



Appendix for Test report



Appendix A: 20dB Emission Bandwidth (EBW)

1 Result Table

EUT Conf.	EBW [MHz]	Limit[MHz]	Verdict
TM1_DH5_Ch0	0.94	---	Pass
TM1_DH5_Ch39	0.95	---	Pass
TM1_DH5_Ch78	0.95	---	Pass
TM2_2DH5_Ch0	1.31	---	Pass
TM2_2DH5_Ch39	1.32	---	Pass
TM2_2DH5_Ch78	1.32	---	Pass
TM3_3DH5_Ch0	1.31	---	Pass
TM3_3DH5_Ch39	1.32	---	Pass
TM3_3DH5_Ch78	1.32	---	Pass

2 Test Plot

TM1_DH5_Ch0





TM1_DH5_Ch39



TM1_DH5_Ch78



TM2_2DH5_Ch0





TM2_2DH5_Ch39





TM2_2DH5_Ch78





TM3_3DH5_Ch0





TM3_3DH5_Ch39





TM3_3DH5_Ch78





Appendix B: Carrier Frequency Separation

1 Result Table

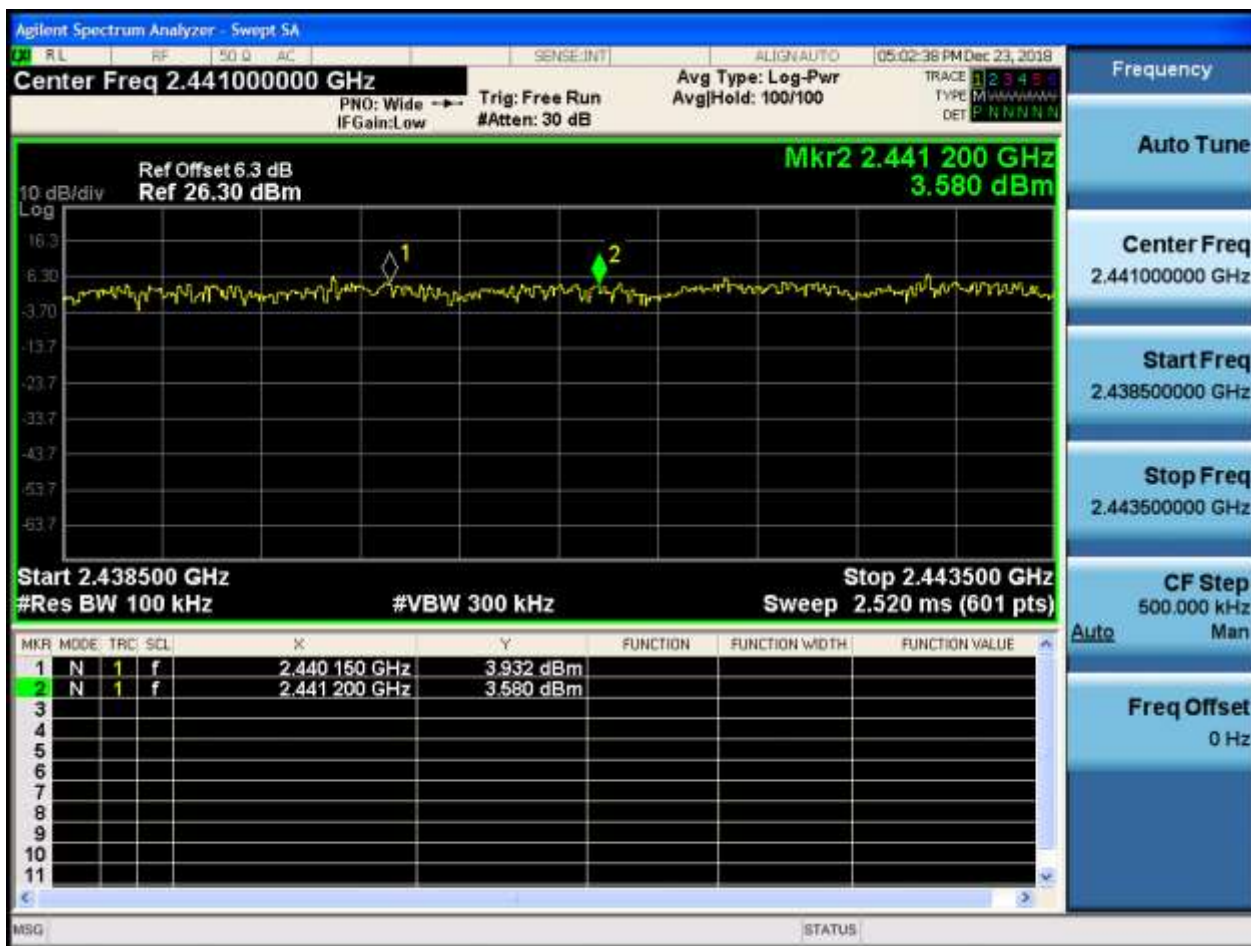
EUT Conf.	Carrier Frequency Separation [MHz]	Limit[MHz]	Verdict
TM1_DH5_Hop	0.95	≥ 0.633	Pass
TM2_2DH5_Hop	1.05	≥ 0.880	Pass
TM3_3DH5_Hop	0.95	≥ 0.880	Pass

2 Test Plot

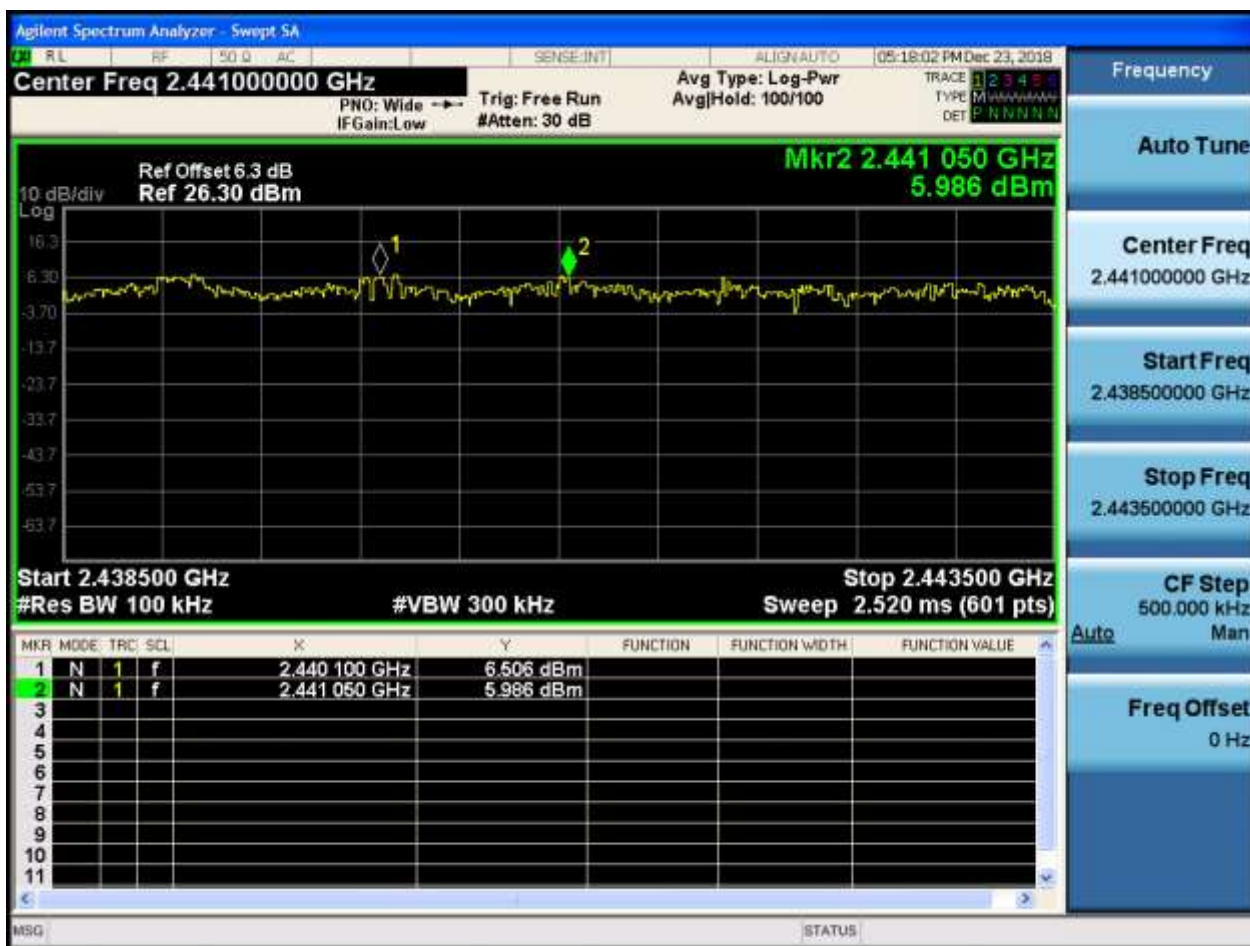
TM1_DH5_Hop



TM2_2DH5_Hop



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

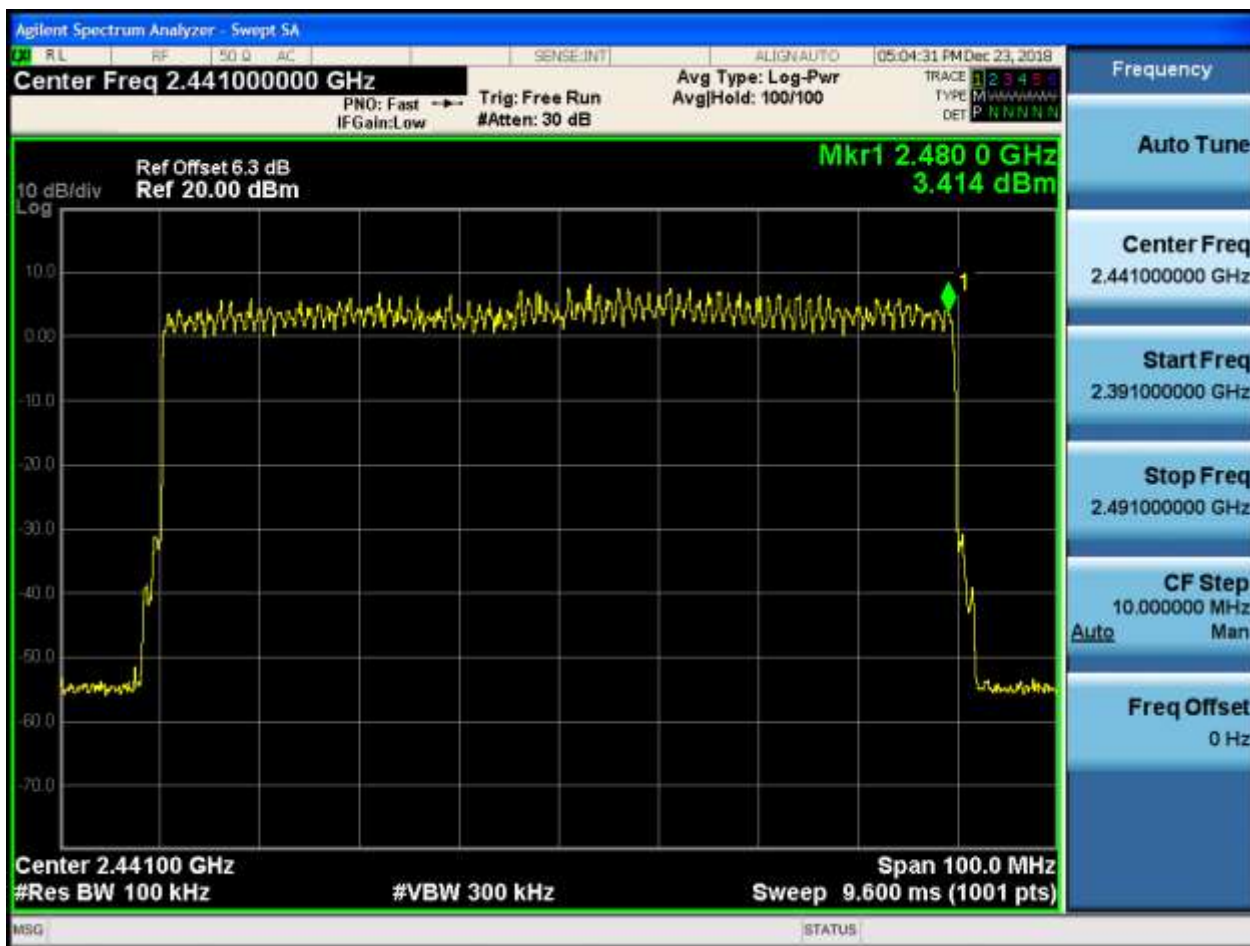
2 Test Plot

TM1_DH5_Hop



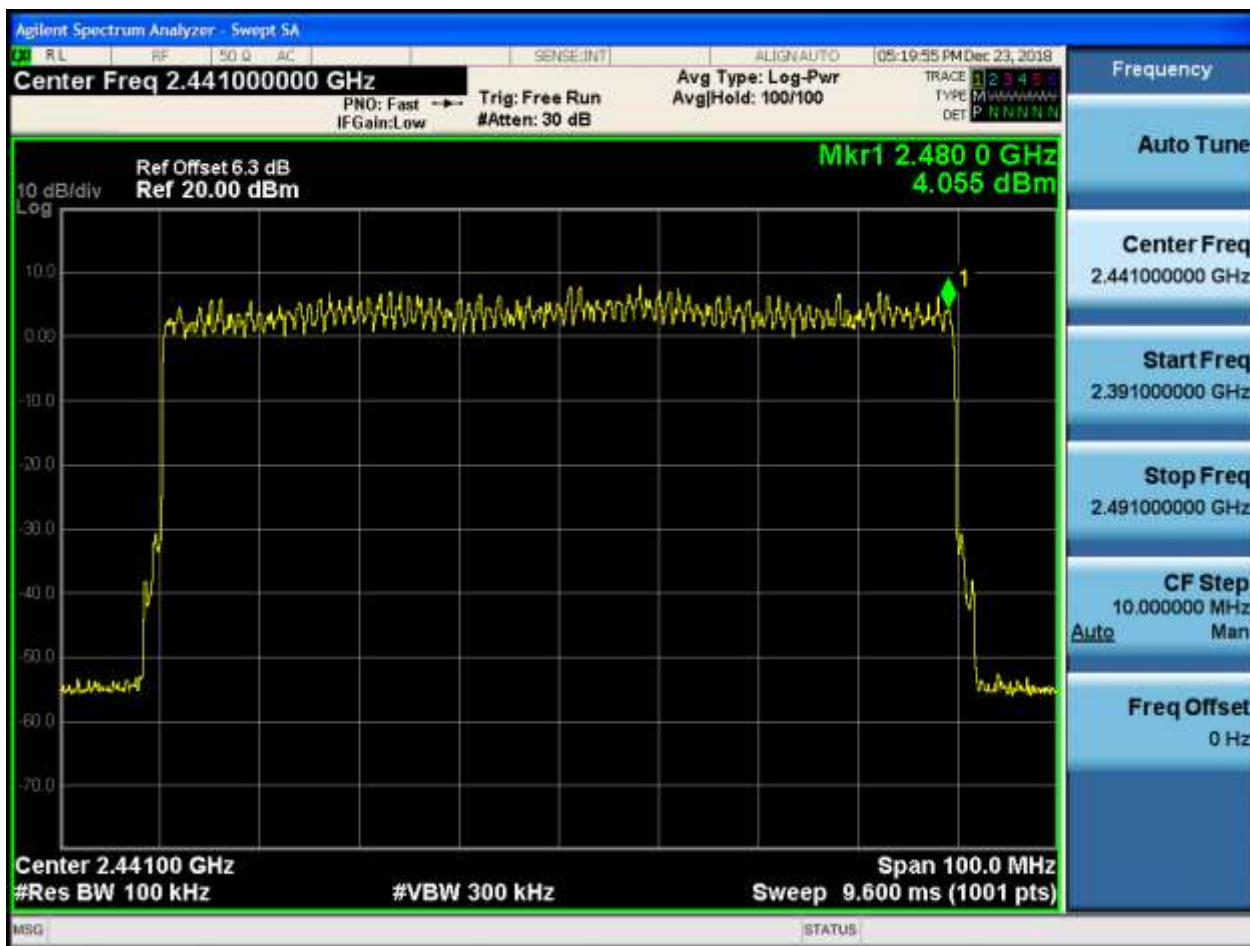


TM2_2DH5_Hop





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

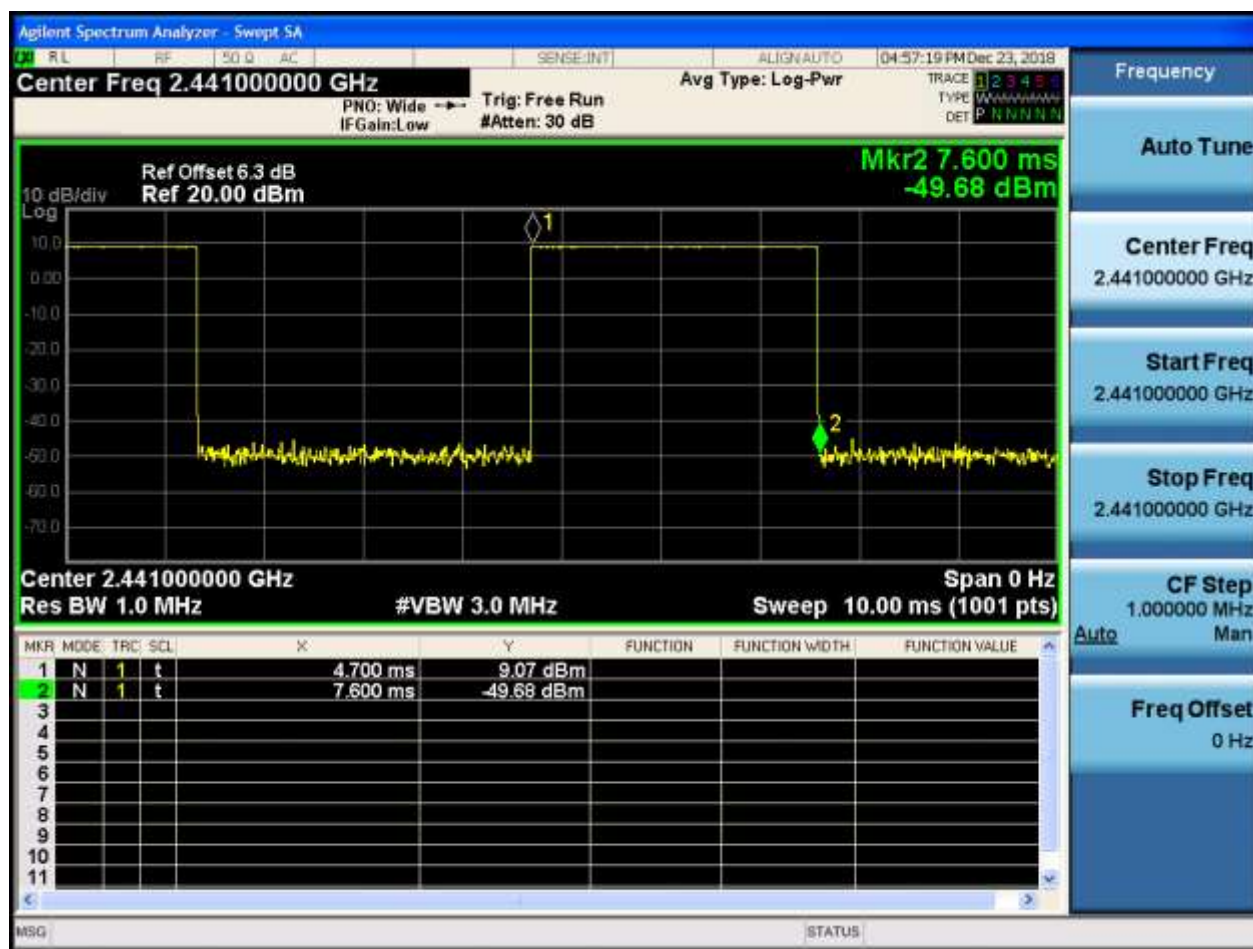
EUT Conf.	Burst Width [s/hop/ch]	Total Hops [hop*ch]	Dwell Time [ms]	Verdict
TM1_DH5_Ch39	0.0029	106.67	0.309	Pass
TM2_2DH5_Ch39	0.0029	106.67	0.309	Pass
TM3_3DH5_Ch39	0.0029	106.67	0.309	Pass



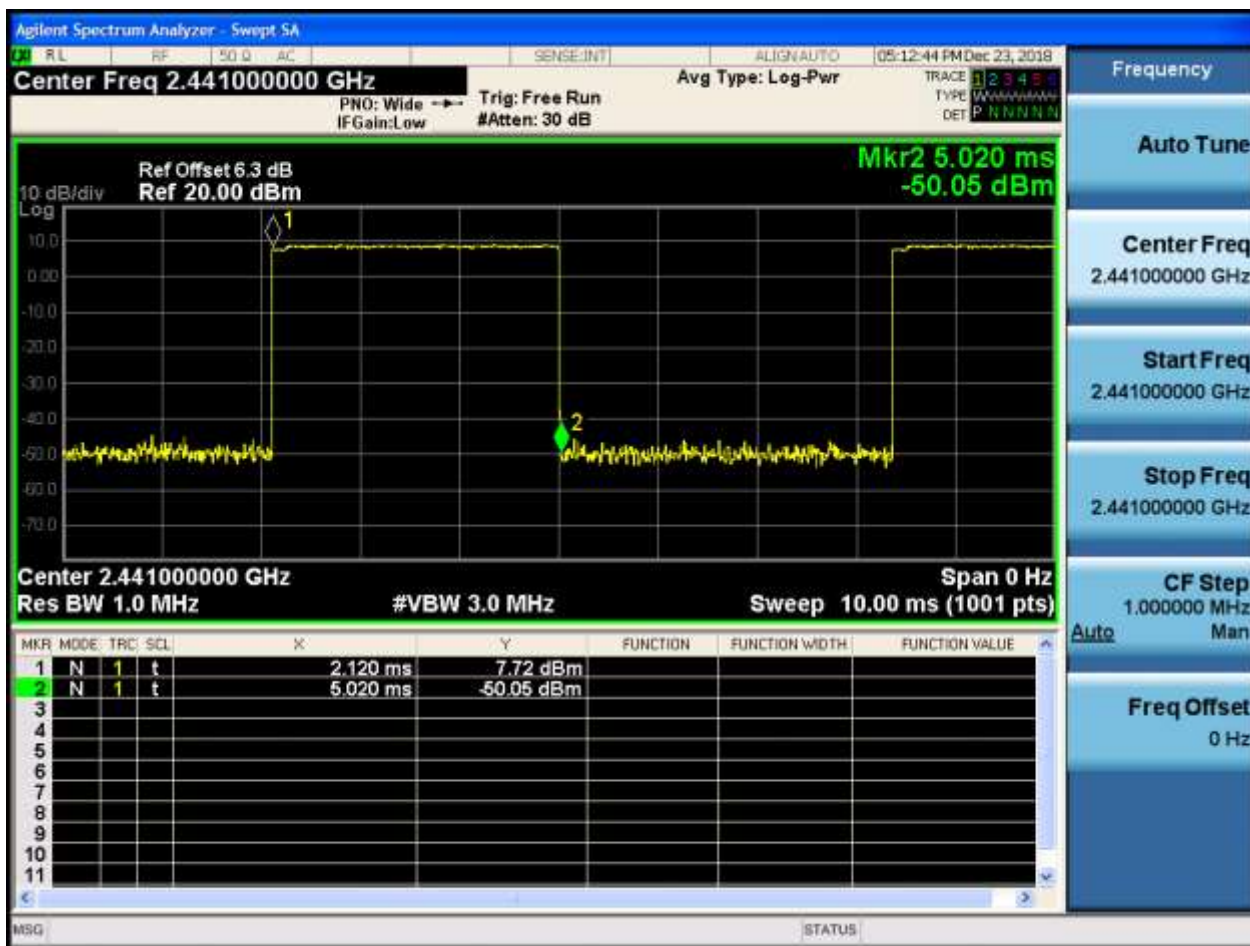
2 Test Plot

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

TM1_DH5_Ch39

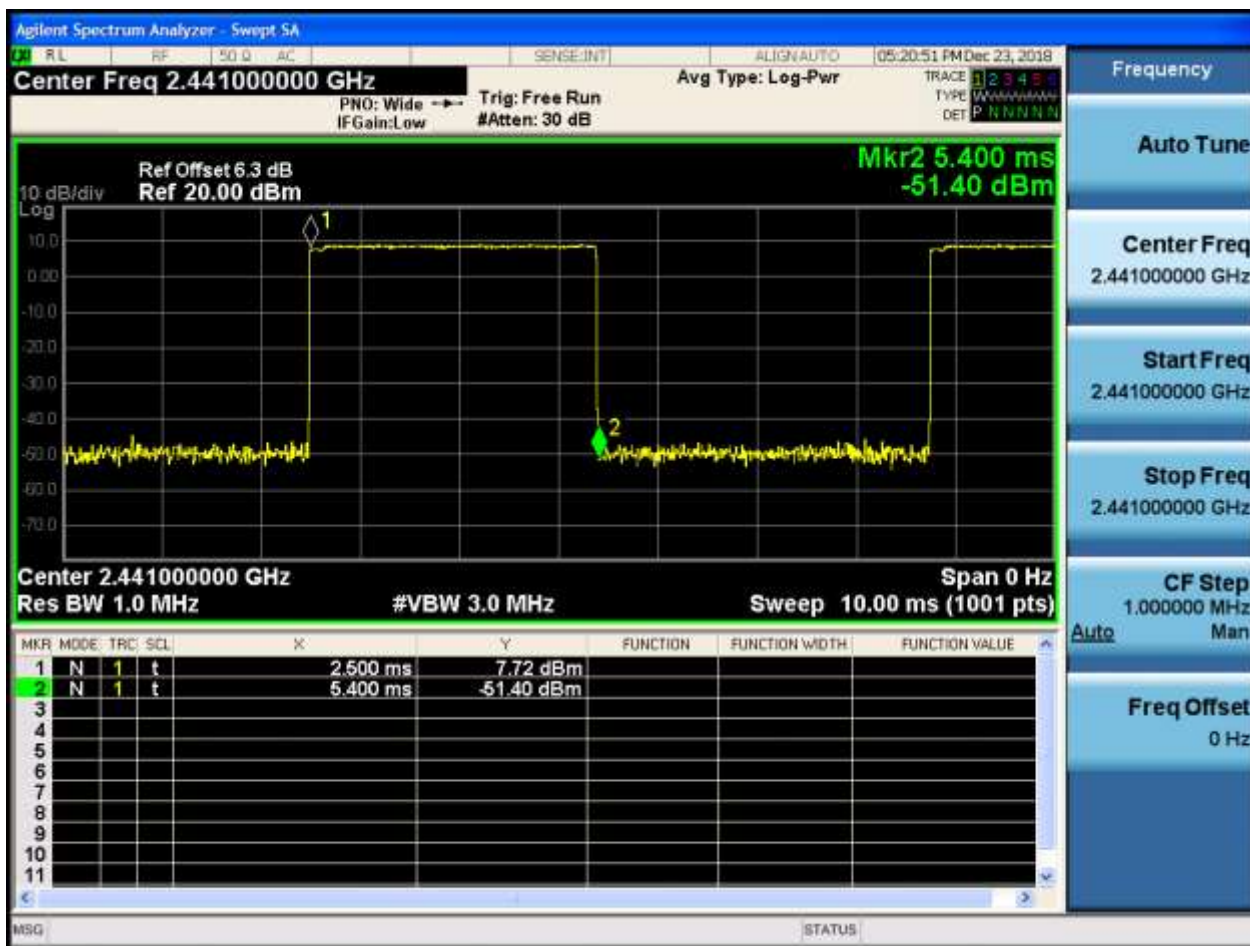


TM2_2DH5_Ch39





TM3_3DH5_Ch39



Appendix E: Maximum Peak Conducted Output Power

1 Result Table

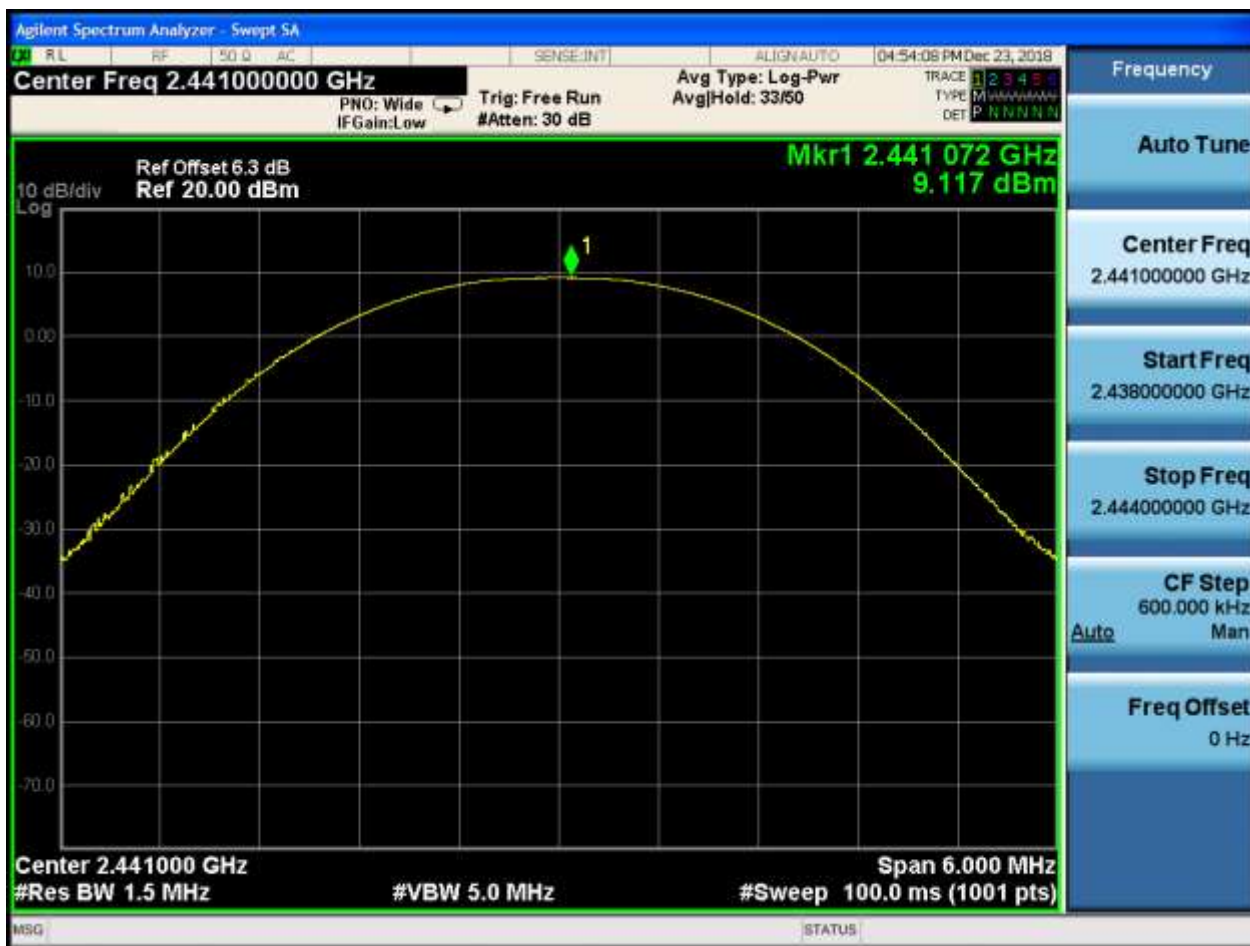
EUT Conf.	Max. Peak Power [dBm]	Limit[dBm]	Verdict
TM1_DH5_Ch0	7.639	20.97	Pass
TM1_DH5_Ch39	9.117	20.97	Pass
TM1_DH5_Ch78	8.072	20.97	Pass
TM2_2DH5_Ch0	7.646	20.97	Pass
TM2_2DH5_Ch39	9.306	20.97	Pass
TM2_2DH5_Ch78	8.341	20.97	Pass
TM3_3DH5_Ch0	7.685	20.97	Pass
TM3_3DH5_Ch39	9.305	20.97	Pass
TM3_3DH5_Ch78	8.349	20.97	Pass

2 Test Plot

TM1_DH5_Ch0



TM1_DH5_Ch39





TM1_DH5_Ch78





TM2_2DH5_Ch0





TM2_2DH5_Ch39





TM2_2DH5_Ch78





TM3_3DH5_Ch0



TM3 3DH5 Ch39





TM3_3DH5_Ch78



Appendix F: Band edge spurious emission

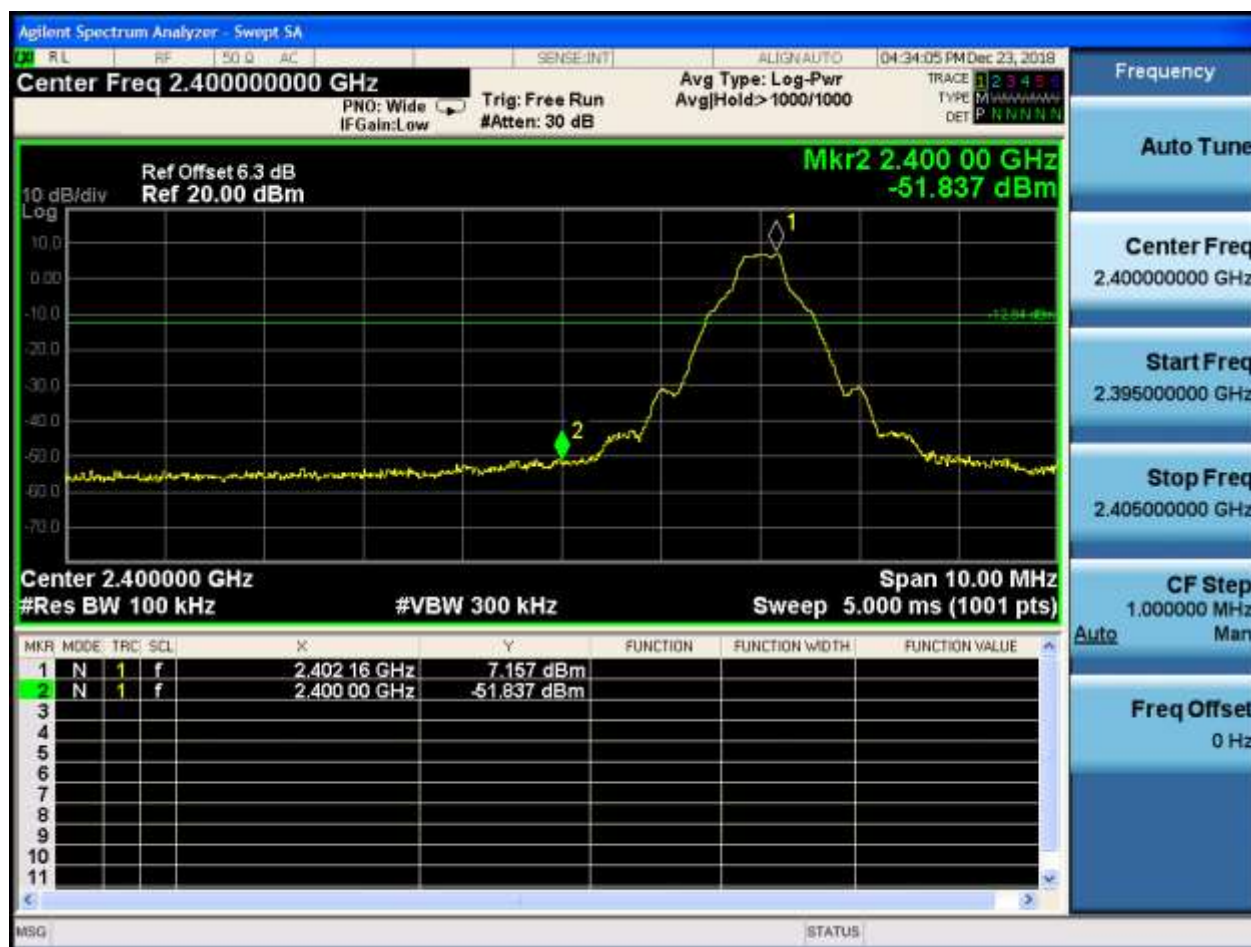
1 Result Table

EUT Conf.	Channel No.	Carrier Frequency [MHz]	Max. Spurious Level [dBm]	Frequency Hopping	Carrier Power [dBm]	Limit [dBm]	Result
TM1_DH5_Ch0	0	2402	-51.837	Off	7.157	-12.843	Pass
	-	-	-54.025	On	6.728	-13.272	Pass
TM1_DH5_Ch78	78	2480	-54.097	Off	7.629	-12.371	Pass
	-	-	-56.427	On	7.367	-12.633	Pass
TM2_2DH5_Ch0	0	2402	-41.076	Off	5.44	-14.56	Pass
	-	-	-42.767	On	4.725	-15.275	Pass
TM2_2DH5_Ch78	78	2480	-54.52	Off	5.936	-14.064	Pass
	-	-	-56.863	On	5.847	-14.153	Pass
TM3_3DH5_Ch0	0	2402	-41.687	Off	5.497	-14.503	Pass
	-	-	-43.876	On	5.547	-14.453	Pass
TM3_3DH5_Ch78	78	2480	-55.479	Off	5.939	-14.061	Pass
	-	-	-55.646	On	5.305	-14.695	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	7.206	< Limit	Pass
TM1_DH5_Ch39	8.976	< Limit	Pass
TM1_DH5_Ch78	7.71	< Limit	Pass
TM2_2DH5_Ch0	5.484	< Limit	Pass
TM2_2DH5_Ch39	7.482	< Limit	Pass
TM2_2DH5_Ch78	5.952	< Limit	Pass
TM3_3DH5_Ch0	5.516	< Limit	Pass
TM3_3DH5_Ch39	7.489	< Limit	Pass
TM3_3DH5_Ch78	5.947	< Limit	Pass



2 Test Plot

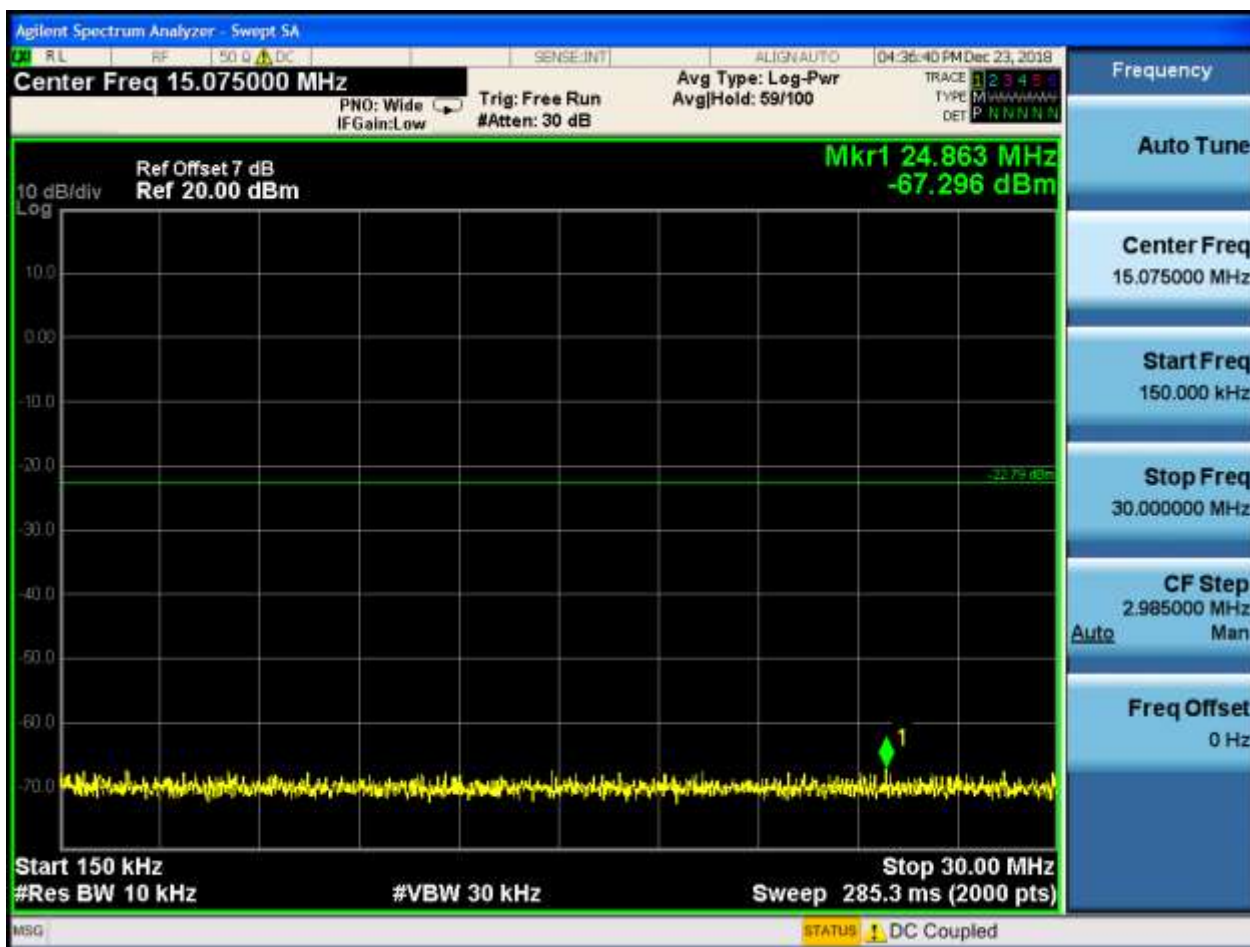
2.1 TM1_DH5_Ch0

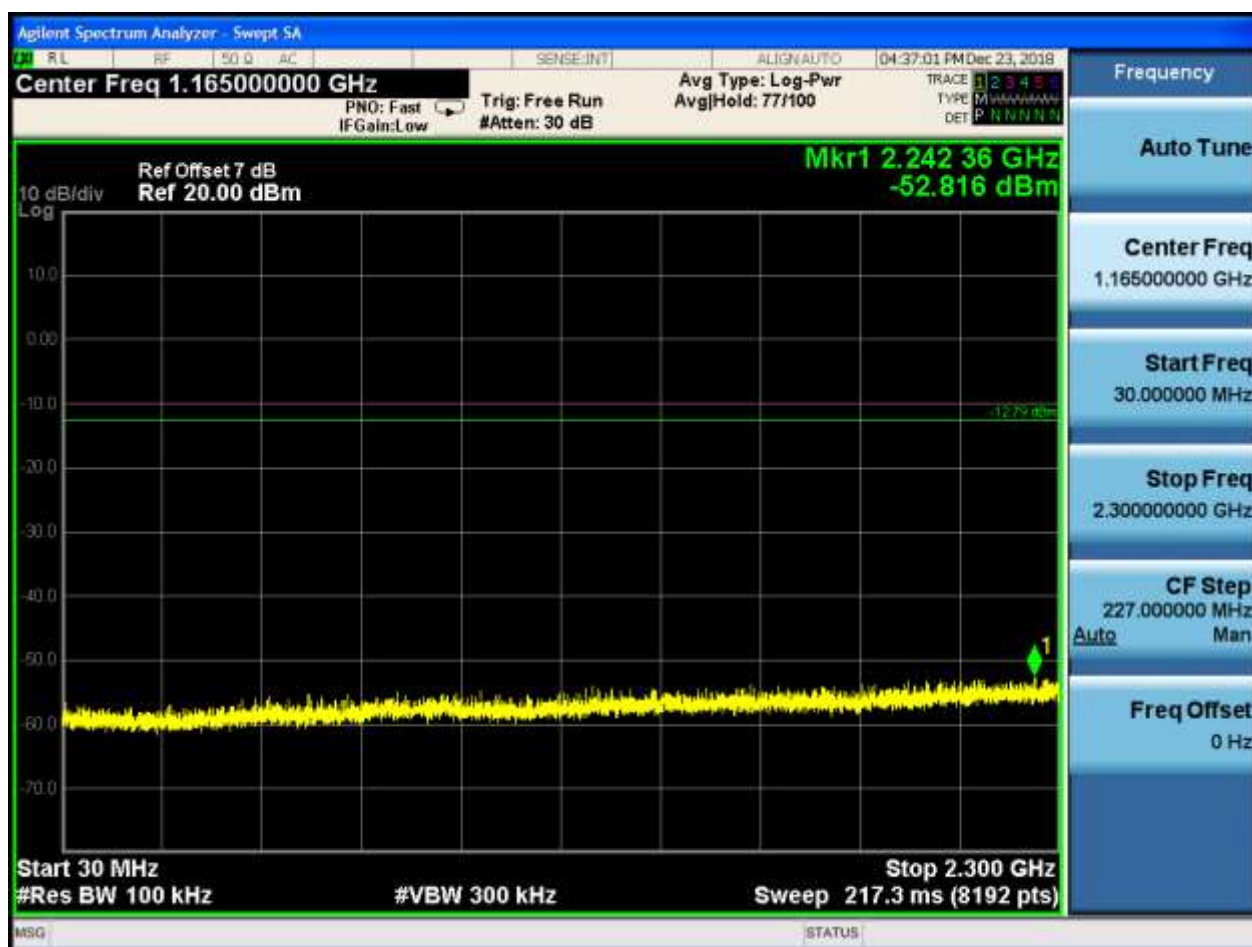
2.1.1 Pref

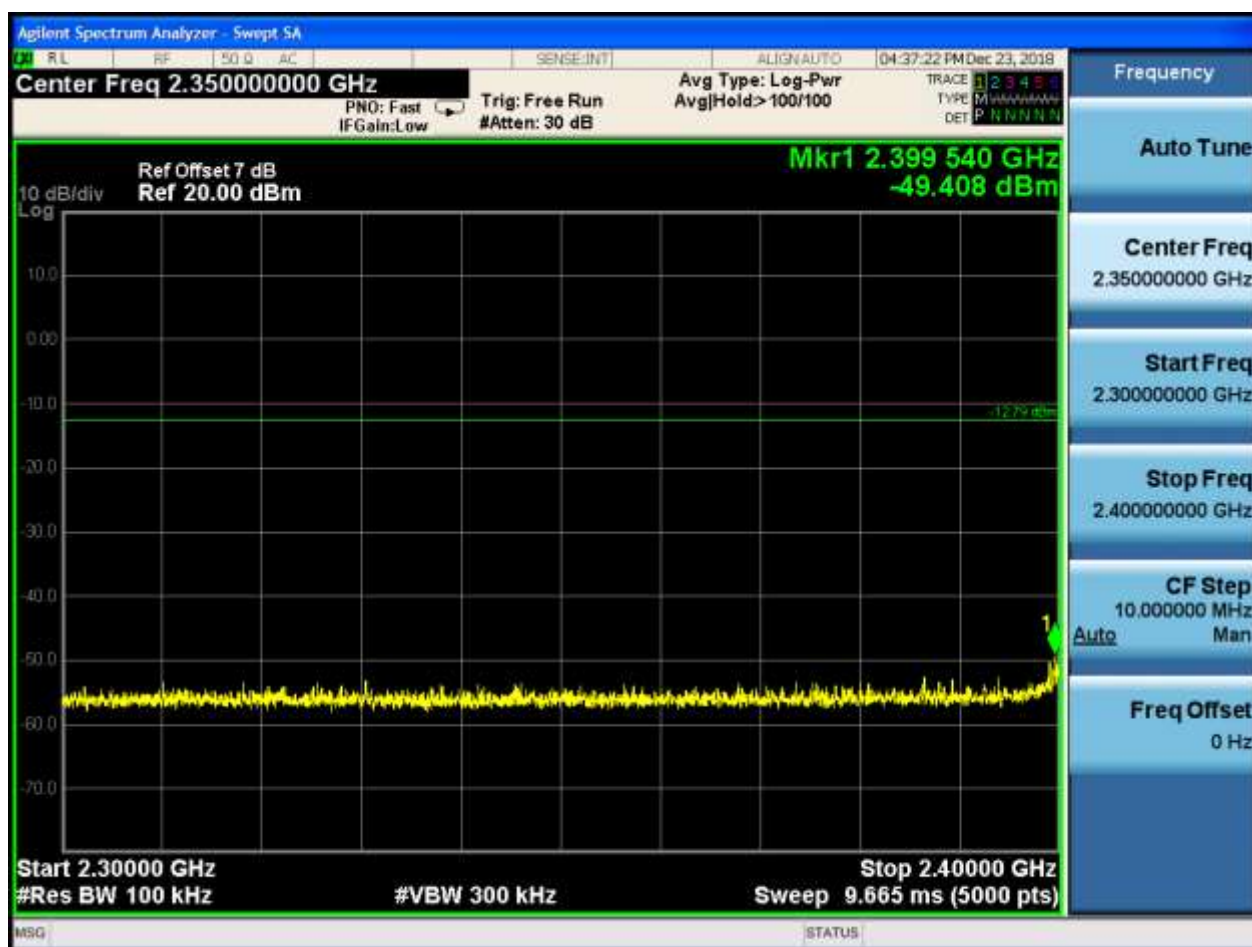


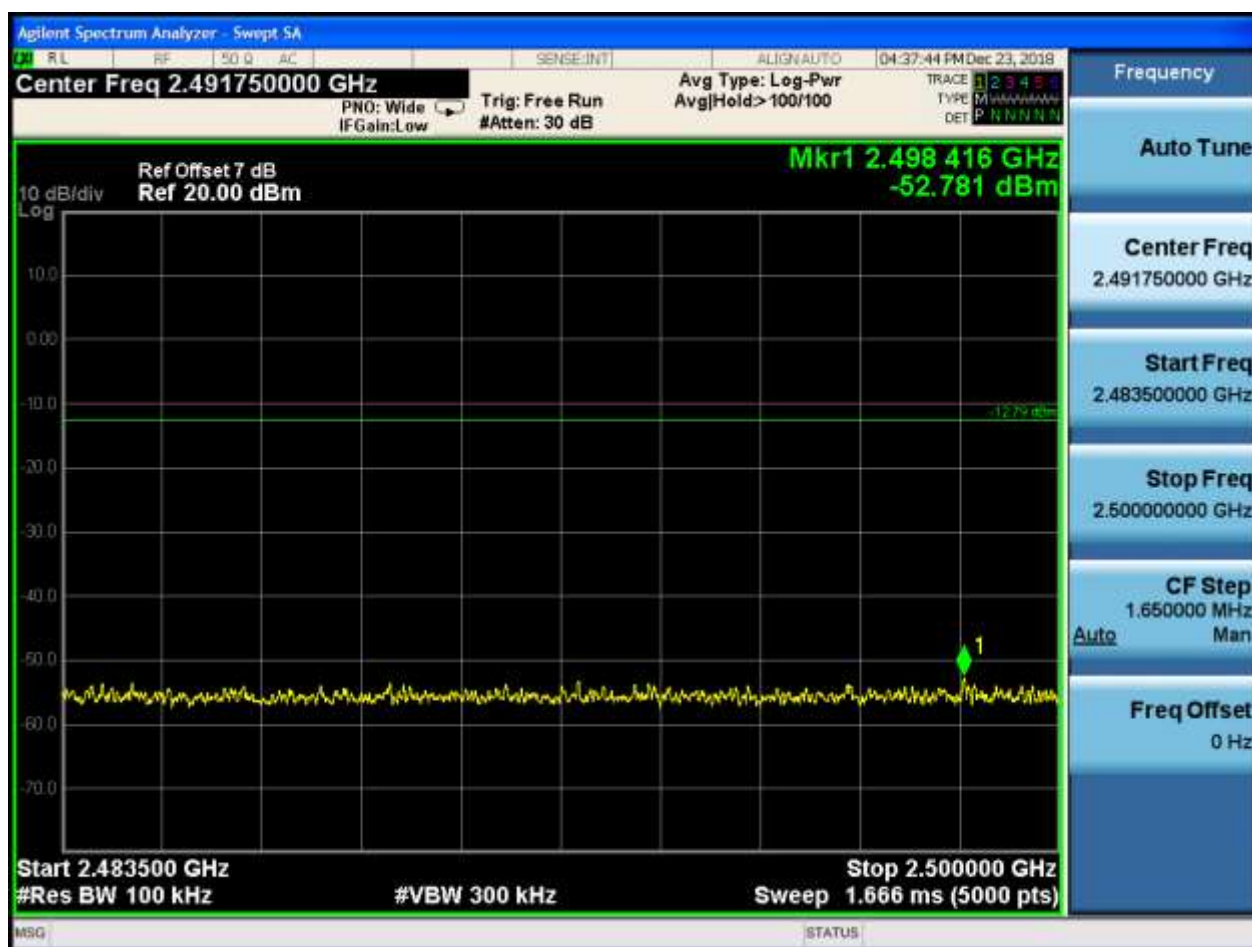
2.1.2 Puw















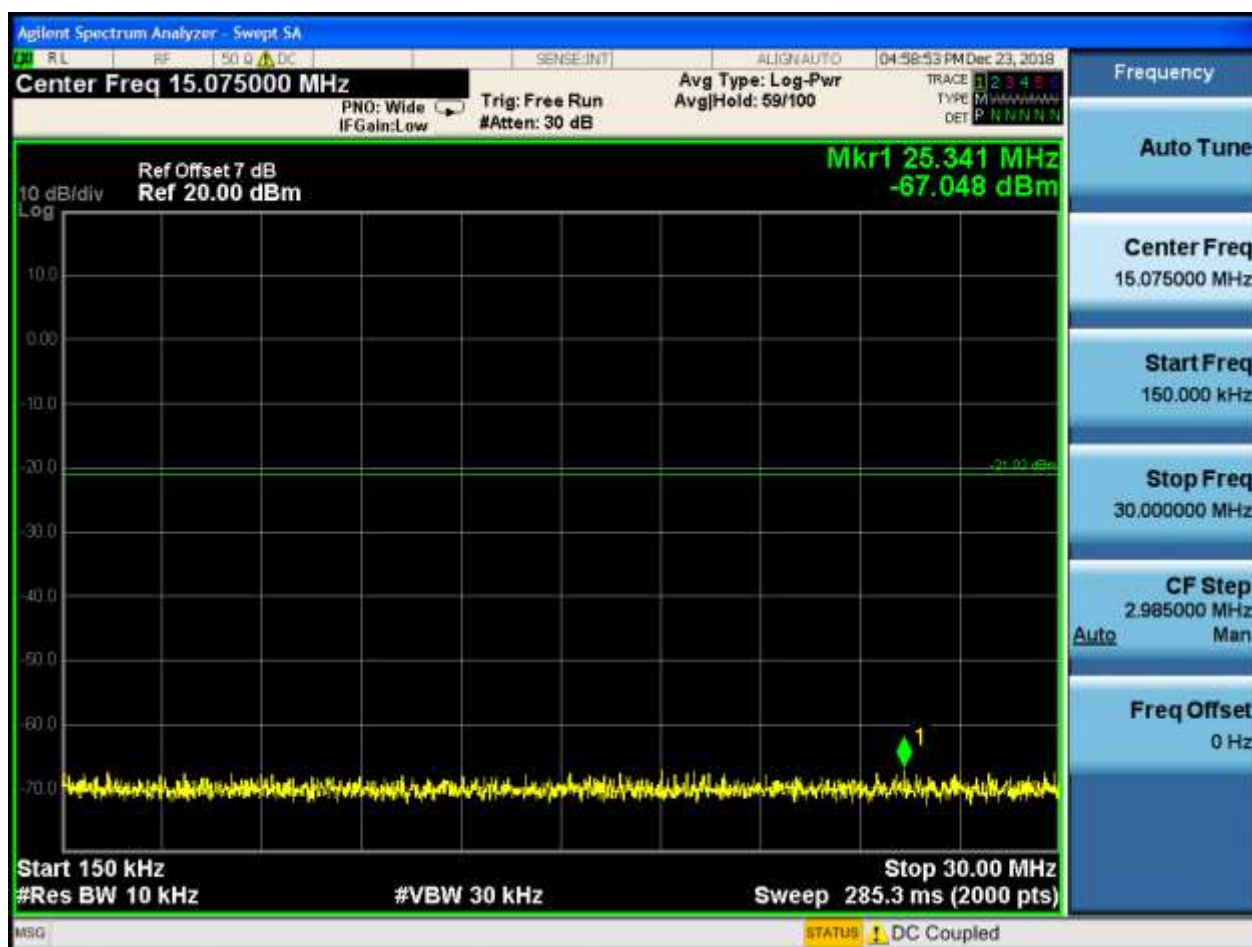
2.2 TM1_DH5_Ch39

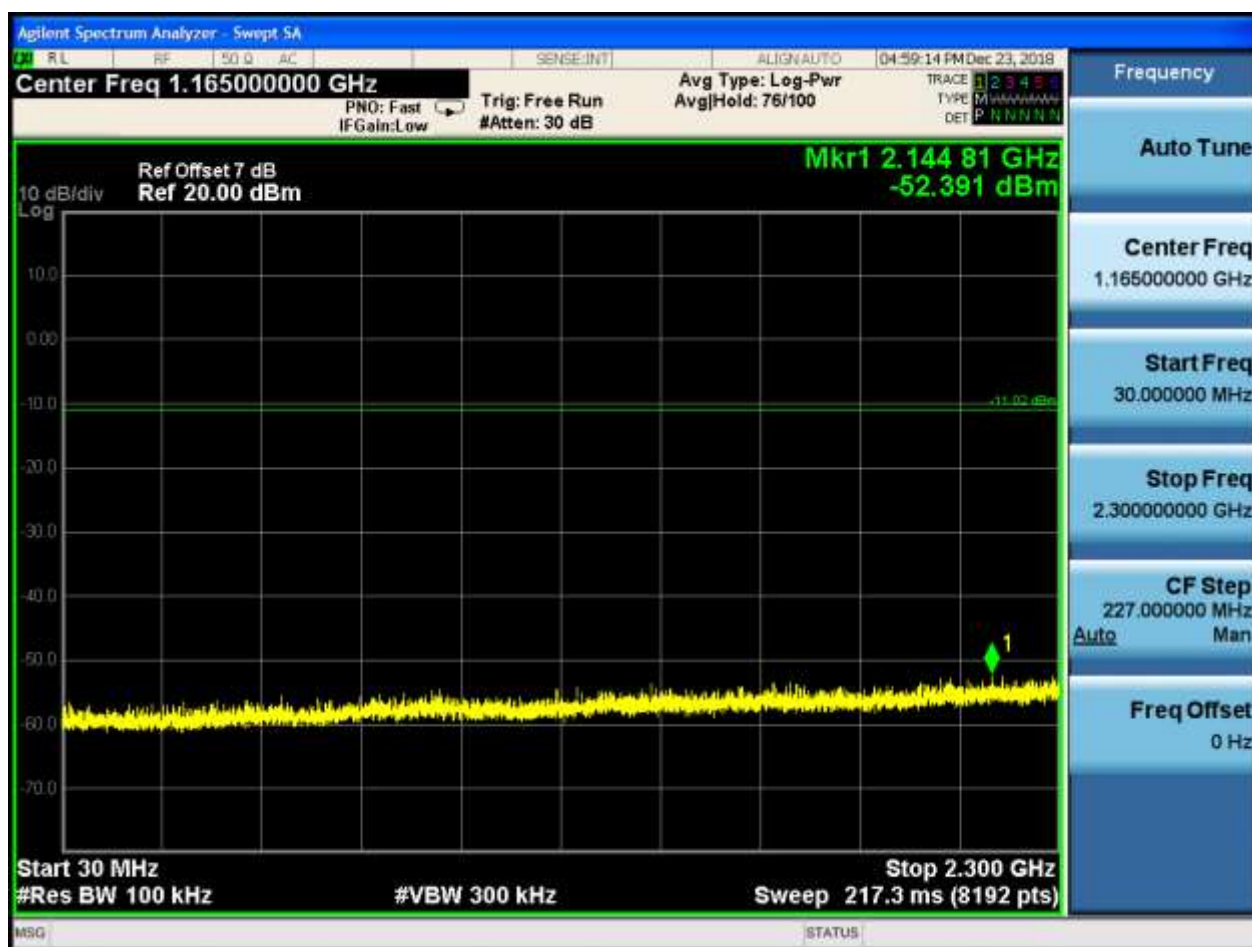
2.1.3 Pref

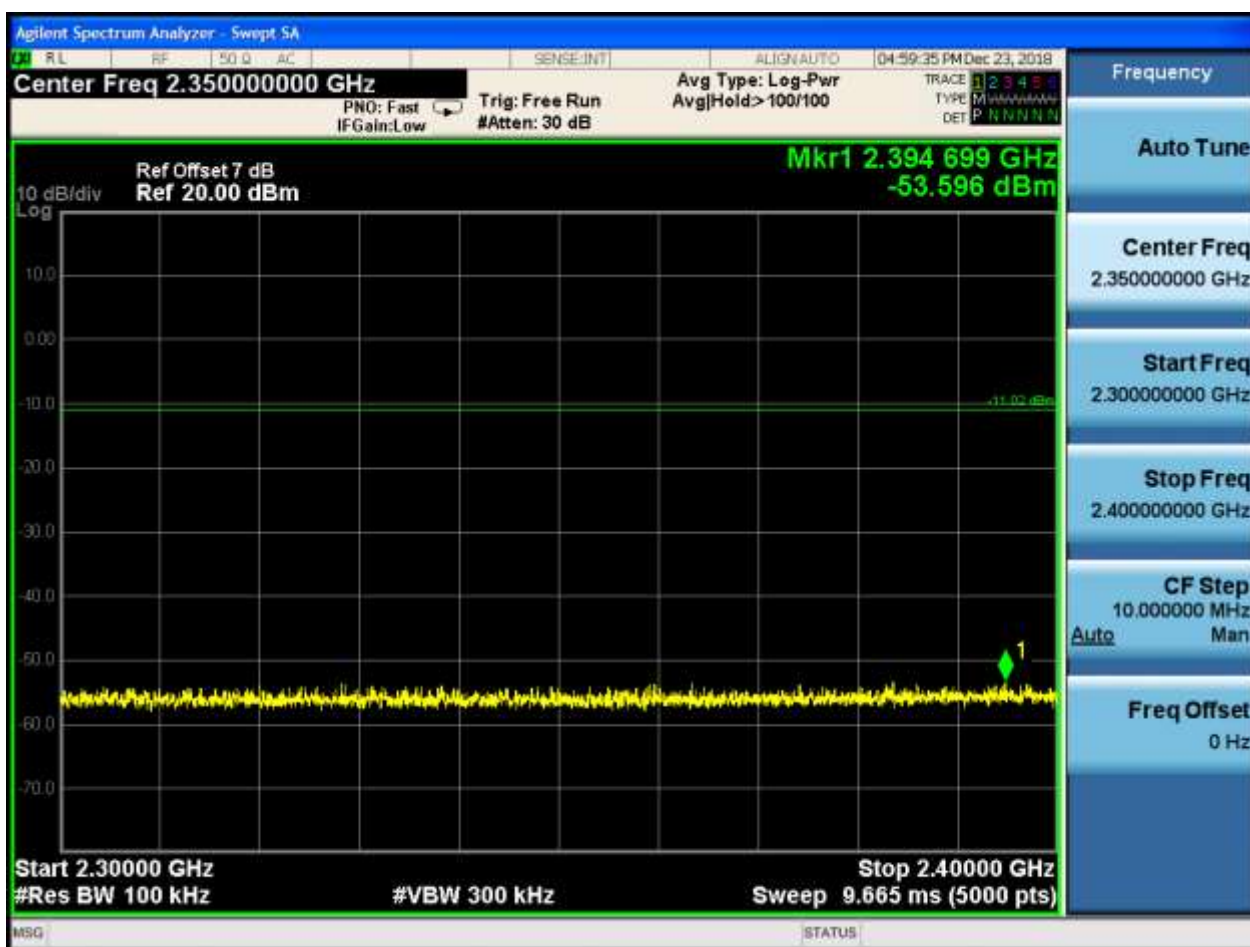


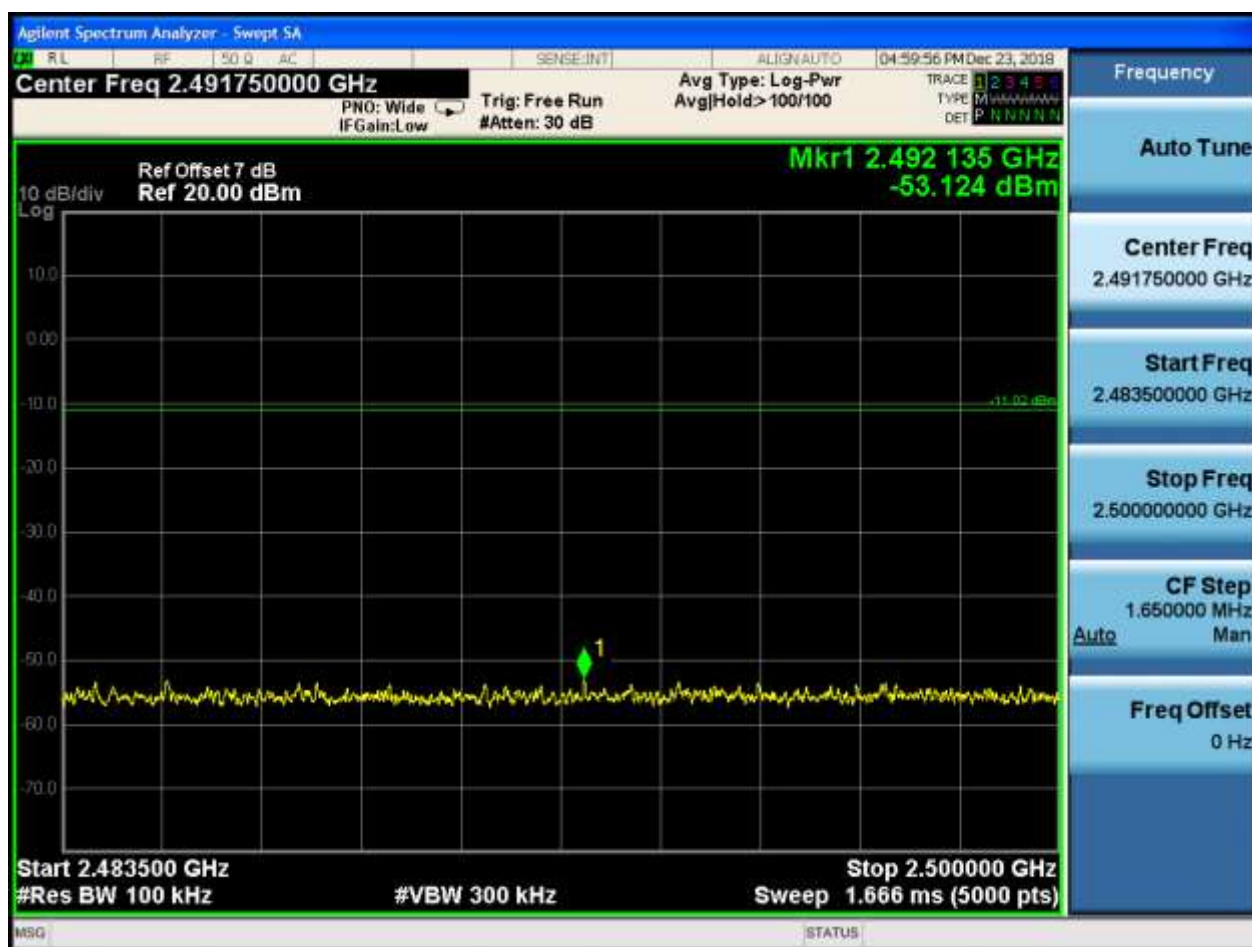
2.1.4 Puw















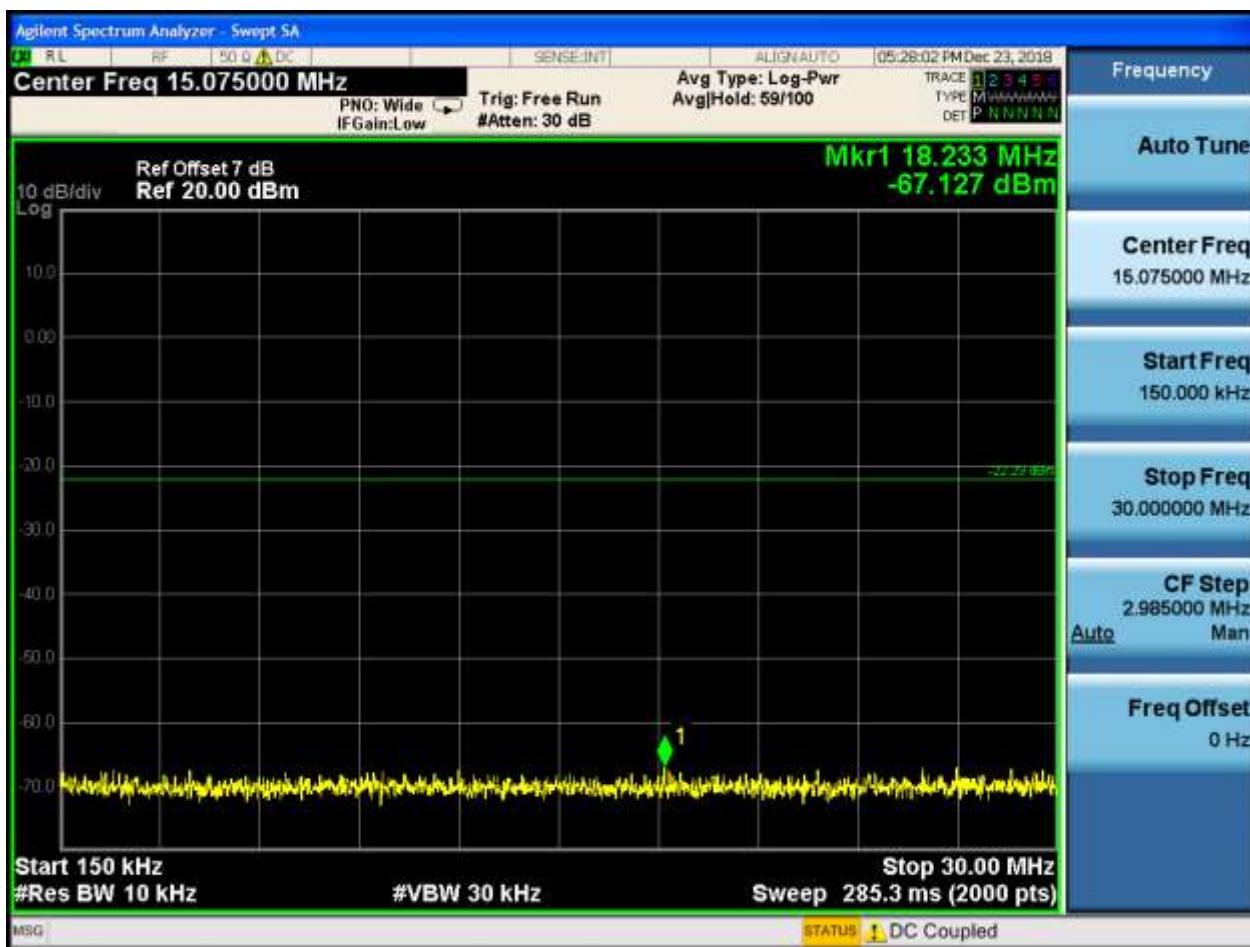
2.3 TM1_DH5_Ch78

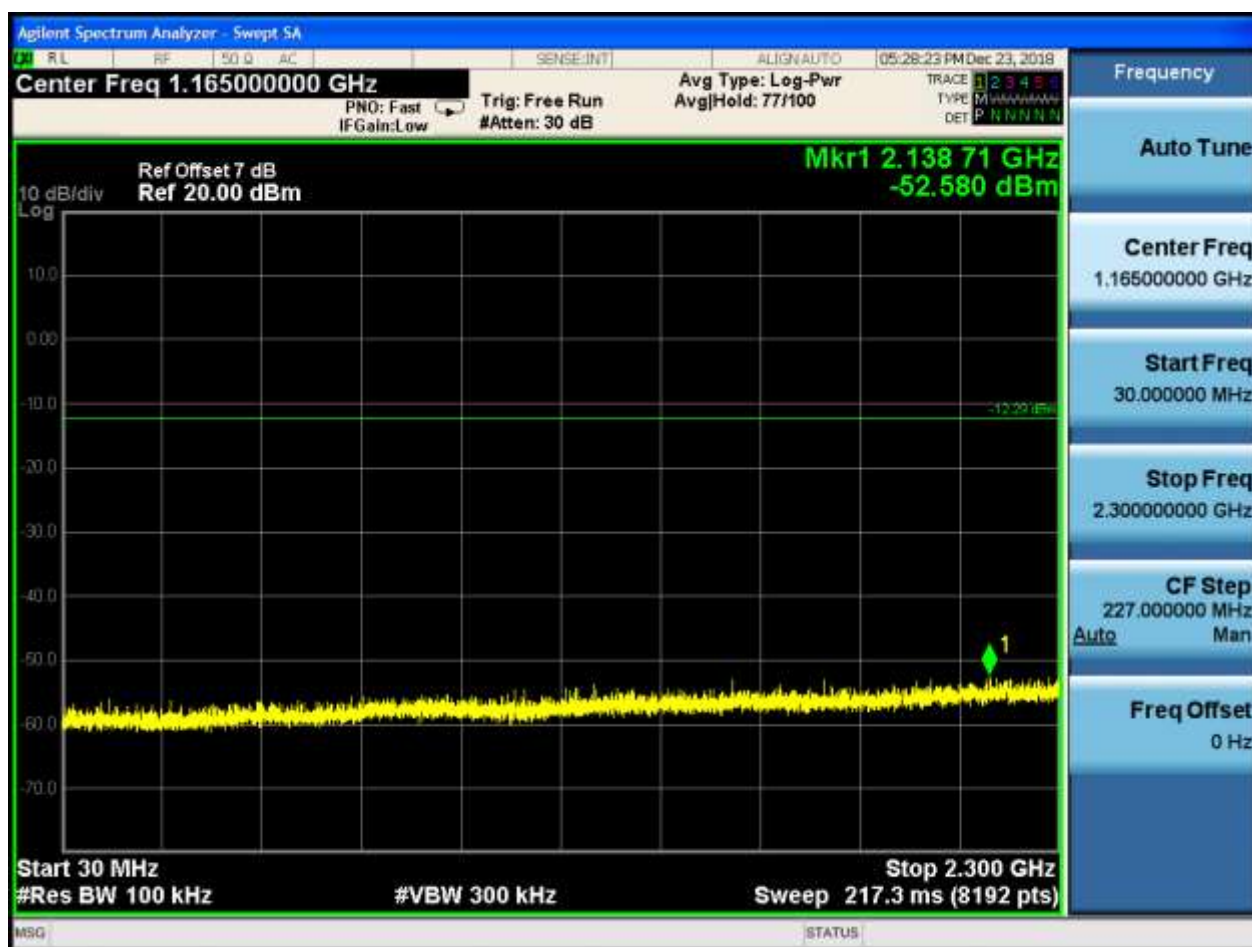
2.1.5 Pref

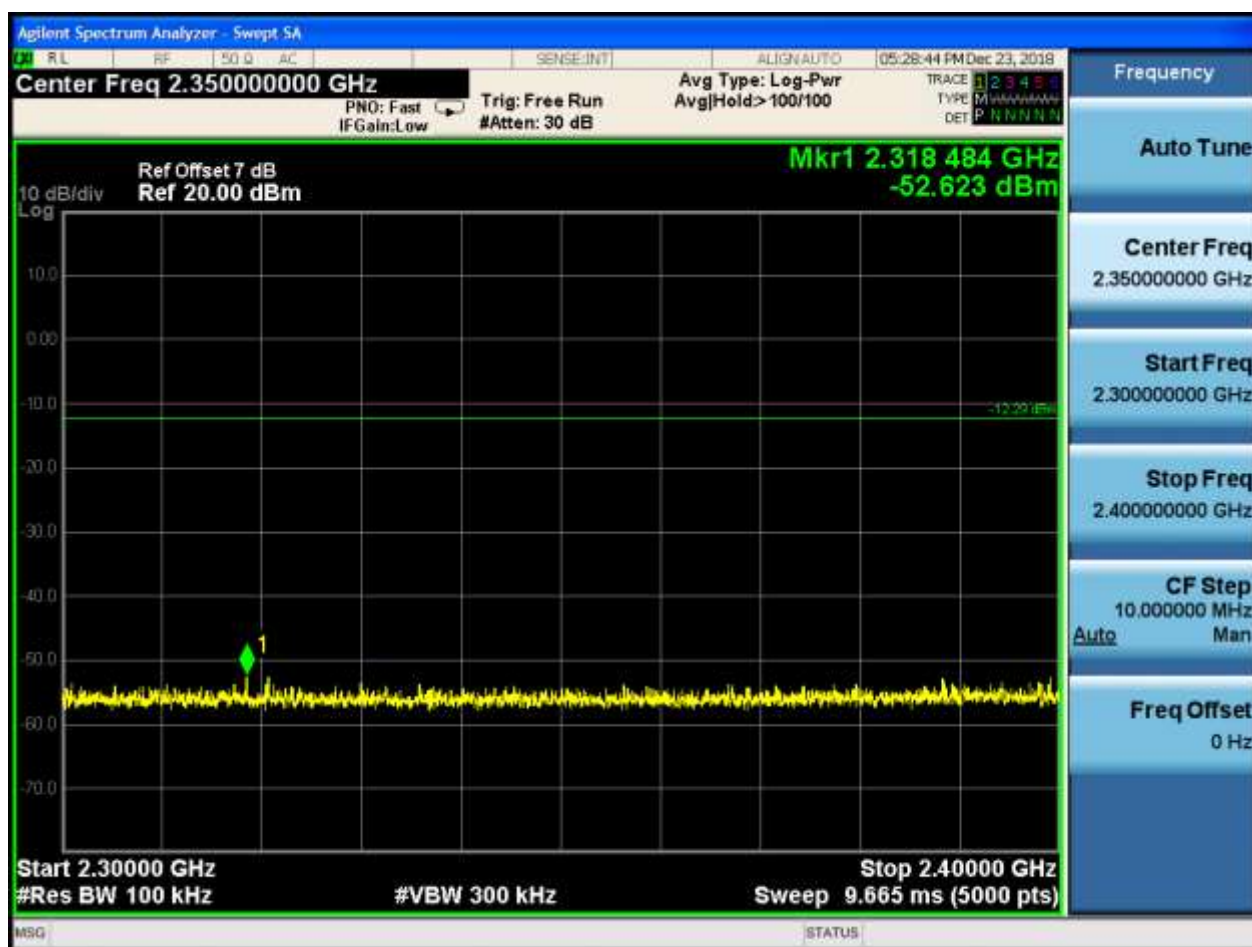


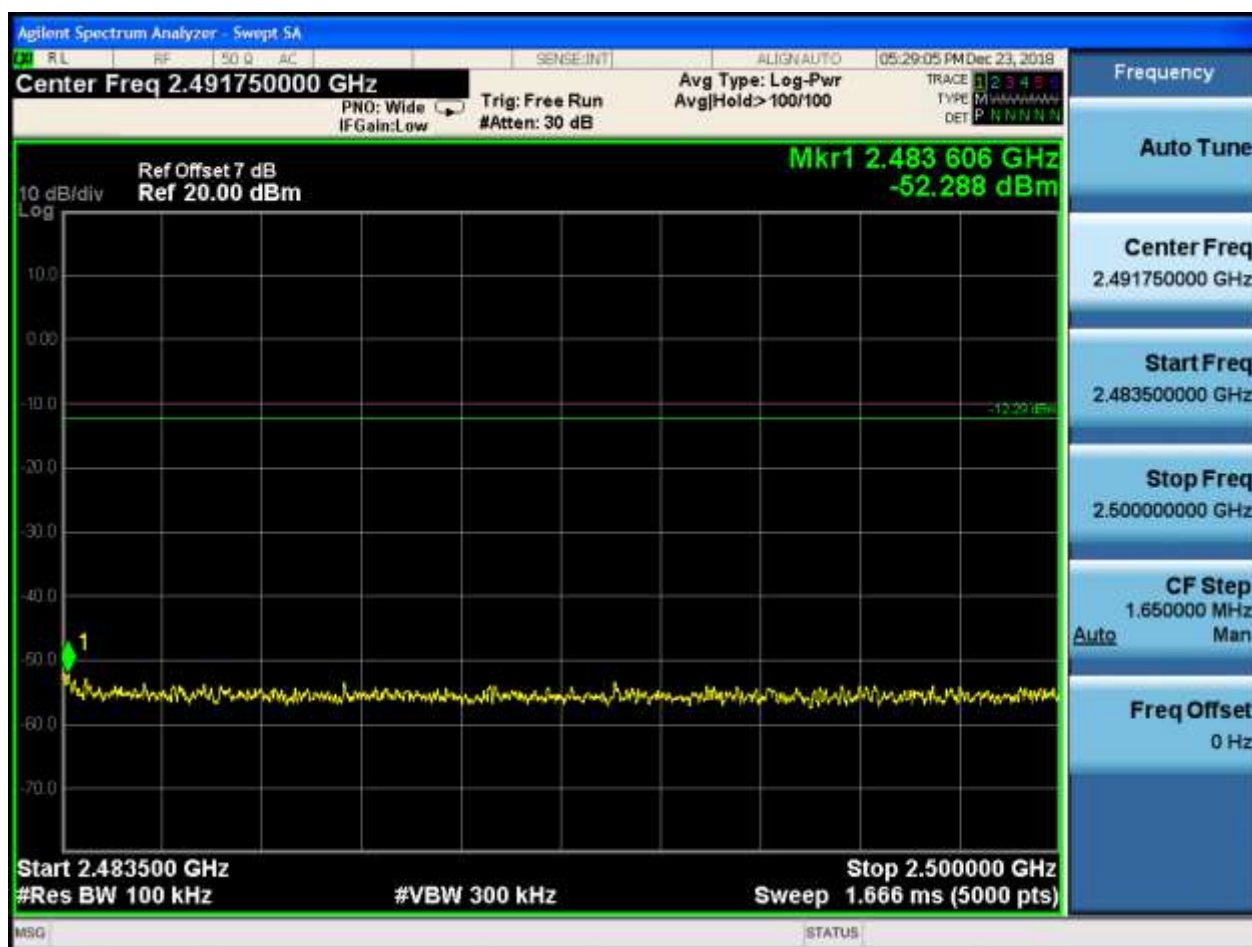
2.1.6 Puw











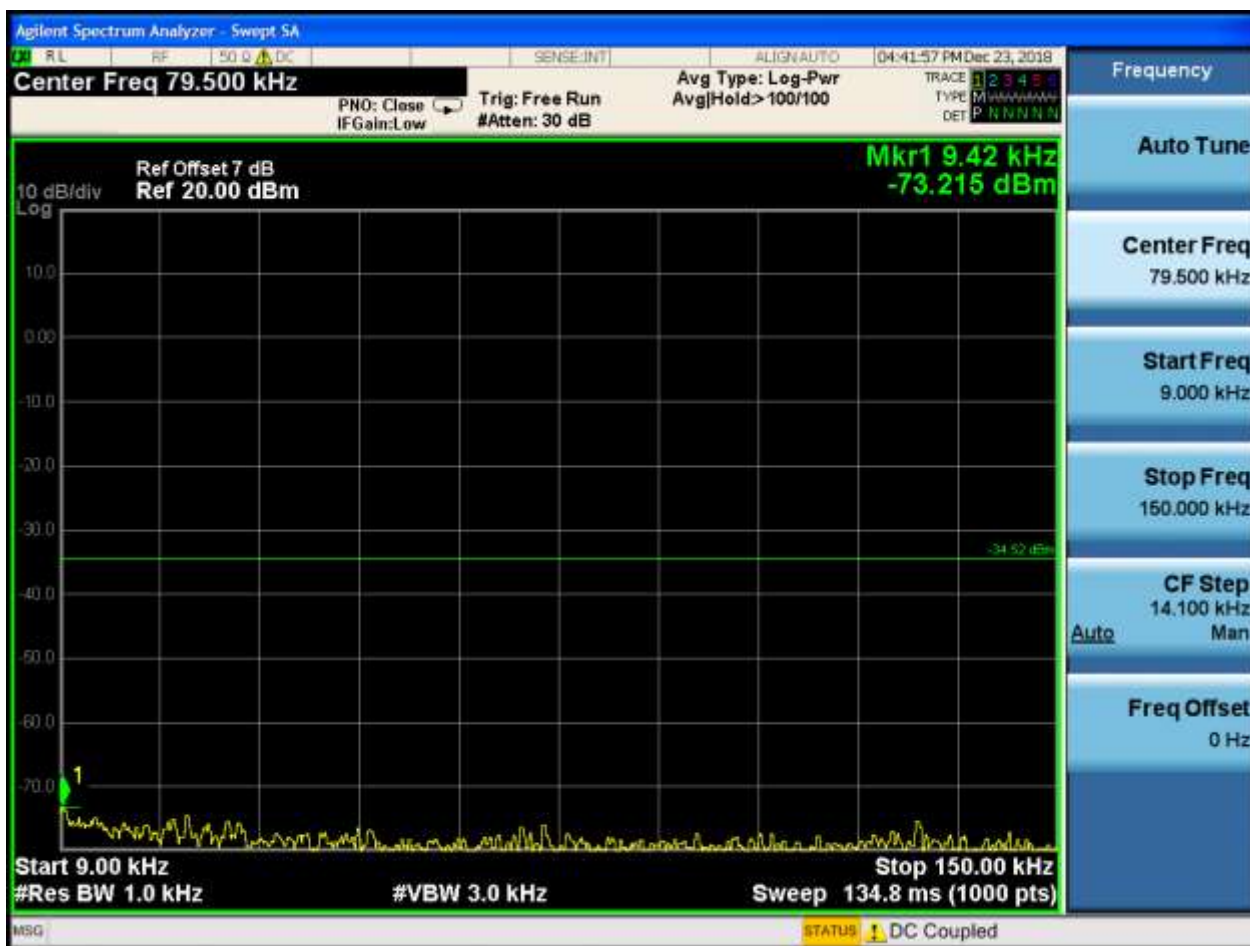


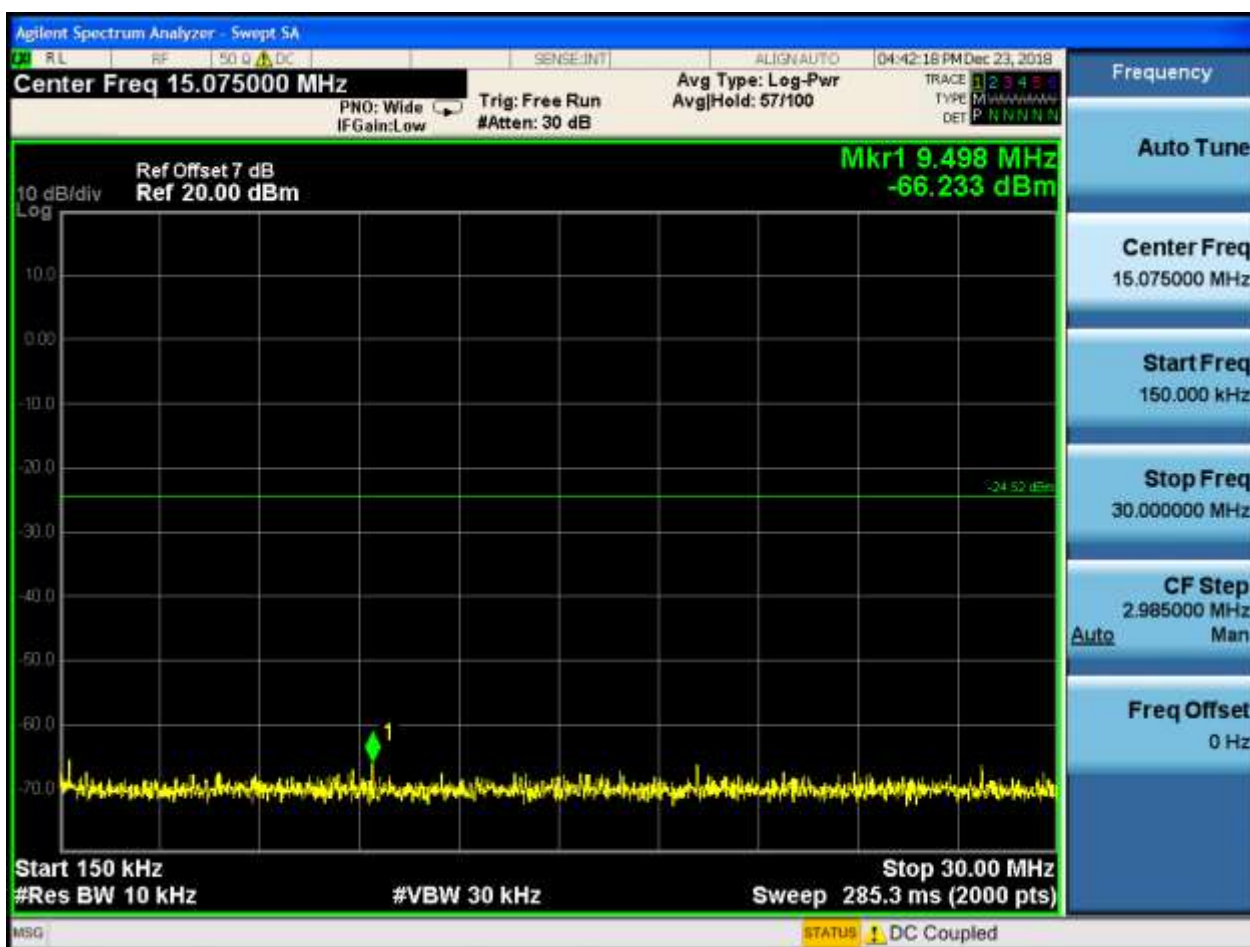
2.4 TM2_2DH5_Ch0

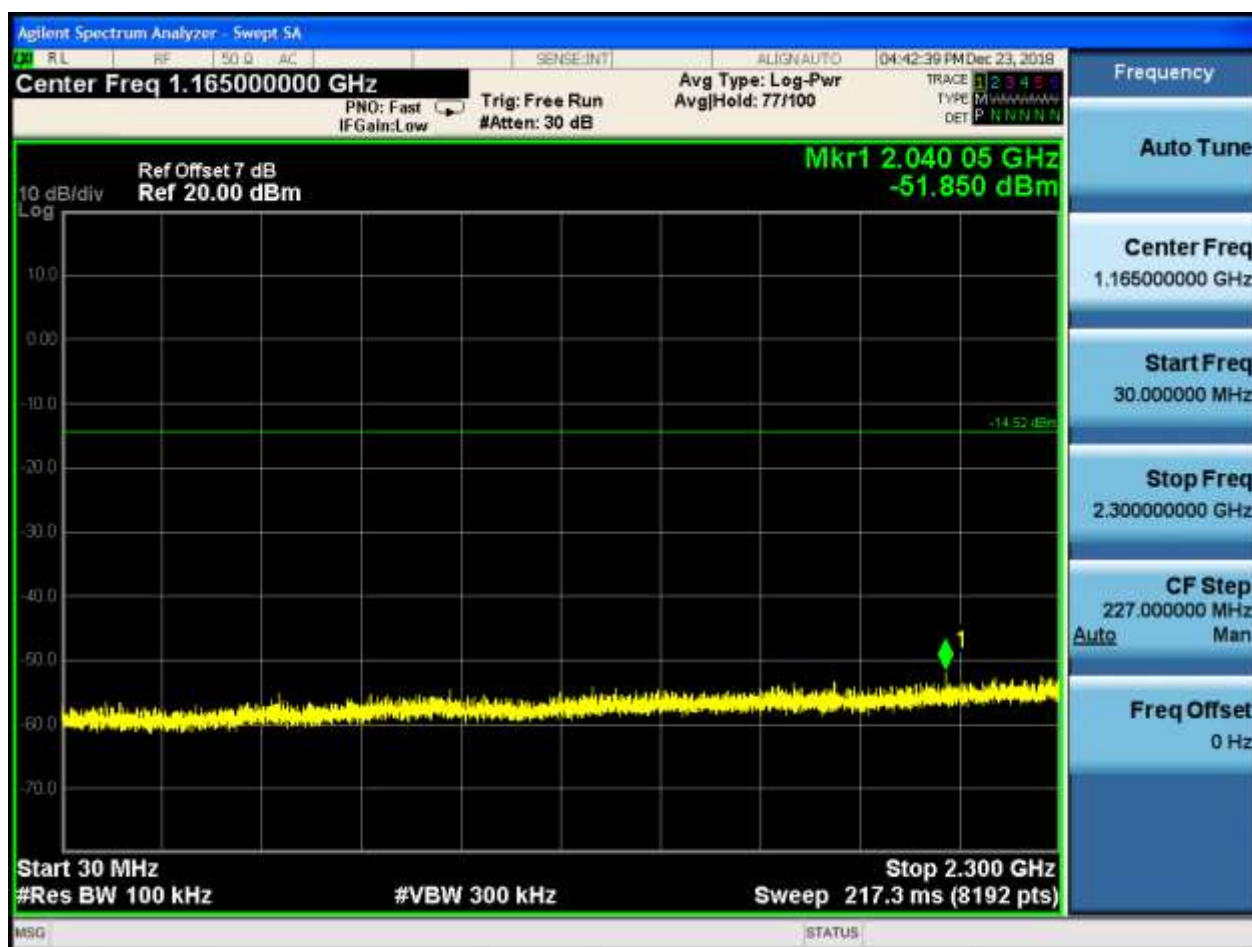
2.1.7 Pref

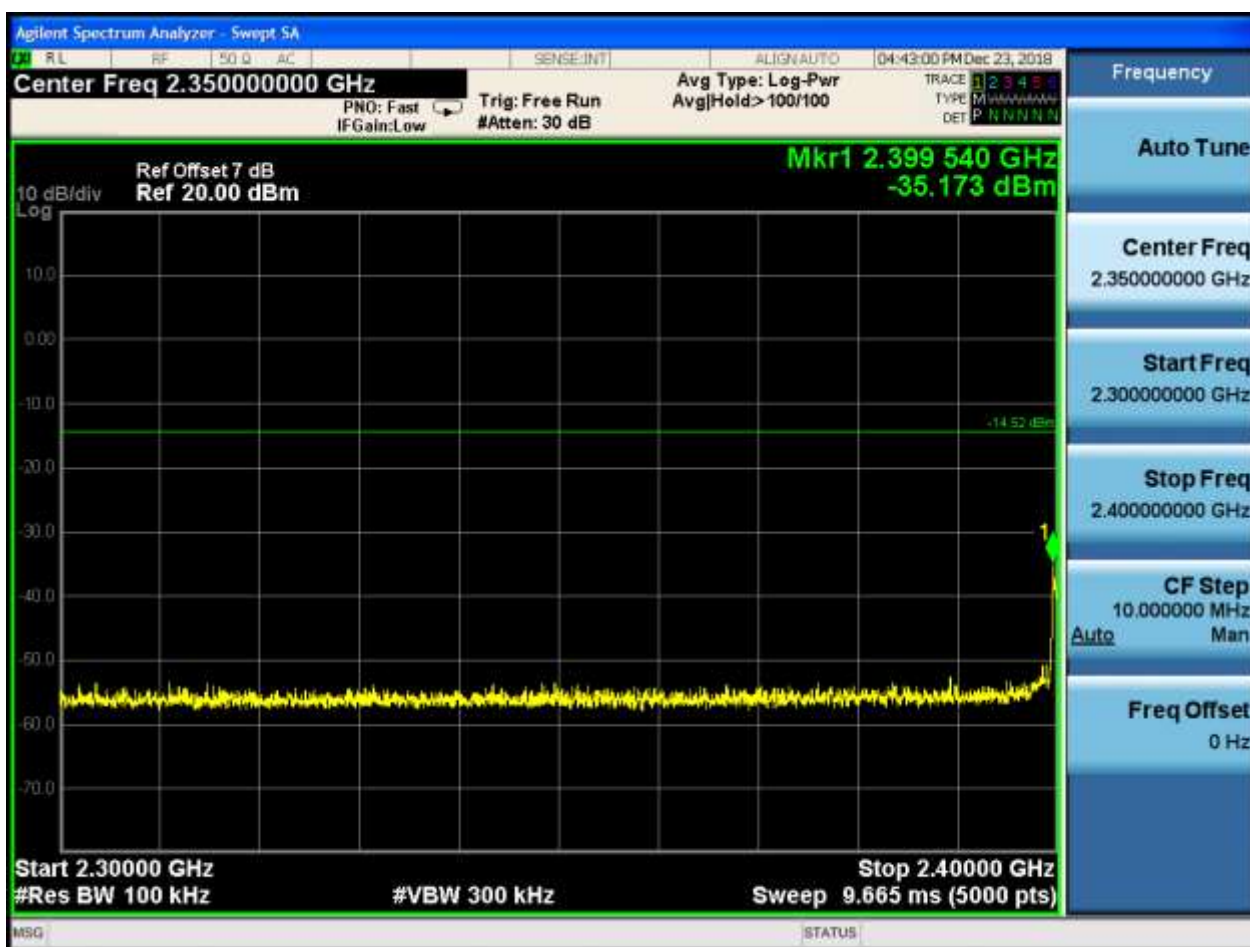


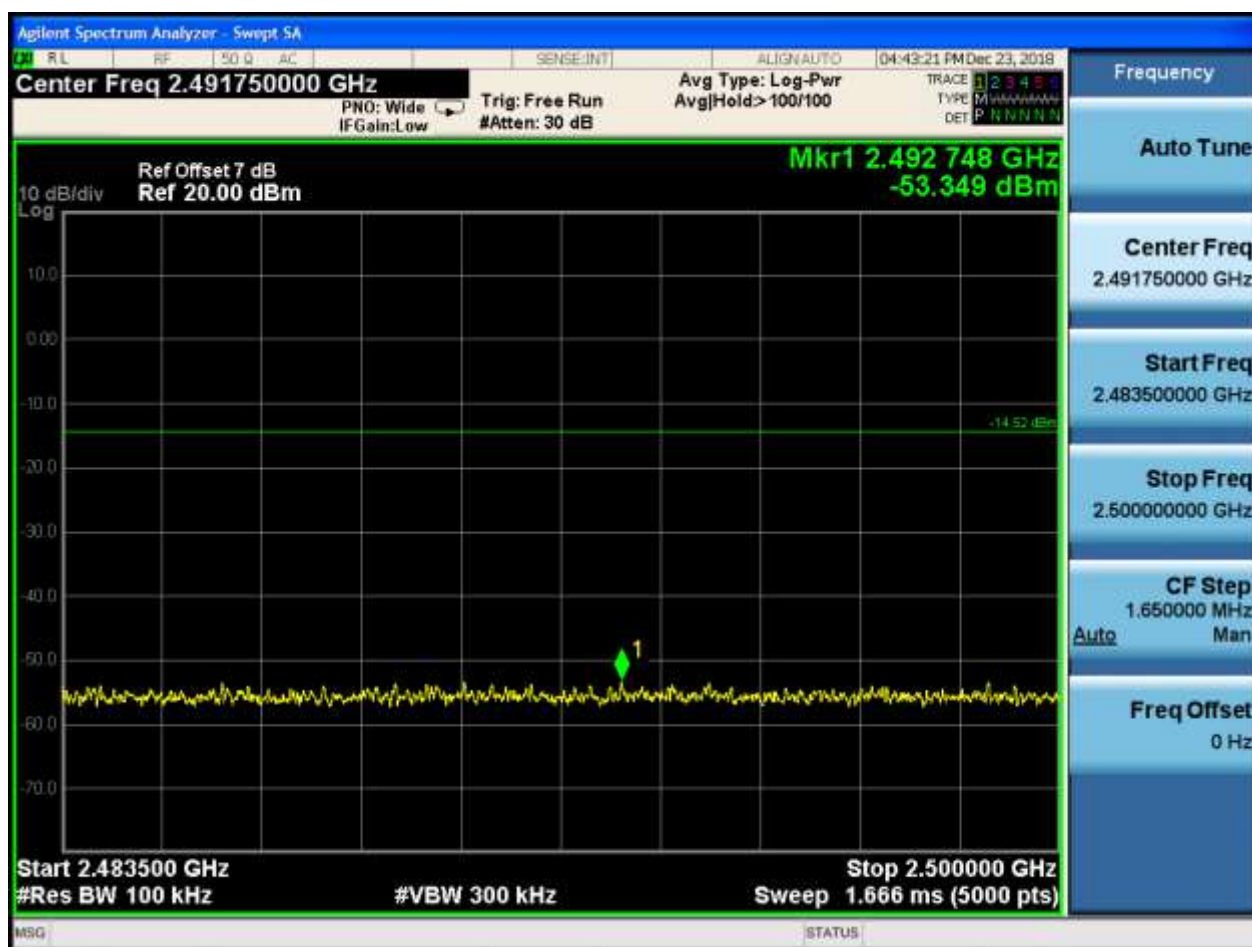
2.1.8 Puw













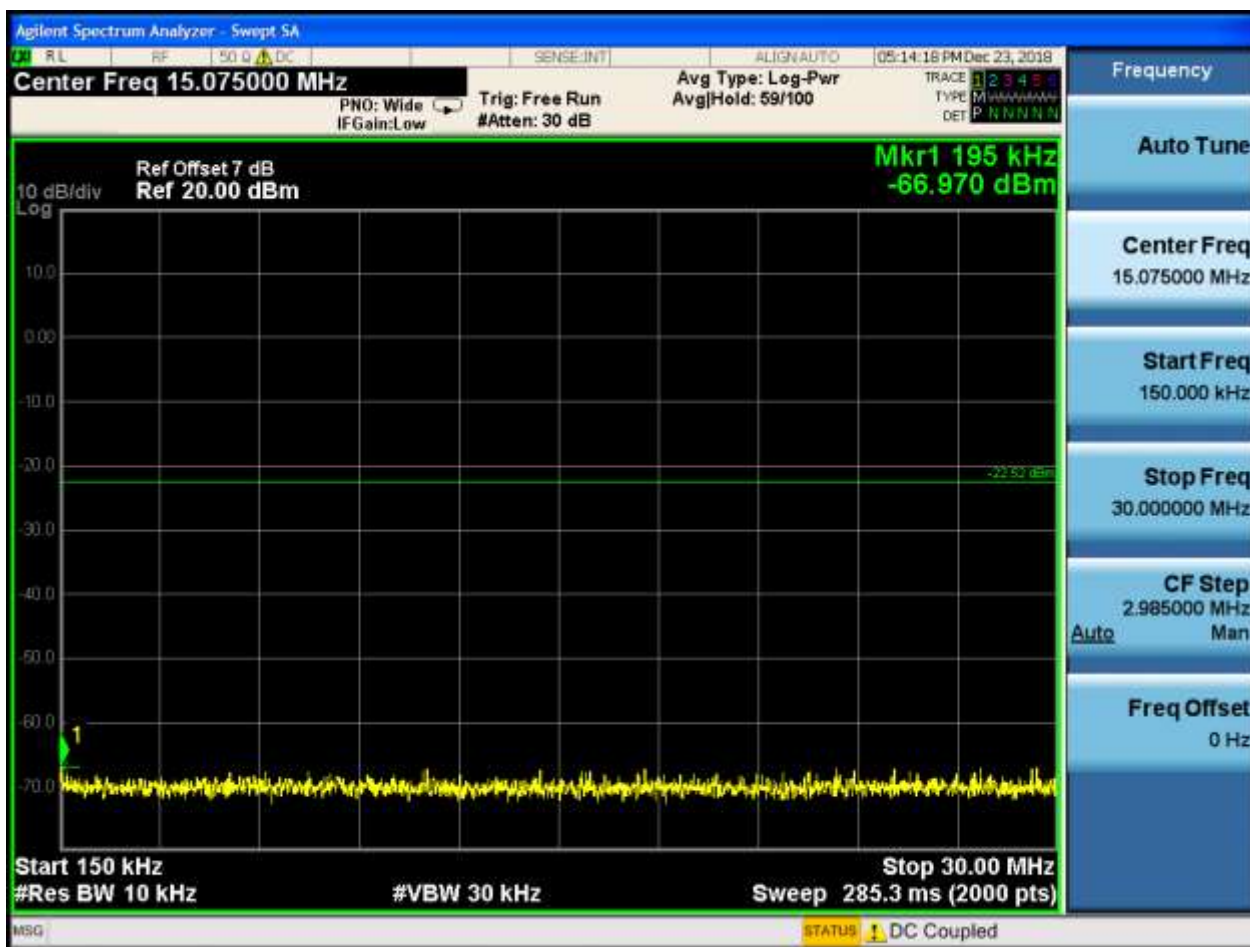
2.5 TM2_2DH5_Ch39

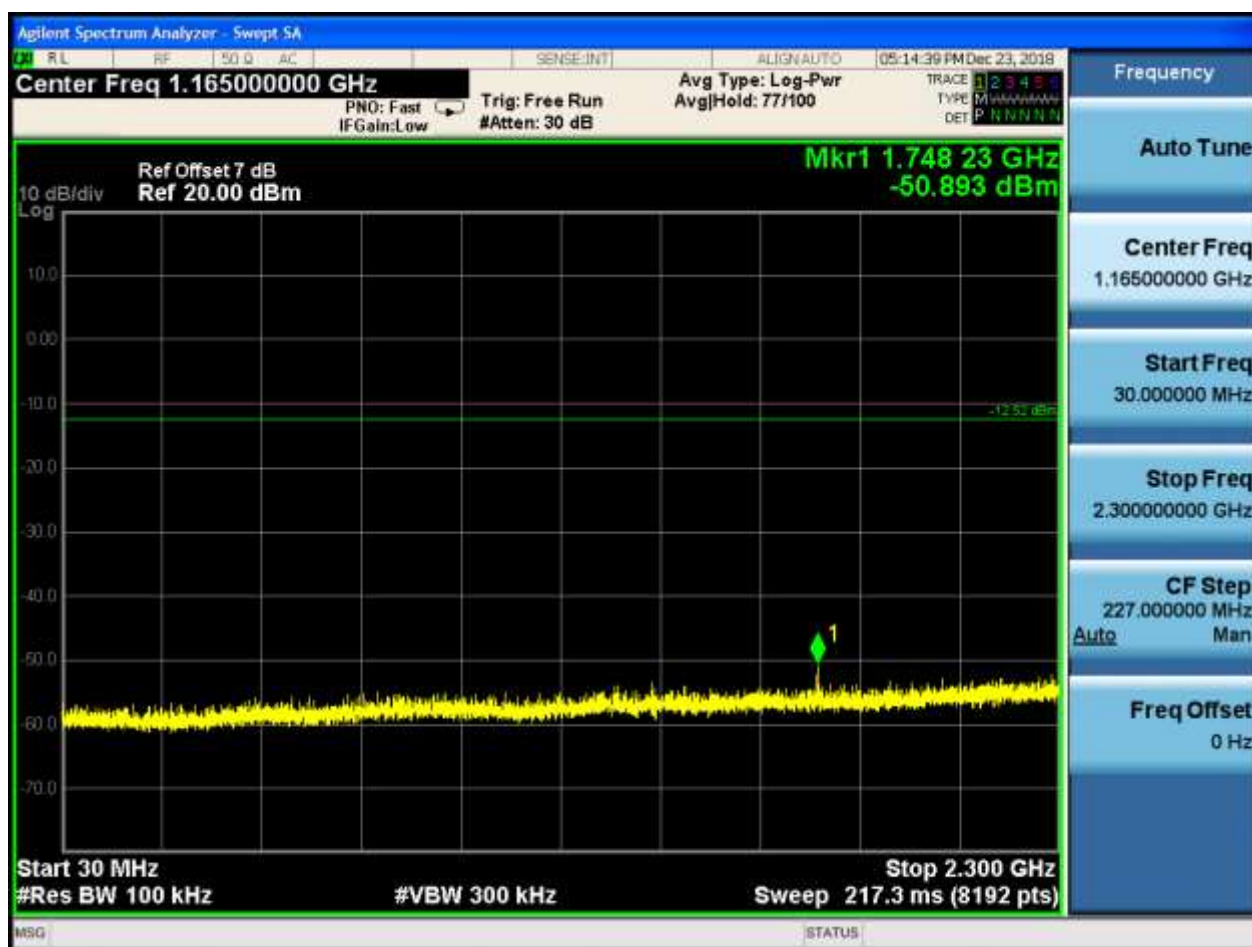
2.1.9 Pref

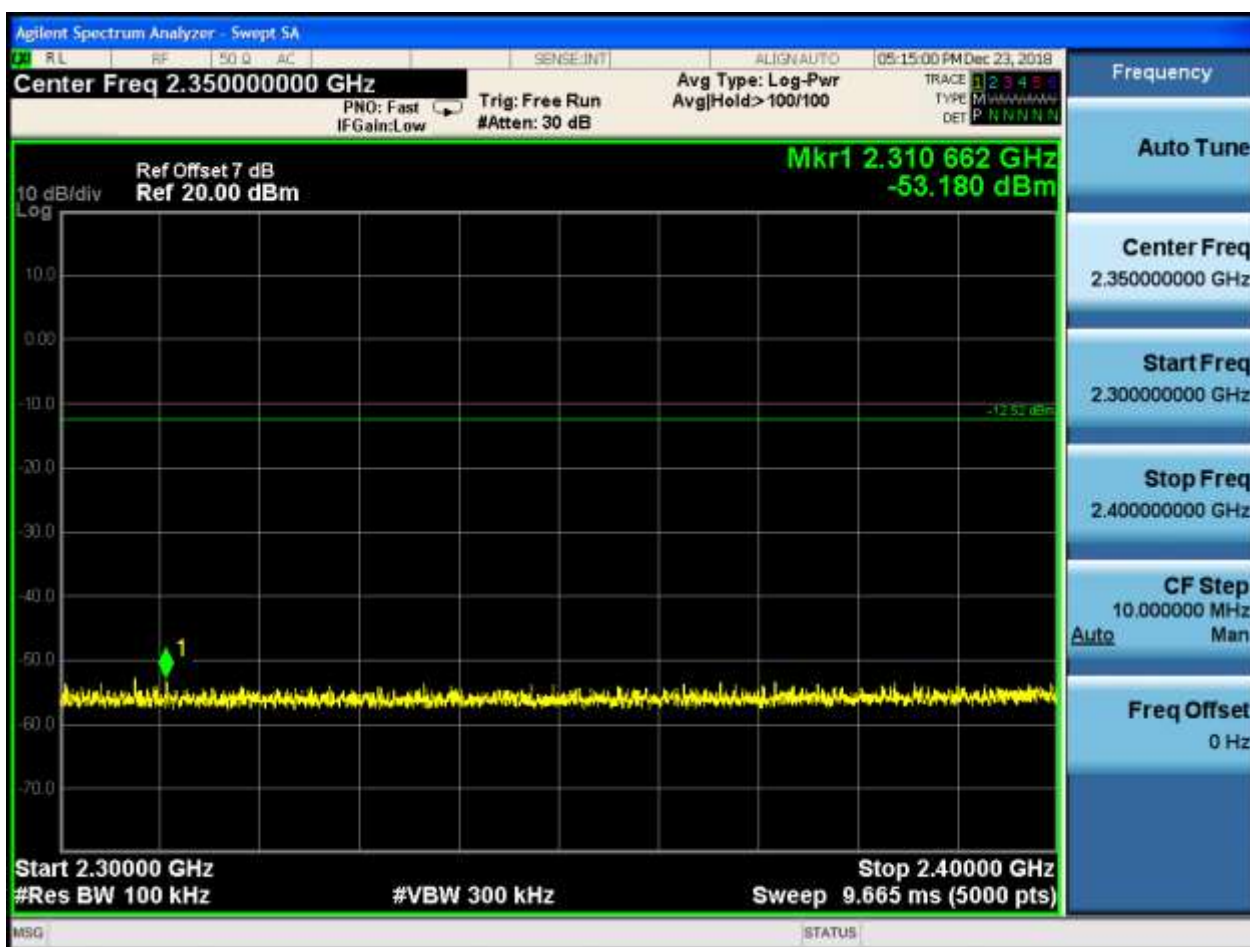


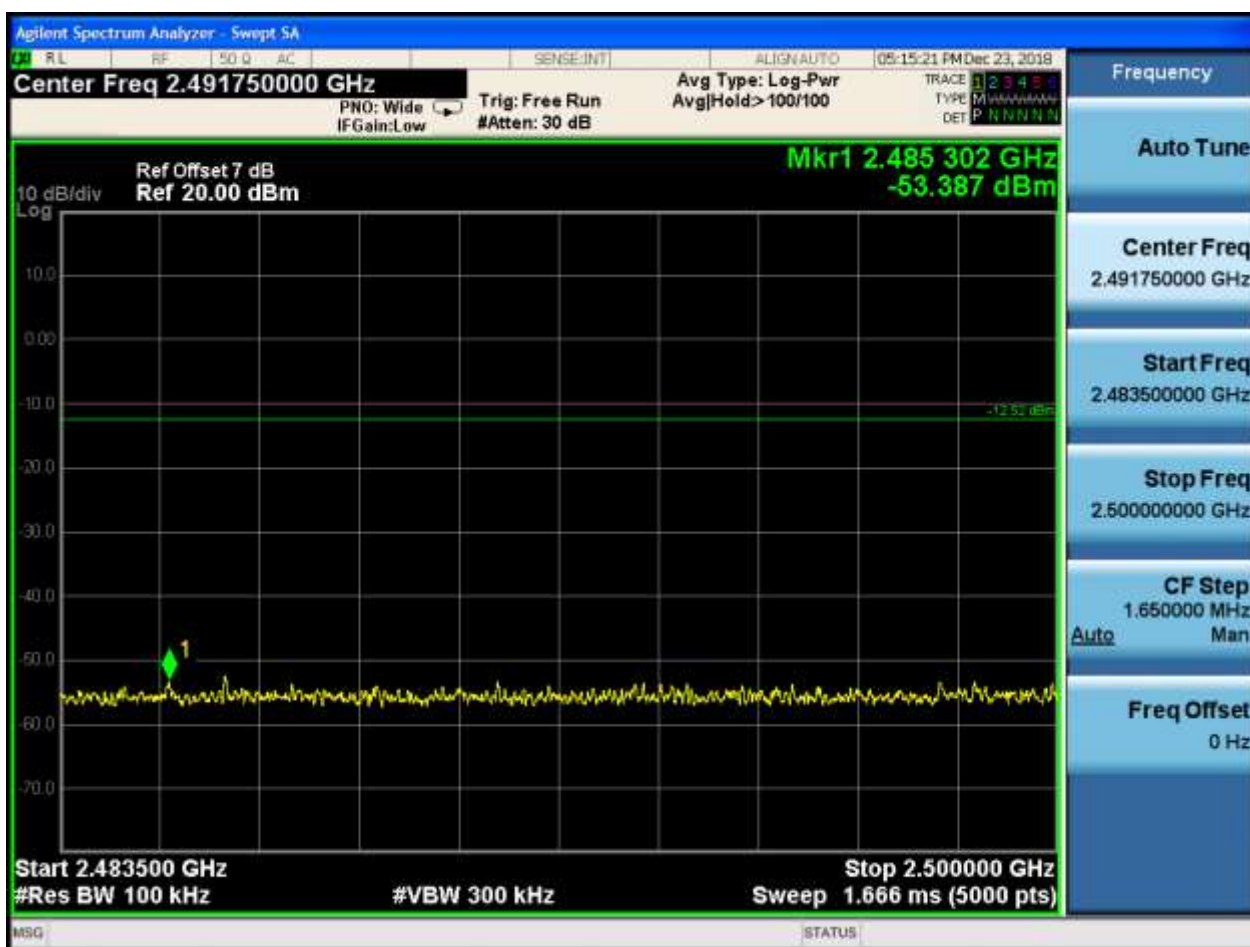
2.1.10 Puw













2.6 TM2_2DH5_Ch78

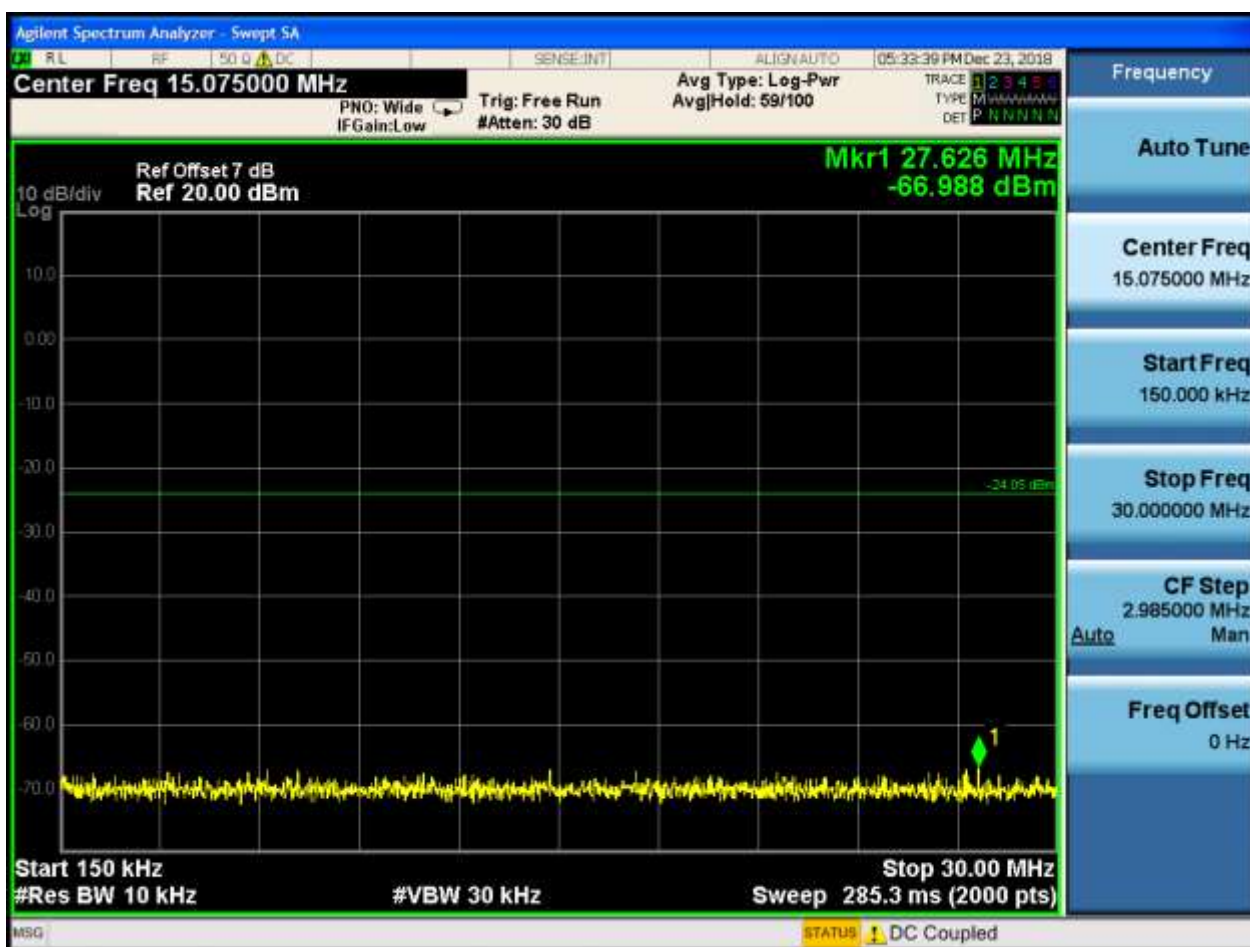
2.1.11 Pref



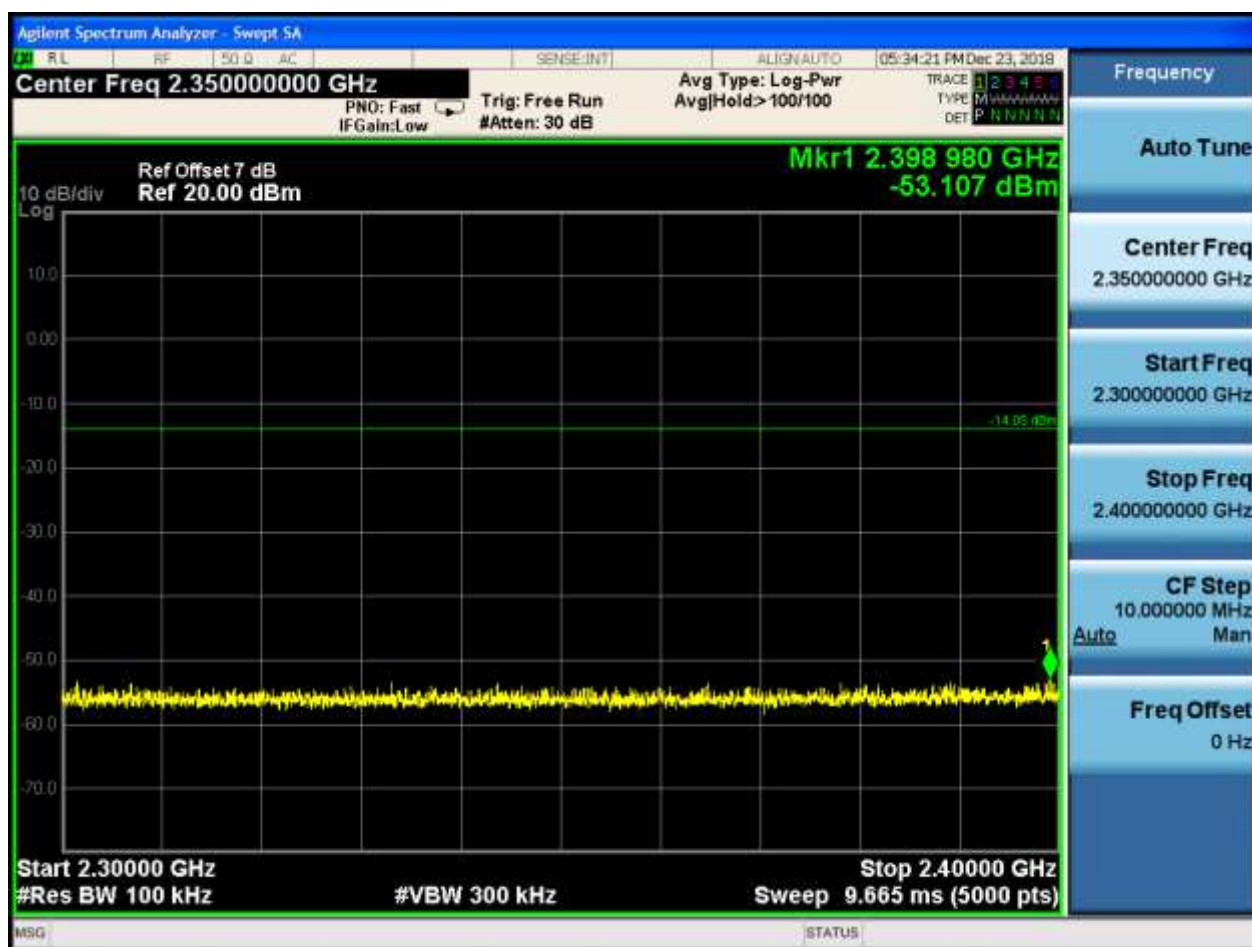


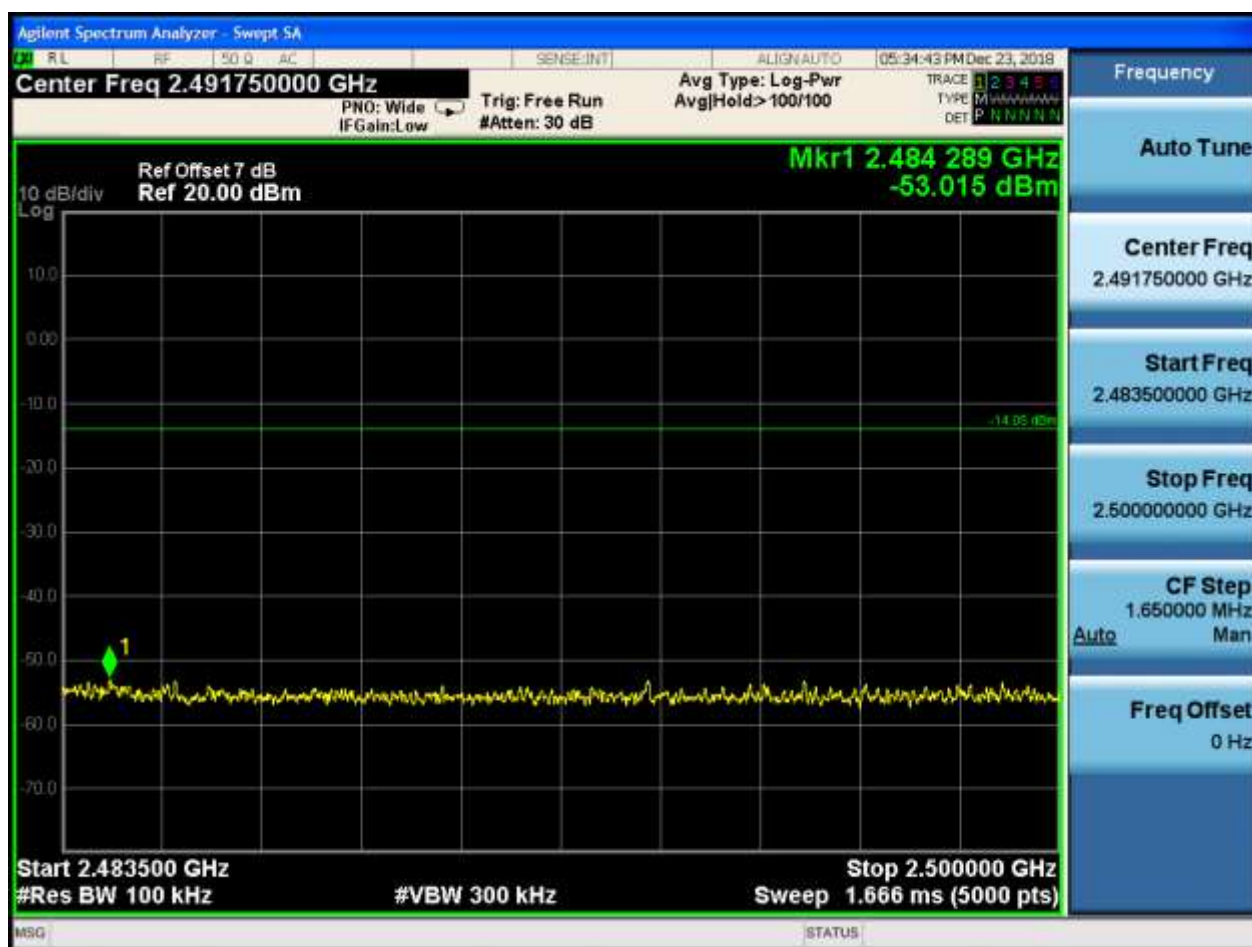
2.1.12 Puw













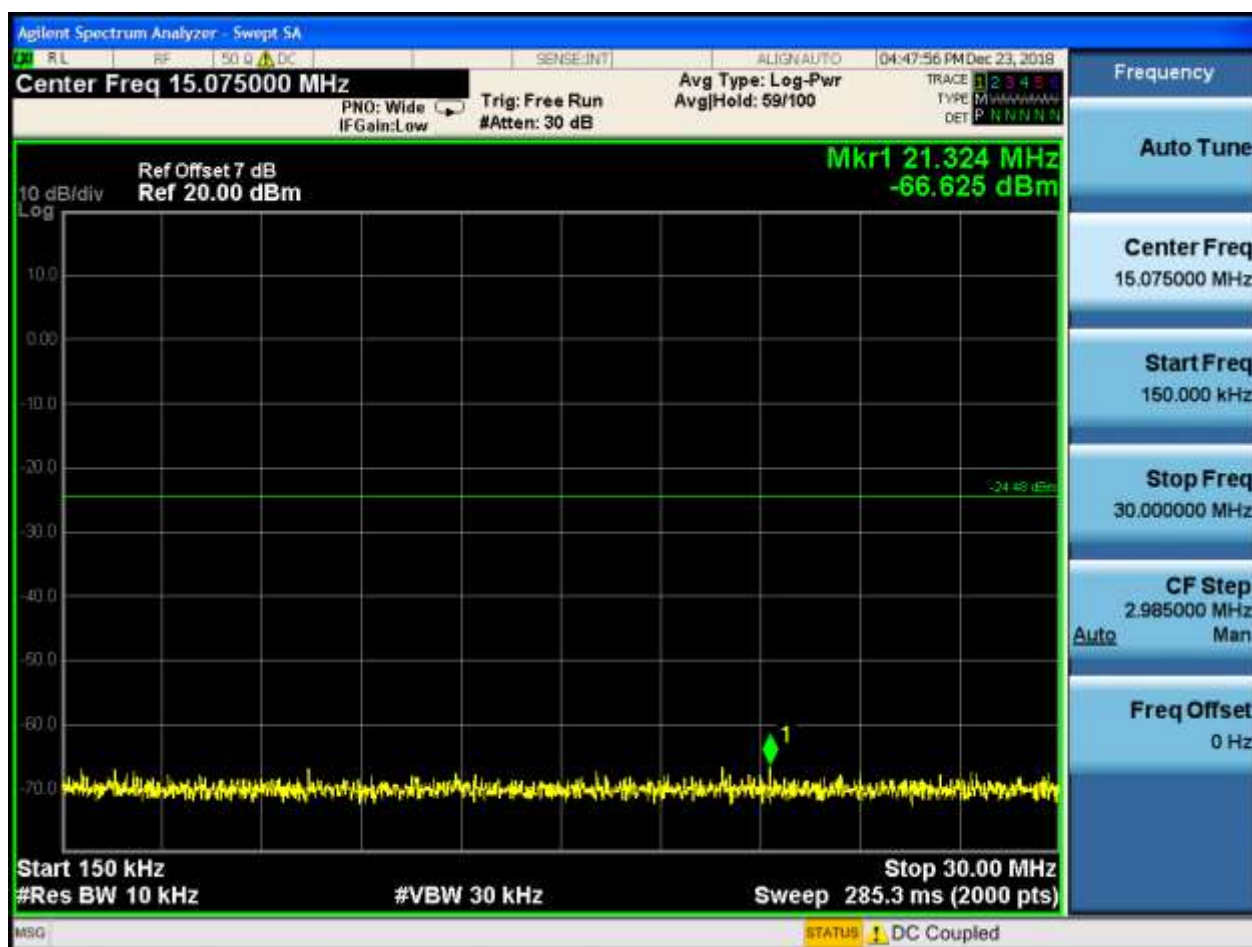
2.7 TM3_3DH5_Ch0

2.1.13 Pref

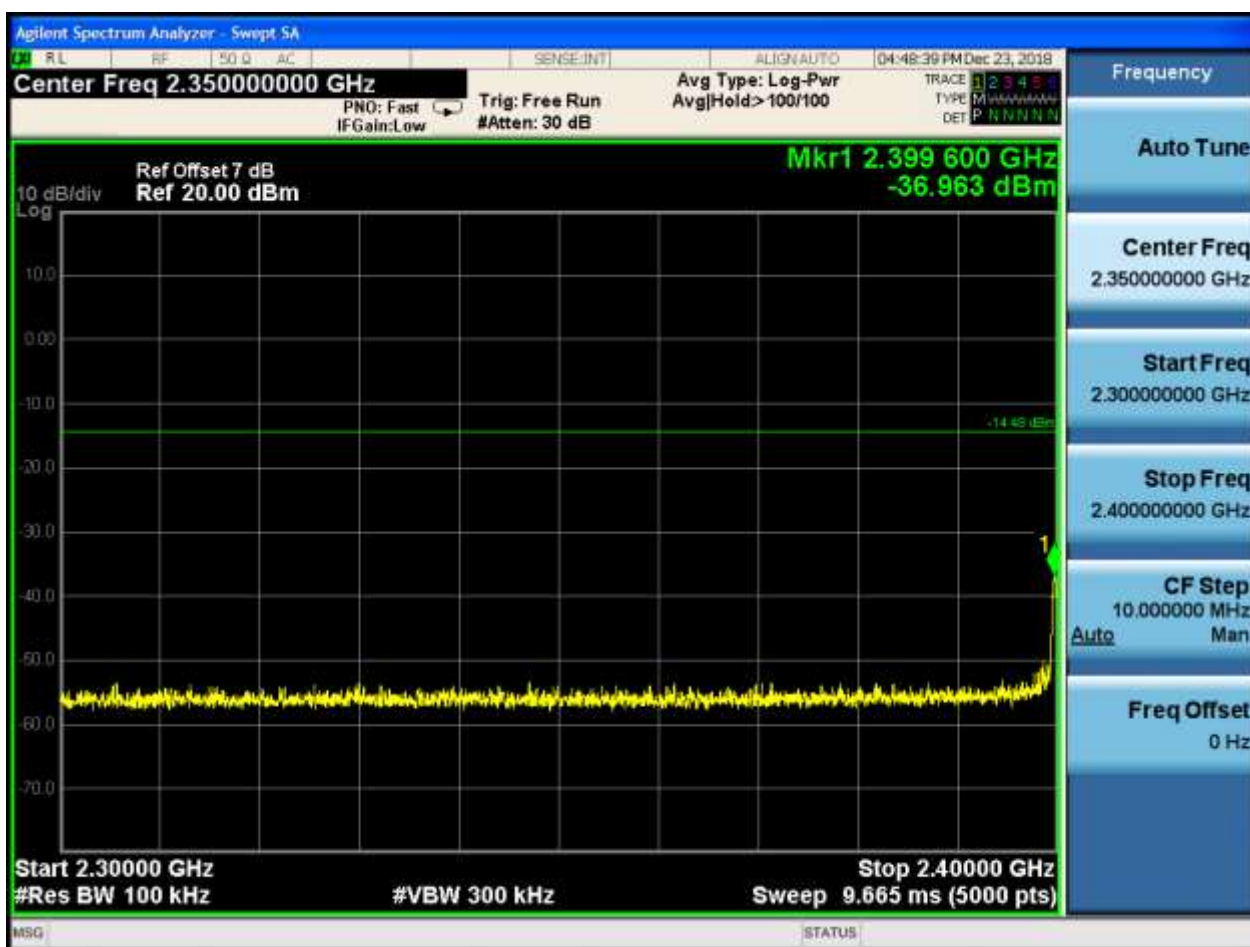


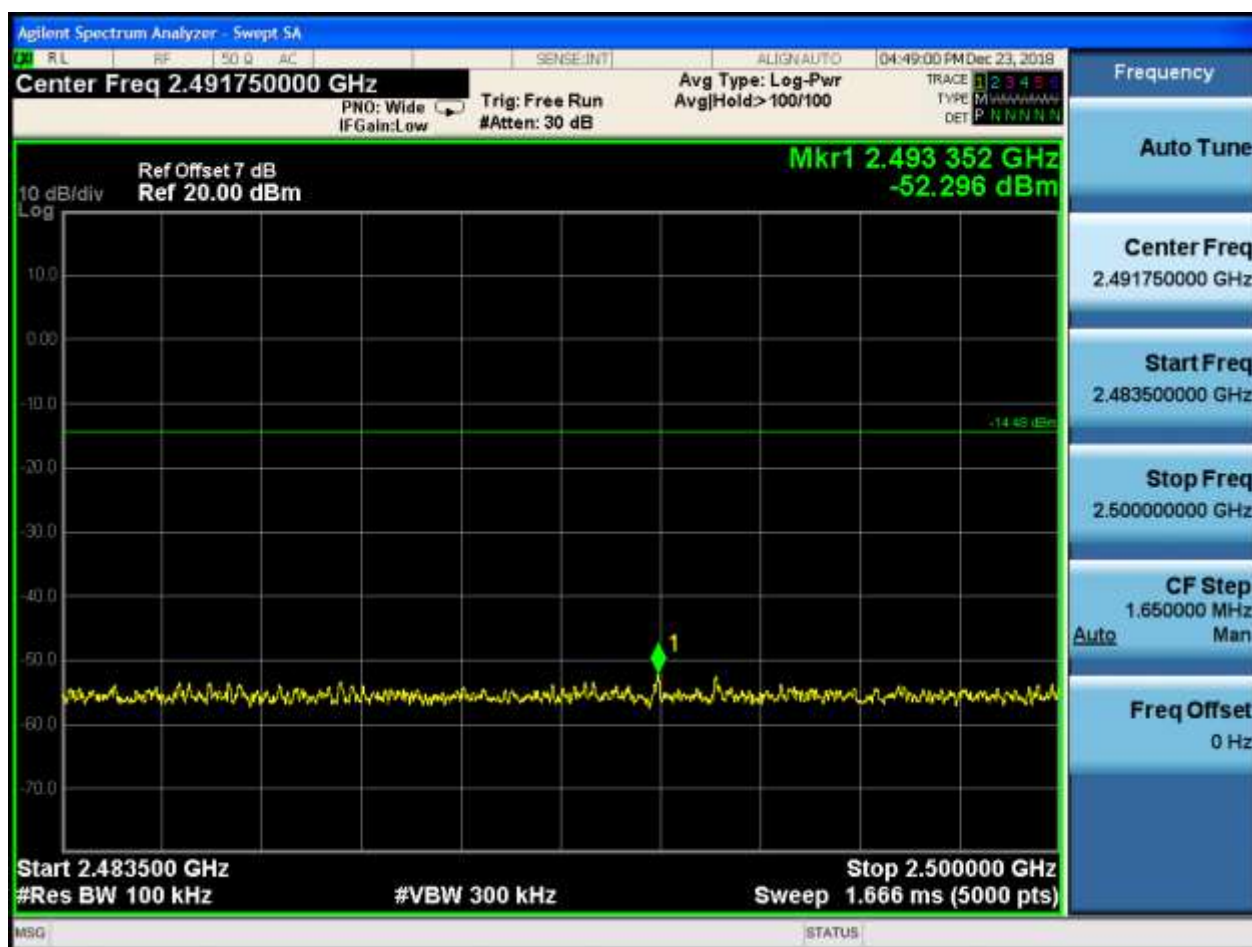
2.1.14 Puw















2.8 TM3_3DH5_Ch39

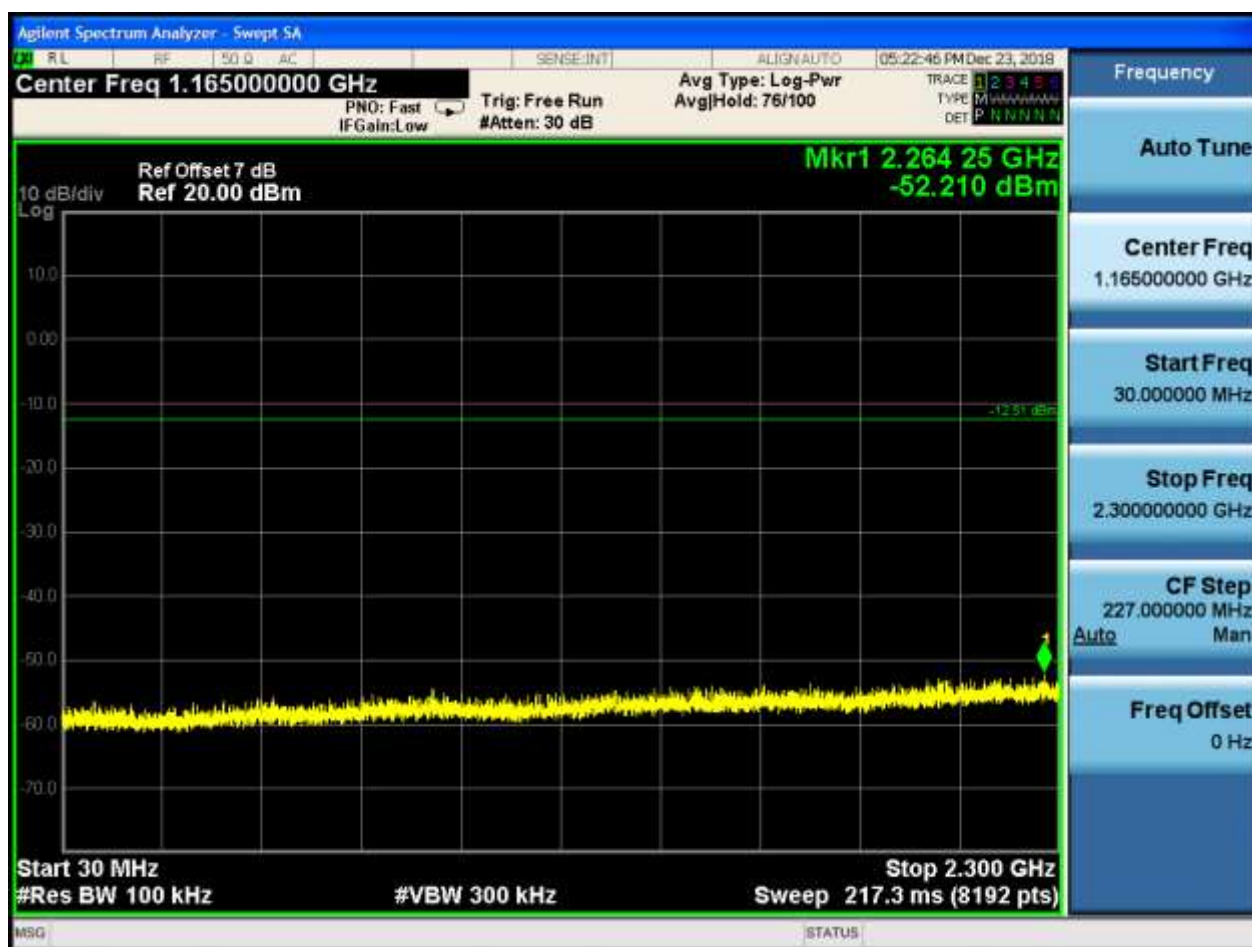
2.1.15 Pref

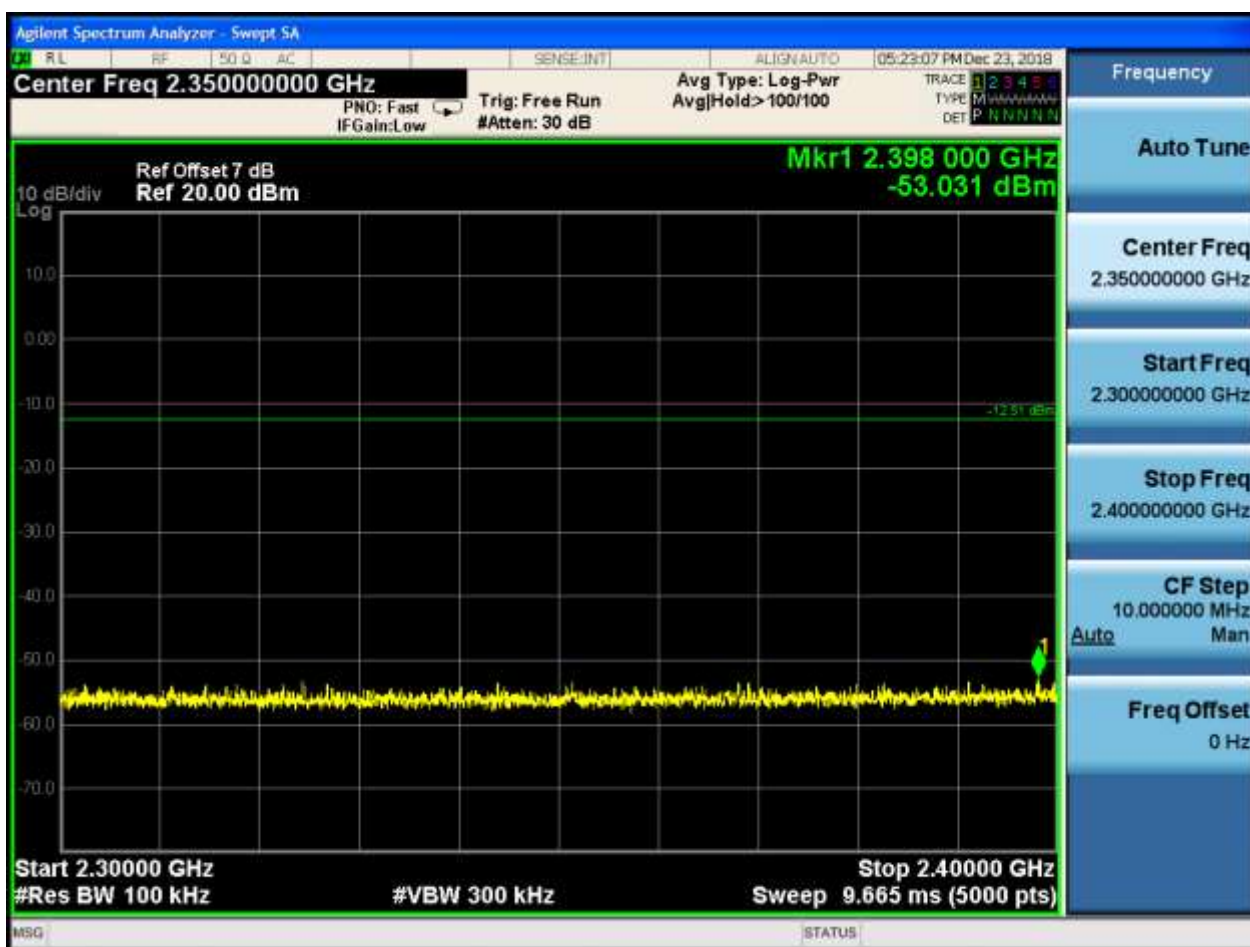


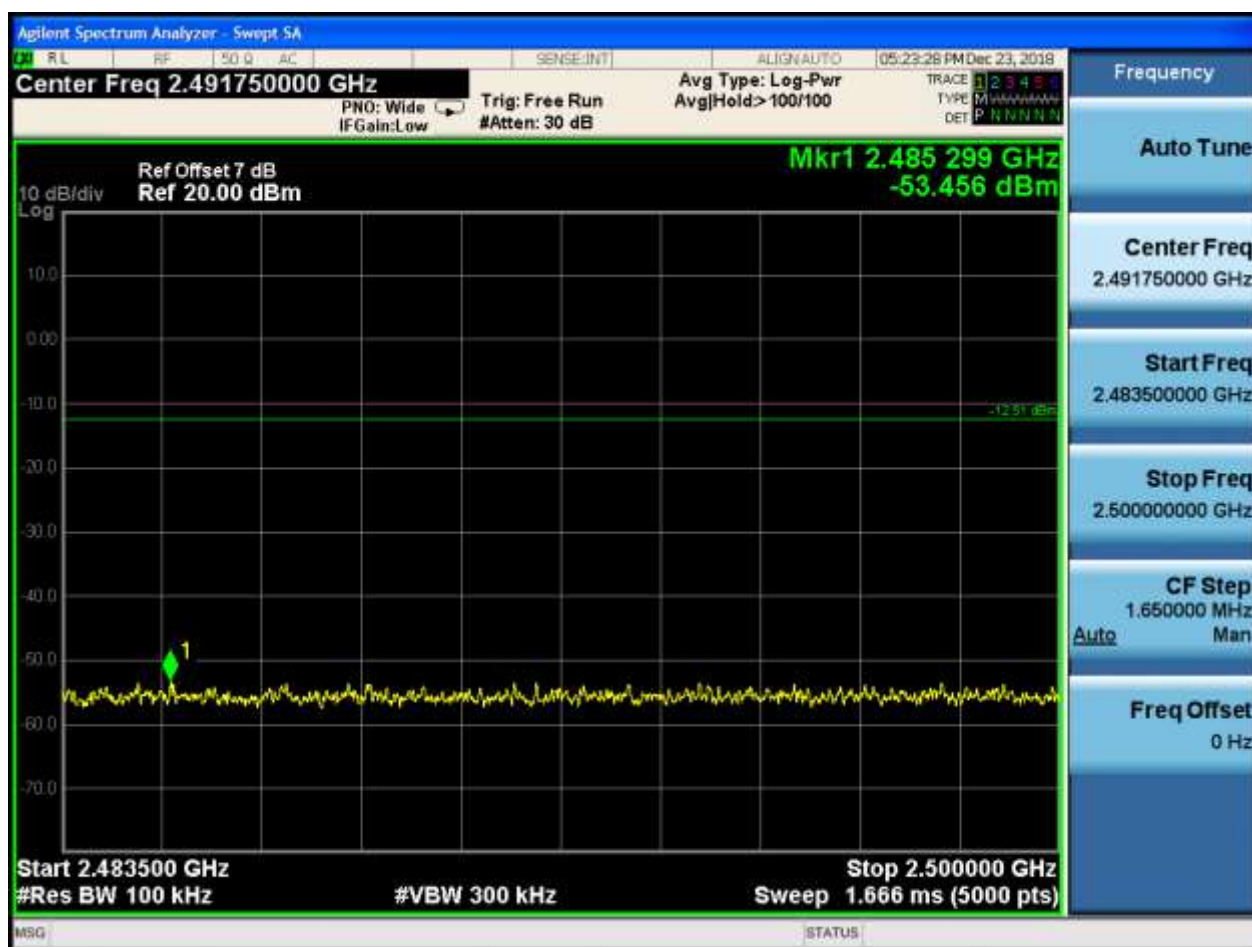
2.1.16 Puw















2.9 TM3_3DH5_Ch78

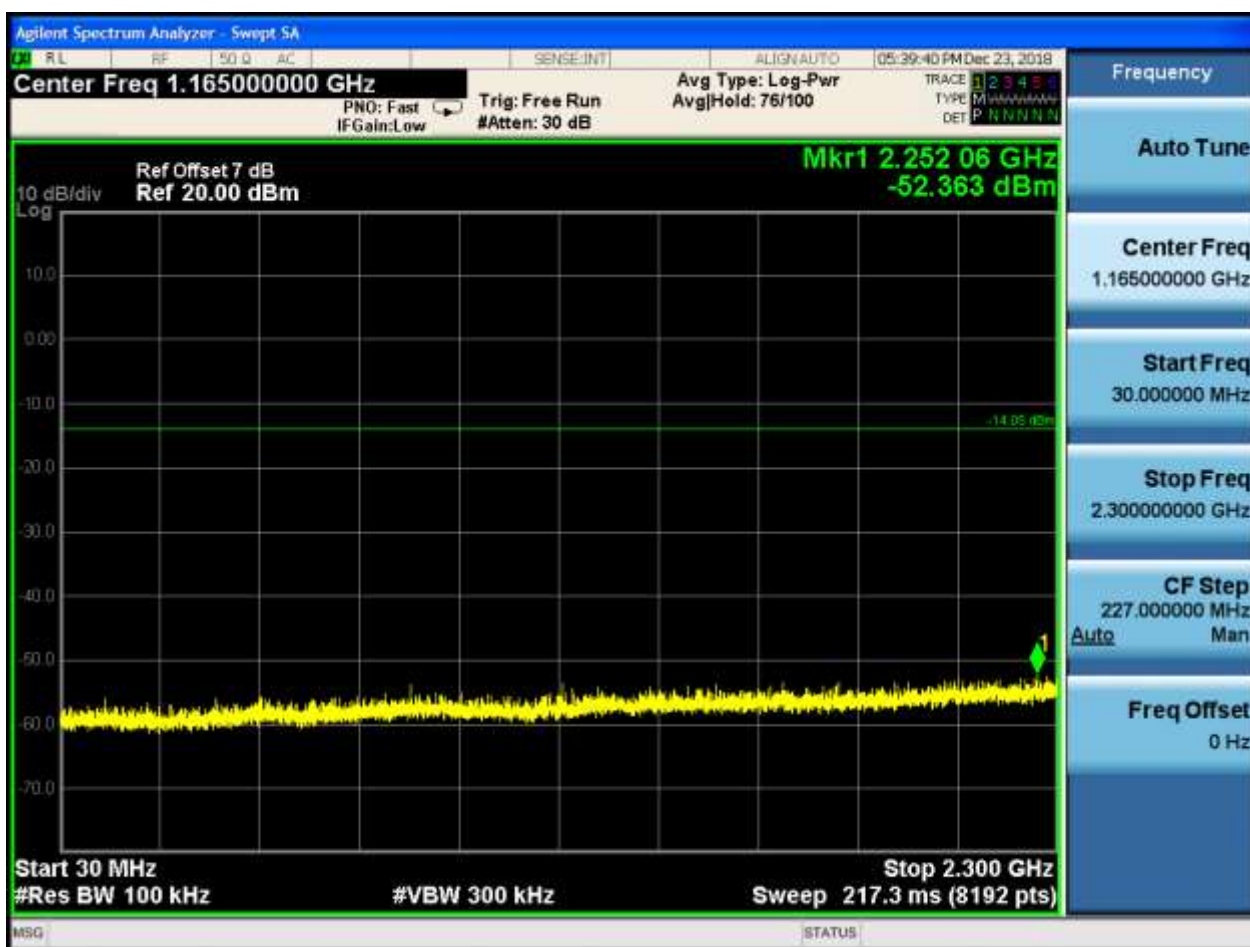
2.1.17 Pref

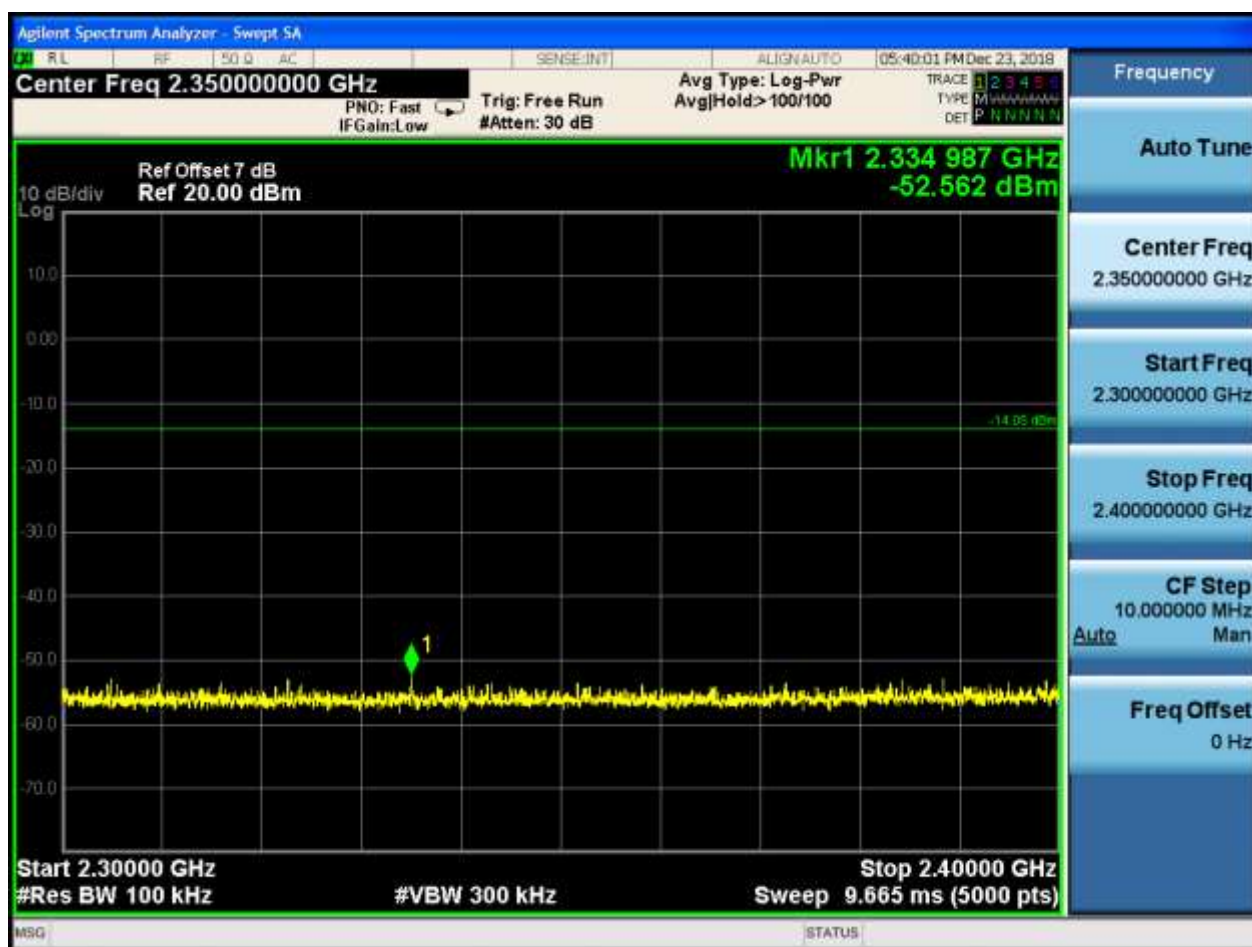


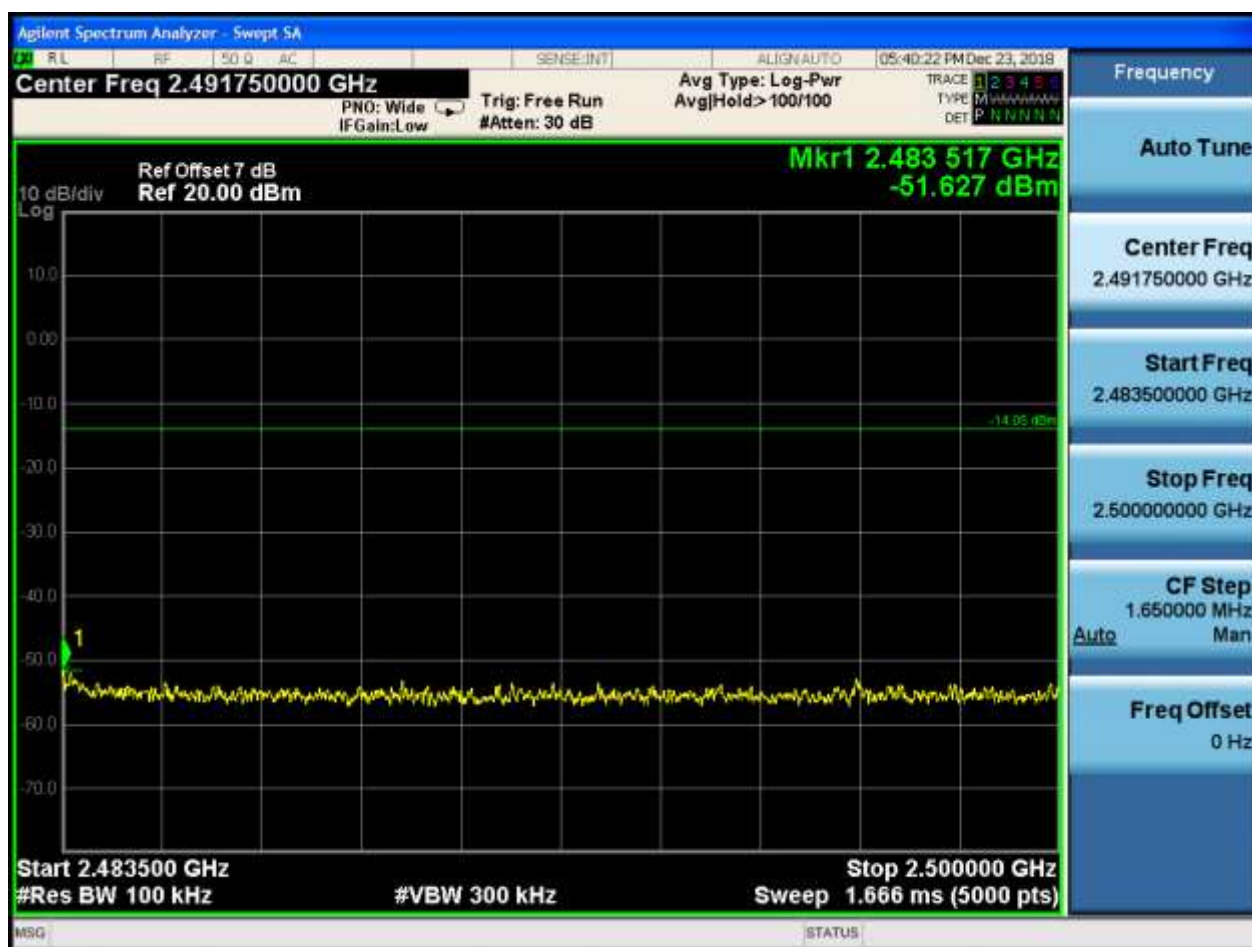
2.1.18 Puw













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 5 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”.

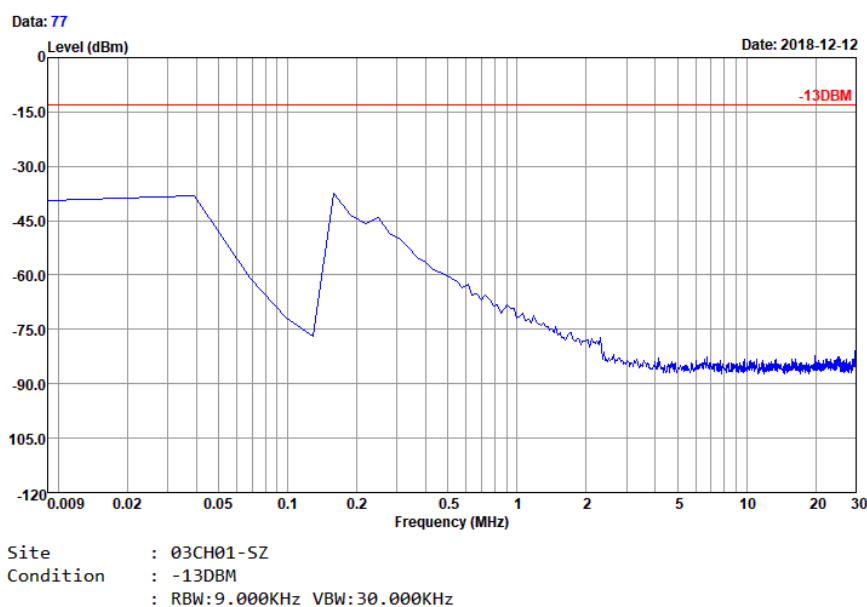
Test Range	EUT Conf.	Emissions	Verdict
30 MHz to 1 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
1 GHz to 3 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
	TM1_DH5_Ch78 (Worst Conf.)	< Limit	Pass
3 GHz to 18 GHz	TM1_DH5_Ch0 (Worse Conf.)	< Limit	Pass
18 GHz to 26.5 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass

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”

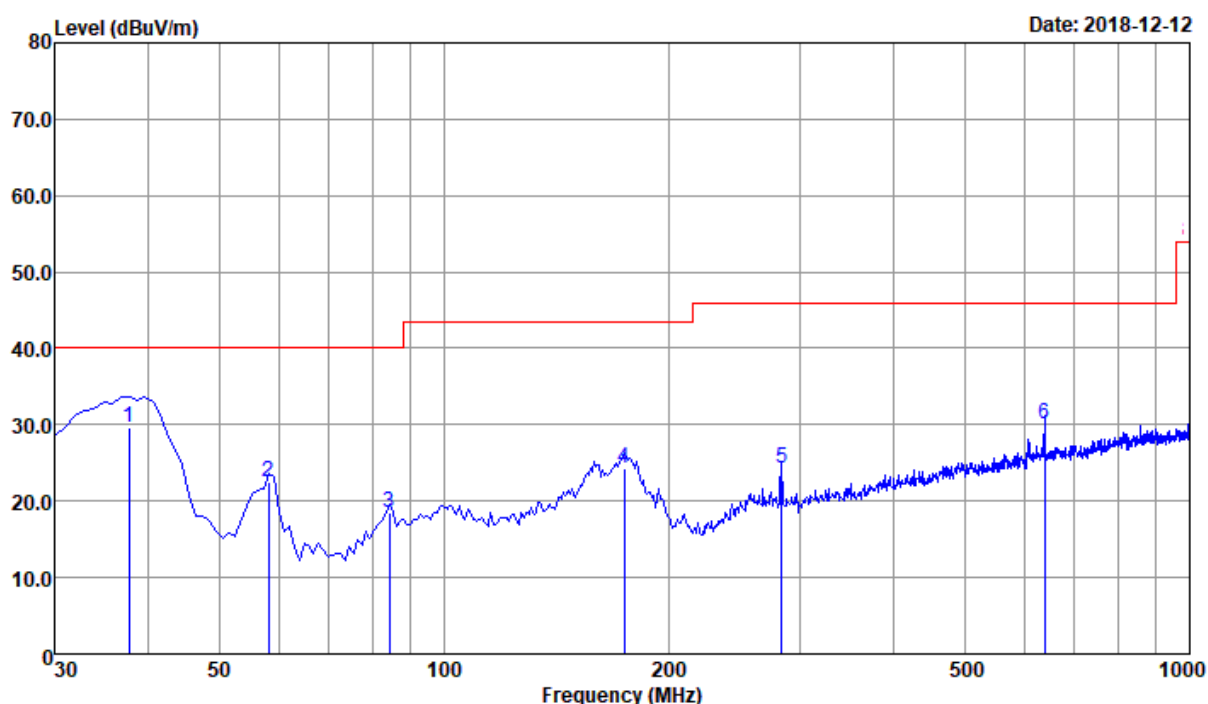
Note 1: The test results and plot for testing range of “9 KHz to 30 MHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.



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).



	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 pp	37.76	29.68	-10.32	40.00	41.26	19.76	0.36	31.70	QP
2	58.13	22.57	-17.43	40.00	40.94	12.74	0.49	31.60	QP
3	84.32	18.58	-21.42	40.00	35.74	13.62	0.72	31.50	QP
4	174.53	24.25	-19.25	43.50	38.66	15.43	1.45	31.29	QP
5	283.17	24.27	-21.73	46.00	34.41	18.94	1.98	31.06	QP
6	638.19	30.19	-15.81	46.00	33.62	24.65	3.12	31.20	QP

Note:

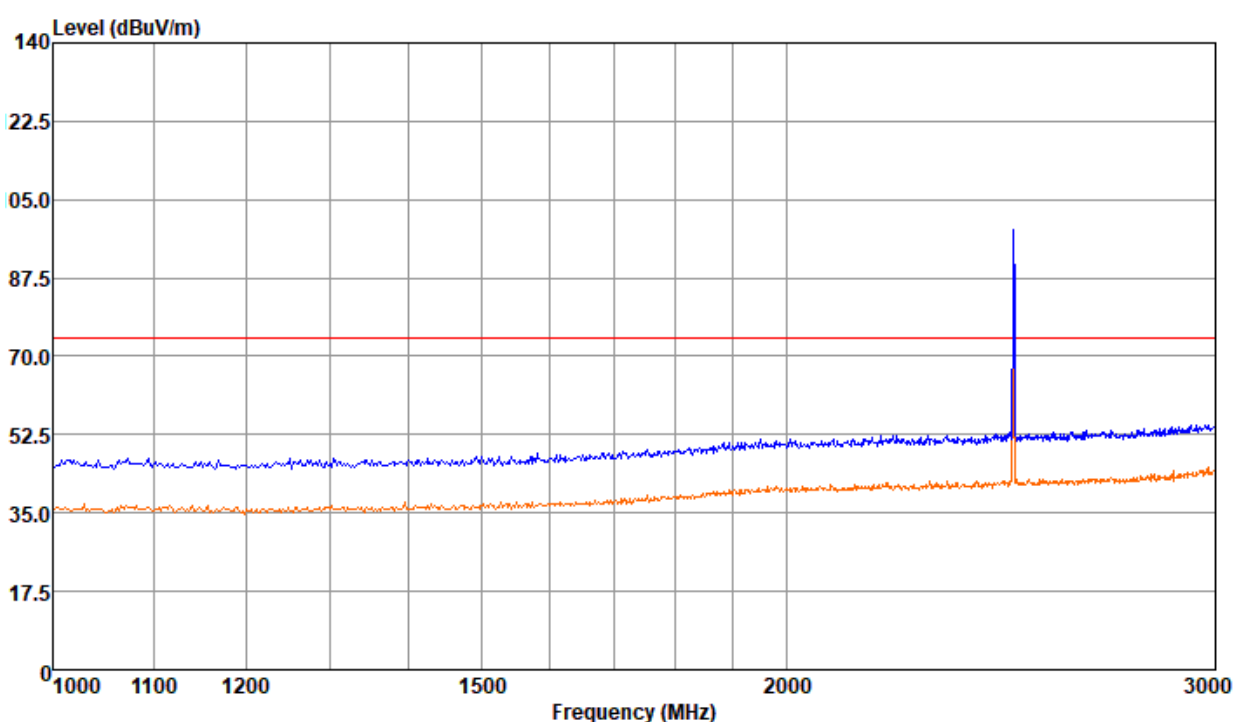
1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

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”

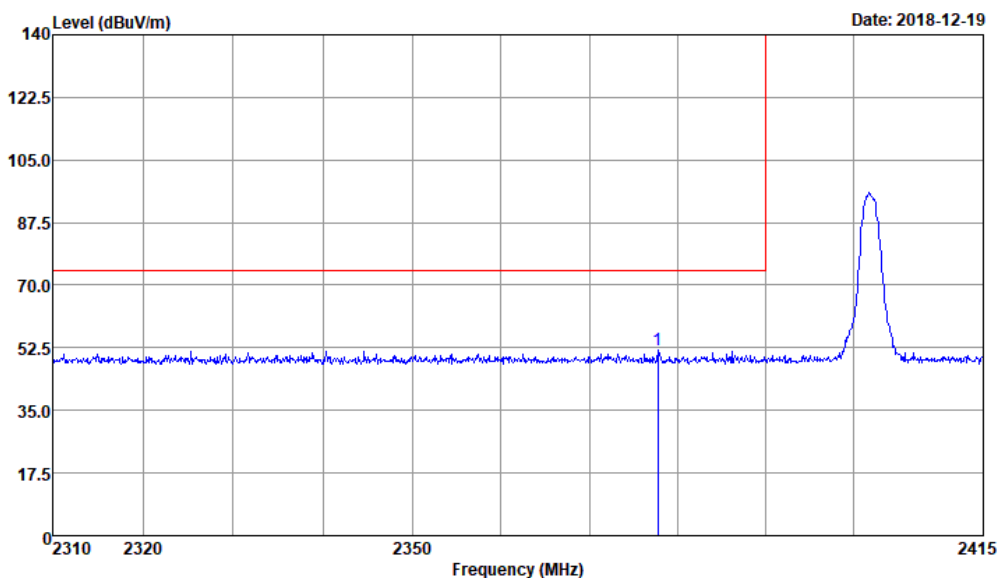
- Note 1: The testing range of “1 GHz to 3 GHz” is for checking radiated emissions located in restricted bands near the EUT operating bands.
- Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB μ V/m) and Average Limit (54 dB μ V/m).
- Note 3: The peak spike exceeds the limit line is EUT's operating frequency.



TM1_DH5_Ch0



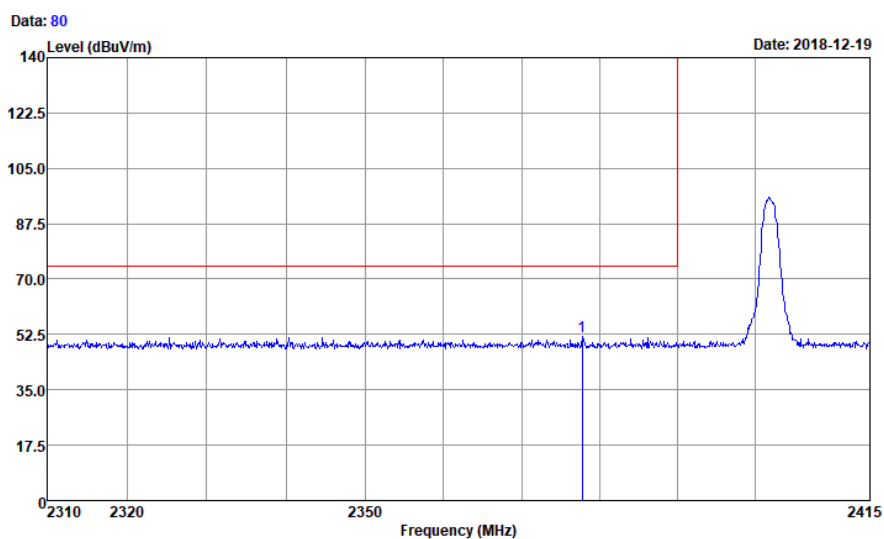
Data: 80



Site : 03CH01-SZ
 Condition : PEAK_BE_74 3m HF_ANT(3117)_119436 HORIZONTAL
 : RBW:1000.000KHz VBW:3000.000KHz
 : L29 BT CH0

Freq	Level	Over Limit	Limit	ReadAntenna	Cable	Preamp	
MHz	dBuV/m		dBuV/m	Level	Factor	Loss	Factor
				dB		dB	dB

1 pp 2377.73 51.74 -22.26 74.00 46.49 31.52 6.73 33.00 Peak



Site : 03CH01-SZ
Condition : PEAK_BE_74 3m HF_ANT(3117)_119436 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz
: L29 BT CH0

Freq	Level	Limit	Over Limit	ReadAntenna	Cable	Preamp	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1 pp 2377.73	51.74	-22.26	74.00	46.49	31.52	6.73	33.00 Peak

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

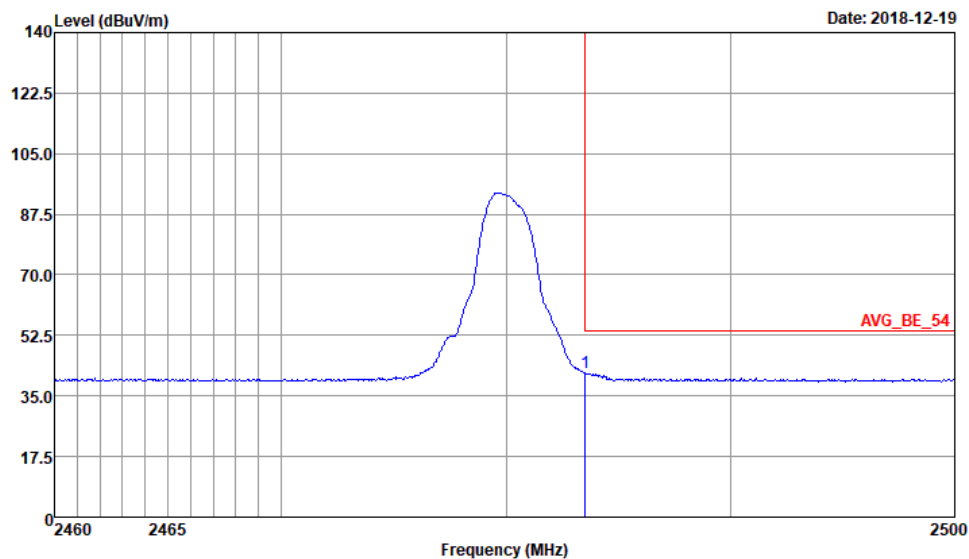


TM1_DH5_Ch78



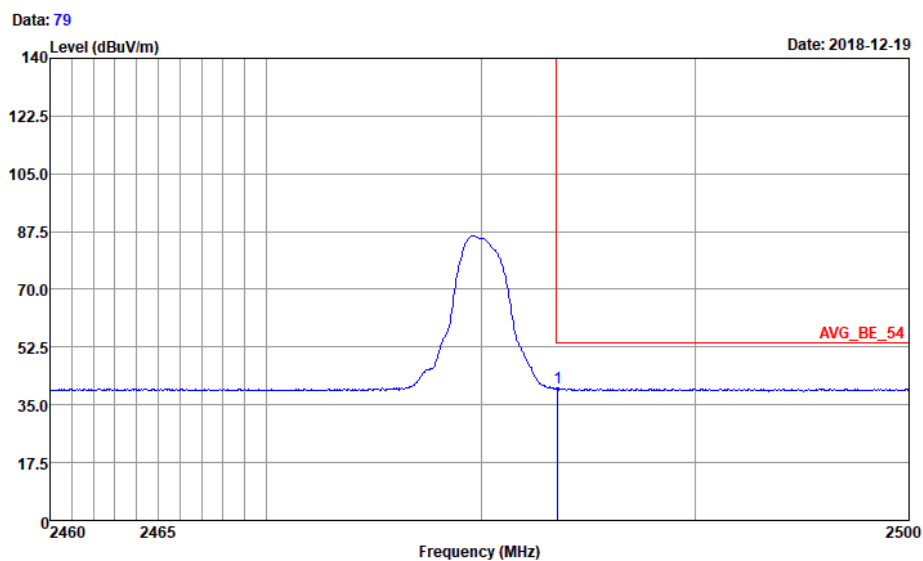
Data: 75

Date: 2018-12-19



Site : 03CH01-SZ
Condition : AVG_BE_54 3m HF_ANT(3117)_119436 HORIZONTAL
: RBW:1000.000KHz VBW:1.000KHz
: L29 BT CH78

Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Preamp Loss Factor	Remark
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB
1 pp 2483.52	41.64	-12.36	54.00	35.87	31.86	6.91 33.00 Average



Site : 03CH01-SZ
Condition : AVG_BE_54 3m HF_ANT(3117)_119436 VERTICAL
: RBW:1000.000KHz VBW:1.000KHz
: L29 BT CH78

Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp		
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	Remark
1 pp 2483.56	40.14	-13.86	54.00	34.37	31.86	6.91	33.00	Average

Note:

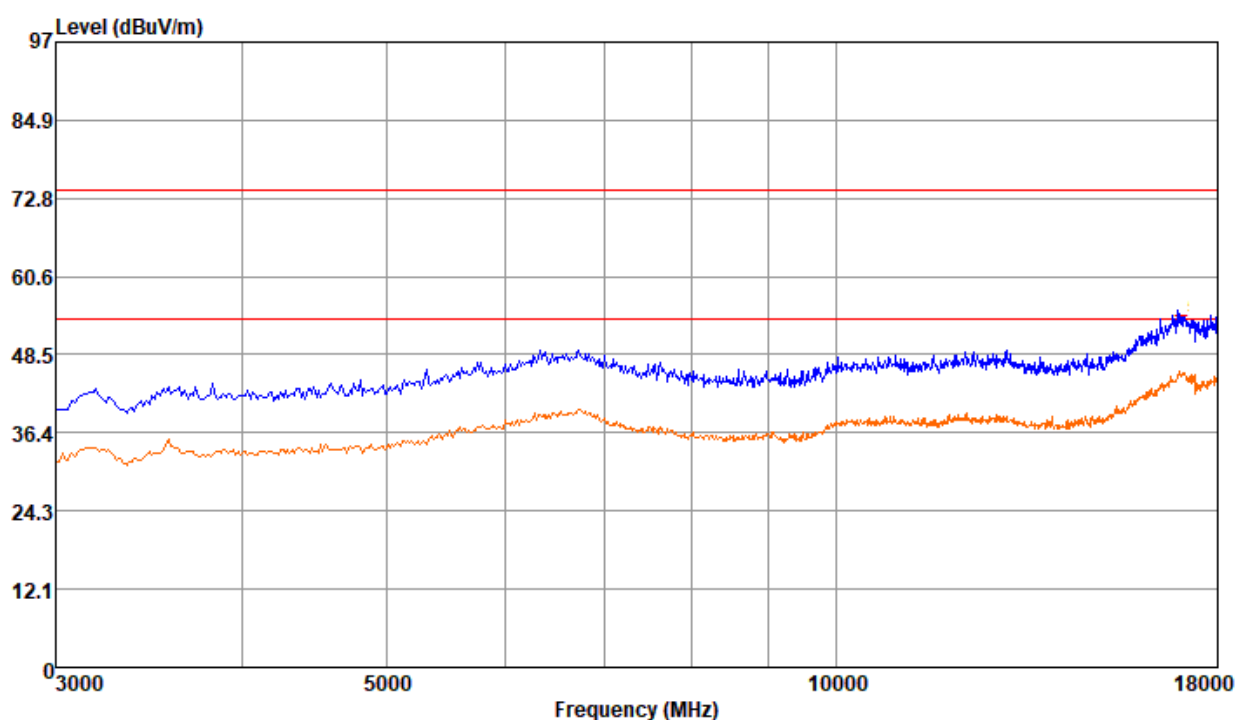
1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

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

2, Margin=Limit - Level

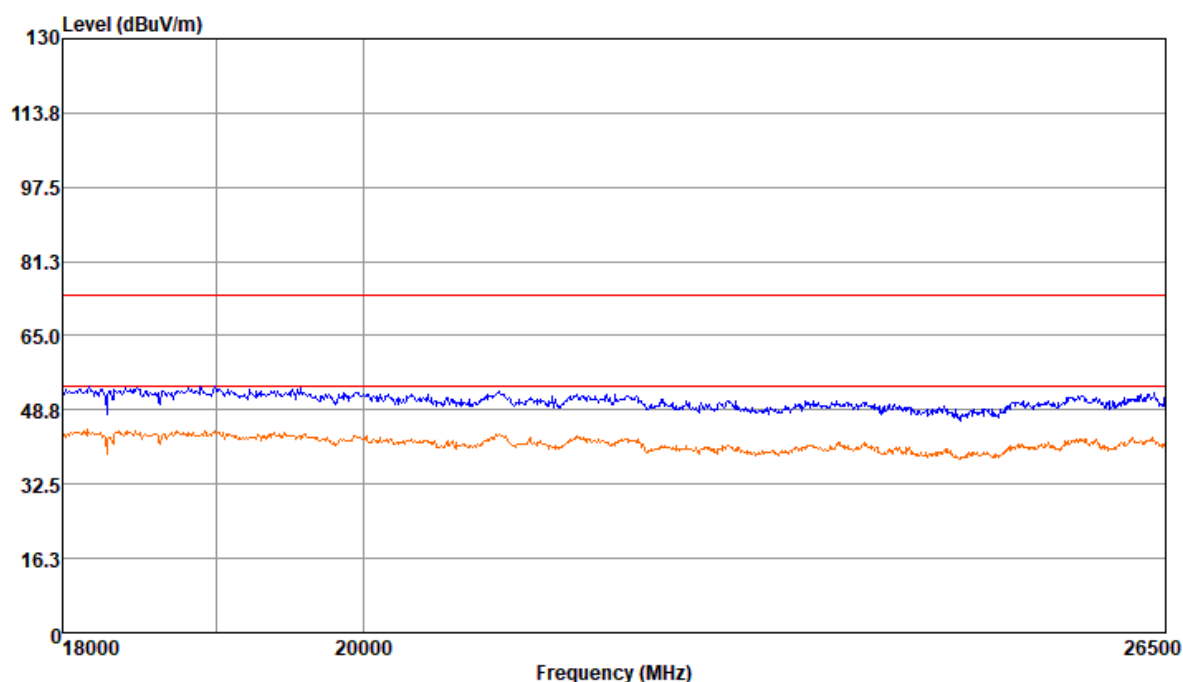
Part 4: Testing Range of “3 GHz to 18 GHz”

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





Appendix I: AC Power Line Conducted Emissions

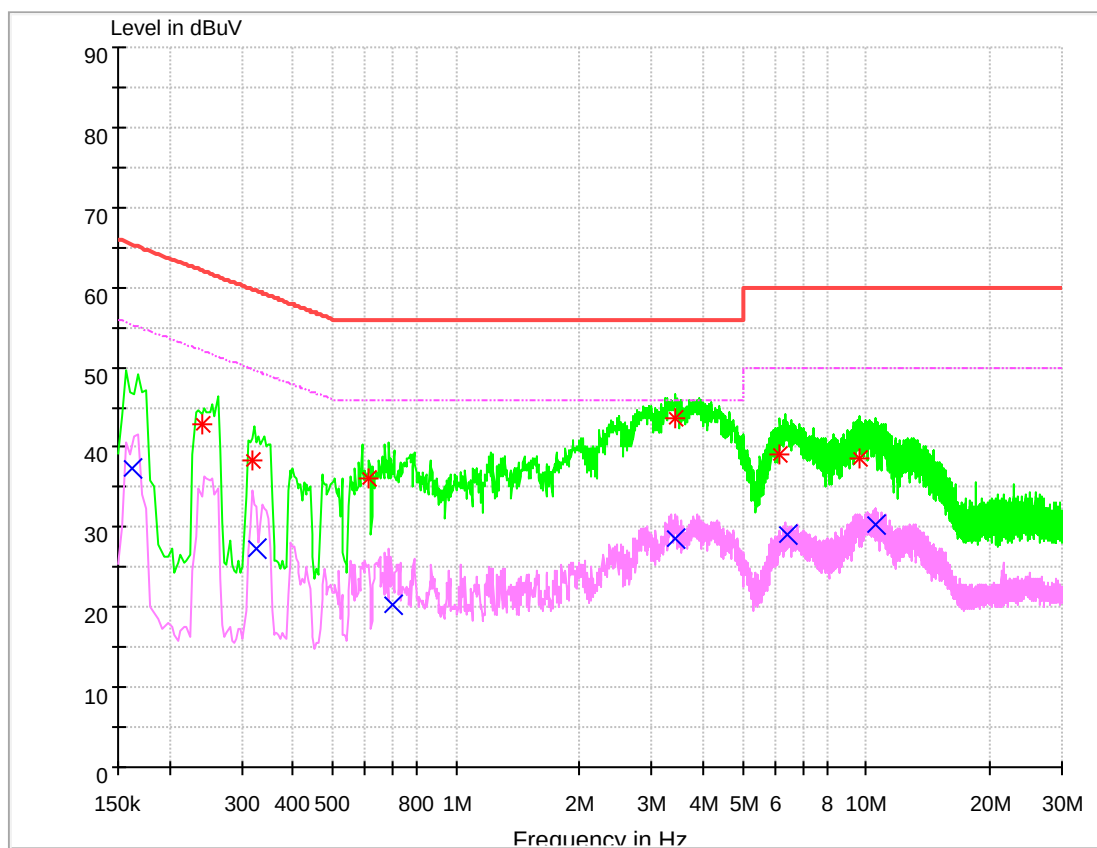
1 Result Table

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: PK Detector

Frequency (MHz)	Level (dB μ V)	Limit (dB μ V)	Transd. (dB)	Margin (dB)	Line	PE
0.241938	42.82	62.03	9.7	19.21	L1	FLO
0.317568	38.27	59.77	9.7	21.50	L1	FLO
0.608891	36.11	56.00	9.7	19.89	N	FLO
3.437774	43.69	56.00	9.7	12.31	L1	FLO
6.174855	39.23	60.00	9.7	20.77	L1	FLO
9.611211	38.63	60.00	9.7	21.37	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB μ V)	Limit (dB μ V)	Transd. (dB)	Margin (dB)	Line	PE
0.162567	37.35	55.33	9.7	17.98	N	FLO



0.327660	27.39	49.51	9.7	22.12	L1	FLO
0.700044	20.19	46.00	9.7	25.81	L1	FLO
3.413990	28.56	46.00	9.7	17.44	N	FLO
6.427296	29.15	50.00	9.7	20.85	L1	FLO
10.507277	30.45	50.00	9.7	19.55	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