Appendix for Test report（Bluetooth-High Power）

Appendix A: 20dB Emission Bandwidth (EBW)

1 Result Table

EUT Conf.	EBW [MHz]	Limit[MHz]	Verdict
TM1_DH5_Ch0	0.95	---	Pass
TM1_DH5_Ch39	0.95	---	Pass
TM1_DH5_Ch78	0.95	---	Pass
TM2_2DH5_Ch0	1.29	---	Pass
TM2_2DH5_Ch39	1.29	---	Pass
TM2_2DH5_Ch78	1.31	---	Pass
TM3_3DH5_Ch0	1.29	---	Pass
TM3_3DH5_Ch39	1.29	---	Pass
TM3_3DH5_Ch78	1.31	---	Pass

2 Test Plot

2.1 TM1_DH5_Ch0

2.2 TM1_DH5_Ch39

2.3 TM1_DH5_Ch78

2.4 TM2_2DH5_Ch0

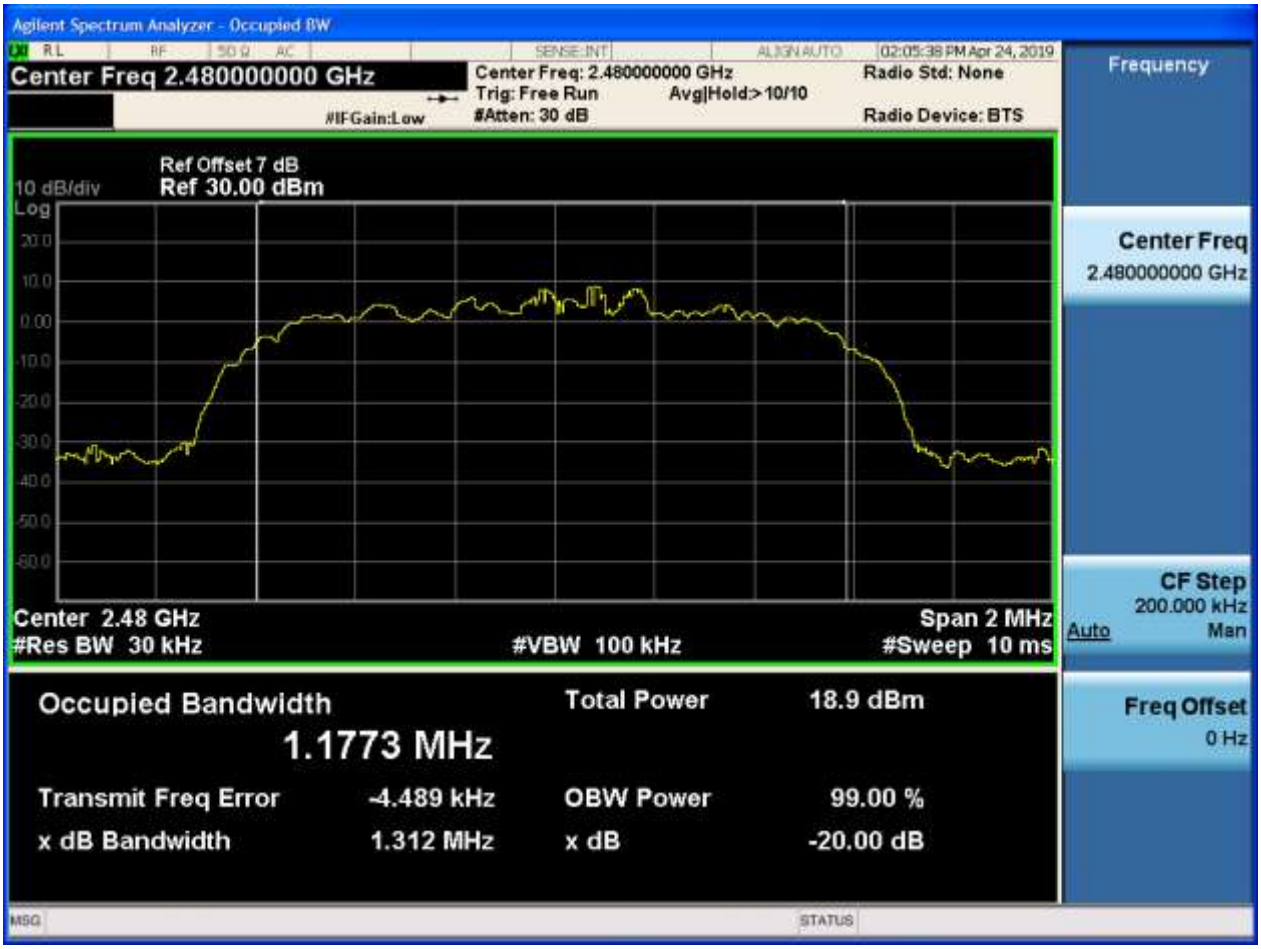
2.5 TM2_2DH5_Ch39

2.6 TM2_2DH5_Ch78

2.7 TM3_3DH5_Ch0

2.8 TM3_3DH5_Ch39

2.9 TM3_3DH5_Ch78



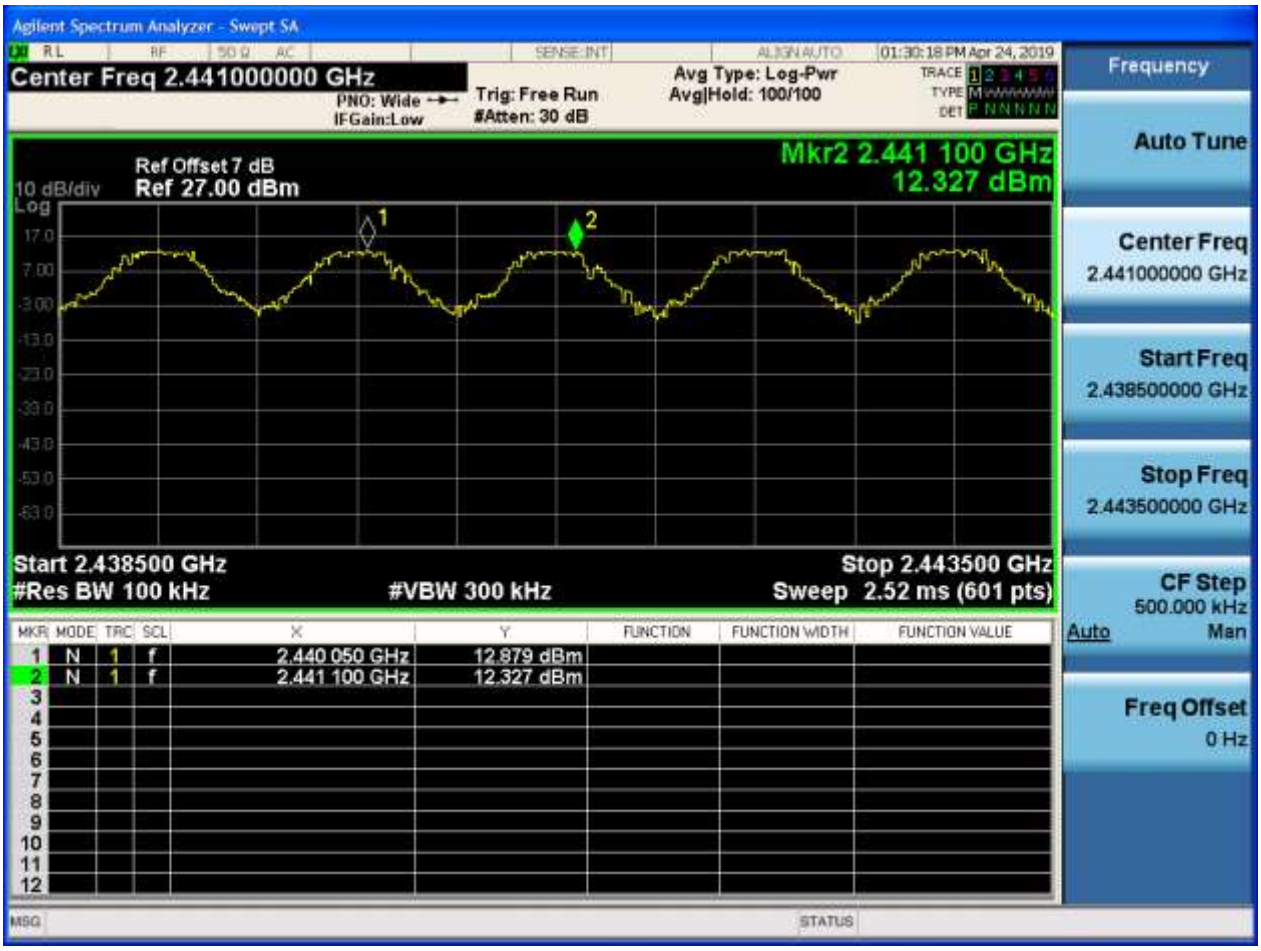
Appendix B: Carrier Frequency Separation

1 Result Table

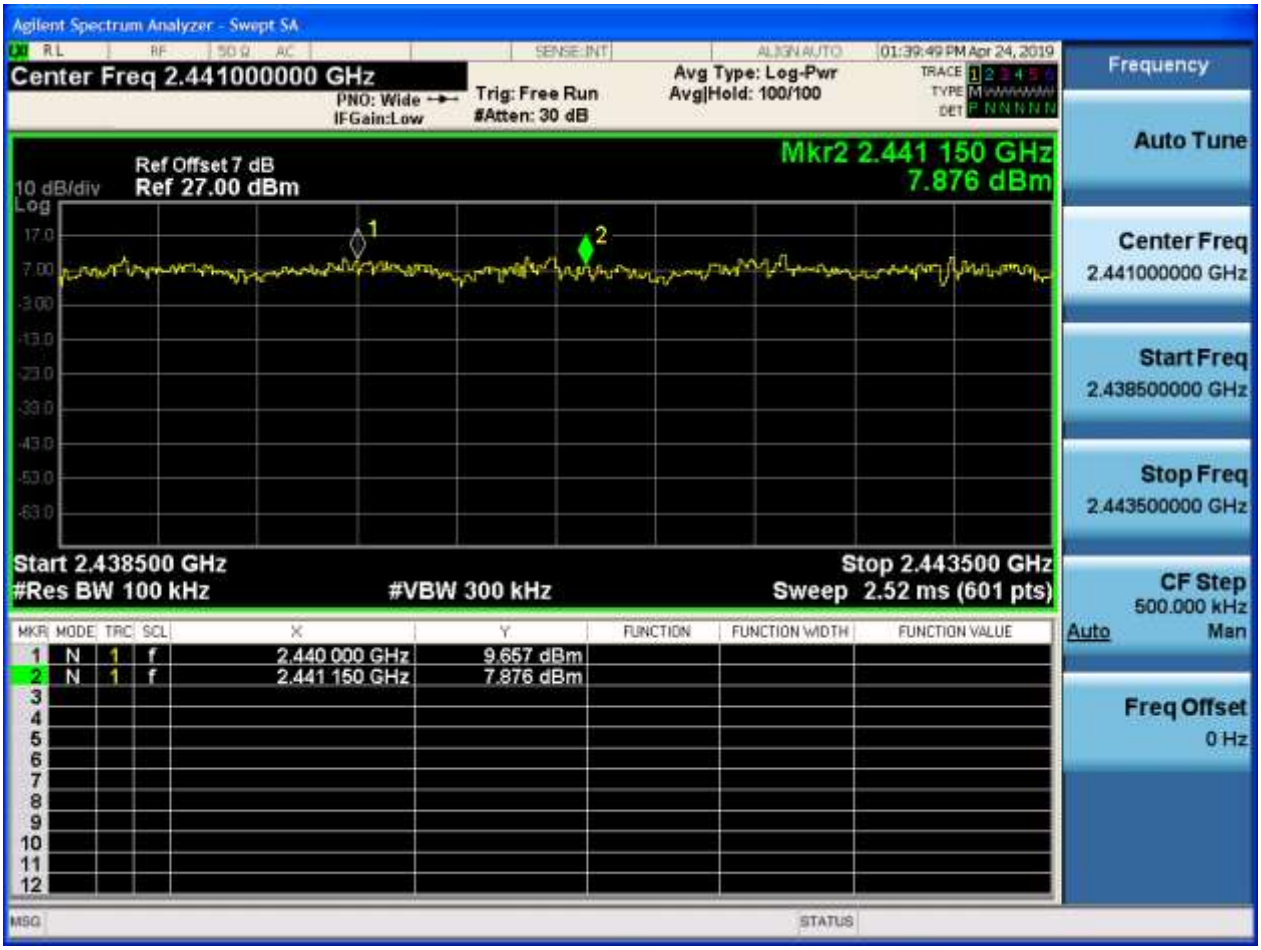
EUT Conf.	Carrier Frequency Separation [MHz]	Limit[MHz]	Verdict
TM1_DH5_Hop	1.05	≥0.633	Pass
TM2_2DH5_Hop	1.15	≥0.873	Pass
TM3_3DH5_Hop	1.23	≥0.873	Pass

2 Test Plot

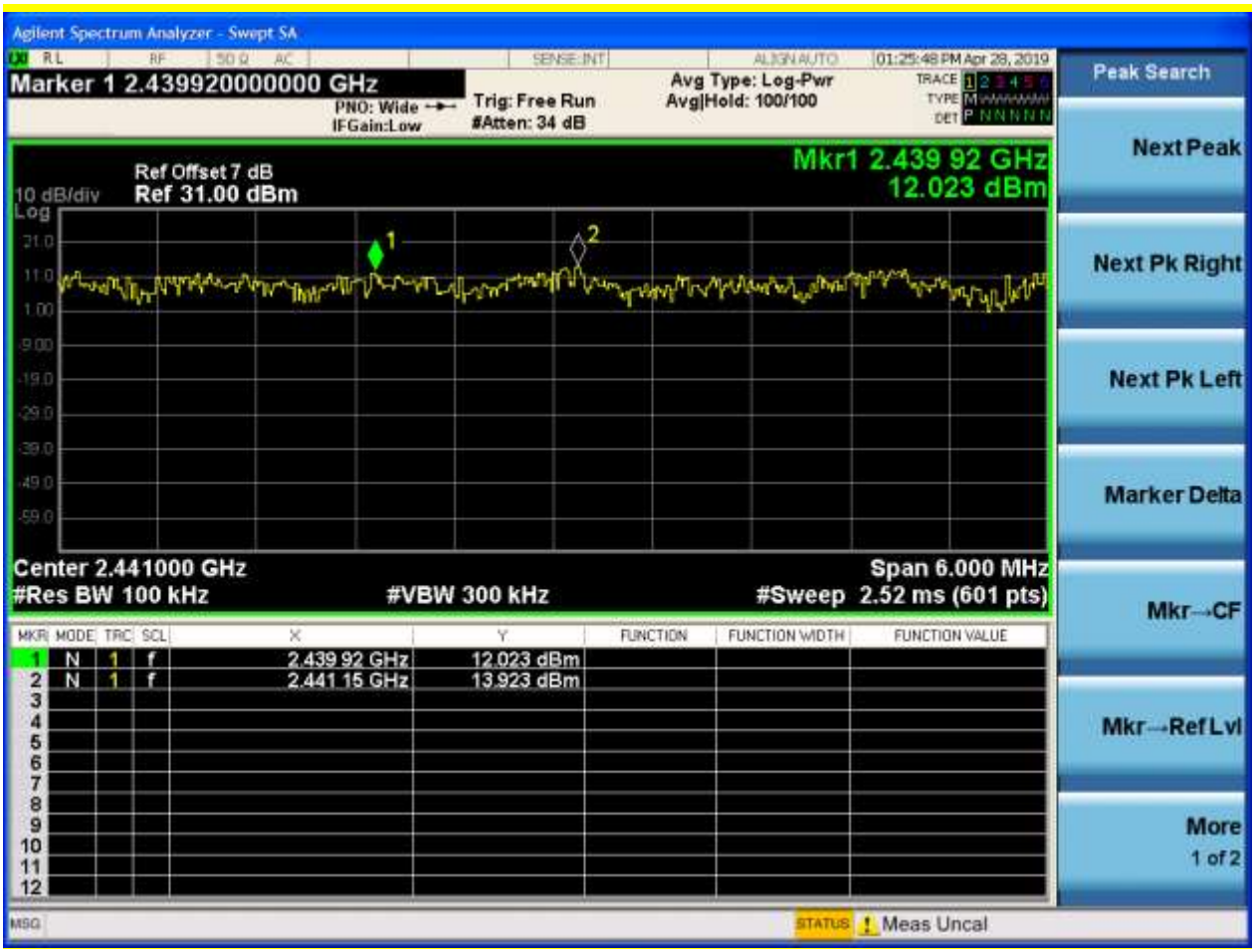
2.1 TM1_DH5_Hop



2.2 TM2_2DH5_Hop



2.3 TM3_3DH5_Hop



Appendix C: Number of Hopping Channel

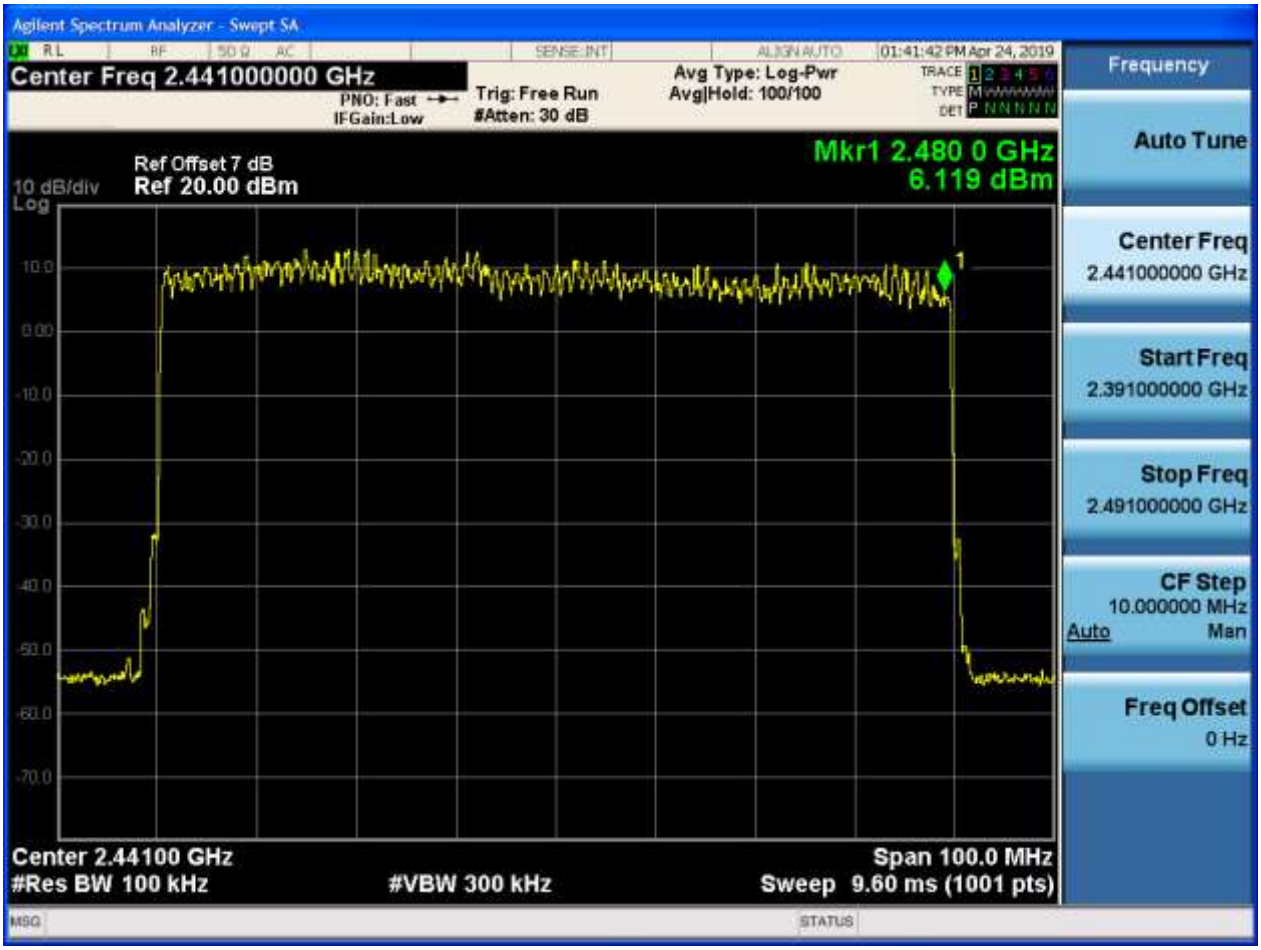
1 Result Table

EUT Conf.	Number of Hopping Channel	Limit	Verdict
TM1_DH5_Hop	79	≥15	Pass
TM2_2DH5_Hop	79	≥15	Pass
TM3_3DH5_Hop	79	≥15	Pass

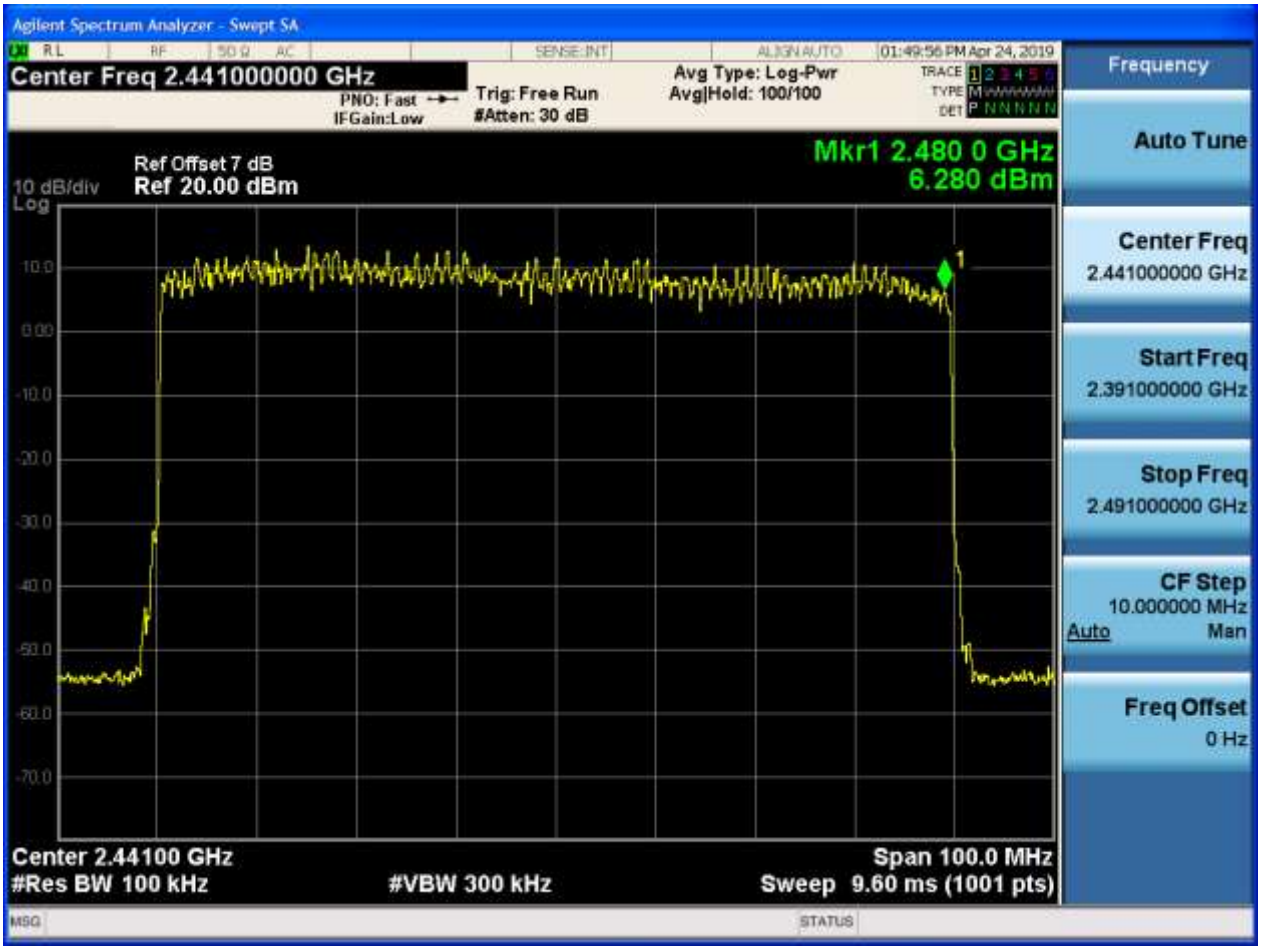
2 Test Plot

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:

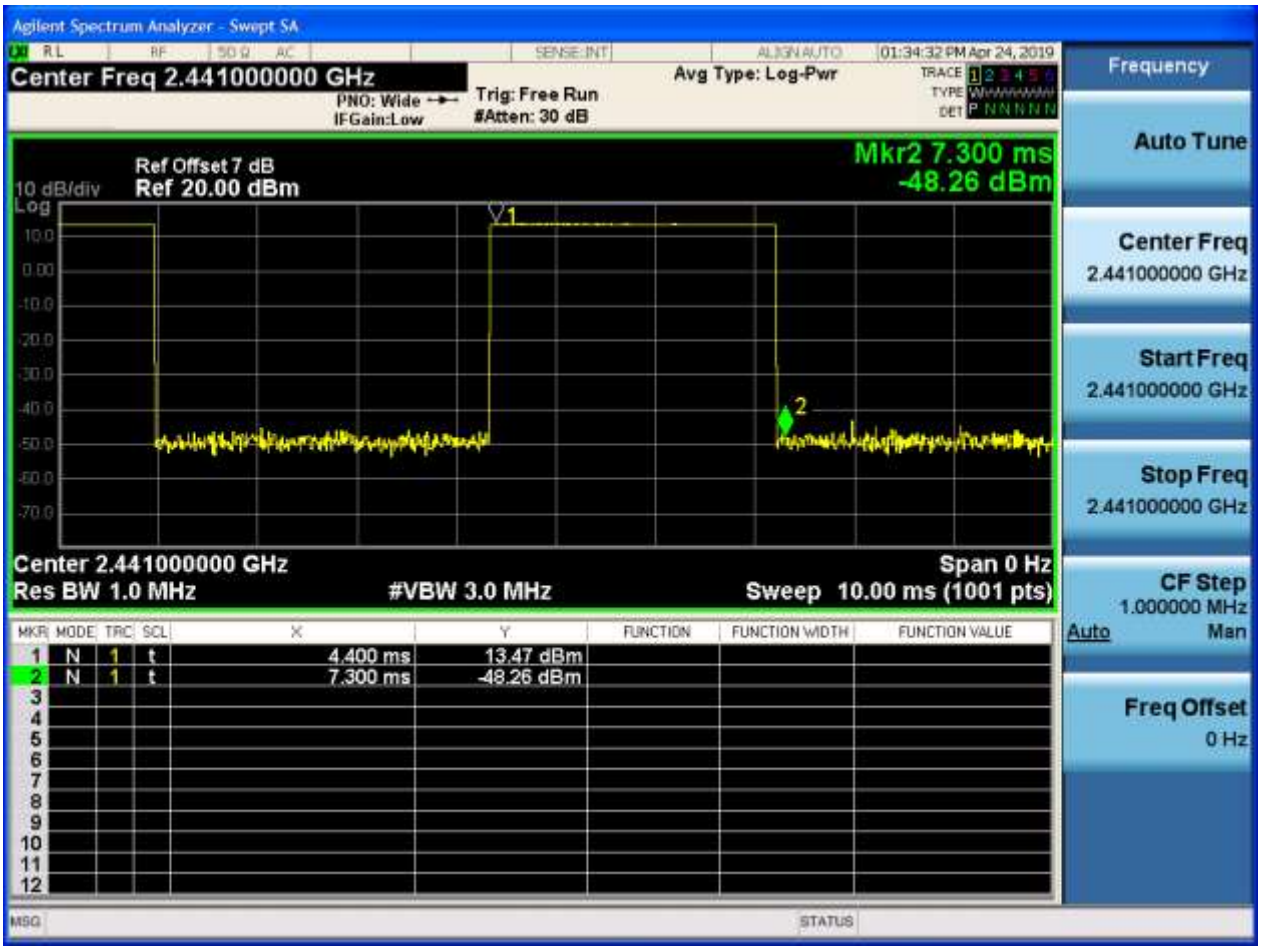
- The duration for dwell time calculation: 0.4 [s] * hopping number = 0.4 [s] * 79 [ch] = 31.6 [s*ch];
- The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
- The hops per second for all channels: The selected EUT Conf uses a slot type of 5-Tx&1-Rx and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

EUT Conf.	Burst Width [s/hop/ch]	Total Hops [hop*ch]	Dwell Time [ms]	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

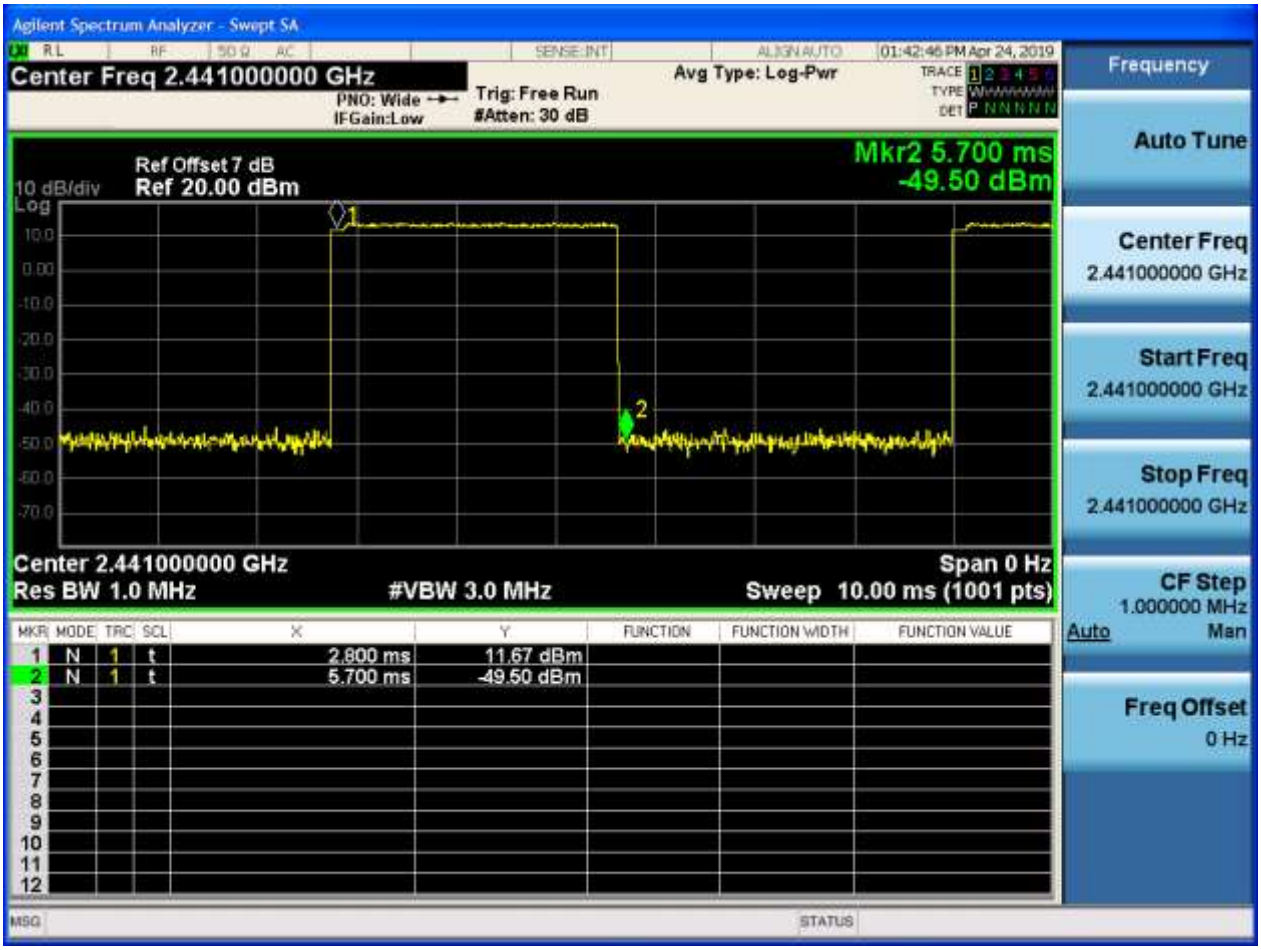
2 Test Plot

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

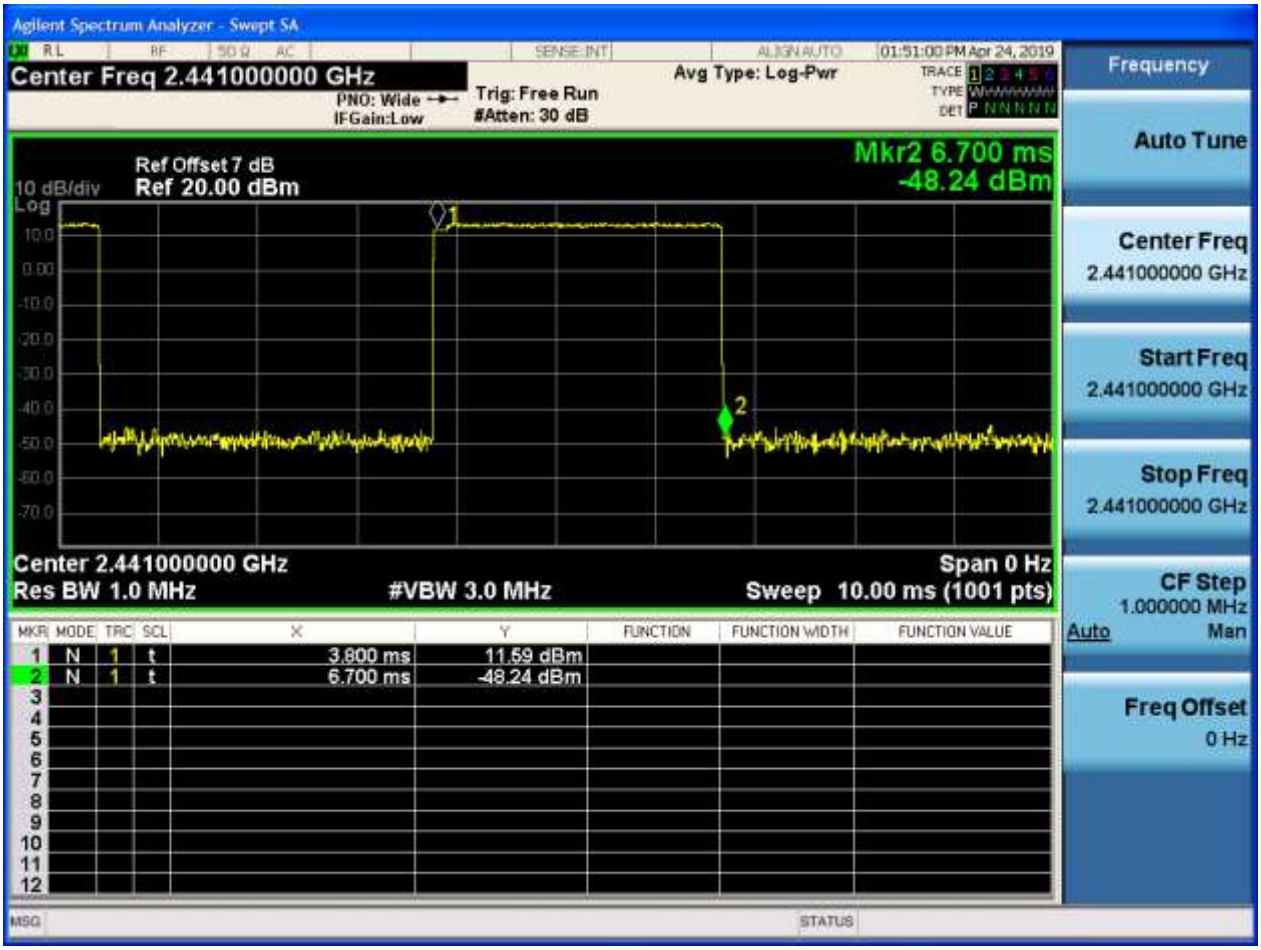
2.1 TM1_DH5_Ch39



2.2 TM2_2DH5_Ch39



2.3 TM3_3DH5_Ch39



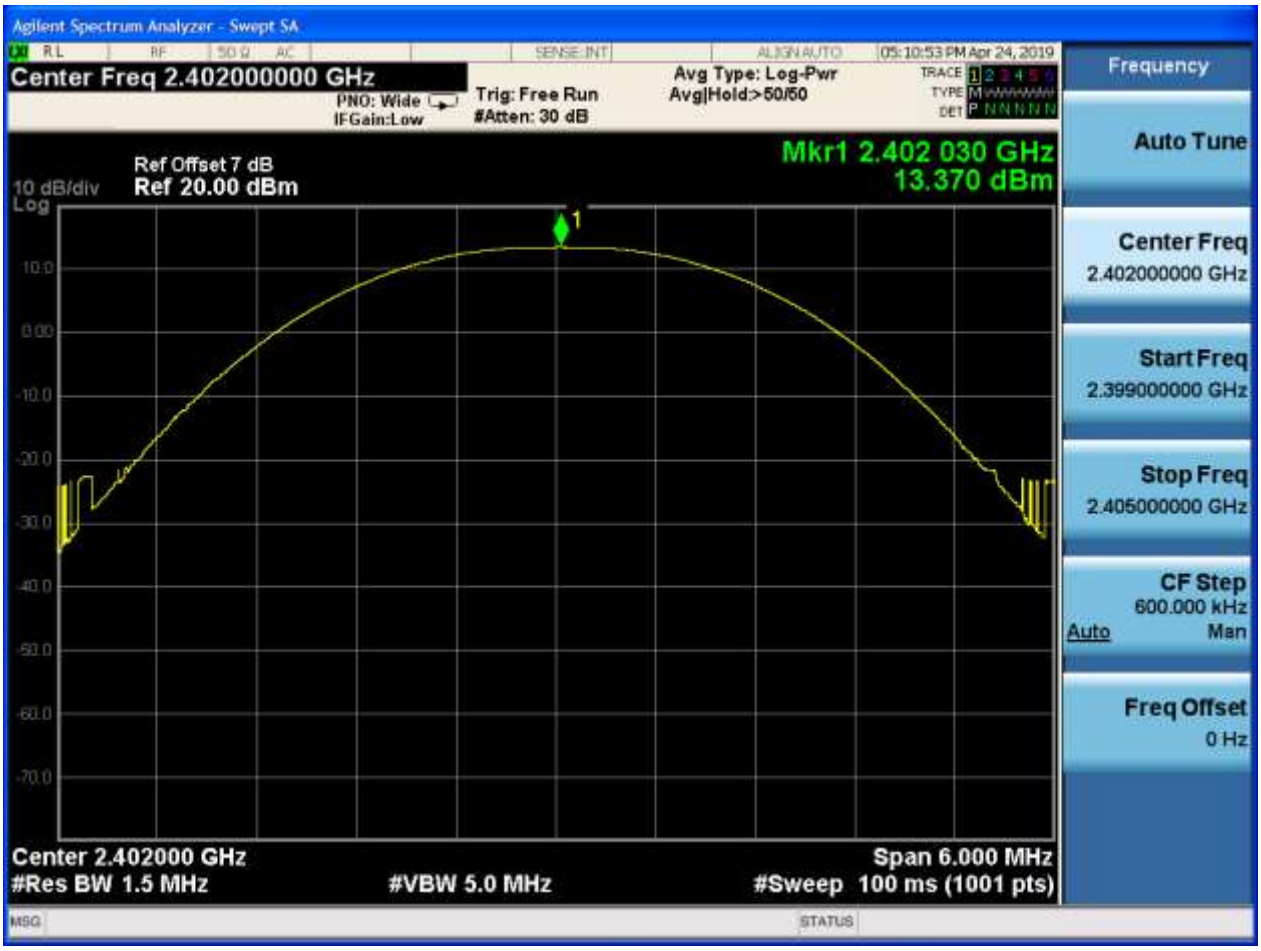
Appendix E: Maximum Peak Output Power

1 Result Table

EUT Conf.	Conducted Result[dBm]	Conducted Limit[dBm]	EIRP Result[dBm]	EIRP Result[dBm]	Verdict
TM1_DH5_Ch0	13.37	30	10.81	36	Pass
TM1_DH5_Ch39	13.562	30	11.002	36	Pass
TM1_DH5_Ch78	13.354	30	10.794	36	Pass
TM2_2DH5_Ch0	13.868	30	11.308	36	Pass
TM2_2DH5_Ch39	14.037	30	11.477	36	Pass
TM2_2DH5_Ch78	13.909	30	11.349	36	Pass
TM3_3DH5_Ch0	13.888	30	11.328	36	Pass
TM3_3DH5_Ch39	14.067	30	11.507	36	Pass
TM3_3DH5_Ch78	13.87	30	11.31	36	Pass

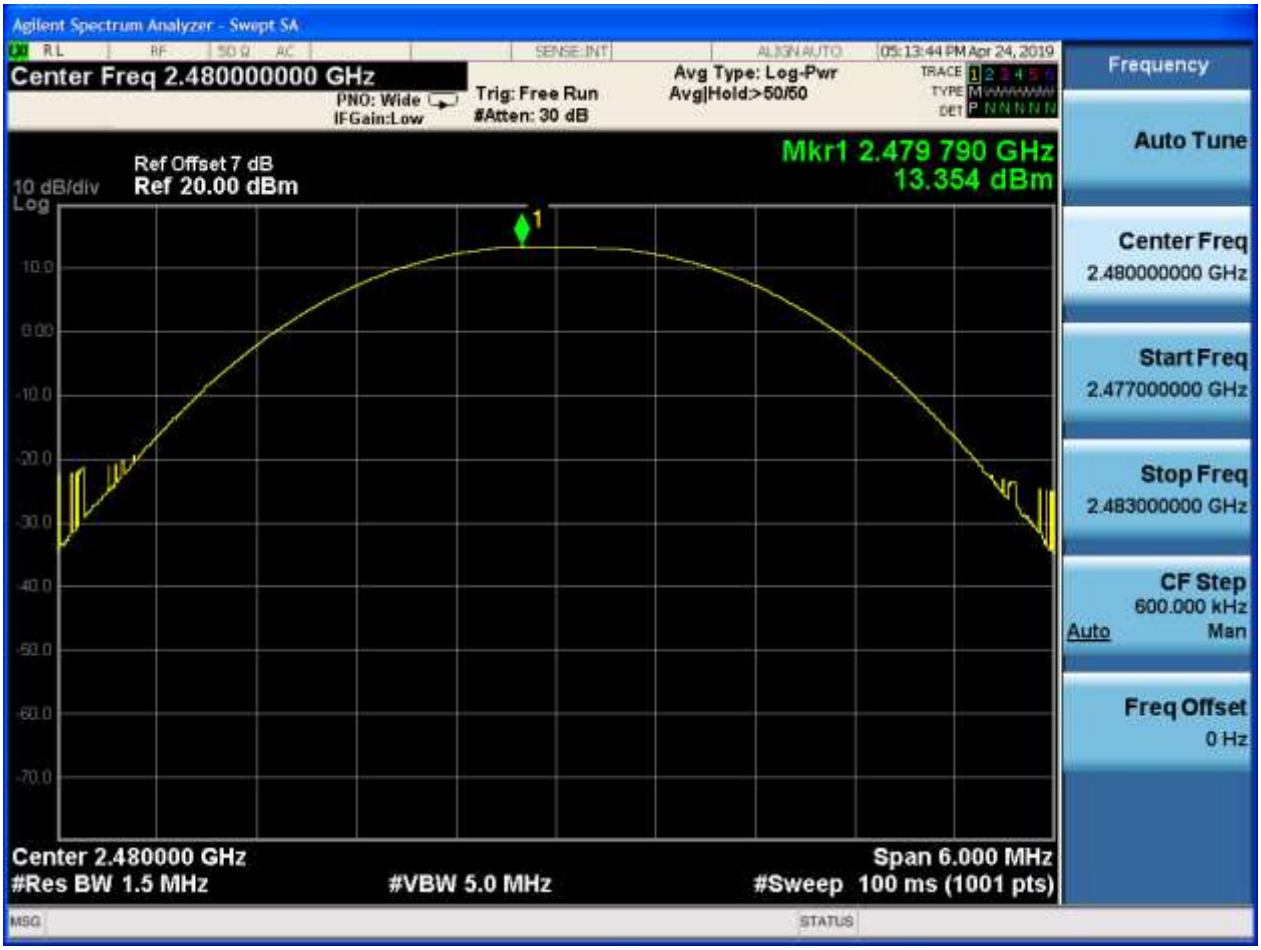
2 Test Plot

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

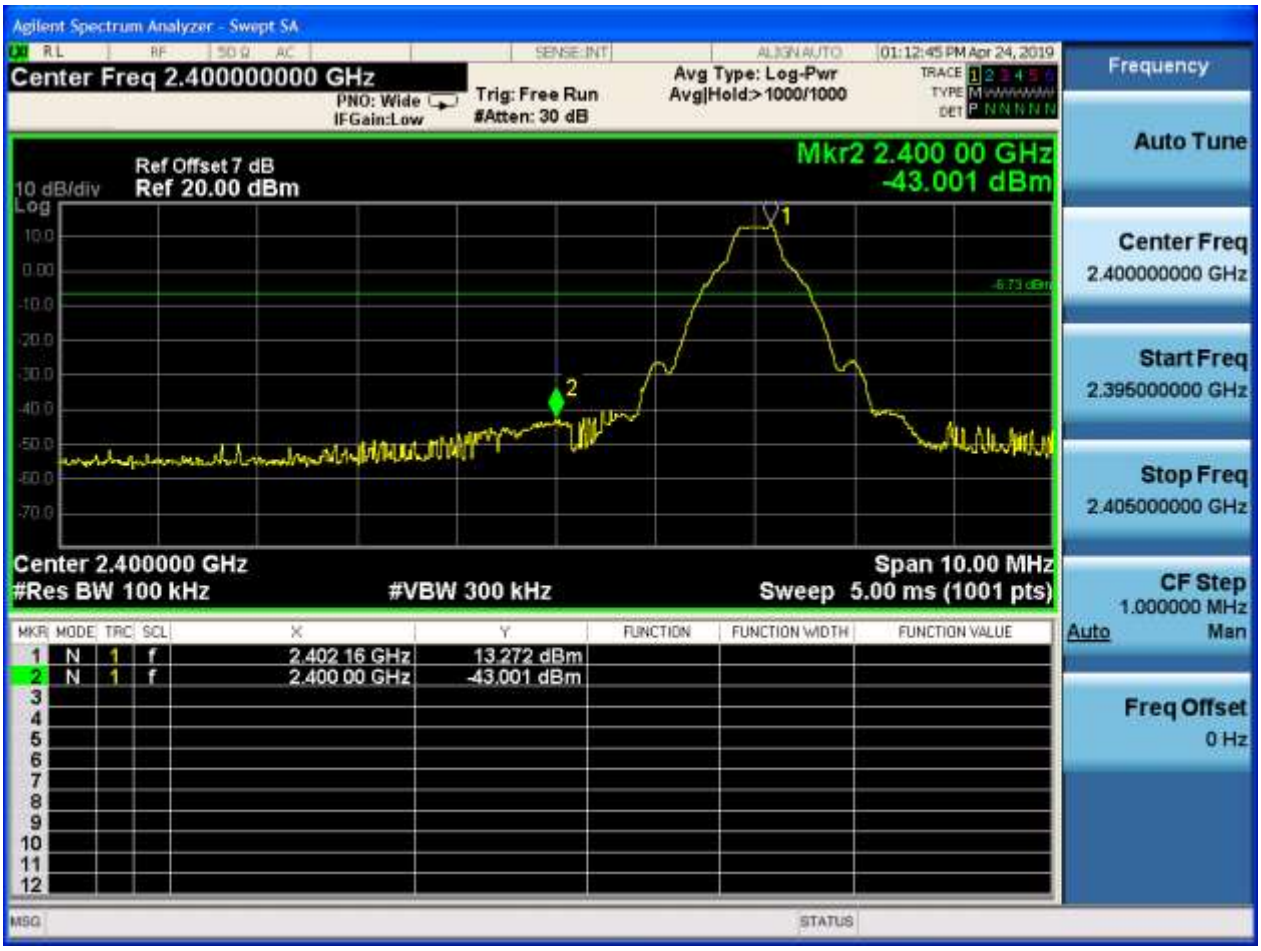
1 Result Table

EUT Conf.	Channel No.	Carrier Frequency [MHz]	Max. Spurious Level [dBm]	Frequency Hopping	Carrier Power [dBm]	Limit [dBm]	Result
TM1_DH5_Ch0	0	2402	-43.001	Off	13.269	-6.731	Pass
	-	-	-55.652	On	13.028	-6.972	Pass
TM1_DH5_Ch78	78	2480	-54.961	Off	10.455	-9.545	Pass
	-	-	-55.491	On	10.066	-9.934	Pass
TM2_2DH5_Ch0	0	2402	-45.791	Off	10.714	-9.286	Pass
	-	-	-48.185	On	9.456	-10.544	Pass
TM2_2DH5_Ch78	78	2480	-49.575	Off	11.31	-8.69	Pass
	-	-	-54.337	On	11.507	-8.493	Pass
TM3_3DH5_Ch0	0	2402	-39.796	Off	12.312	-7.688	Pass
	-	-	-42.8	On	12.062	-7.938	Pass
TM3_3DH5_Ch78	78	2480	-50.664	Off	11.29	-8.71	Pass
	-	-	-54.725	On	9.424	-10.576	Pass

2 Test Plot

2.1 TM1_DH5_Ch0

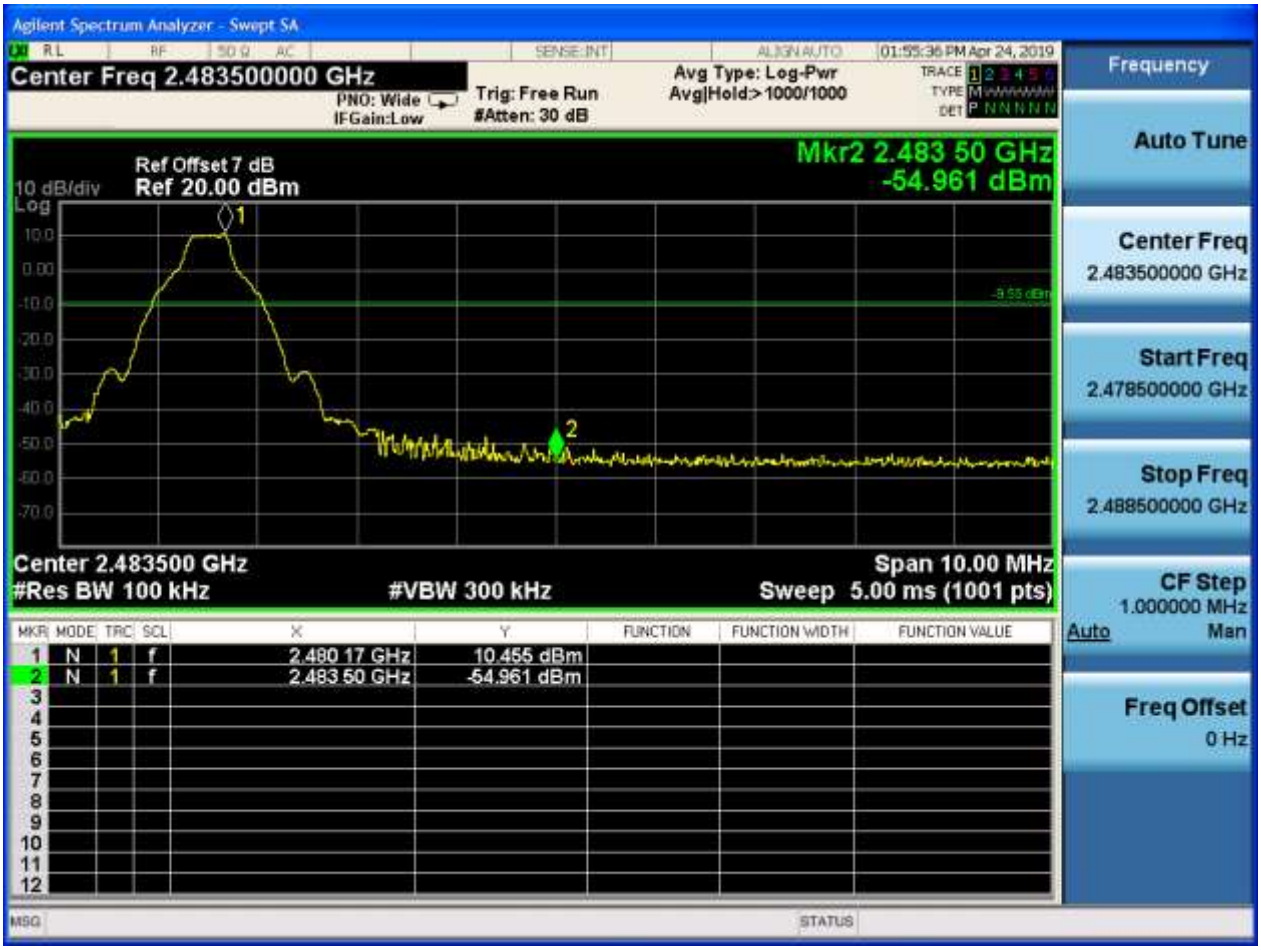
No hopping



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” referrers 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 x 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”.

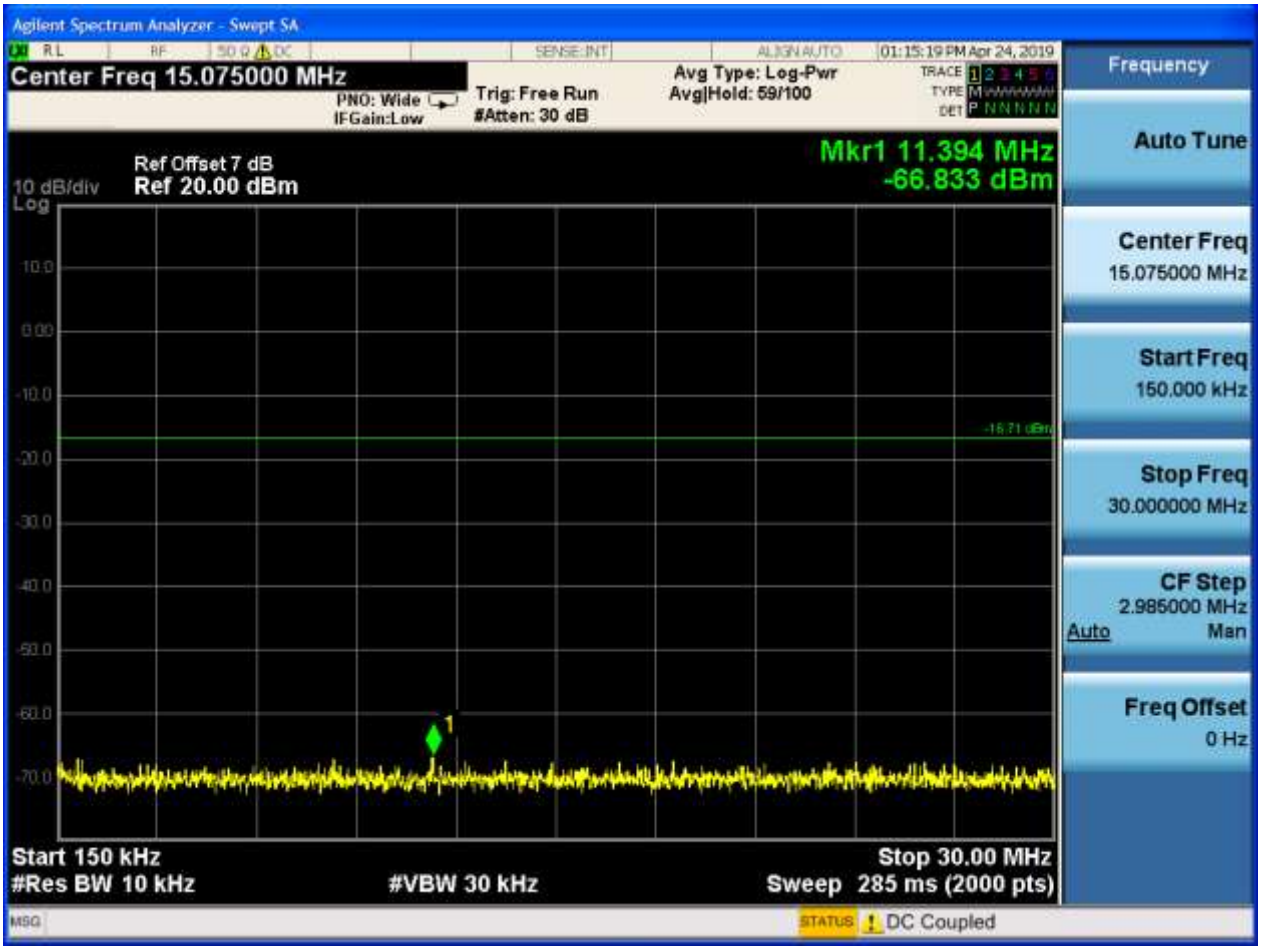
EUT Conf.	Pref [dBm/100 kHz]	Result[dBm]	Limit[dBm/100kHz]	Verdict
TM1_DH5_Ch0	13.289	< Limit	-6.711	Pass
TM1_DH5_Ch39	13.478	< Limit	-6.522	Pass
TM1_DH5_Ch78	10.473	< Limit	-9.527	Pass
TM2_2DH5_Ch0	11.437	< Limit	-8.563	Pass
TM2_2DH5_Ch39	11.672	< Limit	-8.328	Pass
TM2_2DH5_Ch78	11.324	< Limit	-8.676	Pass
TM3_3DH5_Ch0	14.249	< Limit	-5.751	Pass
TM3_3DH5_Ch39	11.676	< Limit	-8.324	Pass
TM3_3DH5_Ch78	11.273	< Limit	-8.727	Pass

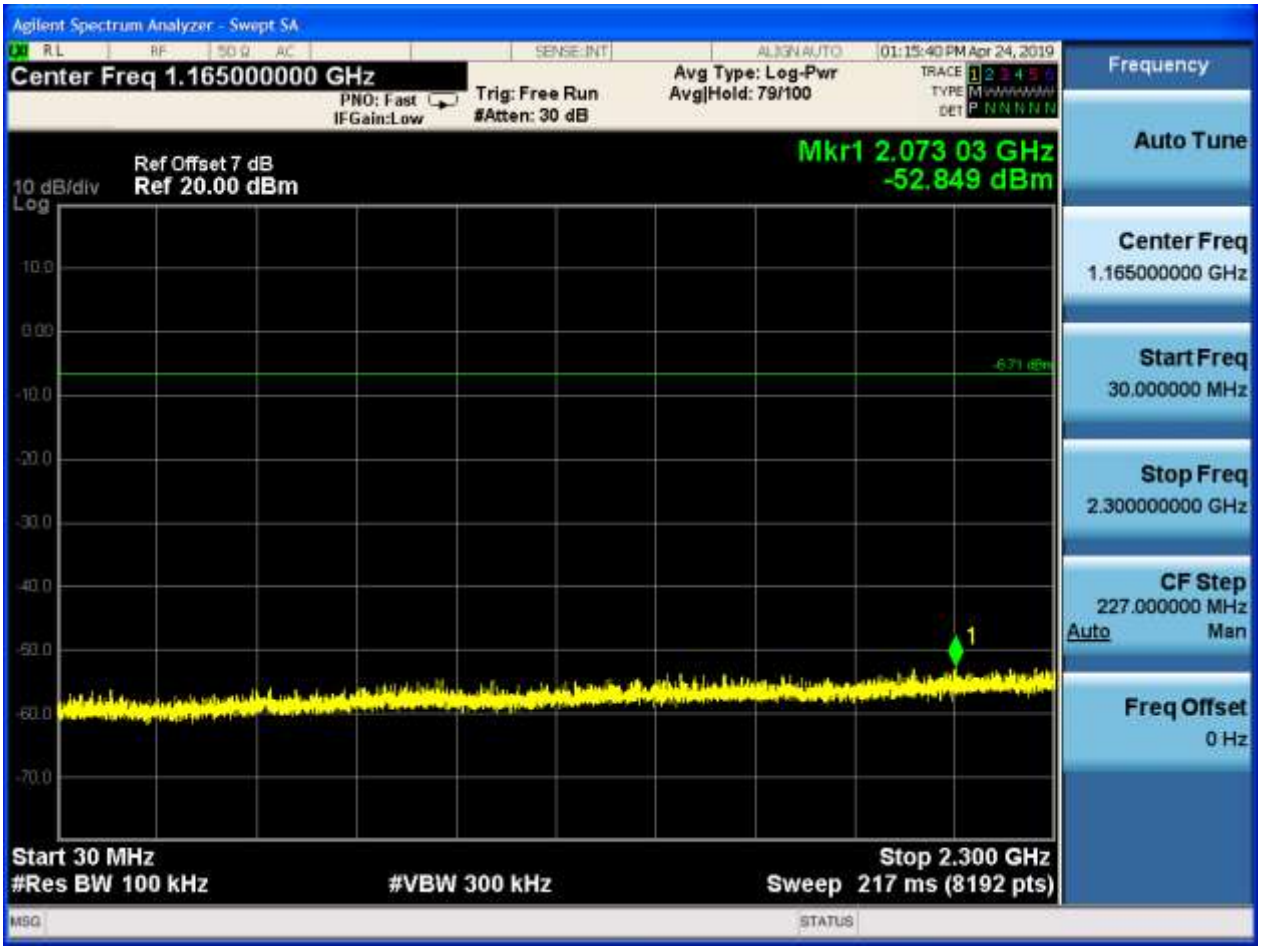
2 Test Plot

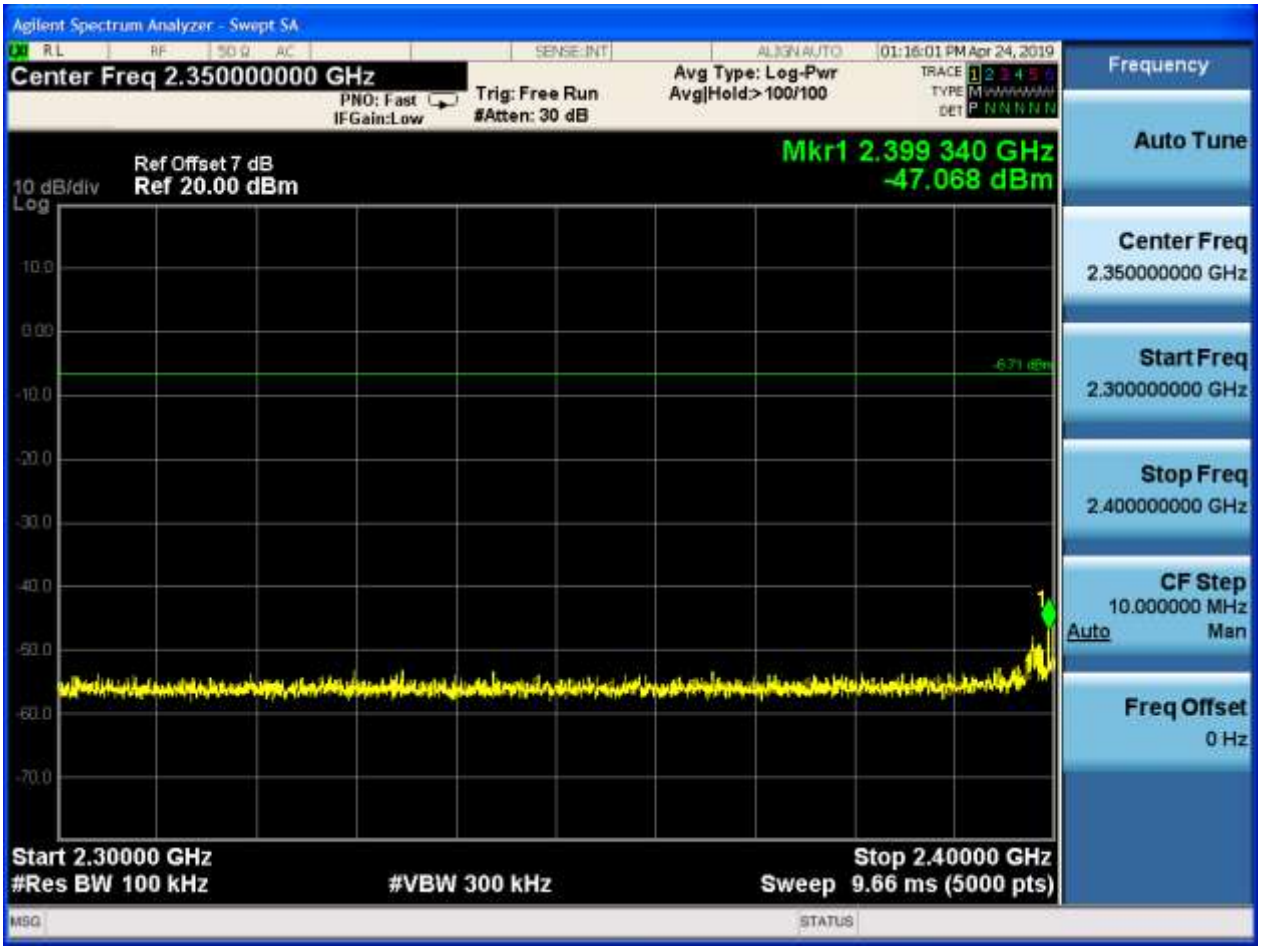
2.1 TM1_DH5_Ch0

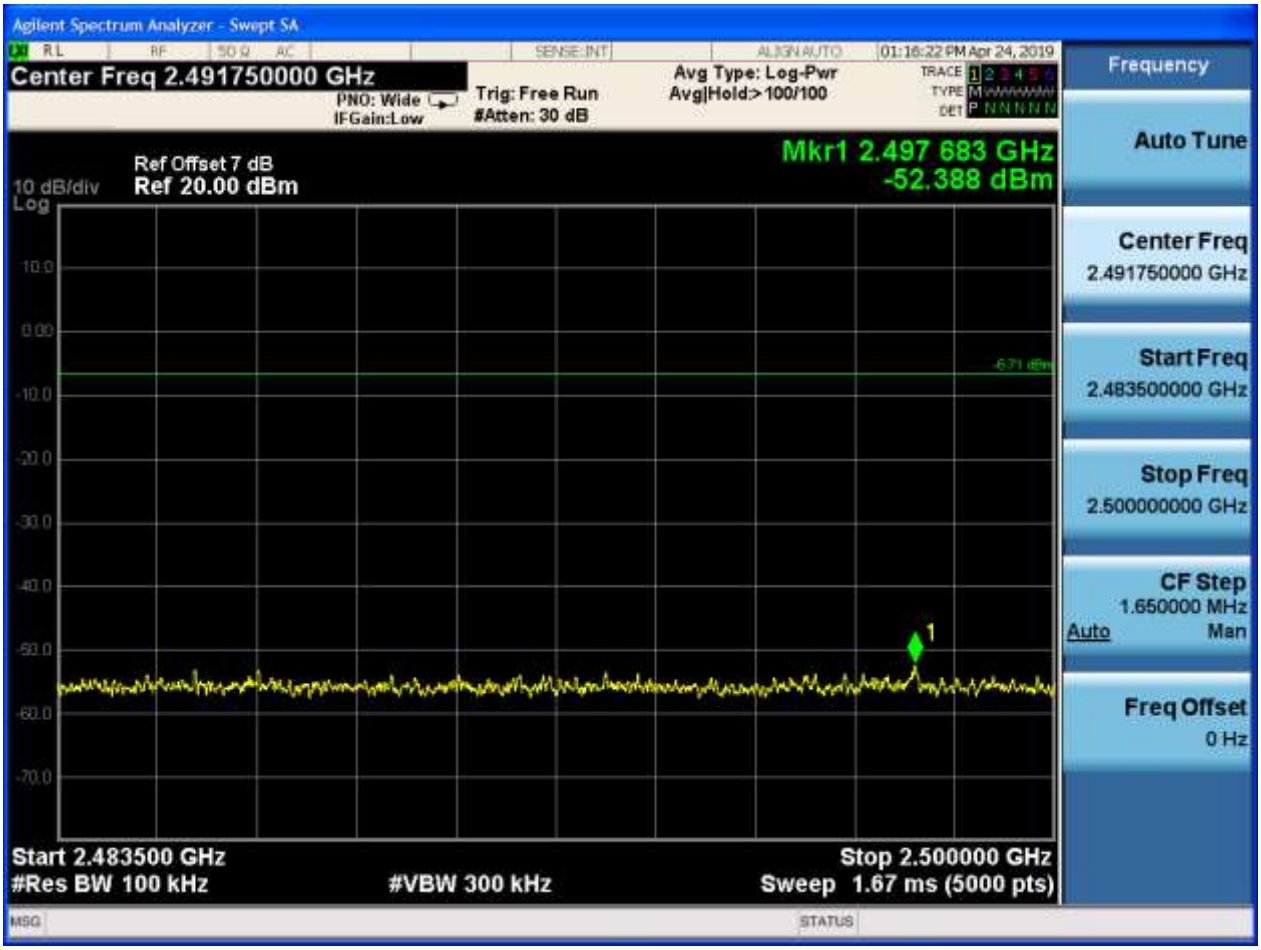
2.1.1 Pref

2.1.2 Puw




Agilent Spectrum Analyzer - Swept SA
Center Freq 1.165000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 79/100
01:15:40 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.073 03 GHz
-52.849 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.300 GHz
Sweep 217 ms (8192 pts)
Frequency
Auto Tune
Center Freq
1.165000000 GHz
Start Freq
30.000000 MHz
Stop Freq
2.300000000 GHz
CF Step
227.000000 MHz
Auto
Man
Freq Offset
0 Hz

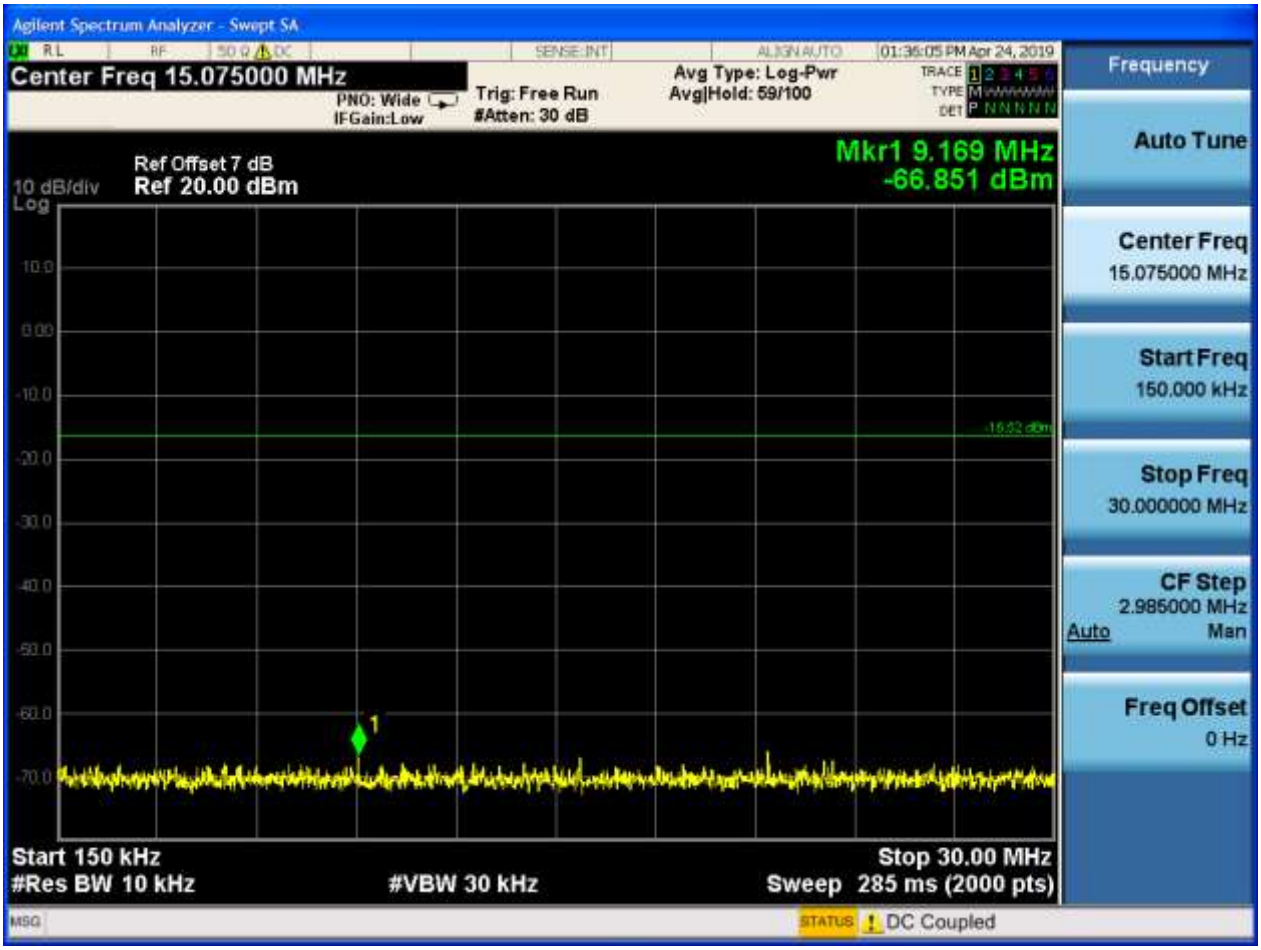

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:16:01 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.399 340 GHz
-47.068 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

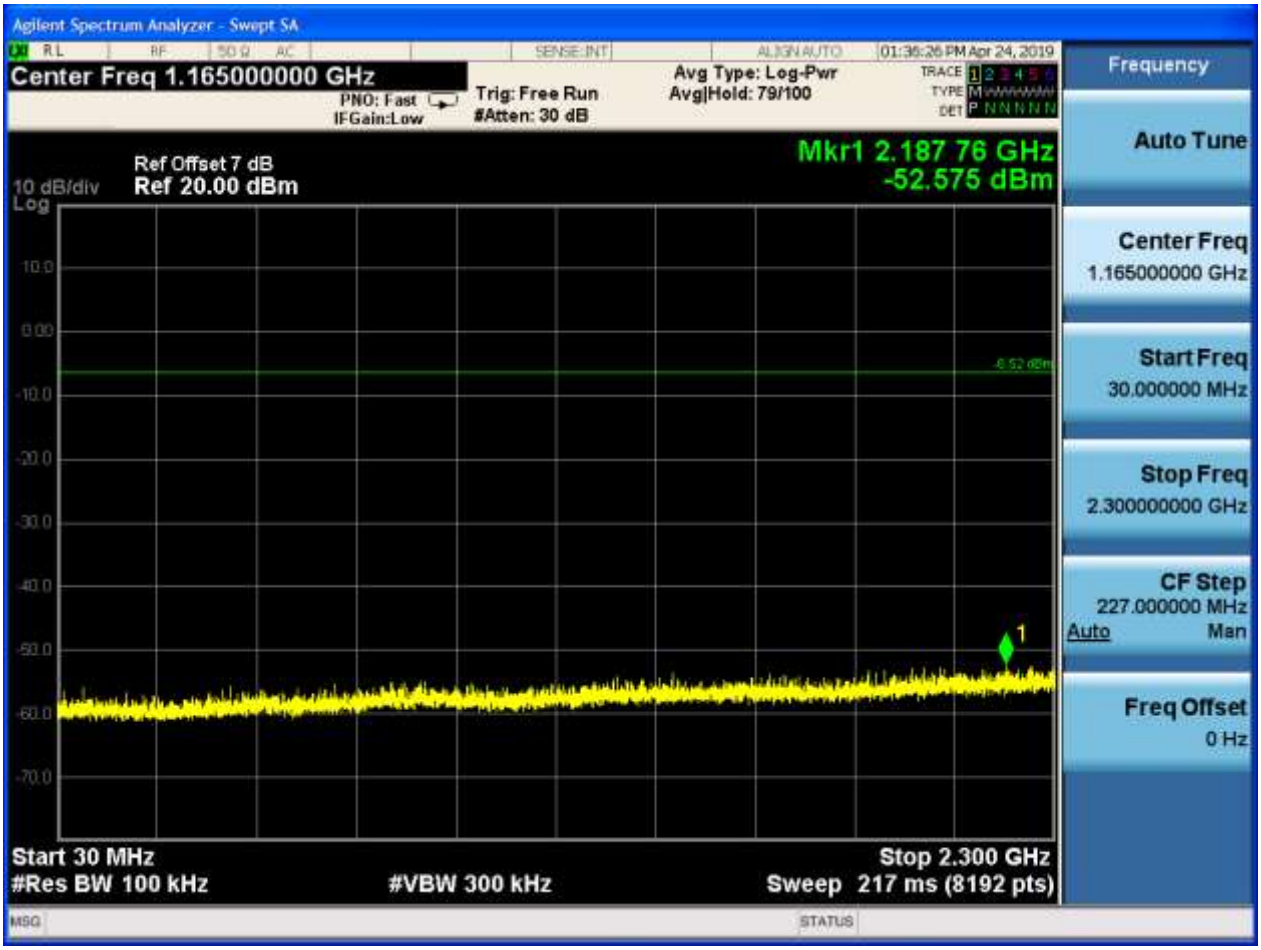

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:16:22 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.497 683 GHz
-52.388 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

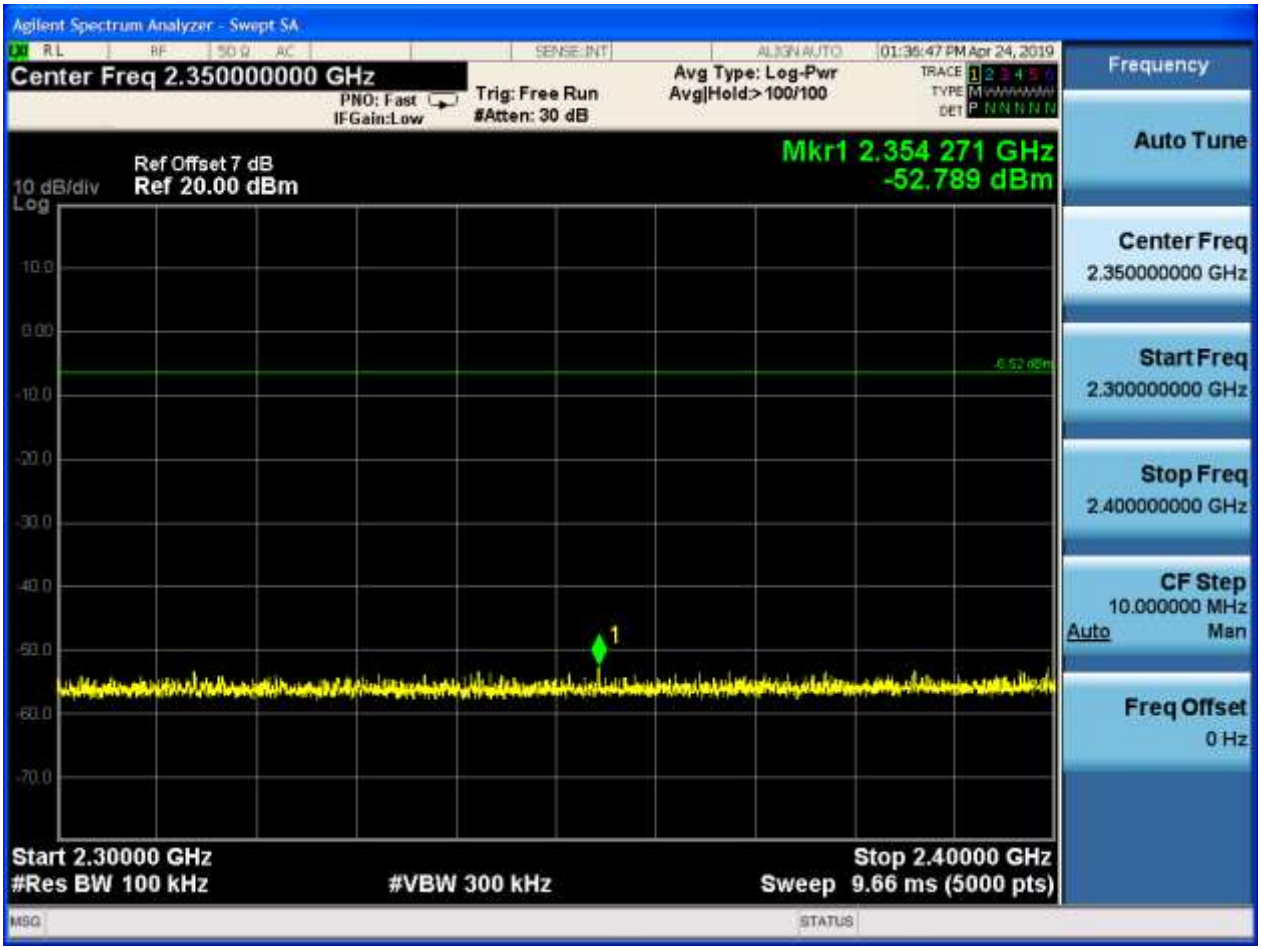
2.2 TM1_DH5_Ch39

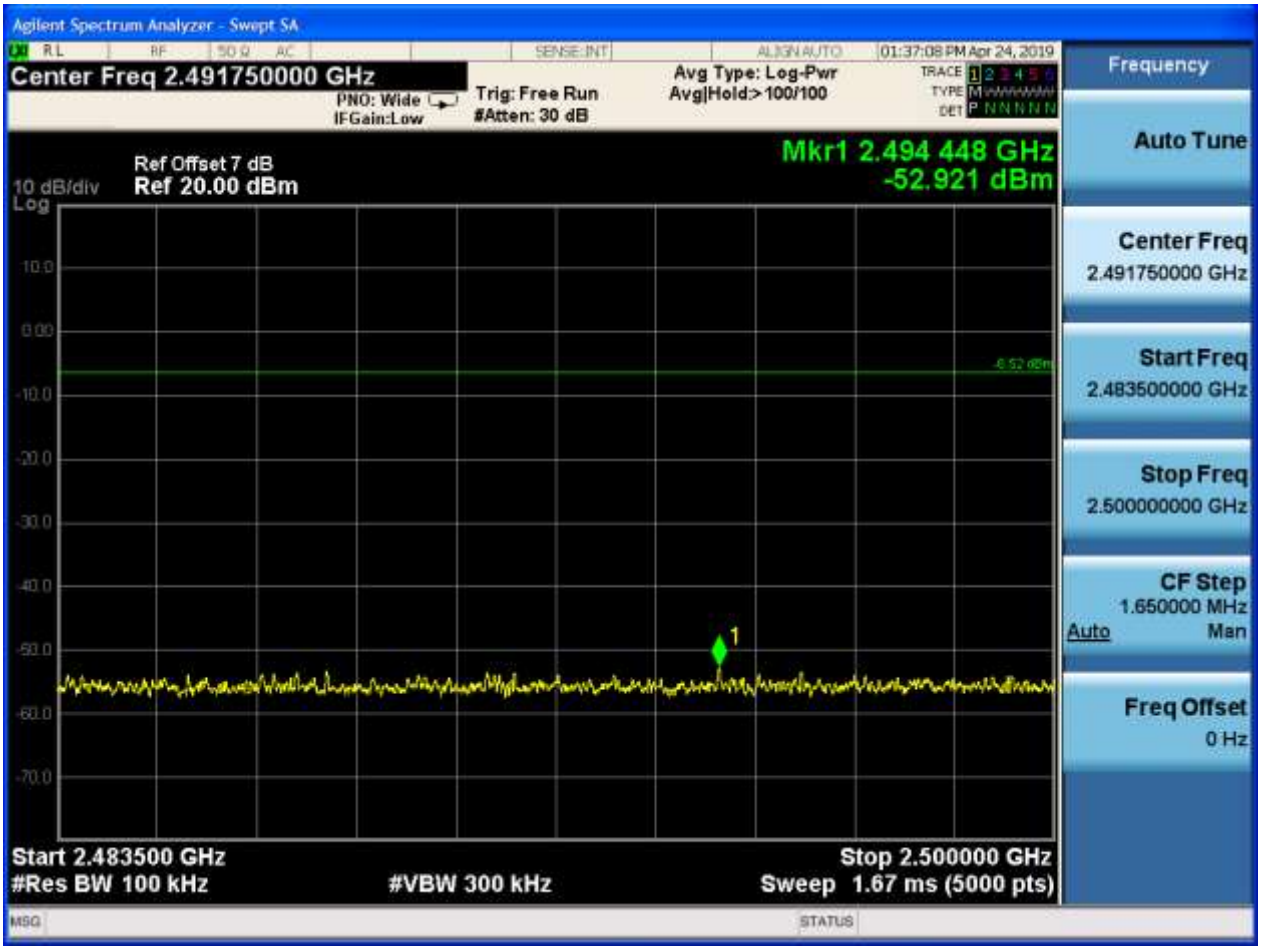
2.2.1 Pref

2.2.2 Puw




Agilent Spectrum Analyzer - Swept SA
Center Freq 1.165000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 79/100
01:36:26 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.187 76 GHz
-52.575 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.300 GHz
Sweep 217 ms (8192 pts)
Frequency
Auto Tune
Center Freq
1.165000000 GHz
Start Freq
30.000000 MHz
Stop Freq
2.300000000 GHz
CF Step
227.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

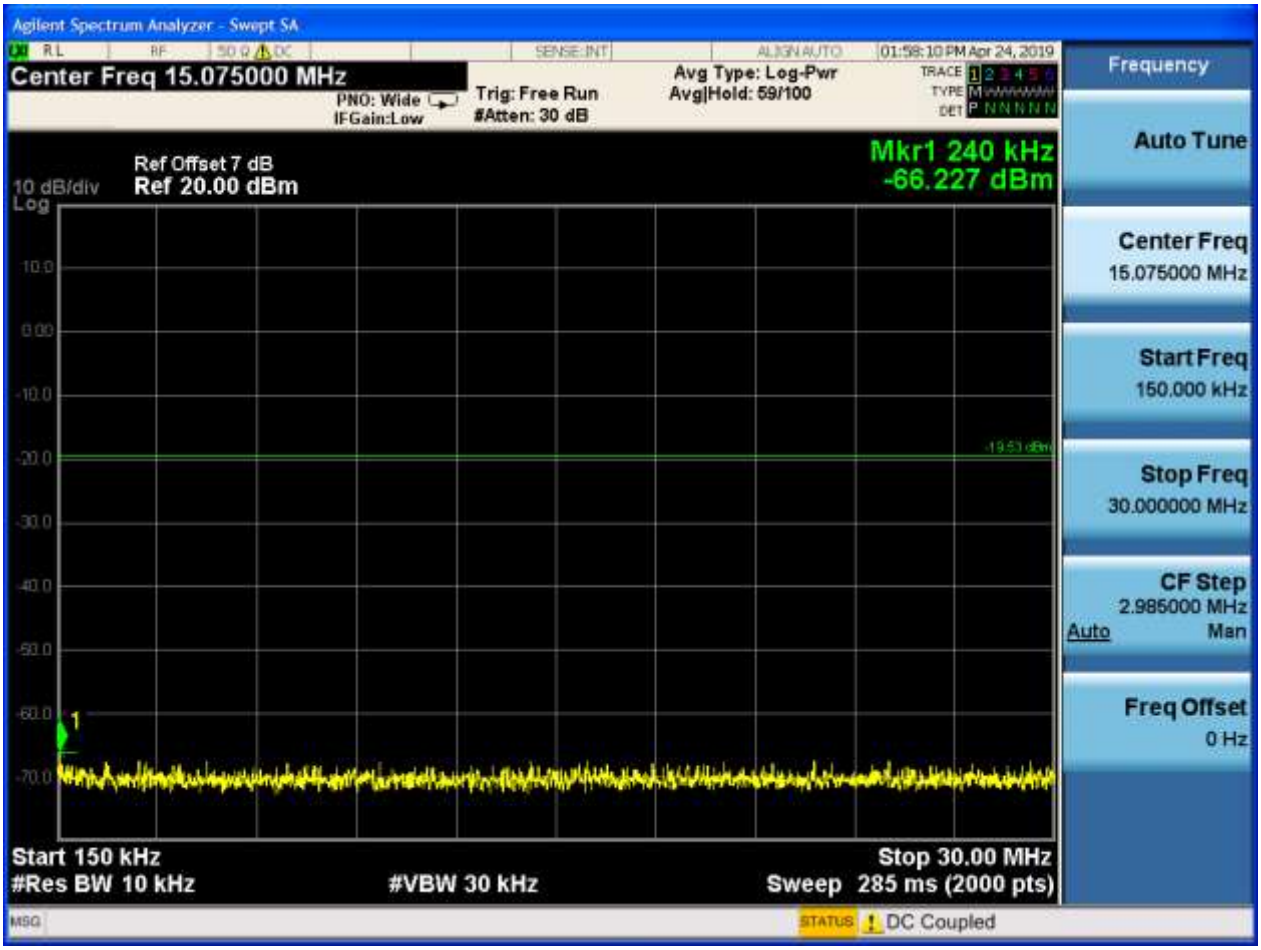

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:36:47 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.354 271 GHz
-52.789 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

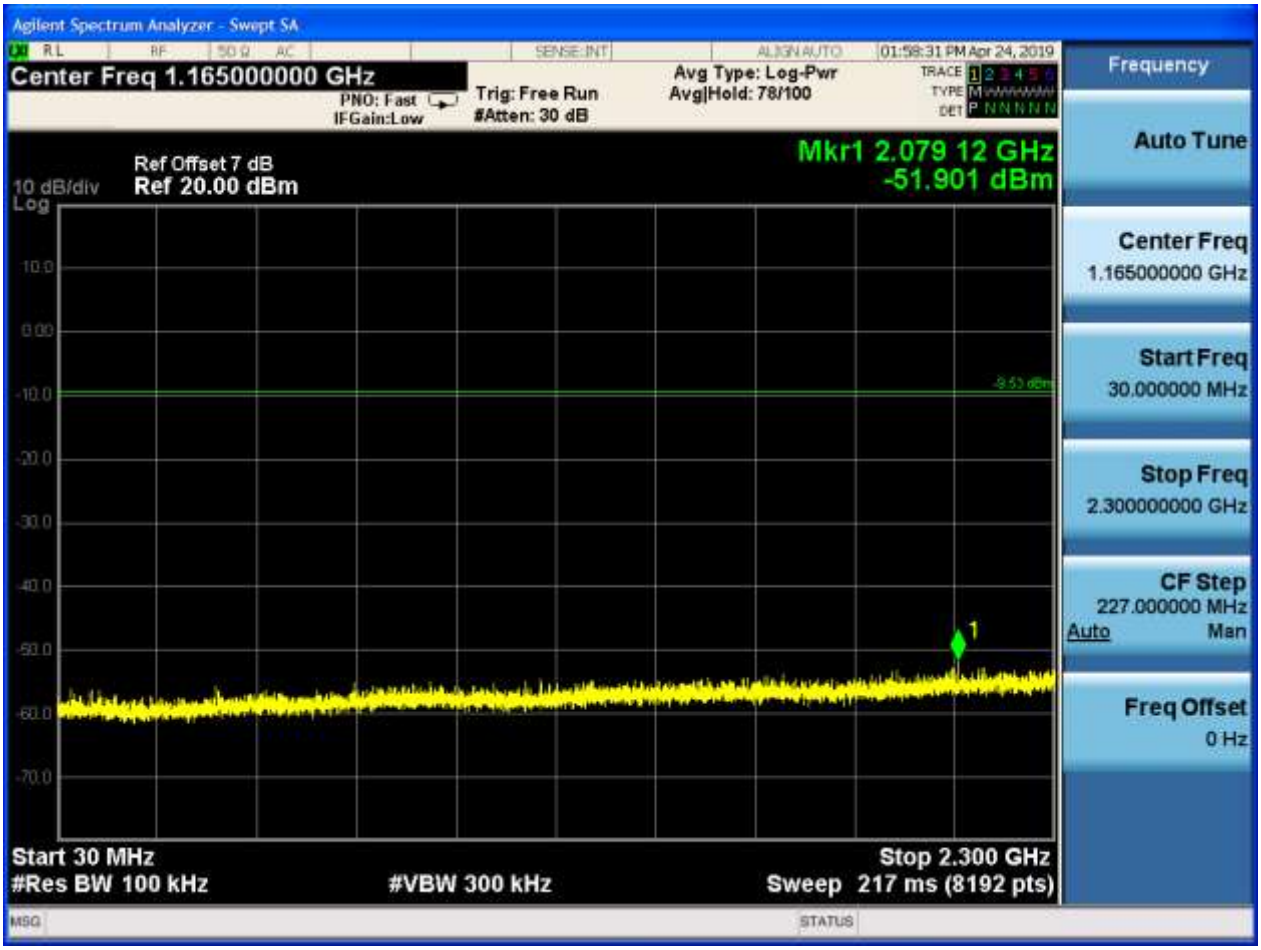

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:37:08 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.494 448 GHz
-52.921 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

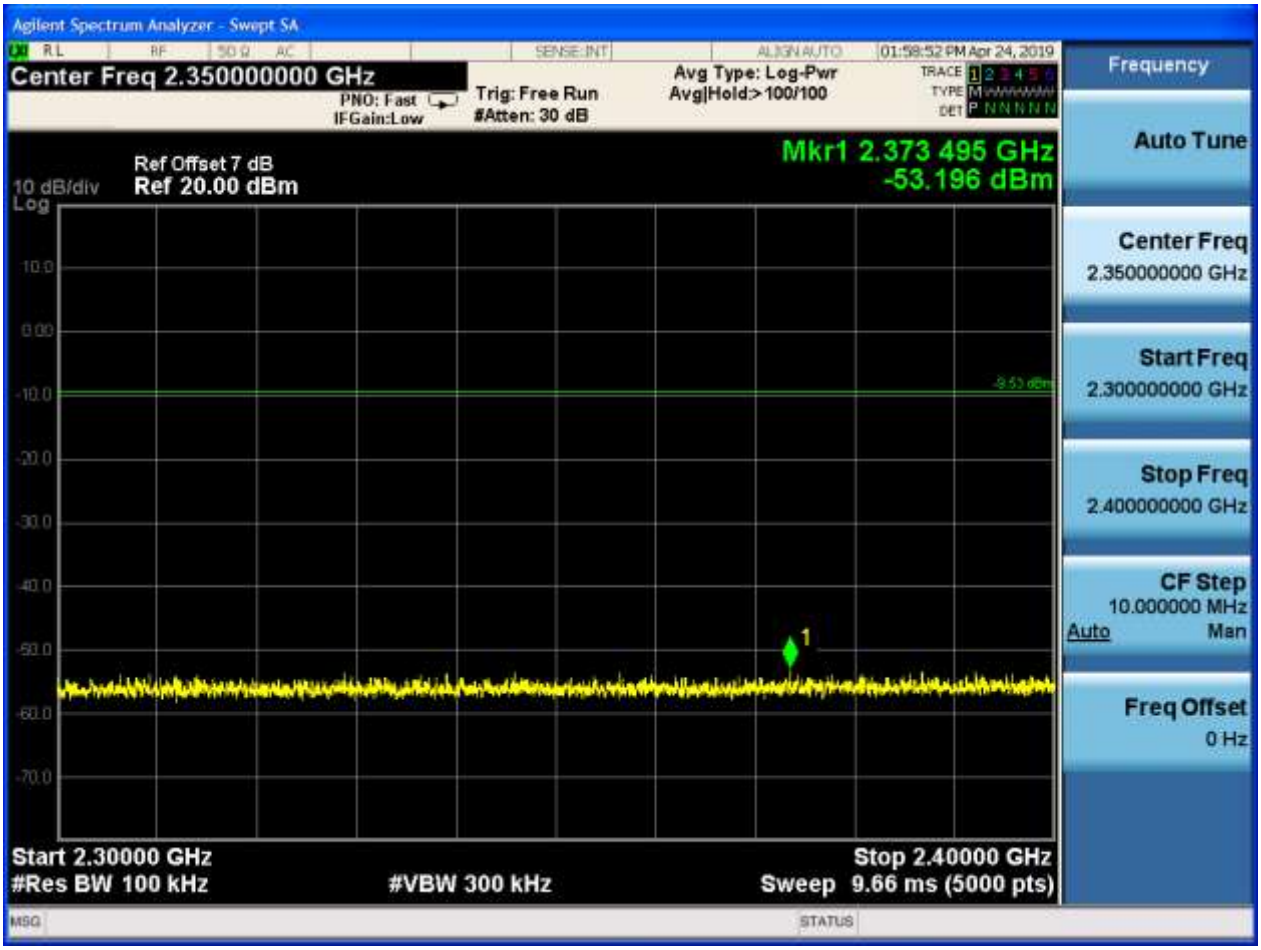
2.3 TM1_DH5_Ch78

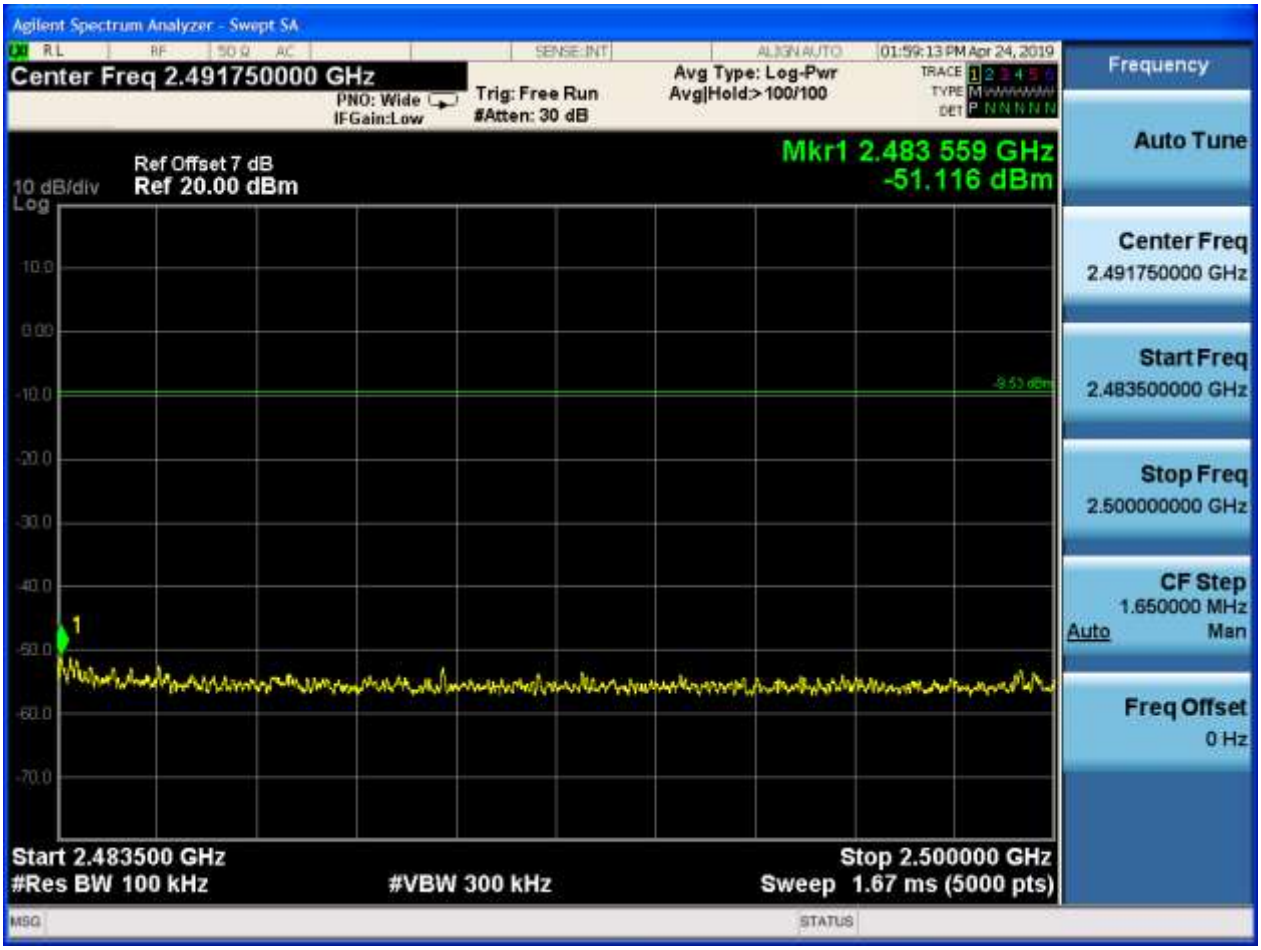
2.3.1 Pref

2.3.2 Puw




Agilent Spectrum Analyzer - Swept SA
Center Freq 1.165000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 78/100
01:58:31 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.079 12 GHz
-51.901 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.300 GHz
Sweep 217 ms (8192 pts)
Frequency
Auto Tune
Center Freq
1.165000000 GHz
Start Freq
30.000000 MHz
Stop Freq
2.300000000 GHz
CF Step
227.000000 MHz
Auto
Man
Freq Offset
0 Hz

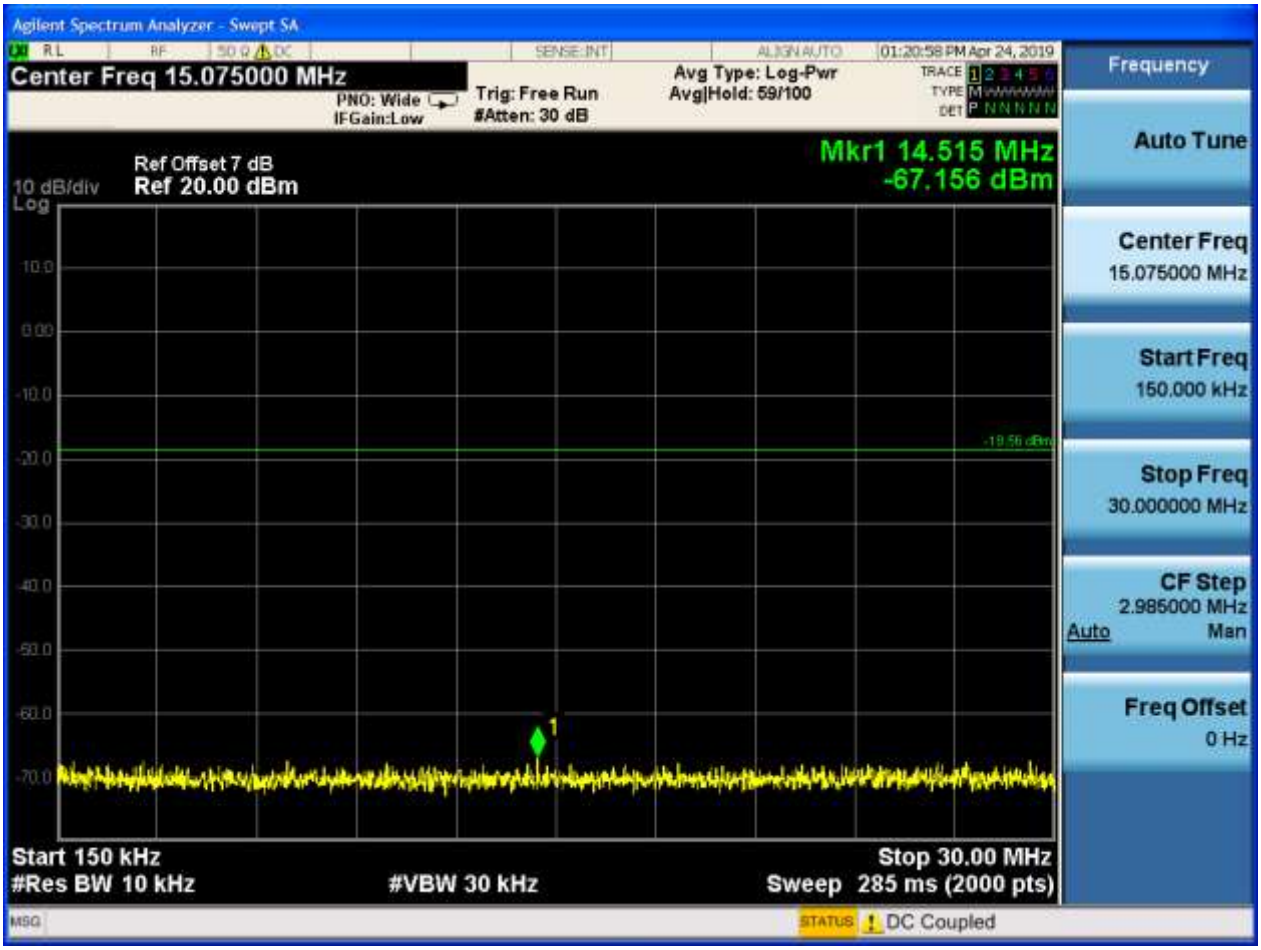

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:58:52 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.373 495 GHz
-53.196 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

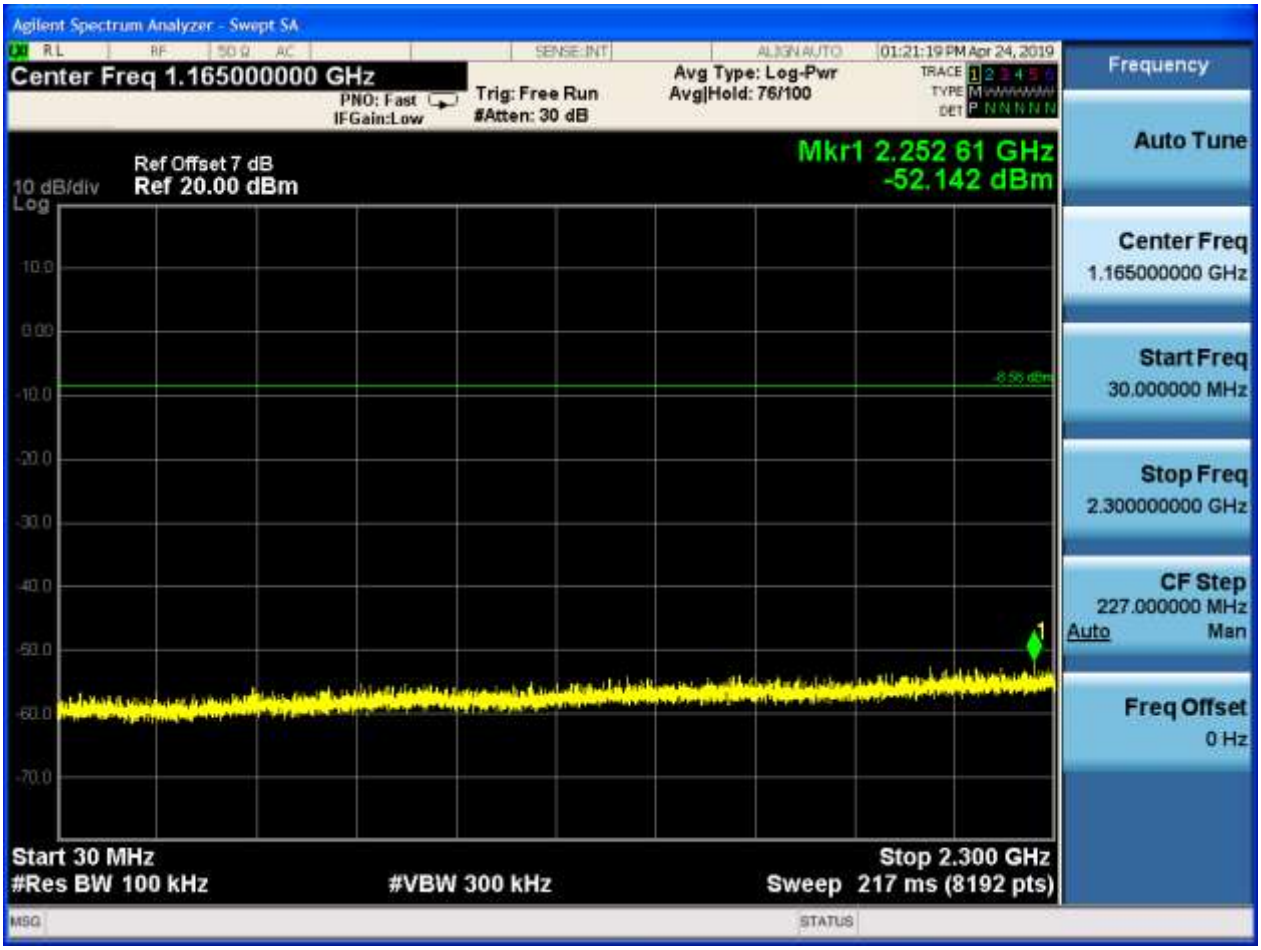

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:59:13 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.483 559 GHz
-51.116 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz

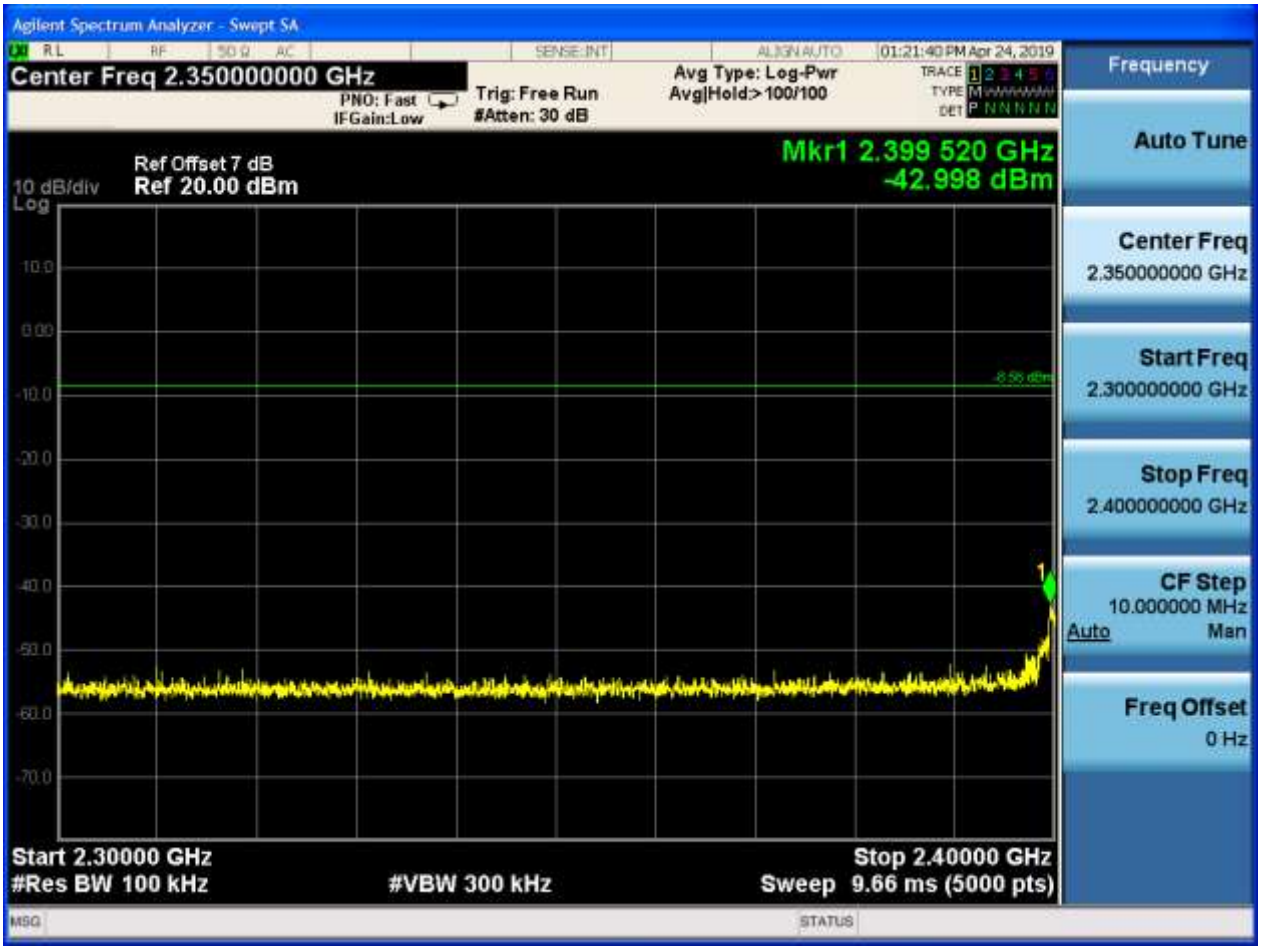
2.4 TM2_2DH5_Ch0

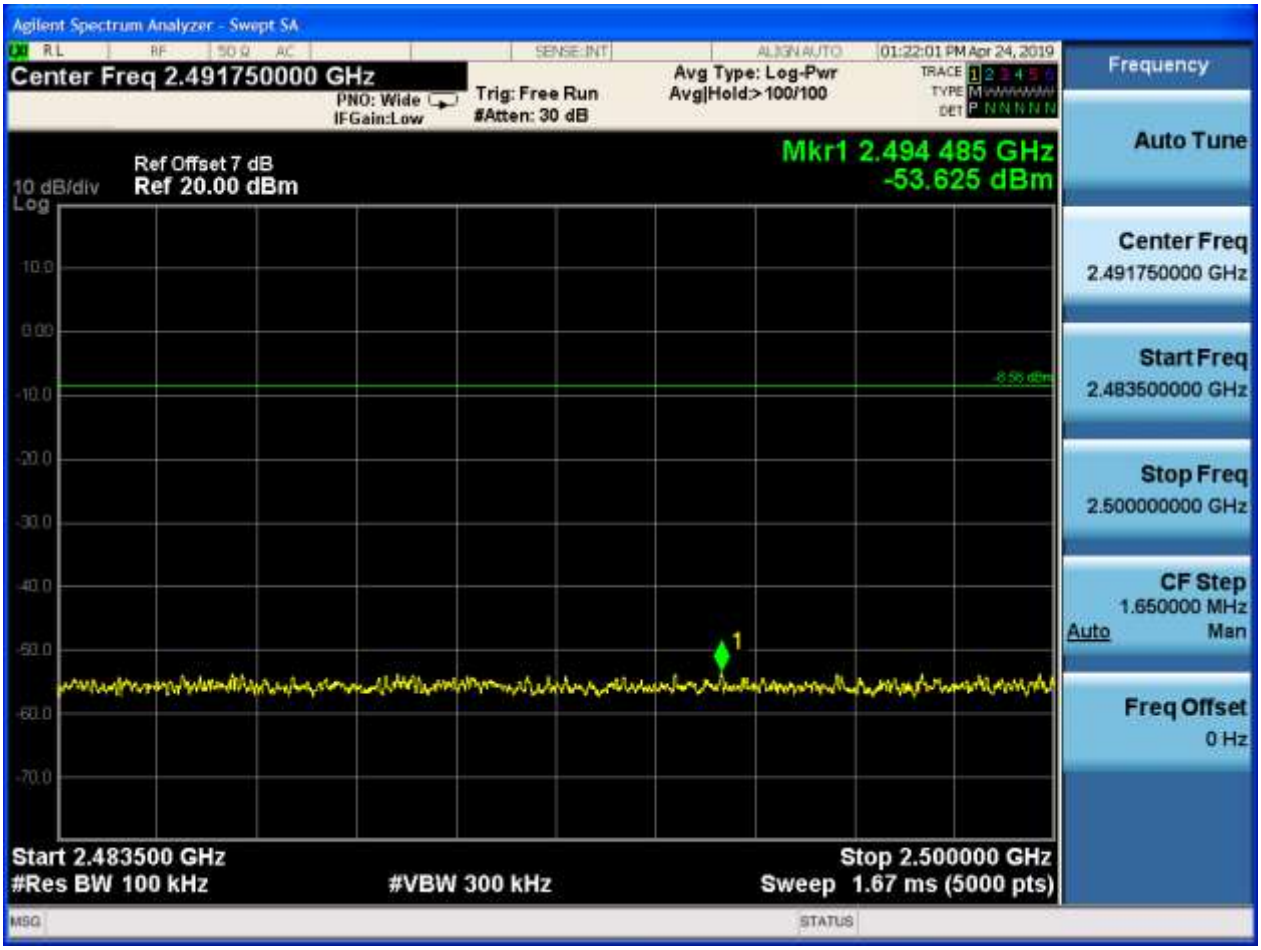
2.4.1 Pref

2.4.2 Puw





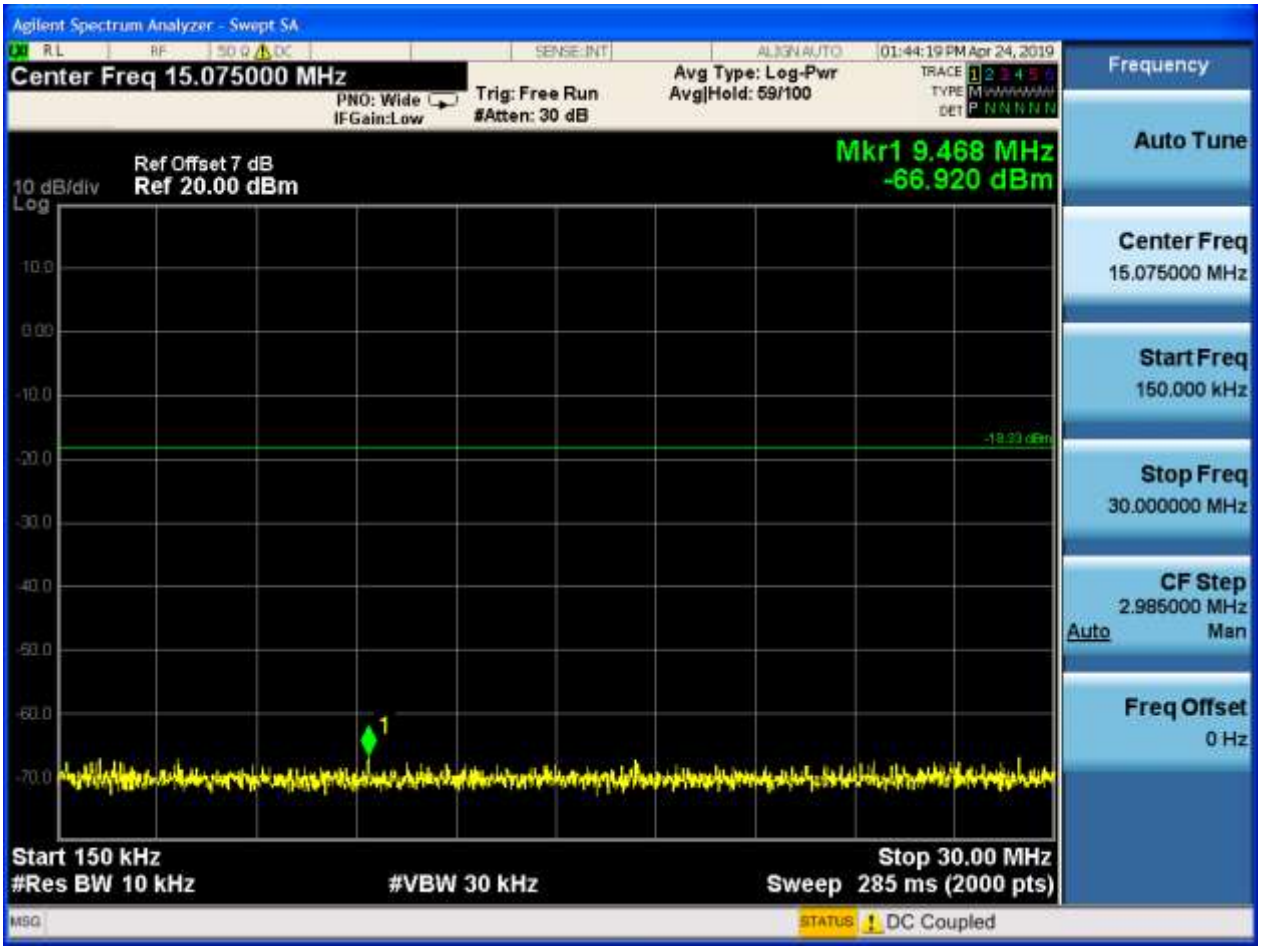

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:21:40 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.399 520 GHz
-42.998 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

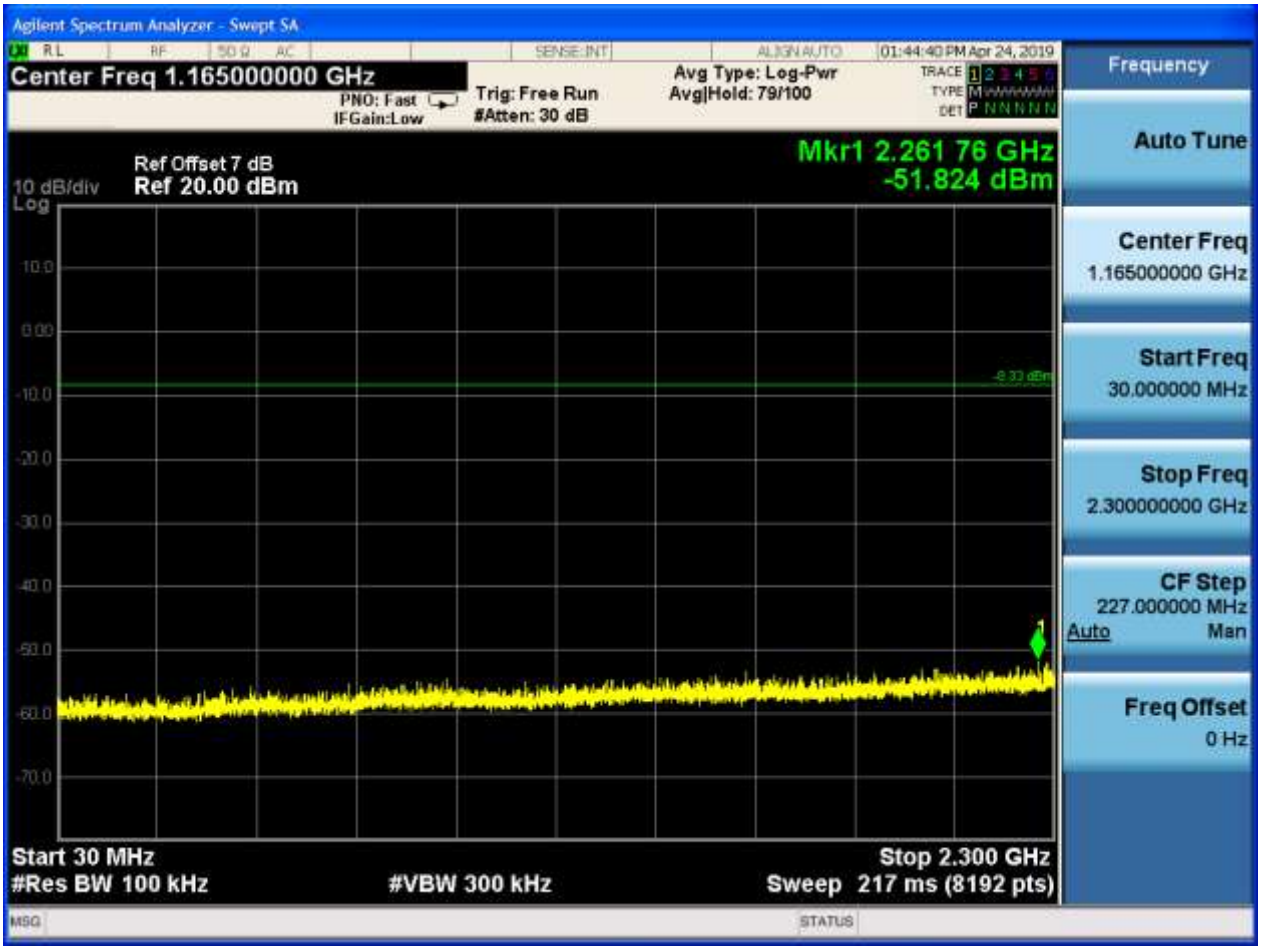

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:22:01 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.494 485 GHz
-53.625 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

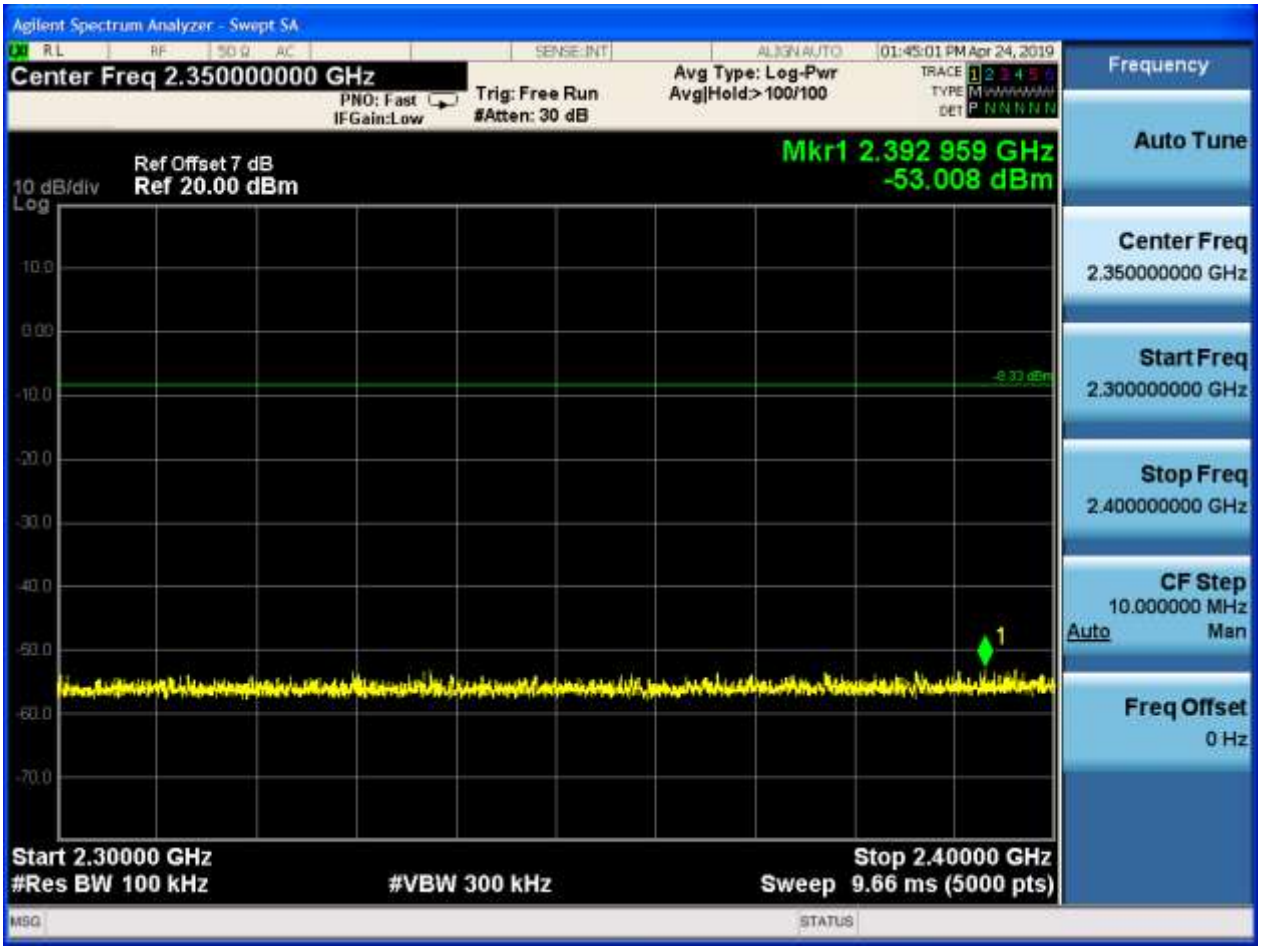
2.5 TM2_2DH5_Ch39

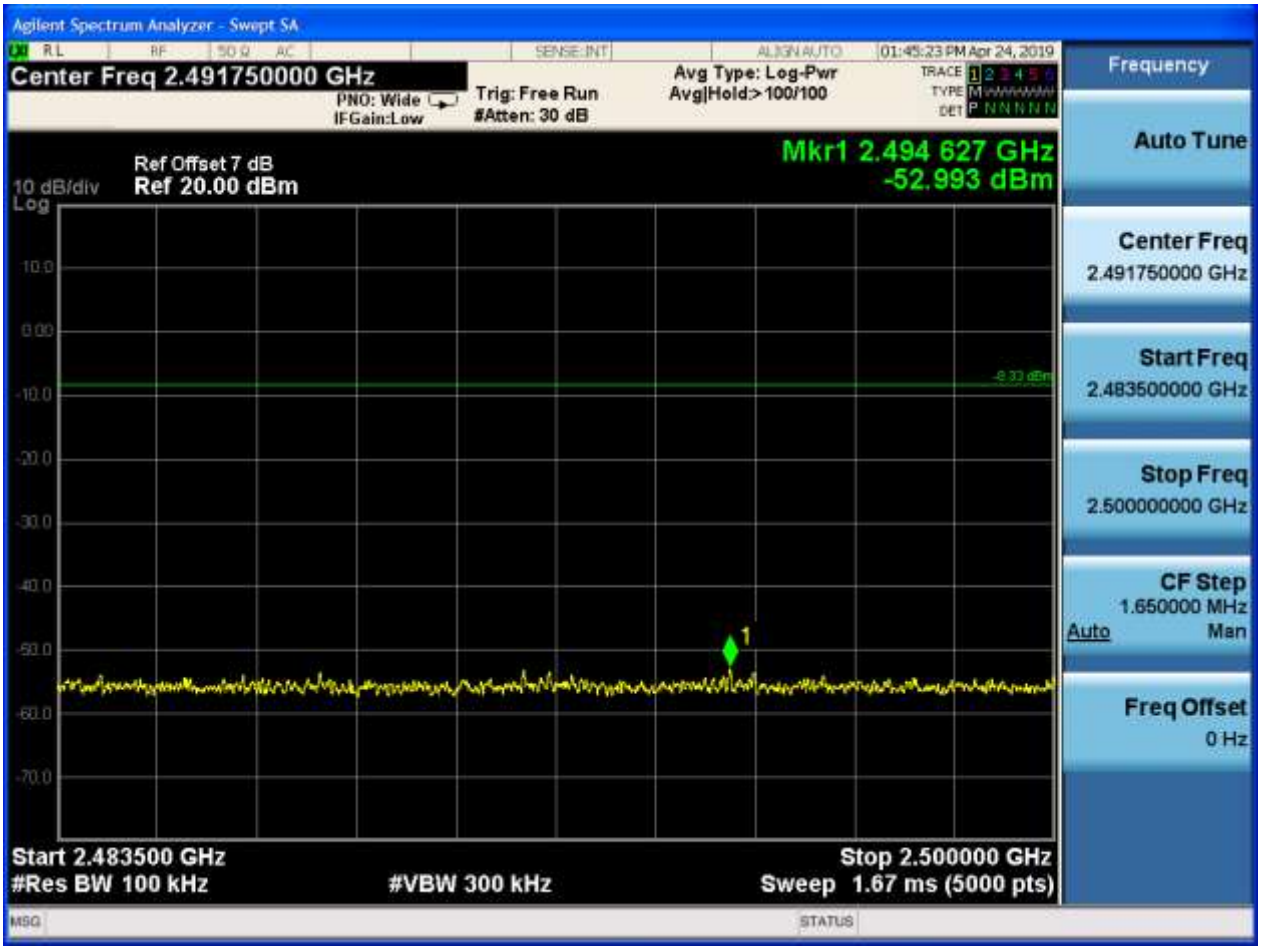
2.5.1 Pref

2.5.2 Puw




Agilent Spectrum Analyzer - Swept SA
Center Freq 1.165000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 79/100
01:44:40 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.261 76 GHz
-51.824 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.300 GHz
Sweep 217 ms (8192 pts)
Frequency
Auto Tune
Center Freq
1.165000000 GHz
Start Freq
30.000000 MHz
Stop Freq
2.300000000 GHz
CF Step
227.000000 MHz
Auto
Man
Freq Offset
0 Hz

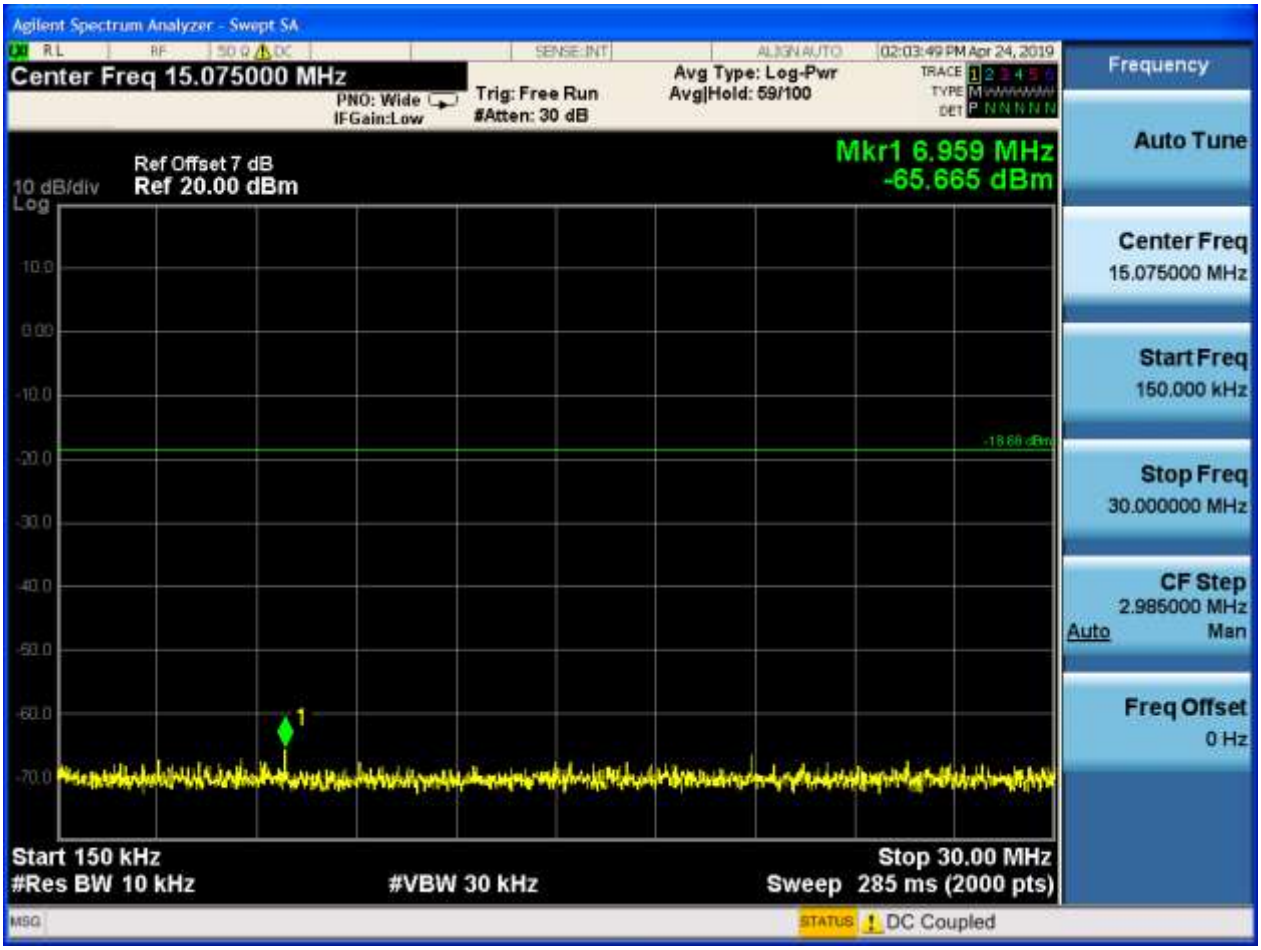

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:45:01 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.392 959 GHz
-53.008 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

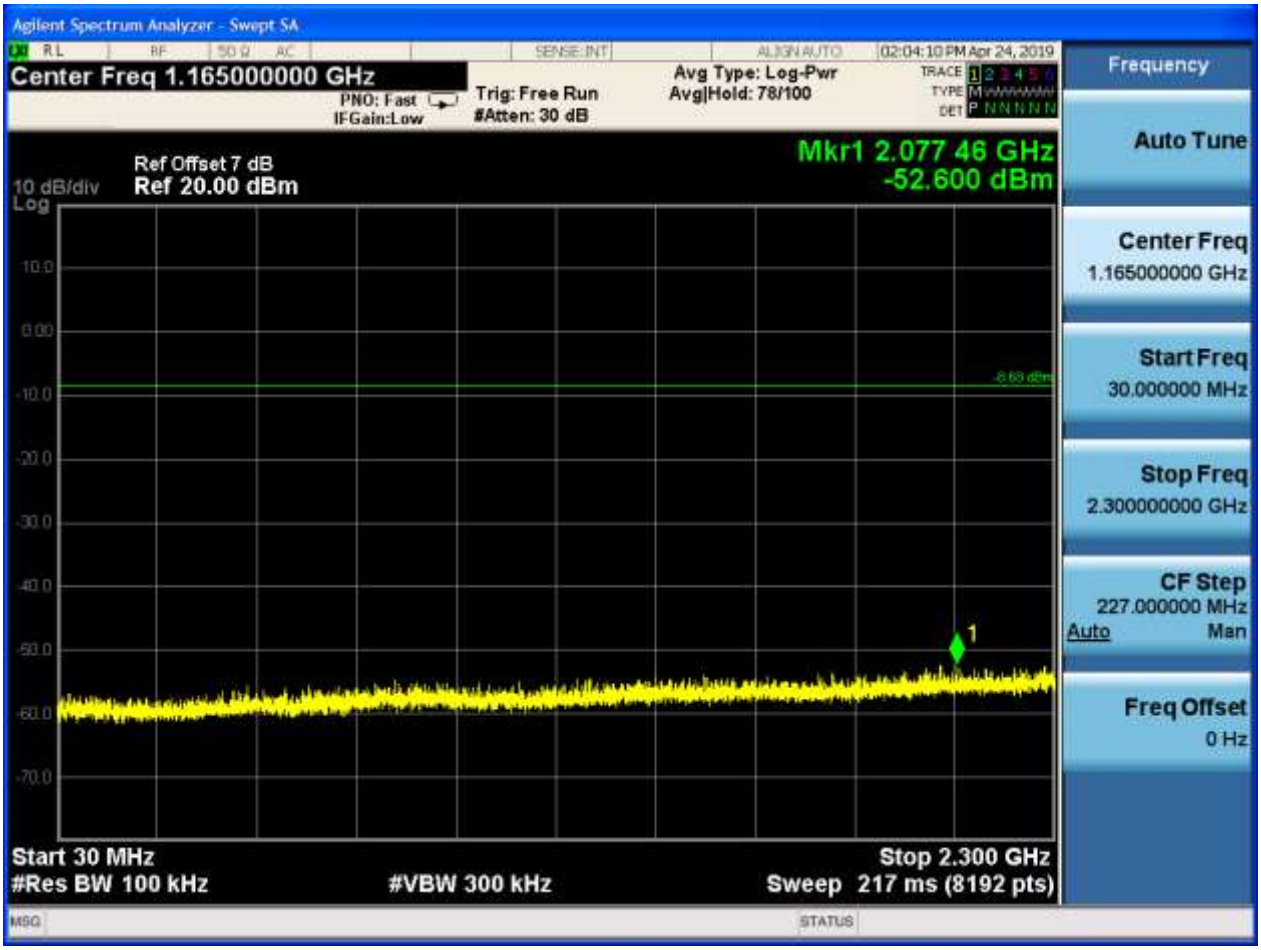

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:45:23 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.494 627 GHz
-52.993 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

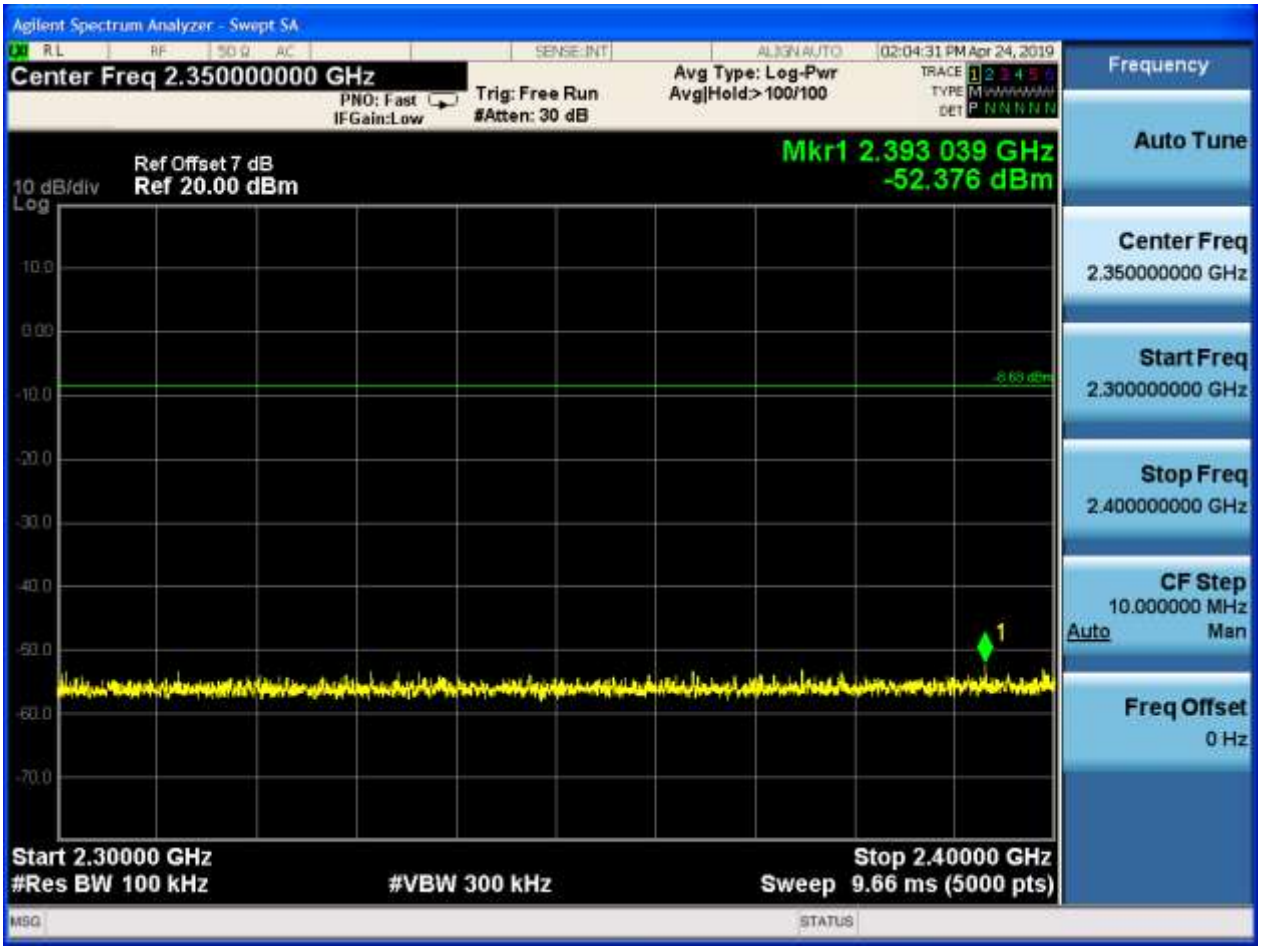
2.6 TM2_2DH5_Ch78

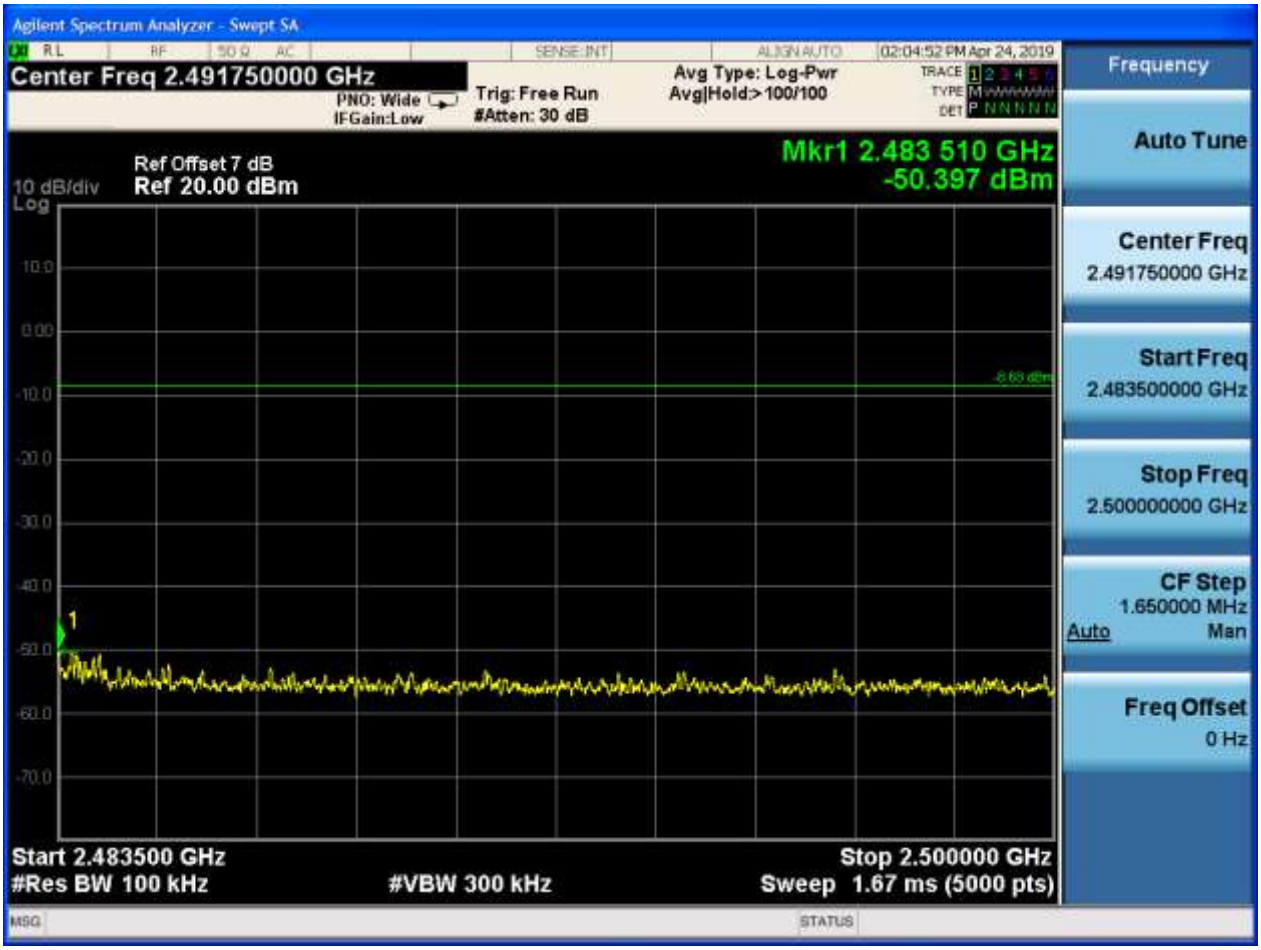
2.6.1 Pref

2.6.2 Puw




Agilent Spectrum Analyzer - Swept SA
Center Freq 1.165000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 78/100
02:04:10 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.077 46 GHz
-52.600 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.300 GHz
Sweep 217 ms (8192 pts)
Frequency
Auto Tune
Center Freq
1.165000000 GHz
Start Freq
30.000000 MHz
Stop Freq
2.300000000 GHz
CF Step
227.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:04:31 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.393 039 GHz
-52.376 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

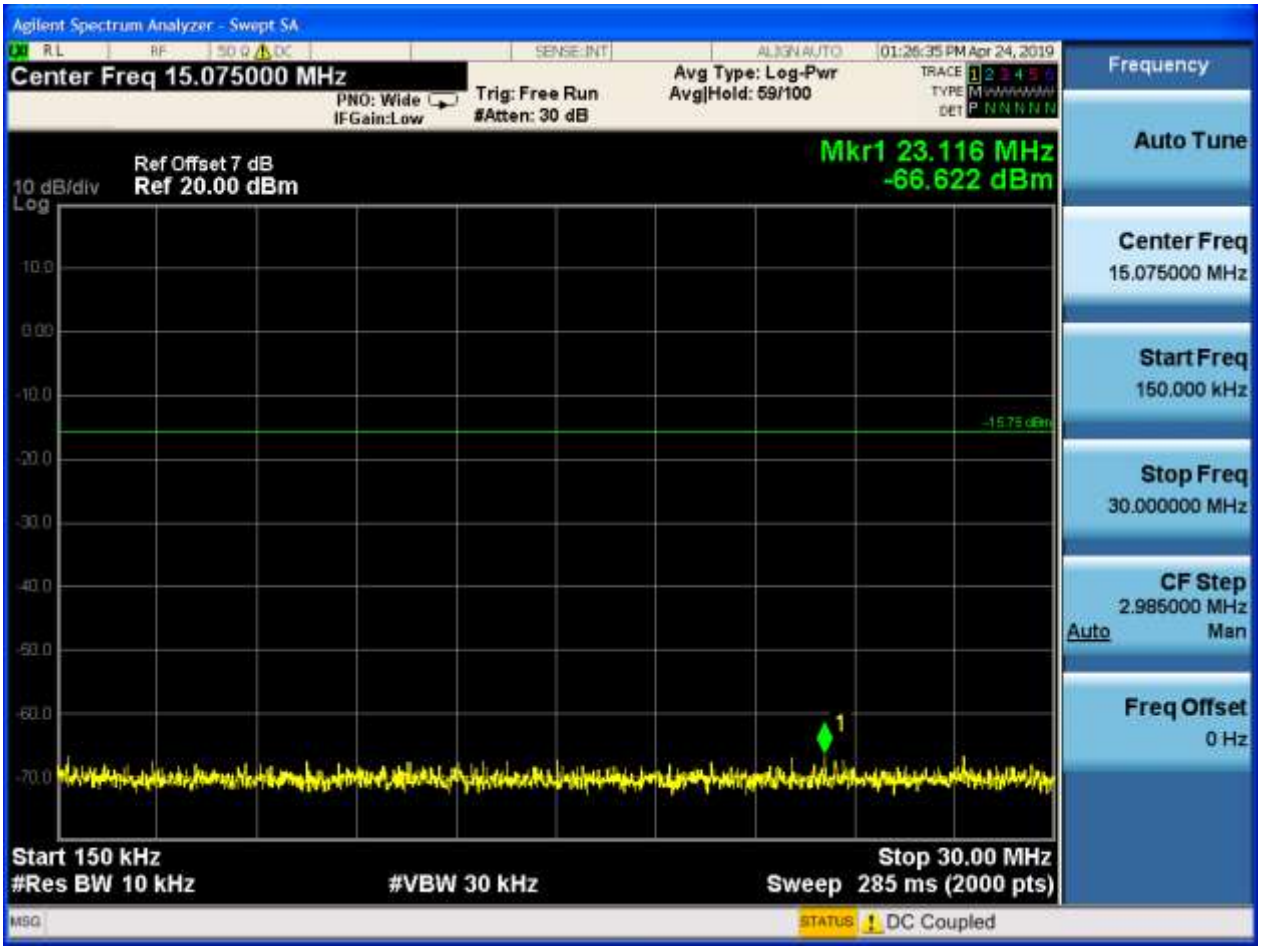

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:04:52 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.483 510 GHz
-50.397 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz

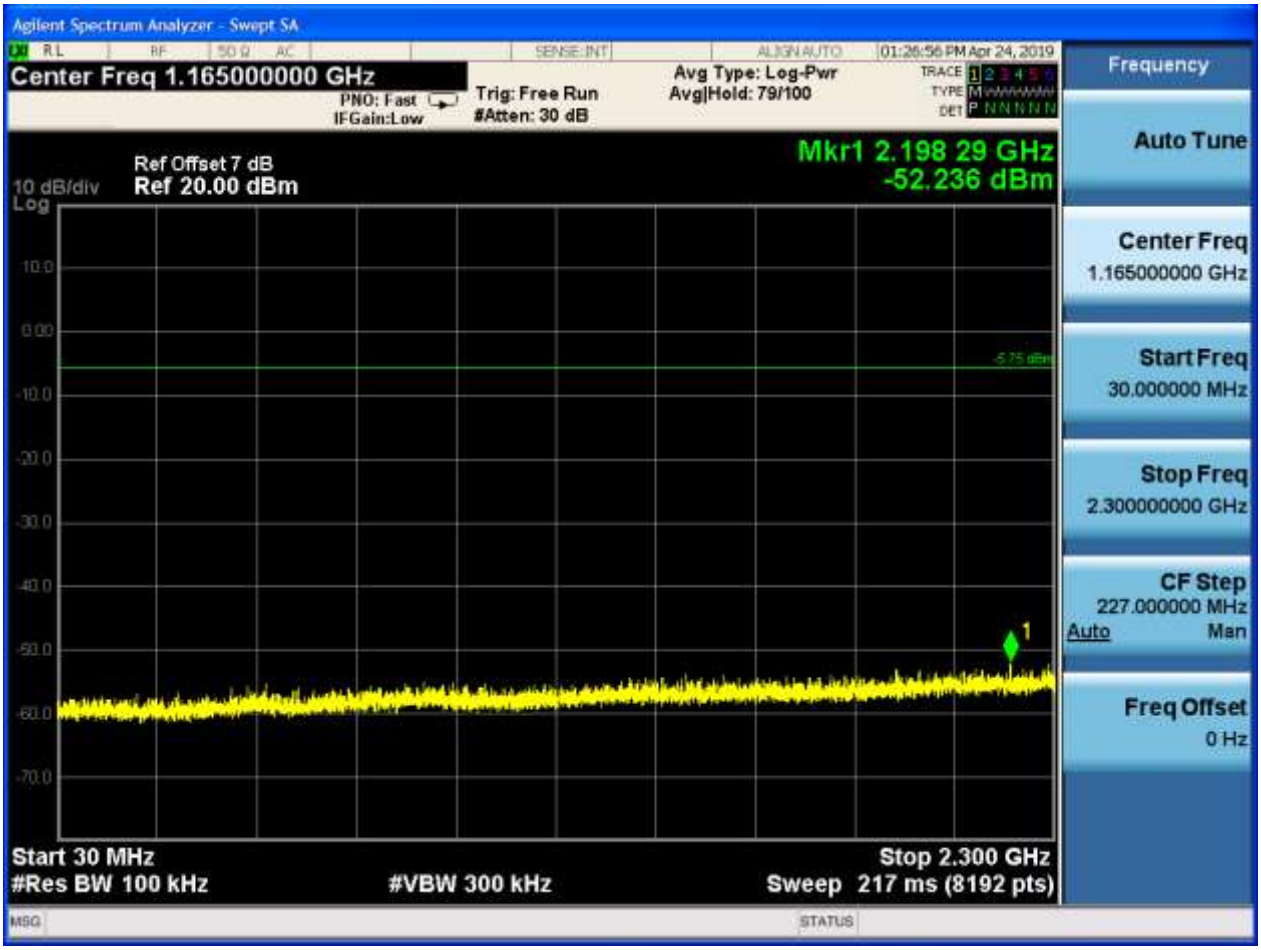

Agilent Spectrum Analyzer - Swept SA
Center Freq 14.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 7/100
02:05:14 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 25.547 74 GHz
-38.924 dBm
Start 2.50 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 26.50 GHz
Sweep 2.29 s (8192 pts)
Frequency
Auto Tune
Center Freq
14.500000000 GHz
Start Freq
2.500000000 GHz
Stop Freq
26.500000000 GHz
CF Step
2.400000000 GHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

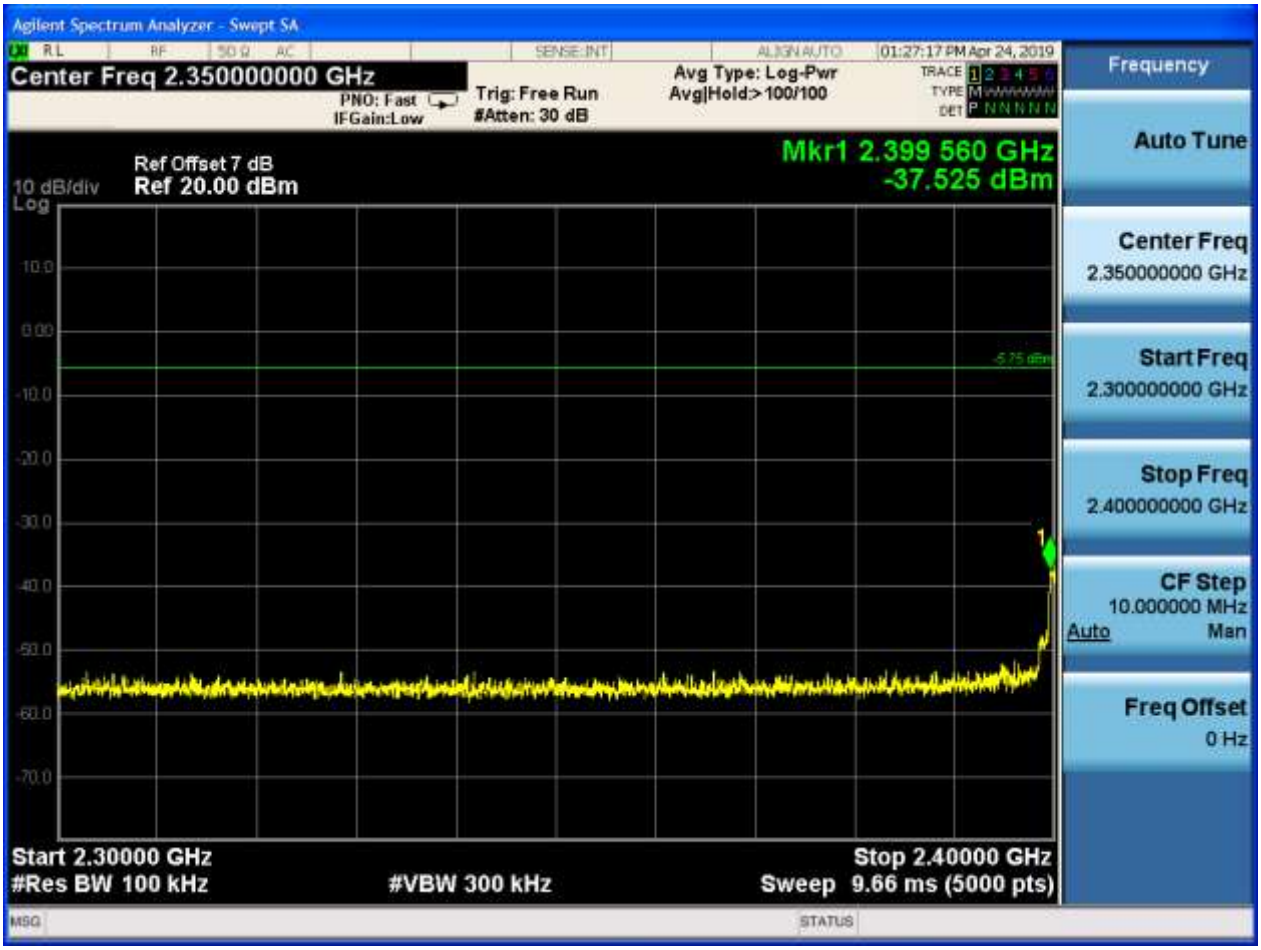
2.7 TM3_3DH5_Ch0

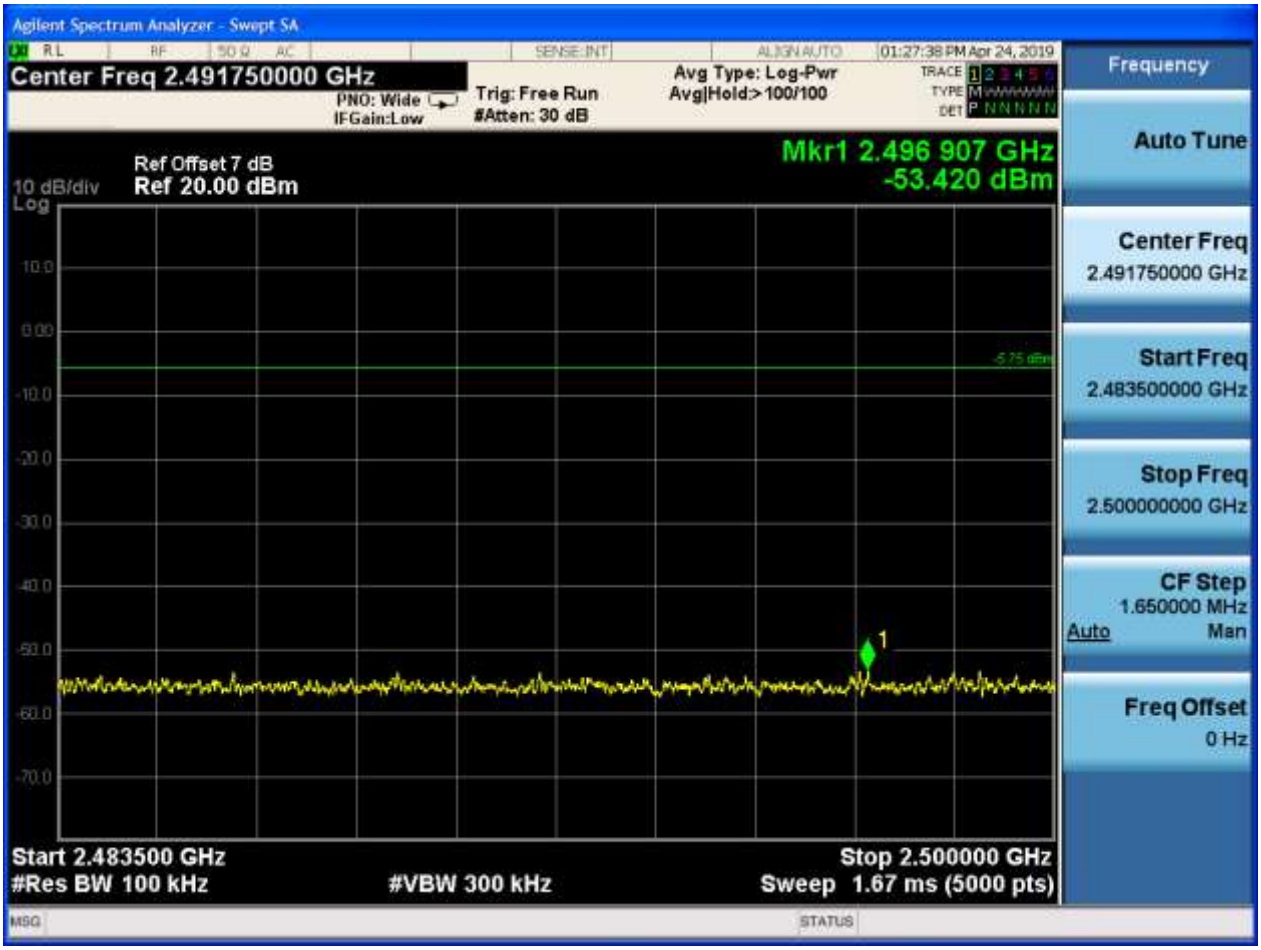
2.7.1 Pref

2.7.2 Puw





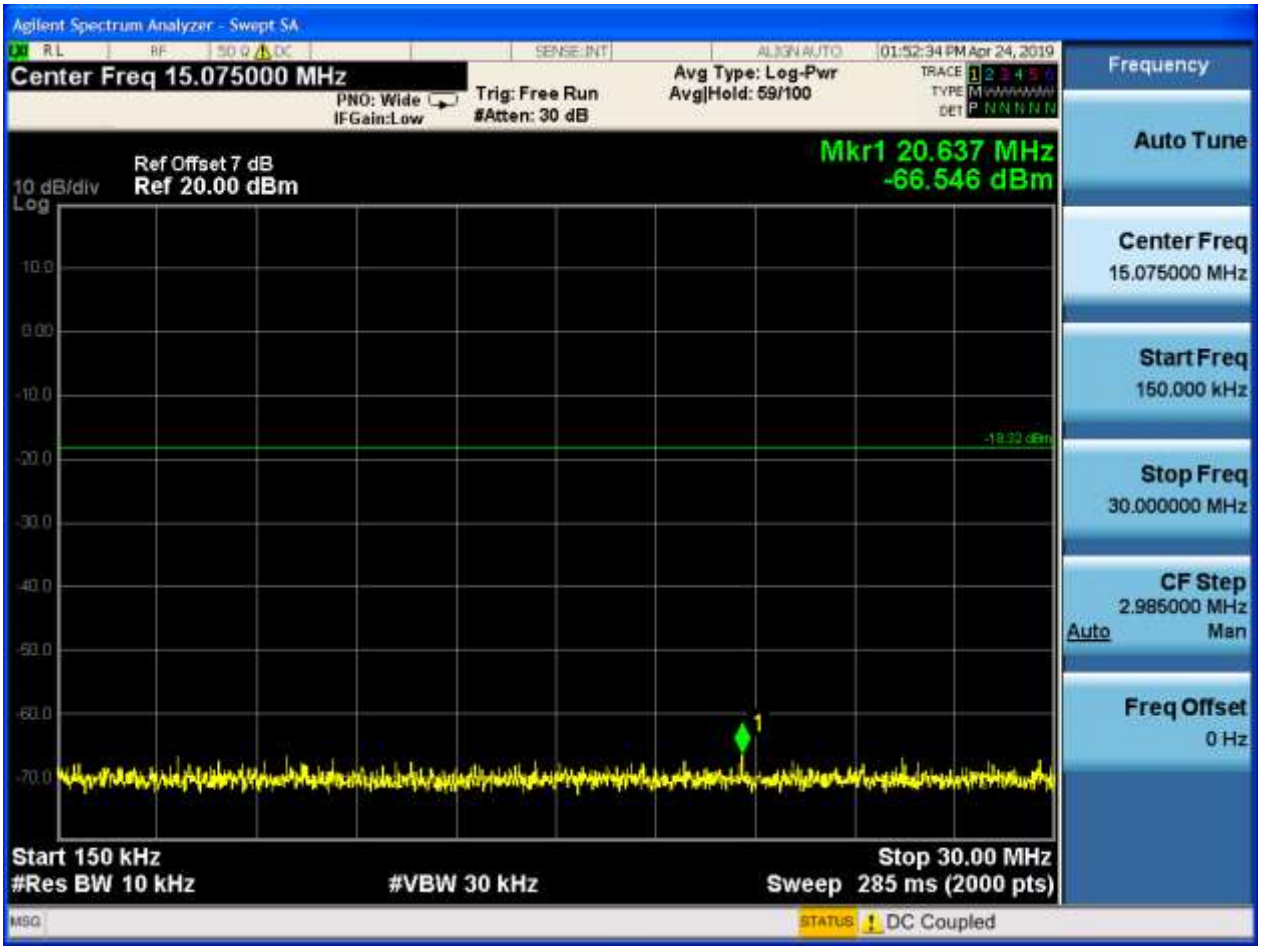

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:27:17 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.399 560 GHz
-37.525 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

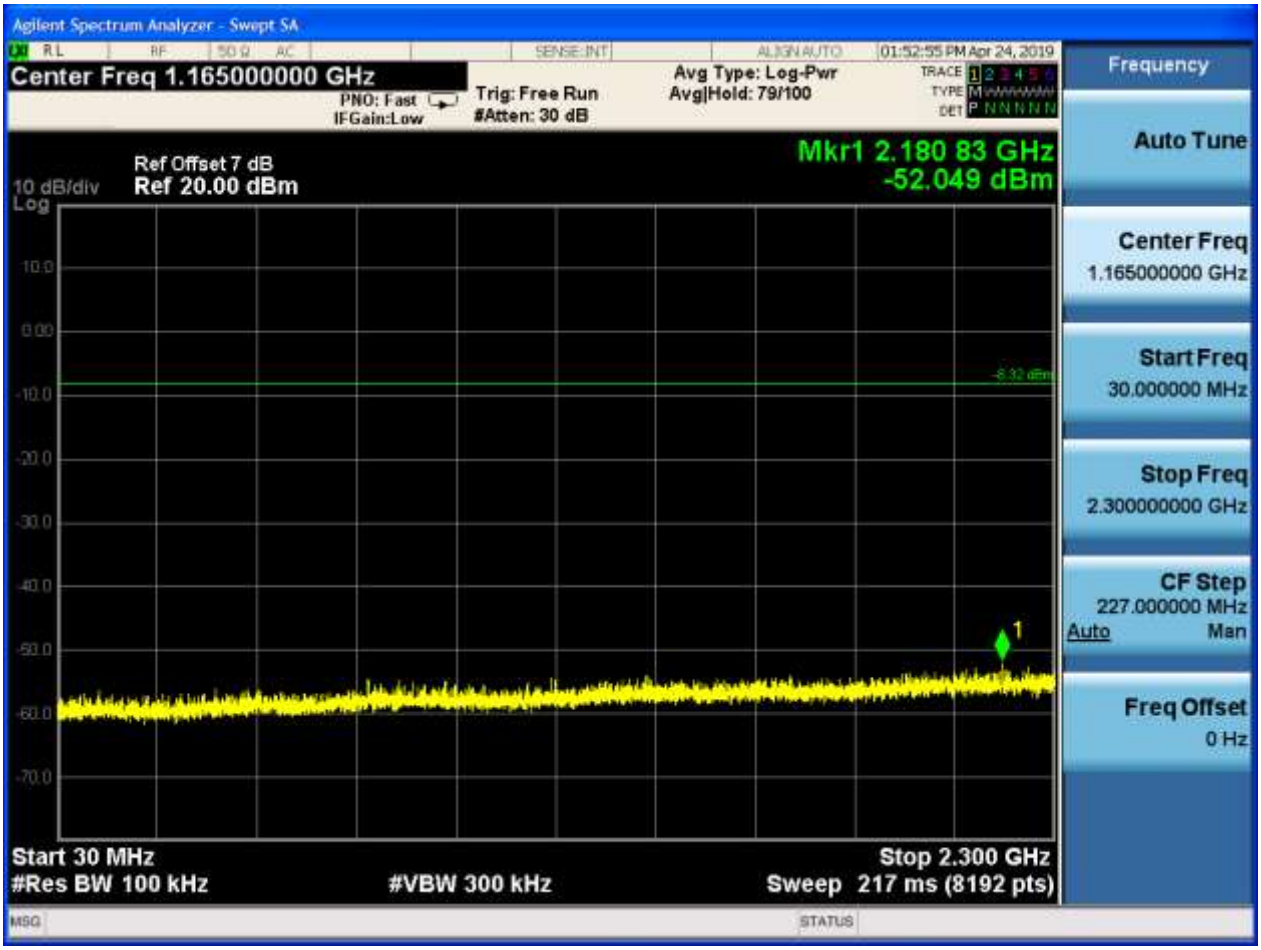

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:27:38 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.496 907 GHz
-53.420 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz

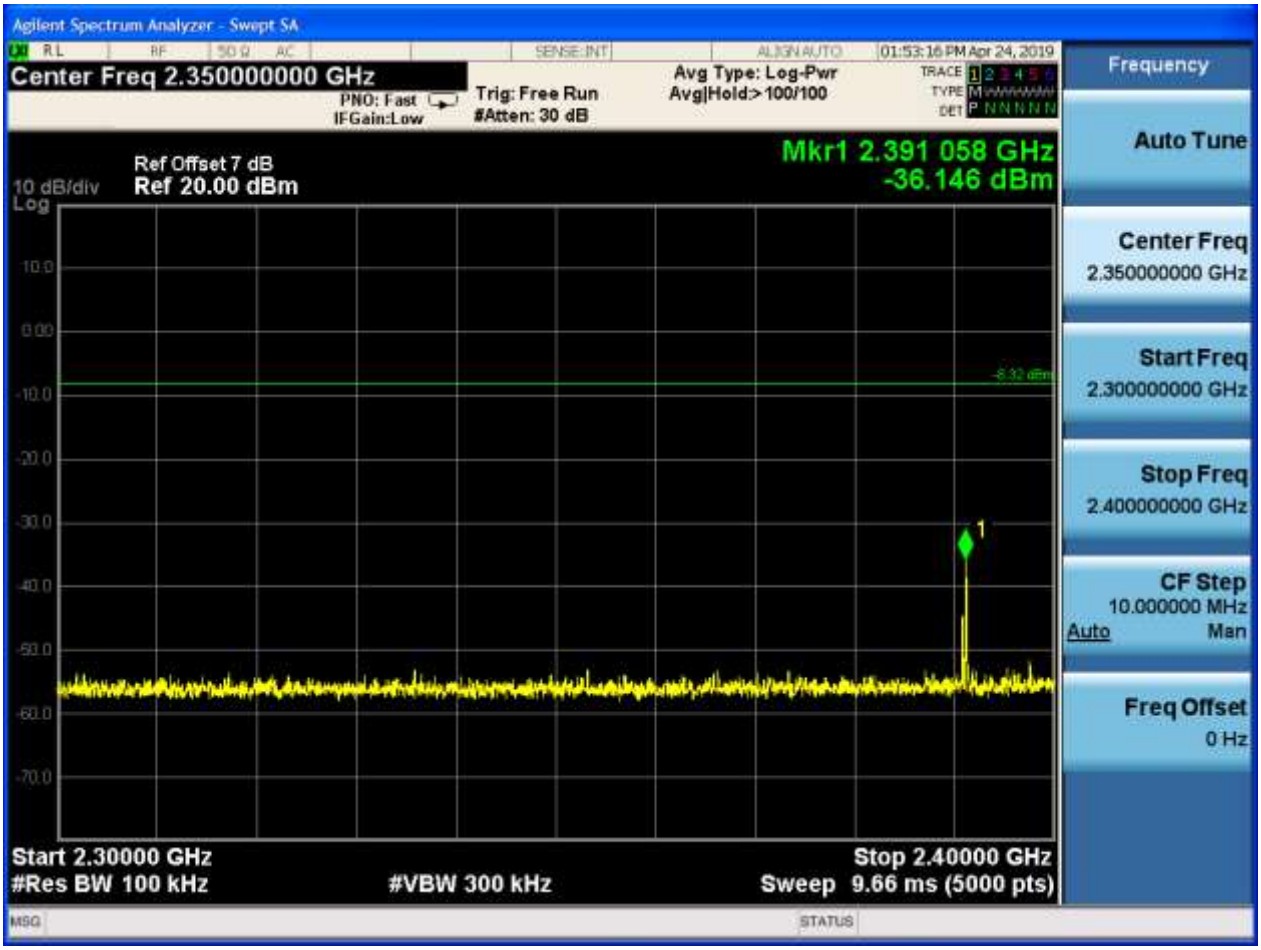
2.8 TM3_3DH5_Ch39

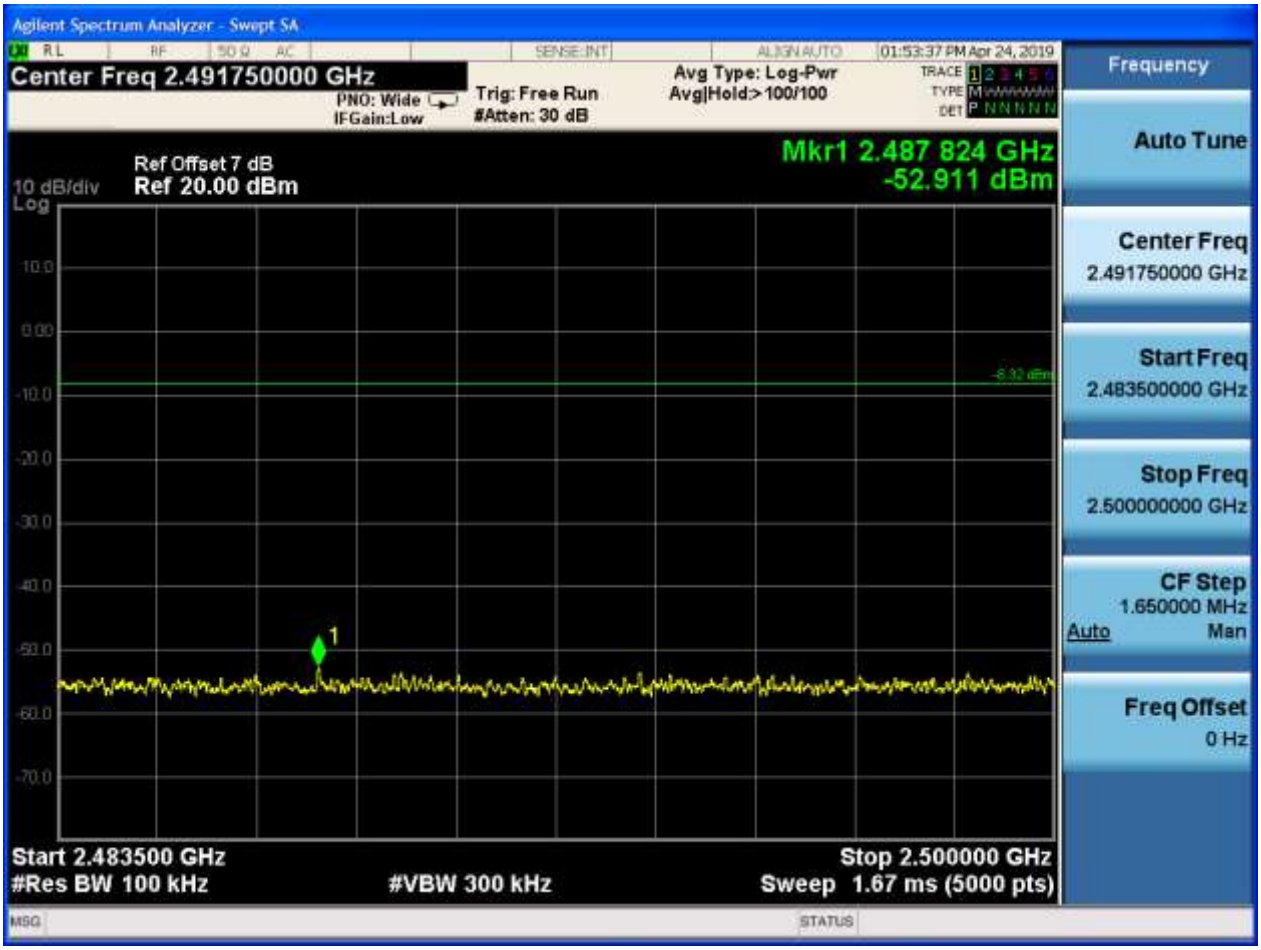
2.8.1 Pref

2.8.2 Puw




Agilent Spectrum Analyzer - Swept SA
Center Freq 1.165000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 79/100
01:52:55 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.180 83 GHz
-52.049 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.300 GHz
Sweep 217 ms (8192 pts)
Frequency
Auto Tune
Center Freq
1.165000000 GHz
Start Freq
30.000000 MHz
Stop Freq
2.300000000 GHz
CF Step
227.000000 MHz
Auto
Man
Freq Offset
0 Hz

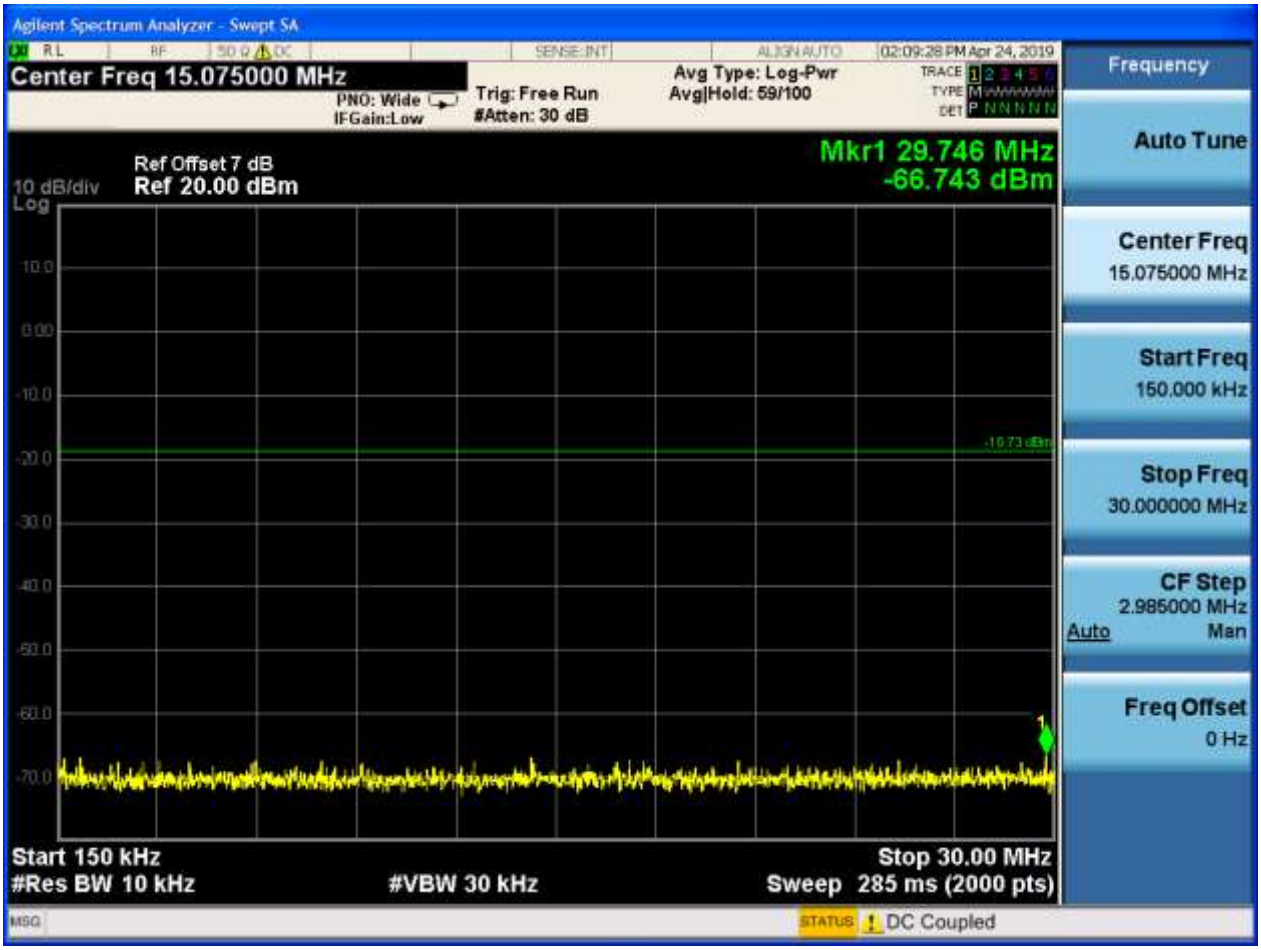

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:53:16 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.391 058 GHz
-36.146 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.66 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.350000000 GHz
Start Freq
2.300000000 GHz
Stop Freq
2.400000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

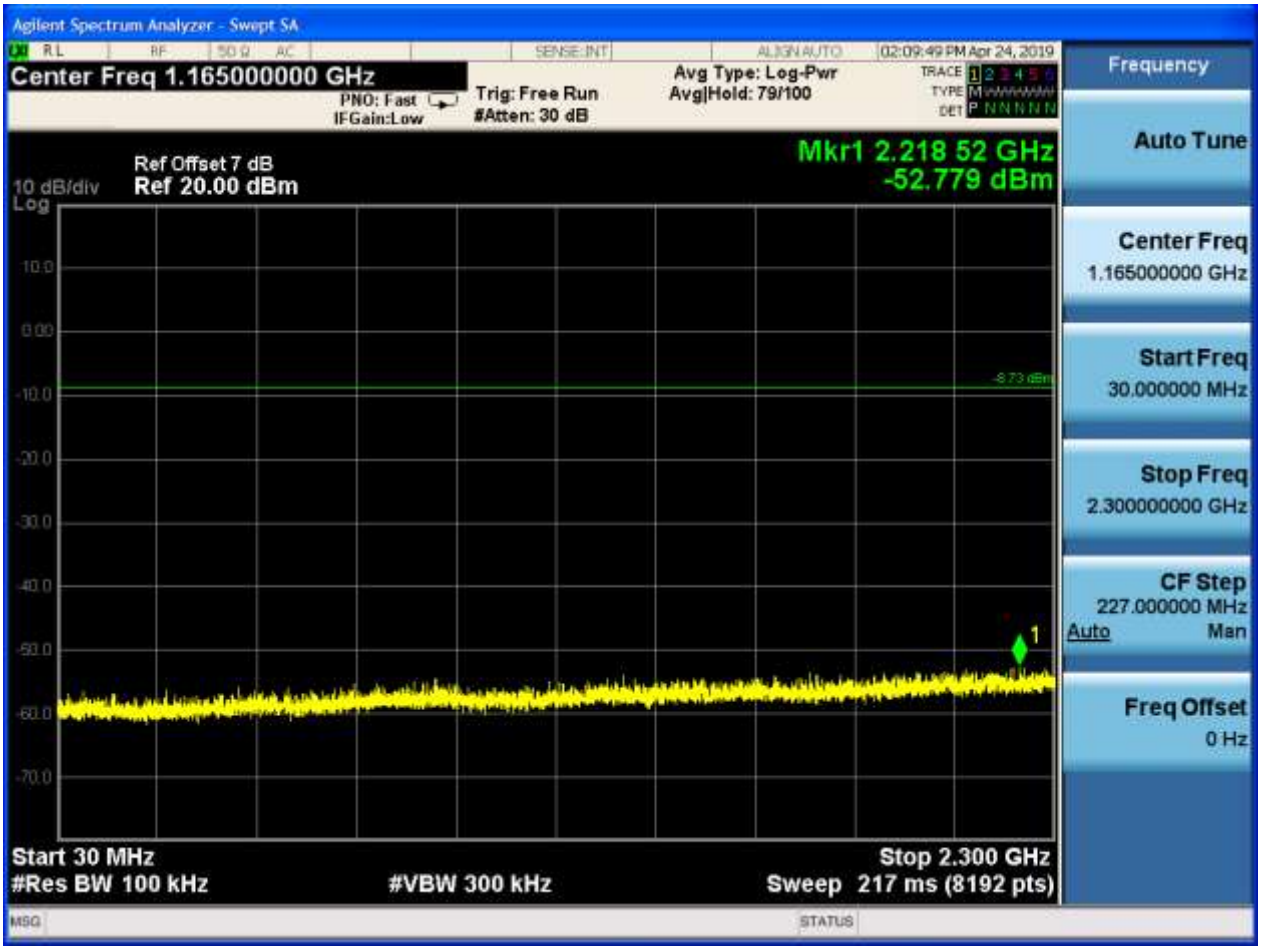

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:53:37 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.487 824 GHz
-52.911 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz

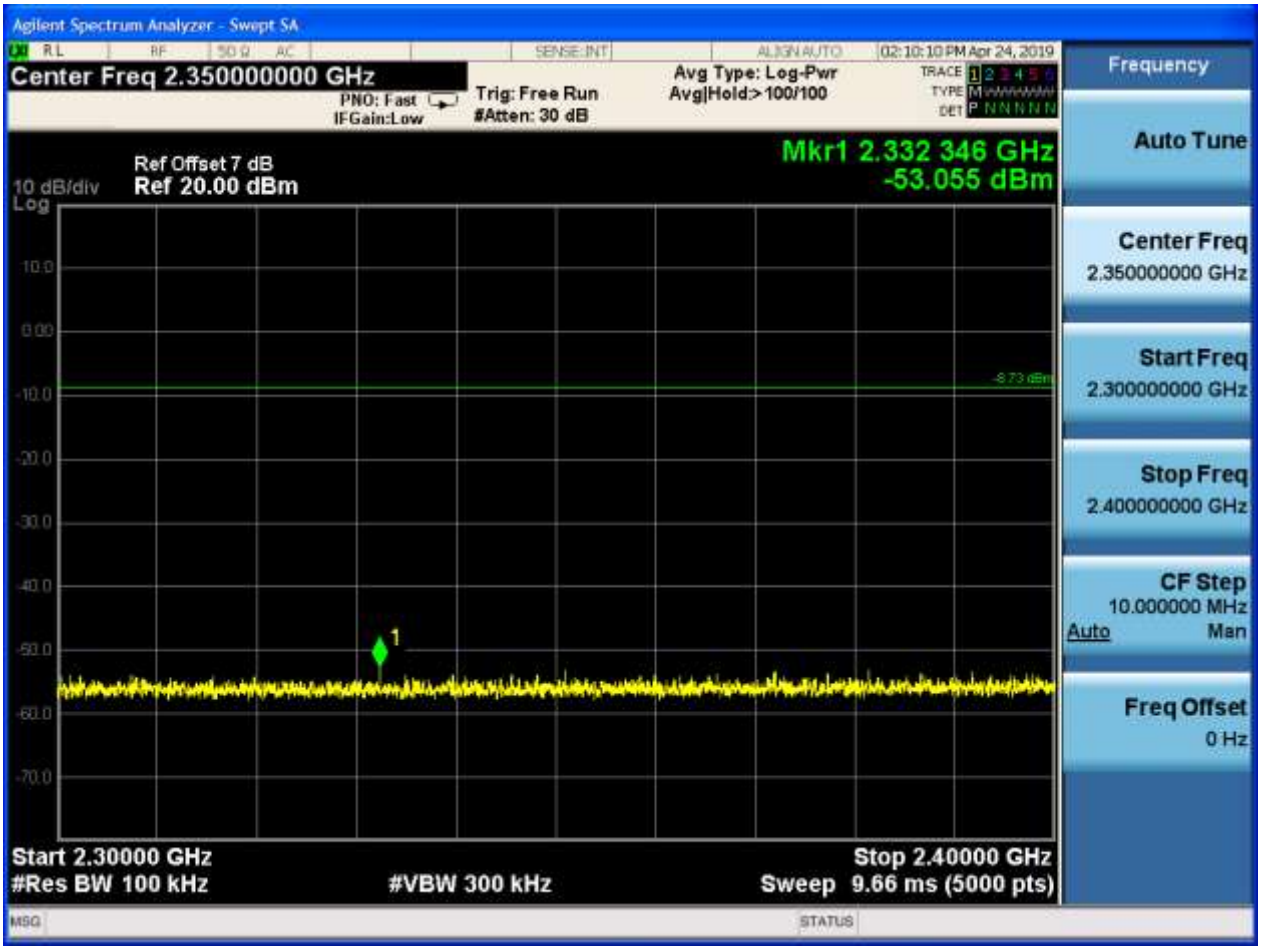
2.9 TM3_3DH5_Ch78

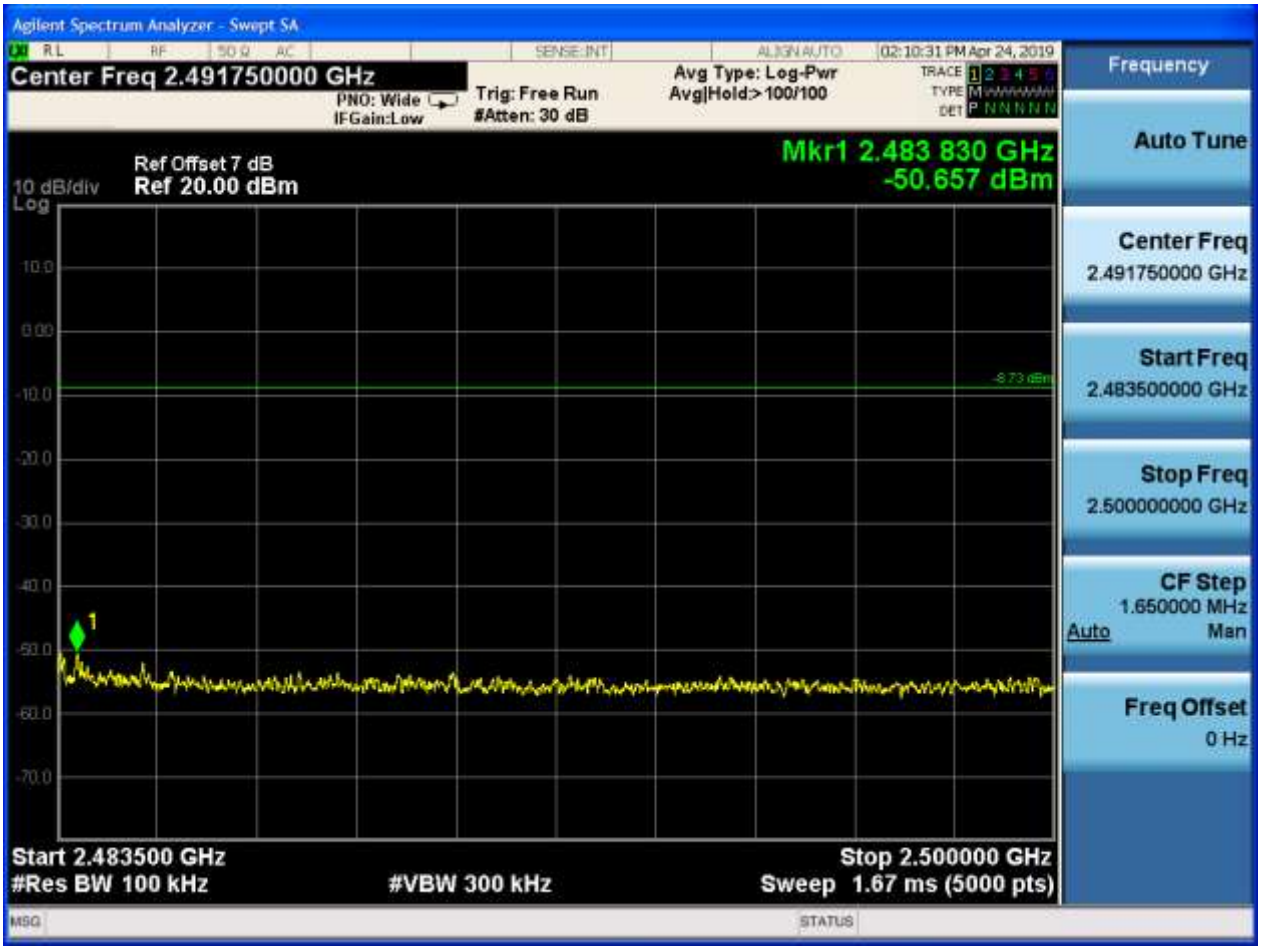
2.9.1 Pref

2.9.2 Puw








Agilent Spectrum Analyzer - Swept SA
Center Freq 2.491750000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:10:31 PM Apr 24, 2019
Ref Offset 7 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.483 830 GHz
-50.657 dBm
Start 2.483500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.500000 GHz
Sweep 1.67 ms (5000 pts)
Frequency
Auto Tune
Center Freq
2.491750000 GHz
Start Freq
2.483500000 GHz
Stop Freq
2.500000000 GHz
CF Step
1.650000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

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 1GHz
- (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”.

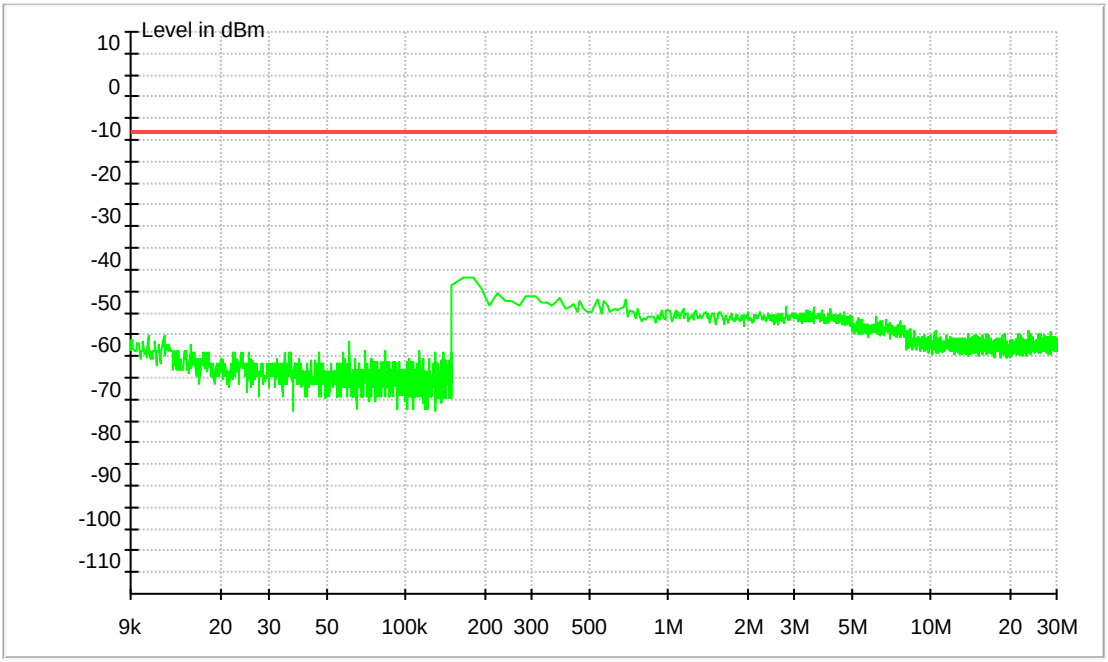
Test Range	EUT Conf.	Emissions	Verdict
30 MHz to 1 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
1 GHz to 3 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
	TM1_DH5_Ch78 (Worst Conf.)	< Limit	Pass
3 GHz to 18 GHz	TM1_DH5_Ch0 (Worse Conf.)	< Limit	Pass
18 GHz to 26.5 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass

Note1: We tested all modes, but the data presented below is the worst case.
Note2: For Wireless charging protective case we only tested the RSE of the worst case.

2 Result Plot

Part 1: Testing Range of "9 kHz to 30MHz"

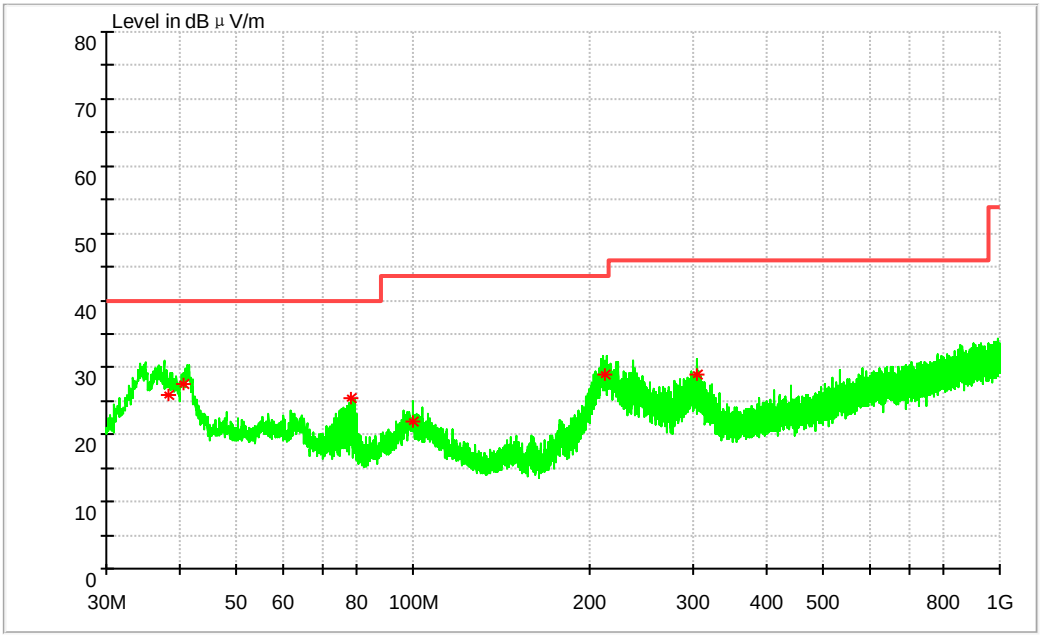
Note 1: The test results and plot for testing range of "9 KHz to 30 MHz" showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.



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).



MEASUREMENT RESULT: QP Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
38.188100	25.88	40.00	14.12	102.0	V	105.0	13.6
40.564480	27.51	40.00	12.49	101.0	V	4.0	14.5
78.506720	25.39	40.00	14.61	121.0	V	208.0	9.2
99.861240	21.92	43.50	21.58	101.0	V	0.0	14.0
211.607520	29.00	43.50	14.50	100.0	V	280.0	12.2
304.818060	28.99	46.00	17.01	101.0	H	167.0	14.5

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.

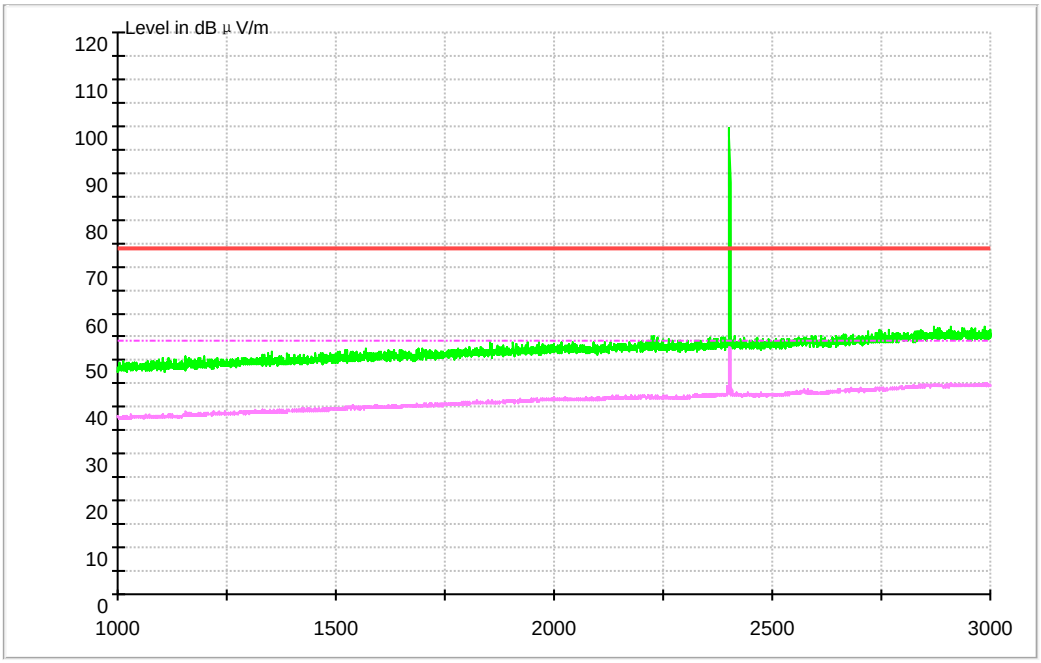
2, Margin=Limit - Level

Part 3: Testing Range of "1GHz to 3GHz"

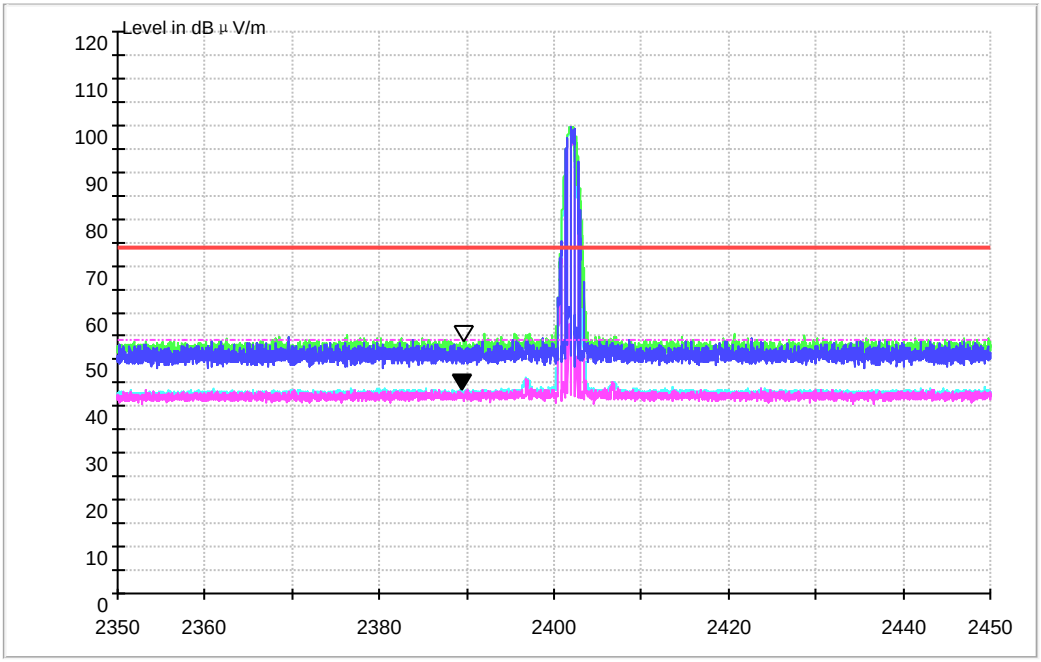
Note 1: The testing range of "1 GHz to 3 GHz" is for checking radiated emissions located in restricted bands near the EUT operating bands.

Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dBµV/m) and Average Limit (54 dBµV/m).

Note 3: The peak spike exceeds the limit line is EUT's operating frequency.



Channel 0



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2389.65	54.19	74.00	19.87	150.0	H	68.0	-9.3

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd.
2389.4	43.71	54.00	10.29	150.0	H	43.0	-9.3

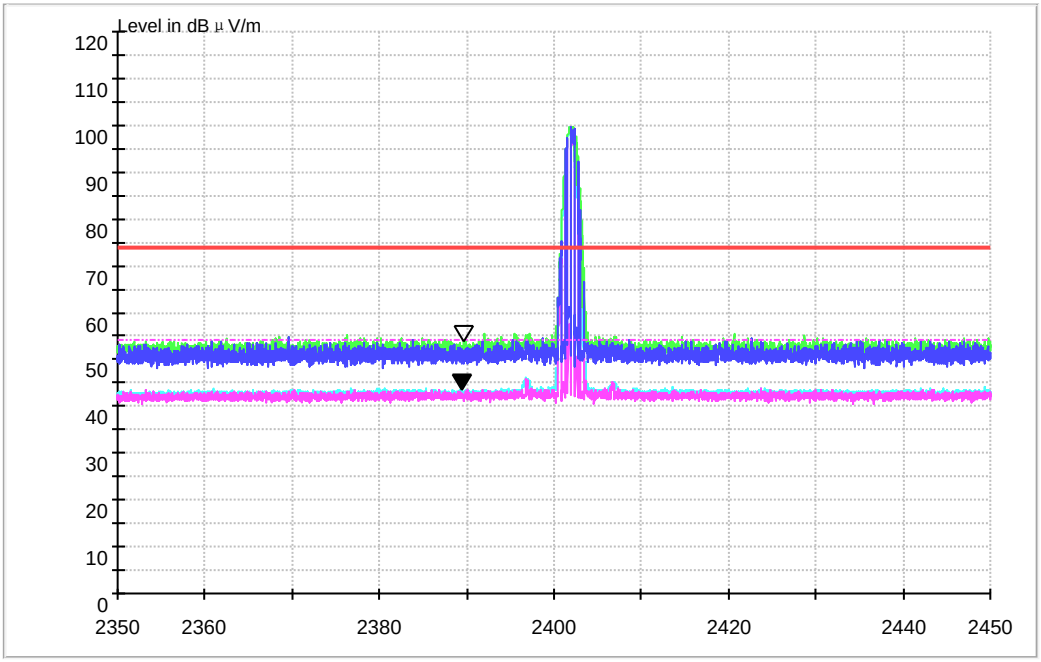
Note:

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

Channel 0 (adaptor + Wireless Charging Case) worst case



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2389.7	54.22	74.00	19.78	150.0	H	73.0	-9.3

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth	Transd. (dB)
2389.5	43.78	54.00	10.22	150.0	H	60.0	-9.3

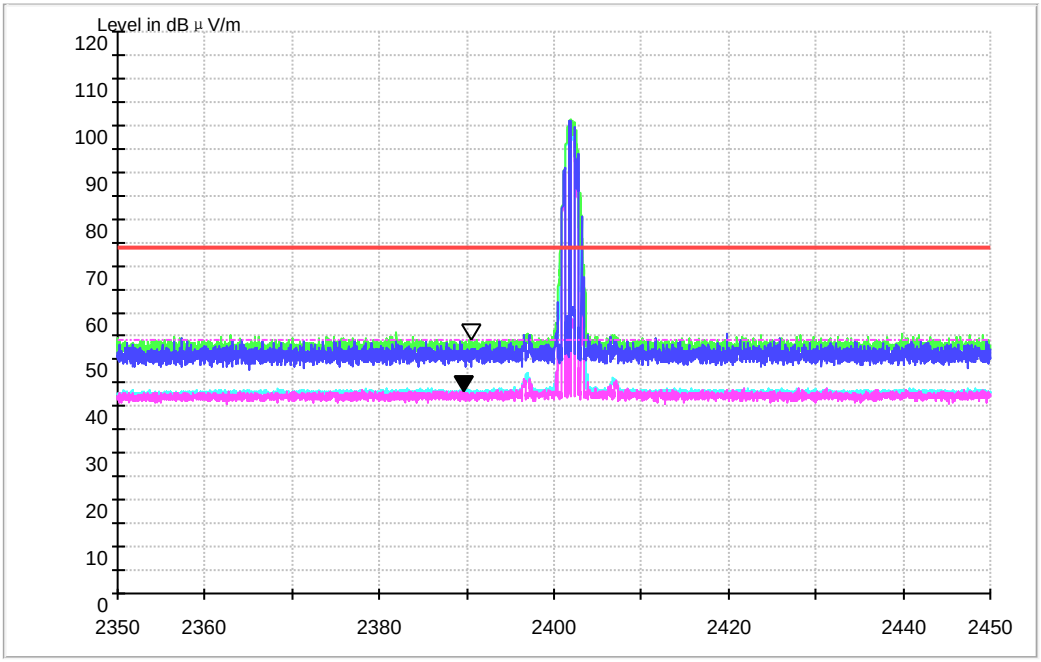
Note:

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

Channel 0 (adaptor + Wireless charging charger+ Wireless Charging Case) worst case



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2390.54	54.33	74.00	19.67	150.0	H	77.0	-9.3

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth	Transd. (dB)
2389.70	43.57	54.00	10.43	150.0	H	85.0	-9.3

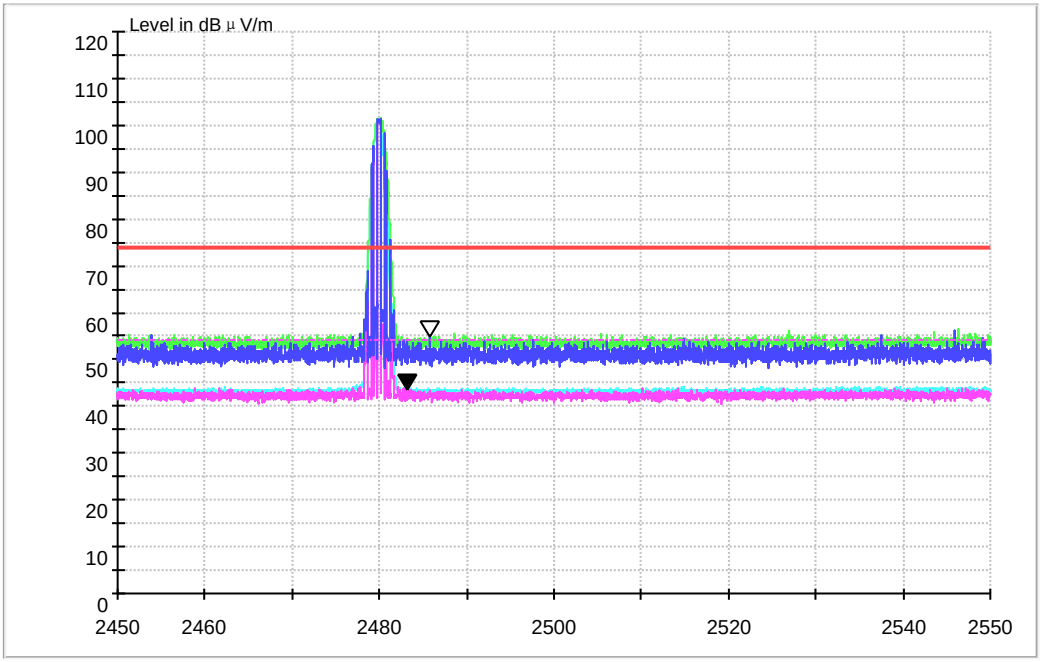
Note:

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

Channel 78



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2485.8	55.16	74.00	18.84	150.0	H	157.0	-9.6

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth	Transd. (dB)
2483.1	43.80	54.00	10.20	150.0	H	142.0	-9.6

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.

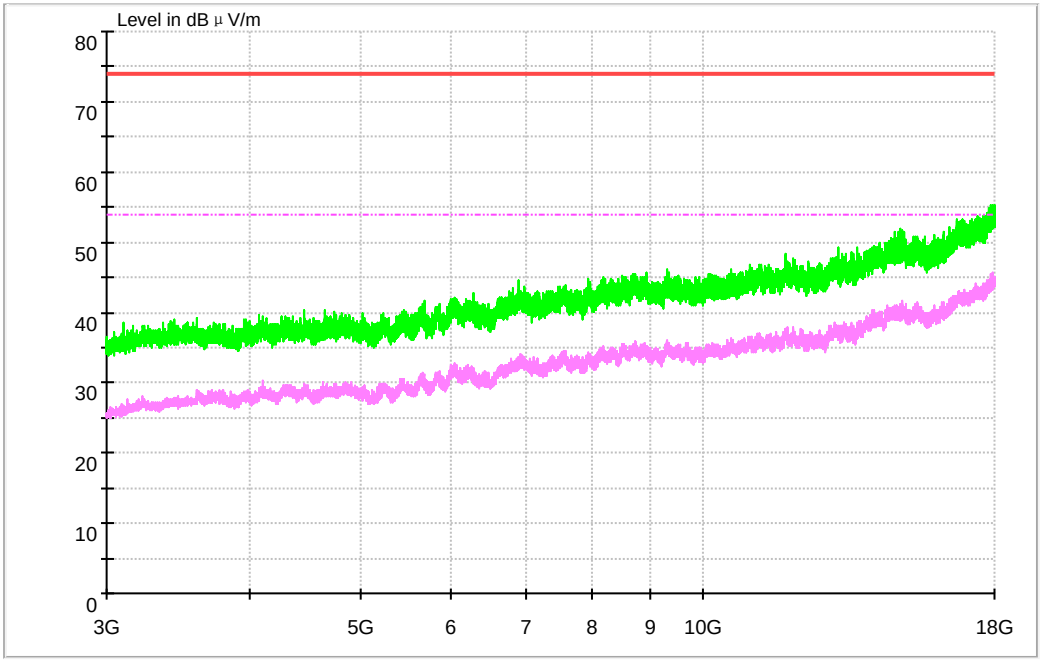
2, Margin=Limit - Level

Part 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 dBµV/m) and Average Limit (54 dBµV/m).

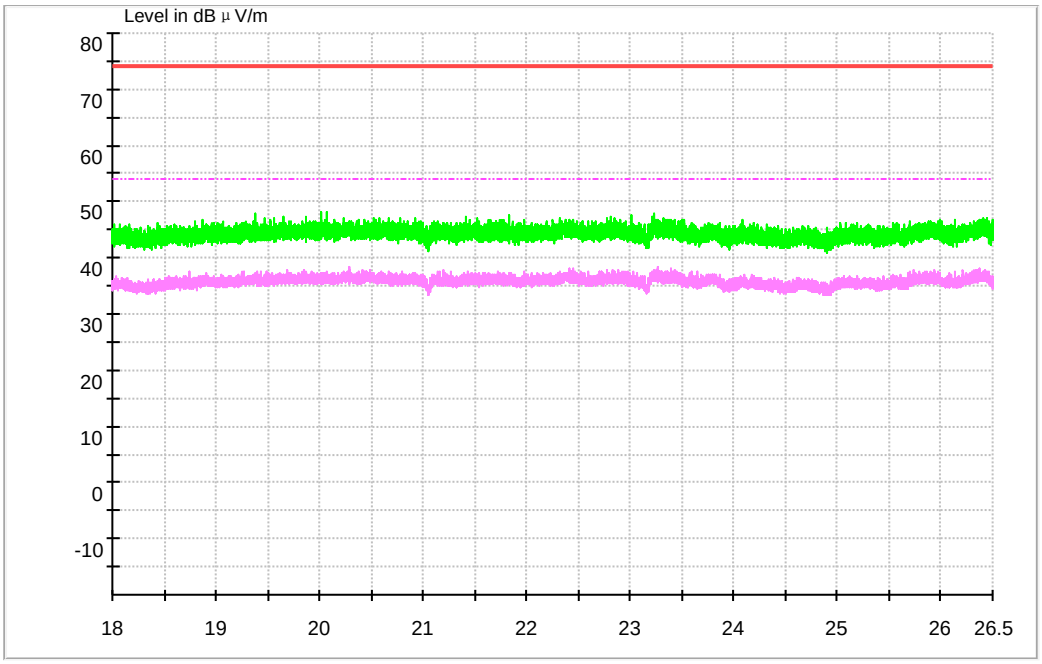


Part 5: Testing Range of "18 GHz to 26.5 GHz"

Note 1: The test results and plot for testing range of "18 GHz to 26.5 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 "18 GHz to 26.5 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 dBμV/m) and Average Limit (54 dBμV/m).



Appendix I: Conducted Emission at Power Port

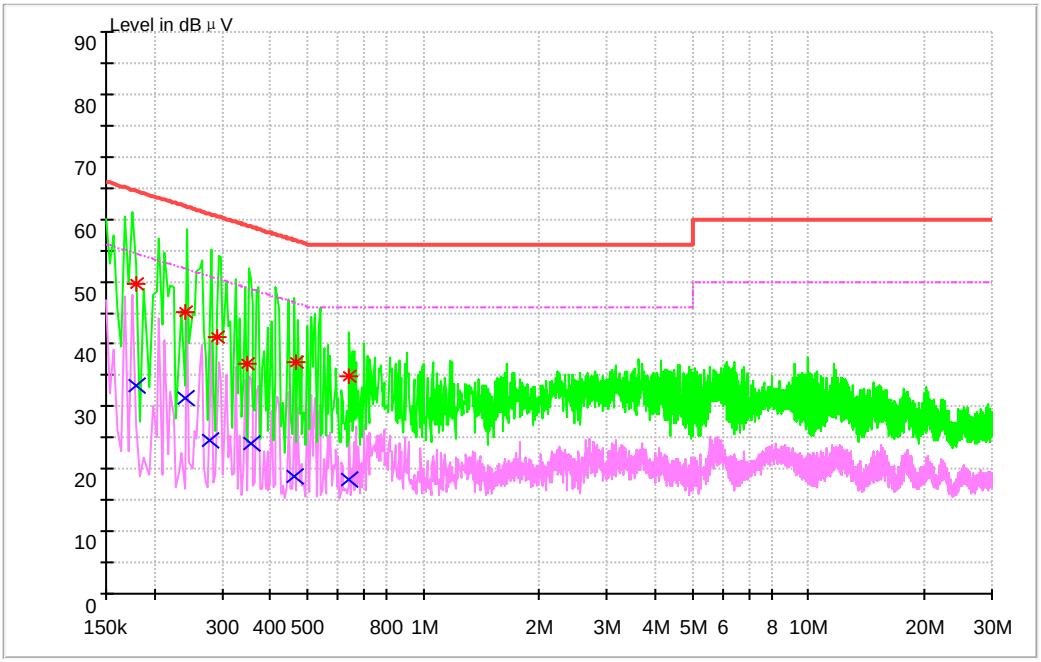
1 Result Table

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

EUT Conf.	Maximum Emissions	Verdict
TM1_DH5_Ch0	Not found obvious spikes or see marked spikes on plots and listed emissions records.	Pass

2 Result Plot

Channel 0



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB µ V)	Limit (dB µ V)	Transd. (dB)	Margin (dB)	Line	PE
0.180031	49.55	64.48	9.7	14.93	N	FLO
0.239752	45.01	62.11	9.7	17.10	N	FLO
0.291107	41.02	60.49	9.7	19.47	N	FLO
0.349388	36.95	58.98	9.7	22.03	N	FLO
0.464755	37.18	56.61	9.7	19.43	N	FLO
0.638696	34.94	56	9.7	21.06	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB µ V)	Limit (dB µ V)	Transd. (dB)	Margin (dB)	Line	PE
0.179588	33.34	54.51	9.7	21.17	N	FLO
0.240522	31.37	52.07	9.7	20.70	N	FLO
0.276996	24.52	50.91	9.7	26.38	N	FLO
0.35471	24.02	48.85	9.7	22.83	N	FLO
0.459501	18.87	46.70	9.7	27.84	N	FLO
0.638128	18.28	46	9.7	27.72	L1	FLO

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

END