

## Appendix C

### RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Mishiko Collar

Trade Mark: MISHIKO

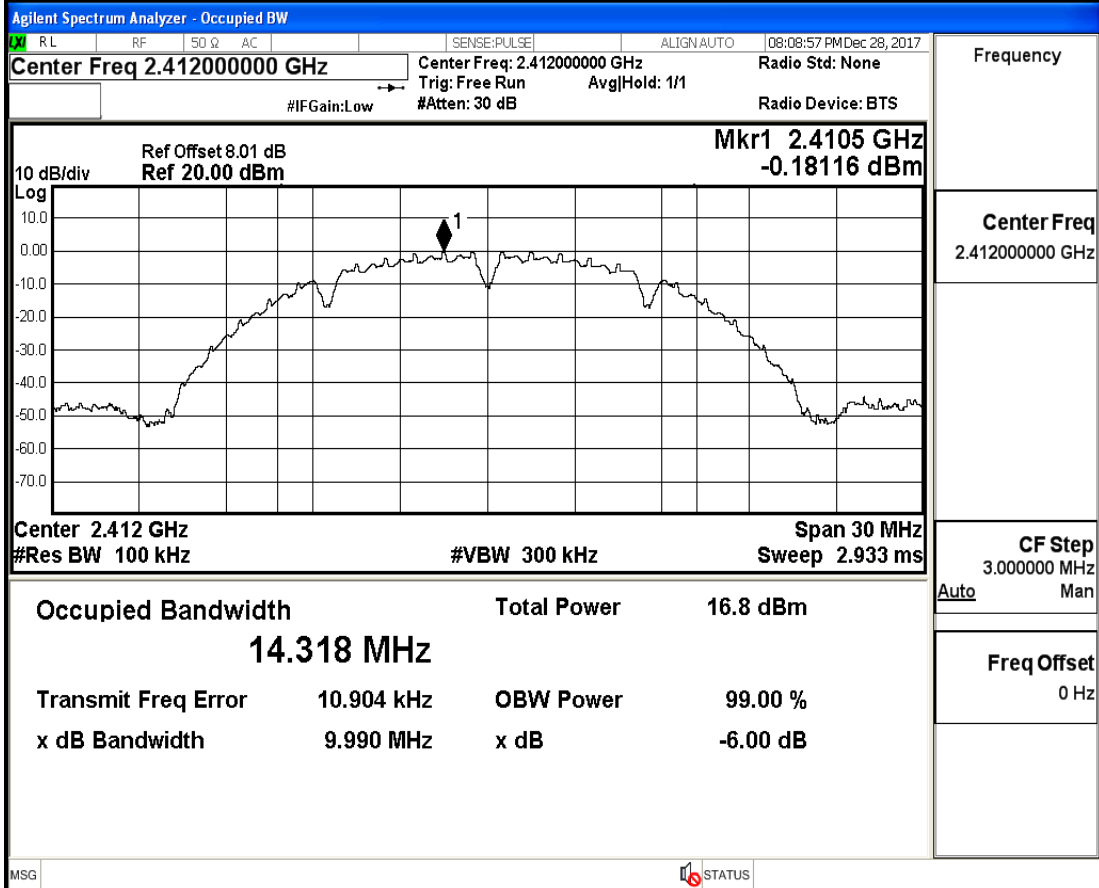
Test Model: M103

FCC ID: 2AID9M103

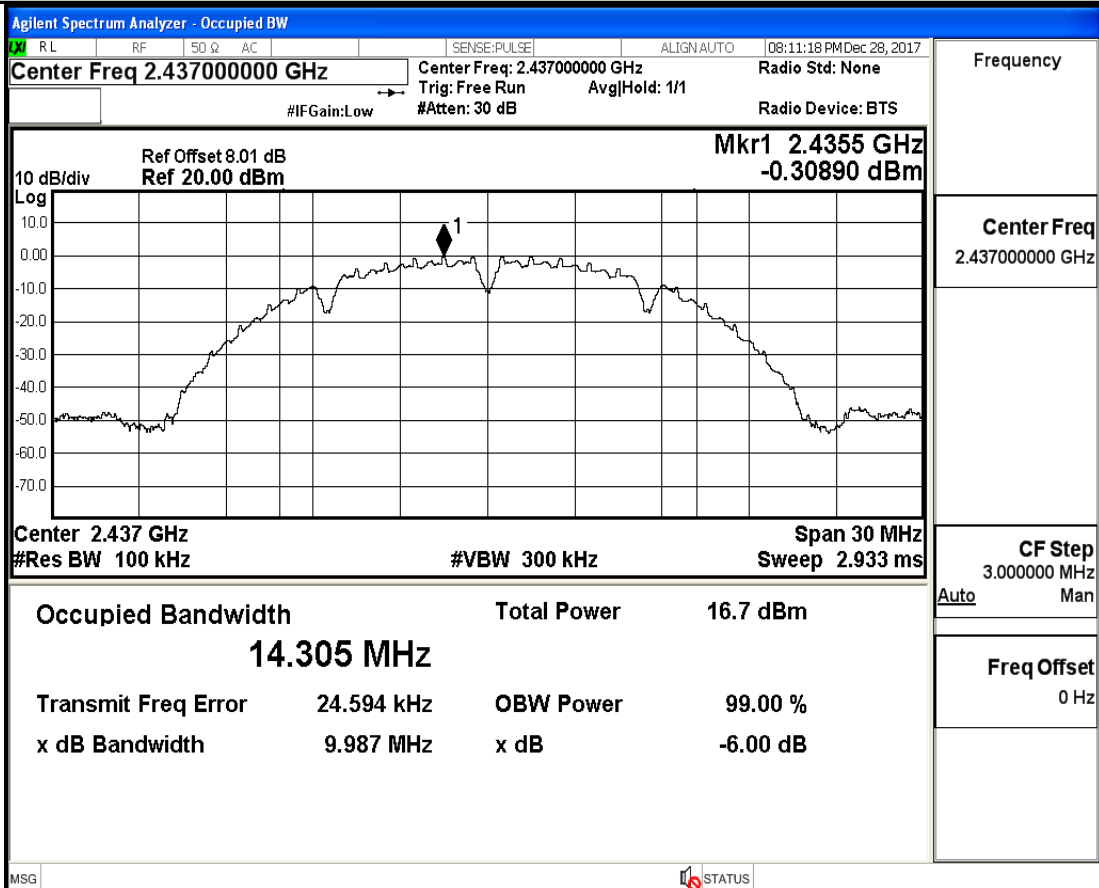
#### C.1 6dB Bandwidth

Test Mode	Test Channel	Ant	EBW[MHz]	Limit	Verdict
11B	2412	Ant1	9.990	0.5	PASS
11B	2437	Ant1	9.987	0.5	PASS
11B	2462	Ant1	9.986	0.5	PASS
11G	2412	Ant1	16.60	0.5	PASS
11G	2437	Ant1	16.62	0.5	PASS
11G	2462	Ant1	16.62	0.5	PASS
11N20SISO	2412	Ant1	17.83	0.5	PASS
11N20SISO	2437	Ant1	17.81	0.5	PASS
11N20SISO	2462	Ant1	17.82	0.5	PASS
11N40SISO	2422	Ant1	36.49	0.5	PASS
11N40SISO	2437	Ant1	36.49	0.5	PASS
11N40SISO	2452	Ant1	36.49	0.5	PASS

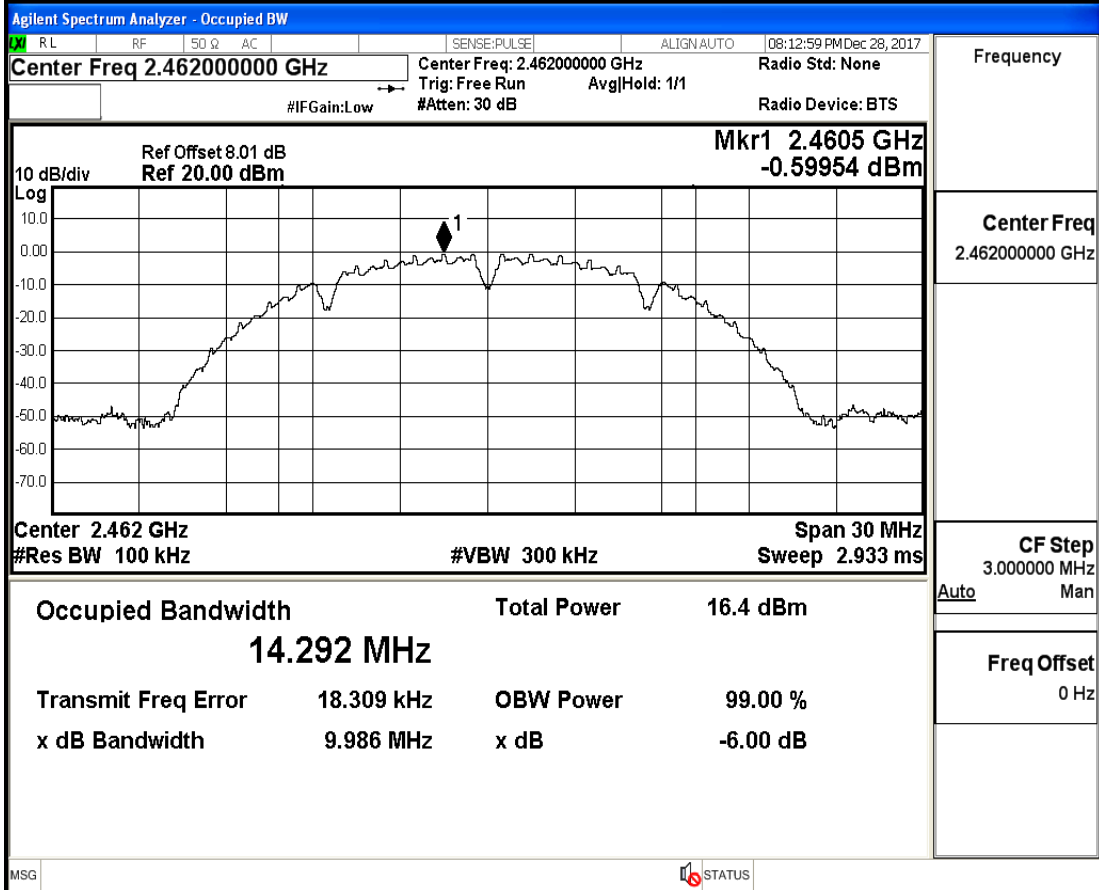
## 6dB Bandwidth\_11B\_2412\_Ant1



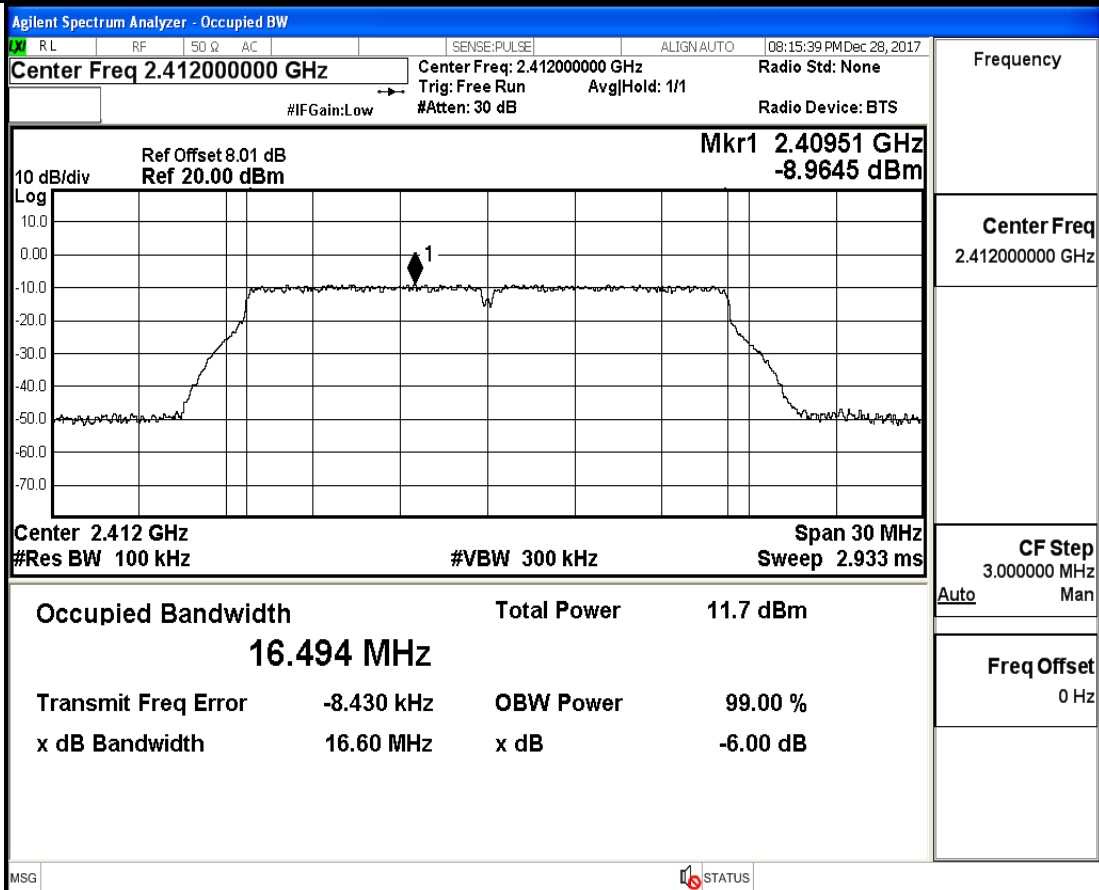
## 6dB Bandwidth\_11B\_2437\_Ant1



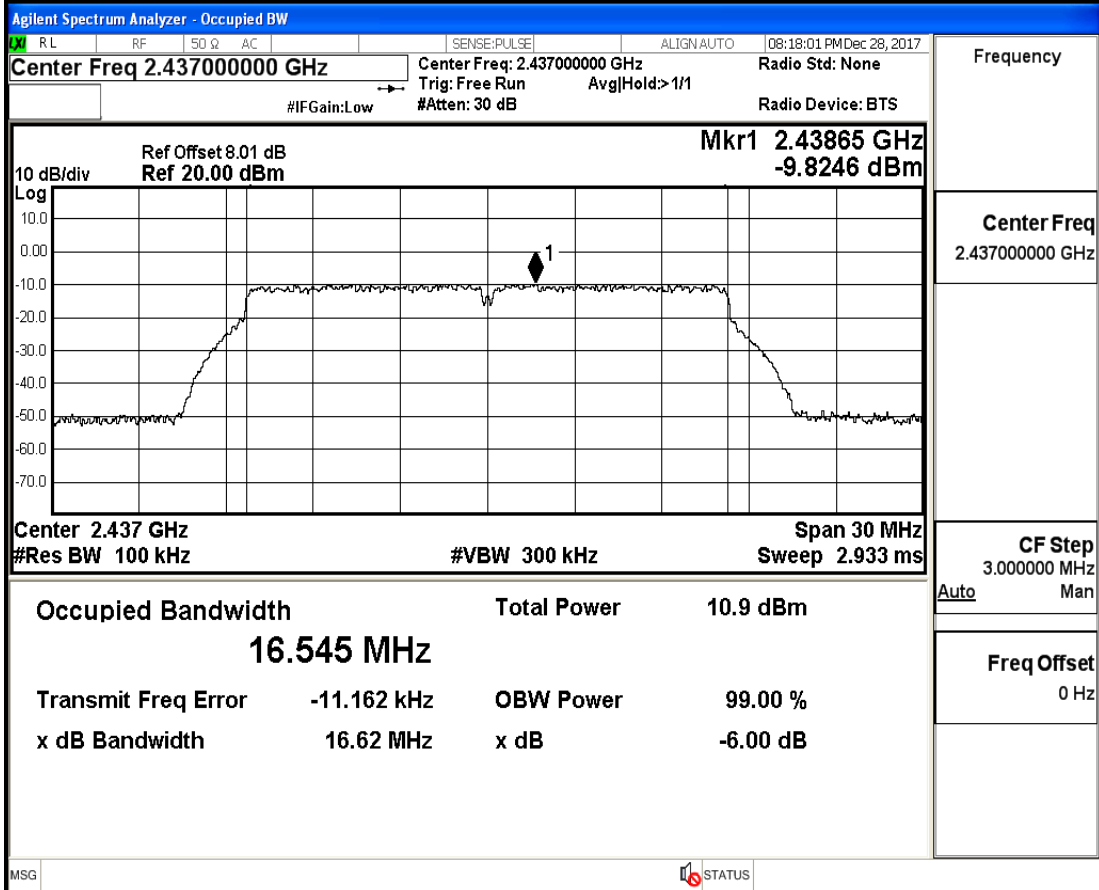
## 6dB Bandwidth\_11B\_2462\_Ant1



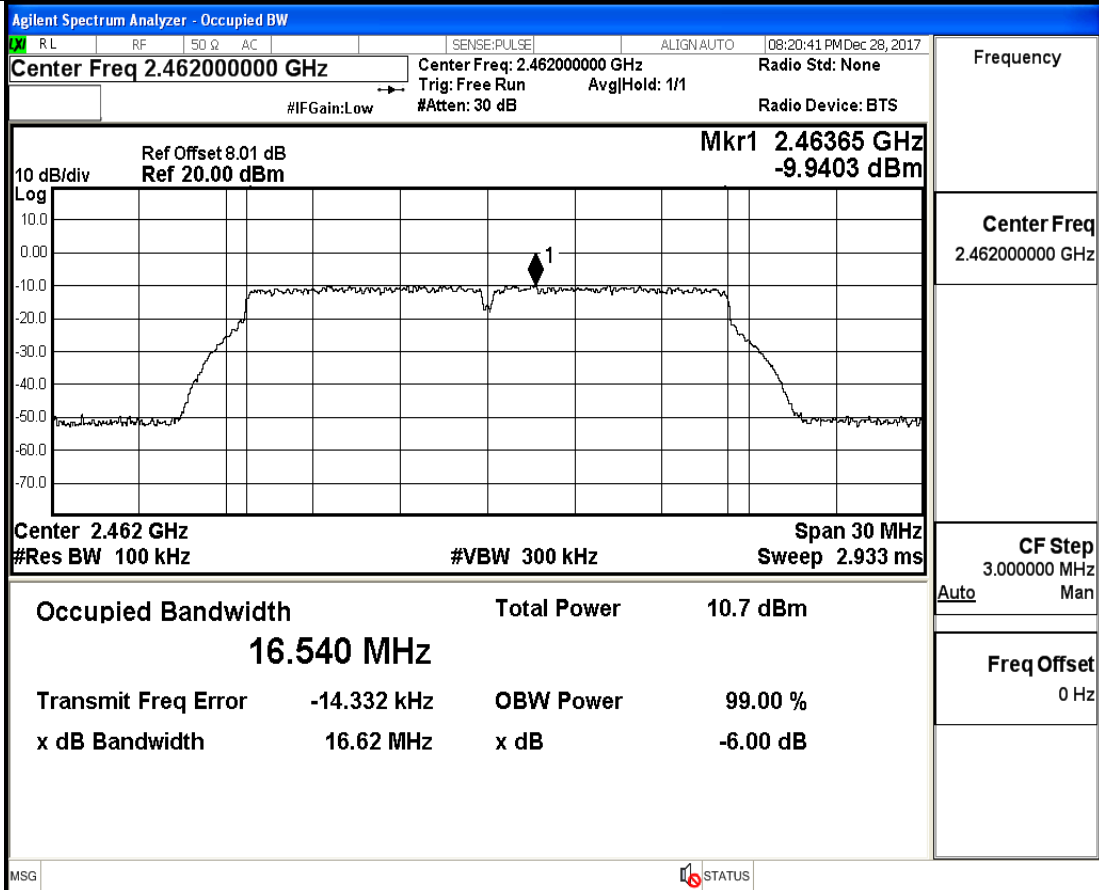
## 6dB Bandwidth\_11G\_2412\_Ant1



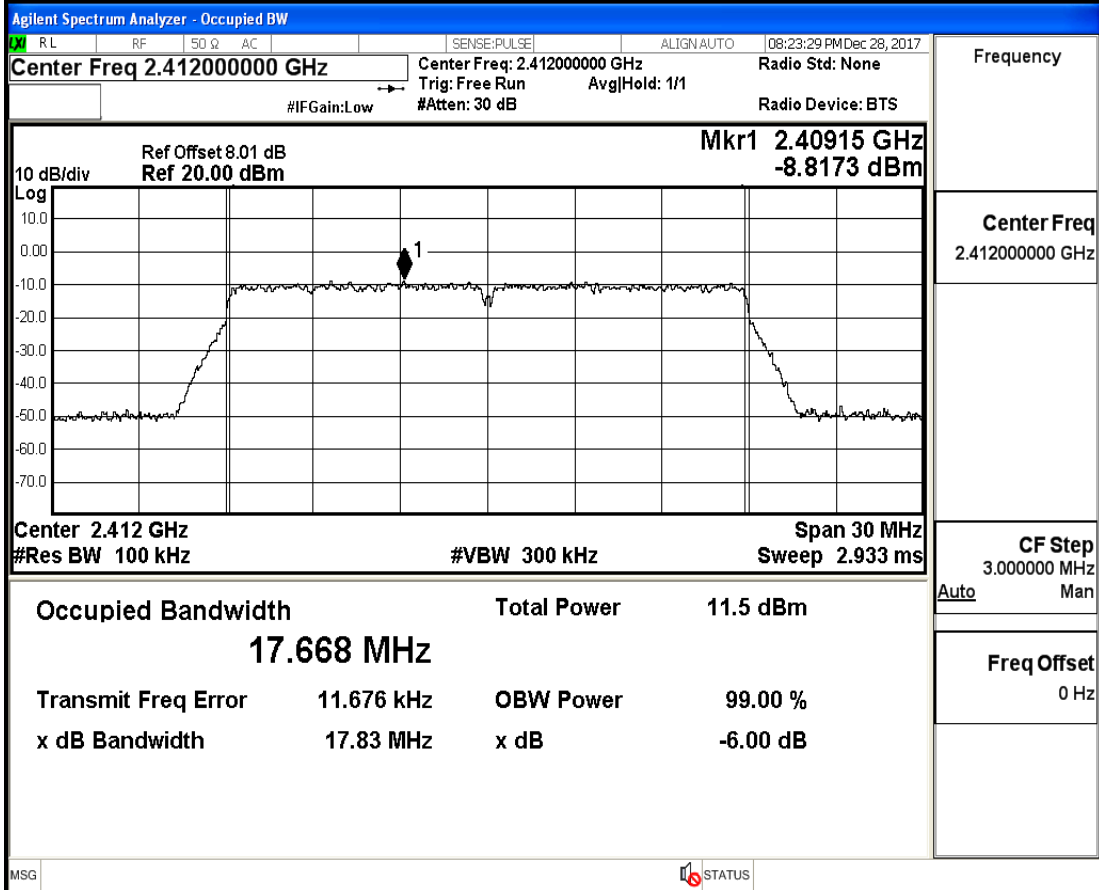
## 6dB Bandwidth\_11G\_2437\_Ant1



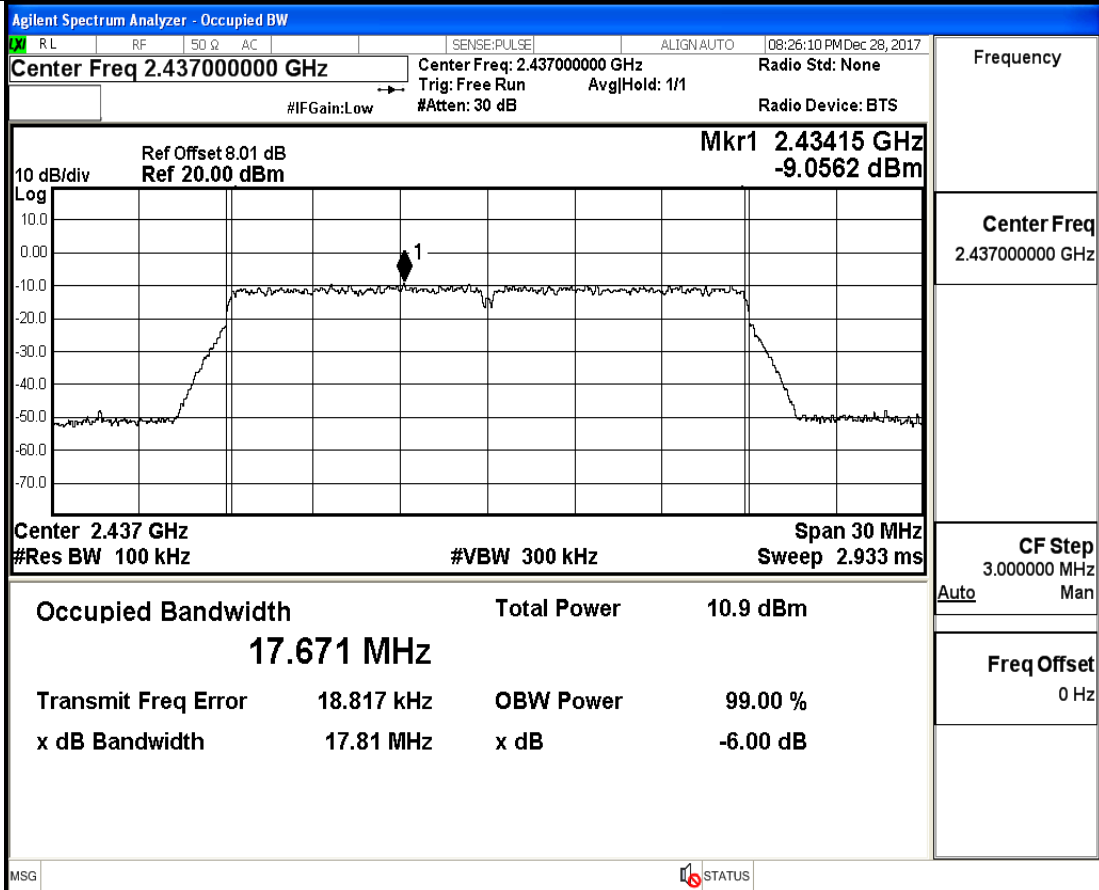
## 6dB Bandwidth\_11G\_2462\_Ant1



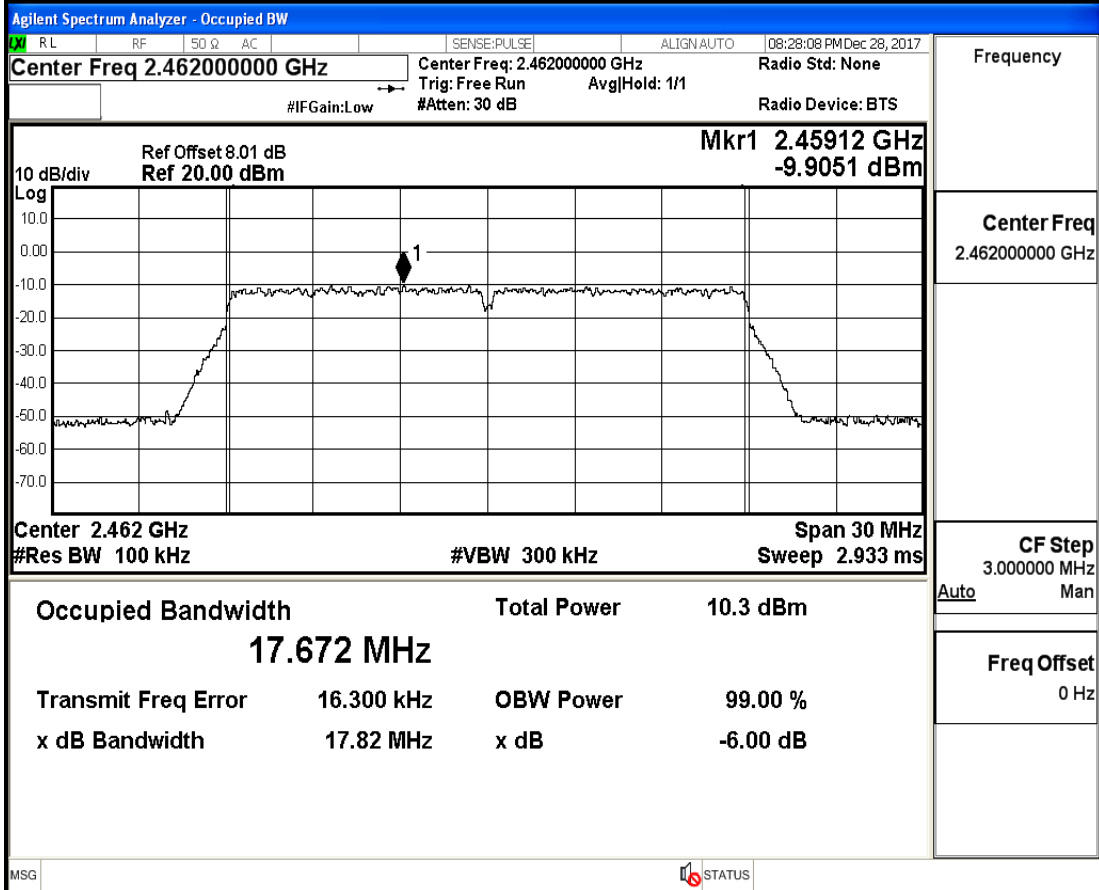
## 6dB Bandwidth\_11N20SISO\_2412\_Ant1



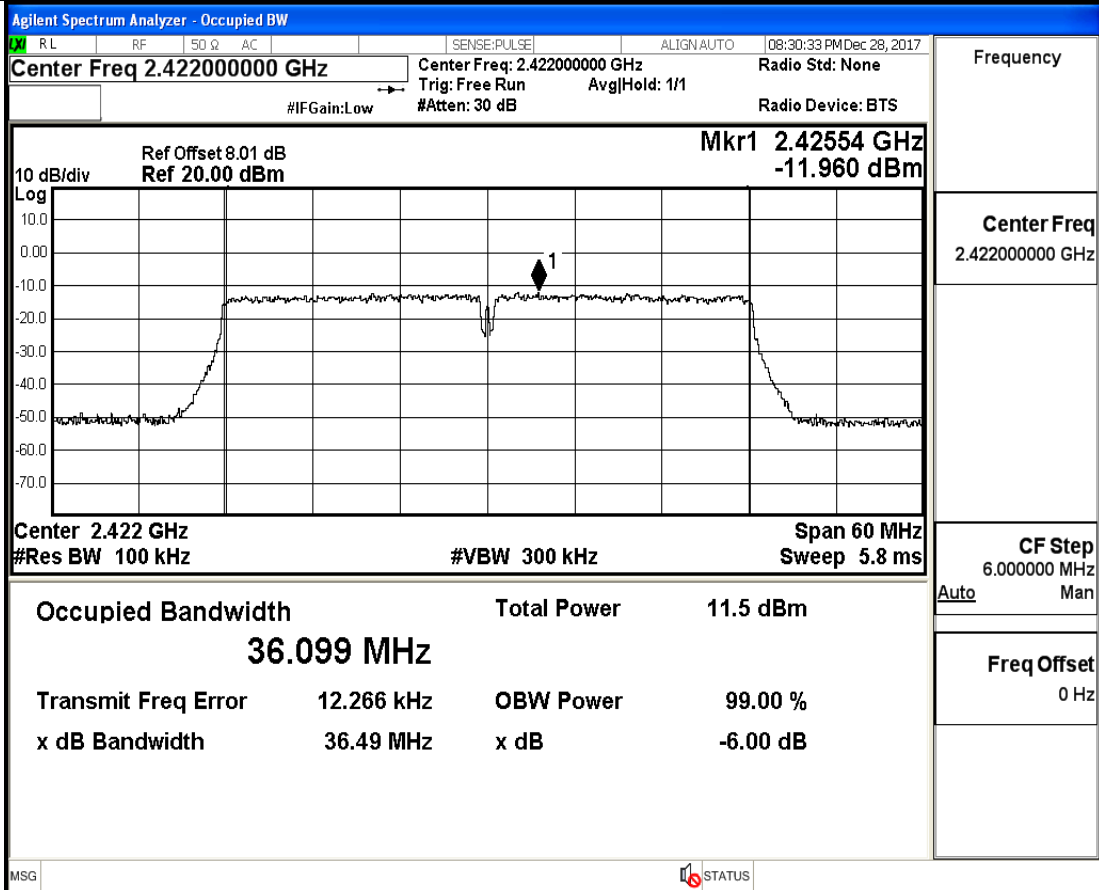
## 6dB Bandwidth\_11N20SISO\_2437\_Ant1



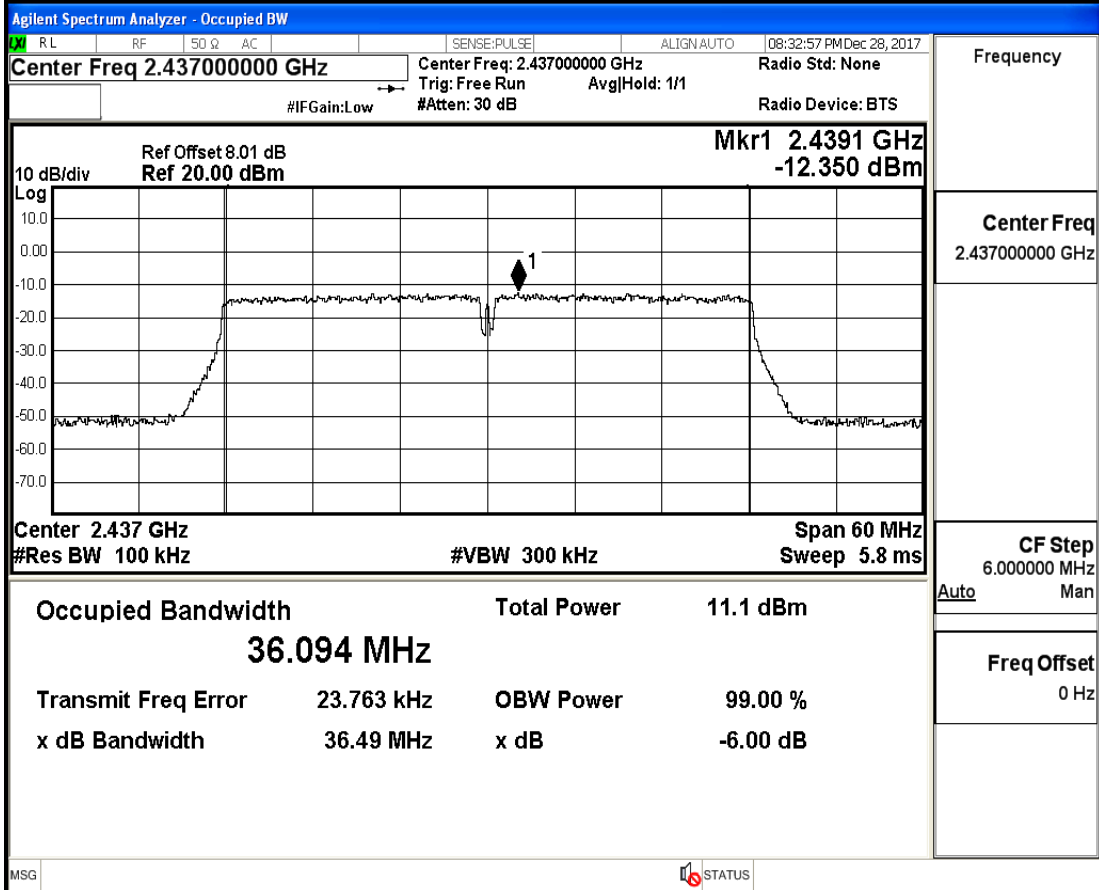
## 6dB Bandwidth\_11N20SISO\_2462\_Ant1



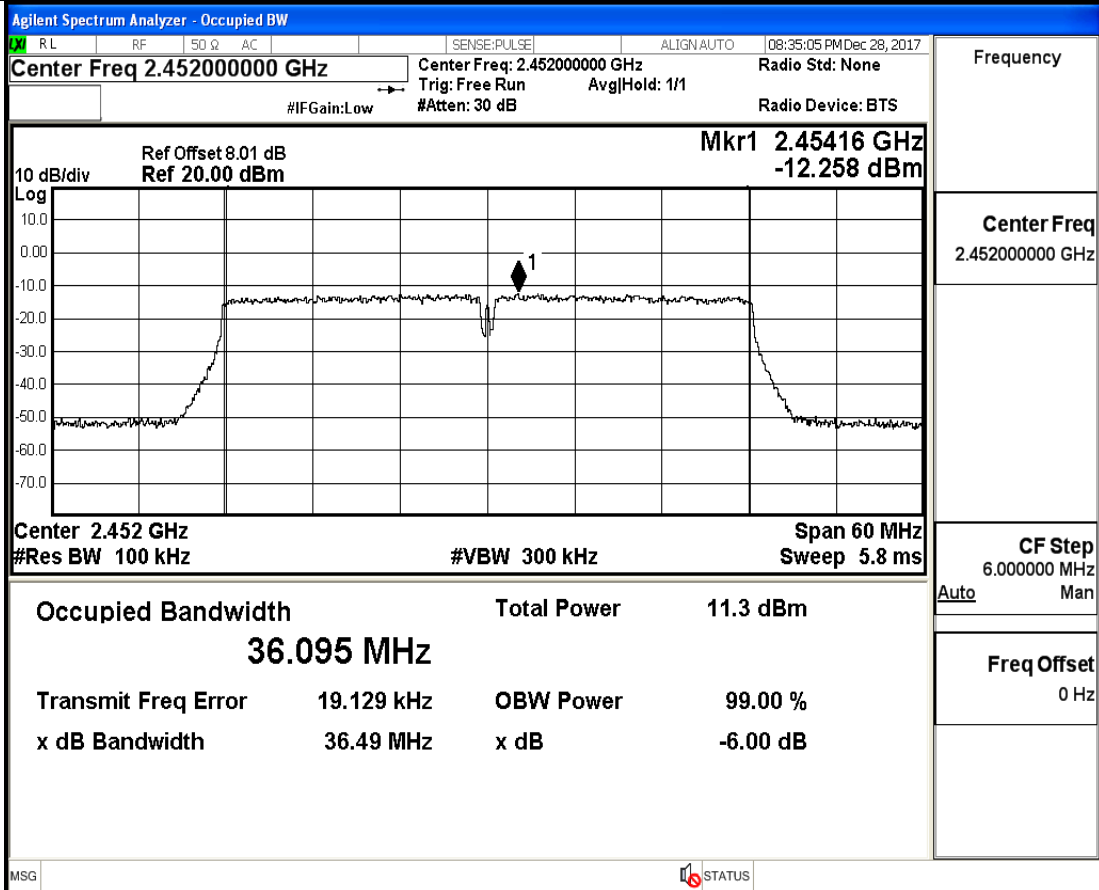
## 6dB Bandwidth\_11N40SISO\_2422\_Ant1



## 6dB Bandwidth\_11N40SISO\_2437\_Ant1



## 6dB Bandwidth\_11N40SISO\_2452\_Ant1



## C.2 Maximum peak conducted output power

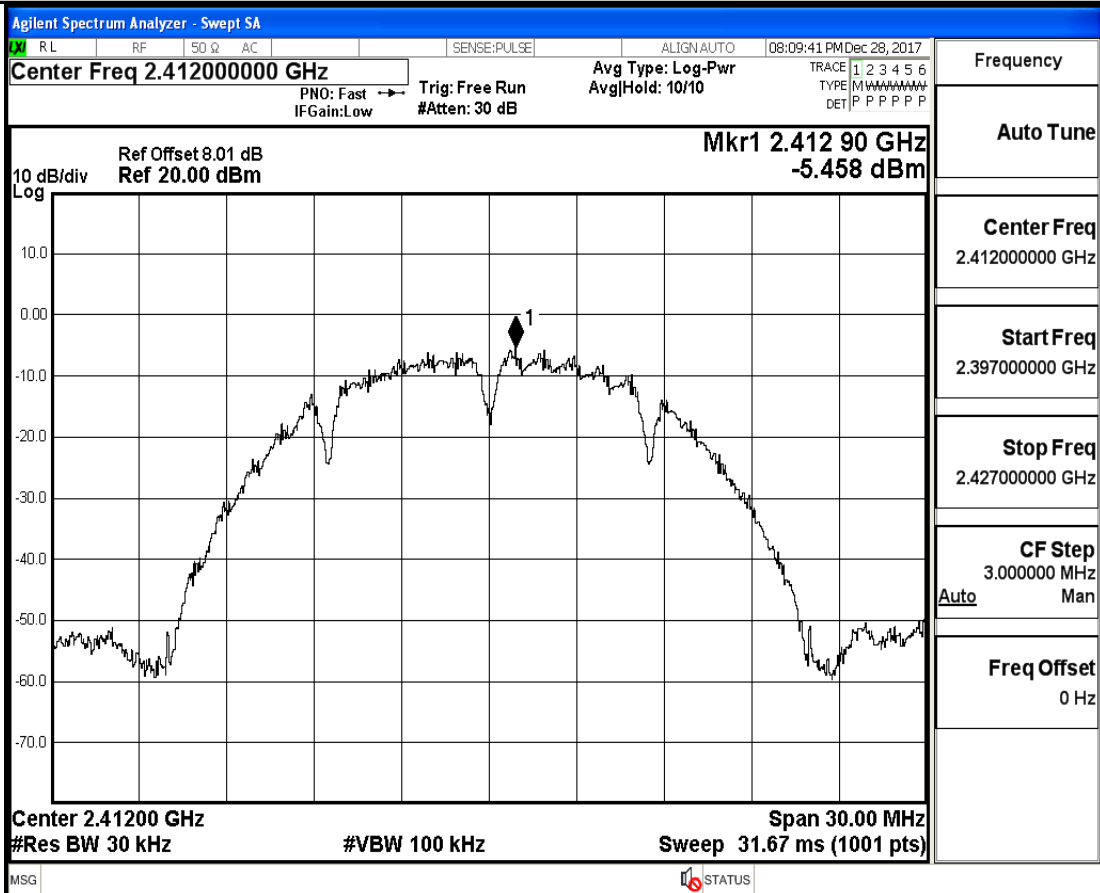
Test Mode	Test Channel	Ant	Peak Power[dBm]	Limit[dBm]	Verdict
11B	2412	Ant1	14.81	30	PASS
11B	2437	Ant1	14.73	30	PASS
11B	2462	Ant1	14.42	30	PASS
11G	2412	Ant1	16.10	30	PASS
11G	2437	Ant1	16.33	30	PASS
11G	2462	Ant1	16.03	30	PASS
11N20SISO	2412	Ant1	17.03	30	PASS
11N20SISO	2437	Ant1	16.46	30	PASS
11N20SISO	2462	Ant1	16.87	30	PASS
11N40SISO	2422	Ant1	18.91	30	PASS
11N40SISO	2437	Ant1	18.53	30	PASS
11N40SISO	2452	Ant1	18.67	30	PASS



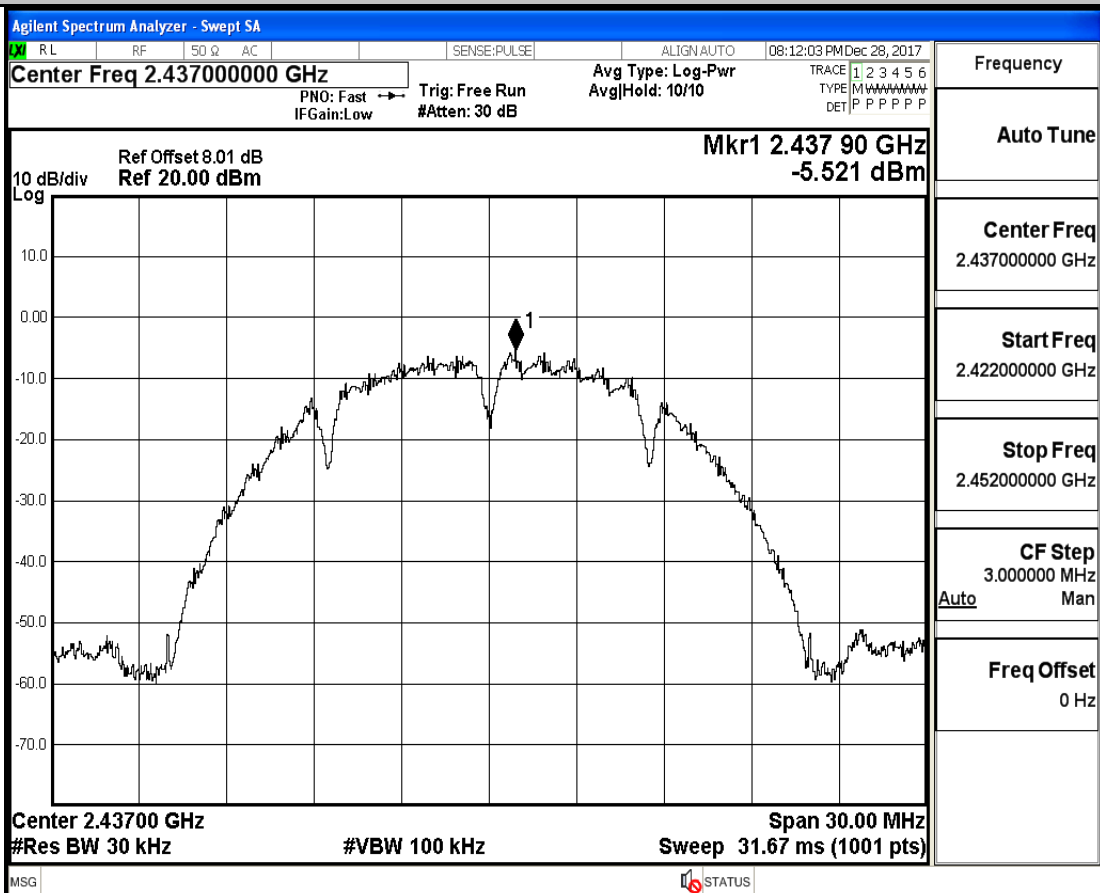
### C.3 Maximum Peak power spectral density

Test Mode	Test Channel	Ant	PSD[dBm/30KHz]	Limit[dBm/3KHz]	Verdict
11B	2412	Ant1	-5.458	8.00	PASS
11B	2437	Ant1	-5.521	8.00	PASS
11B	2462	Ant1	-5.861	8.00	PASS
11G	2412	Ant1	-11.615	8.00	PASS
11G	2437	Ant1	-12.441	8.00	PASS
11G	2462	Ant1	-12.647	8.00	PASS
11N20SISO	2412	Ant1	-11.377	8.00	PASS
11N20SISO	2437	Ant1	-12.154	8.00	PASS
11N20SISO	2462	Ant1	-12.794	8.00	PASS
11N40SISO	2422	Ant1	-15.226	8.00	PASS
11N40SISO	2437	Ant1	-15.684	8.00	PASS
11N40SISO	2452	Ant1	-15.379	8.00	PASS

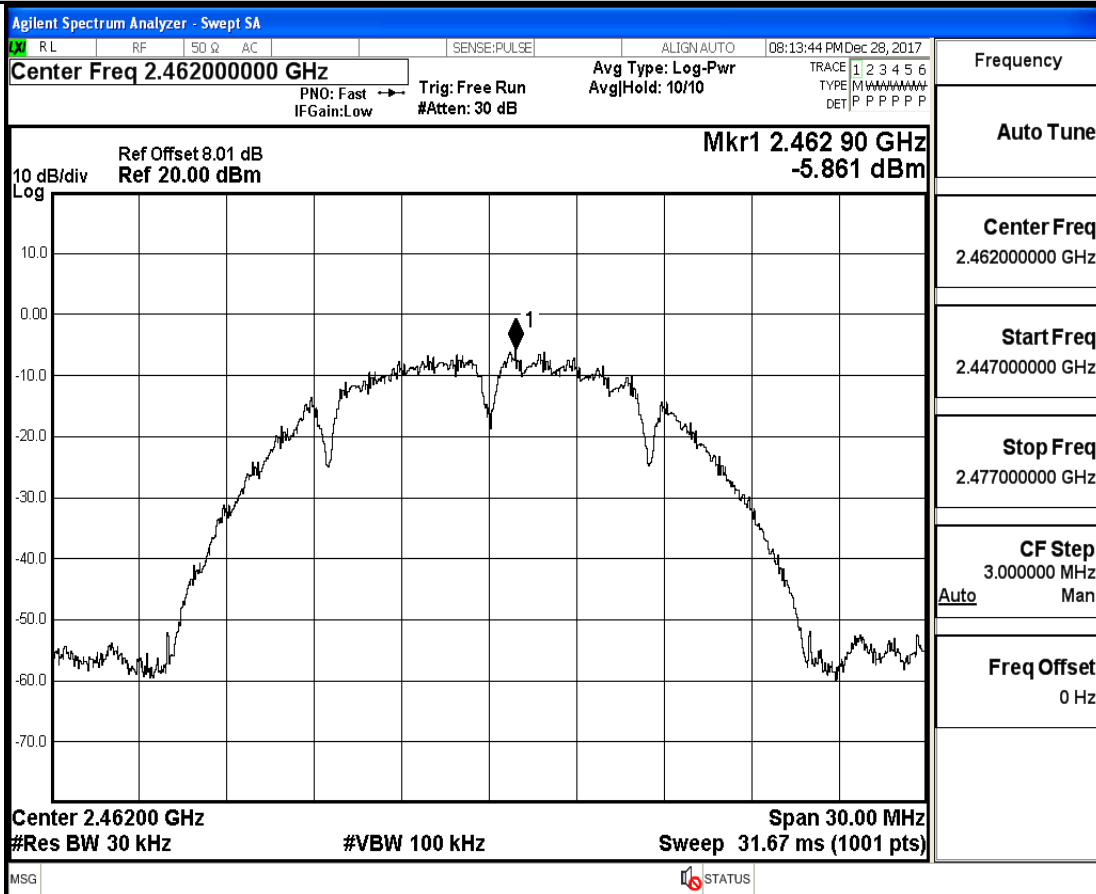
## Maximum Peak power spectral density\_11B\_2412\_Ant1



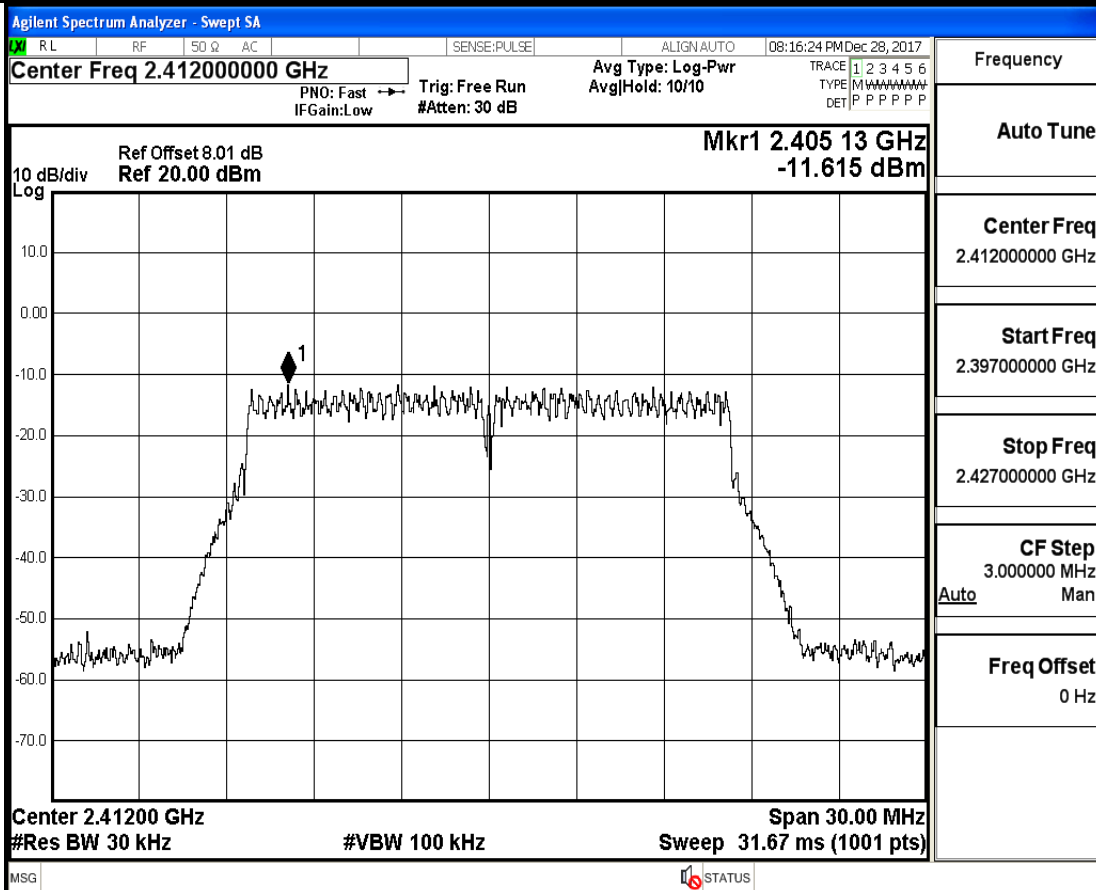
## Maximum Peak power spectral density\_11B\_2437\_Ant1



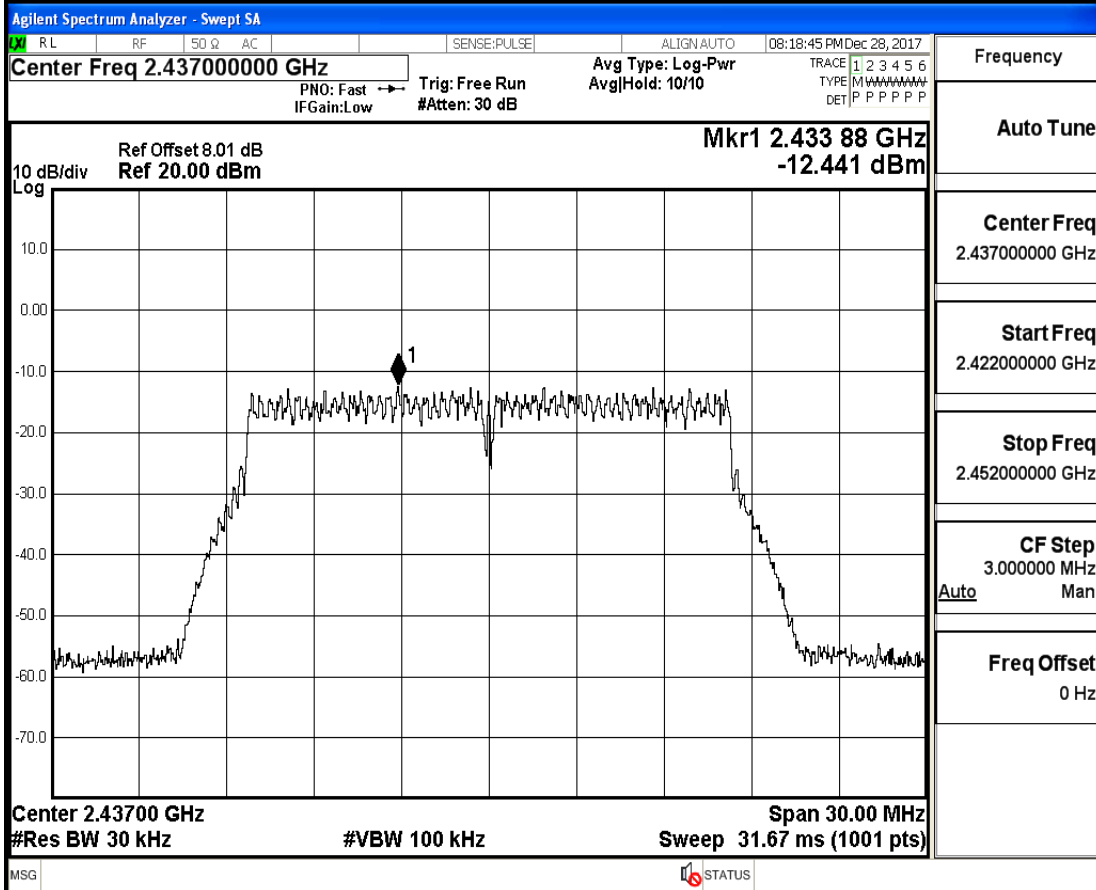
## Maximum Peak power spectral density\_11B\_2462\_Ant1



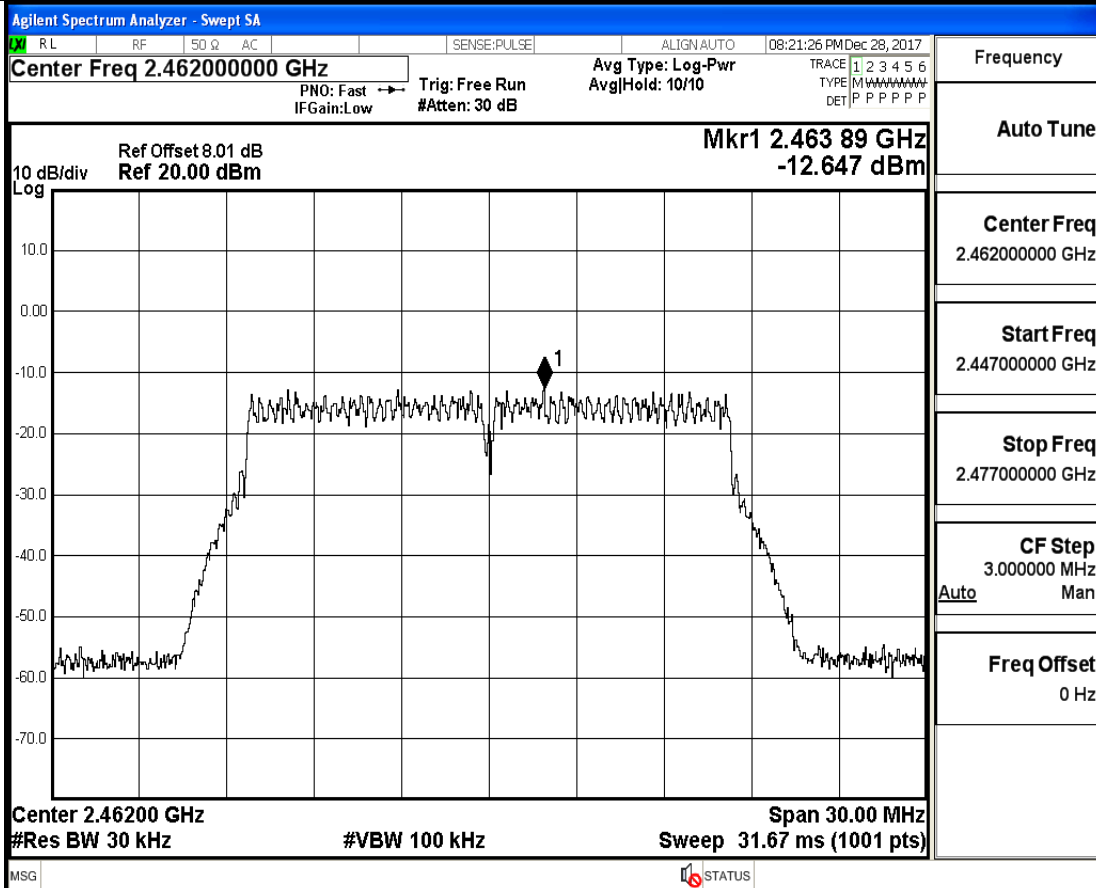
## Maximum Peak power spectral density\_11G\_2412\_Ant1



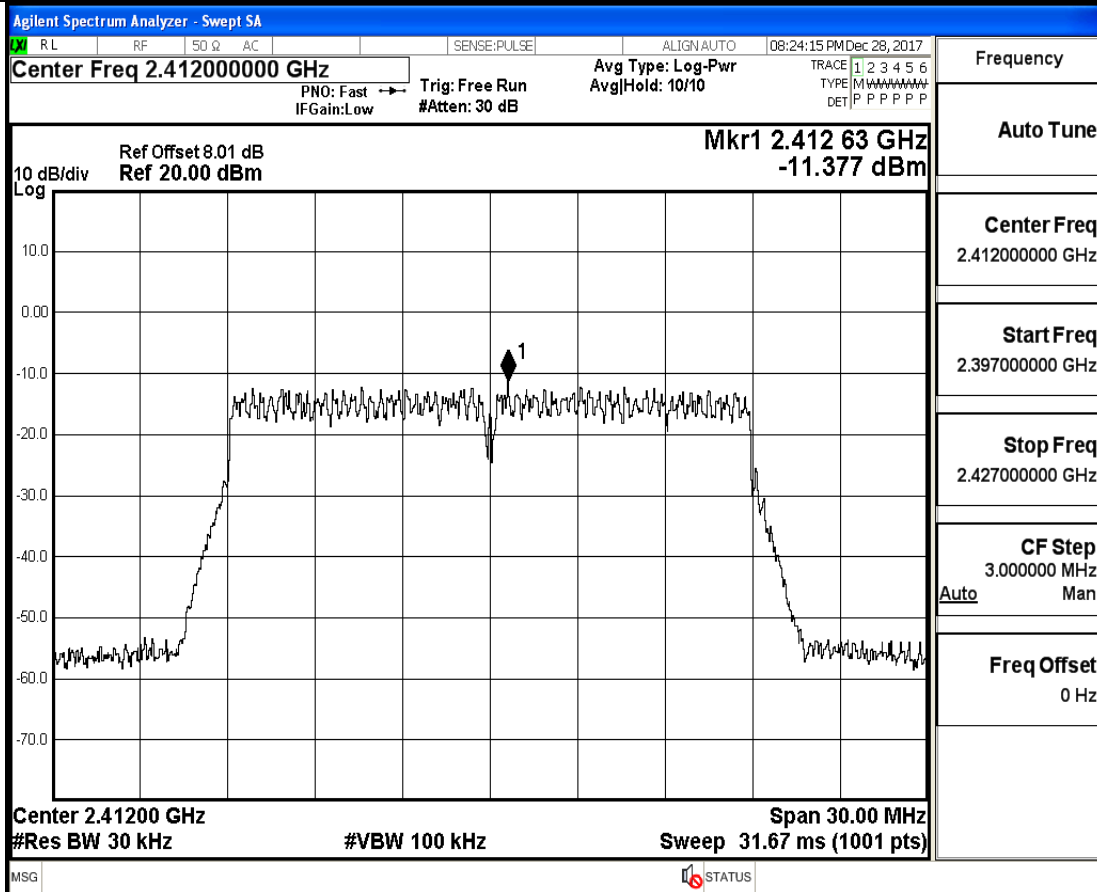
## Maximum Peak power spectral density\_11G\_2437\_Ant1



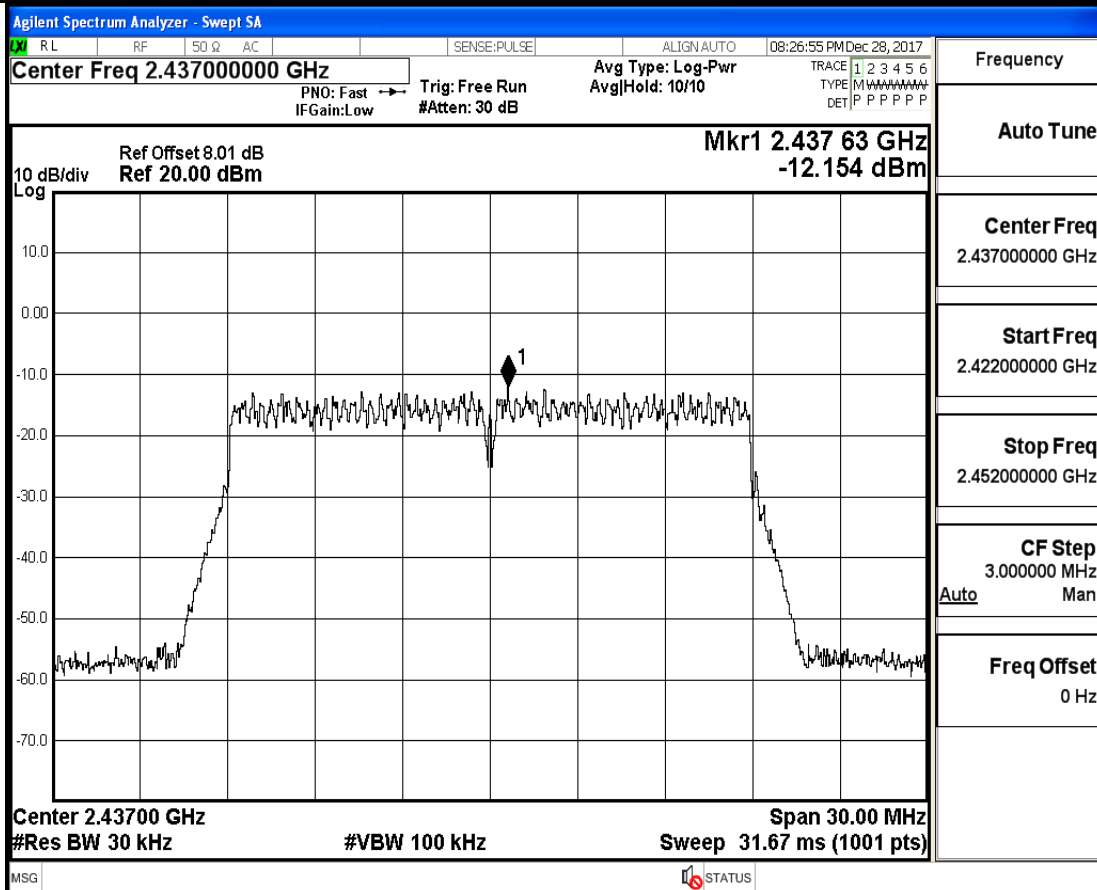
## Maximum Peak power spectral density\_11G\_2462\_Ant1



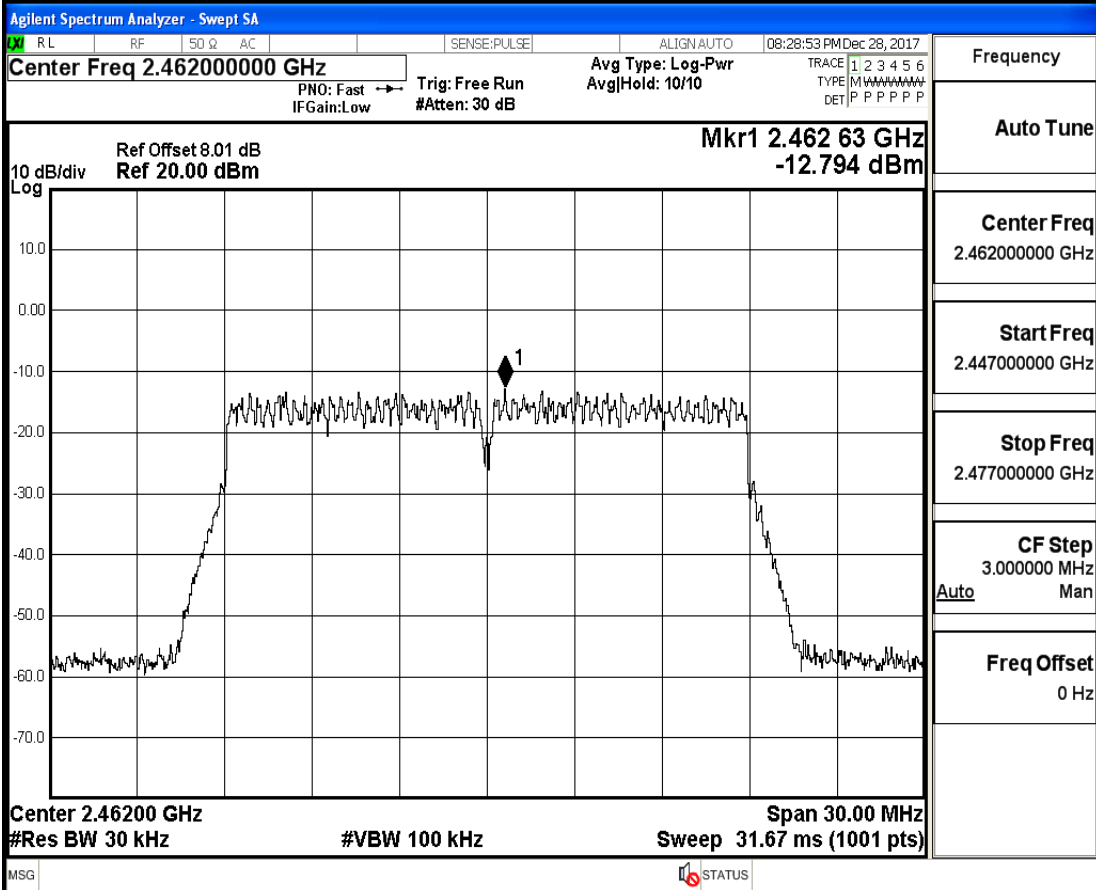
## Maximum Peak power spectral density\_11N20SISO\_2412\_Ant1



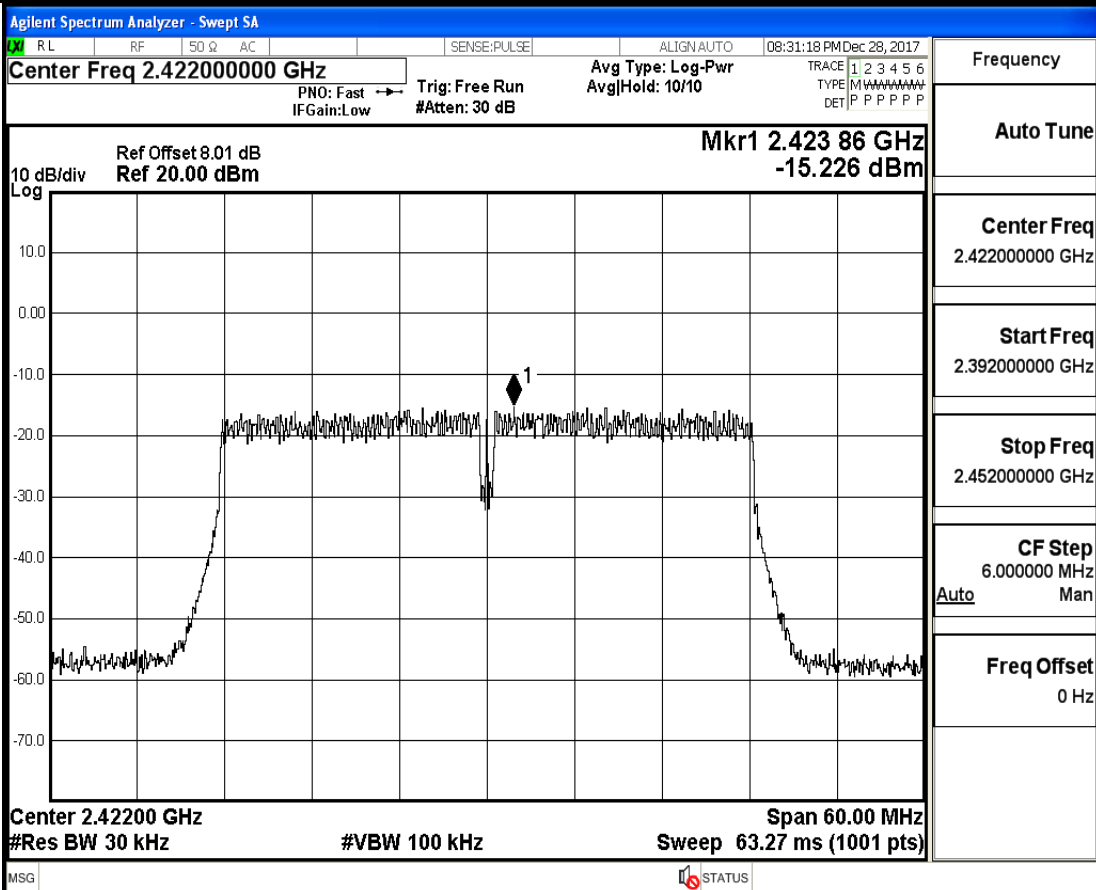
## Maximum Peak power spectral density\_11N20SISO\_2437\_Ant1



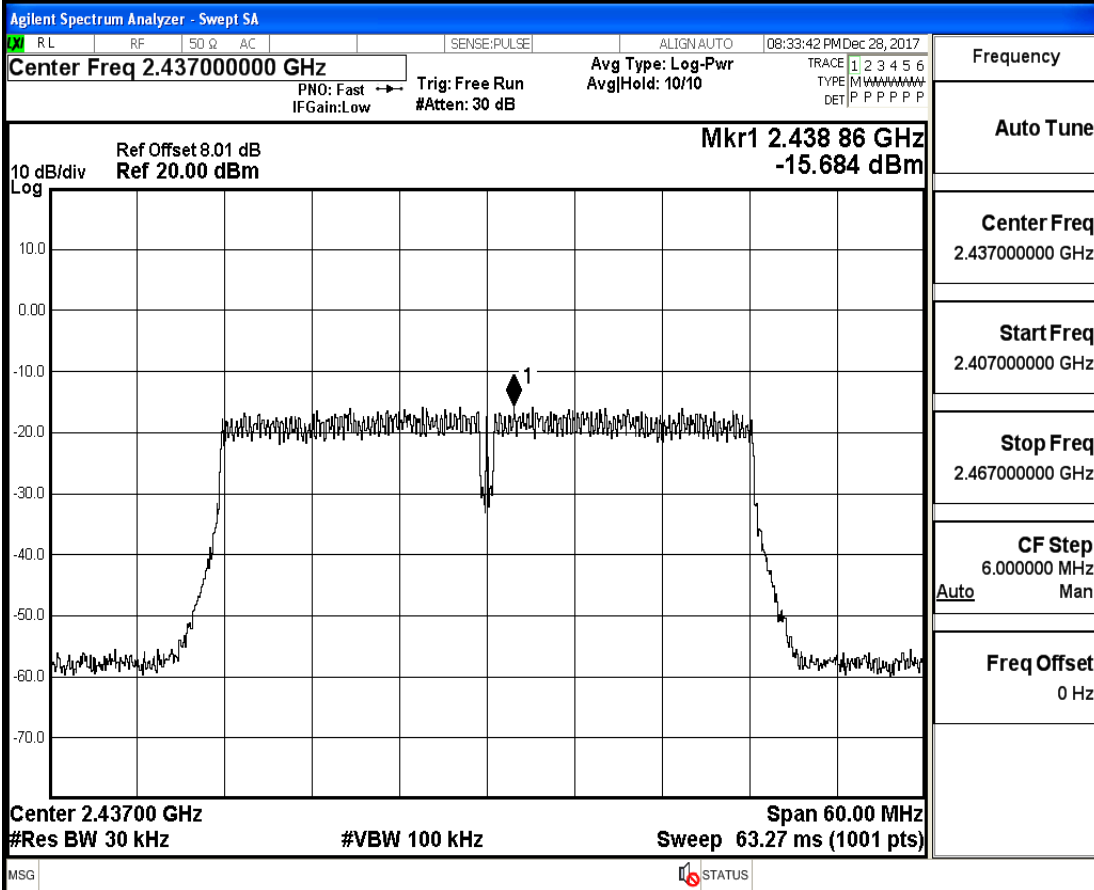
# Maximum Peak power spectral density\_11N20SISO\_2462\_Ant1



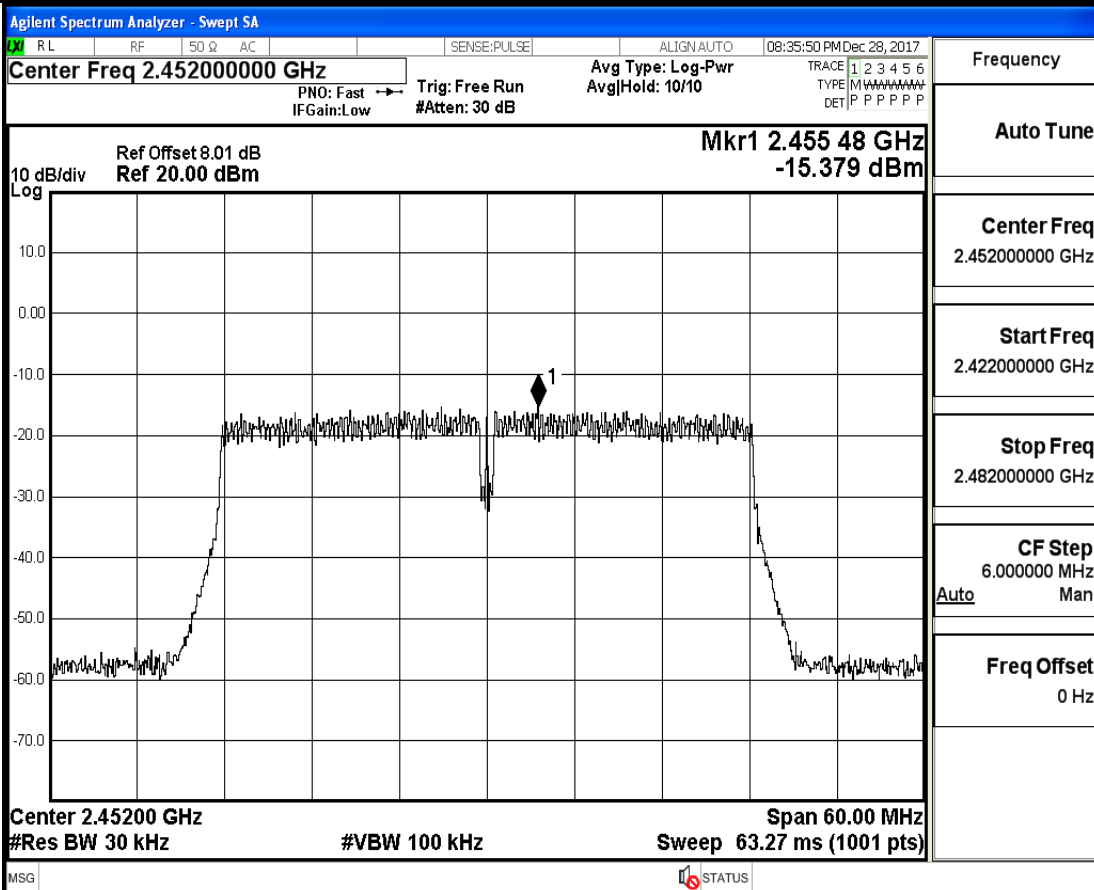
# Maximum Peak power spectral density\_11N40SISO\_2422\_Ant1



# Maximum Peak power spectral density\_11N40ISO\_2437\_Ant1



# Maximum Peak power spectral density\_11N40ISO\_2452\_Ant1

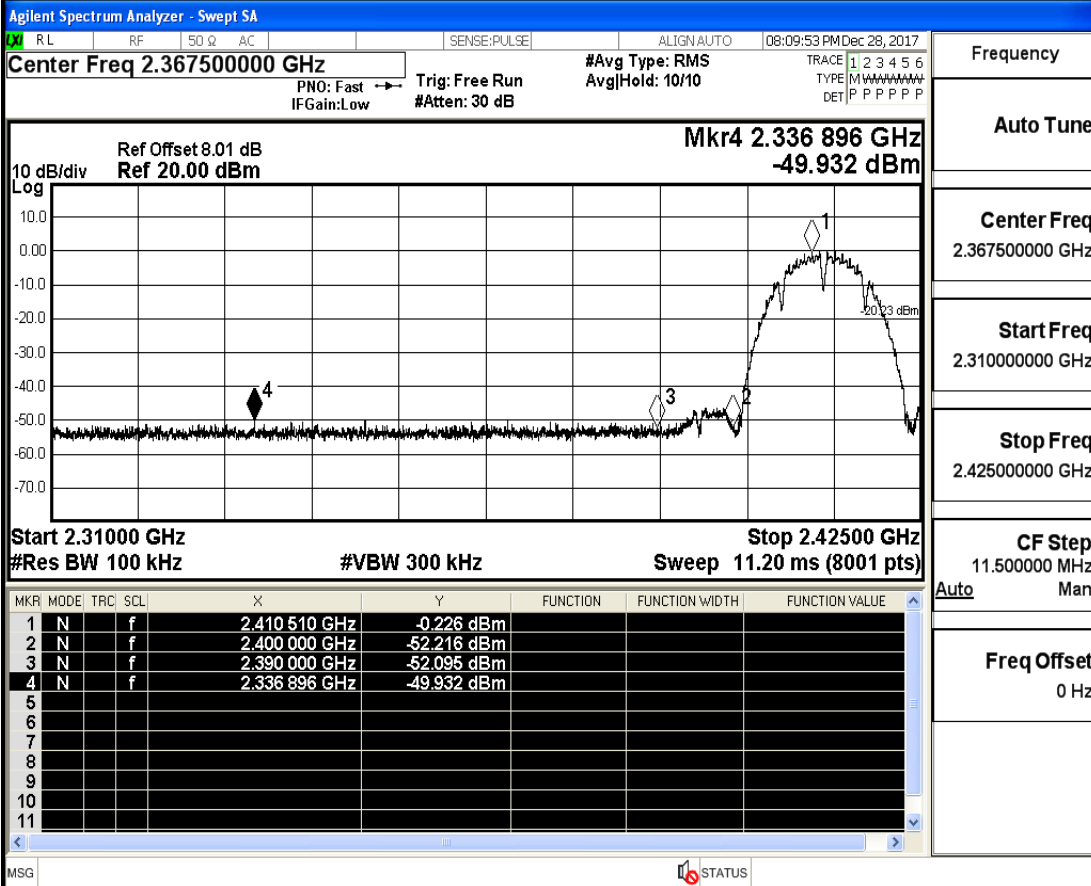


#### C.4 Band-edge for RF Conducted Emissions

Test Mode	Test Channel	Ant	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
11B	2412	Ant1	-0.226	-49.932	-20.23	PASS
11B	2462	Ant1	-0.597	-49.680	-20.6	PASS
11G	2412	Ant1	-9.114	-50.228	-29.11	PASS
11G	2462	Ant1	-9.964	-49.615	-29.96	PASS
11N20SISO	2412	Ant1	-8.649	-50.002	-28.65	PASS
11N20SISO	2462	Ant1	-10.191	-49.851	-30.19	PASS
11N40SISO	2422	Ant1	-12.335	-50.256	-32.34	PASS
11N40SISO	2452	Ant1	-12.359	-50.056	-32.36	PASS



# Band-edge for RF Conducted Emissions\_11B\_2412\_Ant1



Frequency

Auto Tune

Center Freq  
2.367500000 GHz

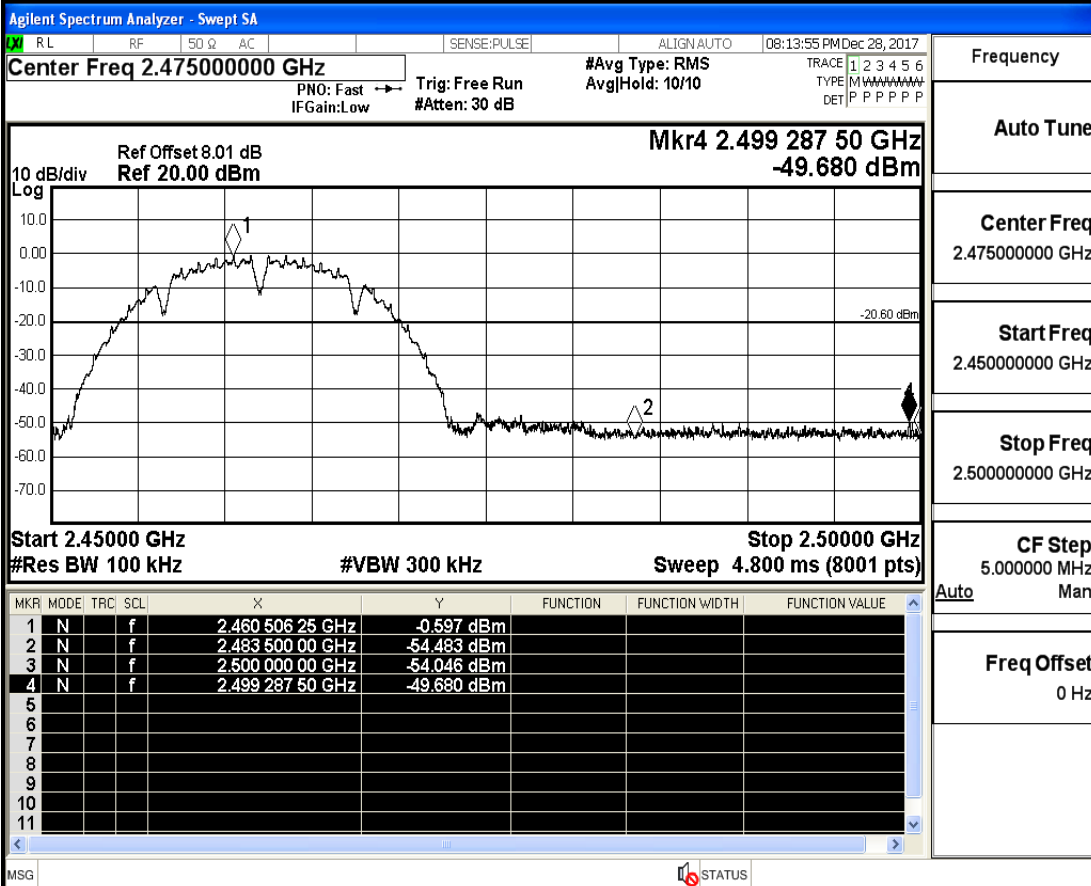
Start Freq  
2.310000000 GHz

Stop Freq  
2.425000000 GHz

CF Step  
11.500000 MHz  
Auto Man

Freq Offset  
0 Hz

# Band-edge for RF Conducted Emissions\_11B\_2462\_Ant1



Frequency

Auto Tune

Center Freq  
2.475000000 GHz

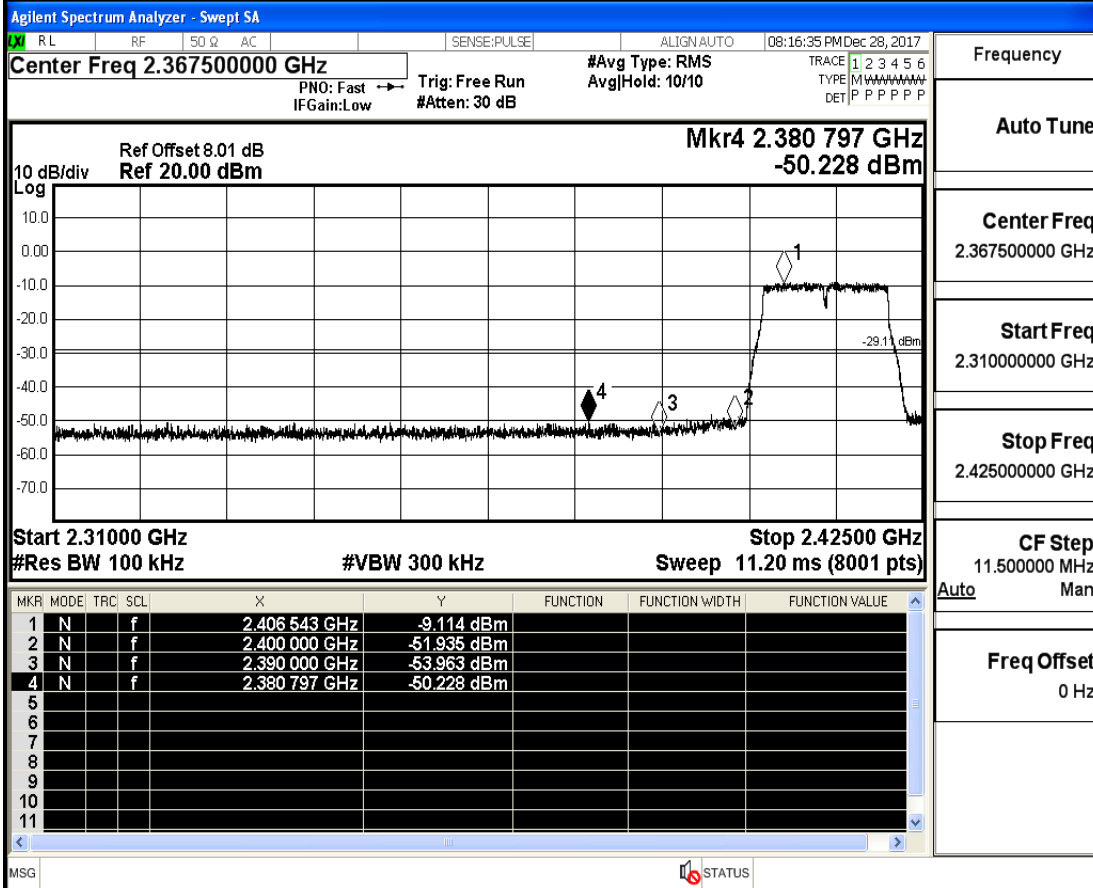
Start Freq  
2.450000000 GHz

Stop Freq  
2.500000000 GHz

CF Step  
5.000000 MHz  
Auto Man

Freq Offset  
0 Hz

# Band-edge for RF Conducted Emissions\_11G\_2412\_Ant1



Frequency

Auto Tune

Center Freq  
2.367500000 GHz

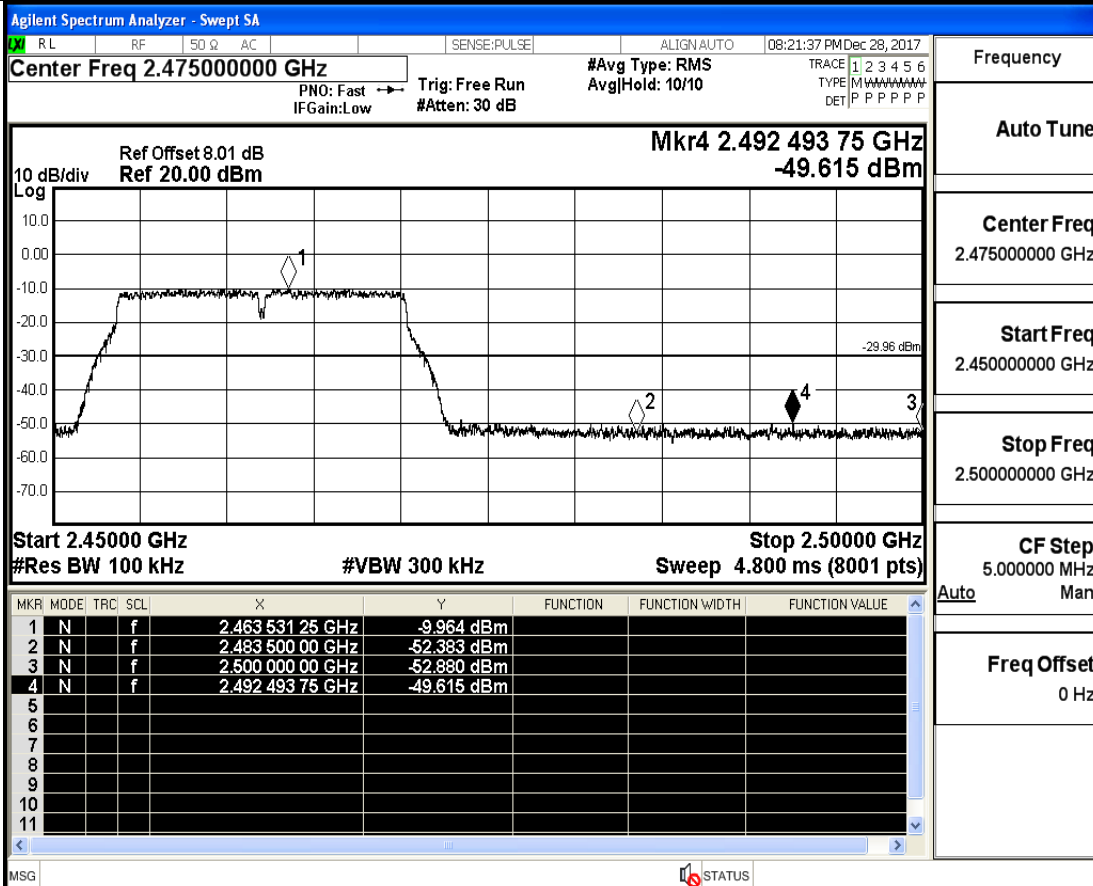
Start Freq  
2.310000000 GHz

Stop Freq  
2.425000000 GHz

CF Step  
11.500000 MHz  
Auto Man

Freq Offset  
0 Hz

# Band-edge for RF Conducted Emissions\_11G\_2462\_Ant1



Frequency

Auto Tune

Center Freq  
2.475000000 GHz

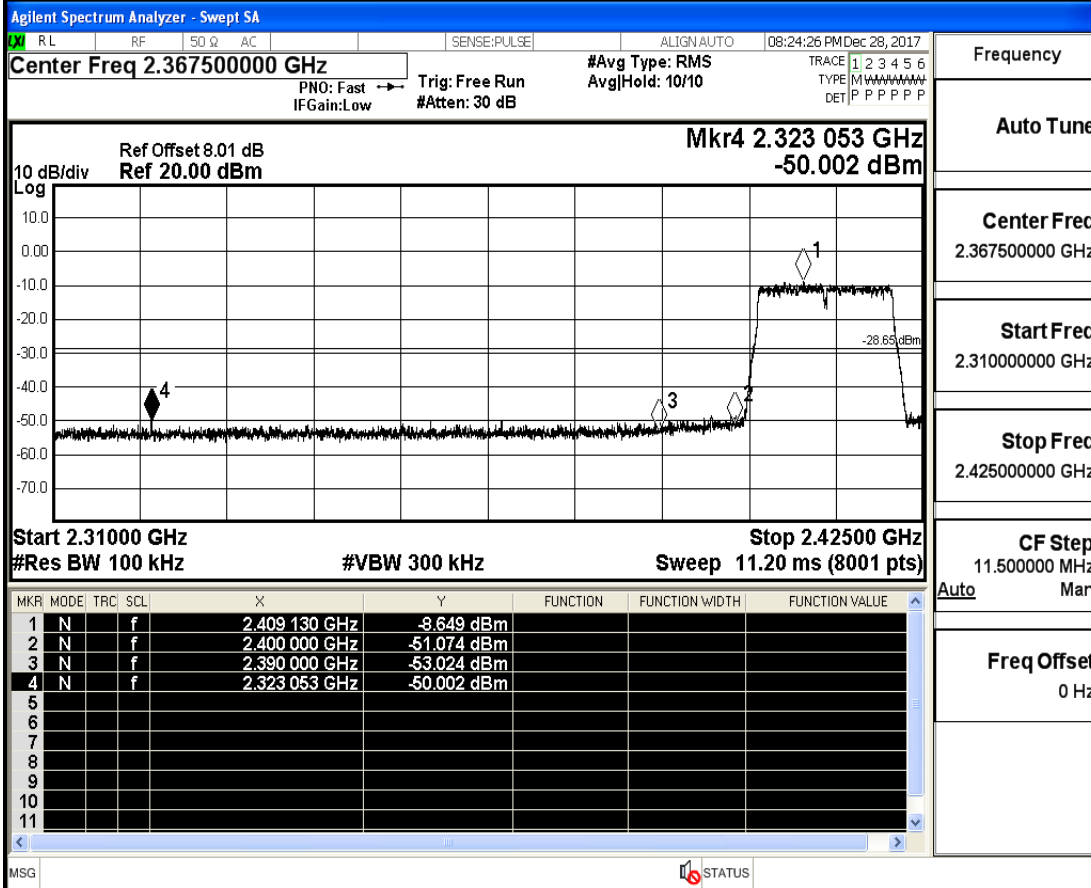
Start Freq  
2.450000000 GHz

Stop Freq  
2.500000000 GHz

CF Step  
5.000000 MHz  
Auto Man

Freq Offset  
0 Hz

# Band-edge for RF Conducted Emissions\_11N20SISO\_2412\_Ant1



Frequency

Auto Tune

Center Freq  
2.367500000 GHz

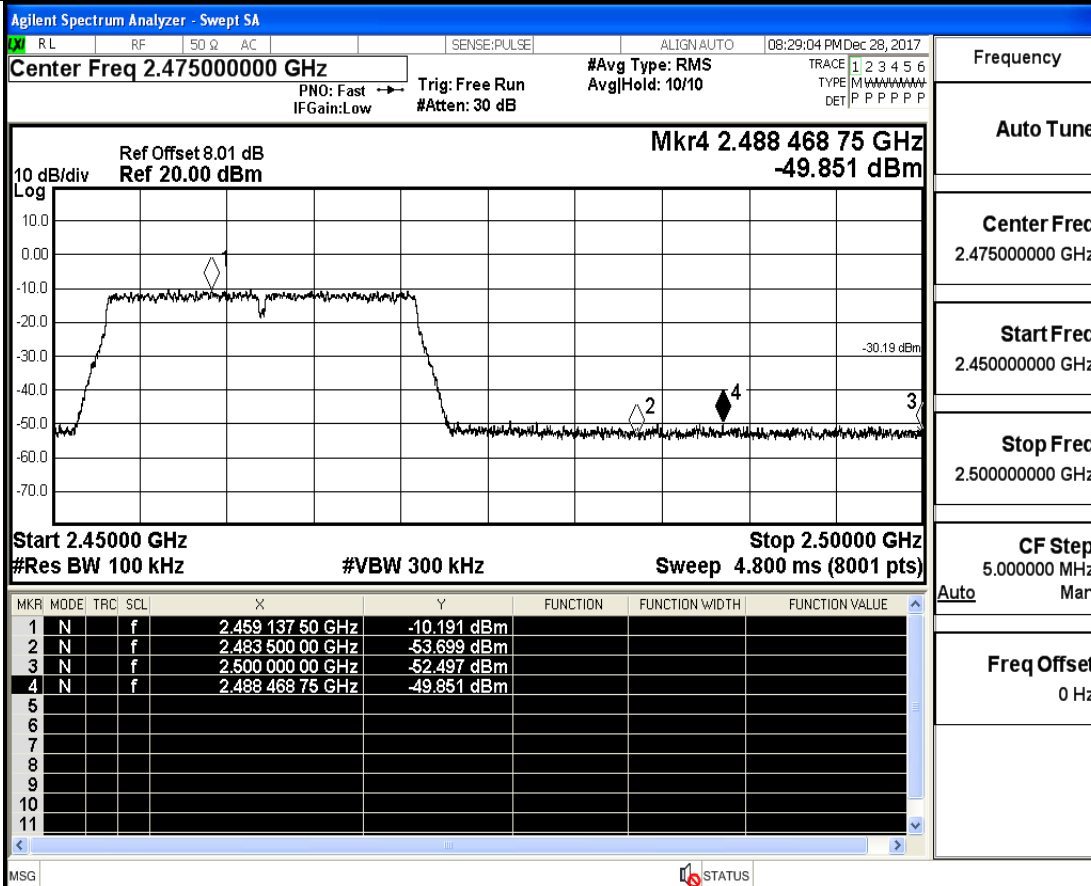
Start Freq  
2.310000000 GHz

Stop Freq  
2.425000000 GHz

CF Step  
11.500000 MHz  
Auto Man

Freq Offset  
0 Hz

# Band-edge for RF Conducted Emissions\_11N20SISO\_2462\_Ant1



Frequency

Auto Tune

Center Freq  
2.475000000 GHz

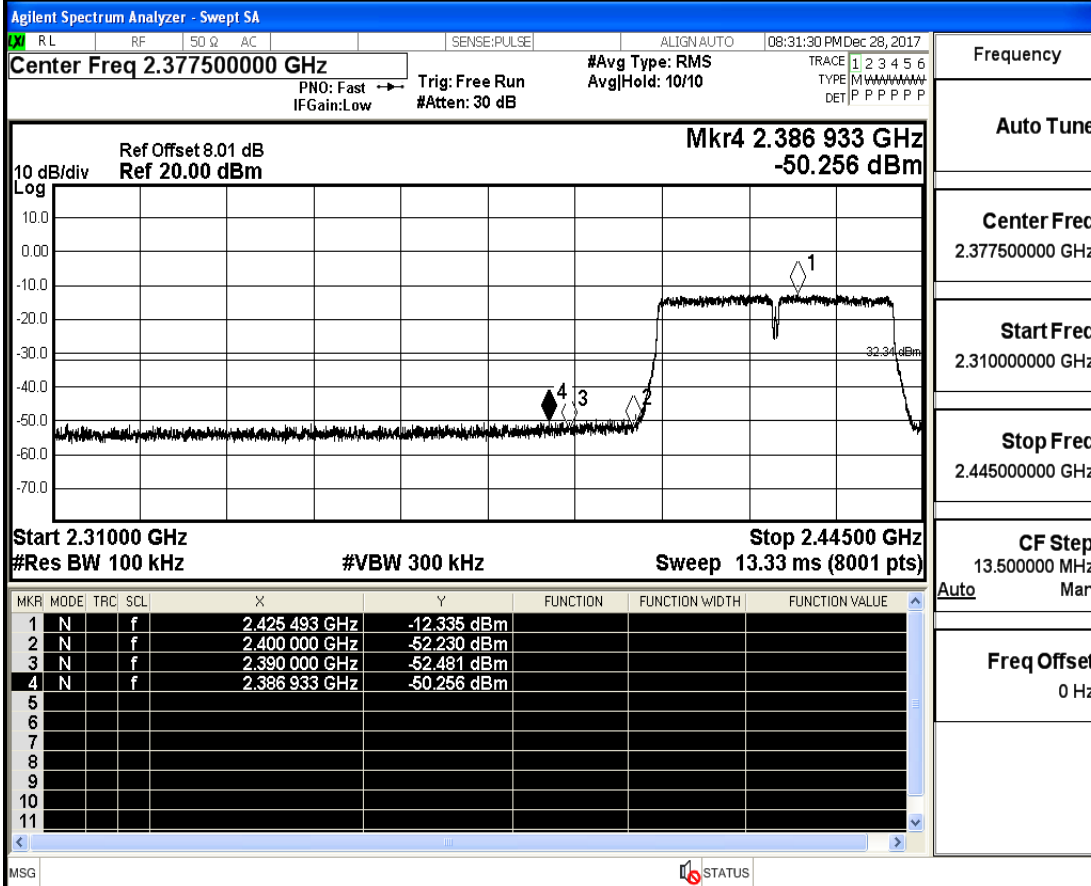
Start Freq  
2.450000000 GHz

Stop Freq  
2.500000000 GHz

CF Step  
5.000000 MHz  
Auto Man

Freq Offset  
0 Hz

# Band-edge for RF Conducted Emissions\_11N40SISO\_2422\_Ant1



Frequency

Auto Tune

Center Freq  
2.377500000 GHz

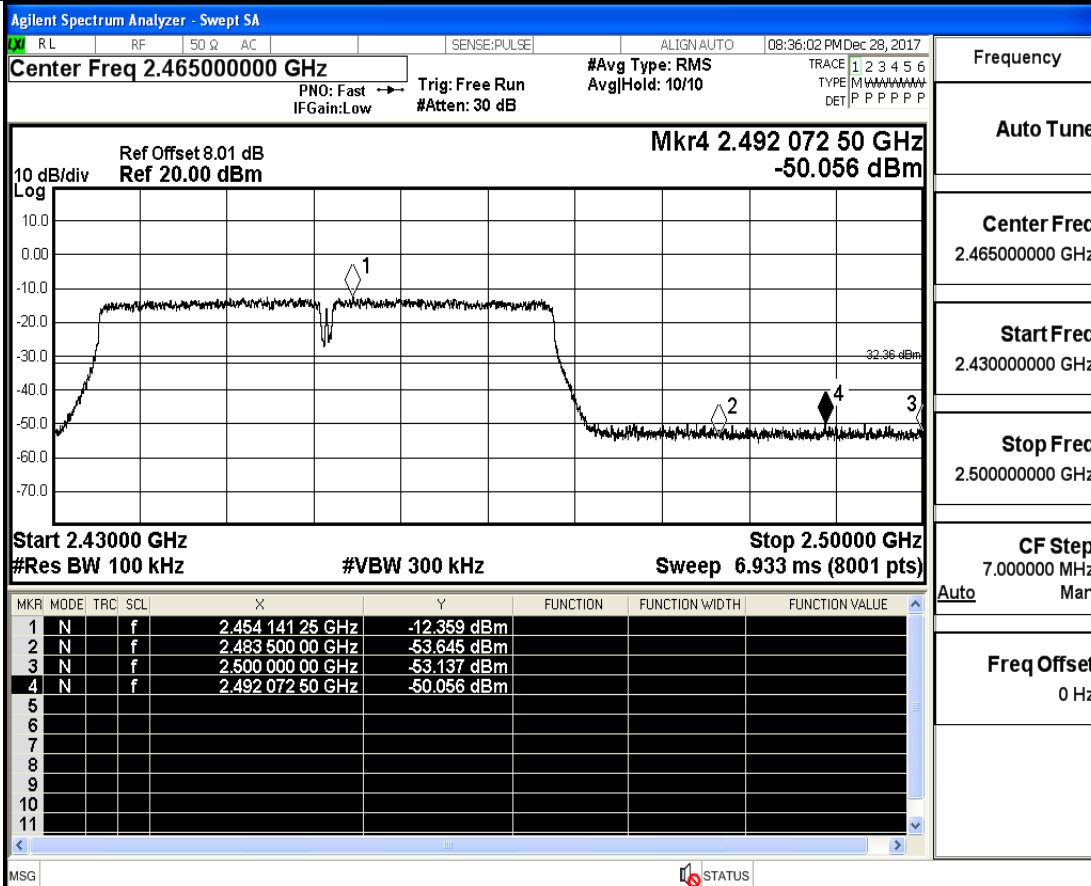
Start Freq  
2.310000000 GHz

Stop Freq  
2.445000000 GHz

CF Step  
13.500000 MHz  
Auto Man

Freq Offset  
0 Hz

# Band-edge for RF Conducted Emissions\_11N40SISO\_2452\_Ant1



Frequency

Auto Tune

Center Freq  
2.465000000 GHz

Start Freq  
2.430000000 GHz

Stop Freq  
2.500000000 GHz

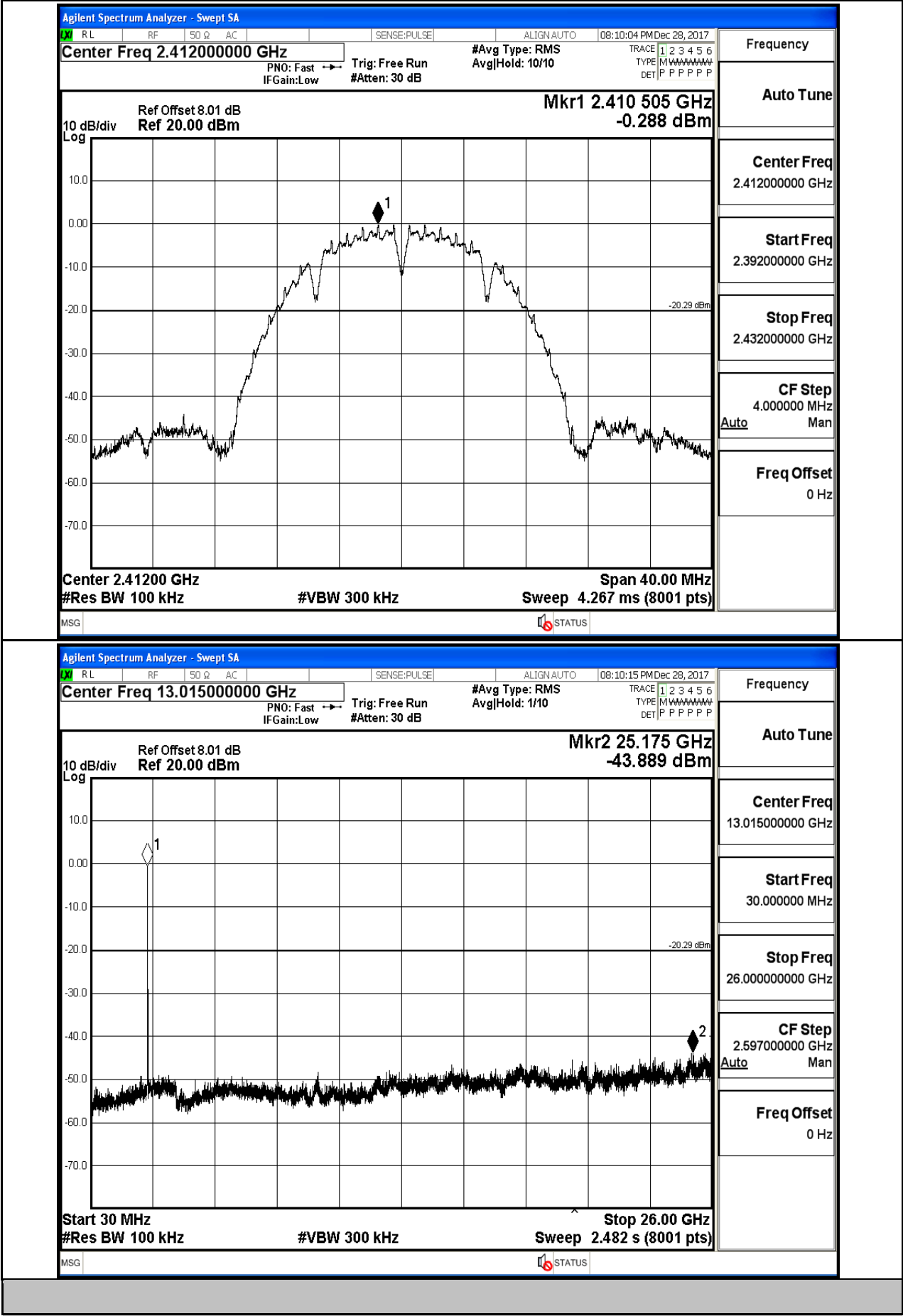
CF Step  
7.000000 MHz  
Auto Man

Freq Offset  
0 Hz

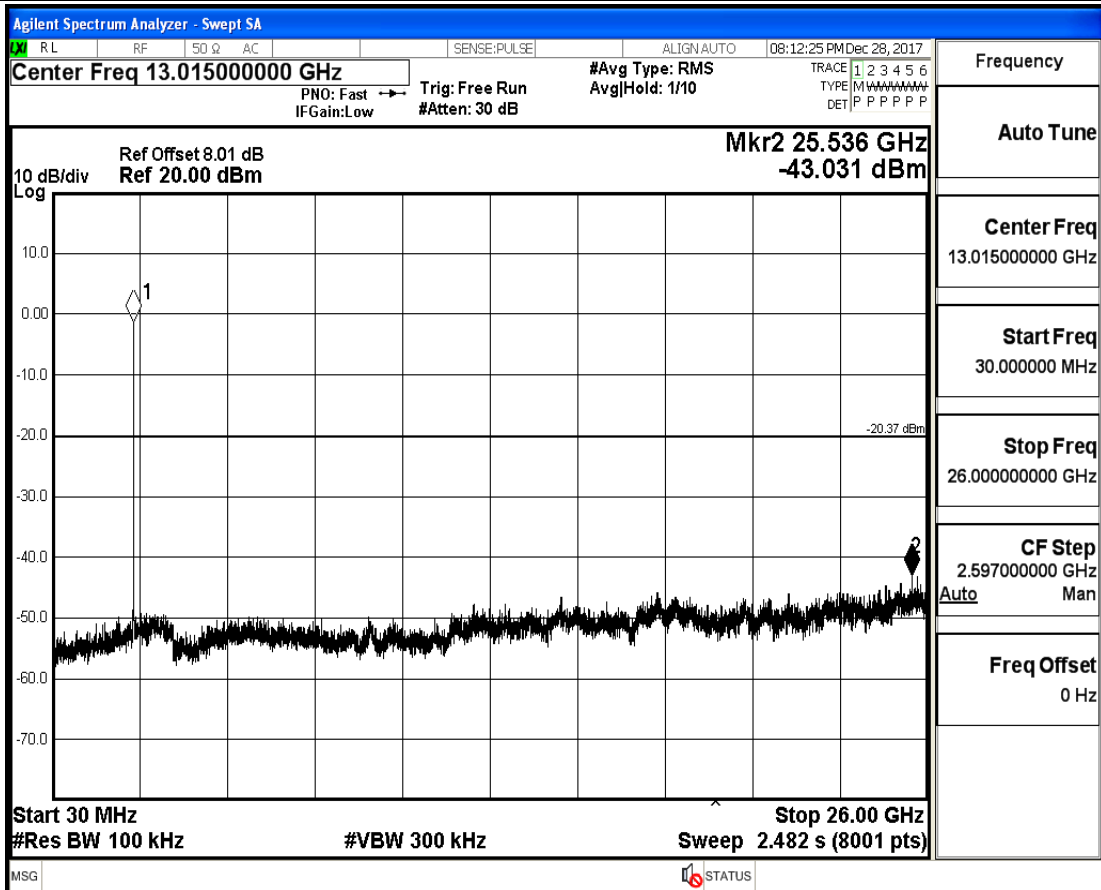
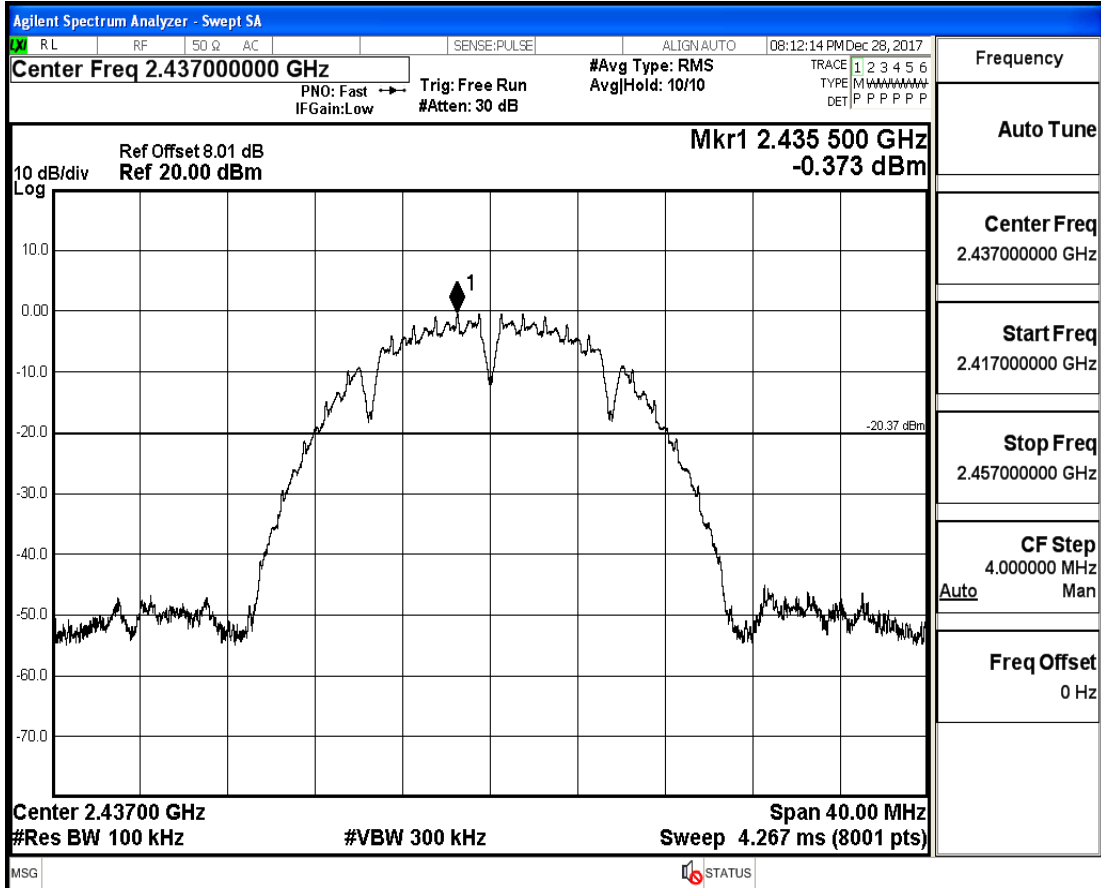
### C.5 RF Conducted Spurious Emissions

Test Mode	Test Channel	Ant	StartFre [MHz]	StopFre [MHz]	RBW [kHz]	VBW [kHz]	Pref[dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	2412	Ant1	30	26000	100	300	-0.288	-43.889	<- 20.288	PASS
11B	2437	Ant1	30	26000	100	300	-0.373	-43.031	<- 20.373	PASS
11B	2462	Ant1	30	26000	100	300	-0.686	-43.248	<- 20.686	PASS
11G	2412	Ant1	30	26000	100	300	-8.887	-43.910	<- 28.887	PASS
11G	2437	Ant1	30	26000	100	300	-9.949	-43.033	<- 29.949	PASS
11G	2462	Ant1	30	26000	100	300	-10.07	-42.471	<-30.07	PASS
11N20SISO	2412	Ant1	30	26000	100	300	-8.783	-43.114	<- 28.783	PASS
11N20SISO	2437	Ant1	30	26000	100	300	-9.131	-43.344	<- 29.131	PASS
11N20SISO	2462	Ant1	30	26000	100	300	-9.883	-43.811	<- 29.883	PASS
11N40SISO	2422	Ant1	30	26000	100	300	-12.214	-43.314	<- 32.214	PASS
11N40SISO	2437	Ant1	30	26000	100	300	-12.76	-43.165	<-32.76	PASS
11N40SISO	2452	Ant1	30	26000	100	300	-12.167	-43.686	<- 32.167	PASS

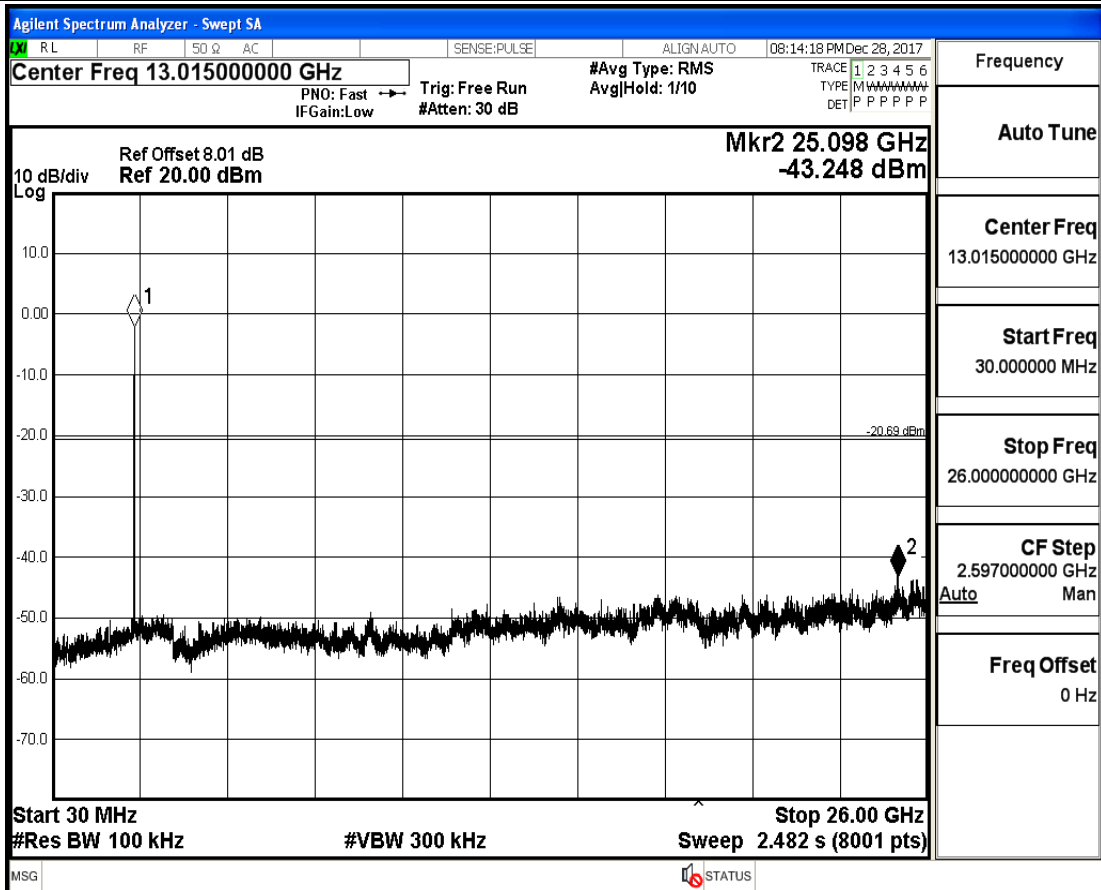
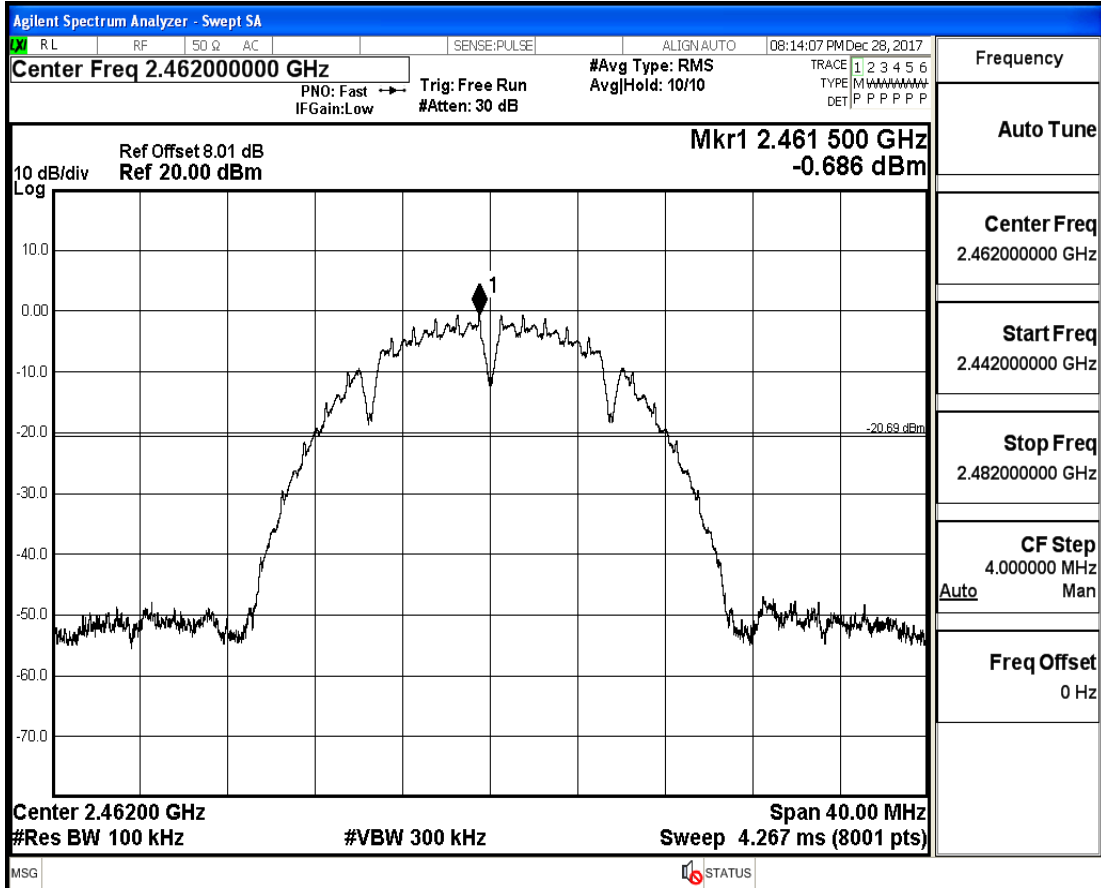
RF Conducted Spurious Emissions\_11B\_2412\_Ant1



RF Conducted Spurious Emissions\_11B\_2437\_Ant1

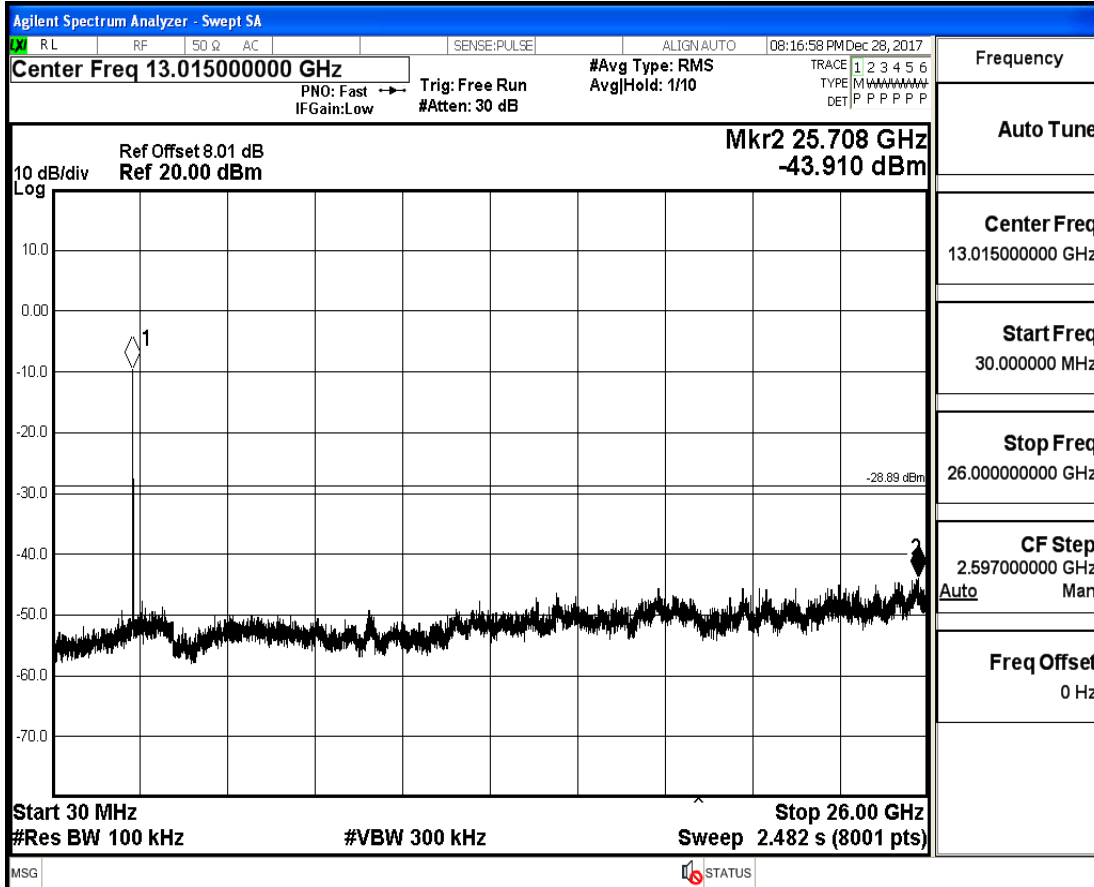
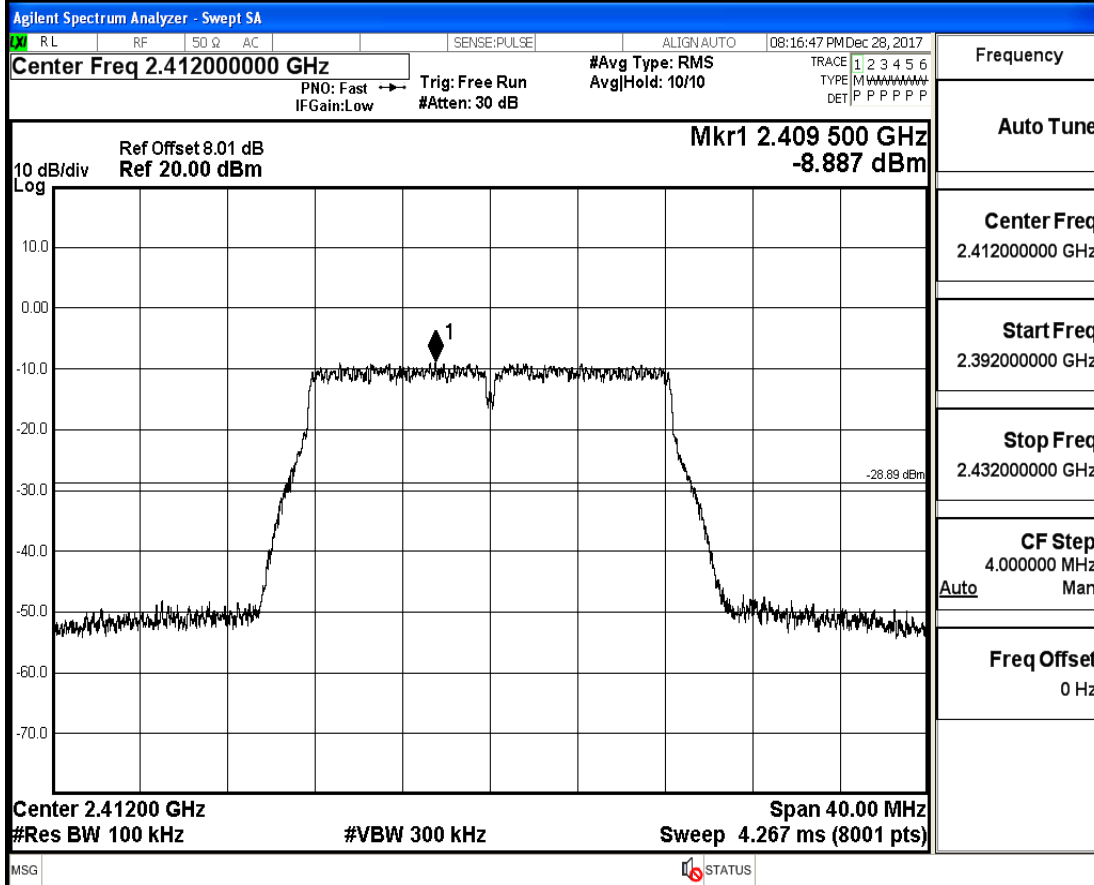


RF Conducted Spurious Emissions\_11B\_2462\_Ant1

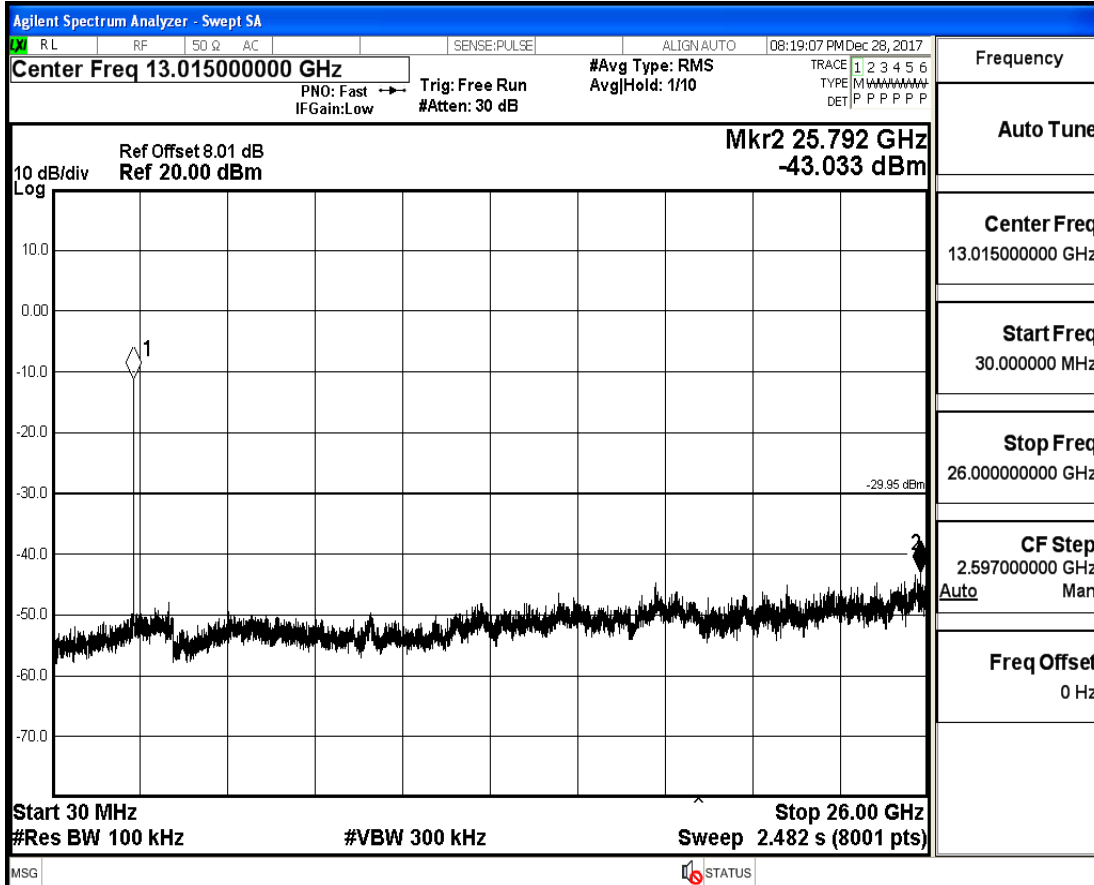
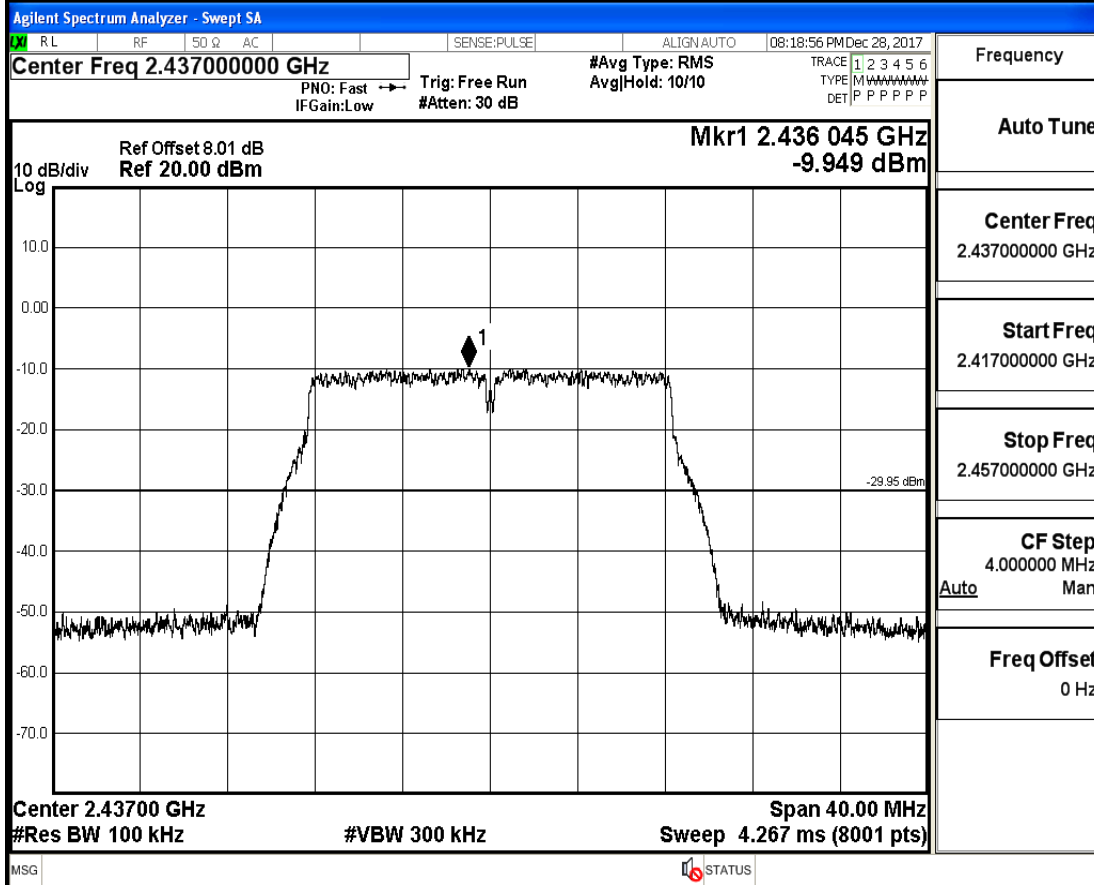




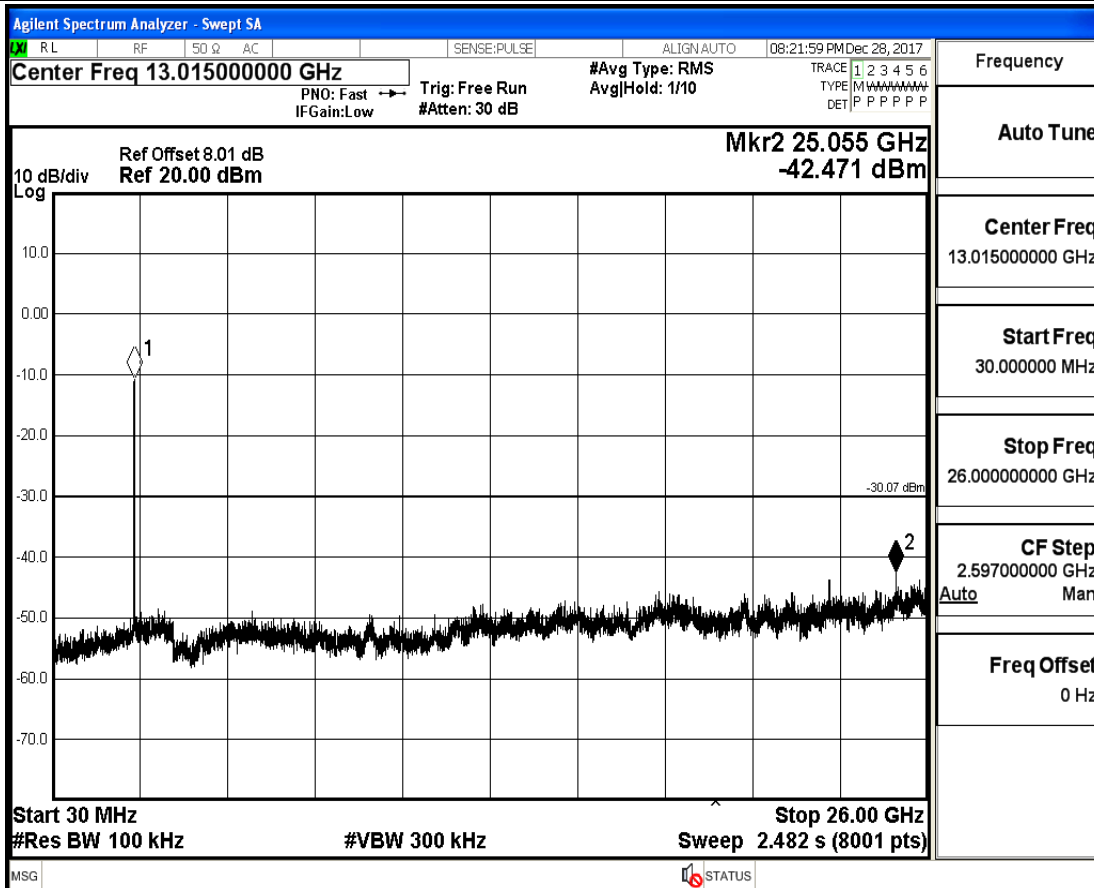
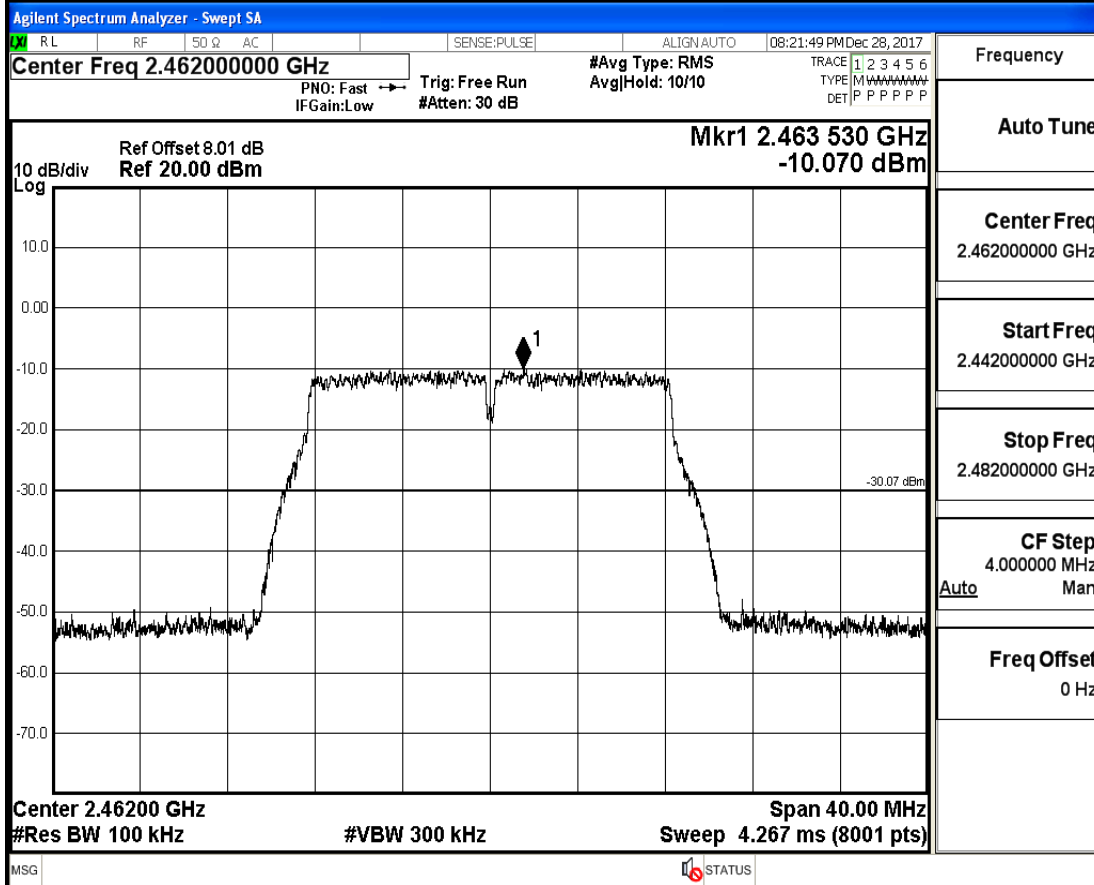
# RF Conducted Spurious Emissions\_11G\_2412\_Ant1



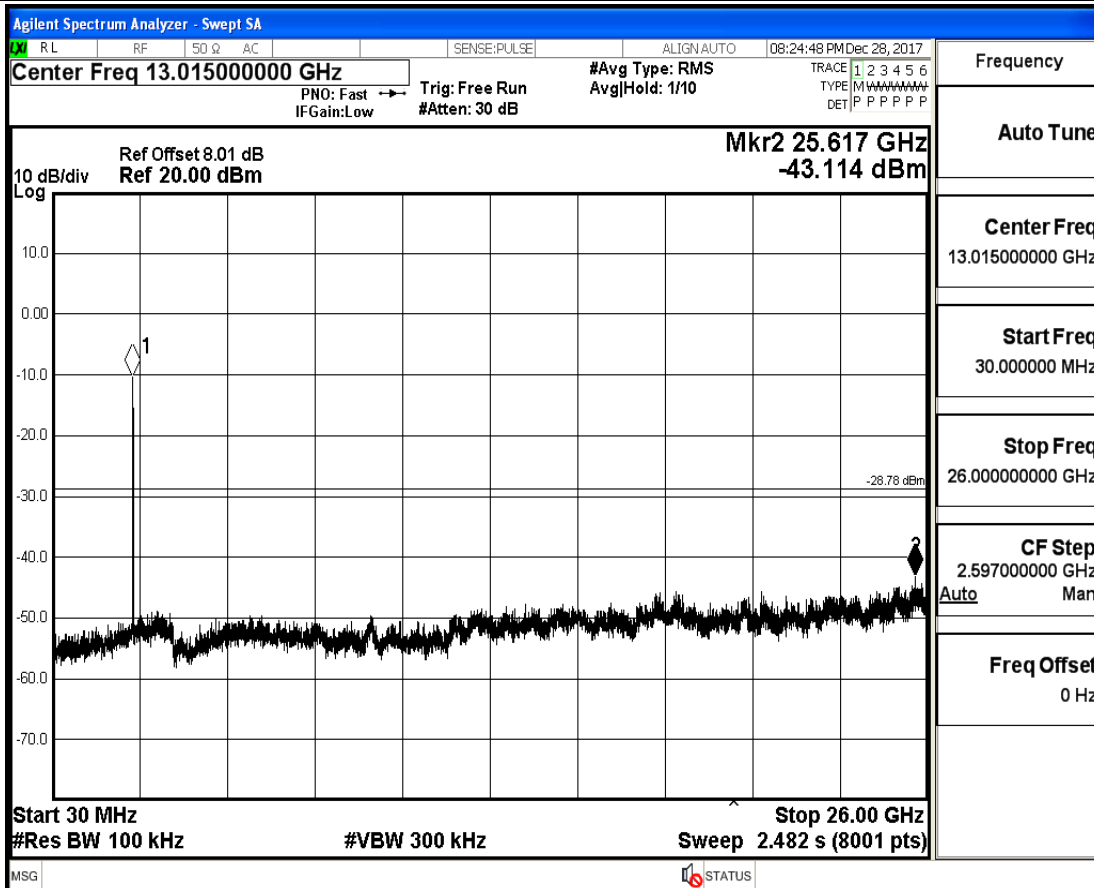
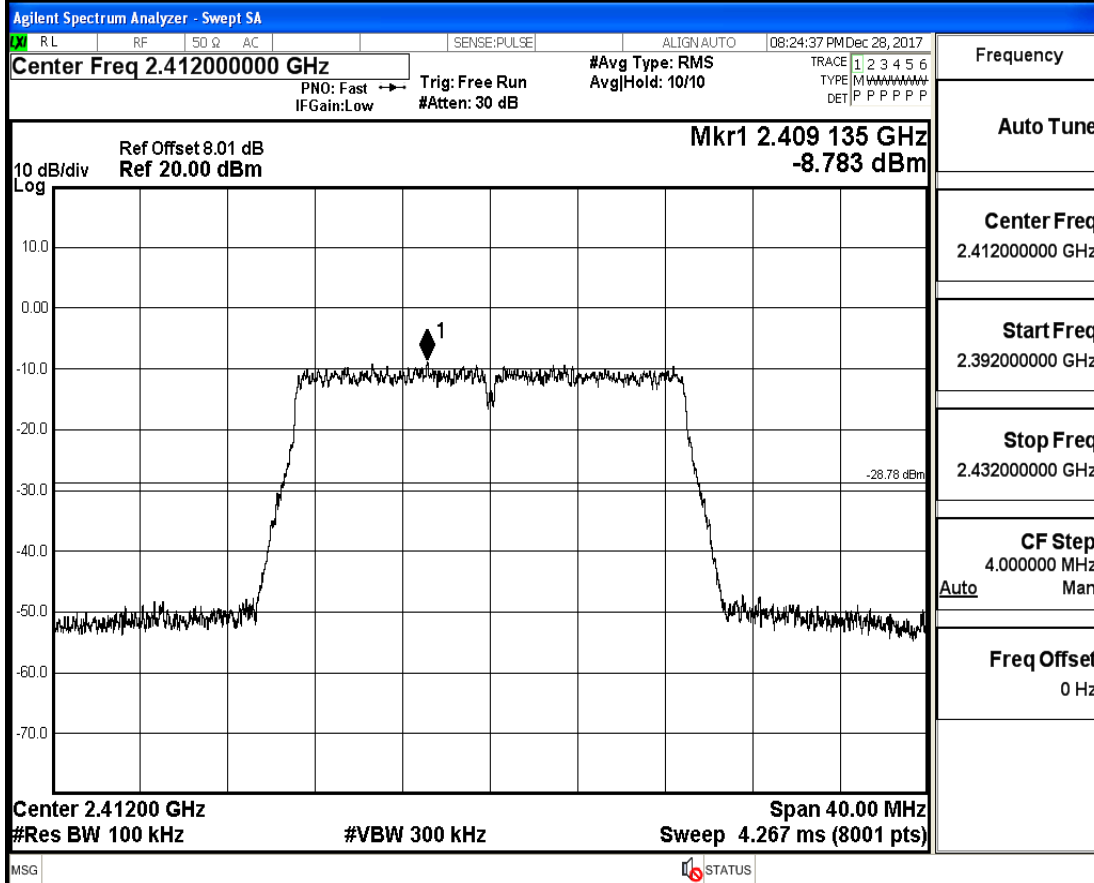
# RF Conducted Spurious Emissions\_11G\_2437\_Ant1



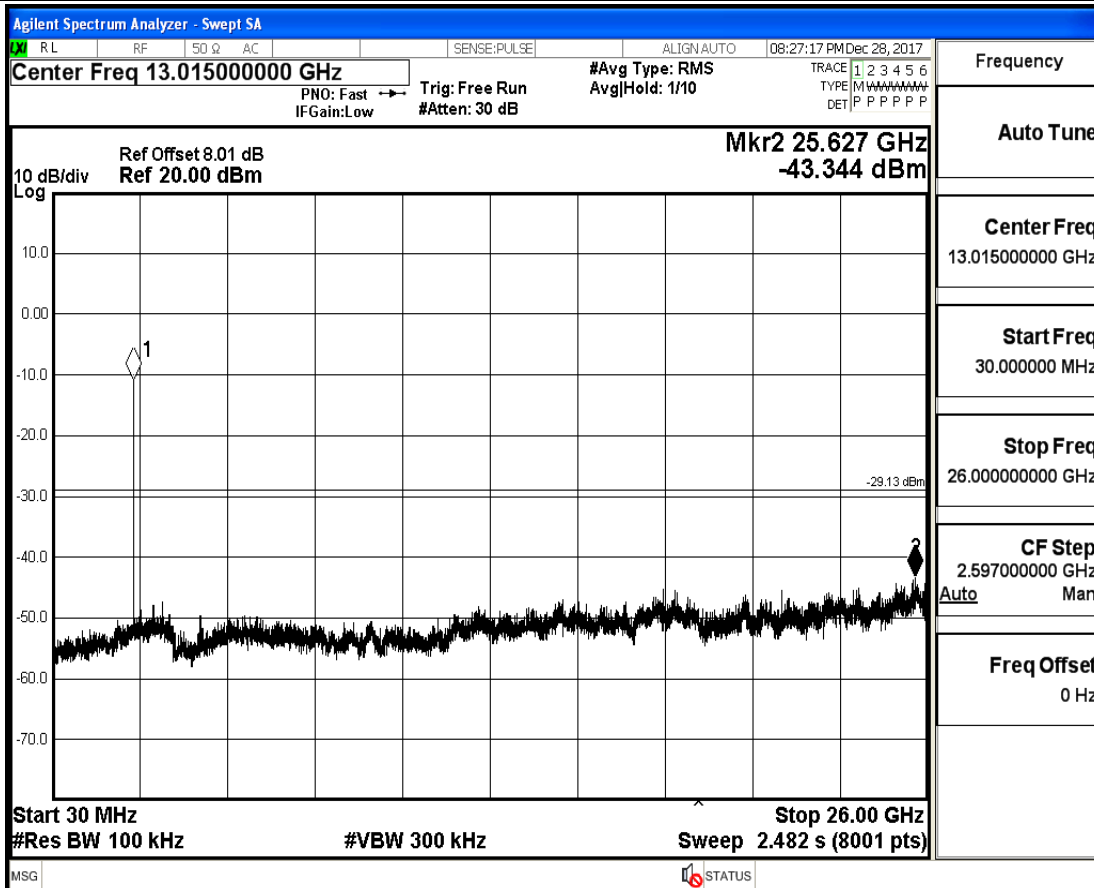
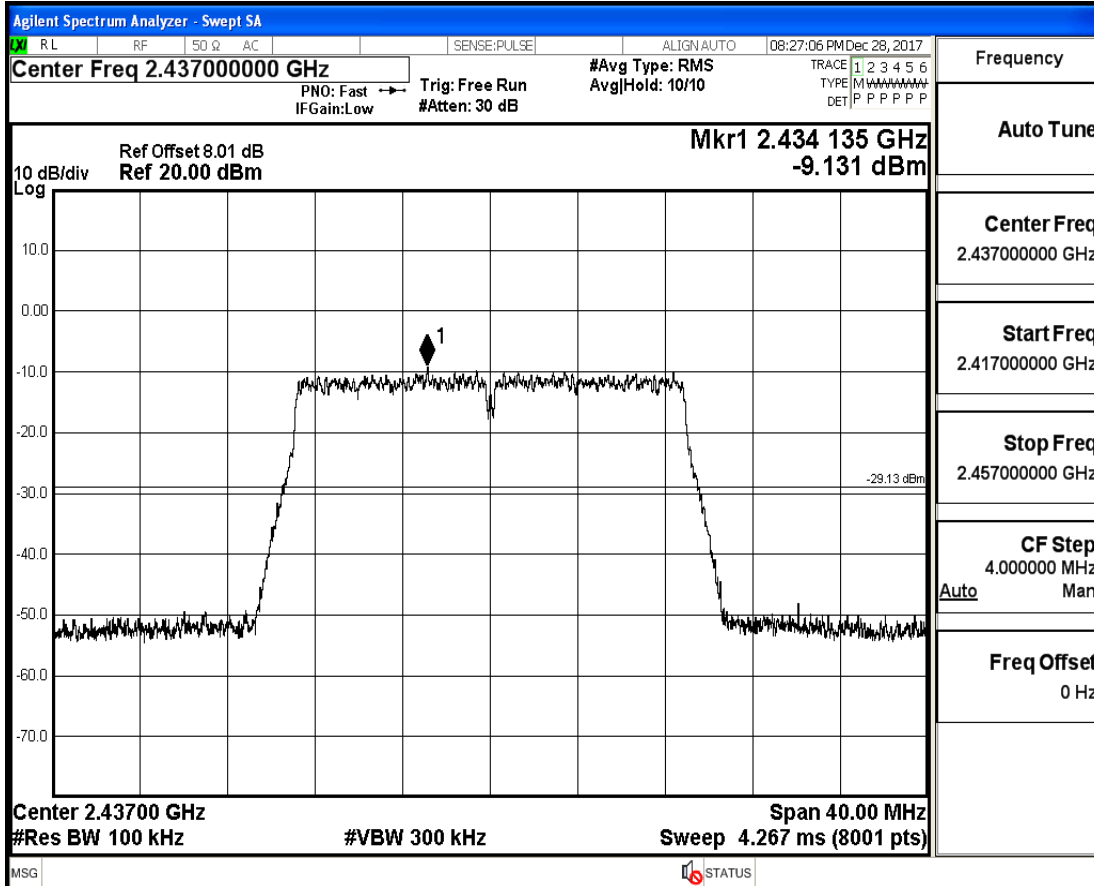
# RF Conducted Spurious Emissions\_11G\_2462\_Ant1



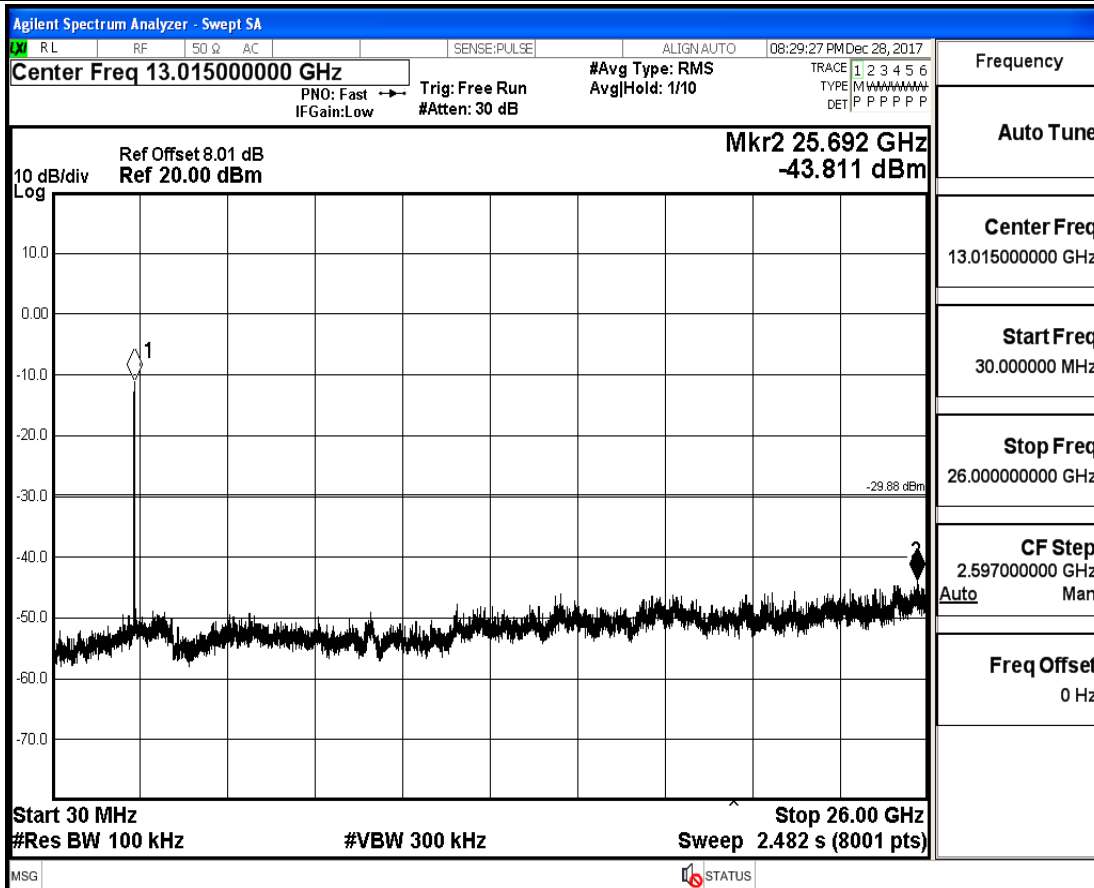
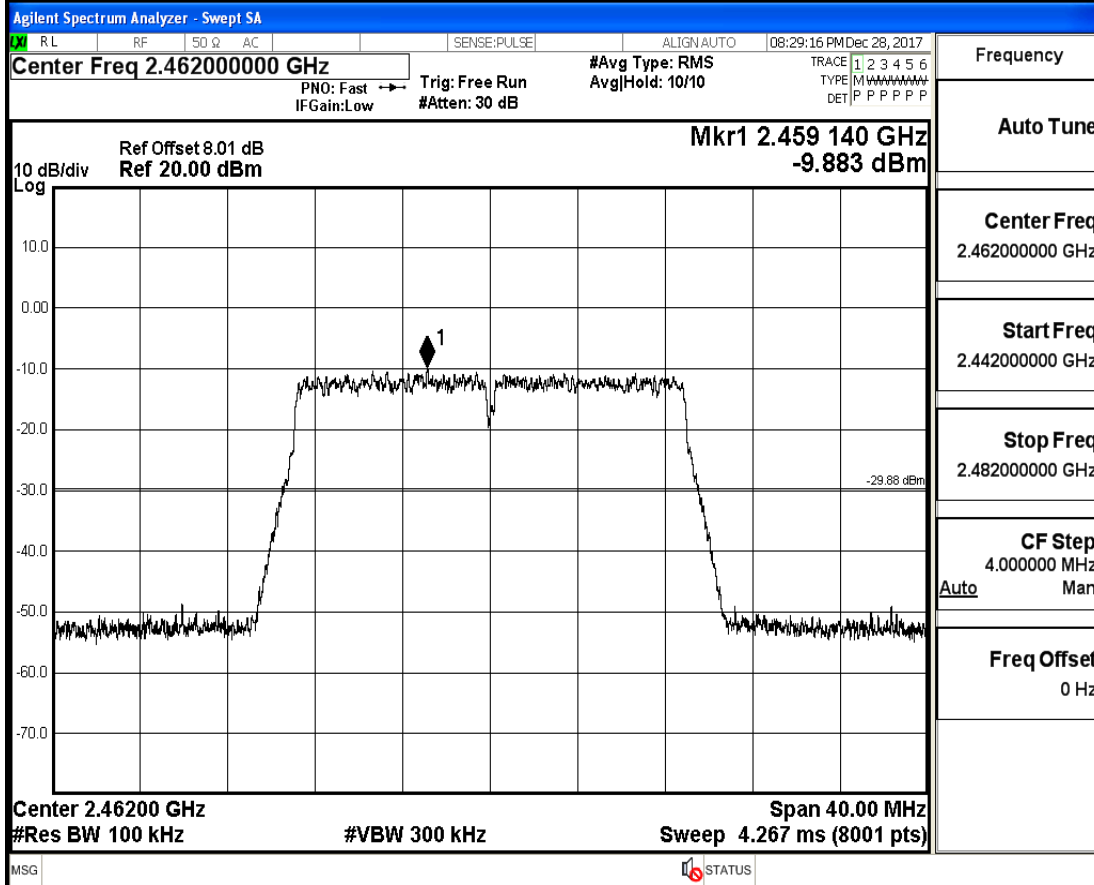
# RF Conducted Spurious Emissions\_11N20SISO\_2412\_Ant1



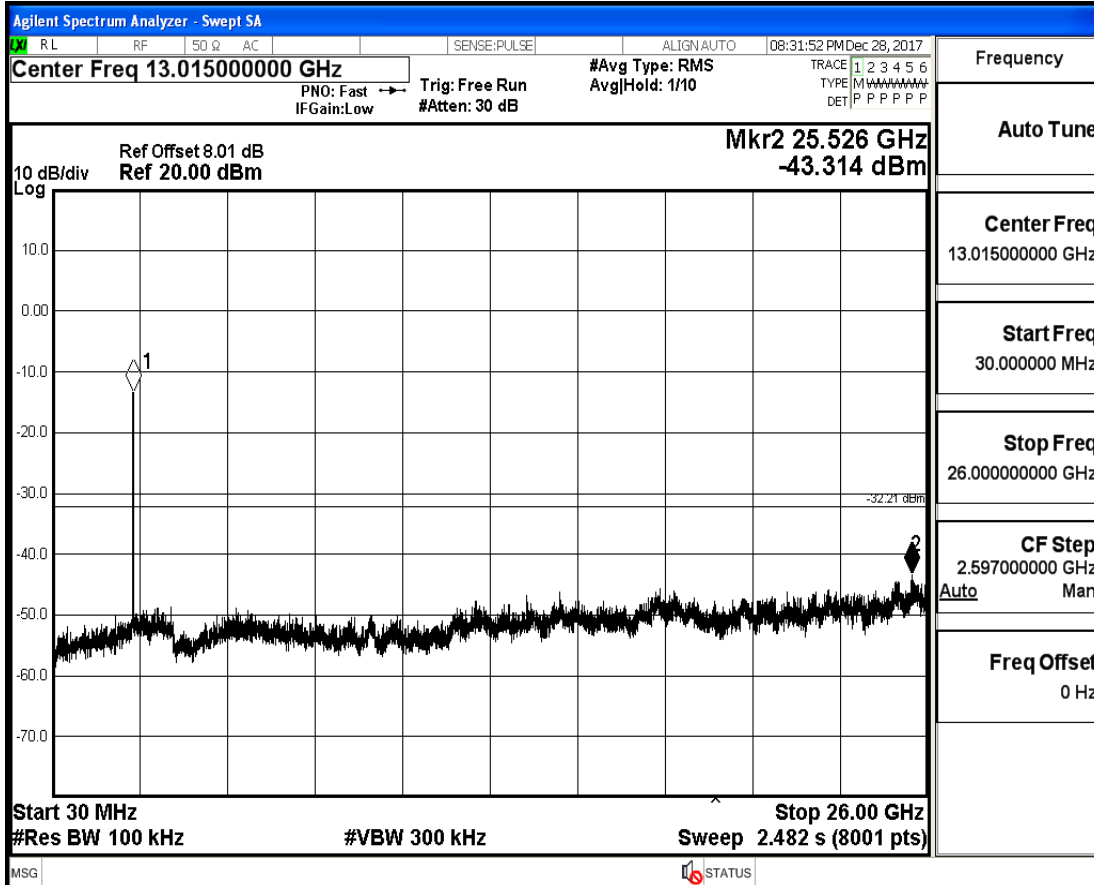
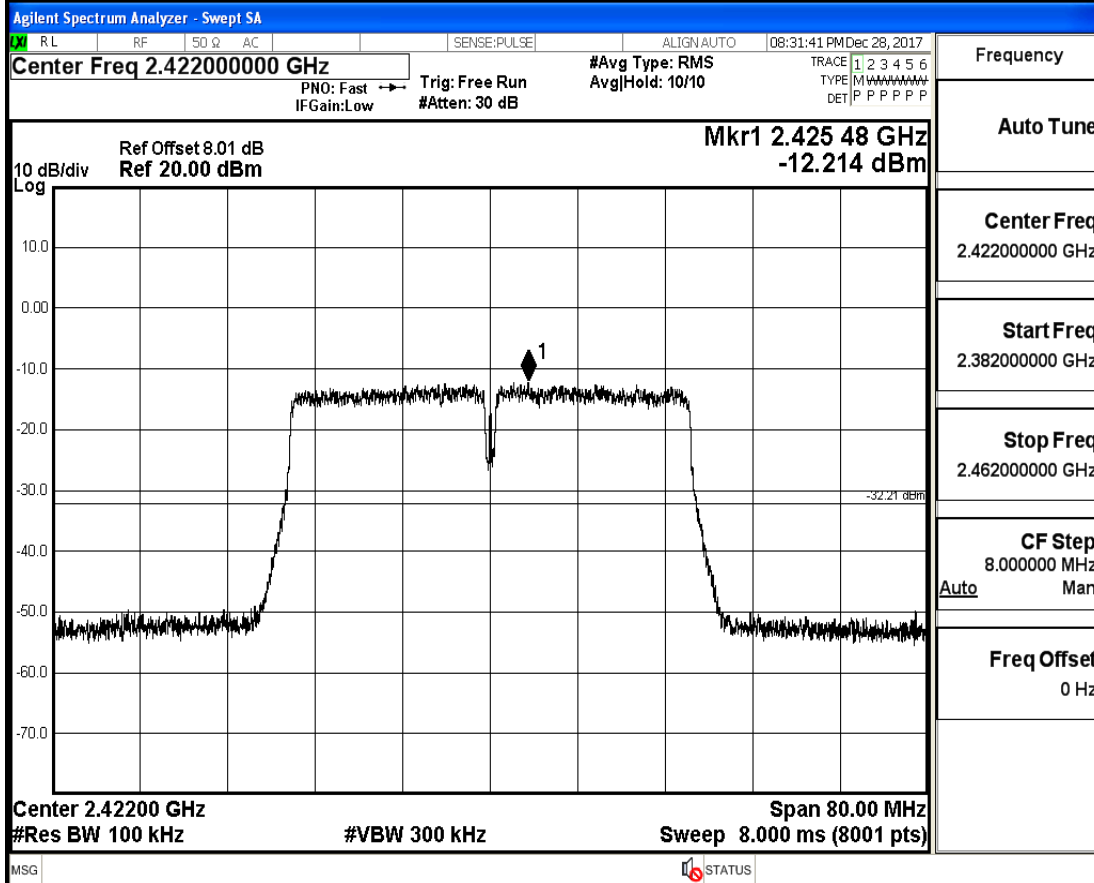
# RF Conducted Spurious Emissions\_11N20SISO\_2437\_Ant1



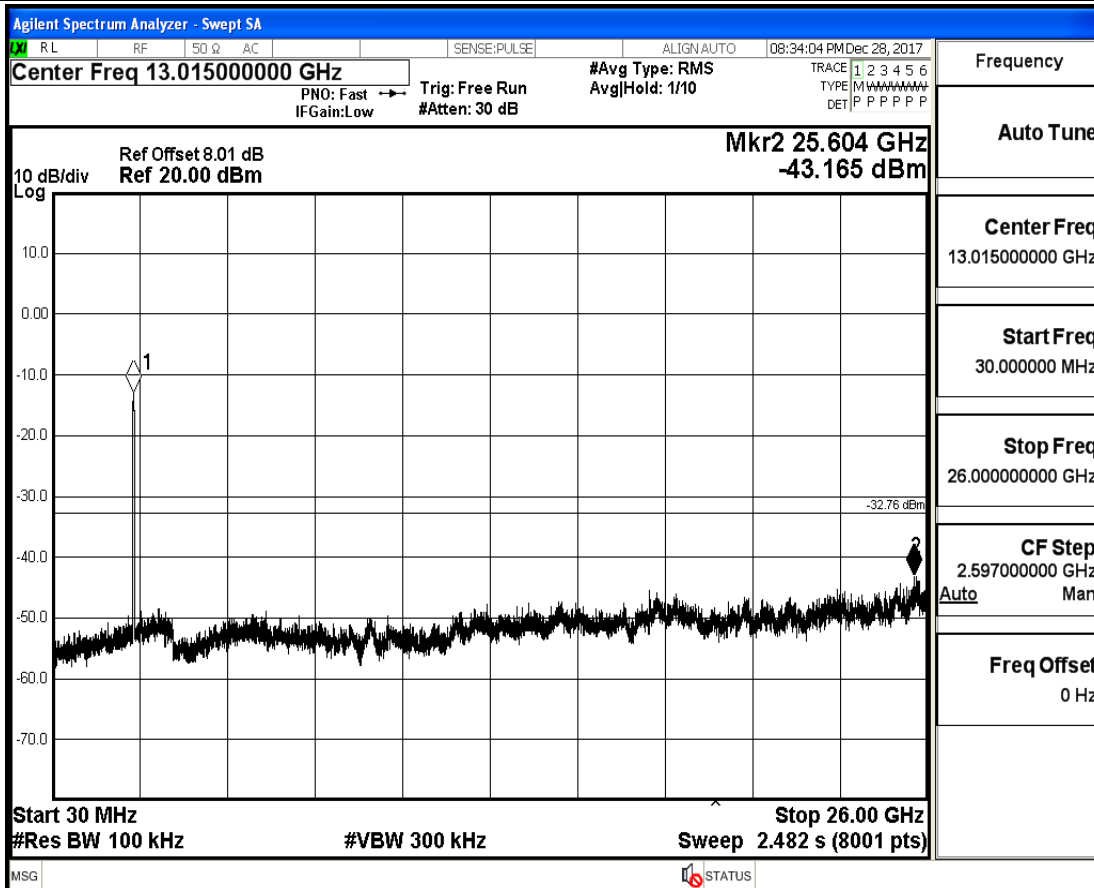
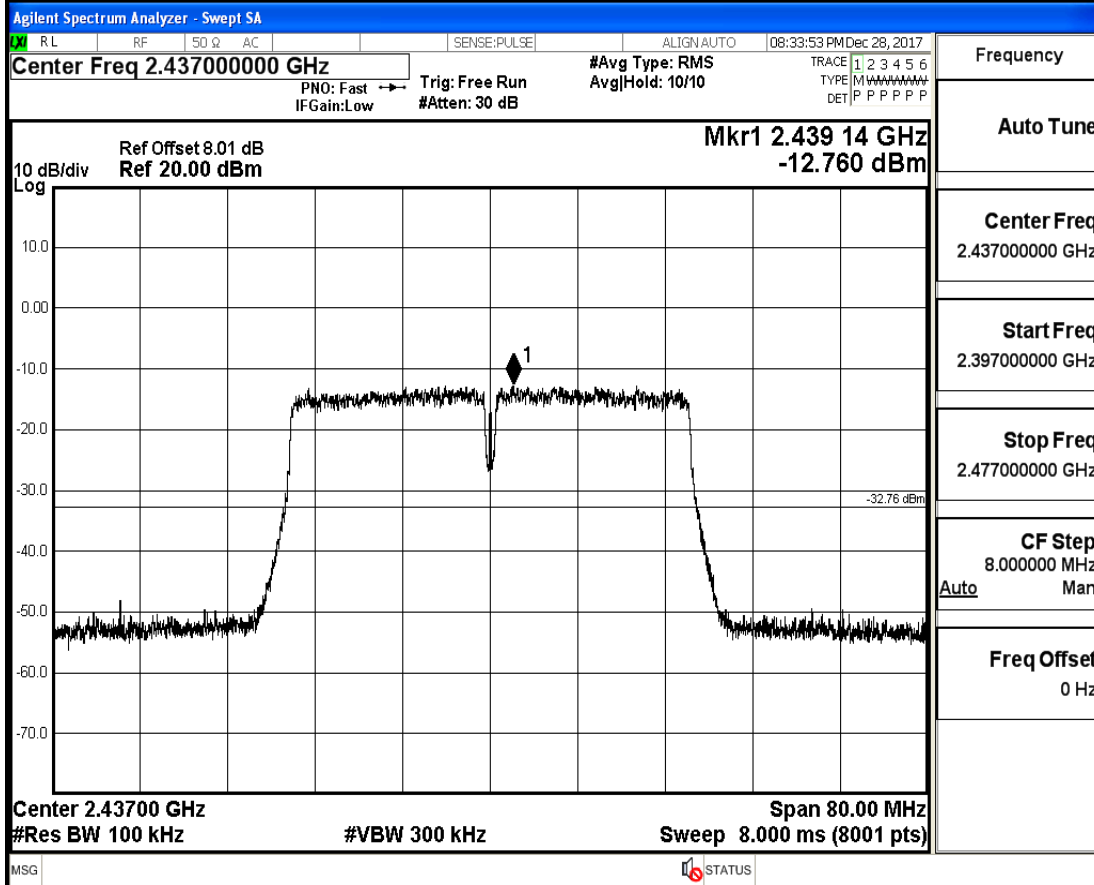
# RF Conducted Spurious Emissions\_11N20SISO\_2462\_Ant1



# RF Conducted Spurious Emissions\_11N40SISO\_2422\_Ant1

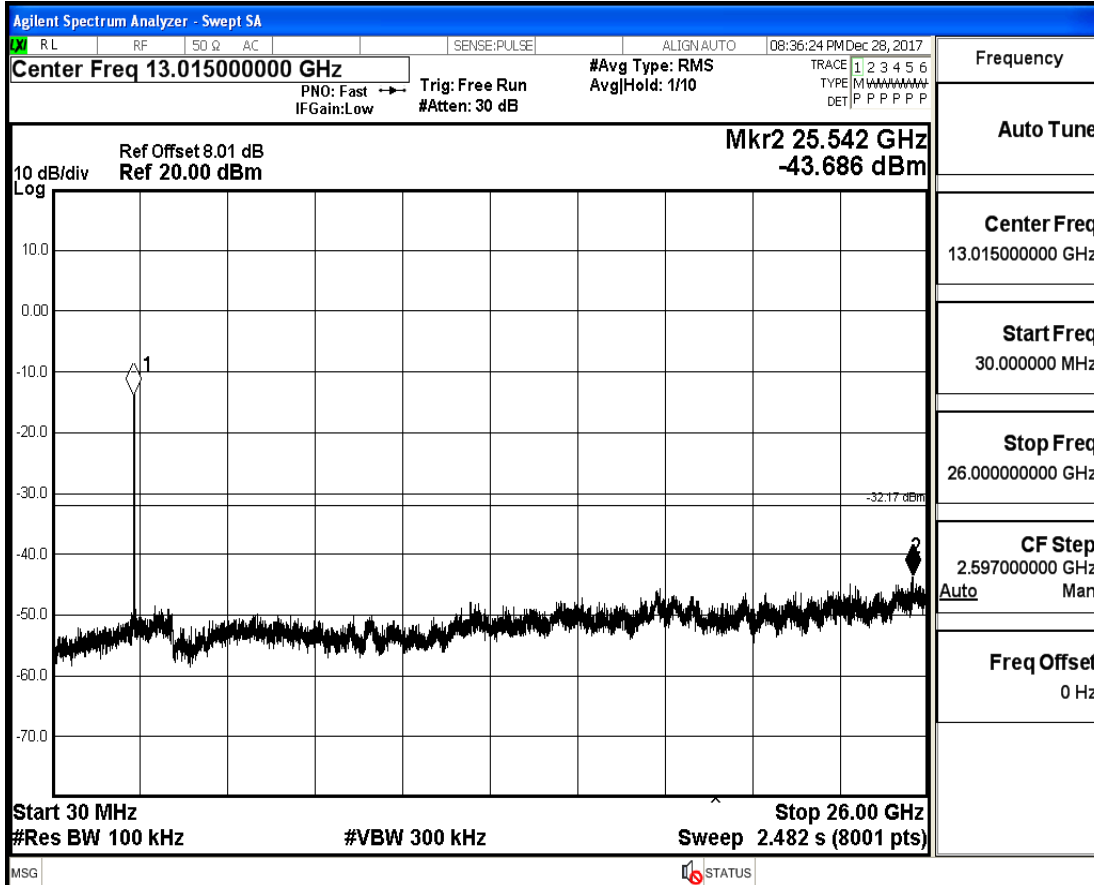
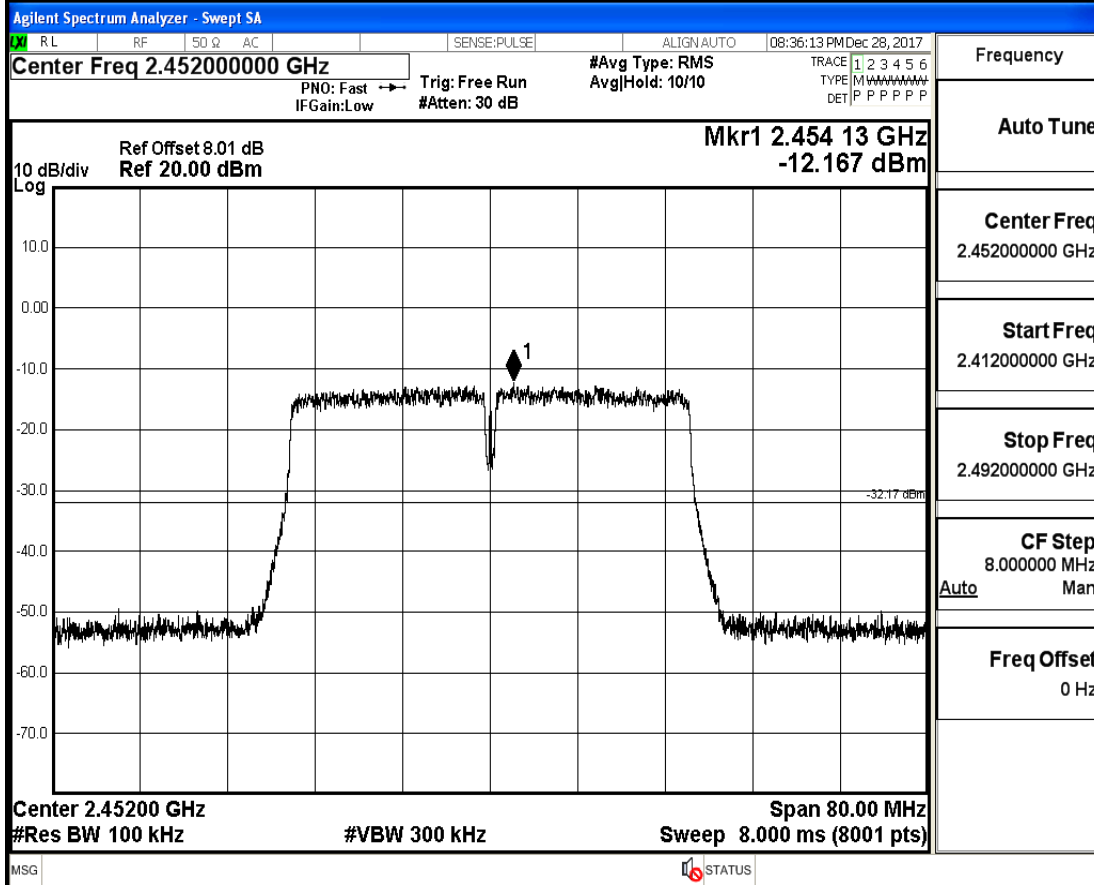


# RF Conducted Spurious Emissions\_11N40SISO\_2437\_Ant1





# RF Conducted Spurious Emissions\_11N40SISO\_2452\_Ant1

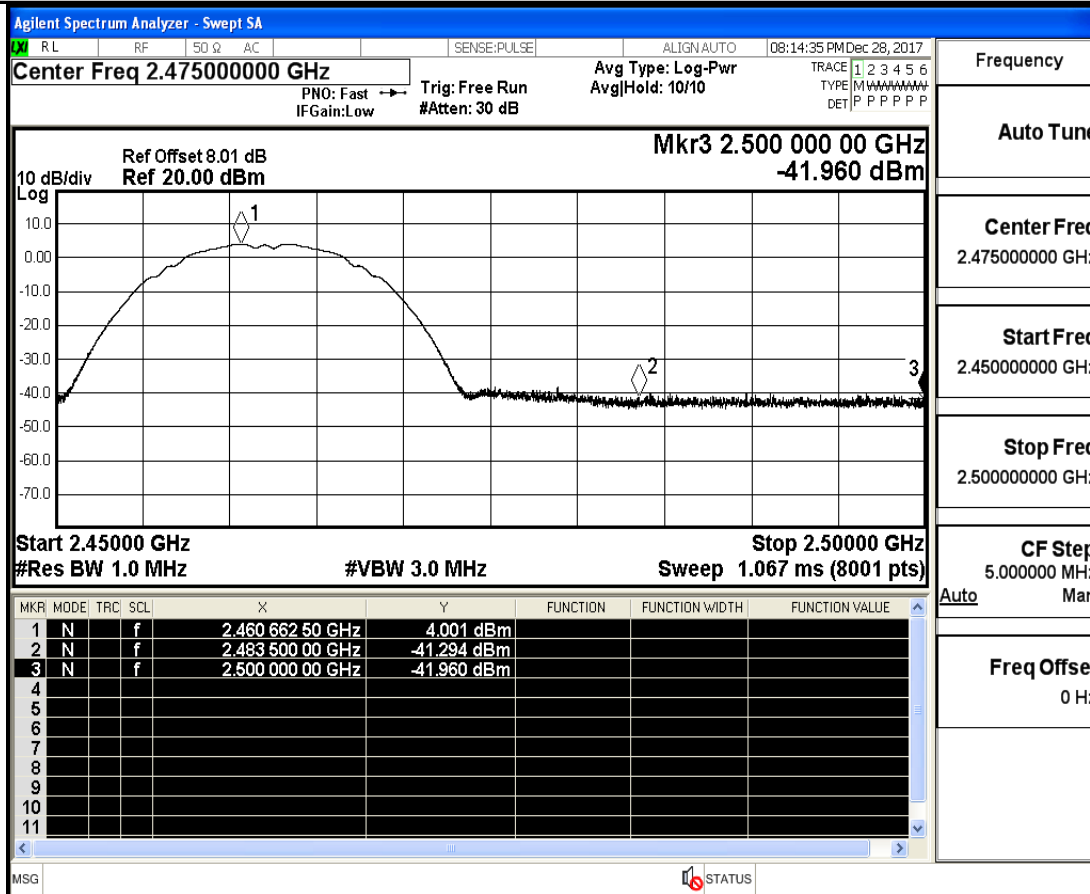


### C.6 Restrict-band band-edge measurements

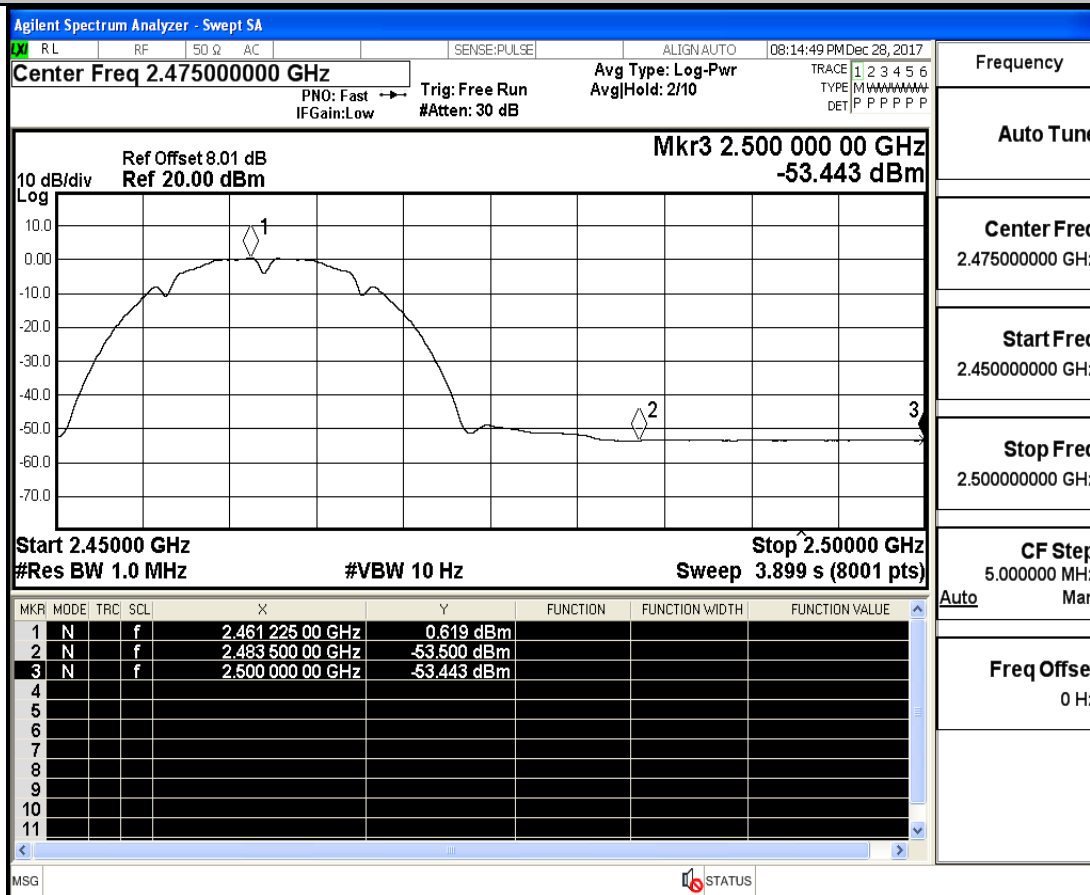
Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
11B	2412	Ant1	2310.0	-42.94	2	0	54.32	PEAK	74	PASS
11B	2412	Ant1	2310.0	-54.14	2	0	43.11	AV	54	PASS
11B	2412	Ant1	2390.0	-42.27	2	0	54.99	PEAK	74	PASS
11B	2412	Ant1	2390.0	-53.67	2	0	43.59	AV	54	PASS
11B	2462	Ant1	2483.5	-41.29	2	0	55.96	PEAK	74	PASS
11B	2462	Ant1	2483.5	-53.50	2	0	43.76	AV	54	PASS
11B	2462	Ant1	2500.0	-41.96	2	0	55.30	PEAK	74	PASS
11B	2462	Ant1	2500.0	-53.44	2	0	43.81	AV	54	PASS
11G	2412	Ant1	2310.0	-42.60	2	0	54.66	PEAK	74	PASS
11G	2412	Ant1	2310.0	-54.10	2	0	43.15	AV	54	PASS
11G	2412	Ant1	2390.0	-43.23	2	0	54.03	PEAK	74	PASS
11G	2412	Ant1	2390.0	-53.18	2	0	44.08	AV	54	PASS
11G	2462	Ant1	2483.5	-43.33	2	0	53.93	PEAK	74	PASS
11G	2462	Ant1	2483.5	-53.18	2	0	44.08	AV	54	PASS
11G	2462	Ant1	2500.0	-43.58	2	0	53.68	PEAK	74	PASS
11G	2462	Ant1	2500.0	-53.19	2	0	44.07	AV	54	PASS
11N20SISO	2412	Ant1	2310.0	-44.33	2	0	52.93	PEAK	74	PASS
11N20SISO	2412	Ant1	2310.0	-54.12	2	0	43.14	AV	54	PASS
11N20SISO	2412	Ant1	2390.0	-42.17	2	0	55.09	PEAK	74	PASS
11N20SISO	2412	Ant1	2390.0	-52.95	2	0	44.30	AV	54	PASS
11N20SISO	2462	Ant1	2483.5	-42.55	2	0	54.70	PEAK	74	PASS
11N20SISO	2462	Ant1	2483.5	-53.12	2	0	44.14	AV	54	PASS
11N20SISO	2462	Ant1	2500.0	-42.00	2	0	55.26	PEAK	74	PASS
11N20SISO	2462	Ant1	2500.0	-53.21	2	0	44.05	AV	54	PASS
11N40SISO	2422	Ant1	2310.0	-43.49	2	0	53.77	PEAK	74	PASS
11N40SISO	2422	Ant1	2310.0	-54.14	2	0	43.11	AV	54	PASS
11N40SISO	2422	Ant1	2390.0	-41.49	2	0	55.77	PEAK	74	PASS
11N40SISO	2422	Ant1	2390.0	-52.55	2	0	44.71	AV	54	PASS
11N40SISO	2452	Ant1	2483.5	-42.26	2	0	55.00	PEAK	74	PASS
11N40SISO	2452	Ant1	2483.5	-53.03	2	0	44.23	AV	54	PASS
11N40SISO	2452	Ant1	2500.0	-43.03	2	0	54.23	PEAK	74	PASS
11N40SISO	2452	Ant1	2500.0	-53.30	2	0	43.96	AV	54	PASS



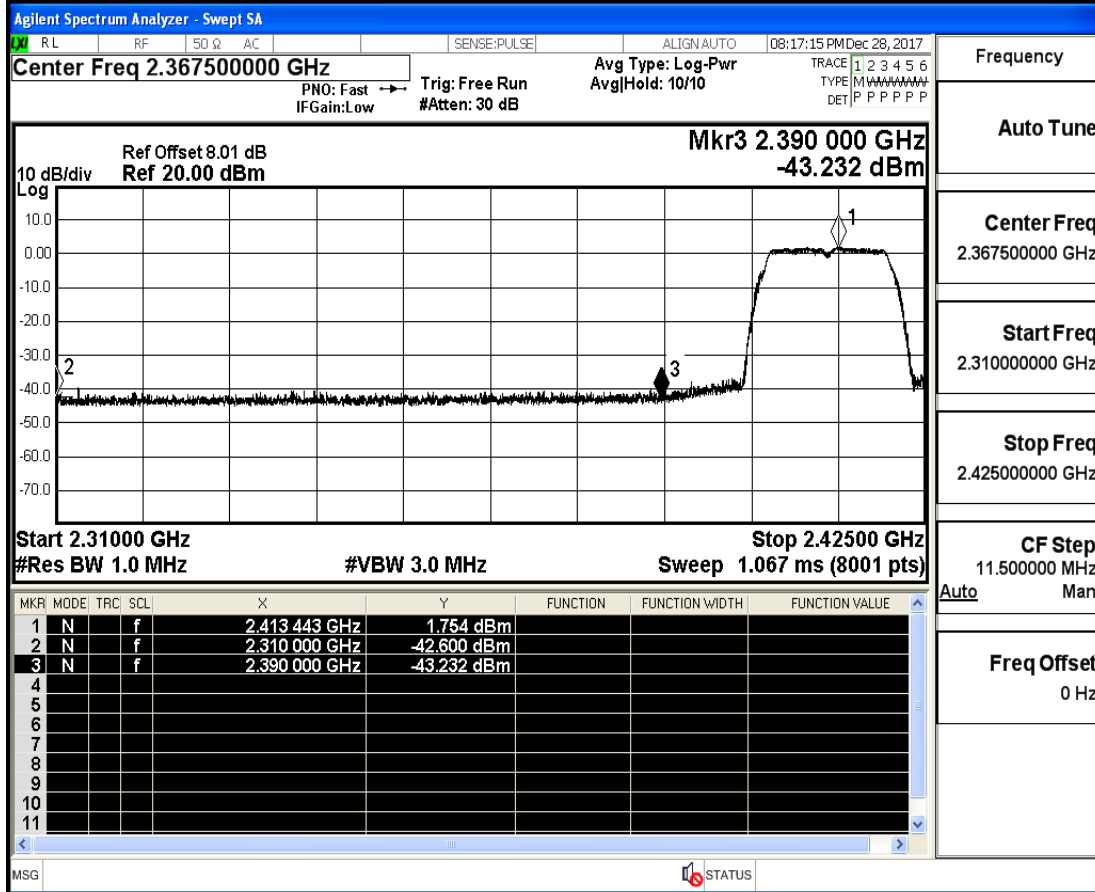
# Restrict-band band-edge measurements\_11B\_2462\_Ant1\_PEAK



# Restrict-band band-edge measurements\_11B\_2462\_Ant1\_AV



# Restrict-band band-edge measurements\_11G\_2412\_Ant1\_PEAK



Frequency

Auto Tune

Center Freq  
2.367500000 GHz

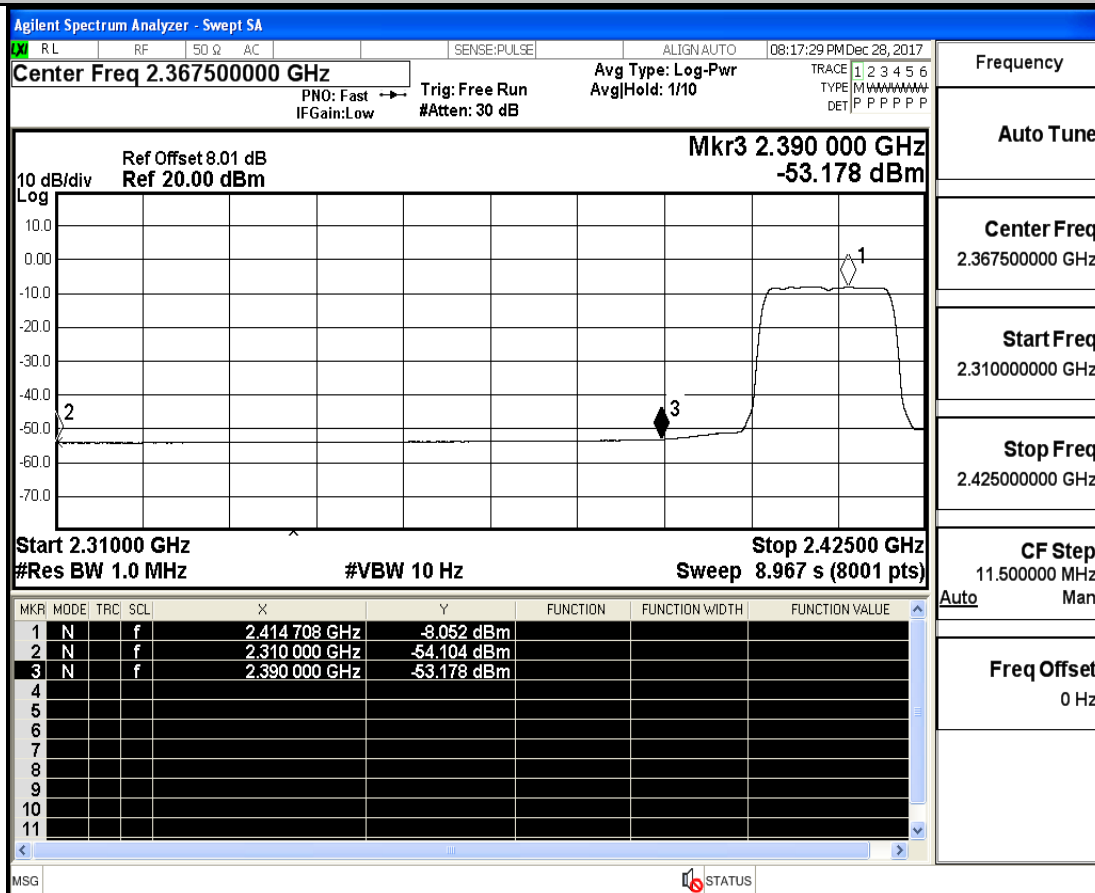
Start Freq  
2.310000000 GHz

Stop Freq  
2.425000000 GHz

CF Step  
11.500000 MHz  
Auto Man

Freq Offset  
0 Hz

# Restrict-band band-edge measurements\_11G\_2412\_Ant1\_AV



Frequency

Auto Tune

Center Freq  
2.367500000 GHz

Start Freq  
2.310000000 GHz

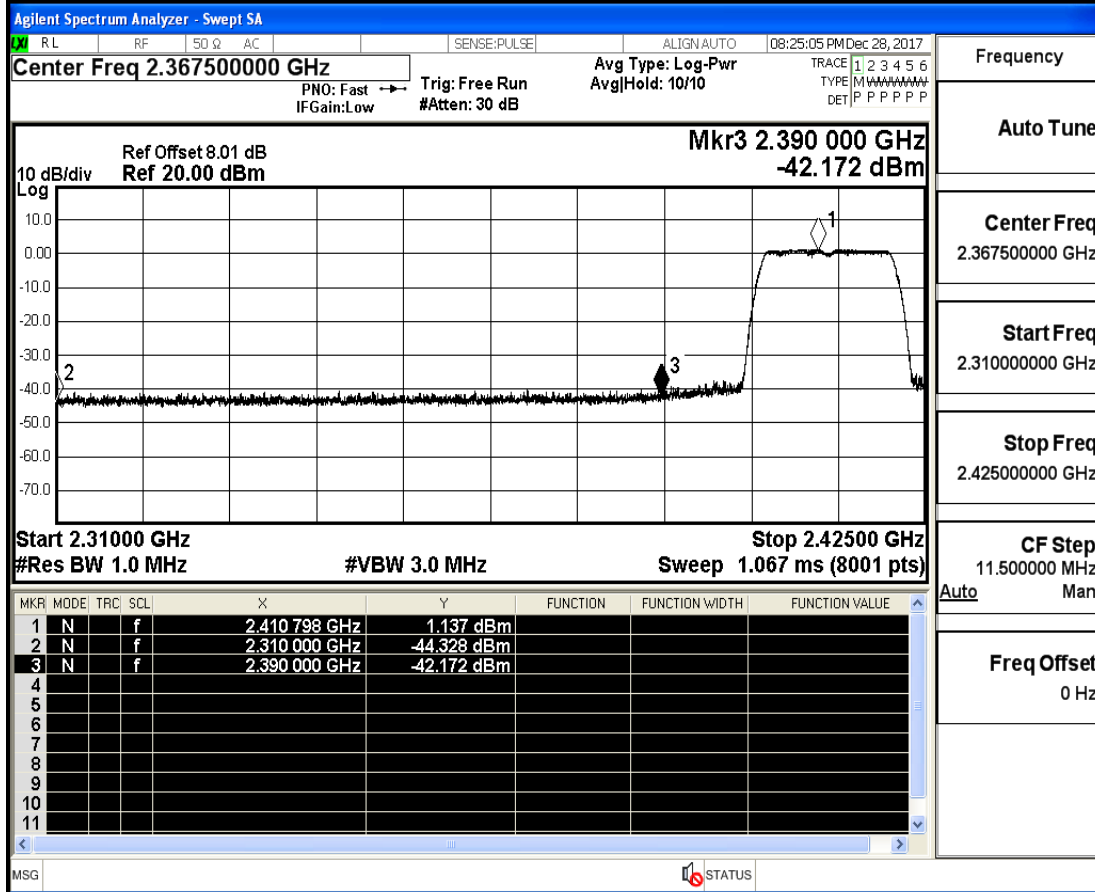
Stop Freq  
2.425000000 GHz

CF Step  
11.500000 MHz  
Auto Man

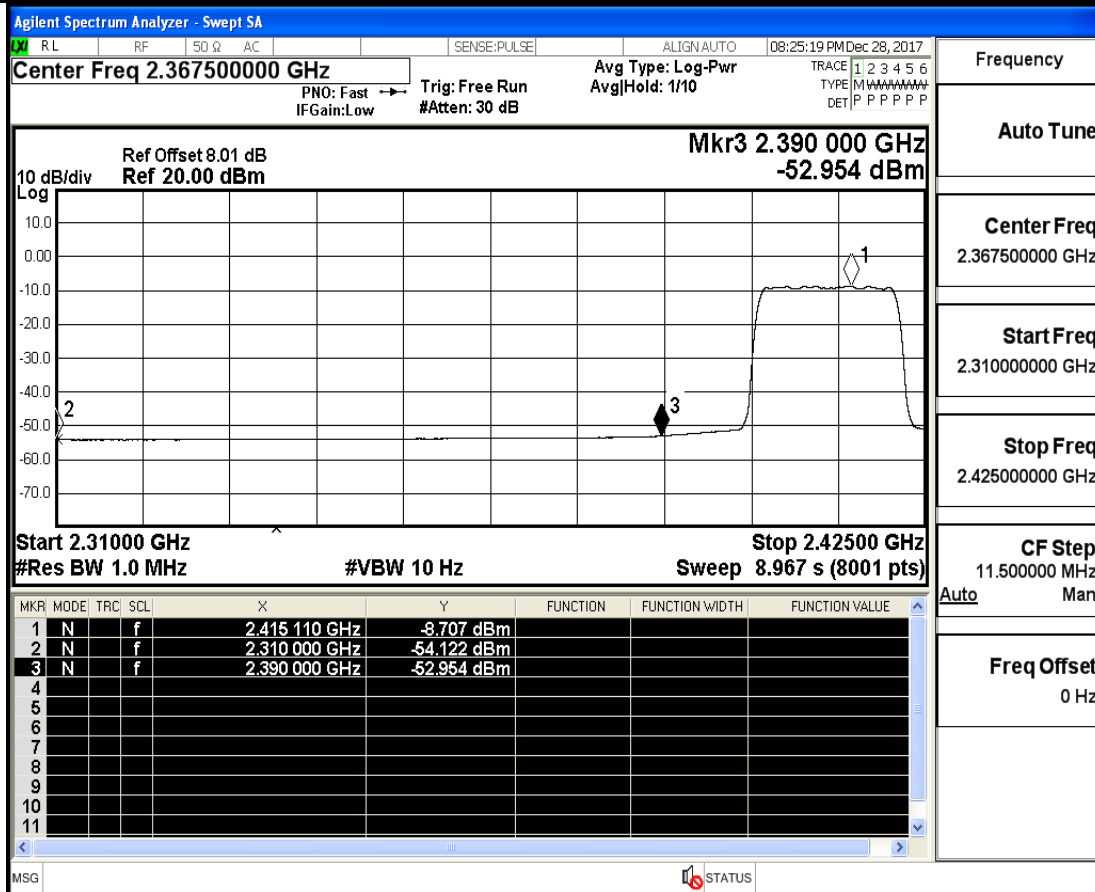
Freq Offset  
0 Hz



# Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_PEAK



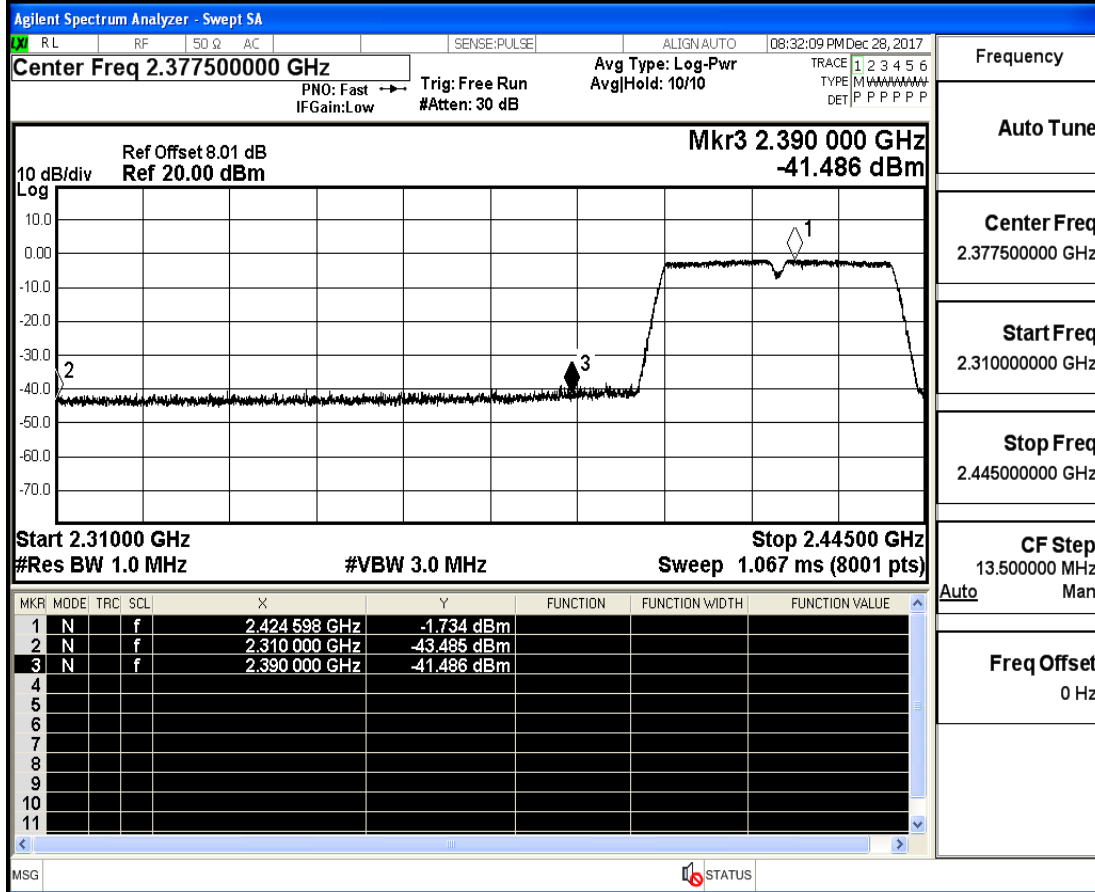
# Restrict-band band-edge measurements\_11N20SISO\_2412\_Ant1\_AV



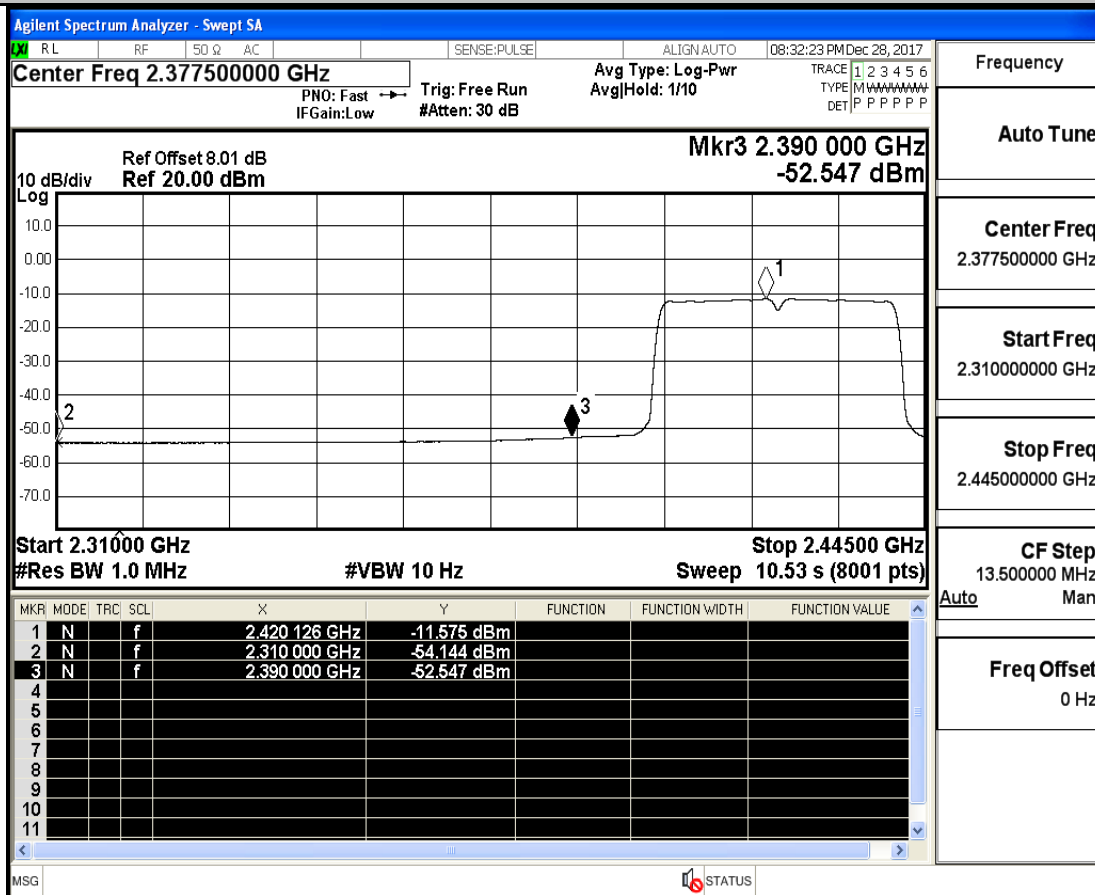




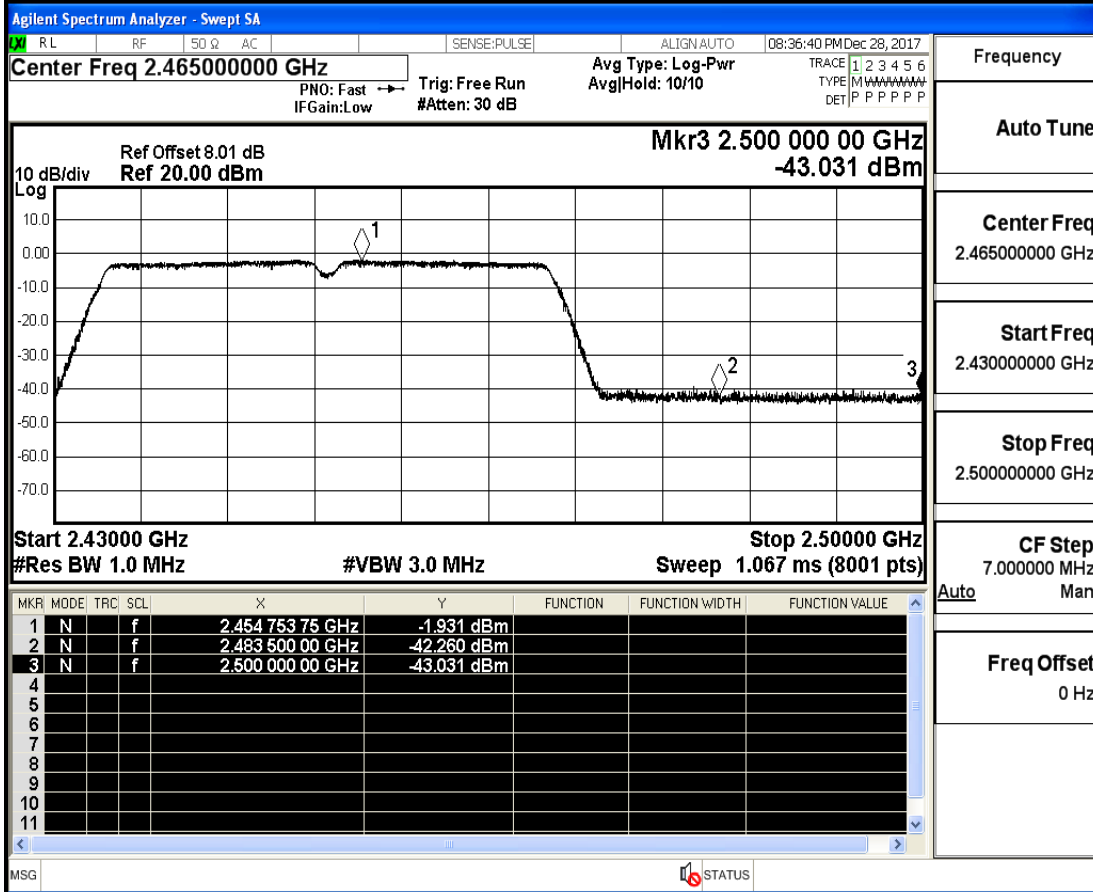
# Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_PEAK



# Restrict-band band-edge measurements\_11N40SISO\_2422\_Ant1\_AV



# Restrict-band band-edge measurements\_11N40SISO\_2452\_Ant1\_PEAK



Frequency

Auto Tune

Center Freq  
2.465000000 GHz

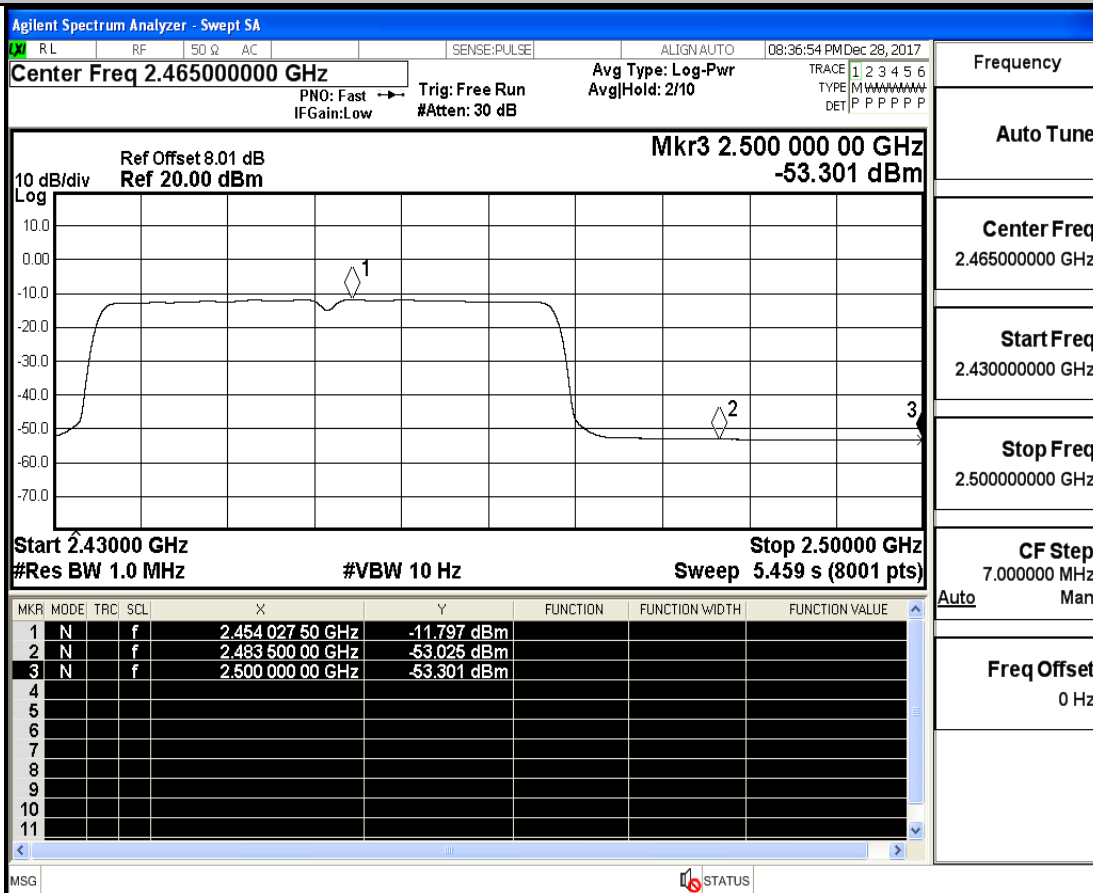
Start Freq  
2.430000000 GHz

Stop Freq  
2.500000000 GHz

CF Step  
7.000000 MHz  
Auto Man

Freq Offset  
0 Hz

# Restrict-band band-edge measurements\_11N40SISO\_2452\_Ant1\_AV



Frequency

Auto Tune

Center Freq  
2.465000000 GHz

Start Freq  
2.430000000 GHz

Stop Freq  
2.500000000 GHz

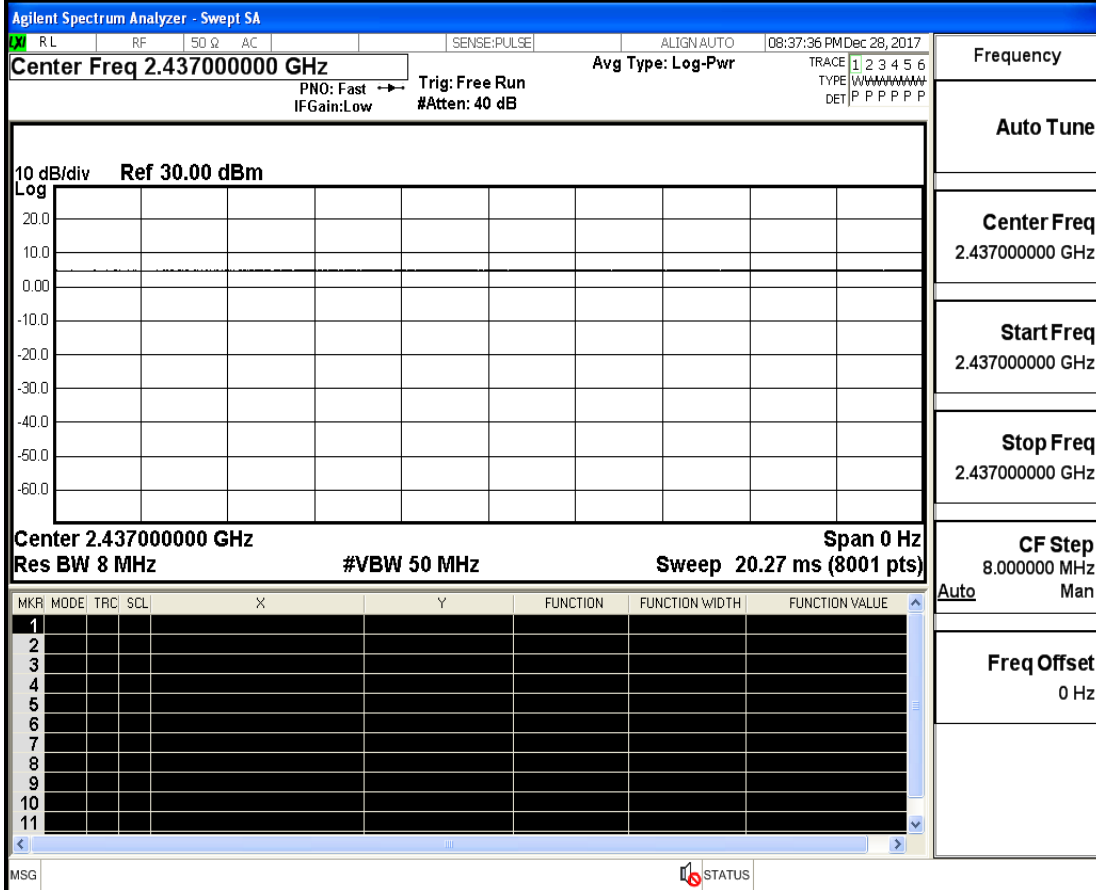
CF Step  
7.000000 MHz  
Auto Man

Freq Offset  
0 Hz

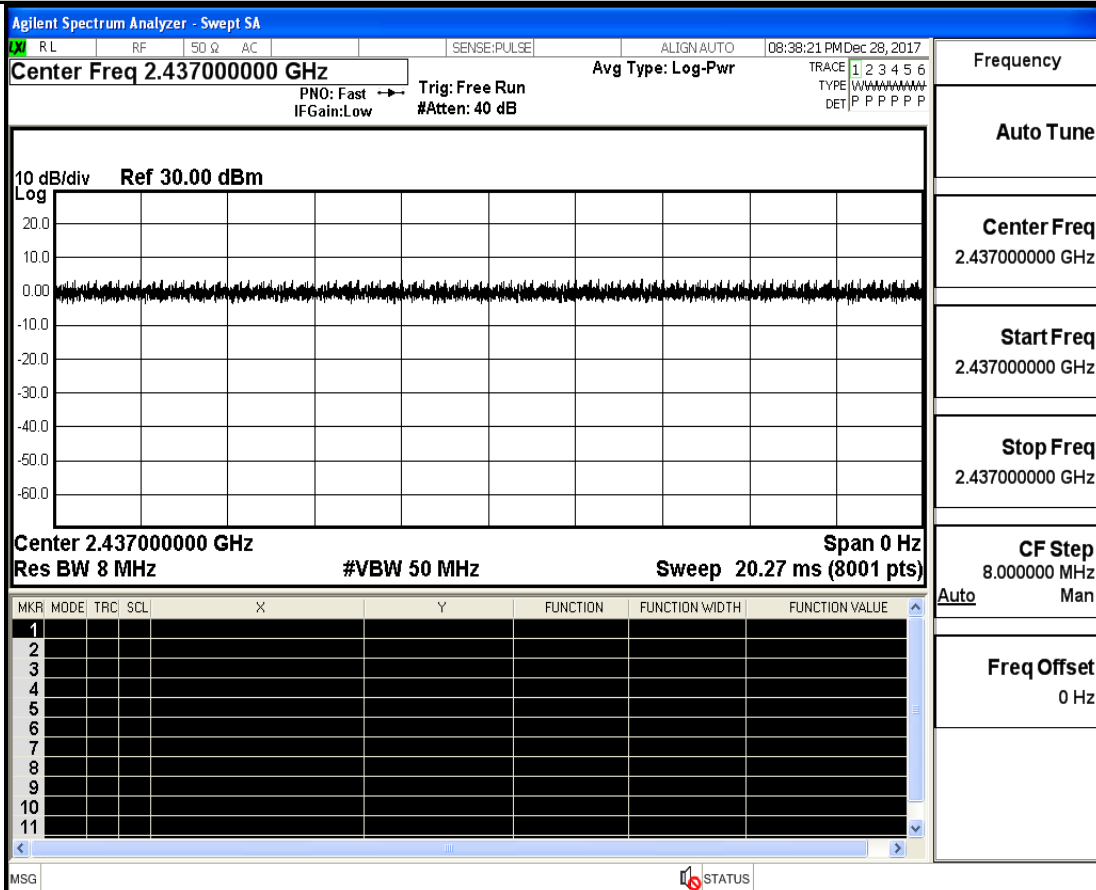
**C.7 Duty Cycle**

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
11B	2437	Ant1	100	PASS
11G	2437	Ant1	100	PASS
11N20SISO	2437	Ant1	100	PASS
11N40SISO	2437	Ant1	100	PASS

# Duty Cycle\_11B\_2437\_Ant1



# Duty Cycle\_11G\_2437\_Ant1



Duty Cycle\_11N20ISO\_2437\_Ant1

**Agilent Spectrum Analyzer - Swept SA**

RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 08:38:55 PM Dec 28, 2017

**Center Freq 2.437000000 GHz** Avg Type: Log-Pwr

PNO: Fast → Trig: Free Run  
IFGain: Low #Atten: 40 dB

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

**10 dB/div Ref 30.00 dBm**

**Log**

20.0  
10.0  
0.0  
-10.0  
-20.0  
-30.0  
-40.0  
-50.0  
-60.0

**Center 2.437000000 GHz** **Span 0 Hz**  
**Res BW 8 MHz** **#VBW 50 MHz** **Sweep 20.27 ms (8001 pts)**

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

**Frequency**

**Auto Tune**

**Center Freq**  
2.437000000 GHz

**Start Freq**  
2.437000000 GHz

**Stop Freq**  
2.437000000 GHz

**CF Step**  
8.000000 MHz  
Auto Man

**Freq Offset**  
0 Hz

Duty Cycle\_11N40SISO\_2437\_Ant1

**Agilent Spectrum Analyzer - Swept SA**

**Center Freq 2.437000000 GHz**

**Auto Tune**

**Center Freq 2.437000000 GHz**

**Start Freq 2.437000000 GHz**

**Stop Freq 2.437000000 GHz**

**Center Freq 2.437000000 GHz**

**Res BW 8 MHz**

**#VBW 50 MHz**

**Sweep 20.27 ms (8001 pts)**

**Span 0 Hz**

**CF Step 8.000000 MHz**

**Freq Offset 0 Hz**

**10 dB/div Ref 30.00 dBm**

**Log**

**Trig: Free Run**

**#Atten: 40 dB**

**Msg**

**Status**