



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.

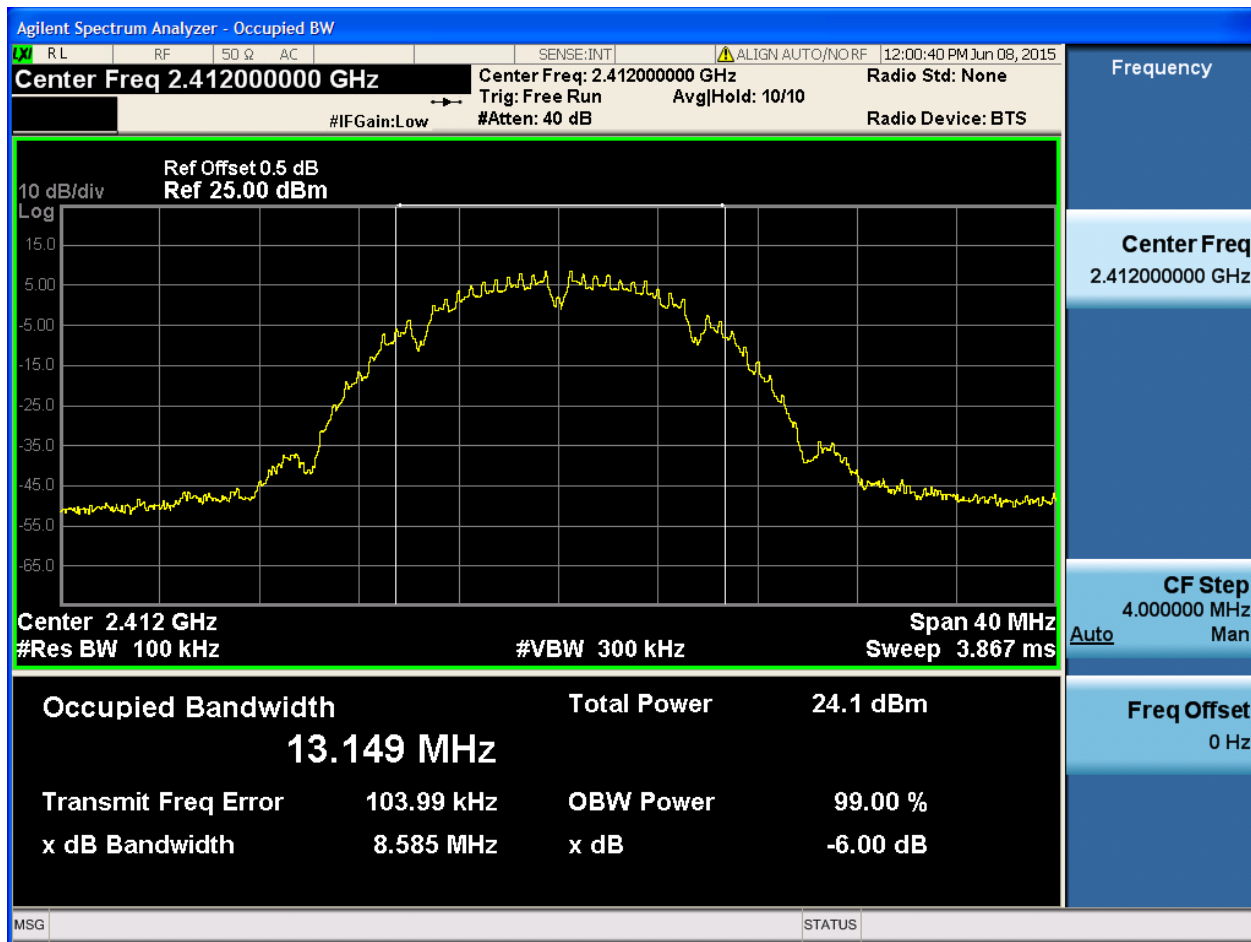
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
11B	L	2412	Ant 1	8.59	pass
11B	M	2437	Ant 1	8.12	pass
11B	H	2462	Ant 1	8.60	pass
11G	L	2412	Ant 1	16.40	pass
11G	M	2437	Ant 1	16.43	pass
11G	H	2462	Ant 1	16.43	pass
11N20	L	2412	Ant 1	17.39	pass
11N20	M	2437	Ant 1	17.65	pass
11N20	H	2462	Ant 1	17.65	pass



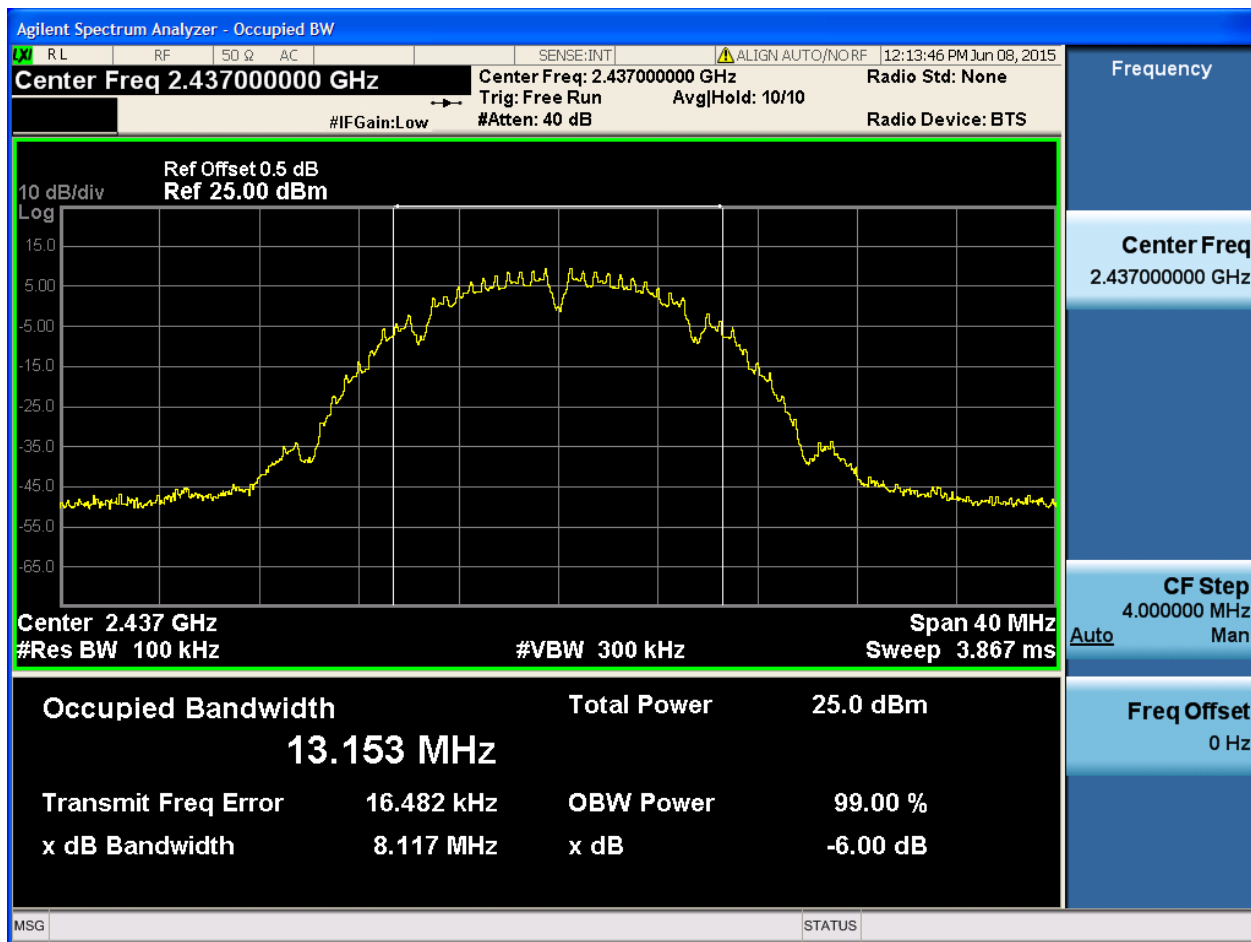
Part II - Test Plots

2.1 11B_L@Ant 1



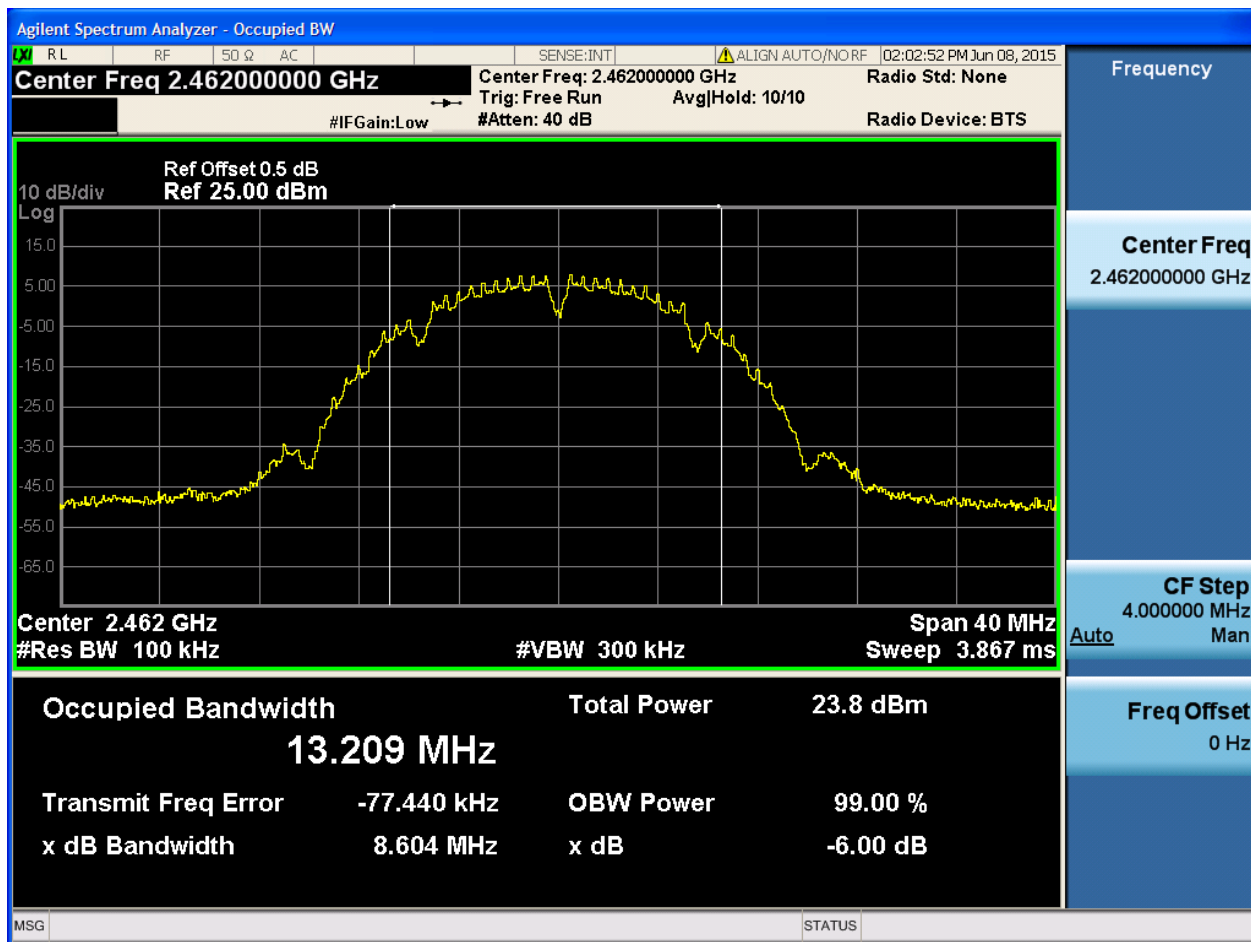


2.2 11B_M@Ant 1



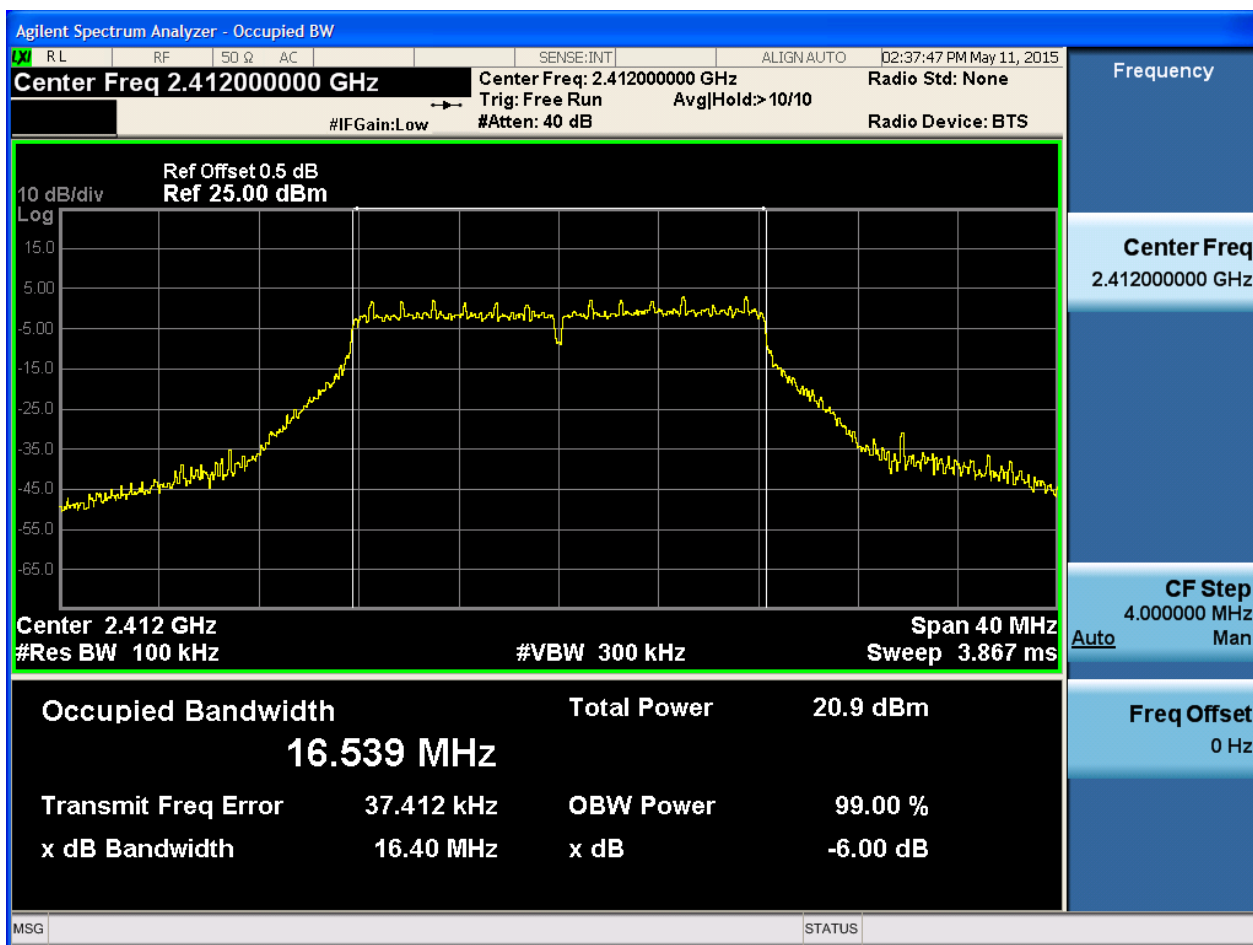


2.3 11B_H@Ant 1



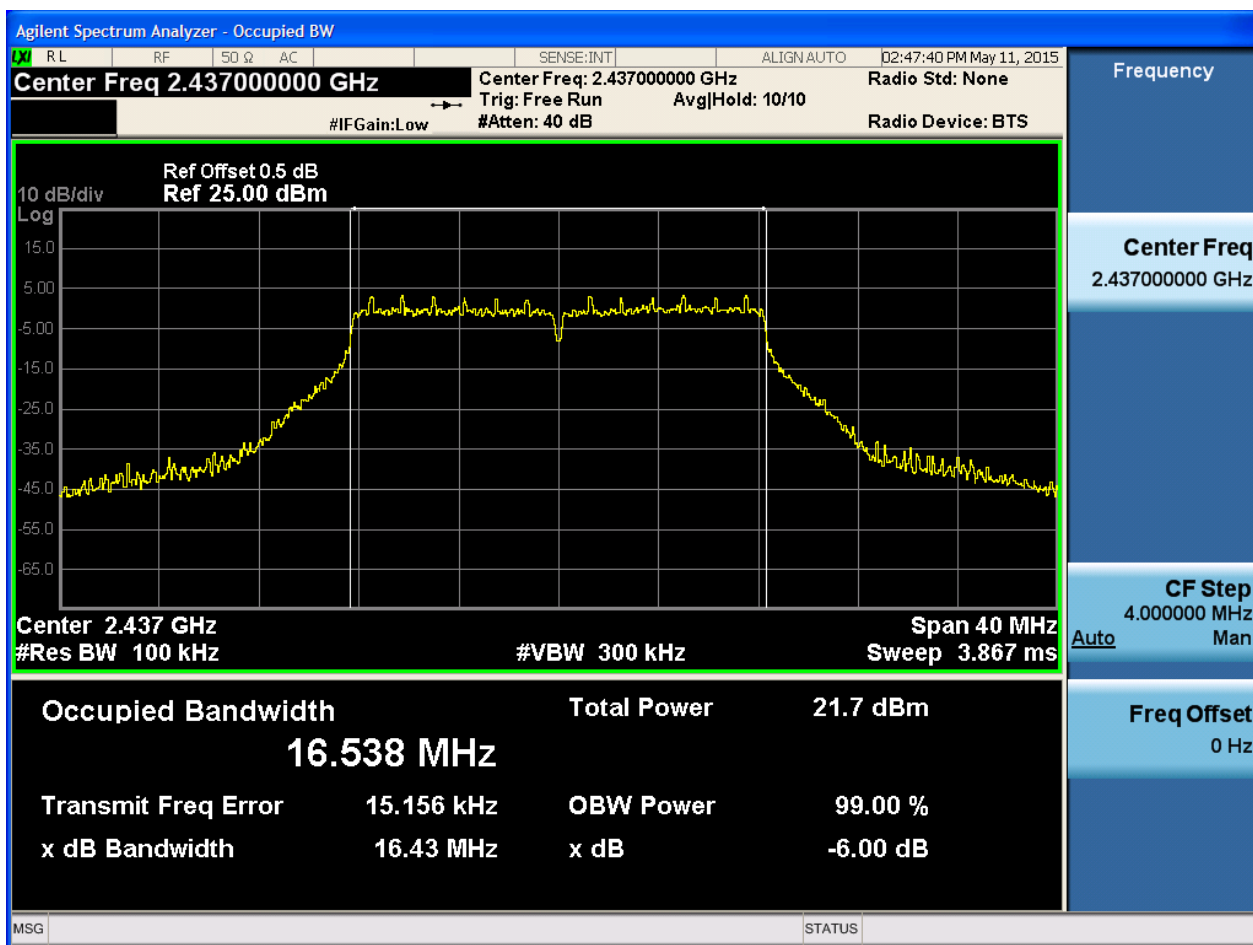


2.4 11G_L@Ant 1



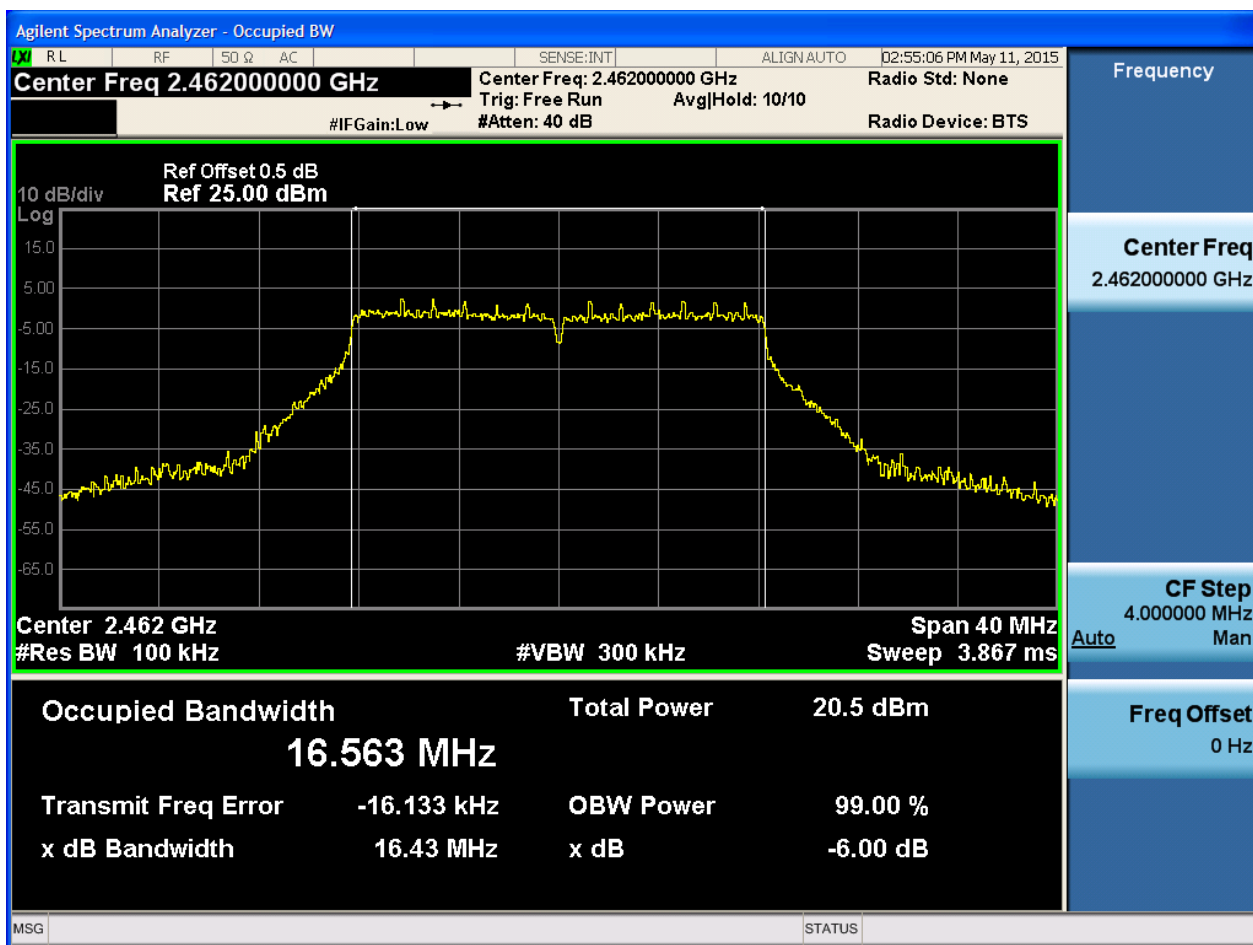


2.5 11G_M@Ant 1



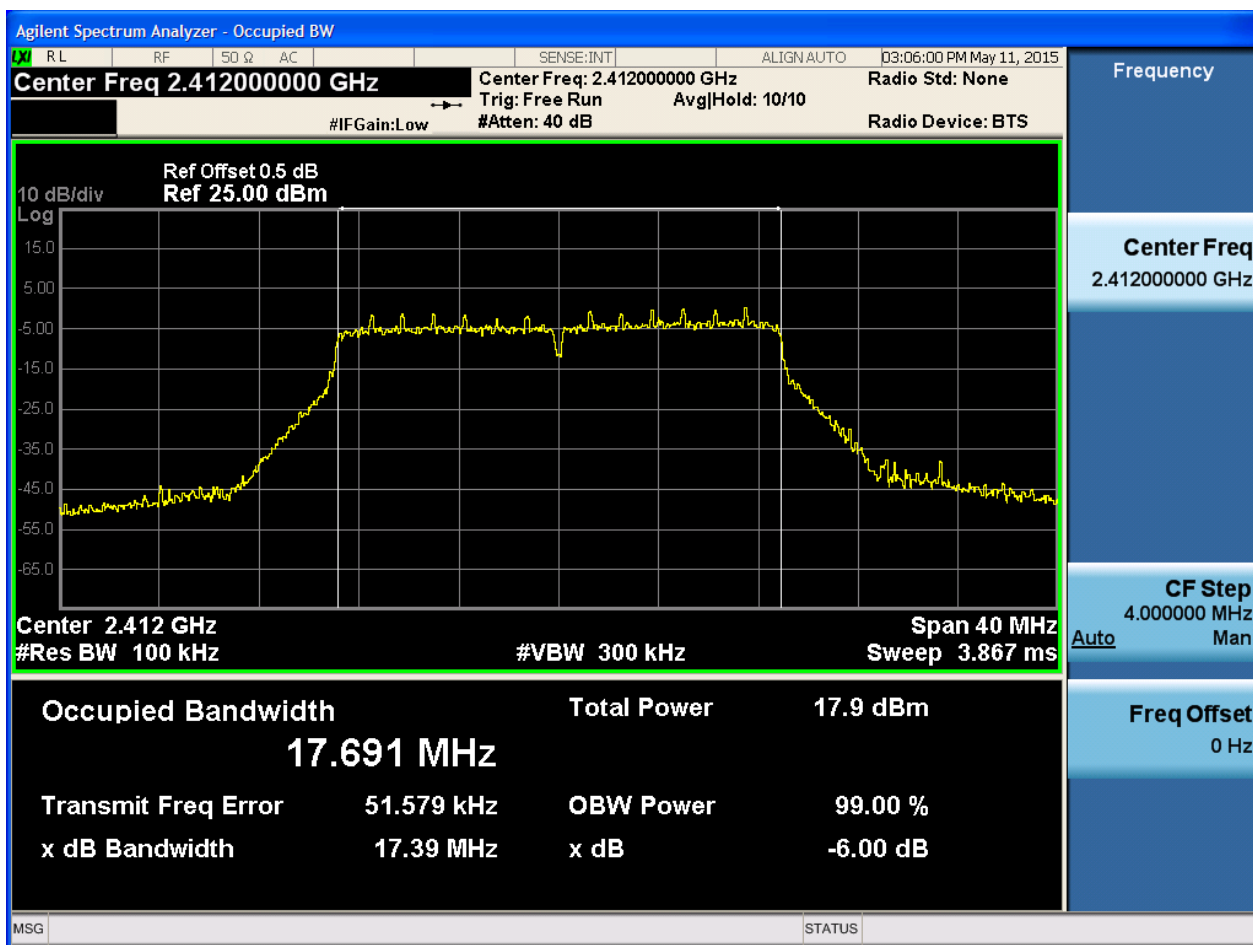


2.6 11G_H@Ant 1



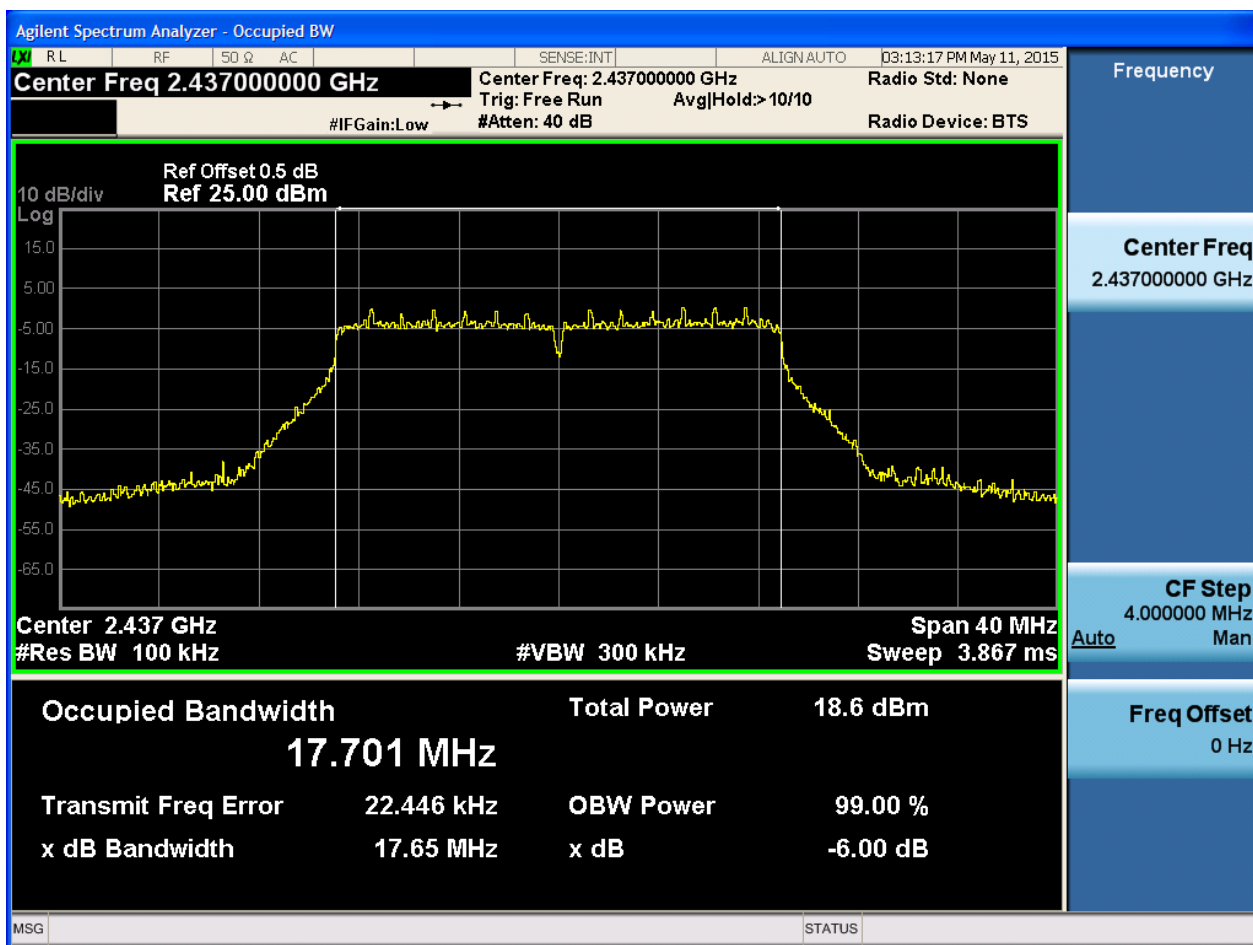


2.7 11N20_L@Ant 1



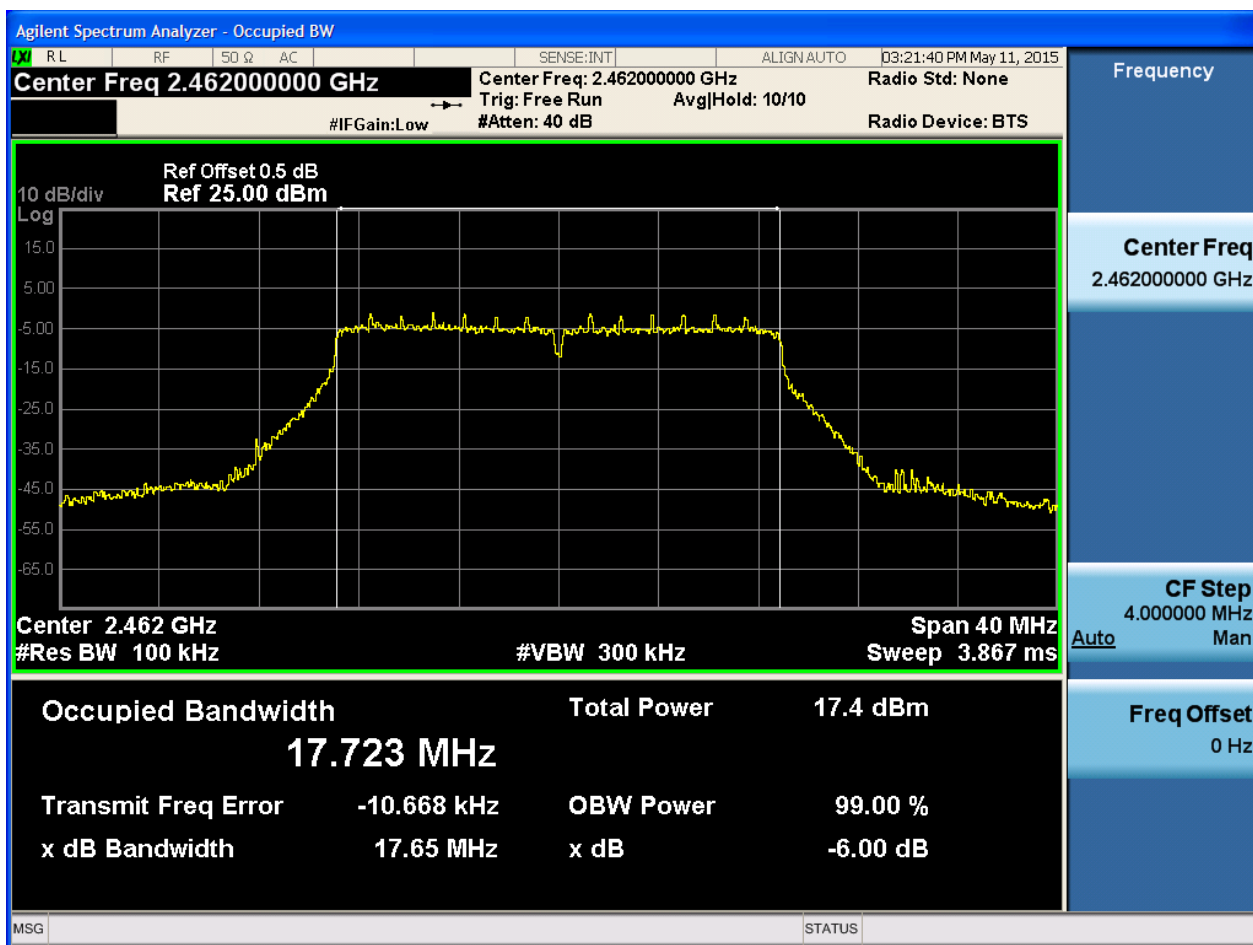


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



Appendix B: Occupied Bandwidth

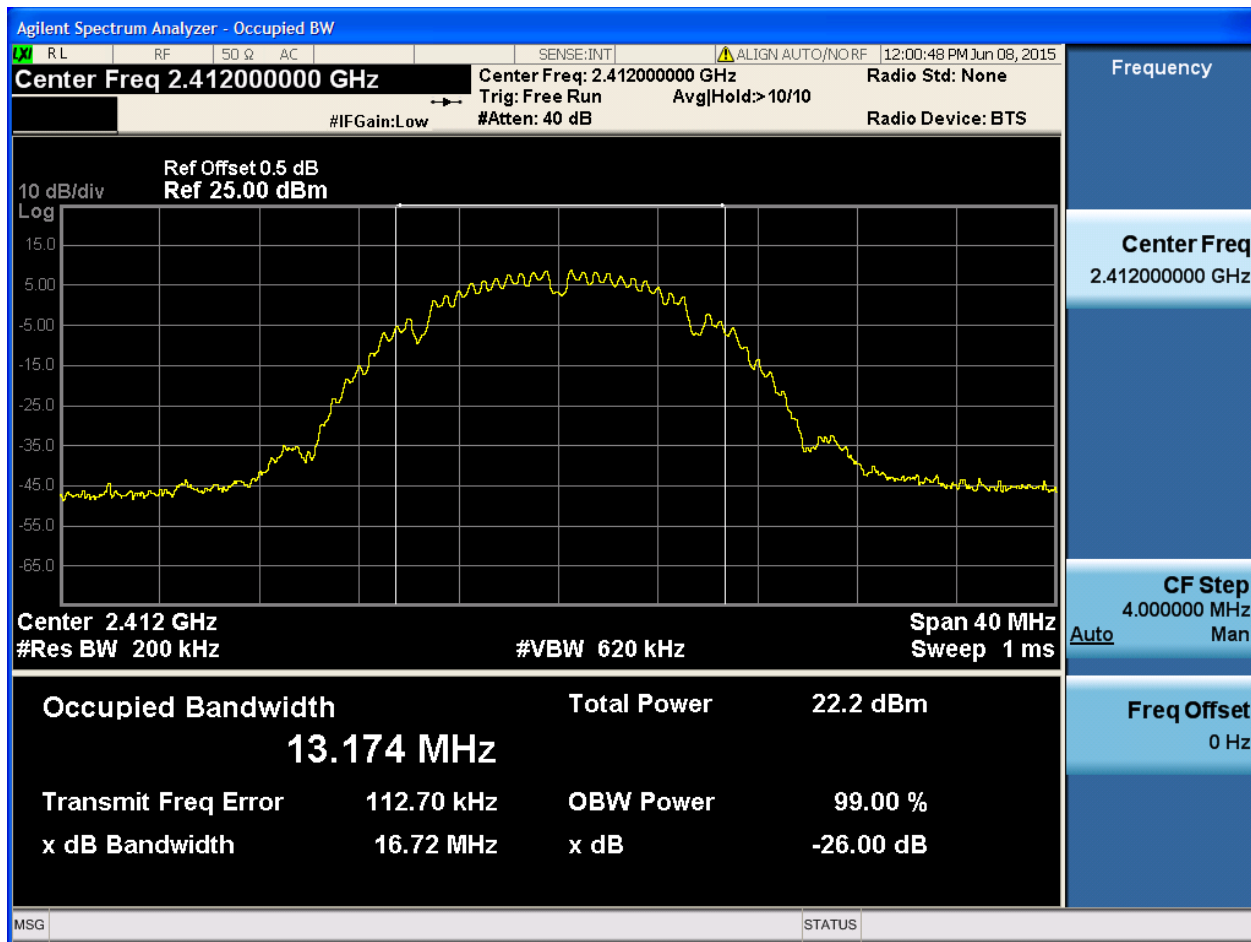
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
11B	L	2412	Ant 1	13.17	pass
11B	M	2437	Ant 1	13.21	pass
11B	H	2462	Ant 1	13.22	pass
11G	L	2412	Ant 1	16.80	pass
11G	M	2437	Ant 1	16.79	pass
11G	H	2462	Ant 1	16.78	pass
11N20	L	2412	Ant 1	17.84	pass
11N20	M	2437	Ant 1	17.87	pass
11N20	H	2462	Ant 1	17.89	pass

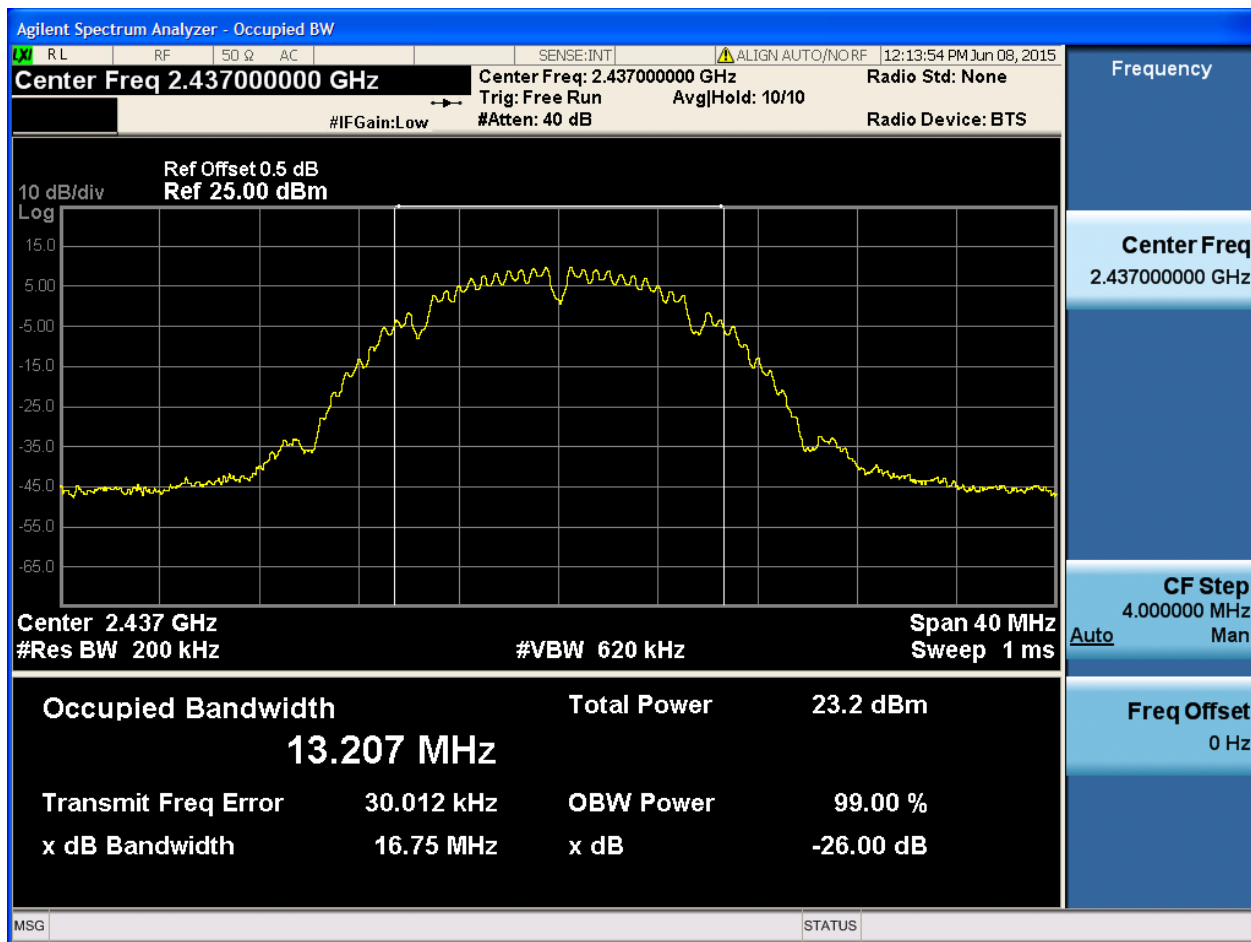
Part II - Test Plots

2.1 11B_L@Ant 1



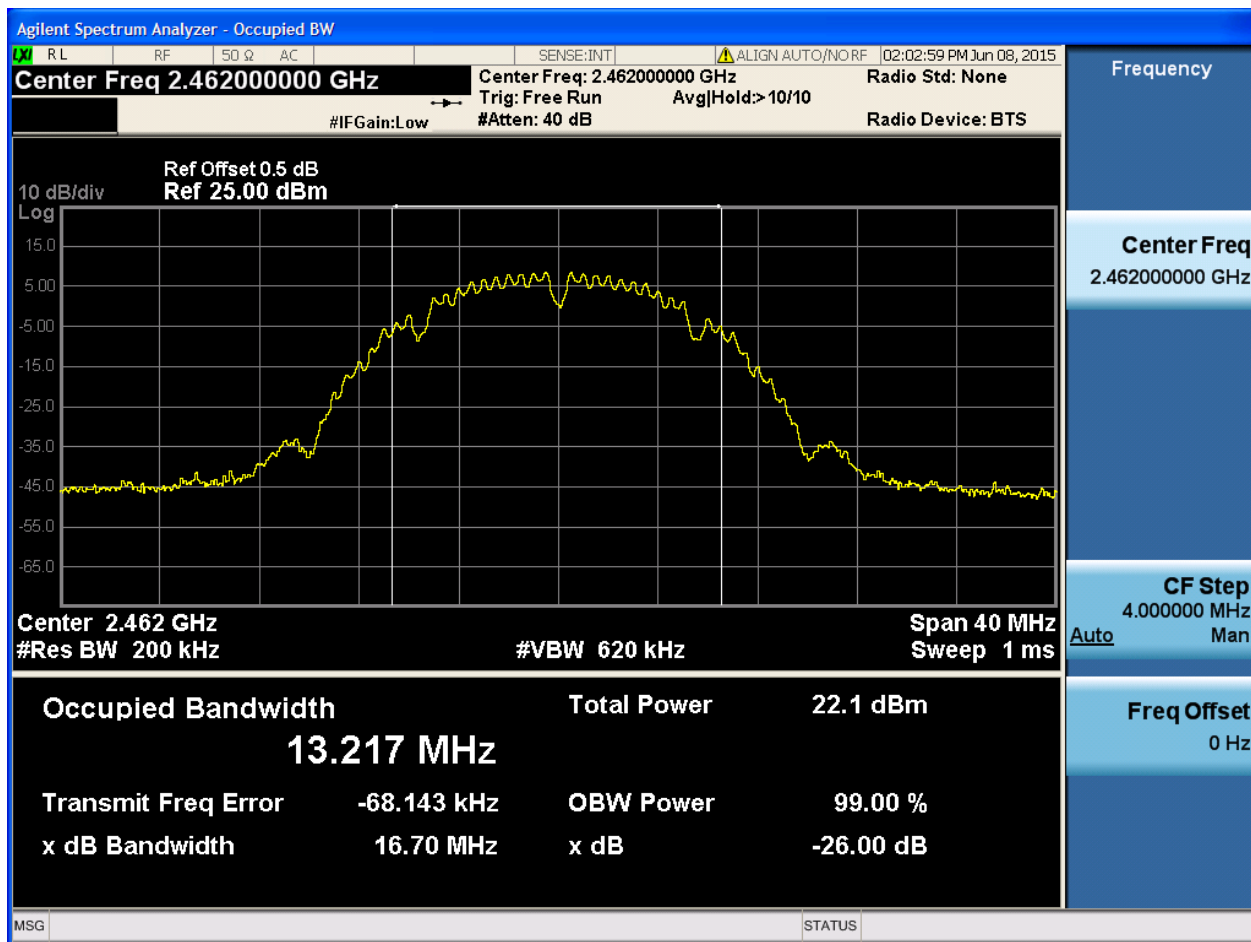


2.2 11B_M@Ant 1



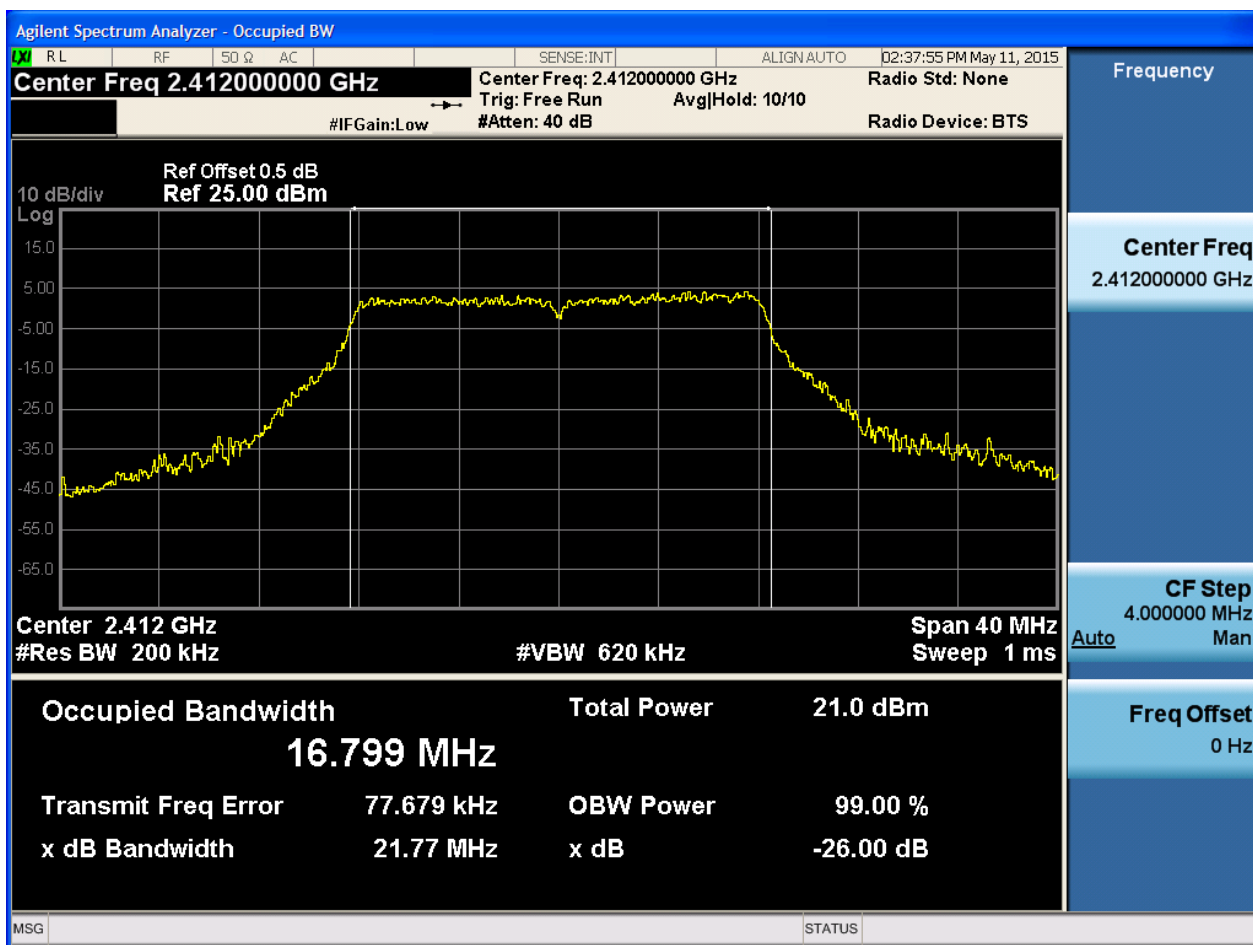


2.3 11B_H@Ant 1



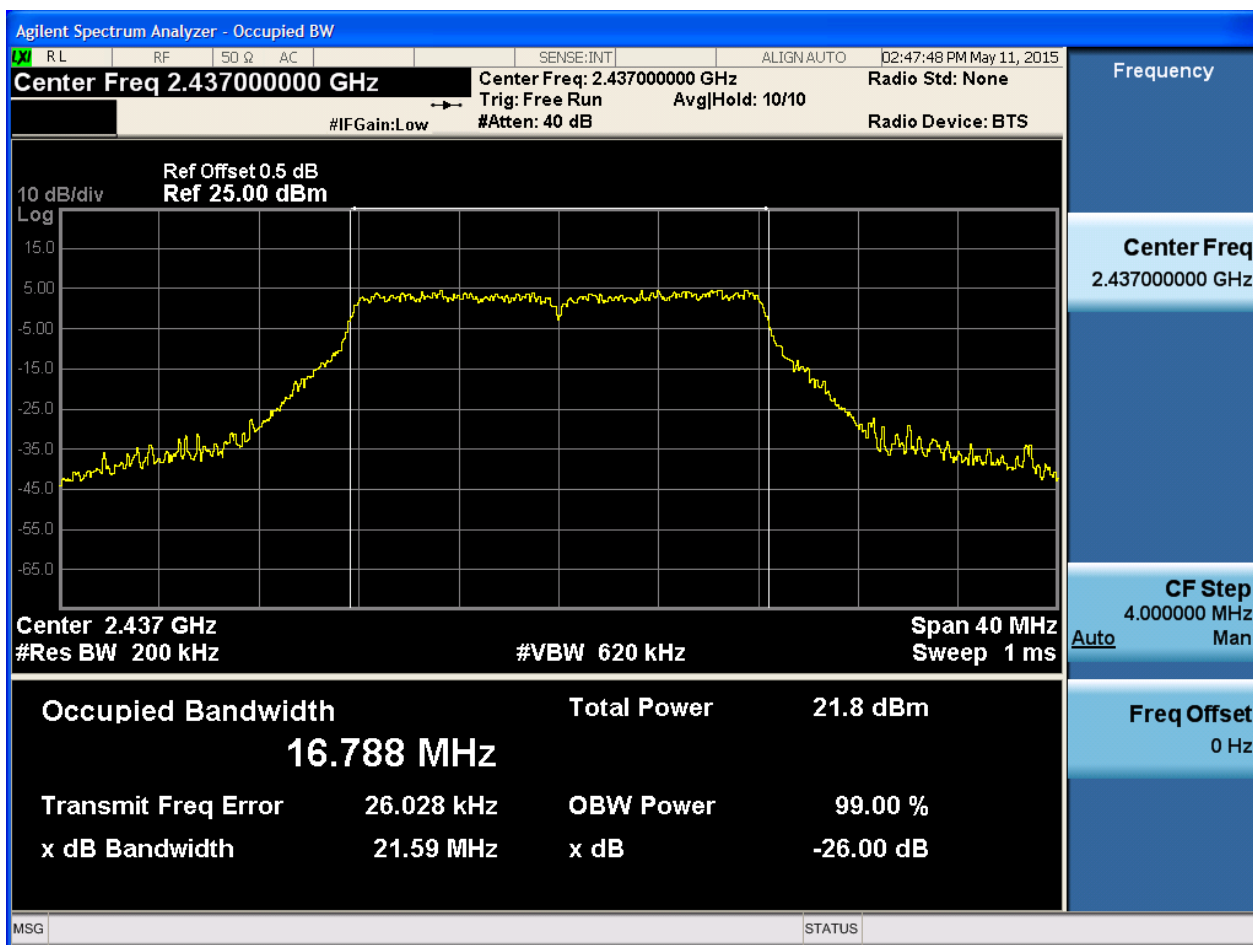


2.4 11G_L@Ant 1



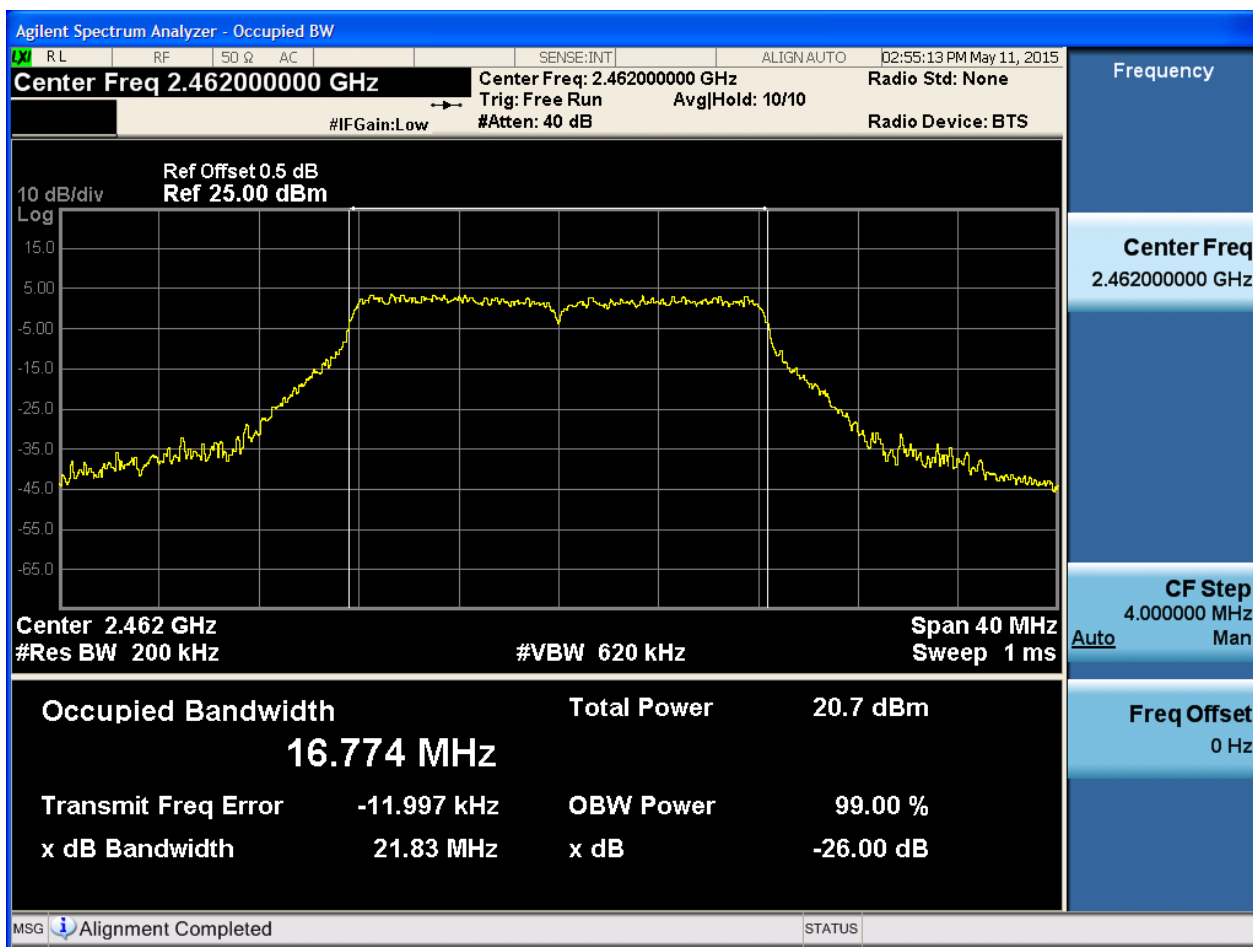


2.5 11G_M@Ant 1



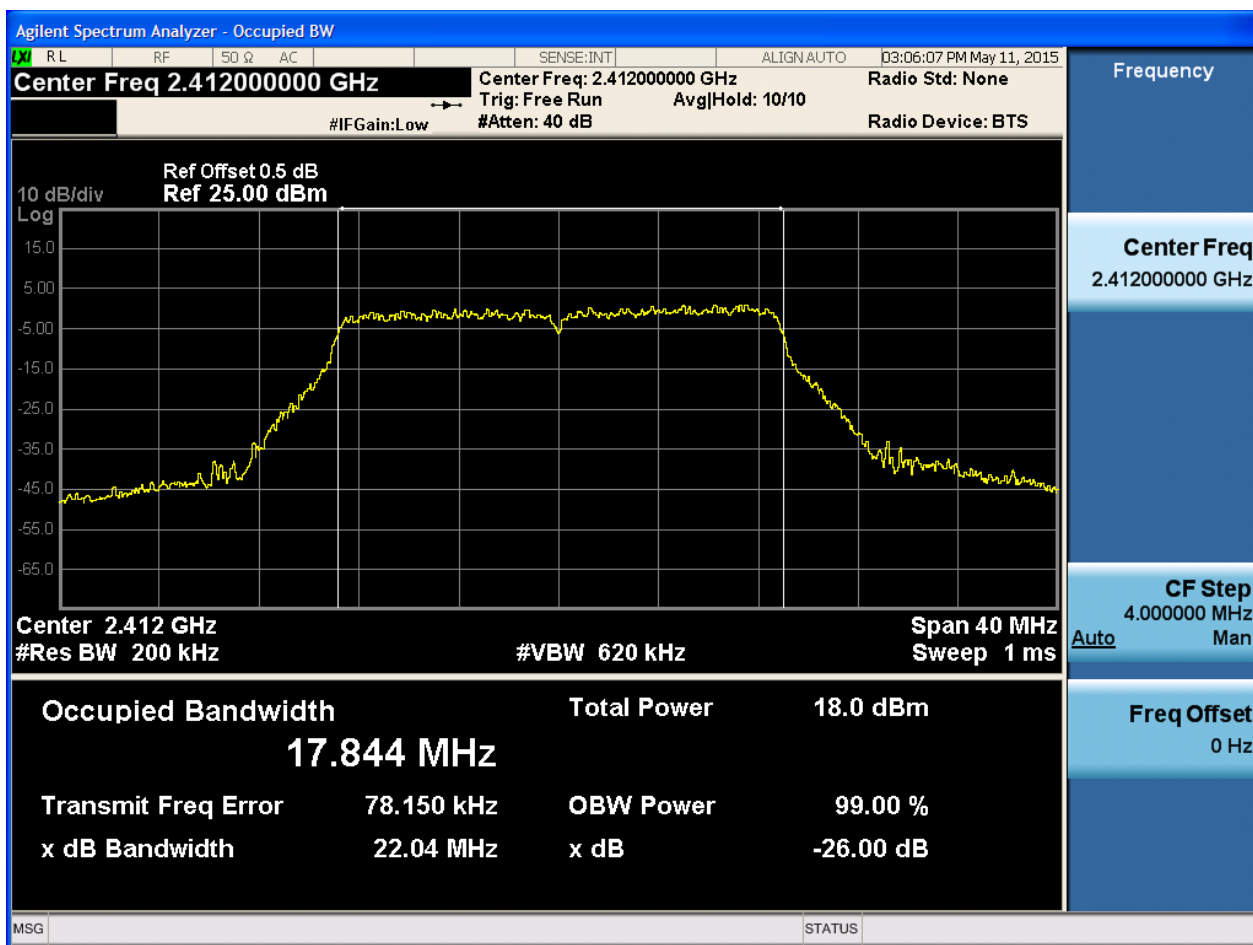


2.6 11G_H@Ant 1



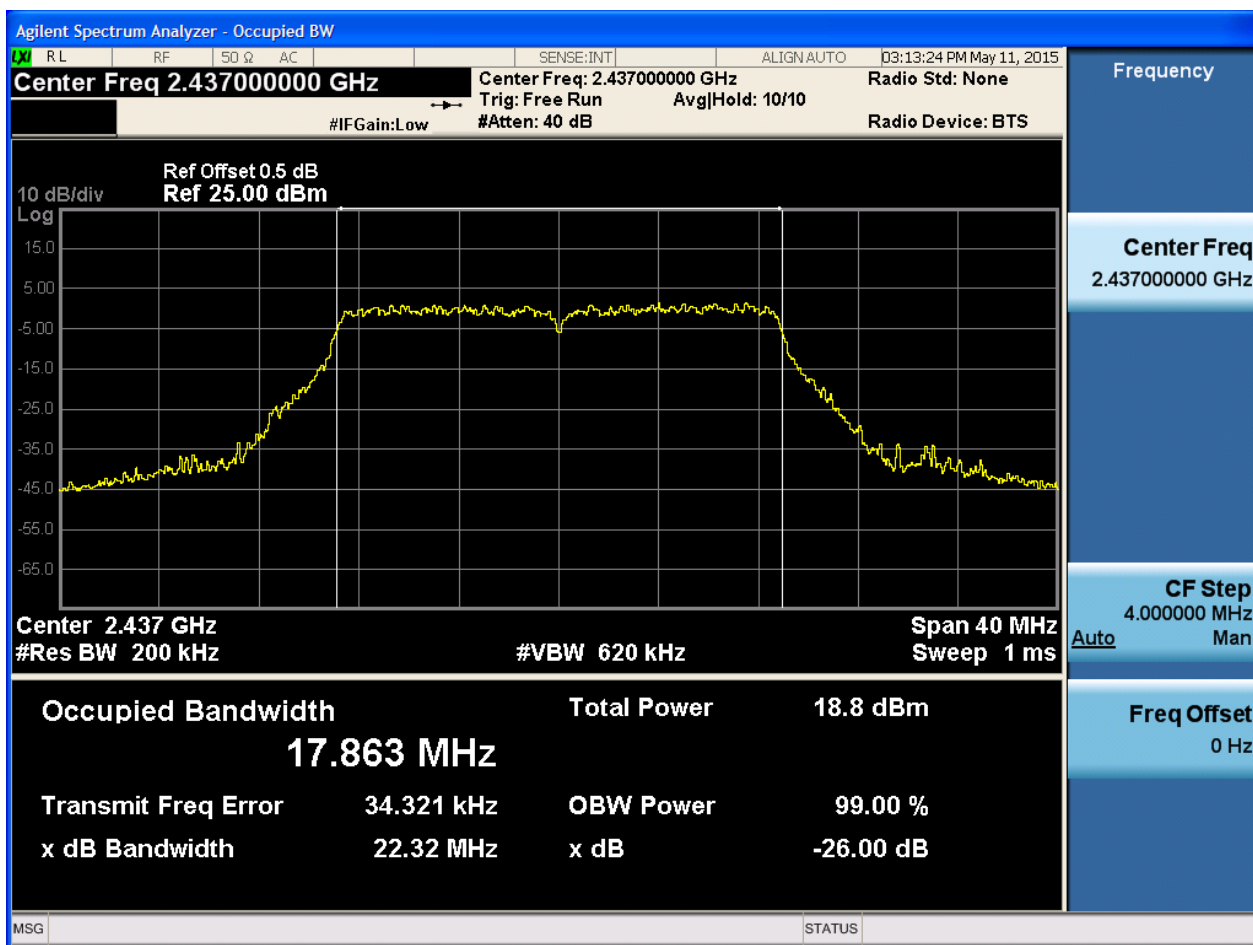


2.7 11N20_L@Ant 1



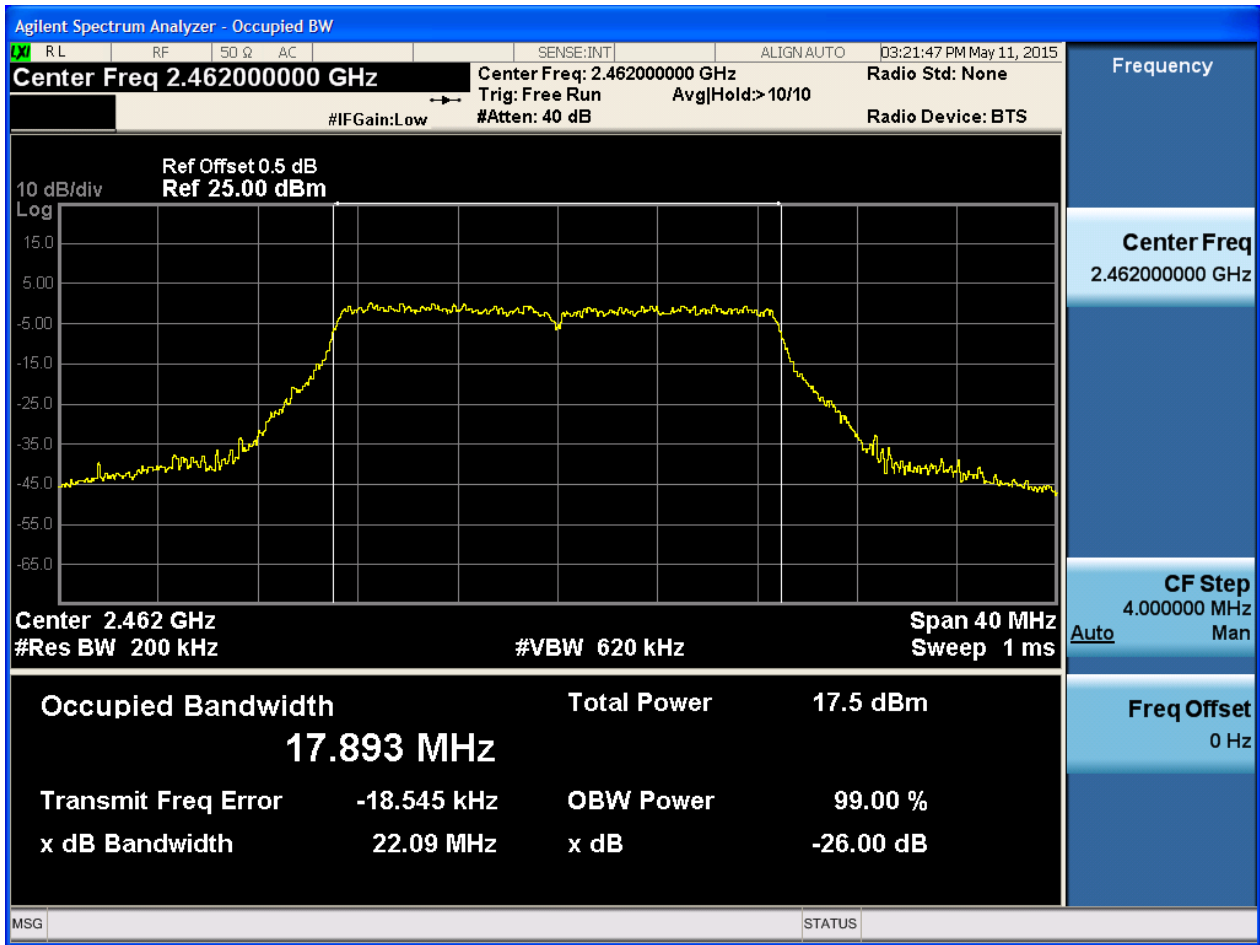


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



Appendix C: Duty Cycle

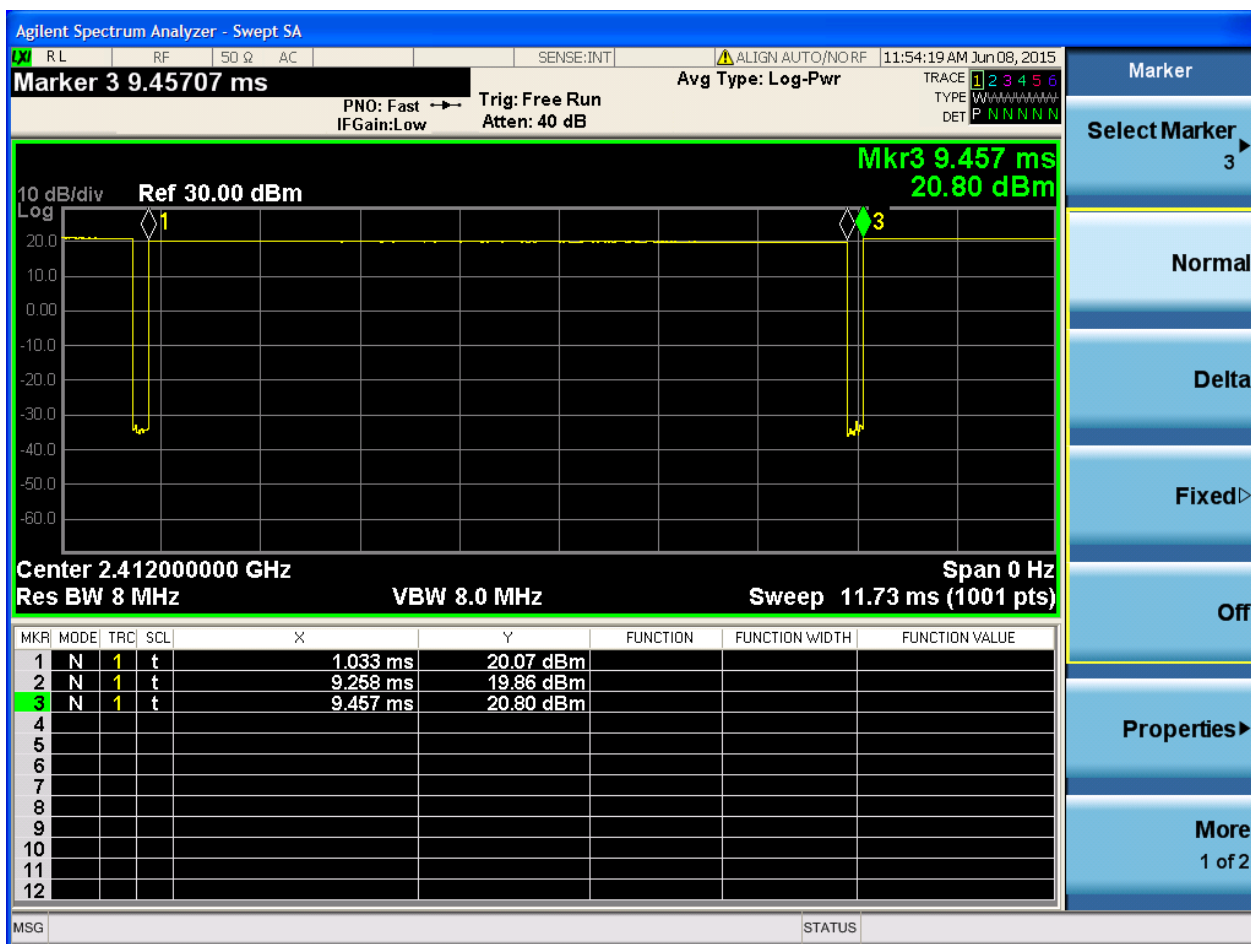
Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
11B	Ant 1: CH1,CH6,CH11	98
11G	Ant 1: CH1,CH6,CH11	87
11N_20M_SISO	Ant 1: CH1,CH6,CH11	87



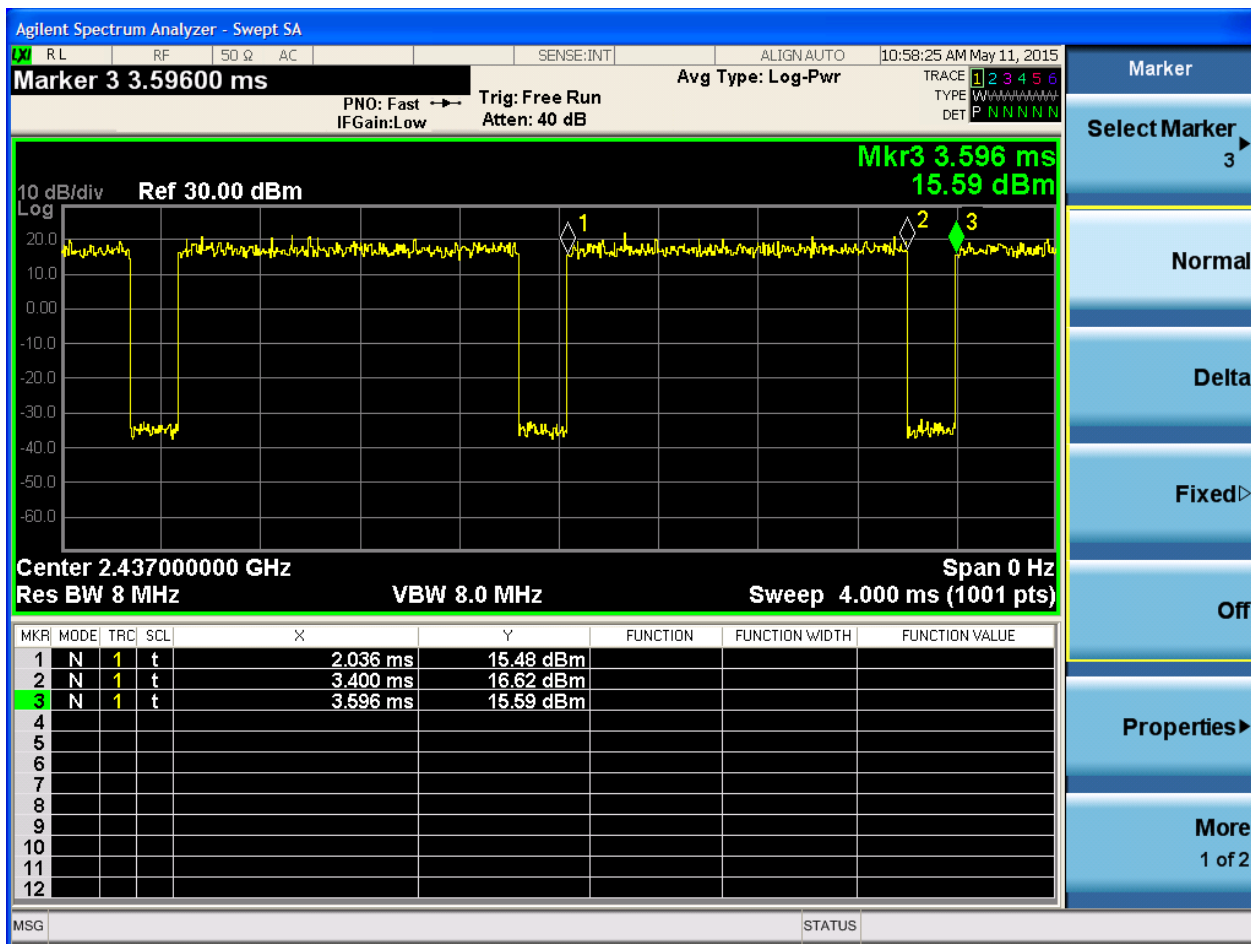
Part II - Test Plots

2.1 11B

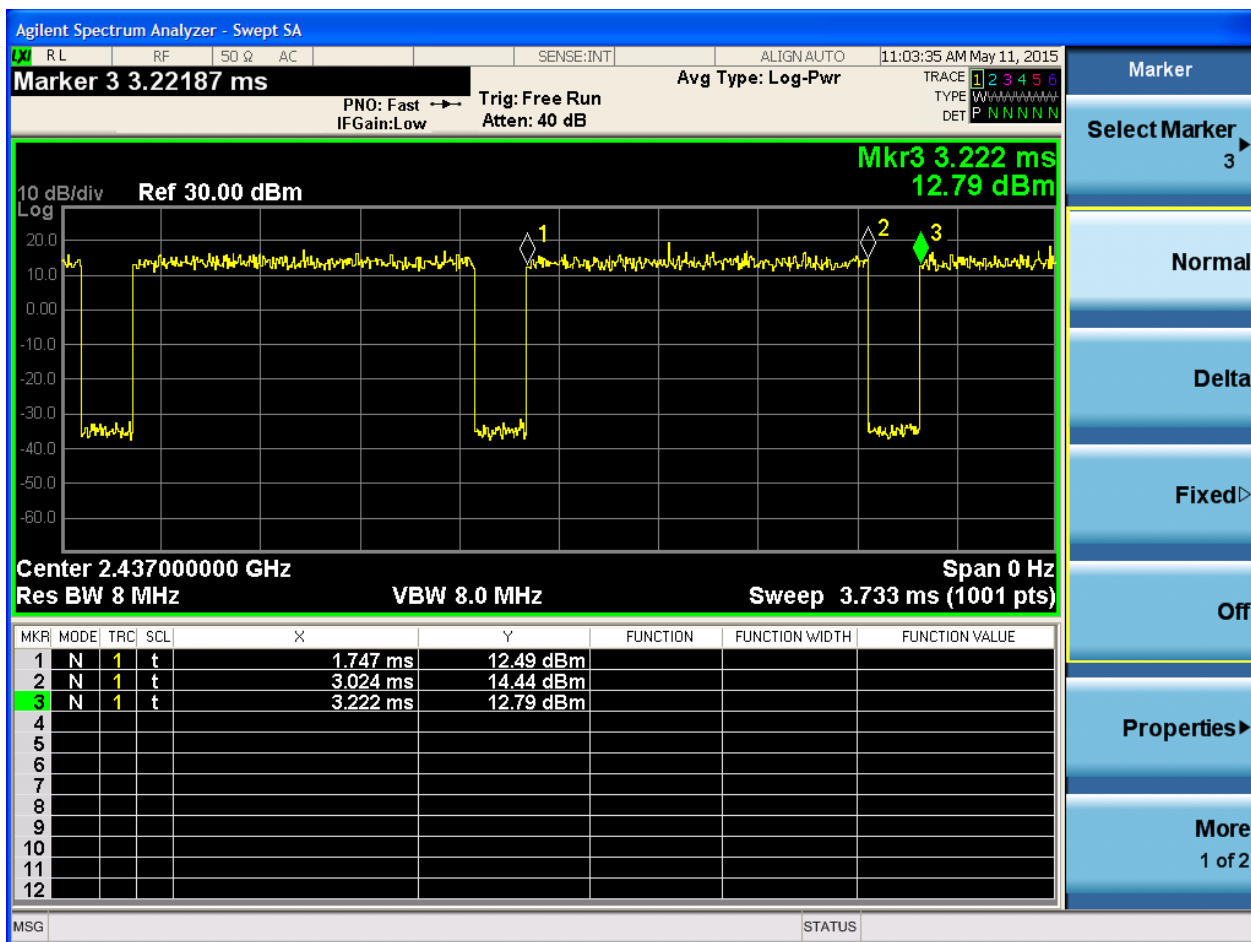




2.2 11G



2.3 11N20



Appendix D: Maximum Conducted Average Output Power

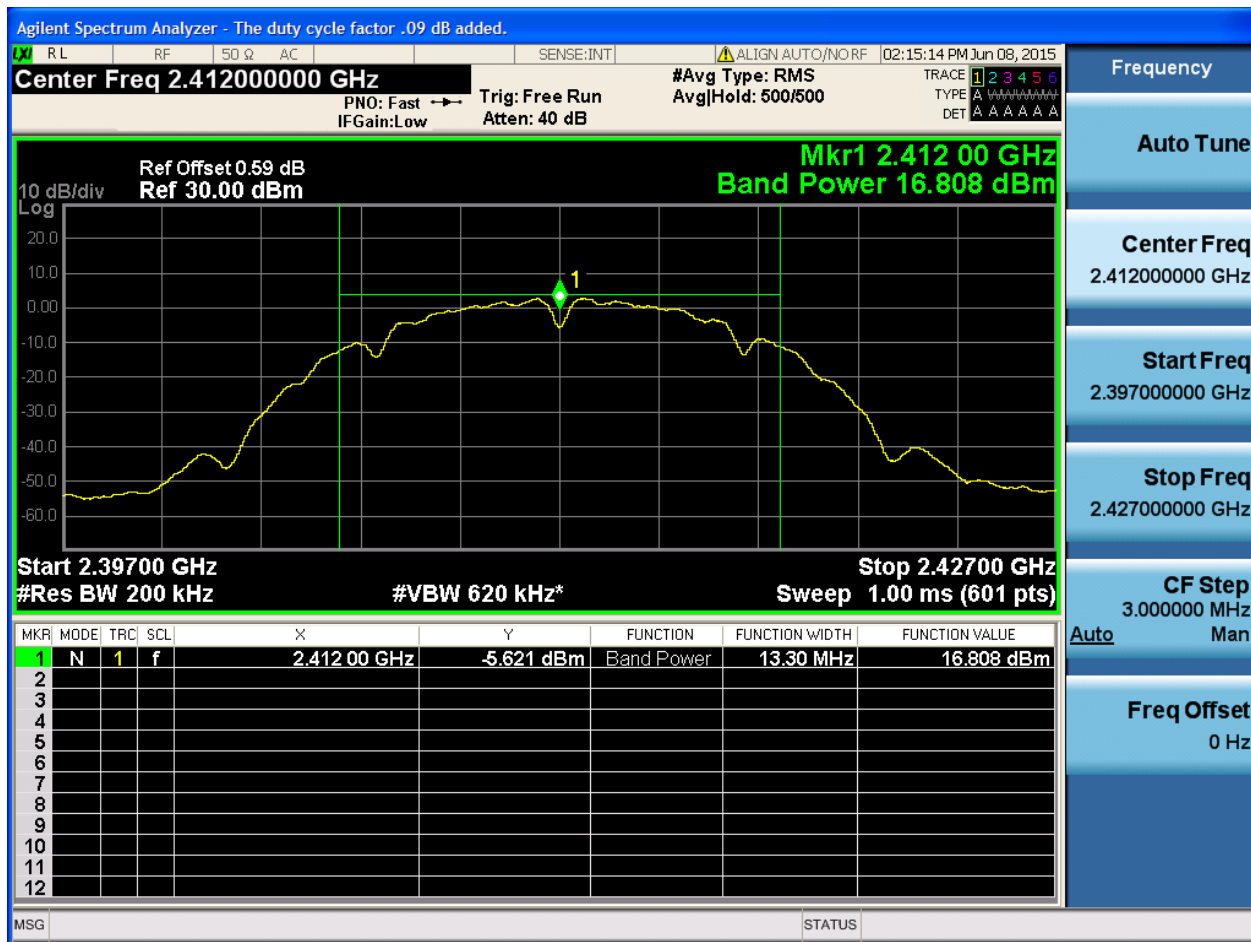
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Power[dBm]	Verdict
11B	L	2412	Ant 1	16.81	pass
11B	M	2437	Ant 1	17.53	pass
11B	H	2462	Ant 1	16.40	pass
11G	L	2412	Ant 1	13.91	pass
11G	M	2437	Ant 1	14.59	pass
11G	H	2462	Ant 1	13.63	pass
11N20	L	2412	Ant 1	10.70	pass
11N20	M	2437	Ant 1	11.63	pass
11N20	H	2462	Ant 1	10.32	pass



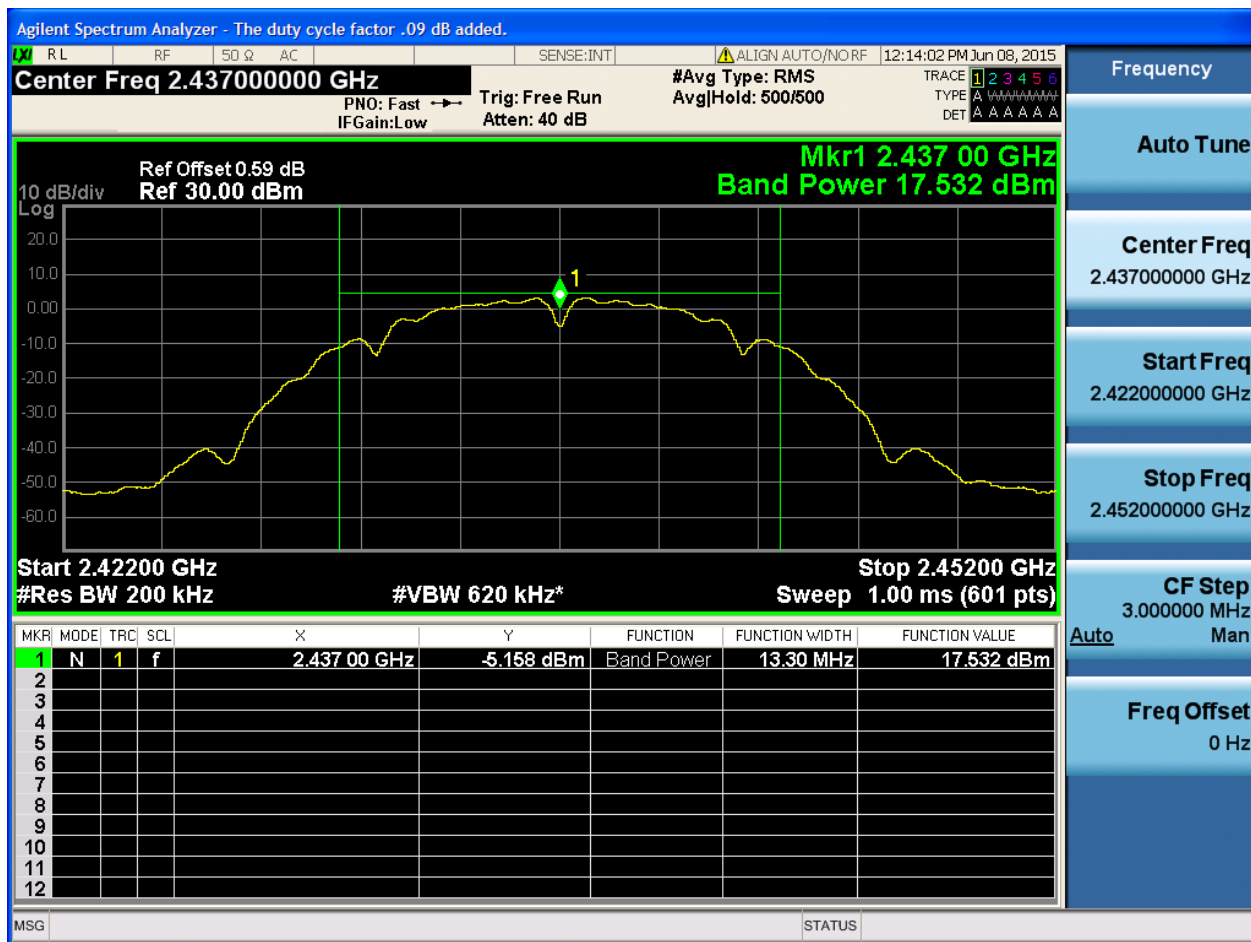
Part II - Test Plots

2.1 11B_L@Ant 1



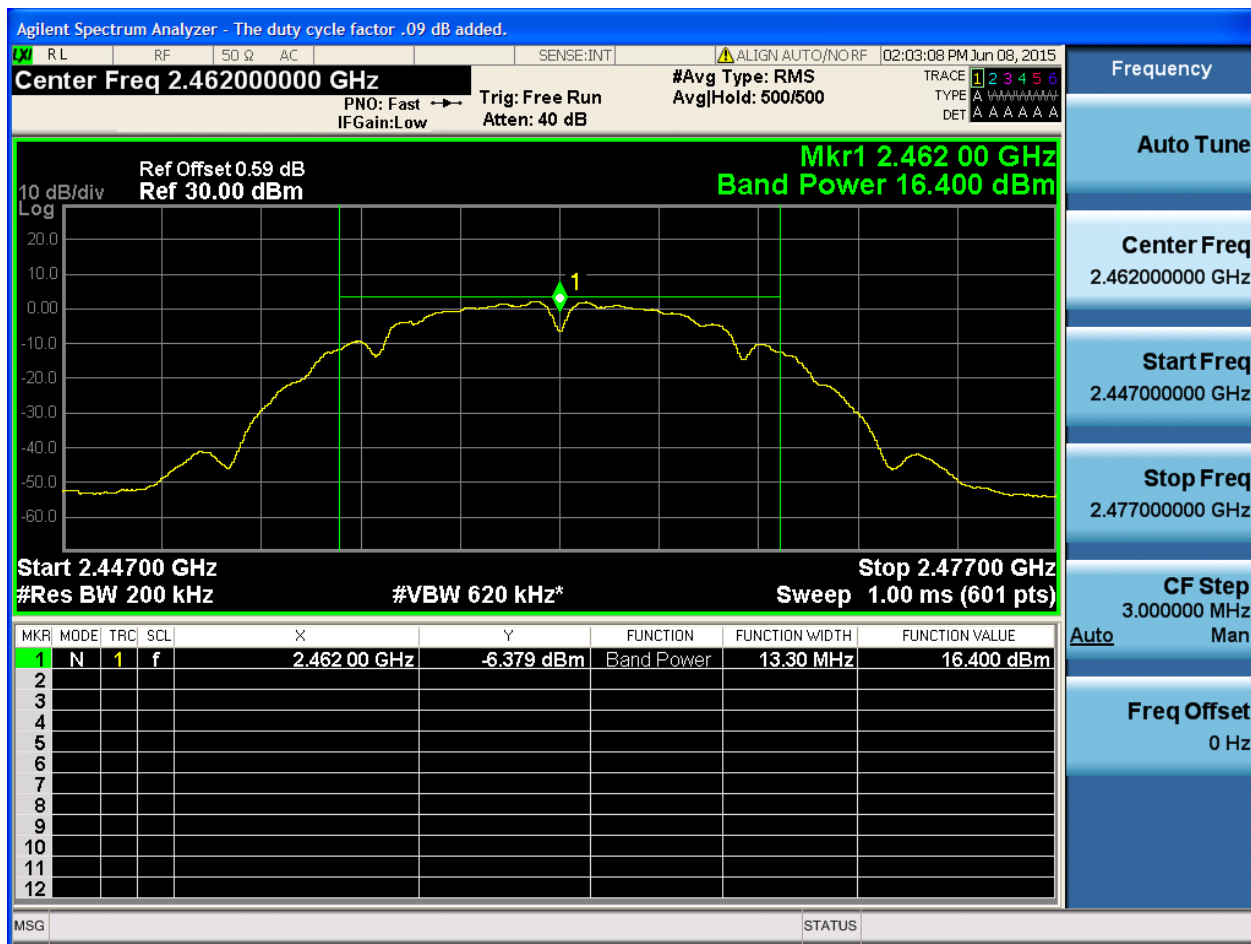


2.2 11B_M@Ant 1



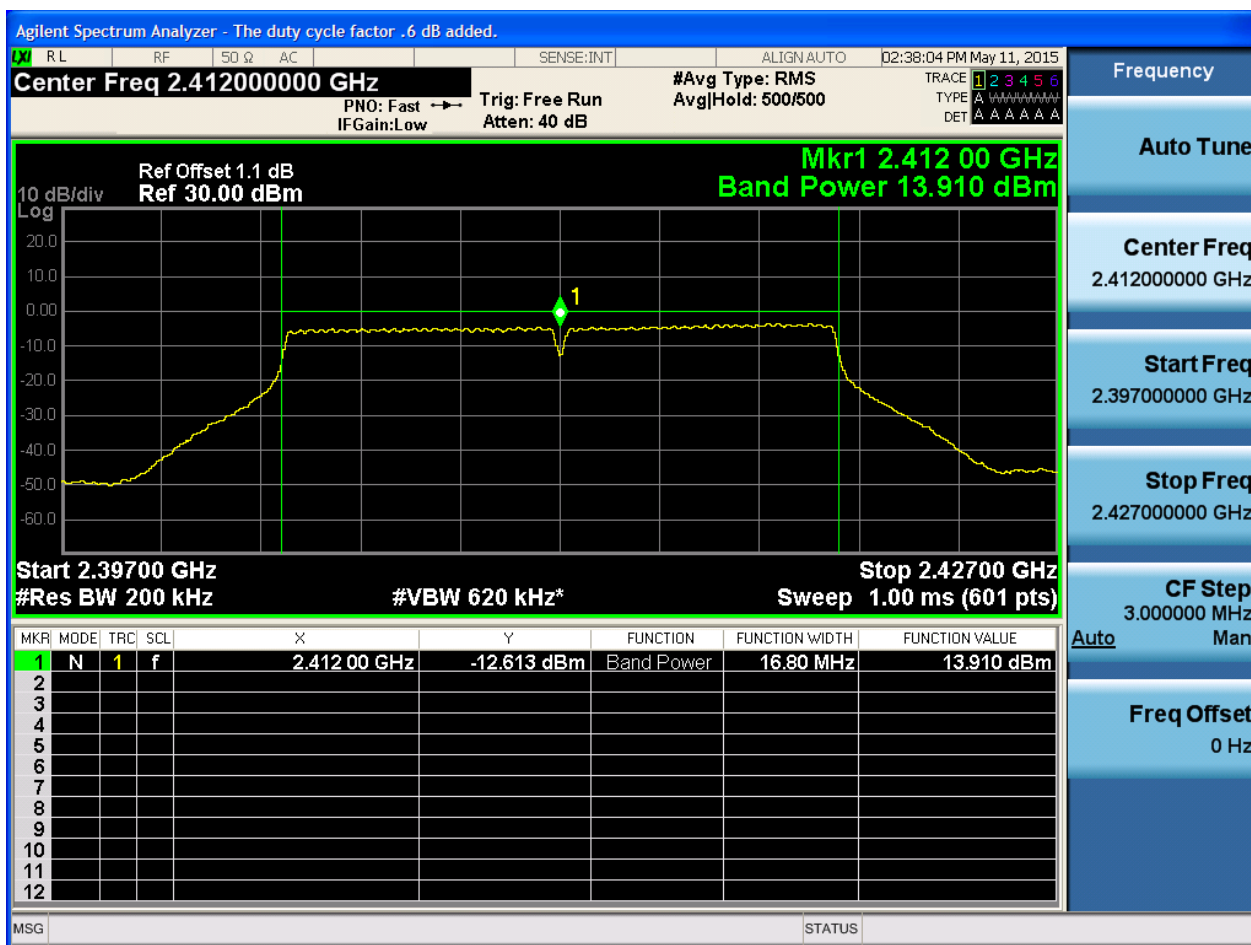


2.3 11B_H@Ant 1



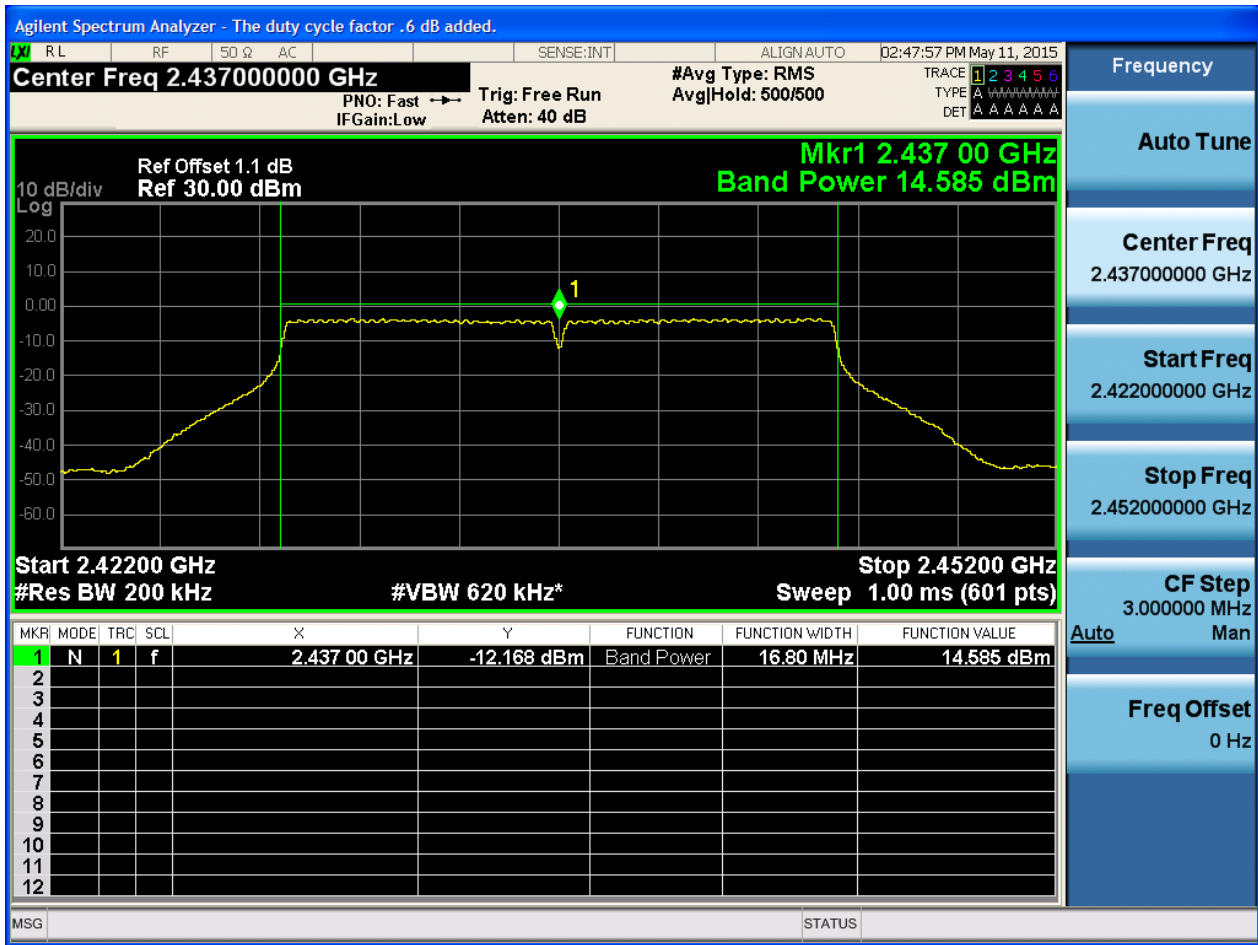


2.4 11G_L@Ant 1



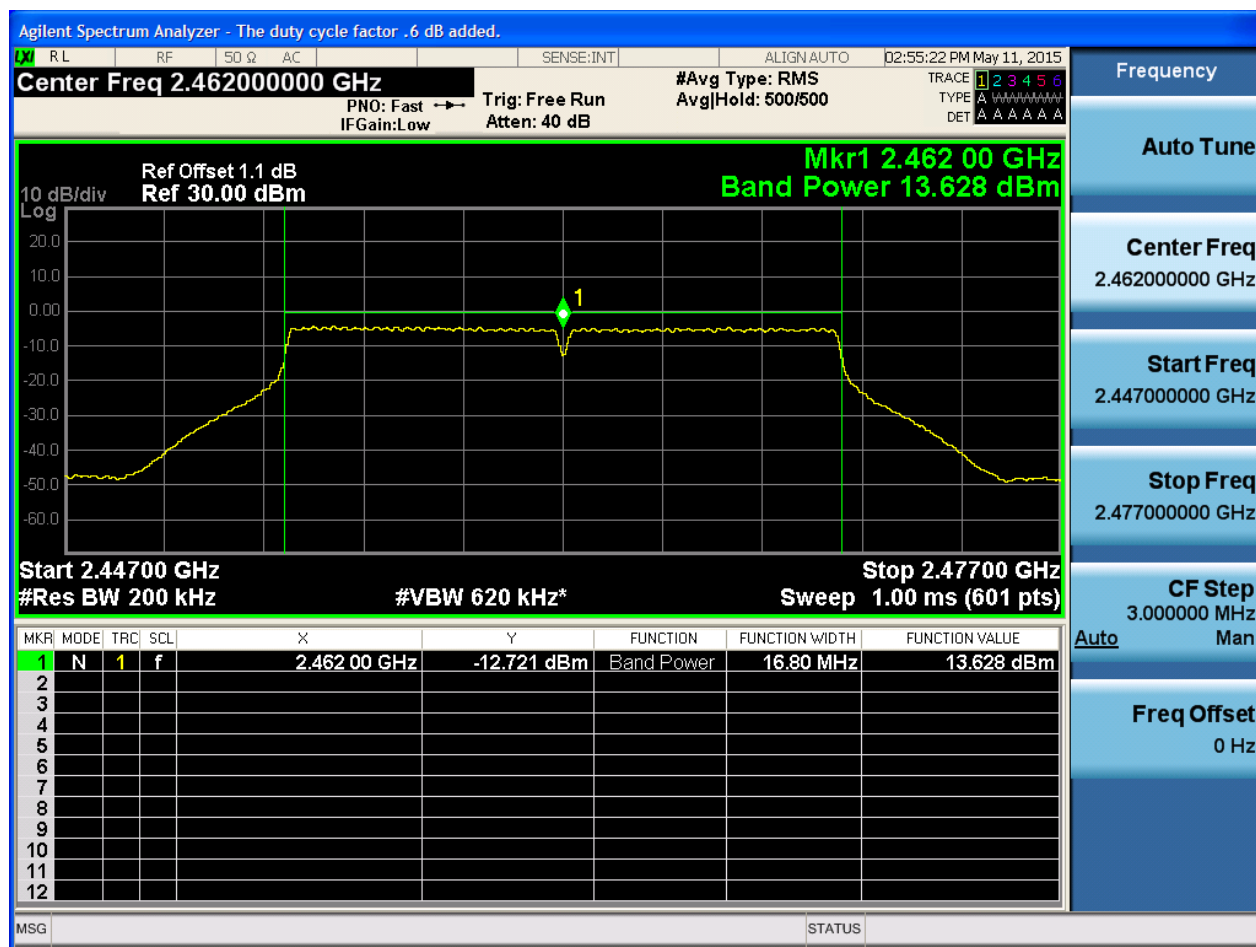


2.5 11G_M@Ant 1



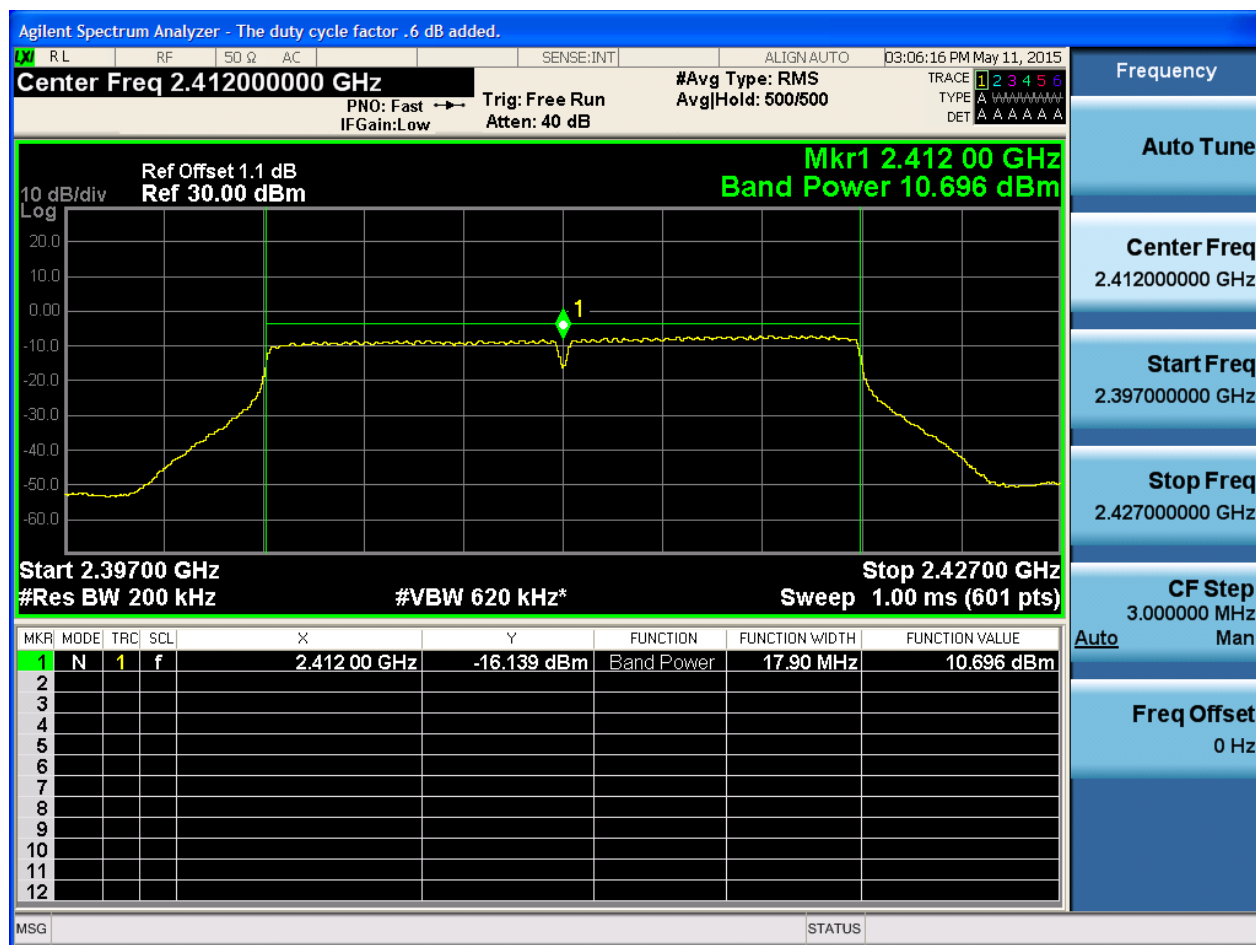


2.6 11G_H@Ant 1



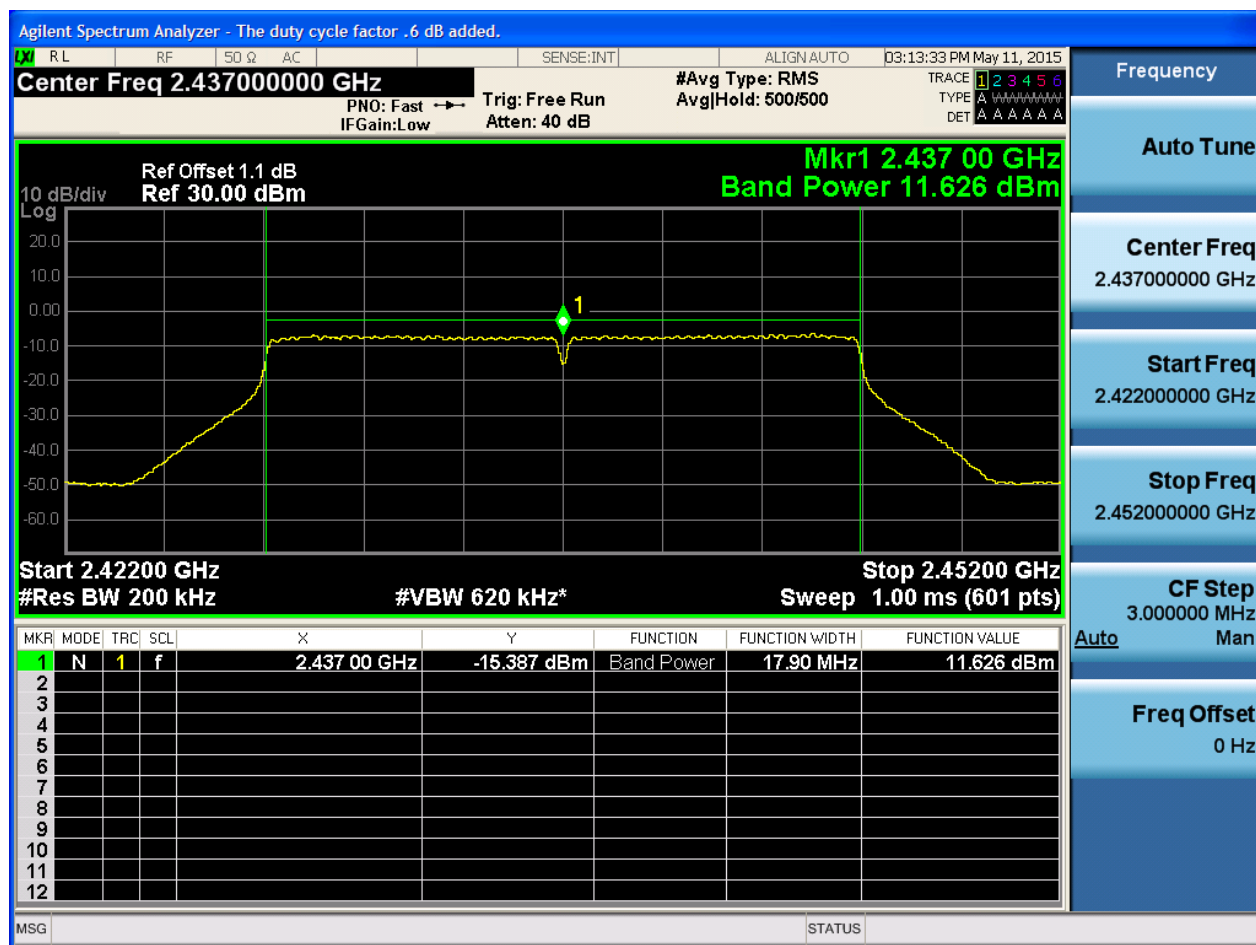


2.7 11N20_L@Ant 1



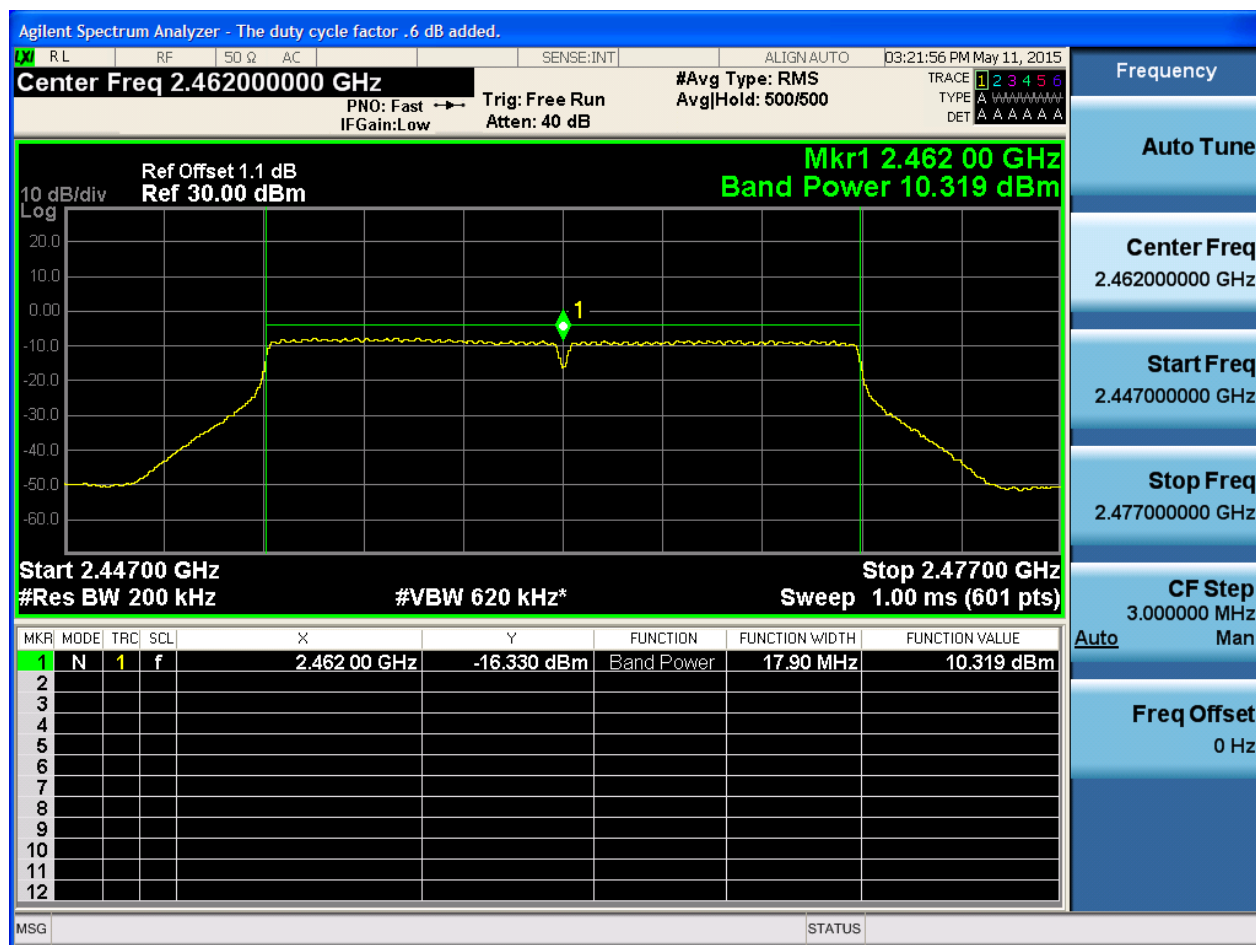


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



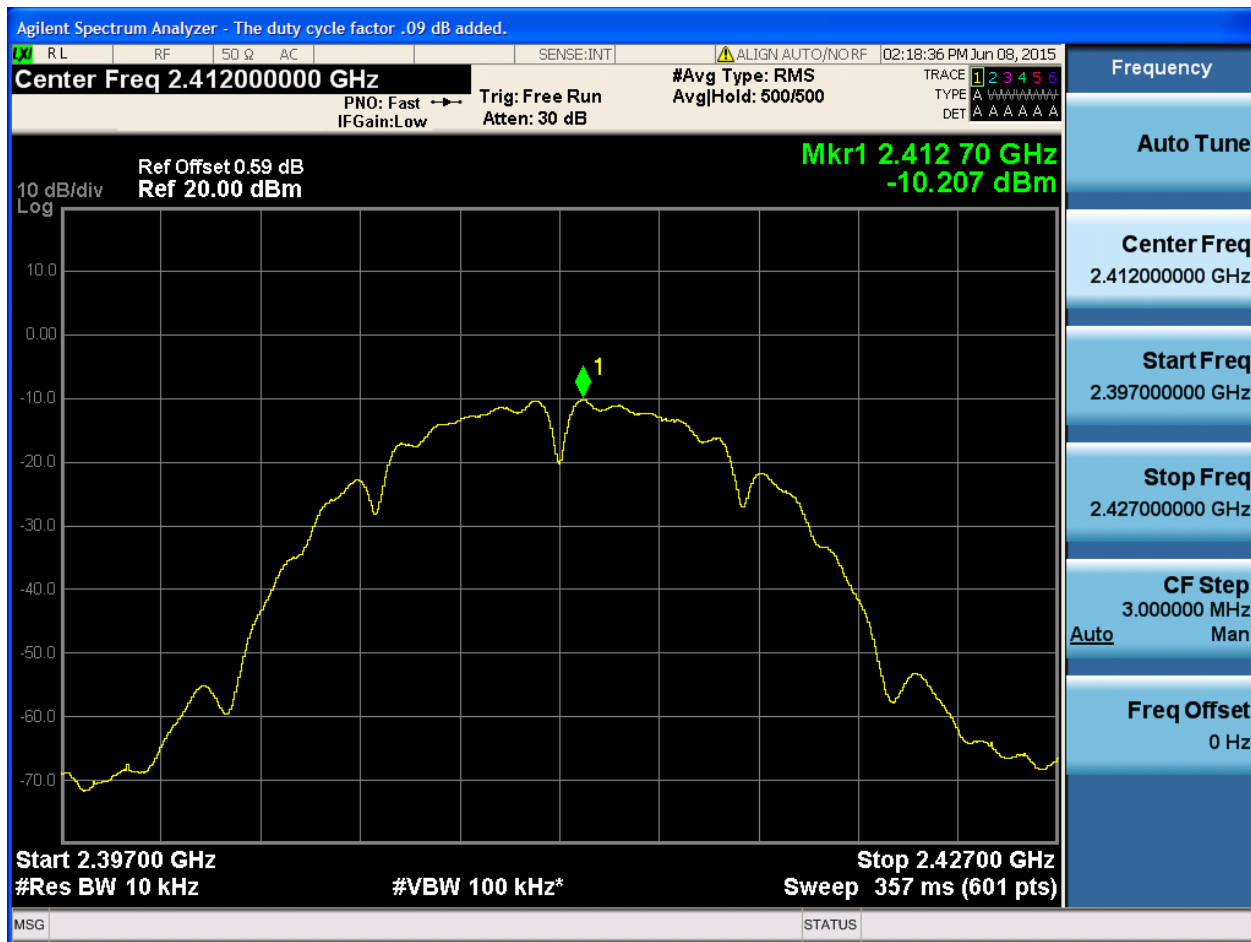
Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	PD[MHz]	Verdict
11B	L	2412	Ant 1	-10.21	pass
11B	M	2437	Ant 1	-9.65	pass
11B	H	2462	Ant 1	-10.68	pass
11G	L	2412	Ant 1	-15.46	pass
11G	M	2437	Ant 1	-15.03	pass
11G	H	2462	Ant 1	-16.07	pass
11N20	L	2412	Ant 1	-18.63	pass
11N20	M	2437	Ant 1	-18.06	pass
11N20	H	2462	Ant 1	-19.46	pass

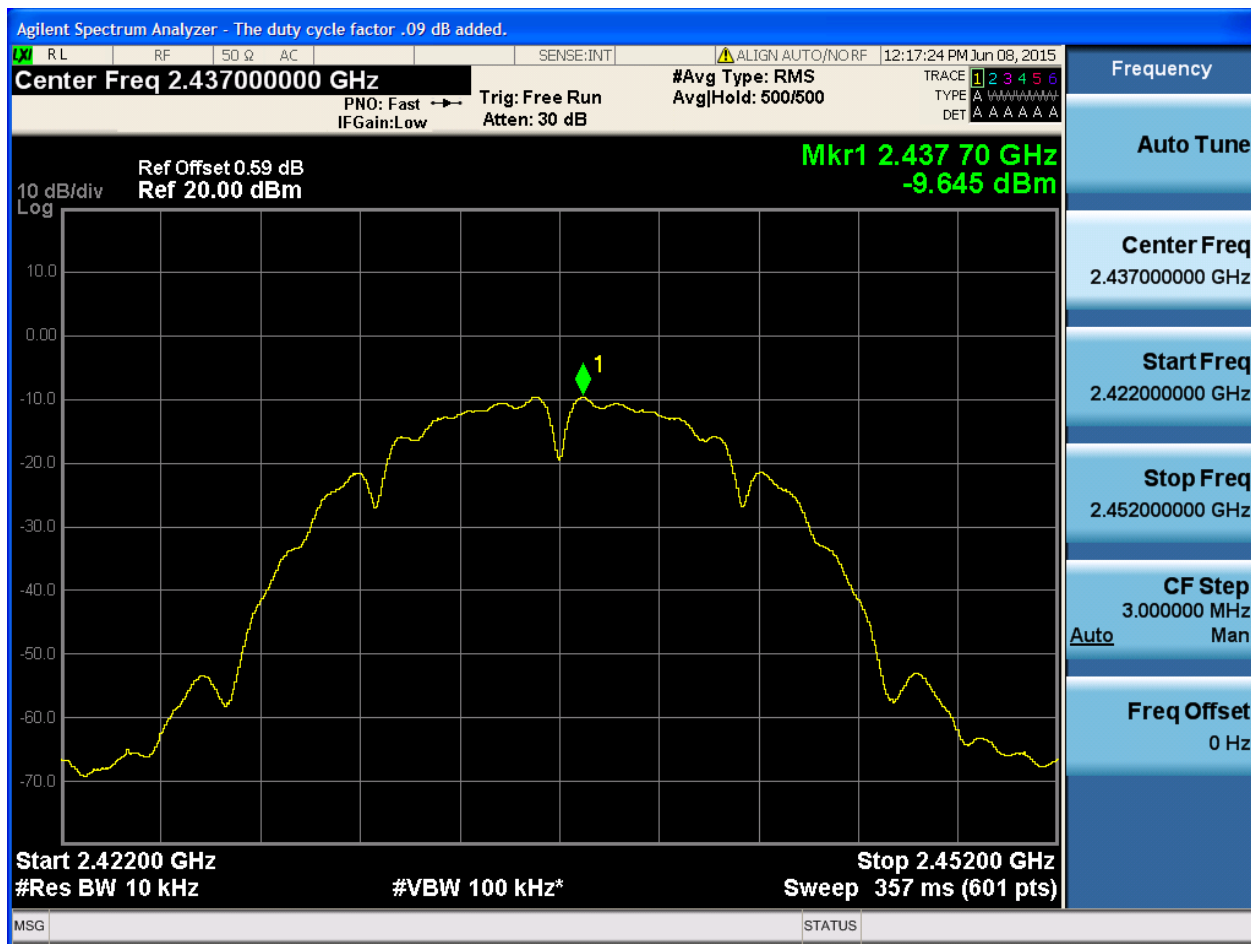
Part II - Test Plots

2.1 11B_L@Ant 1



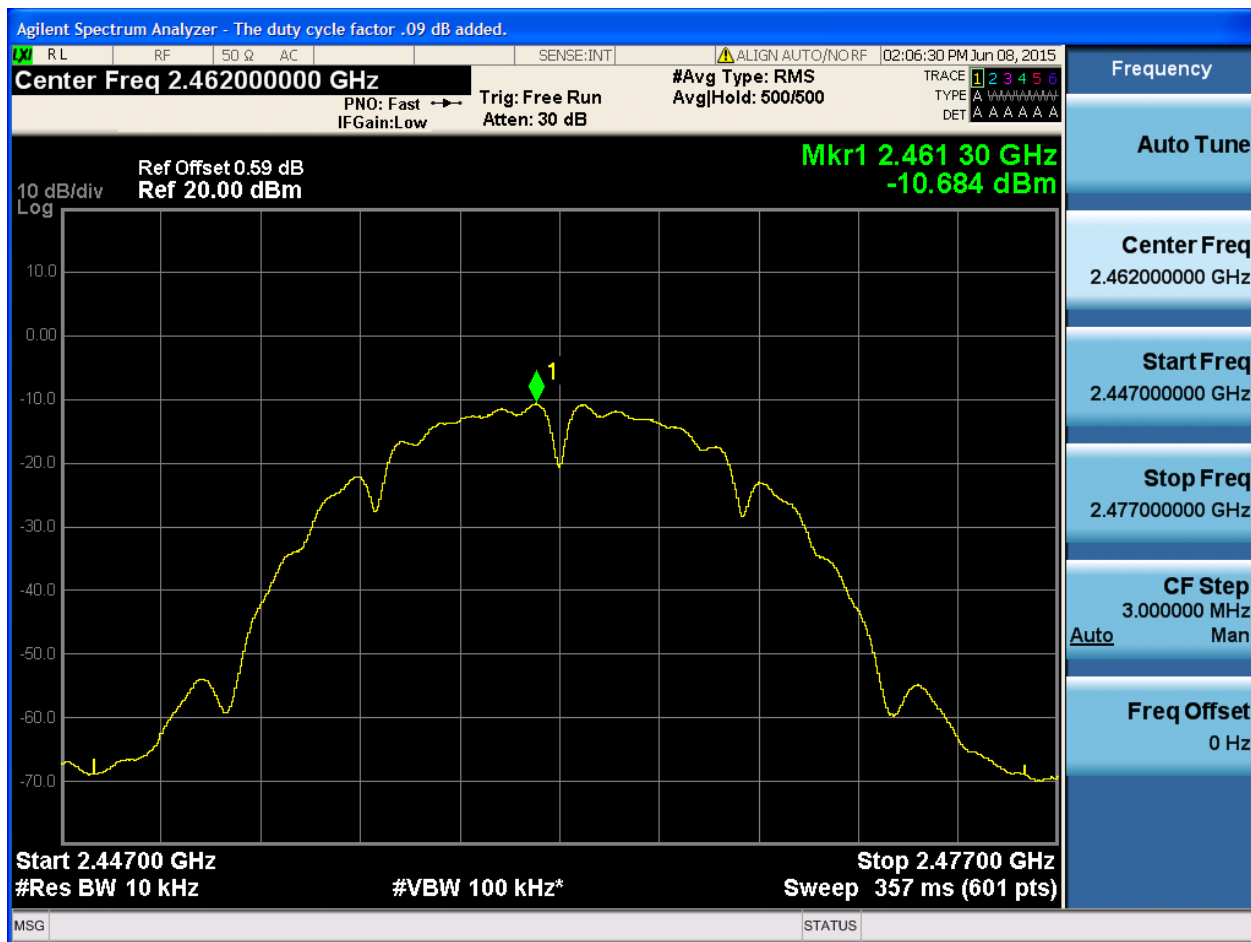


2.2 11B_M@Ant 1



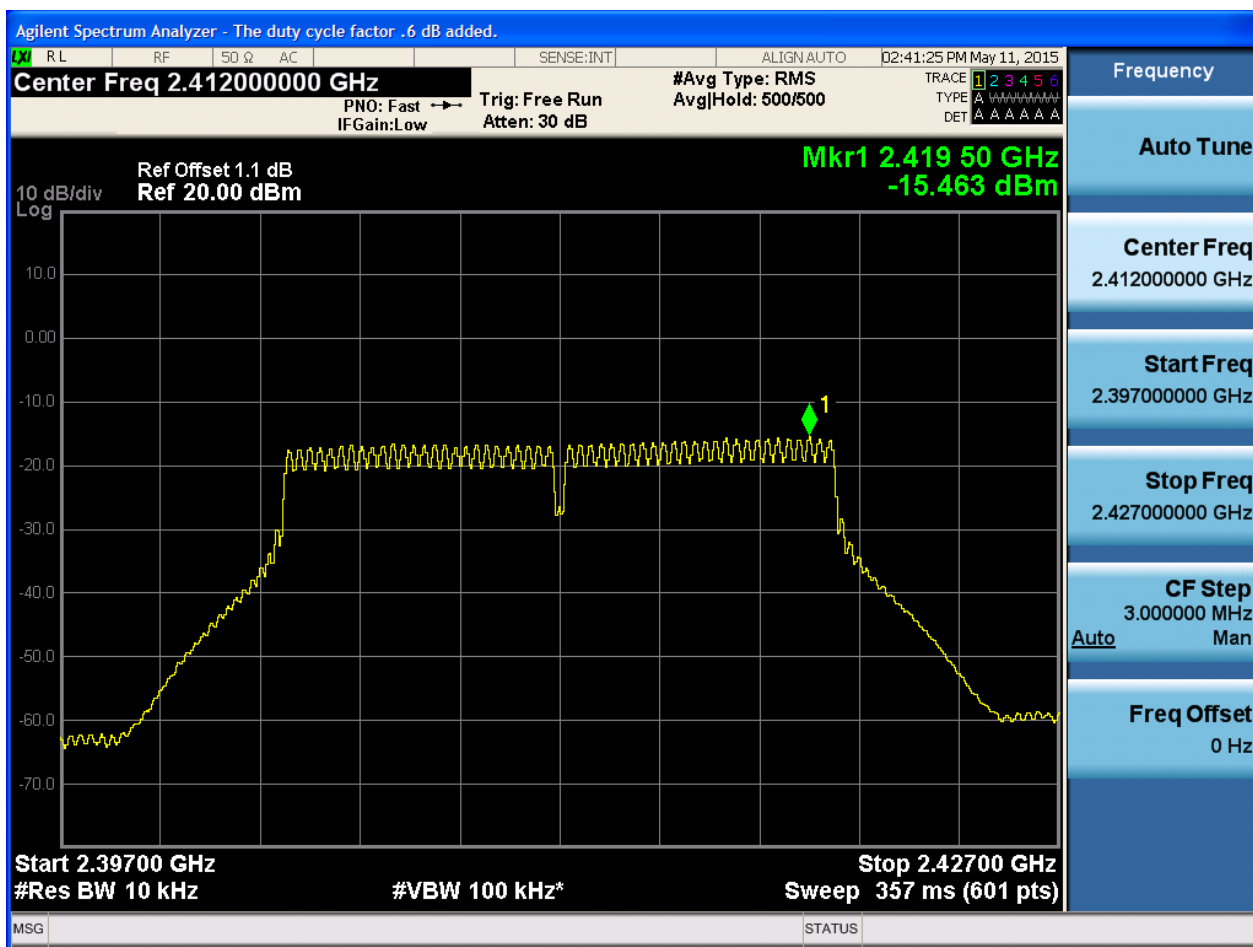


2.3 11B_H@Ant 1



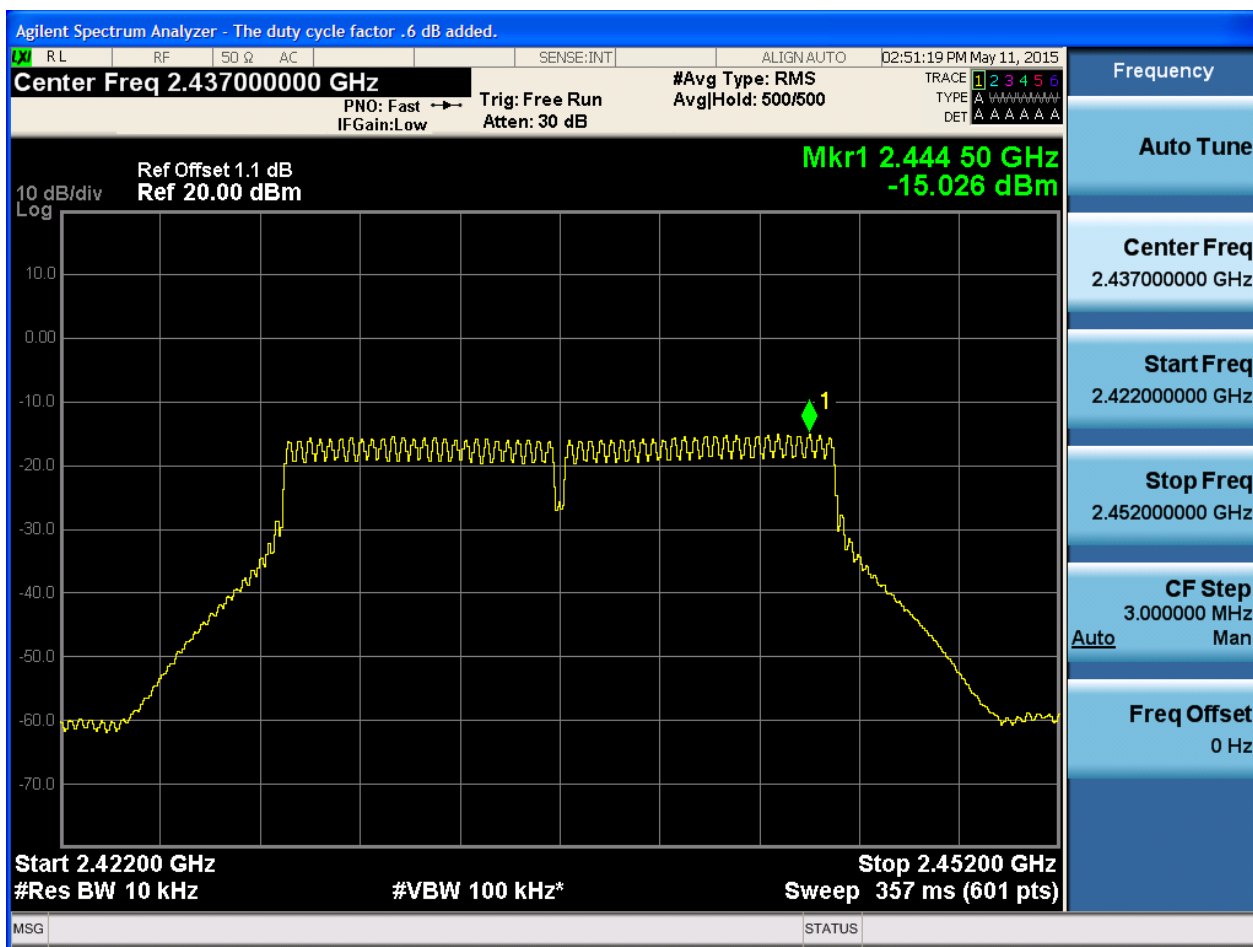


2.4 11G_L@Ant 1



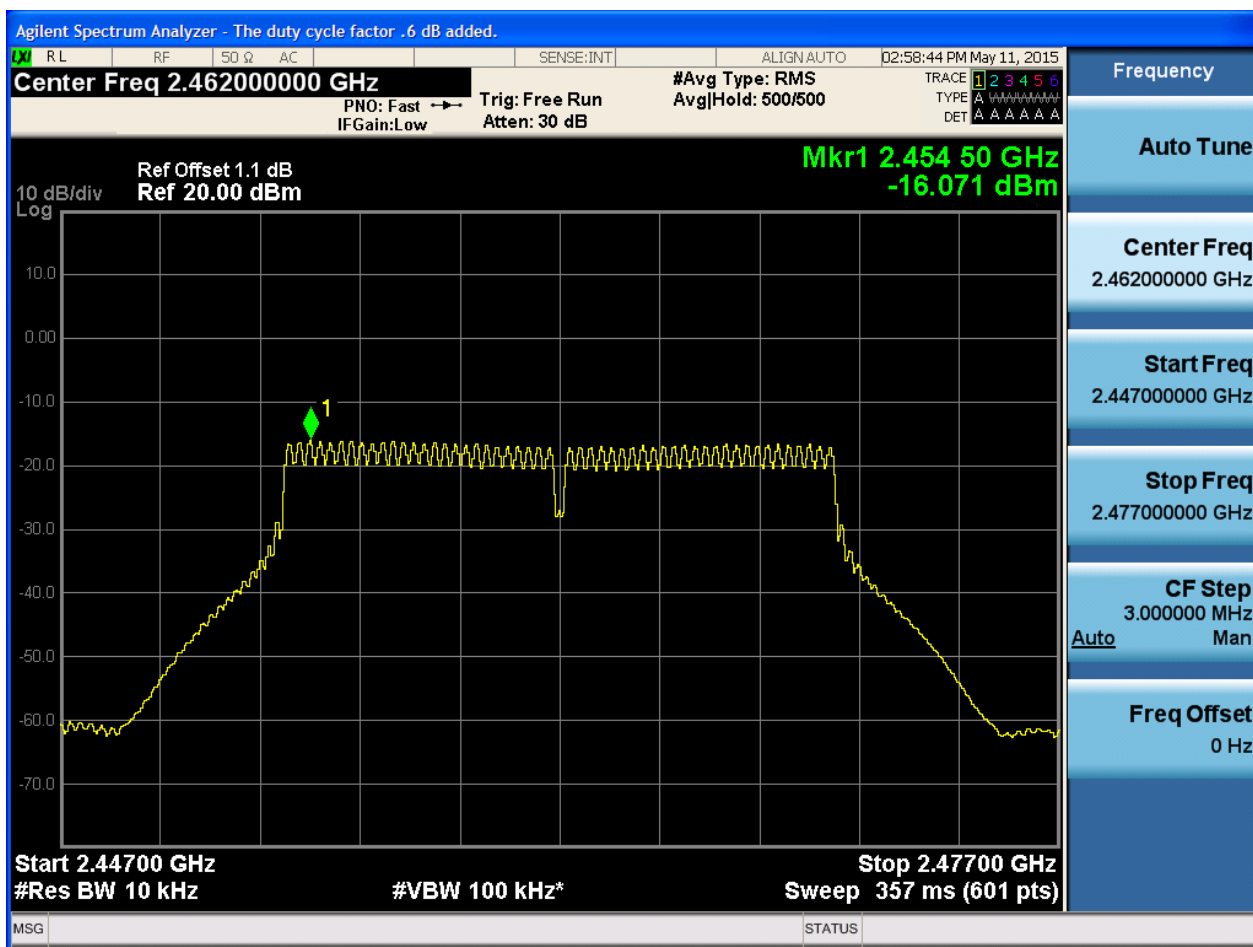


2.5 11G_M@Ant 1



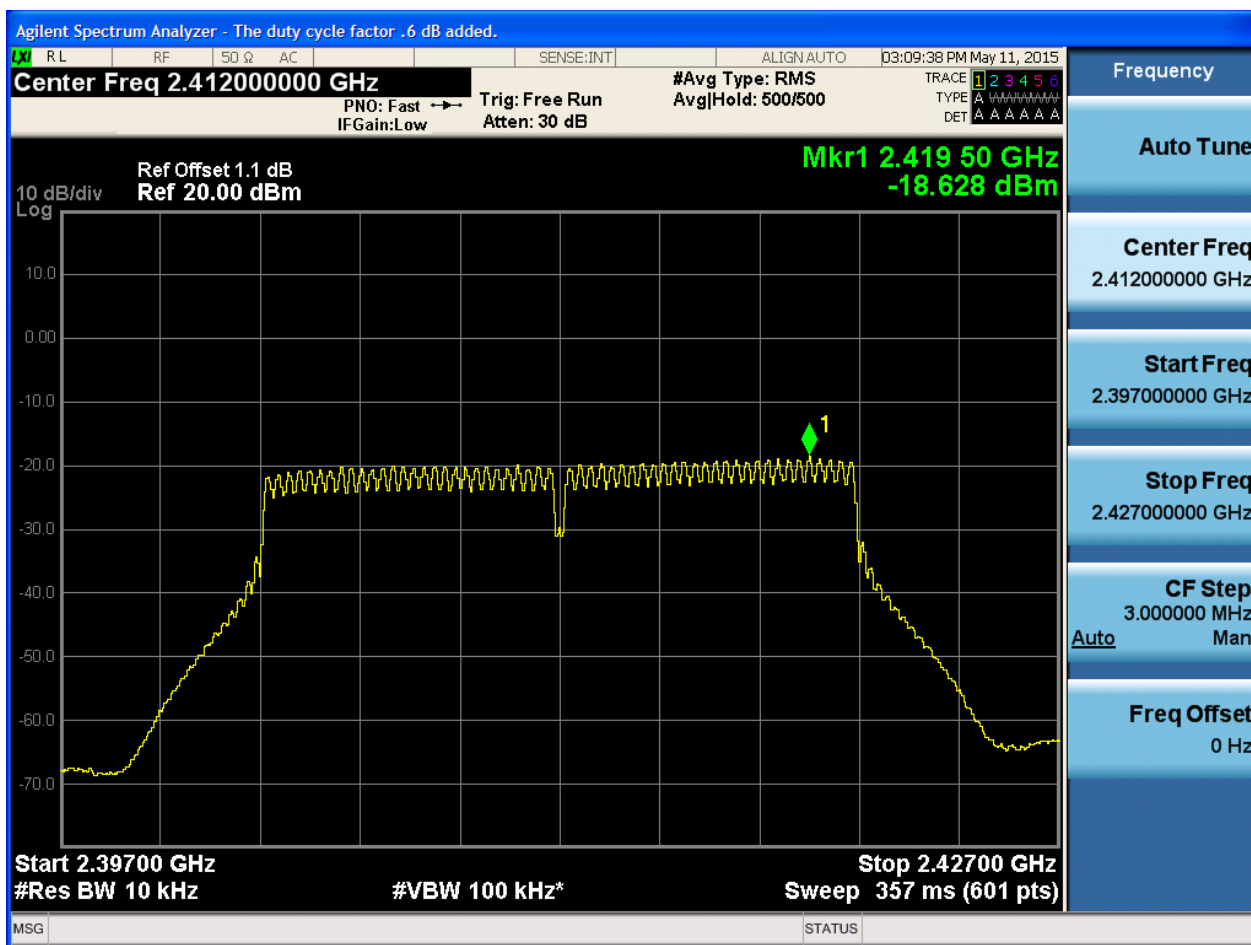


2.6 11G_H@Ant 1



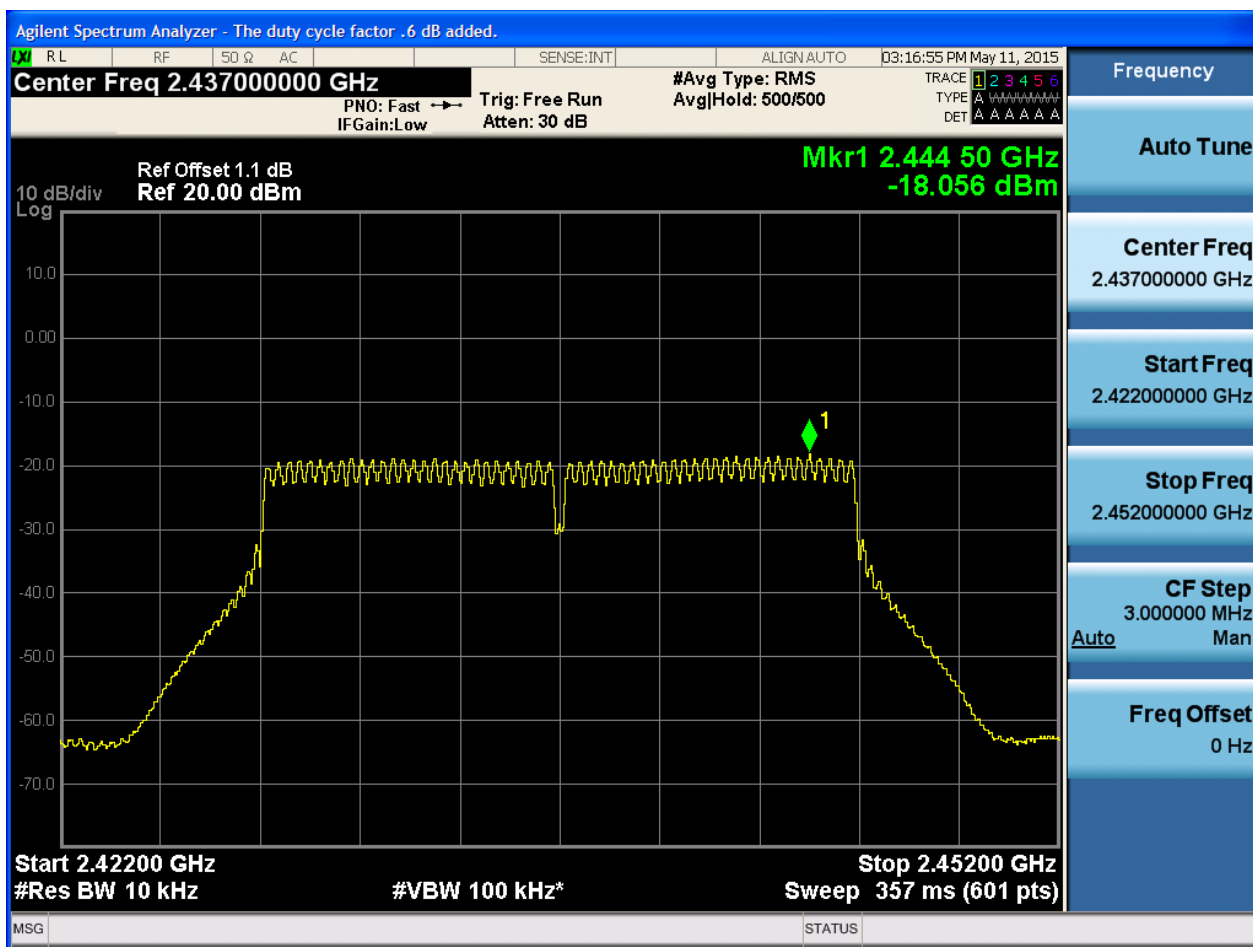


2.7 11N20_L@Ant 1



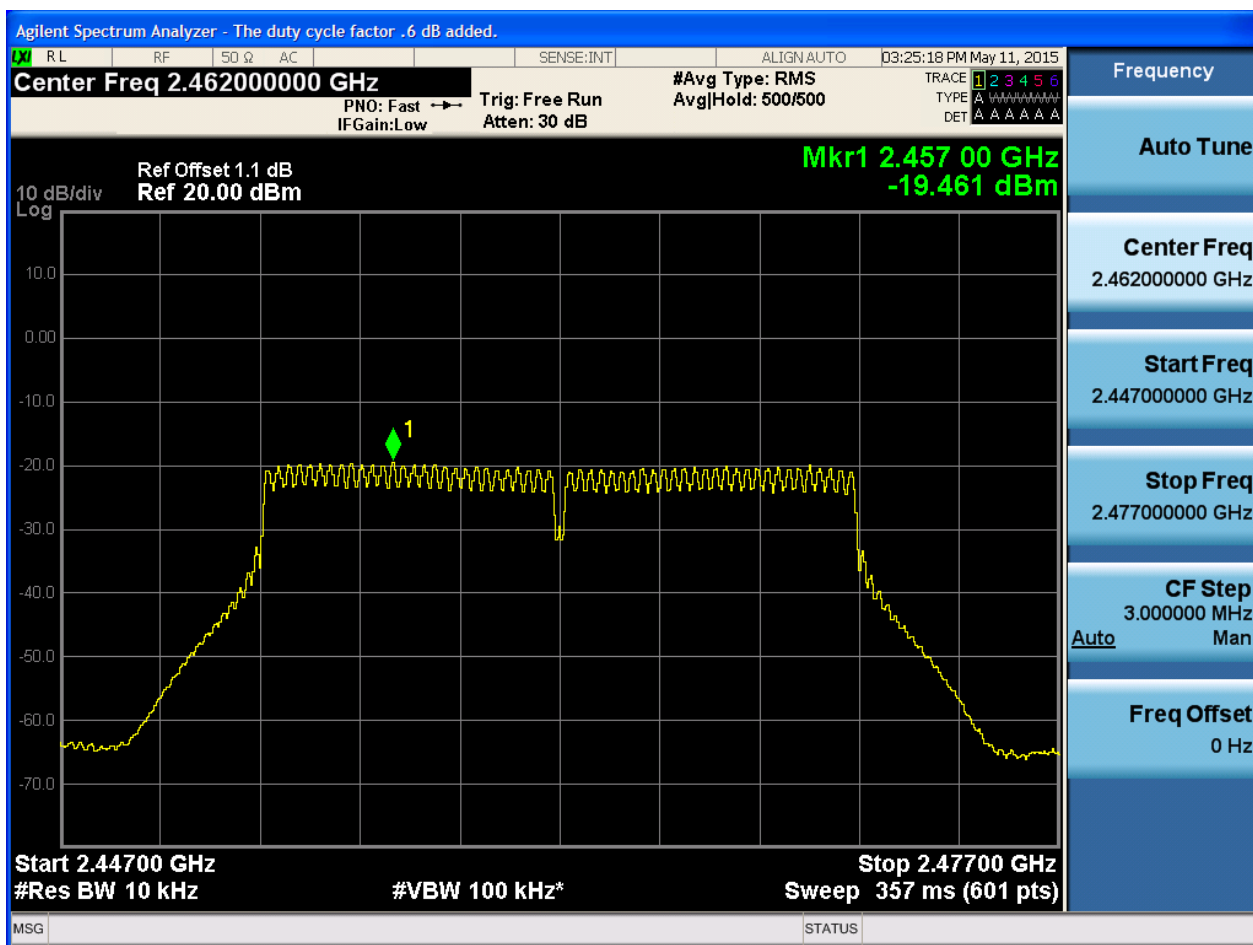


2.8 11N20_M@Ant 1





2.9 11N20_H@Ant 1



Appendix F: Band Edges Compliance

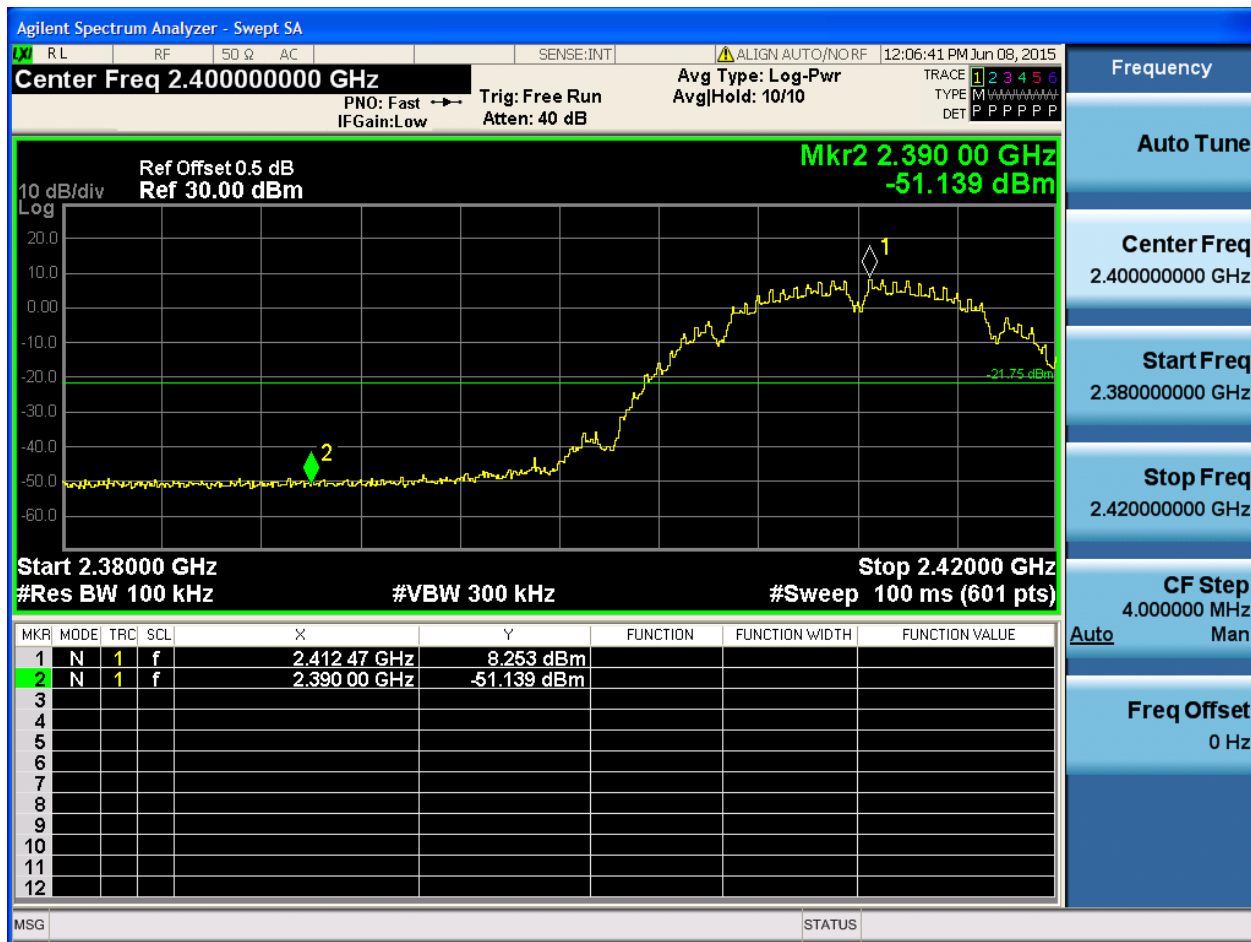
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
11B	L	2412	Ant 1	8.25	-51.14	pass
11B	H	2462	Ant 1	8.25	-49.94	pass
11G	L	2412	Ant 1	3.16	-50.59	pass
11G	H	2462	Ant 1	2.56	-49.21	pass
11N20	L	2412	Ant 1	-0.03	-51.43	pass
11N20	H	2462	Ant 1	-0.92	-48.62	pass



Part II - Test Plots

2.1 11B_L@Ant 1



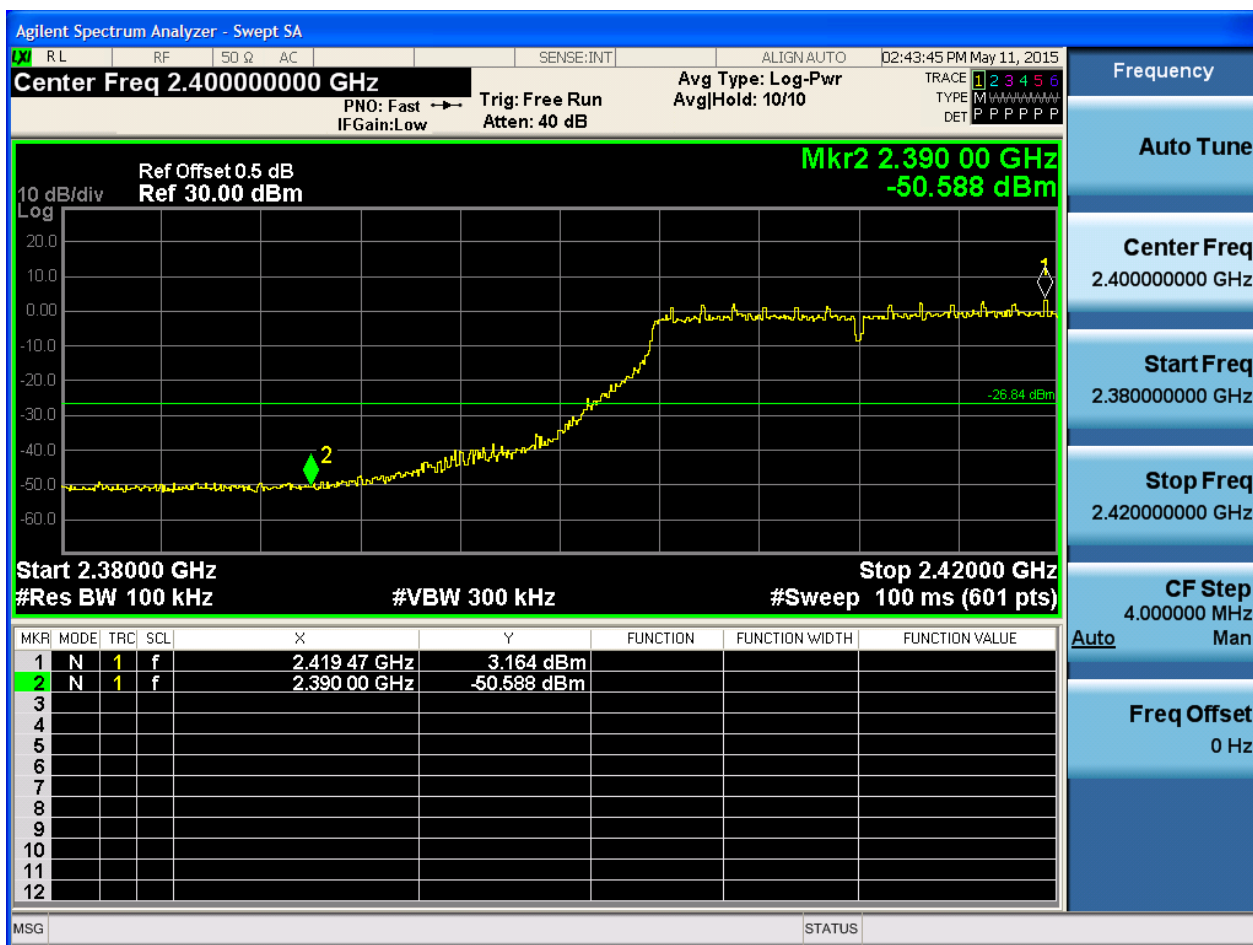


2.2 11B_H@Ant 1





2.3 11G_L@Ant 1





2.4 11G_H@Ant 1





Agilent Spectrum Analyzer - Swept SA

Center Freq 2.40000000 GHz

Ref Offset 0.5 dB
Ref 30.00 dBm

Mkr2 2.390 00 GHz
-51.428 dBm

Start 2.38000 GHz
#Res BW 100 kHz

Stop 2.42000 GHz
#Sweep 100 ms (601 pts)

#VBW 300 kHz

Trig: Free Run
Atten: 40 dB

PNO: Fast
IFGain: Low

Avg Type: Log-Pwr
Avg/Hold: 10/10

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

Frequency

Auto Tune

Center Freq
2.40000000 GHz

Start Freq
2.38000000 GHz

Stop Freq
2.42000000 GHz

CF Step
4.000000 MHz
Man

Freq Offset
0 Hz

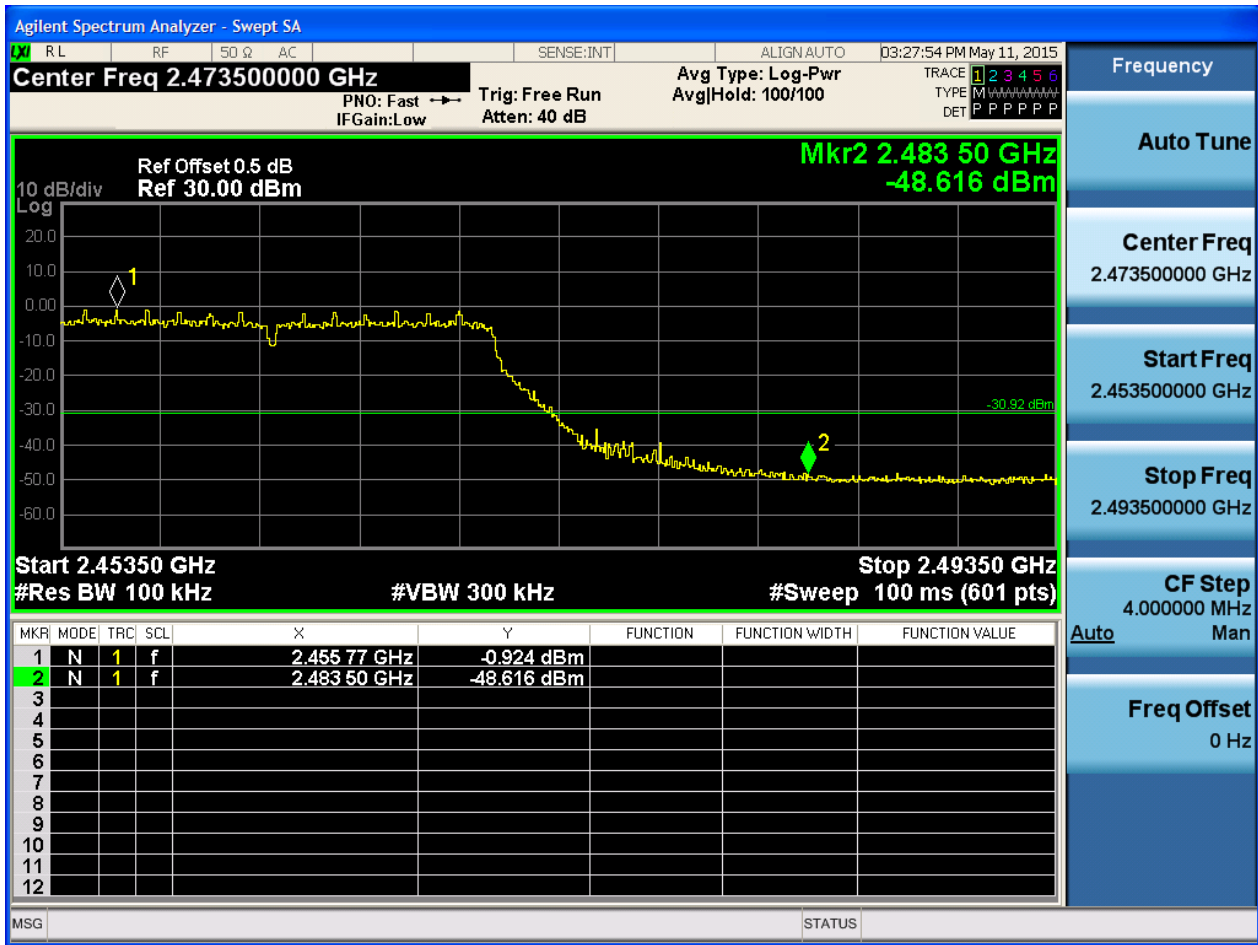
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.419 53 GHz	-0.030 dBm			
2	N	1	f	2.390 00 GHz	-51.428 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG

STATUS



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

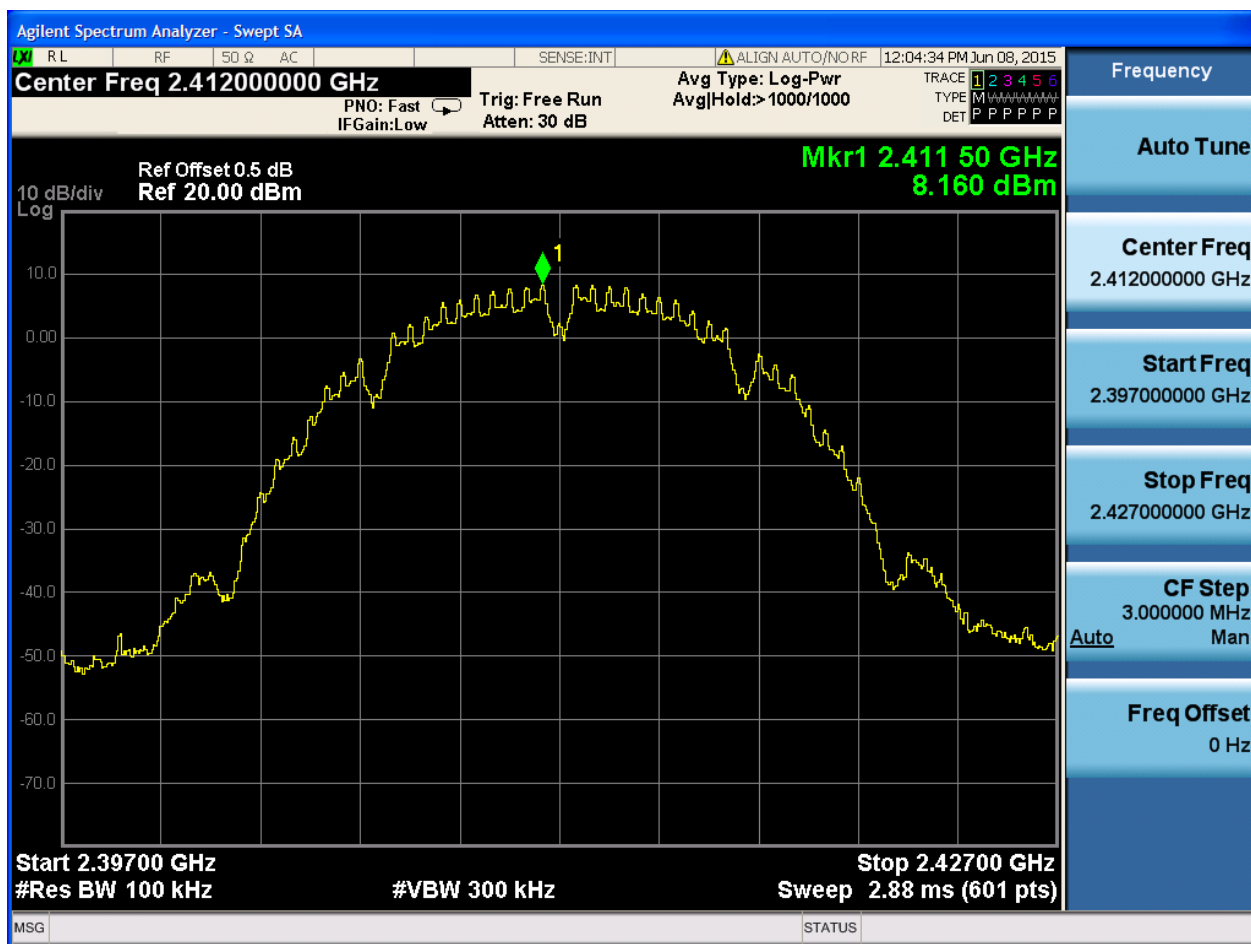
Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
11B	L	2412	Ant 1	8.16	<limit	pass
11B	M	2437	Ant 1	9.24	<limit	pass
11B	H	2462	Ant 1	8.09	<limit	pass
11G	L	2412	Ant 1	3.23	<limit	pass
11G	M	2437	Ant 1	3.66	<limit	pass
11G	H	2462	Ant 1	2.91	<limit	pass
11N20	L	2412	Ant 1	0.15	<limit	pass
11N20	M	2437	Ant 1	0.48	<limit	pass
11N20	H	2462	Ant 1	-0.64	<limit	pass



Part II - Test Plots

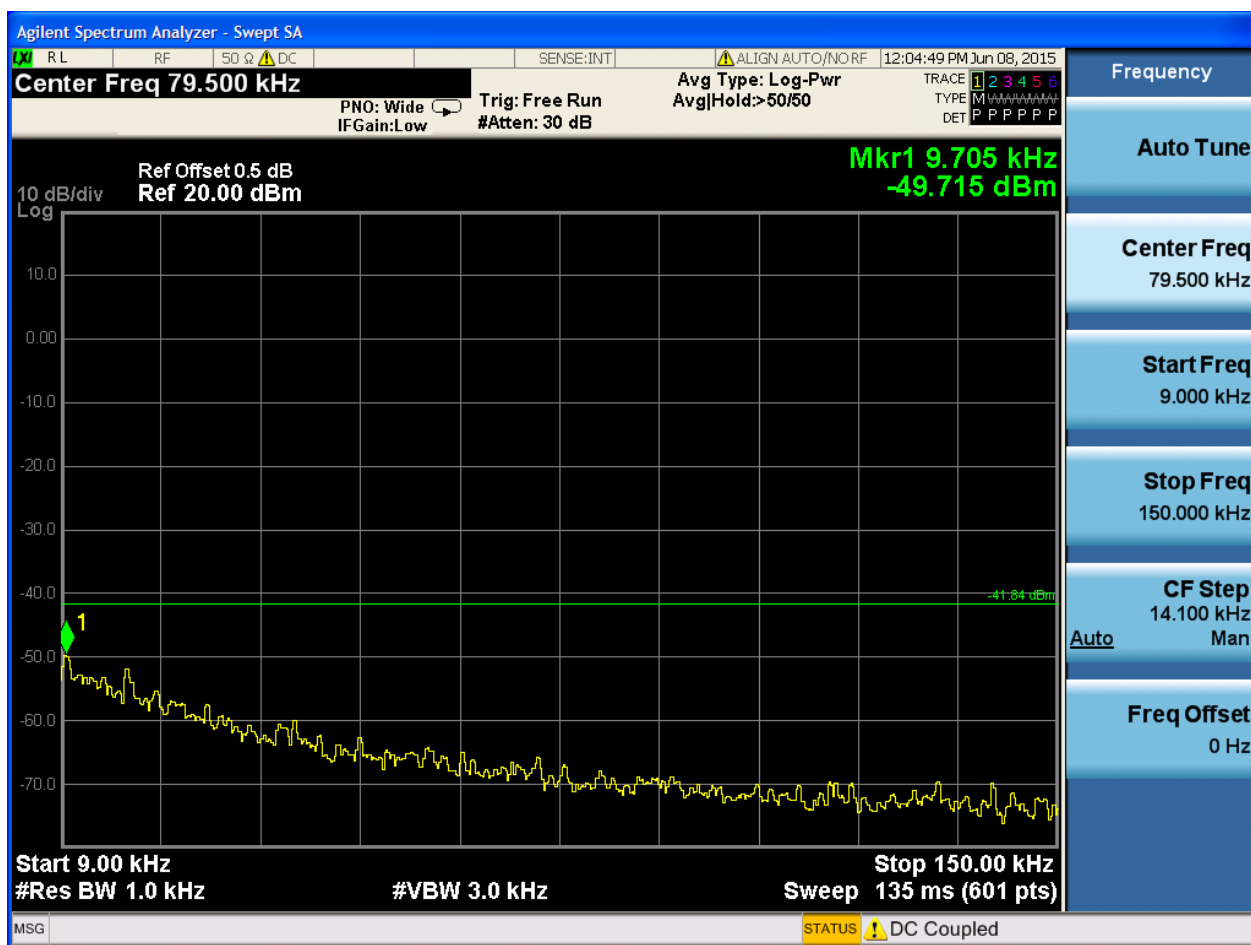
2.1 11B_L@Ant 1

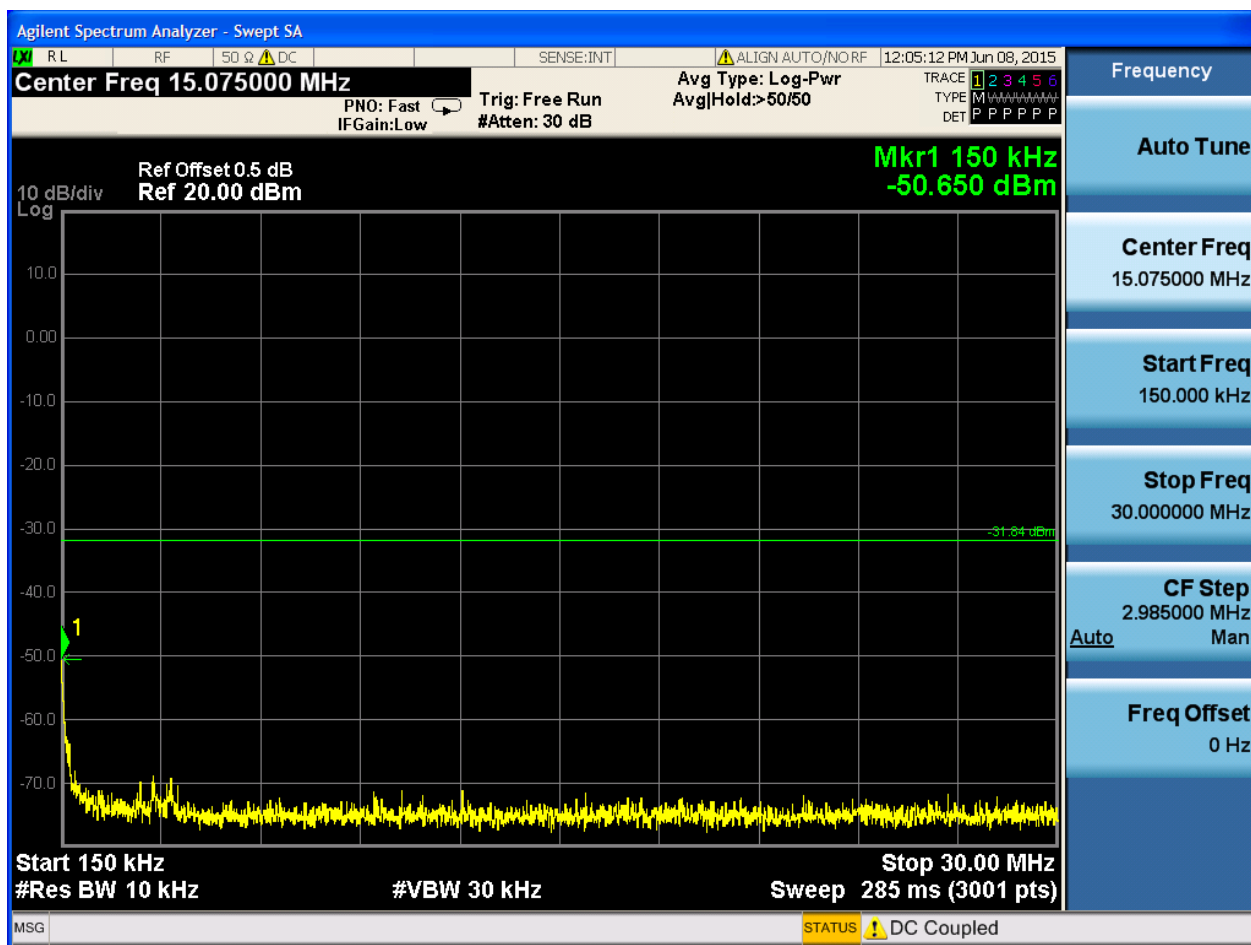
Pref:

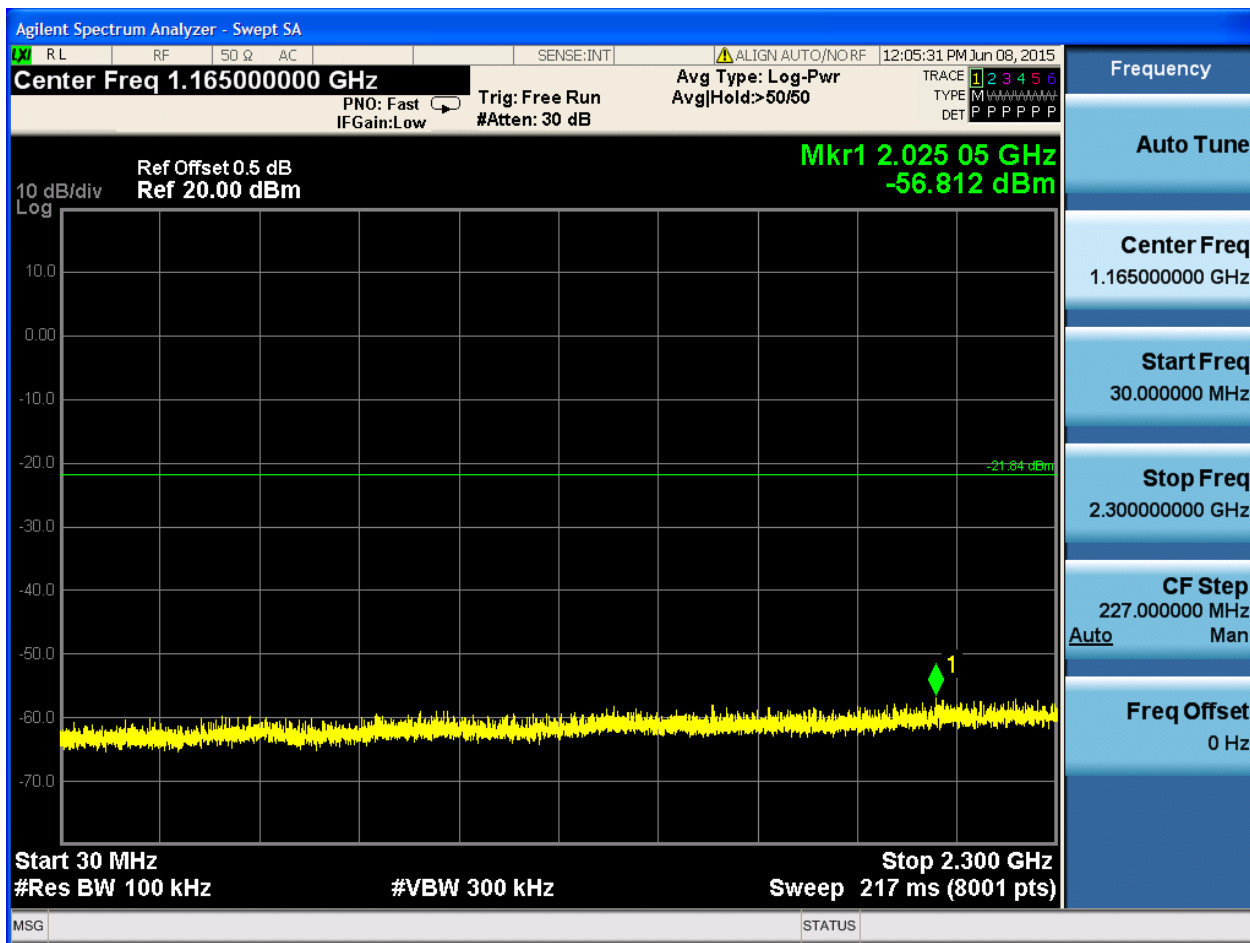


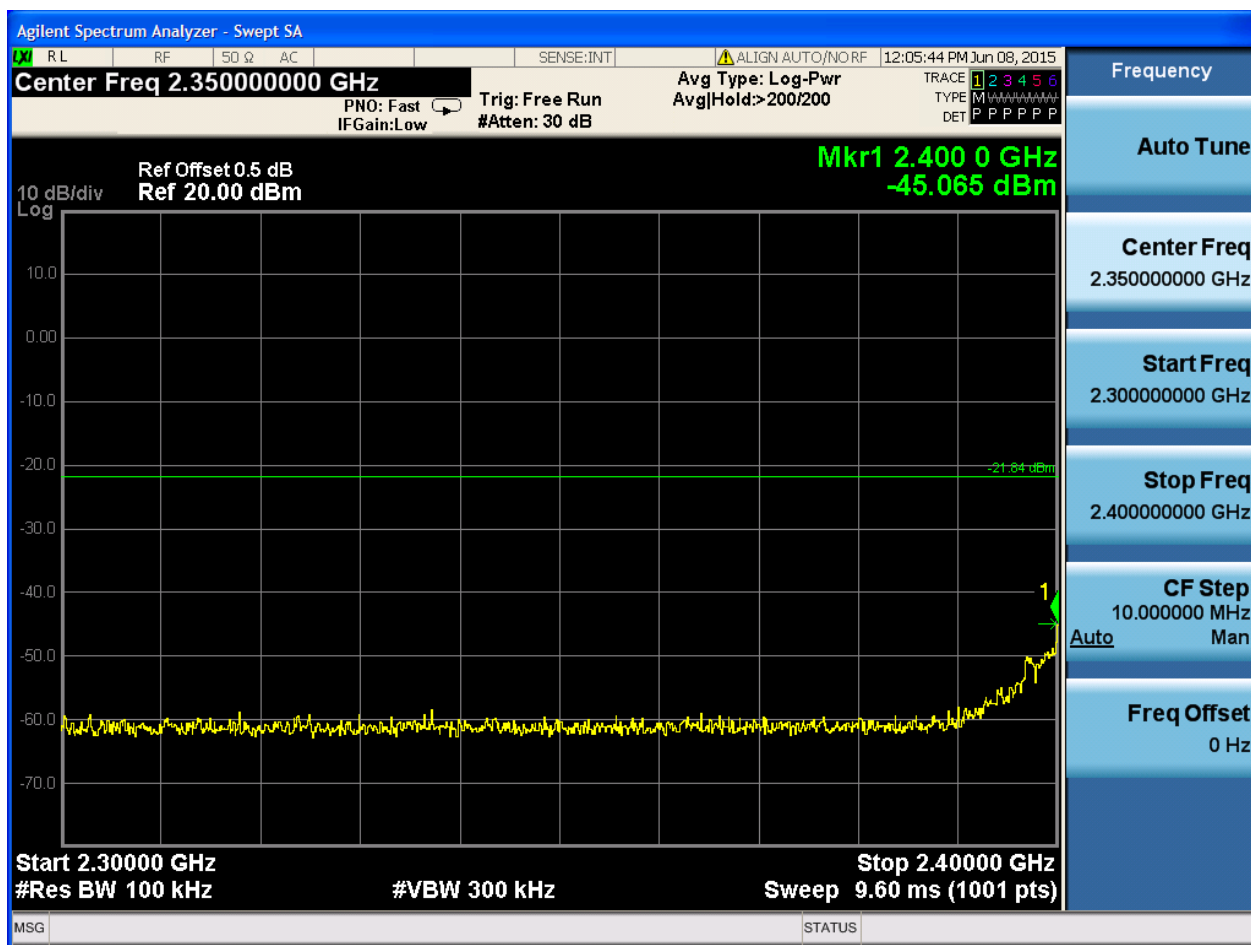


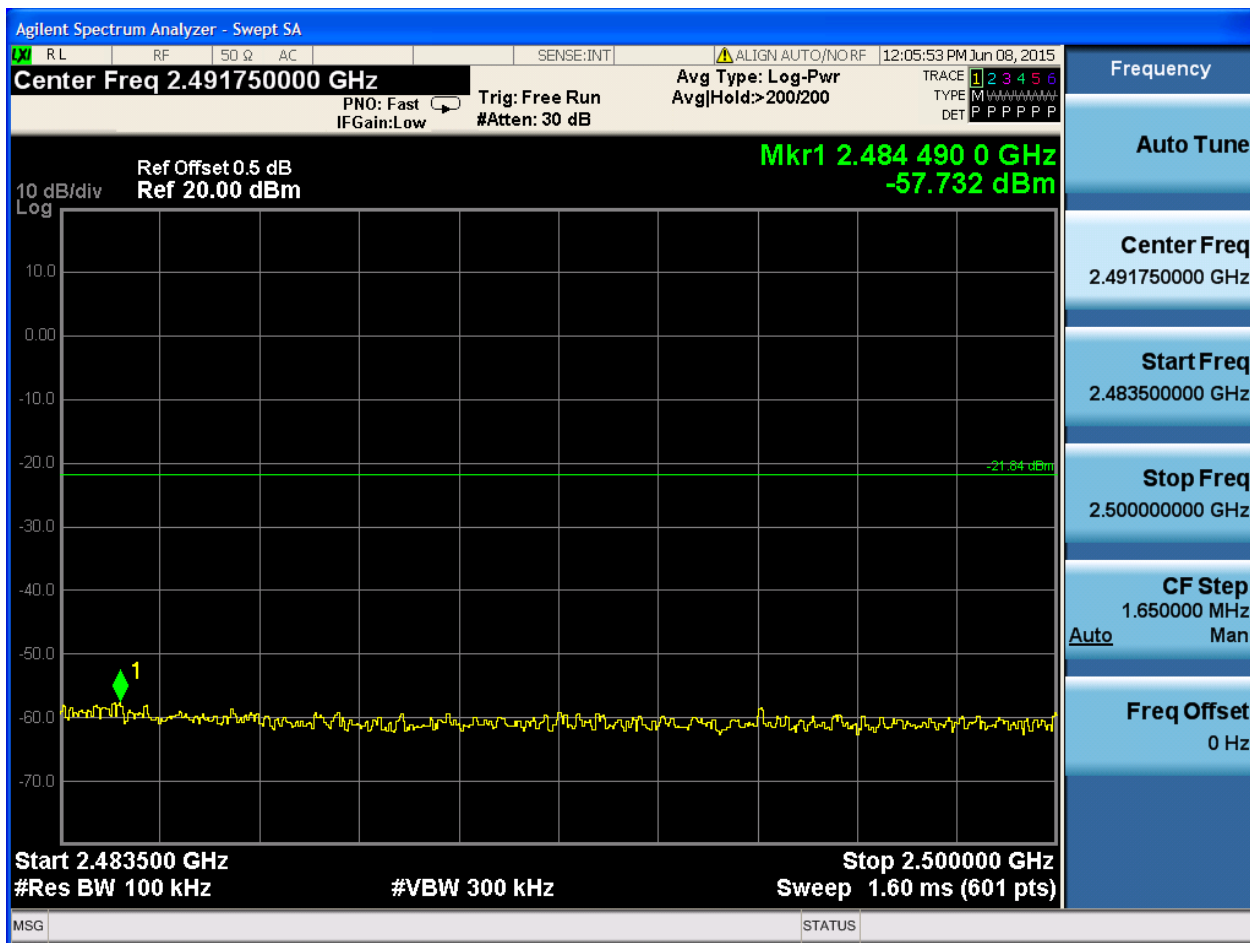
Puw:

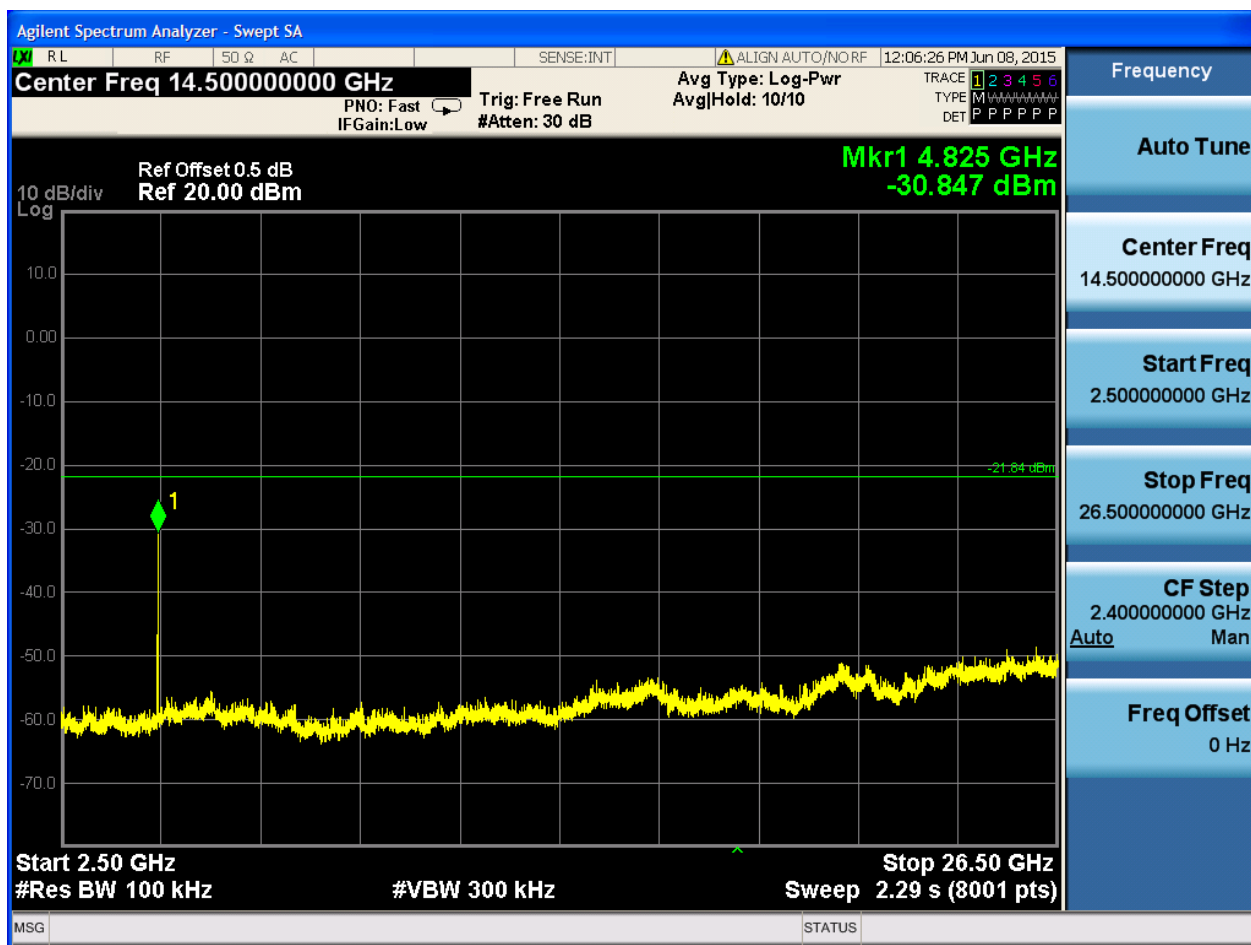












2.2 11B_M@Ant 1

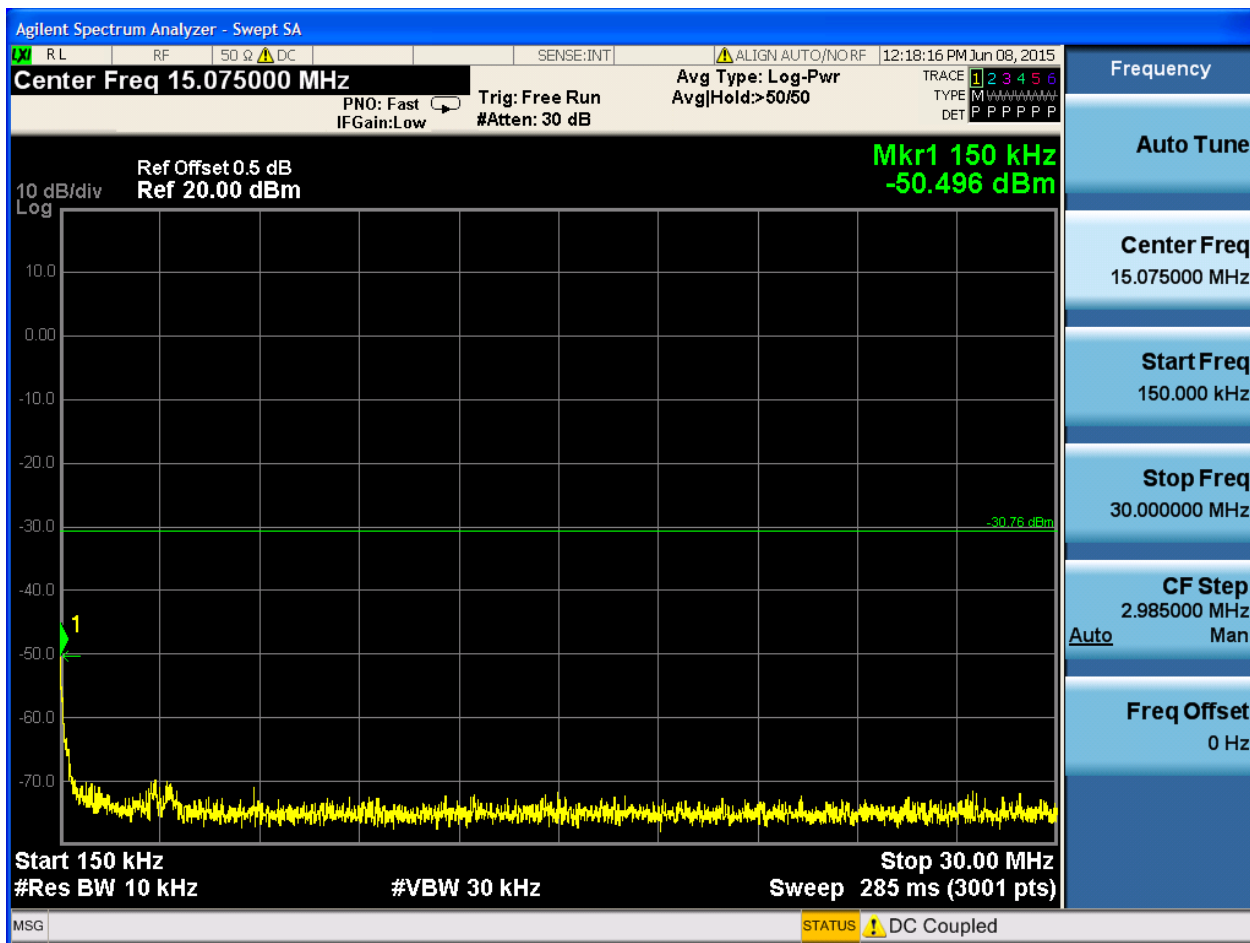
Pref:

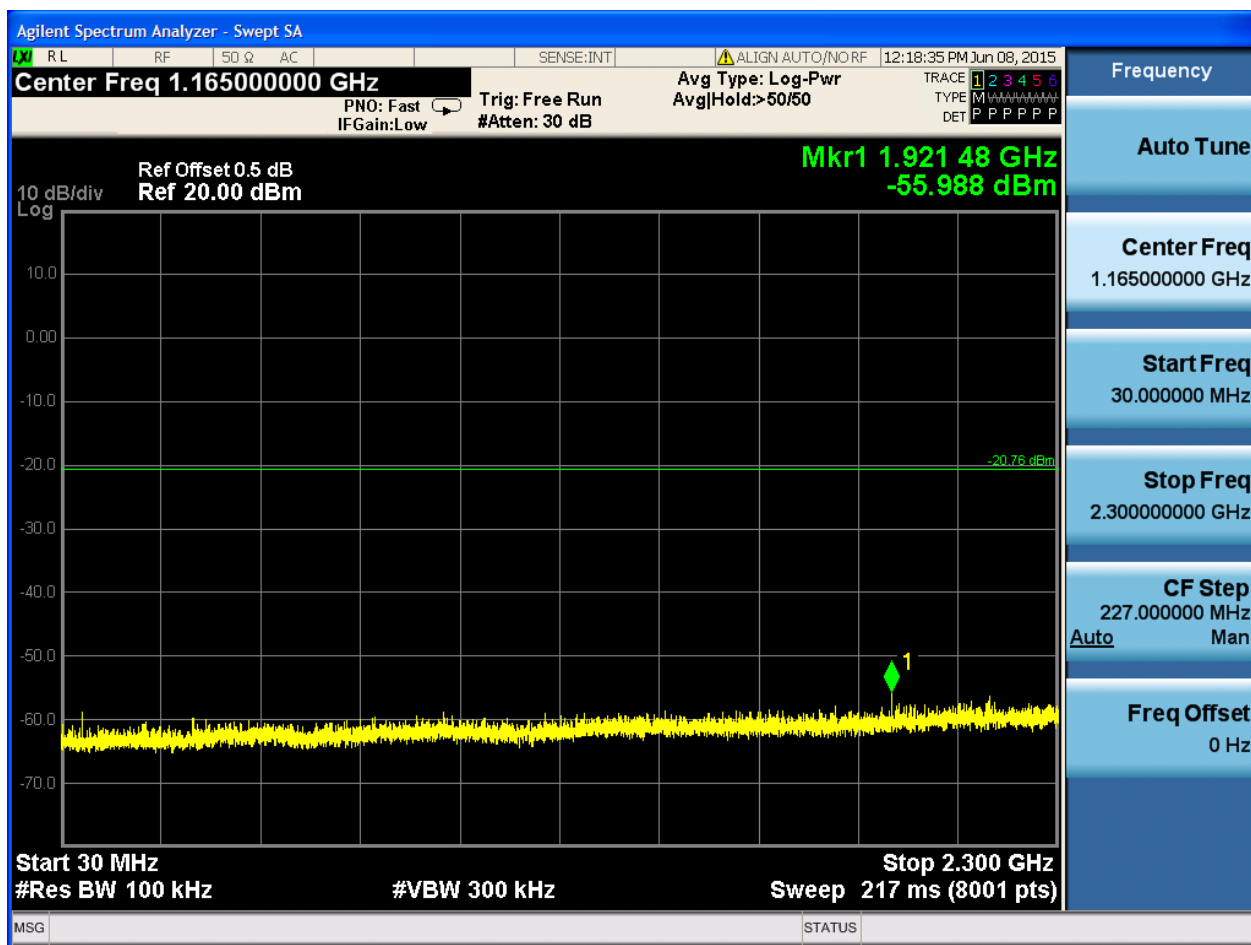


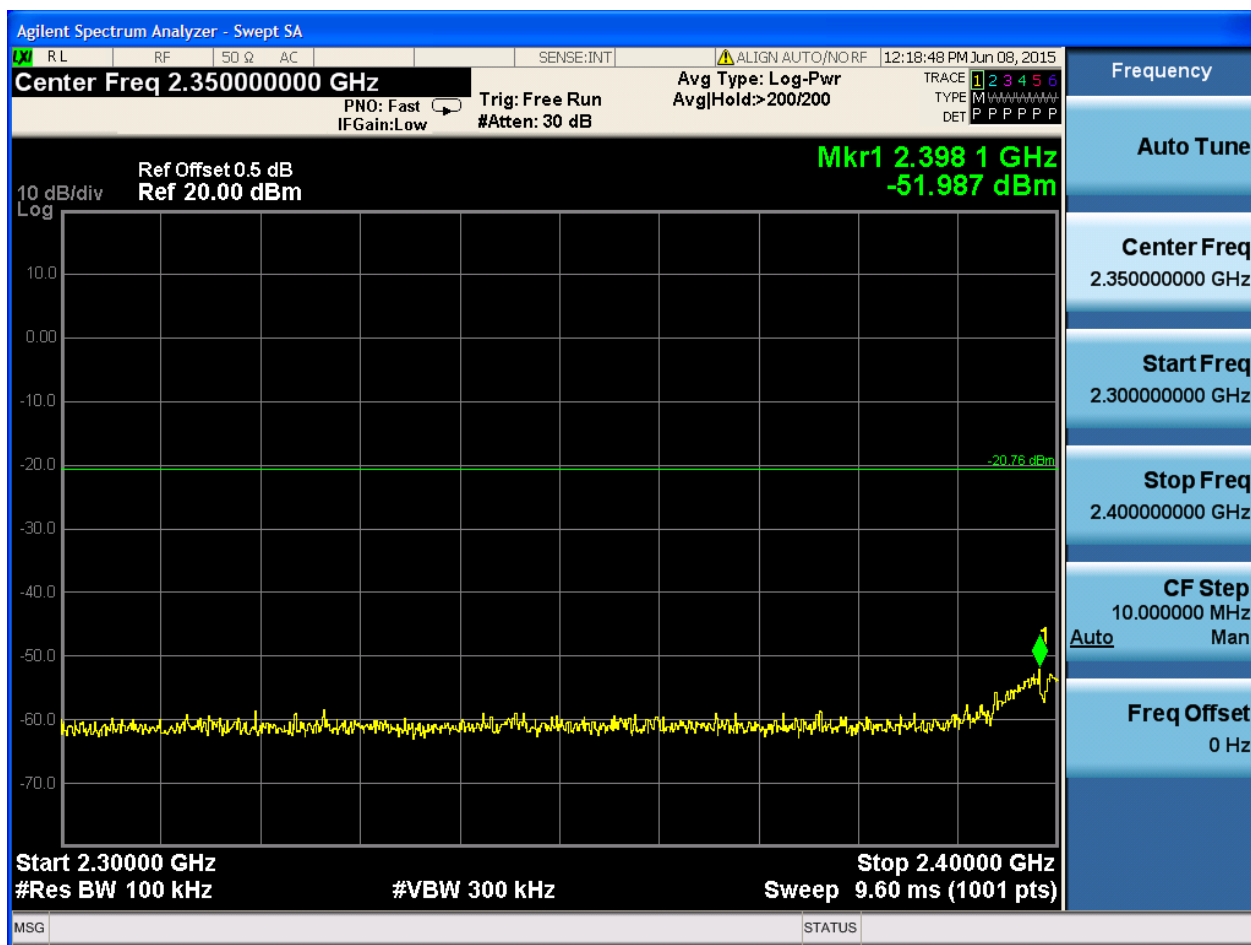


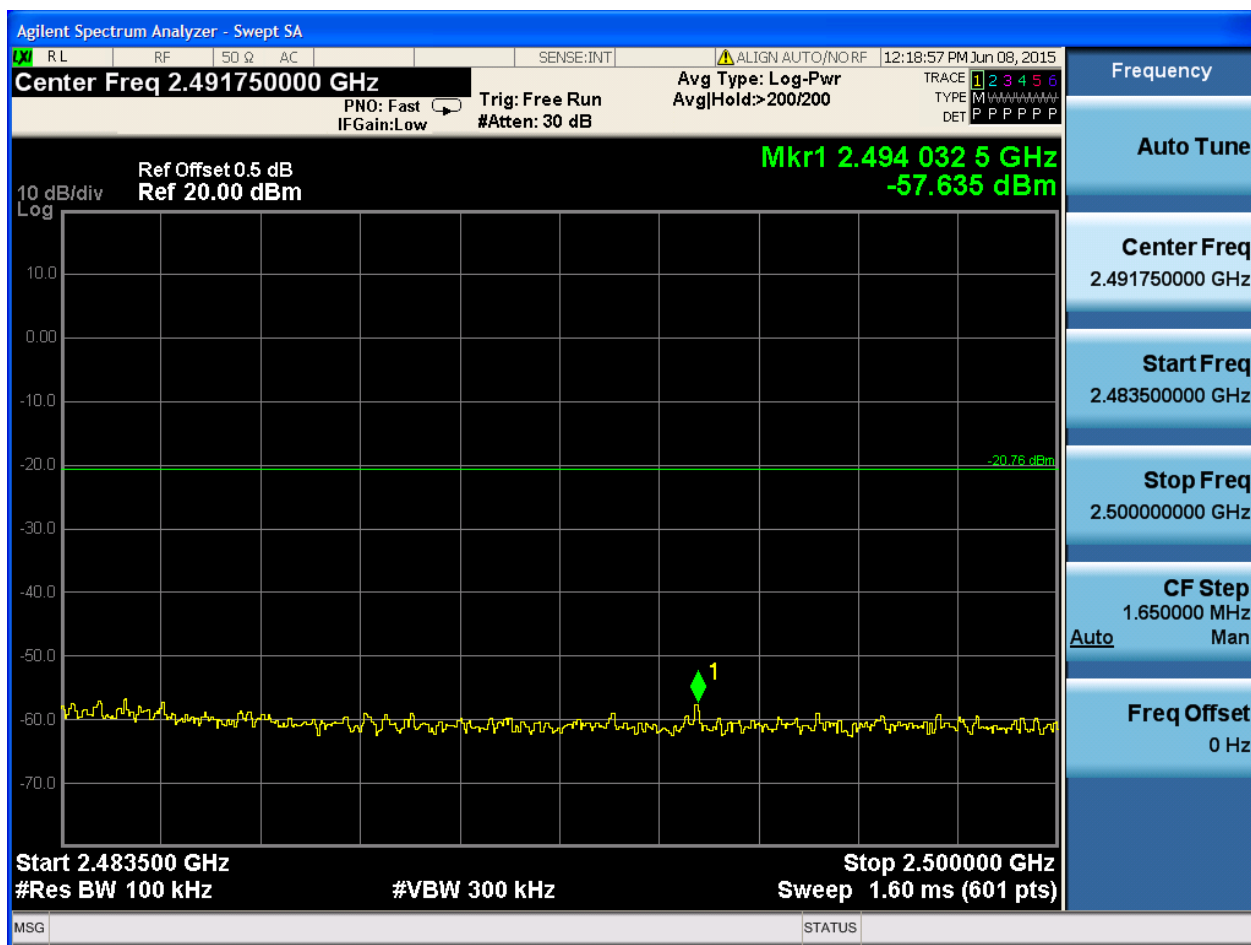
PuW:













2.3 11B_H@Ant 1

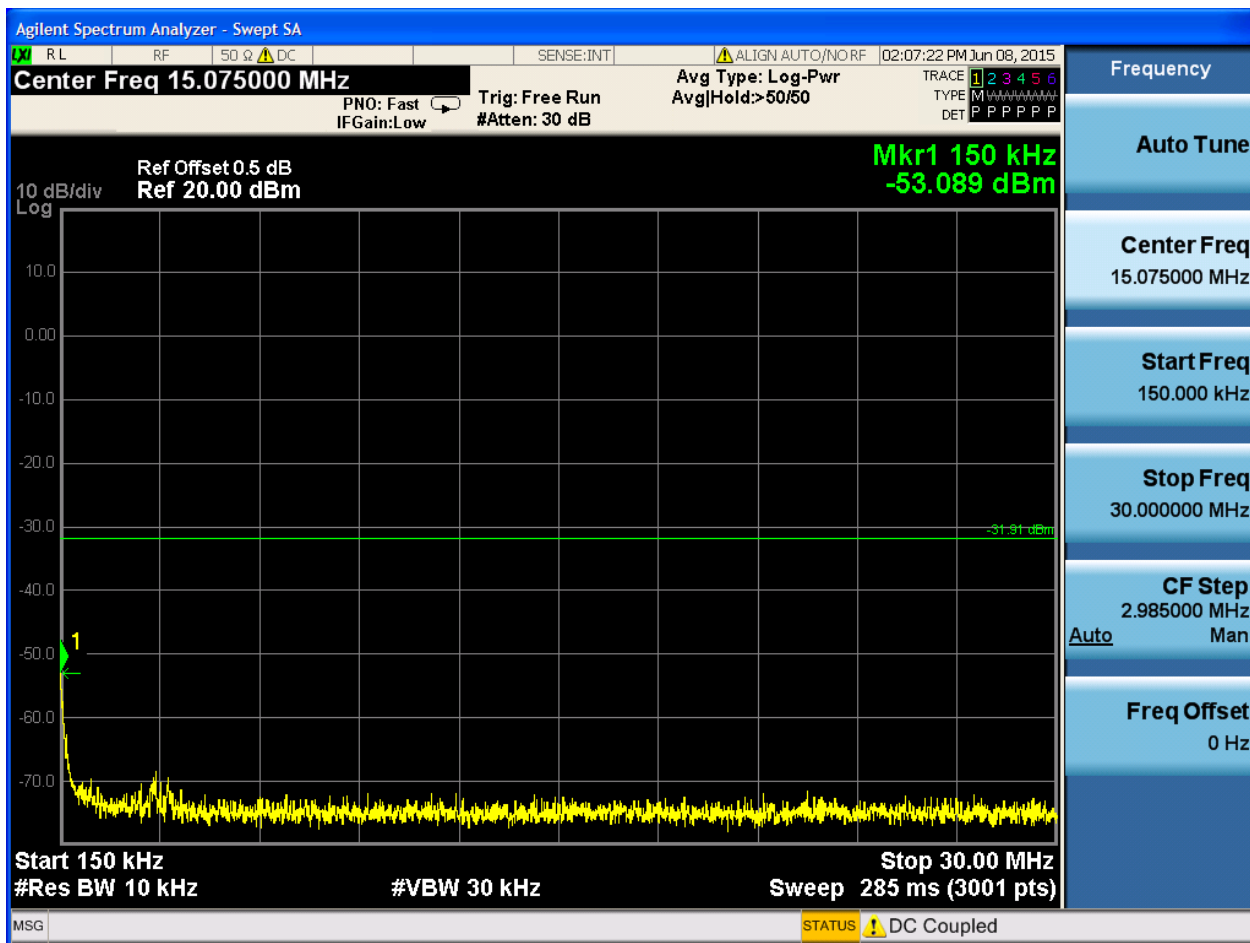
Pref:

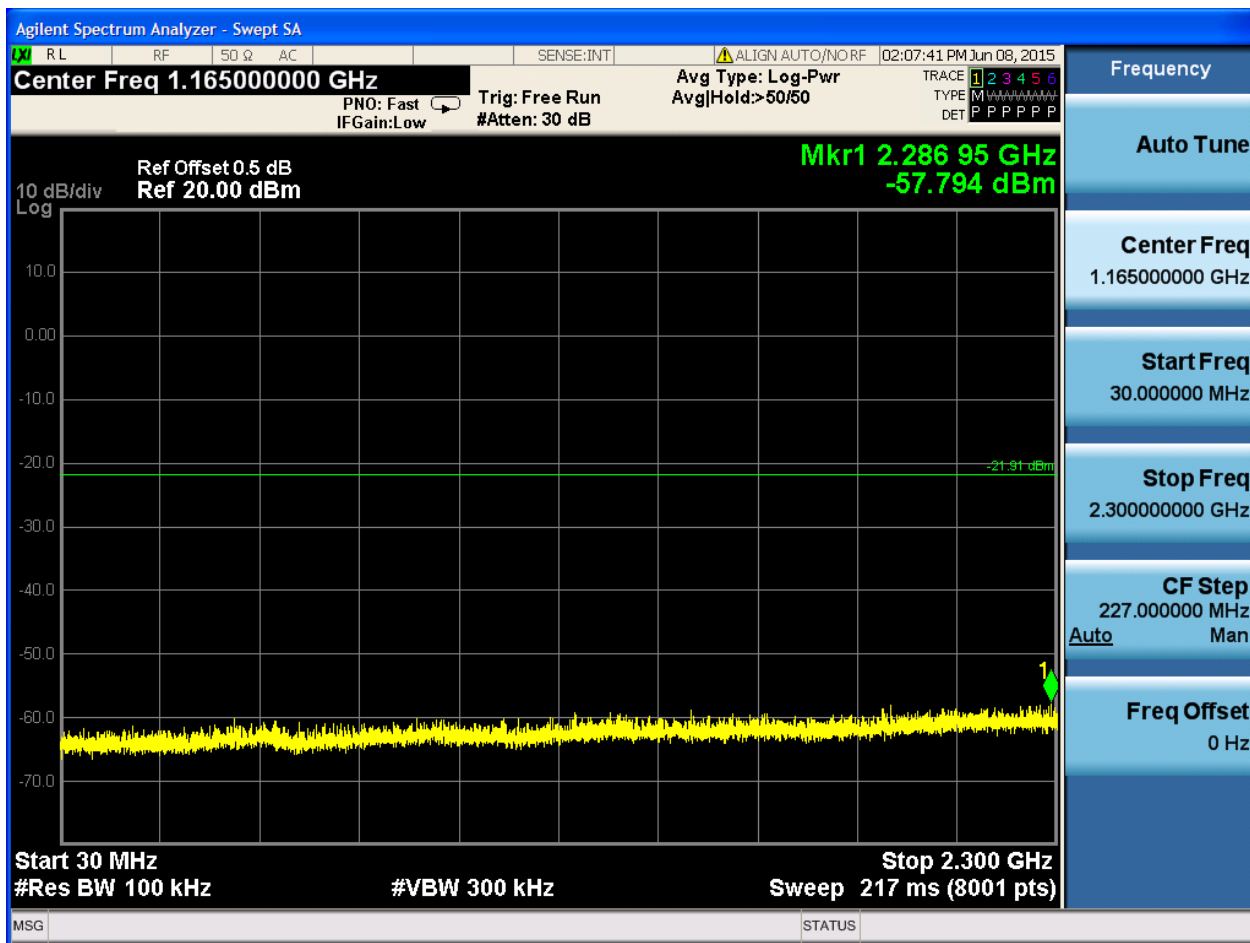


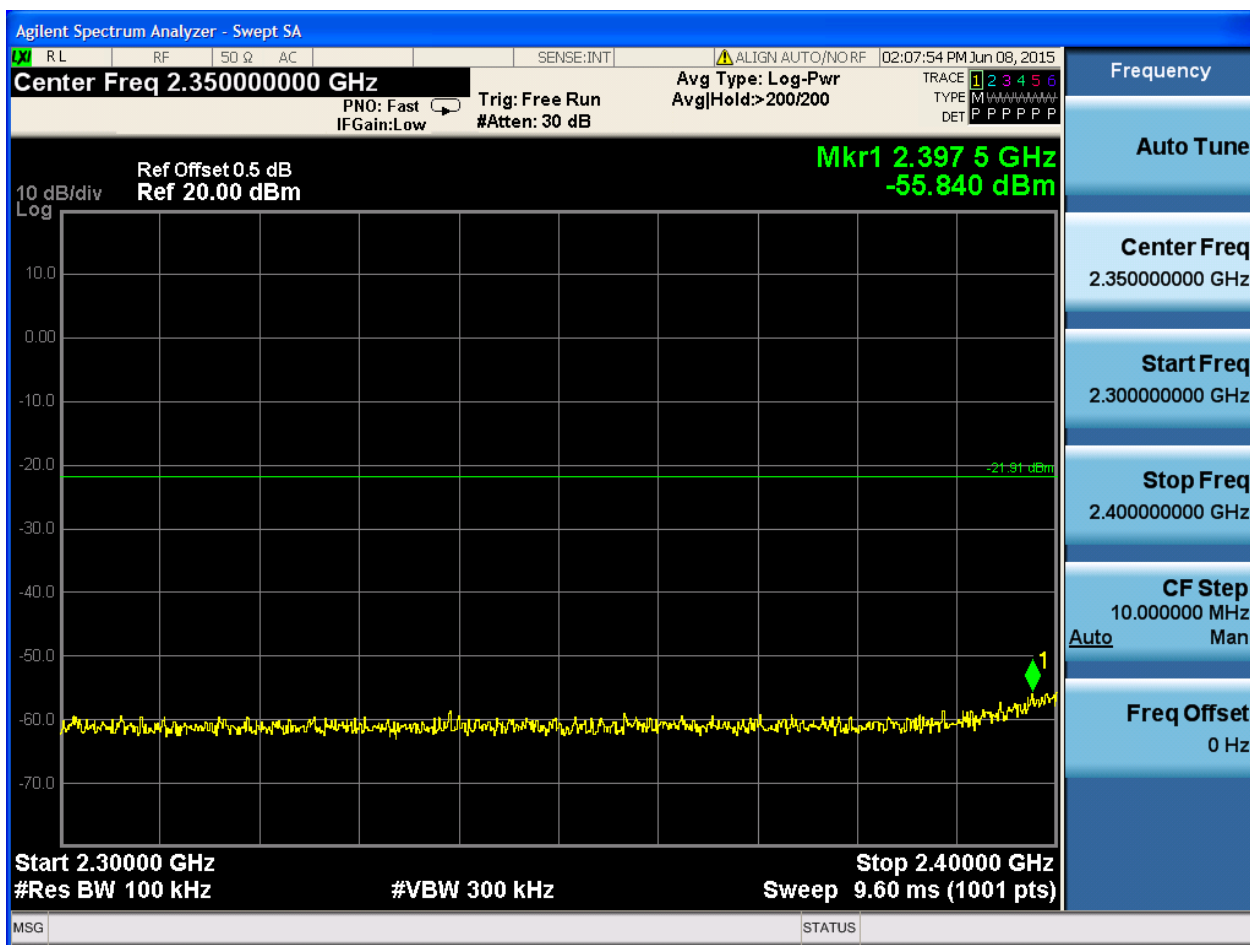


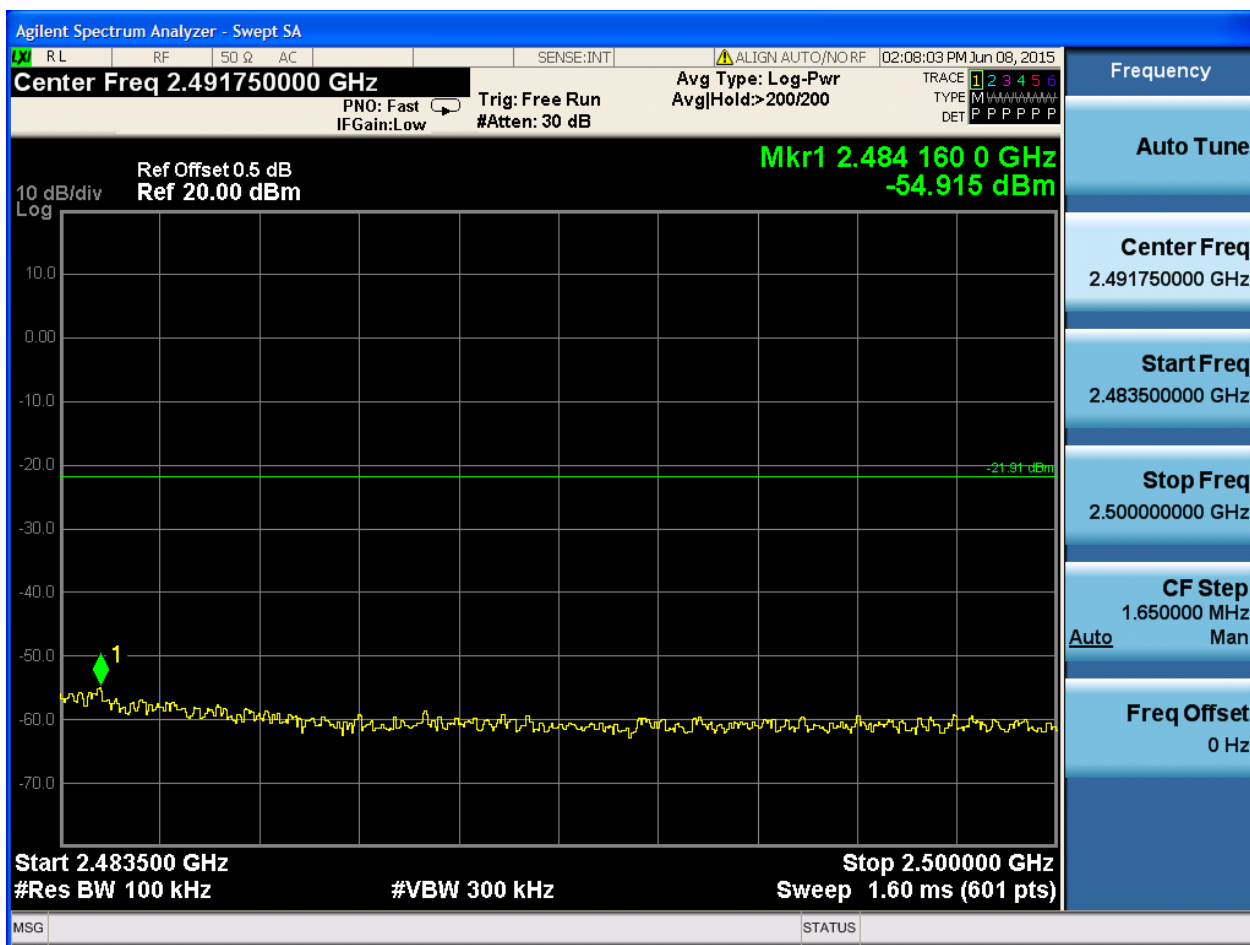
Puw:









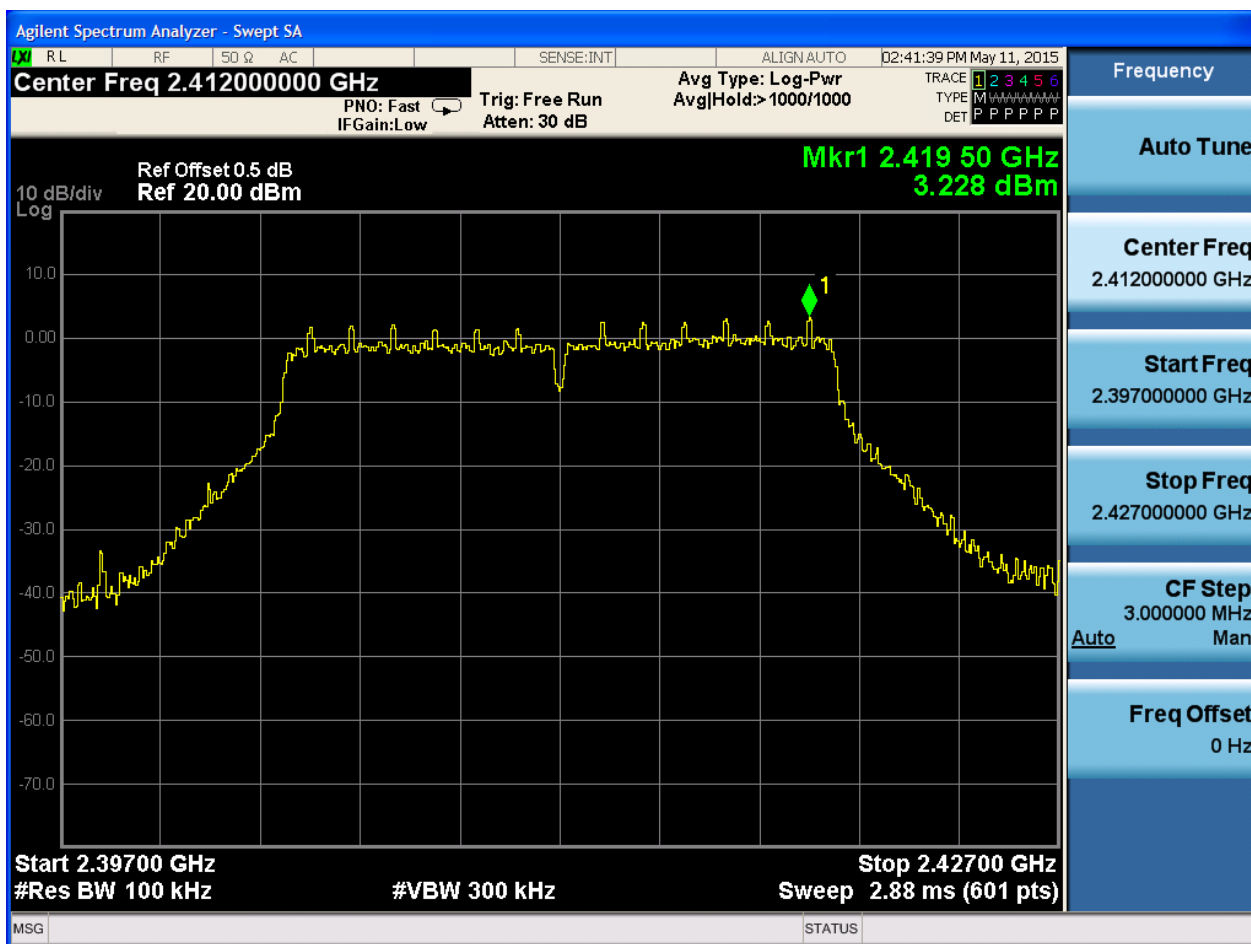






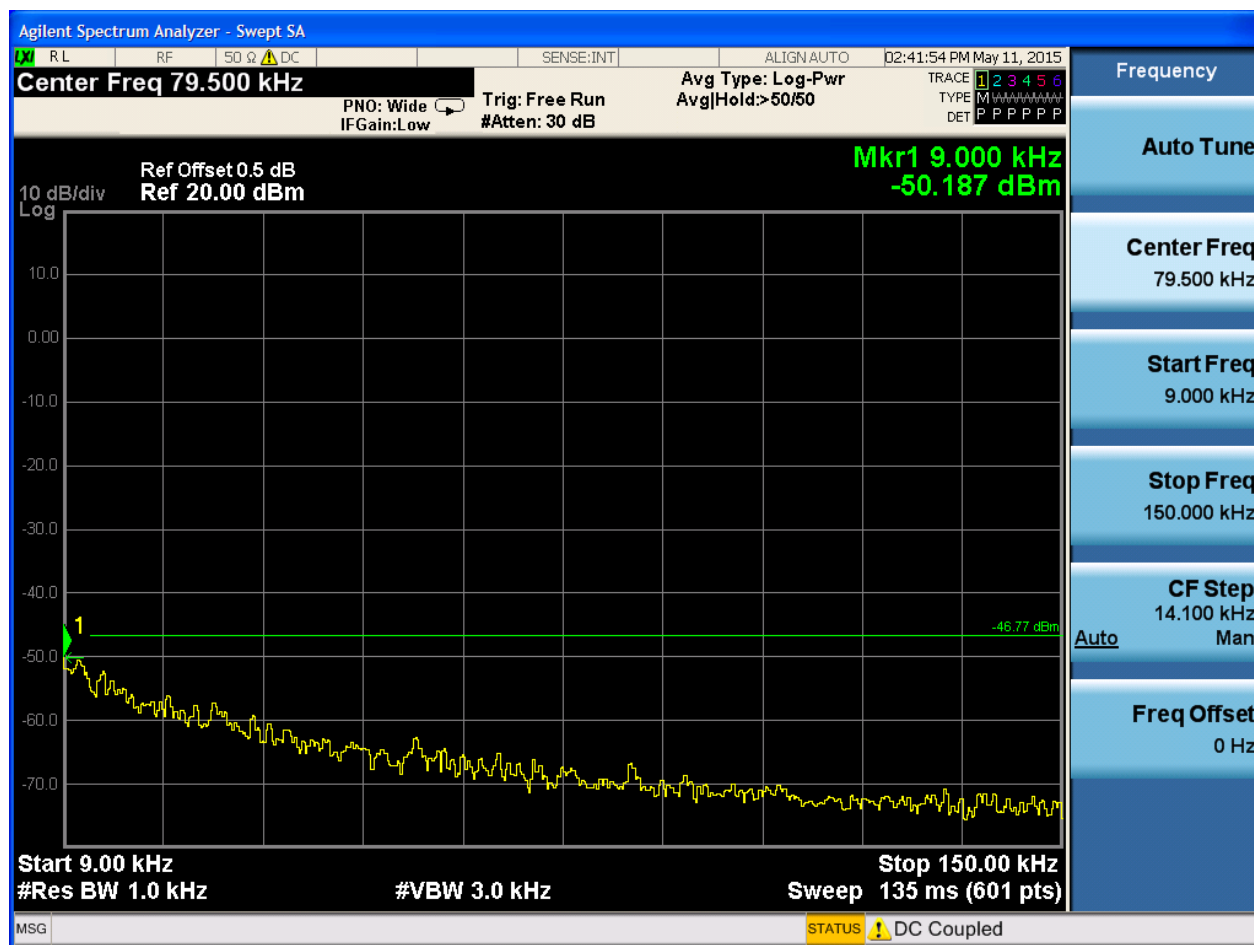
2.4 11G_L@Ant 1

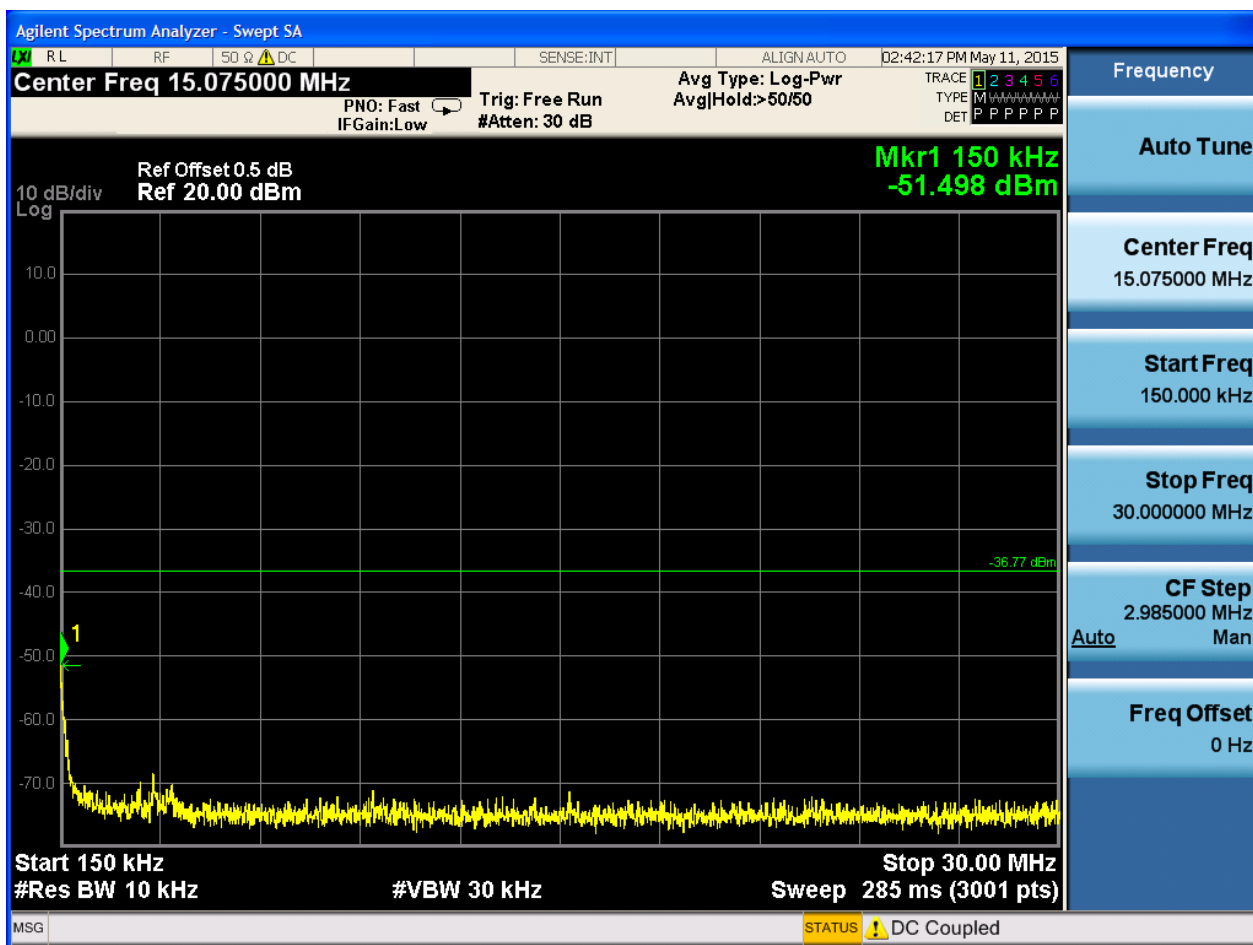
Pref:

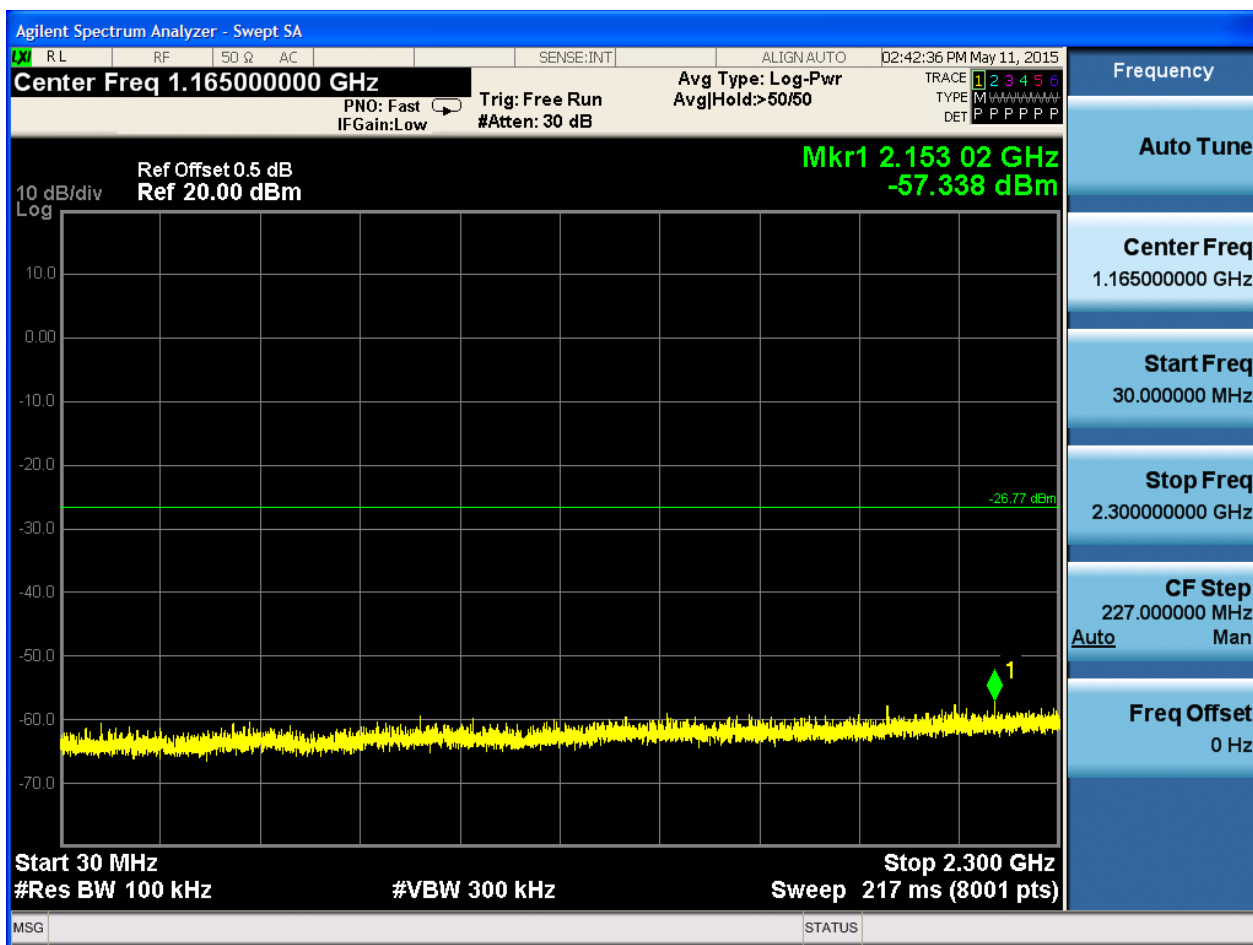


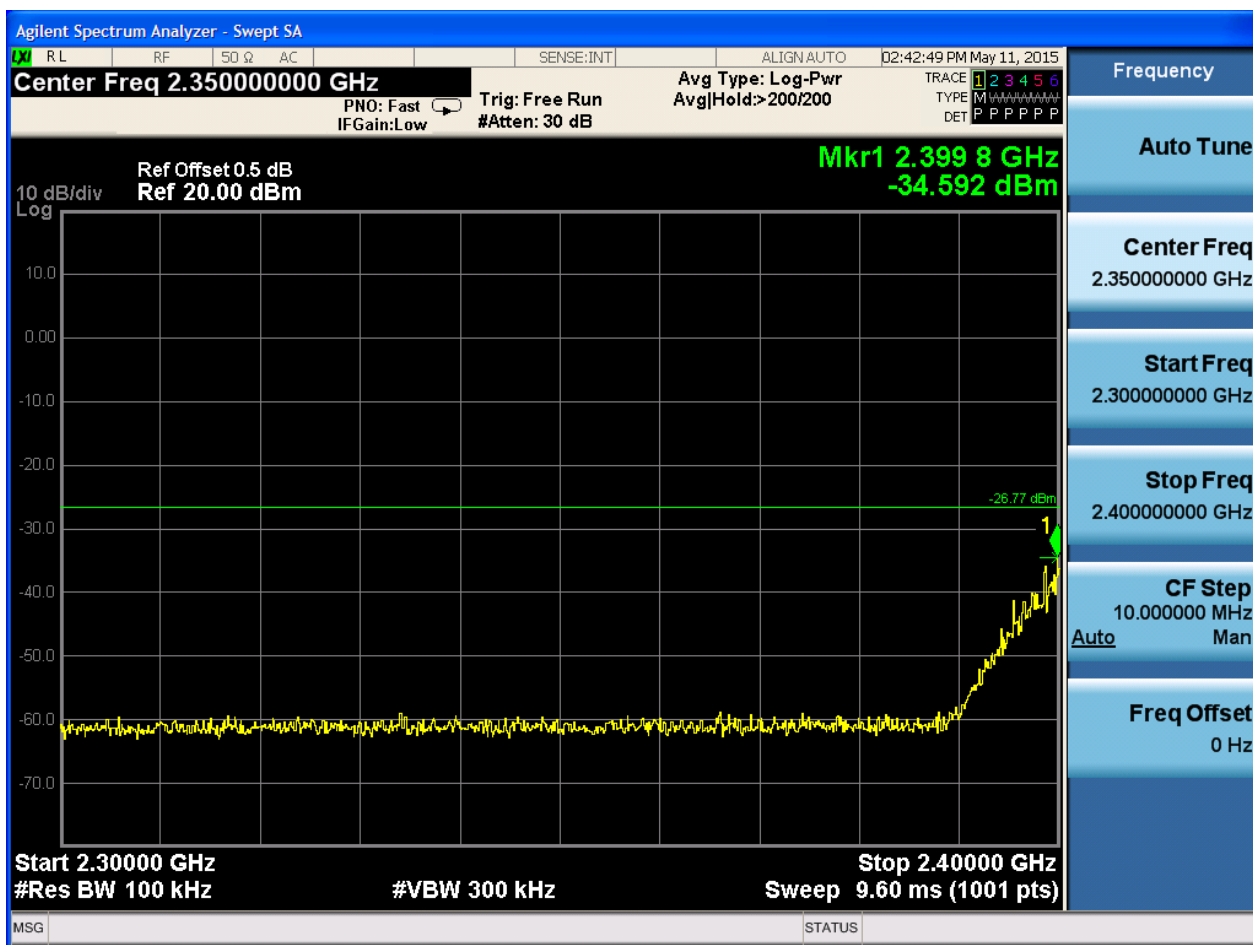


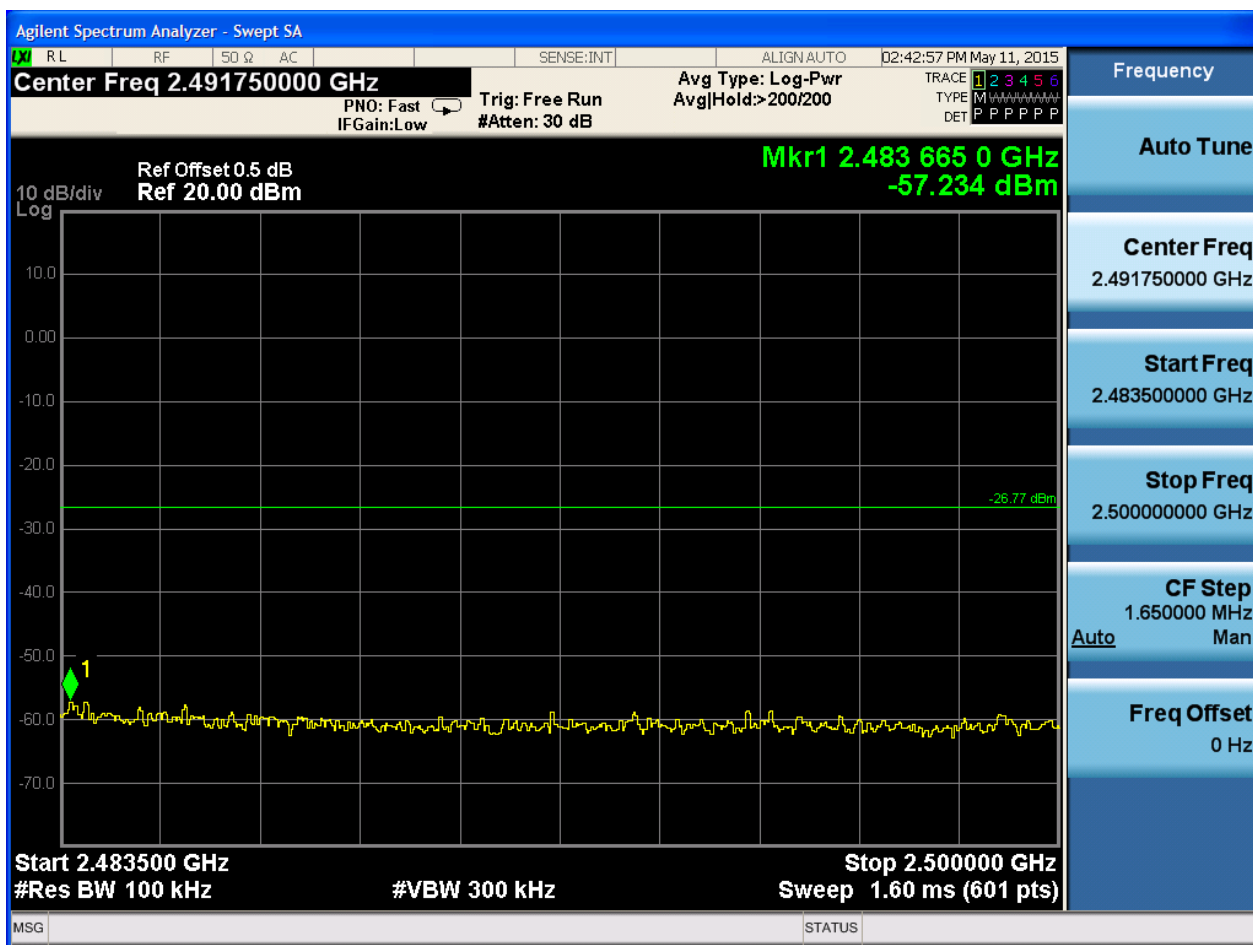
Puw:

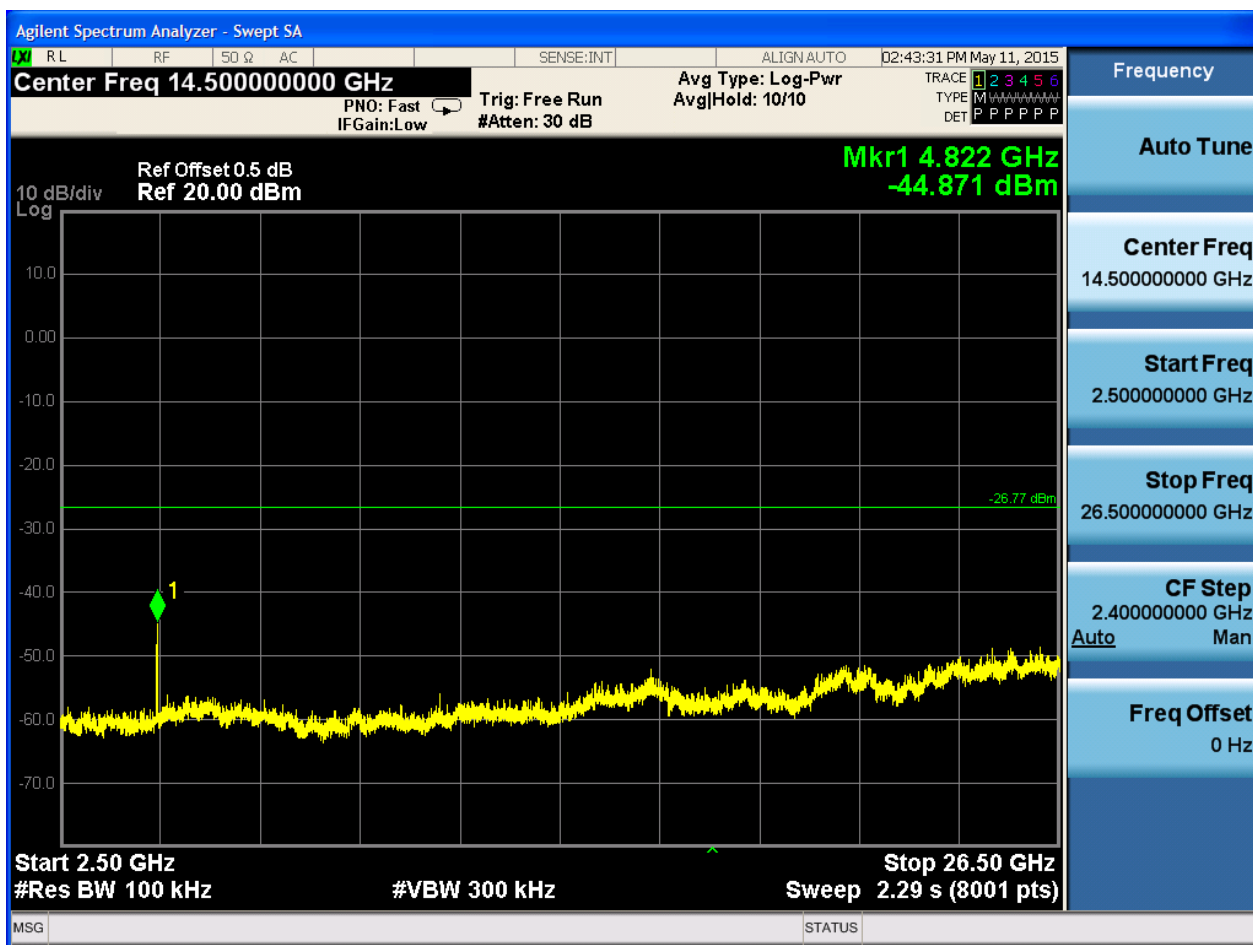








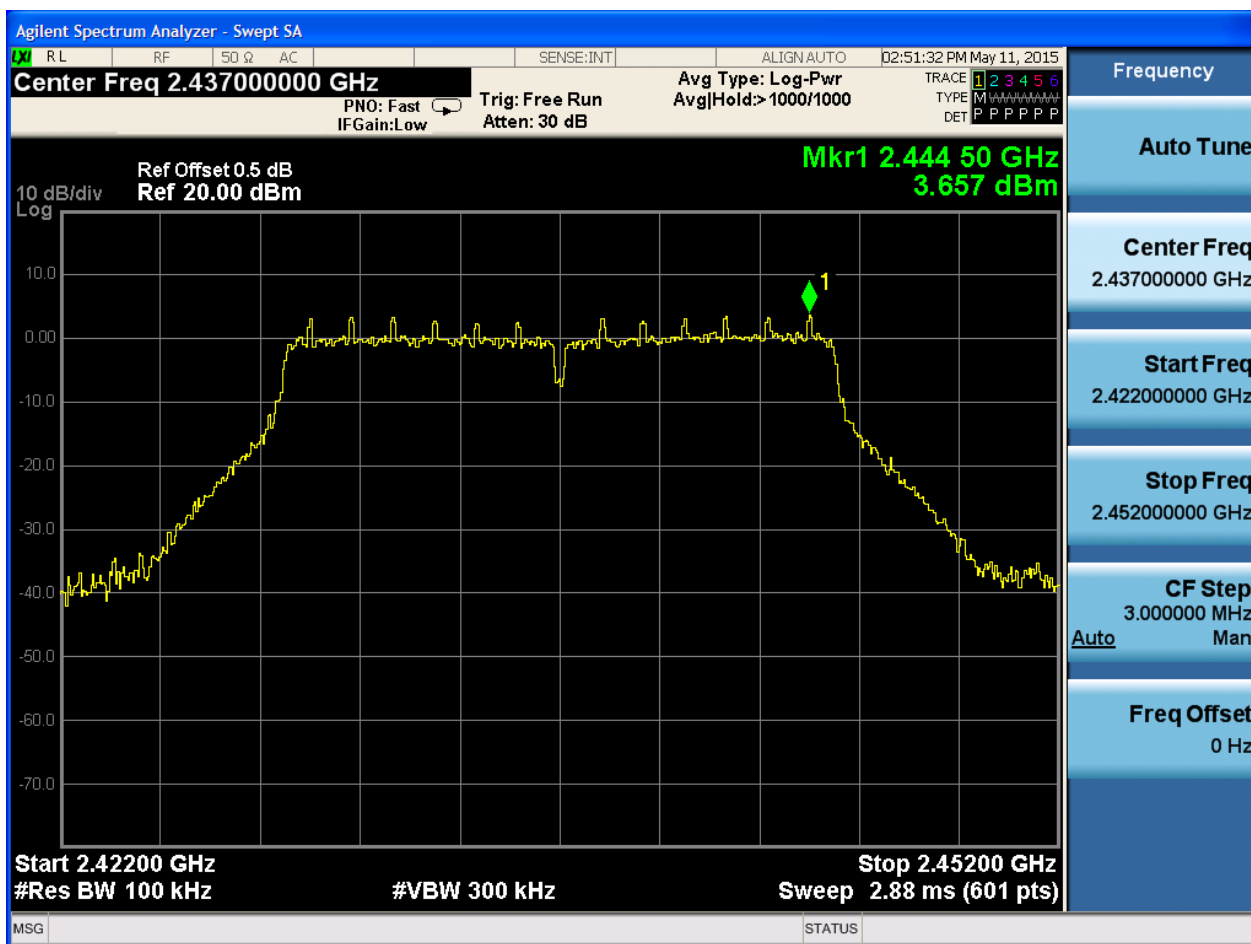






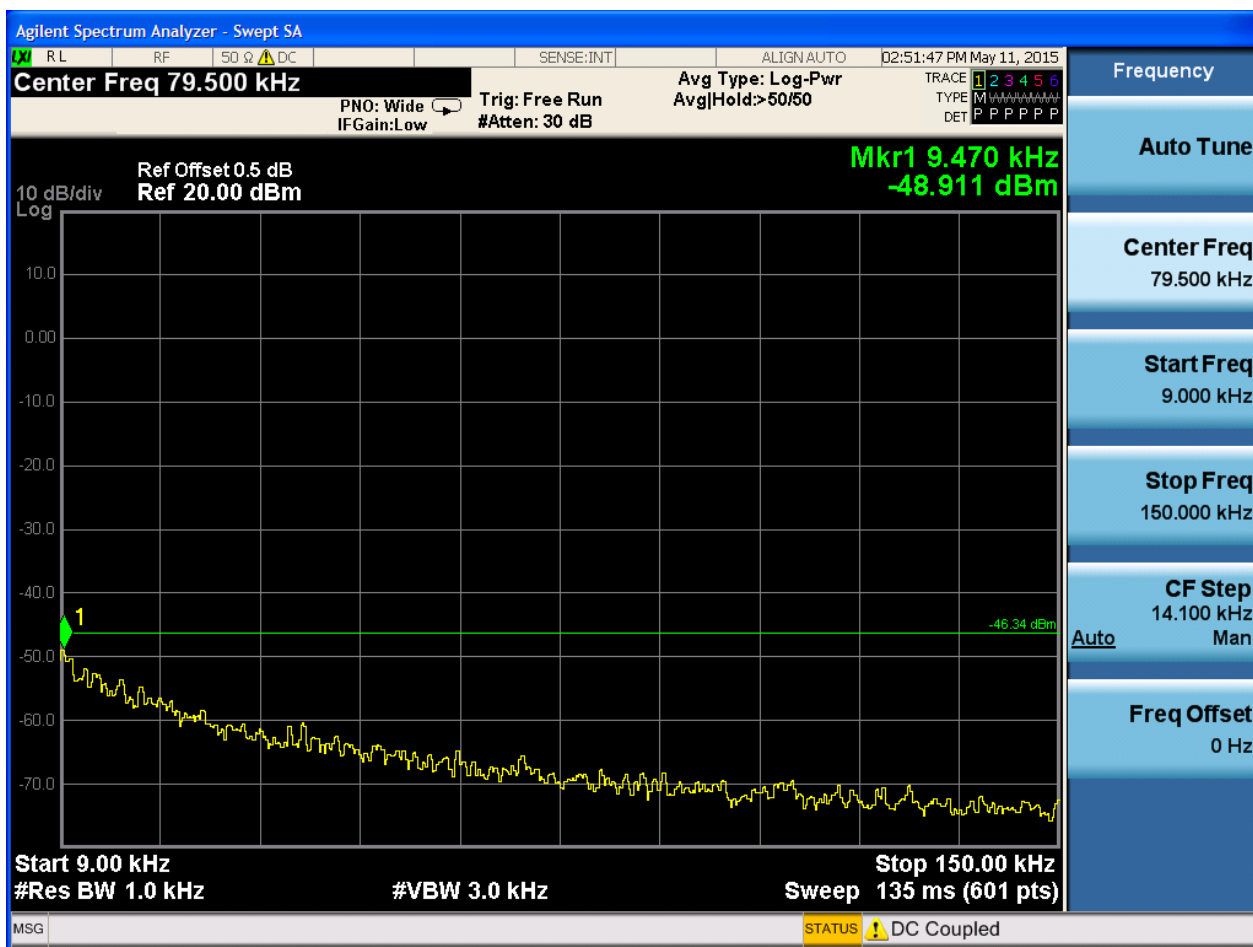
2.5 11G_M@Ant 1

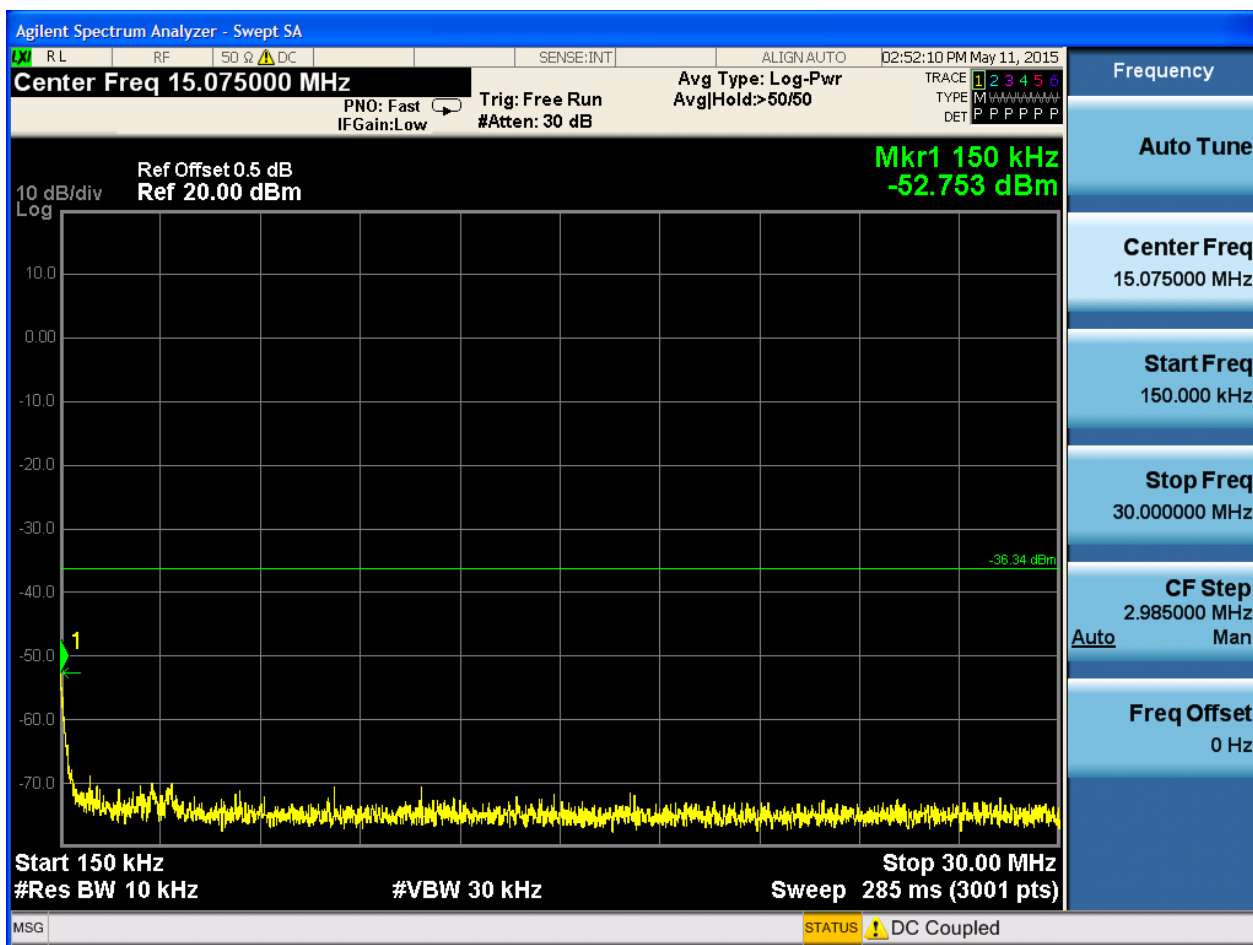
Pref:

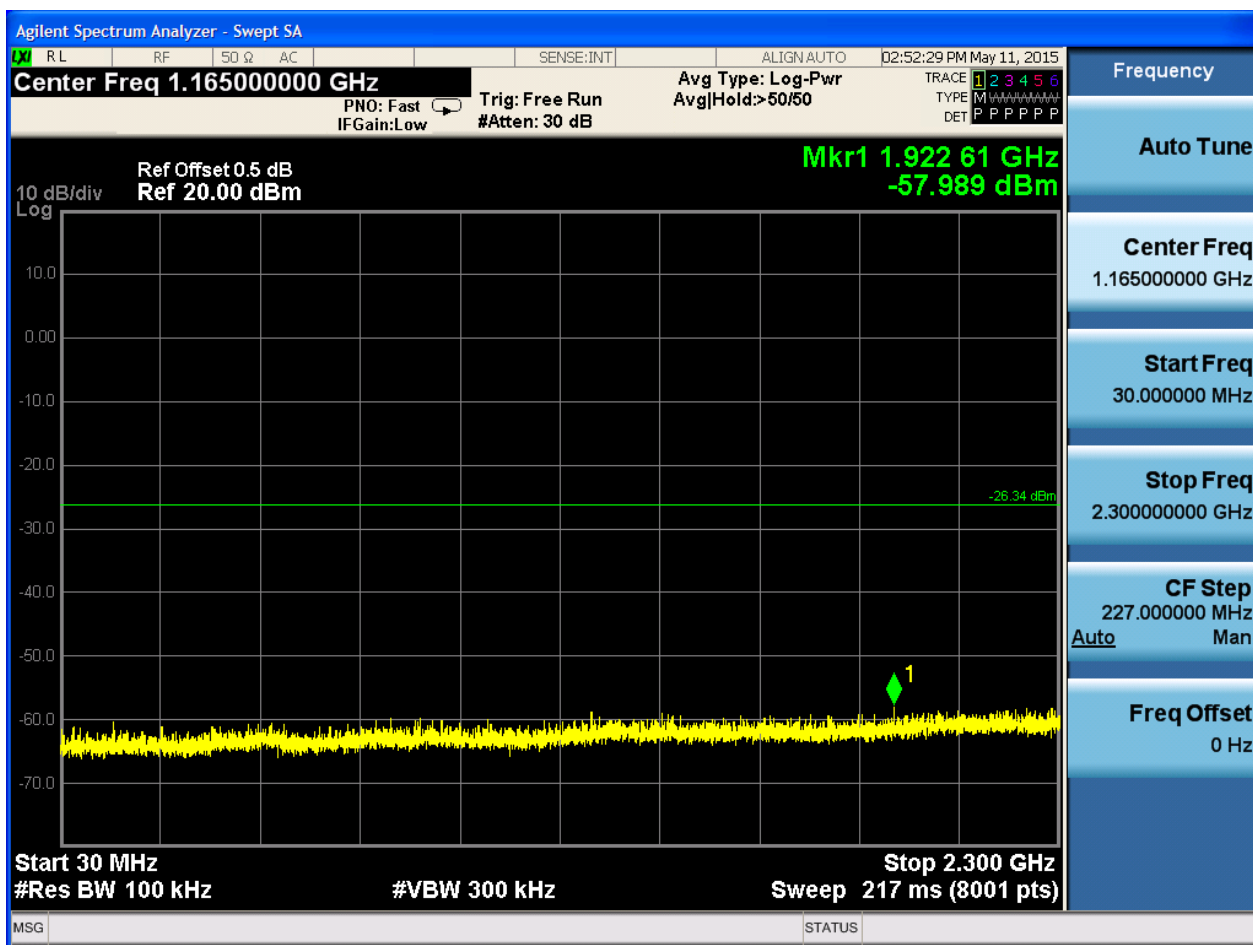


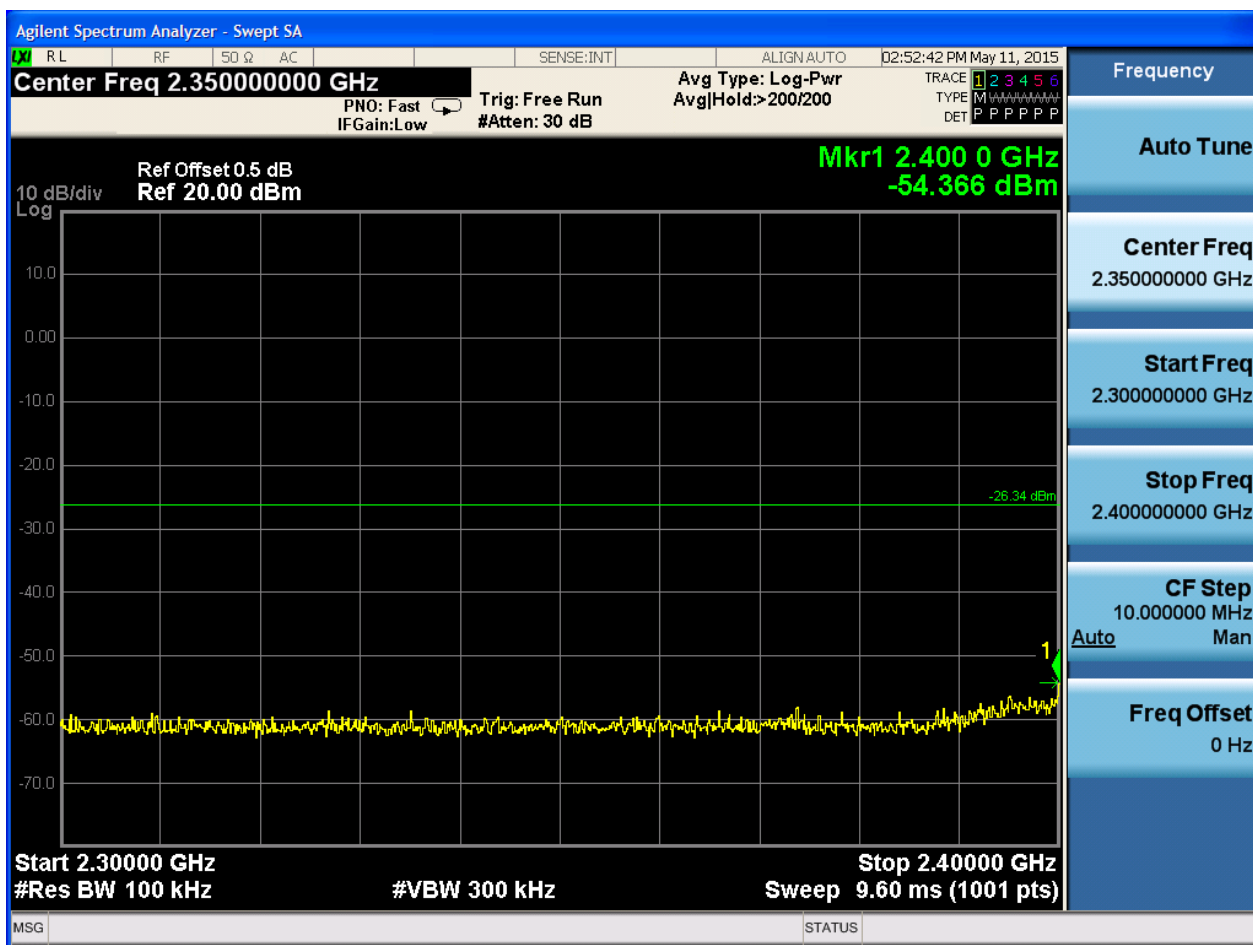


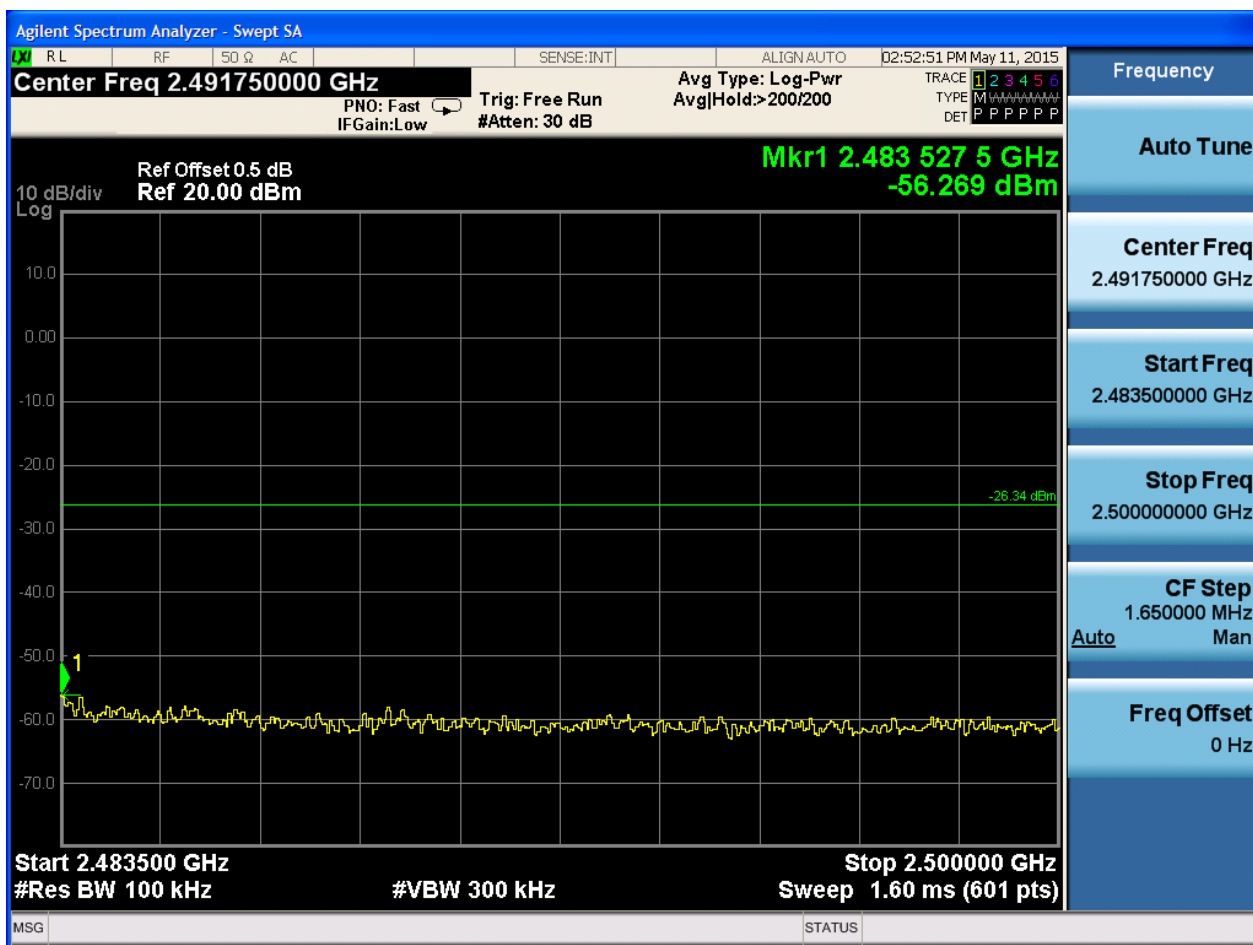
Puw:







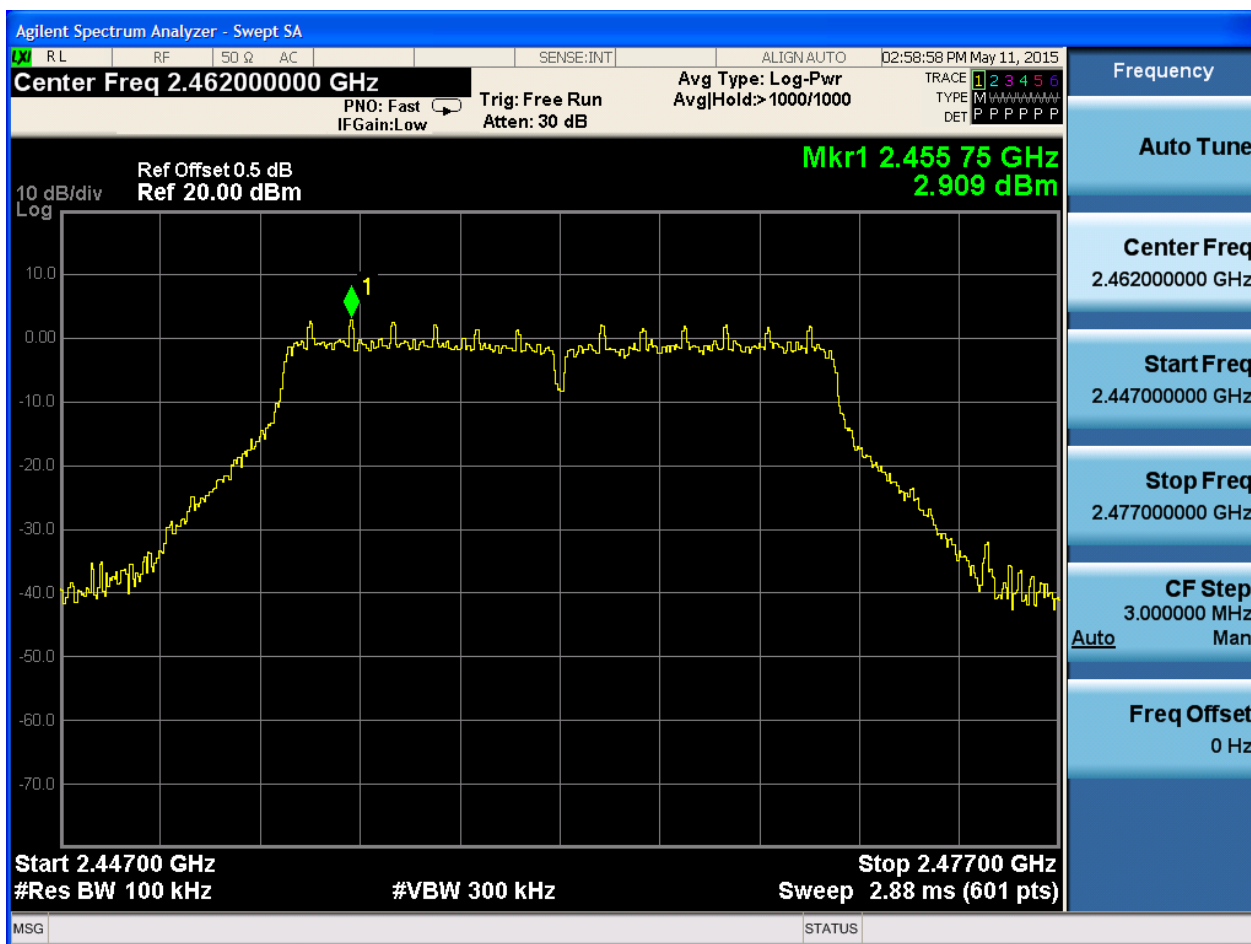






2.6 11G_H@Ant 1

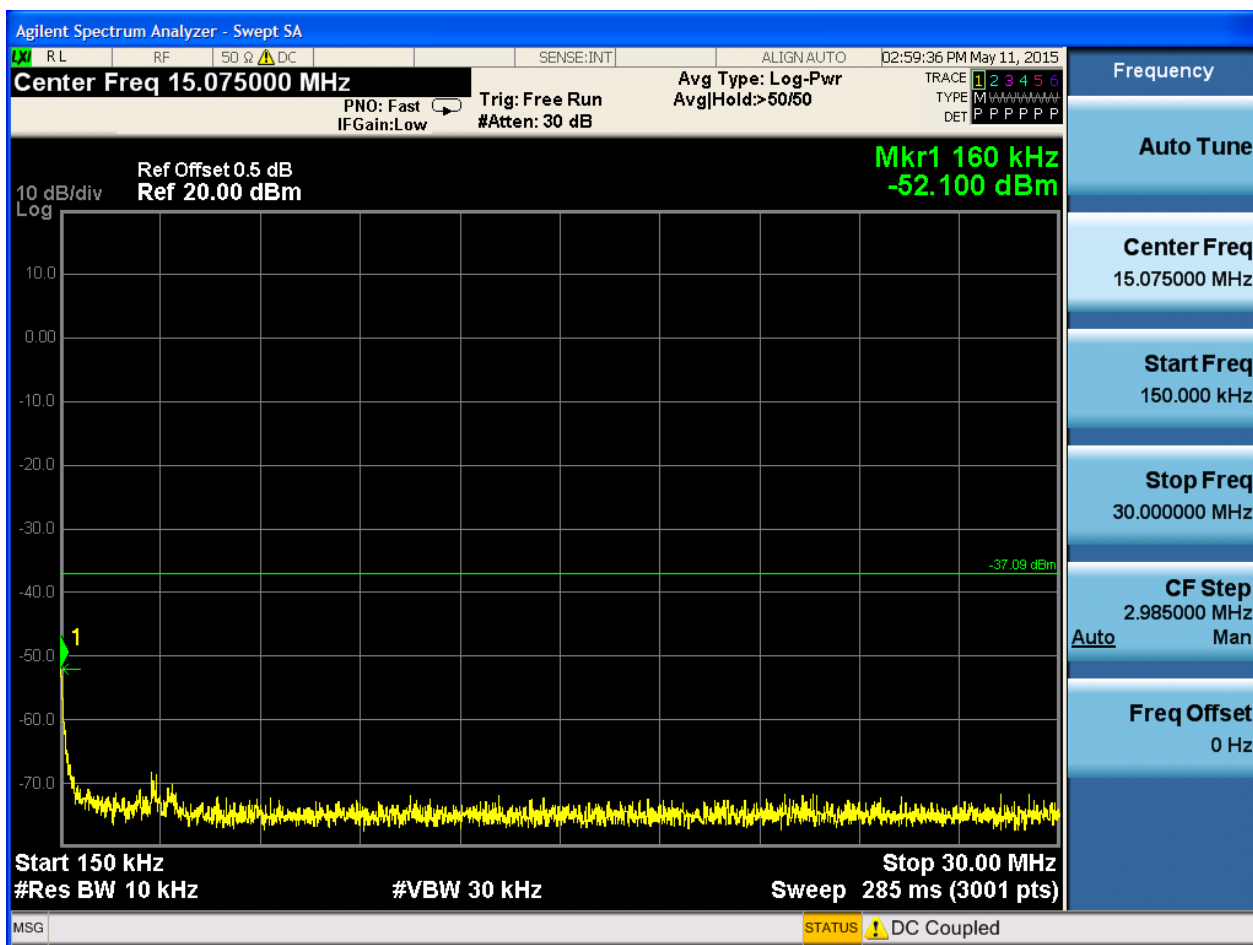
Pref:

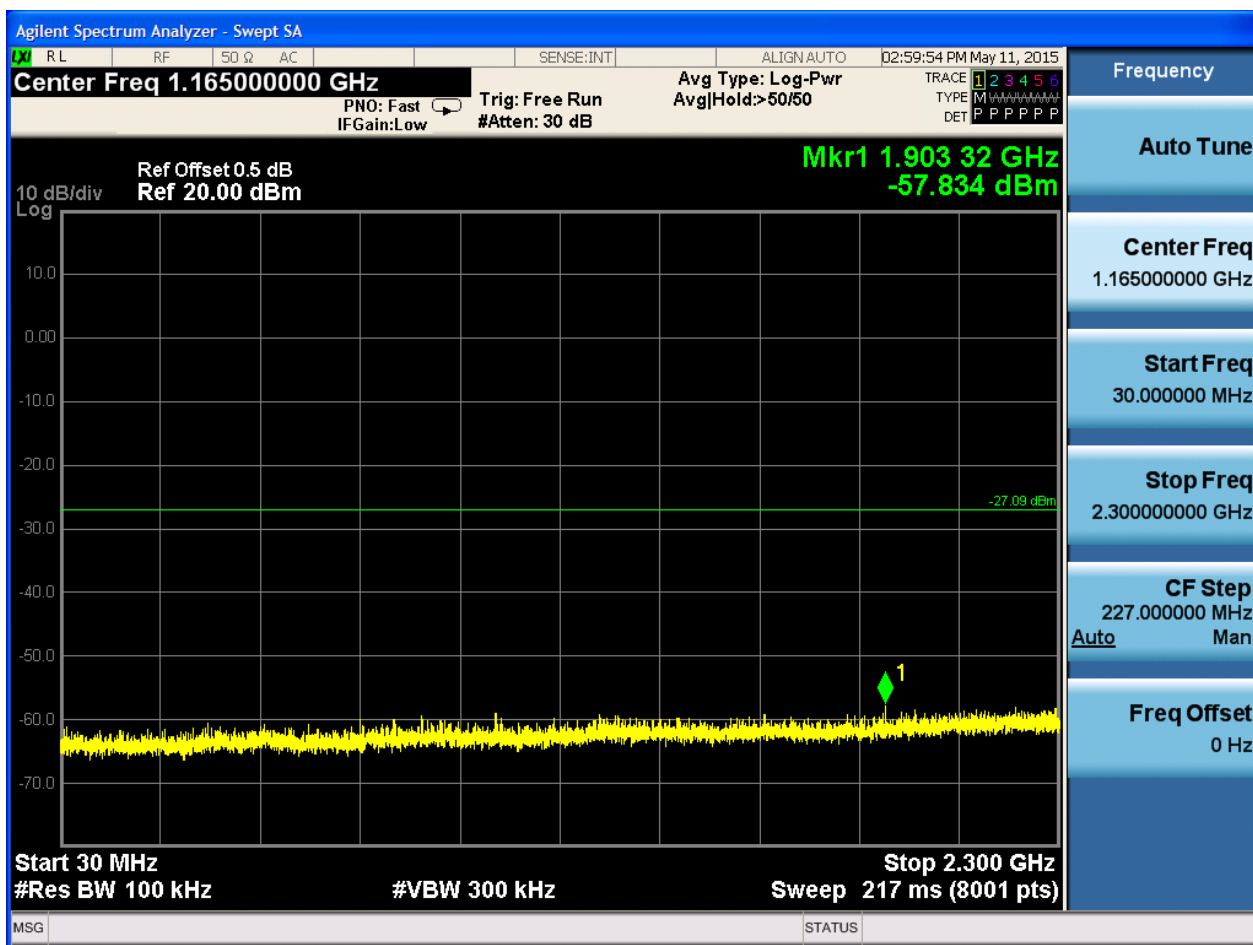


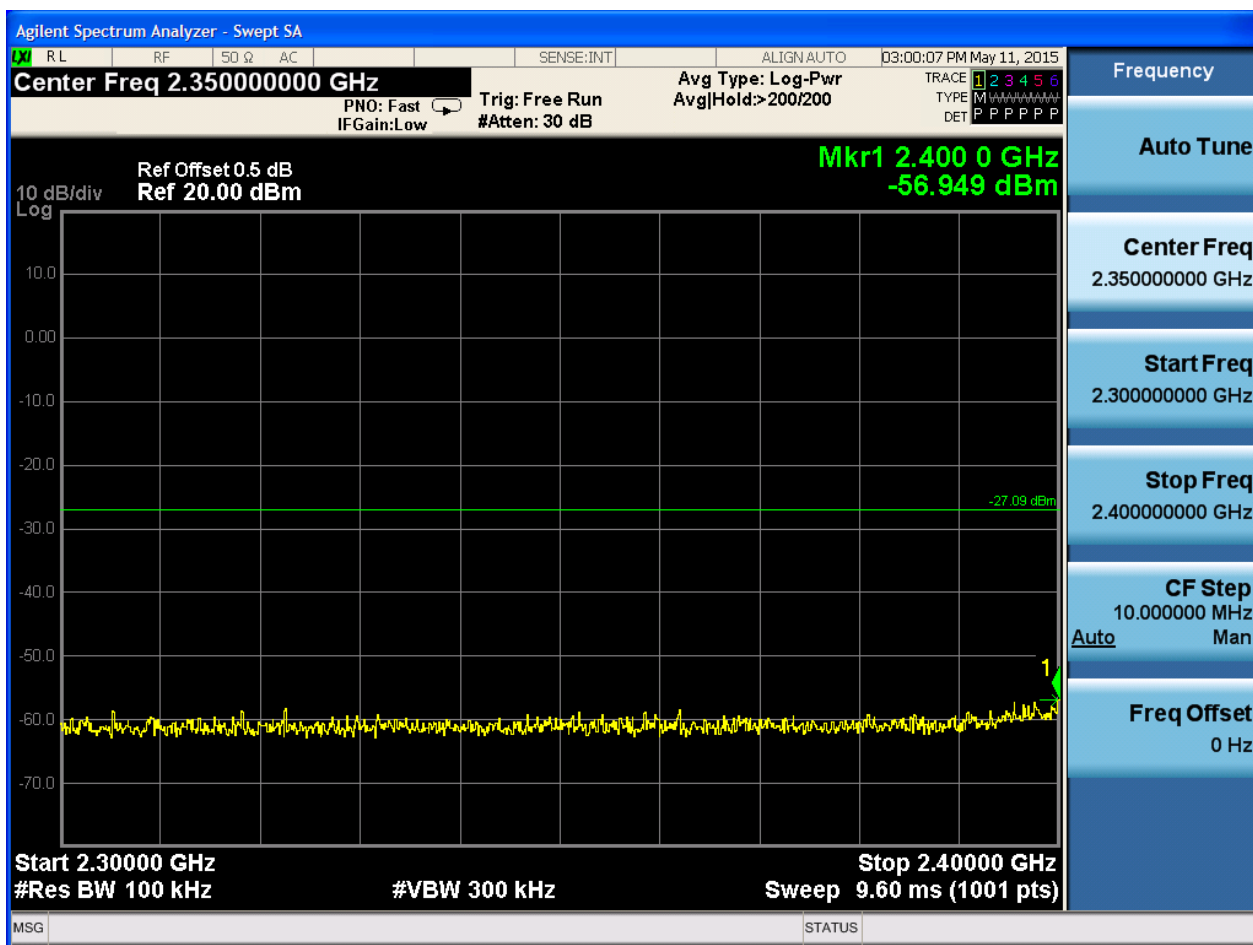


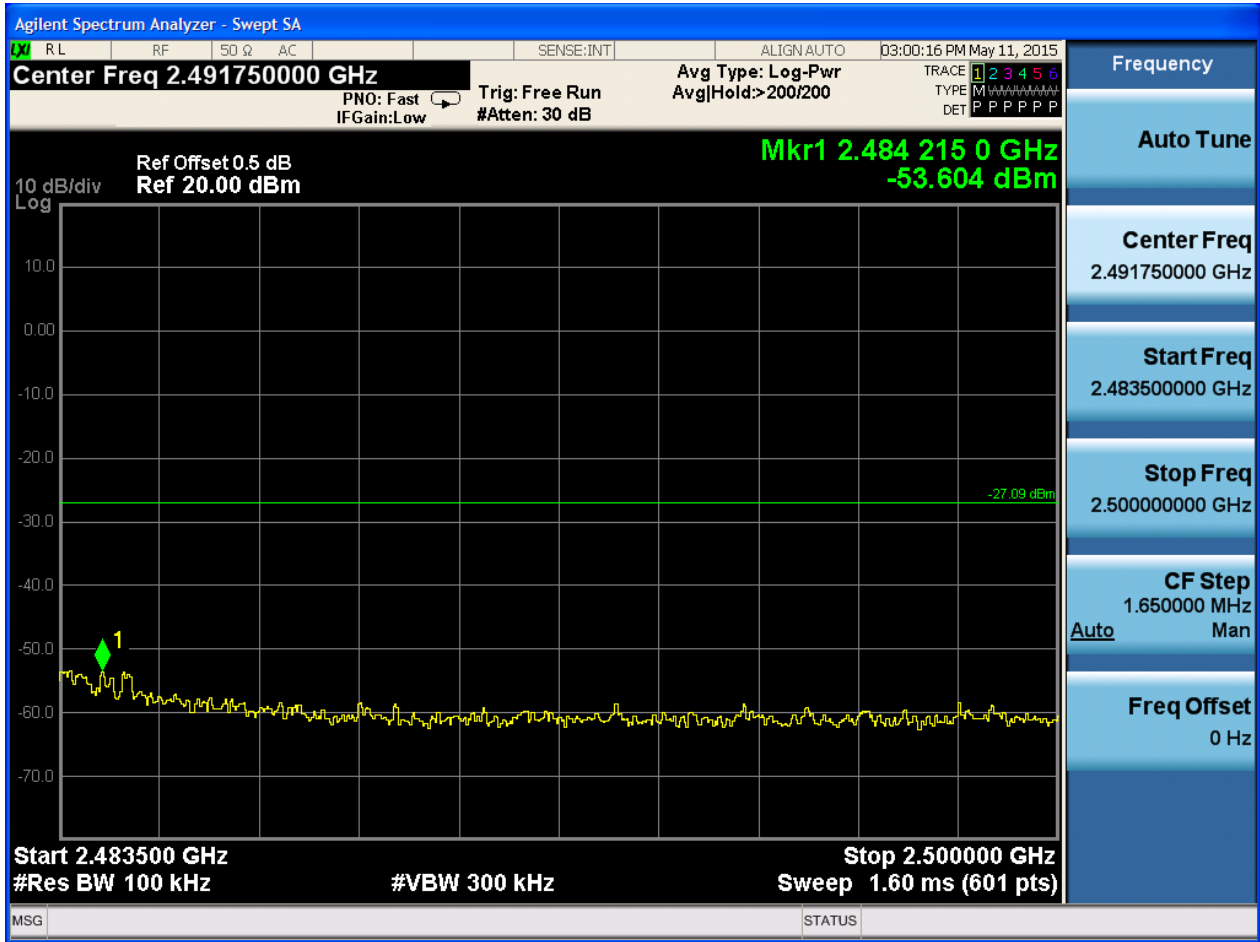
Puw:







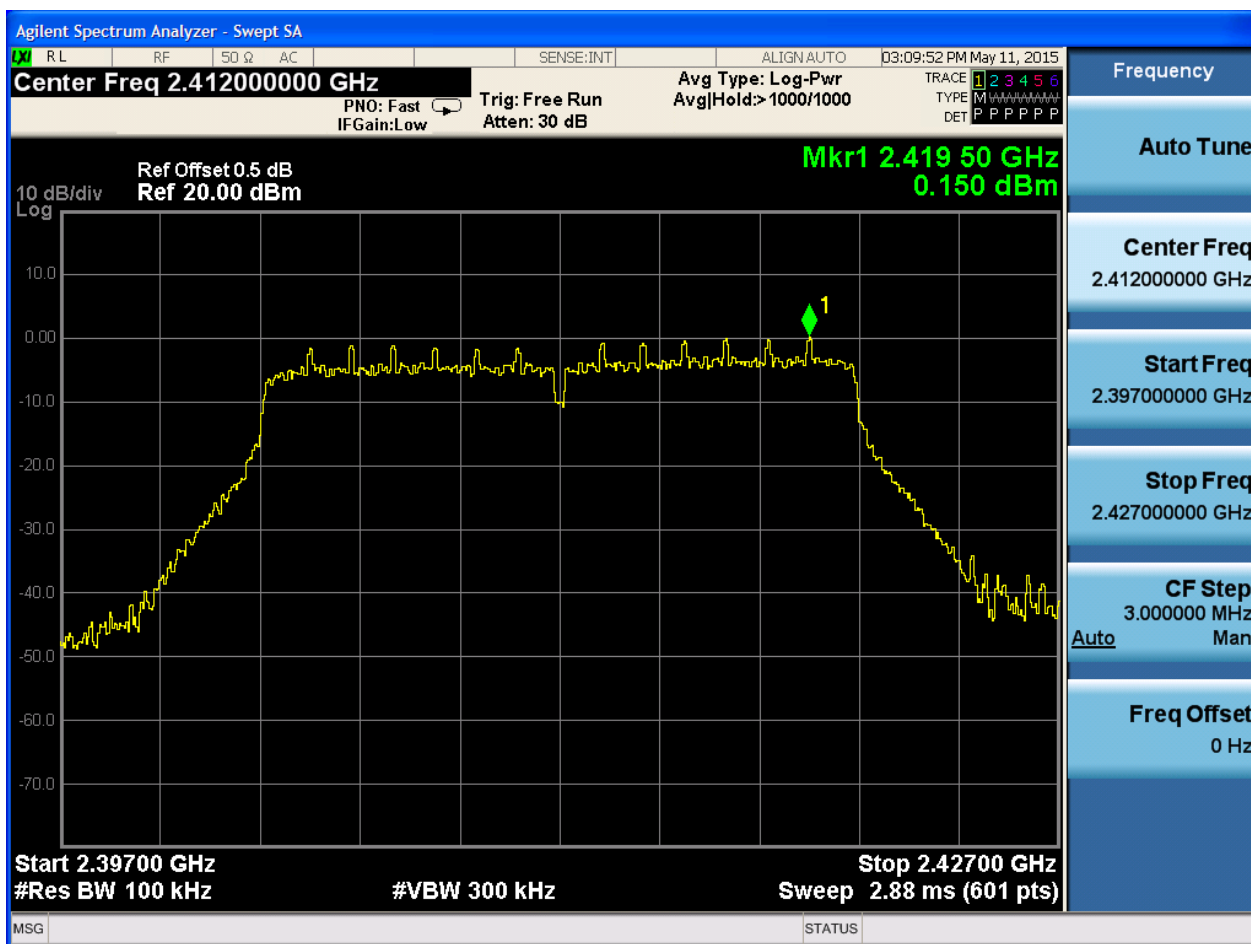






2.7 11N20_L@Ant 1

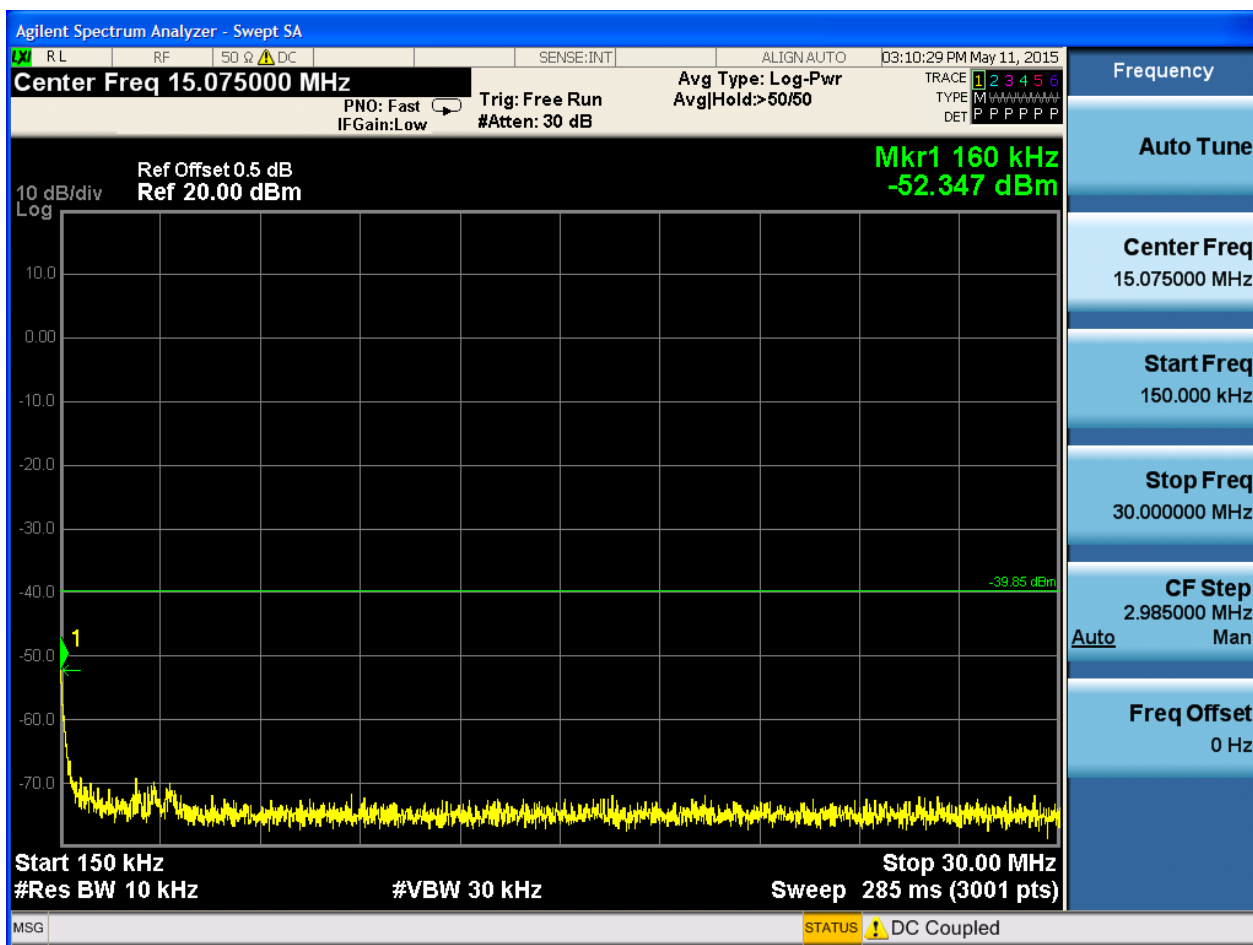
Pref:

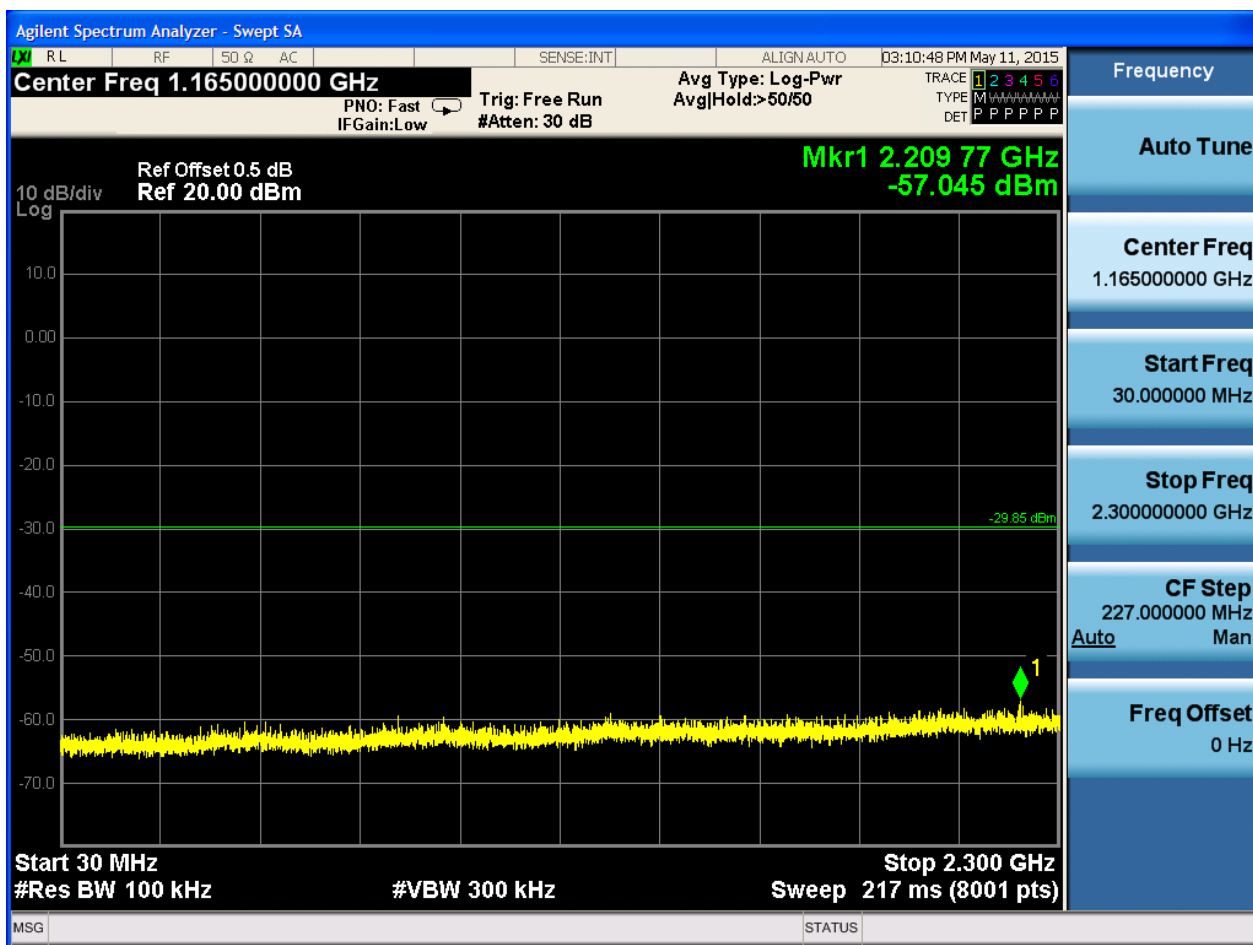


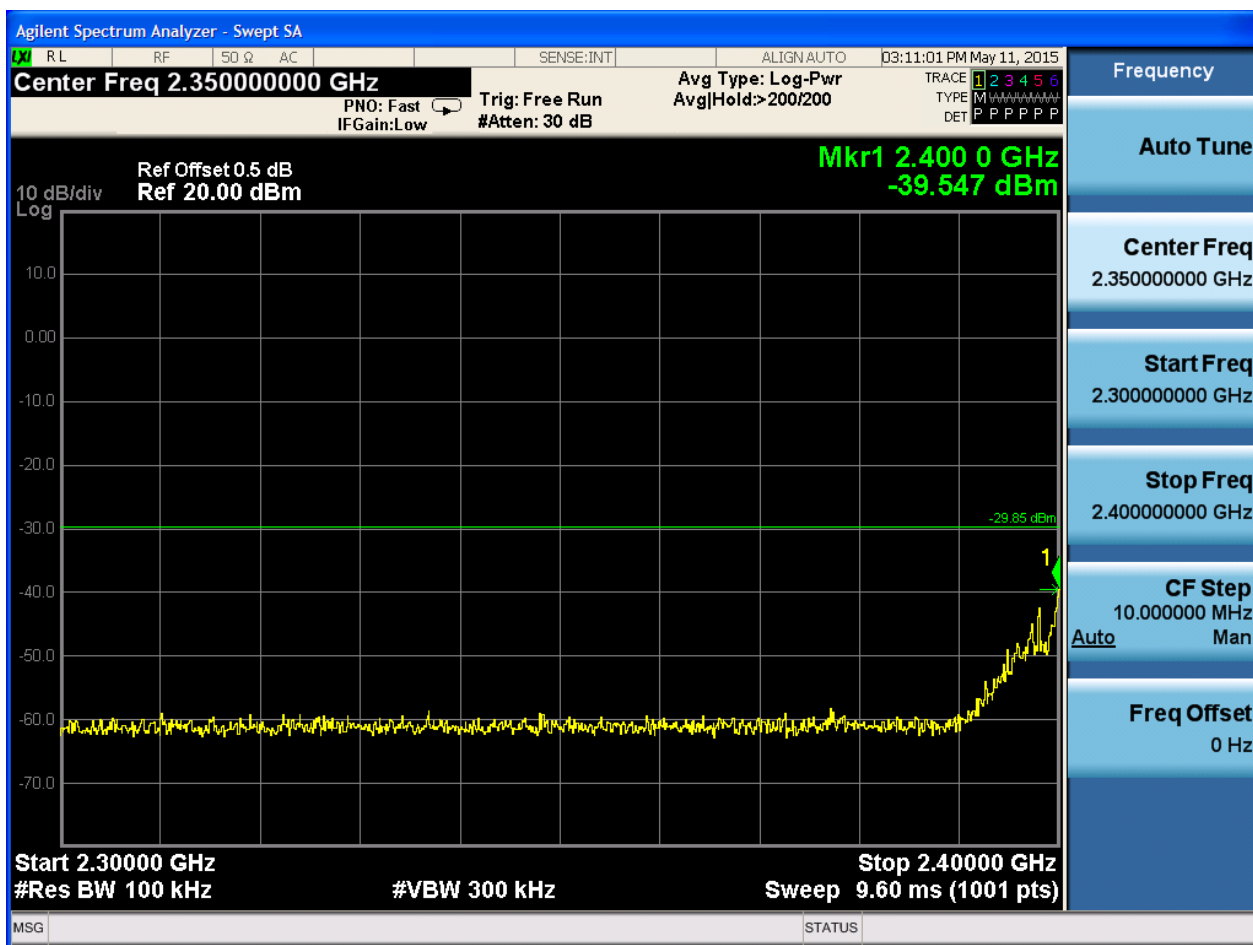


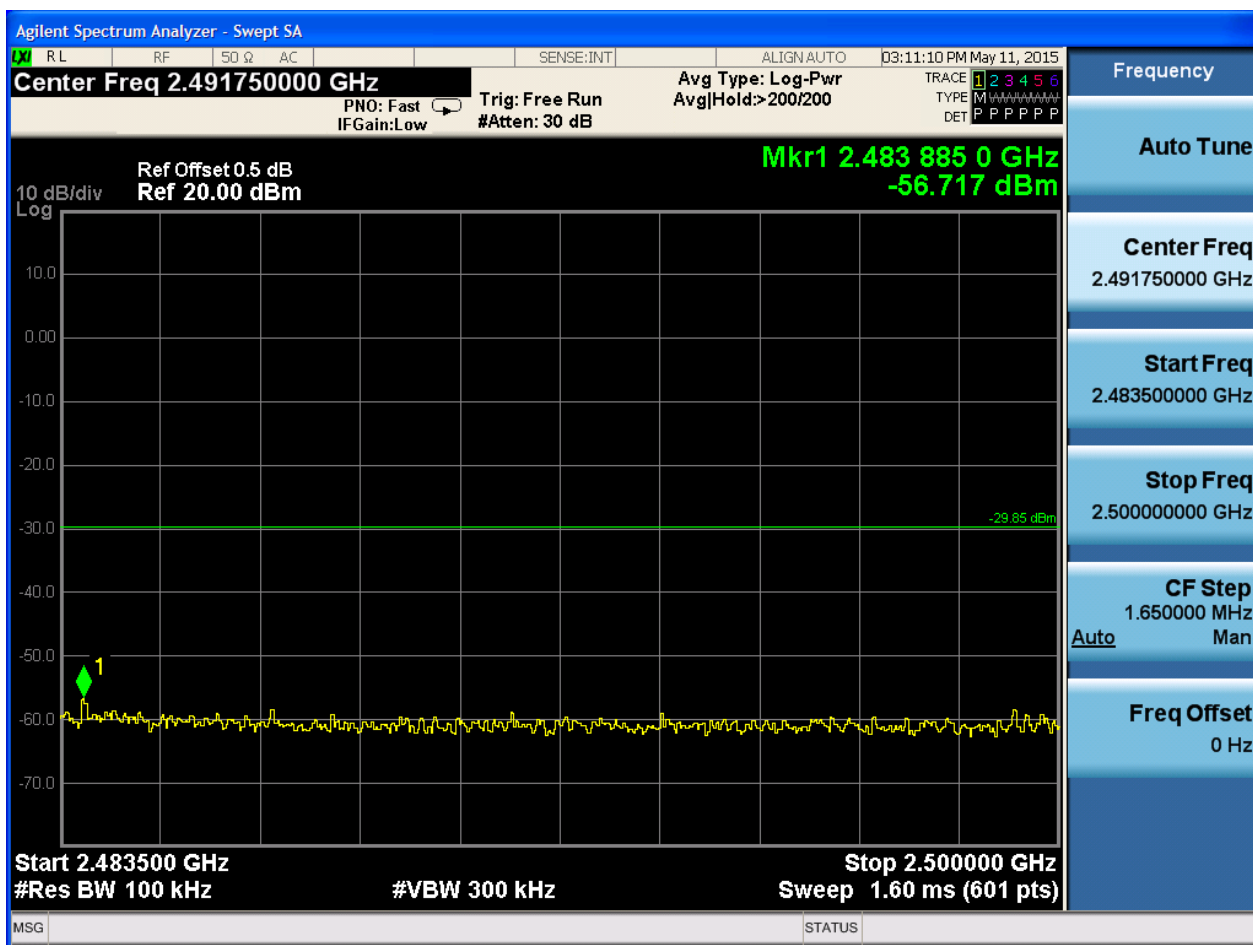
Puw:









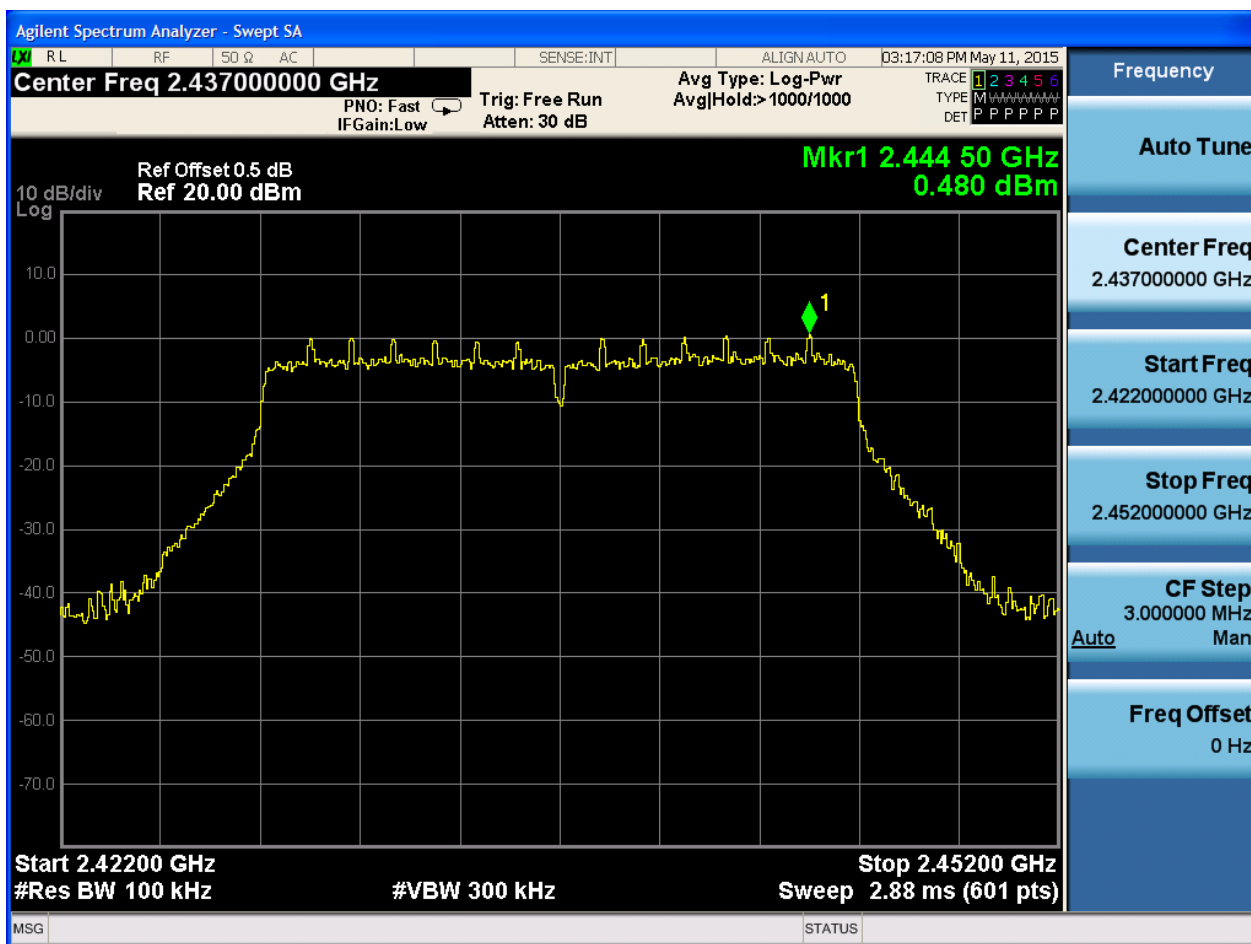






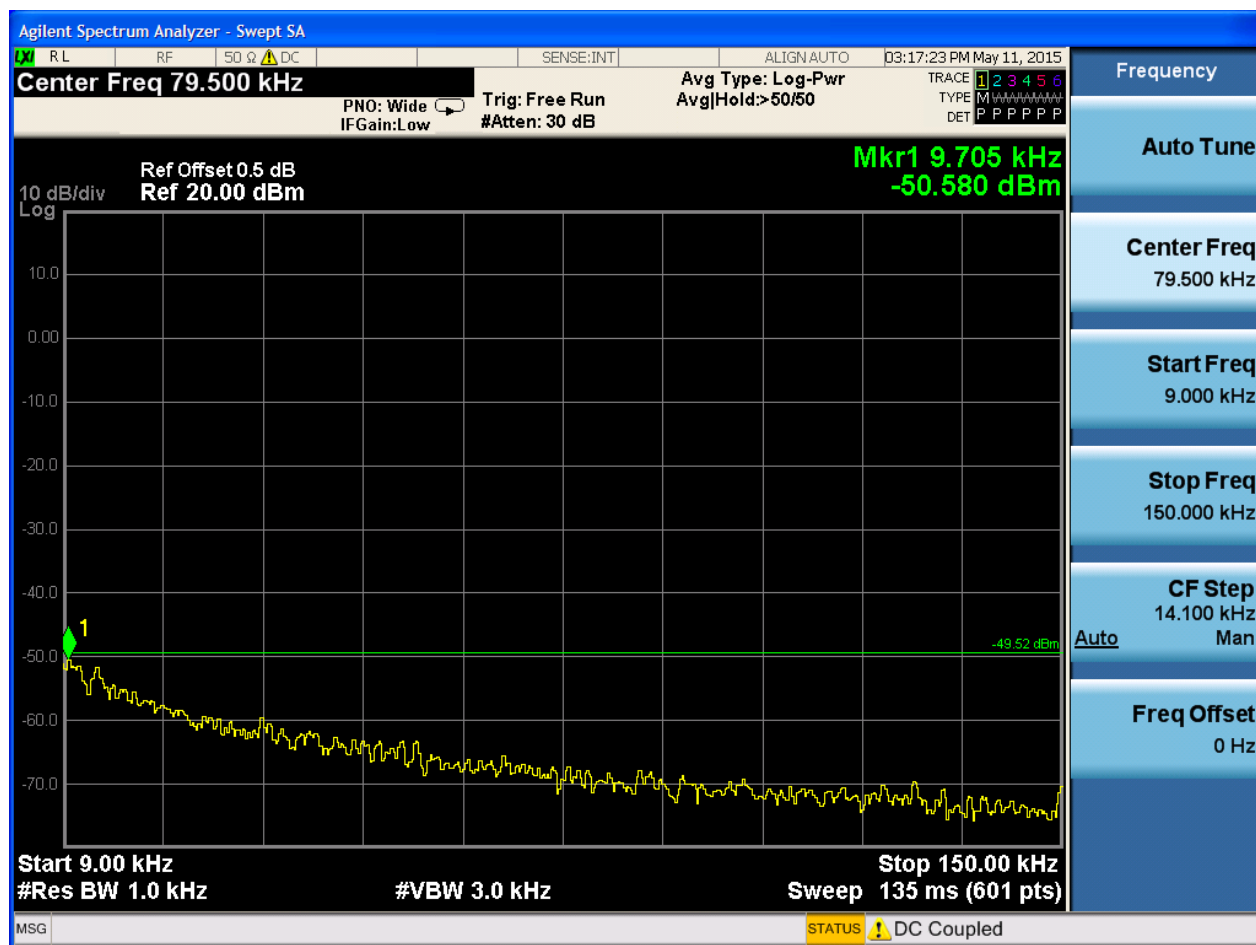
2.8 11N20_M@Ant 1

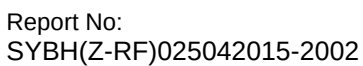
Pref:

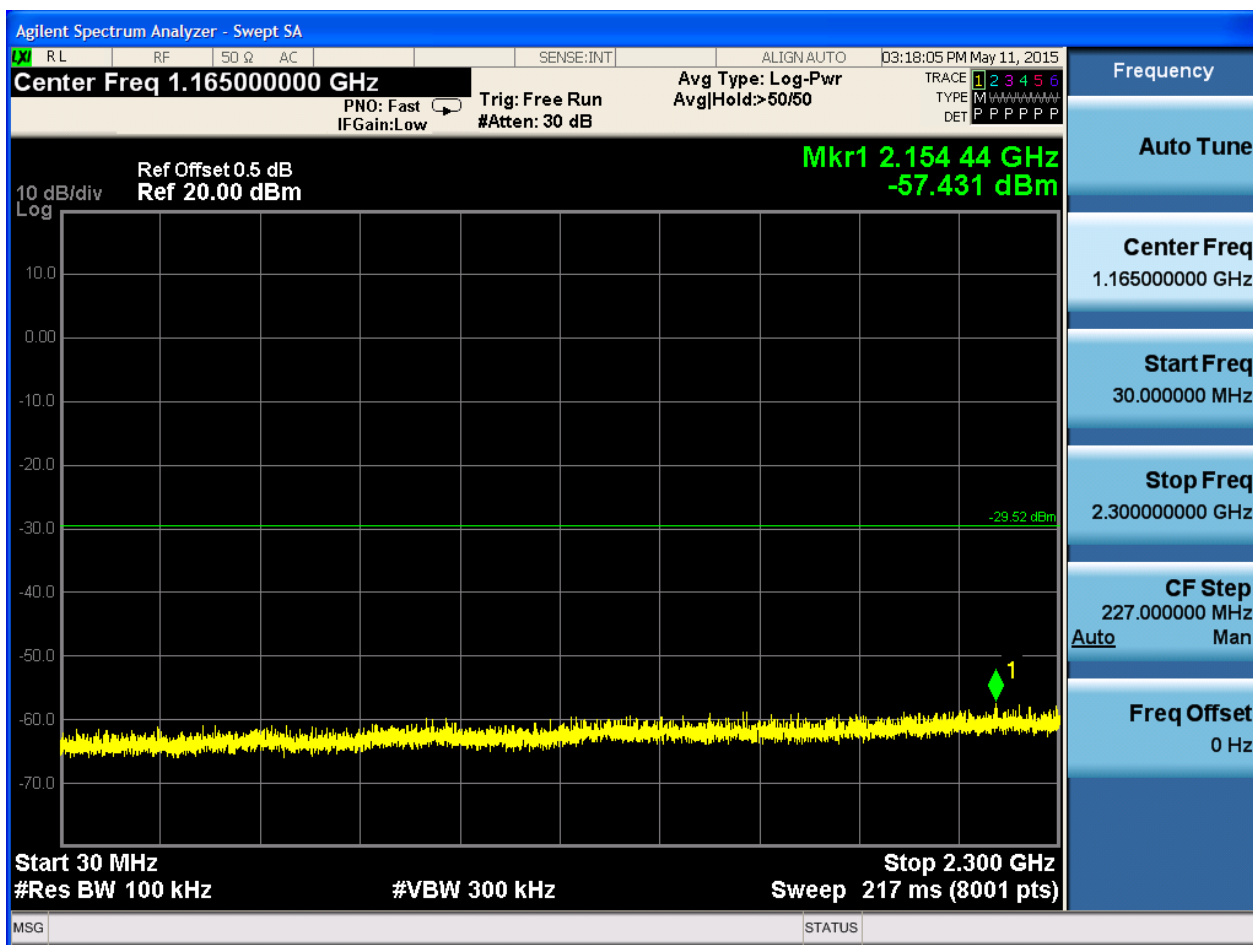


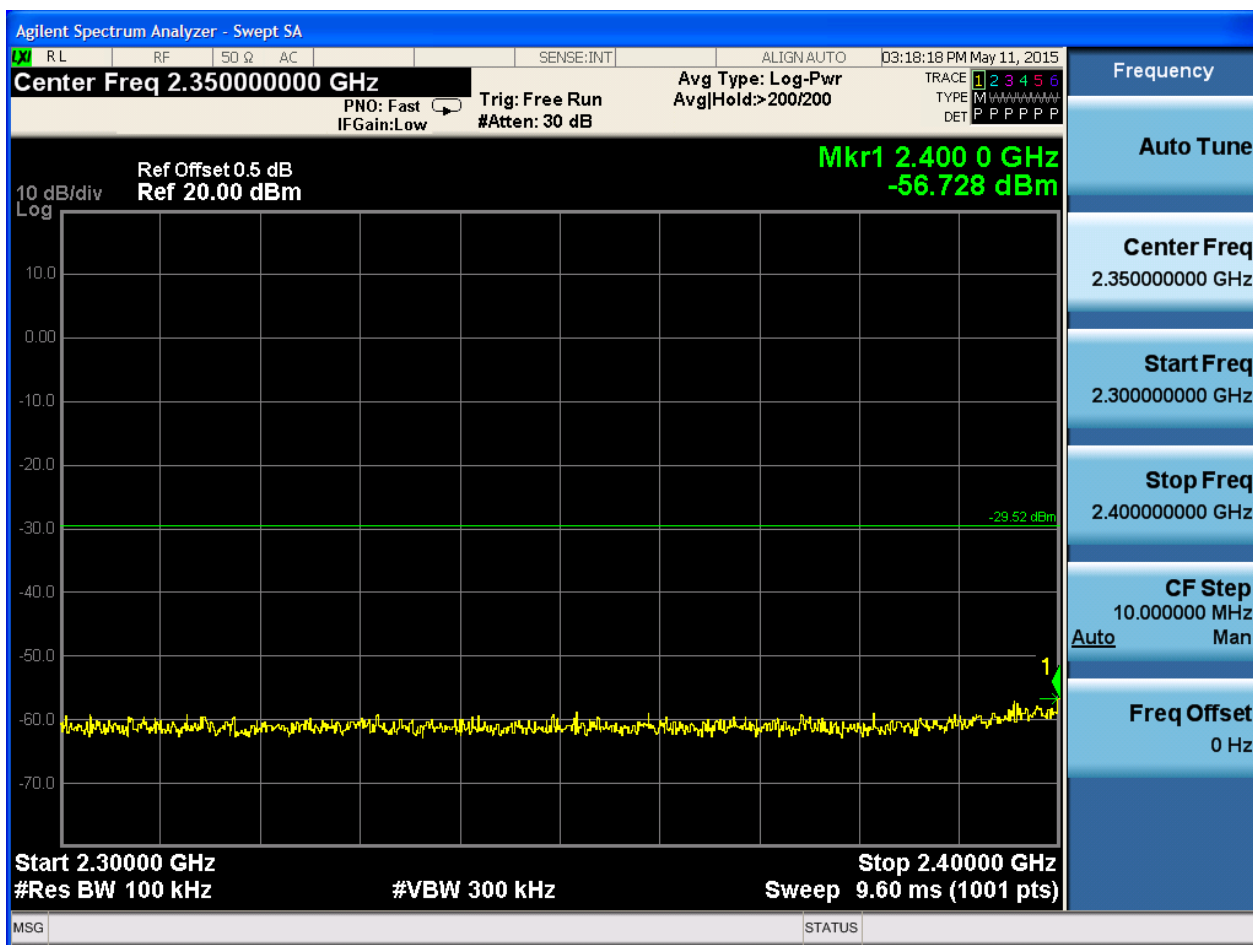


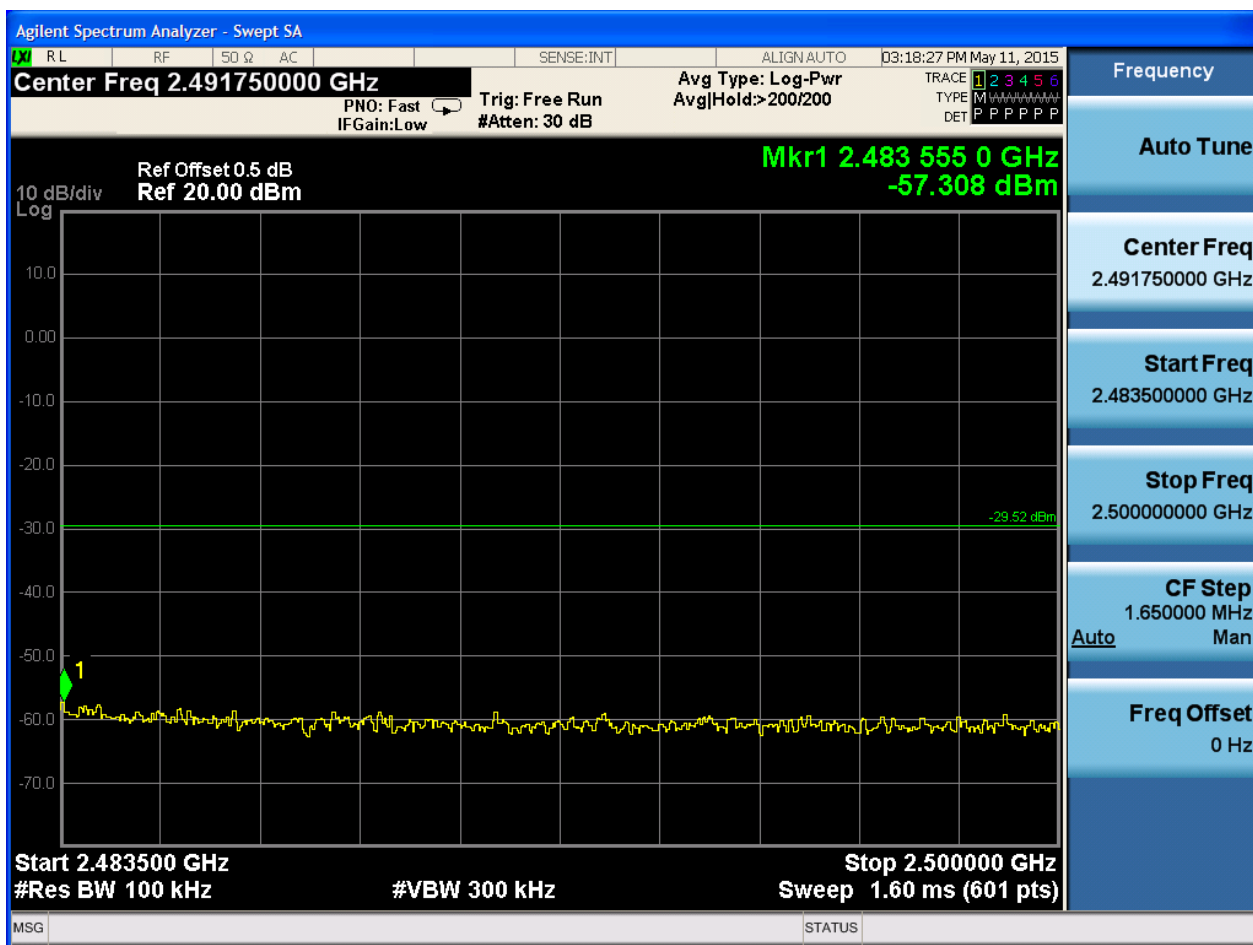
Puw:









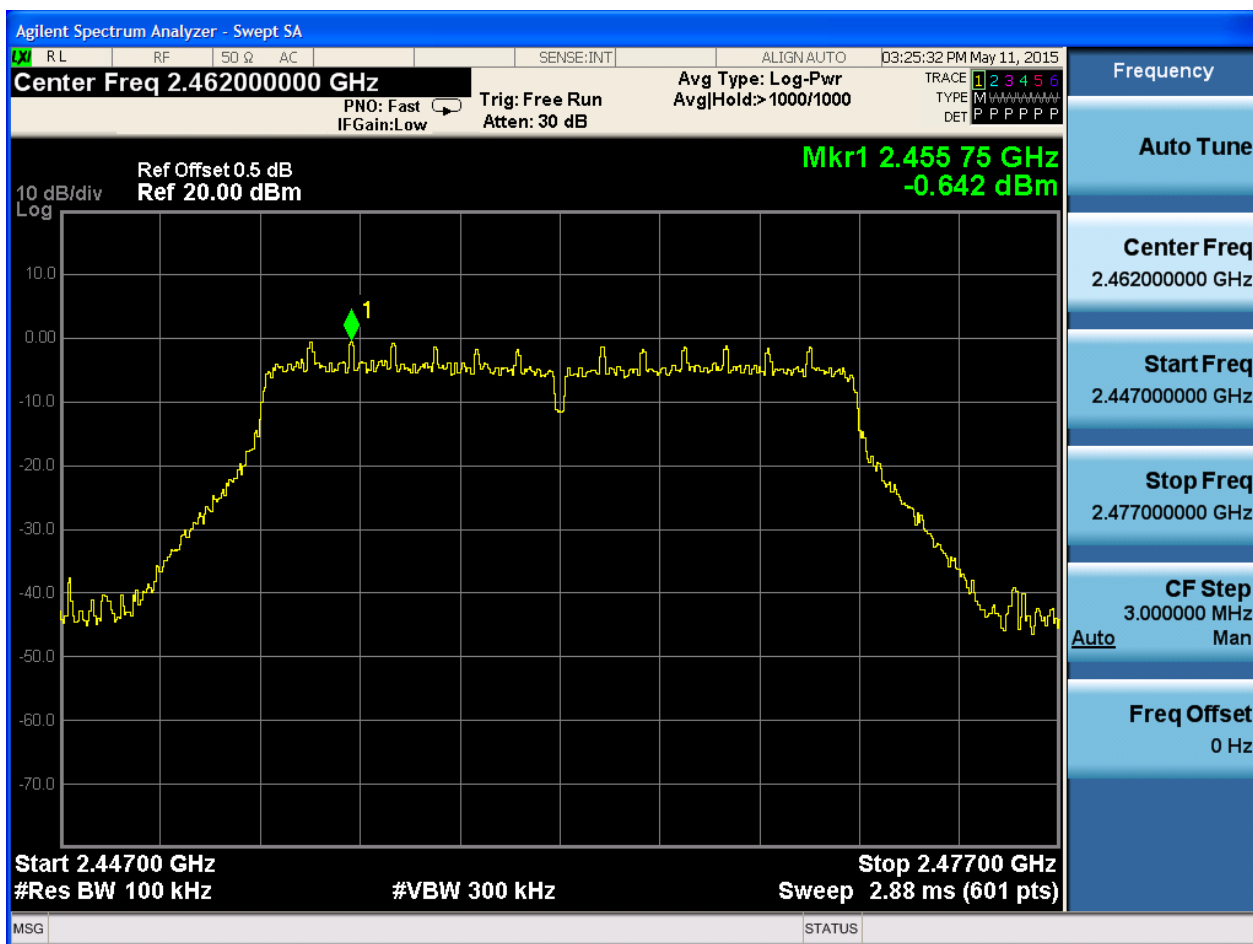






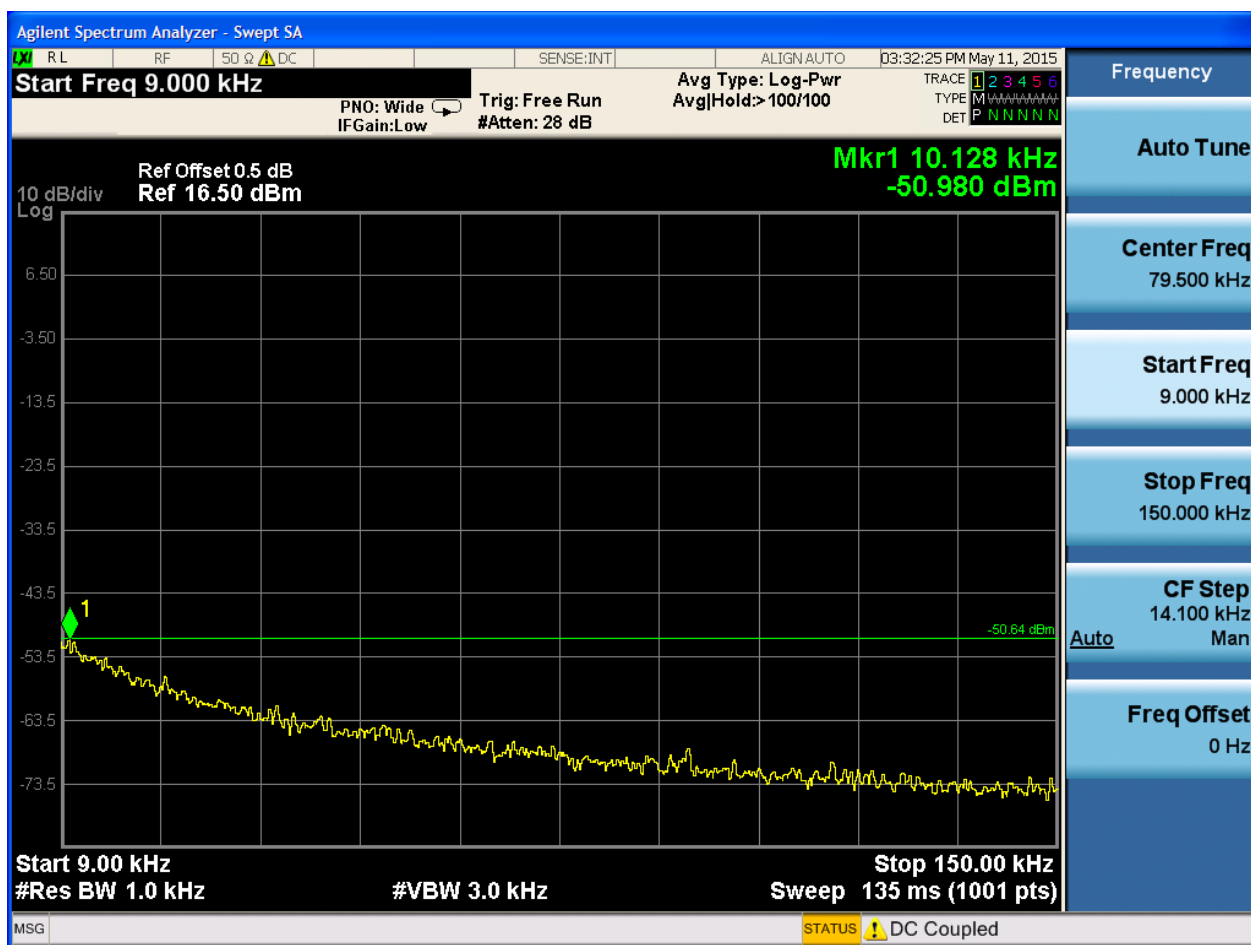
2.9 11N20_H@Ant 1

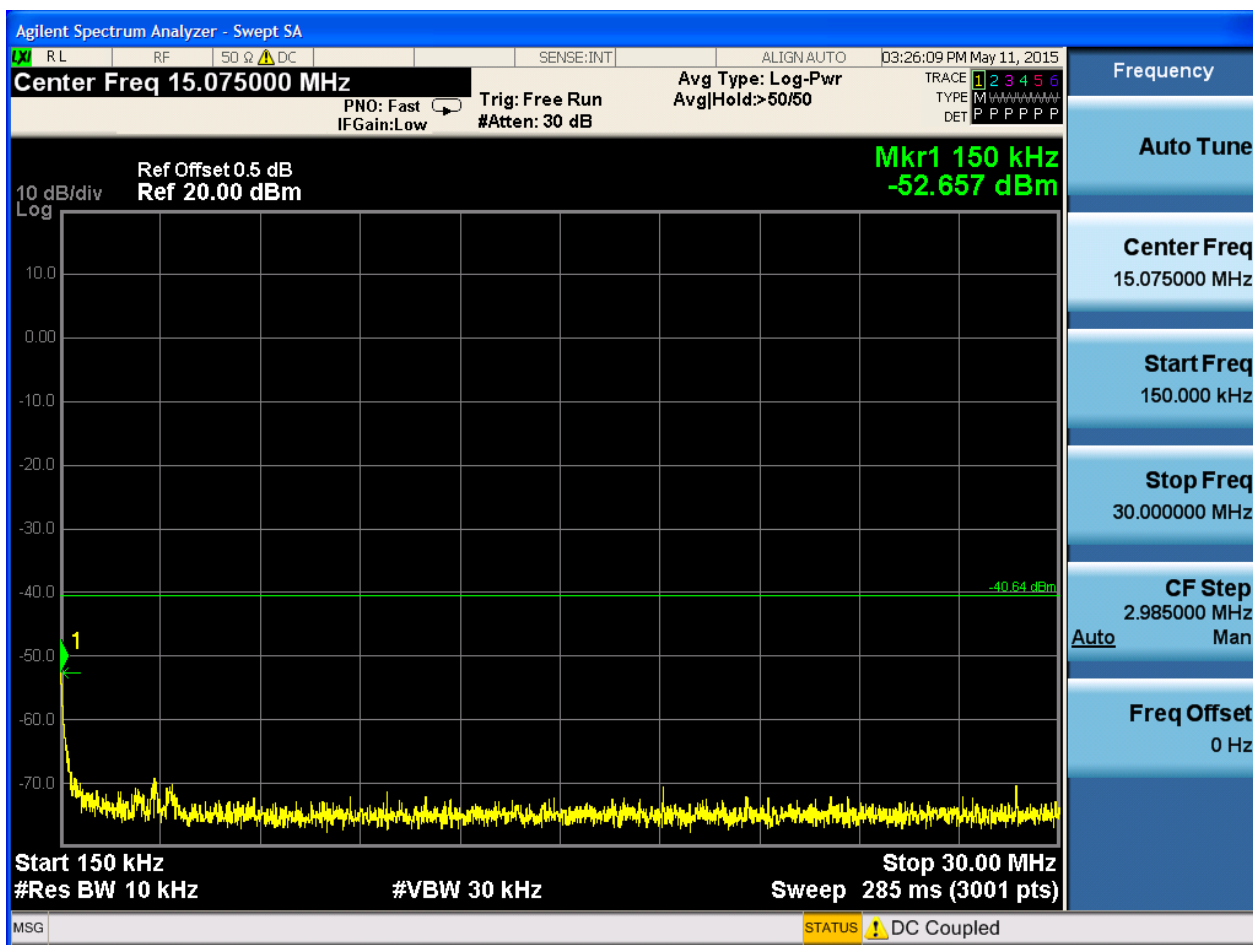
Pref:

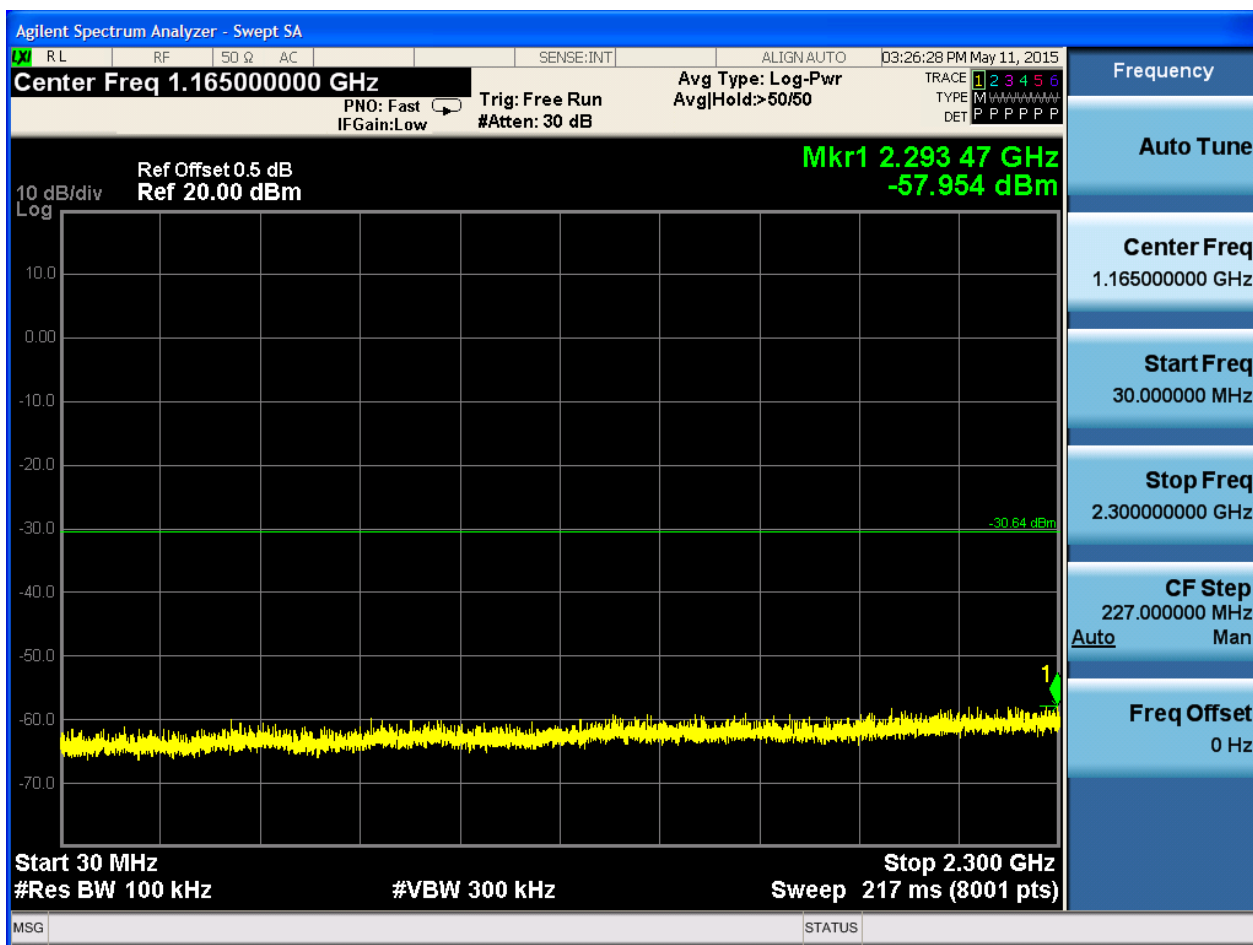


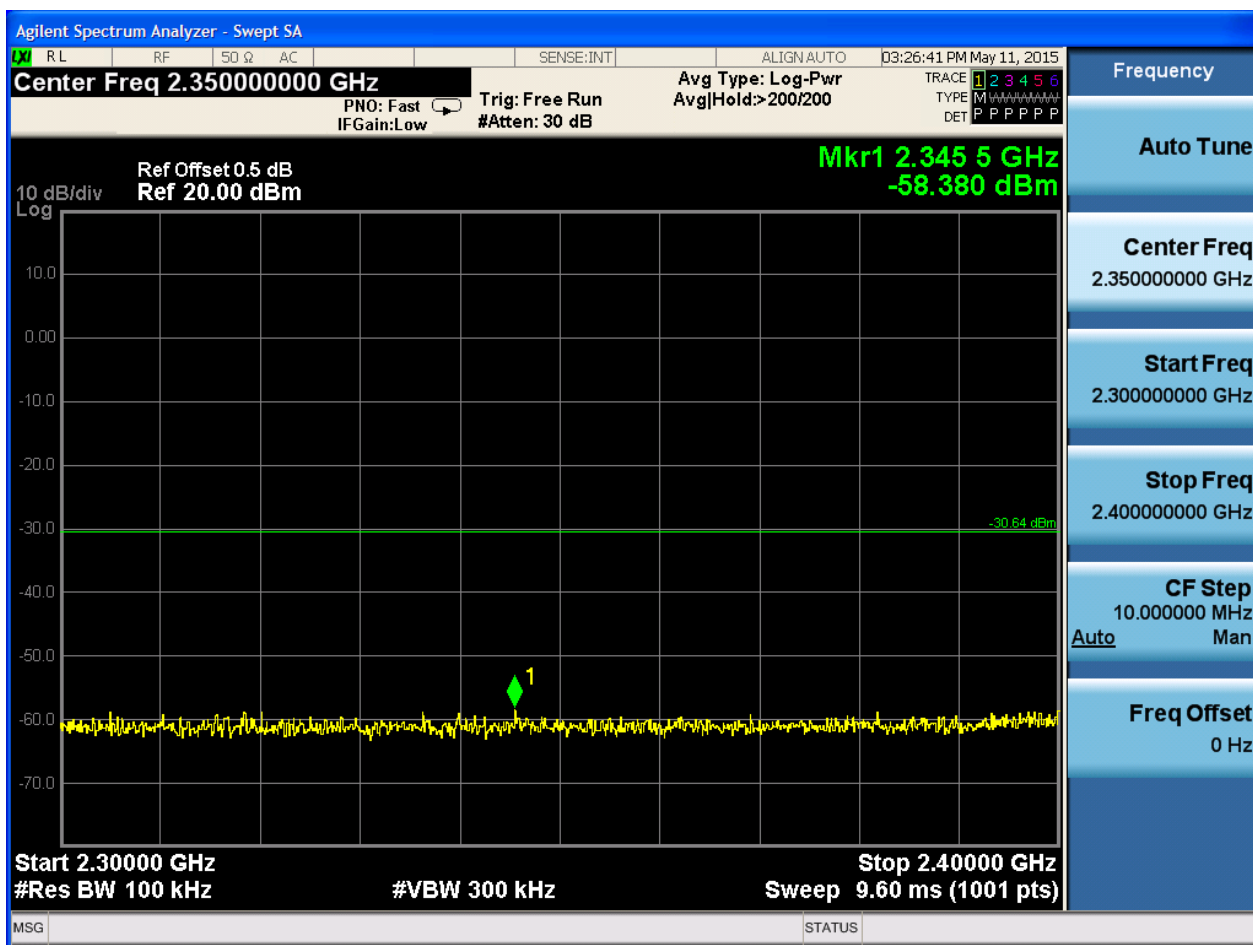


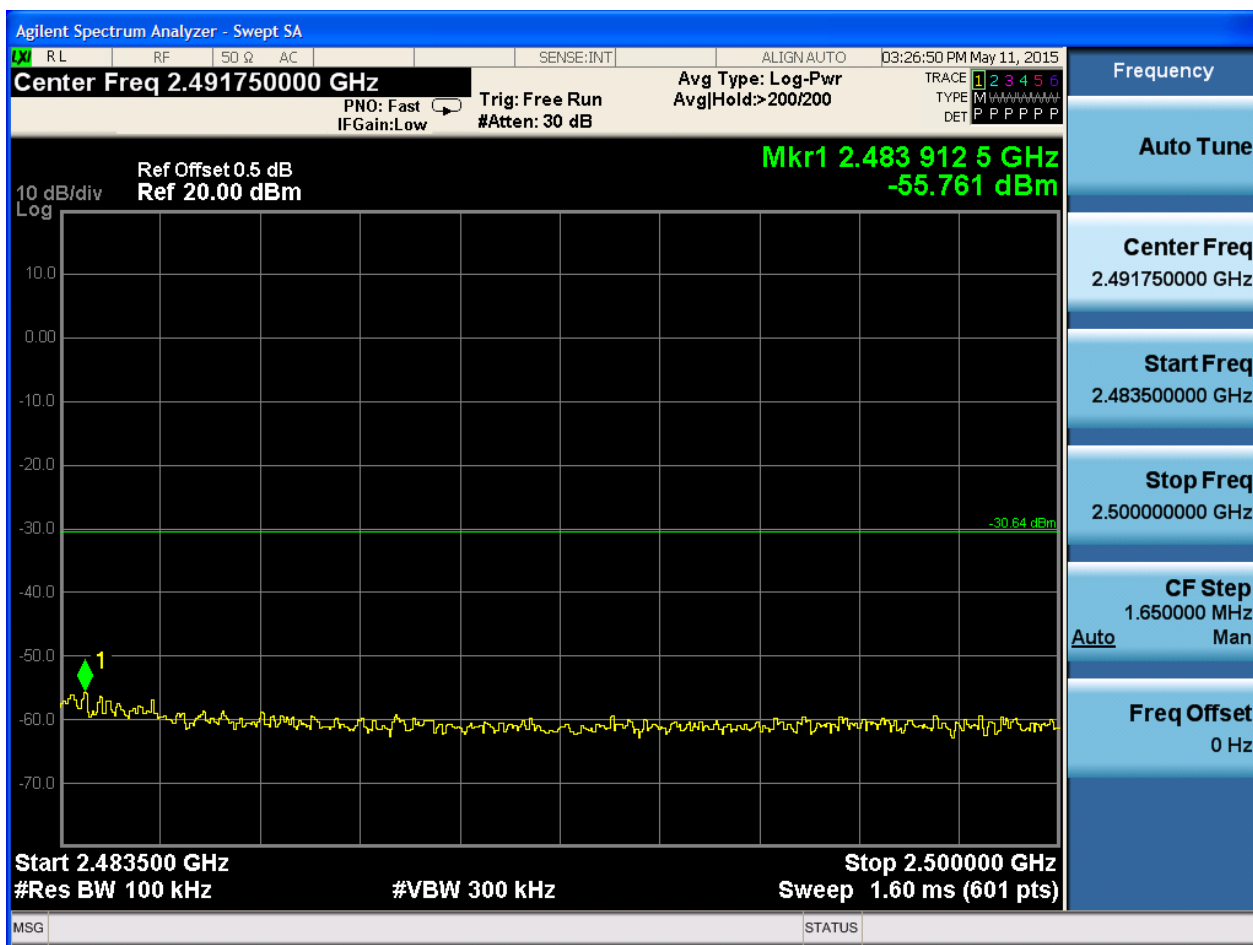
Puw:













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

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

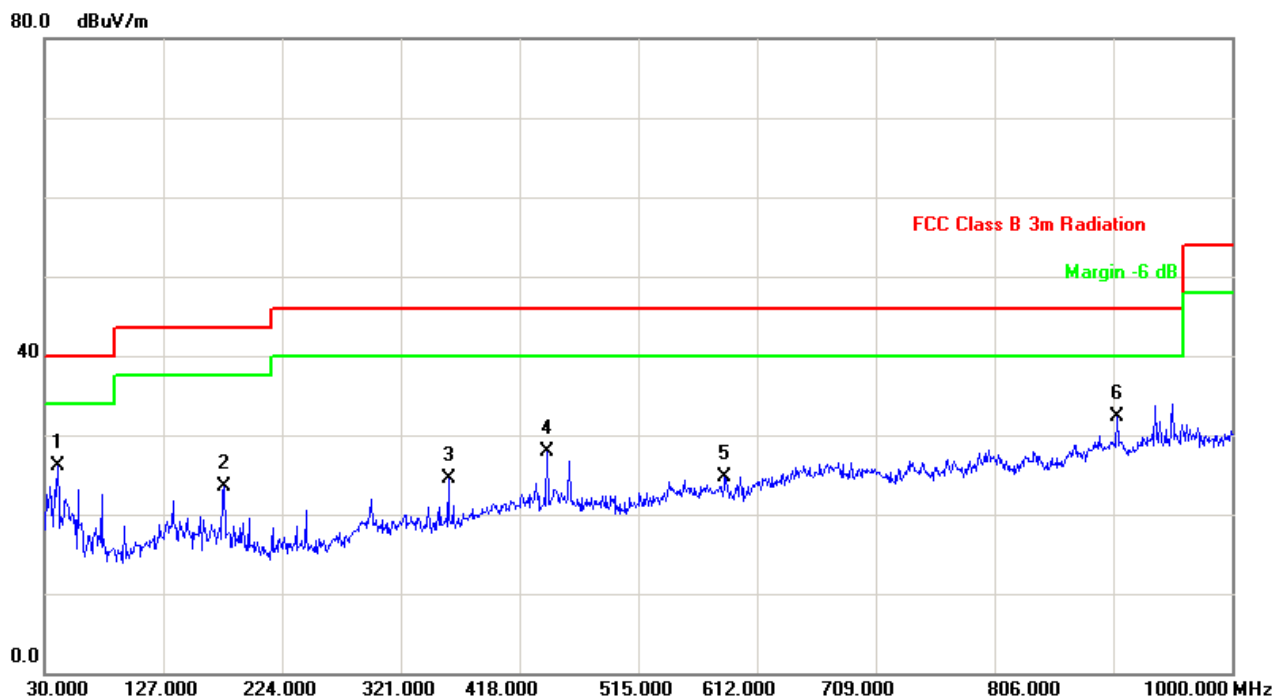
Part 1: Testing Range of “9 kHz to 30MHz”

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

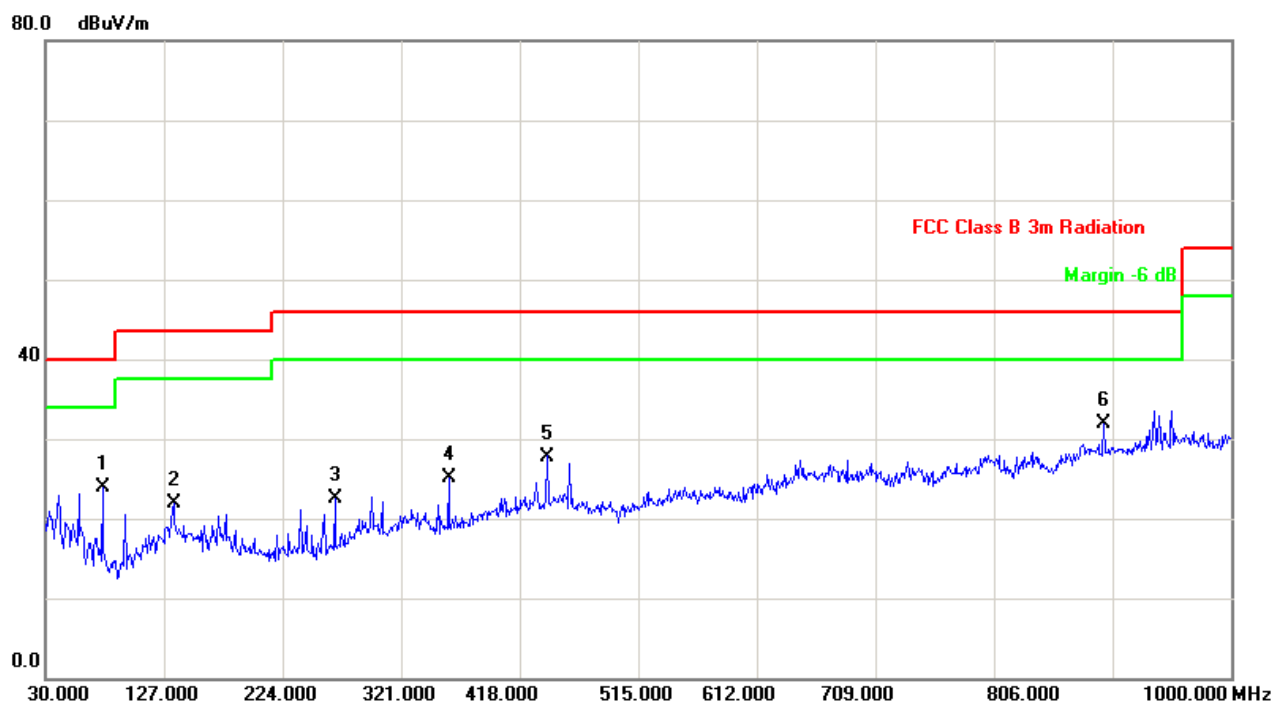
Part 2: Testing Range of “30 MHz to 1 GHz”

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).**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure - ment dBuV	Limit dBuV	Margin dB	Plarization
1		40.67	38.62	-12.49	26.13	40.00	-13.87	VERTICAL
2		176.47	34.91	-11.35	23.56	43.50	-19.94	VERTICAL
3		359.80	33.87	-9.40	24.47	46.00	-21.53	VERTICAL
4	*	440.31	34.01	-6.15	27.86	46.00	-18.14	VERTICAL
5		585.81	29.31	-4.63	24.68	46.00	-21.32	VERTICAL
6		905.910	30.39	1.84	32.23	46.00	-13.77	VERTICAL



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Plarization
1		76.56	39.30	-15.40	23.90	40.00	-16.10	HORIZONTAL
2		134.76	33.45	-11.54	21.91	43.50	-21.59	HORIZONTAL
3		266.68	34.52	-12.07	22.45	46.00	-23.55	HORIZONTAL
4		359.80	34.50	-9.40	25.10	46.00	-20.90	HORIZONTAL
5		440.31	33.95	-6.15	27.80	46.00	-18.20	HORIZONTAL
6	*	895.2400	30.42	1.53	31.95	46.00	-14.05	HORIZONTAL



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

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

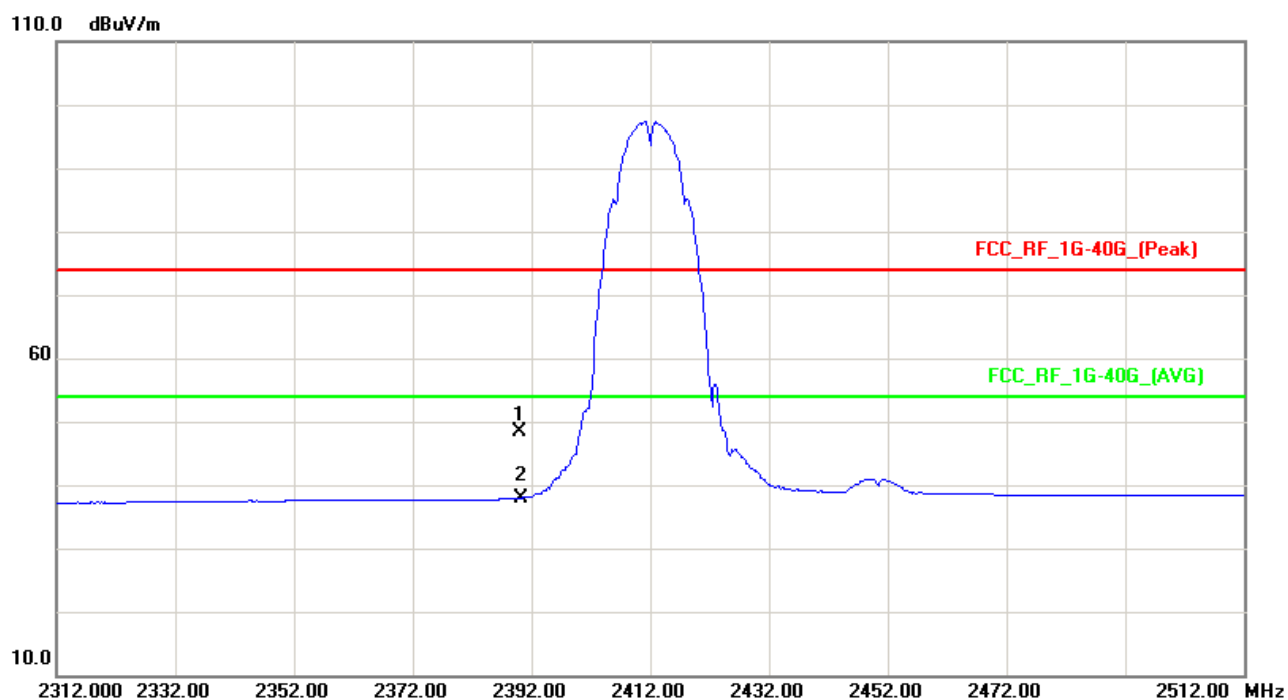
Part 4: Testing Range of “2.3GHz to 2.5GHz”

- 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 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: 11b

Channel 1

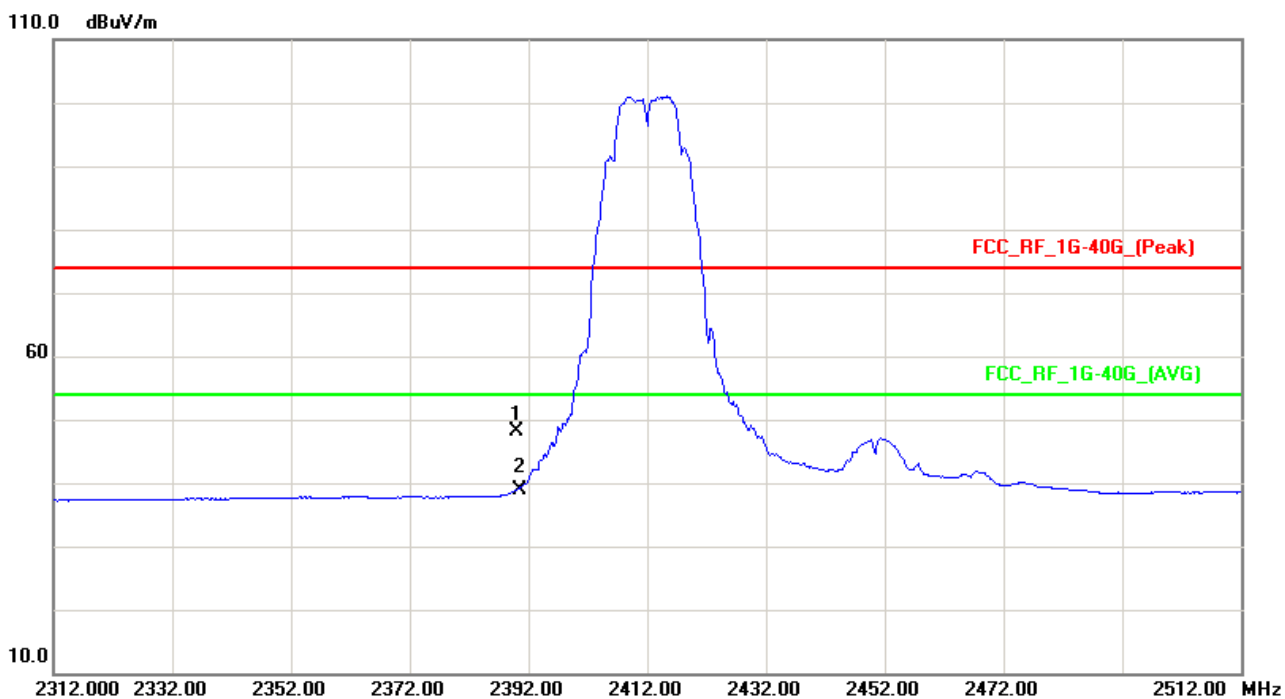
Vertical



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

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
	MHz	dB μ V	dB	dB μ V/m	dB μ V/	dB	Detecto	Polarization
1	2390.000	12.38	35.88	48.26	74.00	-25.74	peak	VERTICAL
2 *	2390.000	2.08	35.88	37.96	54.00	-16.04	AVG	VERTICAL

Horizontal

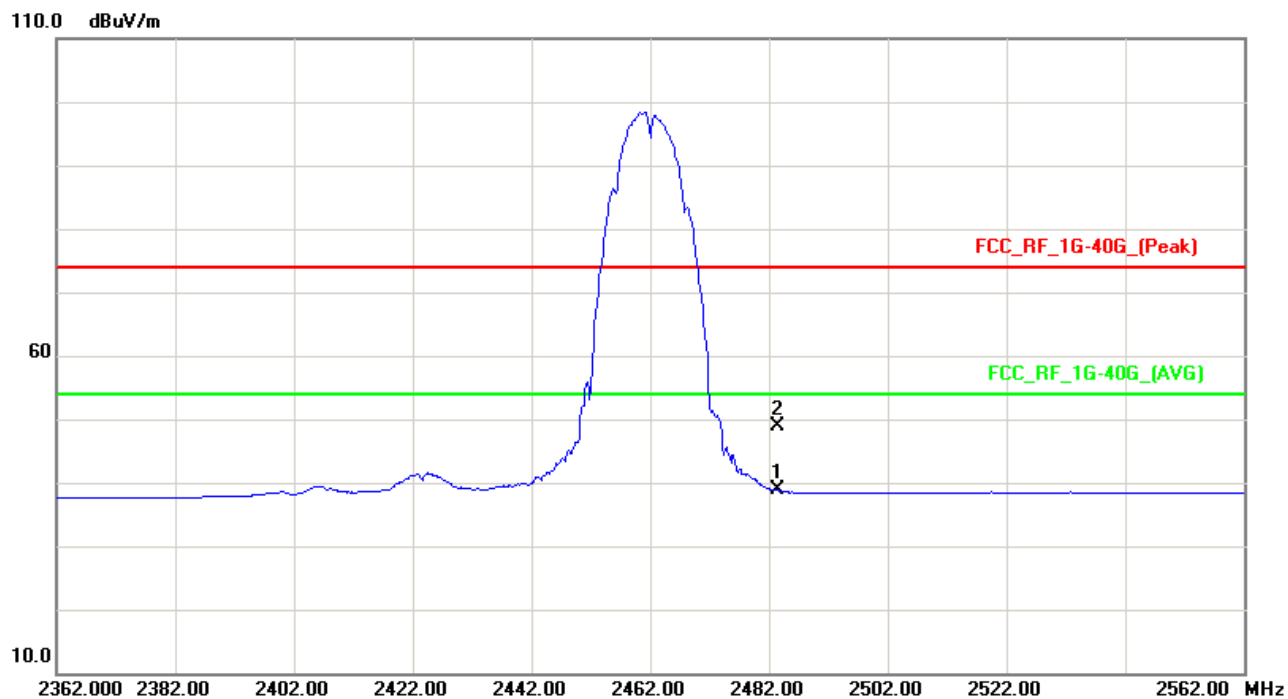


Note: The peak exceeds the limit line is carrier frequency.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1		2390.000	12.26	35.88	48.14	74.00	-25.86	peak	HORIZONTAL
2	*	2390.000	3.09	35.88	38.97	54.00	-15.03	AVG	HORIZONTAL

Channel 11

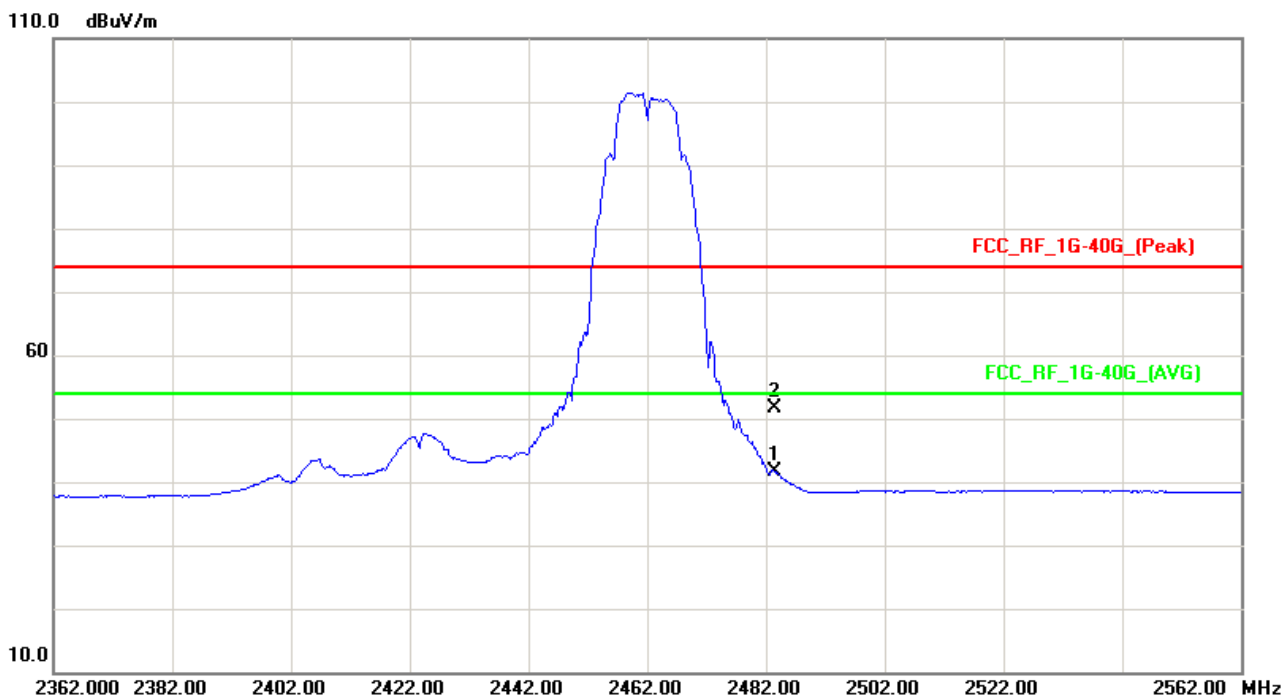
Vertical



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1		2483.500	2.37	36.39	38.76	74.00	-35.24	AVG	VERTICAL
2	*	2483.500	12.37	36.39	48.76	74.00	-25.24	peak	VERTICAL

Horizontal



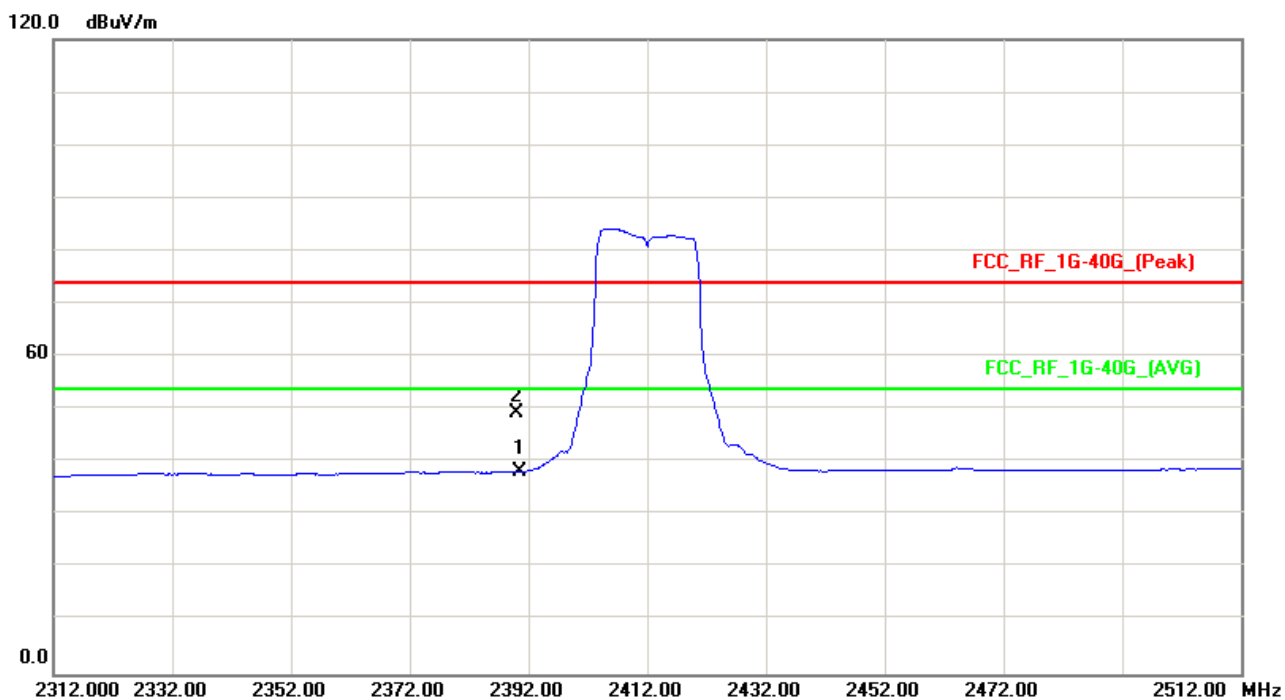
Note: The peak exceeds the limit line is carrier frequency.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1		2483.500	5.17	36.39	41.56	74.00	-32.44	AVG	HORIZONTAL
2	*	2483.500	15.29	36.39	51.68	74.00	-22.32	peak	HORIZONTAL

Test Mode: 11g

Channel 1

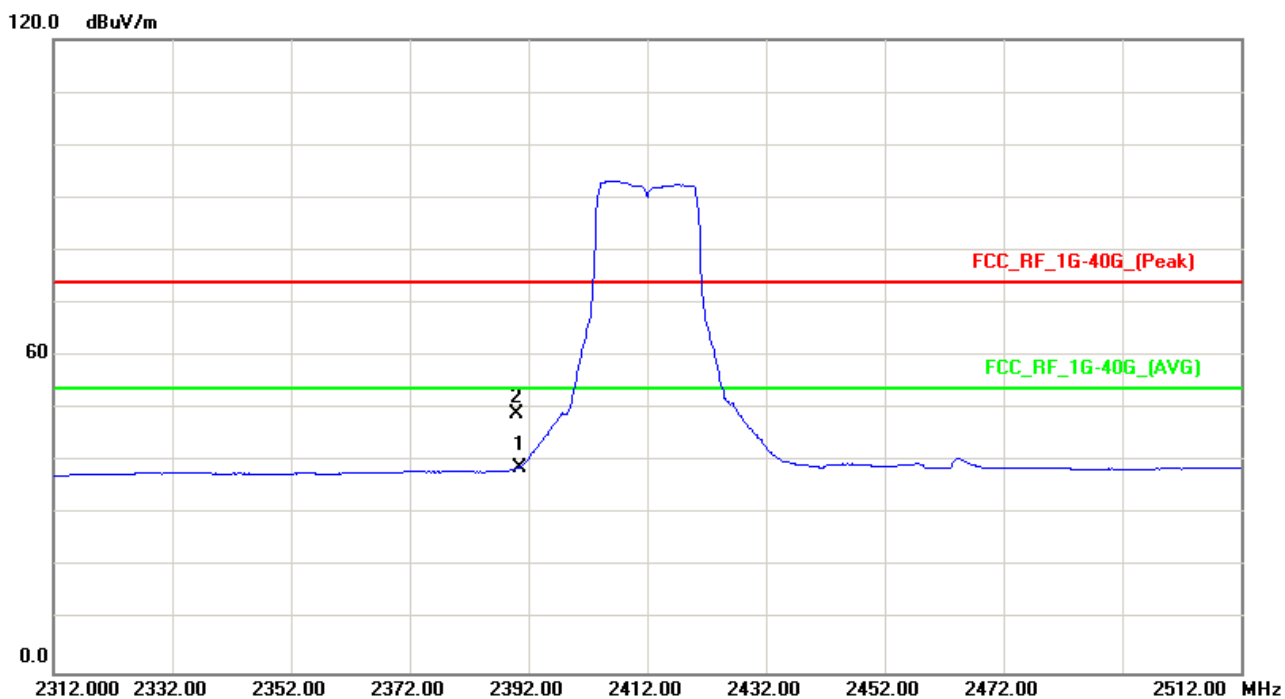
Vertical



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1	*	2390.000	2.34	35.88	38.22	54.00	-15.78	AVG	VERTICAL
2		2390.000	13.56	35.88	49.44	74.00	-24.56	peak	VERTICAL

Horizontal



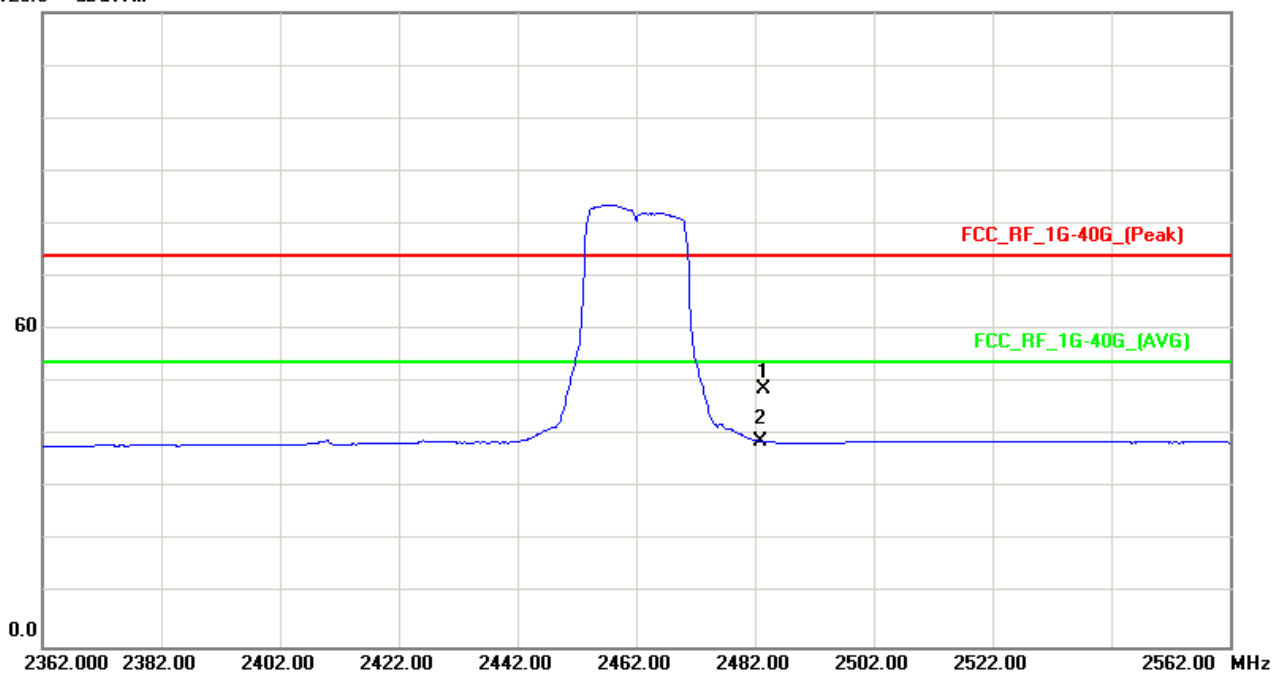
Note: The peak exceeds the limit line is carrier frequency.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1	*	2390.000	2.86	35.88	38.74	54.00	-15.26	AVG	HORIZONTAL
2		2390.000	13.14	35.88	49.02	74.00	-24.98	peak	HORIZONTAL

Channel 11

Vertical

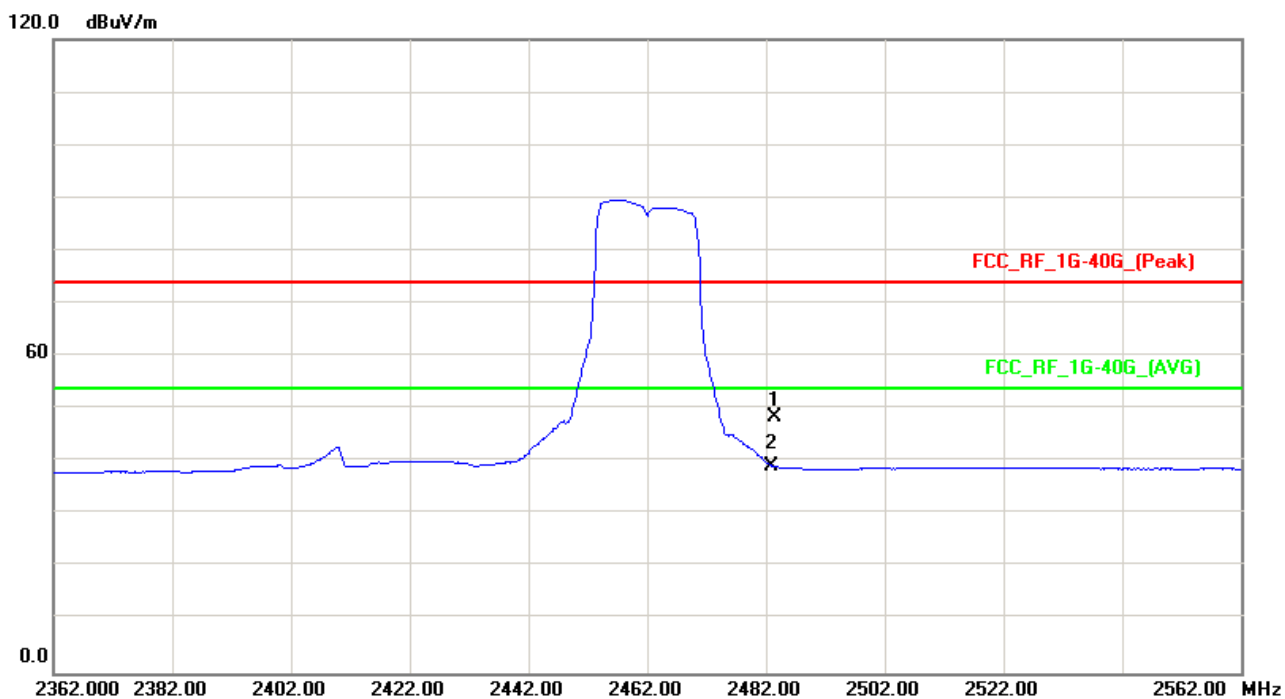
120.0 dBuV/m



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1		2483.500	12.31	36.39	48.70	74.00	-25.30	peak	VERTICAL
2	*	2483.500	2.42	36.39	38.81	54.00	-15.19	AVG	VERTICAL

Horizontal



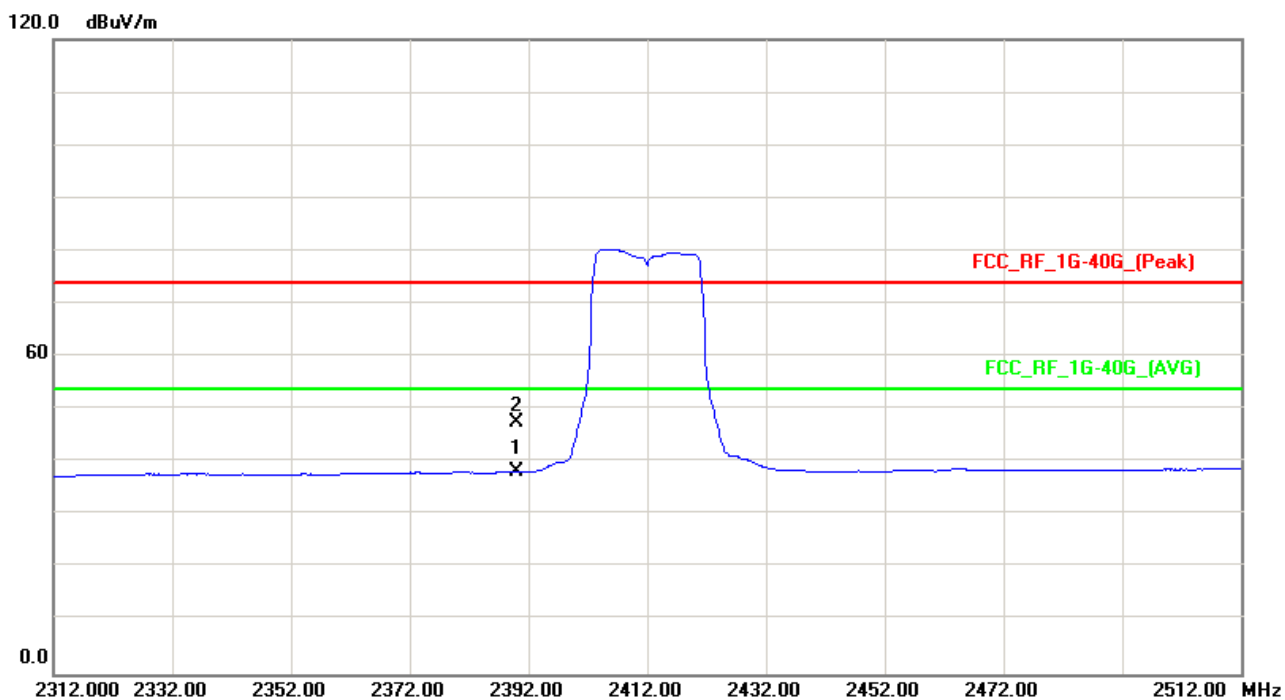
Note: The peak exceeds the limit line is carrier frequency.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1		2483.500	12.06	36.39	48.45	74.00	-25.55	peak	HORIZONTAL
2	*	2483.500	2.66	36.39	39.05	54.00	-14.95	AVG	HORIZONTAL

Test Mode: 11N20

Channel 1

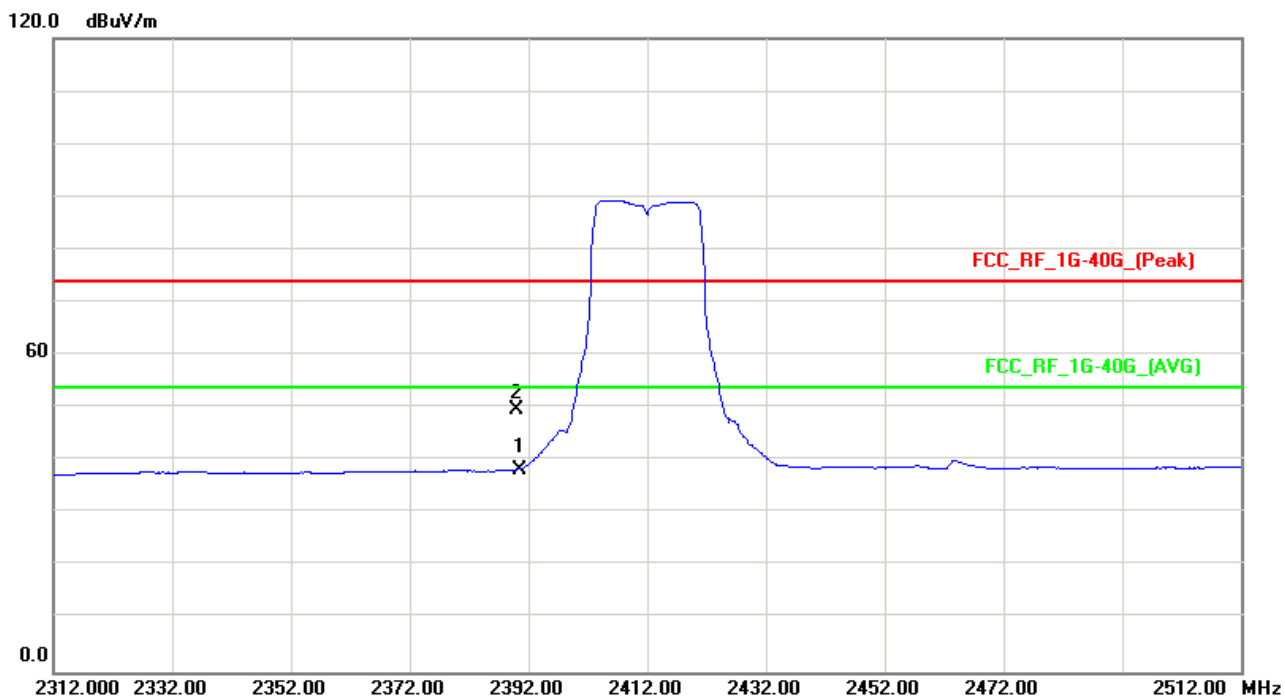
Vertical



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1	*	2390.000	2.29	35.88	38.17	54.00	-15.83	AVG	VERTICAL
2		2390.000	11.56	35.88	47.44	74.00	-26.56	peak	VERTICAL

Horizontal

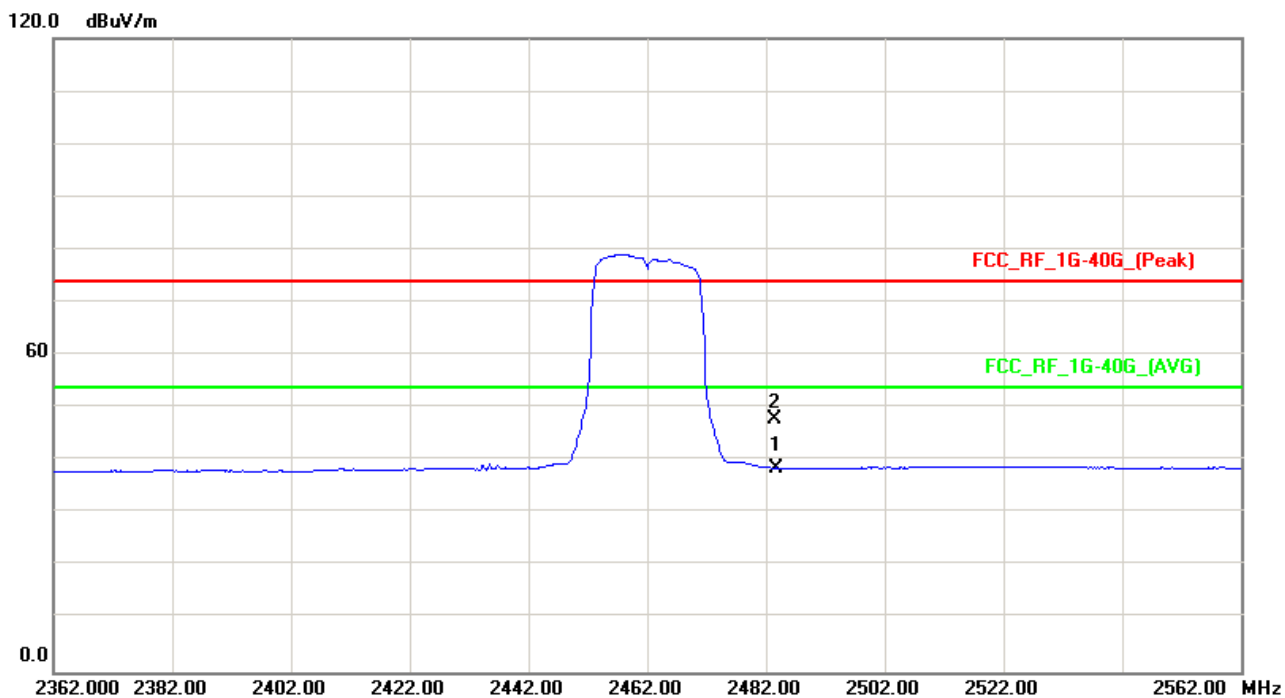


Note: The peak exceeds the limit line is carrier frequency.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1	*	2390.000	2.47	35.88	38.35	54.00	-15.65	AVG	HORIZONTAL
2		2390.000	13.92	35.88	49.80	74.00	-24.20	peak	HORIZONTAL

Channel 11

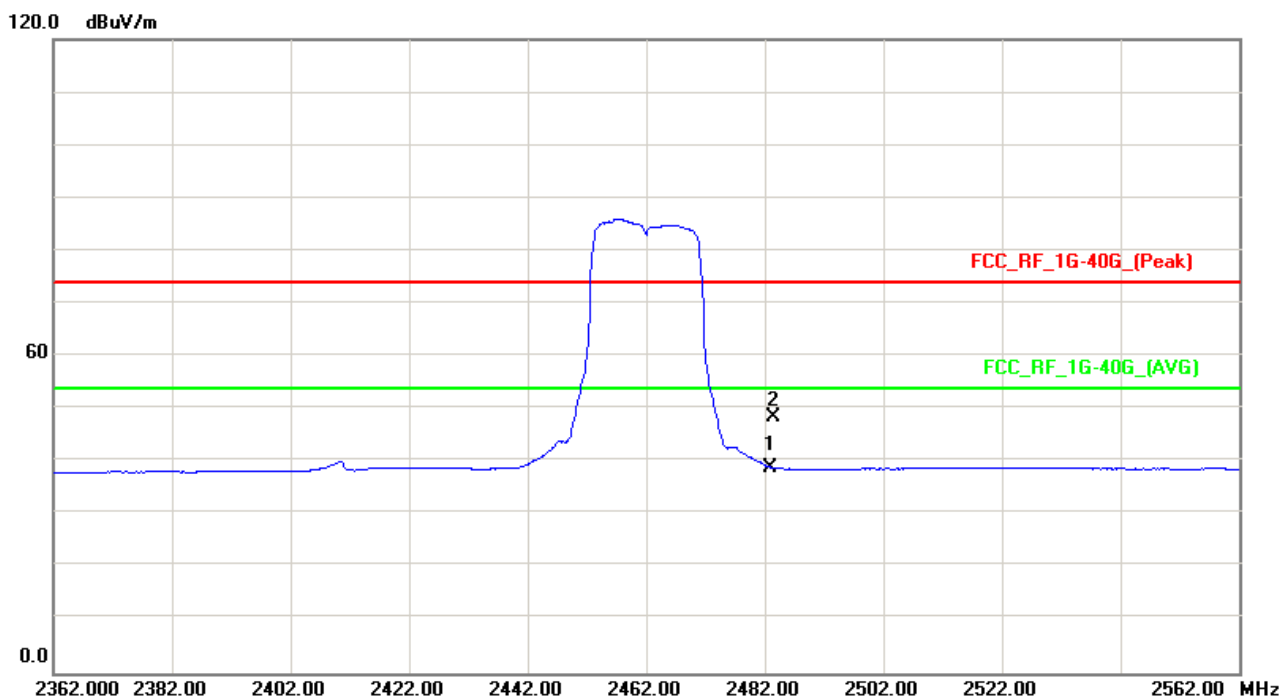
Vertical



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1	*	2483.500	2.31	36.39	38.70	54.00	-15.30	AVG	VERTICAL
2		2483.400	11.48	36.39	47.87	74.00	-26.13	peak	VERTICAL

Horizontal



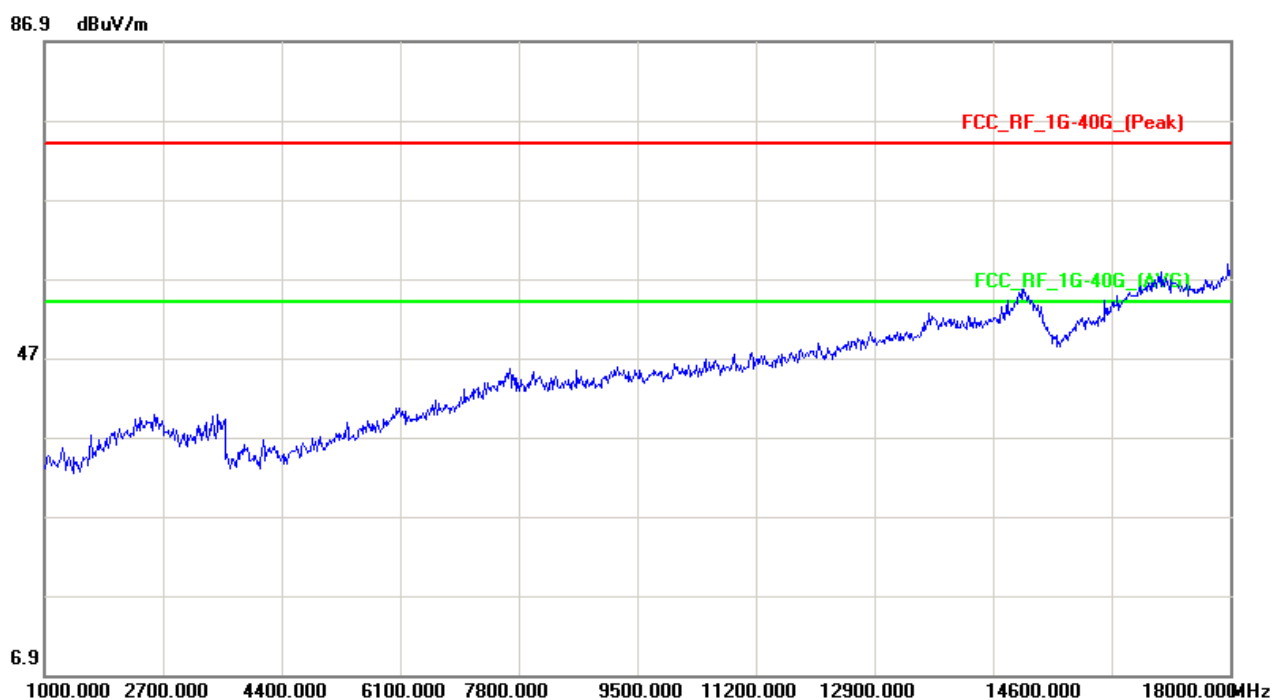
Note: The peak exceeds the limit line is carrier frequency.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Polarization
1	*	2483.500	2.48	36.39	38.87	54.00	-15.13	AVG	HORIZONTAL
2		2483.400	12.12	36.39	48.51	74.00	-25.49	peak	HORIZONTAL

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

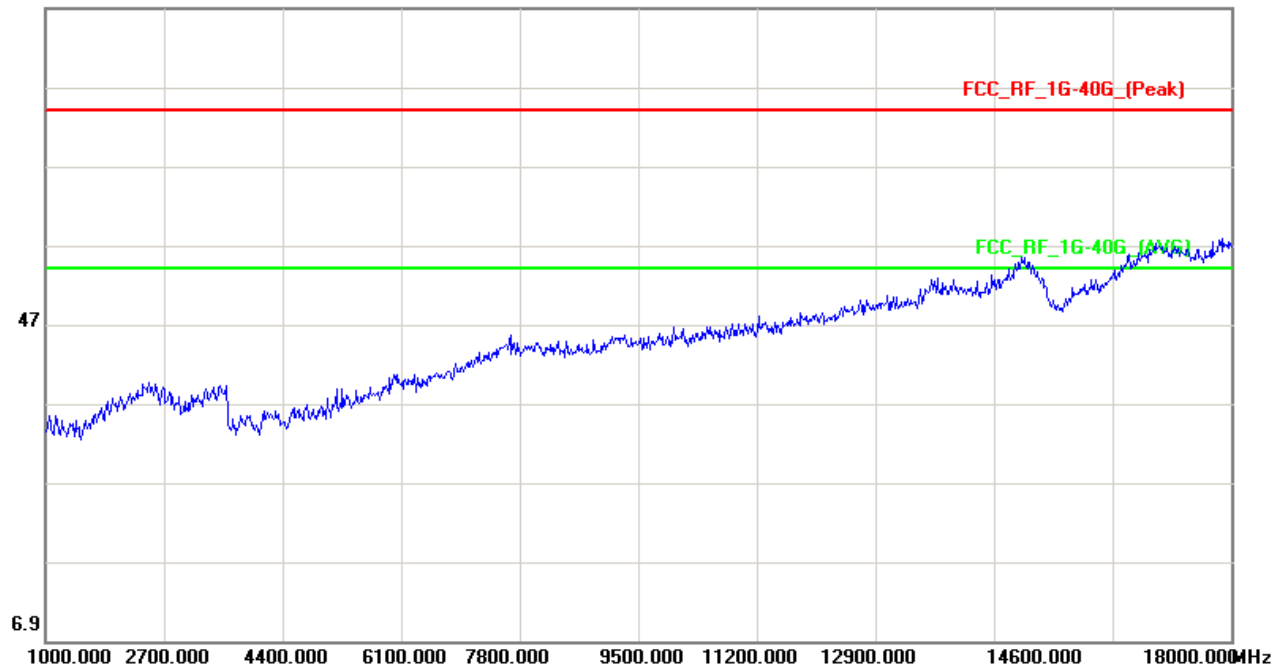
- Note 1: The test results and plot for testing range of “1 GHz to 18 GHz” showed as below is **the WORST case for all Test Modes and Channels**. This range will not be presented for each Test Mode and each Channel.
- Note 2: The testing range of “1 GHz to 18 GHz” is for checking radiated emissions located 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 μ V/m) and Average Limit (54 dB μ V/m).

Vertical



Horizontal

86.9 dBuV/m

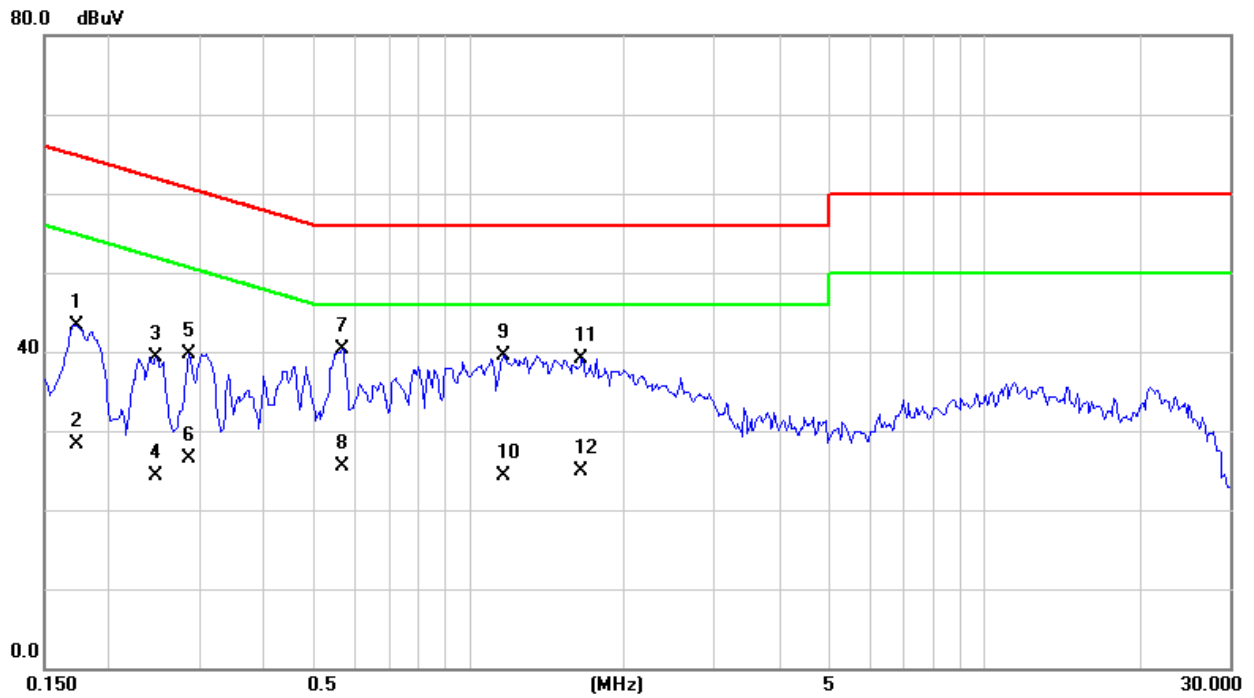




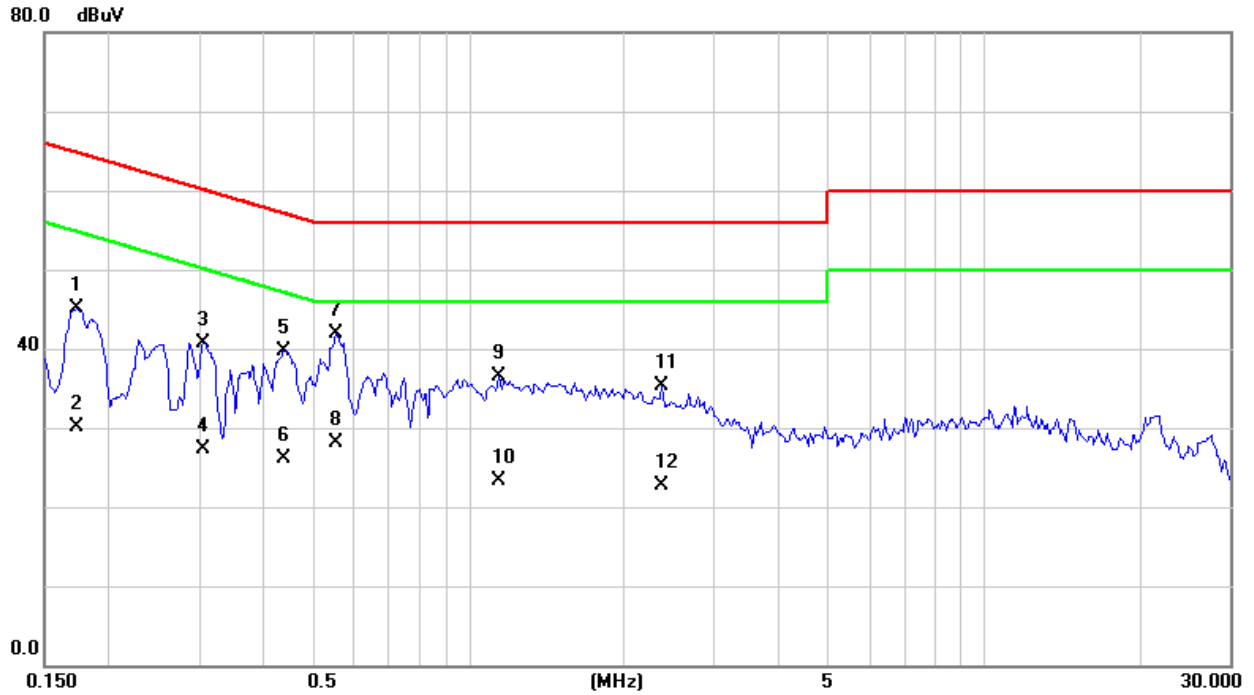
Appendix I: Conducted Emission at Power Port

Note: RBW = 9 kHz, VBW = 30 kHz

Channel 6



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Line
1	0.1734	33.53	9.69	43.22	64.80	-21.58	QP	L1
2	0.1734	18.60	9.69	28.29	54.80	-26.51	AVG	L1
3	0.2477	29.62	9.73	39.35	61.83	-22.48	QP	L1
4	0.2477	14.50	9.73	24.23	51.83	-27.60	AVG	L1
5	0.2867	30.01	9.75	39.76	60.62	-20.86	QP	L1
6	0.2867	16.70	9.75	26.45	50.62	-24.17	AVG	L1
7	0.5680	30.50	9.84	40.34	56.00	-15.66	QP	L1
8	0.5680	15.60	9.84	25.44	46.00	-20.56	AVG	L1
9	1.1694	29.49	10.01	39.50	56.00	-16.50	QP	L1
10	1.1694	14.30	10.01	24.31	46.00	-21.69	AVG	L1
11	1.6617	29.24	9.90	39.14	56.00	-16.86	QP	L1
12	1.6617	15.10	9.90	25.00	46.00	-21.00	AVG	L1



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Line
1	0.1734	35.44	9.60	45.04	64.80	-19.76	QP	N
2	0.1734	20.50	9.60	30.10	54.80	-24.70	AVG	N
3	0.3063	31.10	9.63	40.73	60.07	-19.34	QP	N
4	0.3063	17.60	9.63	27.23	50.07	-22.84	AVG	N
5	0.4391	30.09	9.64	39.73	57.08	-17.35	QP	N
6	0.4391	16.50	9.64	26.14	47.08	-20.94	AVG	N
7	0.5523	32.23	9.67	41.90	56.00	-14.10	QP	N
8	0.5523	18.40	9.67	28.07	46.00	-17.93	AVG	N
9	1.1422	26.66	9.80	36.46	56.00	-19.54	QP	N
10	1.1422	13.60	9.80	23.40	46.00	-22.60	AVG	N
11	2.3687	25.35	9.88	35.23	56.00	-20.77	QP	N
12	2.3687	12.80	9.88	22.68	46.00	-23.32	AVG	N

END