



# Appendix for Testreport



## 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.

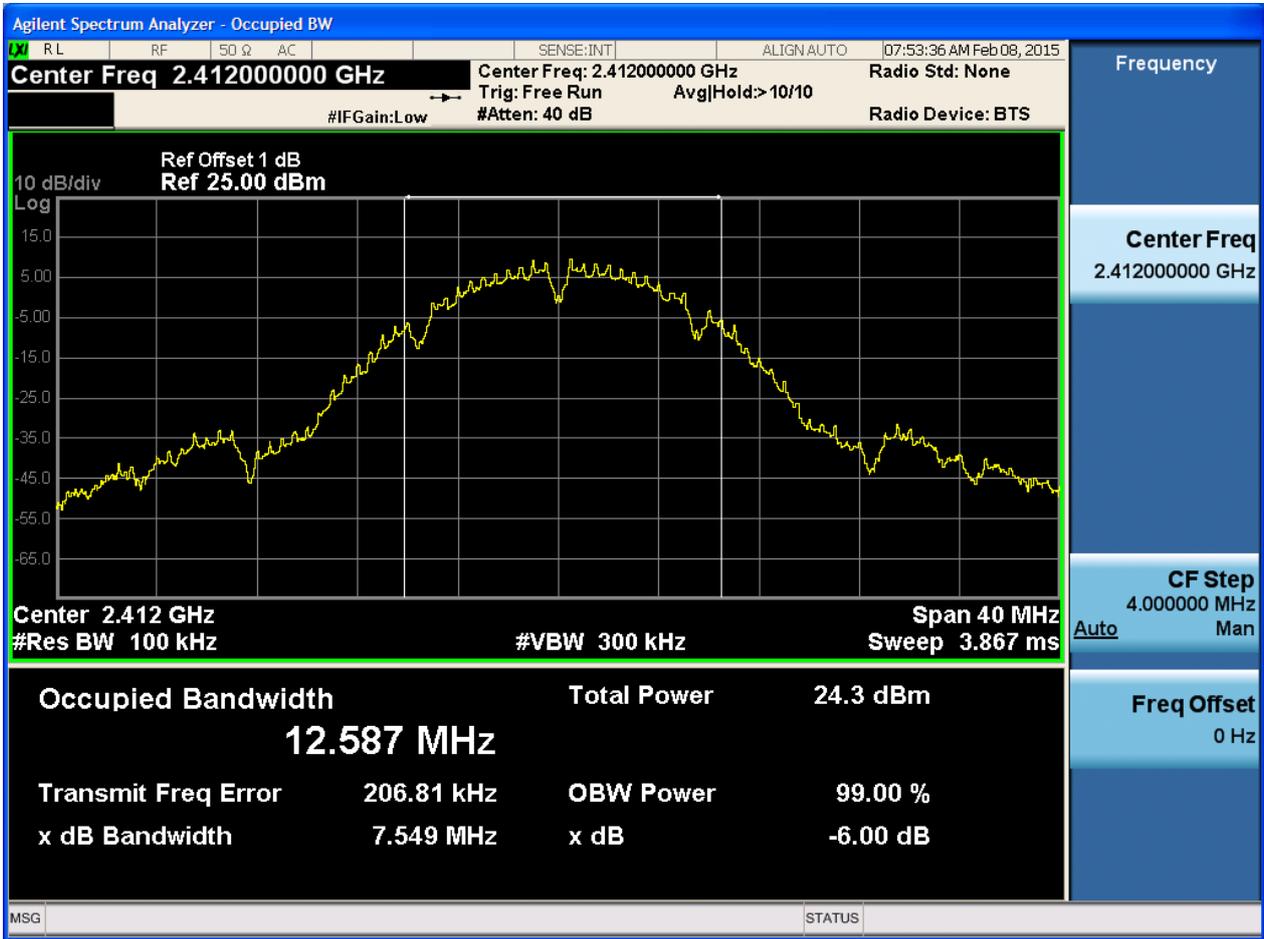
### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	7.55	pass
11B	M	2437	Ant 1	7.15	pass
11B	H	2462	Ant 1	7.59	pass
11G	L	2412	Ant 1	15.95	pass
11G	M	2437	Ant 1	16.42	pass
11G	H	2462	Ant 1	16.43	pass
11N20	L	2412	Ant 1	16.61	pass
11N20	M	2437	Ant 1	17.66	pass
11N20	H	2462	Ant 1	17.63	pass



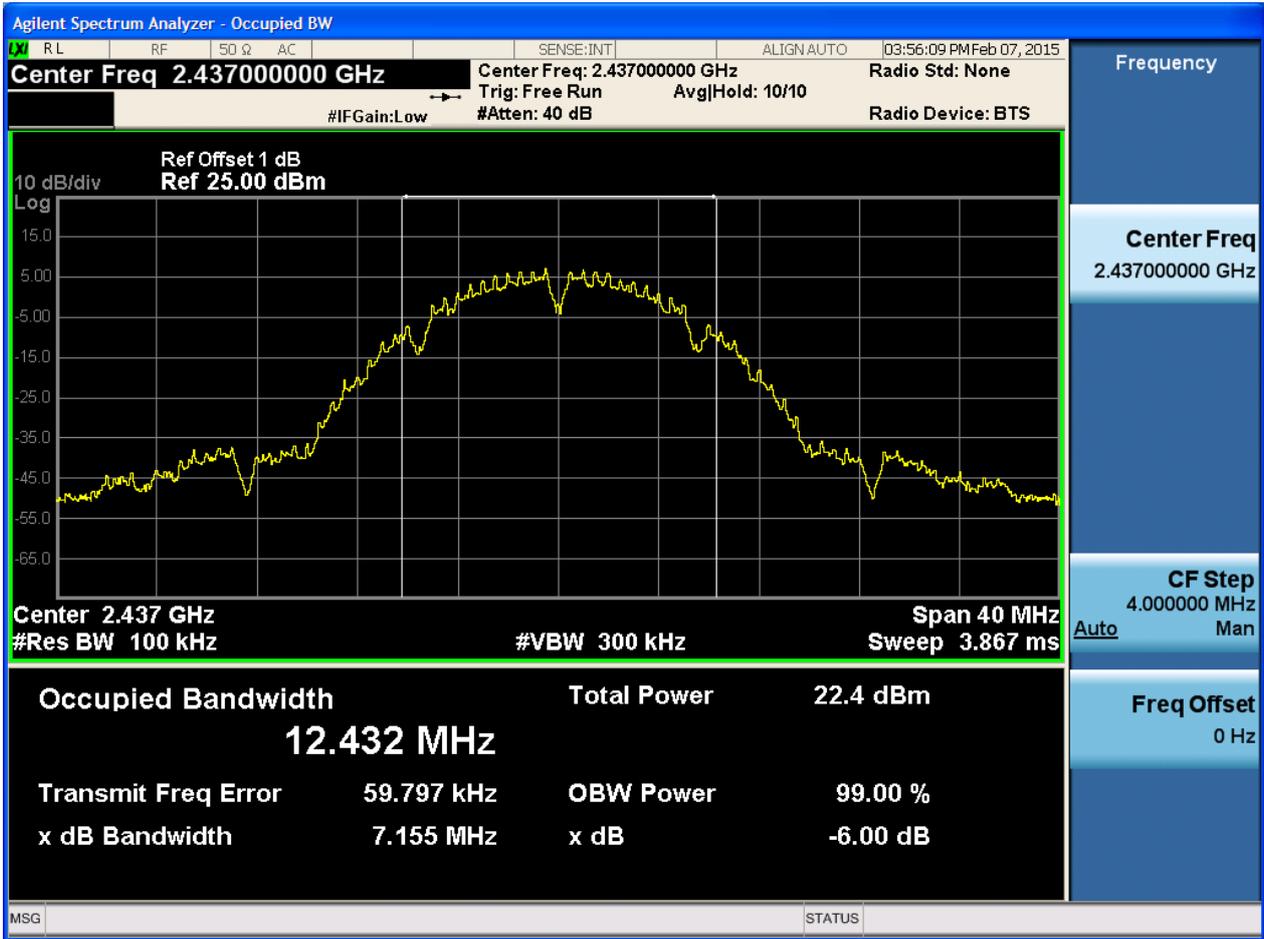
### Part II - Test Plots

#### 2.1 11B\_L@Ant 1



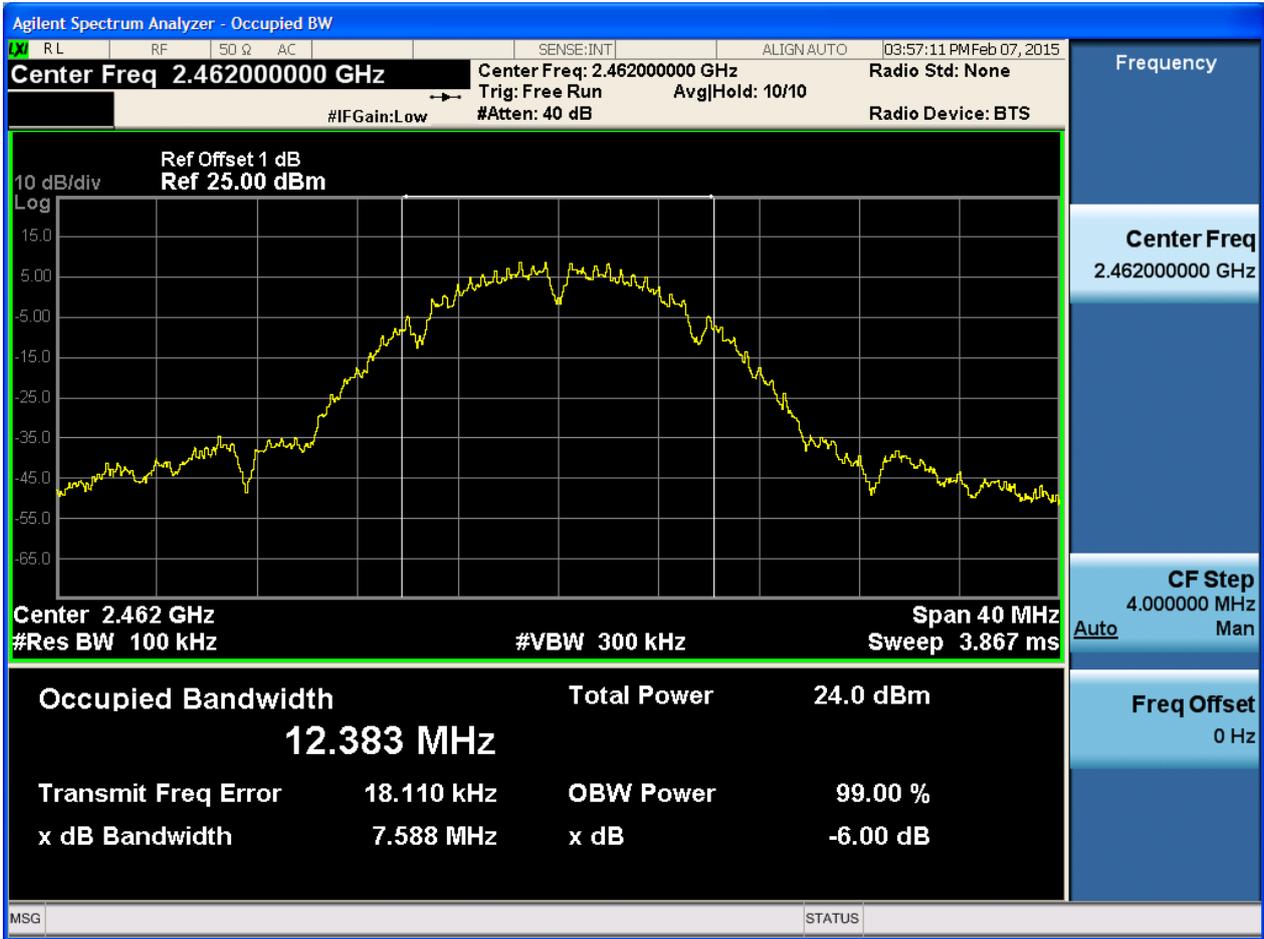


2.2 11B\_M@Ant 1



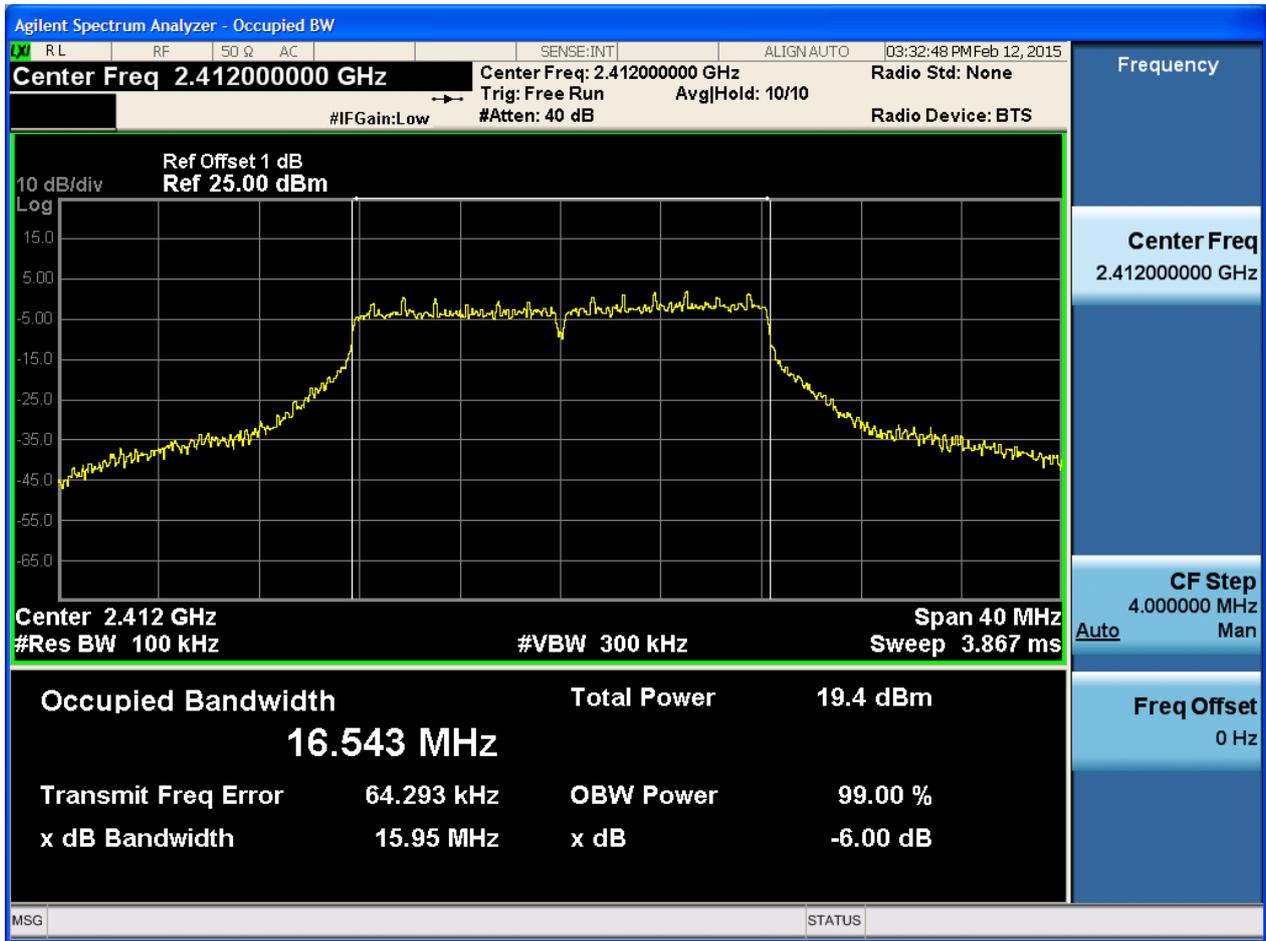


### 2.3 11B\_H@Ant 1



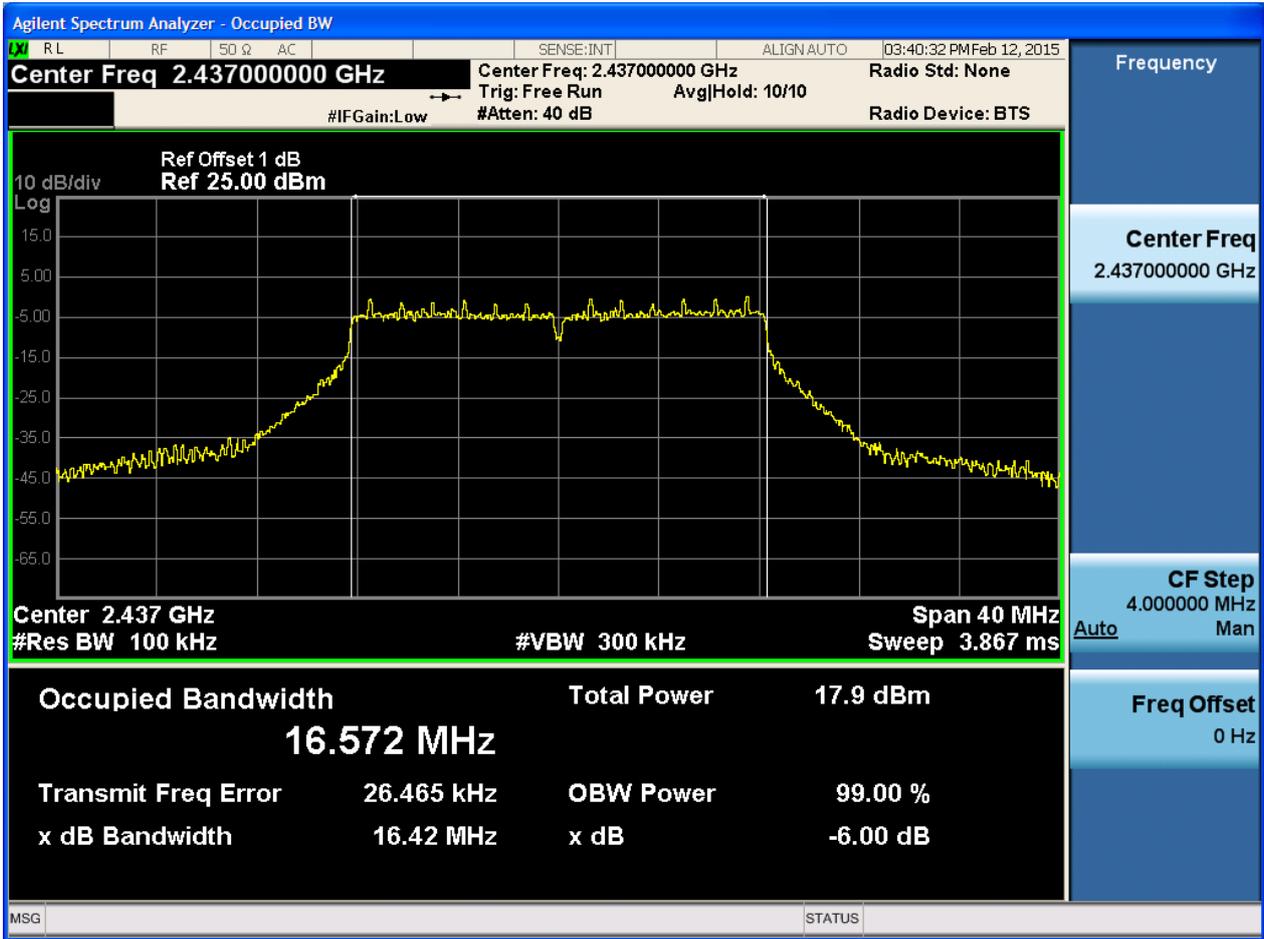


### 2.4 11G\_L@Ant 1



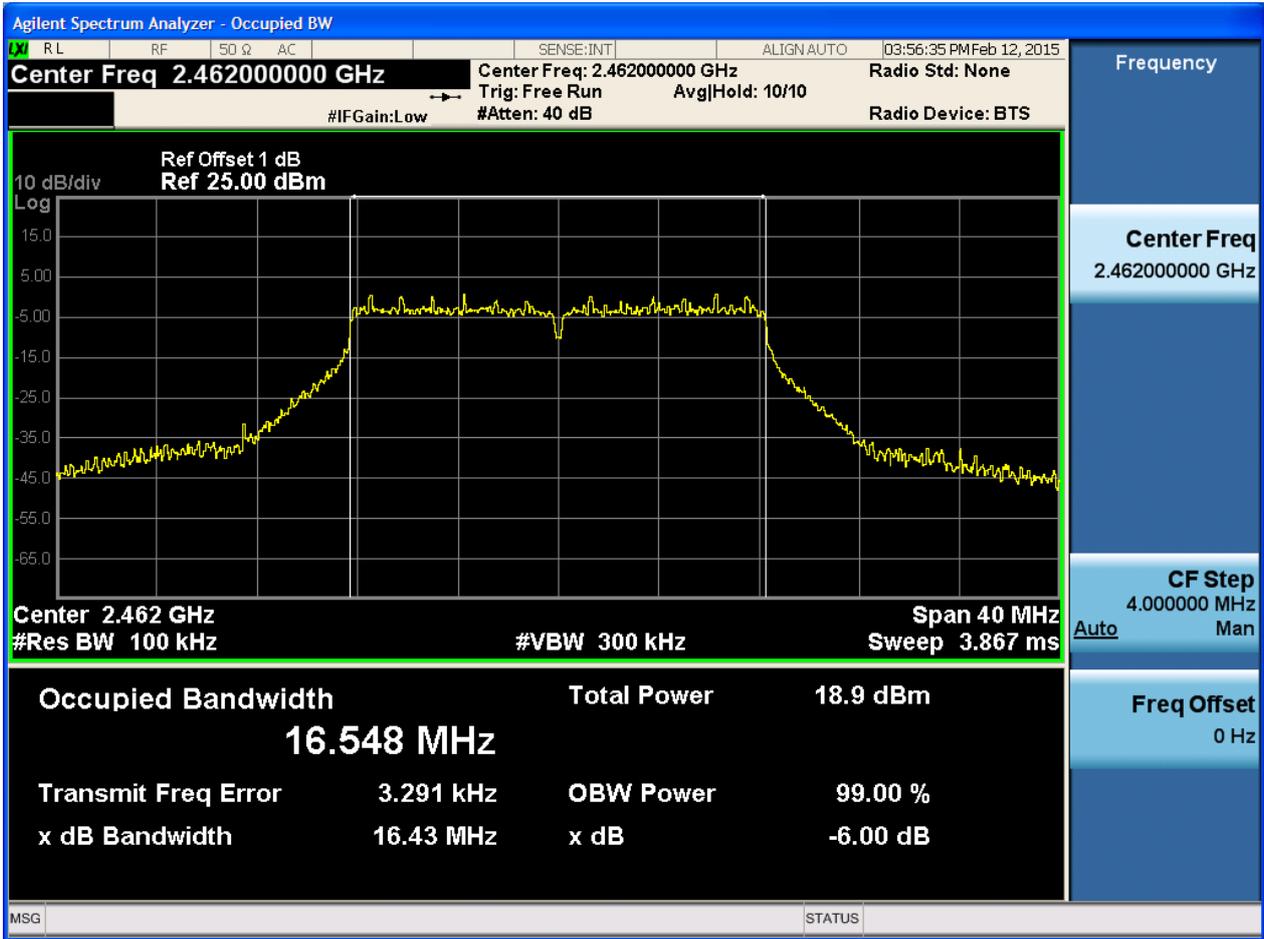


2.5 11G\_M@Ant 1



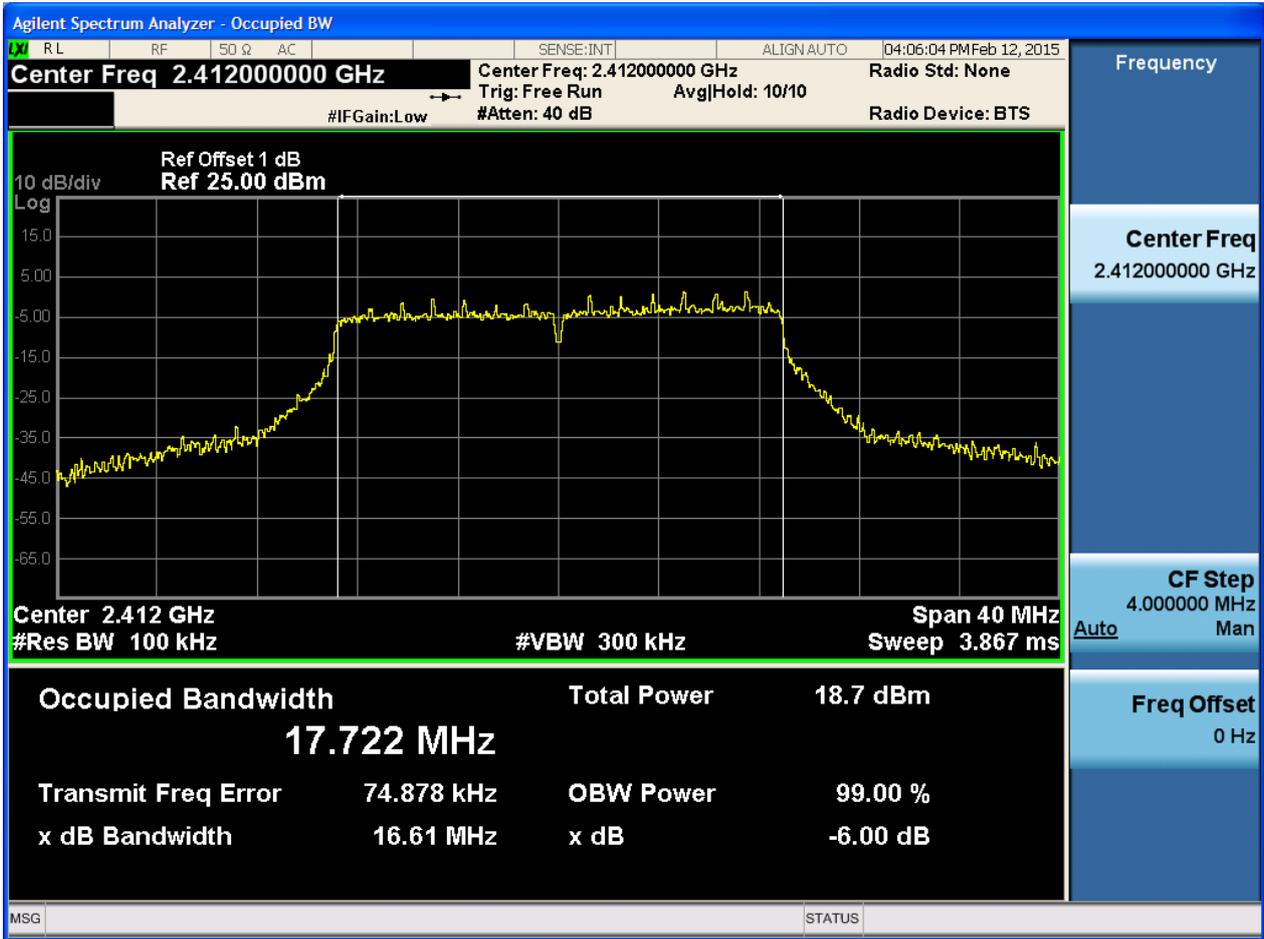


2.6 11G\_H@Ant 1



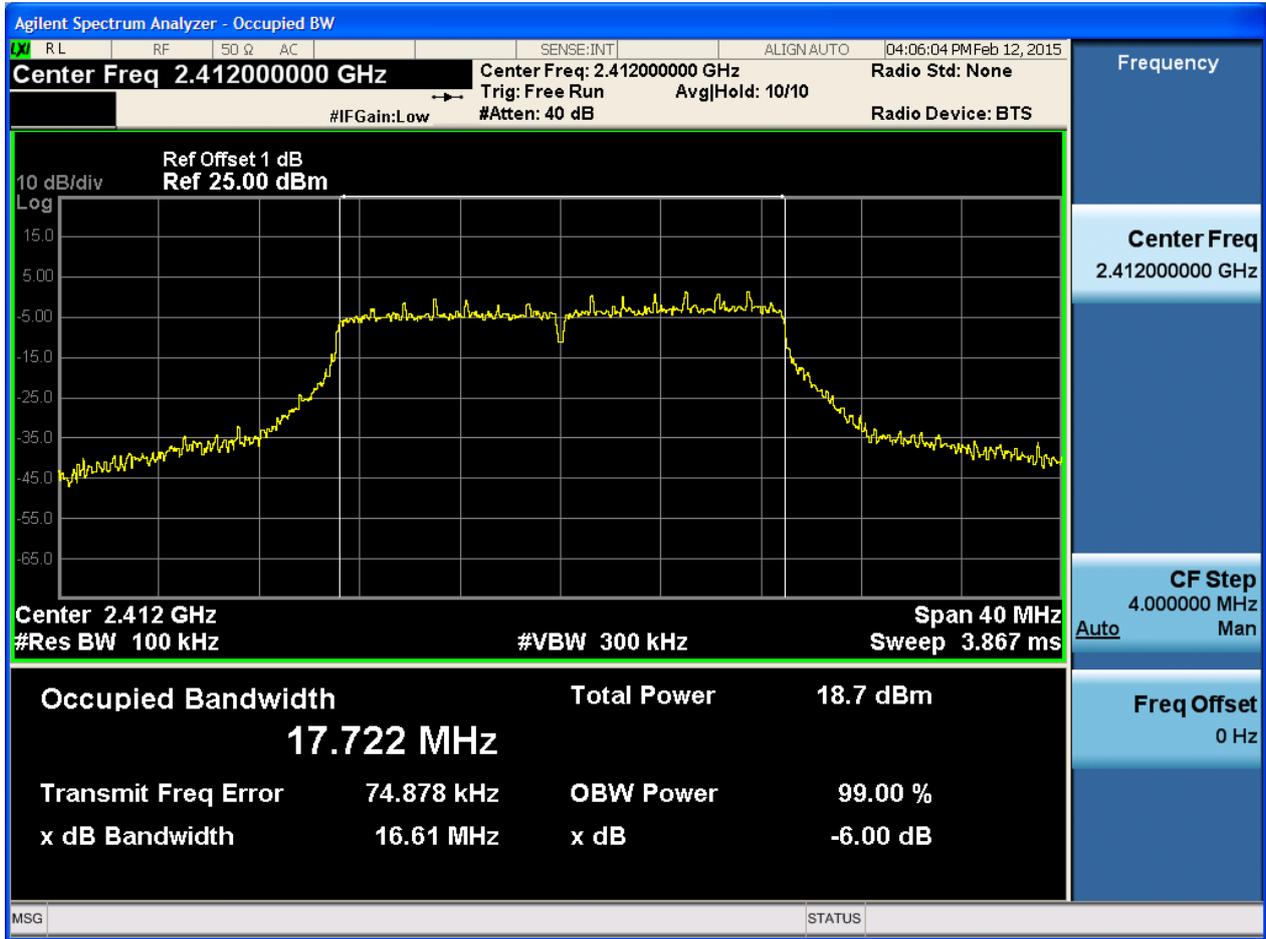


2.7 11N20\_L@Ant 1



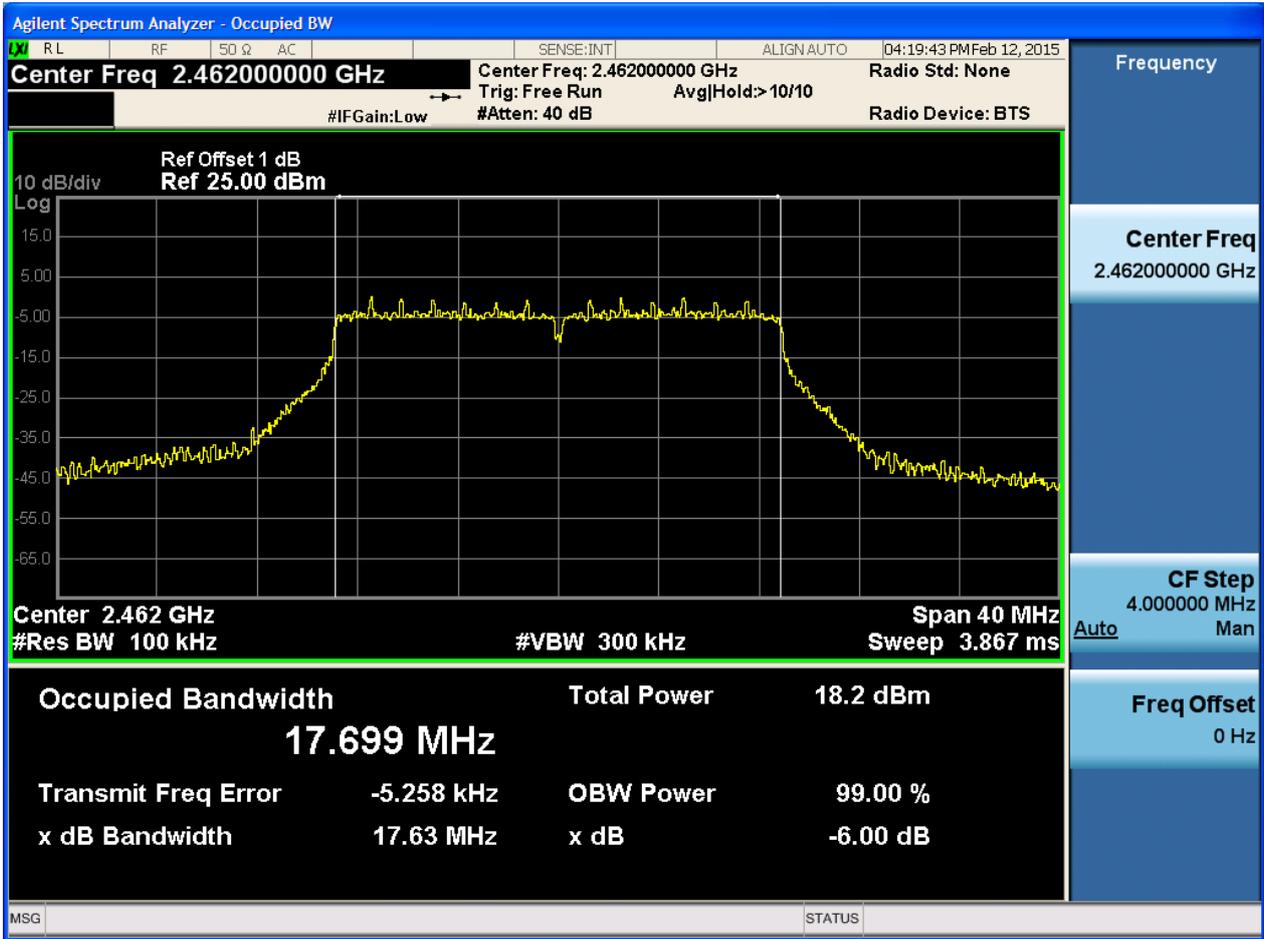


2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1





## 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.

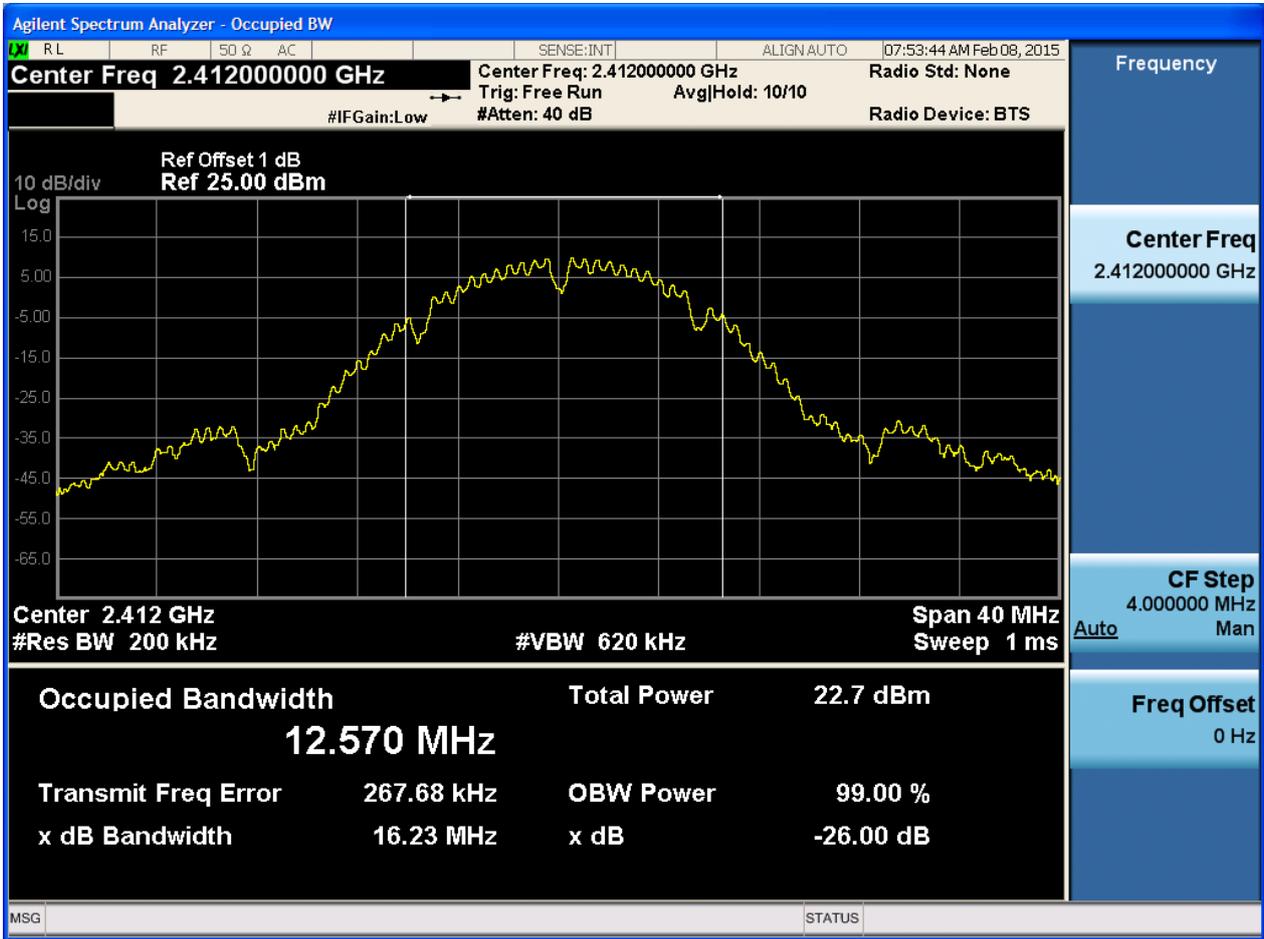
### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	12.37	pass
11B	M	2437	Ant 1	12.46	pass
11B	H	2462	Ant 1	12.30	pass
11G	L	2412	Ant 1	16.83	pass
11G	M	2437	Ant 1	16.88	pass
11G	H	2462	Ant 1	16.75	pass
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11N20	M	2437	Ant 1	17.89	pass
11N20	H	2462	Ant 1	17.82	pass



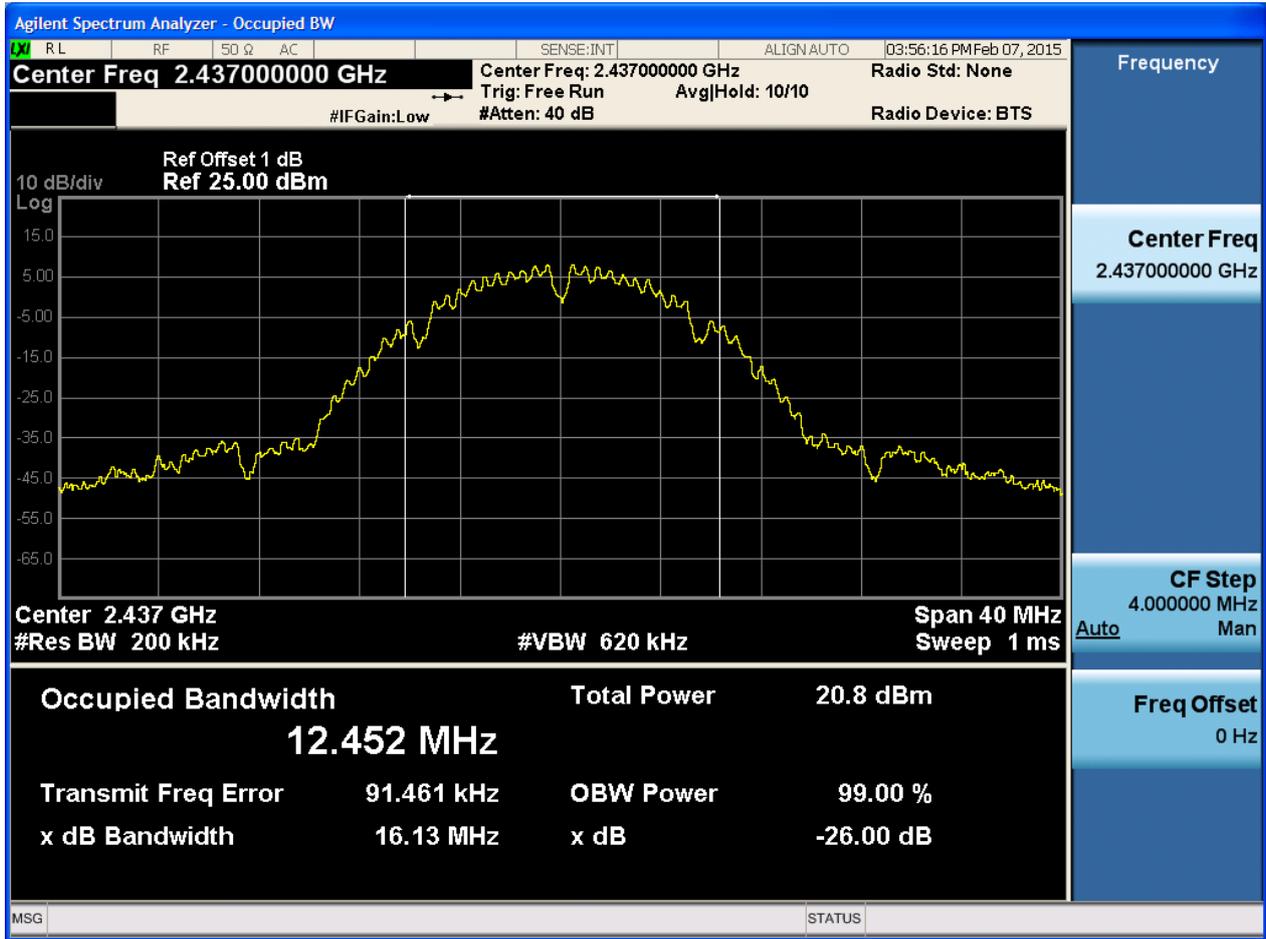
Part II - Test Plots

2.1 11B\_L@Ant 1



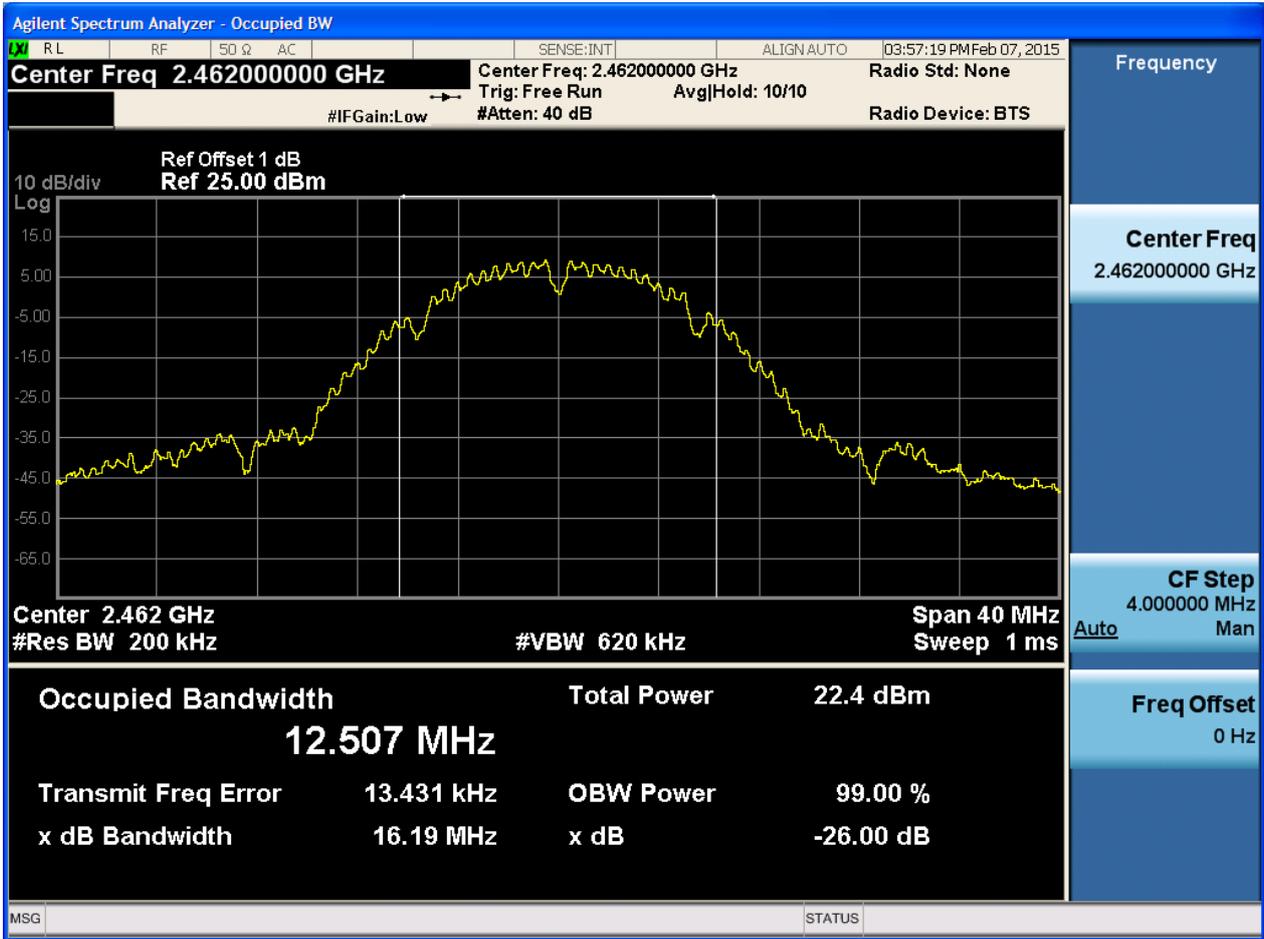


### 2.2 11B\_M@Ant 1



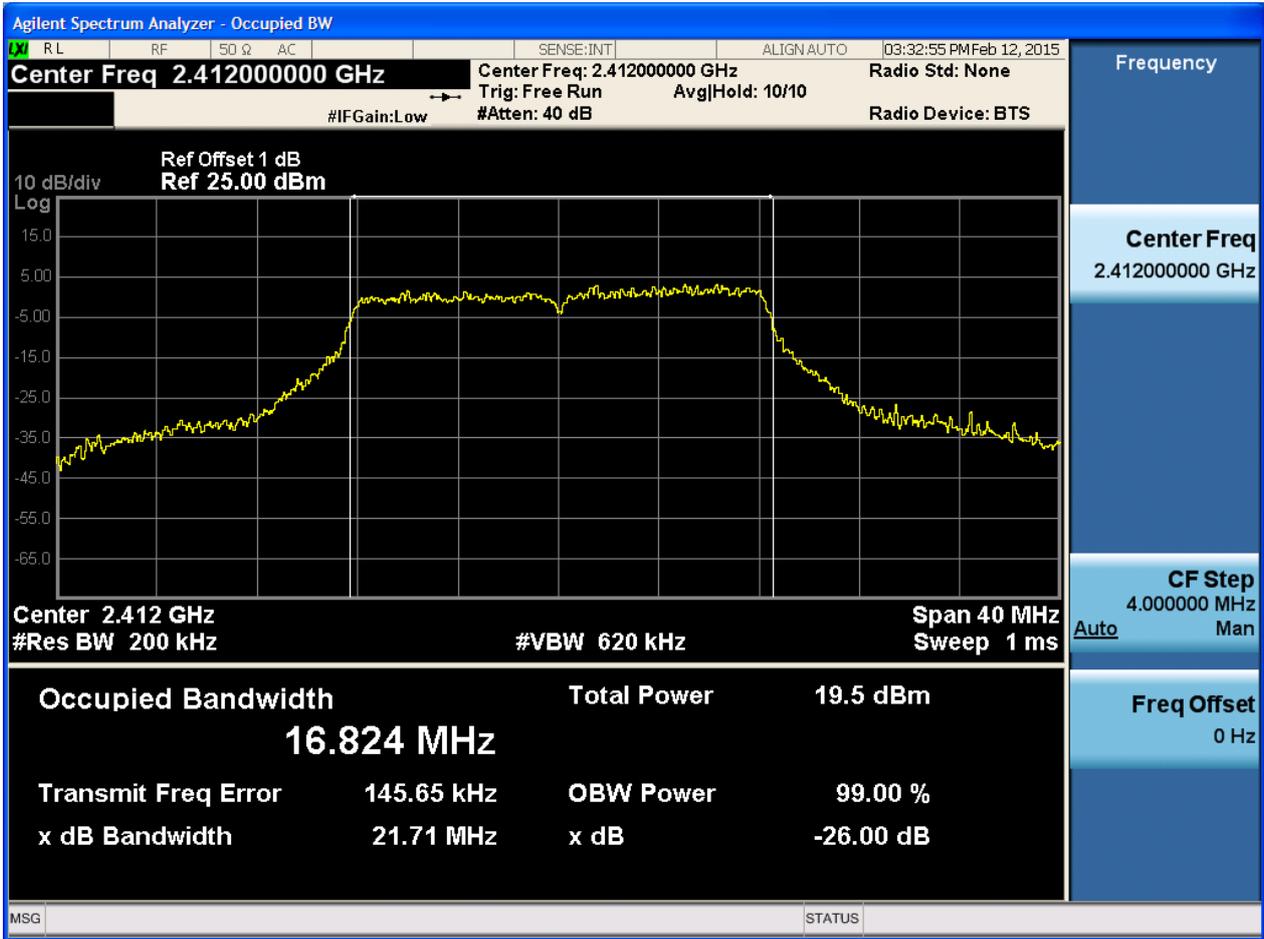


2.3 11B\_H@Ant 1



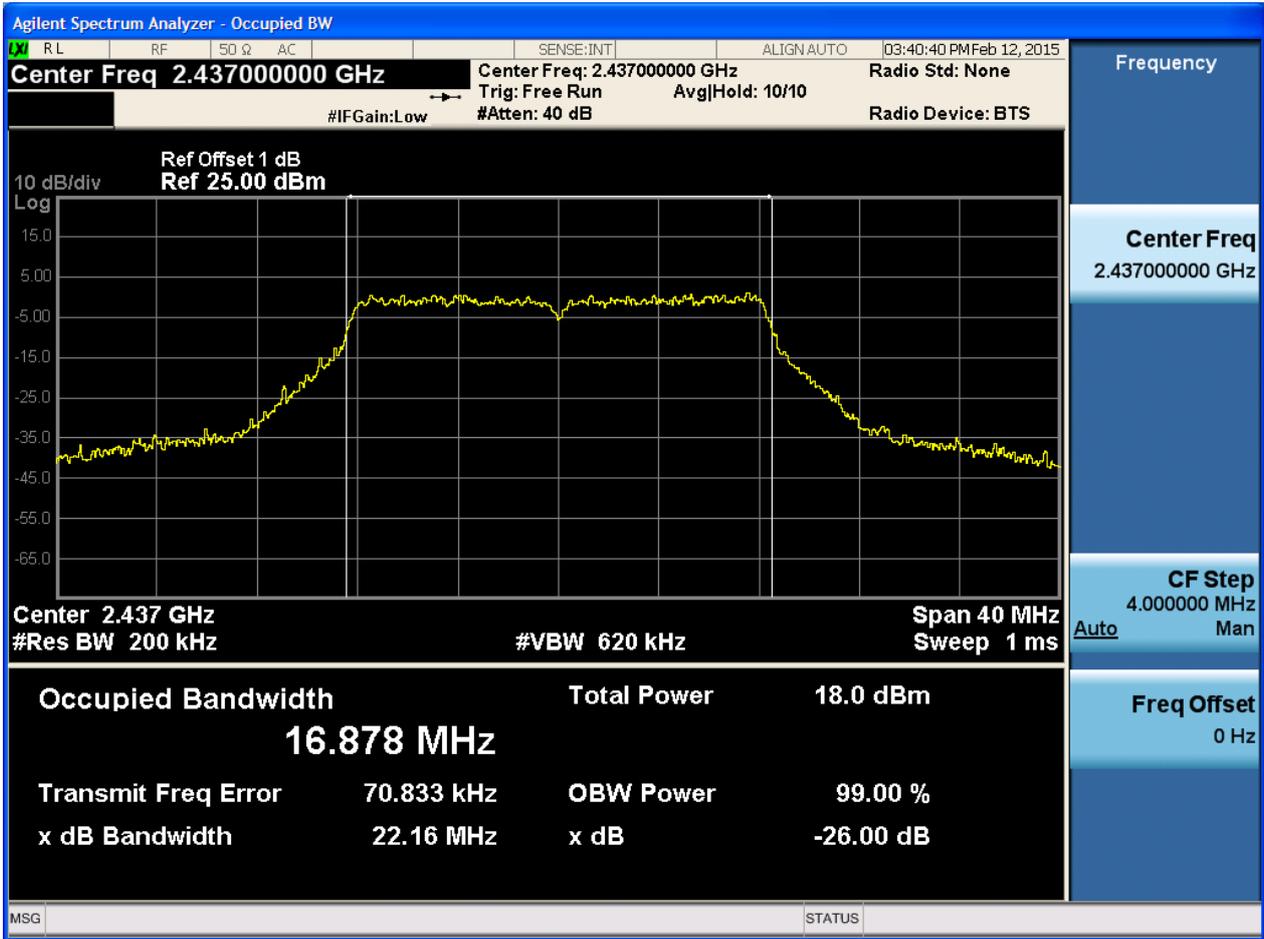


### 2.4 11G\_L@Ant 1



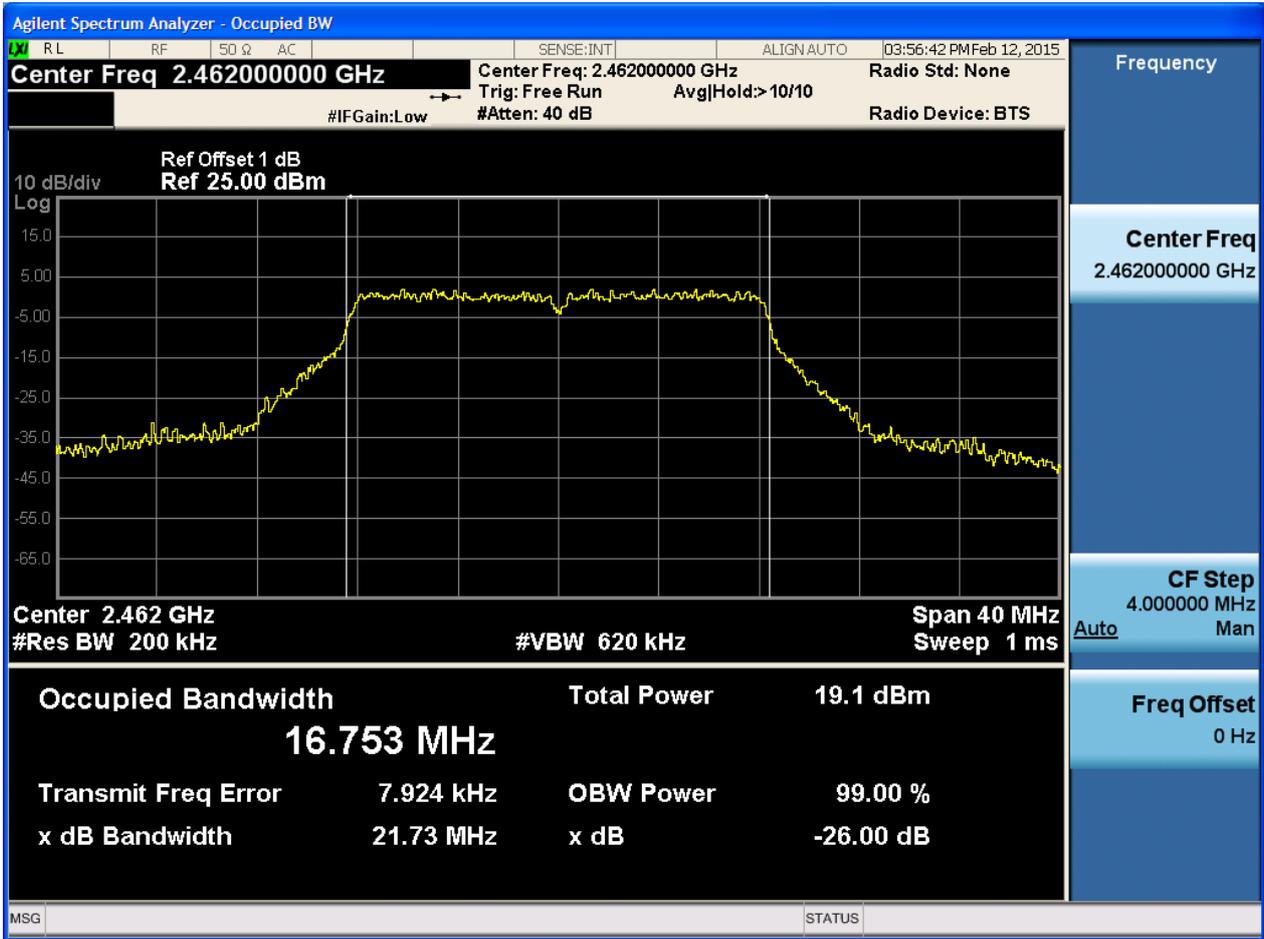


2.5 11G\_M@Ant 1



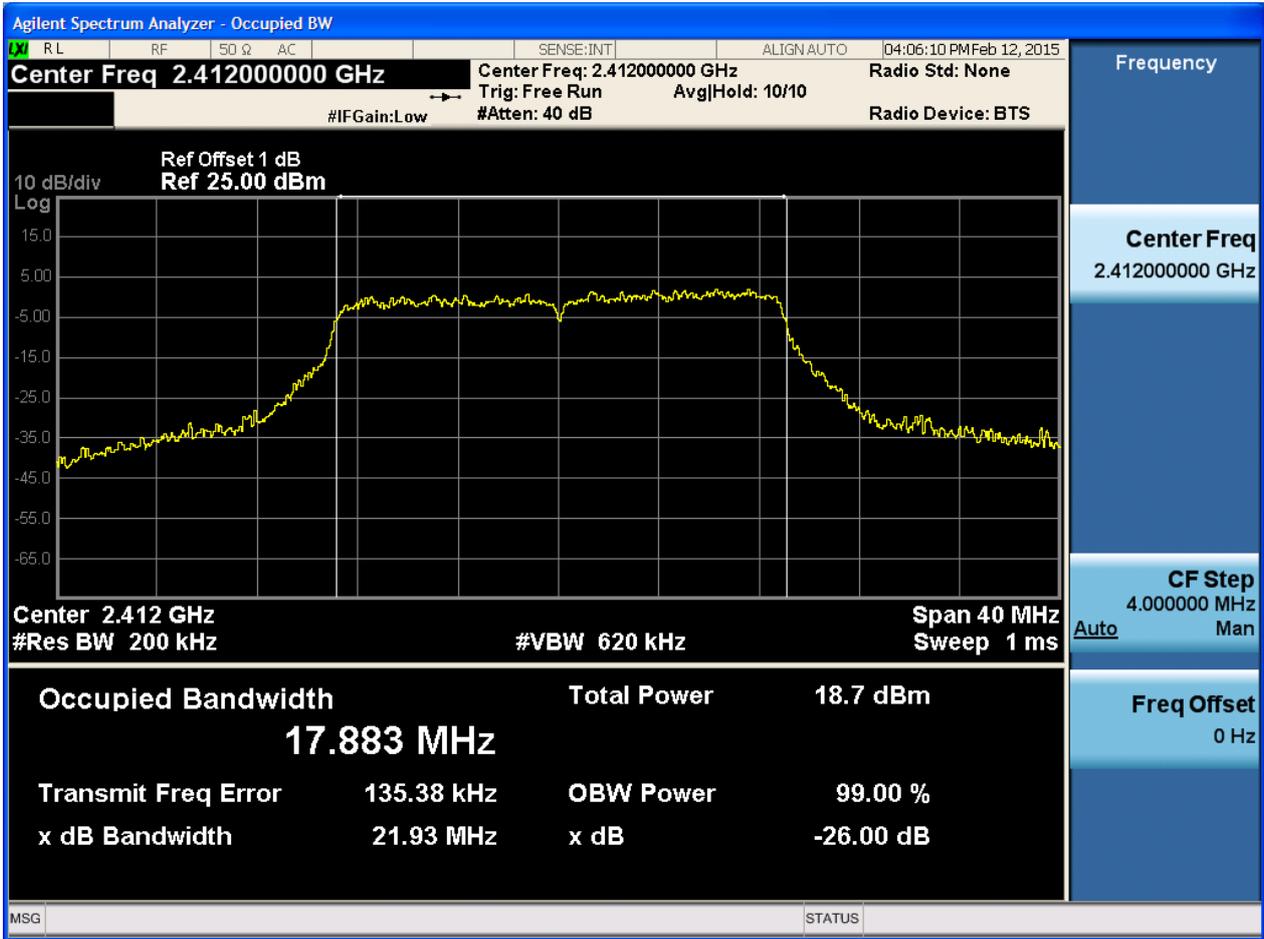


### 2.6 11G\_H@Ant 1



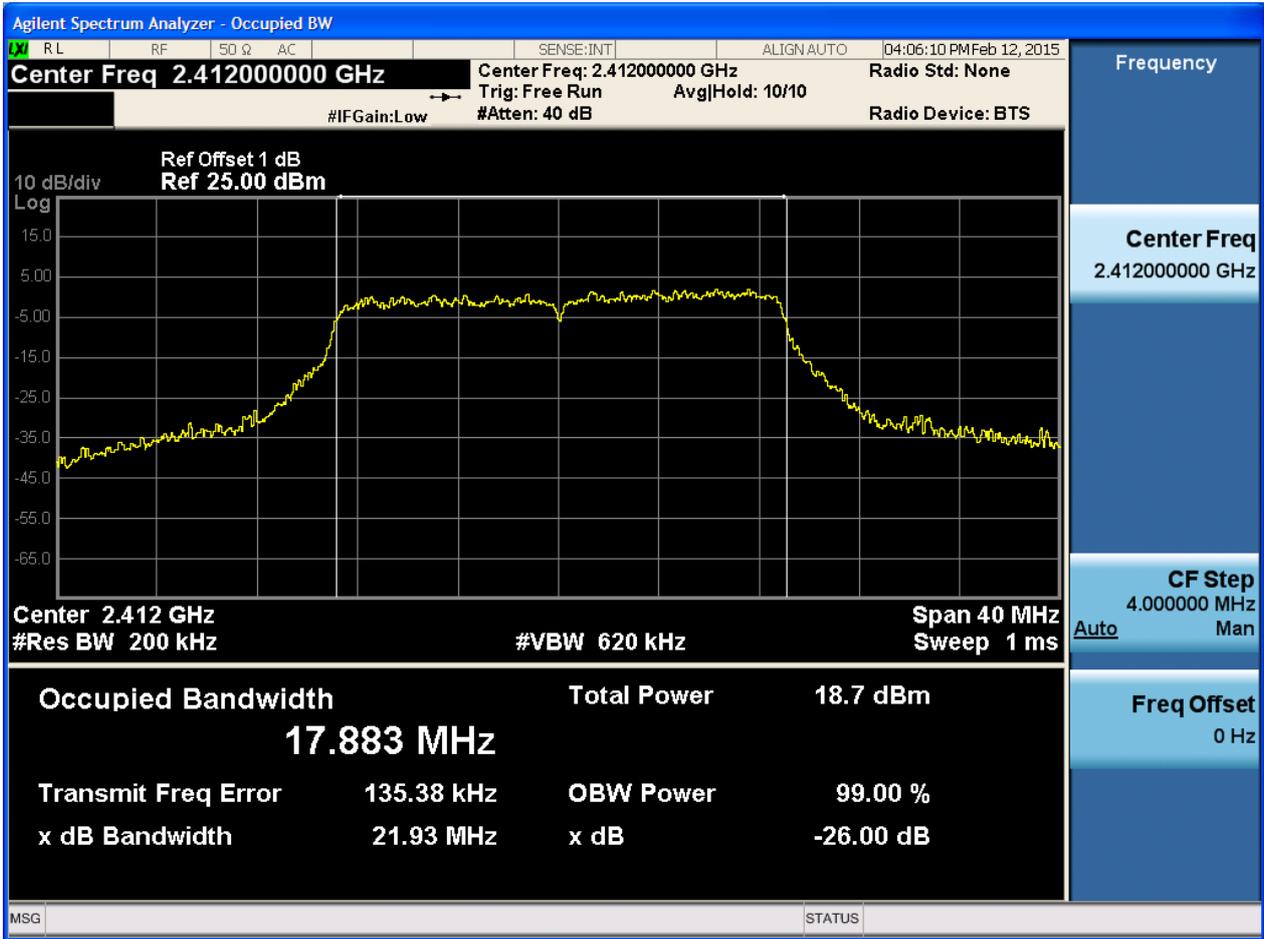


2.7 11N20\_L@Ant 1



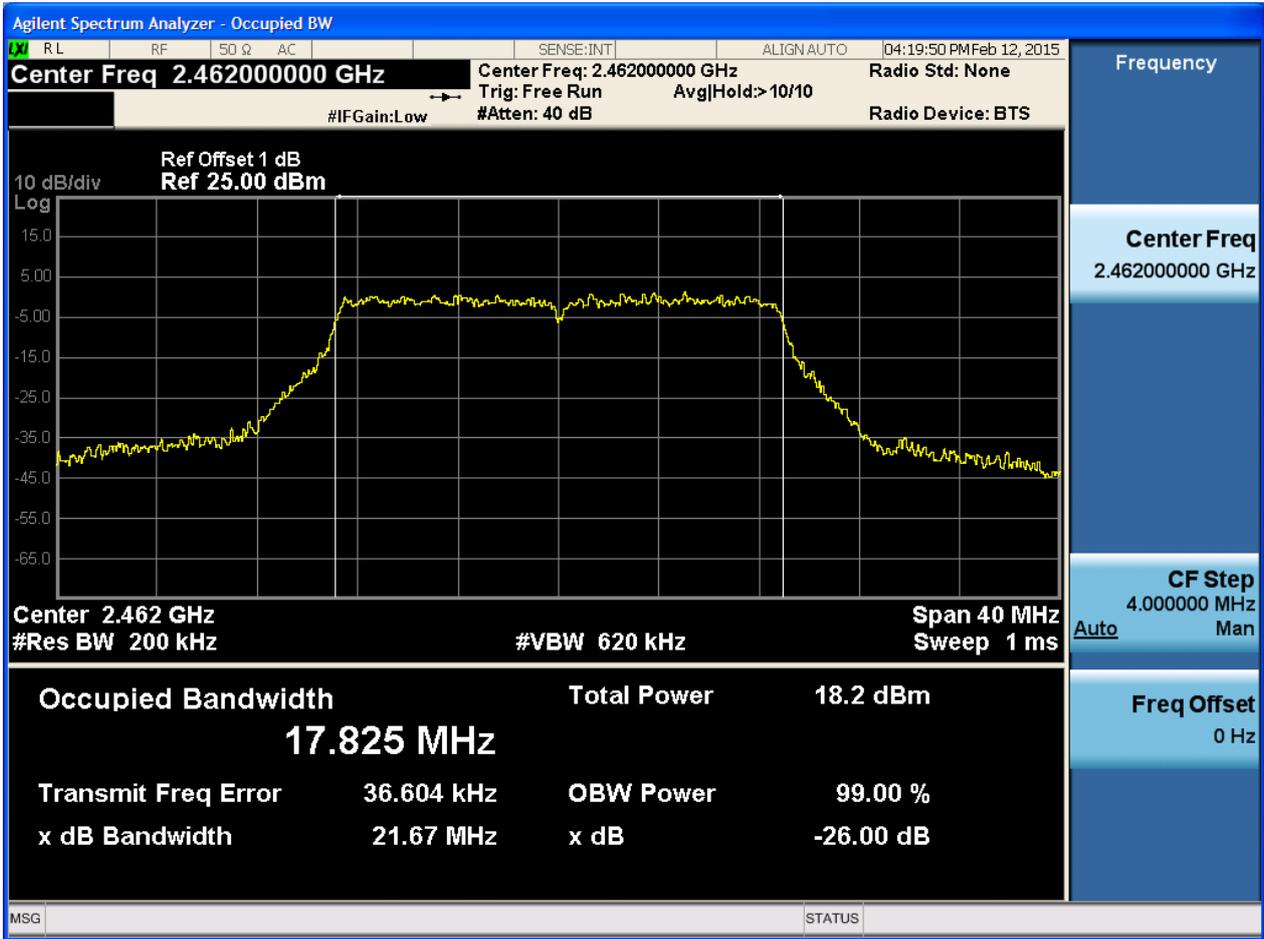


### 2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1





## Appendix C: Duty Cycle

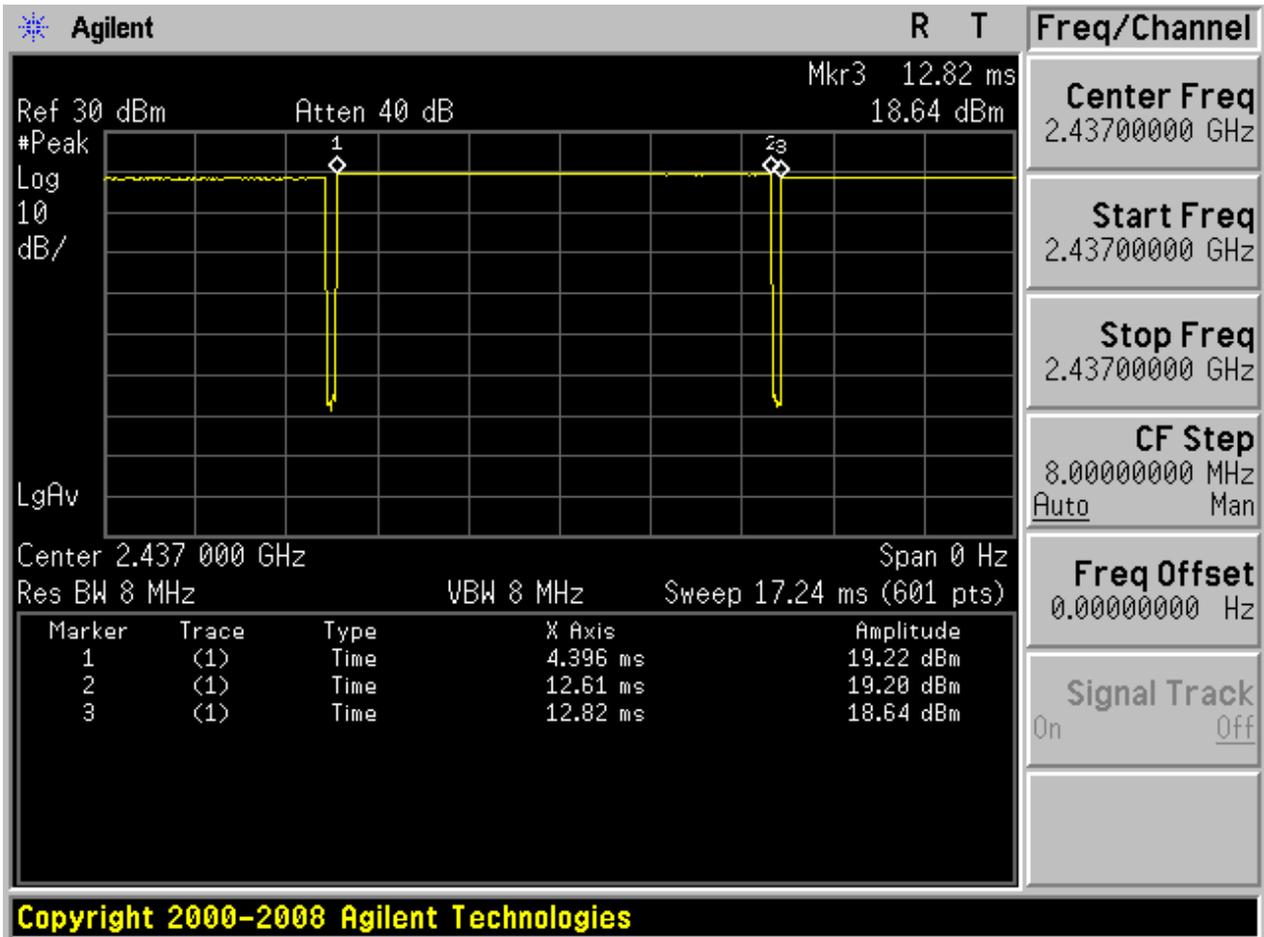
### Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
11B	Ant 1: CH6,	98
11G	Ant 1: CH6,	87
11N_20M	Ant 1:,CH6,	87

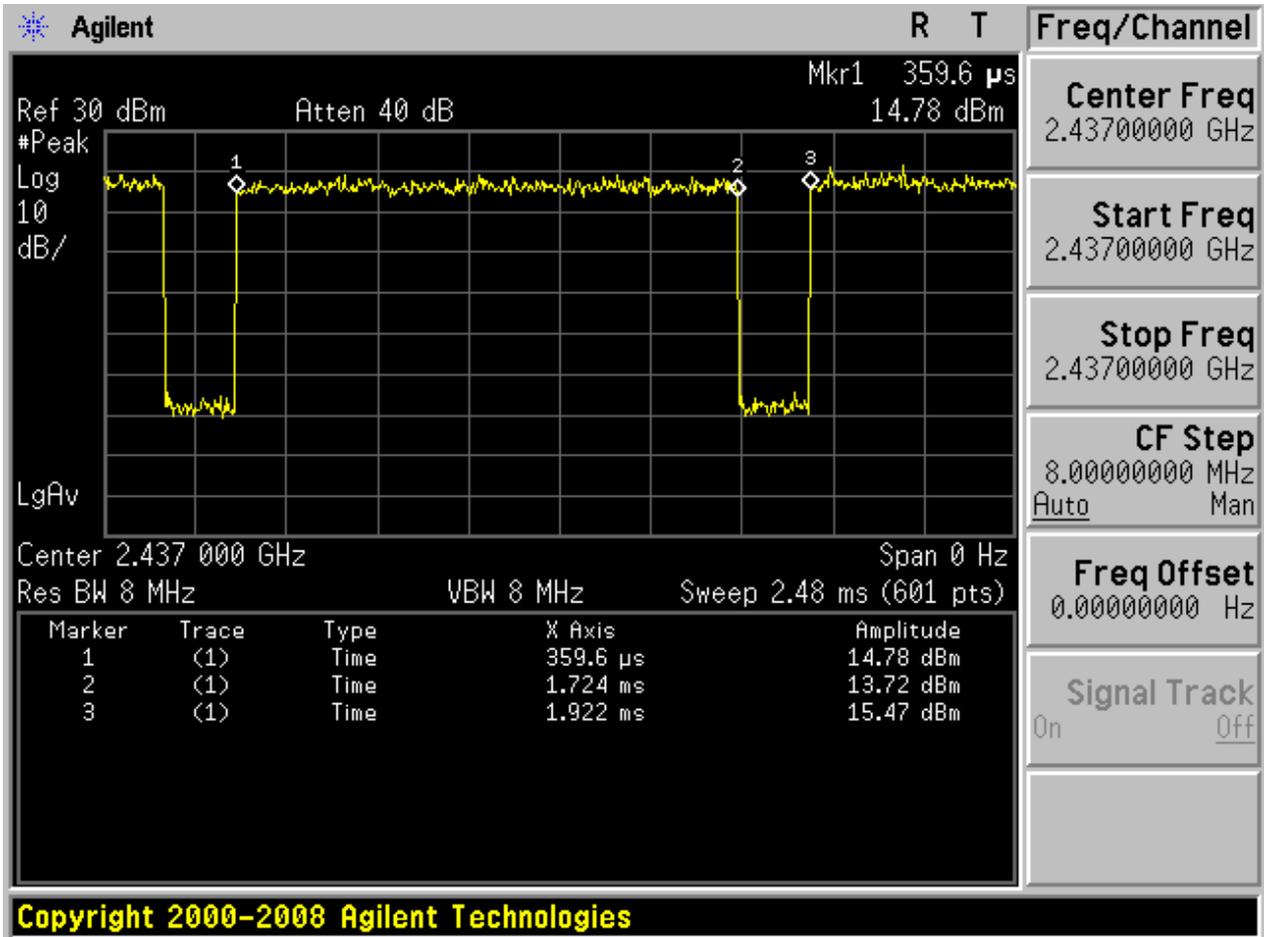


Part II - Test Plots

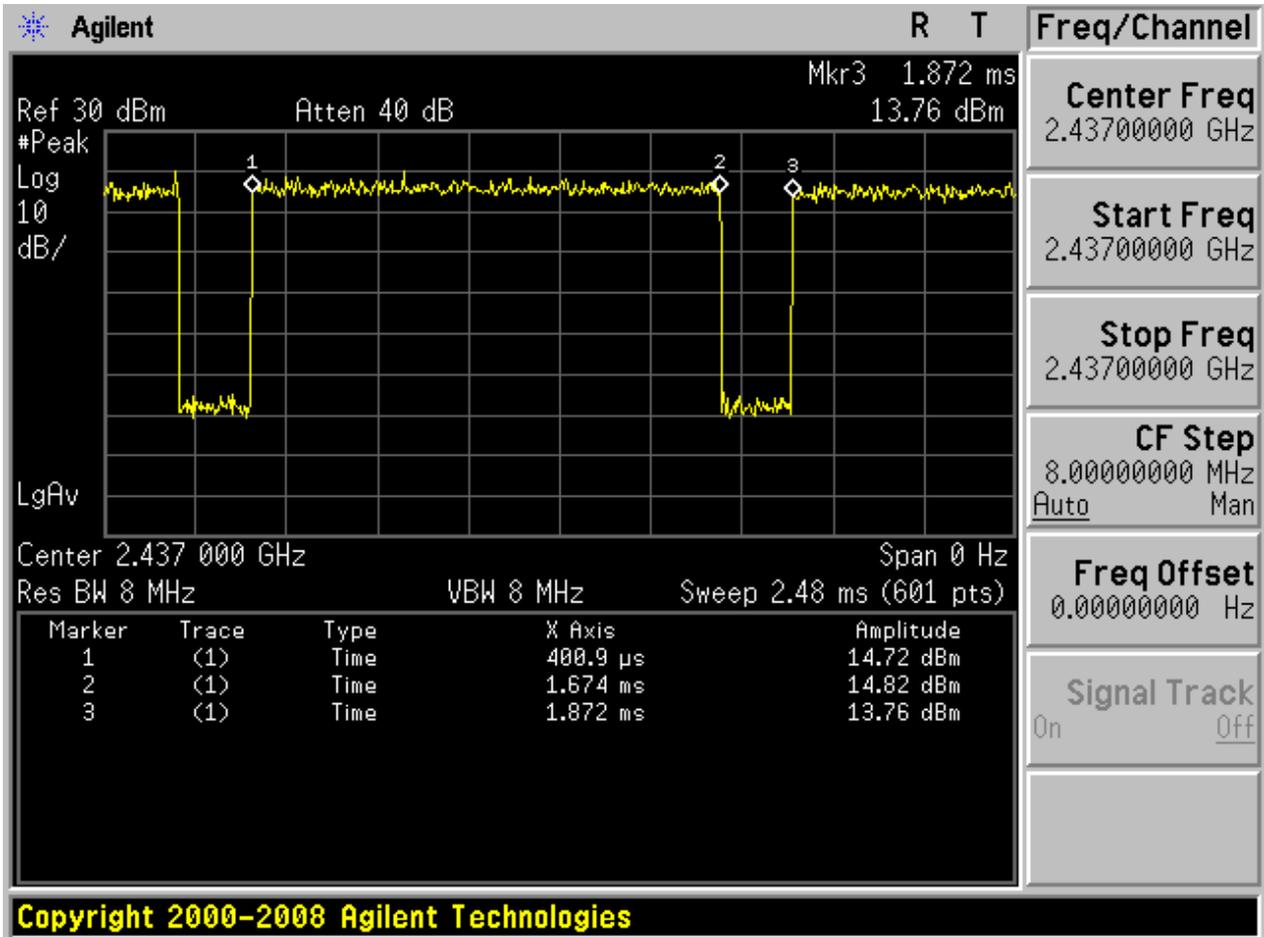
2.1 11B



2.2 11G



2.3 11N20





## Appendix D Maximum Conducted Average Output Power

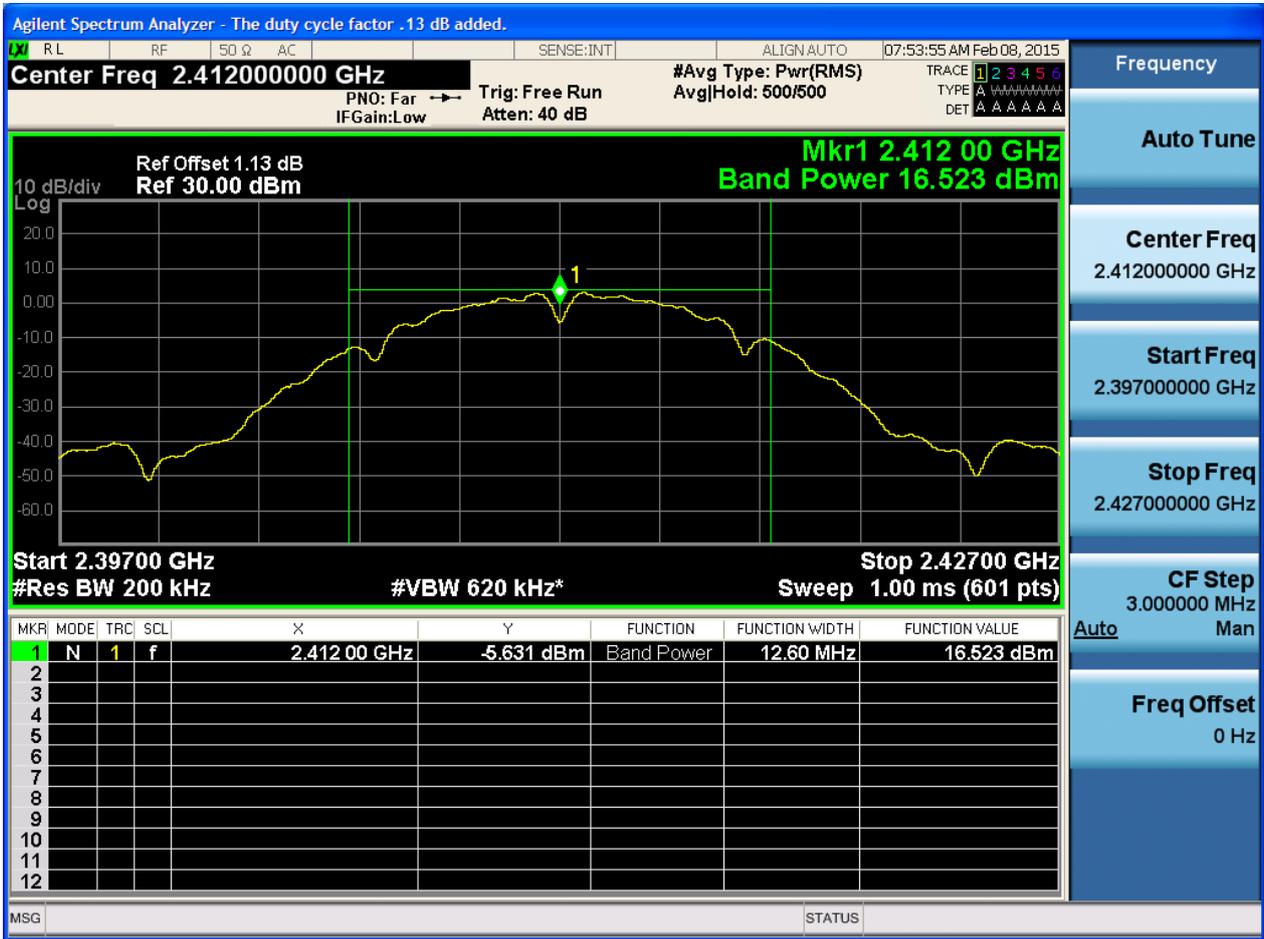
### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	16.52	pass
11B	M	2437	Ant 1	14.35	pass
11B	H	2462	Ant 1	16.28	pass
11G	L	2412	Ant 1	11.71	pass
11G	M	2437	Ant 1	10.91	pass
11G	H	2462	Ant 1	12.07	pass
11N20	L	2412	Ant 1	11.26	pass
11N20	M	2437	Ant 1	9.67	pass
11N20	H	2462	Ant 1	10.69	pass



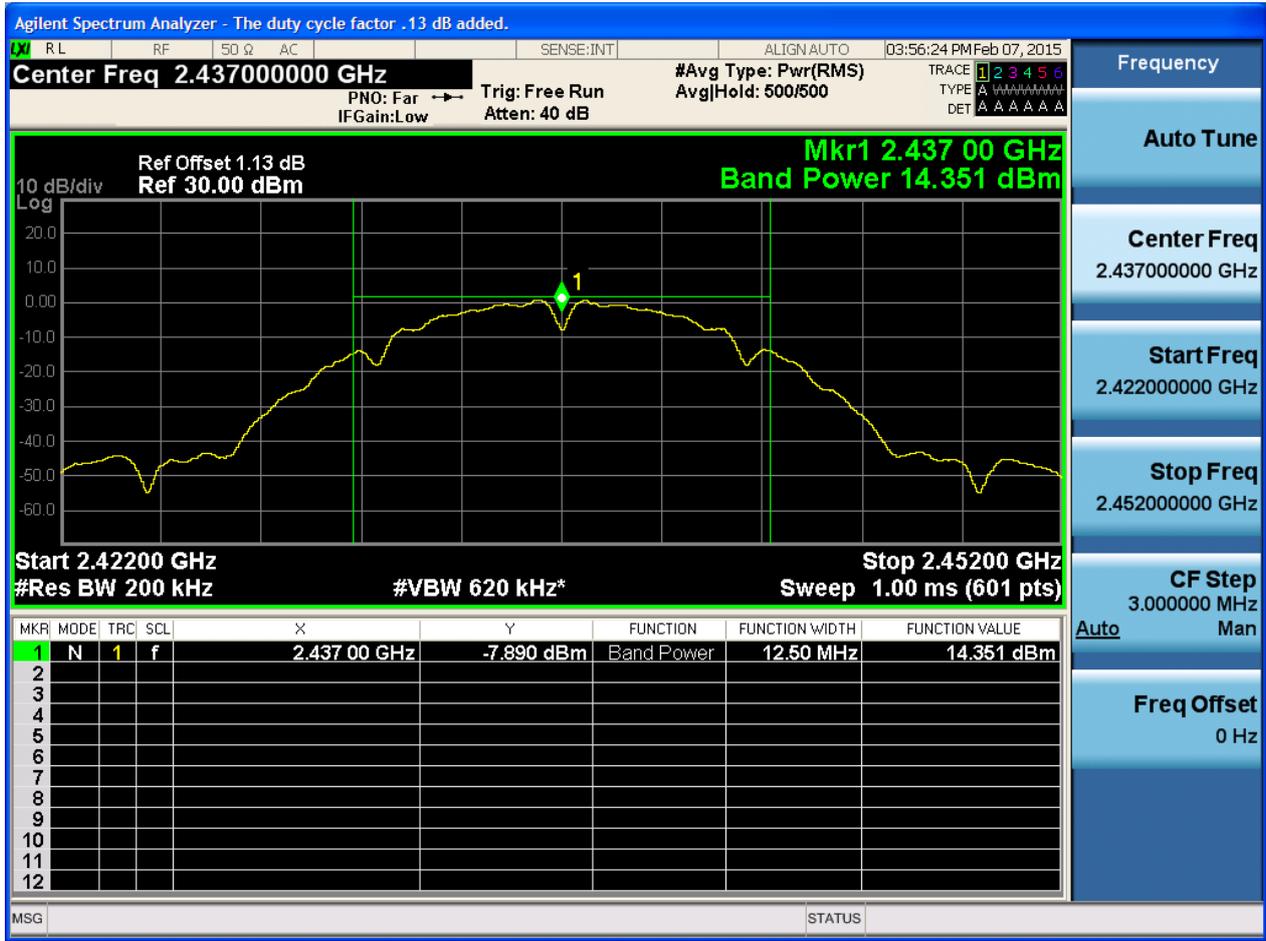
Part II - Test Plots

2.1 11B\_L@Ant 1



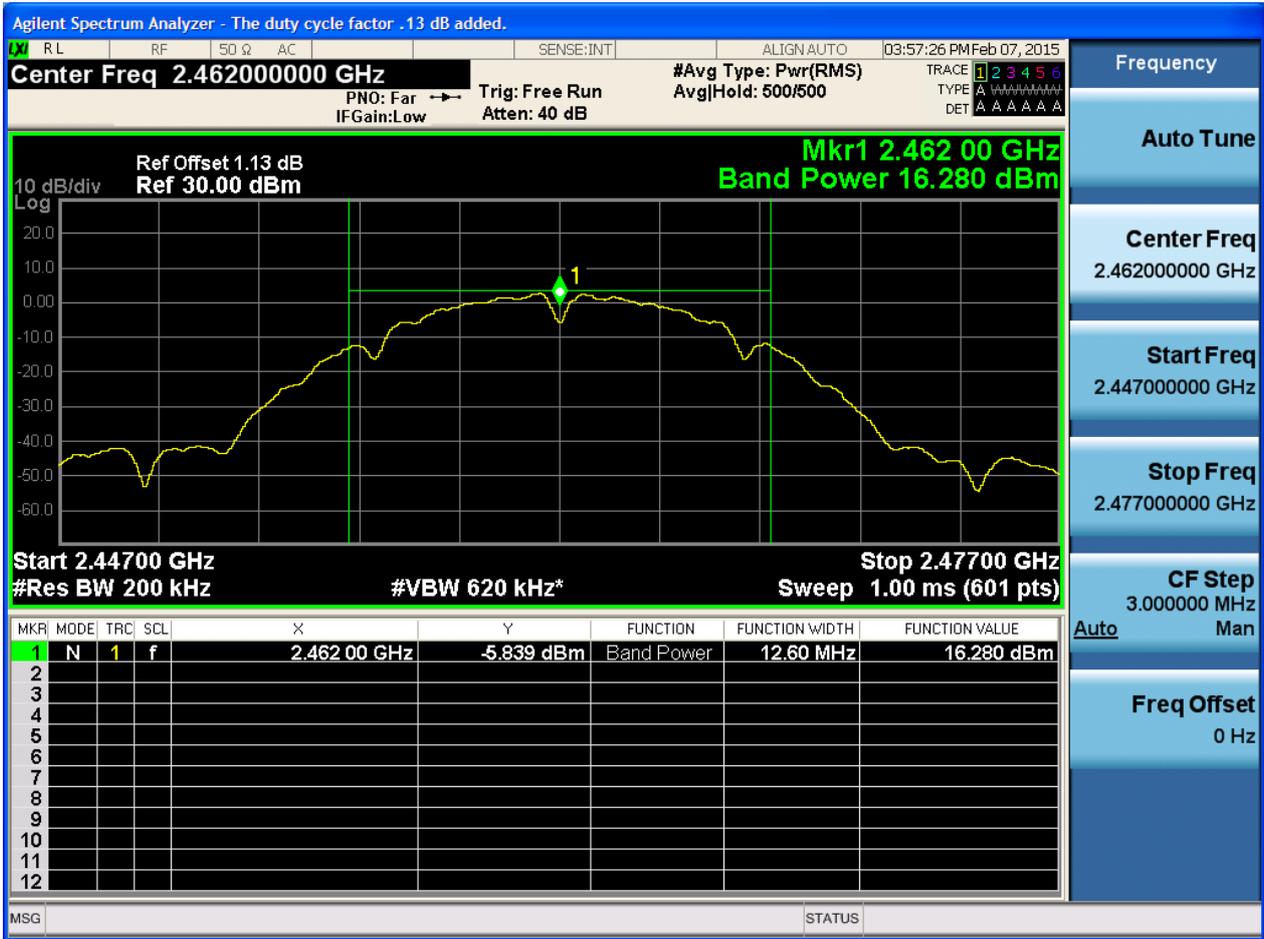


2.2 11B\_M@Ant 1



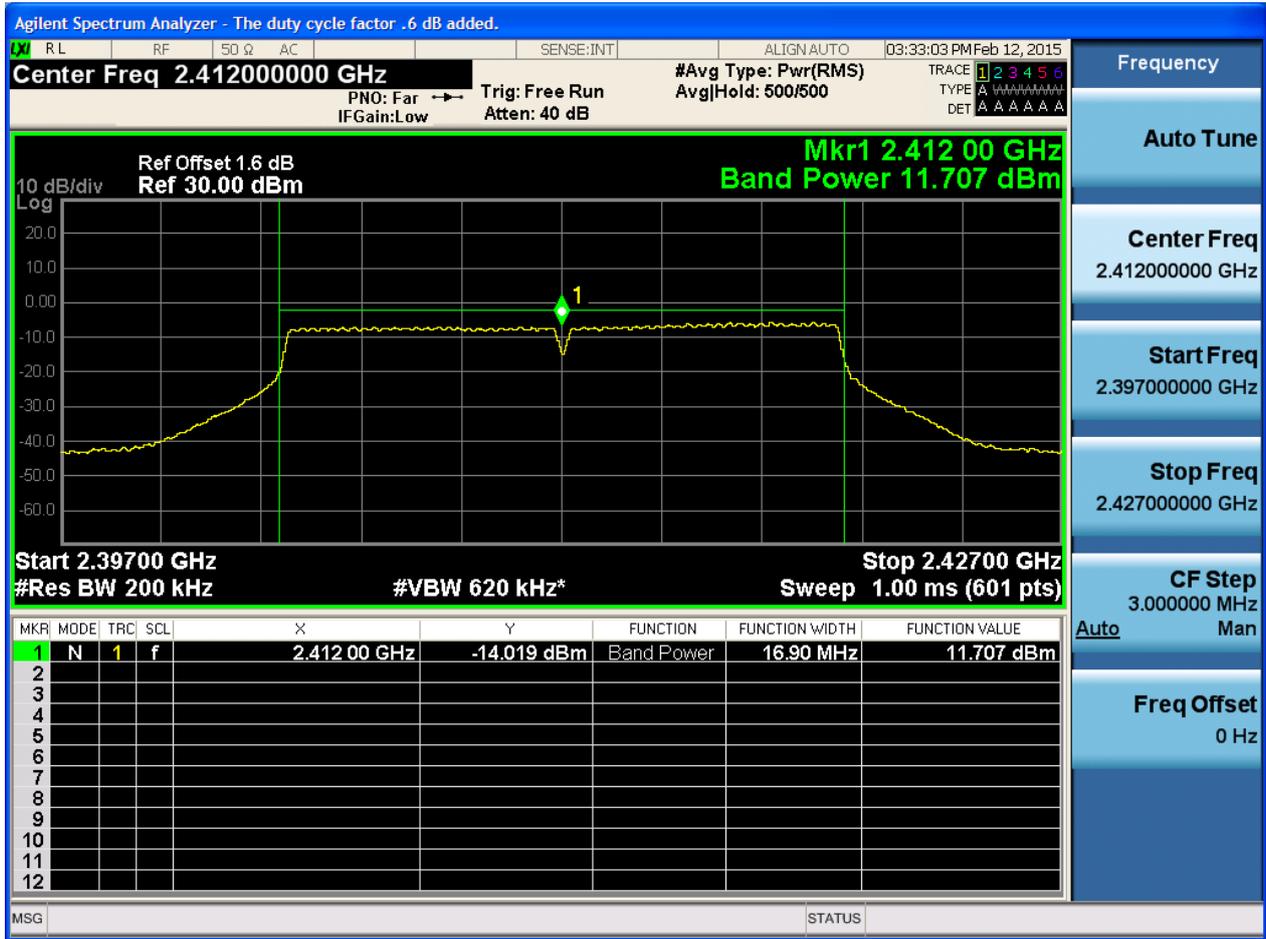


### 2.3 11B\_H@Ant 1



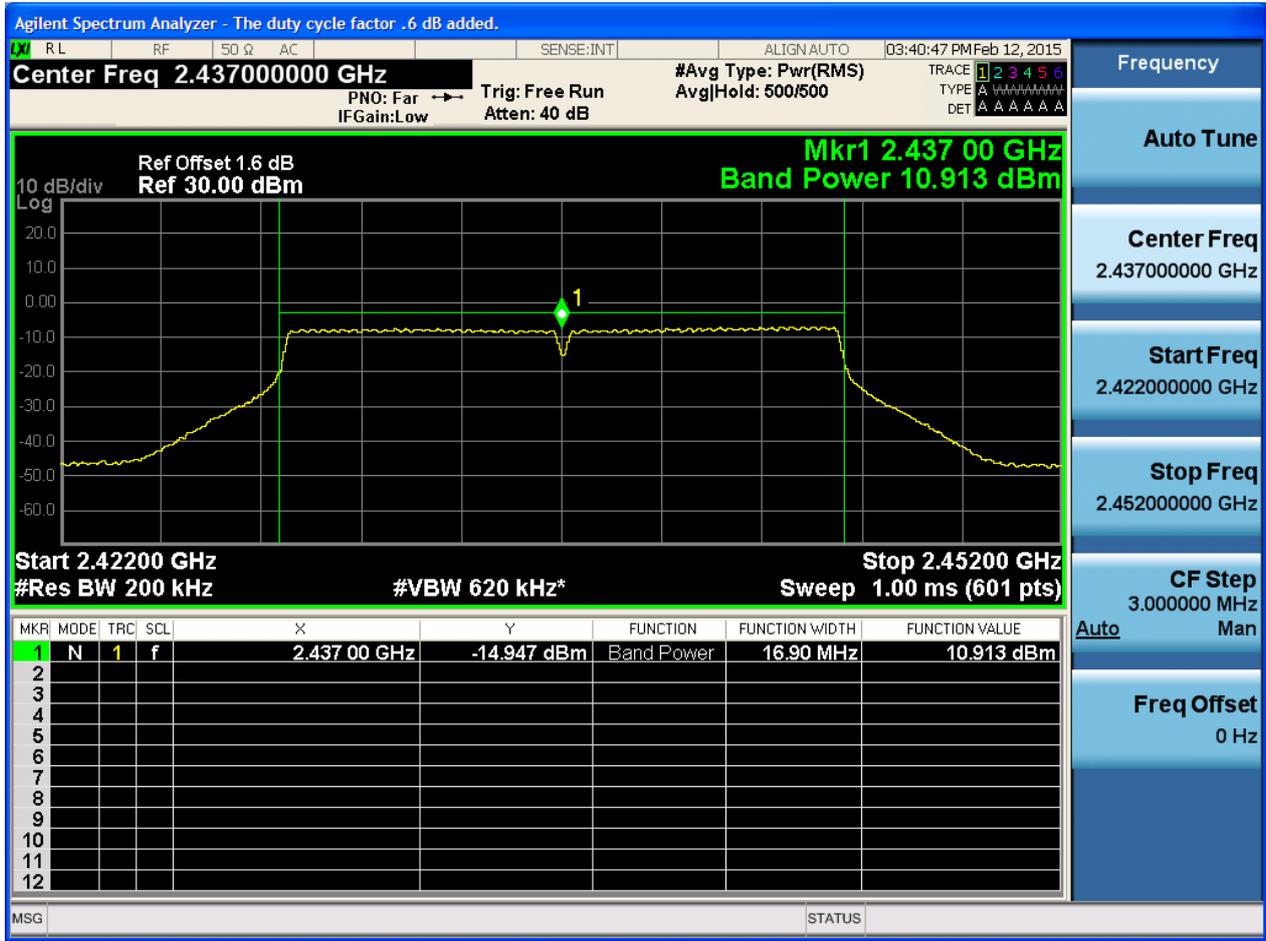


### 2.4 11G\_L@Ant 1



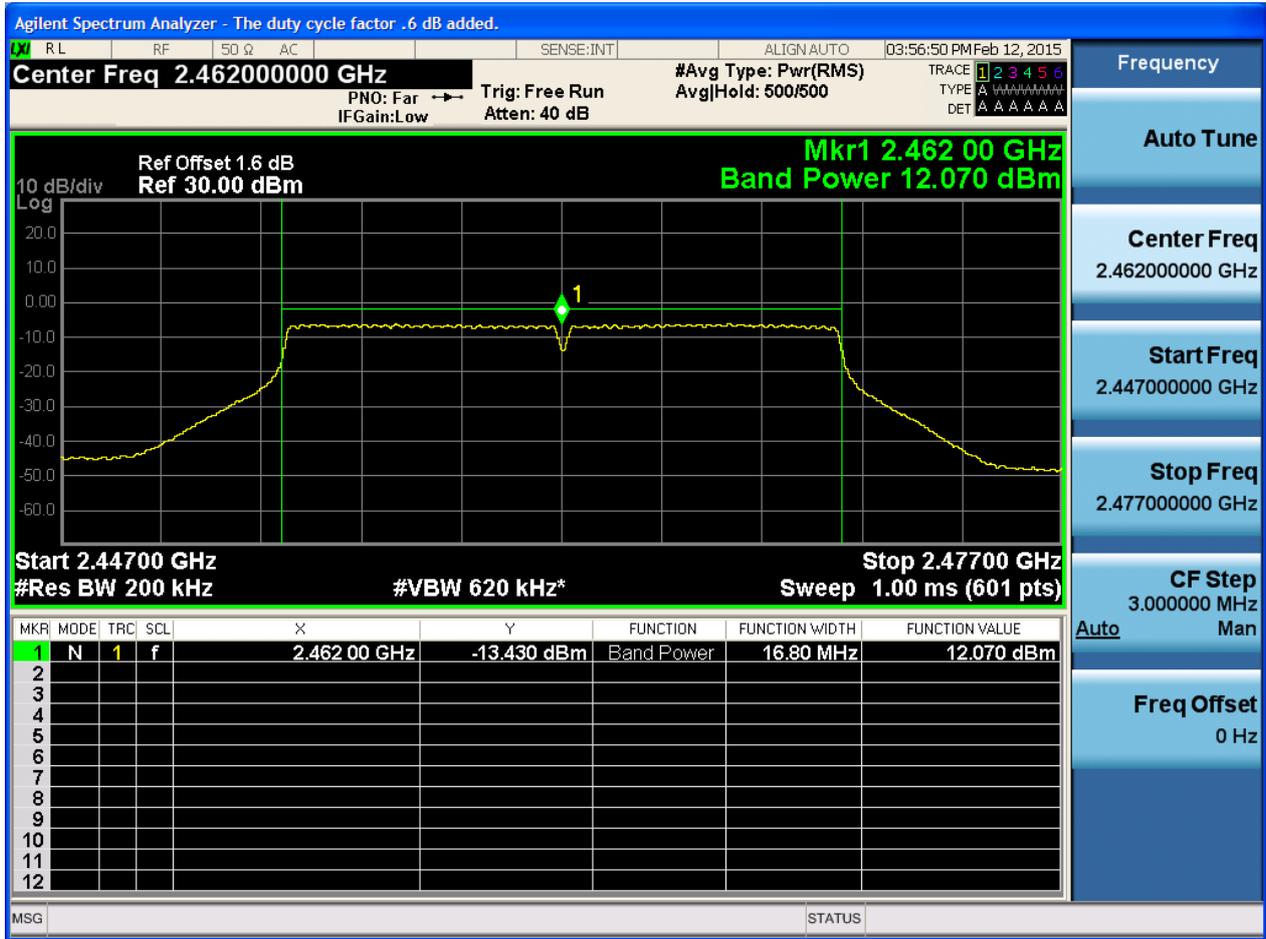


2.5 11G\_M@Ant 1



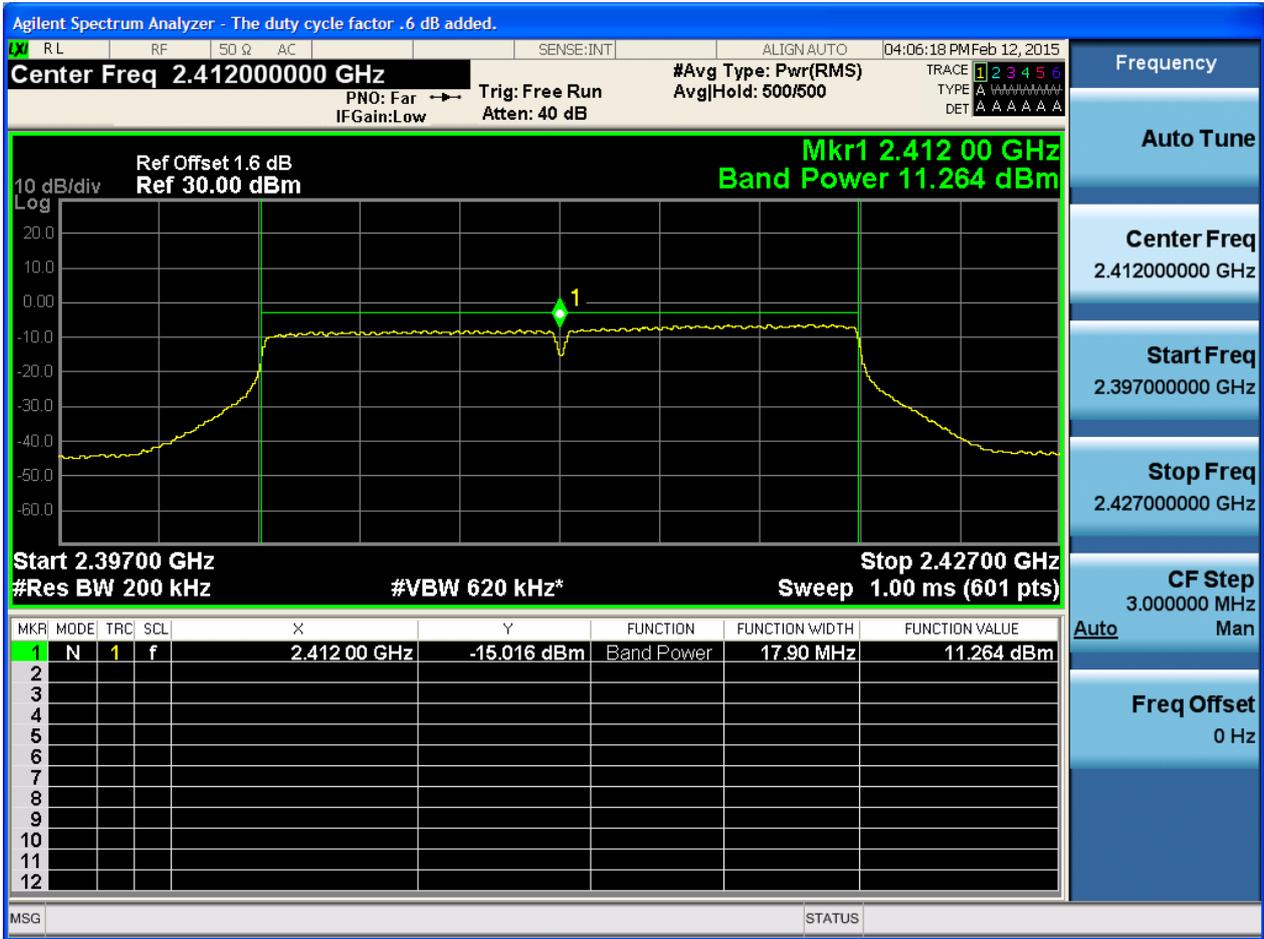


### 2.6 11G\_H@Ant 1



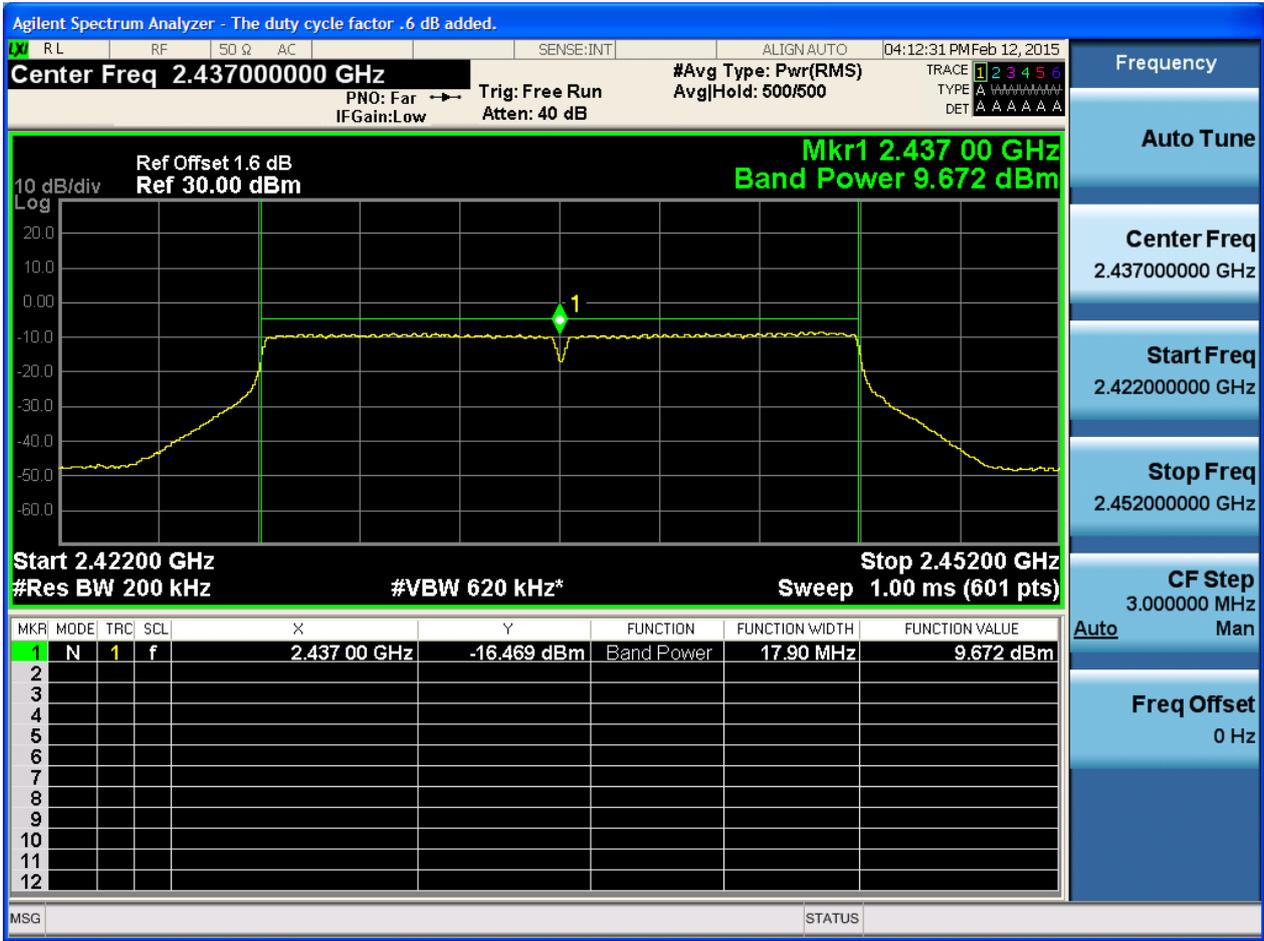


2.7 11N20\_L@Ant 1



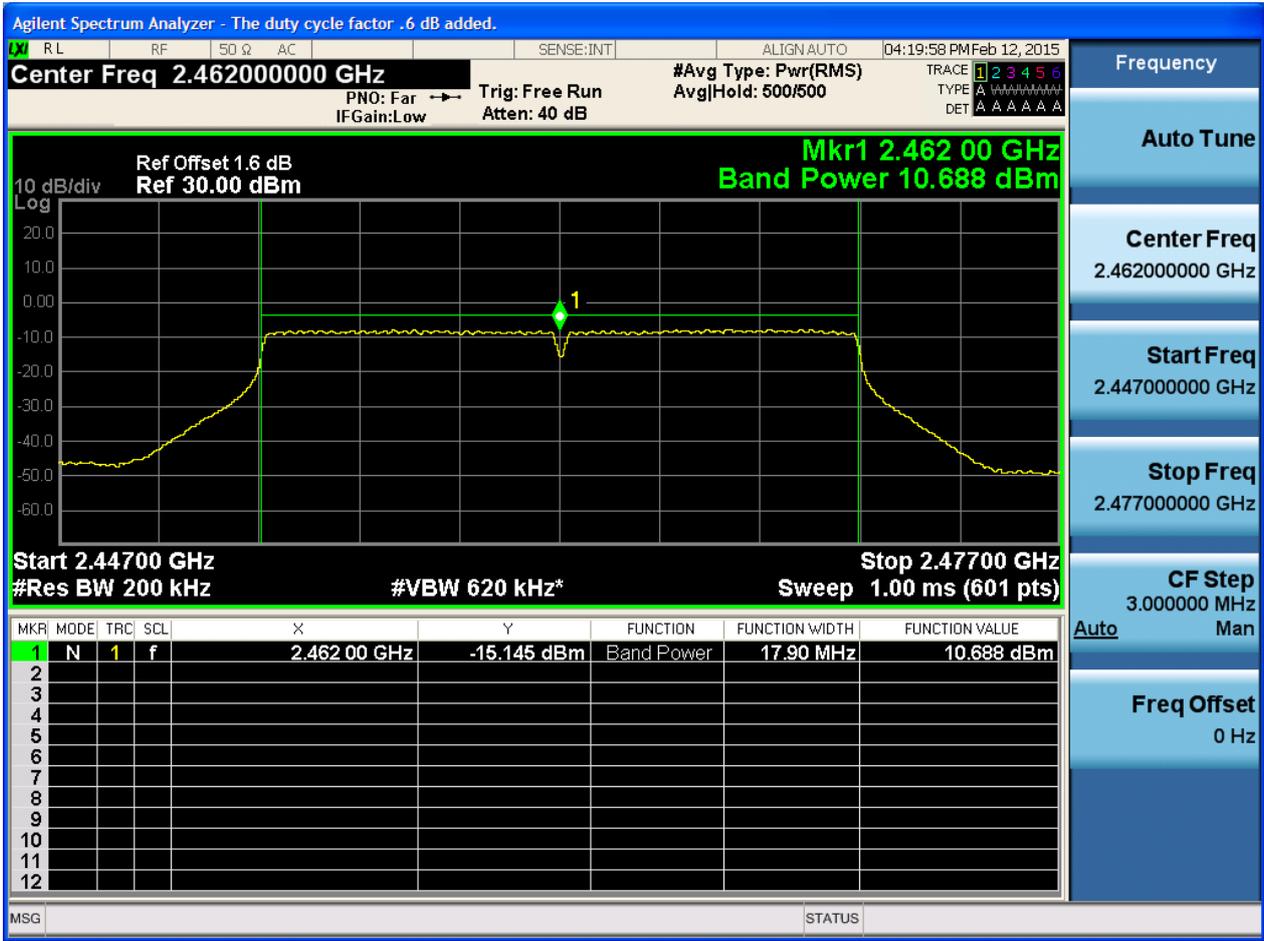


2.8 11N20\_M@Ant 1





2.9 11N20\_H@Ant 1





## Appendix E: Maximum Power Spectral Density Level

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-9.83	pass
11B	M	2437	Ant 1	-11.59	pass
11B	H	2462	Ant 1	-10.36	pass
11G	L	2412	Ant 1	-17.15	pass
11G	M	2437	Ant 1	-19.08	pass
11G	H	2462	Ant 1	-18.45	pass
11N20	L	2412	Ant 1	-17.87	pass
11N20	M	2437	Ant 1	-20.23	pass
11N20	H	2462	Ant 1	-19.43	pass



## Part II - Test Plots

### 2.1 11B\_L@Ant 1



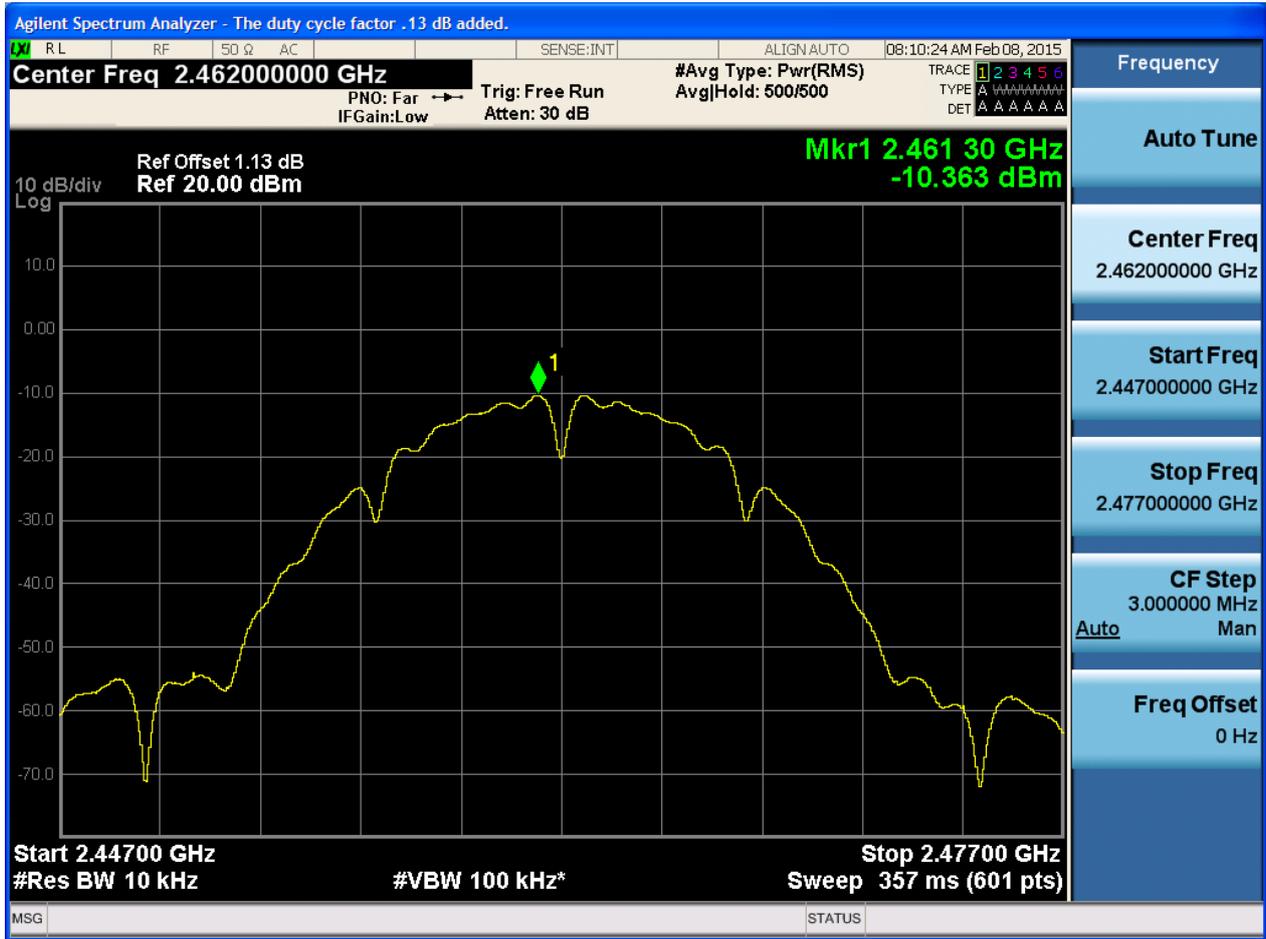


### 2.2 11B\_M@Ant 1



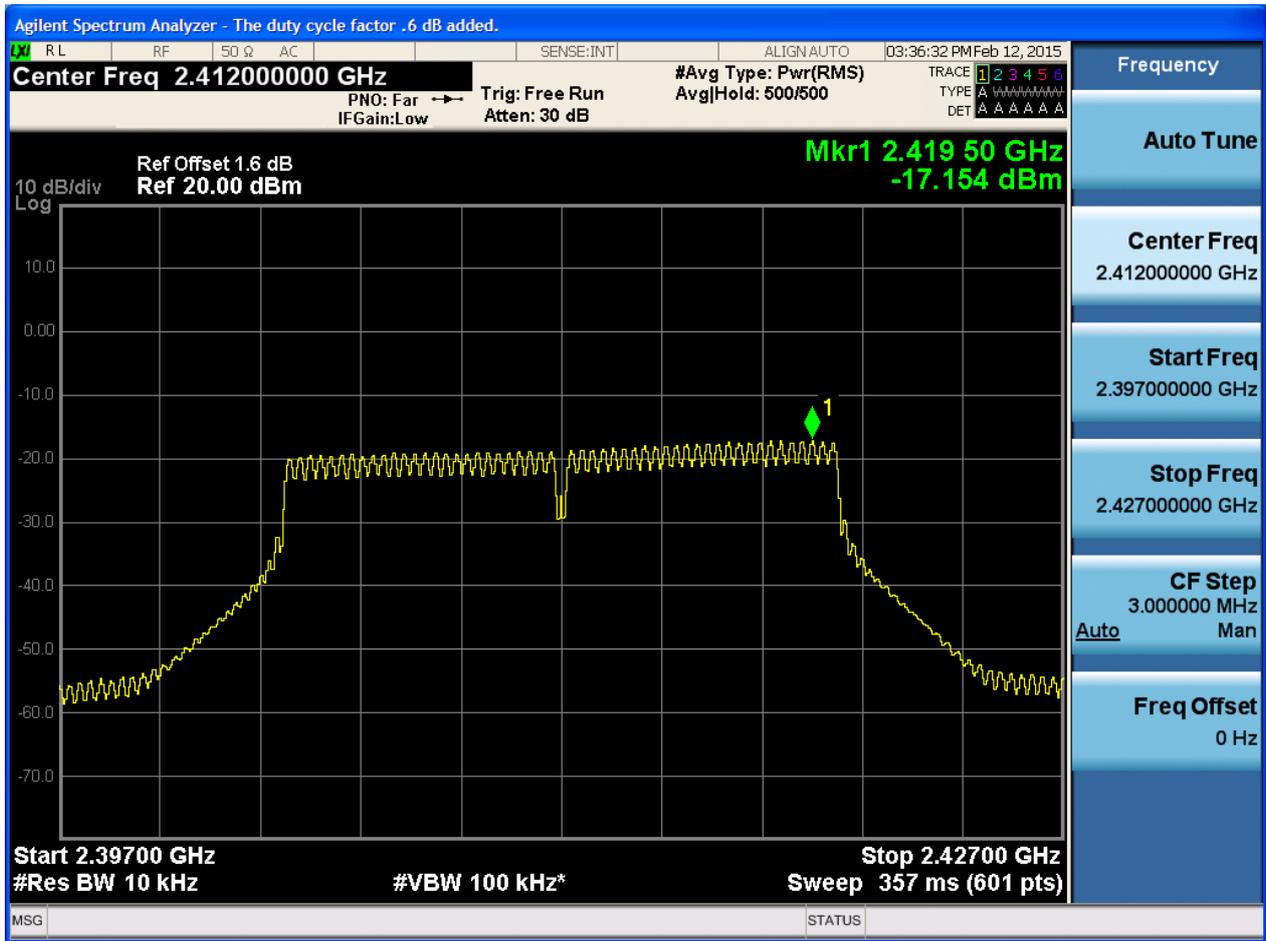


### 2.3 11B\_H@Ant 1



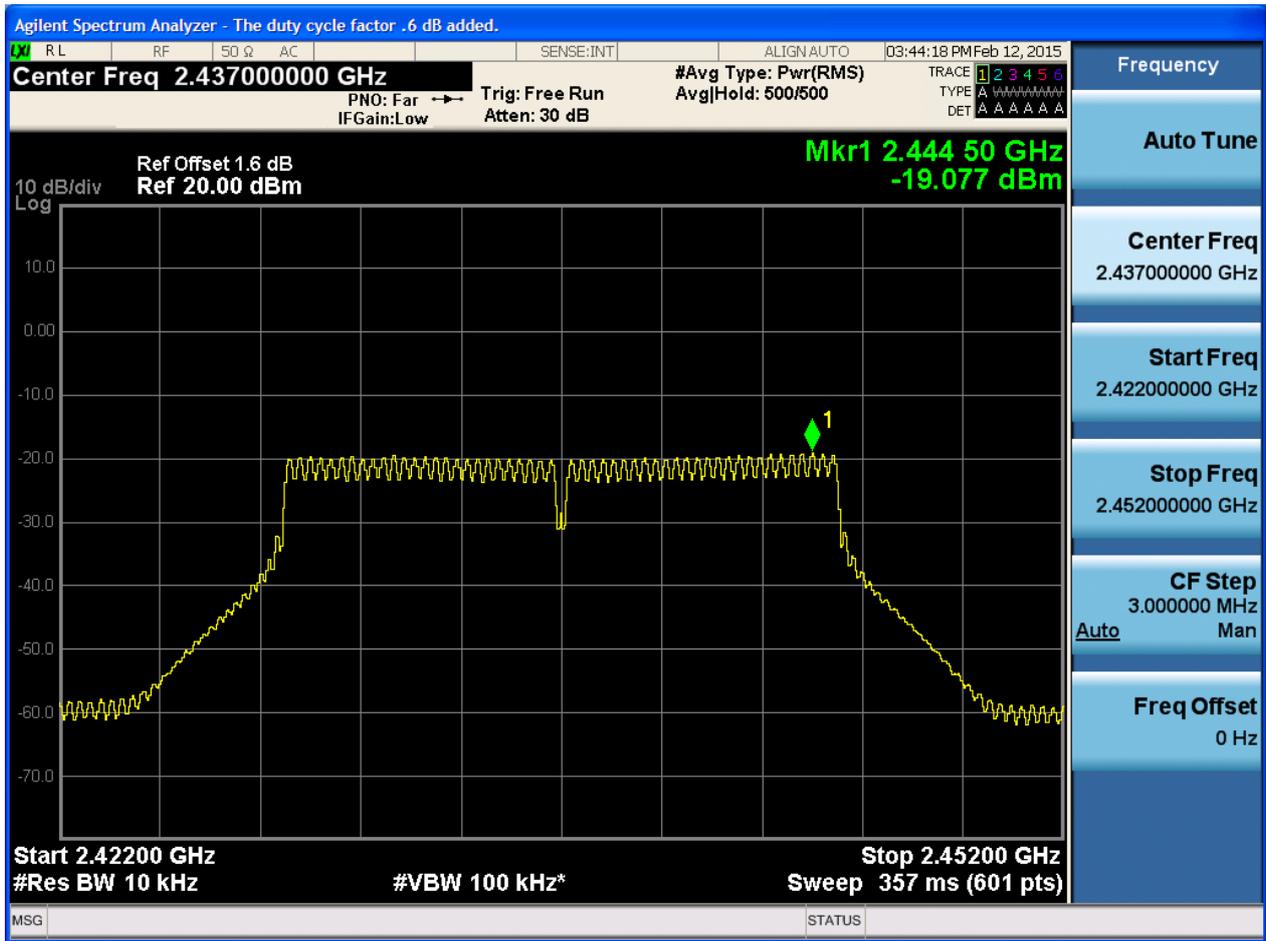


### 2.4 11G\_L@Ant 1



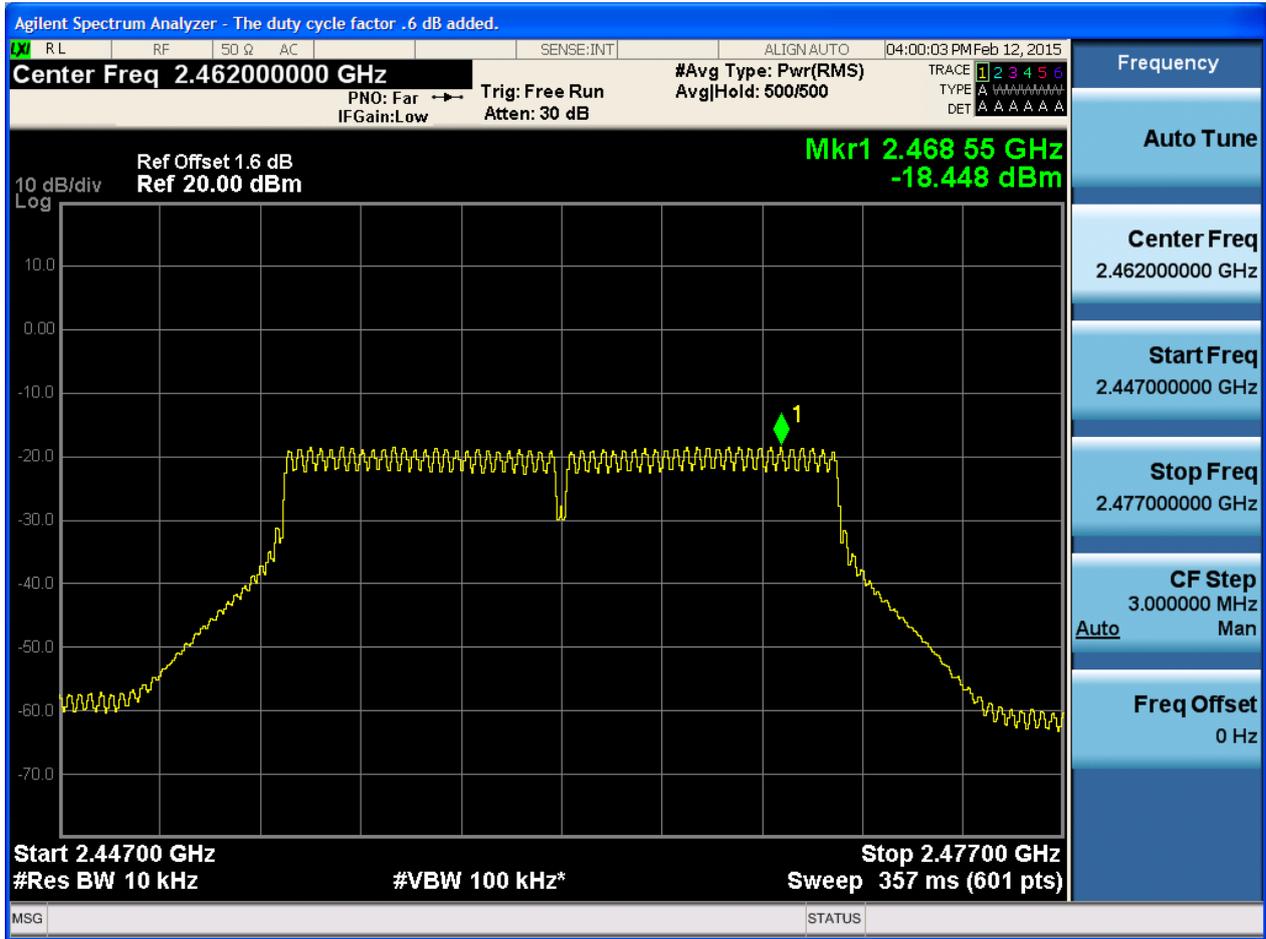


### 2.5 11G\_M@Ant 1



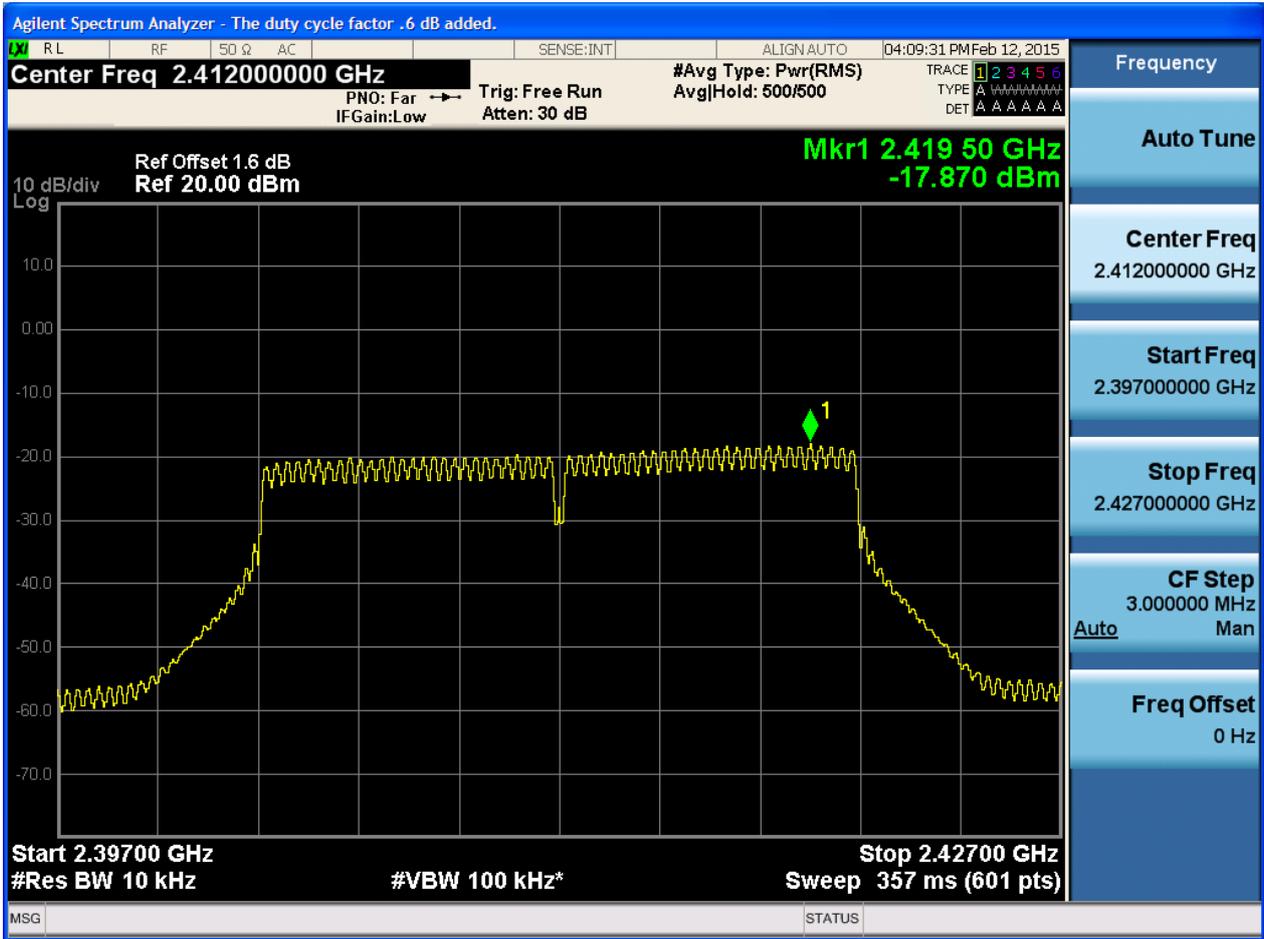


### 2.6 11G\_H@Ant 1



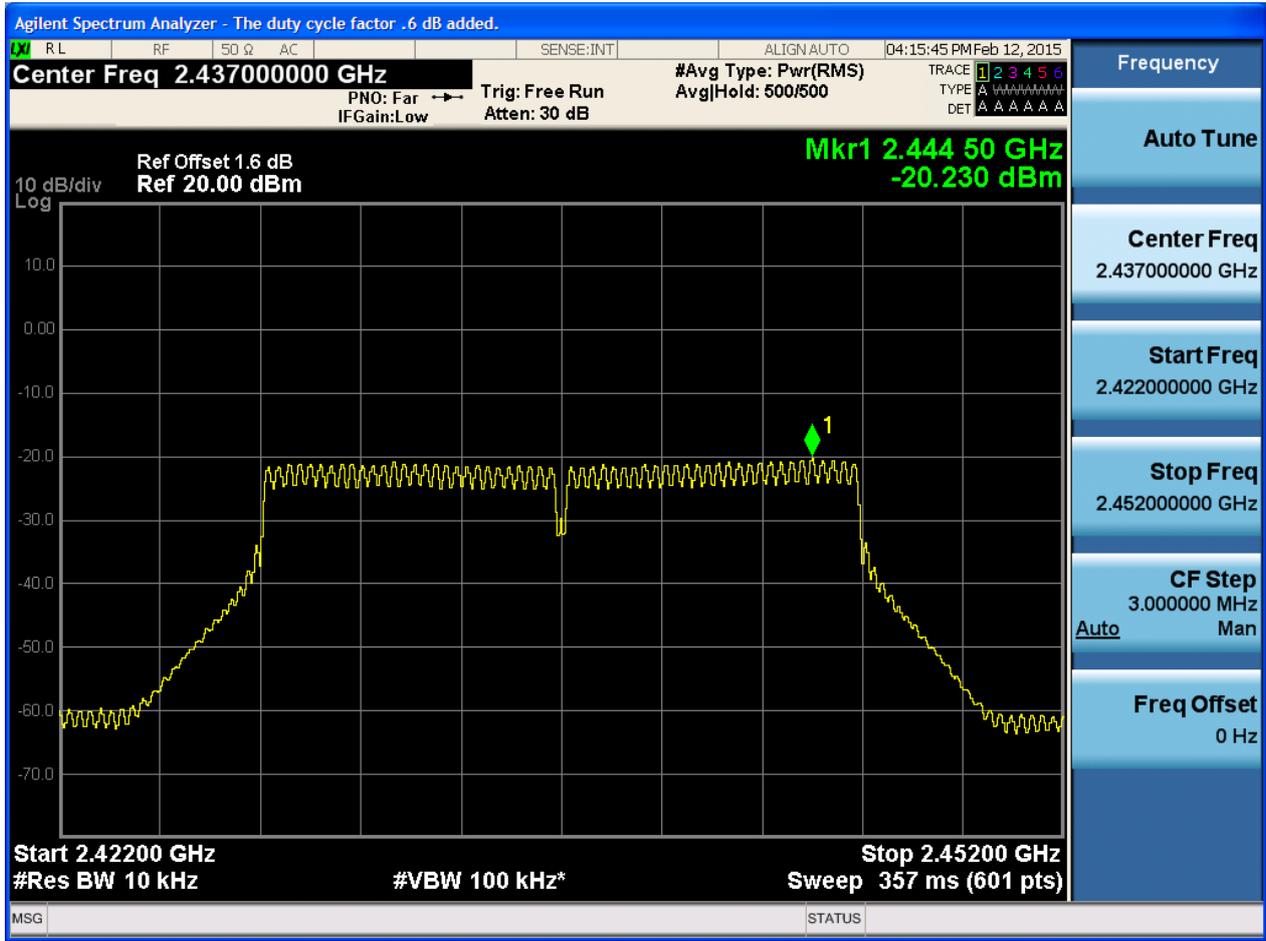


2.7 11N20\_L@Ant 1



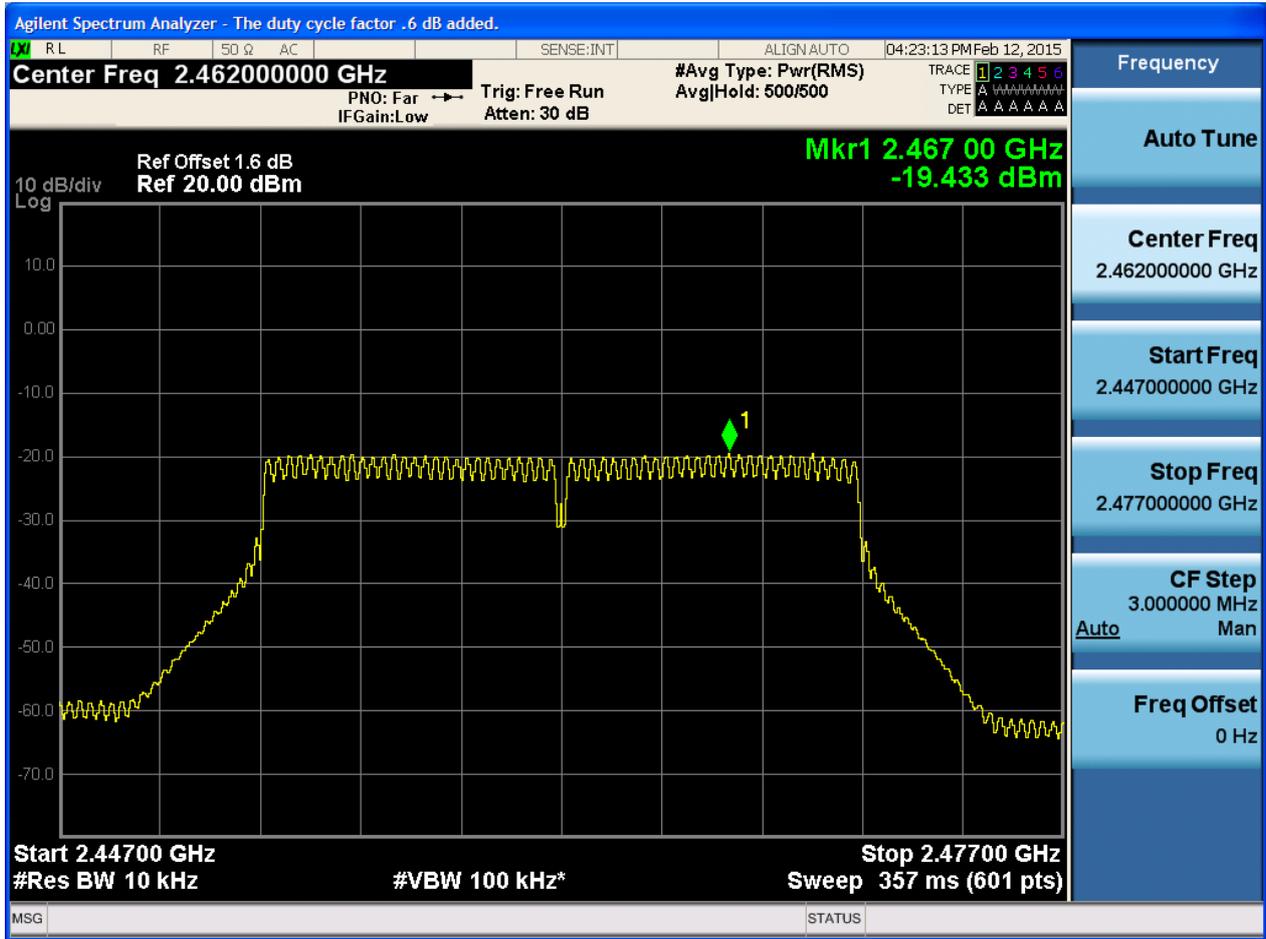


### 2.8 11N20\_M@Ant 1





### 2.9 11N20\_H@Ant 1



## Appendix F: Band Edges Compliance

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	9.48	-52.30	pass
11B	H	2462	Ant 1	9.00	-51.31	pass
11G	L	2412	Ant 1	5.08	-49.85	pass
11G	H	2462	Ant 1	4.09	-49.50	pass
11N20	L	2412	Ant 1	4.09	-48.18	pass
11N20	H	2462	Ant 1	3.17	-48.98	pass



### Part II - Test Plots

#### 2.1 11B\_L@Ant 1





### 2.2 11B\_H@Ant 1



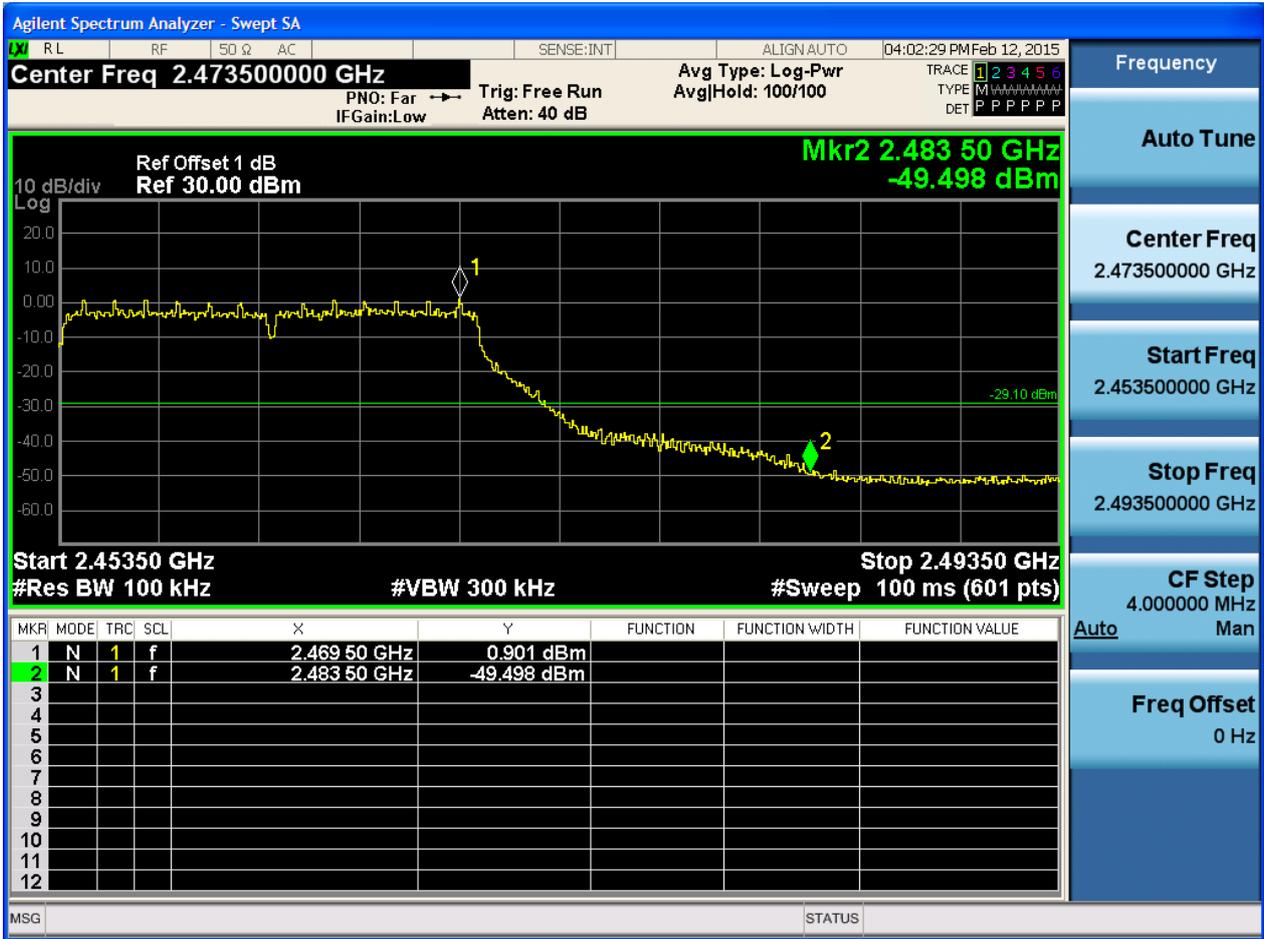


### 2.3 11G\_L@Ant 1



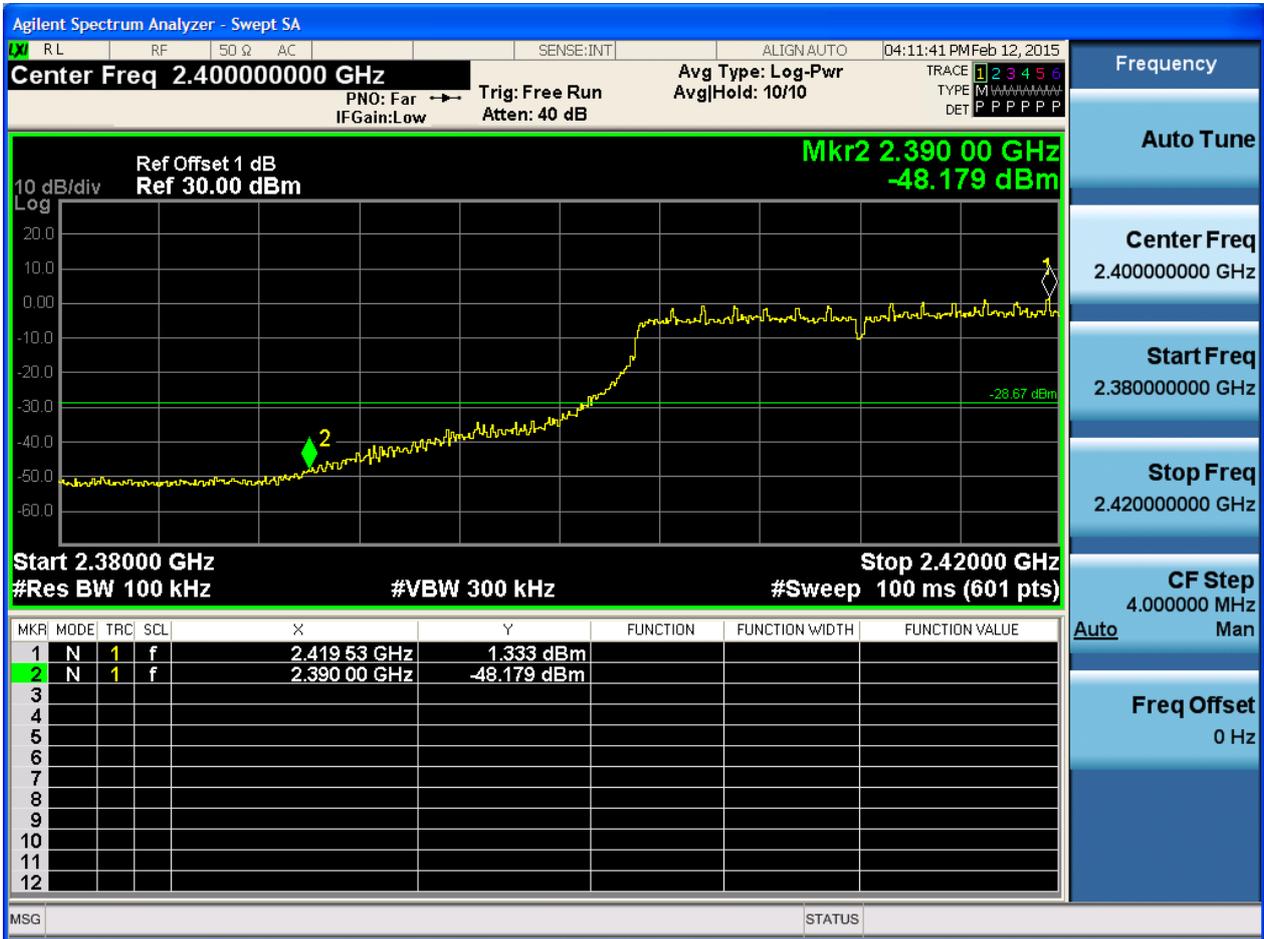


### 2.4 11G\_H@Ant 1



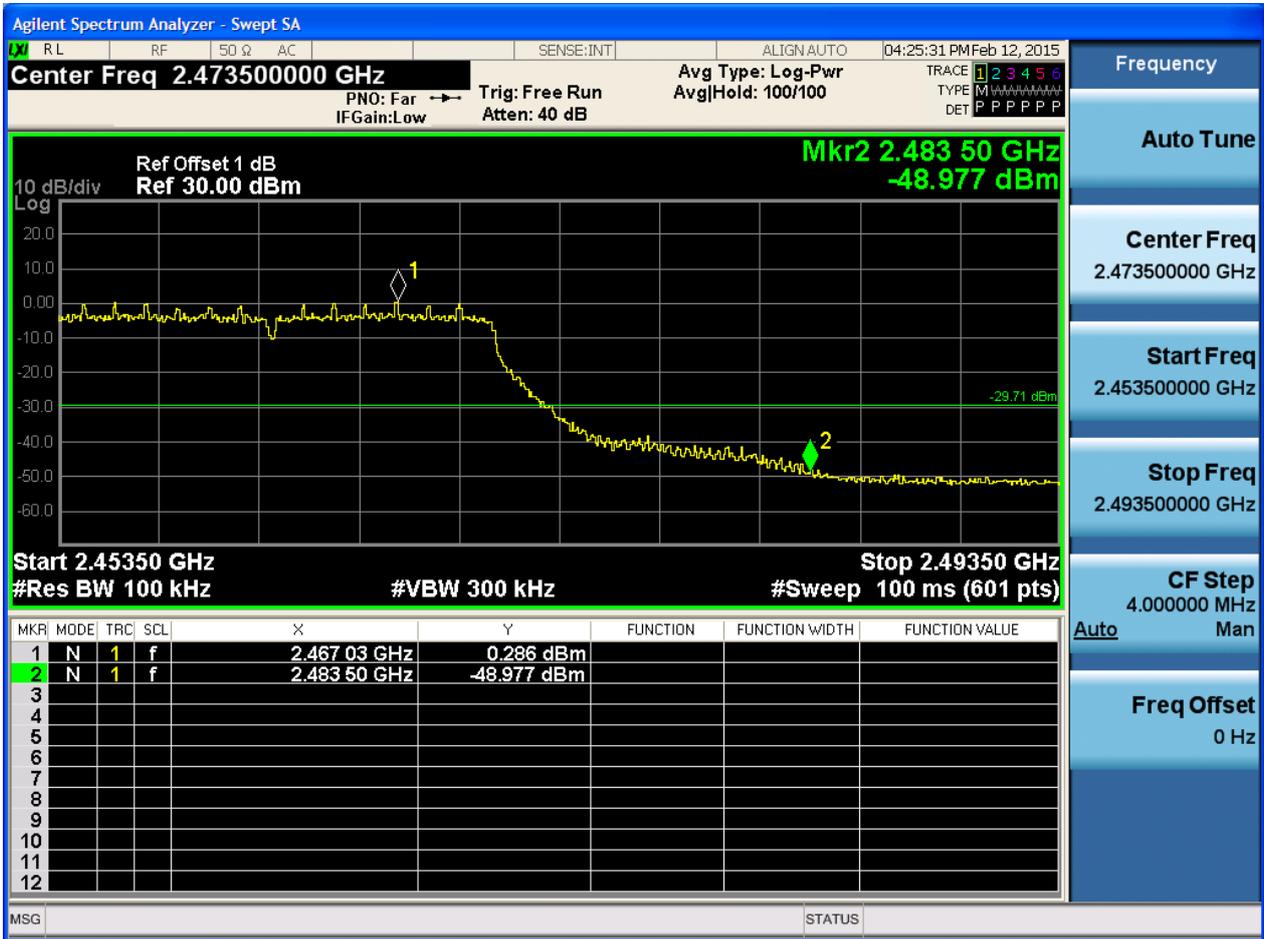


2.5 11N20\_L@Ant 1





2.6 11N20\_H@Ant 1



## 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]-20[dBm], see test plots for detailed".

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	9.18	<limit	pass
11B	M	2437	Ant 1	7.39	<limit	pass
11B	H	2462	Ant 1	8.68	<limit	pass
11G	L	2412	Ant 1	5.19	<limit	pass
11G	M	2437	Ant 1	3.06	<limit	pass
11G	H	2462	Ant 1	4.30	<limit	pass
11N20	L	2412	Ant 1	4.21	<limit	pass
11N20	M	2437	Ant 1	1.72	<limit	pass
11N20	H	2462	Ant 1	2.27	<limit	pass



## Part II - Test Plots

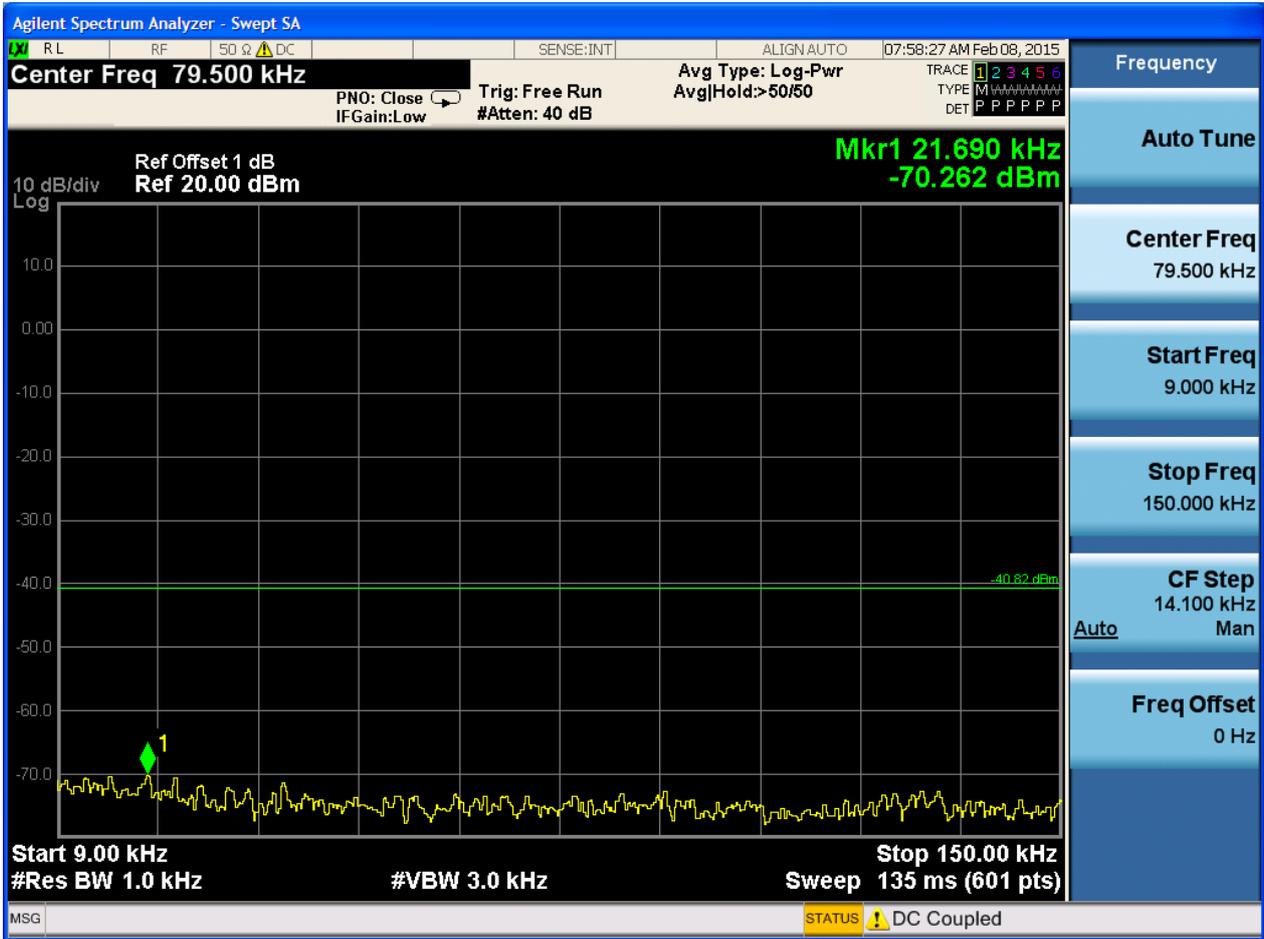
### 2.1 11B\_L@Ant 1

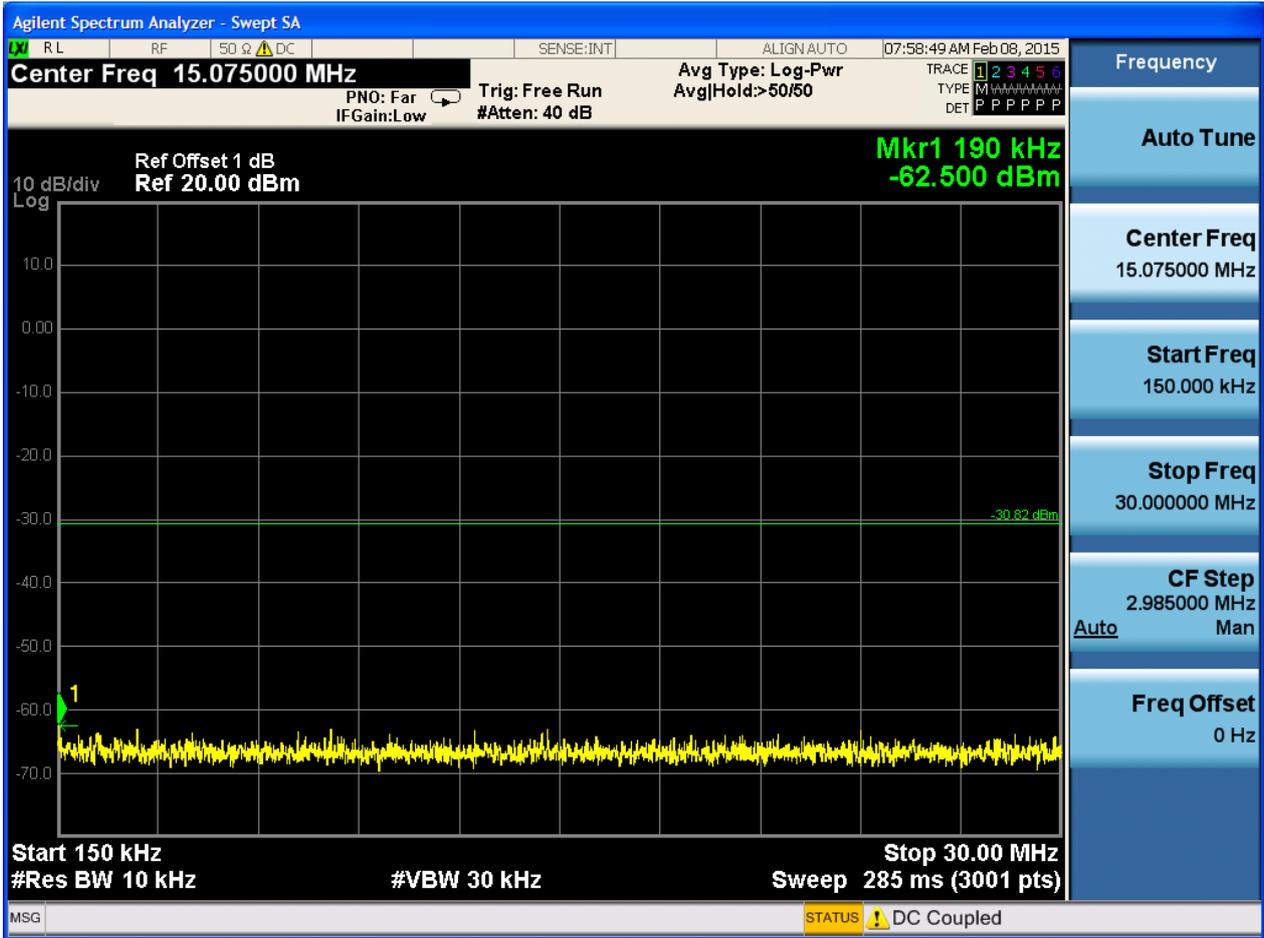
Pref:

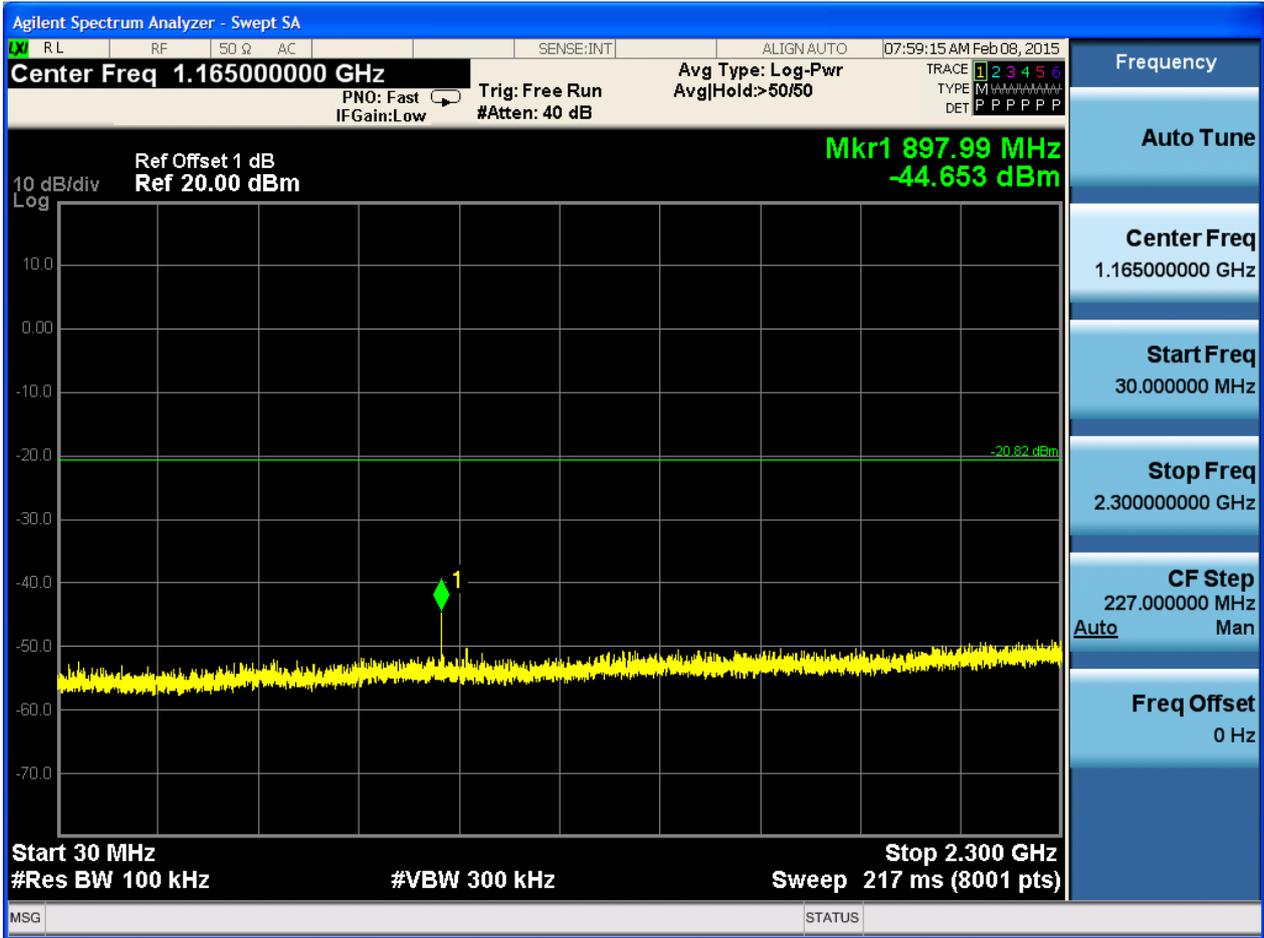


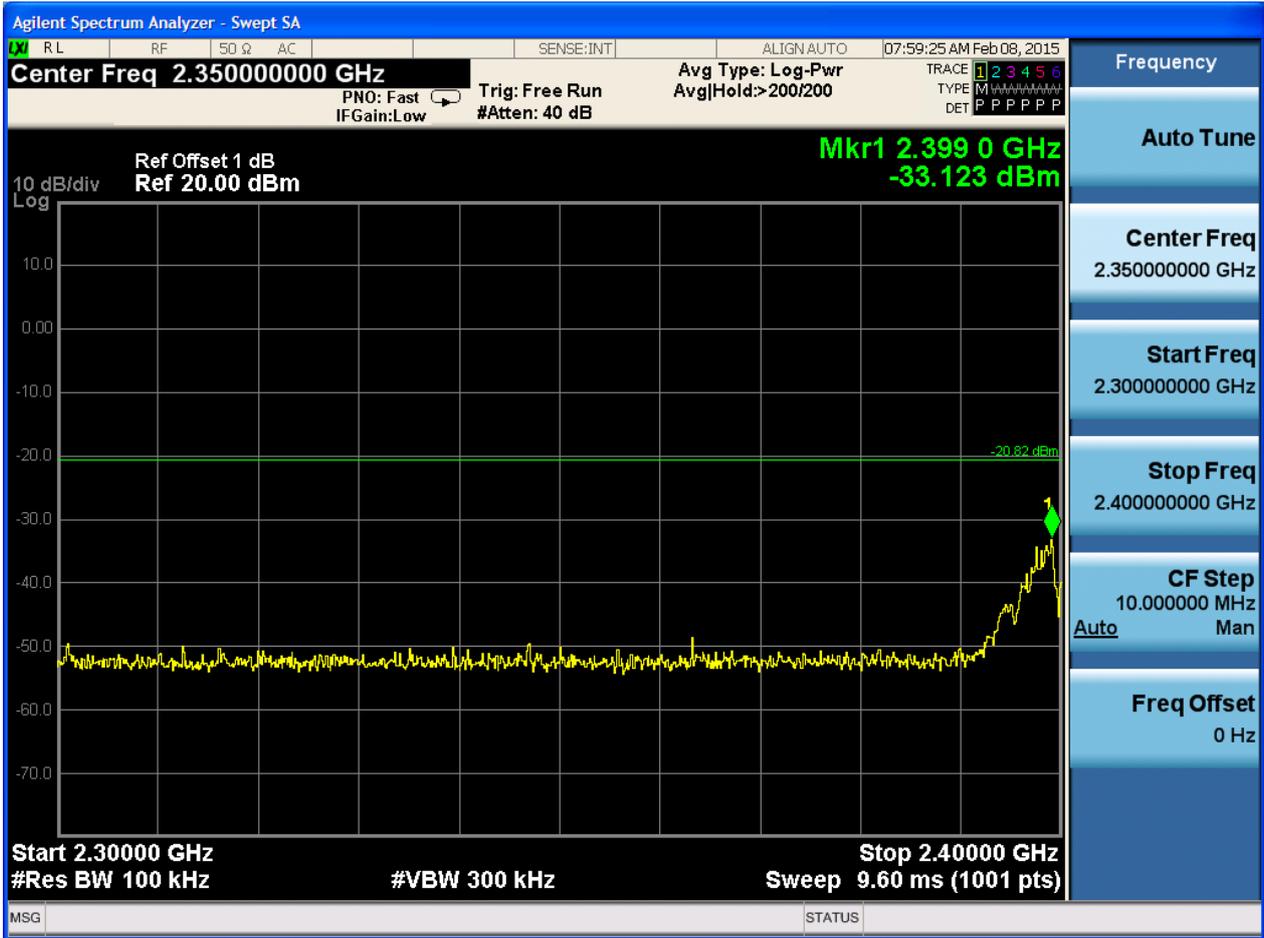


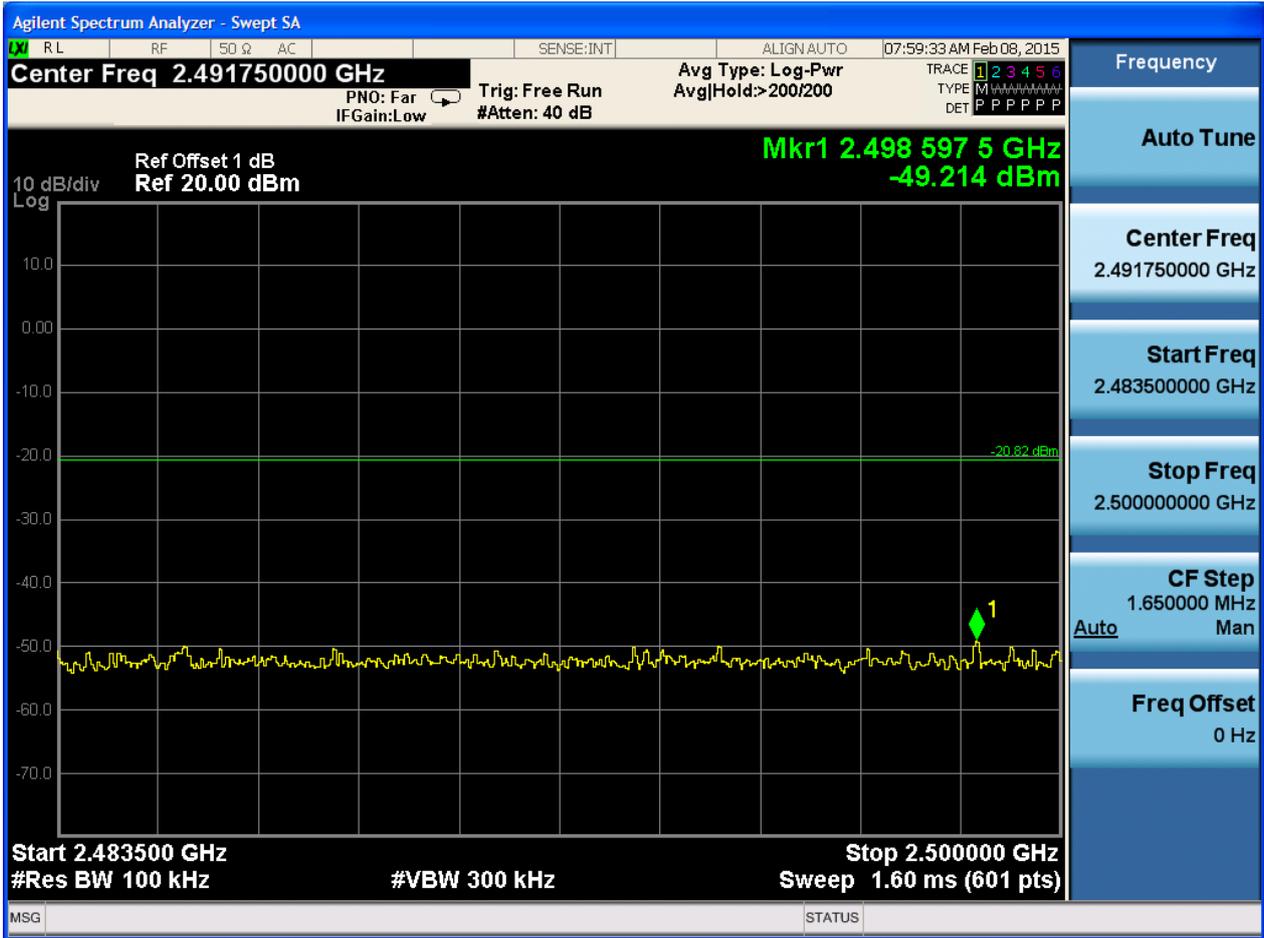
Puw:









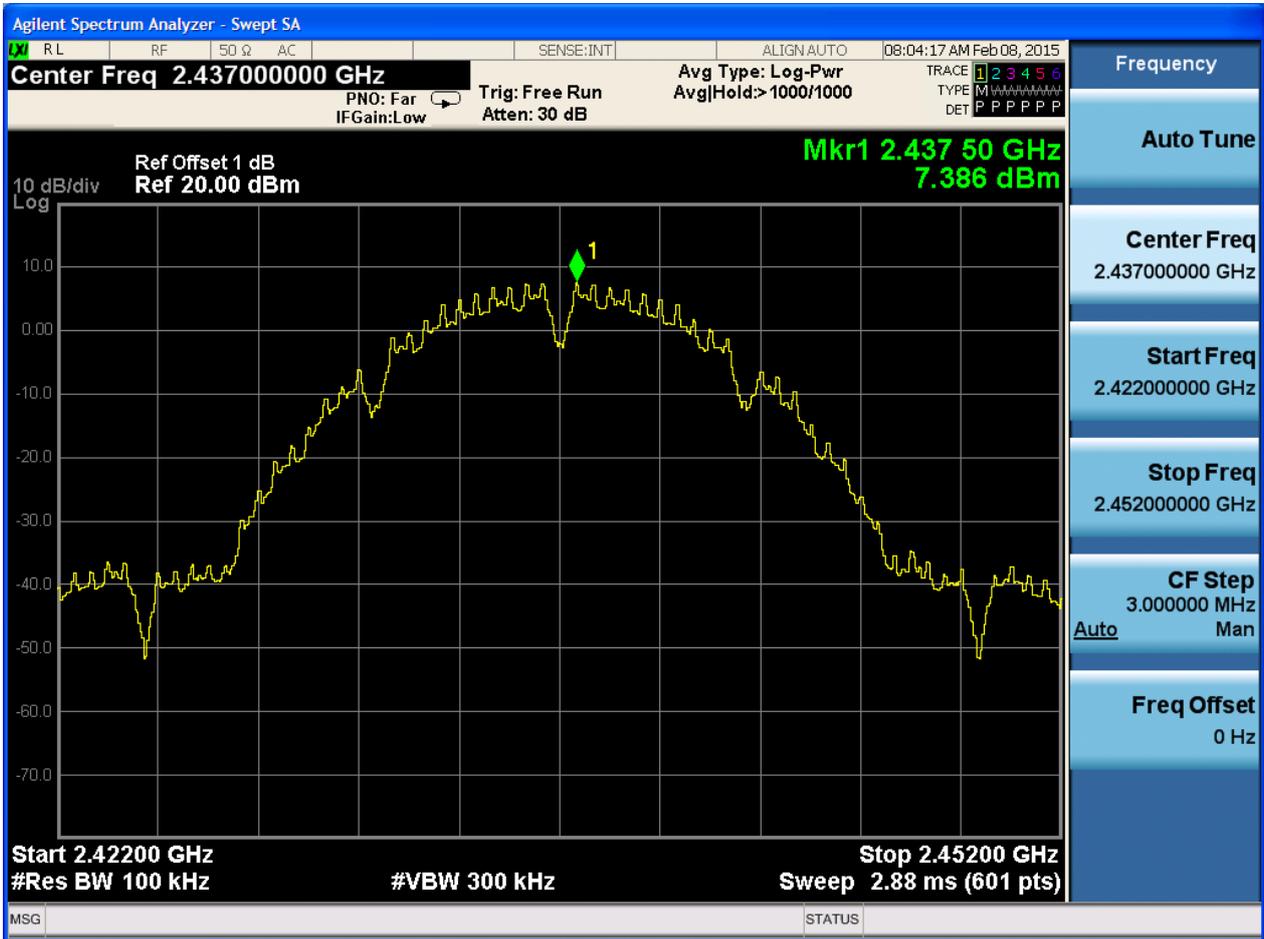






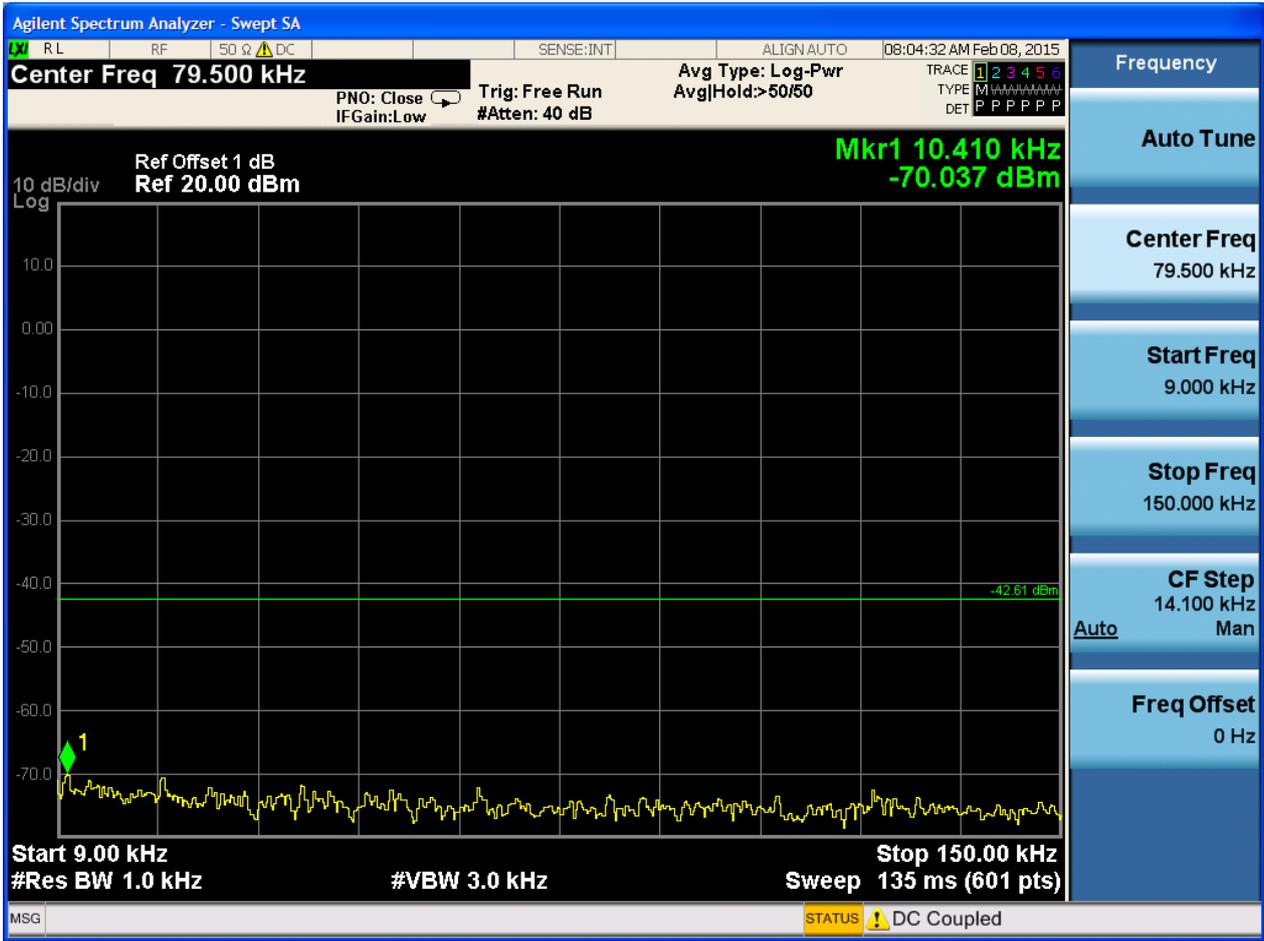
## 2.2 11B\_M@Ant 1

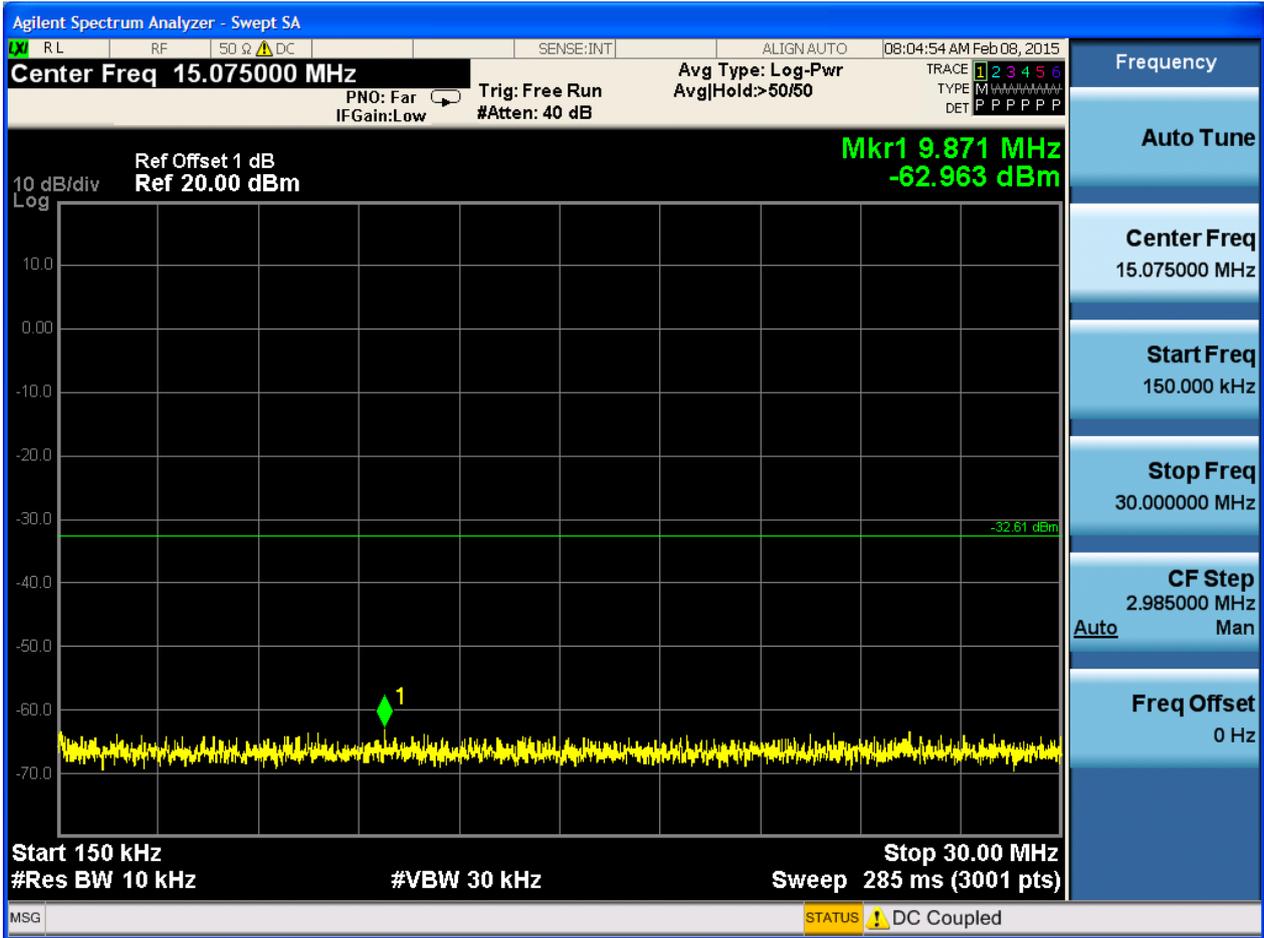
Pref:

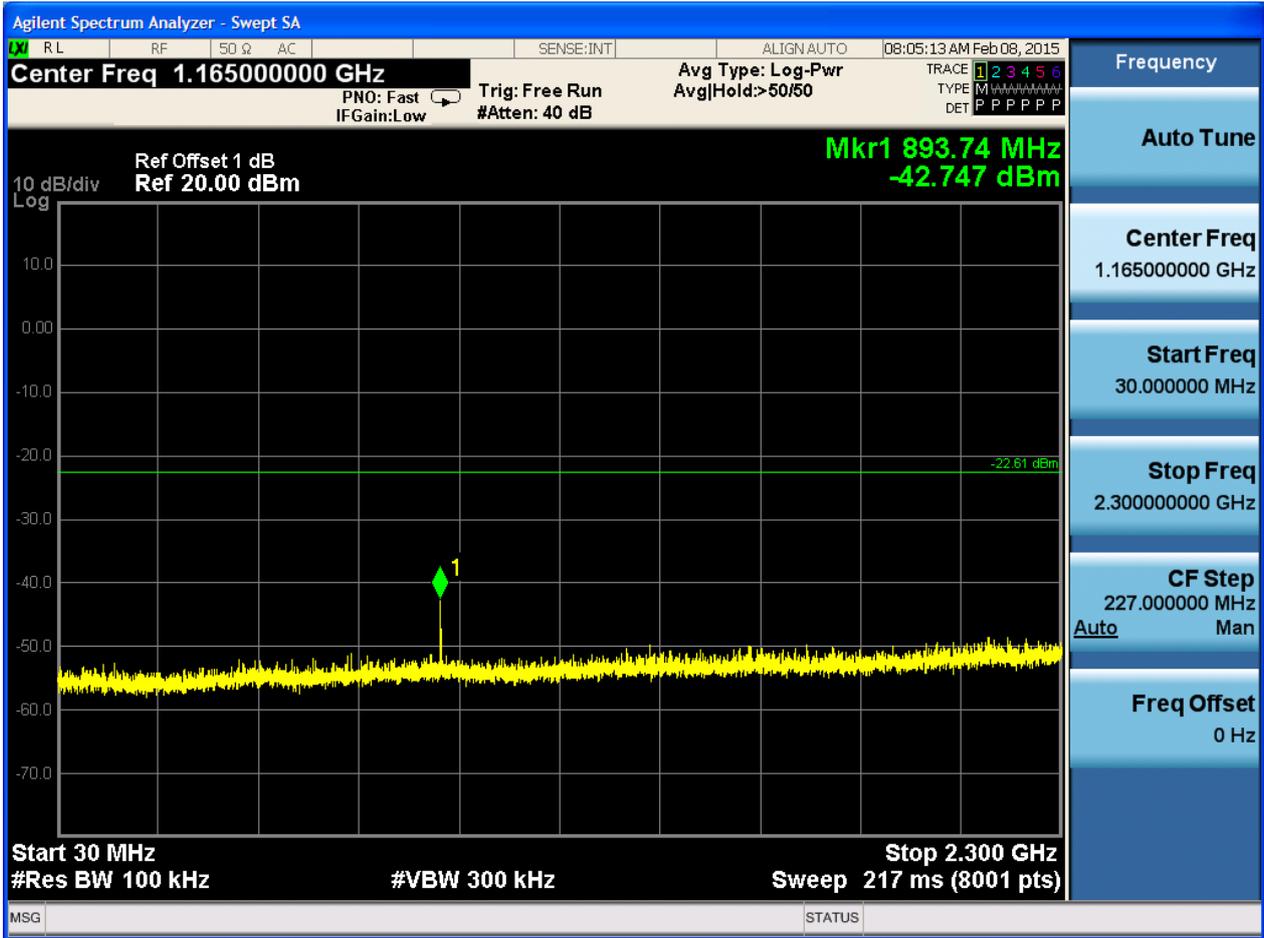


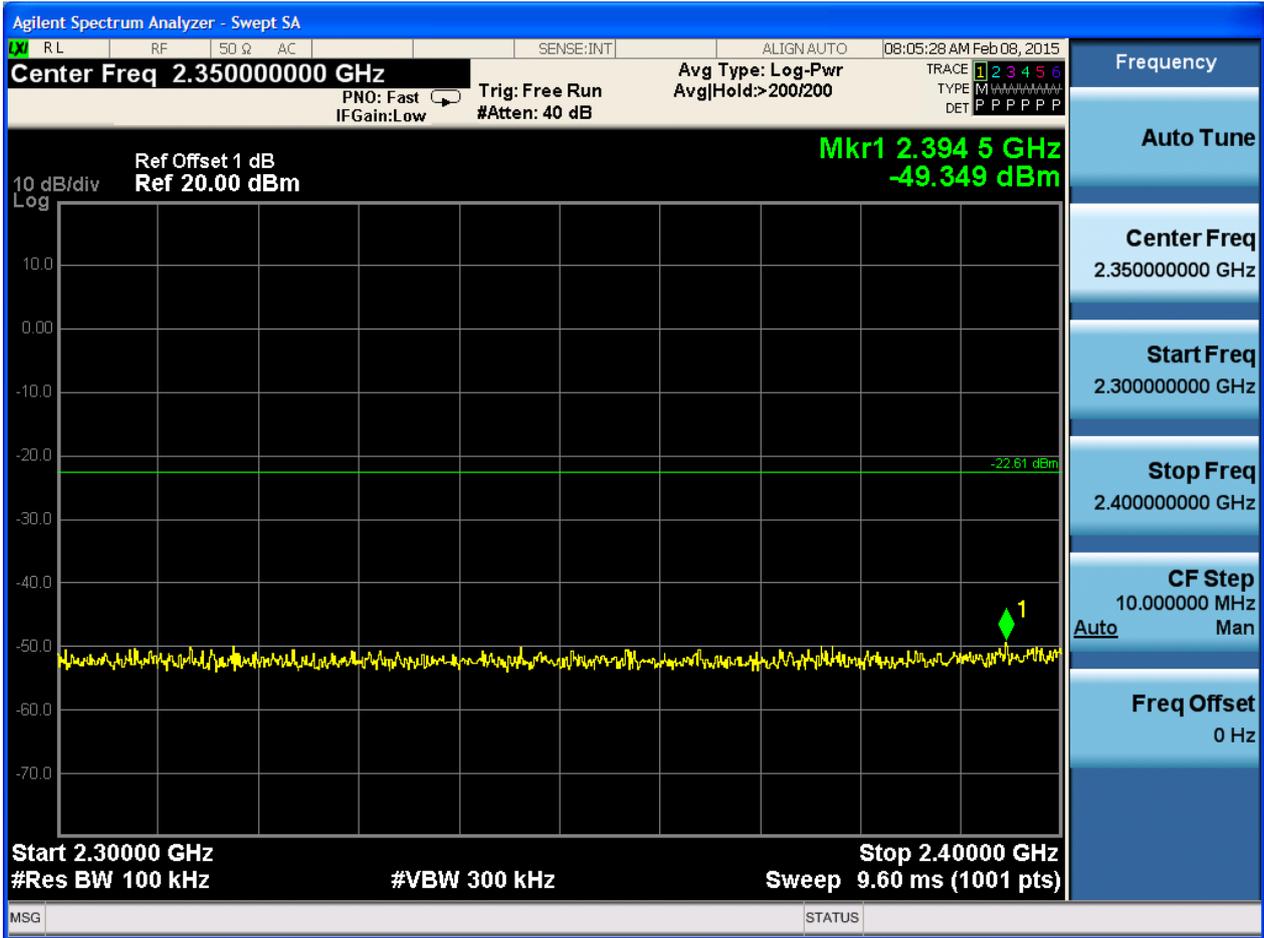


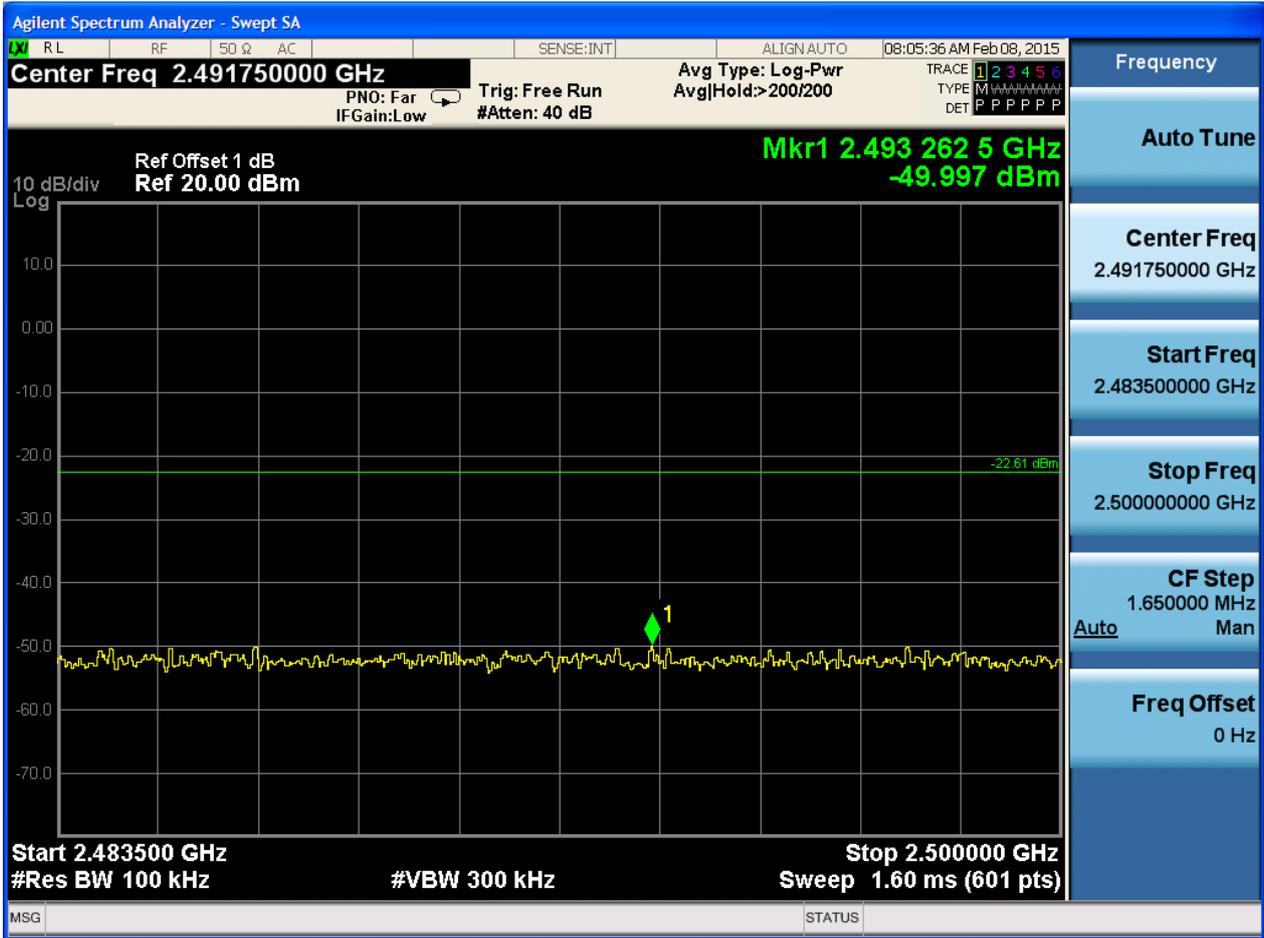
Puw:















### 2.3 11B\_H@Ant 1

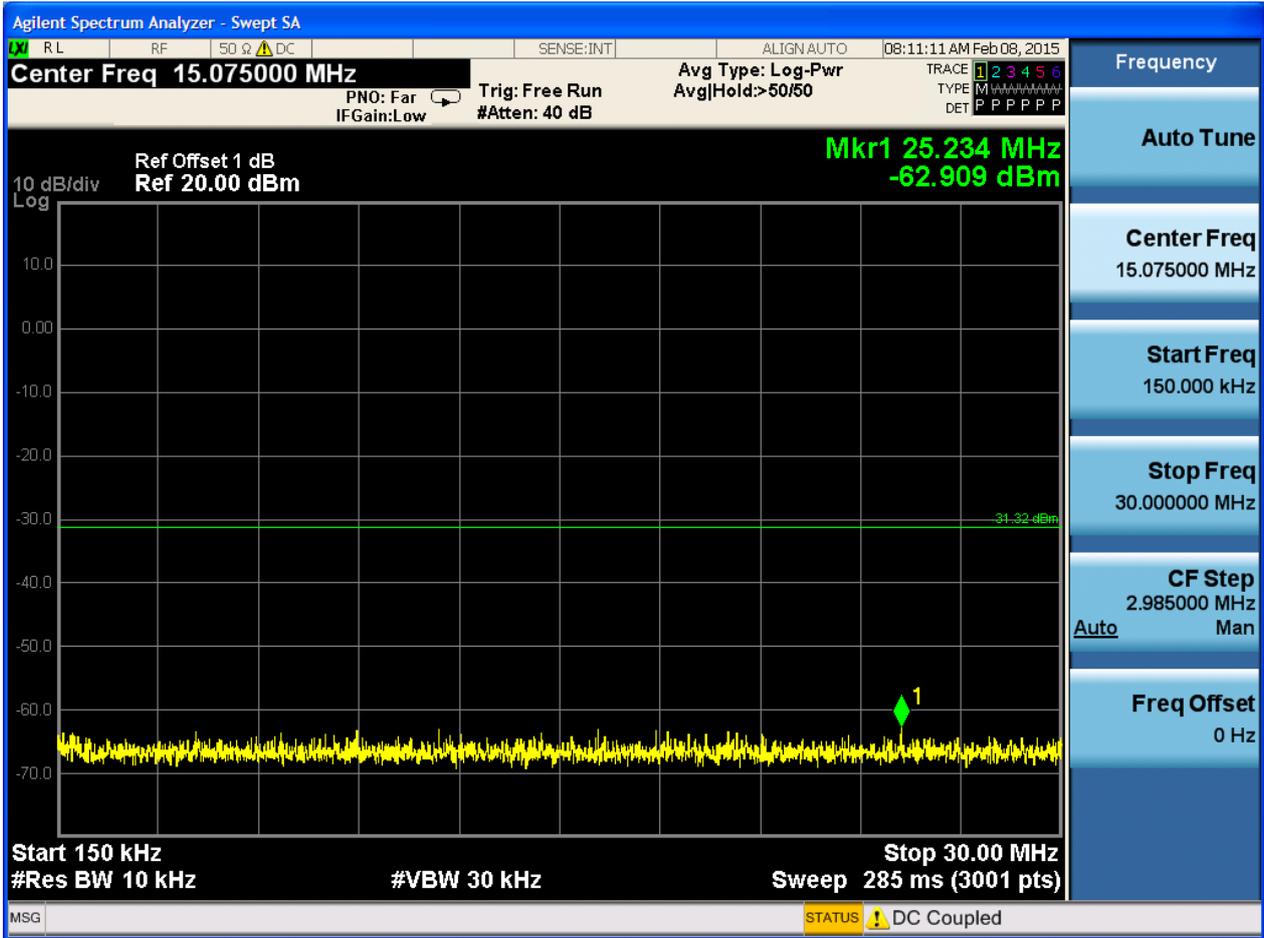
Pref:

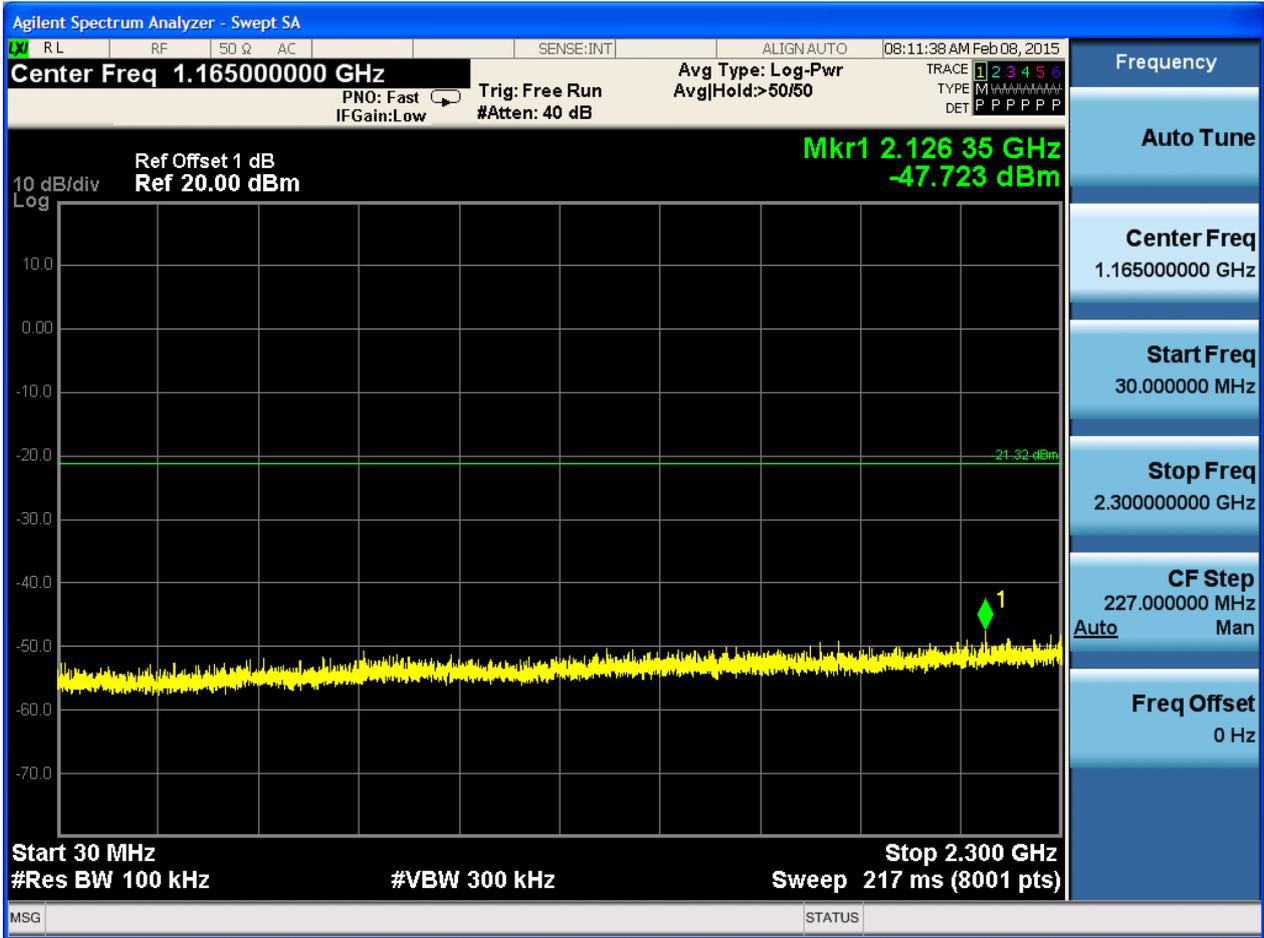


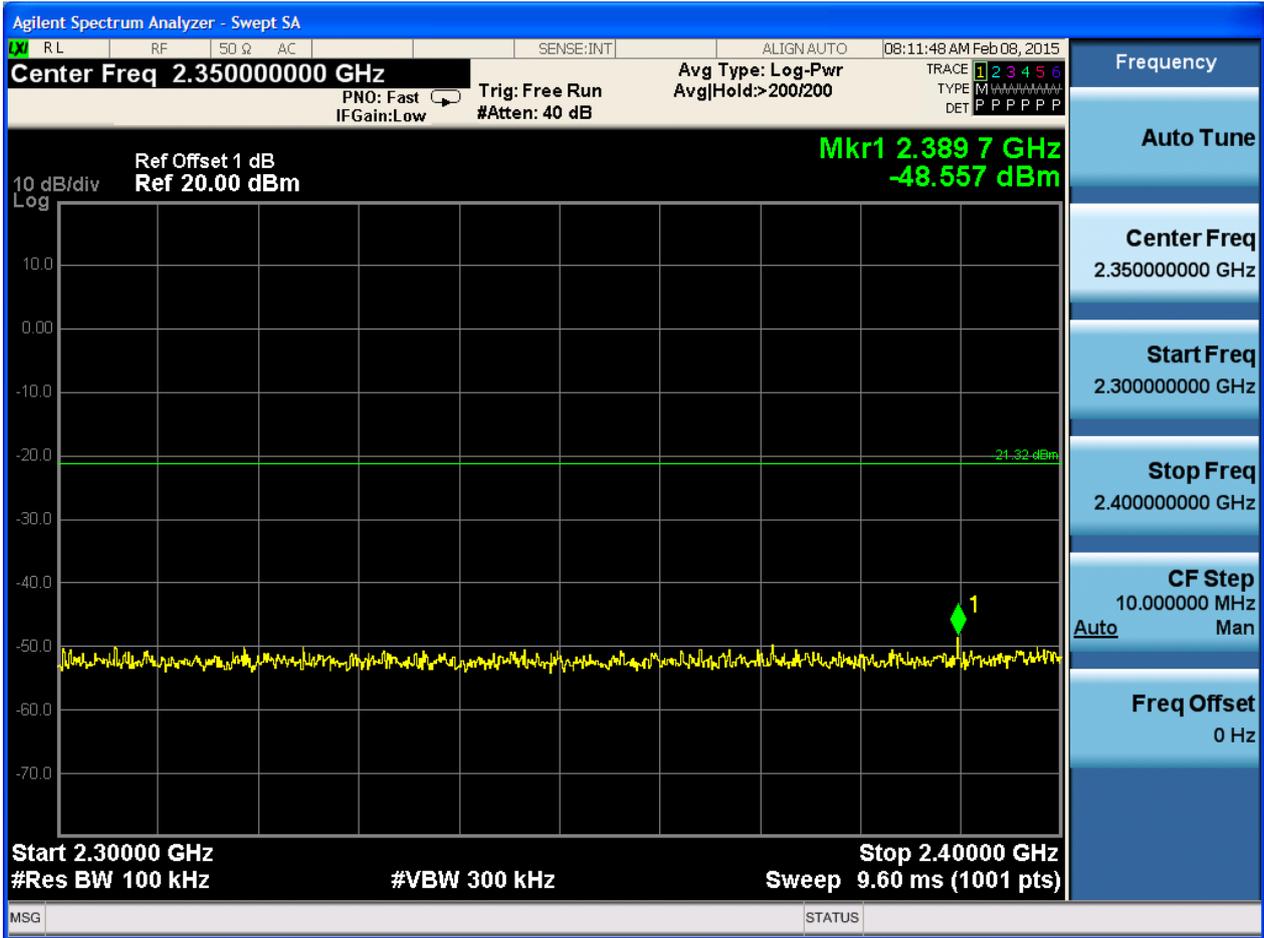


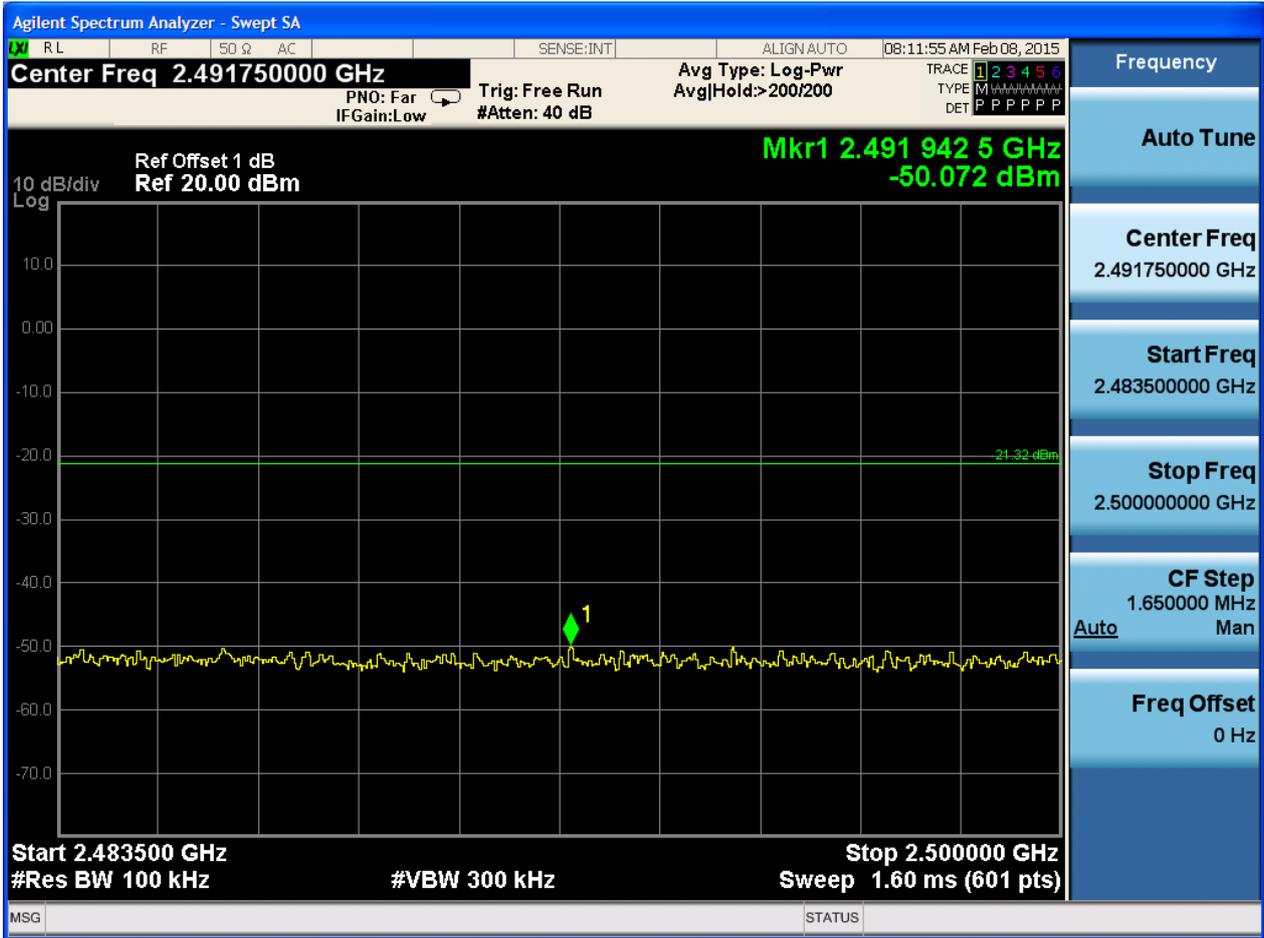
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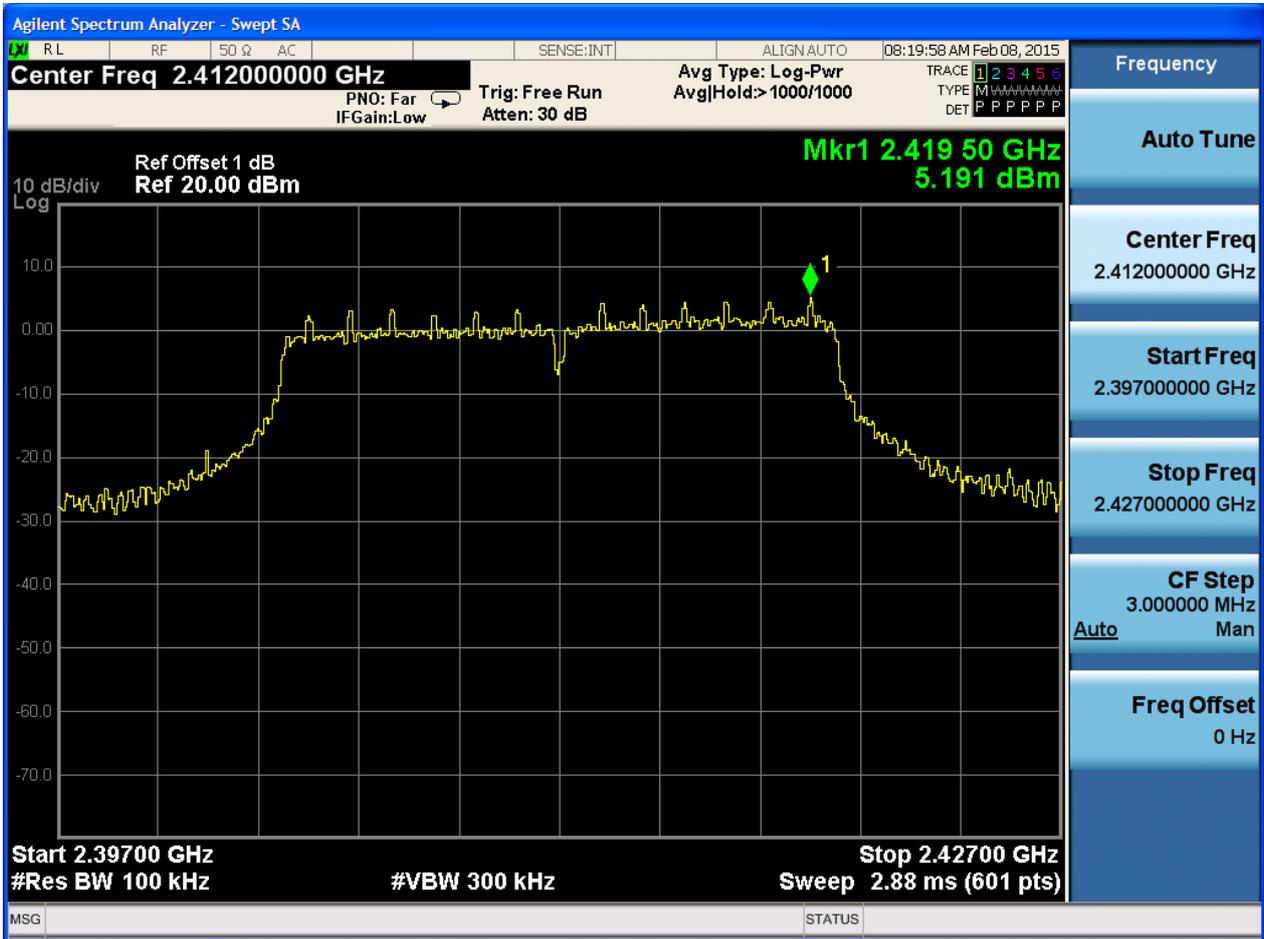






### 2.4 11G\_L@Ant 1

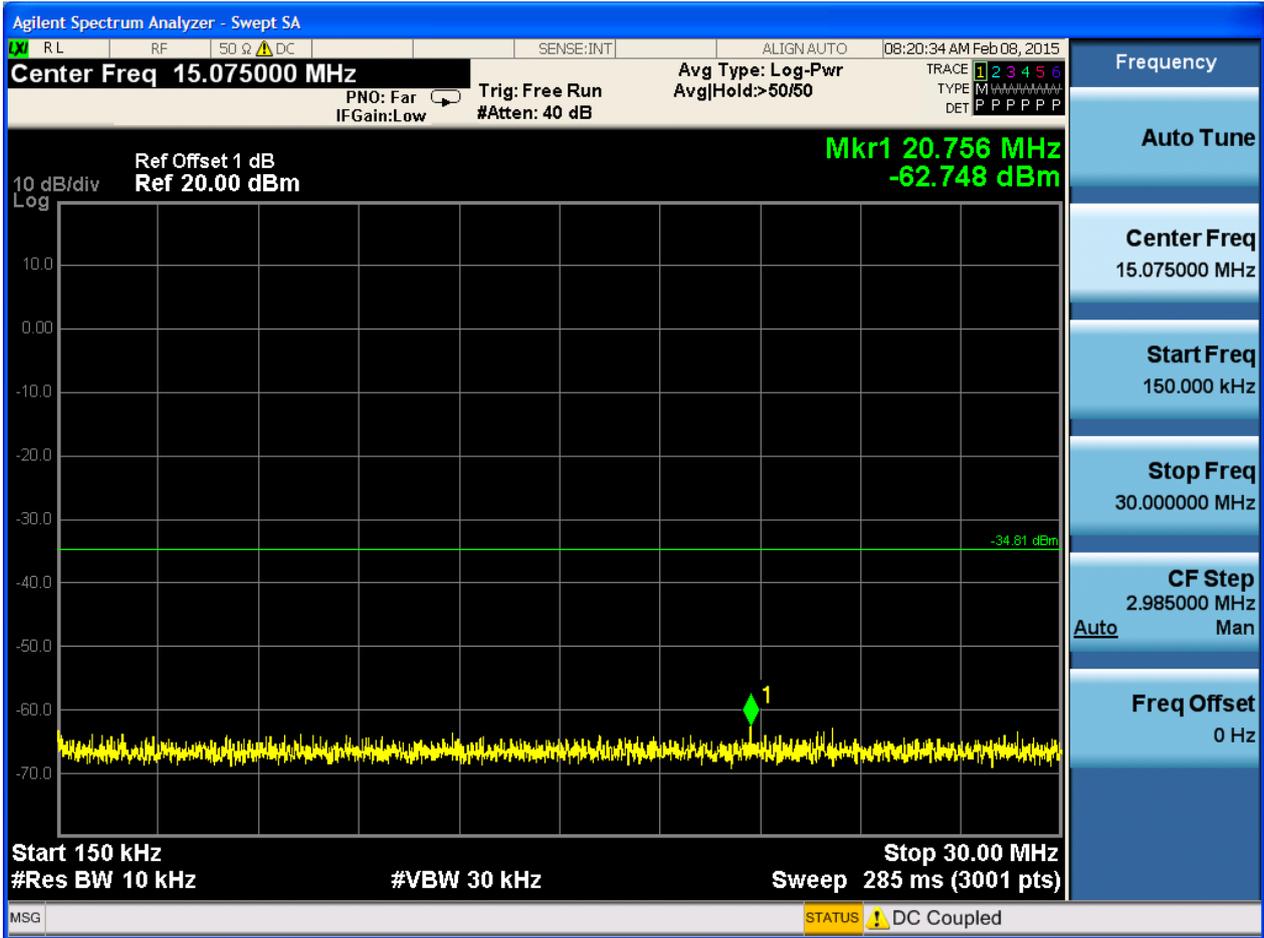
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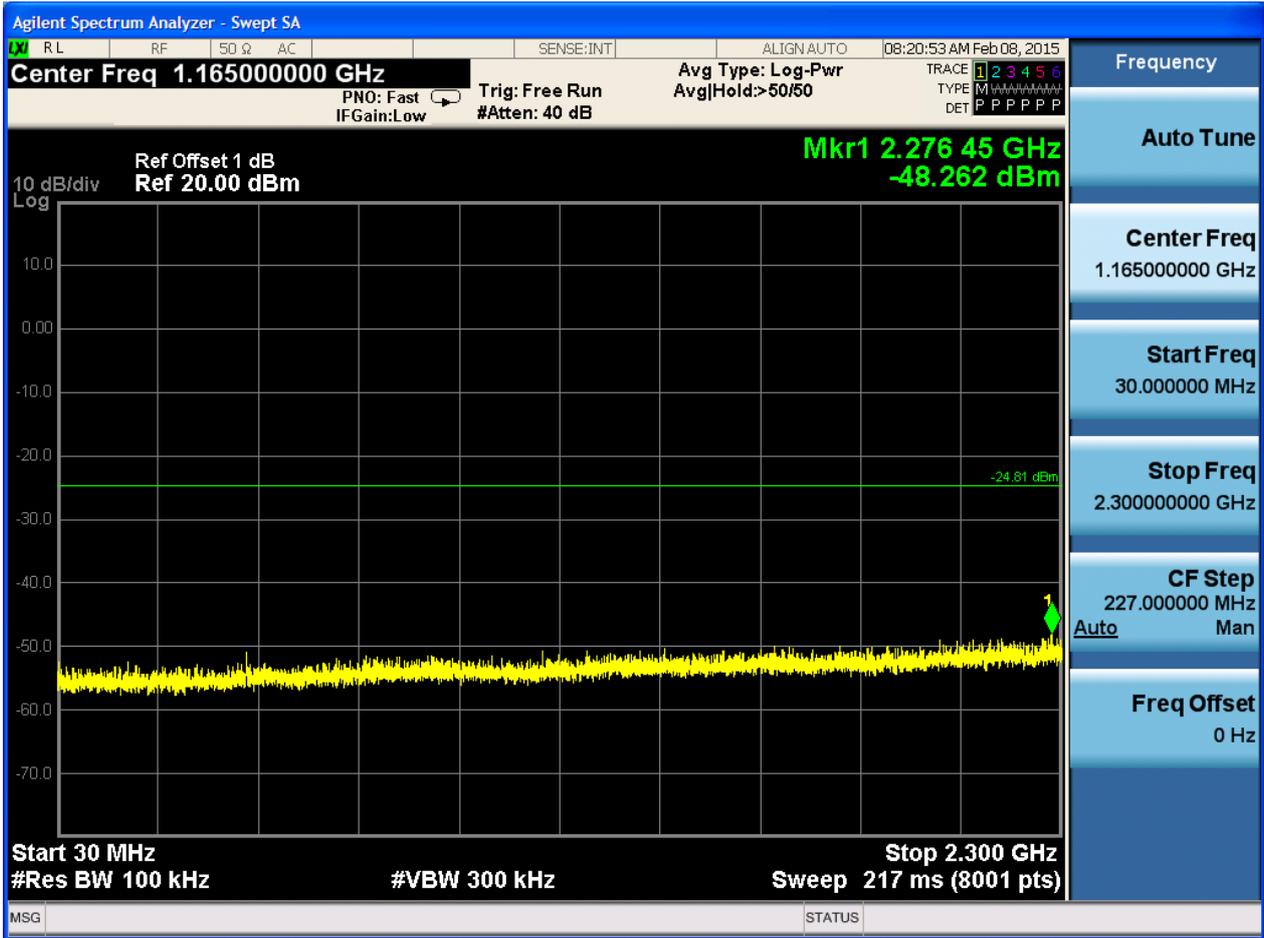


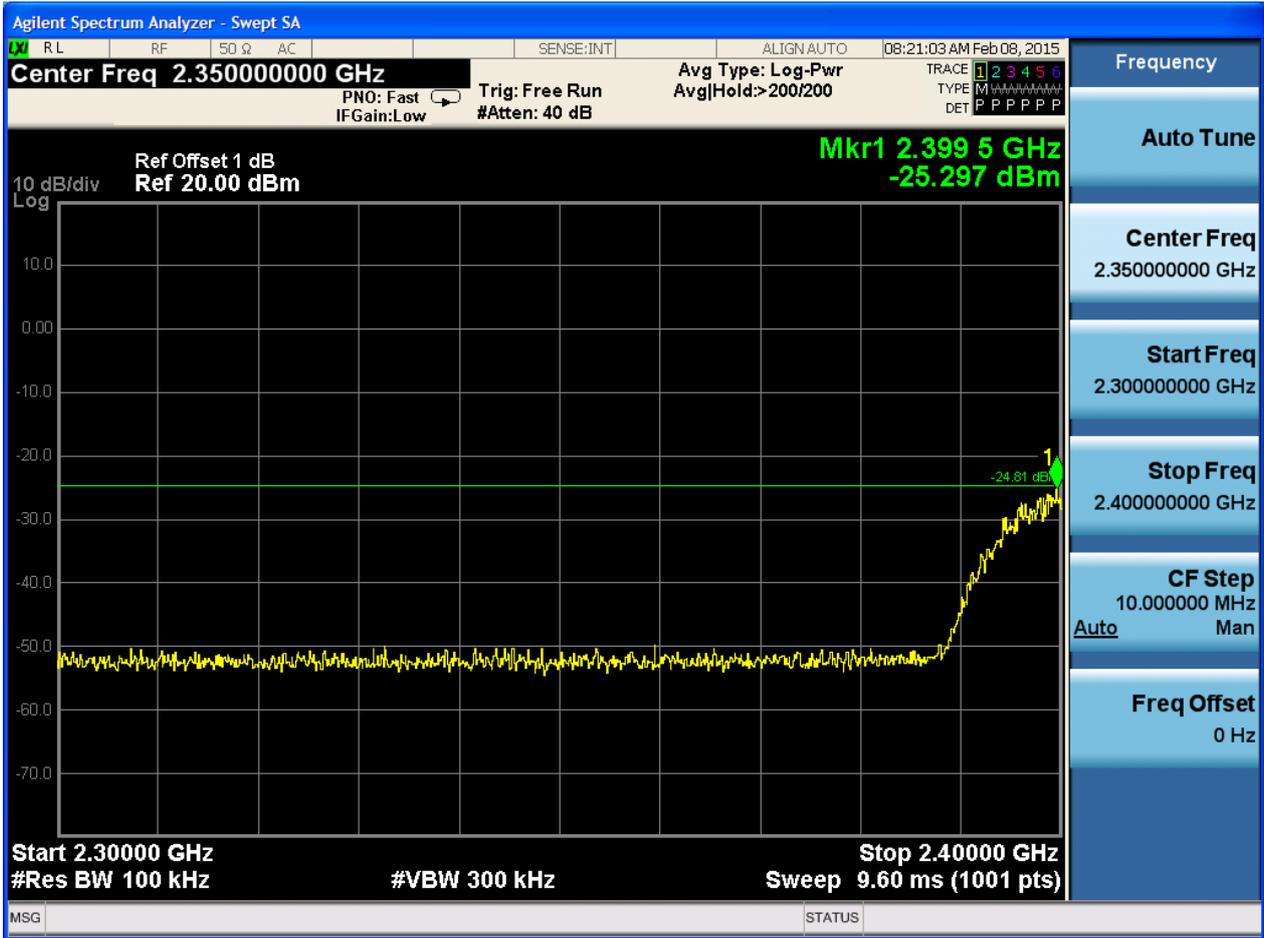


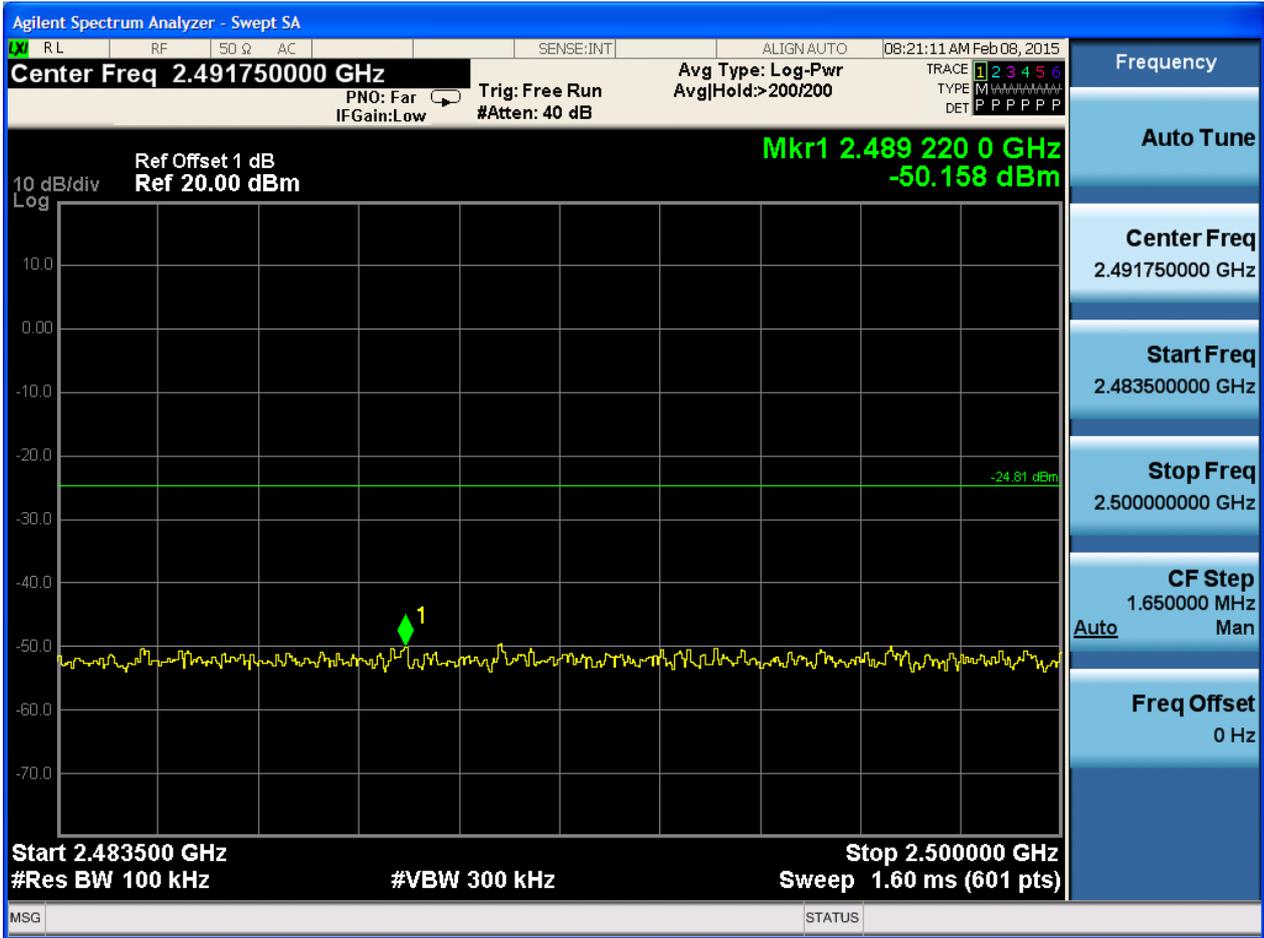
Puw:

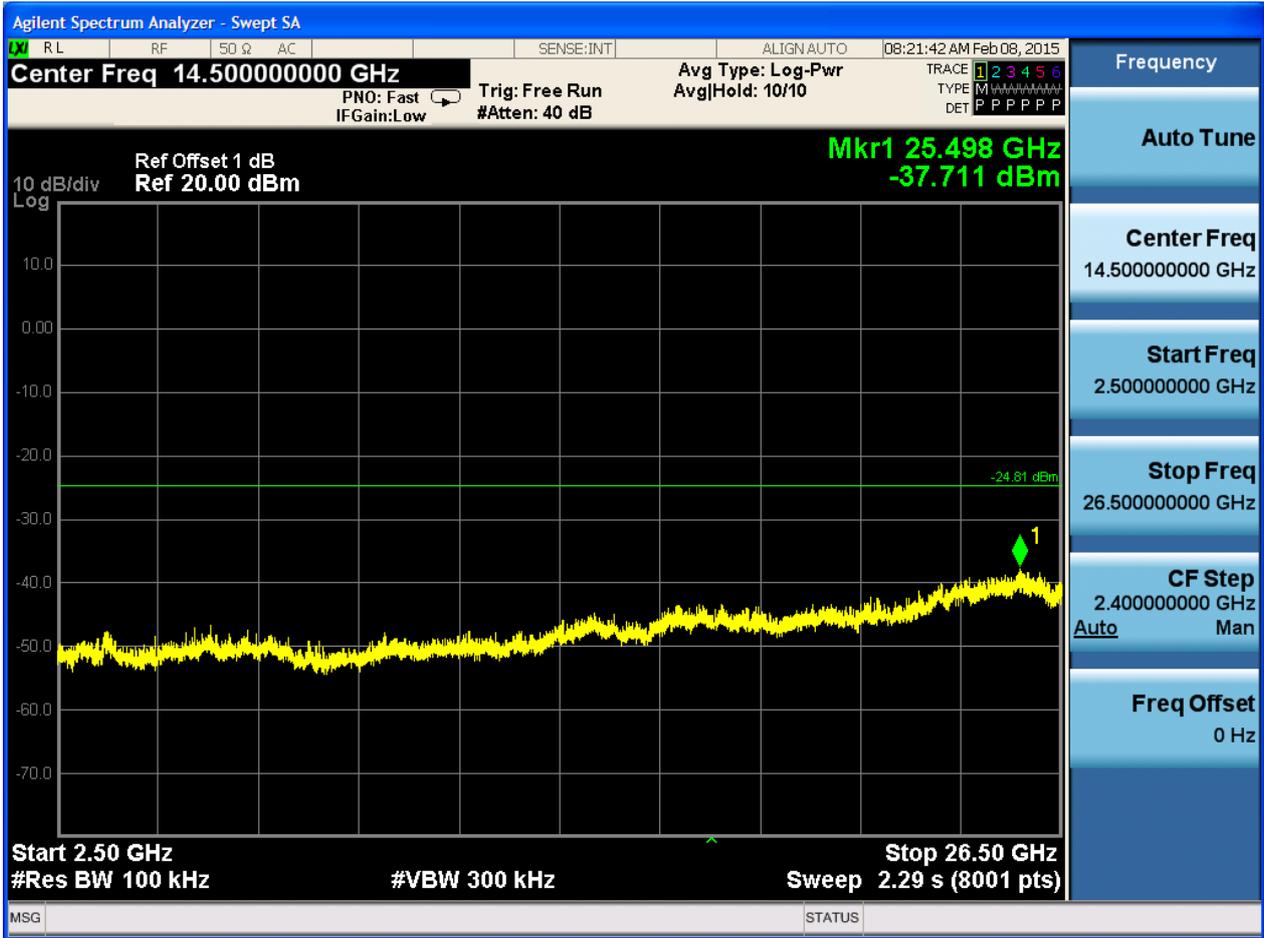








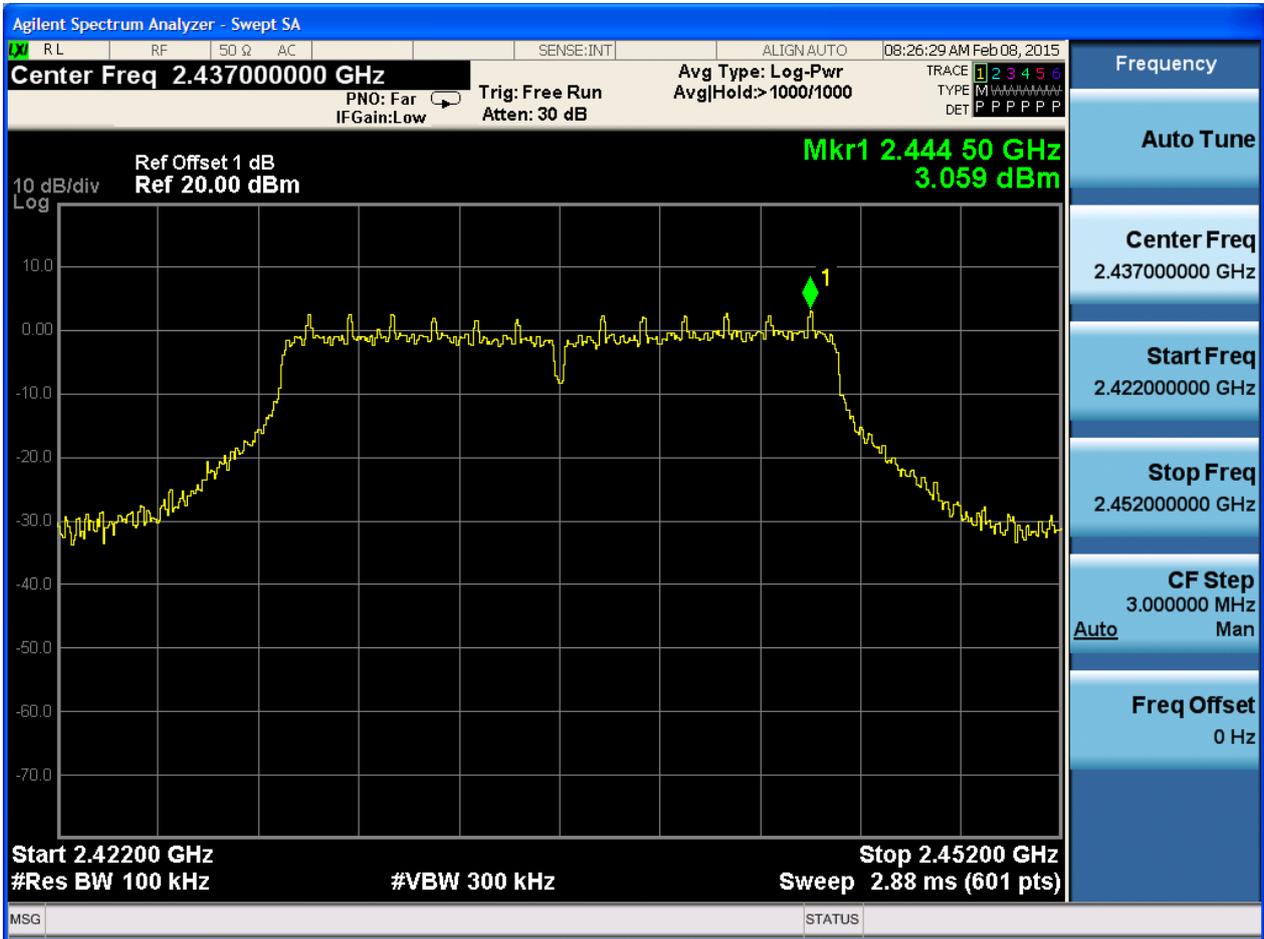






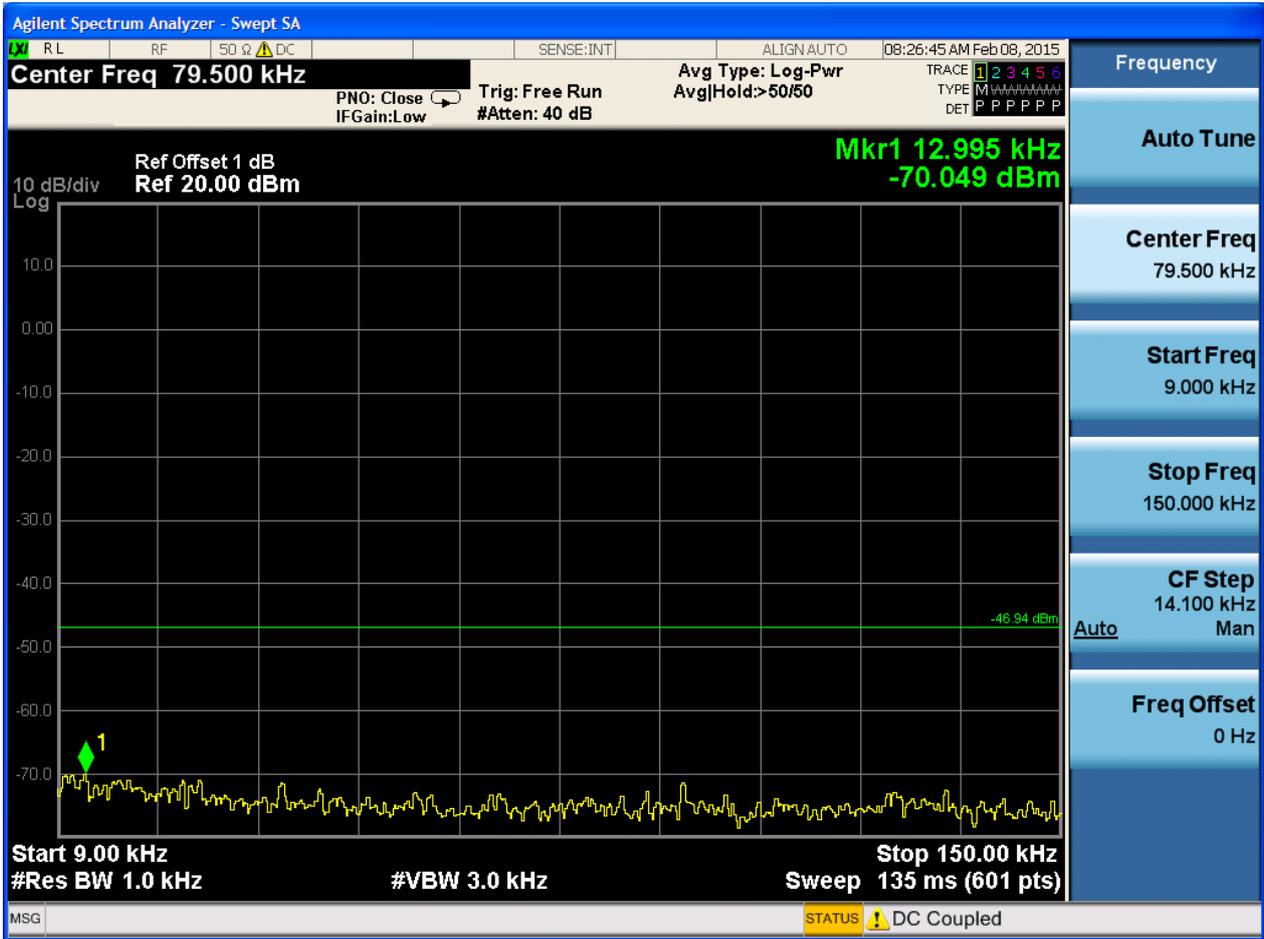
### 2.5 11G\_M@Ant 1

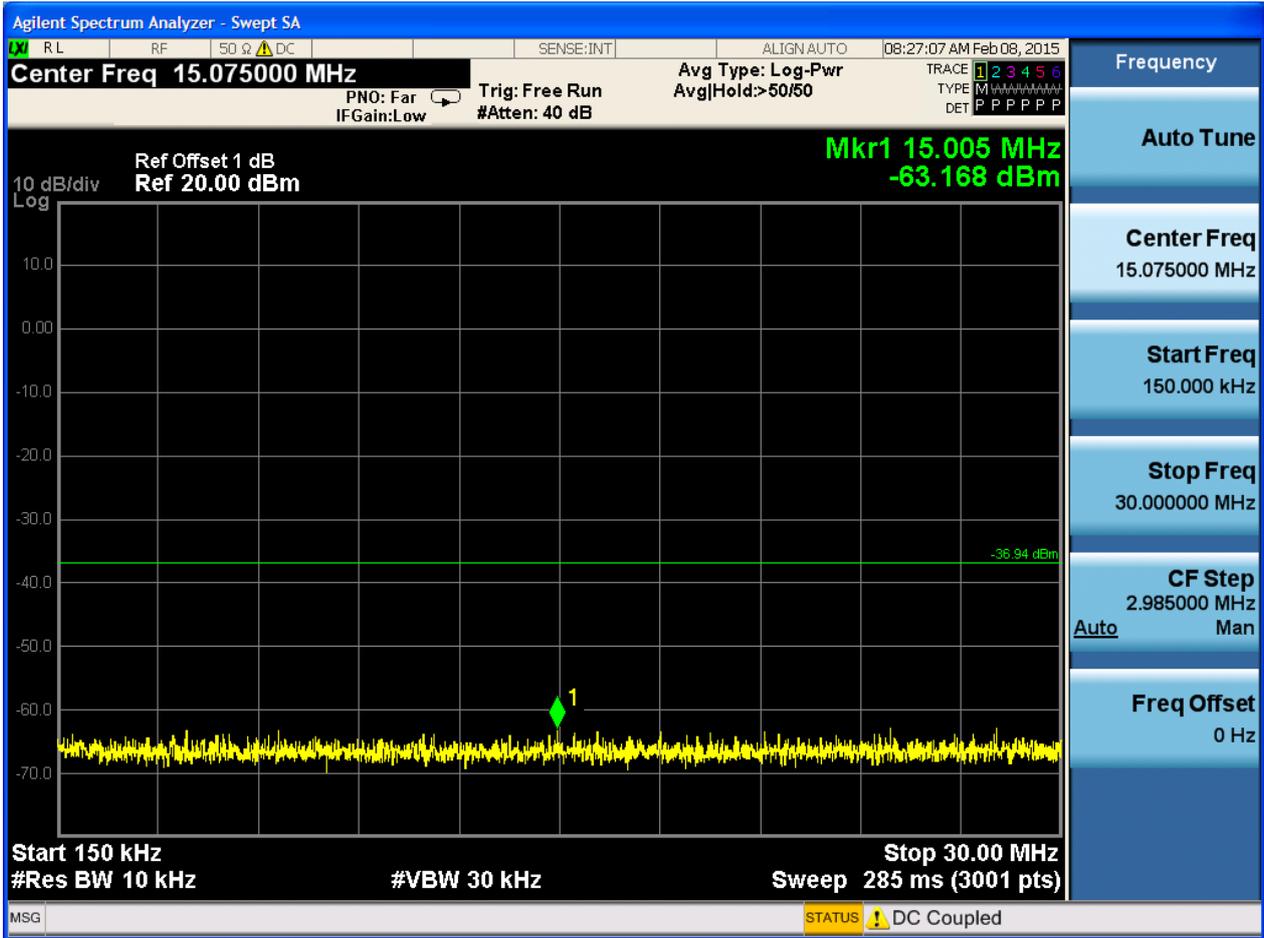
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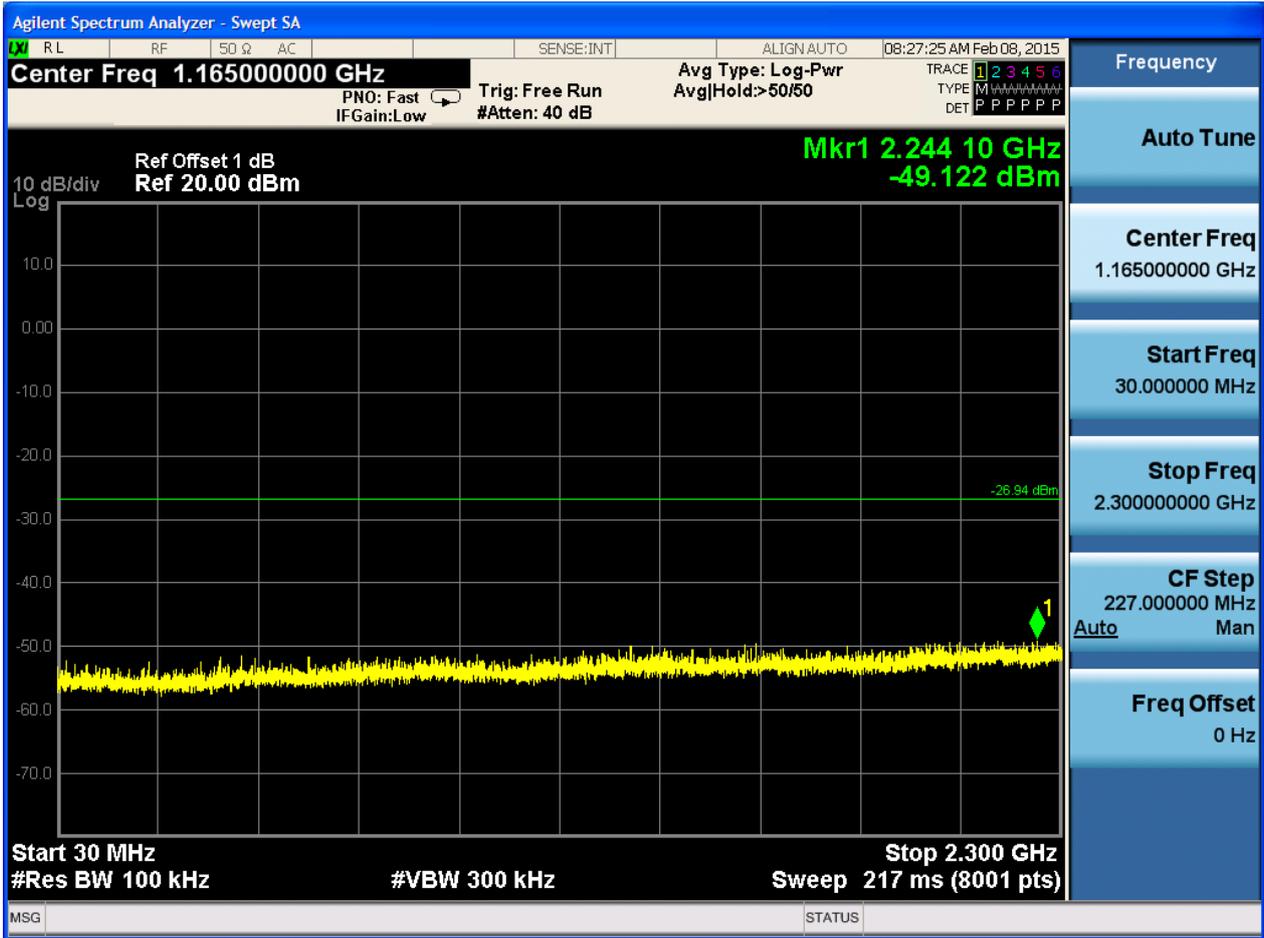


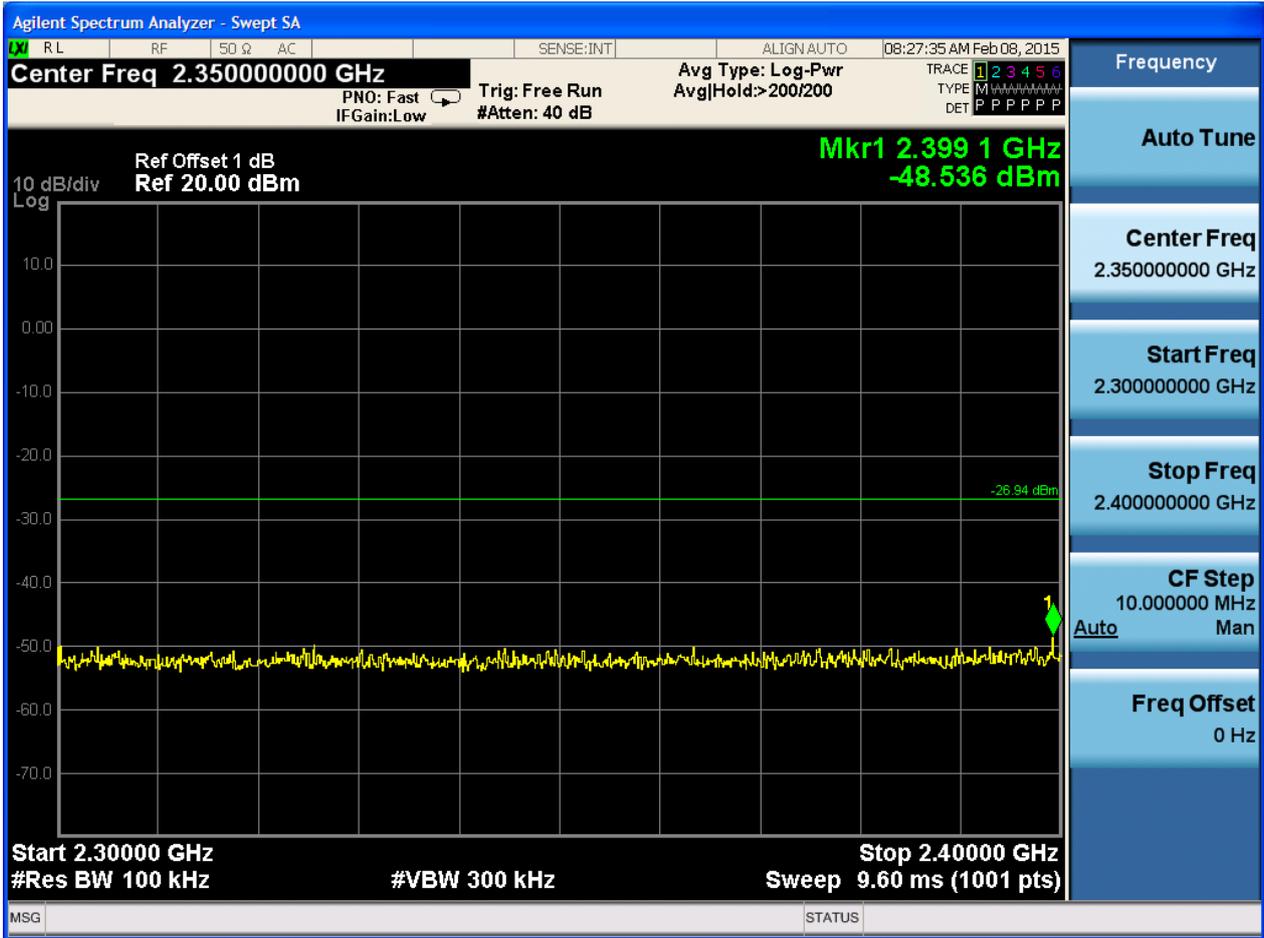


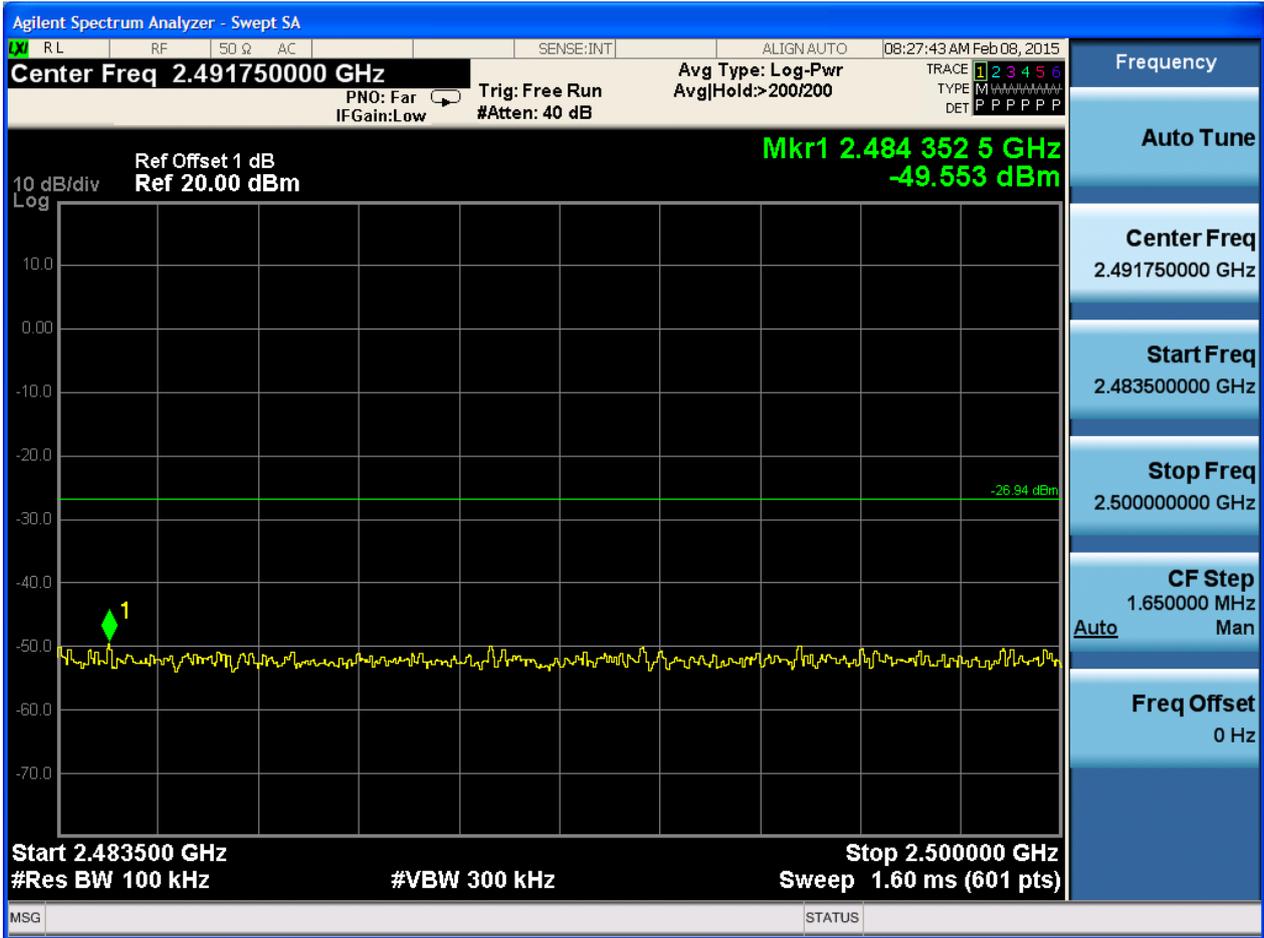
Puw:

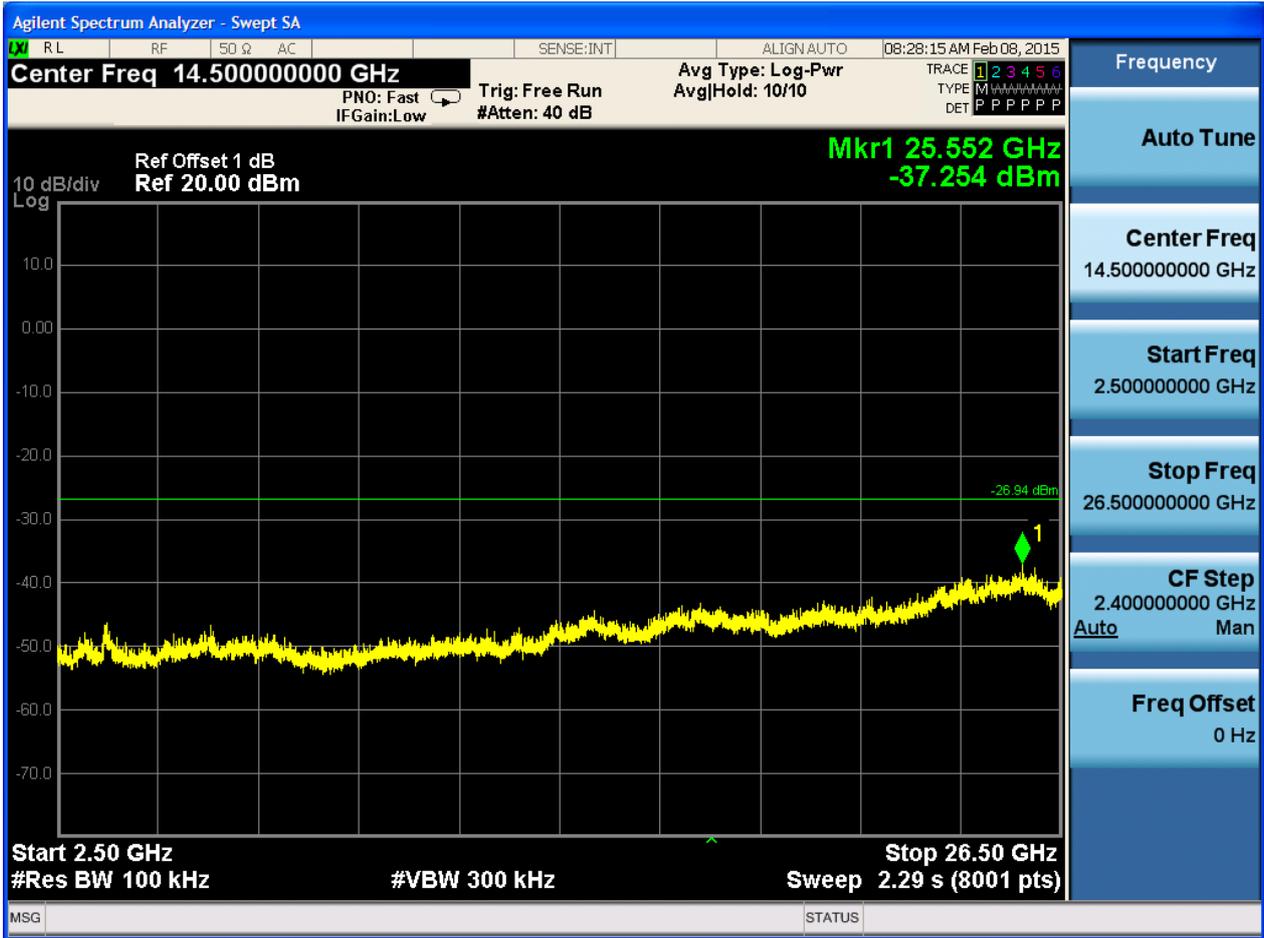








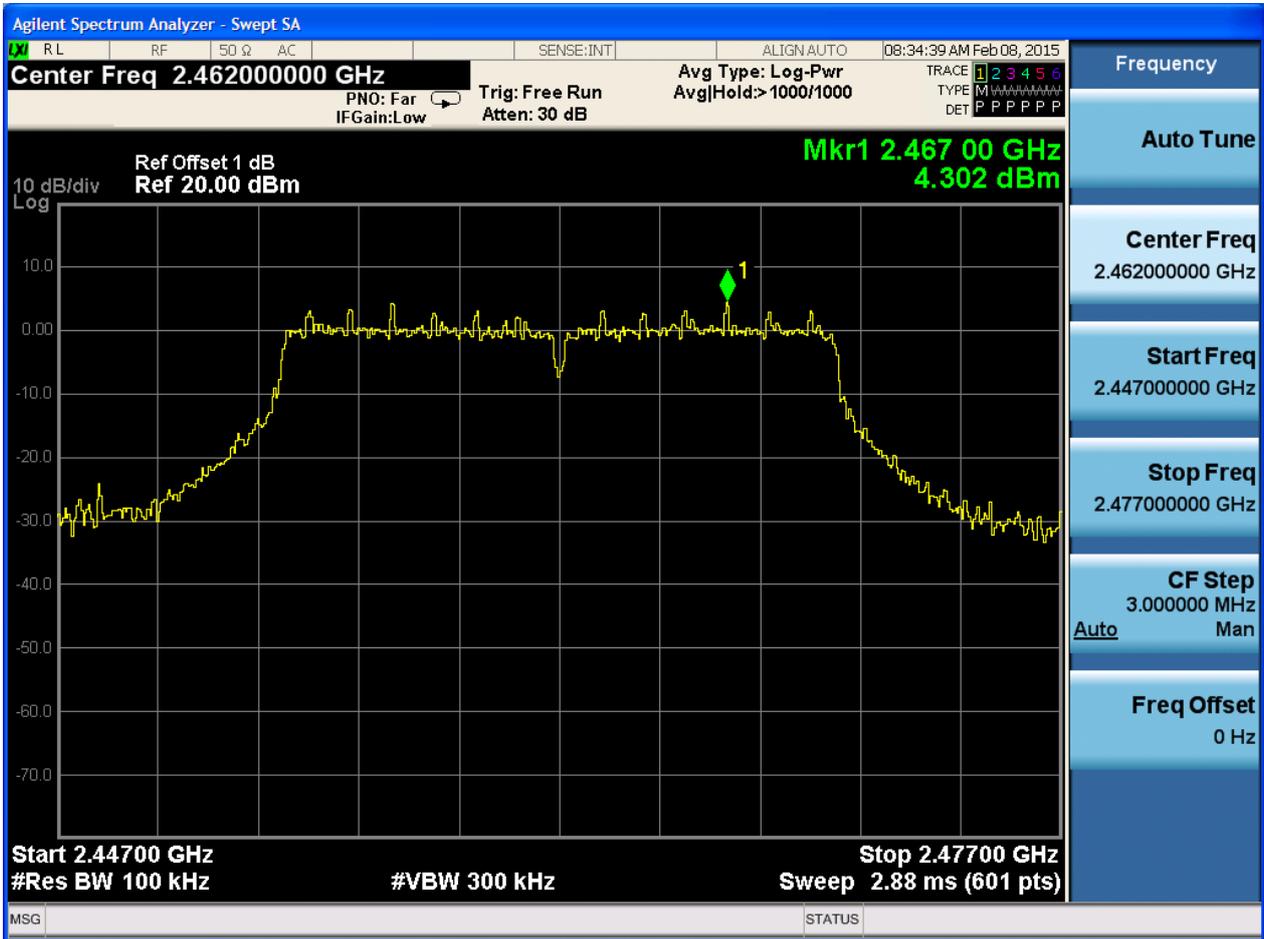






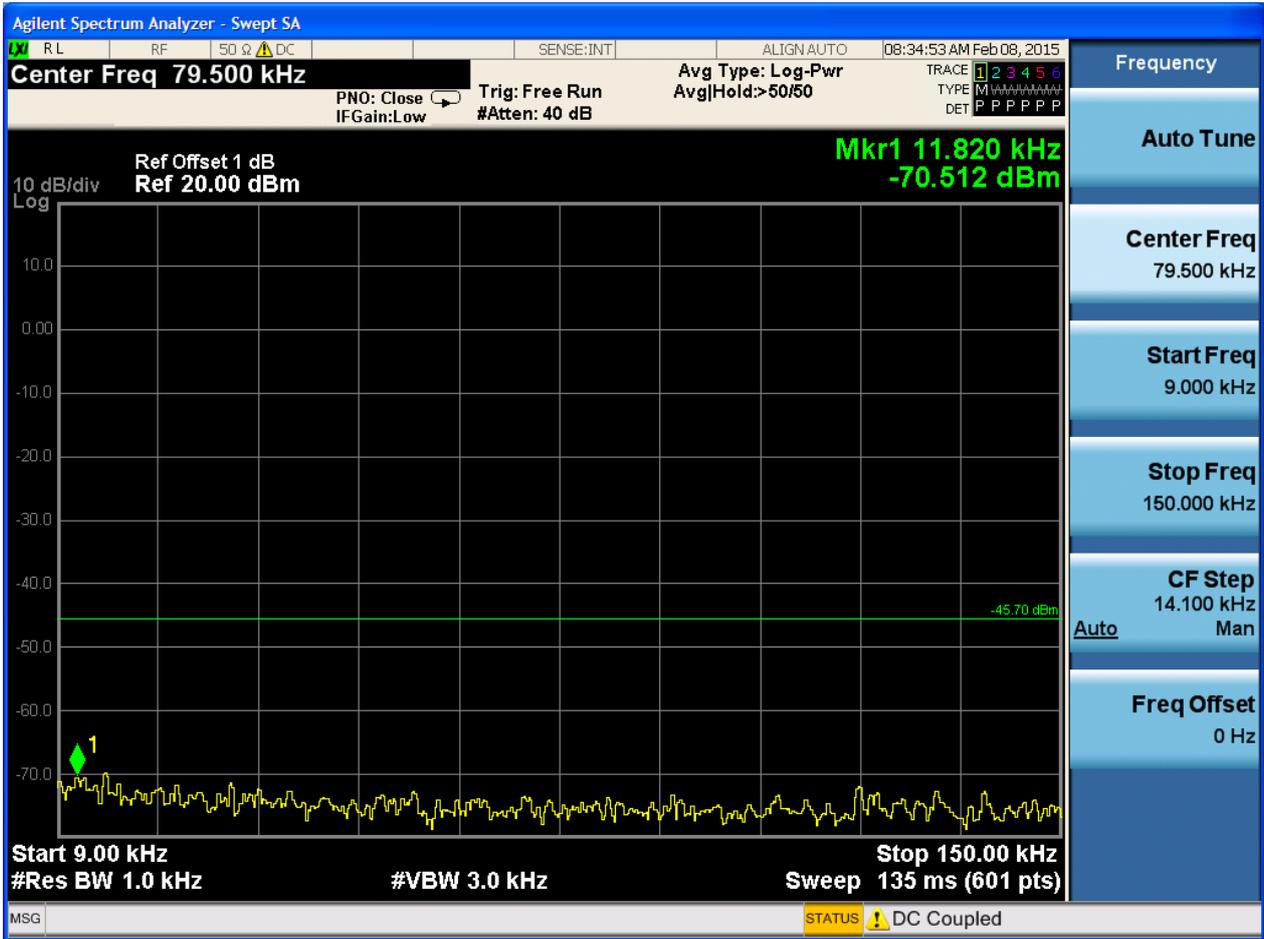
### 2.6 11G\_H@Ant 1

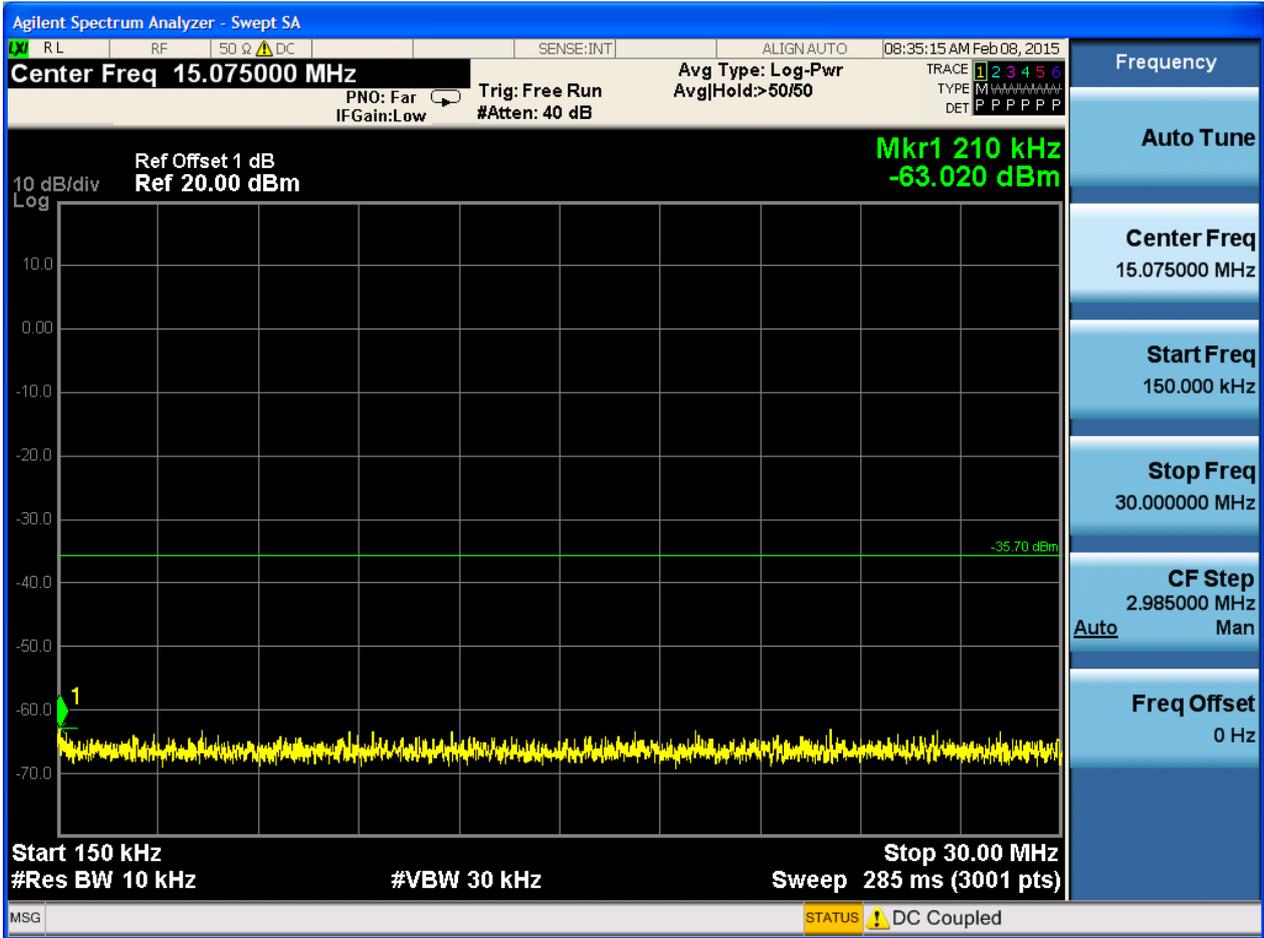
Pref:

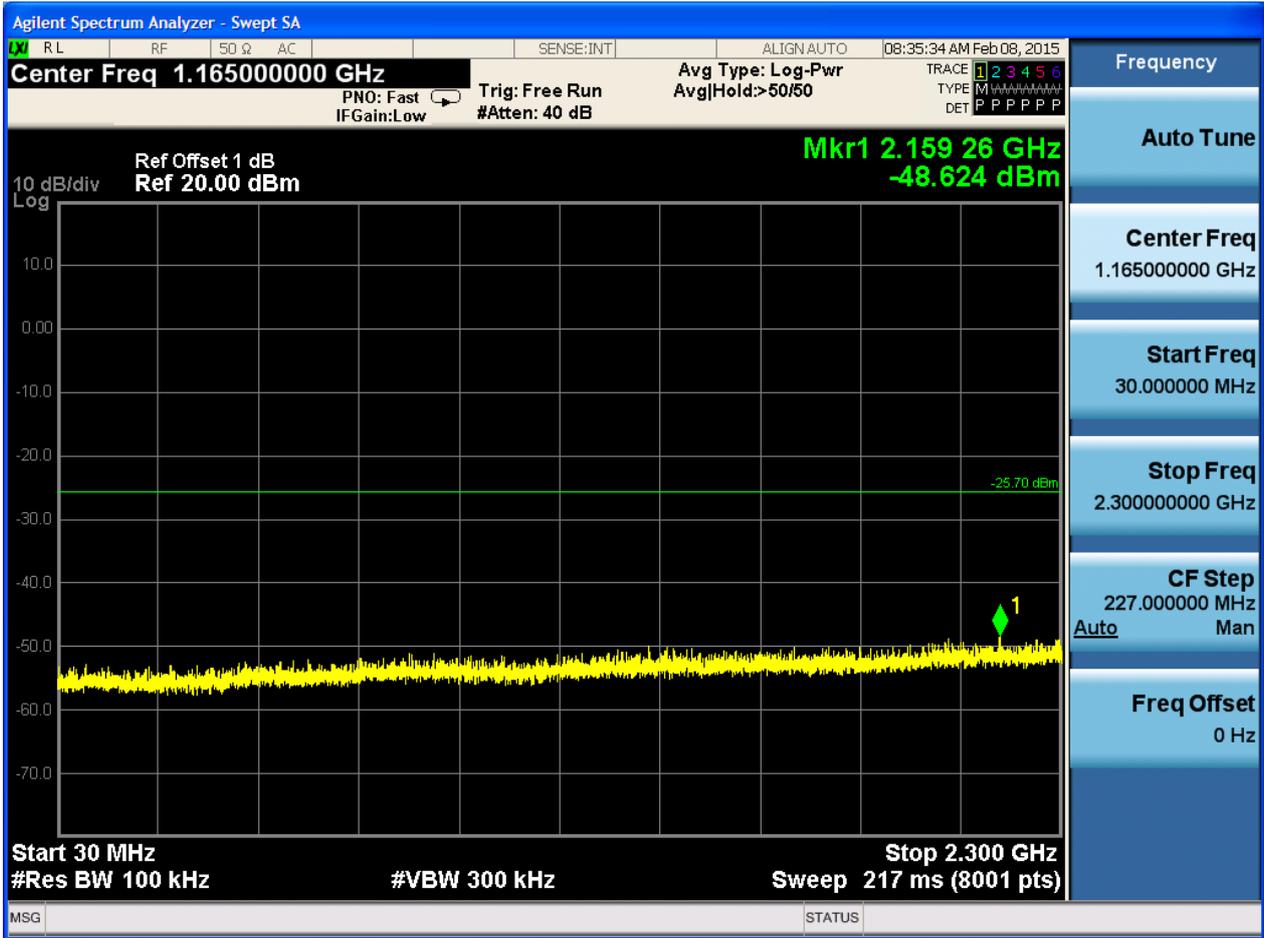


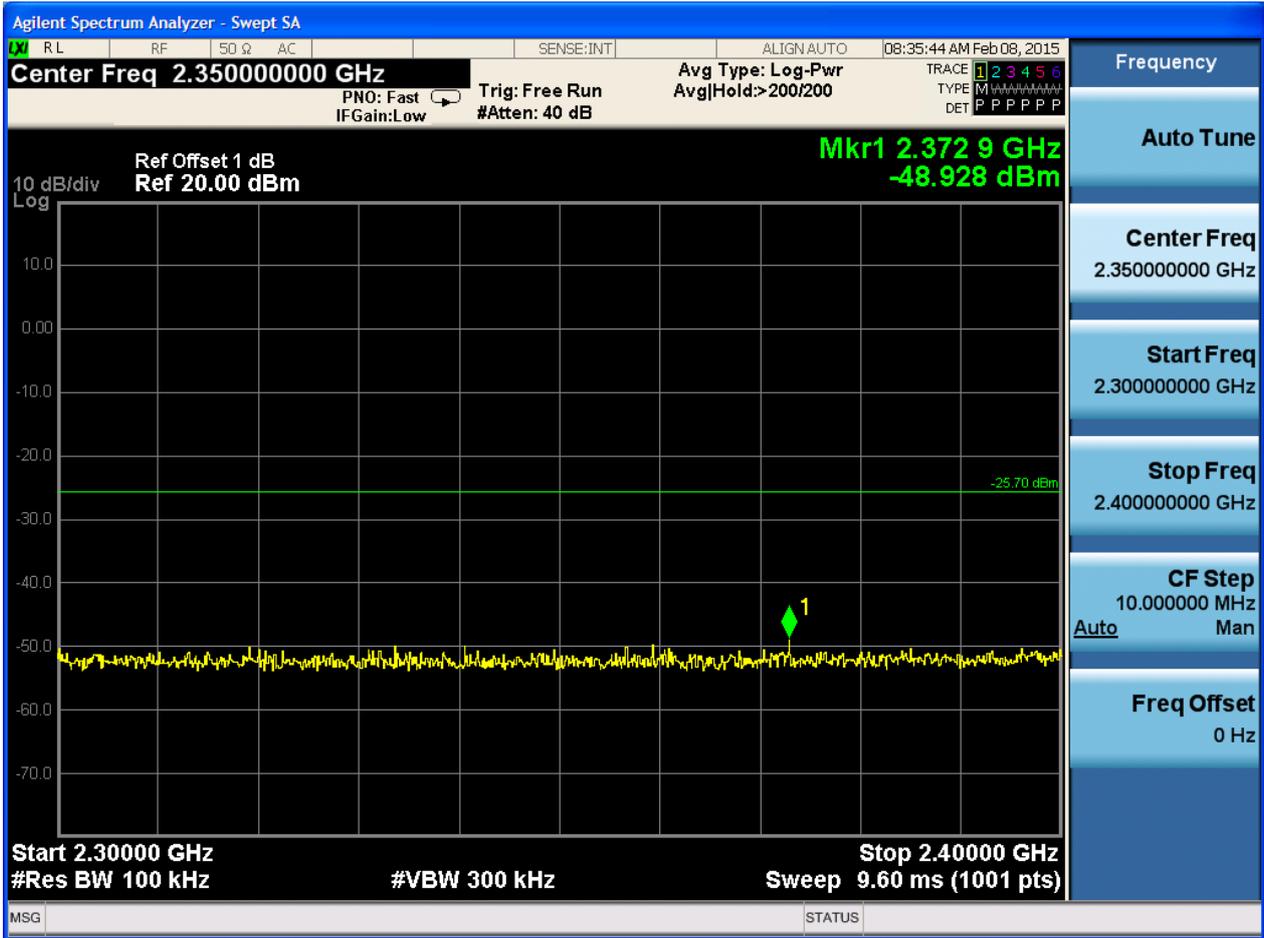


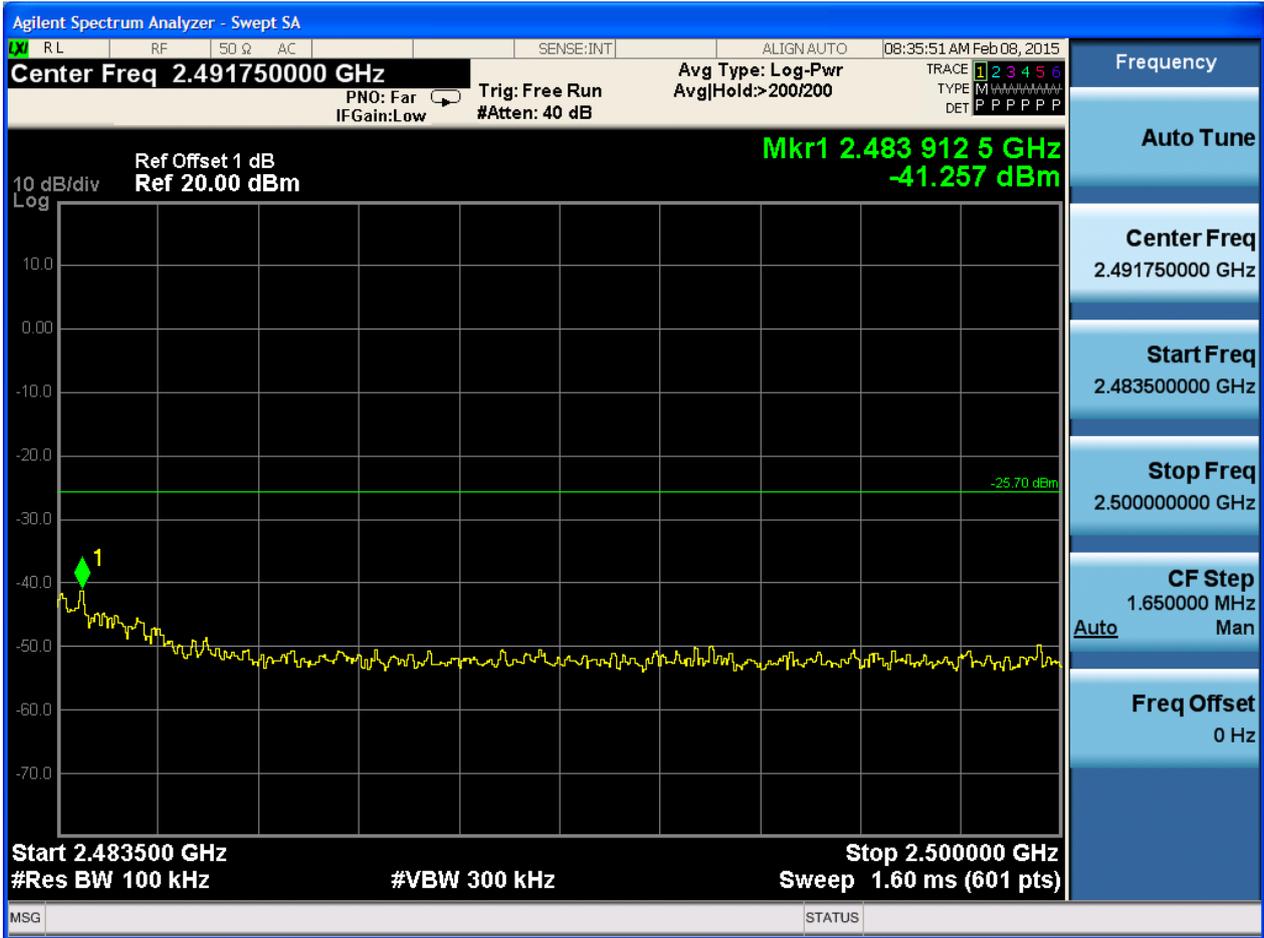
Puw:









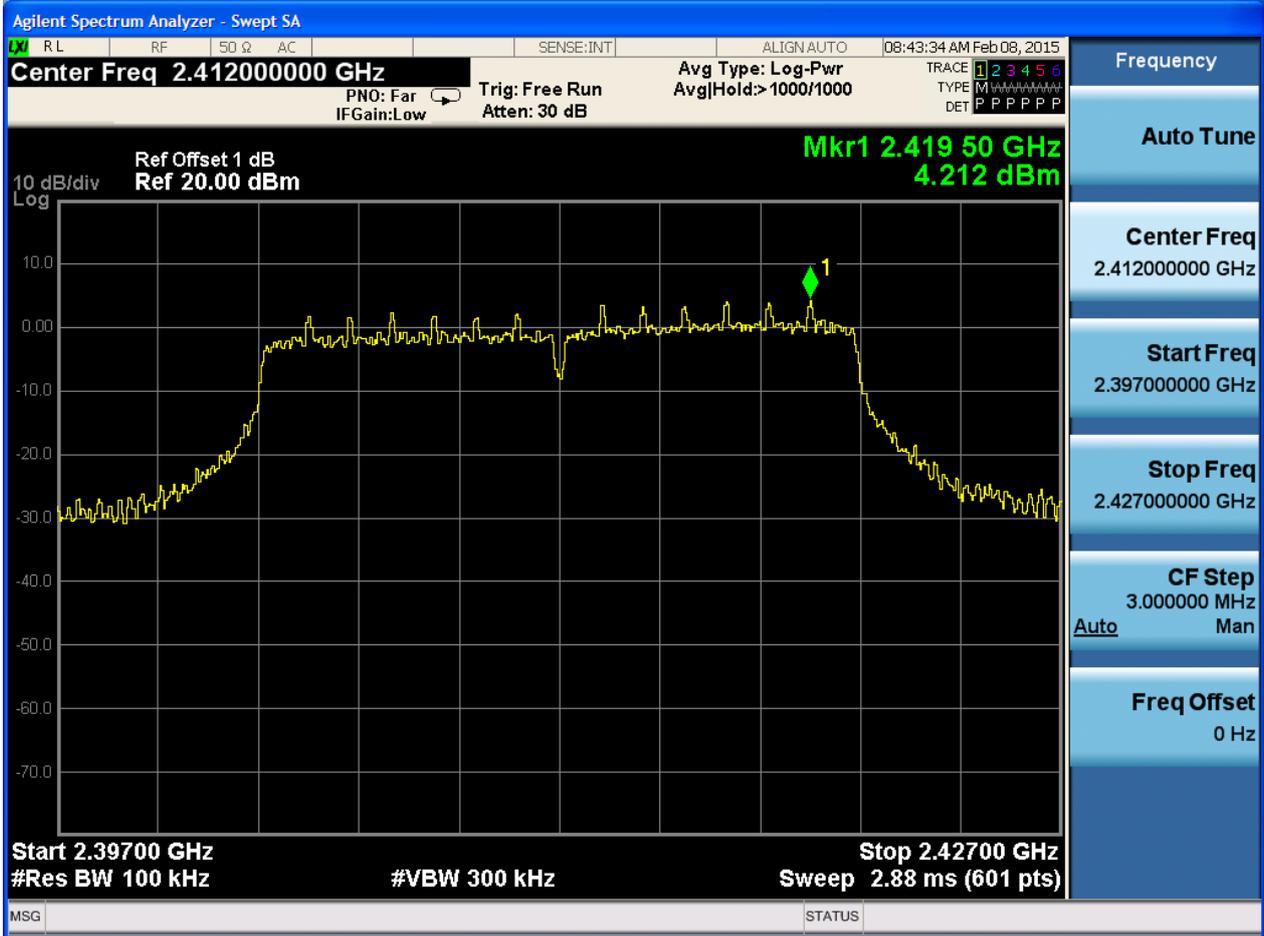






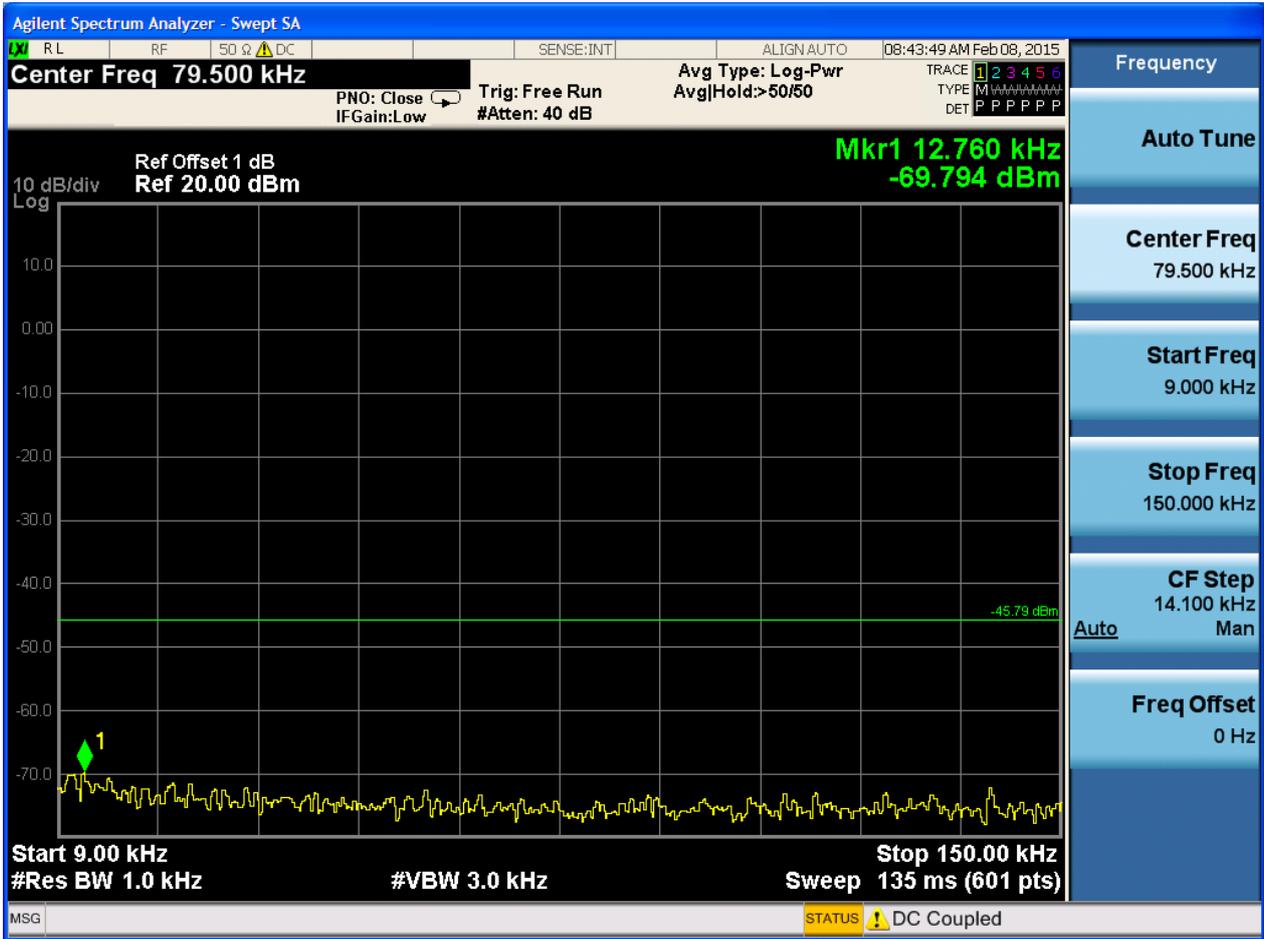
### 2.7 11N20\_L@Ant 1

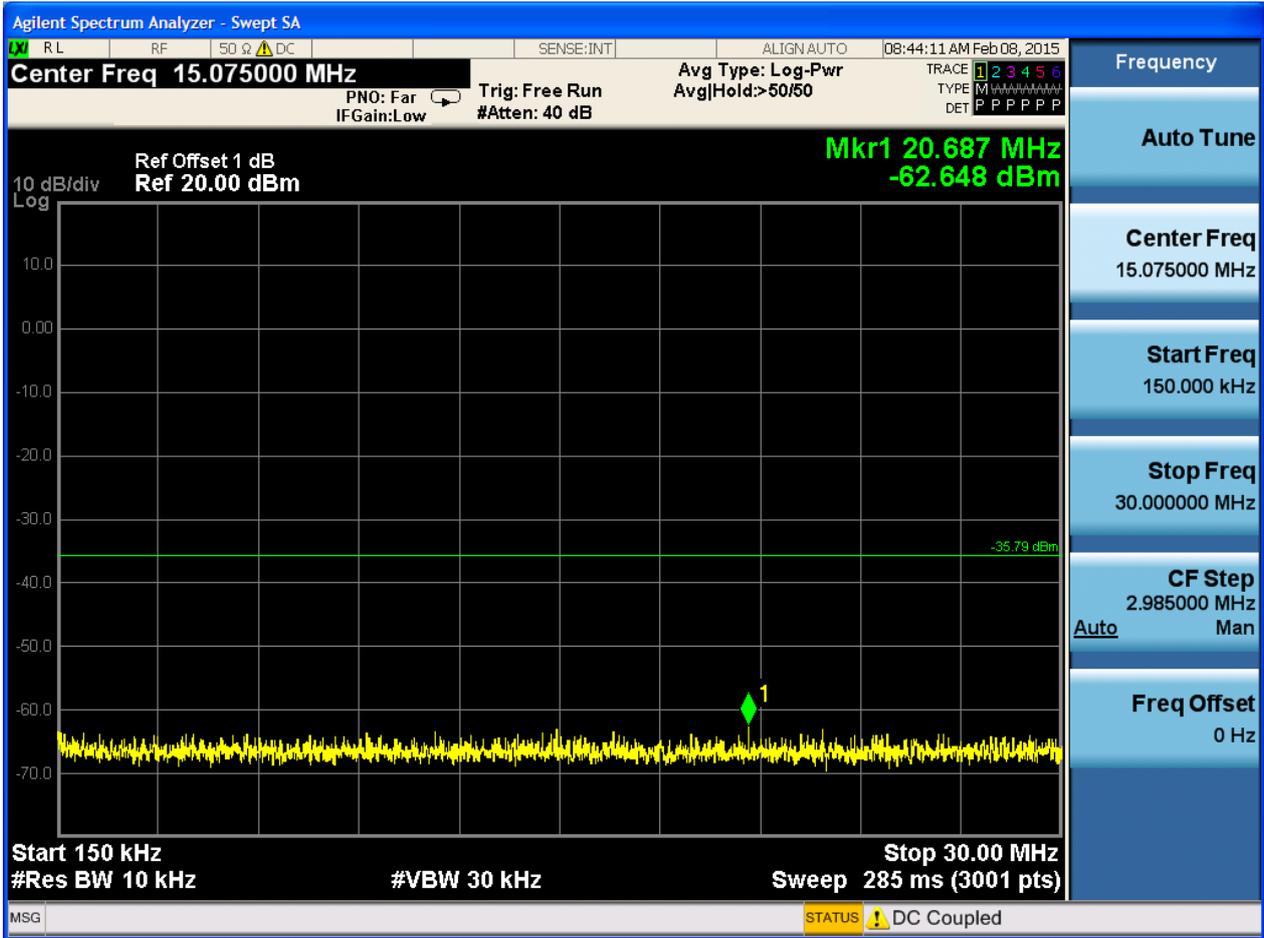
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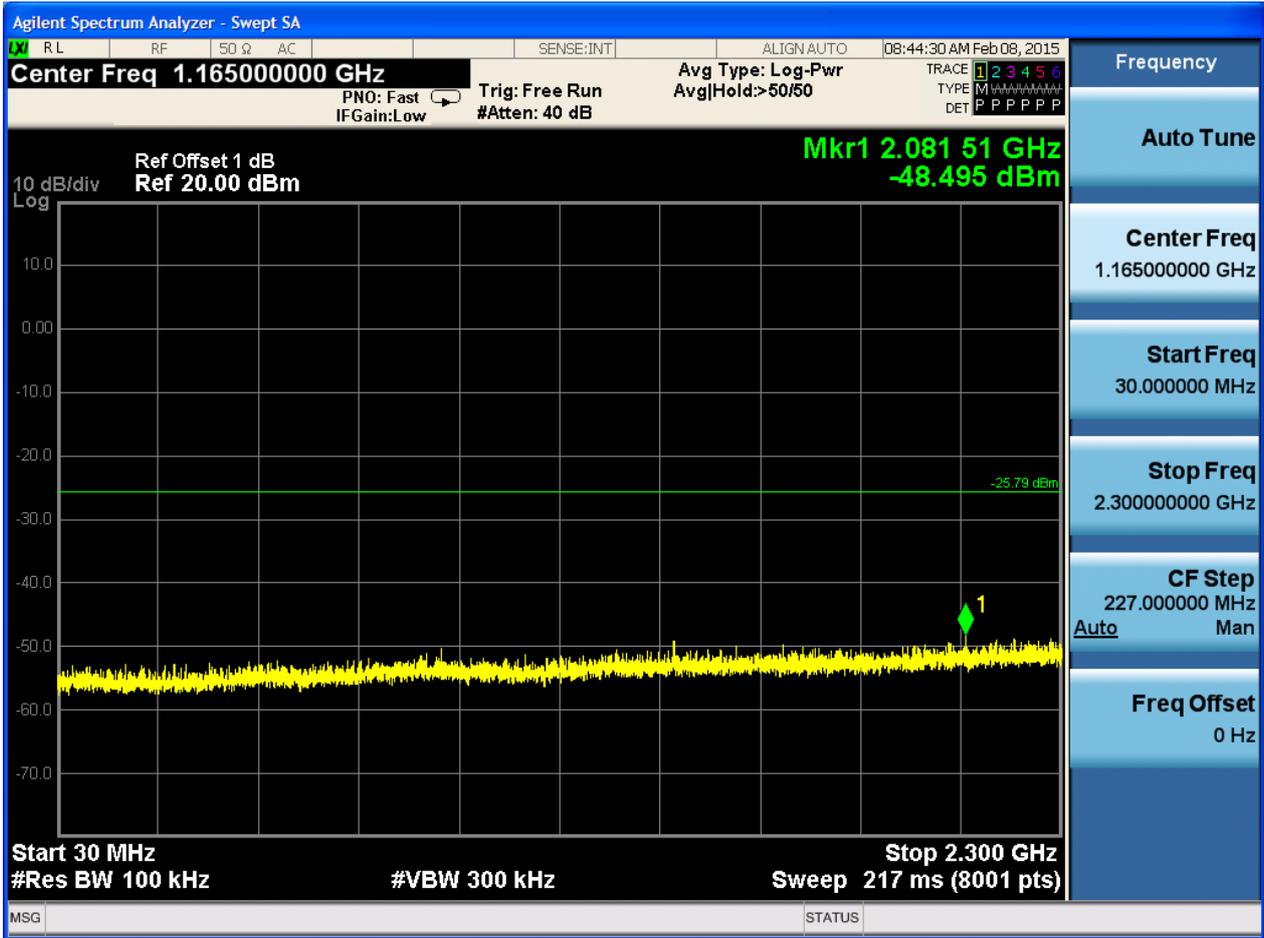


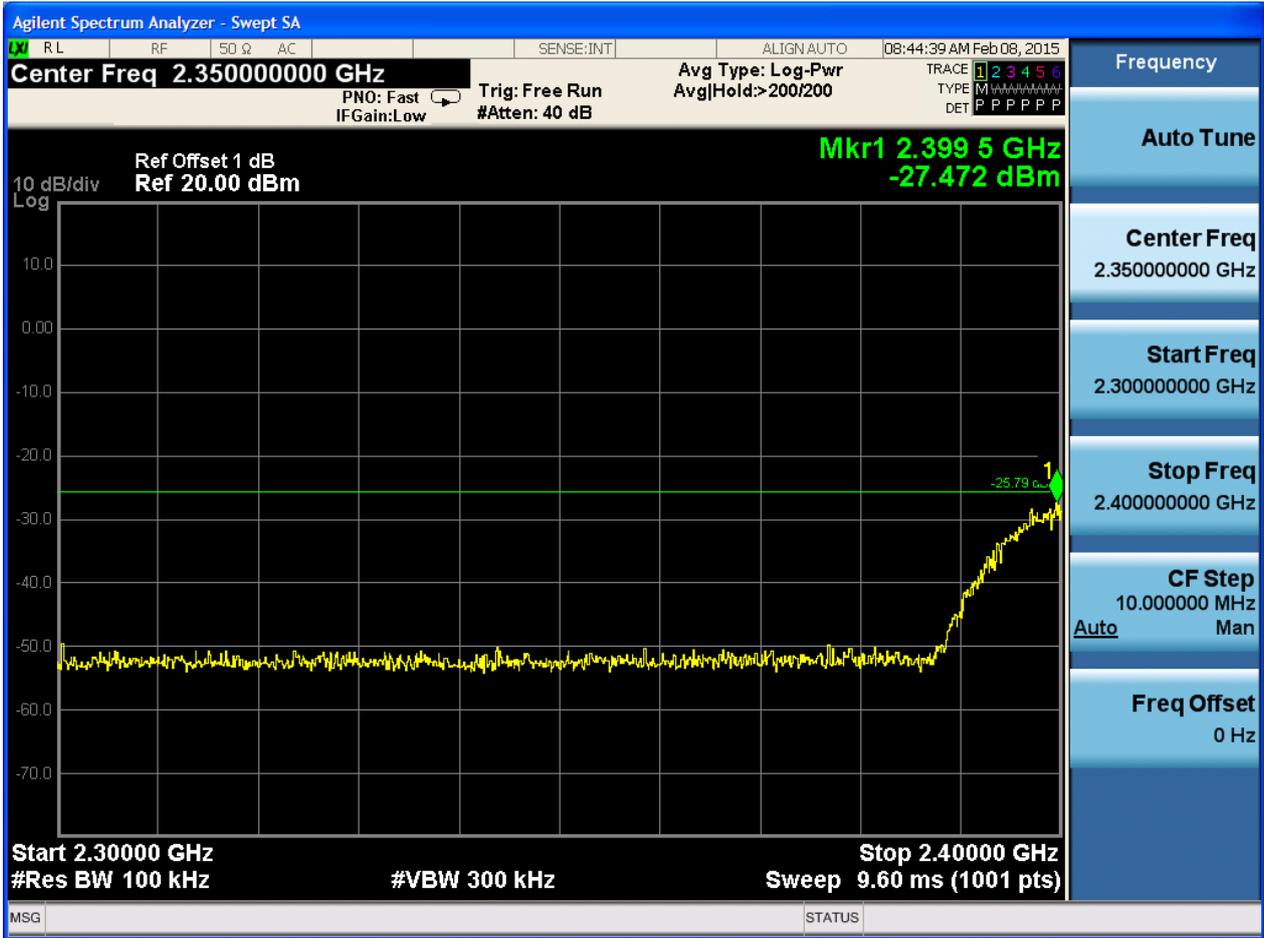


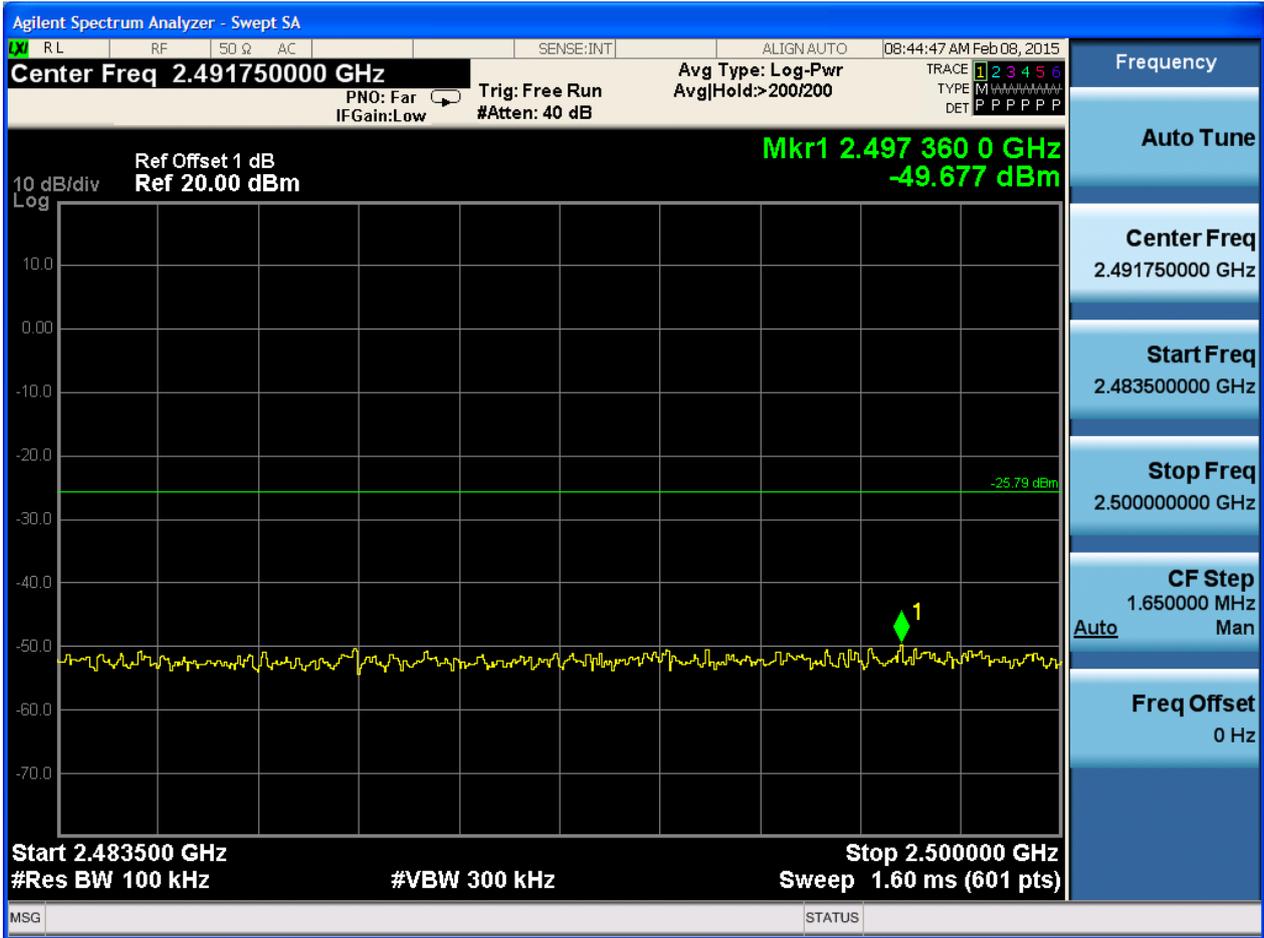
Puw:















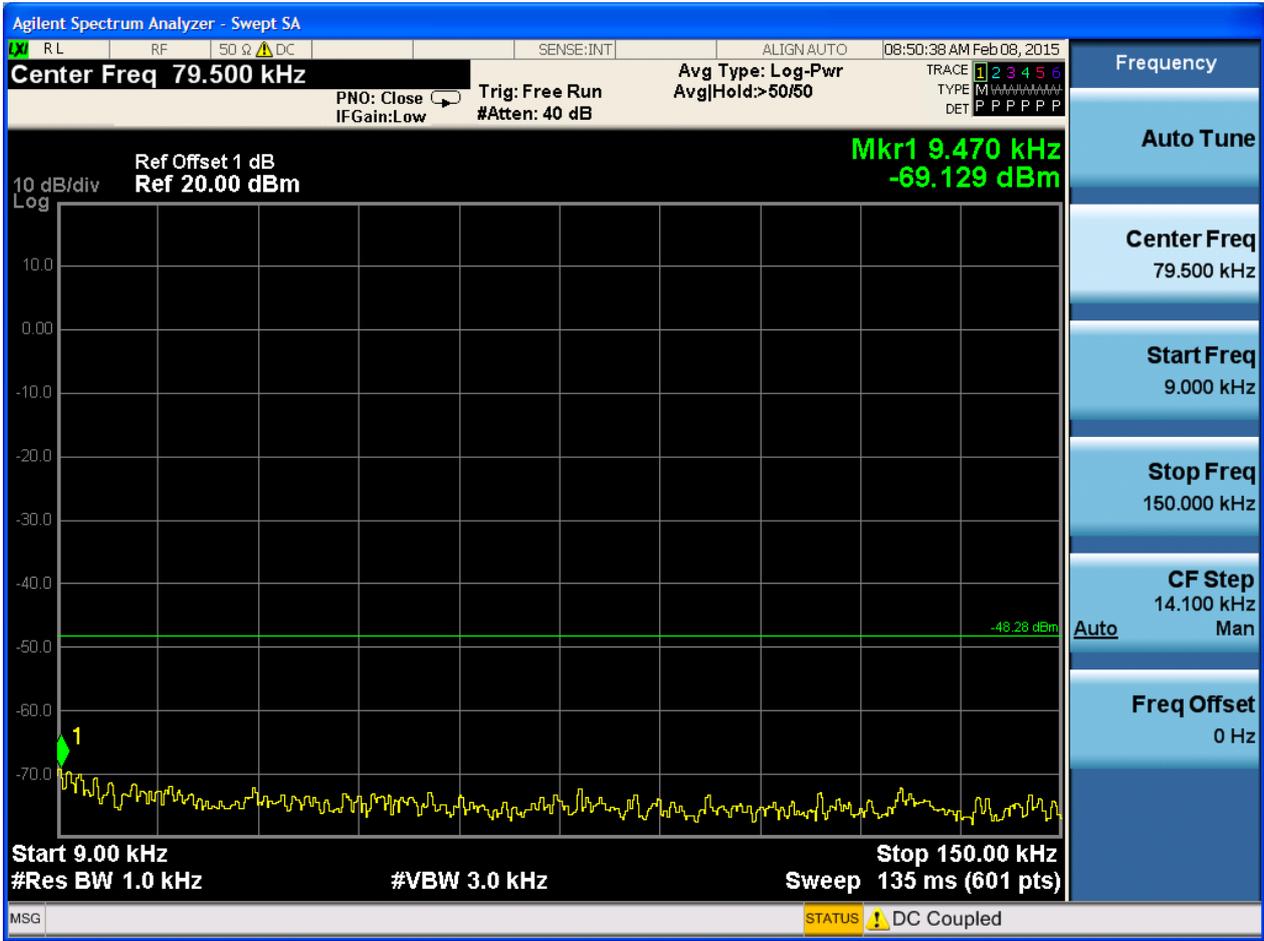
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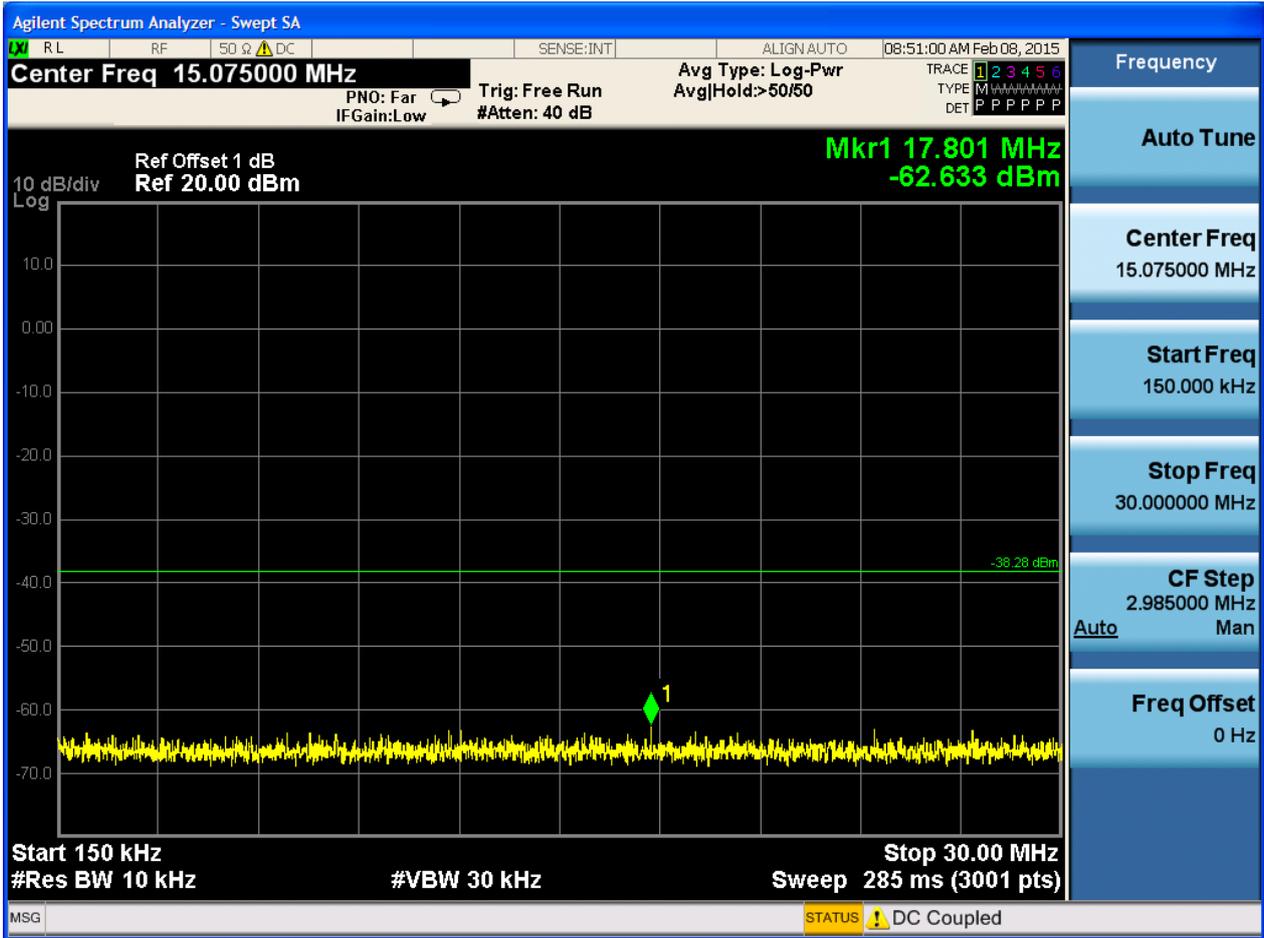
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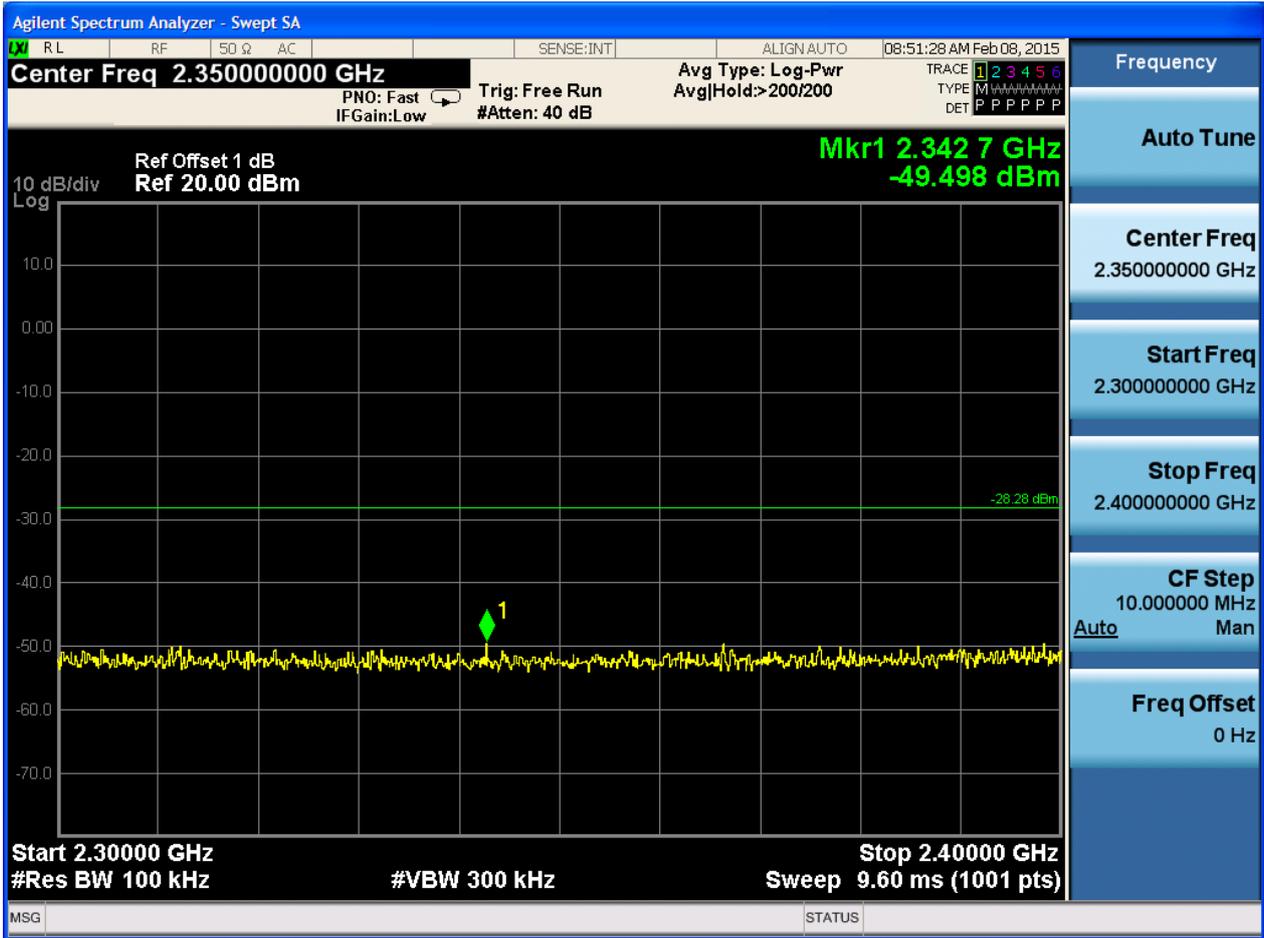


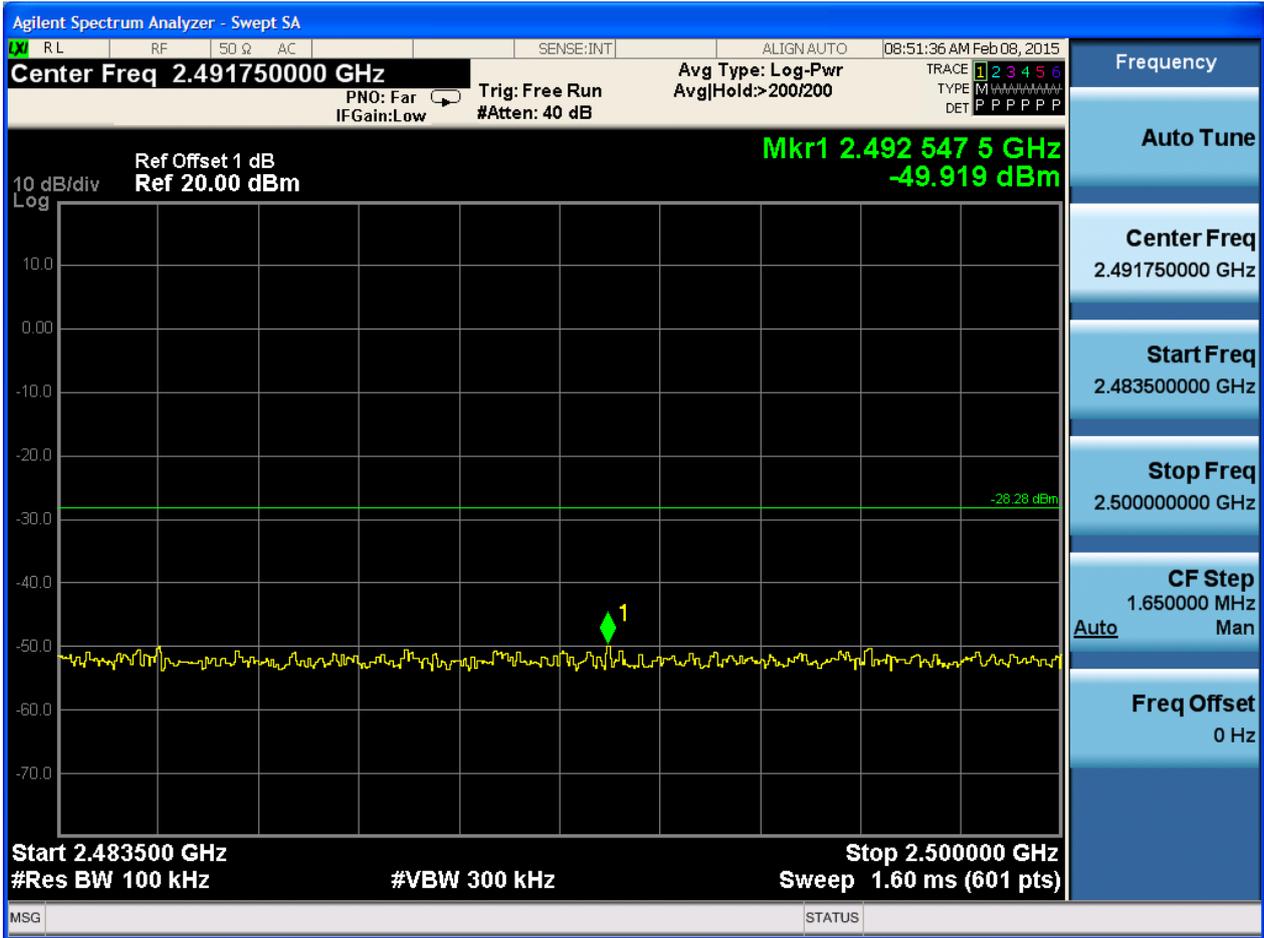
Puw:









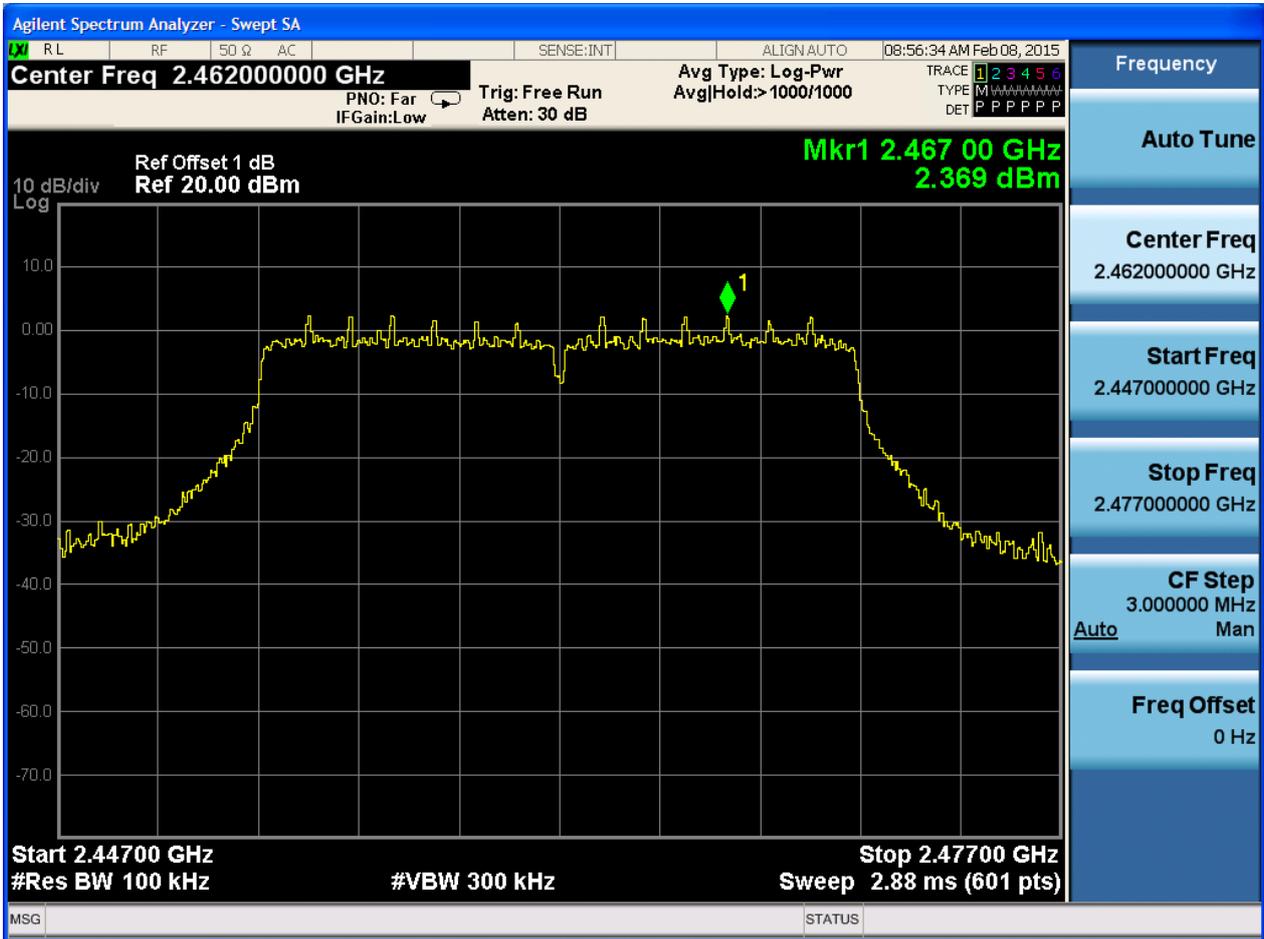






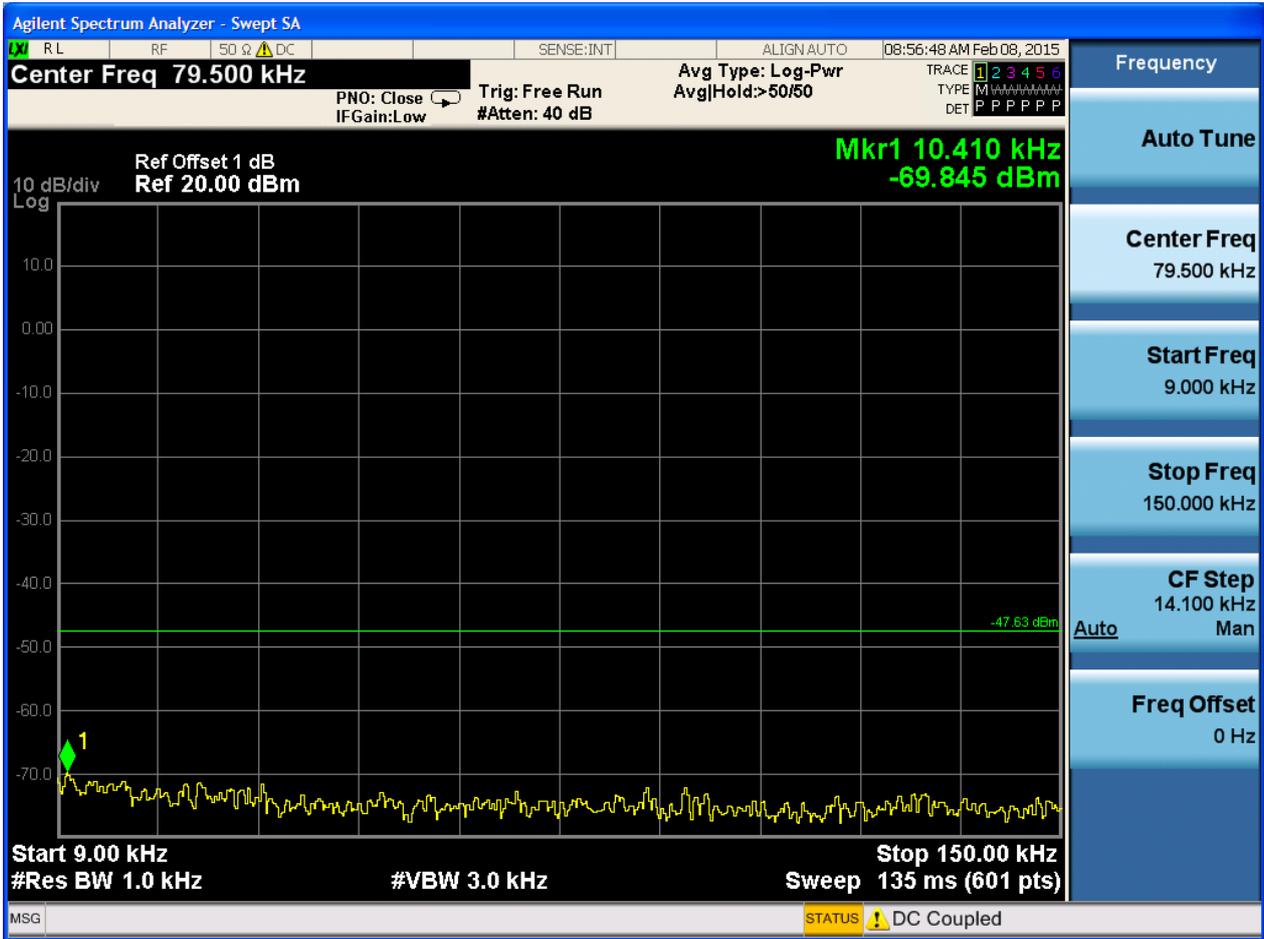
### 2.9 11N20\_H@Ant 1

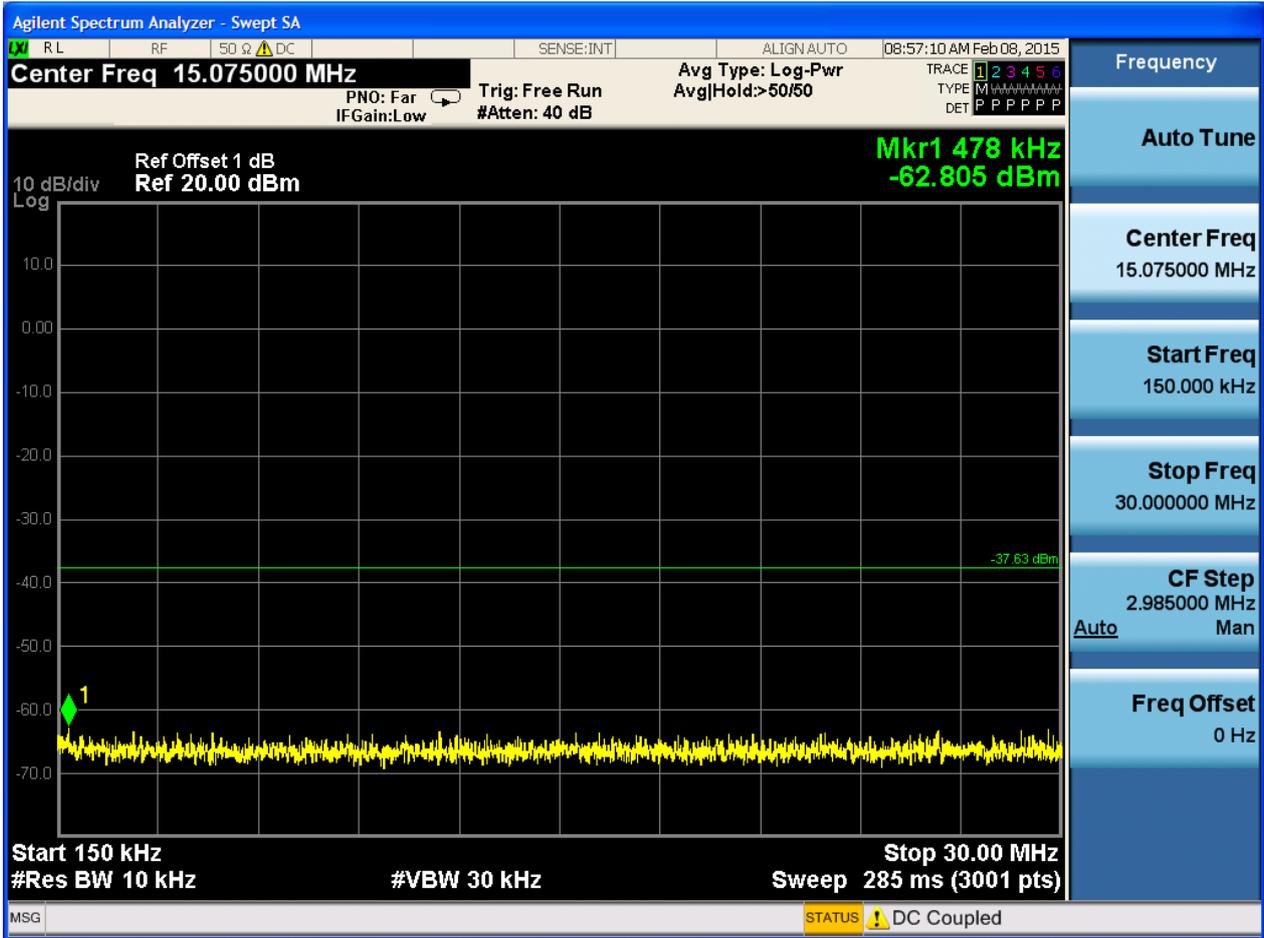
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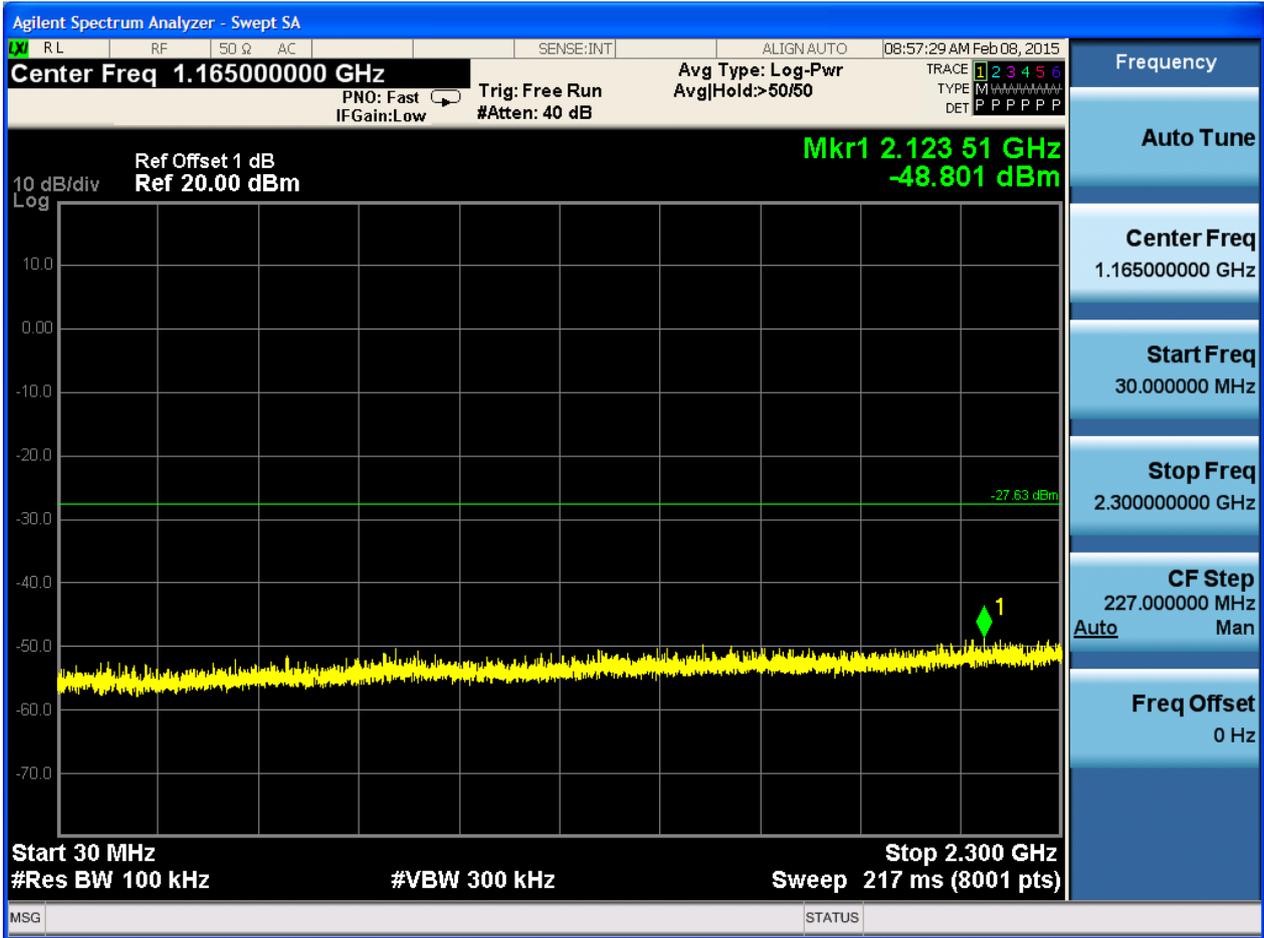


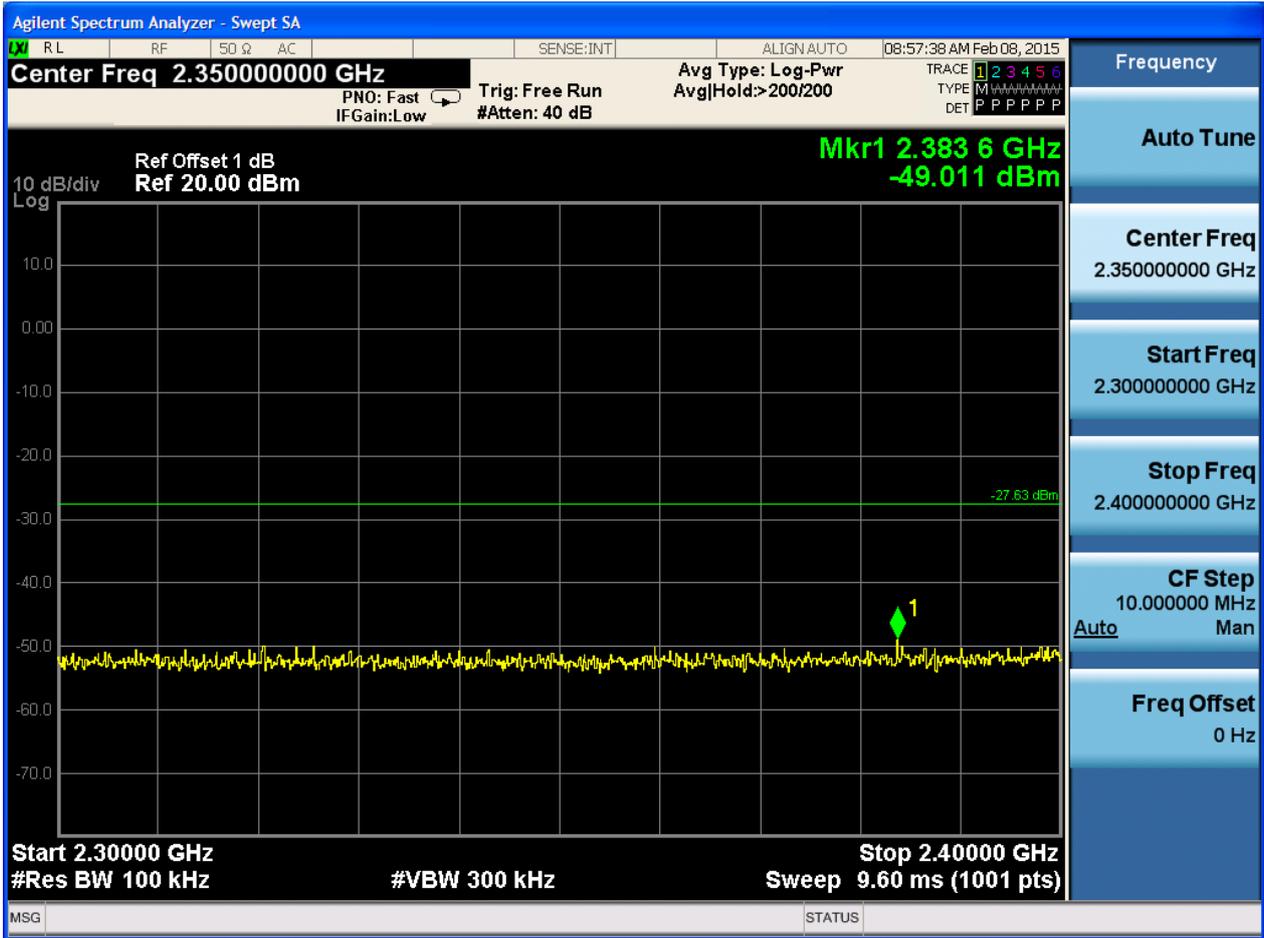


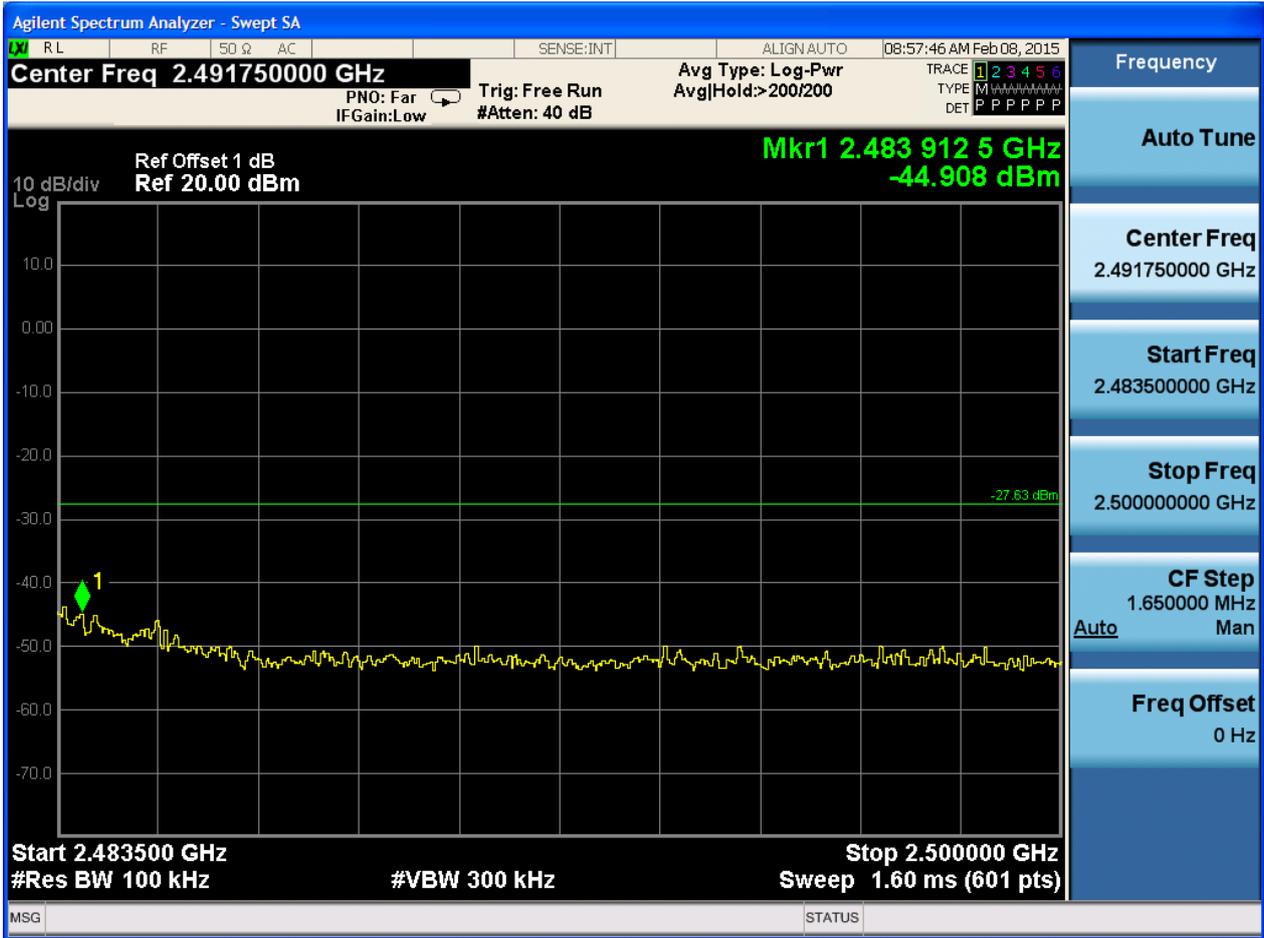
Puw:















## **Appendix H: Radiated Spurious Emission & Spurious in Restricted Band**

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

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

The simultaneous transmission has been considered

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



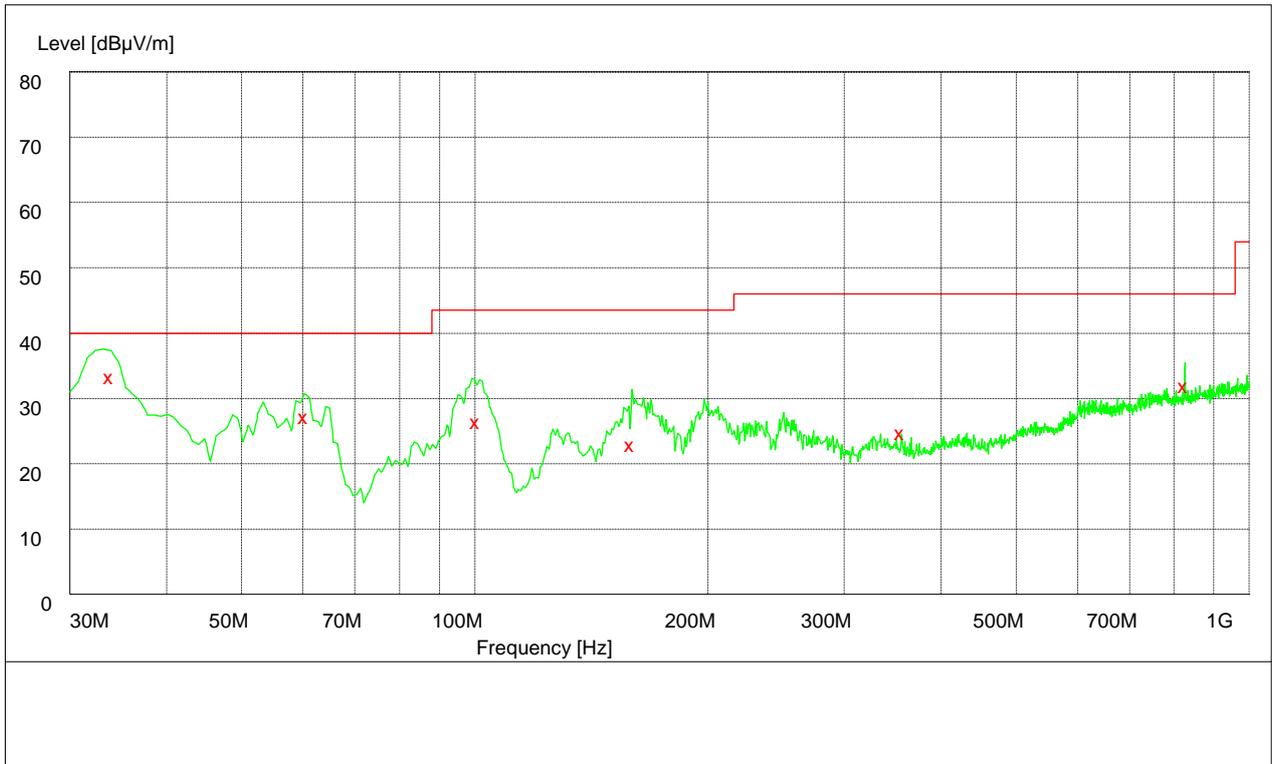
Part 1: Testing Range of "9 kHz to 30MHz"

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.

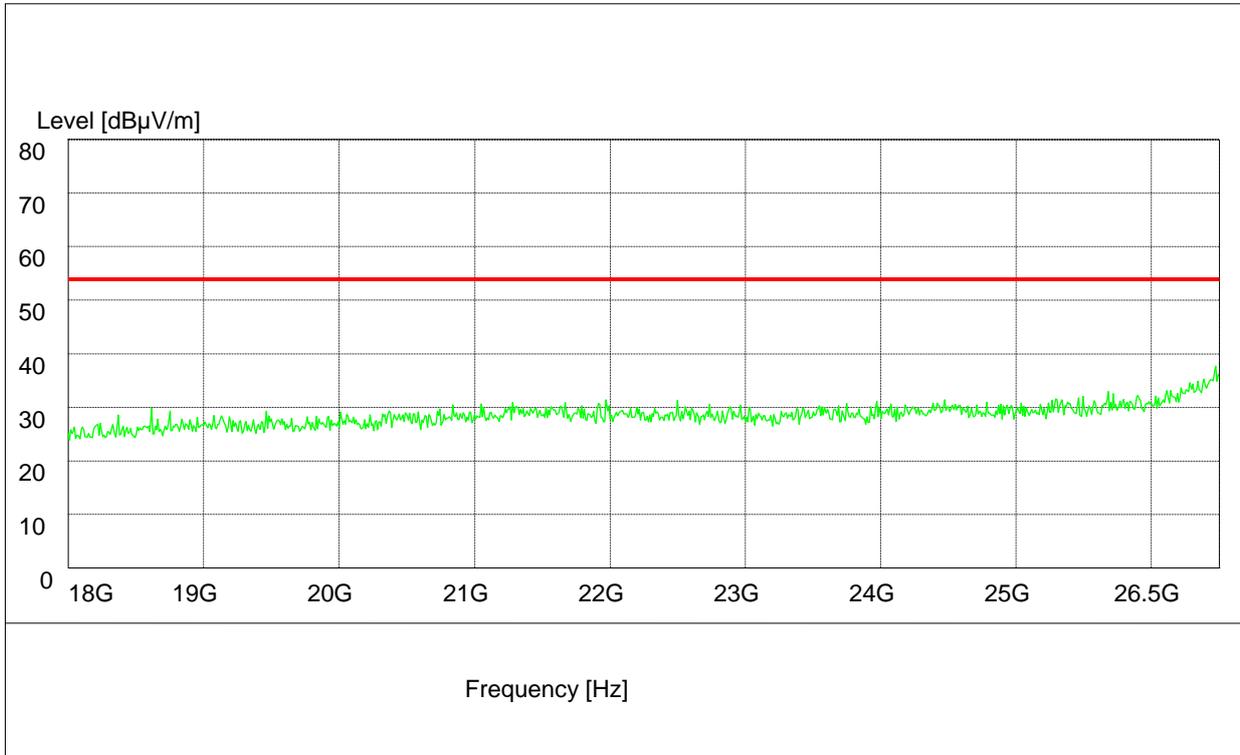
Note 2: The emissions in this range are mainly from the Platform Device (Notepad PC and its ancillary components).



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Plarization
33.884000	34.70	13.2	40.0	5.3	101.0	148.00	VERTICAL
60.504000	28.70	15.0	40.0	11.3	107.0	164.00	VERTICAL
100.740000	27.80	13.7	43.5	15.7	200.0	173.00	VERTICAL
159.712000	24.40	10.4	43.5	19.1	194.0	218.00	HORIZONTAL
355.916000	26.20	19.0	46.0	19.8	100.0	351.00	HORIZONTAL
826.232000	33.30	25.5	46.0	12.7	192.0	0.00	VERTICAL

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

Note: No peak found in pre- test.

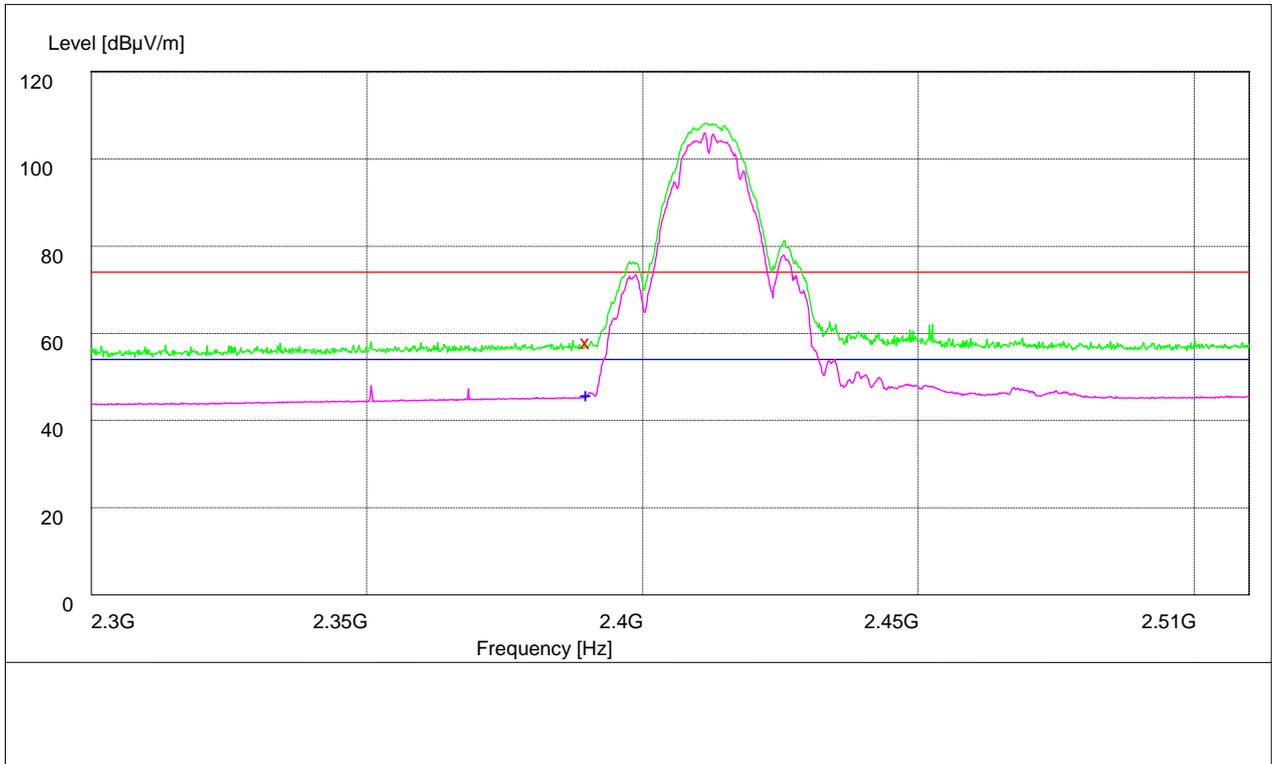


Part 4: Testing Range of “2.3GHz to 2.5GHz”

- Note 1: The testing range of “2.3 GHz to 2.5 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 $\mu$ V/m) and Average Limit (54 dB $\mu$ V/m).
- Note 3: The peak spike exceeds the limit line is EUT’s operating frequency.

## Test Mode: 11b

### Channel 01



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

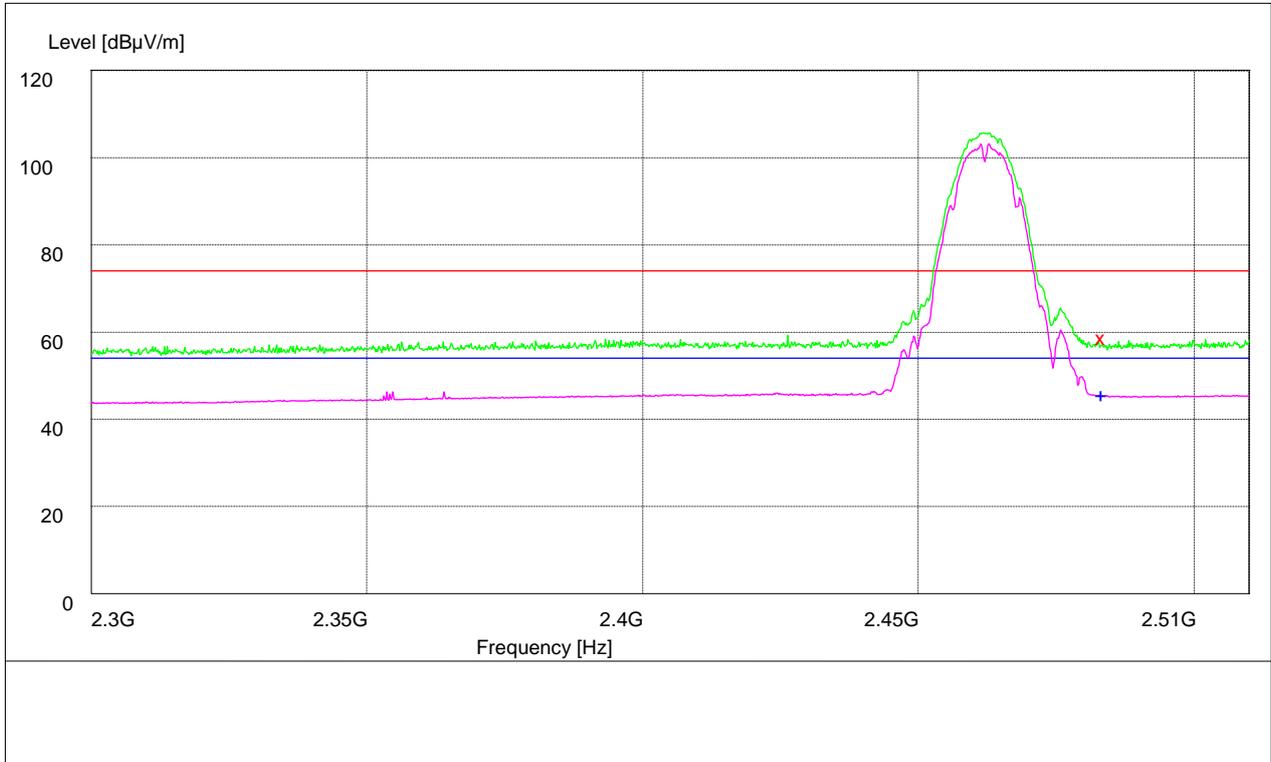
**MEASUREMENT RESULT: PK Detector**

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	60.40	34.8	74.0	13.6	133.0	331.00	HORIZONTAL

**MEASUREMENT RESULT: AV Detector**

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	48.10	34.8	54.0	5.9	100.0	136.00	HORIZONTAL

## Channel 11



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

MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	60.80	35.1	74.0	13.2	192.0	229.00	VERTICAL

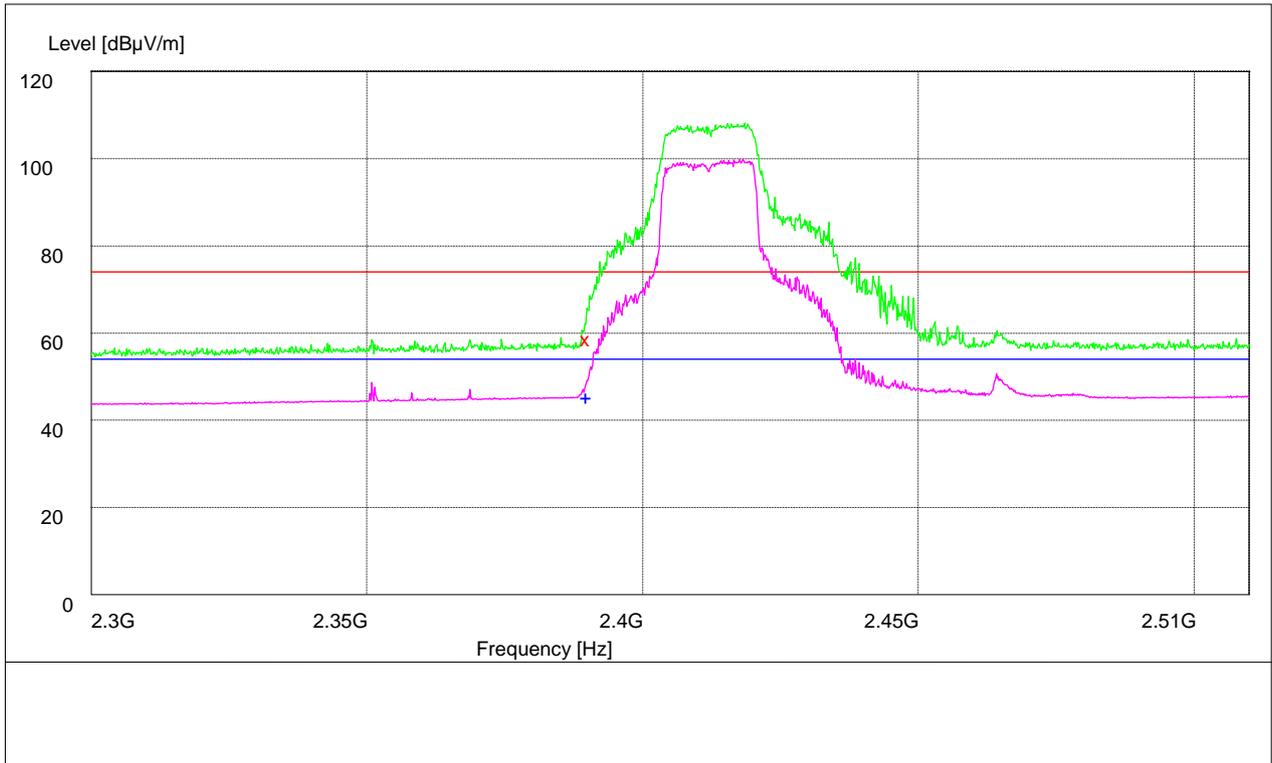
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	47.80	35.1	54.0	6.2	100.0	184.00	HORIZONTAL



# Test Mode: 11g

## Channel 01



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

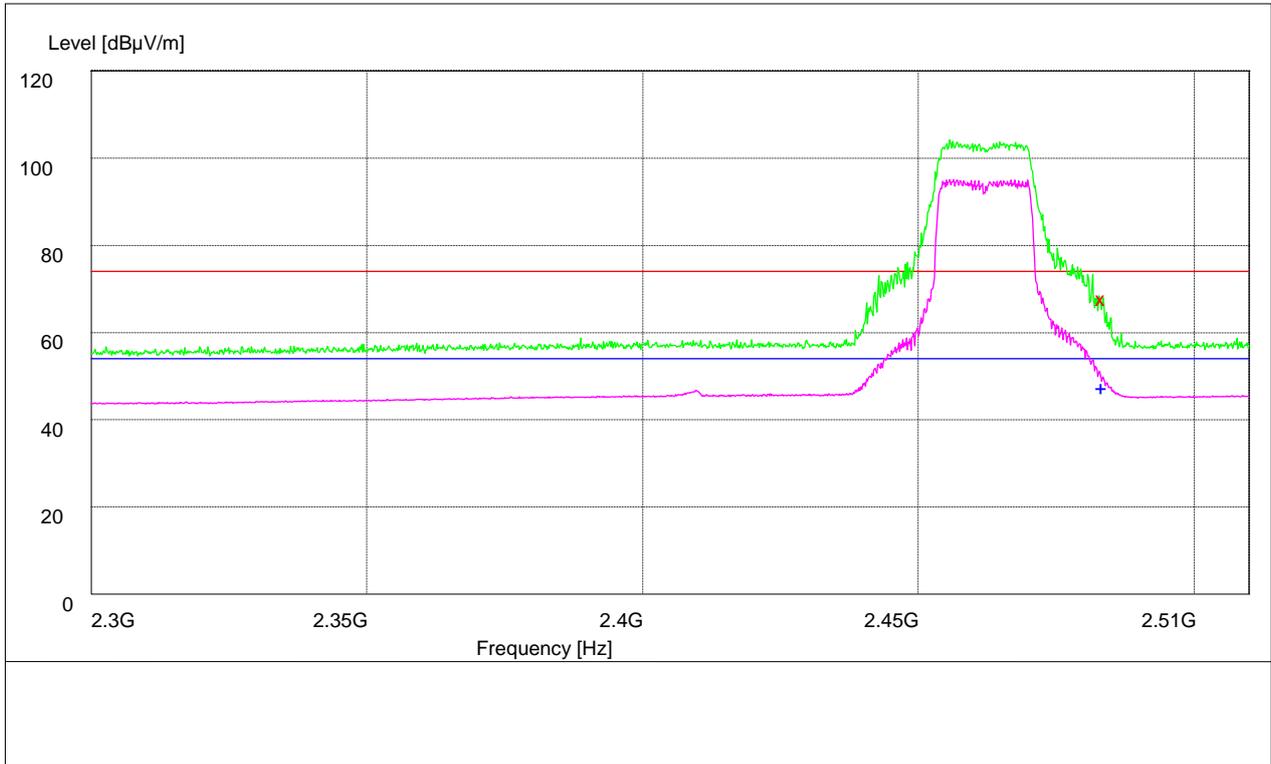
### MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	60.70	34.8	74.0	13.3	168.0	282.00	VERTICAL

### MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	47.60	34.8	54.0	6.4	160.0	296.00	VERTICAL

## Channel 11



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

MEASUREMENT RESULT: PK Detector

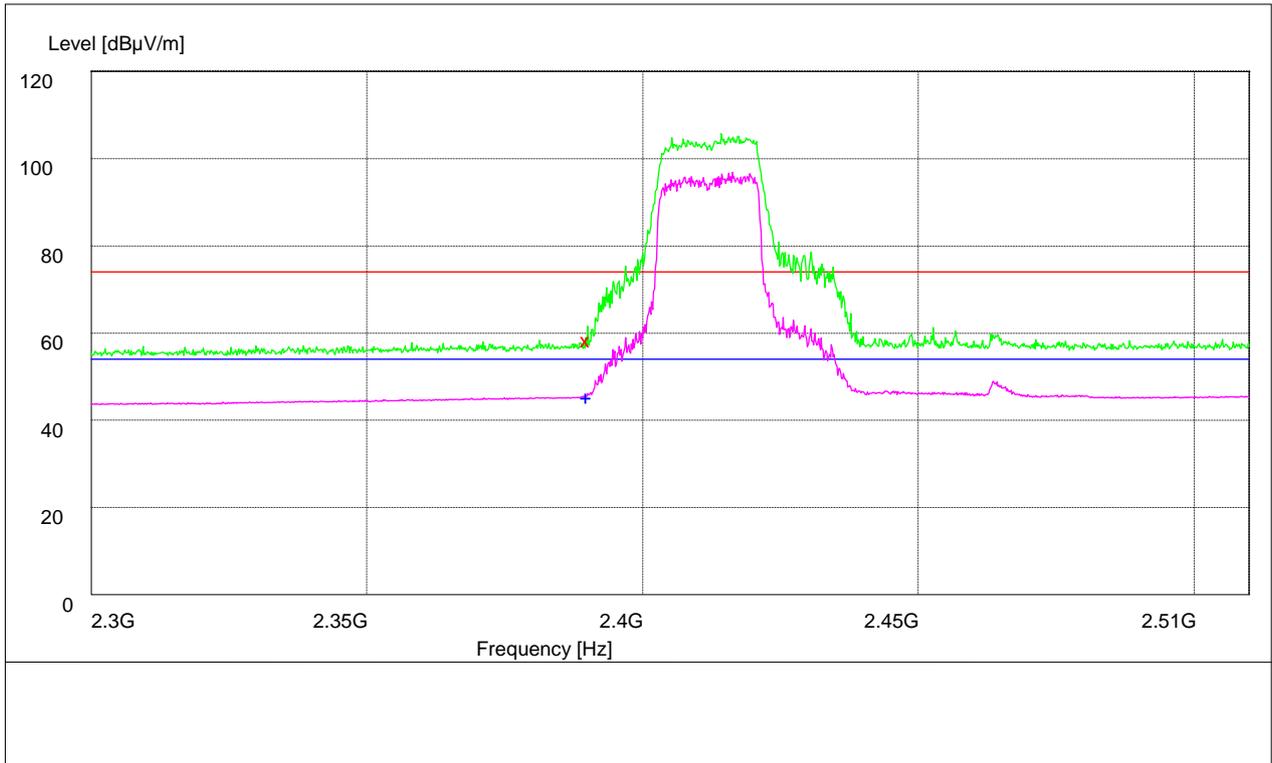
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	69.90	35.1	74.0	4.1	101.0	167.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	49.50	35.1	54.0	4.5	102.0	166.00	HORIZONTAL

# Test Mode: 11n

## Channel 01



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

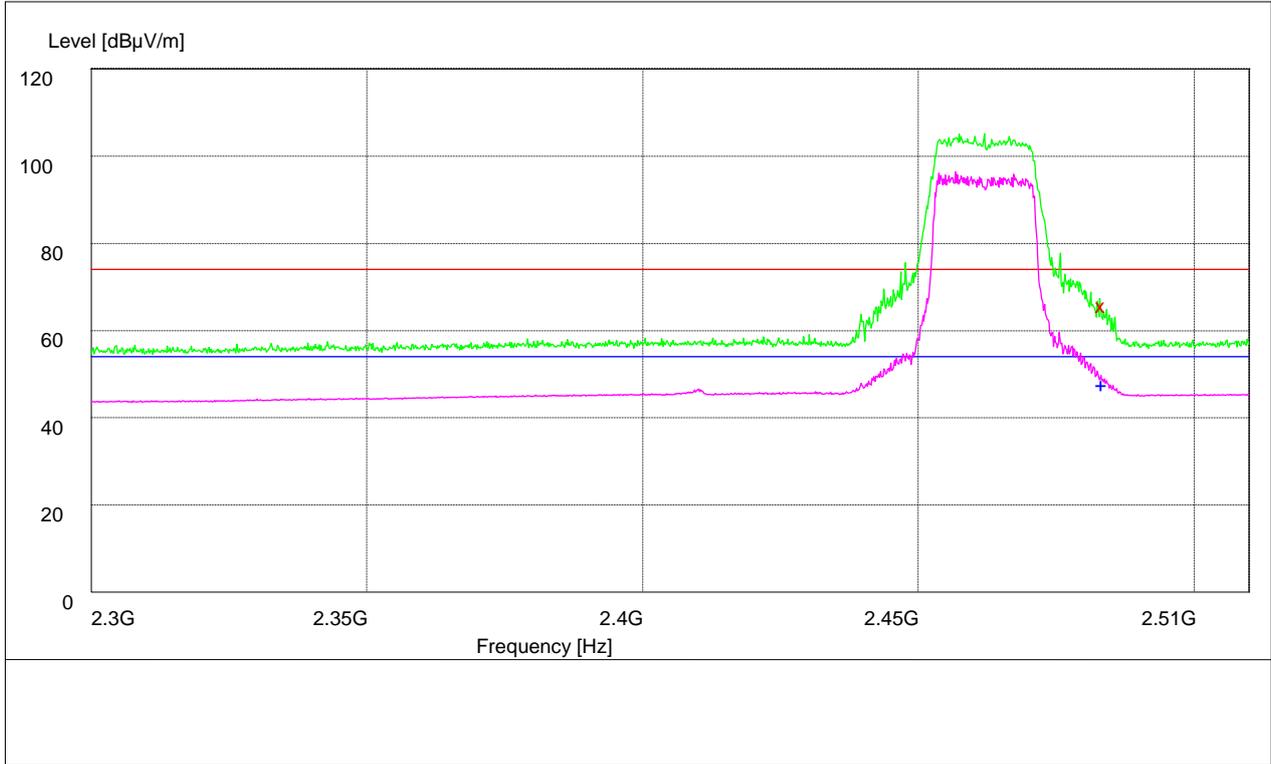
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	60.60	34.8	74.0	13.4	187.0	19.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	47.60	34.8	54.0	6.4	200.0	214.00	VERTICAL

## Channel 11



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

MEASUREMENT RESULT: PK Detector

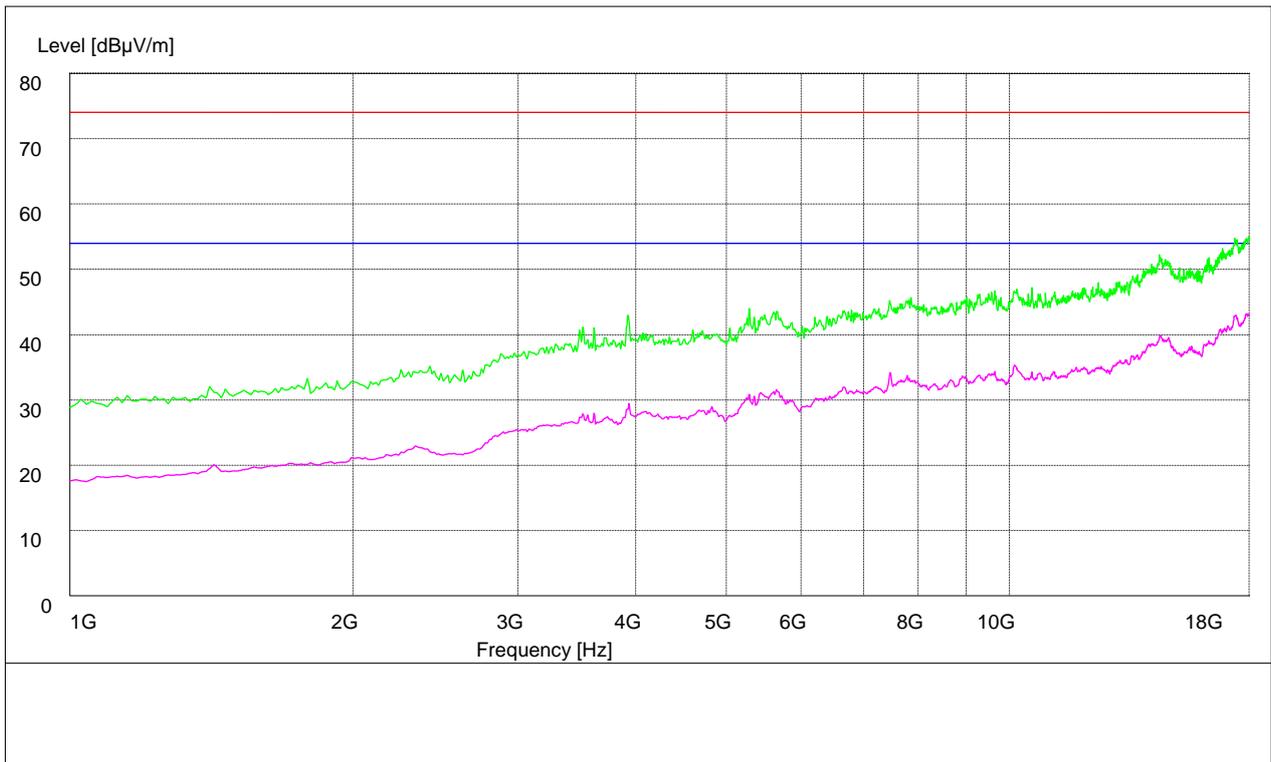
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	67.90	35.1	74.0	6.1	100.0	149.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	49.80	35.1	54.0	4.2	100.0	182.00	HORIZONTAL

### Part 5: Testing Range of “1 GHz to 18 GHz”

- Note 1: The test results and plot for testing range of “1 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 “1 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 $\mu$ V/m) and Average Limit (54 dB $\mu$ V/m).

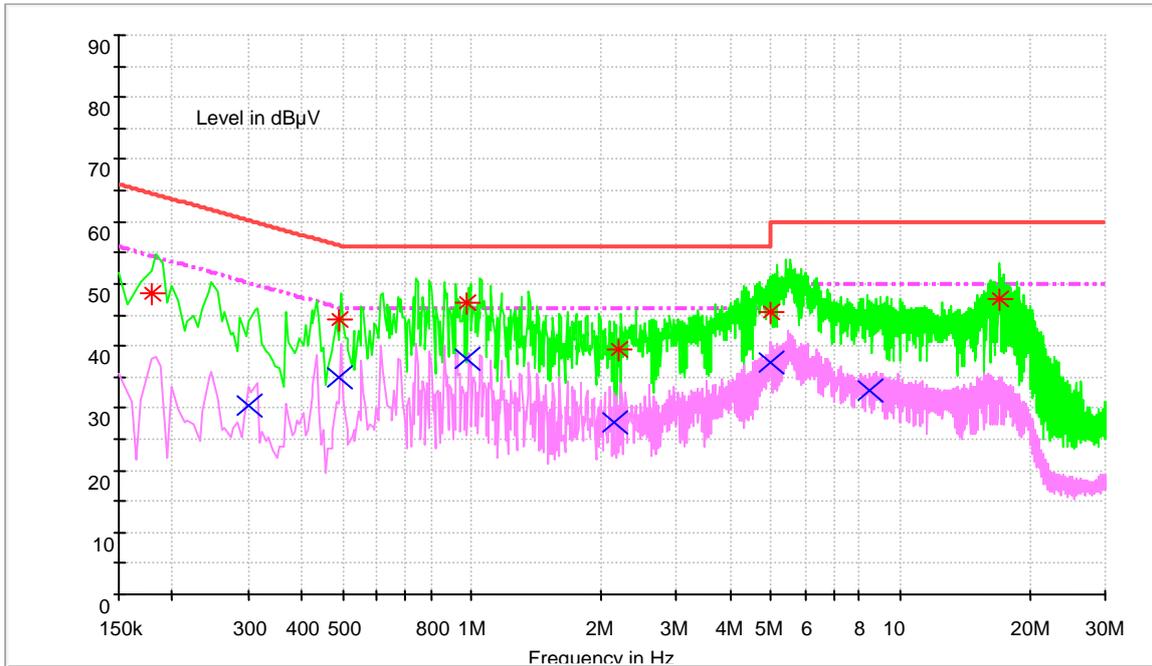




## Appendix I: Conducted Emission at Power Port

Note: RBW = 9 kHz, VBW = 30 kHz

# Channel 6



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.180074	48.4	9.7	64.5	16.1	L1	FLO
0.488595	44.1	9.7	56.2	12.1	N	FLO
0.975881	47.1	9.7	56	8.9	N	FLO
2.199978	39.6	9.7	56	16.4	N	FLO
4.951676	45.5	9.8	56	10.5	N	FLO
17.09941	47.7	10.1	60	12.3	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.303082	30.4	9.7	50.2	19.8	L1	FLO
0.4881	34.9	9.7	46.2	11.3	N	FLO
0.97653	38	9.7	46	8	N	FLO
2.139994	27.8	9.7	46	18.2	N	FLO
4.985561	37.3	9.8	46	8.7	N	FLO
8.442158	32.9	9.9	50	17.1	N	FLO

END