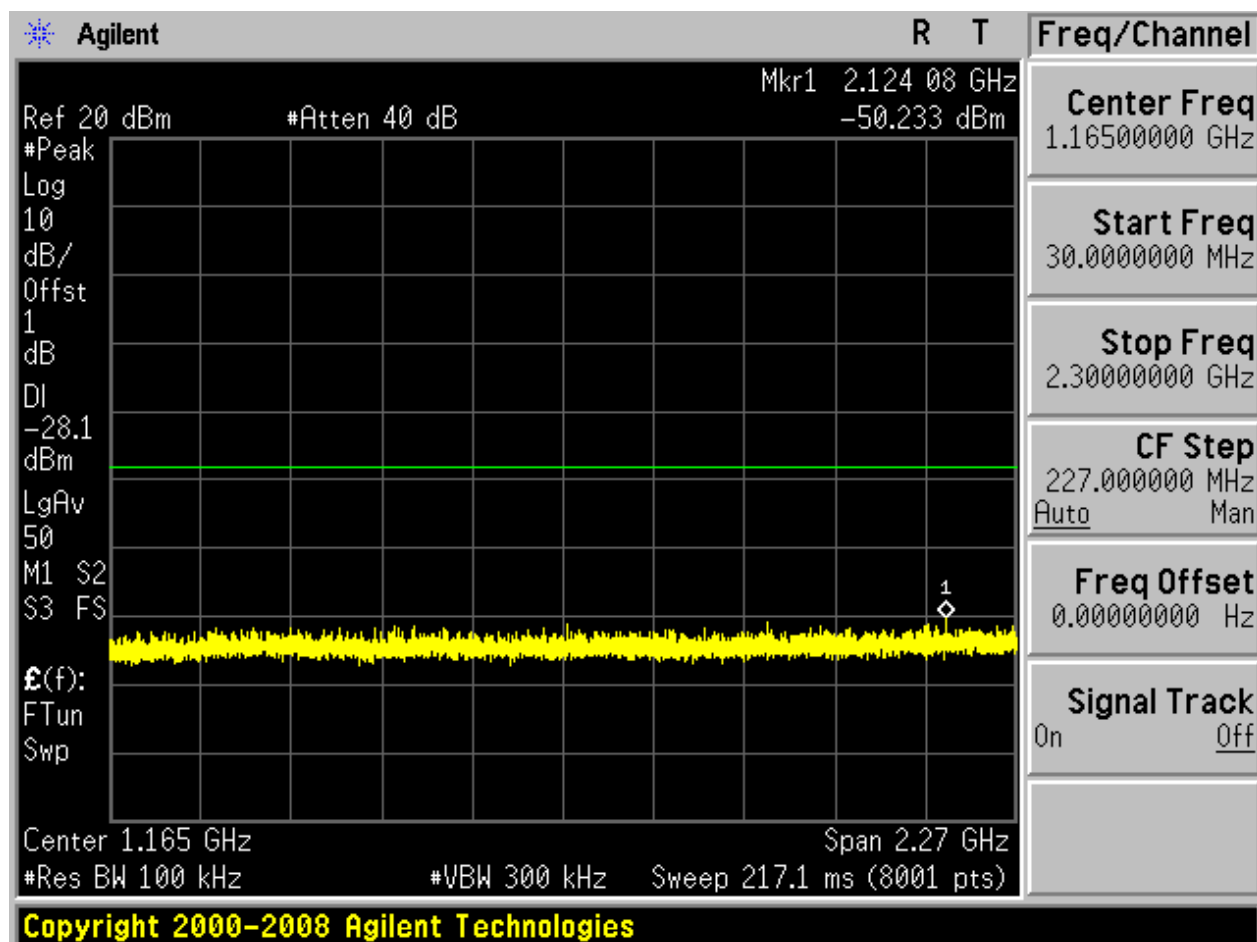


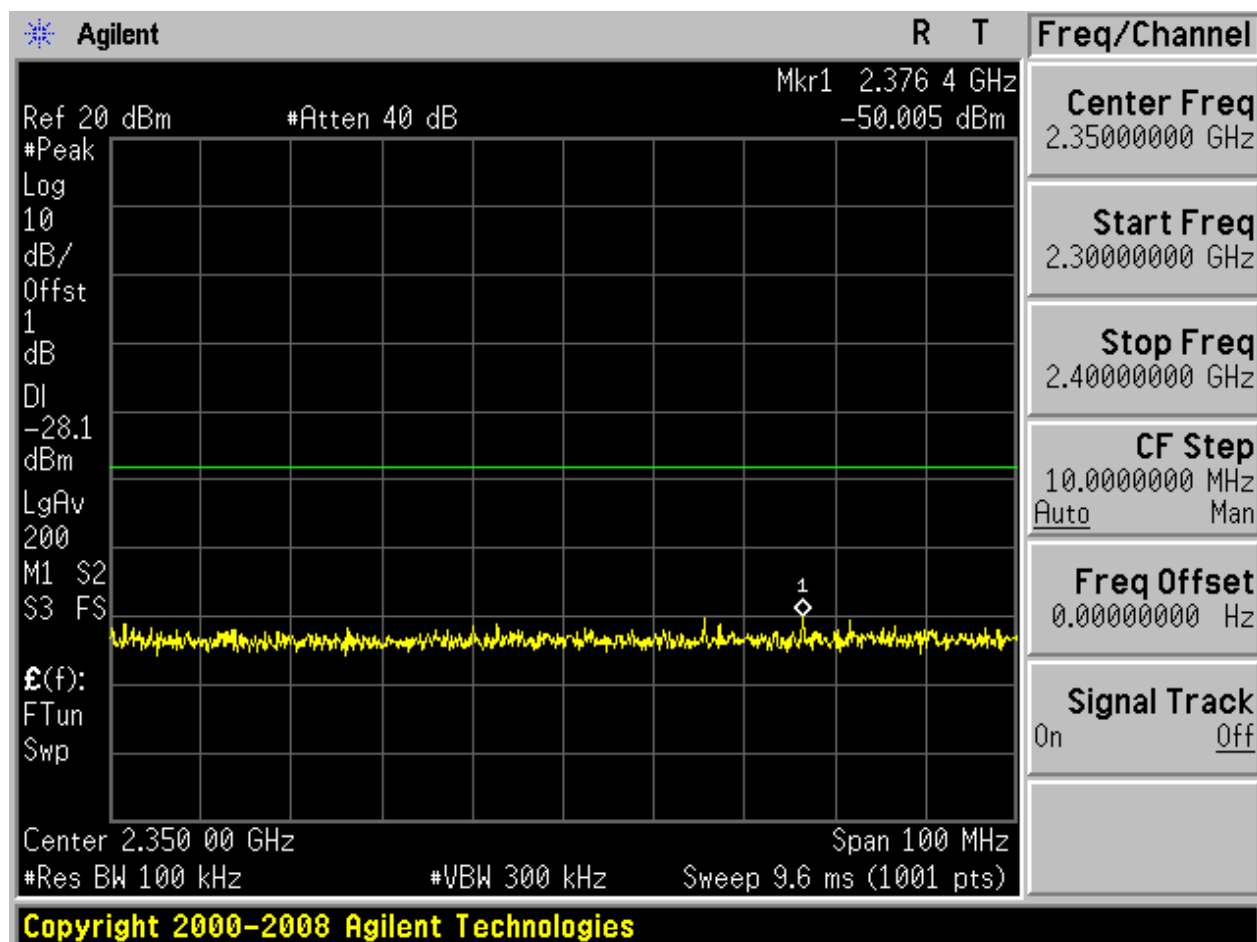


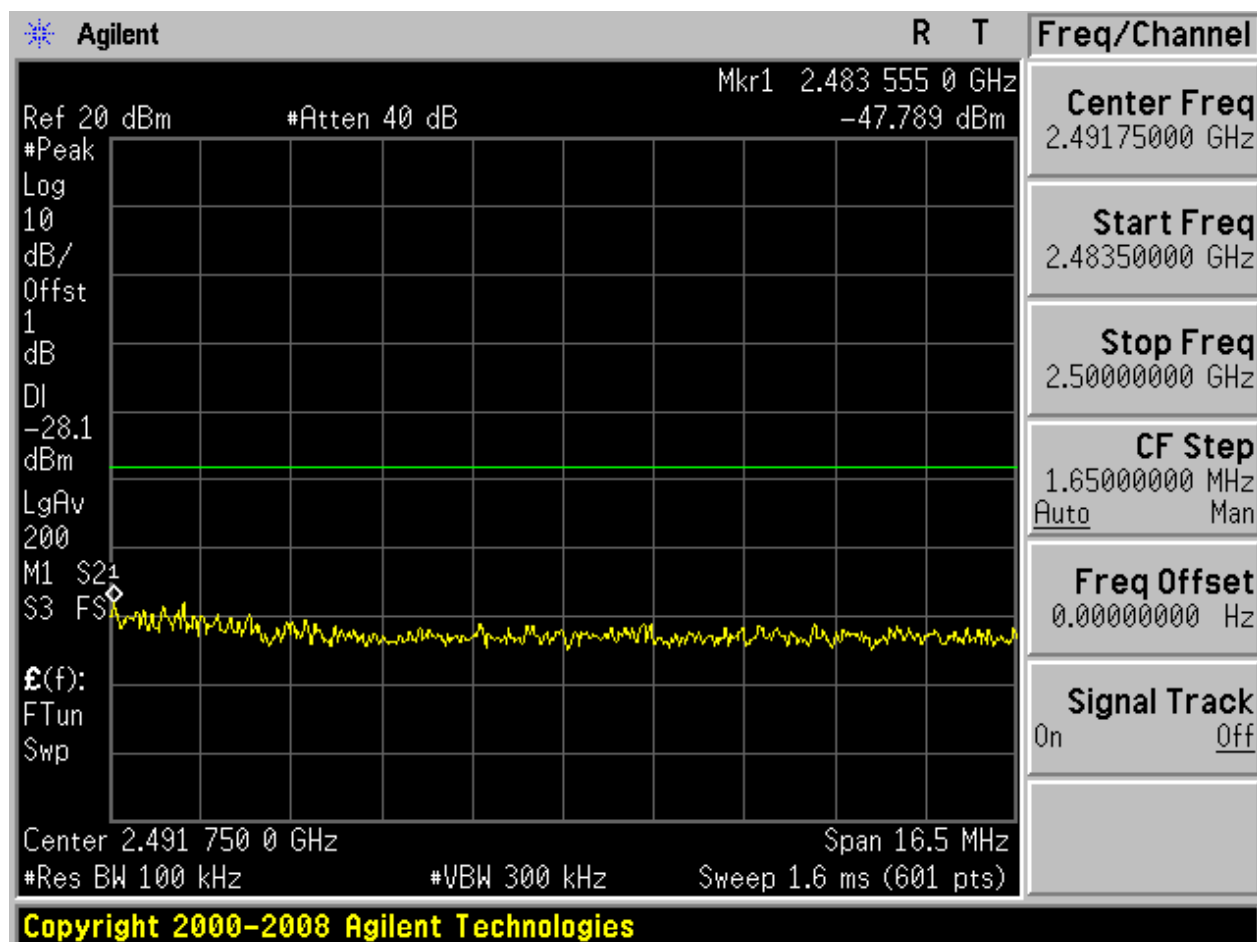
Puw:

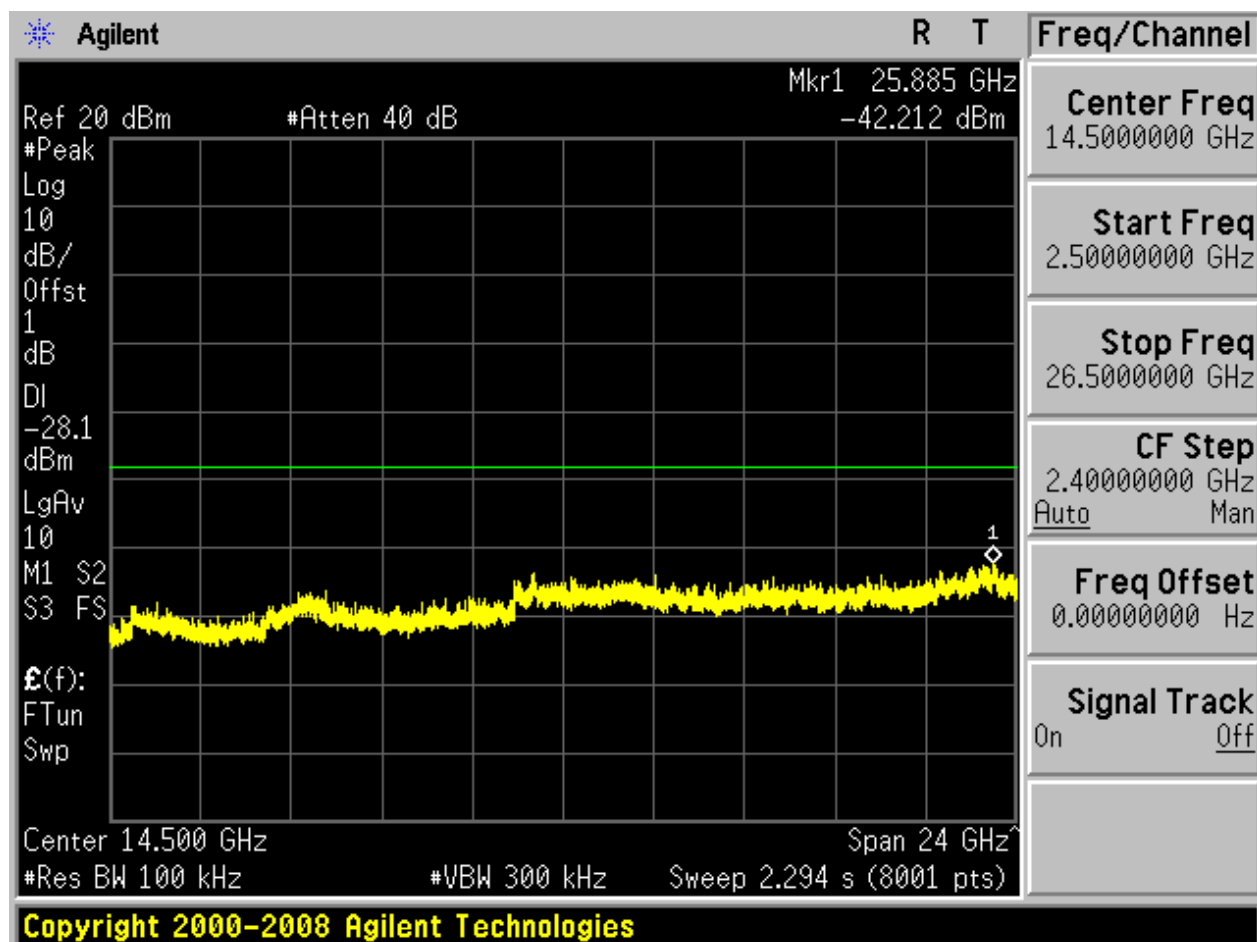














Appendix G: Radiated Spurious Emission & Spurious in Restricted Band

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

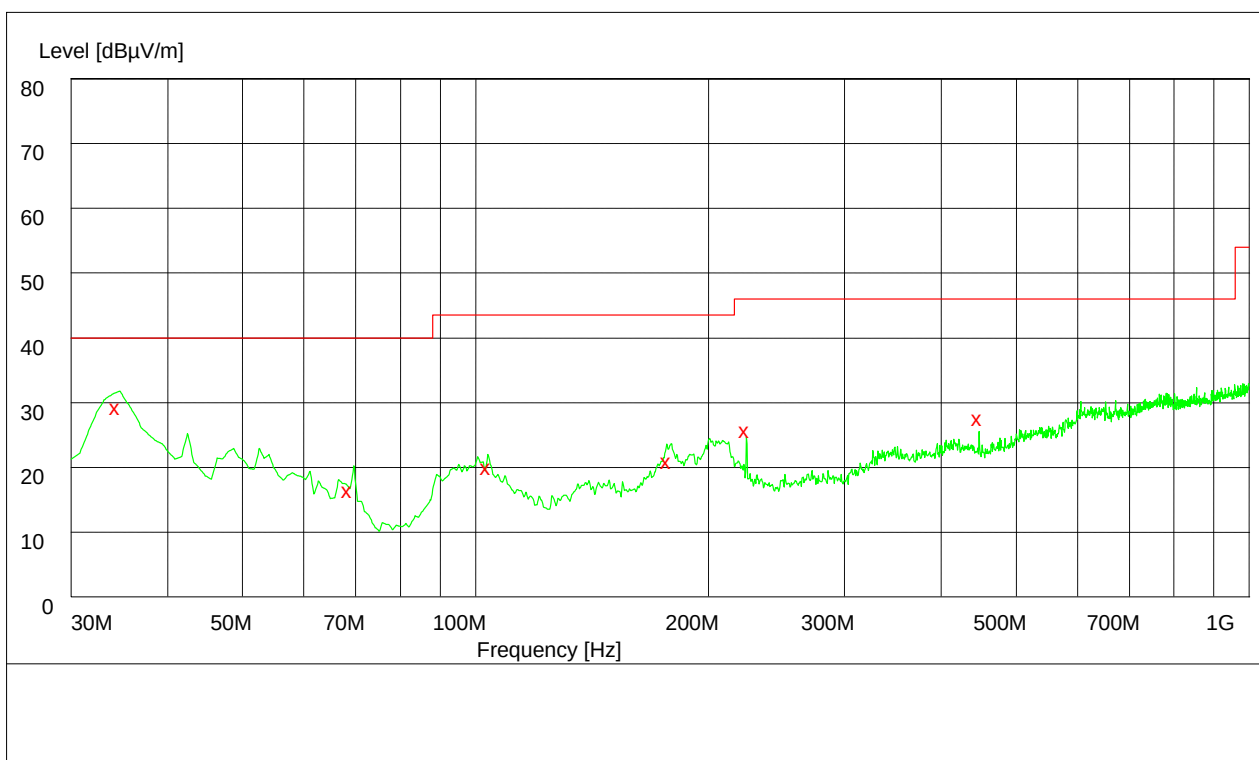
Below 1GHz, RBW = 100 kHz, VBW = 300 kHz.

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

The simultaneous transmission has been considered

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

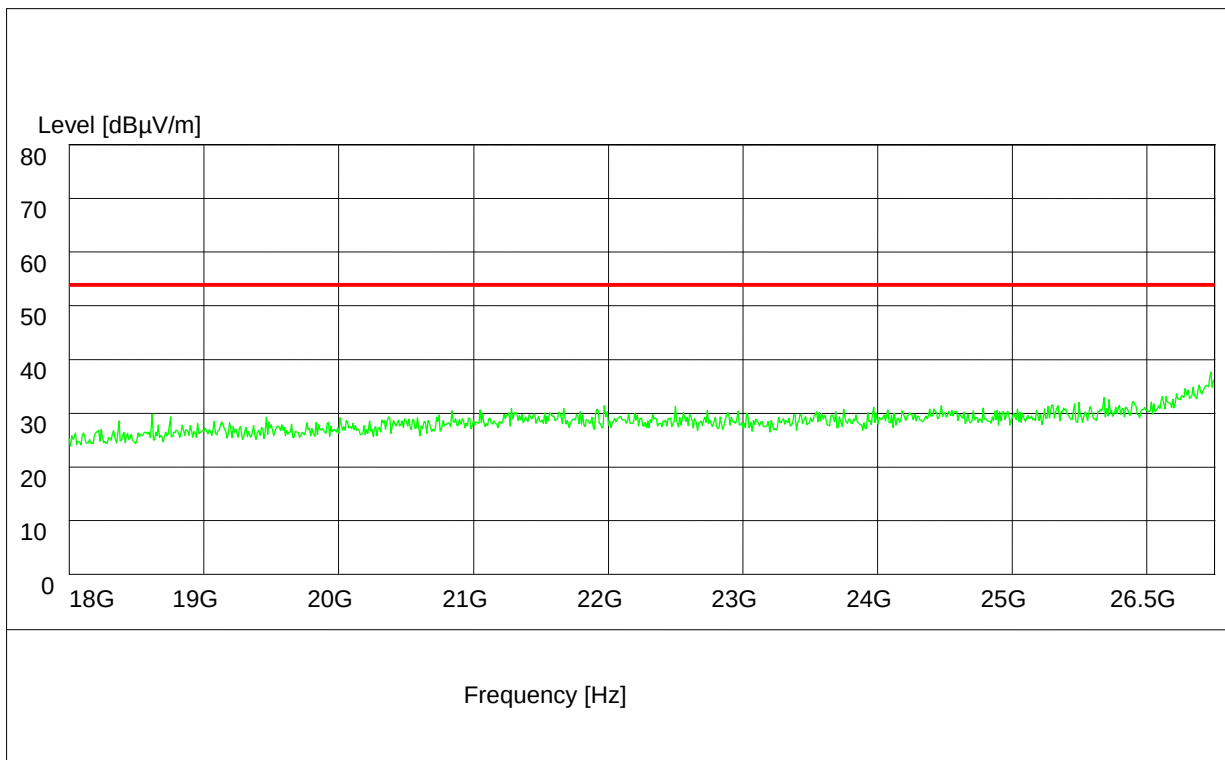
- Note 1: The test results and plot for testing range of “30 MHz to 1 GHz” showed as below is **the WORST case for all Test Modes and Channels**. This range will not be presented for each Test Mode and each Channel.
- Note 2: **The emissions in this range are mainly from the Platform Device (Notepad PC and its ancillary components).**



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Plarization
34.416000	30.70	13.3	40.0	9.3	100.0	116.00	VERTICAL
68.676000	17.90	11.2	40.0	22.1	193.0	33.00	VERTICAL
103.780000	21.40	14.3	43.5	22.1	123.0	29.00	VERTICAL
177.384000	22.40	11.0	43.5	21.1	100.0	112.00	VERTICAL
223.820000	27.20	13.5	46.0	18.8	150.0	0.00	HORIZONTAL
447.668000	29.00	19.5	46.0	17.0	118.0	33.00	VERTICAL

Part 2: Testing Range of “18 GHz to 26.5 GHz”

Note: No peak found in pre- test.

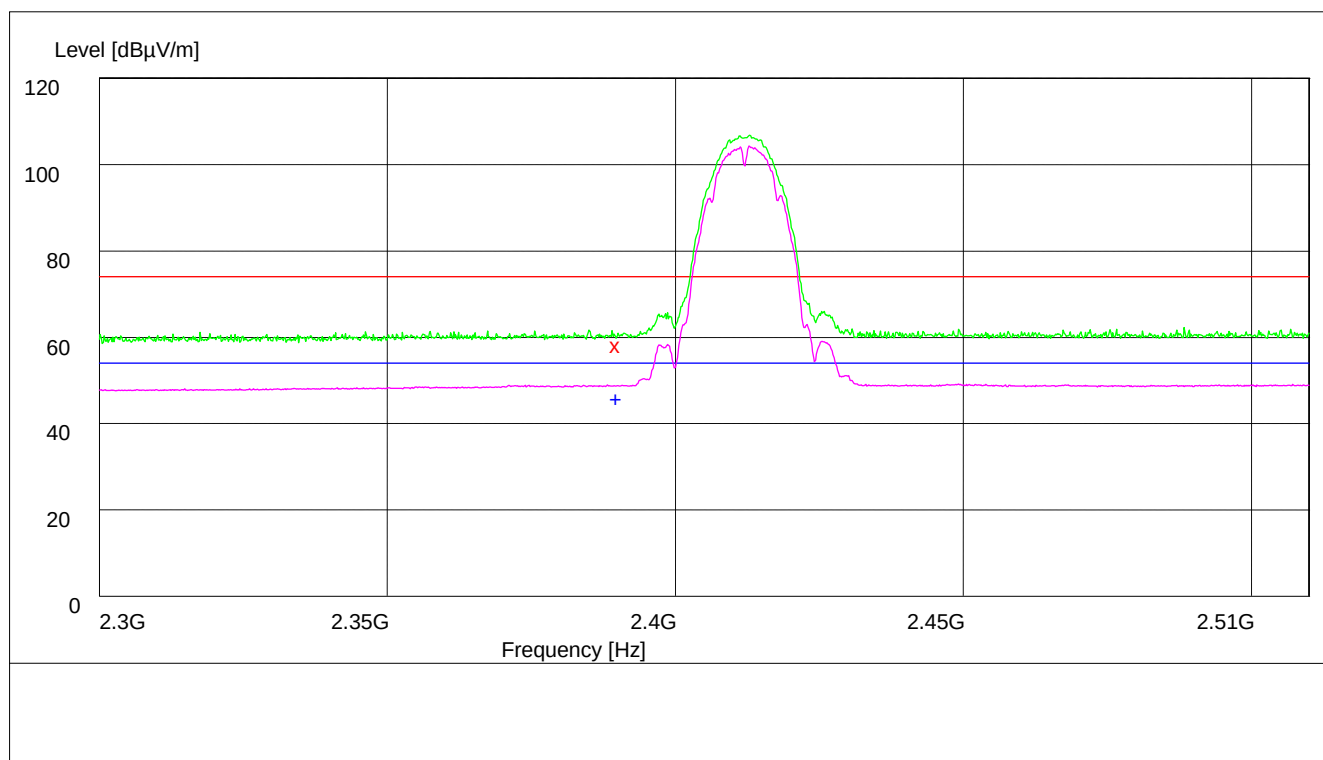


Part 3: Testing Range of “2.3GHz to 2.5GHz”

- 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 μ V/m) and Average Limit (54 dB μ V/m).
- Note 3: The peak spike exceeds the limit line is EUT’s operating frequency.

Test Mode: 11b

Channel 01



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

MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	60.40	34.8	74.0	13.6	161.0	58.00	VERTICAL

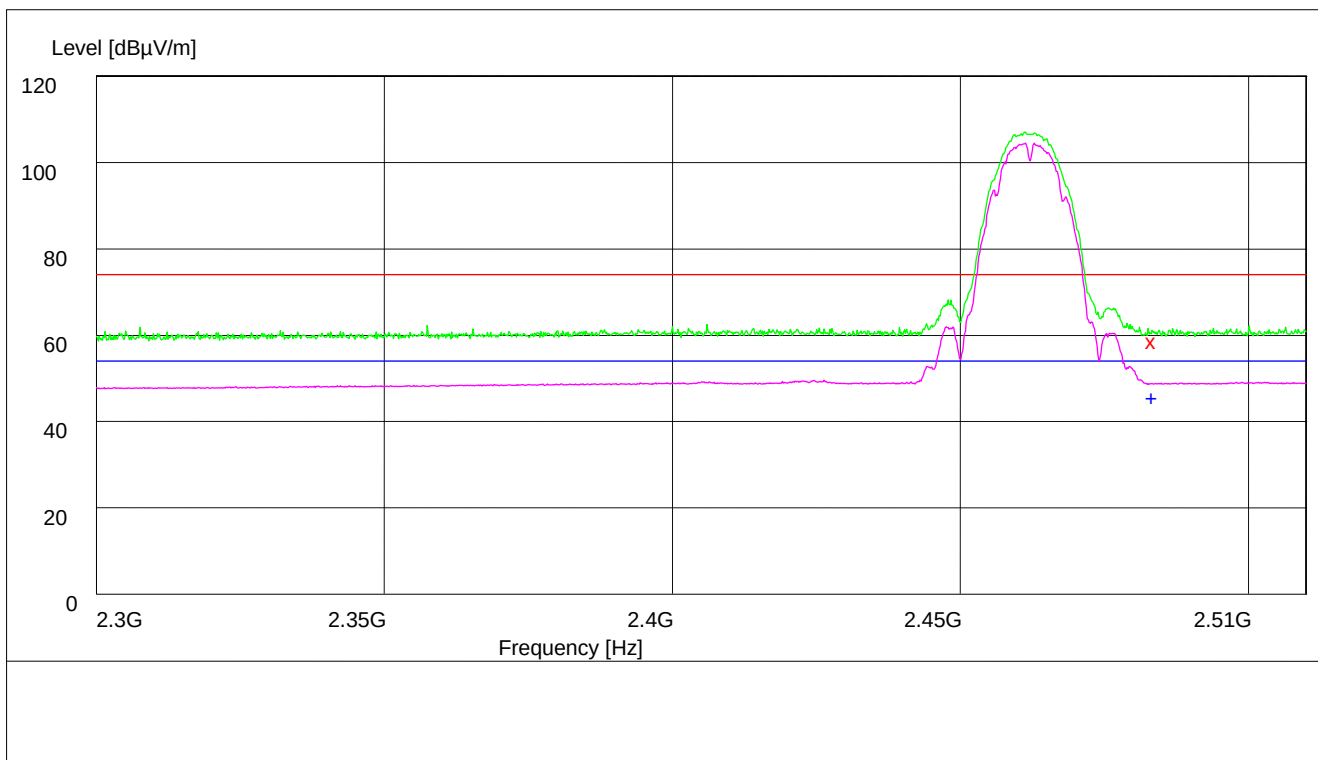
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarization
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2390.000000	47.90	34.8	54.0	6.1	100.0	203.00	HORIZONTAL
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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	Height cm	Azimuth deg	Polarization
2483.500000	60.70	35.1	74.0	13.3	158.0	167.00	HORIZONTAL

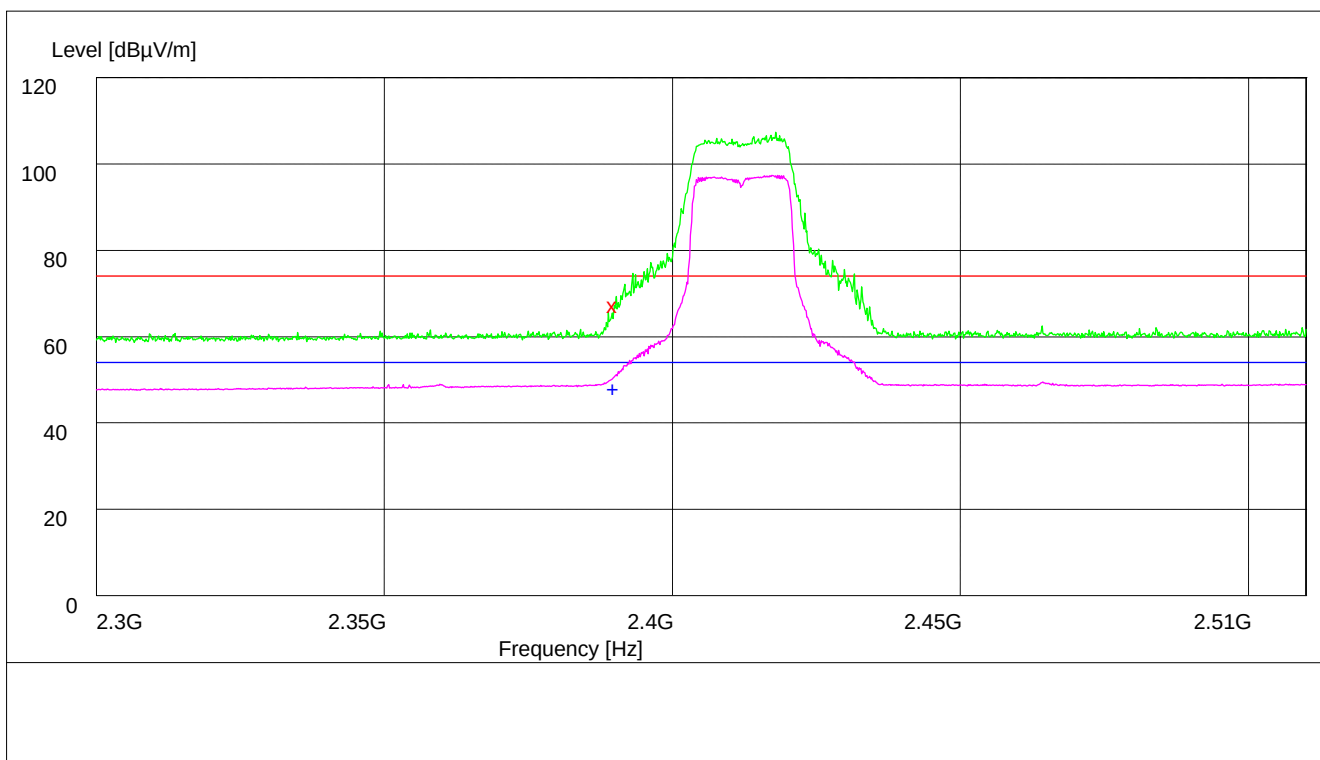
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	47.60	35.1	54.0	6.4	145.0	342.00	HORIZONTAL



Test Mode: 11g

Channel 01



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

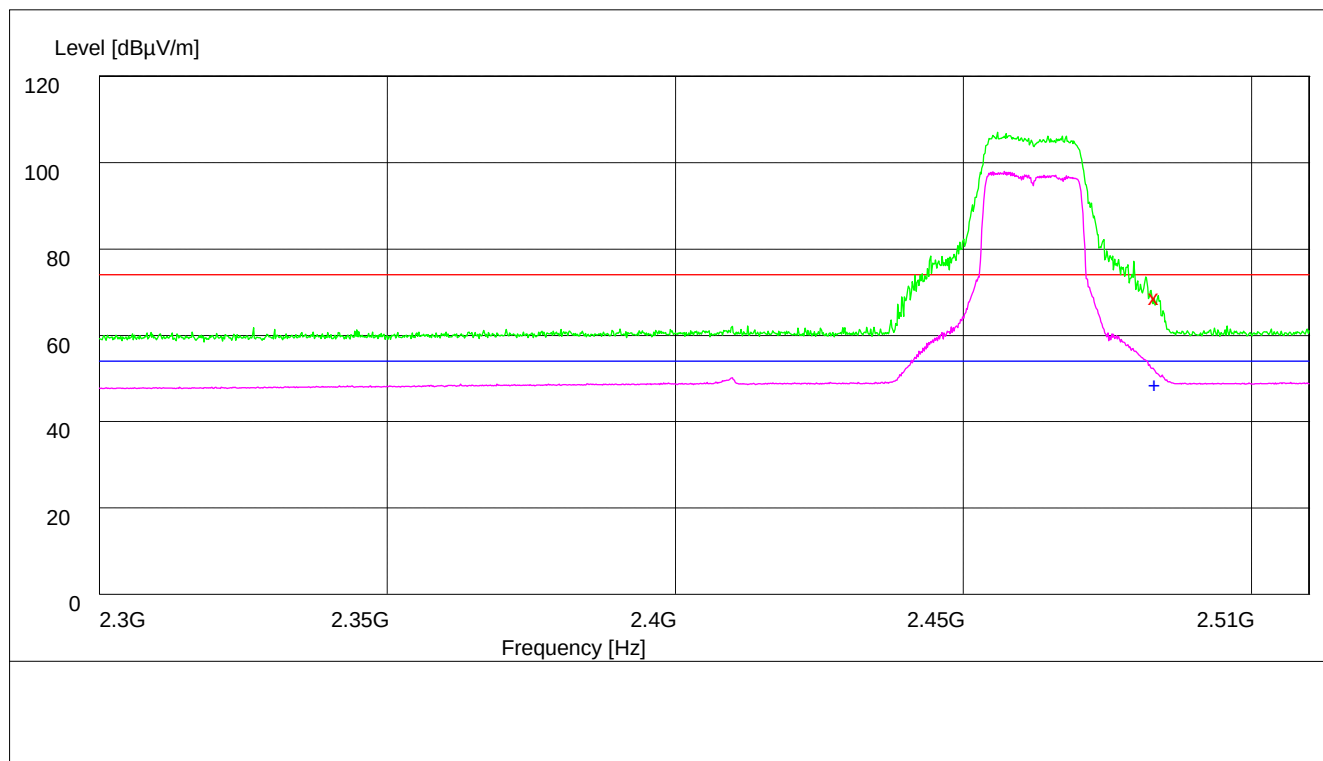
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	69.40	34.8	74.0	4.6	101.0	201.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	50.00	34.8	54.0	4.0	101.0	204.00	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	Height cm	Azimuth deg	Polarization
2483.500000	70.00	35.1	74.0	4.0	101.0	242.00	HORIZONTAL

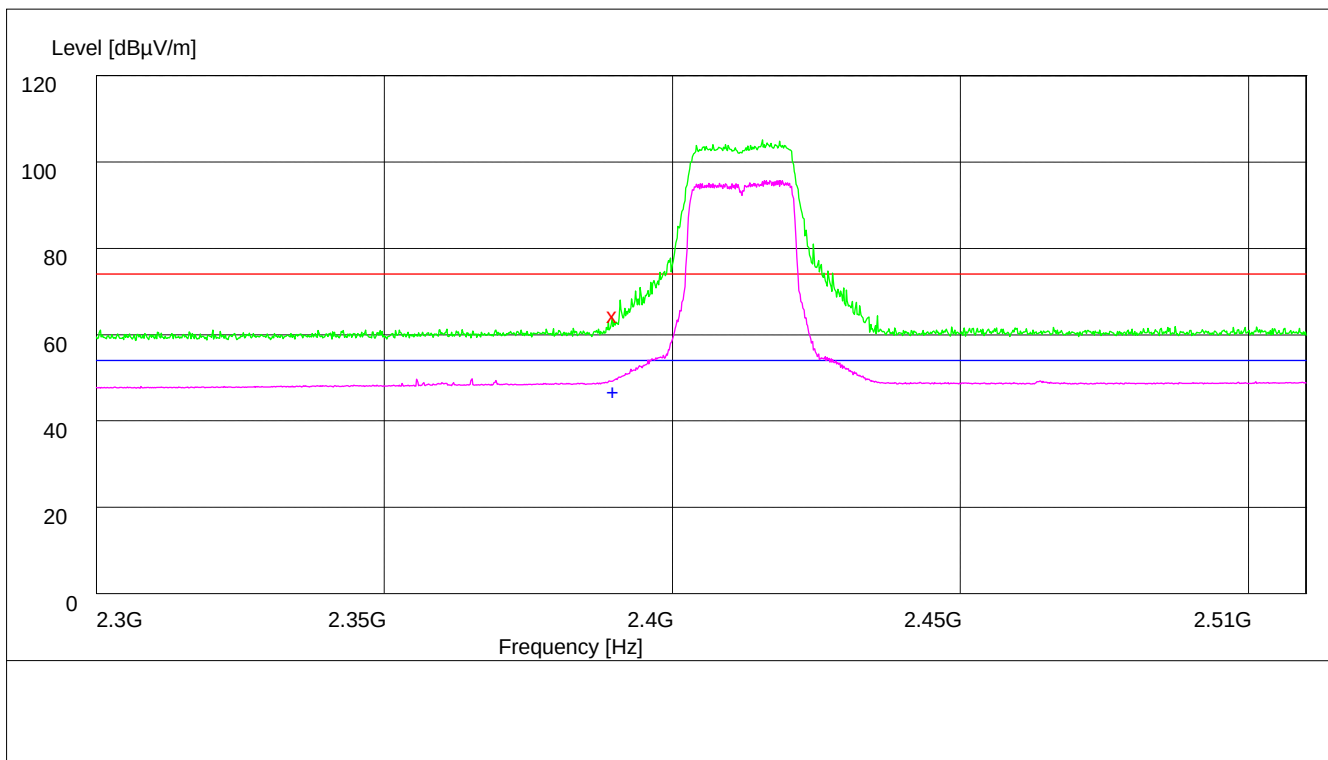
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	49.70	35.1	54.0	4.3	101.0	207.00	HORIZONTAL



Test Mode: 11n

Channel 01



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

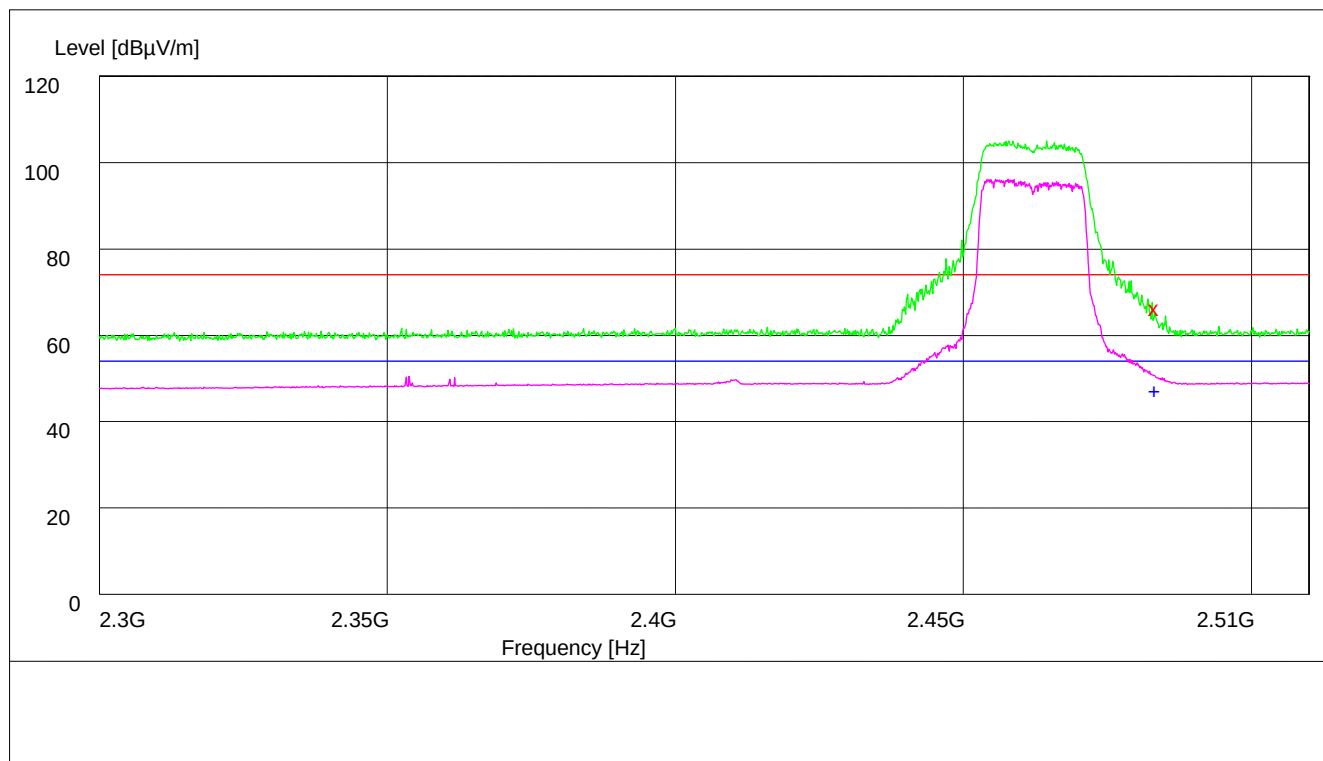
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	66.60	34.8	74.0	7.4	101.0	245.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	48.90	34.8	54.0	5.1	101.0	203.00	HORIZONTAL

Channel 11



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

MEASUREMENT RESULT: PK Detector

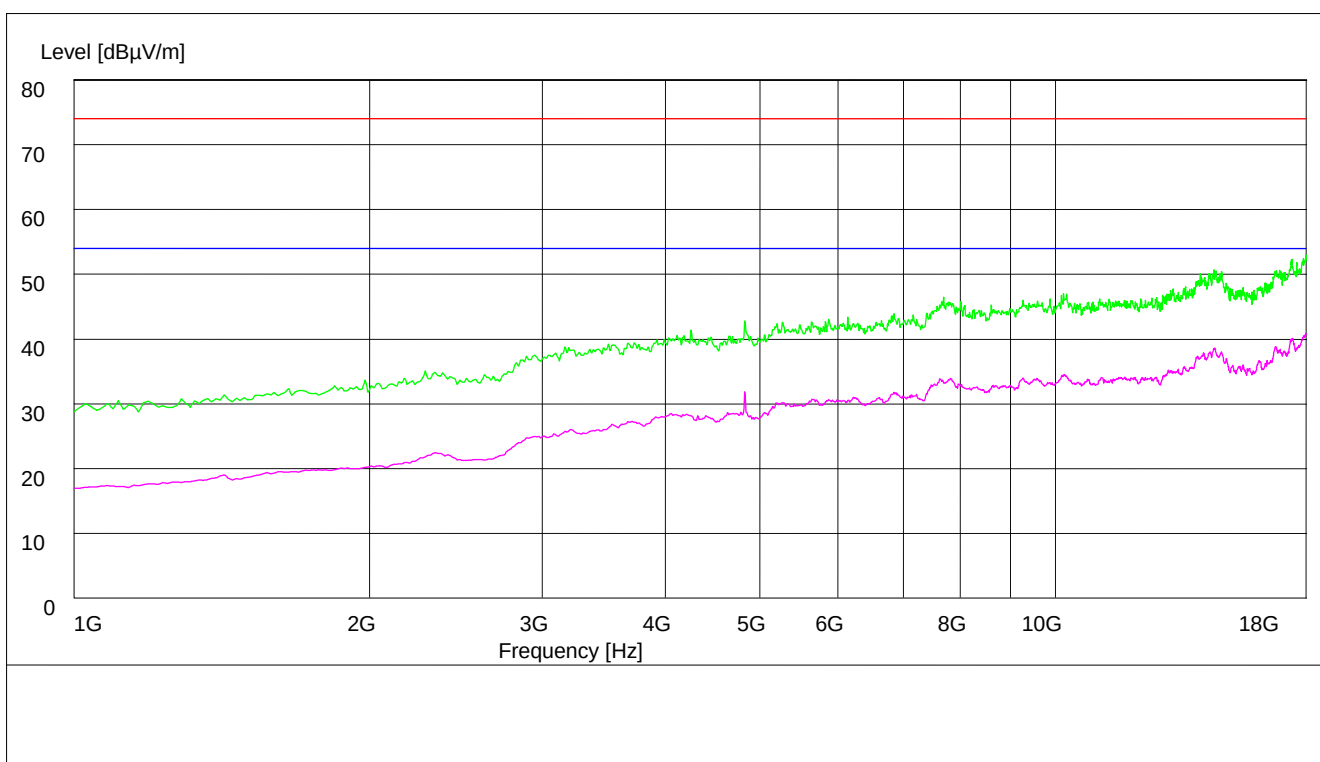
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	68.40	35.1	74.0	5.6	102.0	251.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	49.20	35.1	54.0	4.8	102.0	201.00	HORIZONTAL

Part 4: 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 μ V/m) and Average Limit (54 dB μ V/m).

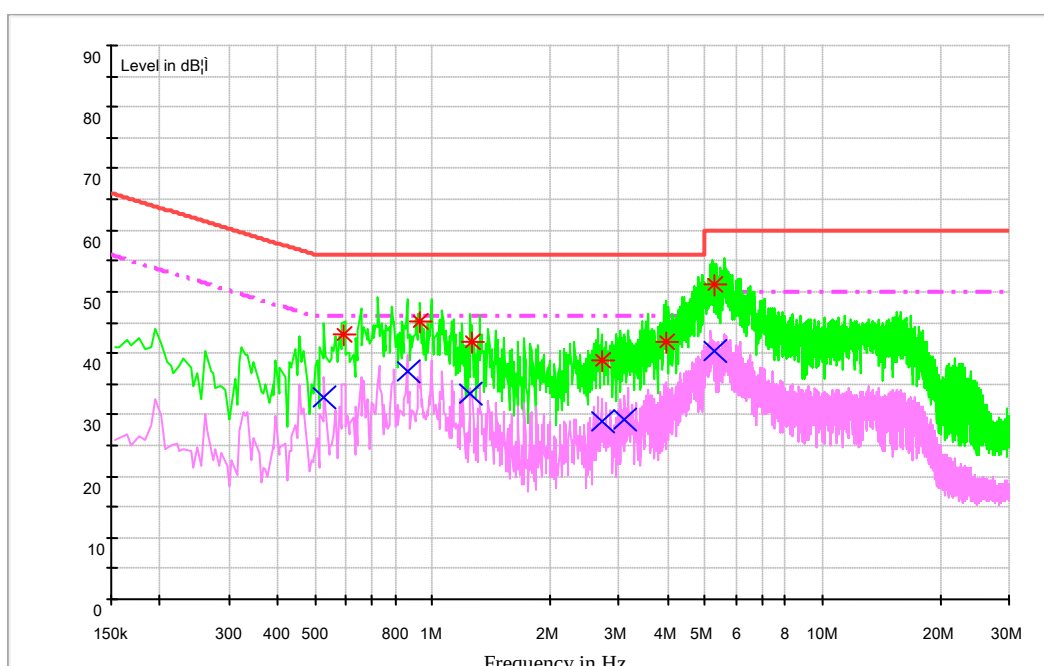


Appendix H: Conducted Emission at Power Port

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
0.591791	43.0	N	9.7	13.0	56.0	FLO
0.924818	45.1	N	9.7	10.9	56.0	FLO
1.254292	41.8	N	9.7	14.2	56.0	FLO
2.704726	38.8	N	9.7	17.2	56.0	FLO
3.961688	41.9	N	9.8	14.1	56.0	FLO
5.276092	51.1	N	9.8	8.9	60.0	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
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0.525960	32.9	N	9.7	13.1	46.0	FLO
0.858736	37.0	N	9.7	9.0	46.0	FLO
1.252200	33.3	N	9.7	12.7	46.0	FLO
2.706548	29.0	N	9.7	17.0	46.0	FLO
3.094208	29.2	N	9.7	16.8	46.0	FLO
5.262278	40.3	N	9.8	9.7	50.0	FLO

END