Appendix for Test report

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	0.94	---	Pass
TM2_2DH5_Ch0	1.29	---	Pass
TM2_2DH5_Ch39	1.31	---	Pass
TM2_2DH5_Ch78	1.31	---	Pass
TM3_3DH5_Ch0	1.29	---	Pass
TM3_3DH5_Ch39	1.31	---	Pass
TM3_3DH5_Ch78	1.31	---	Pass

2 Test Graphs

TM1_DH5_Ch0

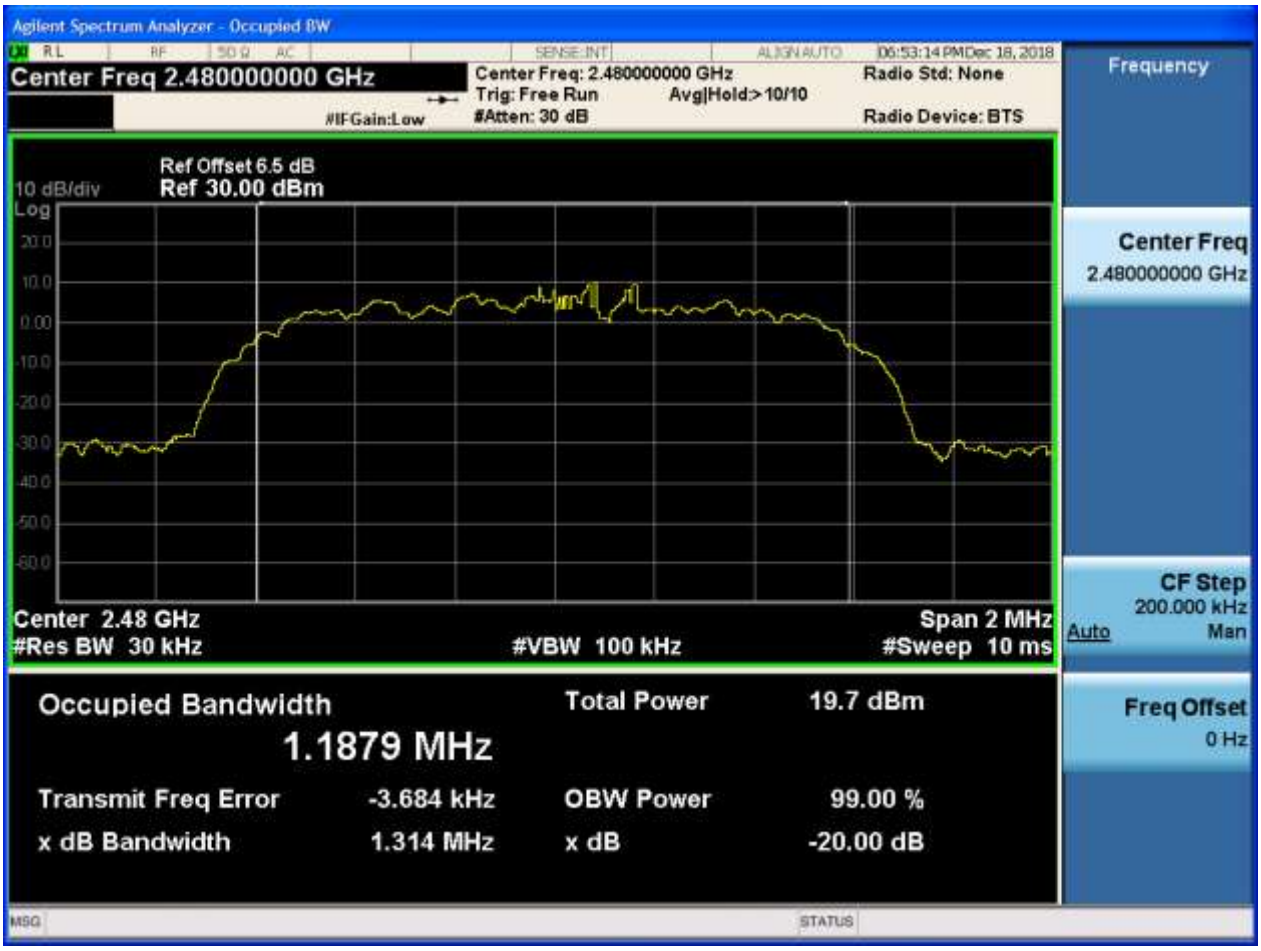
TM1_DH5_Ch39

TM1_DH5_Ch78

TM2_2DH5_Ch0

TM2_2DH5_Ch39

TM2_2DH5_Ch78



TM3_3DH5_Ch0

TM3_3DH5_Ch39

TM3_3DH5_Ch78

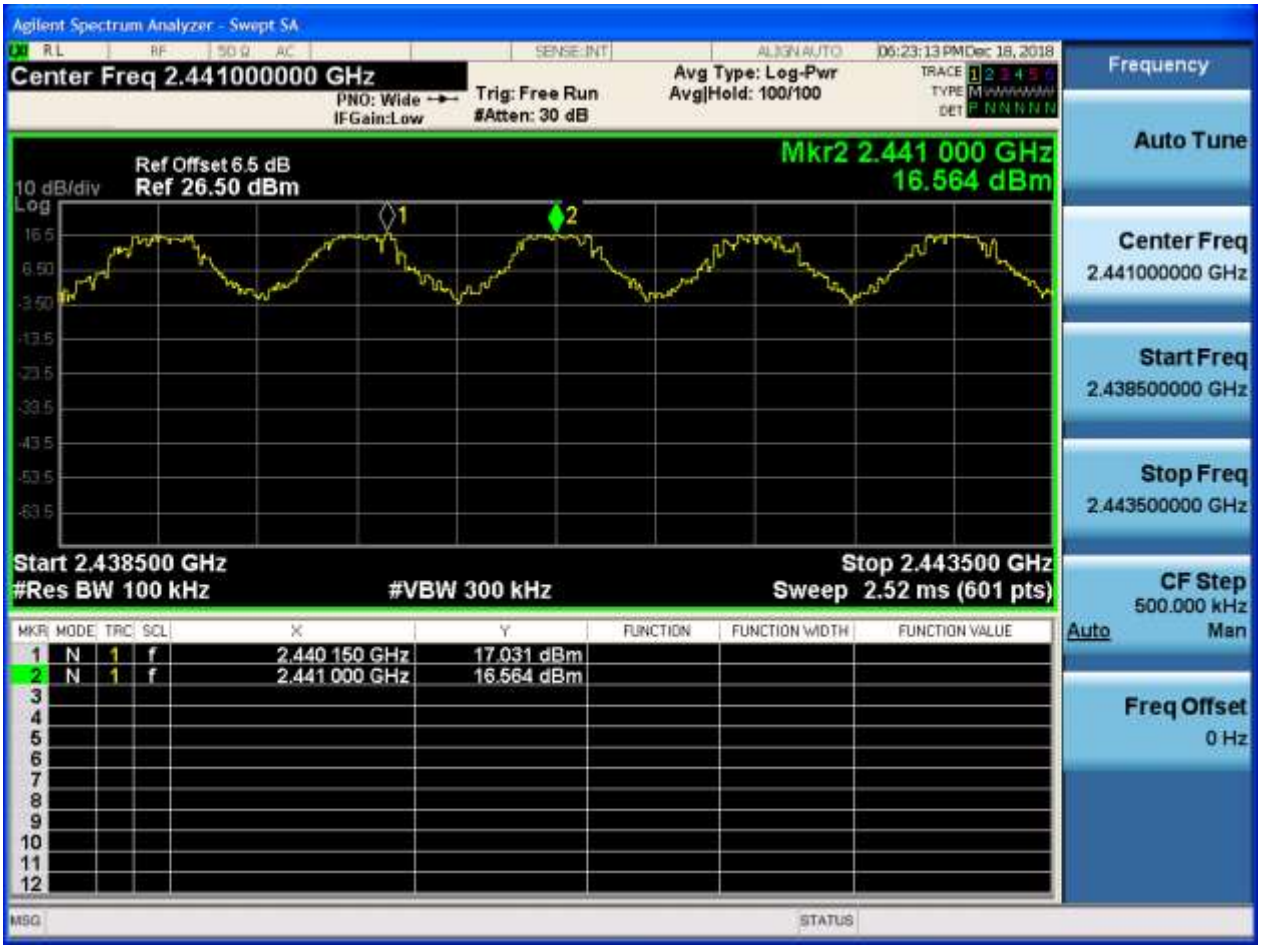
Appendix B: Carrier Frequency Separation

1 Result Table

EUT Conf.	Carrier Frequency Separation [MHz]	Limit[MHz]	Verdict
TM1_DH5_Hop	0.85	≥0.633	Pass
TM2_2DH5_Hop	1.2	≥0.865	Pass
TM3_3DH5_Hop	1.1	≥0.865	Pass

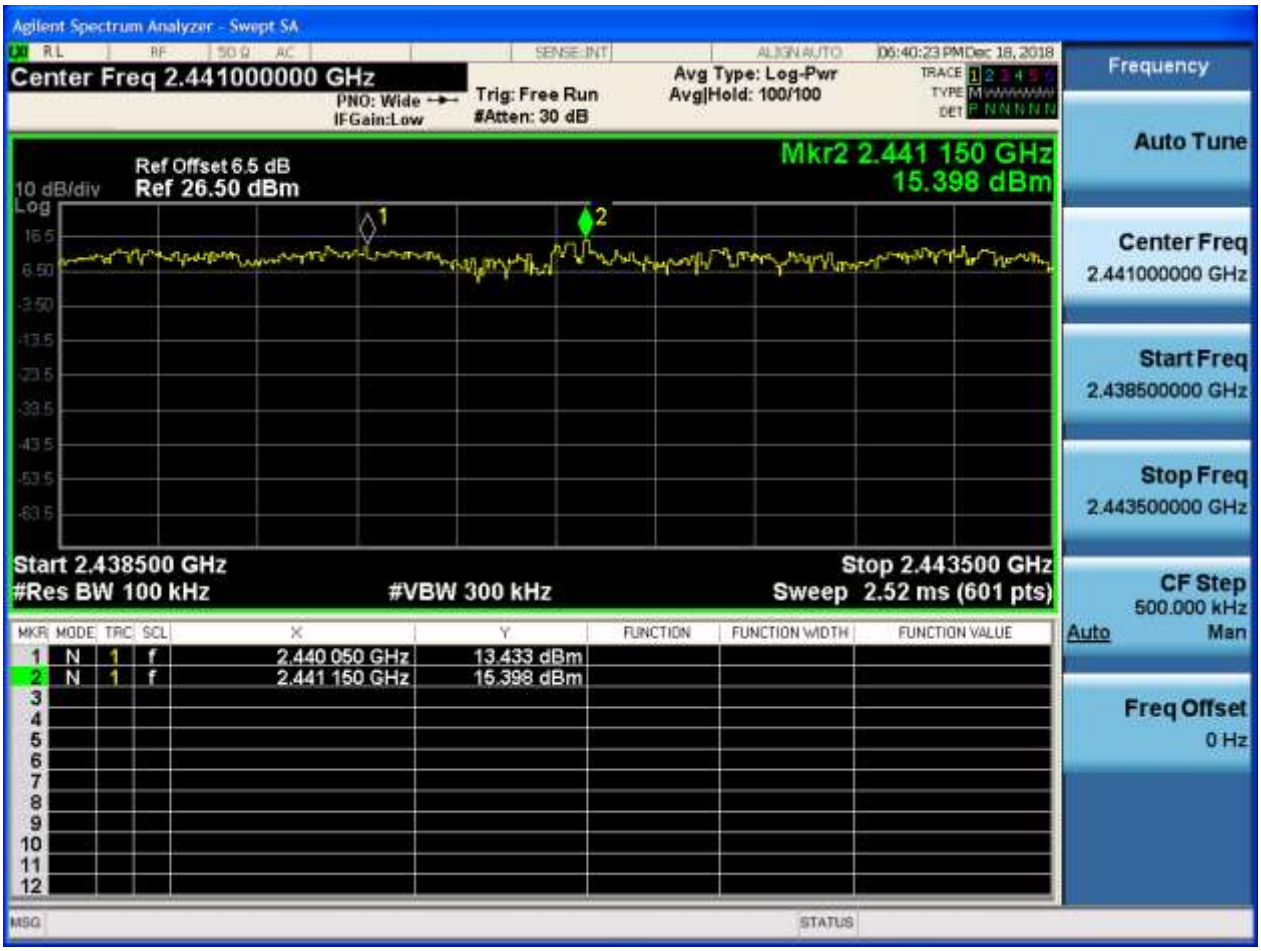
2 Test Graphs

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 Graphs

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:

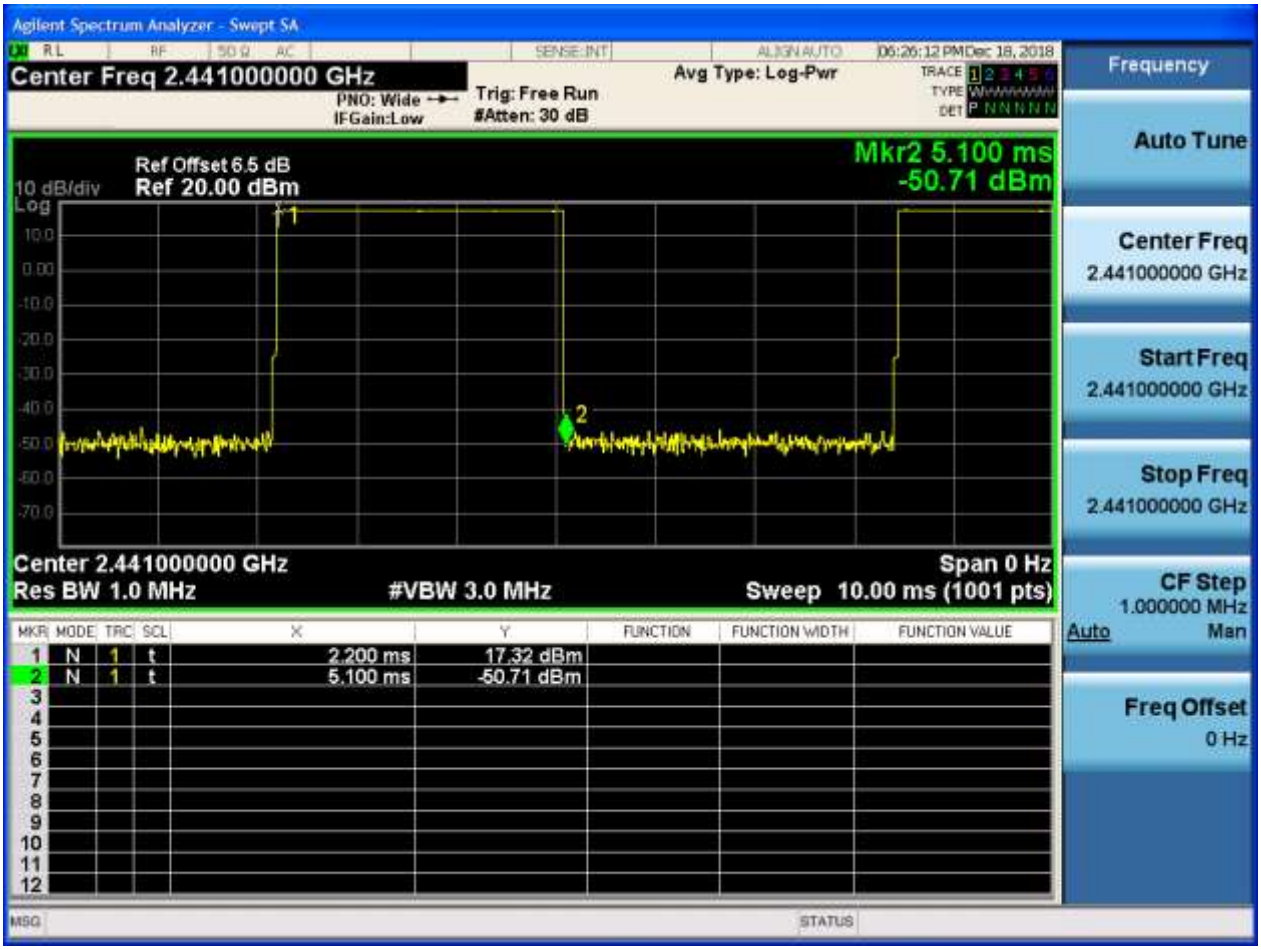
- The duration for dwell time calculation: 0.4 [s] * hopping number = 0.4 [s] * 79 [ch] = 31.6 [s*ch];
- The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
- The hops per second for all channels: The selected EUT Conf uses a slot type of 5-Tx&1-Rx and 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	0.00289	106.67	0.309	Pass
TM3_3DH5_Ch39	0.0029	106.67	0.309	Pass

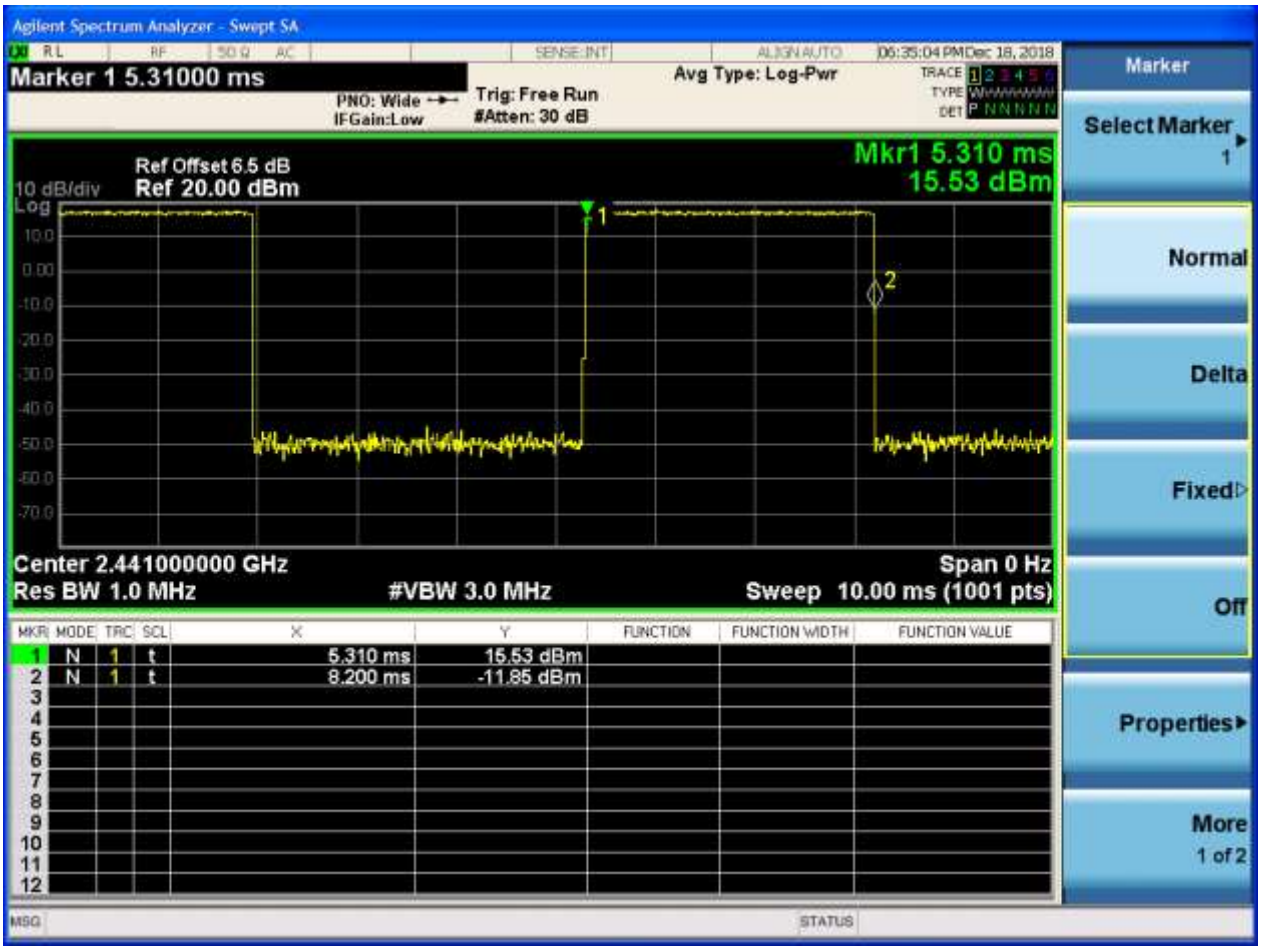
2 Test Graphs

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

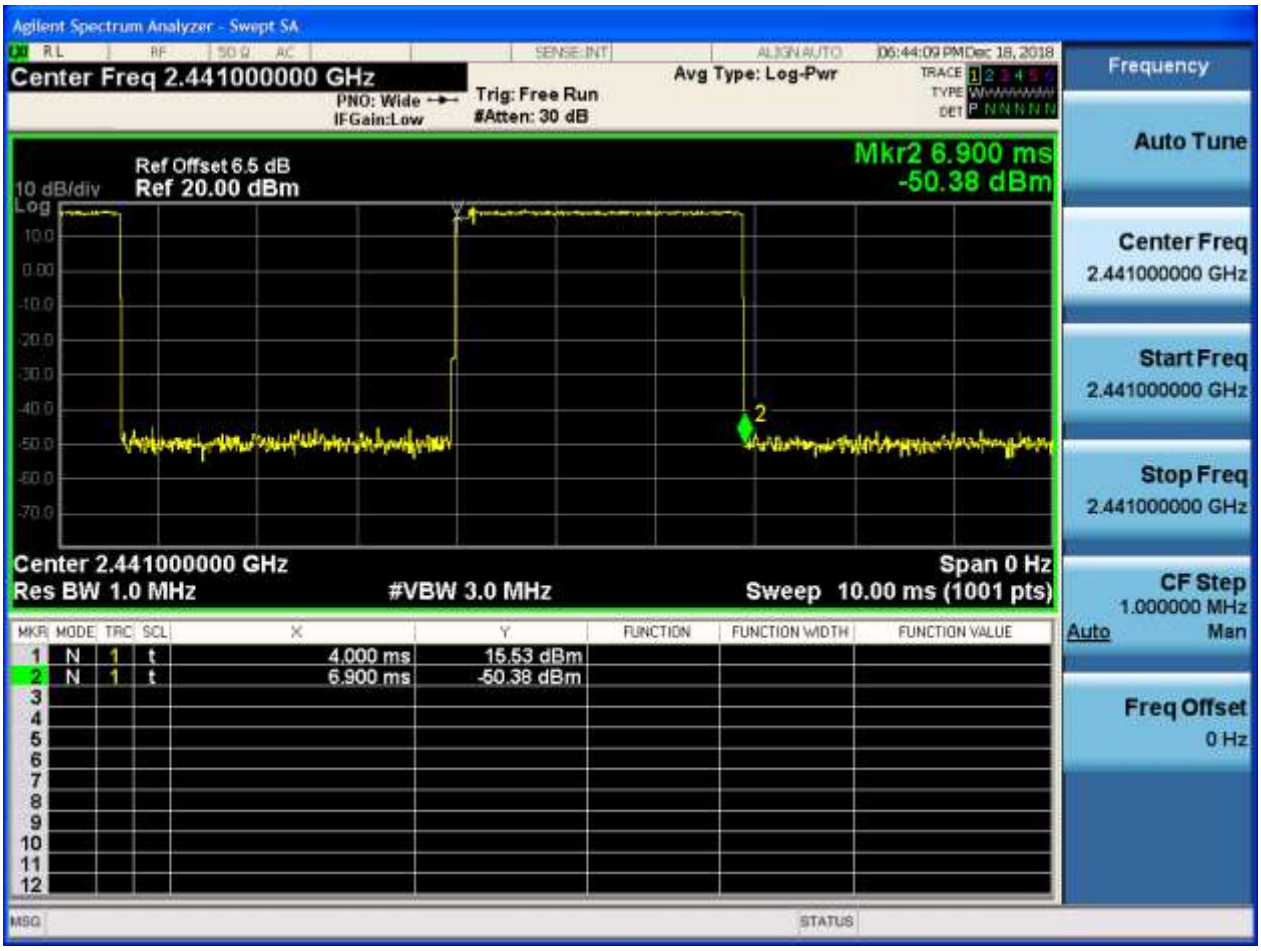
TM1_DH5_Ch39



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	14.34	20.97	Pass
TM1_DH5_Ch39	14.50	20.97	Pass
TM1_DH5_Ch78	11.80	20.97	Pass
TM2_2DH5_Ch0	13.66	20.97	Pass
TM2_2DH5_Ch39	14.98	20.97	Pass
TM2_2DH5_Ch78	12.20	20.97	Pass
TM3_3DH5_Ch0	13.93	20.97	Pass
TM3_3DH5_Ch39	15.23	20.97	Pass
TM3_3DH5_Ch78	12.44	20.97	Pass

2 Test Graphs

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

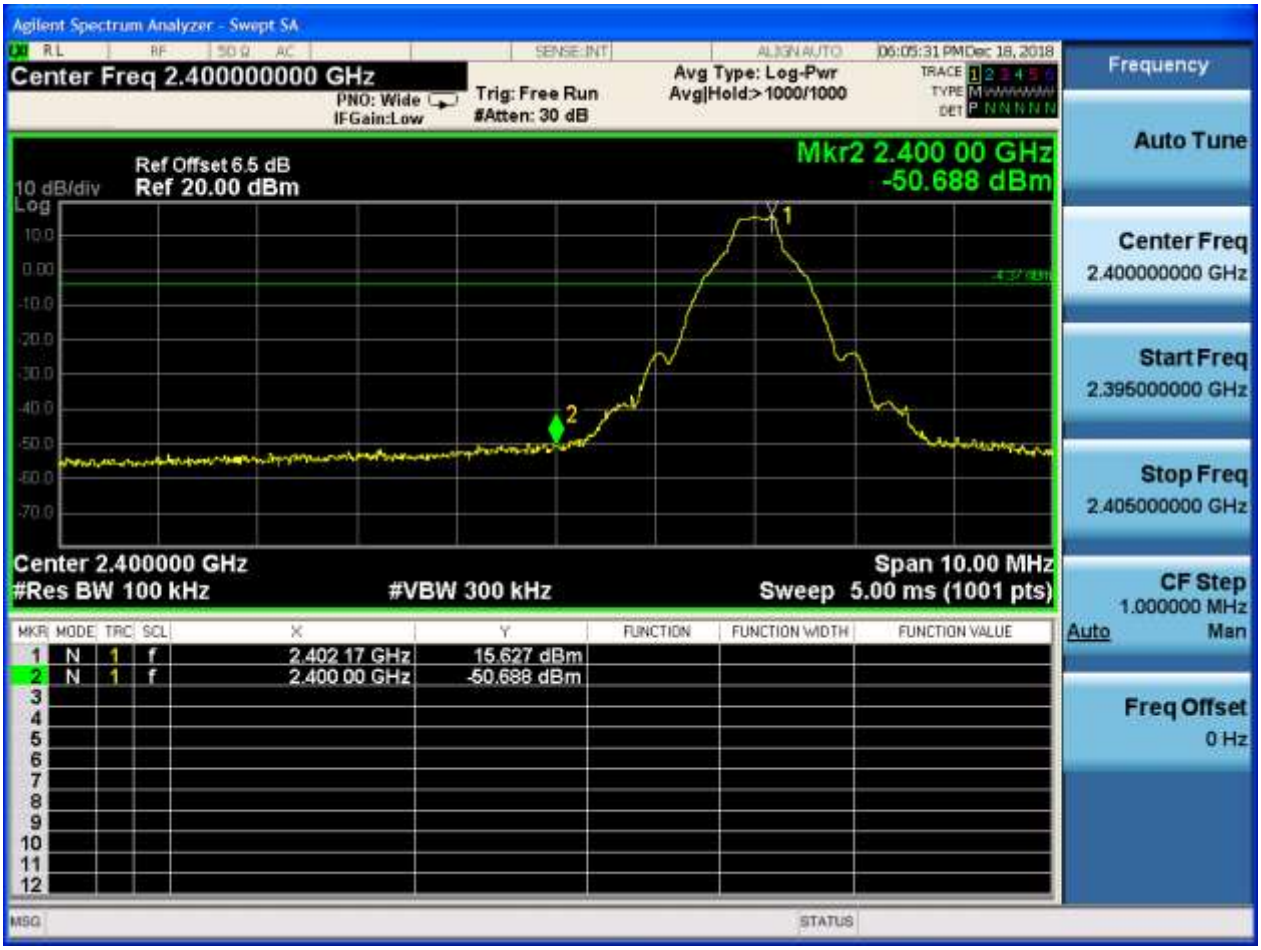
1 Result Table

EUT Conf.	Channel No.	Carrier Frequency [MHz]	Max. Spurious Level [dBm]	Frequency Hopping	Carrier Power [dBm]	Limit [dBm]	Result
TM1_DH5_Ch0	0	2402	-50.688	Off	15.627	-4.373	Pass
	-	-	-53.64	On	15.782	-4.218	Pass
TM1_DH5_Ch78	78	2480	-53.111	Off	14.226	-5.774	Pass
	-	-	-55.842	On	14.059	-5.941	Pass
TM2_2DH5_Ch0	0	2402	-41.23	Off	13.629	-6.371	Pass
	-	-	-42.004	On	13.383	-6.617	Pass
TM2_2DH5_Ch78	78	2480	-50.351	Off	12.463	-7.537	Pass
	-	-	-55.914	On	12.48	-7.52	Pass
TM3_3DH5_Ch0	0	2402	-38.286	Off	16.686	-3.314	Pass
	-	-	-46.896	On	16.848	-3.152	Pass
TM3_3DH5_Ch78	78	2480	-48.411	Off	12.52	-7.48	Pass
	-	-	-55.715	On	10.692	-9.308	Pass

2 Test Graphs

2.1 TM1_DH5_Ch0

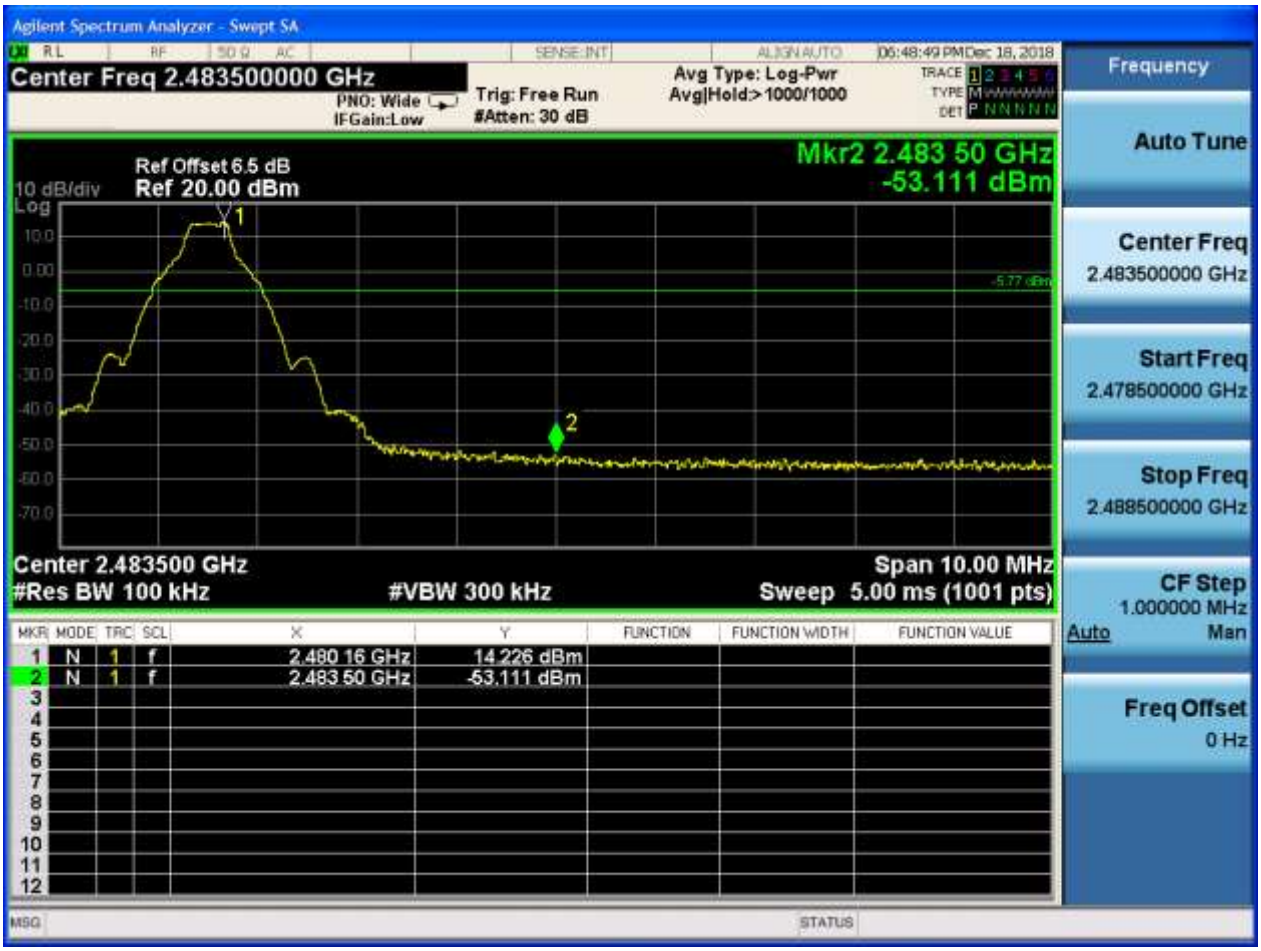
No hopping



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”.

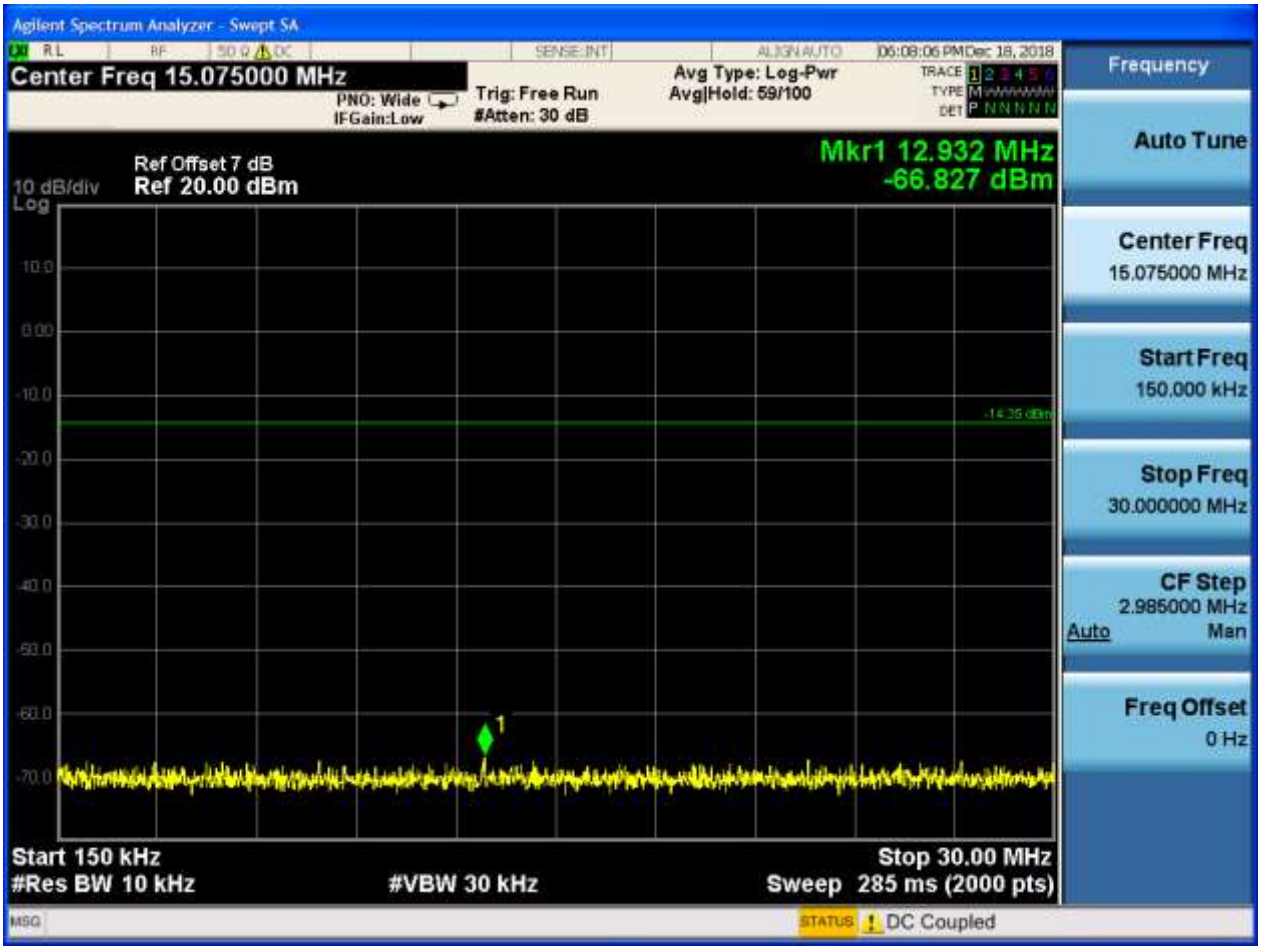
EUT Conf.	Pref [dBm/100 kHz]	Puw [dBm/100 kHz]	Verdict
TM1_DH5_Ch0	15.653	< Limit	Pass
TM1_DH5_Ch39	17.226	< Limit	Pass
TM1_DH5_Ch78	14.259	< Limit	Pass
TM2_2DH5_Ch0	13.735	< Limit	Pass
TM2_2DH5_Ch39	15.482	< Limit	Pass
TM2_2DH5_Ch78	12.523	< Limit	Pass
TM3_3DH5_Ch0	16.682	< Limit	Pass
TM3_3DH5_Ch39	15.488	< Limit	Pass
TM3_3DH5_Ch78	12.537	< Limit	Pass

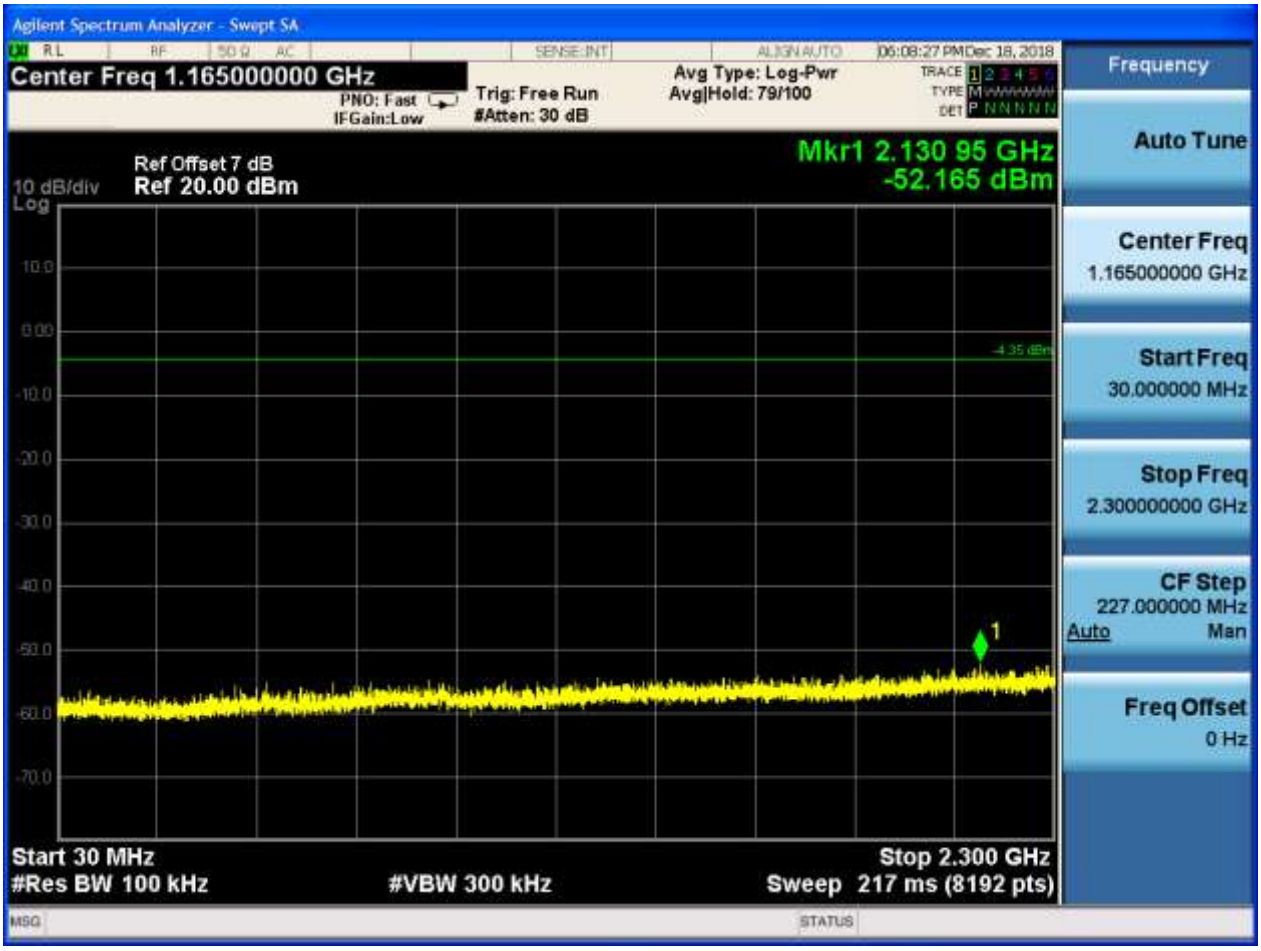
2 Test Graphs

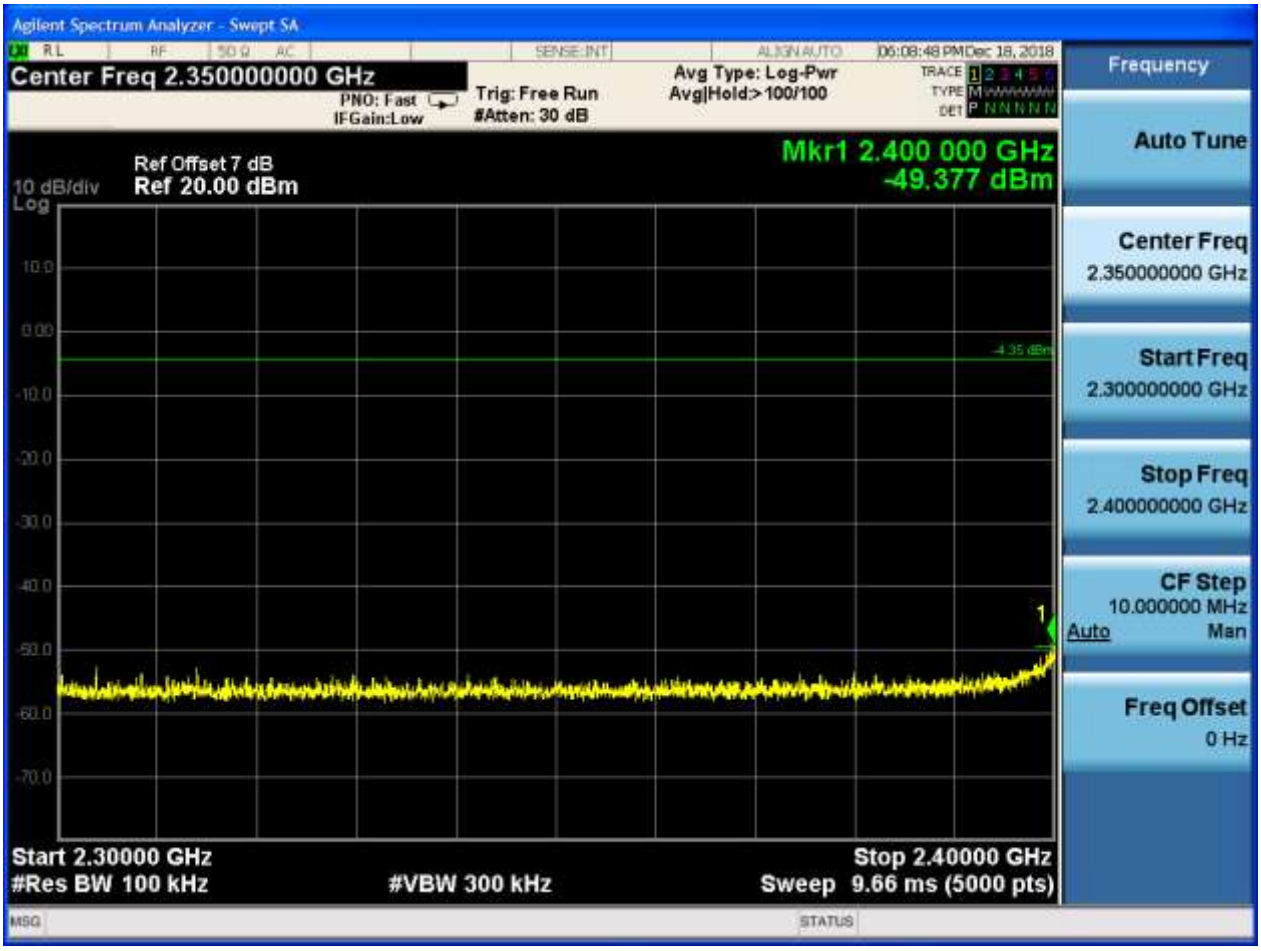
2.1 TM1_DH5_Ch0

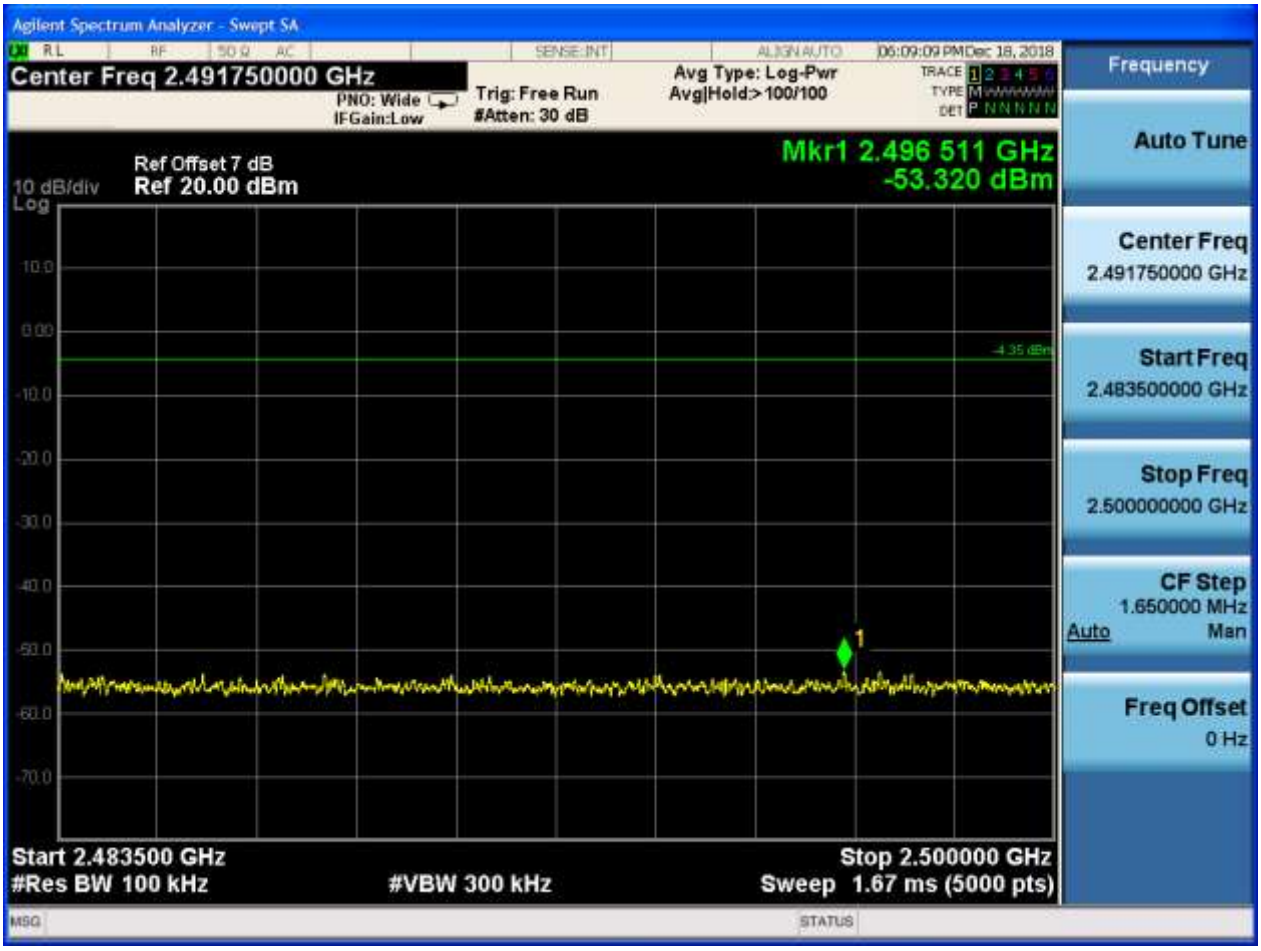
Pref

Puw





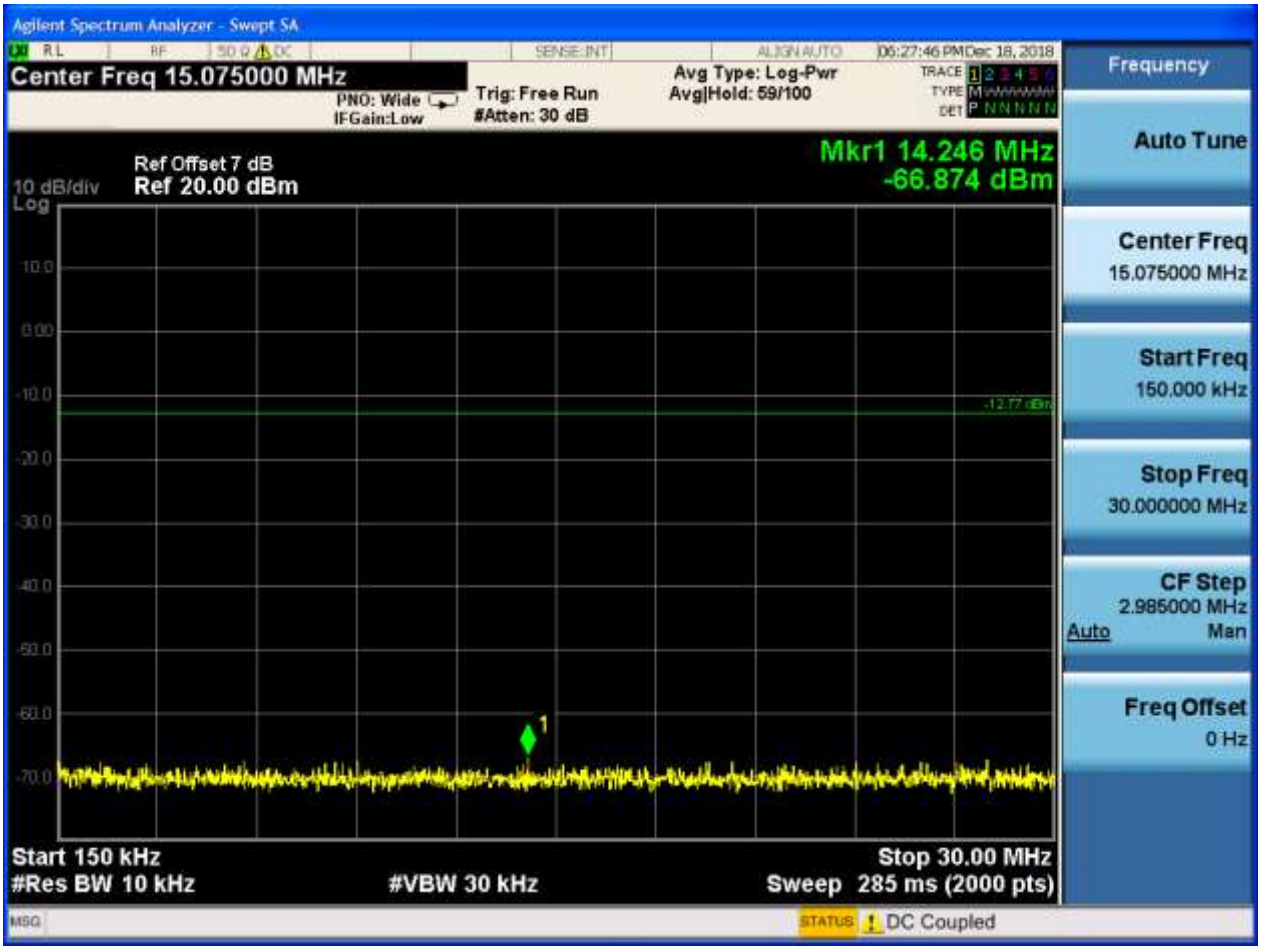


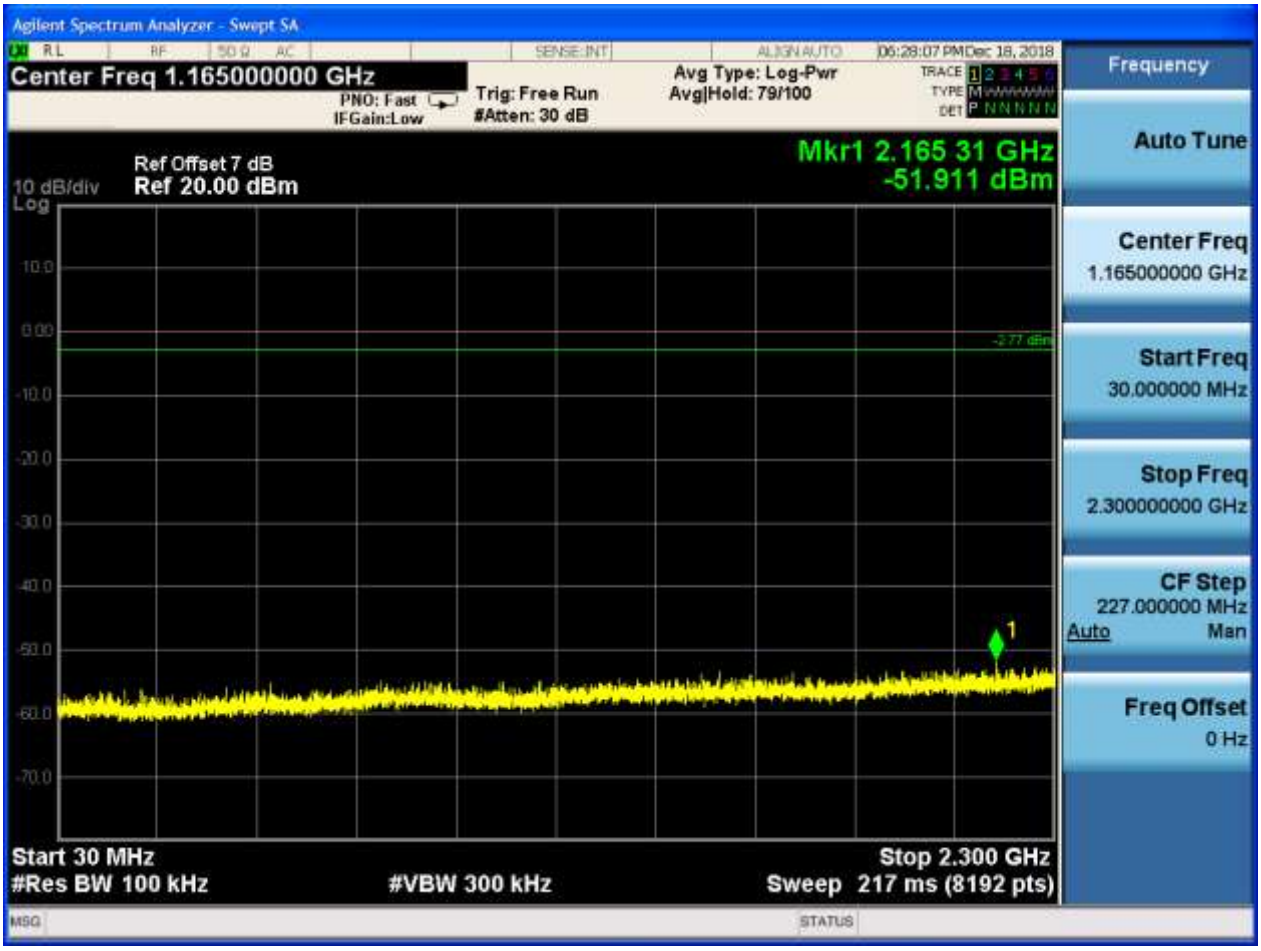


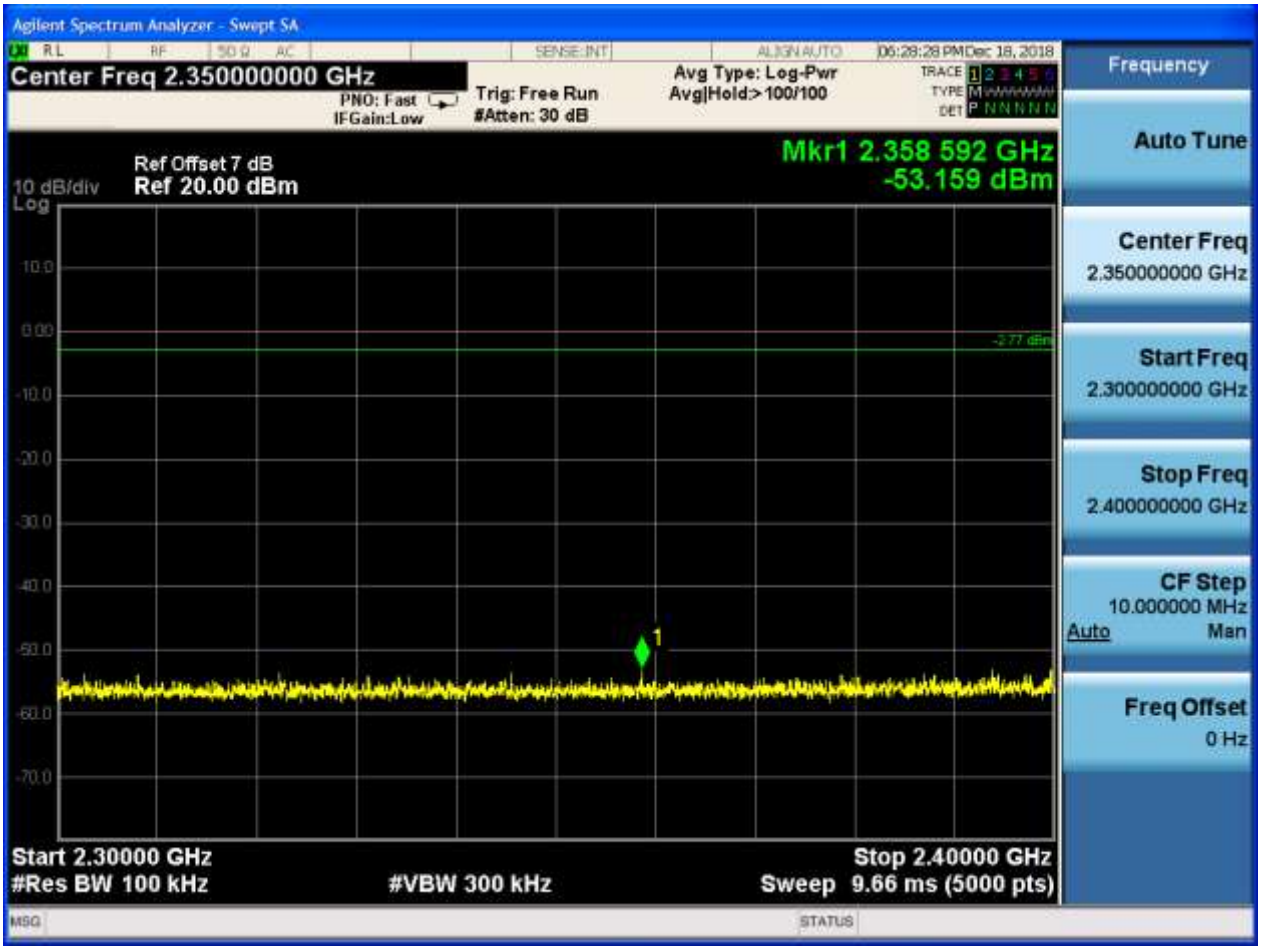
2.2 TM1_DH5_Ch39

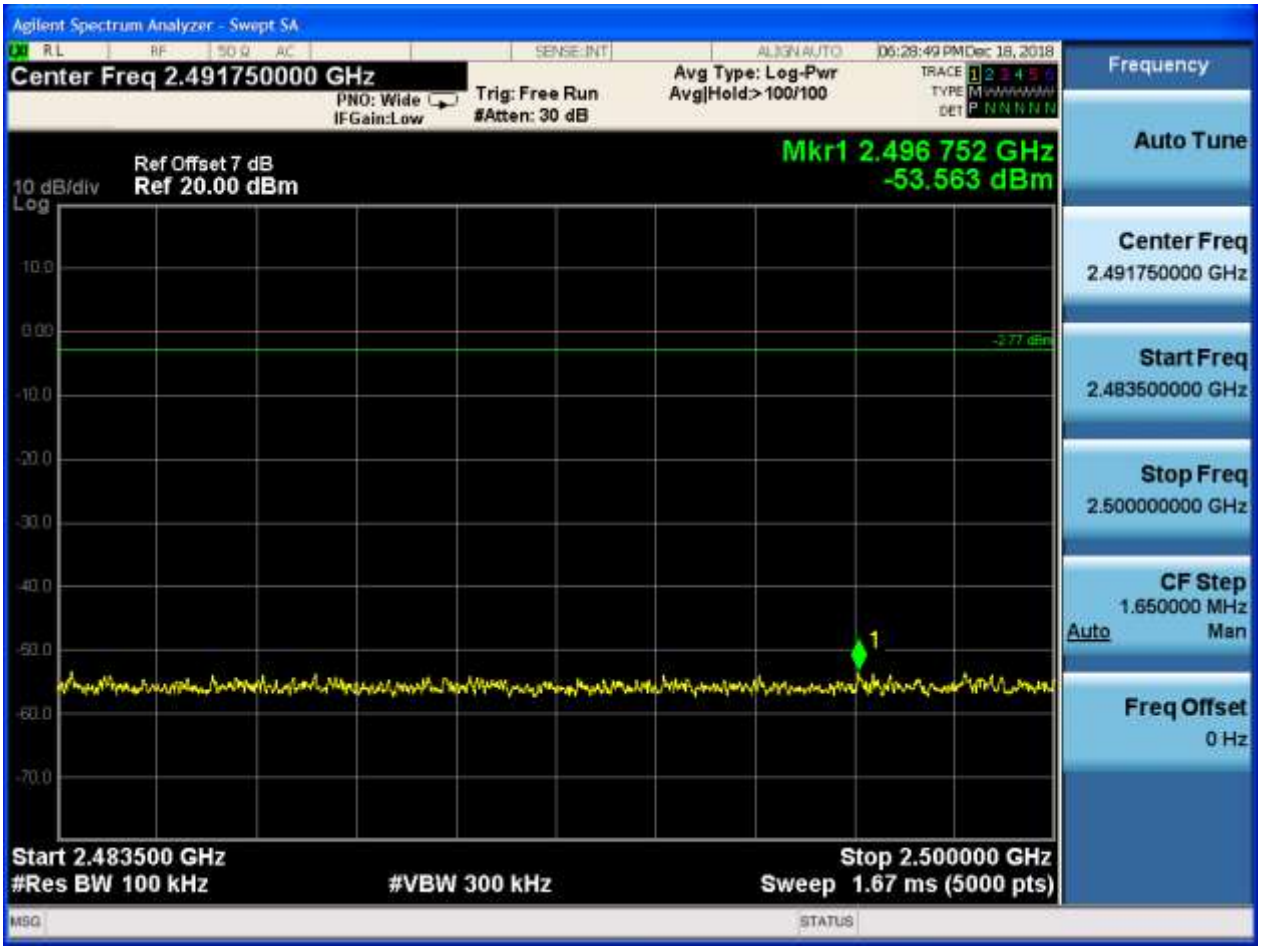
Pref

Puw





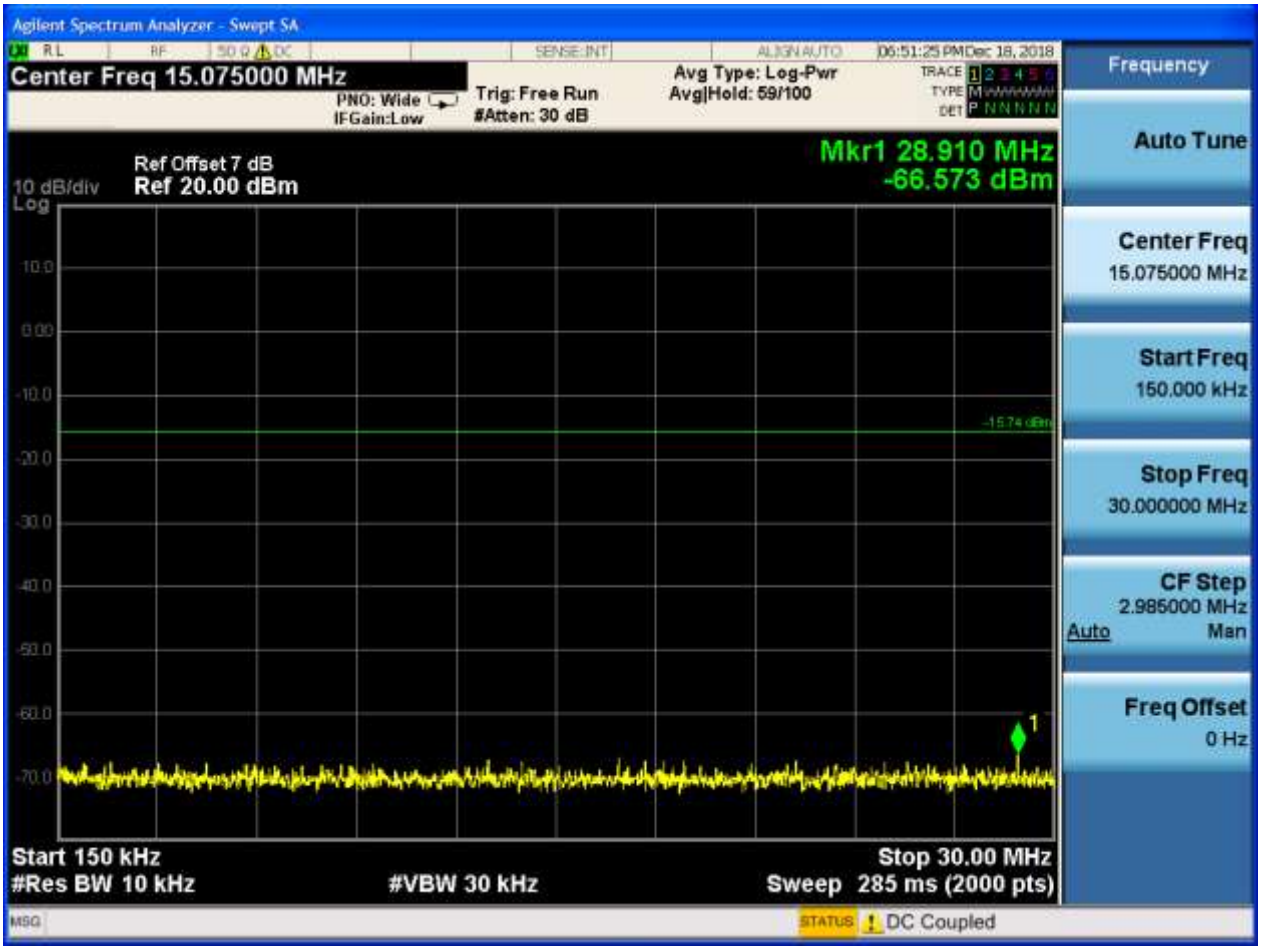


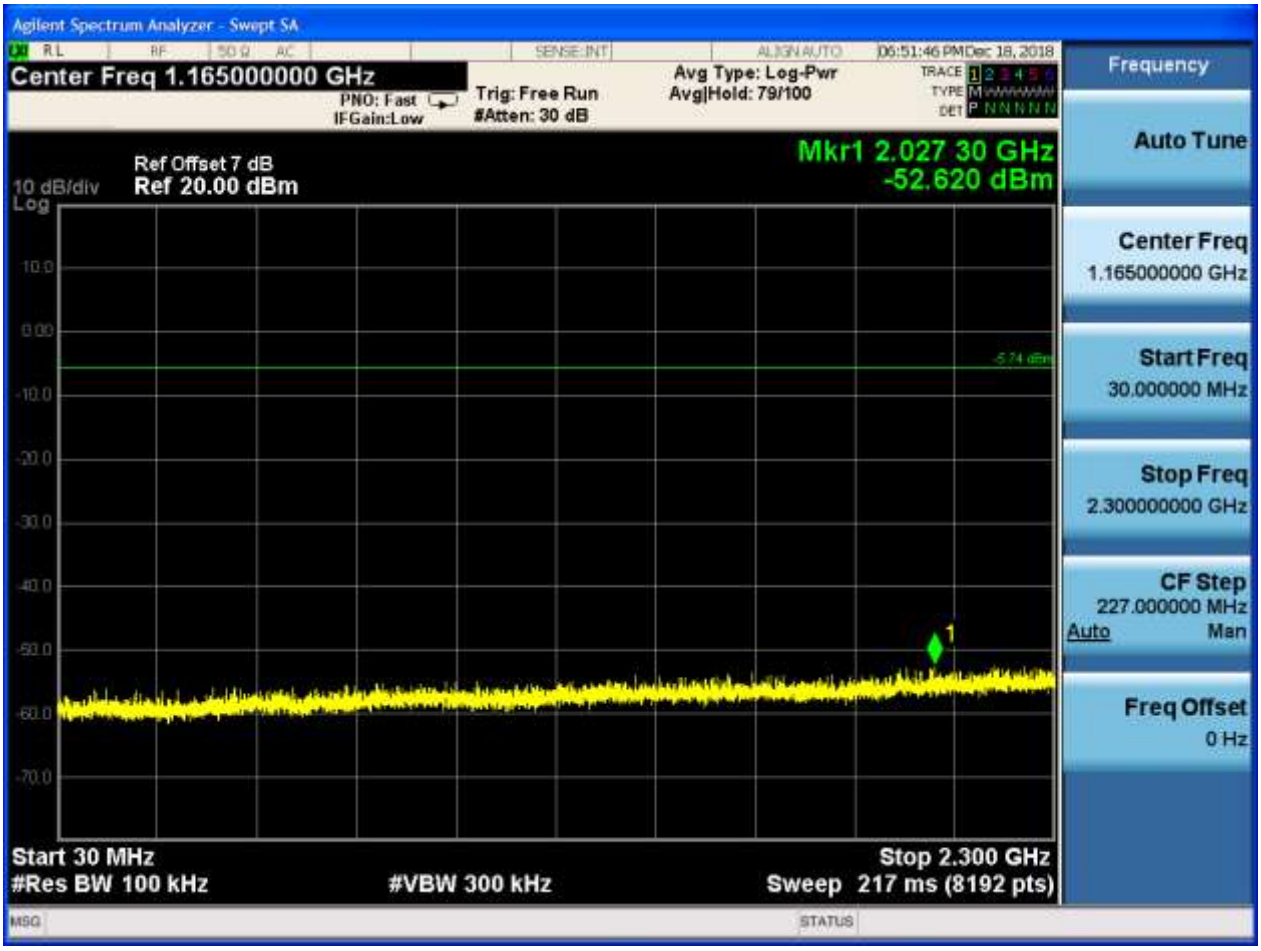


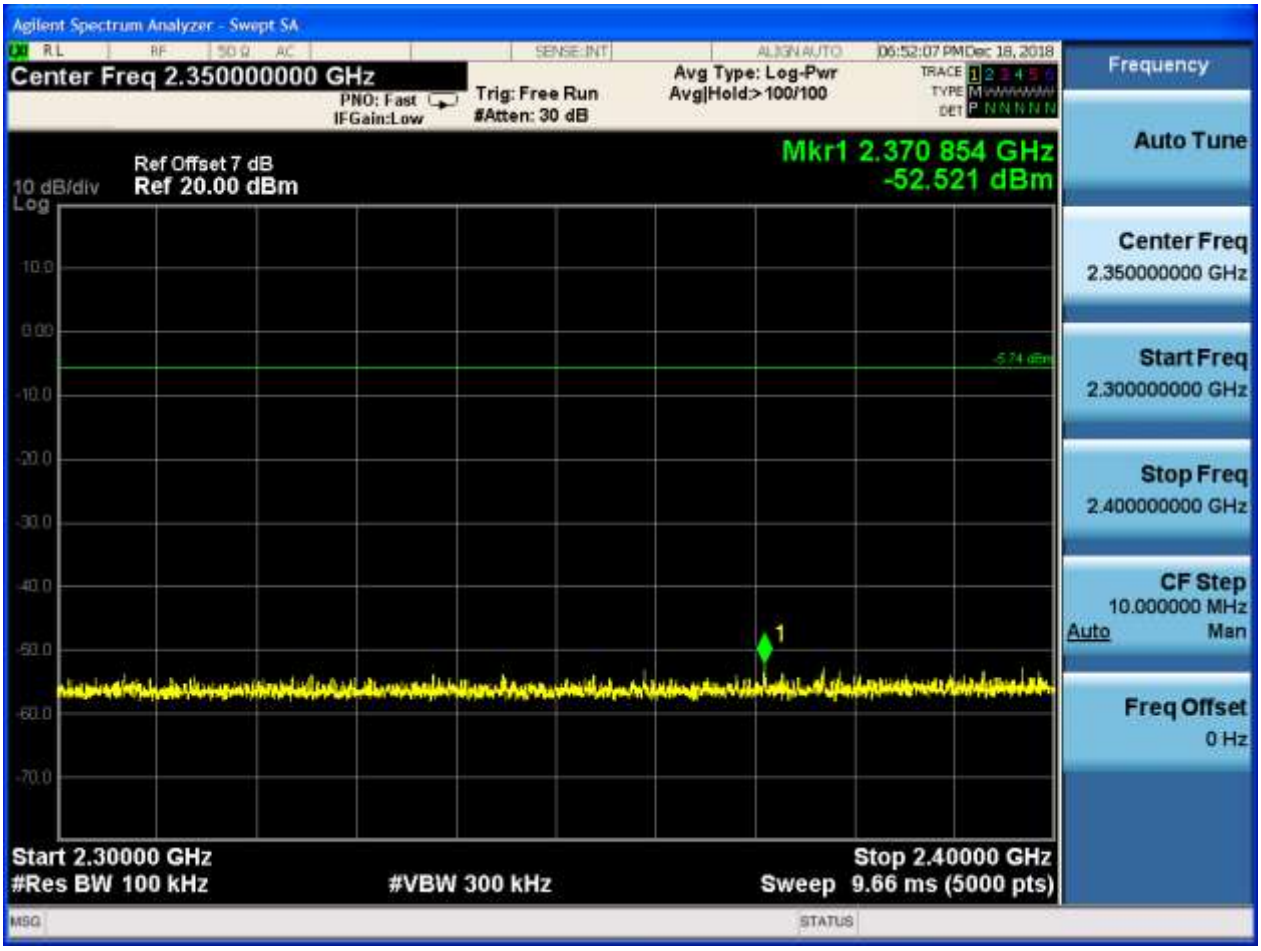
2.3 TM1_DH5_Ch78

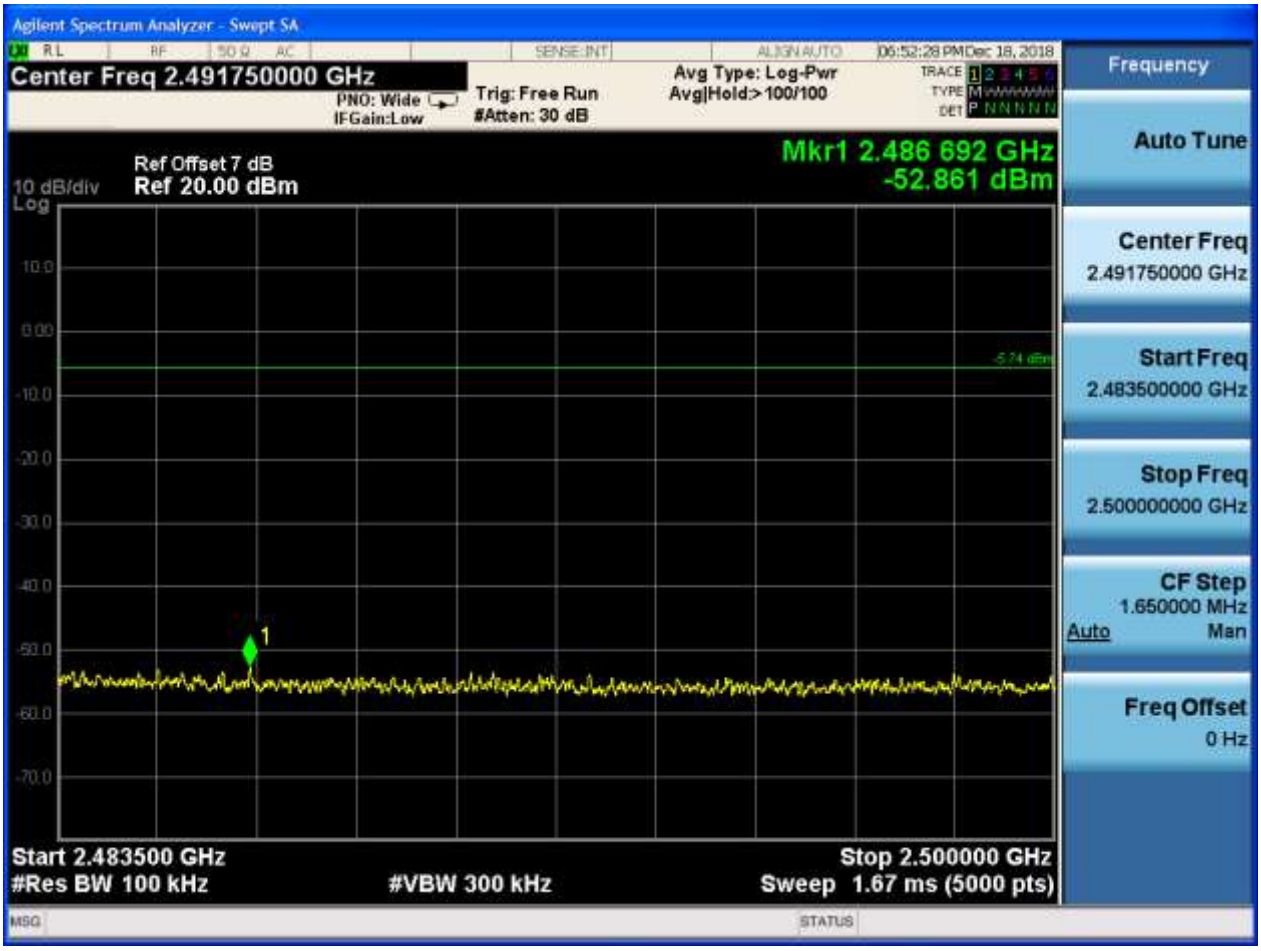
2.1.1 Pref

2.1.2 Puw





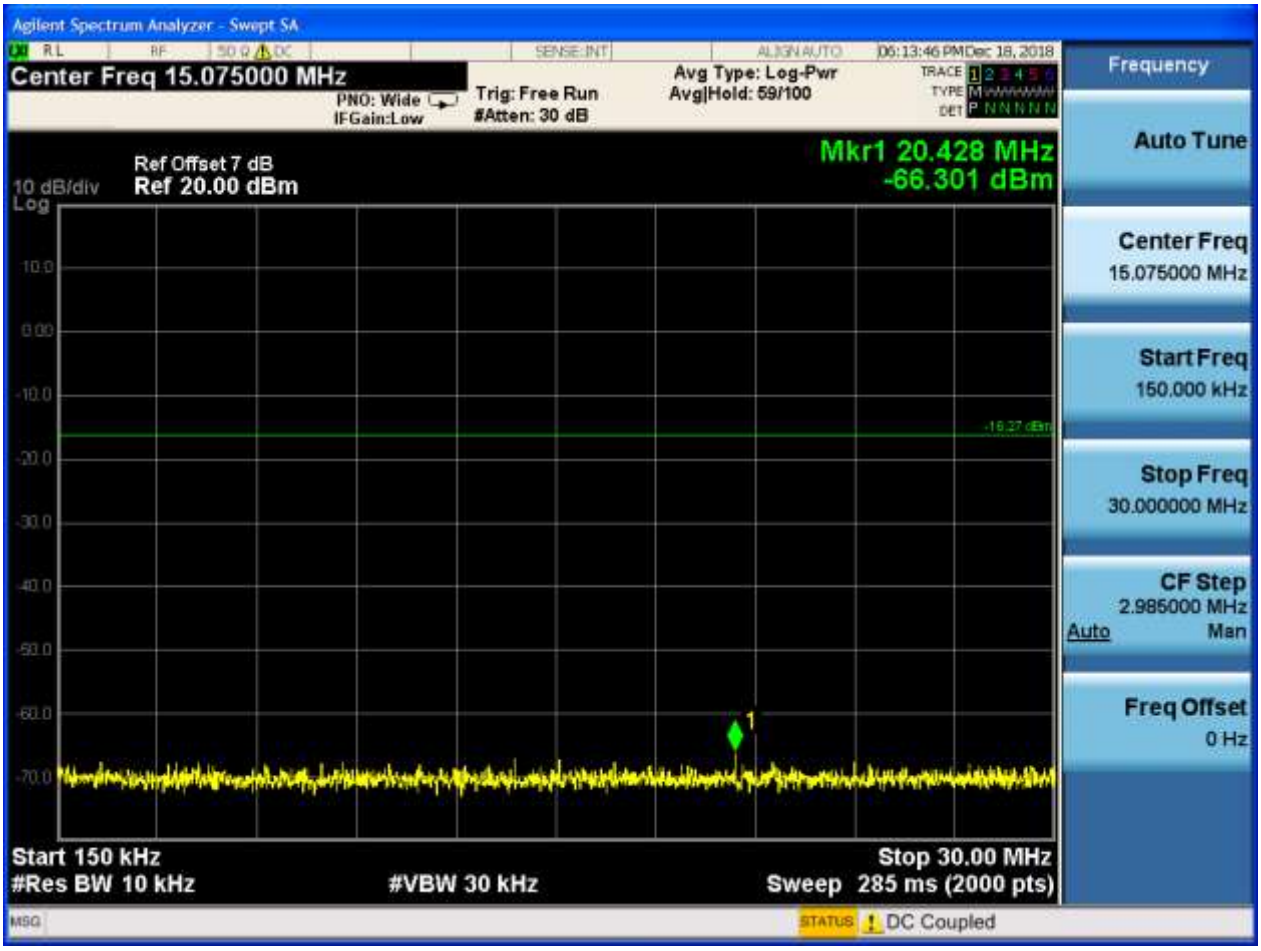


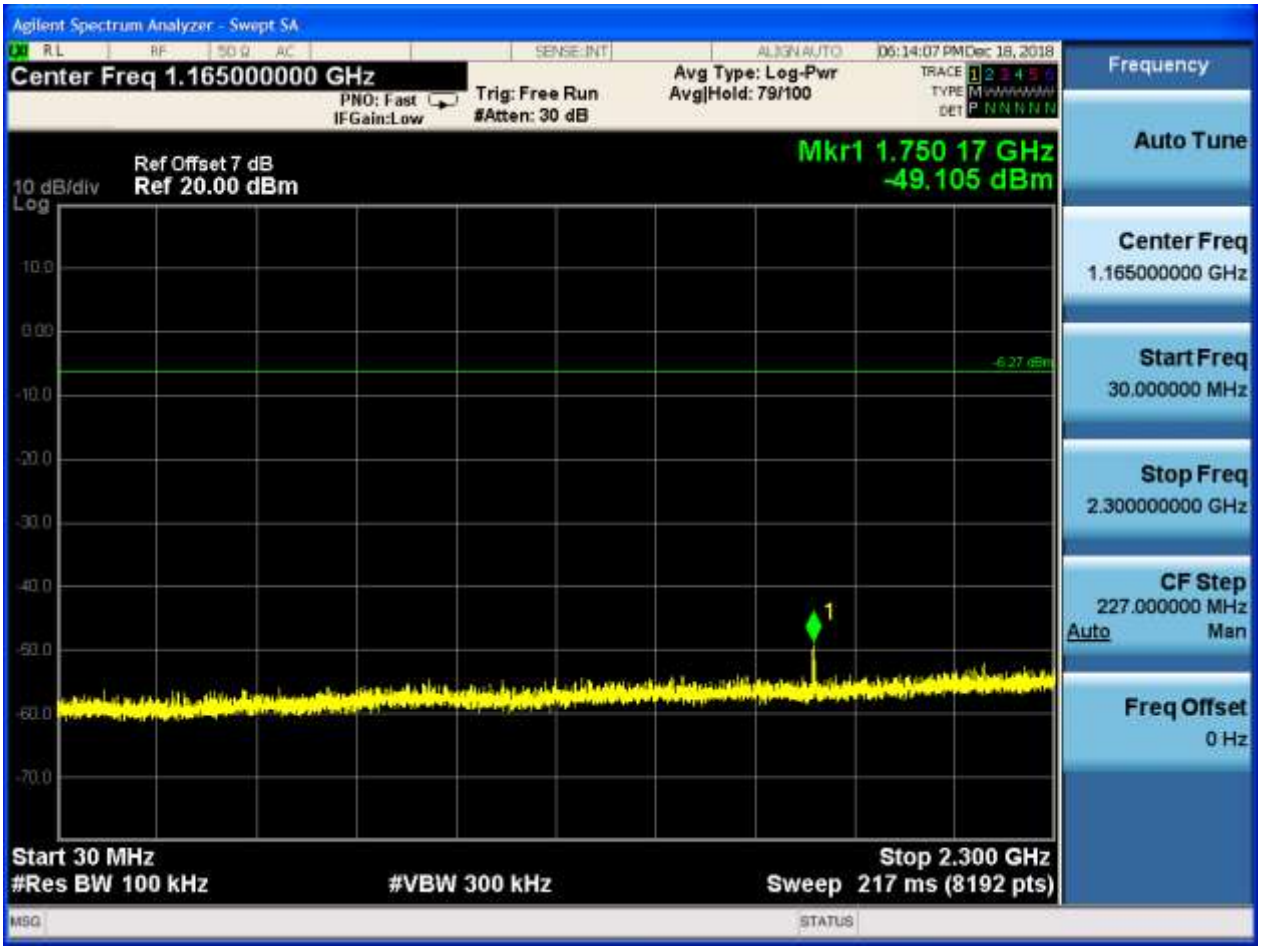


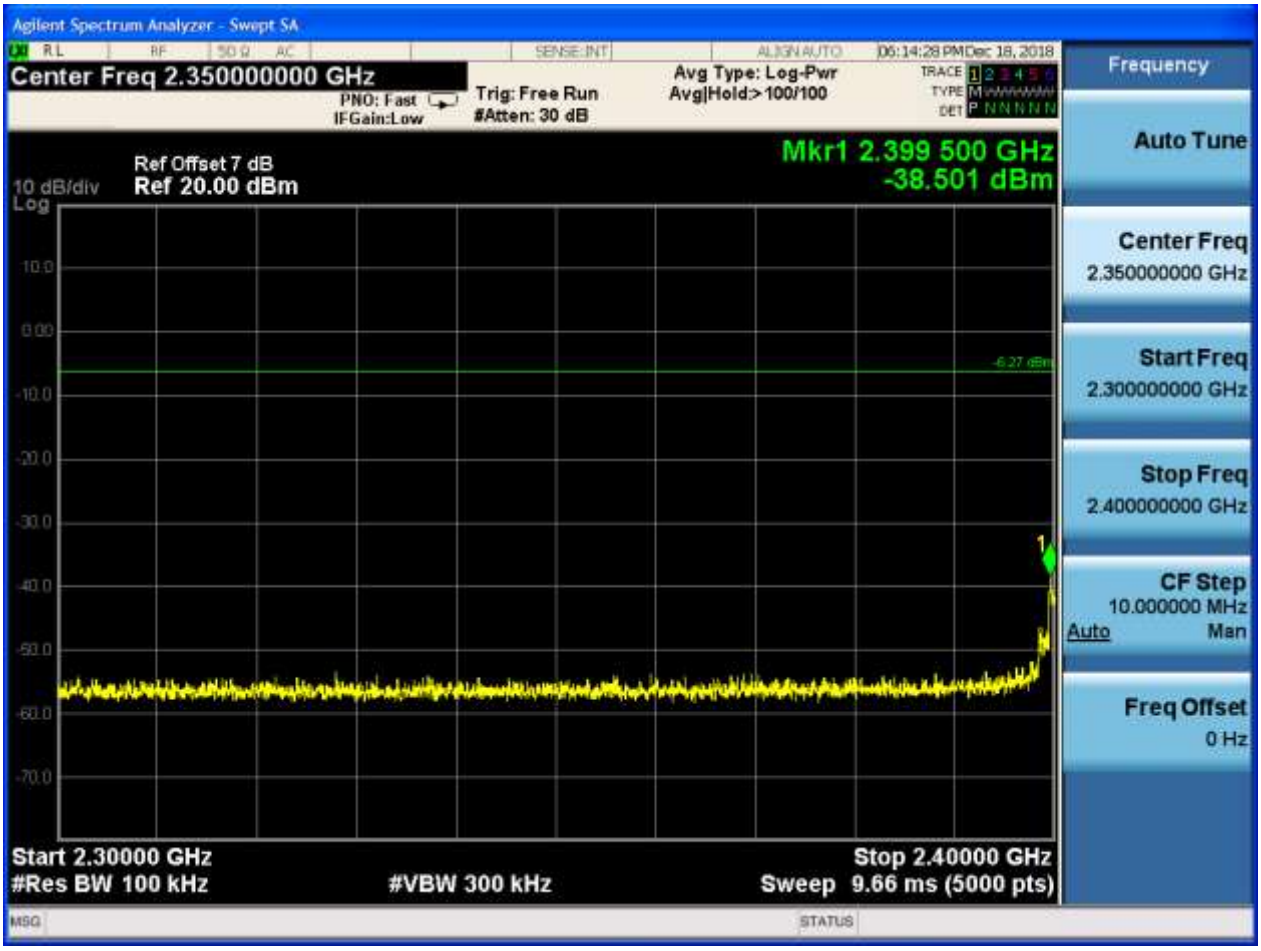
2.4 TM2_2DH5_Ch0

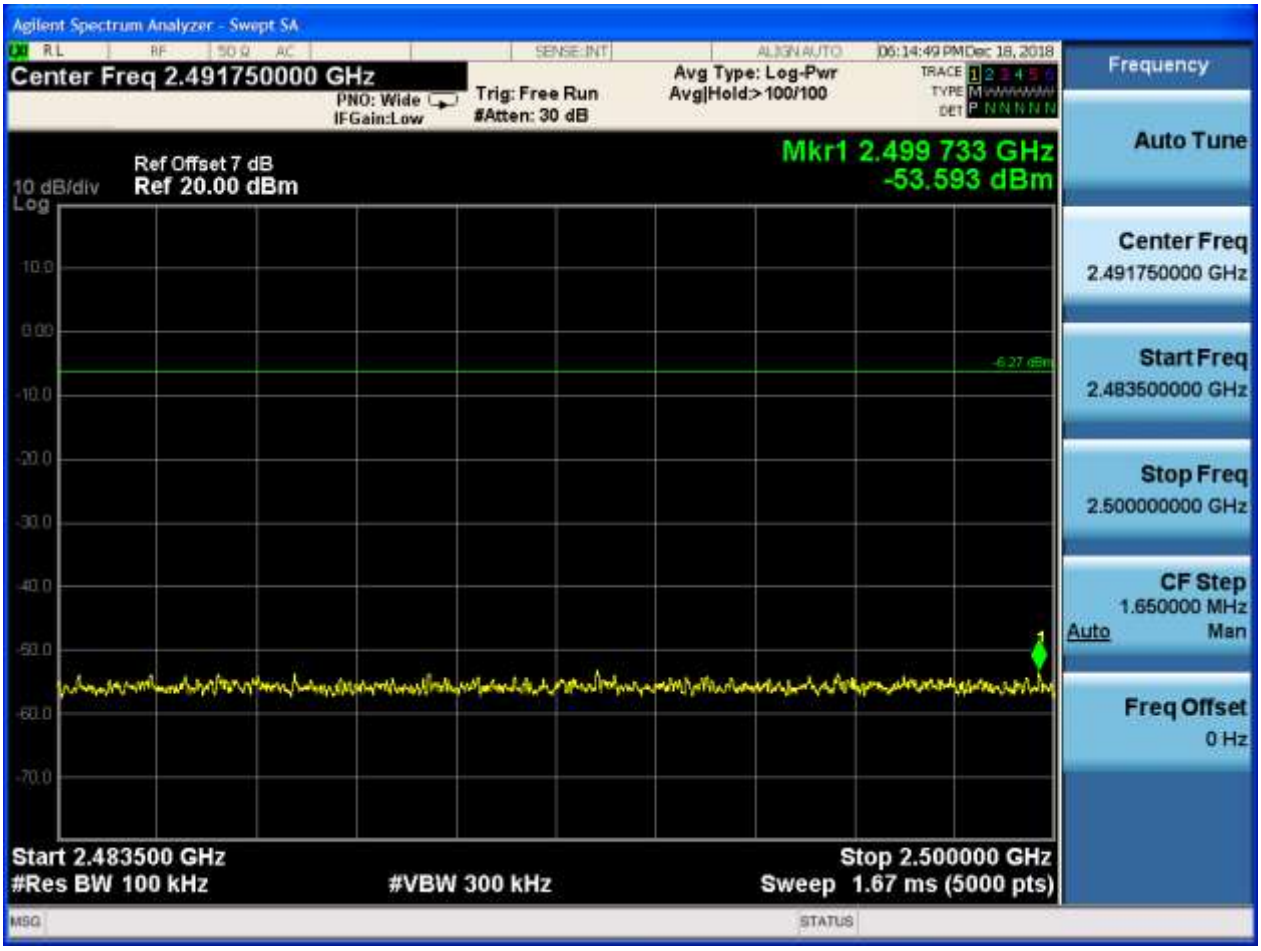
Pref

Puw





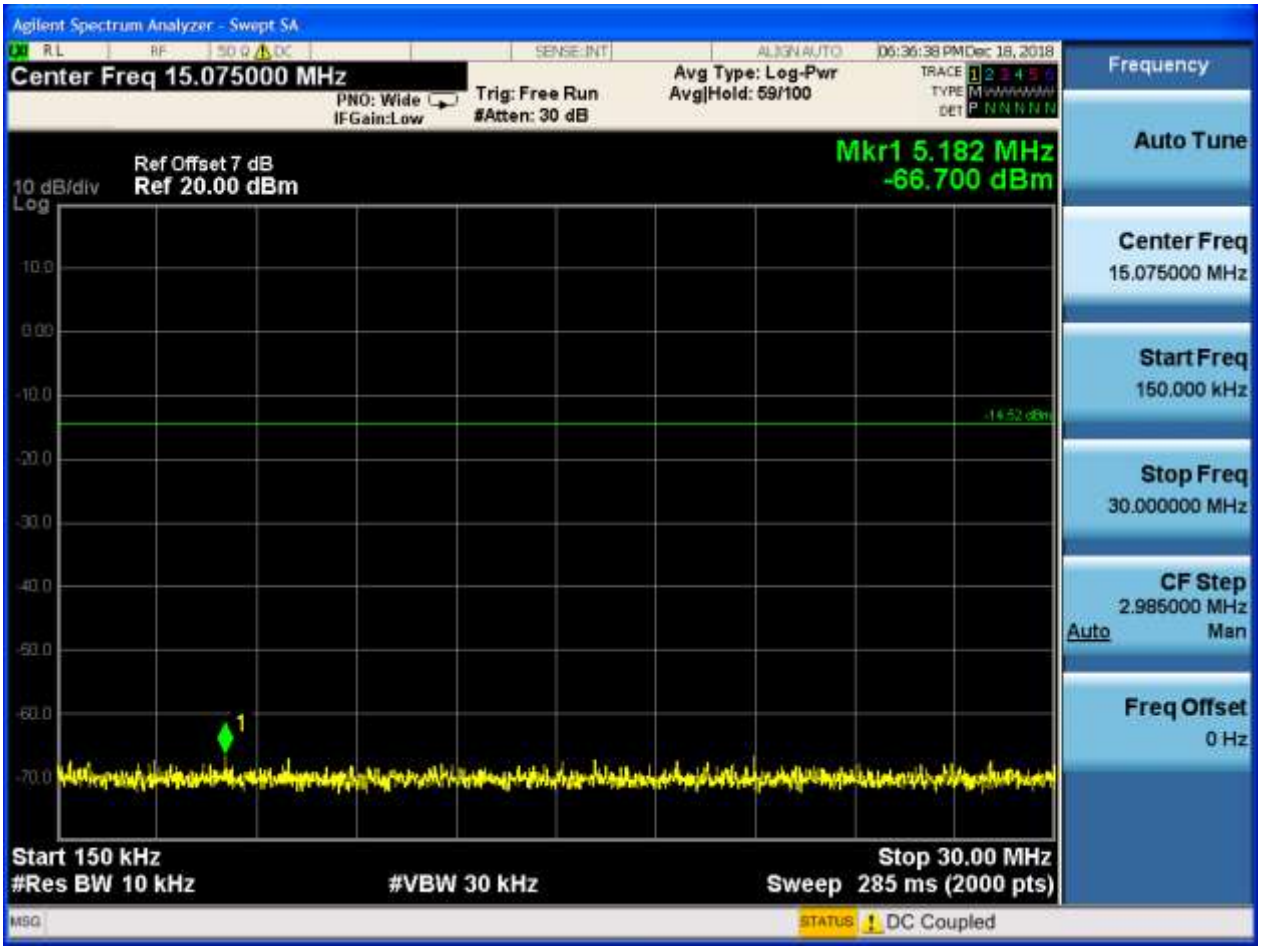


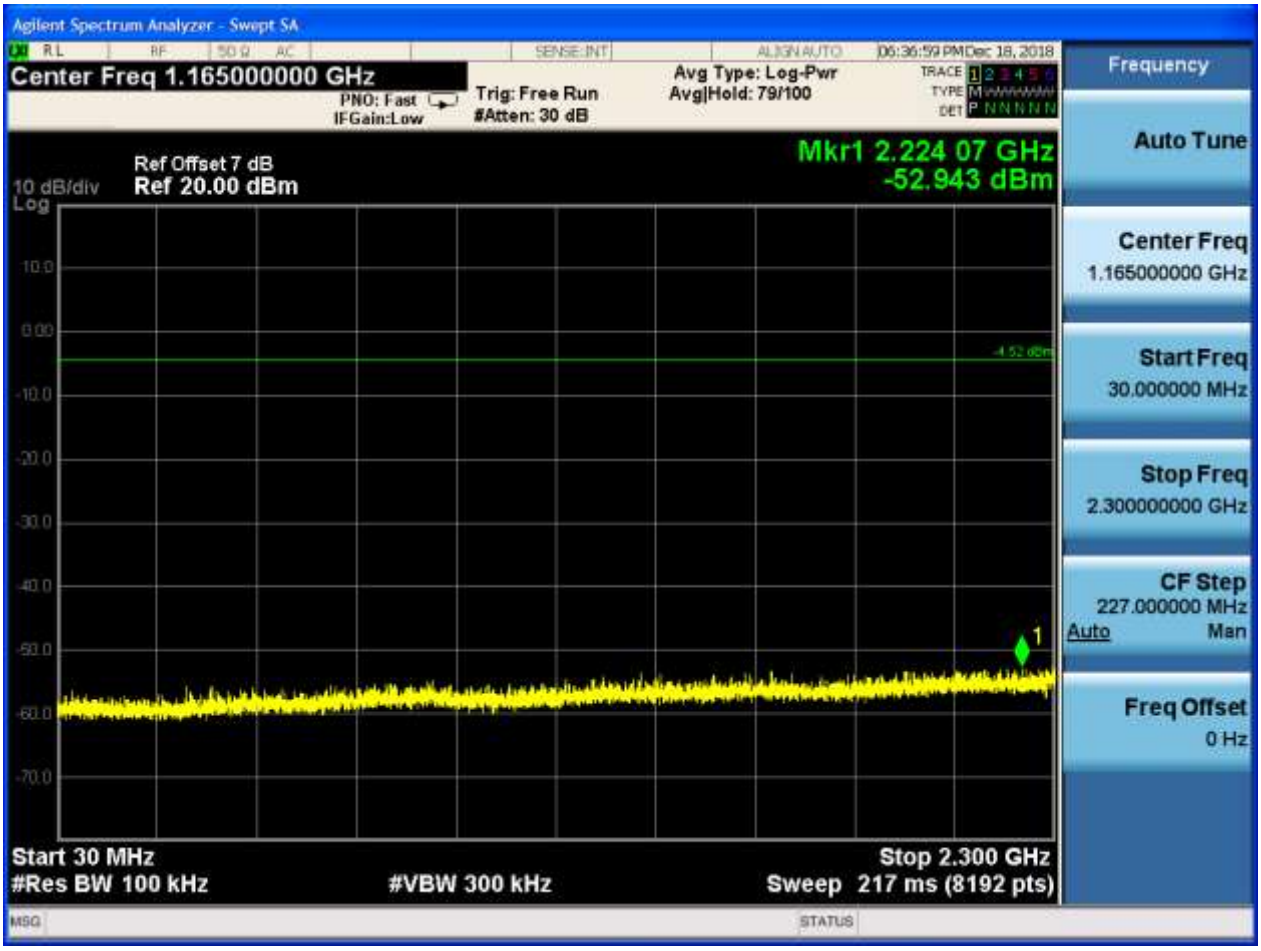


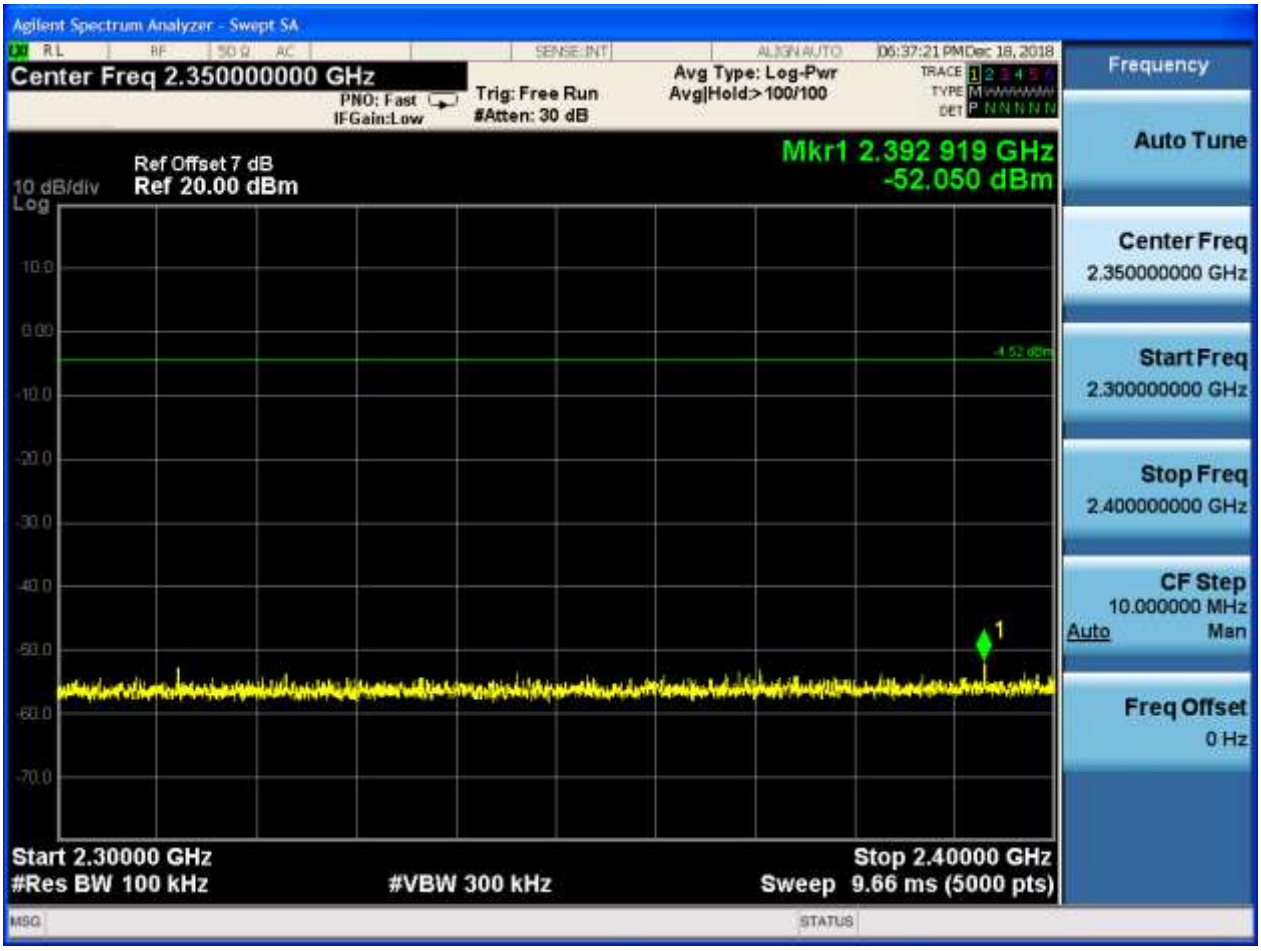
2.5 TM2_2DH5_Ch39

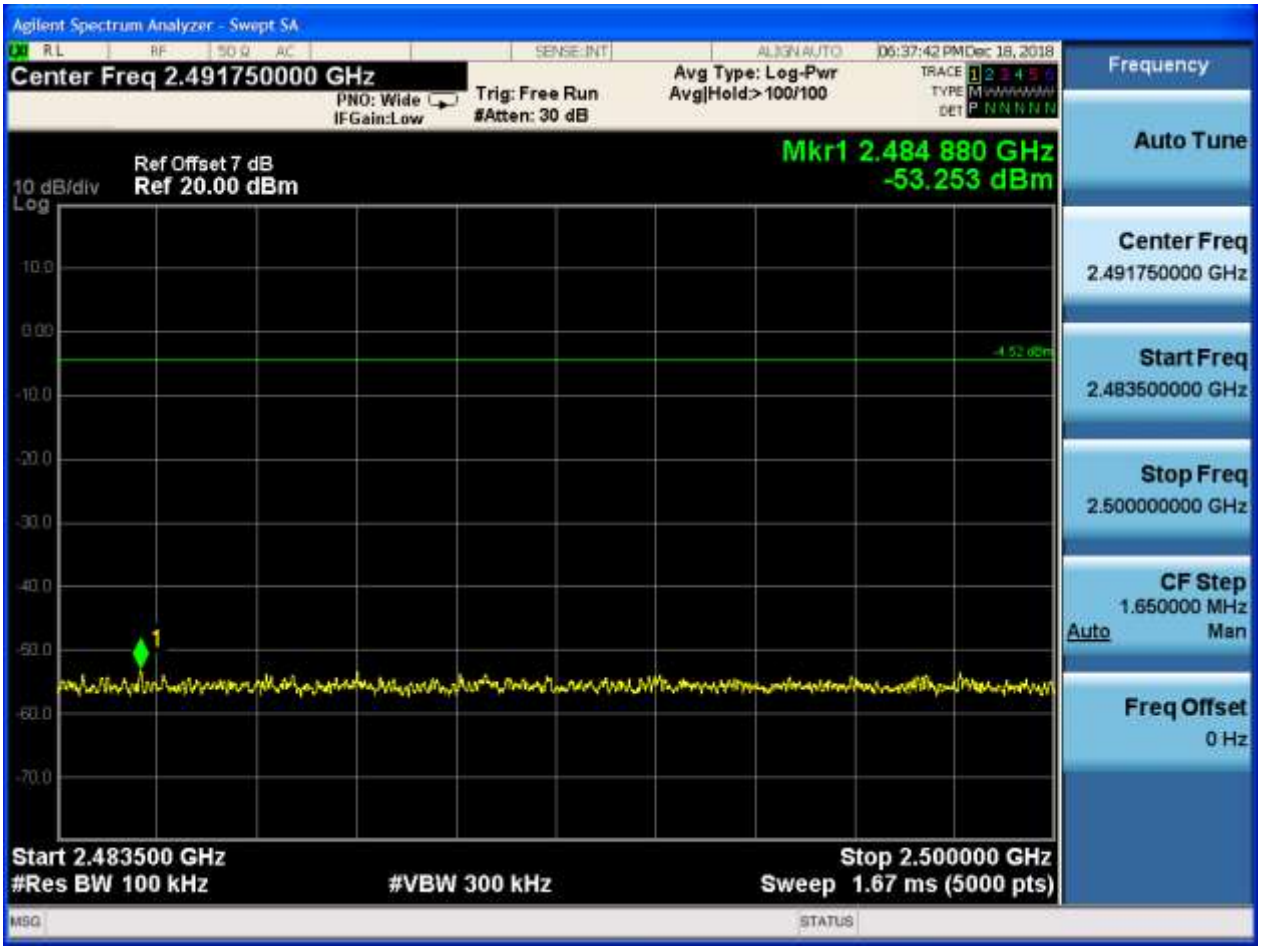
Pref

Puw





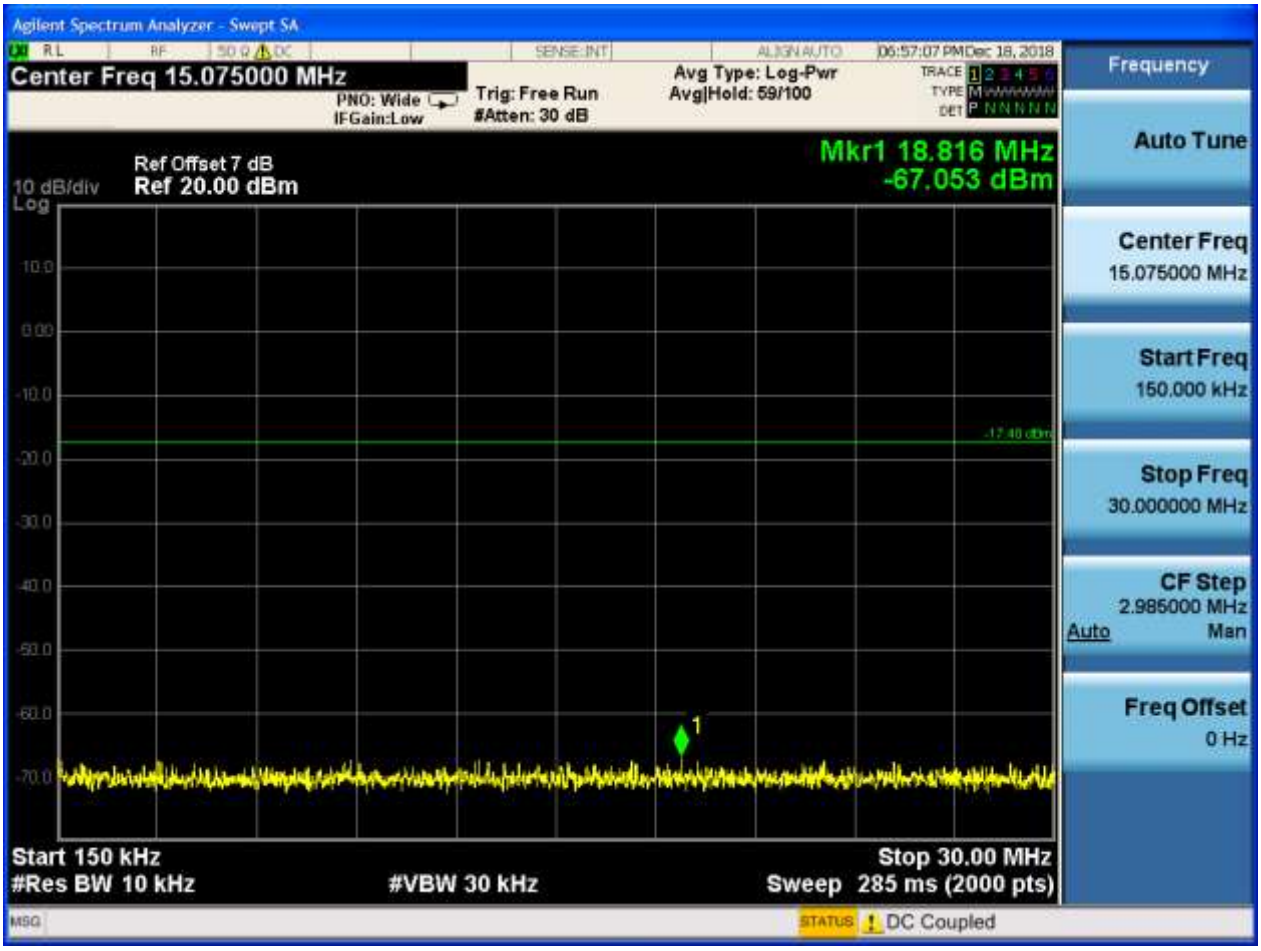


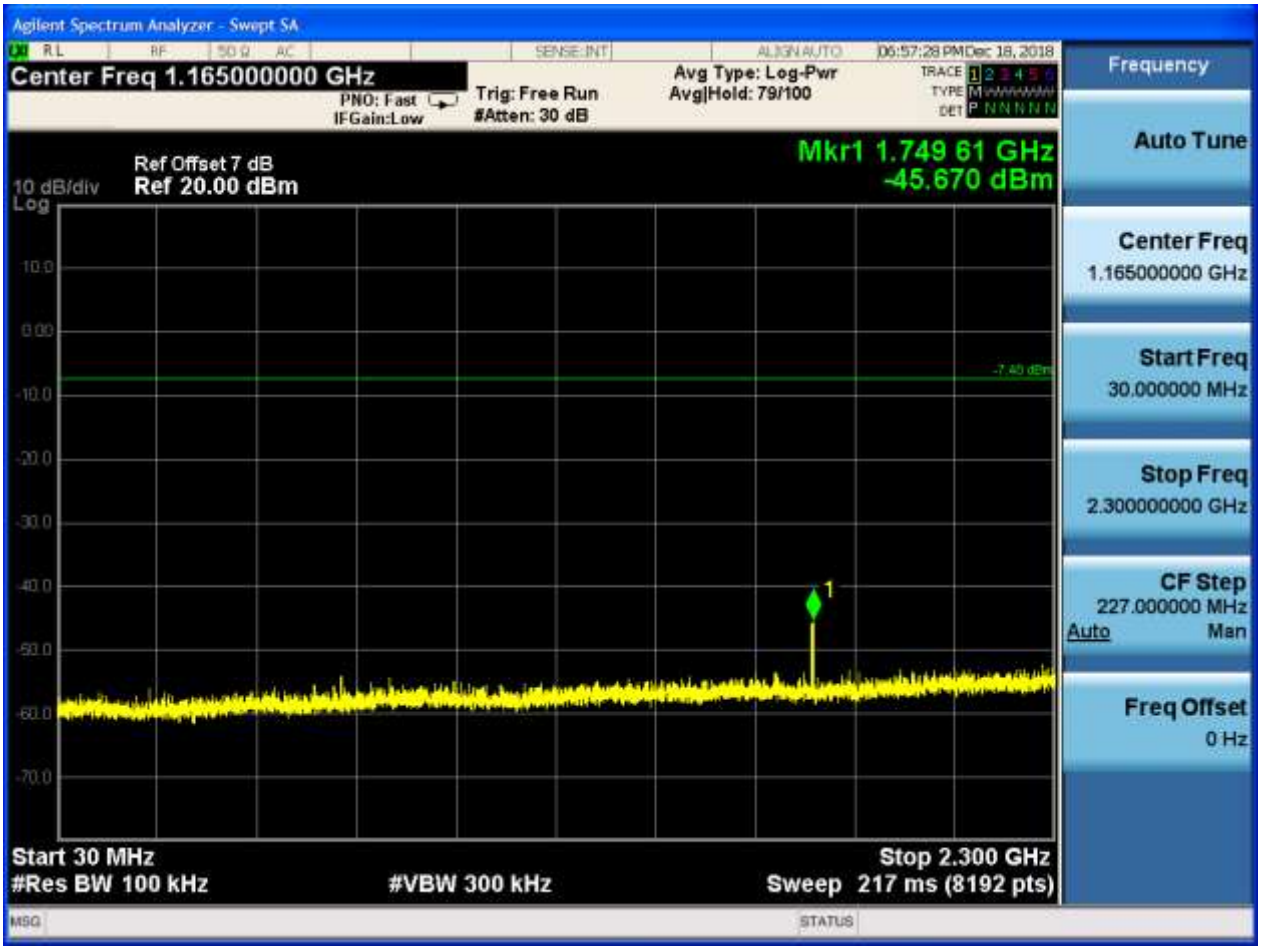


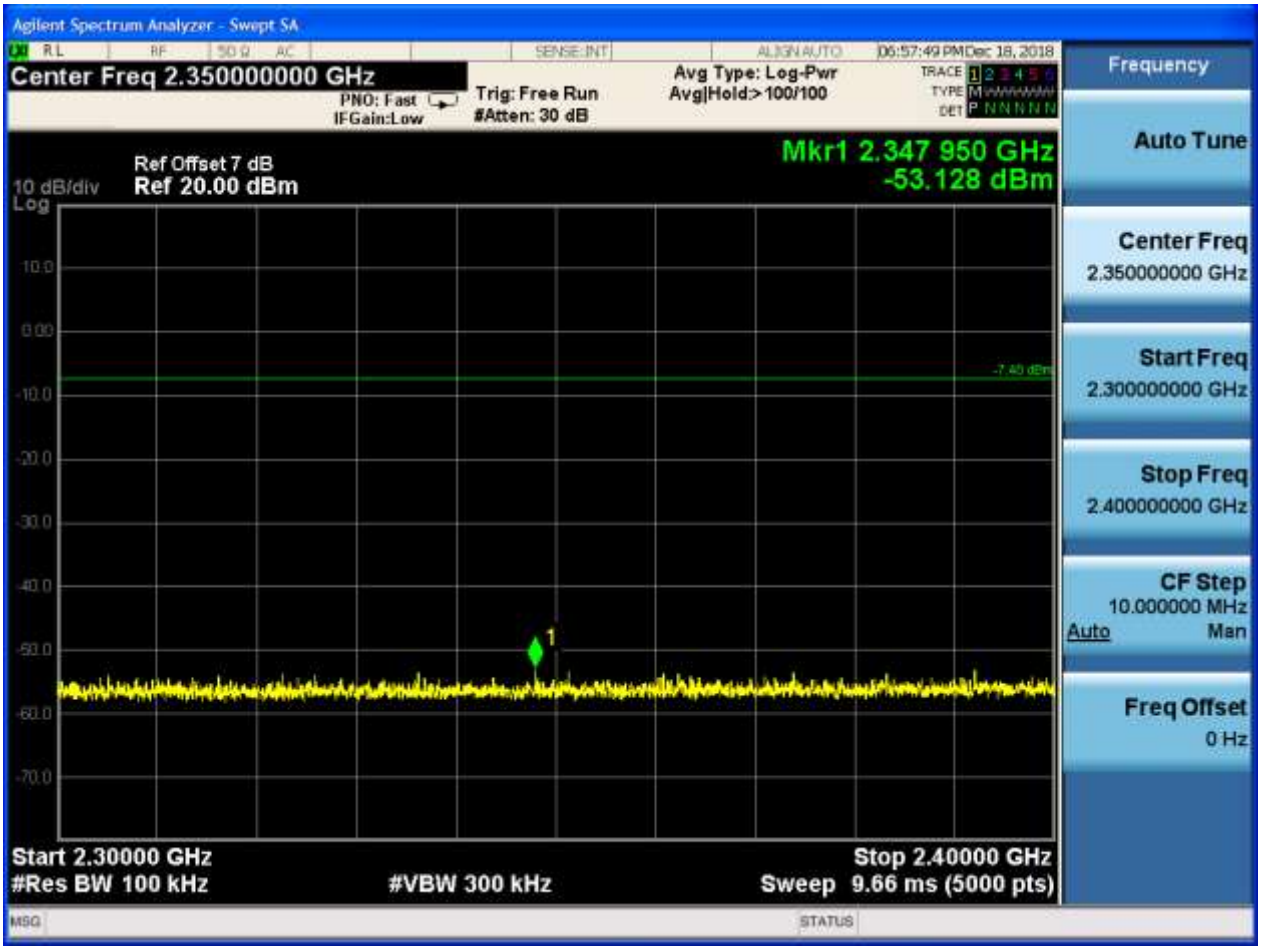
2.6 TM2_2DH5_Ch78

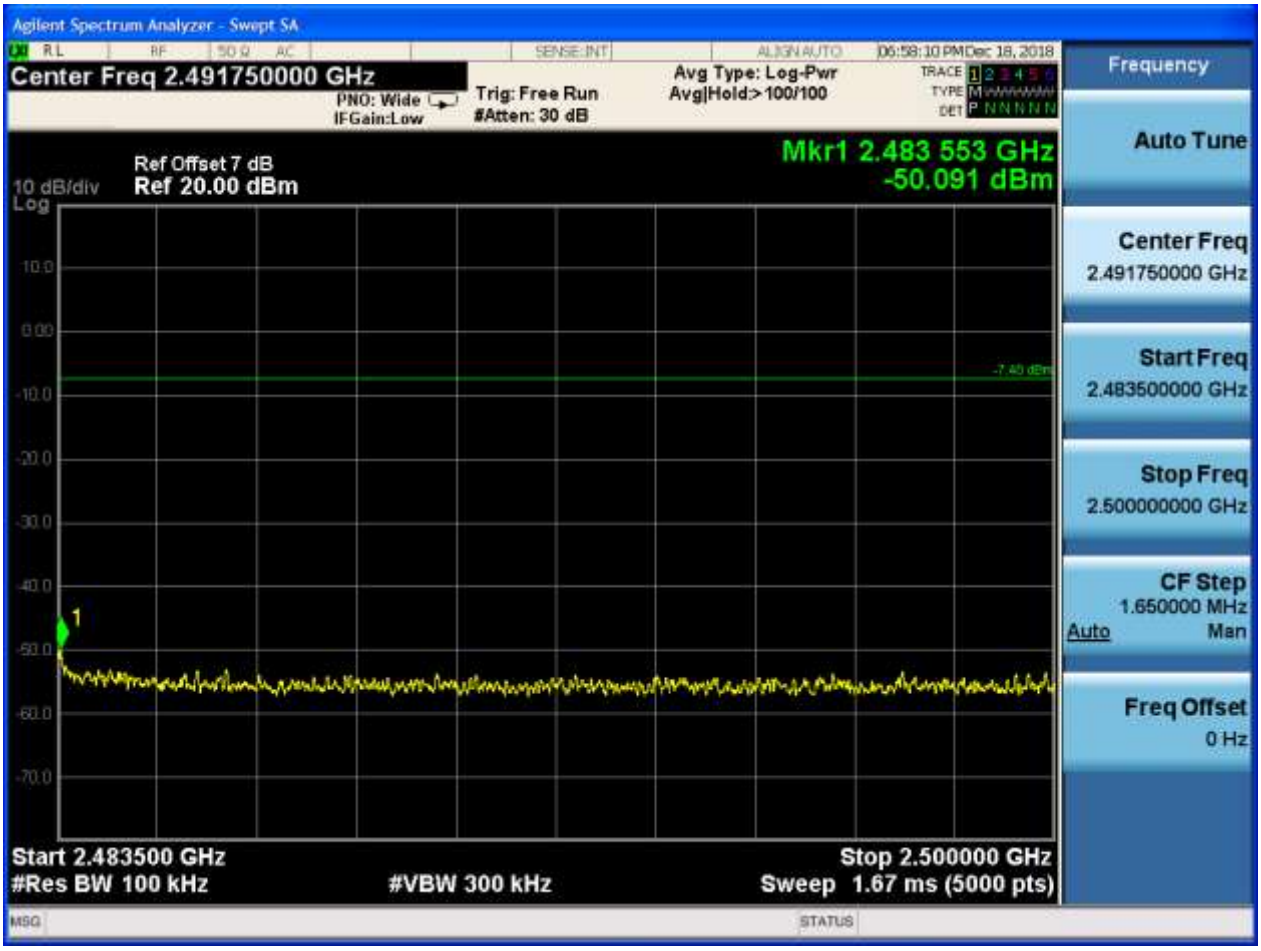
Pref

Puw





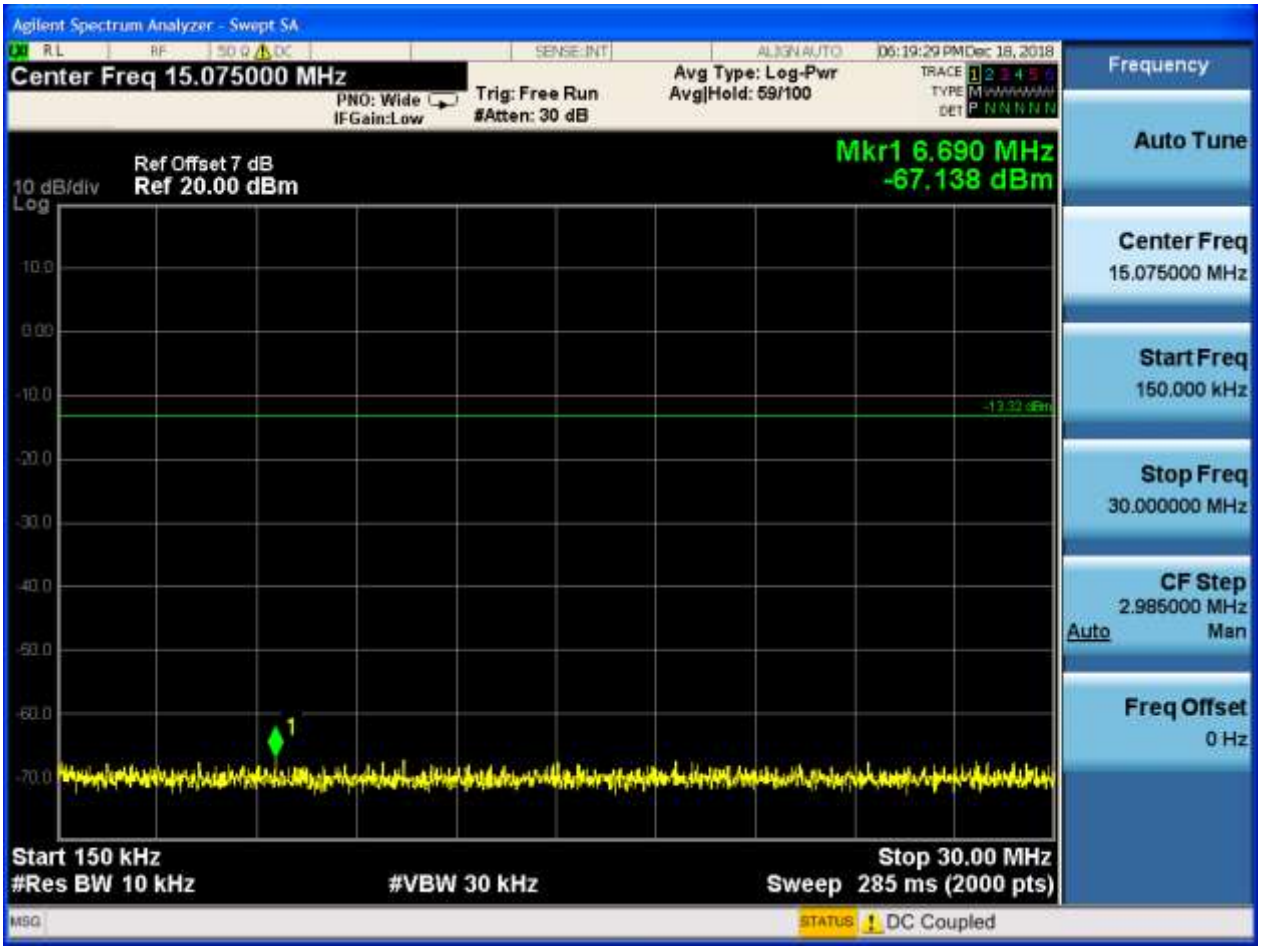


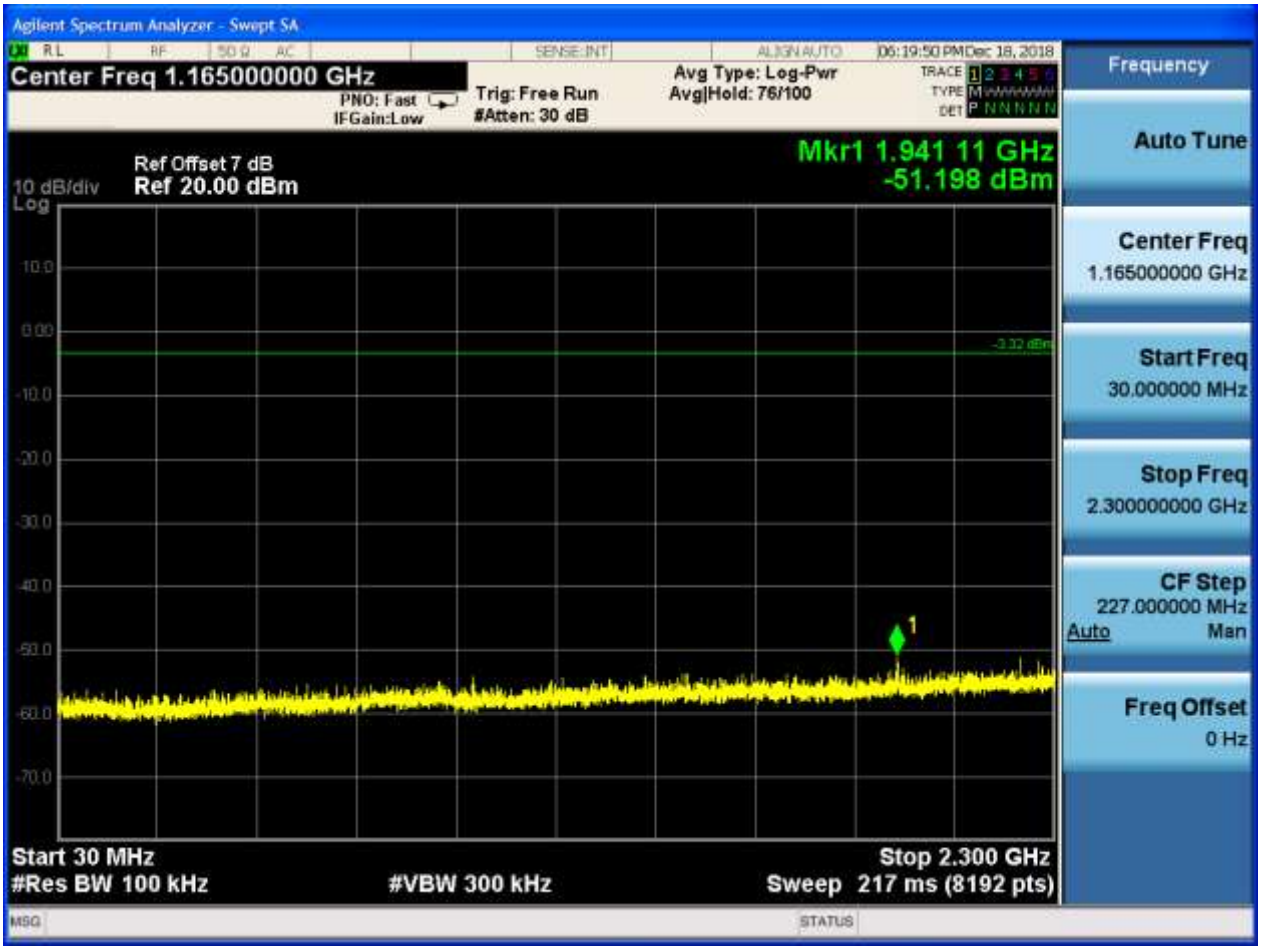


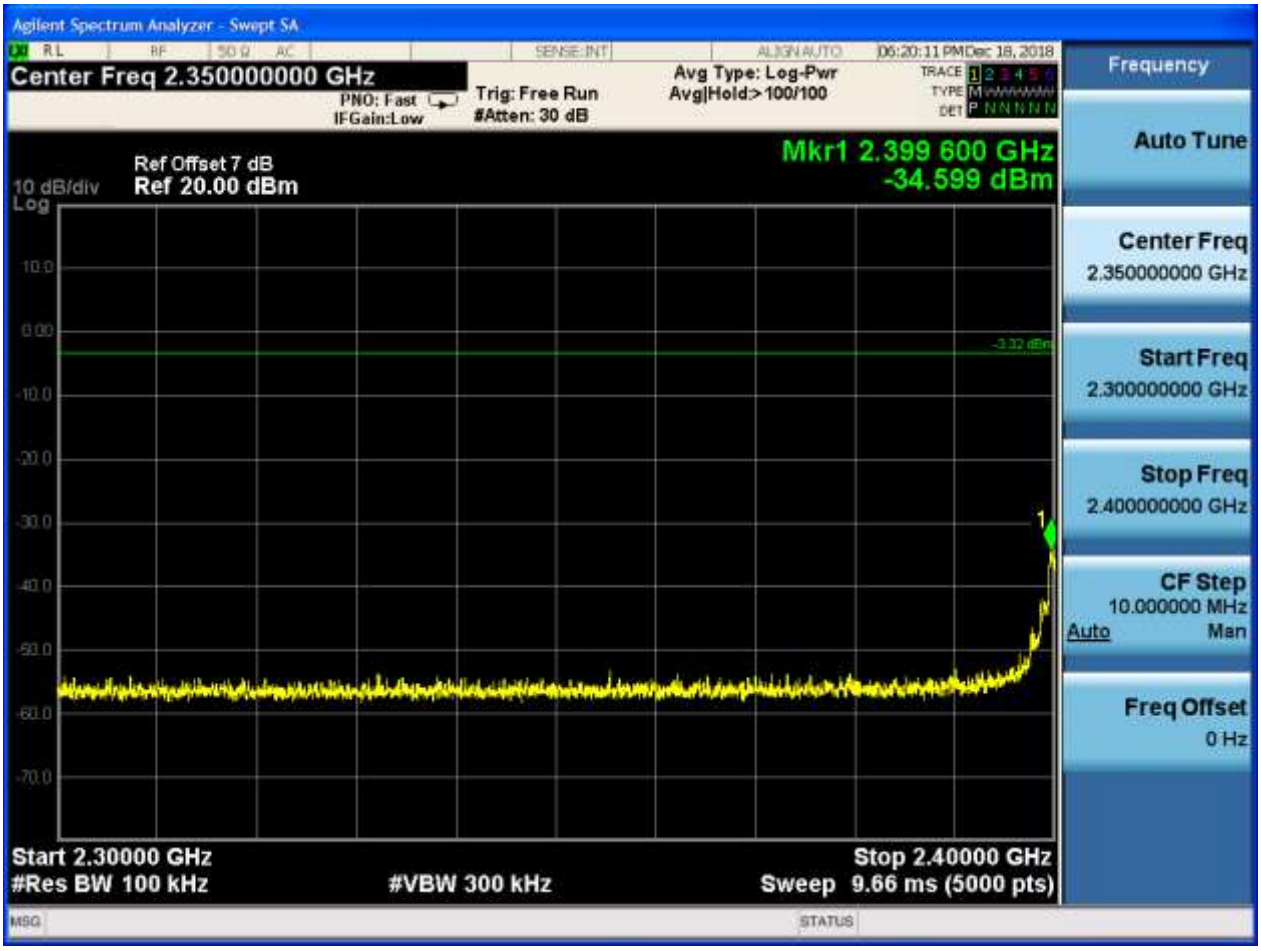
2.7 TM3_3DH5_Ch0

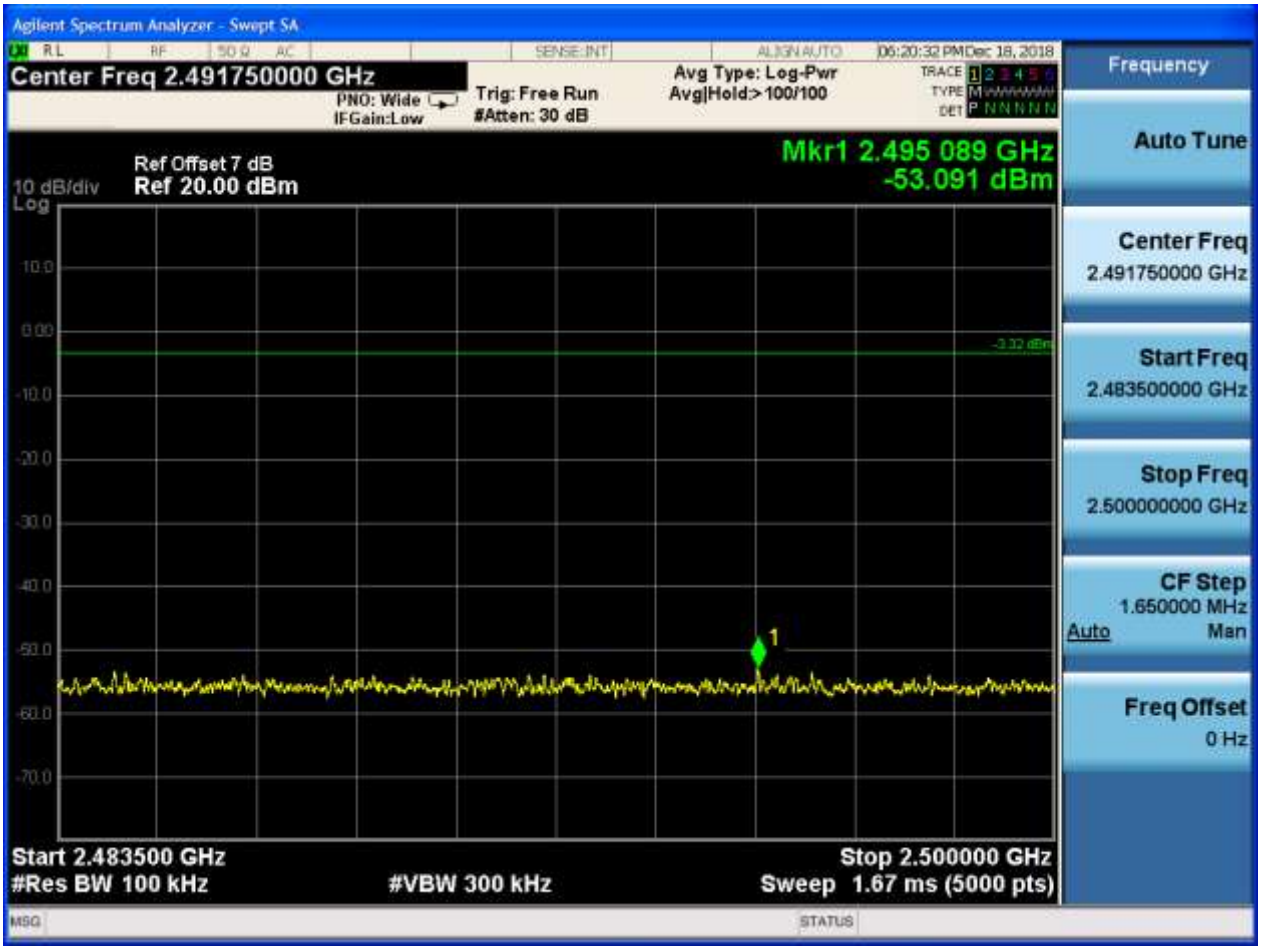
Pref

Puw





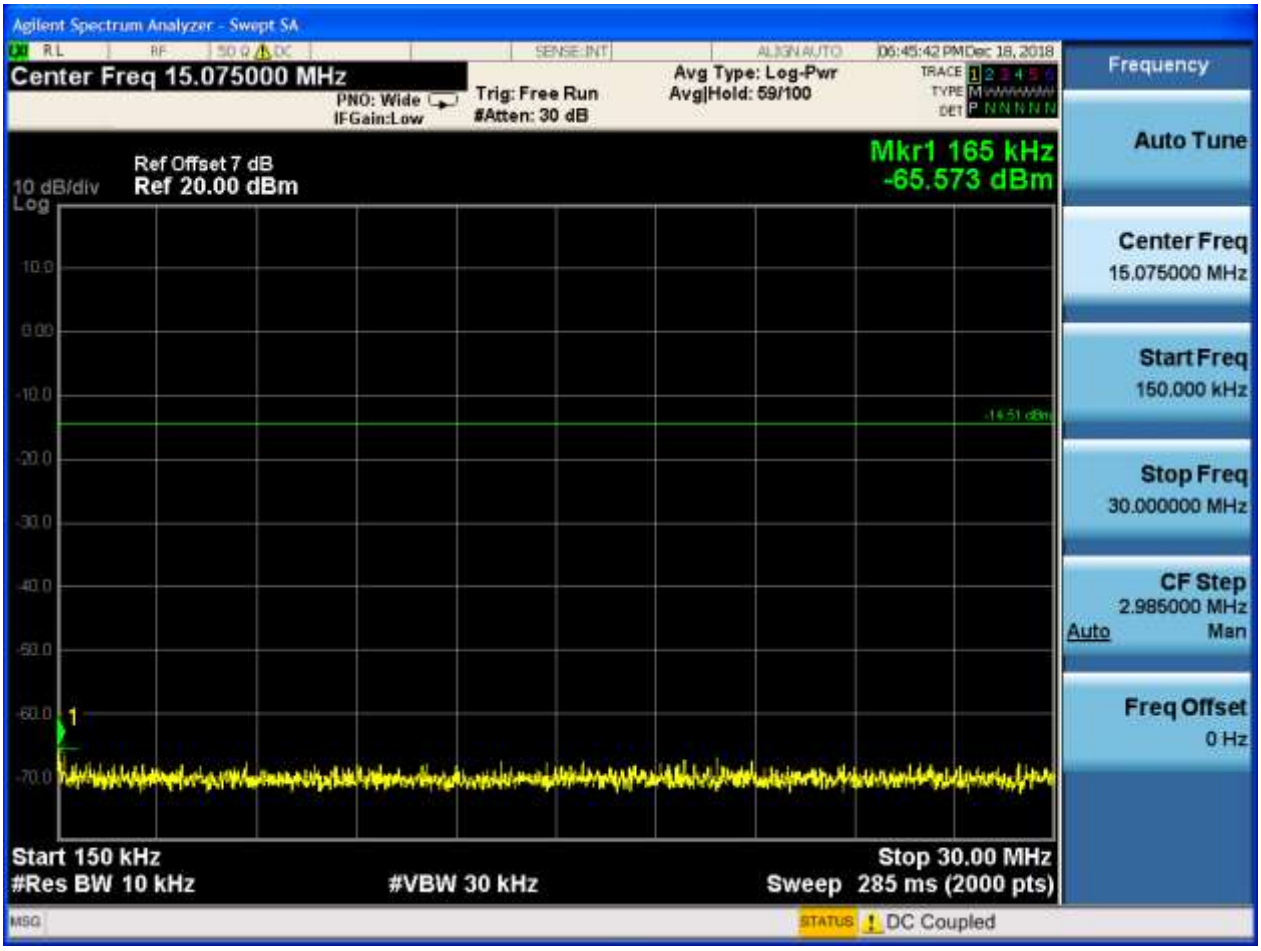


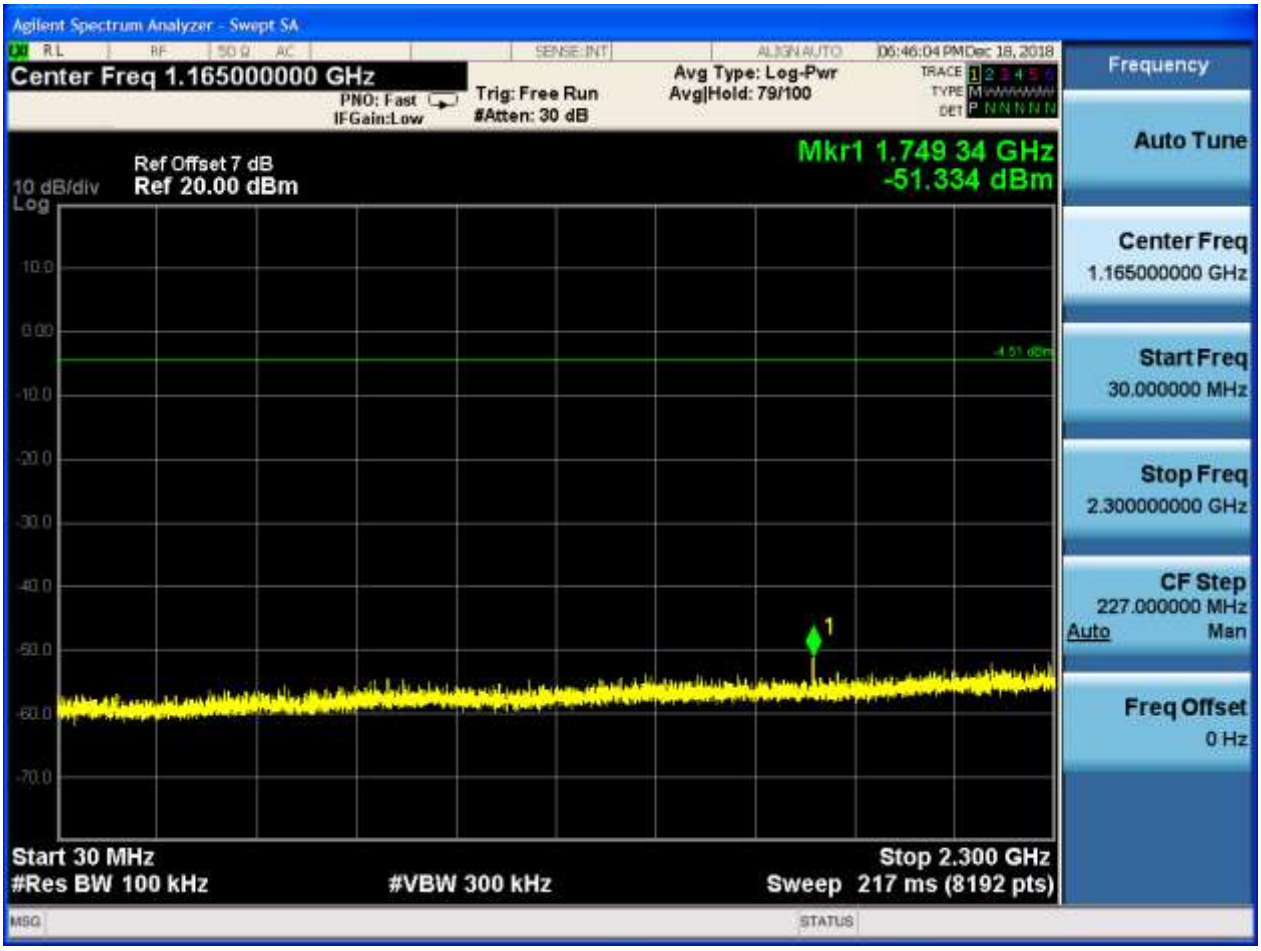


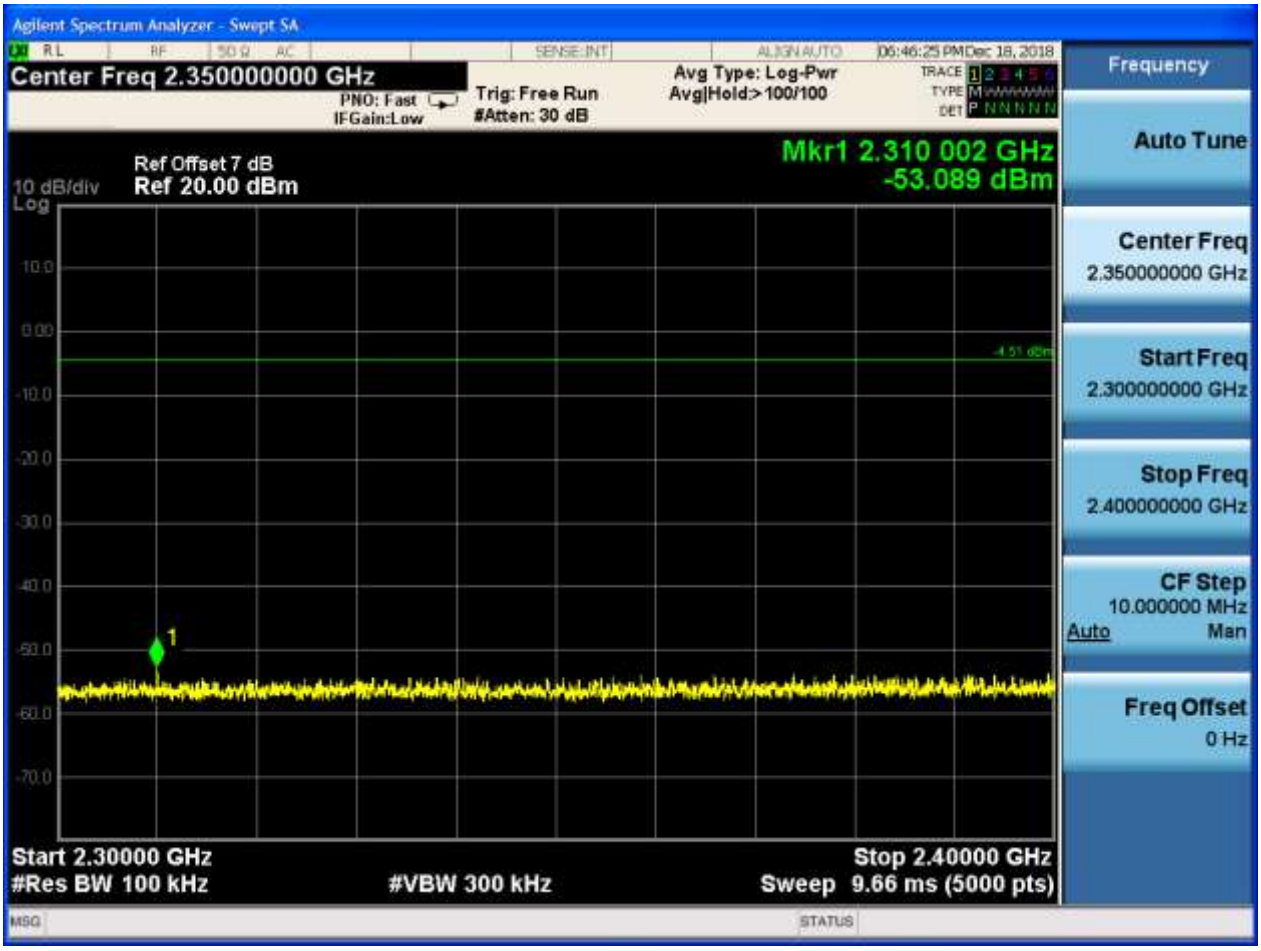
2.8 TM3_3DH5_Ch39

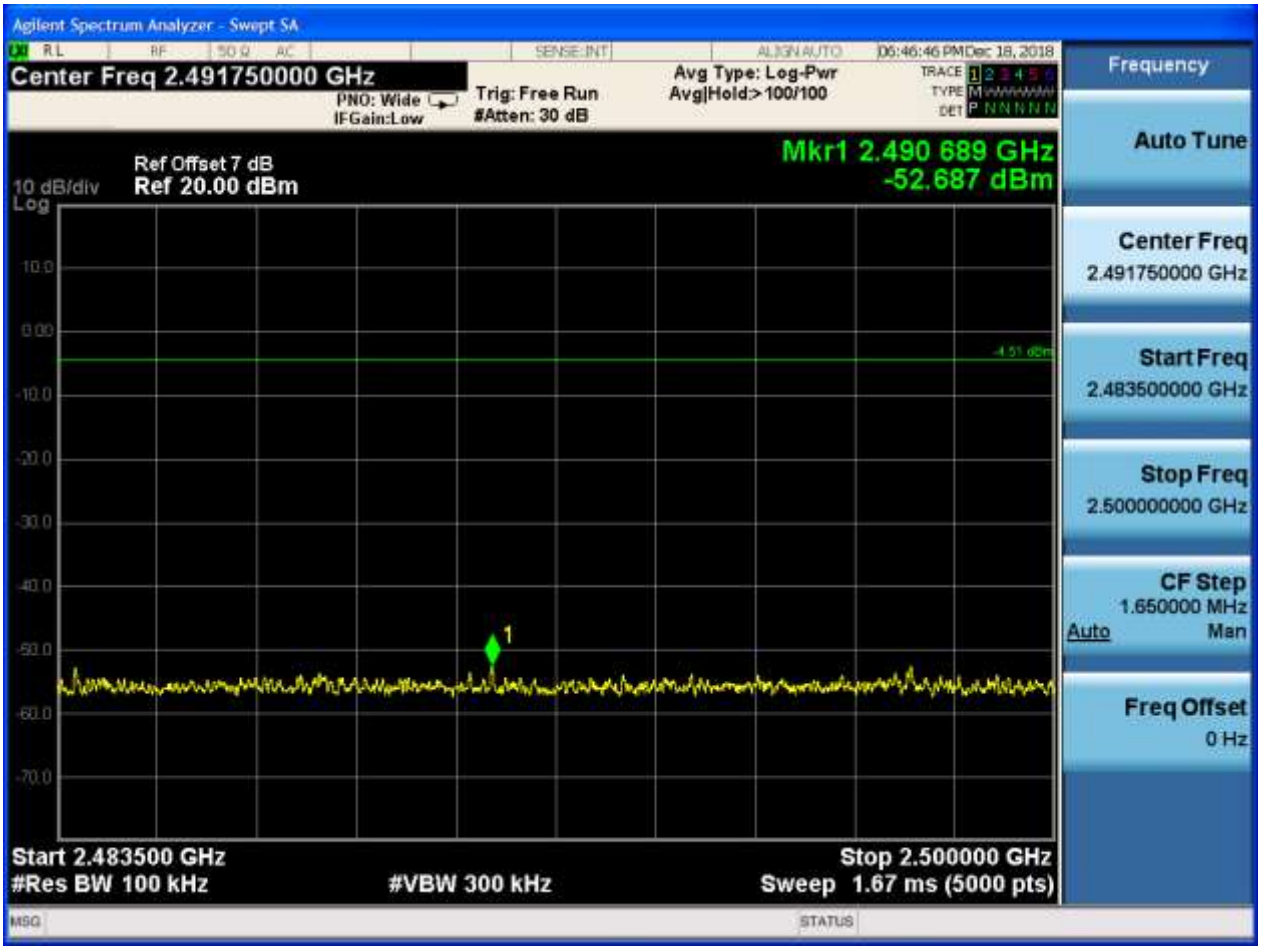
Pref

Puw





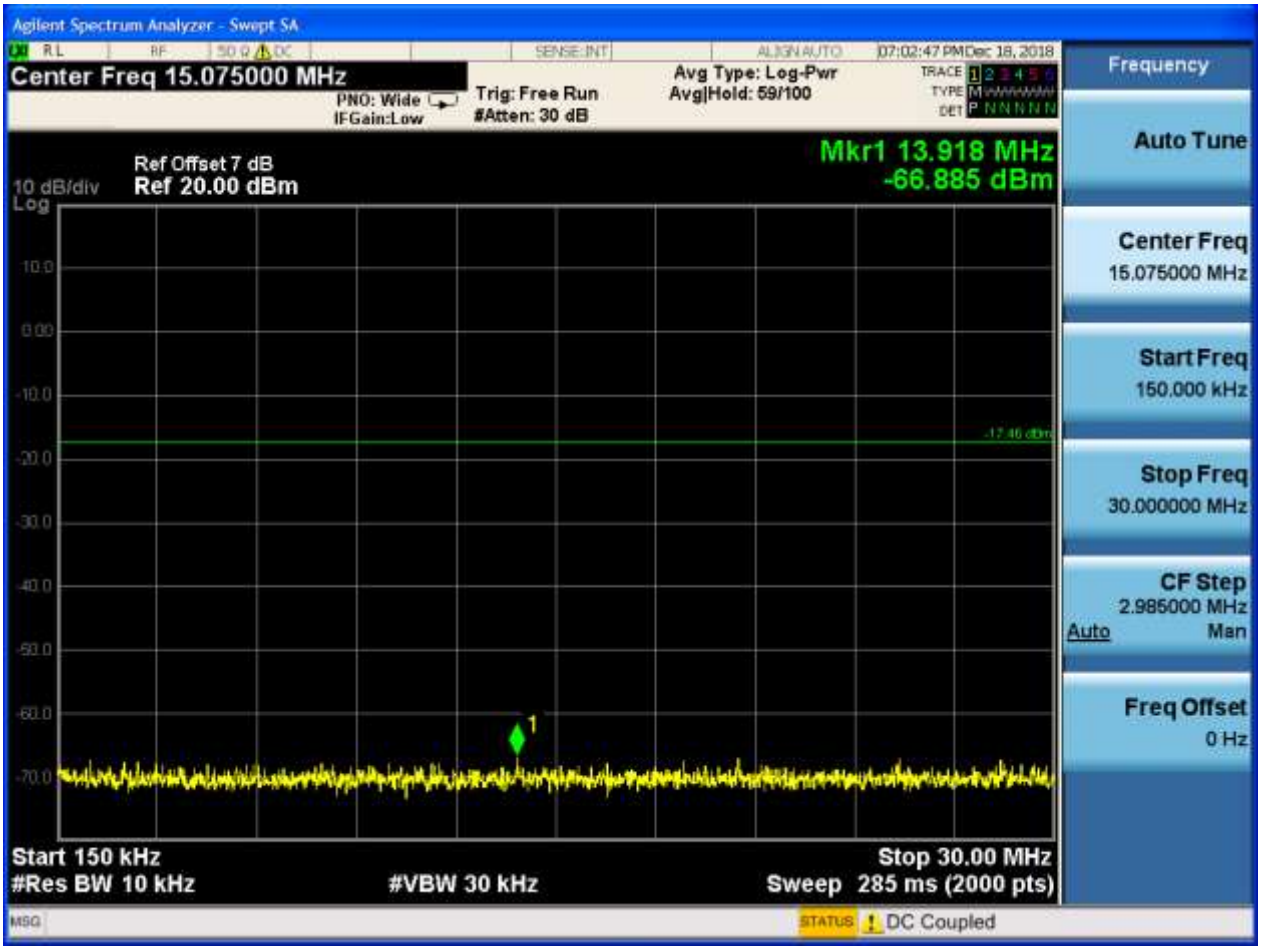


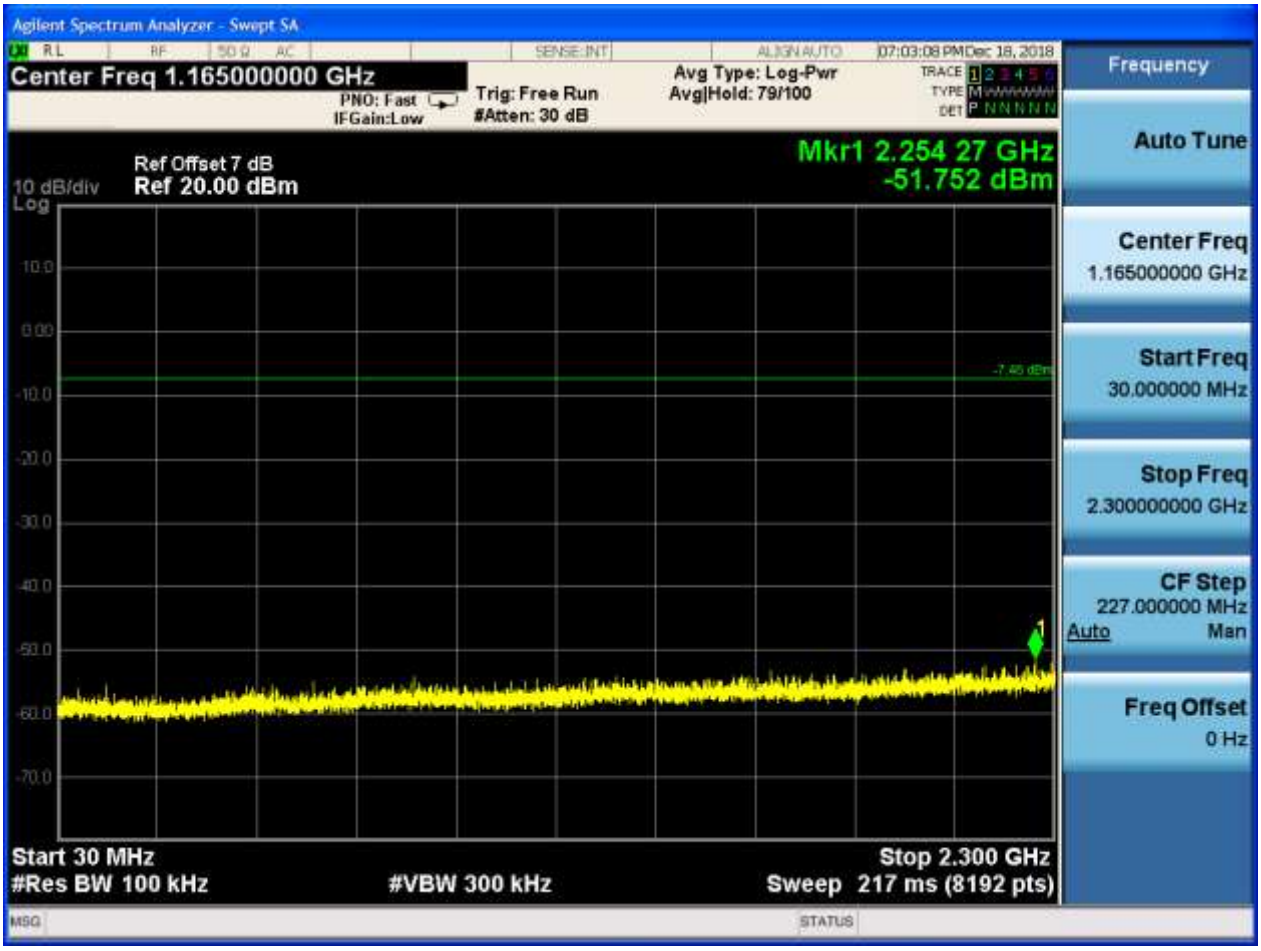


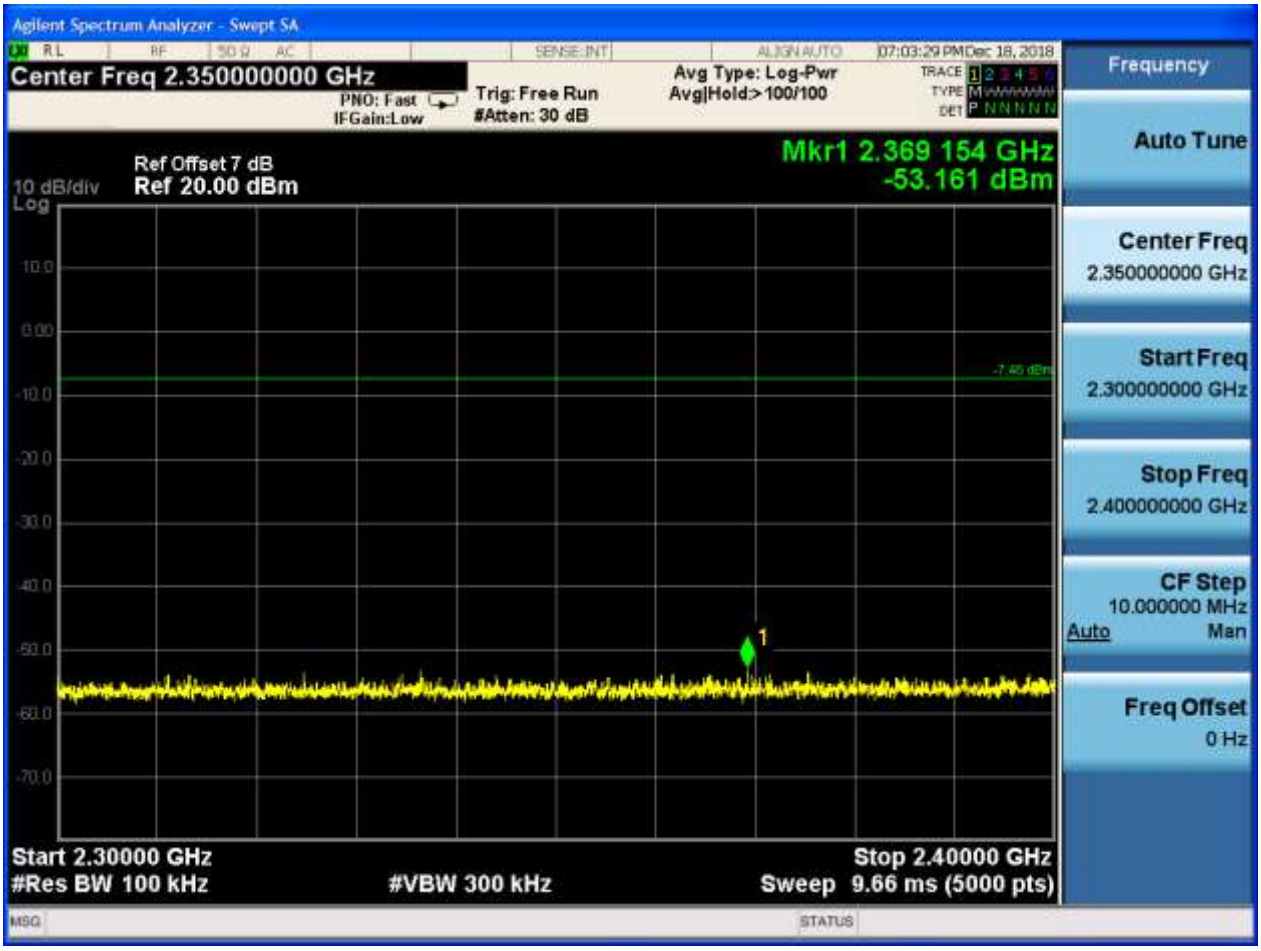
2.9 TM3_3DH5_Ch78

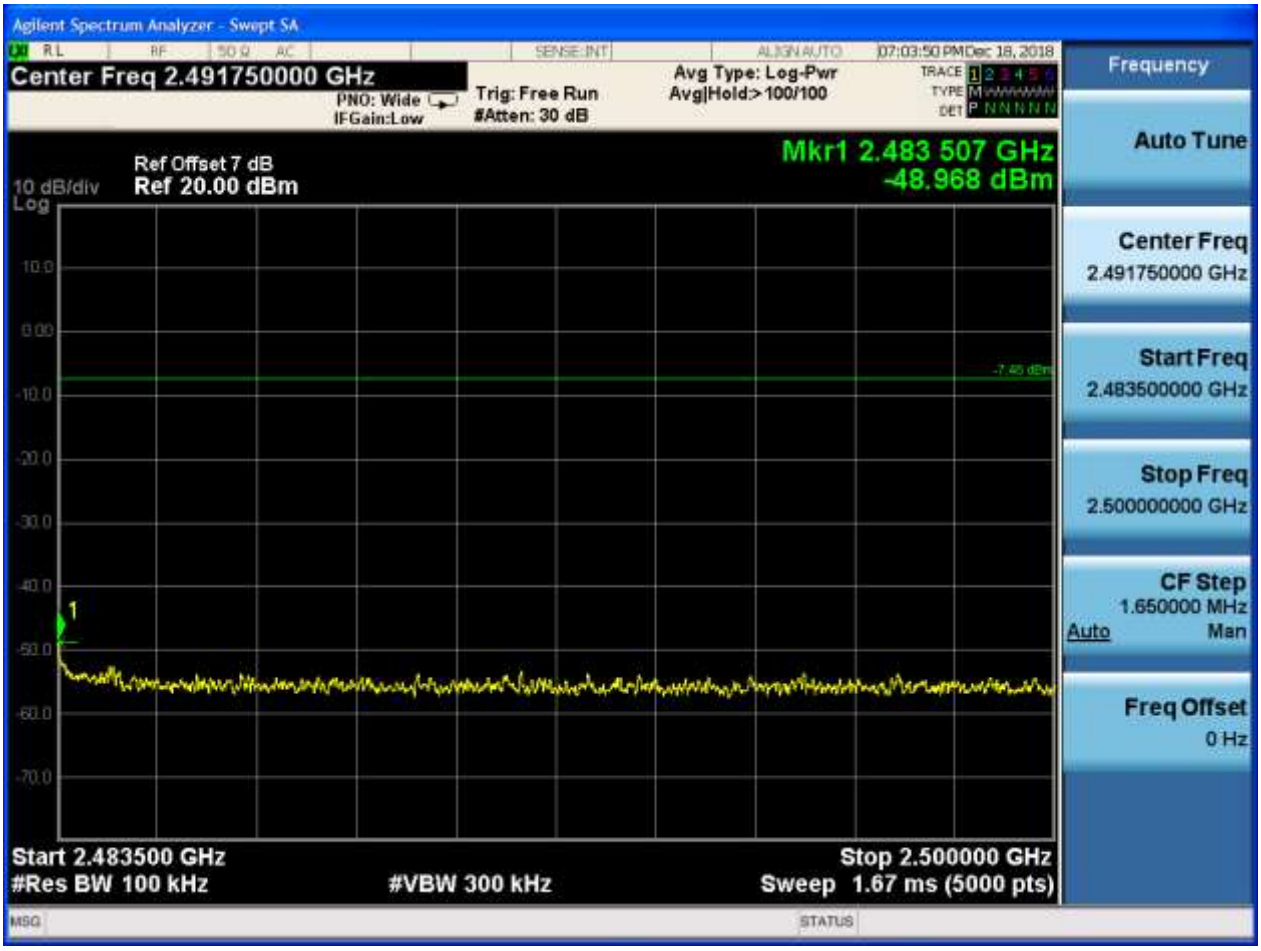
Pref

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 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”.

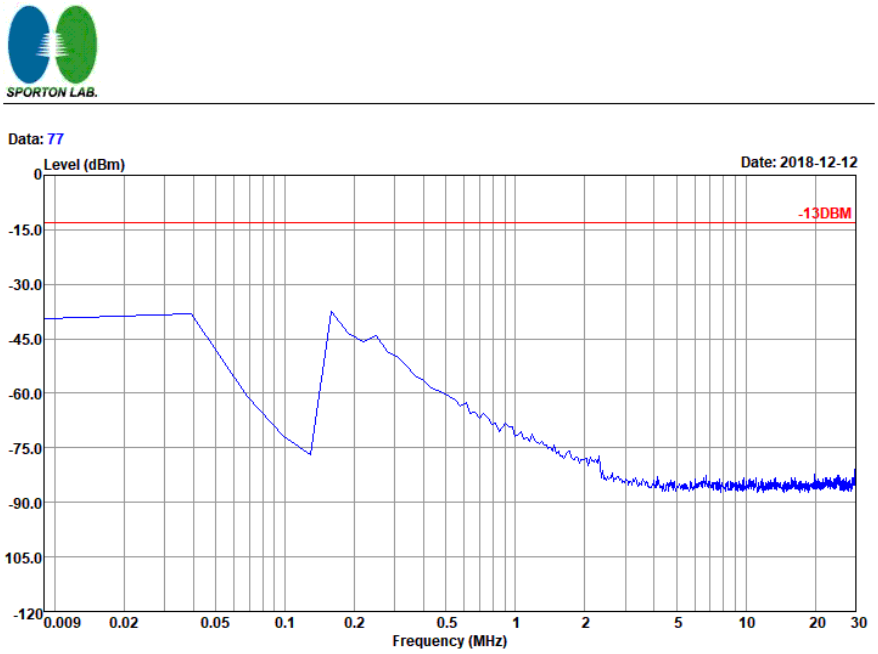
Test Range	EUT Conf.	Emissions	Verdict
30 MHz to 1 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
1 GHz to 3 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
	TM1_DH5_Ch78 (Worst Conf.)	< Limit	Pass
3 GHz to 18 GHz	TM1_DH5_Ch0 (Worse Conf.)	< Limit	Pass
18 GHz to 26.5 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass

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

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.

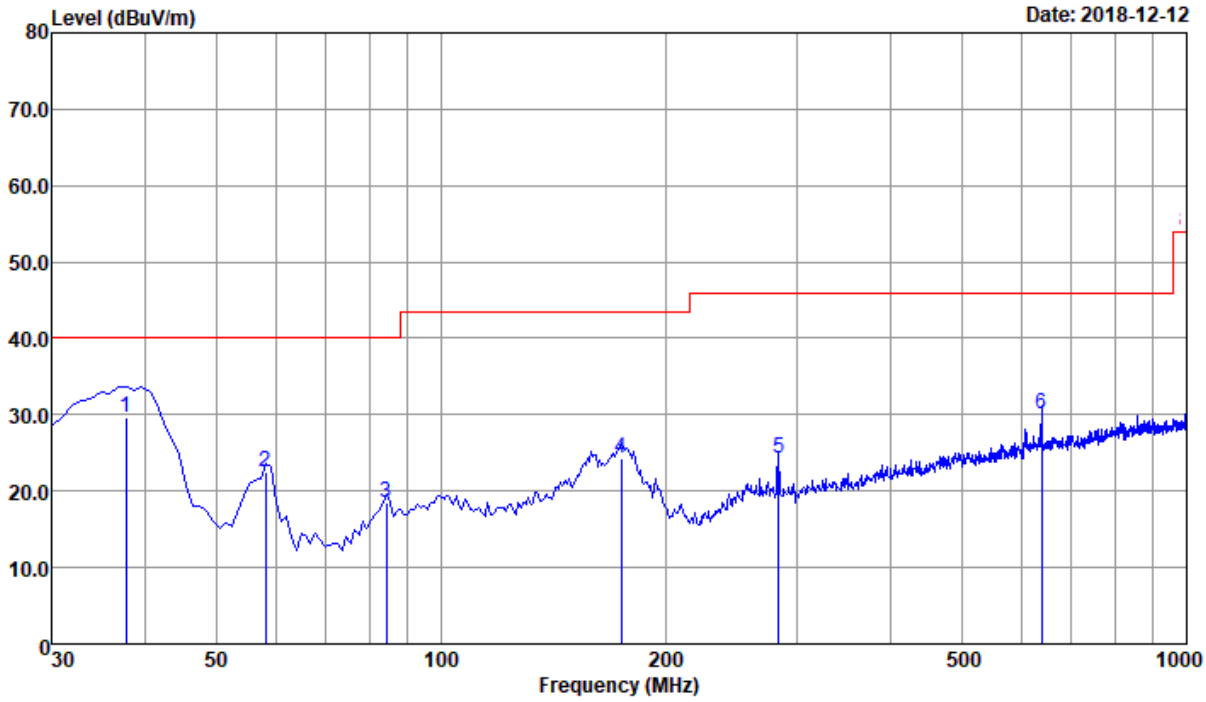


Site : 03CH01-SZ
Condition : -13DBM
: RBW:9.000KHz VBW:30.000KHz

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.

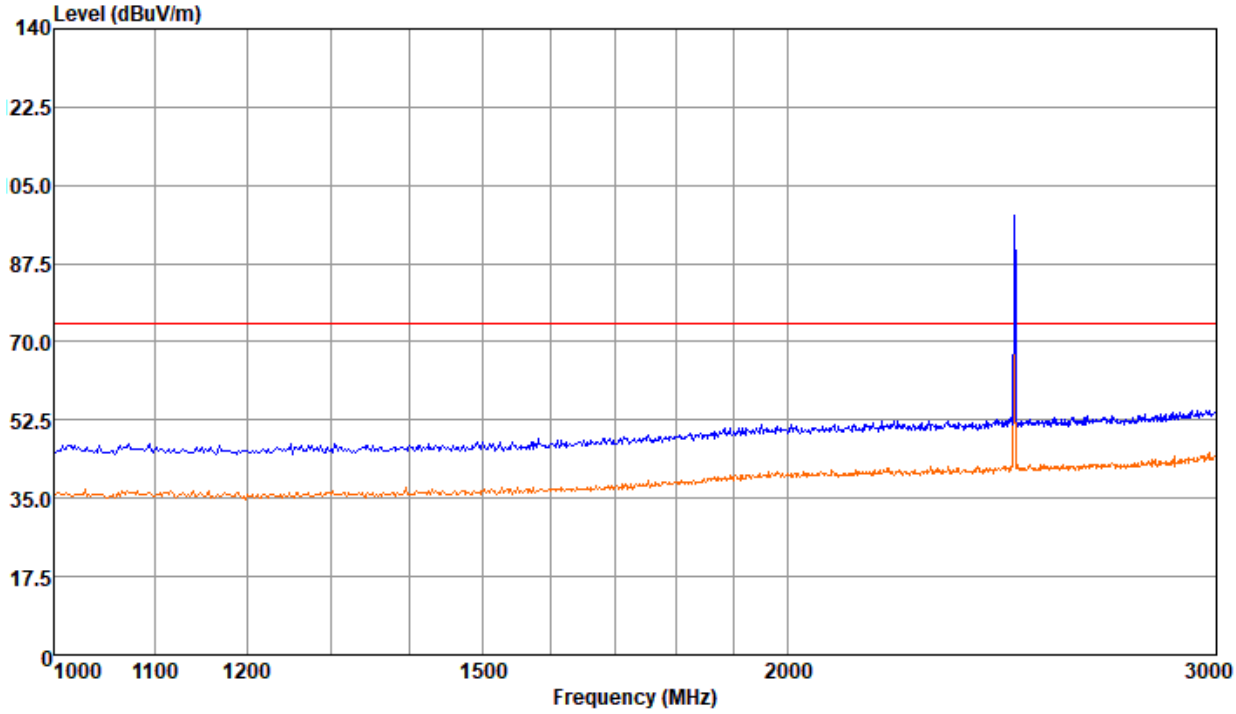
2, Margin=Limit - Level

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

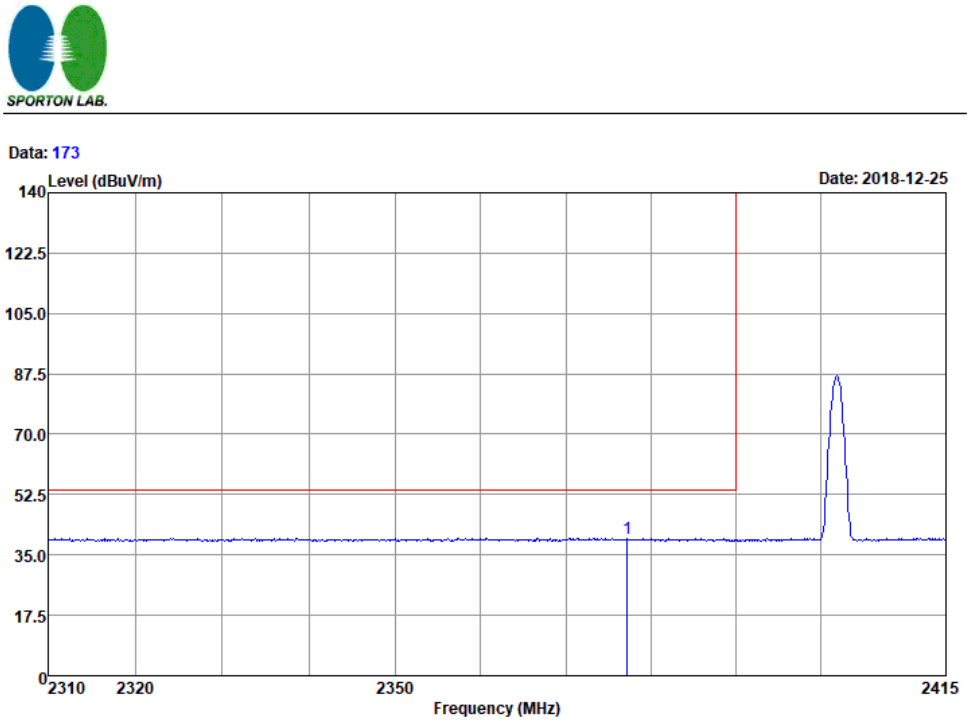
Note 1: The testing range of "1 GHz to 3 GHz" is for checking radiated emissions located in restricted bands near the EUT operating bands.

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

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

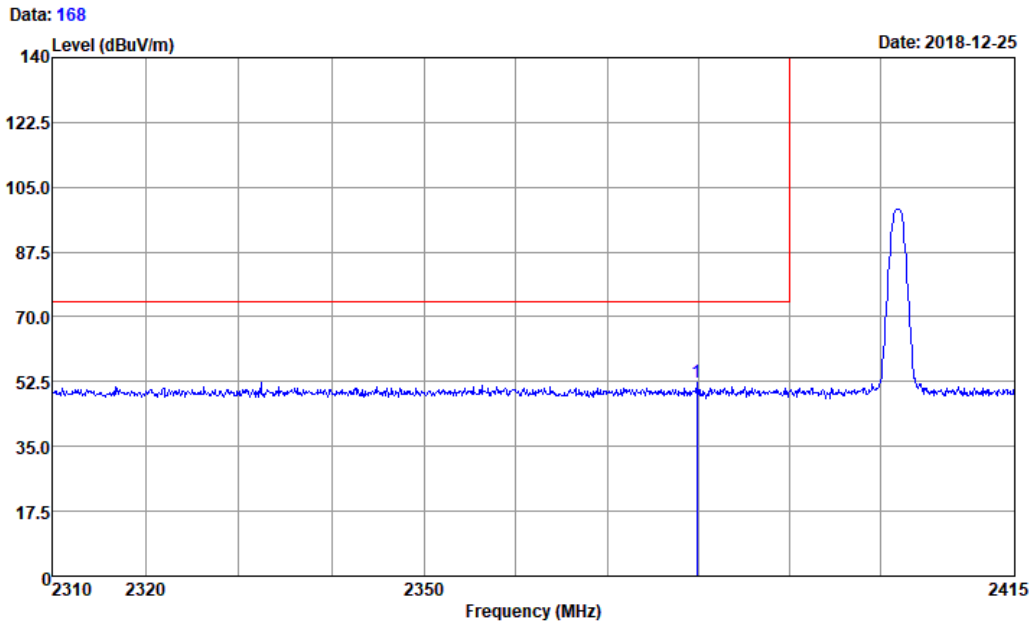


TM1_DH5_Ch0



Site : 03CH01-SZ
Condition : AVG_BE_54 3m HF_ANT(3117)_119436 VERTICAL
: RBW:1000.000KHz VBW:1.000KHz
: BSA-L04 BT CH0

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 pp	2377.20	39.89	-14.11	54.00	34.64	31.52	6.73	33.00	Average



Site : 03CH01-SZ
Condition : PEAK_BE_74 3m HF_ANT(3117)_119436 HORIZONTAL
: RBW:1000.000KHz VBW:3000.000KHz
: BSA-L04 BT CH0

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 pp	2379.83	52.26	-21.74	74.00	47.01	31.52	6.73	33.00	Peak

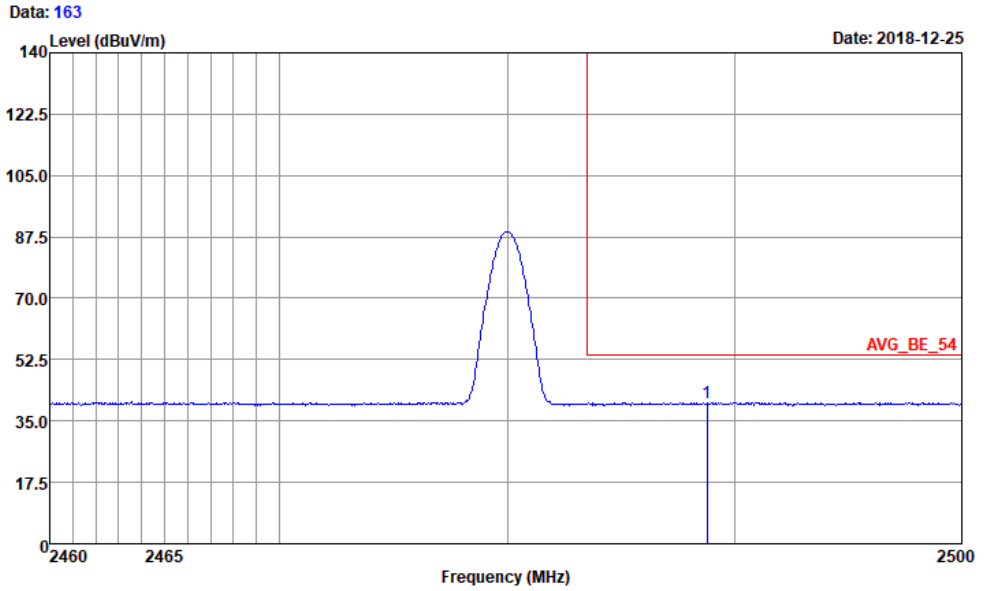
Note:

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.

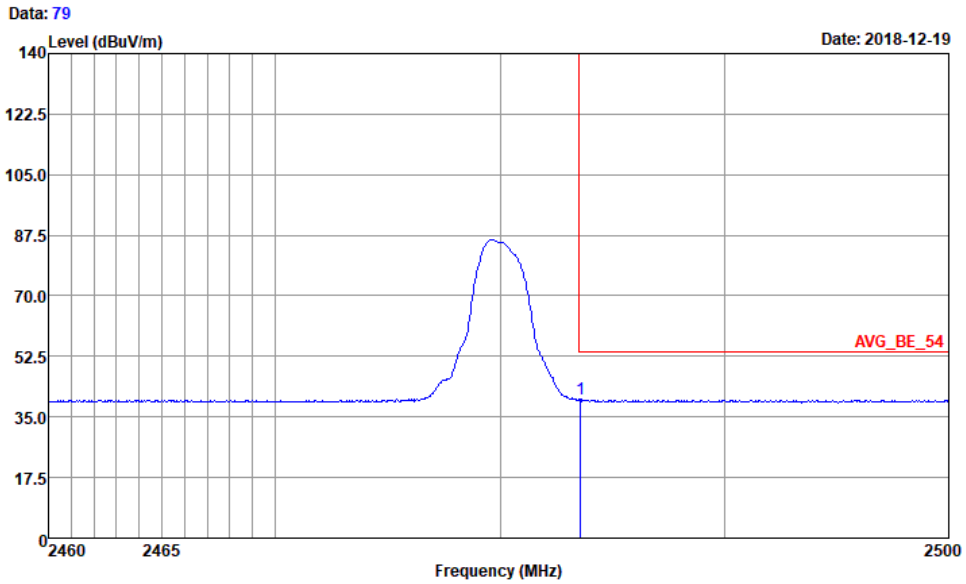
2, Margin=Limit - Level

TM1_DH5_Ch78



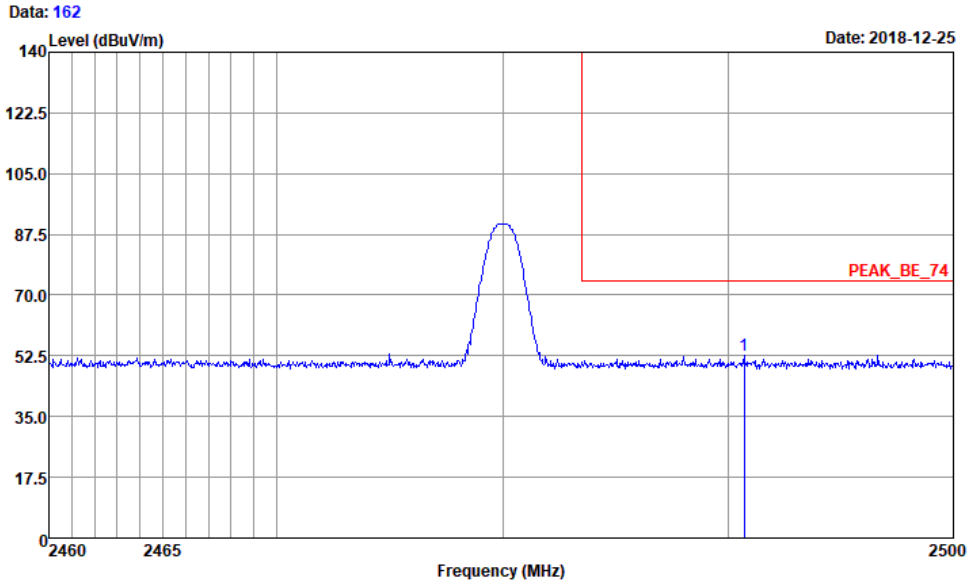
Site : 03CH01-SZ
Condition : AVG_BE_54 3m HF_ANT(3117)_119436 VERTICAL
: RBW:1000.000KHz VBW:1.000KHz
: BSA-L04 BT CH78

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 pp	2488.76	40.32	-13.68	54.00	34.48	31.93	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	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 pp	2483.56	40.14	-13.86	54.00	34.37	31.86	6.91	33.00	Average



Site : 03CH01-SZ
Condition : PEAK_BE_74 3m HF_ANT(3117)_119436 VERTICAL
: RBW:1000.000KHz VBW:3000.000KHz
: BSA-L04 BT CH78

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 pp	2490.68	52.58	-21.42	74.00	46.74	31.93	6.91	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.

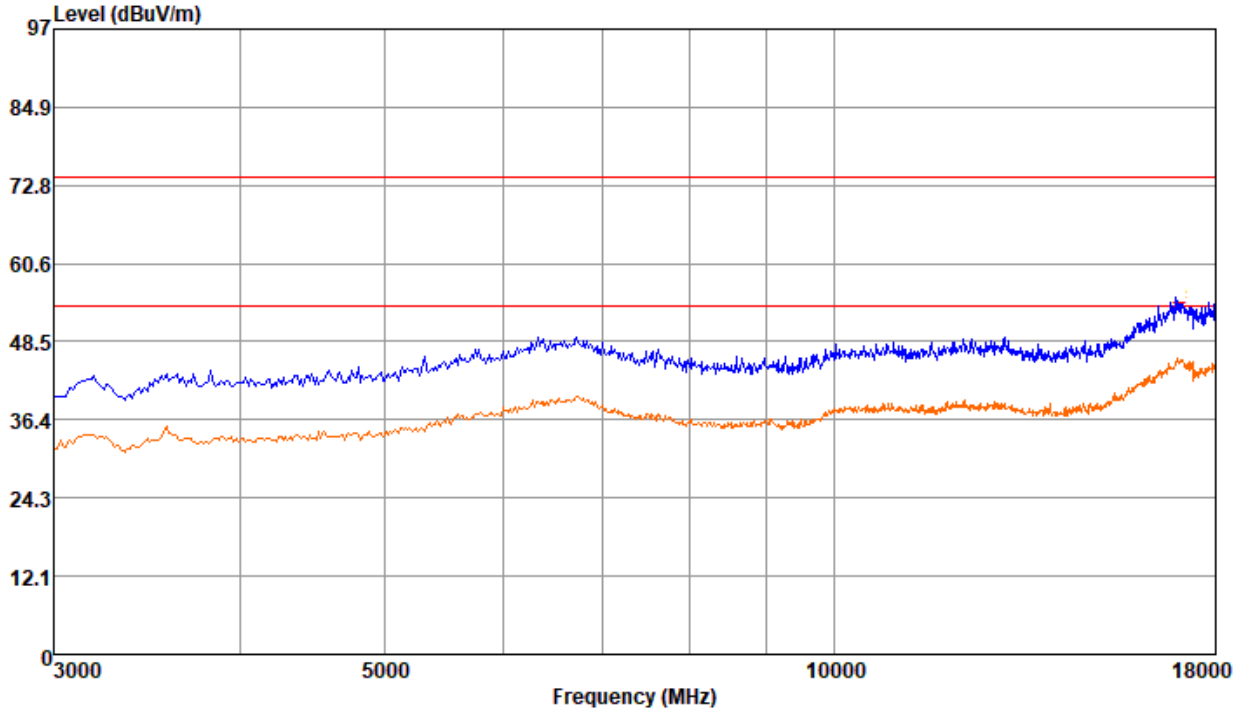
2, Margin=Limit - Level

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).

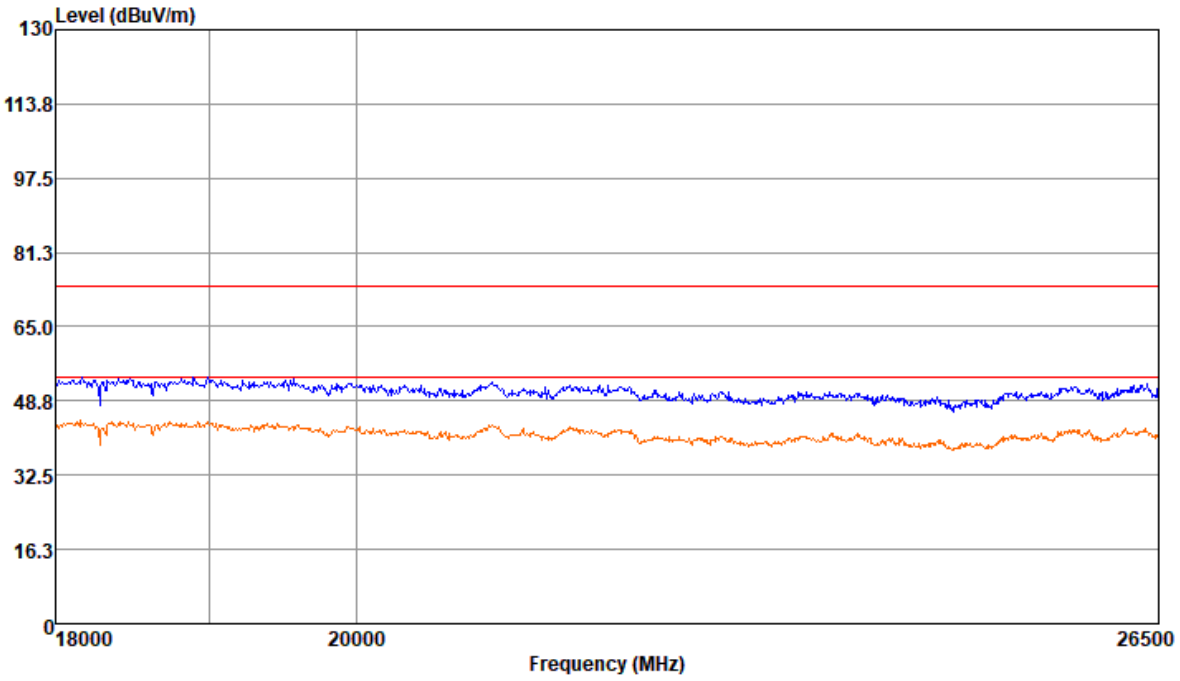


Part 5: Testing Range of "18 GHz to 26.5 GHz"

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: AC Power Line Conducted Emissions

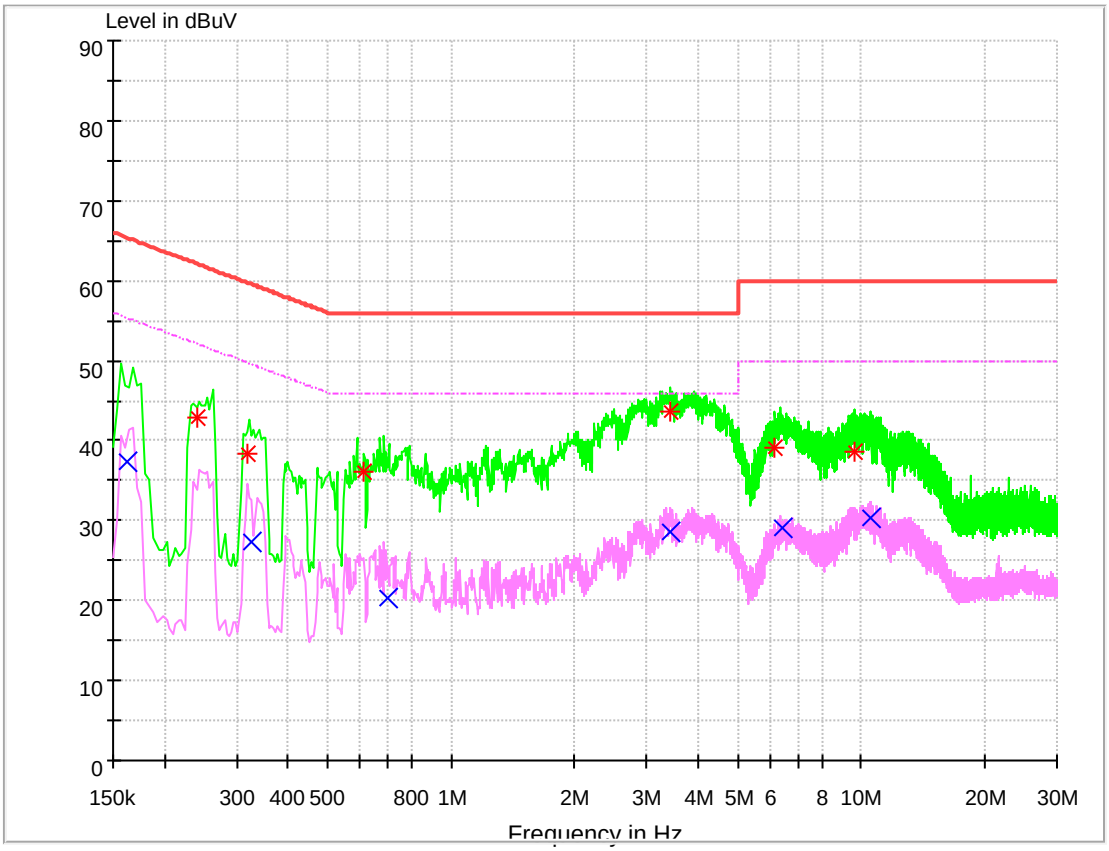
1 Result Table

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