

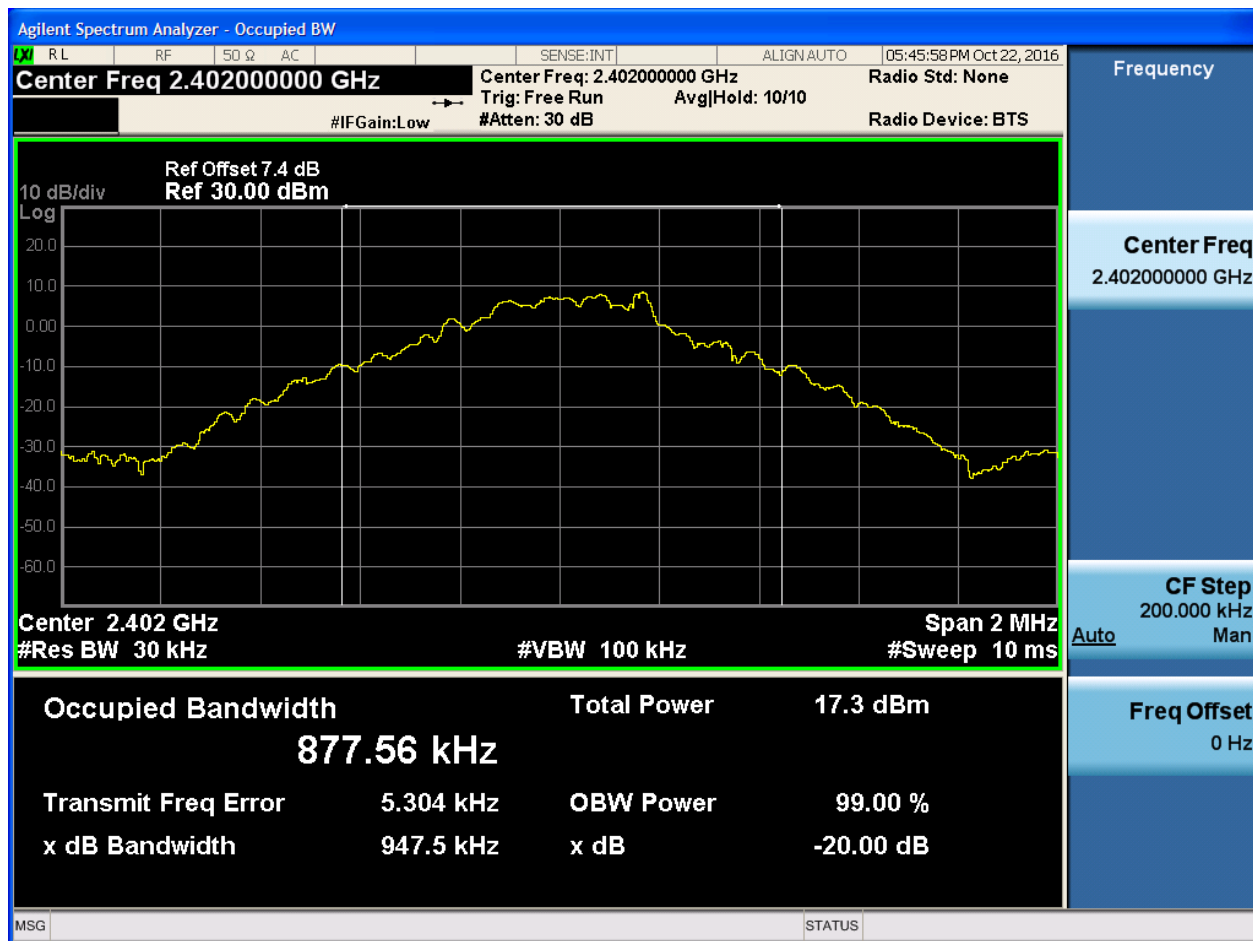
Appendix A: 20dB Emission Bandwidth (EBW)

1 Result Table

EUT Conf.	EBW [MHz]	Verdict
TM1_DH5_Ch0	0.95	Pass
TM1_DH5_Ch39	0.95	Pass
TM1_DH5_Ch78	0.95	Pass
TM2_2DH5_Ch0	1.28	Pass
TM2_2DH5_Ch39	1.28	Pass
TM2_2DH5_Ch78	1.28	Pass
TM3_3DH5_Ch0	1.28	Pass
TM3_3DH5_Ch39	1.28	Pass
TM3_3DH5_Ch78	1.28	Pass

2 Test Plot

2.1 TM1_DH5_Ch0

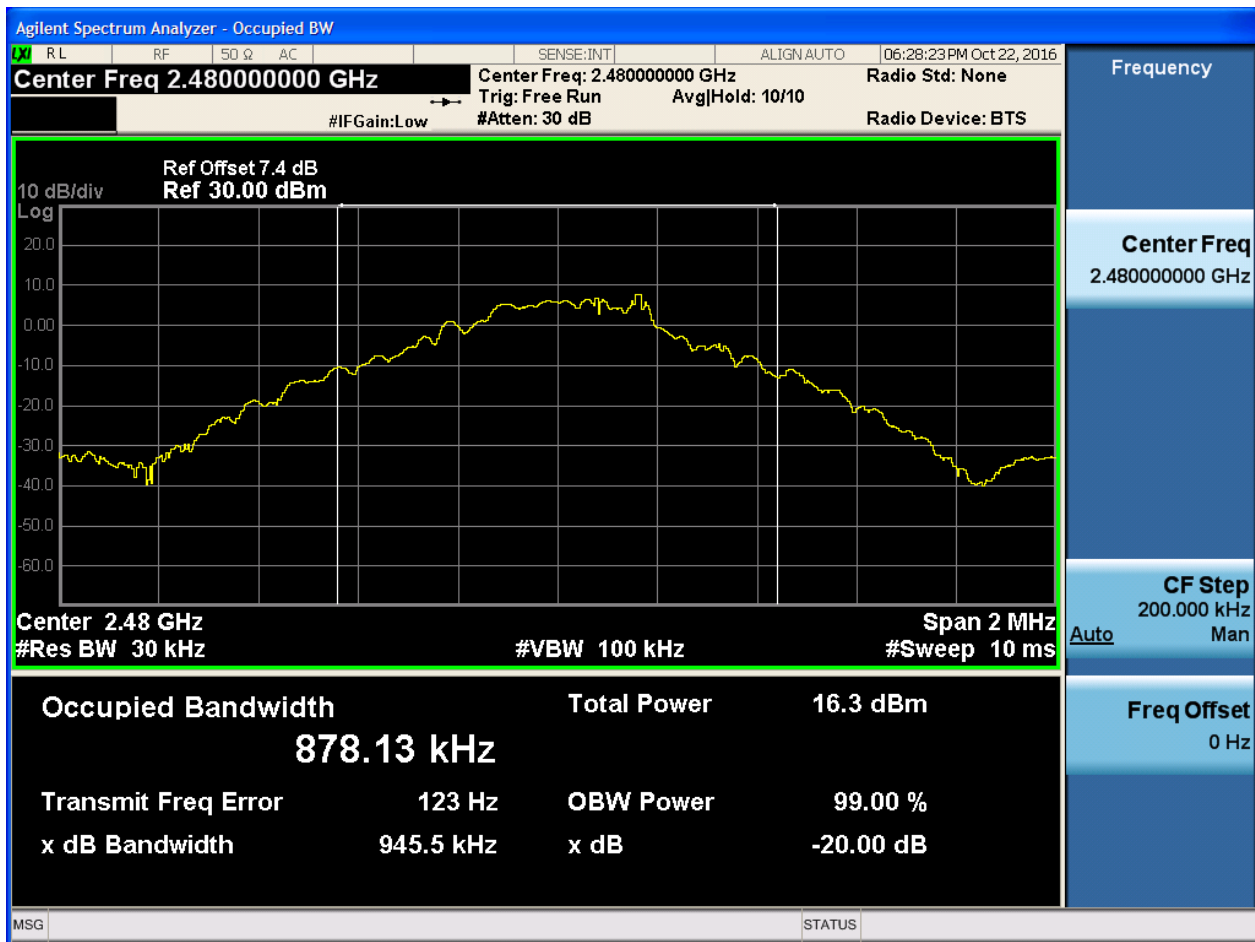




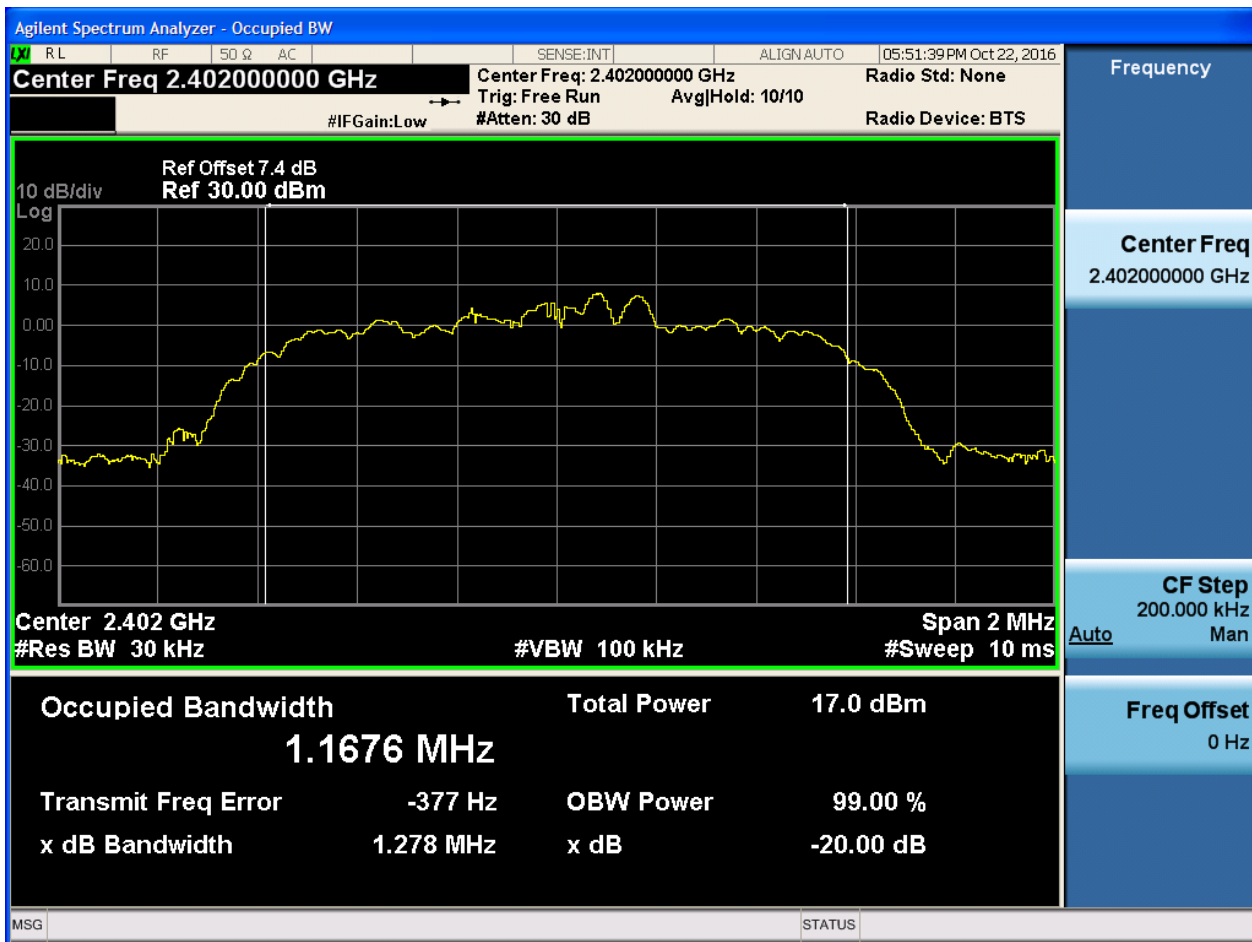
2.2 TM1_DH5_Ch39



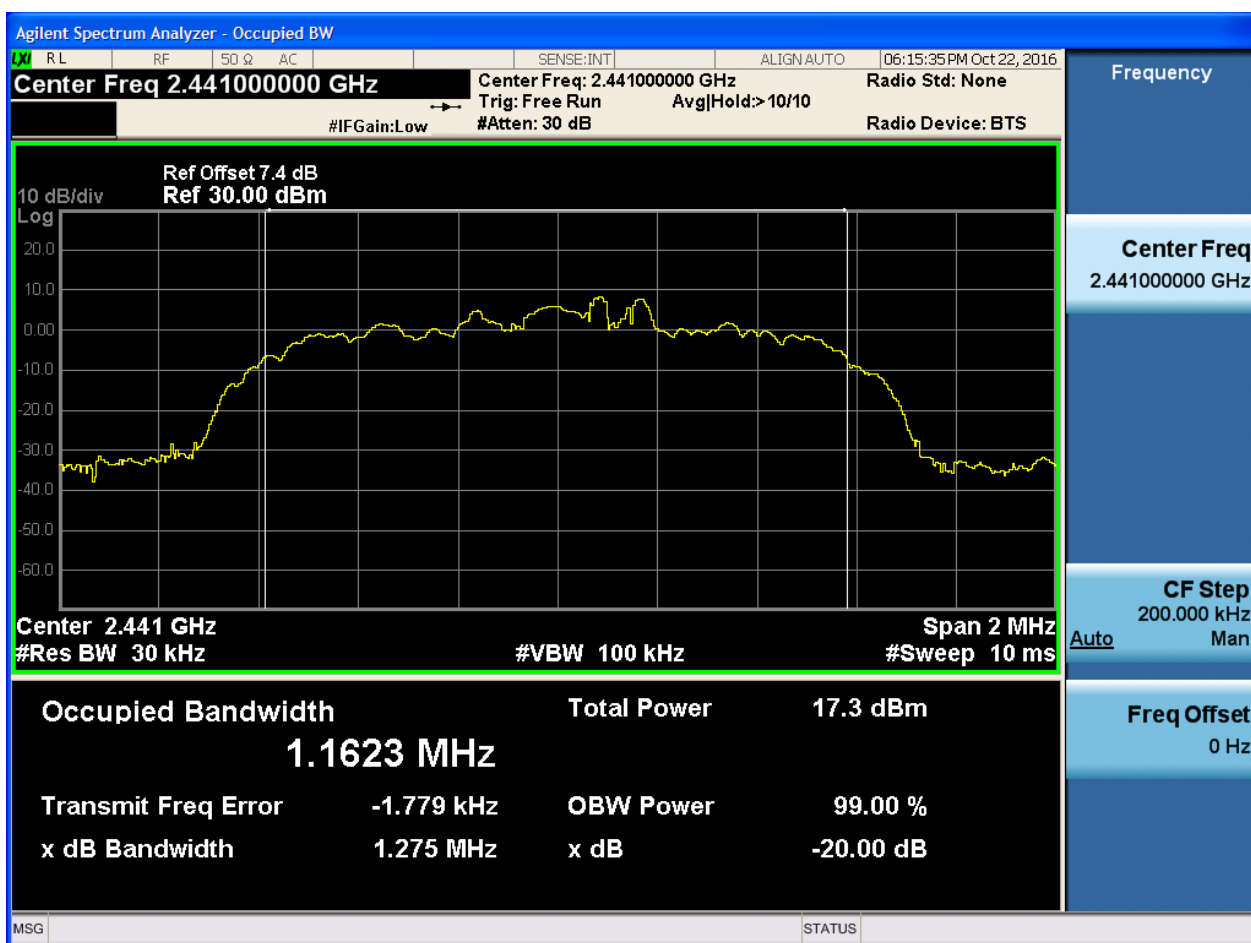
2.3 TM1_DH5_Ch78



2.4 TM2_2DH5_Ch0

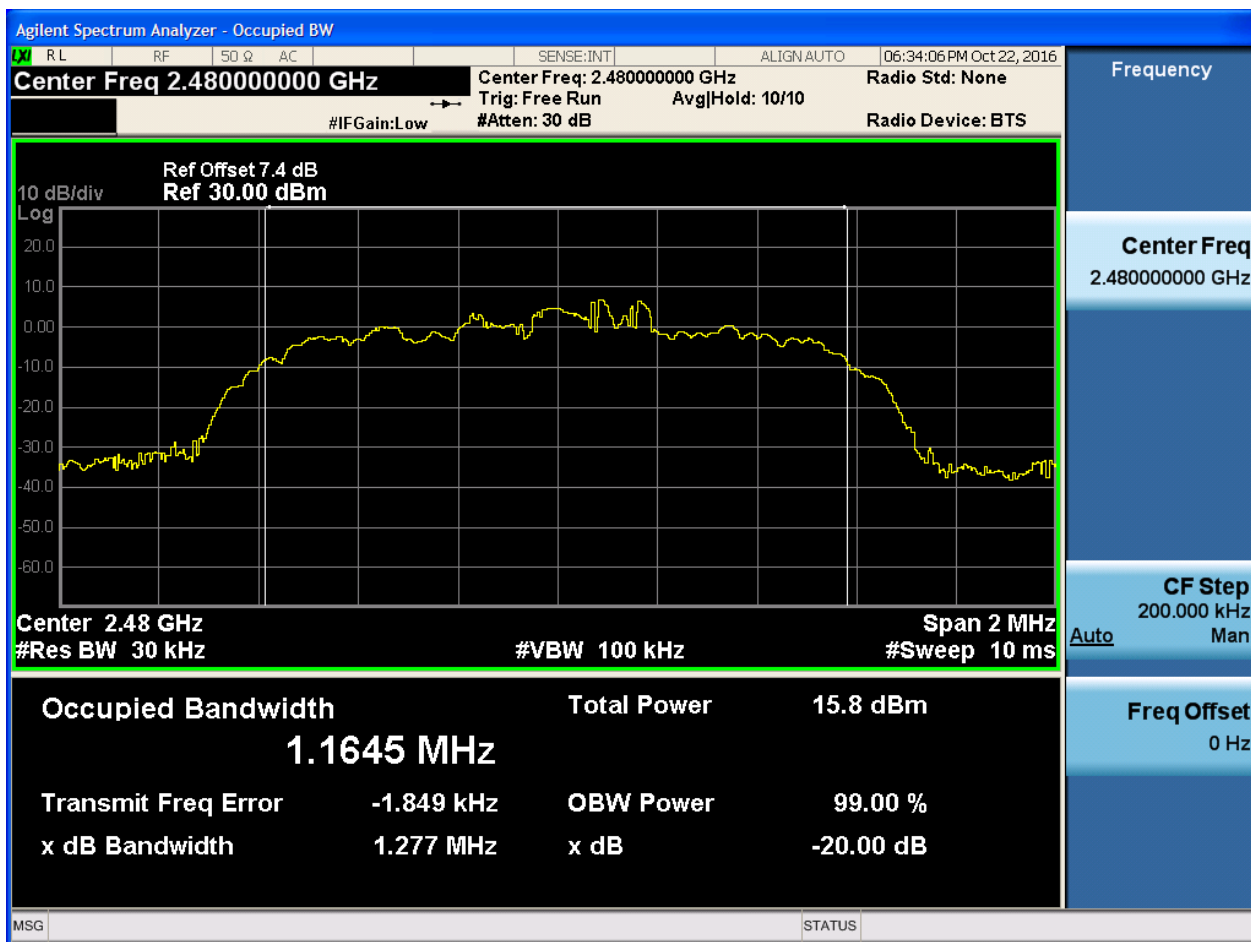


2.5 TM2_2DH5_Ch39



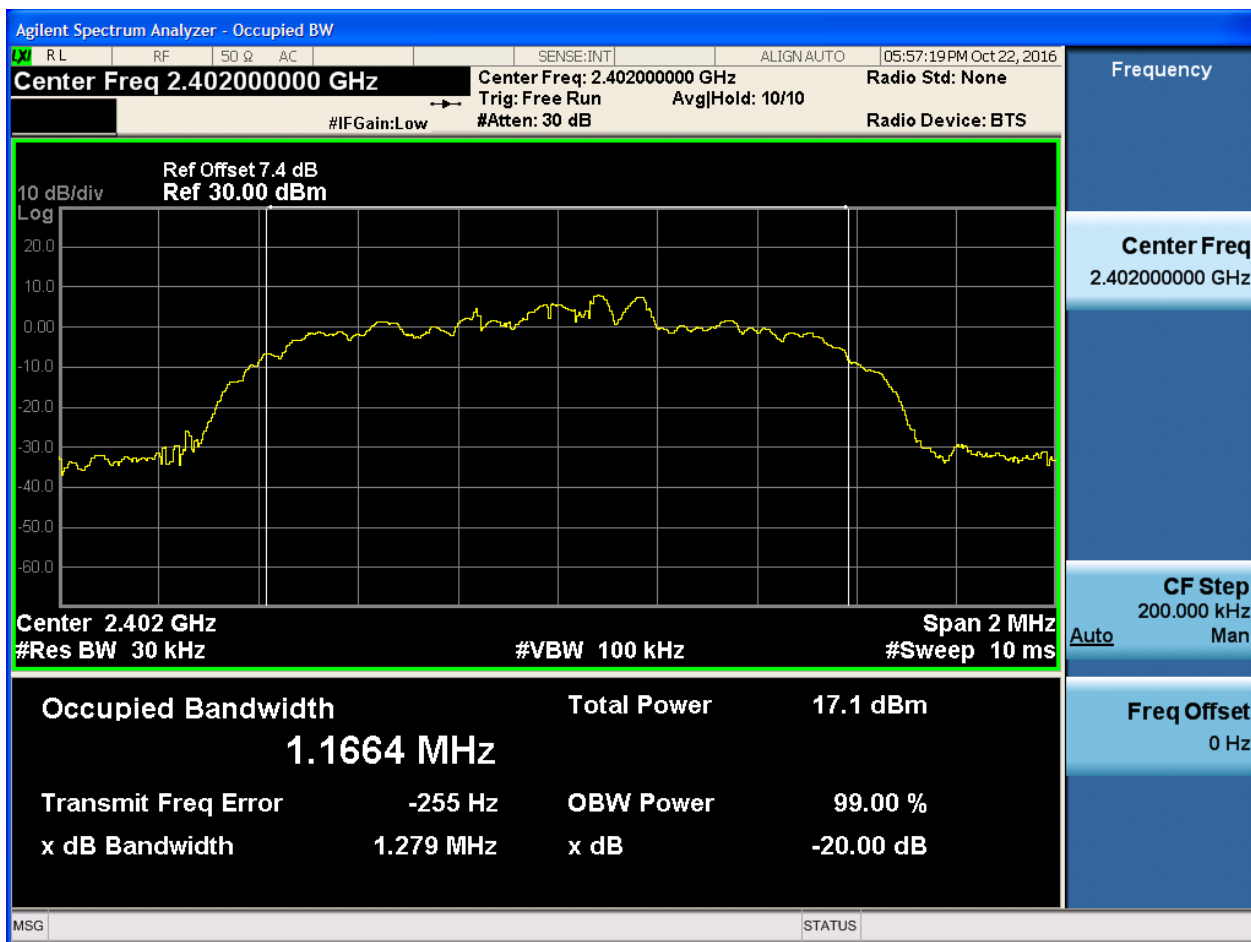


2.6 TM2_2DH5_Ch78



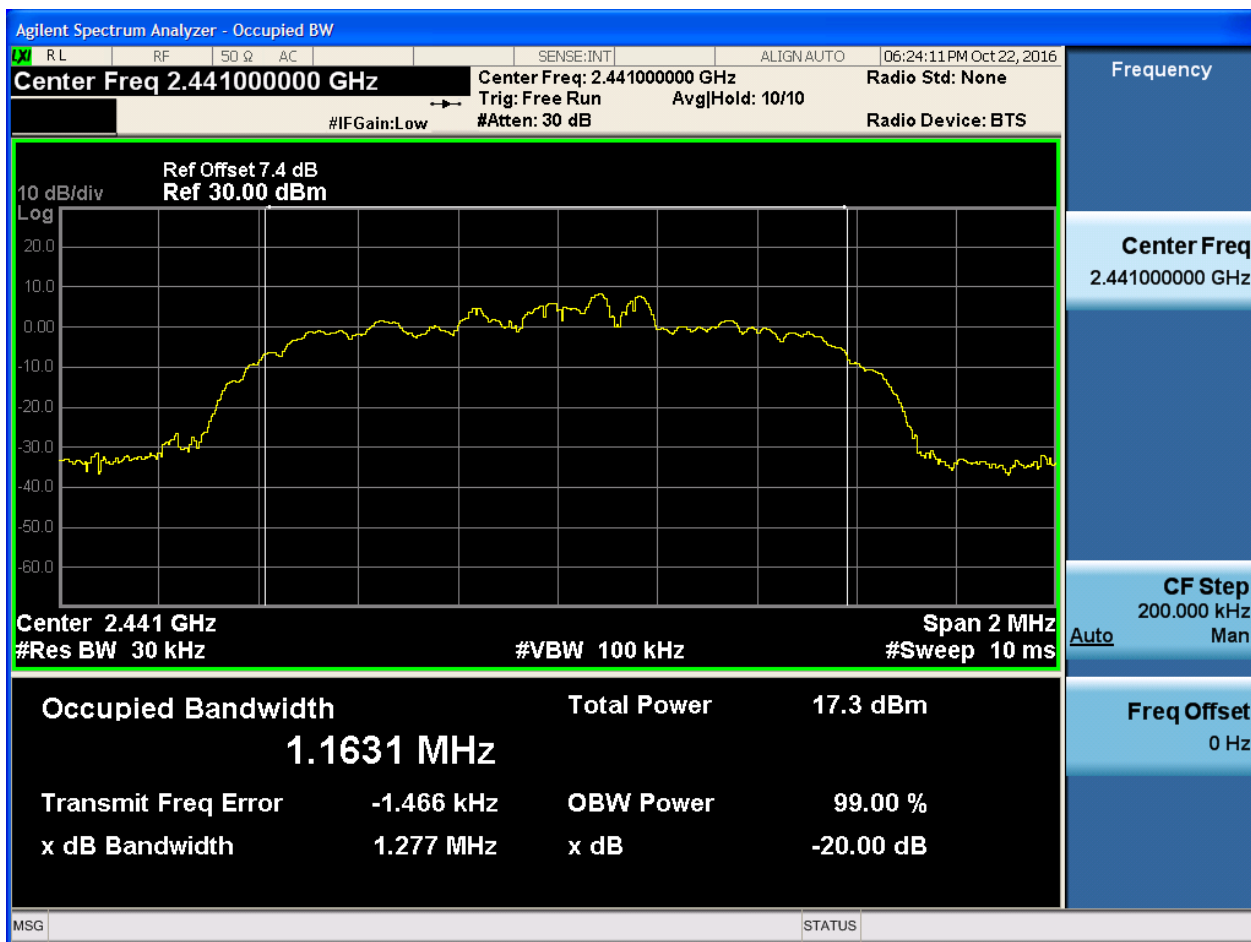


2.7 TM3_3DH5_Ch0

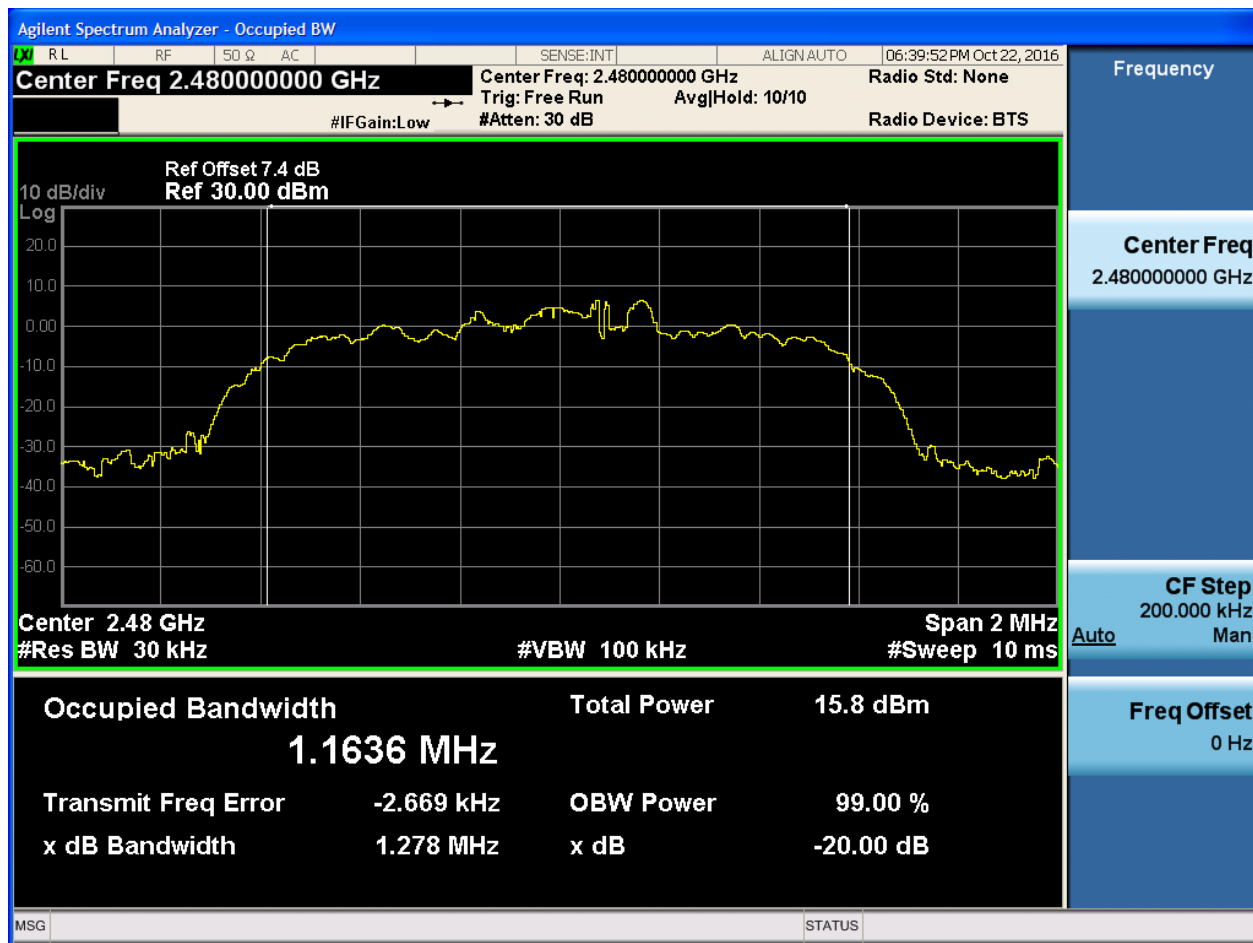




2.8 TM3_3DH5_Ch39



2.9 TM3_3DH5_Ch78



Appendix B: Carrier Frequency Separation

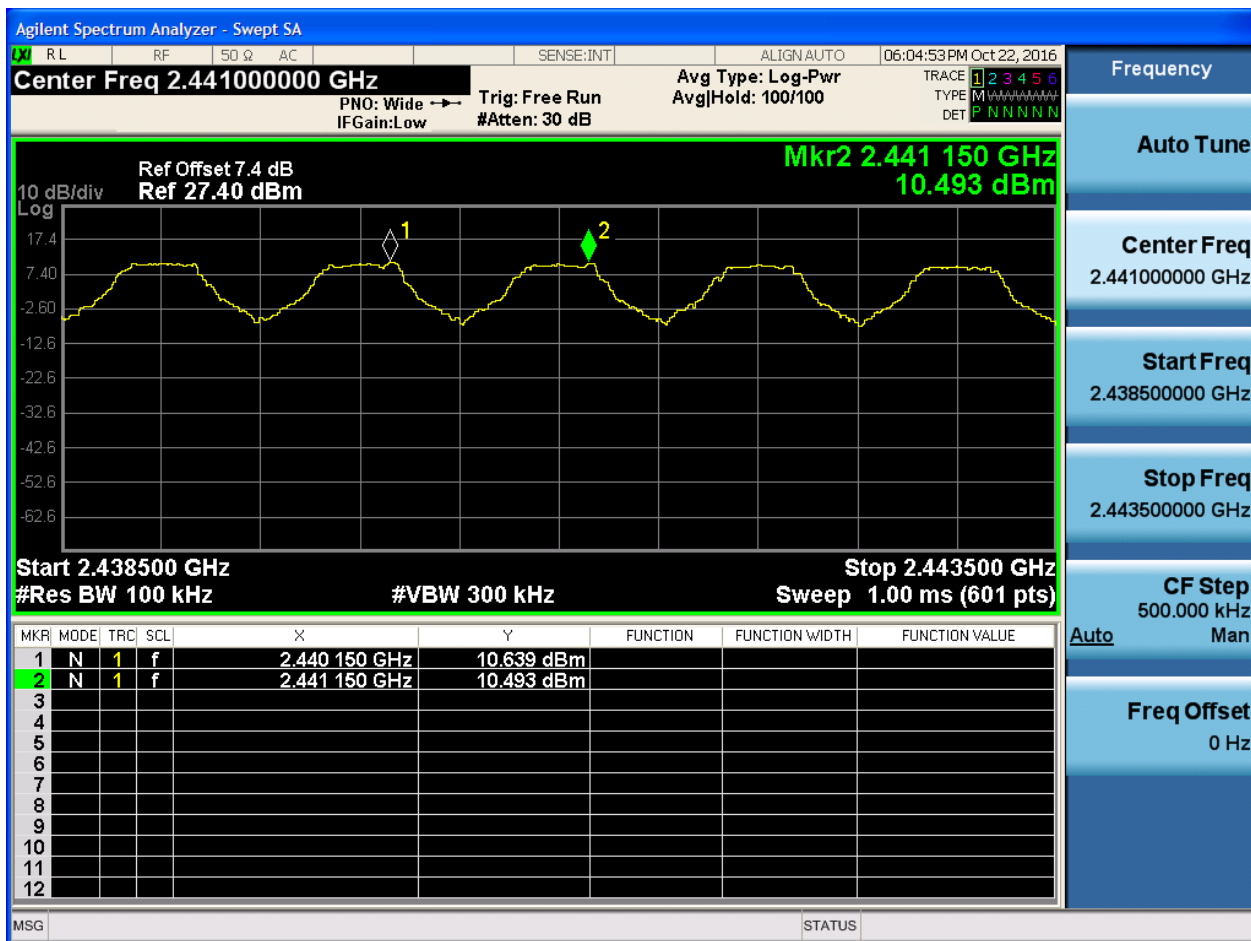
1 Result Table

EUT Conf.	Carrier Frequency Separation [MHz]	Verdict
TM1_DH5_Hop	1	Pass
TM2_2DH5_Hop	0.95	Pass
TM3_3DH5_Hop	1	Pass



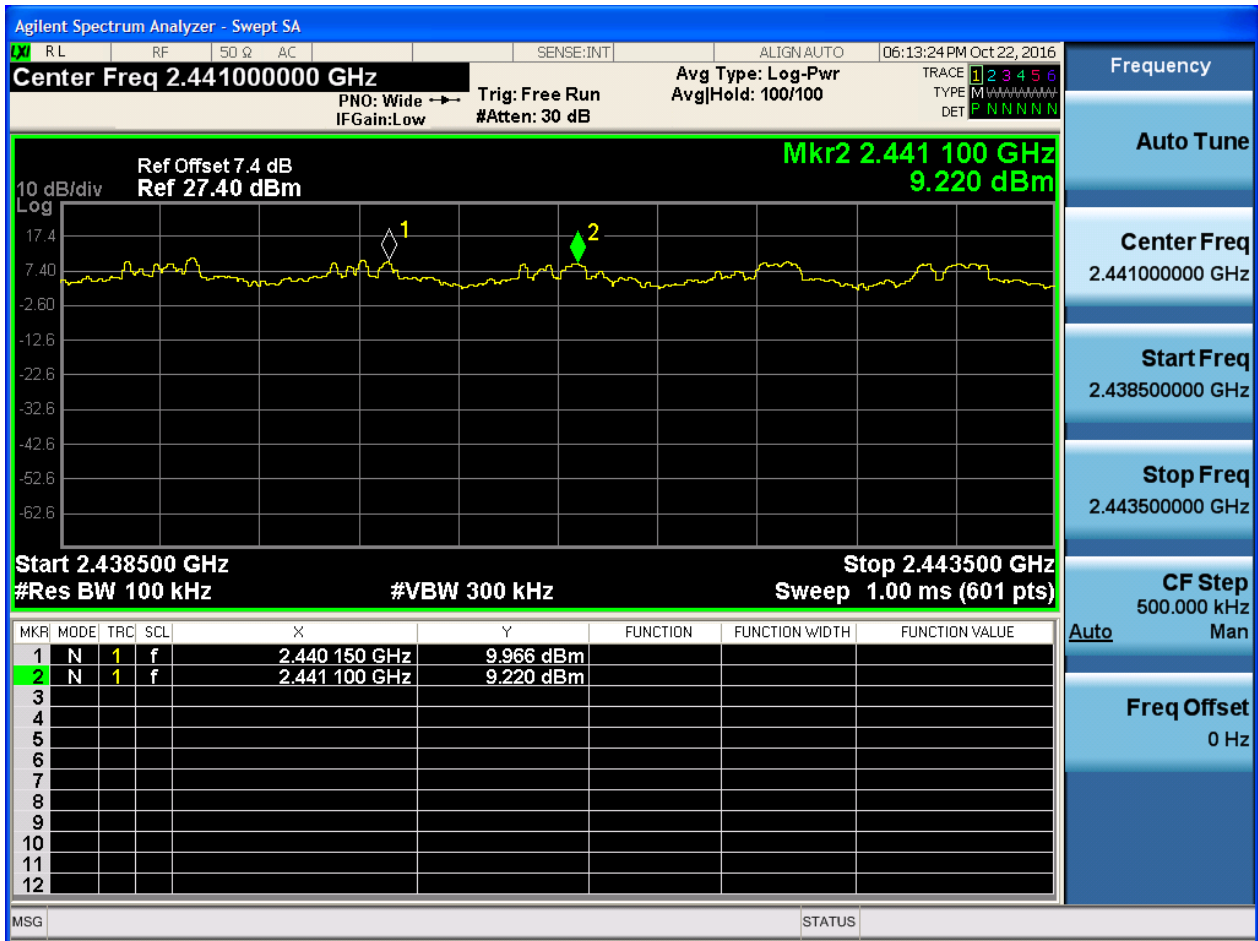
2 Test Plot

2.1 TM1_DH5_Hop





2.2 TM2_2DH5_Hop





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN: AUTO 06:22:01 PM Oct 22, 2016

Center Freq 2.441000000 GHz Avg Type: Log-Pwr
 PNO: Wide → Trig: Free Run Avg/Hold: 100/100
 IFGain: Low #Atten: 30 dB

TRACE 1 2 3 4 5 6
 TYPE M W W W W W W W
 DET P N N N N N N

Ref Offset 7.4 dB
 Ref 27.40 dBm

**Mkr2 2.441 200 GHz
 9.394 dBm**

10 dB/div
 Log

17.4
 7.40
 -2.60
 -12.6
 -22.6
 -32.6
 -42.6
 -52.6
 -62.6

Start 2.438500 GHz Stop 2.443500 GHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 1.00 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.440 200 GHz	9.545 dBm			
2	N	1	f	2.441 200 GHz	9.394 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency
 Auto Tune
 Center Freq 2.441000000 GHz
 Start Freq 2.438500000 GHz
 Stop Freq 2.443500000 GHz
 CF Step 500.000 kHz Man
 Freq Offset 0 Hz

Appendix C: Number of Hopping Channel

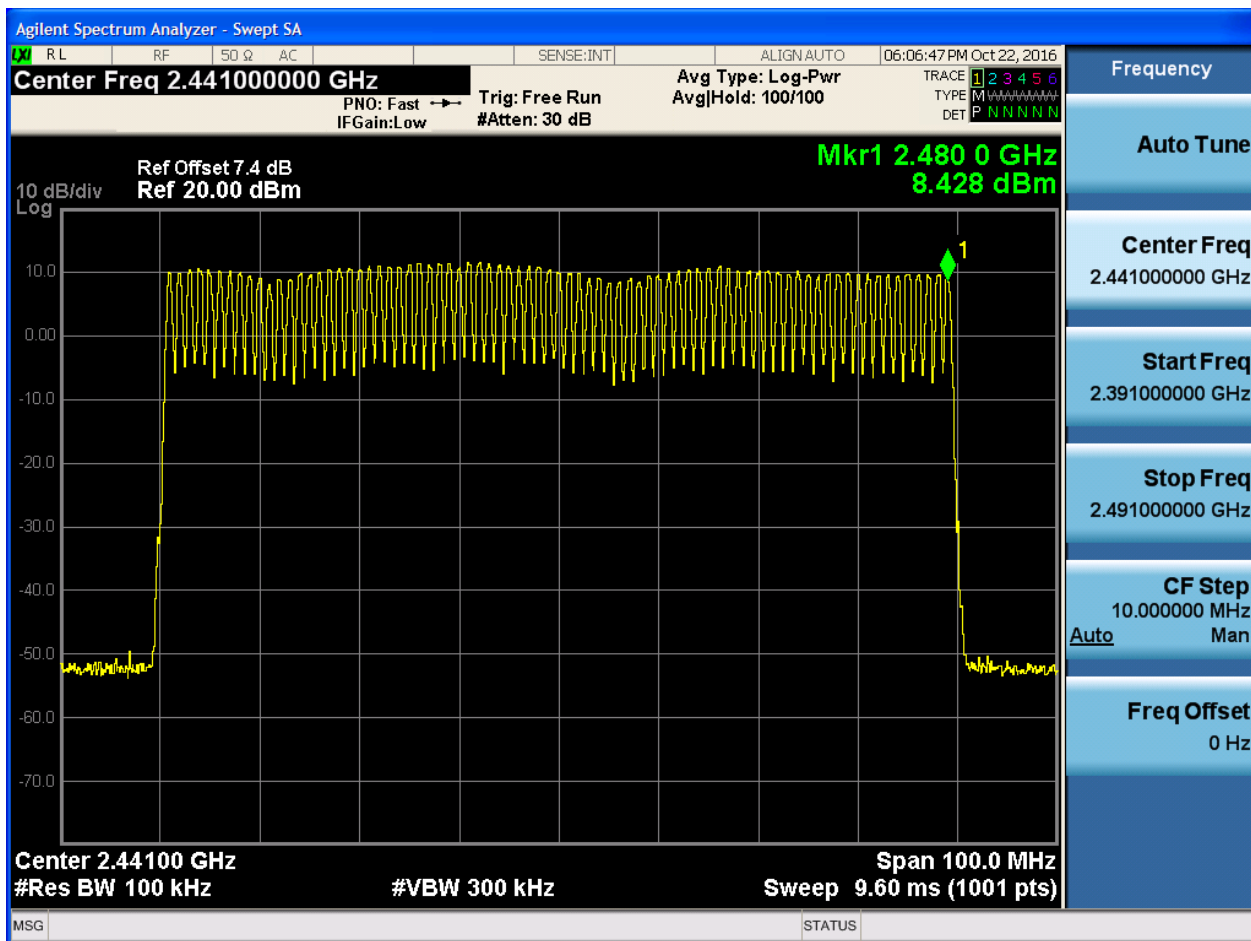


1 Result Table

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

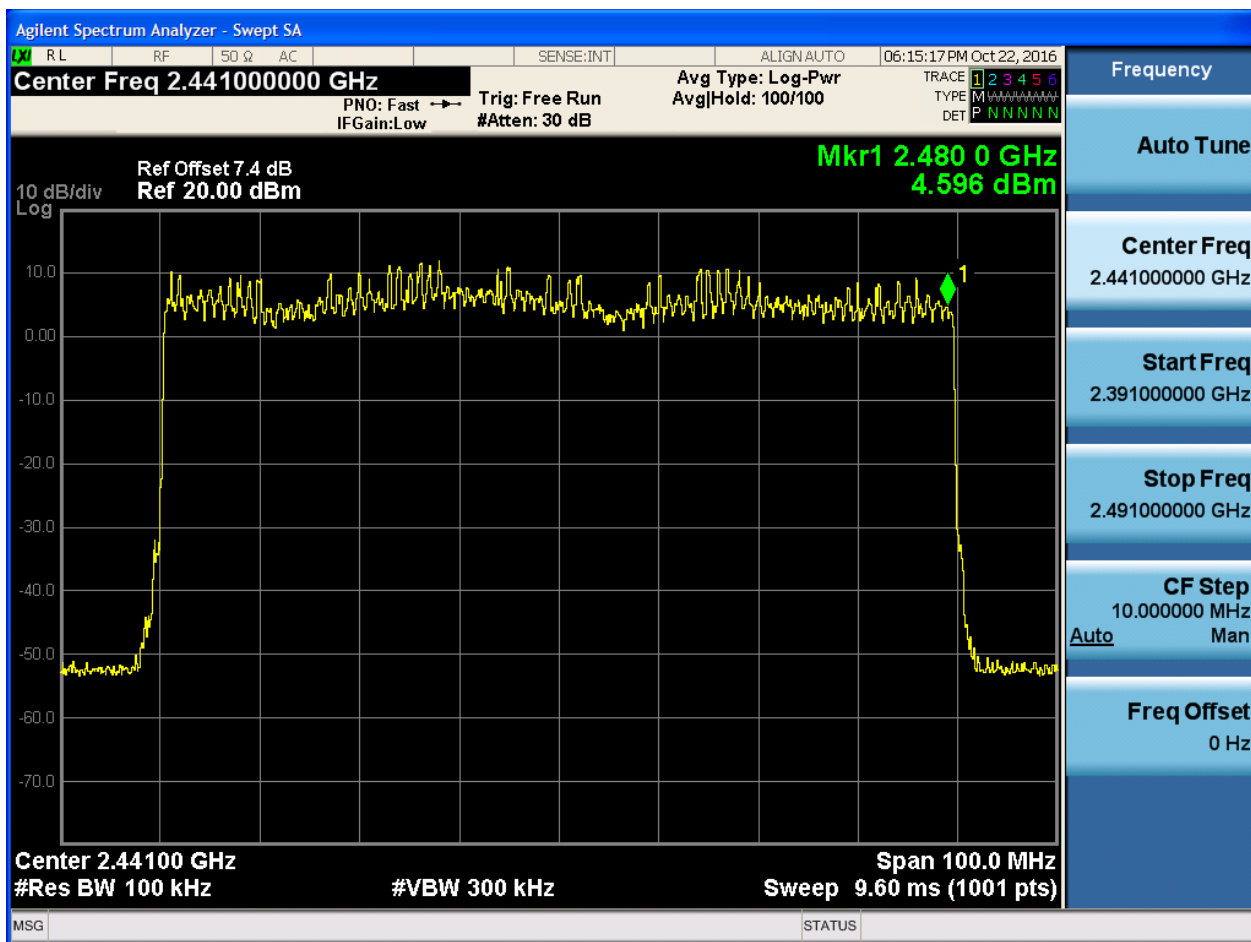
2 Test Plot

2.1 TM1_DH5_Hop



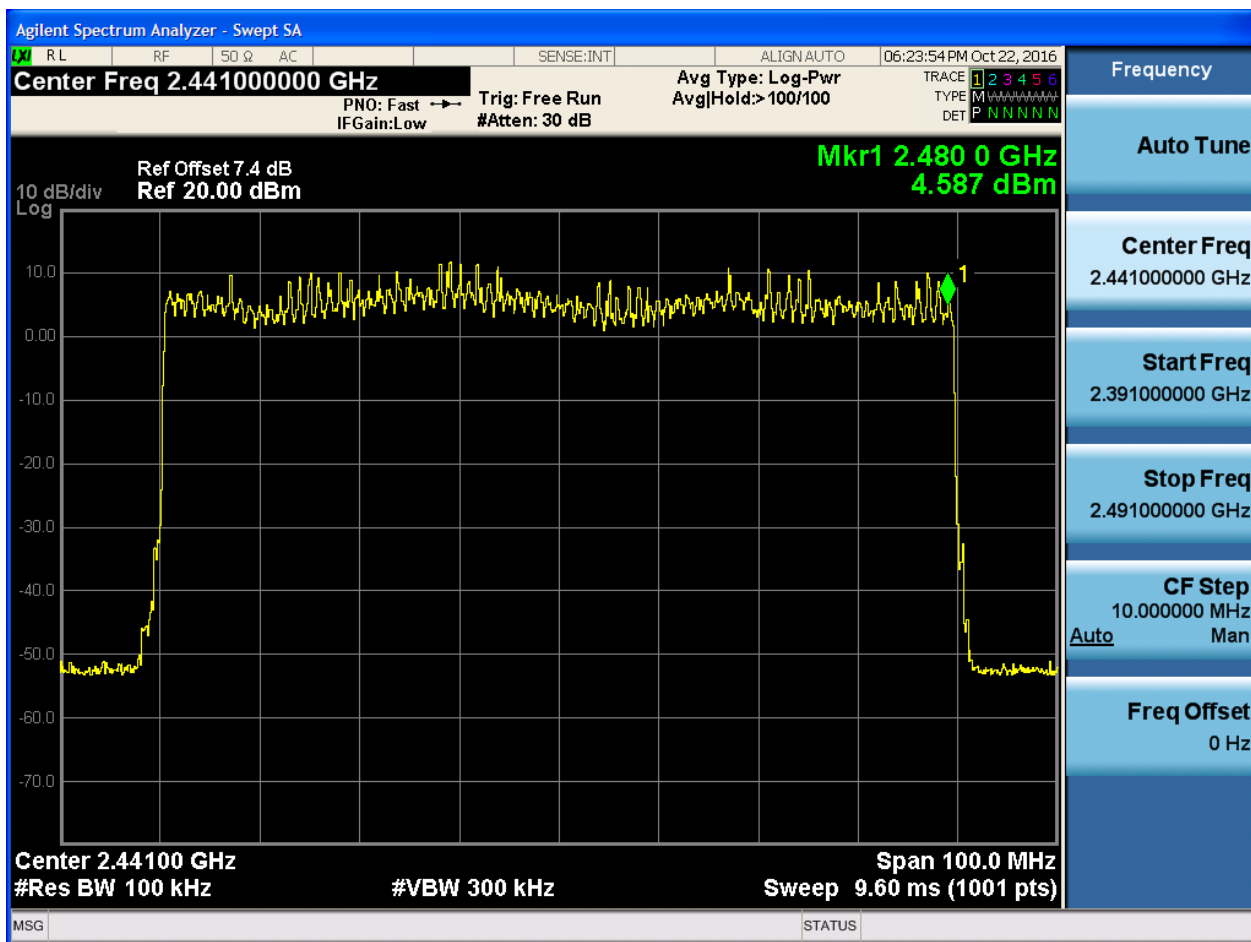


2.2 TM2_2DH5_Hop





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: $106.67 \text{ [hop*ch]} * \text{Burst Width [ms/hop/ch]}$.

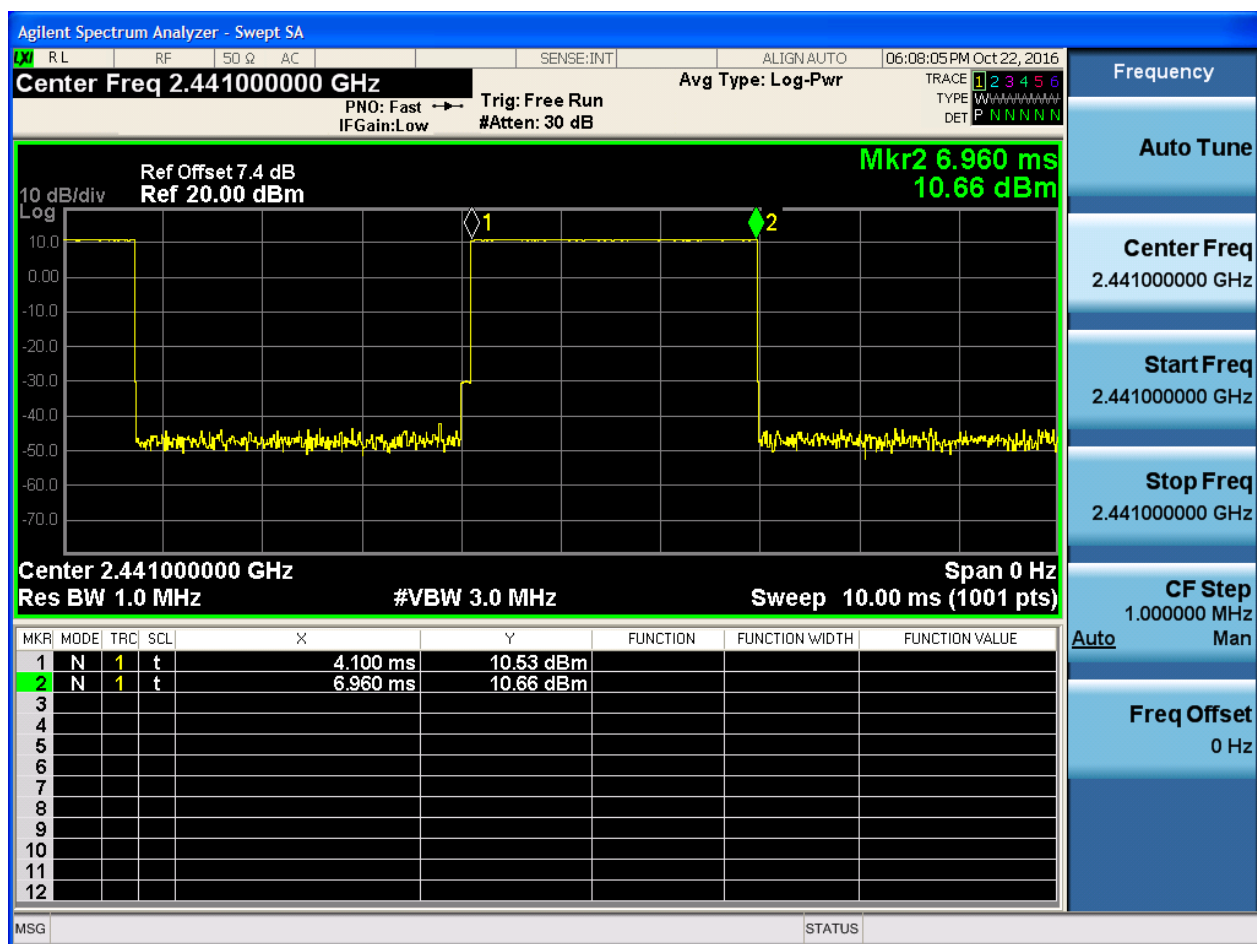
EUT Conf.	Burst Width [s/hop/ch]	Total Hops [hop*ch]	Dwell Time [ms]	Verdict
TM1_DH5_Ch39	0.00286	106.67	0.309	Pass
TM2_2DH5_Ch39	0.00282	106.67	0.309	Pass
TM3_3DH5_Ch39	0.0028	106.67	0.309	Pass



2 Test Plot

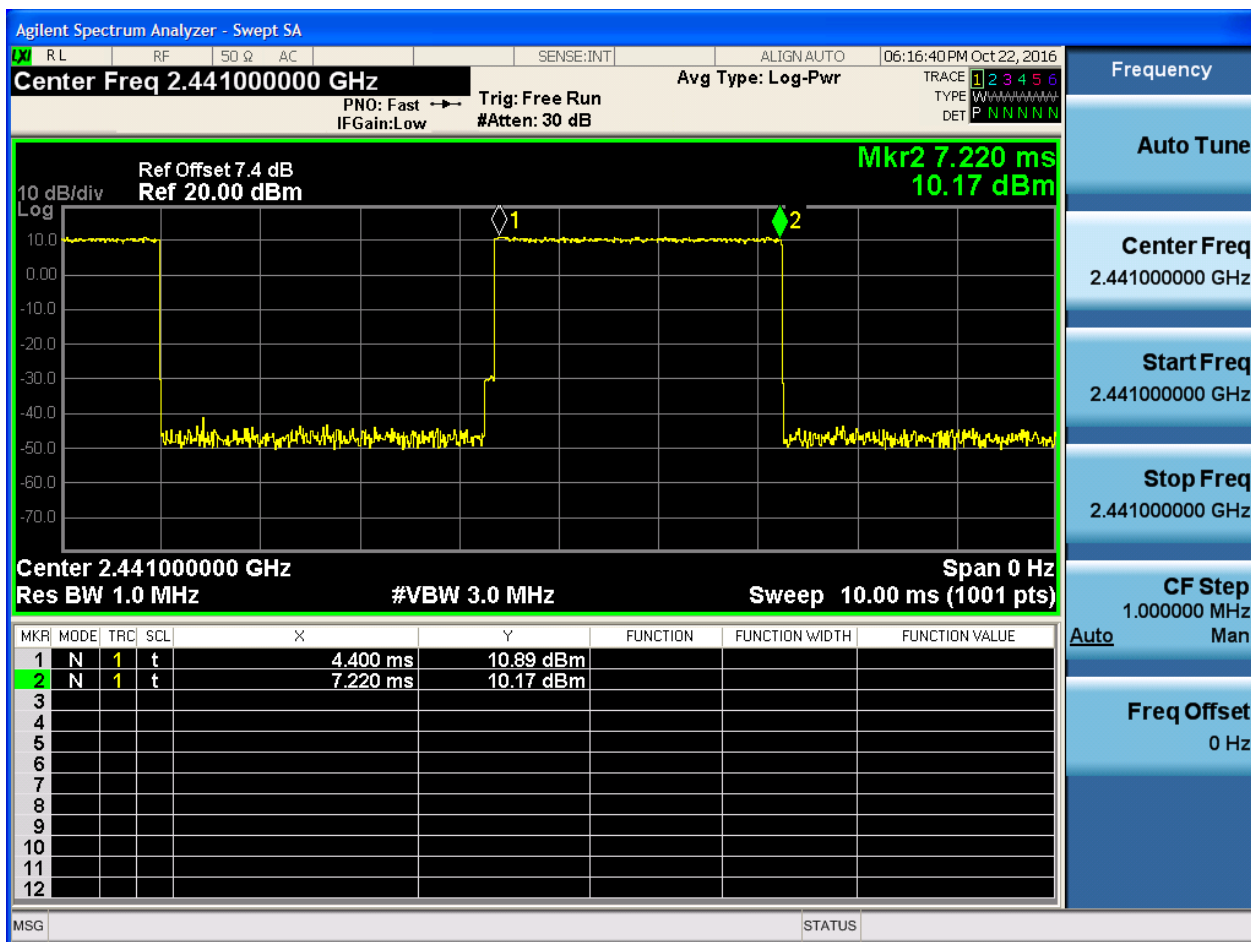
NOTE: The test plots are only for Burst Width measurements.

2.1 TM1_DH5_Ch39



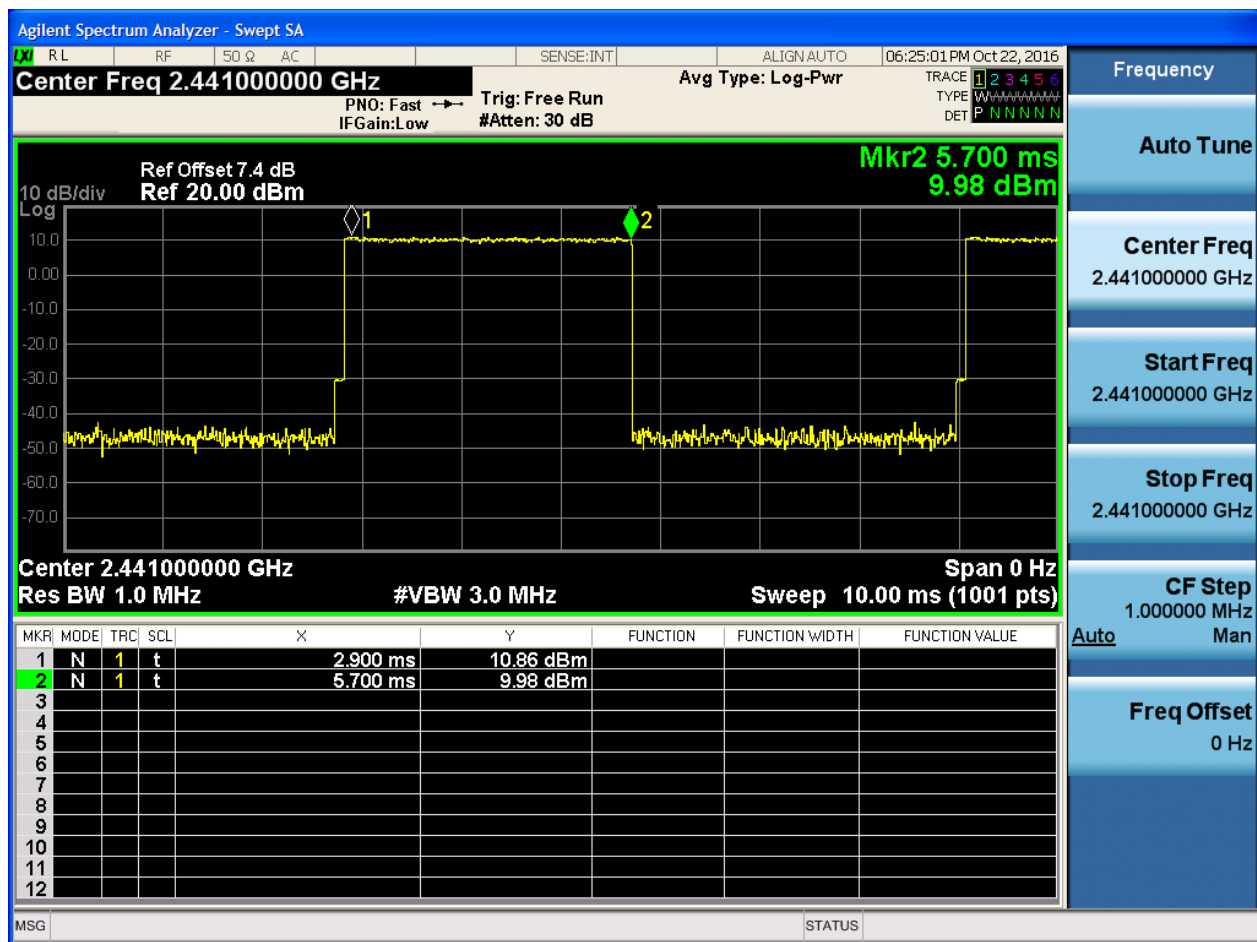


2.2 TM2_2DH5_Ch39





2.3 TM3_3DH5_Ch39



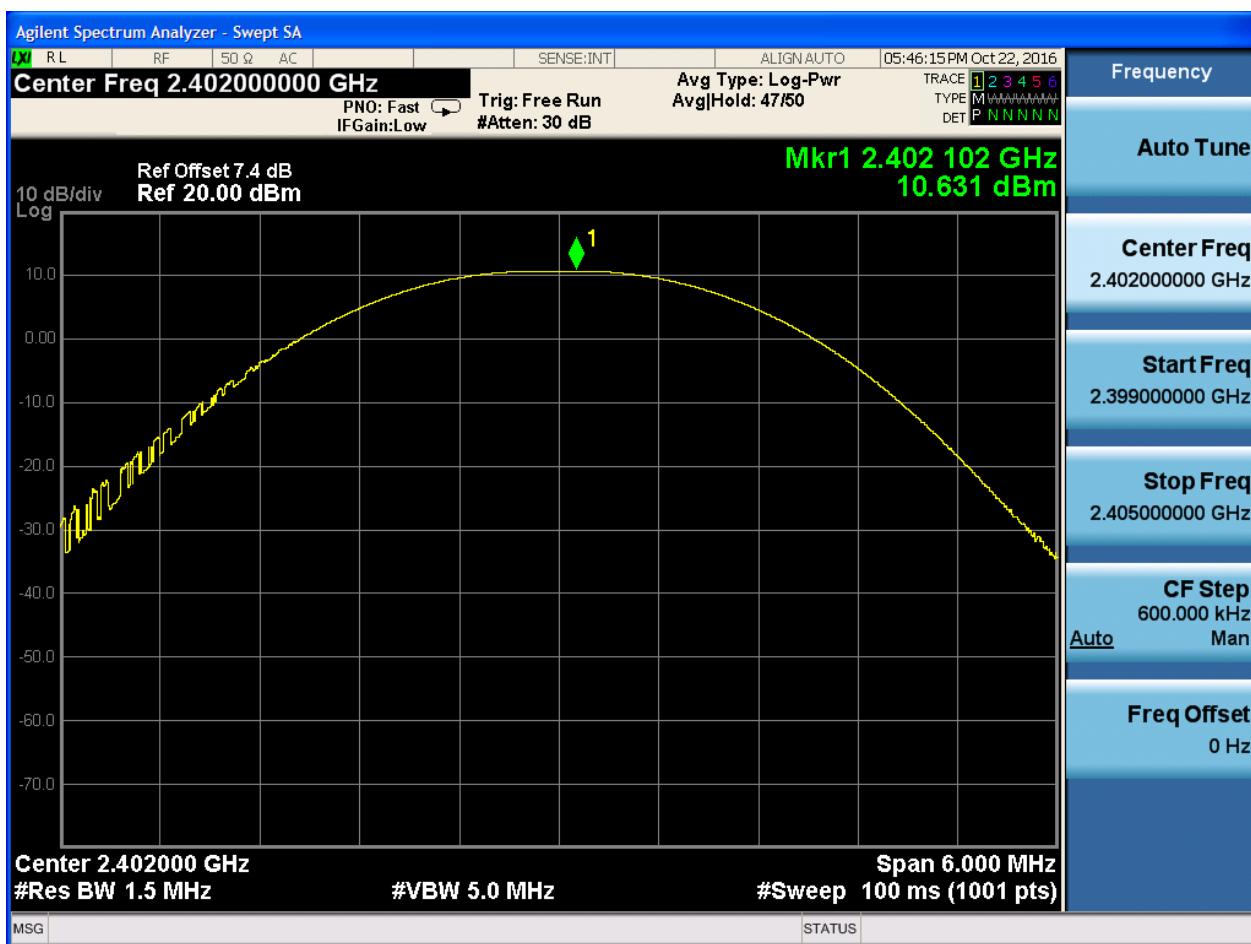
Appendix E: Maximum Peak Conducted Output Power

1 Result Table

EUT Conf.	Max. Peak Power [dBm]	Verdict
TM1_DH5_Ch0	10.631	Pass
TM1_DH5_Ch39	11.036	Pass
TM1_DH5_Ch78	9.849	Pass
TM2_2DH5_Ch0	10.951	Pass
TM2_2DH5_Ch39	11.341	Pass
TM2_2DH5_Ch78	9.989	Pass
TM3_3DH5_Ch0	10.98	Pass
TM3_3DH5_Ch39	11.317	Pass
TM3_3DH5_Ch78	10.035	Pass

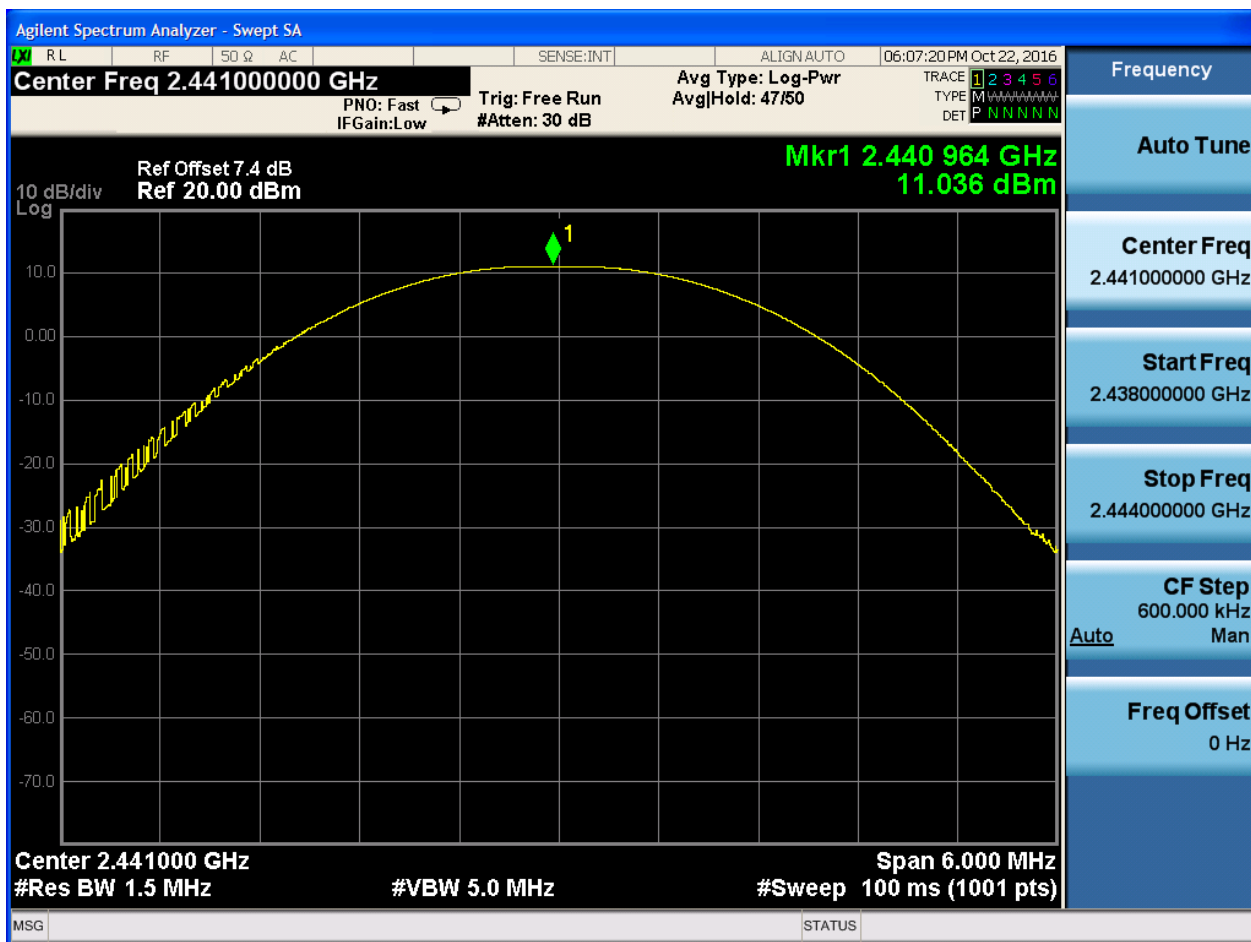
2 Test Plot

2.1 TM1_DH5_Ch0



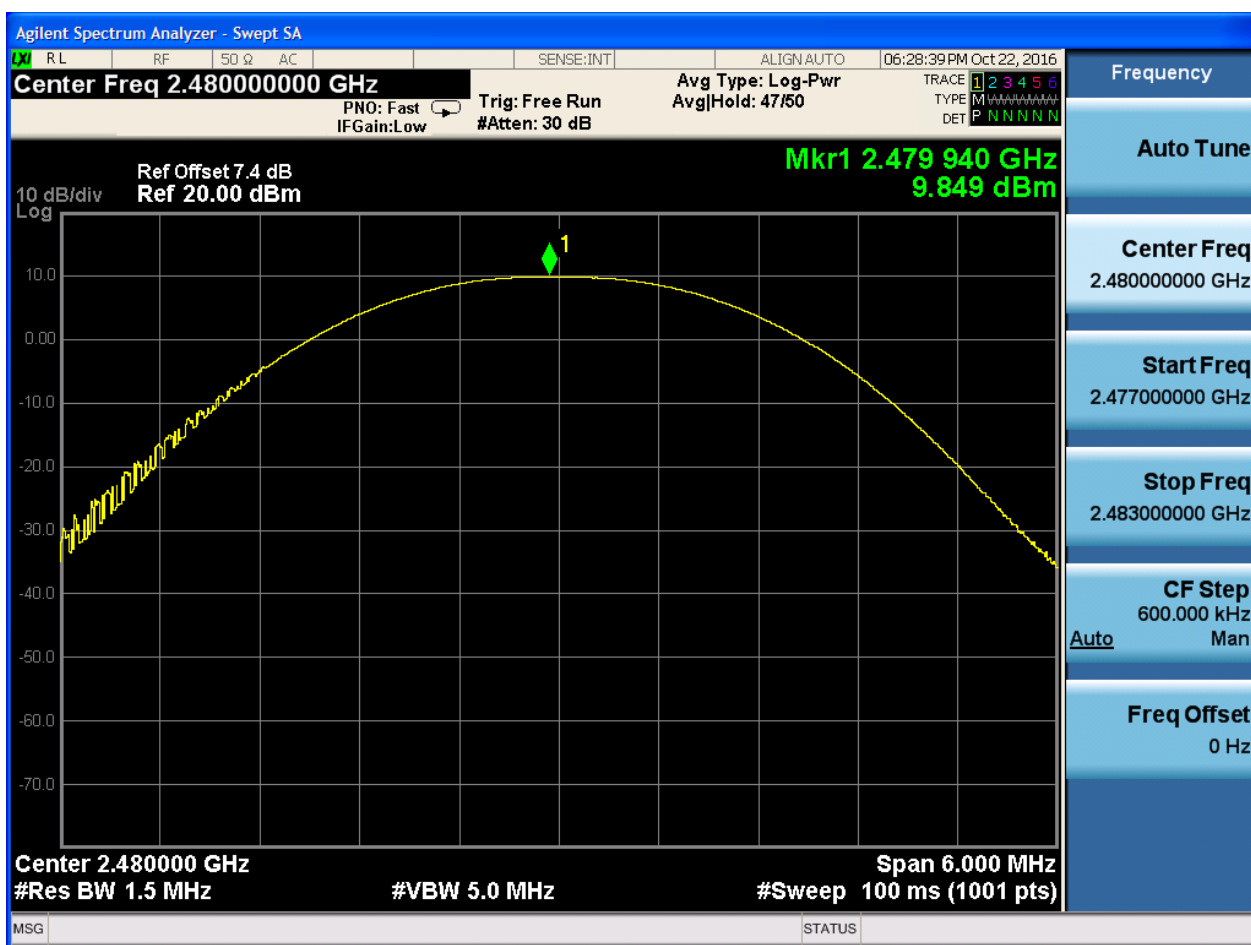


2.2 TM1_DH5_Ch39



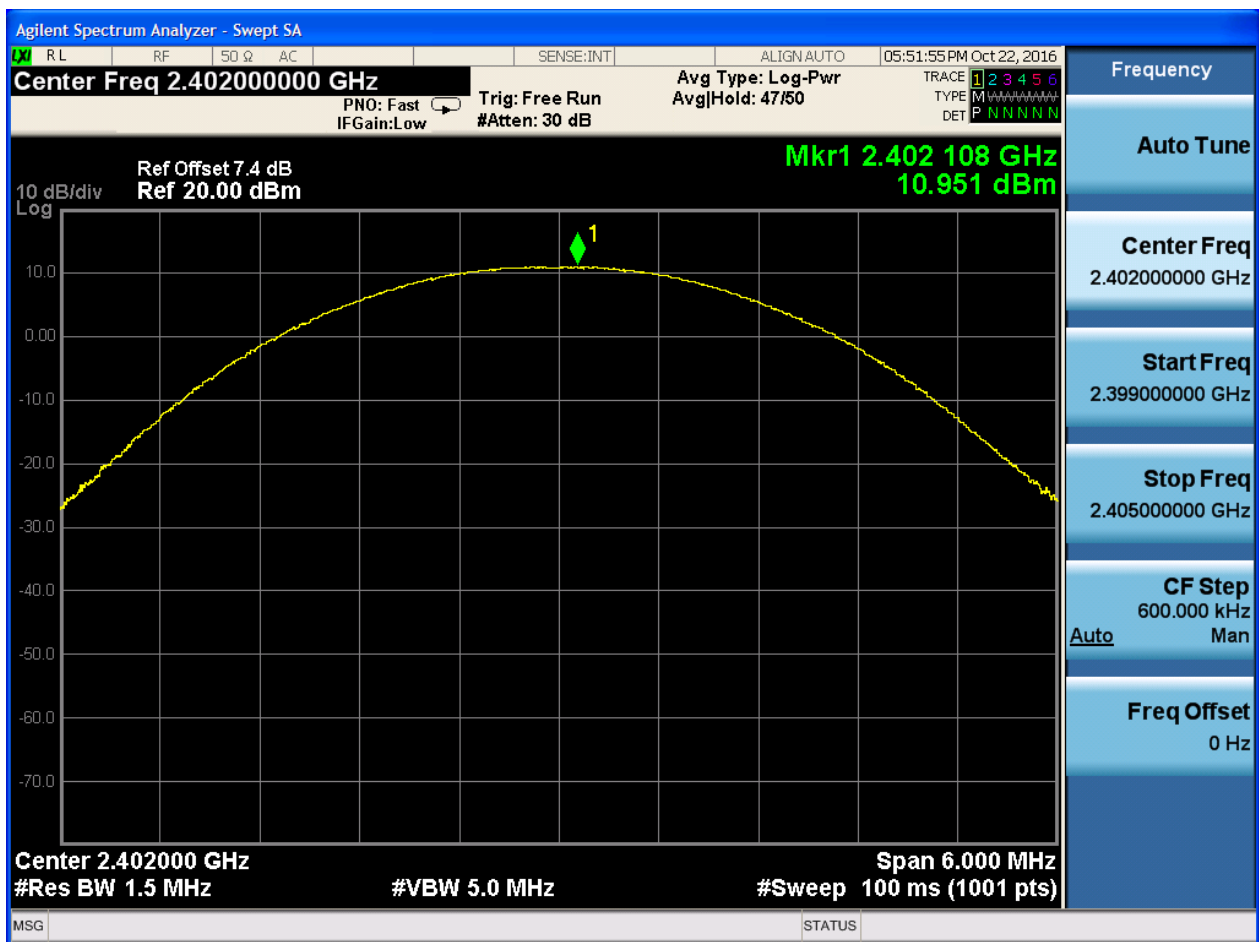


2.3 TM1_DH5_Ch78



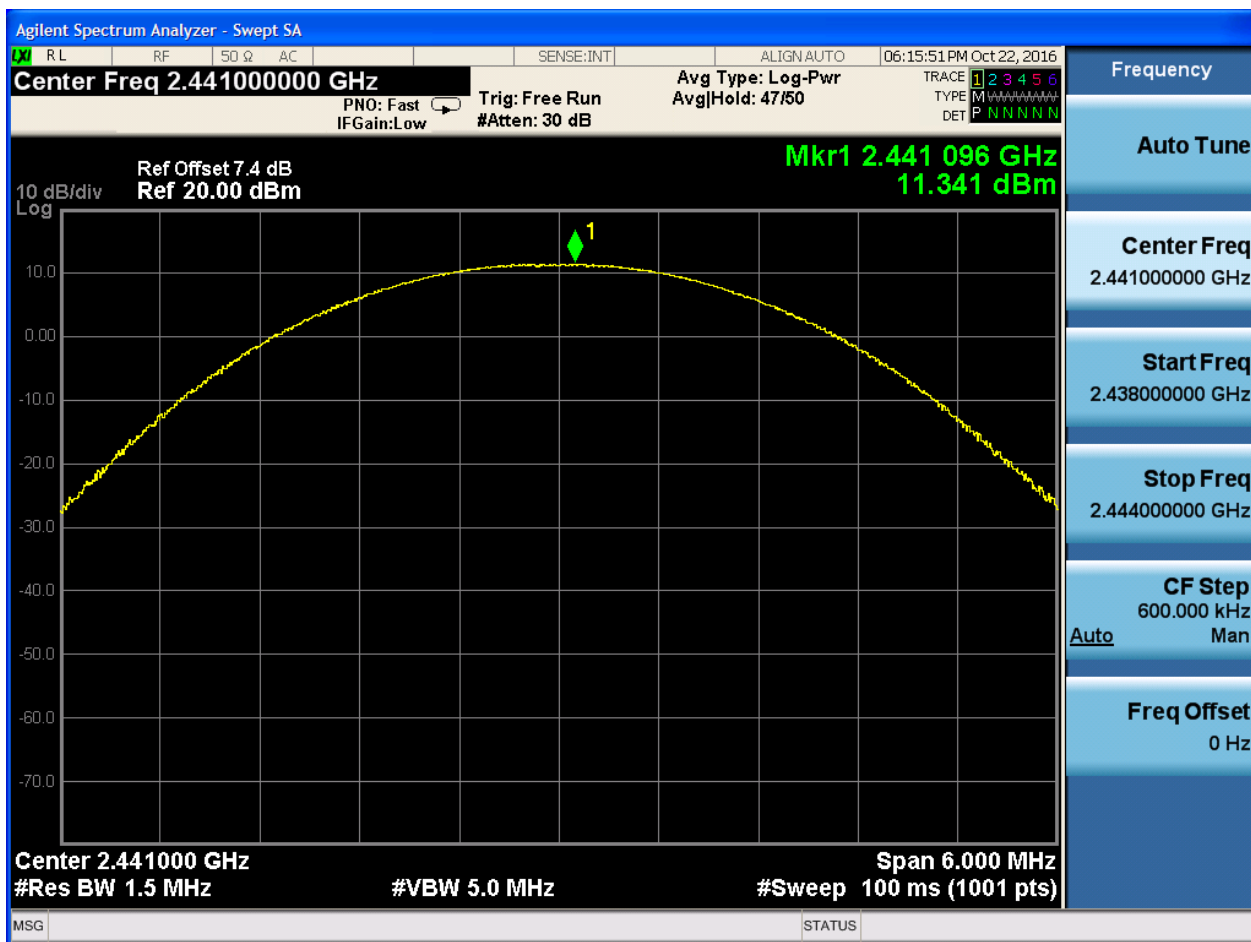


2.4 TM2_2DH5_Ch0



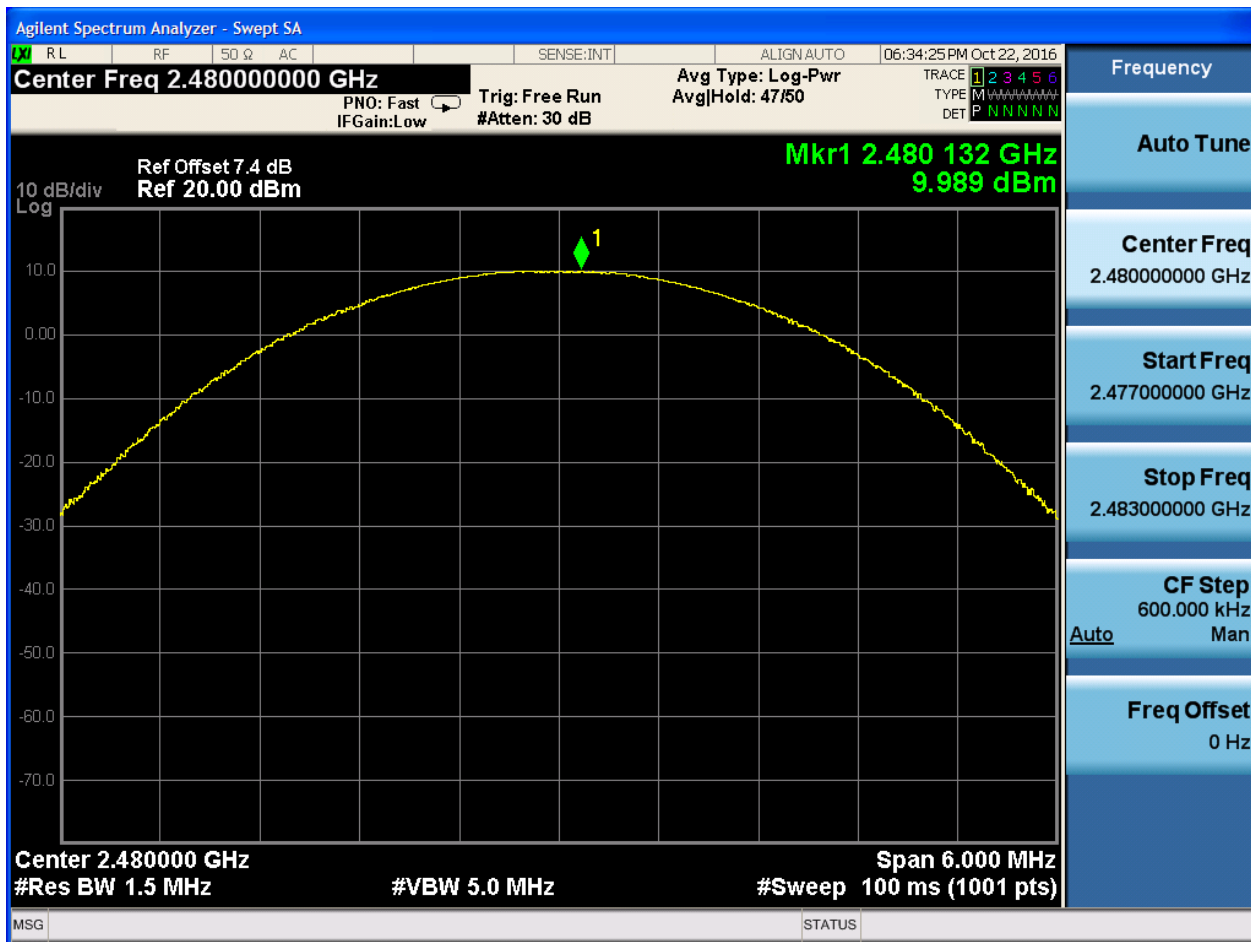


2.5 TM2_2DH5_Ch39



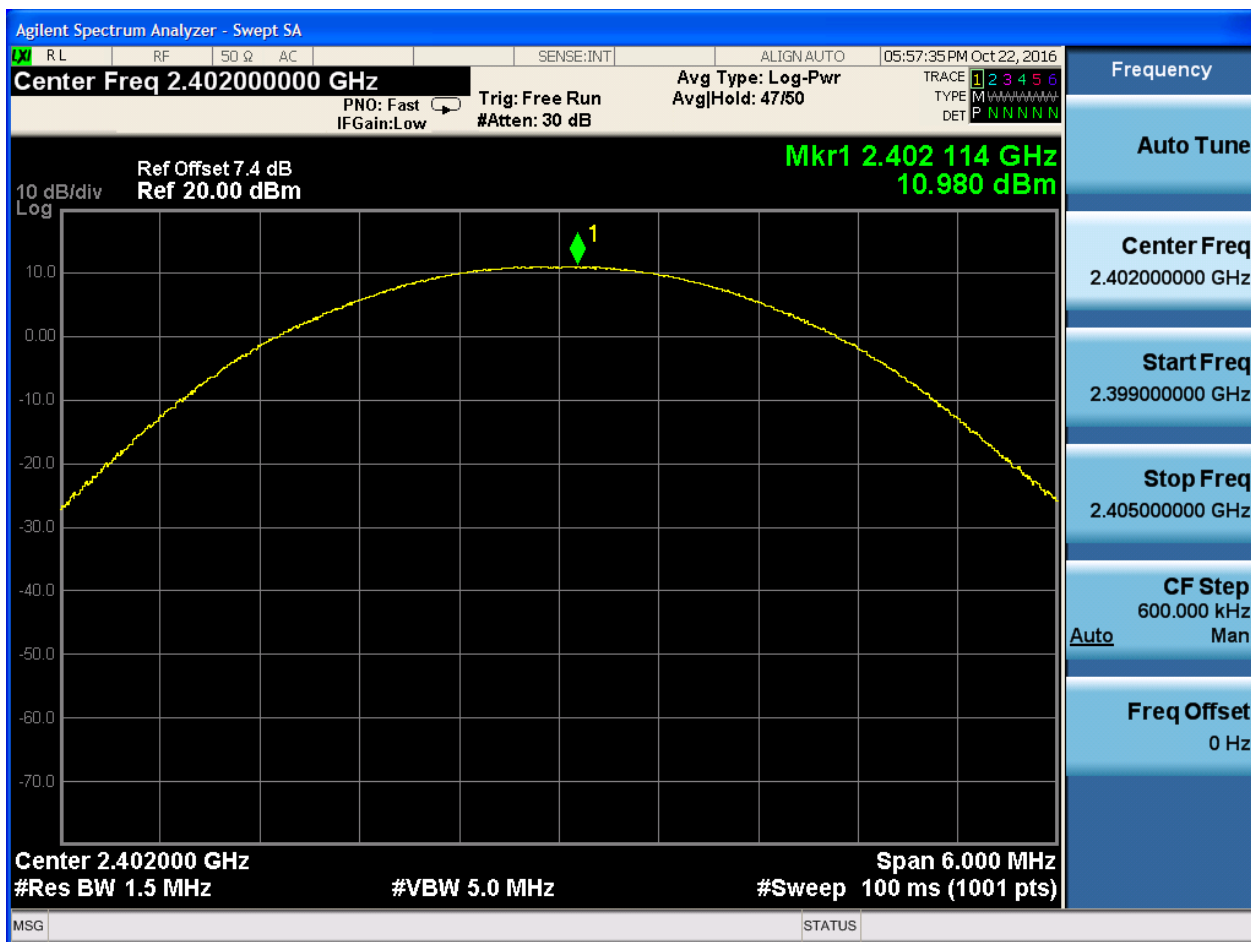


2.6 TM2_2DH5_Ch78



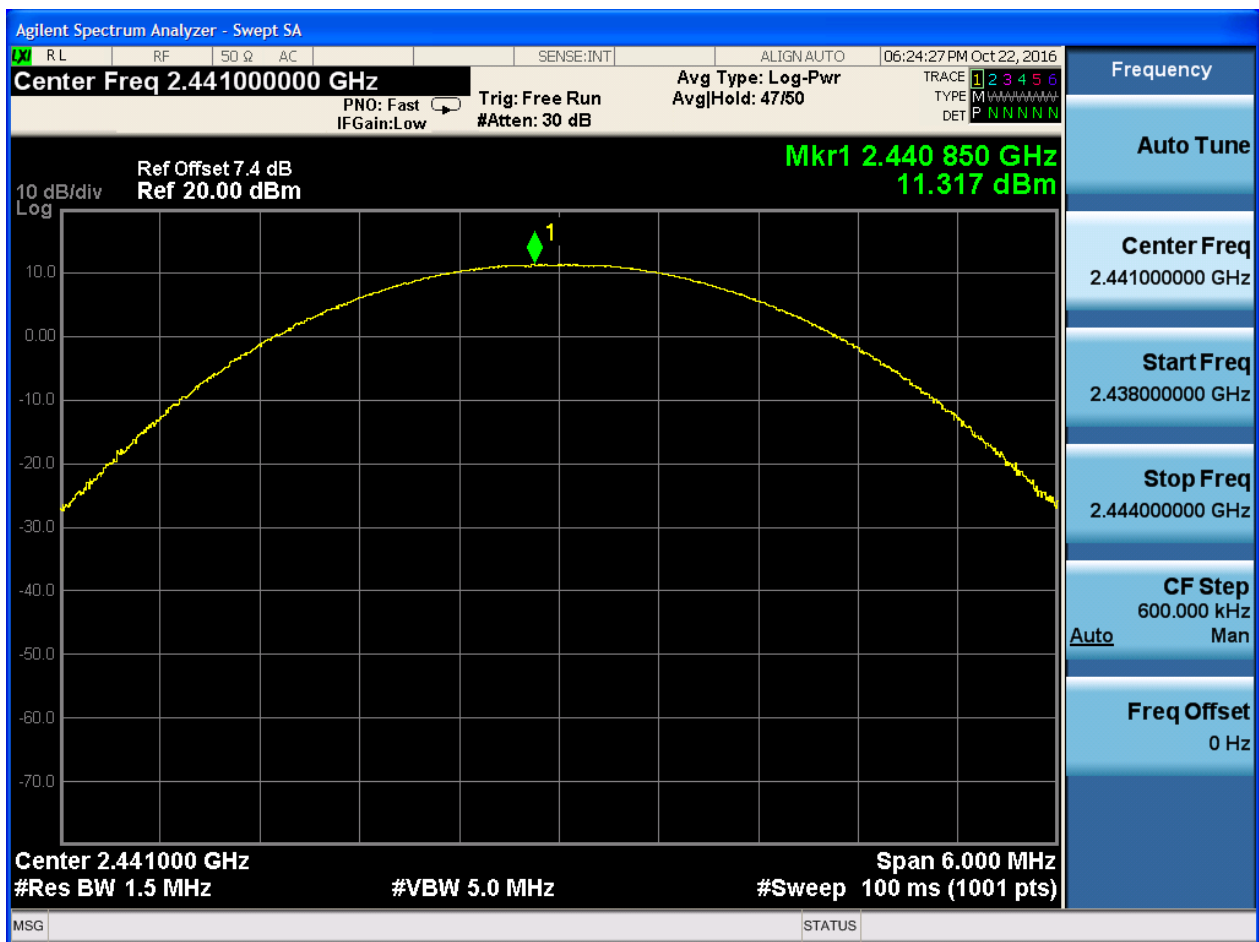


2.7 TM3_3DH5_Ch0



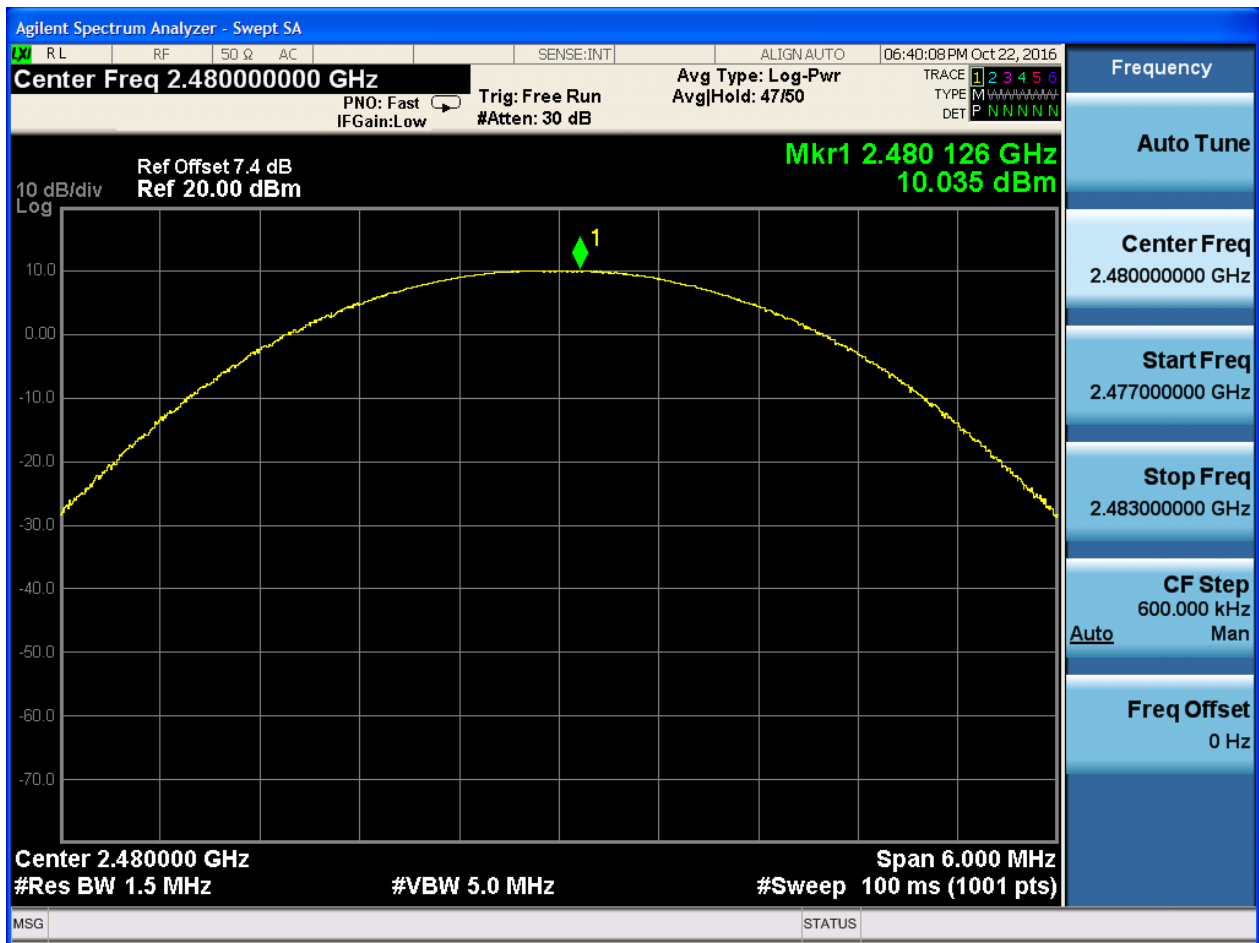


2.8 TM3_3DH5_Ch39





2.9 TM3_3DH5_Ch78



Appendix F: Band edge spurious emission

3 Result Table

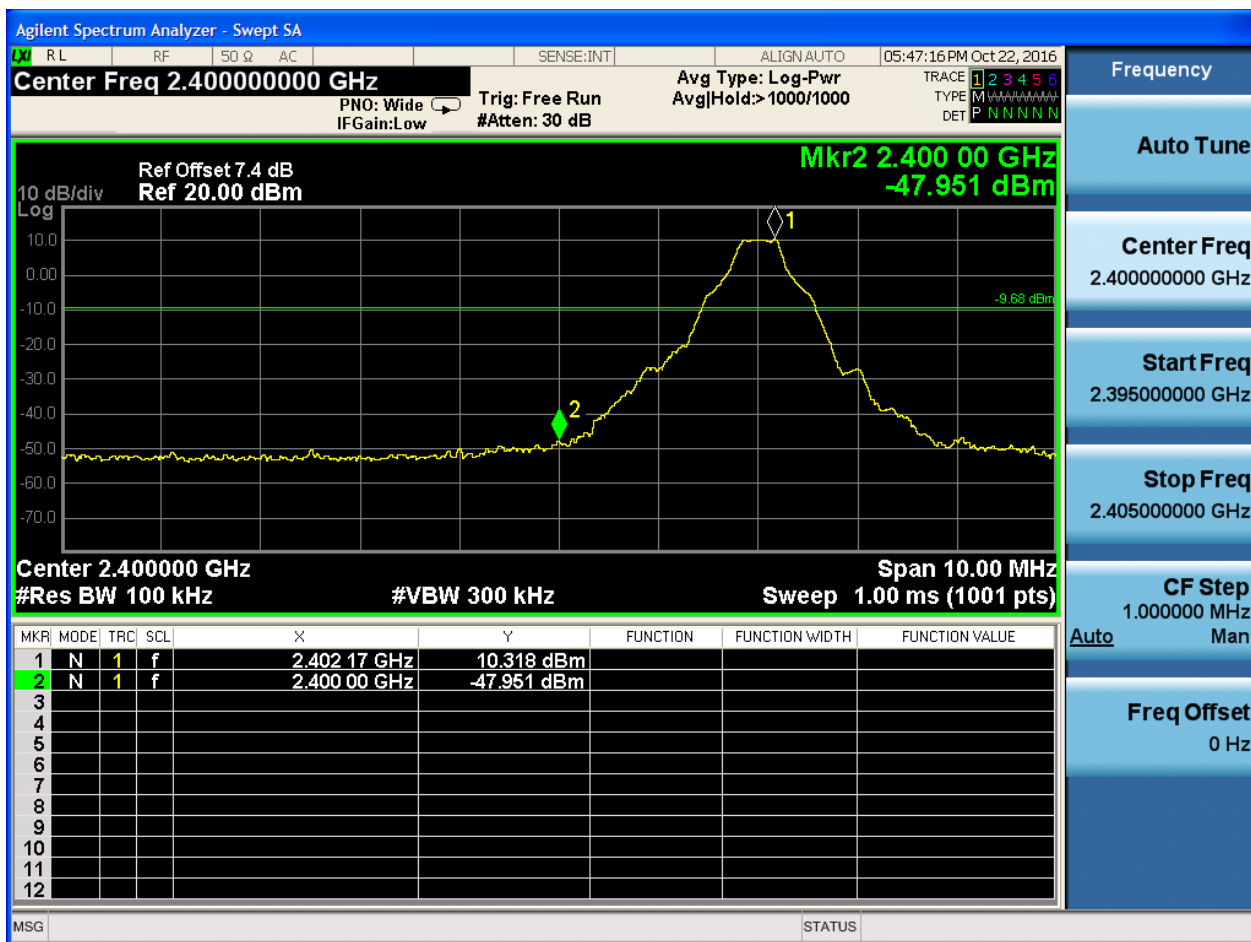
EUT Conf.	Channel No.	Carrier Frequency [MHz]	Max. Spurious Level [dBm]	Frequency Hopping	Carrier Power [dBm]	Limit [dBm]	Result
TM1_DH5_Ch0	0	2402	-47.951	Off	10.318	-9.682	Pass
	-	-	-52.606	On	10.749	-9.251	Pass
TM1_DH5_Ch78	78	2480	-52.921	Off	9.46	-10.54	Pass
	-	-	-53.406	On	9.201	-10.799	Pass
TM2_2DH_5_Ch0	0	2402	-42.598	Off	10.35	-9.65	Pass
	-	-	-45.105	On	9.673	-10.327	Pass
TM2_2DH_5_Ch78	78	2480	-51.649	Off	9.495	-10.505	Pass
	-	-	-52.924	On	8.832	-11.168	Pass
TM3_3DH_5_Ch0	0	2402	-42.456	Off	10.396	-9.604	Pass
	-	-	-45.556	On	10.727	-9.273	Pass
TM3_3DH_5_Ch78	78	2480	-50.917	Off	9.573	-10.427	Pass
	-	-	-52.783	On	9.28	-10.72	Pass



2 Test Plot

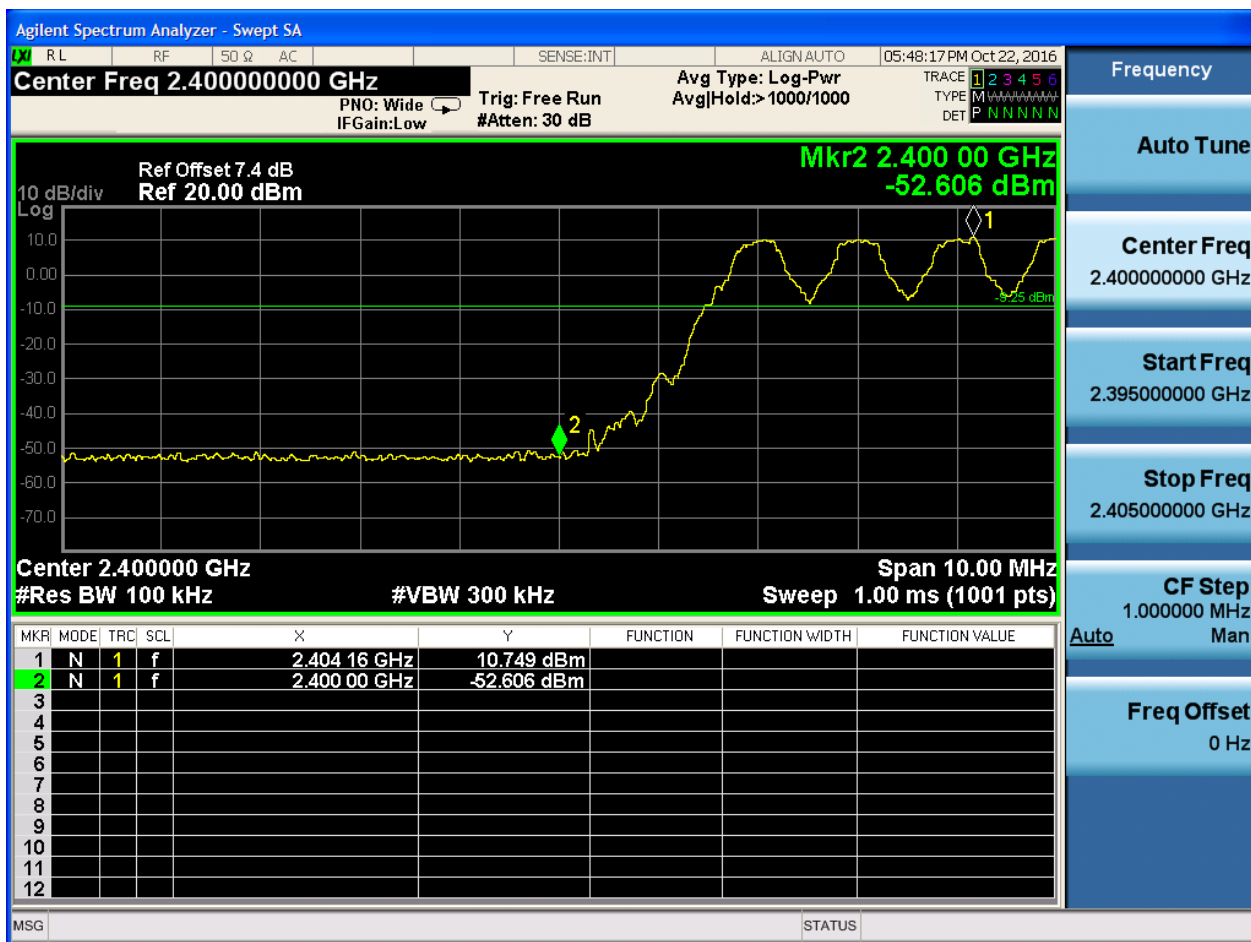
2.1 TM1_DH5_Ch0

No hopping



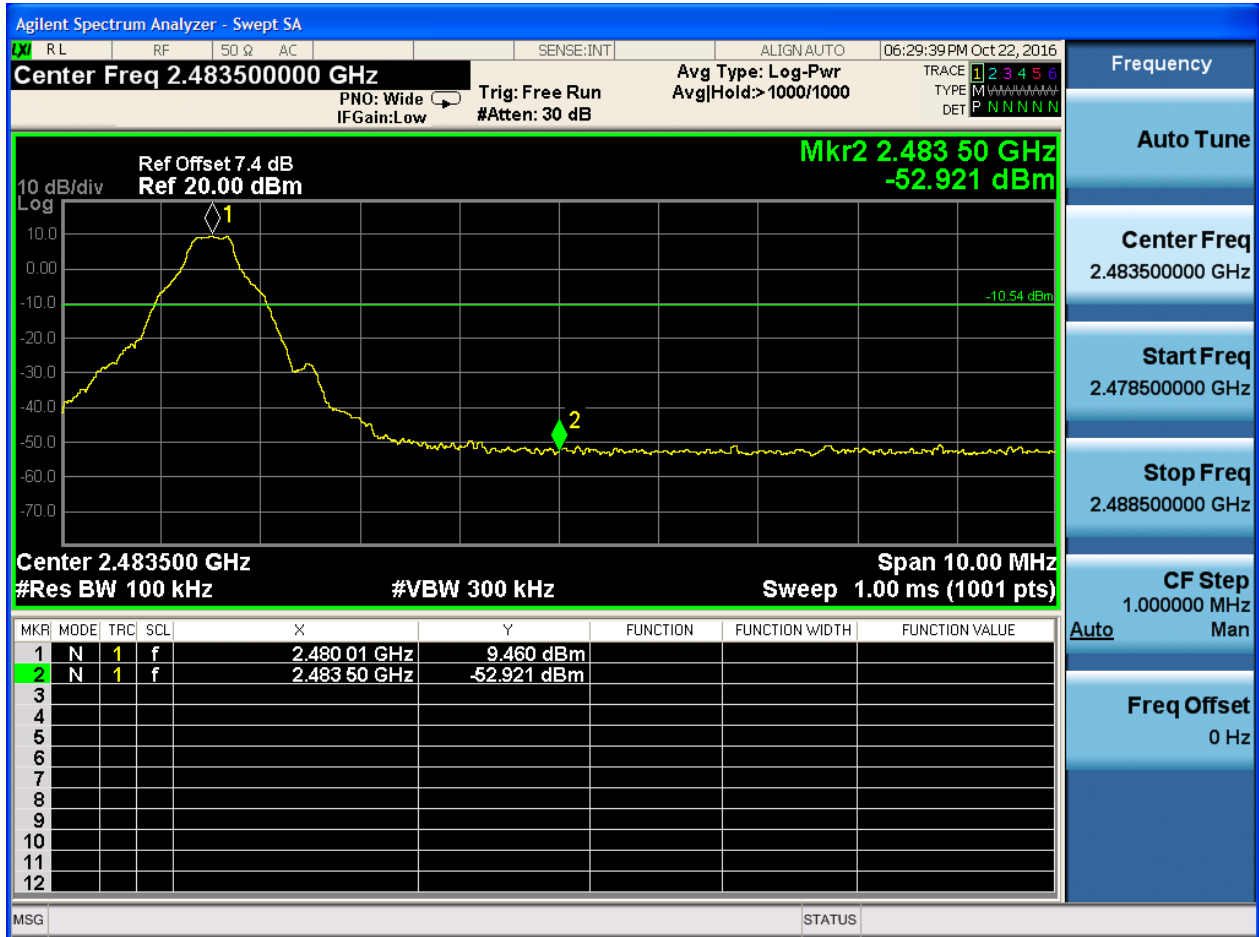


With hopping



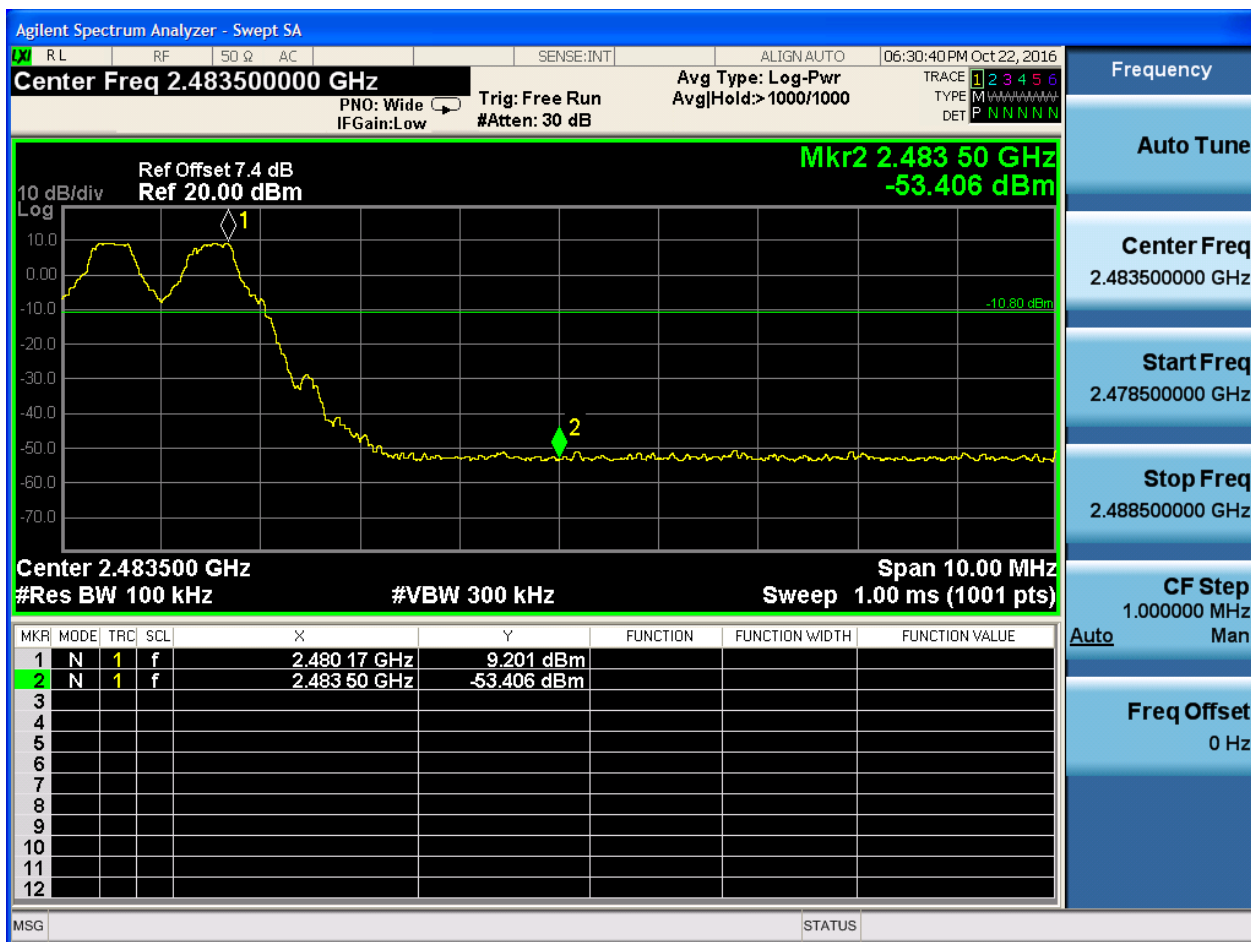
2.2 TM1_DH5_Ch78

No hopping





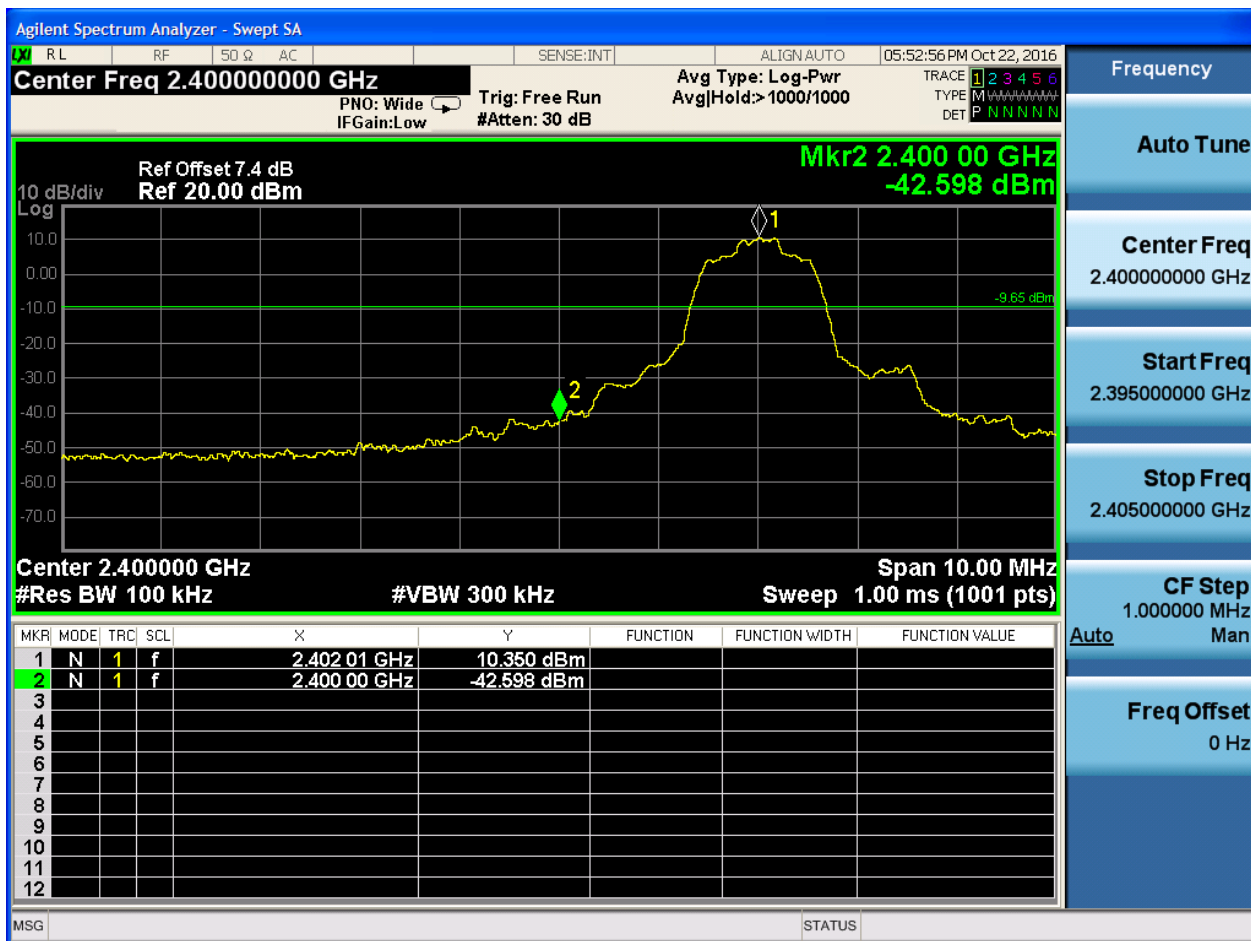
With hopping





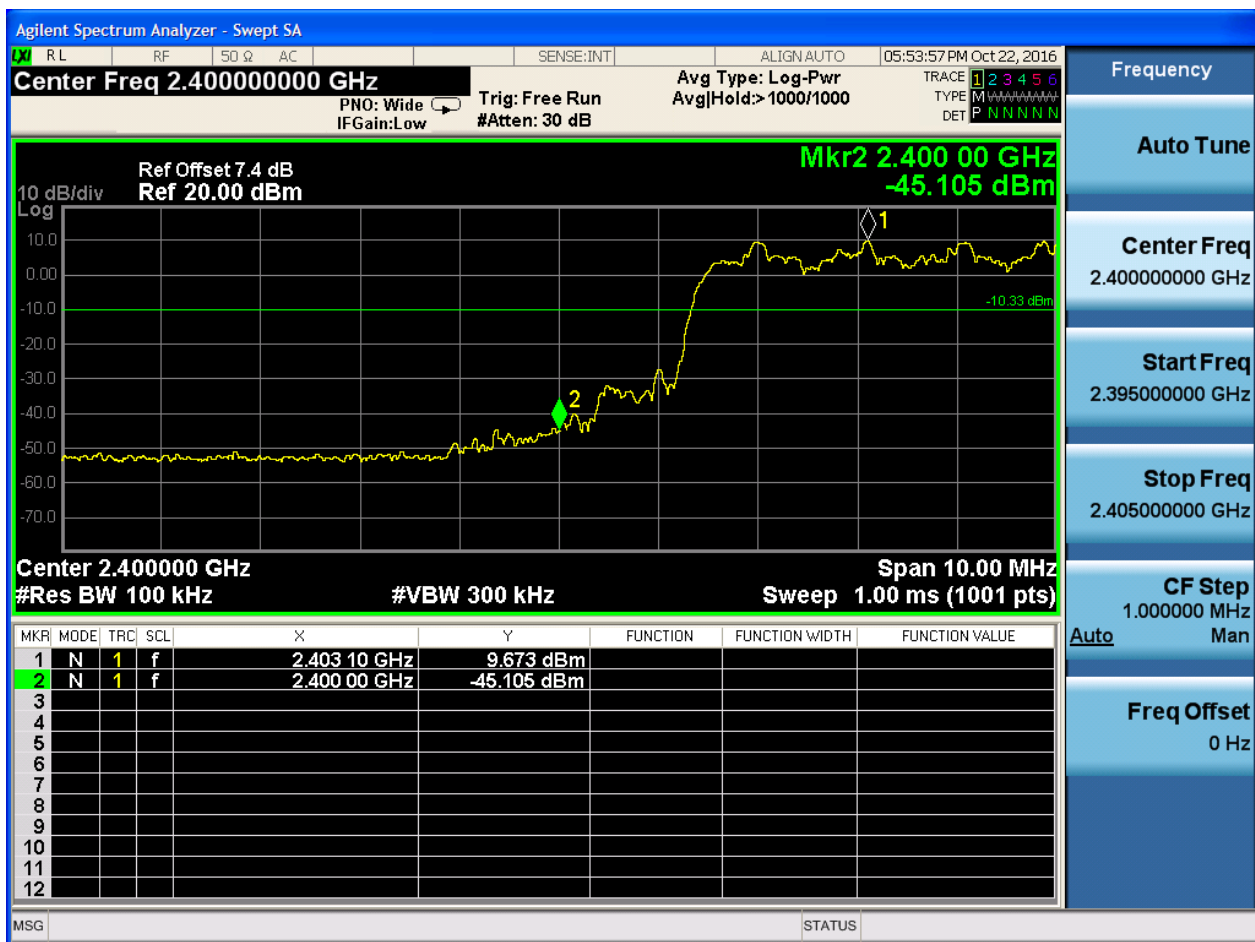
2.3 TM2_2DH5_Ch0

No hopping





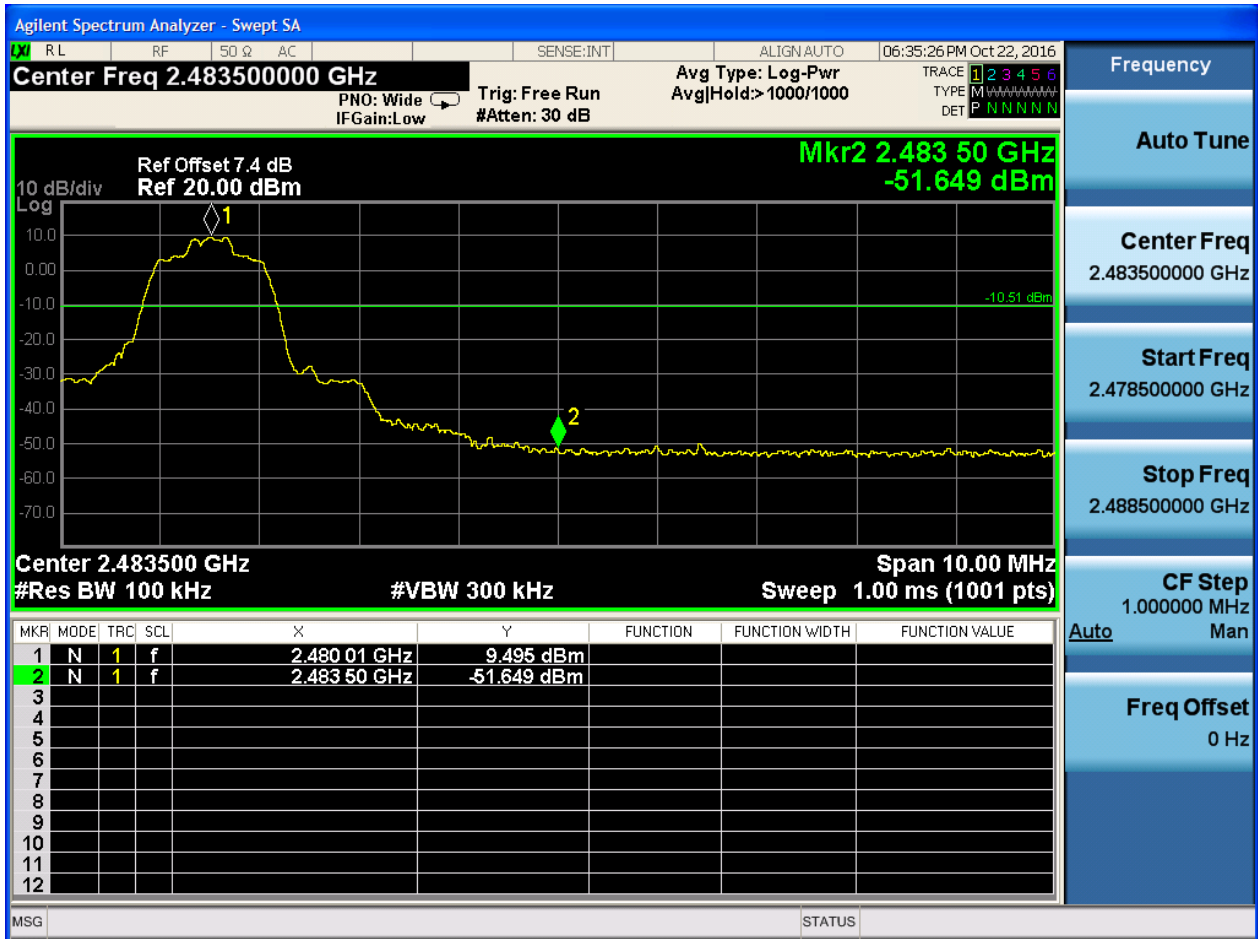
With hopping





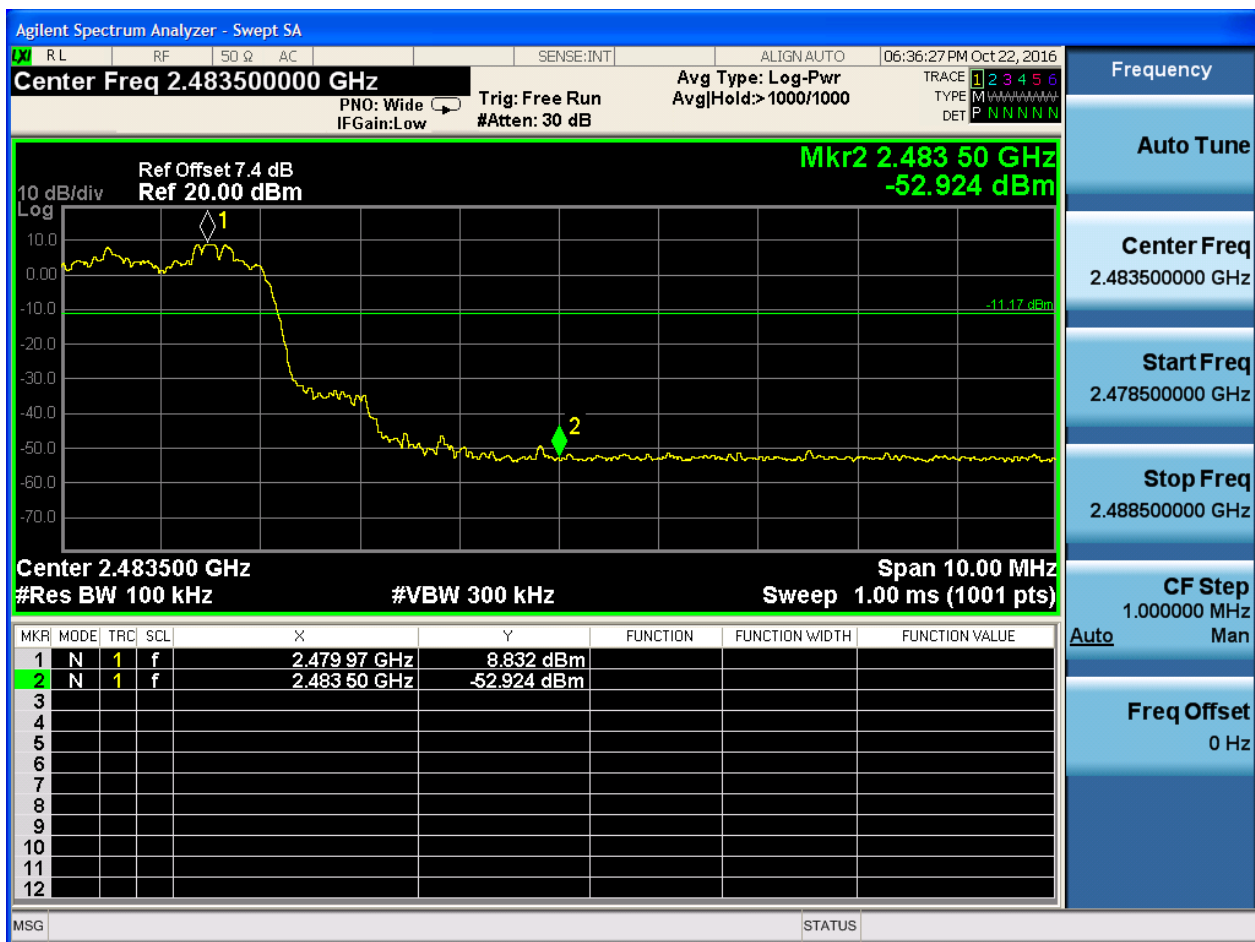
2.4 TM2_2DH5_Ch78

No hopping





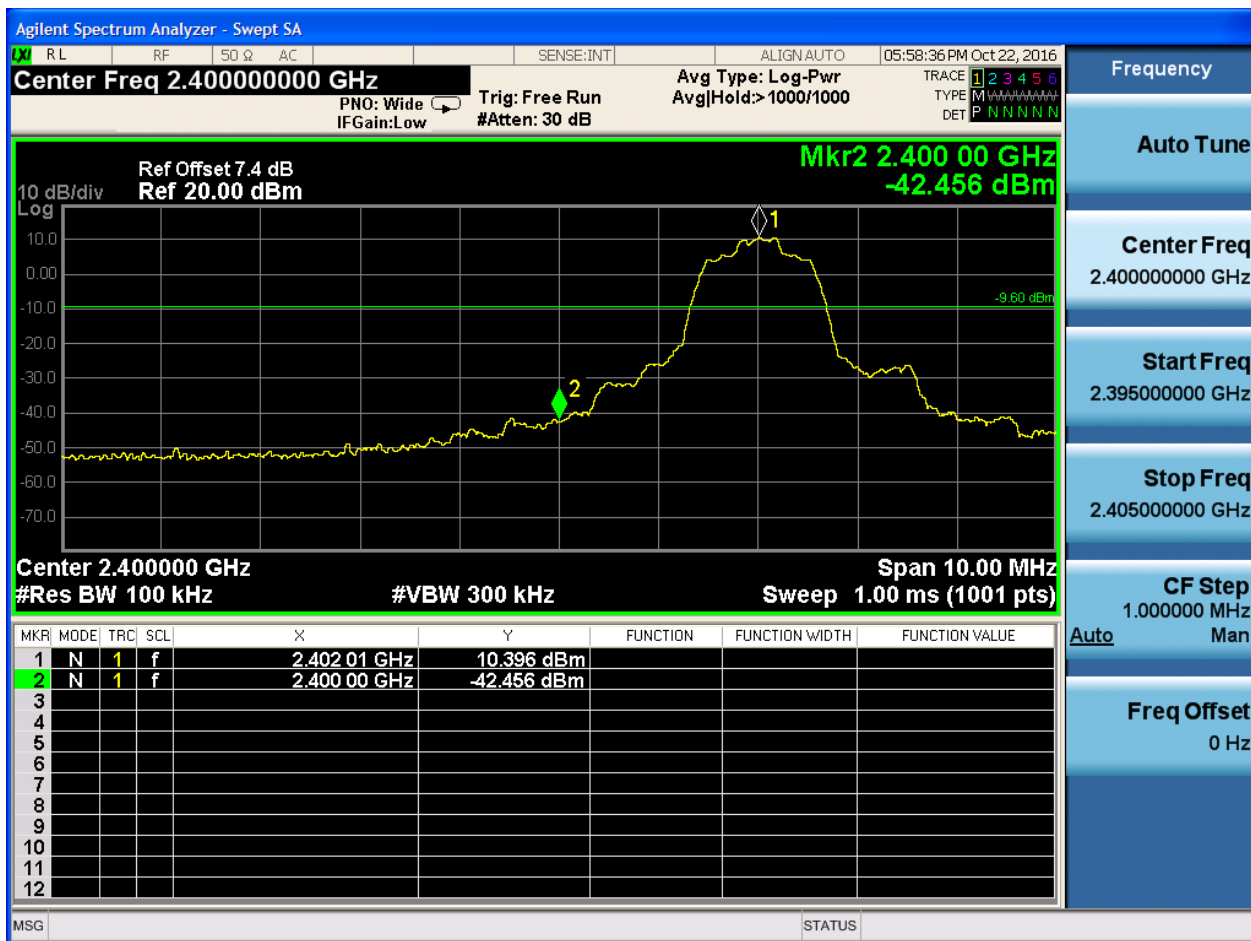
With hopping





2.5 TM3_3DH5_Ch0

No hopping





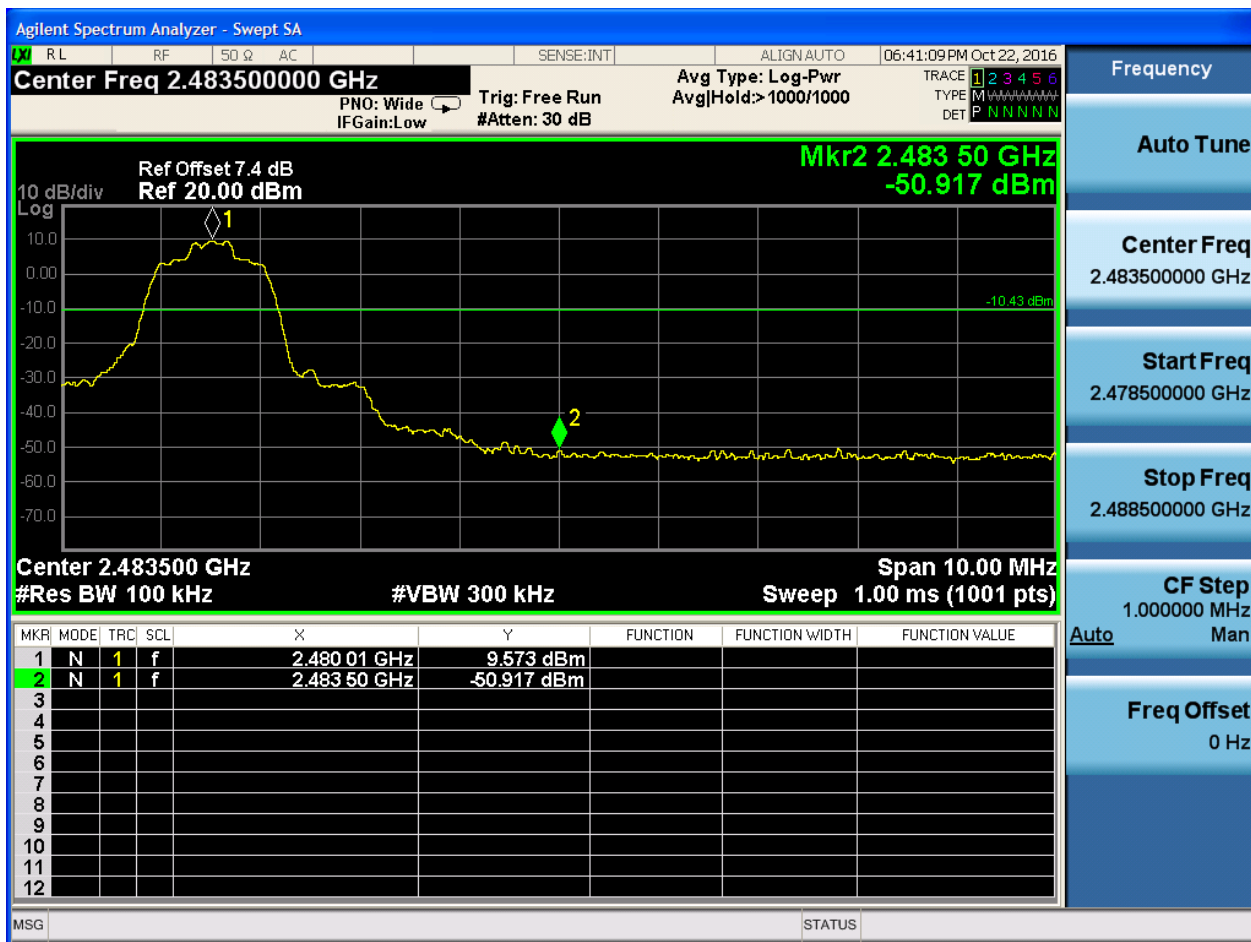
With hopping





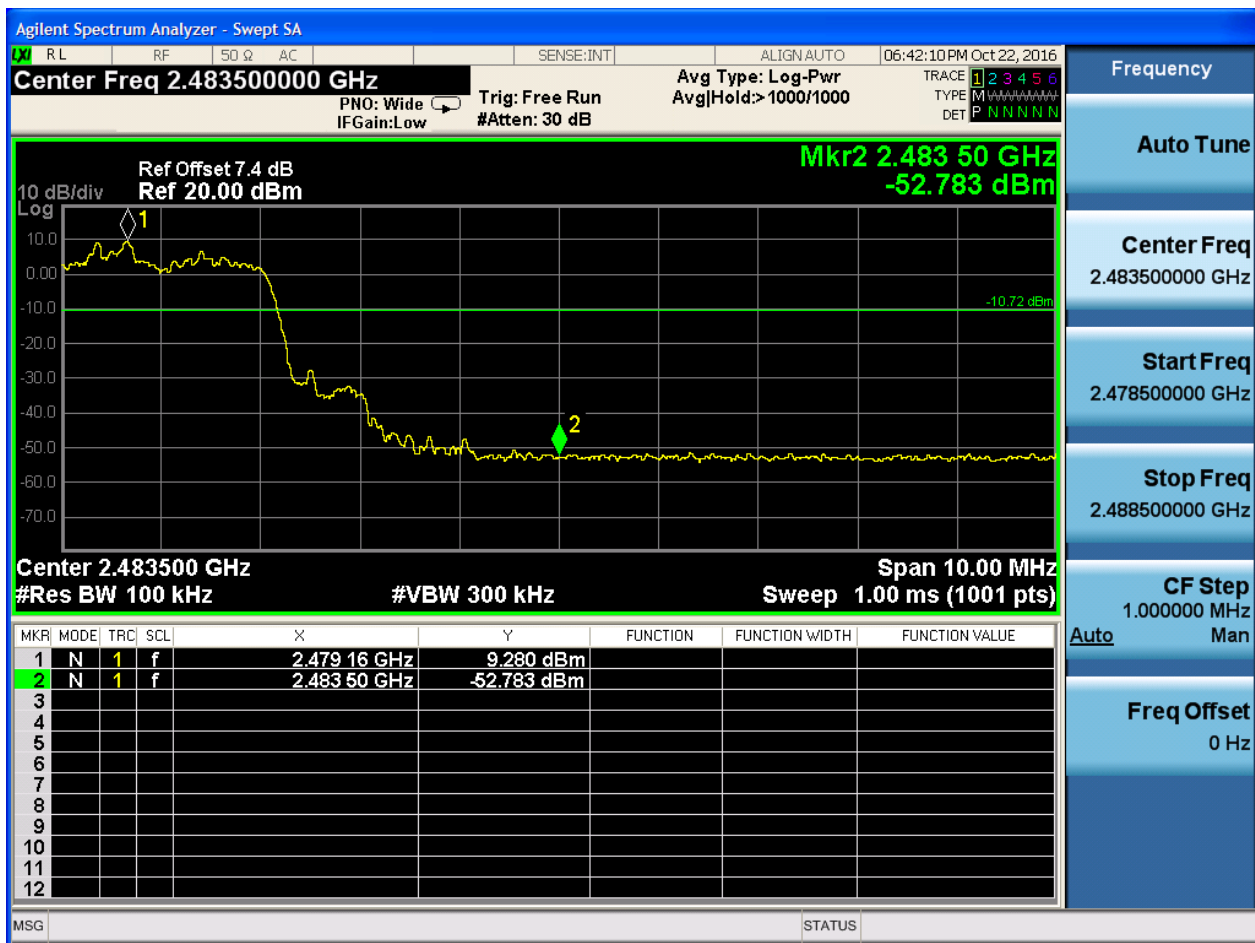
2.6 TM3_3DH5_Ch78

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 $RBWCF [dB] = 10 \times \lg(100 [kHz]/\text{narrower RBW [kHz]})$. 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.

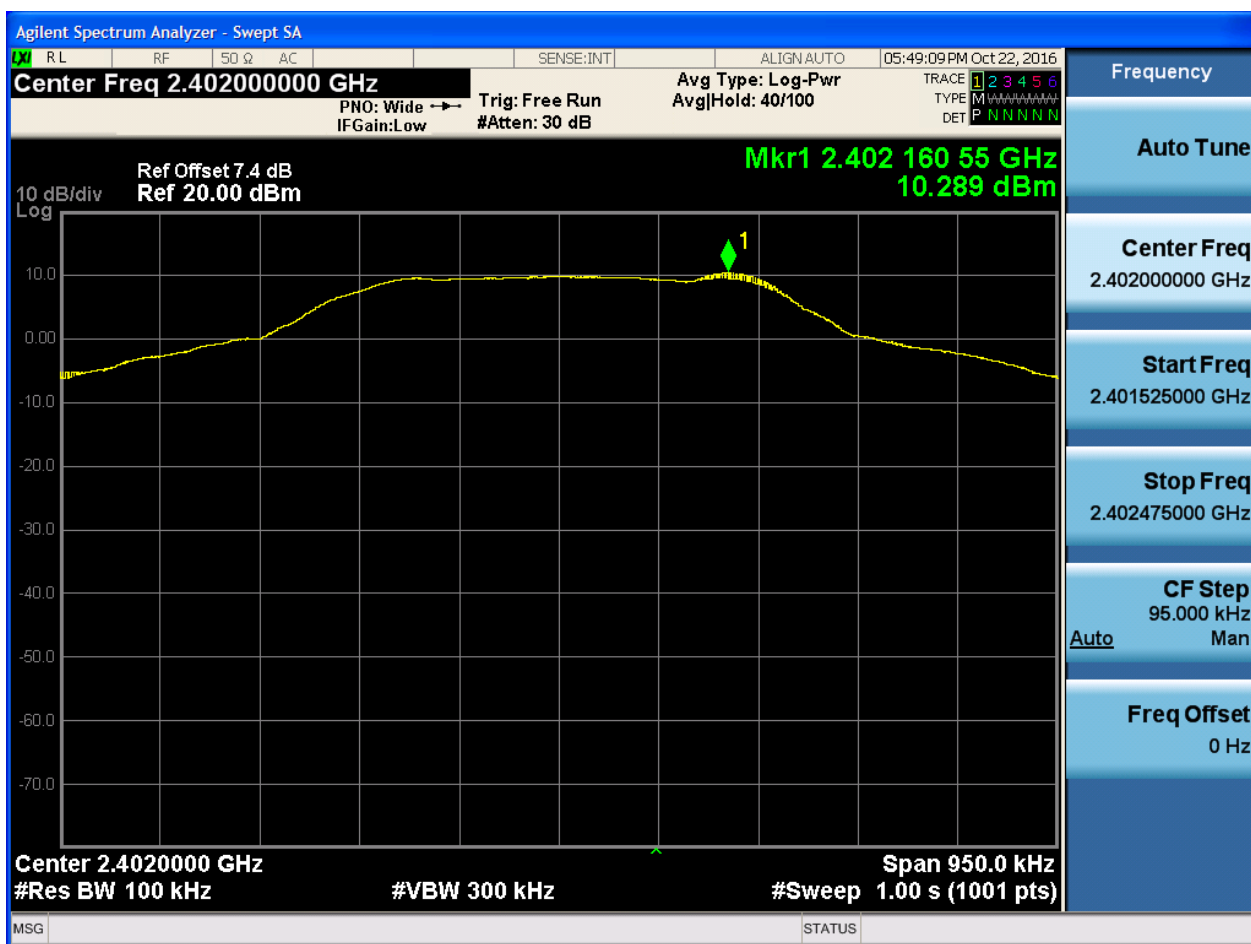
In the result table, the “< Limit” denotes that “The Puw [dBm] is less than Pref [dBm] - 20 [dB], see test plots for detailed”.

EUT Conf.	Pref [dBm/100 kHz]	Puw [dBm/100 kHz]	Verdict
TM1_DH5_Ch0	10.289	< Limit	Pass
TM1_DH5_Ch39	10.582	< Limit	Pass
TM1_DH5_Ch78	9.23	< Limit	Pass
TM2_2DH5_Ch0	10.319	< Limit	Pass
TM2_2DH5_Ch39	10.573	< Limit	Pass
TM2_2DH5_Ch78	9.279	< Limit	Pass
TM3_3DH5_Ch0	10.346	< Limit	Pass
TM3_3DH5_Ch39	10.532	< Limit	Pass
TM3_3DH5_Ch78	9.264	< Limit	Pass

2 Test Plot

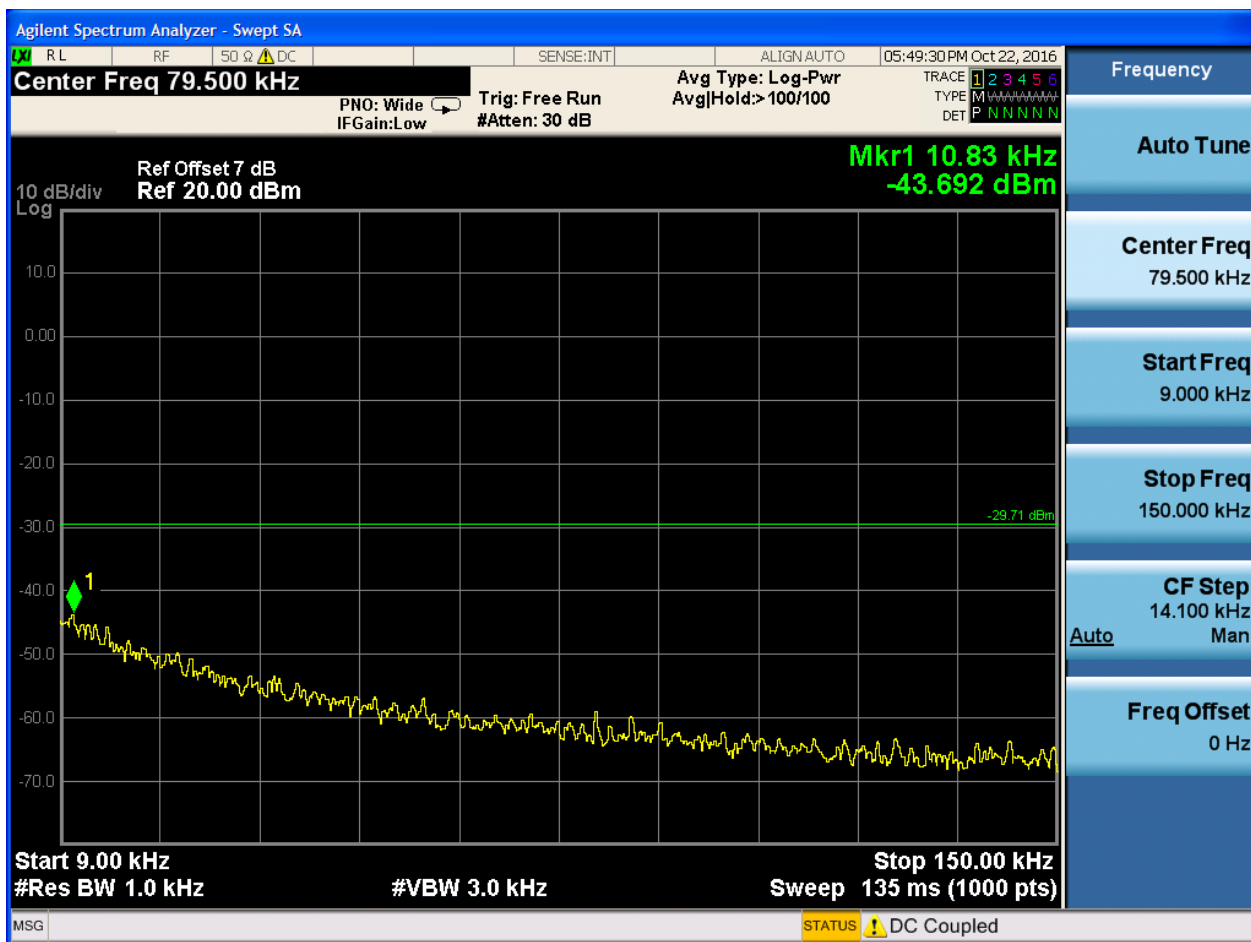
2.1 TM1_DH5_Ch0

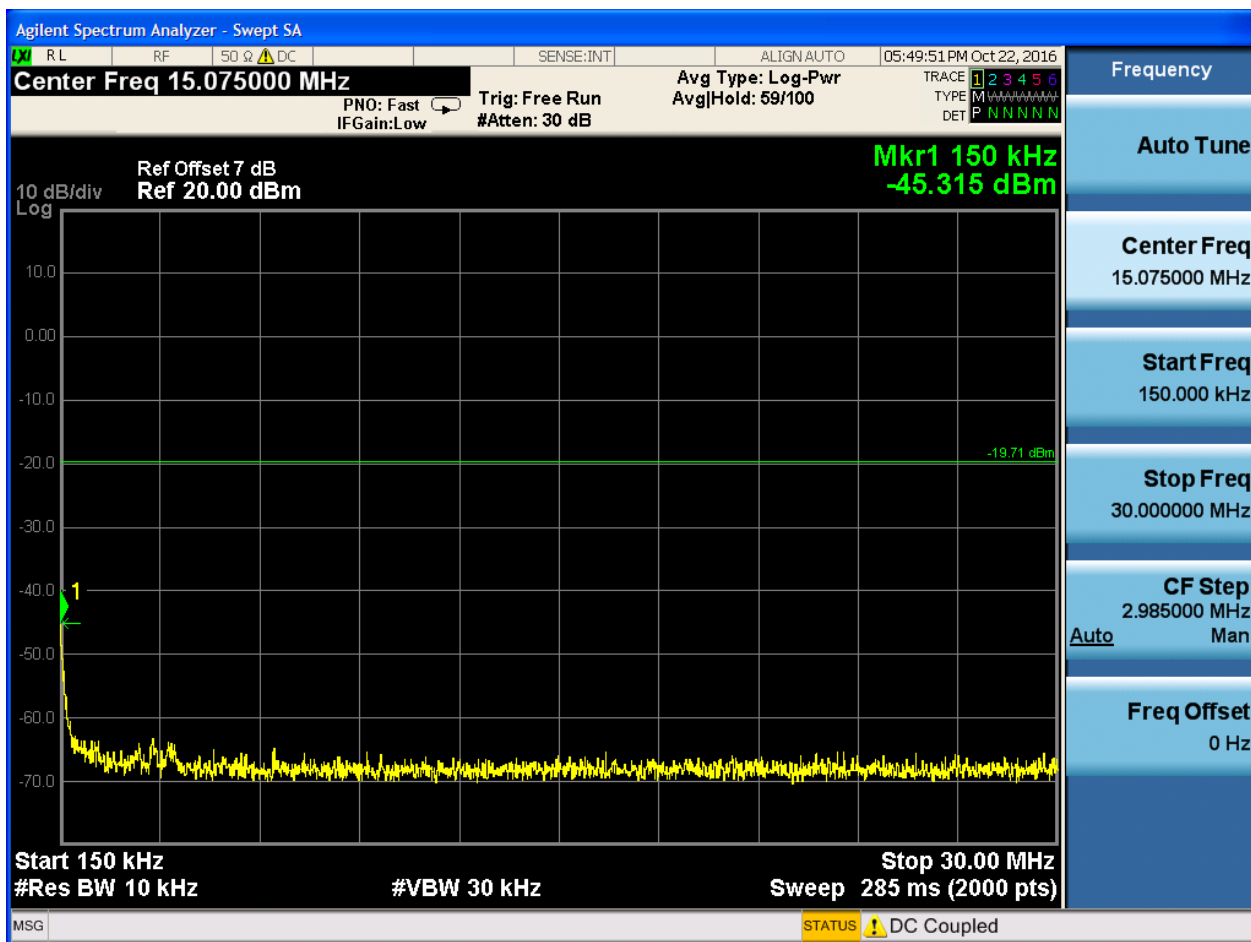
2.1.1 Pref

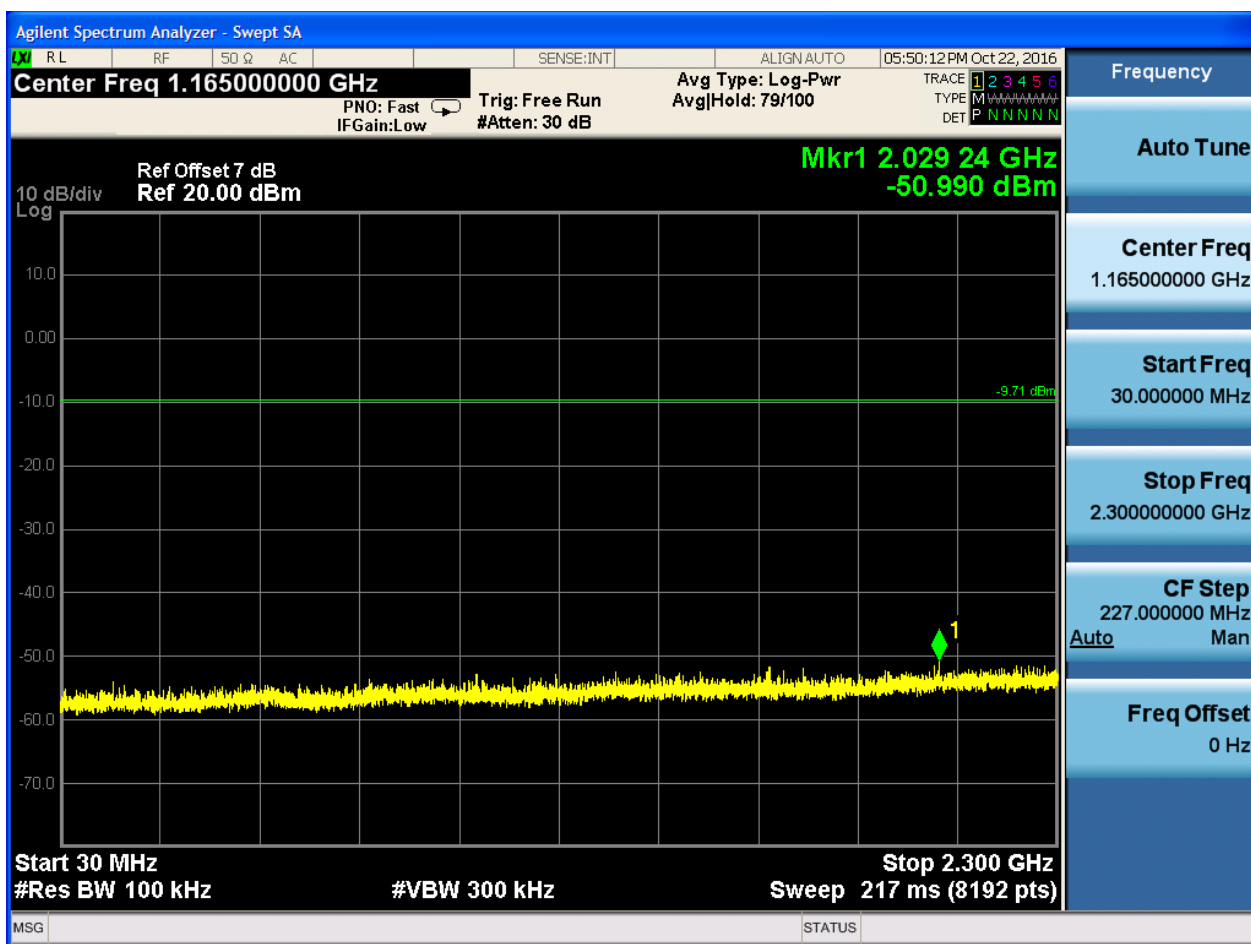


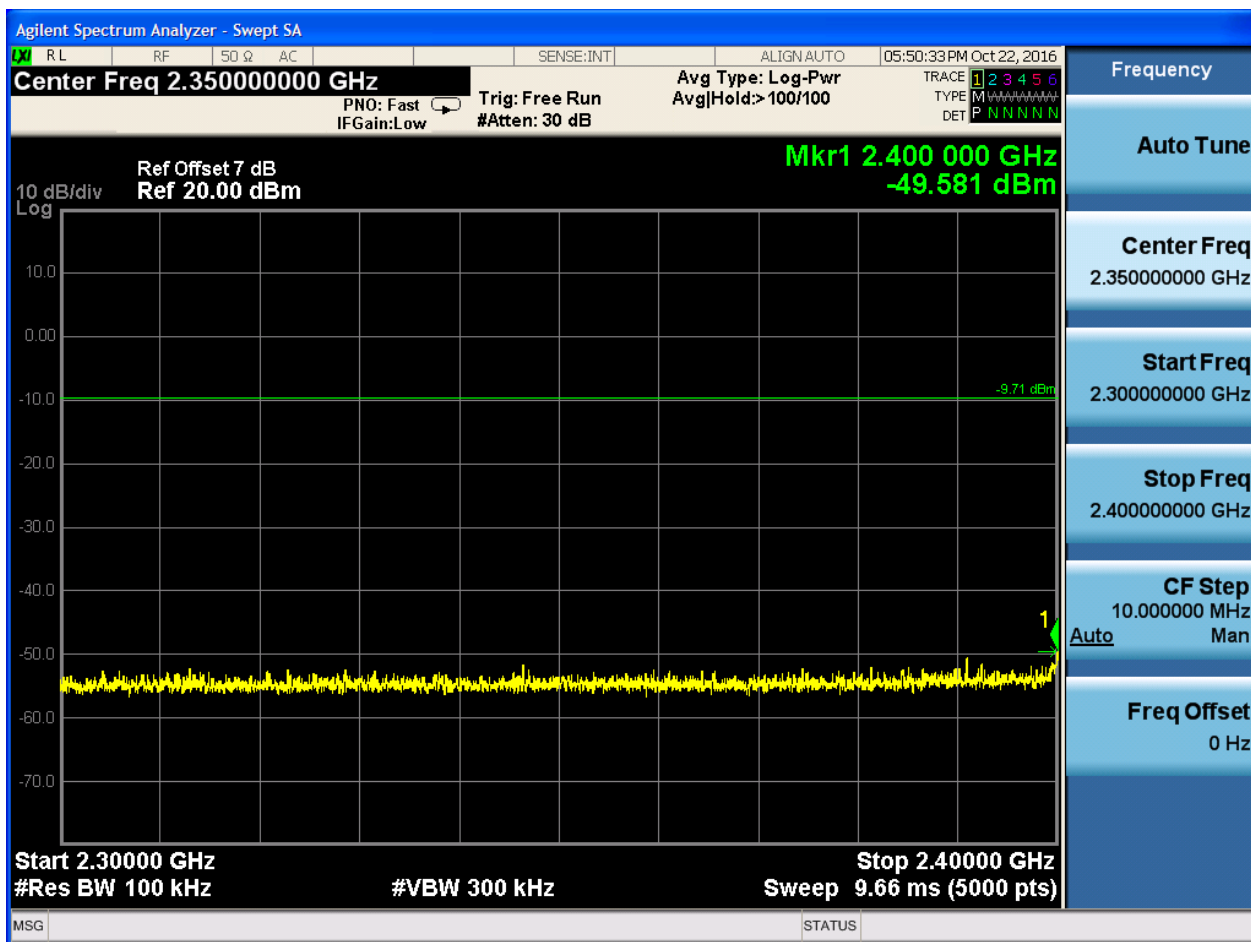


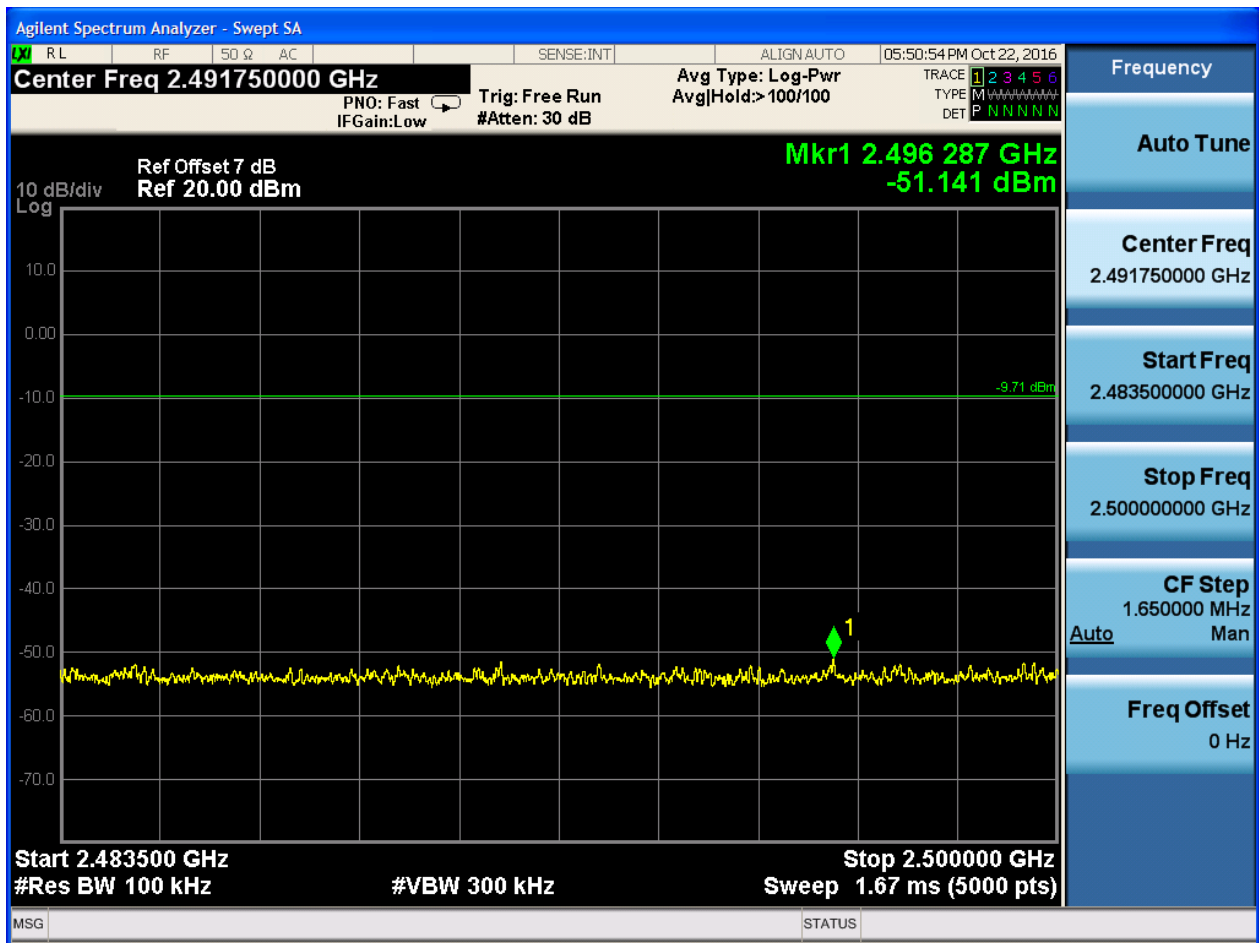
2.1.2 Puw









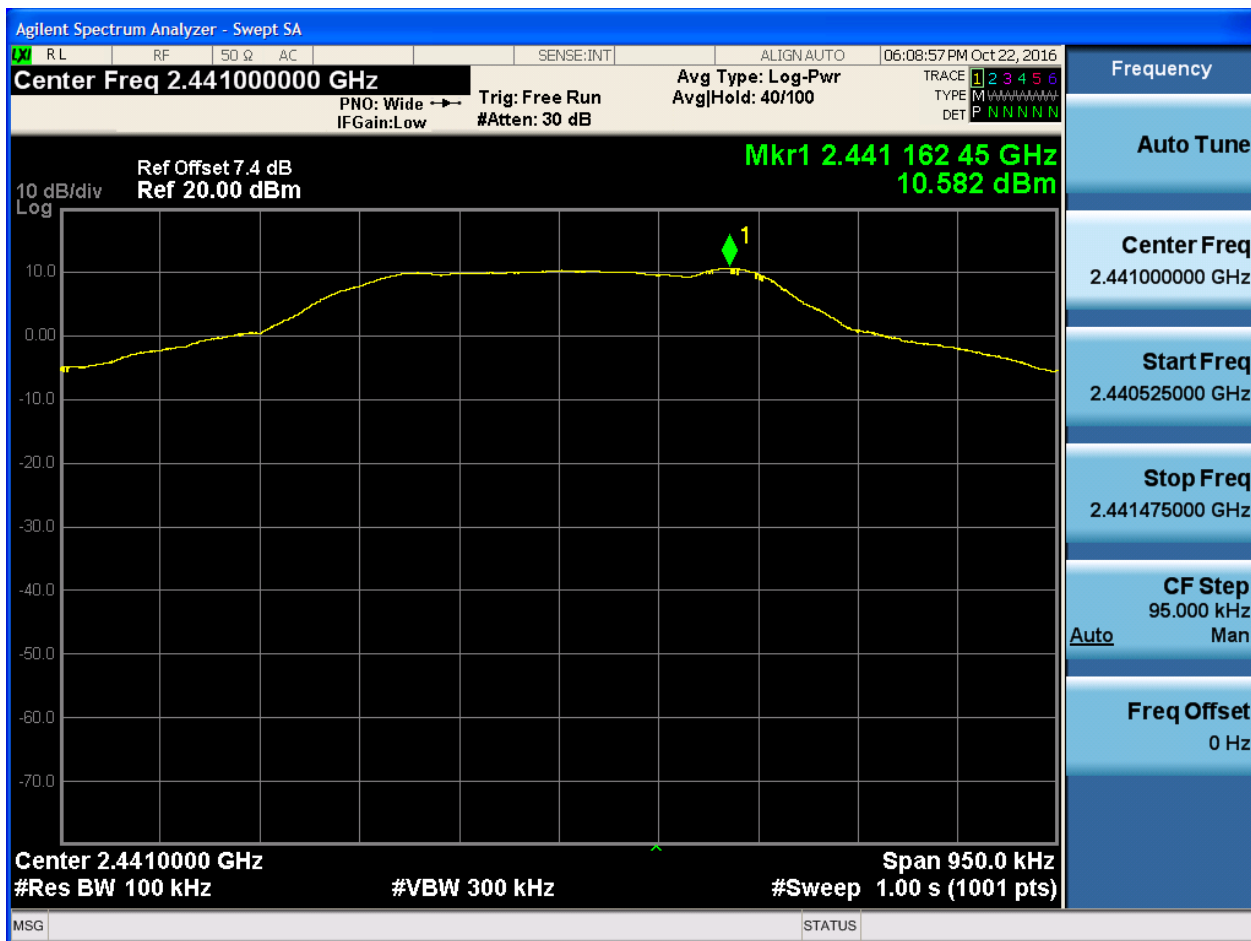






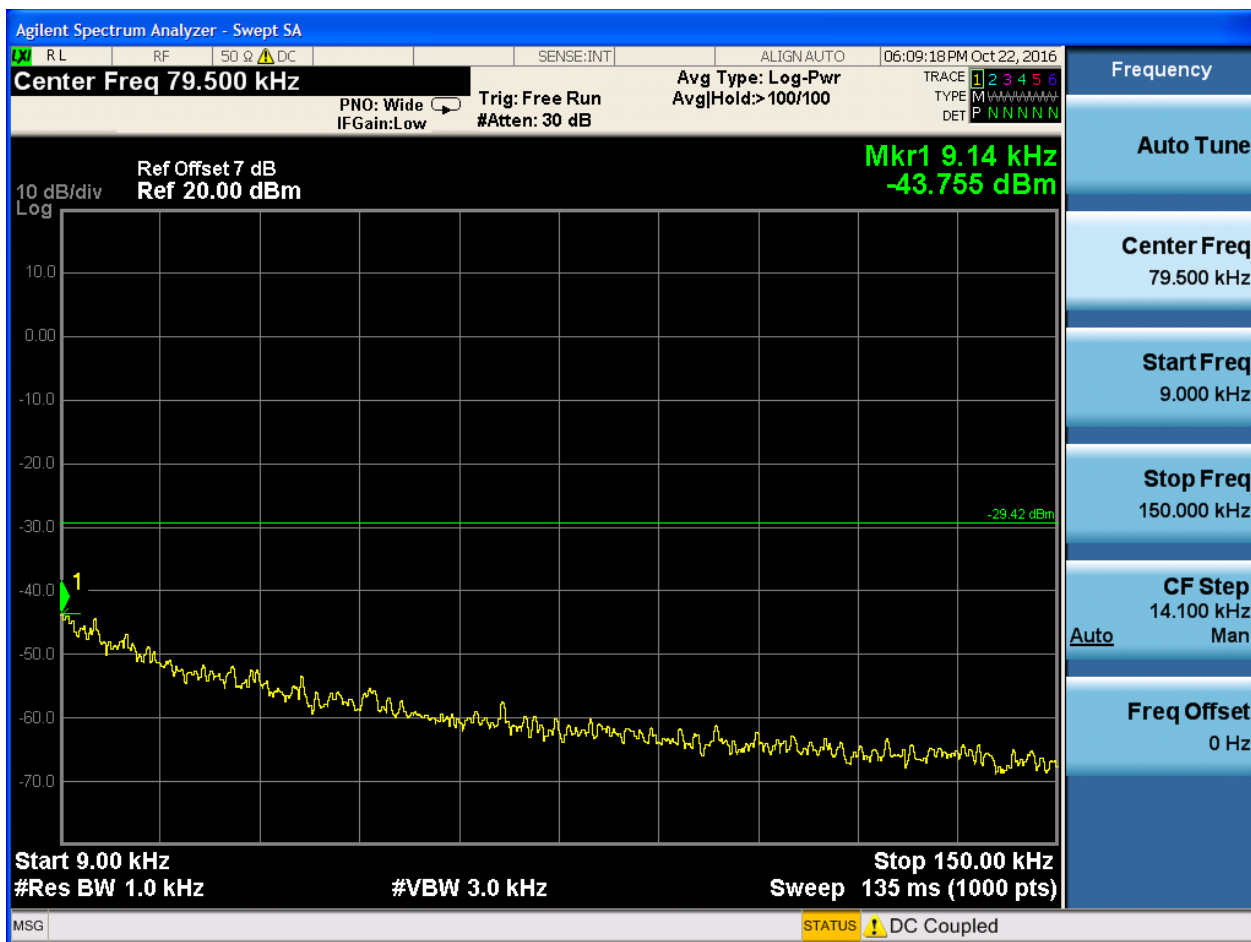
2.2 TM1_DH5_Ch39

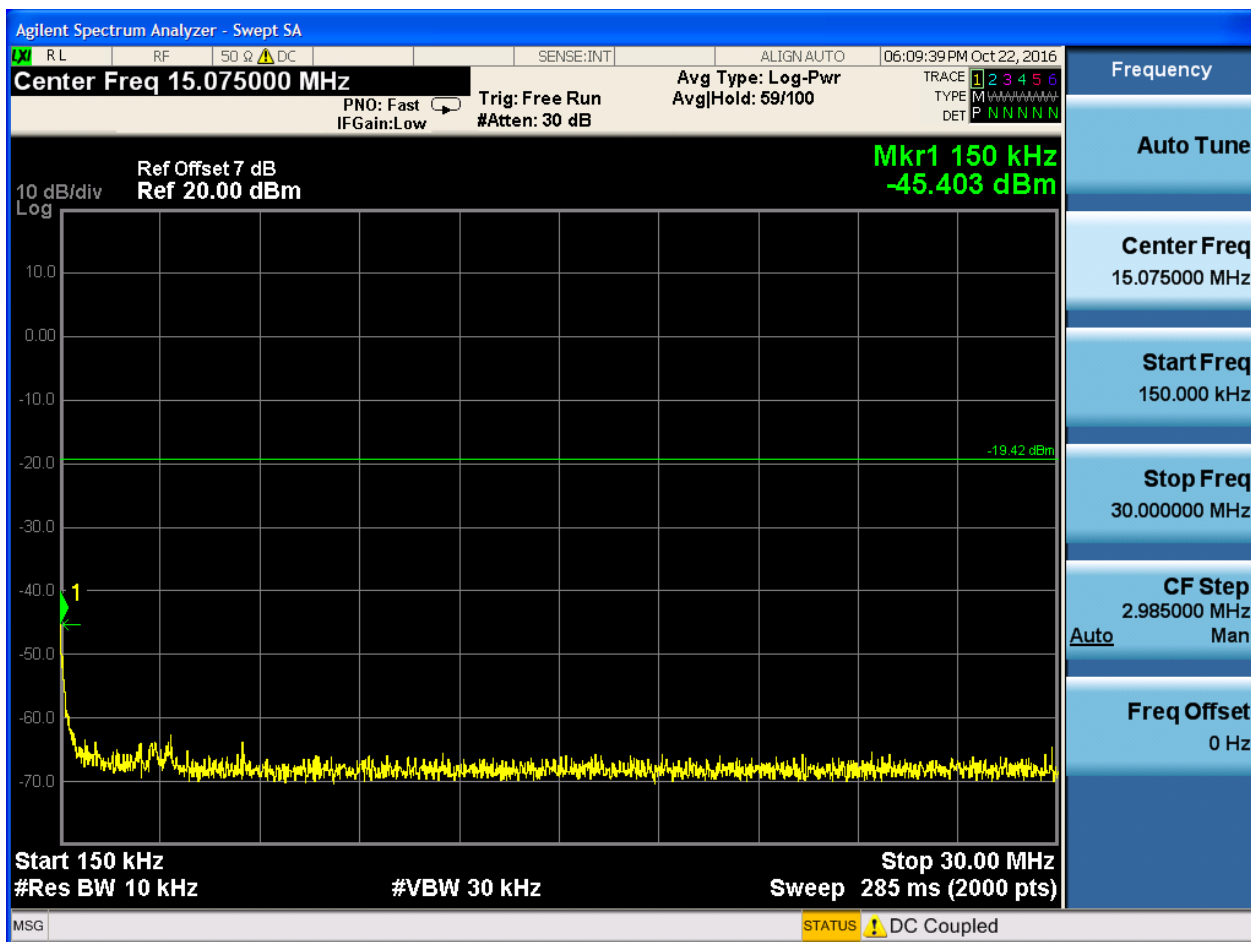
2.2.1 Pref

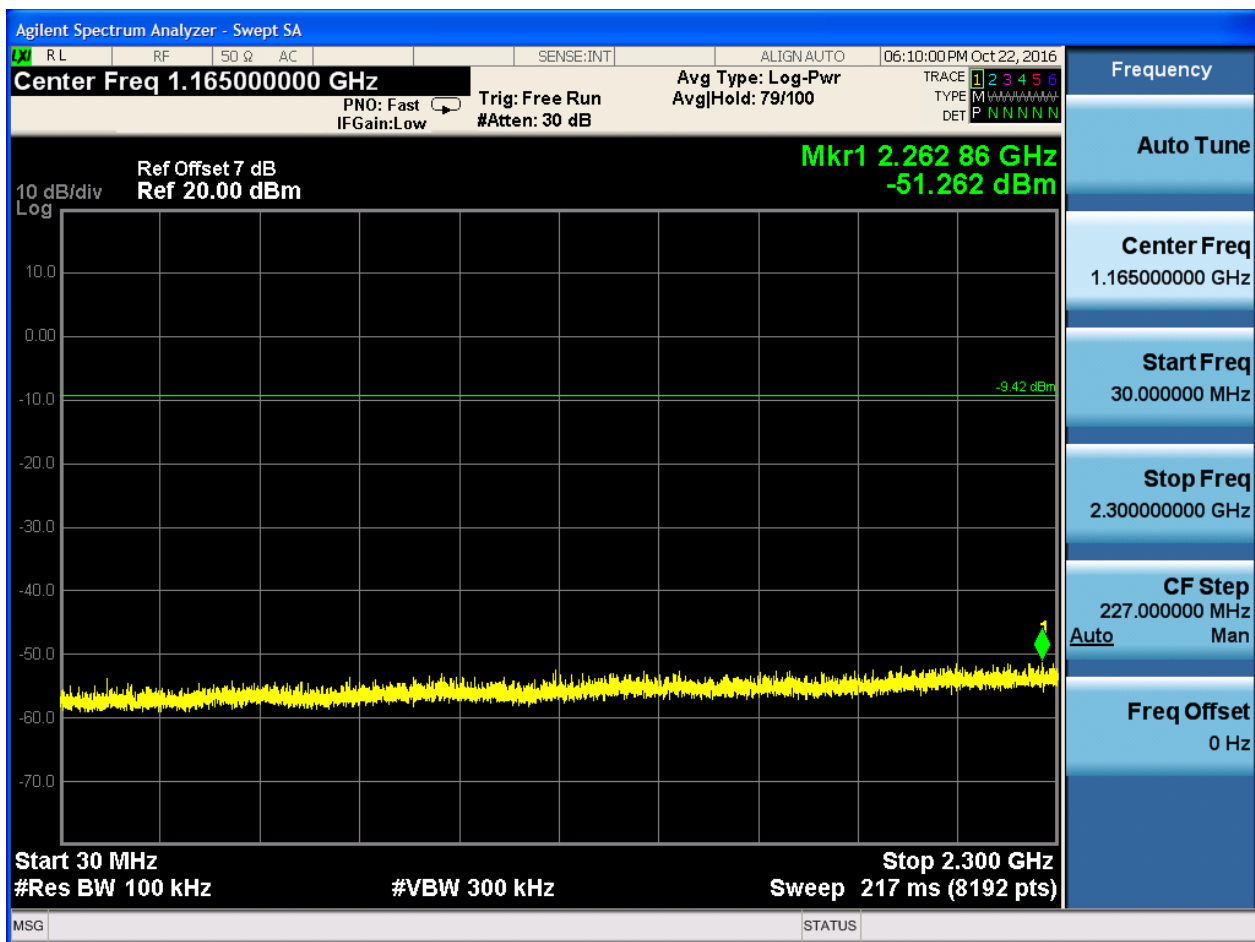


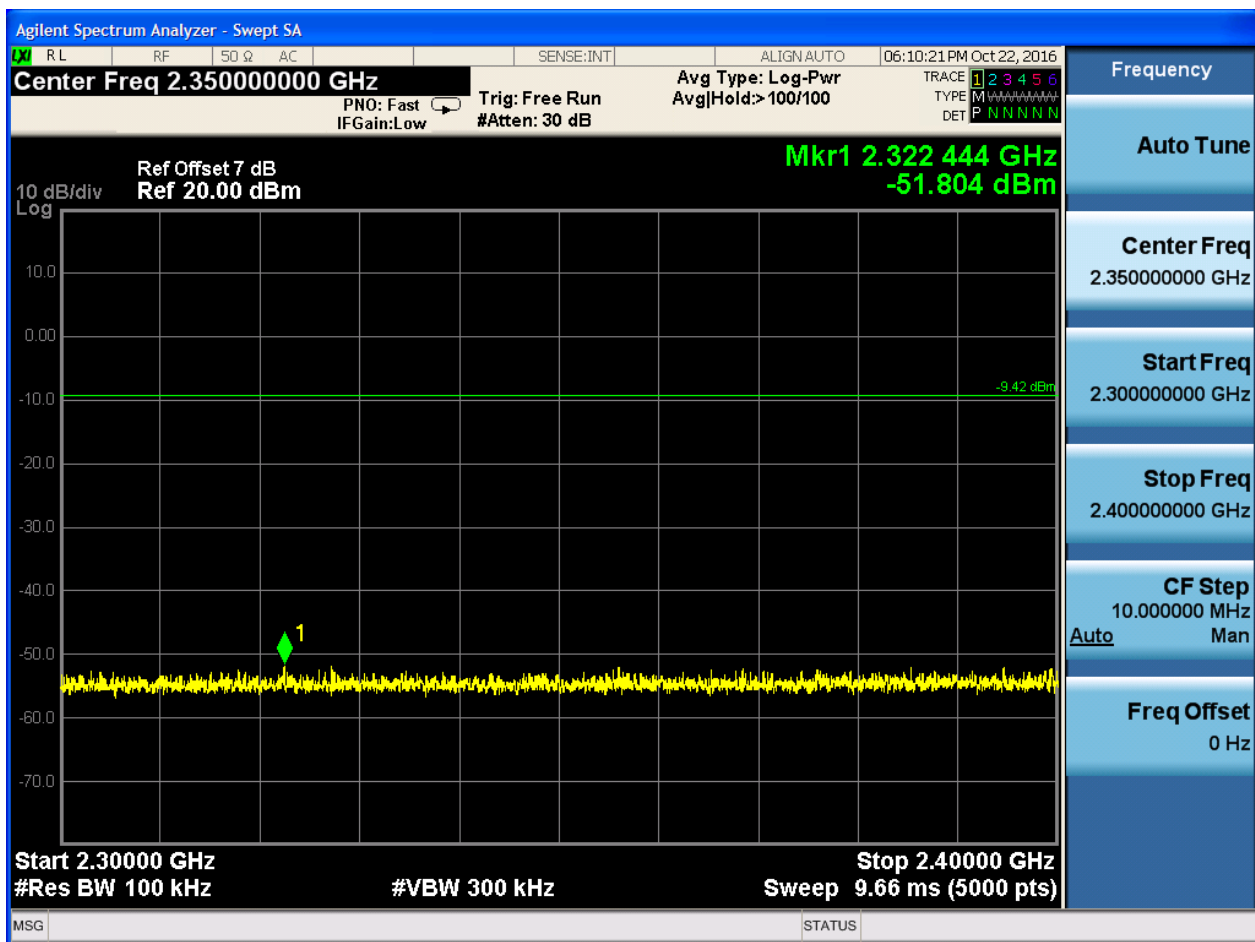


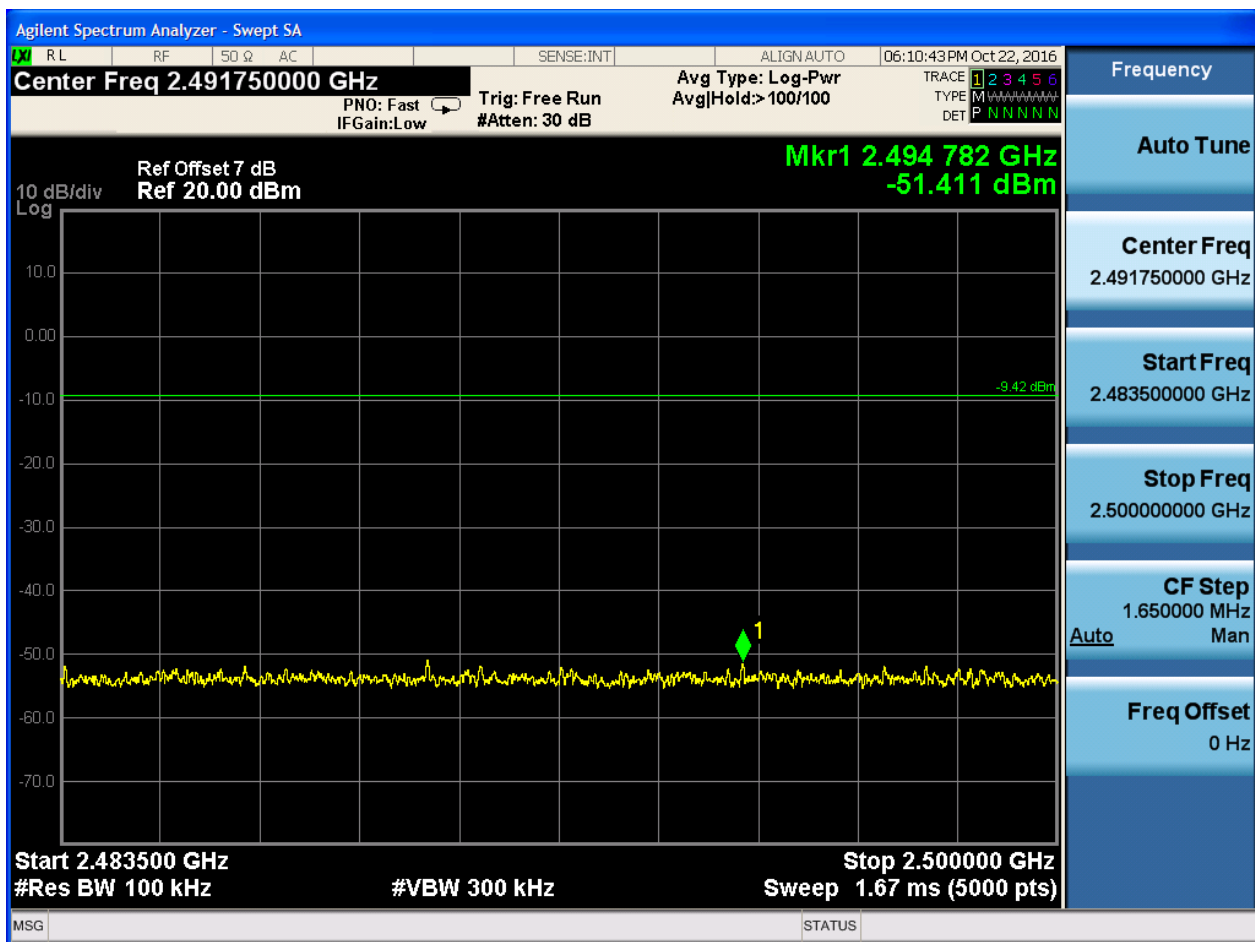
2.2.2 Puw









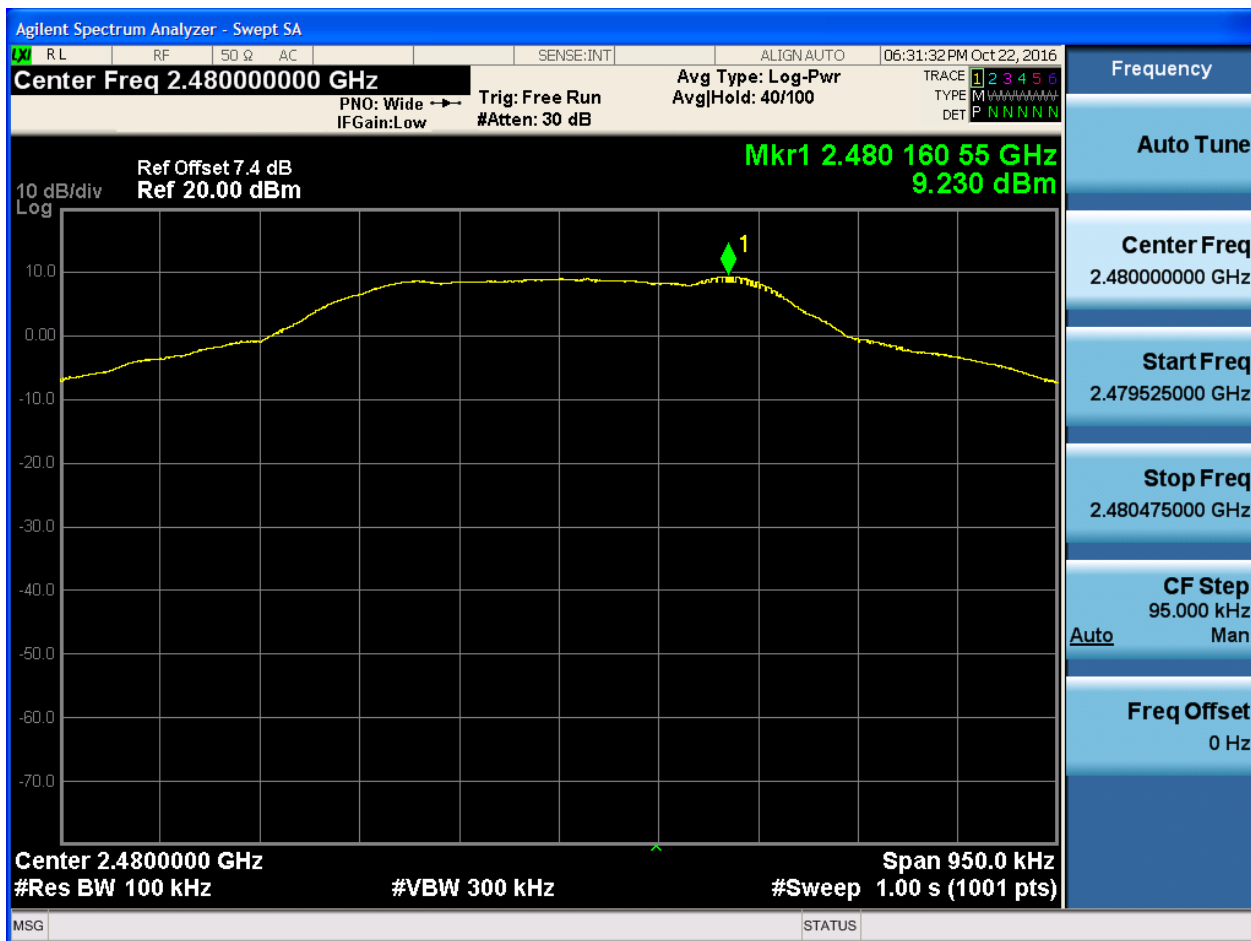






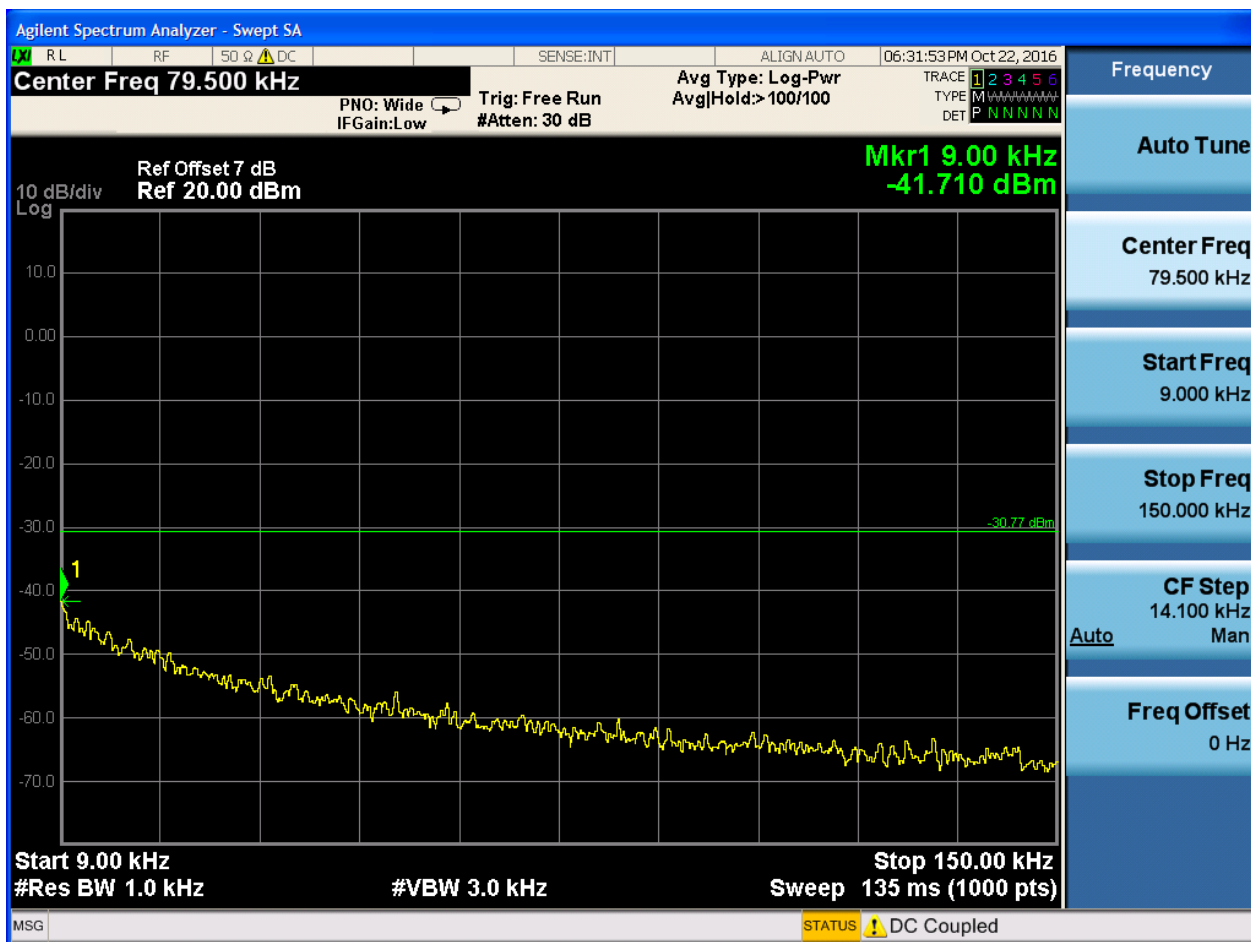
2.3 TM1_DH5_Ch78

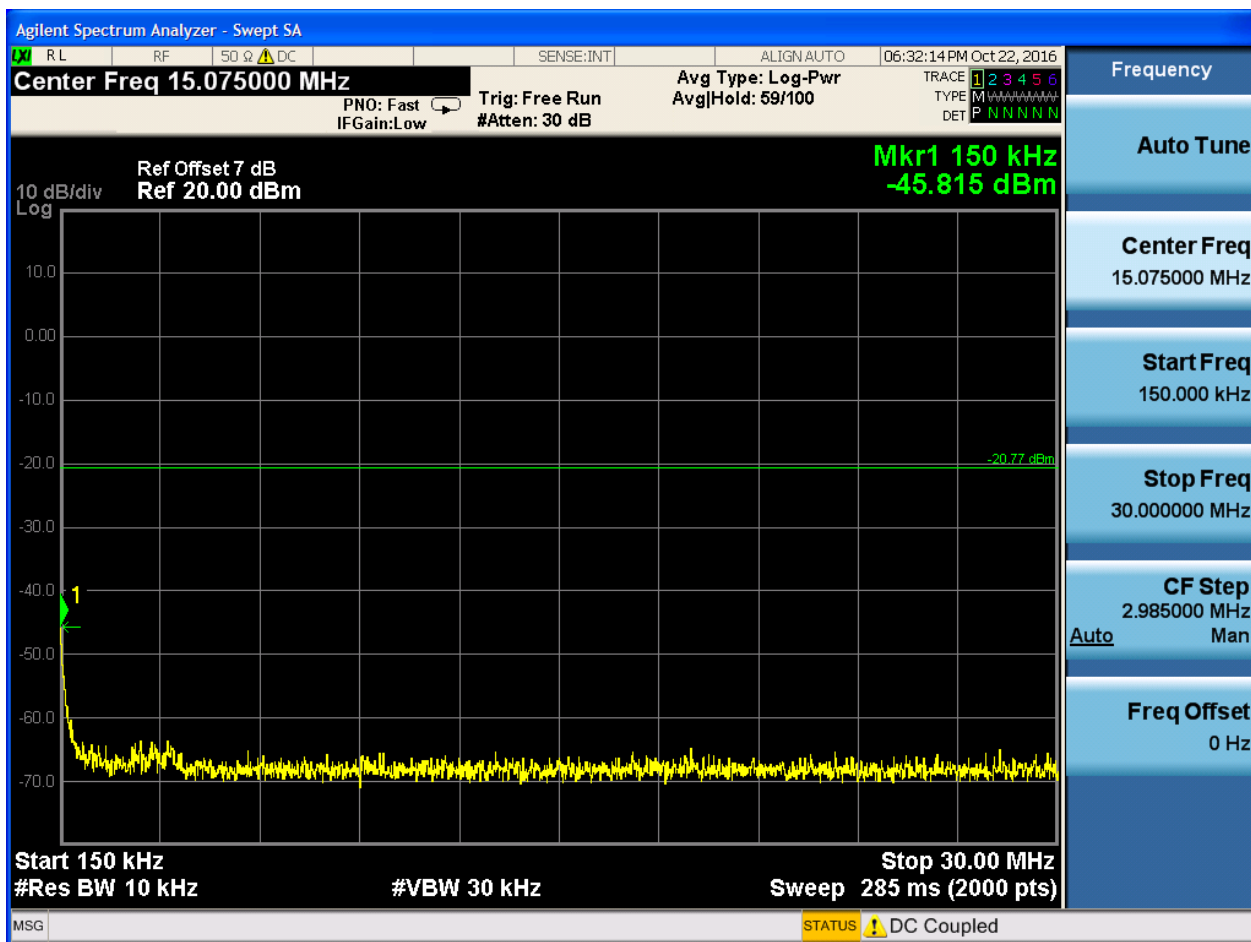
2.3.1 Pref

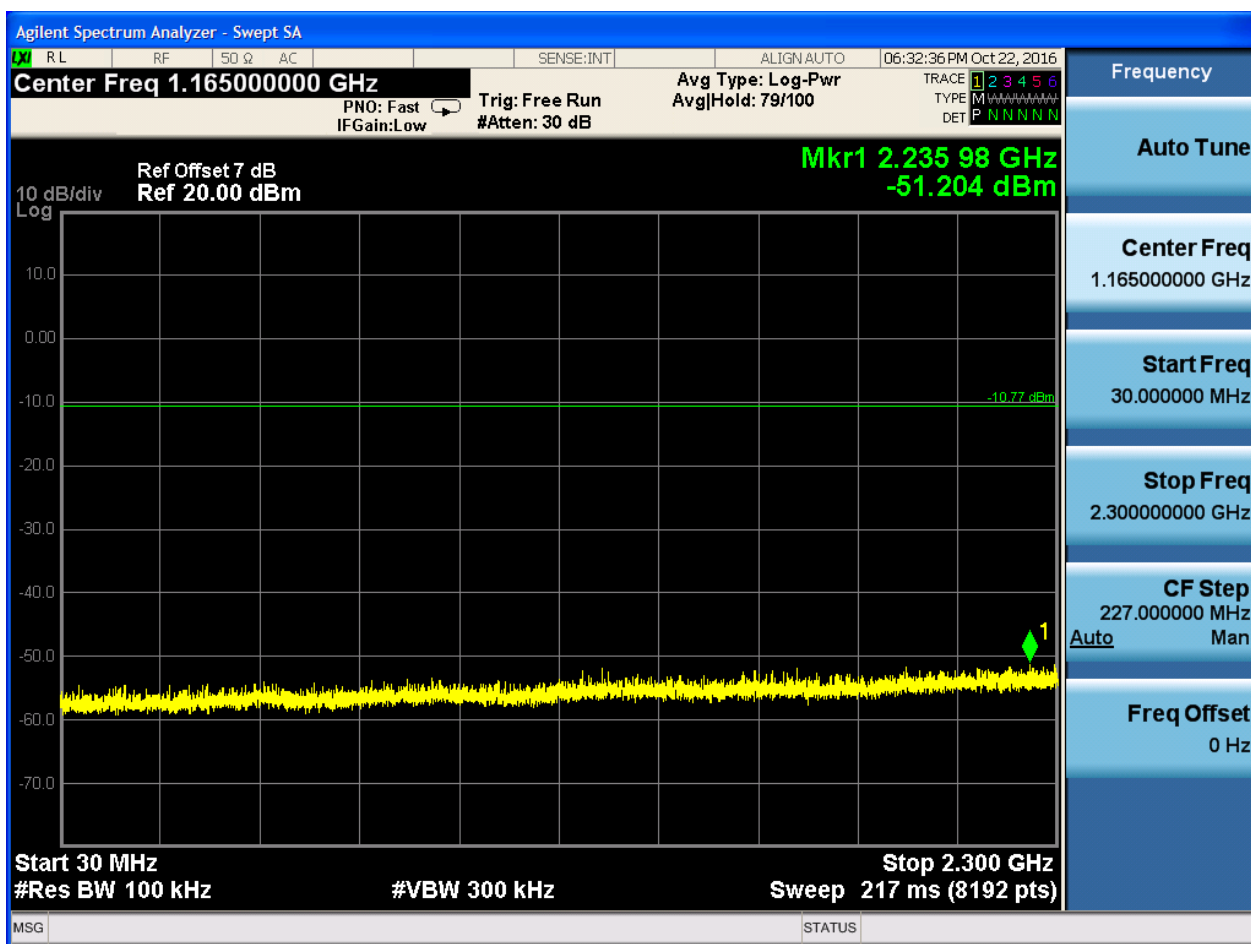


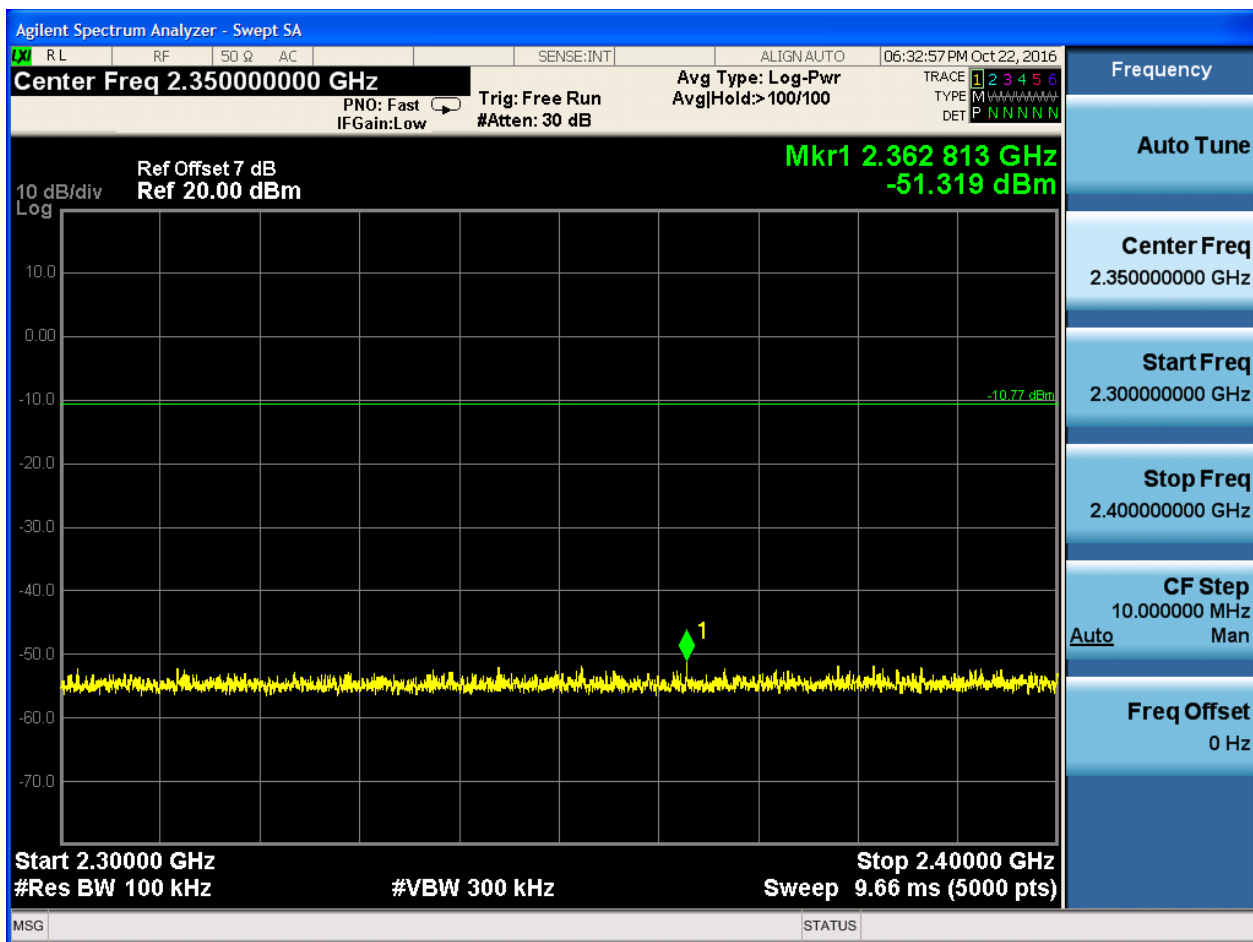


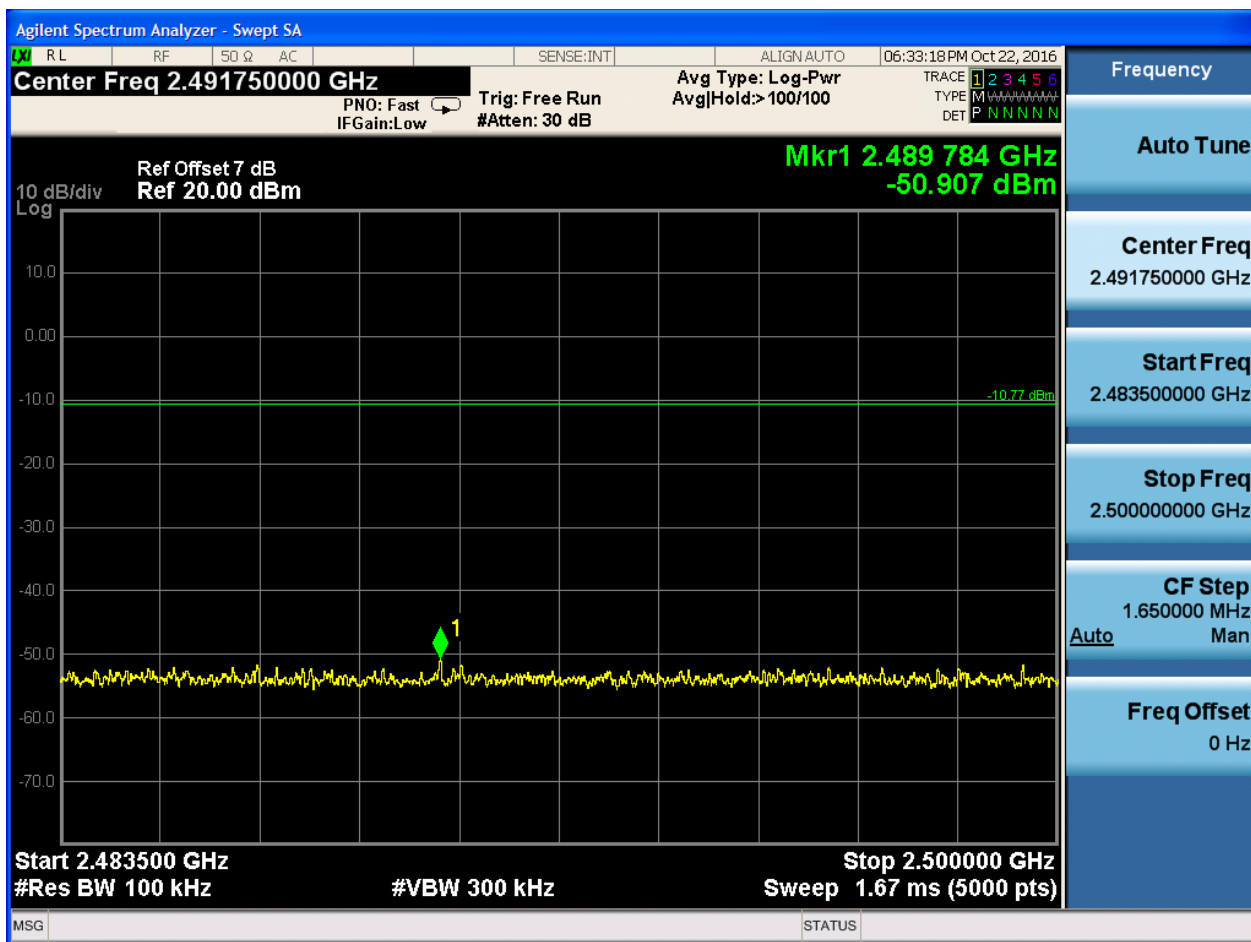
2.3.2 Puw







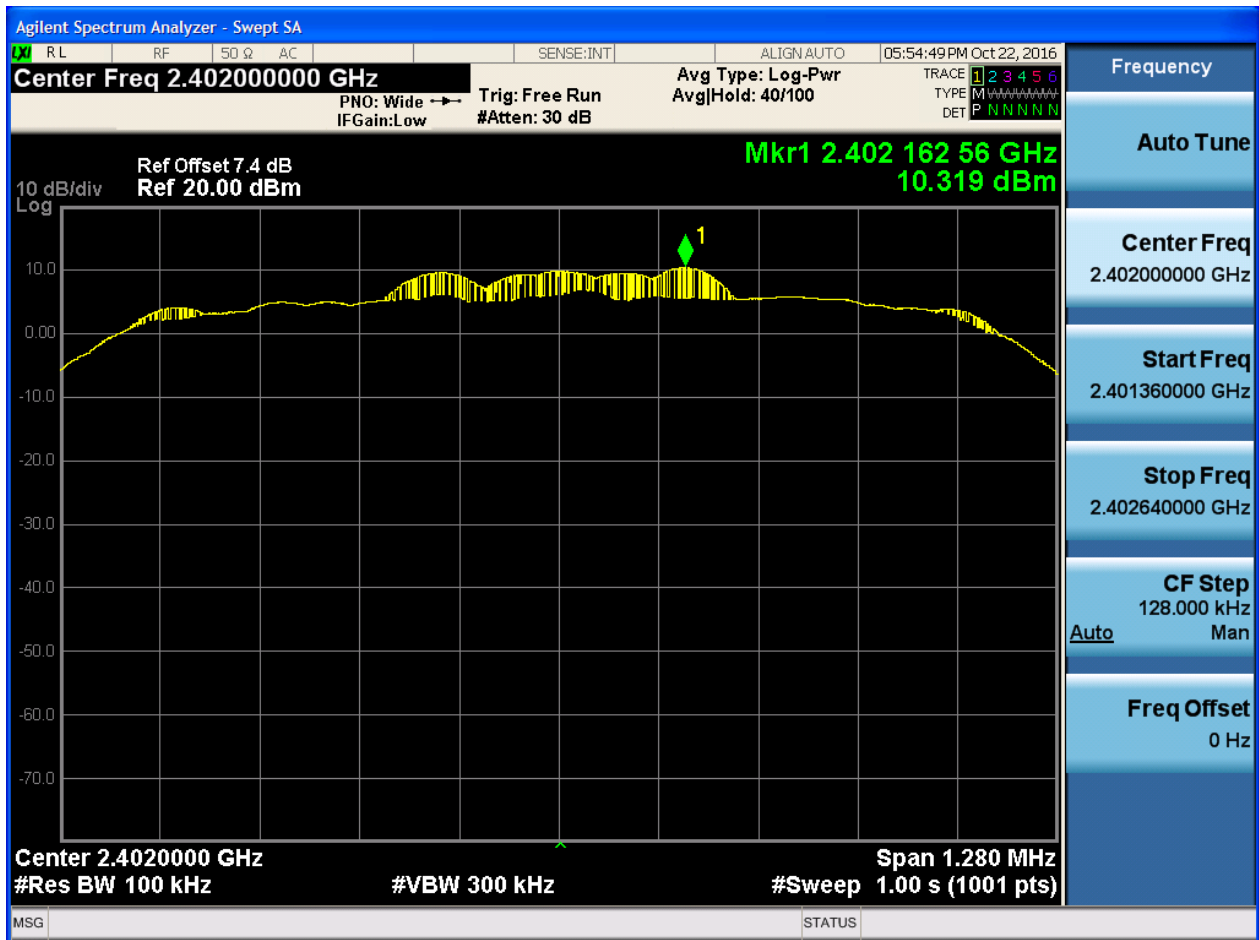




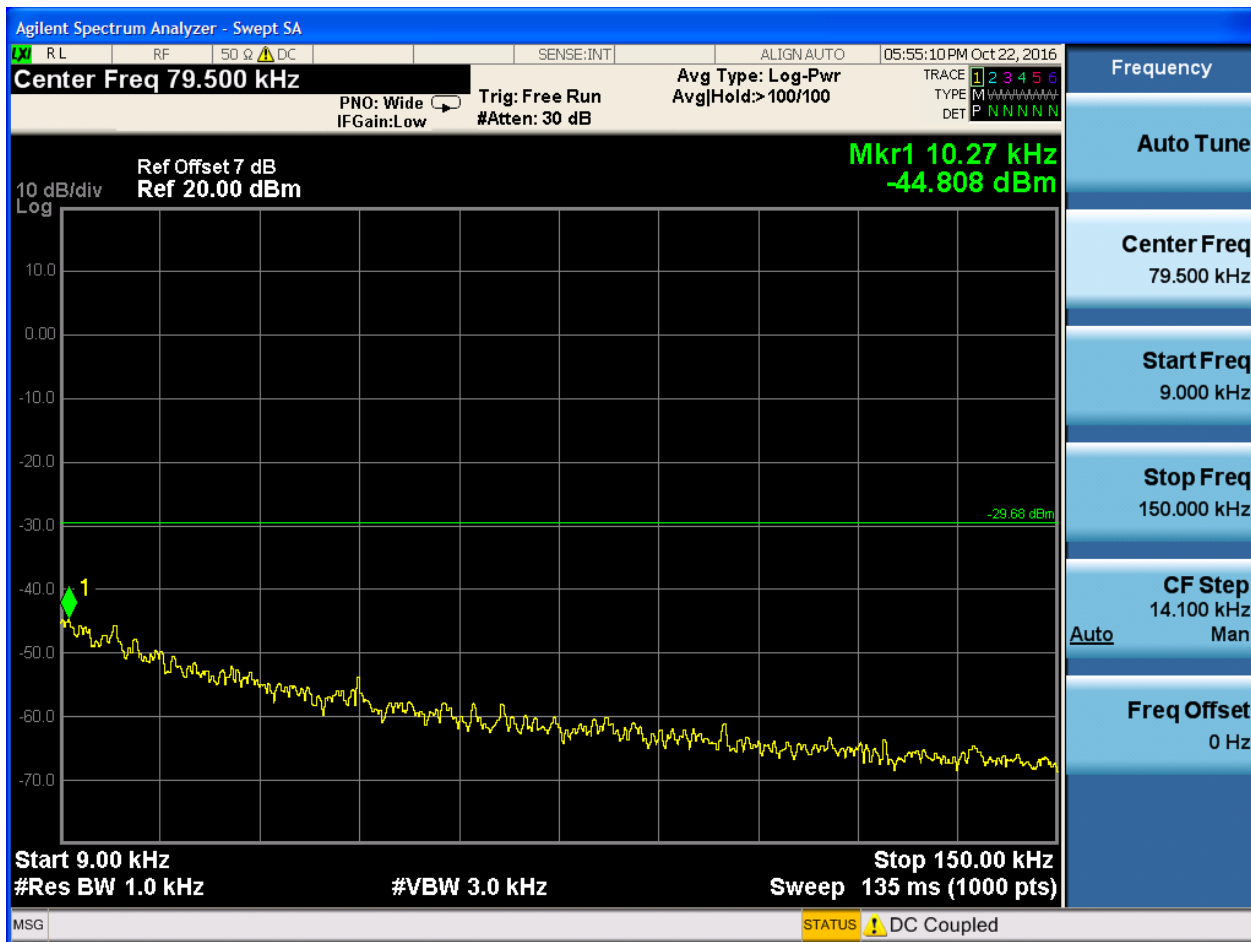


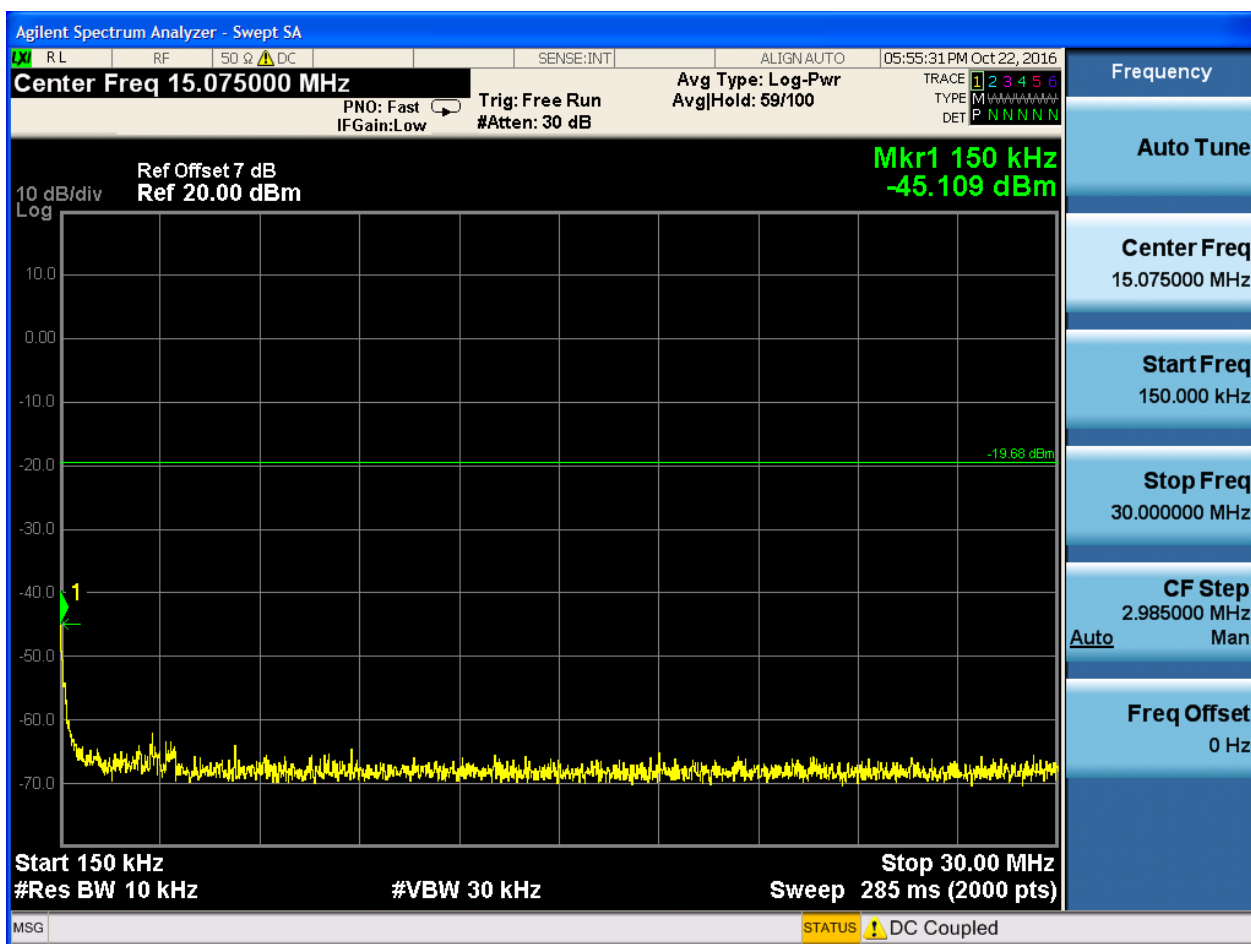
2.4 TM2_2DH5_Ch0

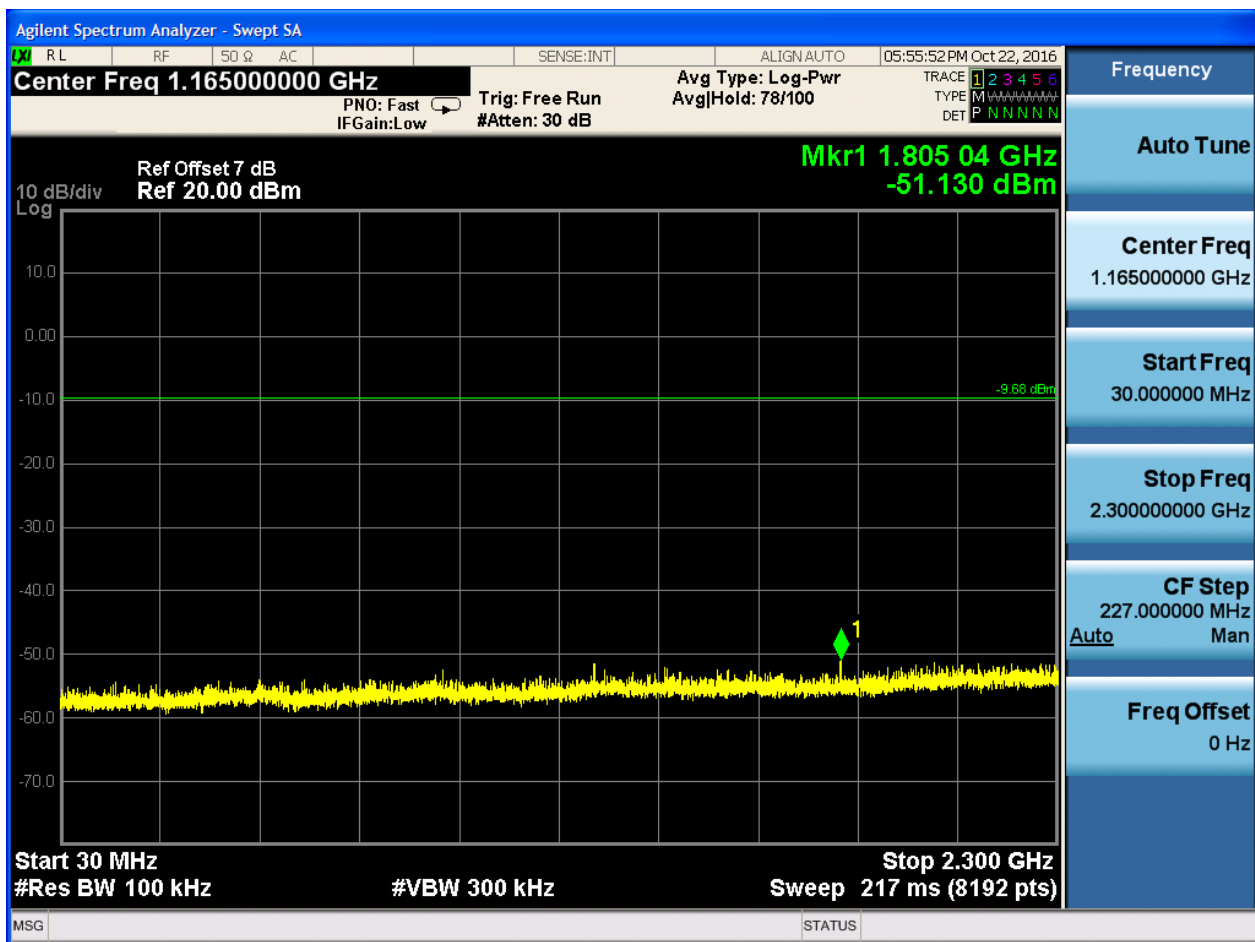
2.4.1 Pref

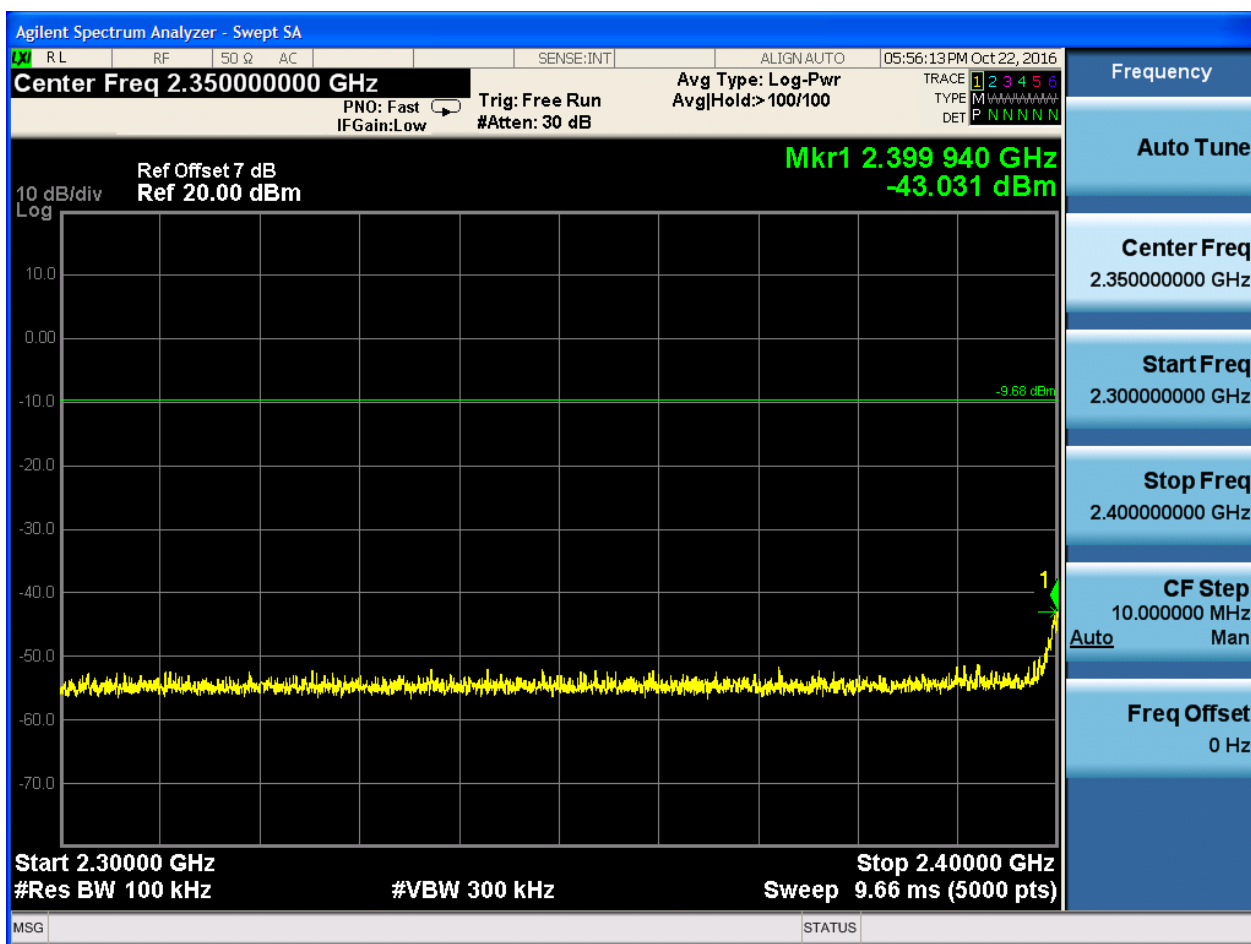


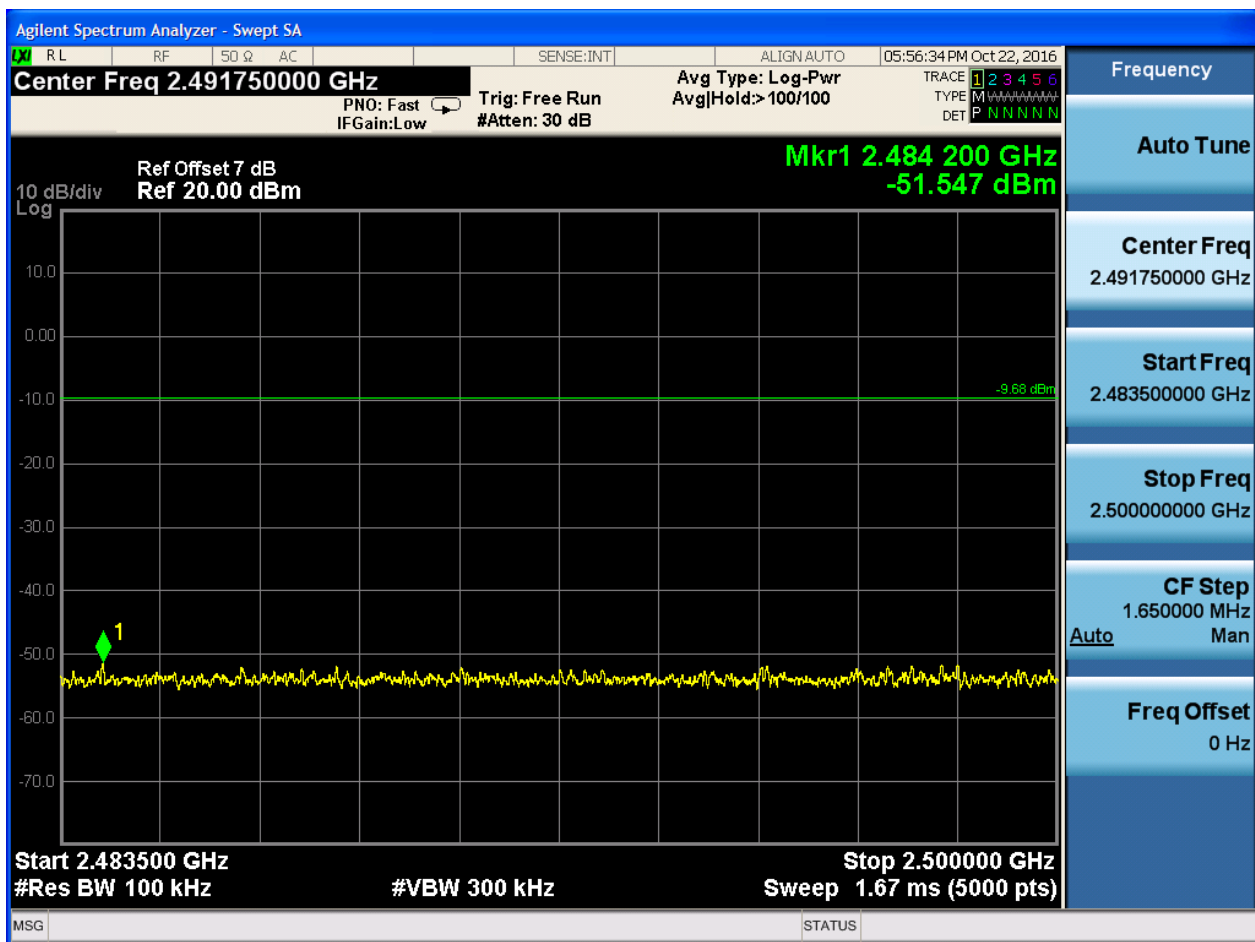
2.4.2 Puw

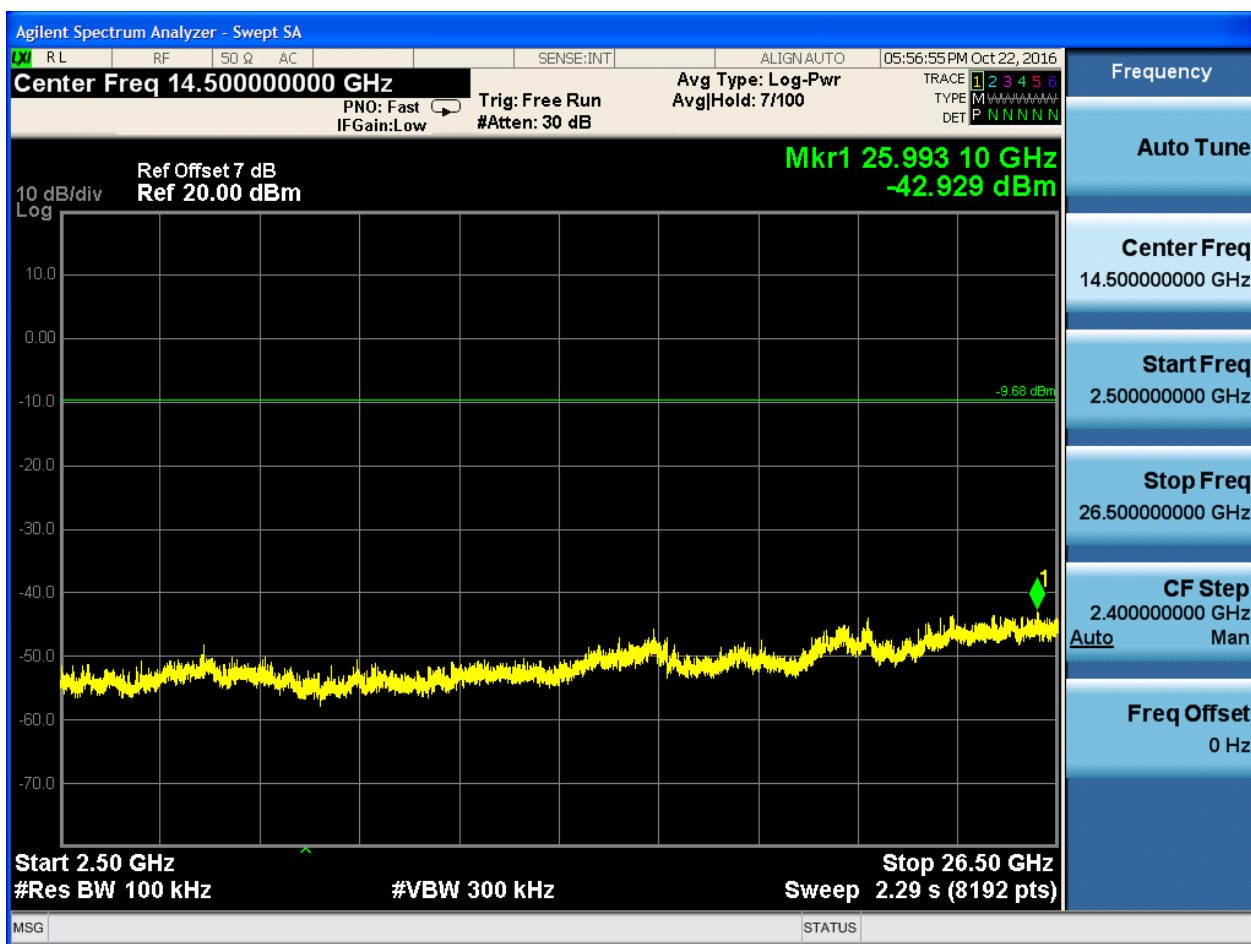






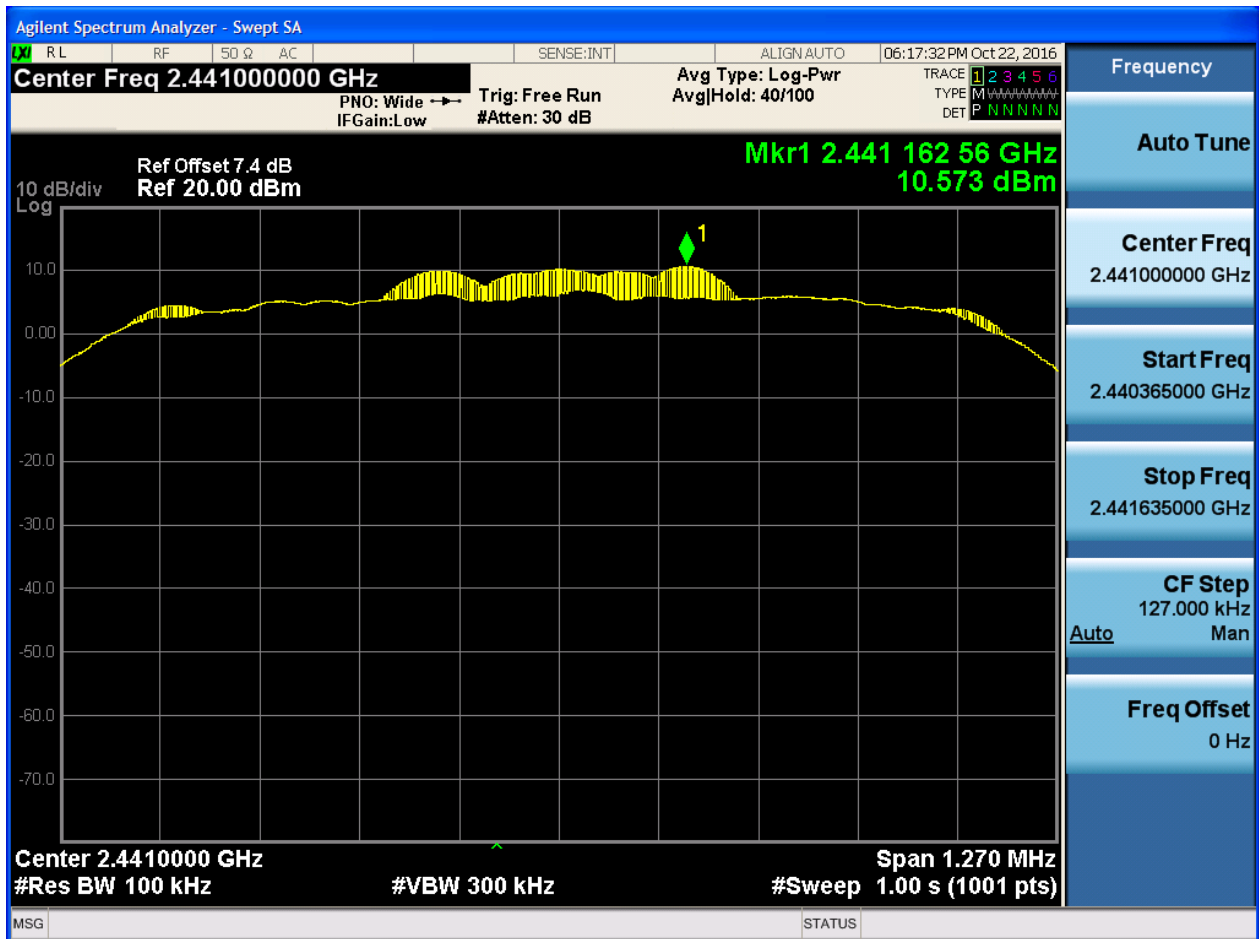




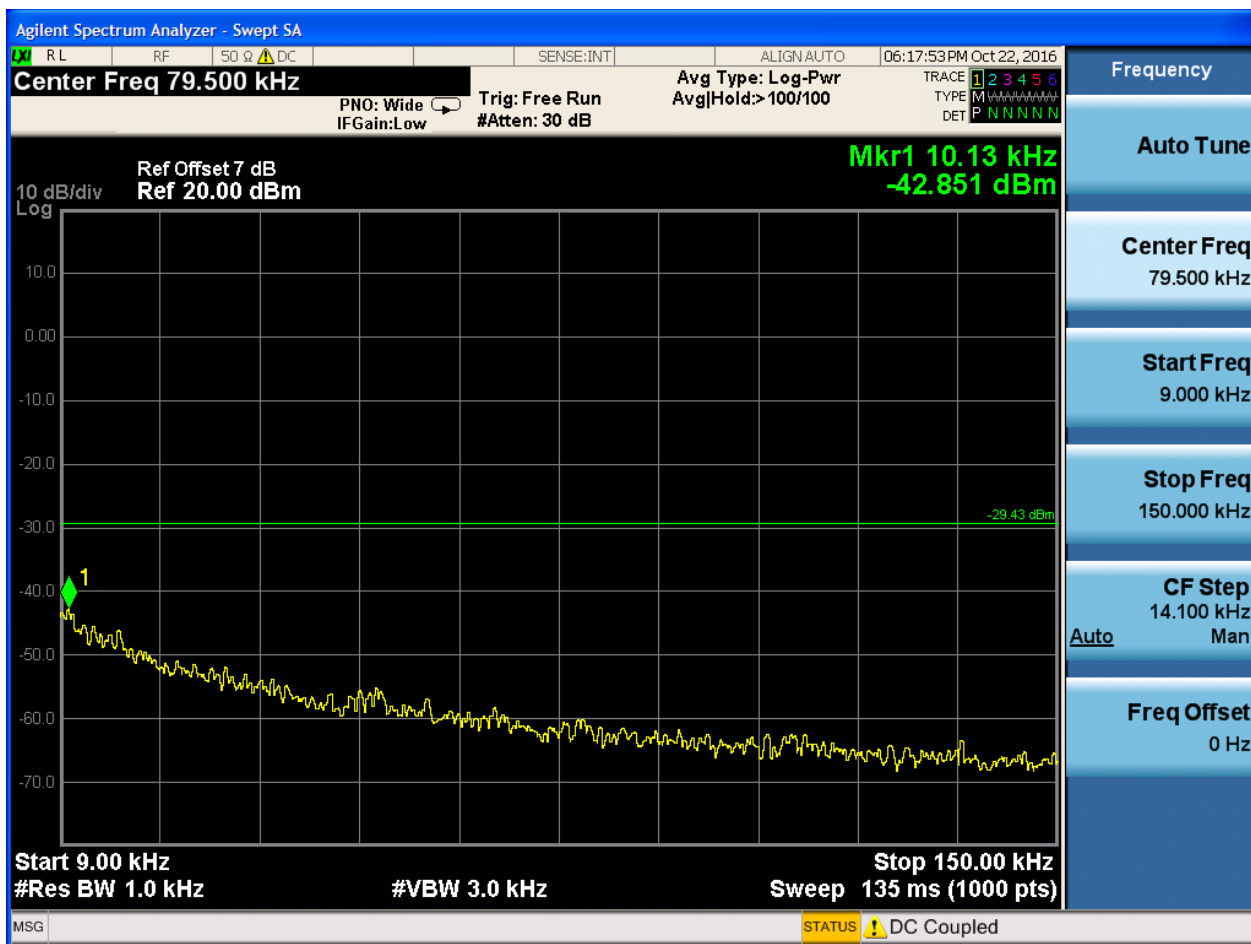


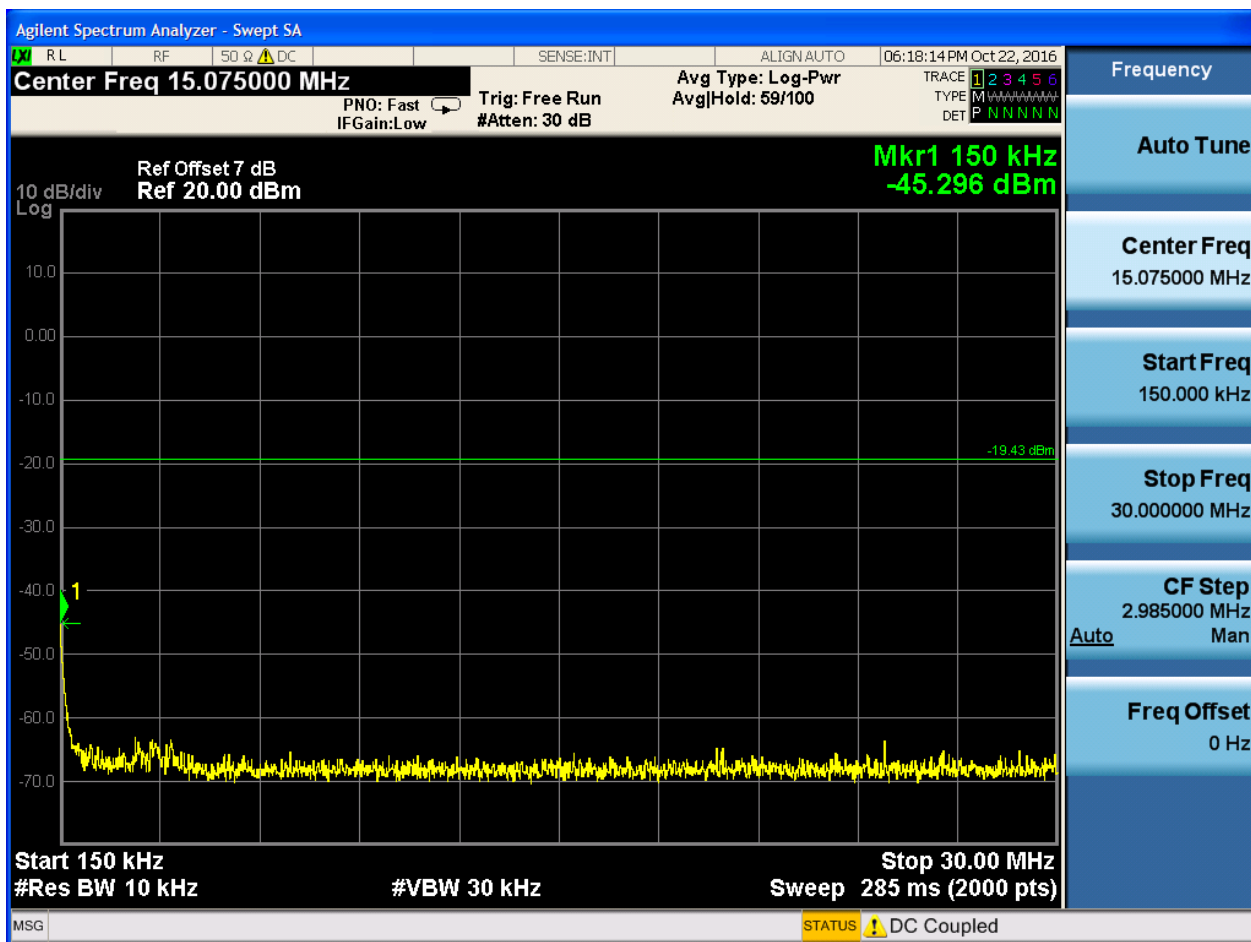
2.5 TM2_2DH5_Ch39

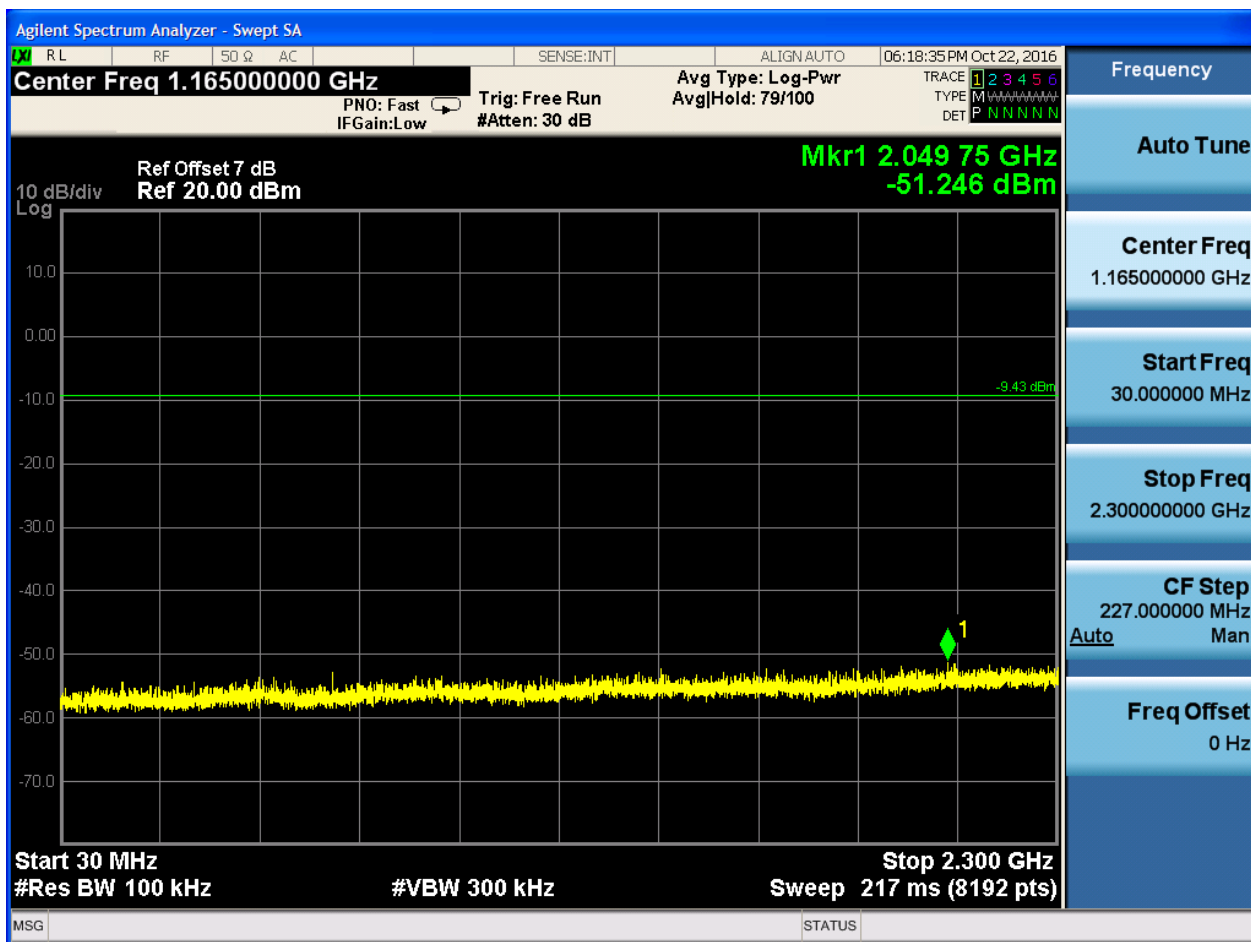
2.5.1 Pref

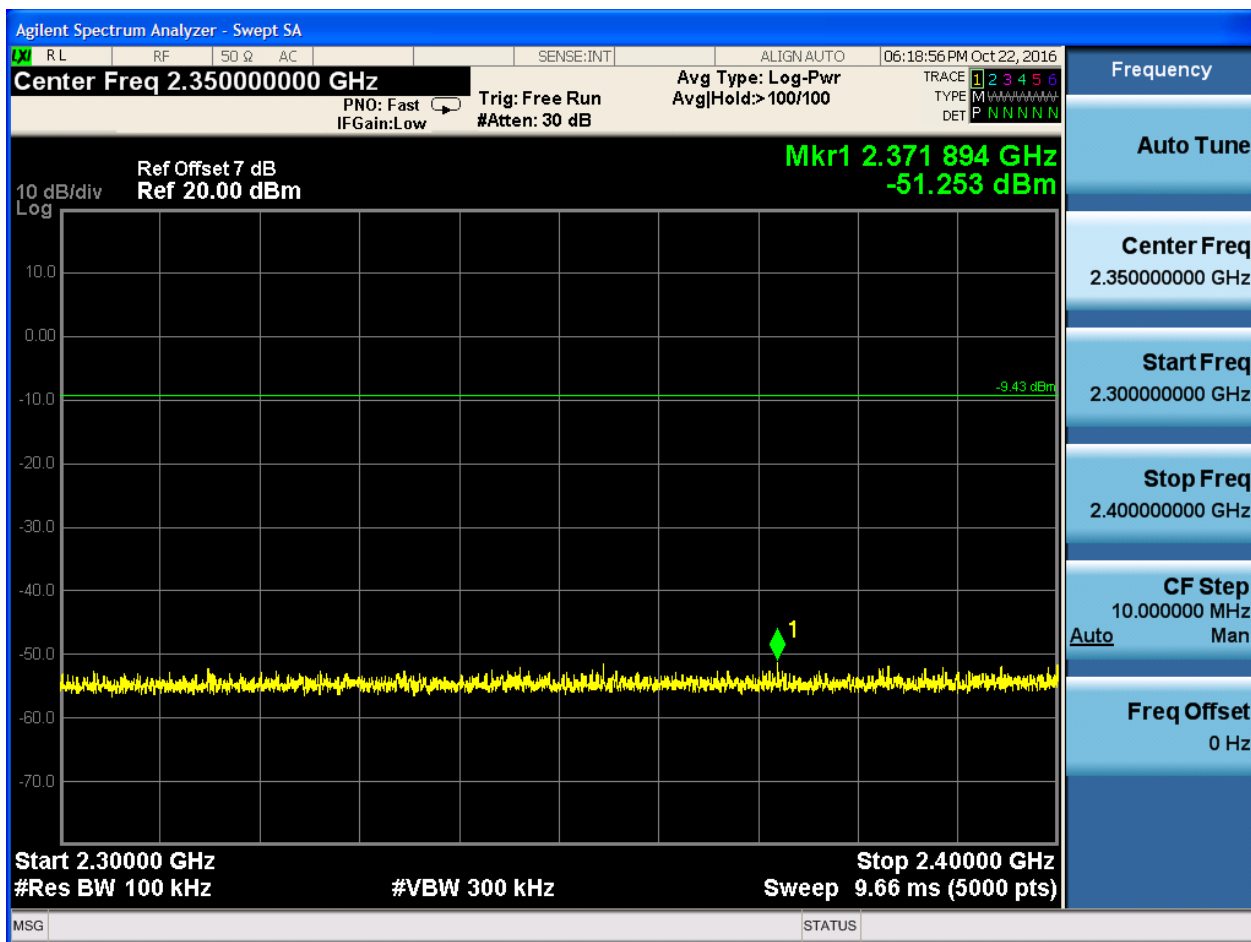


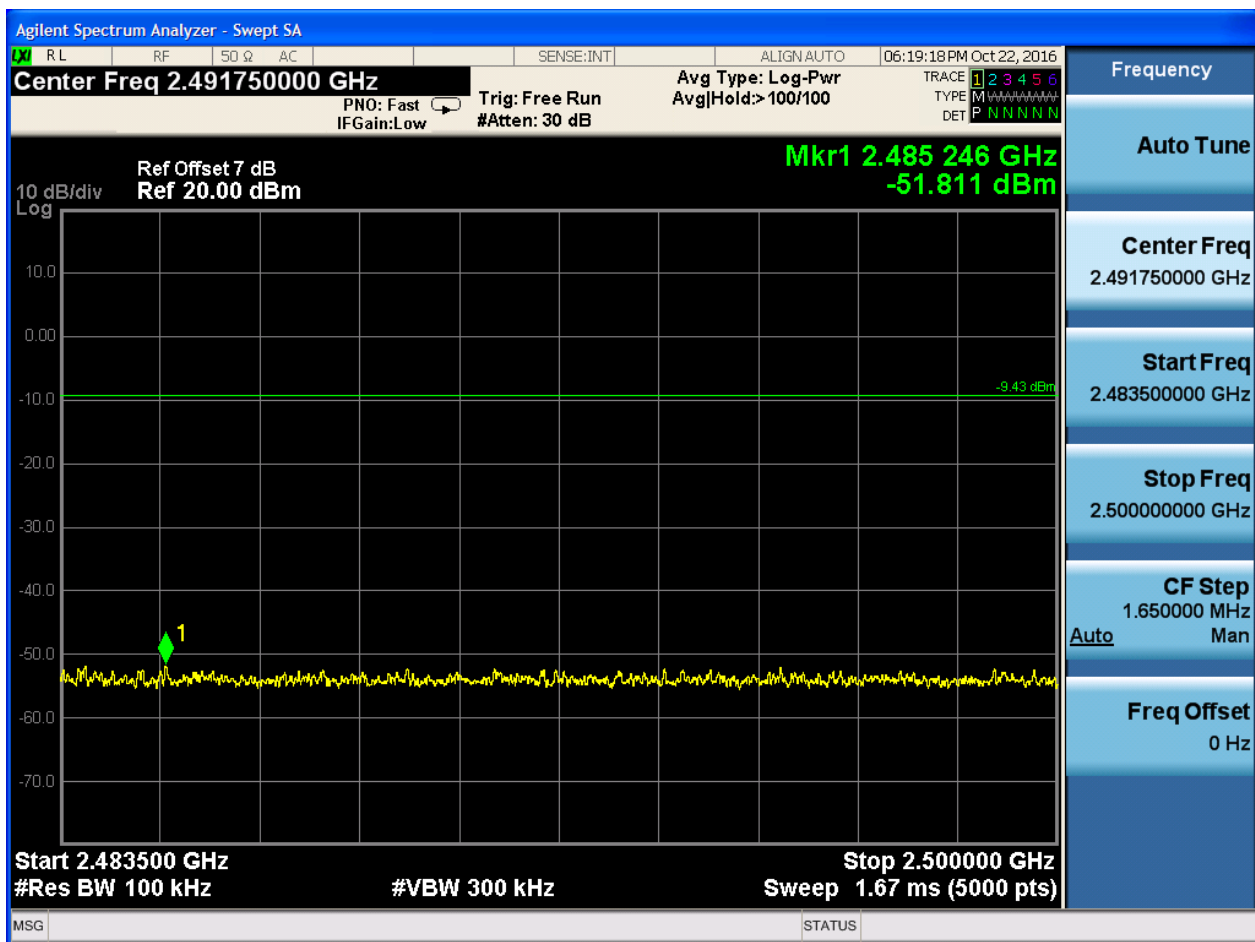
2.5.2 Puw









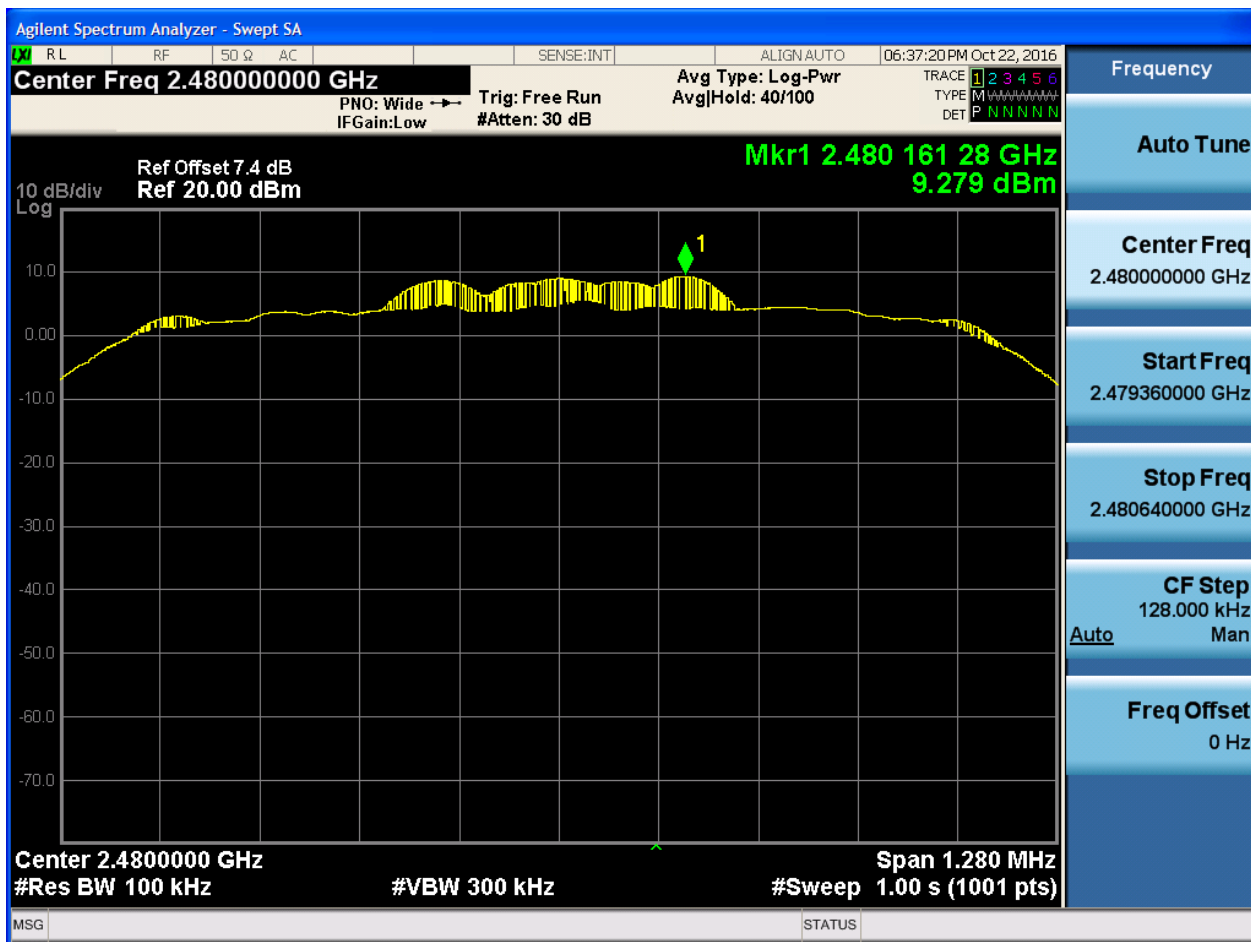




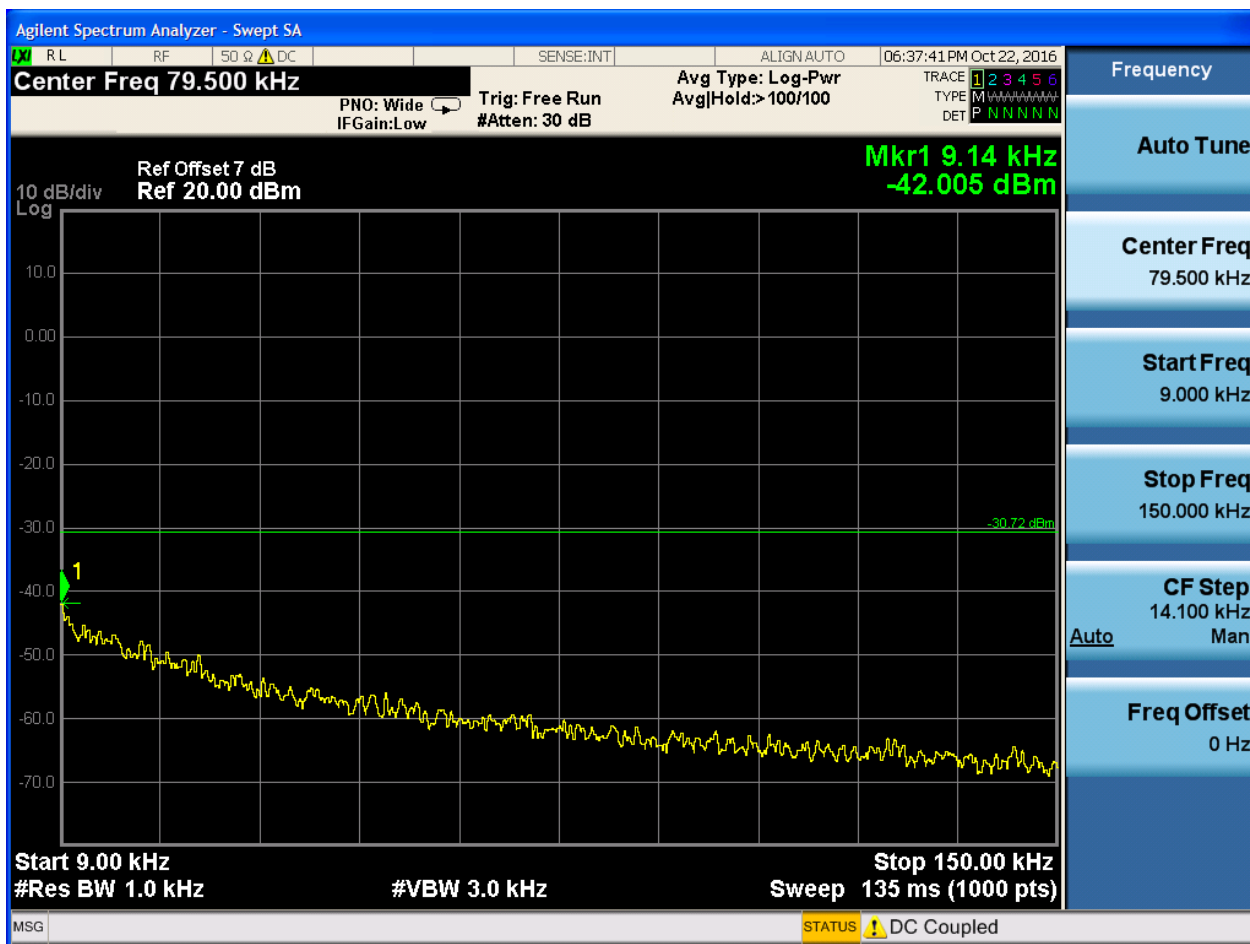


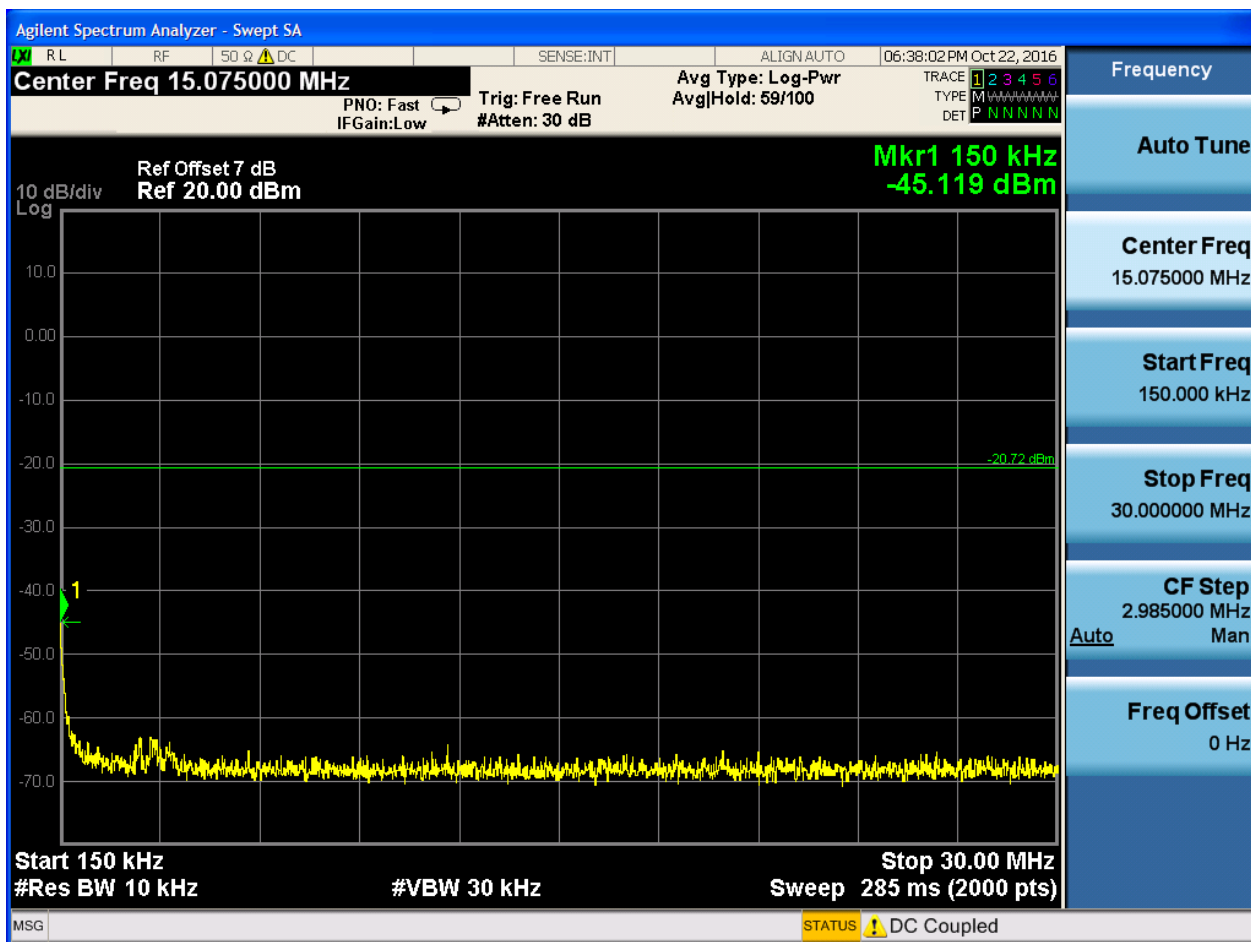
2.6 TM2_2DH5_Ch78

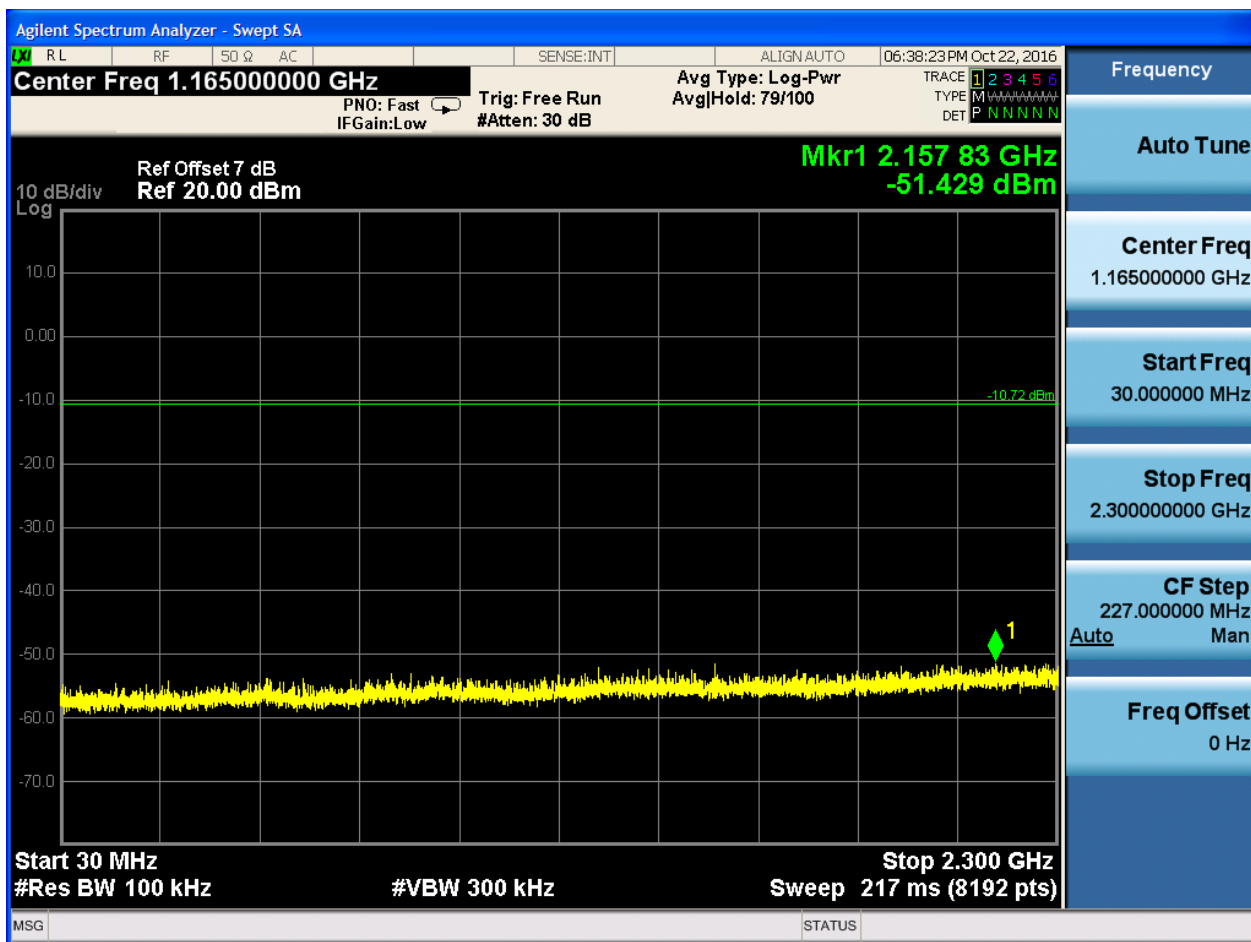
2.6.1 Pref

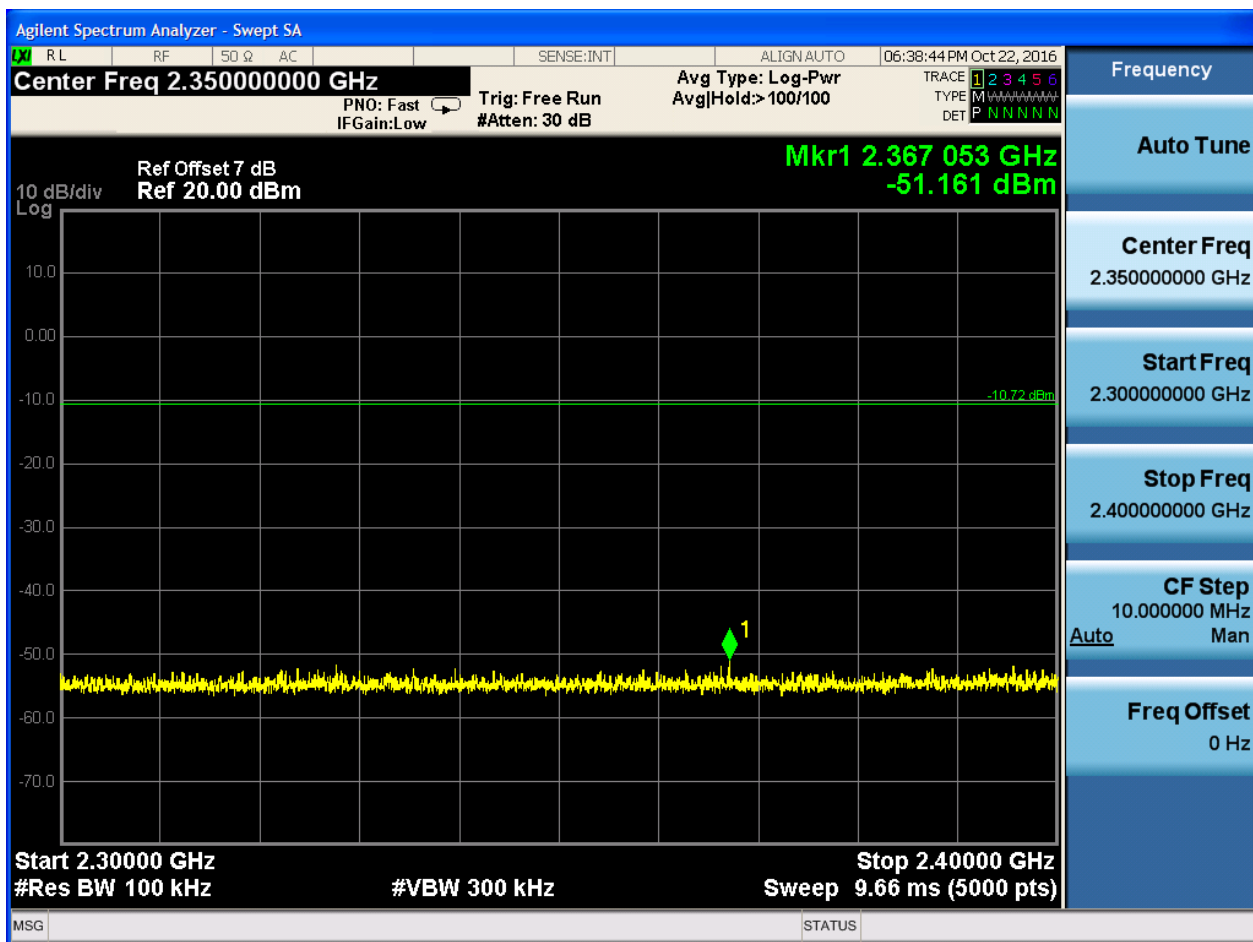


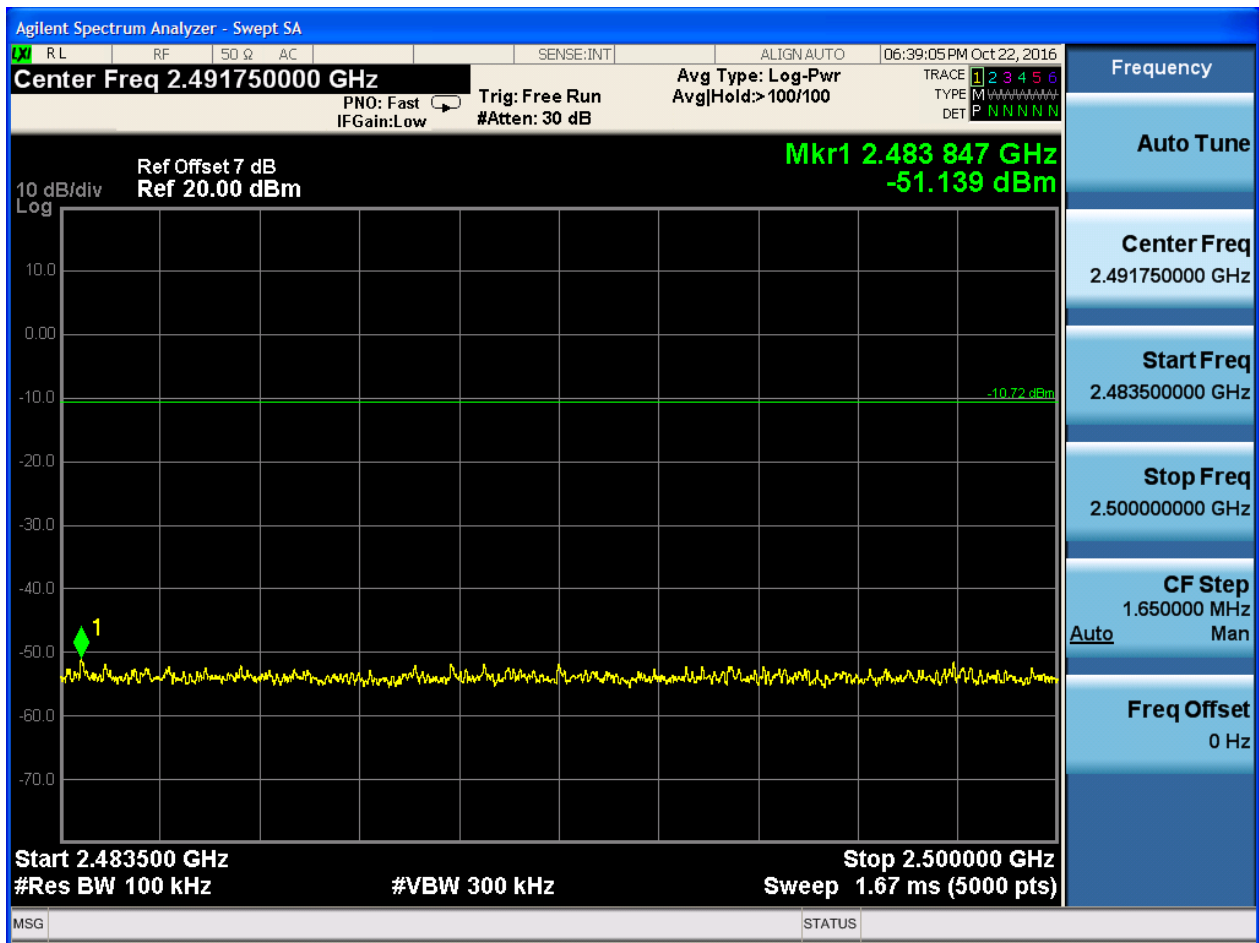
2.6.2 Puw

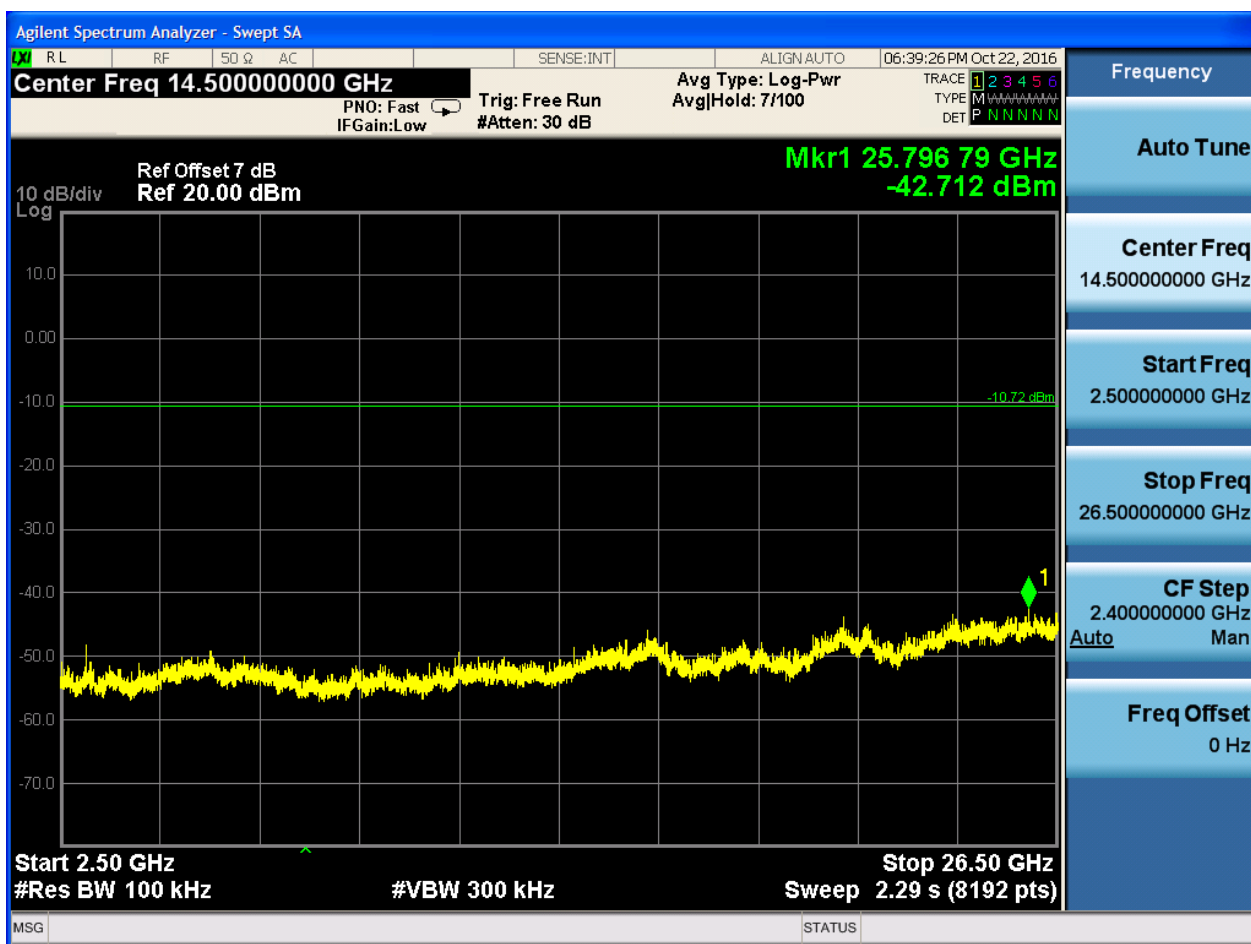








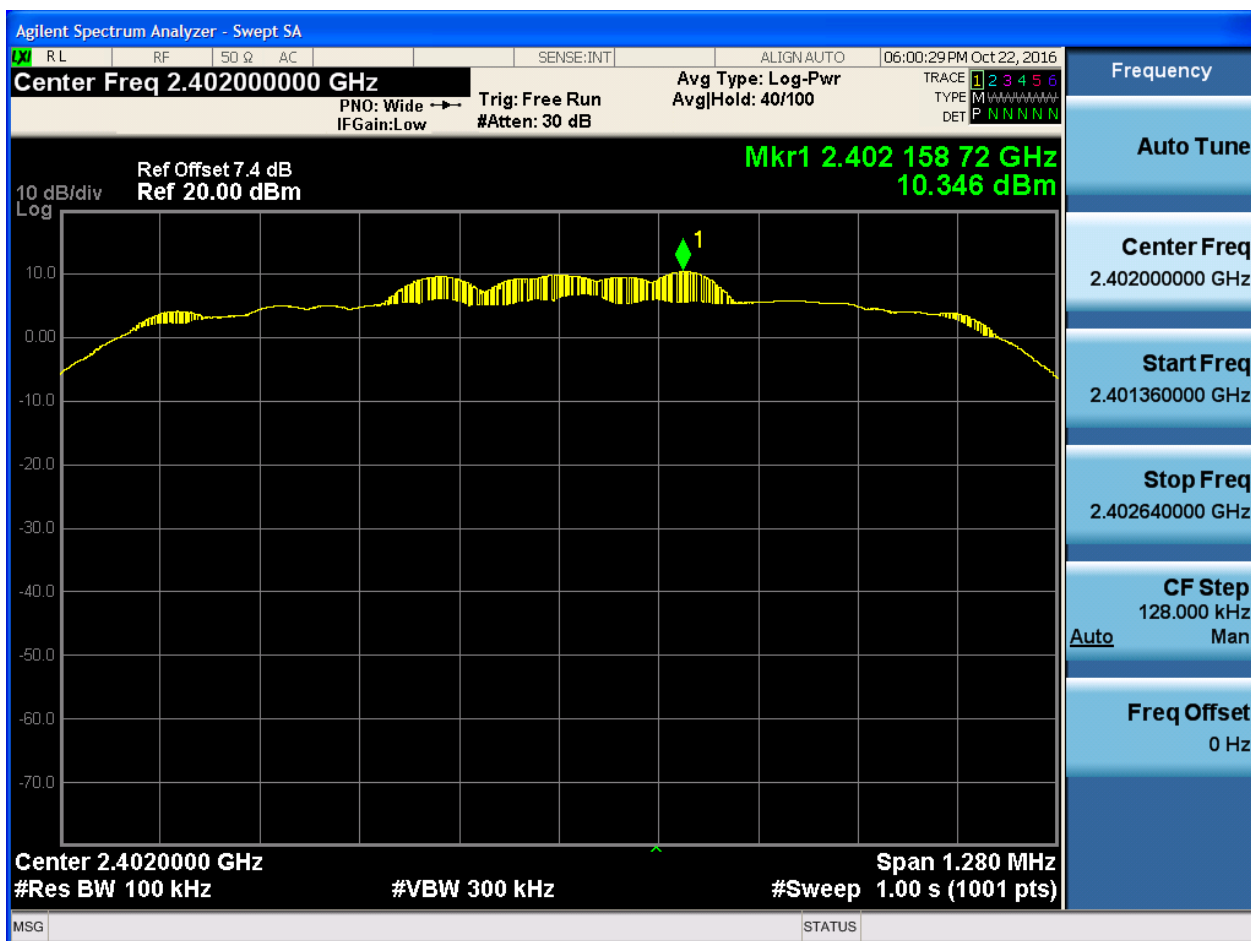




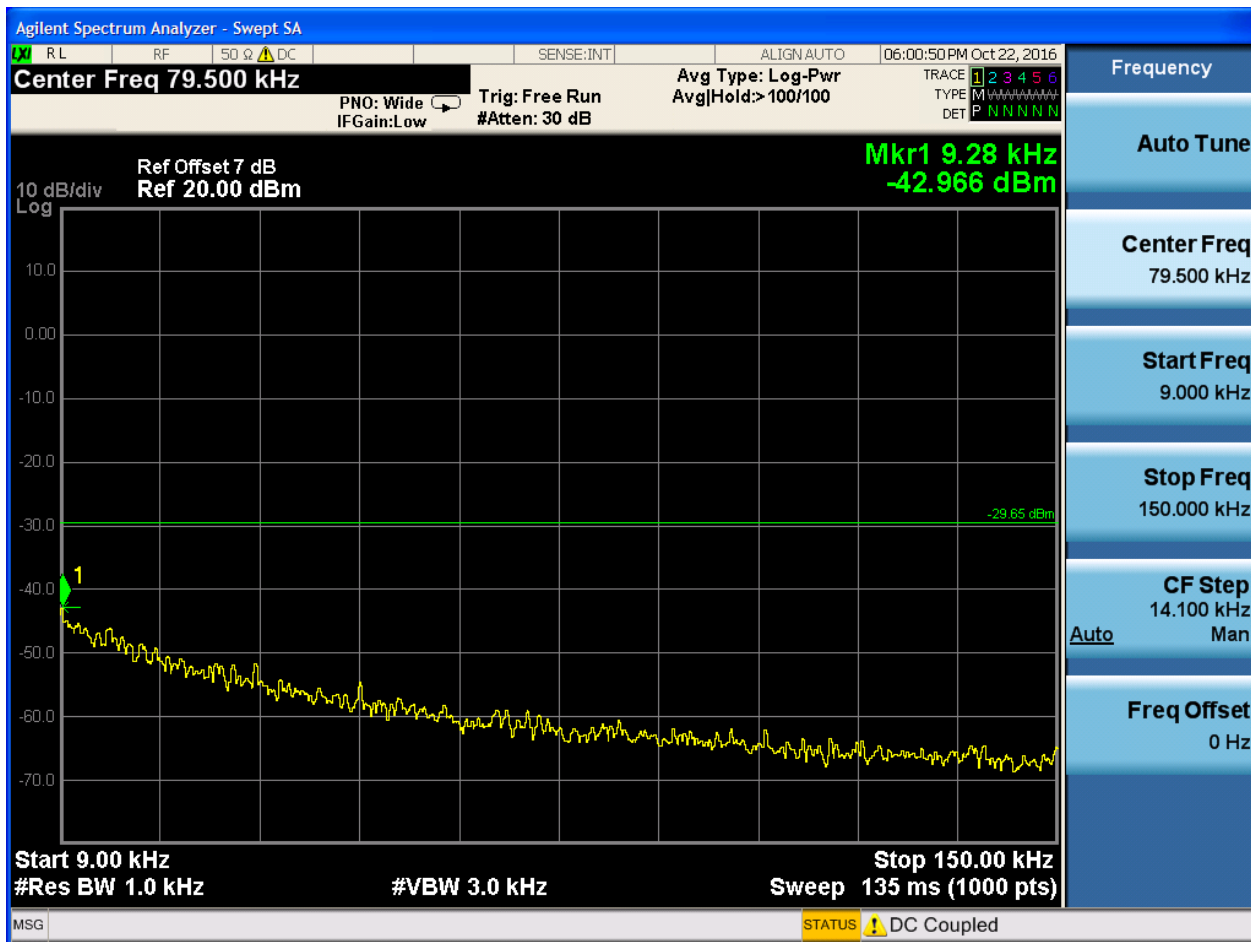


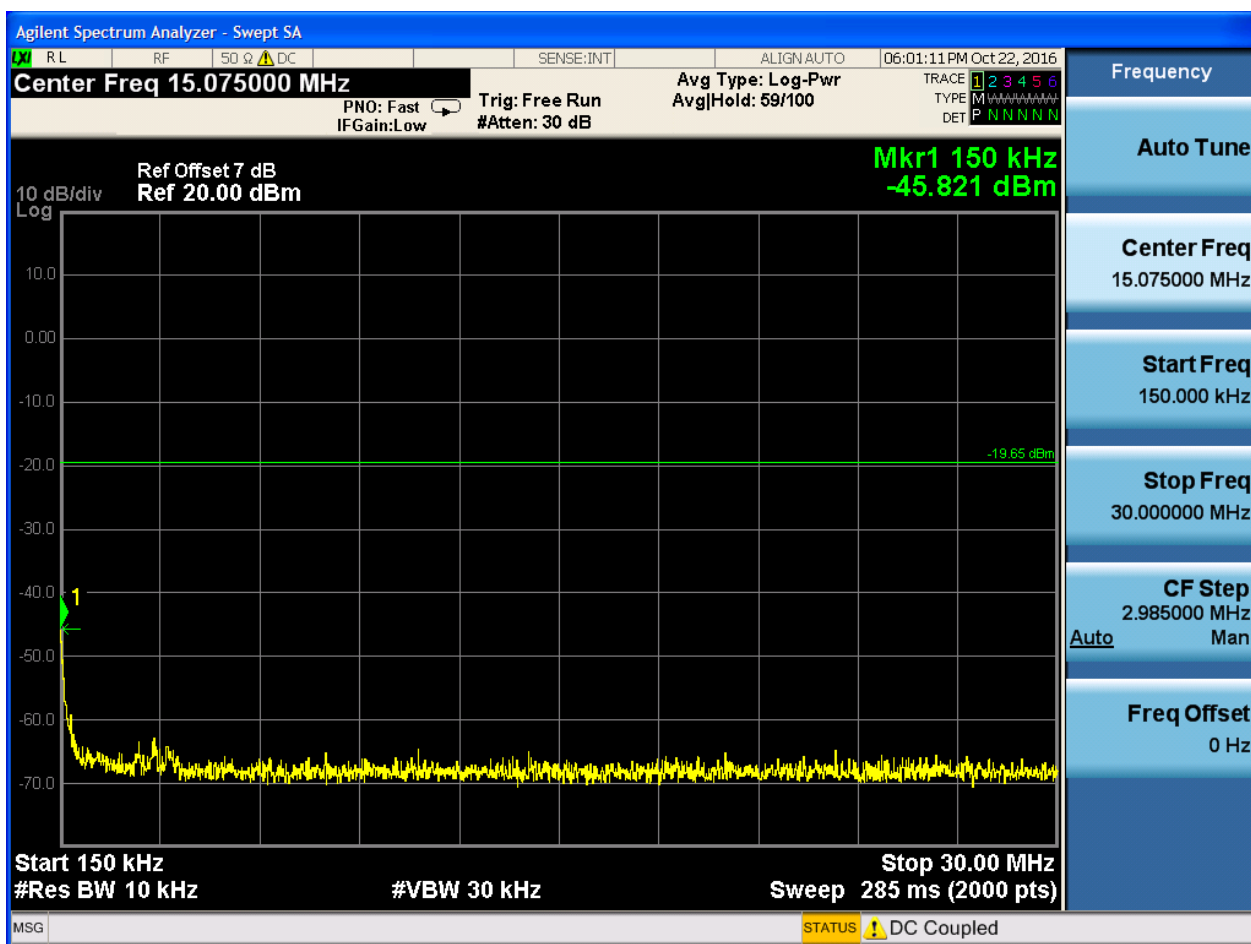
2.7 TM3_3DH5_Ch0

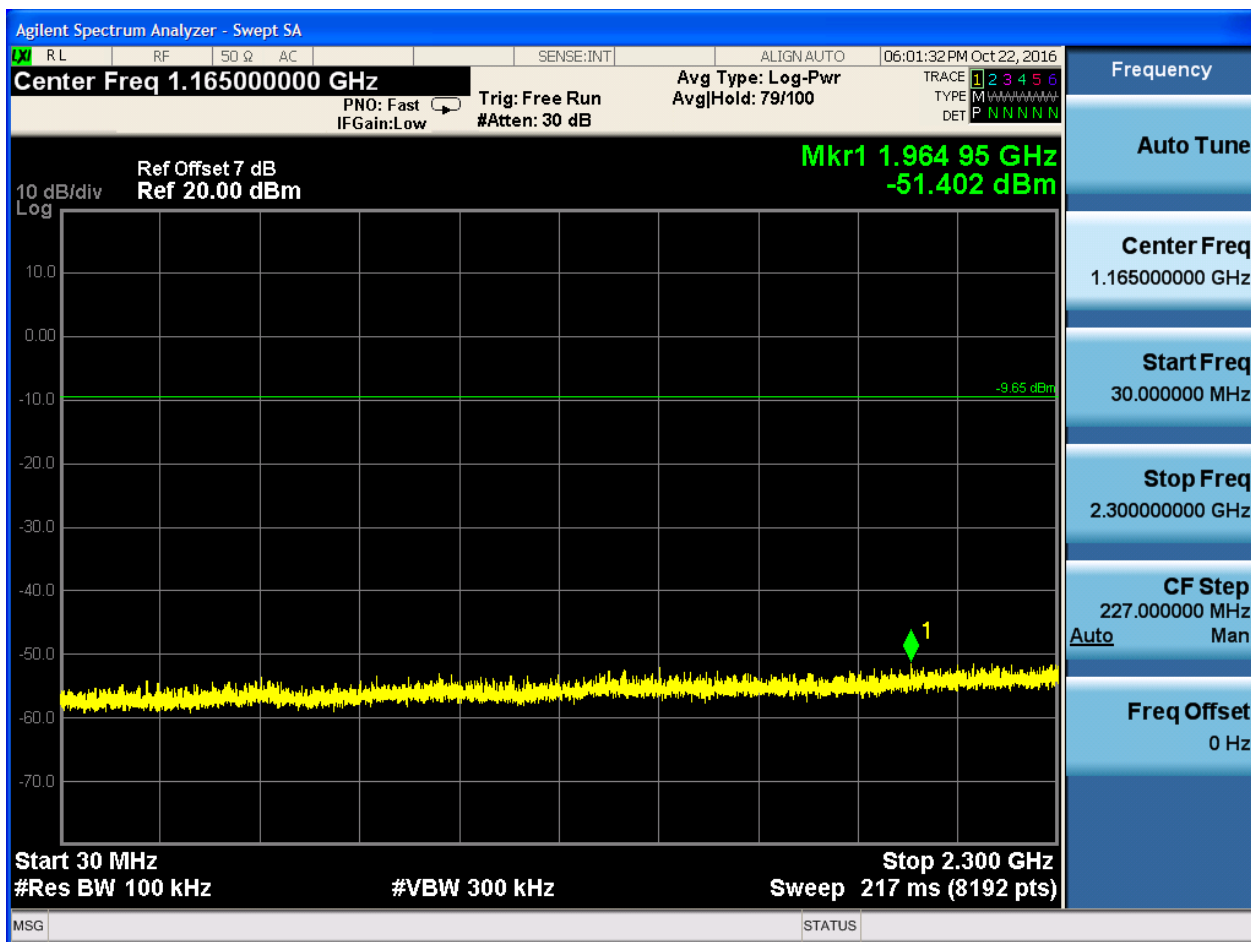
2.7.1 Pref

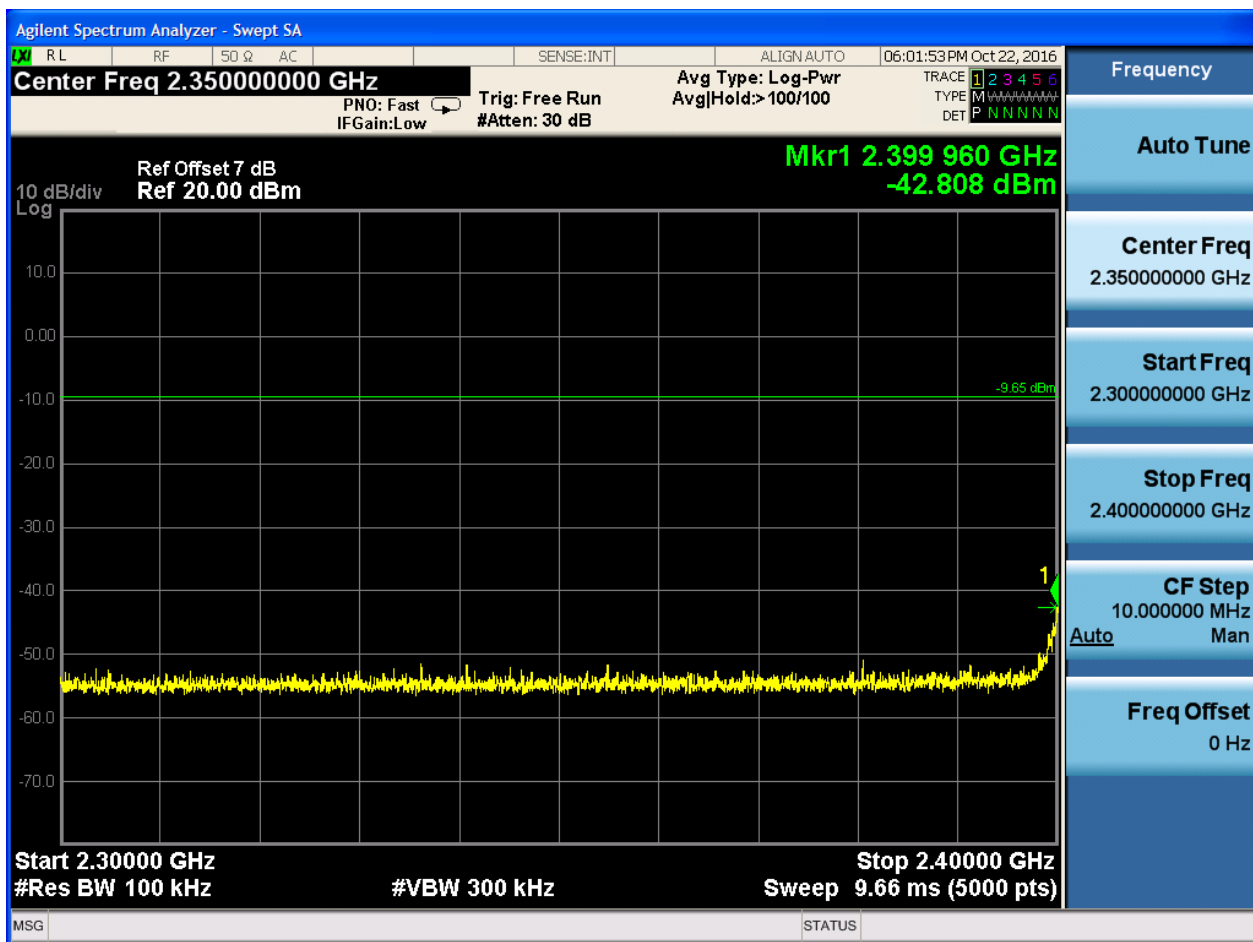


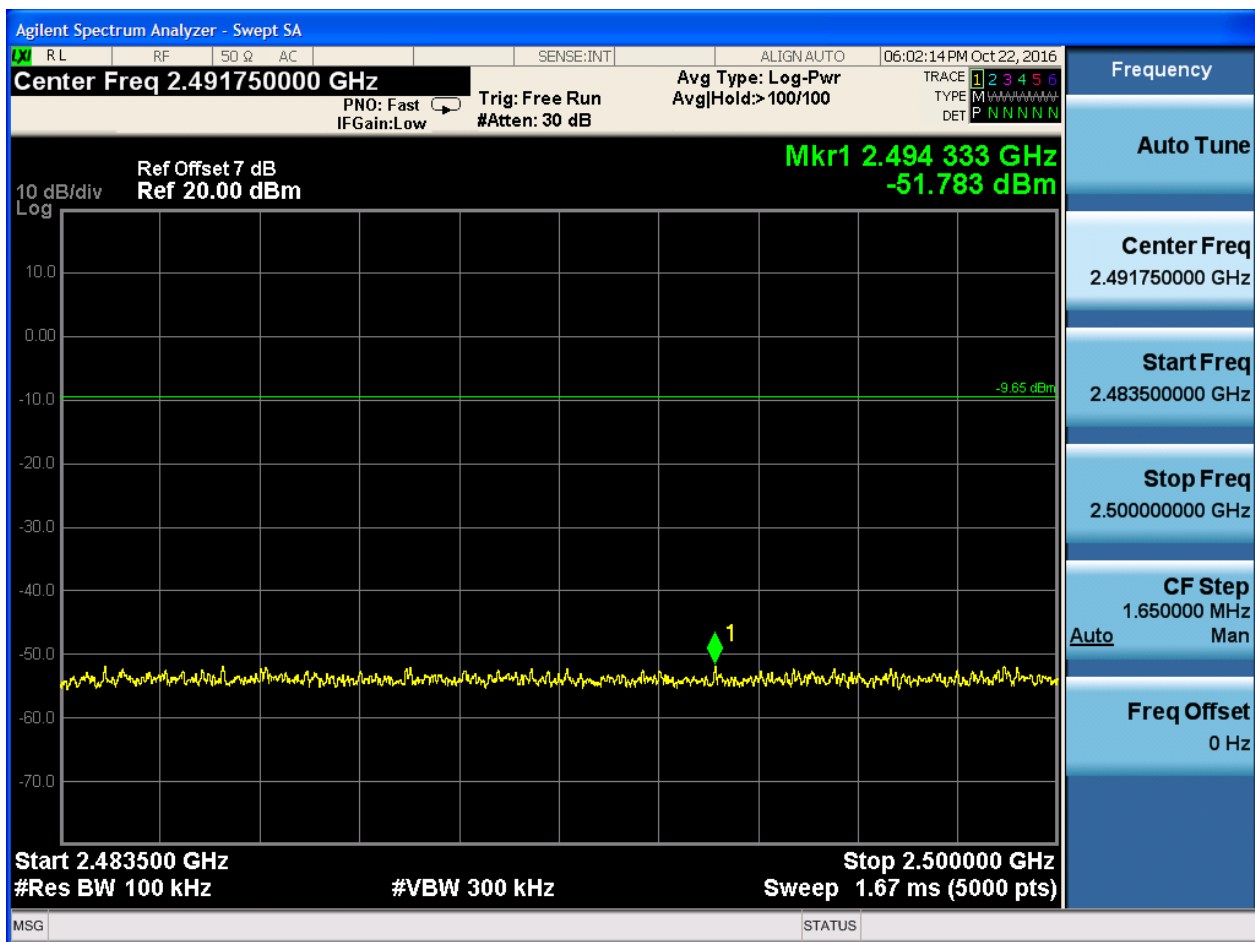
2.7.2 Puw









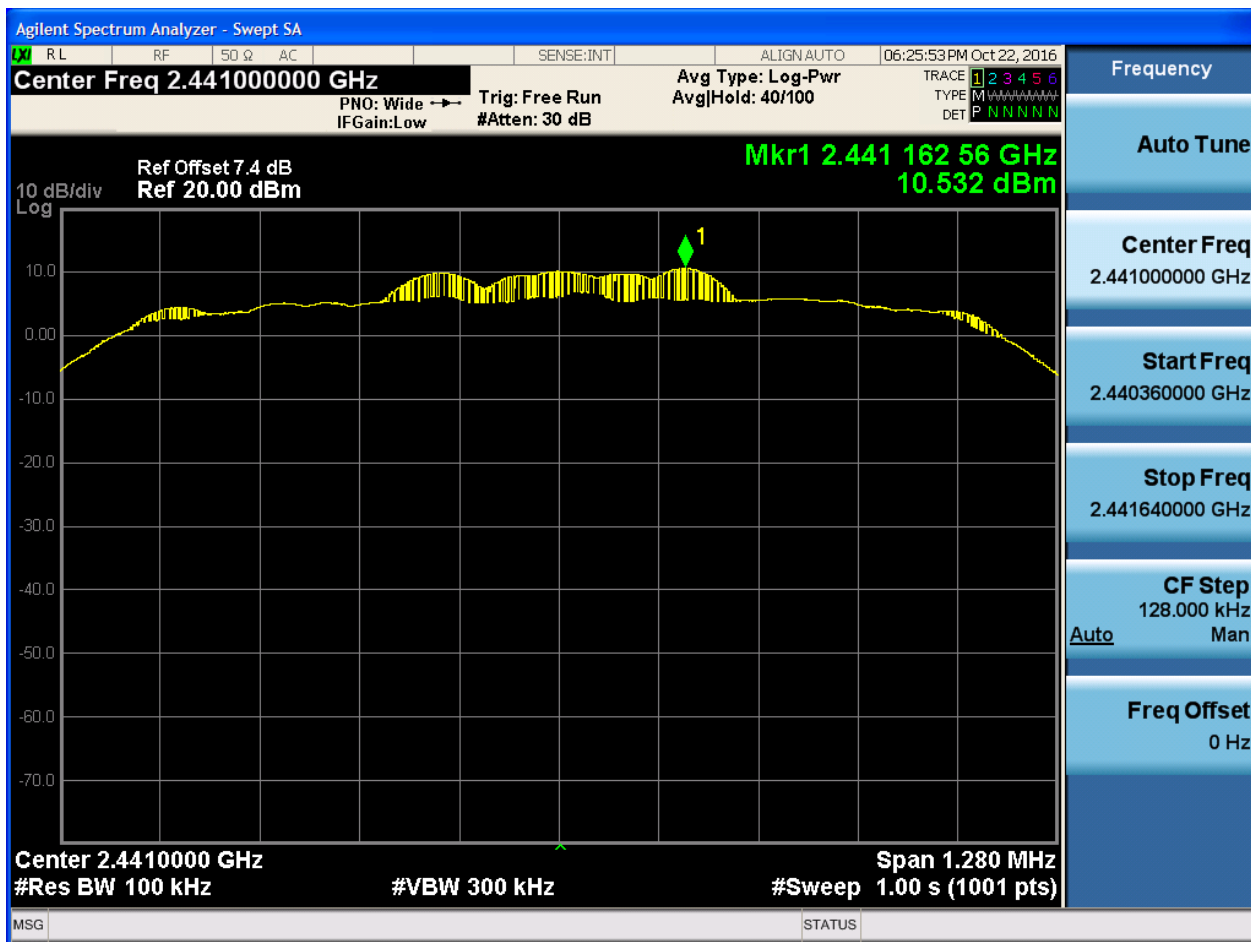






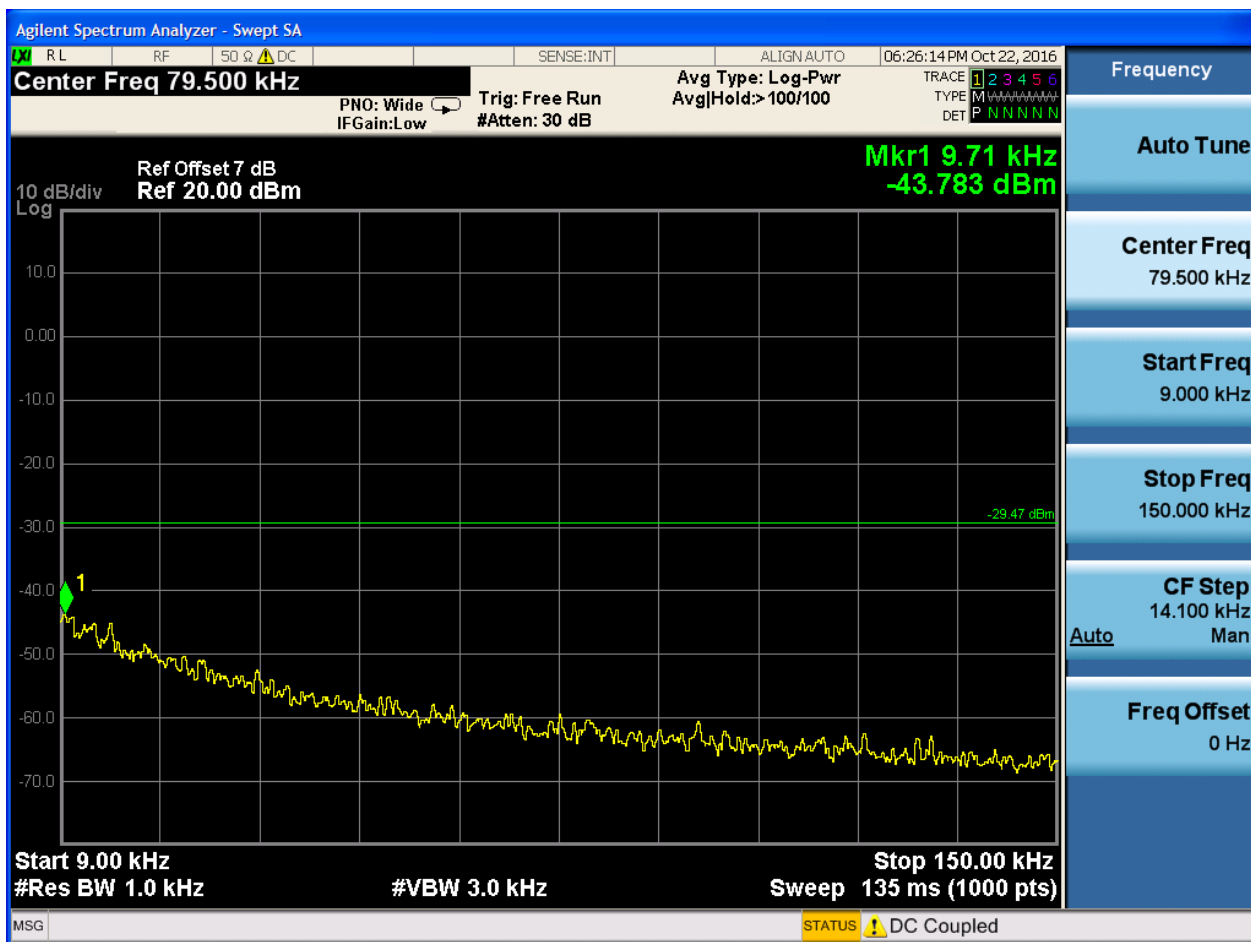
2.8 TM3_3DH5_Ch39

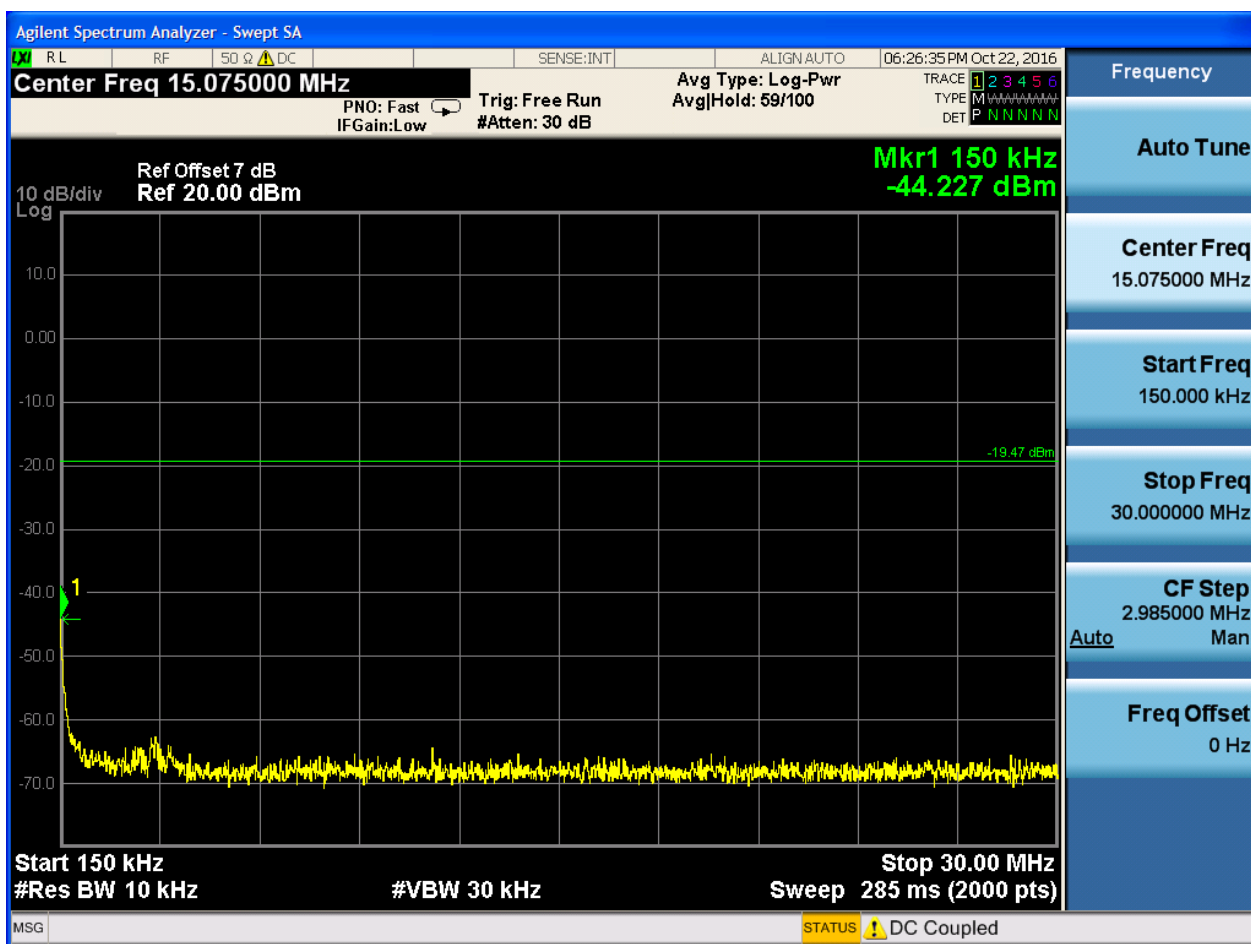
2.8.1 Pref

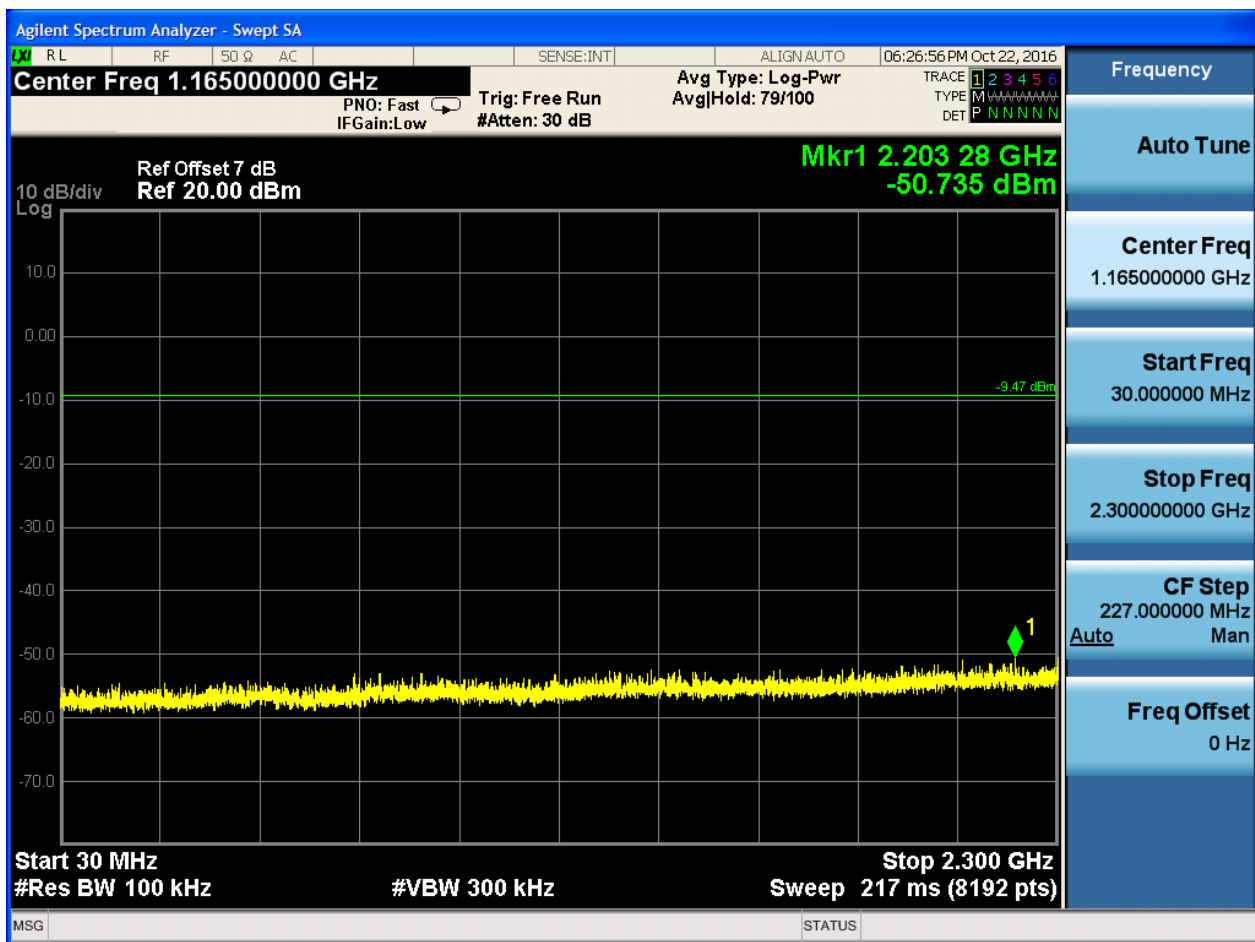


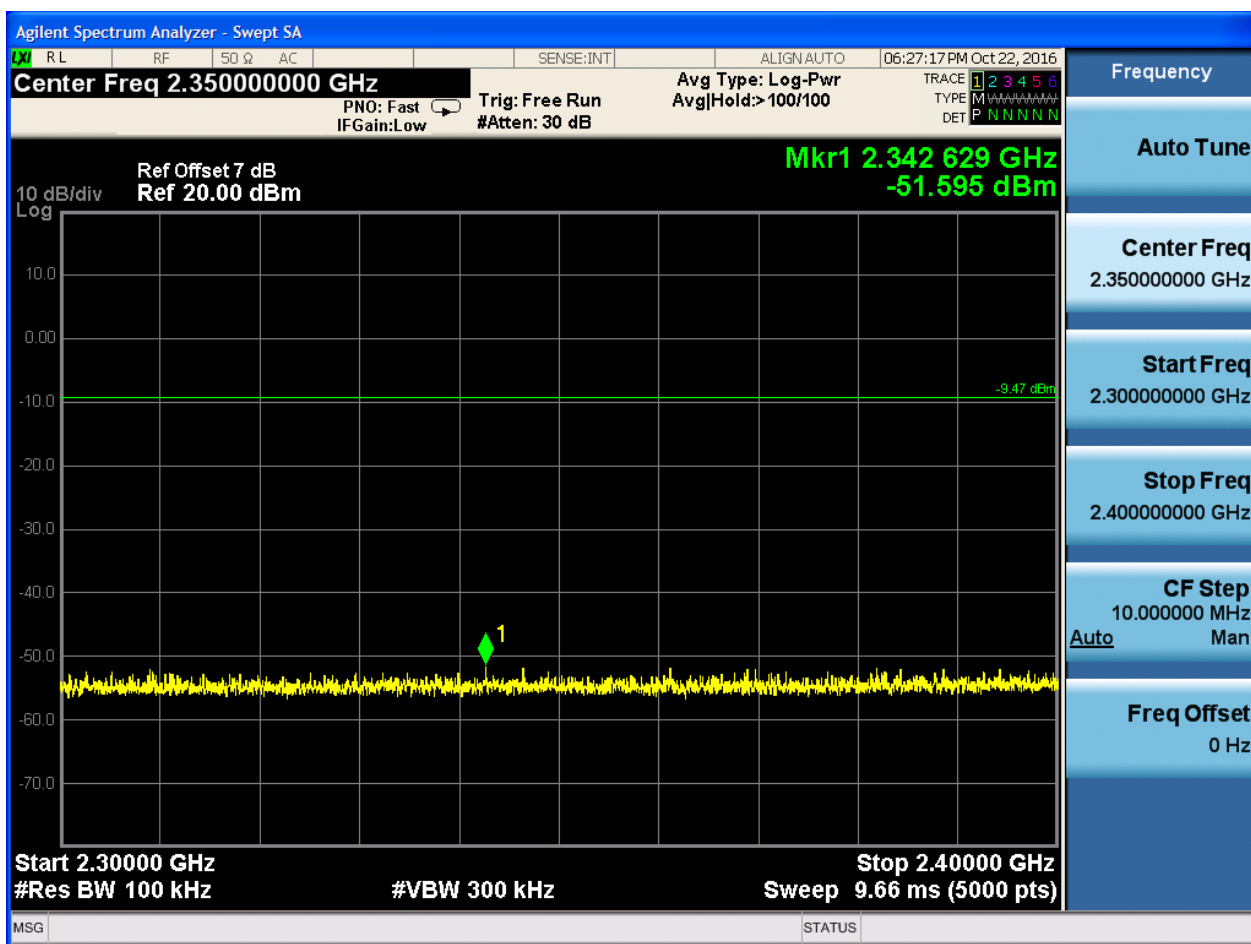


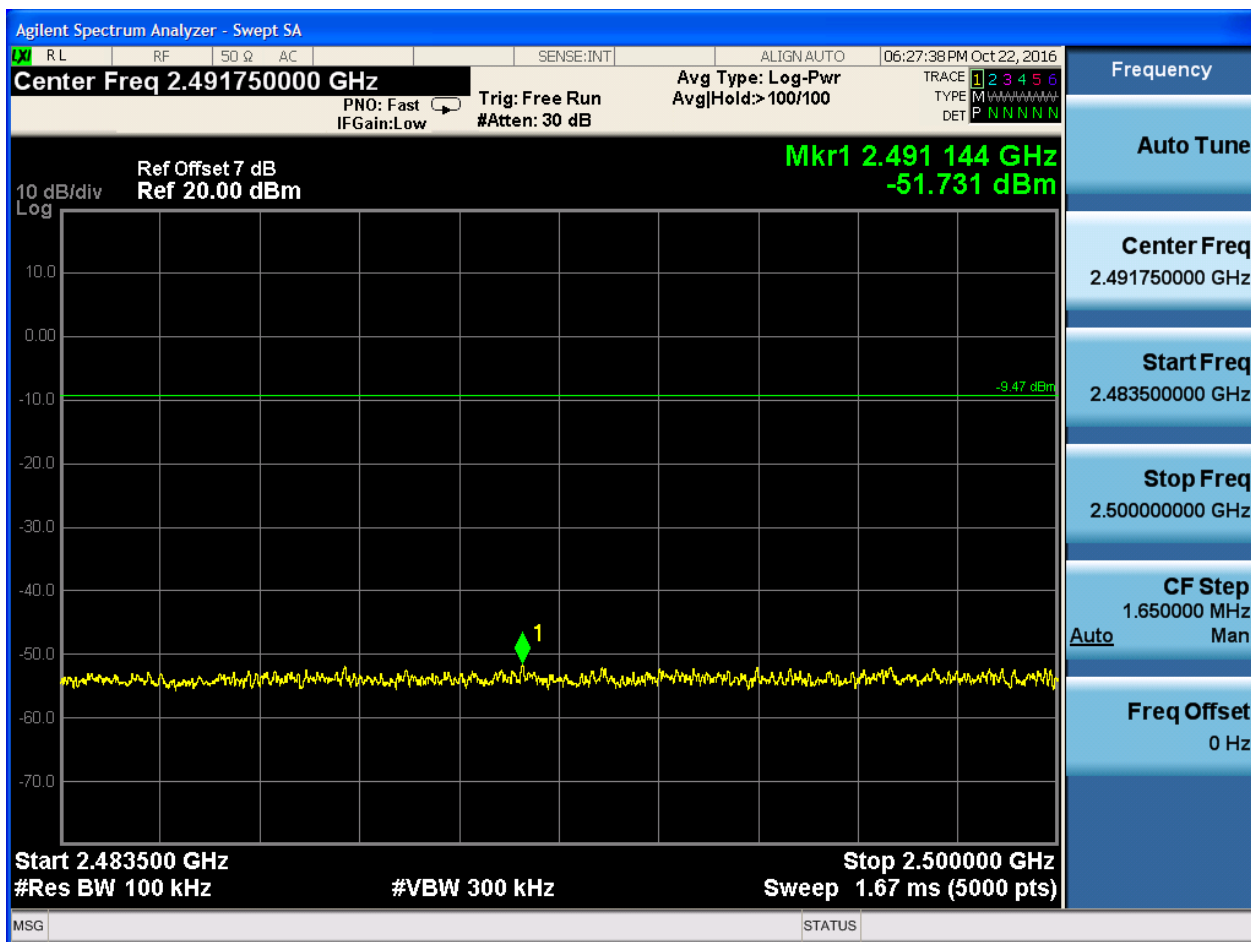
2.8.2 Puw









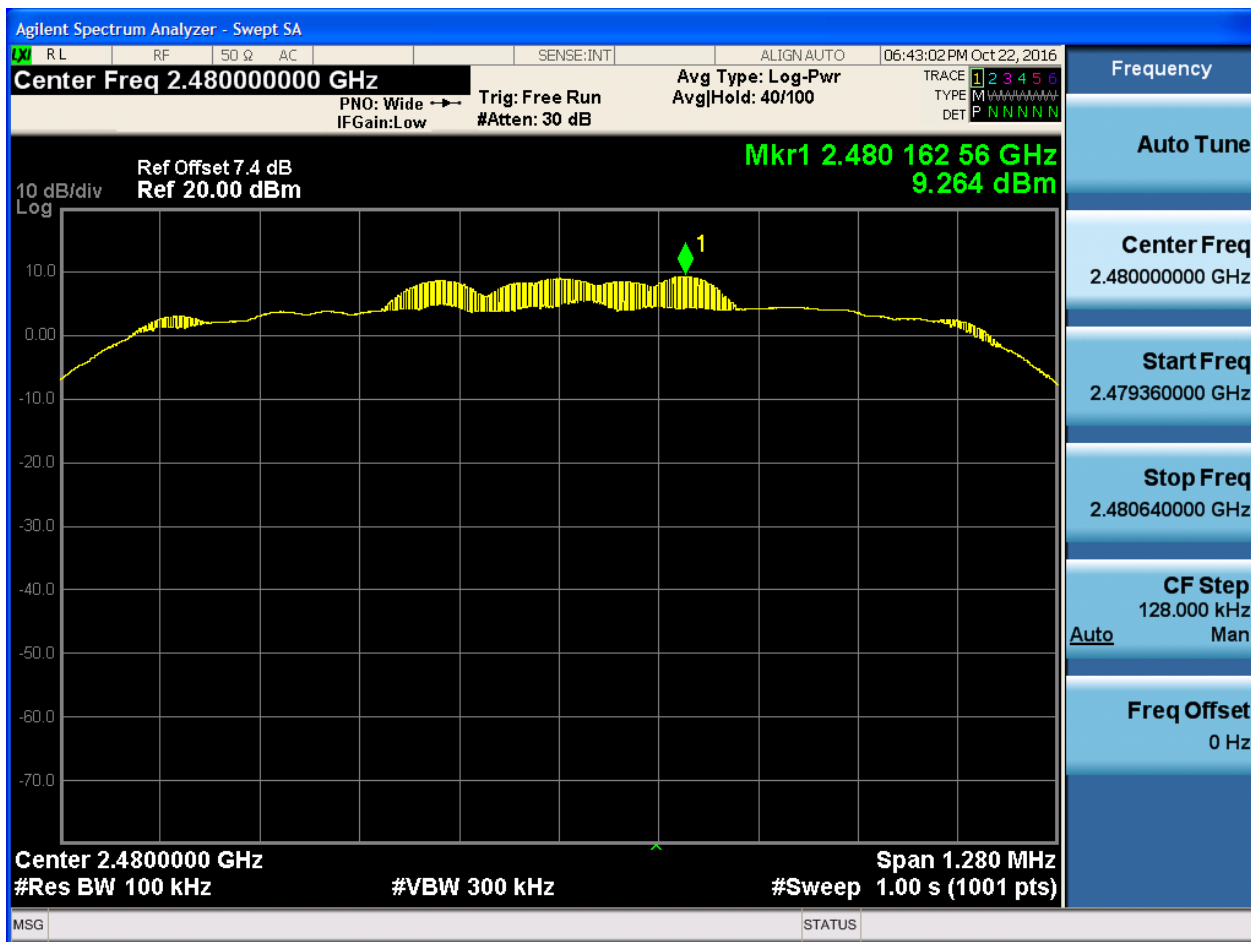






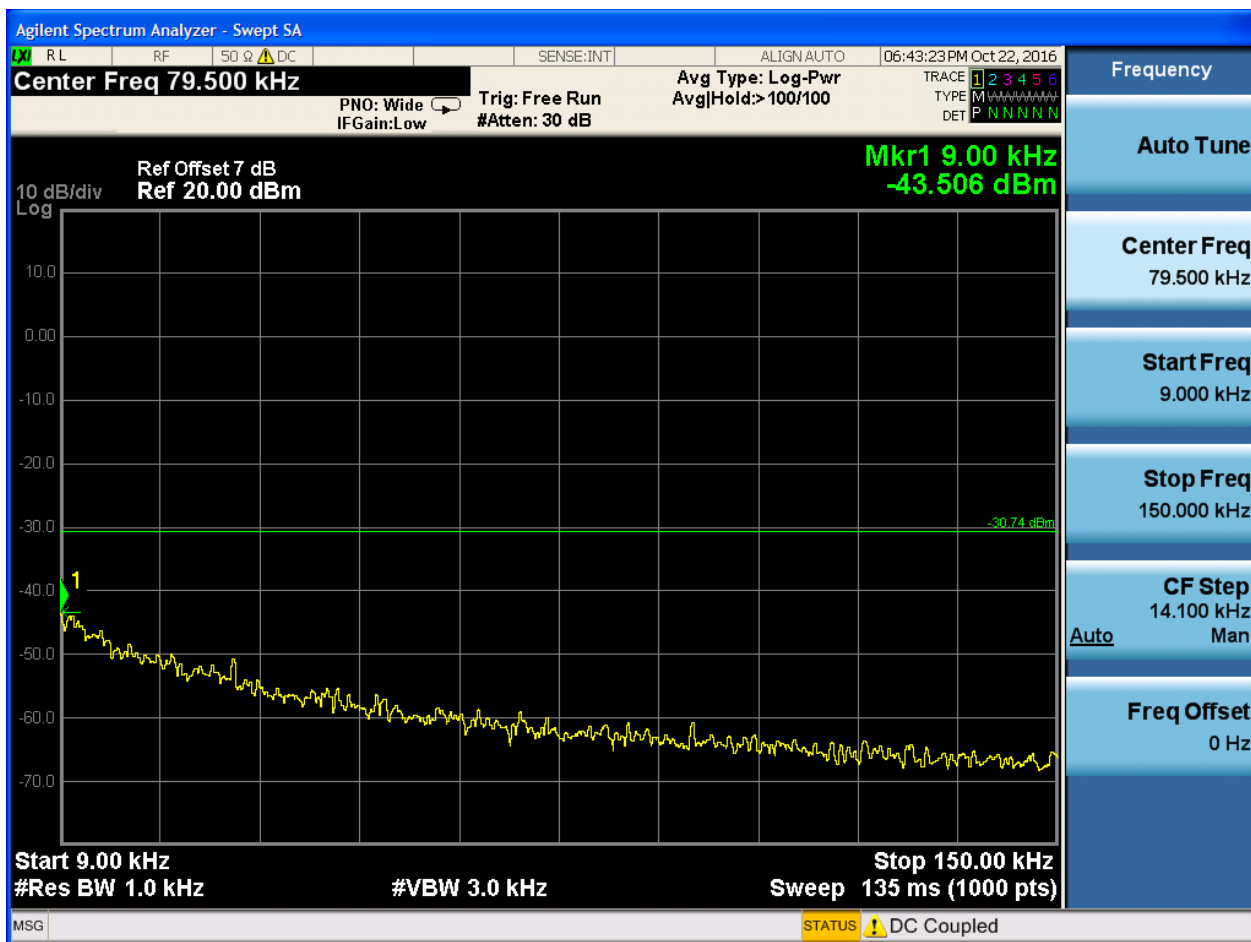
2.9 TM3_3DH5_Ch78

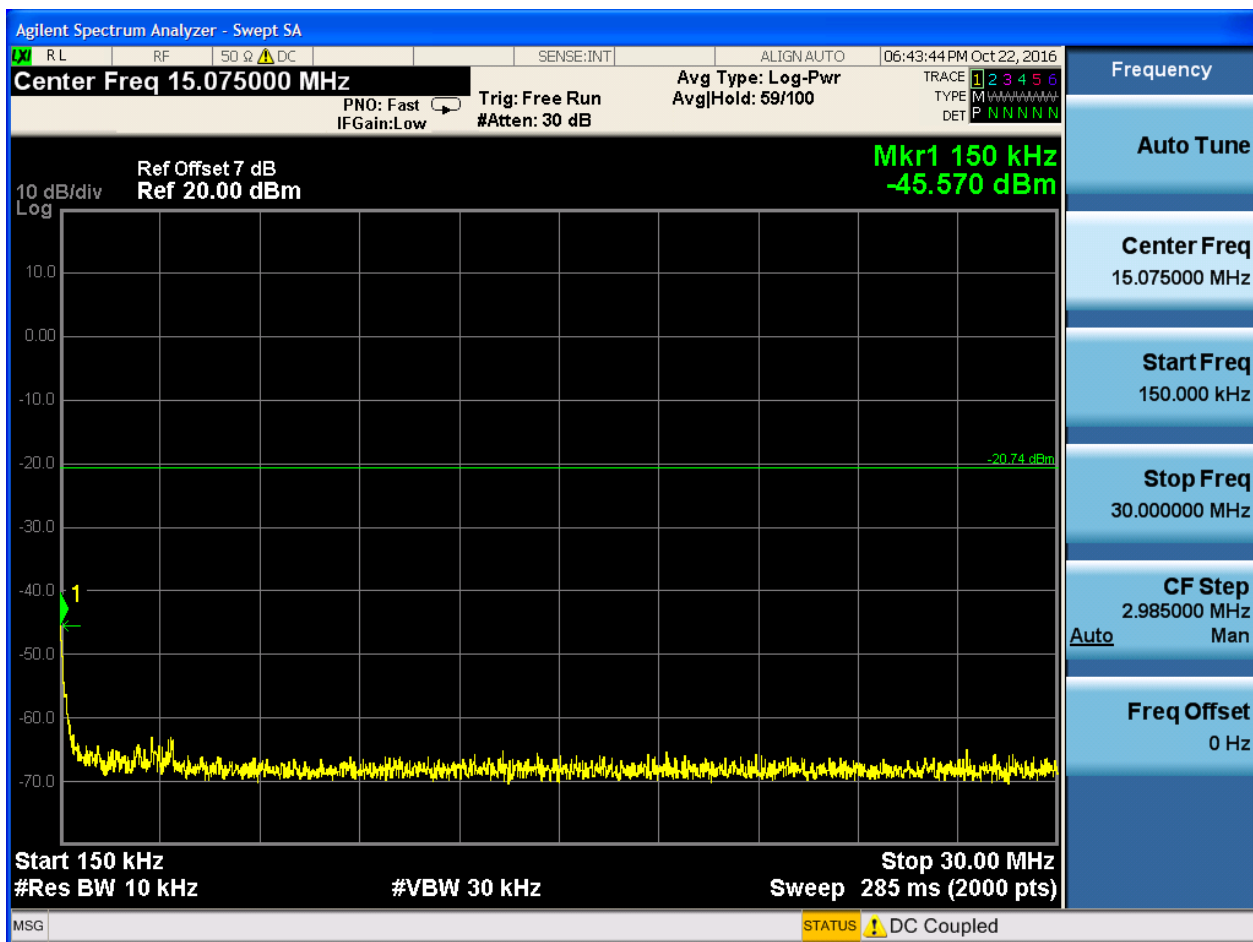
2.9.1 Pref

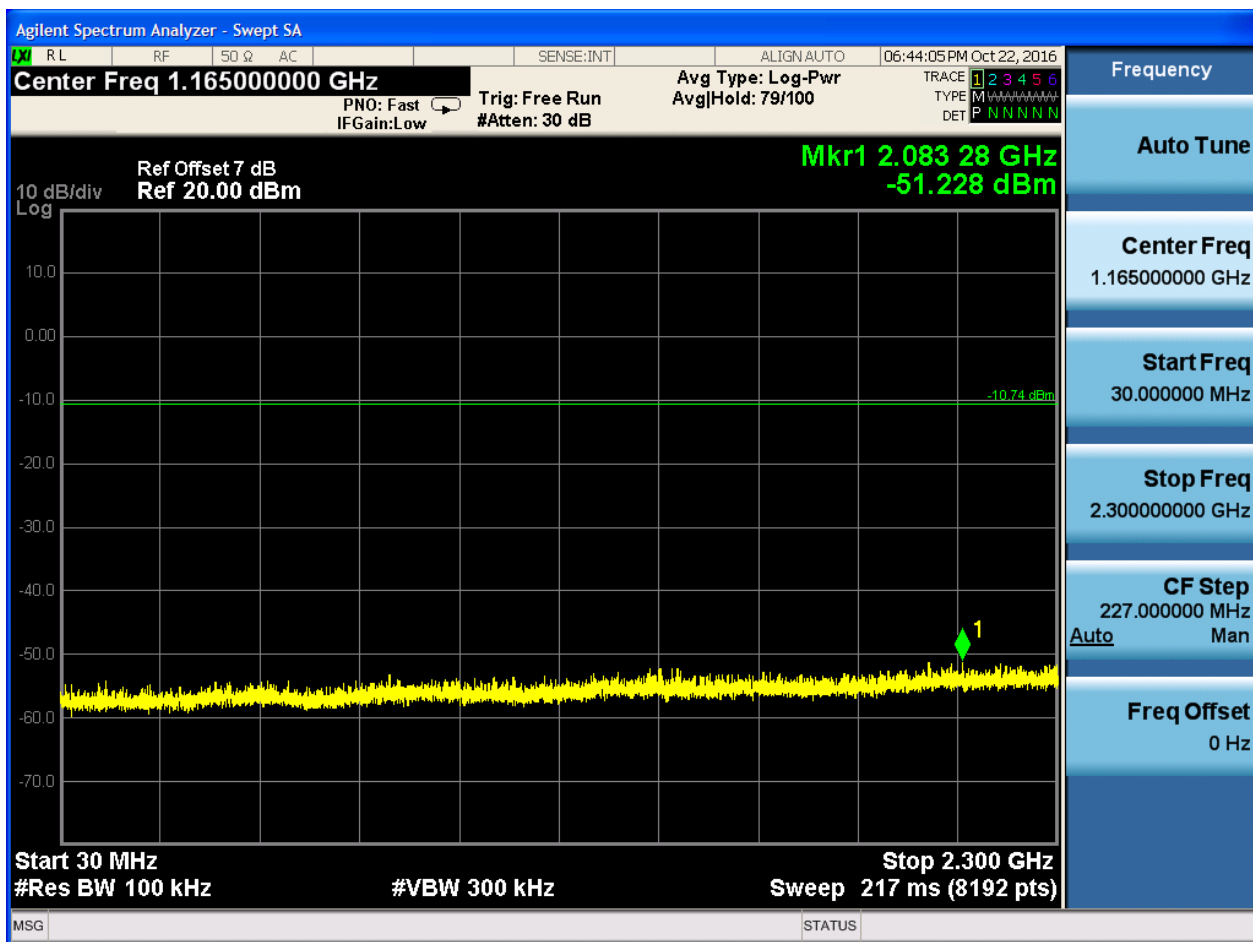


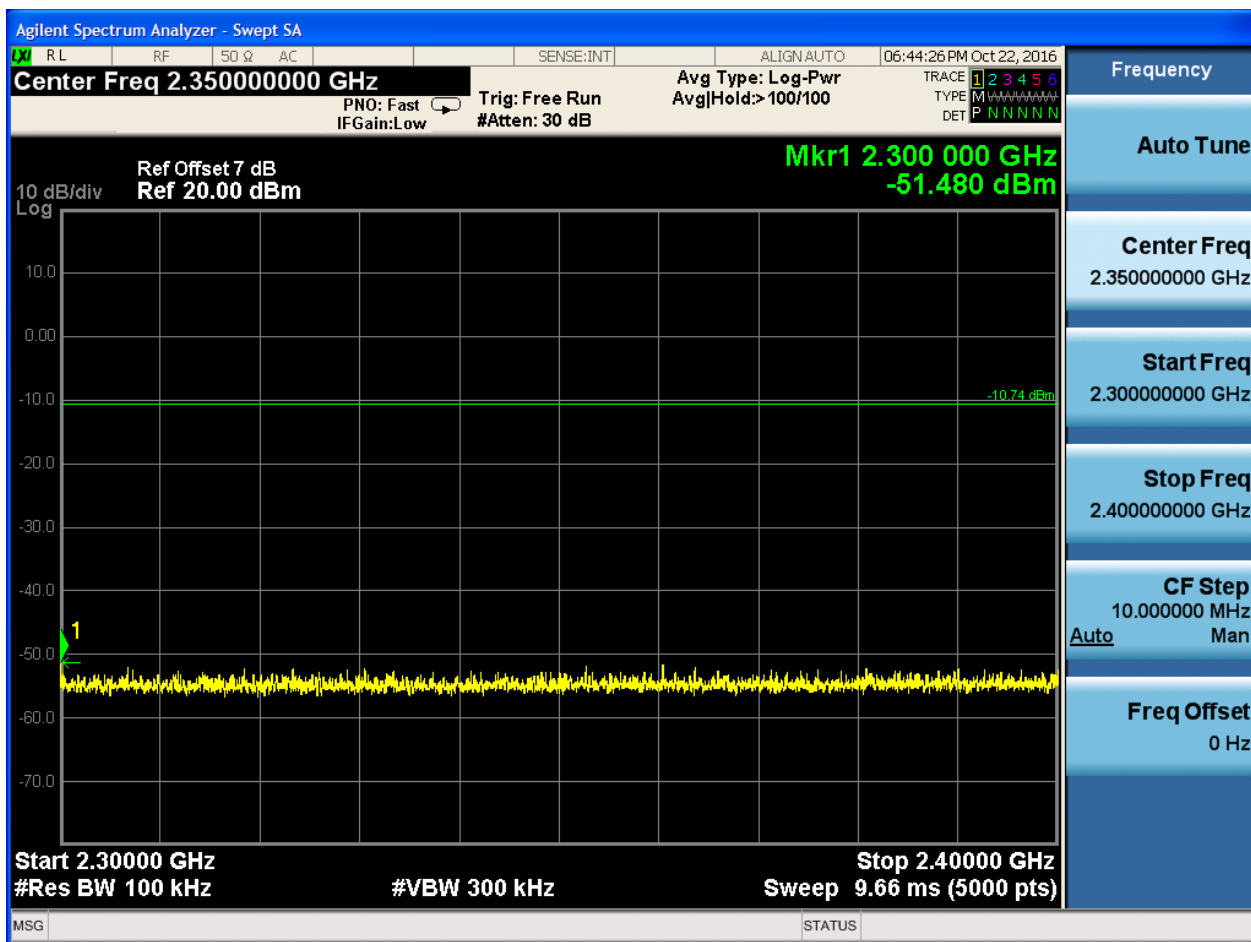


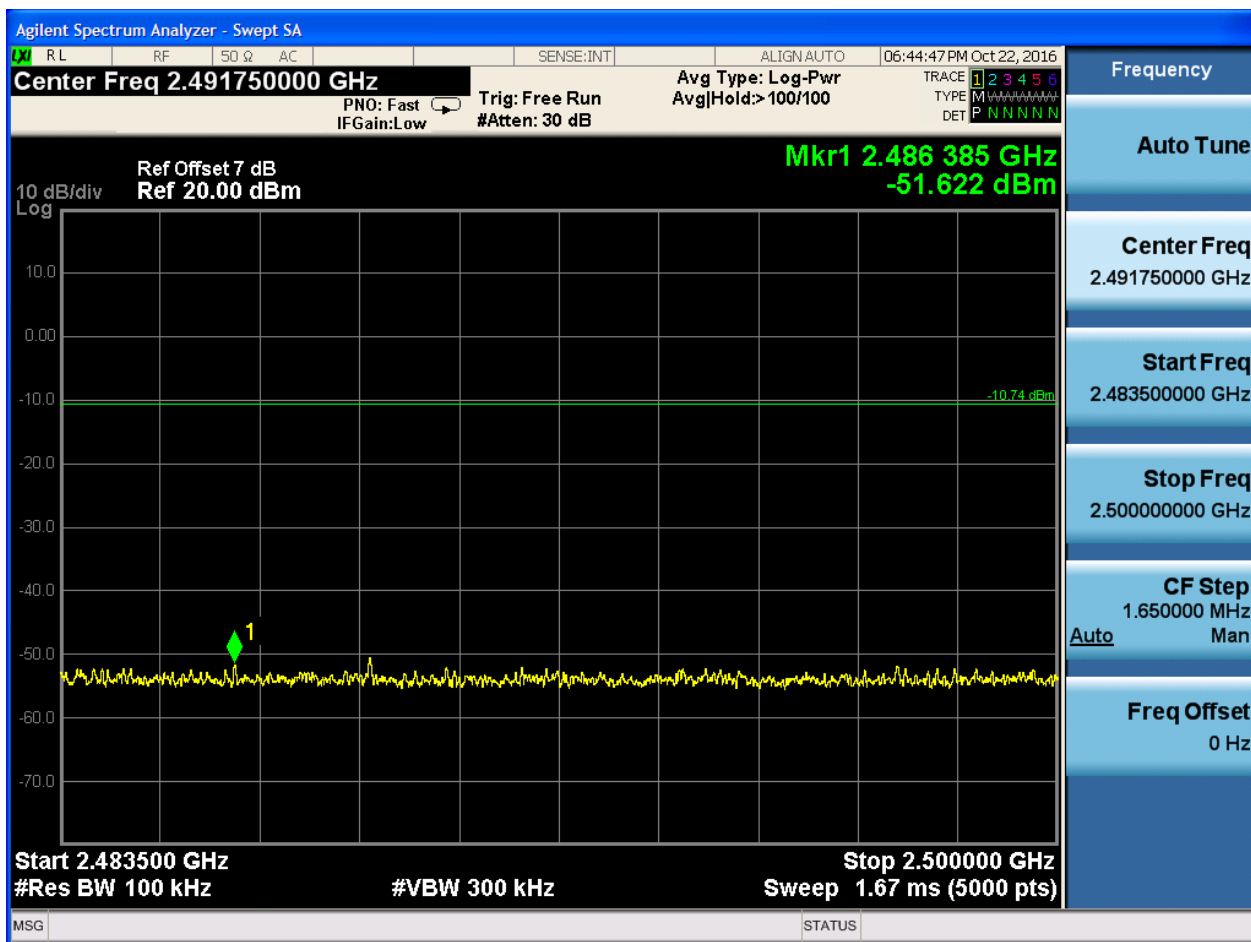
2.9.2 Puw













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 GHz to 1 GHz”,
- (Part 3): Test range of “1 GHz to 3 GHz”.
- (Part 4): Test range of “3 GHz to 18 GHz”,
- (Part 5): Test range of “18 GHz to 26.5 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
1 GHz to 3 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
	TM1_DH5_Ch78 (Worst Conf.)	< Limit	Pass
3 GHz to 18 GHz	TM1_DH5_Ch0 (Worse Conf.)	< Limit	Pass
18 GHz to 26.5 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass

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

2 Result Plot

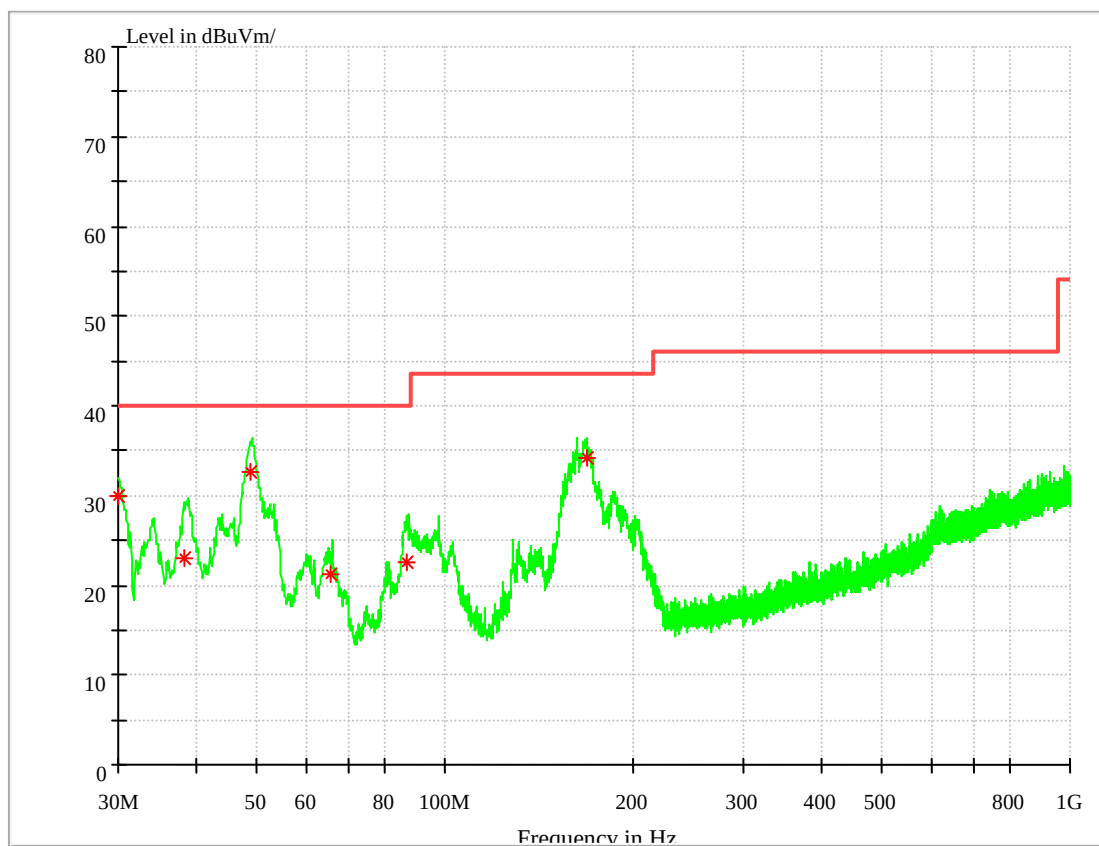
Part 1: Testing Range of “9 kHz to 30MHz”

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).



Frequency (MHz)	Level (dBμ V/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Trans d. (dB)
30.049200	30.02	40.00	9.98	100.0	V	162.0	14.6
38.414800	23.05	40.00	16.95	173.0	V	202.0	15.4
48.978800	32.73	40.00	7.27	100.0	V	272.0	15.2
65.651850	21.24	40.00	18.76	100.0	V	283.0	11.9
87.132400	22.66	40.00	17.34	145.0	V	113.0	11.7
168.478800	34.19	43.50	9.31	100.0	V	232.0	11.0

Note:

1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)



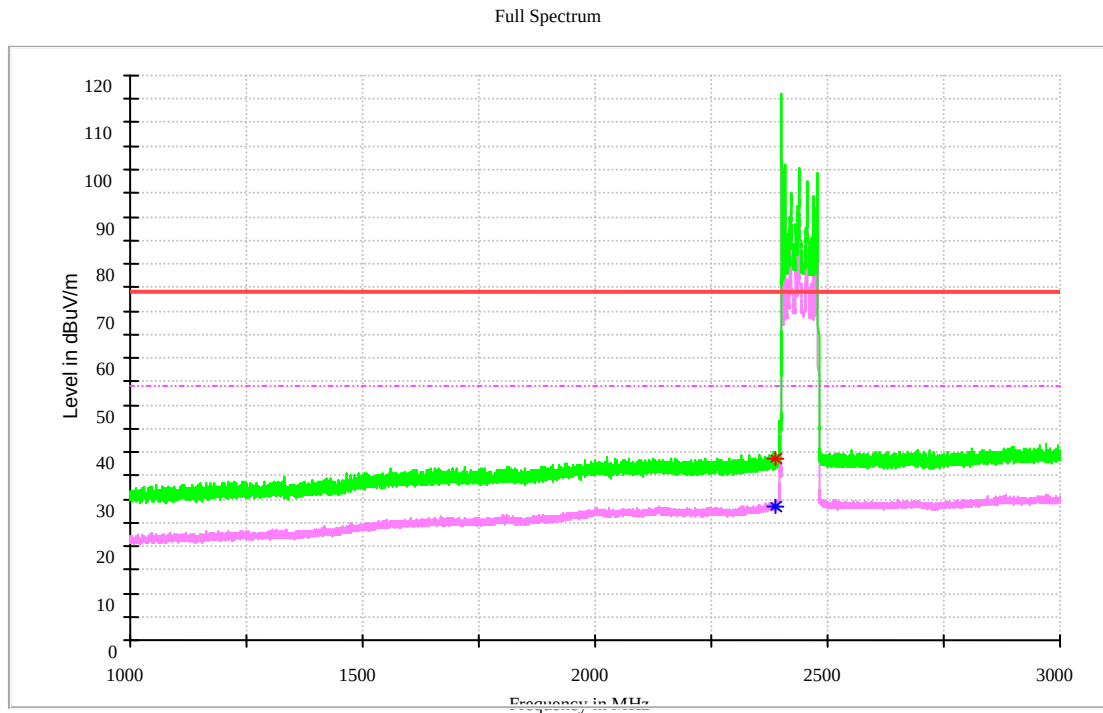
The reading level is calculated by software which is not shown in the sheet.

2, Margin=Limit - Level

Part 3: Testing Range of “1GHz to 3GHz”

- Note 1: The testing range of “1 GHz to 3 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



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2390	28.32	54.00	25.68	100.0	H	350.0	-2.1

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2390	38.44	74.00	35.56	100.0	H	350.0	-2.1

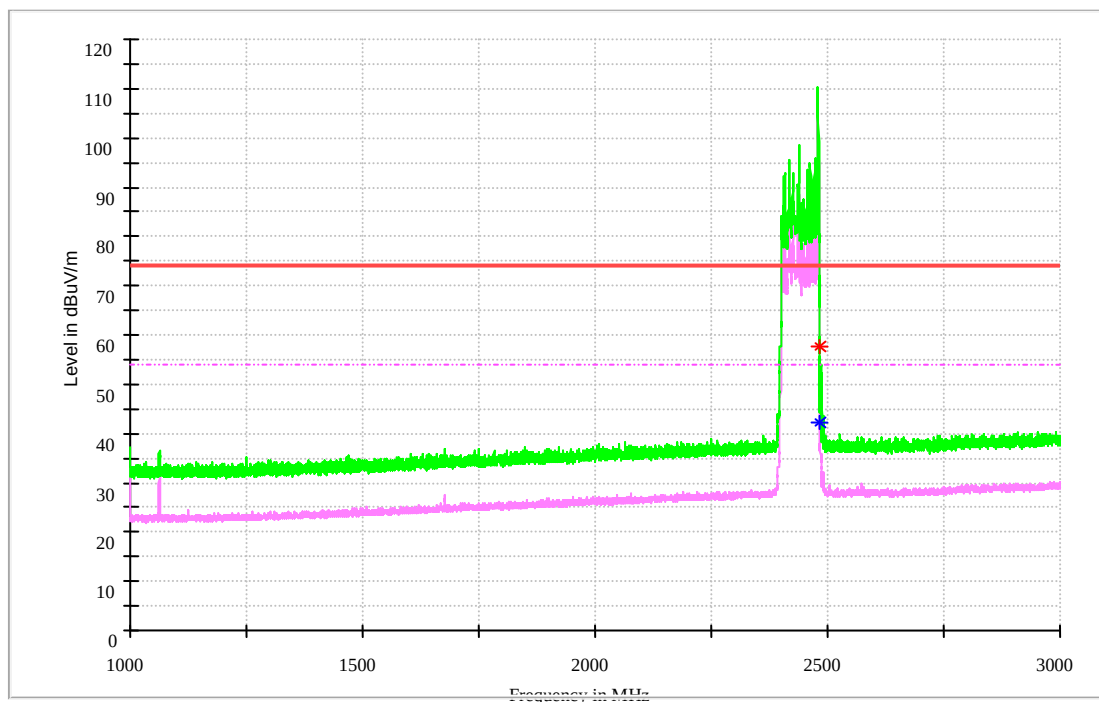
Note2:

1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is calculated by software which is not shown in the sheet.

2, Margin=Limit - Level

Channel 78



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2483.5	42.36	54.00	11.64	100.0	H	202.0	7.2

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2483.5	57.68	74.00	16.32	100.0	H	202.0	7.2

Note2:

1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

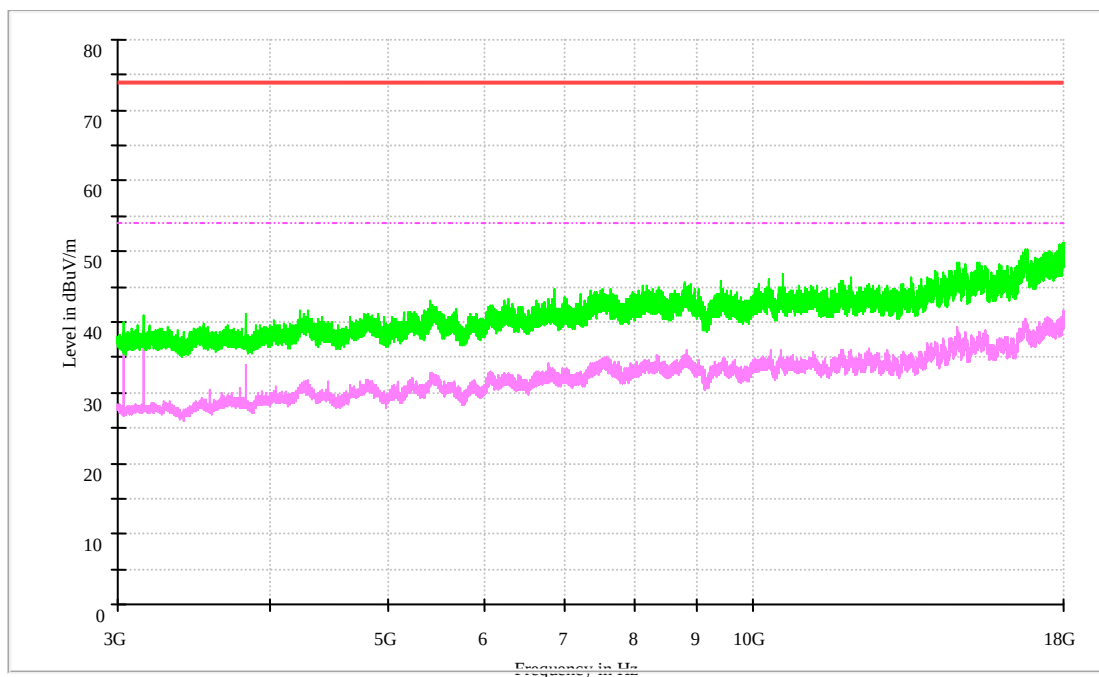
The reading level is calculated by software which is not shown in the sheet.

2, Margin=Limit - Level

Part 4: Testing Range of “3 GHz to 18 GHz”

- Note 1: The test results and plot for testing range of “3 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 “3 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).

Full Spectrum





Part 5: Testing Range of “18 GHz to 26.5 GHz”

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

Appendix I: AC Power Line Conducted Emissions

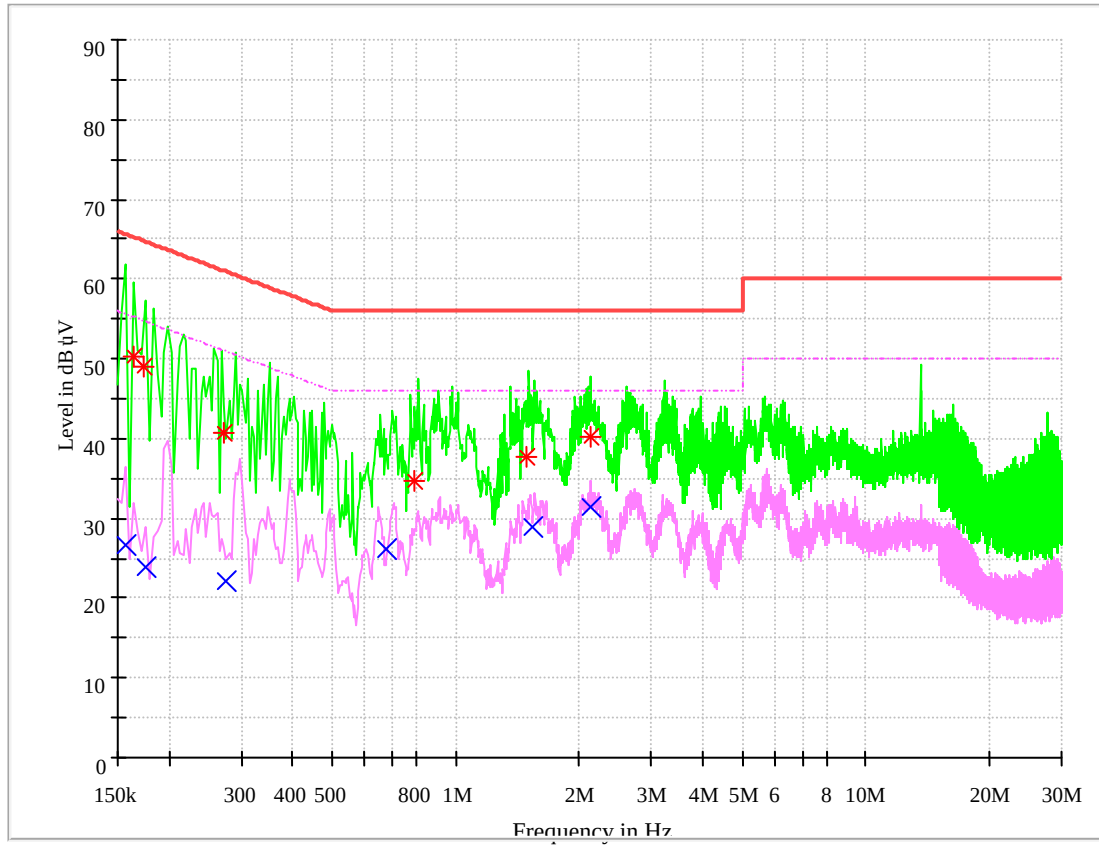
1 Result Table

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



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.157672	26.54	55.59	9.7	29.05	N	FLO
0.174631	23.82	54.74	9.7	30.92	N	FLO
0.276199	22.22	50.93	9.7	28.71	N	FLO
0.679604	26.26	46.00	9.7	19.74	L1	FLO
1.531916	28.82	46.00	9.7	17.18	L1	FLO
2.136414	31.48	46.00	9.8	14.52	L1	FLO

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.163867	50.26	65.27	9.7	15.00	N	FLO
0.172775	48.94	64.83	9.7	15.89	N	FLO
0.272274	40.79	61.05	9.7	20.26	N	FLO
0.789079	34.65	56.00	9.7	21.35	N	FLO
1.492878	37.83	56.00	9.7	18.17	N	FLO
2.136524	40.12	56.00	9.7	15.88	N	FLO

Note2:

1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is calculated by software which is not shown in the sheet.

2, Margin=Limit - Level

END