Appendix for Test report

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Appendix A: 20dB Emission Bandwidth (EBW)

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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	1.31	---	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

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2 Test Plot

2.1 TM1_DH5_Ch0

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2.2 TM1_DH5_Ch39

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2.3 TM1_DH5_Ch78

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2.4 TM2_2DH5_Ch0

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2.5 TM2_2DH5_Ch39

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2.6 TM2_2DH5_Ch78

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2.7 TM3_3DH5_Ch0

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2.8 TM3_3DH5_Ch39

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2.9 TM3_3DH5_Ch78

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Appendix B: Carrier Frequency Separation

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3 Result Table

EUT Conf.	Carrier Frequency Separation [MHz]	Limit[MHz]	Verdict
TM1_DH5_Hop	1	≥0.633	Pass
TM2_2DH5_Hop	0.95	≥0.873	Pass
TM3_3DH5_Hop	1.1	≥0.873	Pass

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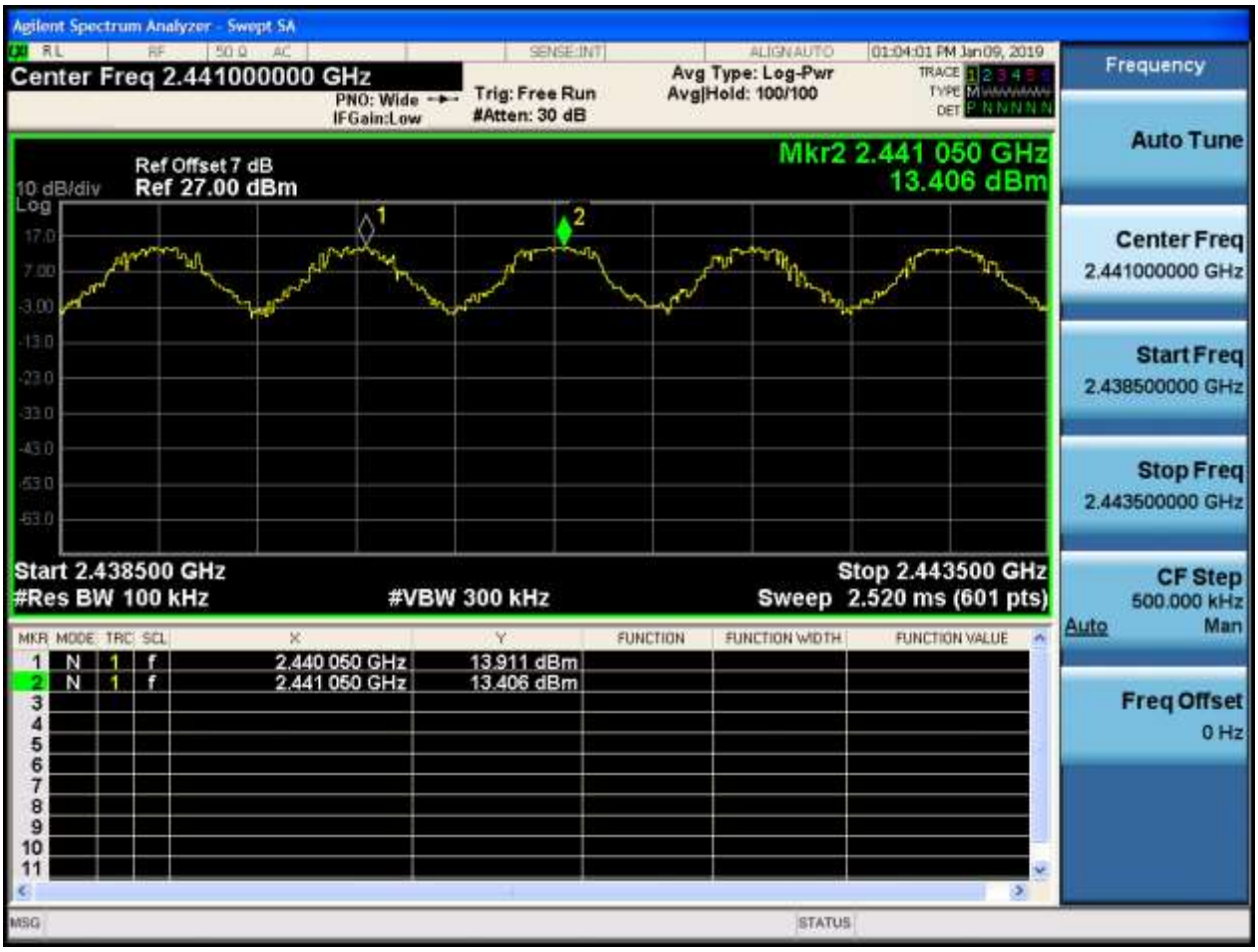
4 Test Plot

4.1 TM1_DH5_Hop



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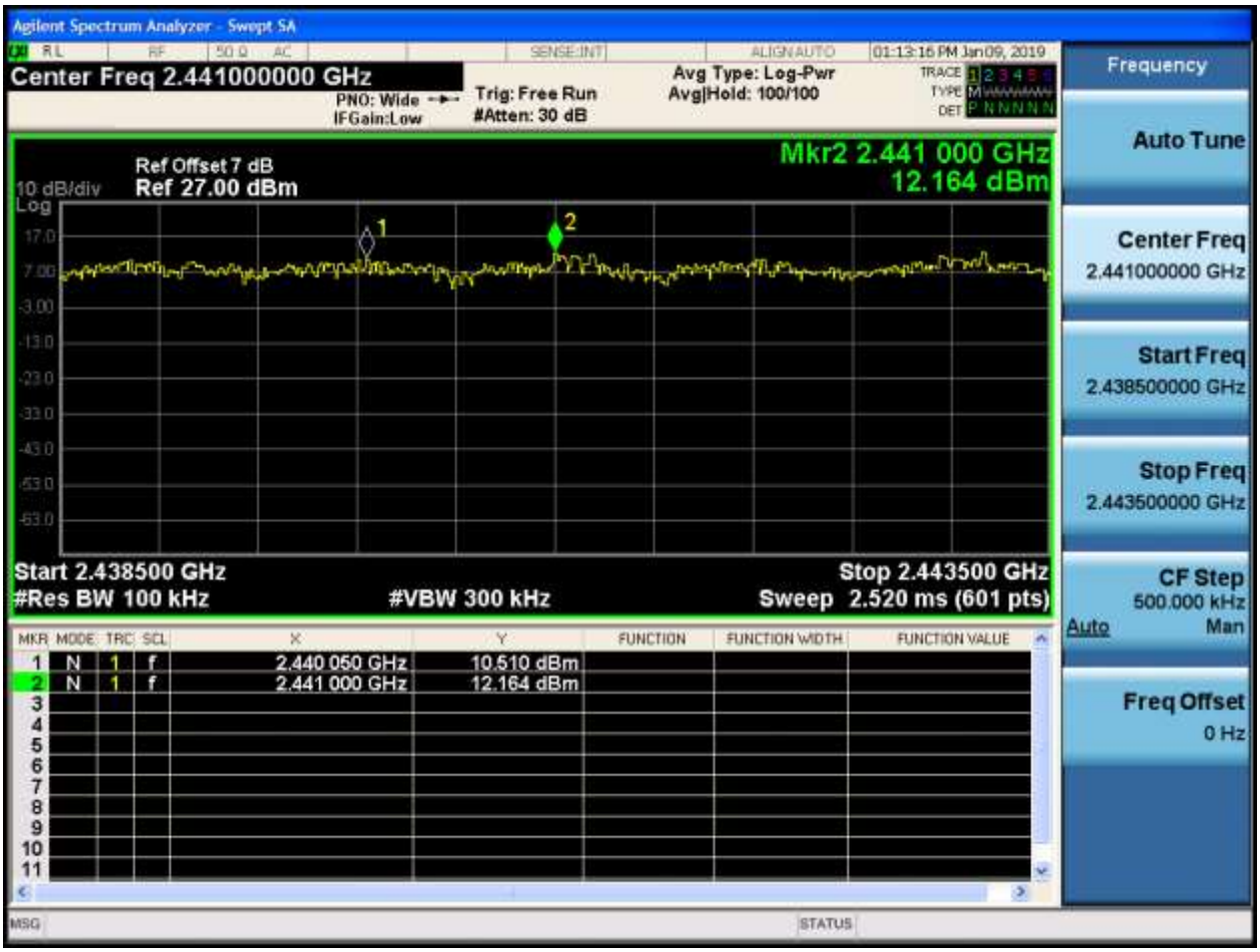
4.2 TM2_2DH5_Hop



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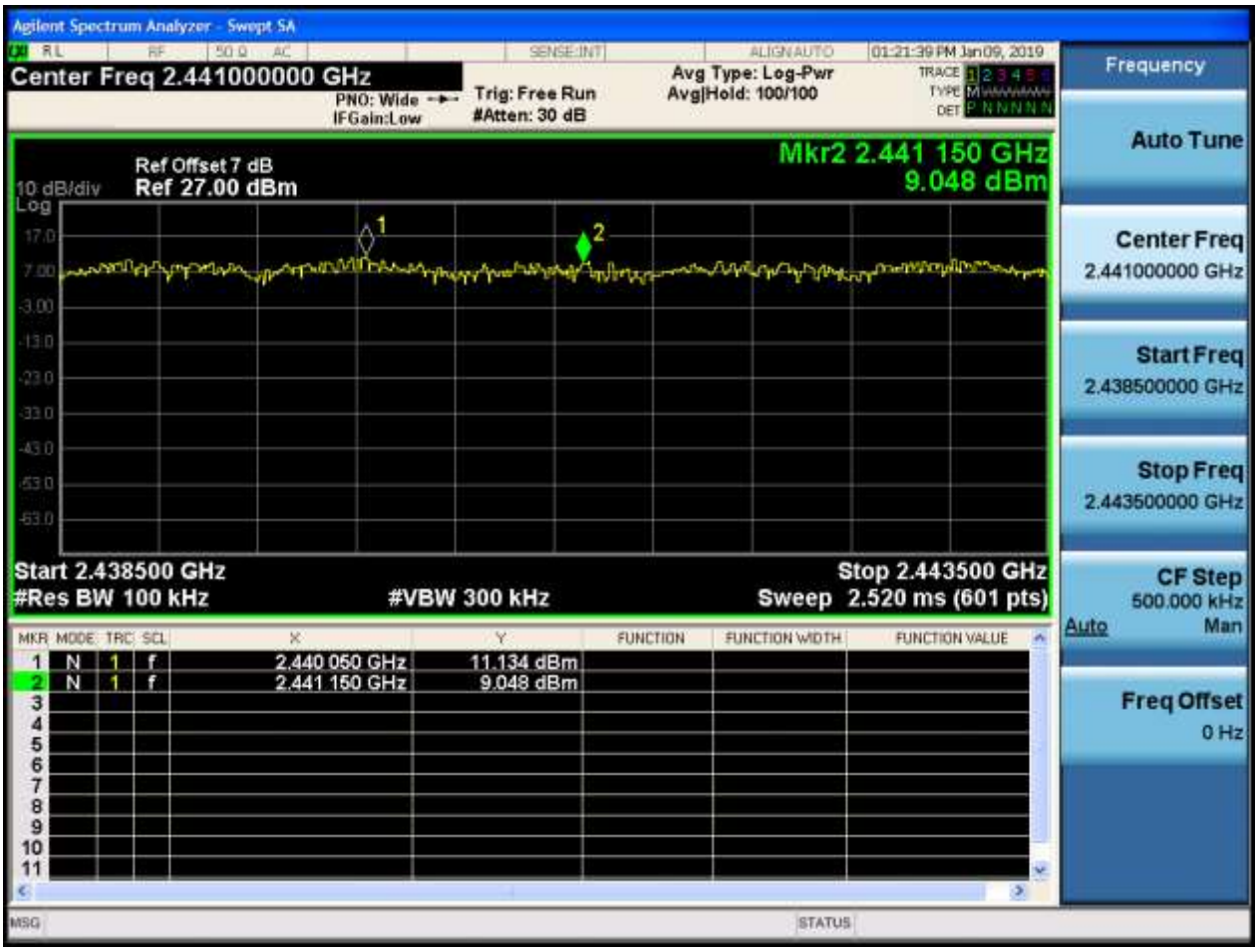
4.3 TM3_3DH5_Hop



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Appendix C: Number of Hopping Channel

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5 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

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6 Test Plot

6.1 TM1_DH5_Hop

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6.2 TM2_2DH5_Hop

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6.3 TM3_3DH5_Hop

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Appendix D: Time of Occupancy (Dwell Time)

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7 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	0.00287	106.67	0.309	Pass
TM2_2DH5_Ch39	0.00288	106.67	0.309	Pass
TM3_3DH5_Ch39	0.00289	106.67	0.309	Pass

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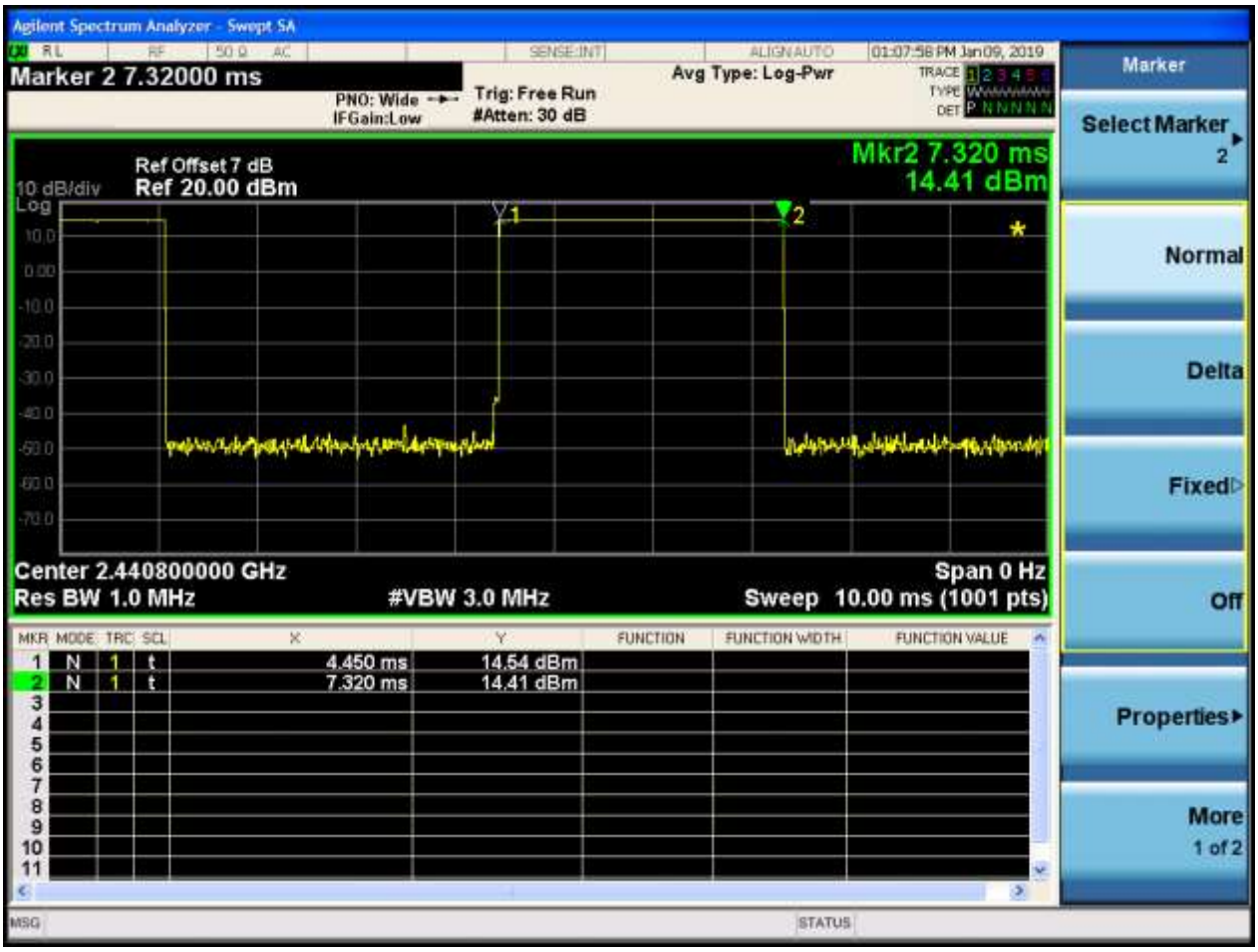
8 Test Plot

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

8.1 TM1_DH5_Ch39



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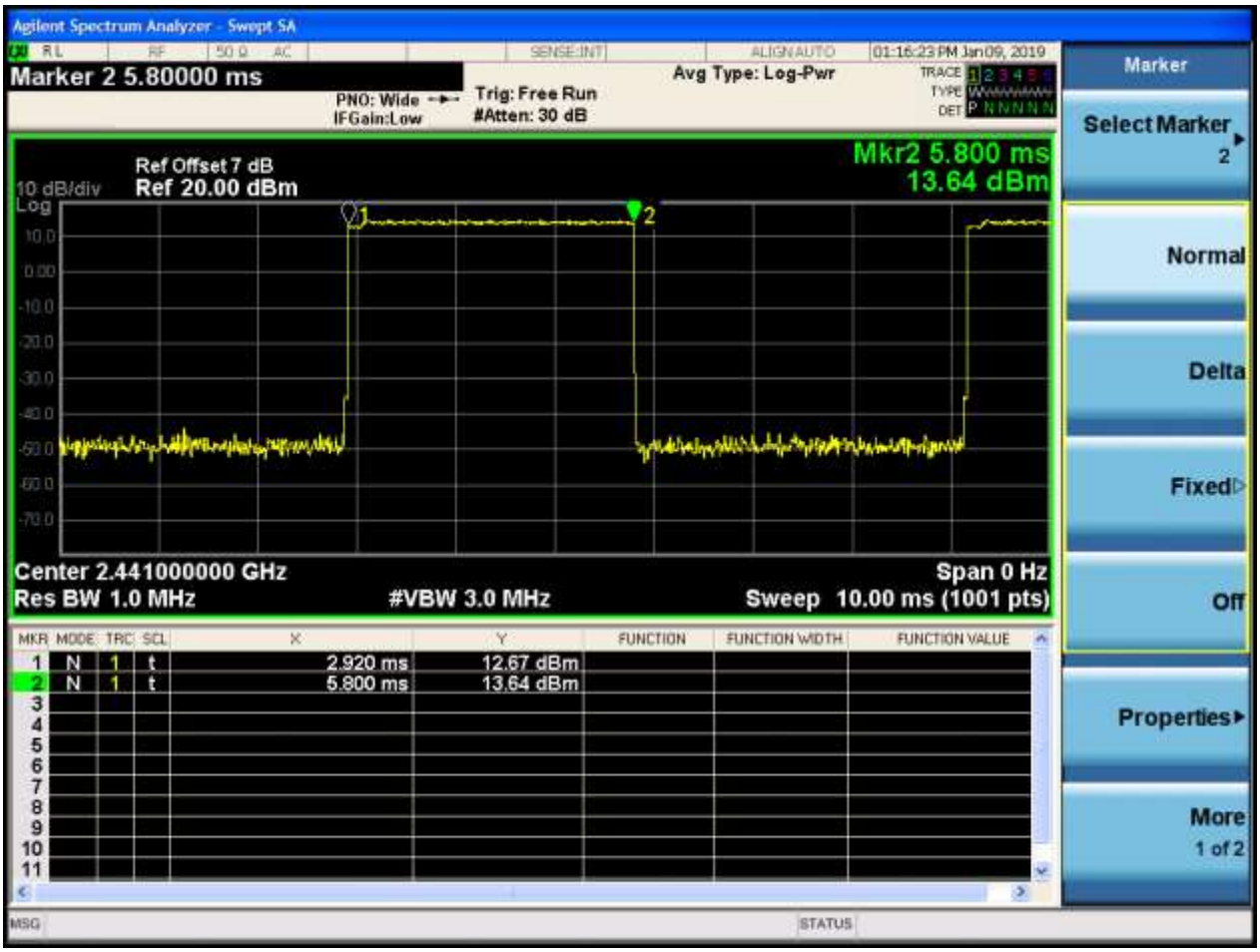
8.2 TM2_2DH5_Ch39



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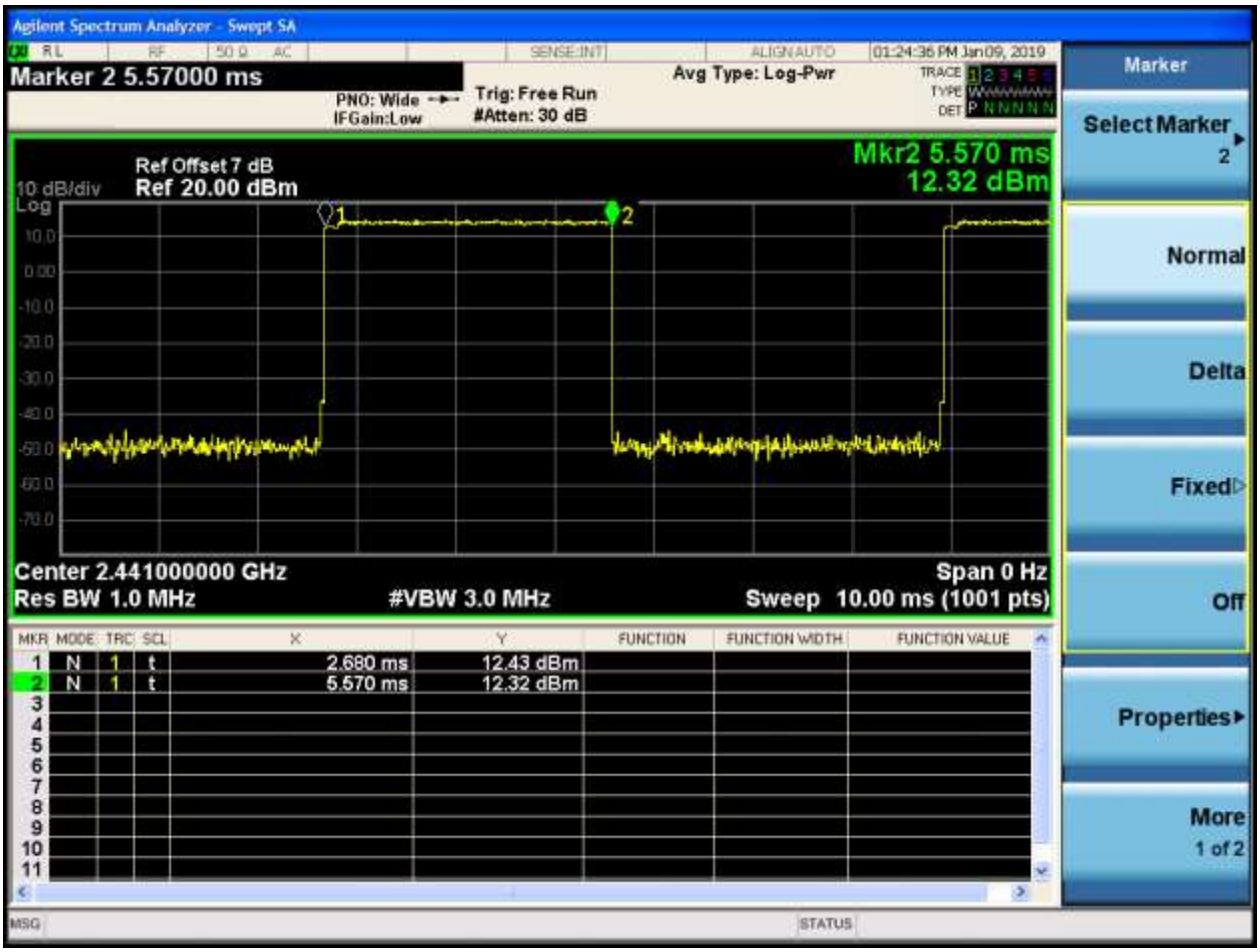
8.3 TM3_3DH5_Ch39



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Appendix E: Maximum Peak Conducted Output Power

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9 Result Table

EUT Conf.	Max. Peak Power [dBm]	Limit[dBm]	Verdict
TM1_DH5_Ch0	15.52	20.97	Pass
TM1_DH5_Ch39	14.62	20.97	Pass
TM1_DH5_Ch78	12.98	20.97	Pass
TM2_2DH5_Ch0	15.90	20.97	Pass
TM2_2DH5_Ch39	15.06	20.97	Pass
TM2_2DH5_Ch78	10.66	20.97	Pass
TM3_3DH5_Ch0	13.06	20.97	Pass
TM3_3DH5_Ch39	15.09	20.97	Pass
TM3_3DH5_Ch78	13.40	20.97	Pass

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10 Test Plot

10.1TM1_DH5_Ch0

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10.2TM1_DH5_Ch39

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10.3TM1_DH5_Ch78

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10.4TM2_2DH5_Ch0

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10.5TM2_2DH5_Ch39

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10.6TM2_2DH5_Ch78

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10.7TM3_3DH5_Ch0

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10.8TM3_3DH5_Ch39

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10.9TM3_3DH5_Ch78

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Appendix F: Band edge spurious emission

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11 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	-49.678	Off	15.324	-4.676	Pass
	-	-	-51.94	On	14.76	-5.24	Pass
TM1_DH5_Ch78	78	2480	-54.867	Off	12.743	-7.257	Pass
	-	-	-56.06	On	12.132	-7.868	Pass
TM2_2DH5_Ch0	0	2402	-42.542	Off	13.42	-6.58	Pass
	-	-	-45.751	On	11.305	-8.695	Pass
TM2_2DH5_Ch78	78	2480	-54.416	Off	8.177	-11.823	Pass
	-	-	-55.654	On	5.907	-14.093	Pass
TM3_3DH5_Ch0	0	2402	-48.03	Off	10.612	-9.388	Pass
	-	-	-50.804	On	8.721	-11.279	Pass
TM3_3DH5_Ch78	78	2480	-52.867	Off	10.969	-9.031	Pass
	-	-	-56.137	On	8.459	-11.541	Pass

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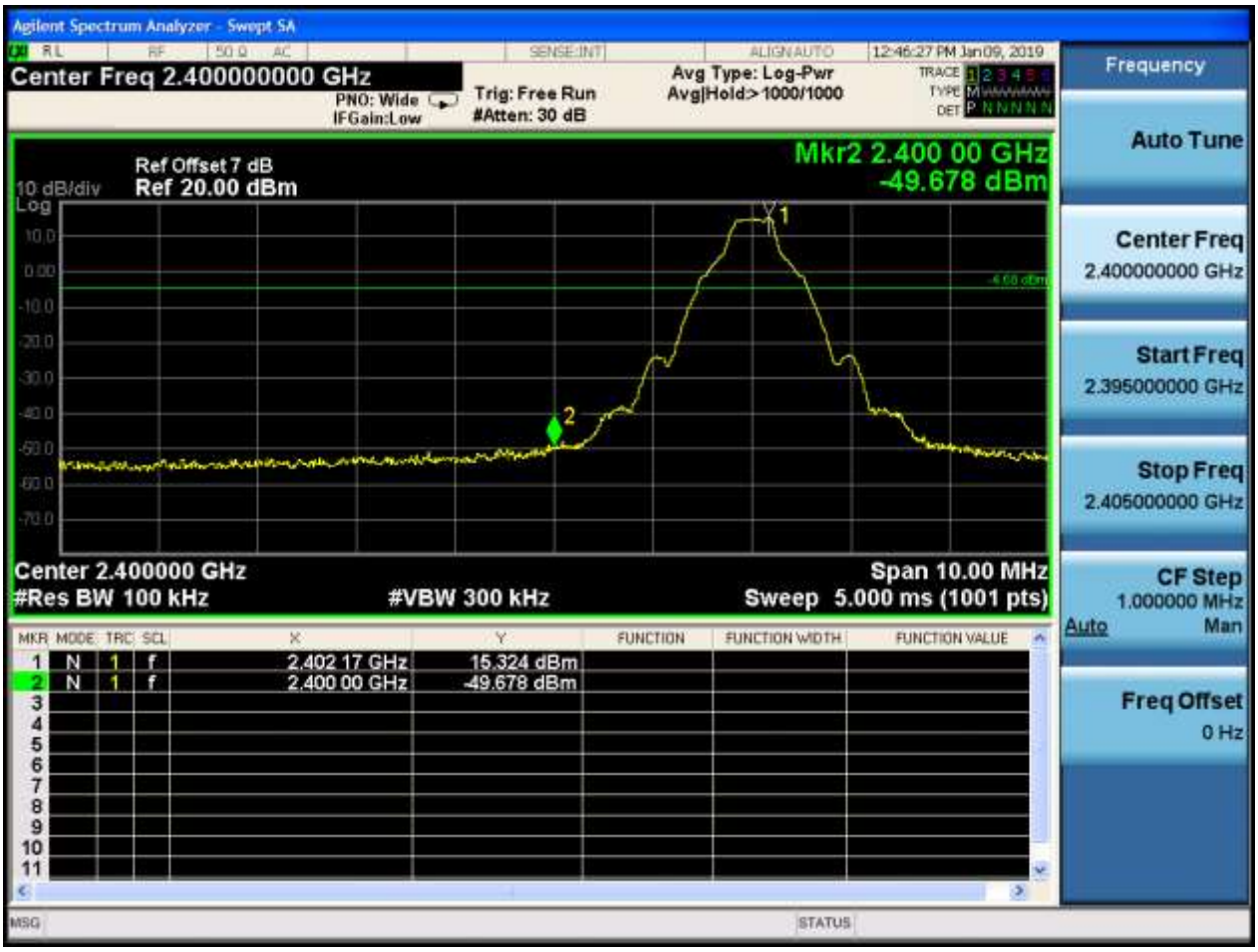
12 Test Plot

12.1TM1_DH5_Ch0

No hopping



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With hopping

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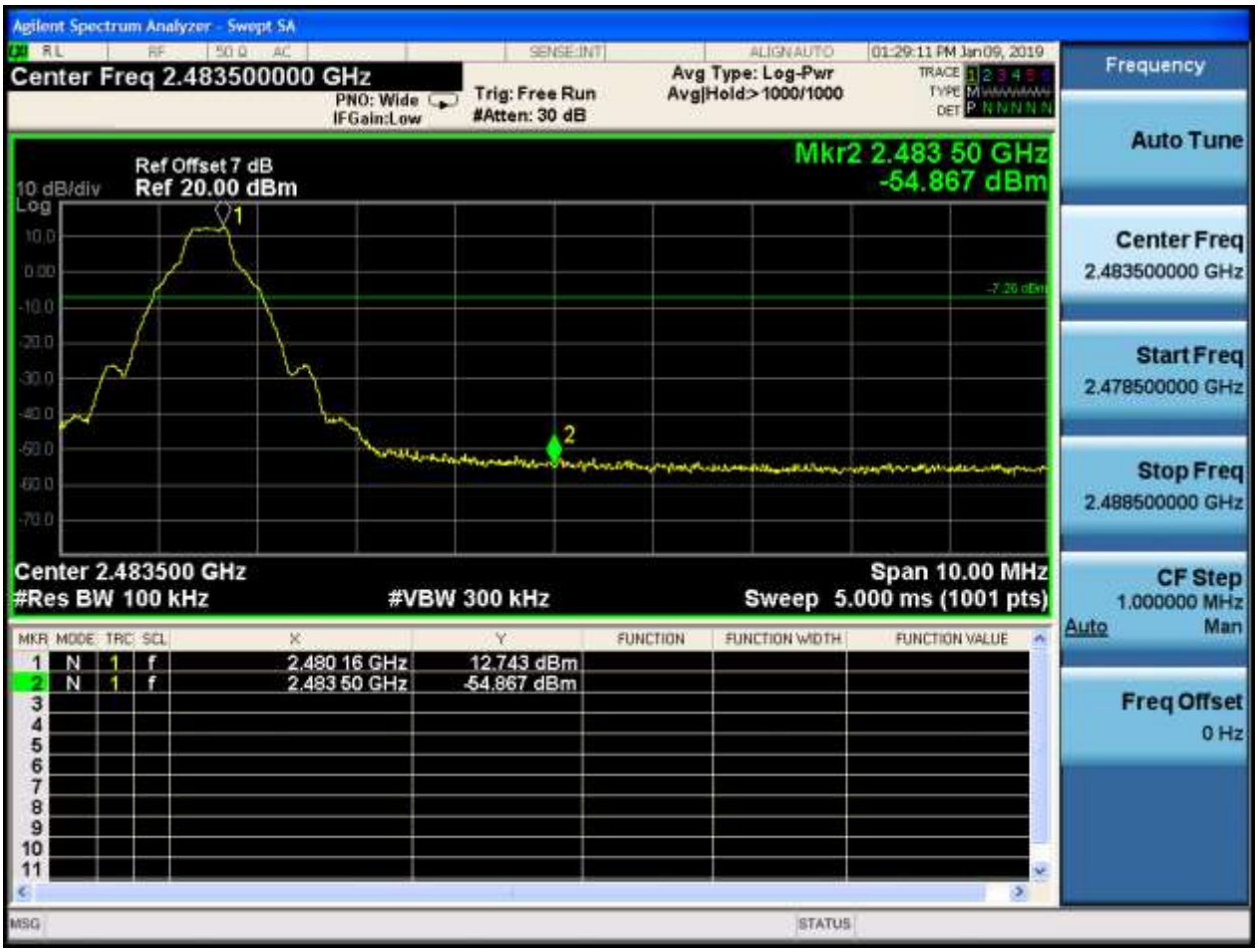
12.2TM1_DH5_Ch78

No hopping



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With hopping

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12.3TM2_2DH5_Ch0

No hopping

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With hopping

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12.4TM2_2DH5_Ch78

No hopping

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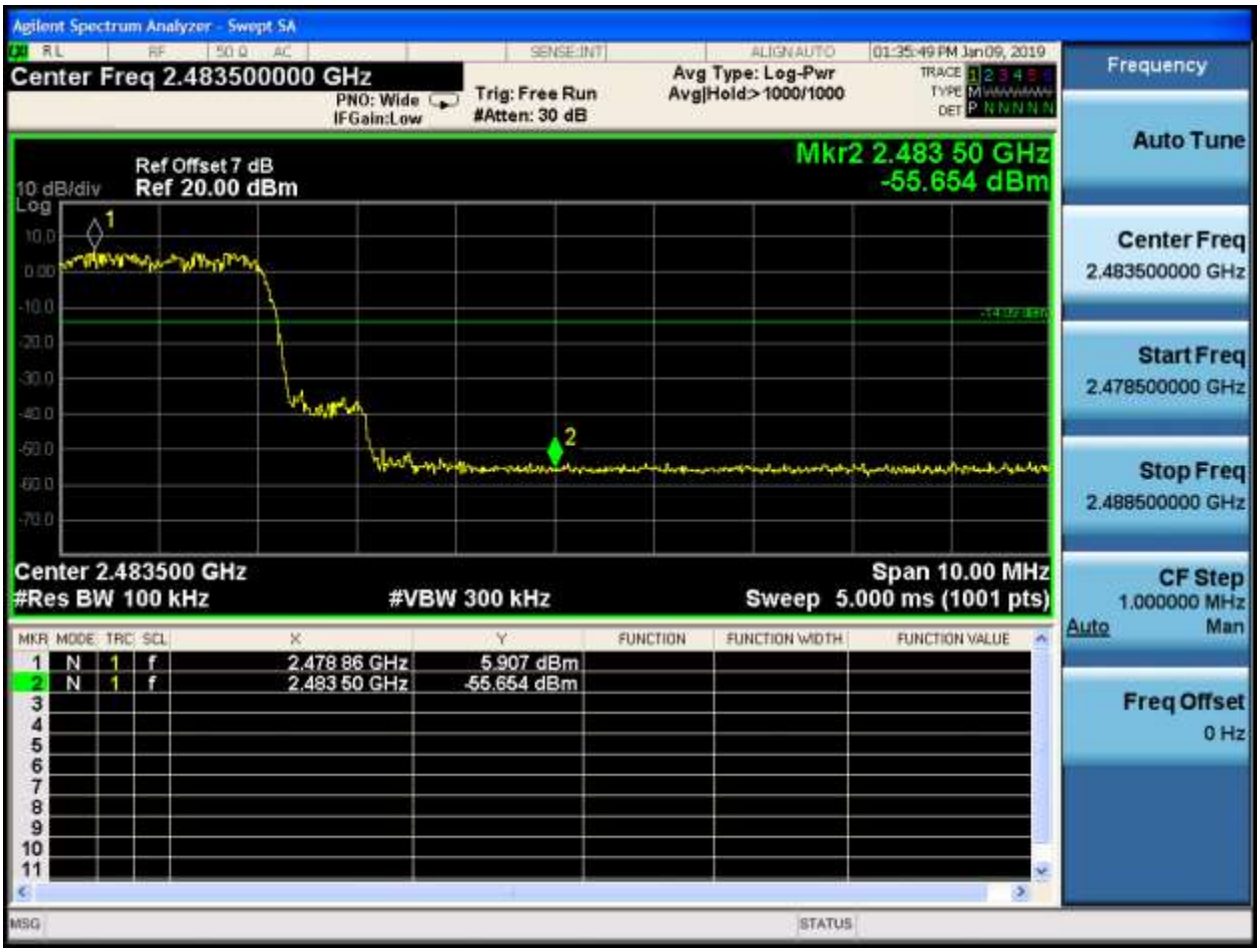
With hopping



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12.5TM3_3DH5_Ch0

No hopping

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With hopping

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12.6TM3_3DH5_Ch78

No hopping

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With hopping

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Appendix G: Conducted RF Spurious Emission

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13 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	15.276	< Limit	Pass
TM1_DH5_Ch39	14.472	< Limit	Pass
TM1_DH5_Ch78	12.768	< Limit	Pass
TM2_2DH5_Ch0	13.431	< Limit	Pass
TM2_2DH5_Ch39	12.68	< Limit	Pass
TM2_2DH5_Ch78	8.274	< Limit	Pass
TM3_3DH5_Ch0	10.645	< Limit	Pass
TM3_3DH5_Ch39	12.648	< Limit	Pass
TM3_3DH5_Ch78	10.998	< Limit	Pass

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14 Test Plot

14.1TM1_DH5_Ch0

14.1.1 Pref

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14.1.2 Puw

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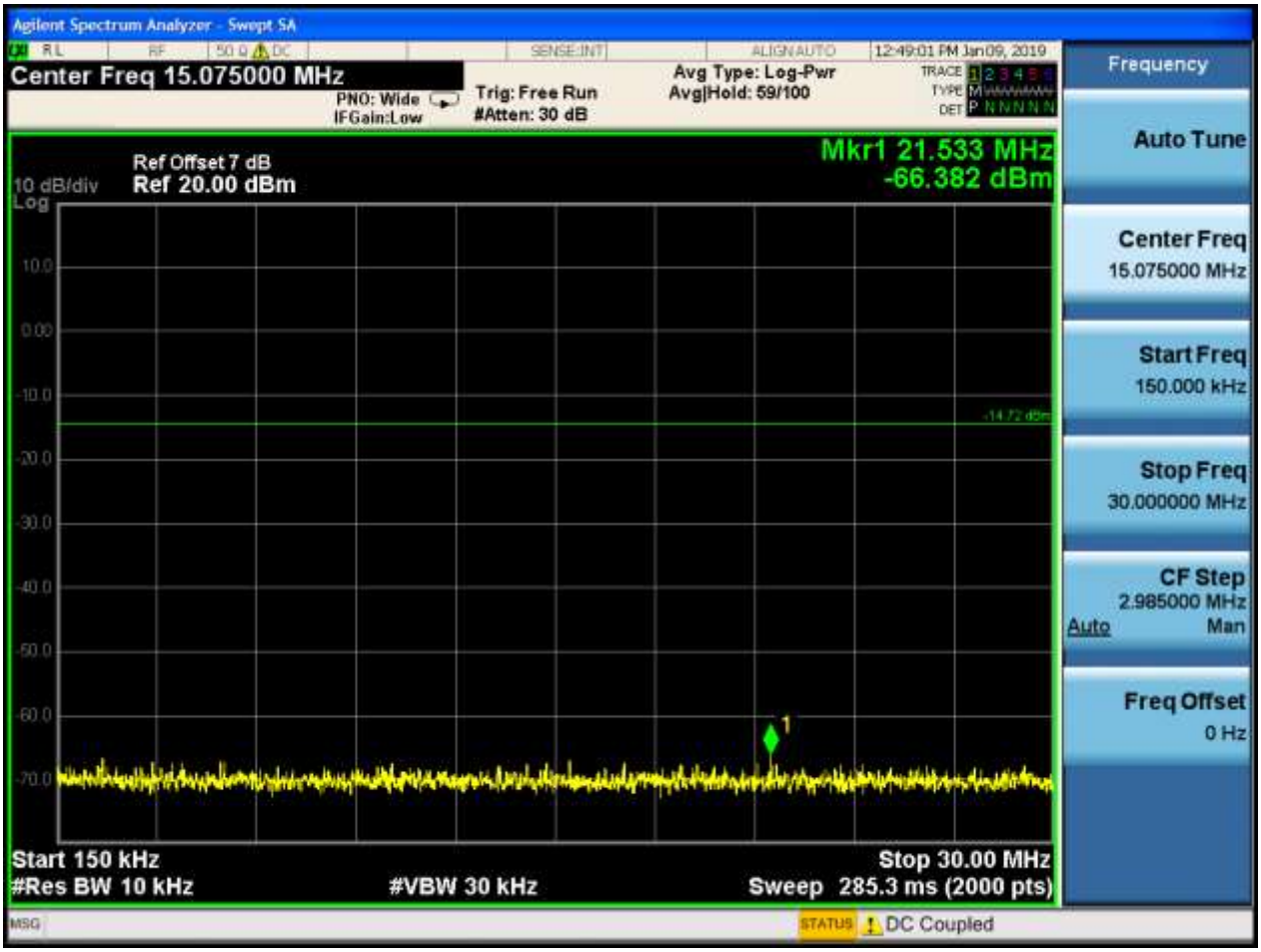

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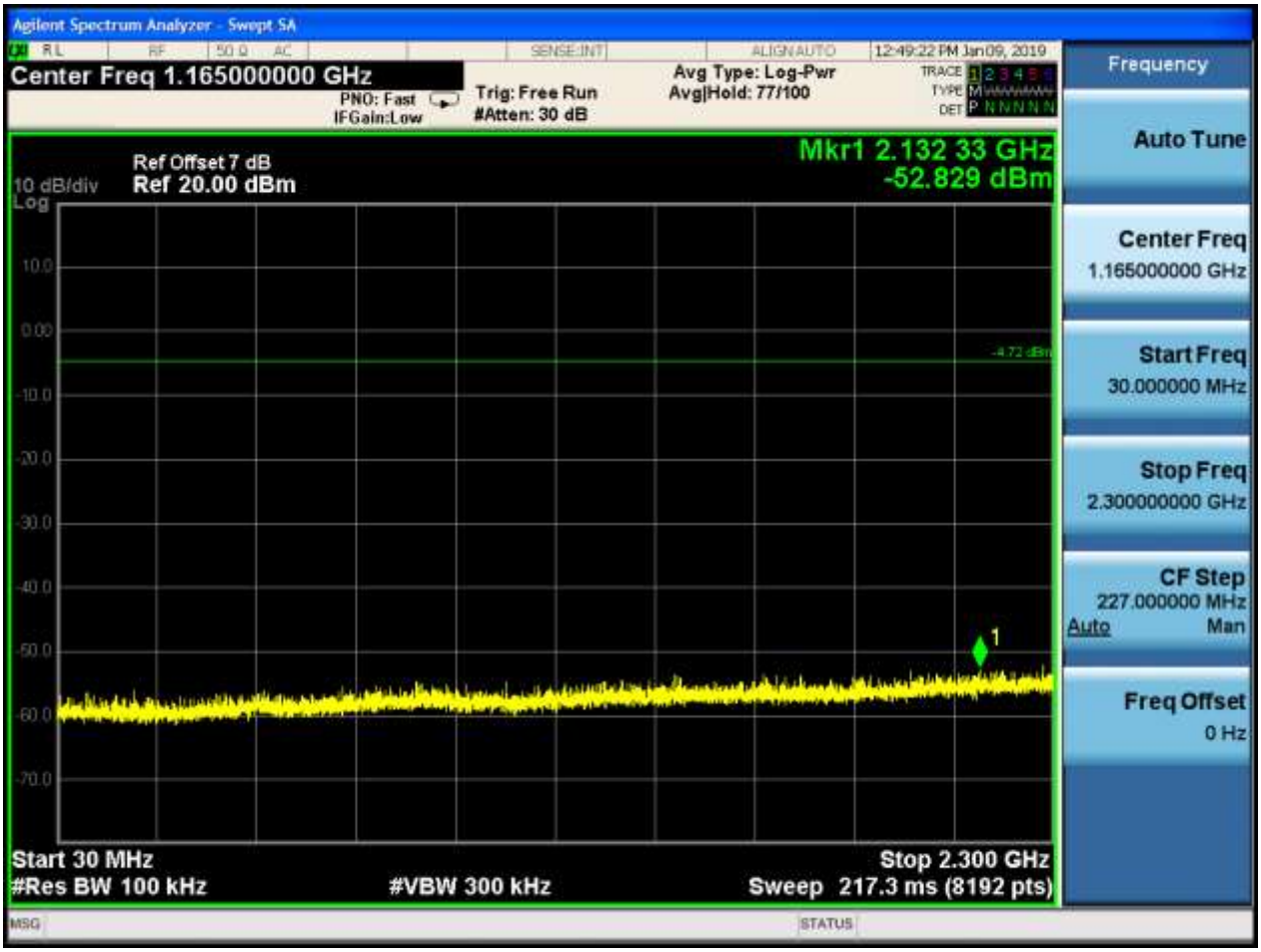

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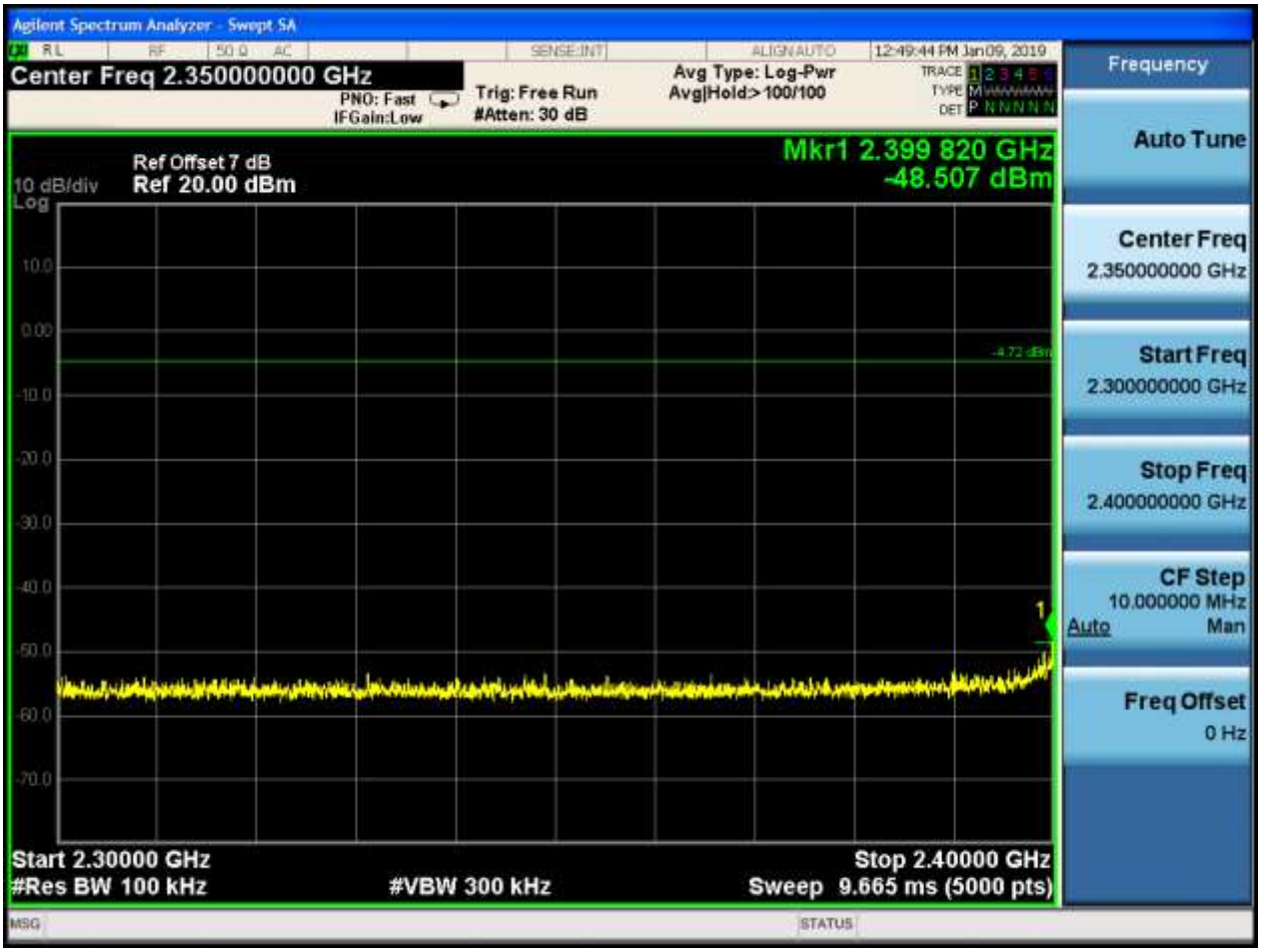

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14.2TM1_DH5_Ch39

14.2.1 Pref

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14.2.2 Puw

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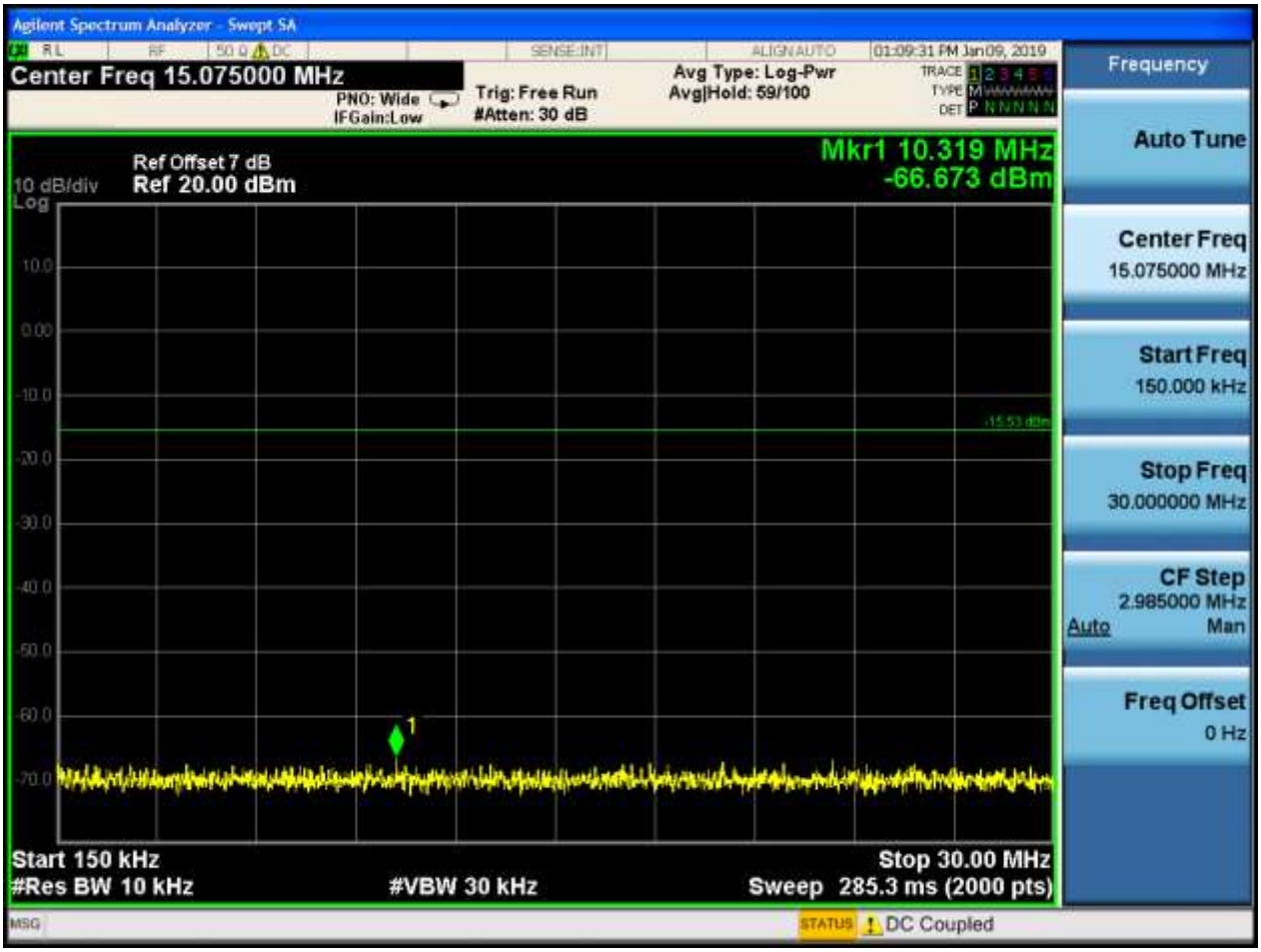

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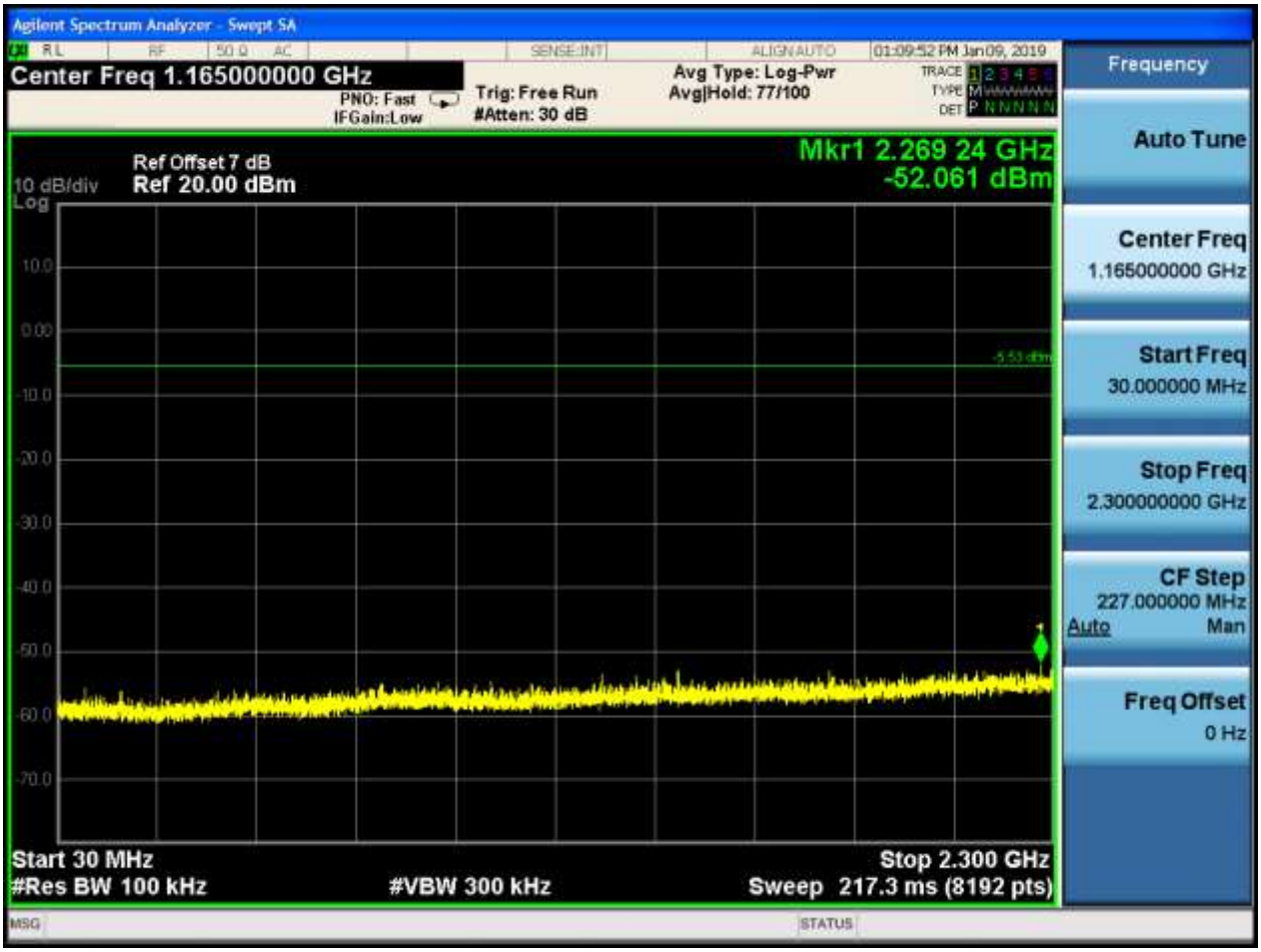

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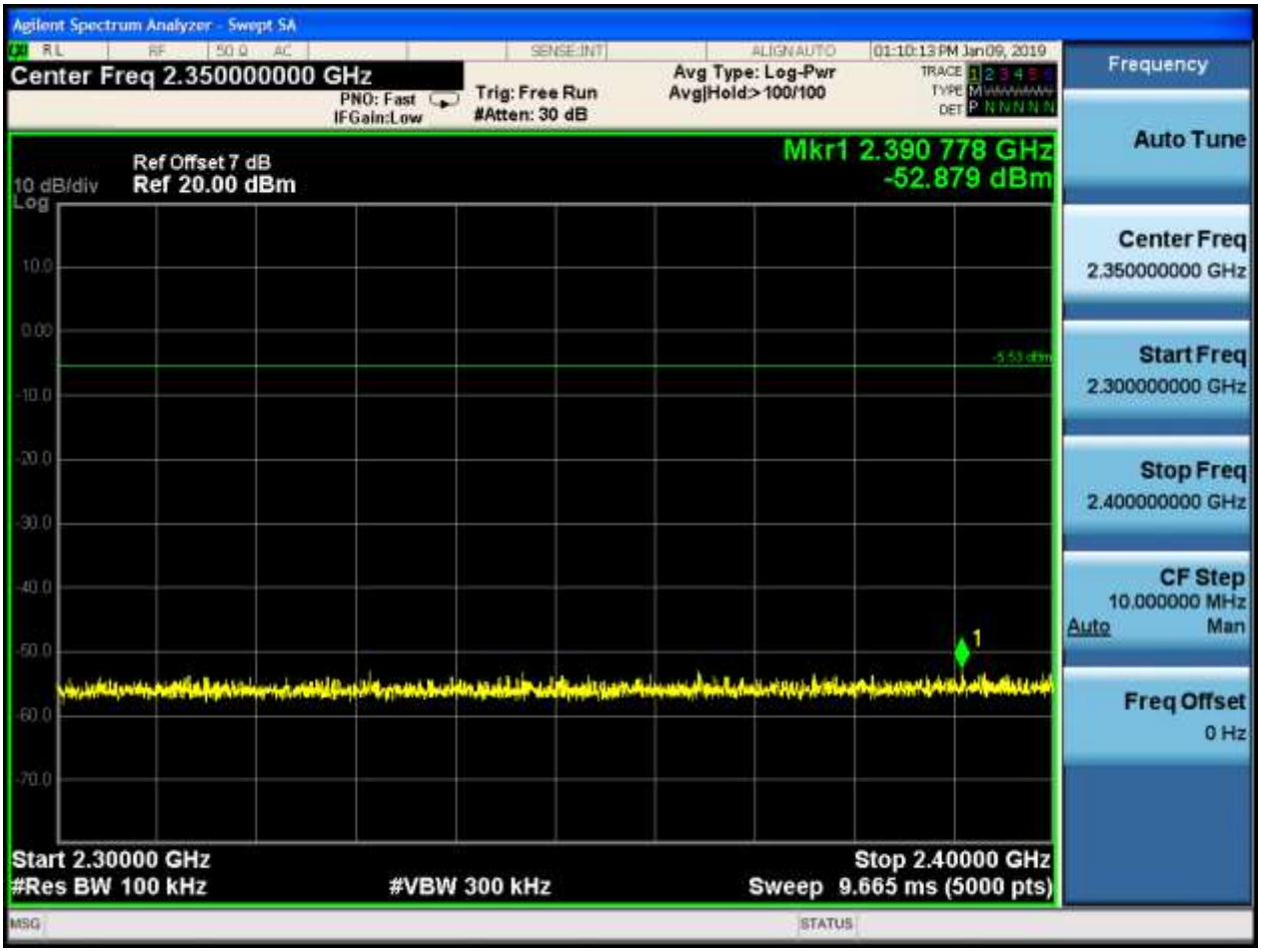

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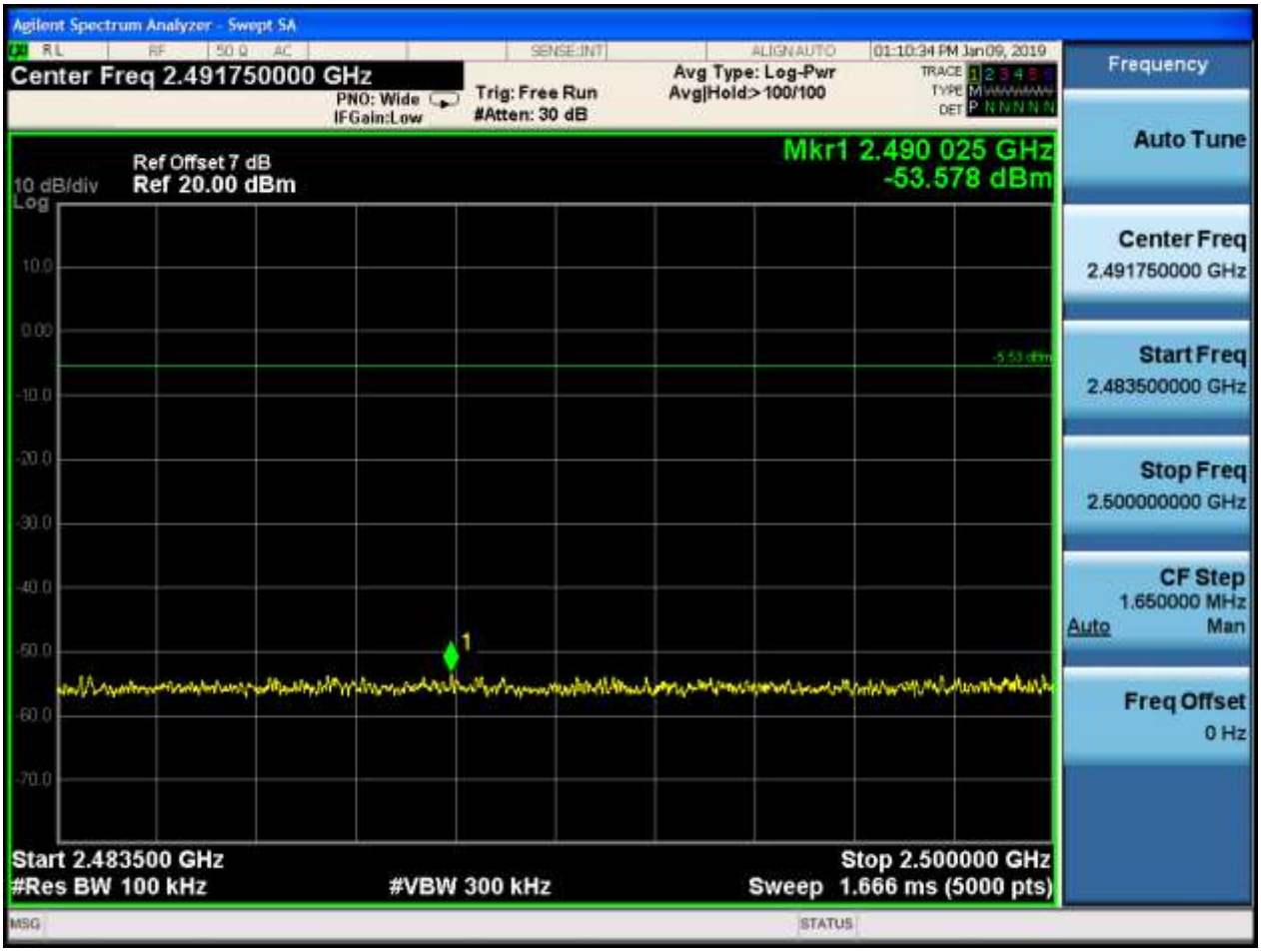

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14.3TM1_DH5_Ch78

14.3.1 Pref

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14.3.2 Puw

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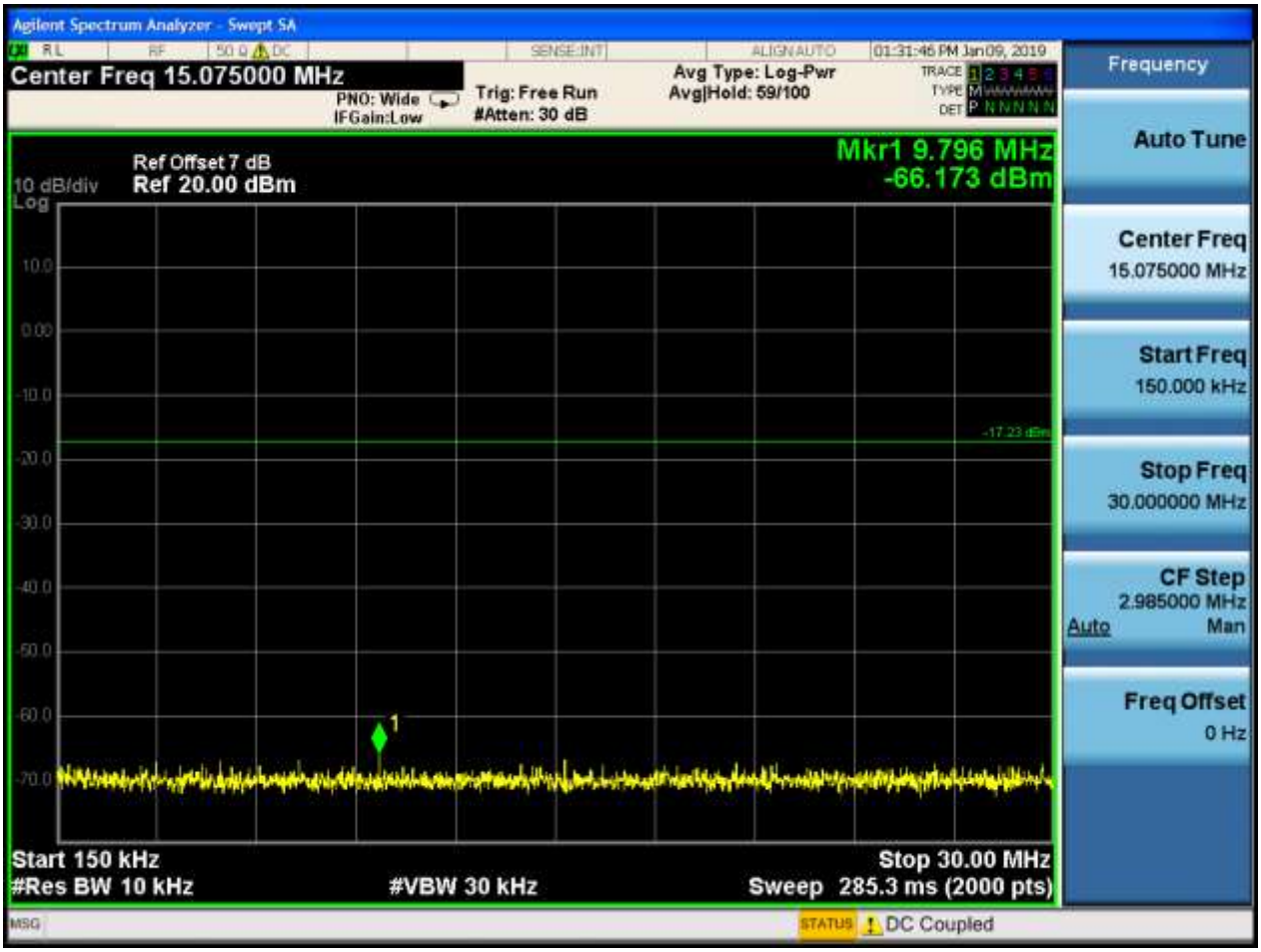

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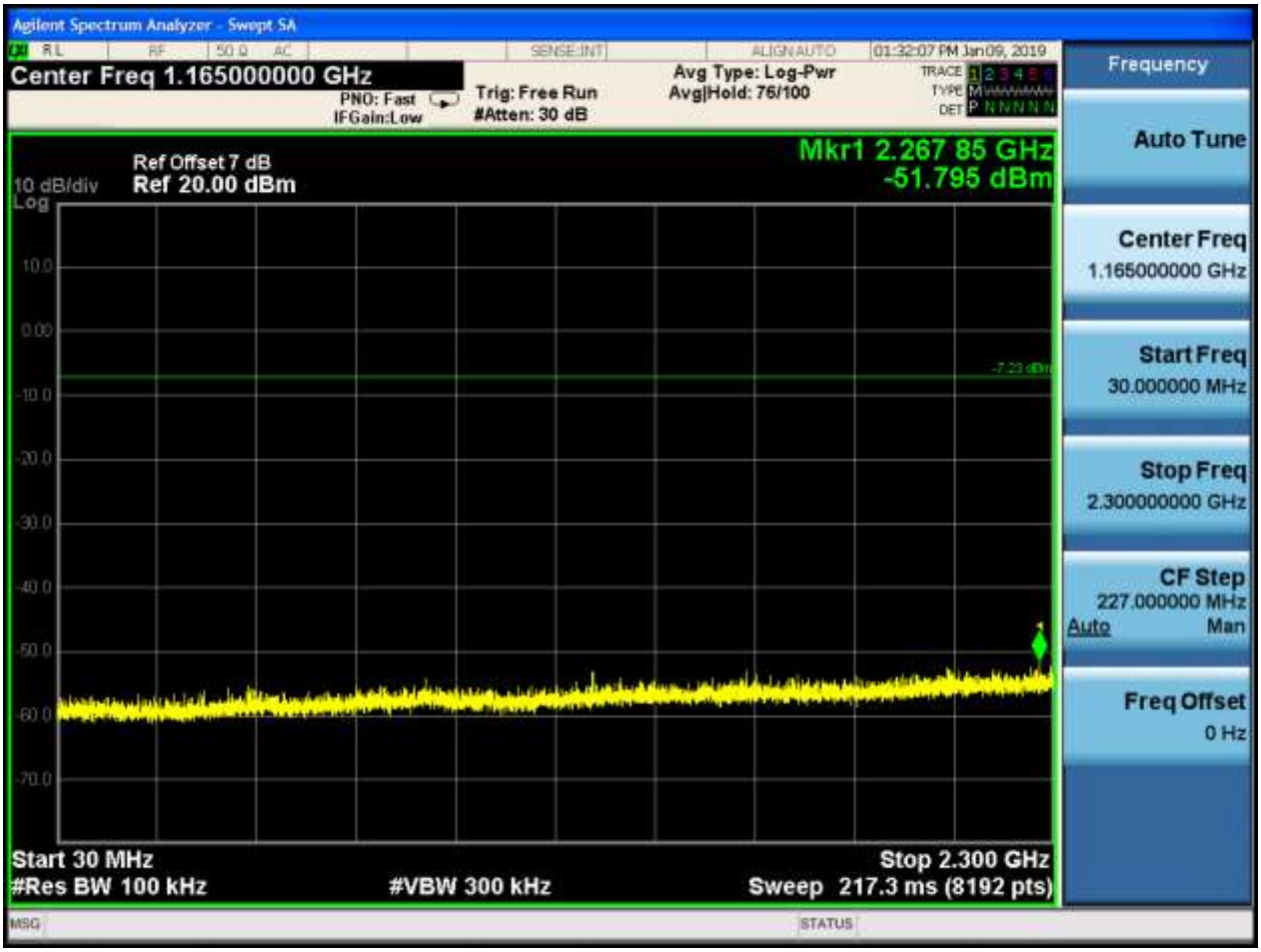

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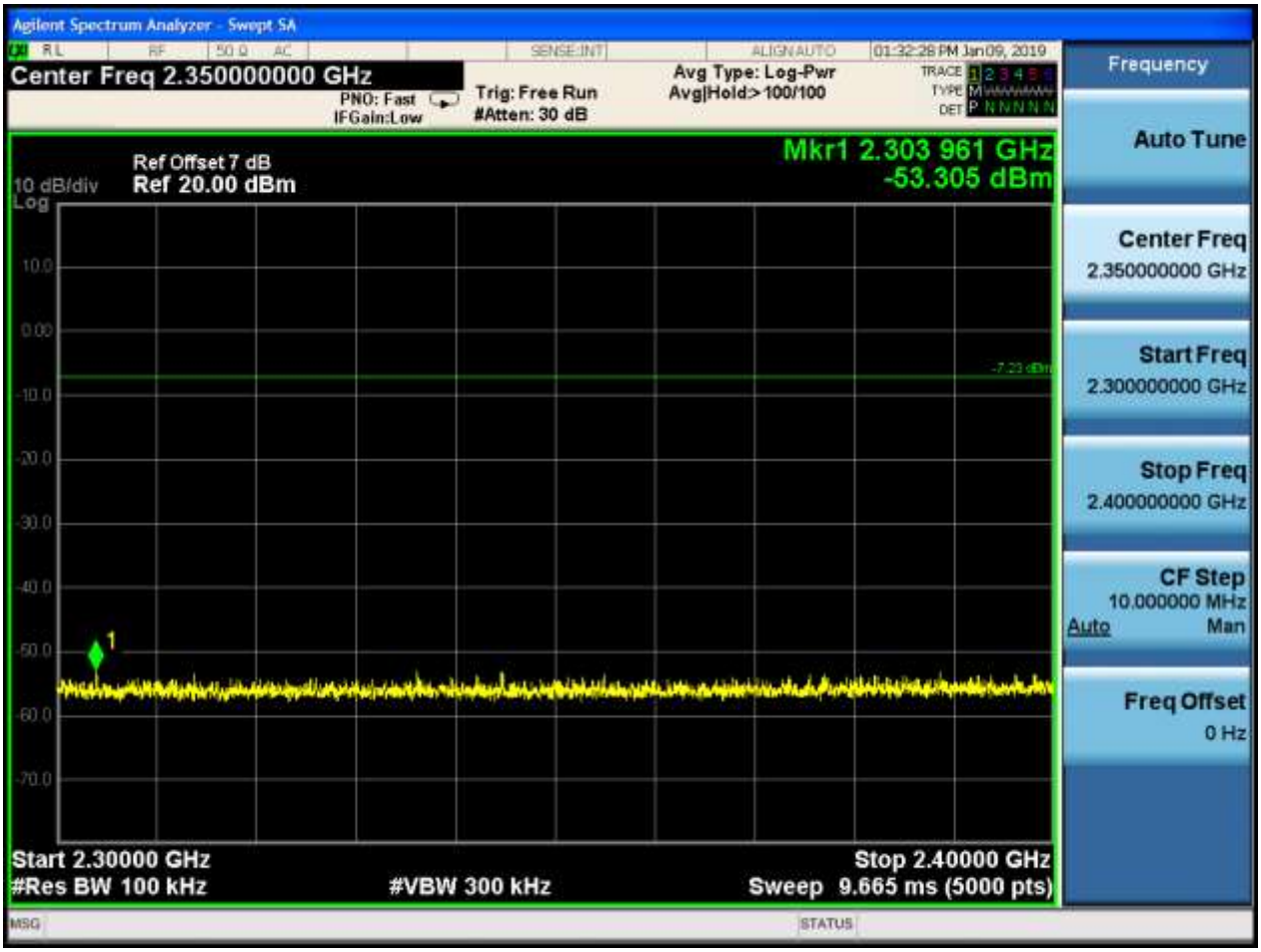

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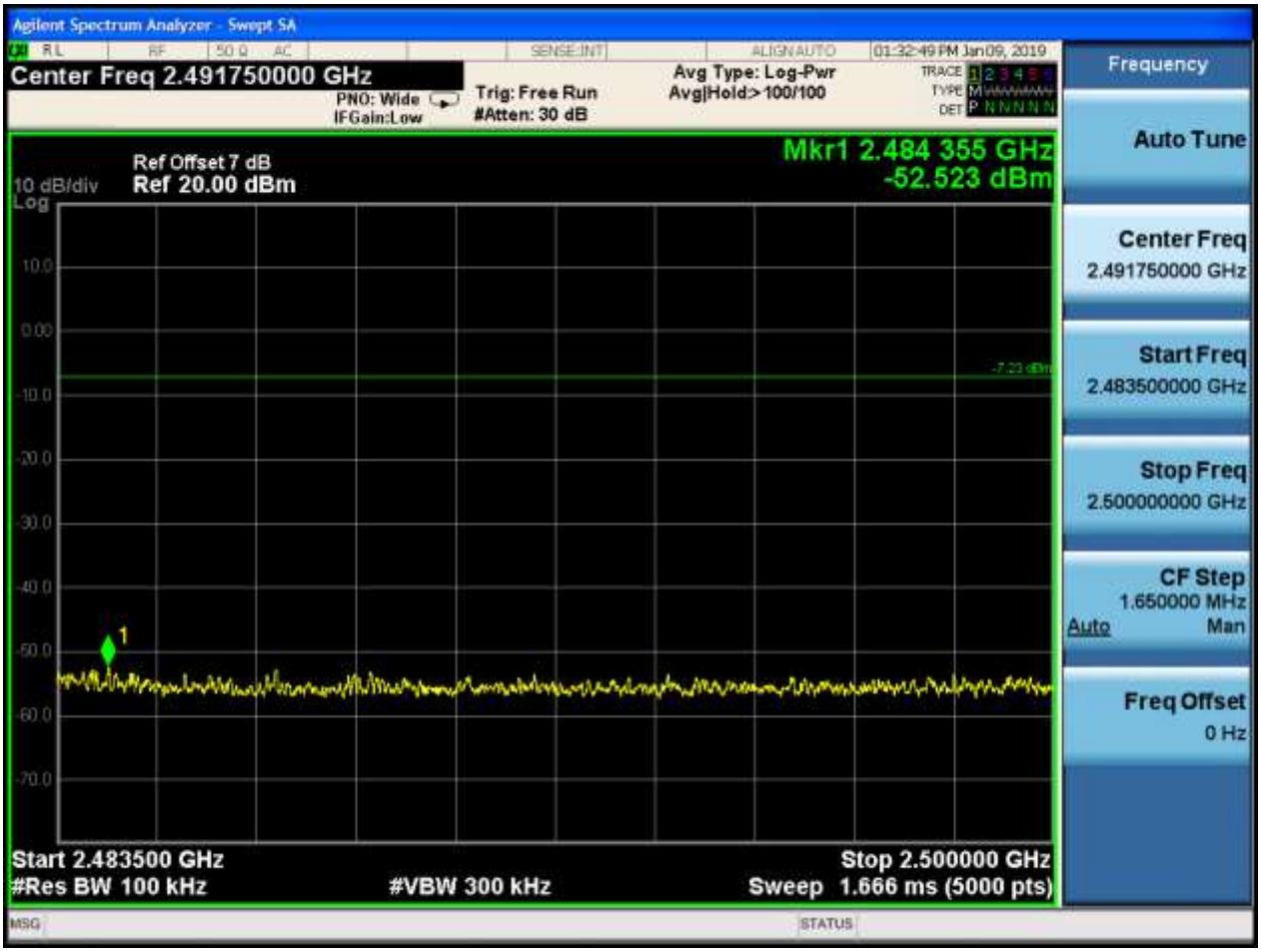

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14.4TM2_2DH5_Ch0

14.4.1 Pref

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14.4.2 Puw

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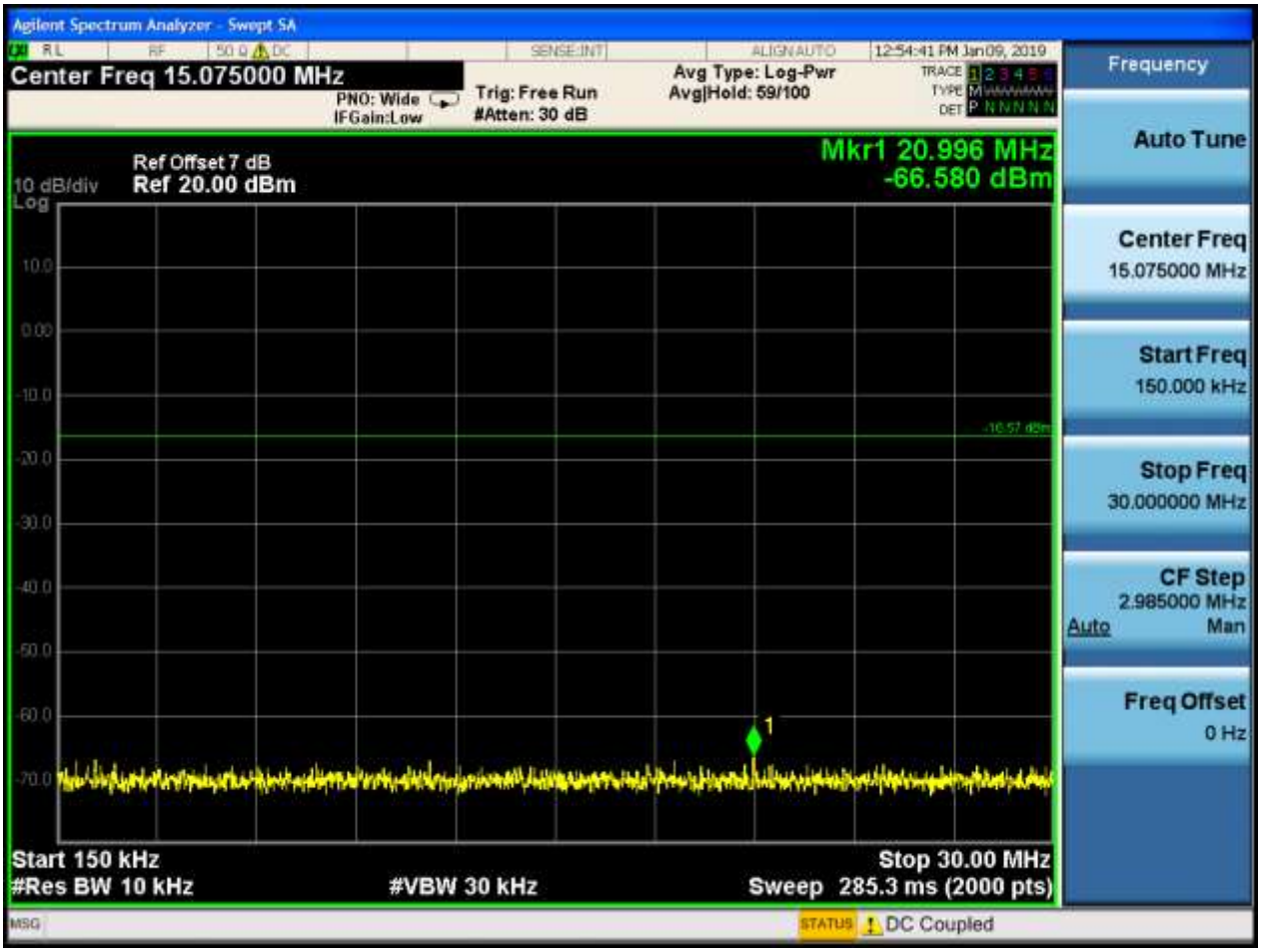

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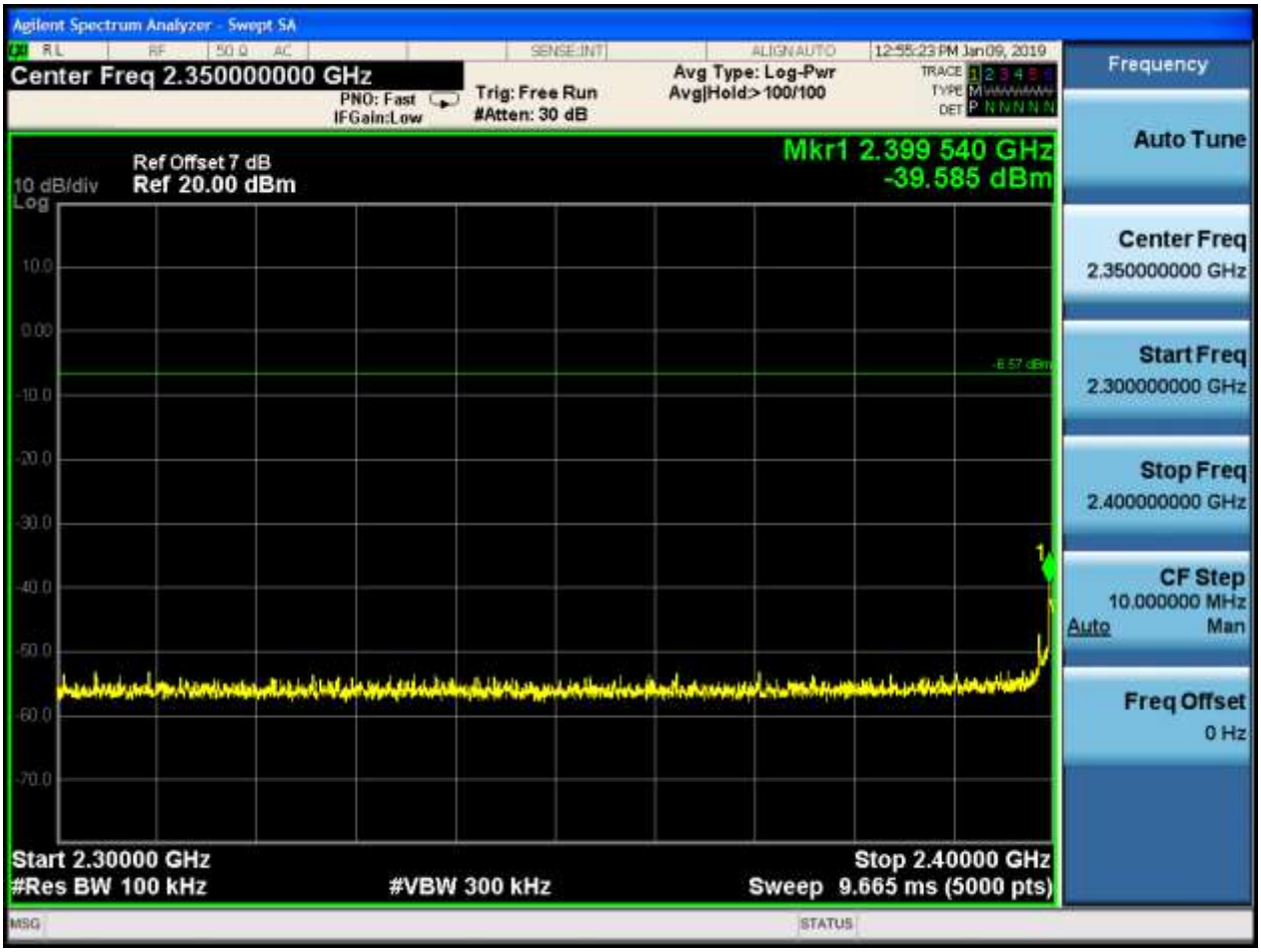

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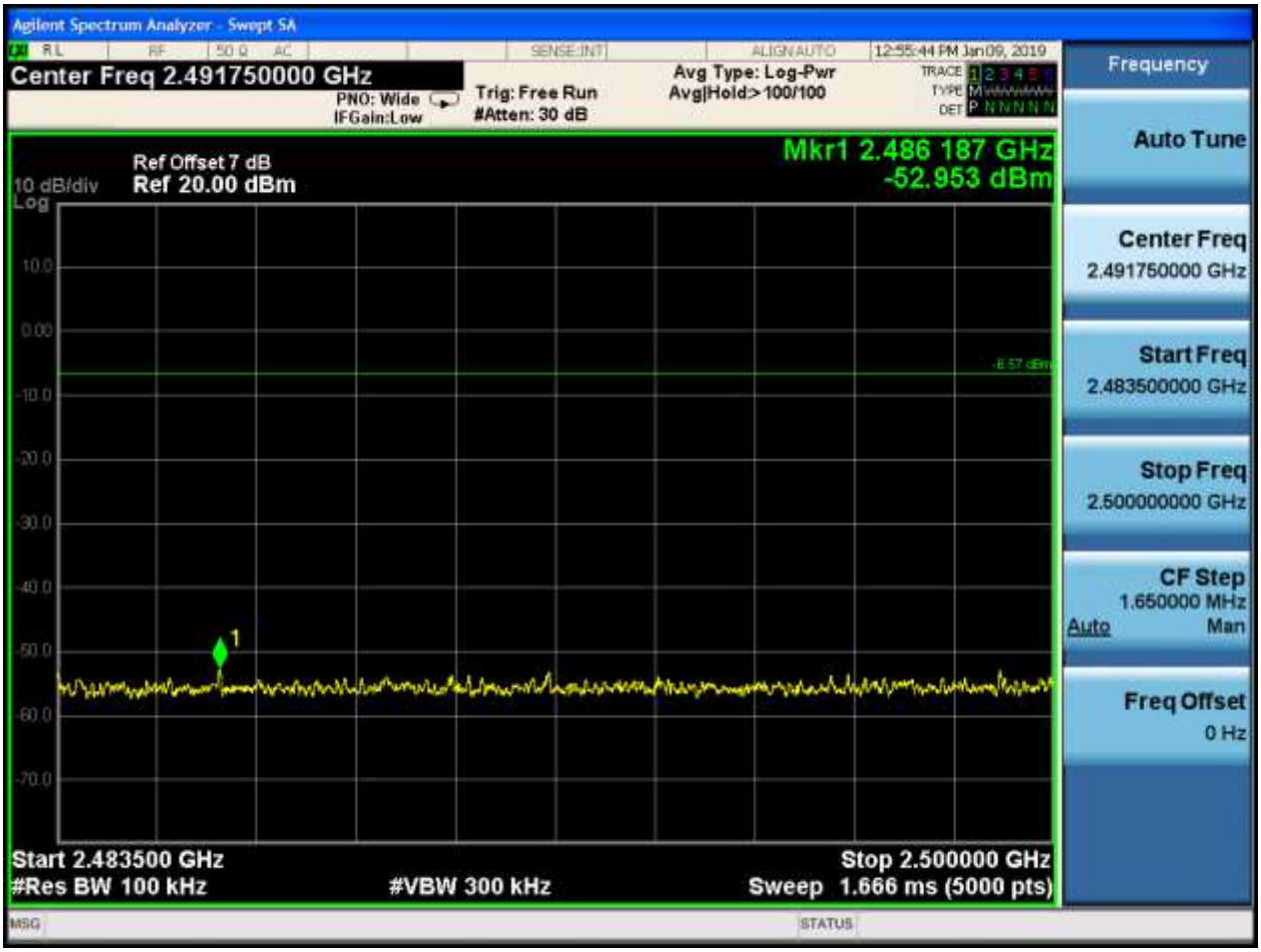

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14.5TM2_2DH5_Ch39

14.5.1 Pref

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14.5.2 Puw

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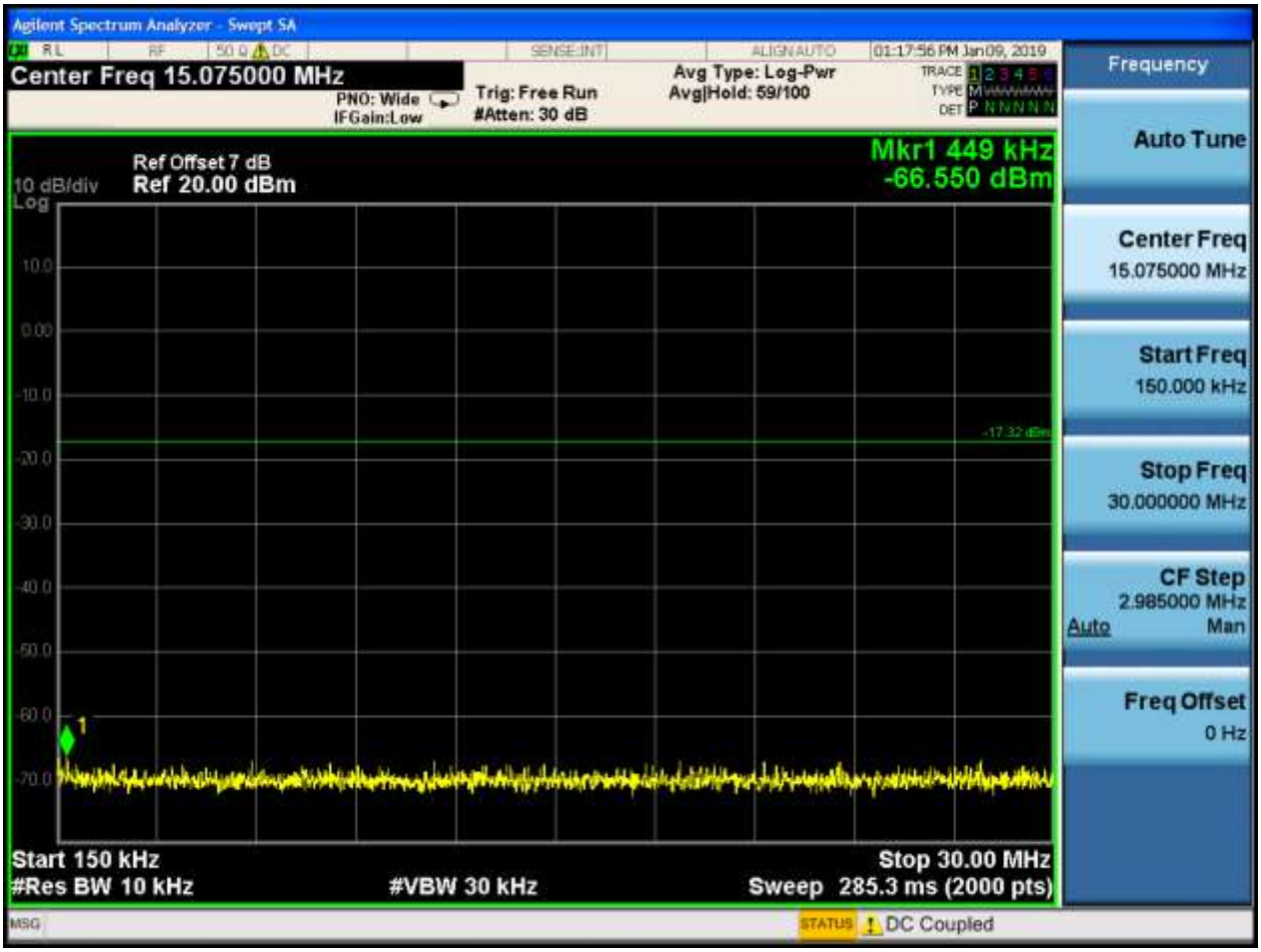

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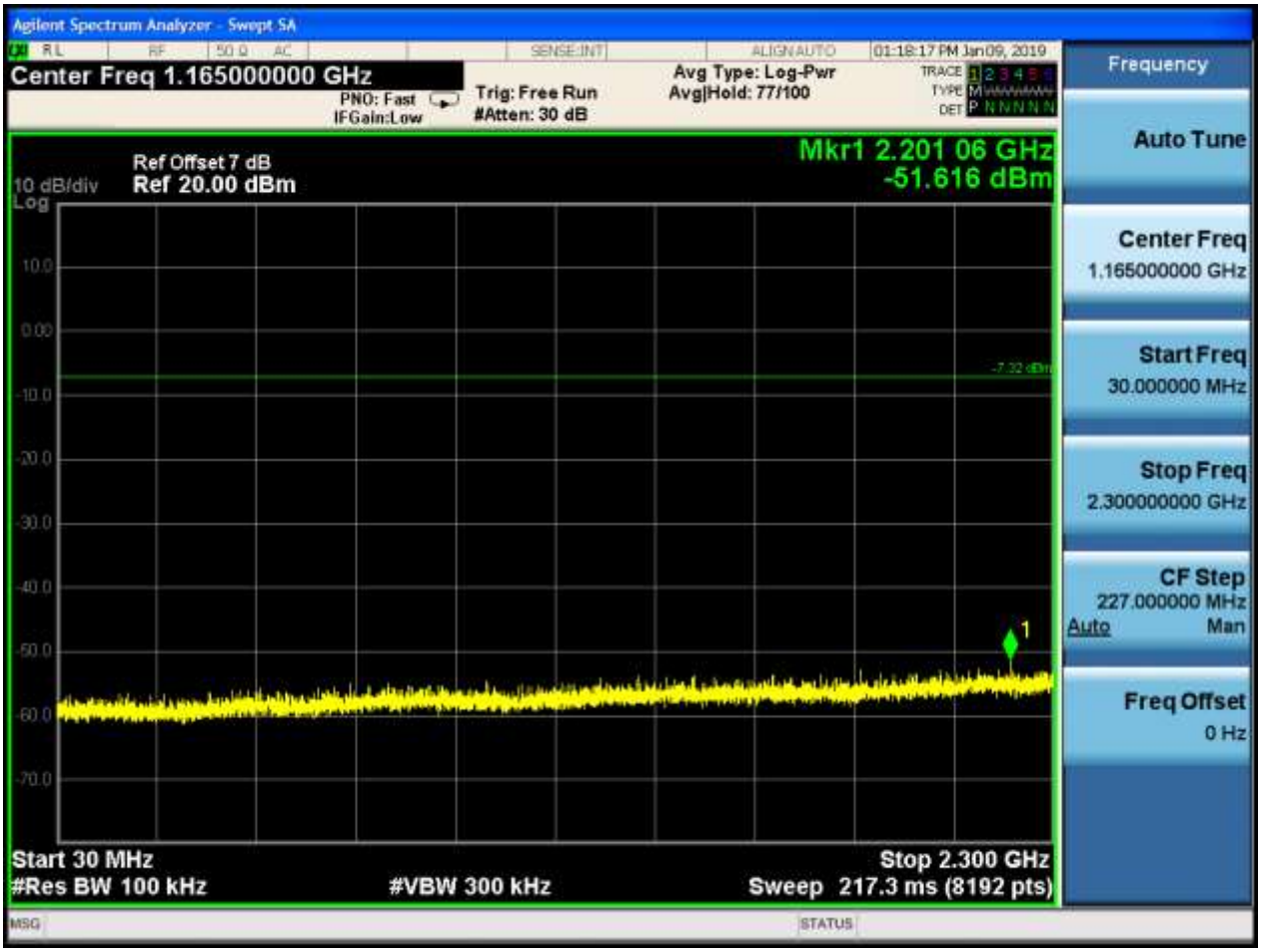

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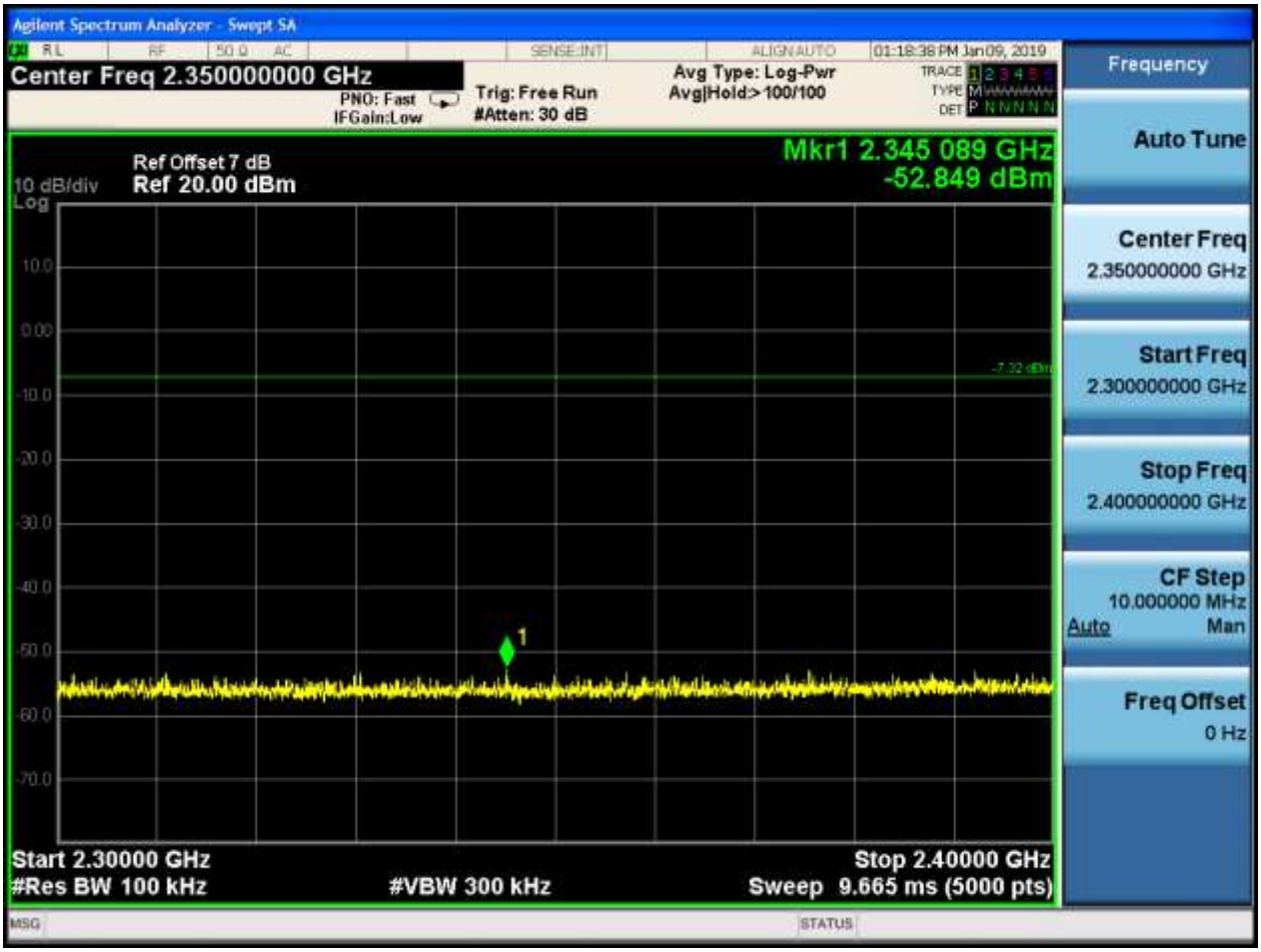

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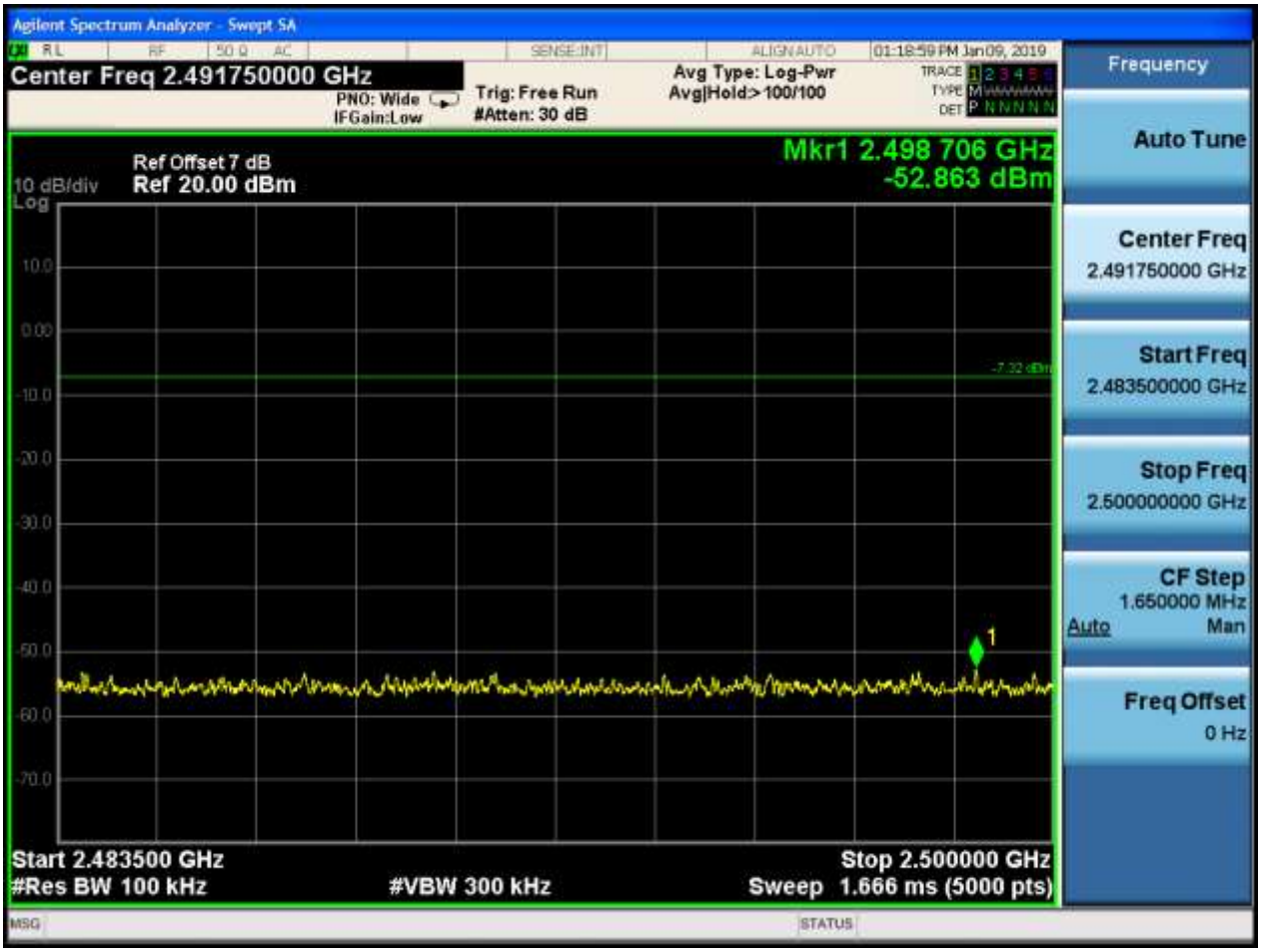

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14.6TM2_2DH5_Ch78

14.6.1 Pref

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14.6.2 Puw

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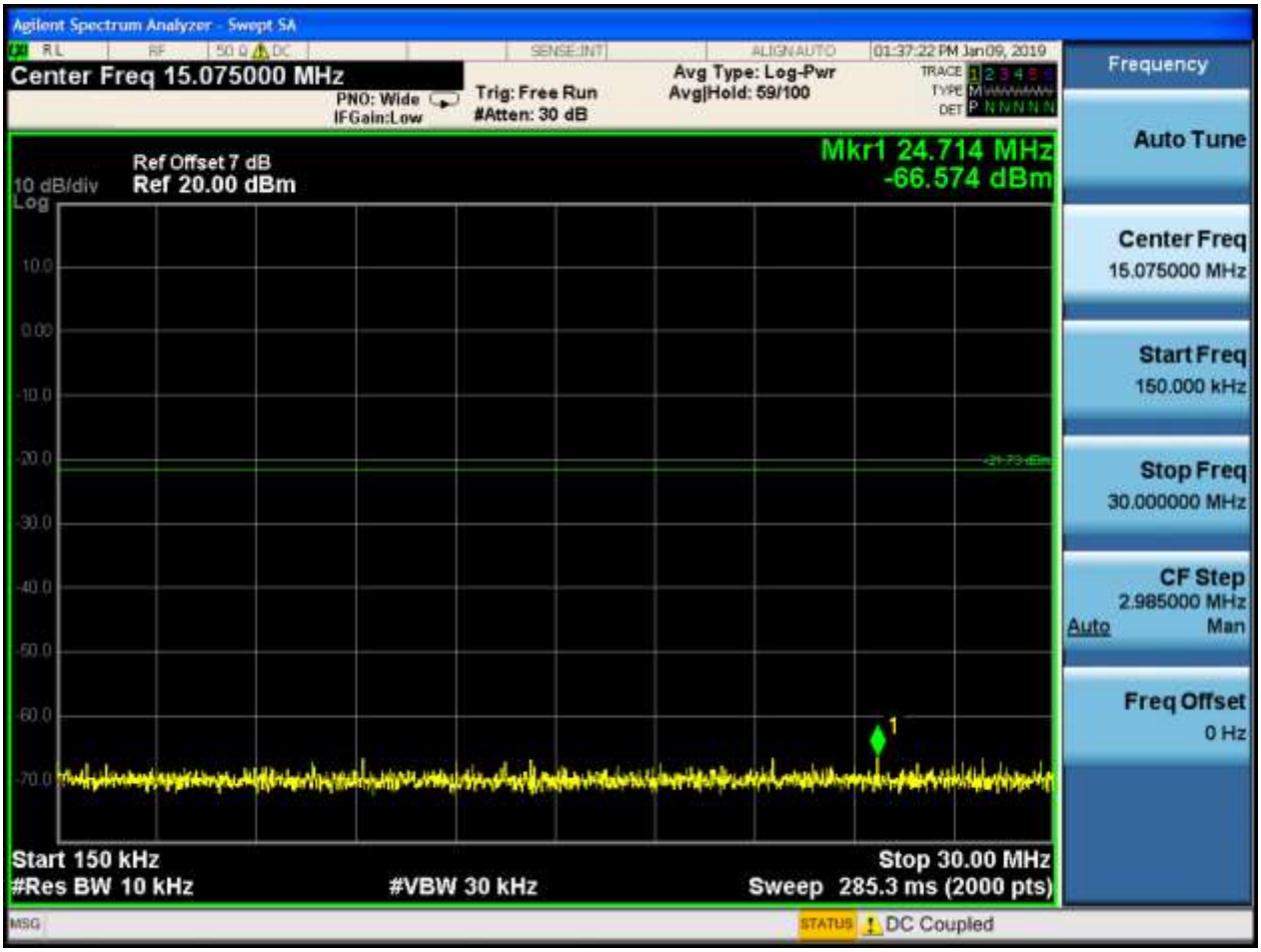

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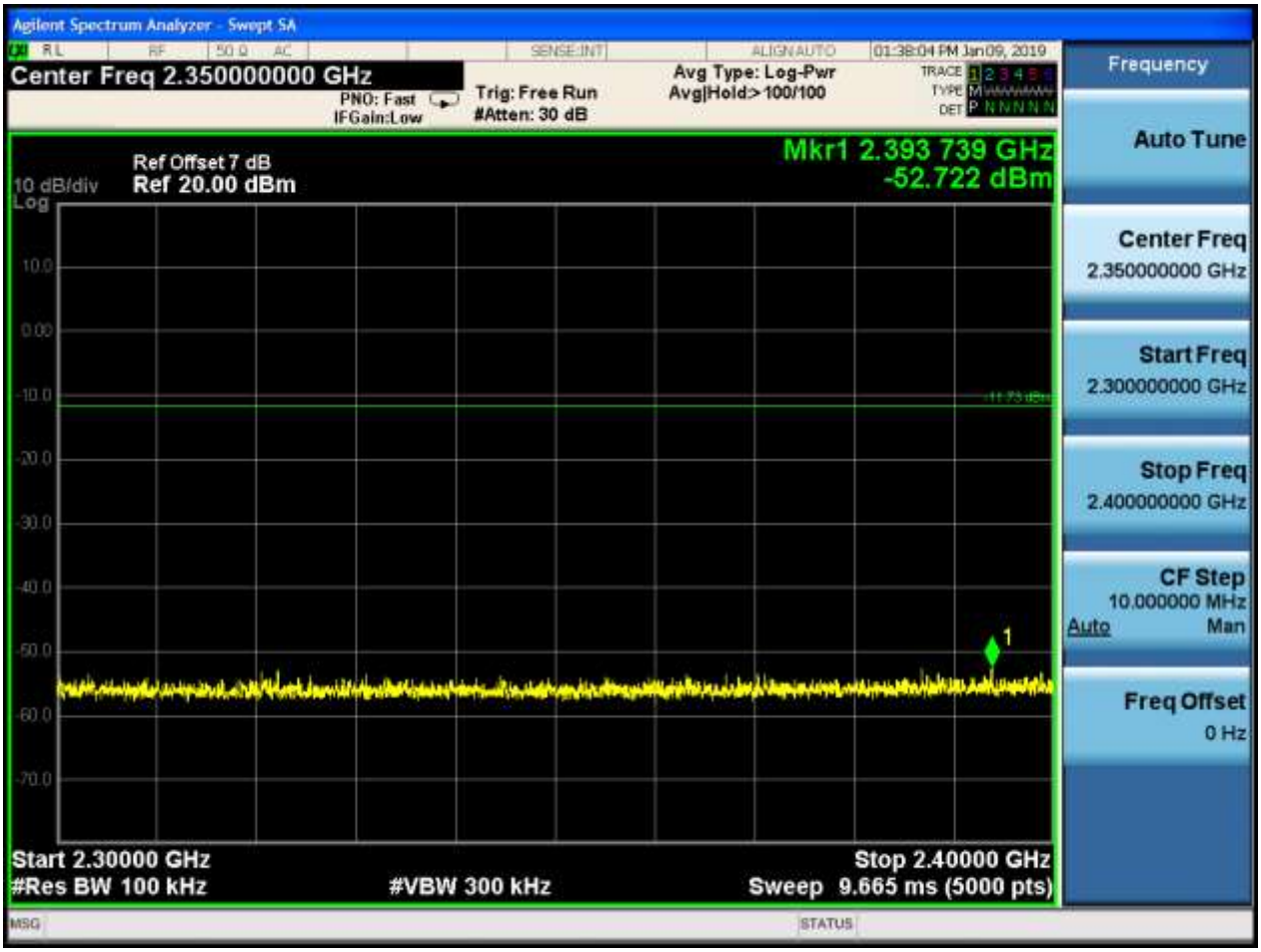

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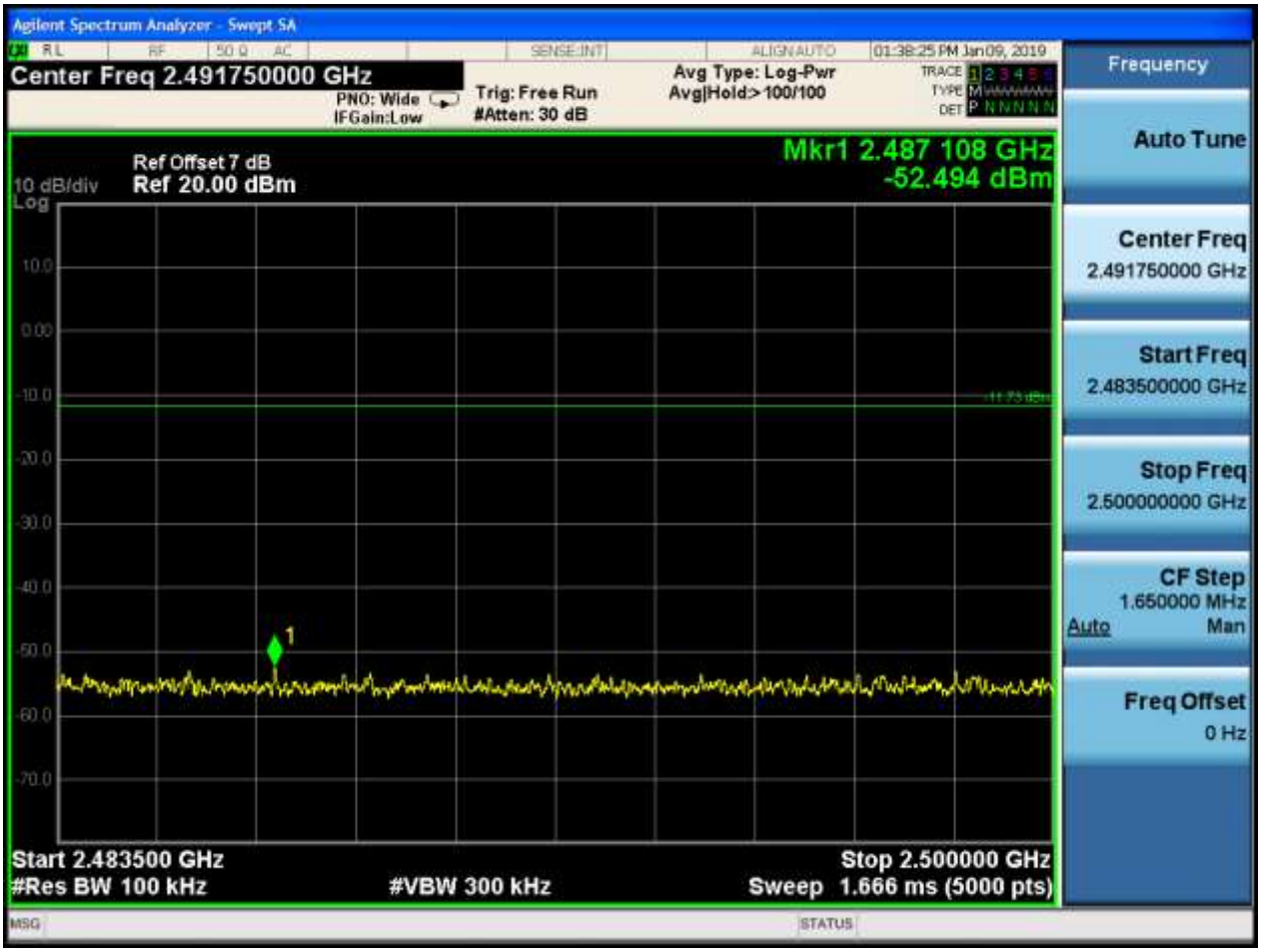

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14.7TM3_3DH5_Ch0

14.7.1 Pref

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14.7.2 Puw

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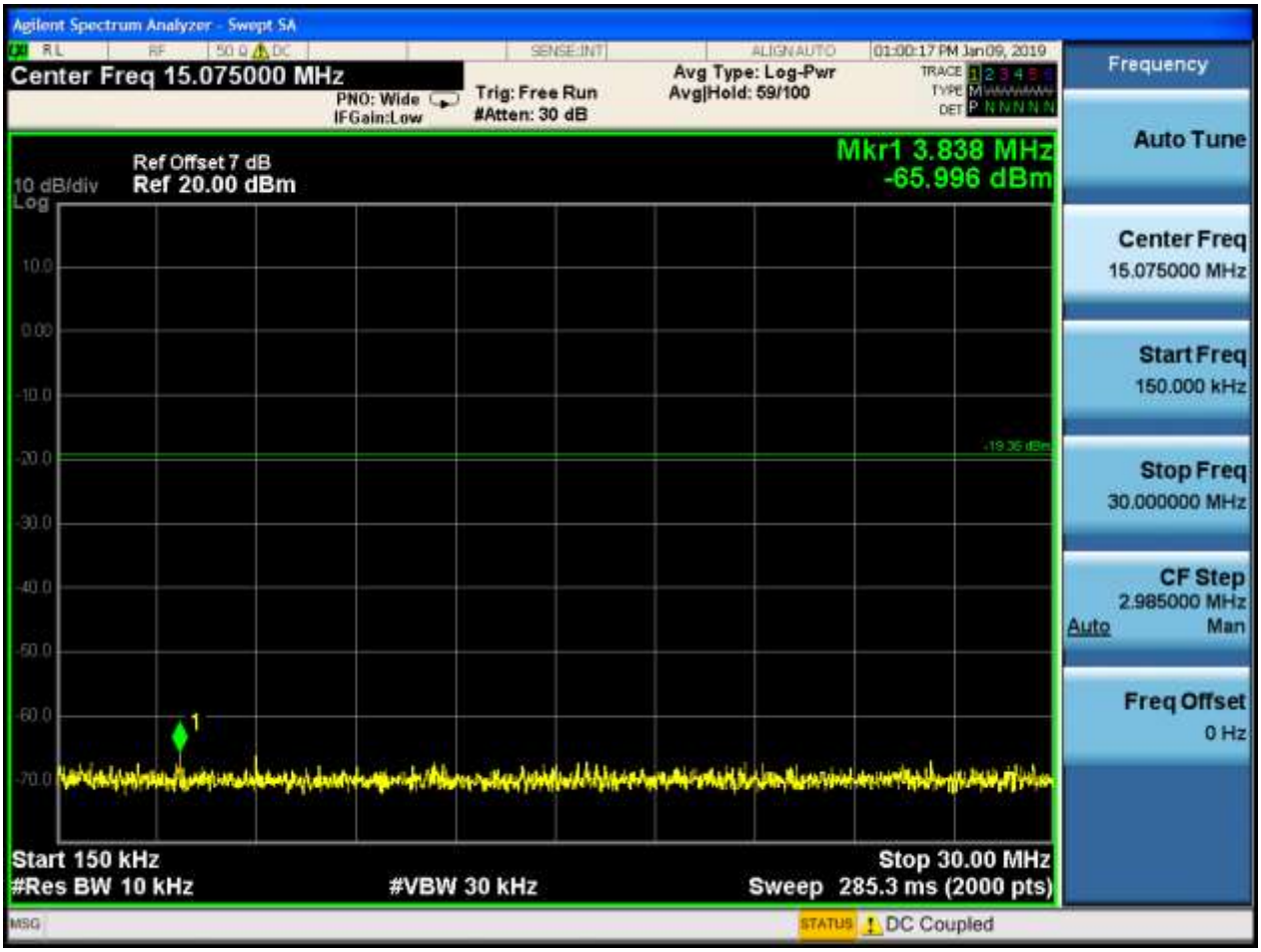

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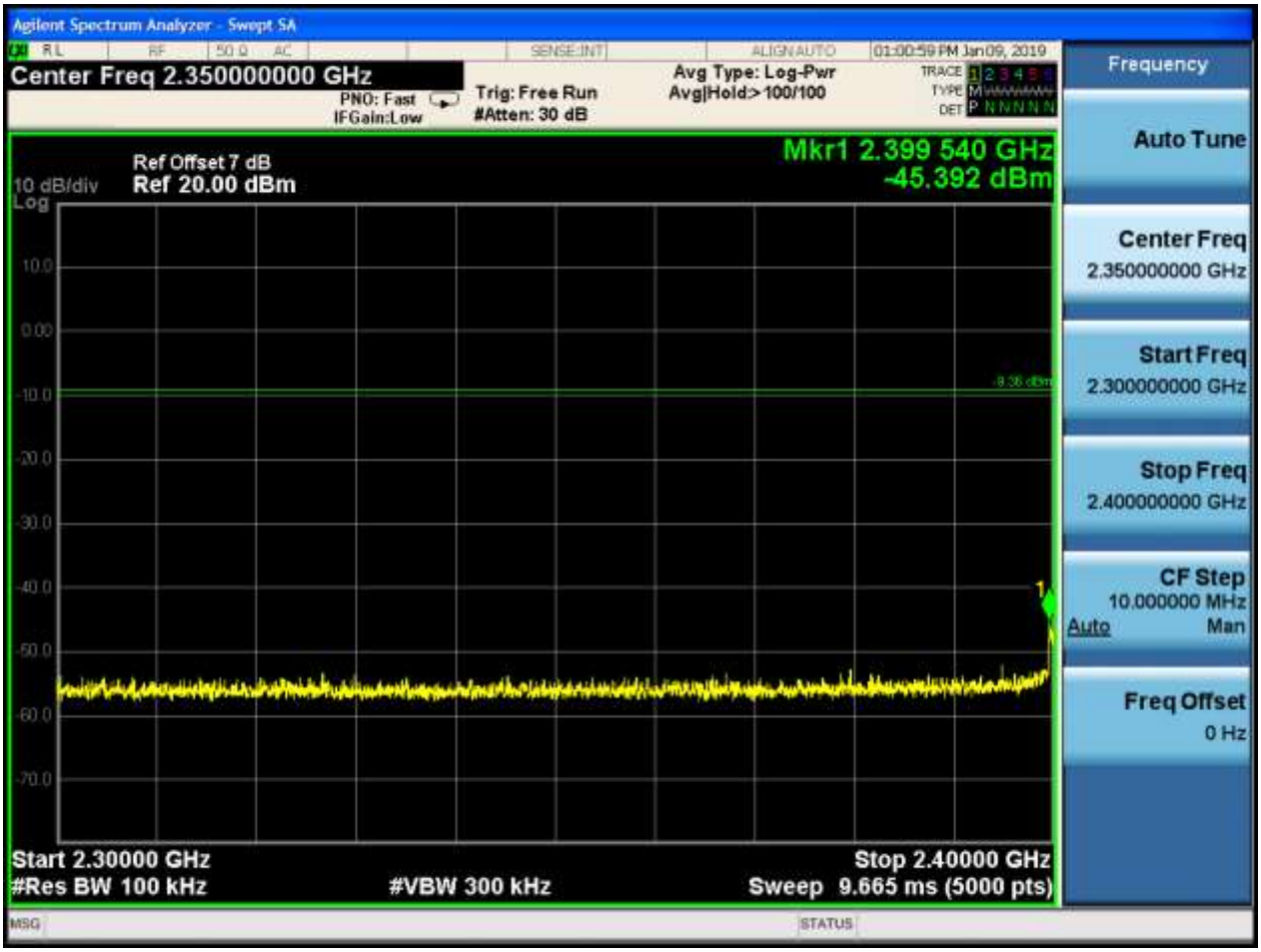

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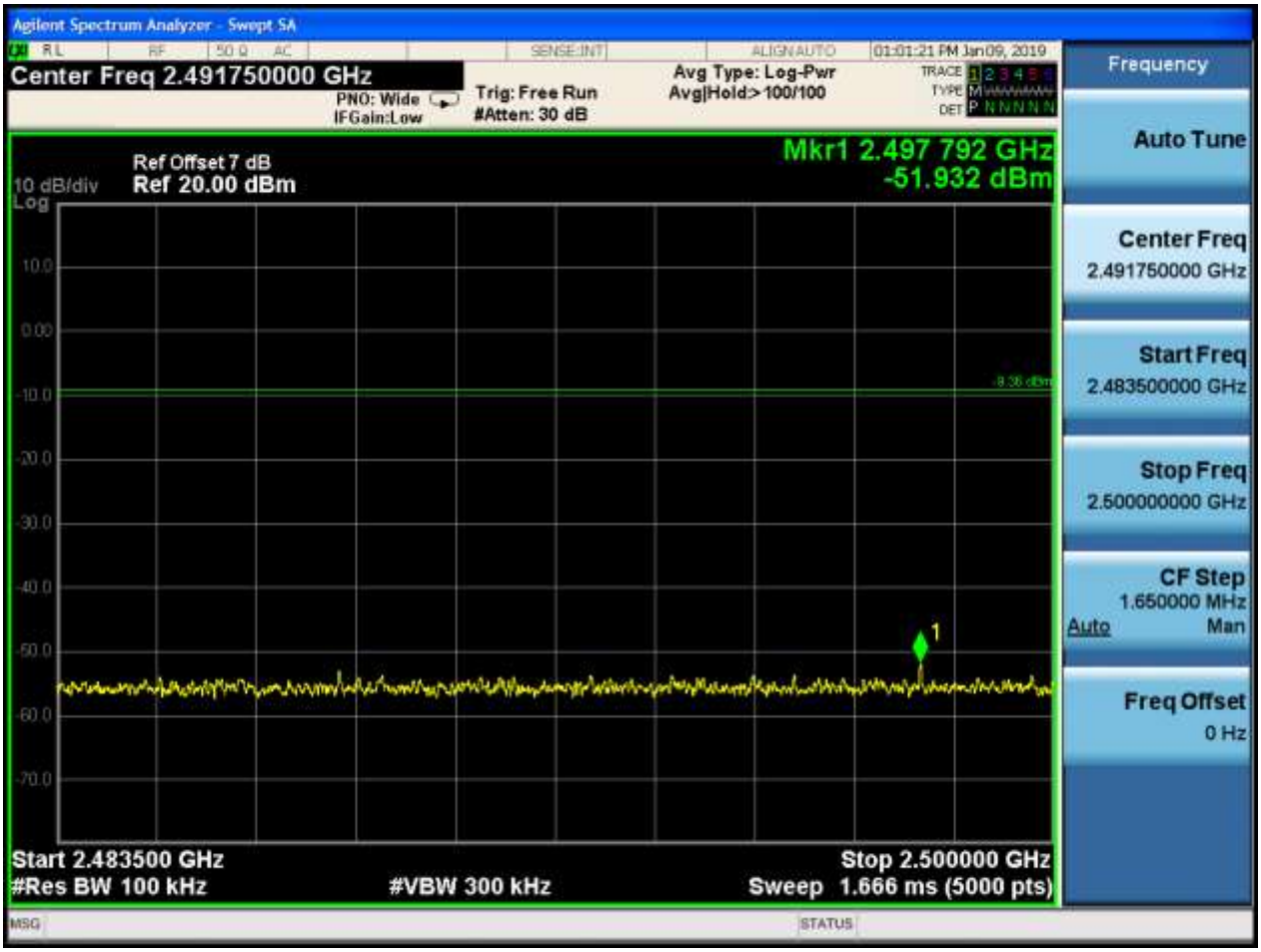

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14.8TM3_3DH5_Ch39

14.8.1 Pref

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14.8.2 Puw

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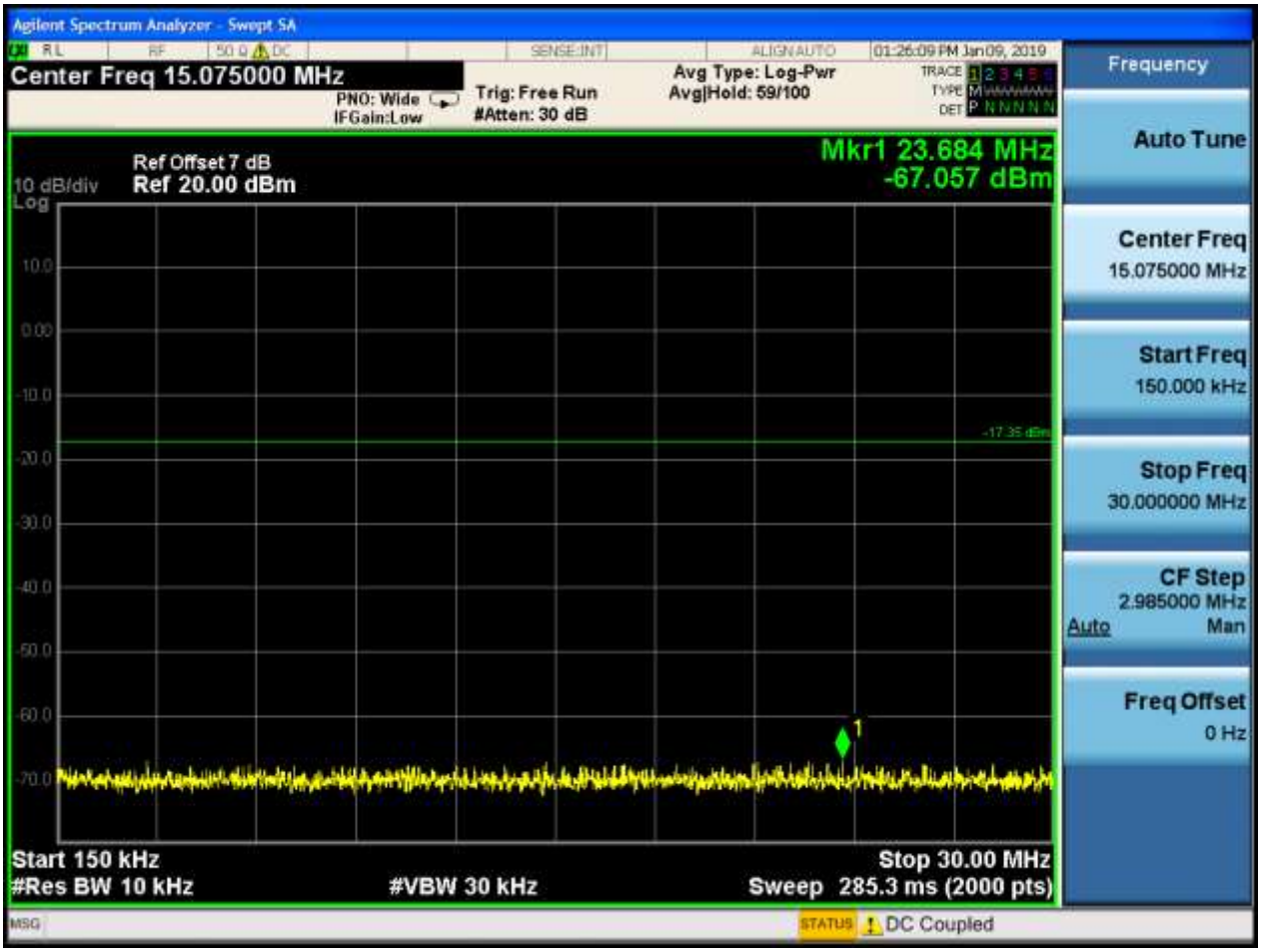

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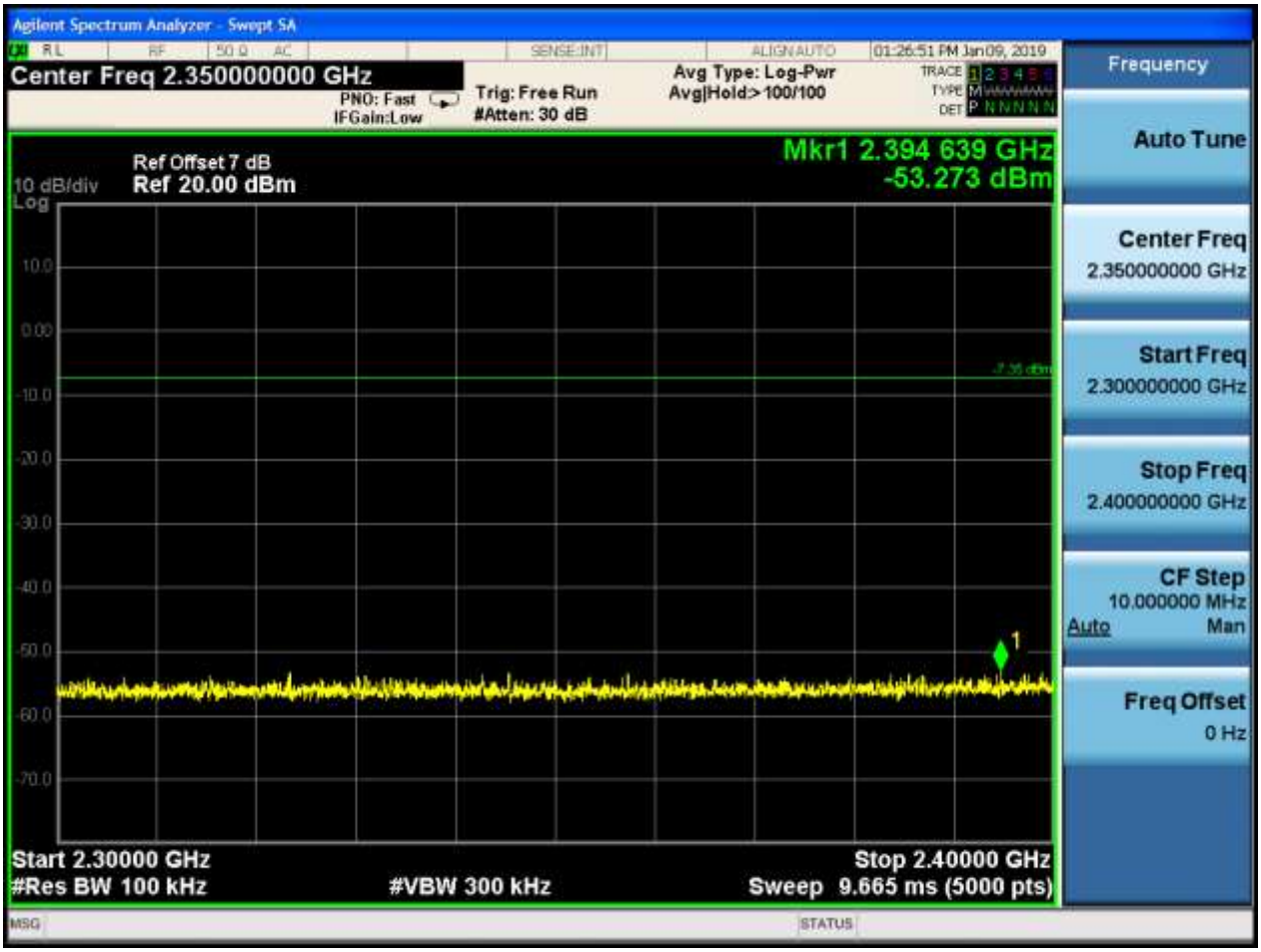

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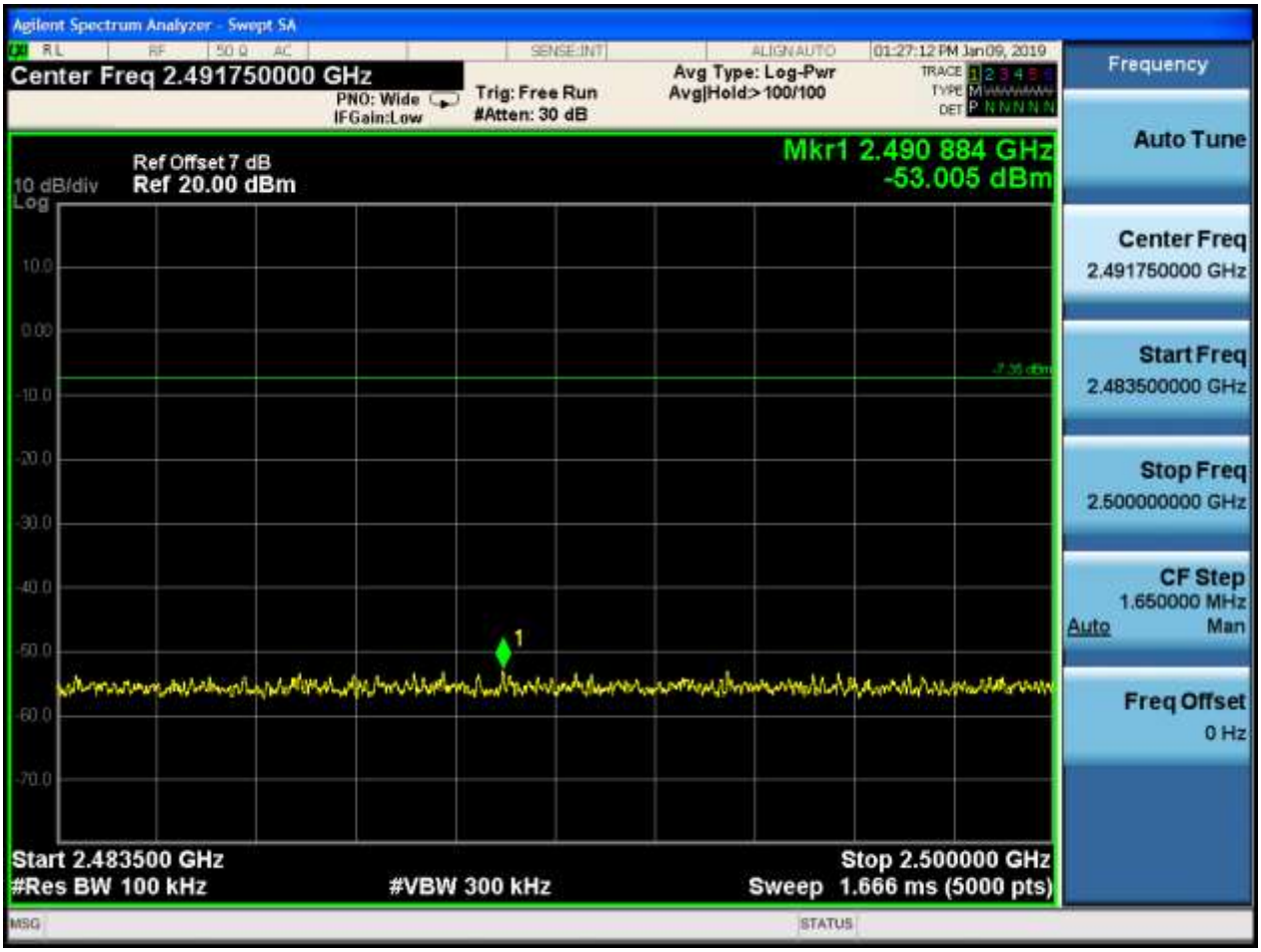

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14.9TM3_3DH5_Ch78

14.9.1 Pref

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14.9.2 Puw

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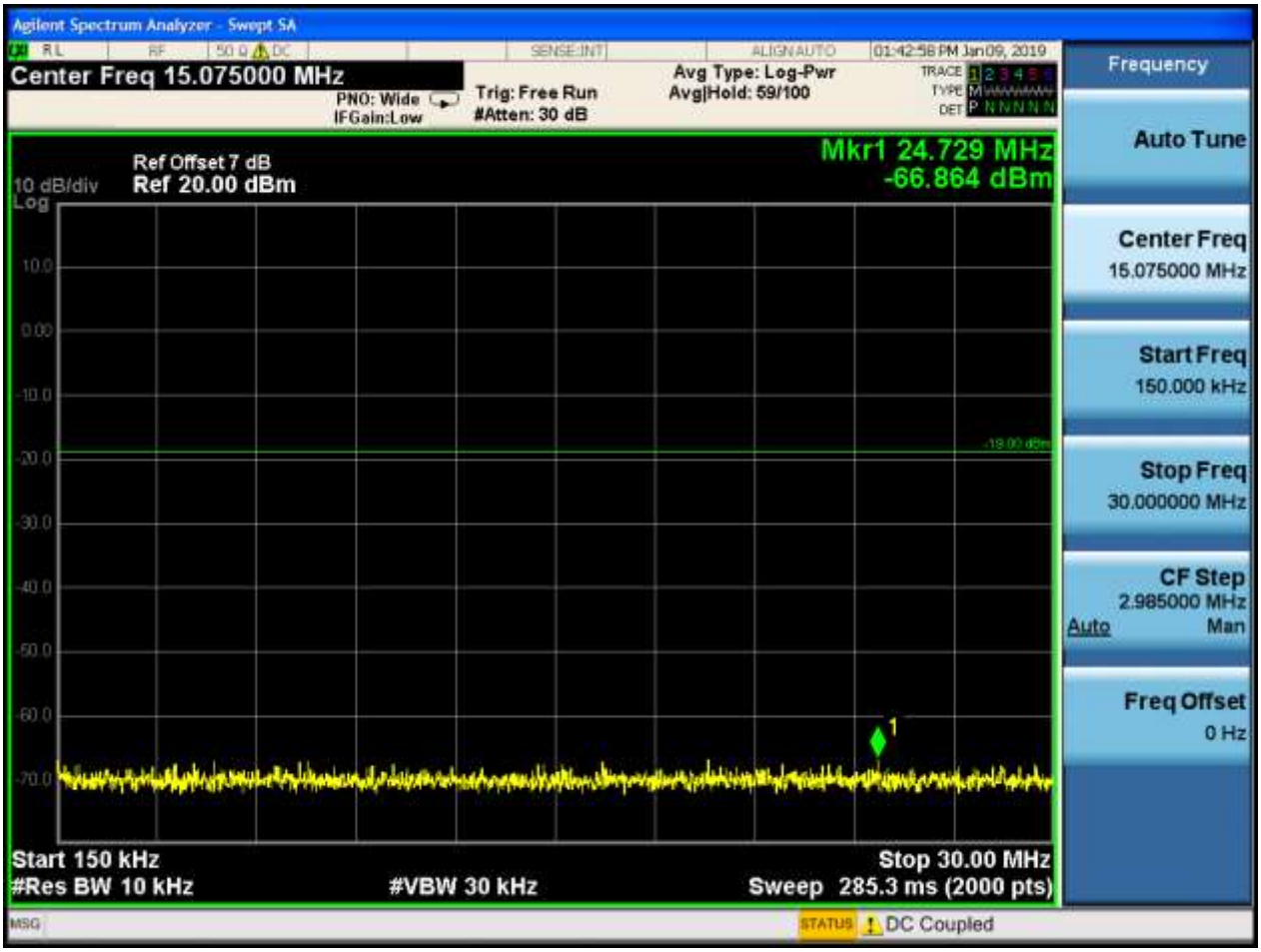

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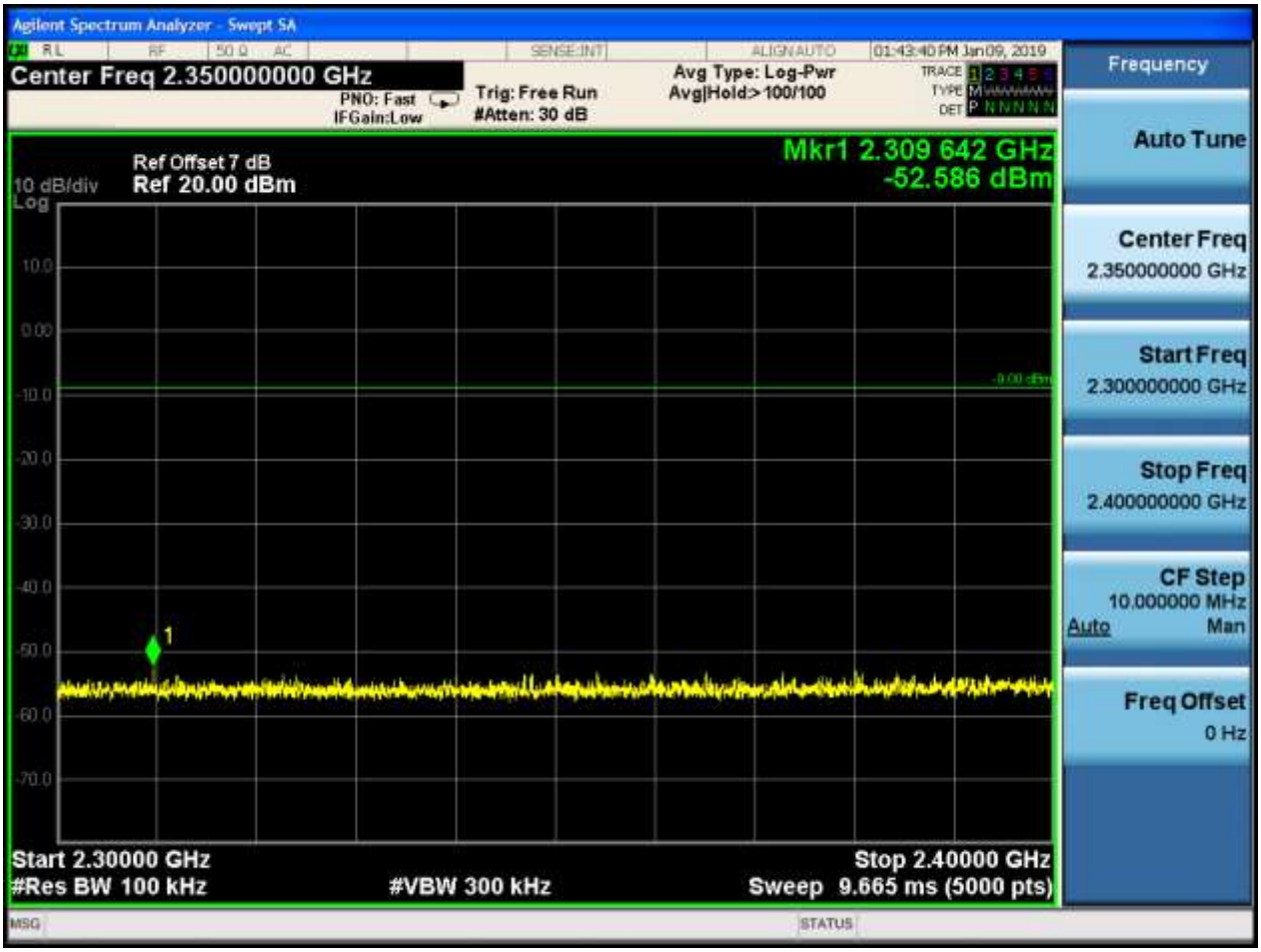

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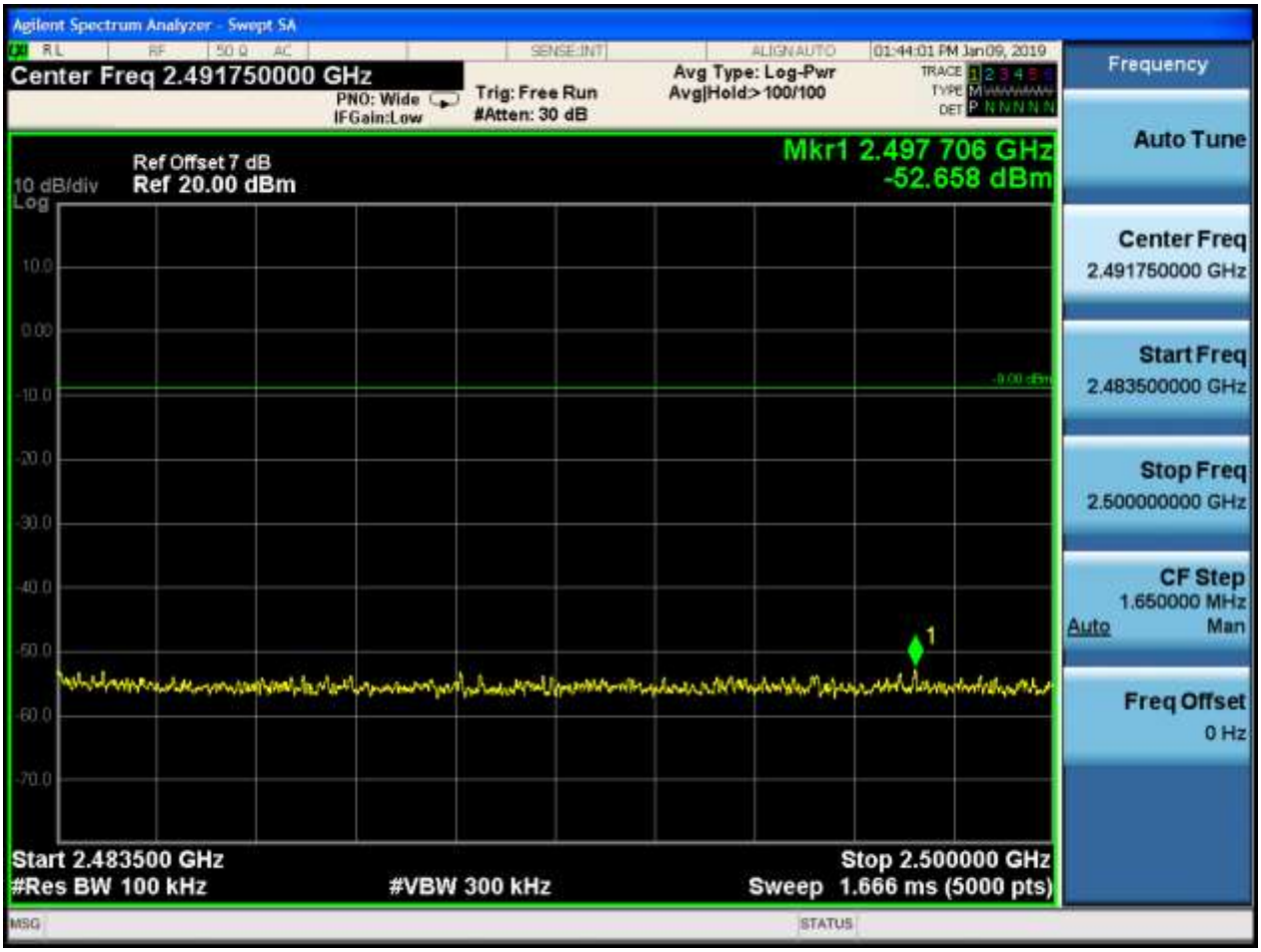

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Appendix H: Radiated Emissions in the Restricted Bands

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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.

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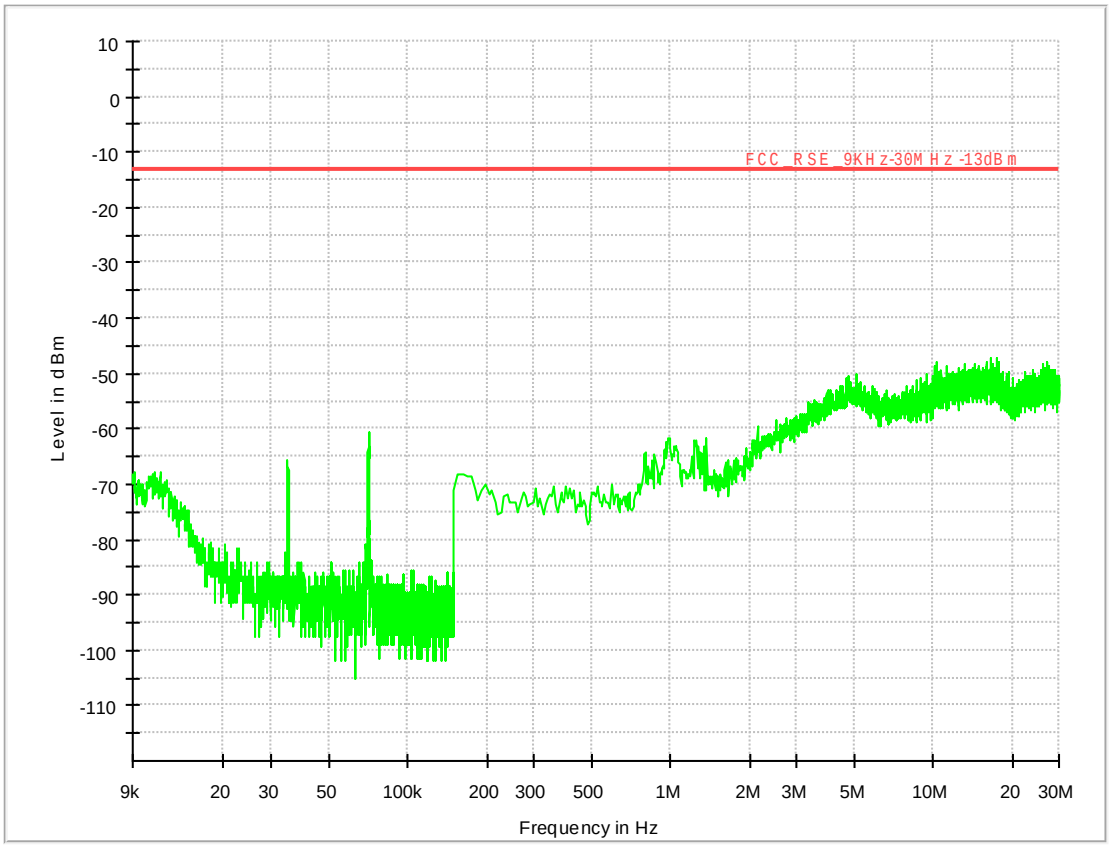
2 Result Plot

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.



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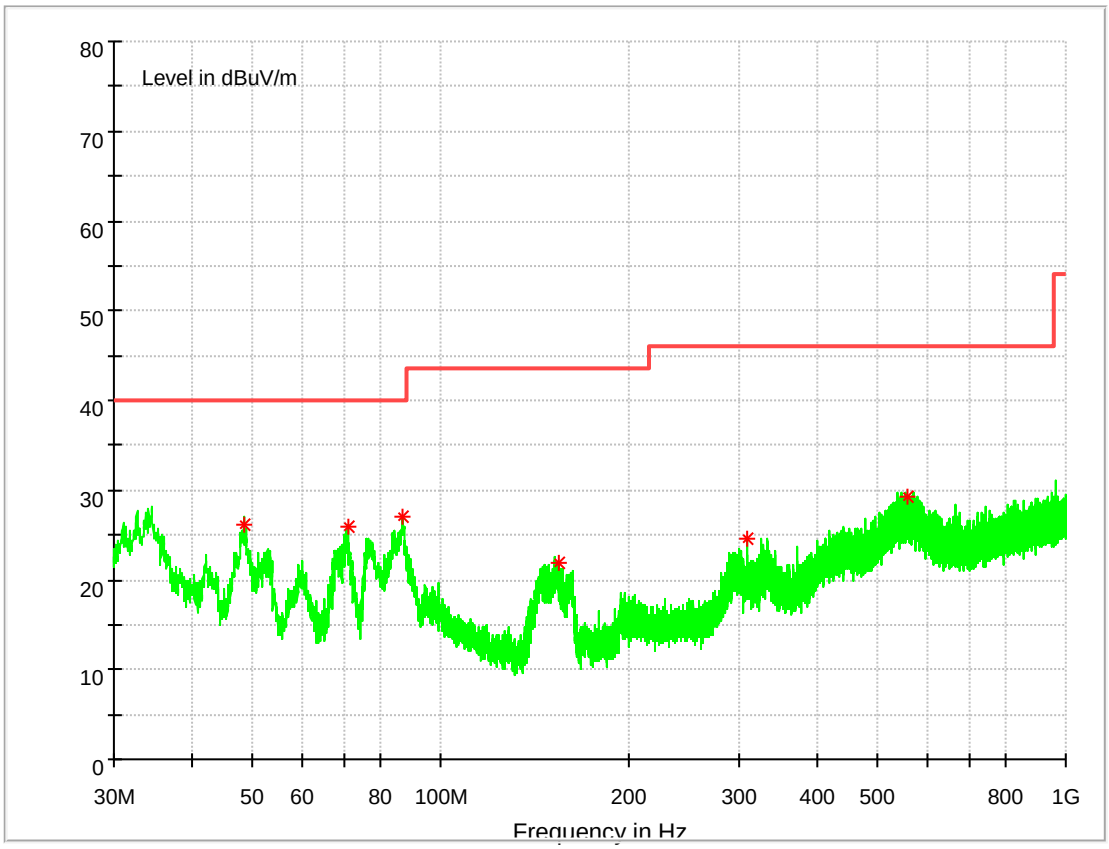
Part 2: Testing Range of "30 MHz to 1 GHz"

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 (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
48.300667	26.21	40.00	13.79	100.0	V	268.0	14.2
70.966333	25.99	40.00	14.01	100.0	V	185.0	9.5
86.939000	27.06	40.00	12.94	100.0	V	243.0	12.0
154.095333	21.92	43.50	21.58	100.0	V	169.0	9.9
309.036667	24.52	46.00	21.48	100.0	V	71.0	15.1
557.162667	29.36	46.00	16.64	100.0	H	152.0	20.0

Note:

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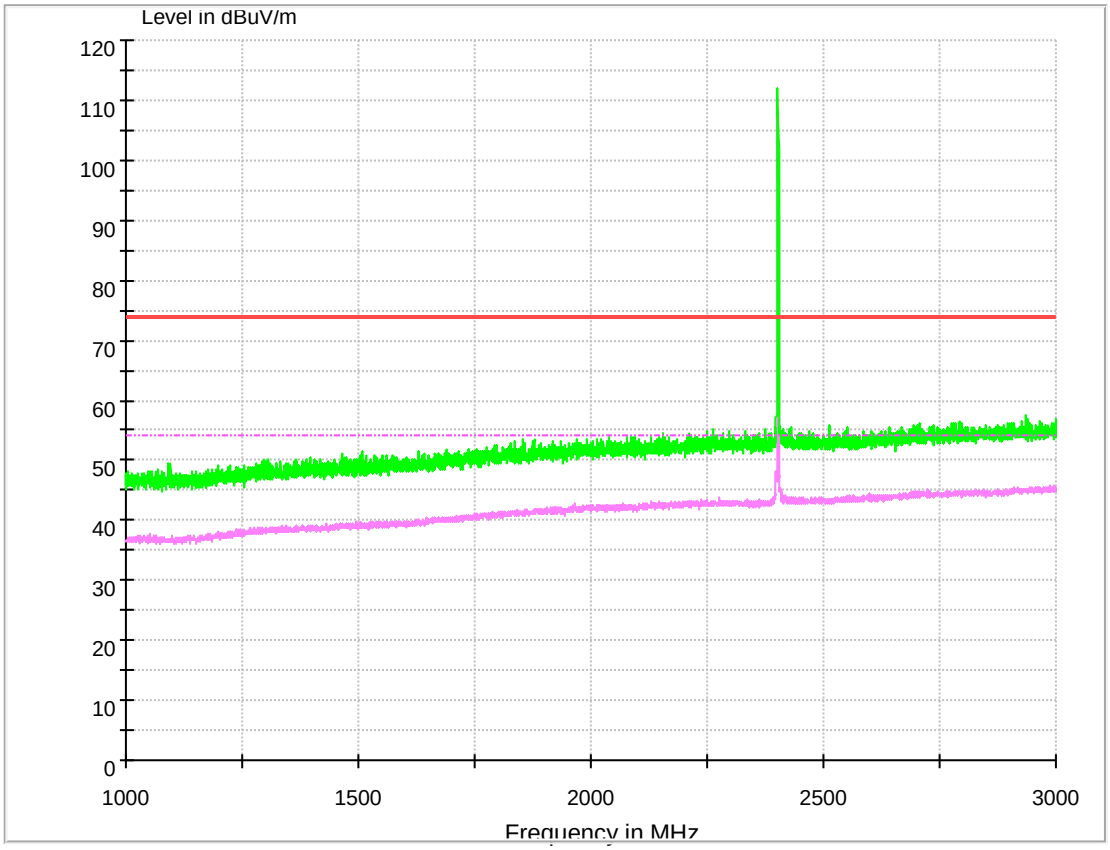
1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)
The reading level is calculated by software which is not shown in the sheet.
2, Margin=Limit - Level

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.



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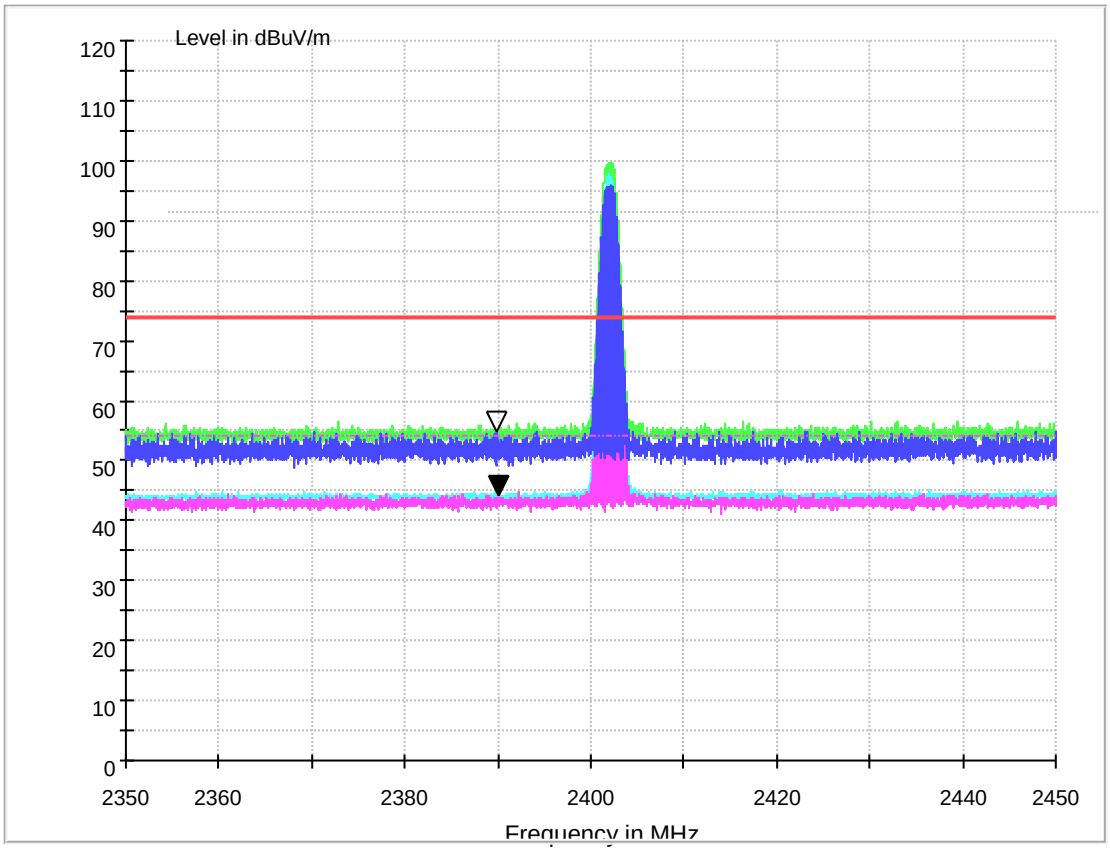
Channel 0



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth	Transd. (dB)
2390	44.312	54.00	9.688	150.0	H	57.0	-6.8

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	55.148	74.00	18.852	150.0	H	45.0	-6.8

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

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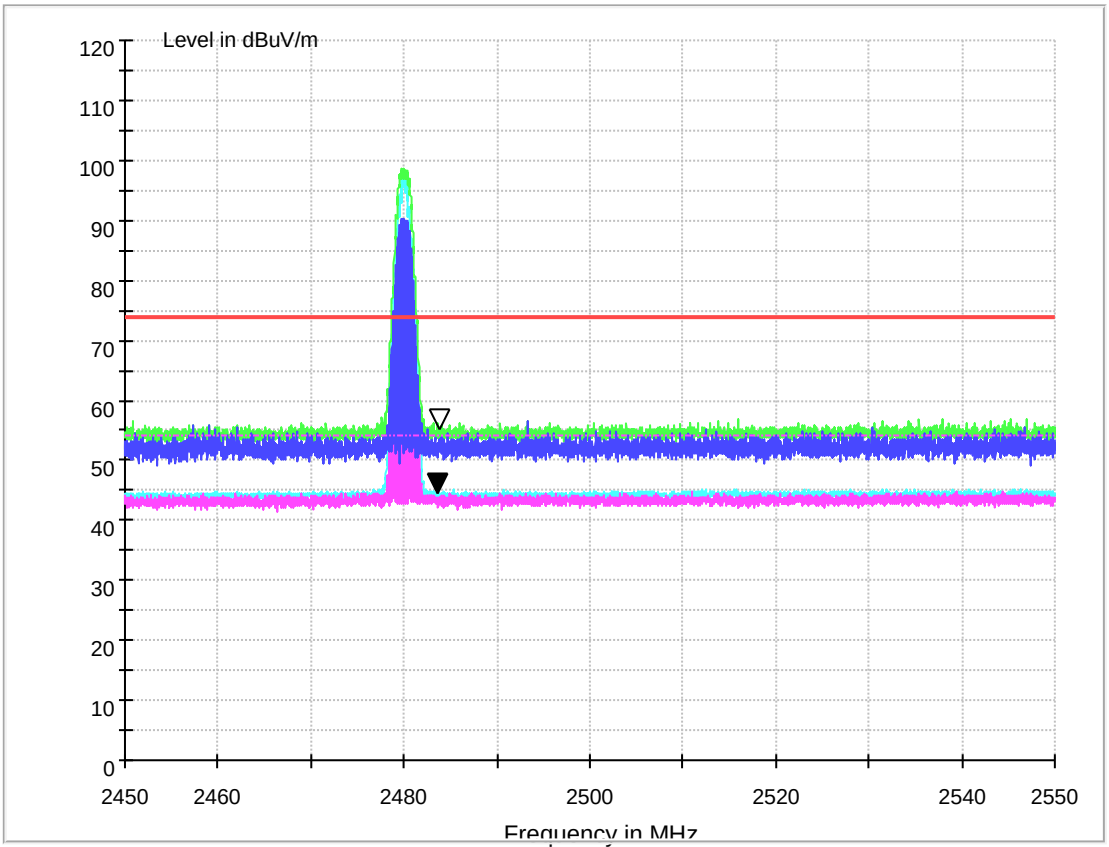
Channel 78



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth	Transd. (dB)
2483.5	44.651	54.00	9.349	150.0	H	57.0	-10.2

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)
2483.5	55.649	74.00	18.351	150.0	H	-8.0	-10.2

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

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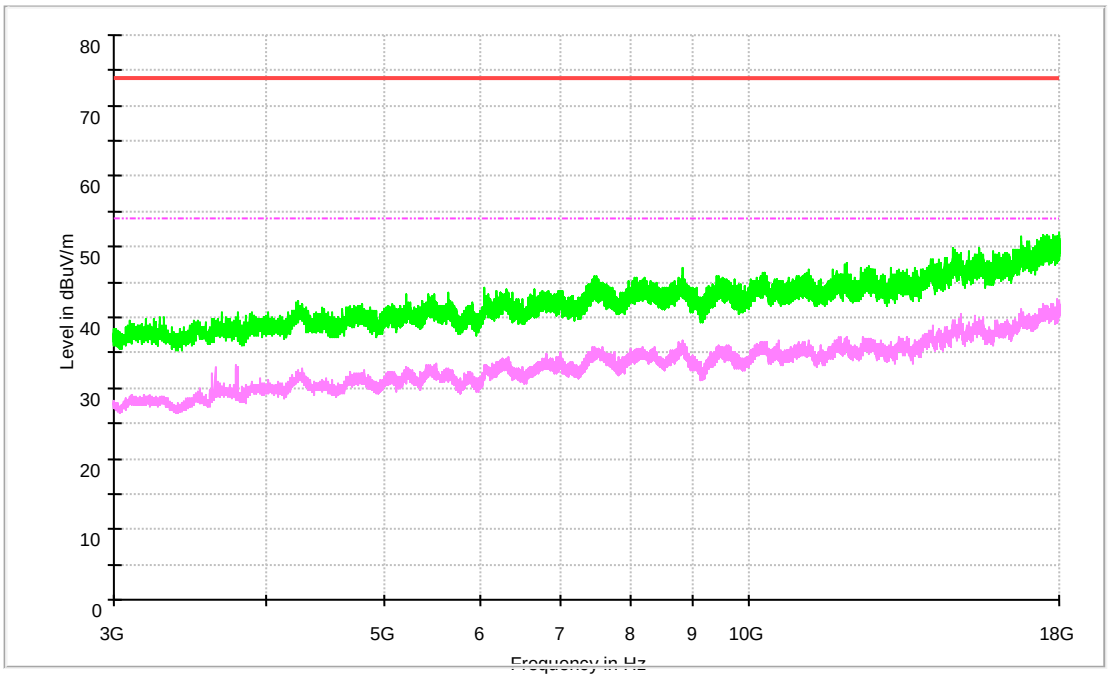
Part 4: Testing Range of "3 GHz to 18 GHz"

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).



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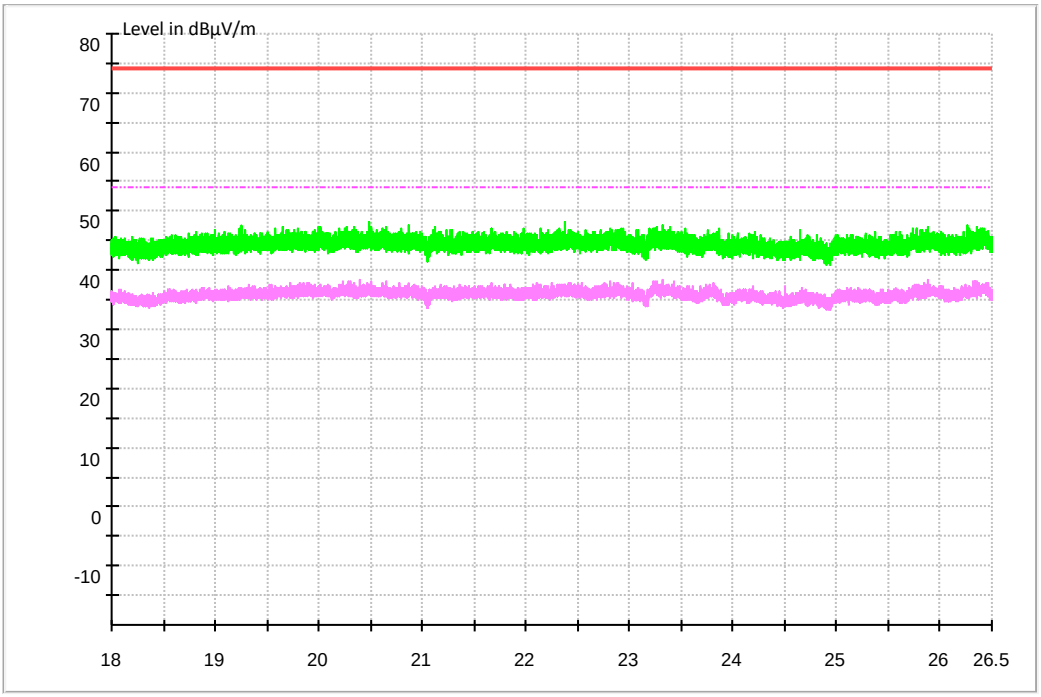
Part 5: Testing Range of "18 GHz to 26.5 GHz"

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).



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Appendix I: Conducted Emission at Power Port

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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_Ch78	Not found obvious spikes or see marked spikes on plots and listed emissions records.	Pass

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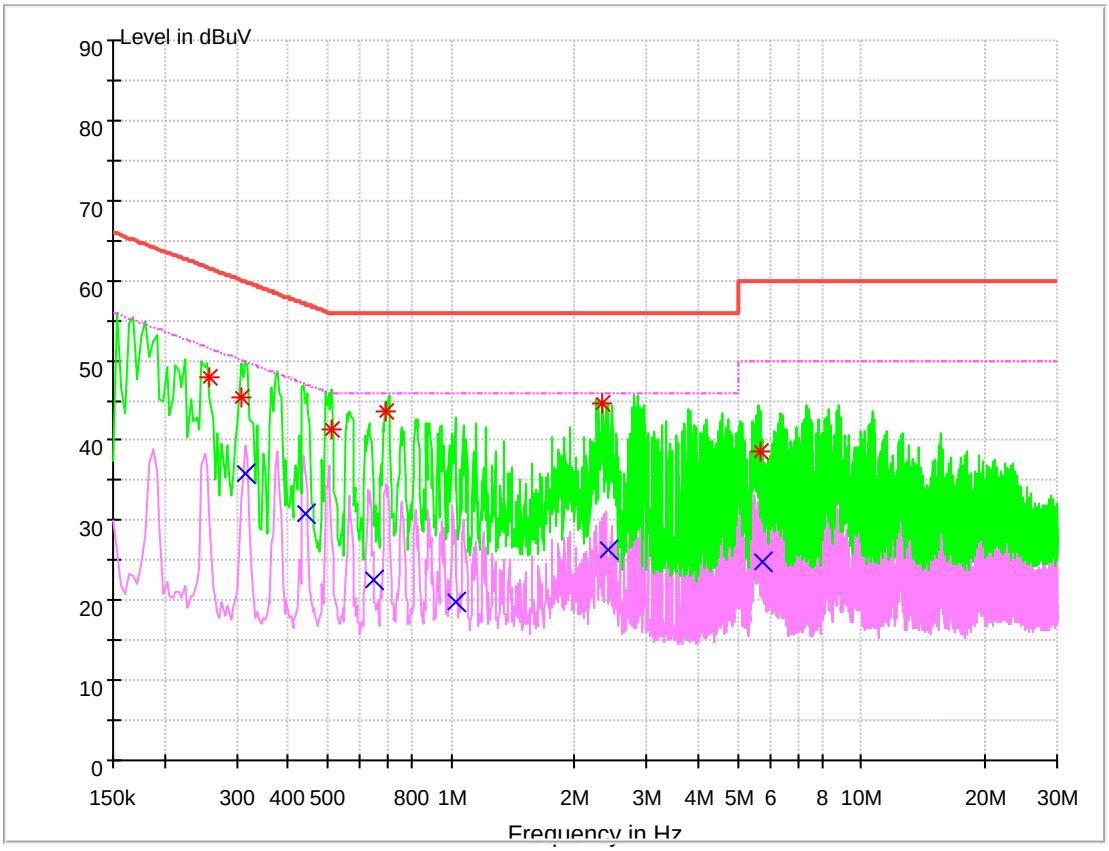
2 Result Plot

Channel 78



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB μ V)	Limit (dB μ V)	Transd. (dB)	Margin (dB)	Line	PE
0.256408	47.90	61.55	9.7	13.65	L1	FLO
0.306948	45.40	60.05	9.7	14.65	L1	FLO
0.513504	41.26	56.00	9.7	14.74	N	FLO
0.693976	43.52	56.00	9.7	12.48	L1	FLO
2.332059	44.58	60.00	9.7	11.42	L1	FLO
5.700942	38.61	60.00	9.7	21.39	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB μ V)	Limit (dB μ V)	Transd. (dB)	Margin (dB)	Line	PE
0.315424	35.83	49.83	9.7	14.00	N	FLO
0.441100	30.89	47.04	9.7	16.15	L1	FLO
0.646007	22.57	46.00	9.7	23.43	L1	FLO

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1.026926	19.69	46.00	9.7	26.31	N	FLO
2.415564	26.42	46.00	9.7	19.58	L1	FLO
5.736813	24.86	50.00	9.7	25.14	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

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