

Appendix A: 20dB Emission Bandwidth (EBW)

1 Result Table

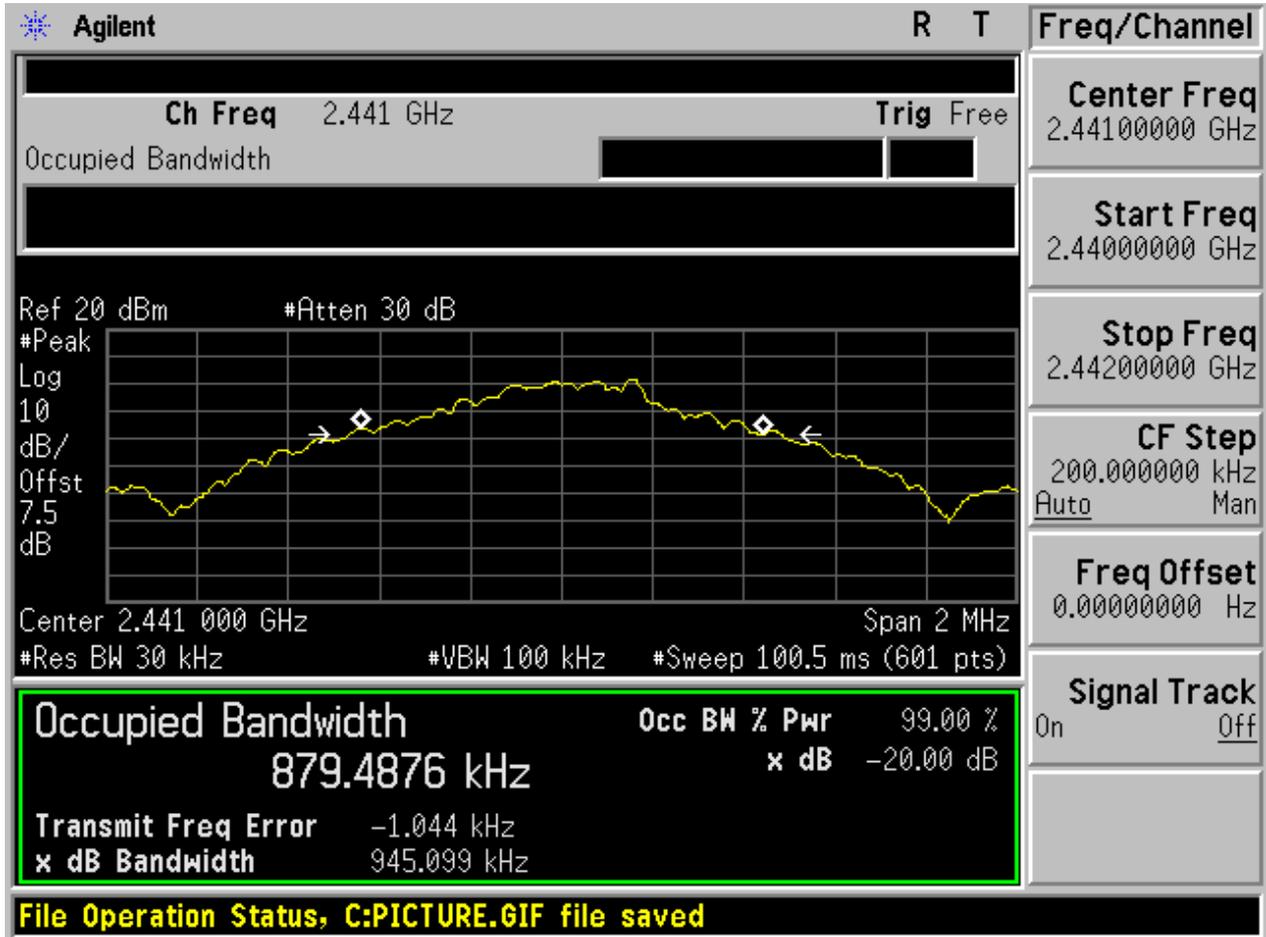
EUT Conf.	EBW [MHz]	Verdict
TM1_DH5_Ch0	0.943	Pass
TM1_DH5_Ch39	0.945	Pass
TM1_DH5_Ch78	0.945	Pass
TM2_2DH5_Ch0	1.284	Pass
TM2_2DH5_Ch39	1.285	Pass
TM2_2DH5_Ch78	1.283	Pass
TM3_3DH5_Ch0	1.275	Pass
TM3_3DH5_Ch39	1.273	Pass
TM3_3DH5_Ch78	1.271	Pass

2 Test Plot

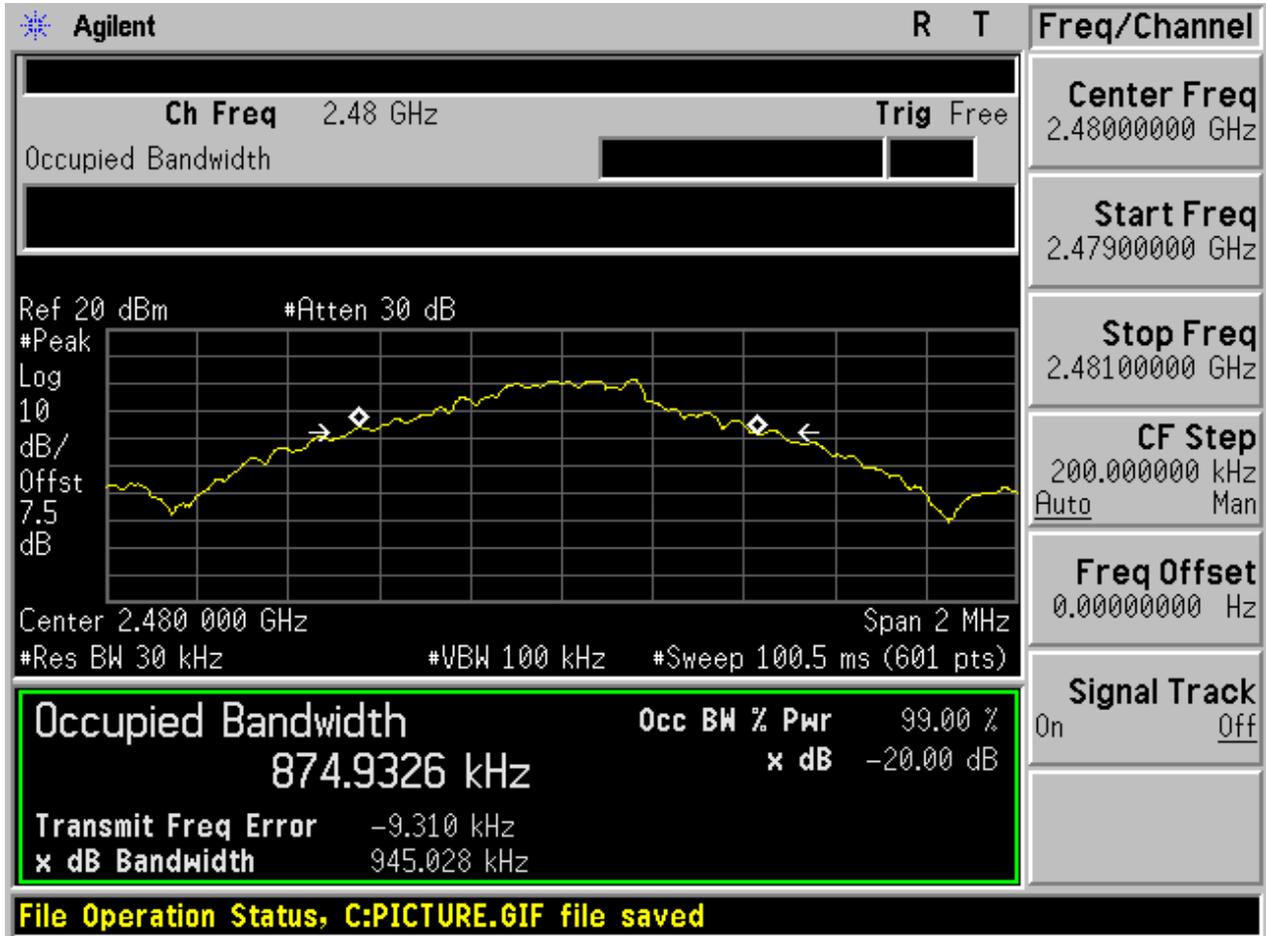
2.1 TM1_DH5_Ch0



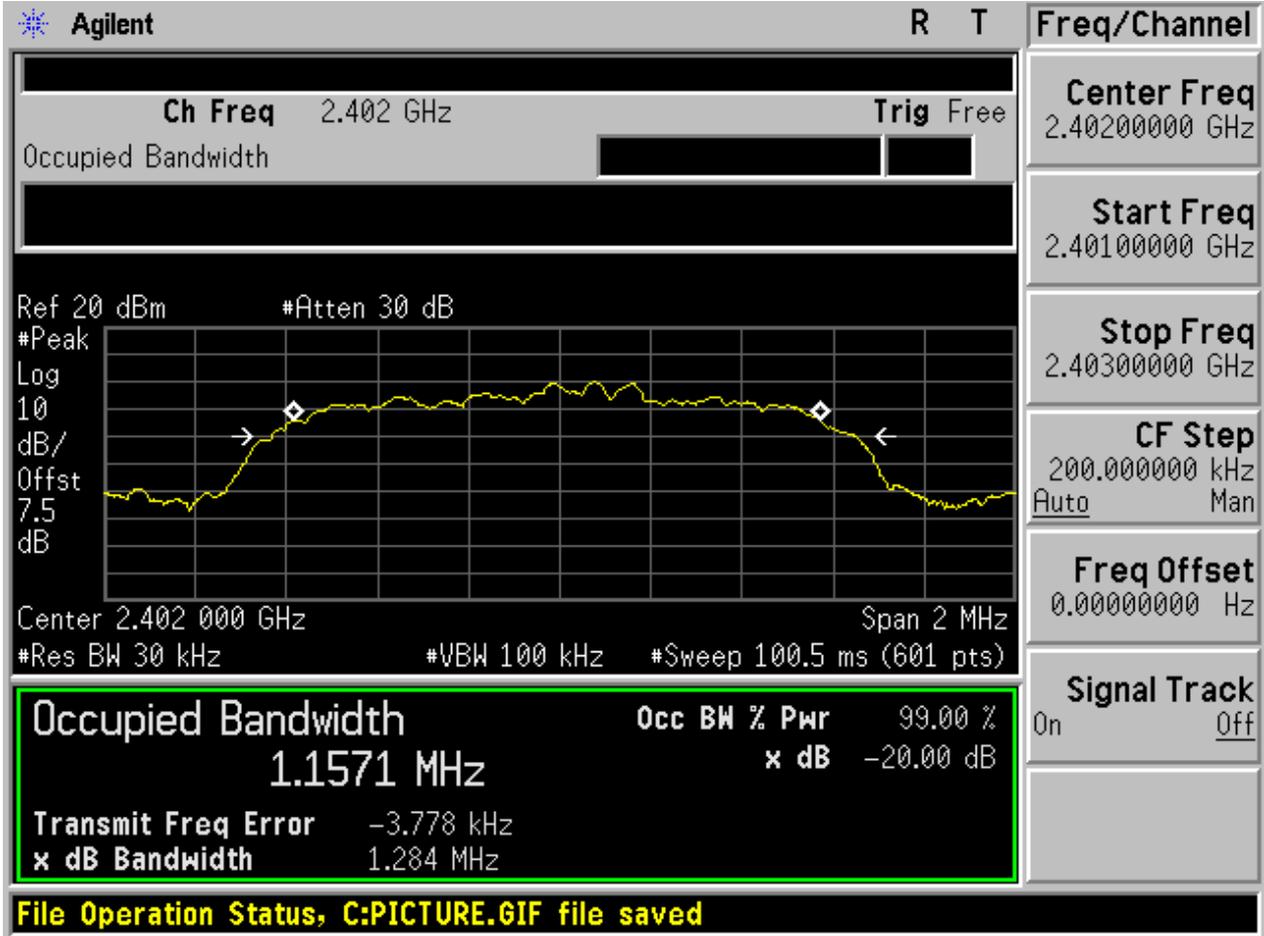
2.2 TM1_DH5_Ch39



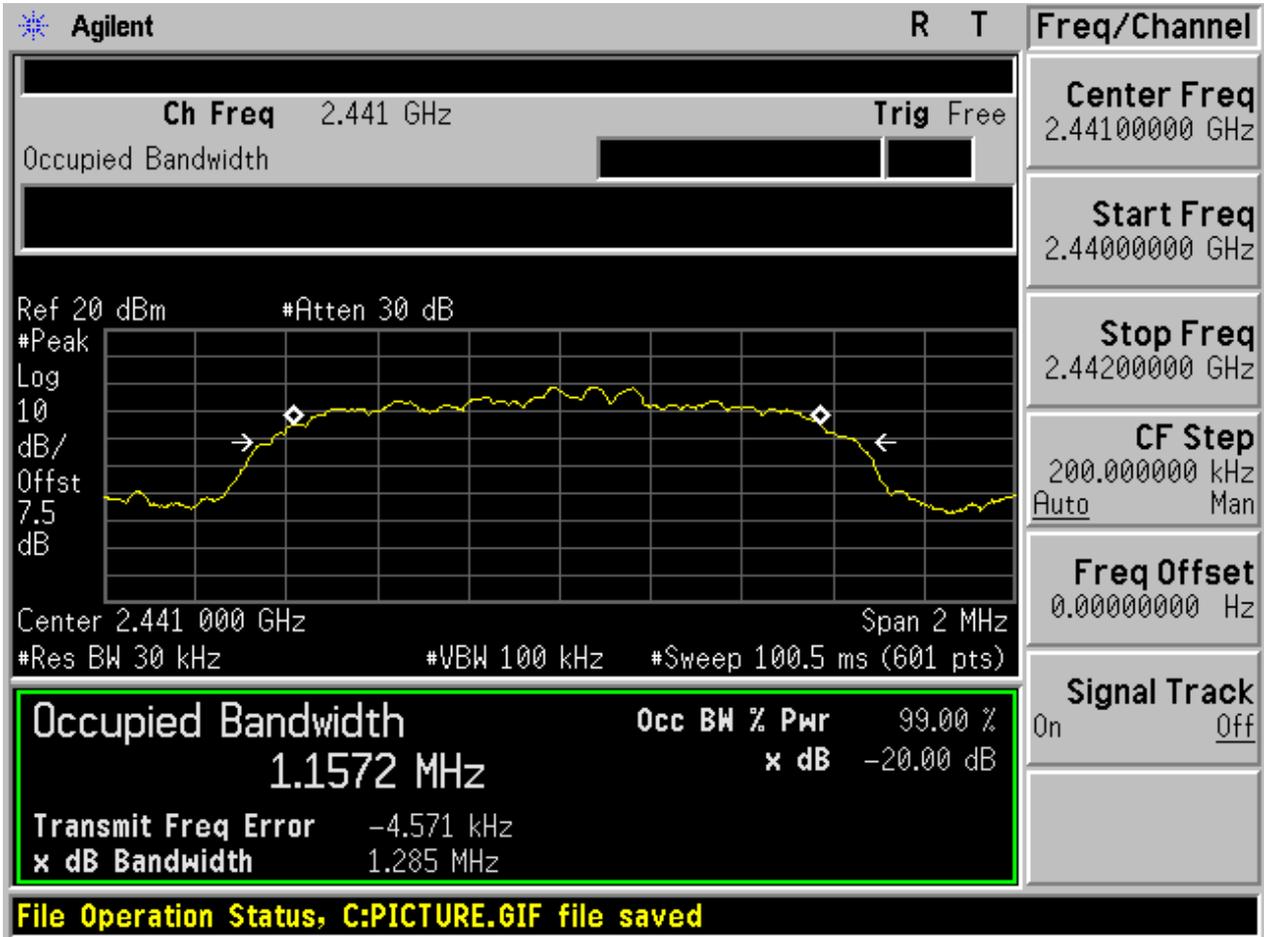
2.3 TM1_DH5_Ch78



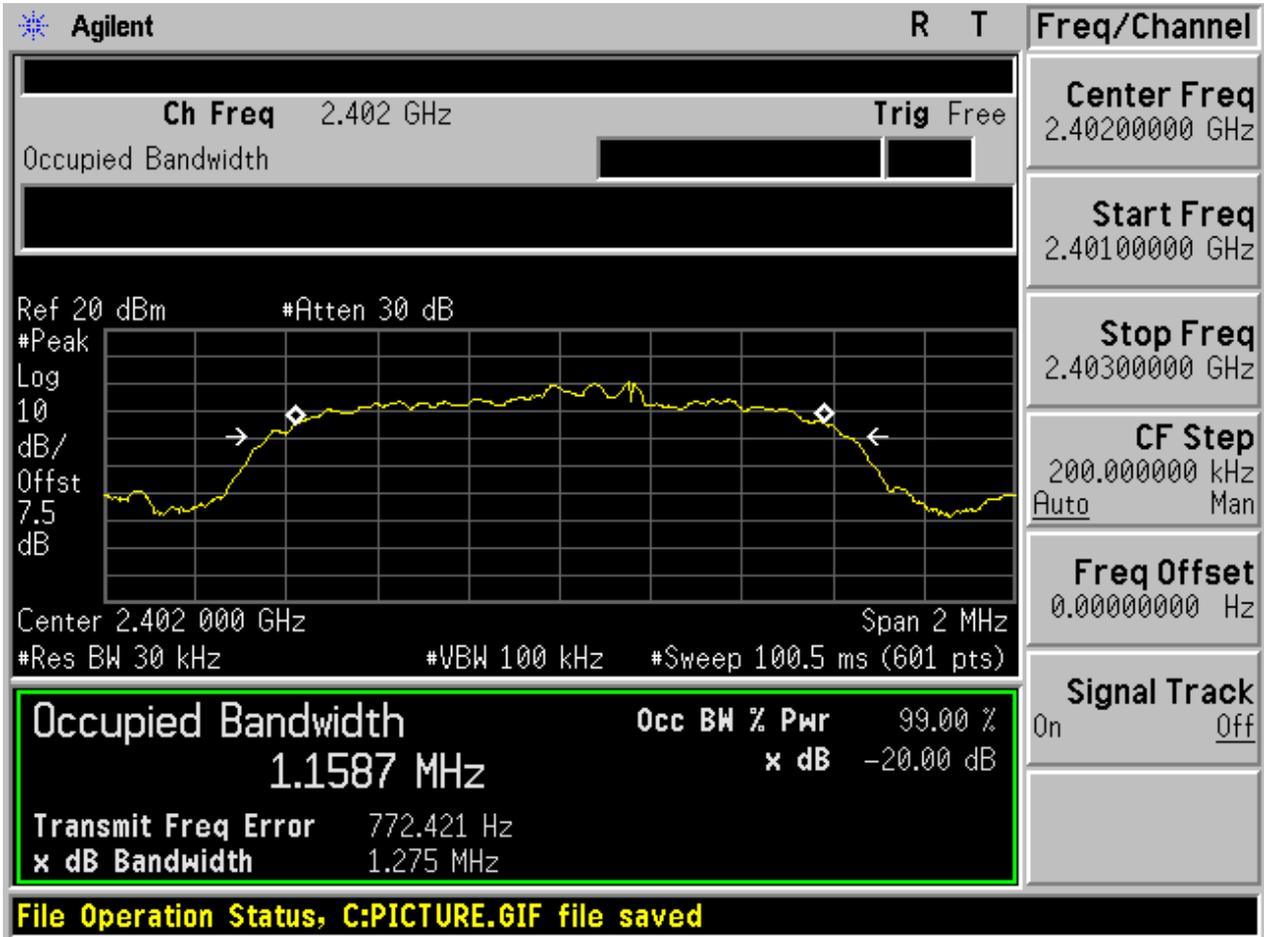
2.4 TM2_2DH5_Ch0



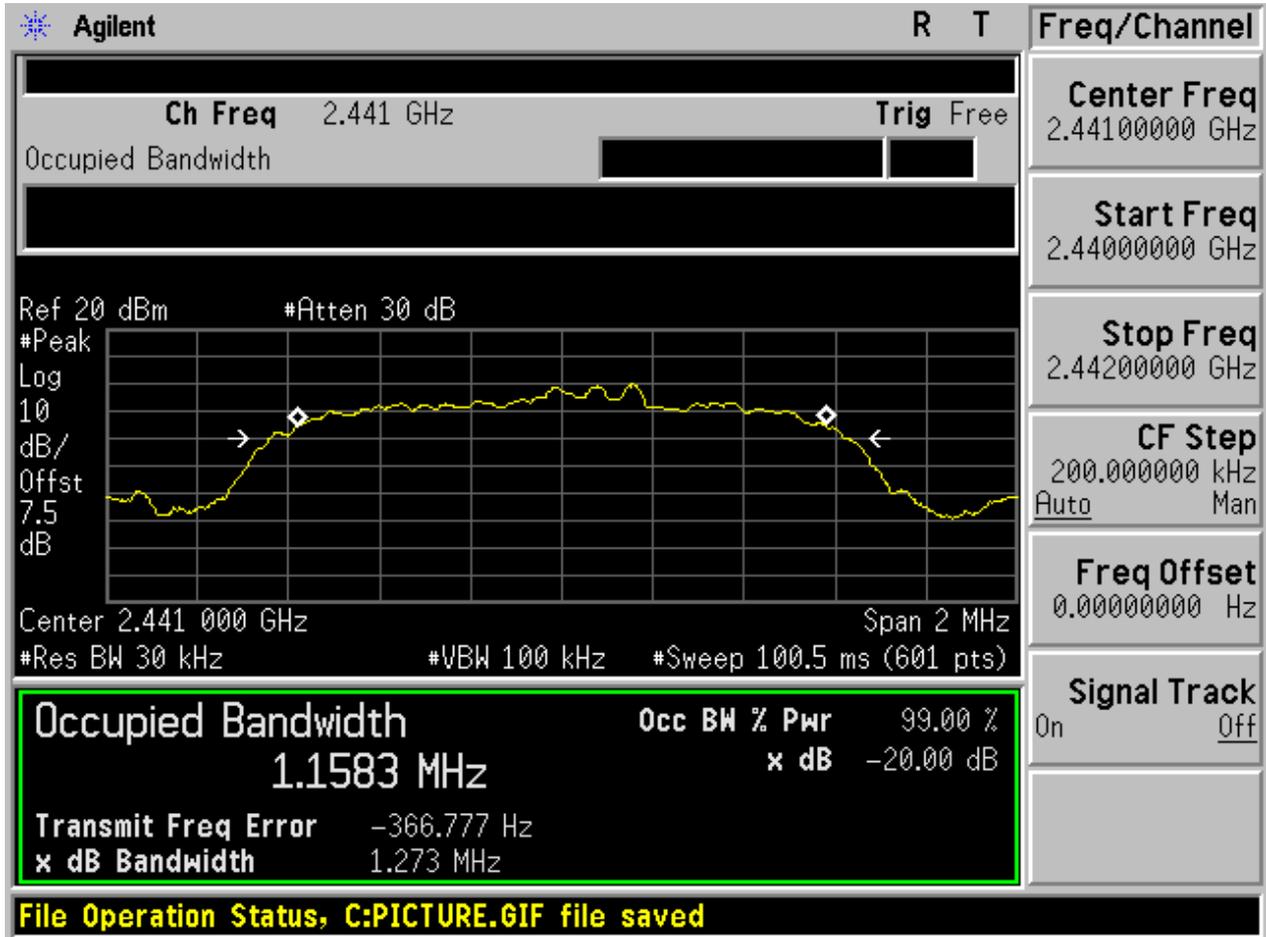
2.5 TM2_2DH5_Ch39



2.7 TM3_3DH5_Ch0



2.8 TM3_3DH5_Ch39



2.9 TM3_3DH5_Ch78

Agilent R T		Freq/Channel
Ch Freq 2.48 GHz Trig Free		Center Freq 2.48000000 GHz
Occupied Bandwidth [Progress Bar]		Start Freq 2.47900000 GHz
Ref 20 dBm #Atten 30 dB		Stop Freq 2.48100000 GHz
#Peak Log 10 dB/Offst 7.5 dB		CF Step 200.000000 kHz Auto Man
		Freq Offset 0.00000000 Hz
Center 2.480 000 GHz Span 2 MHz #Res BW 30 kHz #VBW 100 kHz #Sweep 100.5 ms (601 pts)		Signal Track On Off
Occupied Bandwidth Occ BW % Pwr 99.00 % 1.1584 MHz x dB -20.00 dB		
Transmit Freq Error -4.667 kHz x dB Bandwidth 1.271 MHz		
File Operation Status, C:PICTURE.GIF file saved		

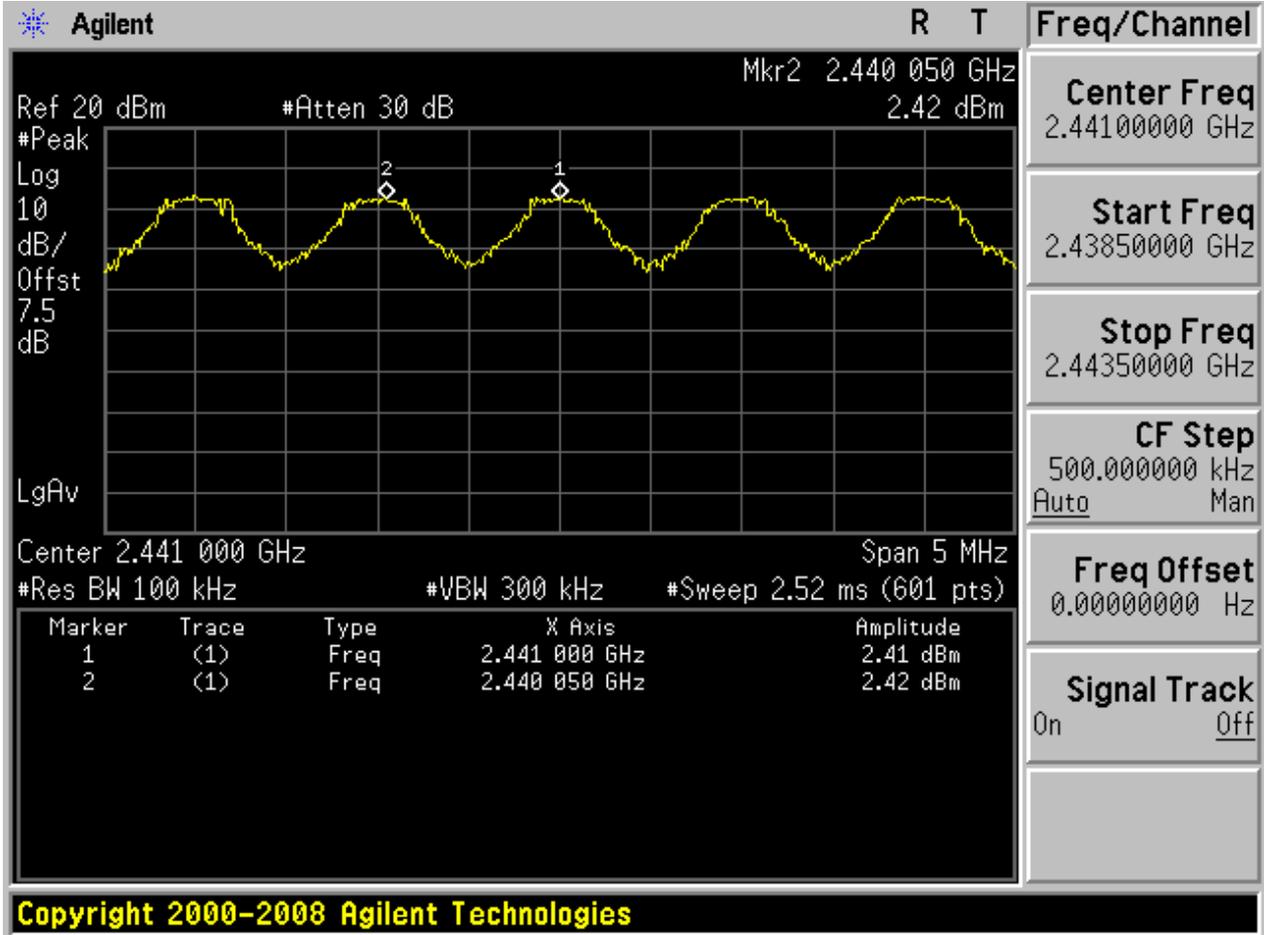
Appendix B: Carrier Frequency Separation

1 Result Table

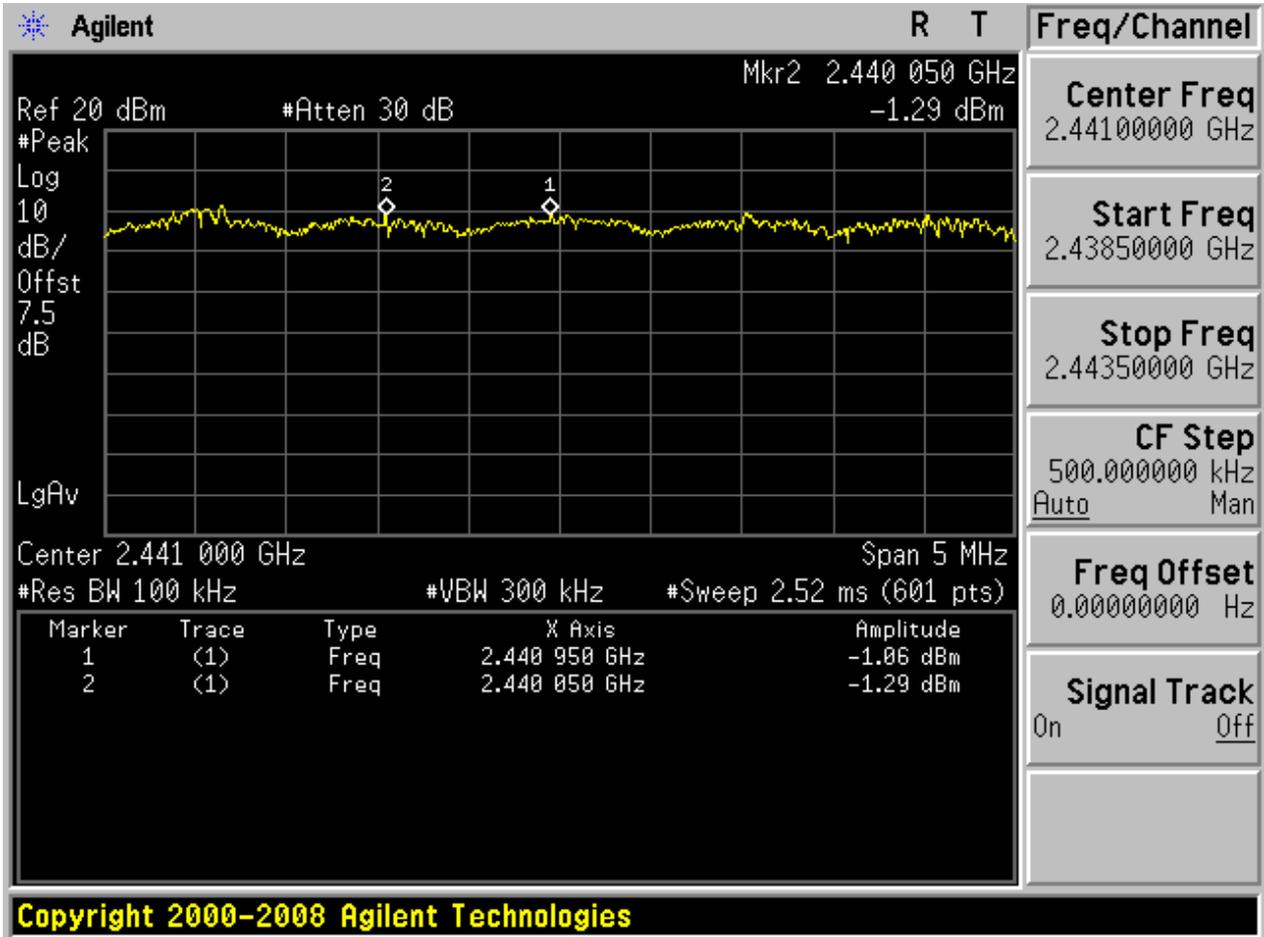
EUT Conf.	Carrier Frequency Separation [MHz]	Verdict
TM1_DH5_Hop	0.950	Pass
TM2_2DH5_Hop	0.900	Pass
TM3_3DH5_Hop	0.900	Pass

2 Test Plot

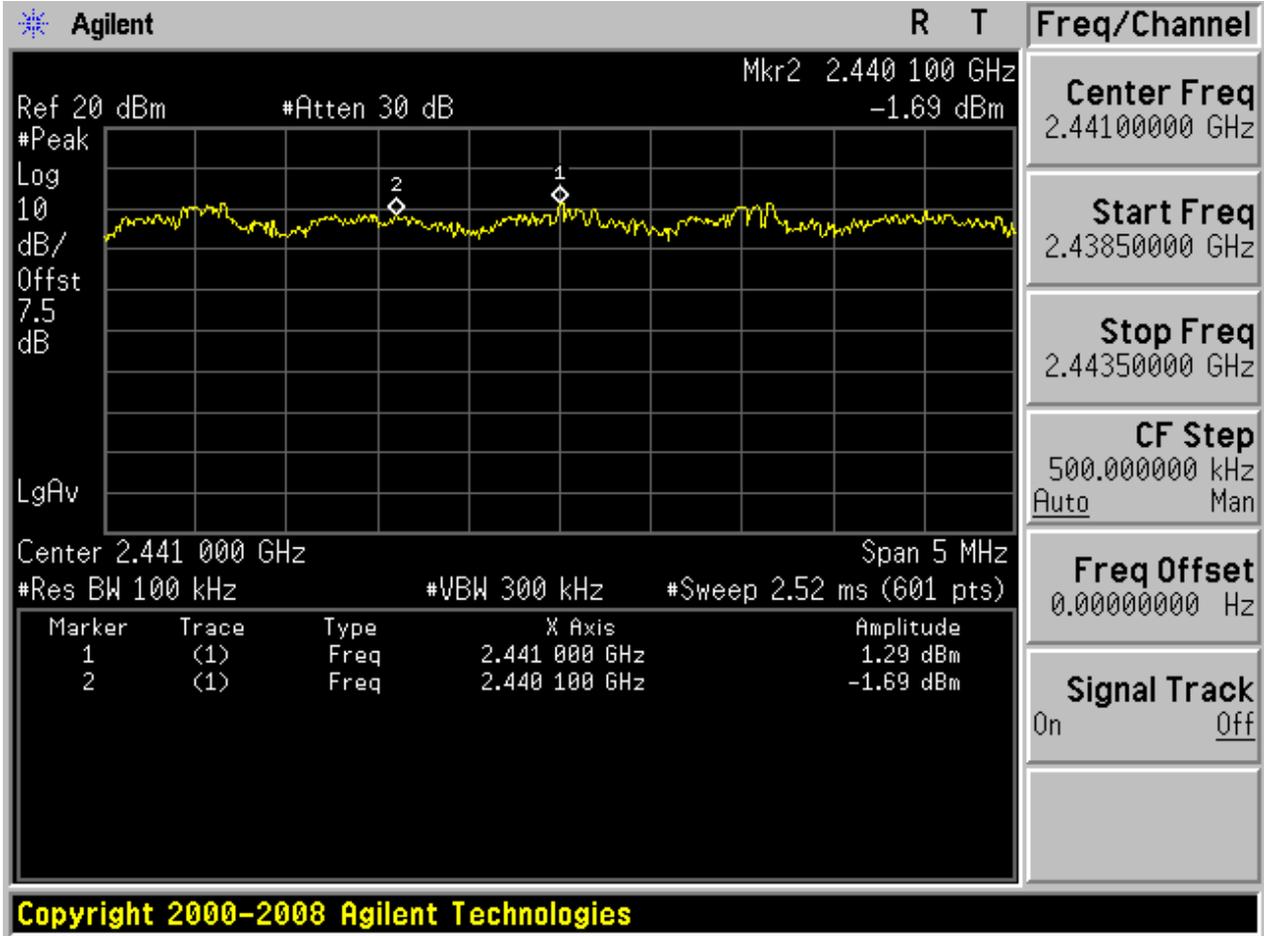
2.1 TM1_DH5_Hop



2.2 TM2_2DH5_Hop



2.3 TM3_3DH5_Hop



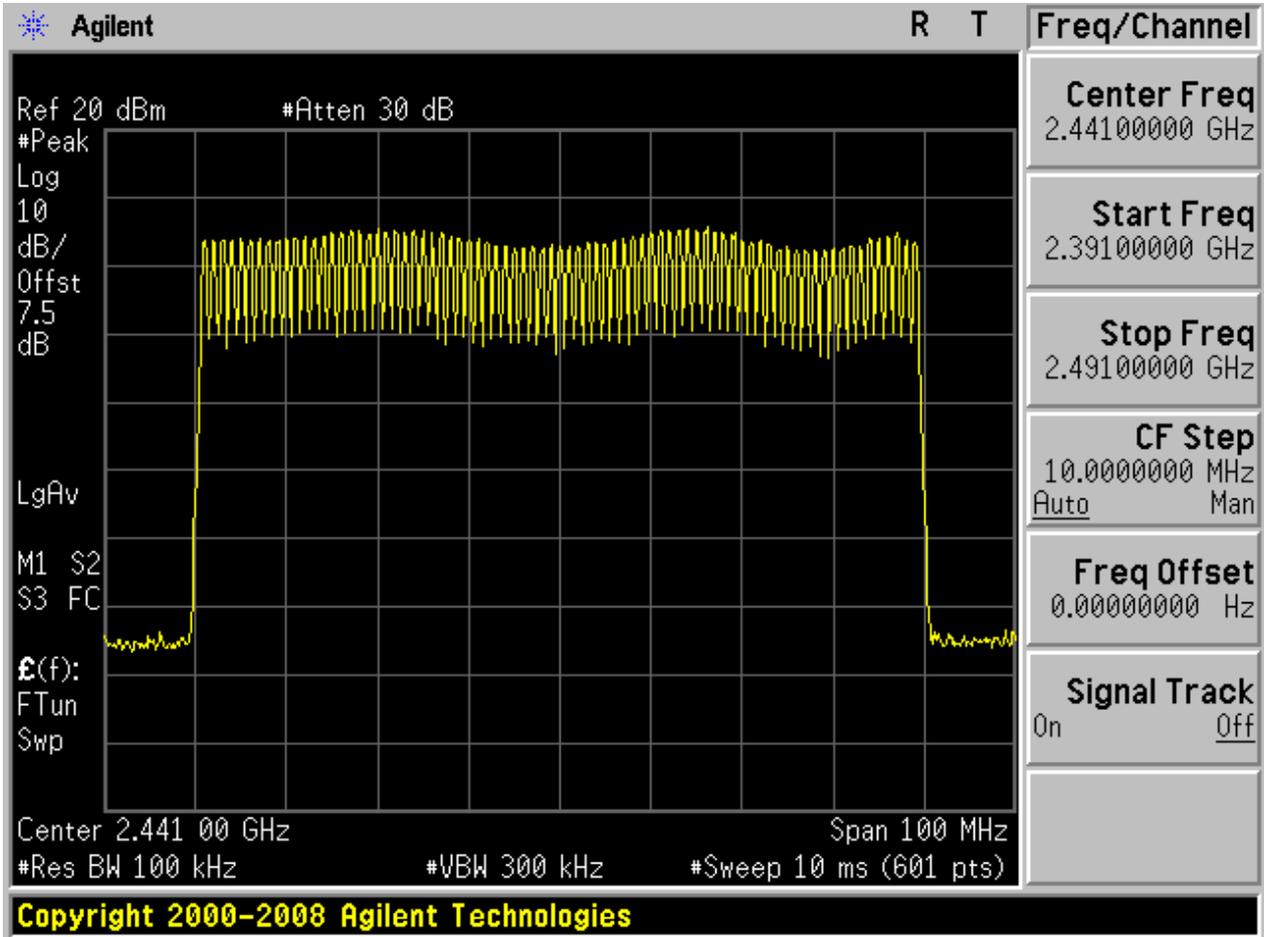
Appendix C: Number of Hopping Channel

1 Result Table

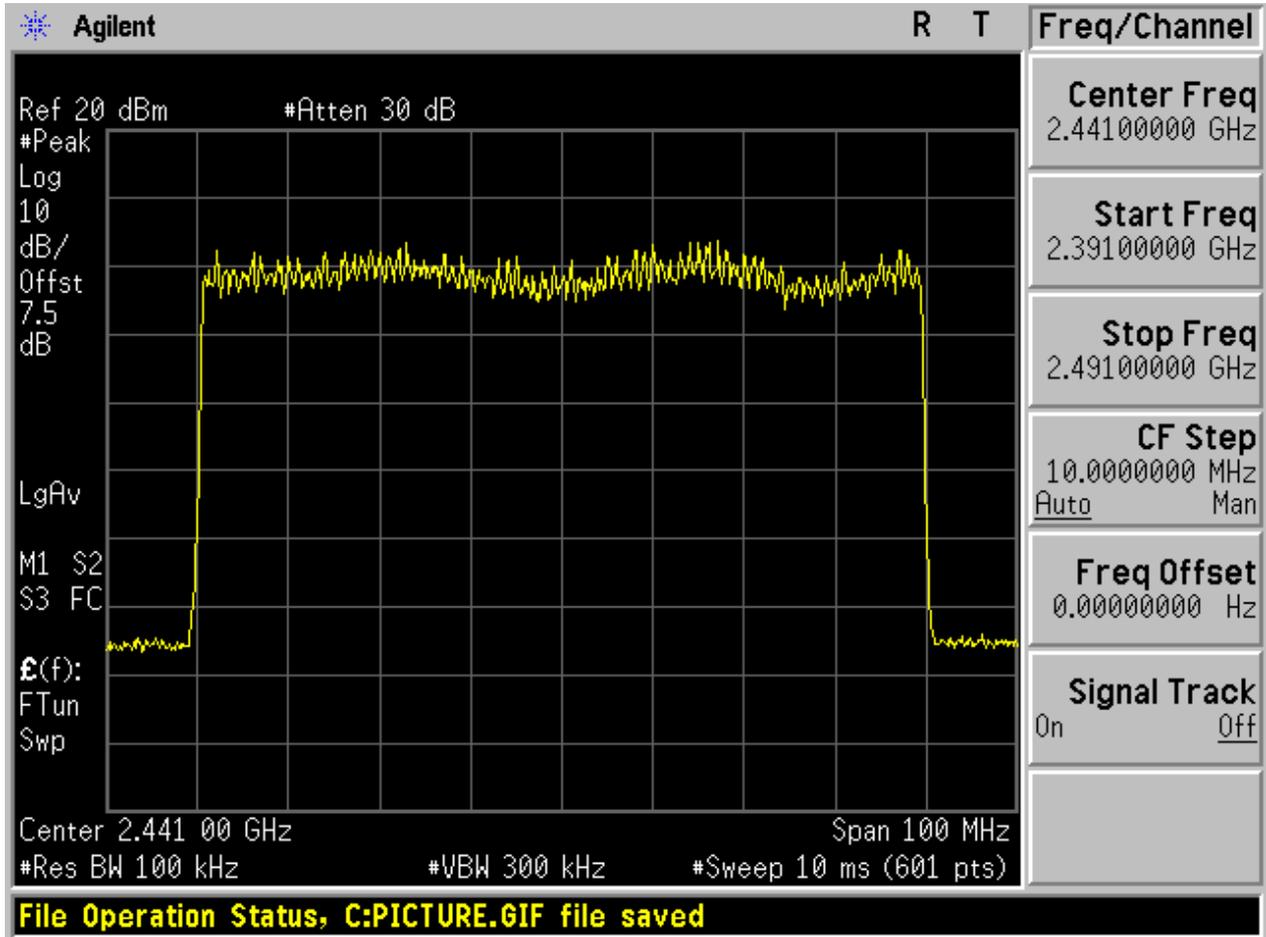
EUT Conf.	Number of Hopping Channel	Verdict
TM1_DH5_Hop	79	Pass
TM2_2DH5_Hop	79	Pass
TM3_3DH5_Hop	79	Pass

2 Test Plot

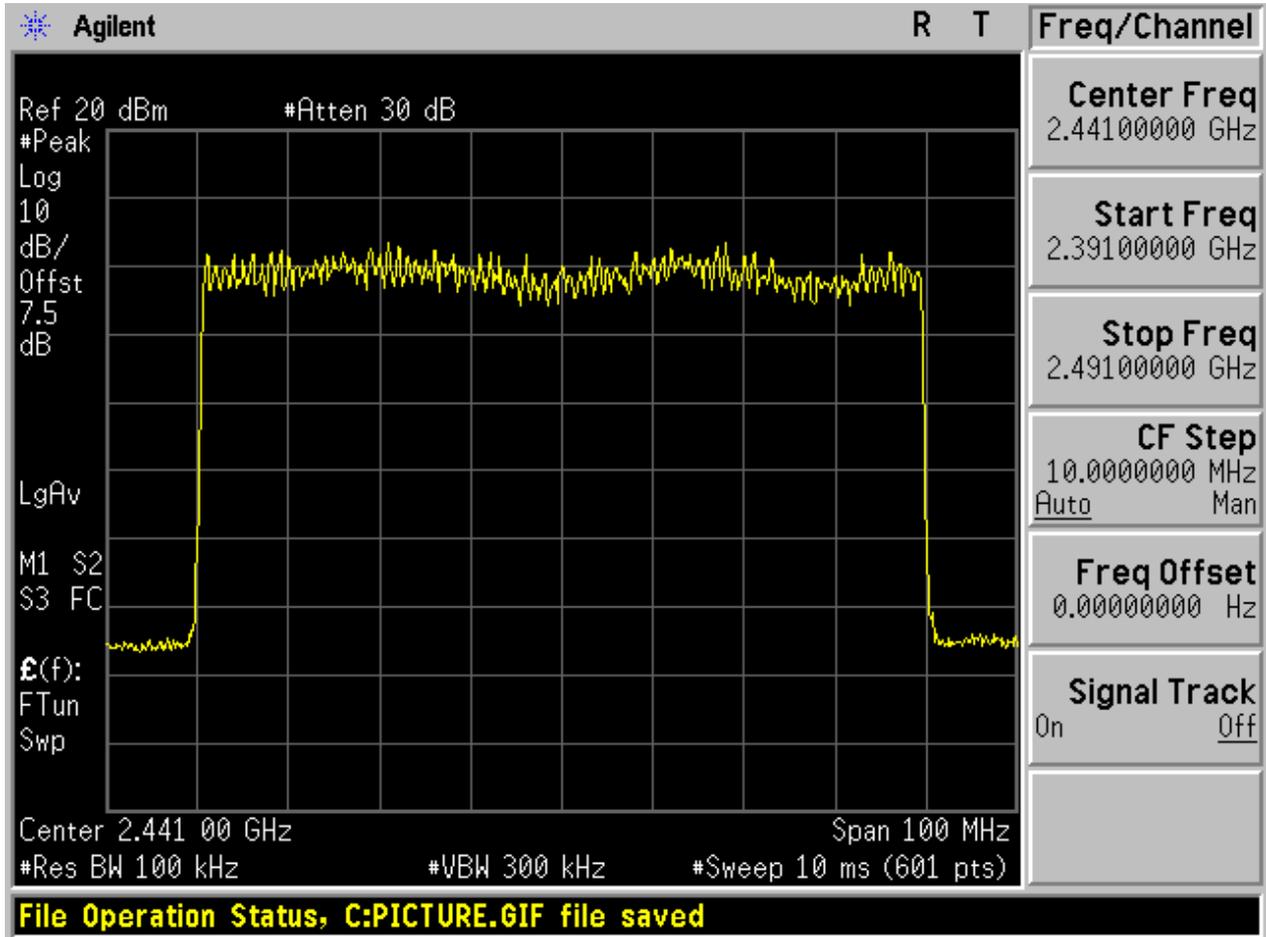
2.1 TM1_DH5_Hop



2.2 TM2_2DH5_Hop



2.3 TM3_3DH5_Hop



Appendix D: Time of Occupancy (Dwell Time)

1 Result Table

The Dwell Time = Burst Width * Total Hops. The detailed calculations are showed as follows:

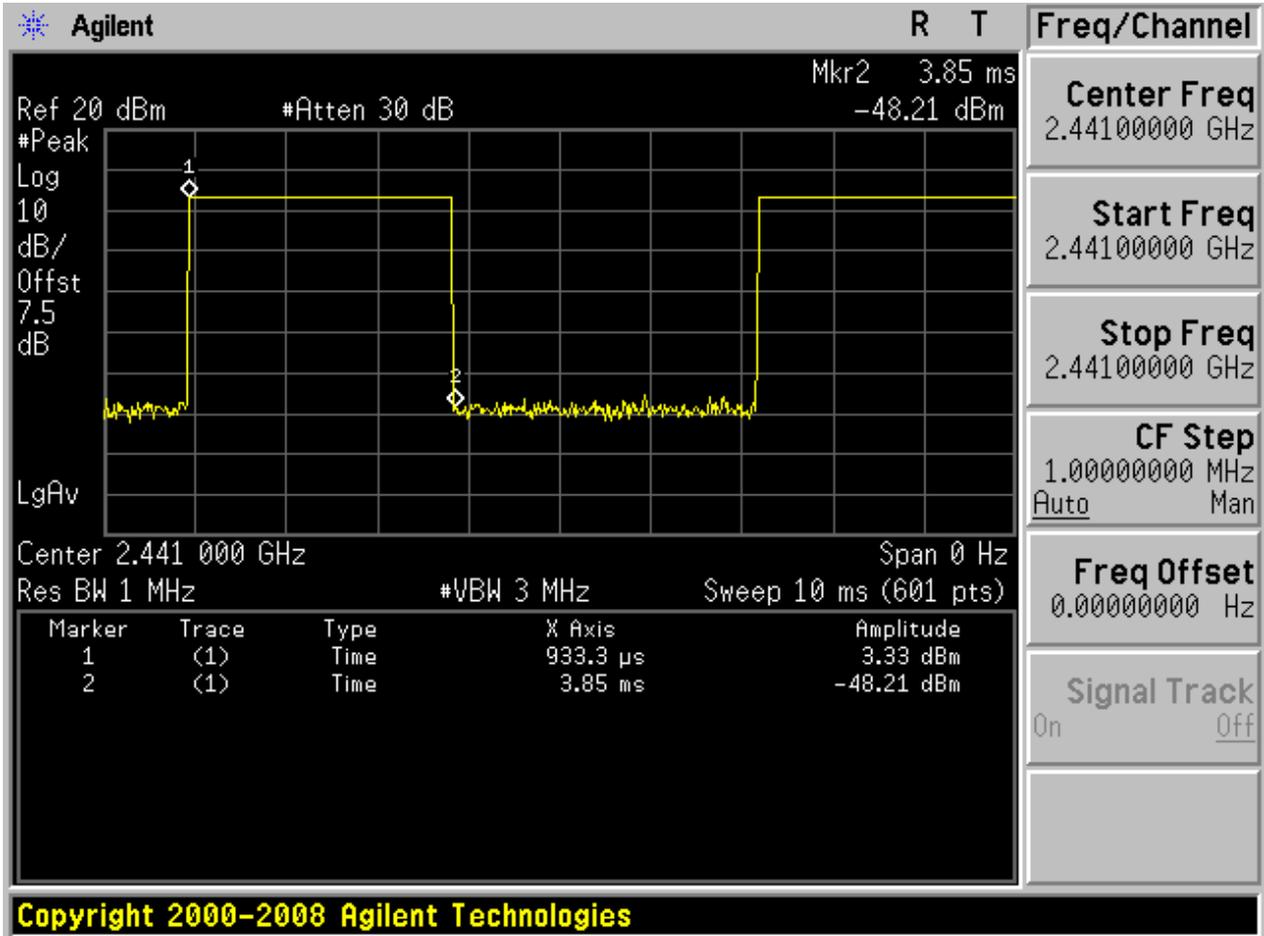
- The duration for dwell time calculation: $0.4 \text{ [s]} * \text{hopping number} = 0.4 \text{ [s]} * 79 \text{ [ch]} = 31.6 \text{ [s*ch]}$;
- The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
- The hops per second for all channels: The selected EUT Conf uses a slot type of 5-Tx&1-Rx and a hopping rate of 1600 [ch*hop/s] for all channels. So the final hopping rate for all channels is $1600 / 6 = 266.67 \text{ [ch*hop/s]}$;
- The hops per second on one channel: $266.67 \text{ [ch*hop/s]} / 79 \text{ [ch]} = 3.38 \text{ [hop/s]}$;
- The total hops for all channels within the dwell time calculation duration: $3.38 \text{ [hop/s]} * 31.6 \text{ [s*ch]} = 106.67 \text{ [hop*ch]}$;
- The dwell time for all channels hopping: $106.67 \text{ [hop*ch]} * \text{Burst Width [ms/hop/ch]}$.

EUT Conf.	Burst Width [ms/hop/ch]	Total Hops [hop*ch]	Dwell Time [s]	Verdict
TM1_DH5_Ch39	2.900	106.67	0.309	Pass
TM2_2DH5_Ch39	2.900	106.67	0.309	Pass
TM3_3DH5_Ch39	2.900	106.67	0.309	Pass

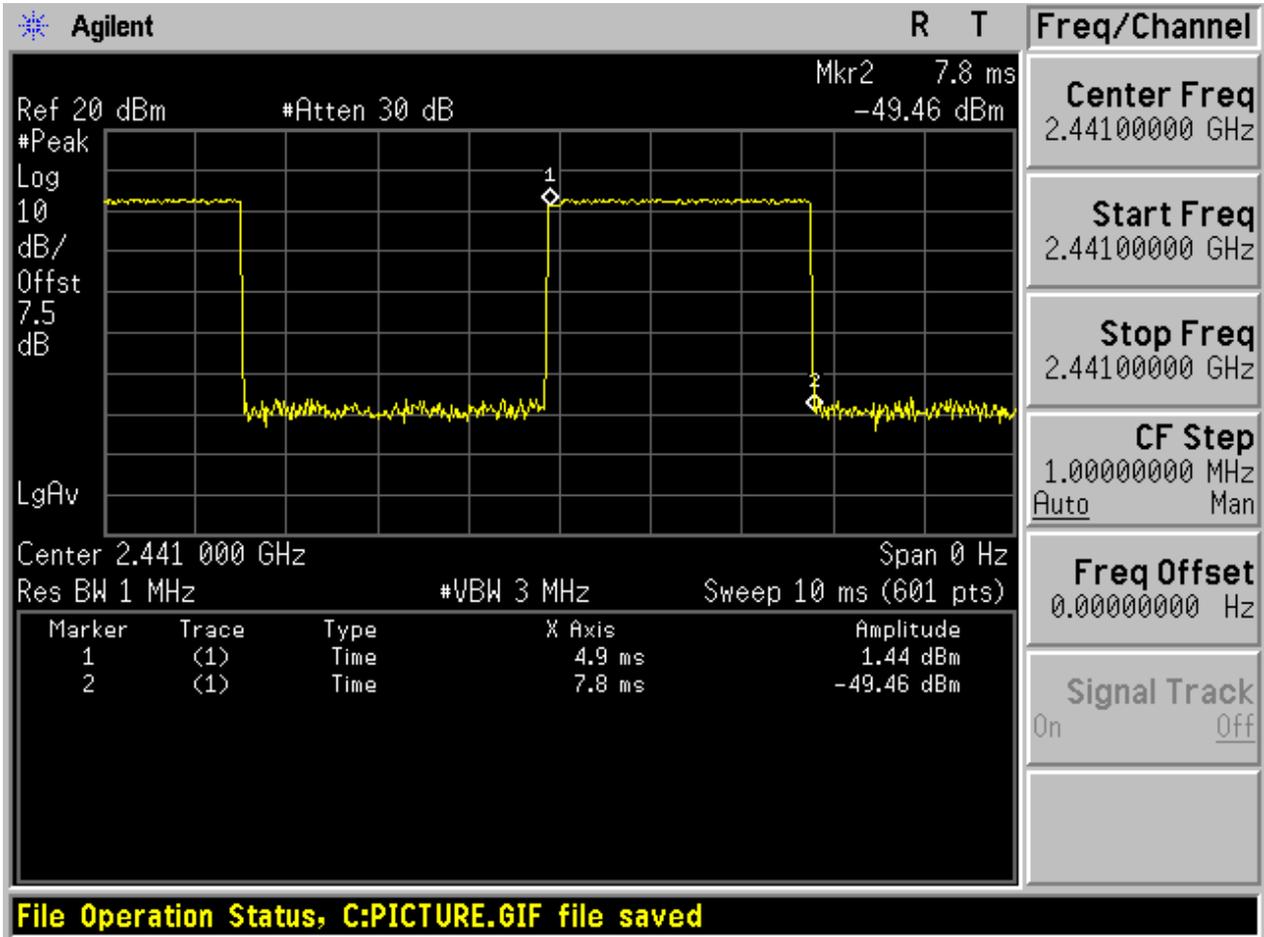
2 Test Plot

NOTE: The test plots are only for Burst Width measurements.

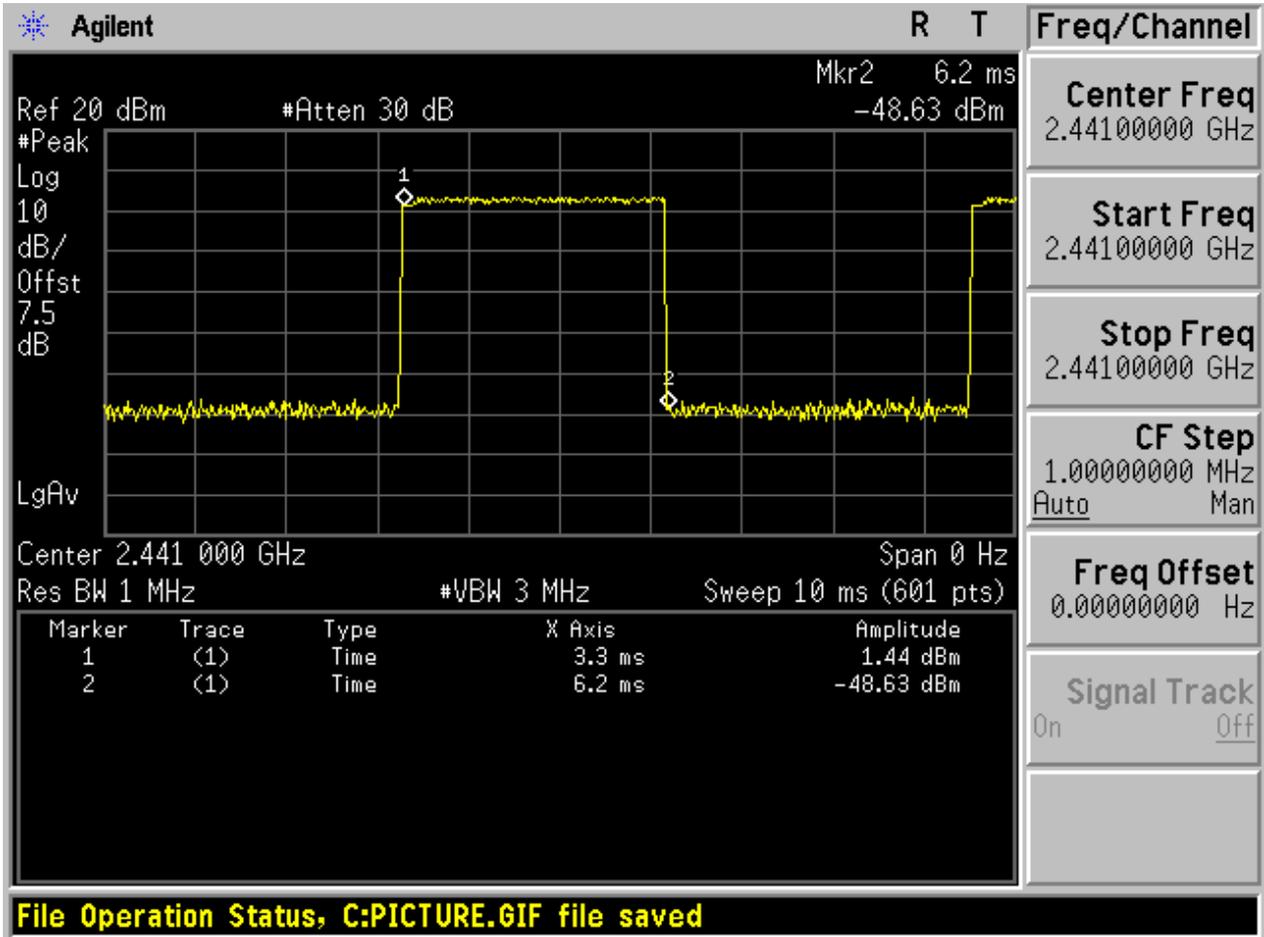
2.1 TM1_DH5_Ch39



2.2 TM2_2DH5_Ch39



2.3 TM3_3DH5_Ch39



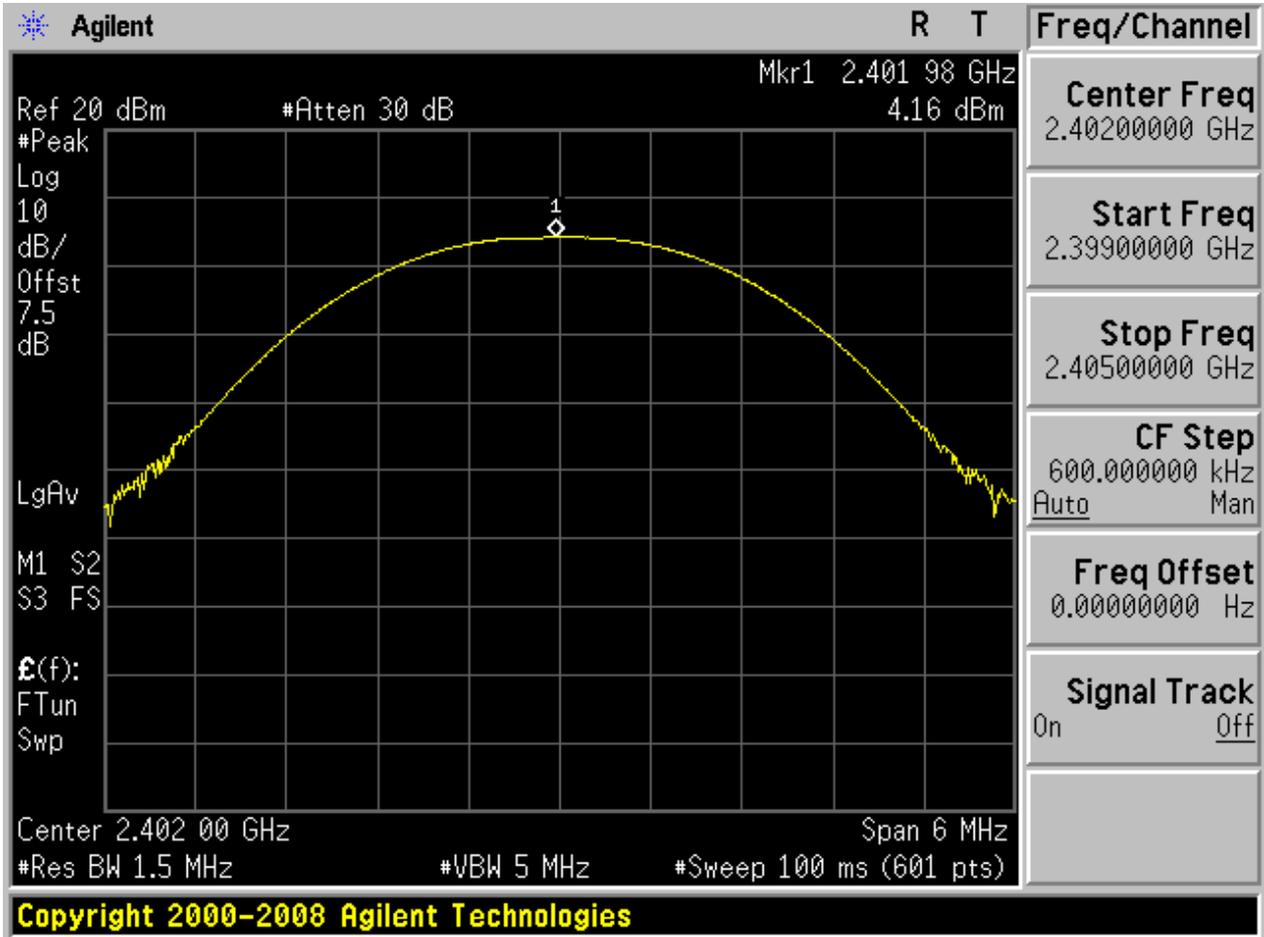
Appendix E: Maximum Peak Conducted Output Power

1 Result Table

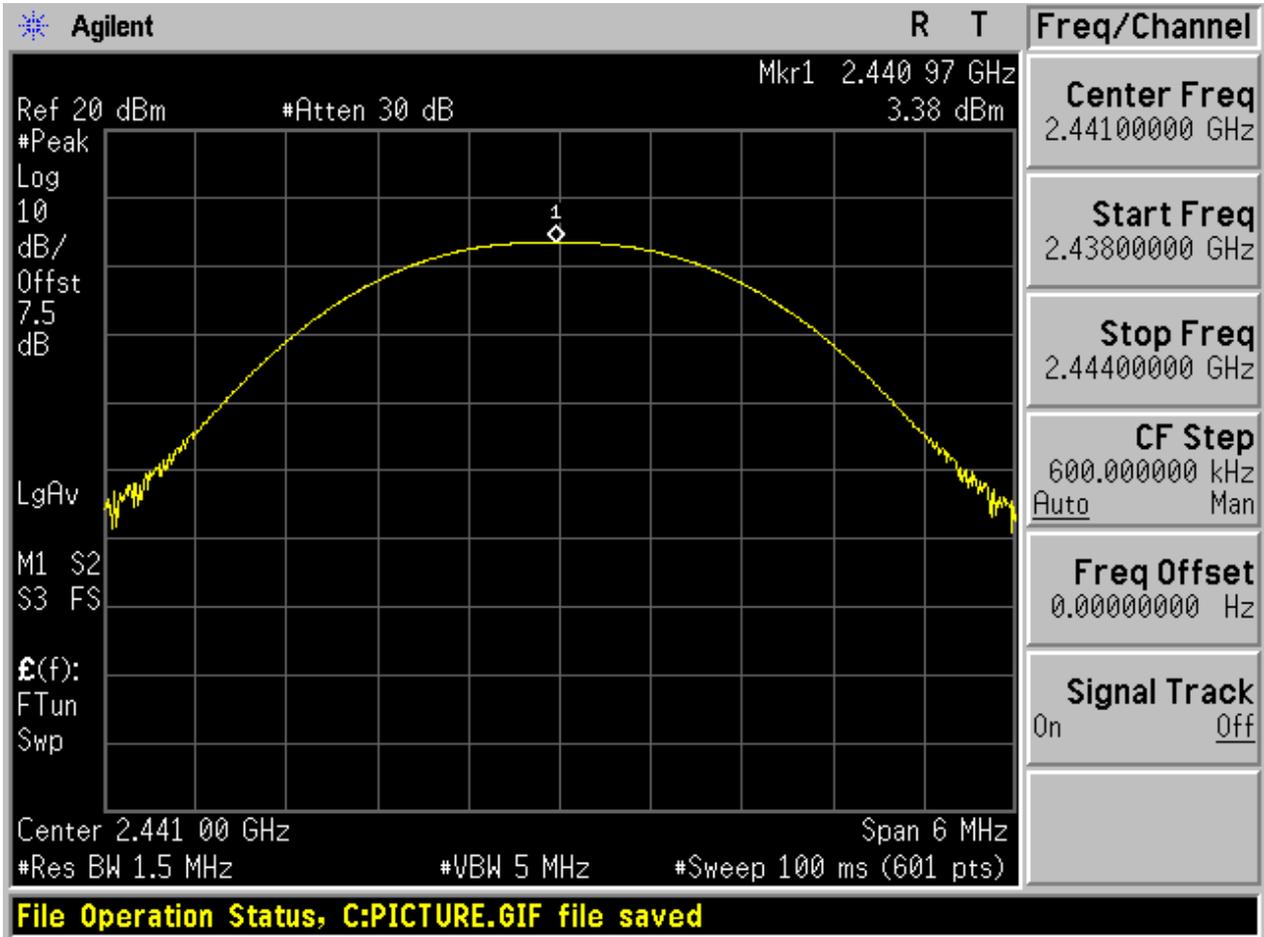
EUT Conf.	Max. Peak Power [dBm]	Verdict
TM1_DH5_Ch0	4.16	Pass
TM1_DH5_Ch39	3.38	Pass
TM1_DH5_Ch78	3.79	Pass
TM2_2DH5_Ch0	4.17	Pass
TM2_2DH5_Ch39	3.37	Pass
TM2_2DH5_Ch78	3.76	Pass
TM3_3DH5_Ch0	4.54	Pass
TM3_3DH5_Ch39	3.75	Pass
TM3_3DH5_Ch78	4.09	Pass

2 Test Plot

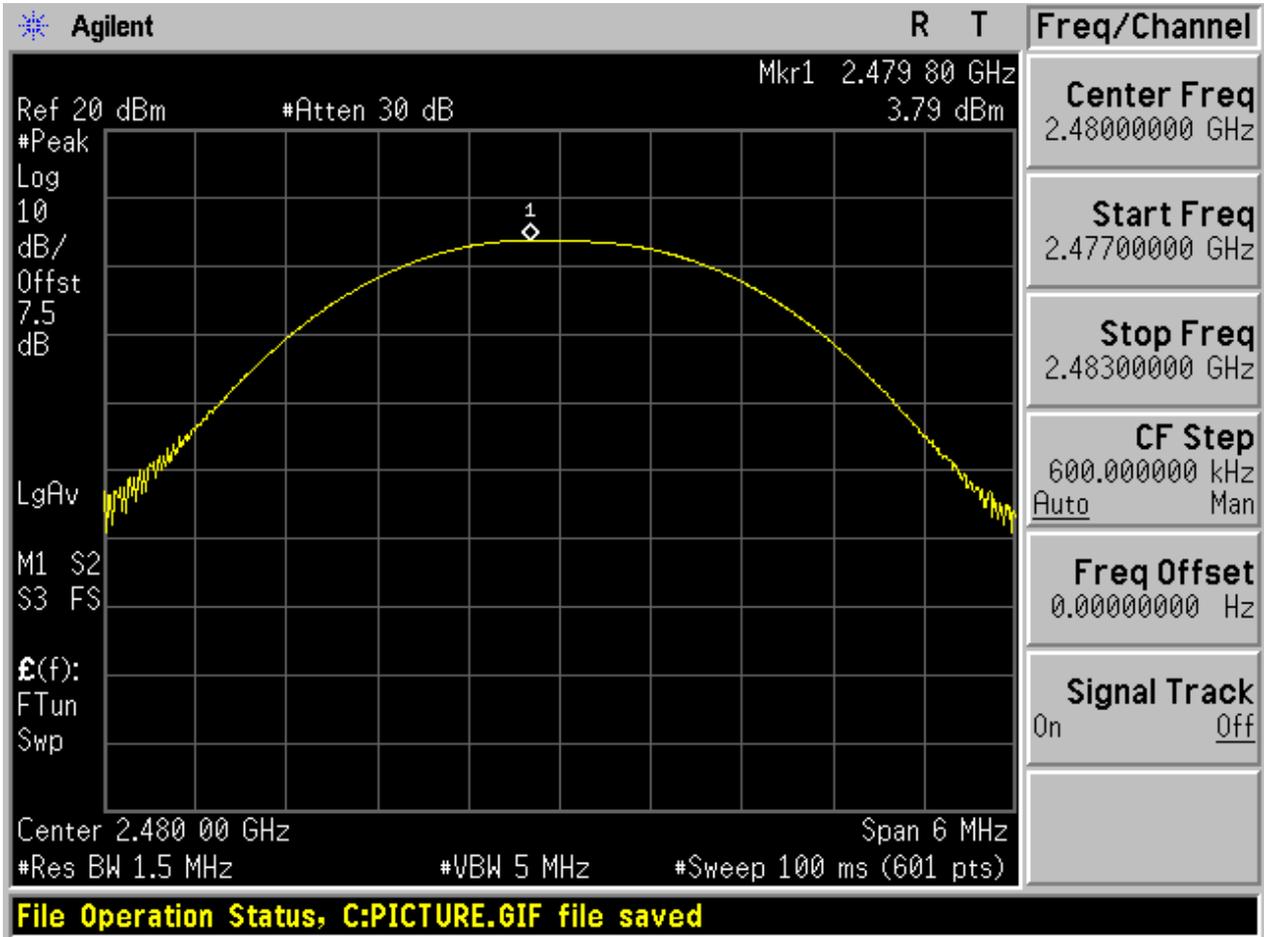
2.1 TM1_DH5_Ch0



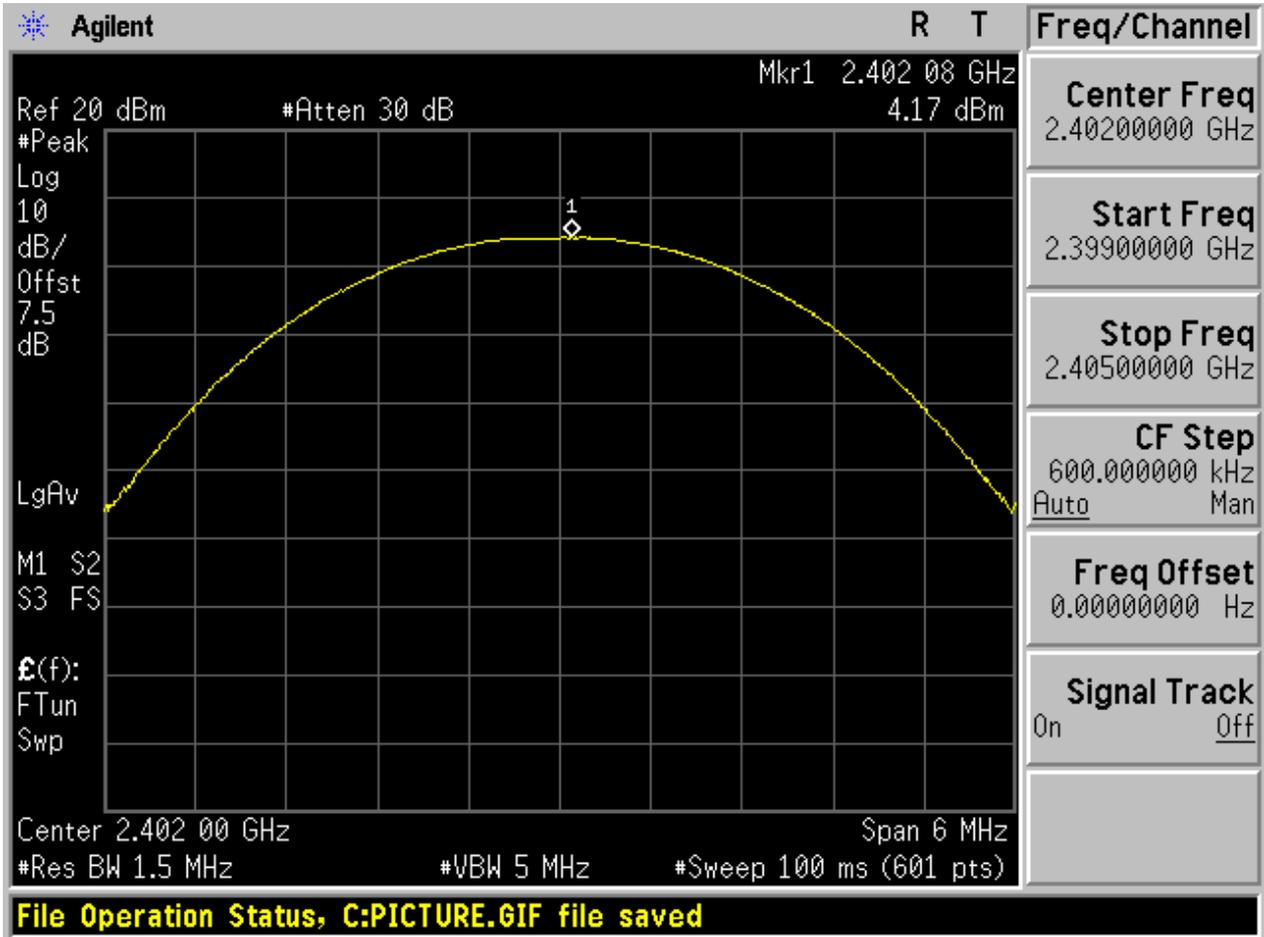
2.2 TM1_DH5_Ch39



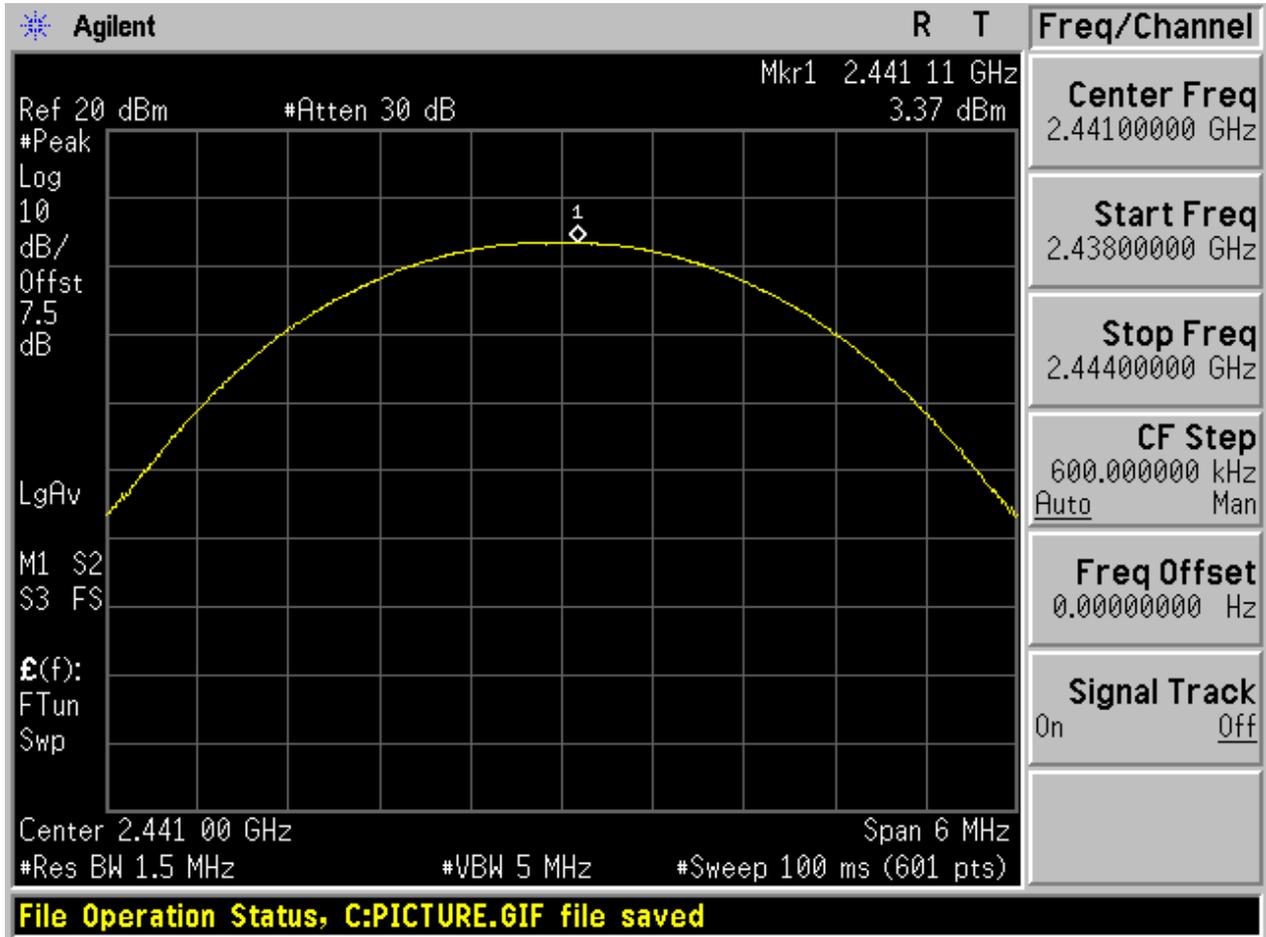
2.3 TM1_DH5_Ch78



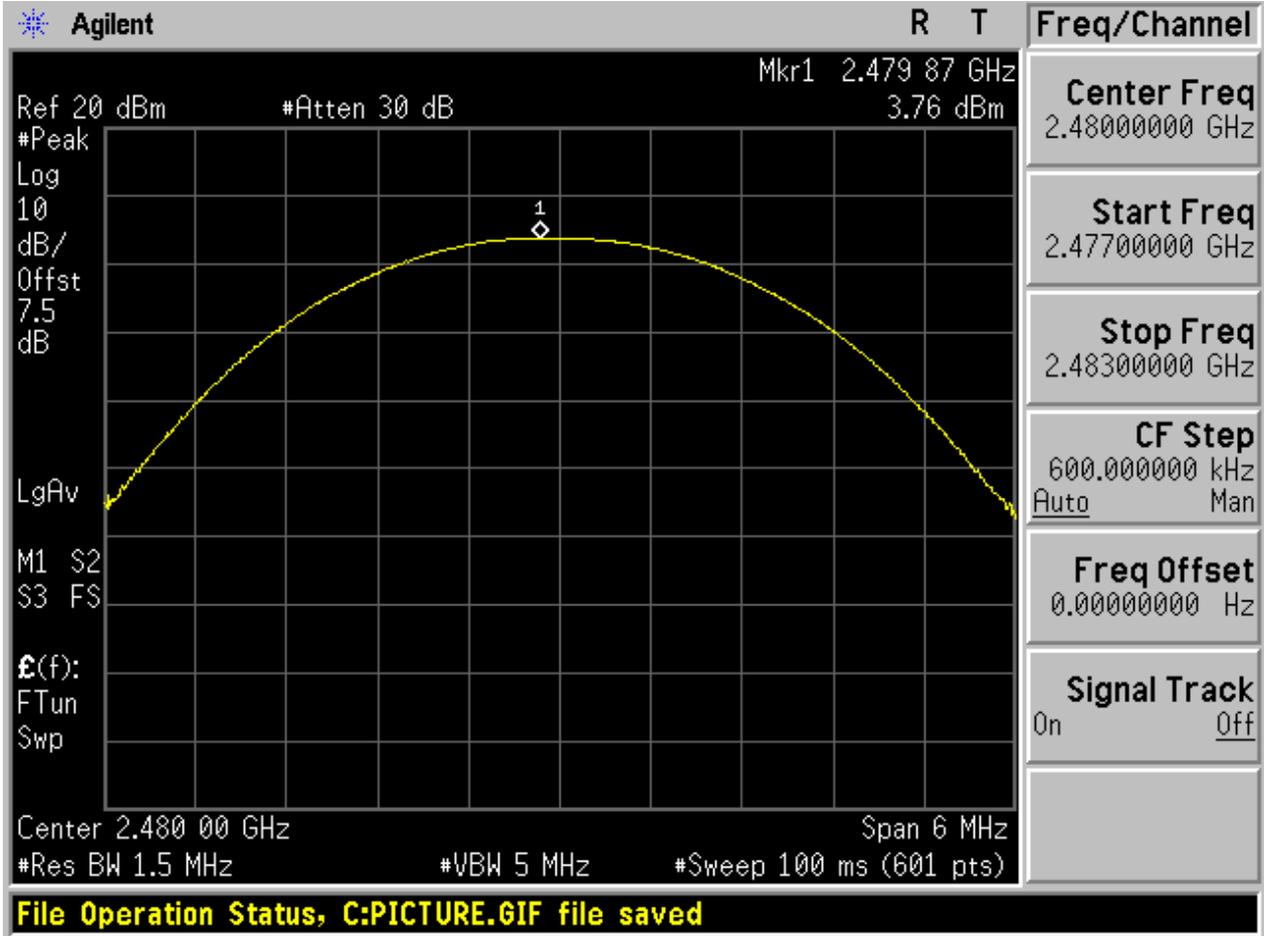
2.4 TM2_2DH5_Ch0



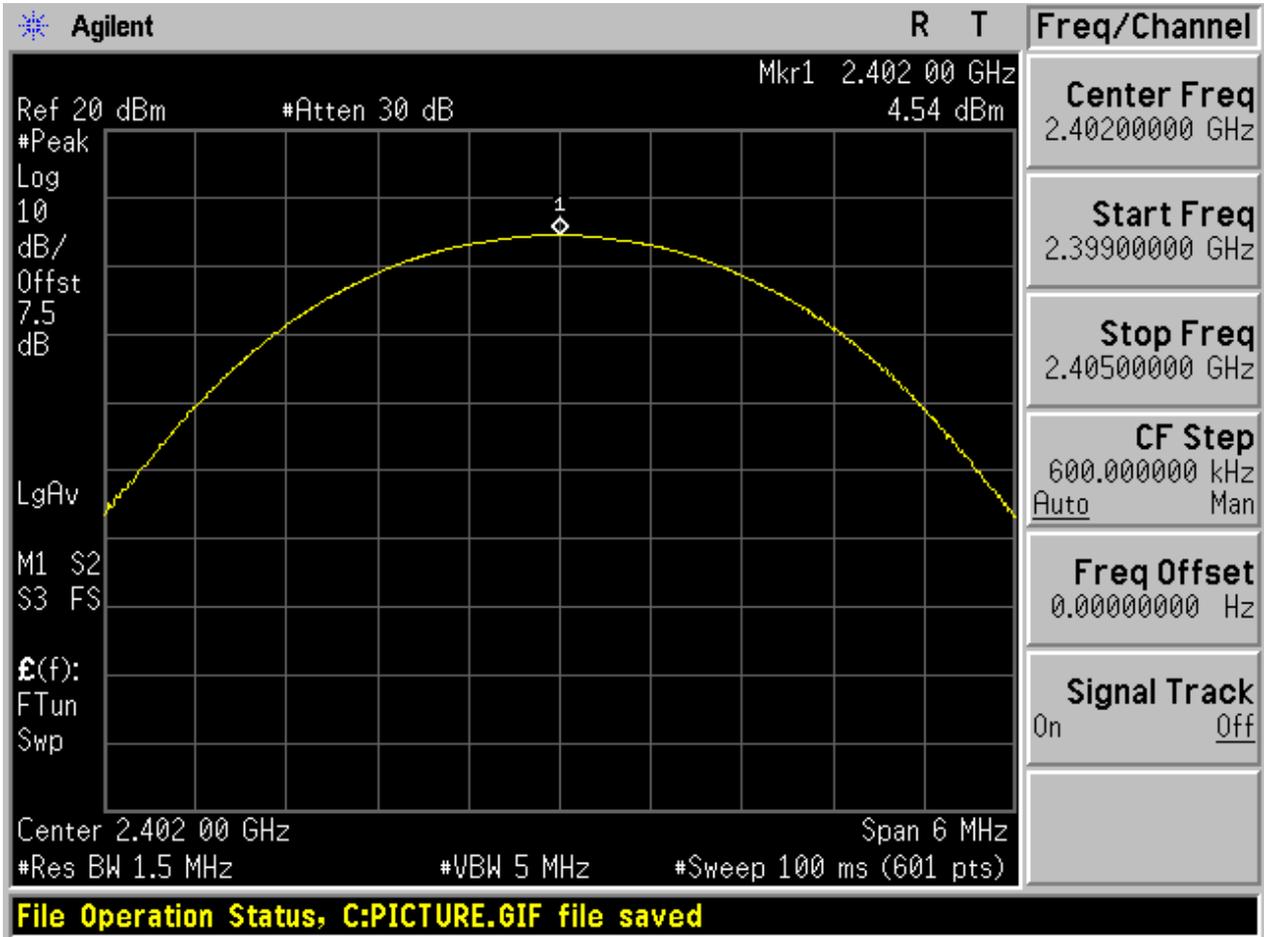
2.5 TM2_2DH5_Ch39



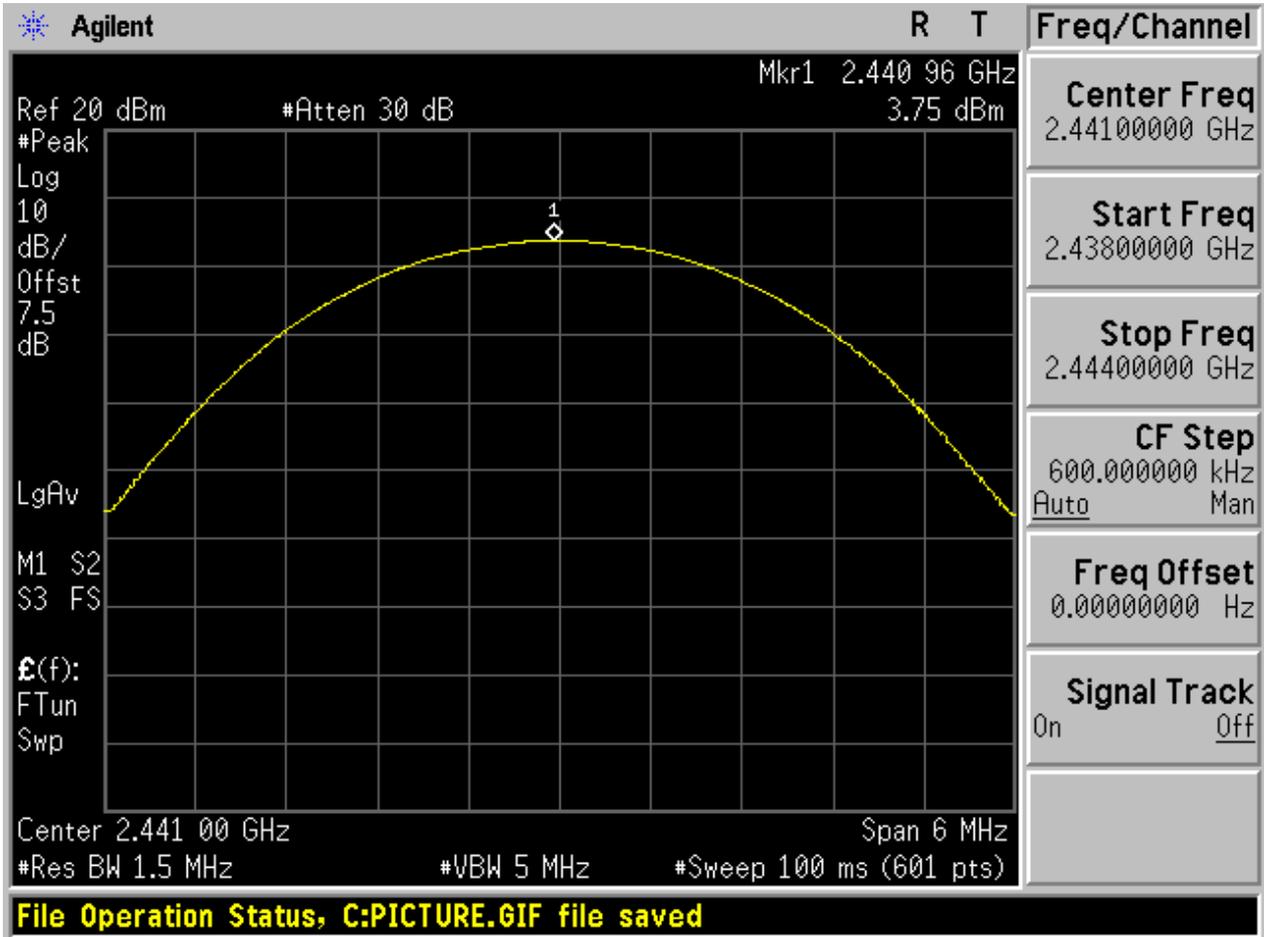
2.6 TM2_2DH5_Ch78



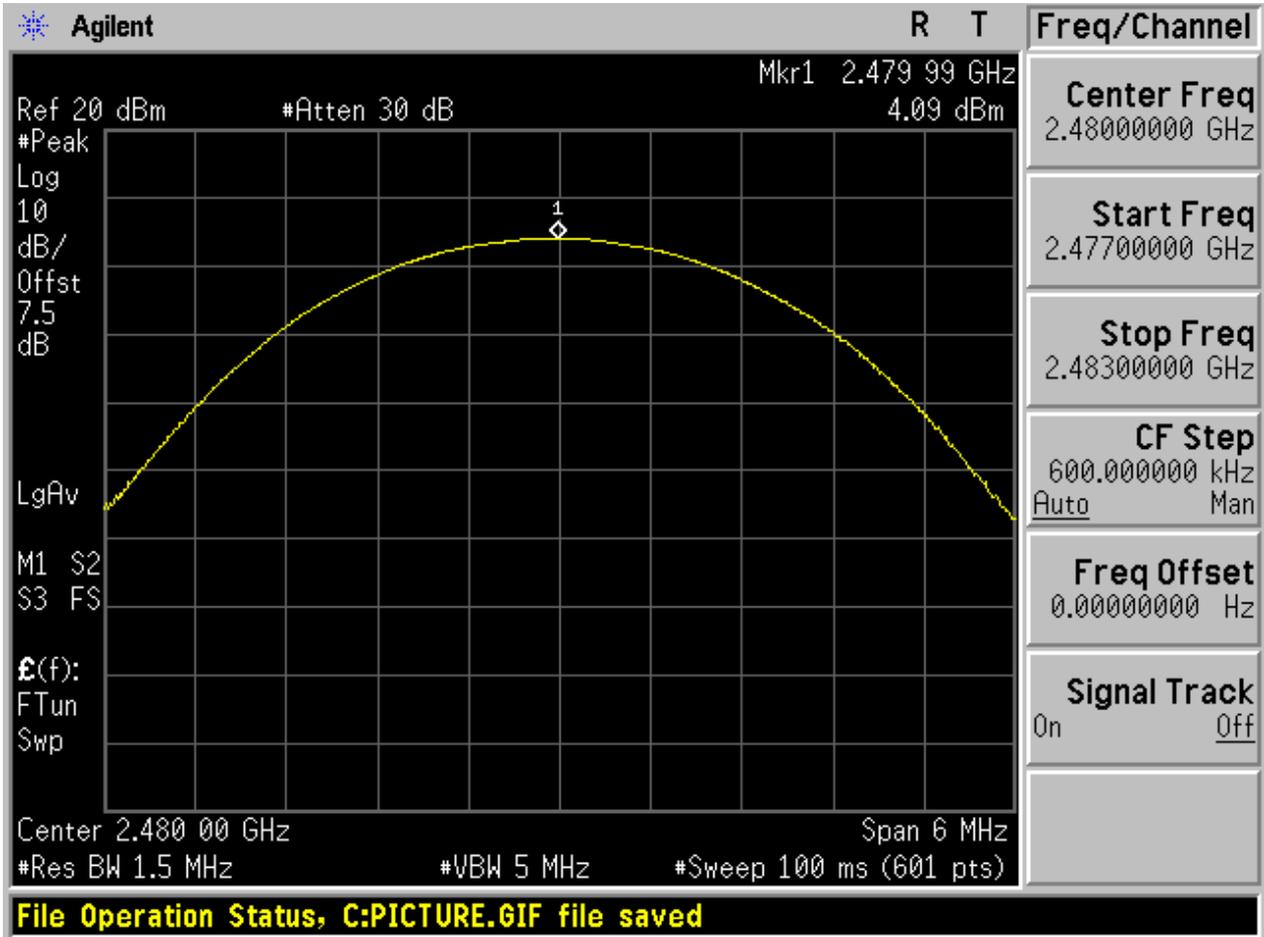
2.7 TM3_3DH5_Ch0



2.8 TM3_3DH5_Ch39



2.9 TM3_3DH5_Ch78



Appendix F: Band edge spurious emission

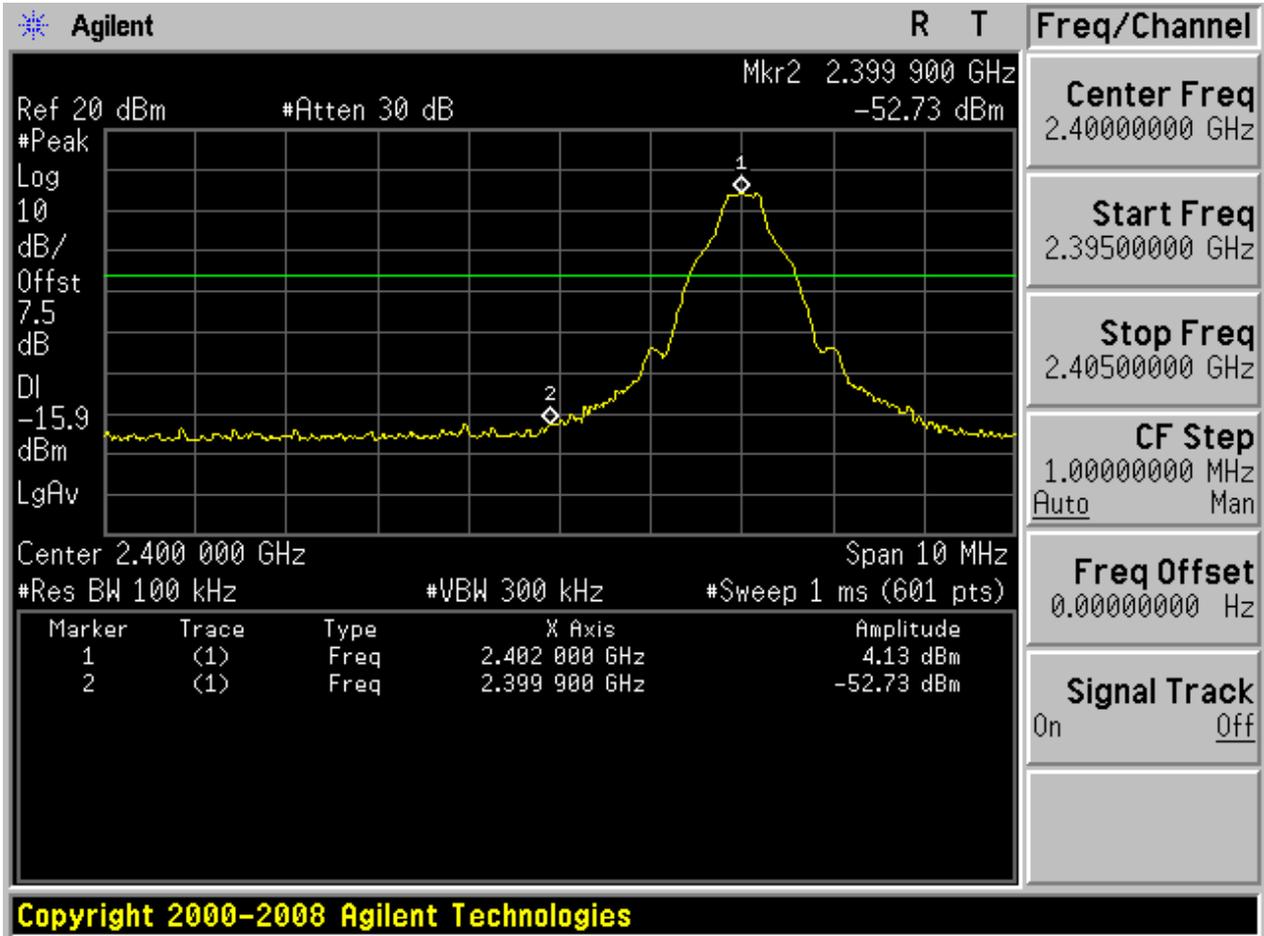
1 Result Table

EUT Conf.	Channel No.	Carrier Frequency [MHz]	Max. Spurious Level [dBm]	Frequency Hopping	Carrier Power [dBm]	Limit [dBm]	Result
TM1_DH5_Ch0	0	2402	-52.73	Off	4.13	-15.87	Pass
	-	-	-54.52	On	4.00	-16	Pass
TM1_DH5_Ch78	78	2480	-53.84	Off	3.72	-16.28	Pass
	-	-	-53.44	On	3.97	-16.03	Pass
TM2_2DH_5_Ch0	0	2402	-53.55	Off	2.26	-17.74	Pass
	-	-	-54.56	On	1.00	-19	Pass
TM2_2DH_5_Ch78	78	2480	-53.22	Off	1.77	-18.23	Pass
	-	-	-53.92	On	-1.27	-21.27	Pass
TM3_3DH_5_Ch0	0	2402	-54.09	Off	2.27	-17.73	Pass
	-	-	-54.92	On	0.05	-19.95	Pass
TM3_3DH_5_Ch78	78	2480	-53.49	Off	1.75	-18.25	Pass
	-	-	-53.82	On	1.53	-18.47	Pass

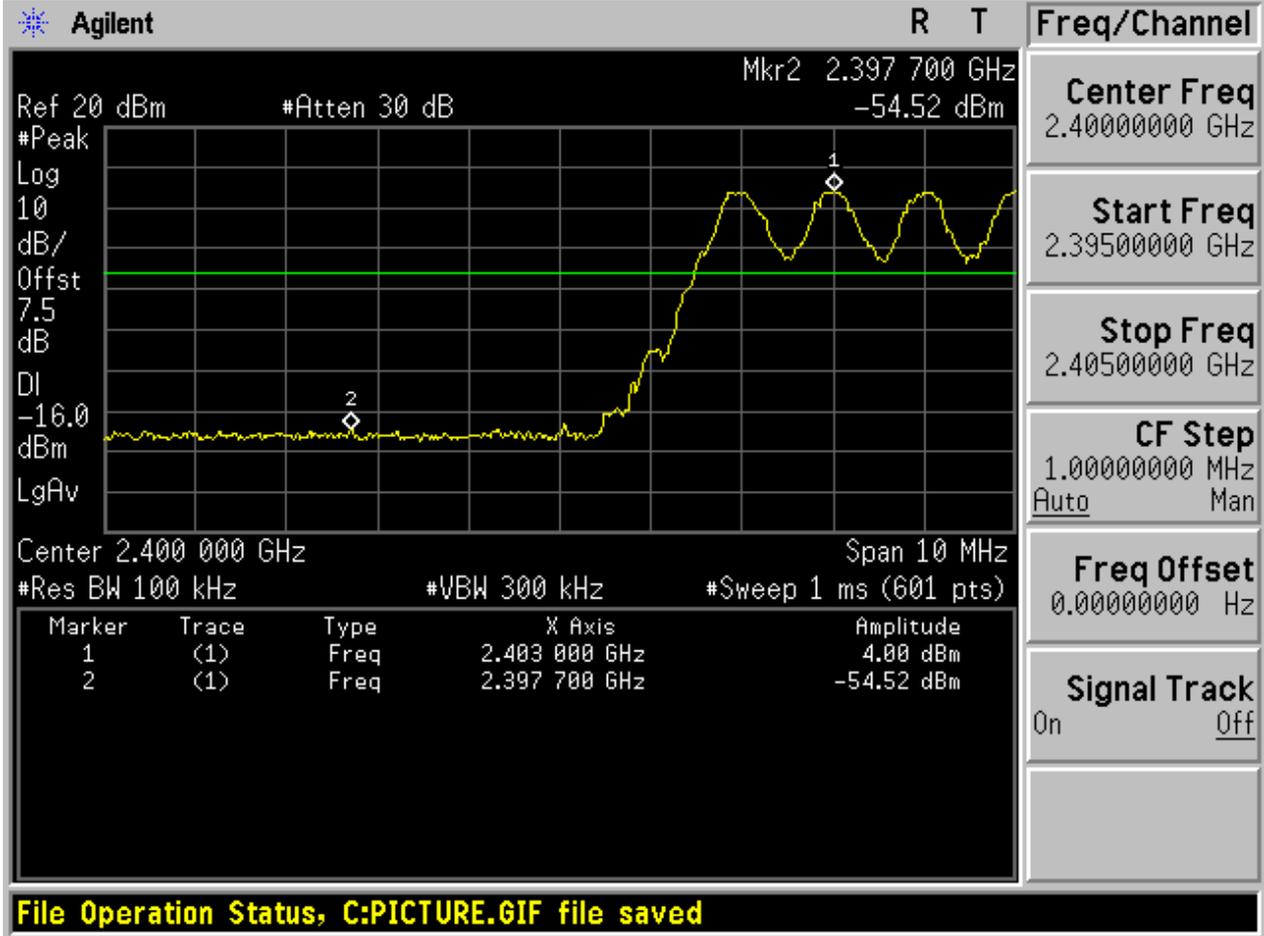
2 Test Plot

2.1 TM1_DH5_Ch0

No hopping

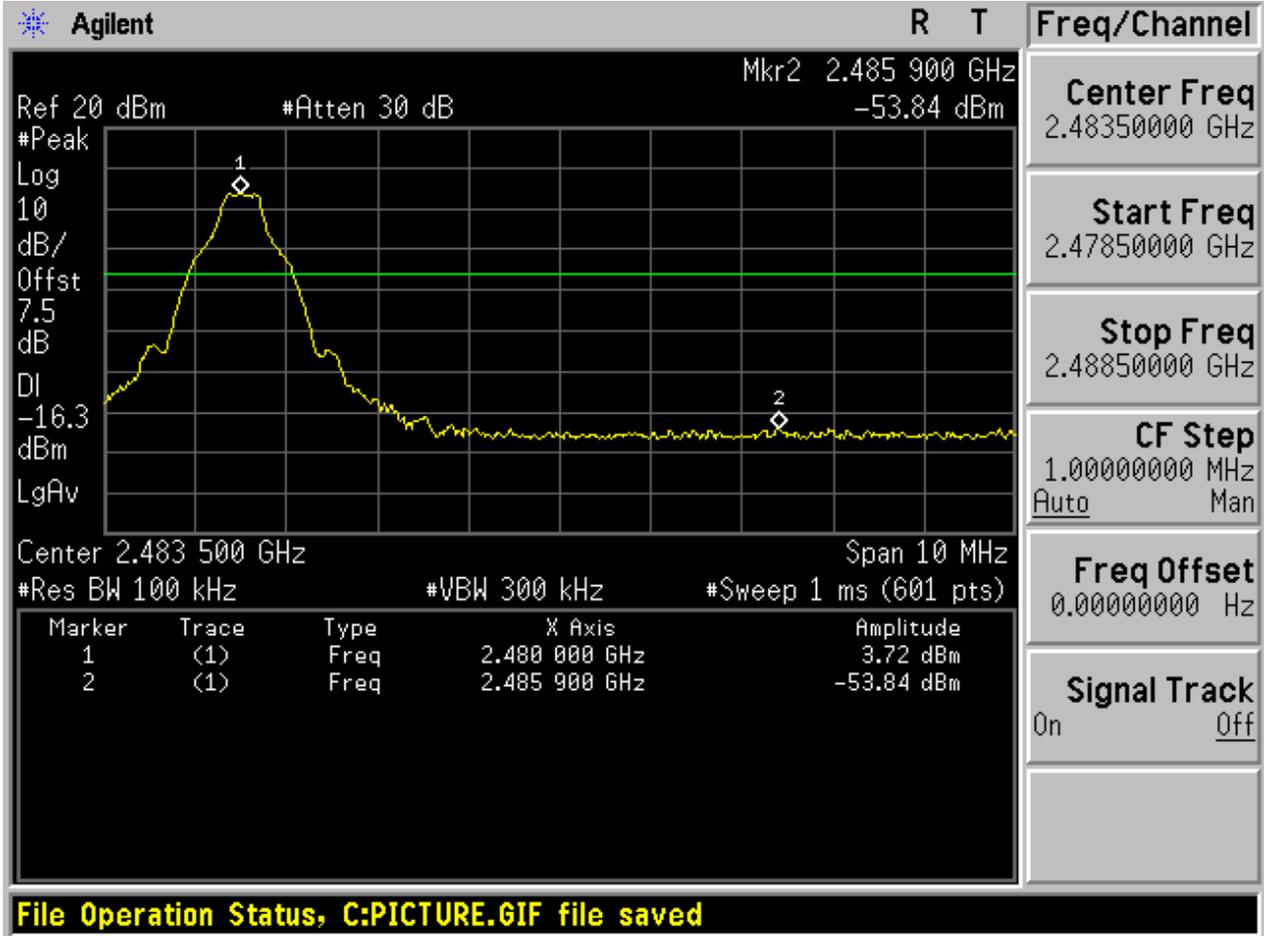


With hopping

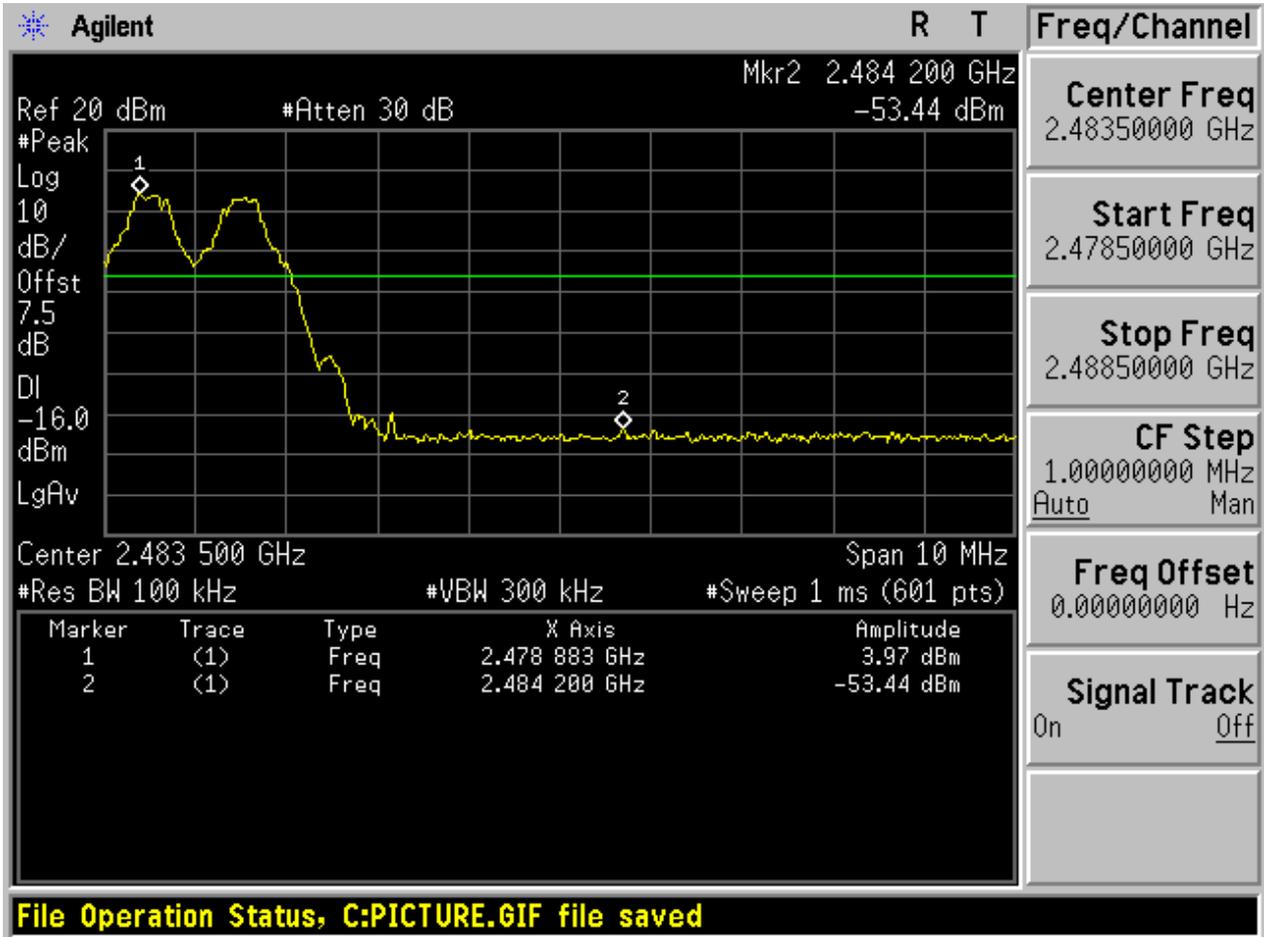


2.2 TM1_DH5_Ch78

No hopping

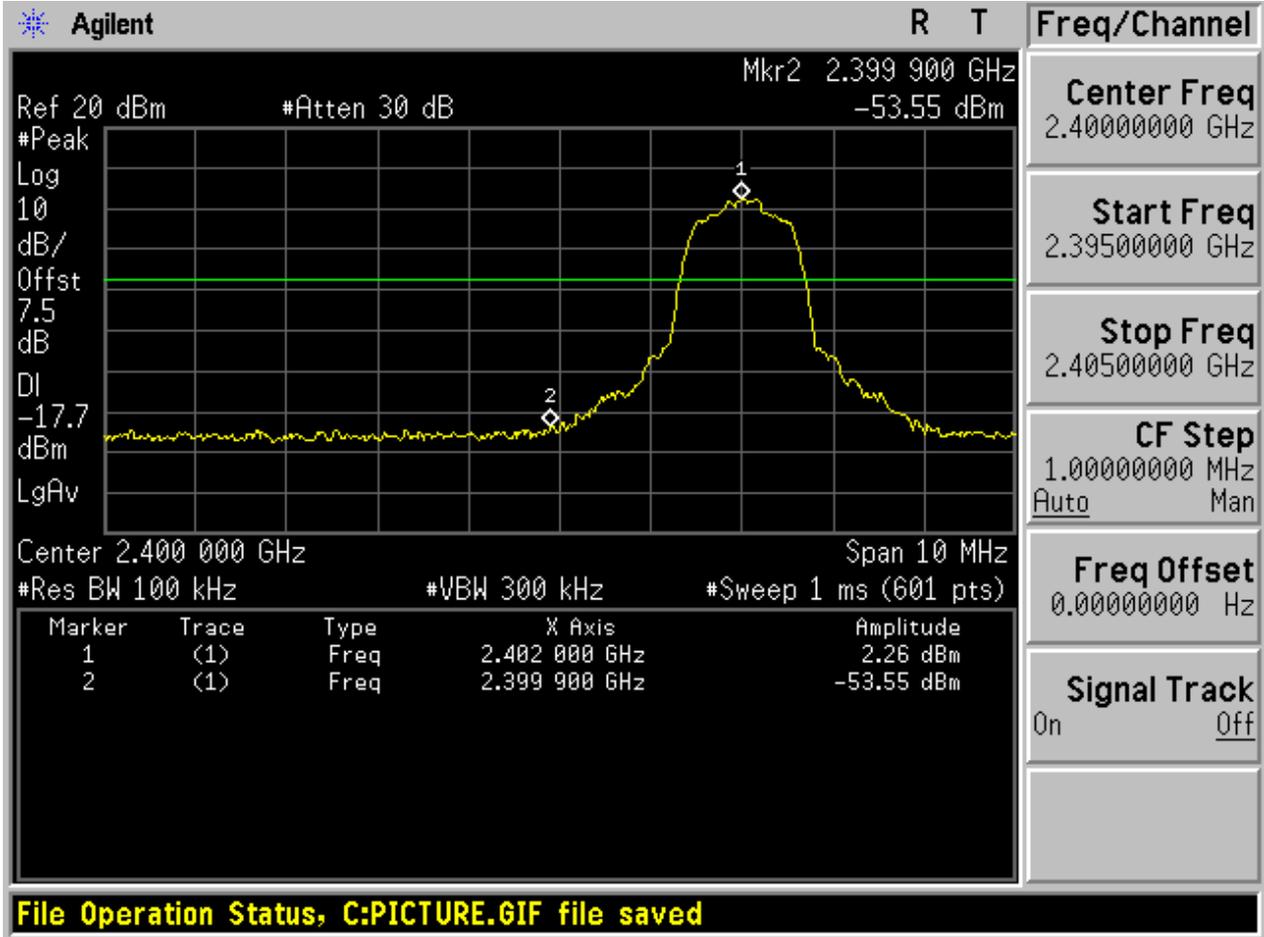


With hopping

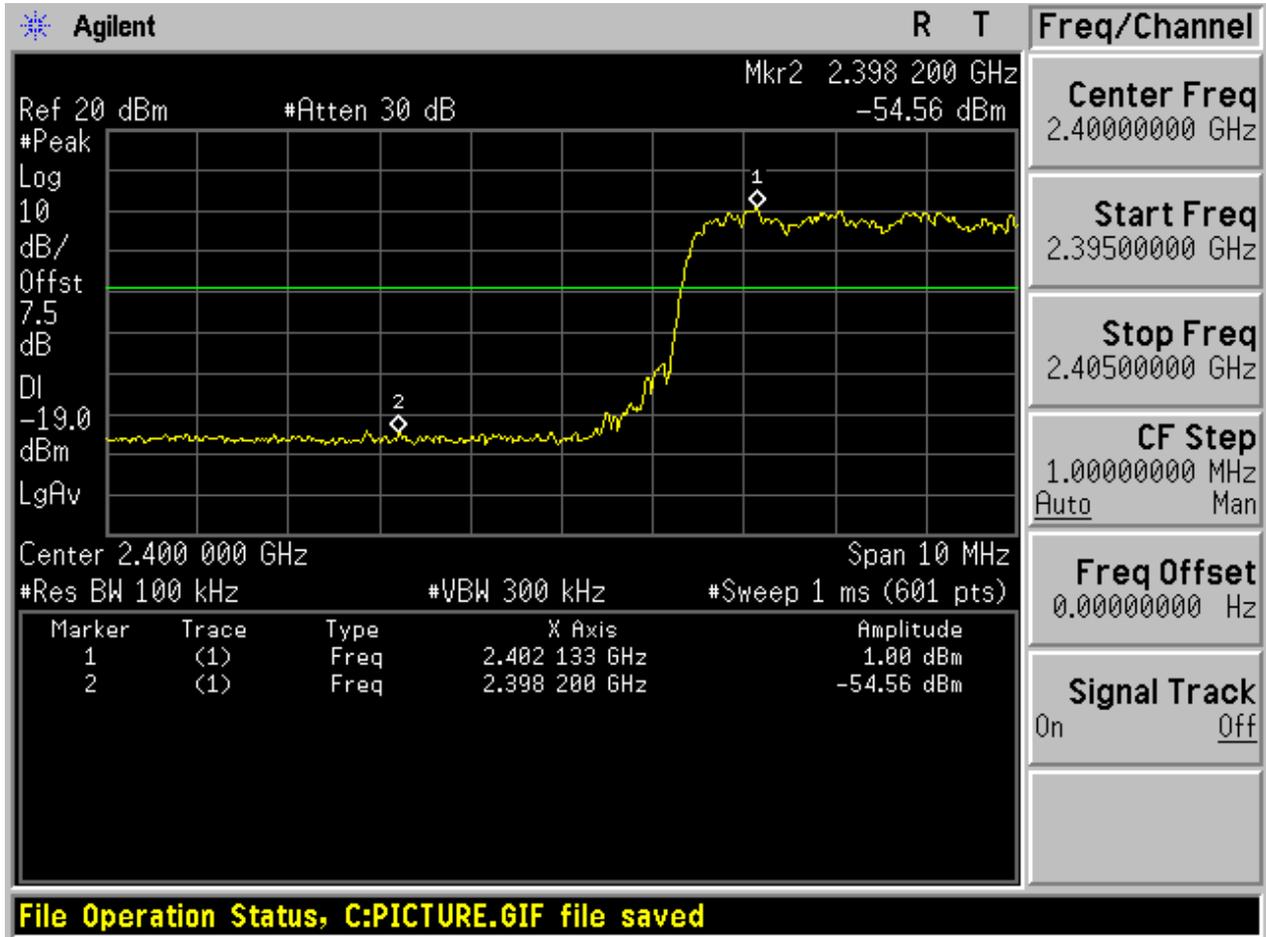


2.3 TM2_2DH5_Ch0

No hopping

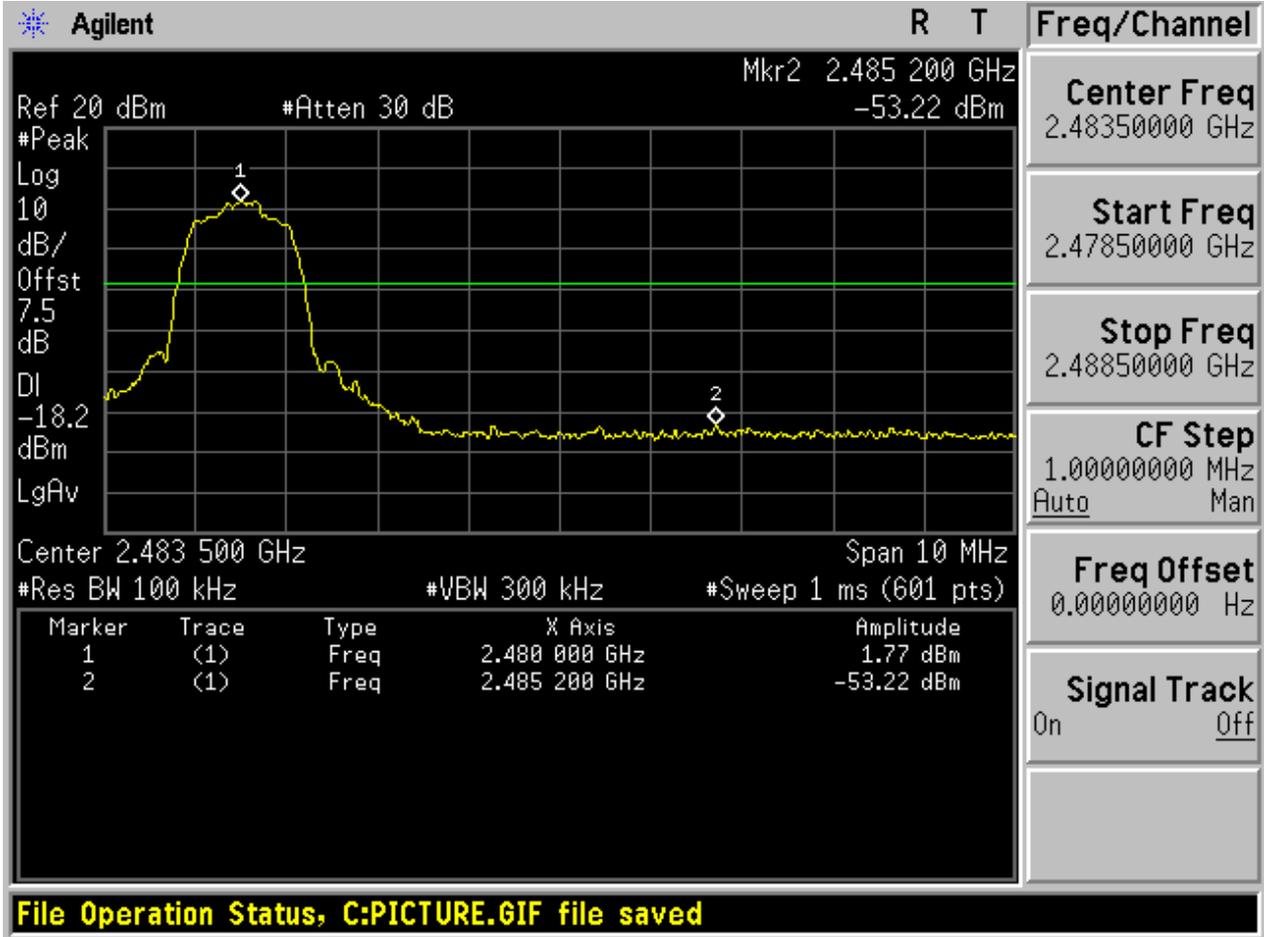


With hopping

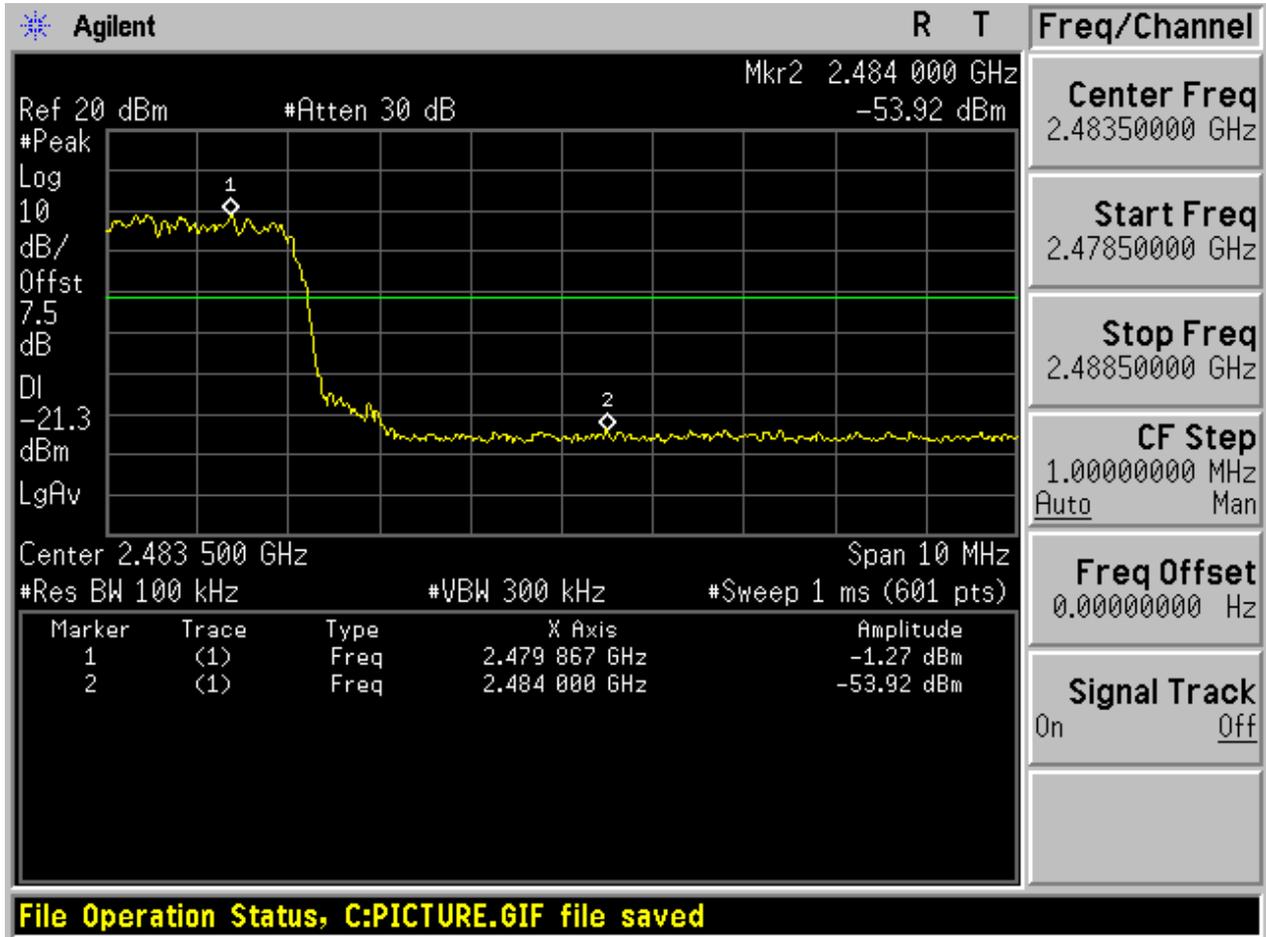


2.4 TM2_2DH5_Ch78

No hopping

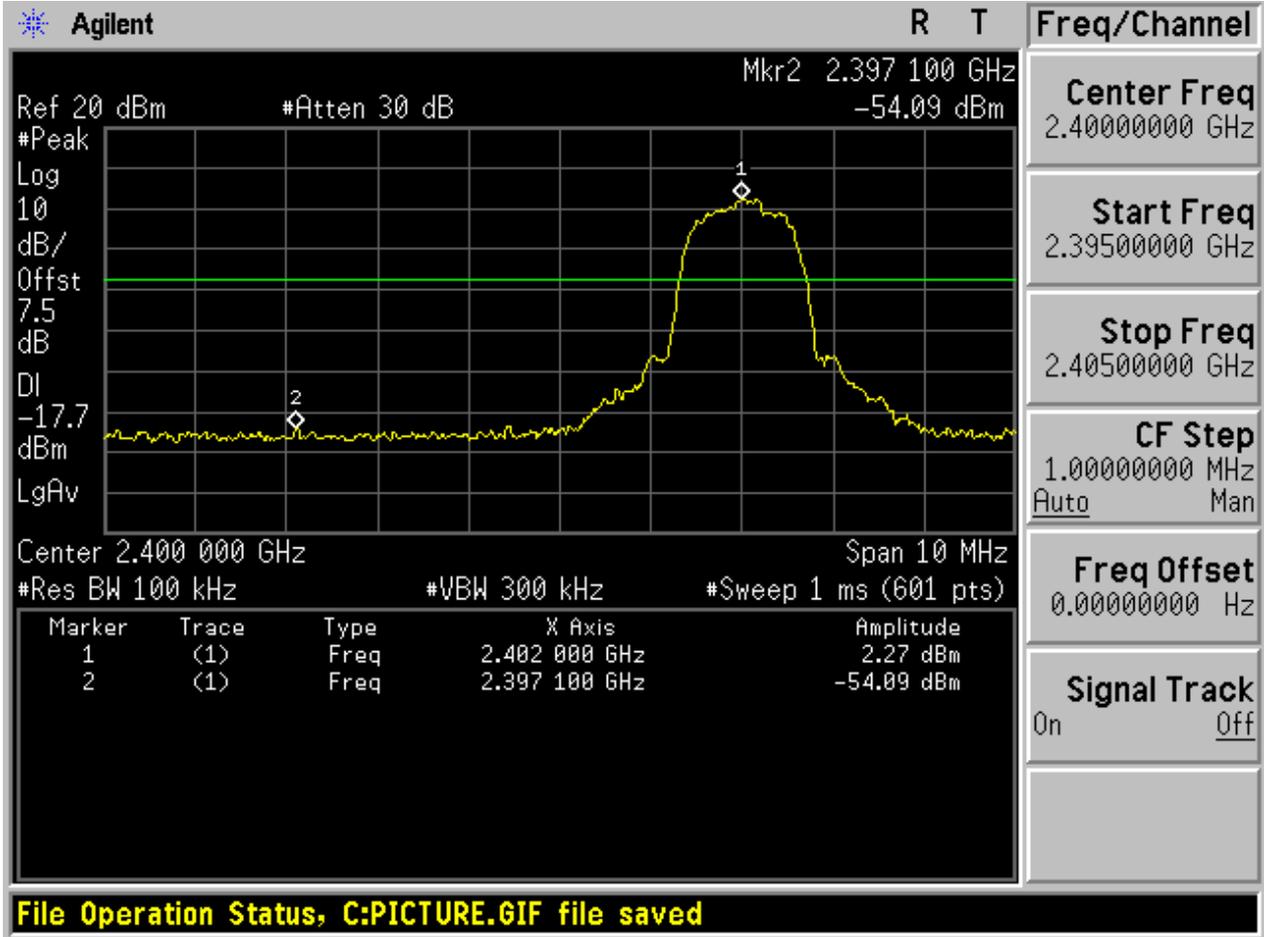


With hopping

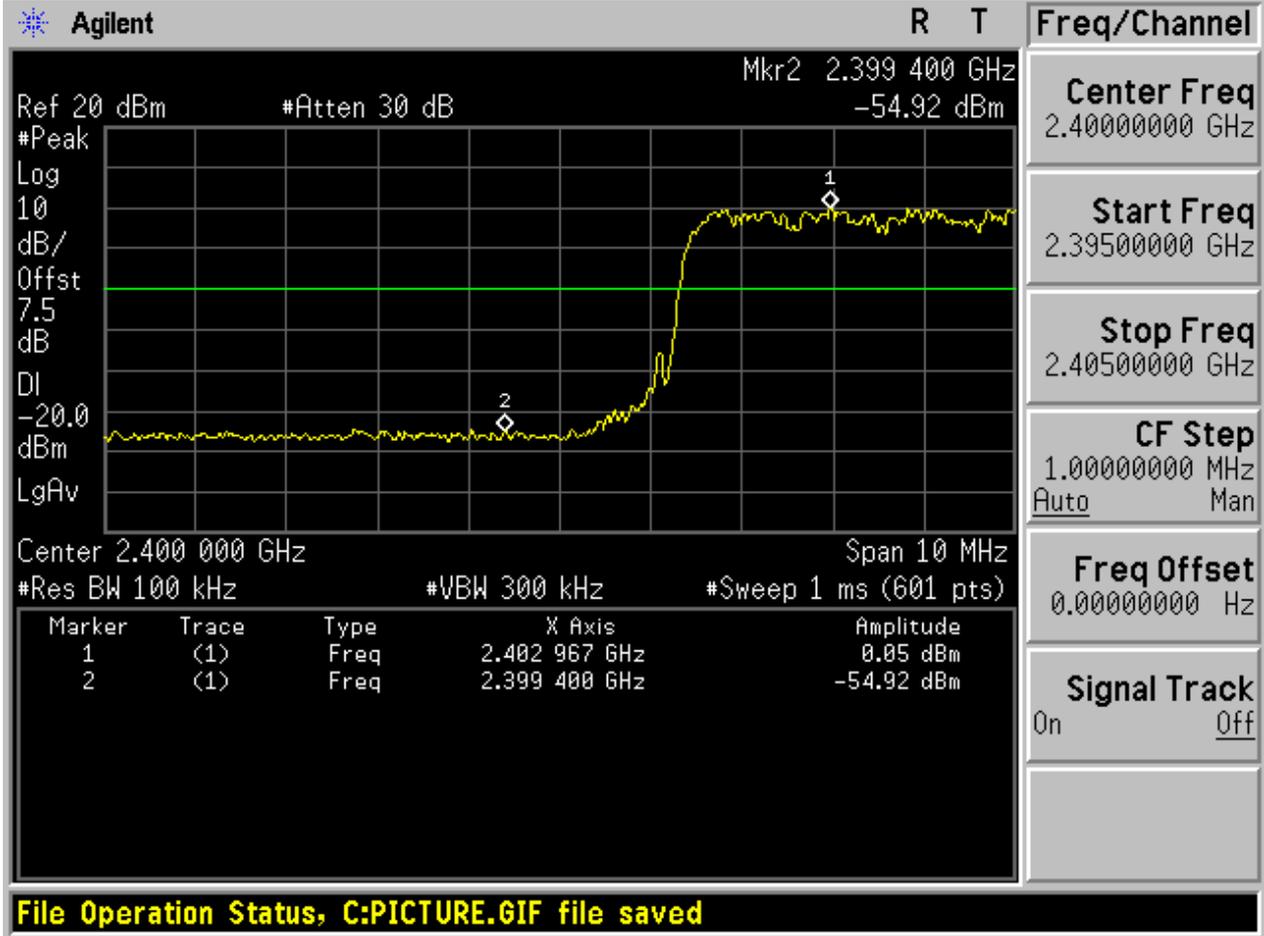


2.5 TM3_3DH5_Ch0

No hopping

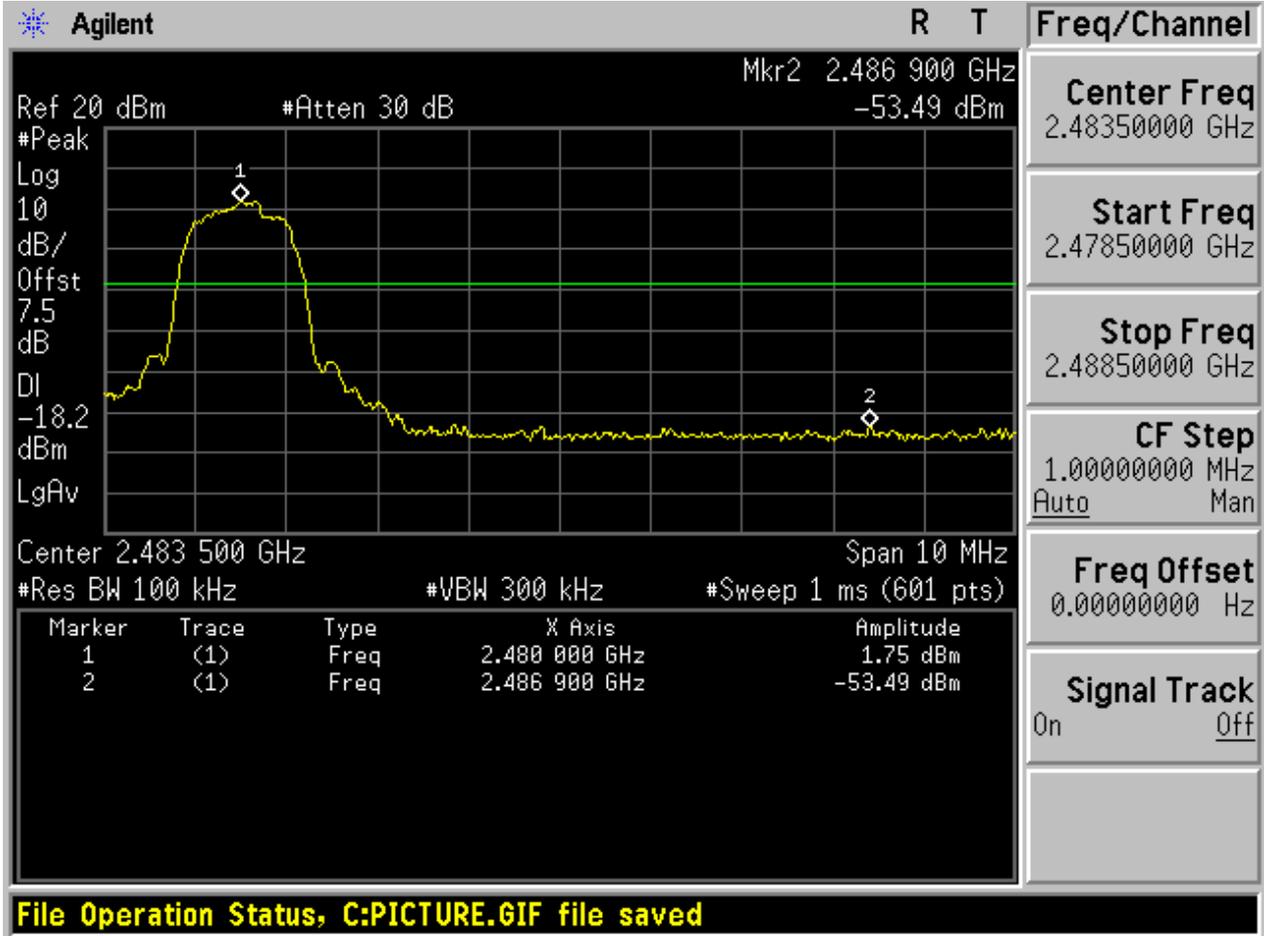


With hopping

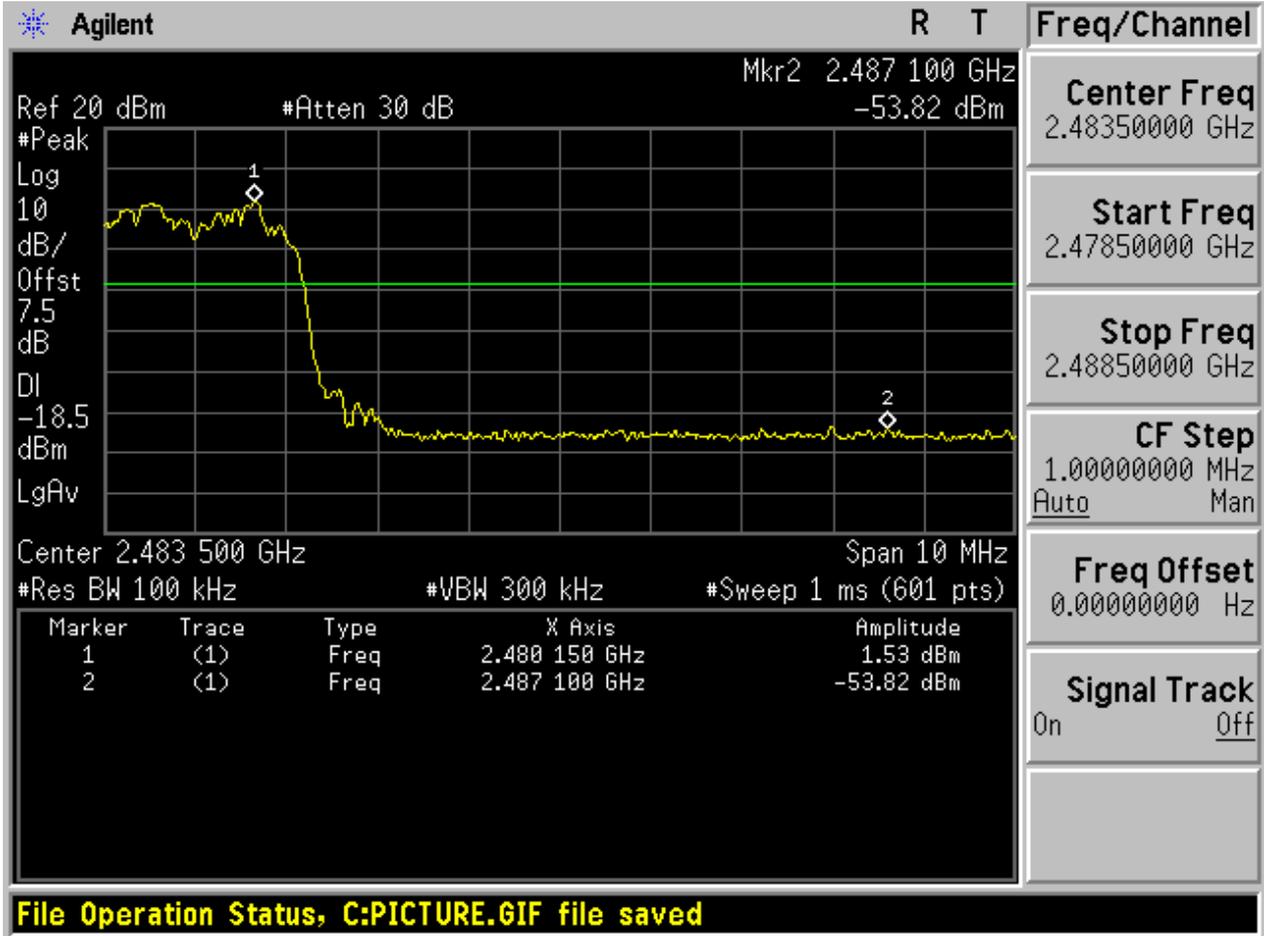


2.6 TM3_3DH5_Ch78

No hopping



With hopping



Appendix G: Conducted RF Spurious Emission

1 Result Table

In this Appendix, the “Pref” refers to the peak power level in any 100 kHz bandwidth within the fundamental emission which is used as the reference level, 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 $RBWCF [dB] = 10 \times \lg(100 [kHz]/narrower\ RBW [kHz])$. 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.

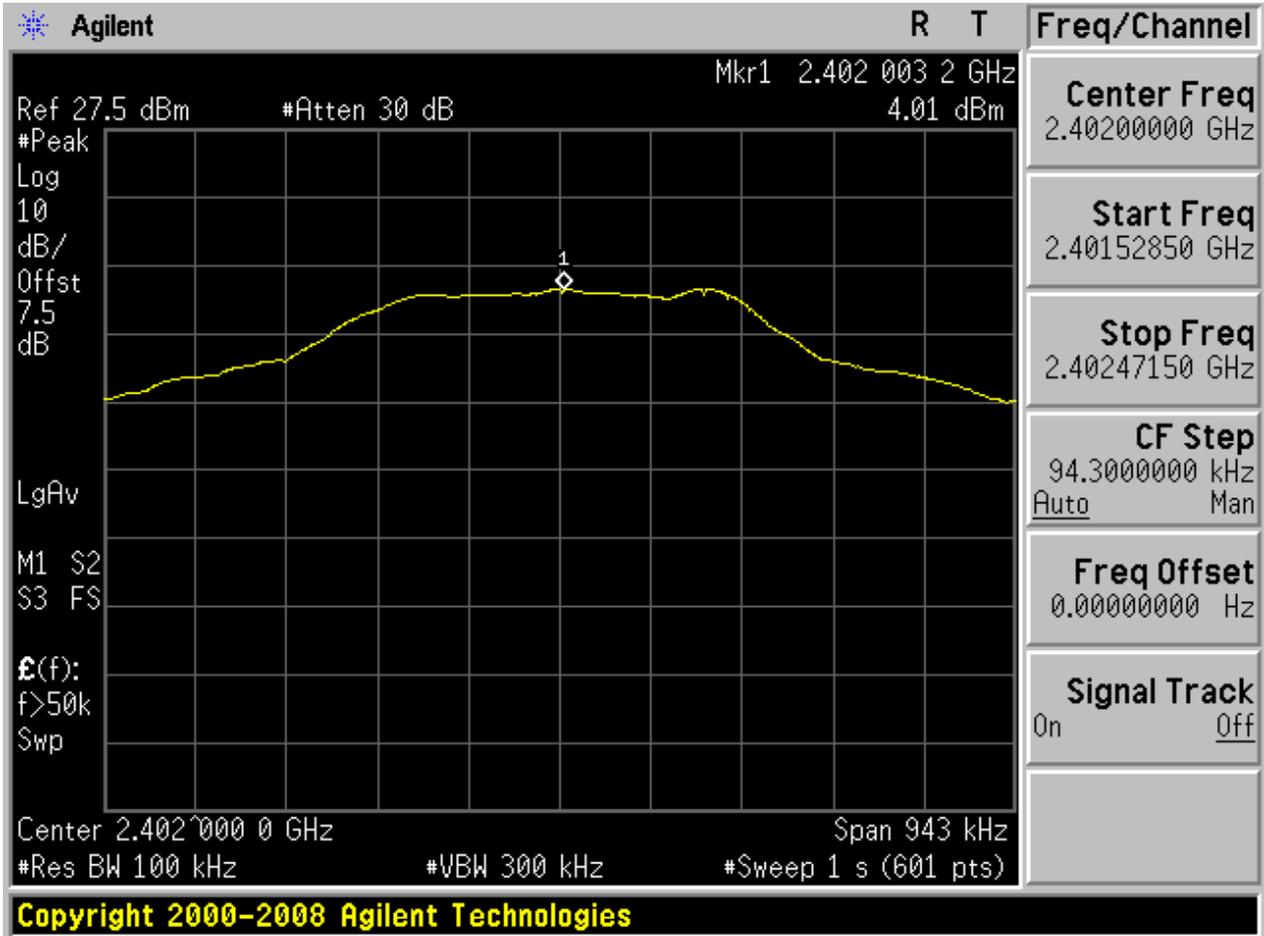
In the result table, the “< Limit” denotes that “The Puw [dBm] is less than Pref [dBm] - 20 [dB], see test plots for detailed”.

EUT Conf.	Pref [dBm/100 kHz]	Puw [dBm/100 kHz]	Verdict
TM1_DH5_Ch0	4.01	< Limit	Pass
TM1_DH5_Ch39	3.21	< Limit	Pass
TM1_DH5_Ch78	3.53	< Limit	Pass
TM2_2DH5_Ch0	2.10	< Limit	Pass
TM2_2DH5_Ch39	1.29	< Limit	Pass
TM2_2DH5_Ch78	1.59	< Limit	Pass
TM3_3DH5_Ch0	2.10	< Limit	Pass
TM3_3DH5_Ch39	1.28	< Limit	Pass
TM3_3DH5_Ch78	1.60	< Limit	Pass

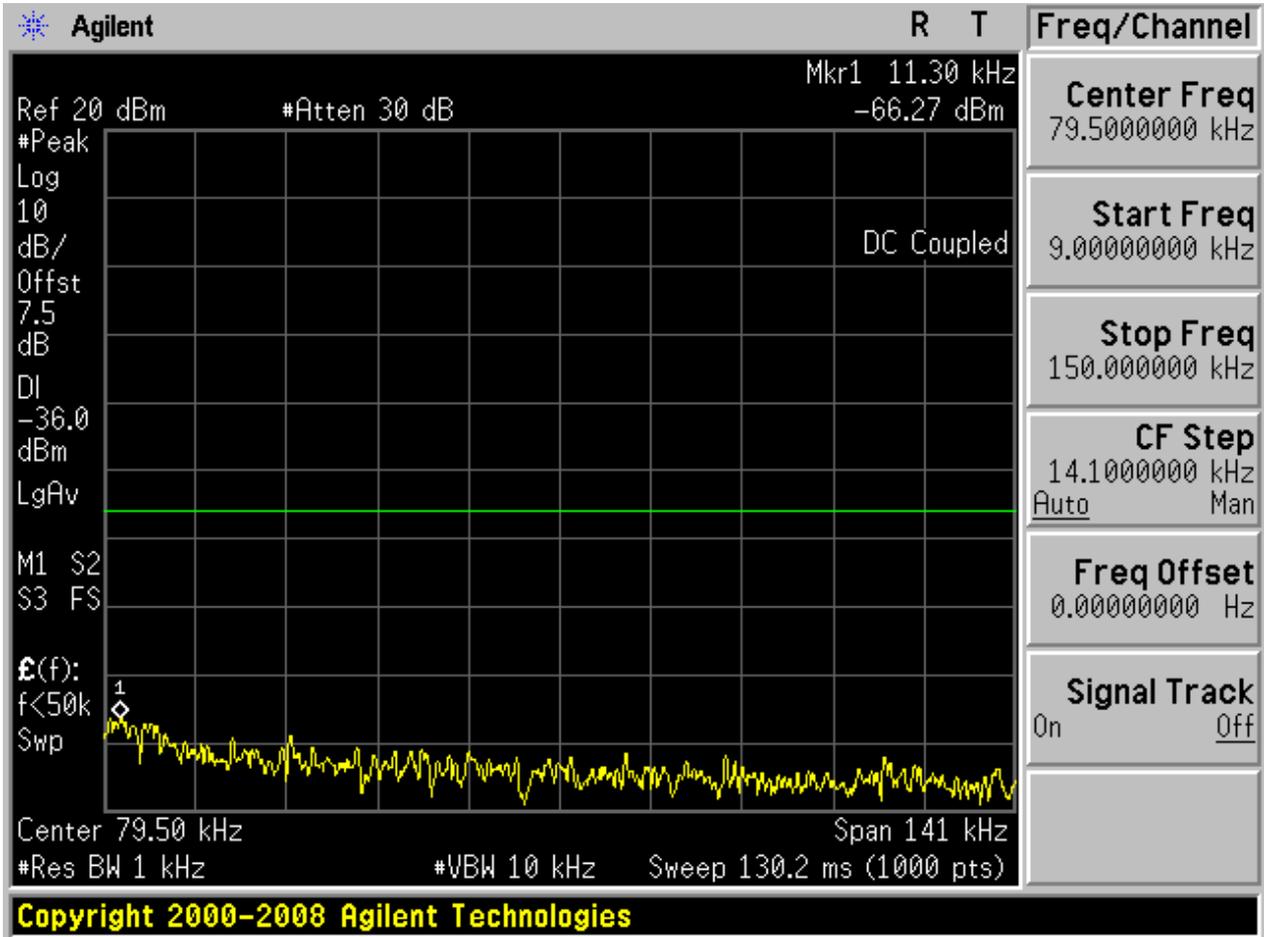
2 Test Plot

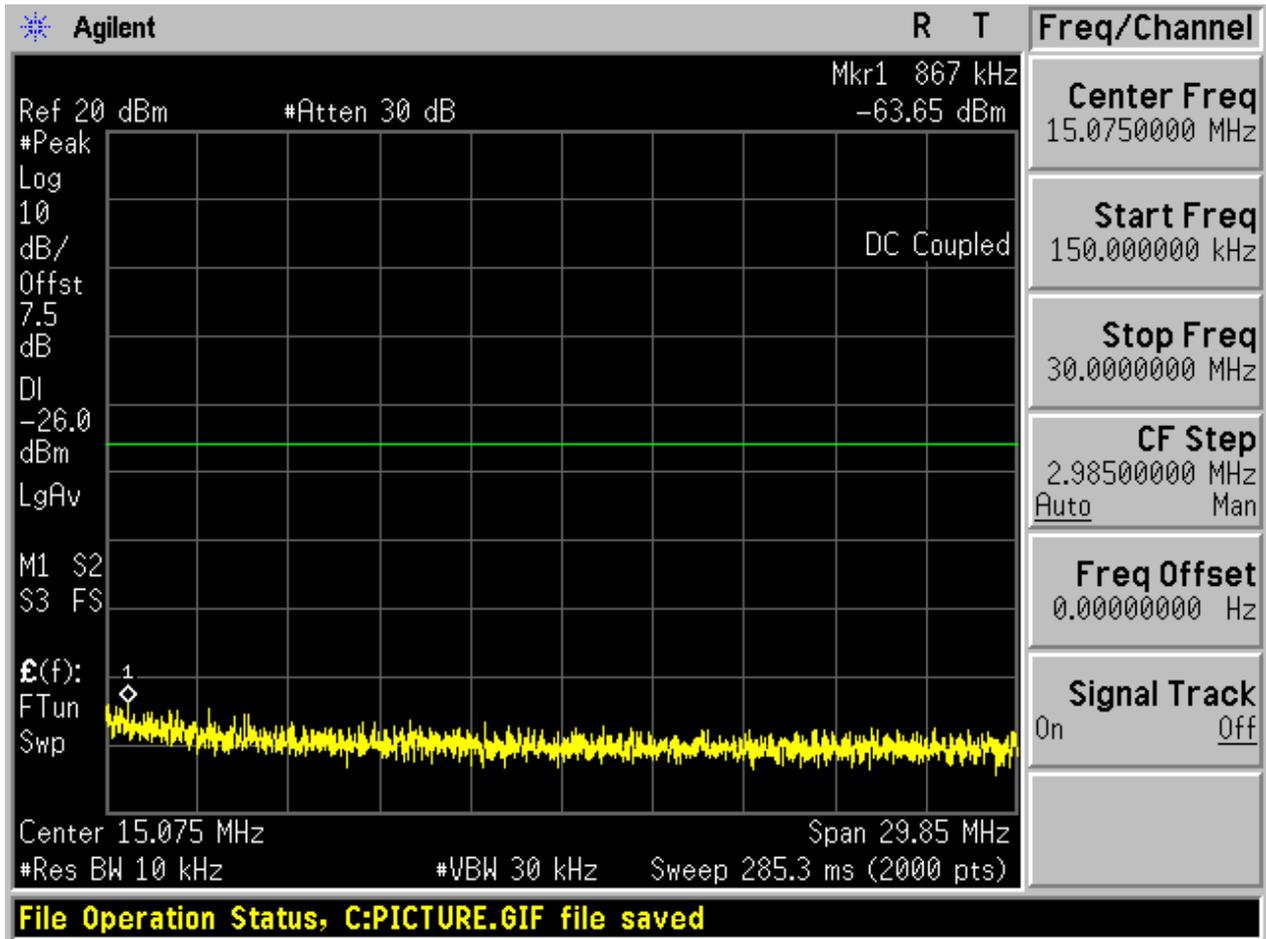
2.1 TM1_DH5_Ch0

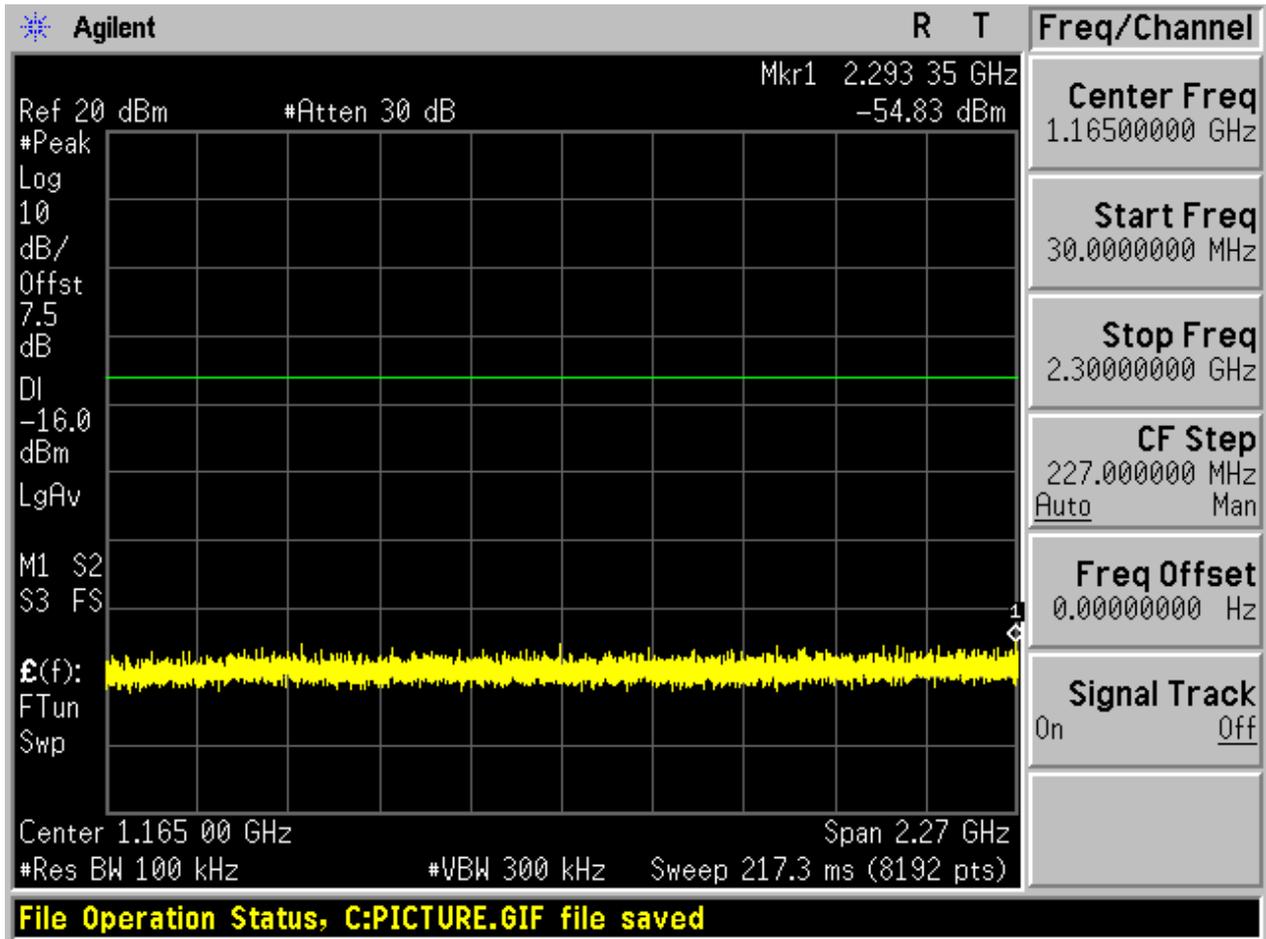
2.1.1 Pref

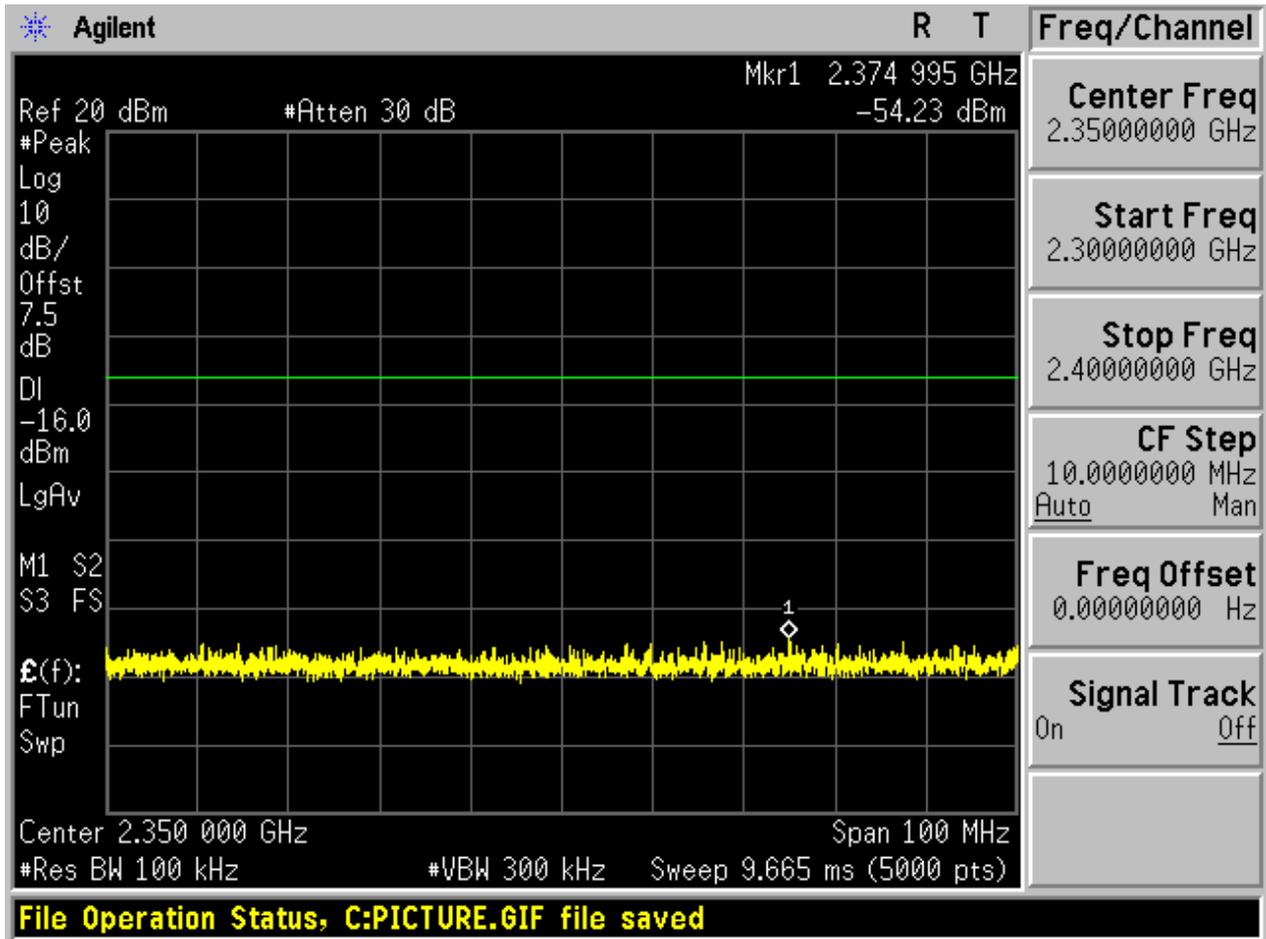


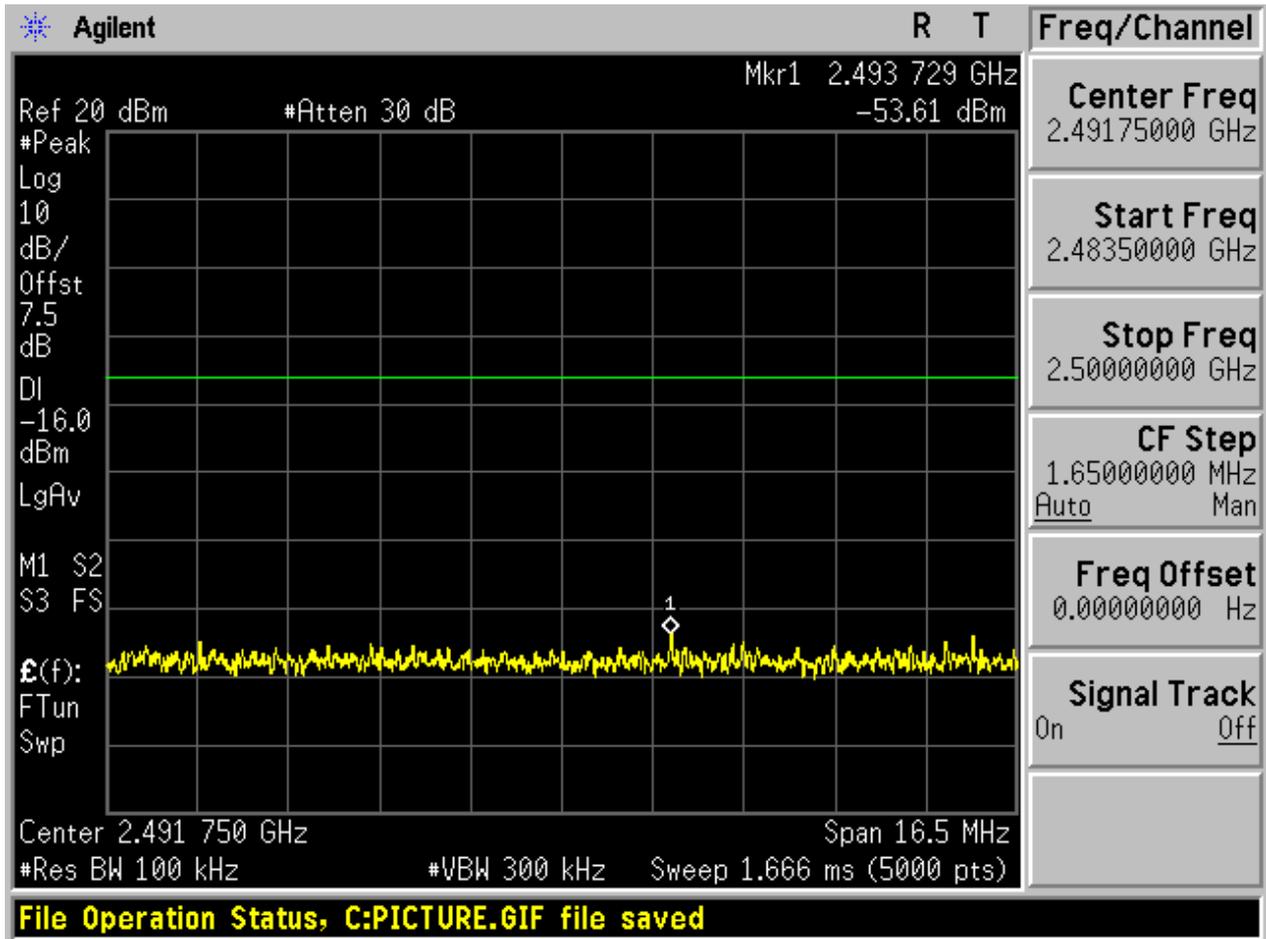
2.1.2 Puw

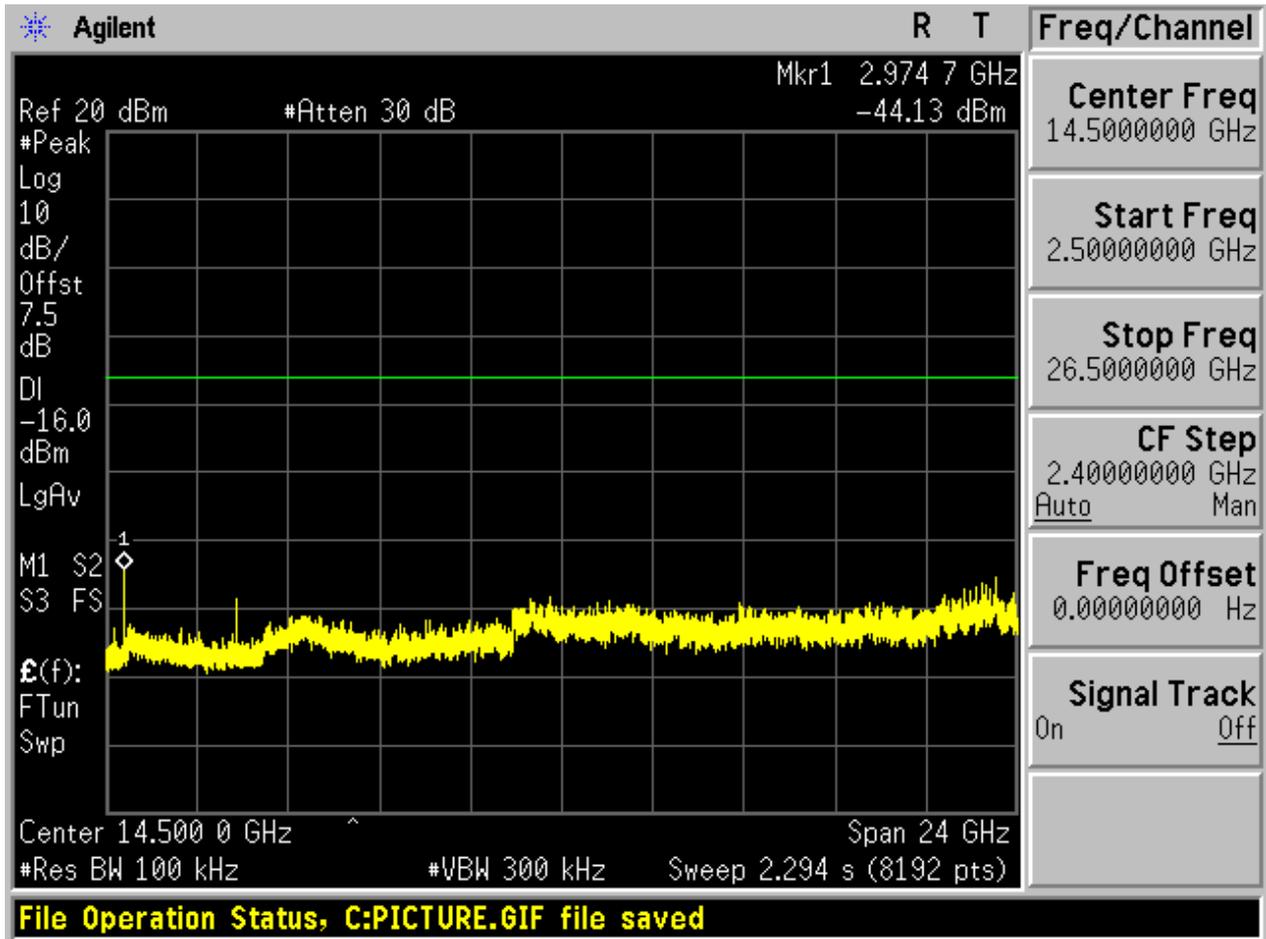






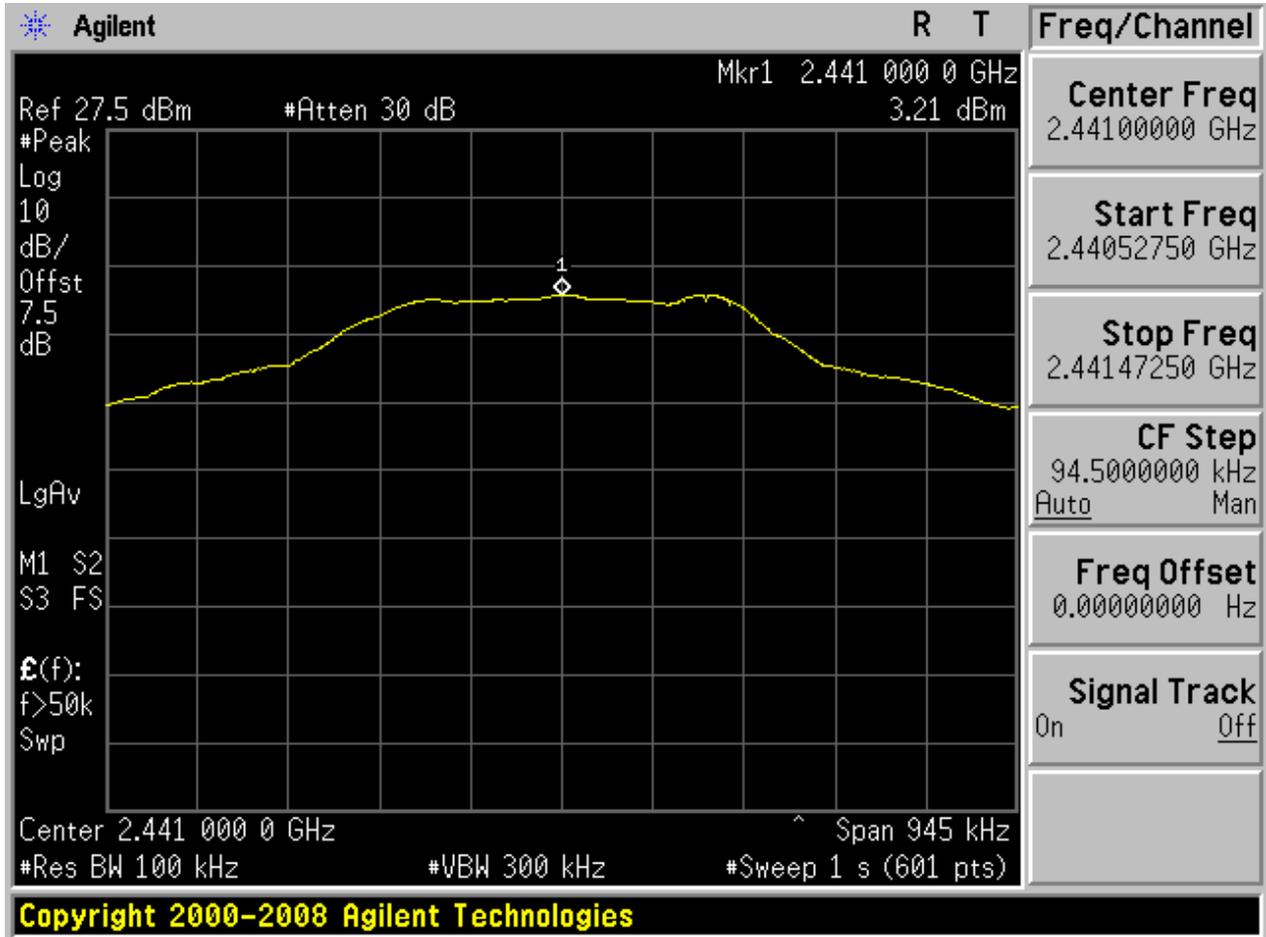




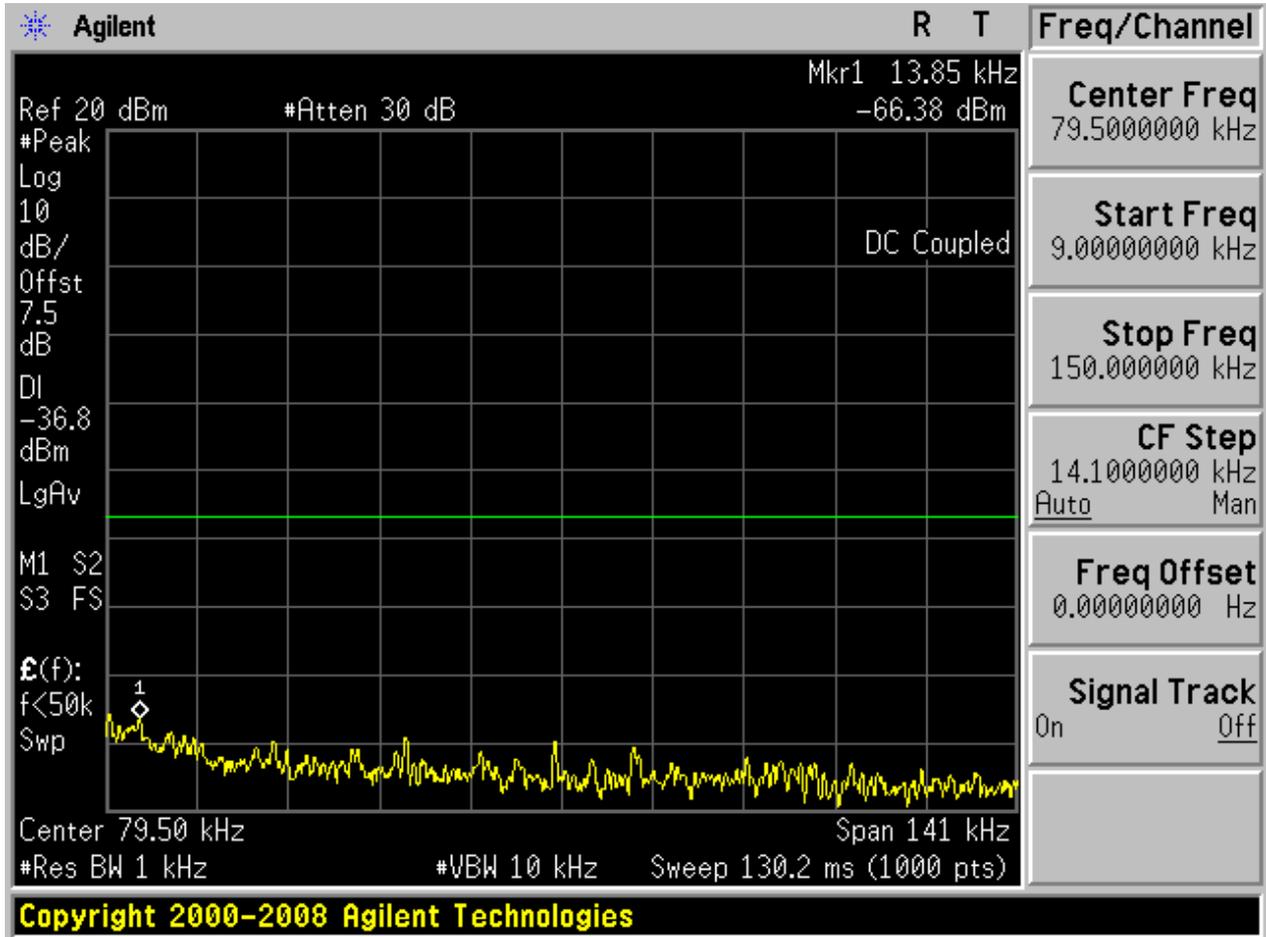


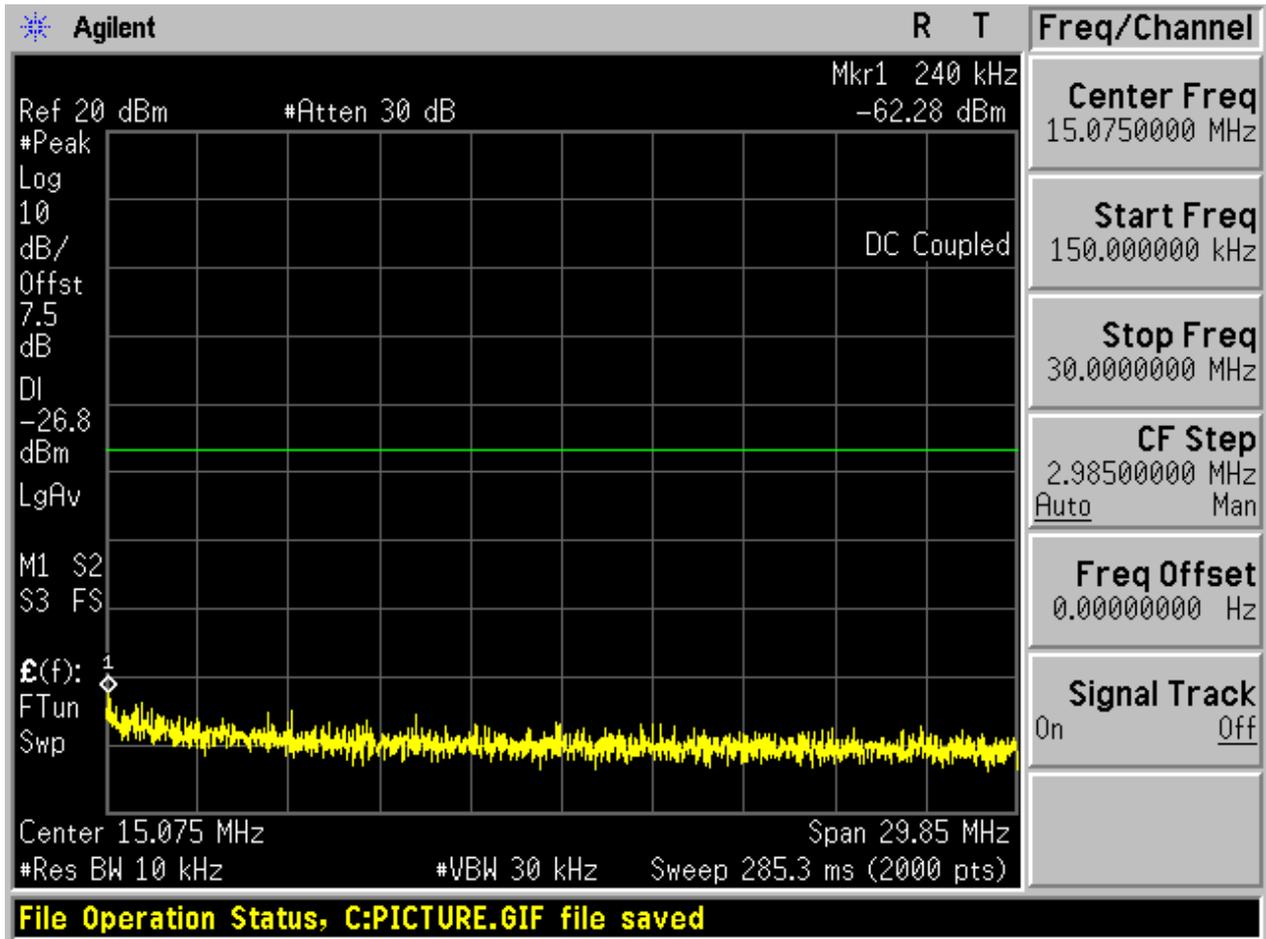
2.2 TM1_DH5_Ch39

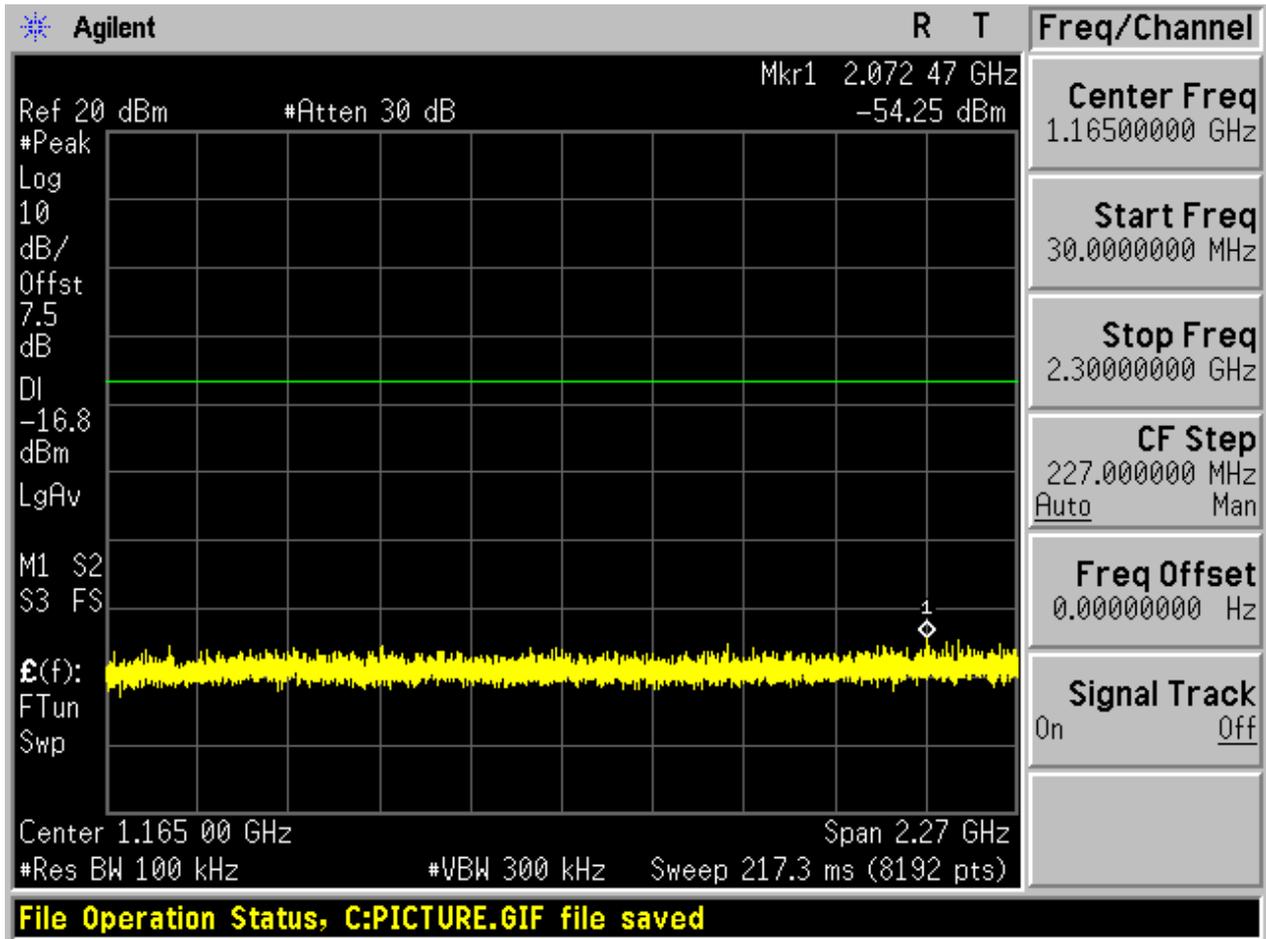
2.2.1 Pref

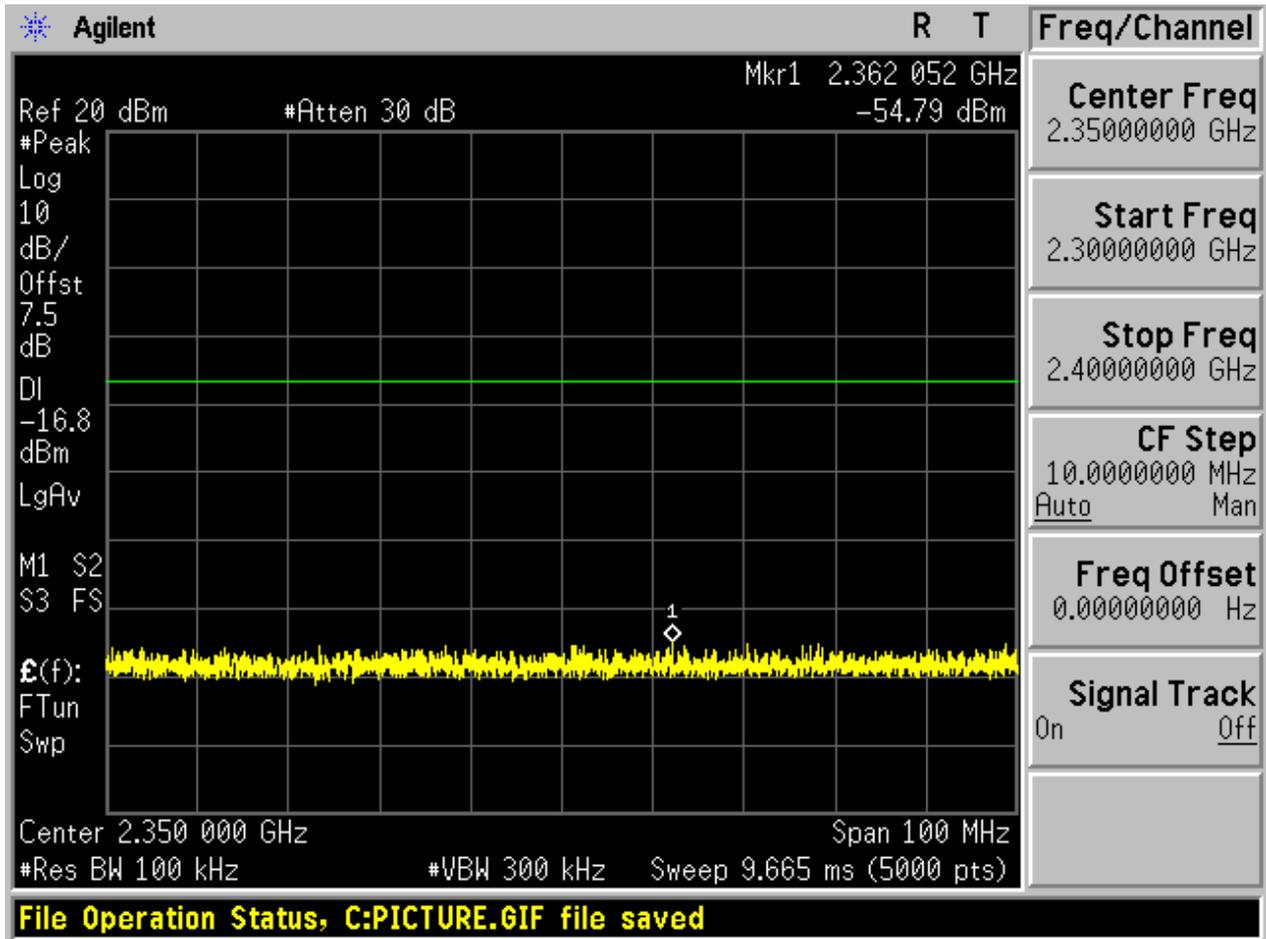


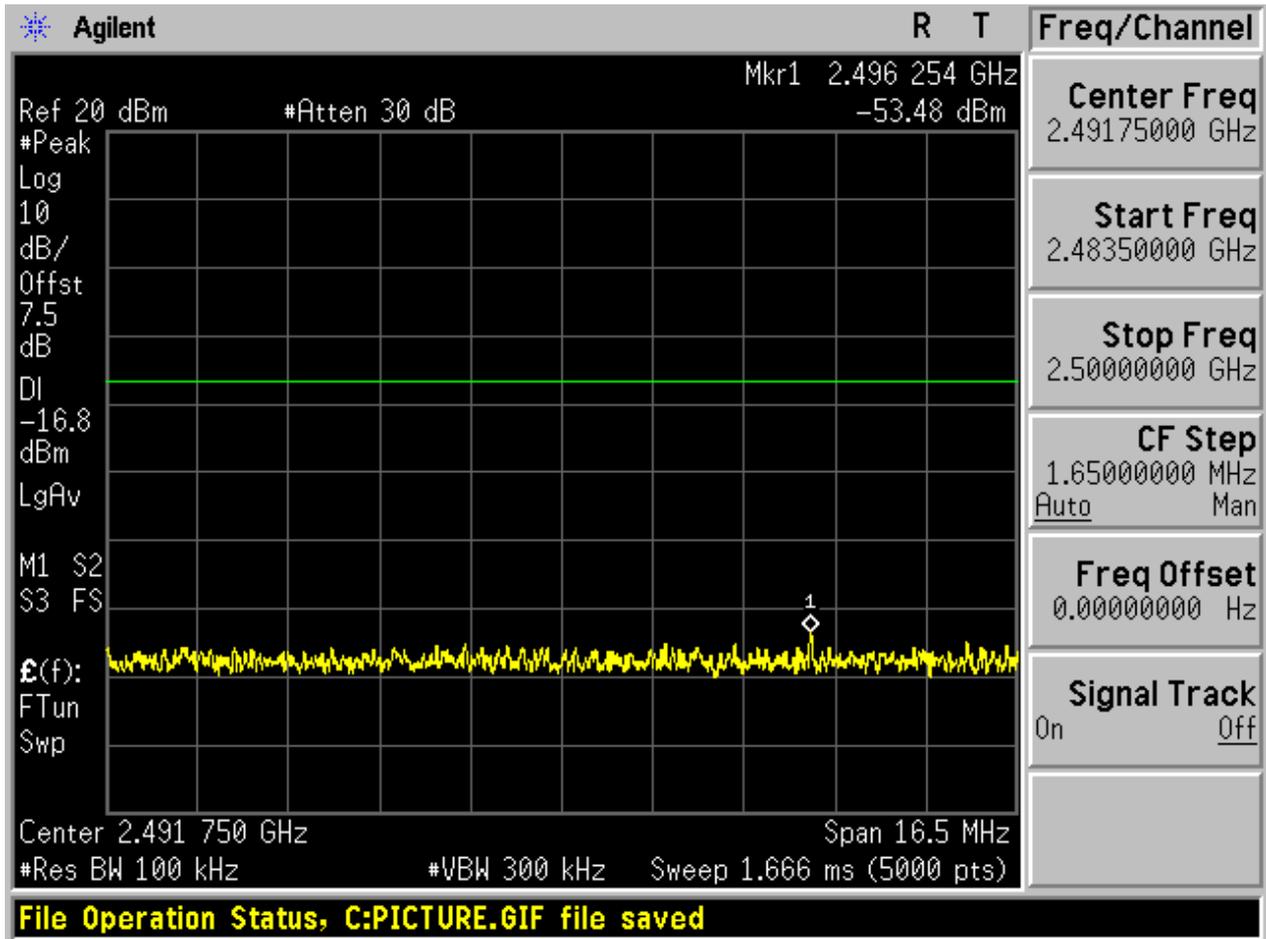
2.2.2 Puw

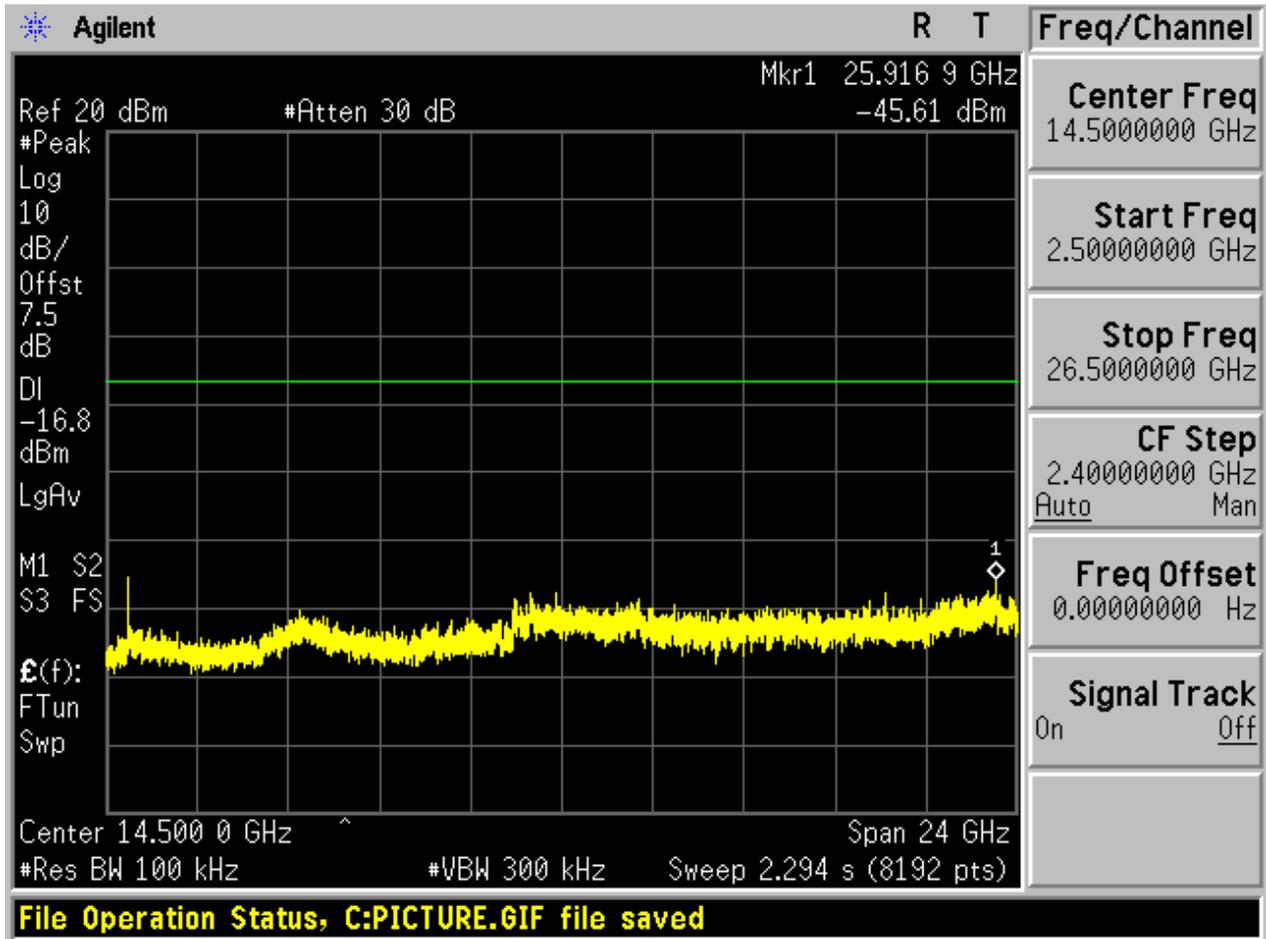






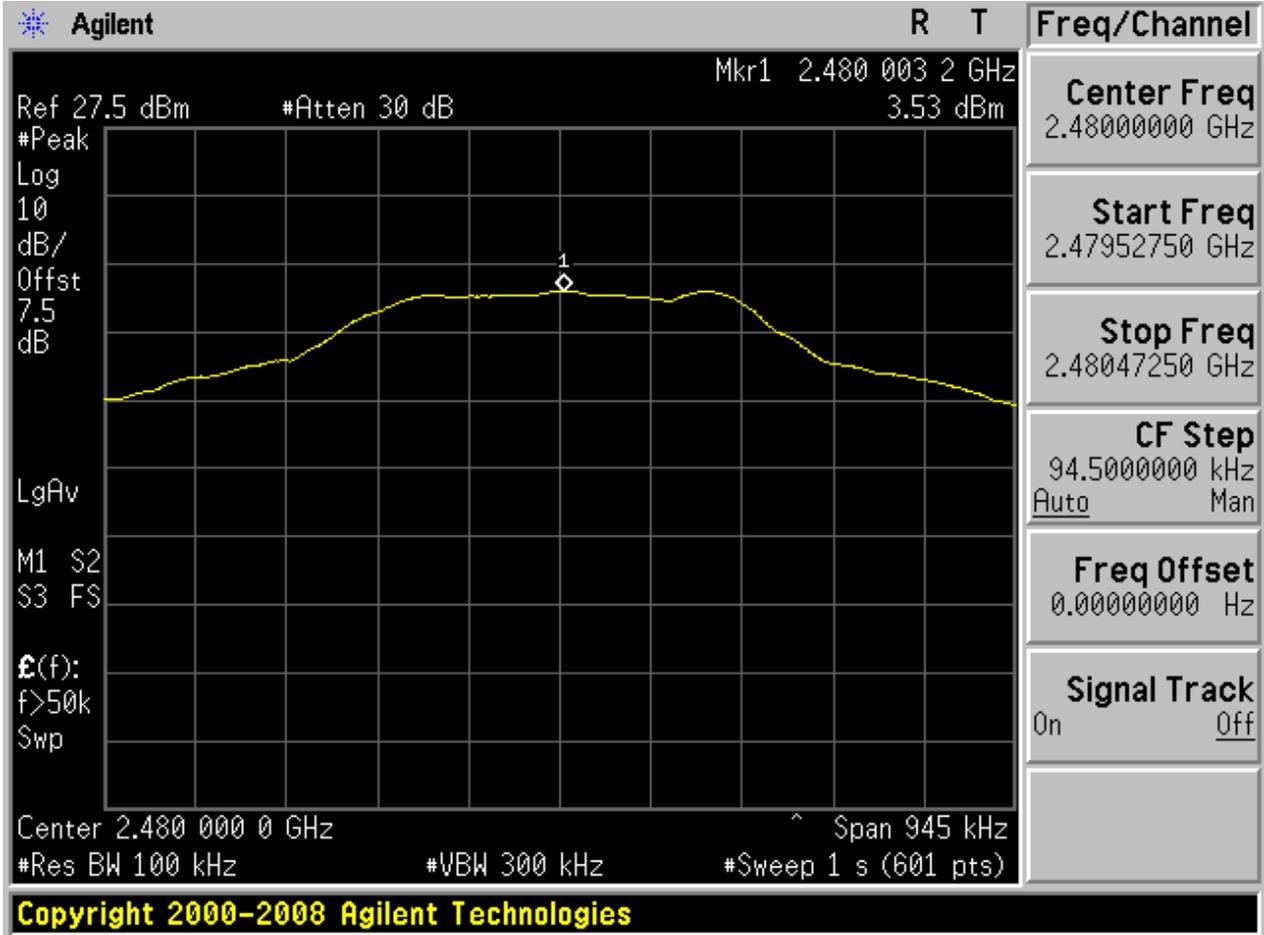




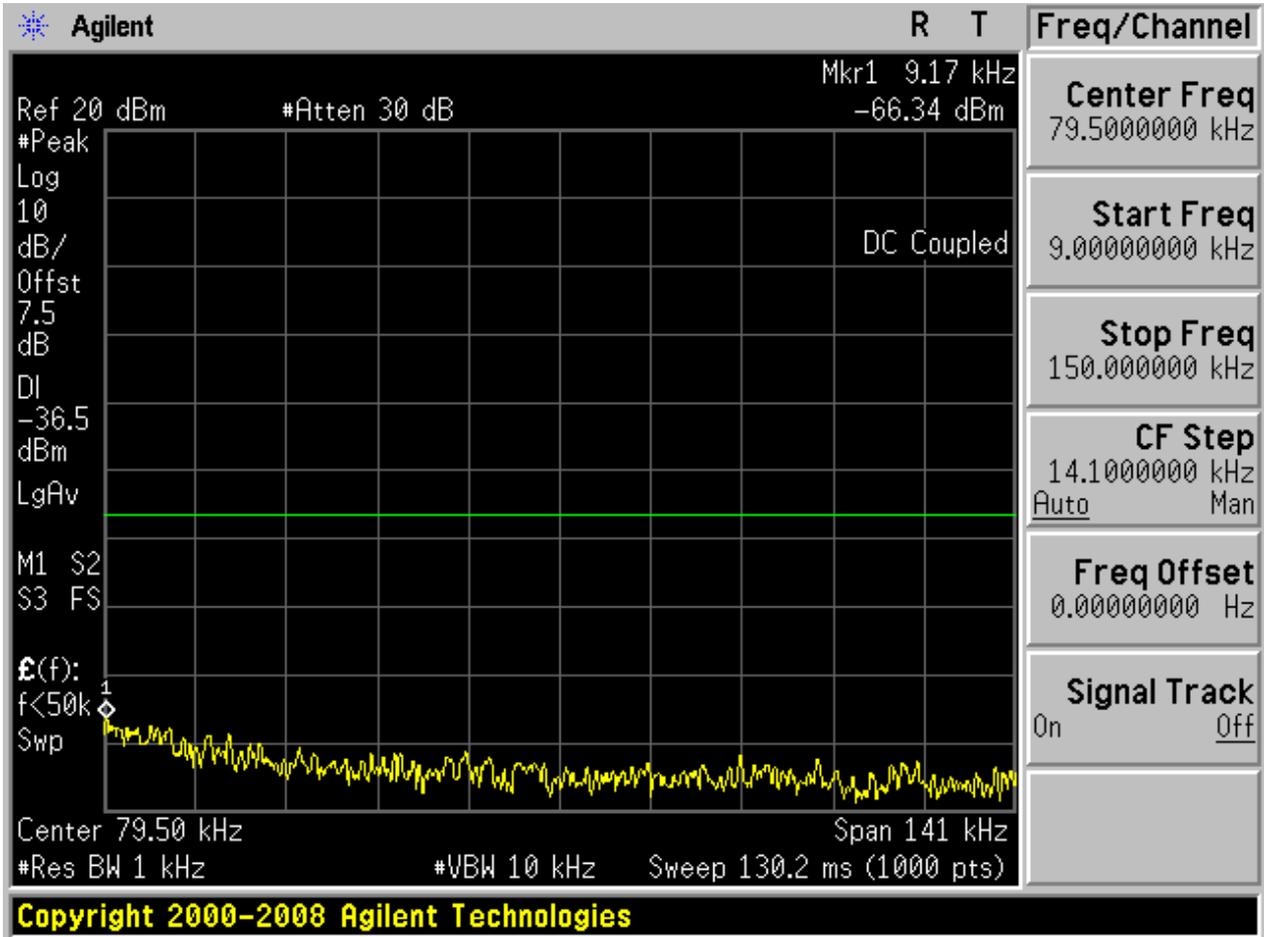


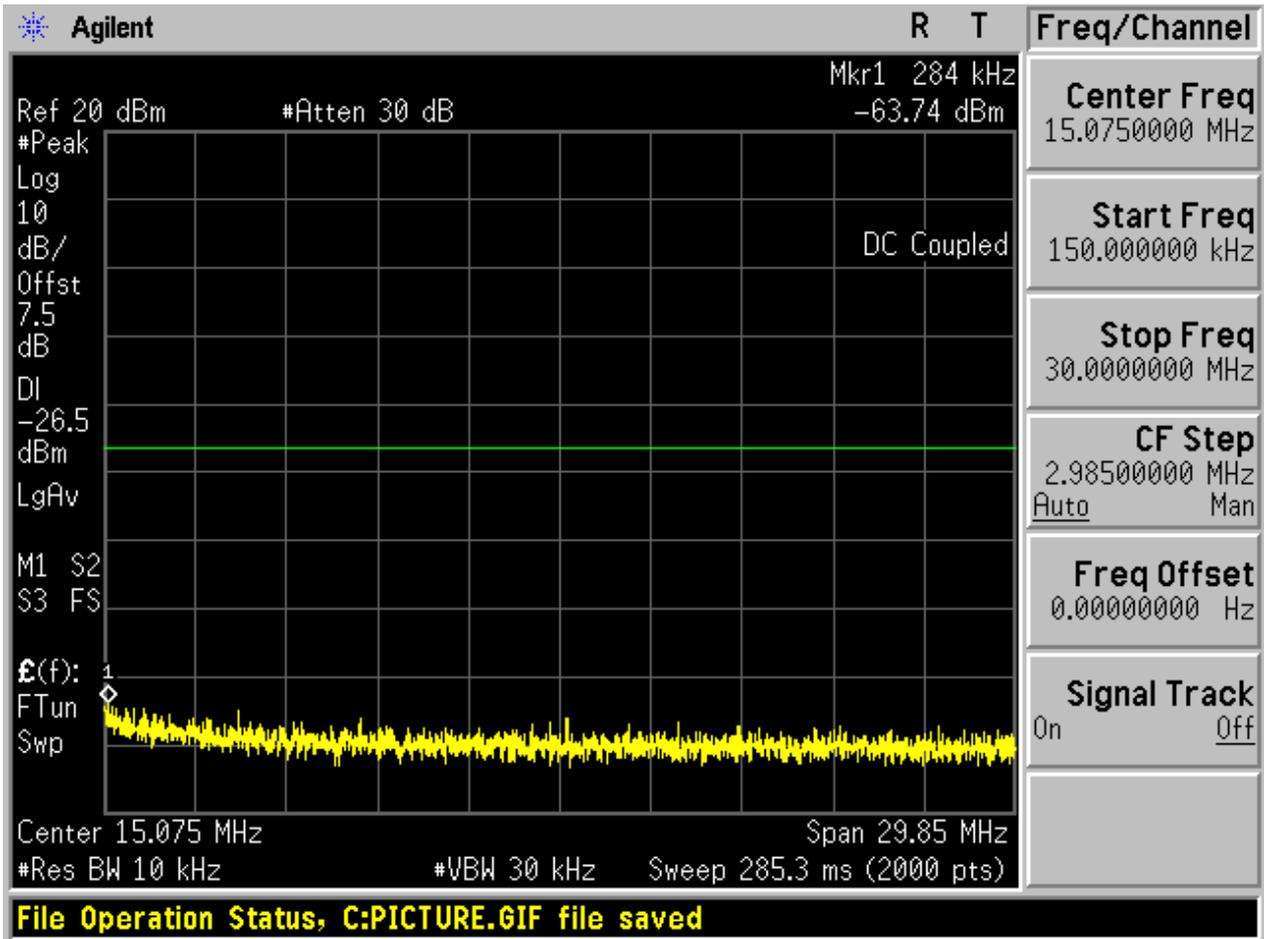
2.3 TM1_DH5_Ch78

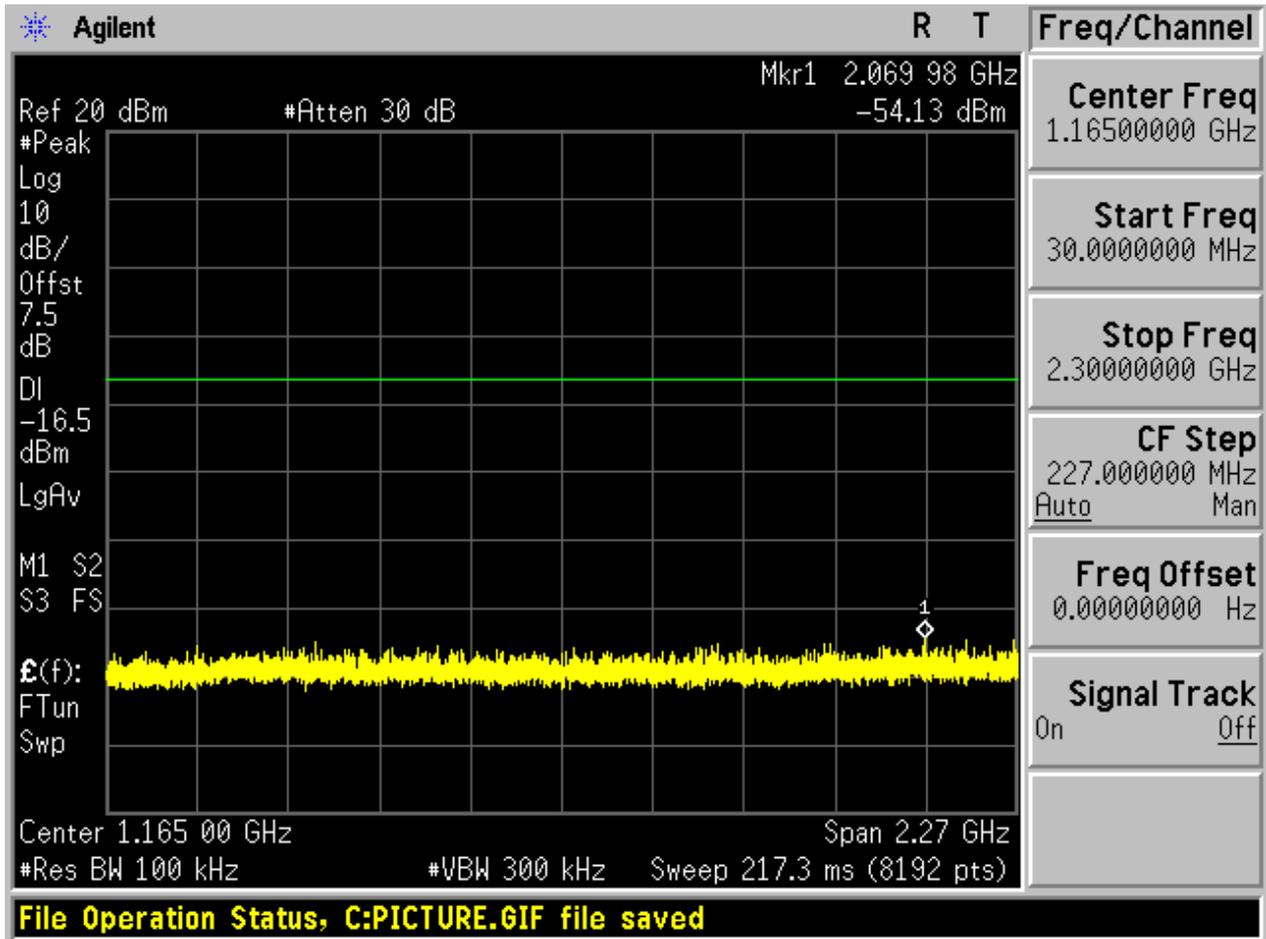
2.3.1 Pref

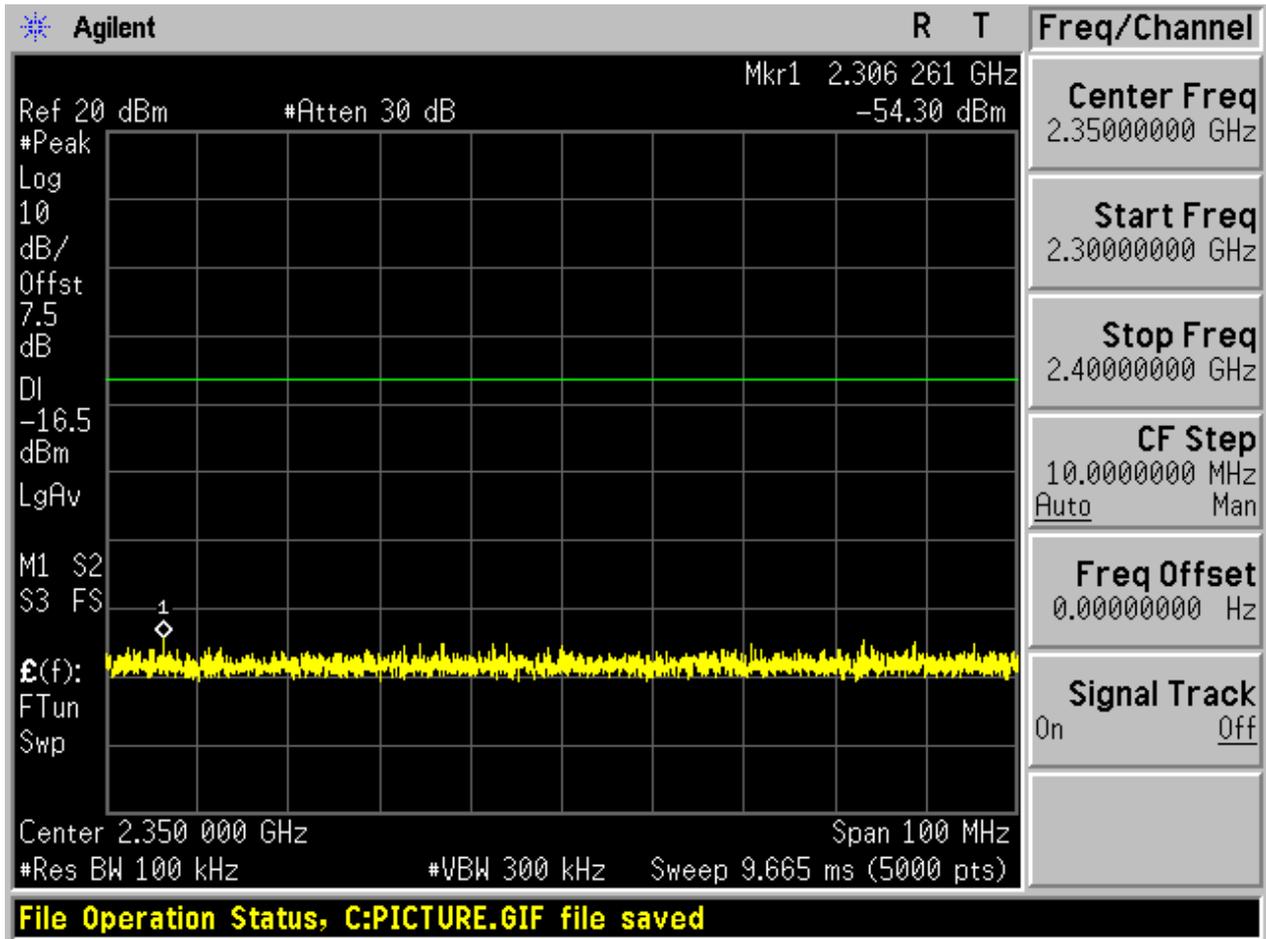


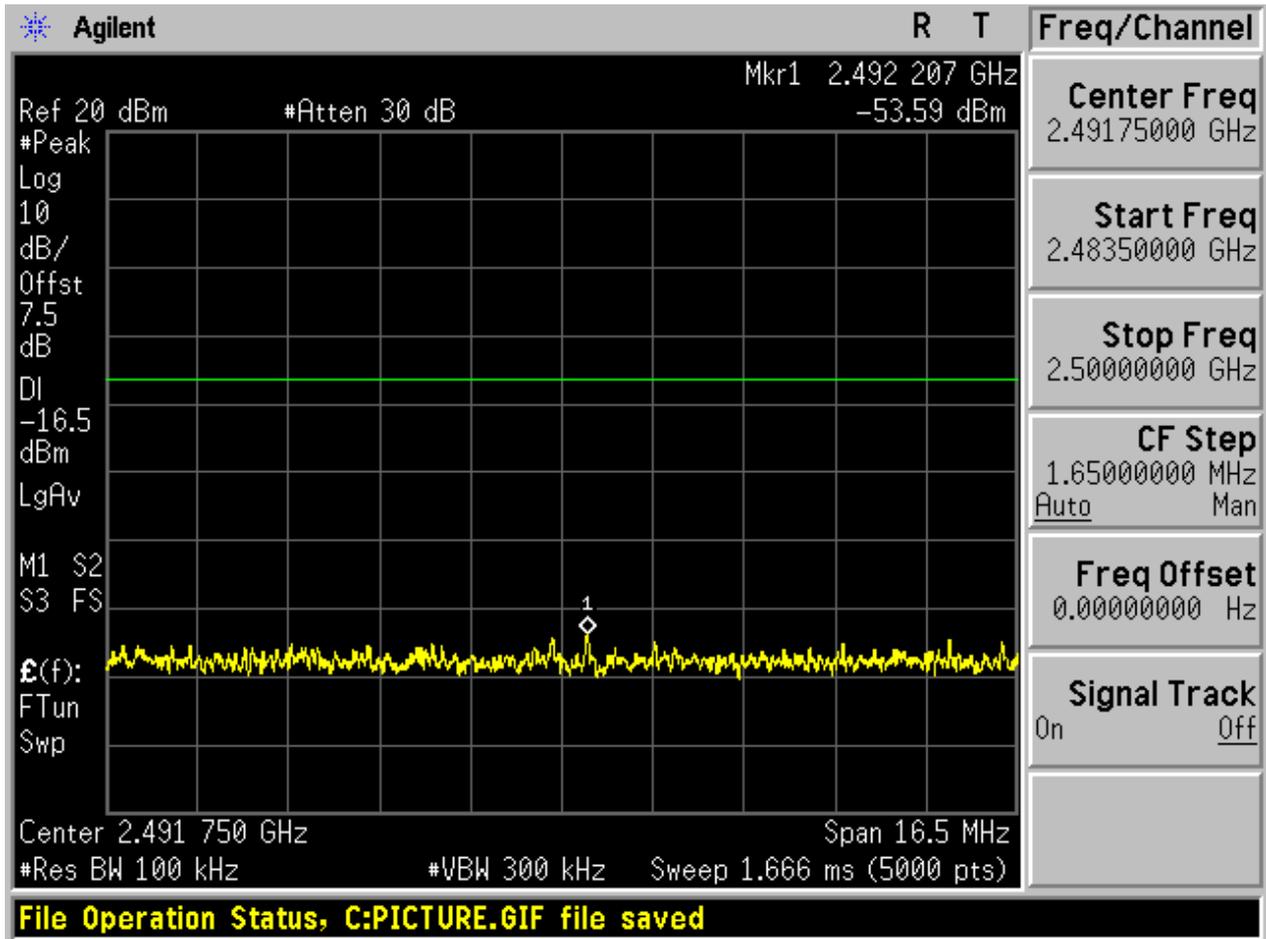
2.3.2 Puw

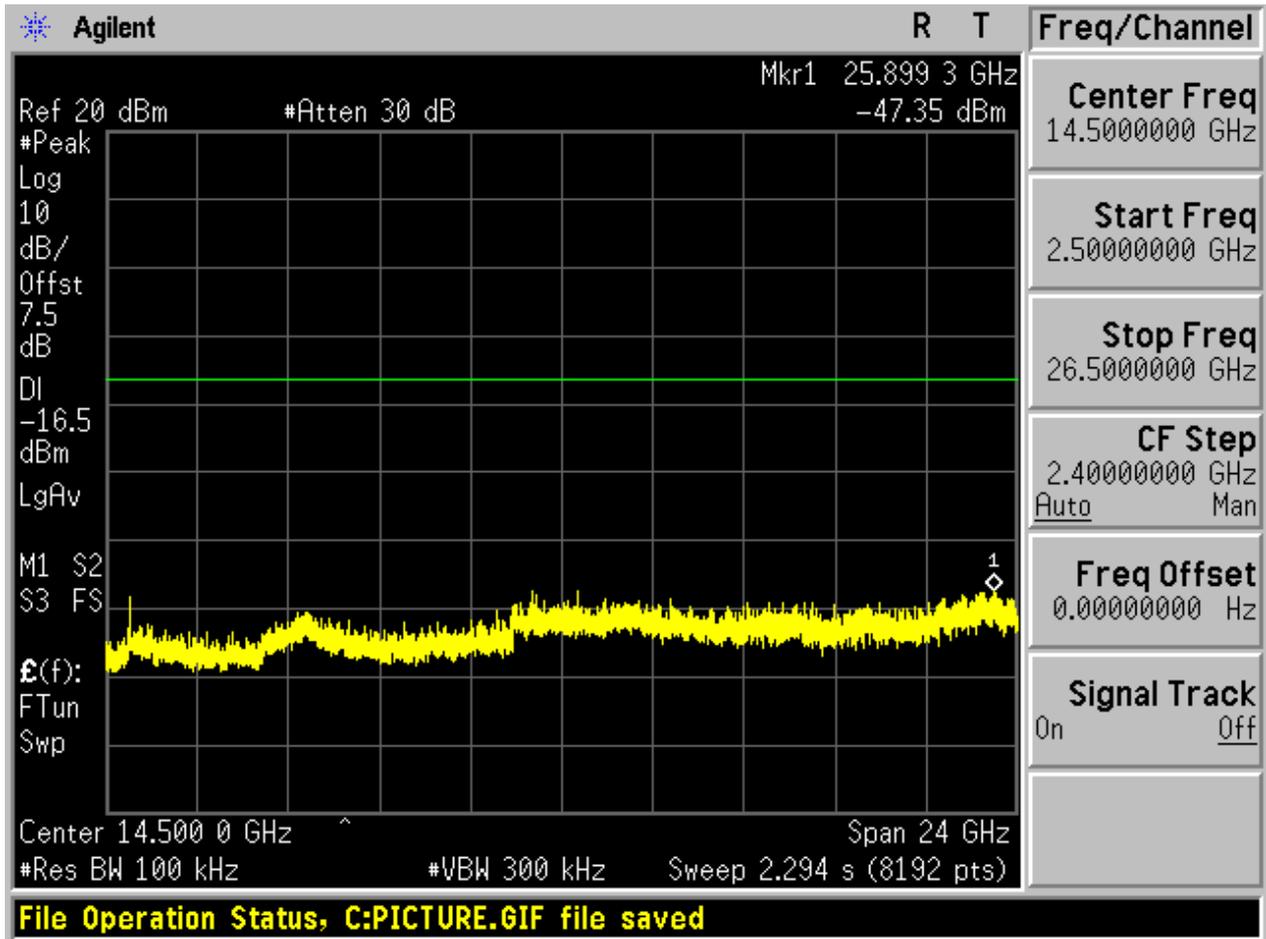






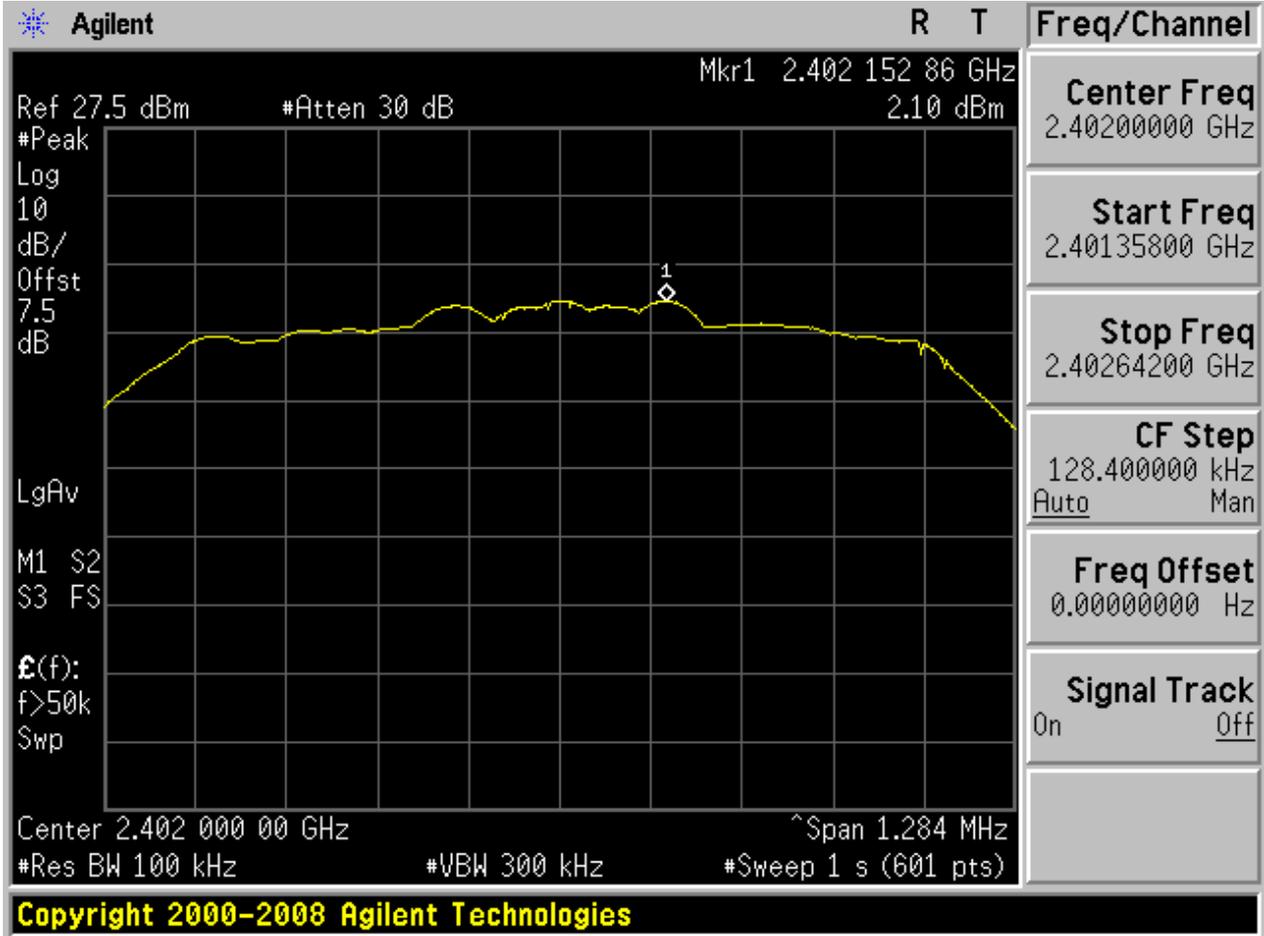




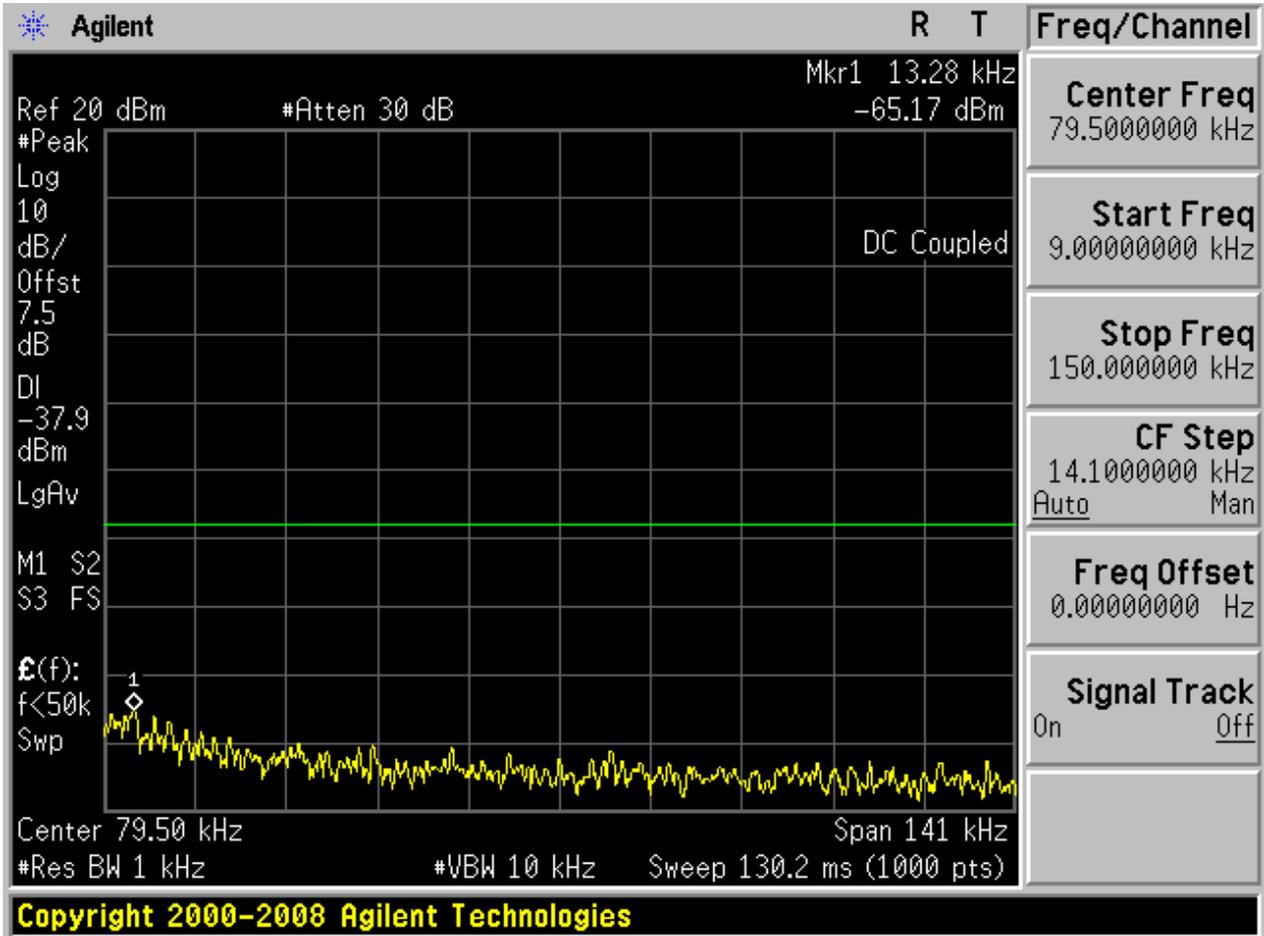


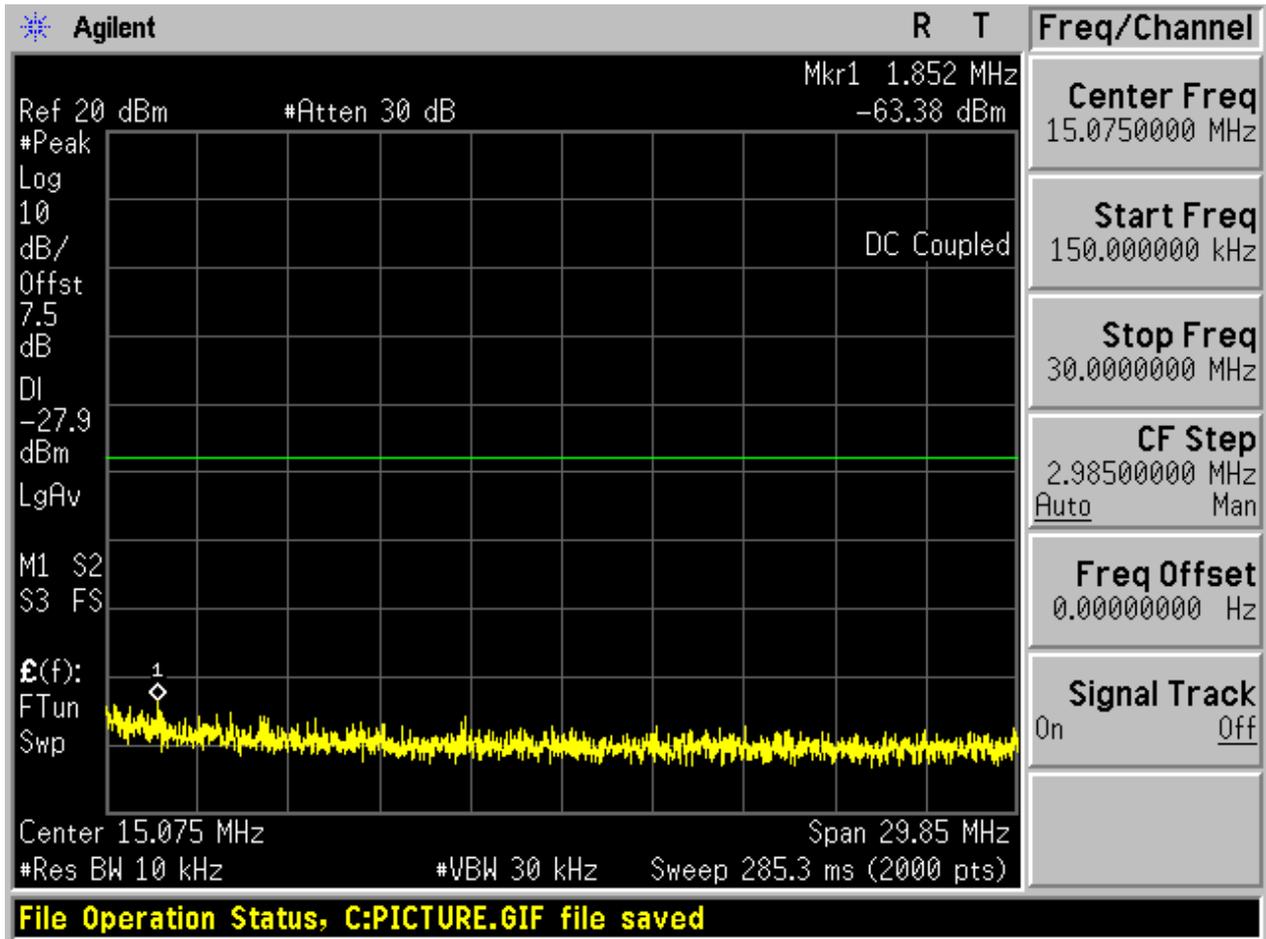
2.4 TM2_2DH5_Ch0

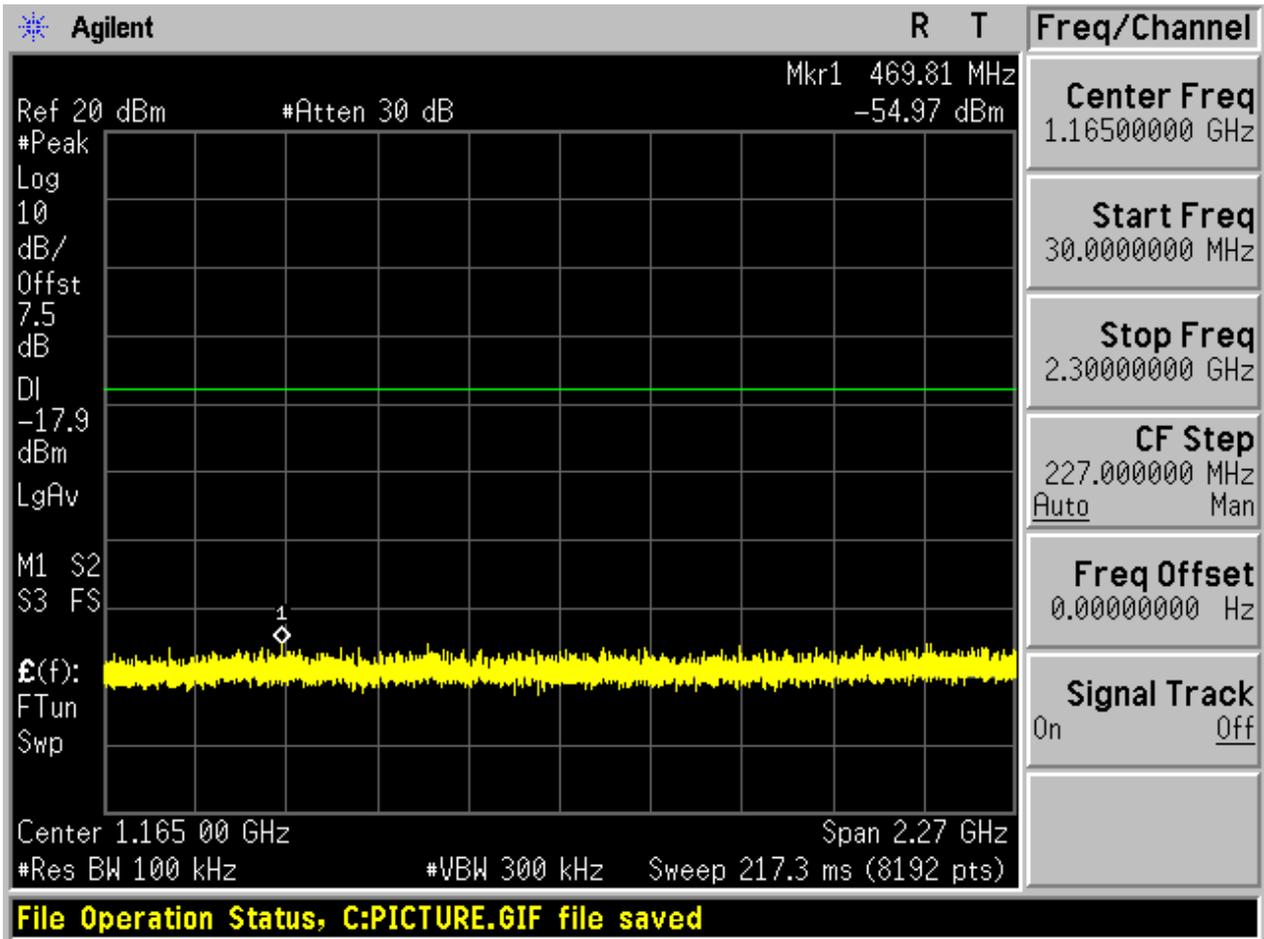
2.4.1 Pref

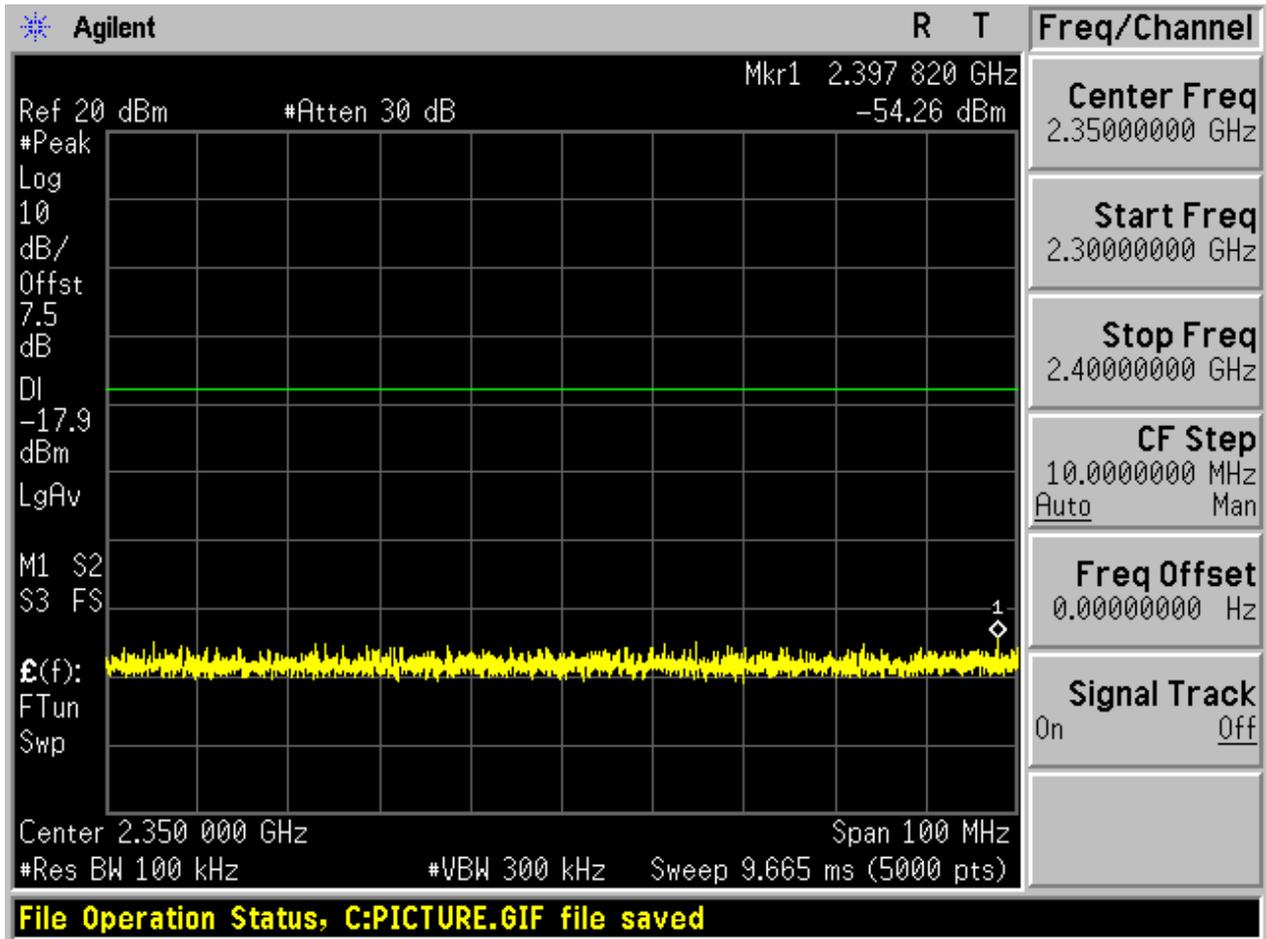


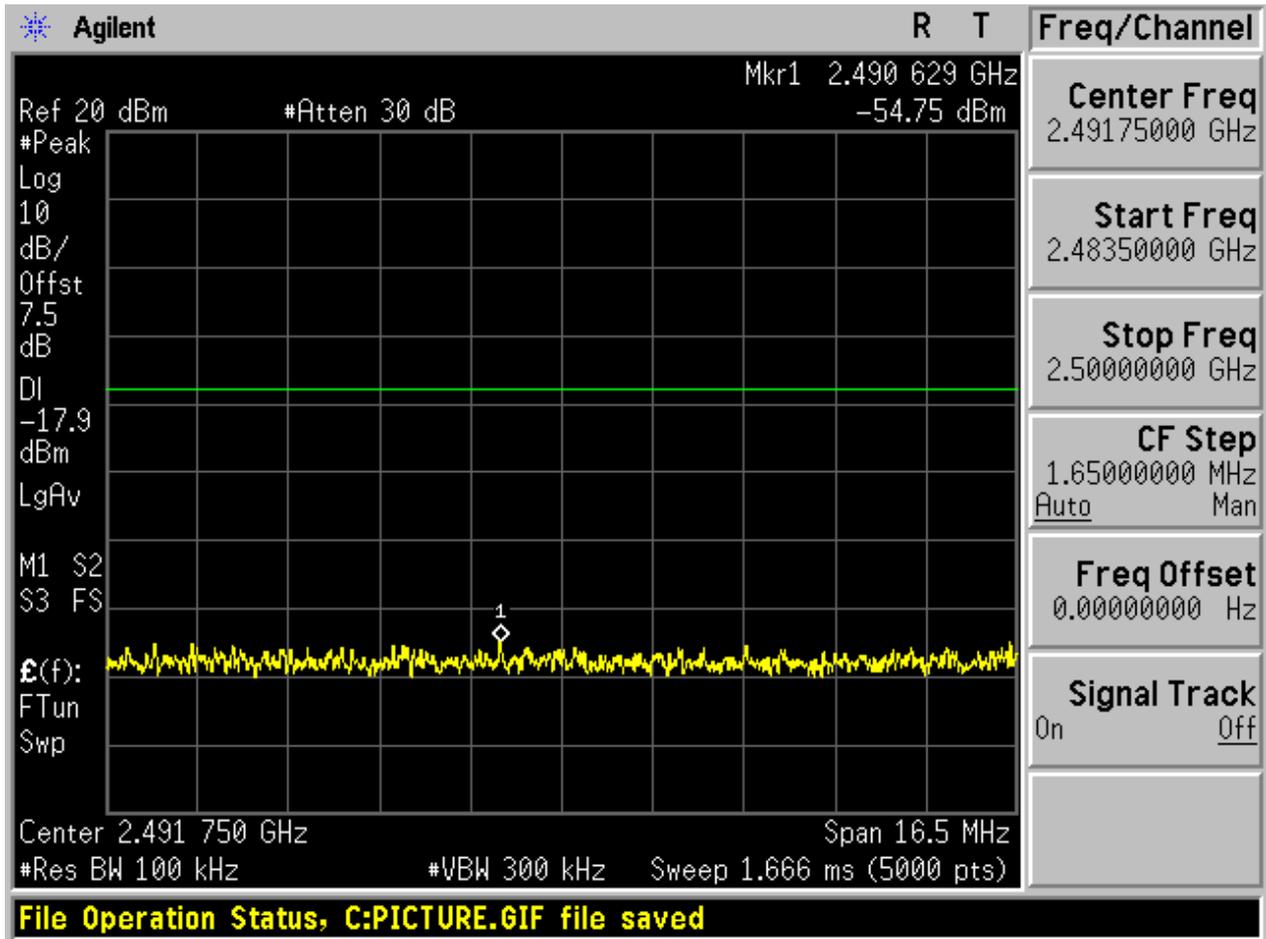
2.4.2 Puw

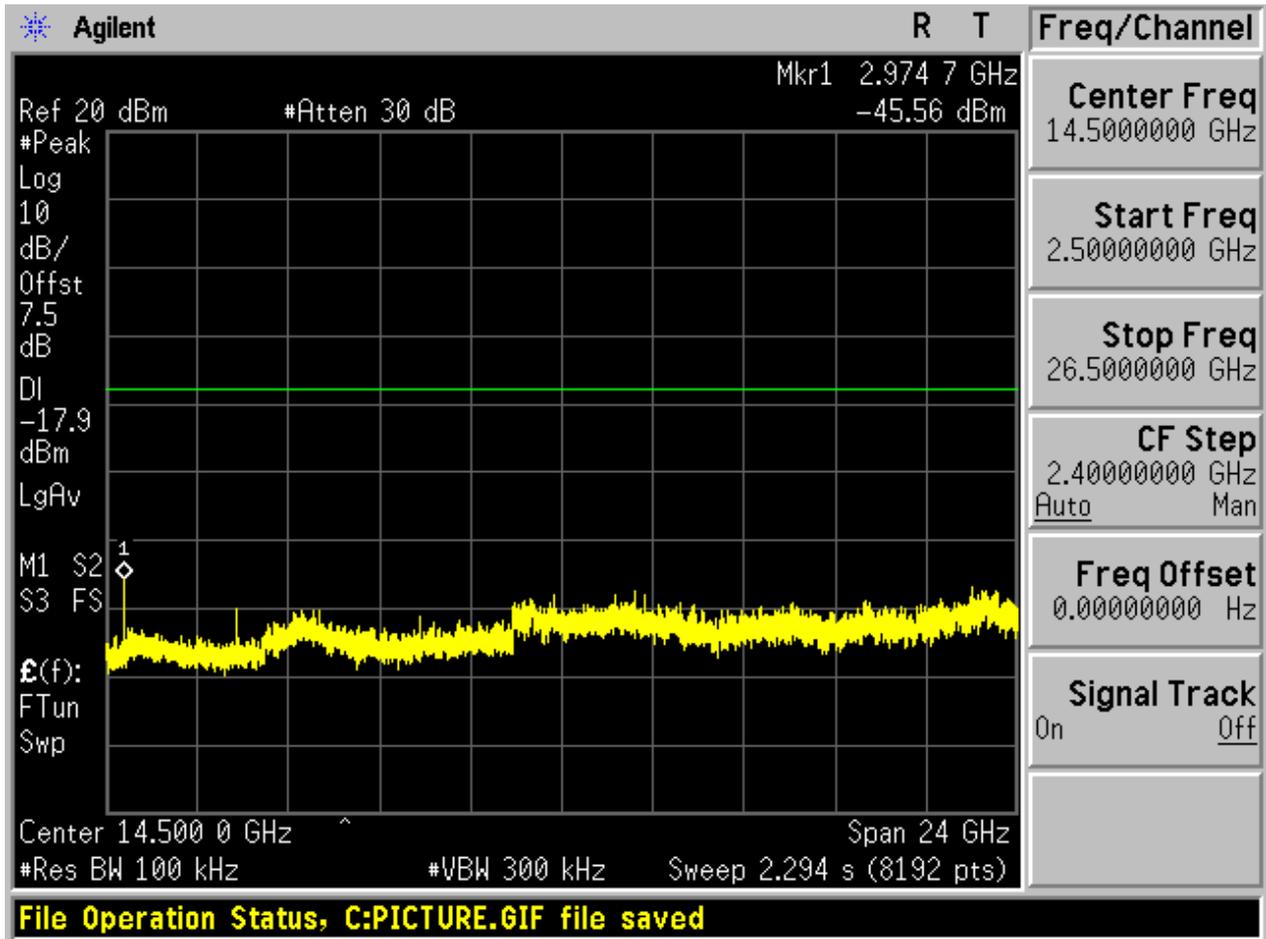






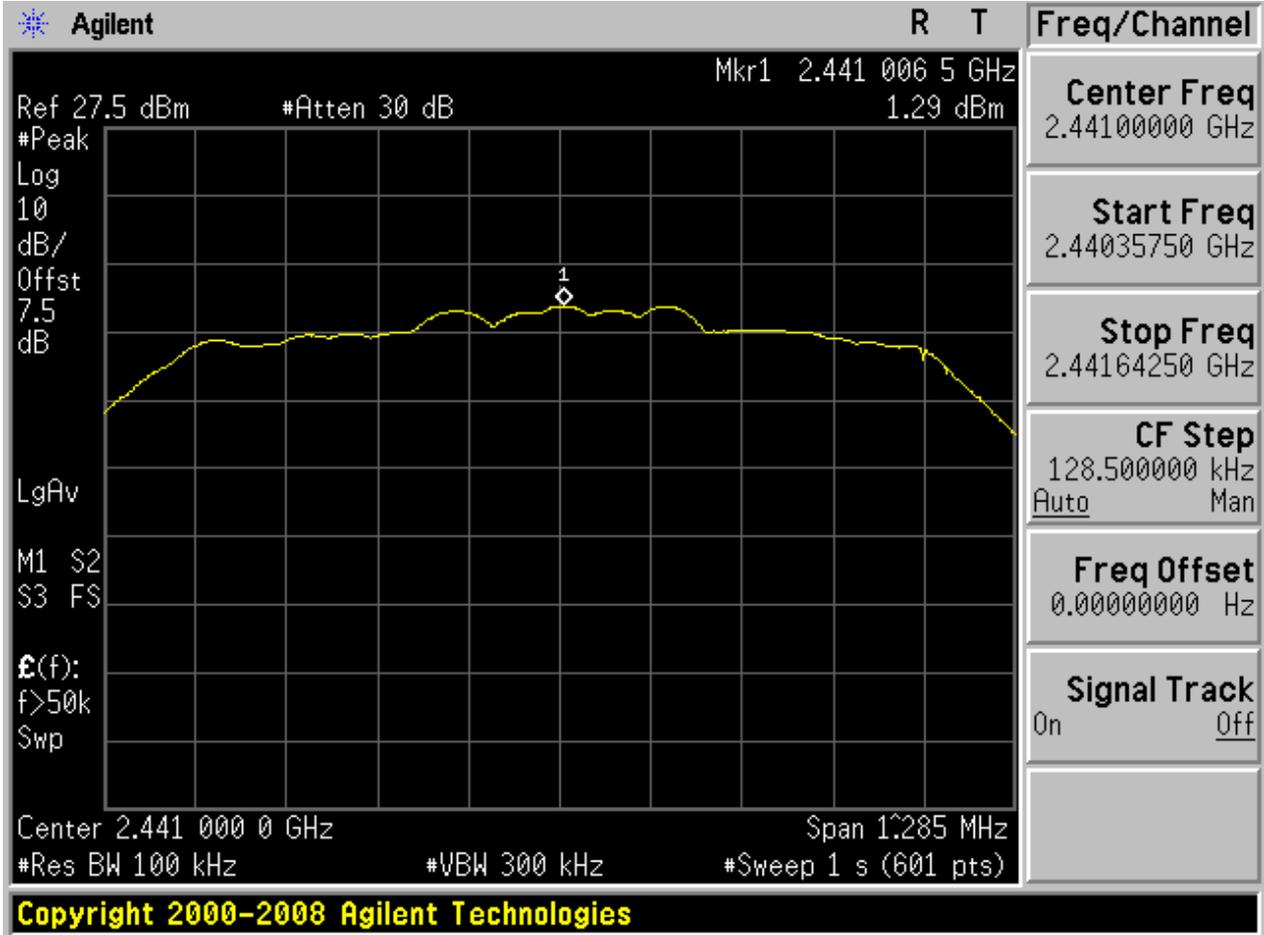


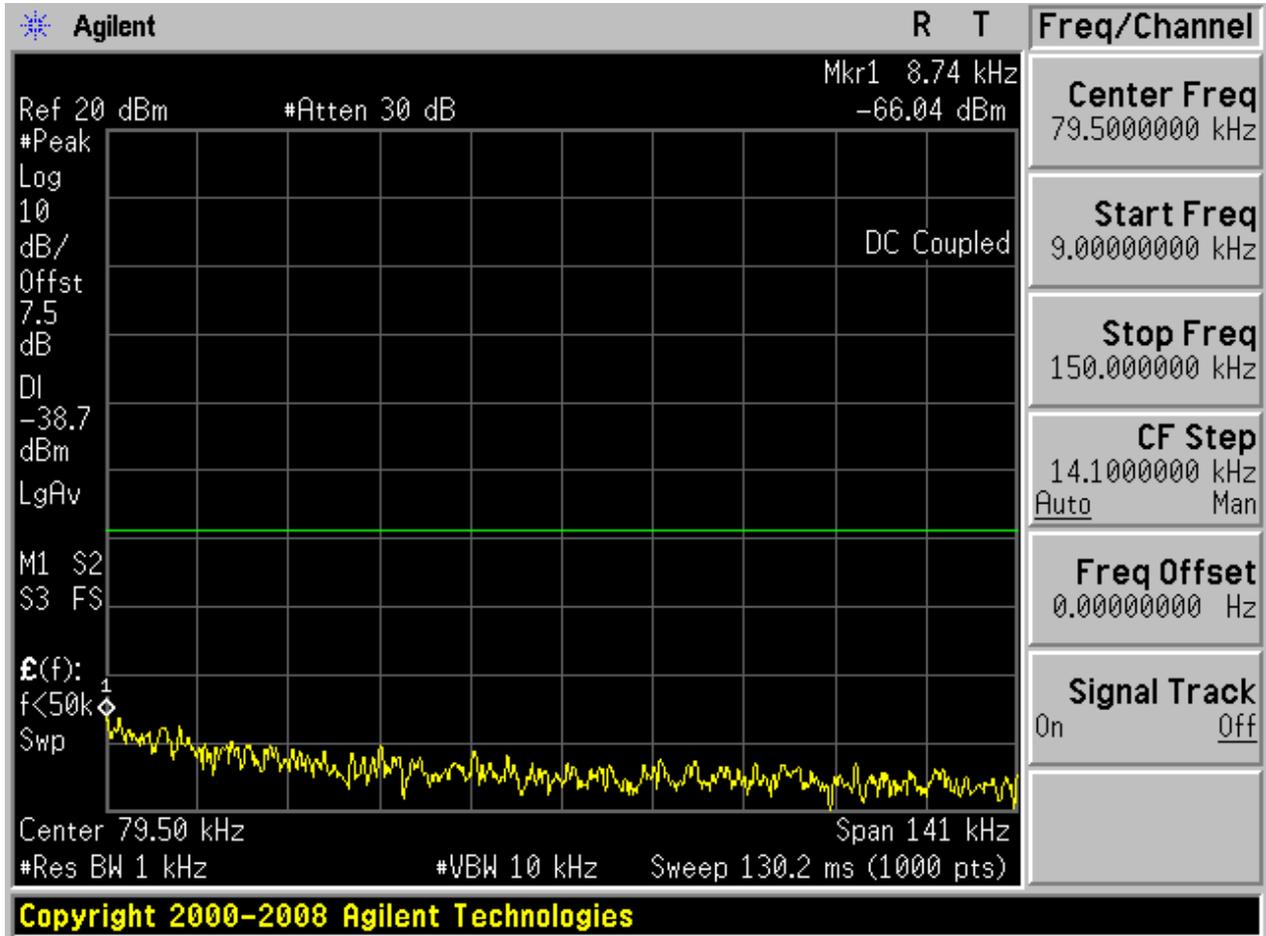


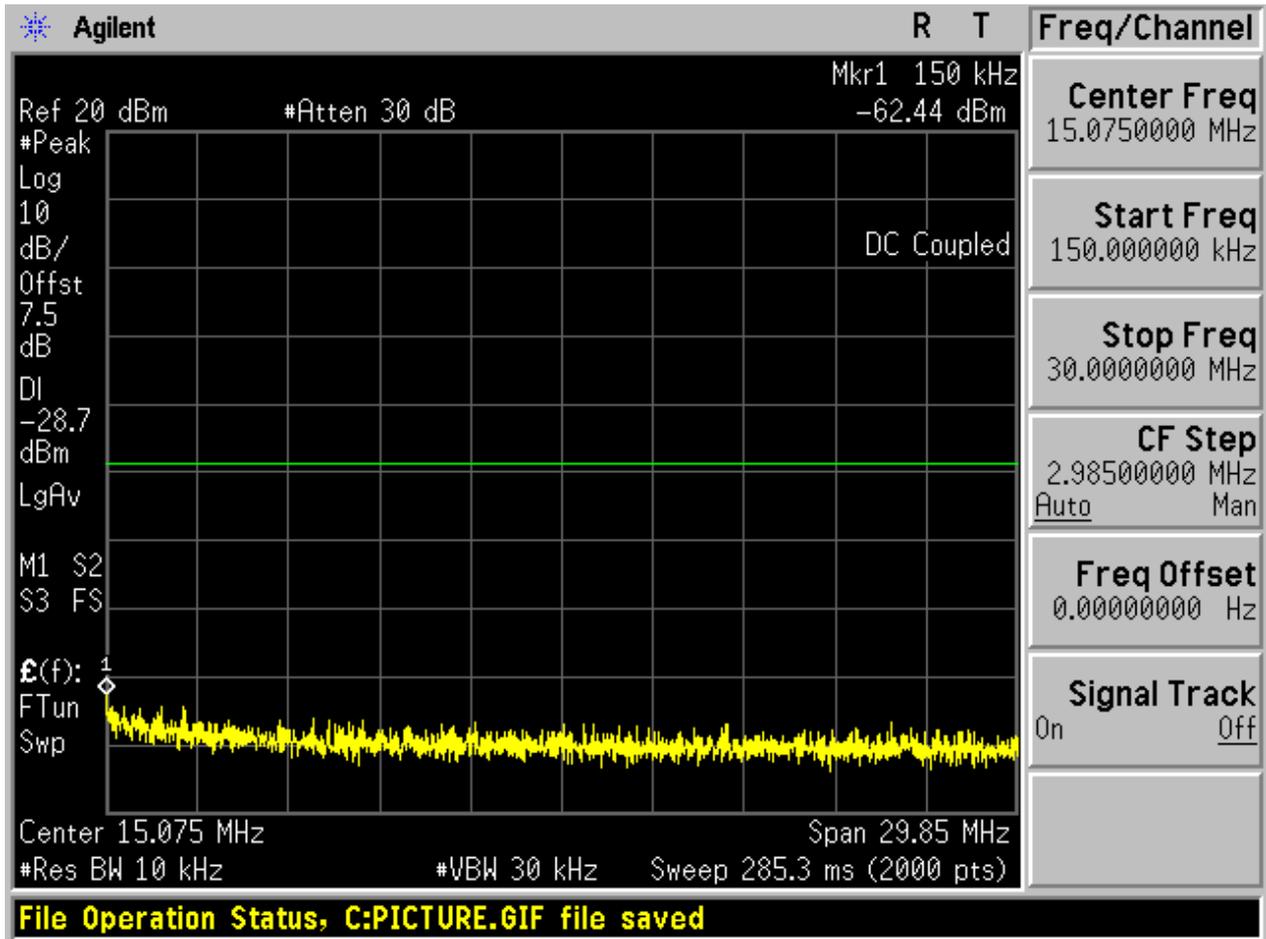


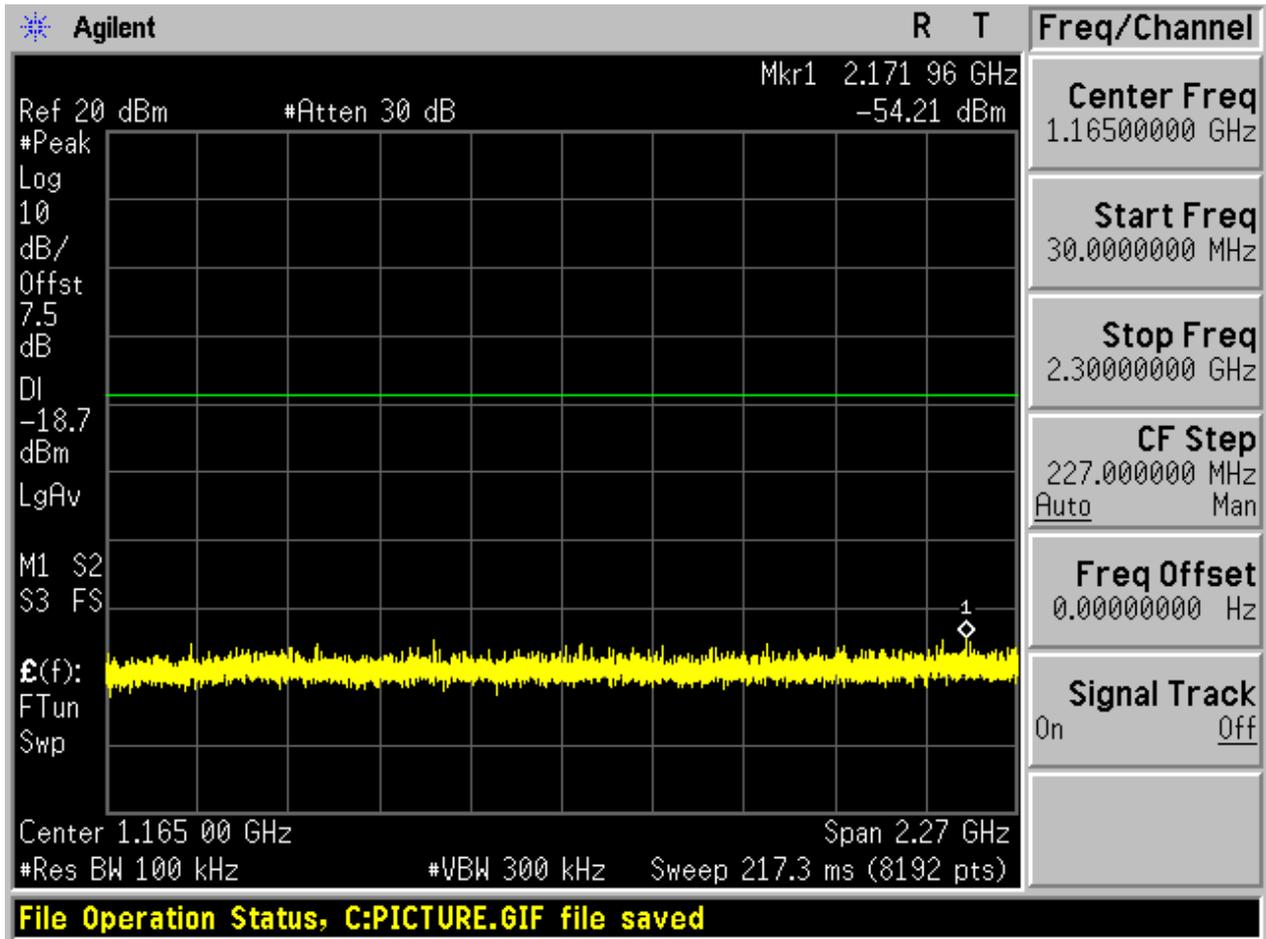
2.5 TM2_2DH5_Ch39

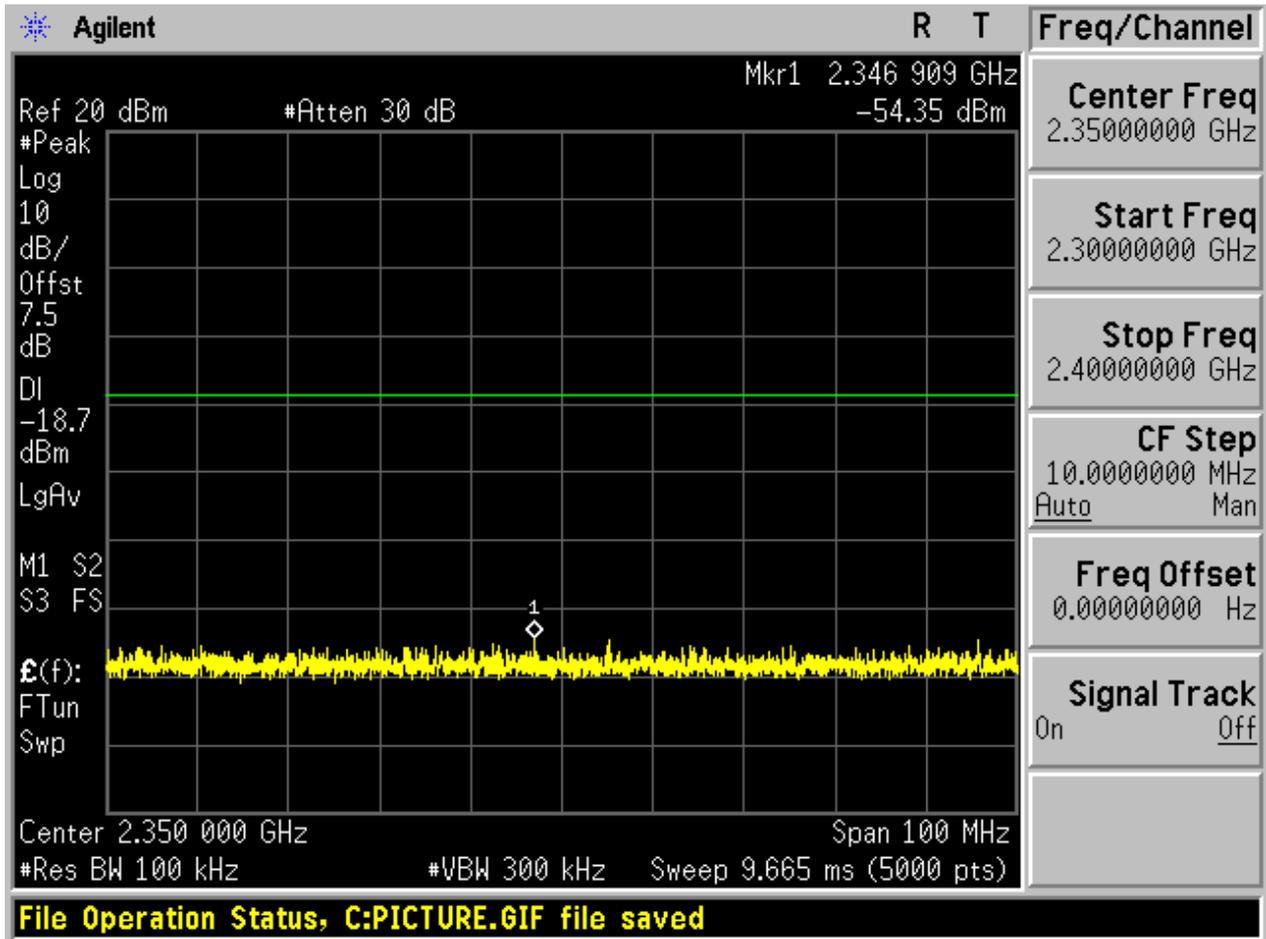
2.5.1 Pref

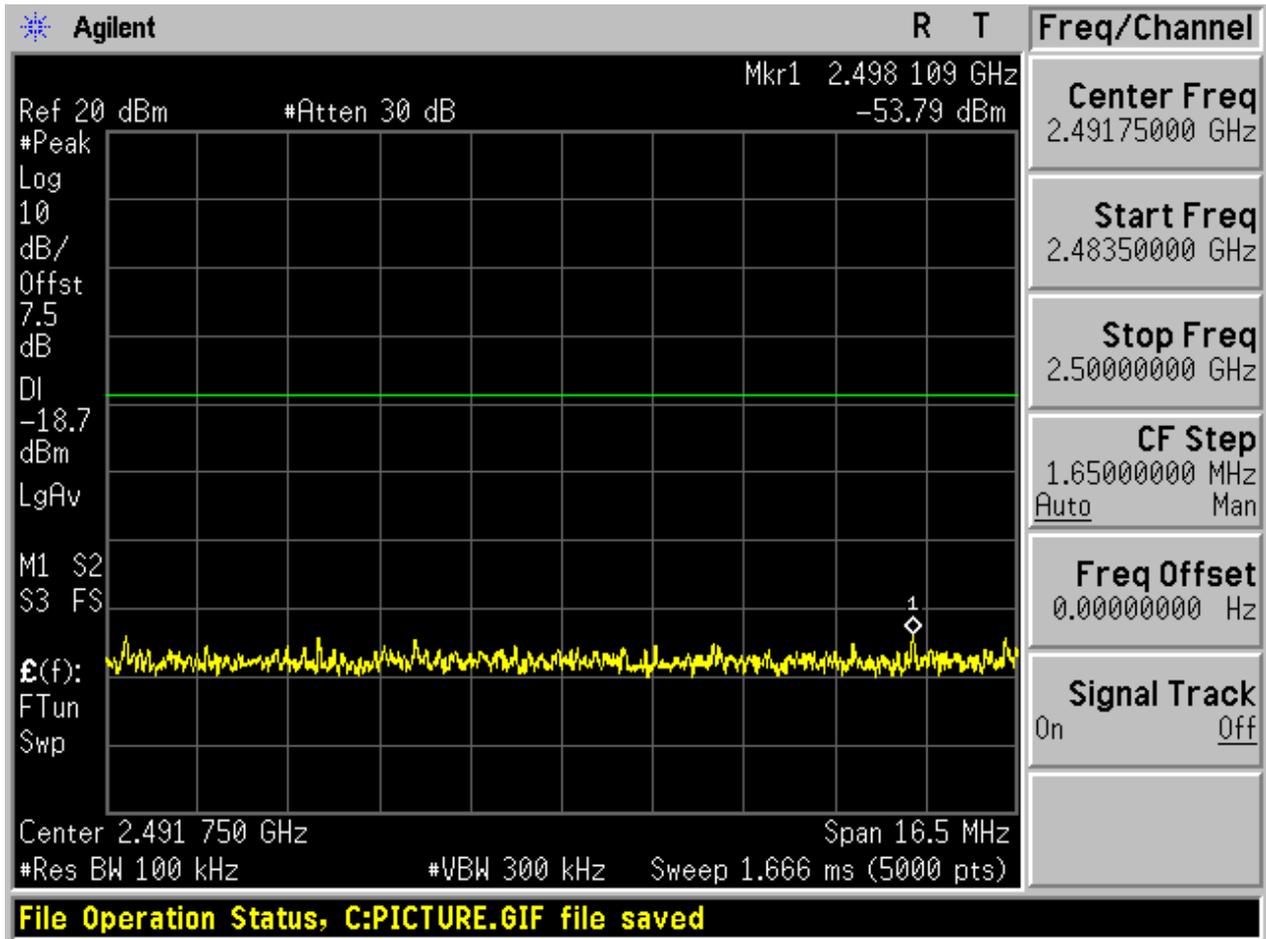


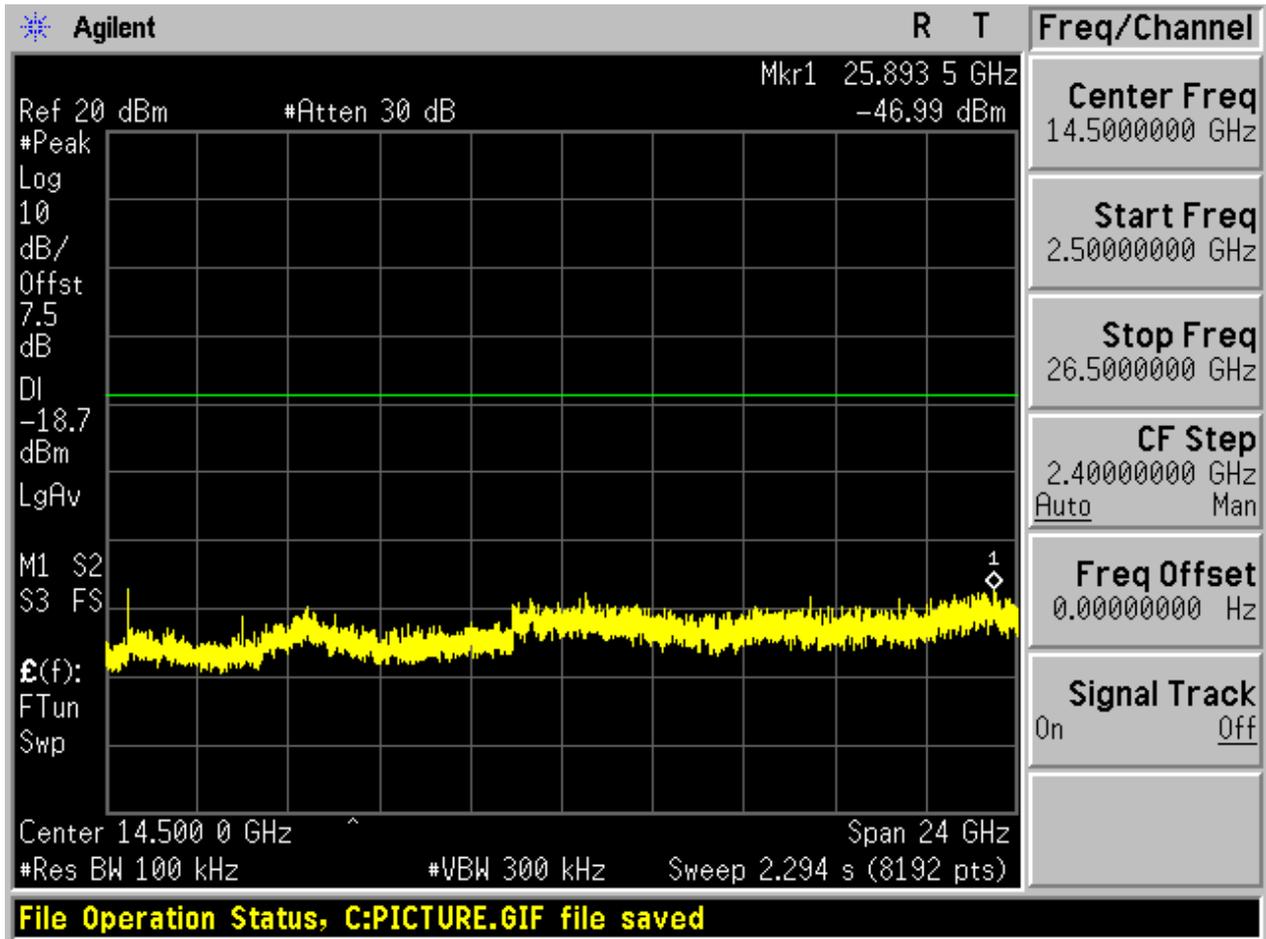
2.5.2 P_{uw}






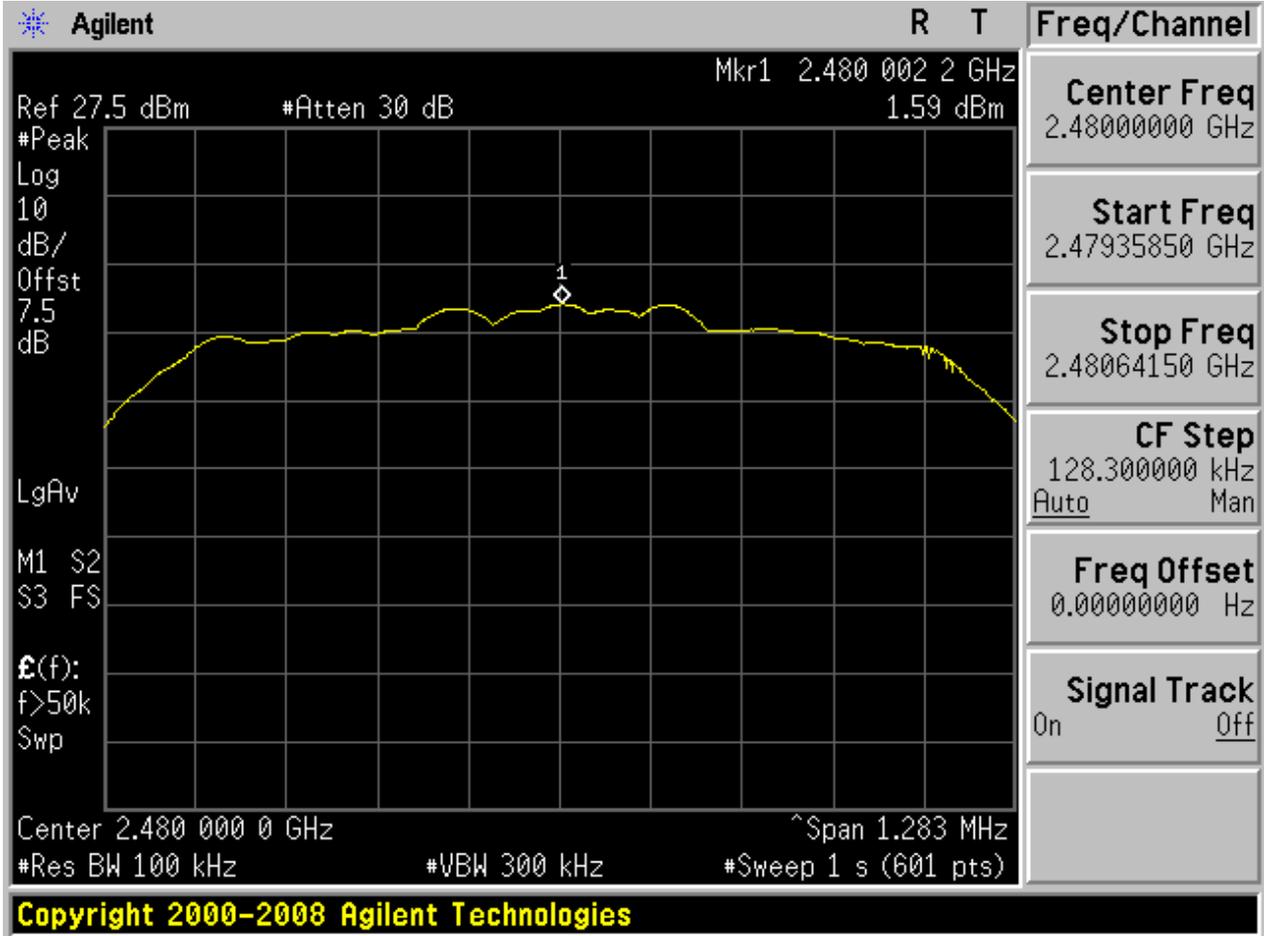




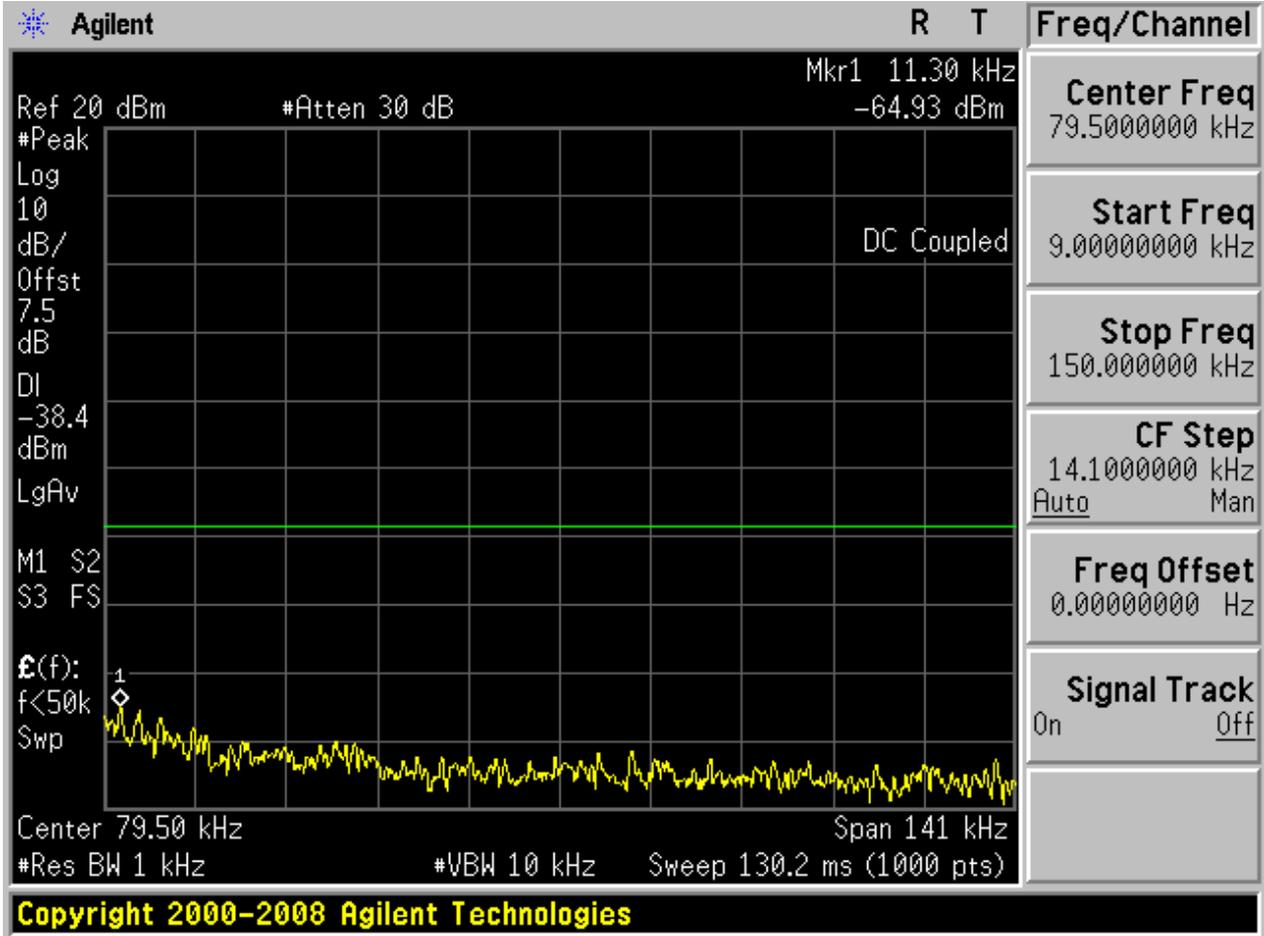


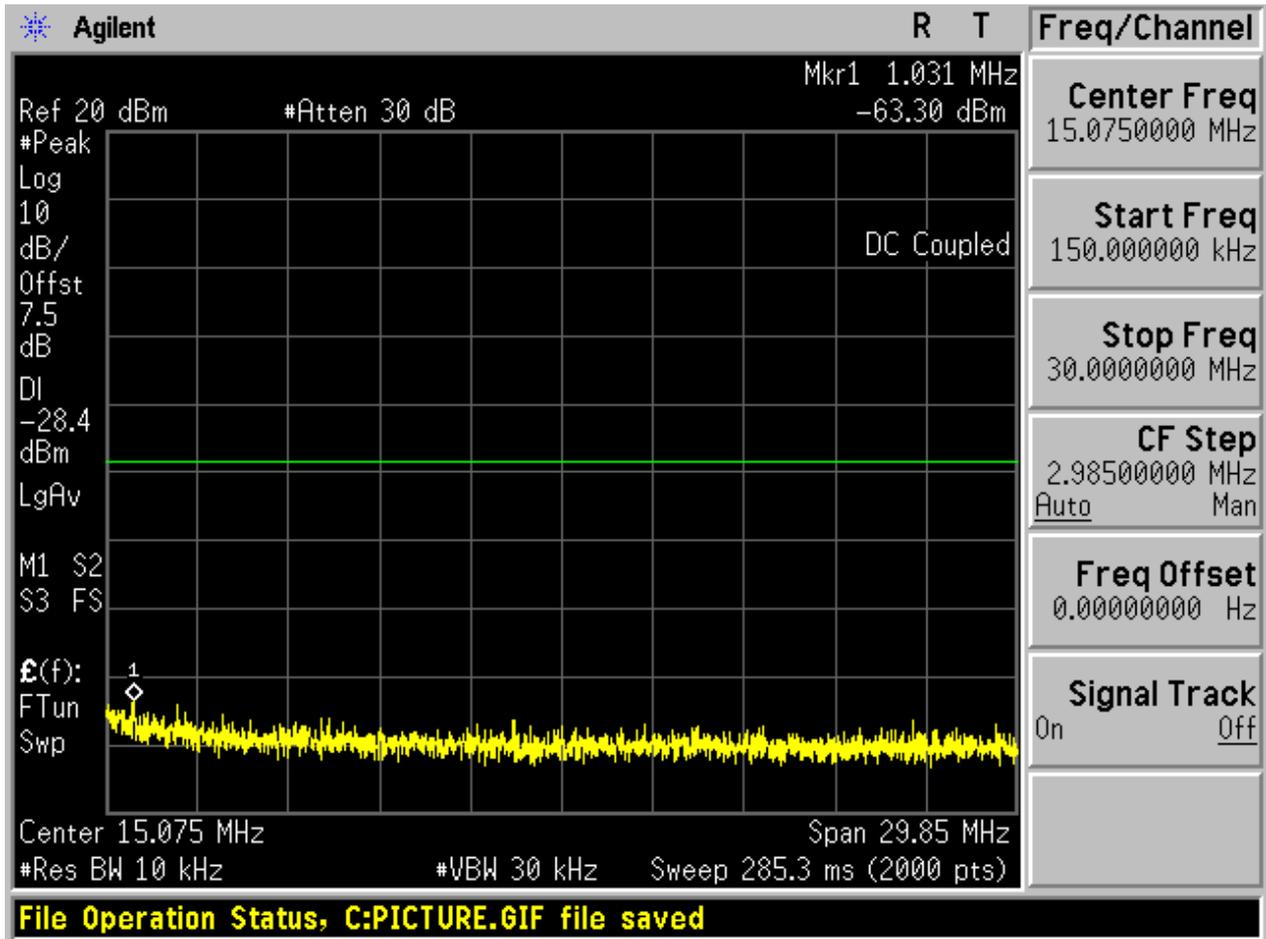
2.6 TM2_2DH5_Ch78

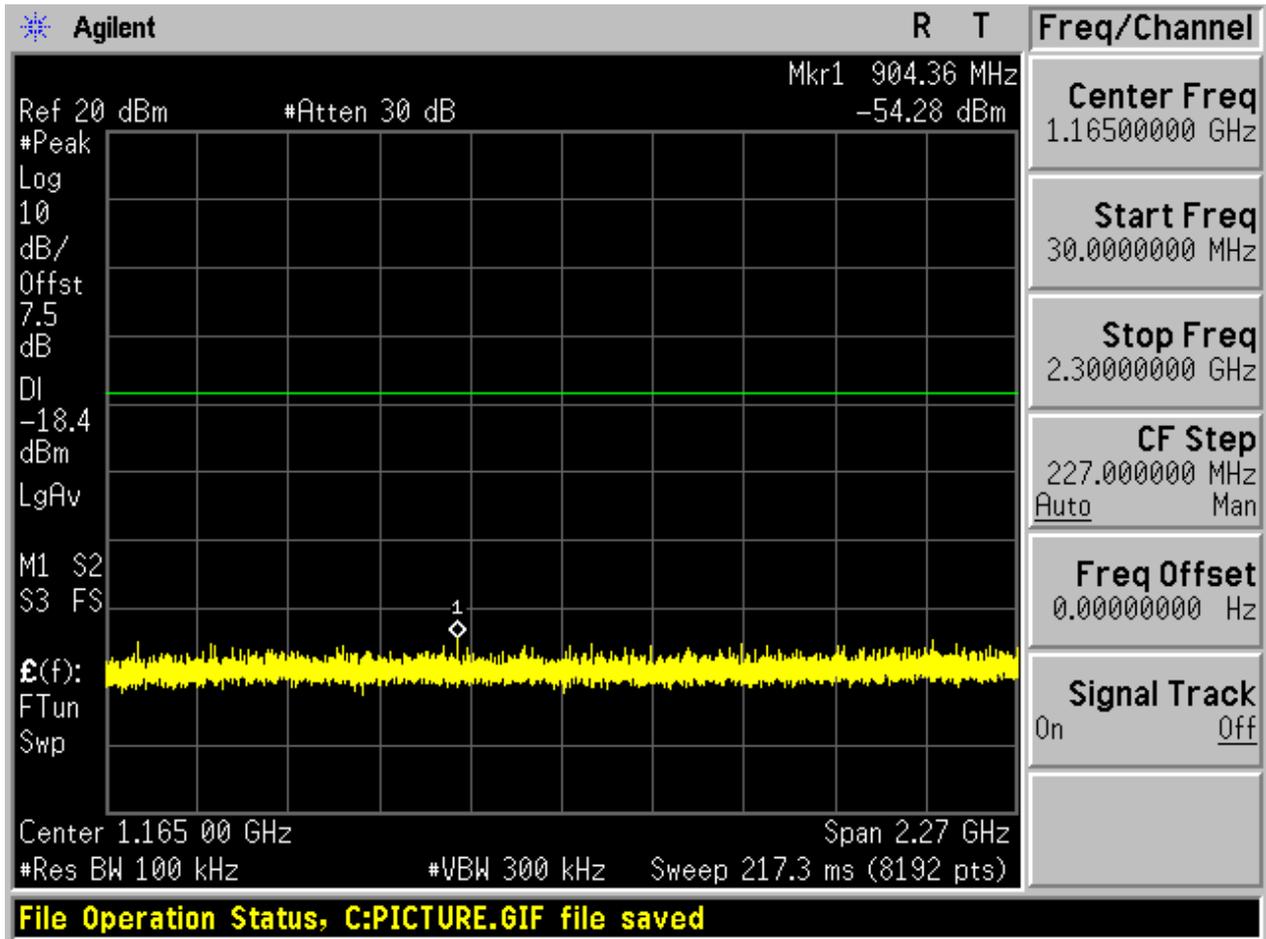
2.6.1 Pref

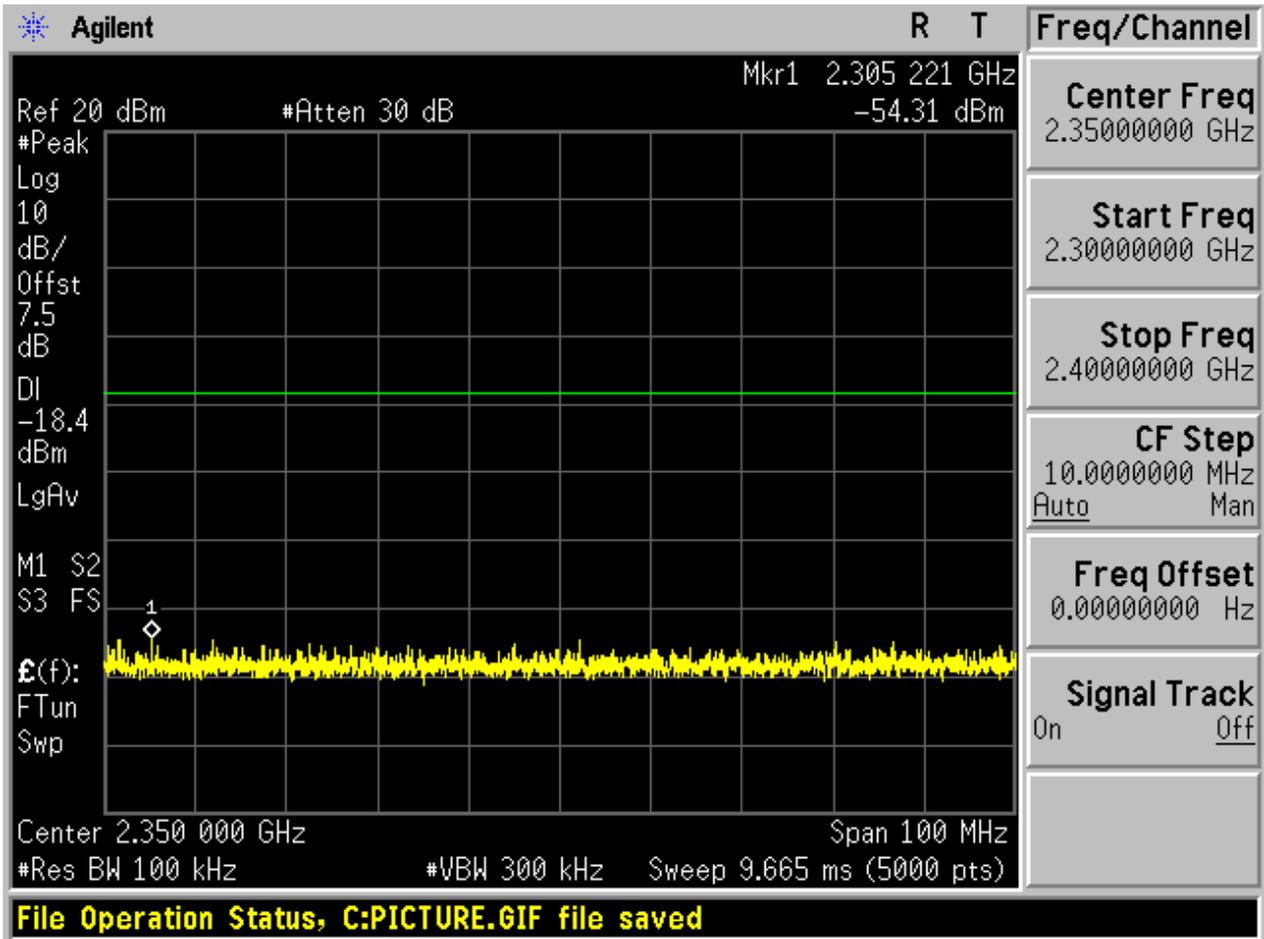


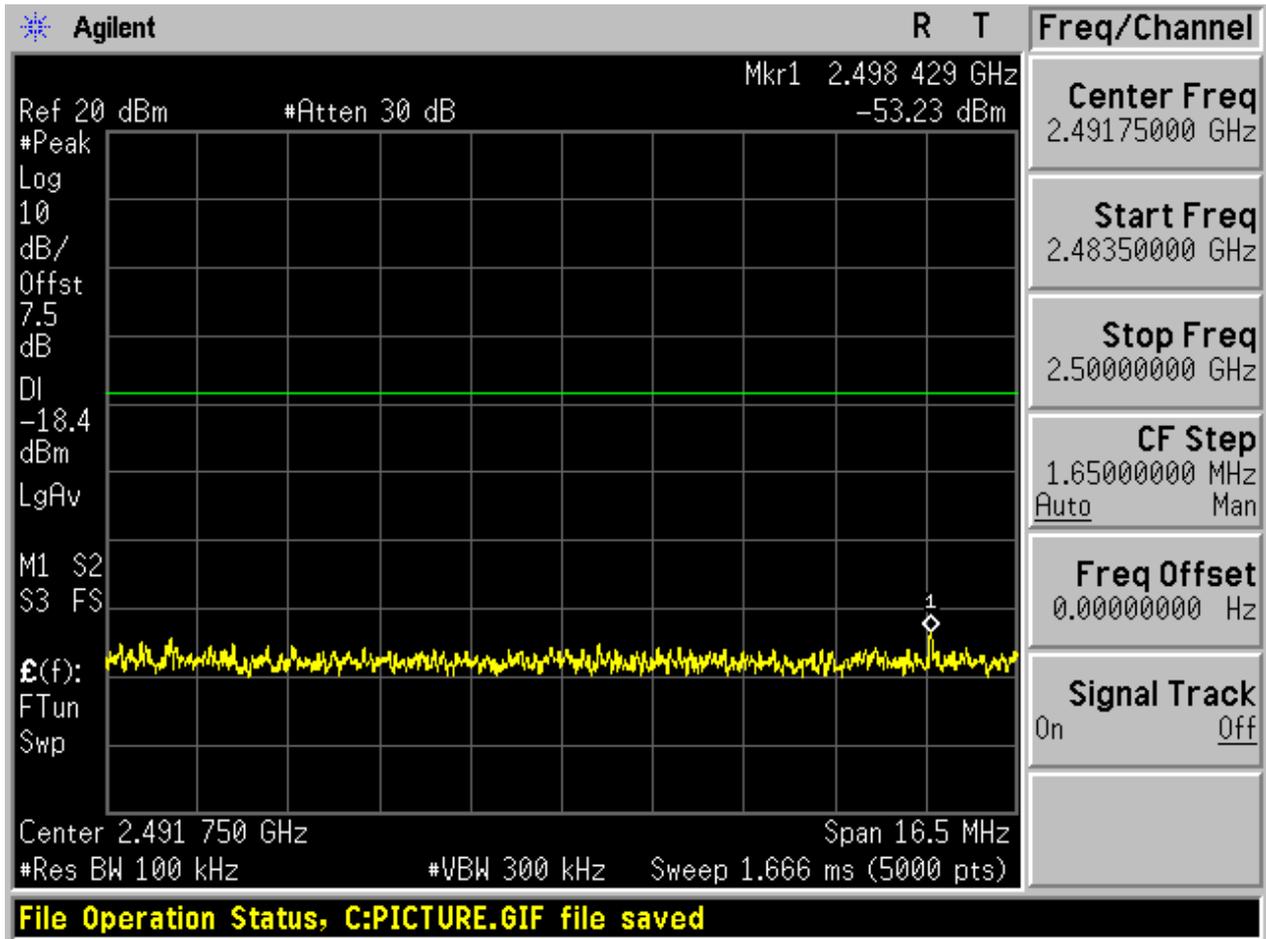
2.6.2 P_{uw}

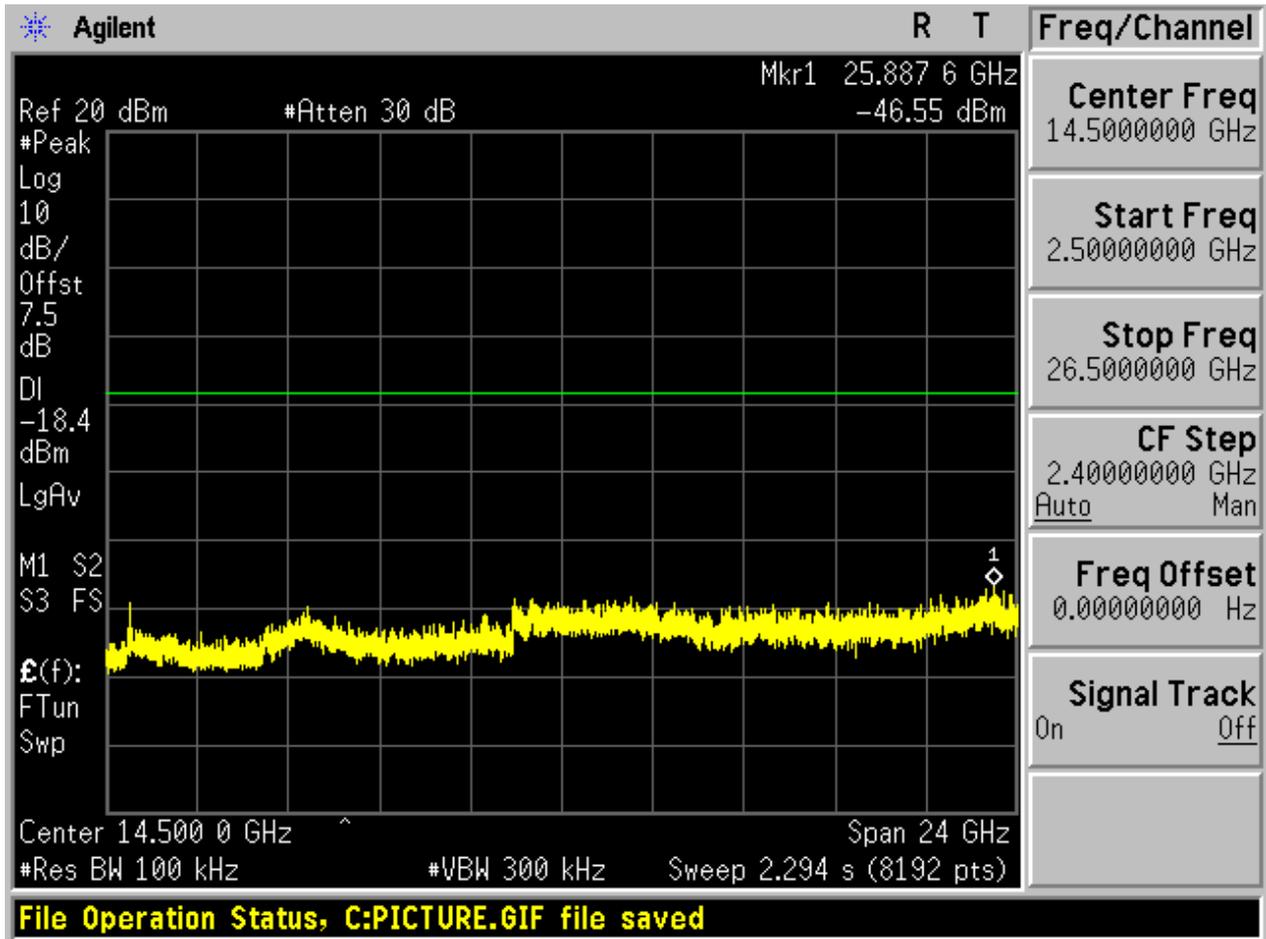






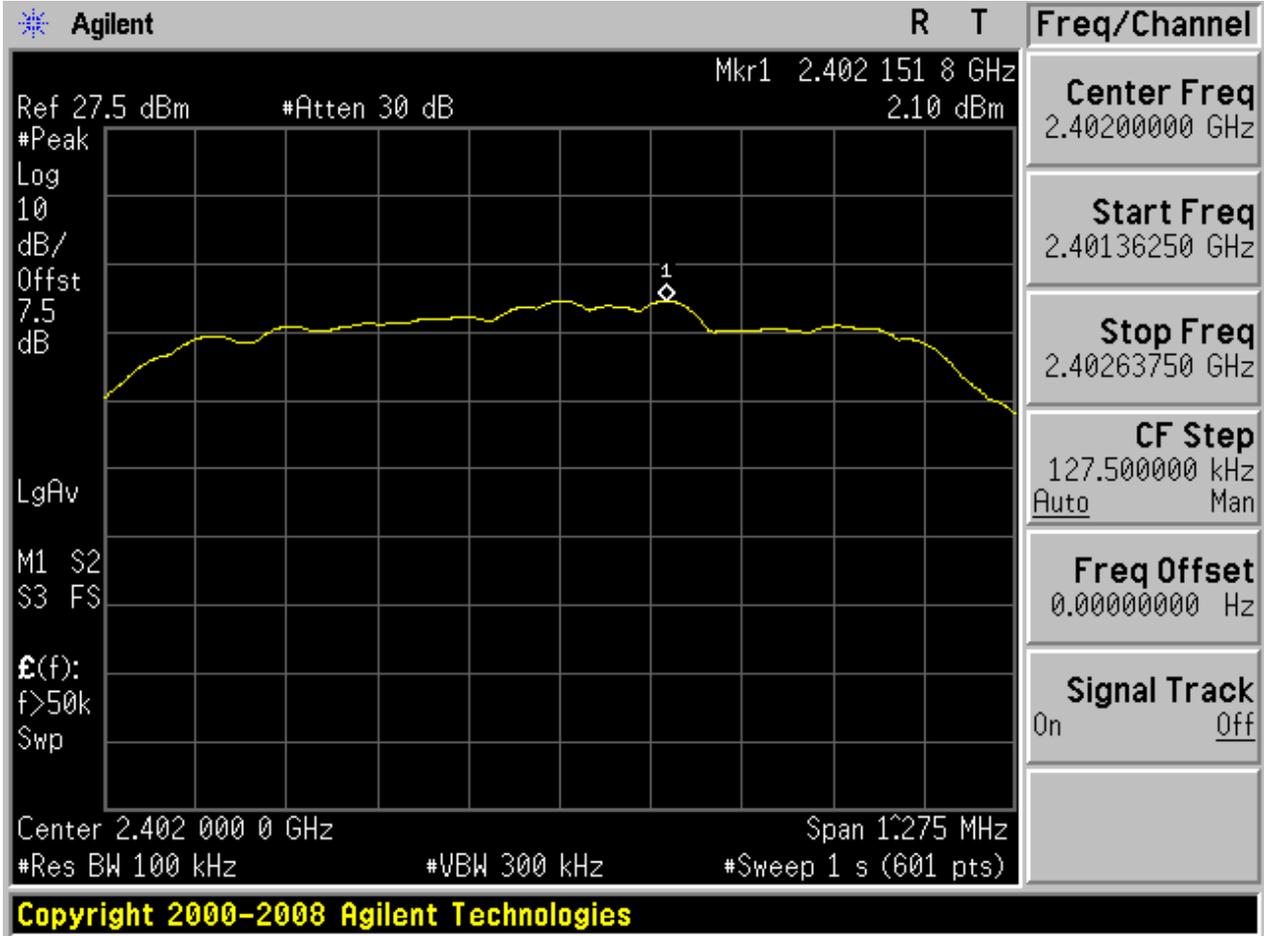




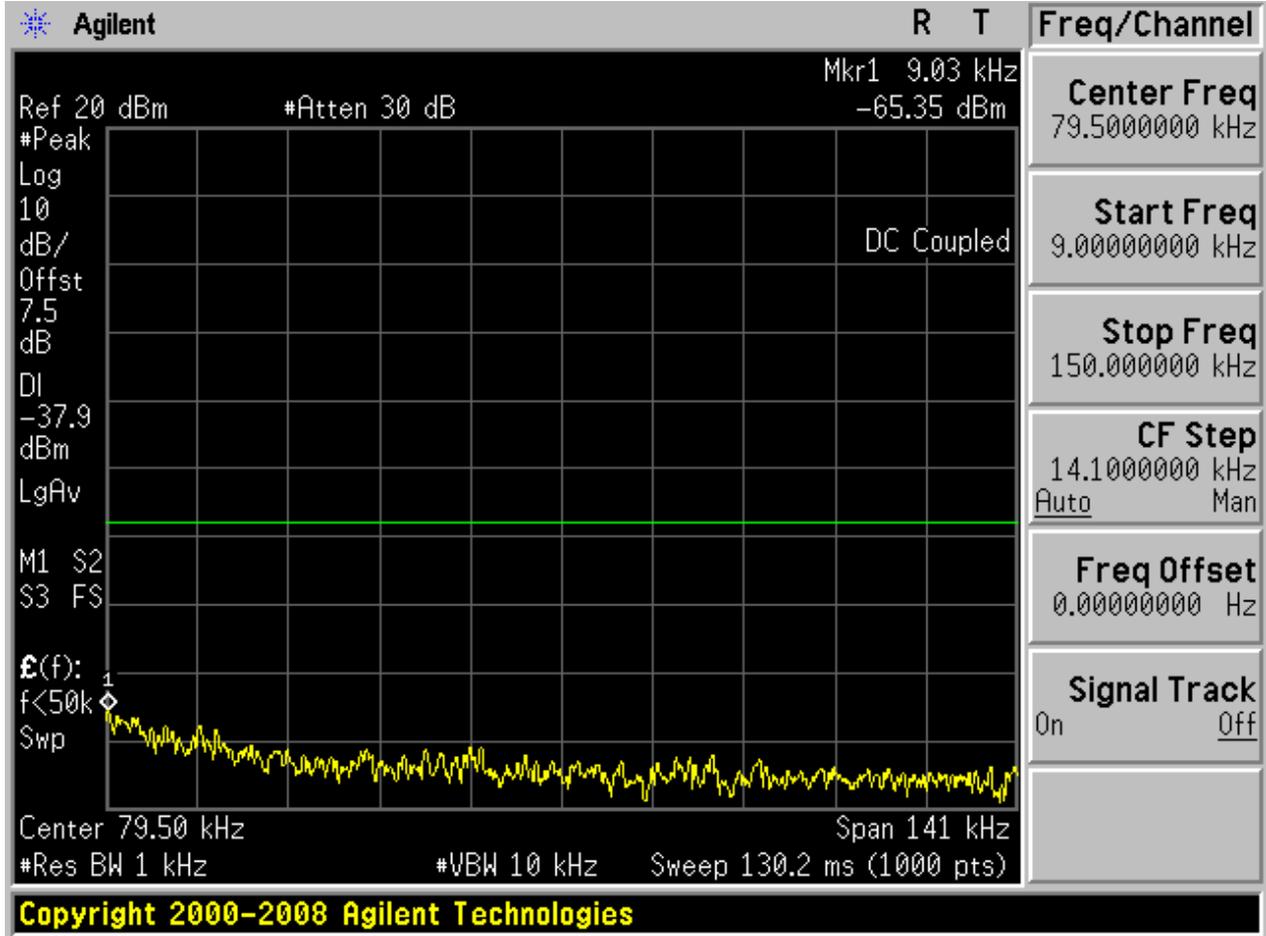


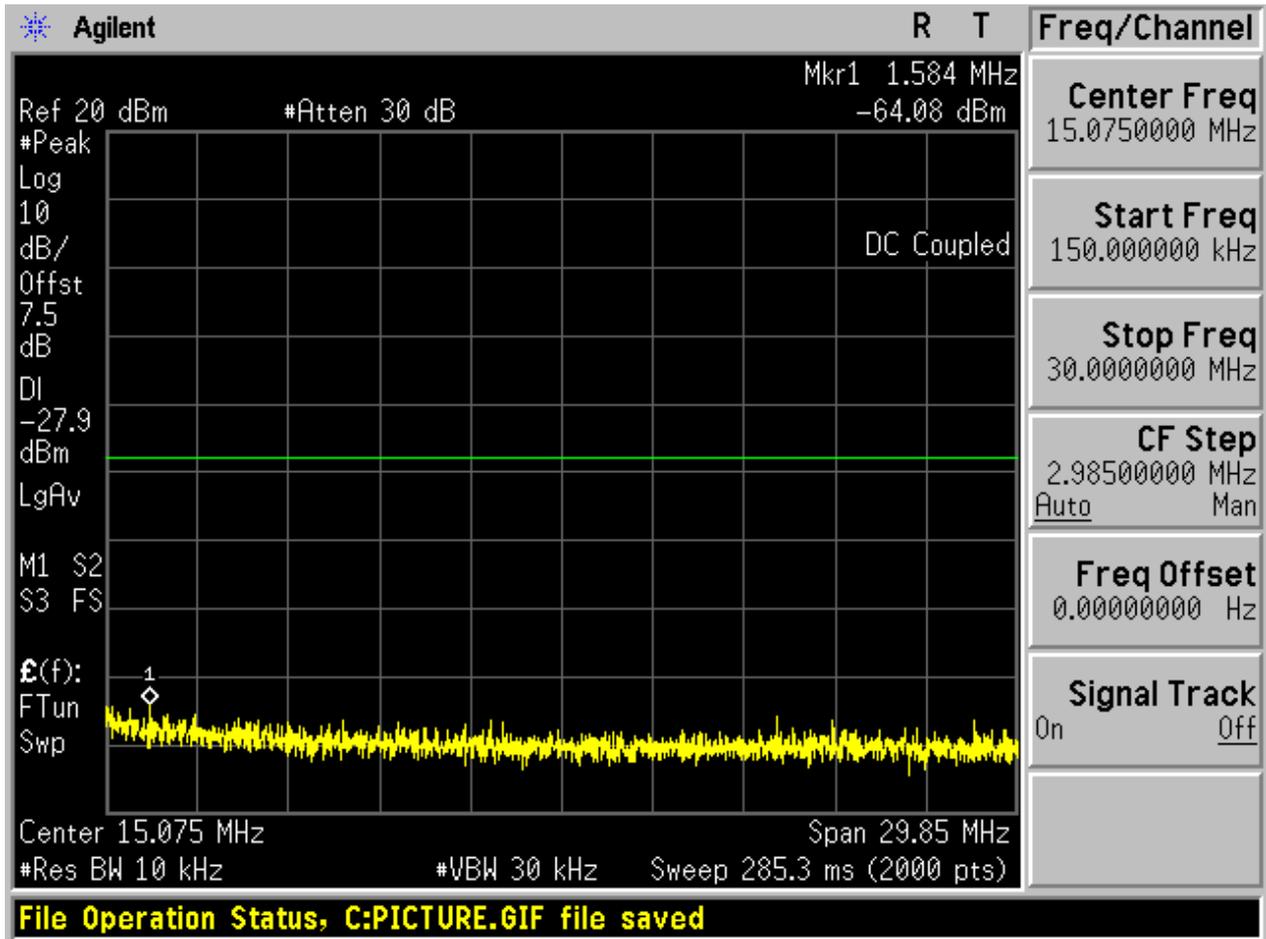
2.7 TM3_3DH5_Ch0

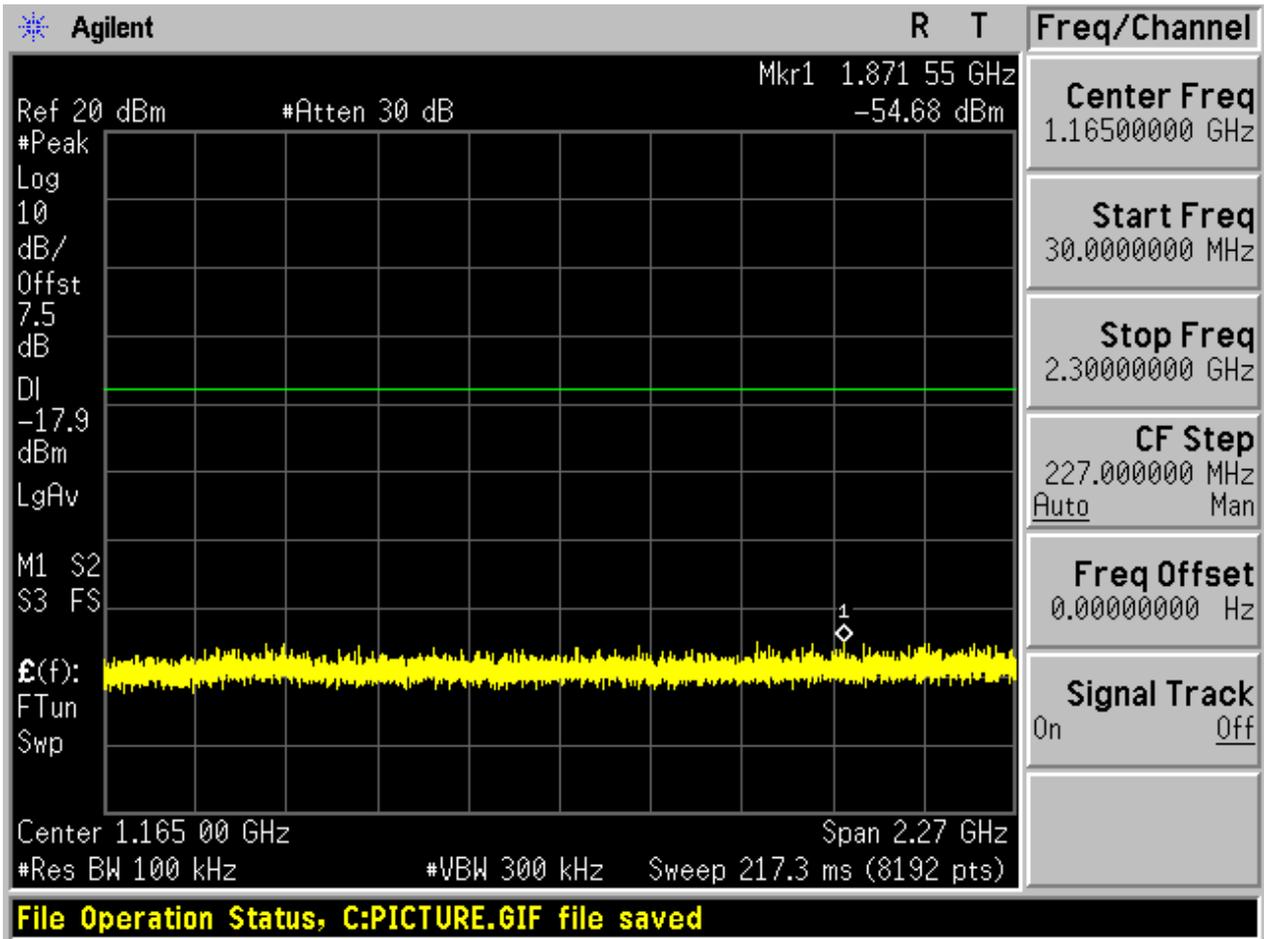
2.7.1 Pref

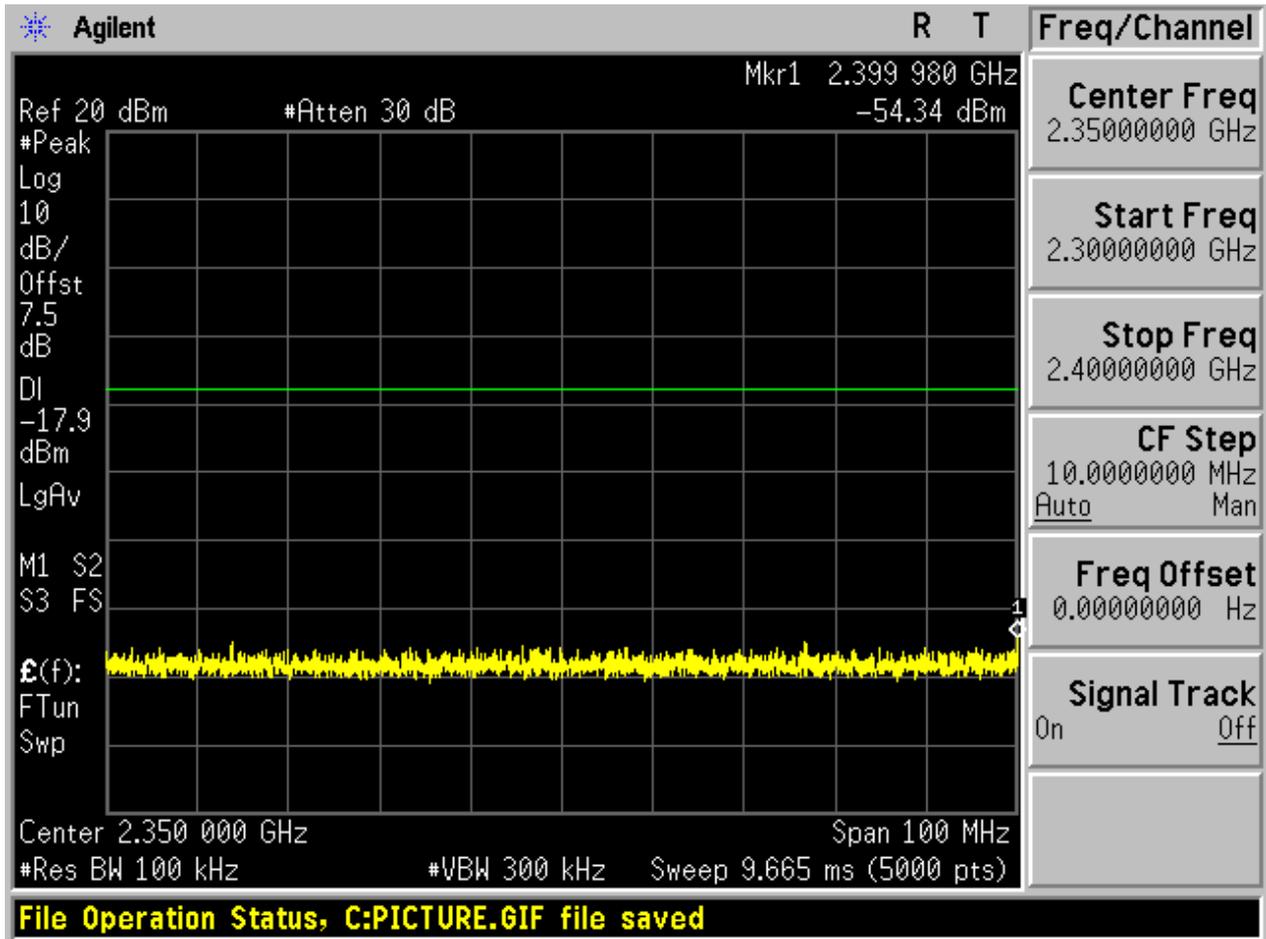


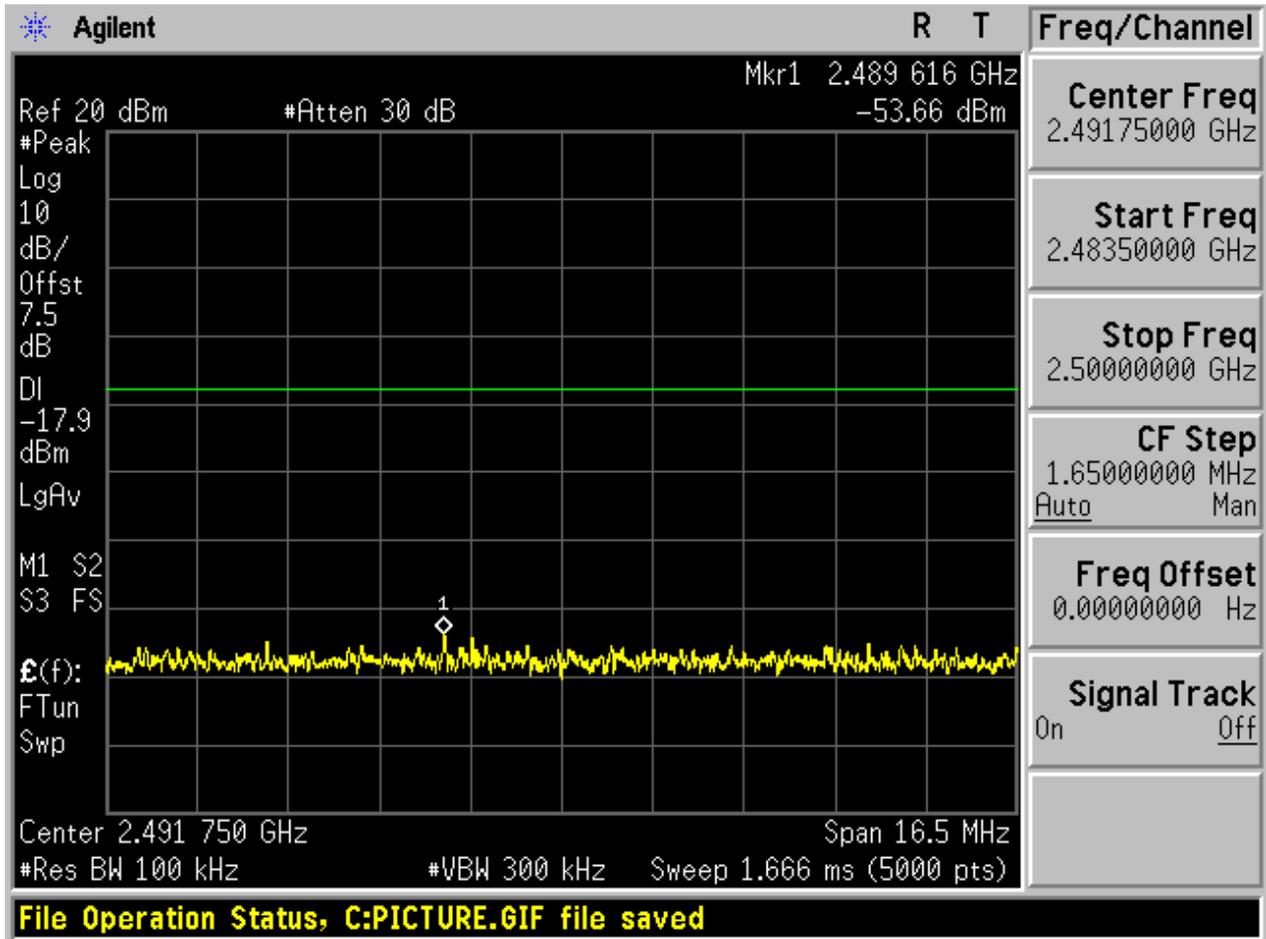
2.7.2 P_{uw}

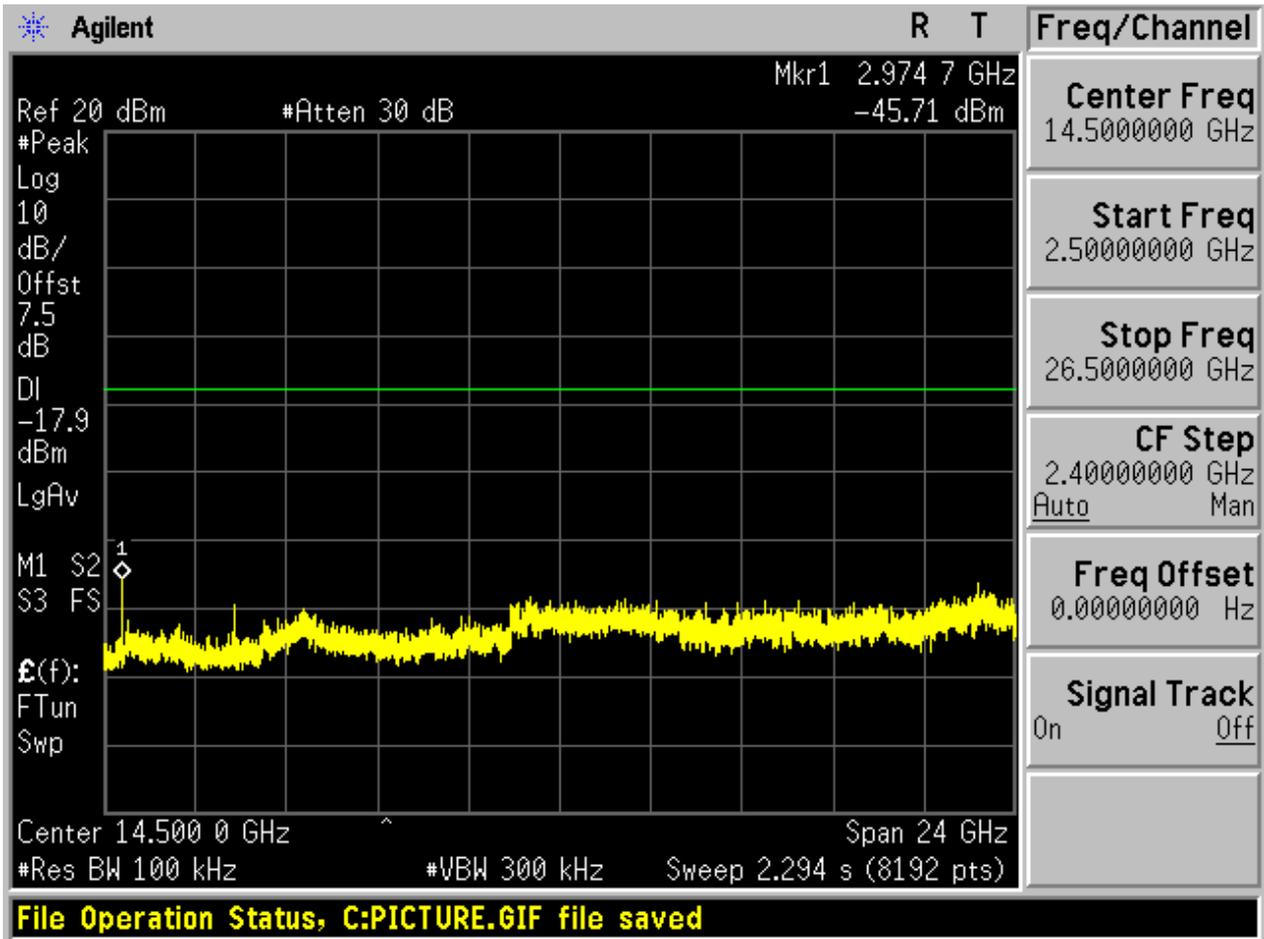






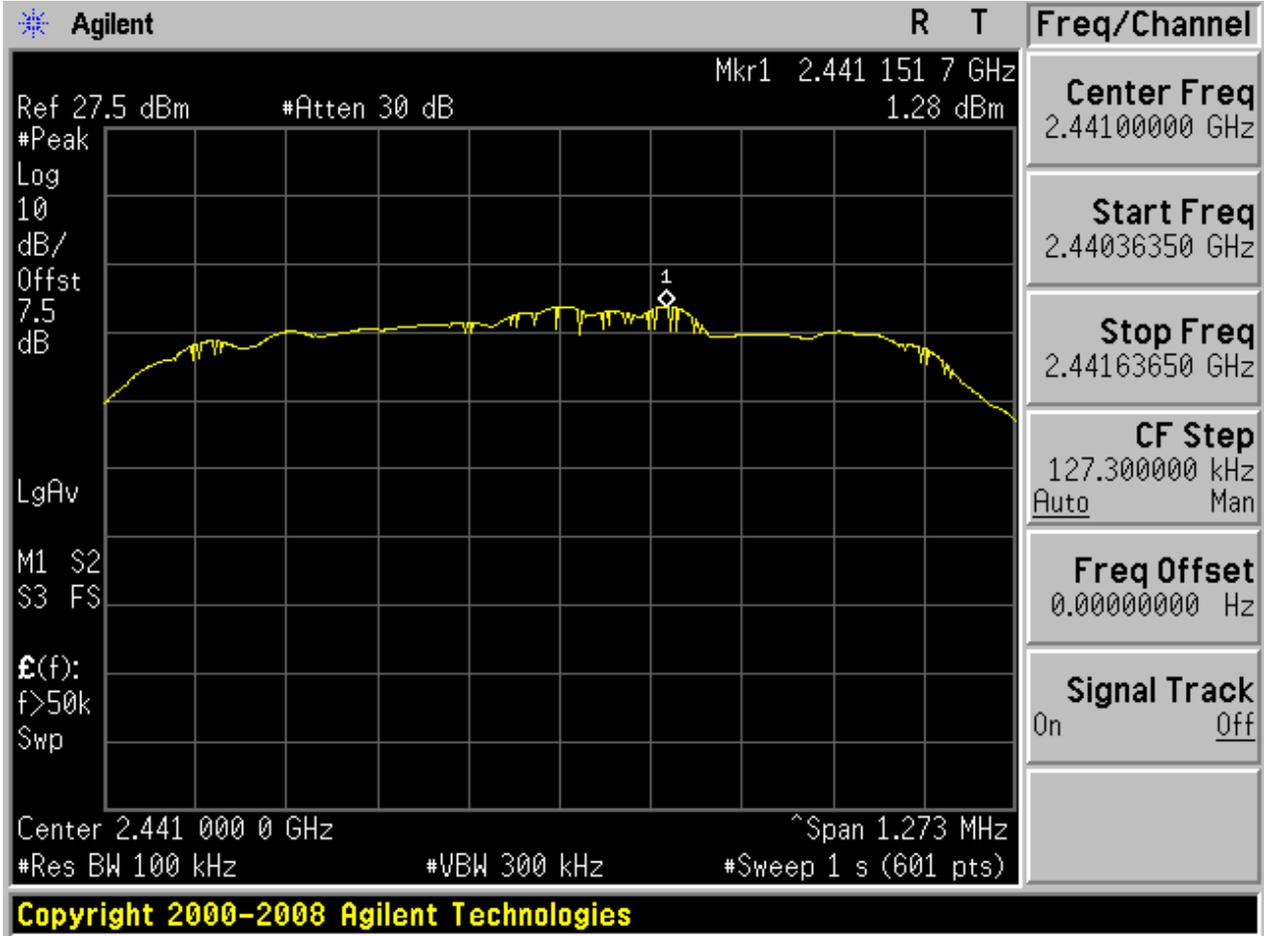




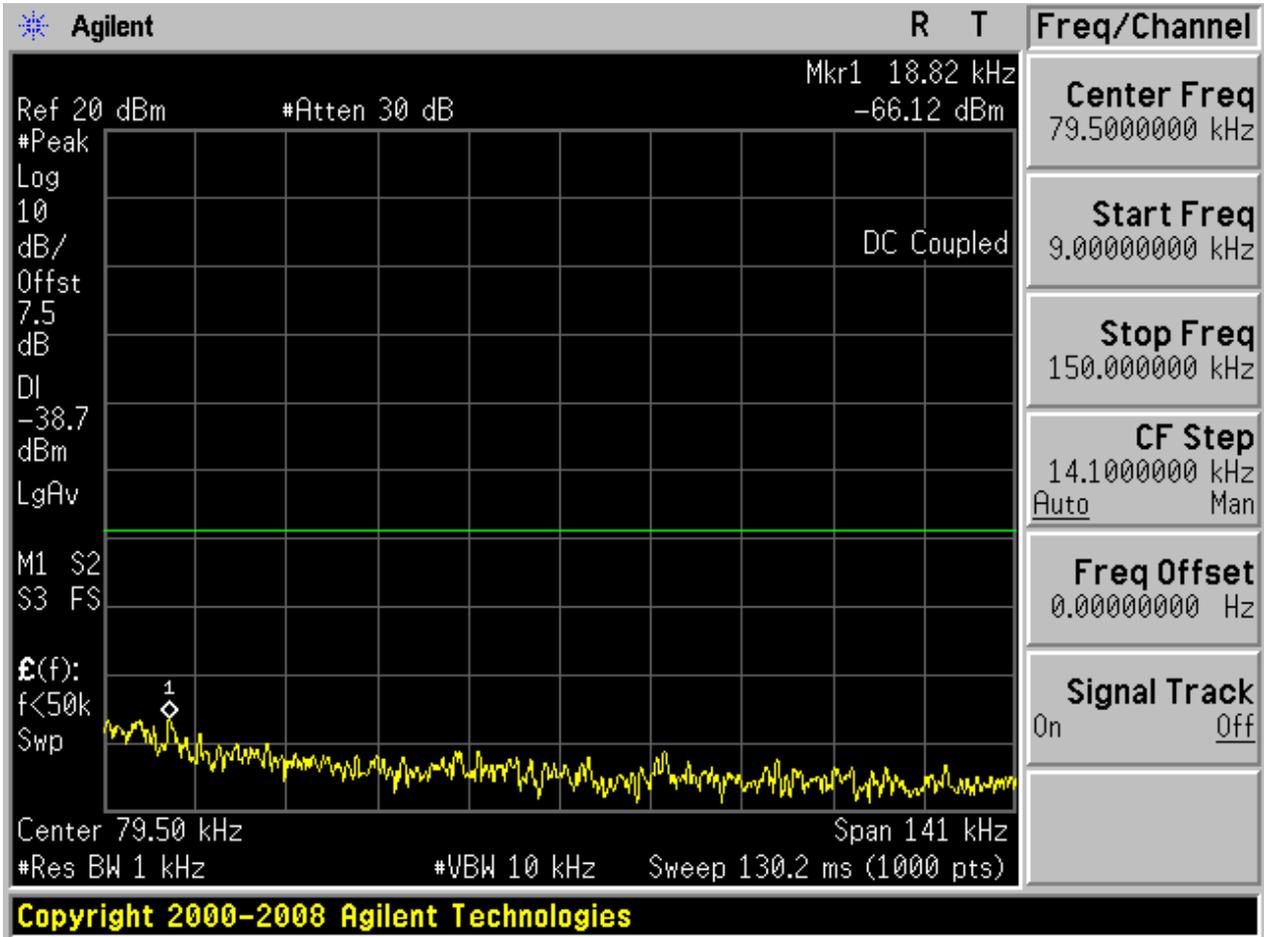


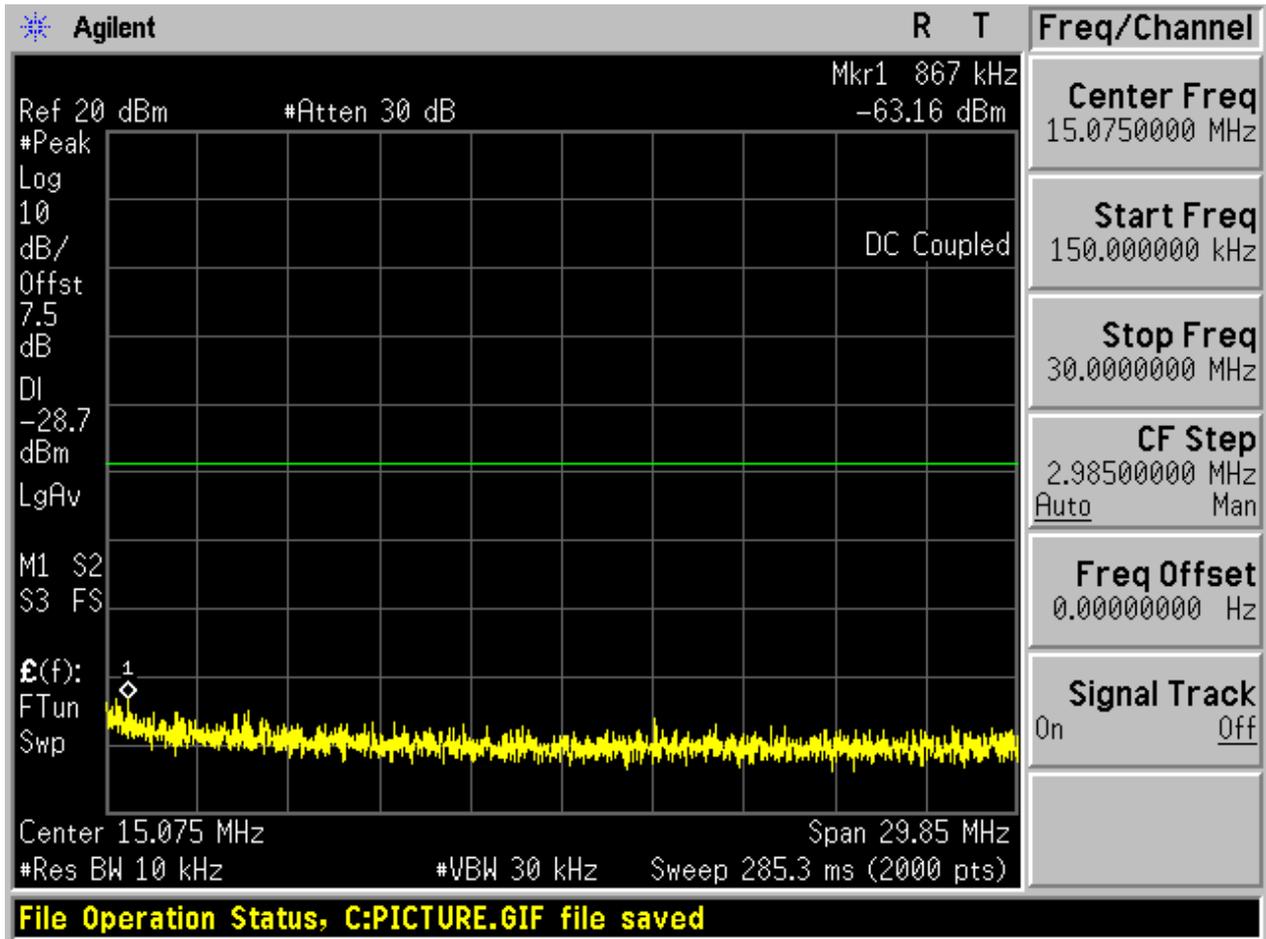
2.8 TM3_3DH5_Ch39

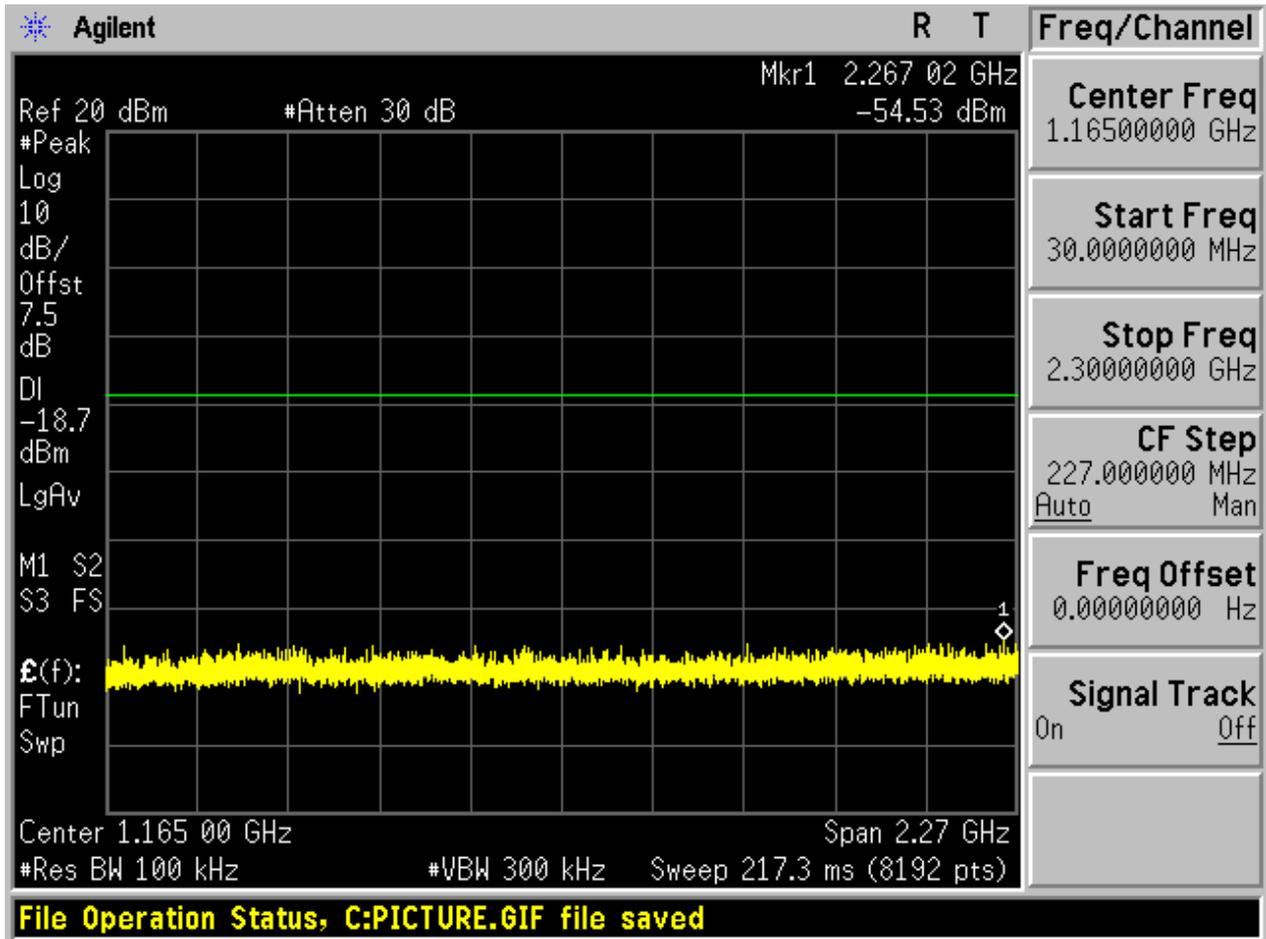
2.8.1 Pref

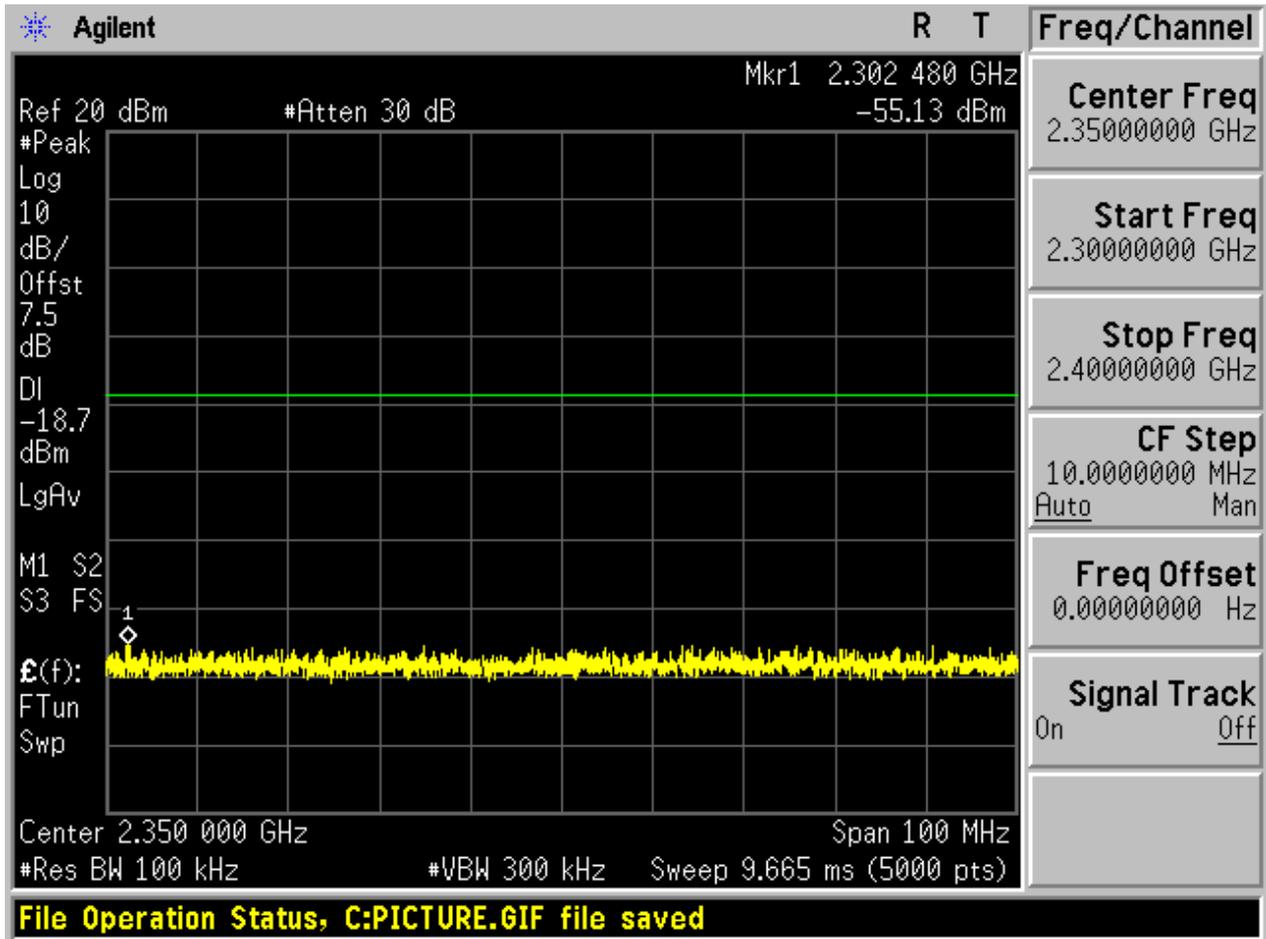


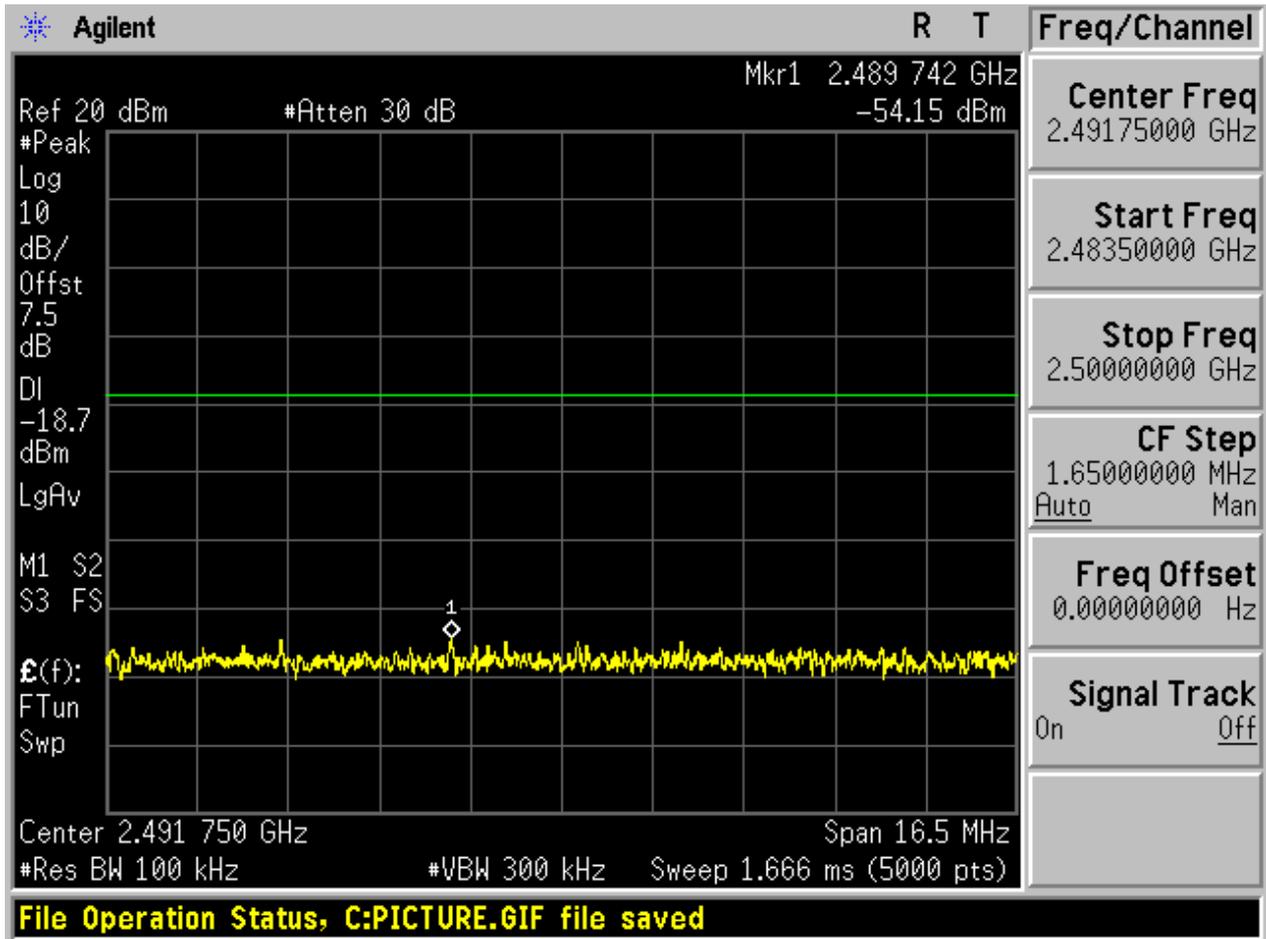
2.8.2 Puw

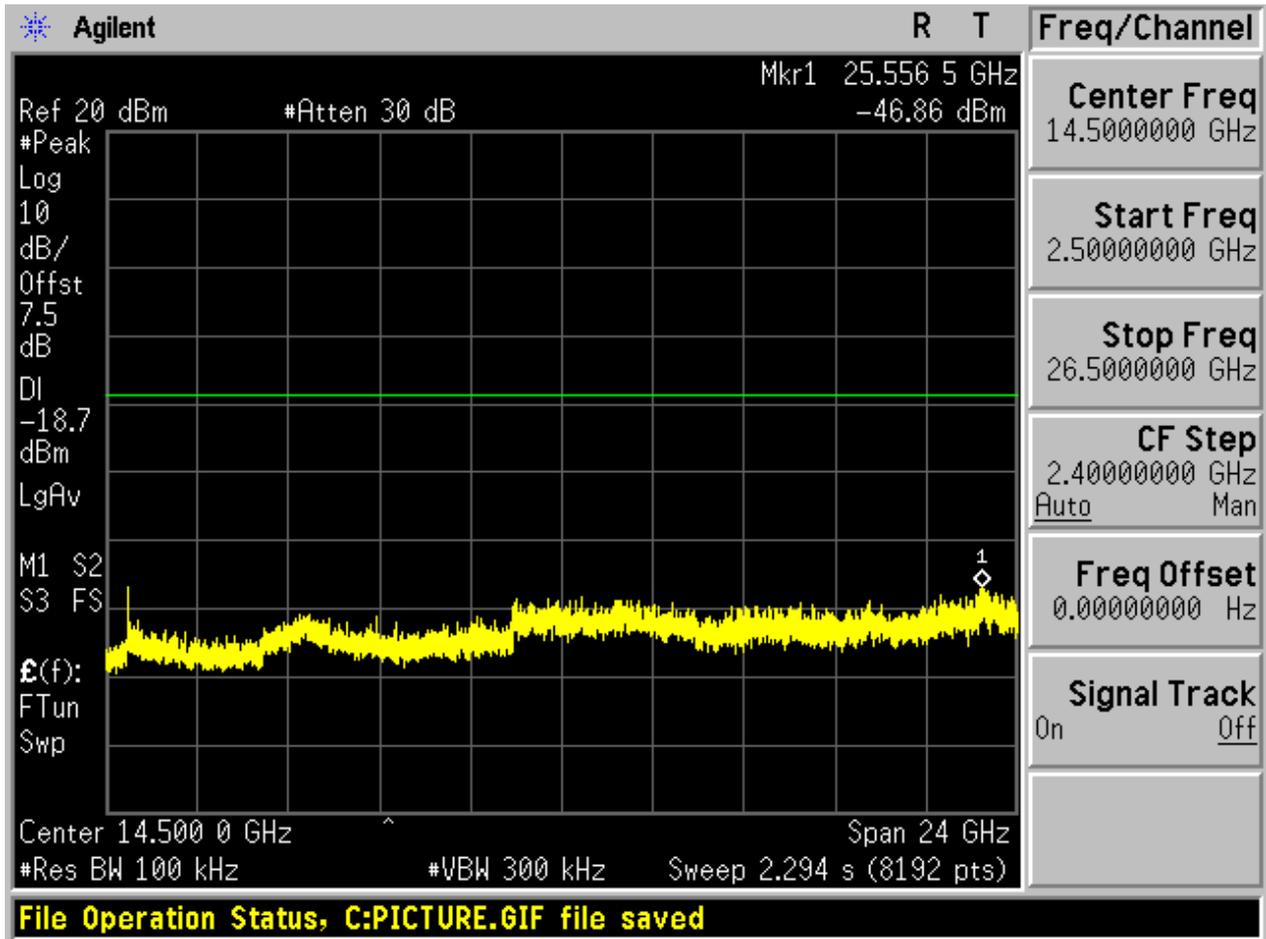






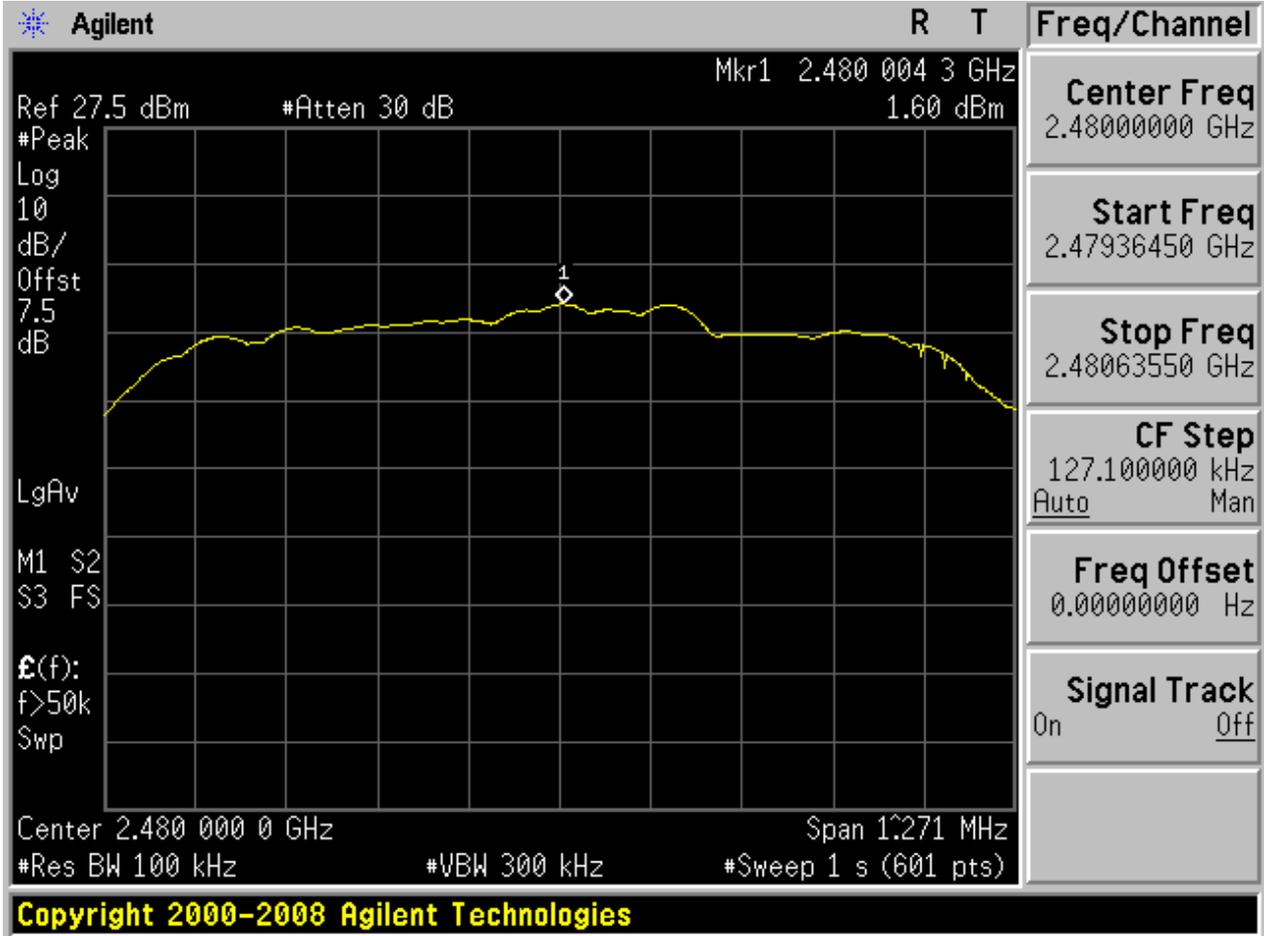




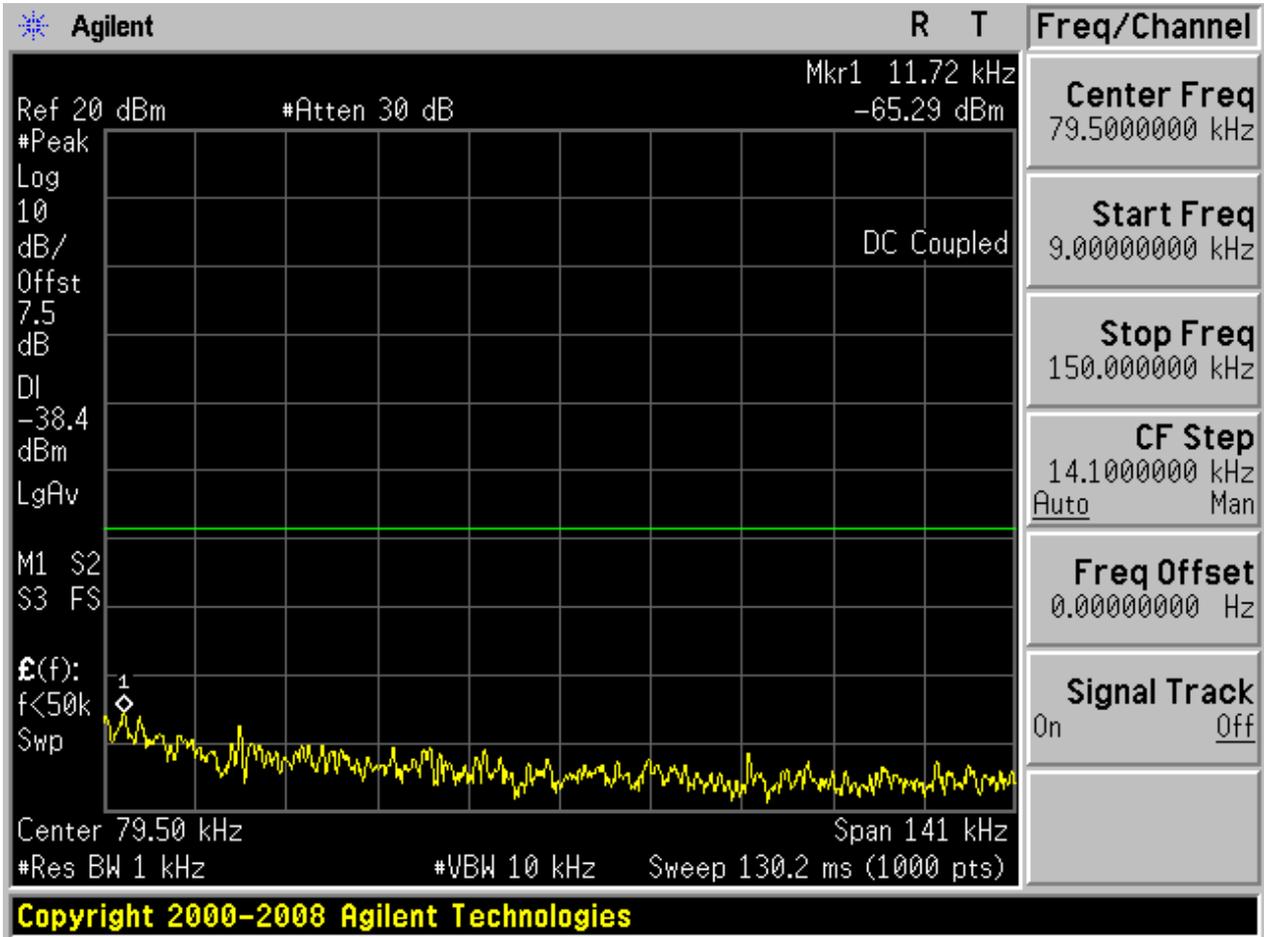


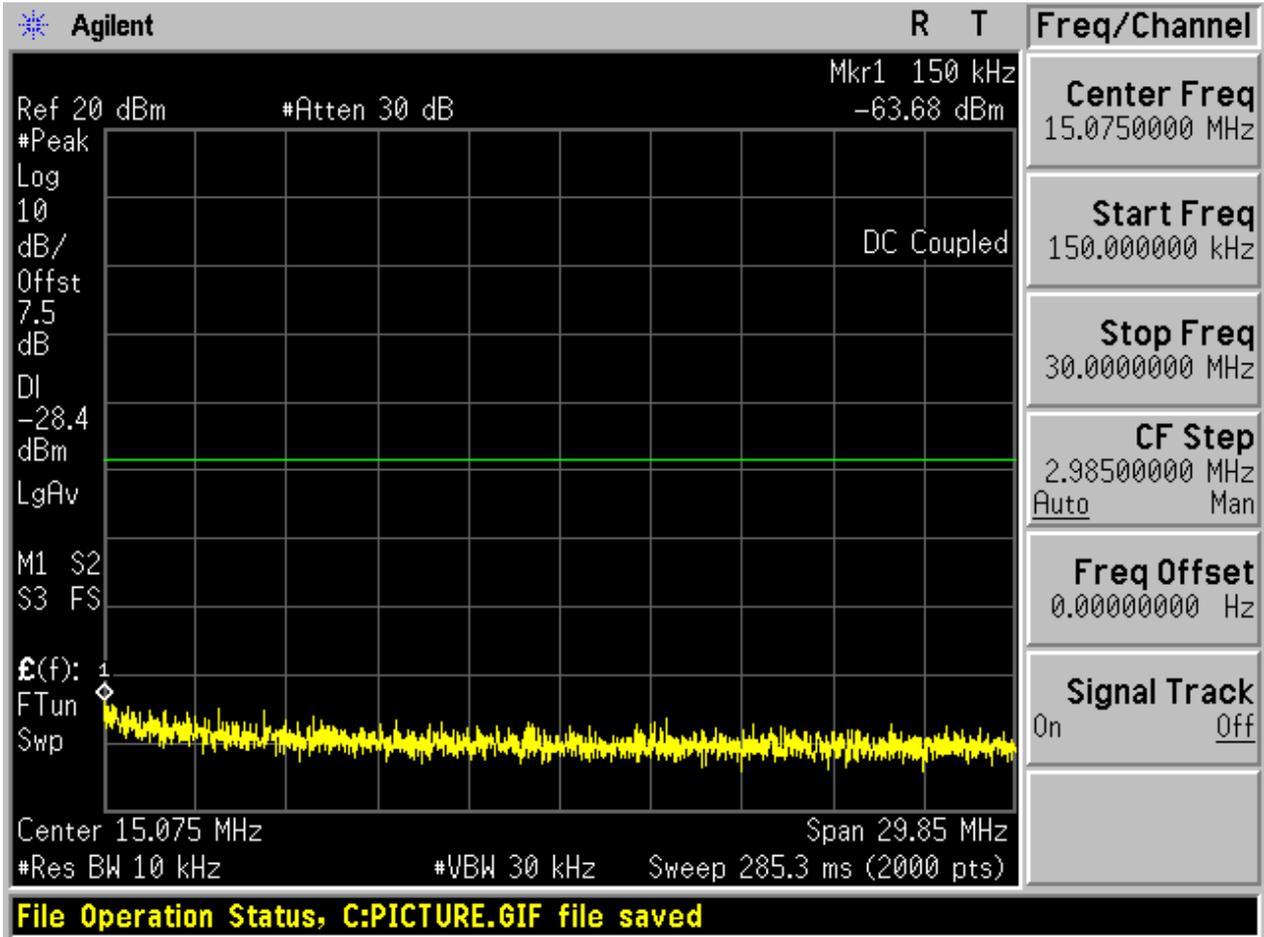
2.9 TM3_3DH5_Ch78

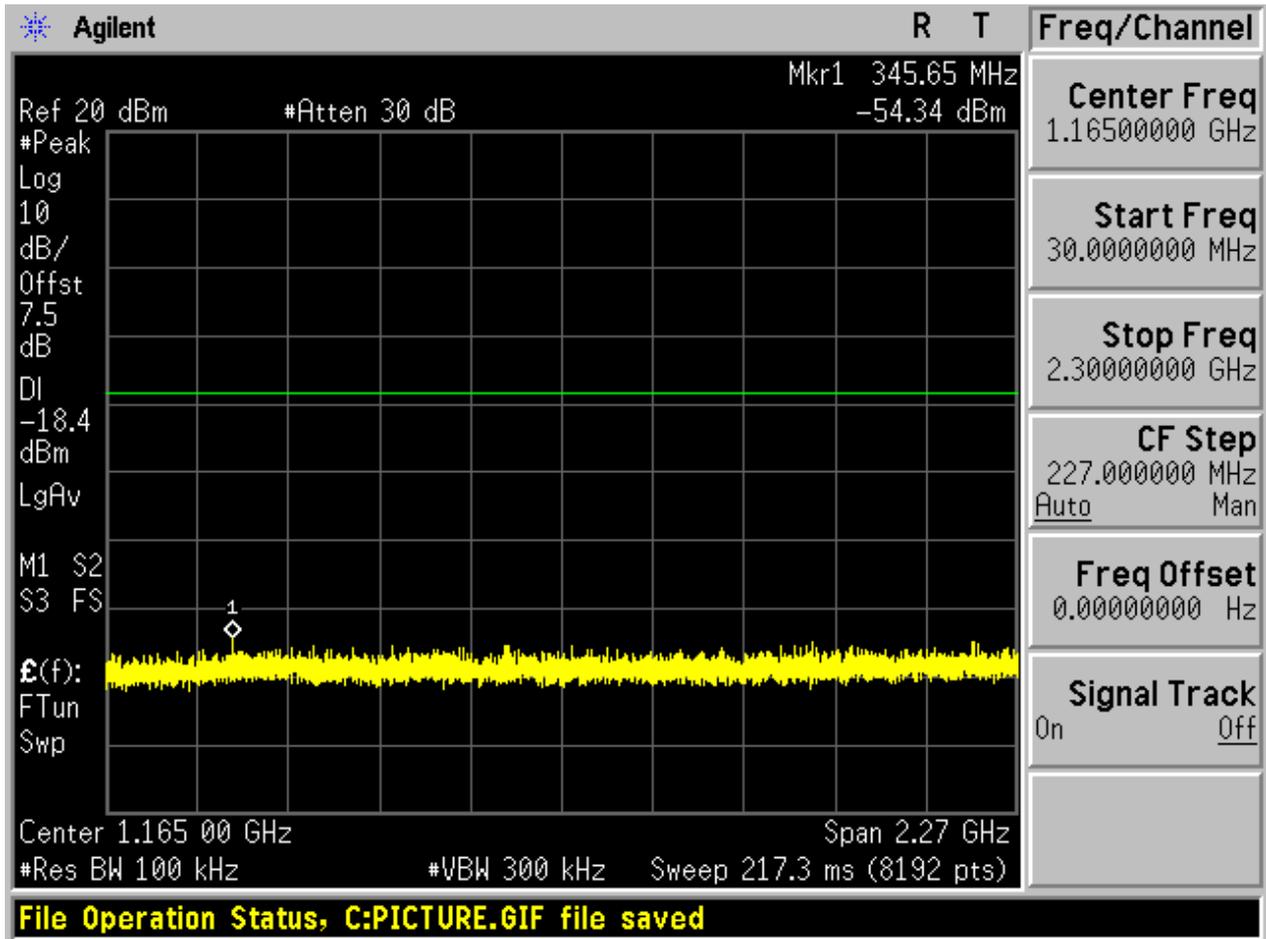
2.9.1 Pref

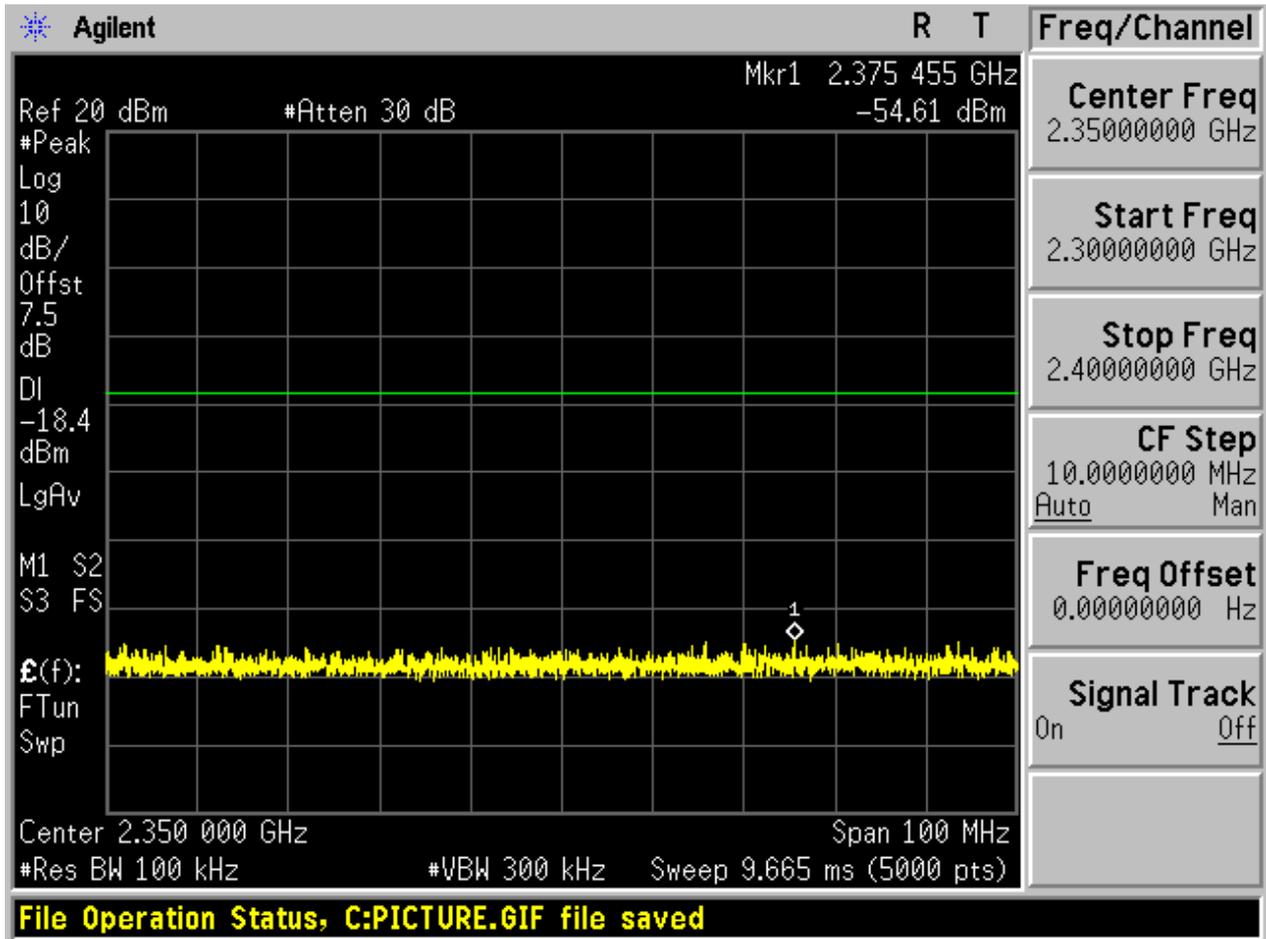


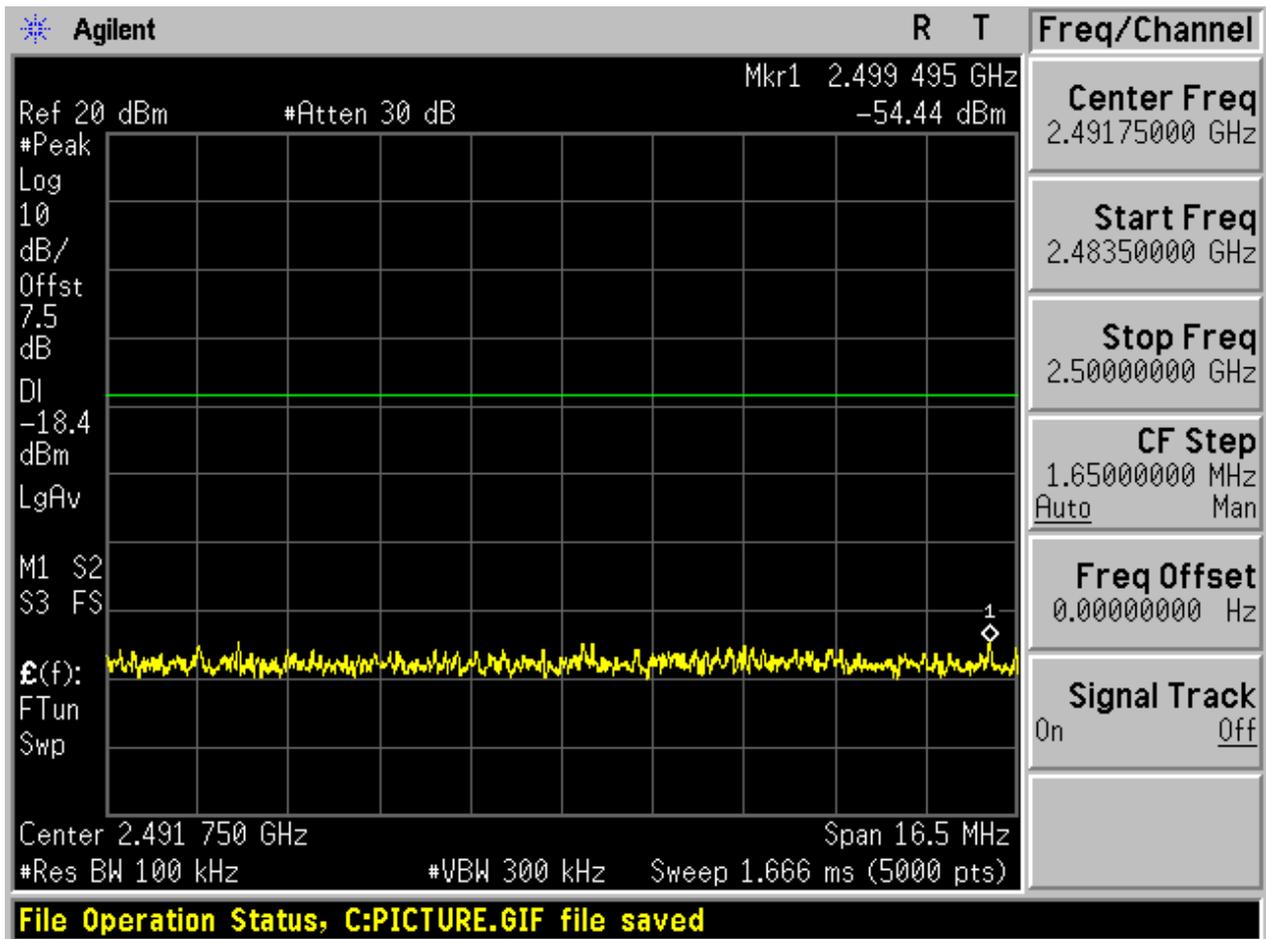
2.9.2 Puw

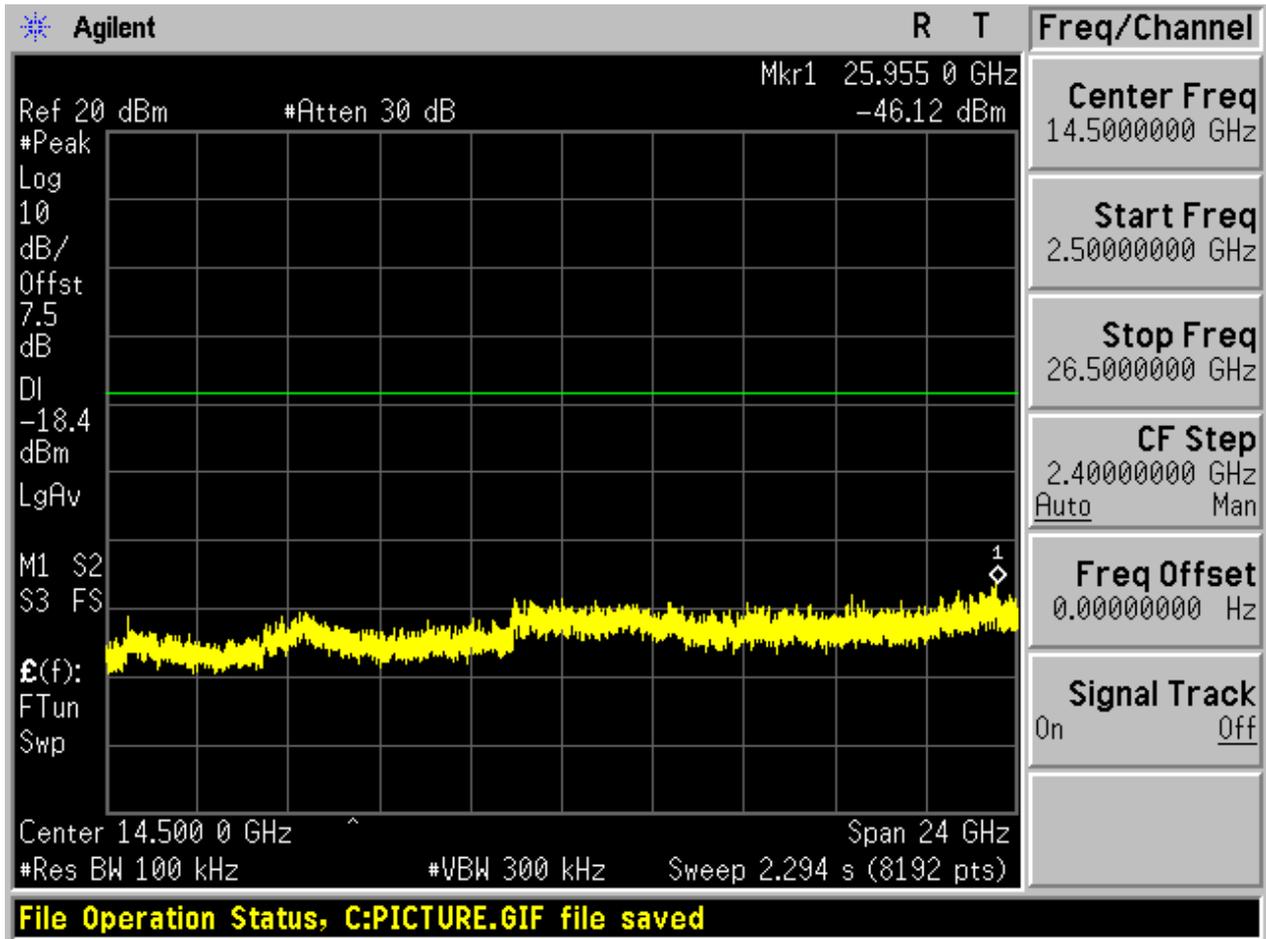












Appendix H: Radiated Emissions in the Restricted Bands

1 Result Table

The whole testing range is from “30 MHz to 26.5 GHz (10th harmonics)” is divided into 4 parts according to the test site settings, which are:

- (Part 1): Test range of “9 KHz to 30 MHz”,
- (Part 2): Test range of “30 MHz to 1 GHz”,
- (Part 3): Test range of “18 GHz to 26.5 GHz”.
- (Part 4): Test range of “2.3 GHz to 2.5 GHz”, and
- (Part 5): Test range of “1 GHz to 18 GHz”.

In this Appendix, only the test results and plots under the worst case can be reported. In the result table, the “< Limit” denotes that “Not found obvious spikes or see marked spikes on plots and listed emissions records”.

Test Range	EUT Conf.	Emissions	Verdict
30 MHz to 1 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
18 GHz to 26.5 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
	TM1_DH5_Ch78 (Worst Conf.)	< Limit	Pass
2.3 GHz to 2.5 GHz	TM1_DH5_Ch0 (Worse Conf.)	< Limit	Pass
1 GHz to 18 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass

2 Result Plot

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

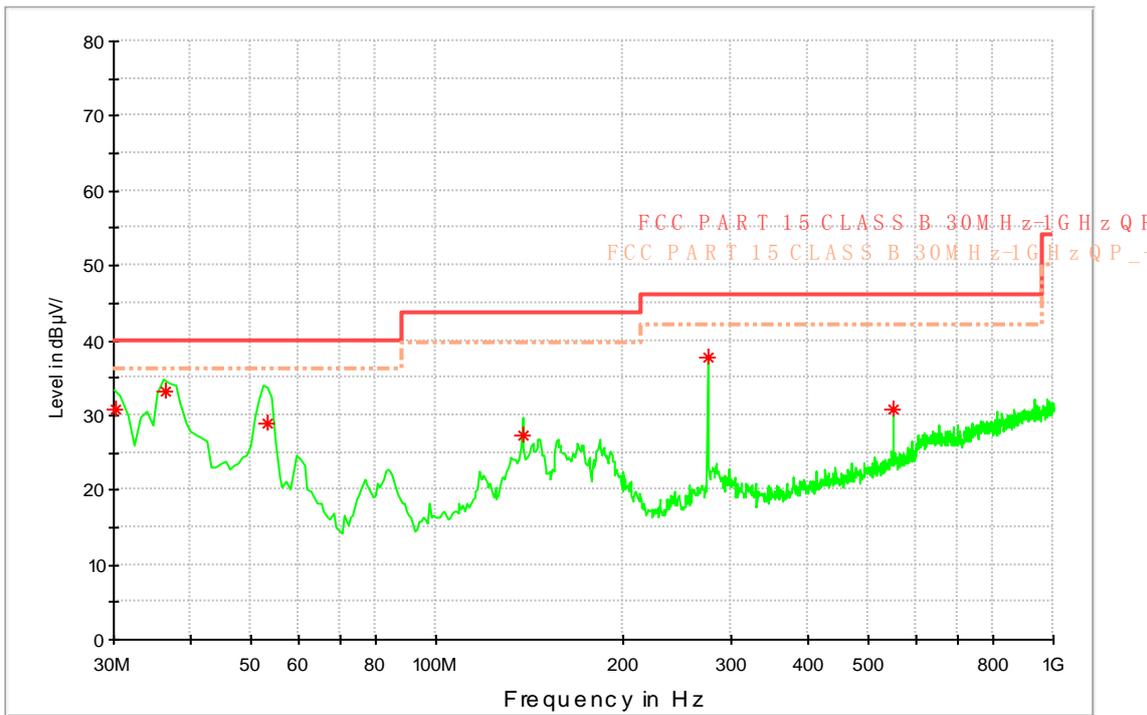
NOTE1: No peak found in the Test Range of “9 kHz to 30MHz”

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).

FCC CLASS B RE 30MHz-1GHz



Frequency (MHz)	QuasiPeak (dBµ V/m)	Bandwidth (Hz)	Height (cm)	Polarization	Azimuth (deg)	Corr (dB)	Margi n (dB)	Limit (dBµ V/m)
30.139110	30.9	120.000	100.0	V	99.0	13.7	14.1	40.0
36.346240	33.2	120.000	100.0	V	40.0	14.8	6.8	40.0
53.099200	28.9	120.000	100.0	V	340.0	14.8	11.1	40.0
137.839040	27.2	120.000	100.0	V	183.0	10.3	16.3	43.5
275.617600	37.8	120.000	124.0	H	303.0	15.1	8.2	46.0
551.212800	30.9	120.000	100.0	V	41.0	21.0	15.1	46.0

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

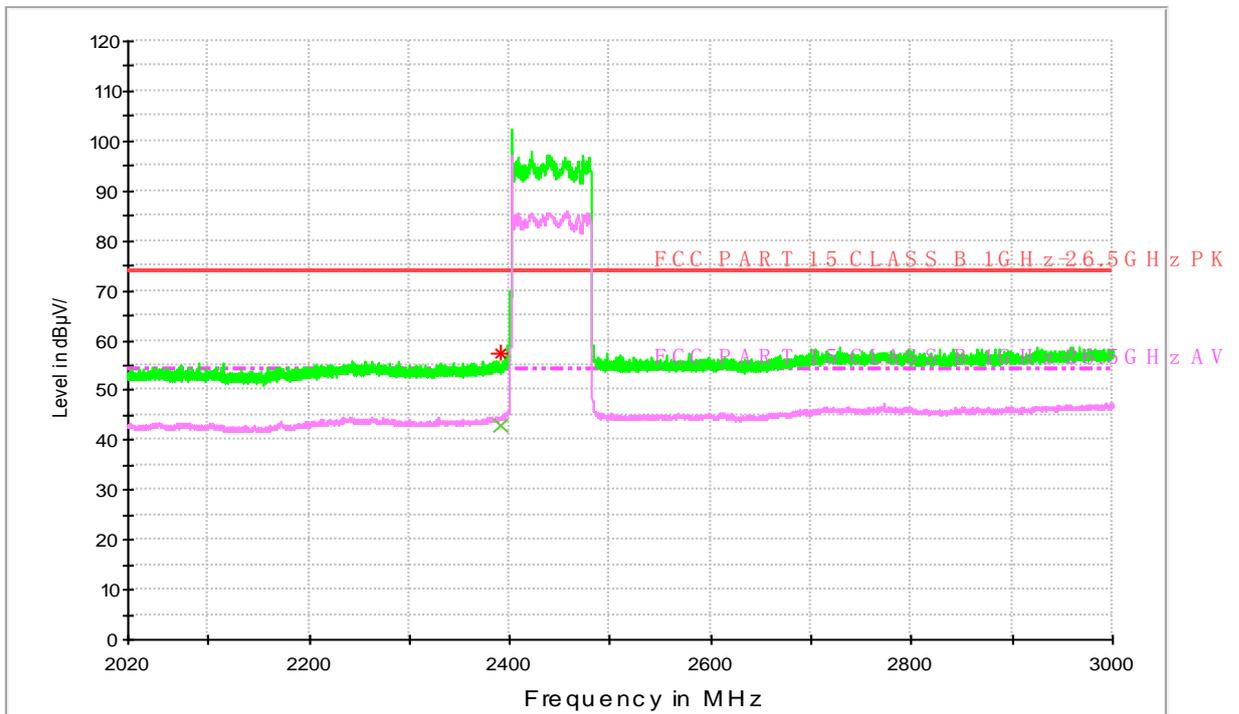
NOTE1: No peak found in the Test Range of “18 GHz to 26.5GHz”

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 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.

Channel 0

FCC CLASS B WIFI 1GHz-3GHz



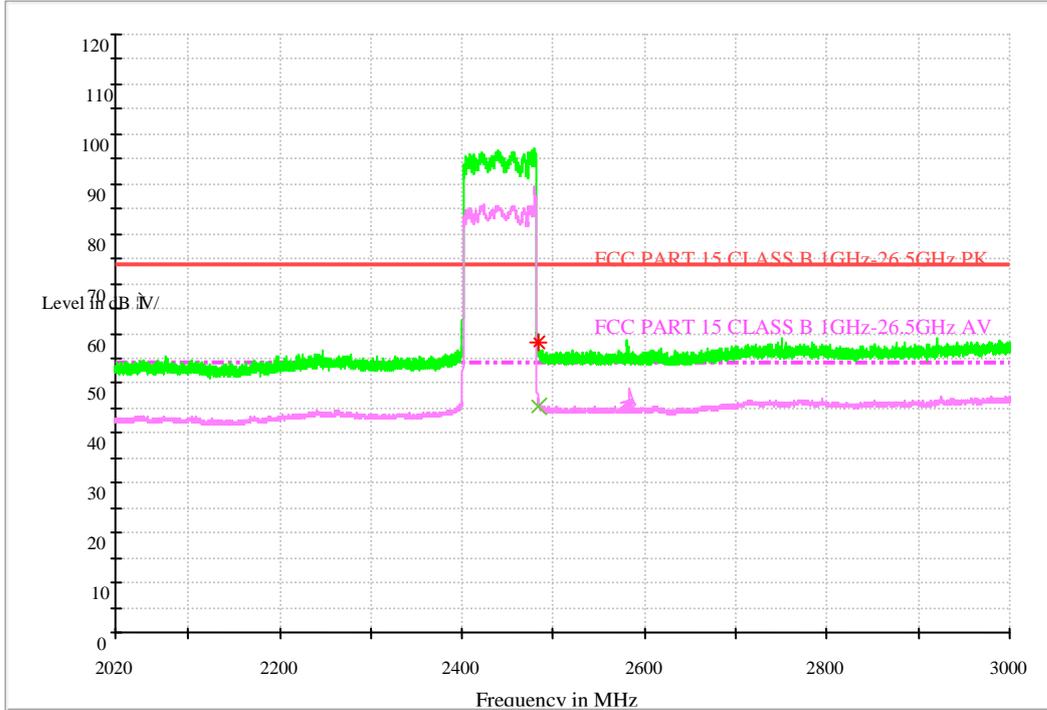
Note: The peak exceeds the limit line is carrier frequency.

MEASUREMENT RESULT: PK/ AV Detector

Frequency (MHz)	MaxPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)
2389.948800	57.3	15000.0	1000.000	100.0	V	355.0	38.3	16.7
Frequency	Average	Meas.	Bandwidth	Height	Polarization	Azimuth	Corr.	Margin
2390.097800	42.9	15000.0	1000.000	100.0	V	355.0	38.4	11.1

2.1.1.1 Channel 39

FCC CLASS B WIFI 1GHz-3GHz



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

MEASUREMENT RESULT: PK/ AV Detector

Frequency (MHz)	MaxPeak (dBμ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)
2483.711100	58.2	15000.0	1000.000	100.0	H	233.0	40.7	15.8
Frequency	Average	Meas.	Bandwidth	Height	Polarization	Azimuth	Corr.	Margin
2482.993000	45.5	15000.0	1000.000	100.0	V	159.0	41.3	8.5

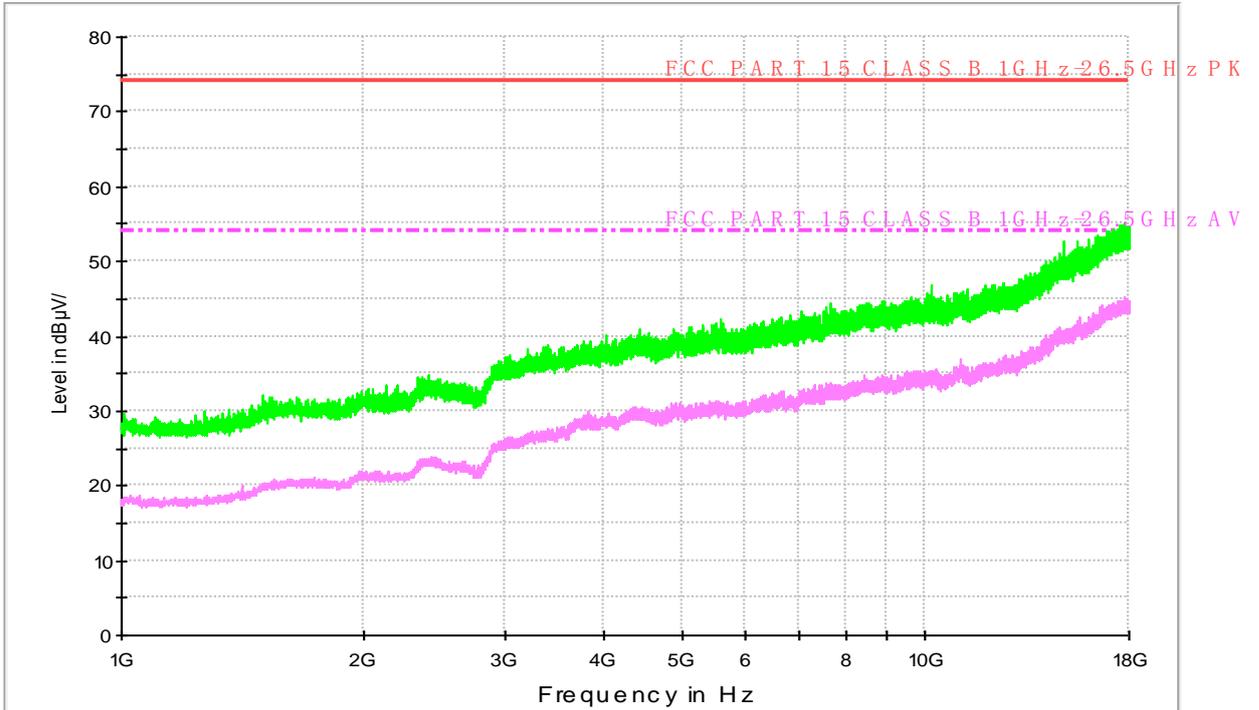
Part 5: Testing Range of “1 GHz to 18 GHz”

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).

FCC CLASS B RE 1GHz-18GHz



Appendix I: AC Power Line Conducted Emissions

1 Result Table

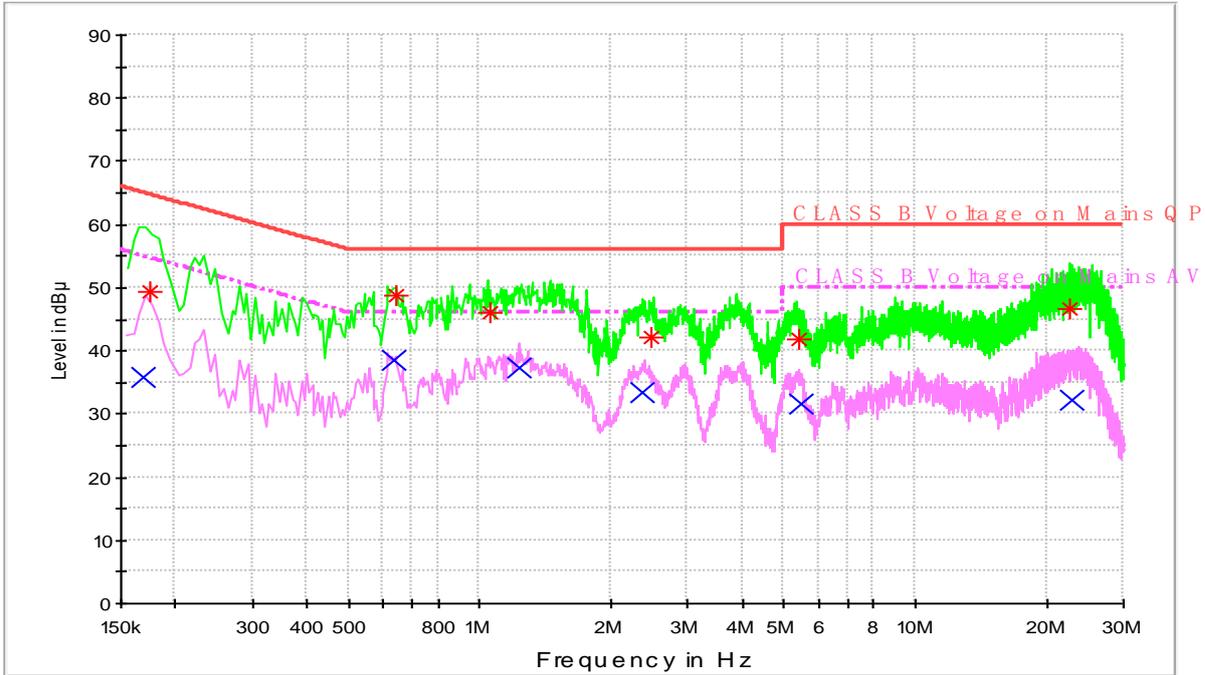
In this Appendix, only the test results and plots under the worst case can be reported.

EUT Conf.	Maximum Emissions	Verdict
TM1_DH5_Ch39	Not found obvious spikes or see marked spikes on plots and listed emissions records.	Pass

2 Result Plot

Channel 39

CLASS B Voltage with ENV216



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.174696	49.3	L1	9.8	15.4	64.7
0.639090	48.7	L1	9.8	7.3	56.0
1.049679	46.1	L1	9.8	9.9	56.0
2.463924	42.0	L1	9.8	14.0	56.0
5.379648	42.0	L1	10.0	18.0	60.0
22.564509	46.7	L1	10.2	13.3	60.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.169773	35.9	L1	9.8	19.1	55.0
0.637248	38.5	L1	9.8	7.5	46.0
1.224384	37.5	L1	9.8	8.5	46.0
2.349390	33.5	L1	9.8	12.5	46.0
5.449902	31.7	L1	10.0	18.3	50.0
22.851609	32.3	N	10.2	17.7	50.0

END