



Appendix for Test report

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.

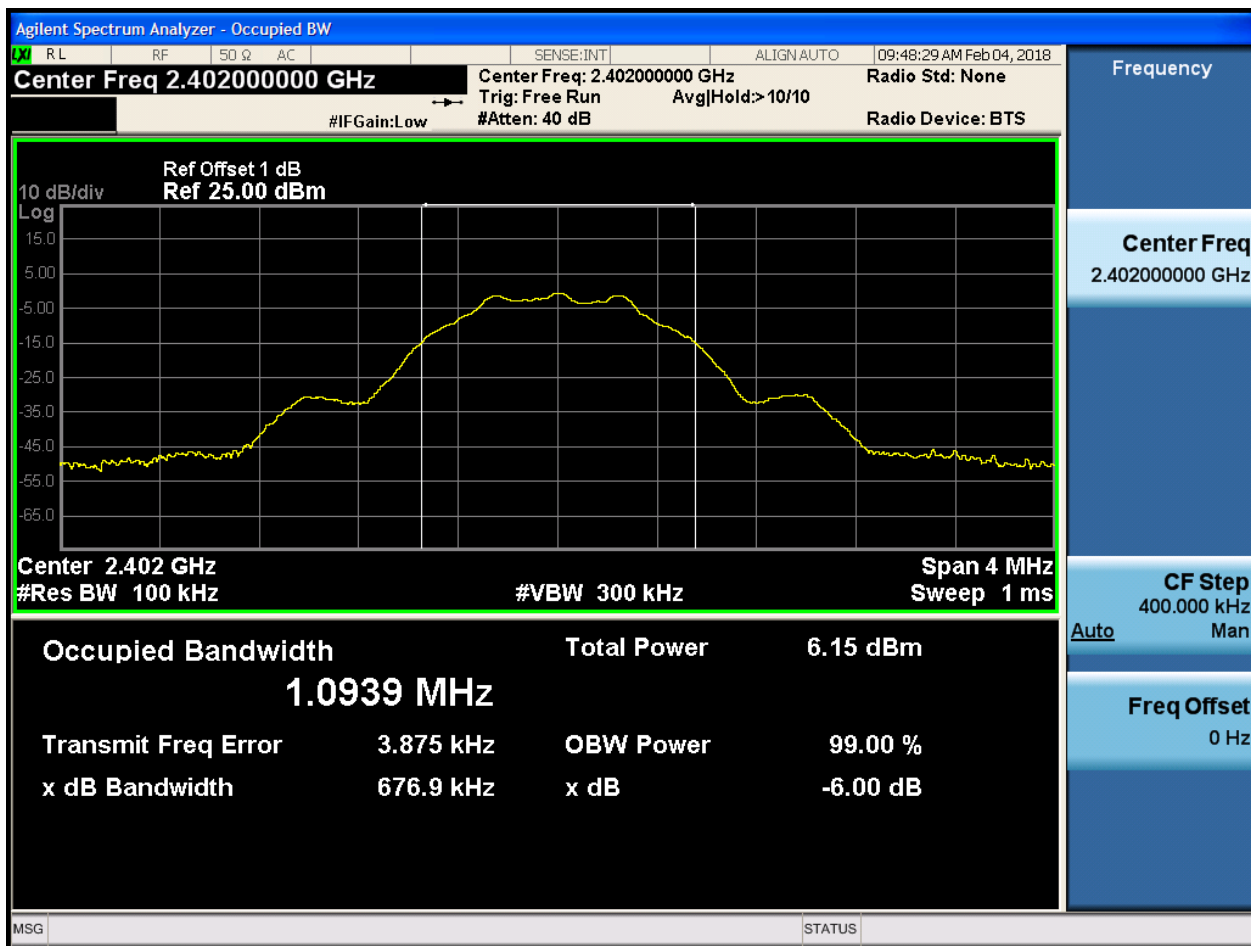
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	DTS6dBBW[MHz]	Verdict
TM1_Ch0	L	2402	0.68	pass
TM1_Ch19	M	2440	0.68	pass
TM1_Ch39	H	2480	0.68	pass

Part II - Test Plots

2.1 TM1_Ch0_L





2.2 TM1_Ch19_M





2.3 TM1_Ch39_H



Appendix B: Occupied Bandwidth

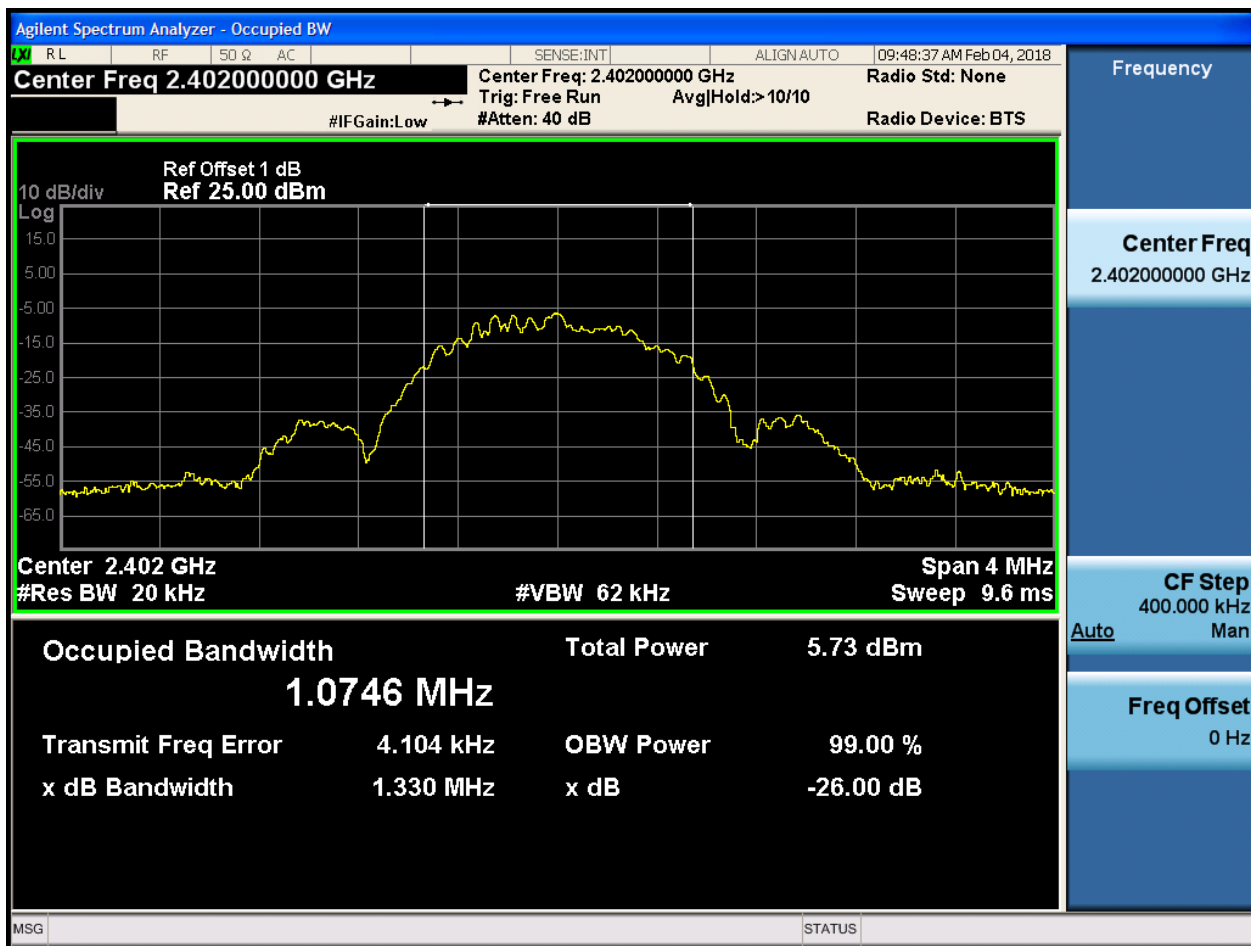
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Occupied Bandwidth [MHz]	Verdict
TM1 _Ch0	L	2402	1.07	pass
TM1 _Ch19	M	2440	1.07	pass
TM1 _Ch39	H	2480	1.07	pass

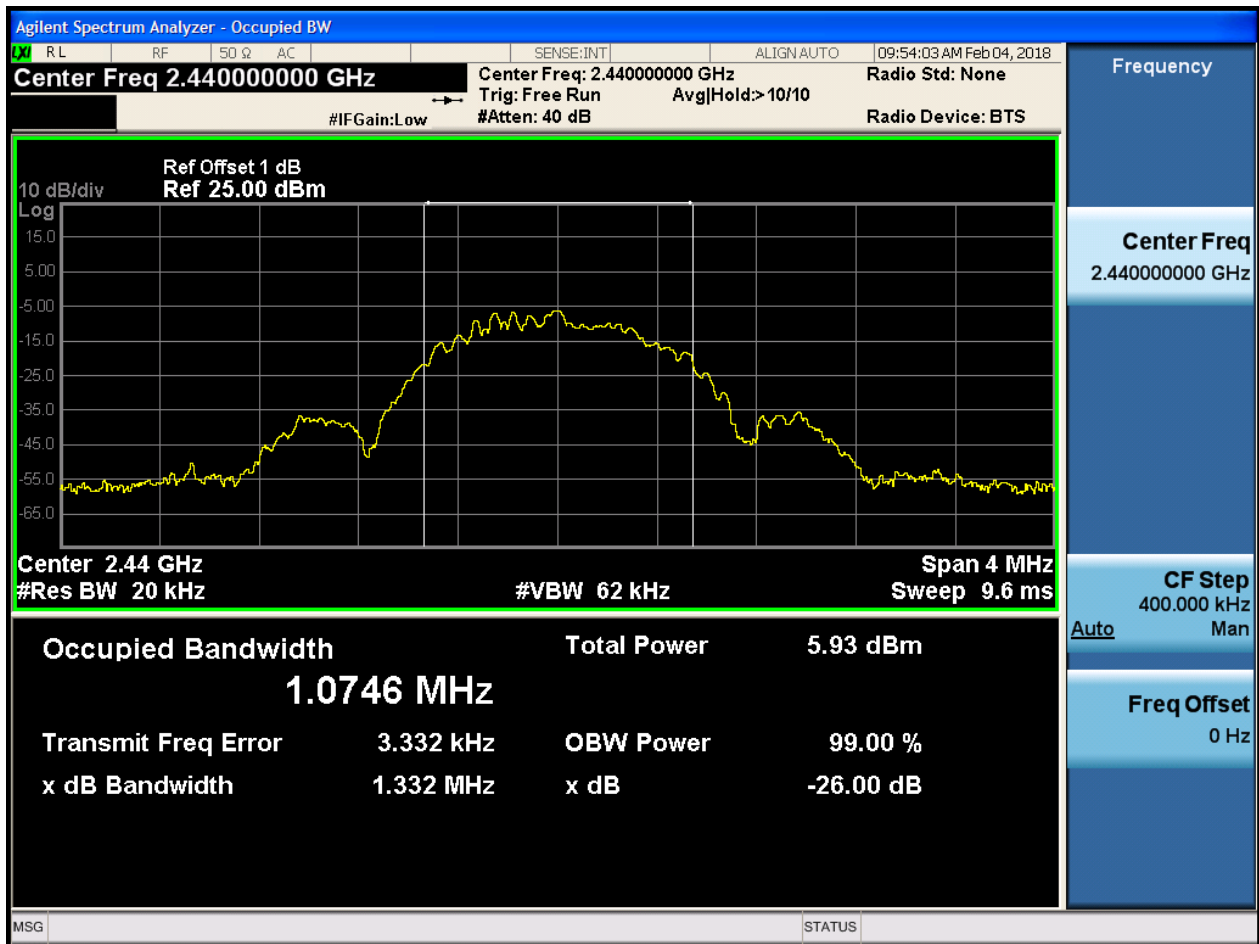
Part II - Test Plots

2.1 TM1_Ch0_L



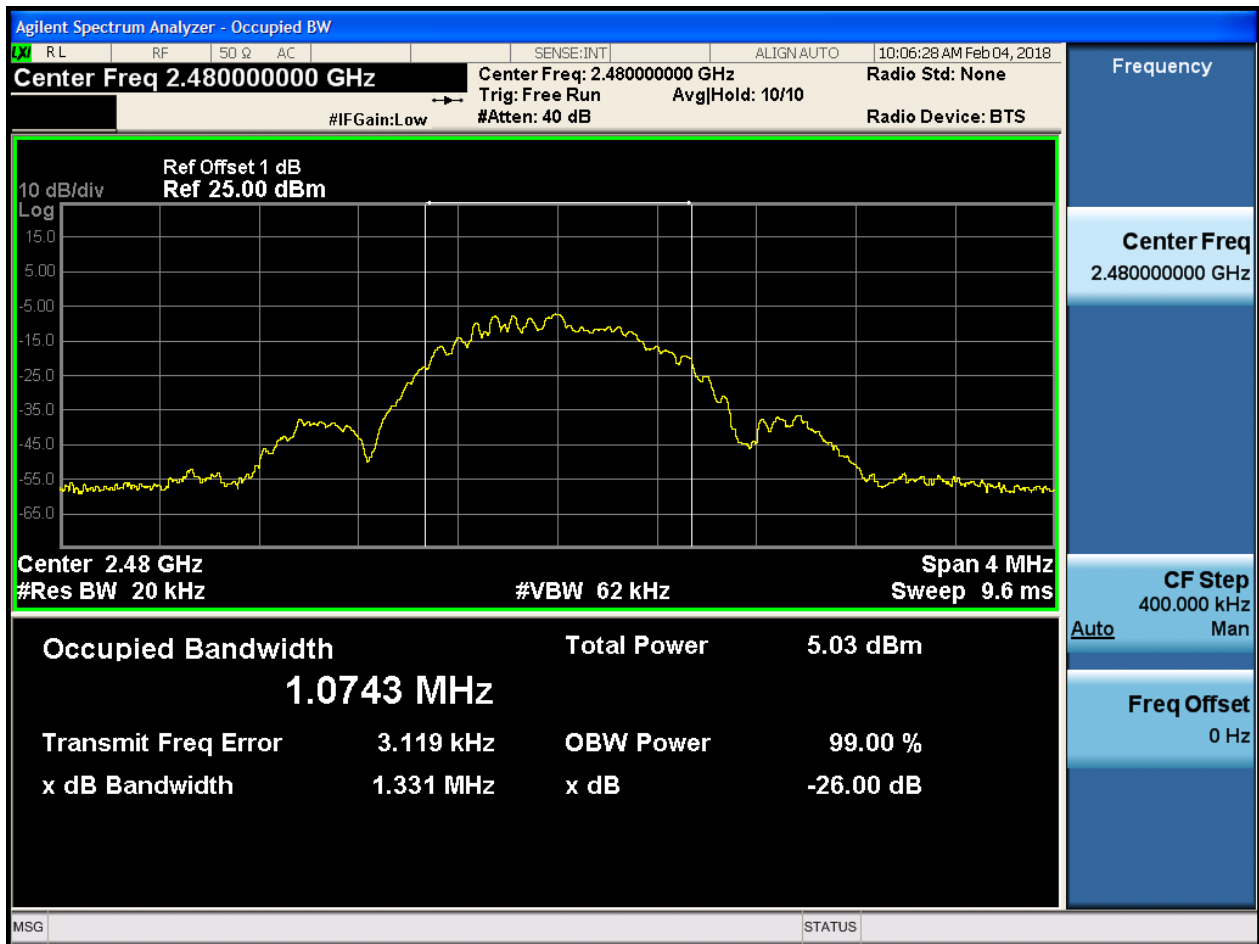


2.2 TM1_Ch19_M





2.3 TM1_Ch39_H



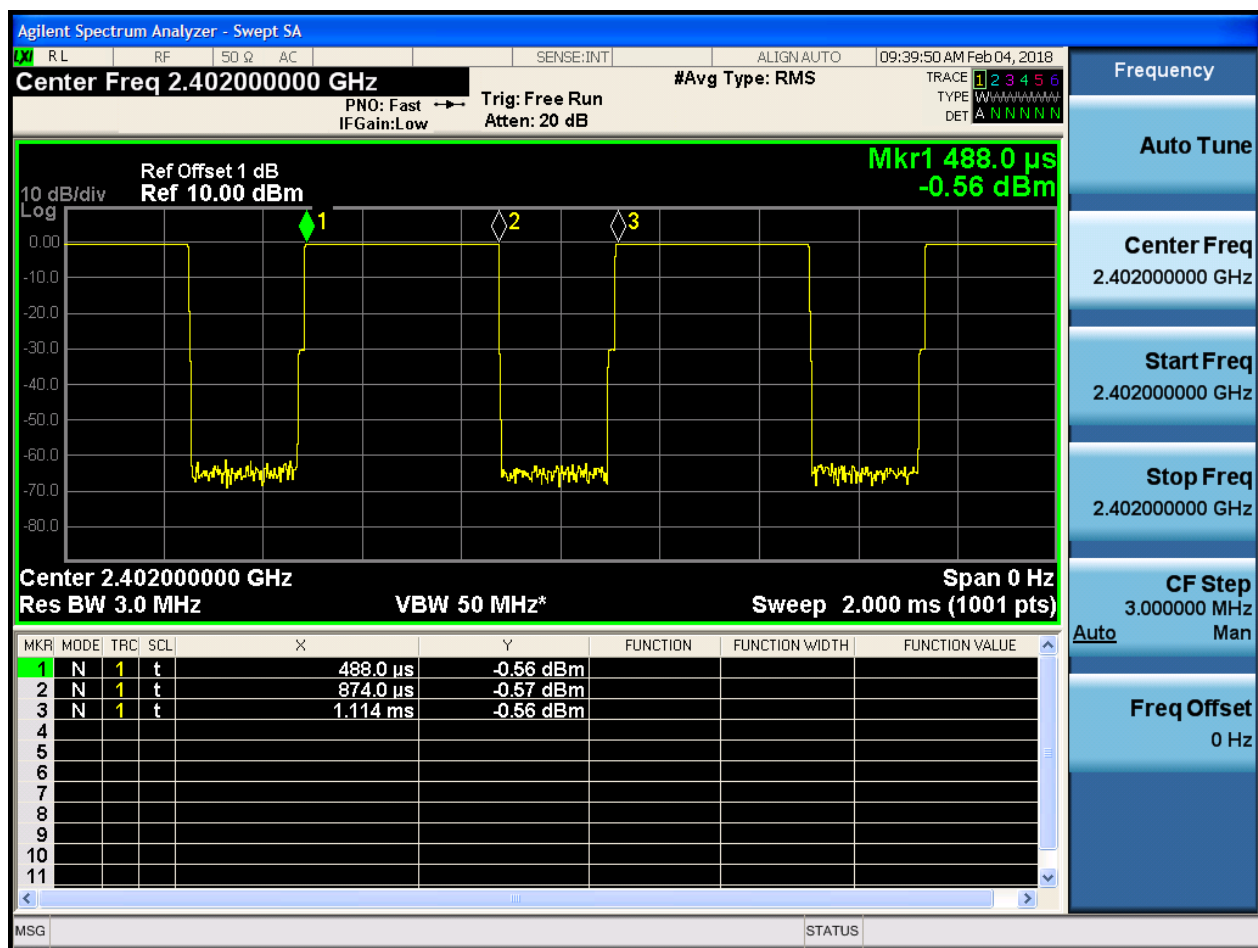
Appendix C: Duty Cycle

Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
TM1	CH0,CH19,CH39	61.7

Part II - Test Plots

2.1 TM1



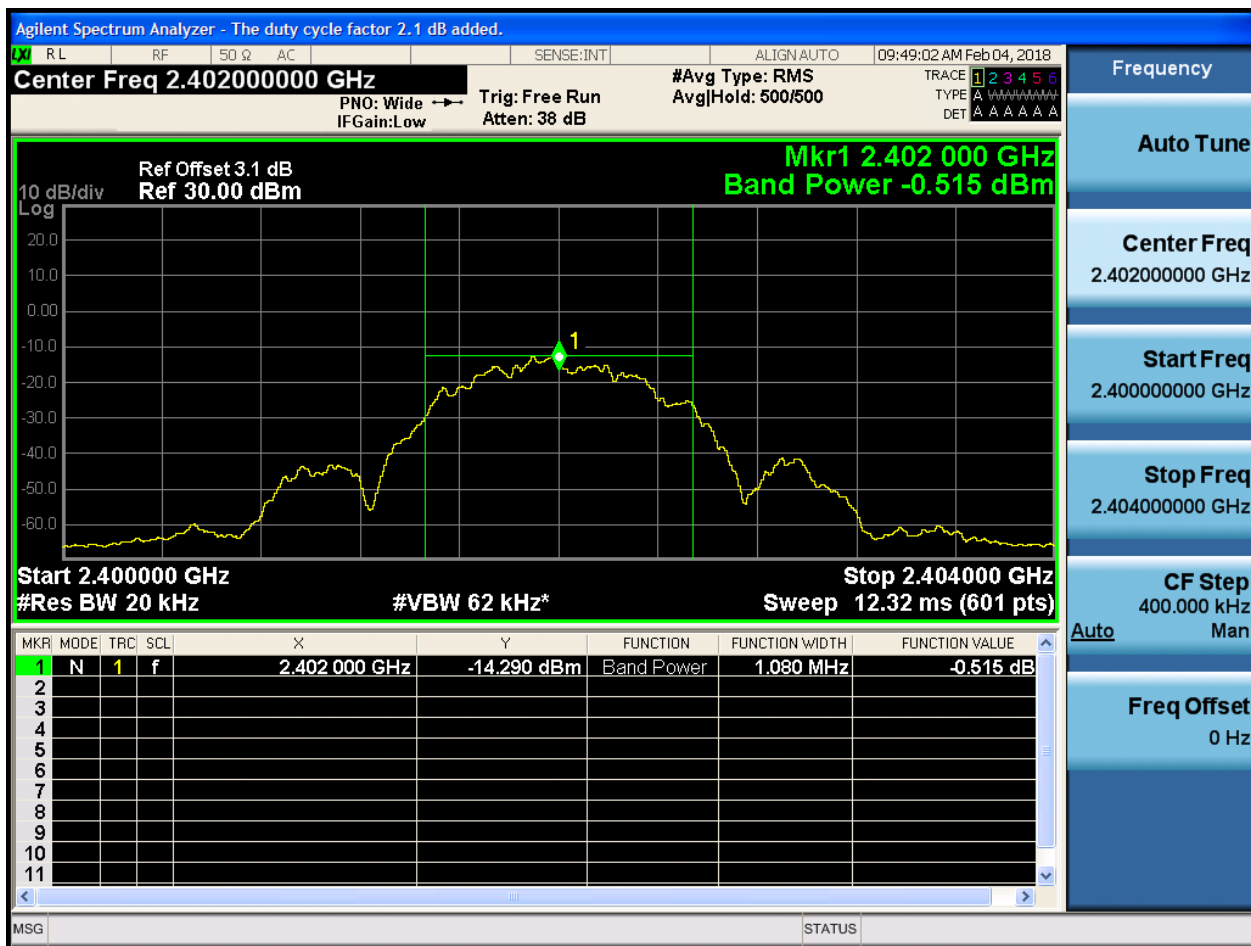
Appendix D: Maximum Conducted Average Output Power

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	Power[dBm]	Verdict
TM1 _Ch0	L	2402	61.7	-0.52	pass
TM1 _Ch19	M	2440	61.7	-0.27	pass
TM1 _Ch39	H	2480	61.7	-1.18	pass

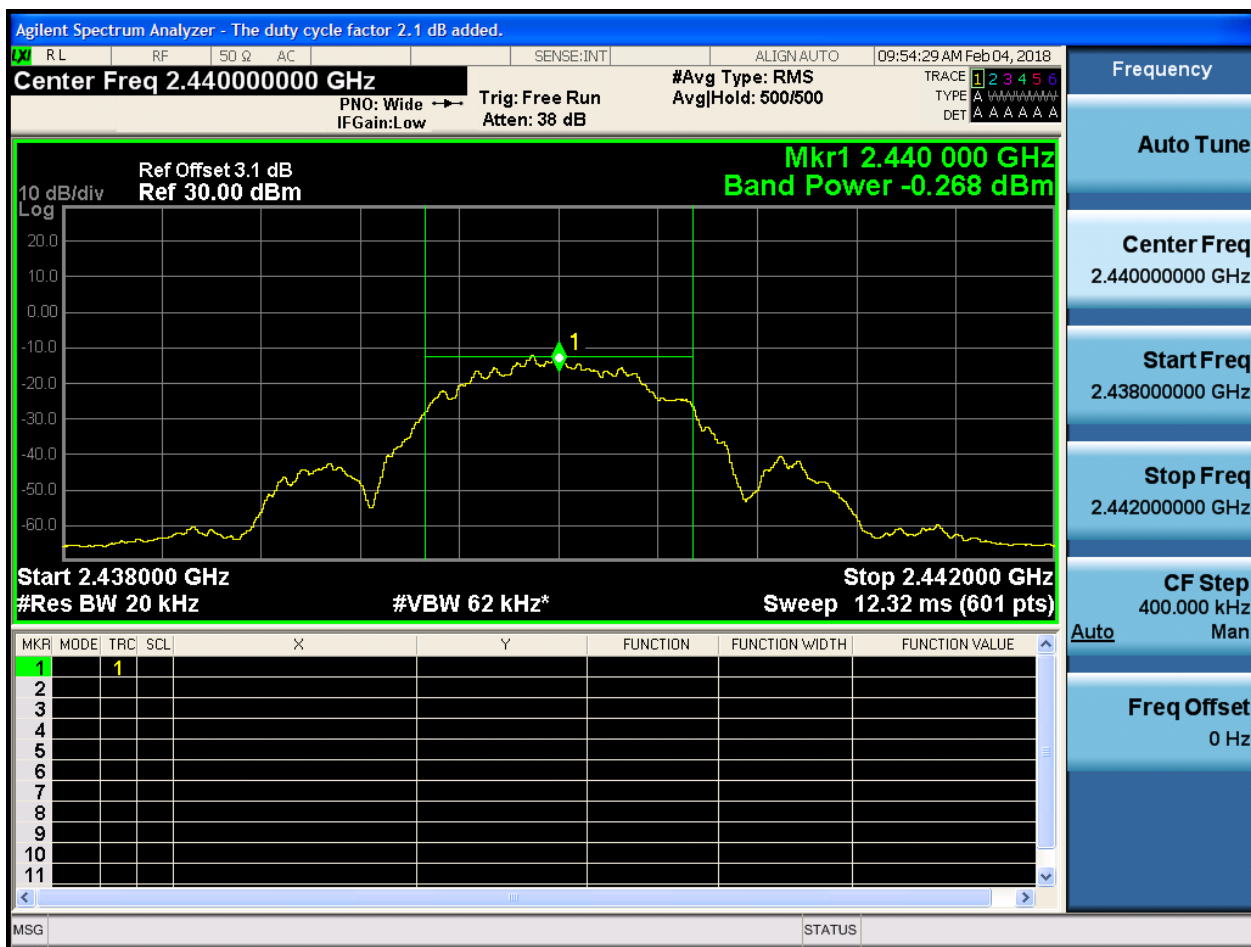
Part II - Test Plots

2.1 TM1_Ch0_L





2.2 TM1_Ch19_M





2.3 TM1_Ch39_H



Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	PSD[dBm/10 kHz]	Verdict
TM1 _Ch0	L	2402	61.7	-13.09	pass
TM1 _Ch19	M	2440	61.7	-13.23	pass
TM1 _Ch39	H	2480	61.7	-15.37	pass

Part II - Test Plots

2.1 TM1_Ch0_L





2.2 TM1_Ch19_M





2.3 TM1_Ch39_H



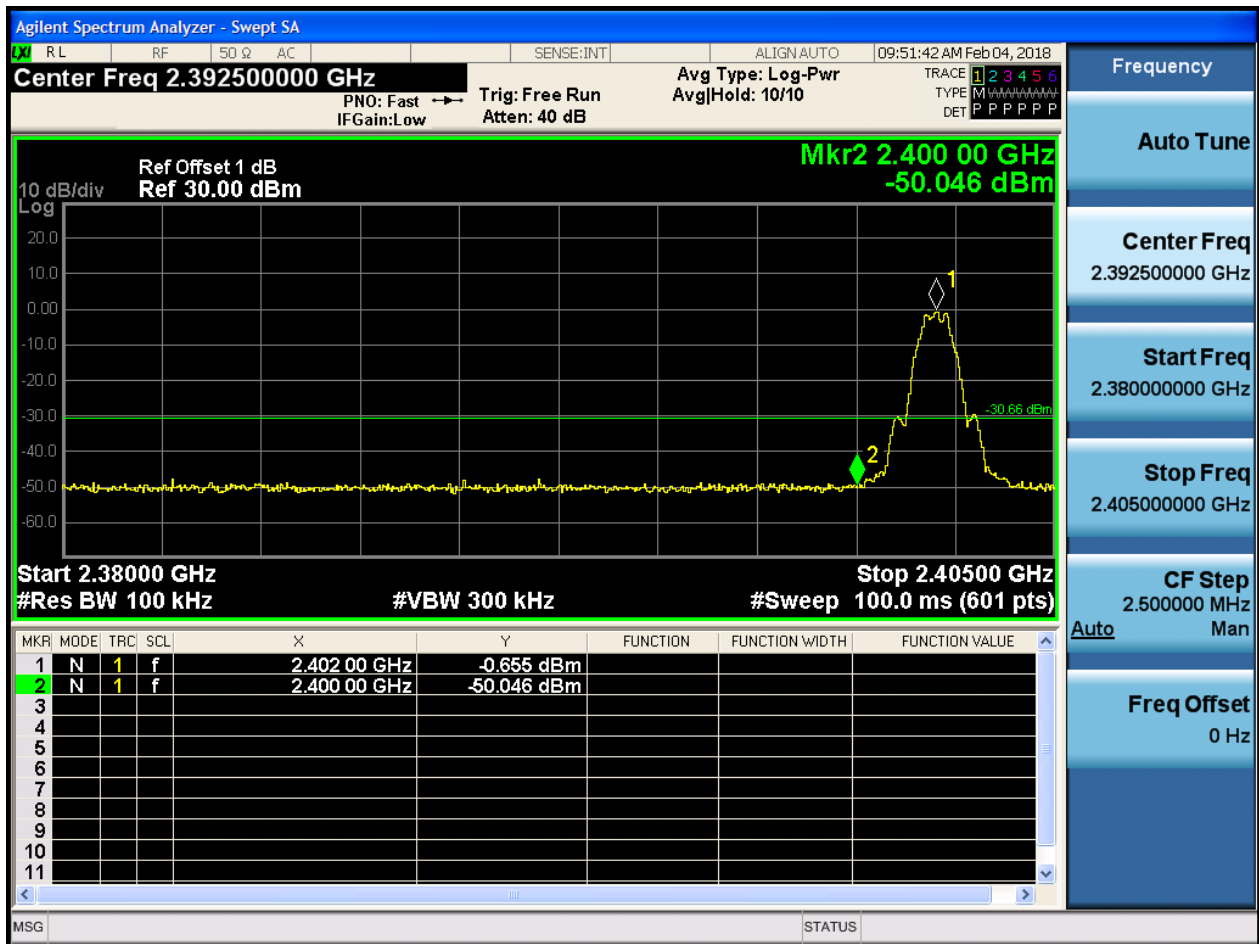
Appendix F: Band Edges Compliance

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
TM1_Ch0	L	2402	-0.66	-50.05	pass
TM1_Ch39	H	2480	-1.30	-51.23	pass

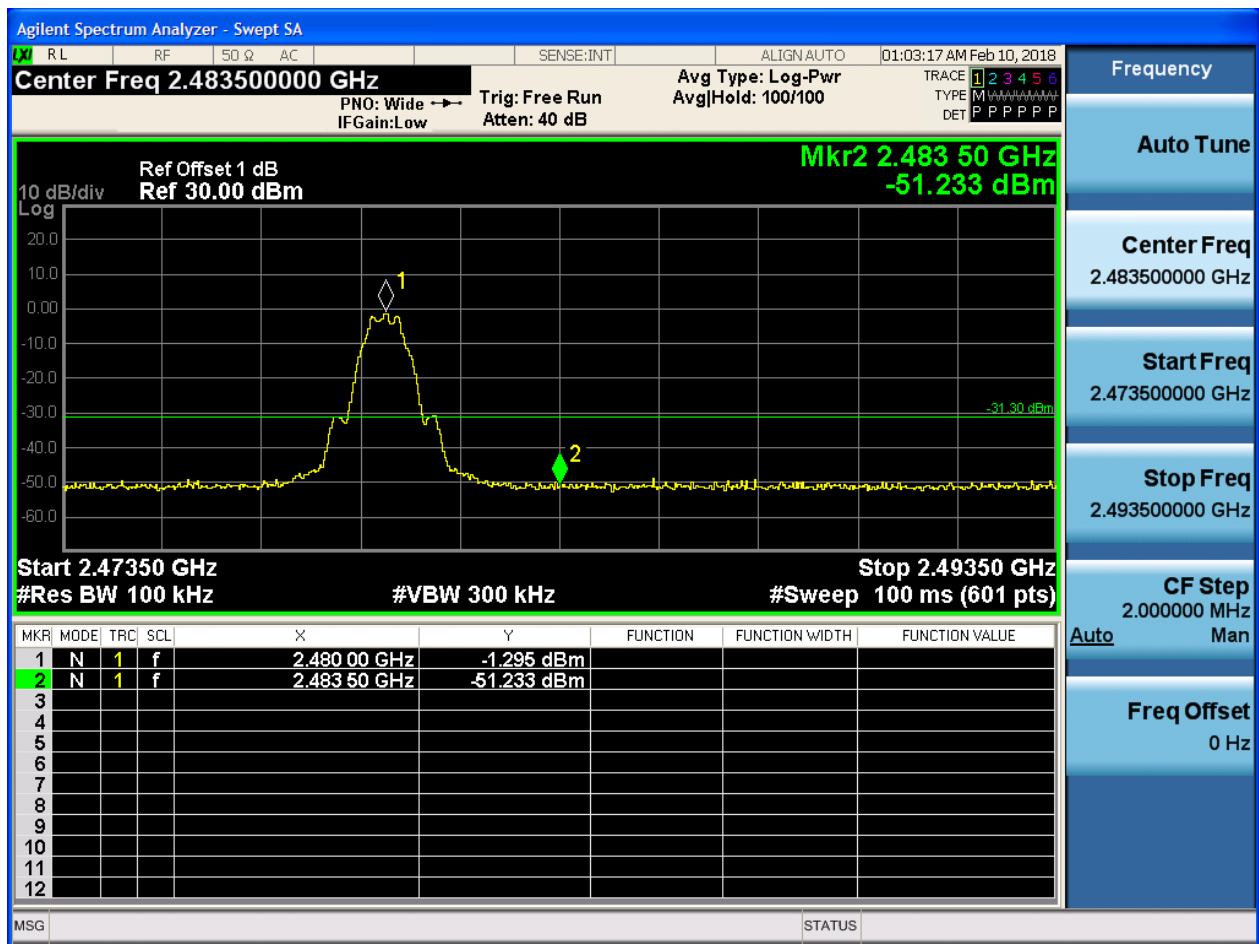
Part II - Test Plots

2.1 TM1_Ch0_L





2.2 TM1_Ch39_H



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" 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.

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]	Pref[dBm]	Puw[dBm]	Verdict
TM1 _Ch0	L	2402	-0.54	<limit	pass
TM1 _Ch19	M	2440	-0.35	<limit	pass
TM1 _Ch39	H	2480	-1.23	<limit	pass

Part II - Test Plots

2.1 TM1_Ch0_L

Pref:





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω DC SENSE:INT ALIGN AUTO 09:49:50 AM Feb 04, 2018

Center Freq 79.500 kHz Avg Type: Log-Pwr Avg/Hold: >50/50

PNO: Wide IFGain:Low Trig: Free Run #Atten: 26 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET P P P P P P

Ref Offset 1 dB
Ref 0.00 dBm

Mkr1 10.175 kHz
-53.710 dBm

10 dB/div
Log

Start 9.00 kHz
#Res BW 1.0 kHz

Stop 150.00 kHz
Sweep 134.8 ms (601 pts)

#VBW 3.0 kHz

Auto Tune

Center Freq
79.500 kHz

Start Freq
9.000 kHz

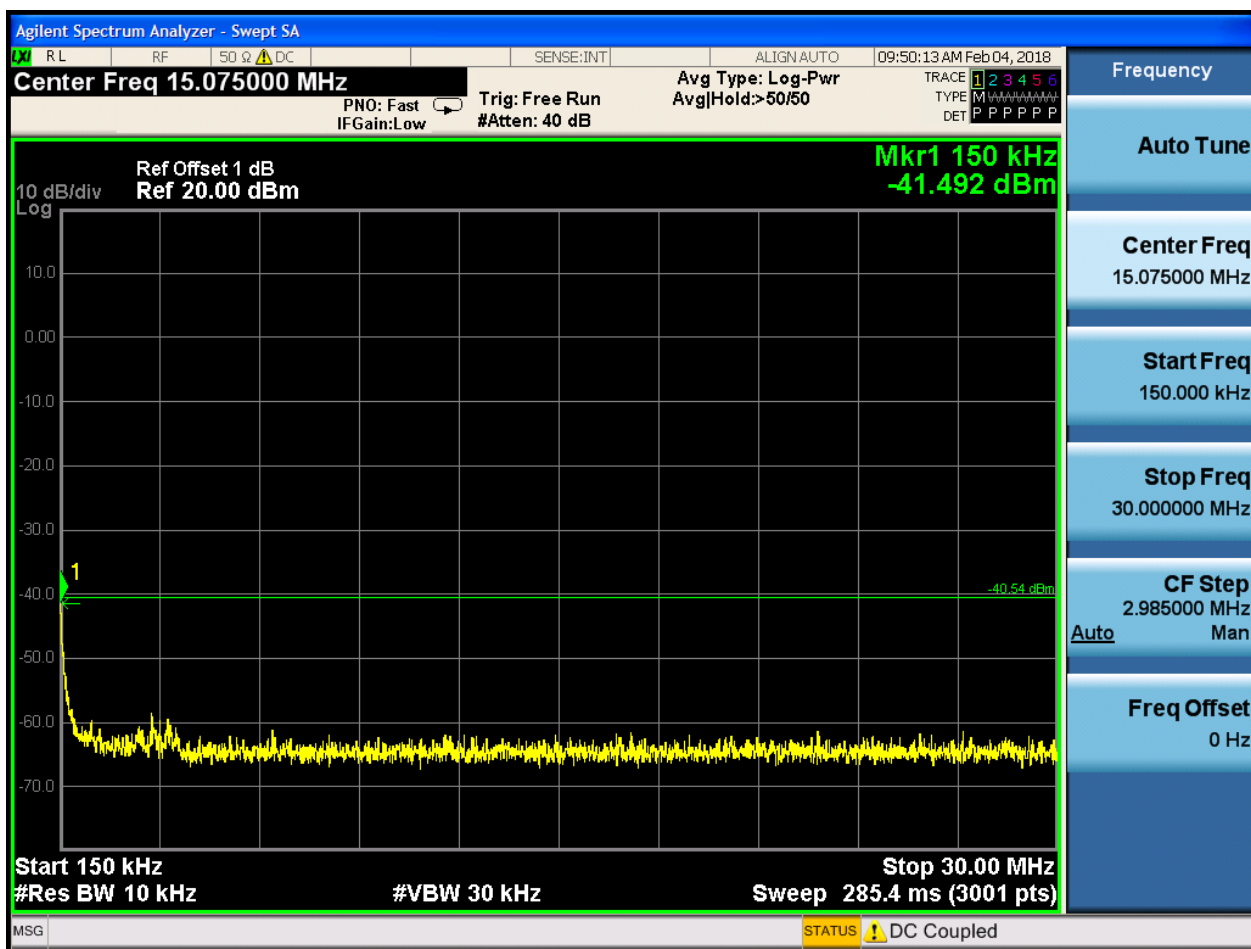
Stop Freq
150.000 kHz

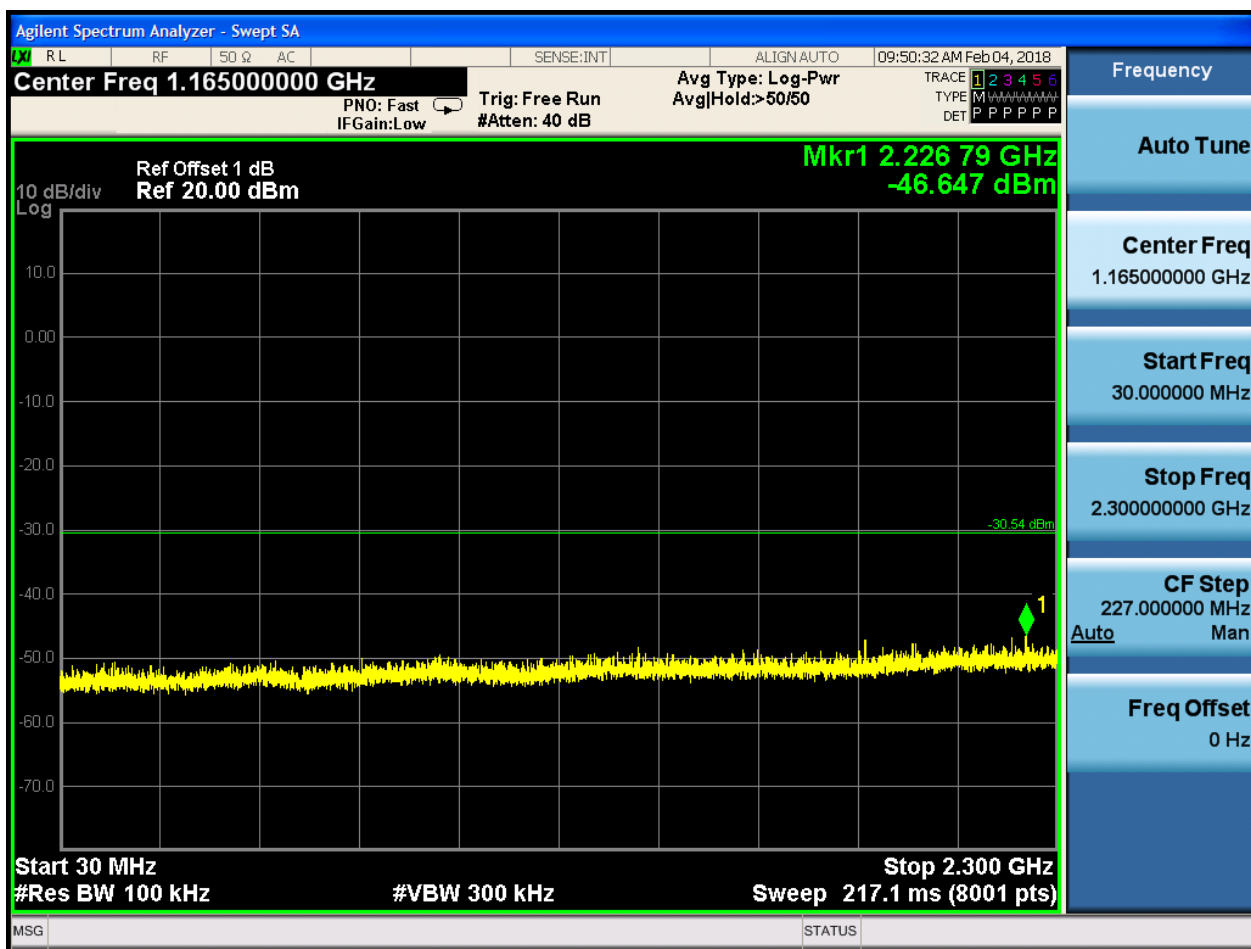
CF Step
14.100 kHz
Man

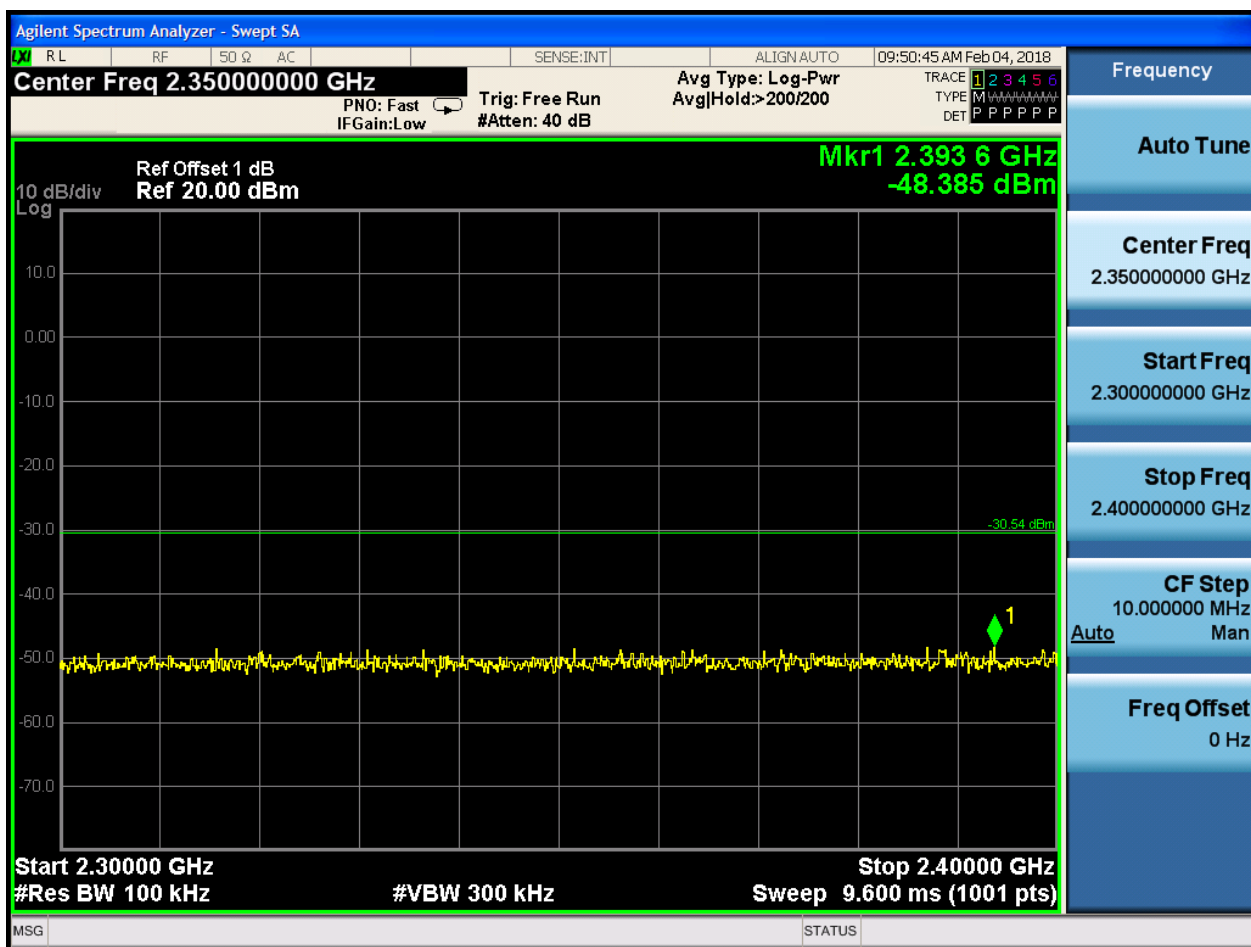
Auto

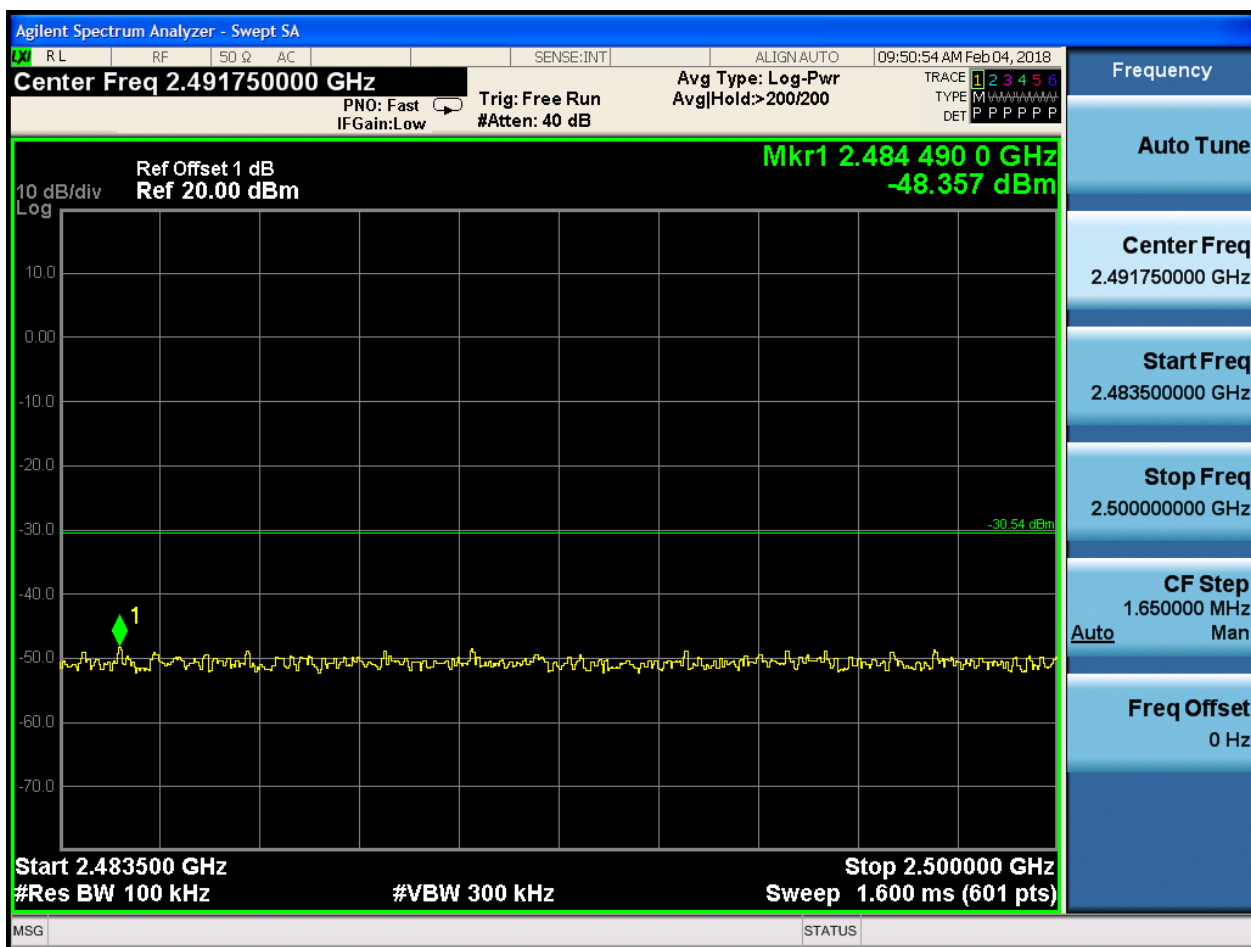
Freq Offset
0 Hz

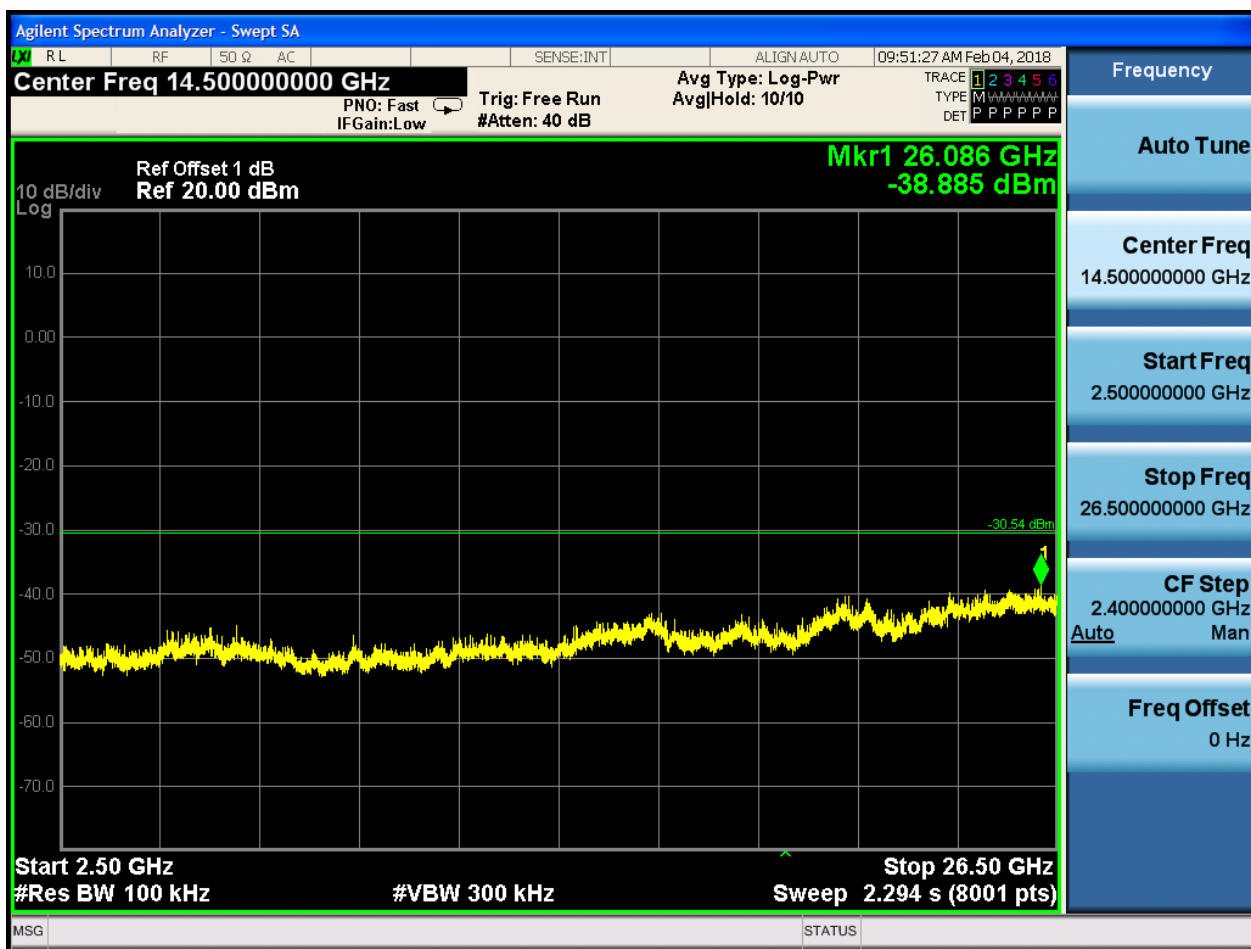
MSG STATUS Δ DC Coupled







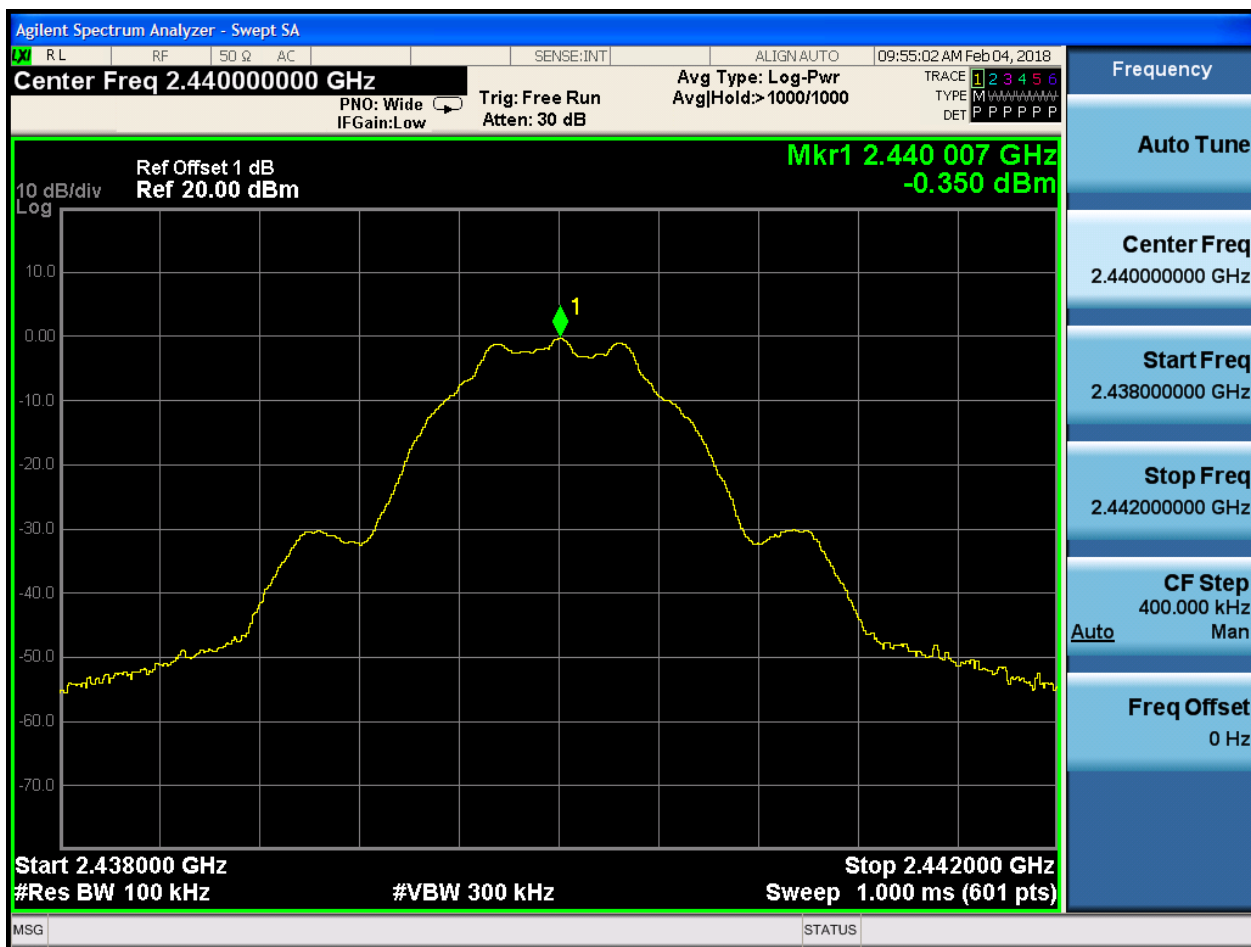






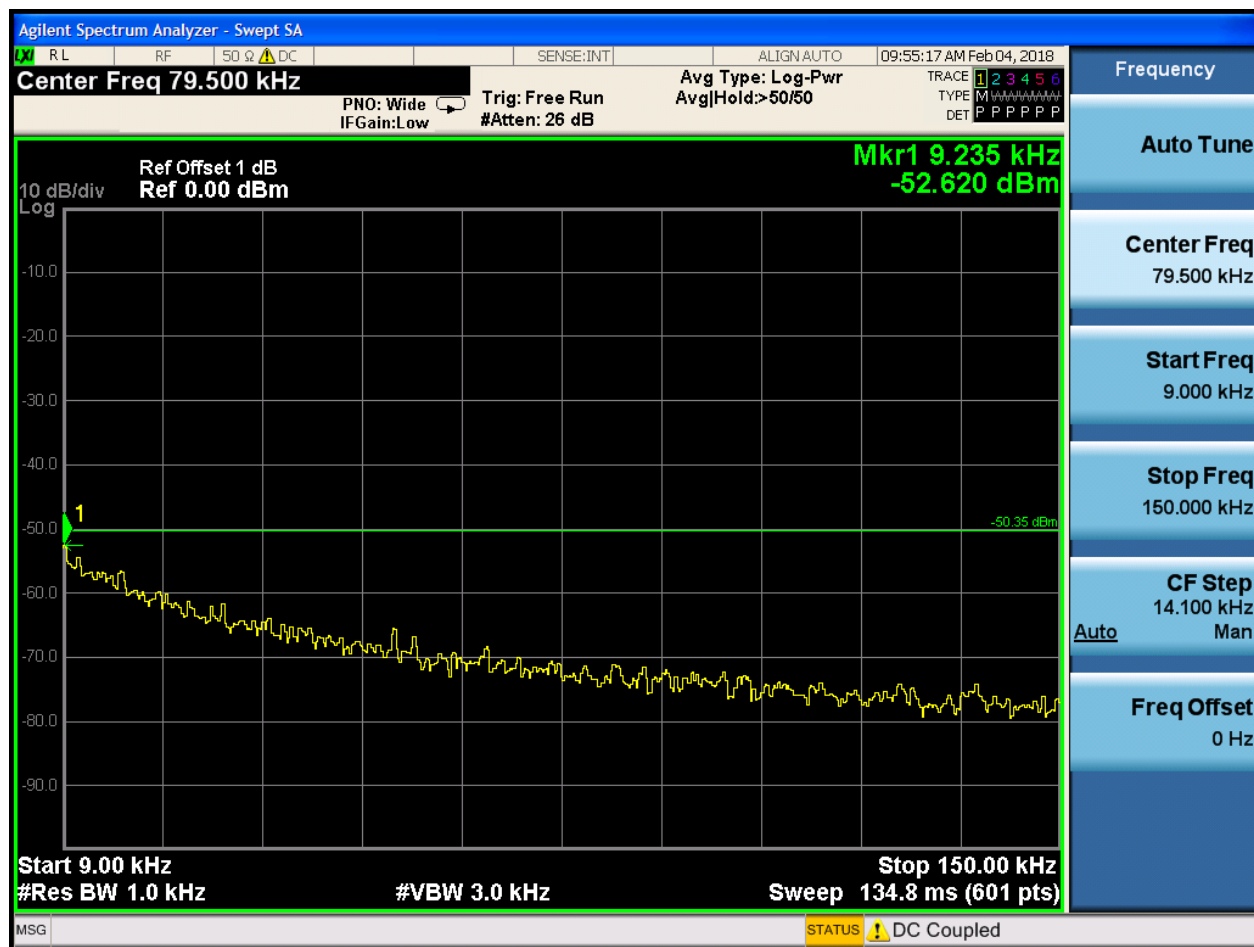
2.2 TM1_Ch19_M

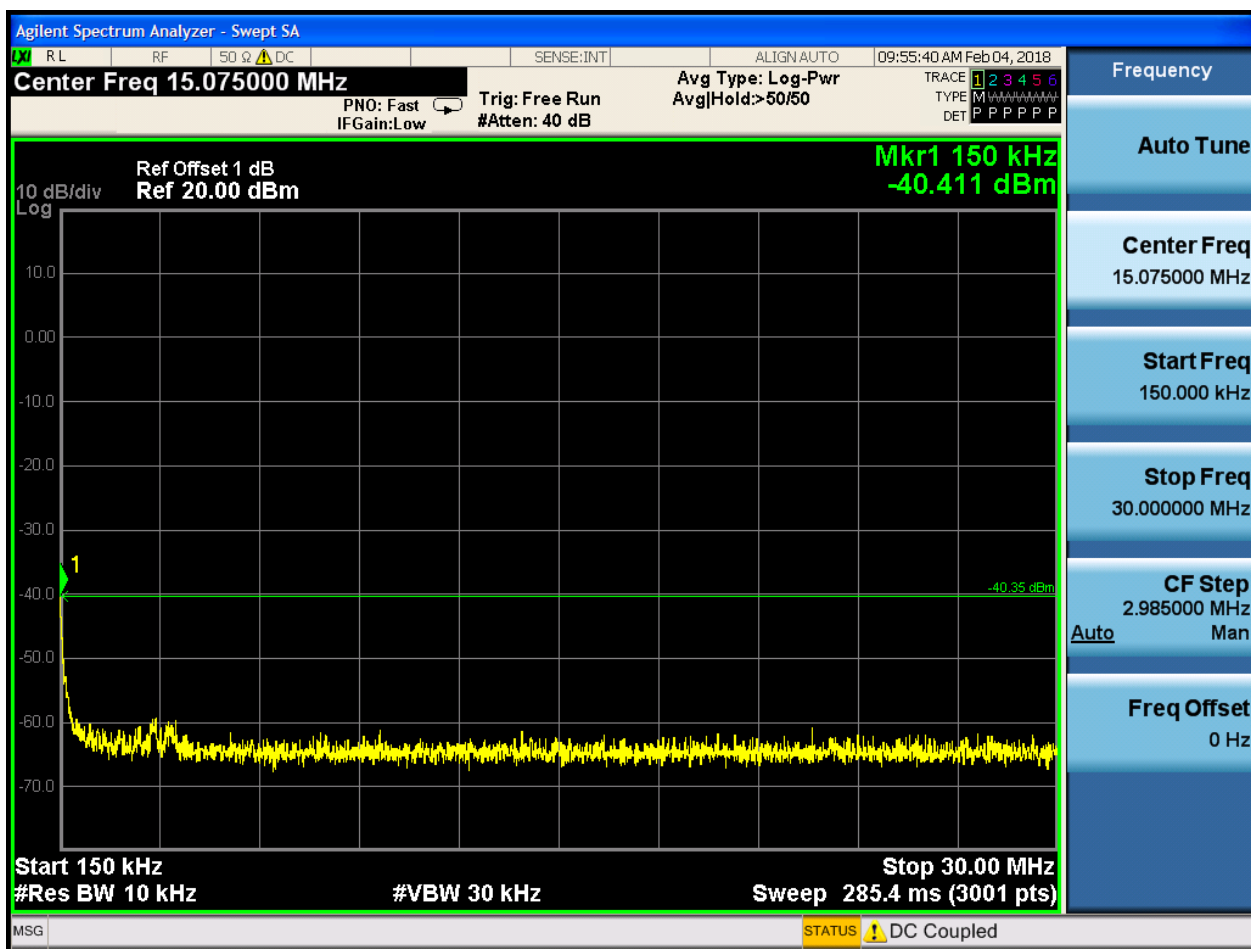
Pref:

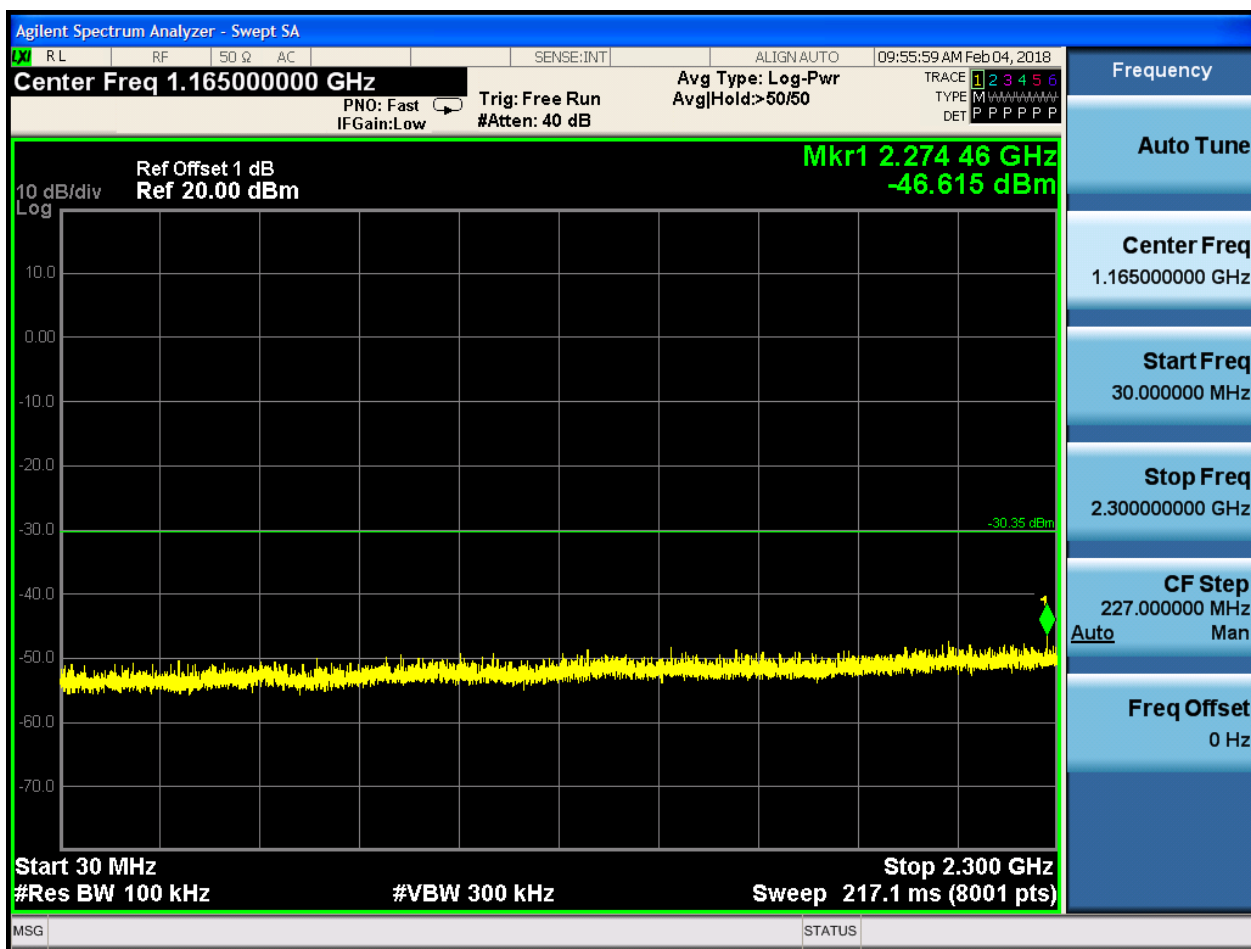


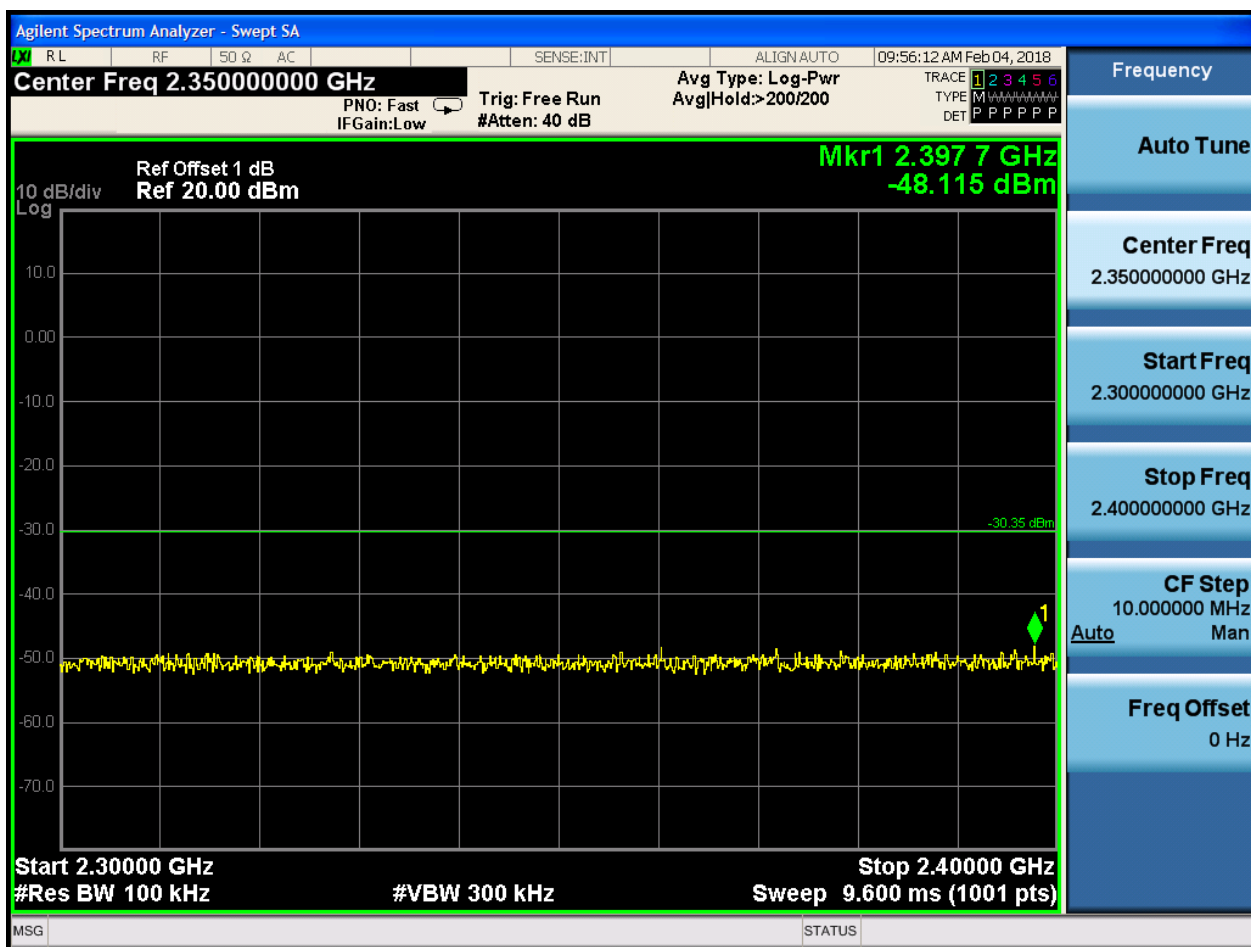


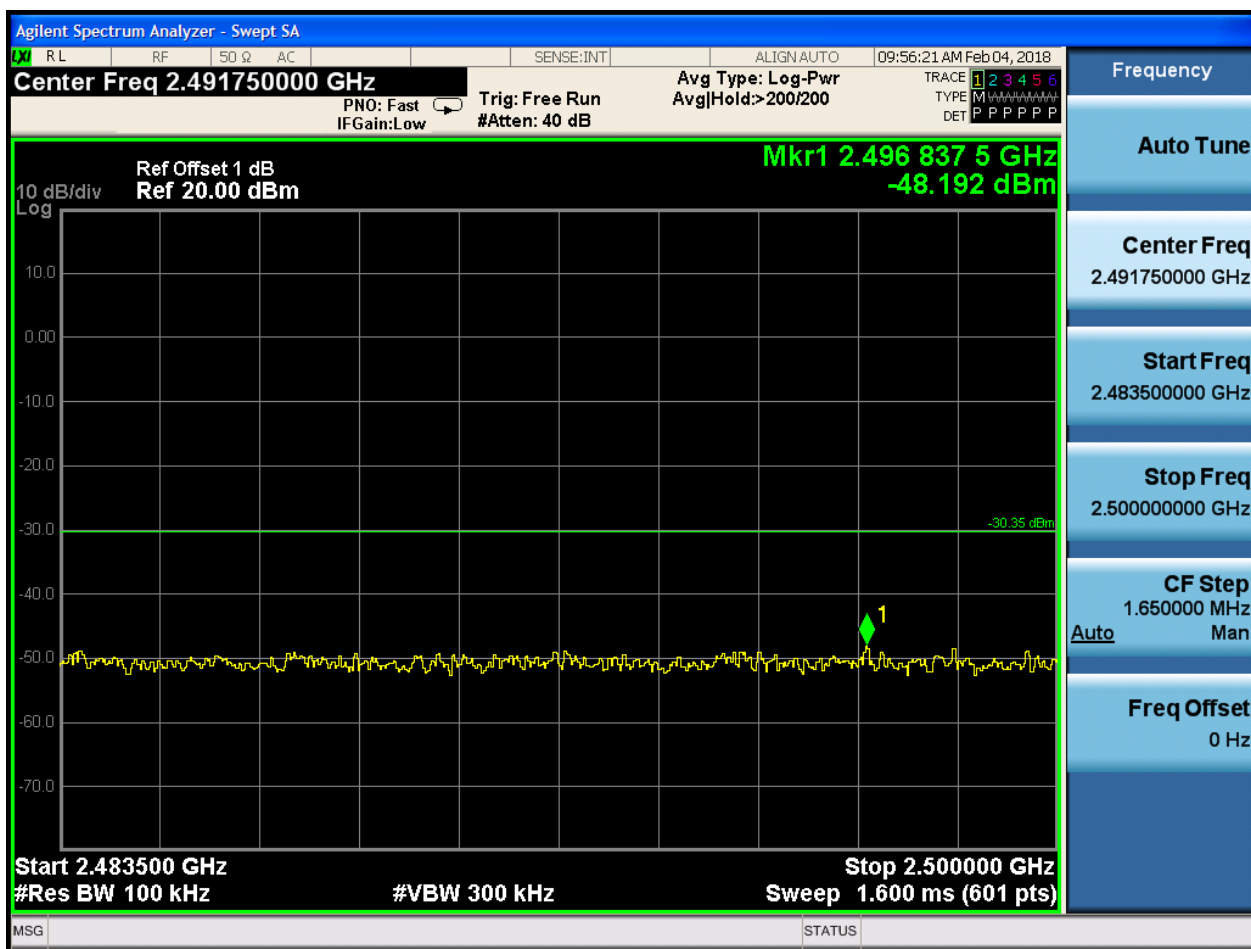
Puw:

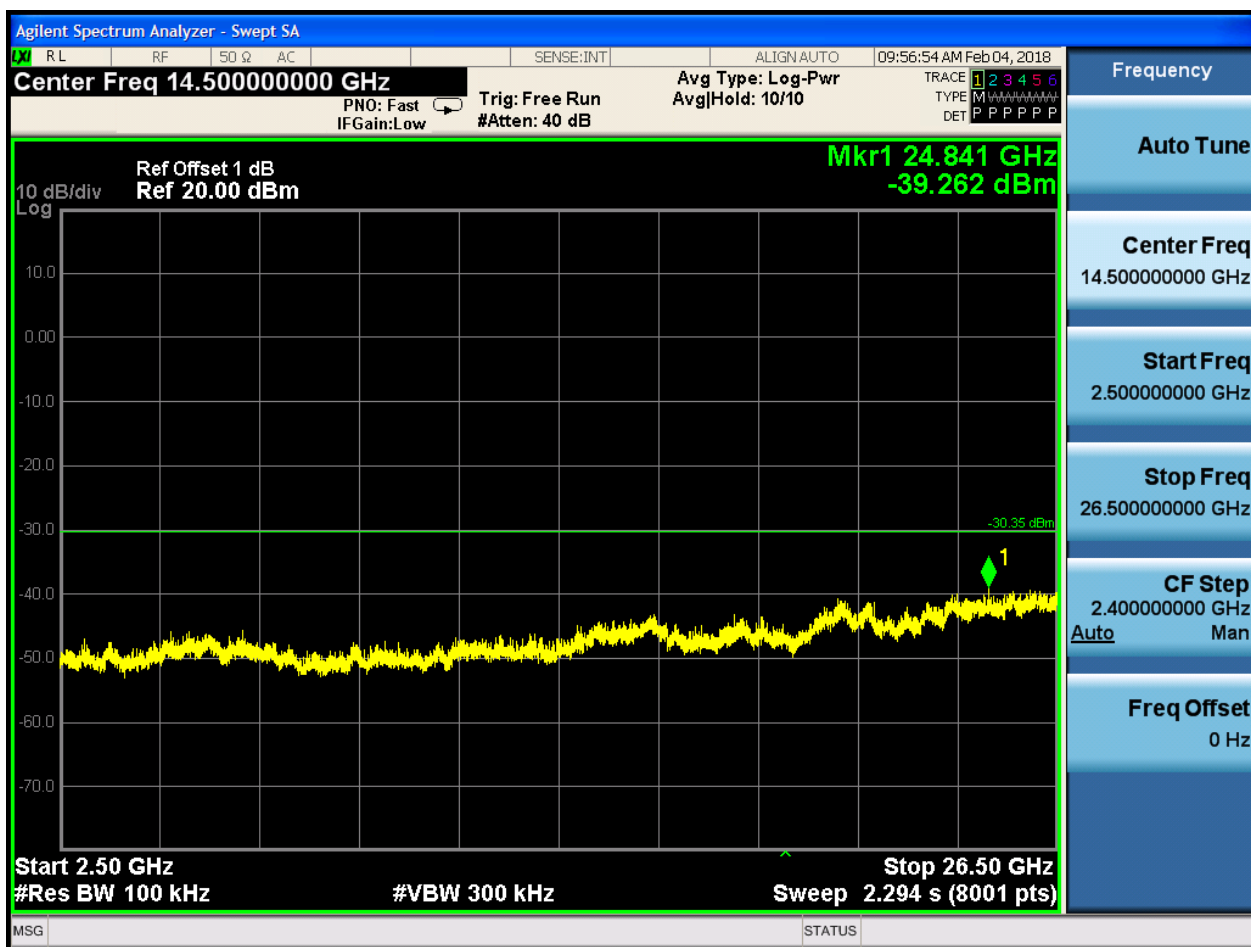








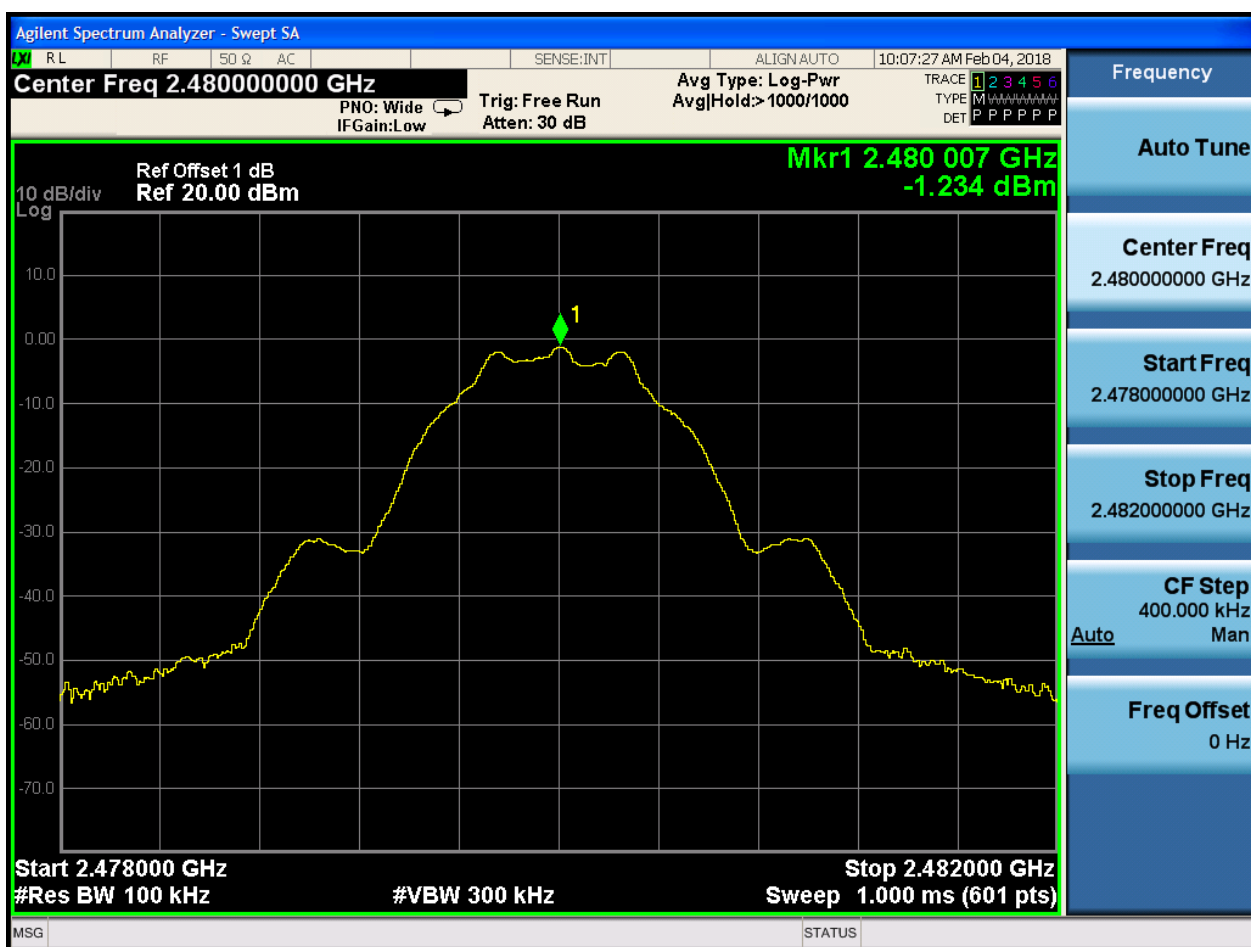






2.3 11B_H@Ant 1

Pref:





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω DC SENSE:INT ALIGN:AUTO 10:07:41 AM Feb 04, 2018

Center Freq 79.500 kHz

PNO: Wide IFGain:Low Trig: Free Run #Atten: 26 dB

Avg Type: Log-Pwr Avg/Hold: >50/50

TRACE 1 2 3 4 5 6 TYPE M P P P P P P DET

Ref Offset 1 dB Ref 0.00 dBm

Mkr1 9.470 kHz -53.217 dBm

10 dB/div Log

Start 9.00 kHz Stop 150.00 kHz

#Res BW 1.0 kHz #VBW 3.0 kHz Sweep 134.8 ms (601 pts)

MSG STATUS DC Coupled

Frequency

Auto Tune

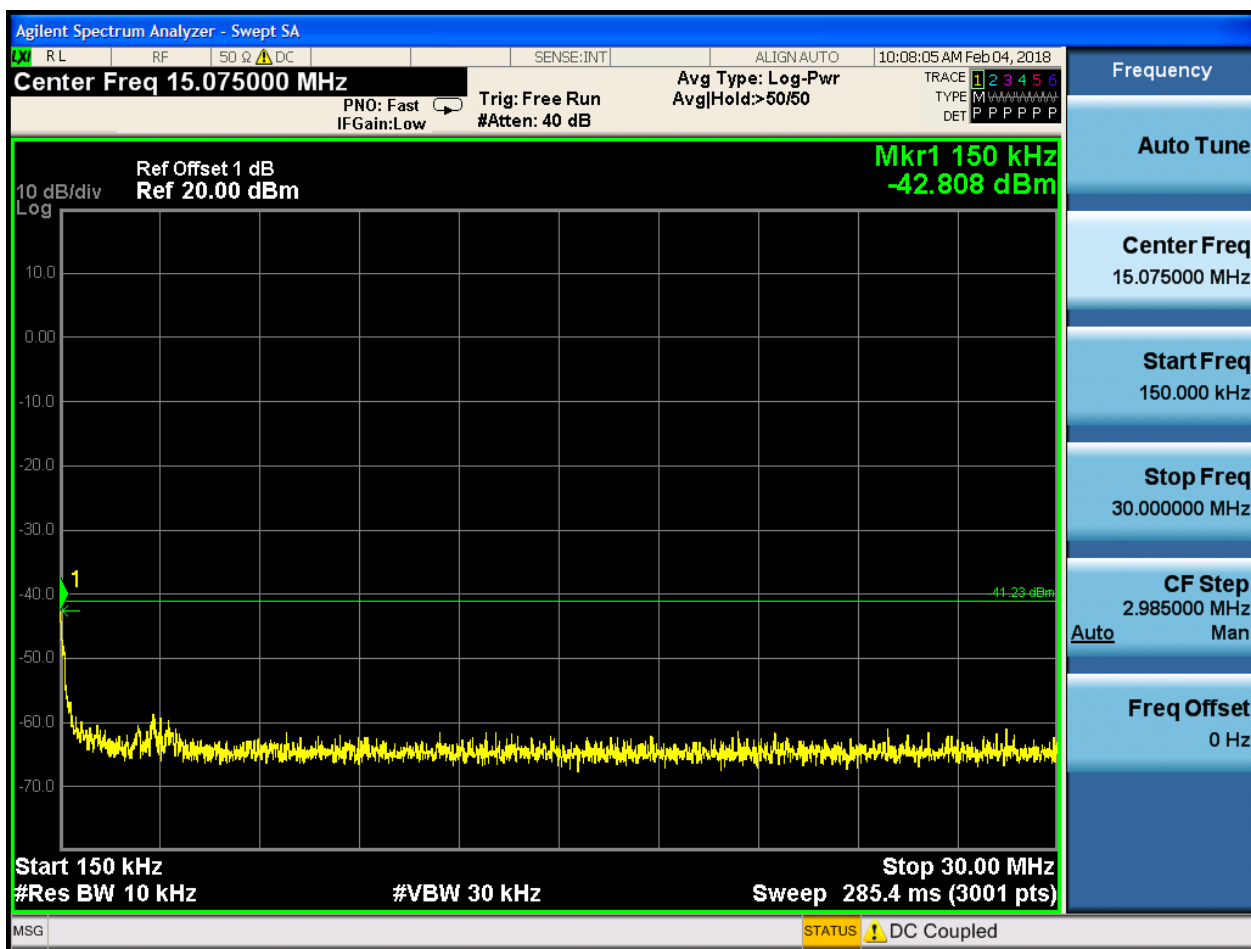
Center Freq 79.500 kHz

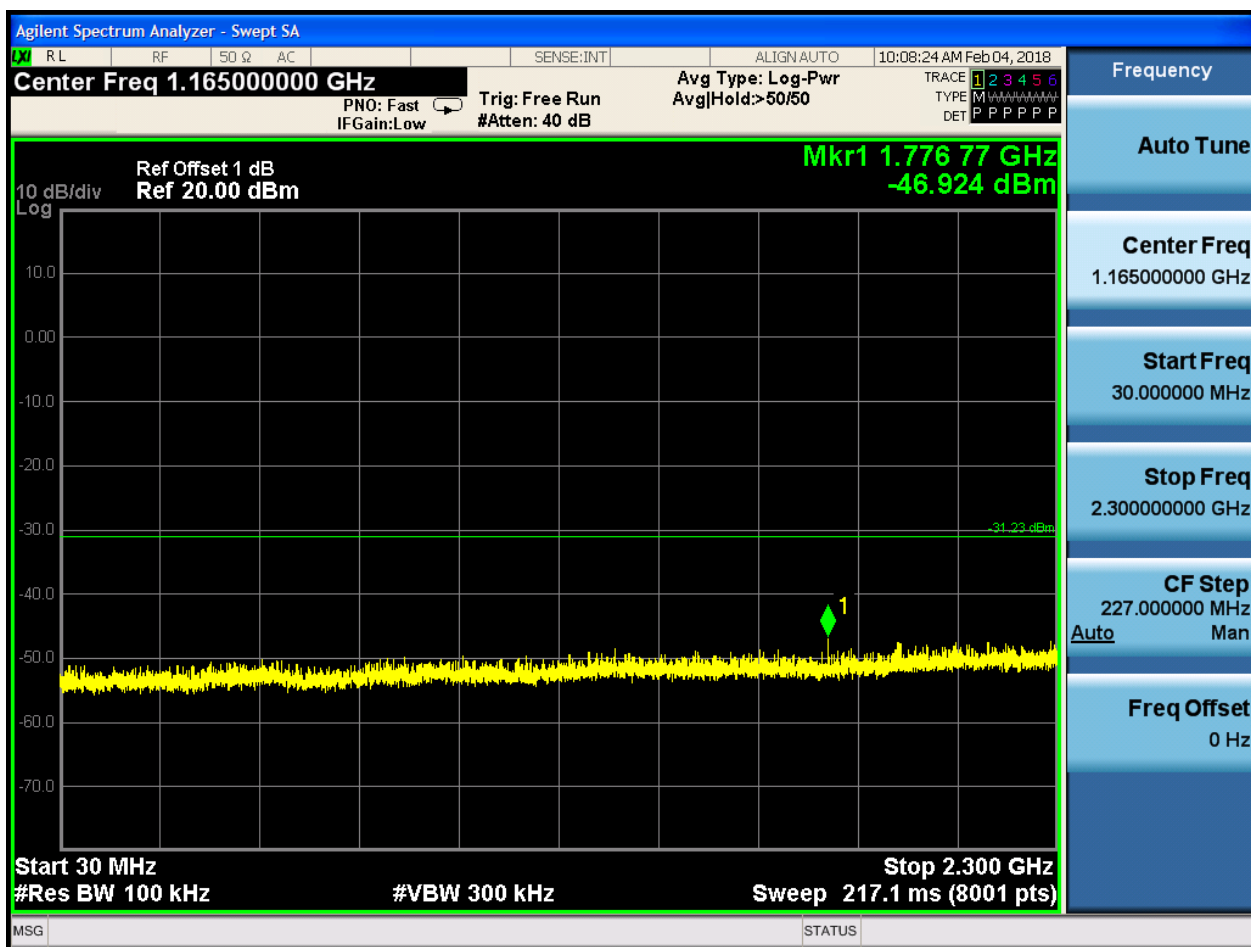
Start Freq 9.000 kHz

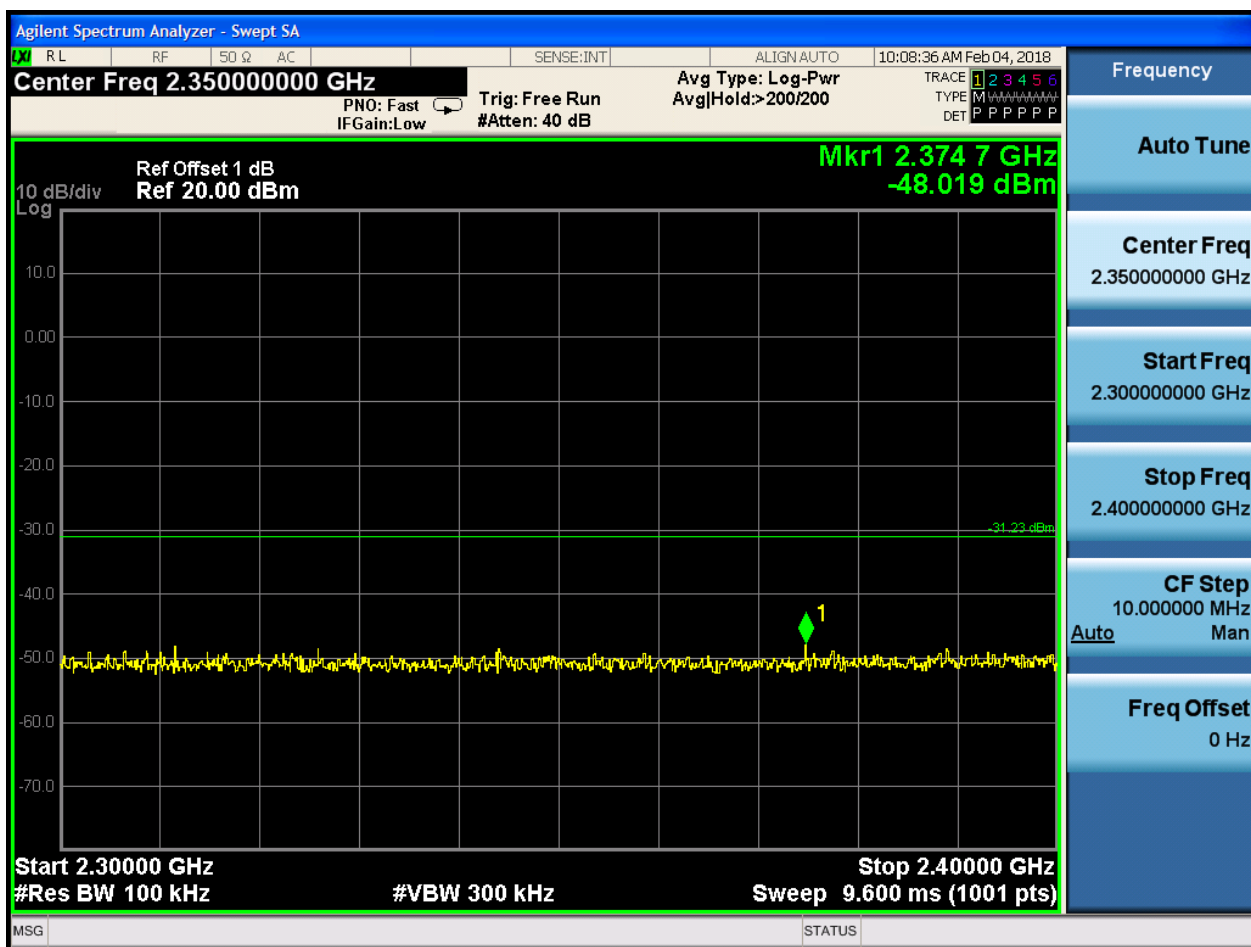
Stop Freq 150.000 kHz

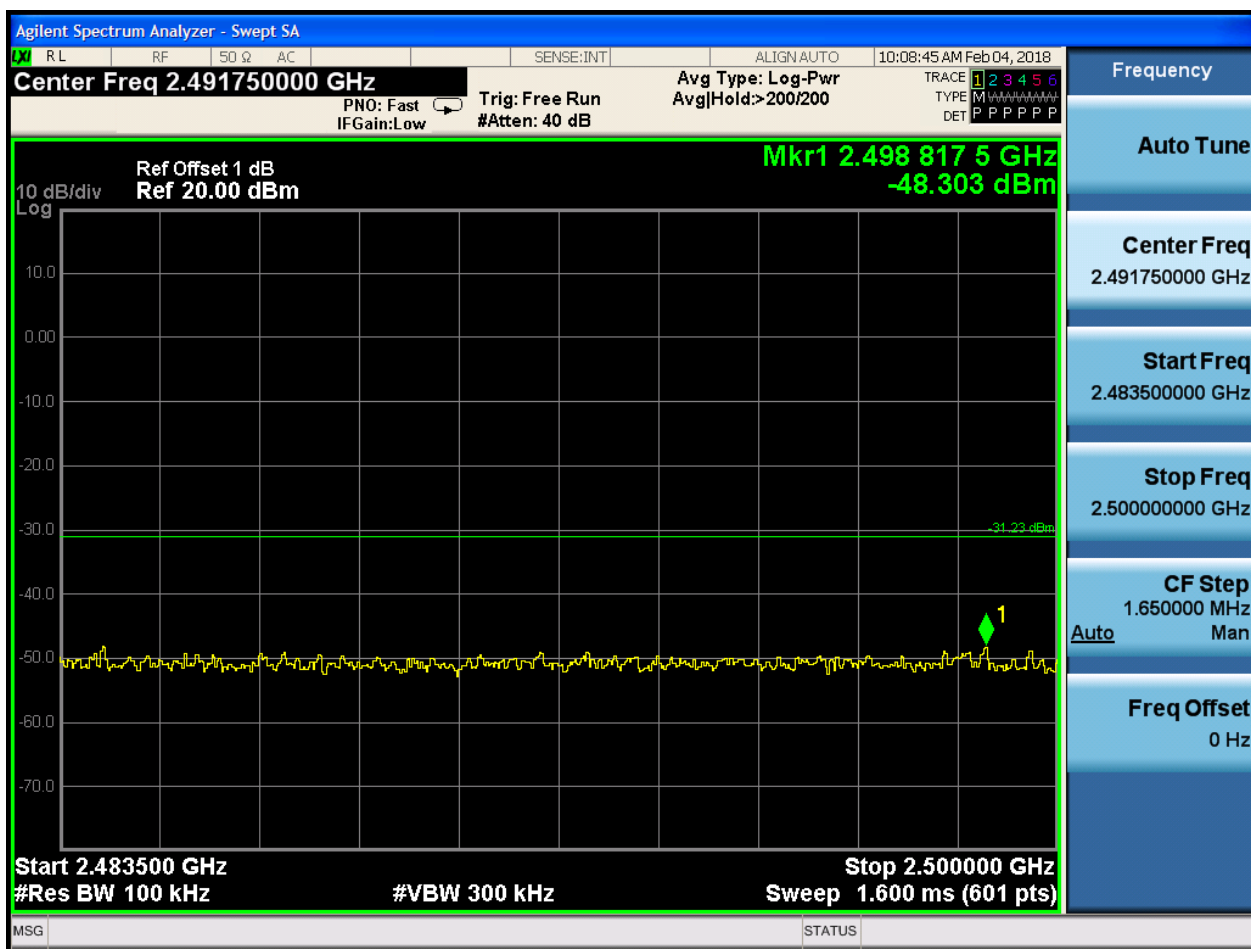
CF Step 14.100 kHz Man

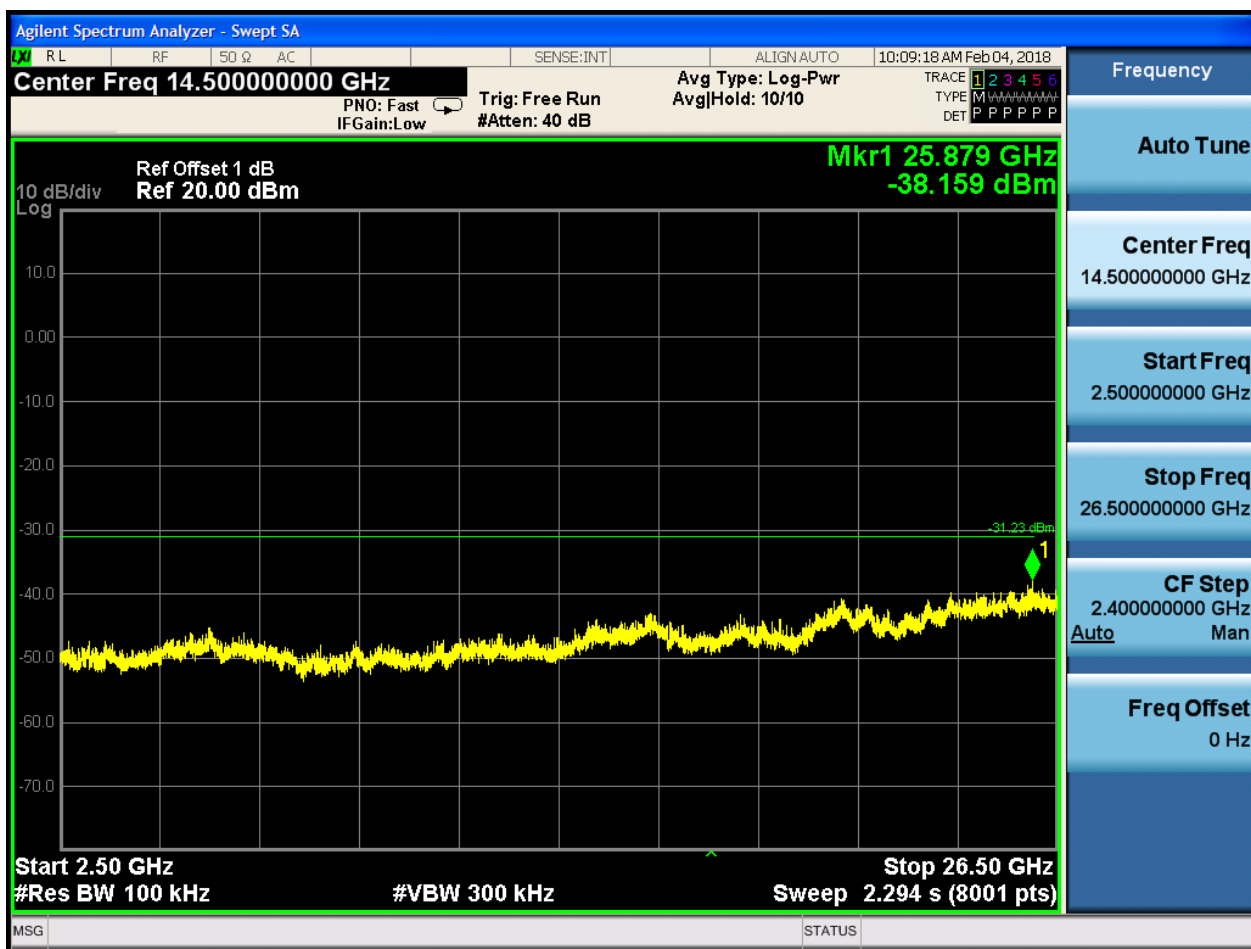
Freq Offset 0 Hz











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

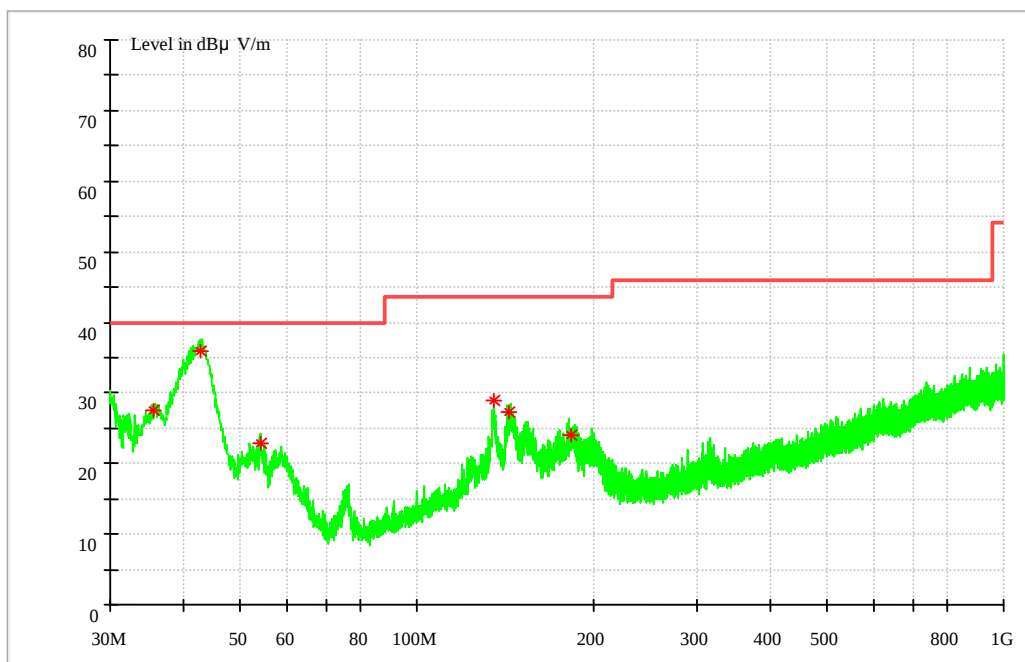
1.1 Part 1: Testing Range of “9 kHz to 30MHz”

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

1.2 Part 2: Testing Range of “30 MHz to 1 GHz”

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

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



MEASUREMENT RESULT: QP Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
35.68178	27.43	40	12.57	101	H	292	16.1
42.80968	35.91	40	4.09	101	H	296	17.4
54.27208	22.95	40	17.05	100	H	39	11.5
135.21230	29.04	43.5	14.46	101	H	151	13.6
143.09696	27.40	43.5	16.1	101	H	176	13.2
183.06086	24.04	43.5	19.46	152	V	116	11.6

Note:

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

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

2, Margin=Limit - Level

1.3 Part 3: Testing Range of “1GHz to 3GHz”

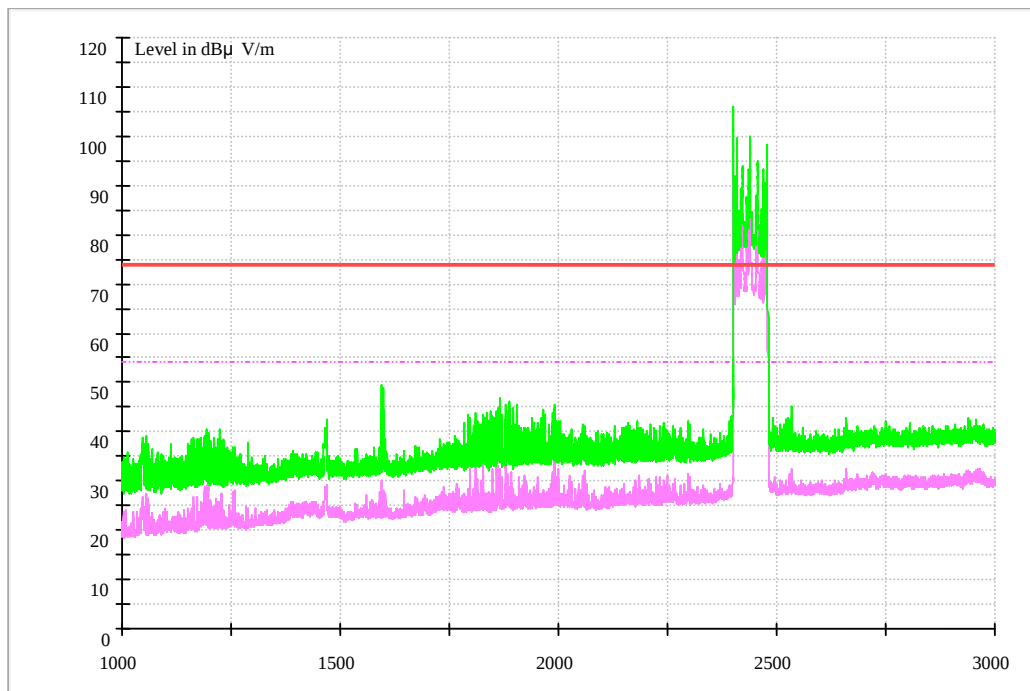
Note 1: The testing range of “1GHz to 3 GHz” is for checking radiated emissions located in restricted bands near the EUT operating bands.

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.

Test Mode:

1.3.1 Test Mode: TM1



1.3.1.1 Channel 0



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2390.0	27.28	54.00	26.72	150.0	V	57.0	-10.2

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2390.0	49.96	74.00	24.04	150.0	V	135.0	-10.2

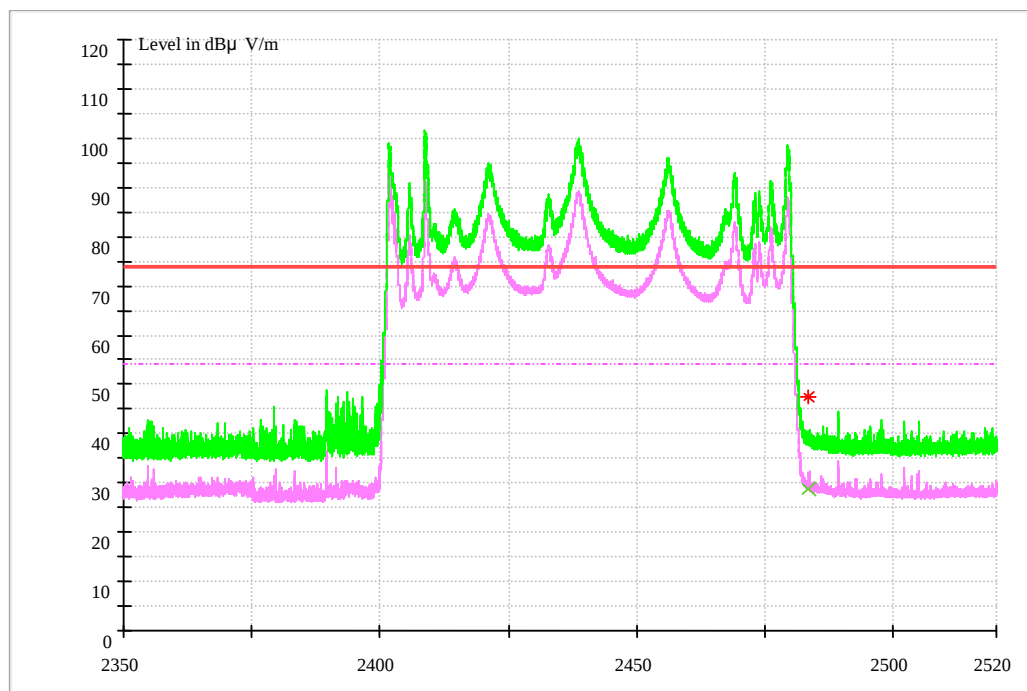
Note:

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

1.3.1.2 Channel 39



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2483.5	28.75	54.00	25.25	150.0	V	79.0	-6.8

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2483.5	47.57	74.00	26.43	150.0	V	151.0	-6.8

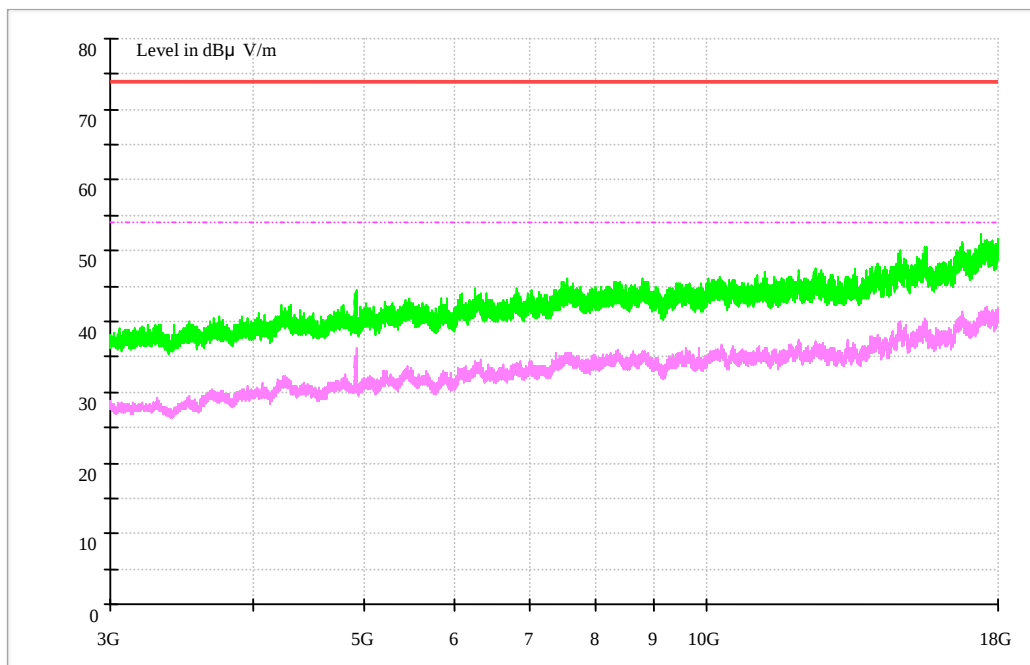
Note:

- 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

1.4 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).

Full Spectrum





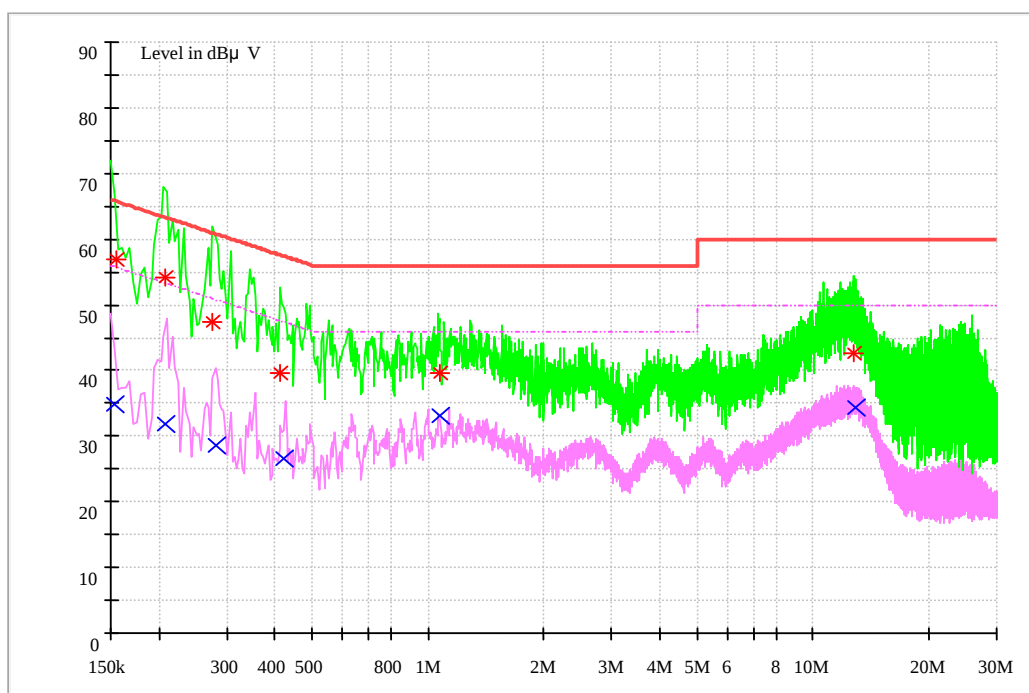
1.5 Part 5: Testing Range of “18 GHz to 26.5 GHz”

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

Appendix I: Conducted Emission at Power Port

Note: RBW =9 kHz, VBW = 30 kHz

Channel 39



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.156008	56.82	65.67	9.7	8.85	N	FLO
0.207096	54.24	63.32	9.7	9.08	N	FLO
0.276268	47.47	60.93	9.7	13.46	N	FLO
0.413191	39.51	57.59	9.7	18.08	N	FLO
1.07013	39.66	56	9.7	16.34	N	FLO
12.773095	42.62	60	10	17.38	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.153476	34.72	55.81	9.7	21.09	N	FLO
0.207169	31.77	53.32	9.7	21.55	N	FLO
0.281674	28.68	50.76	9.7	22.08	N	FLO
0.421266	26.58	47.42	9.7	20.84	N	FLO
1.07271	33.07	46	9.7	12.93	L1	FLO
12.940337	34.41	50	10	15.59	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