Appendix for Testreport

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Appendix A: DTS (6 dB) Bandwidth

In this document, the "DTS6dBBW" refers to the measured "DTS (6 dB) Bandwidth" value. In this Appendix, the "fc(DTS6dBBW)" refers to the centre of the measured "DTS6dBBW". The introduction of the "fc(DTS6dBBW)" is due to that other measurements use it as the spectrum analyzer setting.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
TM1_ Ch0	L	2402	Ant 1	0.70	pass
TM1_ Ch19	M	2440	Ant 1	0.71	pass
TM1_Ch39	H	2480	Ant 1	0.71	pass

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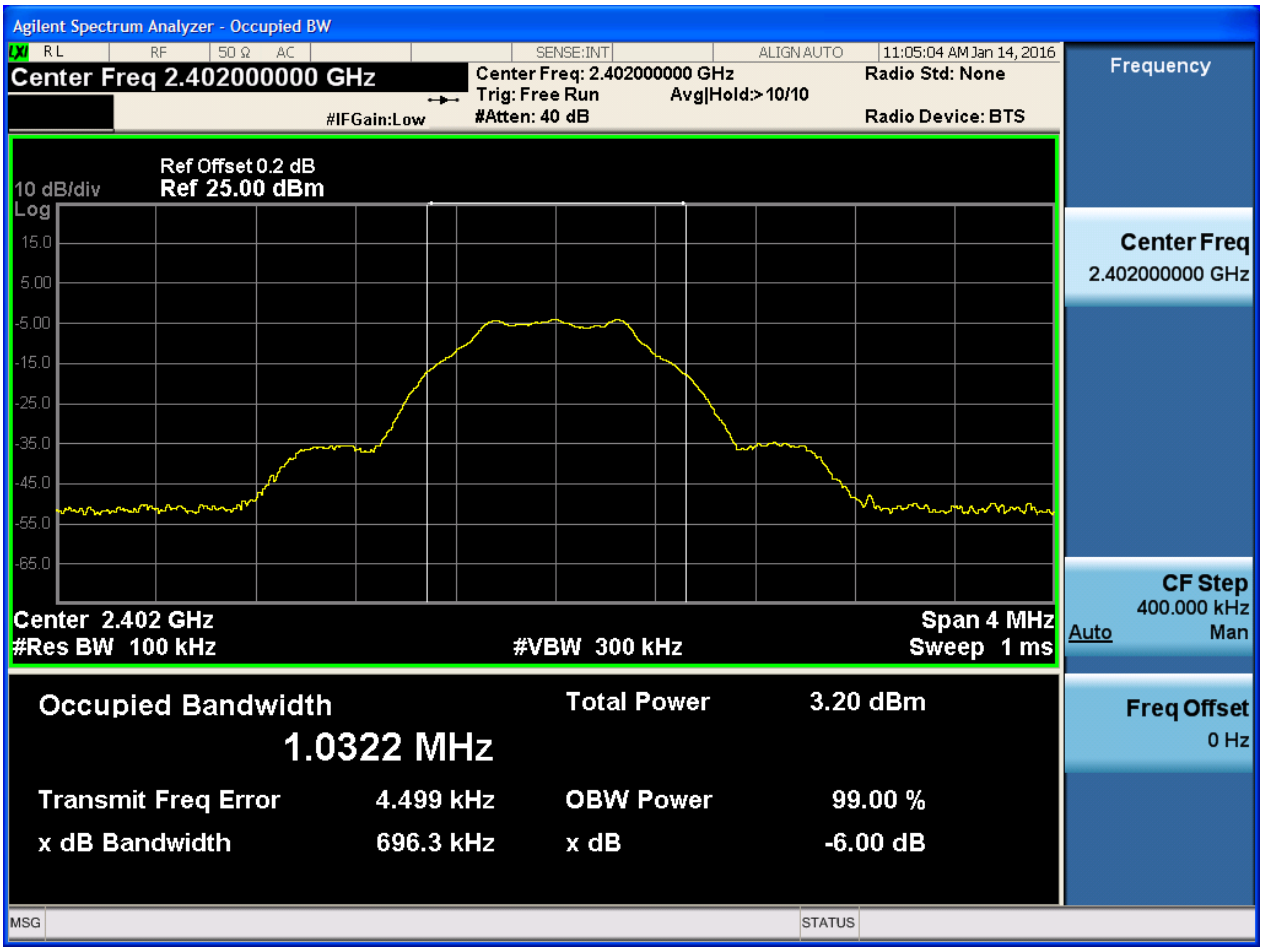
Part II - Test Plots

2.1 TM1_Ch0_L



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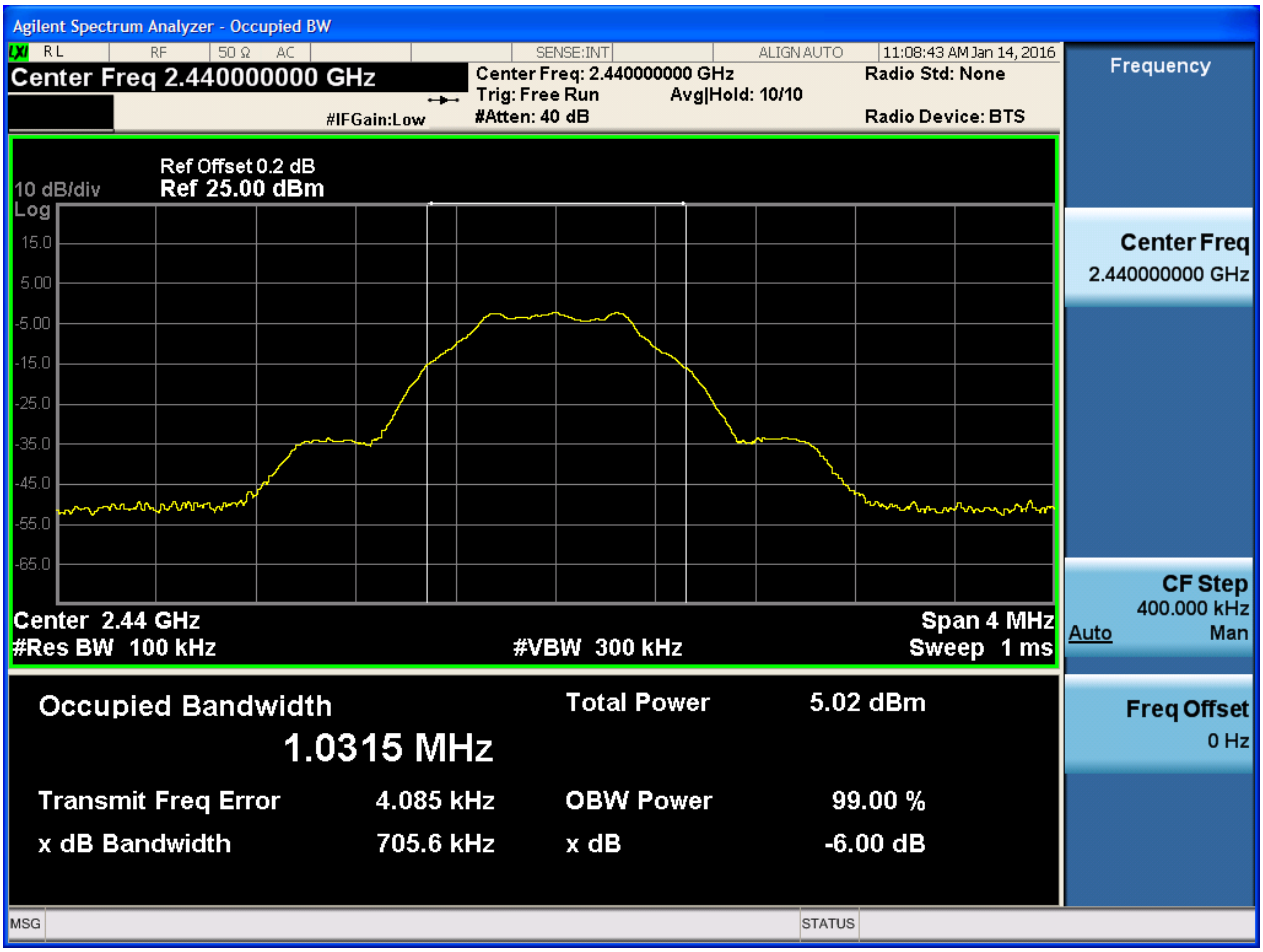
2.3 TM1_Ch19_M



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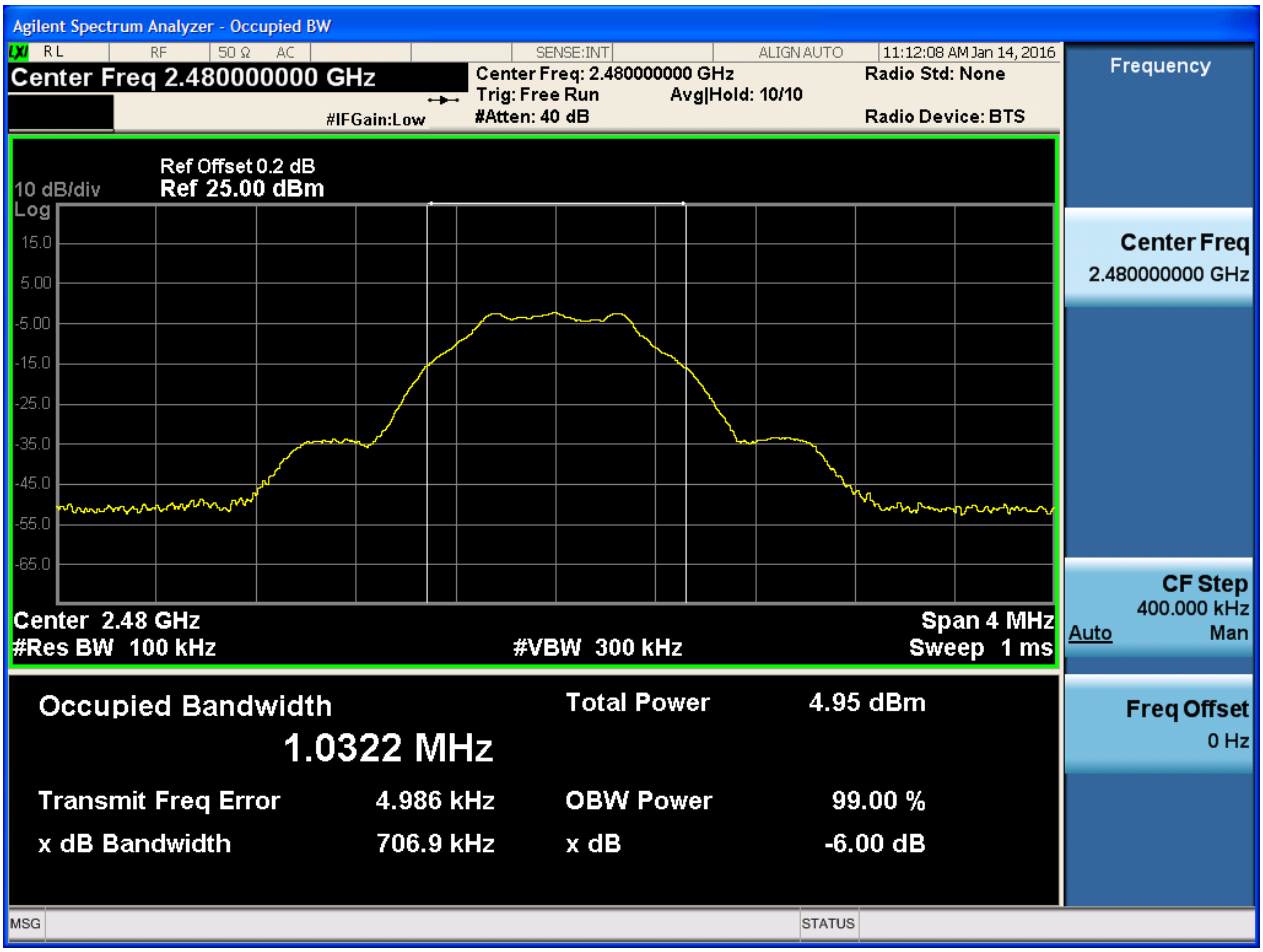
2.5 TM1_Ch39_H



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Appendix B: Occupied Bandwidth

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
TM1_ Ch0	L	2402	Ant 1	1.02	pass
TM1_ Ch19	M	2440	Ant 1	1.02	pass
TM1_Ch39	H	2480	Ant 1	1.02	pass

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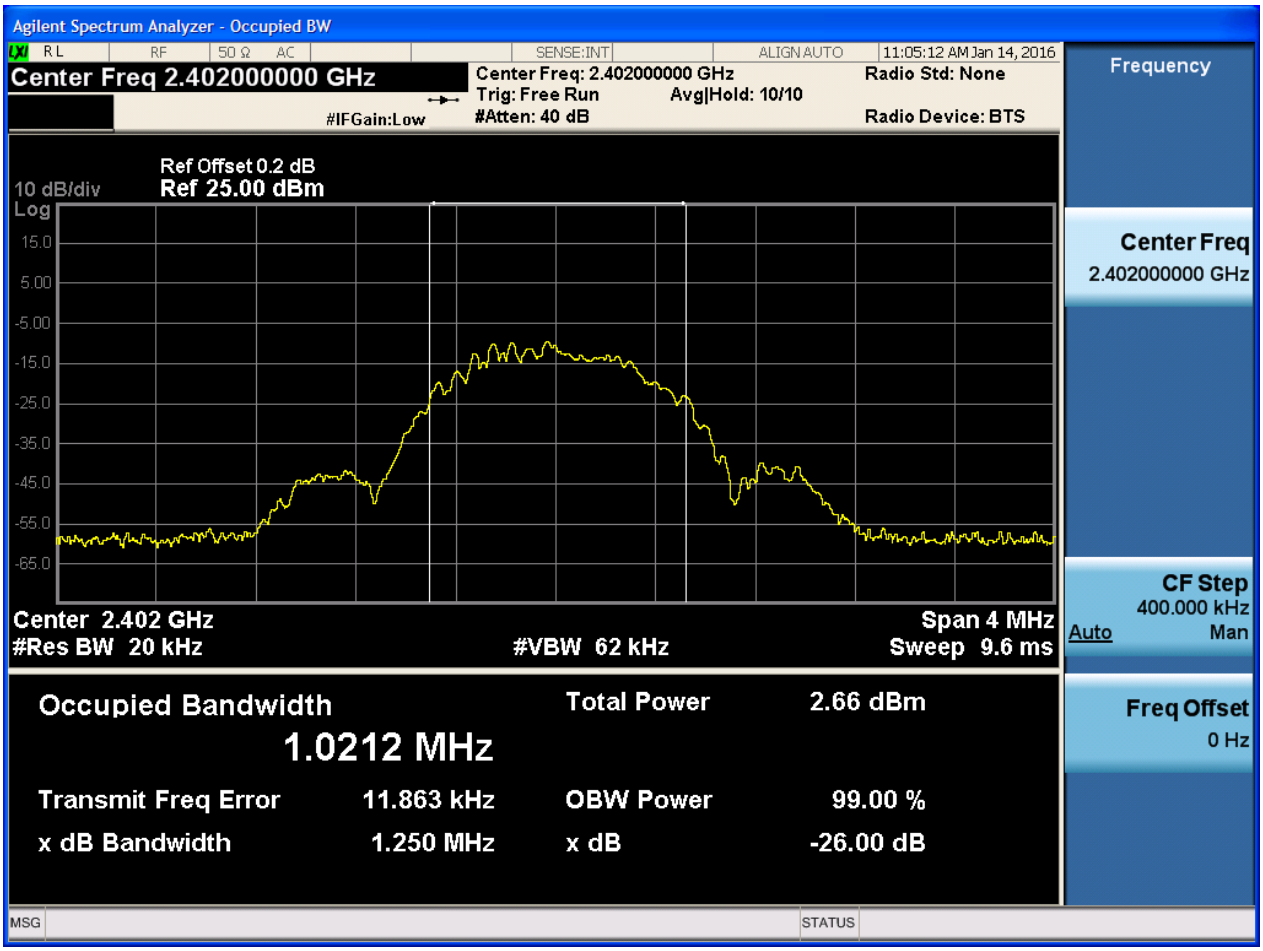
Part II - Test Plots

2.1 TM1_Ch0_L



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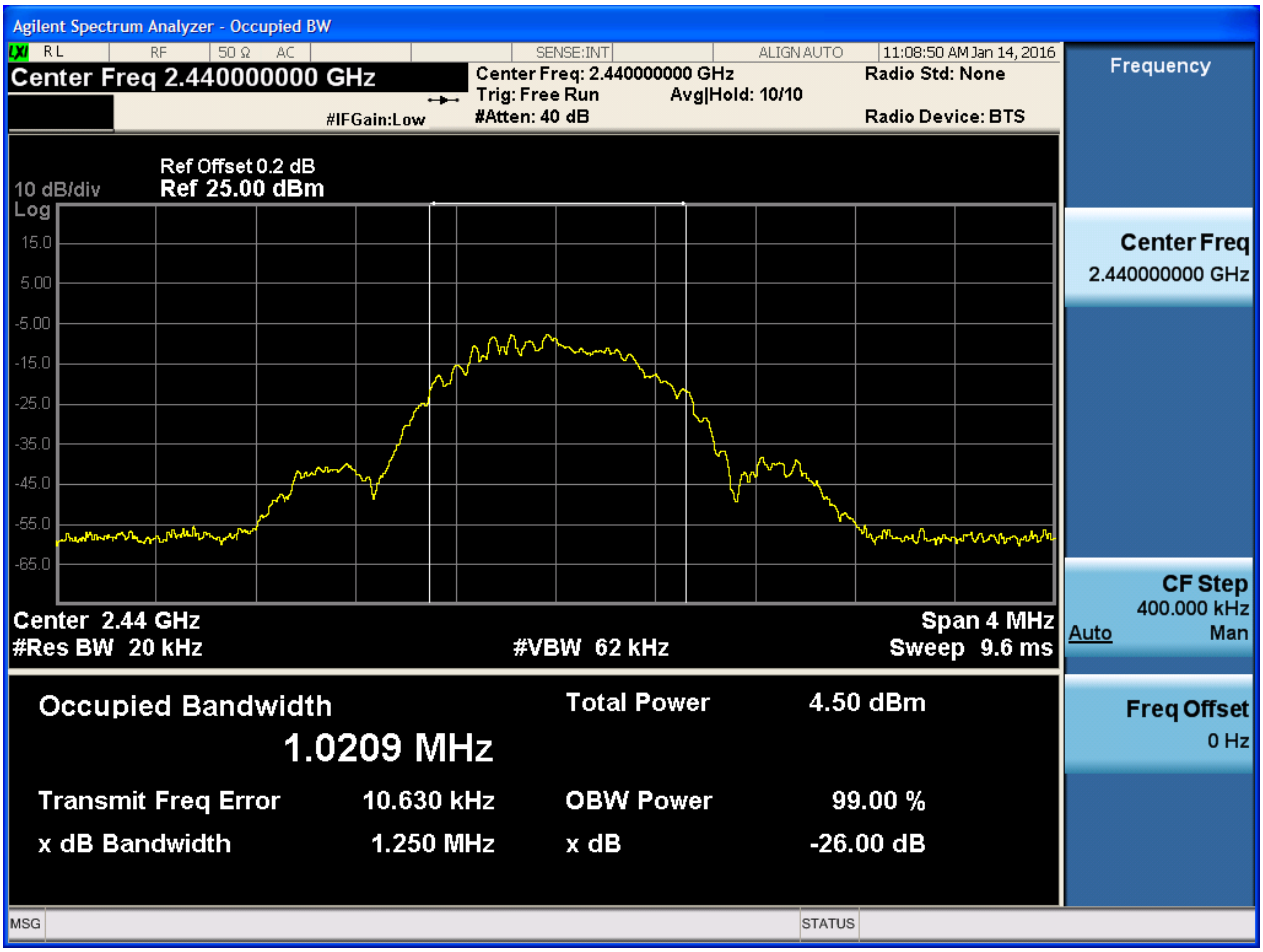
2.1 TM1_Ch19_M



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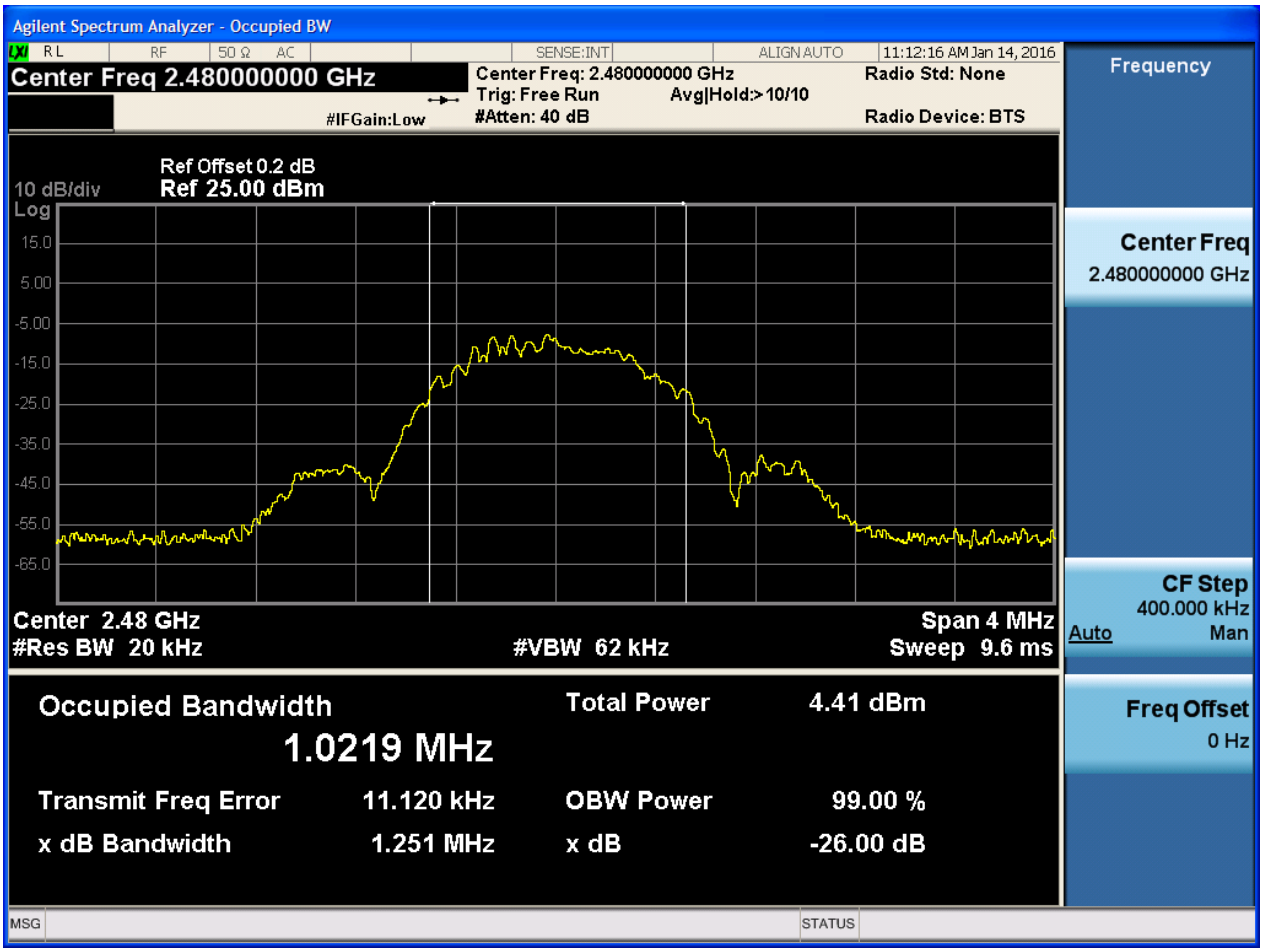
2.1 TM1_Ch39_H



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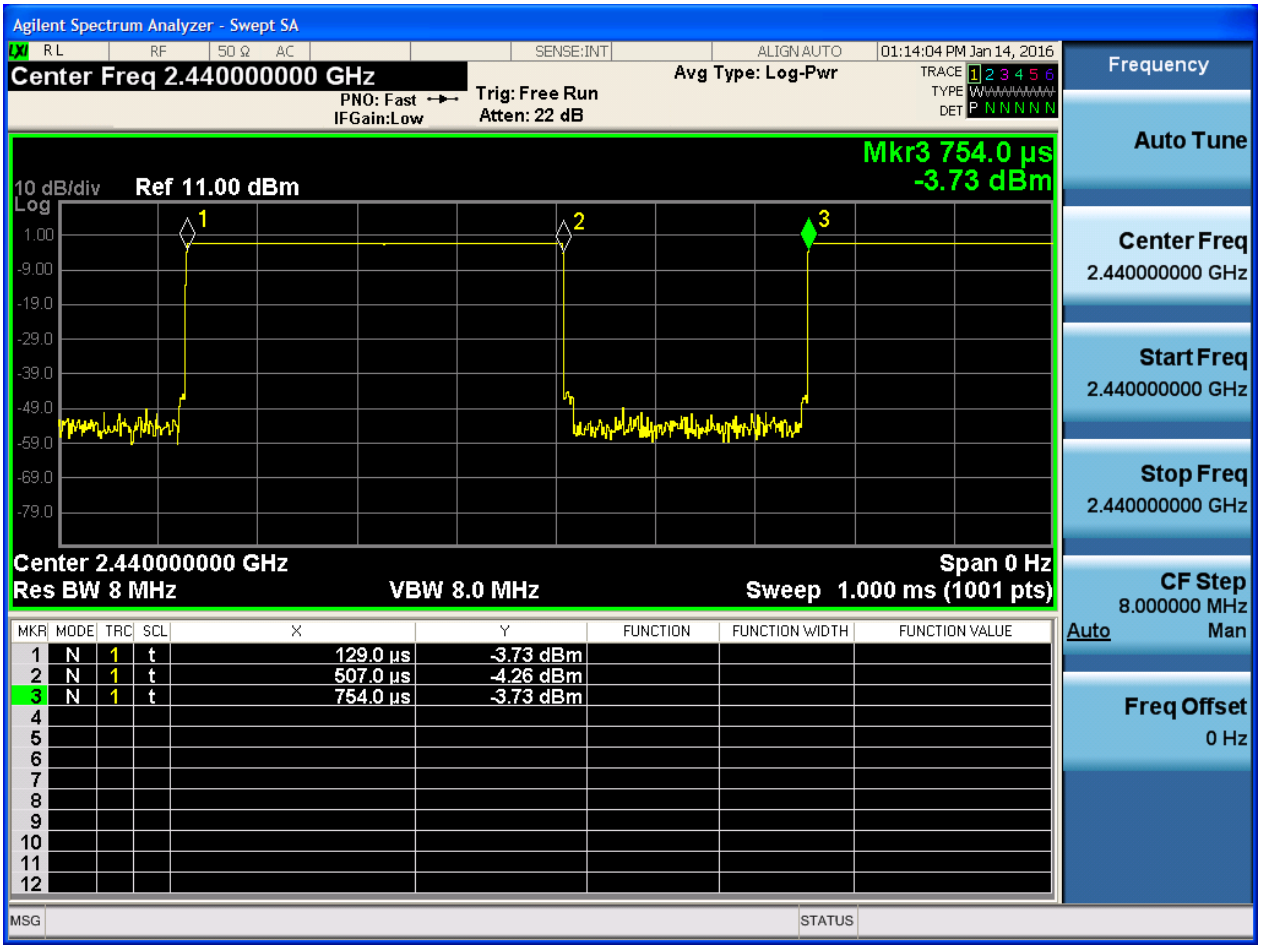
Appendix C: Duty Cycle

Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
TM1	CH0,CH19,CH39	60

Part II - Test Plots

2.1 TM1



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Appendix D: Maximum Conducted Average Output Power

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
TM1_ Ch0	L	2402	Ant 1	-3.35	pass
TM1_ Ch19	M	2440	Ant 1	-1.49	pass
TM1_Ch39	H	2480	Ant 1	-1.64	pass

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Part II - Test Plots

2.1 TM1_Ch0_L

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2.3 TM1_Ch19_M

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2.5 TM1_Ch39_H

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Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
TM1_ Ch0	L	2402	Ant 1	-17.21	pass
TM1_ Ch19	M	2440	Ant 1	-14.53	pass
TM1_Ch39	H	2480	Ant 1	-14.60	pass

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Part II - Test Plots

2.1 TM1_Ch0_L

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2.3 TM1_Ch19_M

Agilent Spectrum Analyzer - The duty cycle factor 2.22 dB added.
Center Freq 2.440000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 28 dB
#Avg Type: RMS
Avg|Hold: 200/200
11:09:30 AM Jan 14, 2016
Ref Offset 2.42 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.439 953 GHz
-14.529 dBm
Start 2.438000 GHz
#Res BW 10 kHz
#VBW 100 kHz*
Stop 2.442000 GHz
Sweep 47.7 ms (601 pts)
Frequency
Auto Tune
Center Freq
2.440000000 GHz
Start Freq
2.438000000 GHz
Stop Freq
2.442000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz

2.5 TM1_Ch39_H

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Appendix F: Band Edges Compliance

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
TM1_ Ch0	L	2402	Ant 1	-4.05	-50.67	pass
TM1_Ch39	H	2480	Ant 1	-2.27	-49.11	pass

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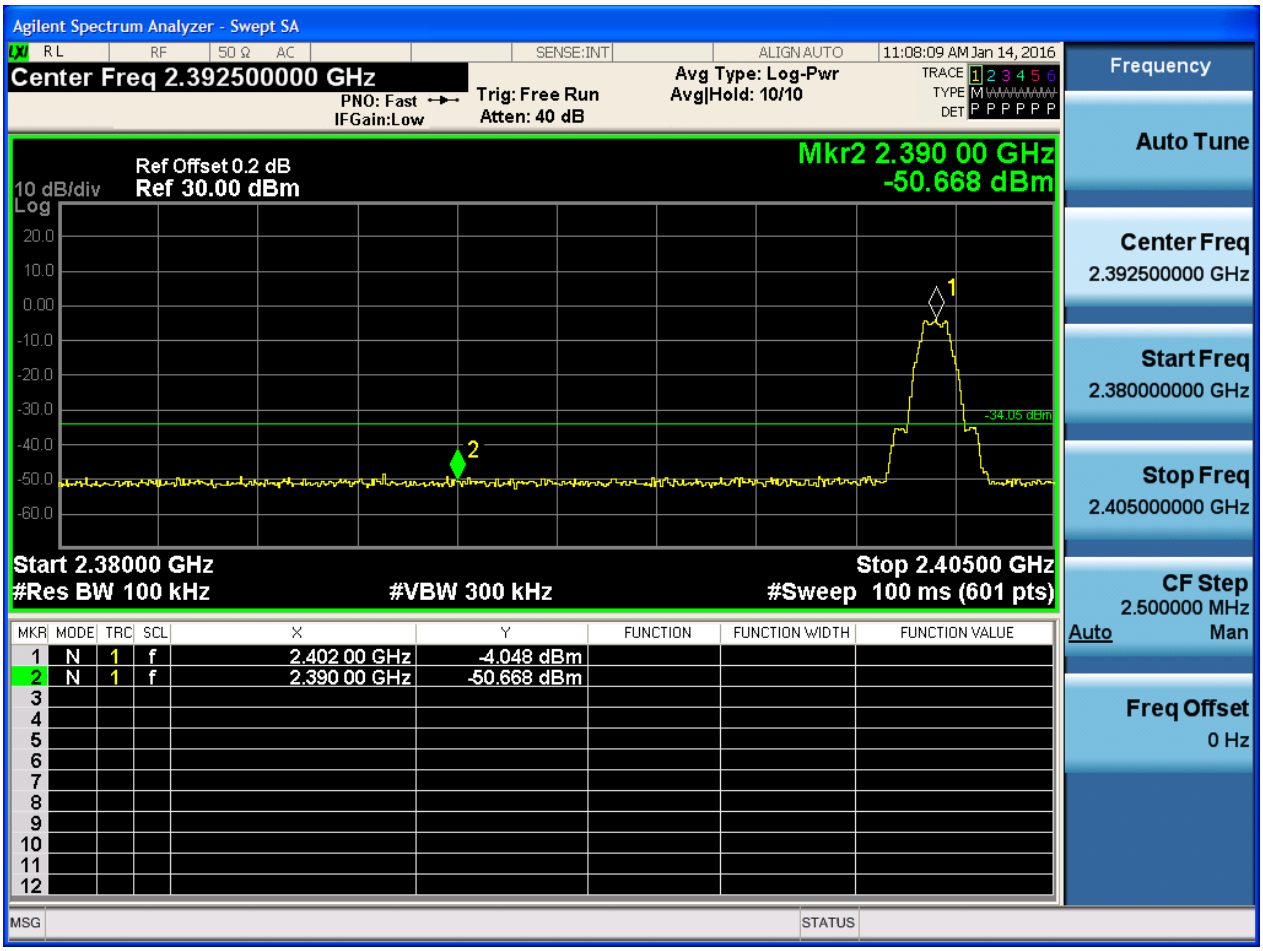
Part II - Test Plots

2.1 TM1_Ch0_L



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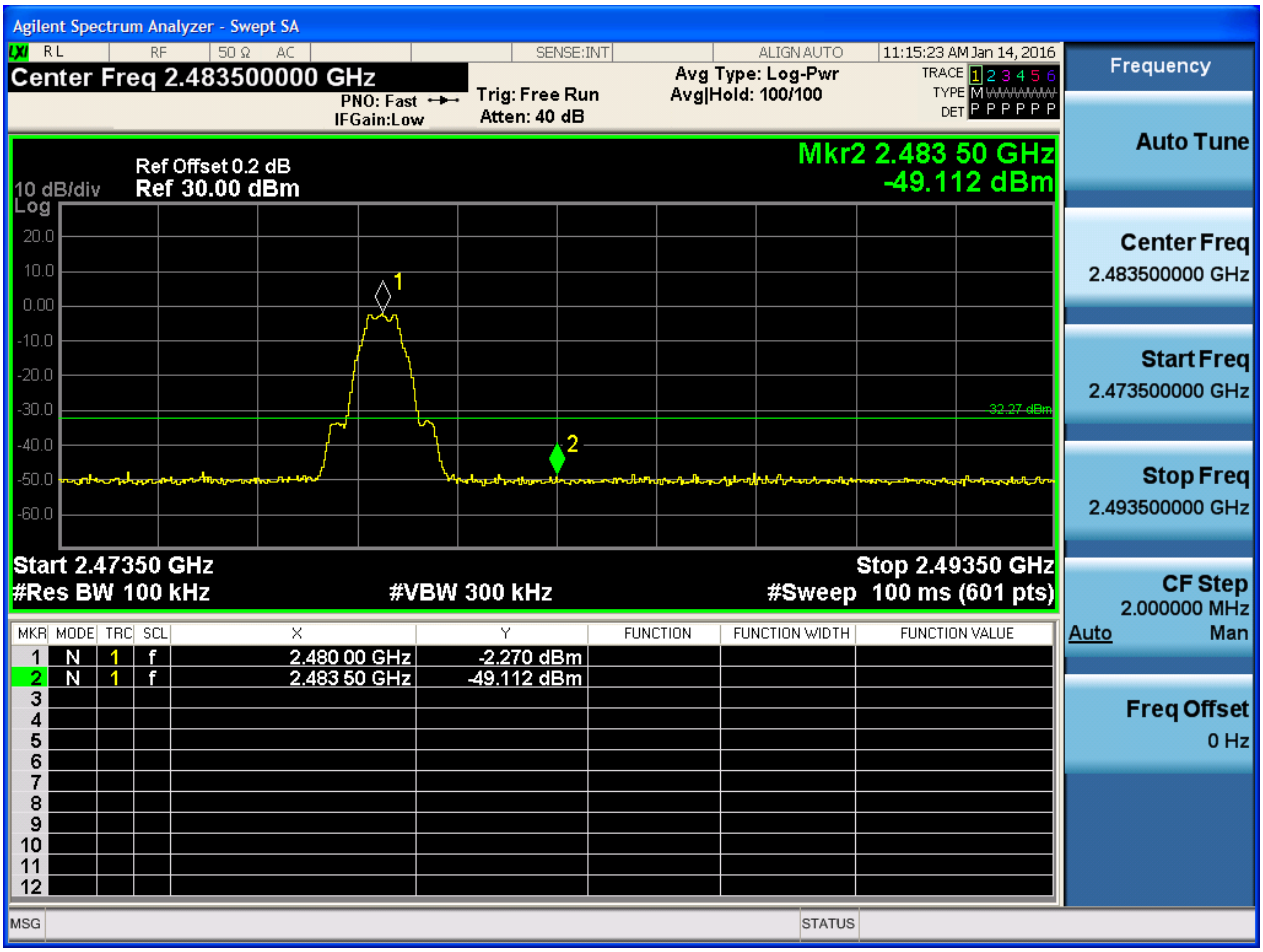
2.3 TM1_Ch39_H


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.483500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 100/100
11:15:23 AM Jan 14, 2016
Ref Offset 0.2 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr2 2.483 50 GHz
-49.112 dBm
32.27 dBm
Start 2.47350 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.49350 GHz
#Sweep 100 ms (601 pts)
1 N 1 f 2.480 00 GHz -2.270 dBm
2 N 1 f 2.483 50 GHz -49.112 dBm
Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.473500000 GHz
Stop Freq
2.493500000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

Appendix G: Unwanted Emissions into Non-Restricted Frequency Bands

In this Appendix, the "Pref", which is used as the reference level, refers to the peak power level in any 100 kHz bandwidth within the fundamental emission, 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.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain and used as respective results for each chain, due to the relative-limit requirement.

In the result table, the "< Limit" denotes that "The Puw [dBm] is less than Pref[dBm]-30[dBm],see test plots for detailed".

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
TM1_ Ch0	L	2402	Ant 1	-4.02	<limit	pass
TM1_ Ch19	M	2440	Ant 1	-2.22	<limit	pass
TM1_Ch39	H	2480	Ant 1	-2.26	<limit	pass

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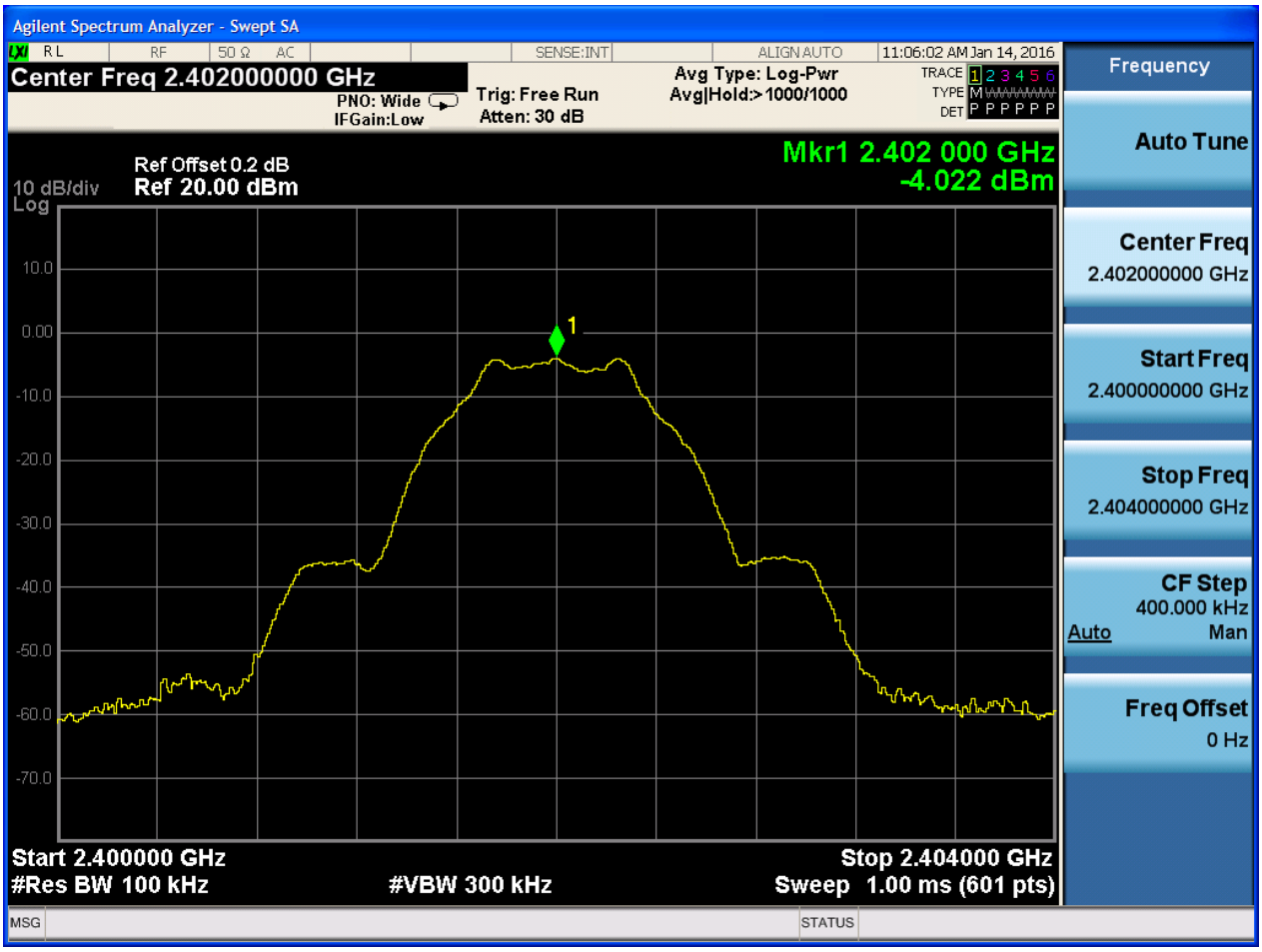
Part II - Test Plots

2.1 TM1_Ch0_L

Pref:



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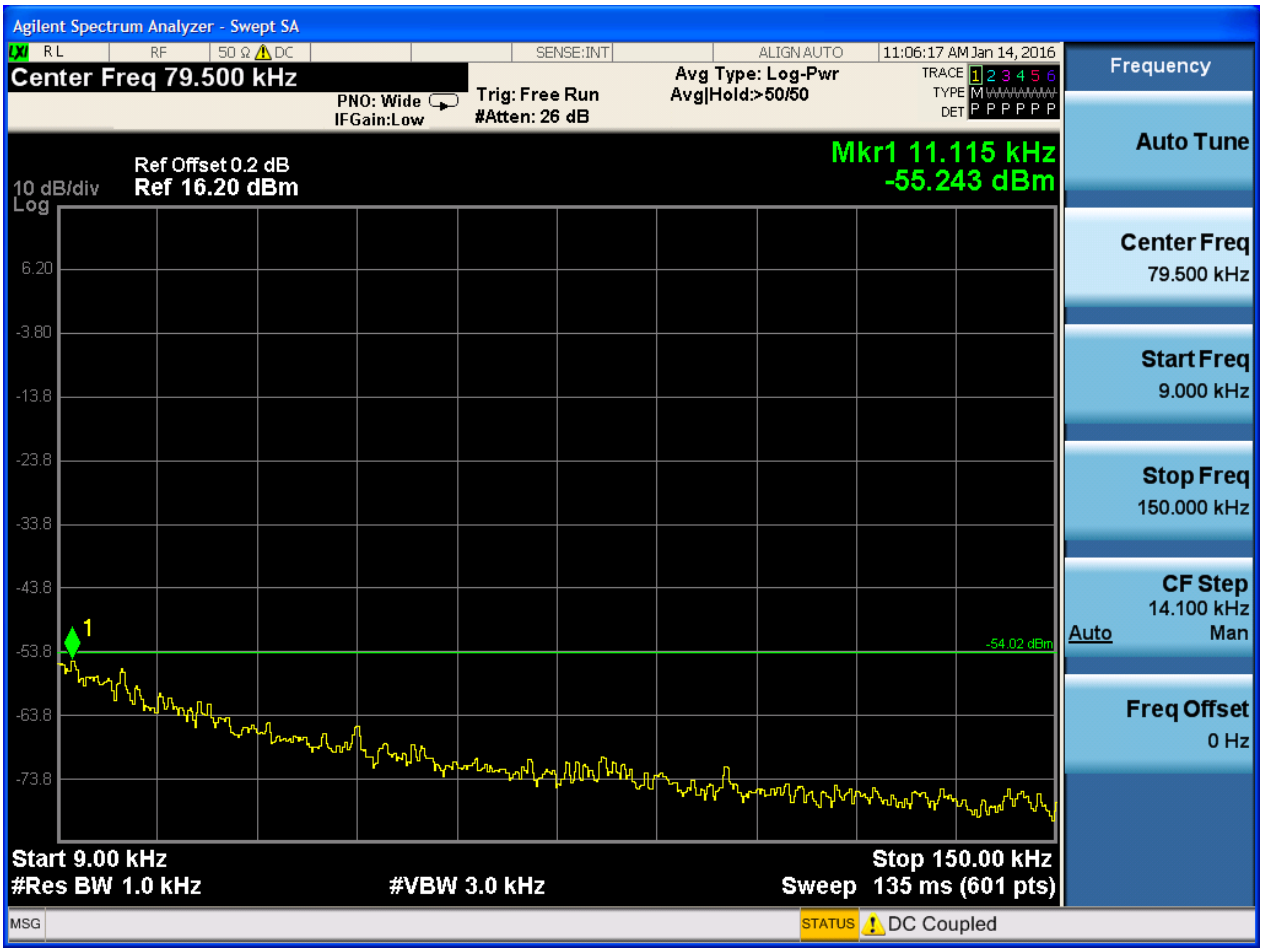
Puw:



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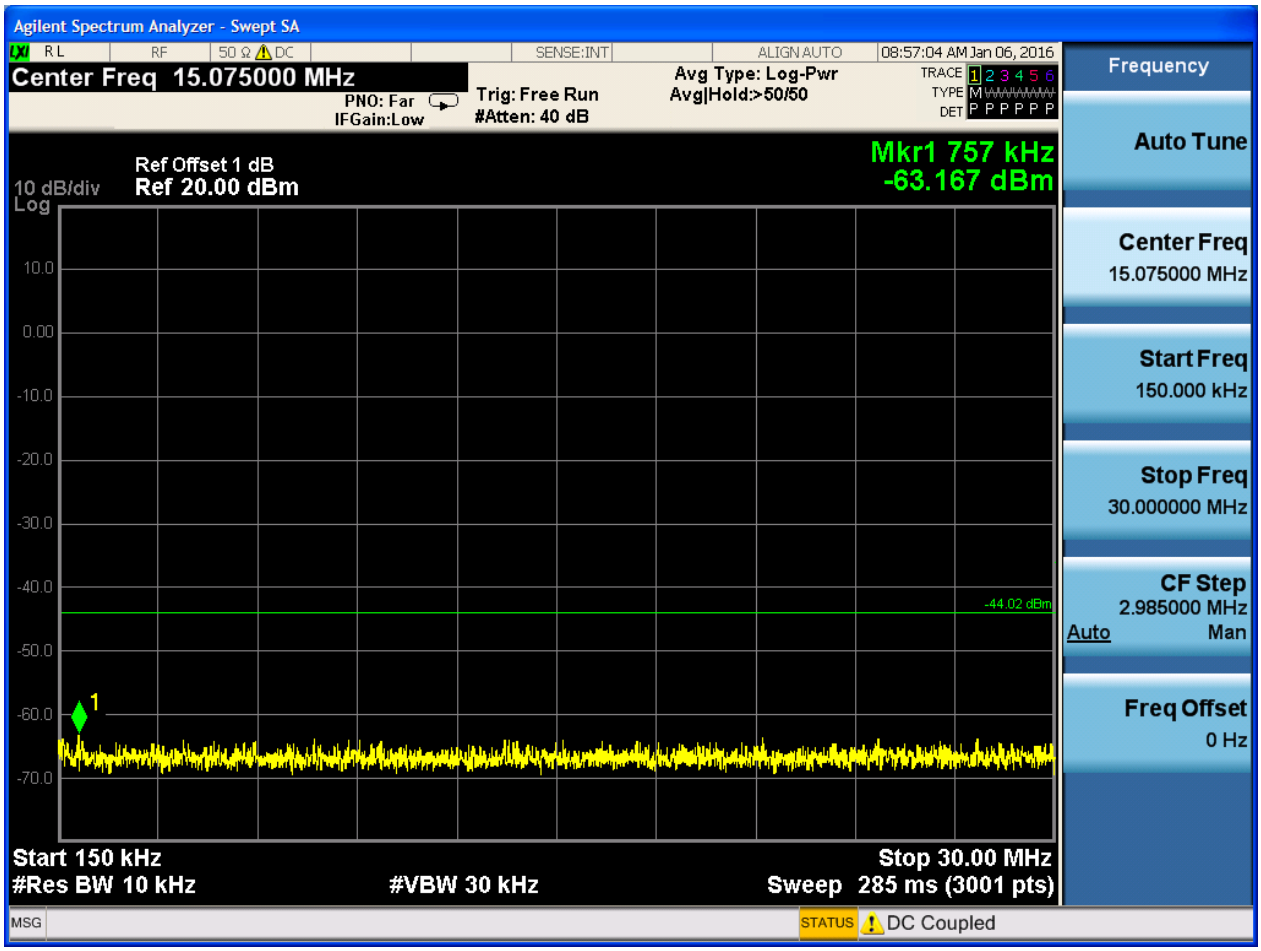

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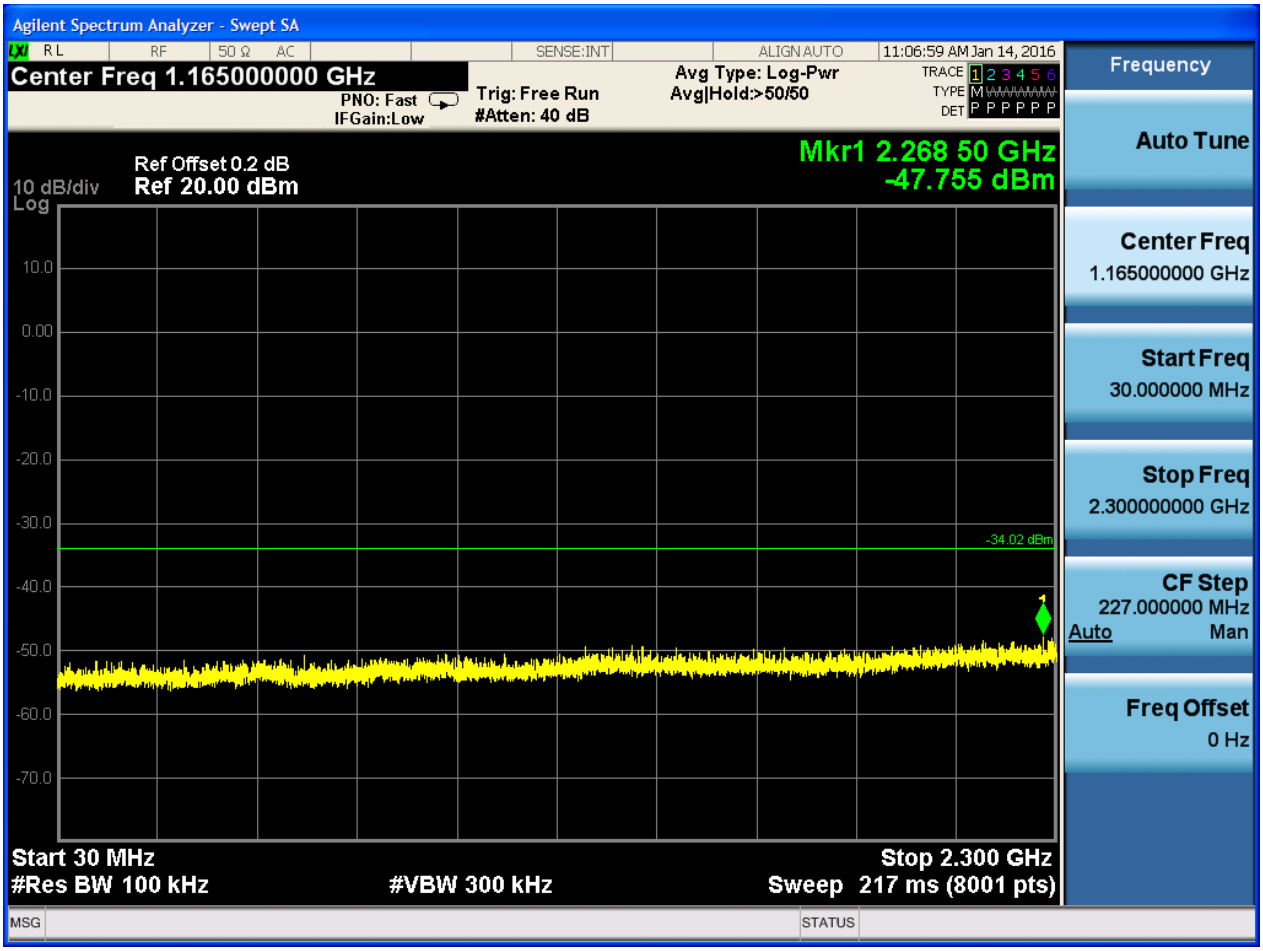

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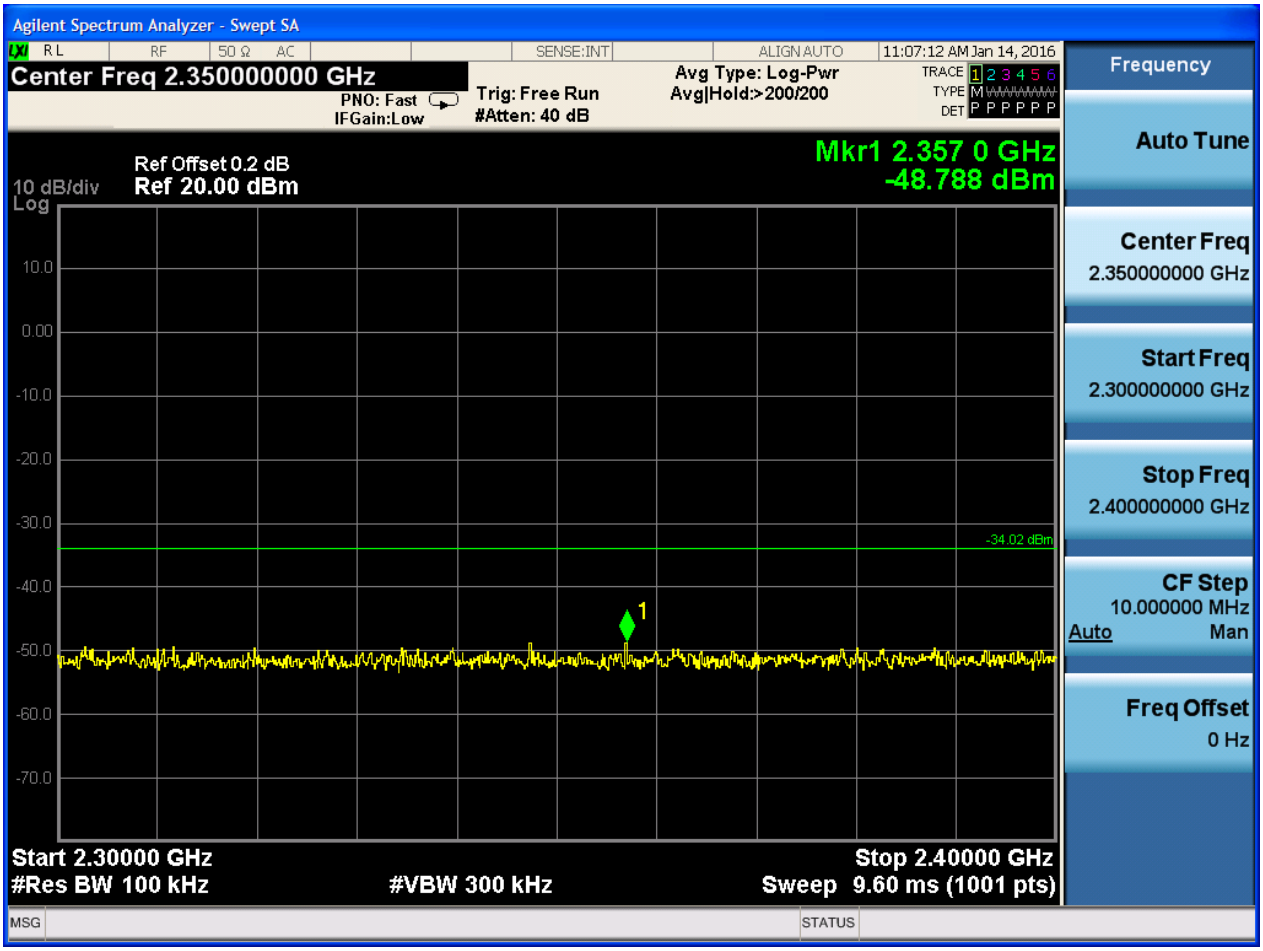
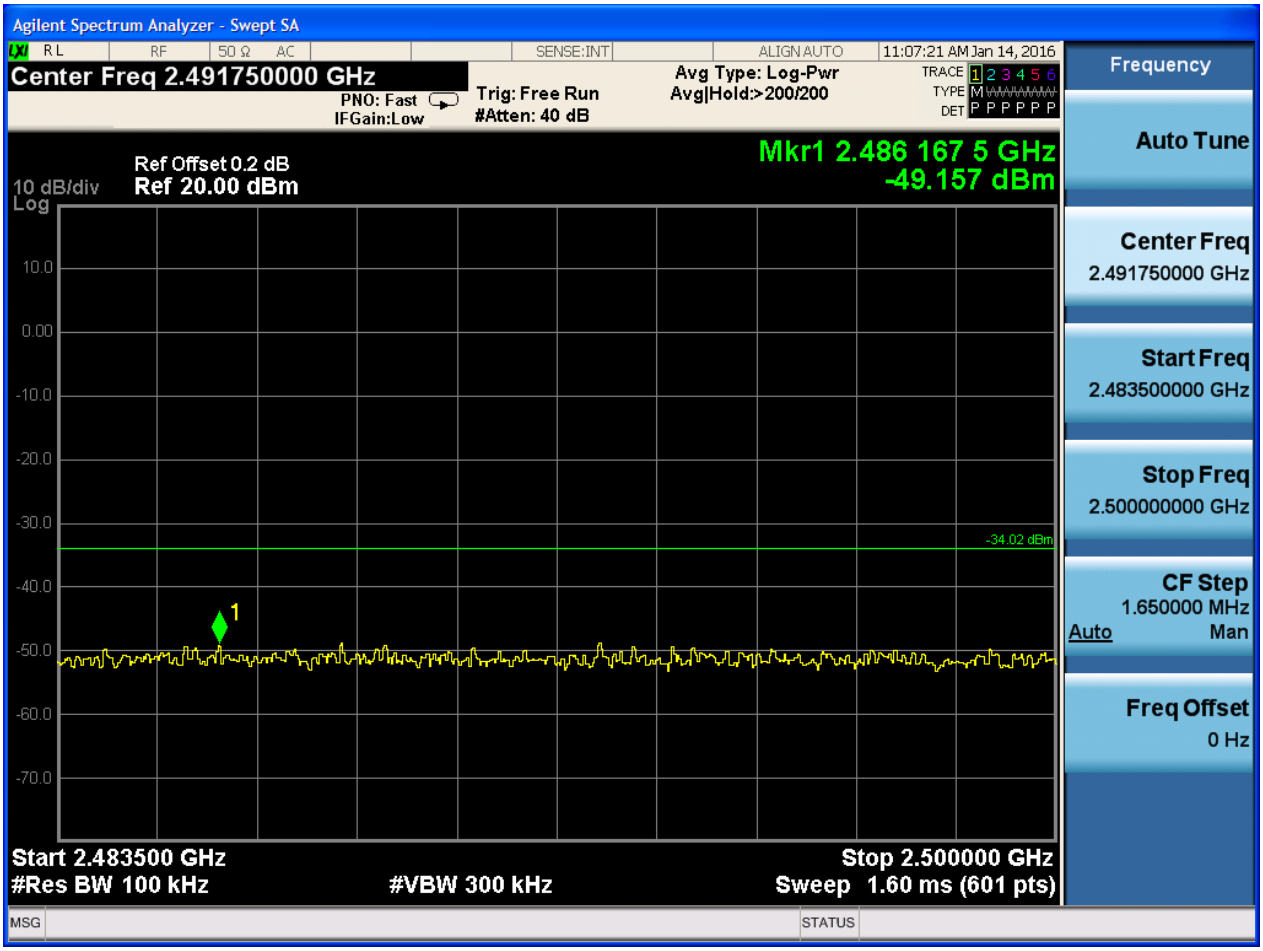

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold:>200/200
11:07:12 AM Jan 14, 2016
Ref Offset 0.2 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.357 0 GHz
-48.788 dBm
-34.02 dBm
Start 2.30000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40000 GHz
Sweep 9.60 ms (1001 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



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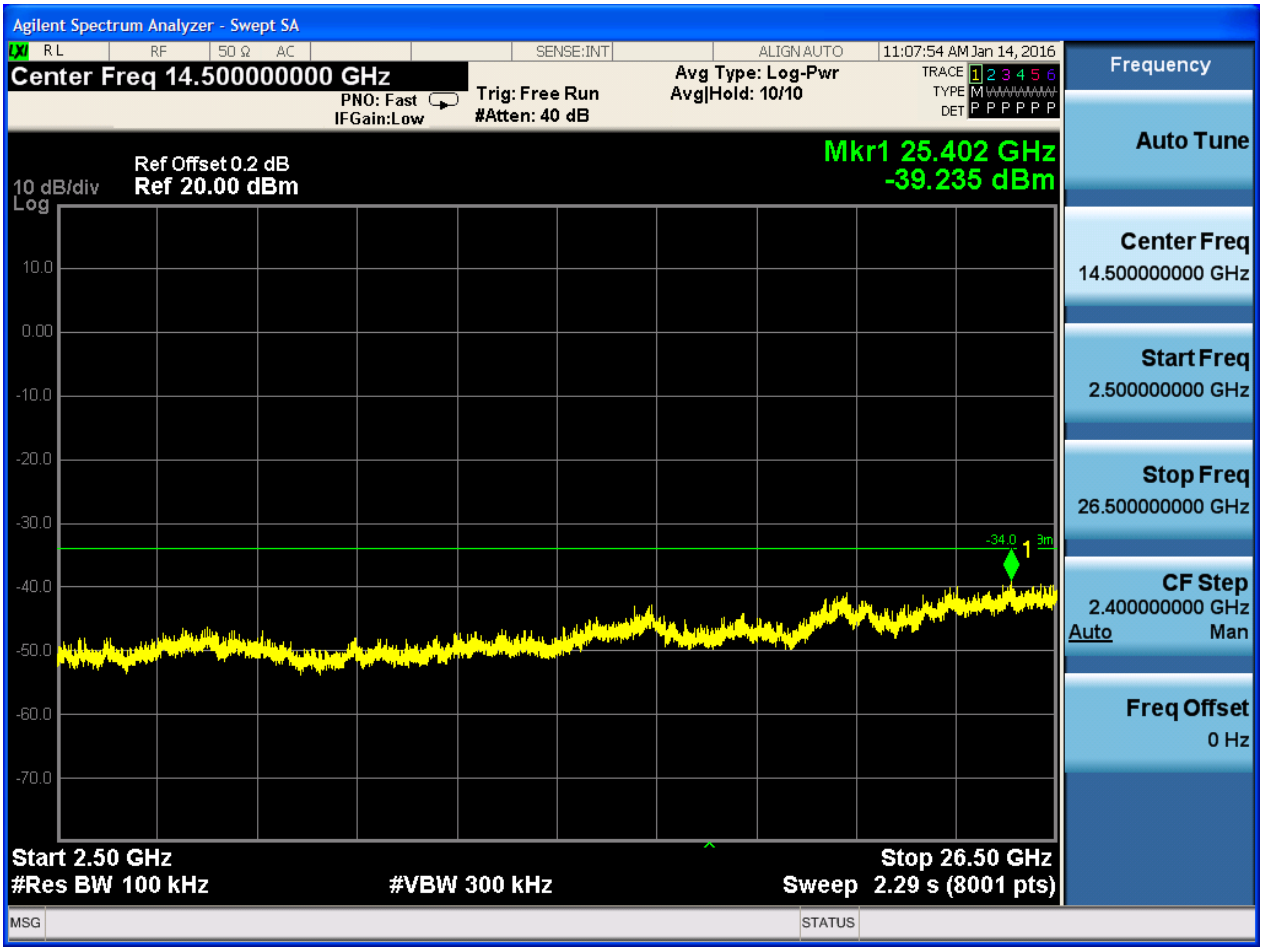

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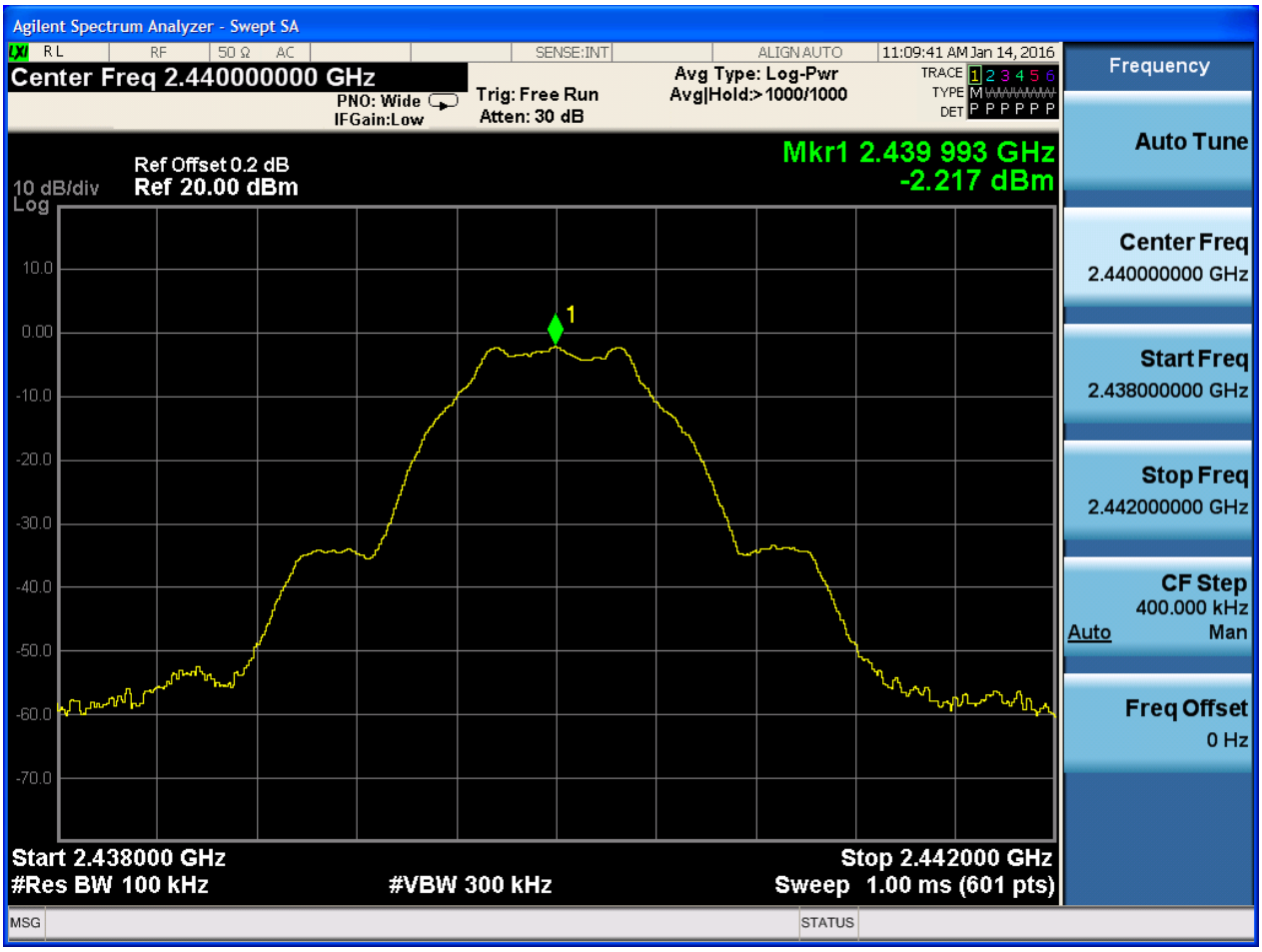
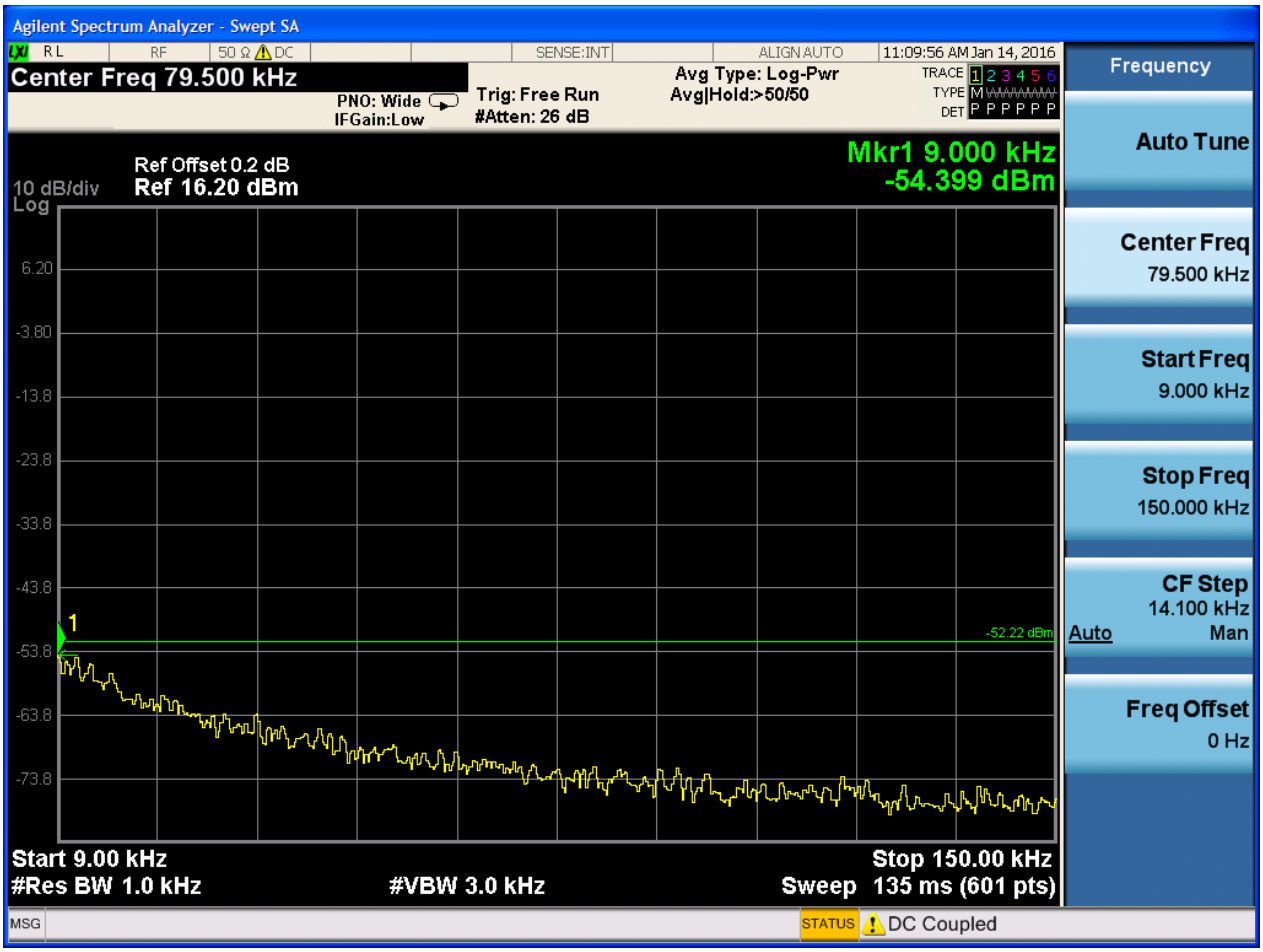
2.3 TM1_Ch19_M

Pref:



Puw:


Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 26 dB
Avg Type: Log-Pwr
Avg|Hold:>50/50
11:09:56 AM Jan 14, 2016
Ref Offset 0.2 dB
10 dB/div
Ref 16.20 dBm
Log
Mkr1 9.000 kHz
-54.399 dBm
-52.22 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz
Stop 150.00 kHz
Sweep 135 ms (601 pts)
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz
DC Coupled

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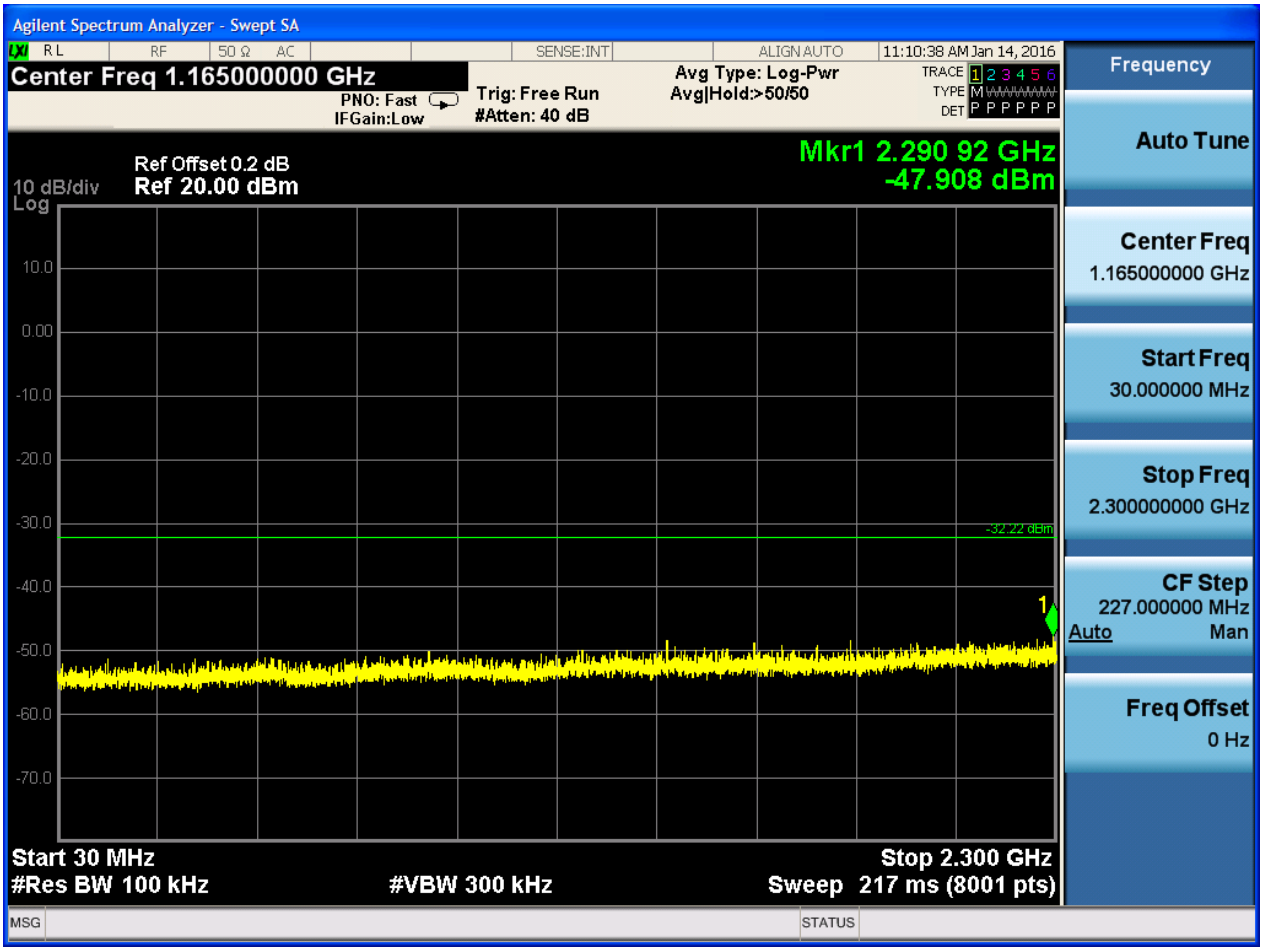

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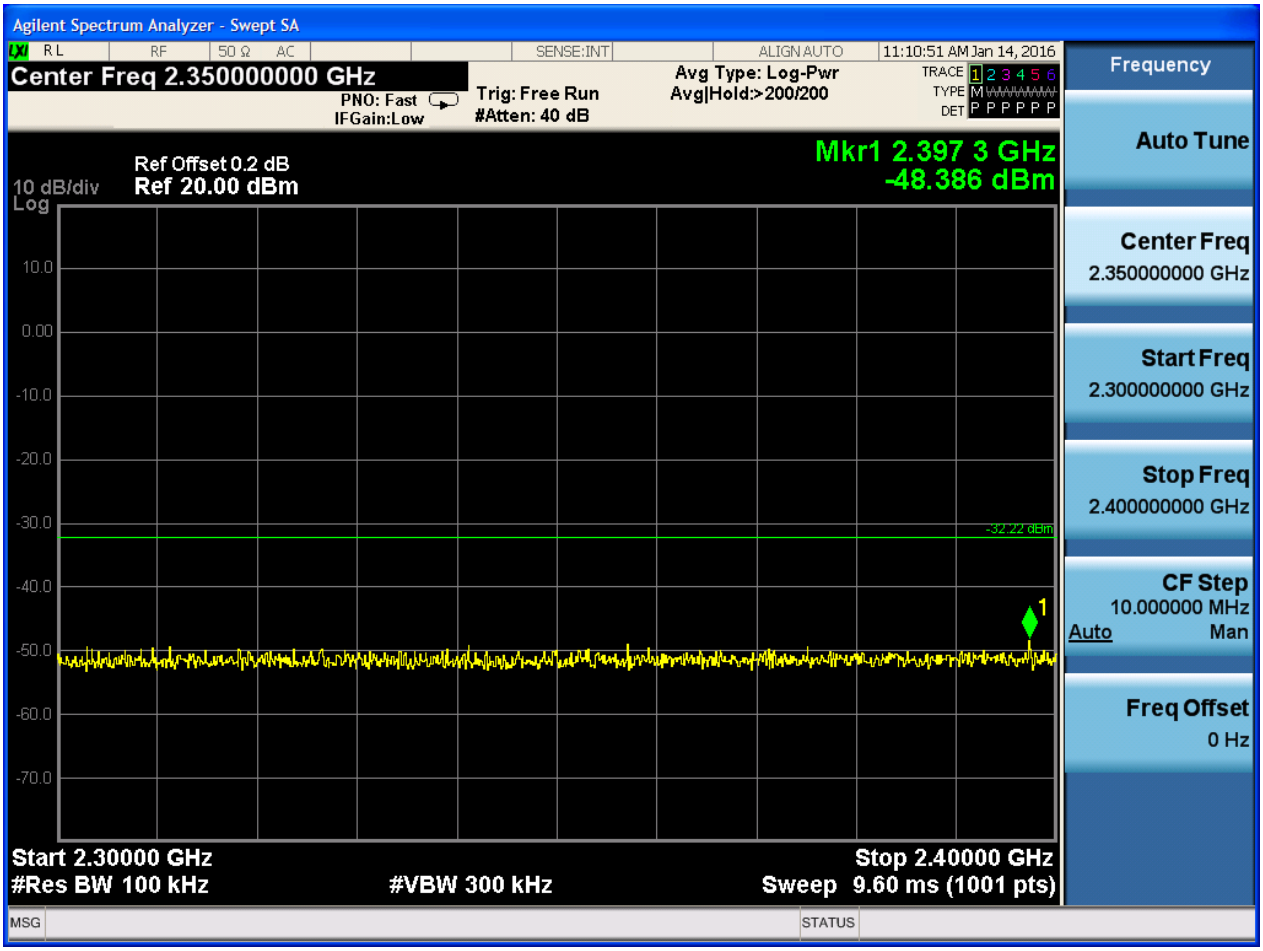

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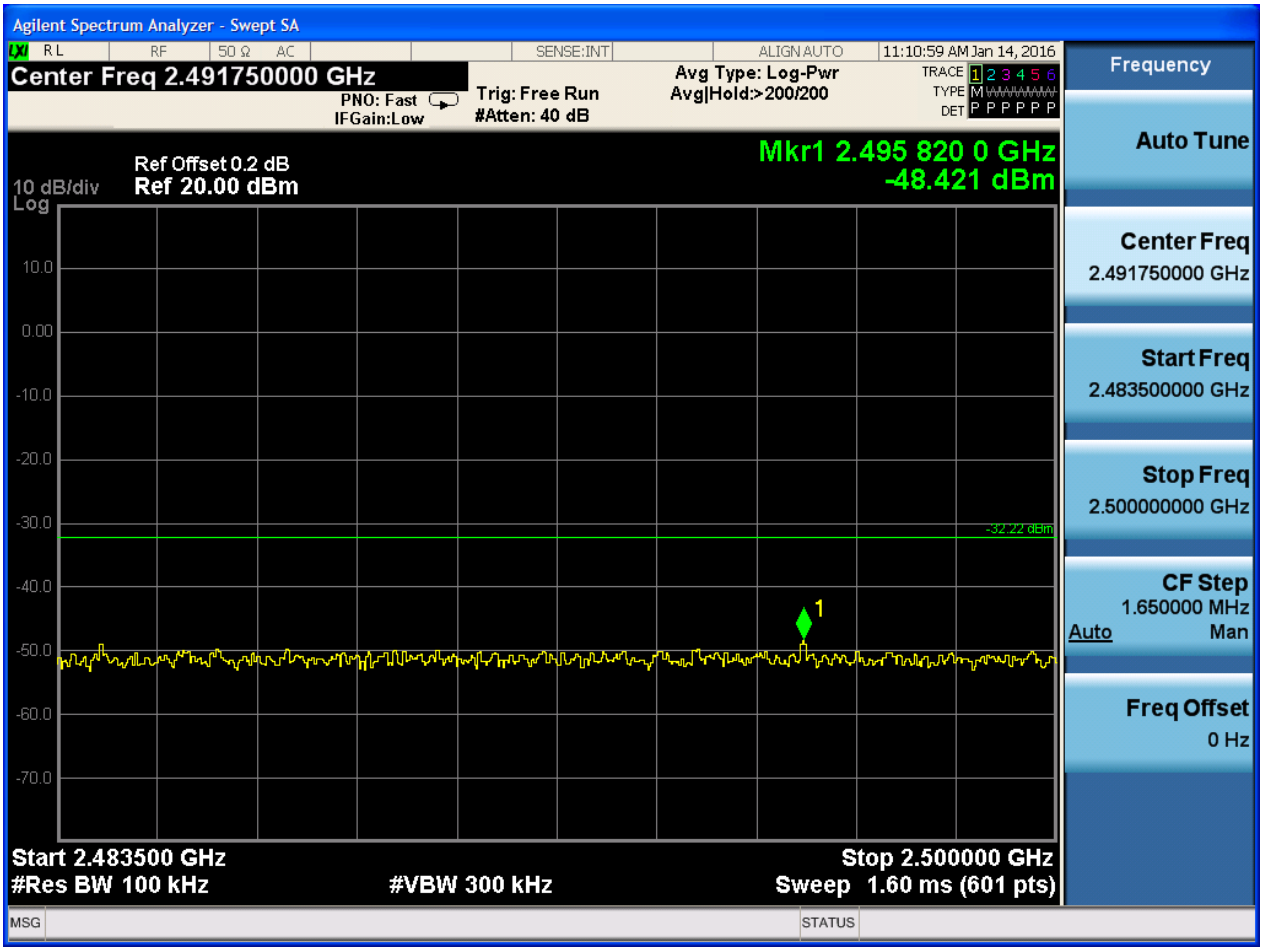

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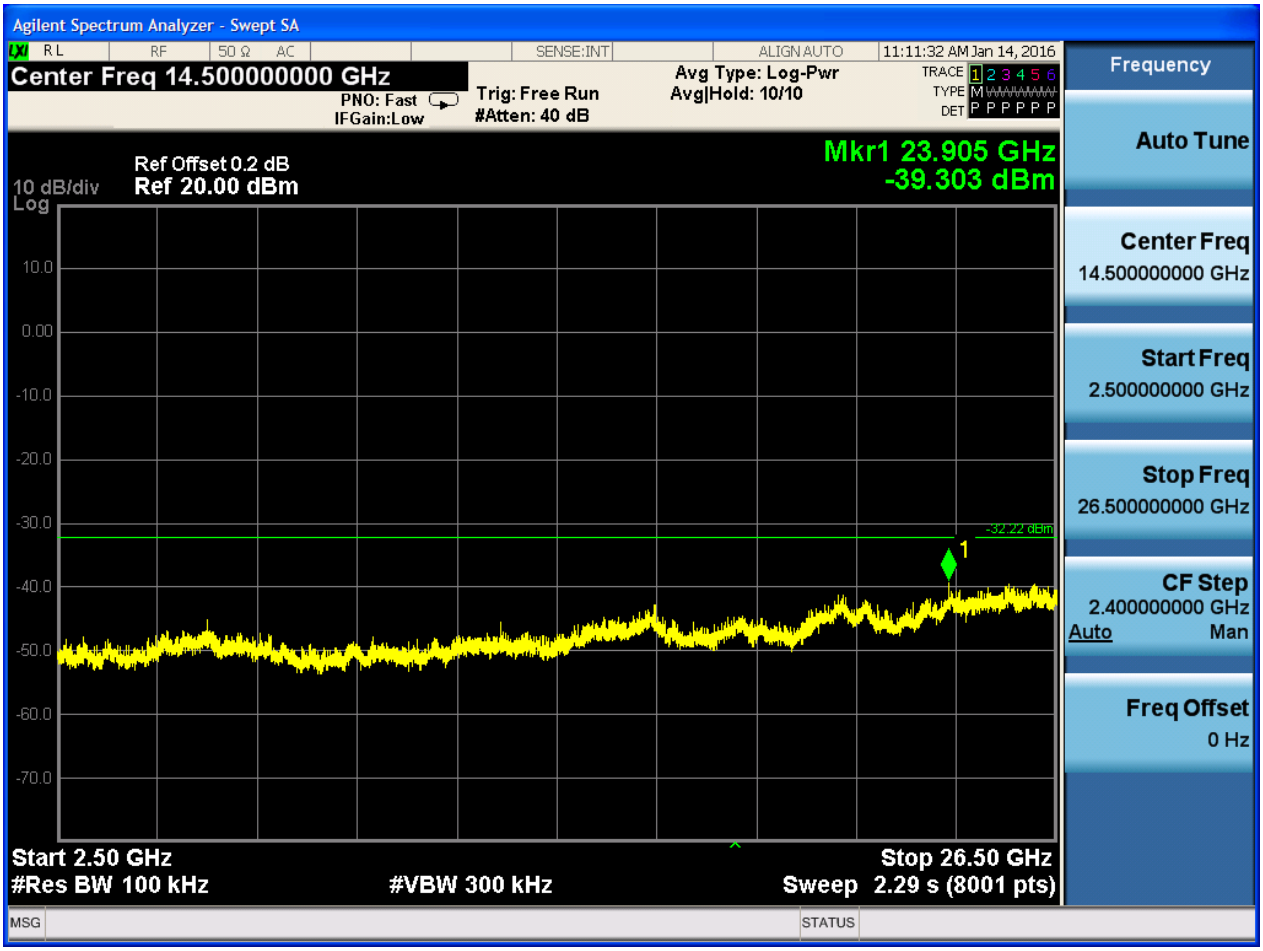

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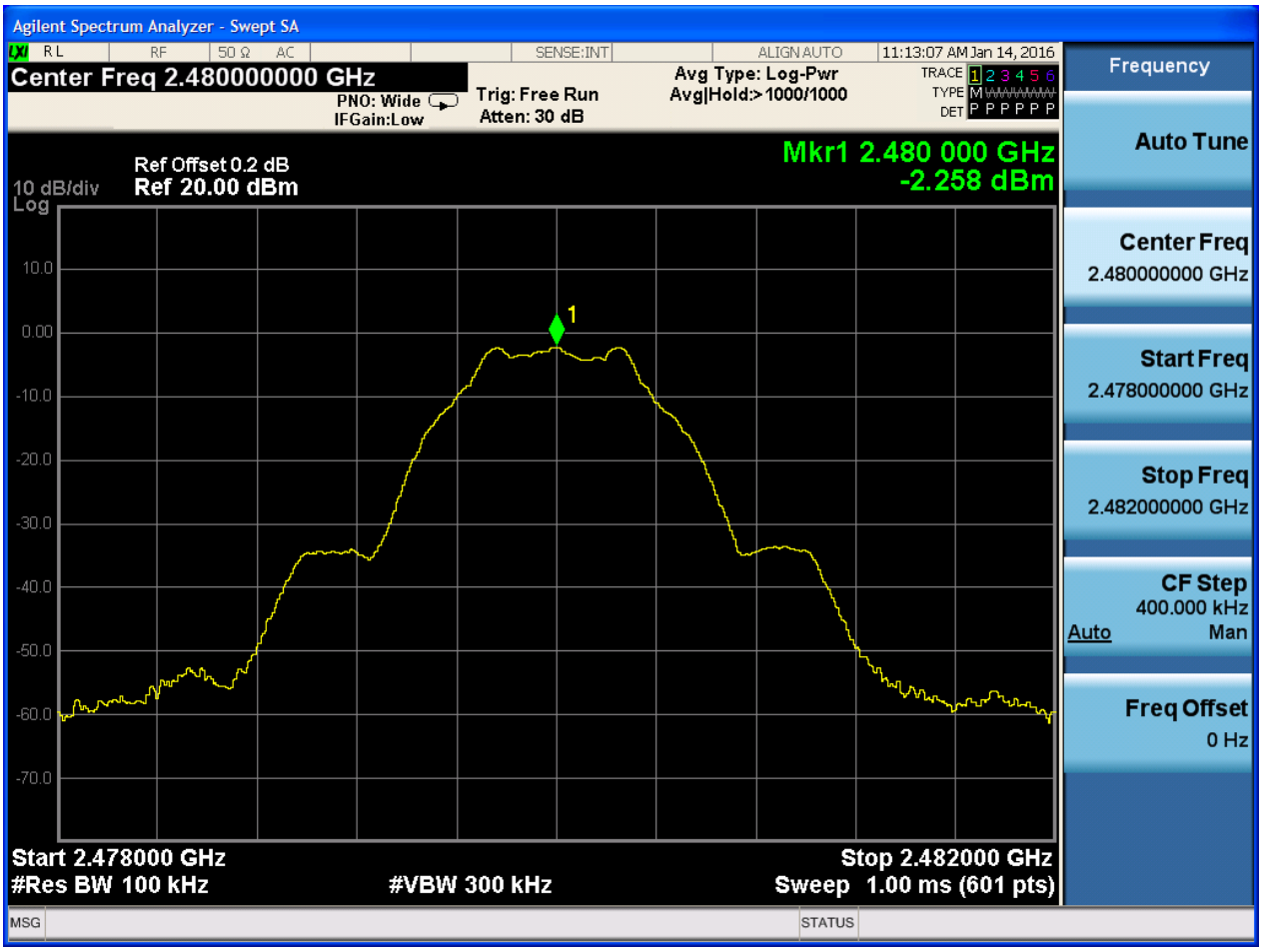
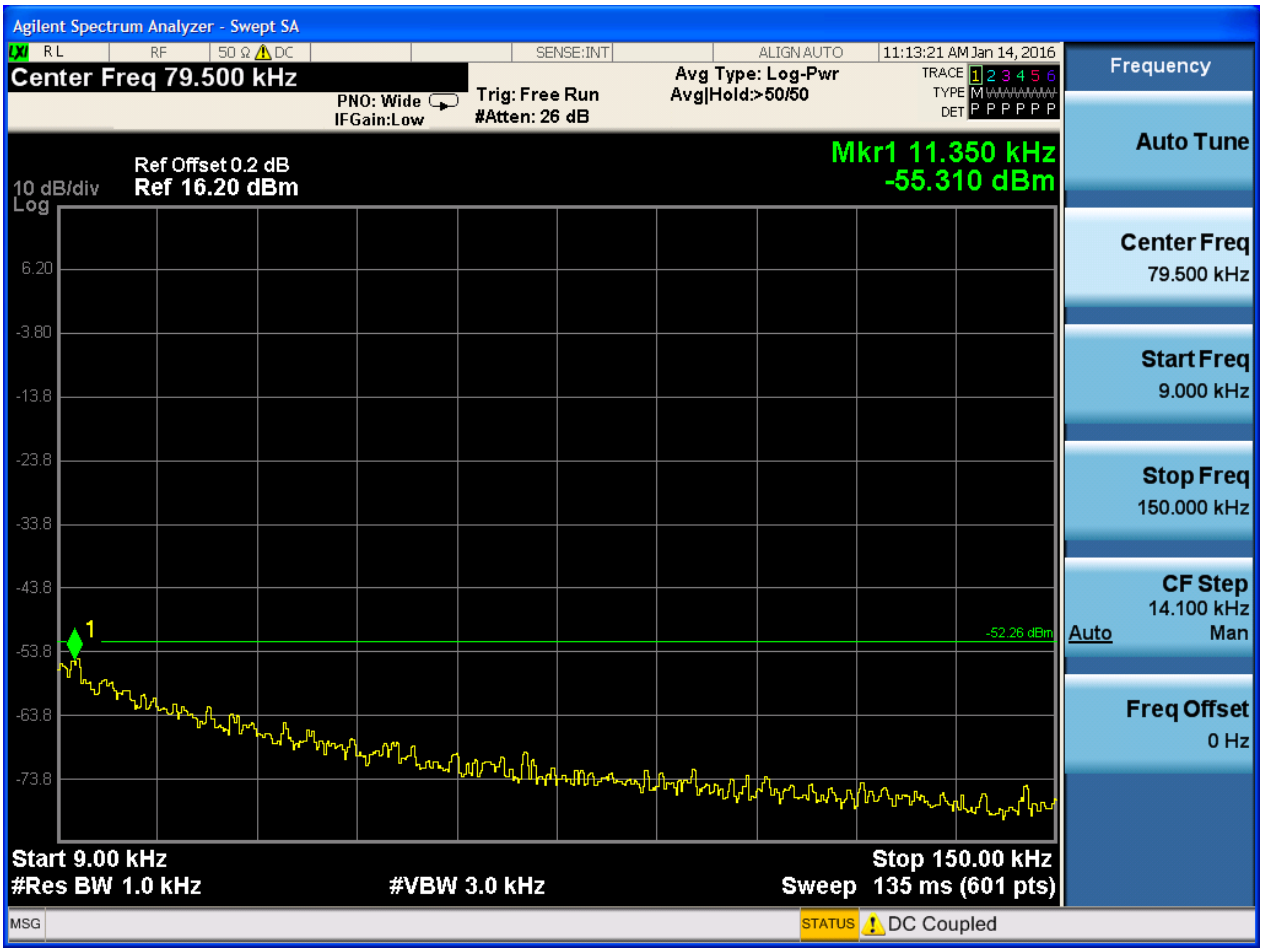
2.5 TM1_Ch39_H

Pref:



Puw:



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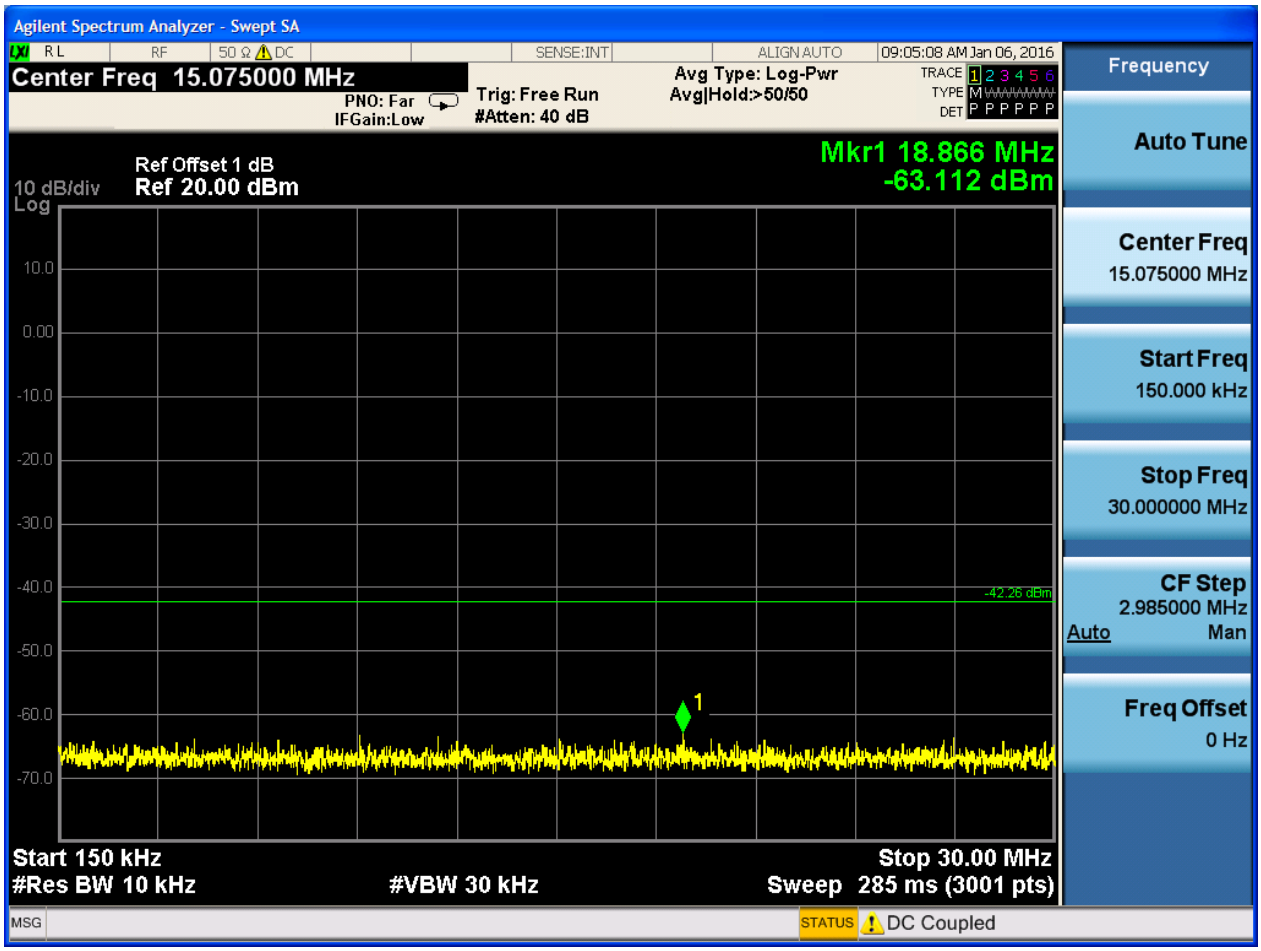

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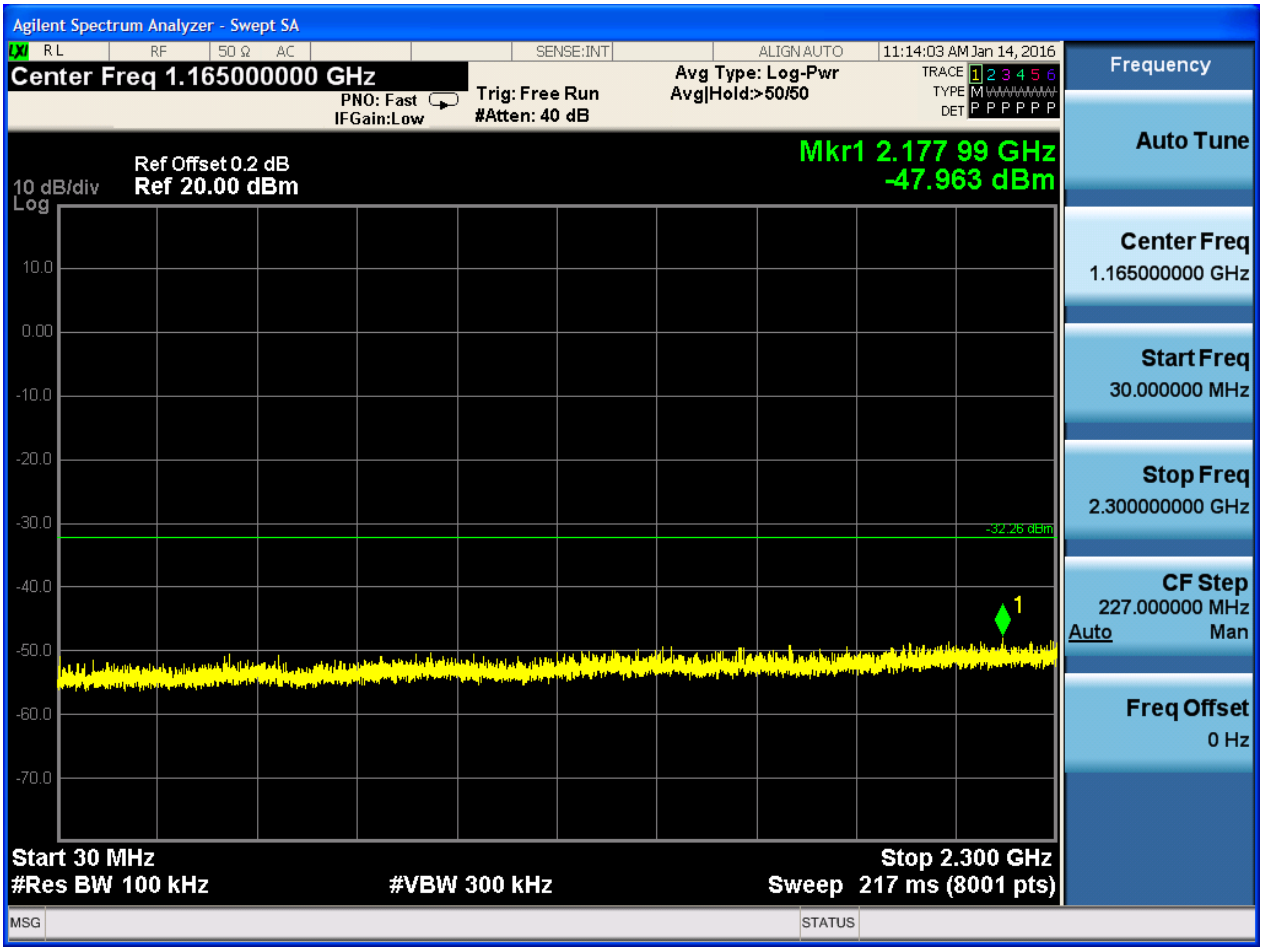

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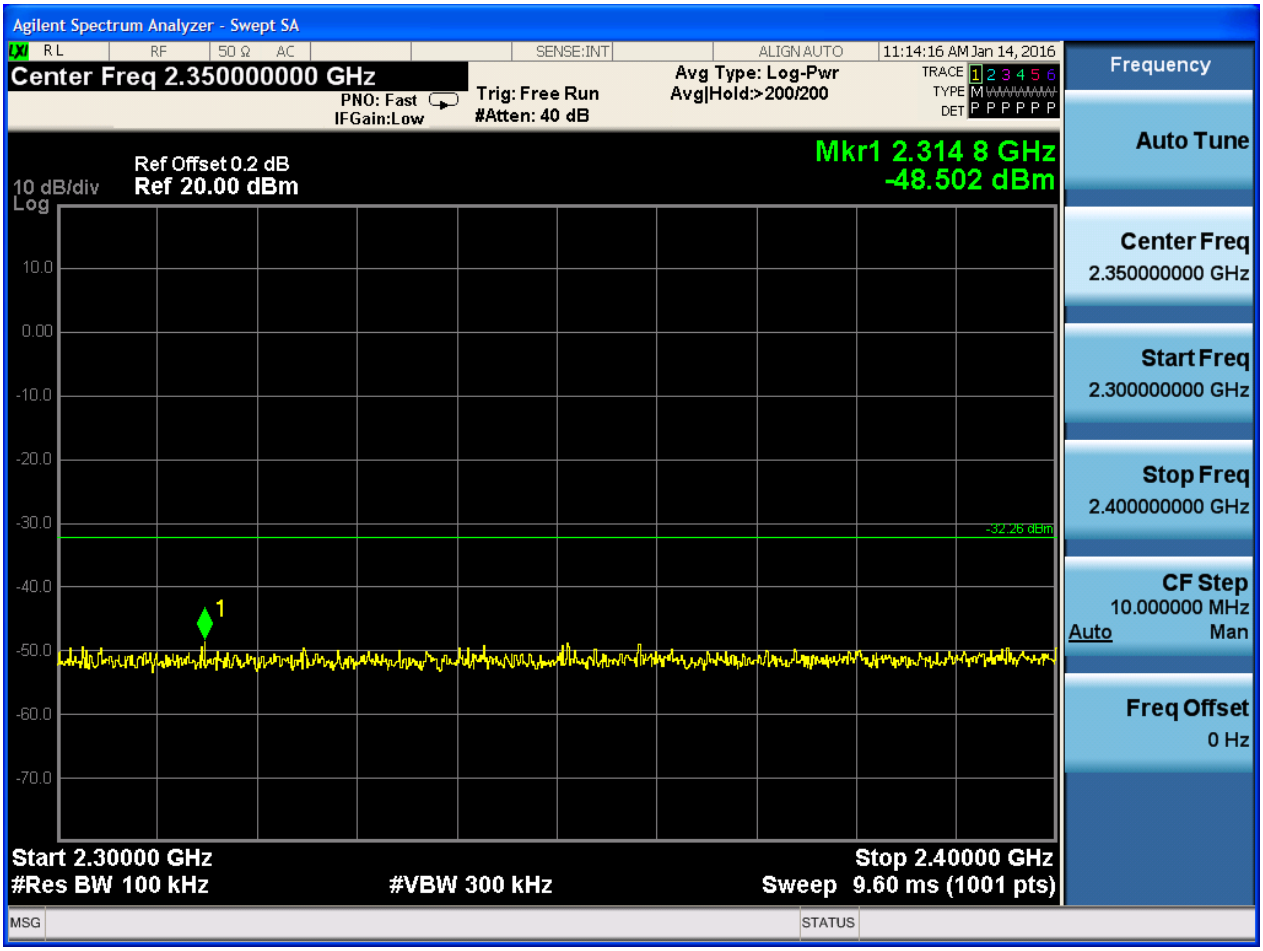

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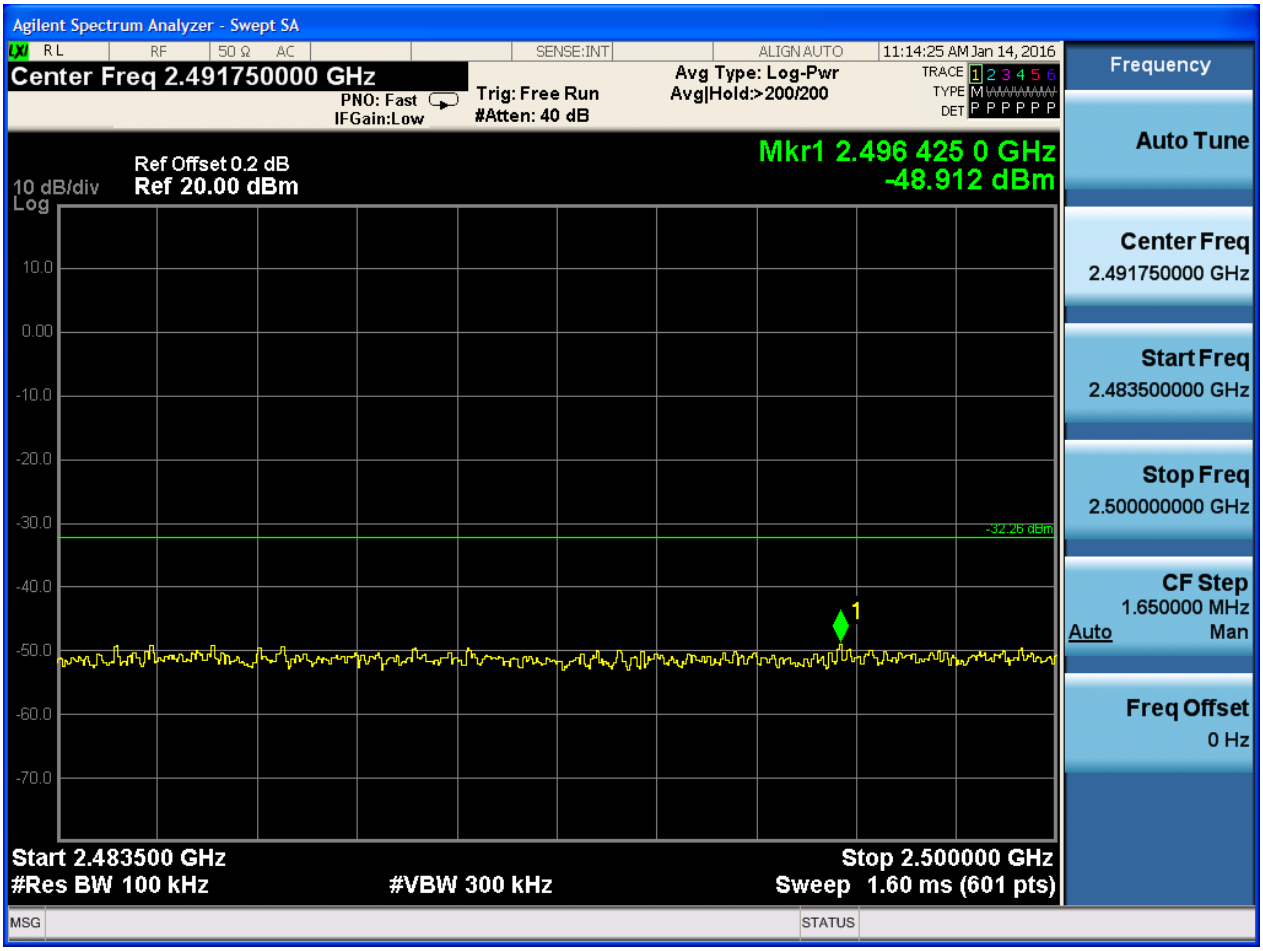

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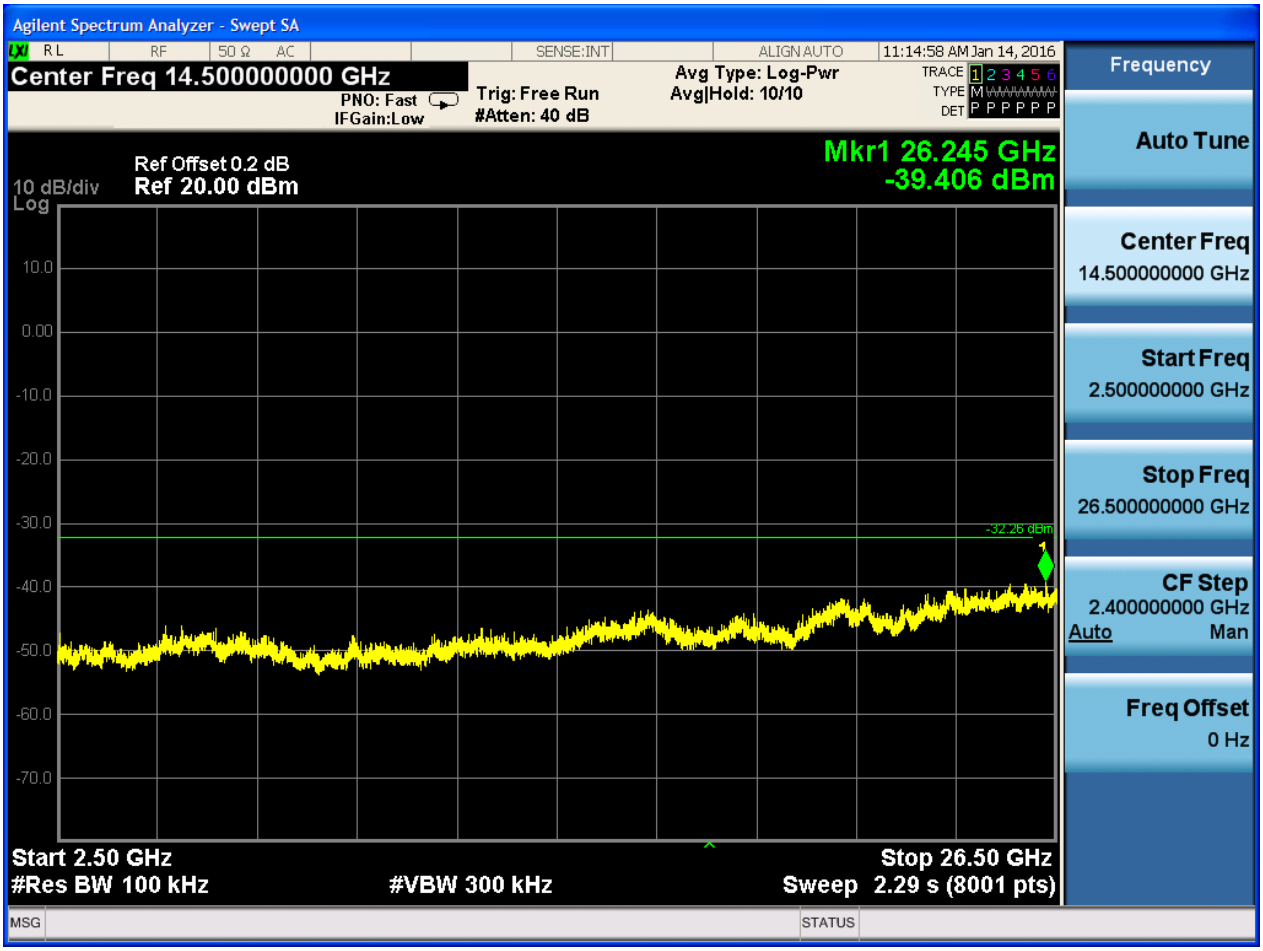

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Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

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

.Below 1GHz, RBW = 100 kHz, VBW = 300 kHz.

Above 1GHz, RBW = 1 MHz, VBW = 3 MHz.

The simultaneous transmission has been considered

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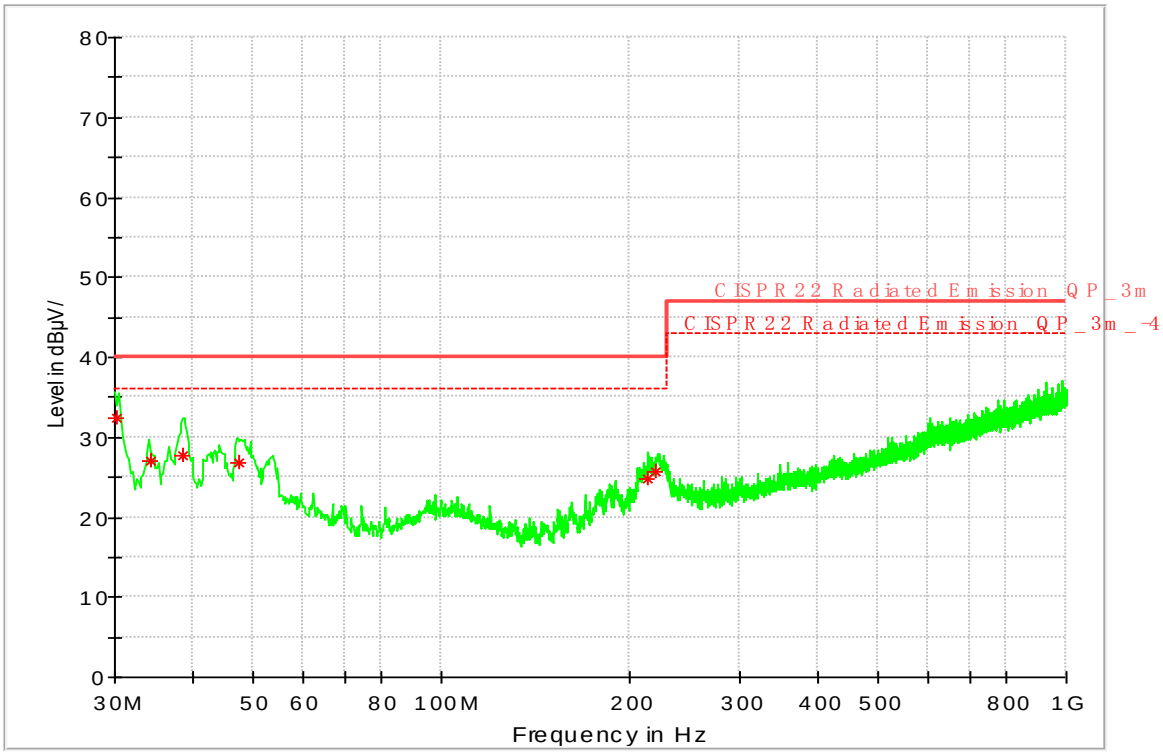
Part 1: Testing Range of "9 kHz to 30MHz"

NOTE1: No peak found in the Test Range of "9 kHz to 30MHz"

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

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

Note 2: The emissions in this range are mainly from the Platform Device (Notepad PC and its ancillary compon



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.312480	32.38	40.00	-7.62	100.0	V	0.0	14.5
34.187760	27.14	40.00	-12.86	167.0	V	272.0	15.0
38.644720	27.82	40.00	-12.18	166.0	V	255.0	15.3
47.479040	26.74	40.00	-13.26	100.0	V	148.0	15.1
214.104400	24.83	40.00	-15.17	142.0	H	224.0	13.0
220.978720	25.66	40.00	-14.34	154.0	H	231.0	13.3

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Part 3: Testing Range of “18 GHz to 26.5 GHz”

NOTE1: No peak found in the Test Range of “18 GHz to 26.5GHz”

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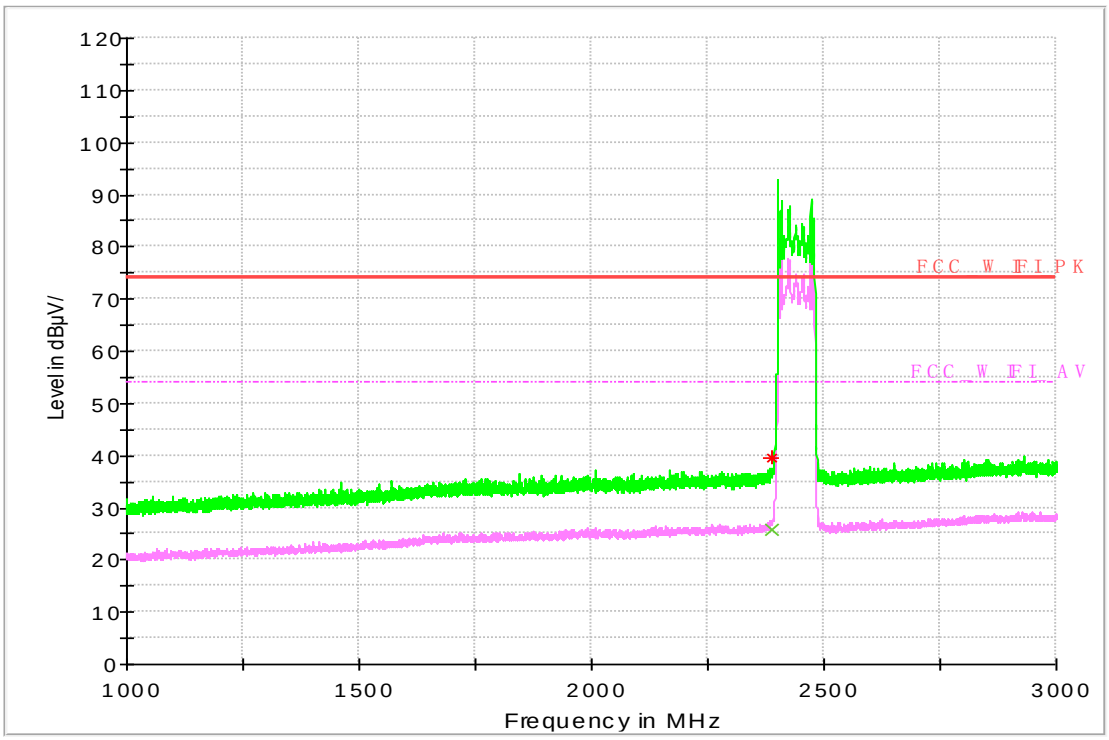
Part 4: Testing Range of "1 GHz to 3 GHz"

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



Note: The peak exceeds the limit line is carrier frequency.

MEASUREMENT RESULT: PK/ AV Detector

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2390.000000	---	25.81	54.00	-28.19	117.0	H	61.0	-8.0
2390.000000	39.60	---	74.00	-34.40	200.0	H	108.0	-8.0

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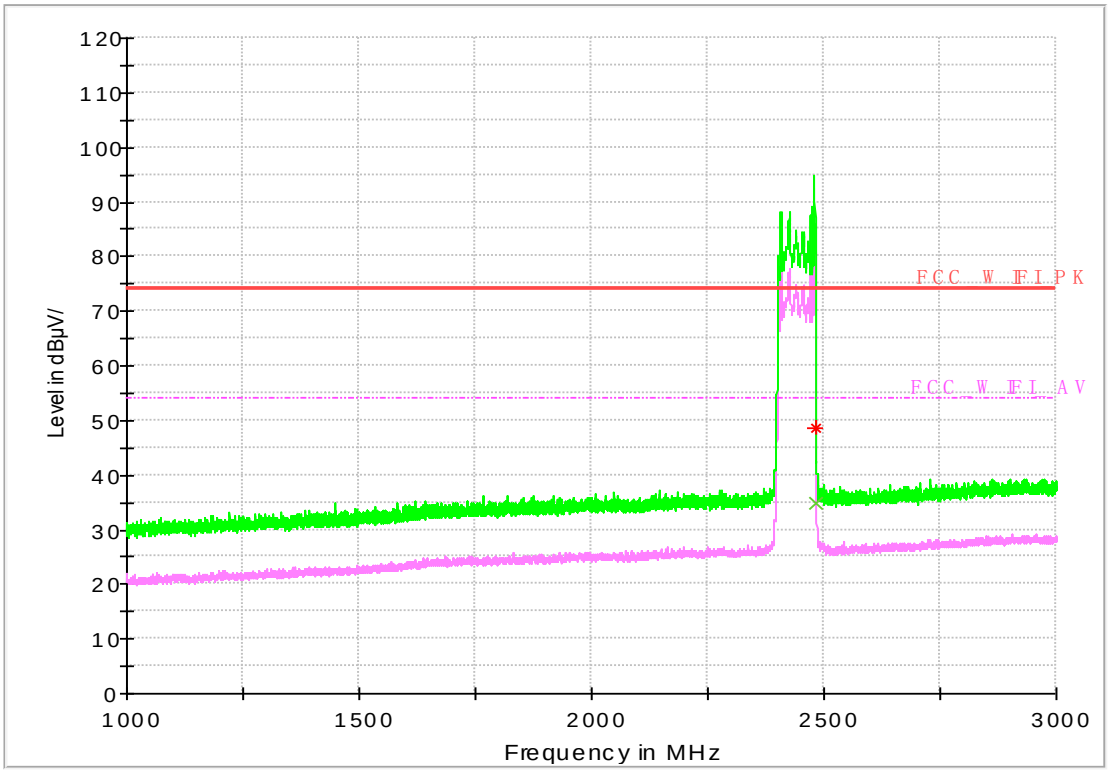
Channel 39



Note: The peak exceeds the limit line is carrier frequency.

MEASUREMENT RESULT: PK/ AV Detector

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2483.500000	48.50	---	74.00	-25.50	142.0	H	165.0	2.0
2483.500000	---	34.89	54.00	-19.11	100.0	H	112.0	1.9

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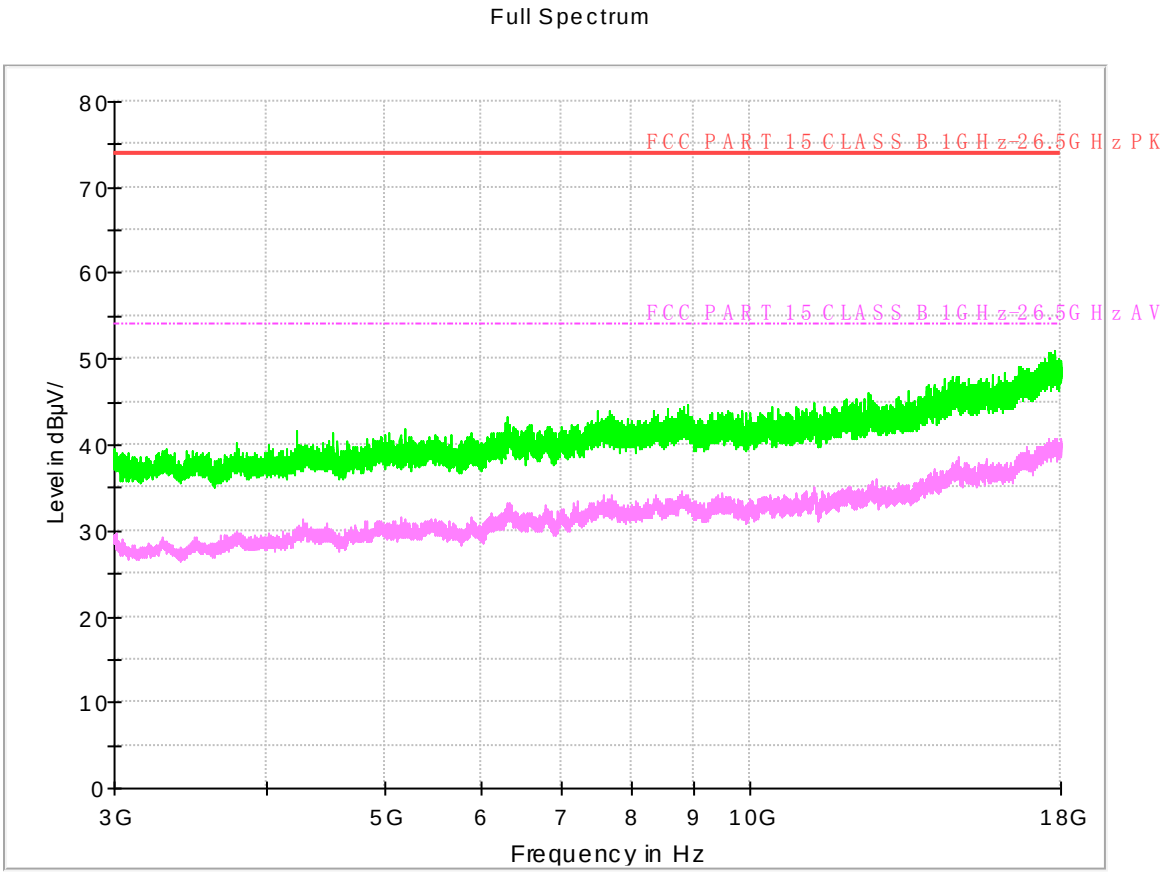
Part 5: Testing Range of "3 GHz to 18 GHz"

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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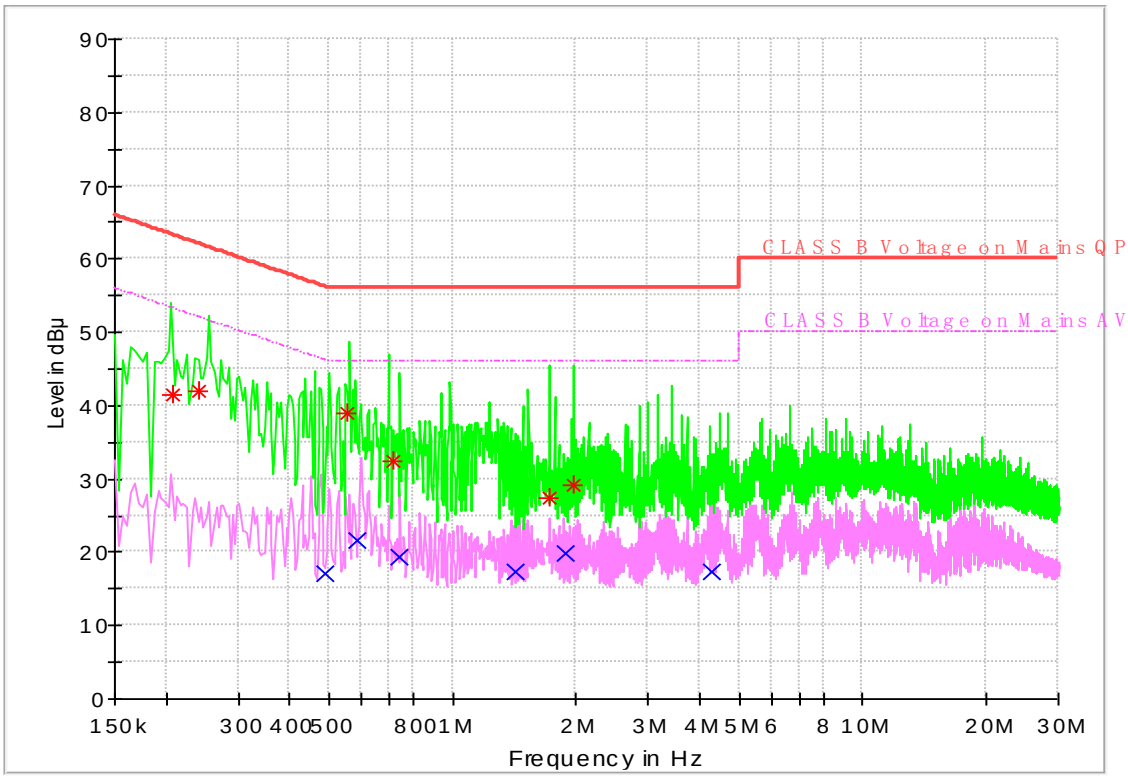
Appendix I: Conducted Emission at Power Port

Note: RBW =9 kHz, VBW =30kHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.207906	41.44	---	63.29	-21.85	N	ON	9.7
0.240874	41.91	---	62.07	-20.16	L1	ON	9.7
0.490466	---	16.98	46.16	-29.18	L1	ON	9.7
0.555348	38.84	---	56.00	-17.16	L1	ON	9.7
0.588089	---	21.55	46.00	-24.45	L1	ON	9.7
0.713013	32.46	---	56.00	-23.54	N	ON	9.7
0.742014	---	19.26	46.00	-26.74	L1	ON	9.7
1.418079	---	17.23	46.00	-28.77	N	ON	9.7
1.729198	27.42	---	56.00	-28.58	N	ON	9.8
1.885594	---	19.91	46.00	-26.09	L1	ON	9.8
1.961665	29.04	---	56.00	-26.96	N	ON	9.8
4.296744	---	17.42	46.00	-28.58	L1	ON	9.9

END

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