



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.

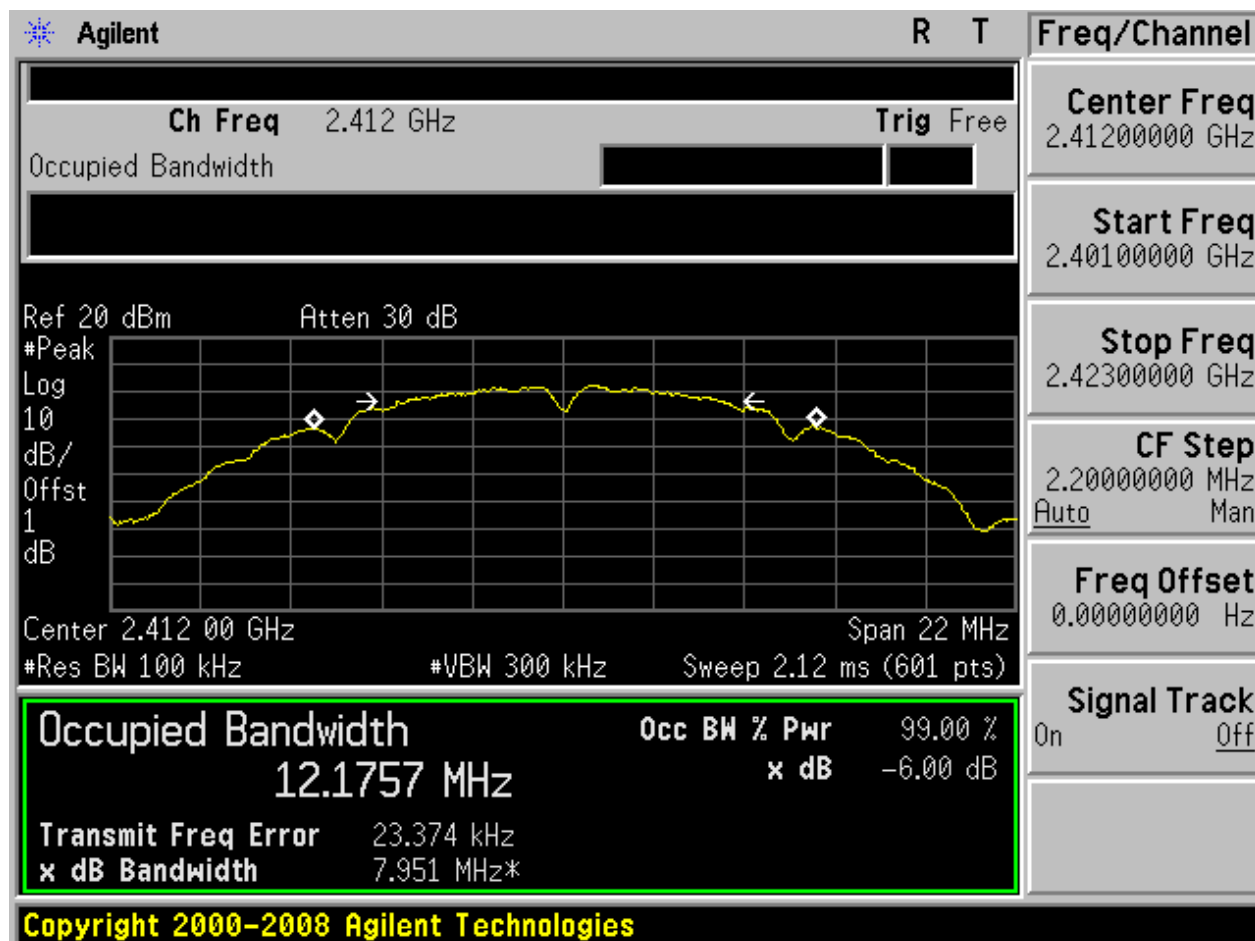
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	DTS6dBBW[MHz]	Verdict
11B	L	2412	7.95	pass
11B	M	2437	7.78	pass
11B	H	2462	7.70	pass
11G	L	2412	16.56	pass
11G	M	2437	16.54	pass
11G	H	2462	16.59	pass
11N20	L	2412	17.78	pass
11N20	M	2437	17.78	pass
11N20	H	2462	17.79	pass



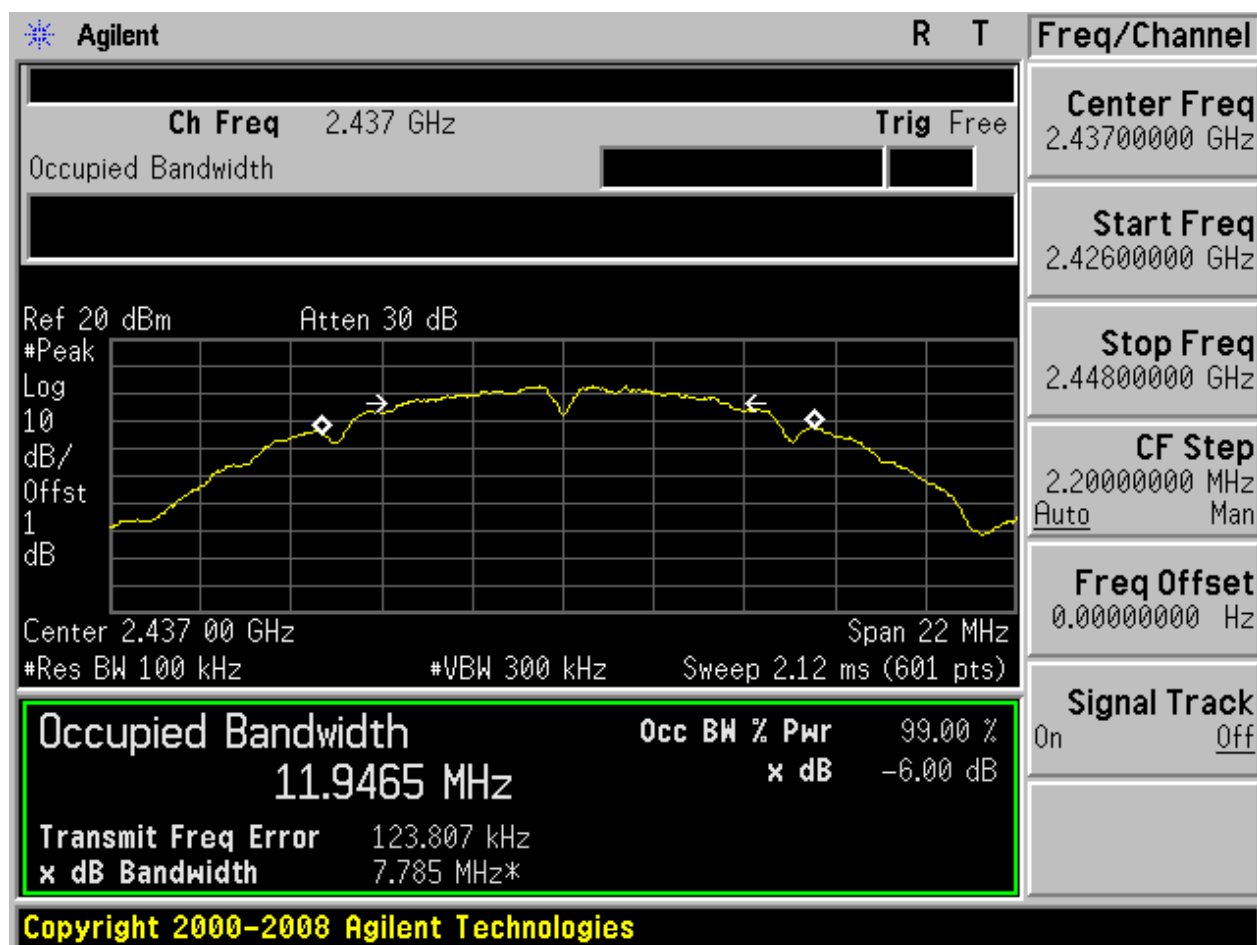
Part II - Test Plots

2.1 11B_L



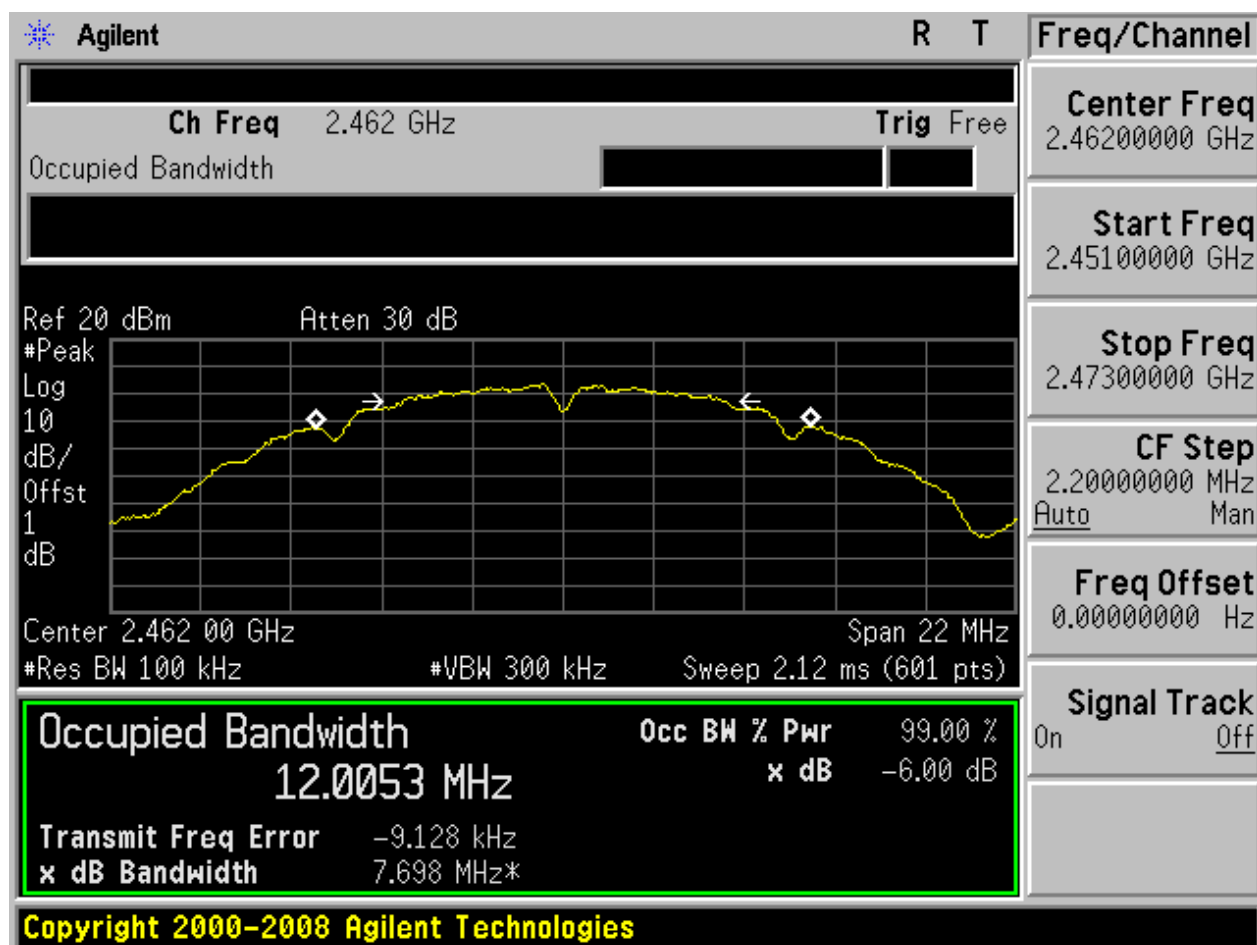


2.3 11B_M

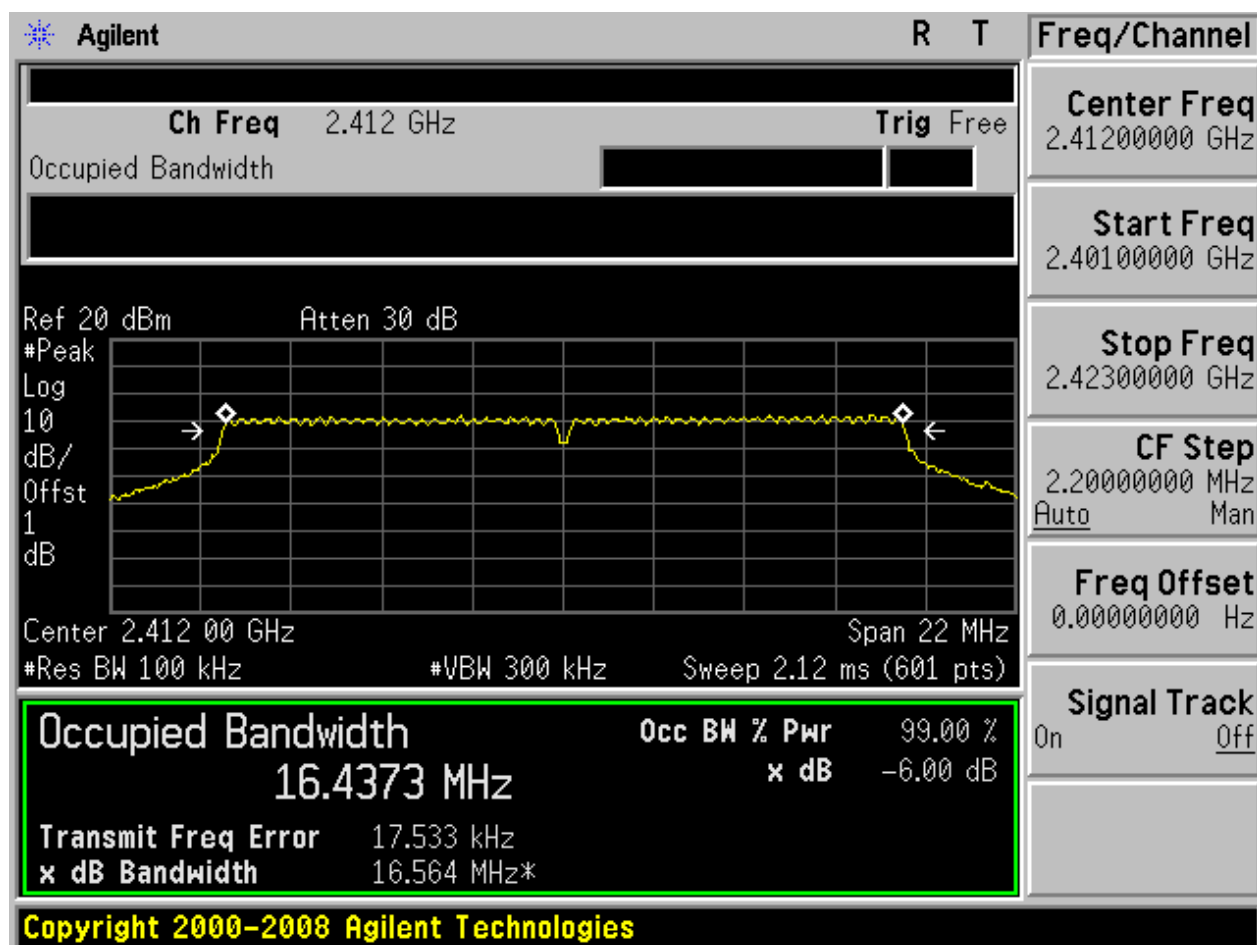




2.5 11B_H

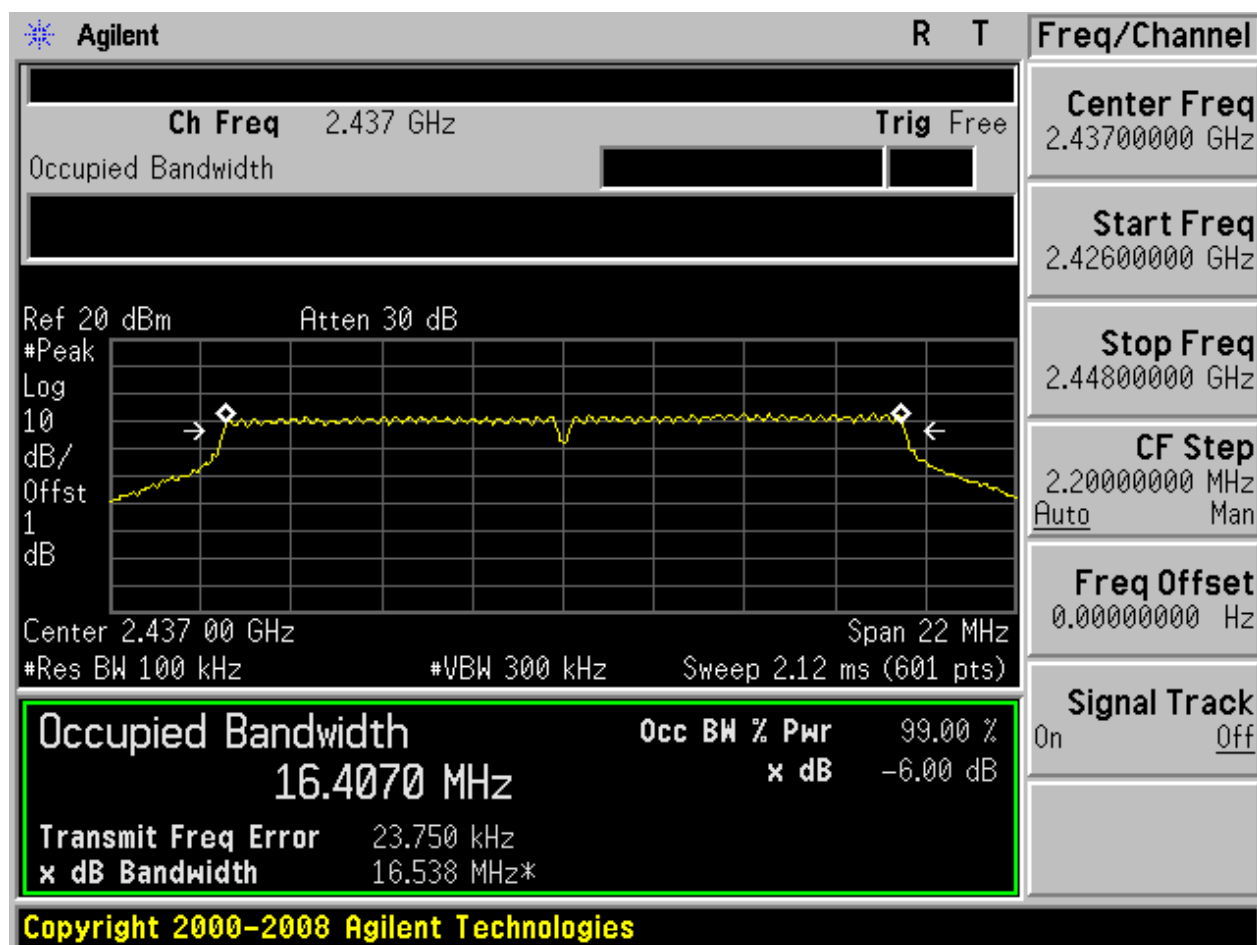


2.7 11G_L



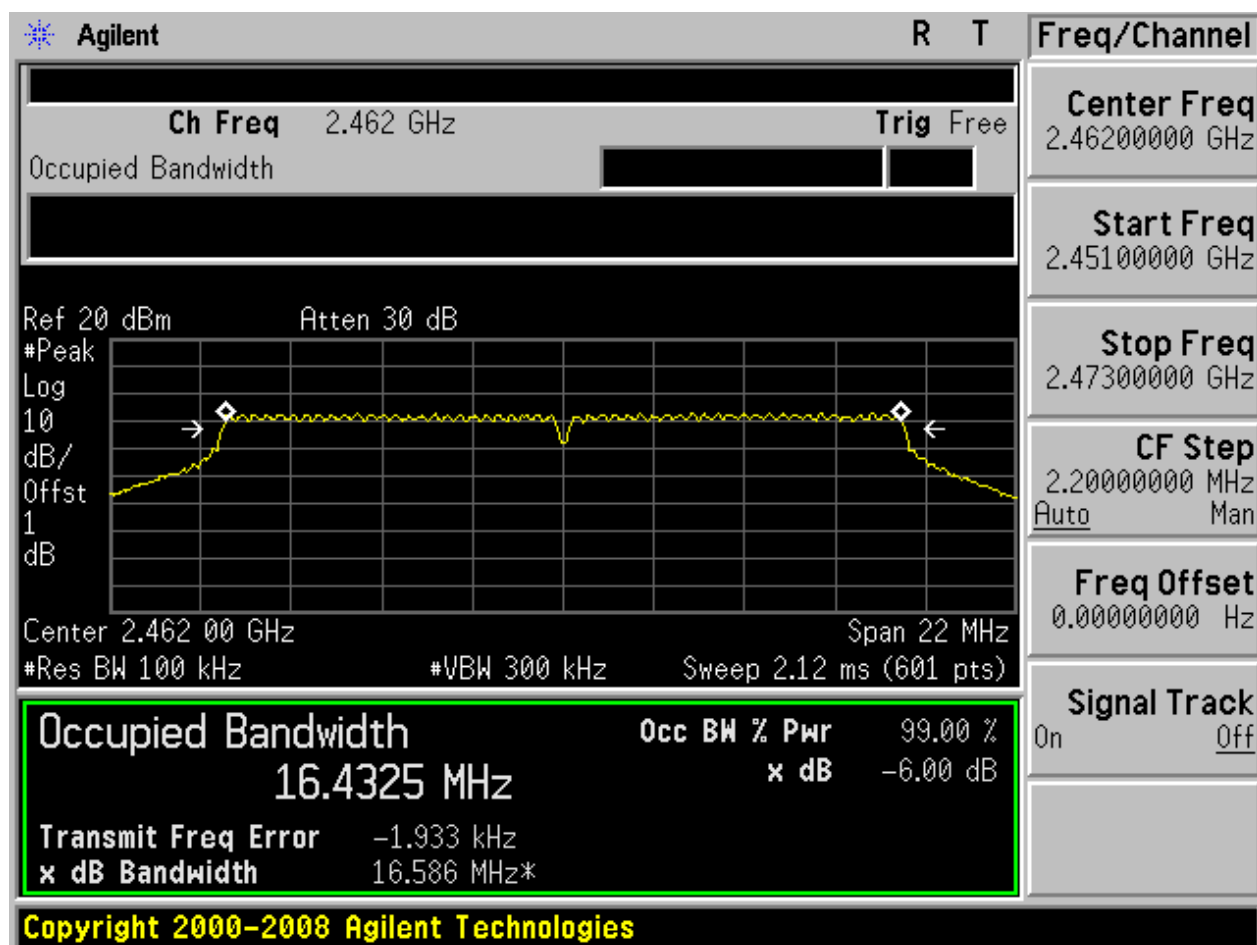


2.9 11G_M

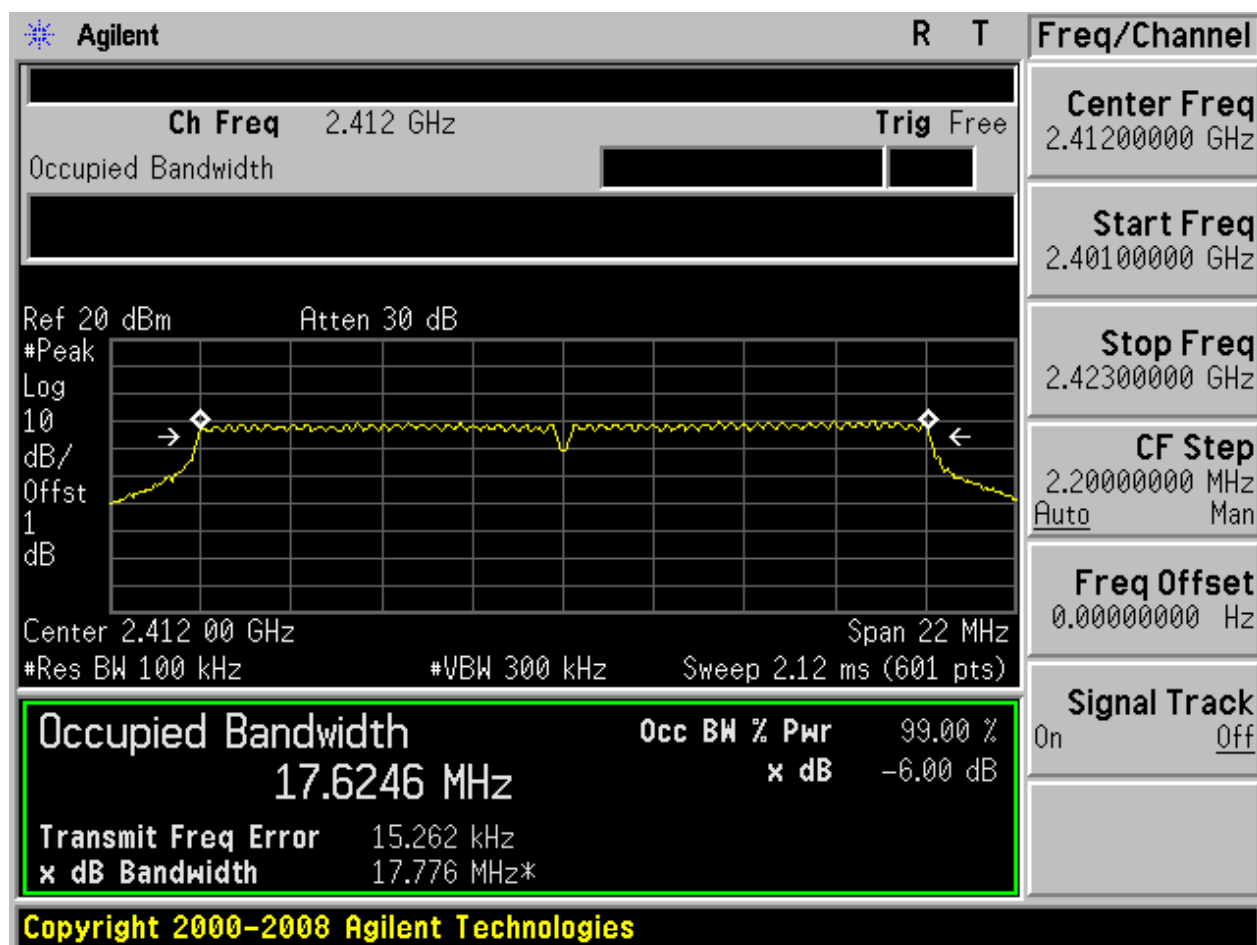




2.11 11G_H

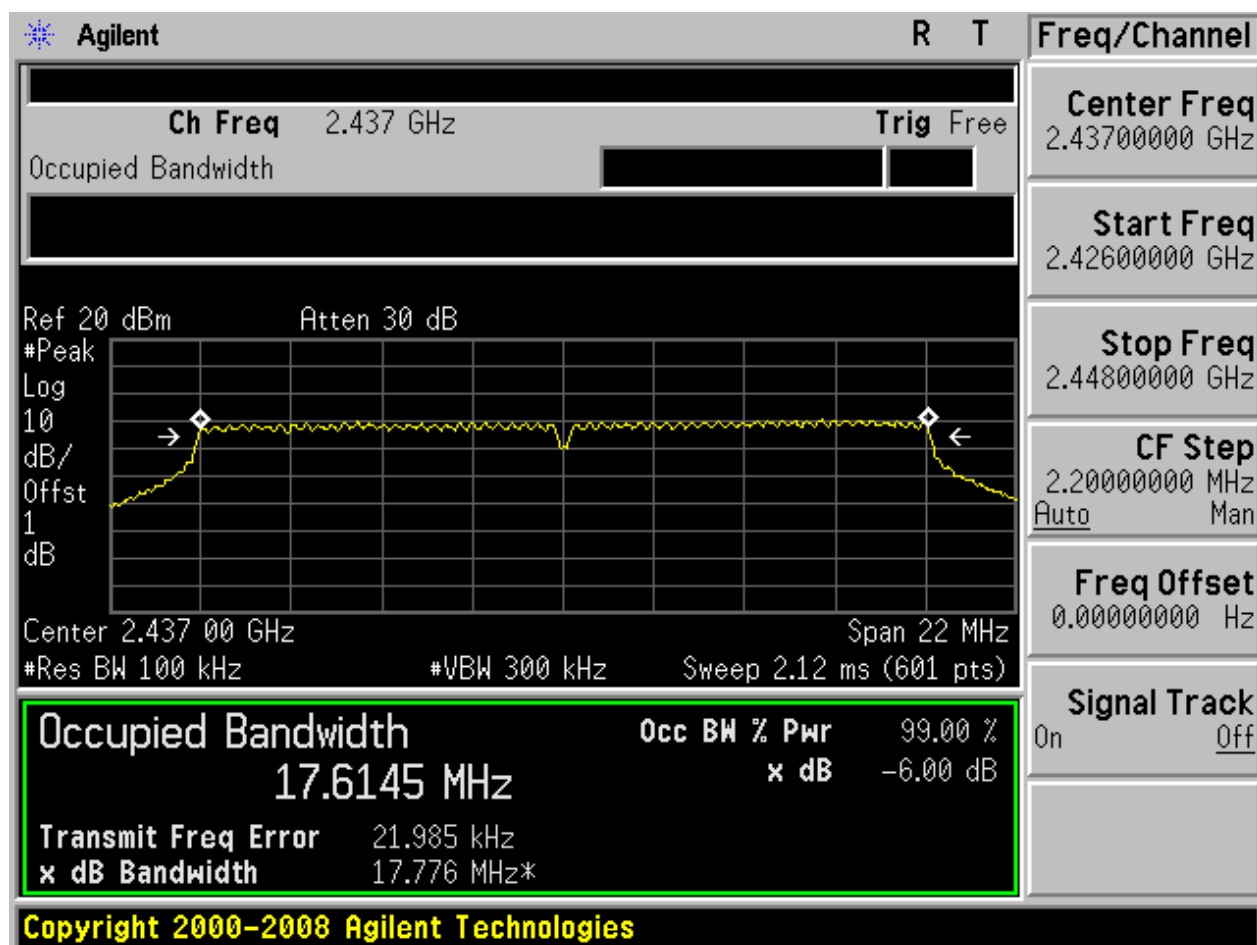


2.13 11N20_L



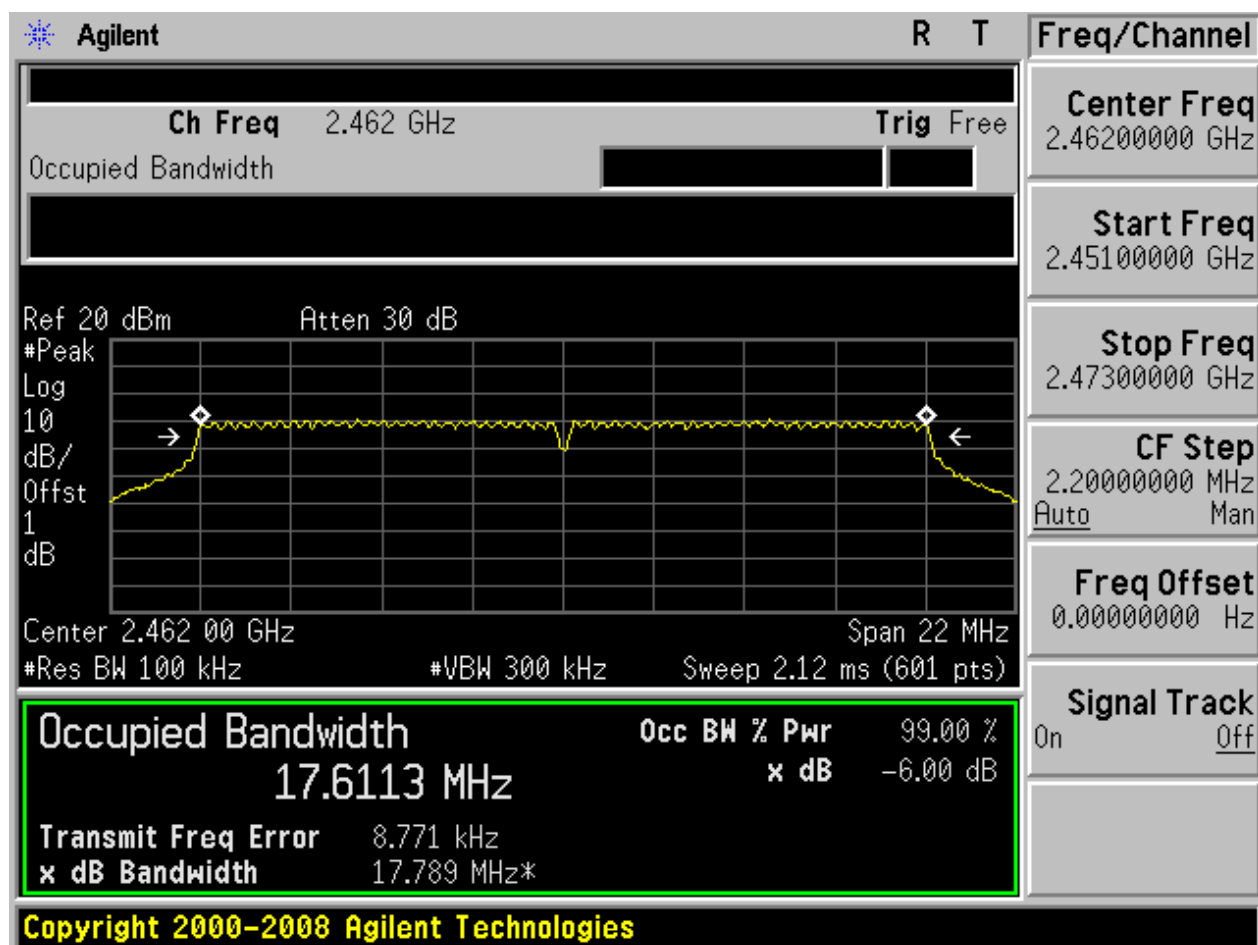


2.15 11N20_M





2.17 11N20_H



Appendix B: Occupied Bandwidth

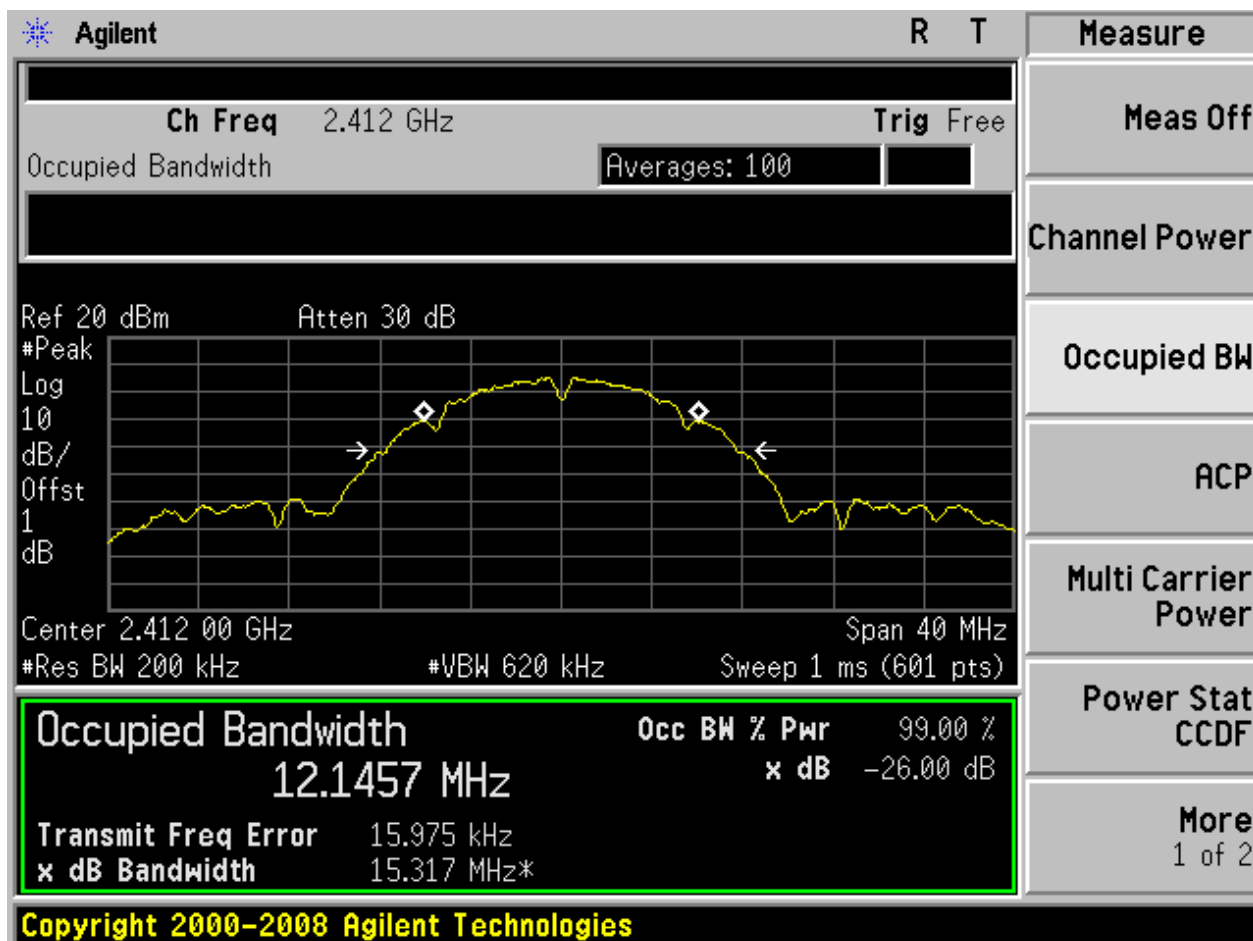
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	12.15	pass
11B	M	2437	11.97	pass
11B	H	2462	12.04	pass
11G	L	2412	16.52	pass
11G	M	2437	16.51	pass
11G	H	2462	16.45	pass
11N20	L	2412	17.68	pass
11N20	M	2437	17.64	pass
11N20	H	2462	17.65	pass

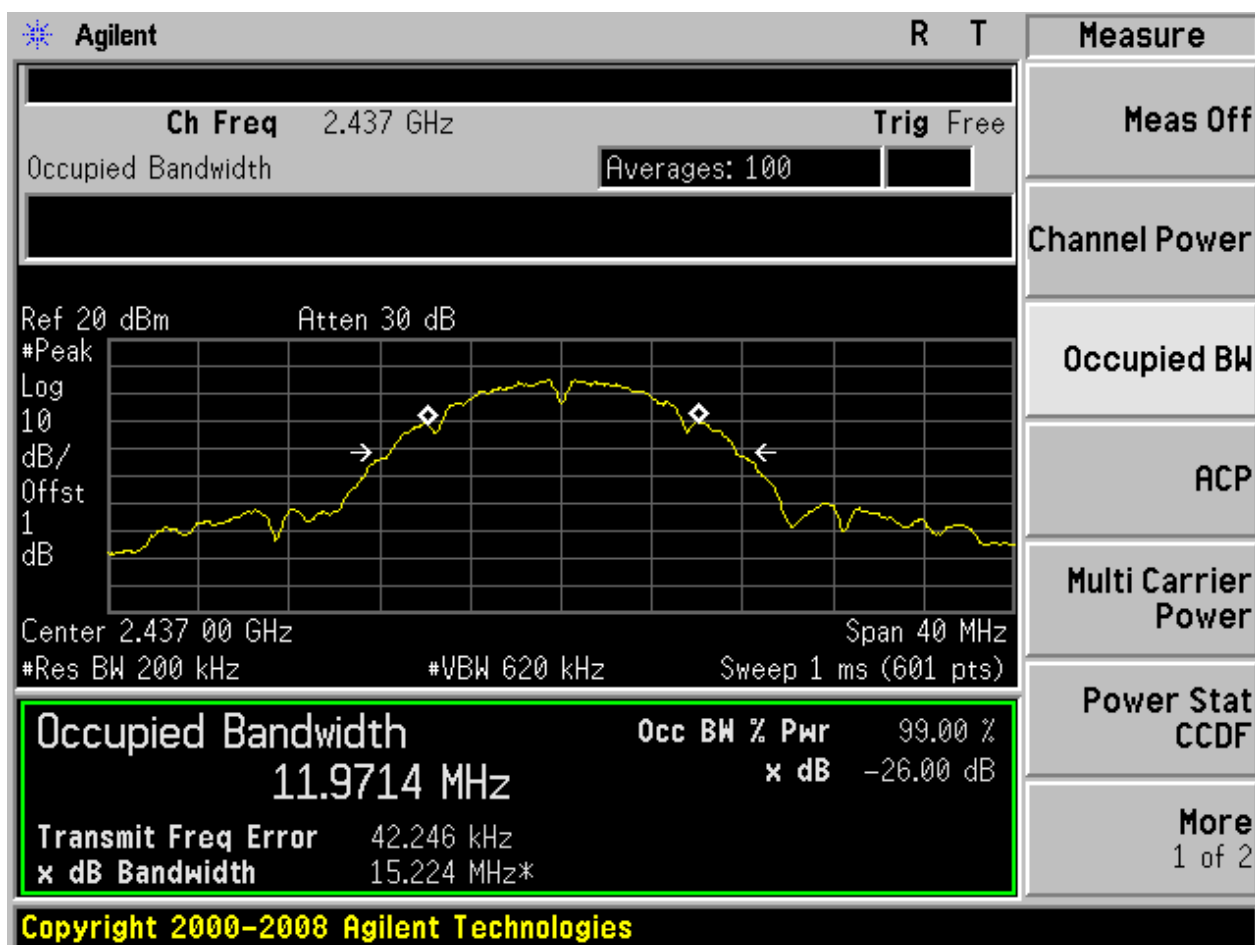
Part II - Test Plots

2.1 11B_L



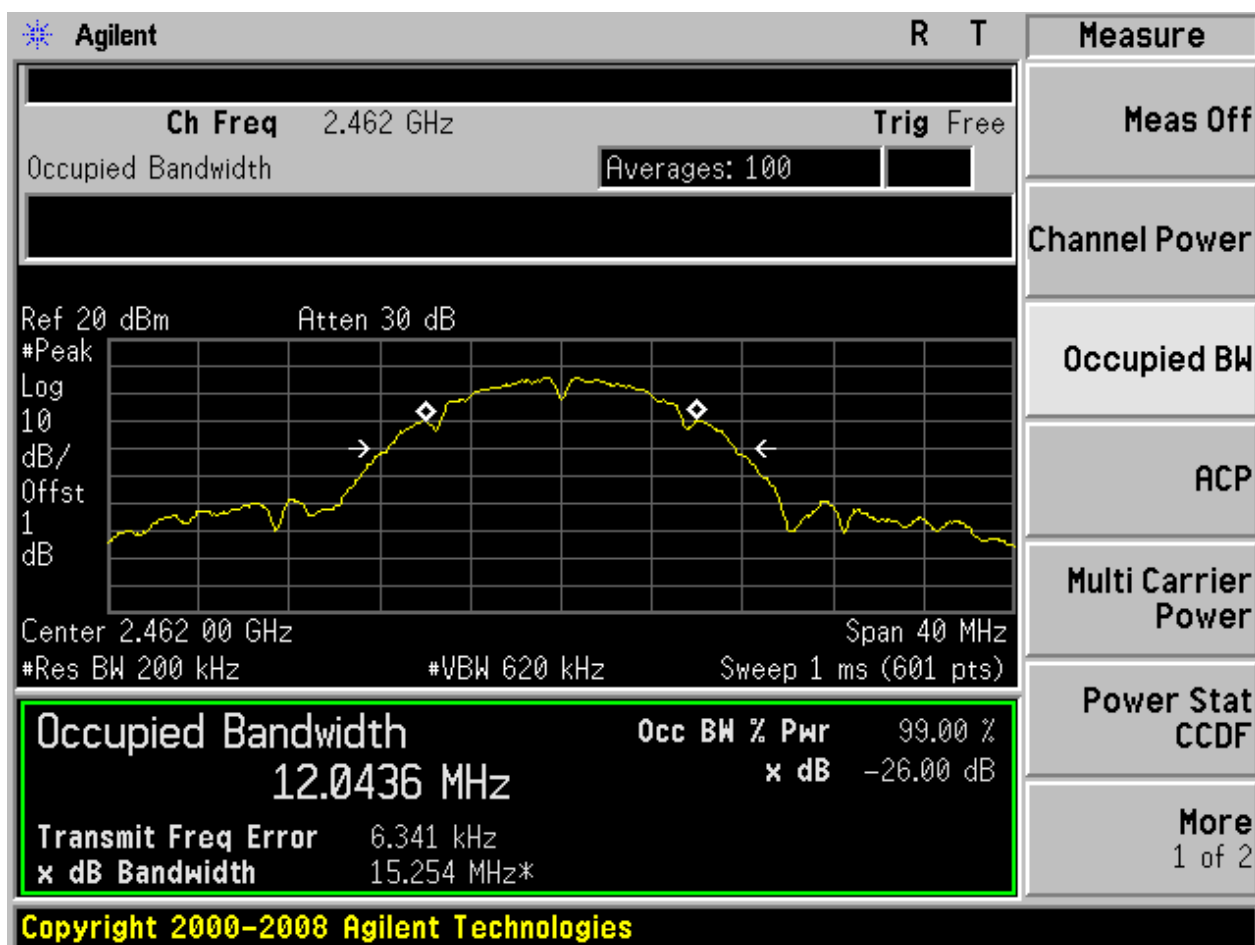


2.3 11B_M

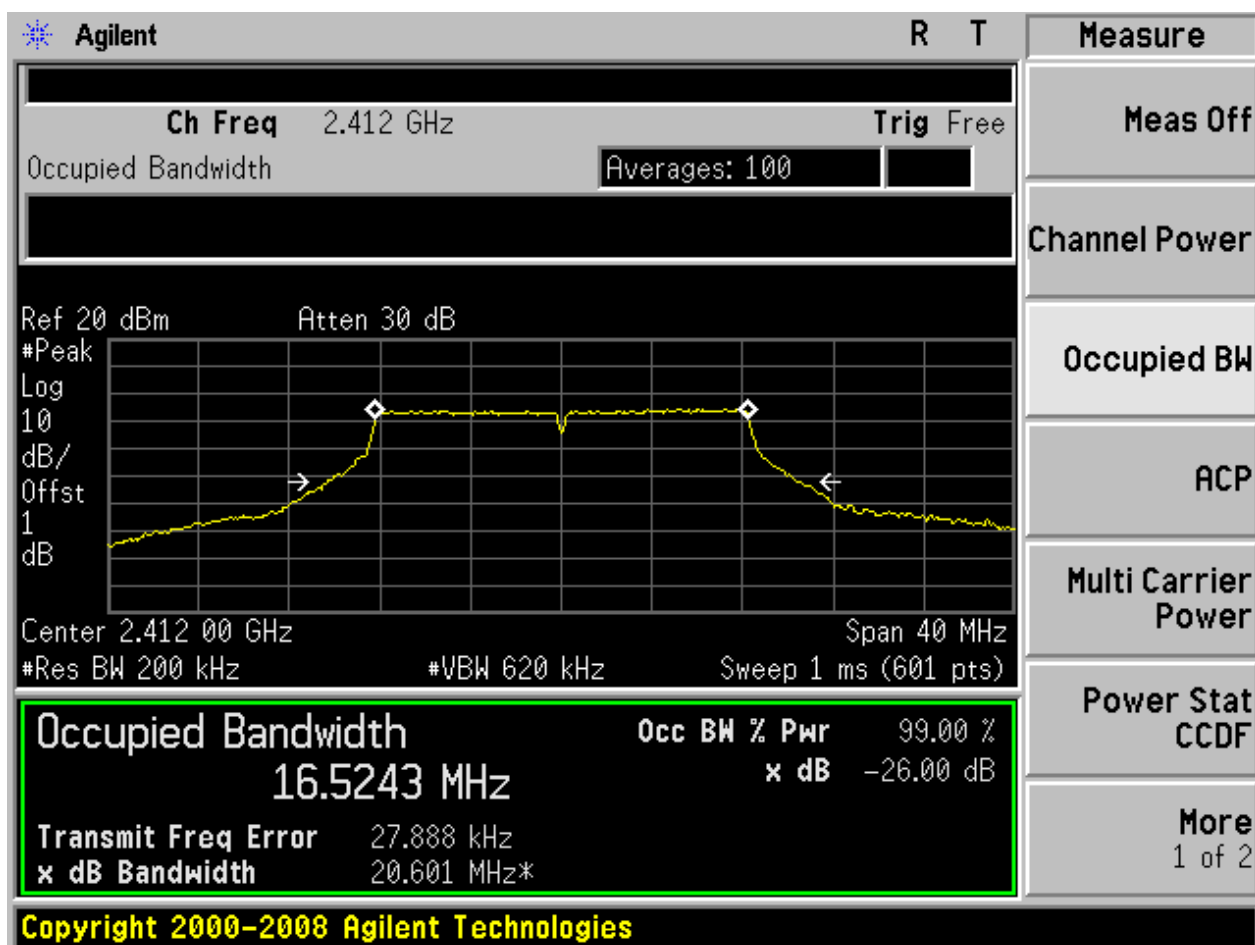




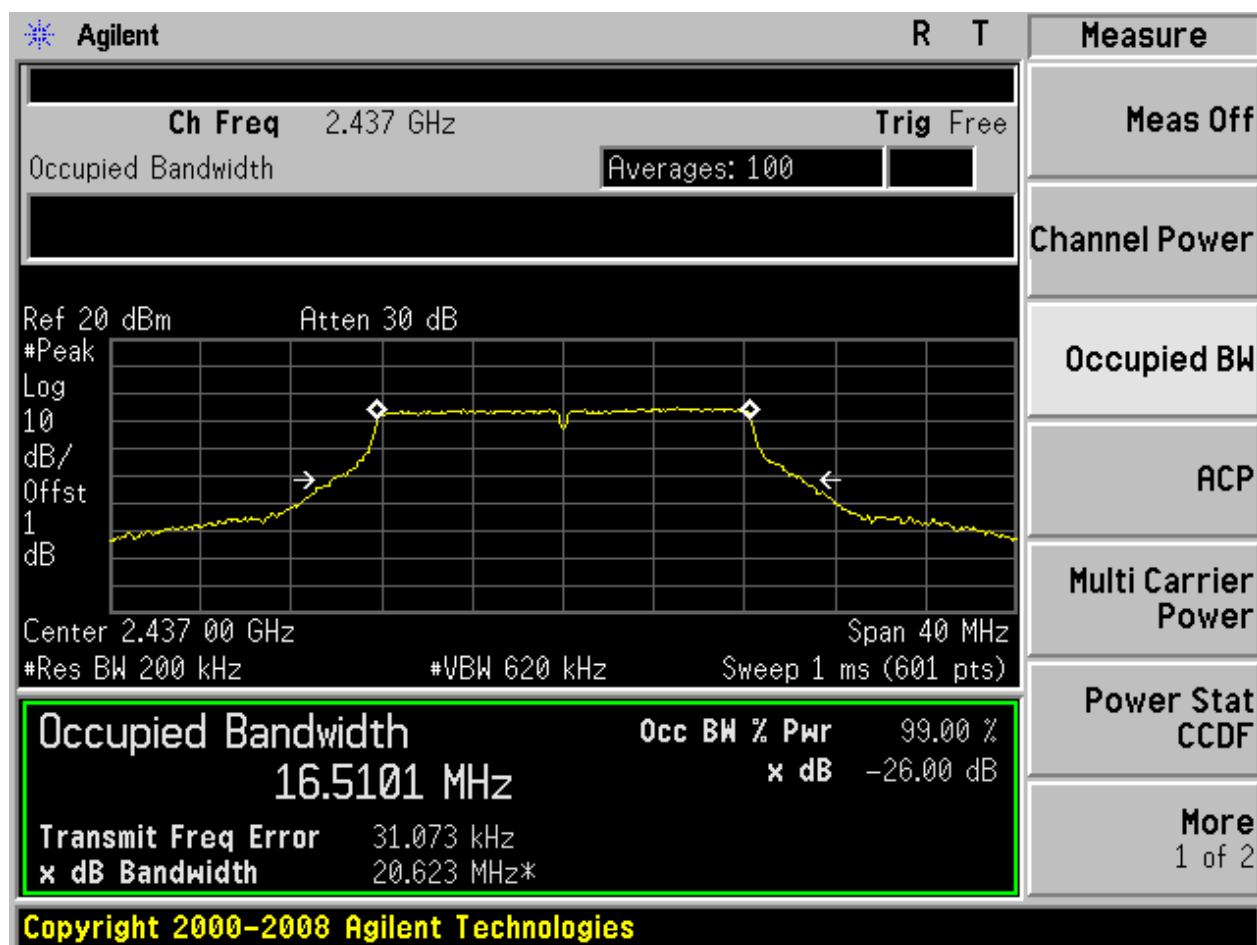
2.5 11B_H



2.7 11G_L

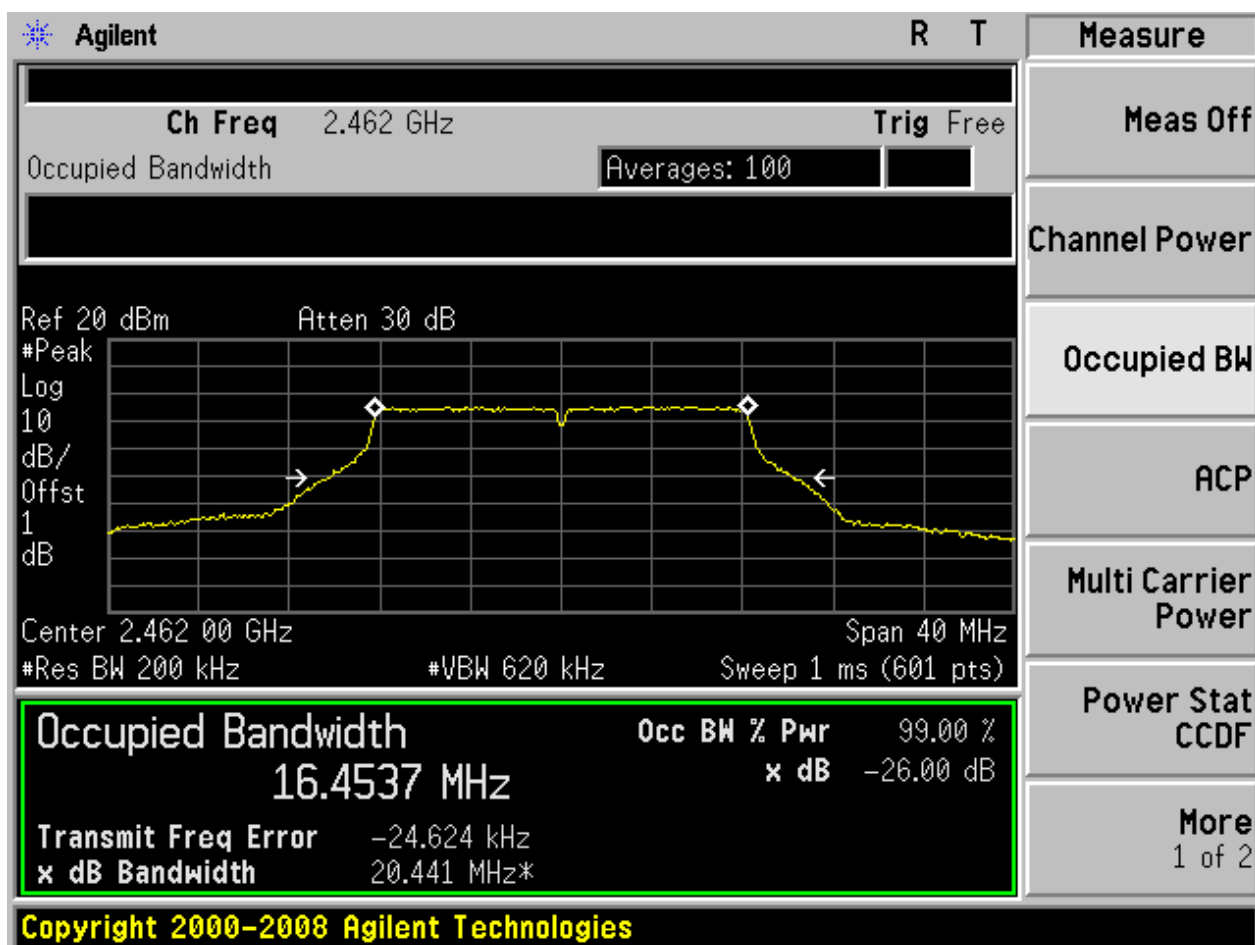


2.9 11G_M

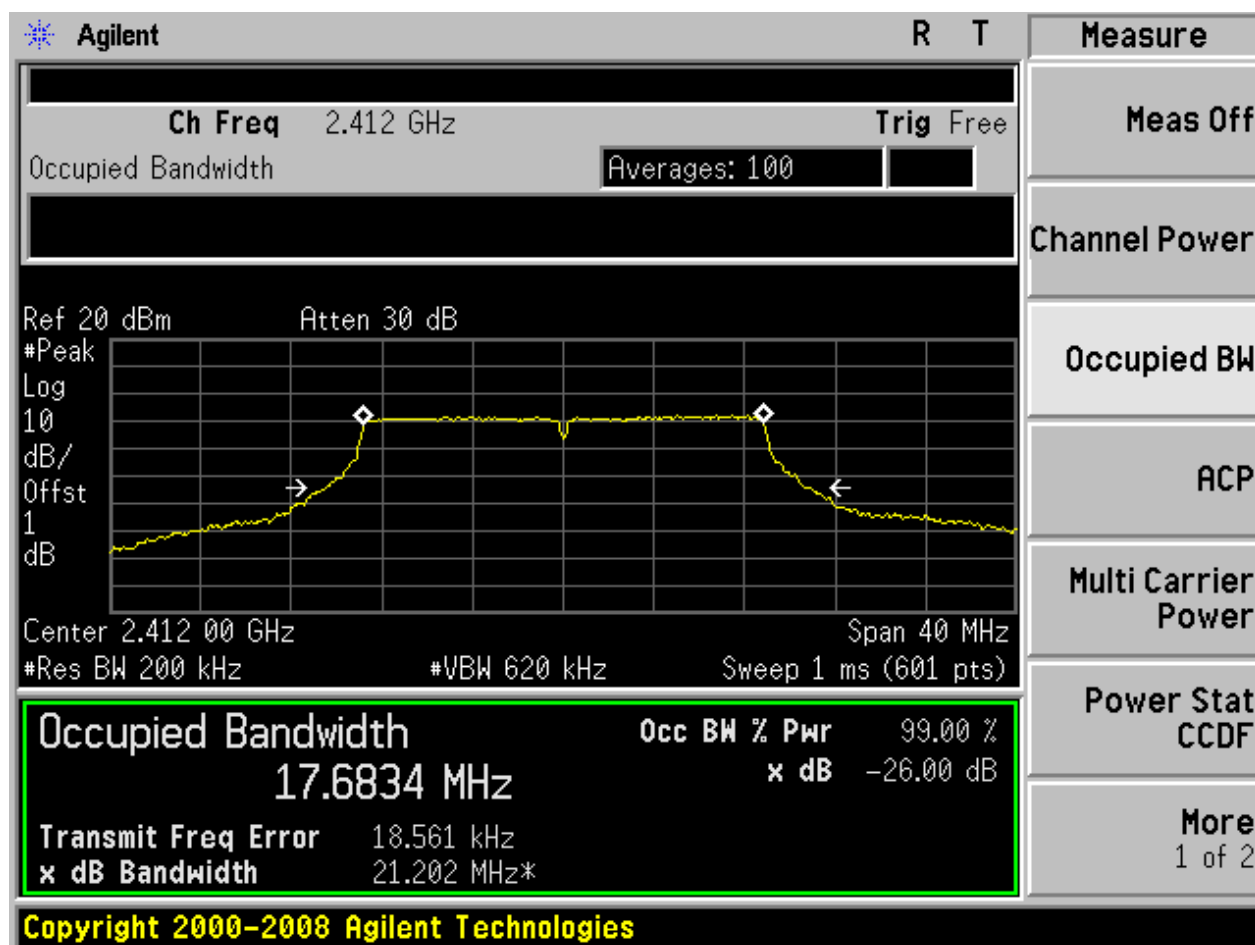




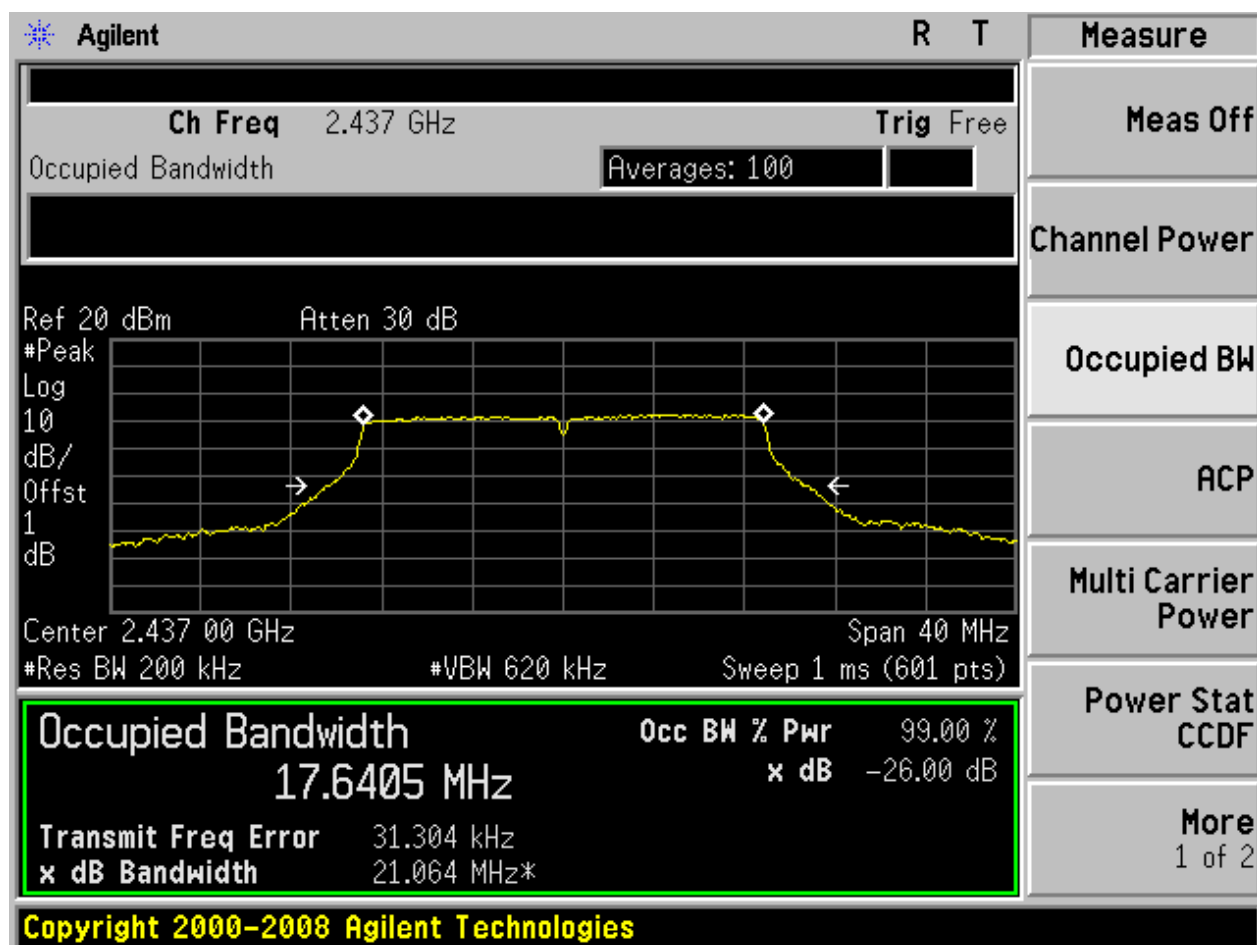
2.11 11G_H



2.13 11N20_L

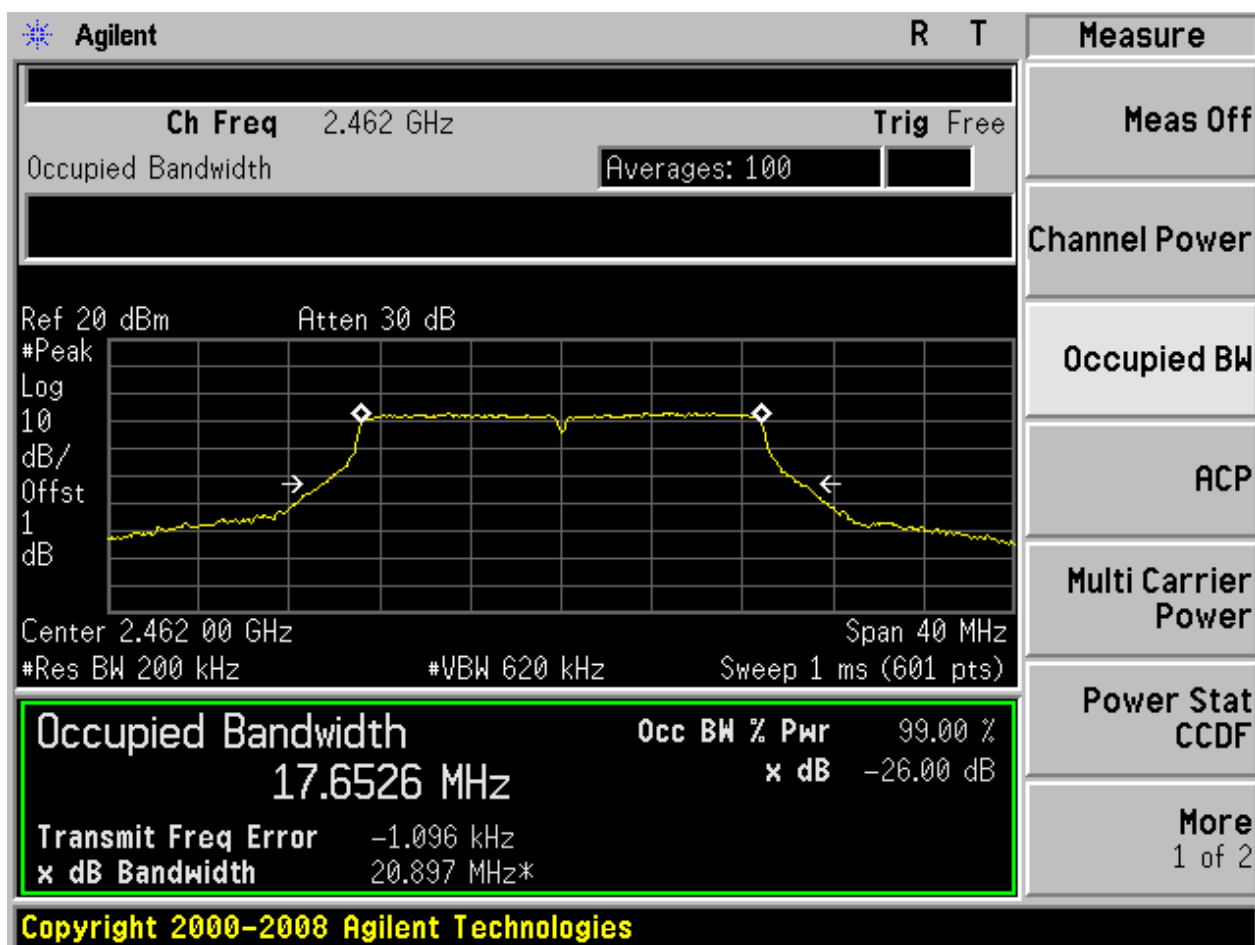


2.15 11N20_M





2.17 11N20_H



Appendix C: Maximum Conducted Average Output Power

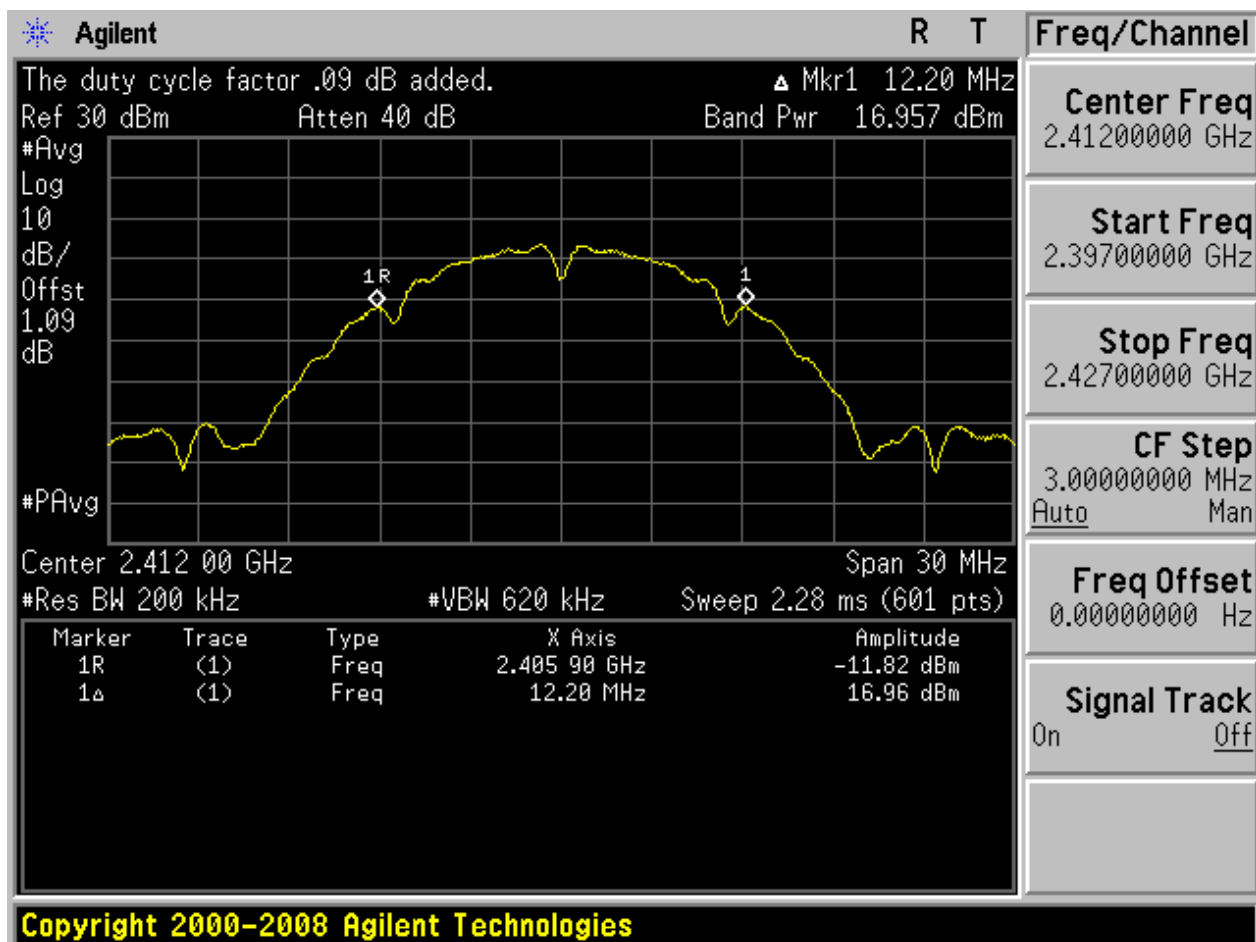
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	Power[dBm]	Verdict
11B	L	2412	98	16.96	pass
11B	M	2437	98	17.1	pass
11B	H	2462	98	17.86	pass
11G	L	2412	88	11.01	pass
11G	M	2437	88	11.34	pass
11G	H	2462	88	12.07	pass
11N20	L	2412	87	8.98	pass
11N20	M	2437	87	9.36	pass
11N20	H	2462	87	9.96	pass



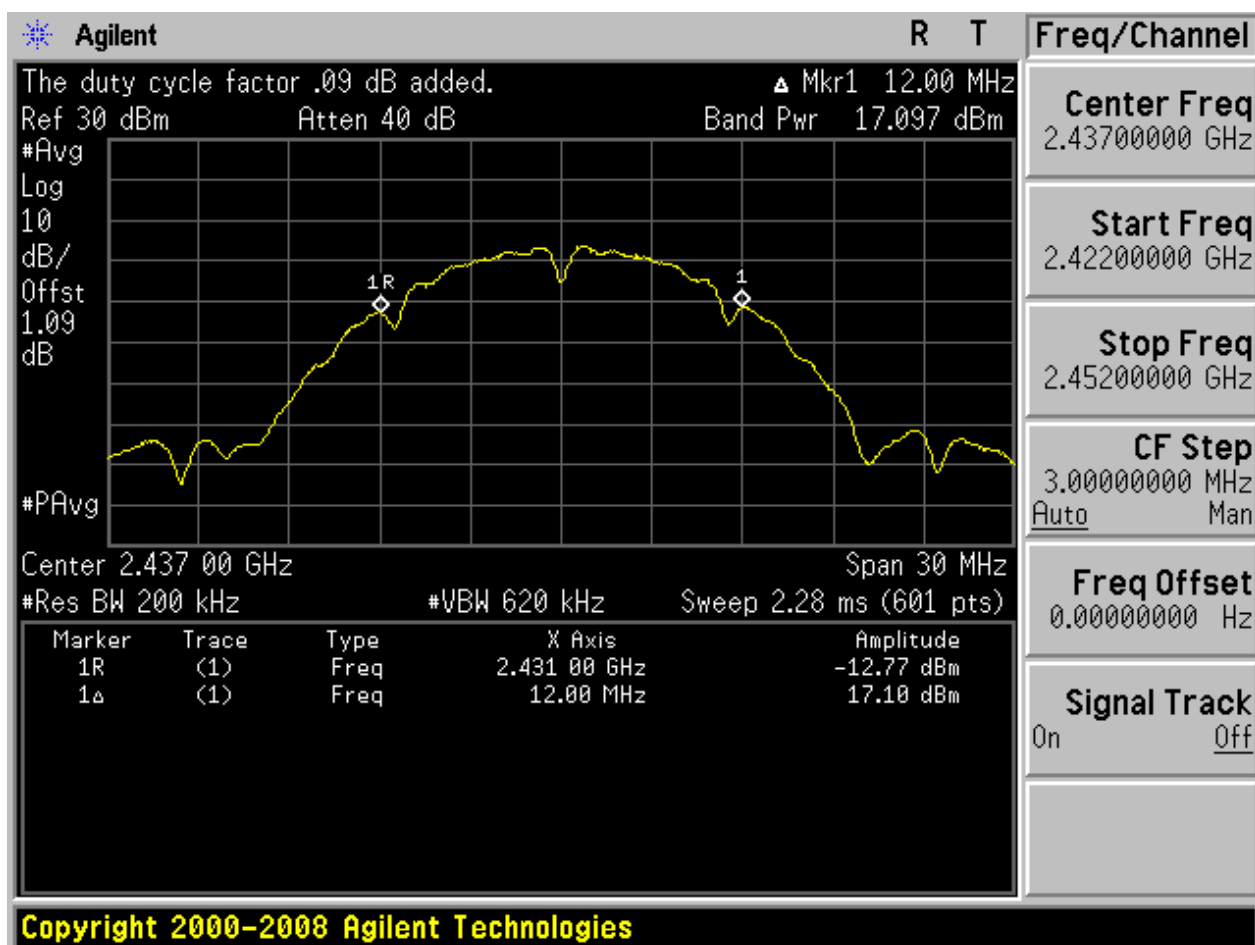
Part II - Test Plots

2.1 11B_L



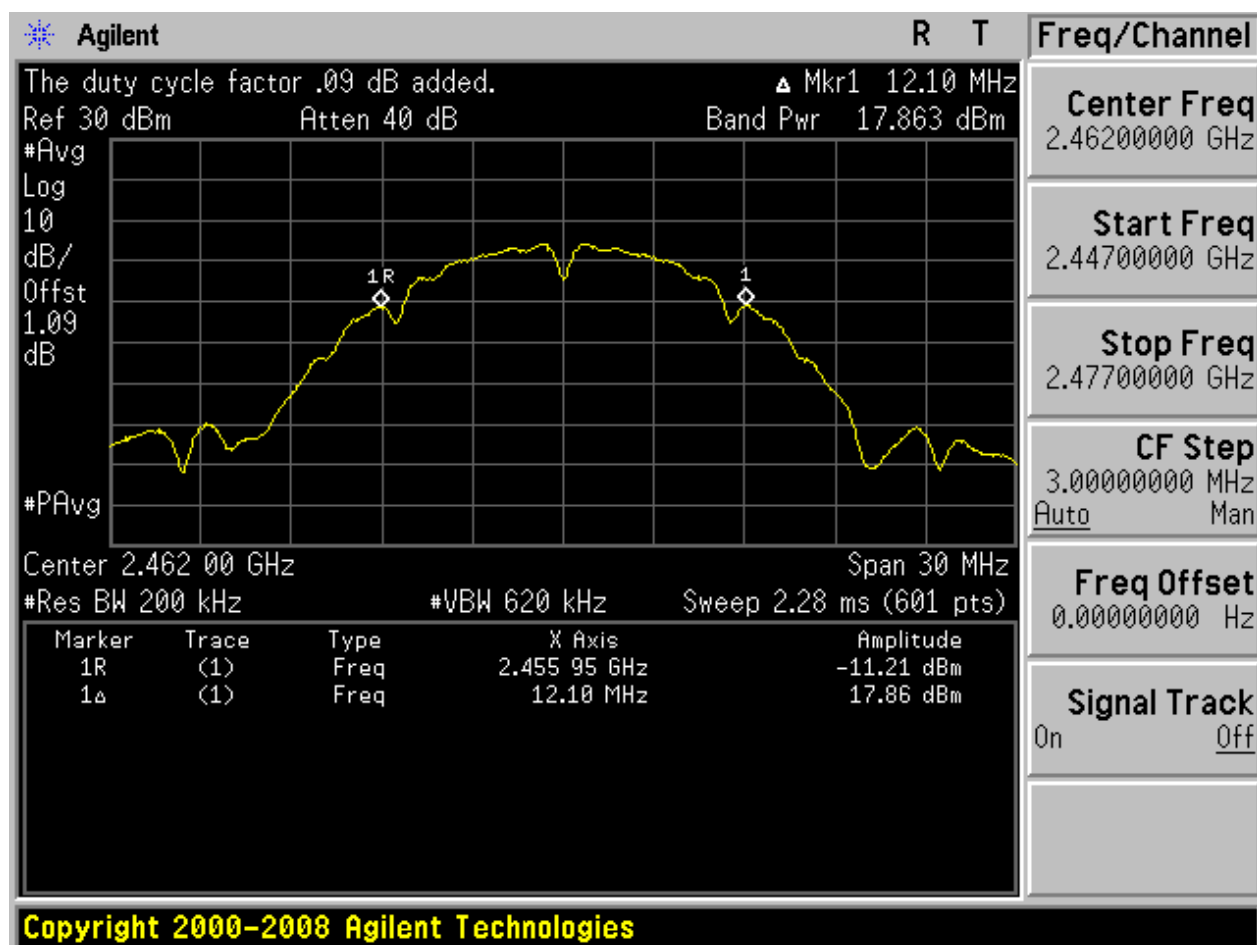


2.3 11B_M



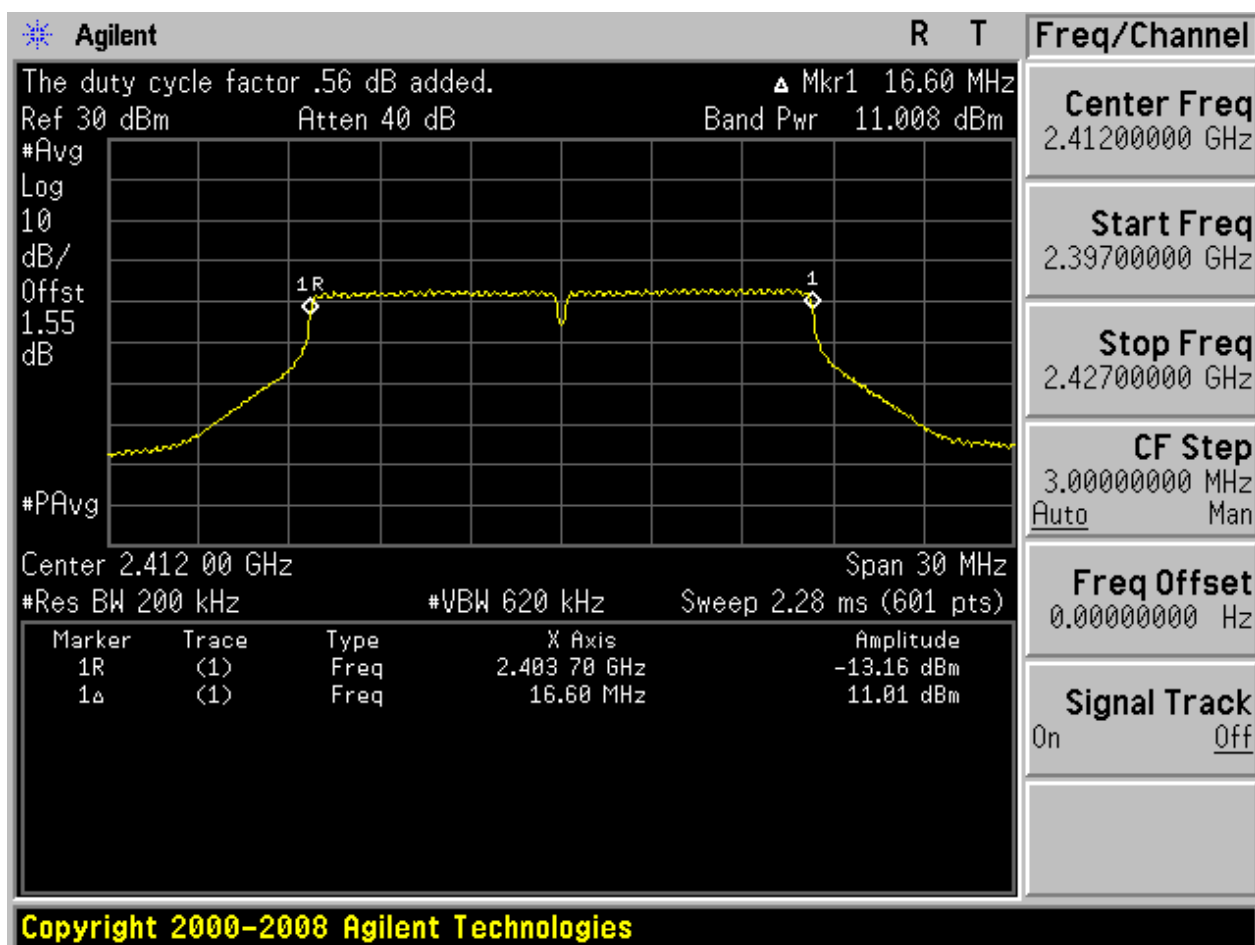


2.5 11B_H



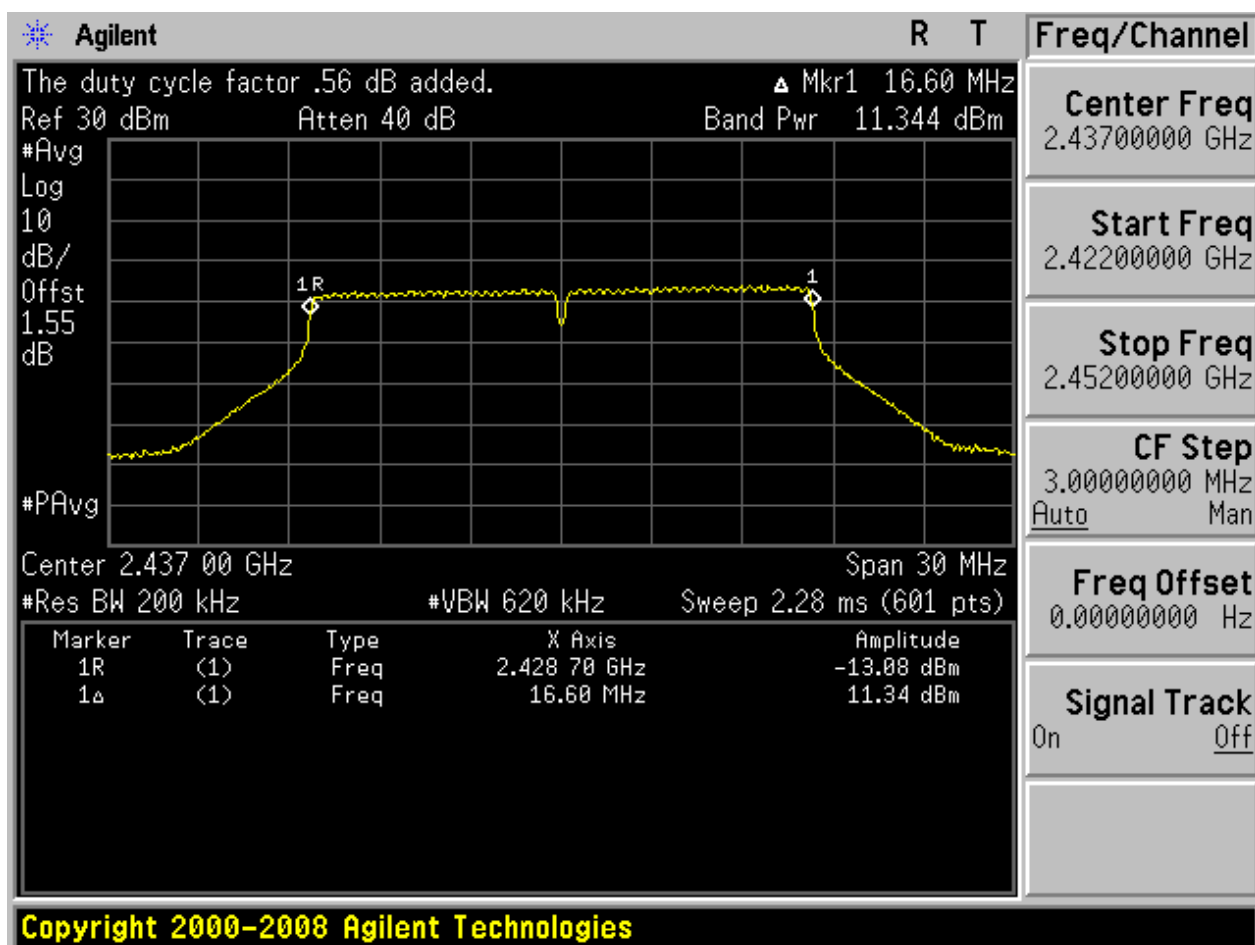


2.7 11G_L



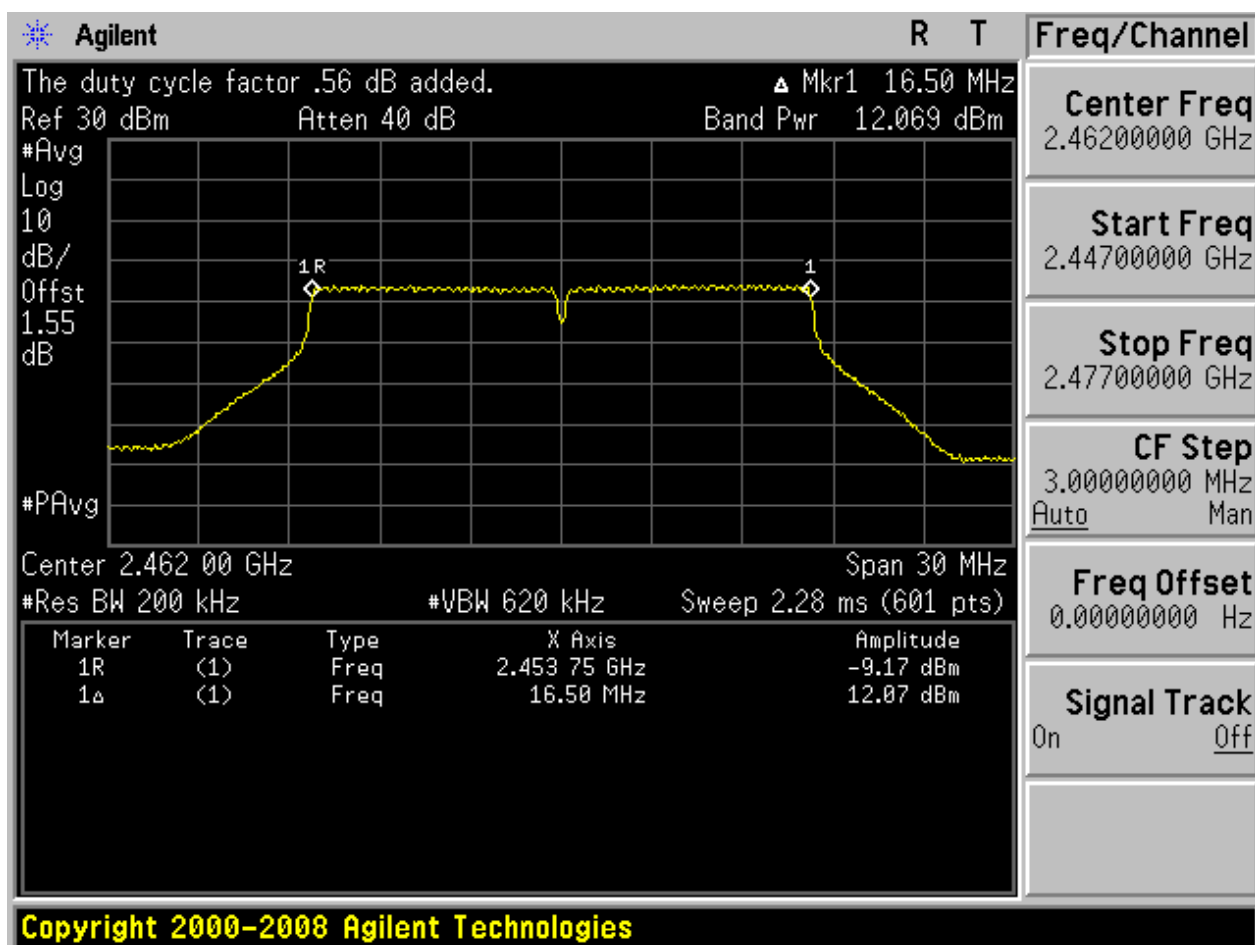


2.9 11G_M



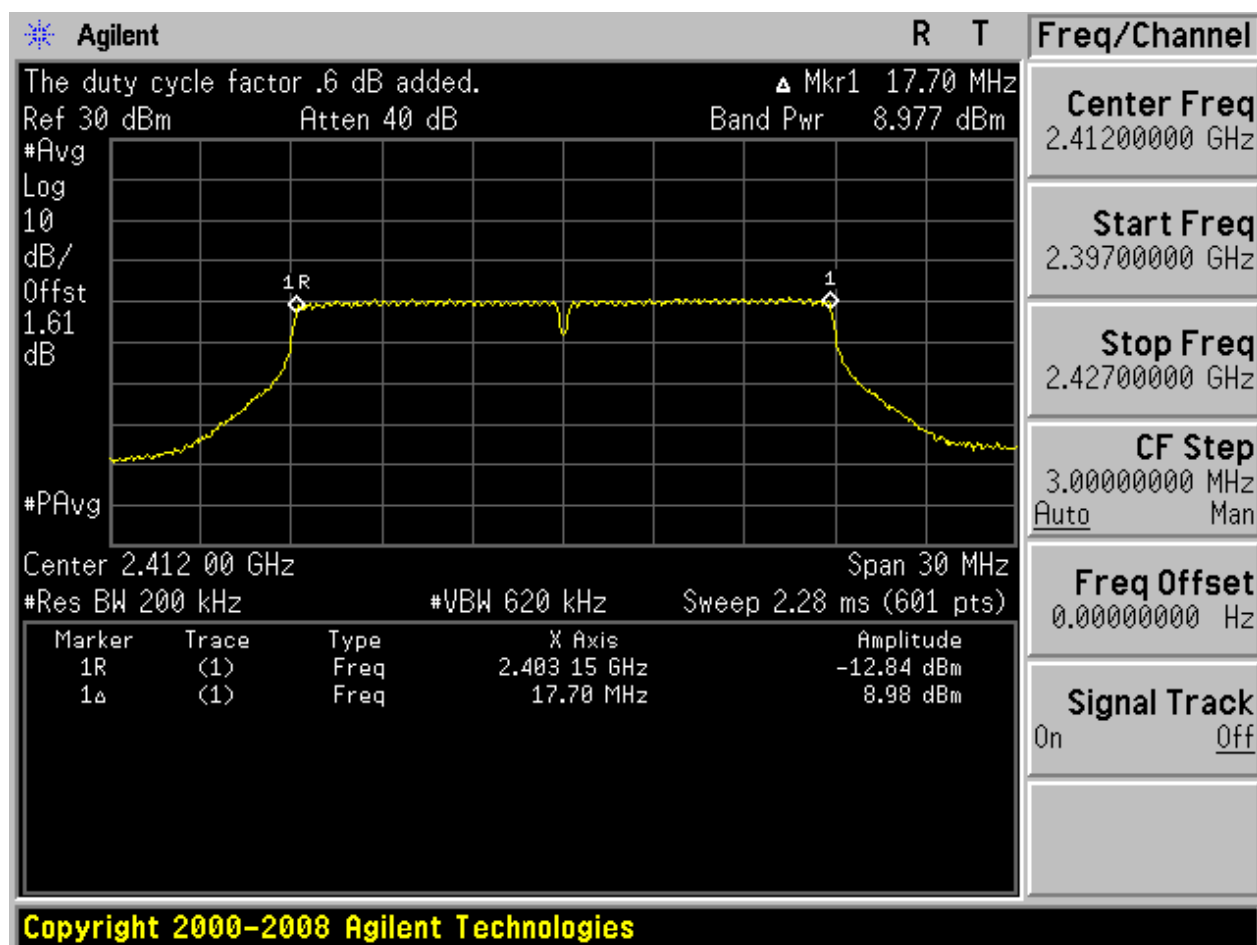


2.11 11G_H





2.13 11N20_L





Agilent R T

The duty cycle factor .6 dB added.

Ref 30 dBm Atten 40 dB Band Pwr 9.364 dBm

#Avg Log 10 dB/ Offst 1.61 dB

#PAvg

Center 2.437 00 GHz Span 30 MHz

#Res BW 200 kHz #VBW 620 kHz Sweep 2.28 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1R	(1)	Freq	2.428 15 GHz	-13.20 dBm
1	(1)	Freq	17.70 MHz	9.36 dBm

Freq/Channel

Center Freq 2.43700000 GHz

Start Freq 2.42200000 GHz

Stop Freq 2.45200000 GHz

CF Step 3.00000000 MHz

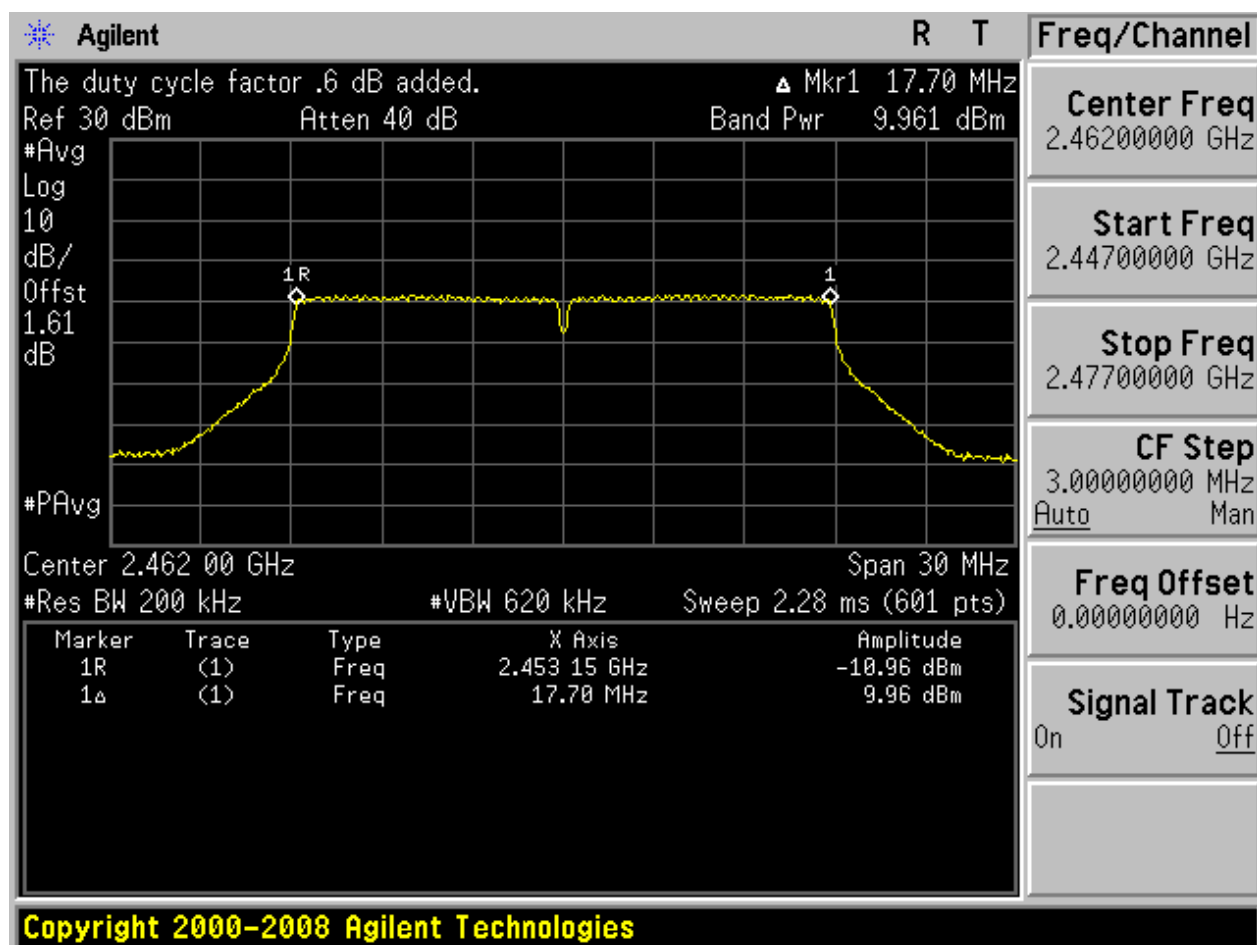
Freq Offset 0.00000000 Hz

Signal Track On Off

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2.17 11N20_H



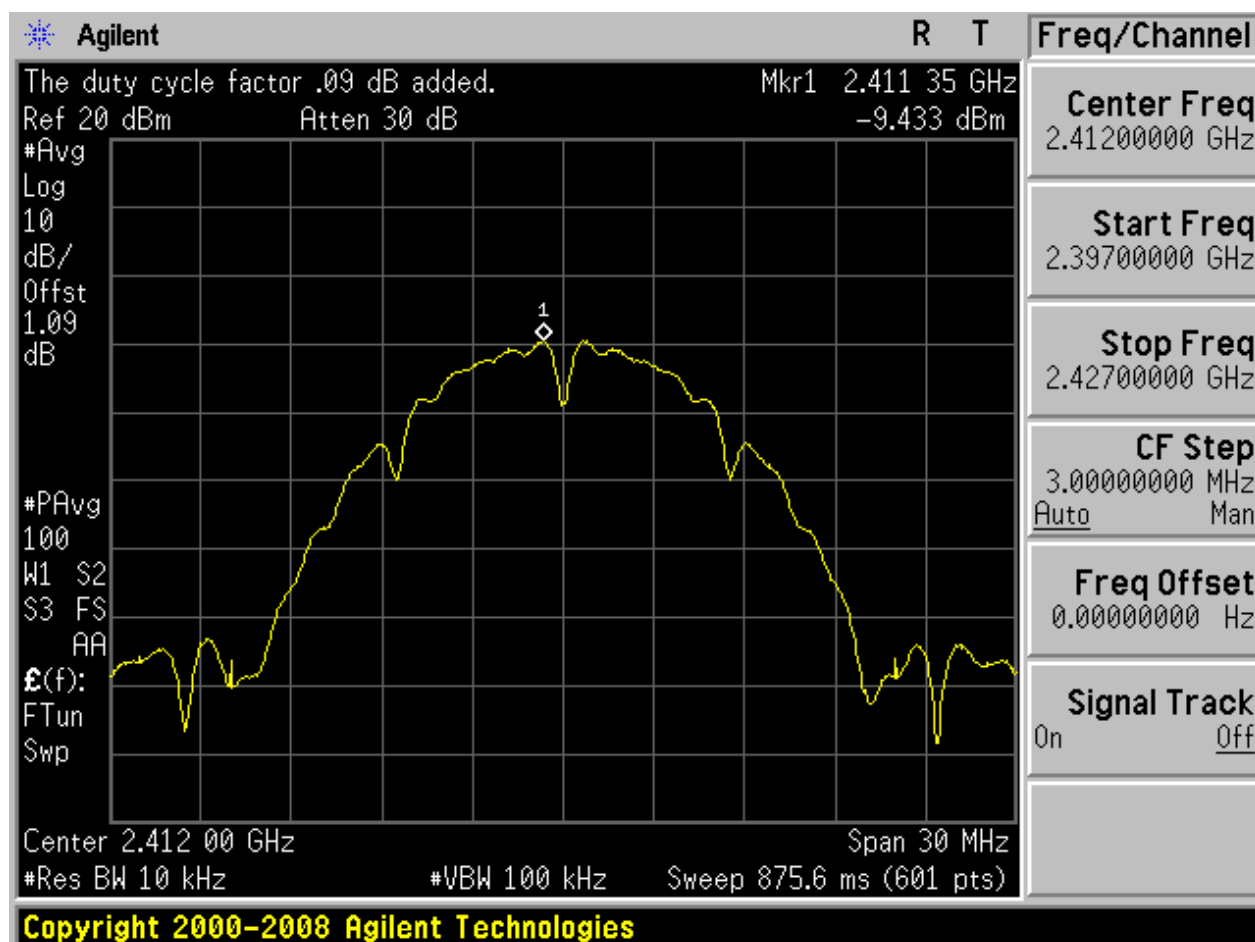
Appendix D: Maximum Power Spectral Density Level

Part I - Test Results

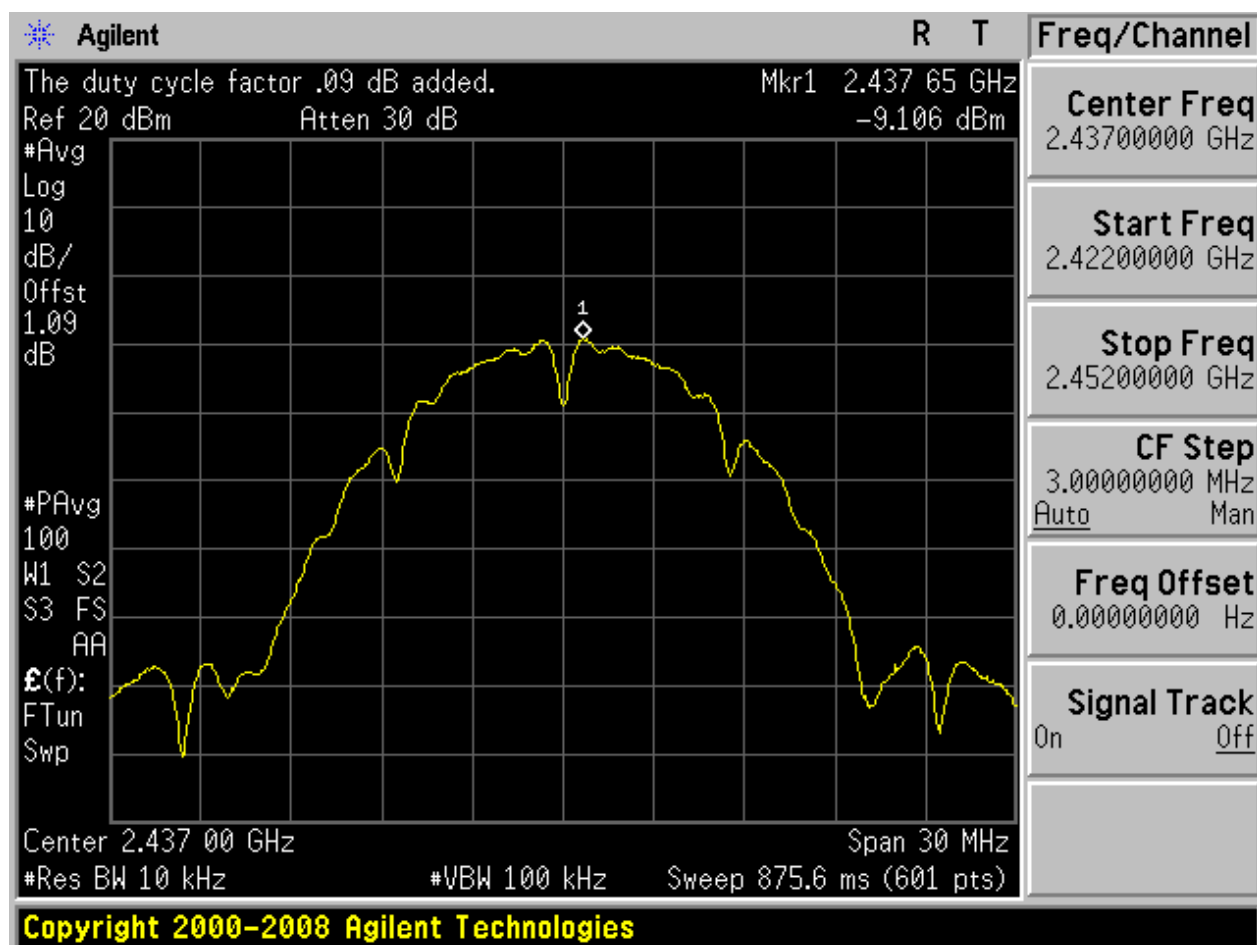
Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	PD[3kHz]	Verdict
11B	L	2412	98	-9.43	pass
11B	M	2437	98	-9.11	pass
11B	H	2462	98	-8.57	pass
11G	L	2412	88	-18.65	pass
11G	M	2437	88	-18.05	pass
11G	H	2462	88	-17.80	pass
11N20	L	2412	87	-20.72	pass
11N20	M	2437	87	-20.35	pass
11N20	H	2462	87	-20.32	pass

Part II - Test Plots

2.1 11B_L

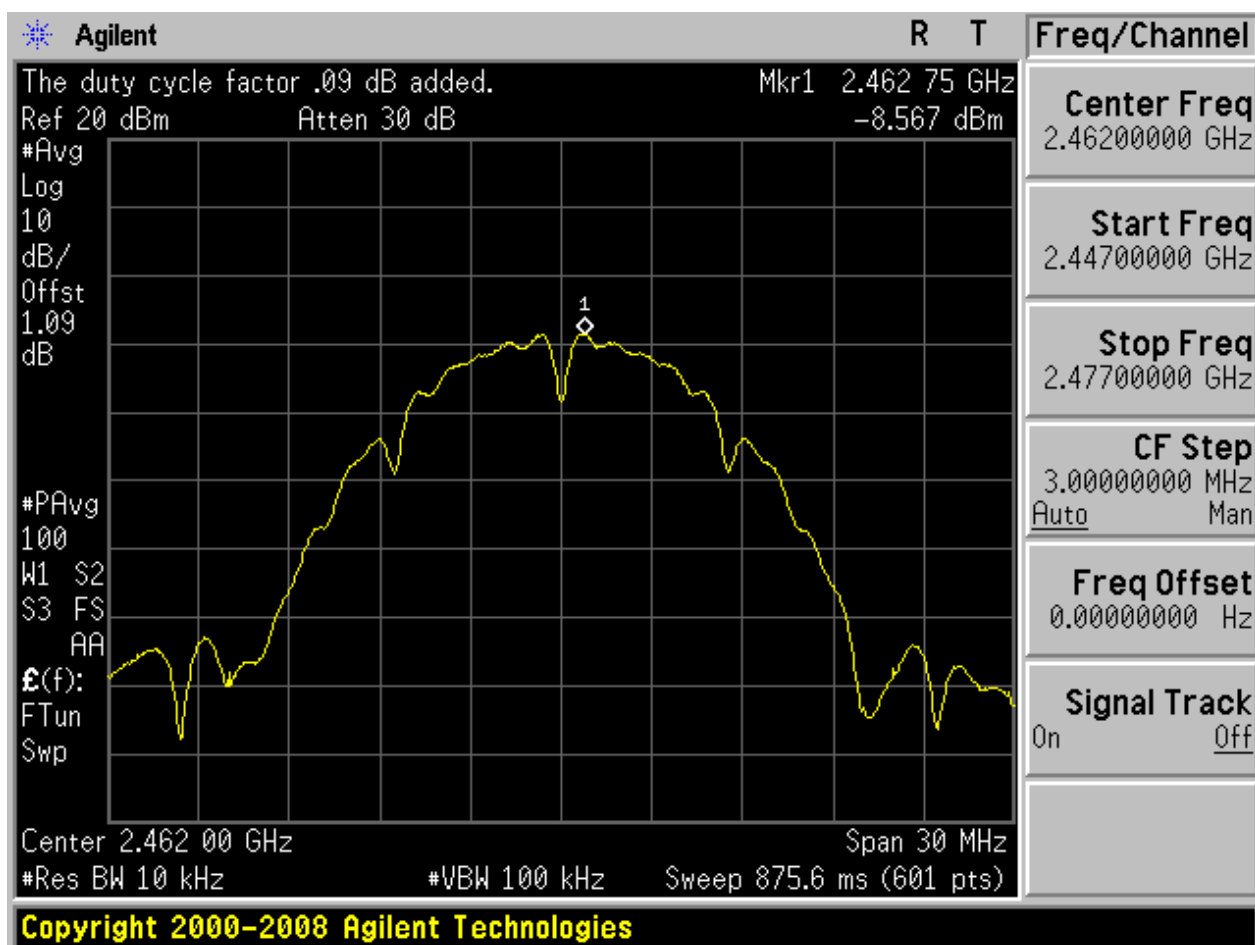


2.3 11B_M



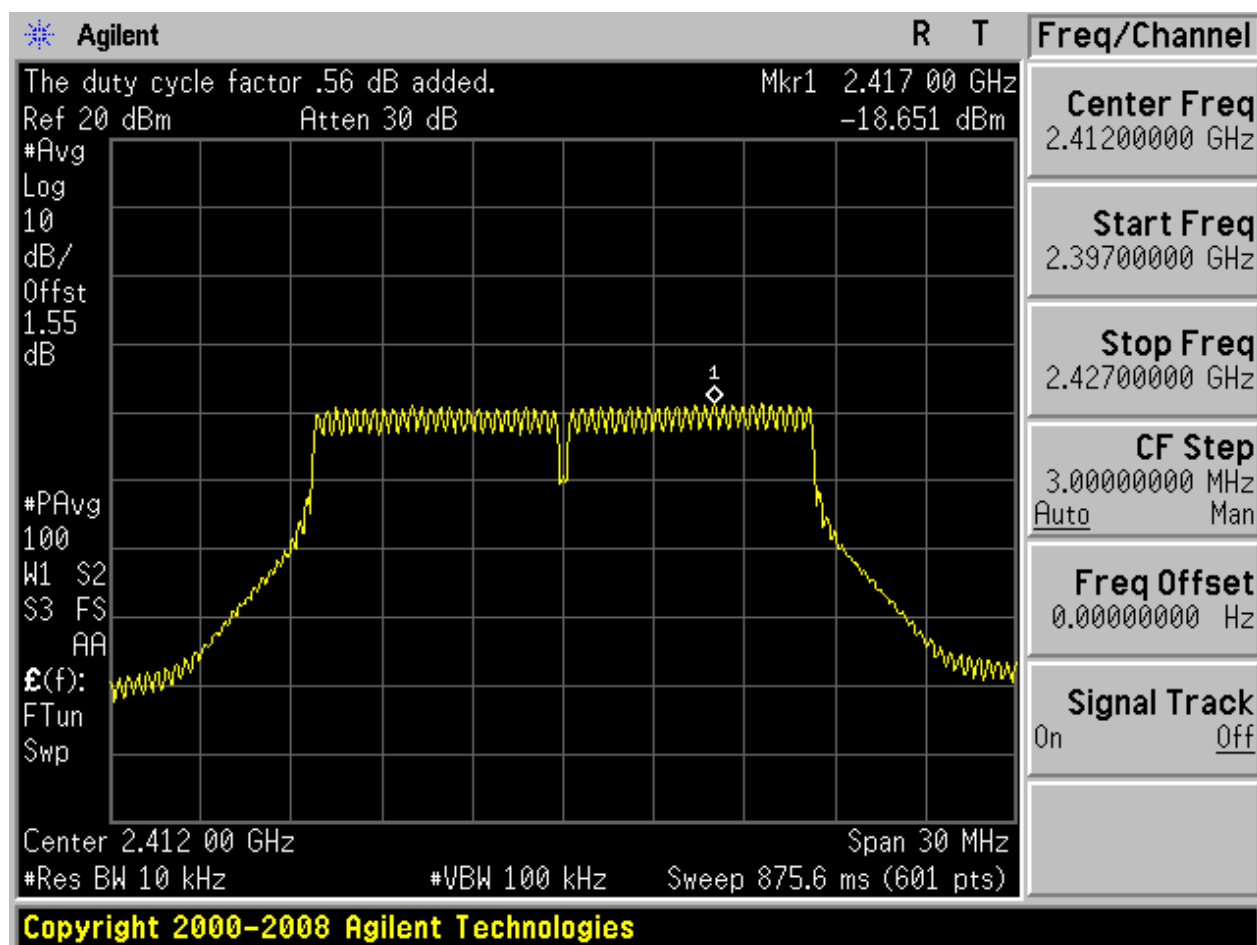


2.5 11B_H



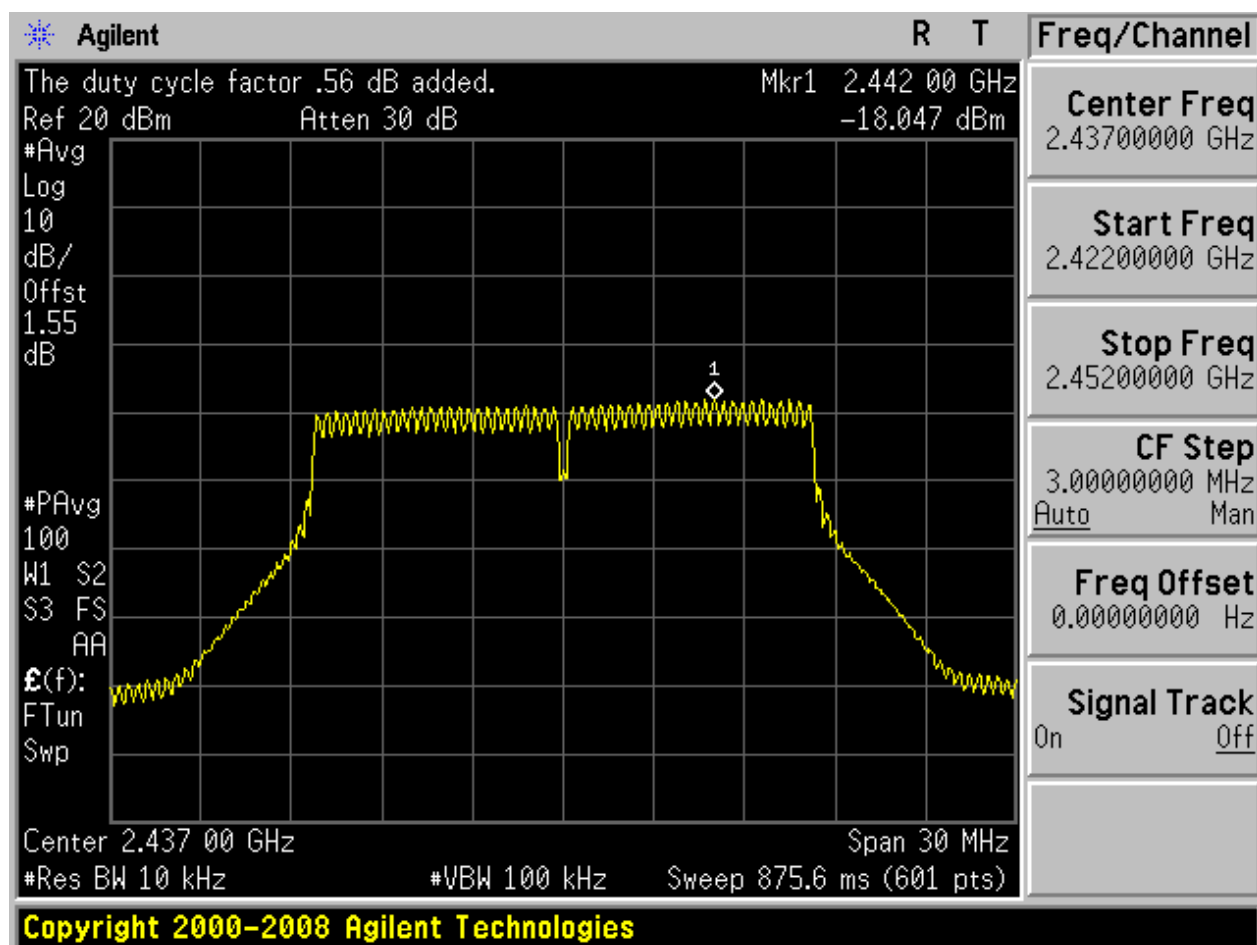


2.7 11G_L

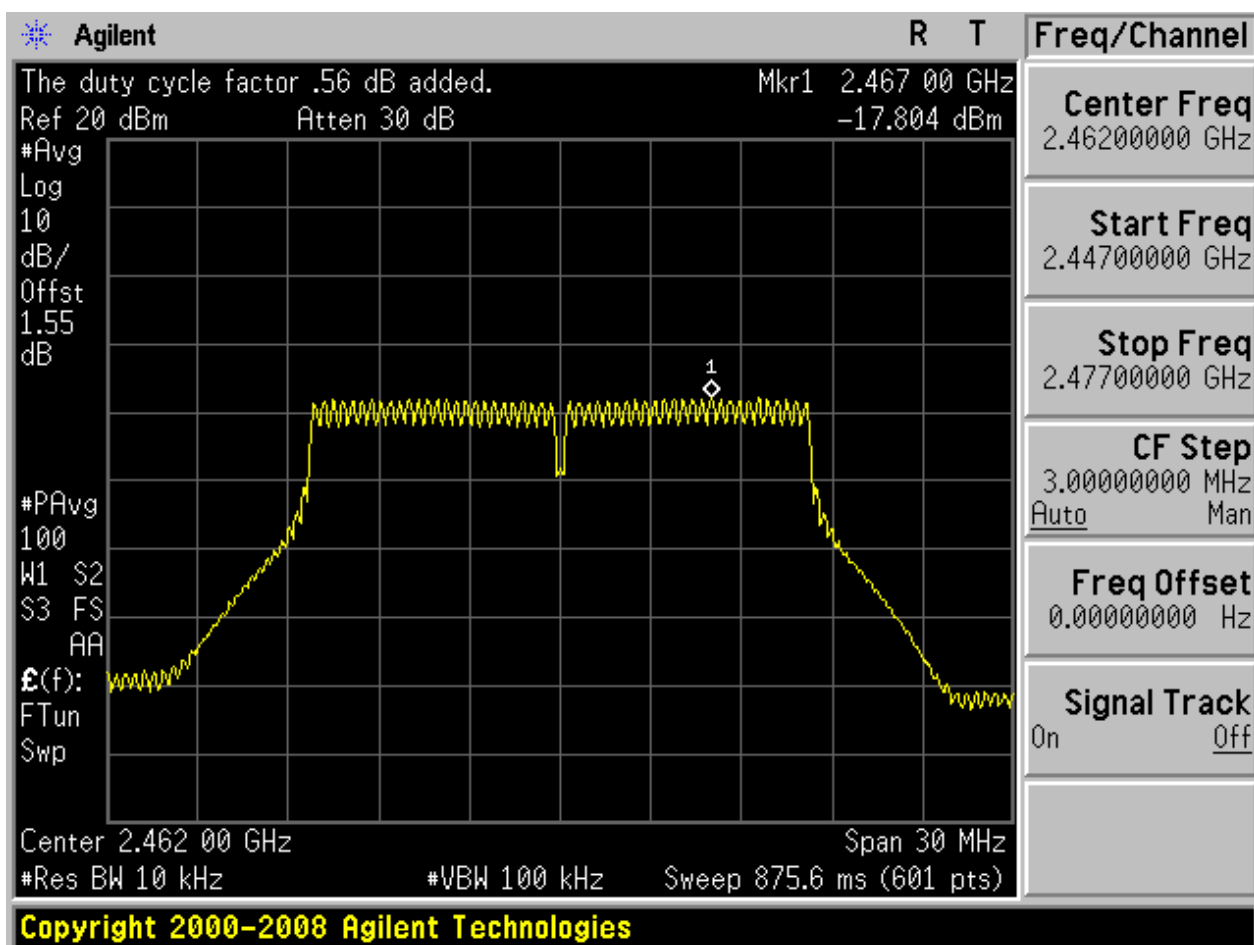




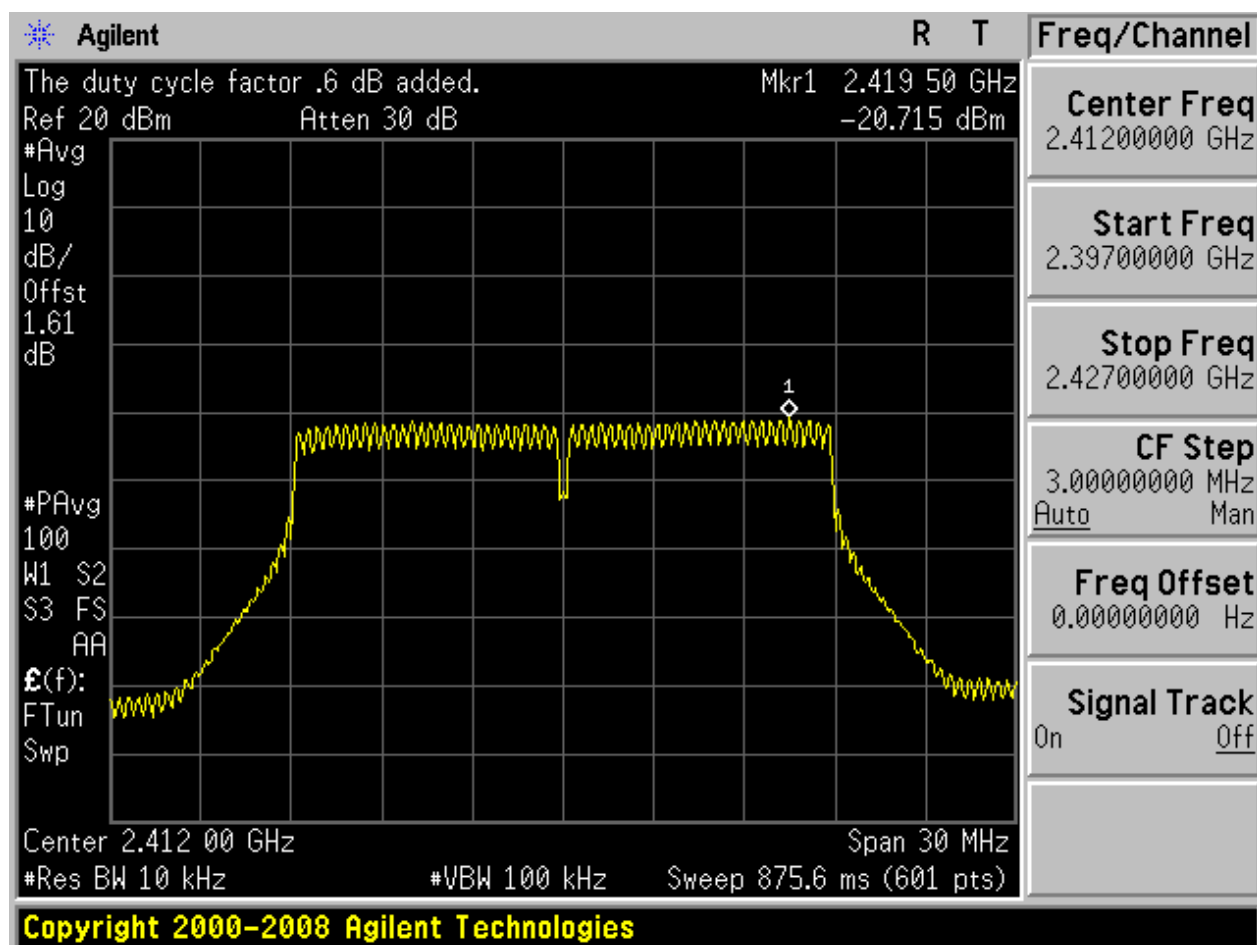
2.9 11G_M



2.11 11G_H

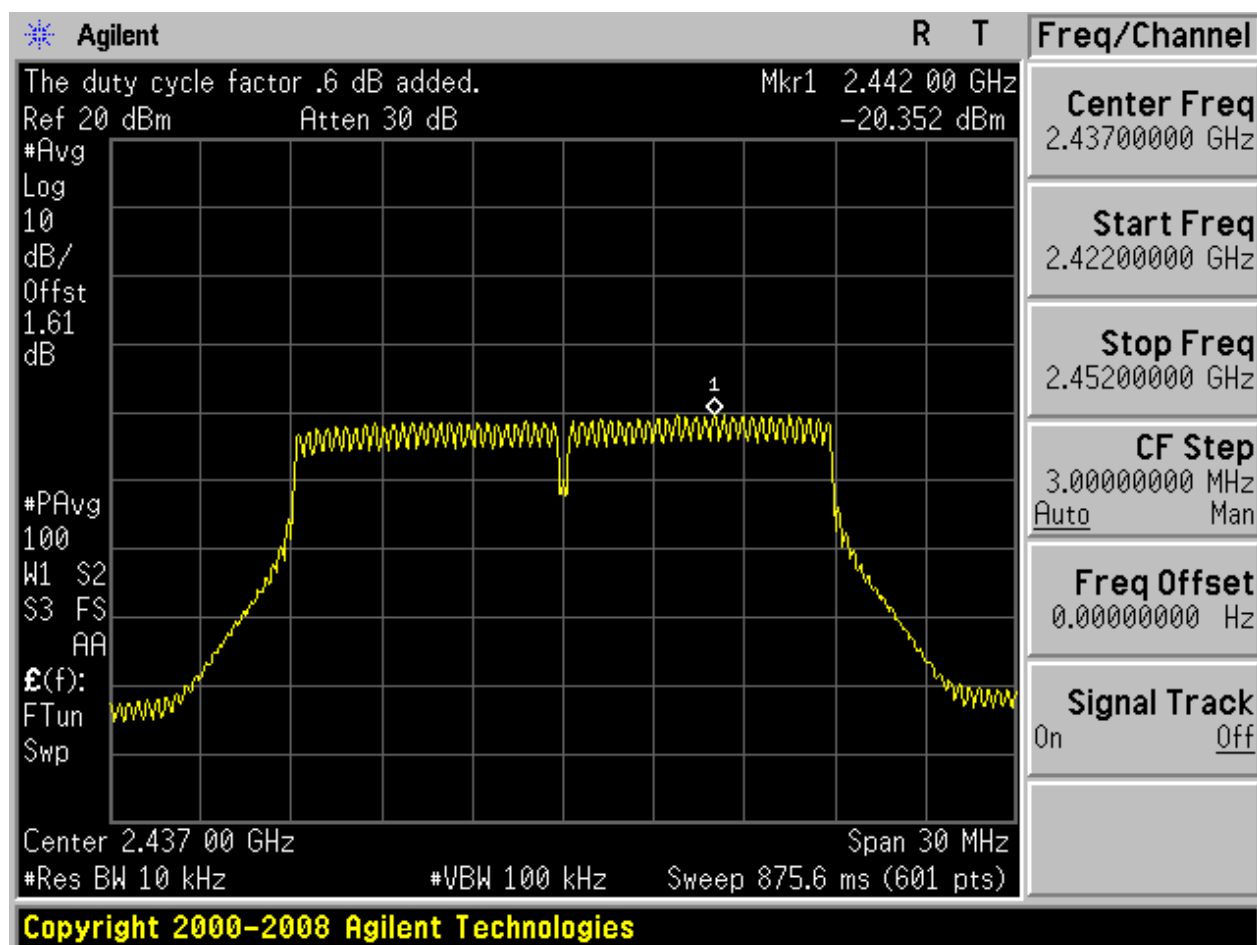


2.13 11N20_L



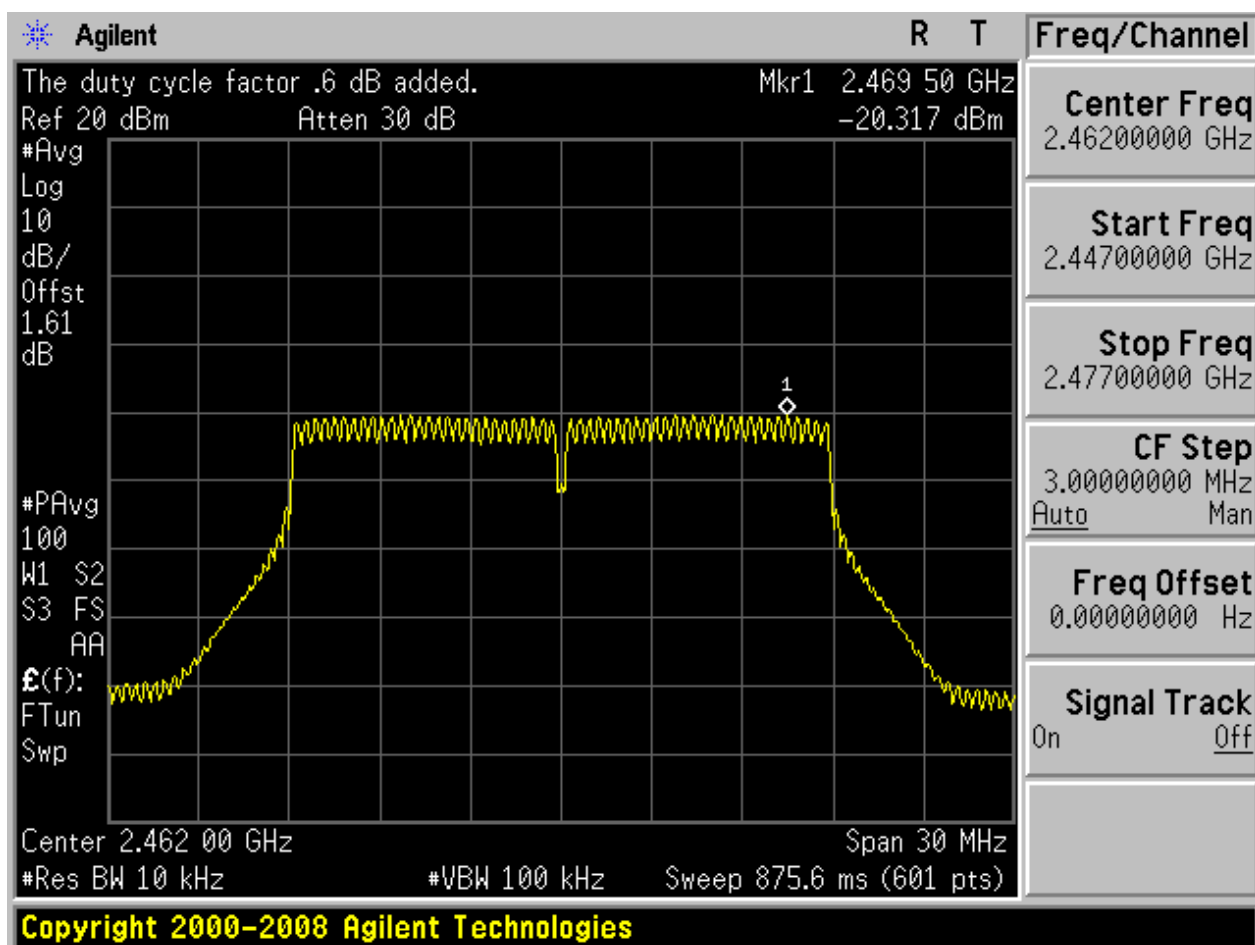


2.15 11N20_M





2.17 11N20_H



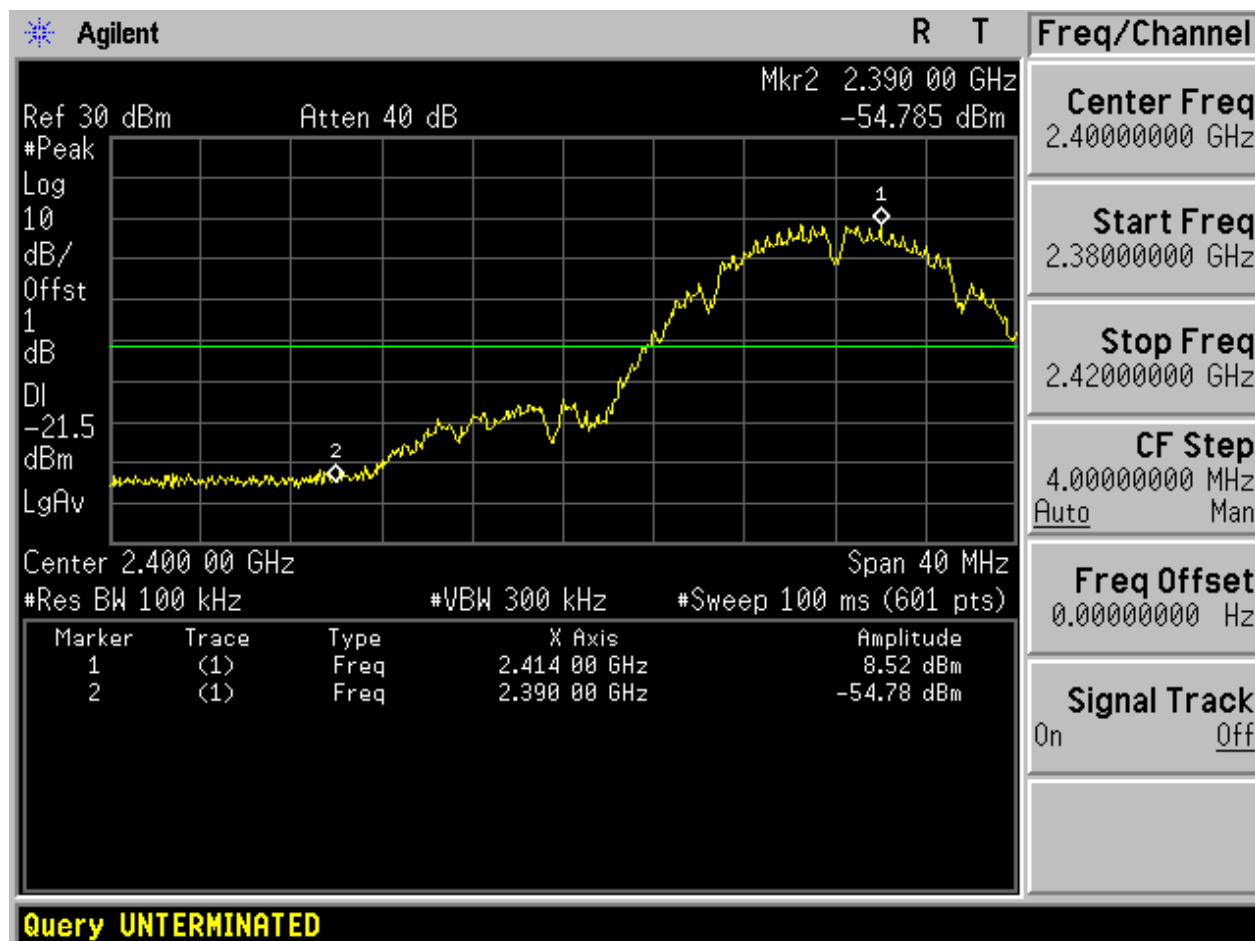
Appendix E: Band Edges Compliance

Part I - Test Results

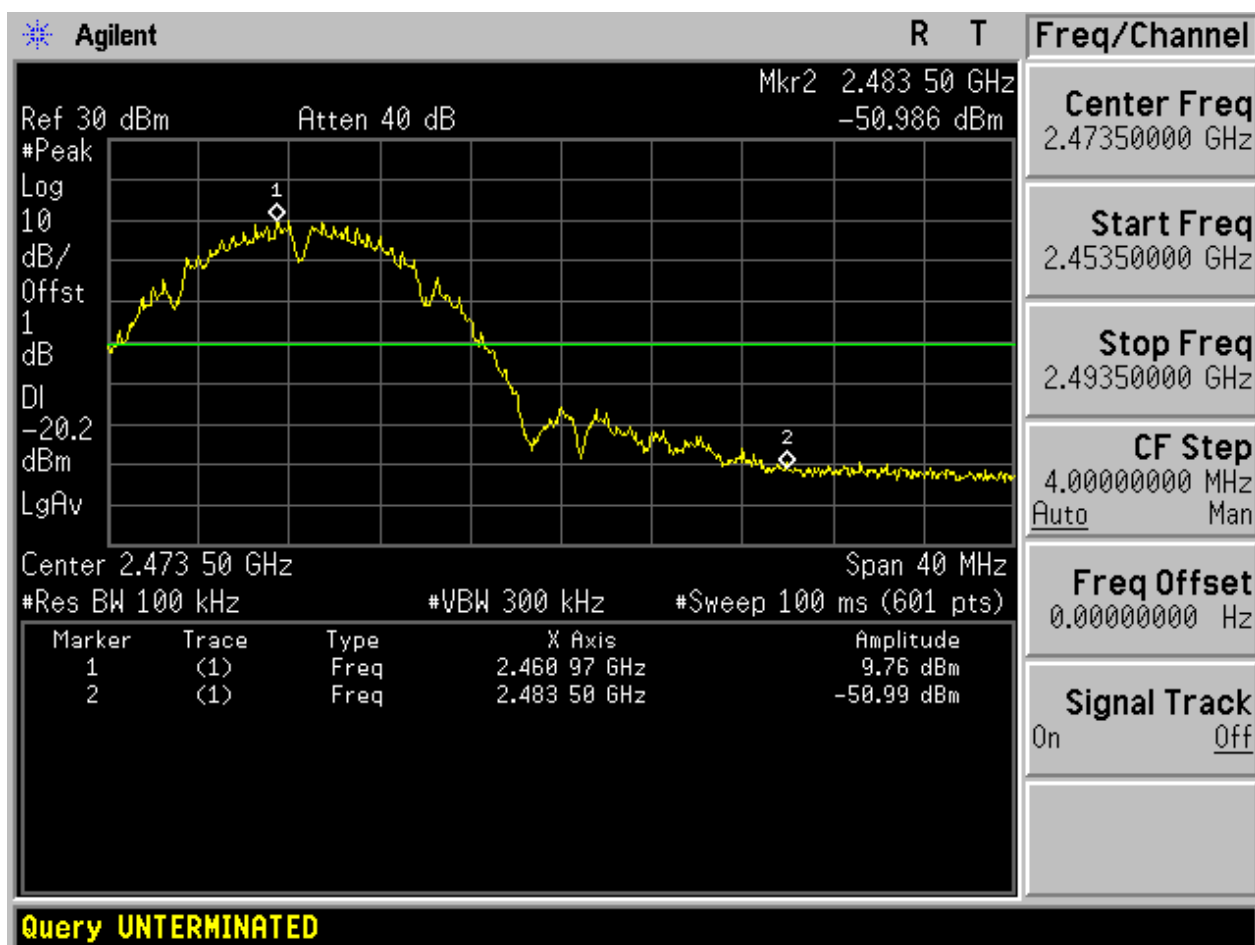
Test Mode	Test Channel	Frequency[MHz]	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	8.52	-54.78	pass
11B	H	2462	9.76	-50.99	pass
11G	L	2412	-0.98	-52.75	pass
11G	H	2462	0.61	-49.39	pass
11N20	L	2412	-2.51	-54.41	pass
11N20	H	2462	-1.66	-49.79	pass

Part II - Test Plots

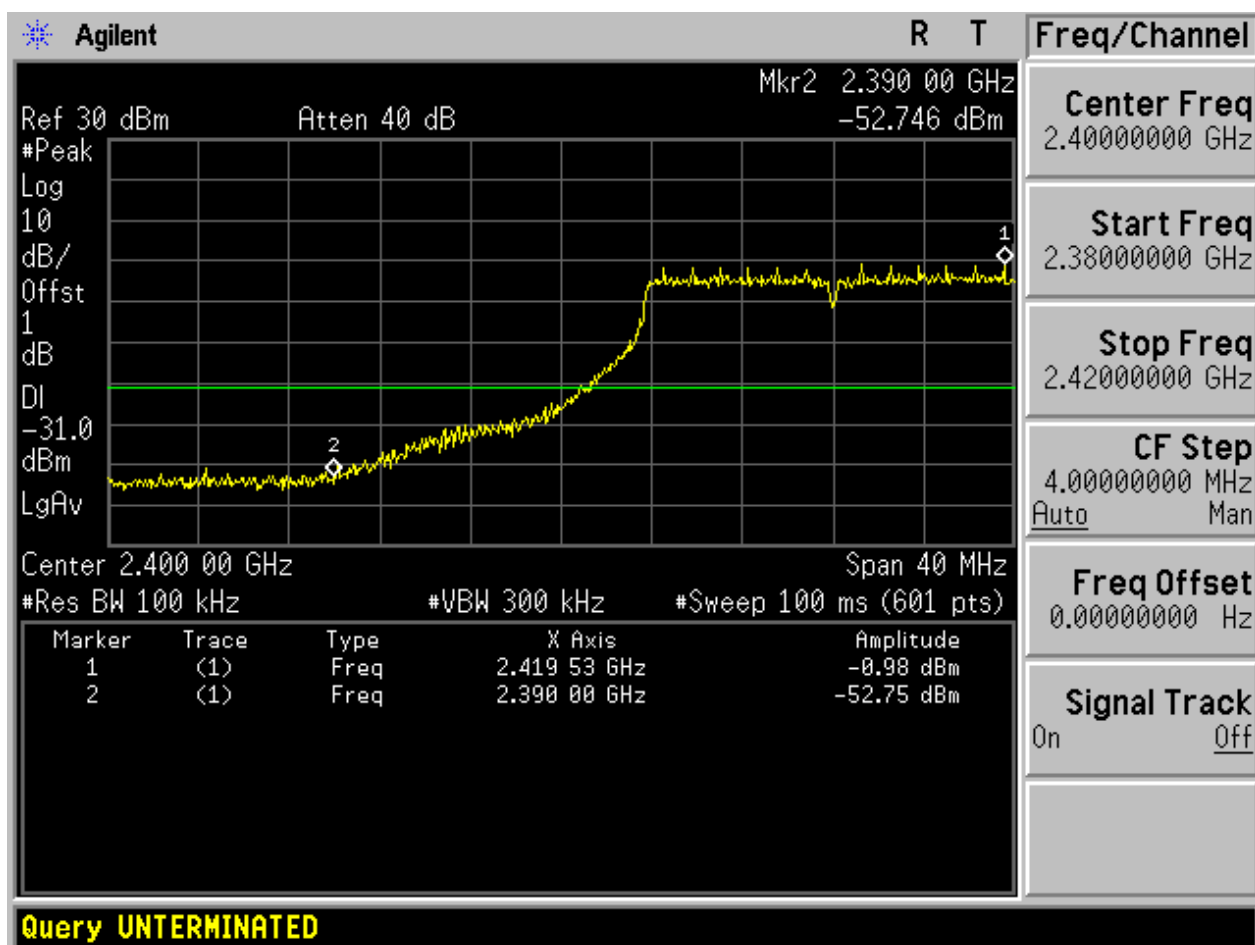
2.1 11B_L



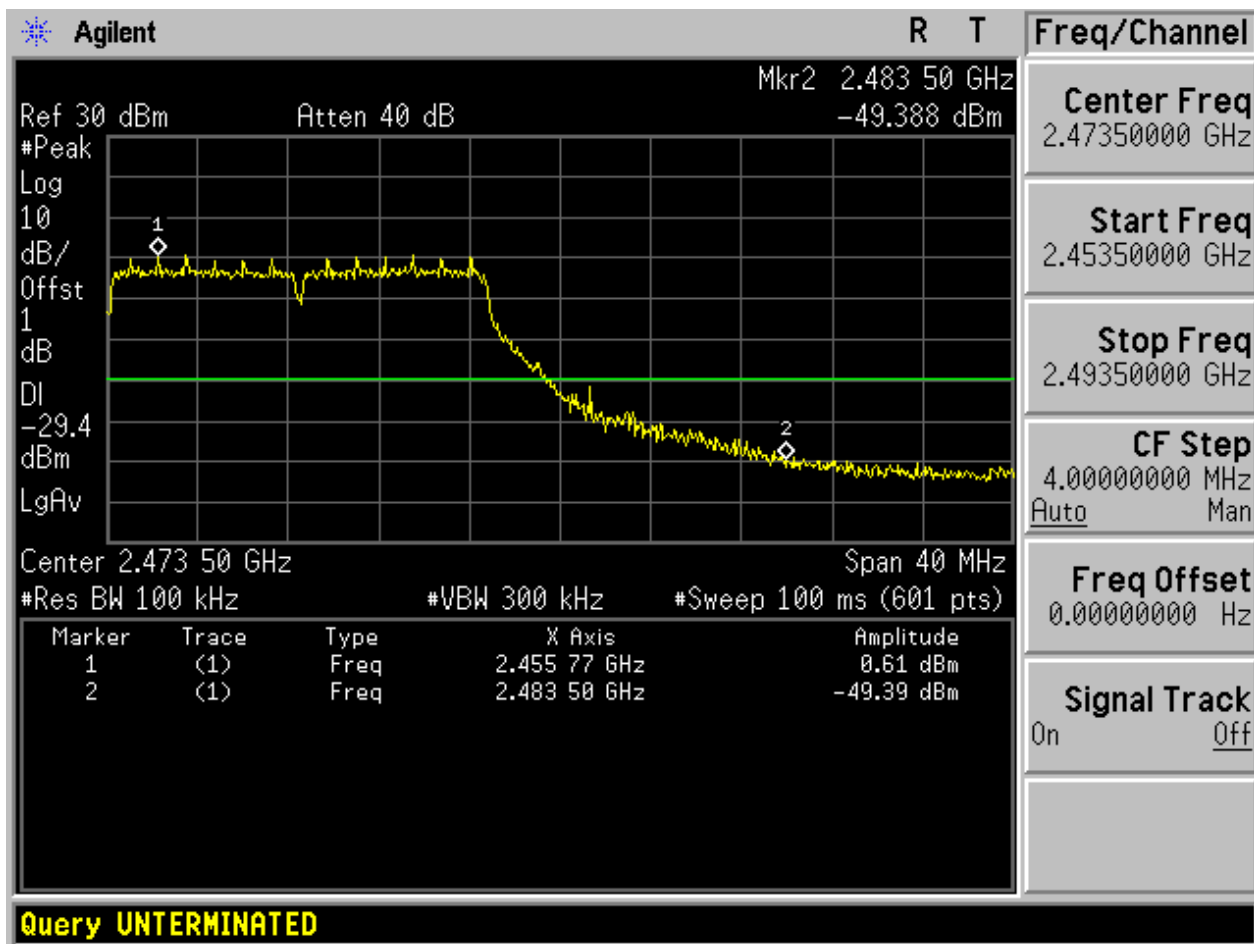
2.3 11B_H



2.5 11G_L

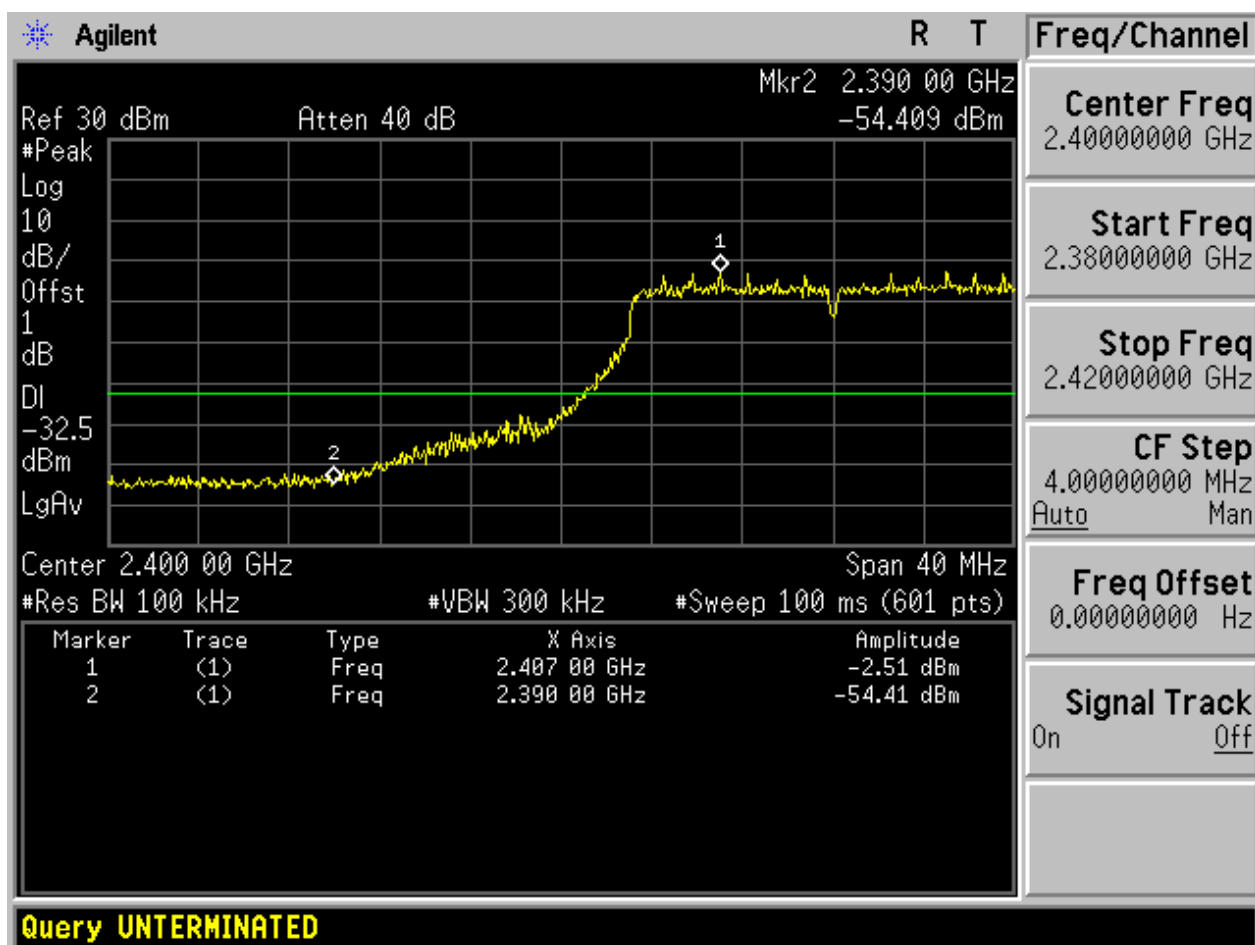


2.7 11G_H



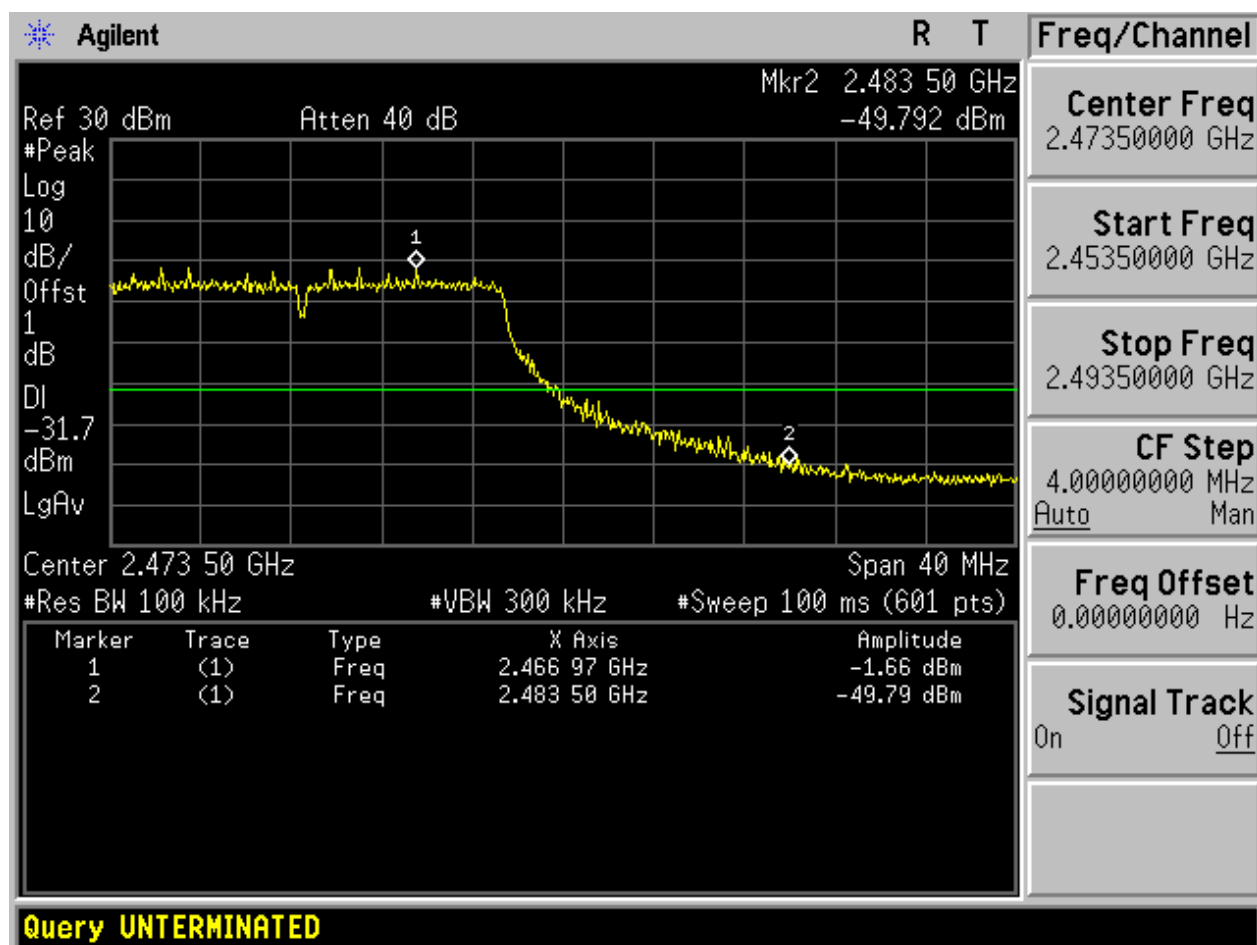


2.9 11N20_L





2.11 11N20_H





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

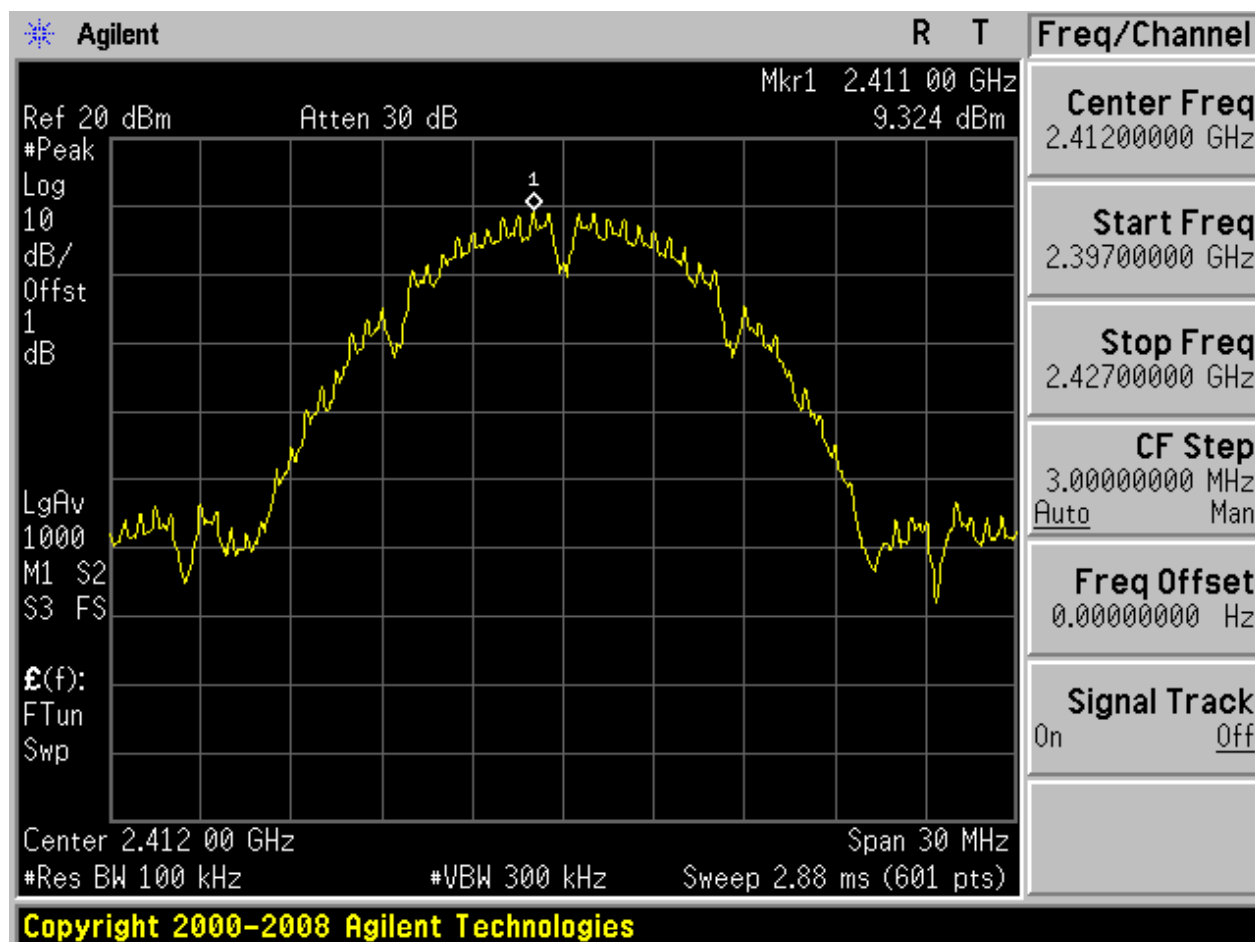
Test Mode	Test Channel	Frequency[MHz]	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	9.32	<limit	pass
11B	M	2437	9.61	<limit	pass
11B	H	2462	10.21	<limit	pass
11G	L	2412	-0.21	<limit	pass
11G	M	2437	0.35	<limit	pass
11G	H	2462	0.66	<limit	pass
11N20	L	2412	-2.15	<limit	pass
11N20	M	2437	-1.59	<limit	pass
11N20	H	2462	-1.42	<limit	pass



Part II - Test Plots

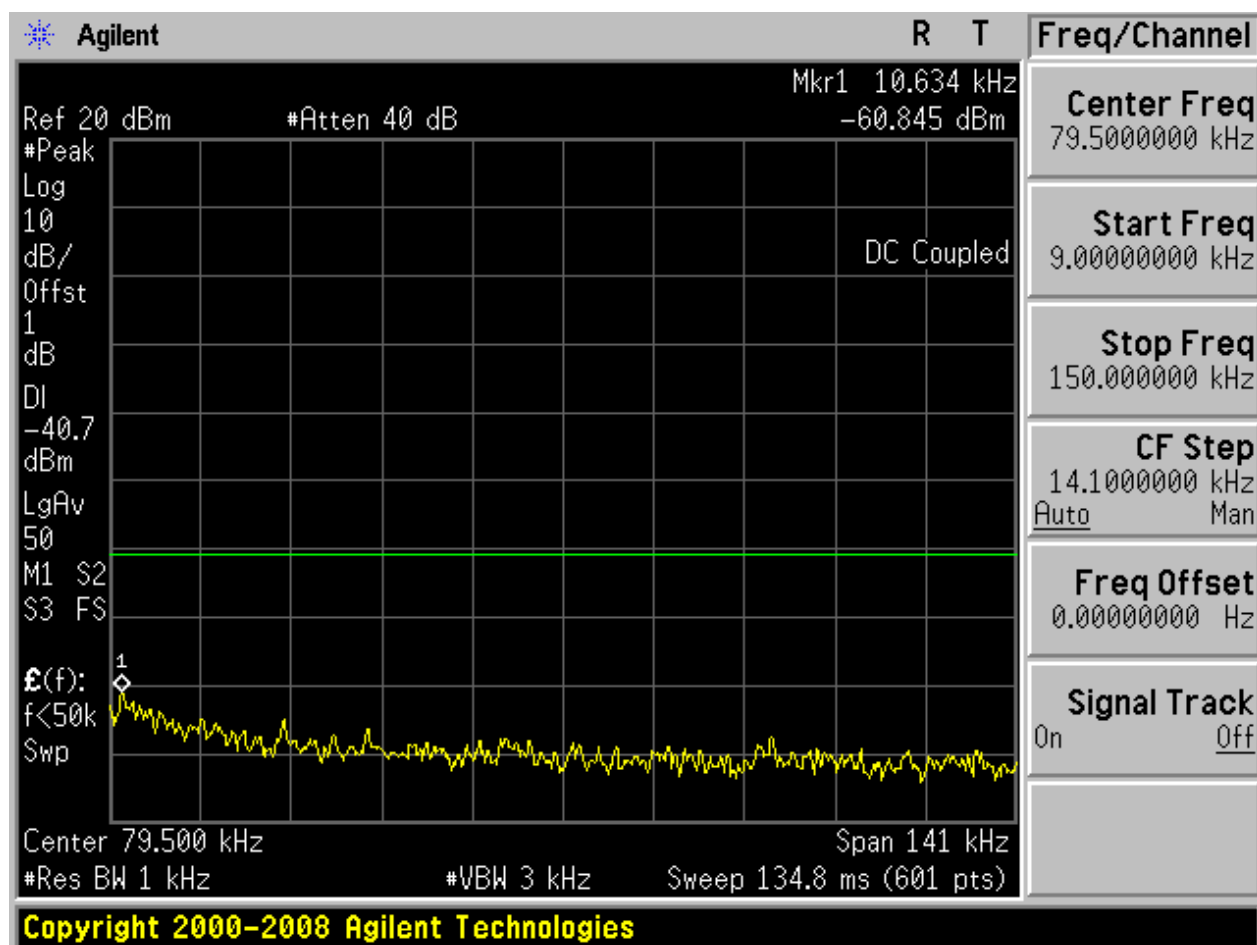
2.1 11B_L

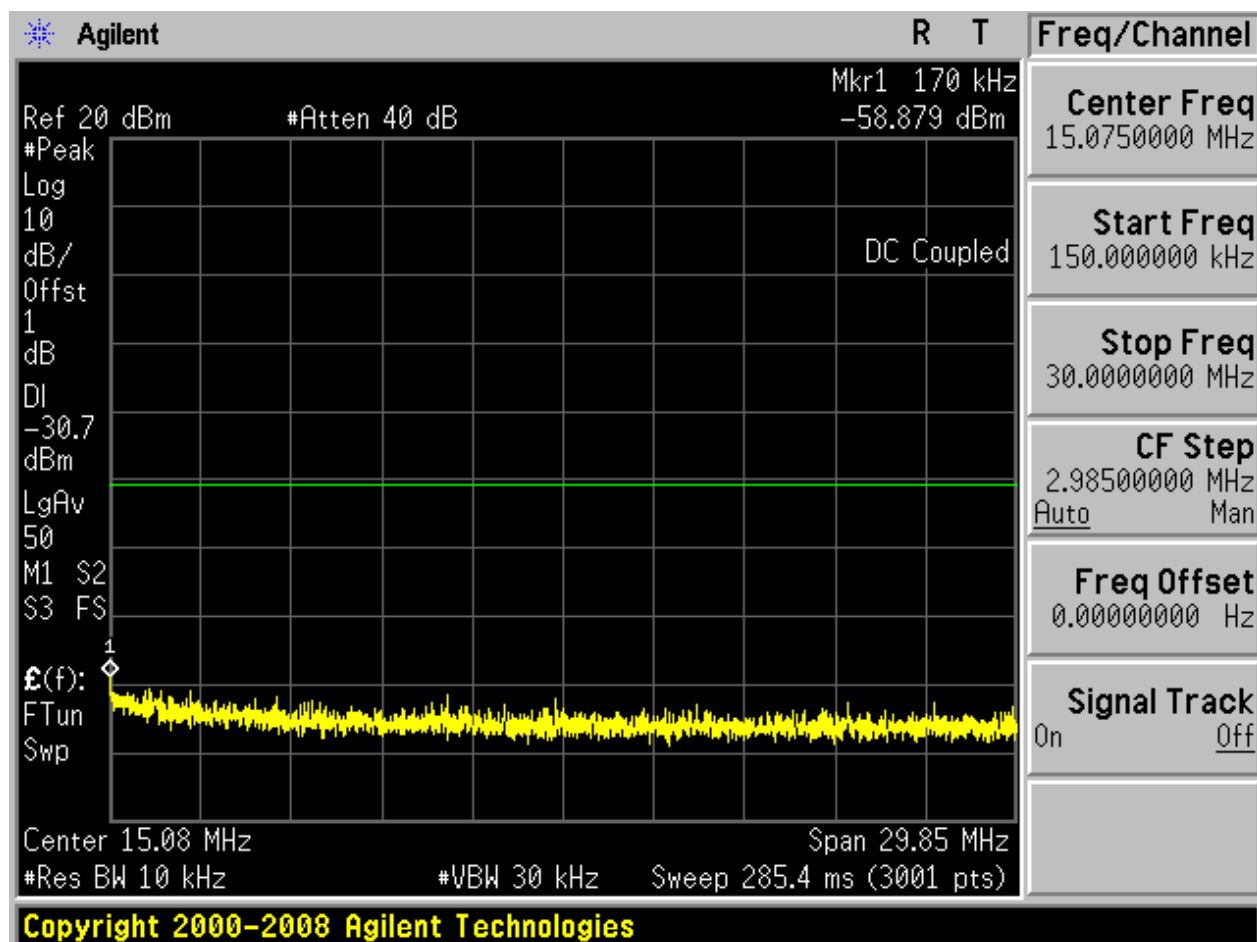
Pref:

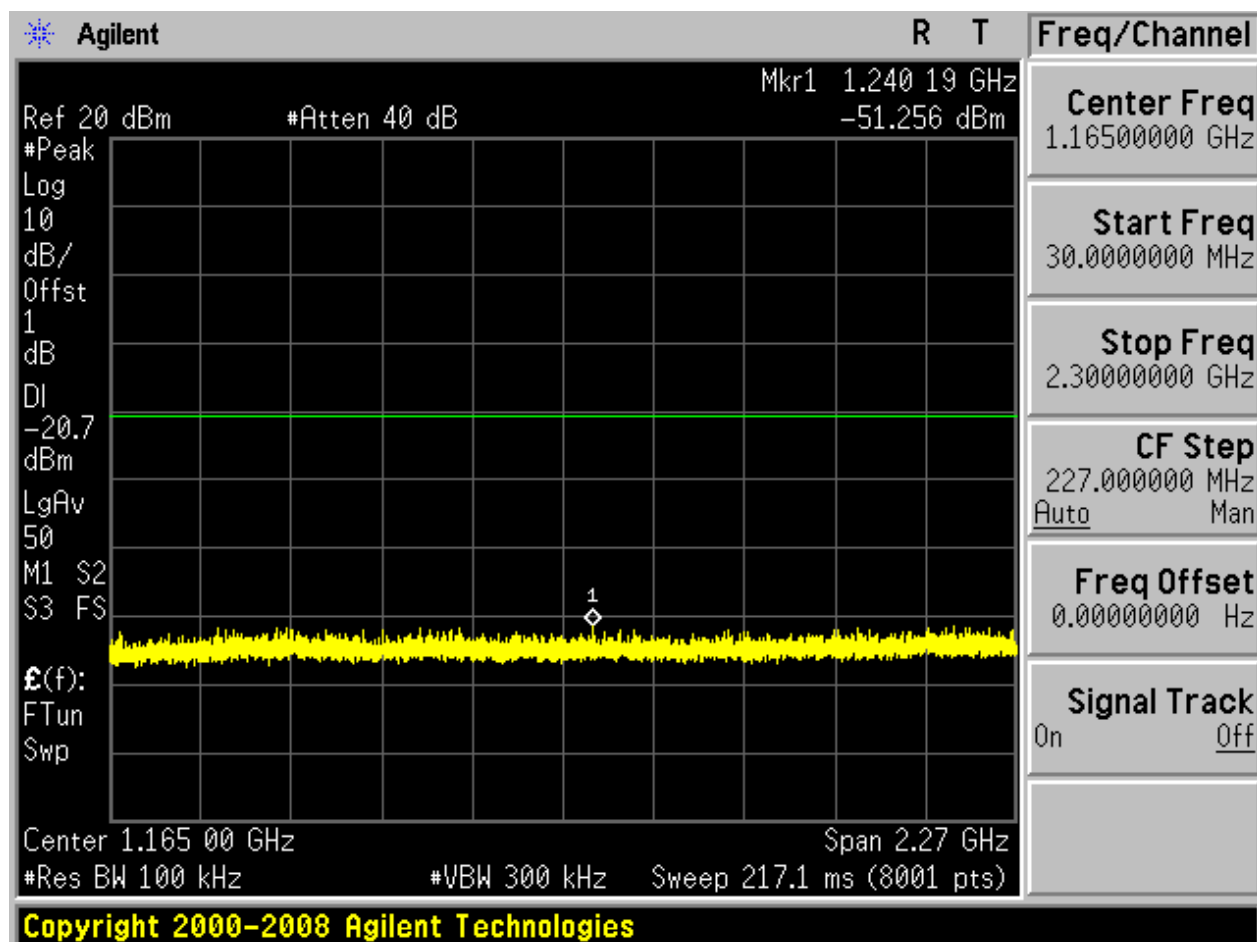


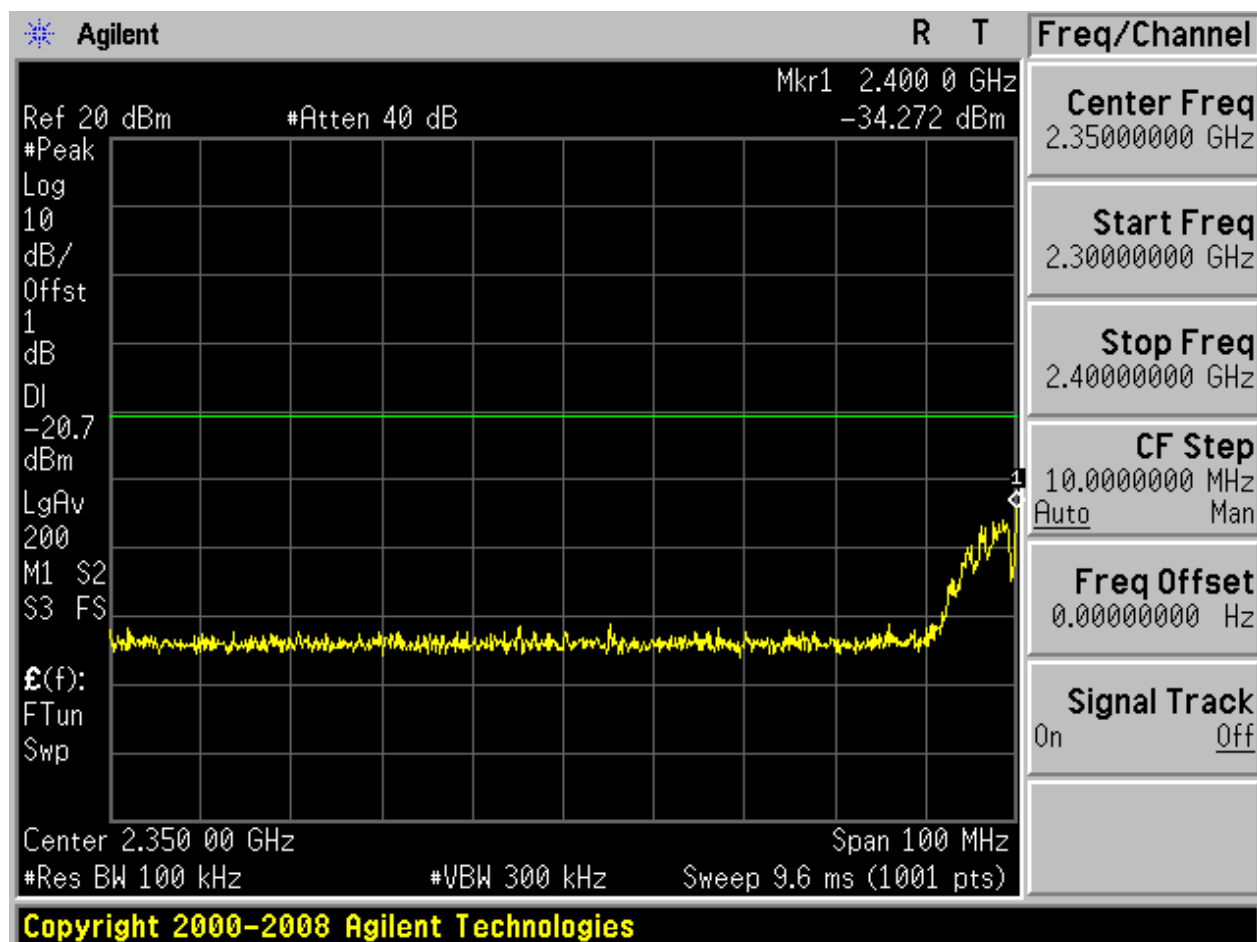


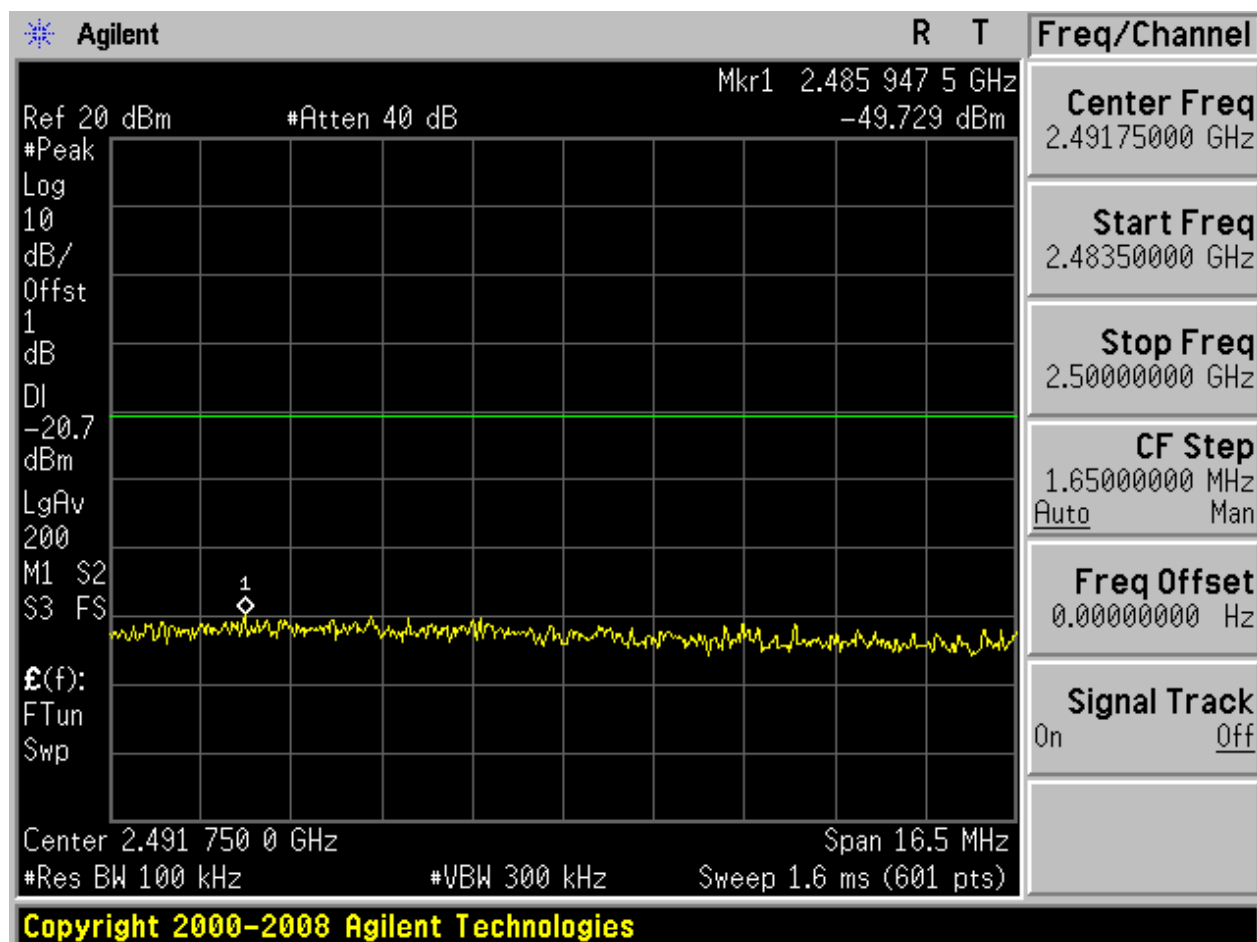
Puw:

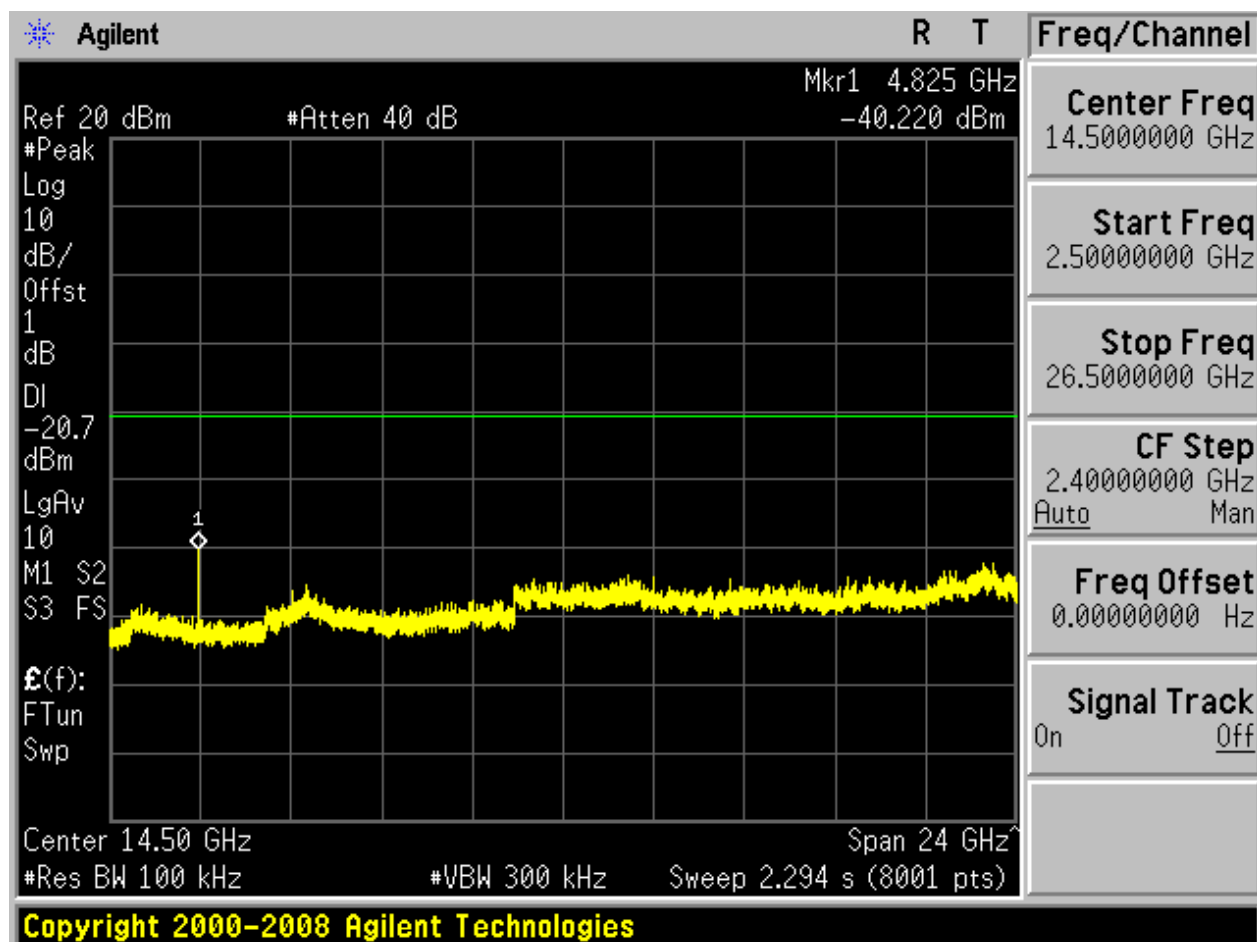








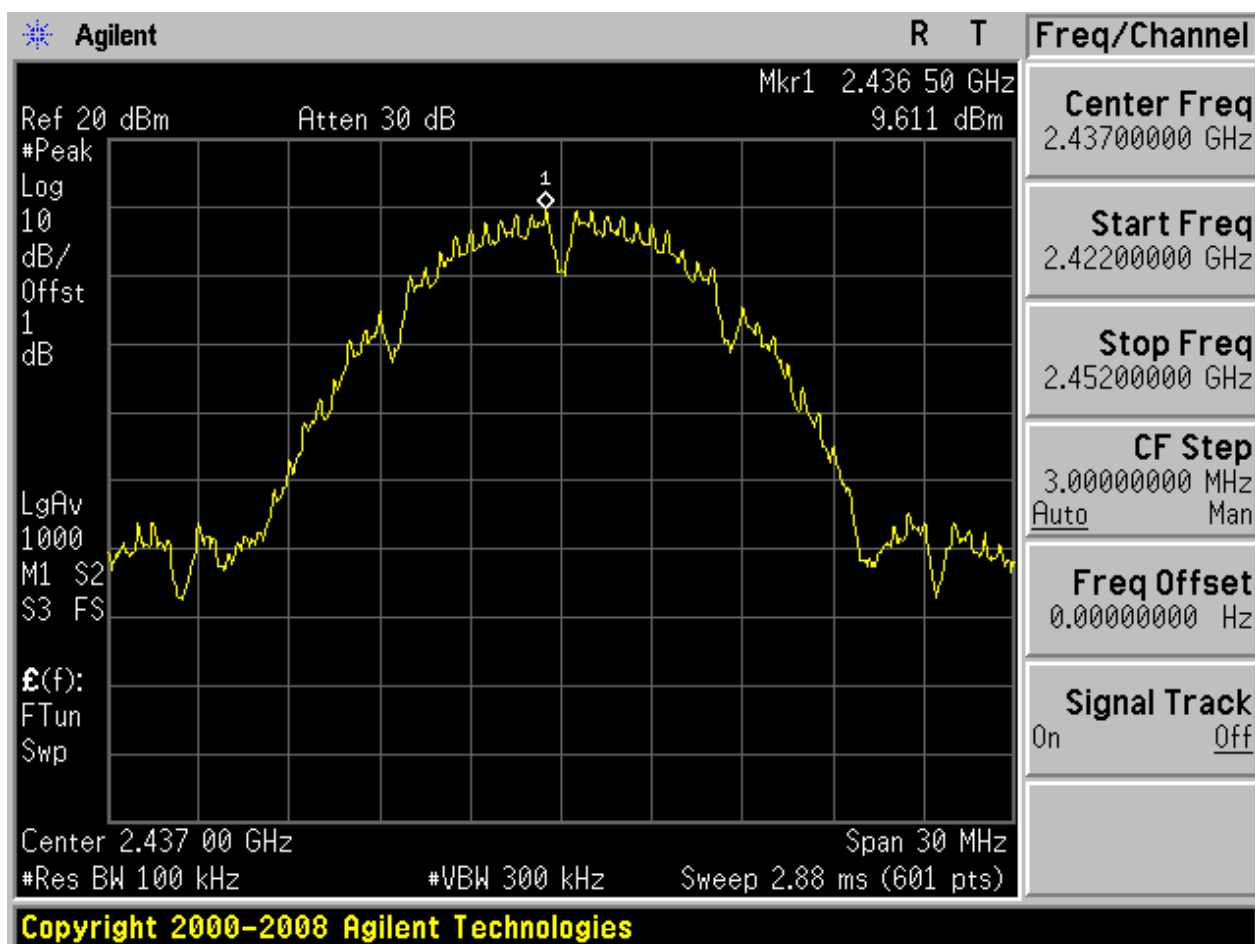






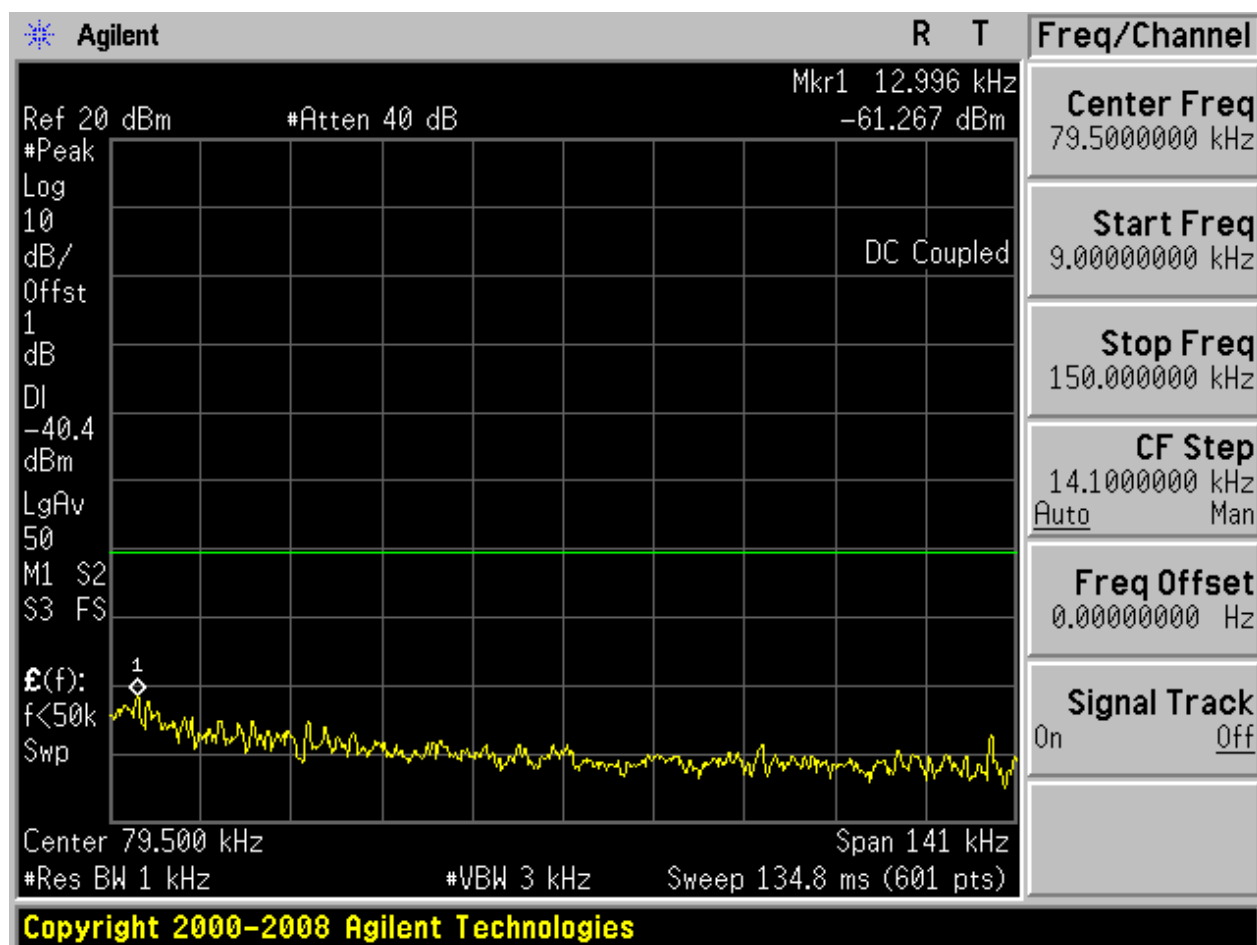
2.3 11B_M

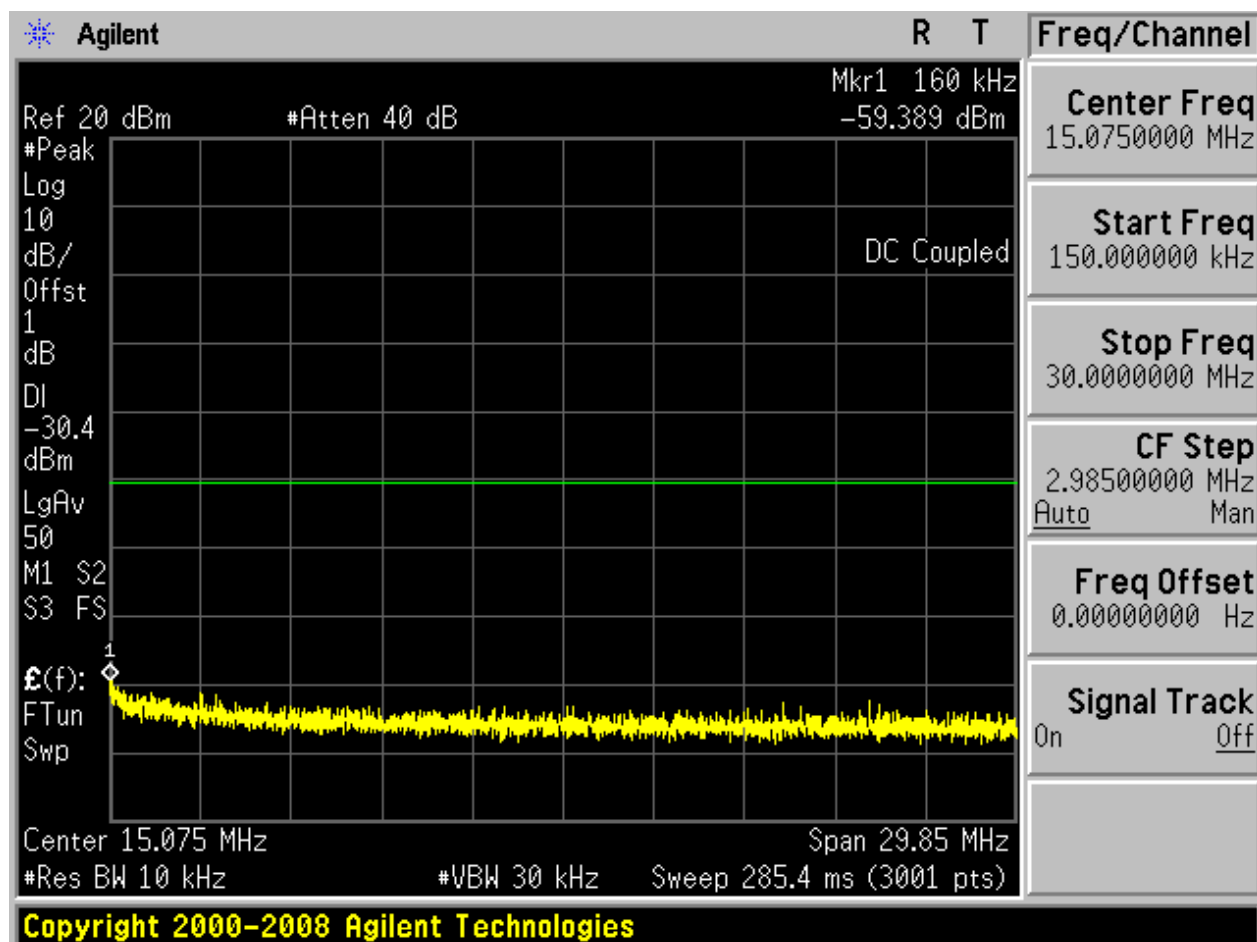
Pref:

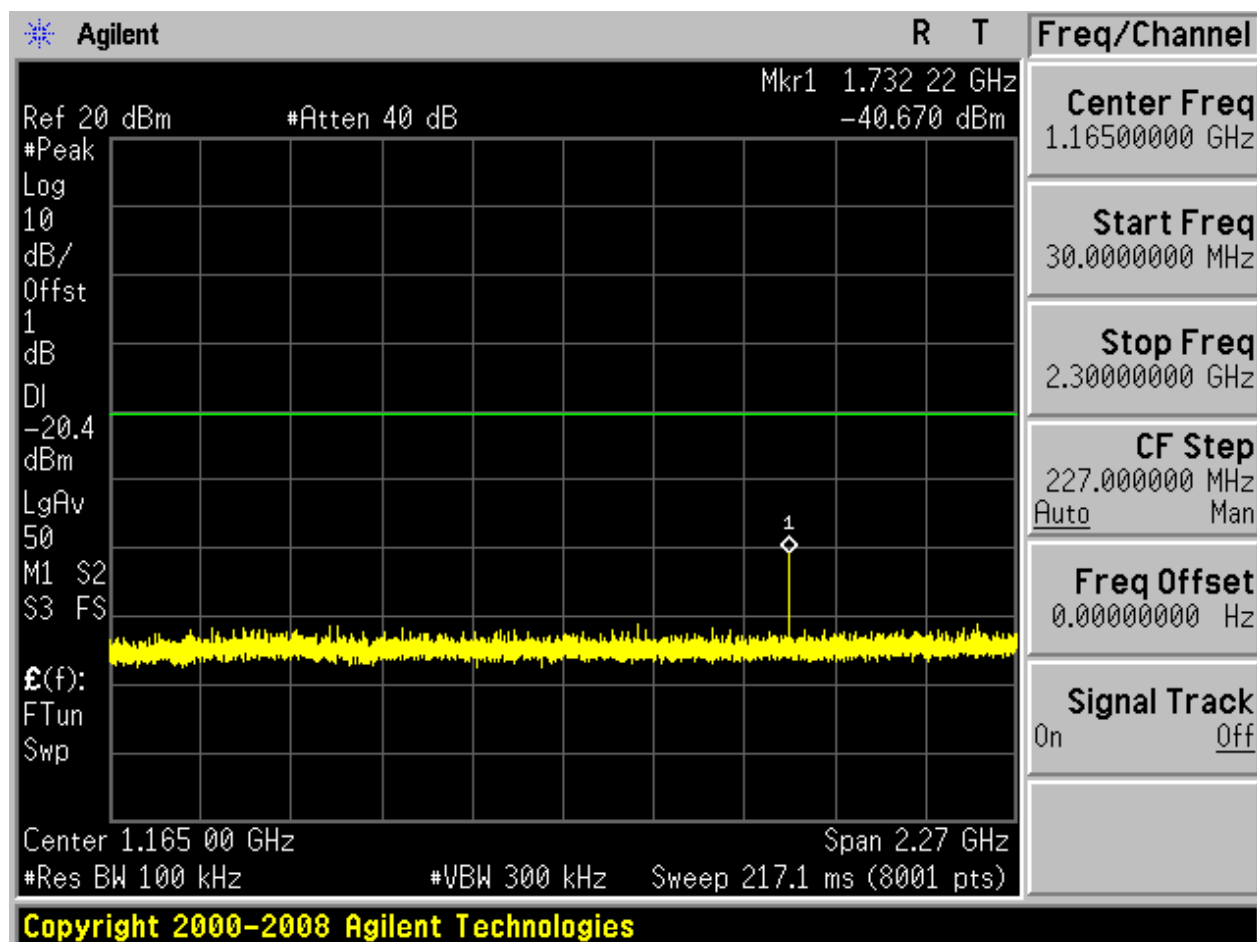


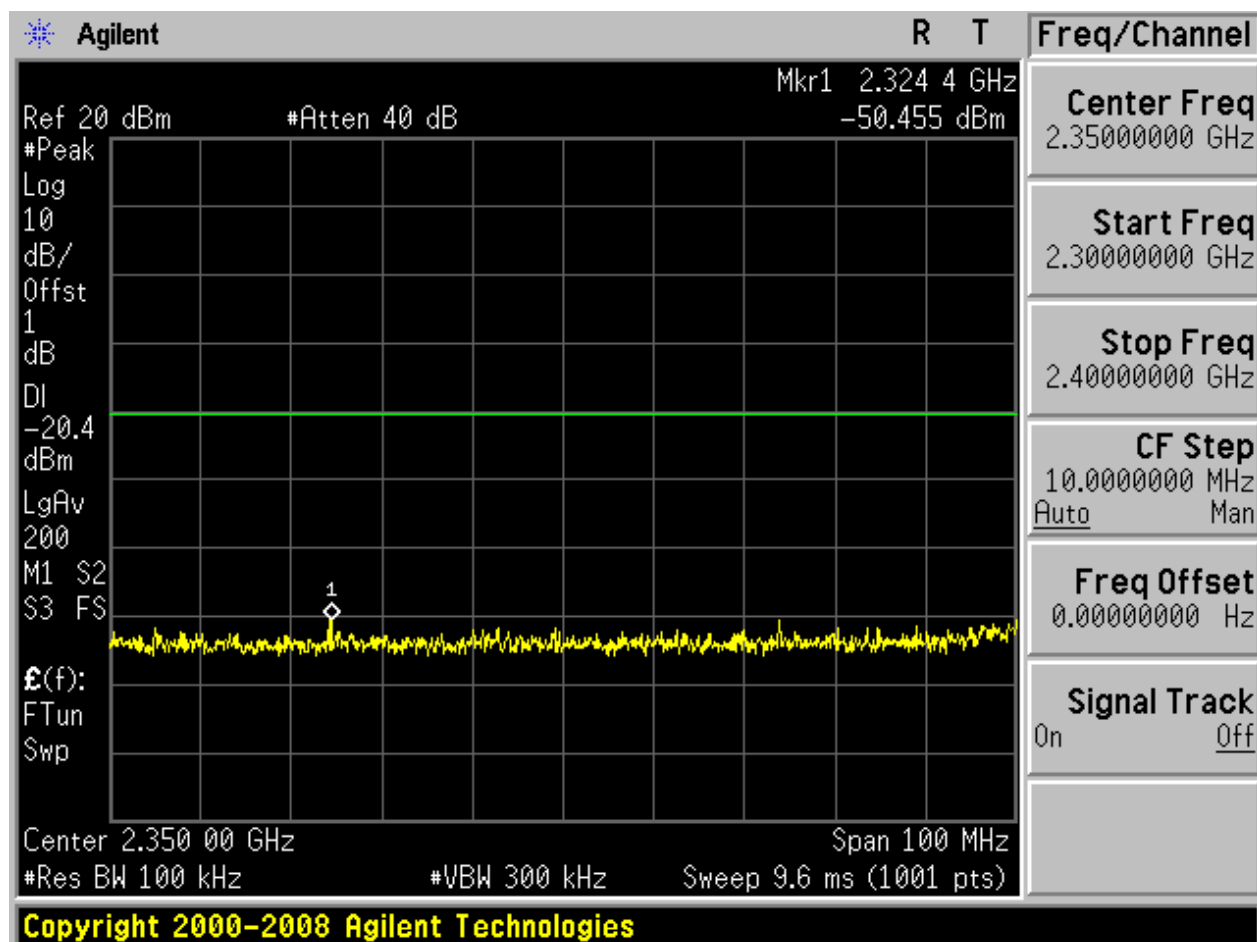


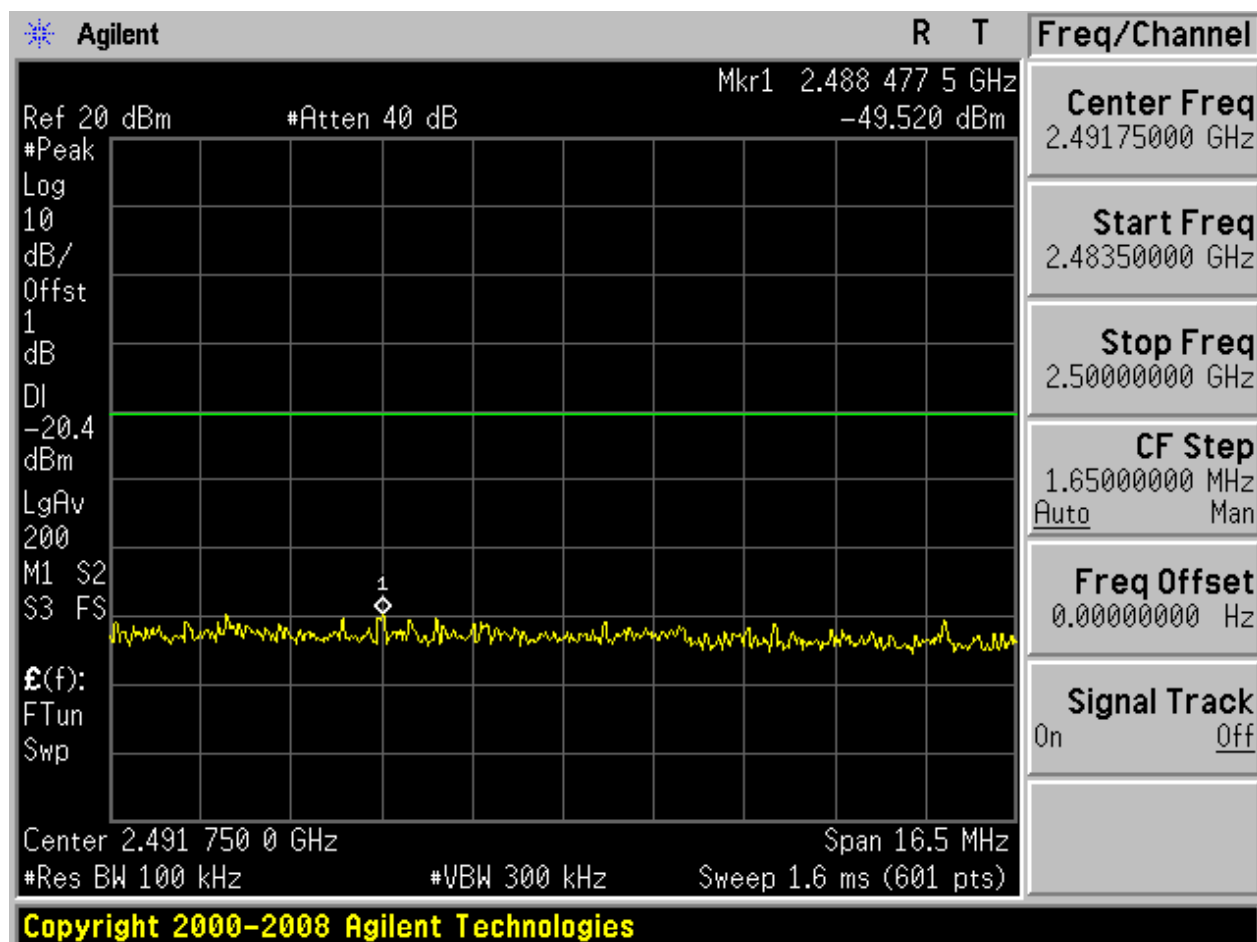
Puw:

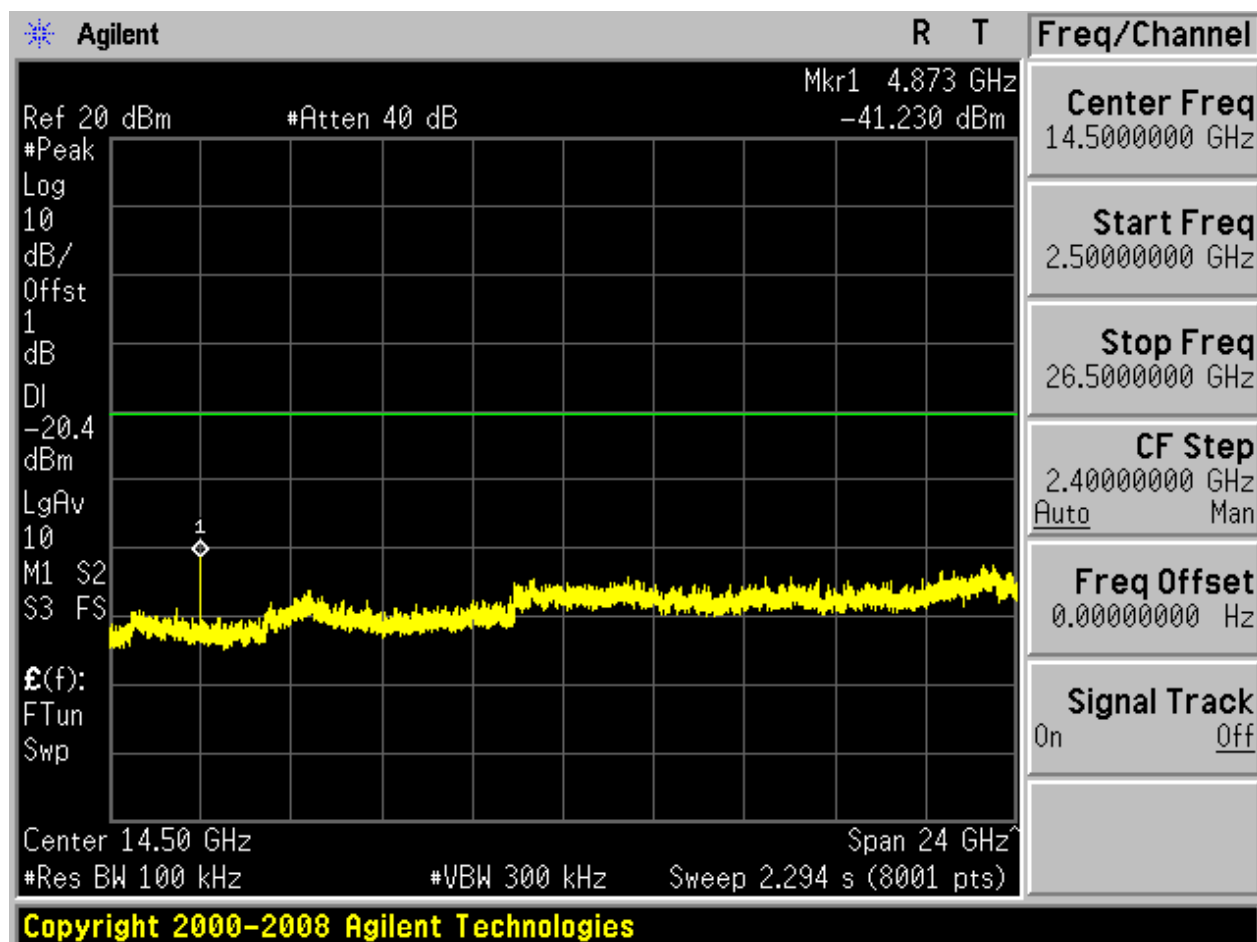








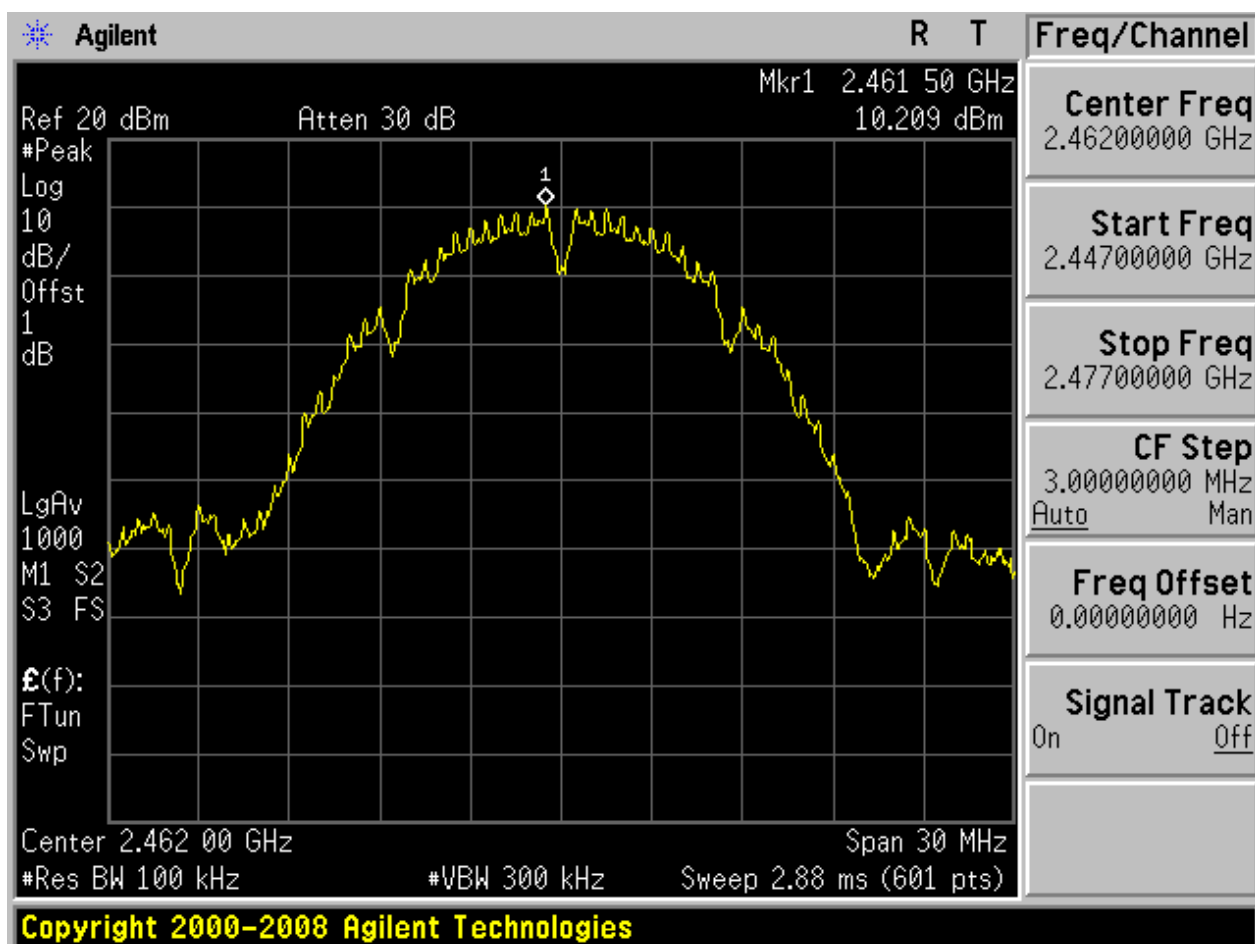






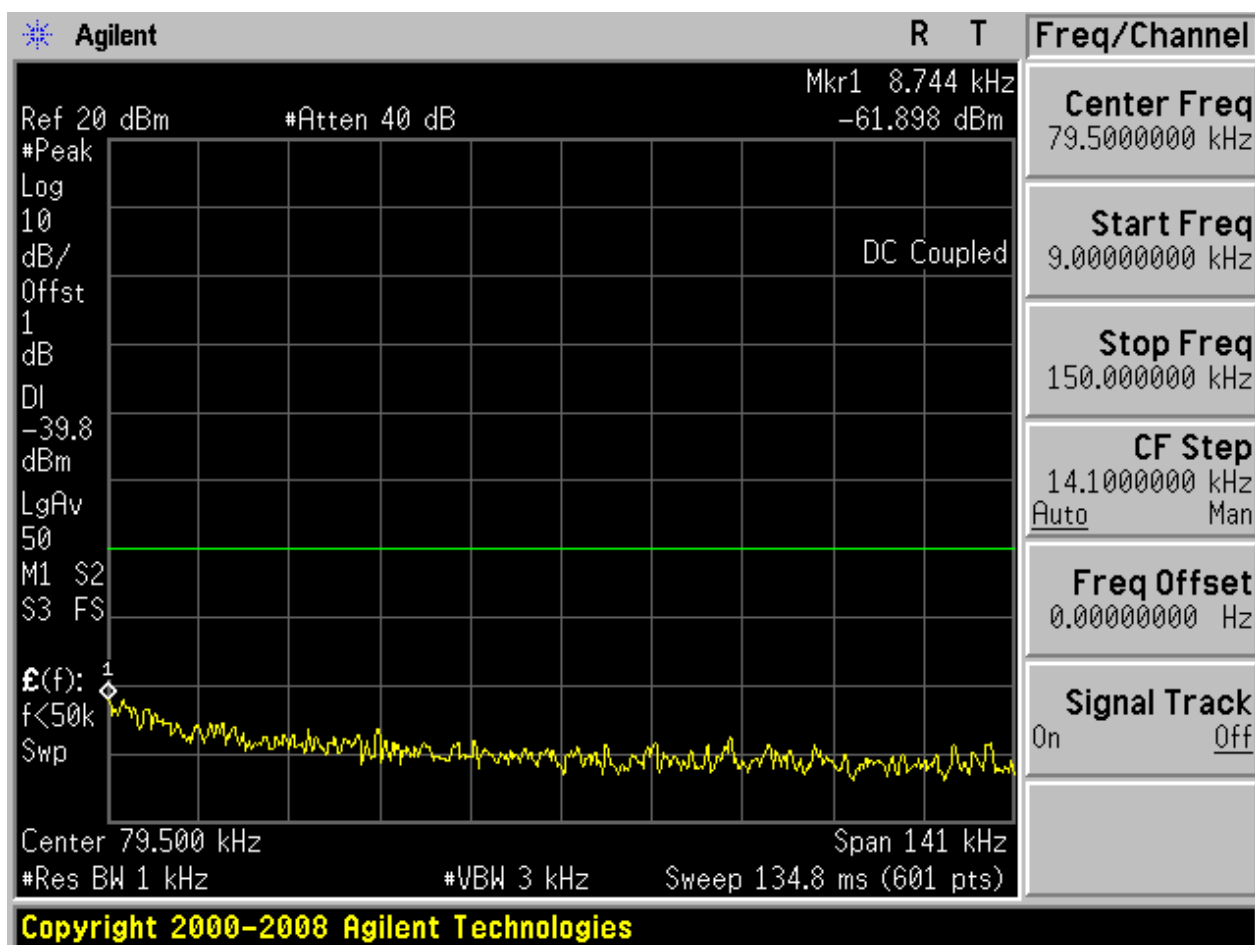
2.5 11B_H

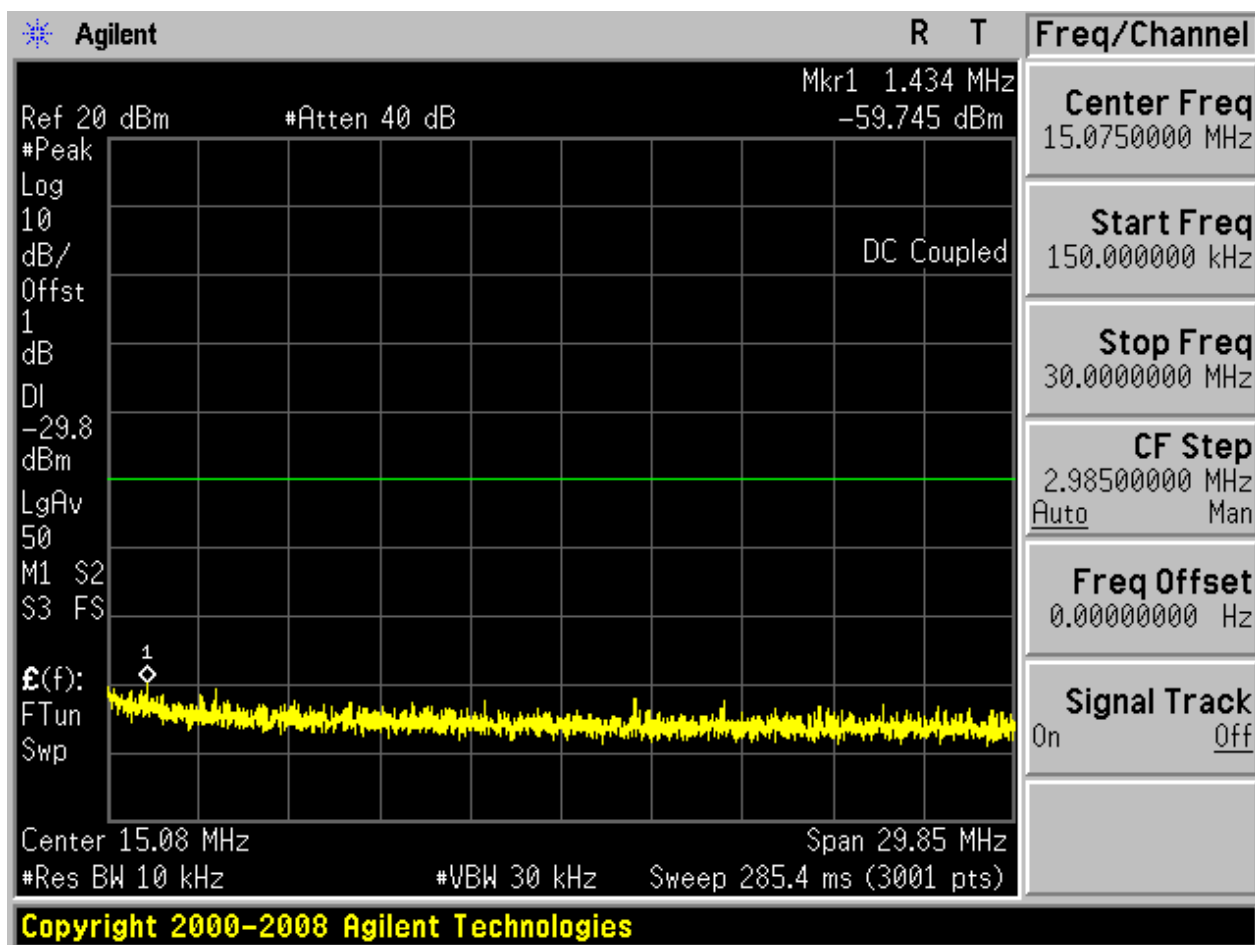
Pref:

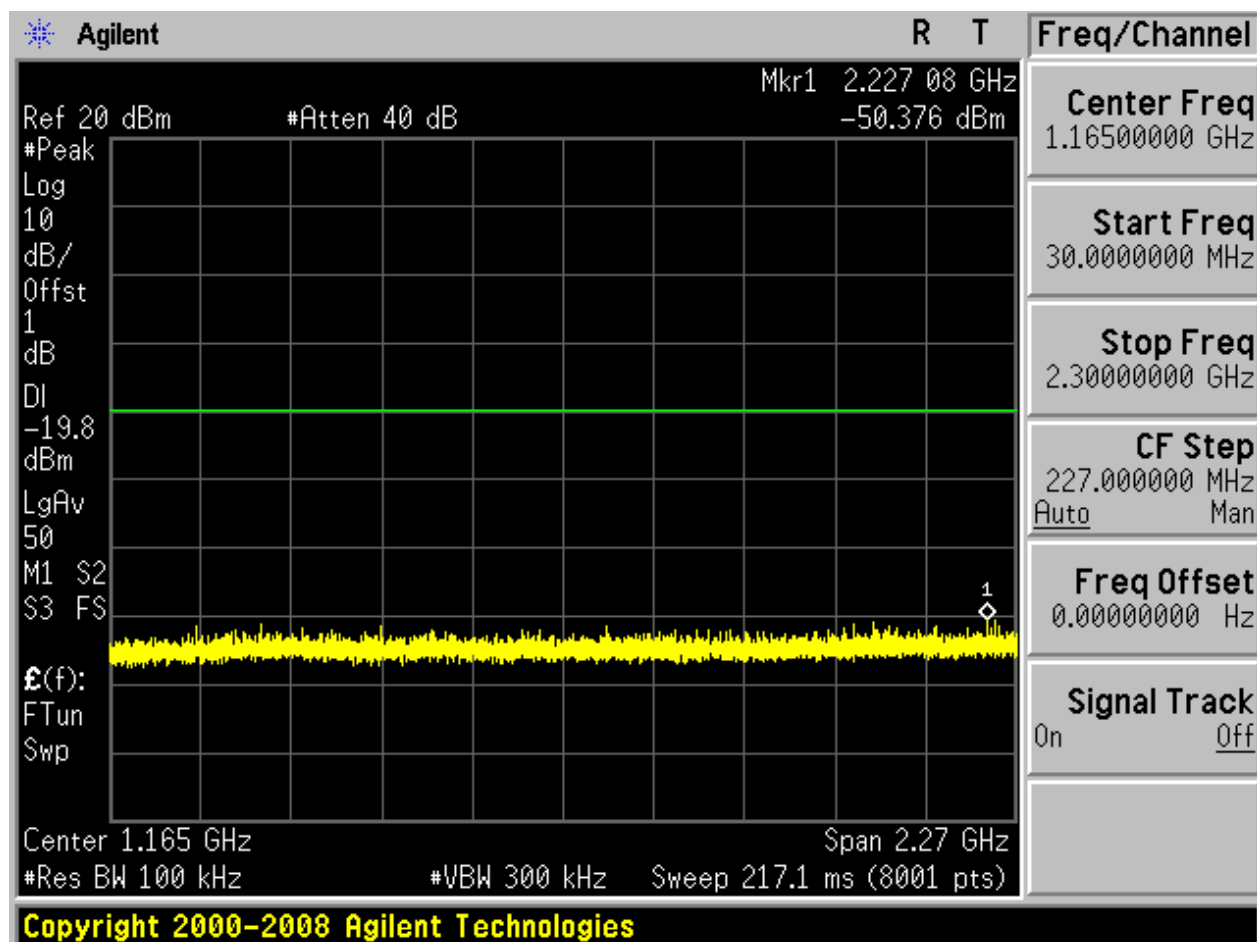


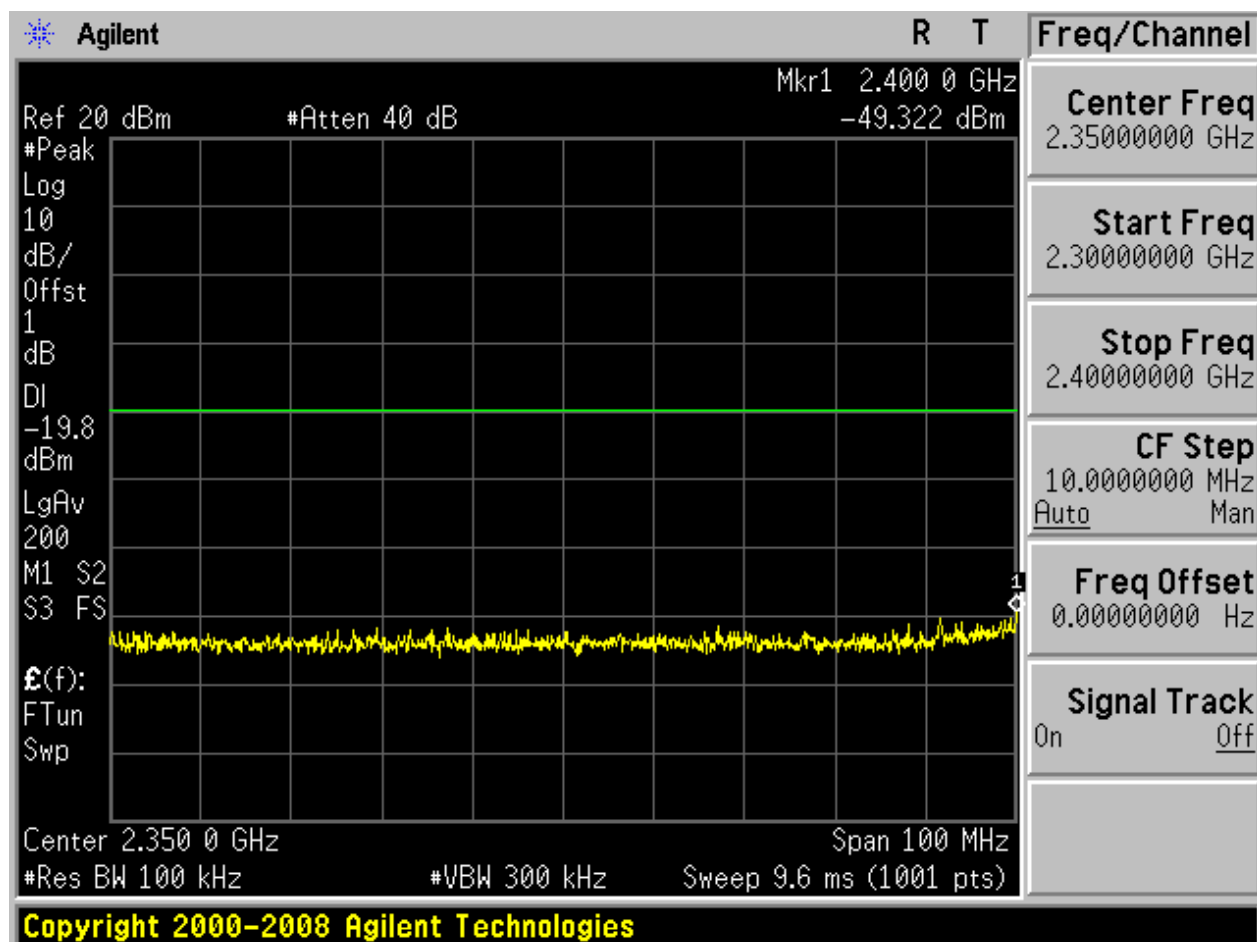


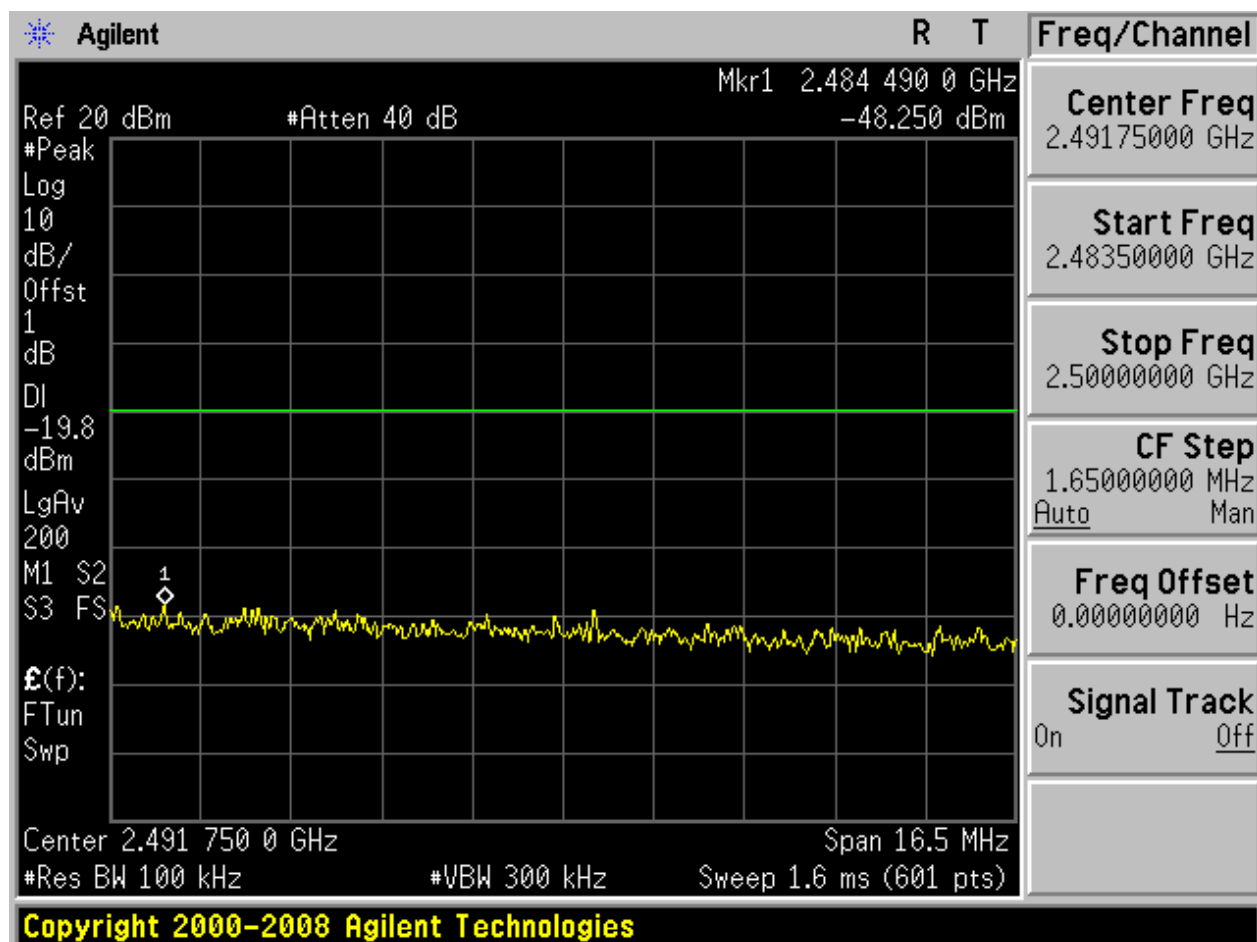
Puw:

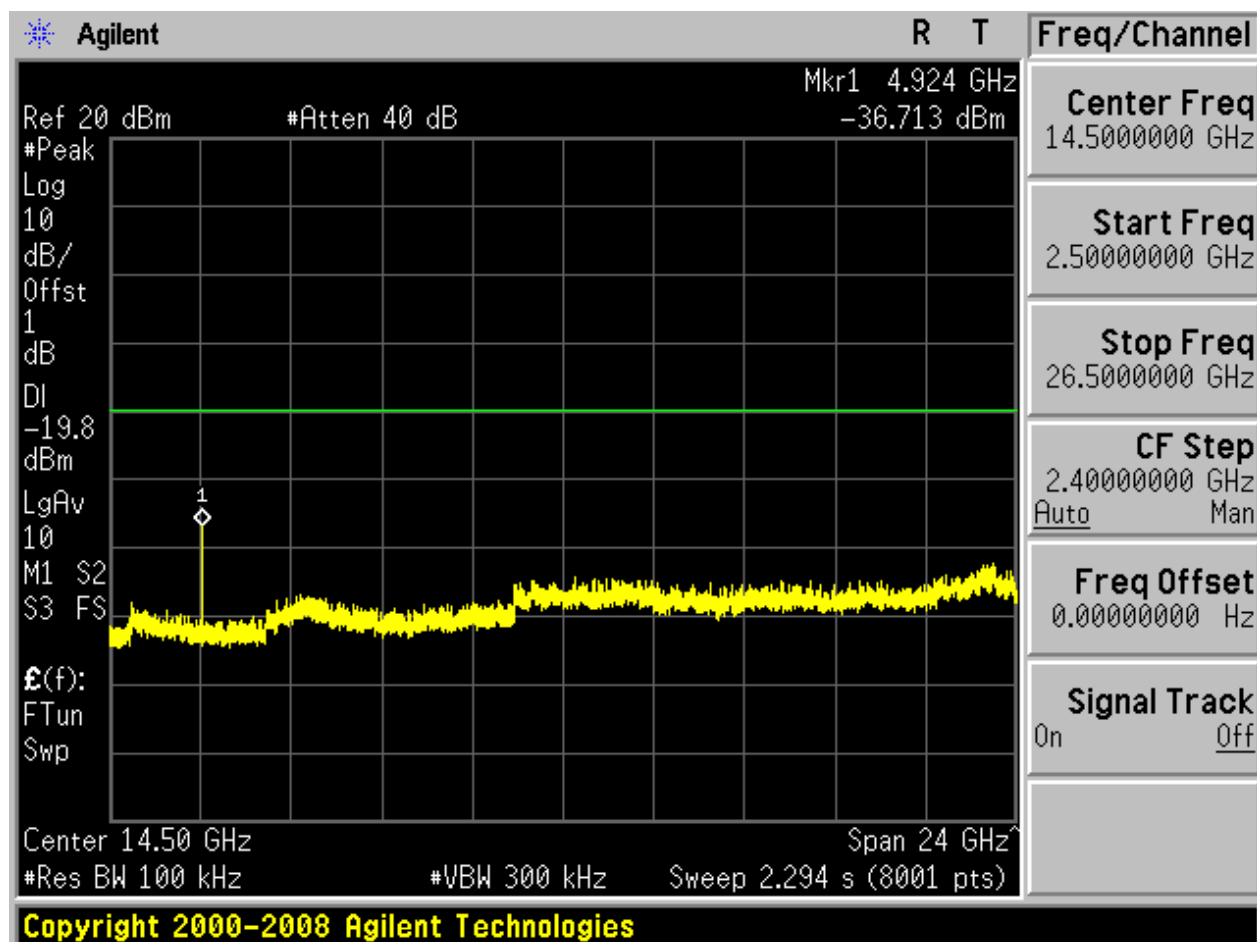








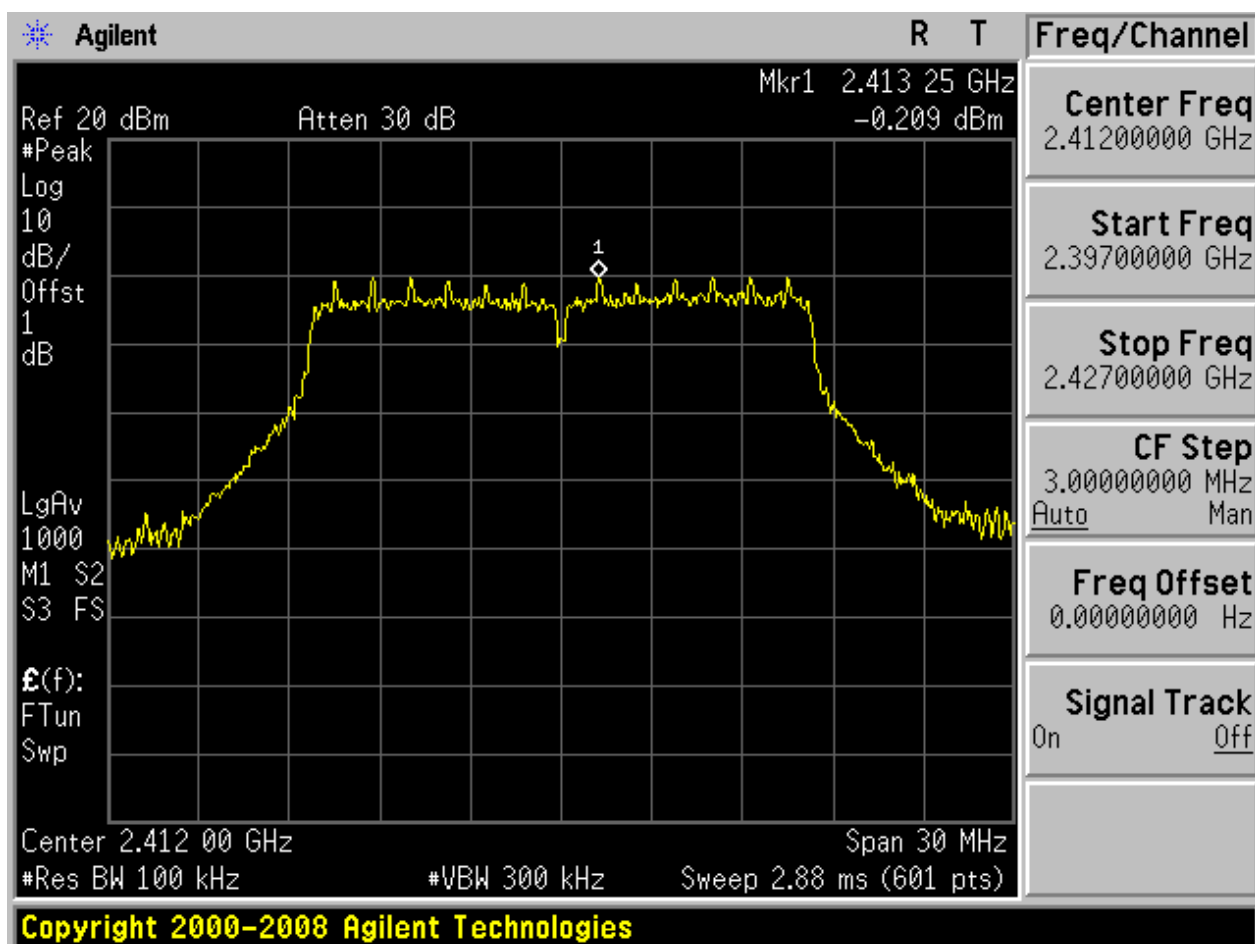






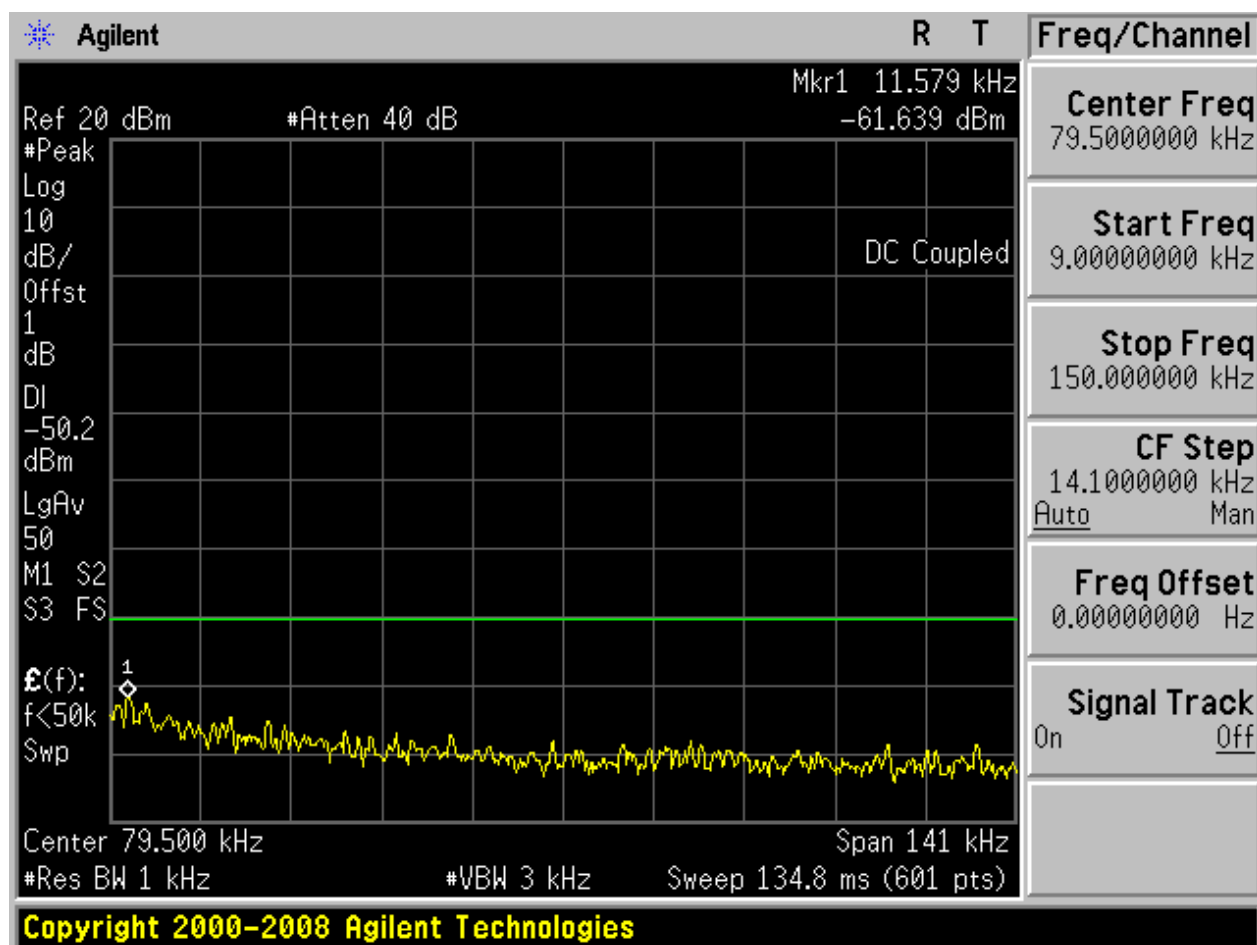
2.7 11G_L

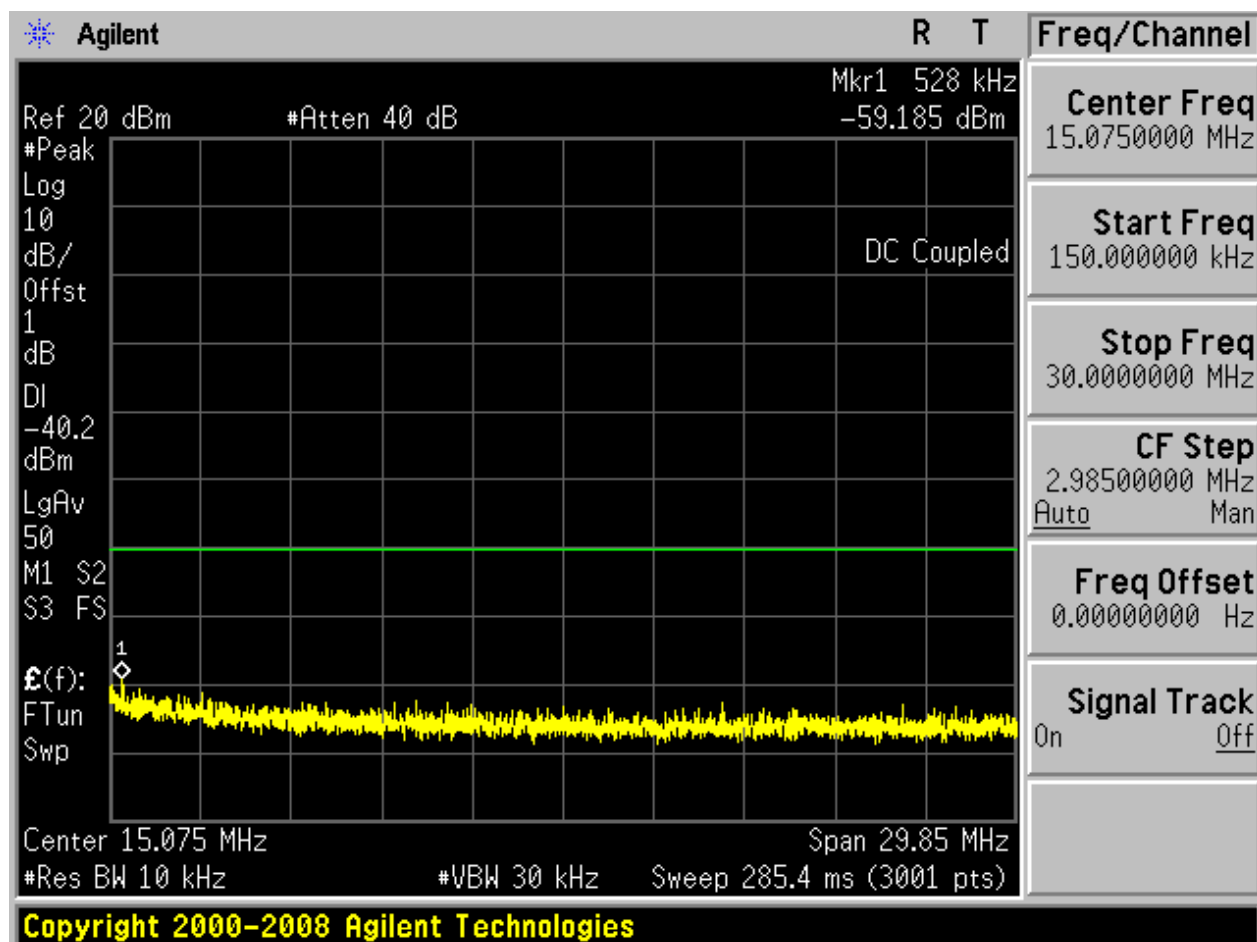
Pref:

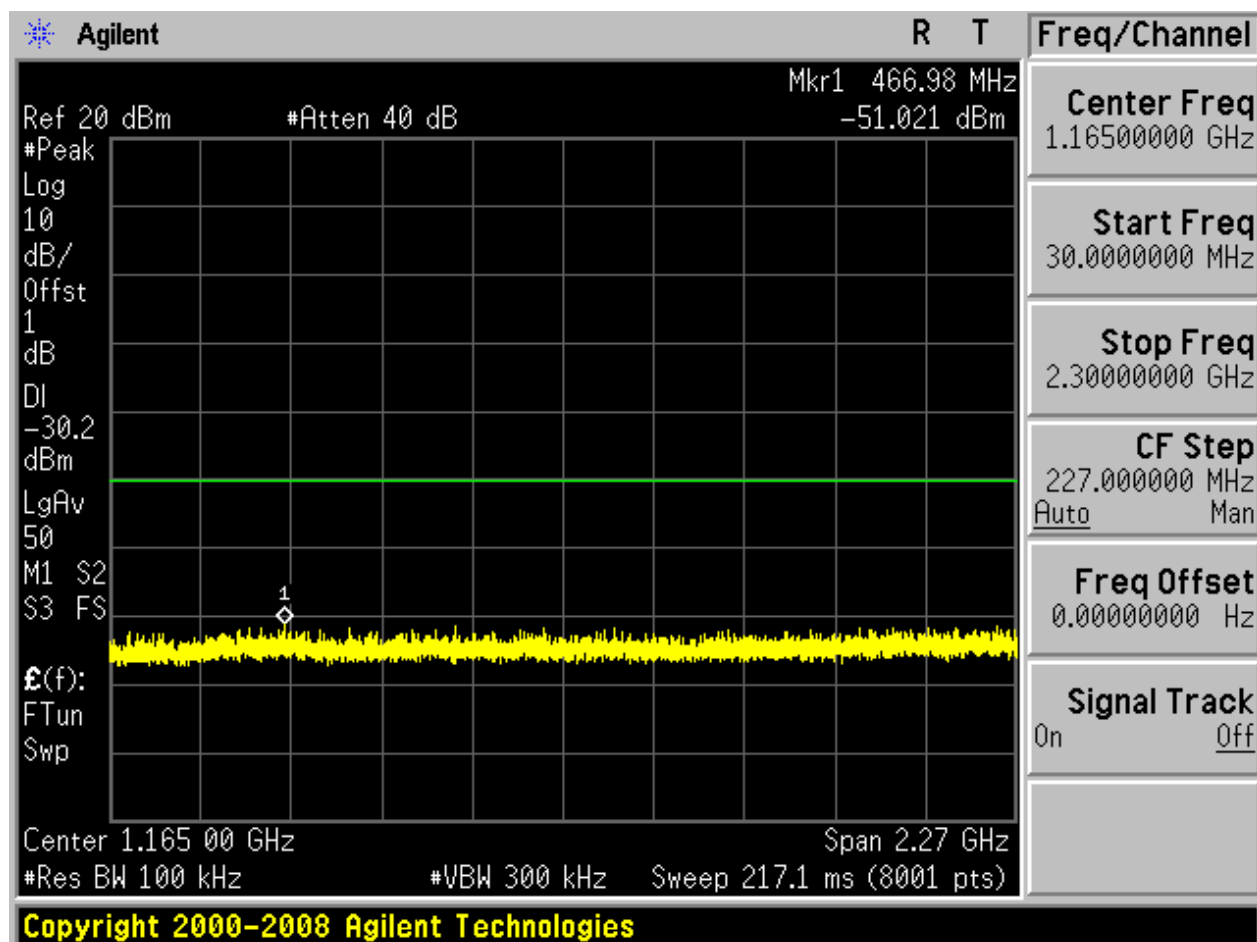


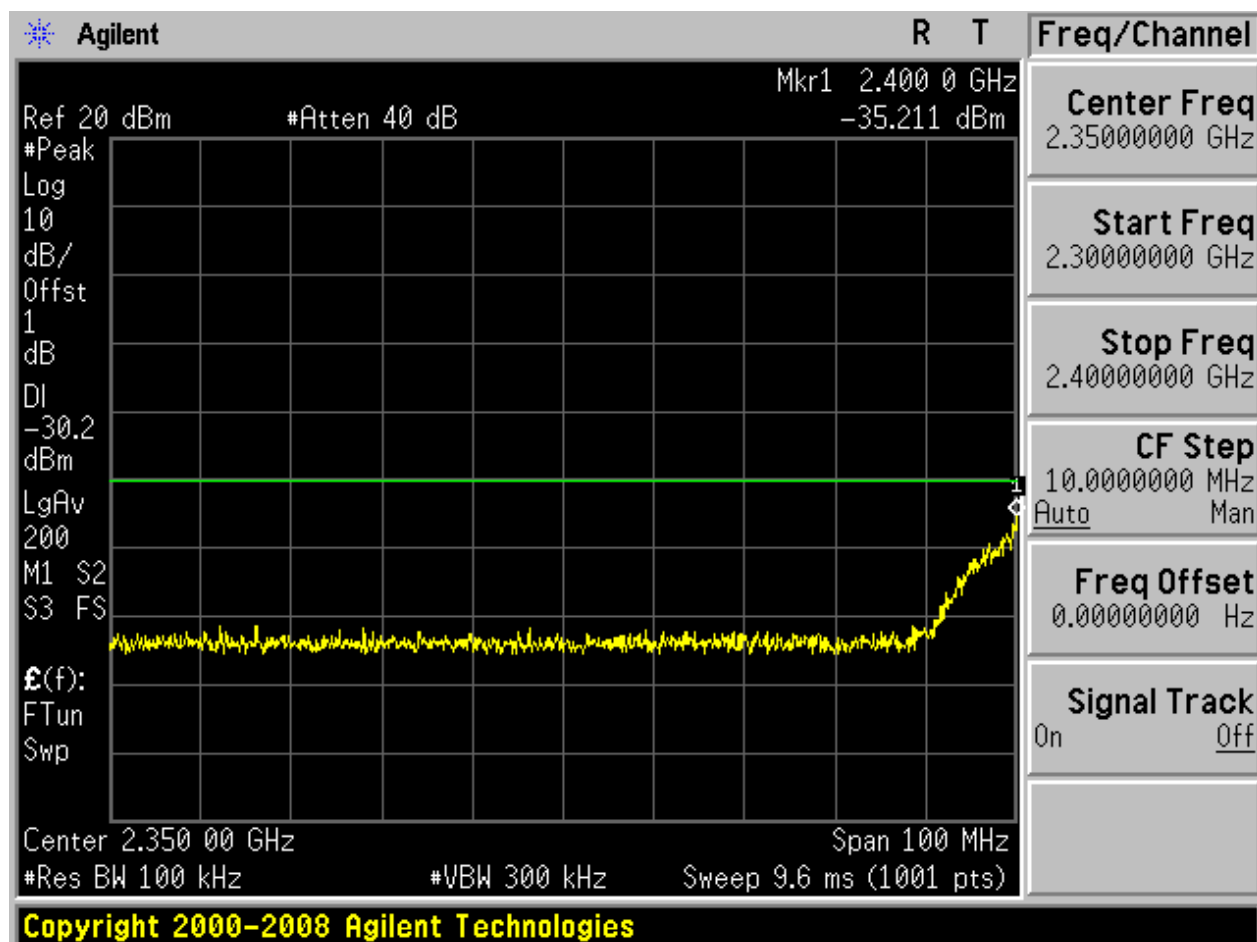


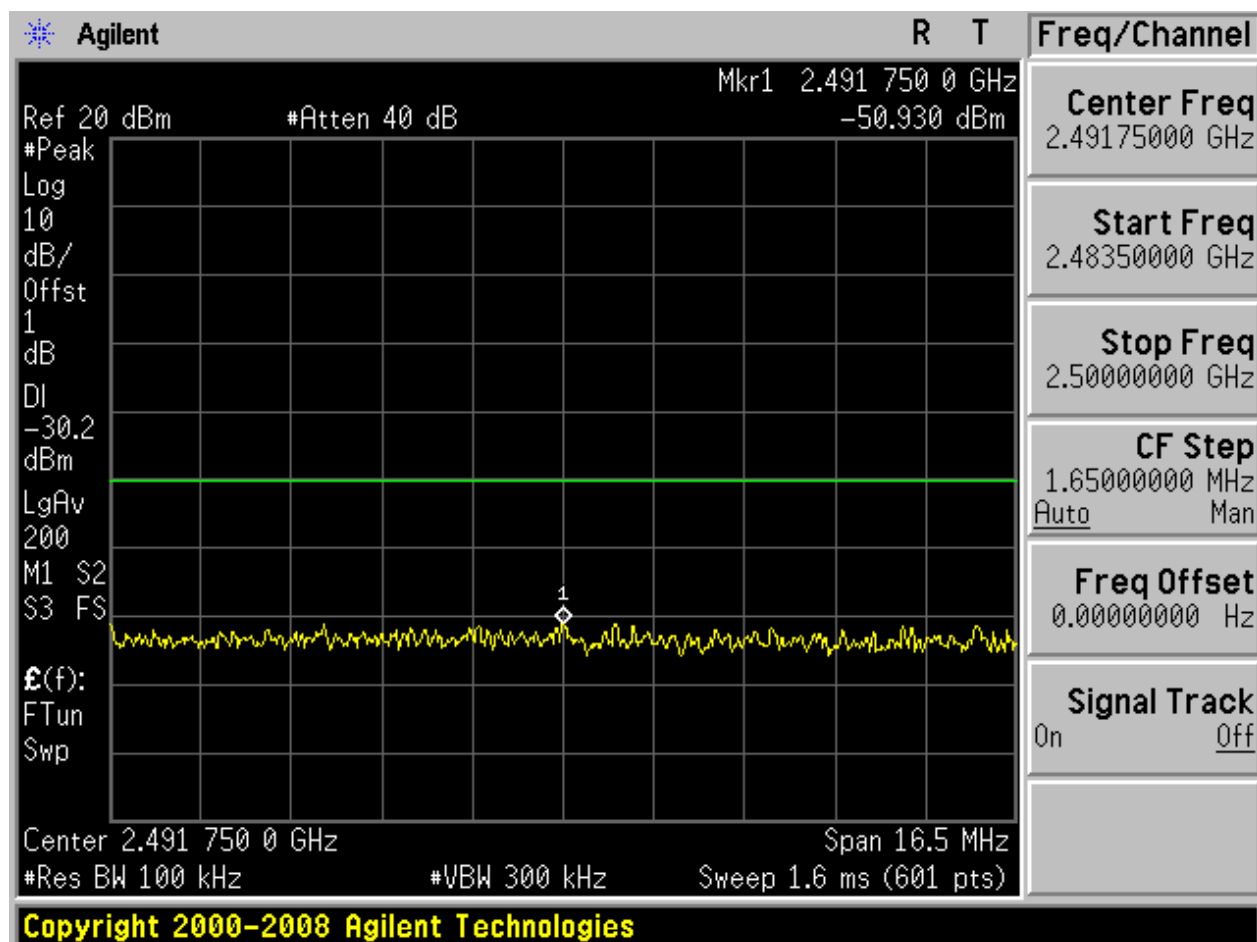
Puw:

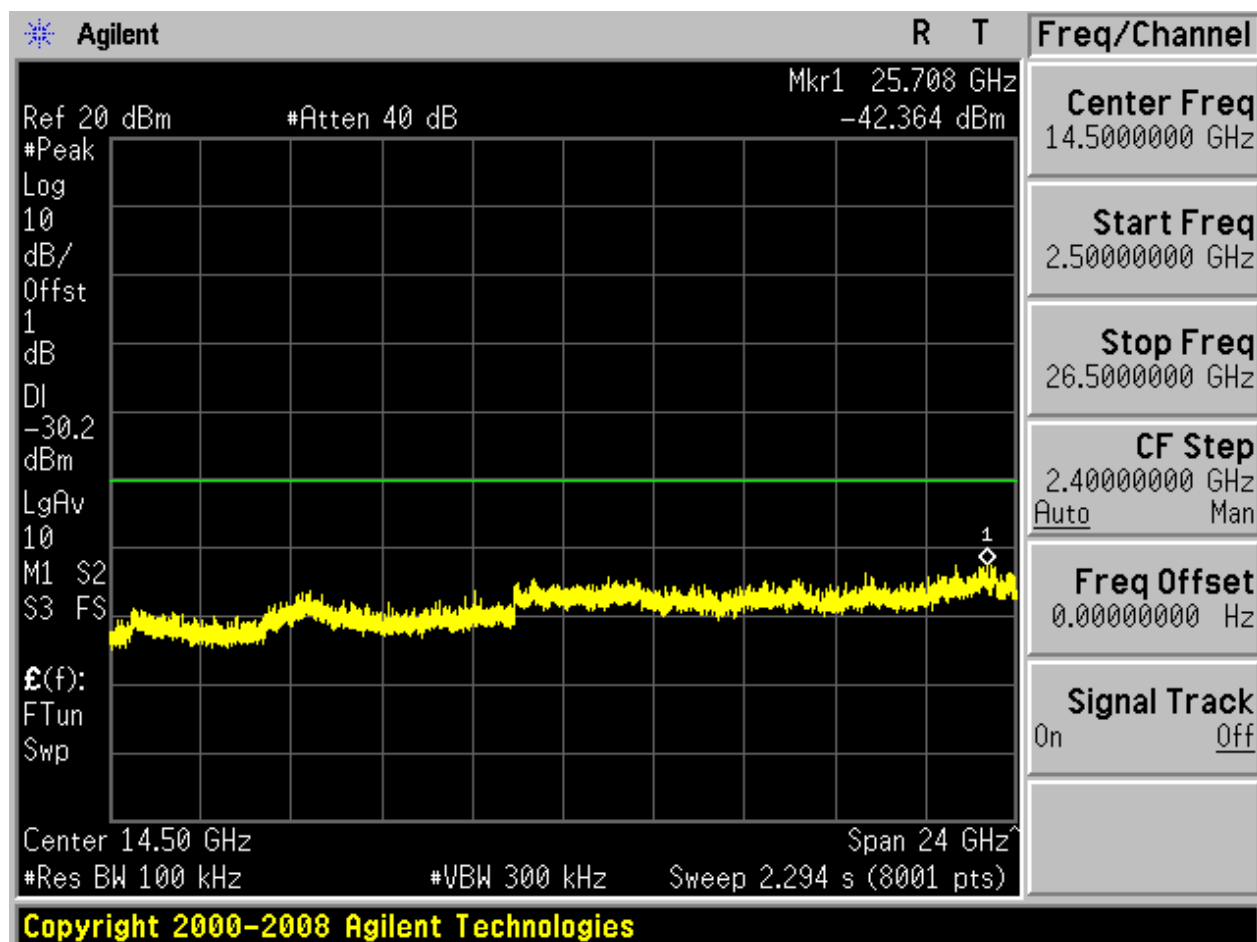






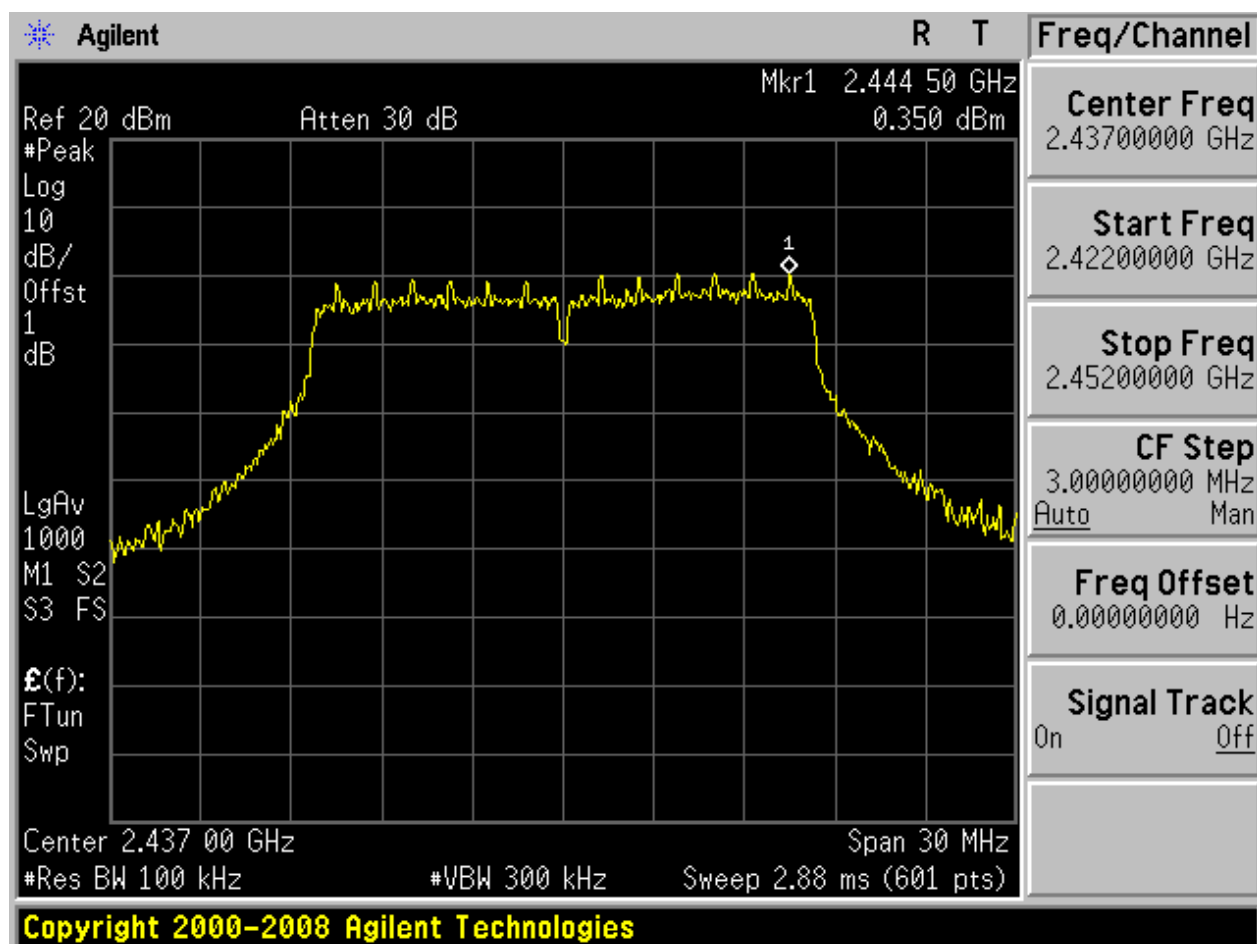






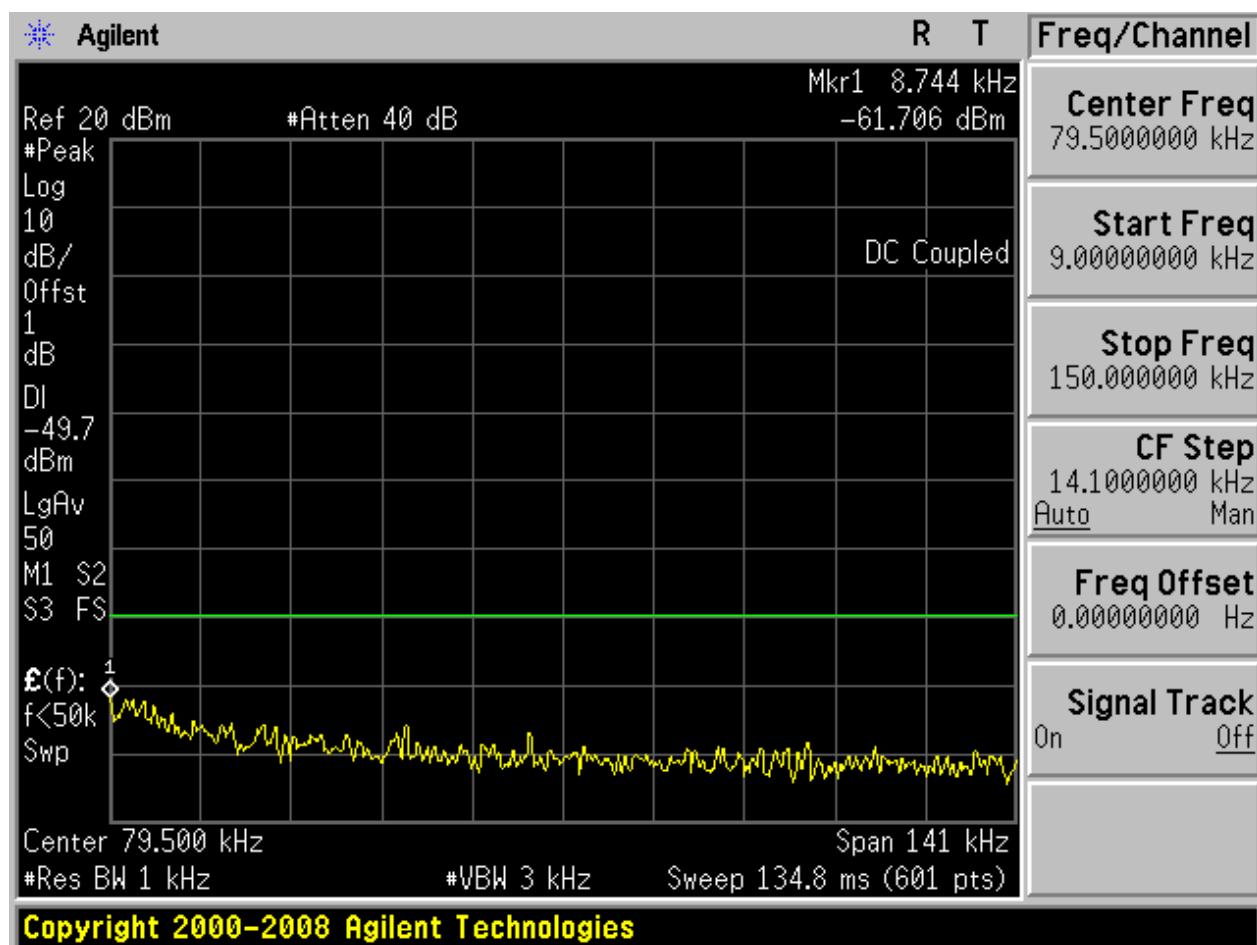
2.9 11G_M

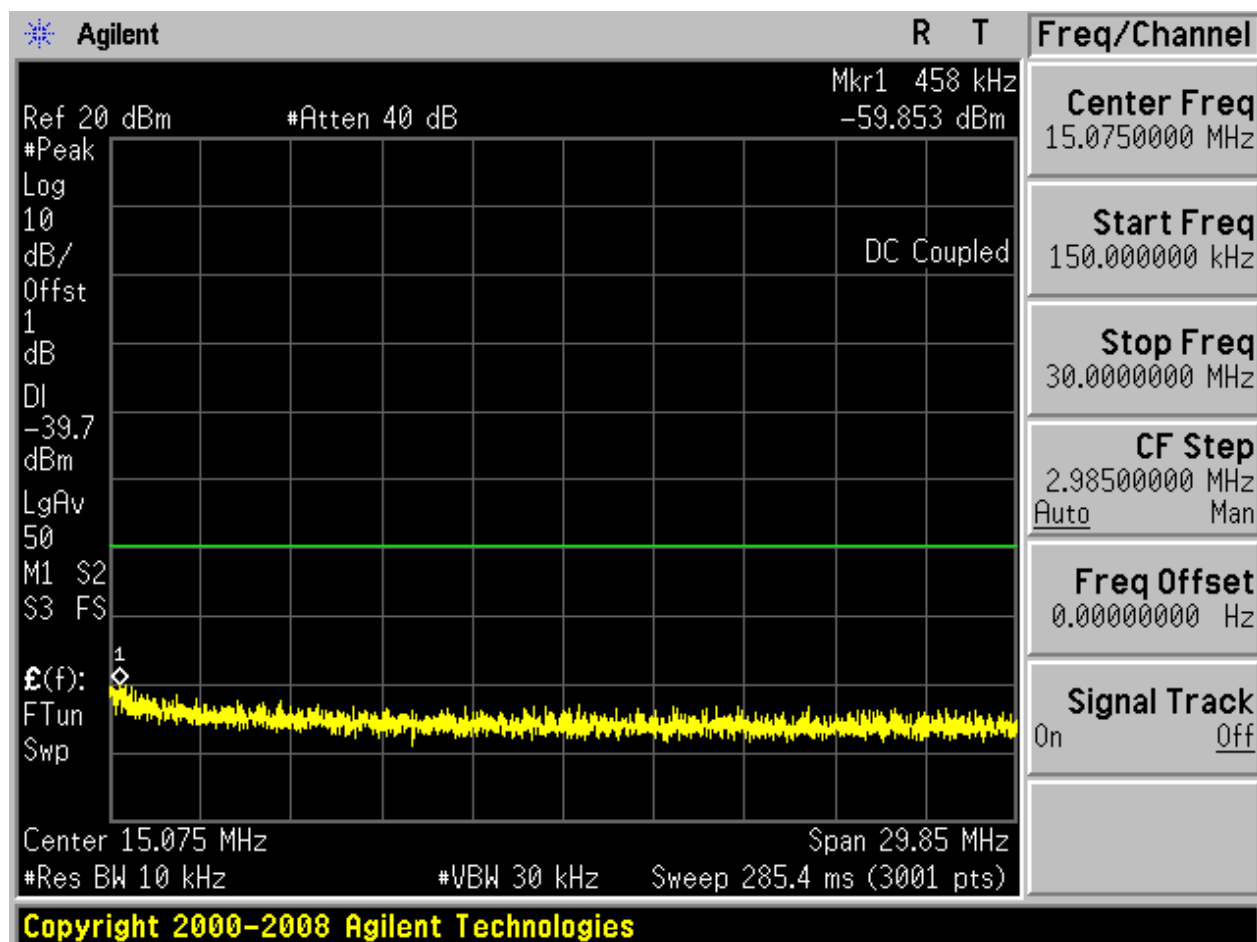
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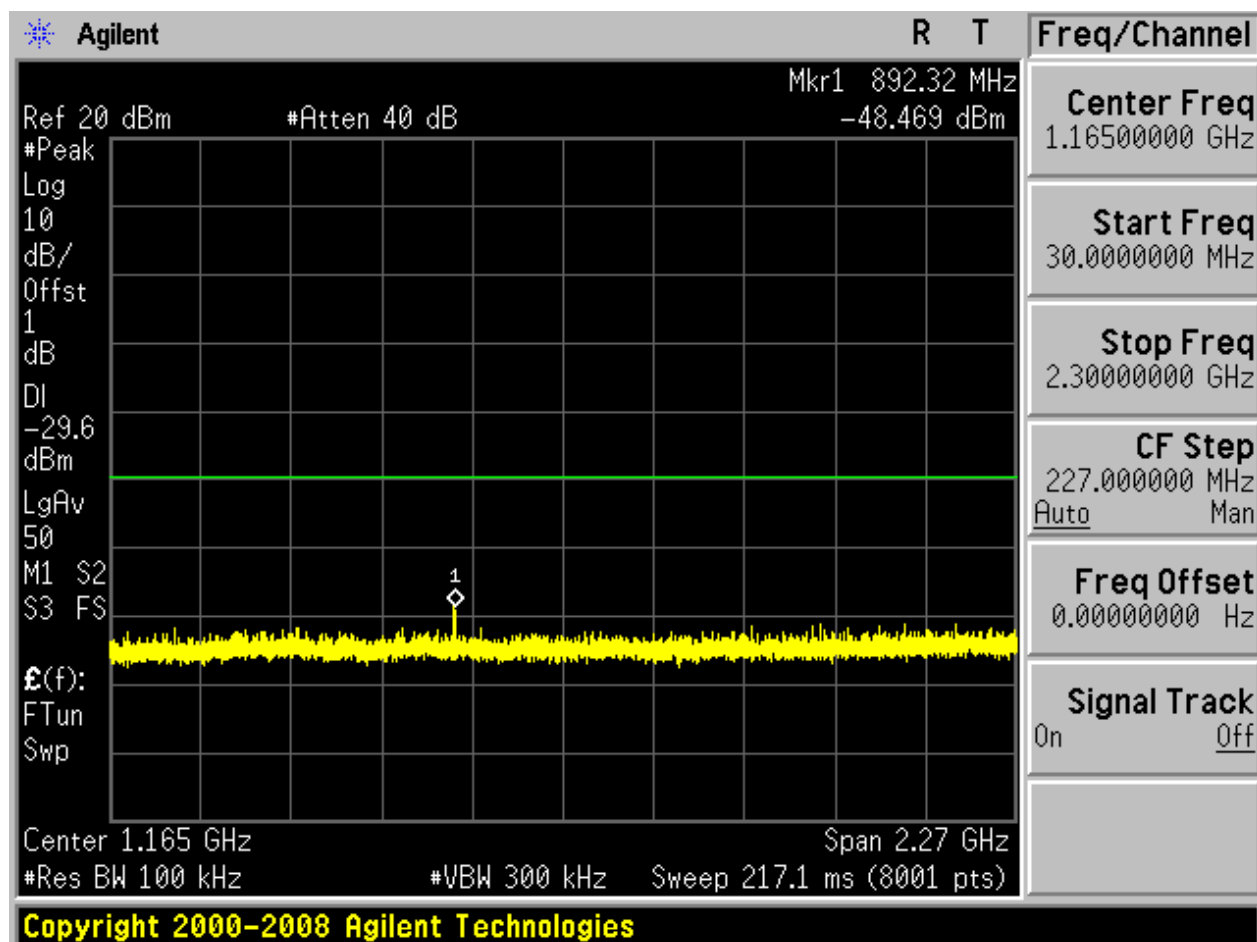


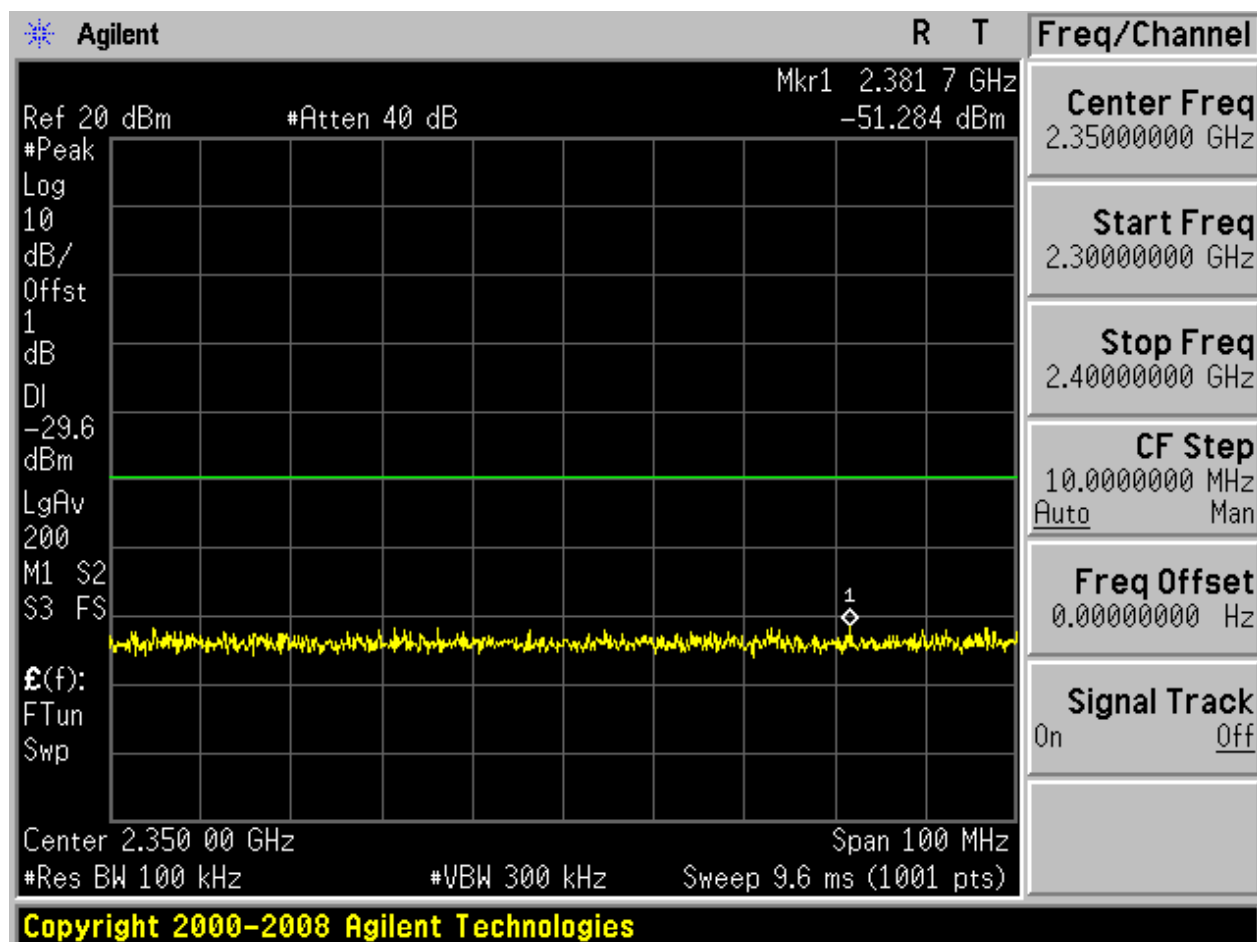


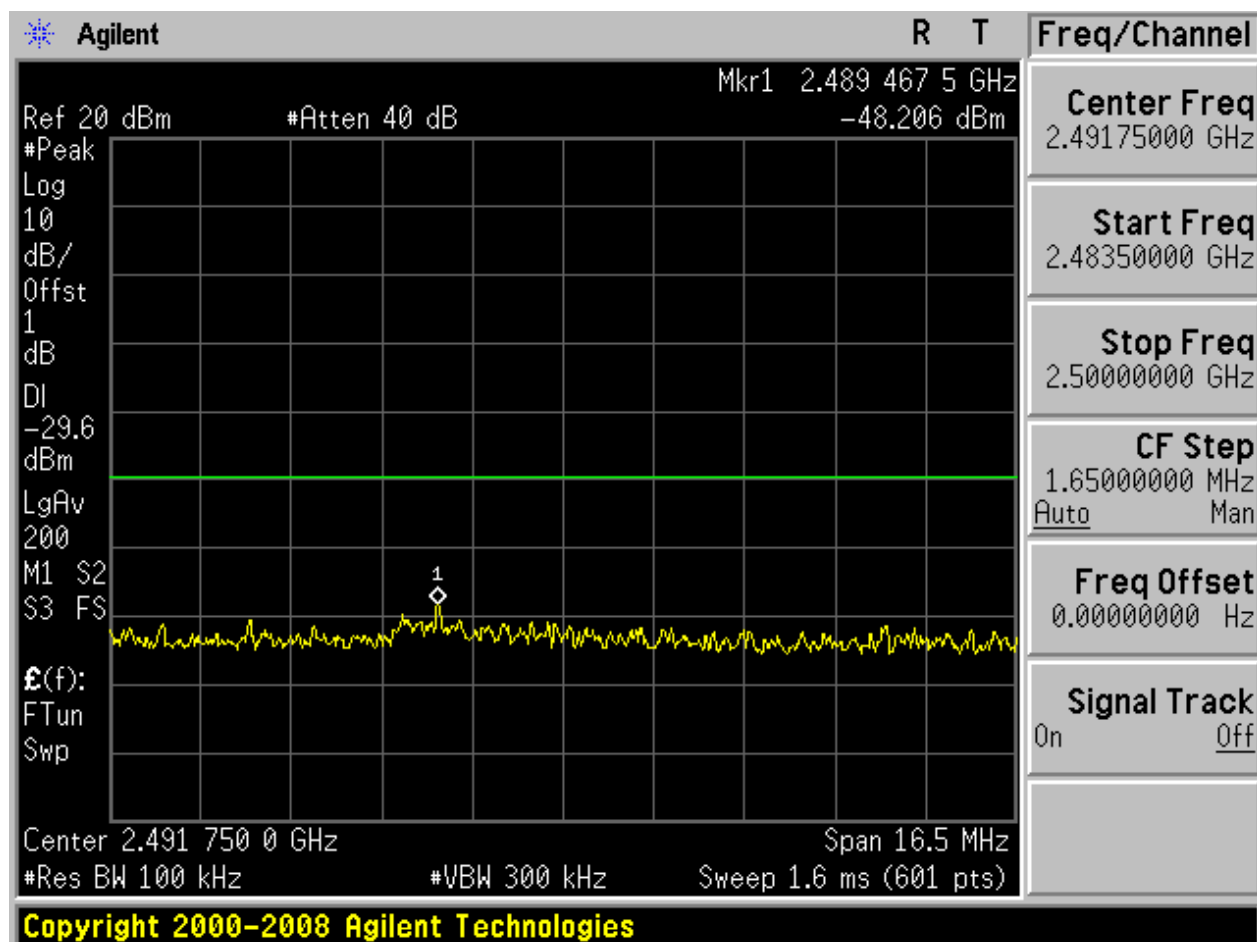
Puw:

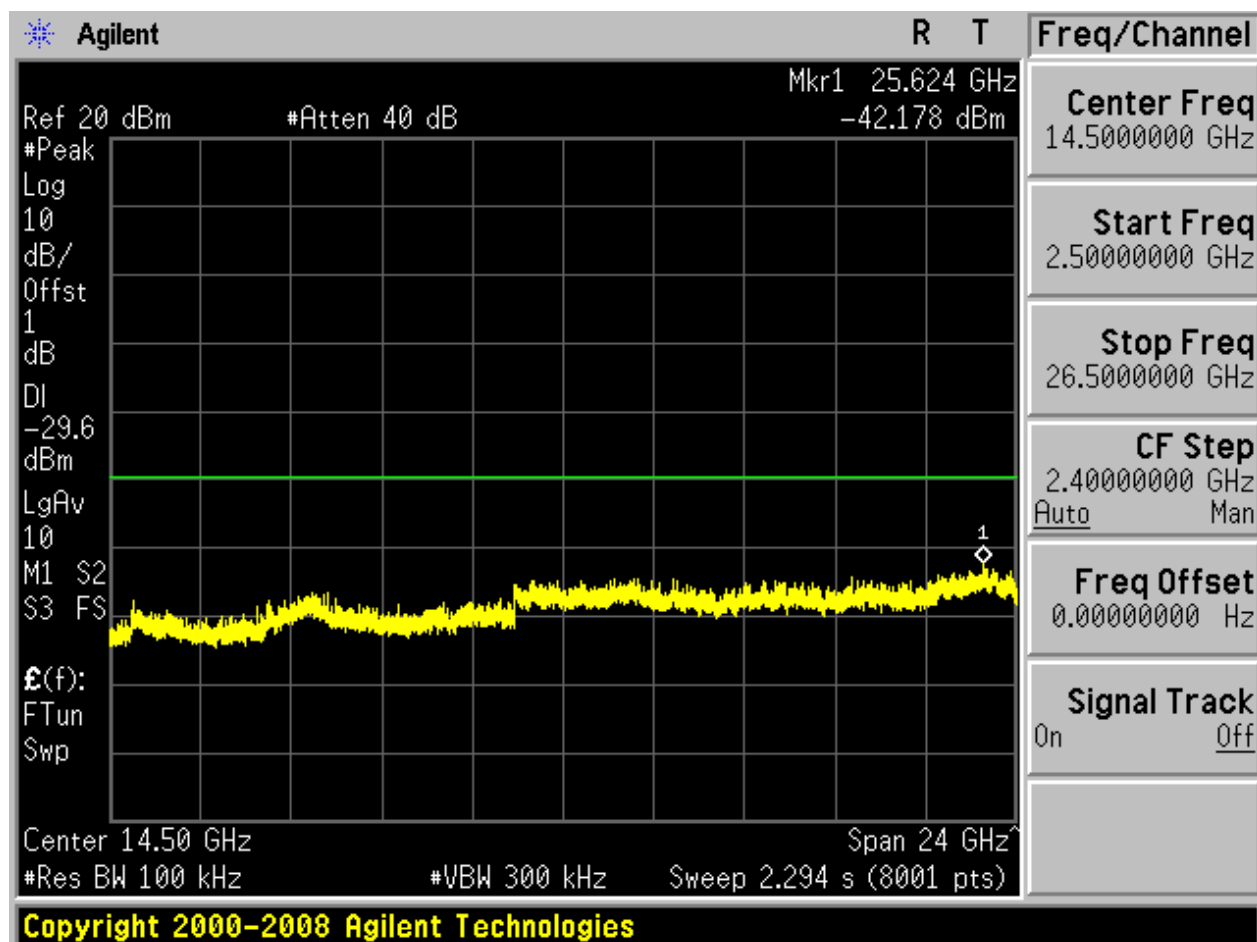






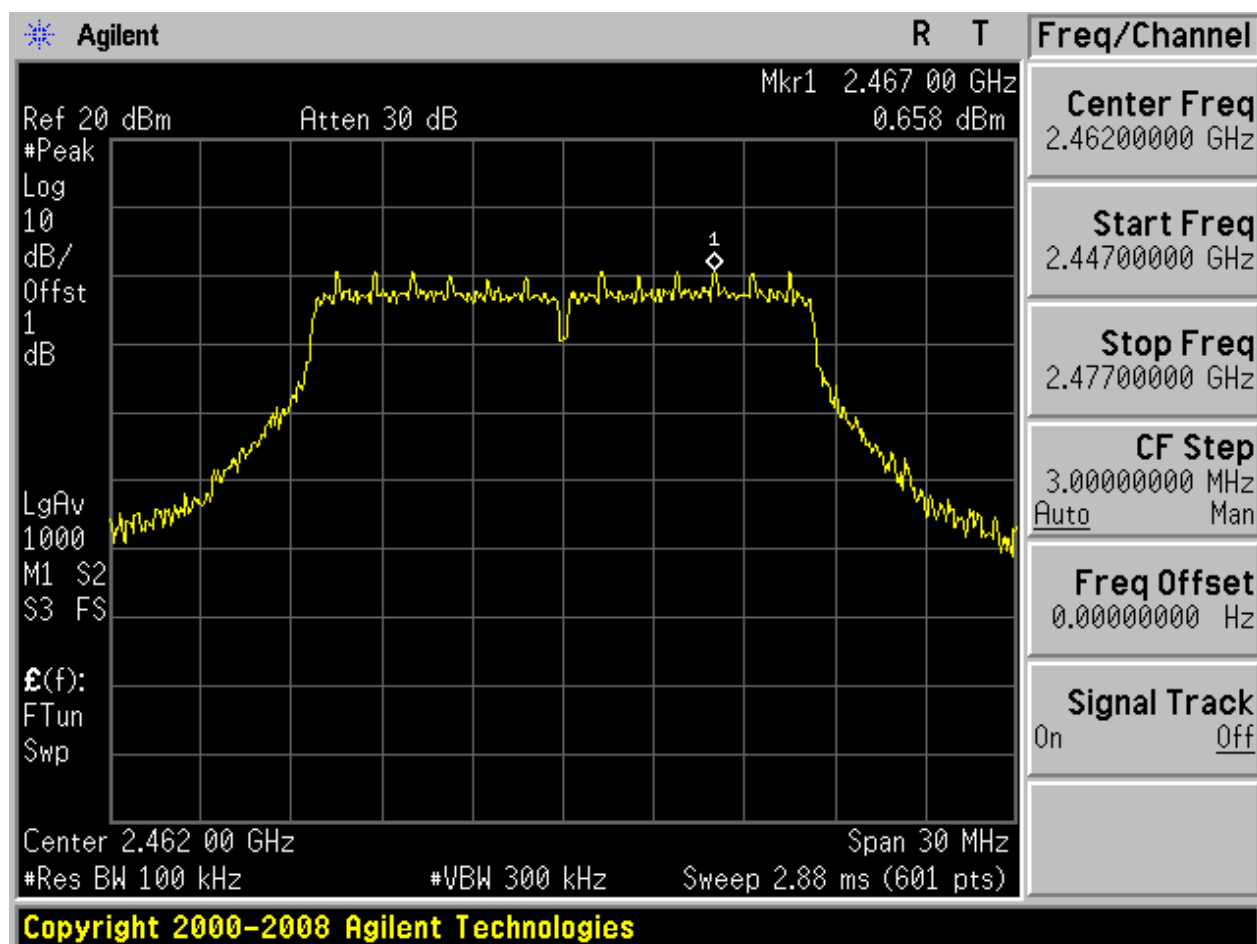






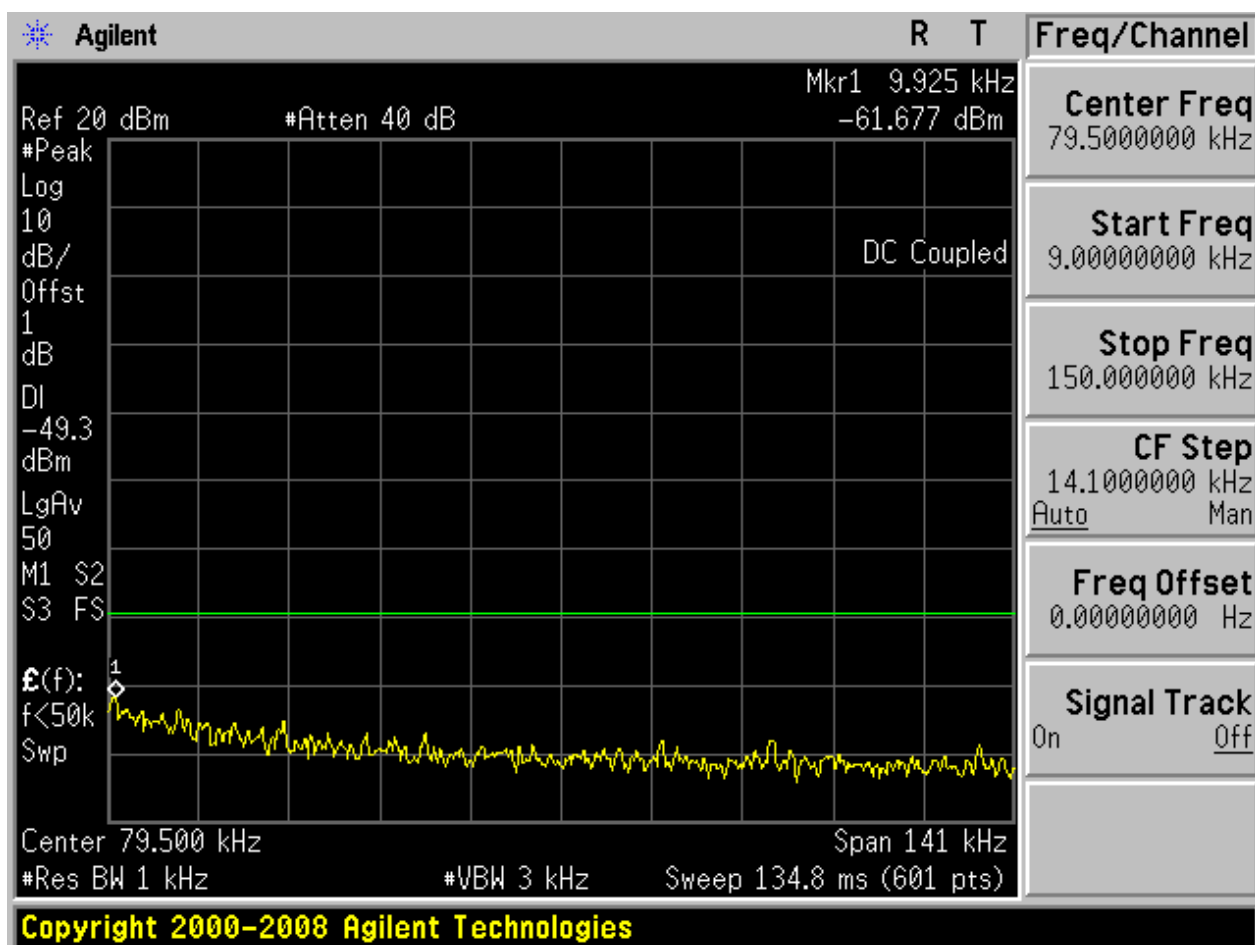
2.11 11G_H

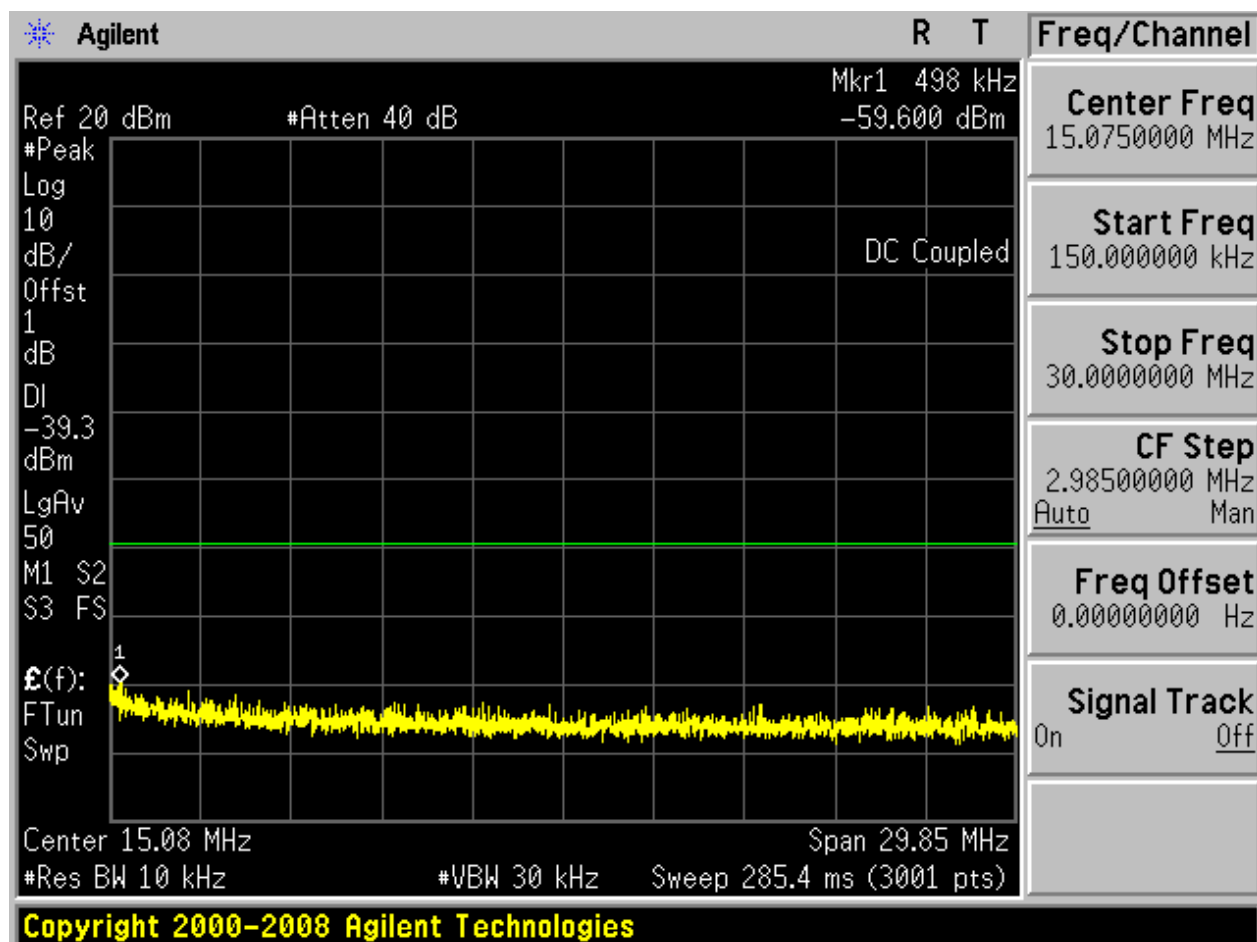
Pref:

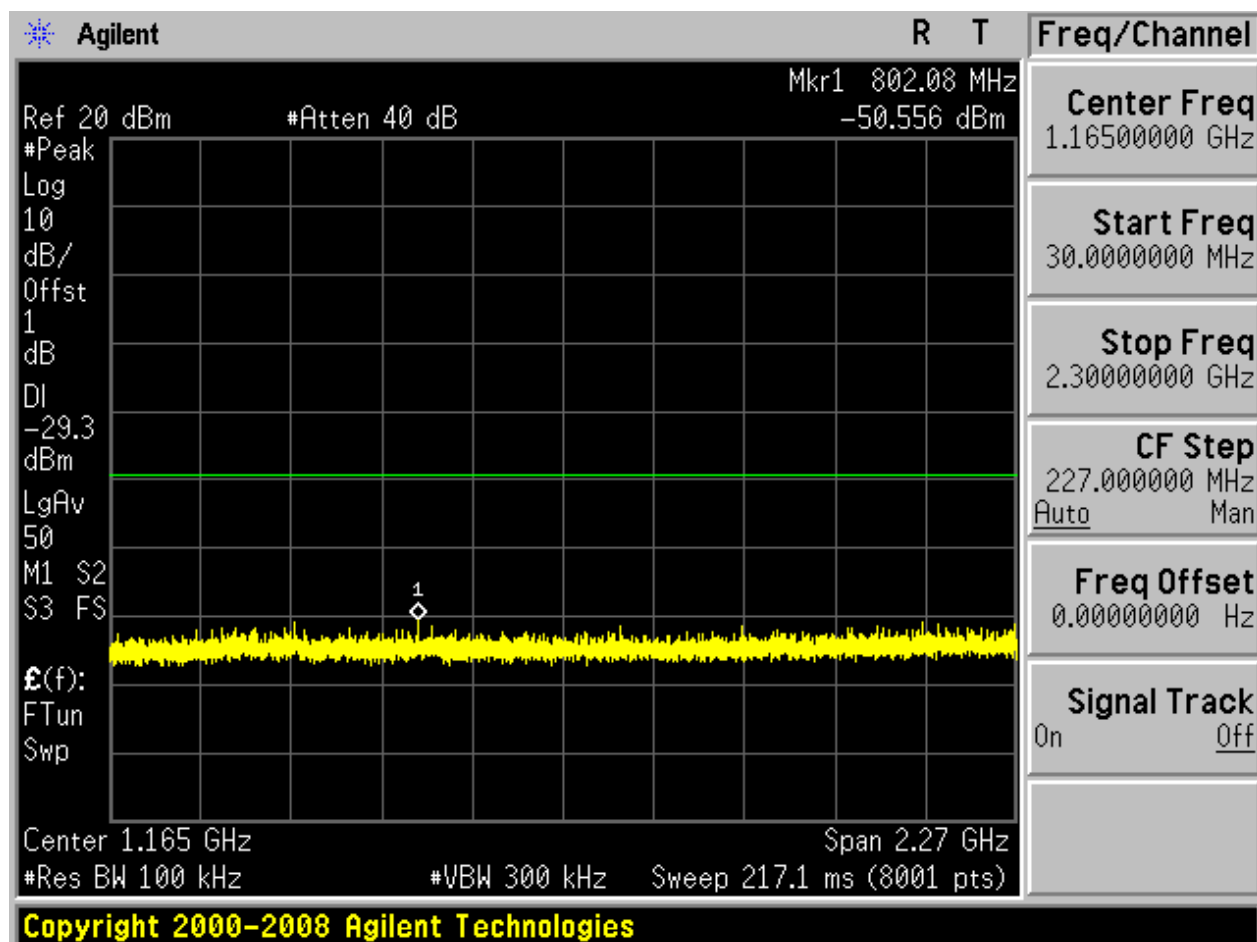


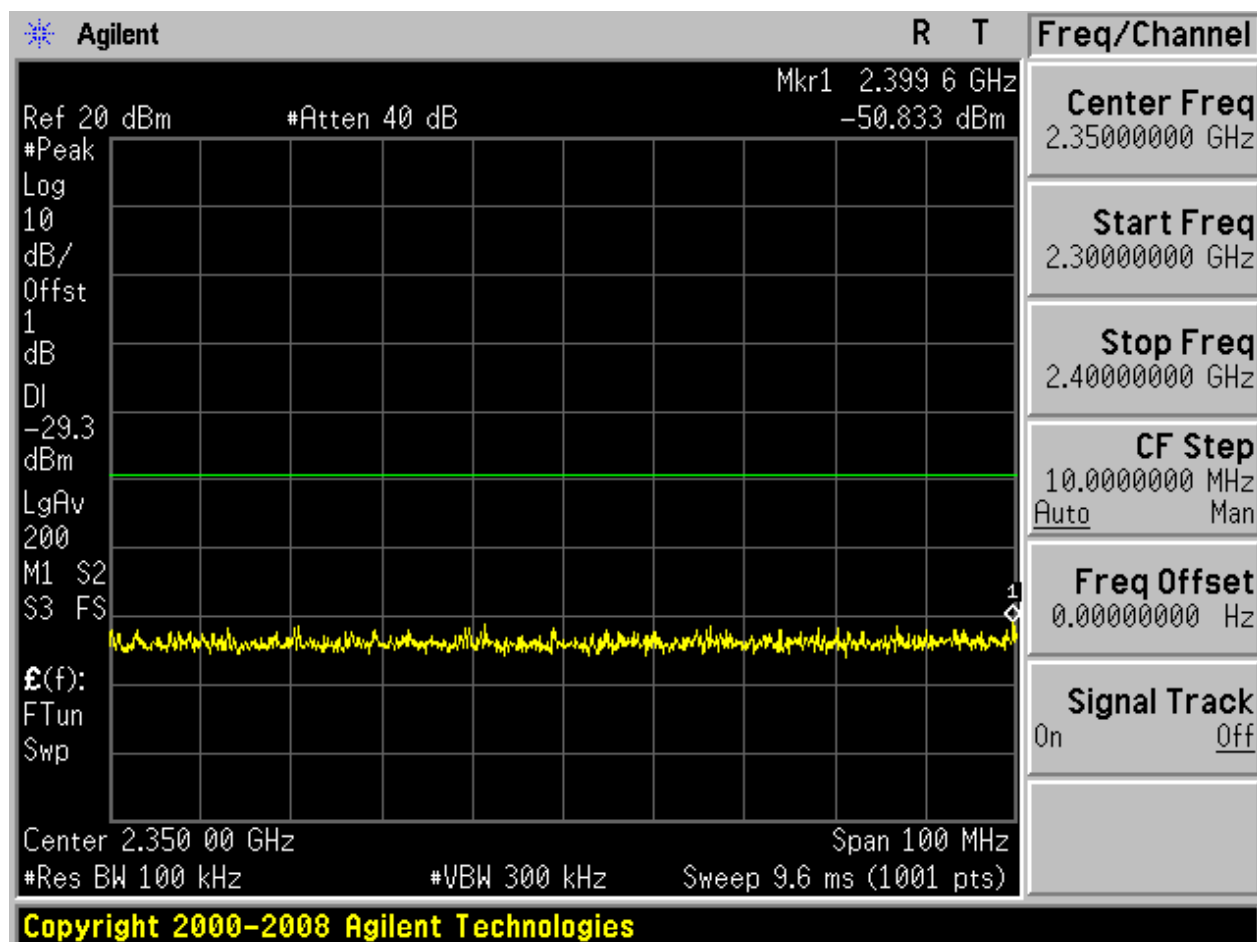


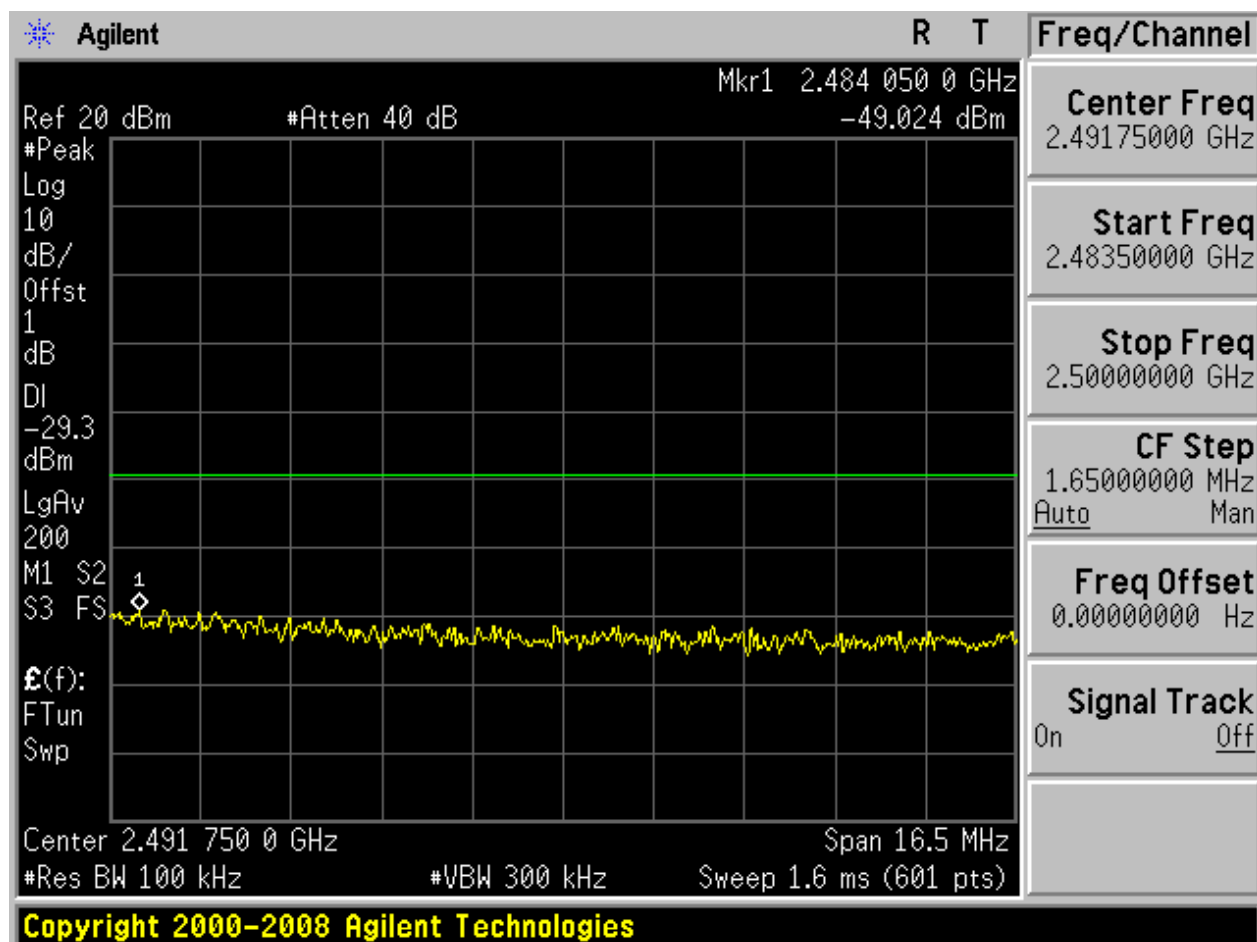
Puw:

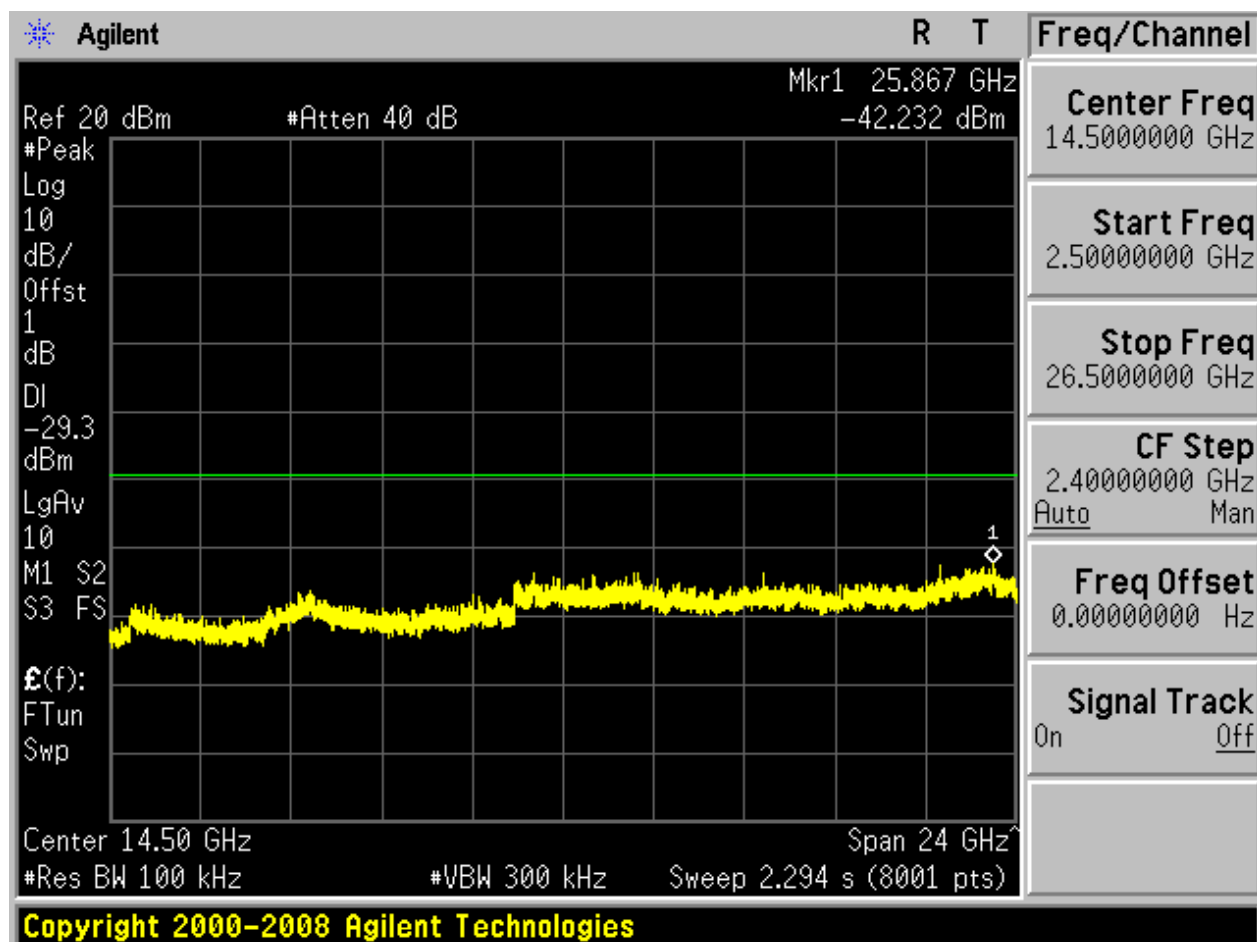






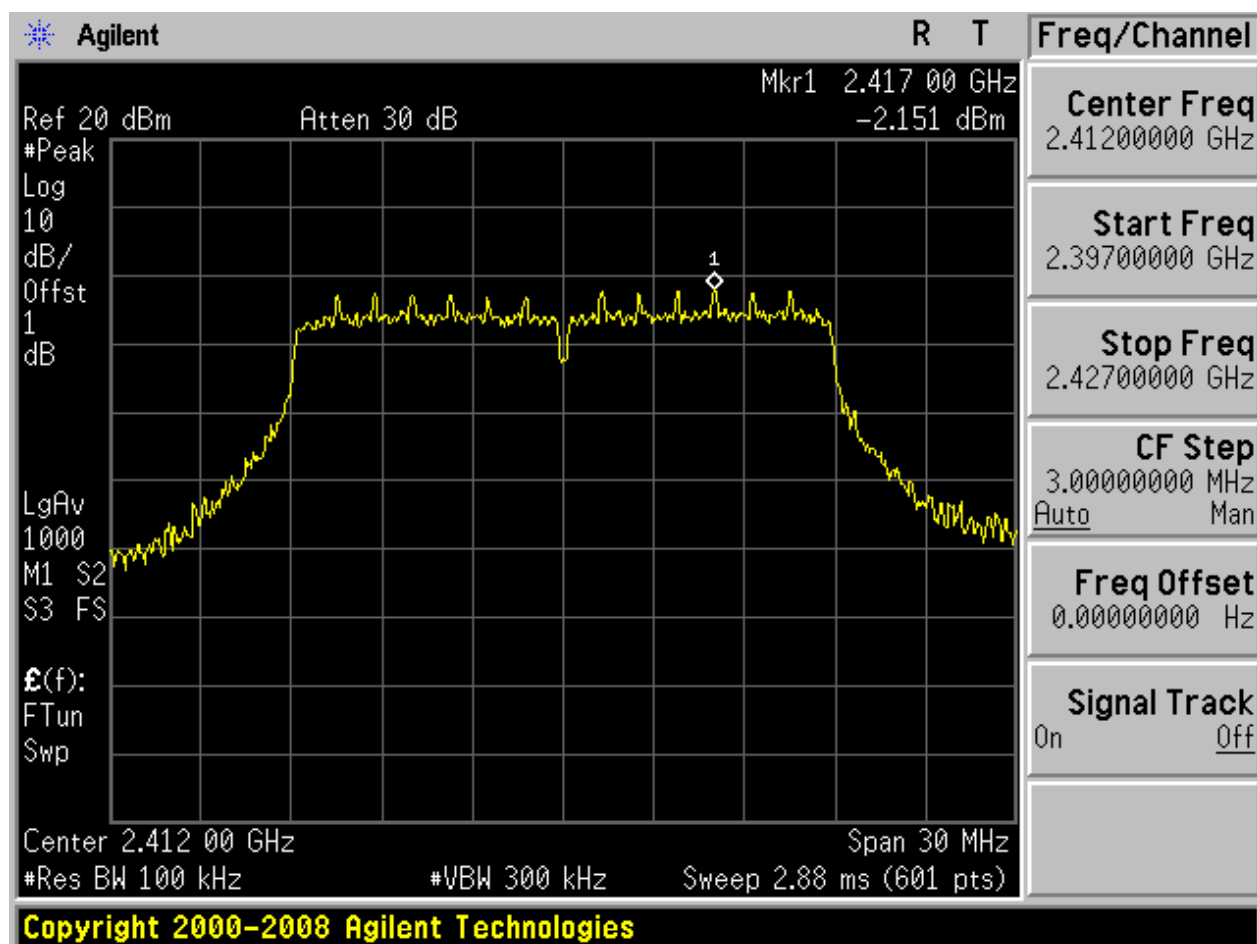






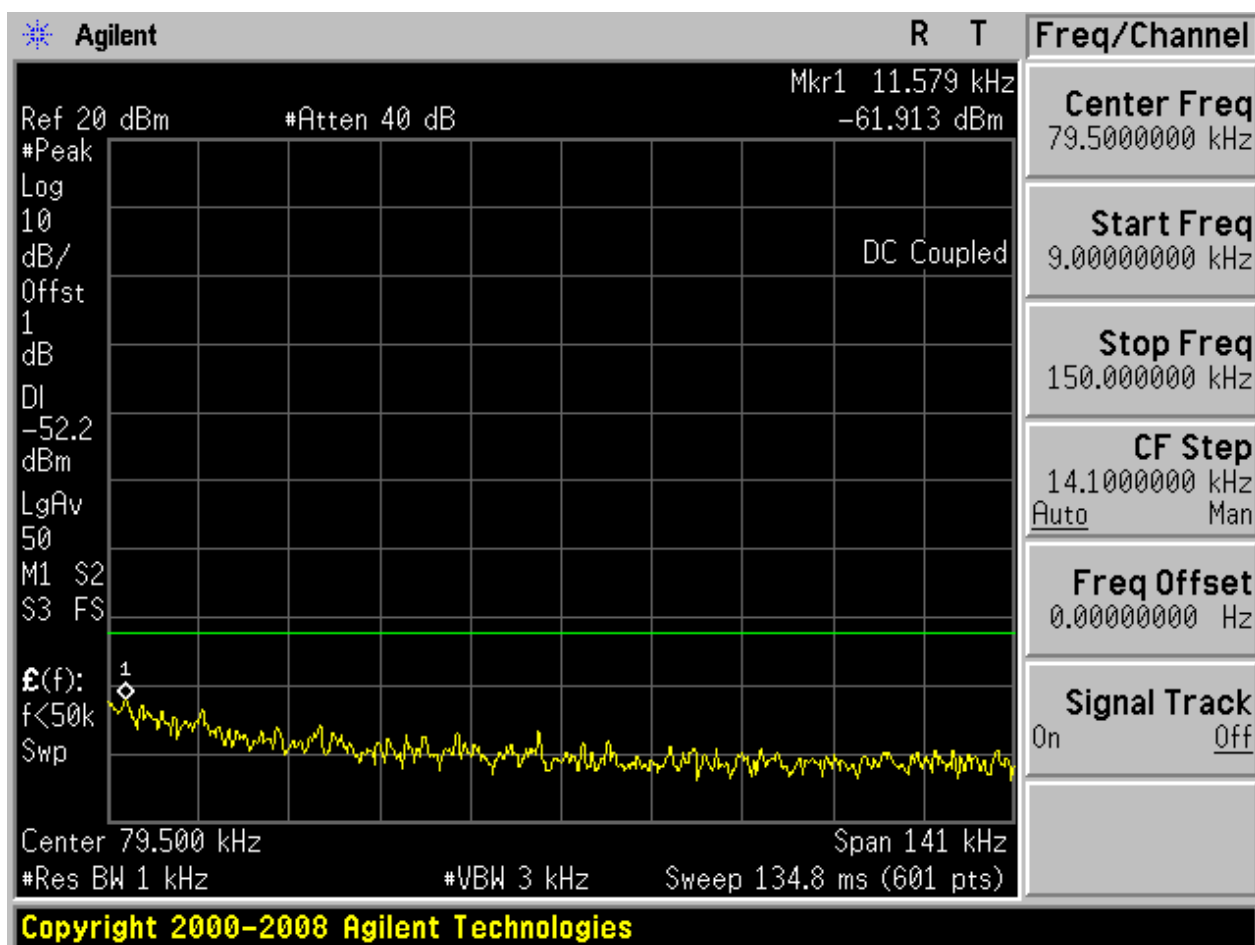
2.13 11N20_L

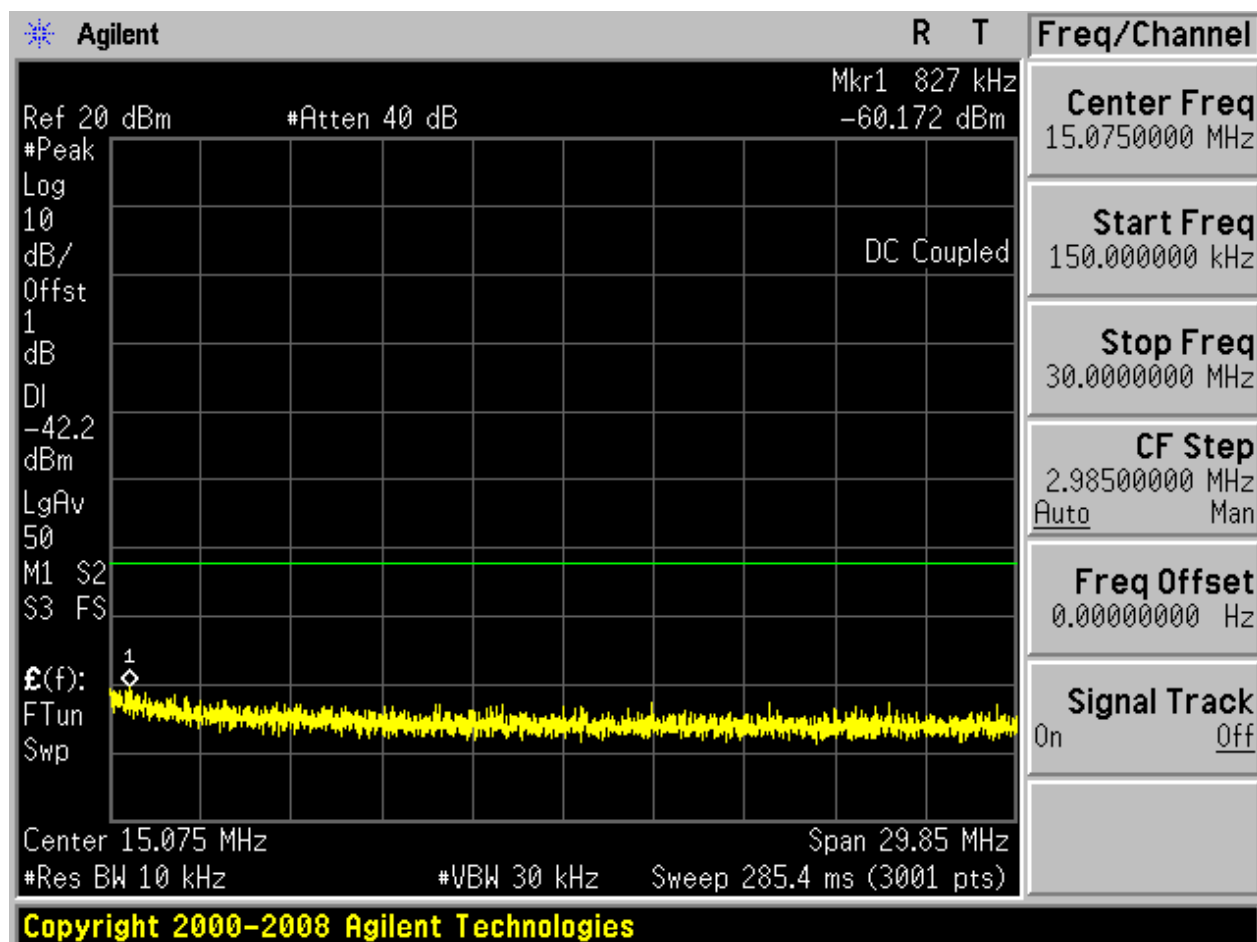
Pref:

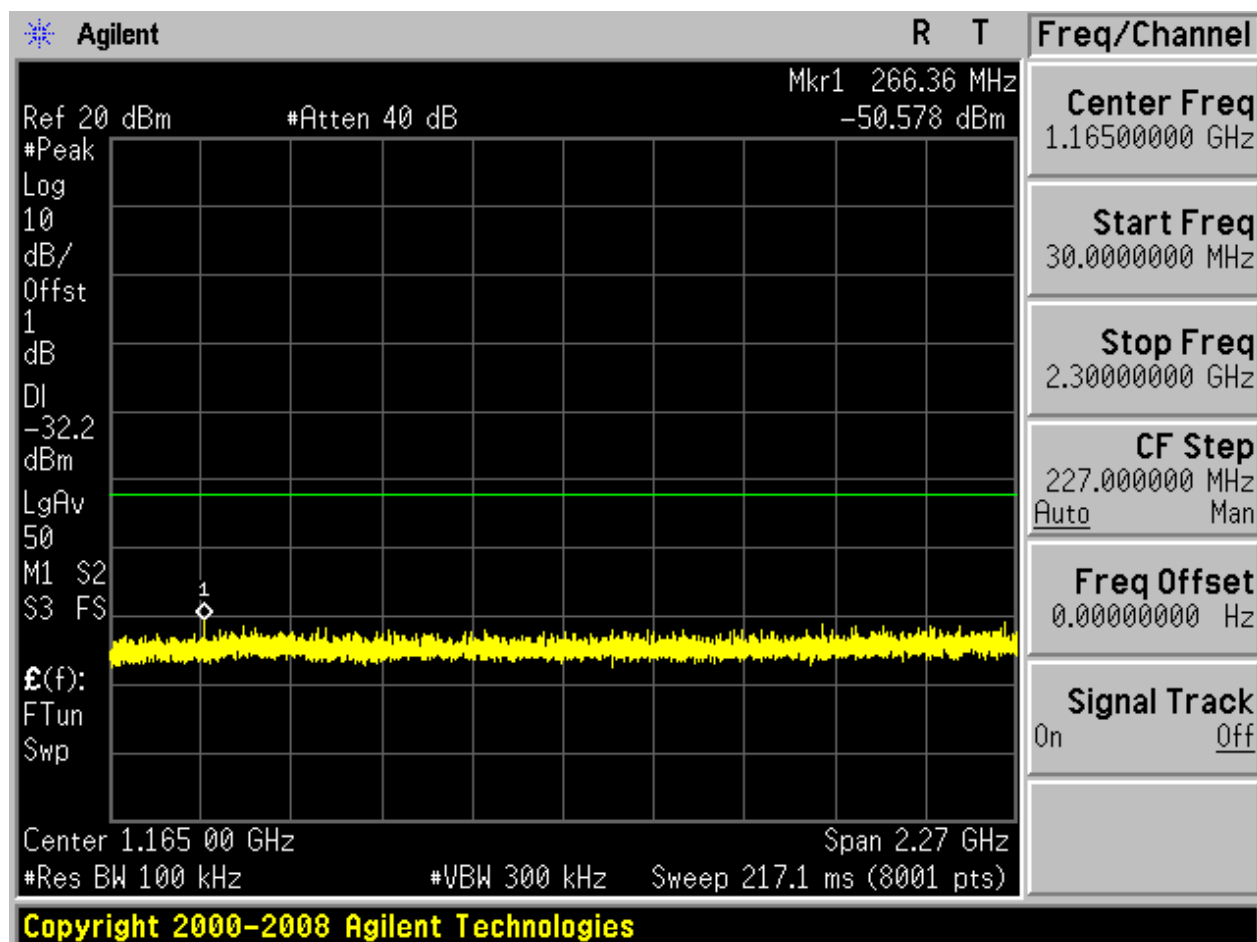


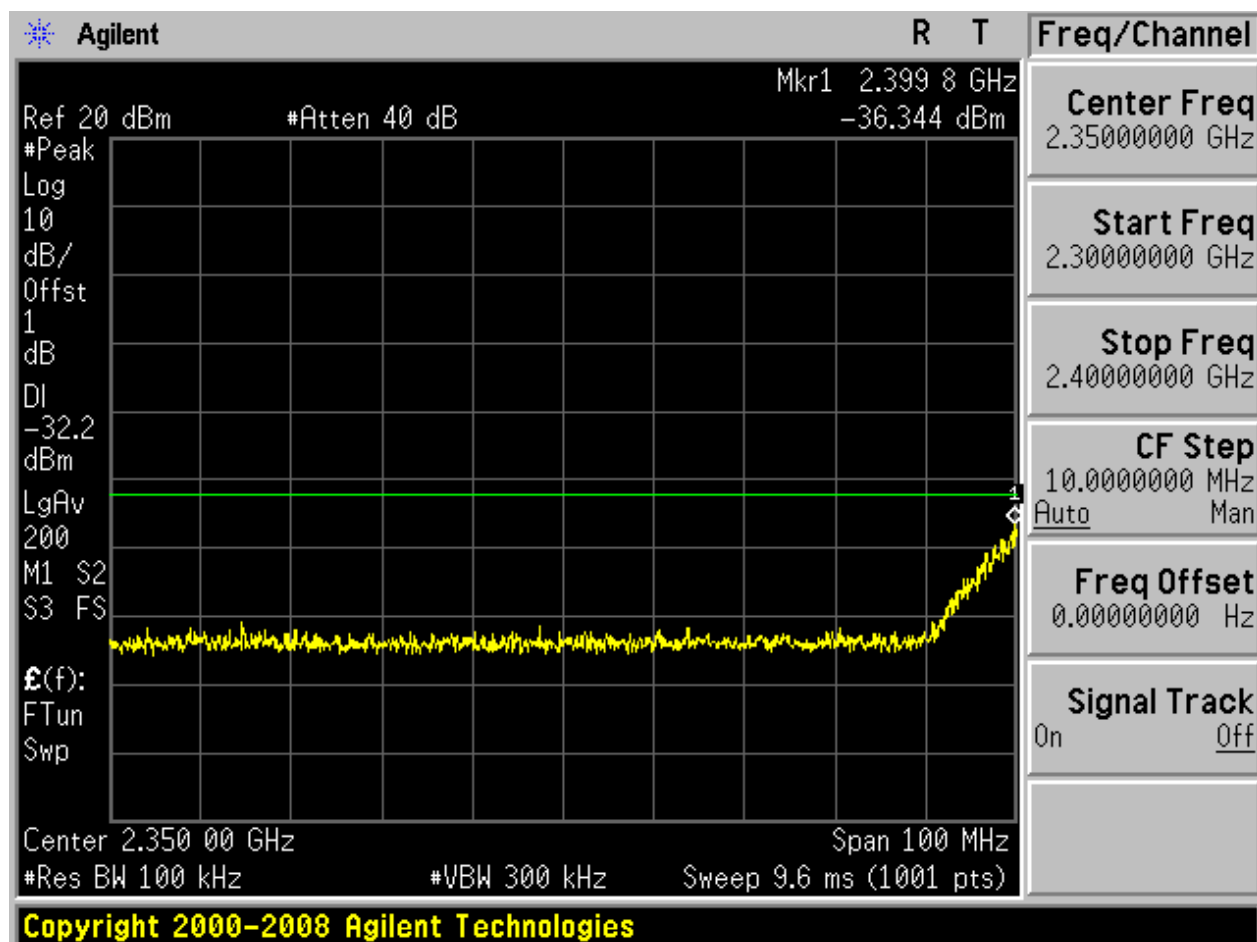


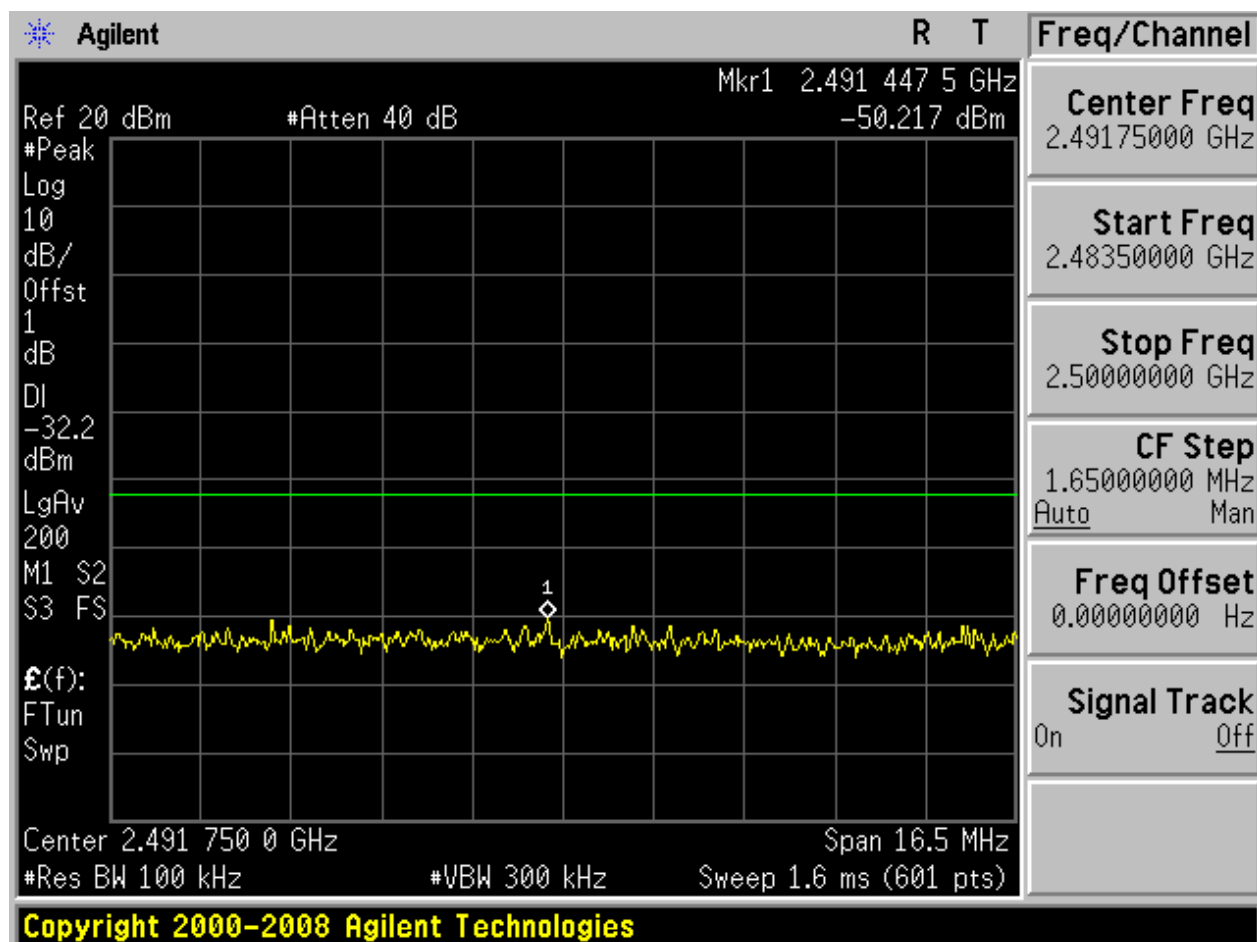
Puw:

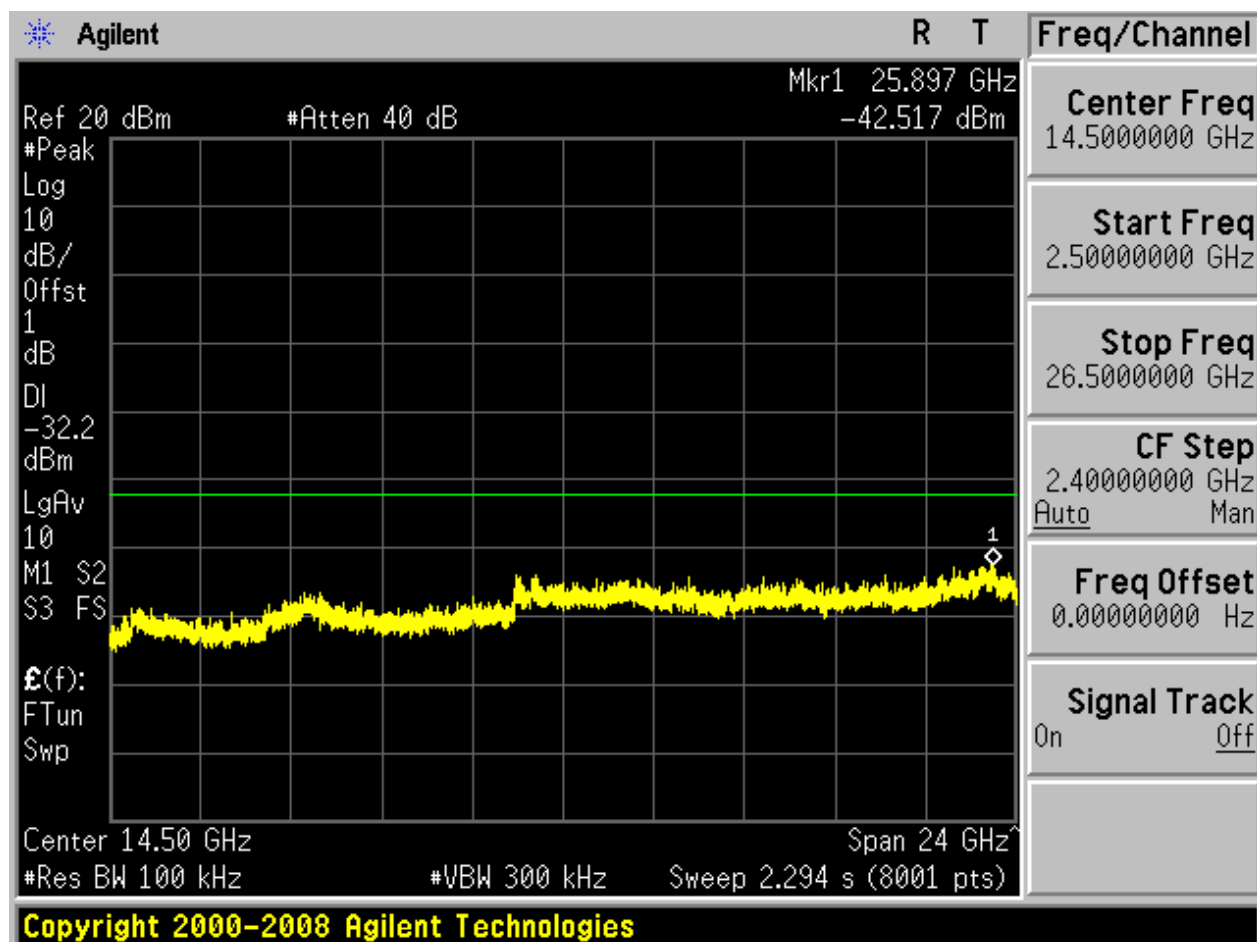








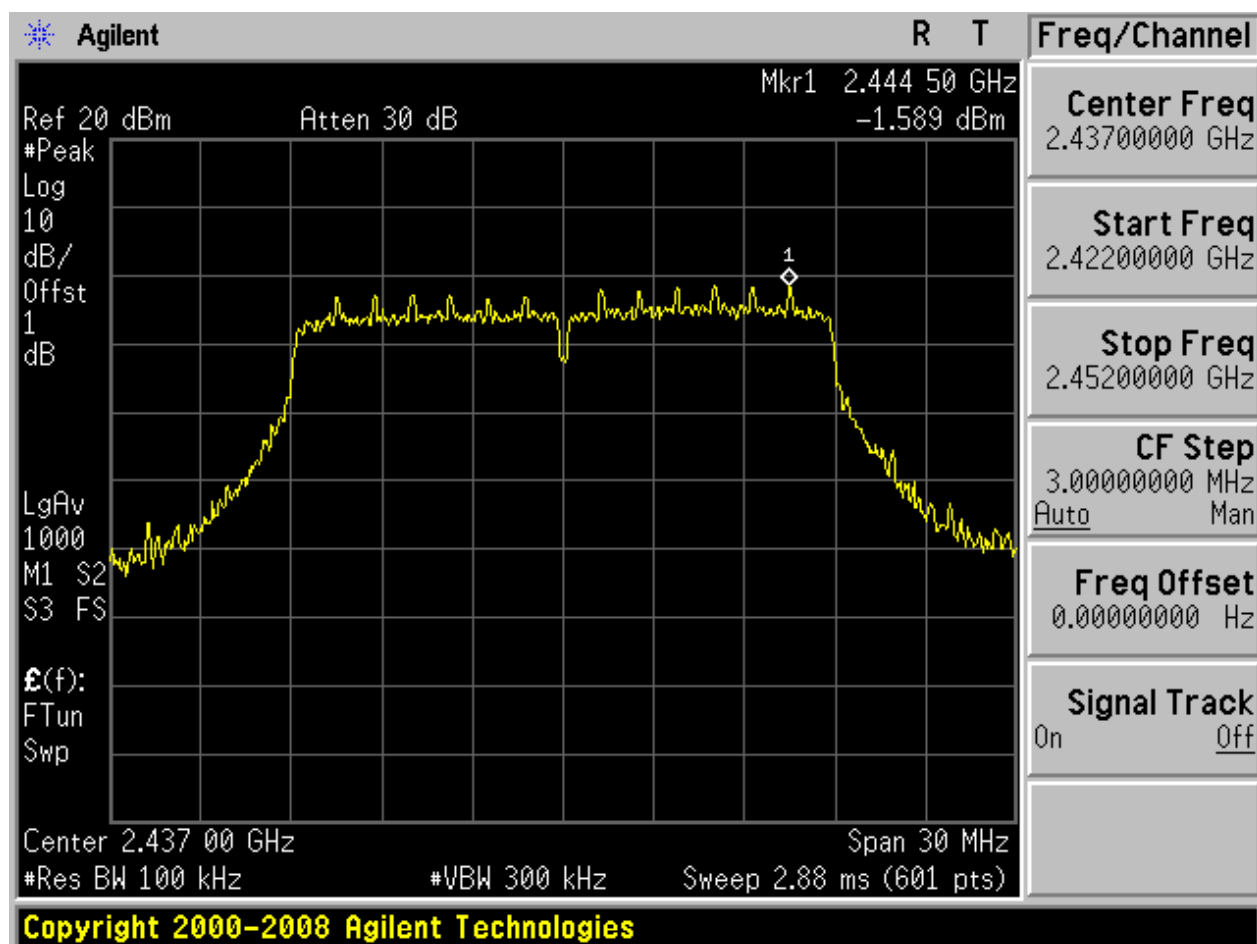






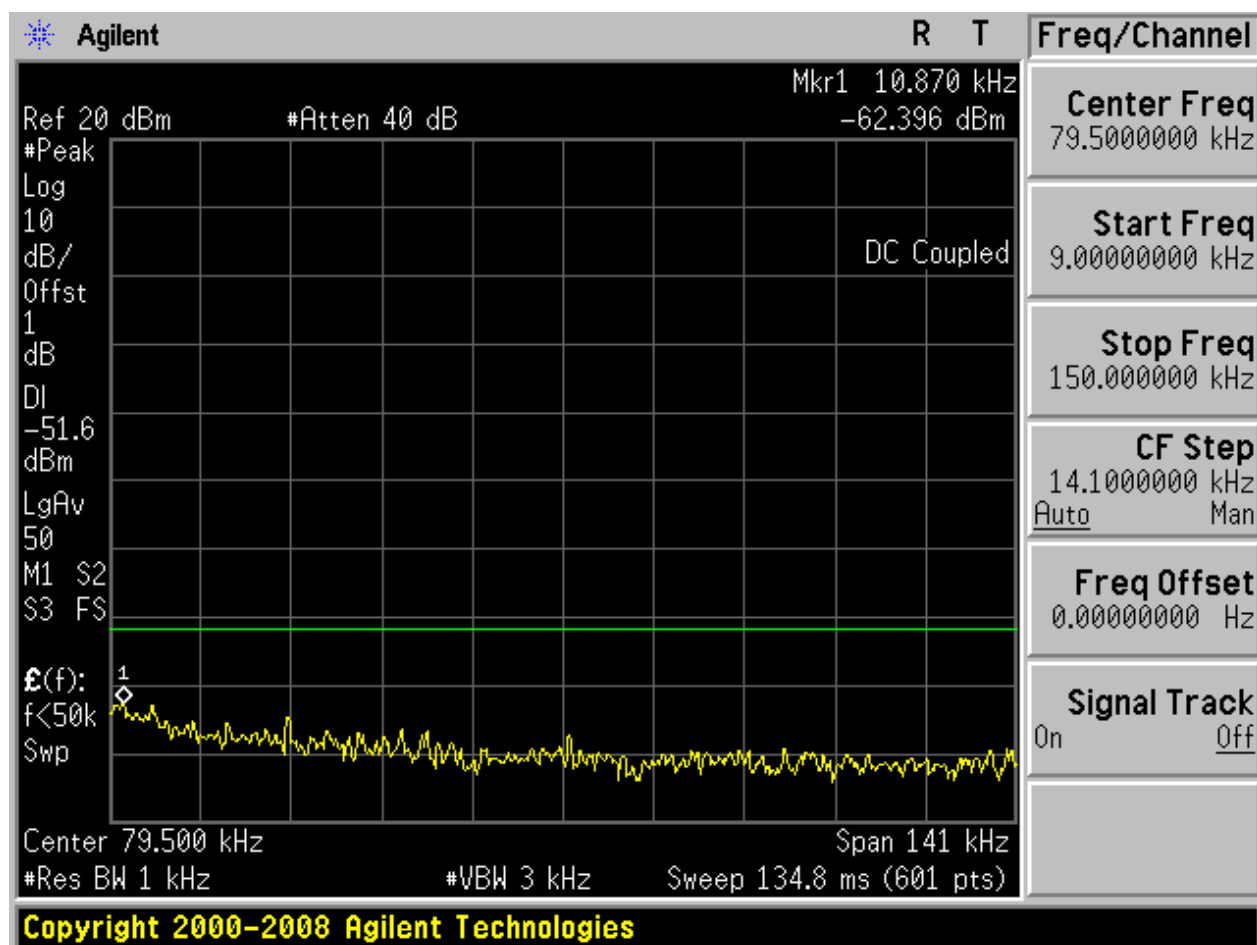
2.15 11N20_M

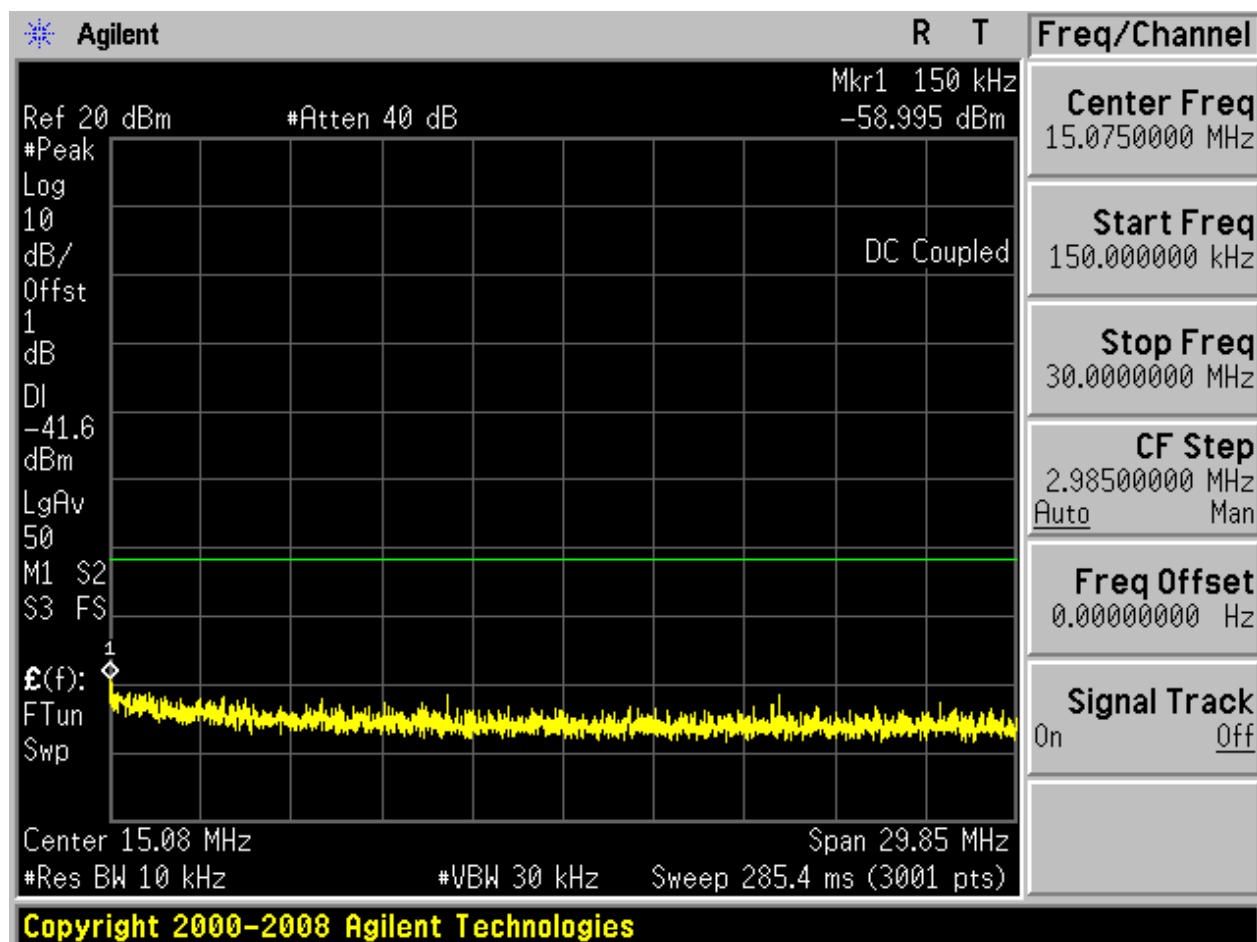
Pref:

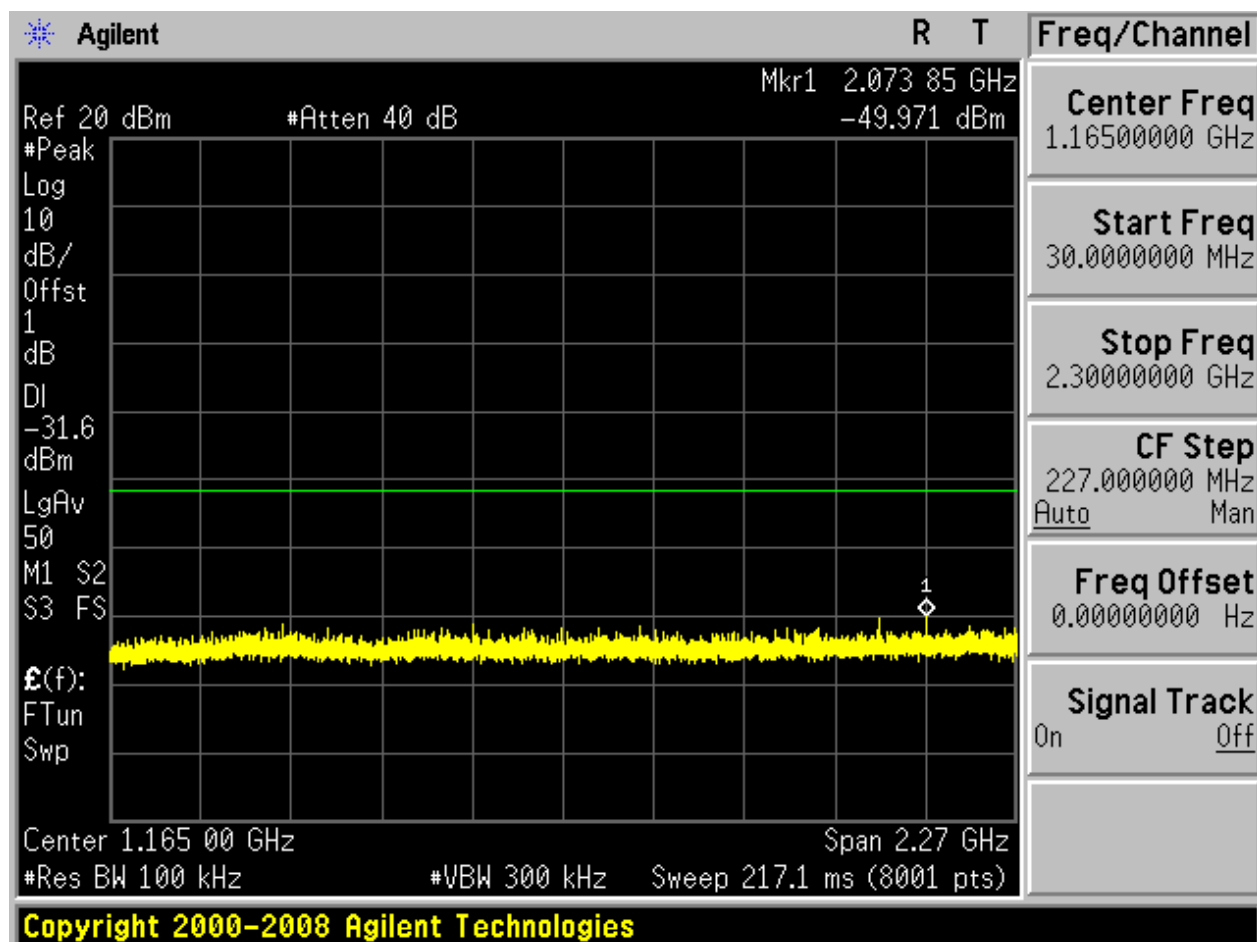


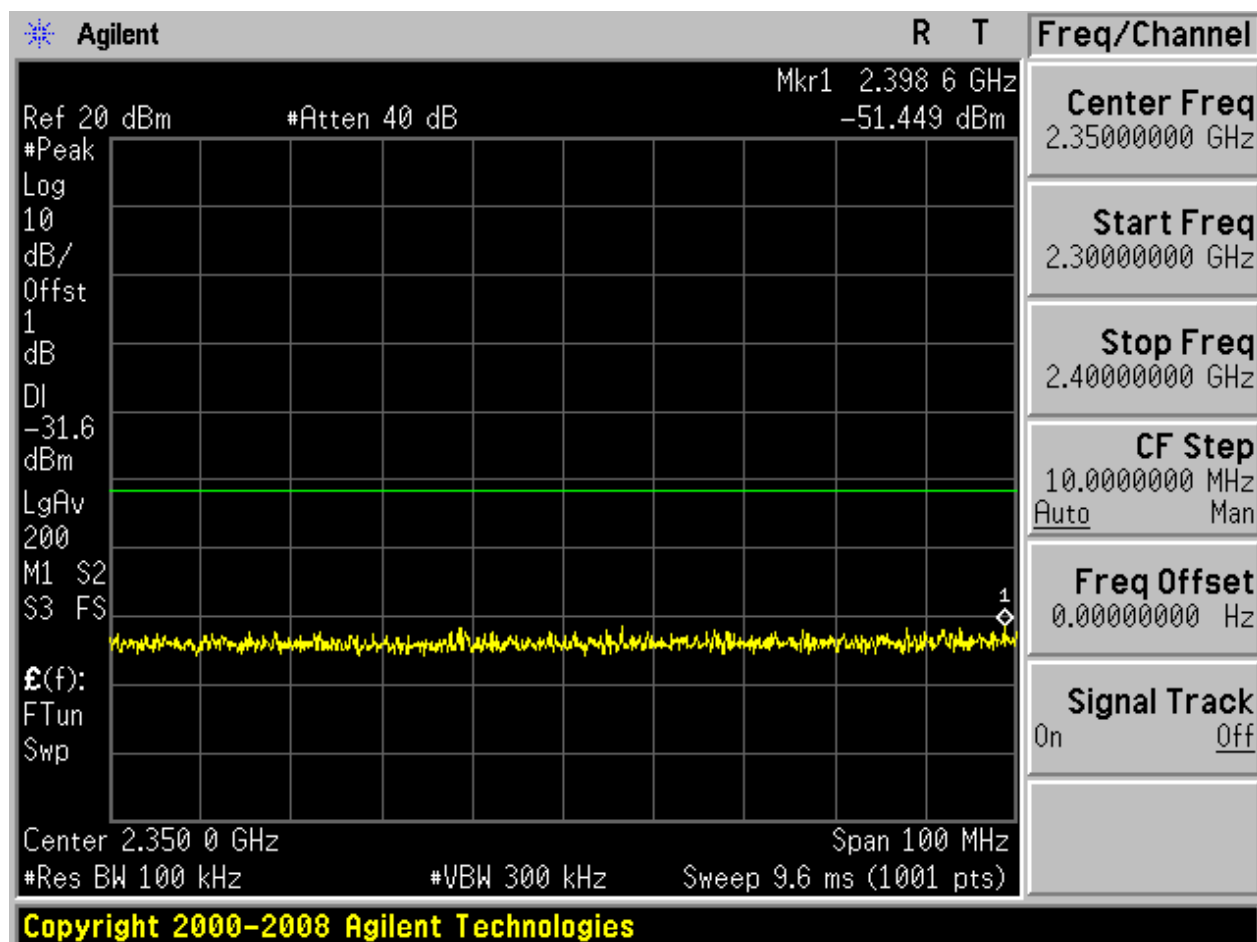


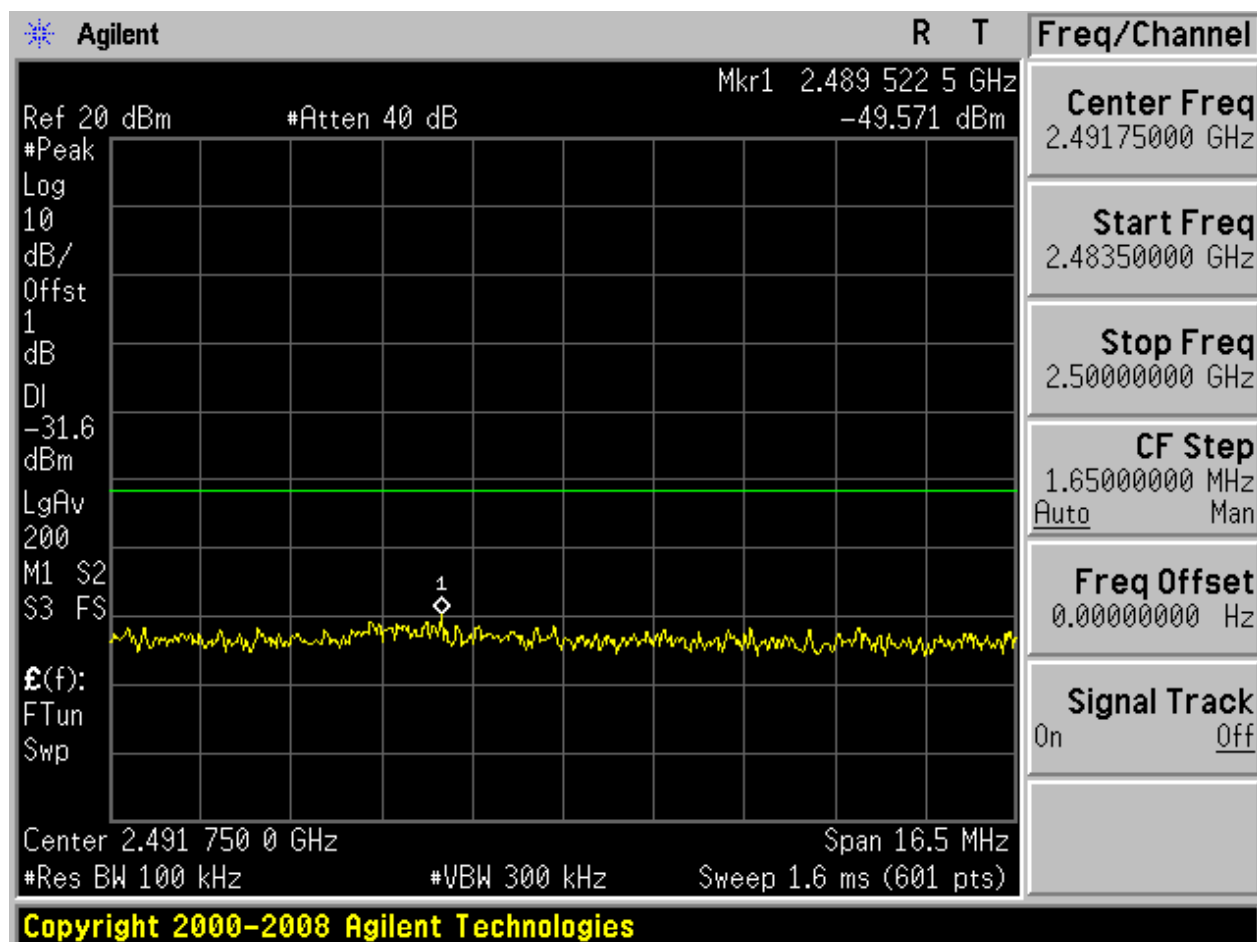
Puw:

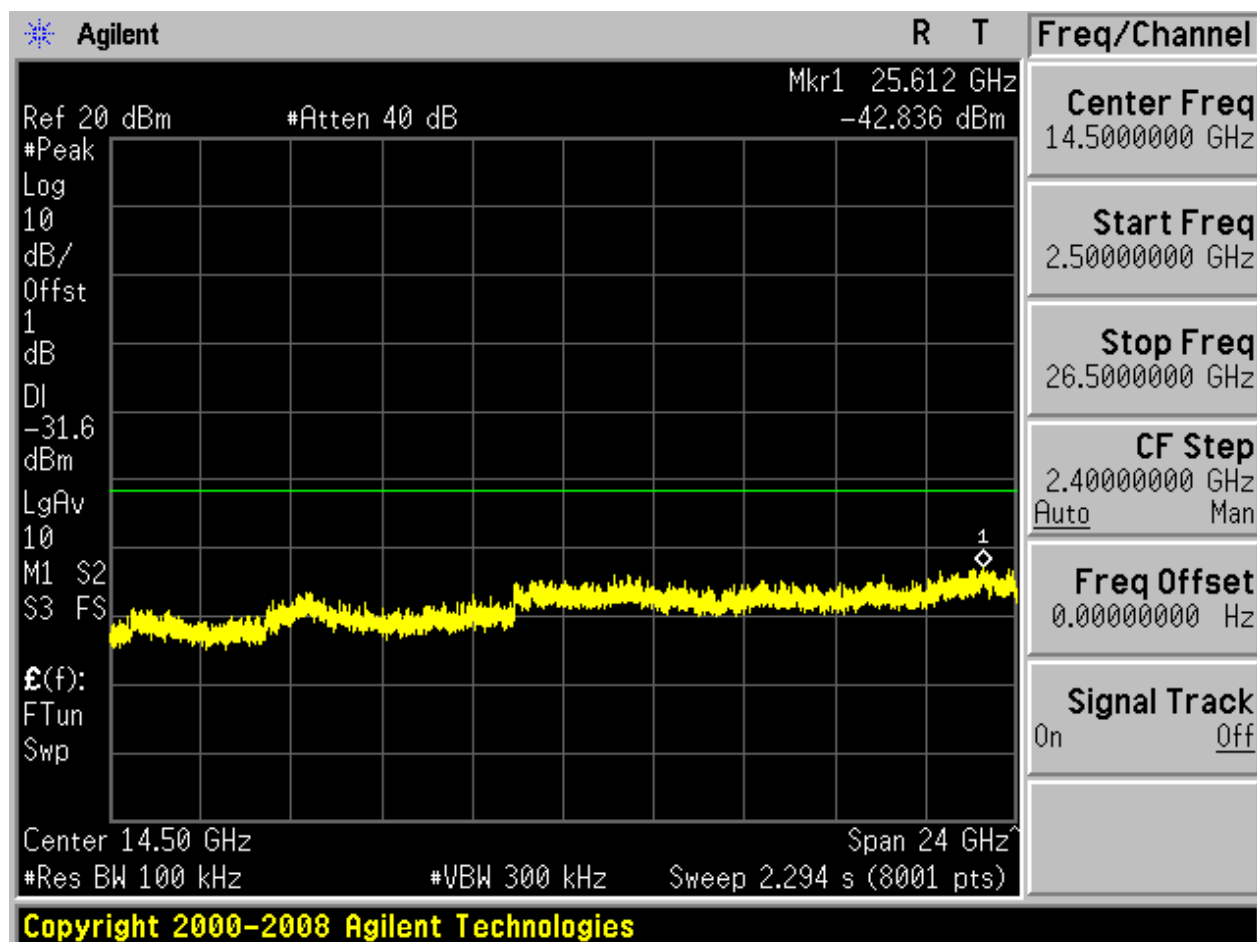






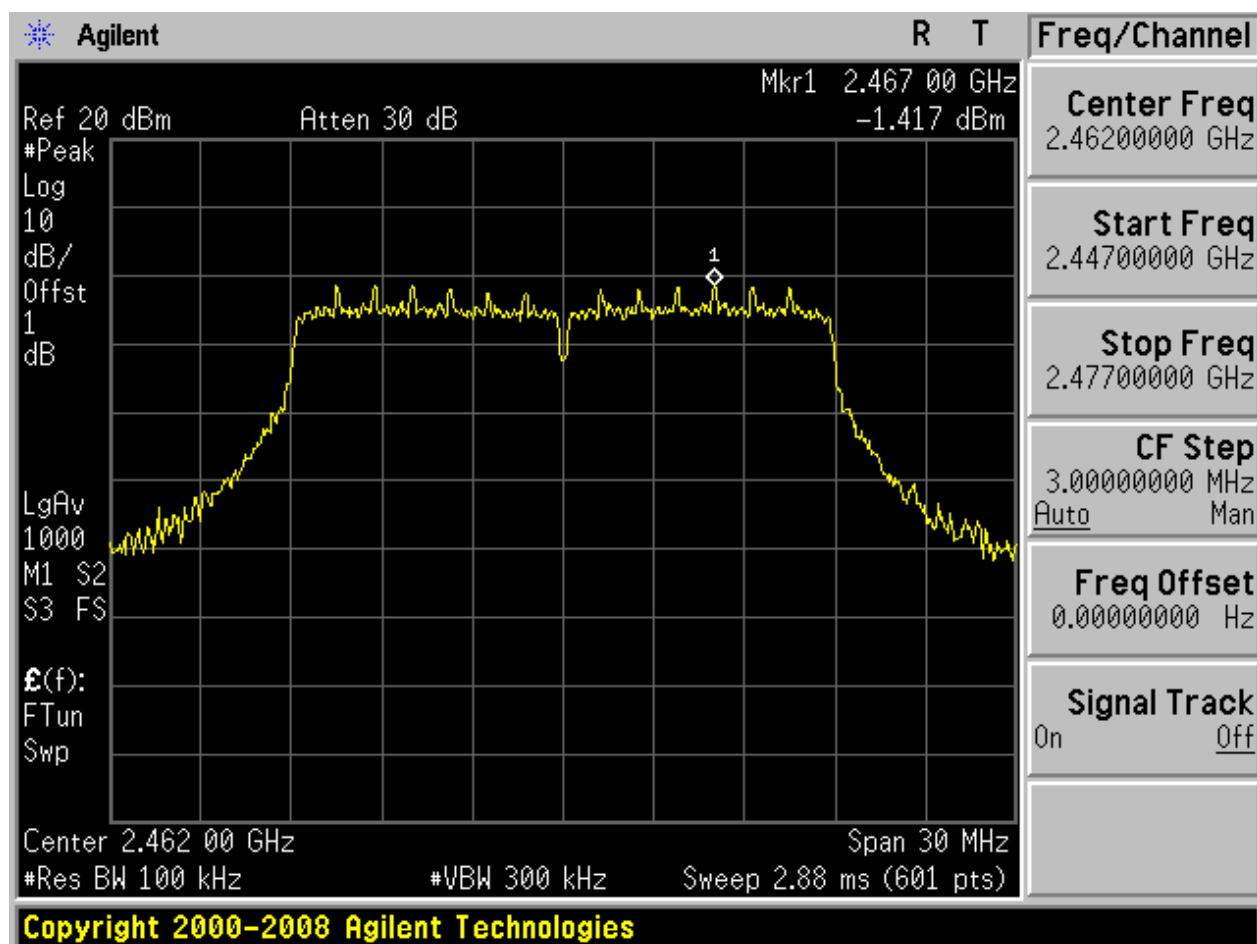






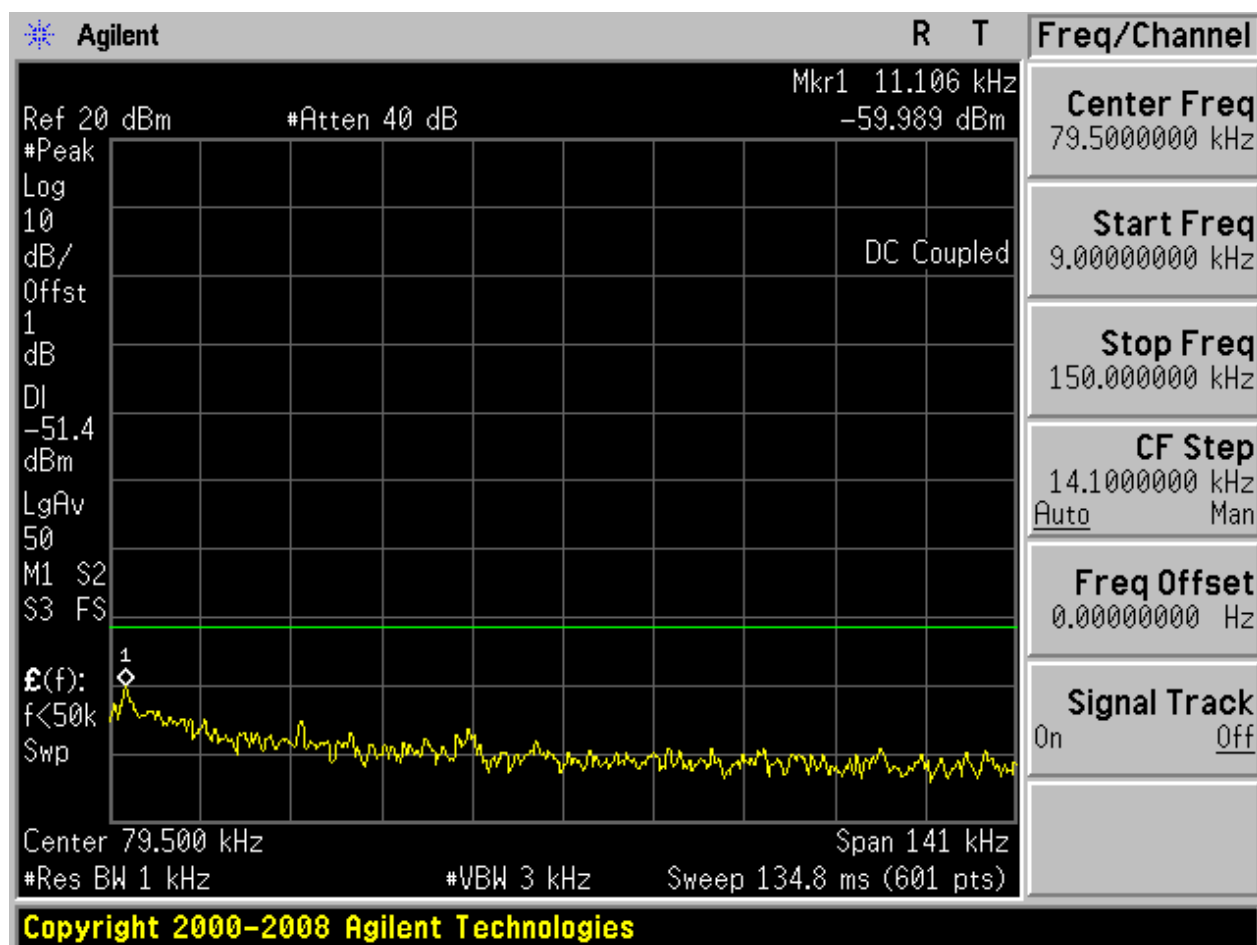
2.17 11N20_H

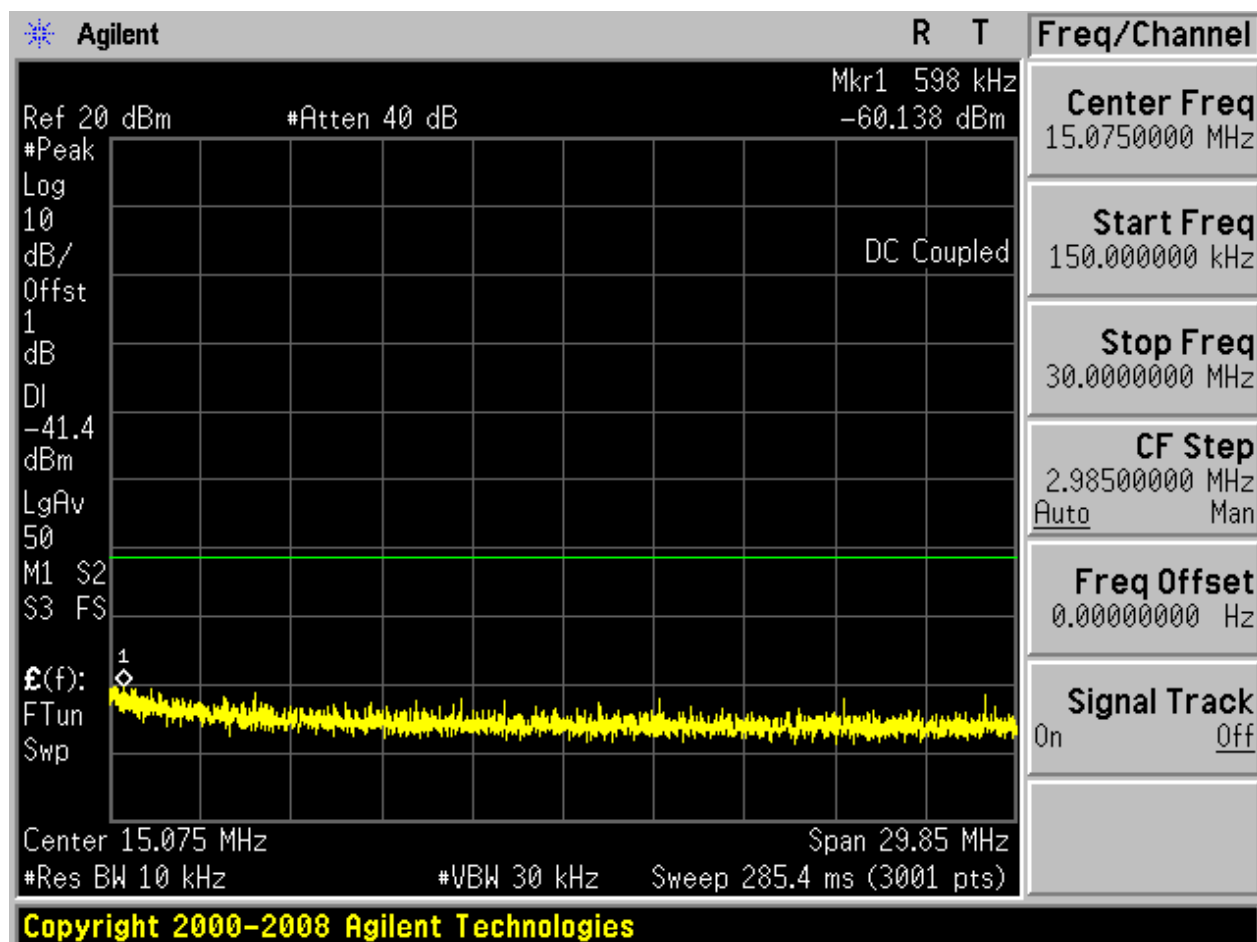
Pref:

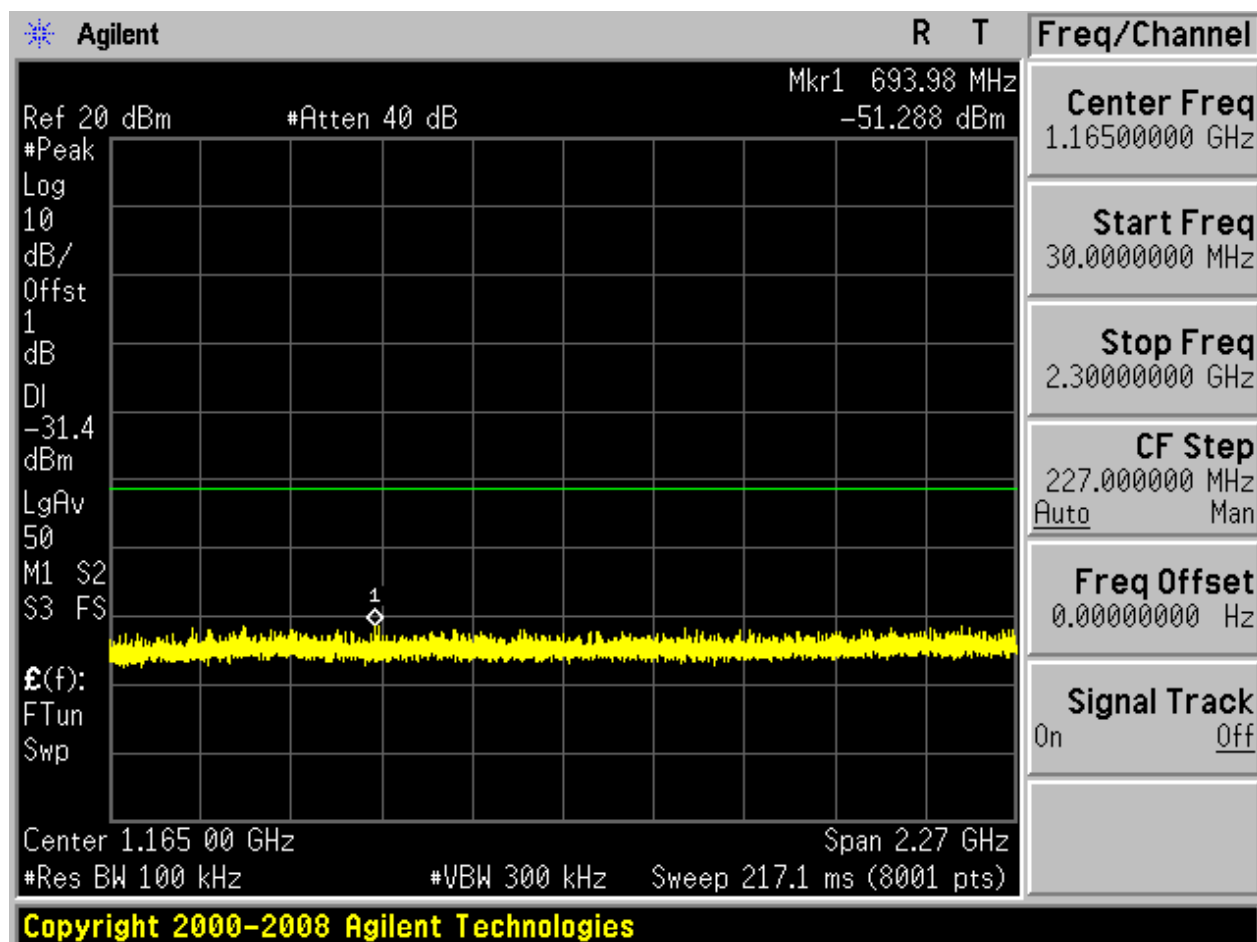


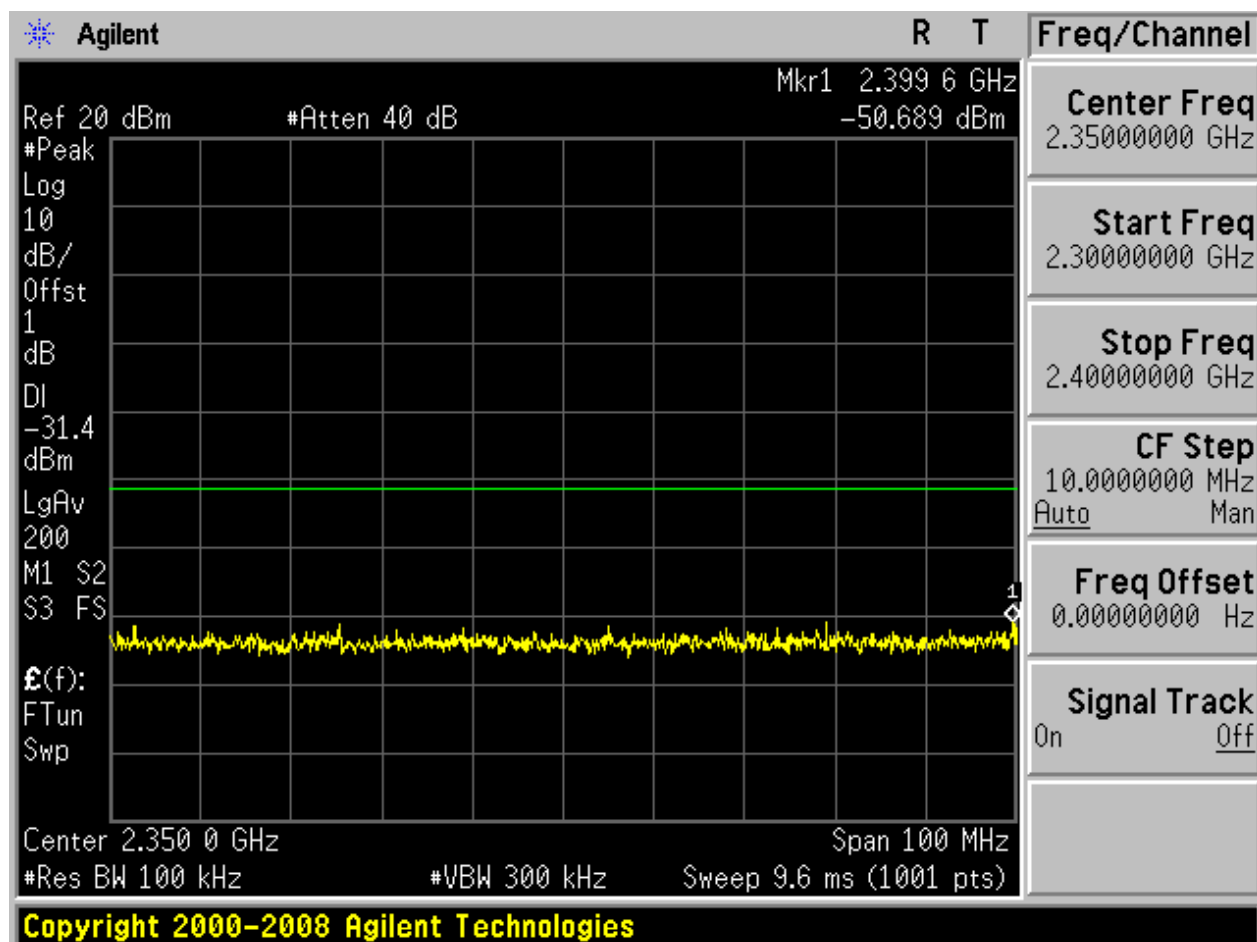


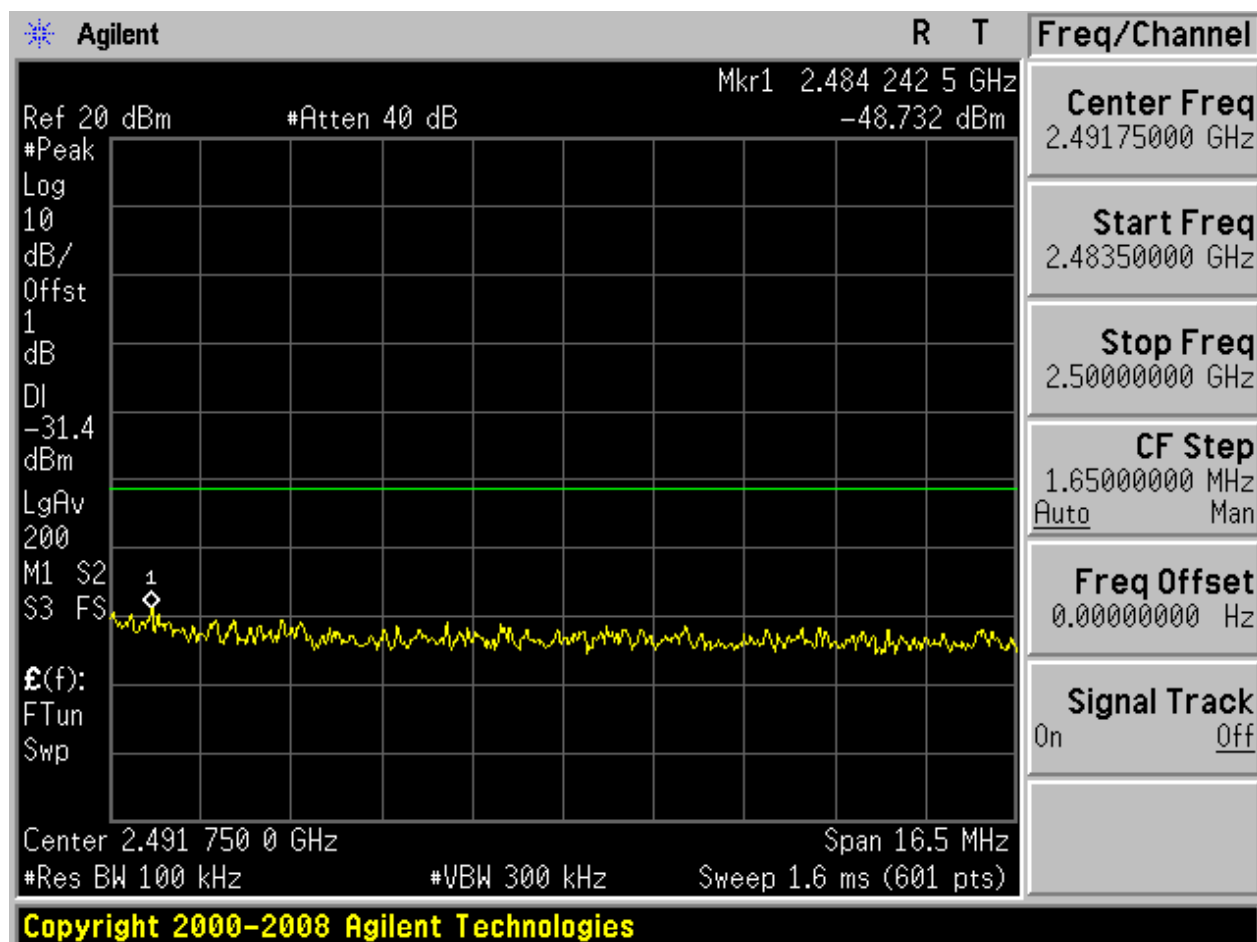
Puw:

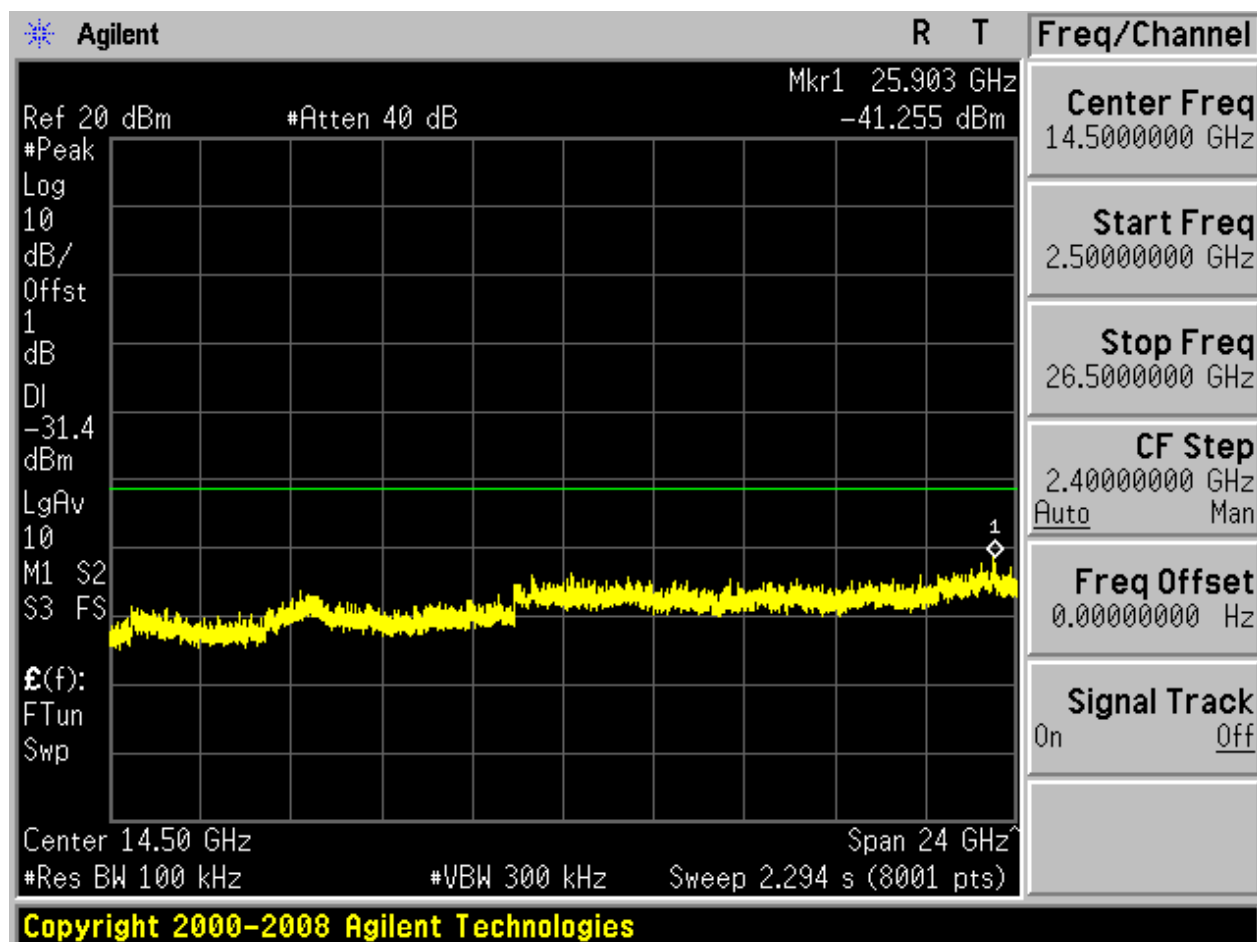












Appendix G: Radiated Spurious Emission & Spurious in Restricted Band

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

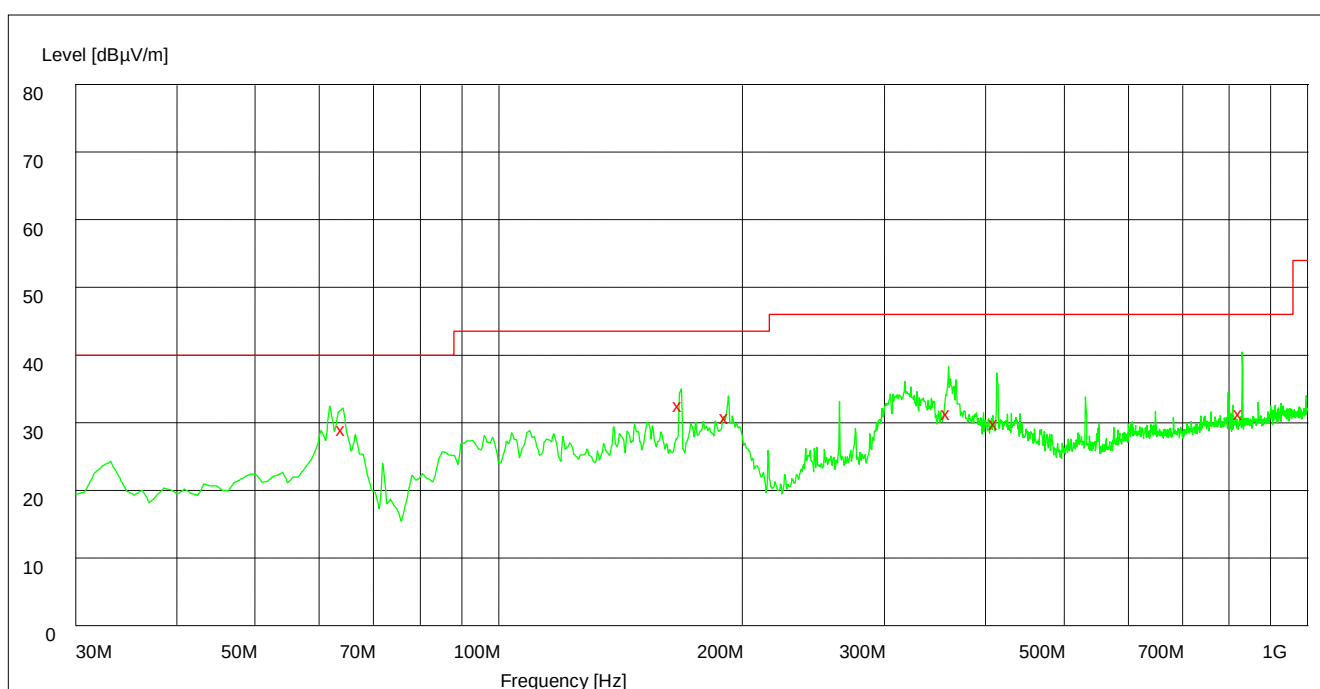
Part 1: Testing Range of “9 kHz to 30MHz”

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.

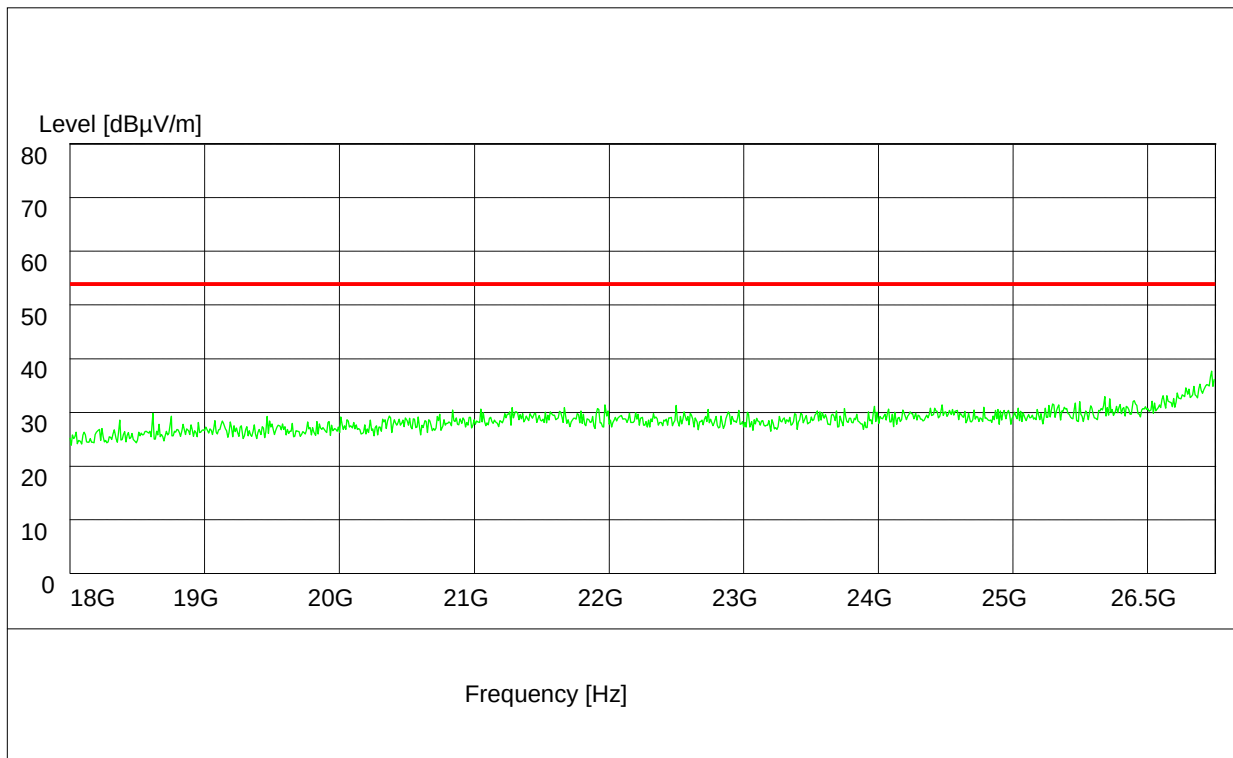
Note 2: **The emissions in this range are mainly from the Platform Device (Notepad PC and its ancillary components).**



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Plarization
64.444000	30.40	11.8	40.0	9.6	100.0	97.00	VERTICAL
168.012000	34.00	10.6	43.5	9.5	100.0	227.00	VERTICAL
192.004000	32.20	12.2	43.5	11.3	100.0	70.00	HORIZONTAL
360.580000	32.80	16.8	46.0	13.2	100.0	230.00	HORIZONTAL
412.928000	31.30	17.8	46.0	14.7	100.0	102.00	VERTICAL
829.156000	32.70	24.0	46.0	13.3	131.0	9.00	HORIZONTAL

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

Note: No peak found in pre- test.

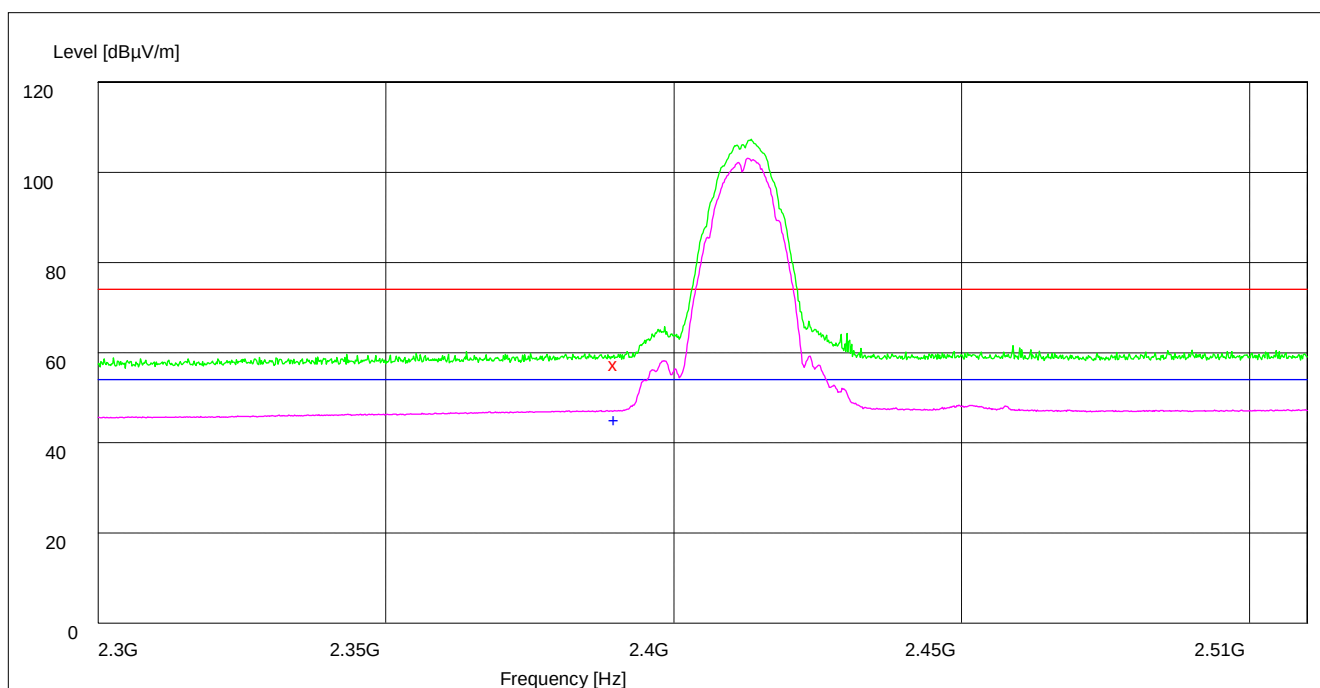


Part 4: Testing Range of “2.3GHz to 2.5GHz”

- 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 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.

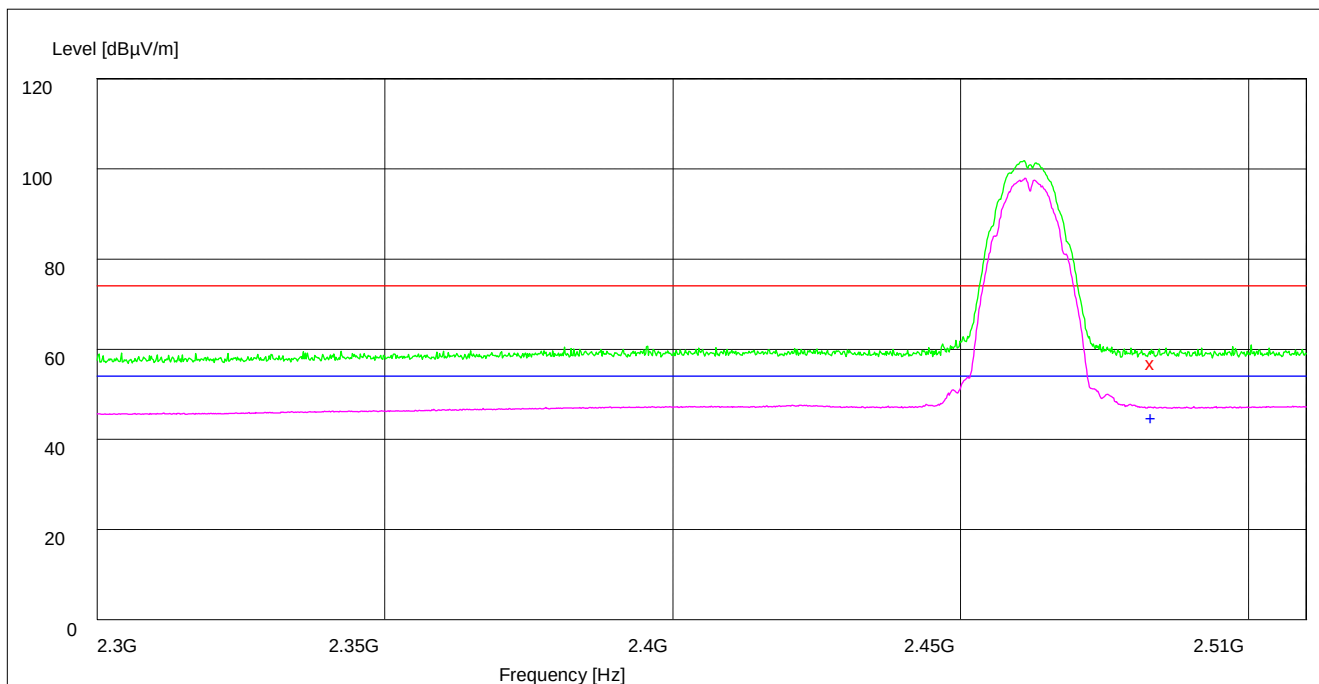
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dB μ V/m	Transd dB	Limit dB μ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	59.50	34.8	74.0	14.5	197.0	251.00	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
2390.000000	47.00	34.8	54.0	7.0	100.0	189.00	HORIZONTAL

Channel 11



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

MEASUREMENT RESULT: PK Detector

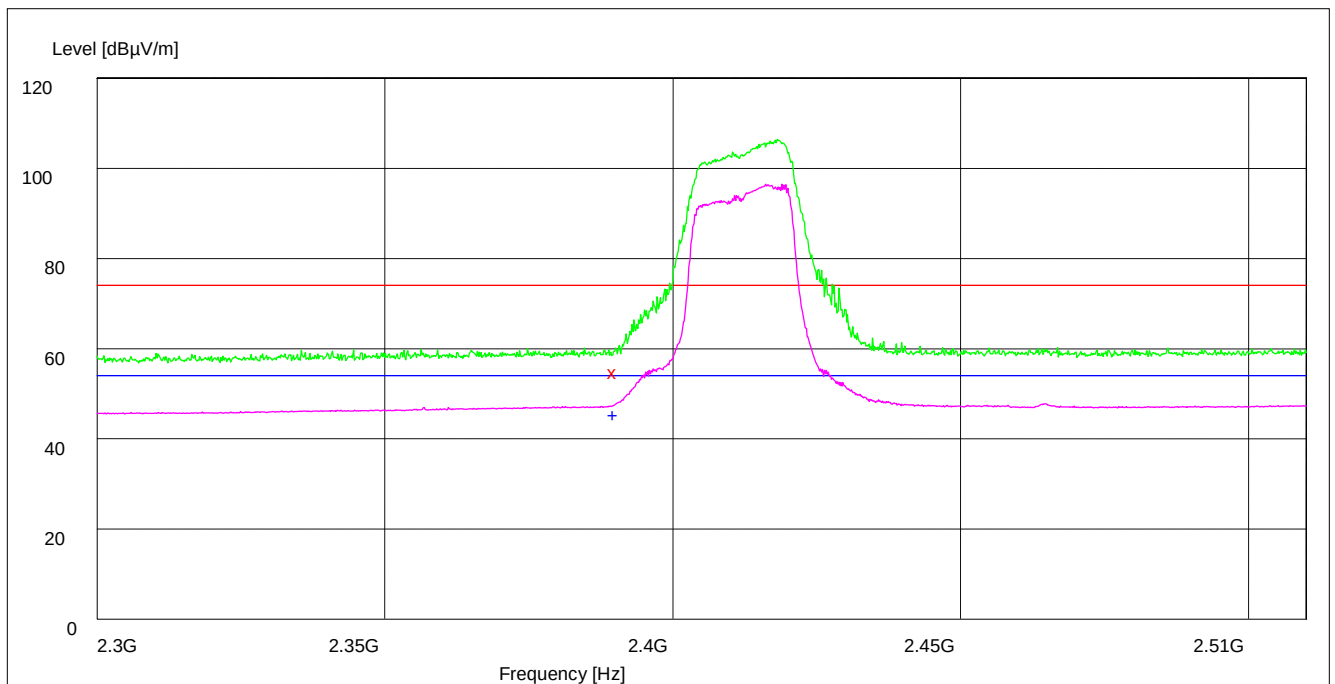
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	58.80	35.1	74.0	15.2	137.0	282.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	46.70	35.1	54.0	7.3	100.0	217.00	HORIZONTAL

Test Mode: 11g

Channel 01



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

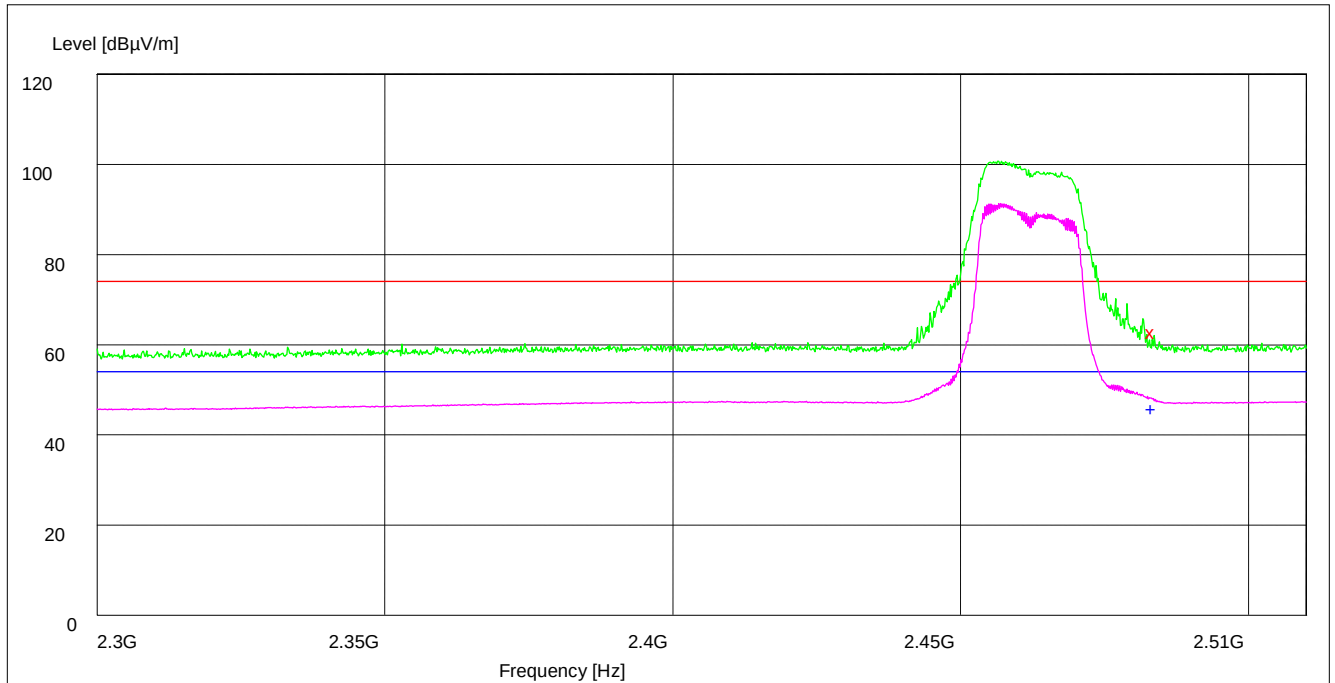
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	56.80	34.8	74.0	17.2	193.0	208.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	47.20	34.8	54.0	6.8	100.0	198.00	HORIZONTAL

Channel 11



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

MEASUREMENT RESULT: PK Detector

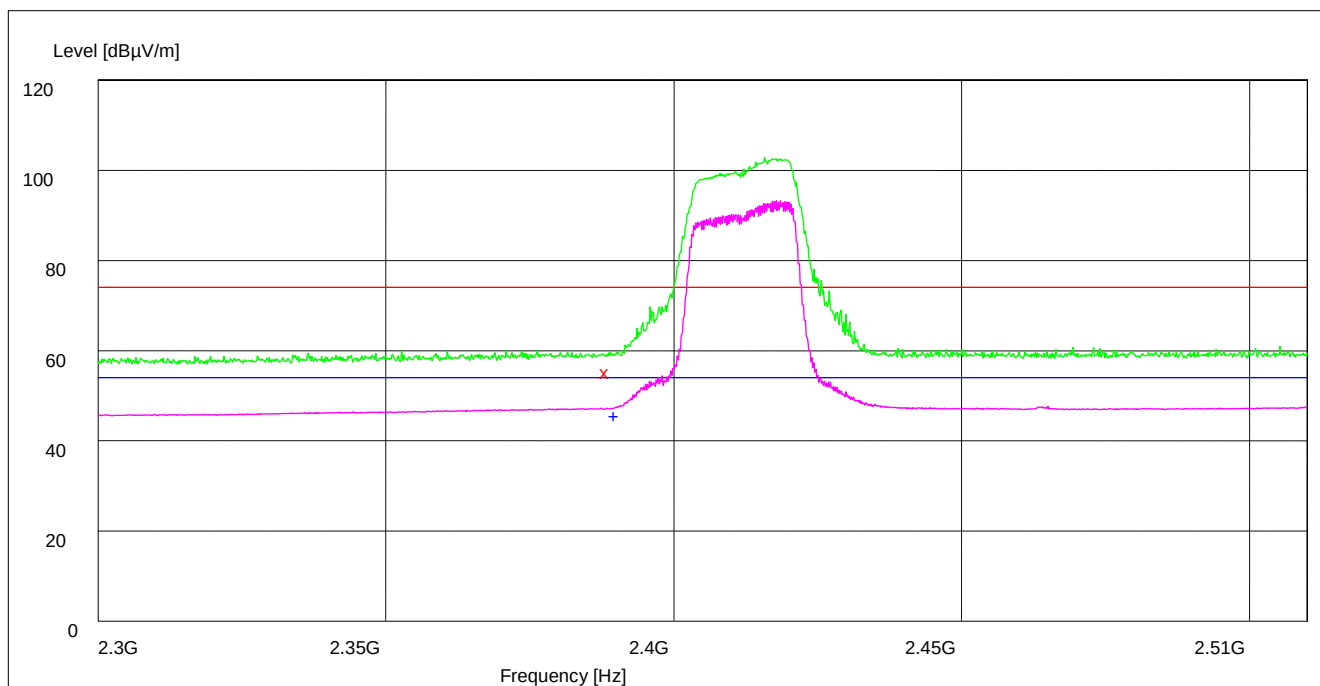
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	64.70	35.1	74.0	9.3	124.0	209.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	47.80	35.1	54.0	4.2	100.0	224.00	HORIZONTAL

Test Mode: 11n

Channel 01



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

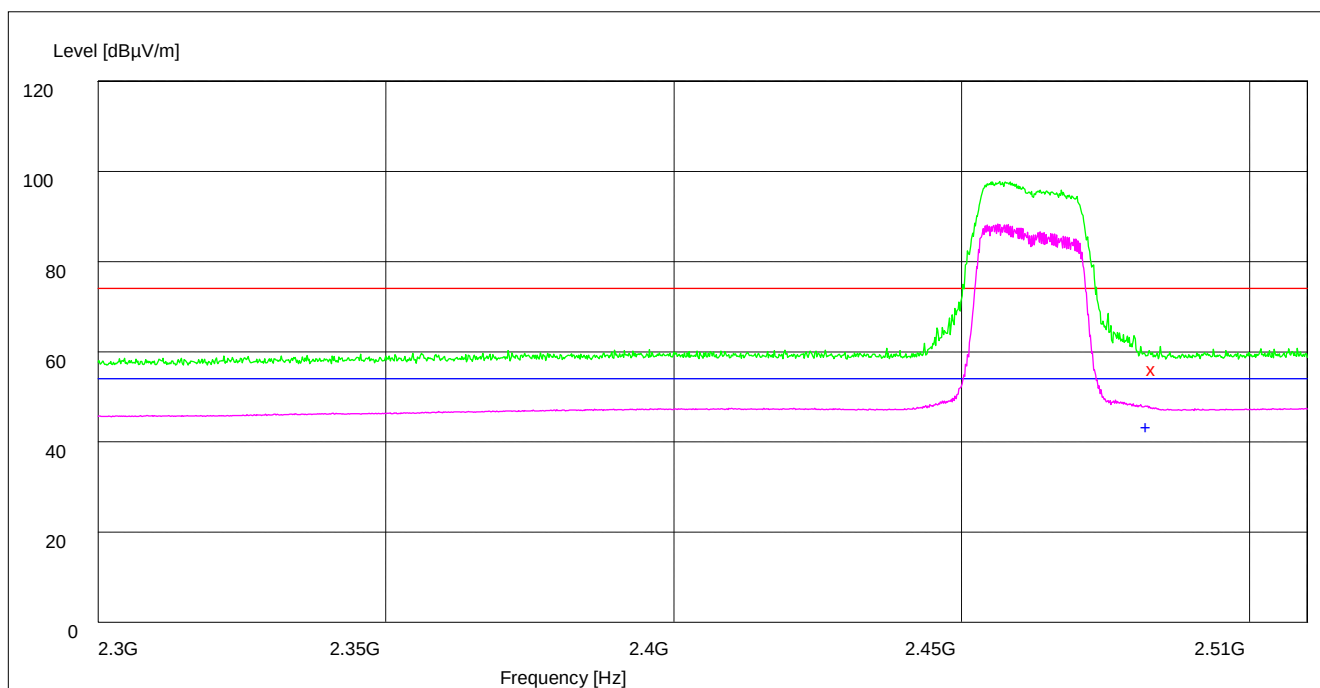
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2388.500000	57.20	34.8	74.0	16.8	121.0	4.00	2388.500000

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	47.60	34.8	54.0	6.4	100.0	218.00	HORIZONTAL

Channel 11



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

MEASUREMENT RESULT: PK Detector

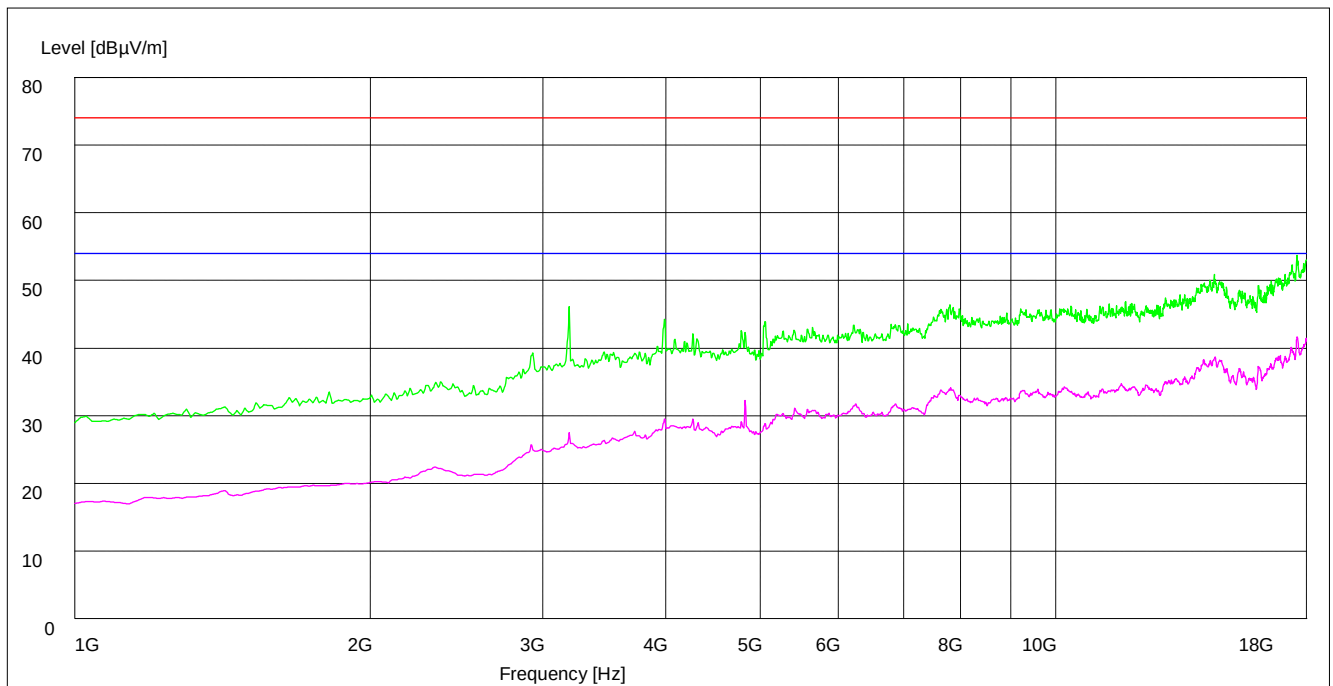
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	58.20	35.1	74.0	15.8	100.0	9.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2482.500000	45.40	35.1	54.0	8.6	100.0	228.00	HORIZONTAL

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

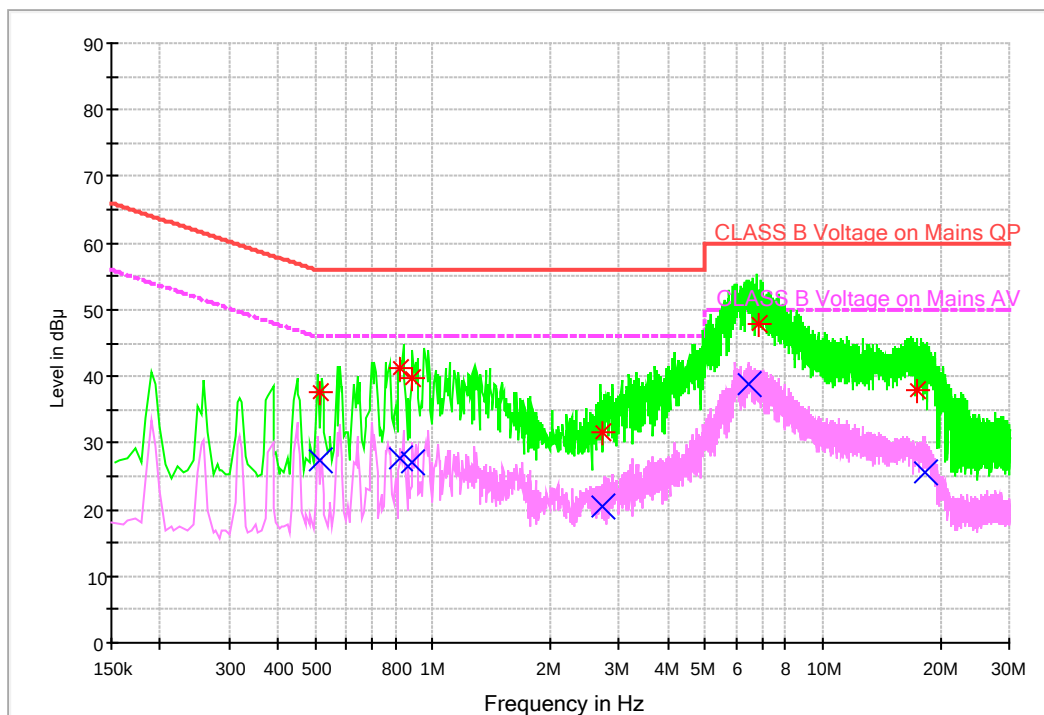


Appendix H: Conducted Emission at Power Port

Note: RBW =9 kHz, VBW = 30 kHz

Channel 6

CLASS B Voltage with ENV216



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBμV	Line	Transd dB	Margin dB	Limit dBμV	PE
0.516045	37.6	N	9.7	18.4	56.0	FLO
0.825634	41.3	N	9.7	14.7	56.0	FLO
0.886616	39.8	N	9.7	16.2	56.0	FLO
2.727892	31.7	N	9.7	24.3	56.0	FLO
6.829754	47.8	N	9.9	12.2	60.0	FLO
17.423626	37.8	L1	10.1	22.2	60.0	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV	Line	Transd dB	Margin dB	Limit dBμV	PE
0.515595	27.5	N	9.7	18.5	46.0	FLO
0.826196	27.8	N	9.7	18.2	46.0	FLO
0.888952	27.2	N	9.7	18.8	46.0	FLO
2.731002	20.5	N	9.7	25.5	46.0	FLO
6.445268	38.7	N	9.8	11.3	50.0	FLO
18.279874	25.5	N	10.1	24.5	50.0	FLO

END