



Appendix A: 20dB Emission Bandwidth (EBW)

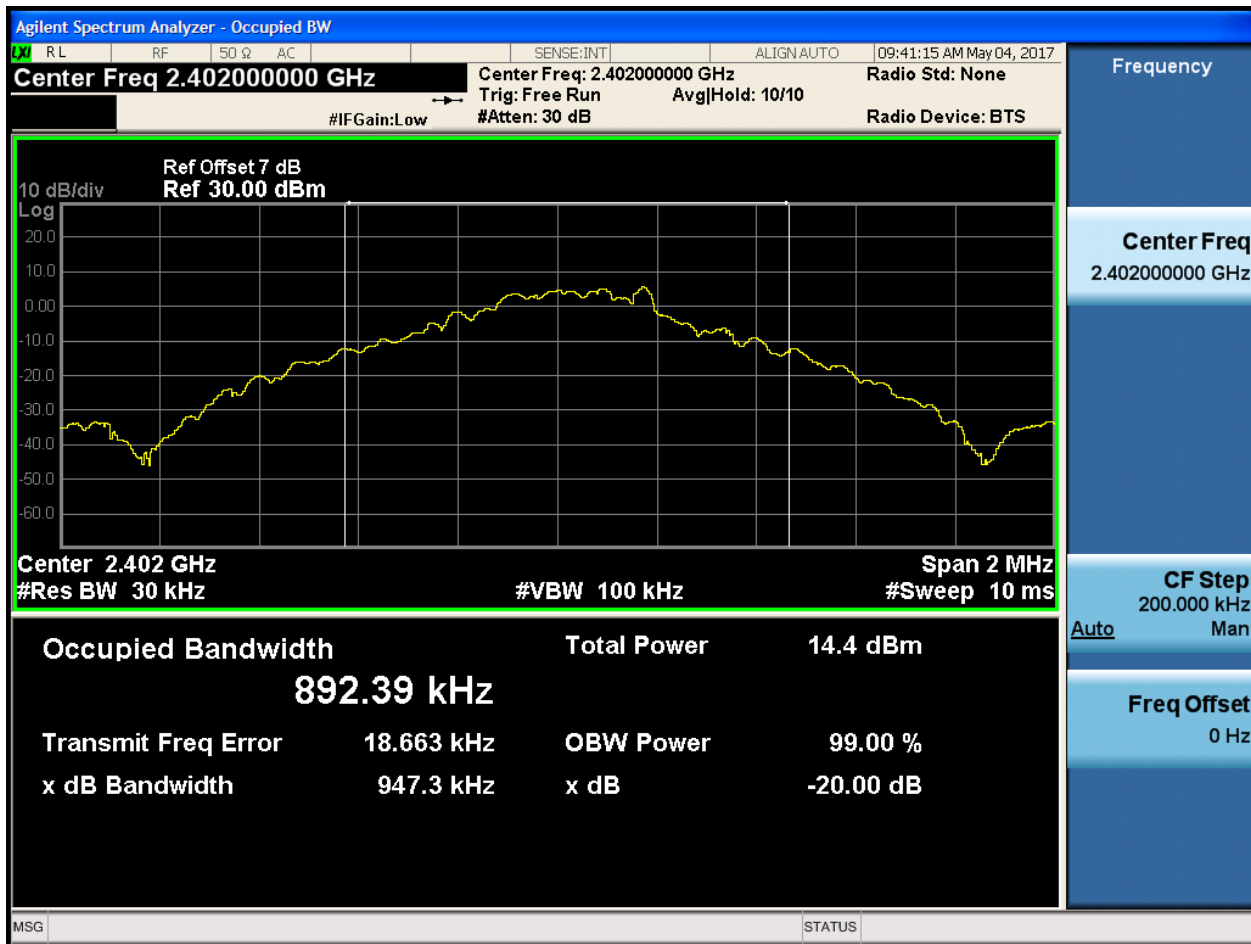


1 Result Table

EUT Conf.	EBW [MHz]	Verdict
TM1_DH5_Ch0	0.95	Pass
TM1_DH5_Ch39	0.95	Pass
TM1_DH5_Ch78	0.94	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

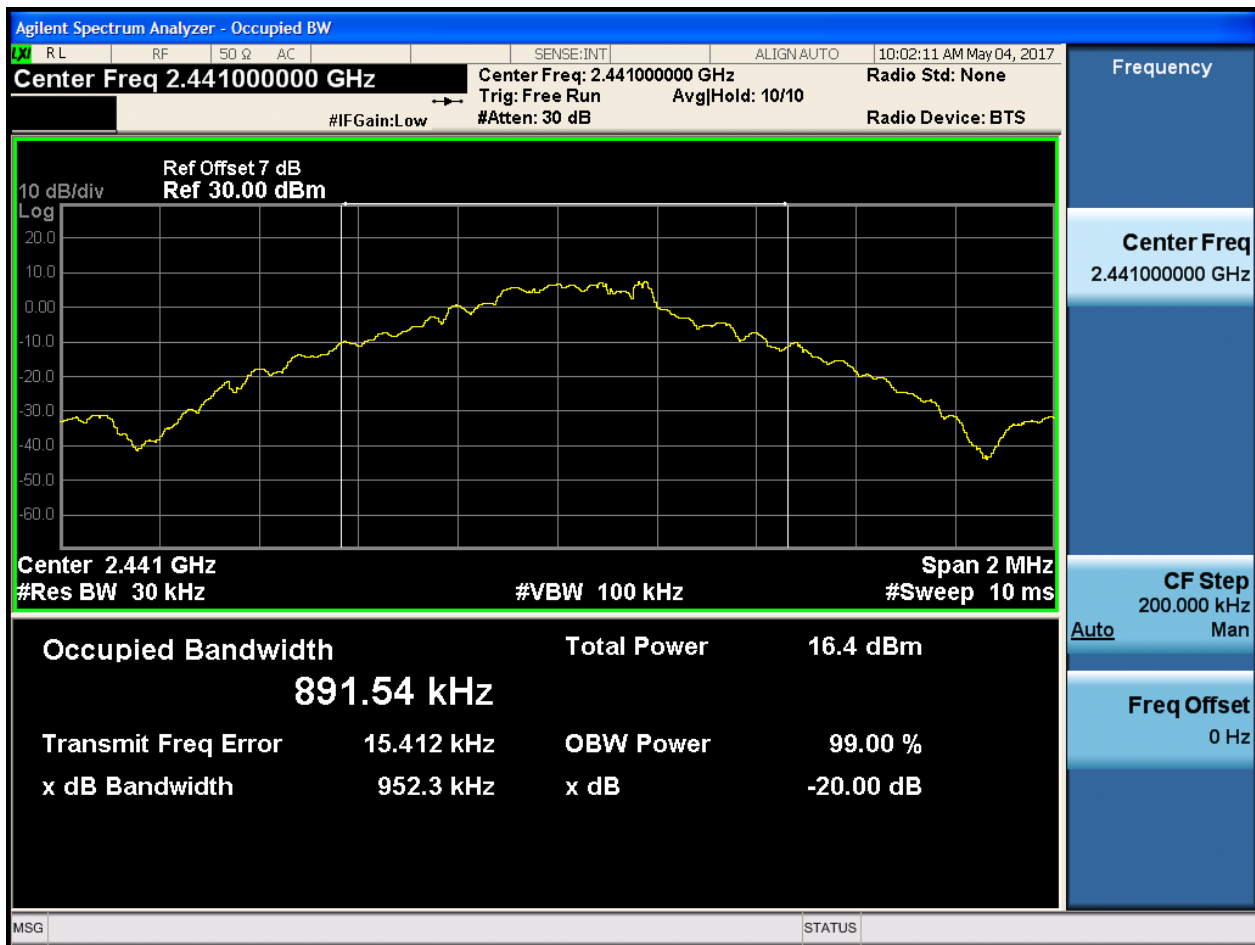
2 Test Plot

2.1 TM1_DH5_Ch0

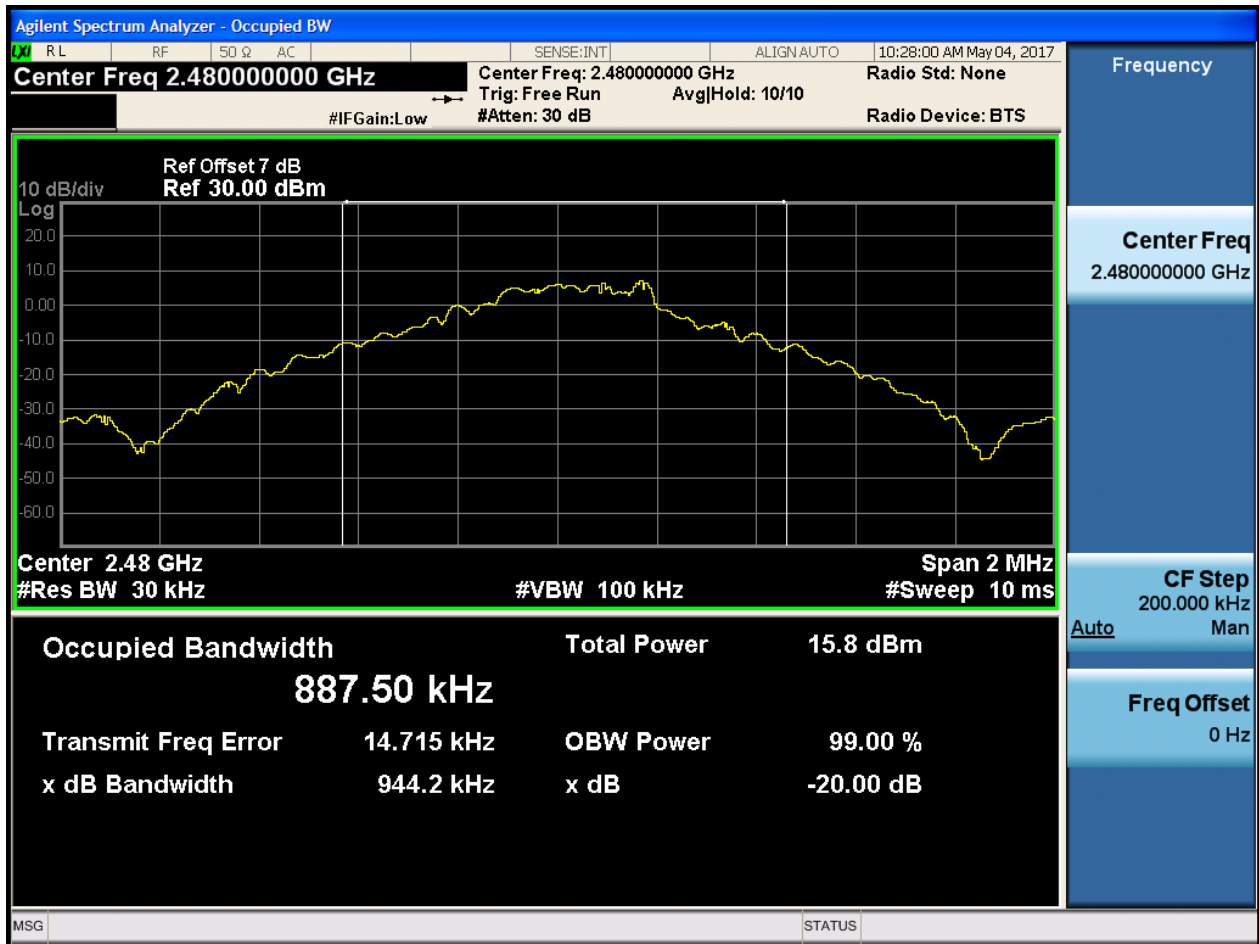




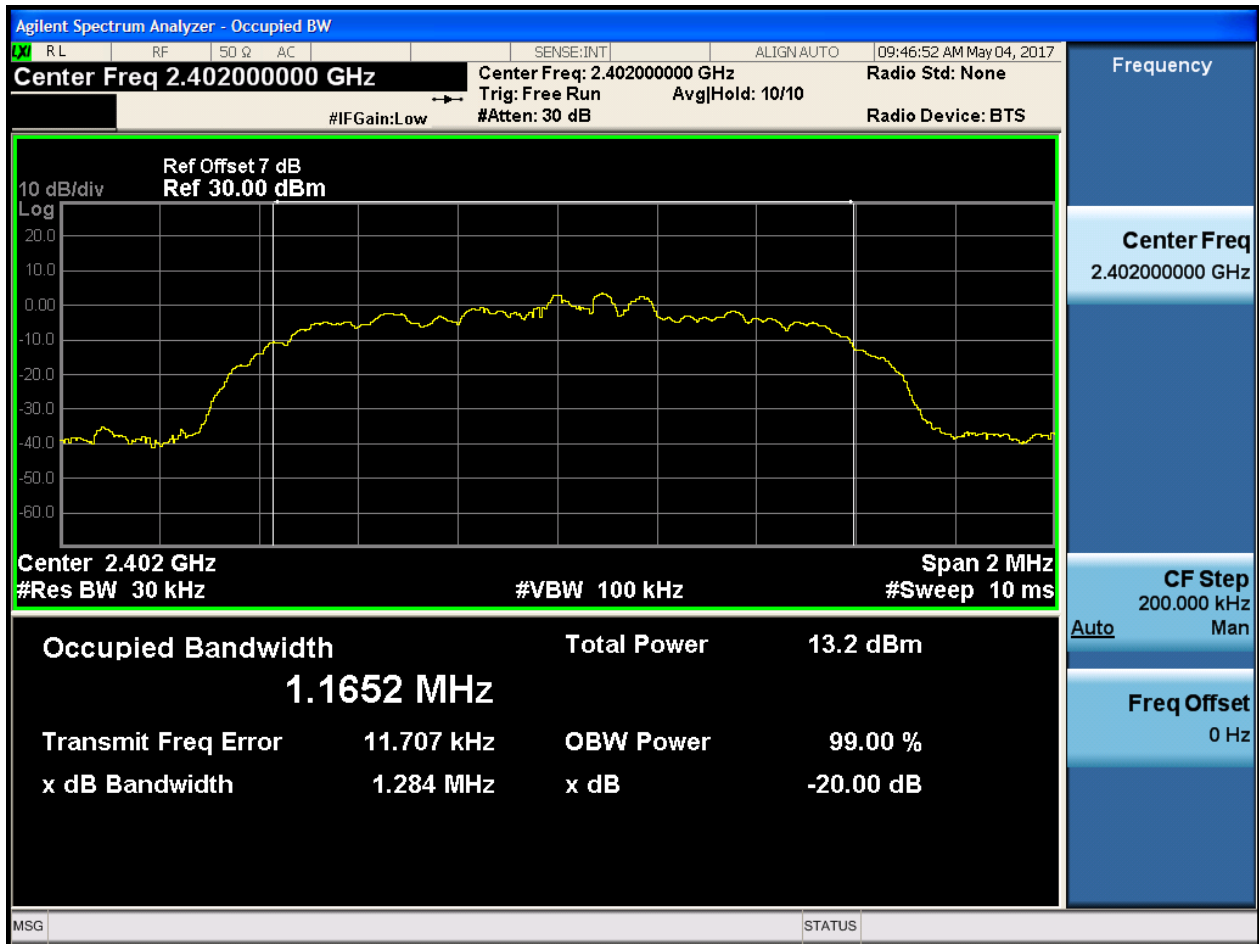
2.2 TM1_DH5_Ch39



2.3 TM1_DH5_Ch78

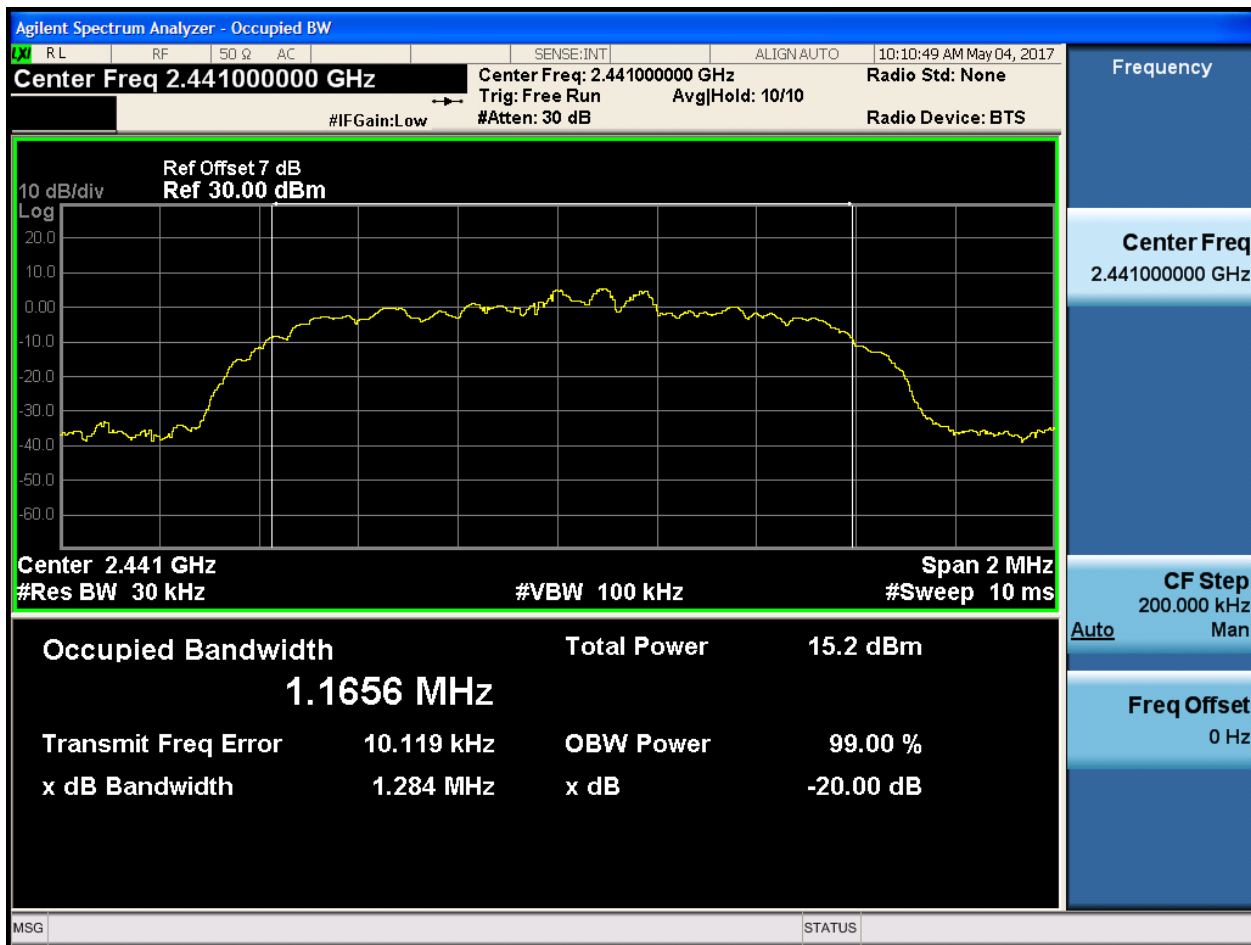


2.4 TM2_2DH5_Ch0



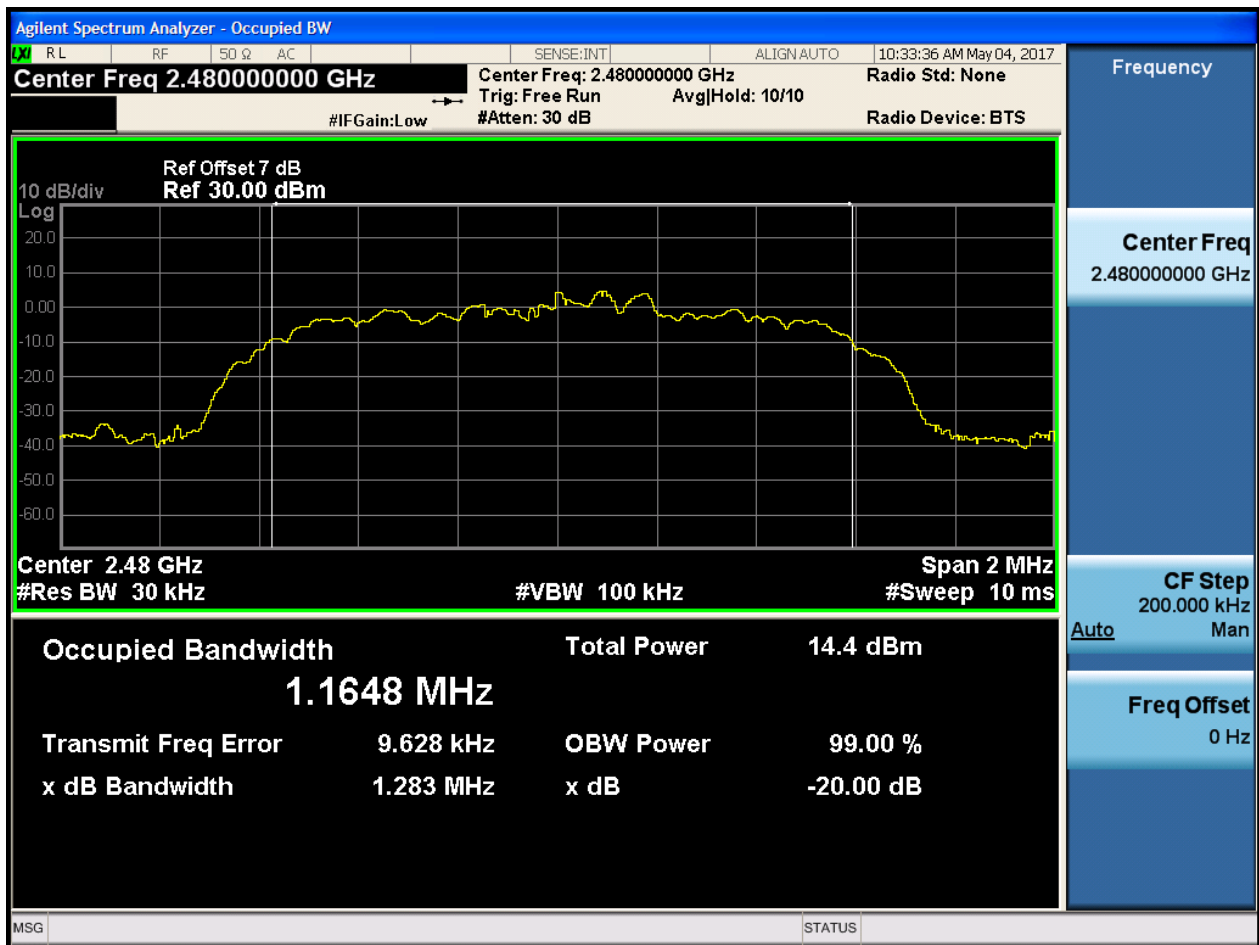


2.5 TM2_2DH5_Ch39



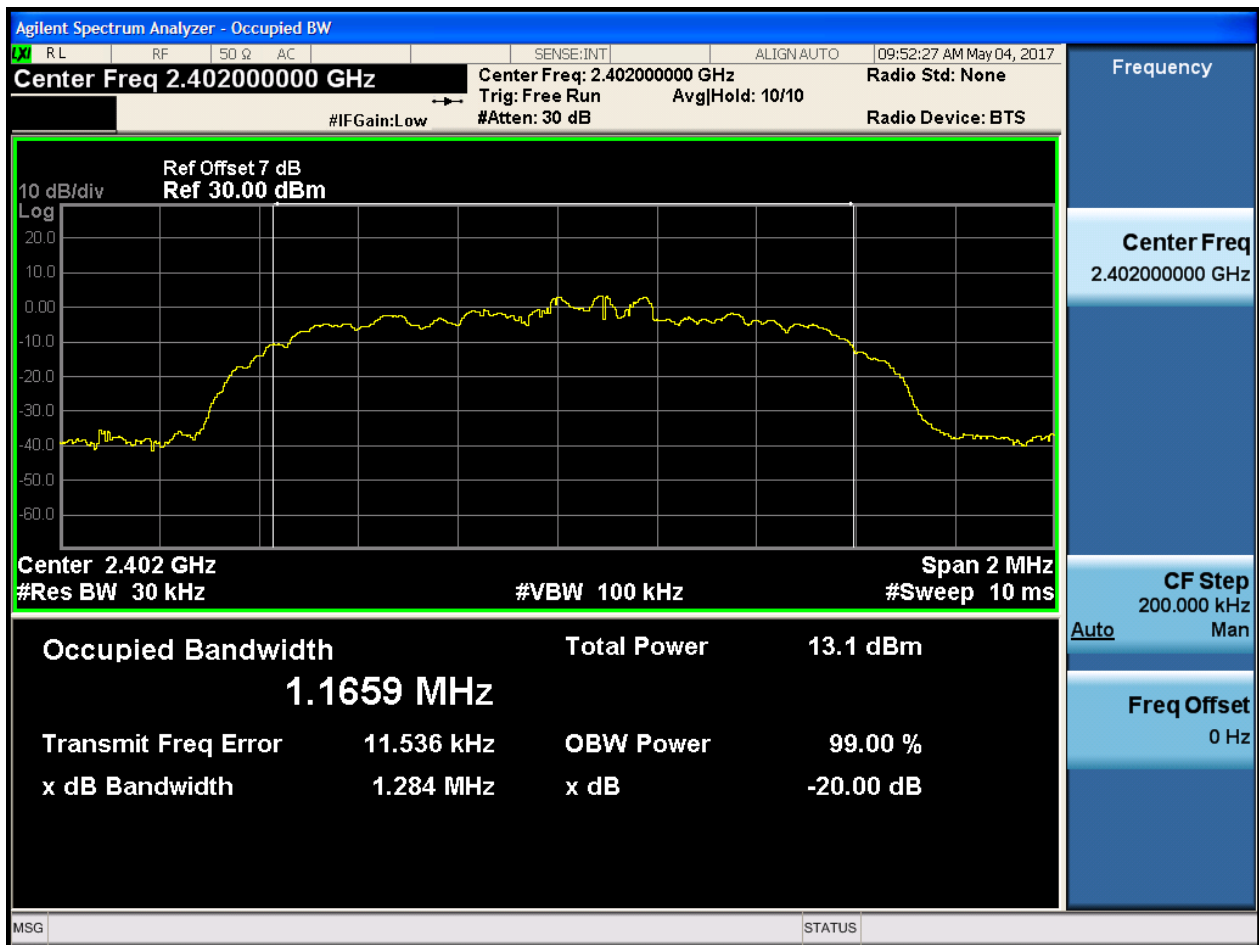


2.6 TM2_2DH5_Ch78



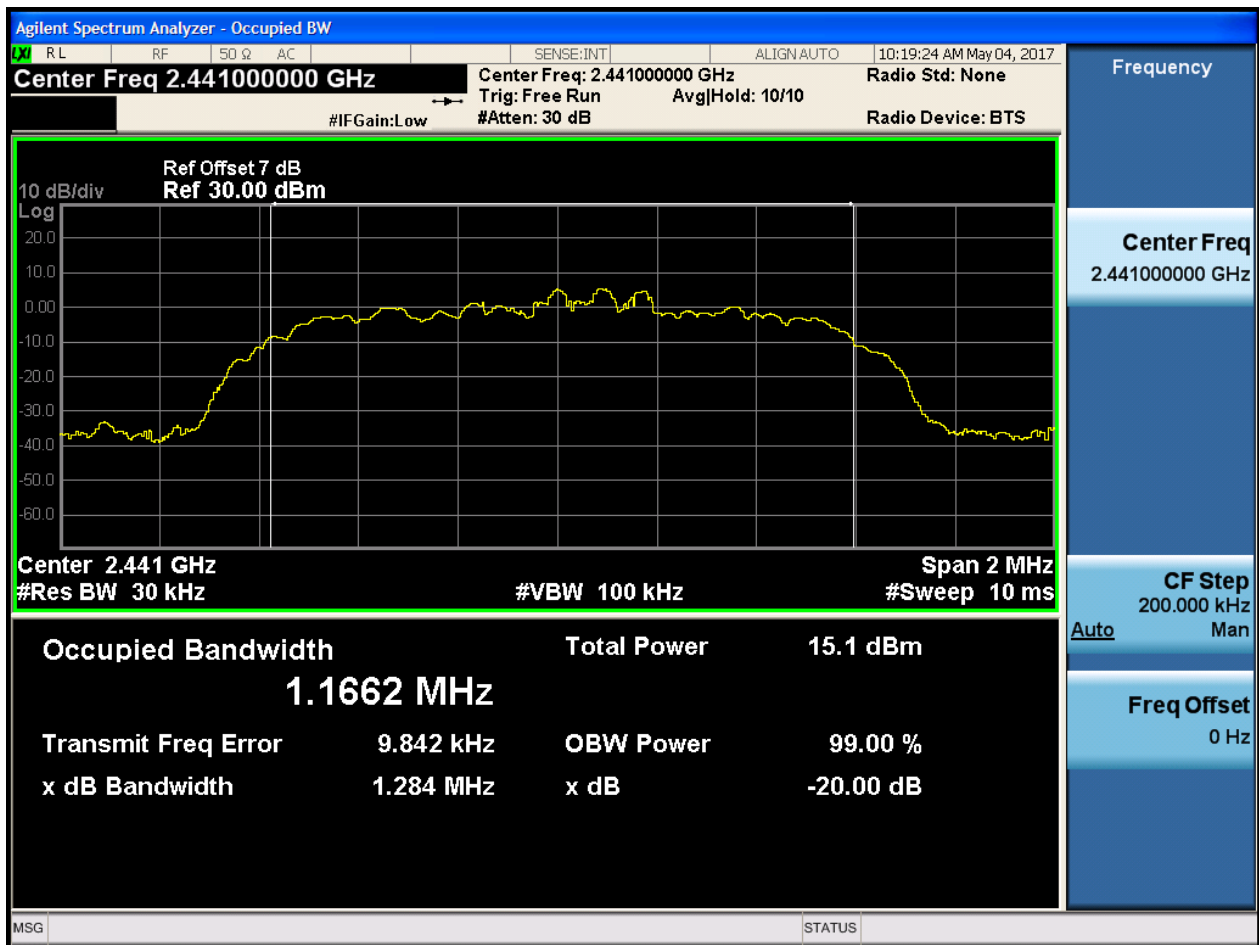


2.7 TM3_3DH5_Ch0



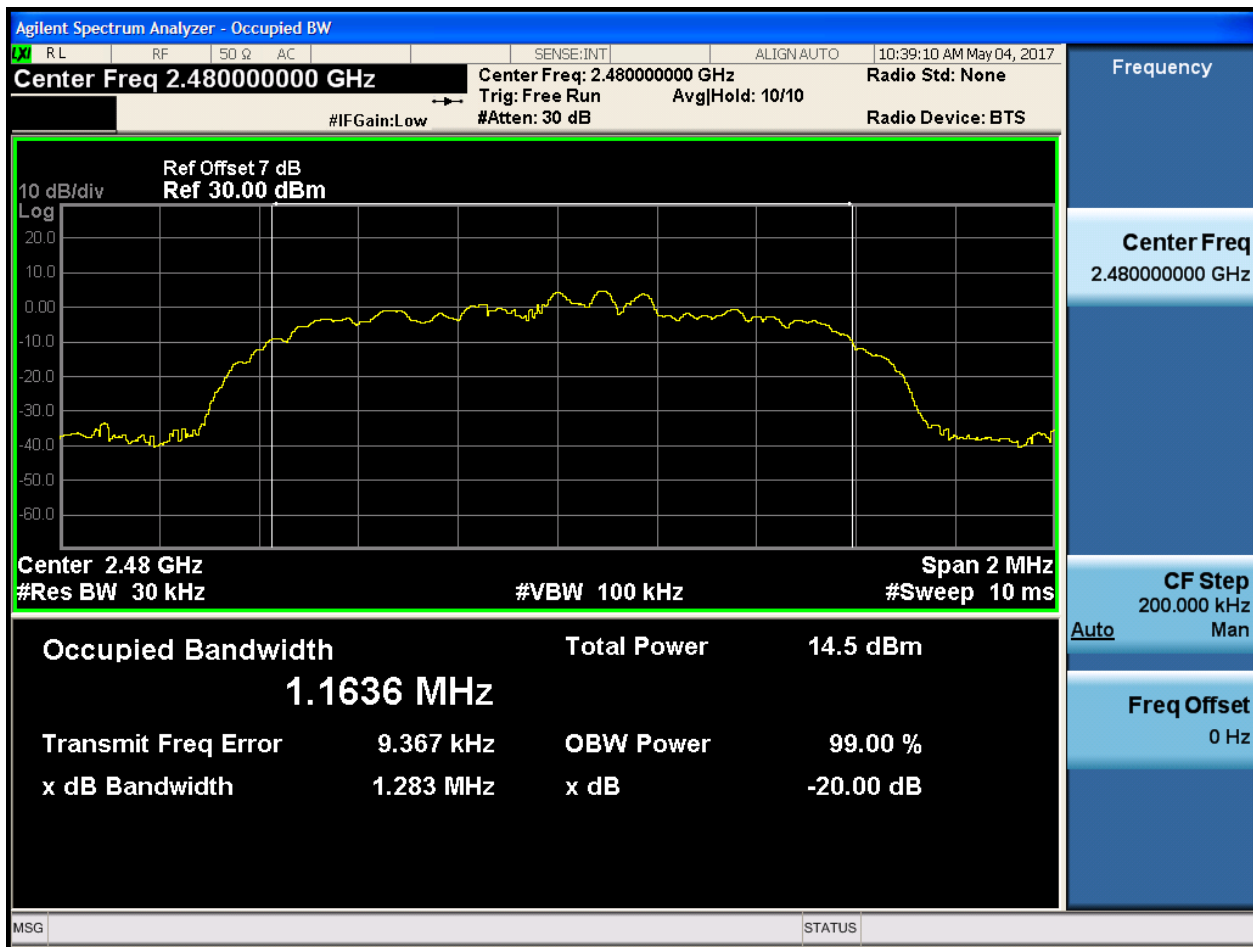


2.8 TM3_3DH5_Ch39





2.9 TM3_3DH5_Ch78



Appendix B: Carrier Frequency Separation



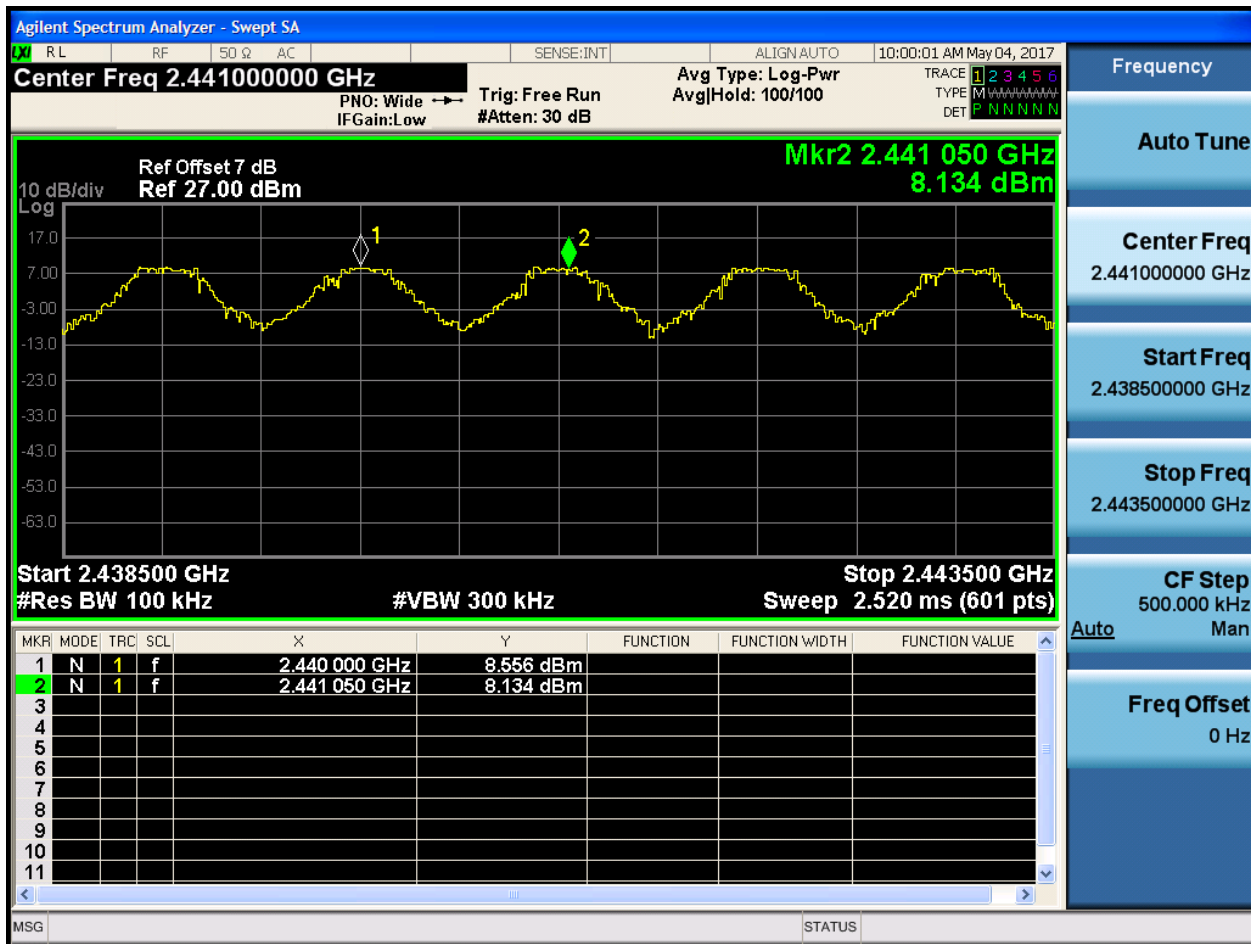
1 Result Table

EUT Conf.	Carrier Frequency Separation [MHz]	Verdict
TM1_DH5_Hop	1.05	Pass
TM2_2DH5_Hop	0.95	Pass
TM3_3DH5_Hop	0.95	Pass



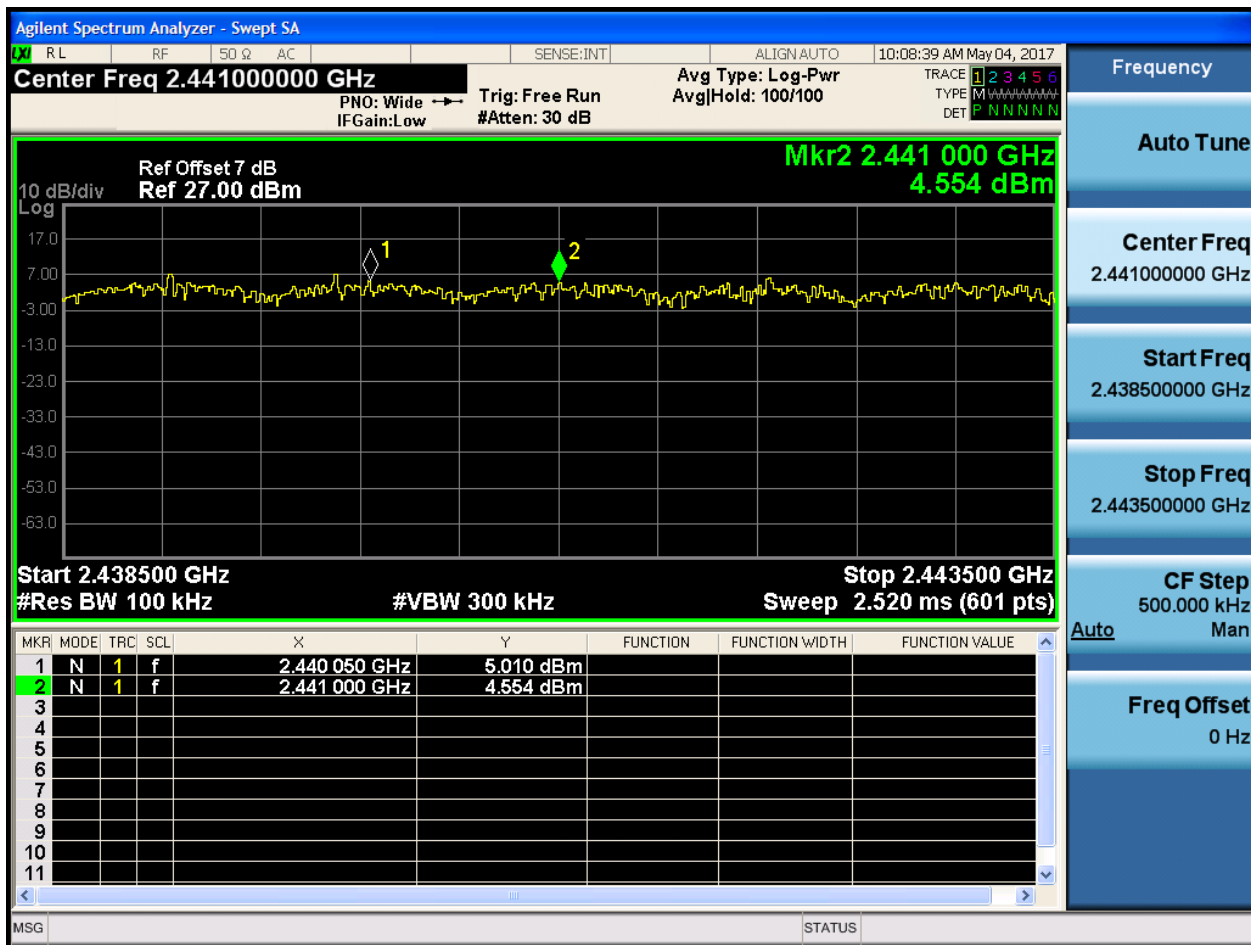
2 Test Plot

2.1 TM1_DH5_Hop



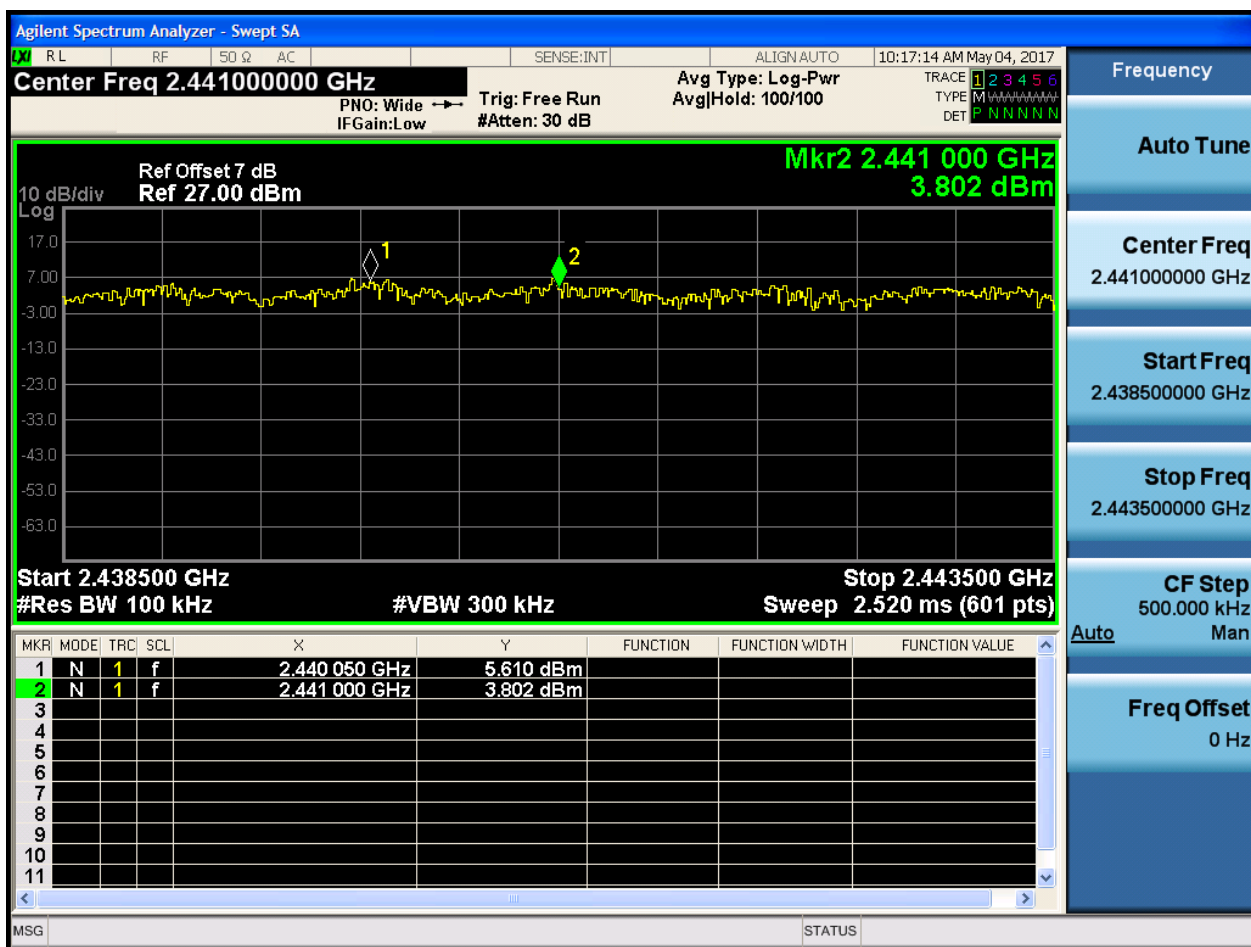


2.2 TM2_2DH5_Hop





2.3 TM3_3DH5_Hop



Appendix C: Number of Hopping Channel



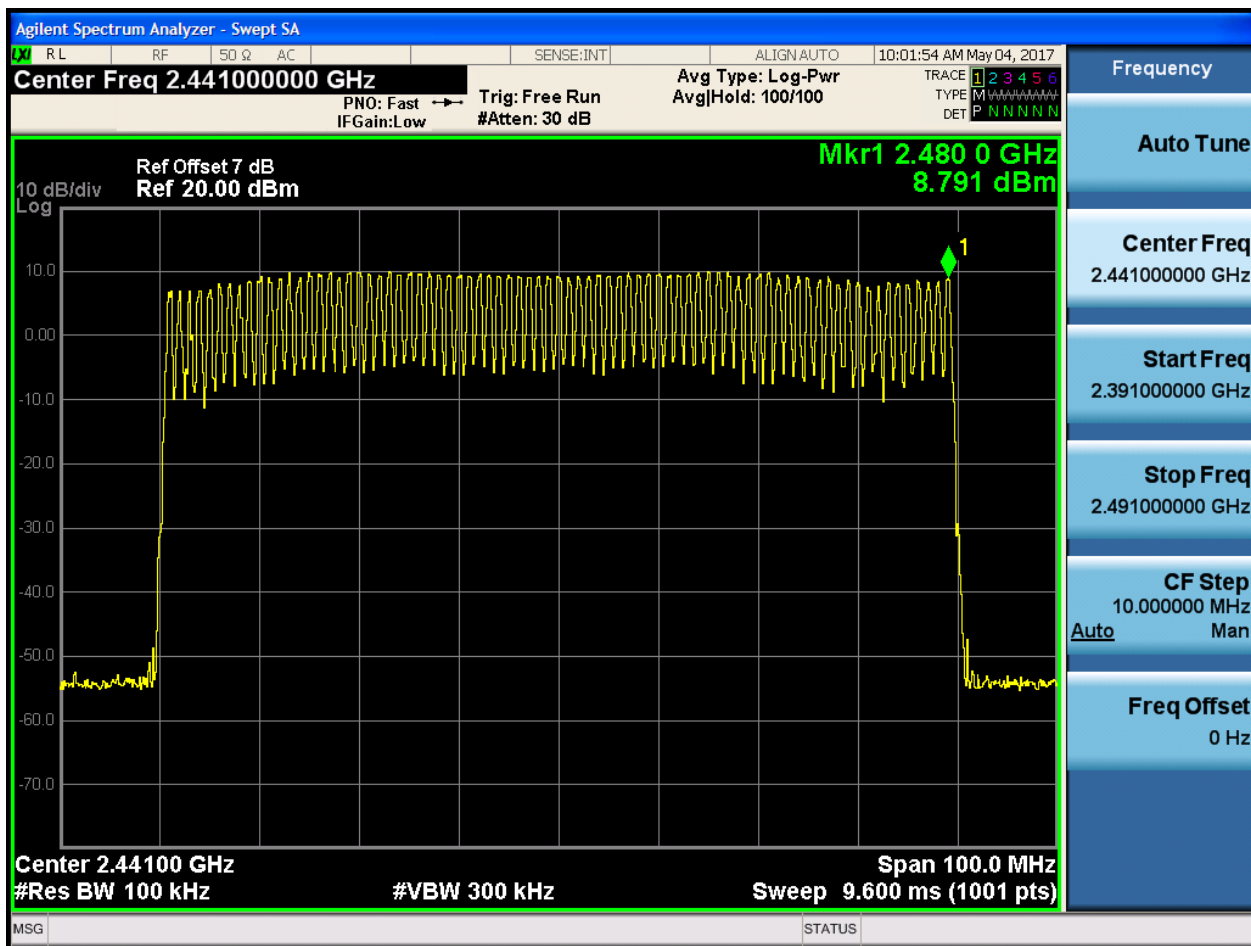
1 Result Table

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



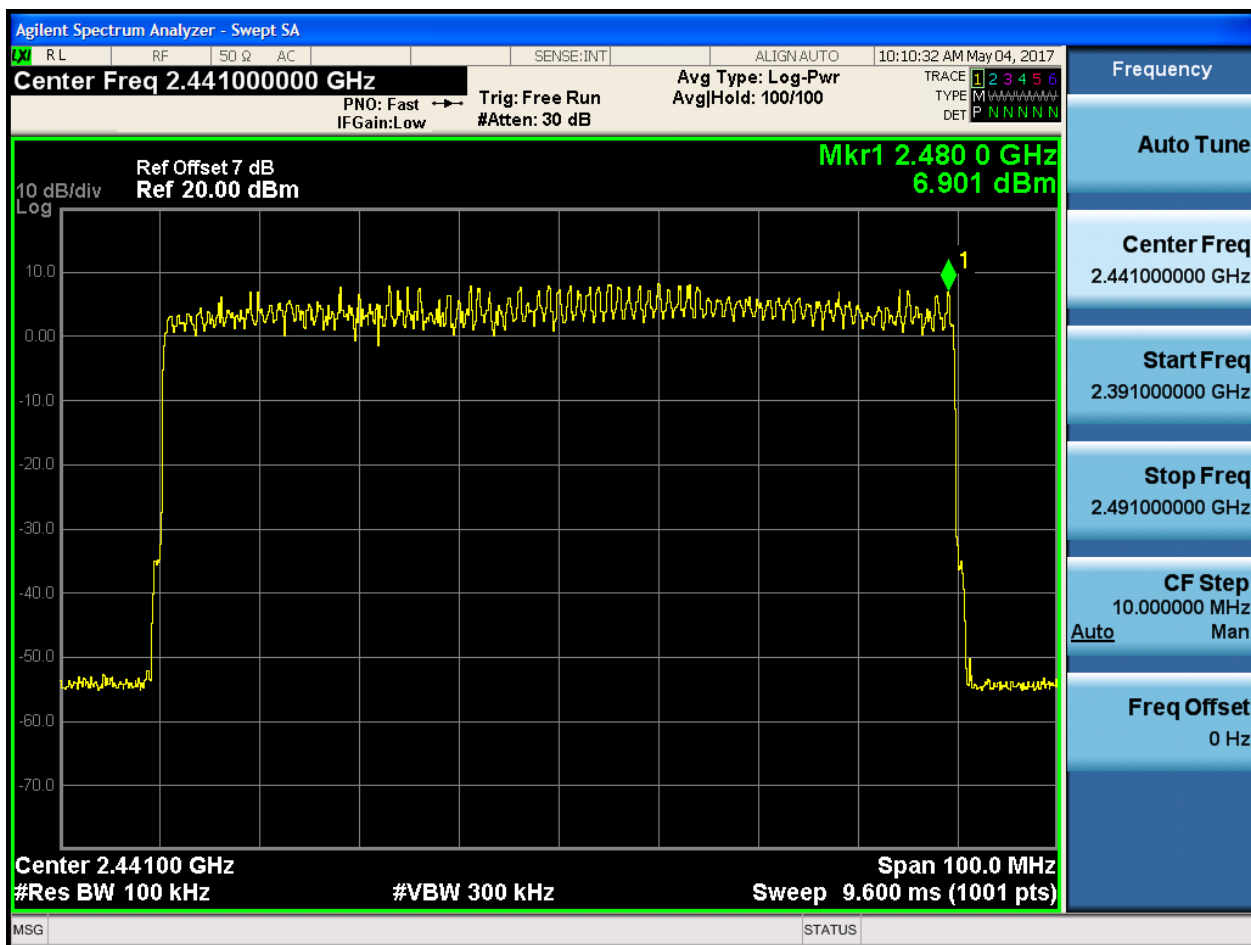
2 Test Plot

2.1 TM1_DH5_Hop



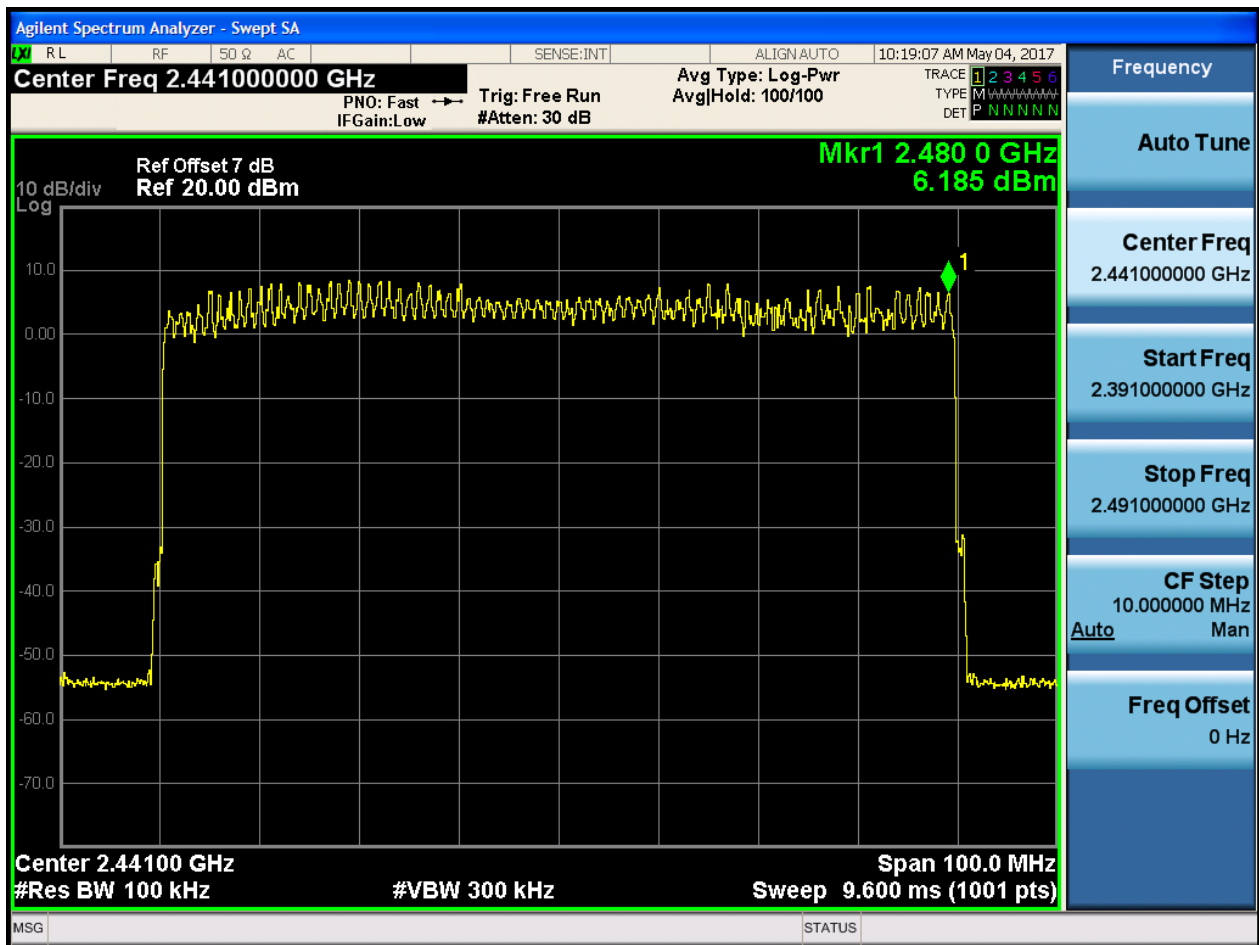


2.2 TM2_2DH5_Hop





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

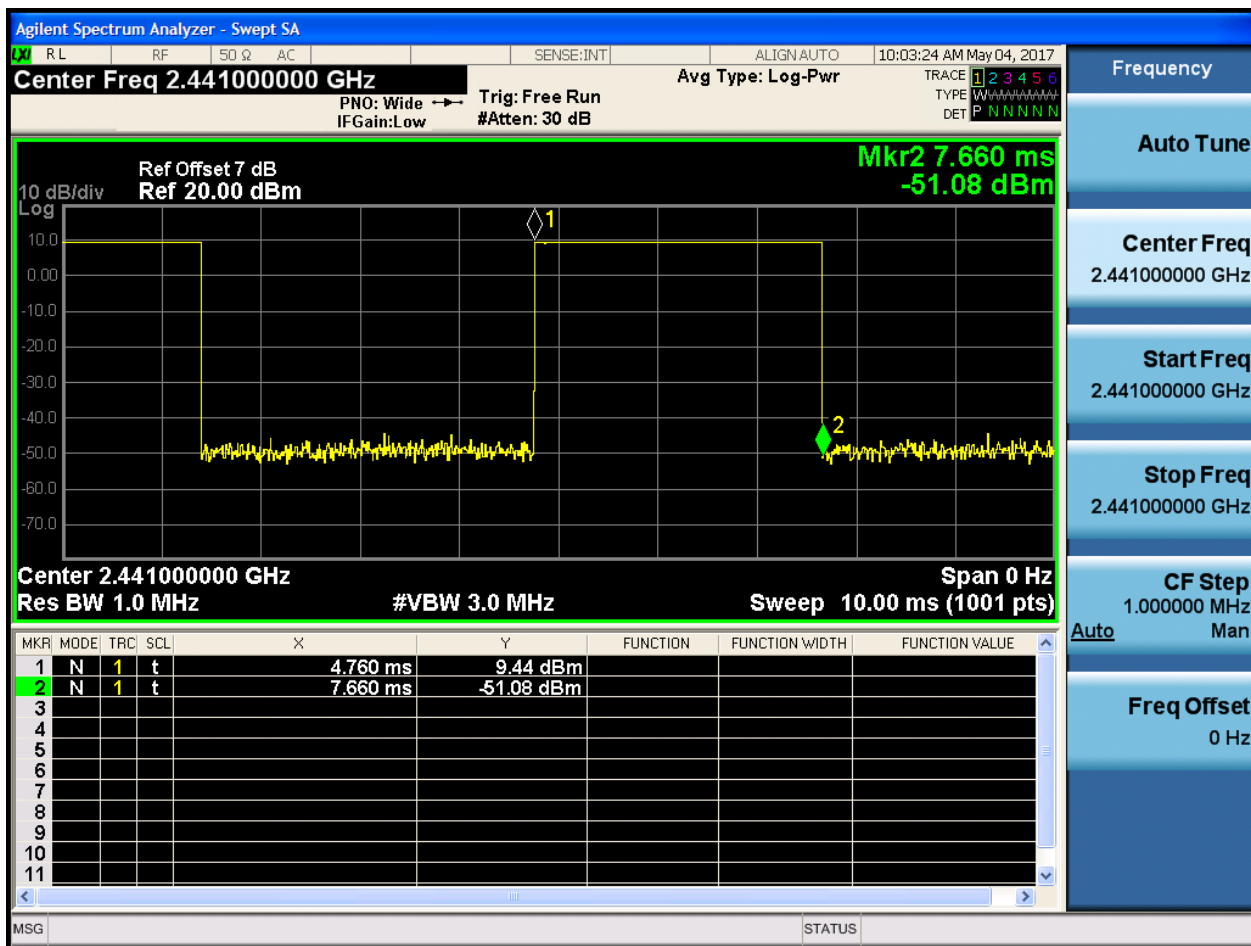
EUT Conf.	Burst Width [s/hop/ch]	Total Hops [hop*ch]	Dwell Time [s]	Verdict
TM1_DH5_Ch39	0.0029	106.67	0.309	Pass
TM2_2DH5_Ch39	0.0029	106.67	0.309	Pass
TM3_3DH5_Ch39	0.0029	106.67	0.309	Pass



2 Test Plot

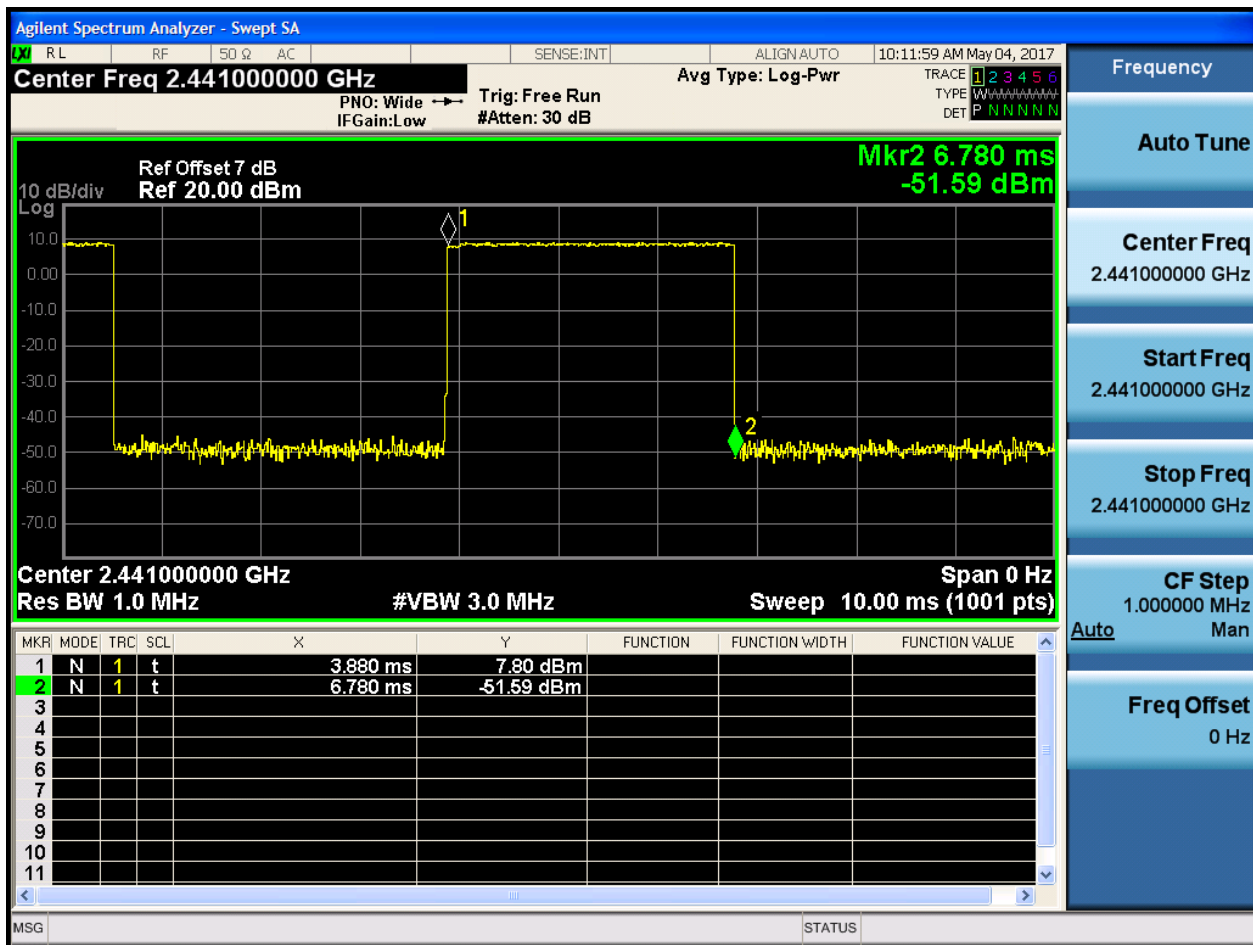
NOTE: The test plots are only for Burst Width measurements.

2.1 TM1_DH5_Ch39



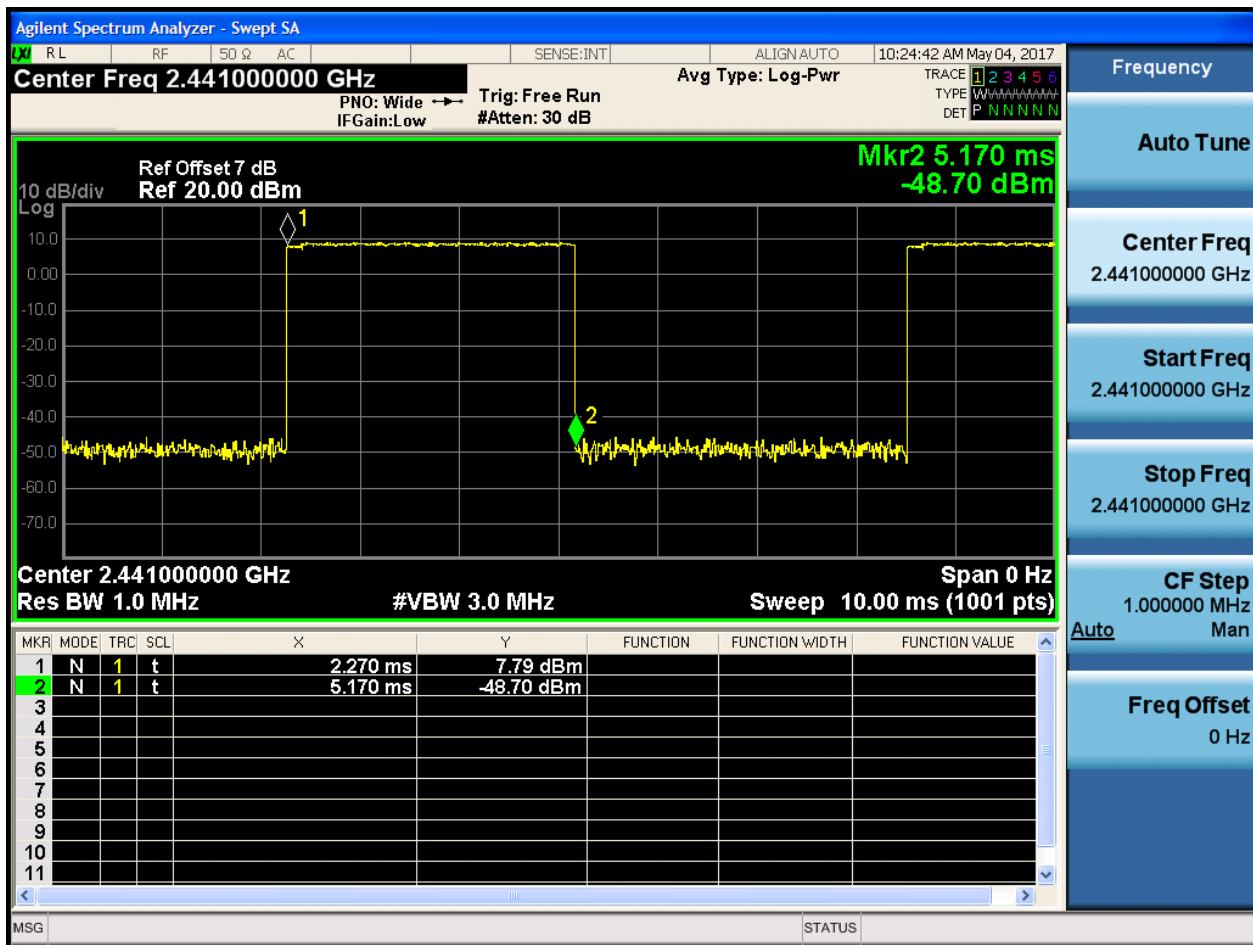


2.2 TM2_2DH5_Ch39





2.3 TM3_3DH5_Ch39



Appendix E: Maximum Peak Conducted Output Power



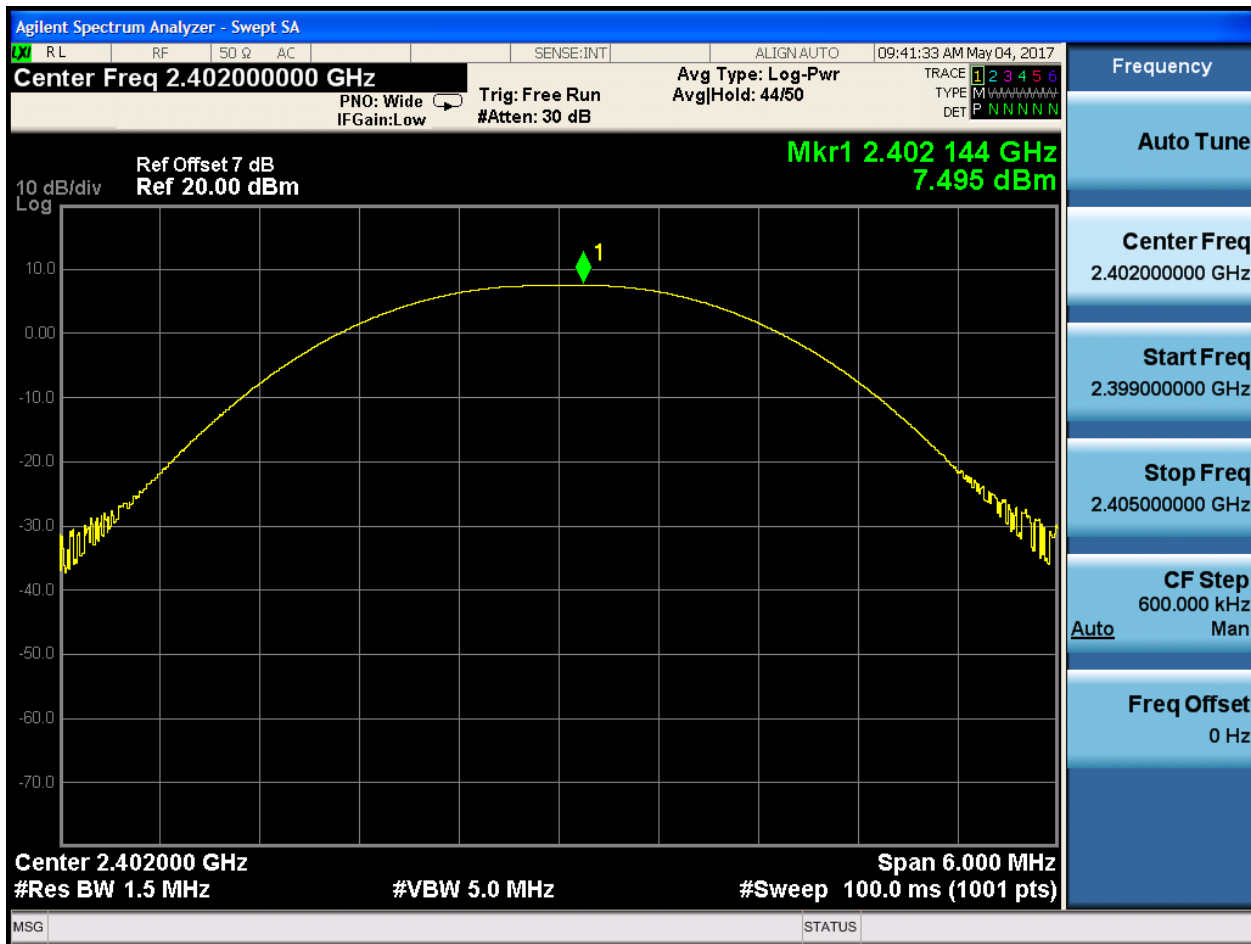
1 Result Table

EUT Conf.	Max. Peak Power [dBm]	Verdict
TM1_DH5_Ch0	7.495	Pass
TM1_DH5_Ch39	9.533	Pass
TM1_DH5_Ch78	8.874	Pass
TM2_2DH5_Ch0	7.435	Pass
TM2_2DH5_Ch39	9.504	Pass
TM2_2DH5_Ch78	8.824	Pass
TM3_3DH5_Ch0	7.455	Pass
TM3_3DH5_Ch39	9.523	Pass
TM3_3DH5_Ch78	8.828	Pass



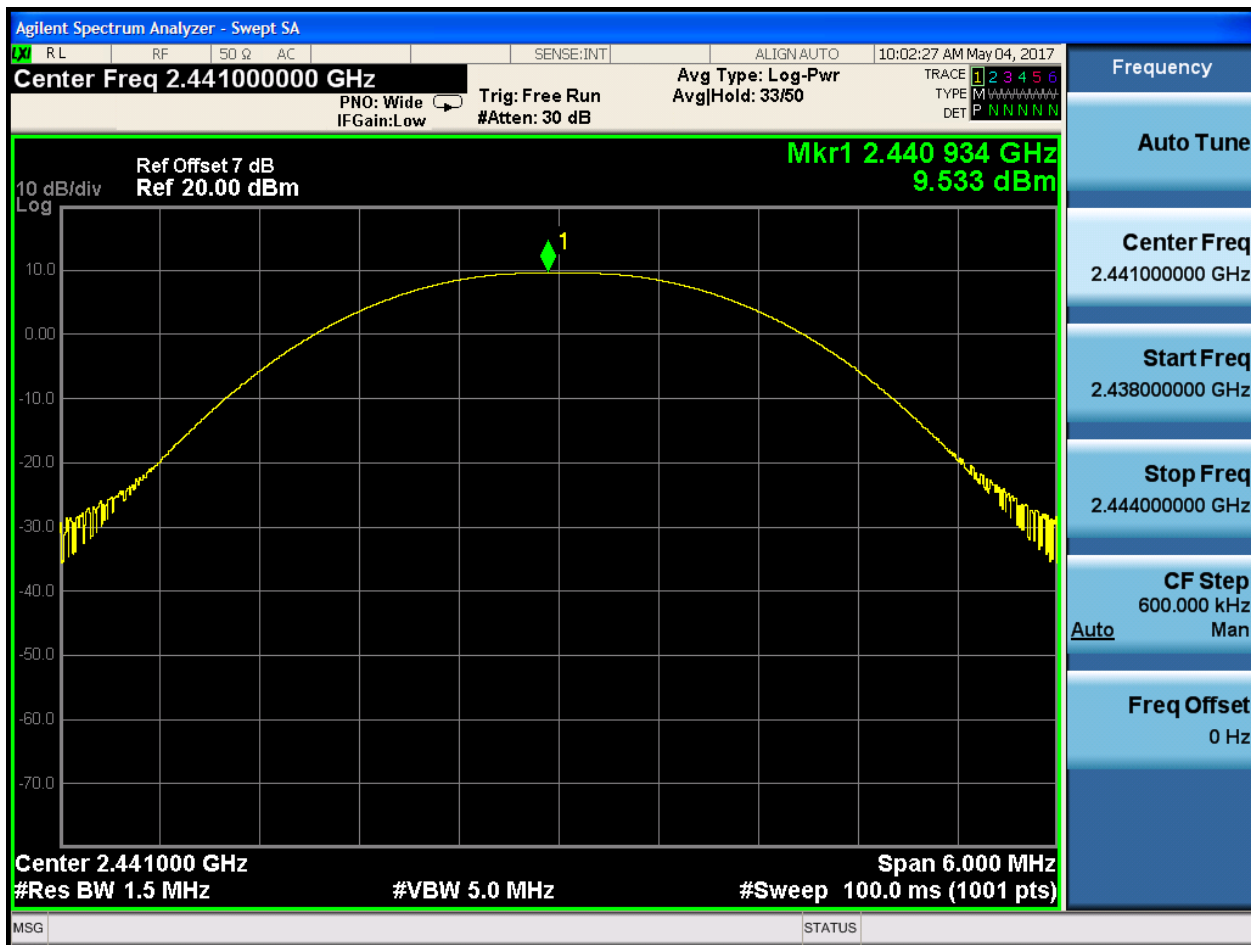
2 Test Plot

2.1 TM1_DH5_Ch0



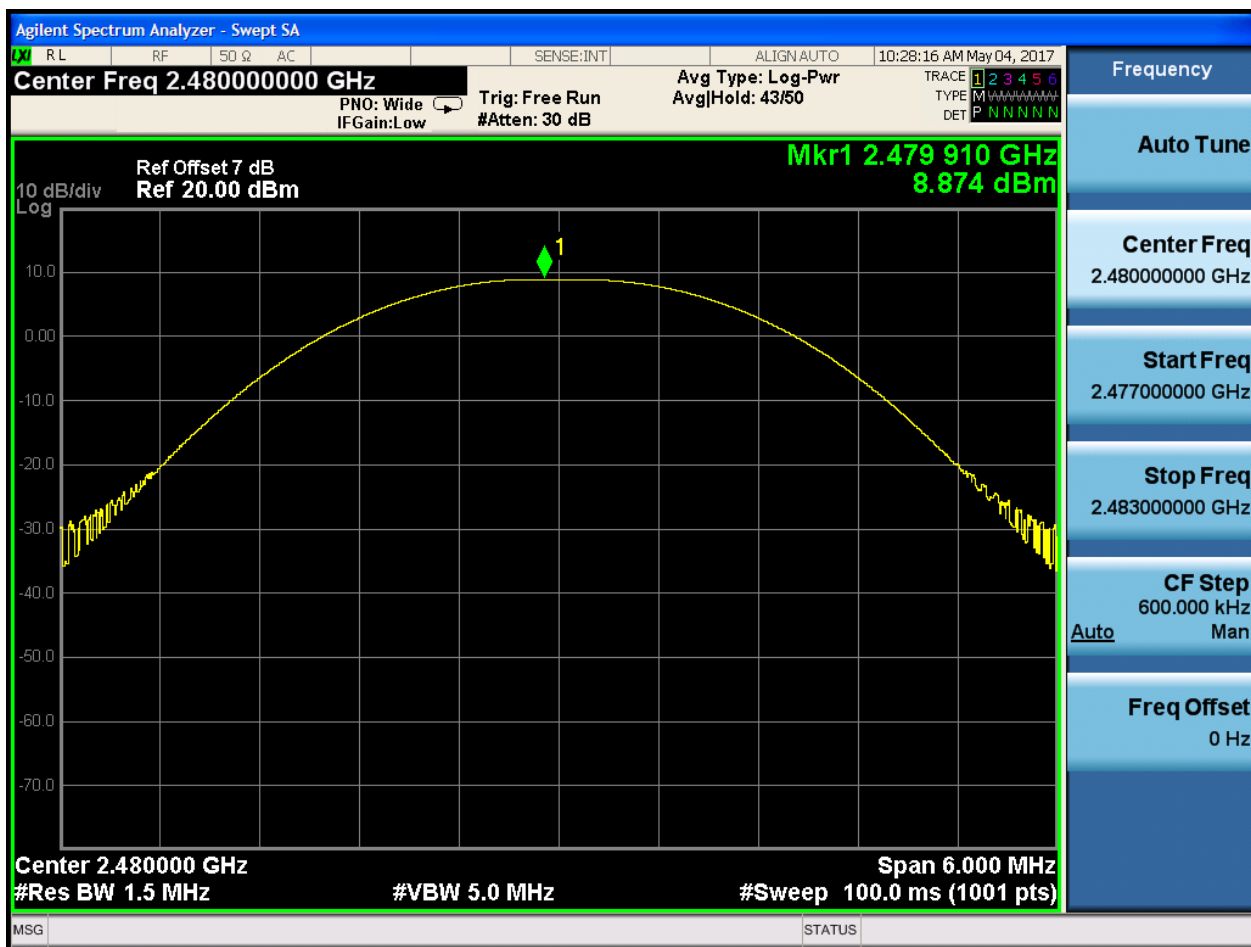


2.2 TM1_DH5_Ch39



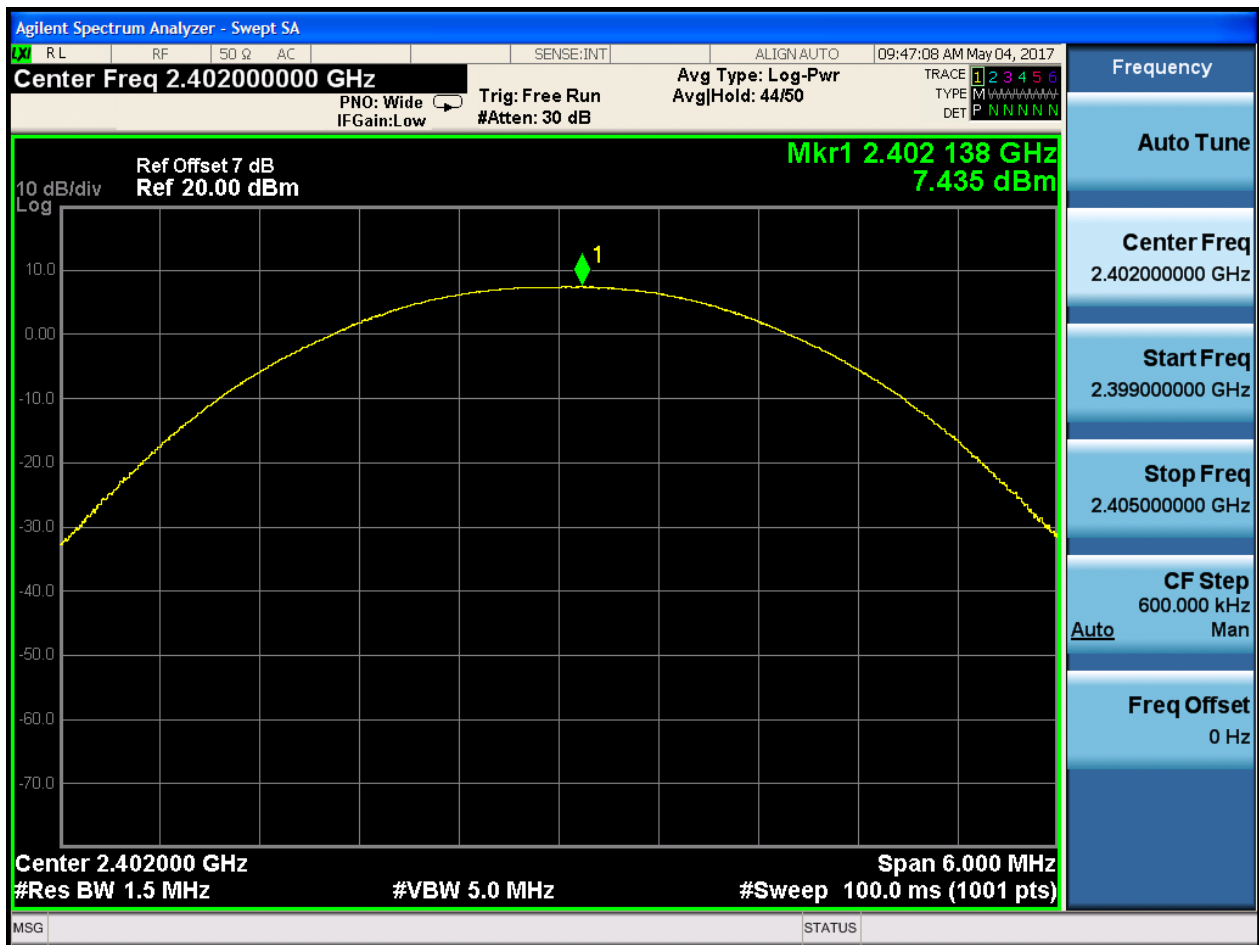


2.3 TM1_DH5_Ch78



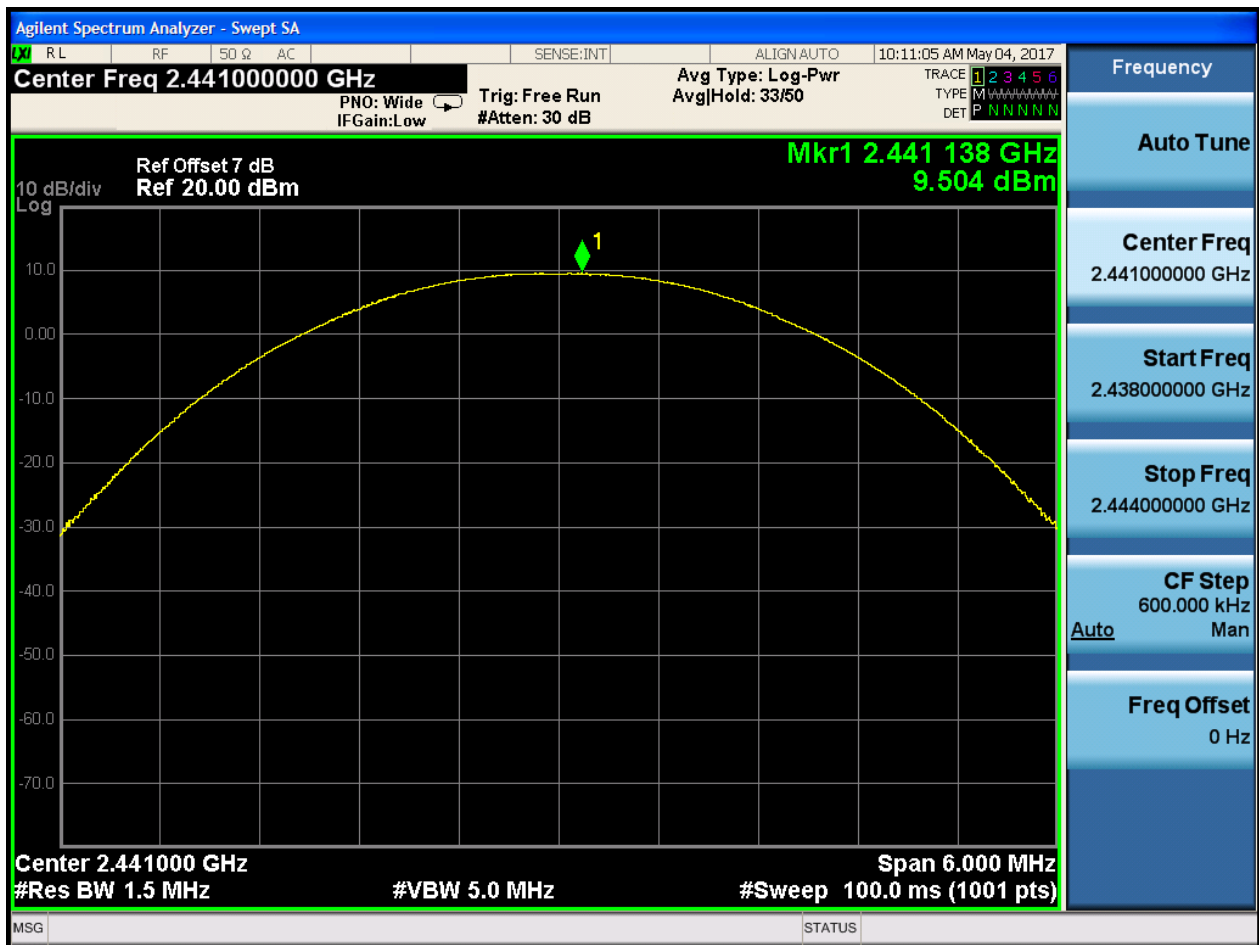


2.4 TM2_2DH5_Ch0

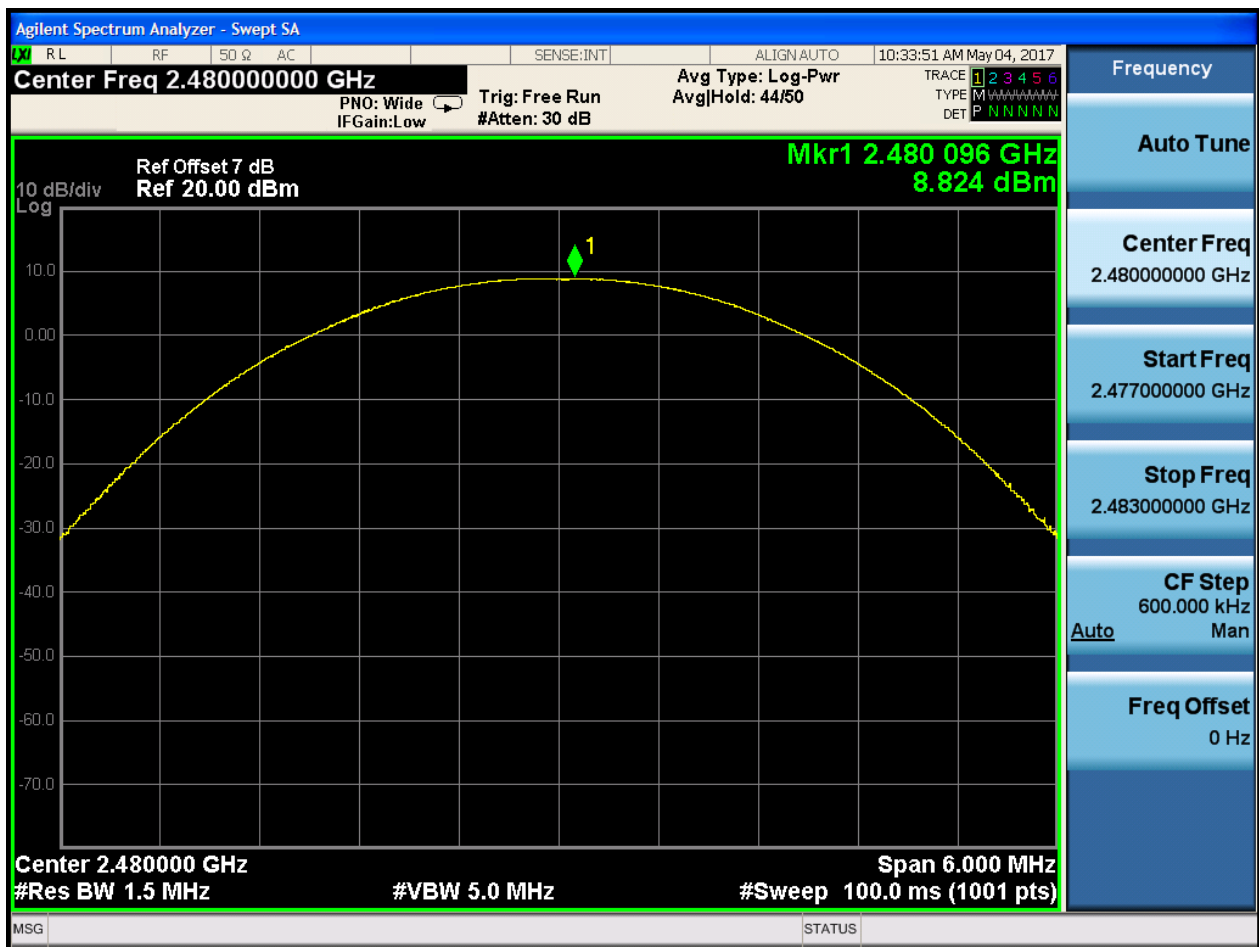




2.5 TM2_2DH5_Ch39

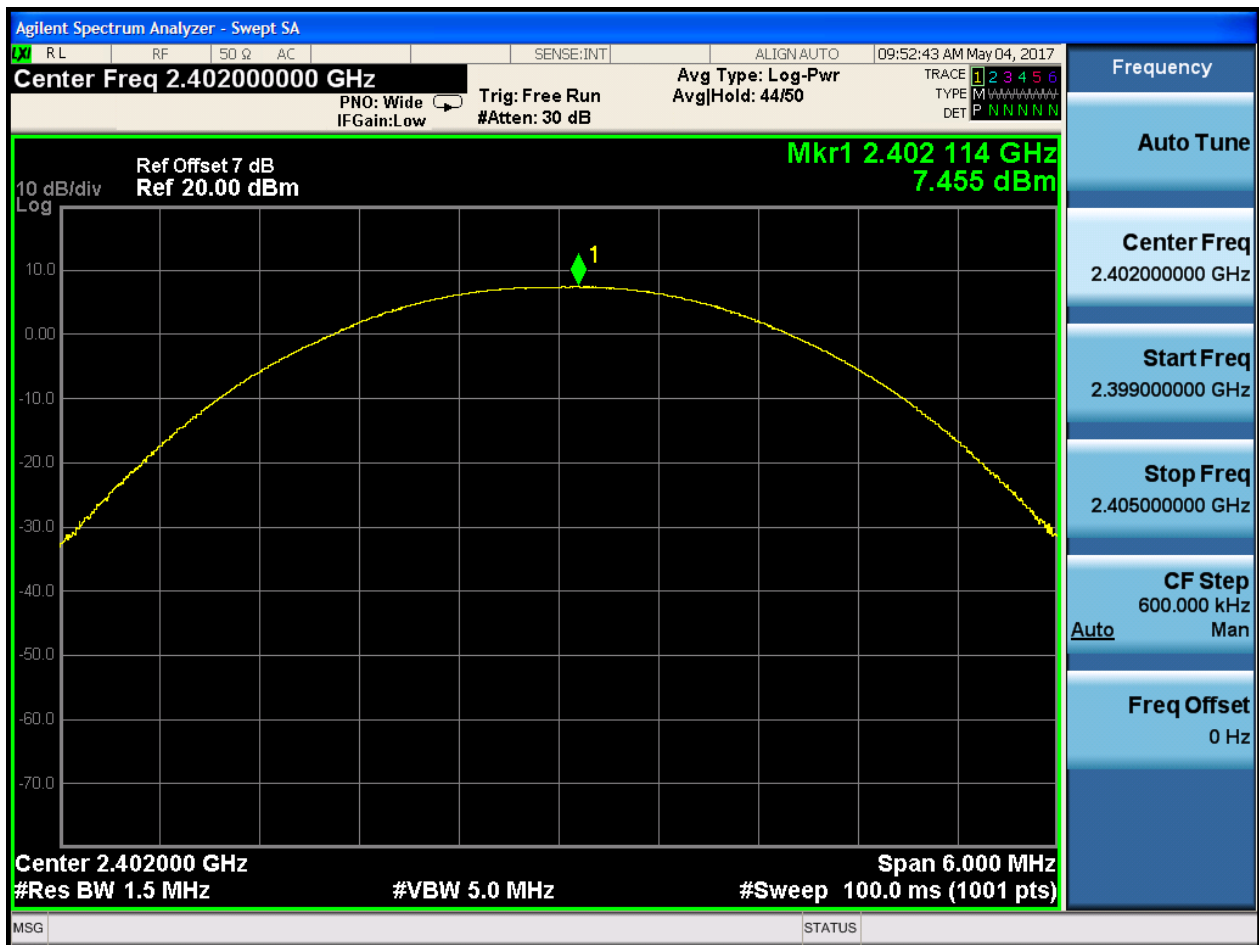


2.6 TM2_2DH5_Ch78



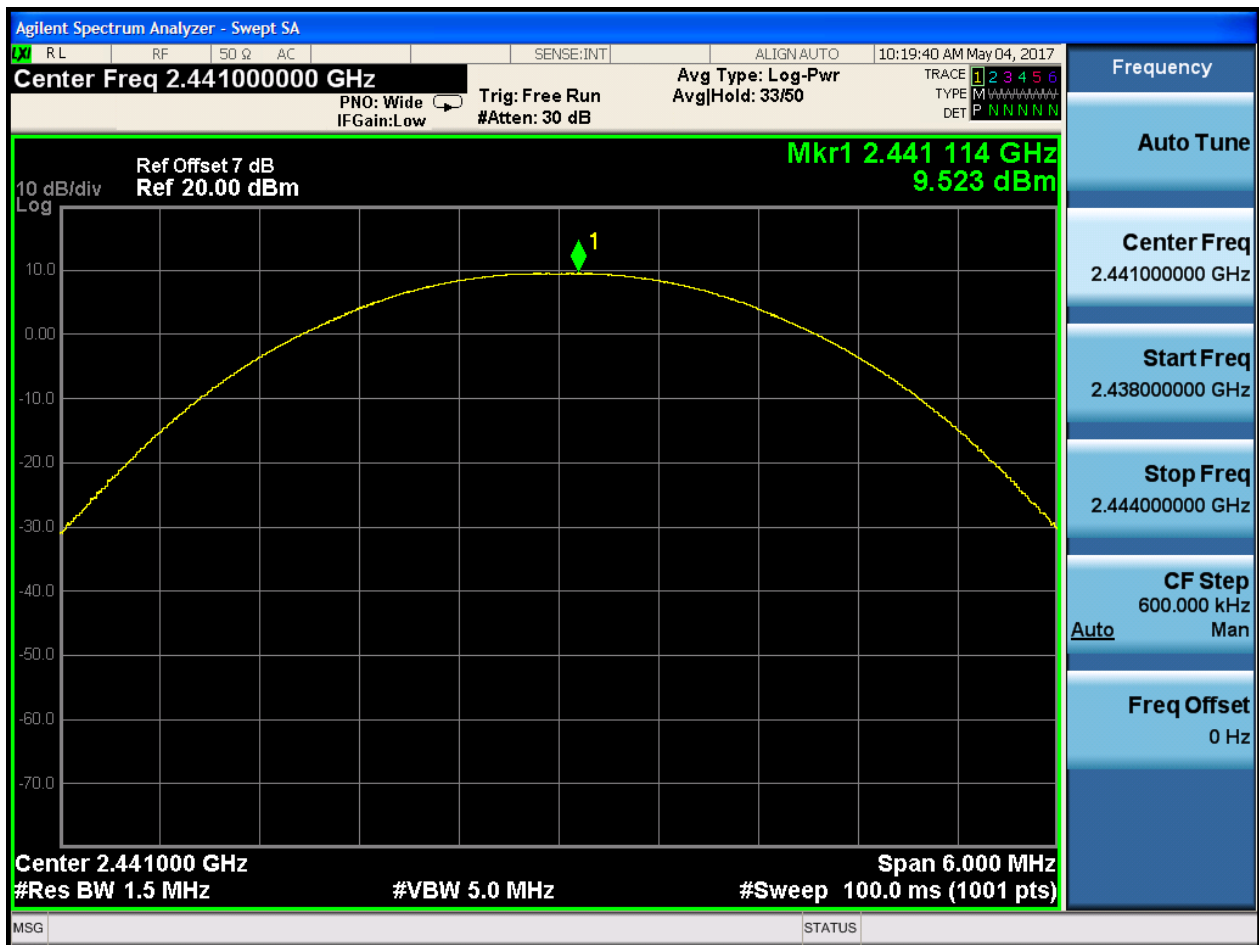


2.7 TM3_3DH5_Ch0



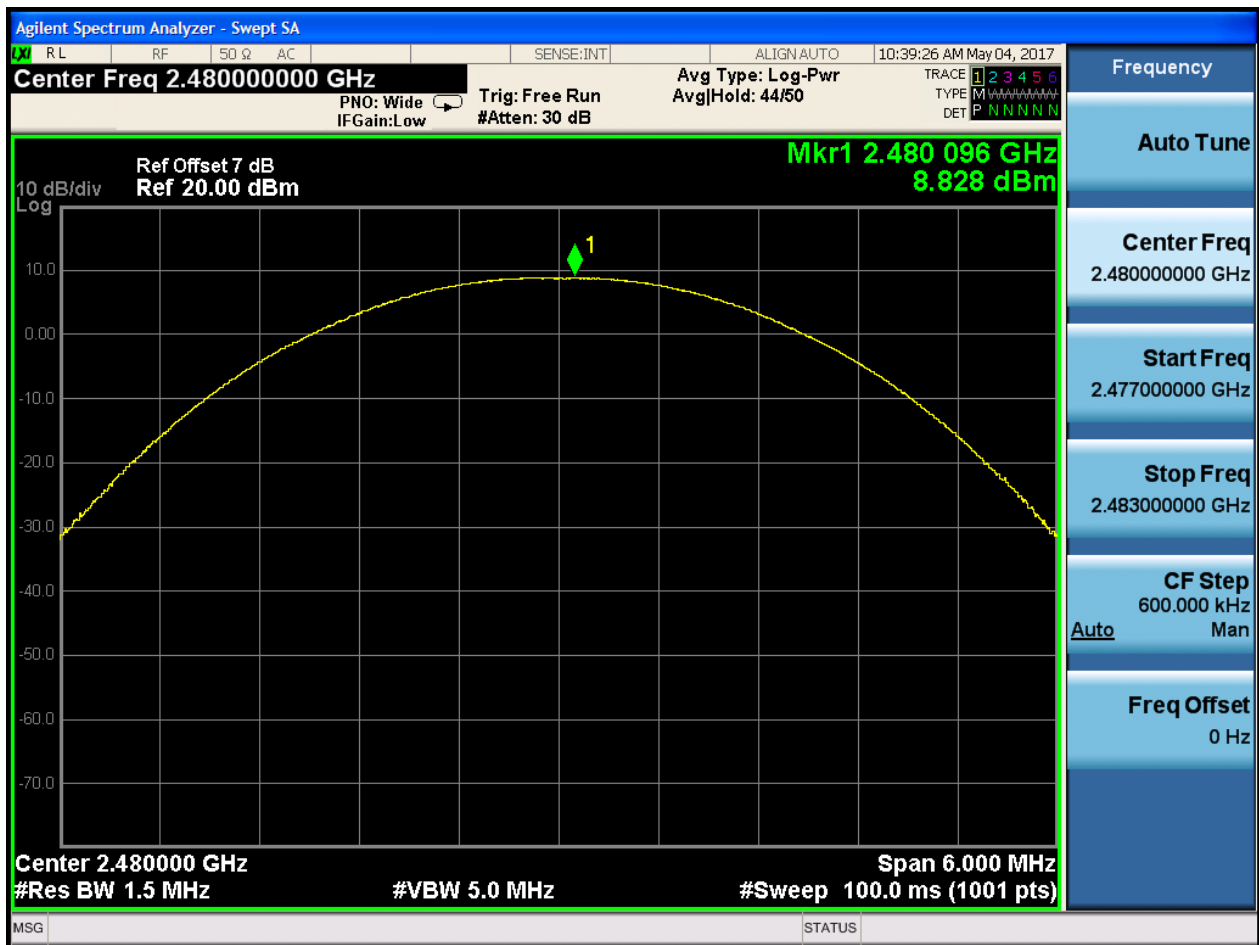


2.8 TM3_3DH5_Ch39





2.9 TM3_3DH5_Ch78



Appendix F: Band edge spurious emission

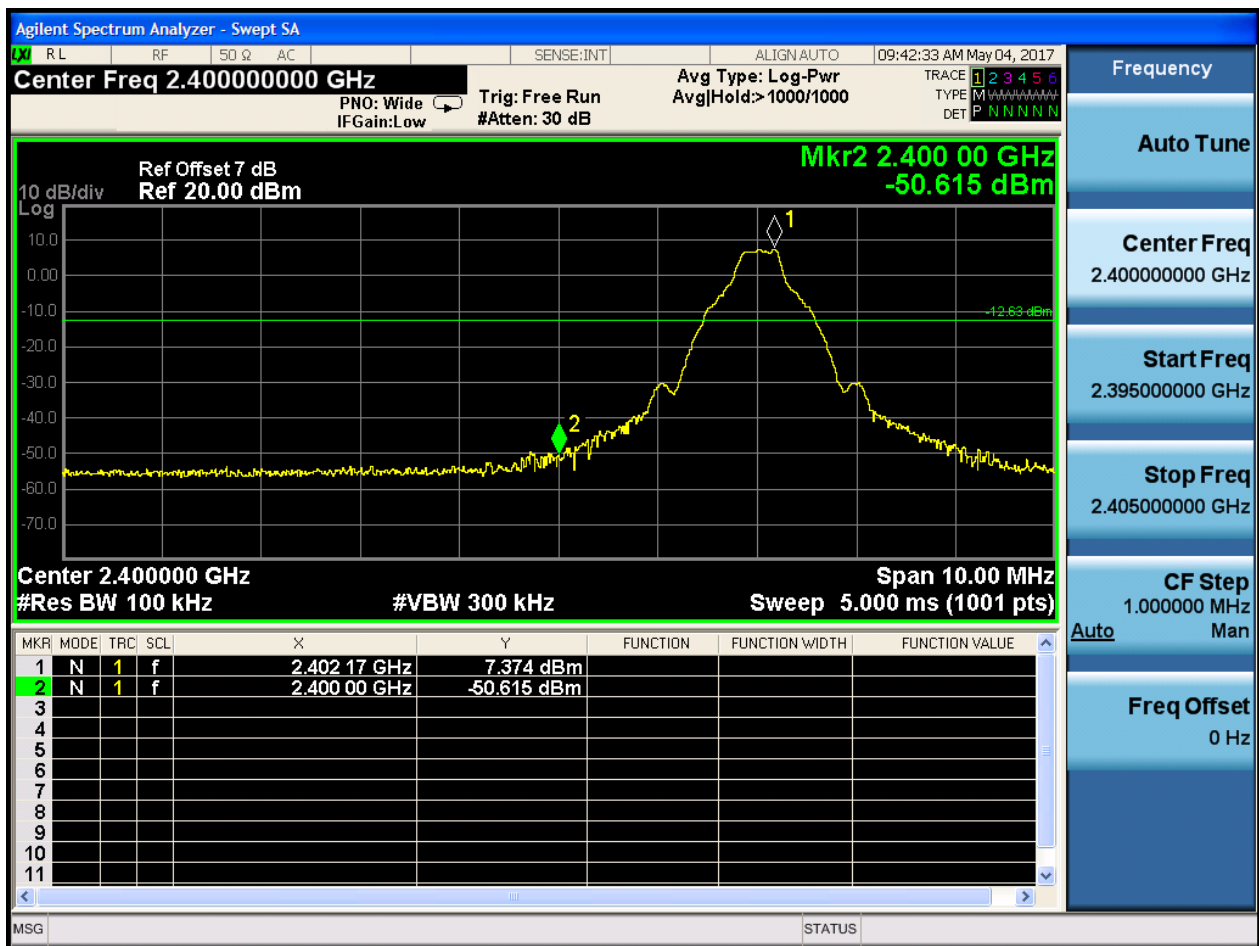
1 Result Table

EUT Conf.	Channel No.	Carrier Frequency [MHz]	Max. Spurious Level [dBm]	Frequency Hopping	Carrier Power [dBm]	Limit [dBm]	Result
TM1_DH5_Ch0	0	2402	-50.615	Off	7.374	-12.626	Pass
	-	-	-55.537	On	7.735	-12.265	Pass
TM1_DH5_Ch78	78	2480	-55.698	Off	8.717	-11.283	Pass
	-	-	-56.026	On	8.104	-11.896	Pass
TM2_2DH5_Ch0	0	2402	-52.089	Off	5.734	-14.266	Pass
	-	-	-55.621	On	6.001	-13.999	Pass
TM2_2DH5_Ch78	78	2480	-56.104	Off	7.077	-12.923	Pass
	-	-	-56.25	On	6.055	-13.945	Pass
TM3_3DH5_Ch0	0	2402	-51.029	Off	5.794	-14.206	Pass
	-	-	-54.851	On	5.791	-14.209	Pass
TM3_3DH5_Ch78	78	2480	-55.439	Off	7.049	-12.951	Pass
	-	-	-55.66	On	4.885	-15.115	Pass

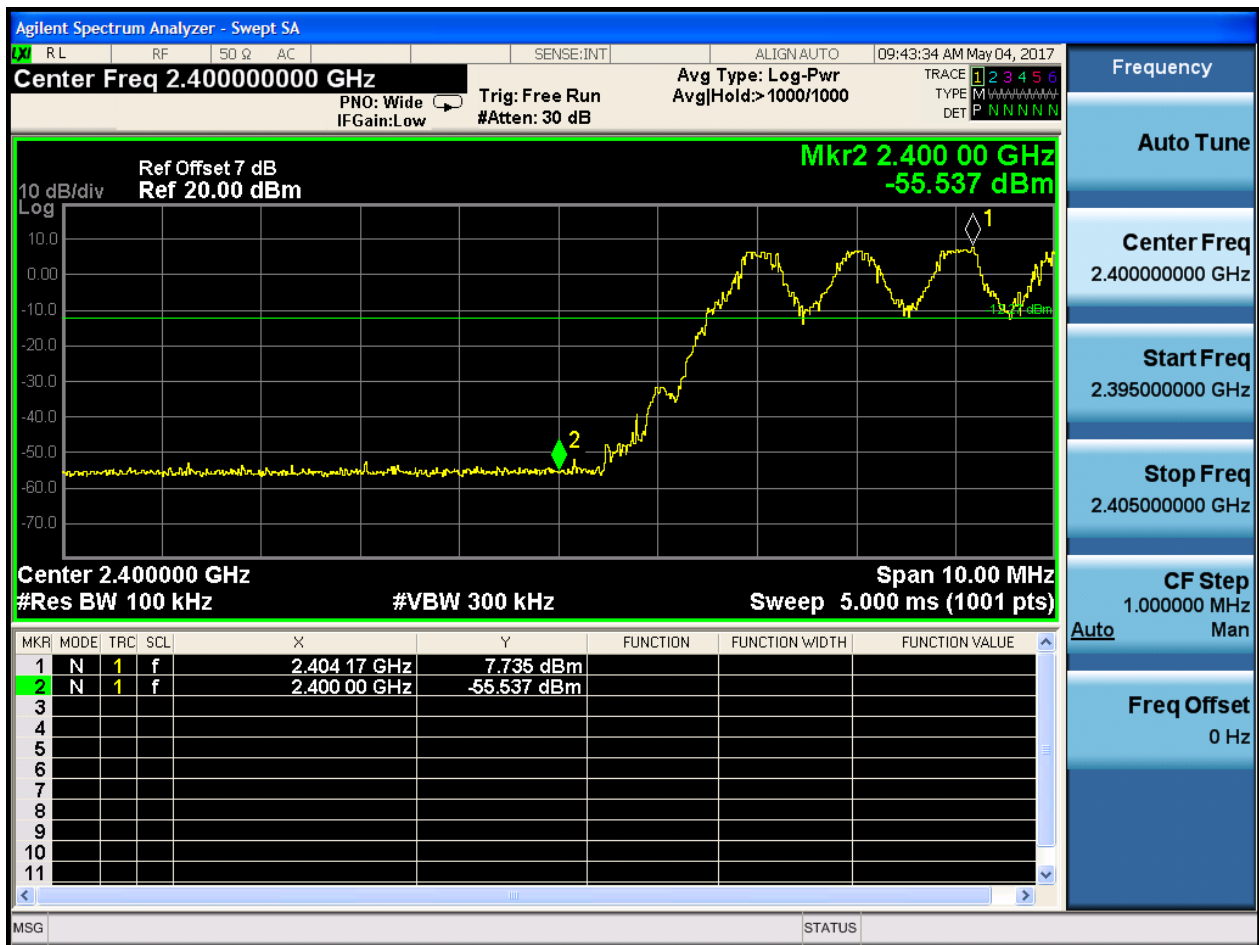
2 Test Plot

2.1 TM1_DH5_Ch0

No hopping



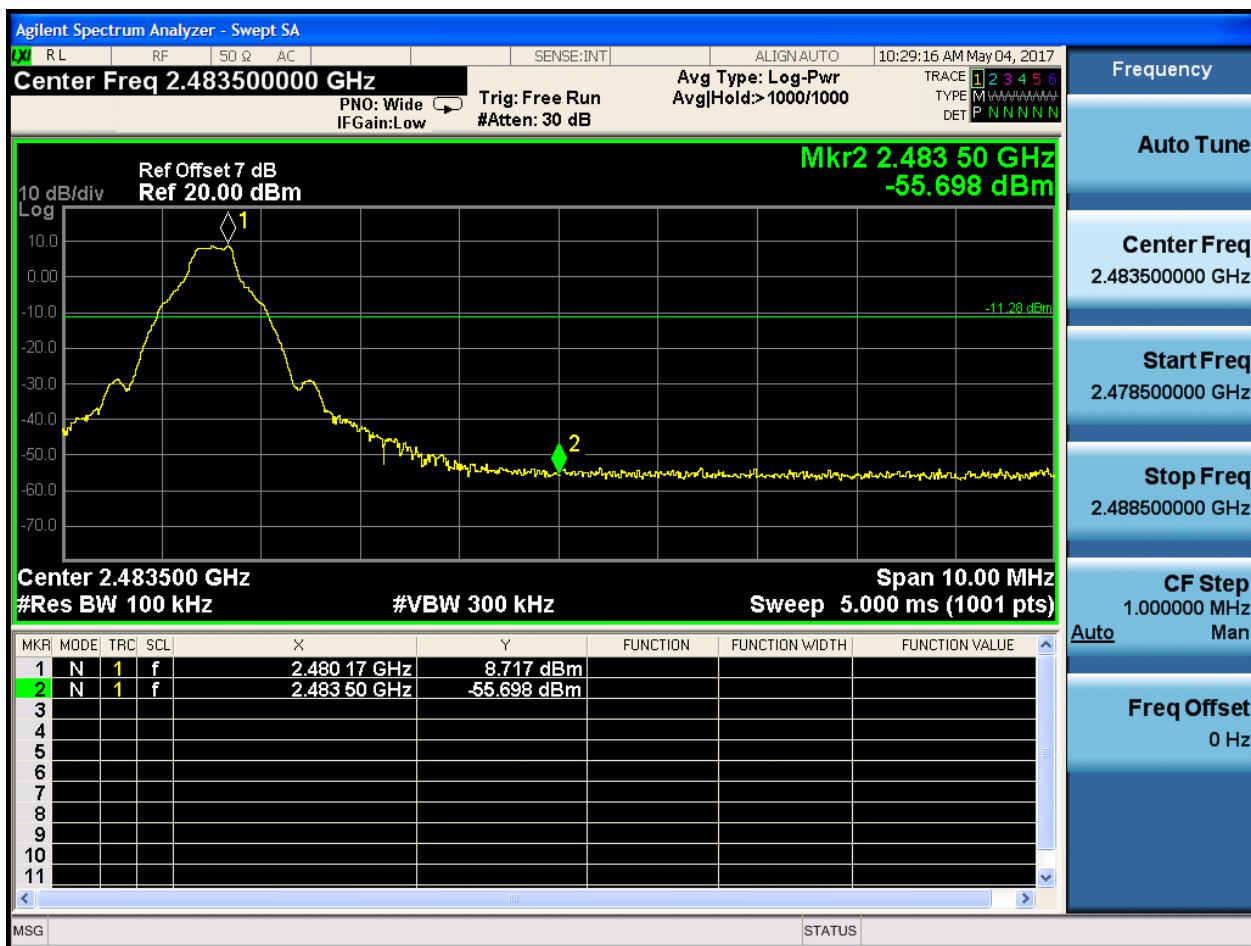
With hopping



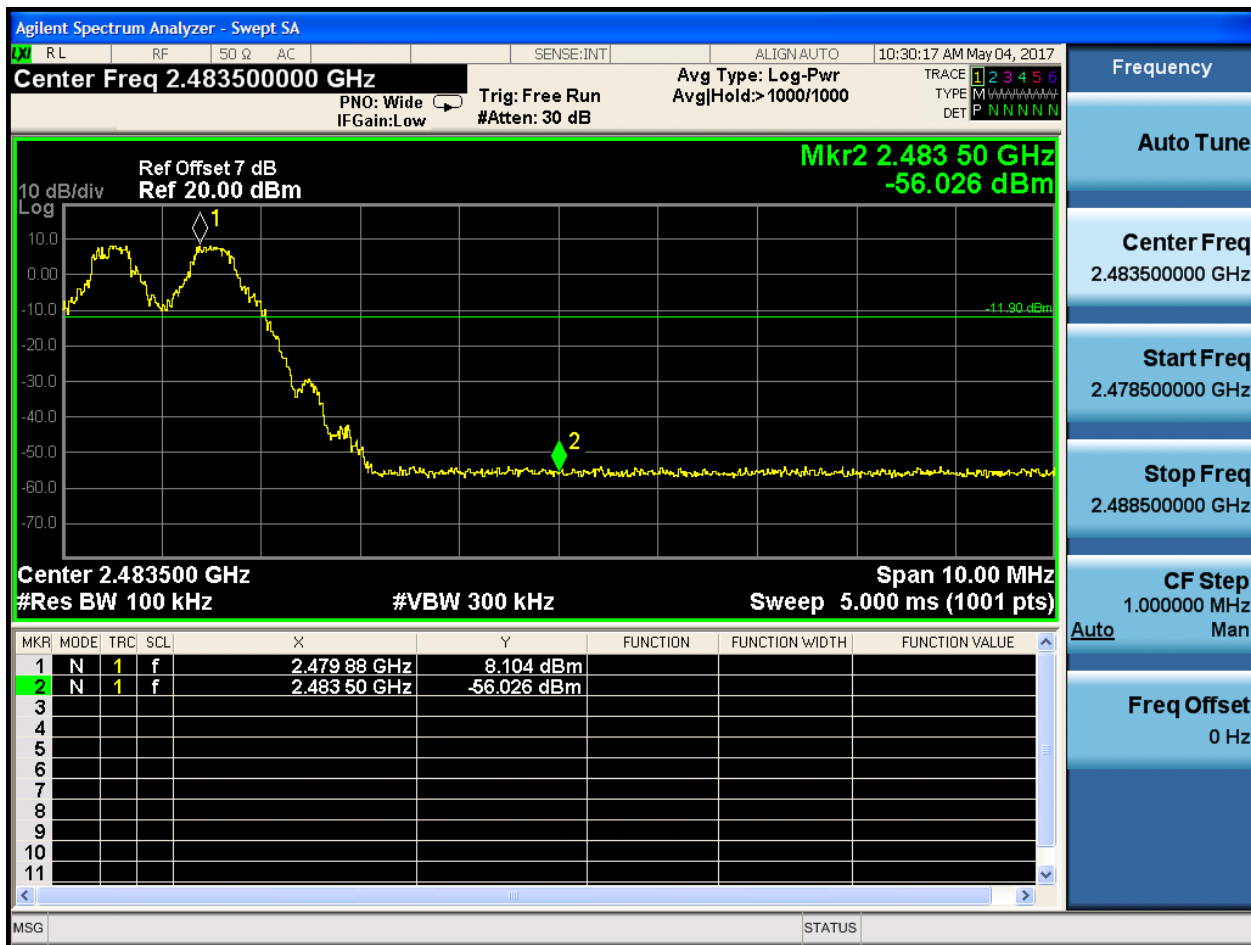


2.2 TM1_DH5_Ch78

No hopping



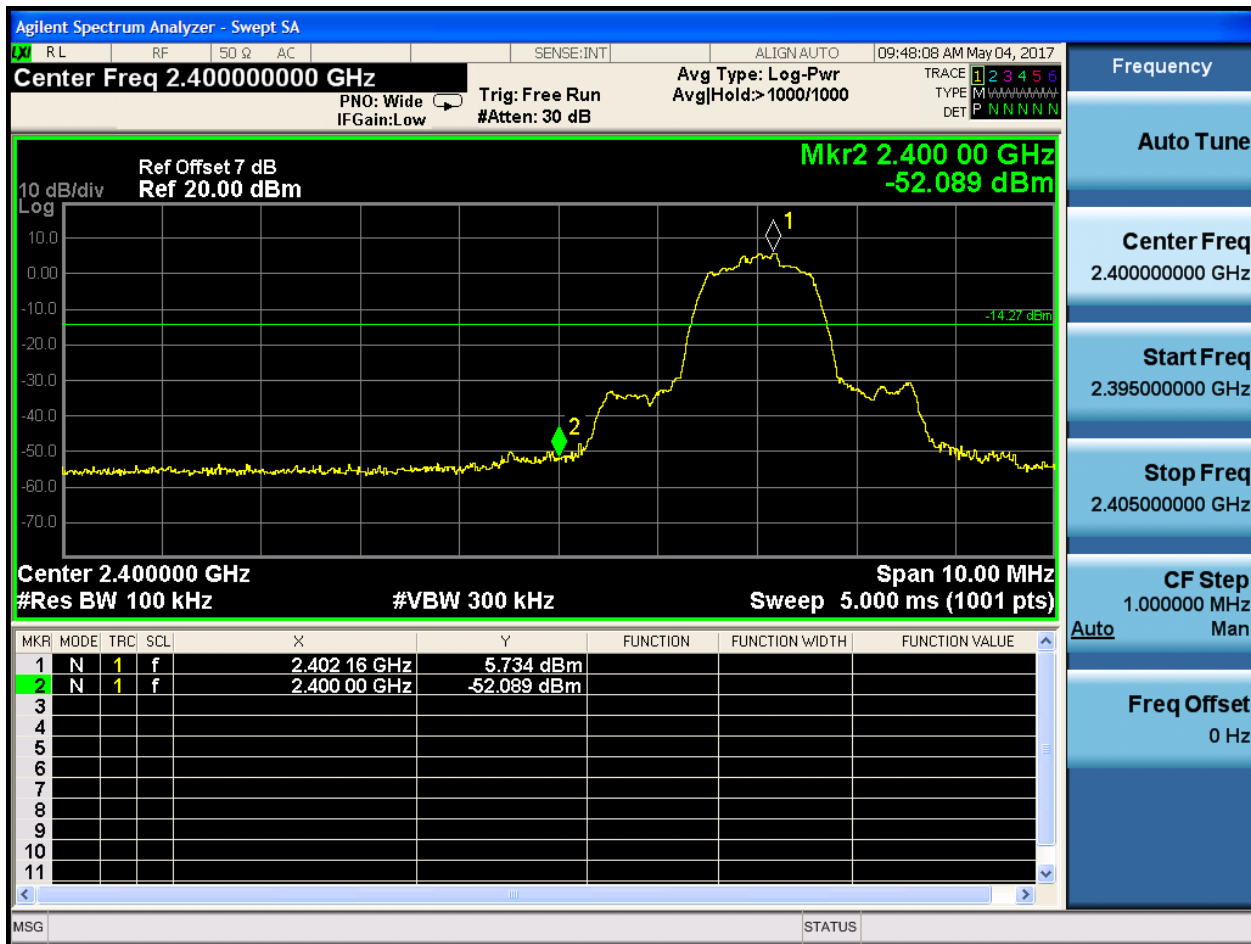
With hopping





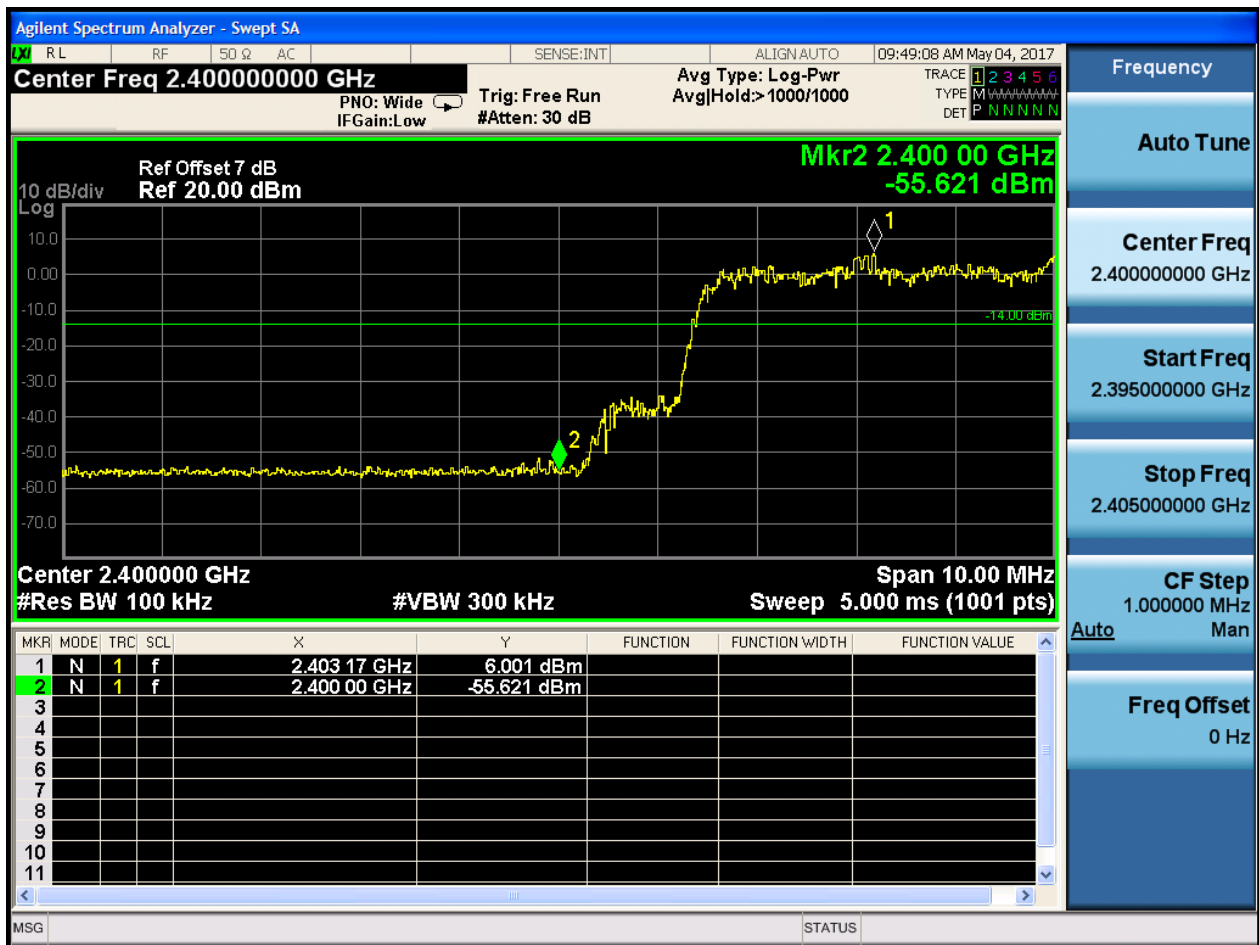
2.3 TM2_2DH5_Ch0

No hopping





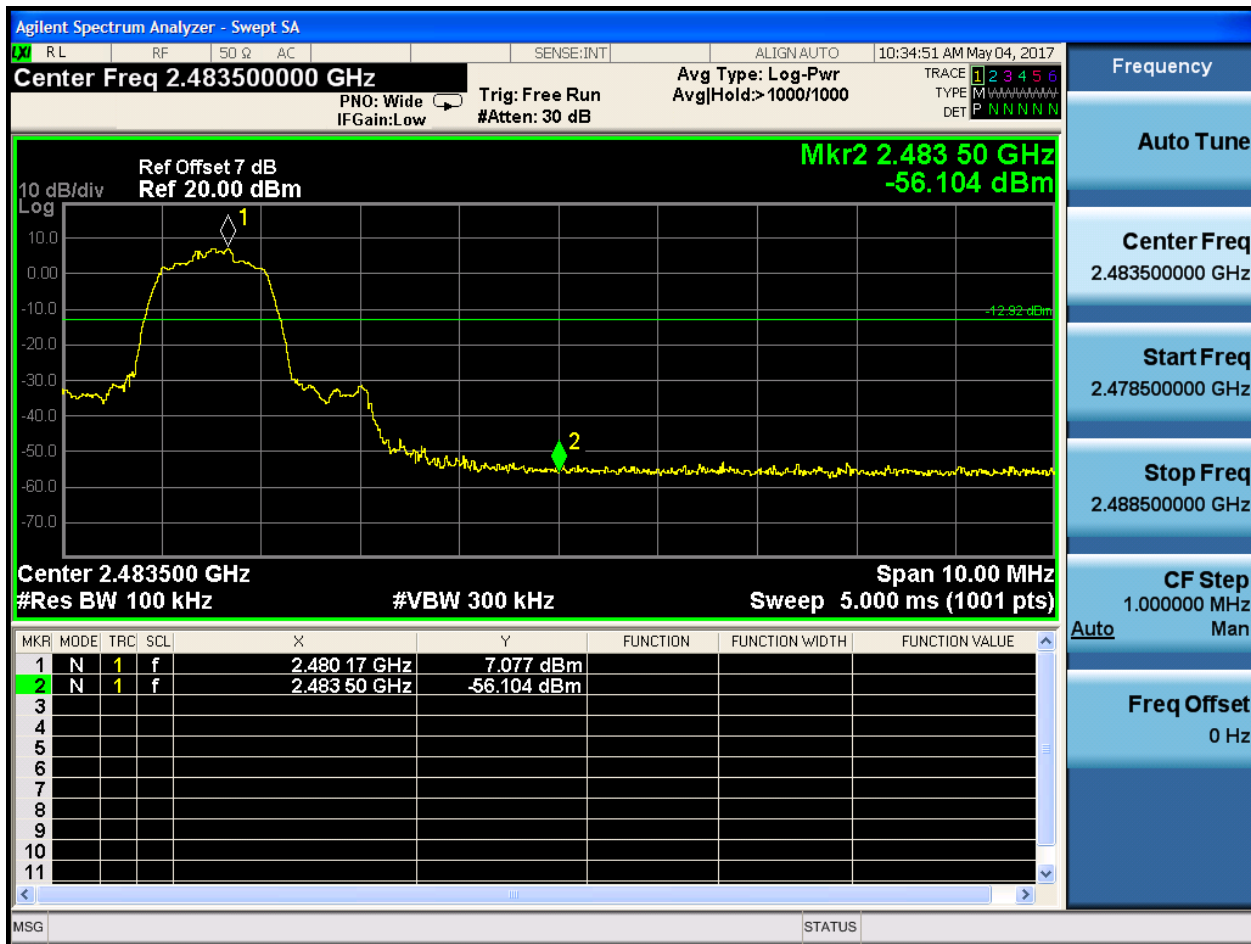
With hopping





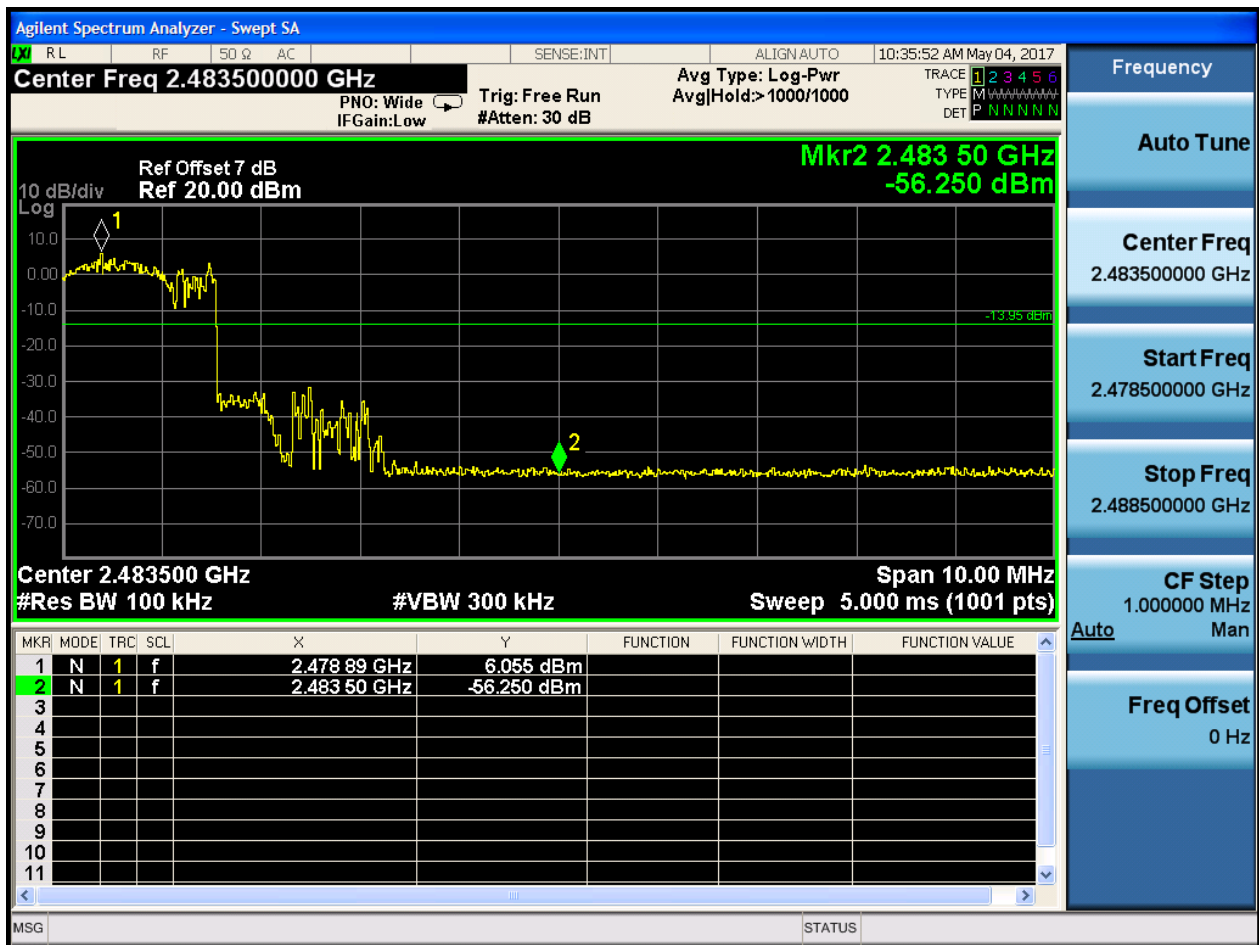
2.4 TM2_2DH5_Ch78

No hopping





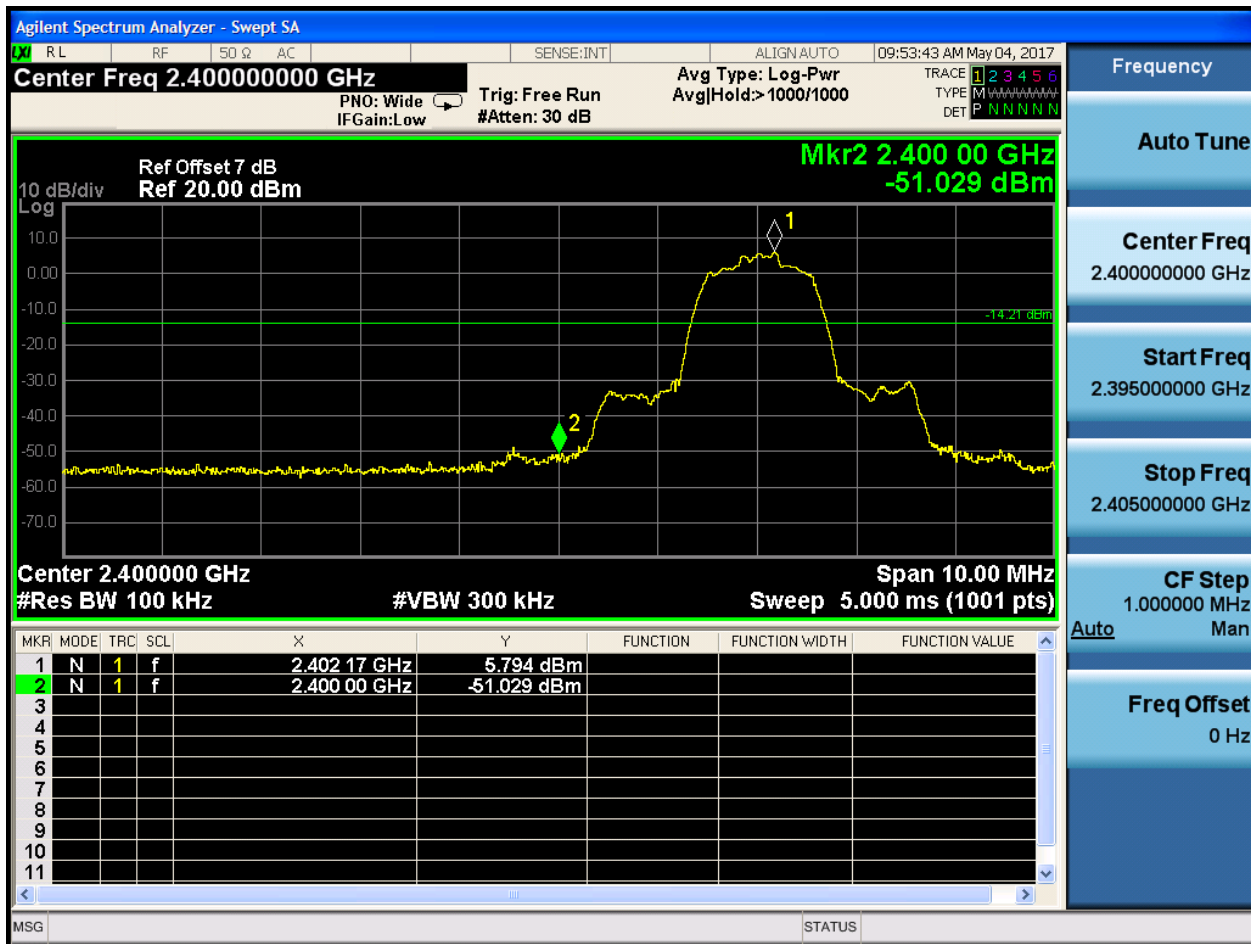
With hopping

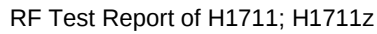




2.5 TM3_3DH5_Ch0

No hopping





Agilent Spectrum Analyzer - Swept SA

Center Freq 2.40000000 GHz

Ref Offset 7 dB
Ref 20.00 dBm

Mkr2 2.400 00 GHz
-54.851 dBm

10 dB/div
Log

Center 2.400000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 10.00 MHz
Sweep 5.000 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.402 17 GHz	5.791 dBm			
2	N	1	f	2.400 00 GHz	-54.851 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.400000000 GHz

Start Freq
2.395000000 GHz

Stop Freq
2.405000000 GHz

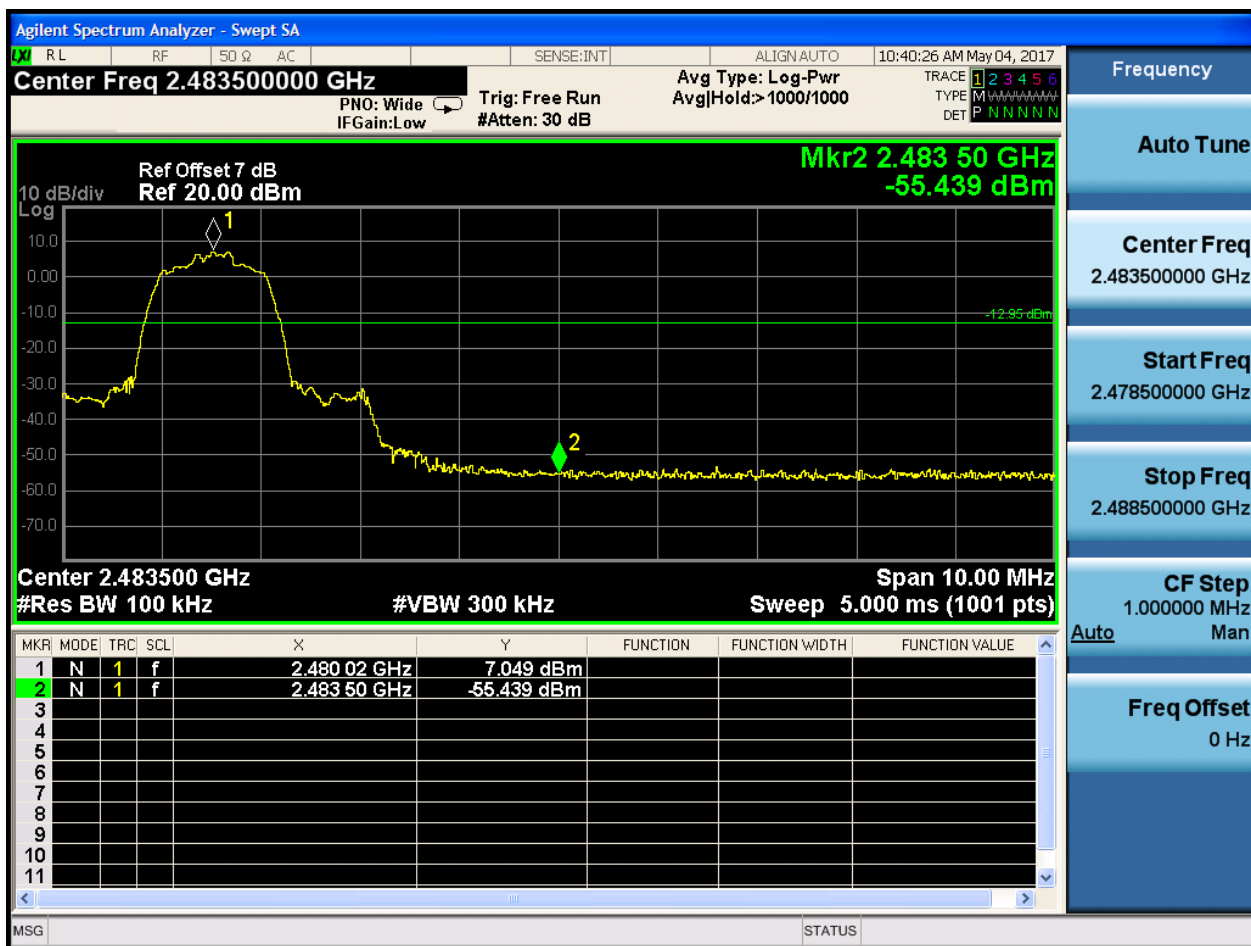
CF Step
1.000000 MHz
Man

Freq Offset
0 Hz



2.6 TM3_3DH5_Ch78

No hopping





With hopping





Appendix G: Conducted RF Spurious Emission

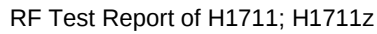
1 Result Table

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.

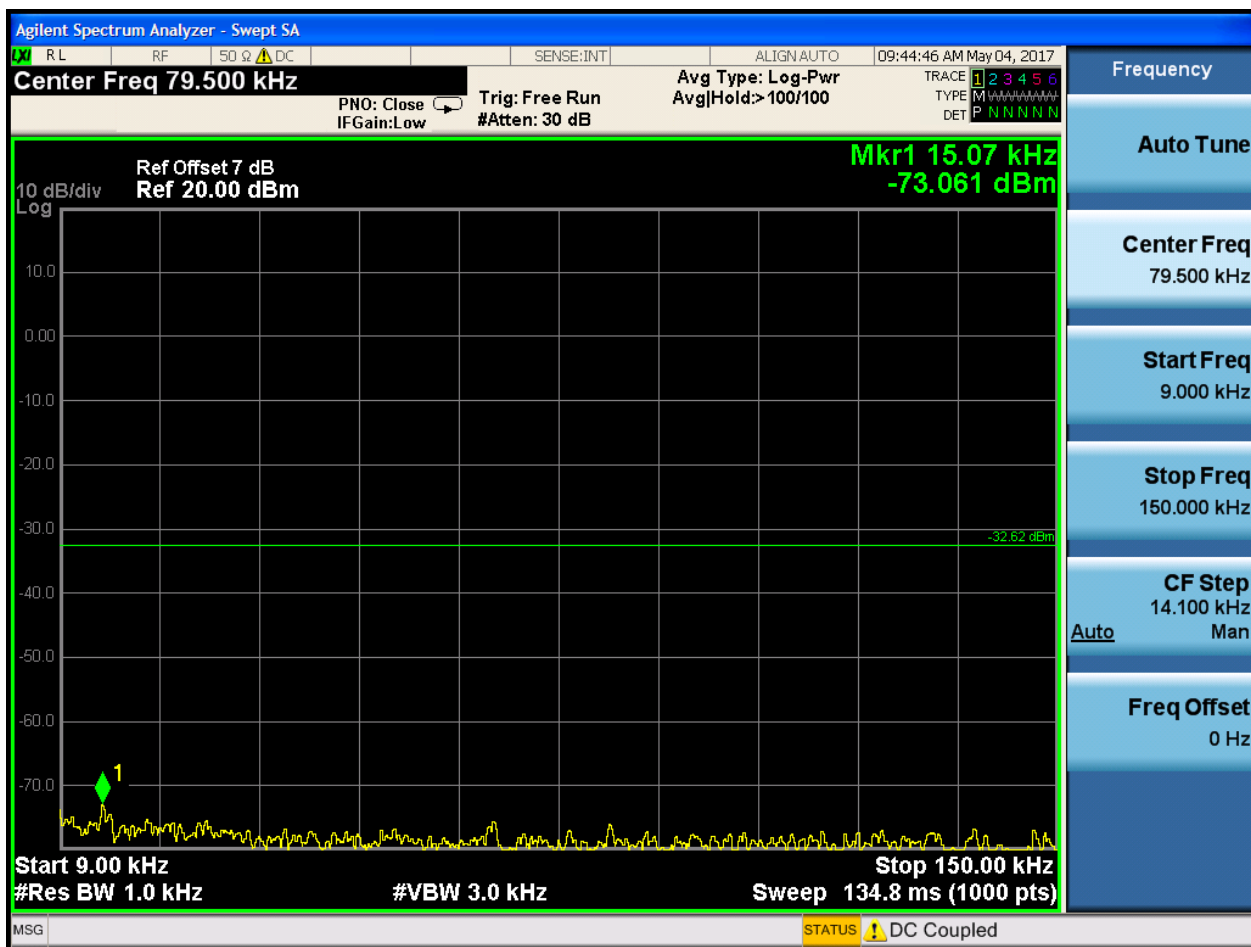
In the result table, the “< Limit” denotes that “The Puw [dBm] is less than Pref [dBm] - 20 [dB], see test plots for detailed”.

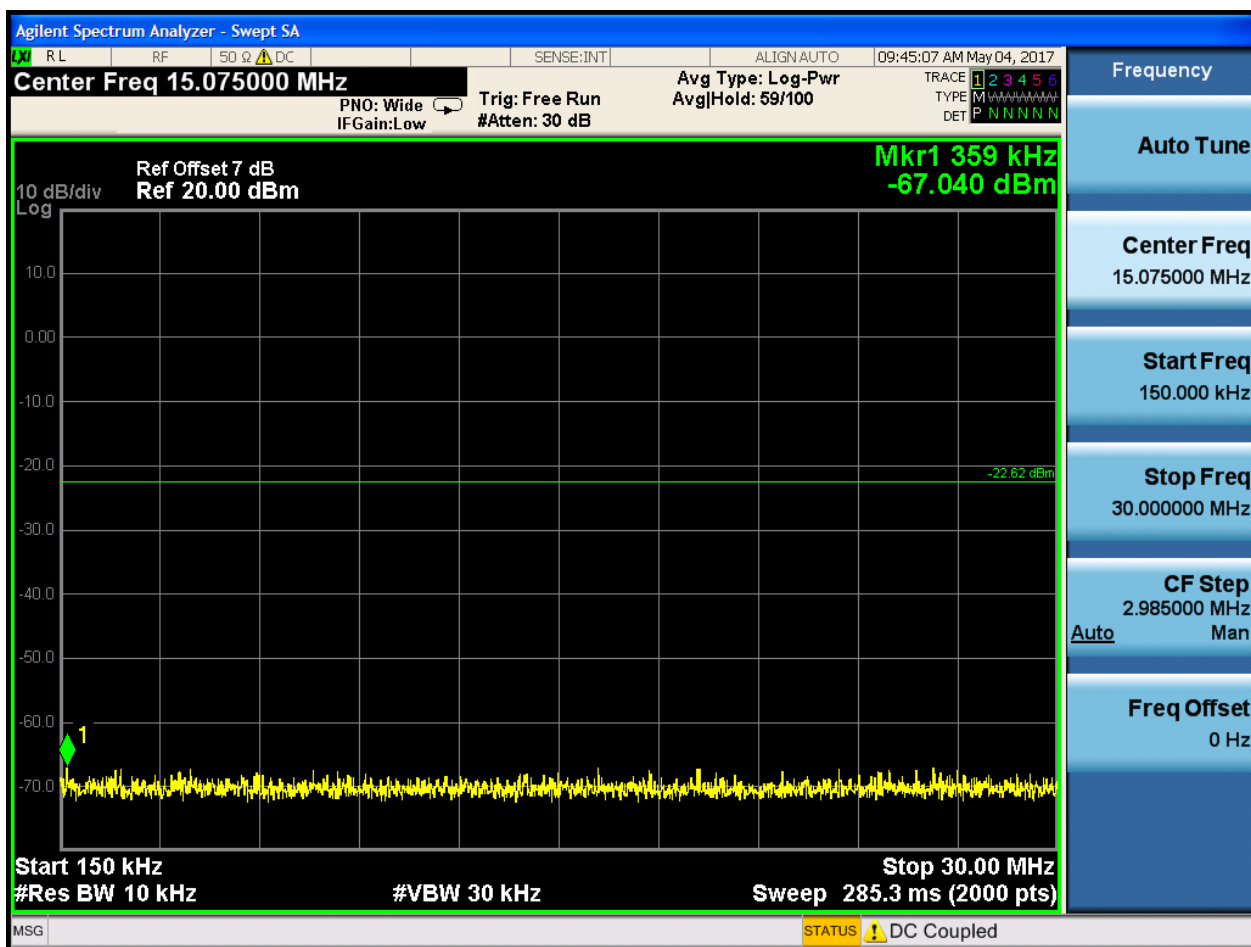
EUT Conf.	Pref [dBm/100 kHz]	Puw [dBm/100 kHz]	Verdict
TM1_DH5_Ch0	7.382	< Limit	Pass
TM1_DH5_Ch39	9.411	< Limit	Pass
TM1_DH5_Ch78	8.73	< Limit	Pass
TM2_2DH5_Ch0	5.804	< Limit	Pass
TM2_2DH5_Ch39	7.834	< Limit	Pass
TM2_2DH5_Ch78	7.082	< Limit	Pass
TM3_3DH5_Ch0	5.809	< Limit	Pass
TM3_3DH5_Ch39	7.84	< Limit	Pass
TM3_3DH5_Ch78	7.087	< Limit	Pass

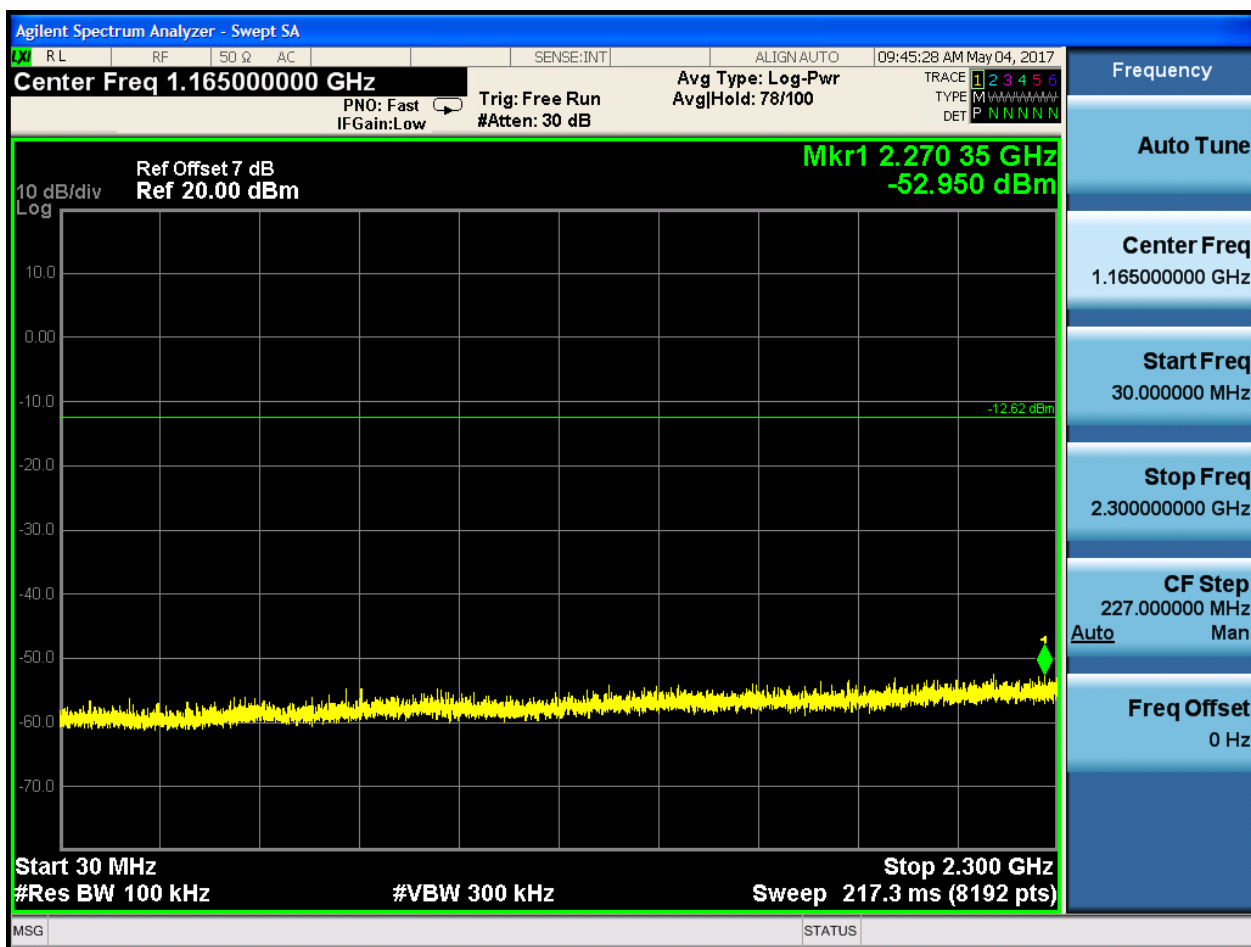


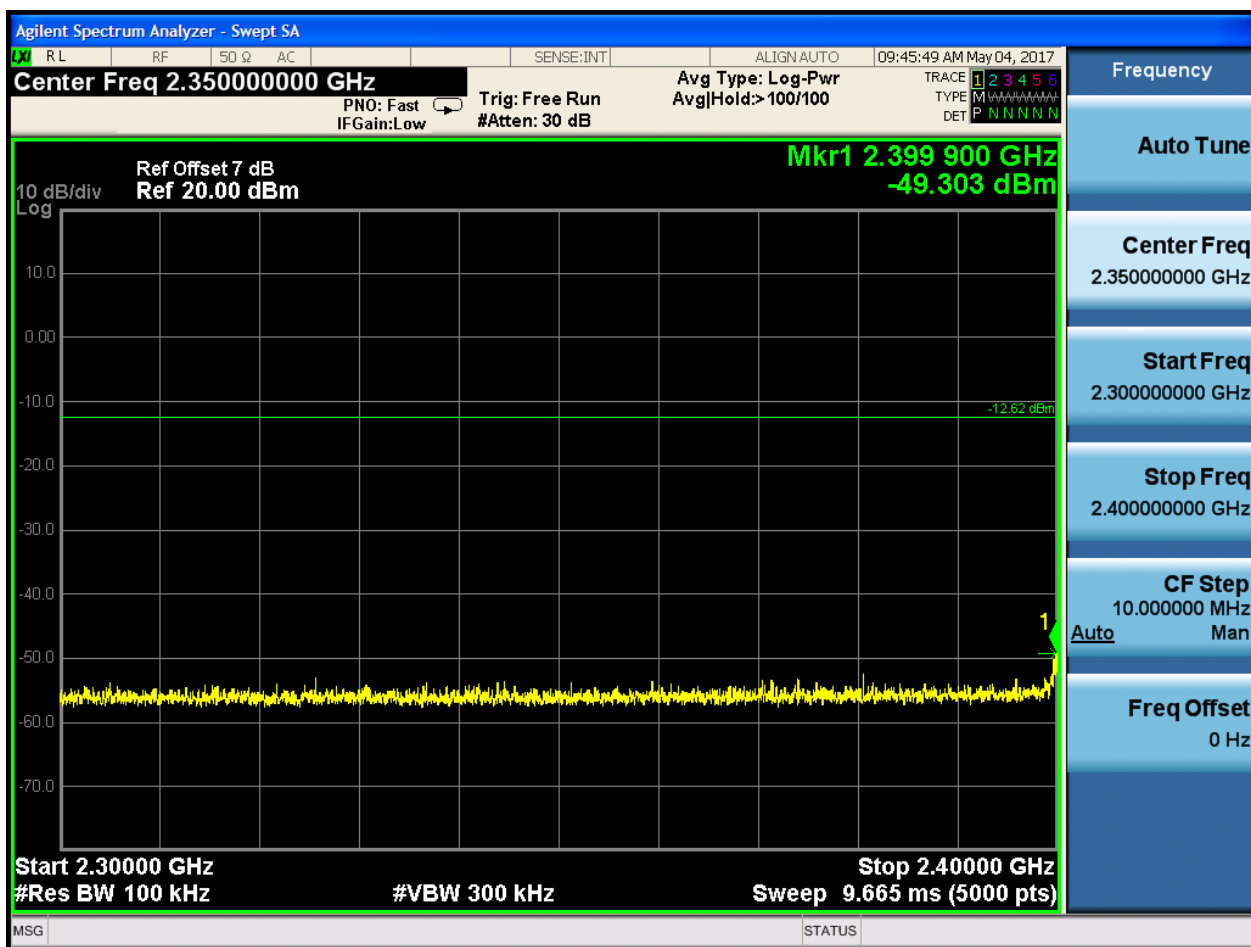


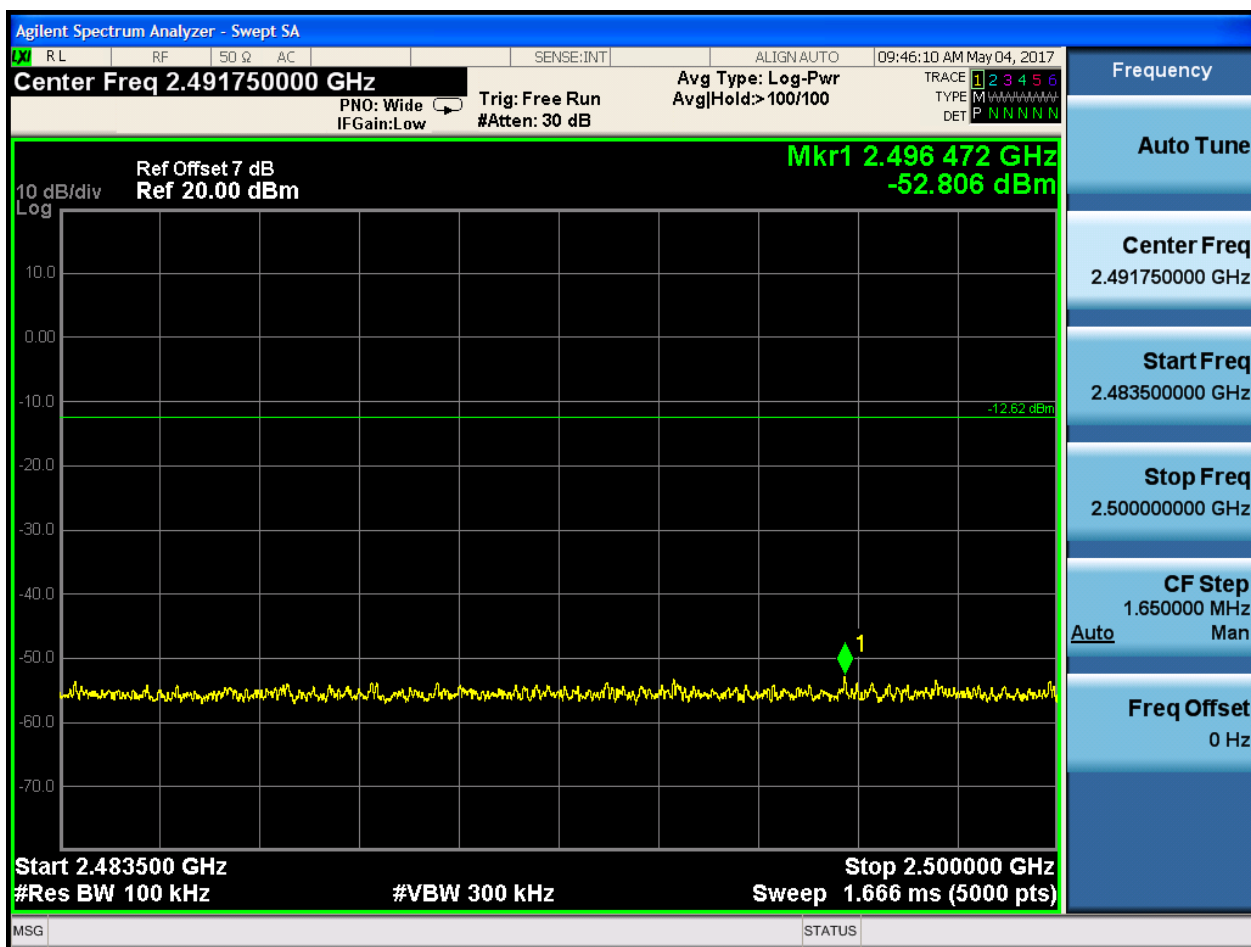
2.1.2 Puw

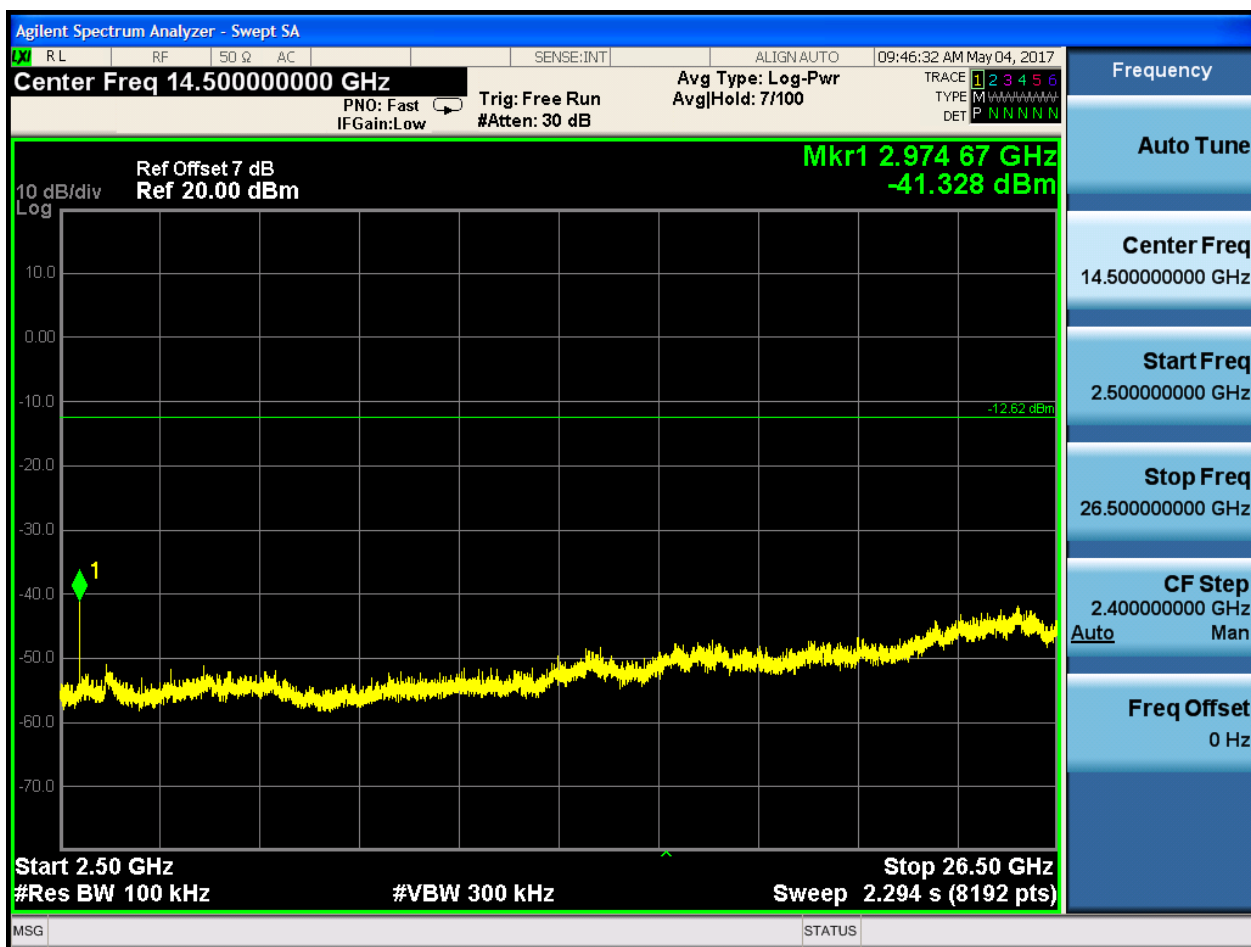








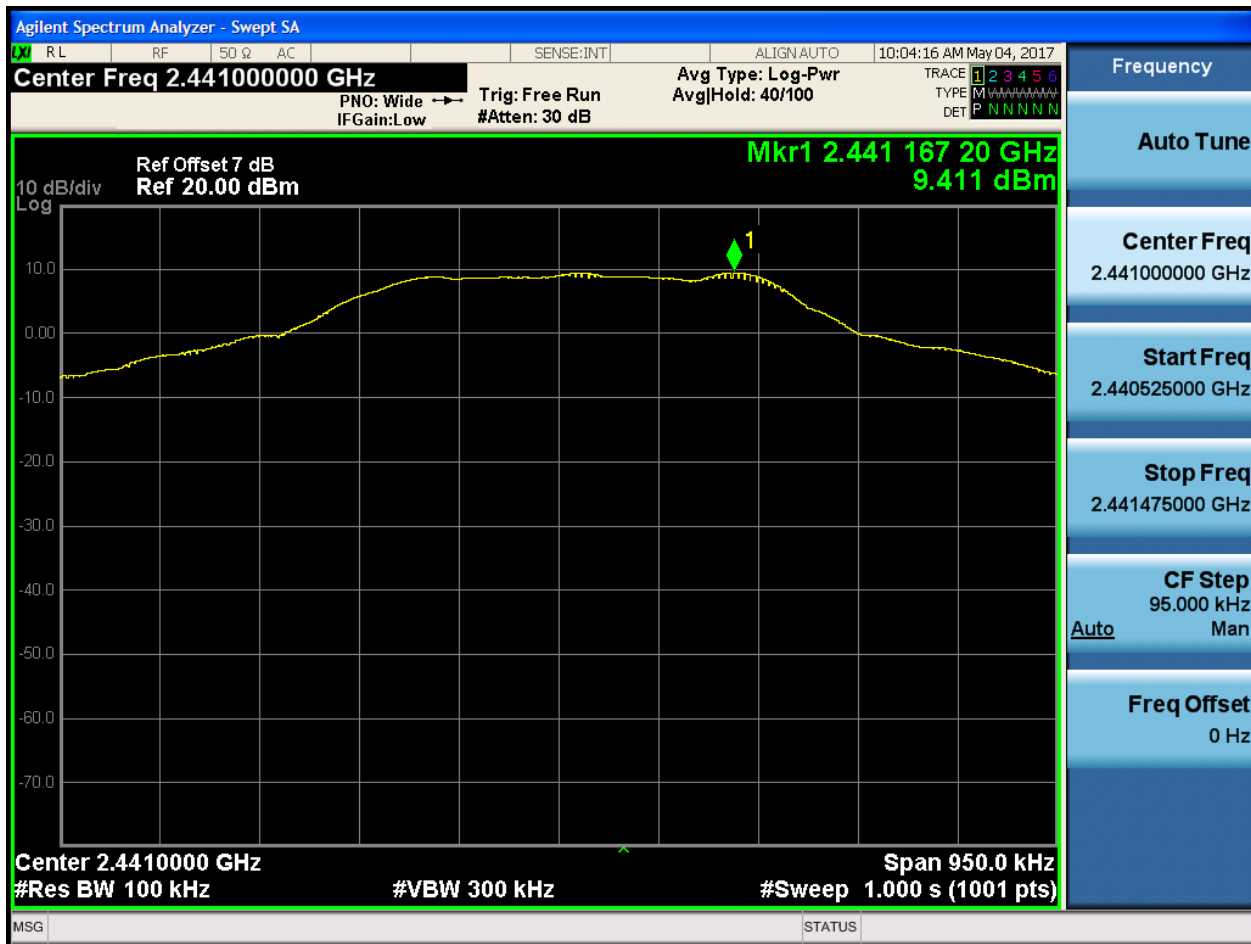






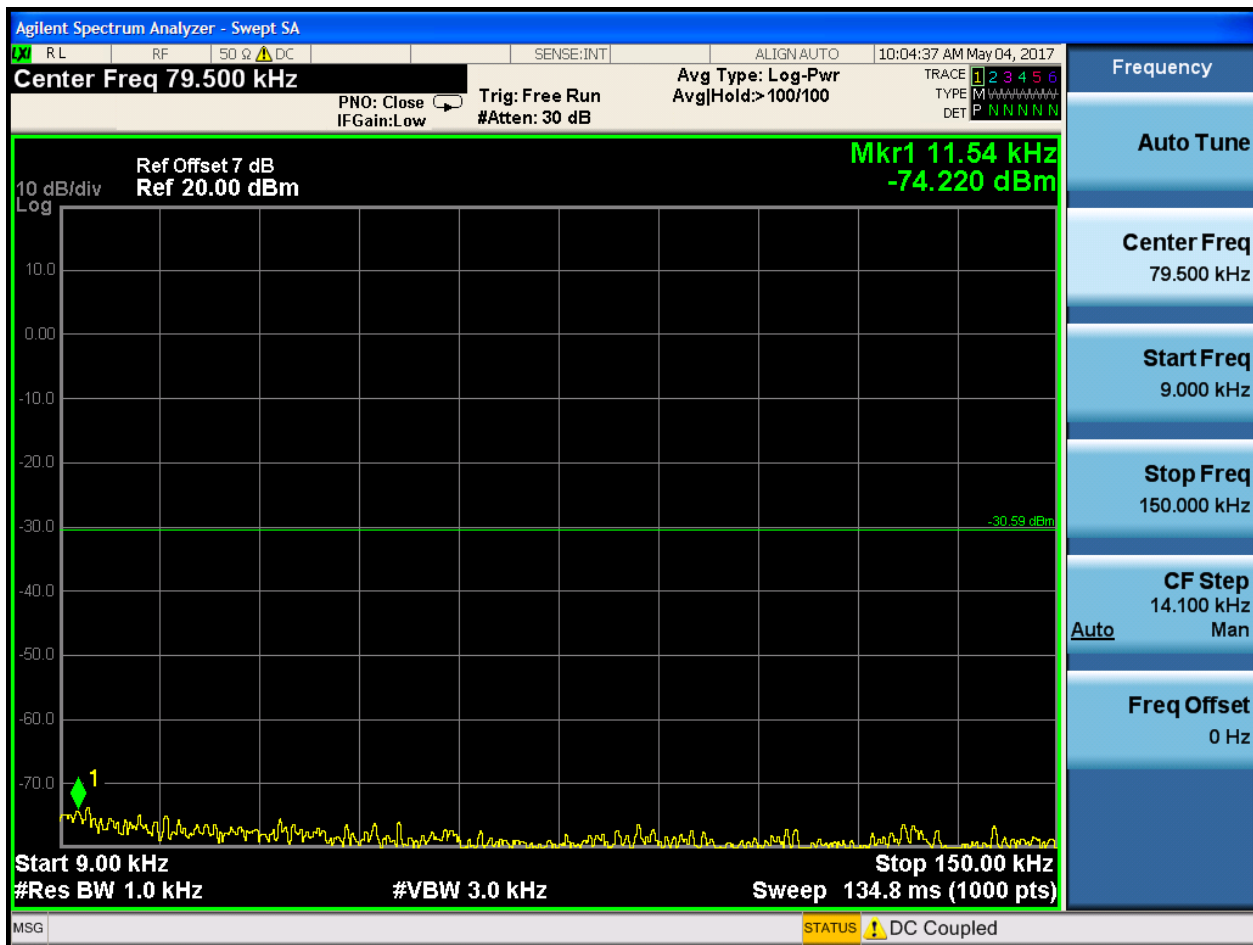
2.2 TM1_DH5_Ch39

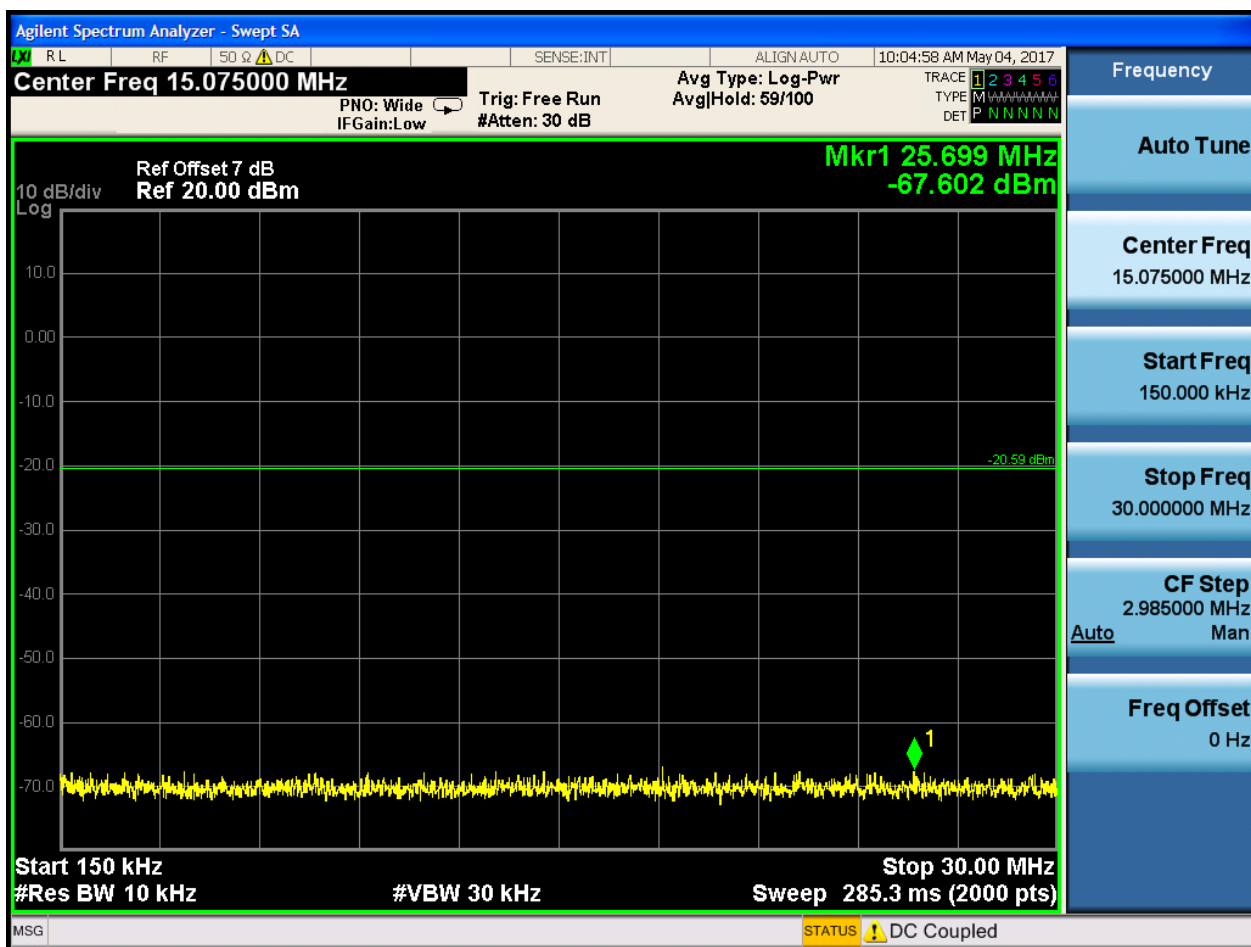
2.2.1 Pref

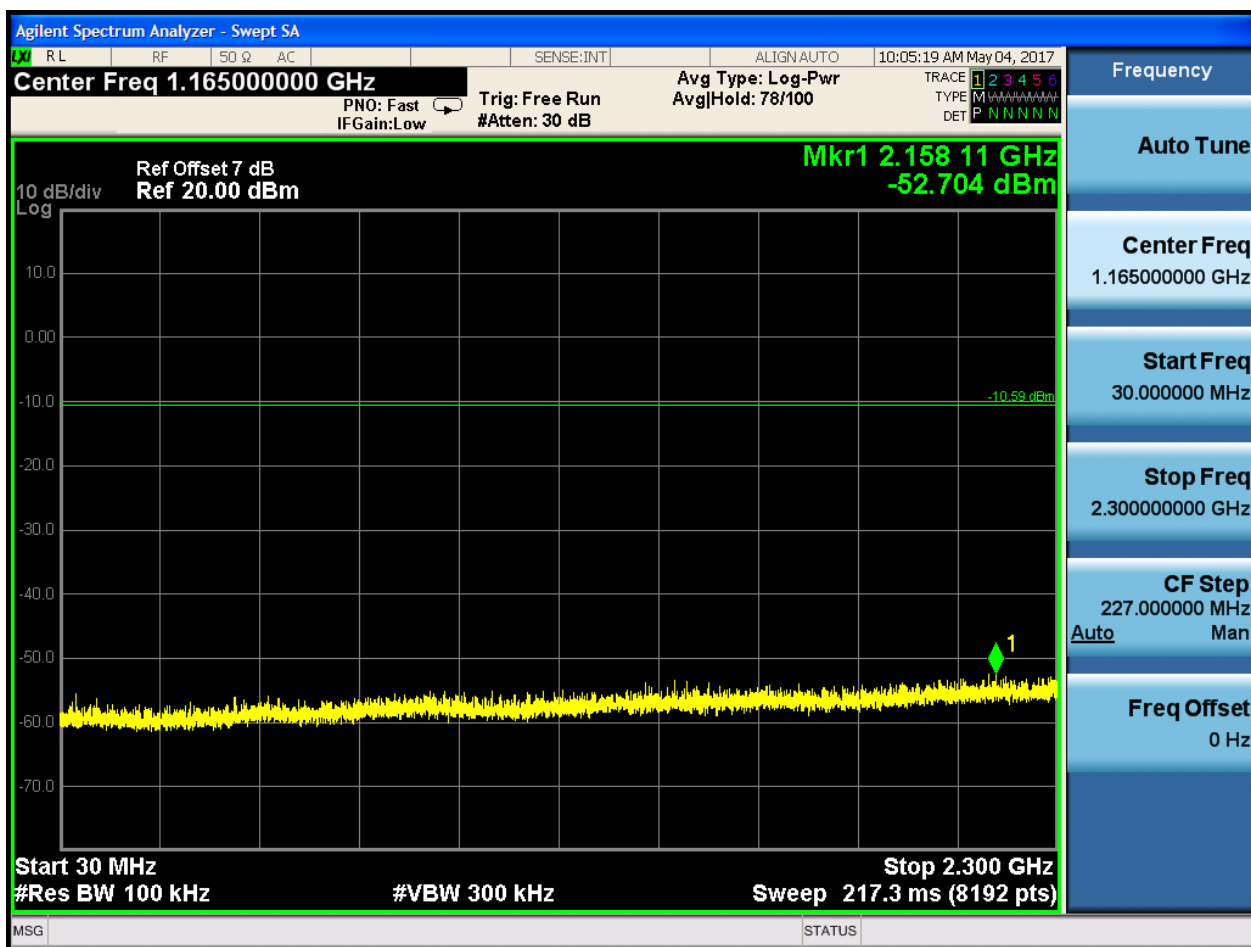


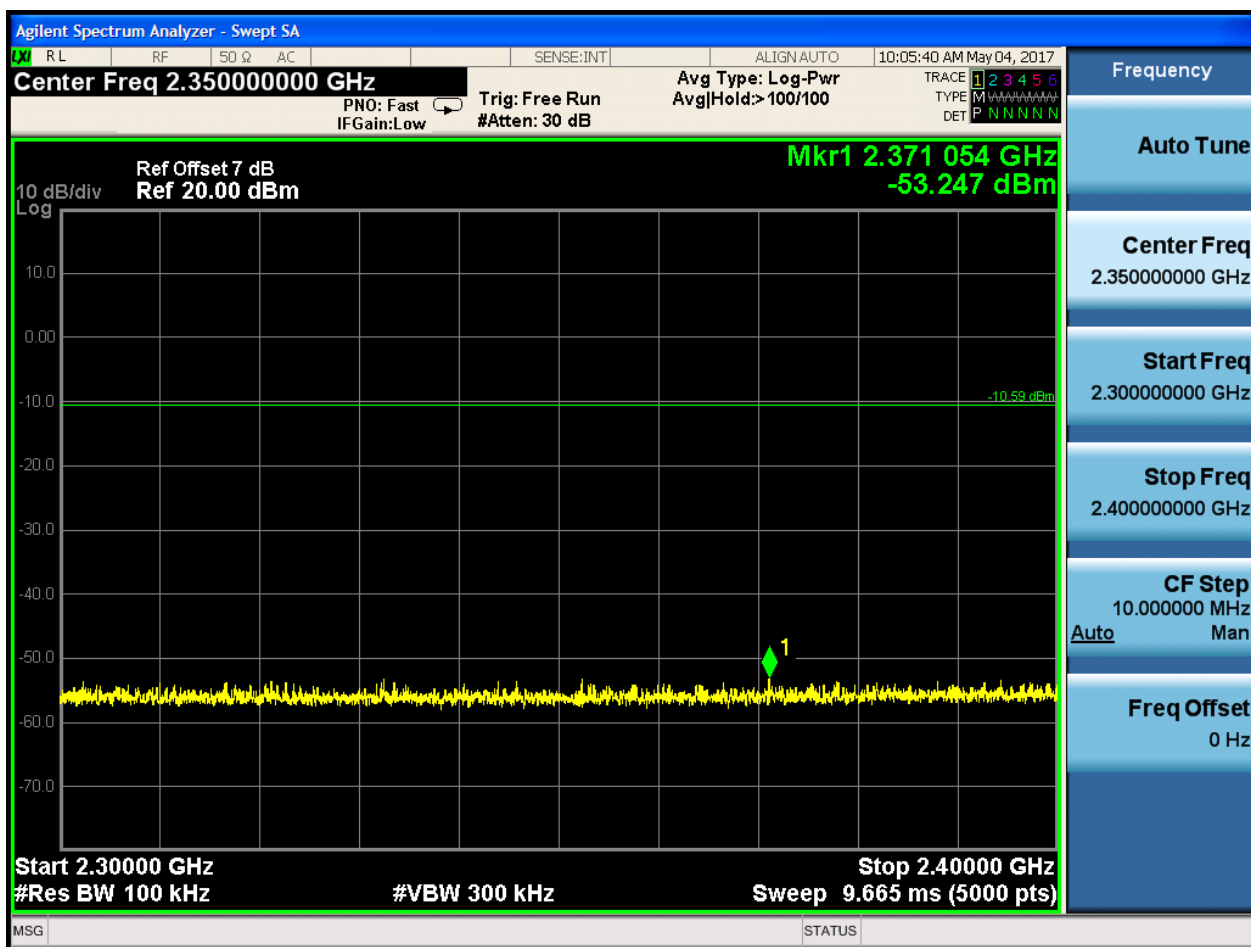


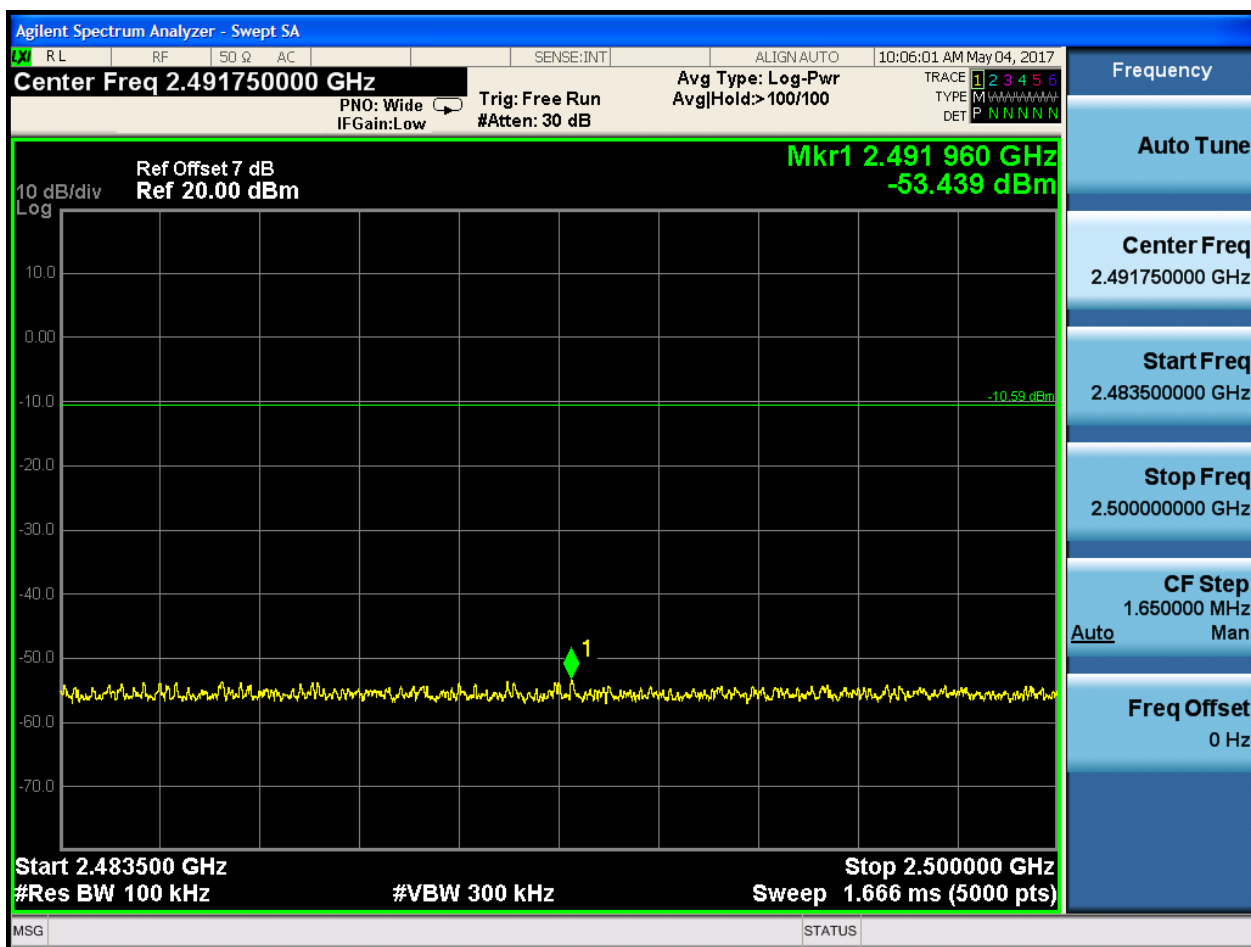
2.2.2 Puw

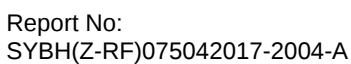
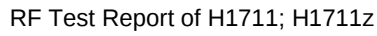








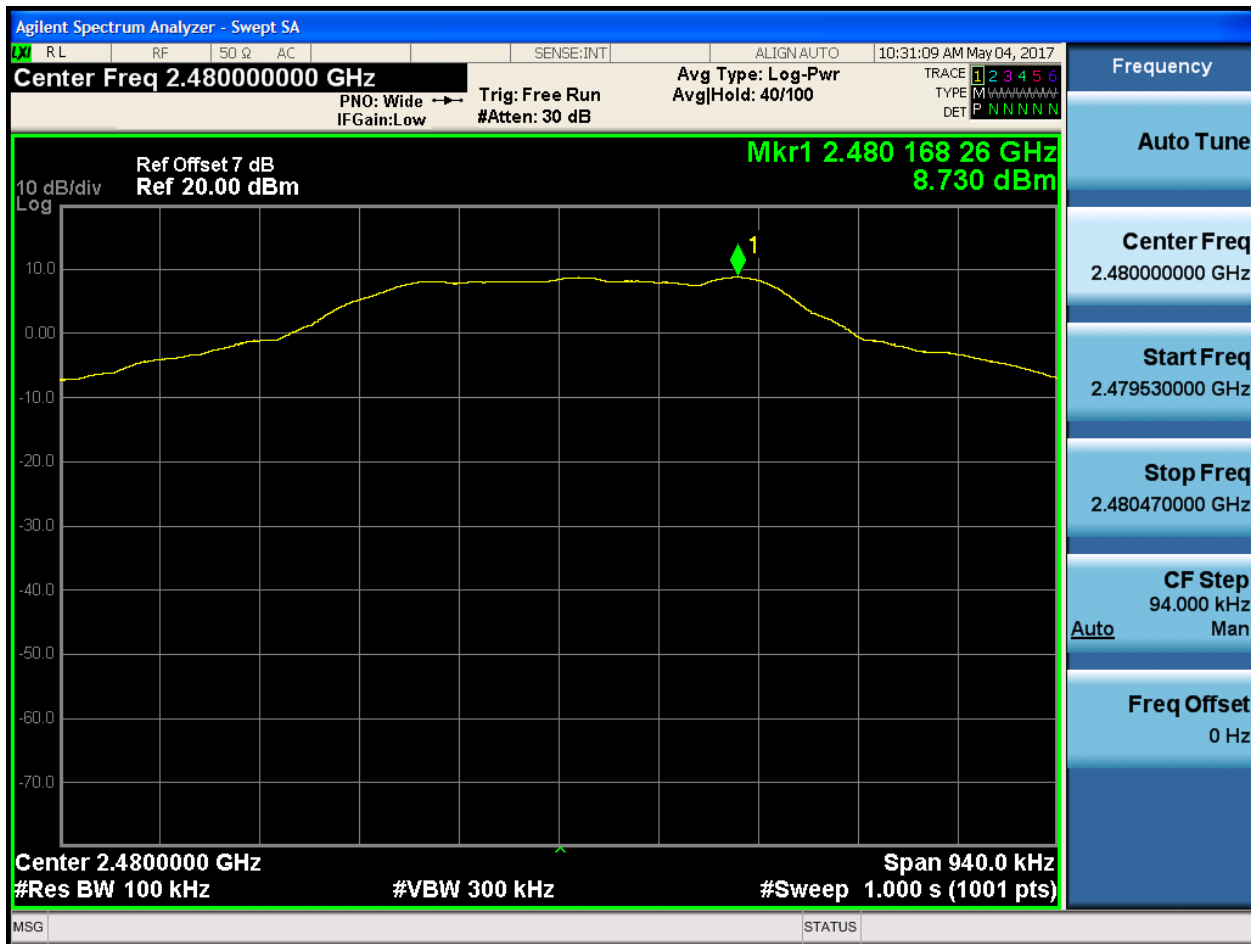






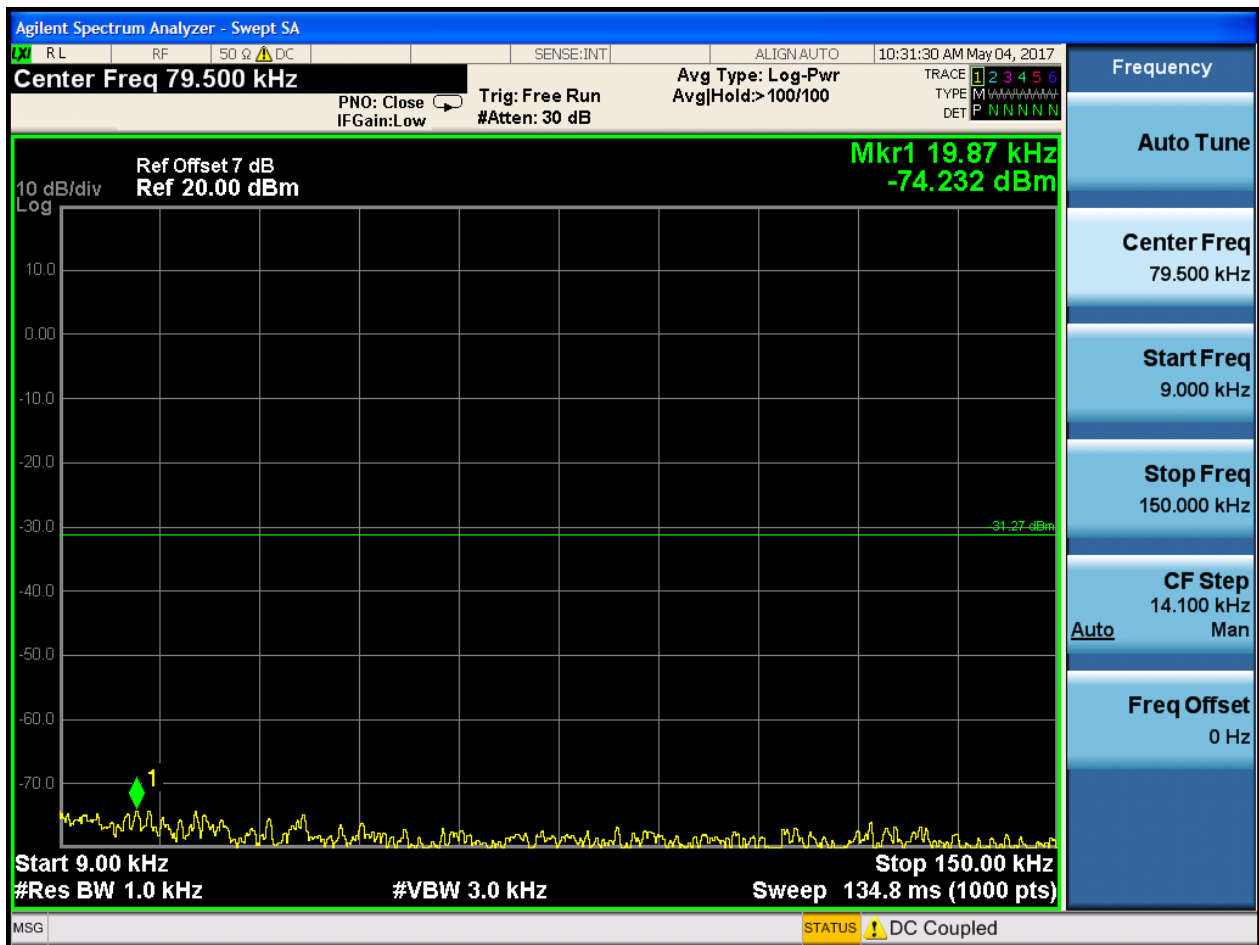
2.3 TM1_DH5_Ch78

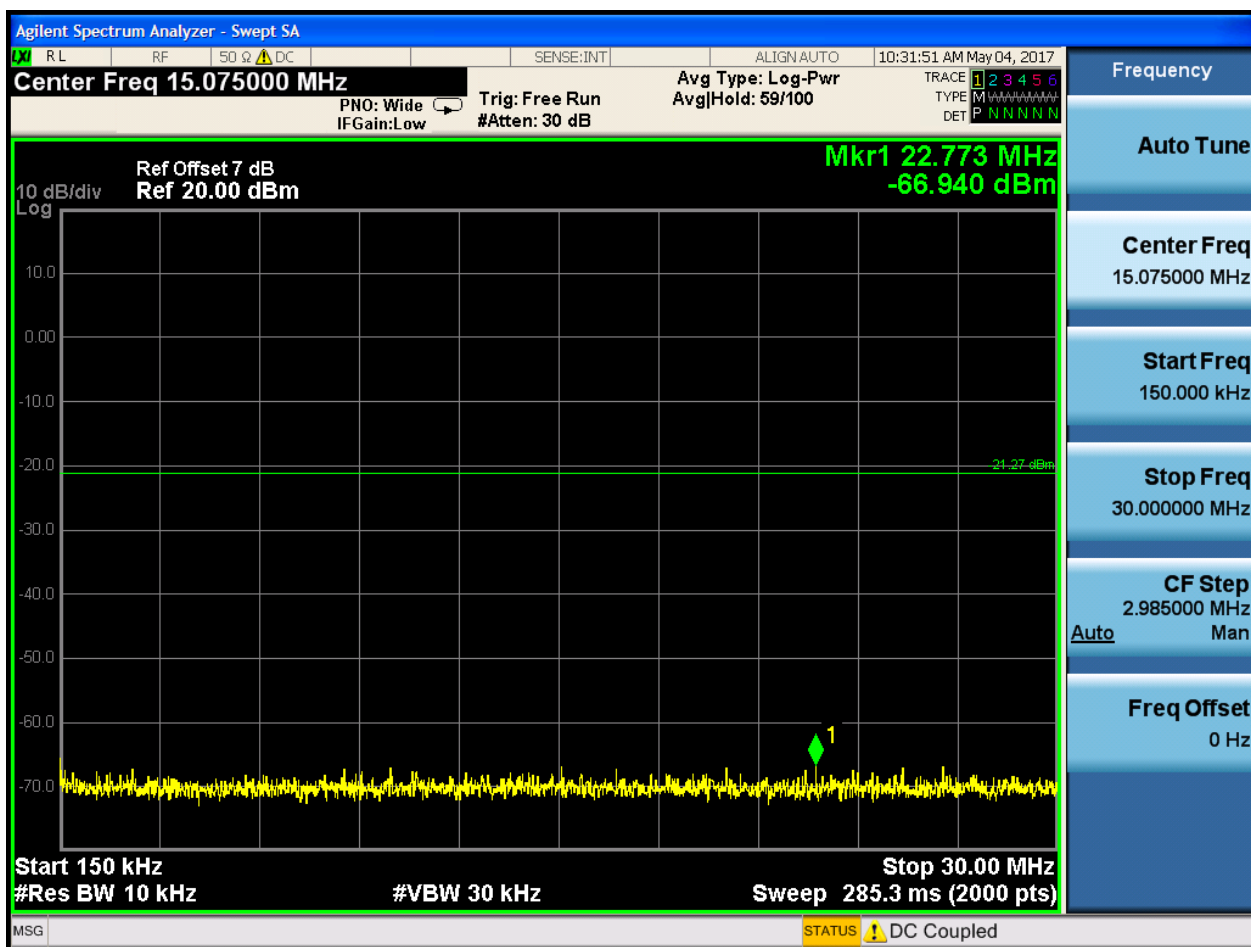
2.3.1 Pref

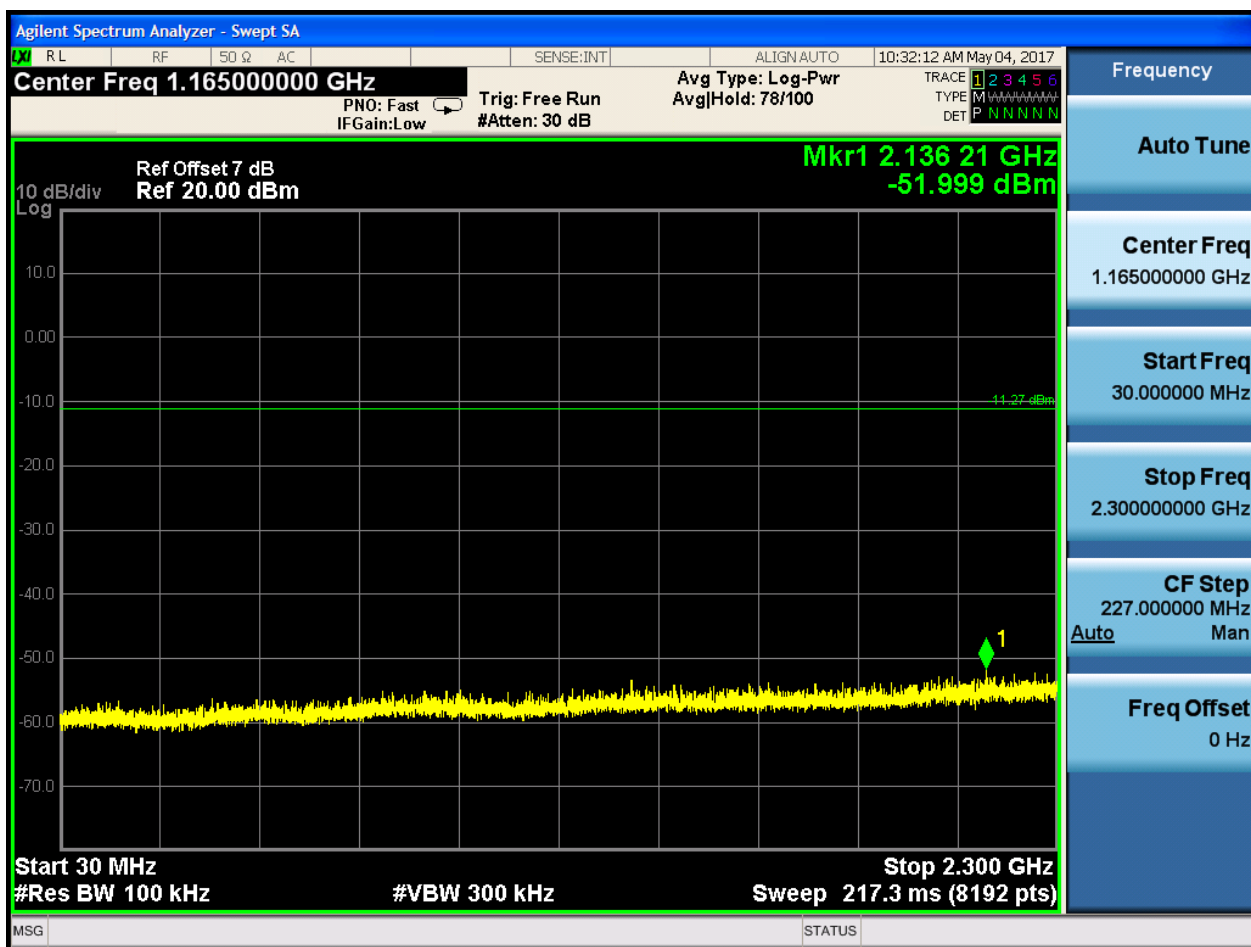


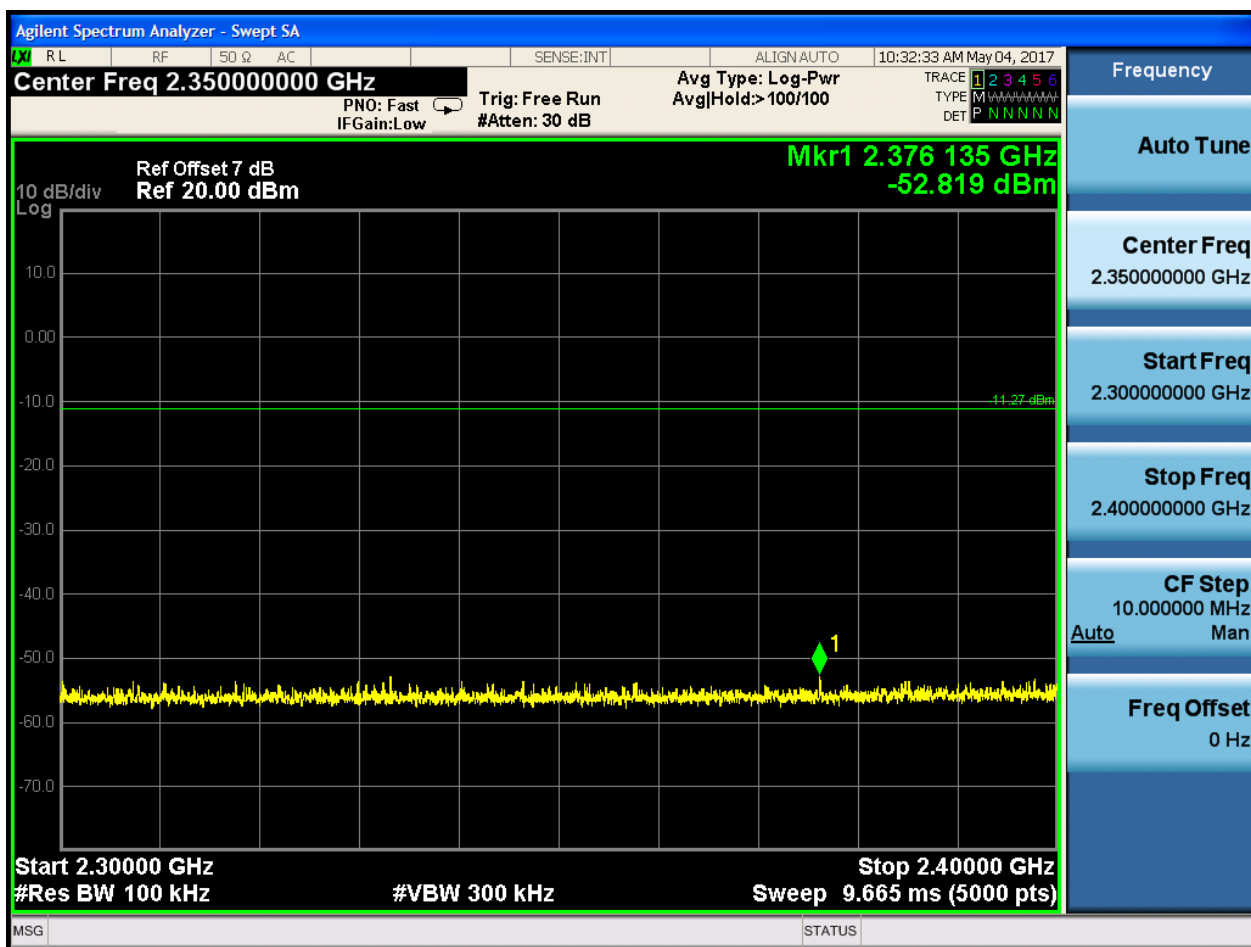


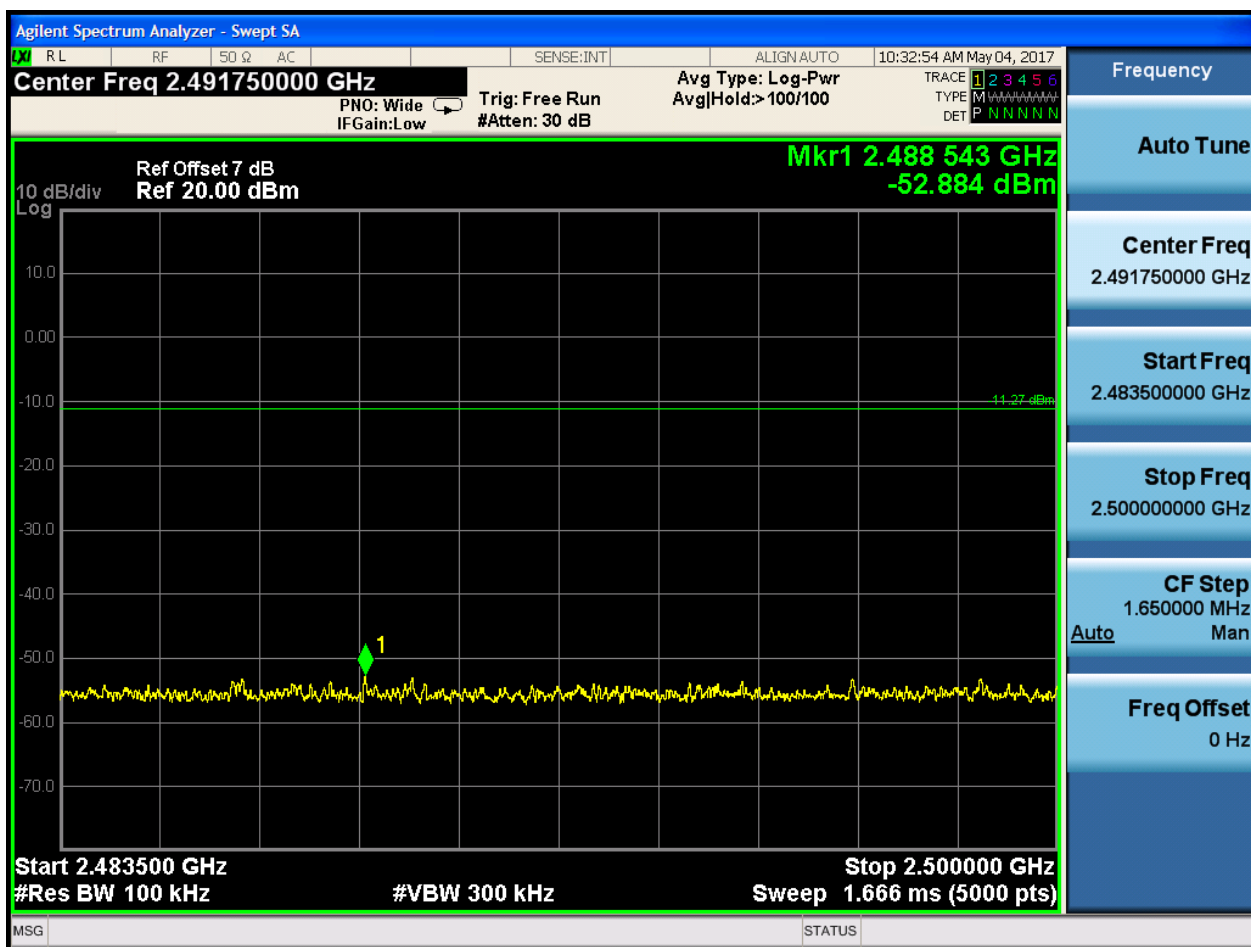
2.3.2 Puw







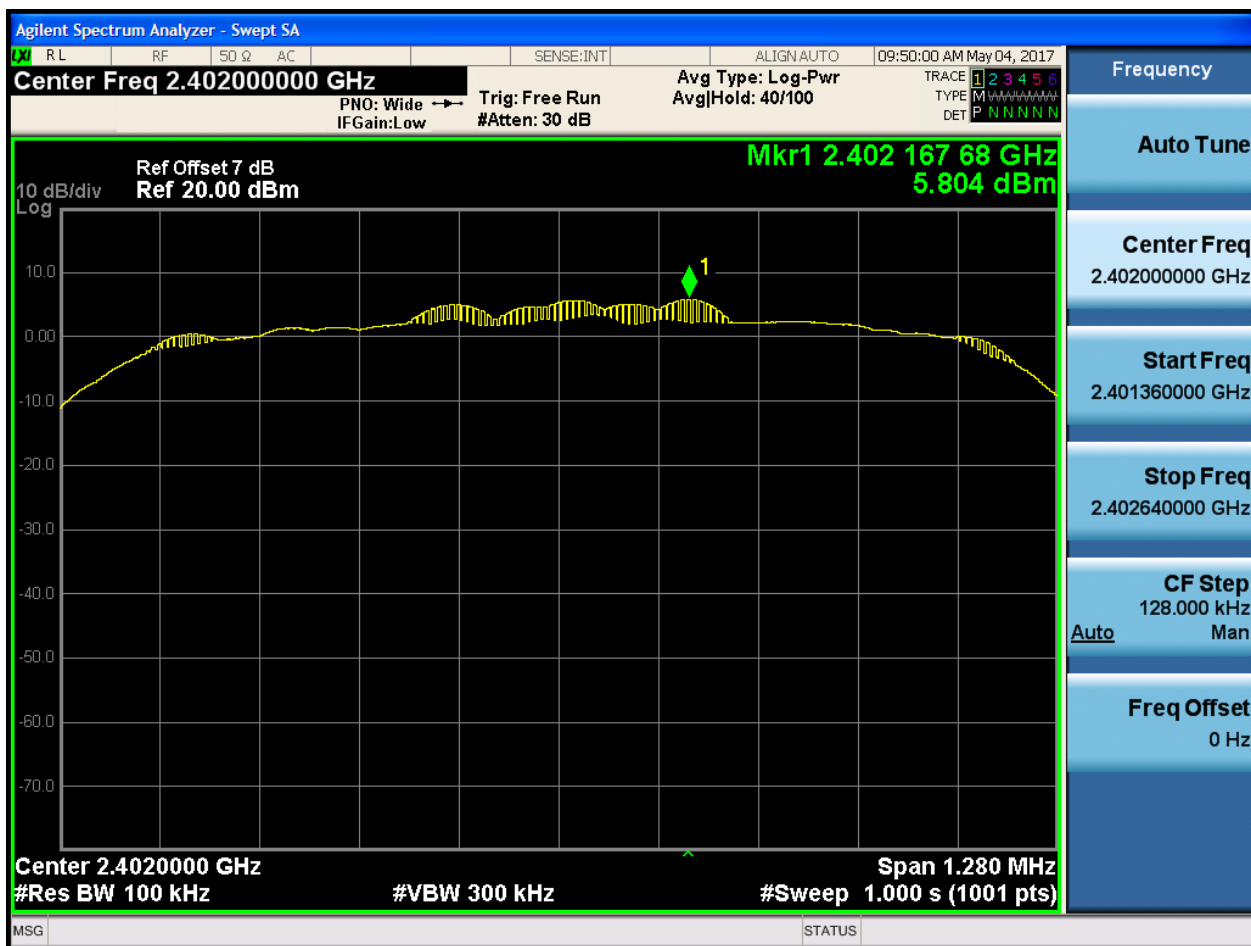




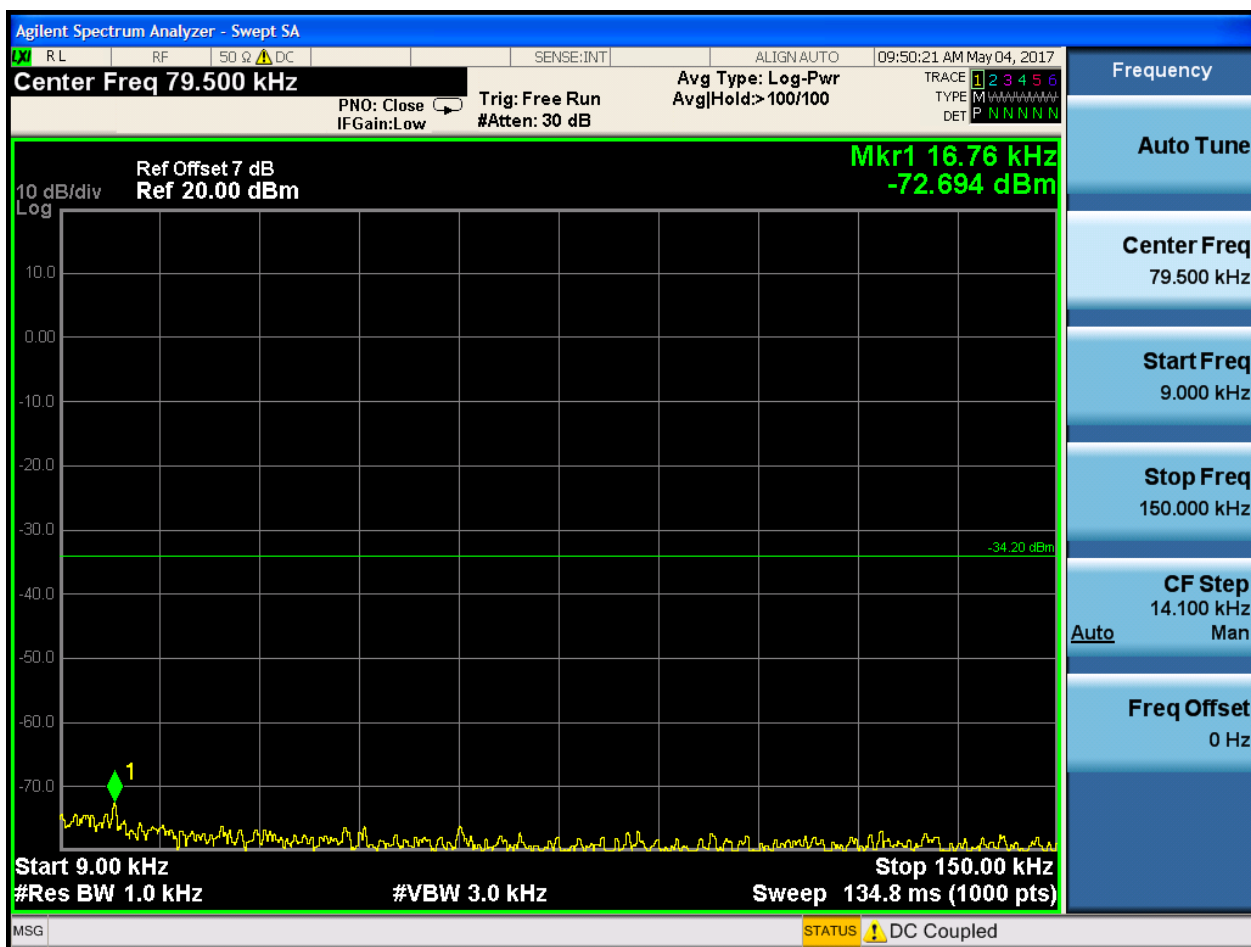


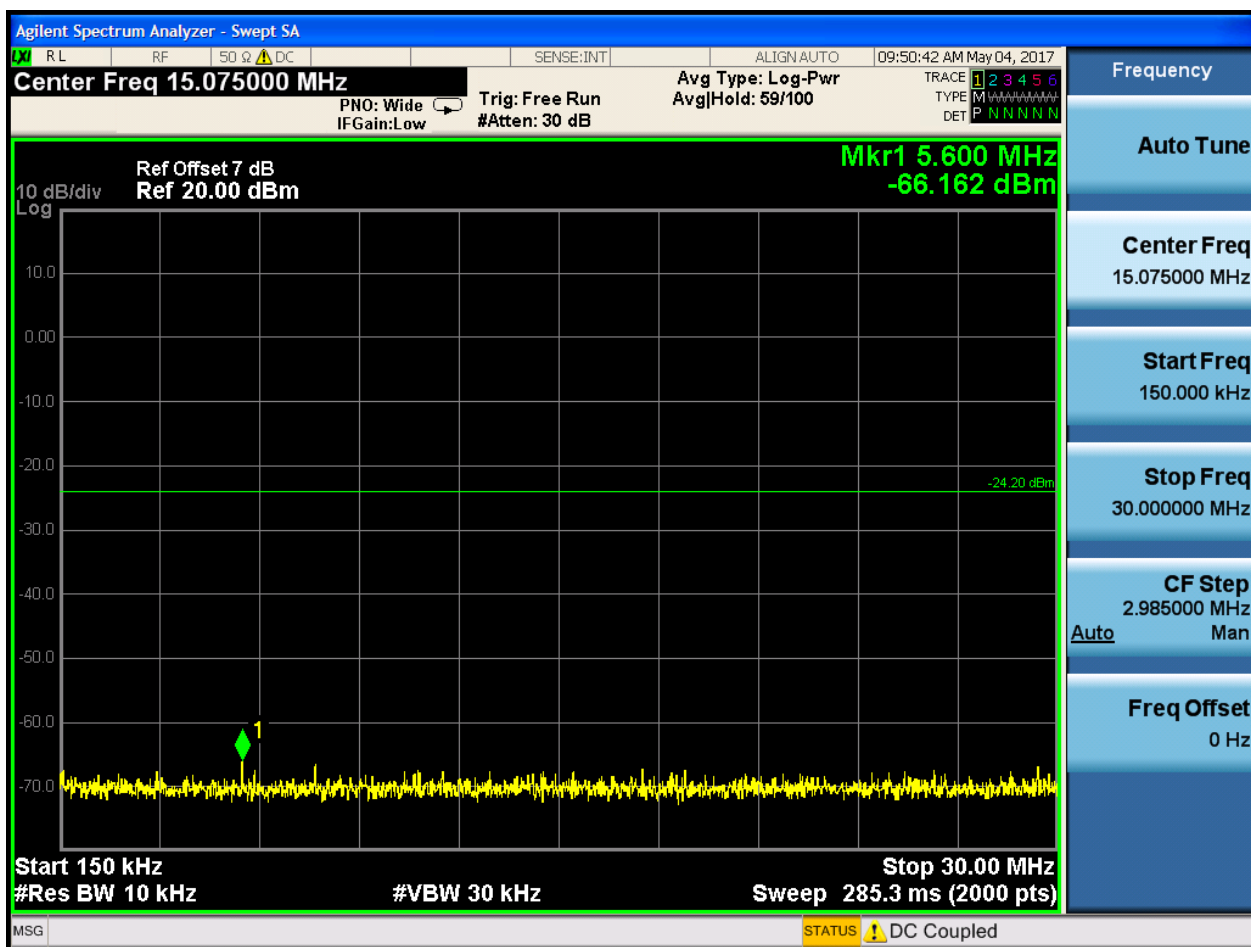
2.4 TM2_2DH5_Ch0

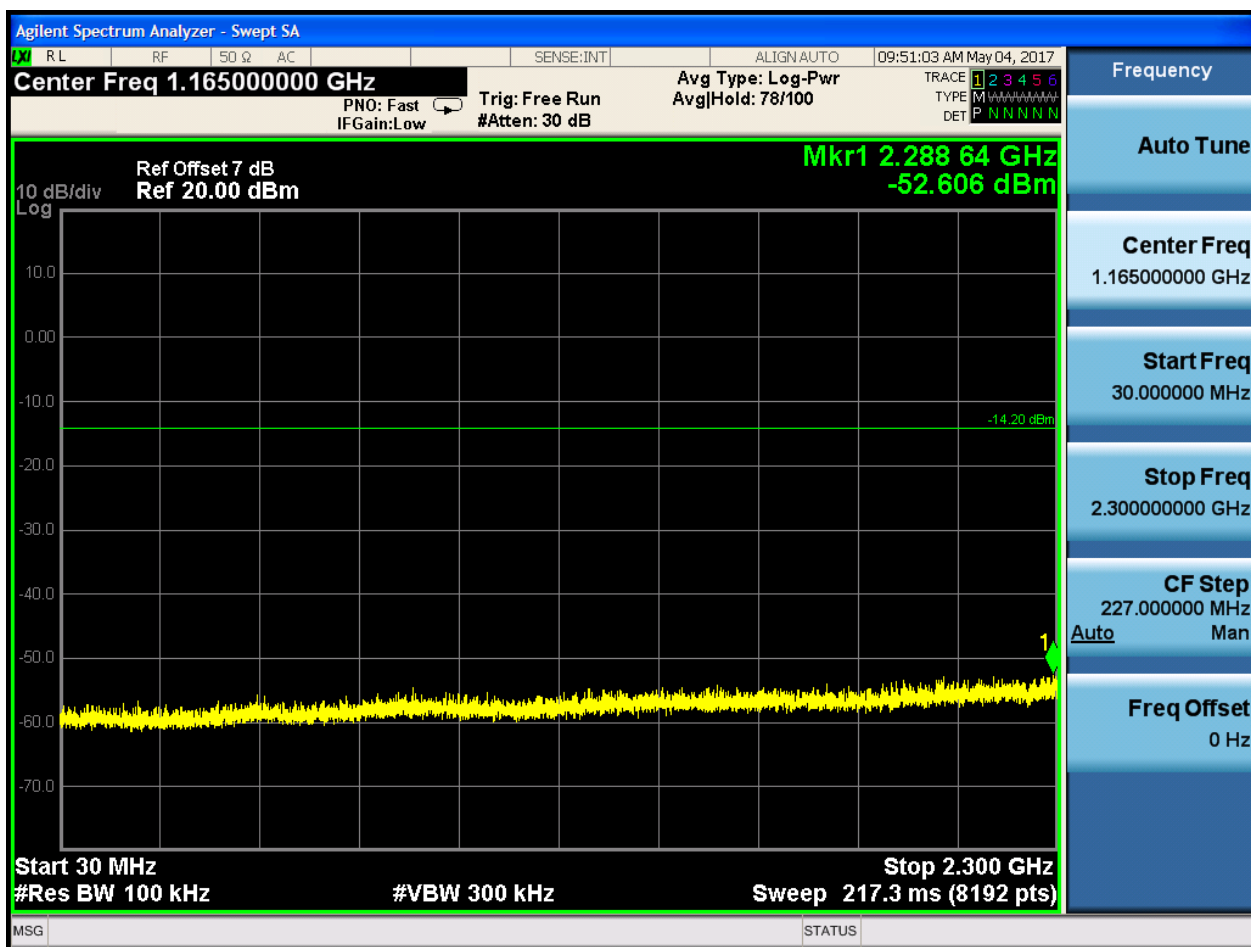
2.4.1 Pref

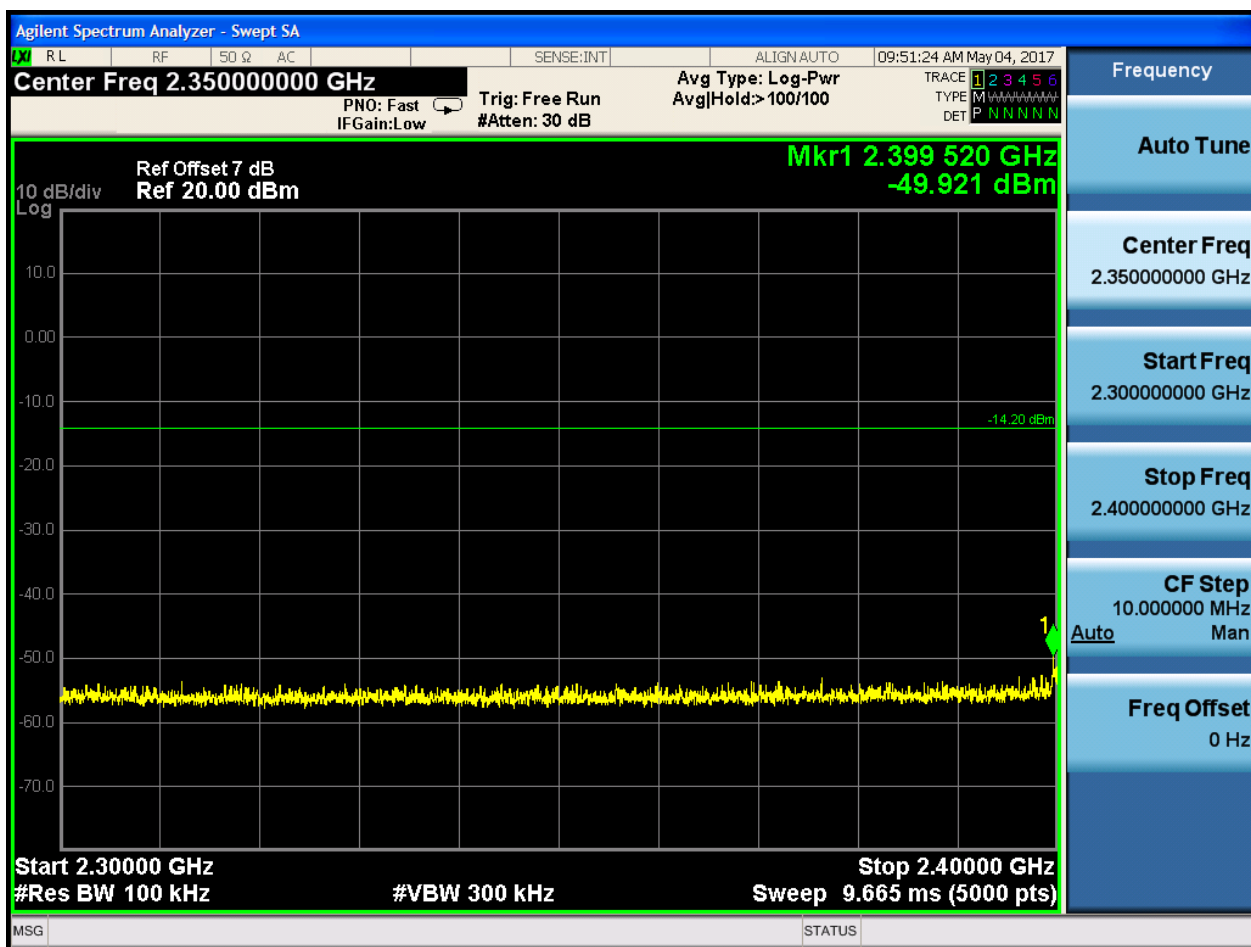


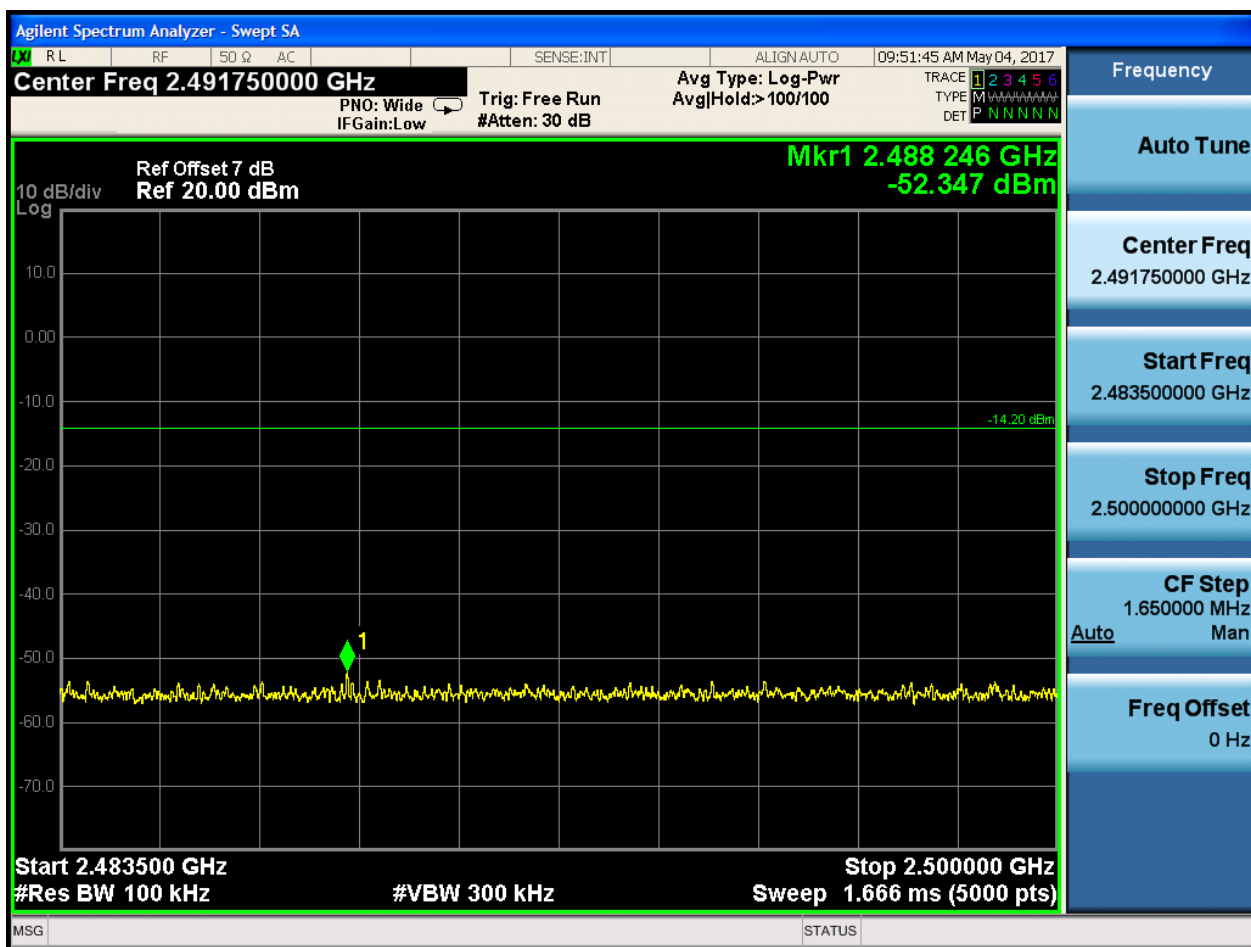
2.4.2 Puw















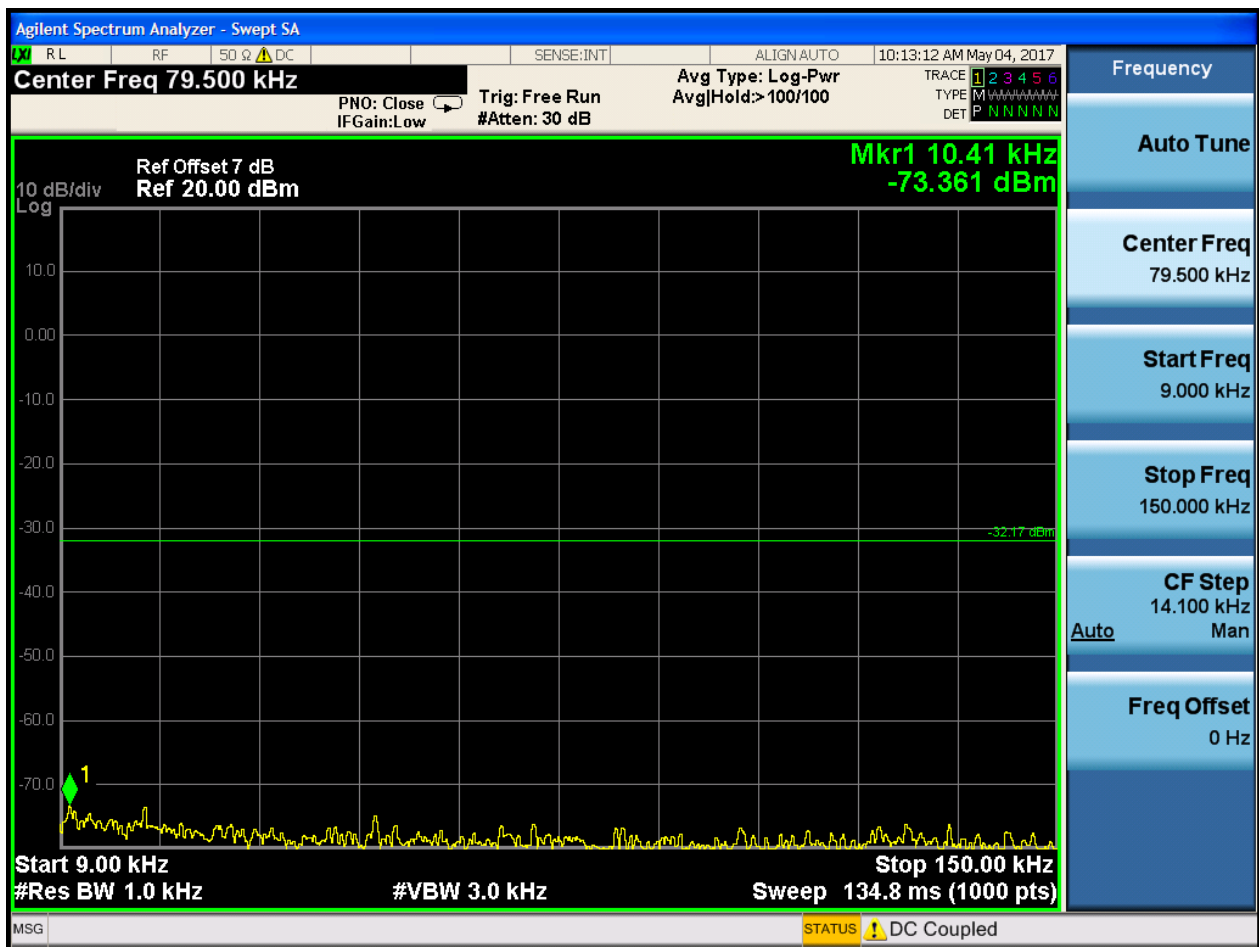
2.5 TM2_2DH5_Ch39

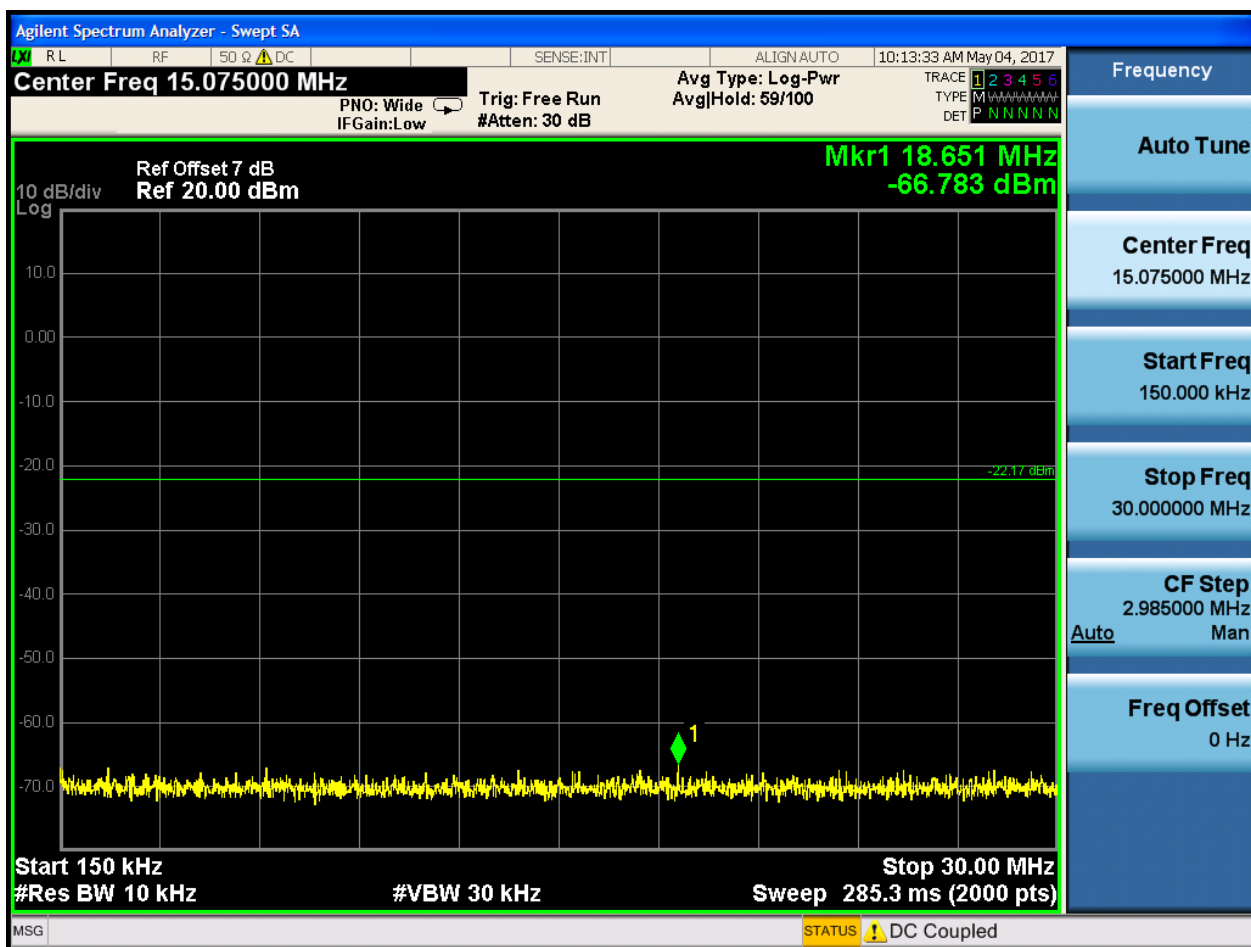
2.5.1 Pref

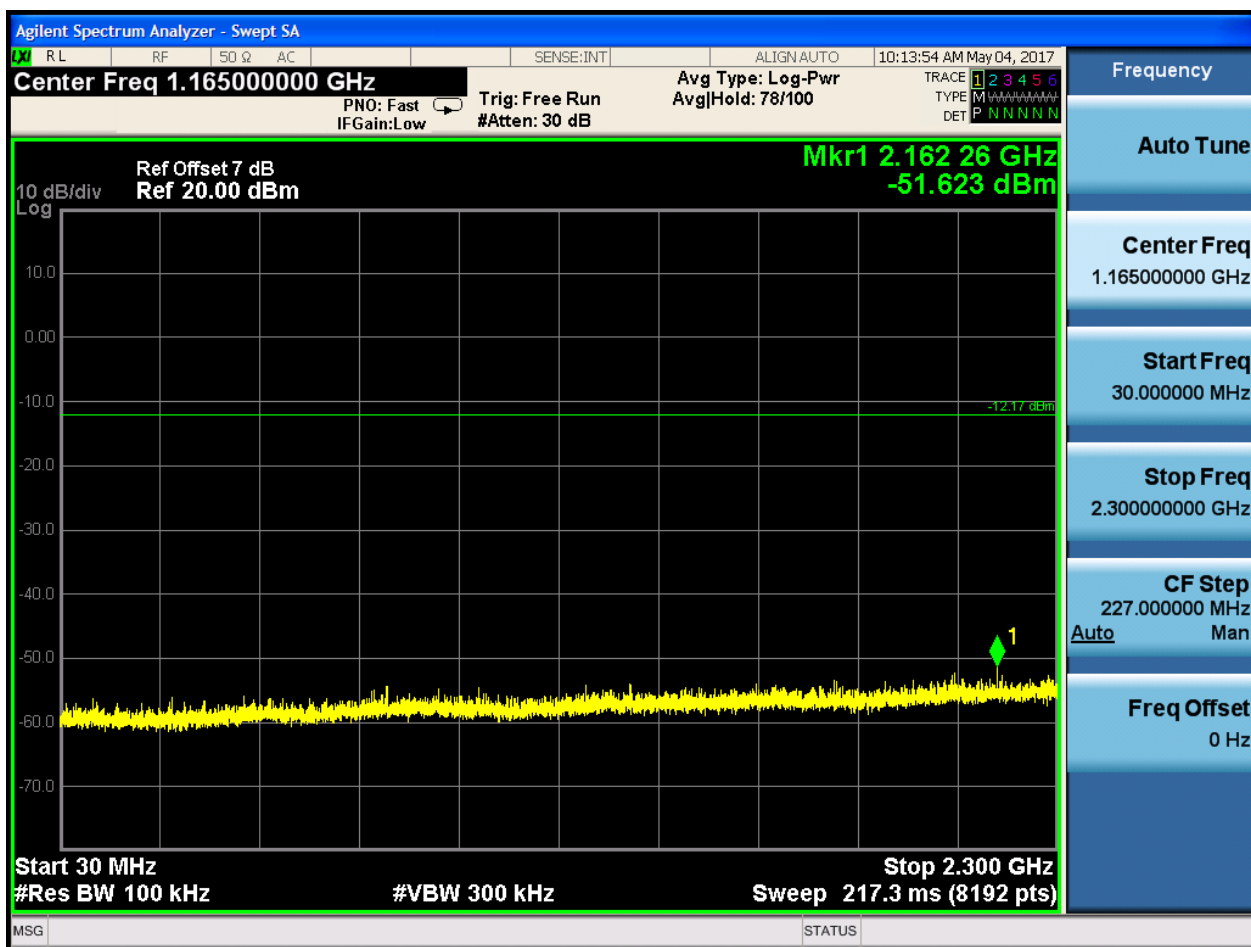


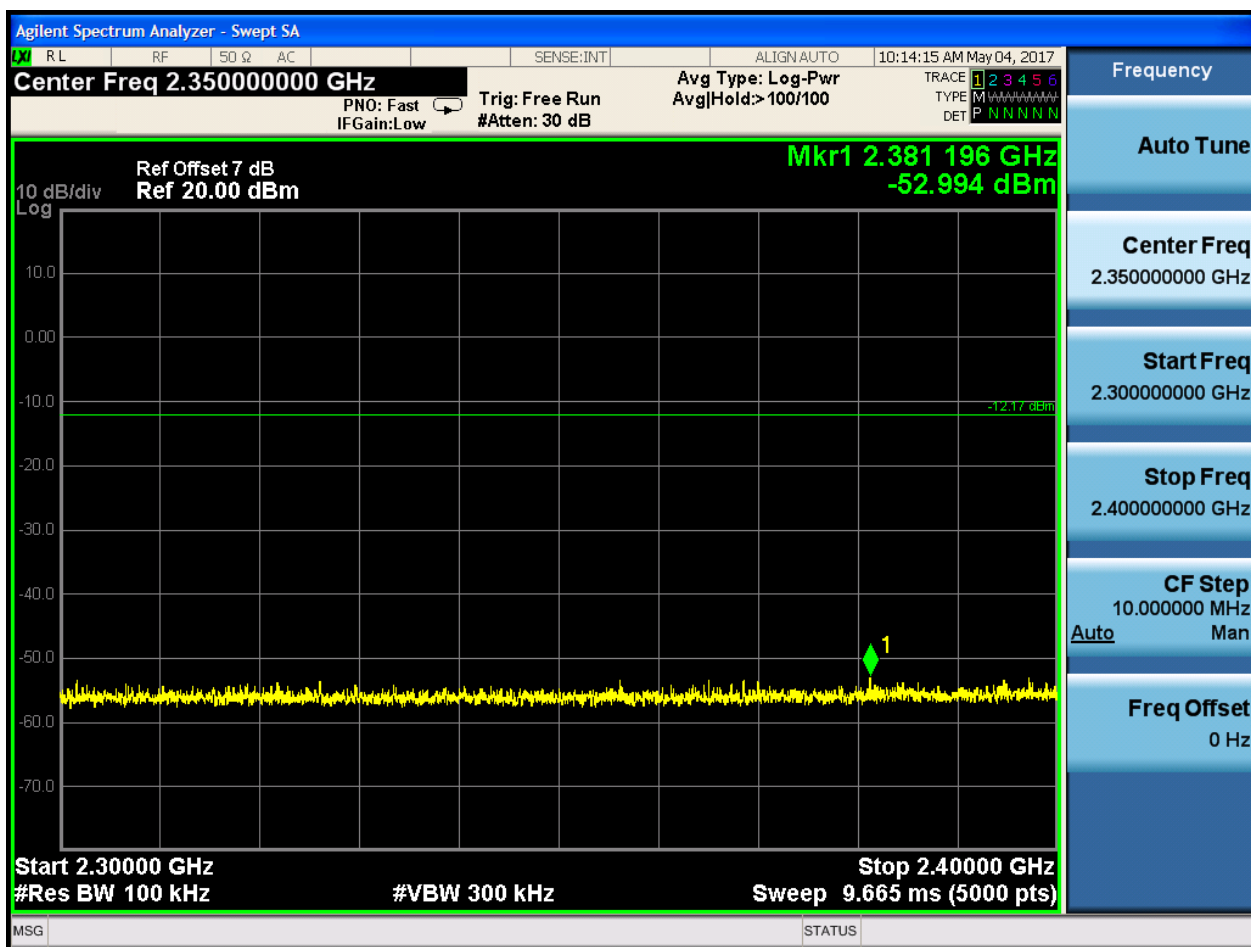


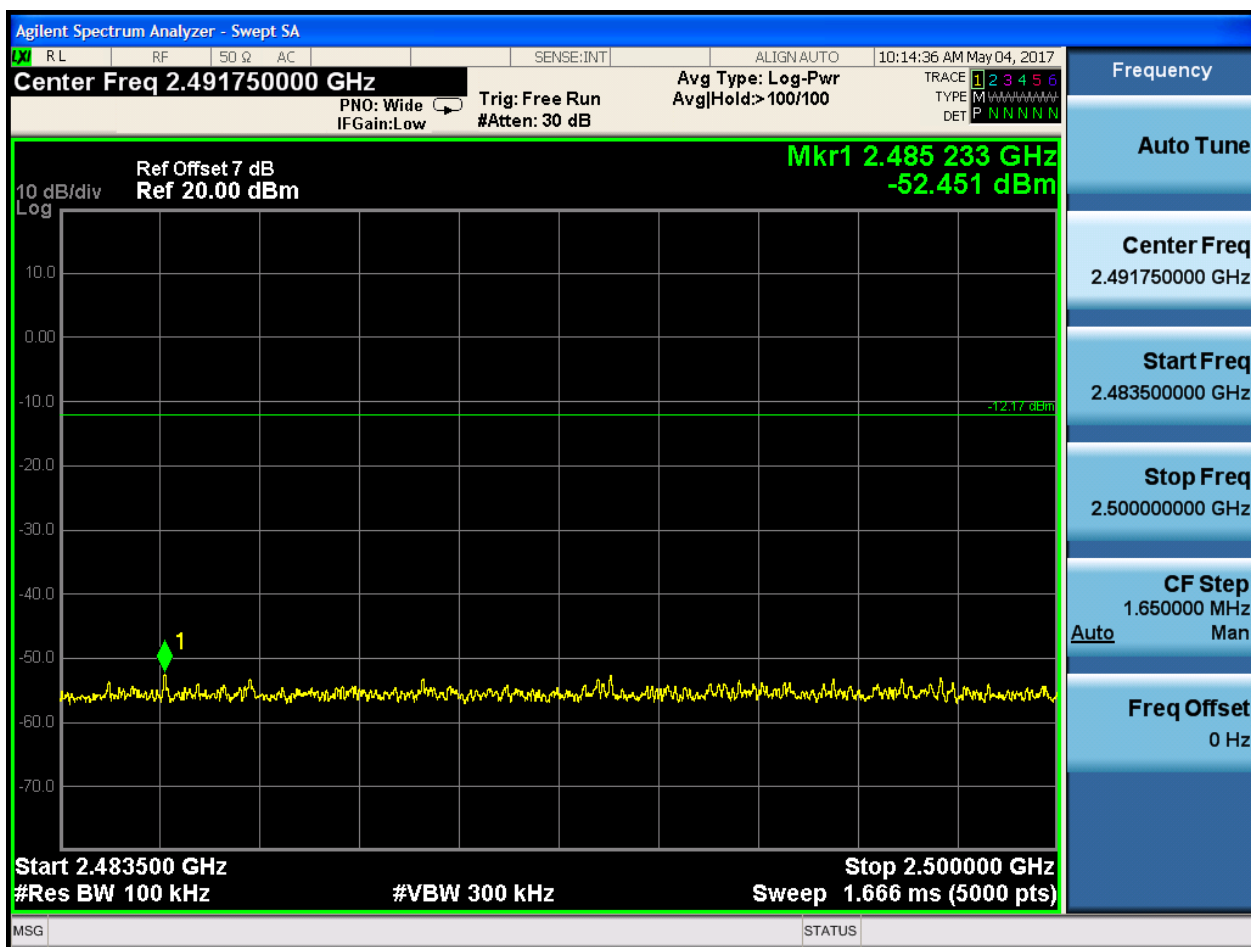
2.5.2 Puw









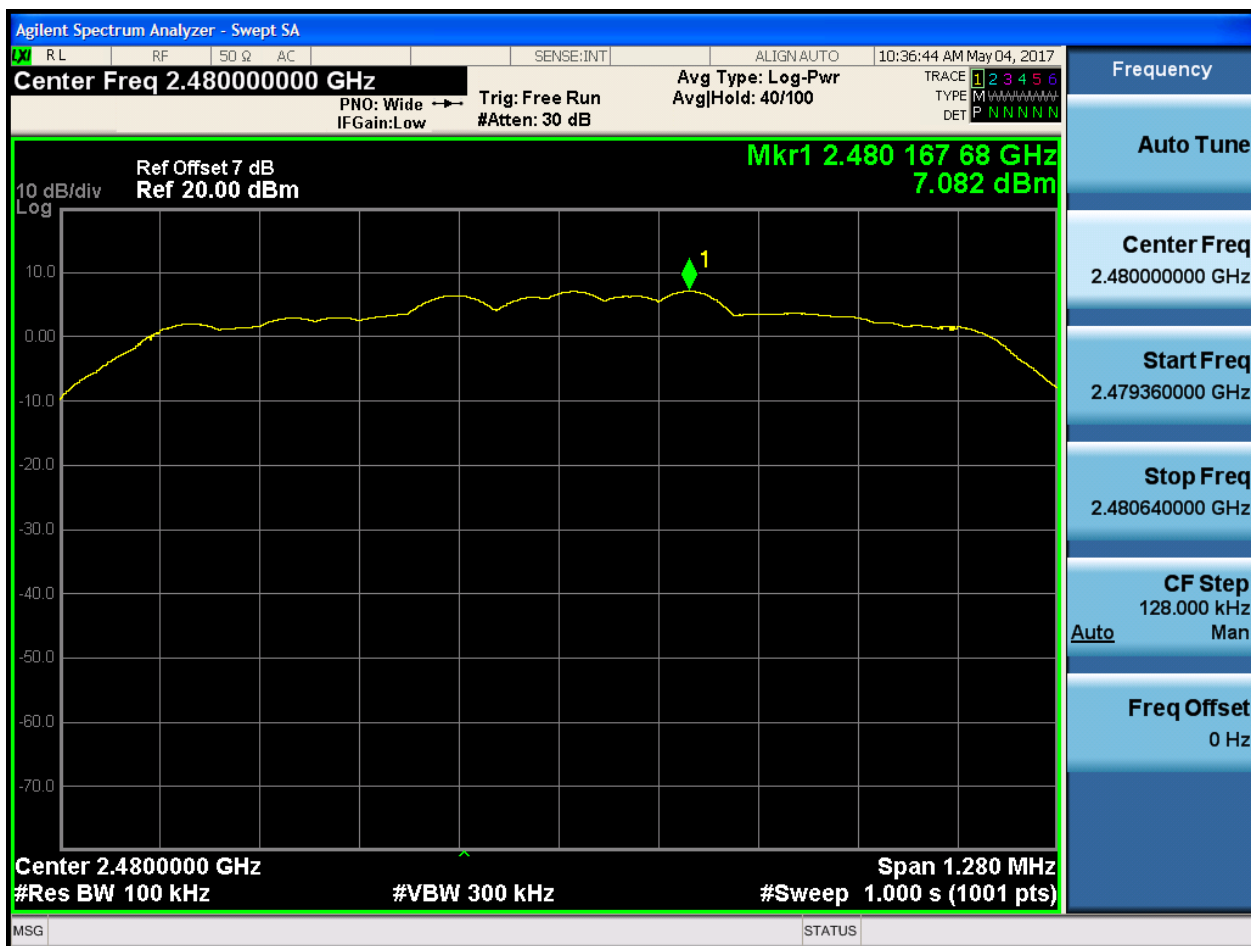






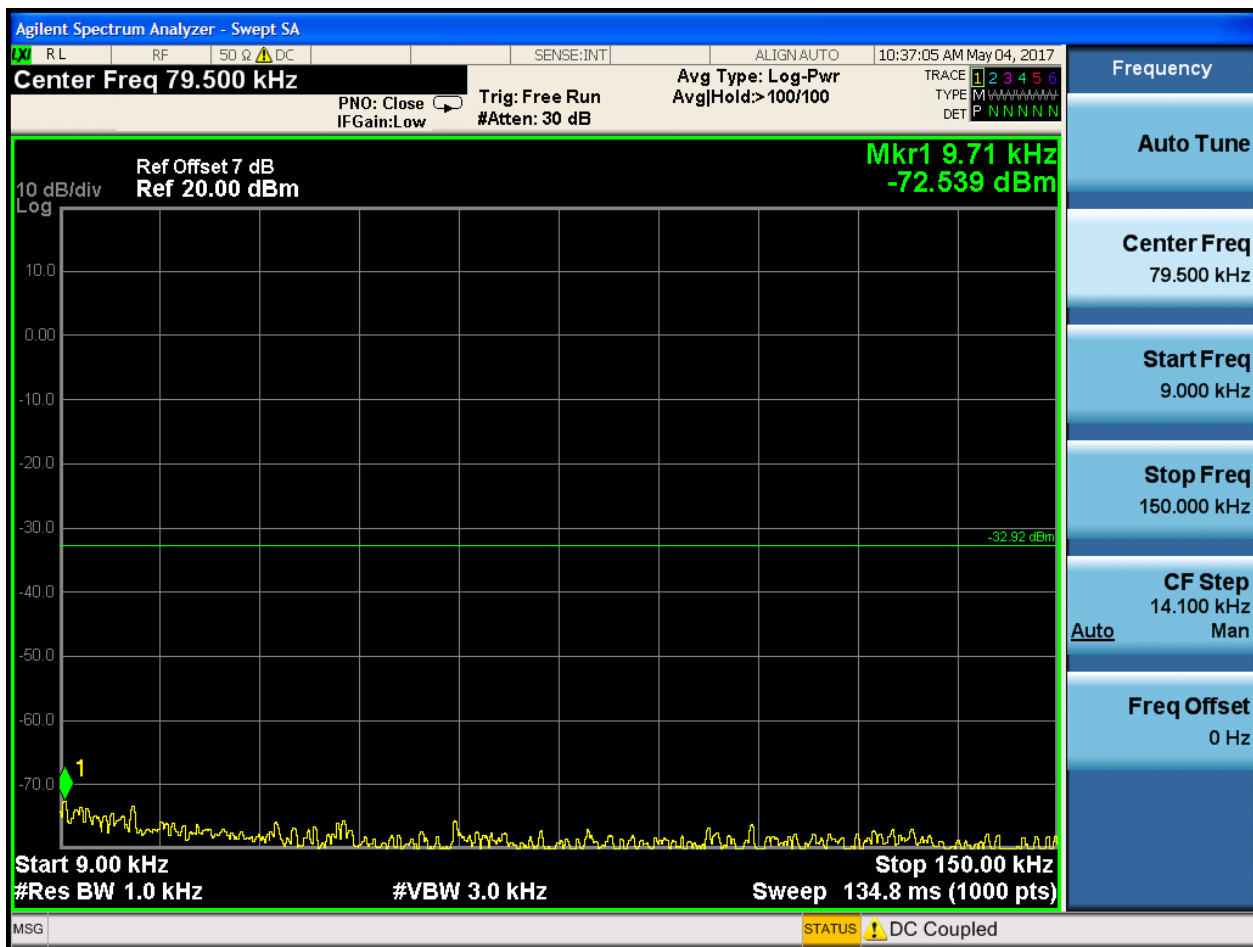
2.6 TM2_2DH5_Ch78

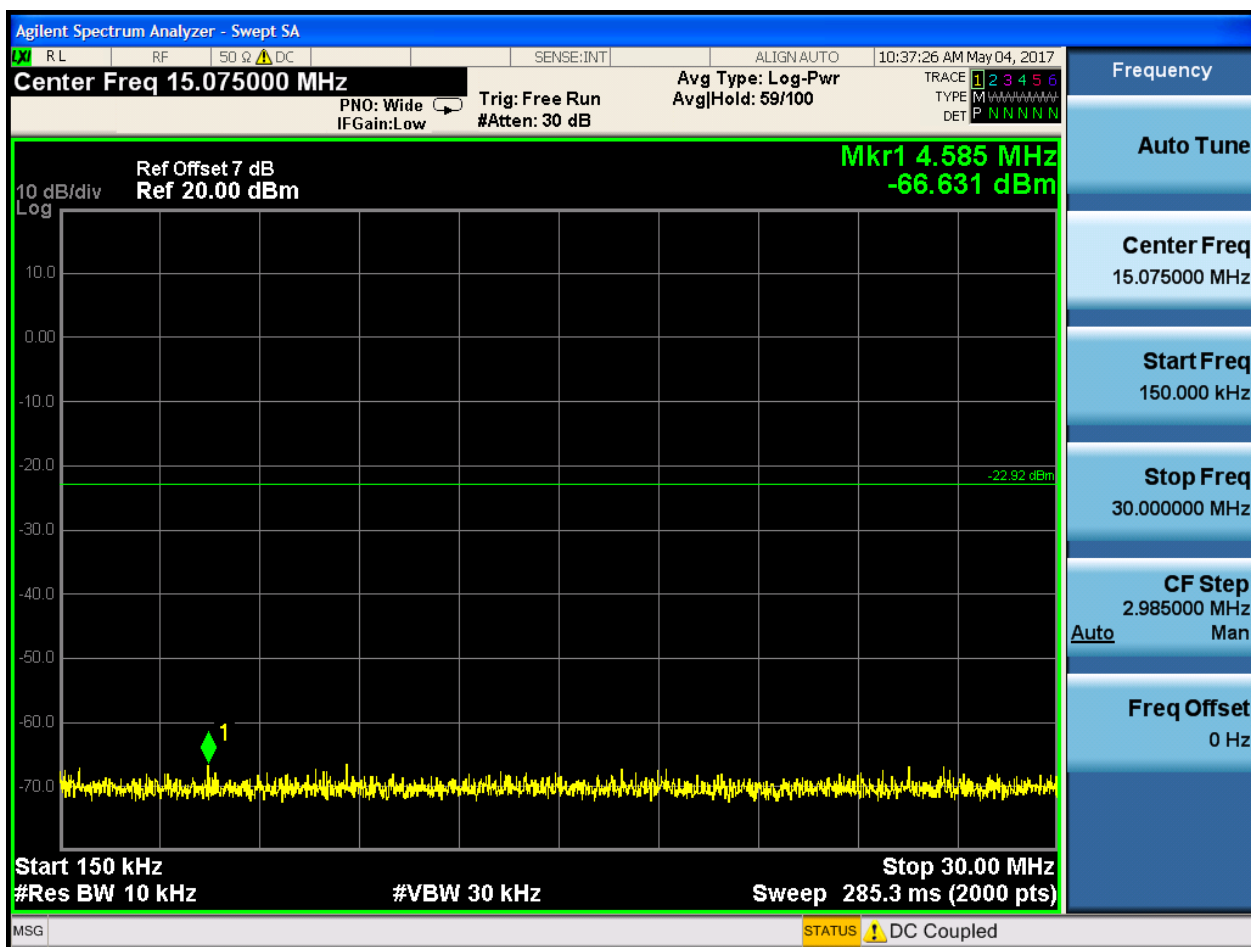
2.6.1 Pref

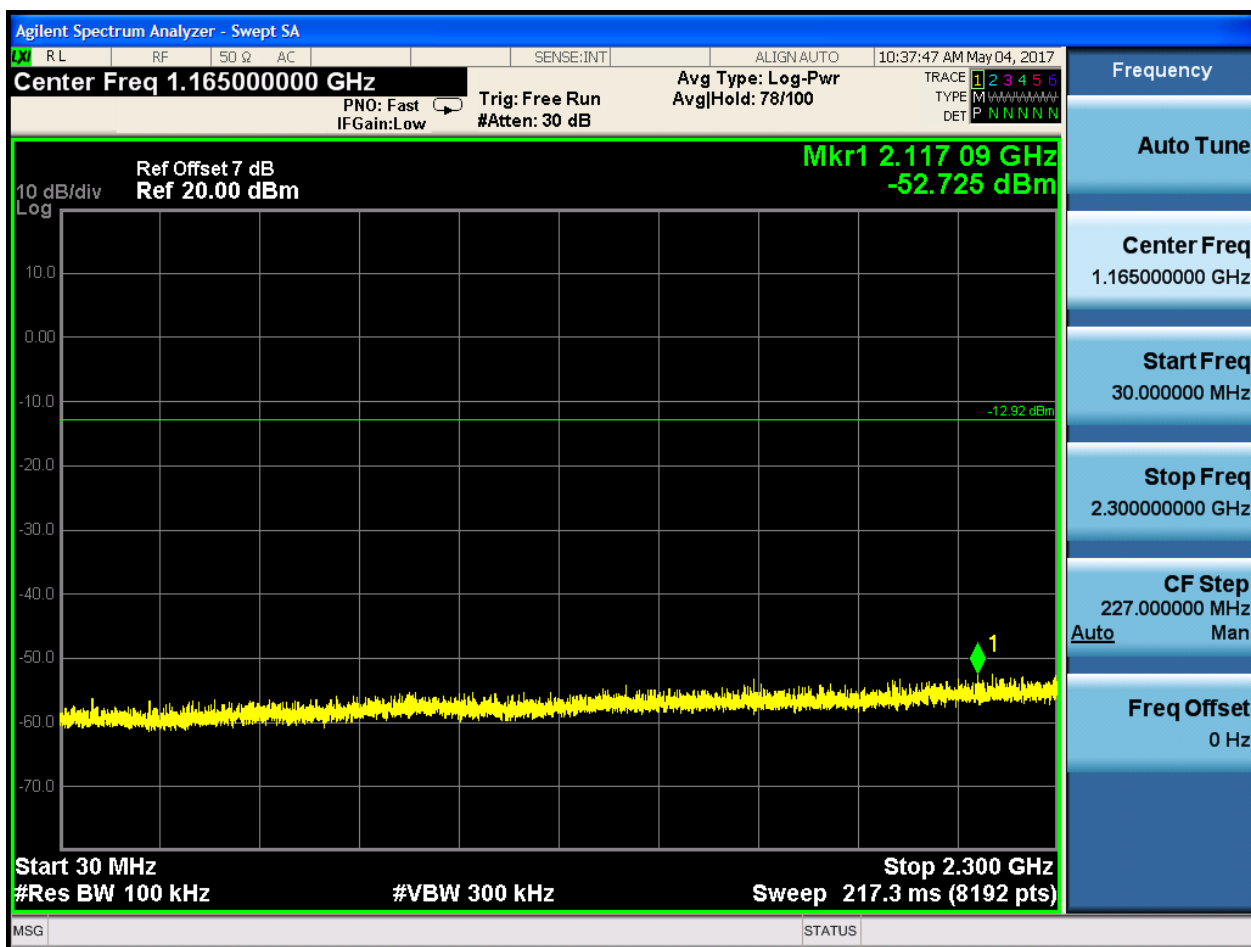


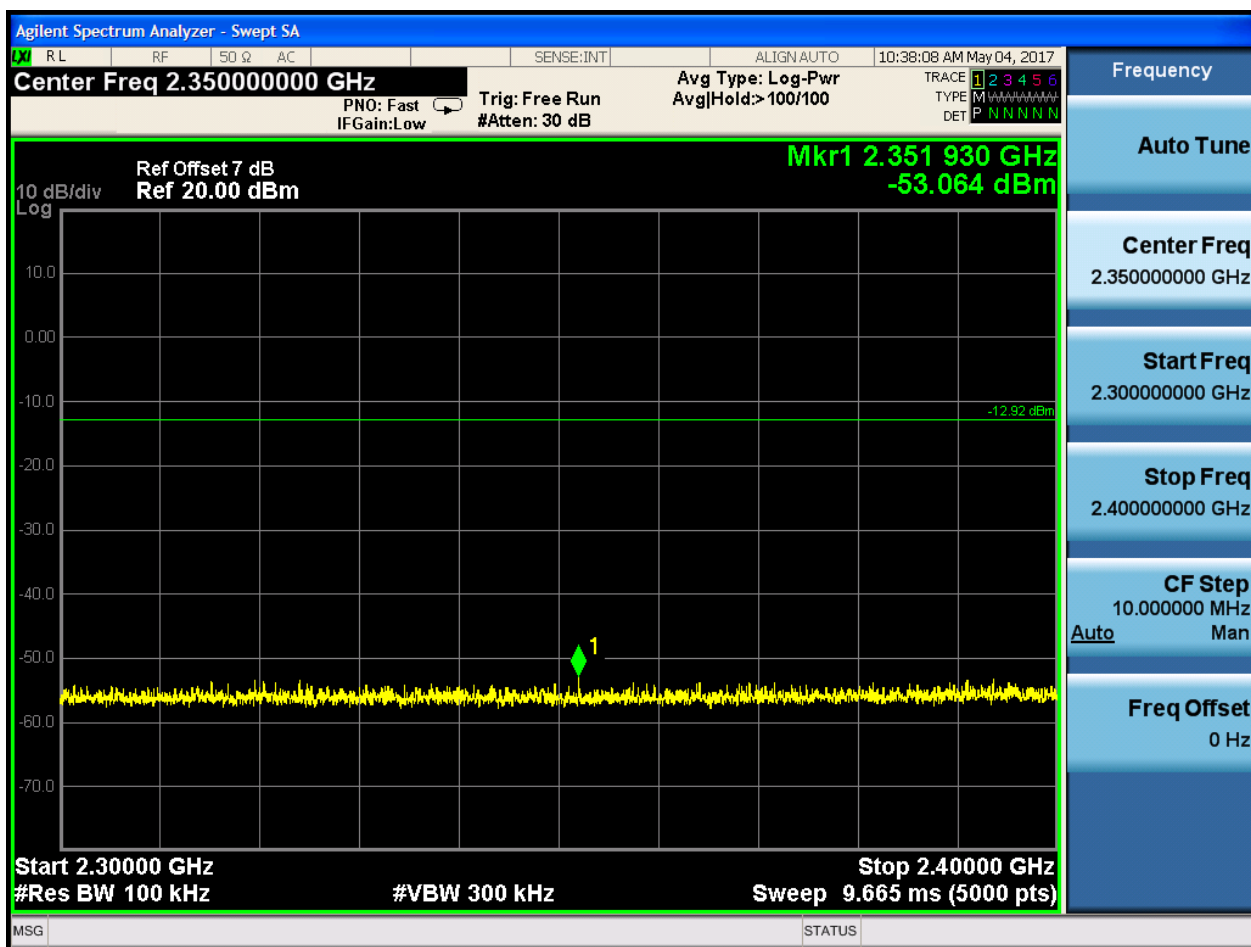


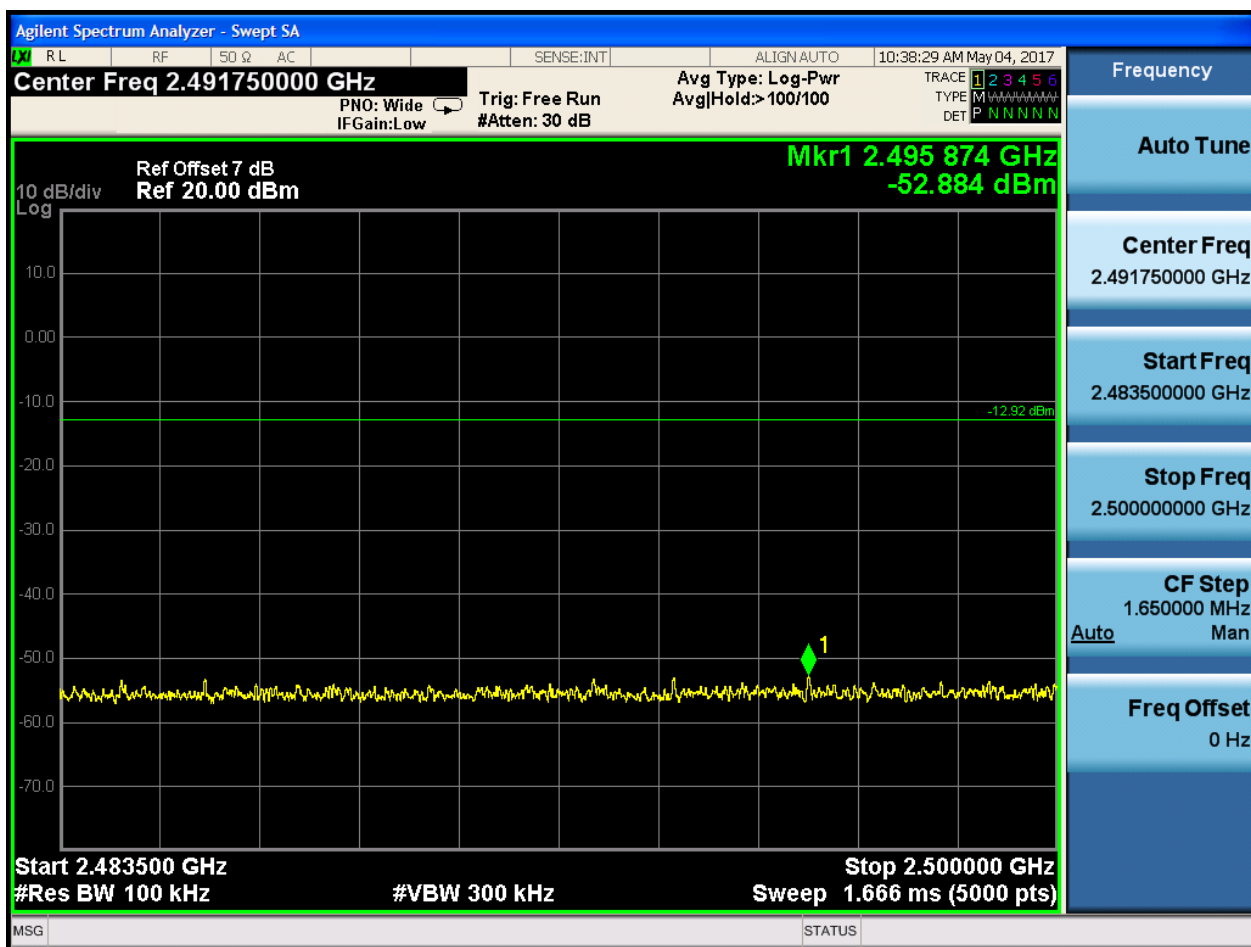
2.6.2 Puw







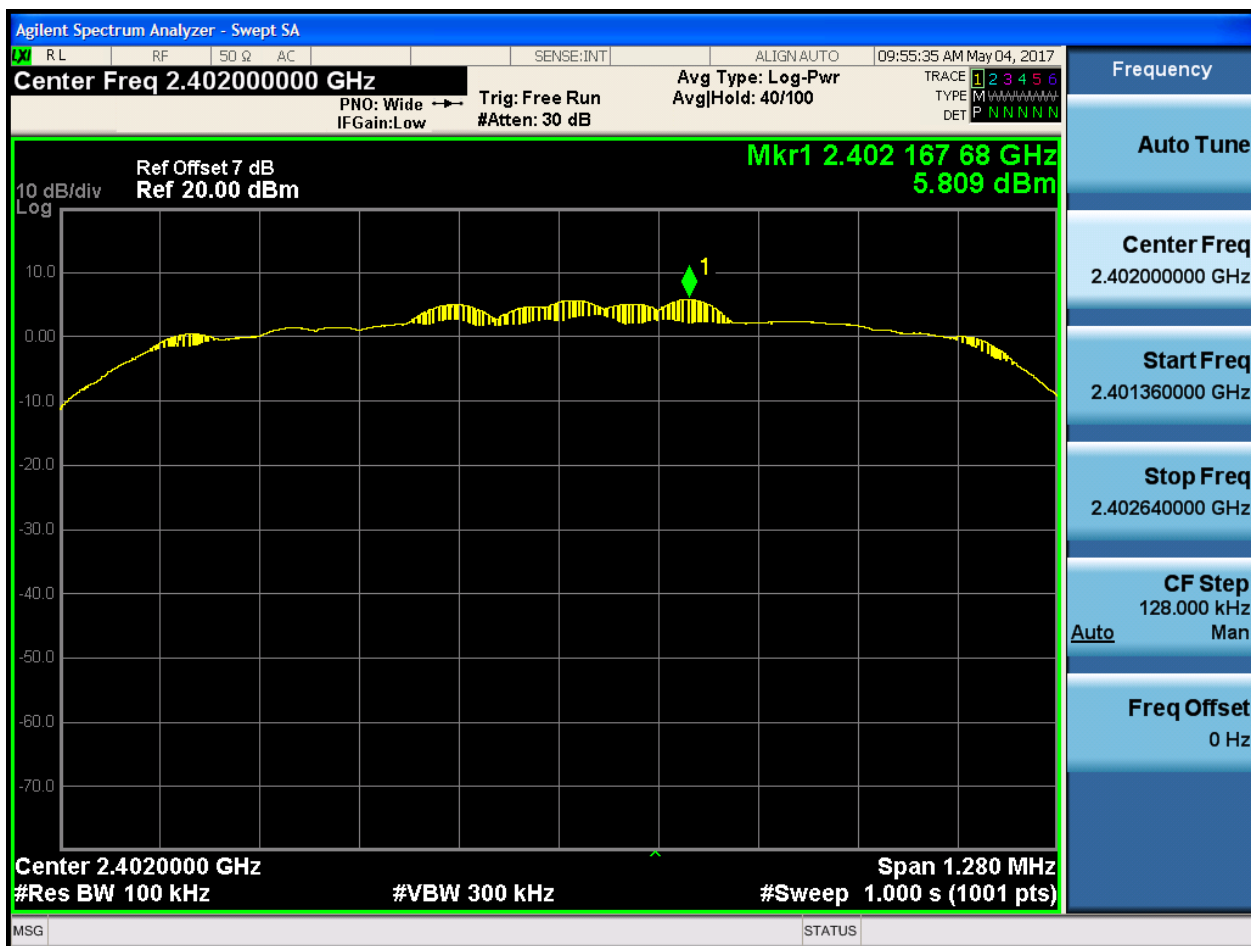




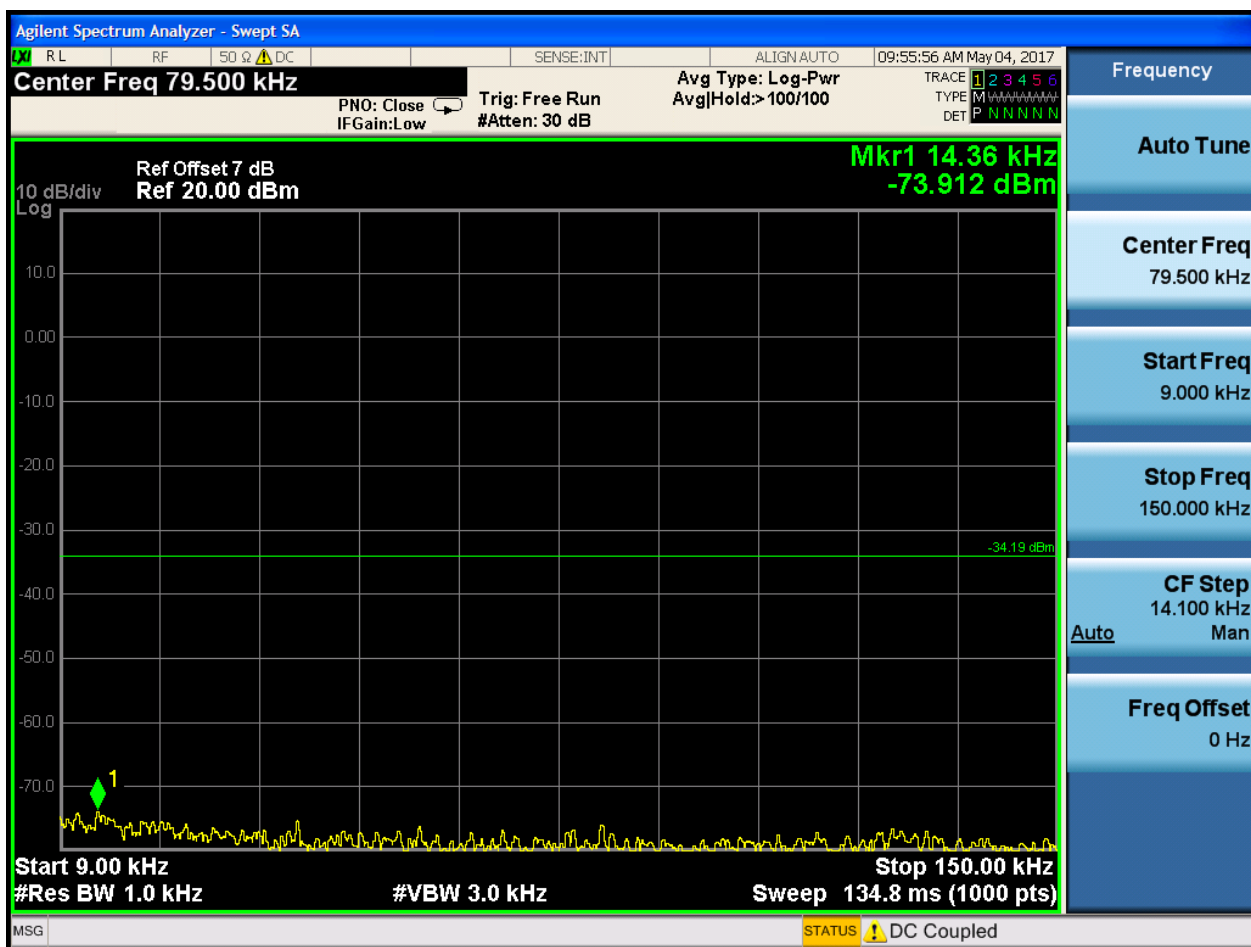


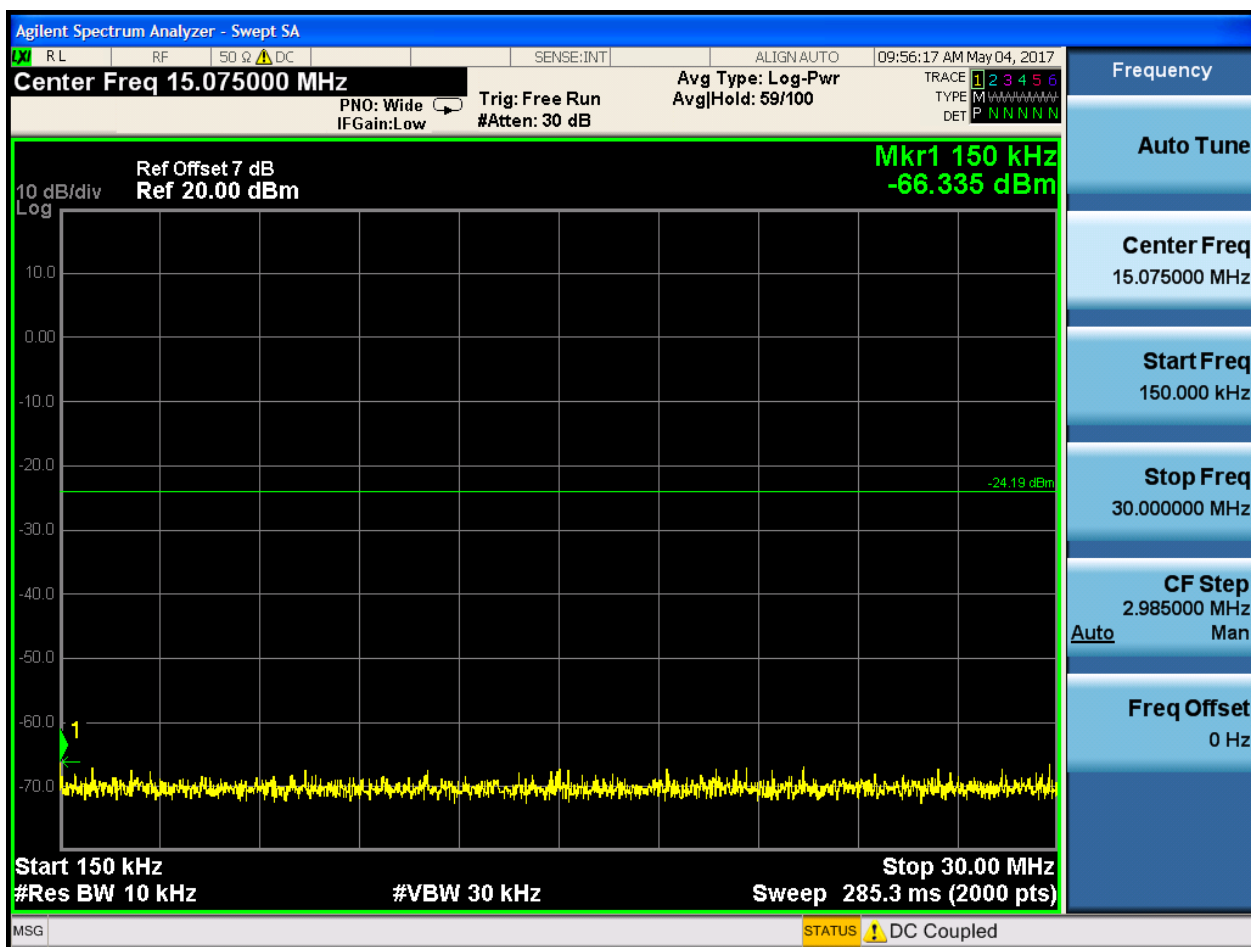
2.7 TM3_3DH5_Ch0

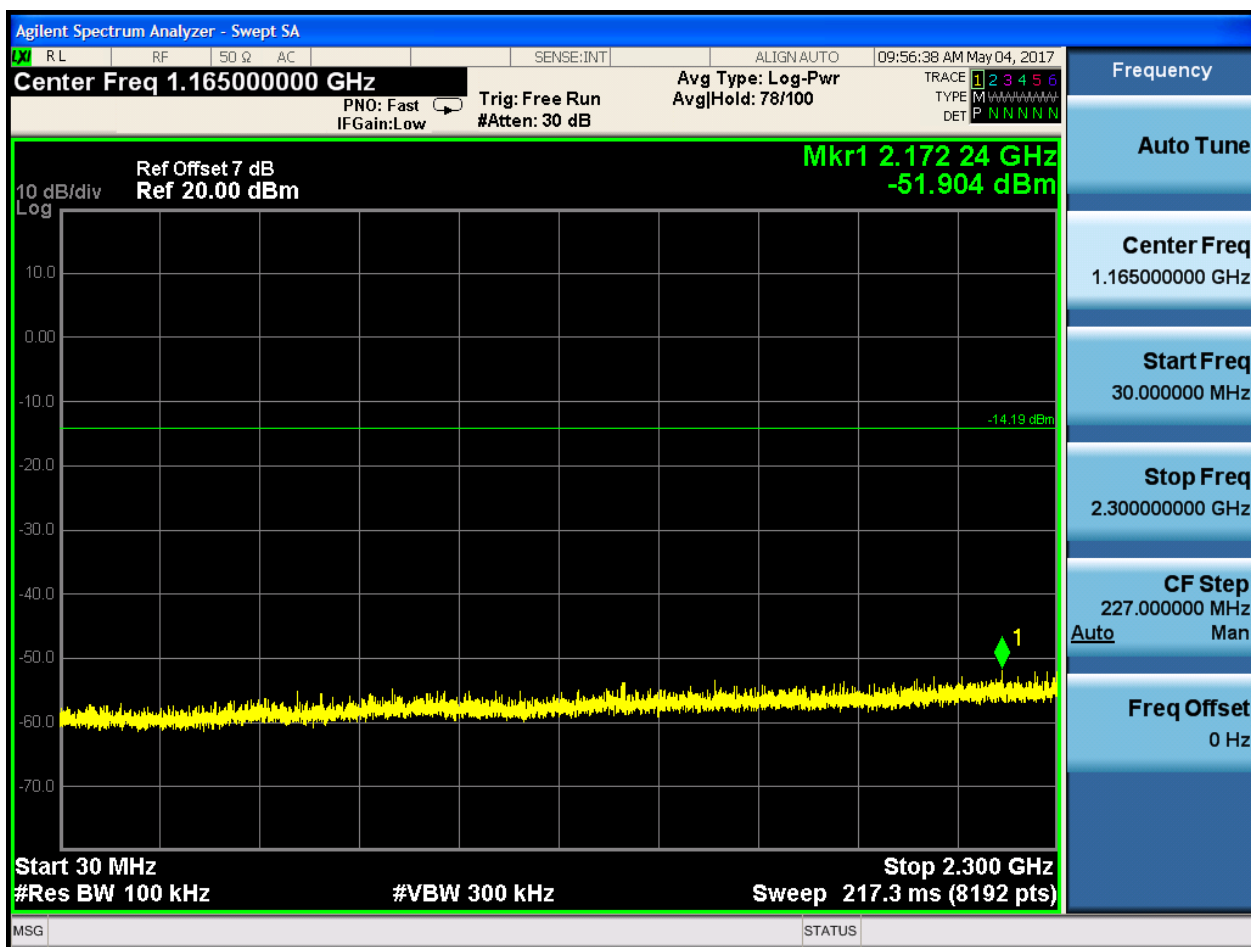
2.7.1 Pref

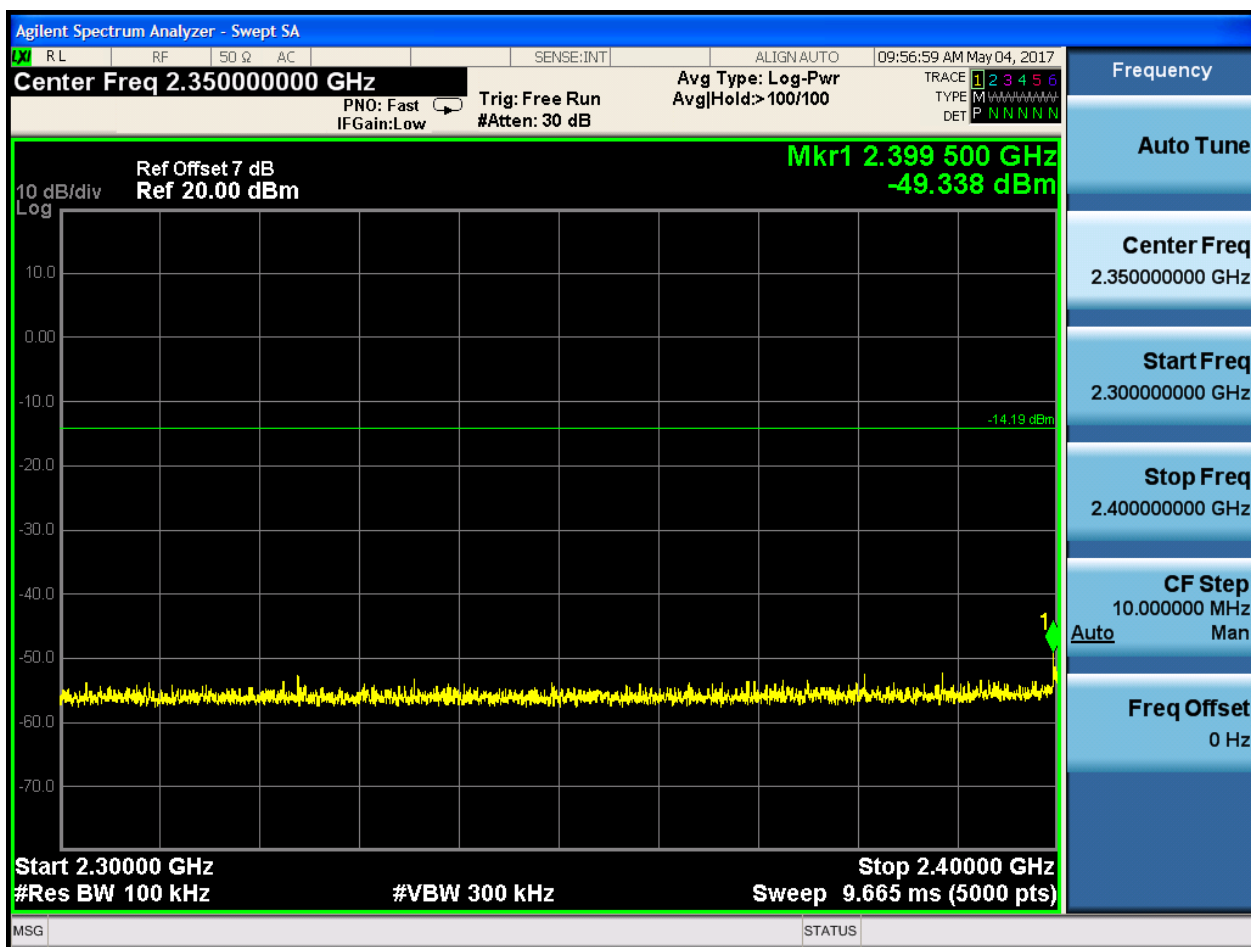


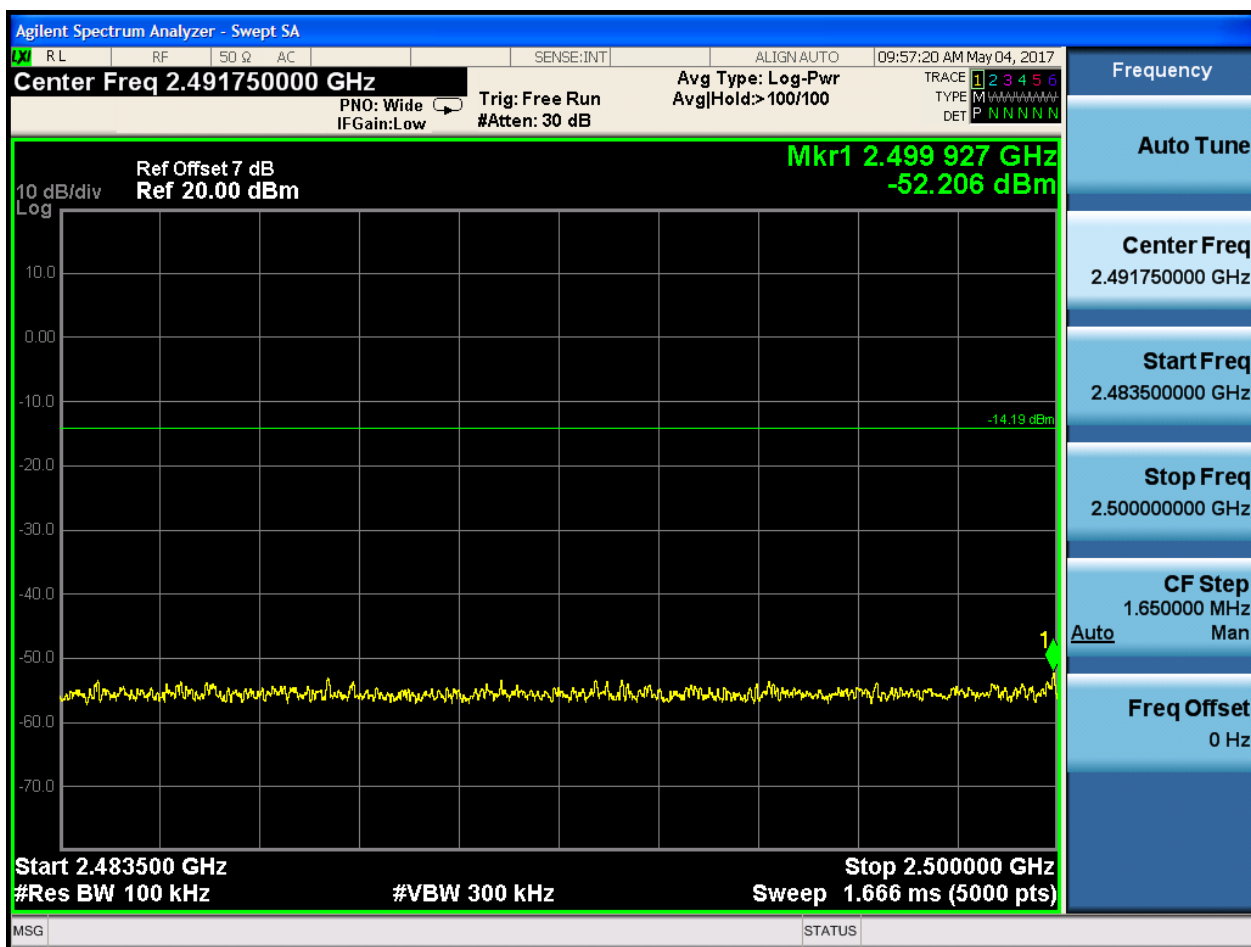
2.7.2 Puw















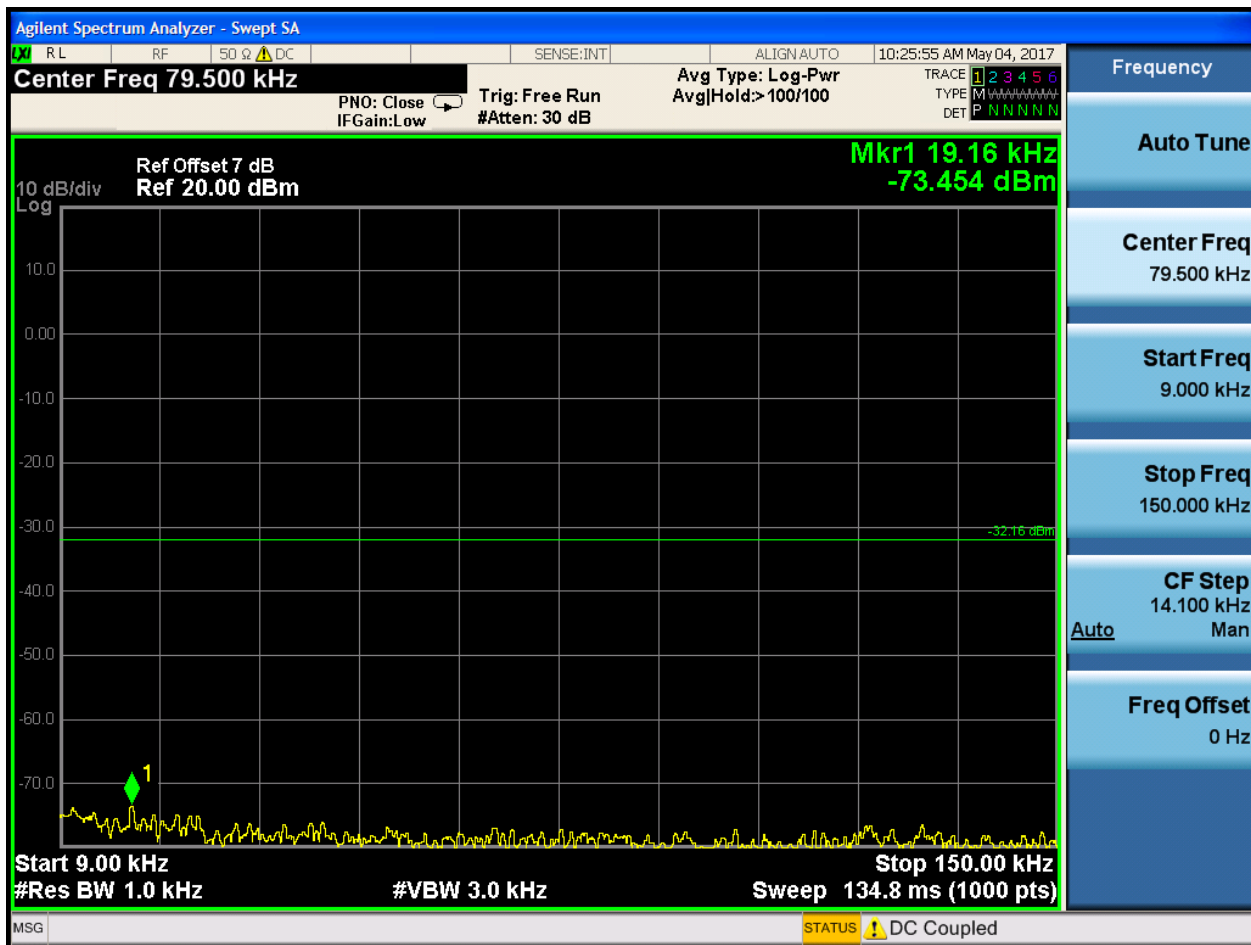
2.8 TM3_3DH5_Ch39

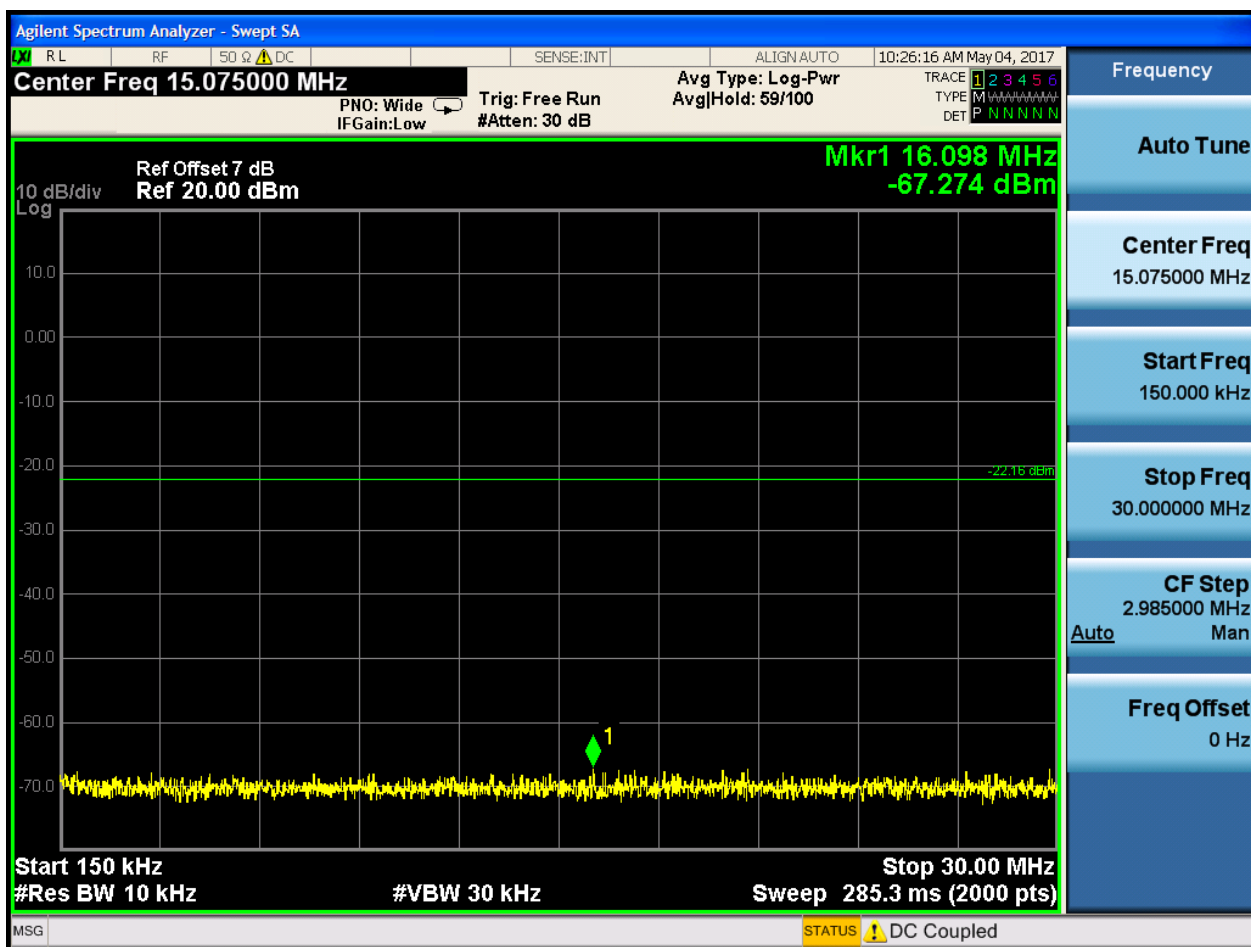
2.8.1 Pref

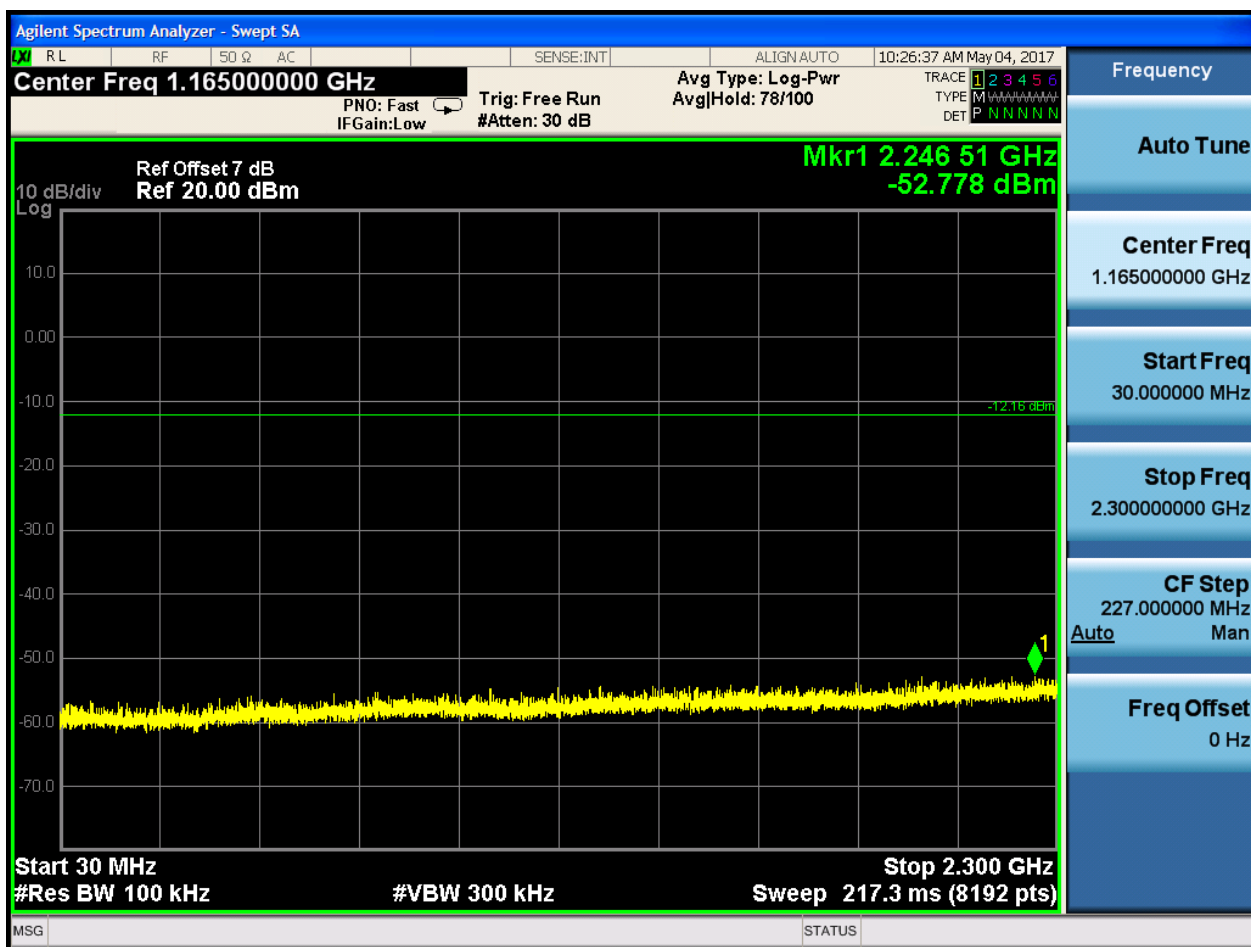


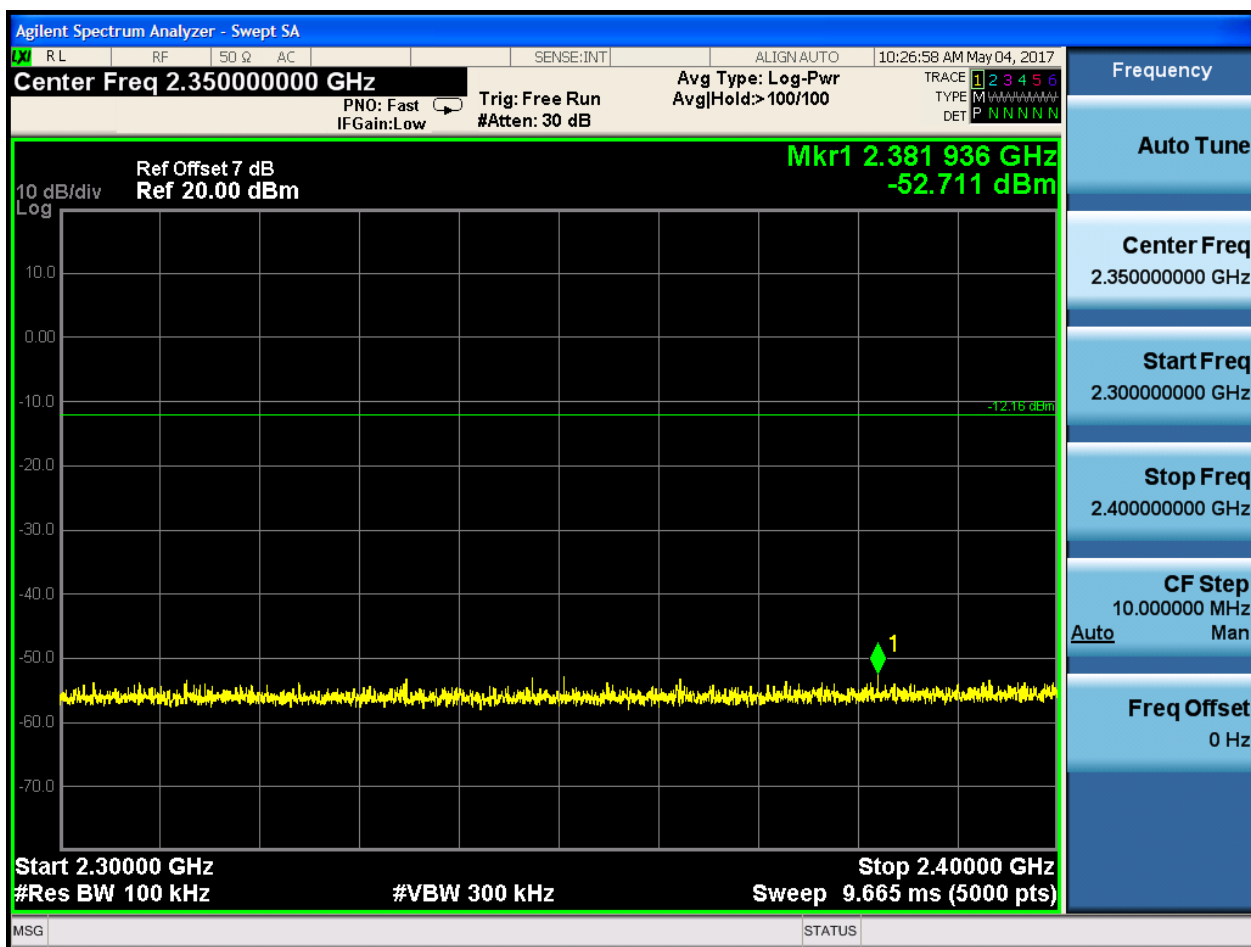


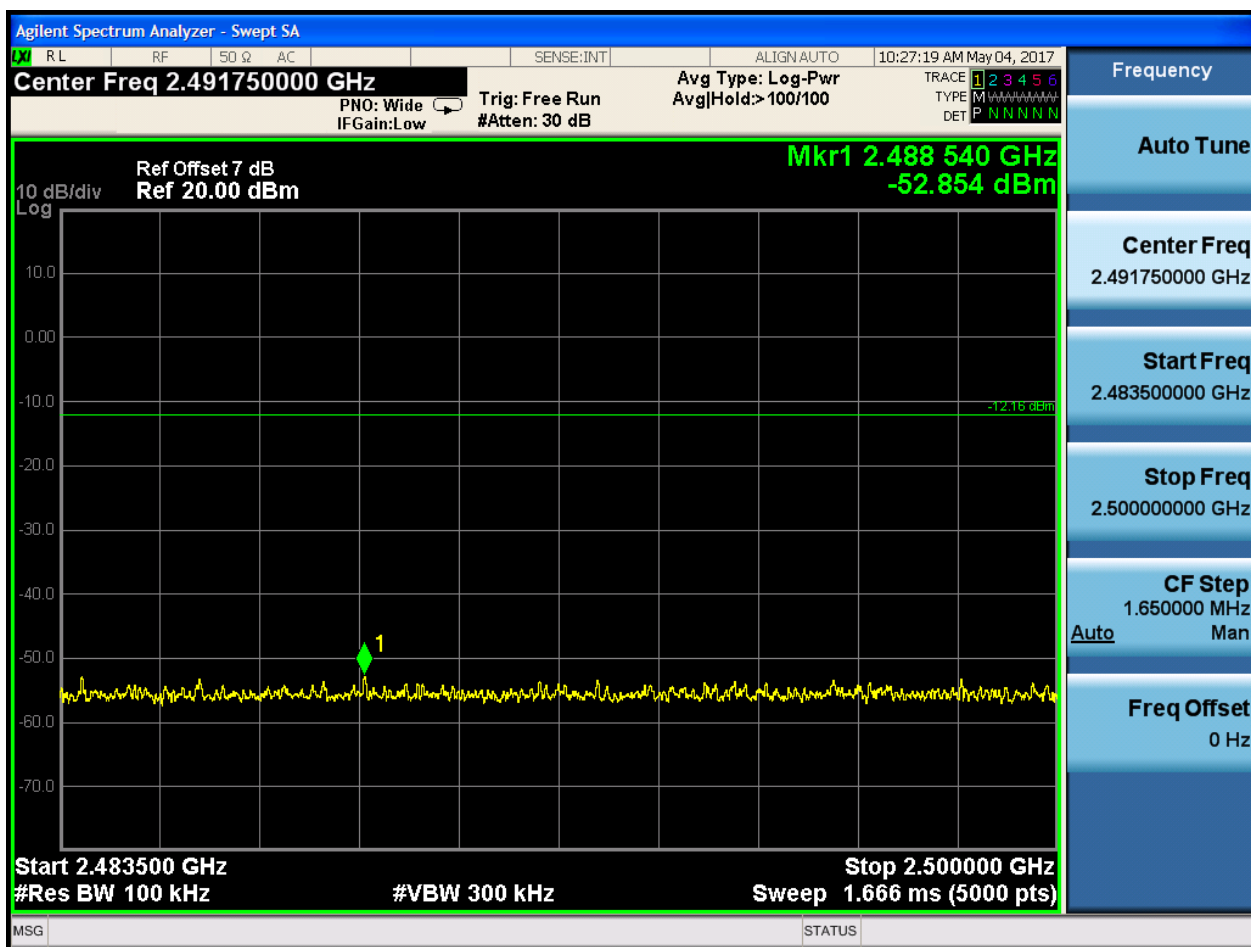
2.8.2 Puw

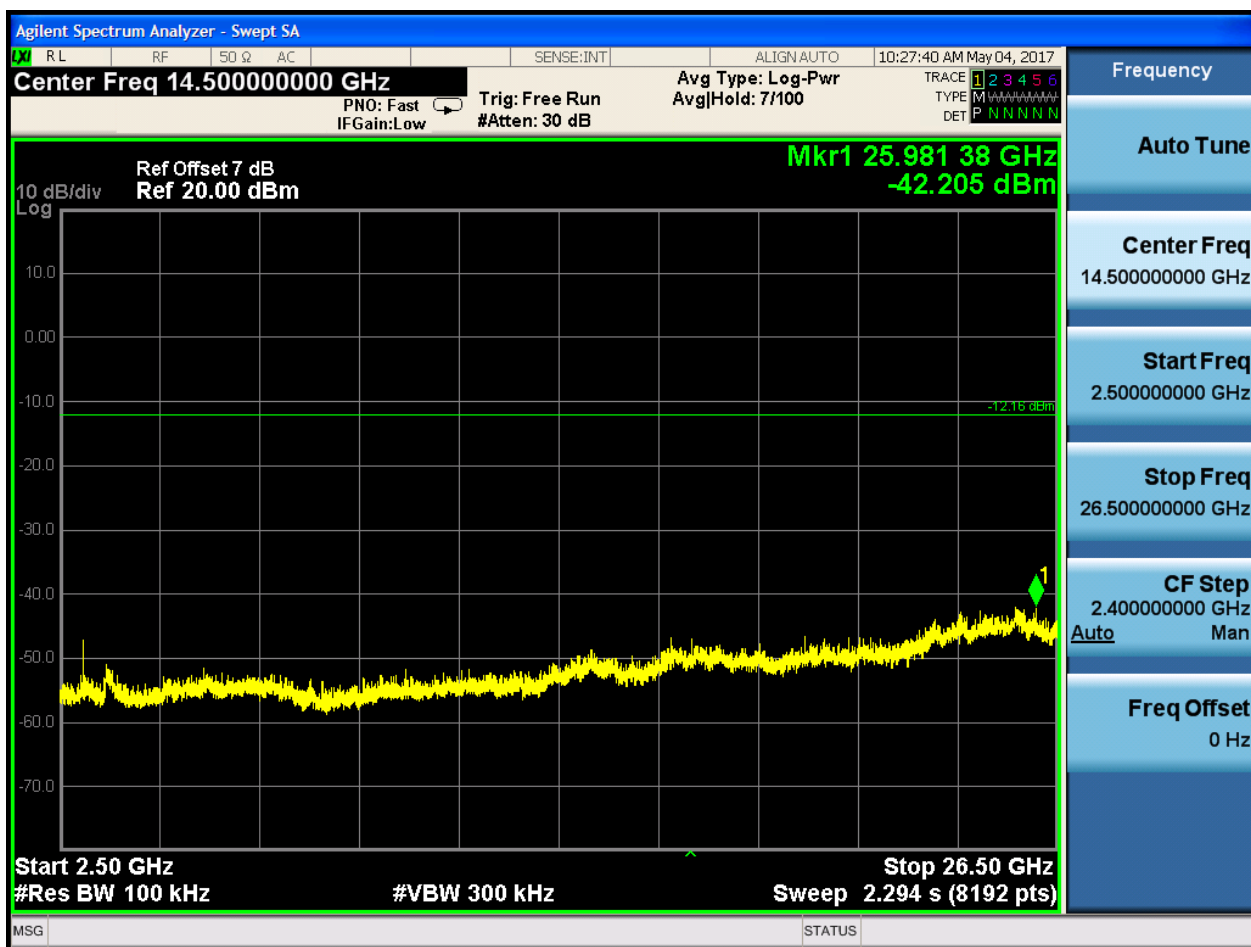






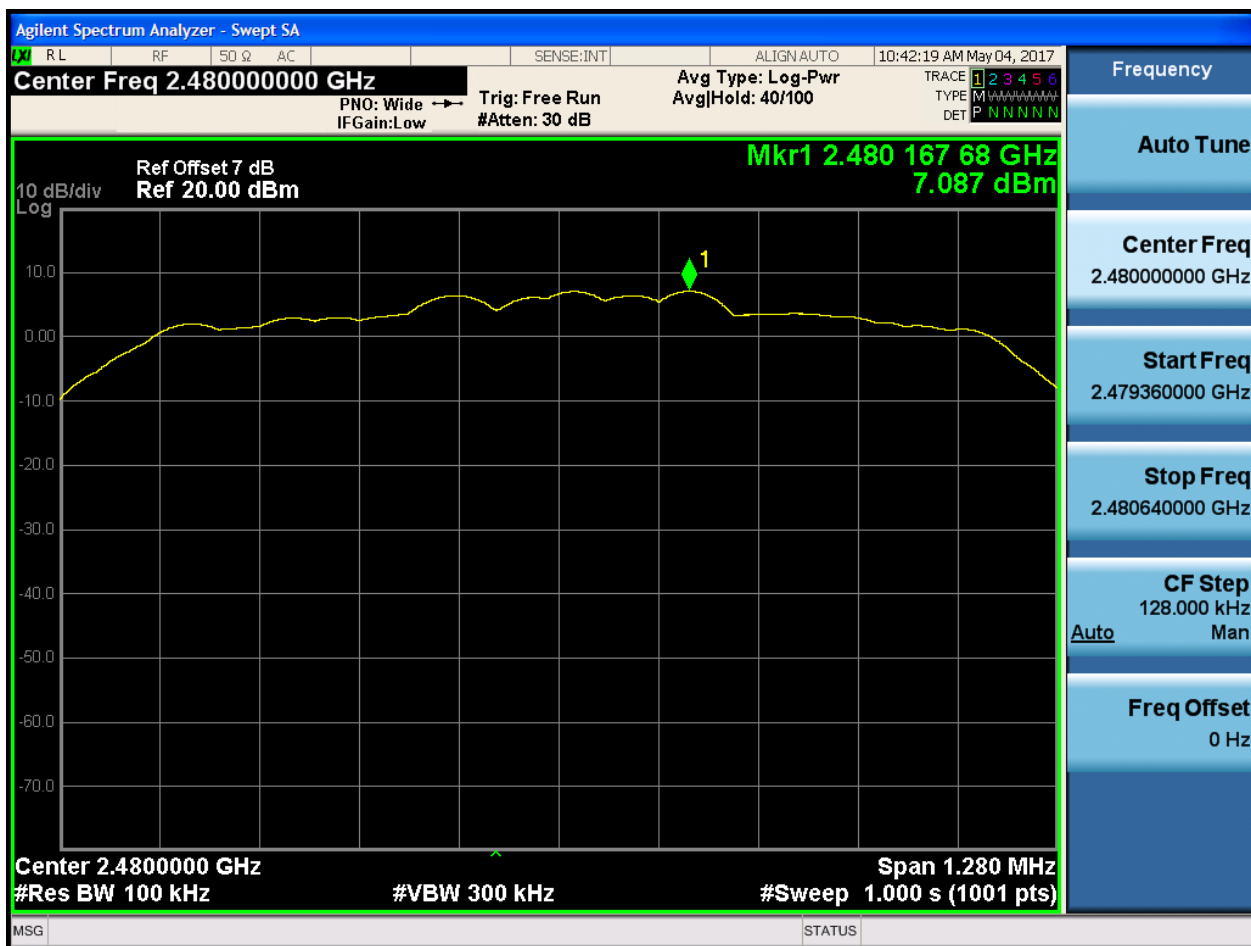






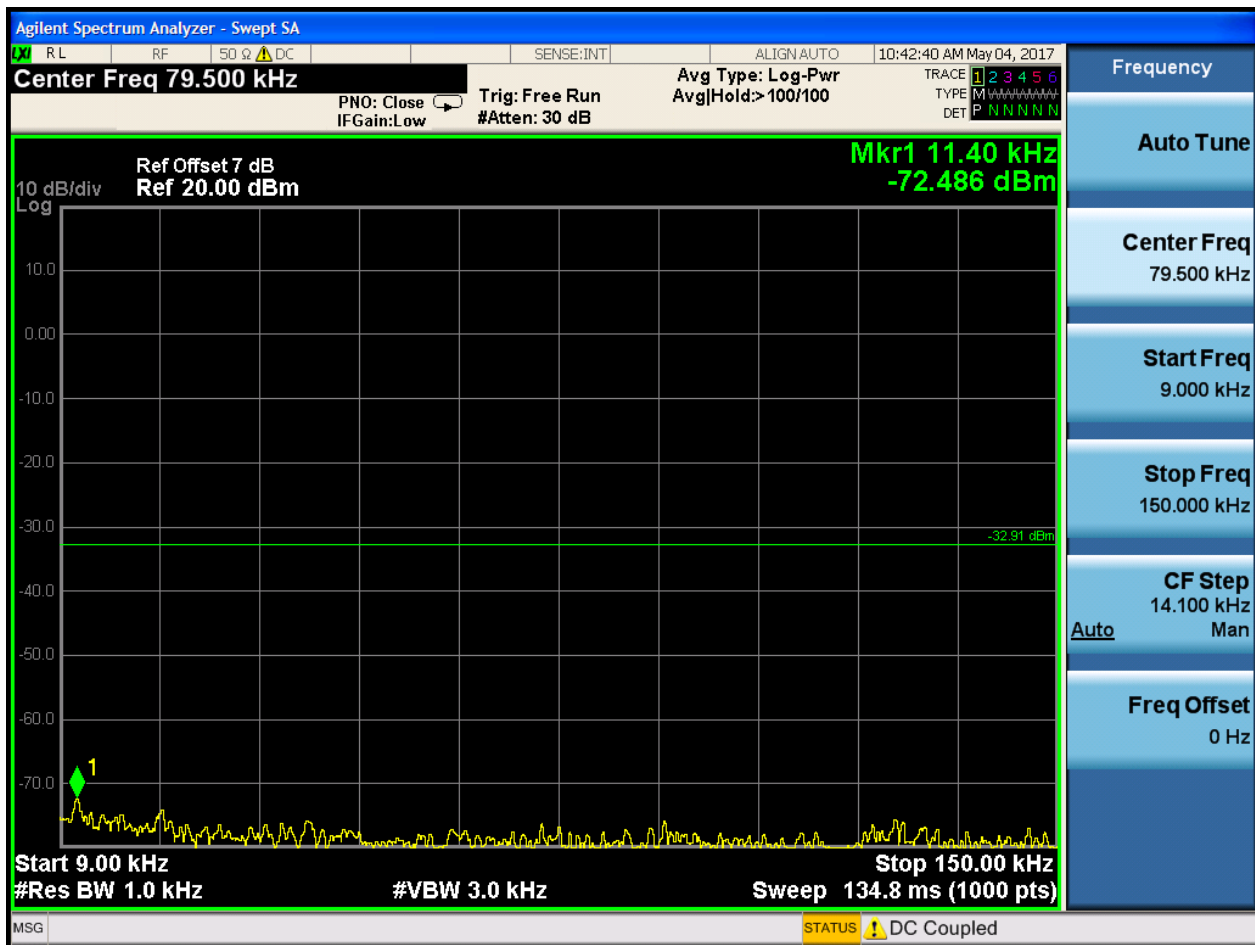
2.9 TM3_3DH5_Ch78

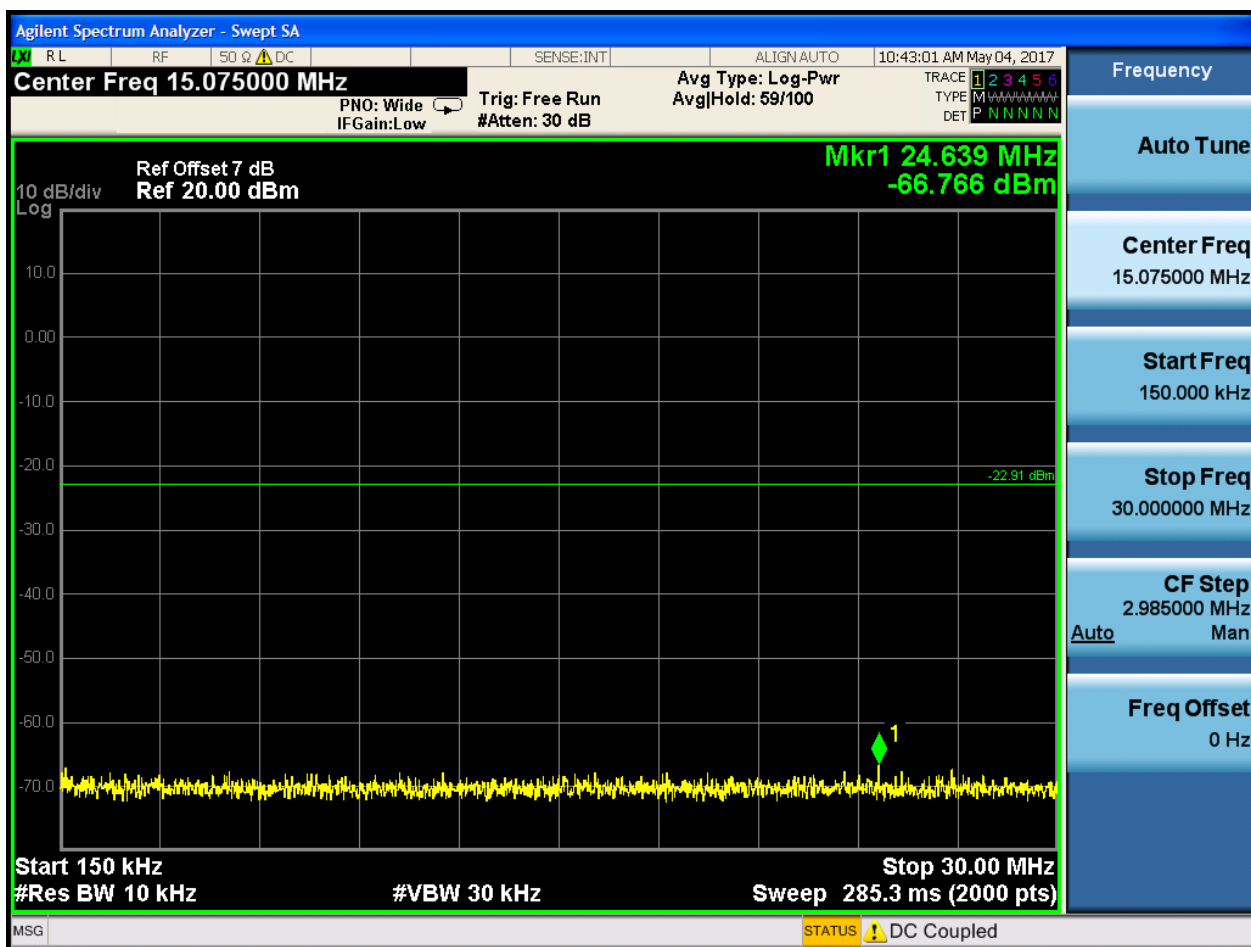
2.9.1 Pref

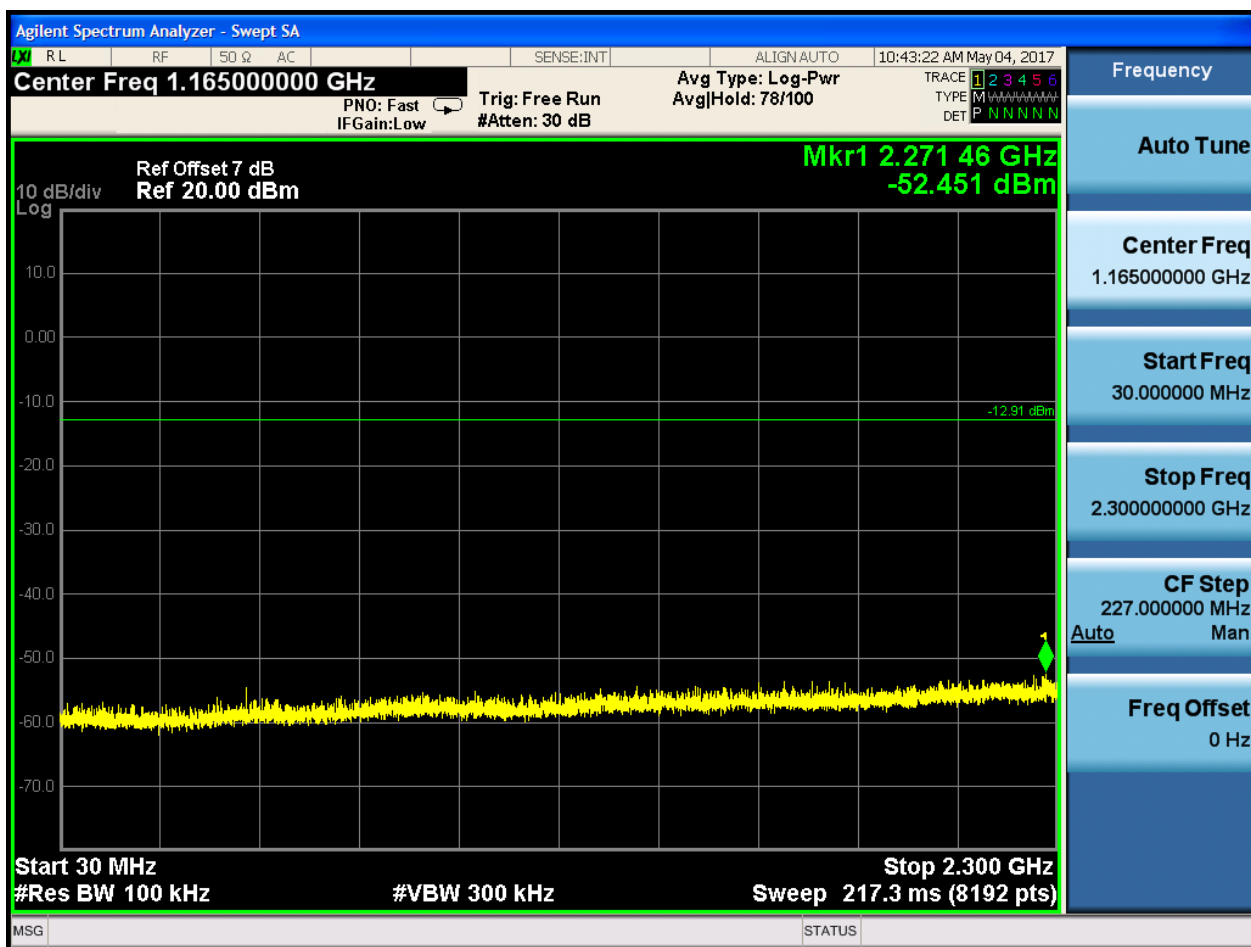


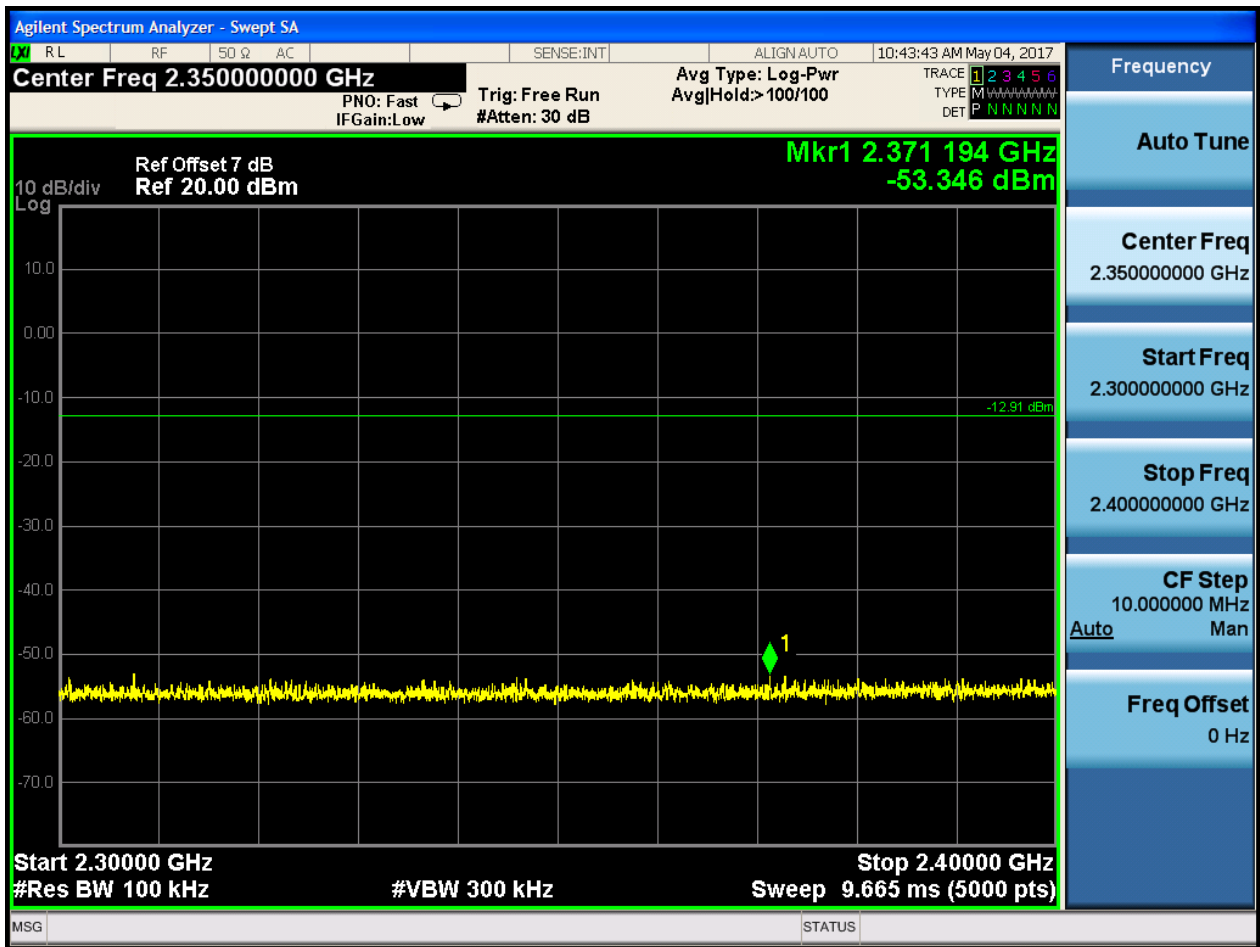


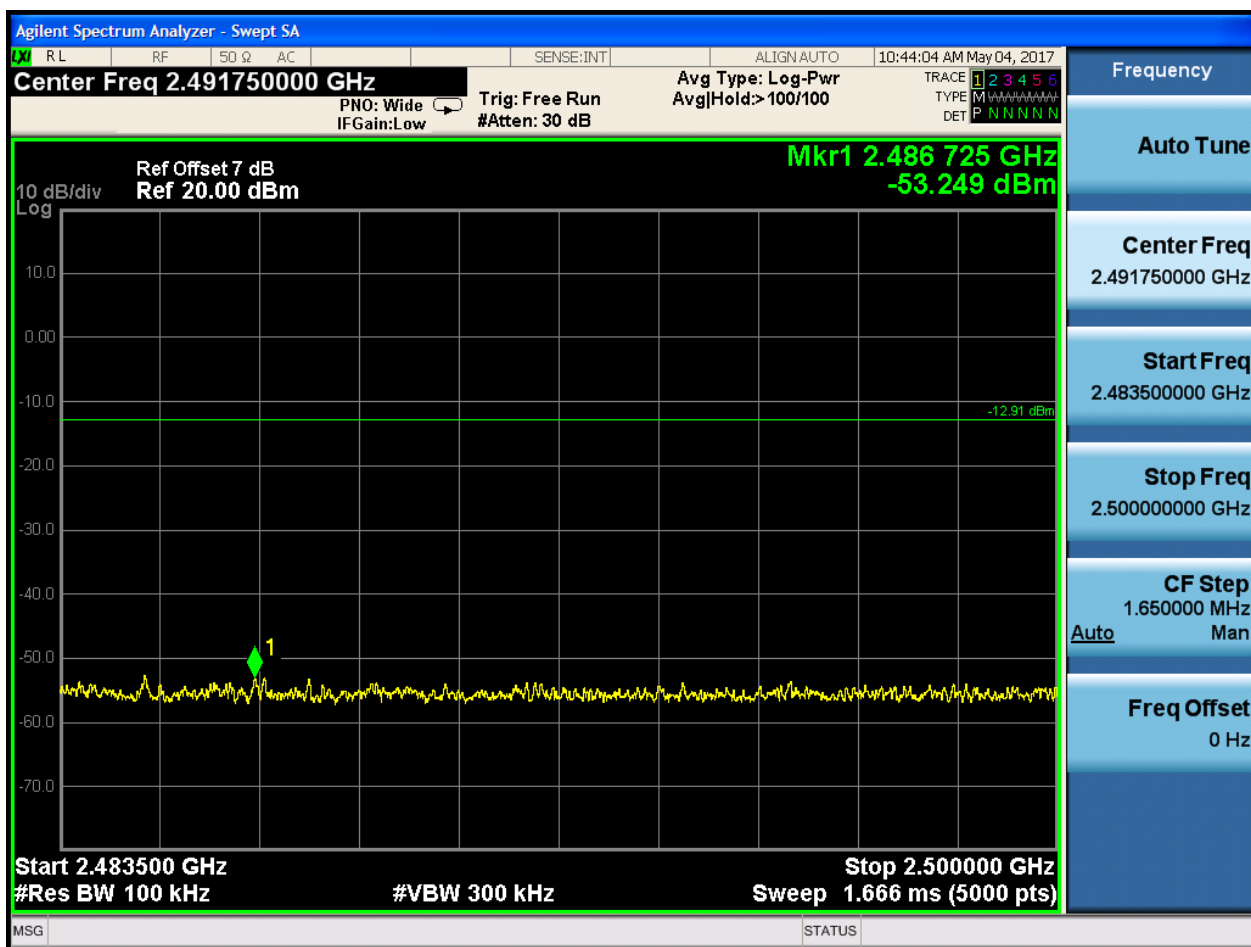
2.9.2 Puw













Appendix H: Radiated Emissions in the Restricted Bands

3 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.

4 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 (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
31.961700	24.29	40.00	15.71	106.0	V	125.0	14.5
44.118900	26.27	40.00	13.73	123.0	V	195.0	18.1
101.914350	22.30	43.50	21.20	130.0	V	45.0	11.8
153.844700	26.48	43.50	17.02	100.0	V	264.0	12.4
200.536000	23.96	43.50	19.54	100.0	V	172.0	13.1
429.693800	26.47	46.00	19.53	141.0	V	41.0	19.4

Note:

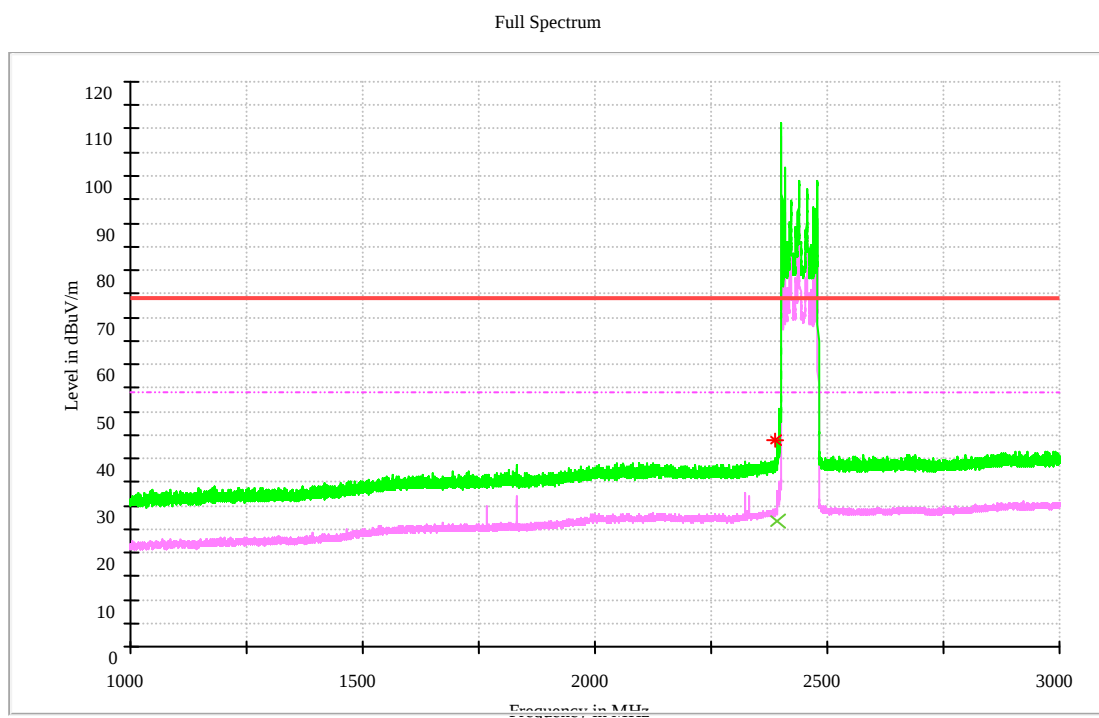
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

Margin=Limit-Level. The reading level is calculated by software which is not shown in the sheet.

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	26.79	54.00	27.21	100.0	H	70.0	-7.6

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	43.69	74.00	30.31	100.0	V	152.0	-7.6

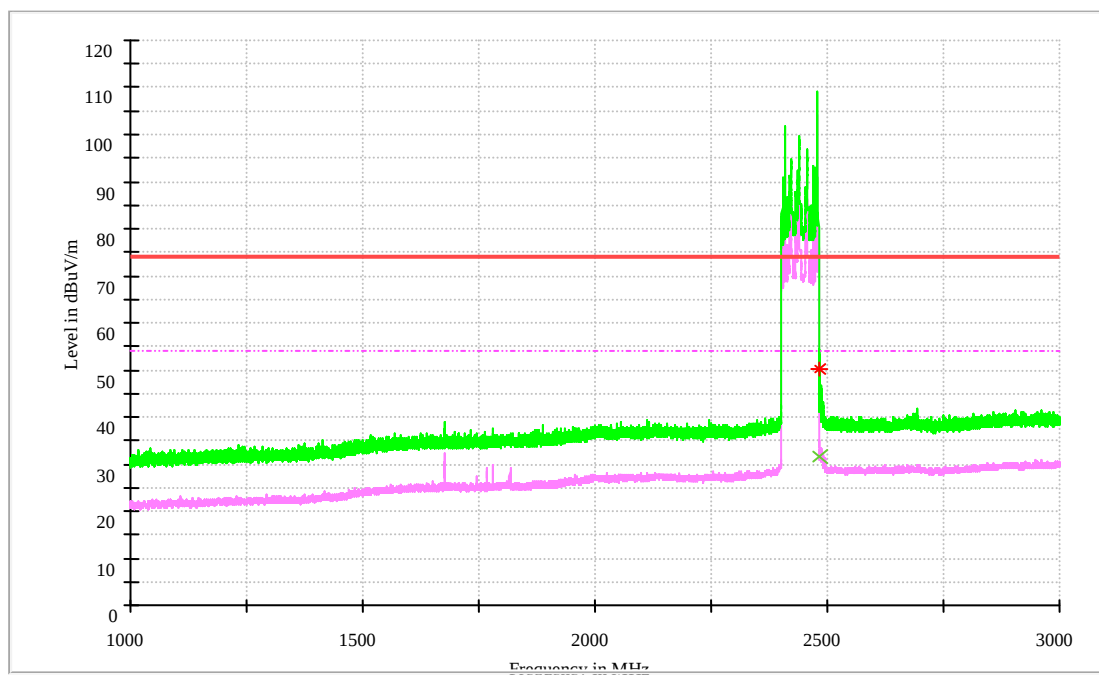
Note:

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

Margin=Limit-Level. The reading level is calculated by software which is not shown in the sheet.

Channel 78

Full Spectrum



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2483.5	31.48	54.00	22.52	110.0	H	204.0	-5.4

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2483.5	50.16	74.00	23.84	100.0	H	258.0	-5.4

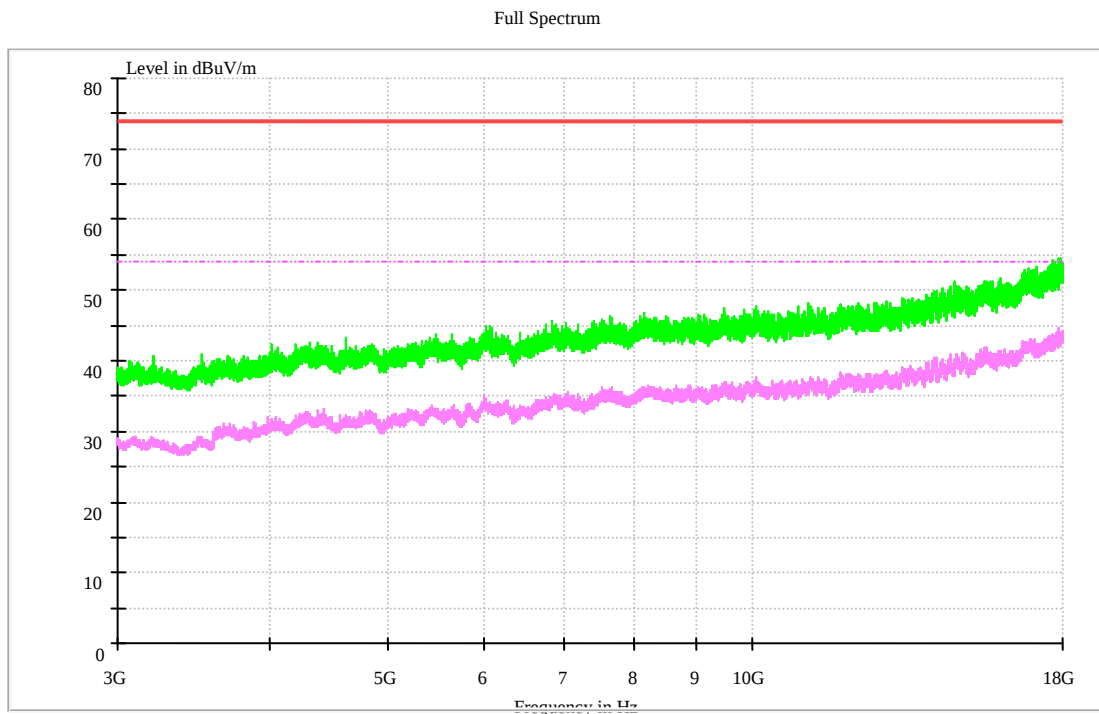
Note:

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

Margin = Limit - Level. The reading level is calculated by software which is not shown in the sheet.

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).





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: Conducted Emission at Power Port

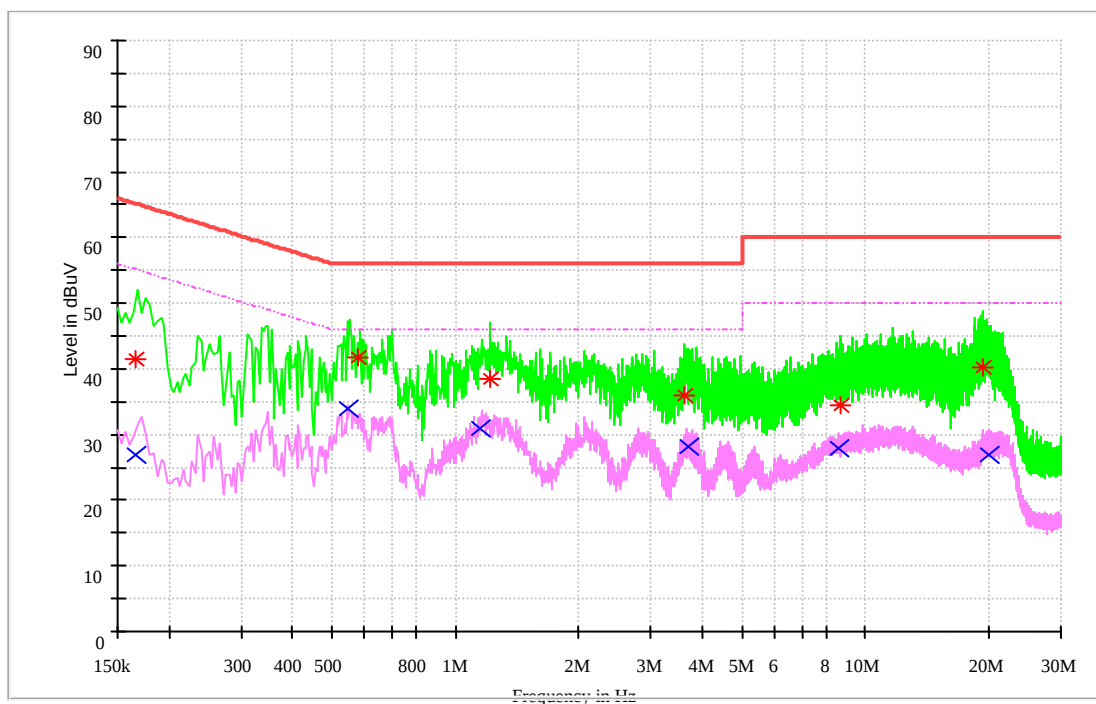
1 Result Table

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
0.166514	26.88	55.13	9.7	28.25	L1	FLO
0.548381	33.95	46.00	9.7	12.05	L1	FLO
1.143236	30.91	46.00	9.7	15.09	L1	FLO
3.682077	28.18	46.00	9.8	17.82	L1	FLO
8.602742	27.81	50.00	9.9	22.19	N	FLO
20.102828	26.97	50.00	10.1	23.03	L1	FLO

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.165437	41.38	65.19	9.7	23.81	N	FLO
0.578146	41.67	56.00	9.7	14.33	L1	FLO
1.218130	38.58	56.00	9.7	17.42	L1	FLO
3.618395	36.00	56.00	9.8	20.00	L1	FLO
8.712034	34.46	60.00	9.9	25.54	N	FLO
19.397250	40.31	60.00	10.1	19.69	L1	FLO

Note:

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

Margin = Limit - Level. The reading level is calculated by software which is not shown in the sheet.

END