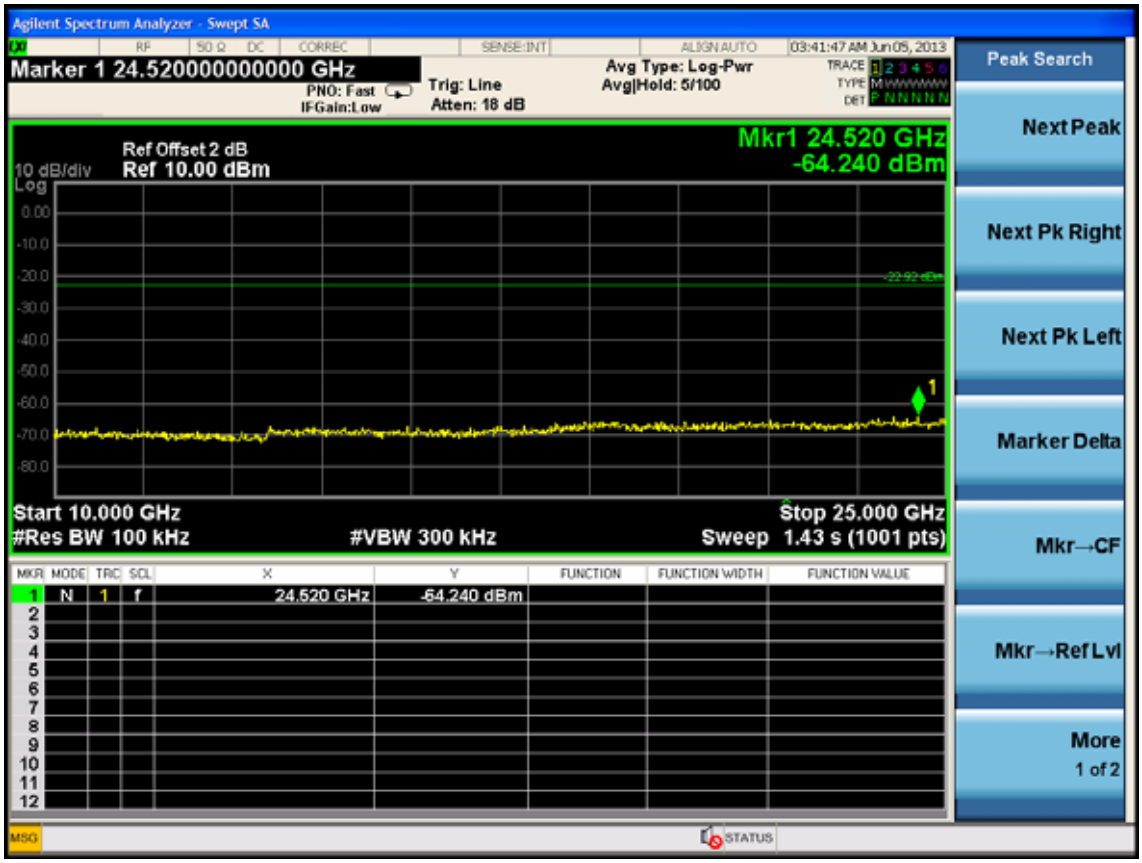
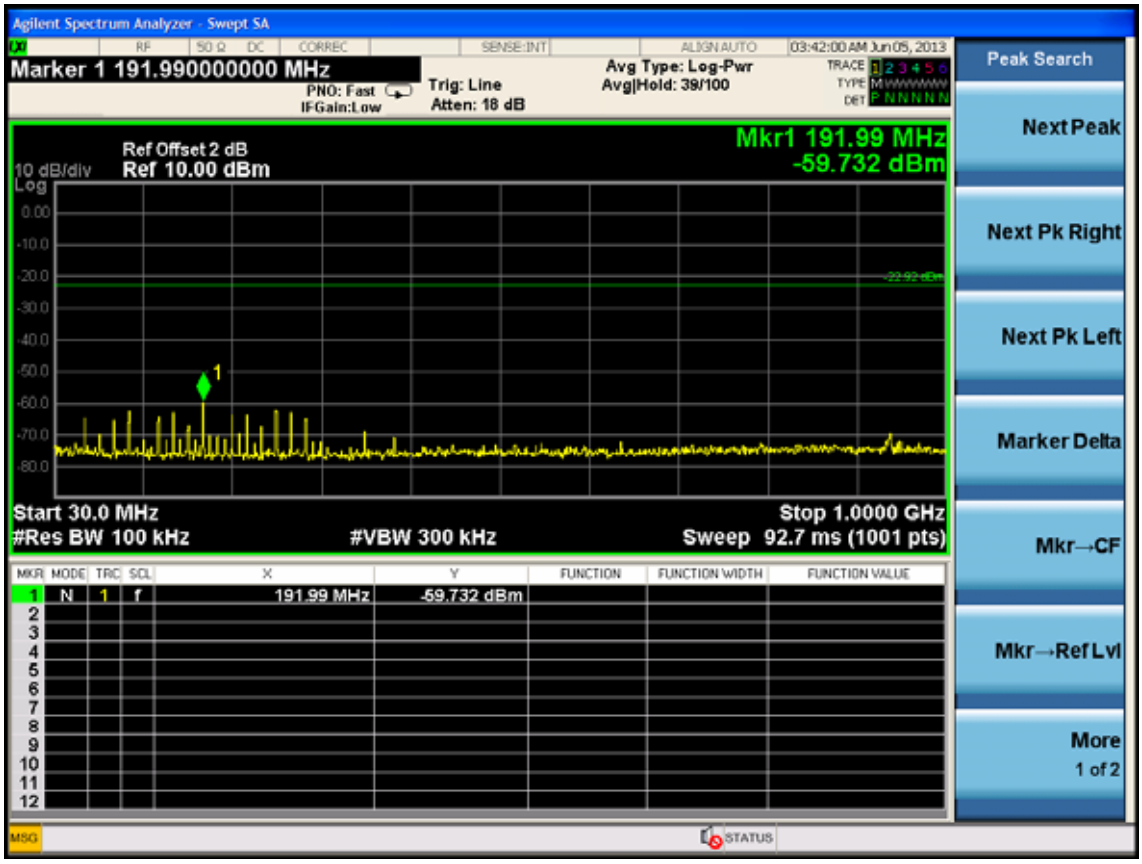
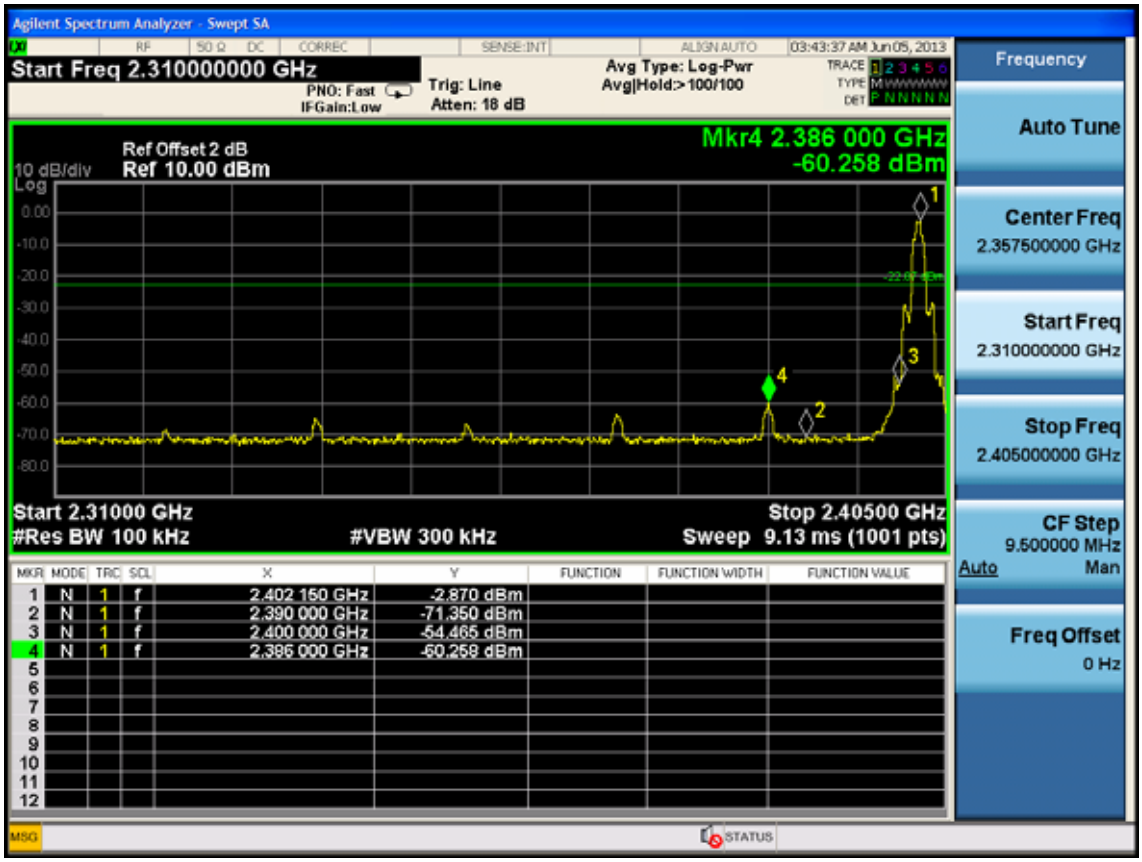
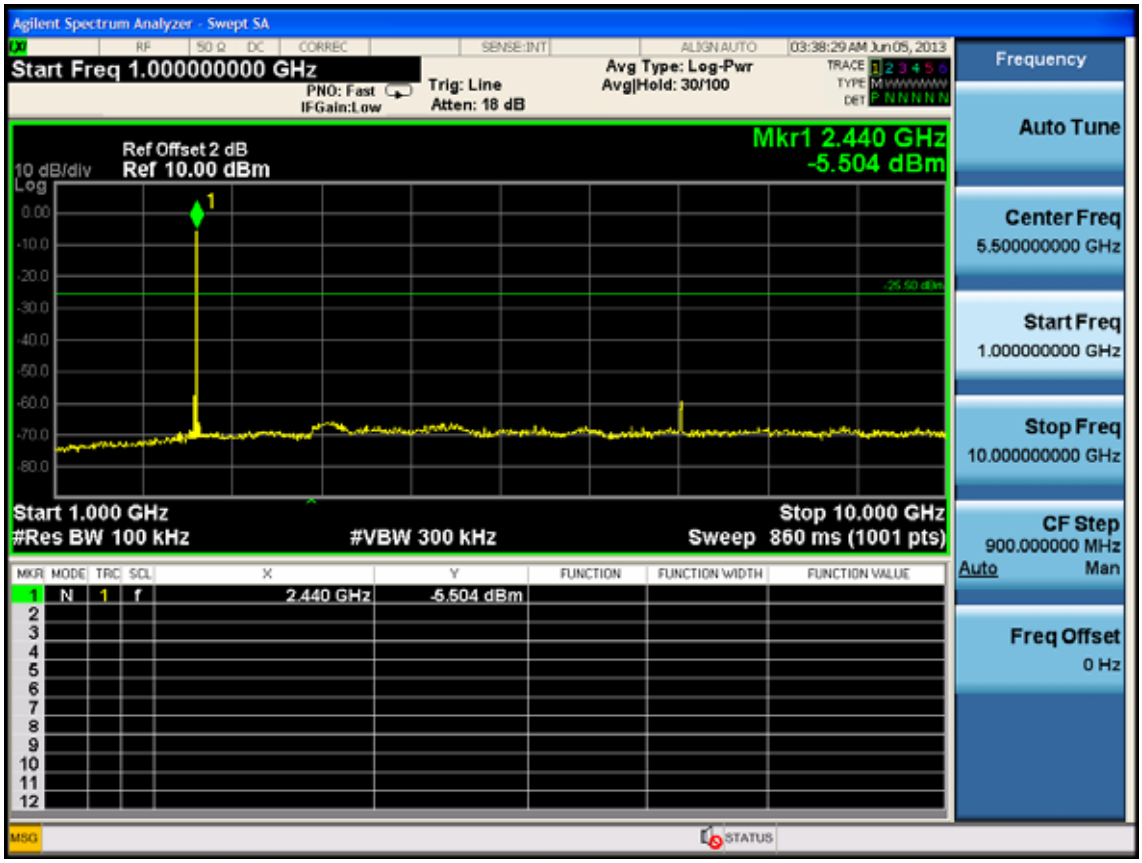
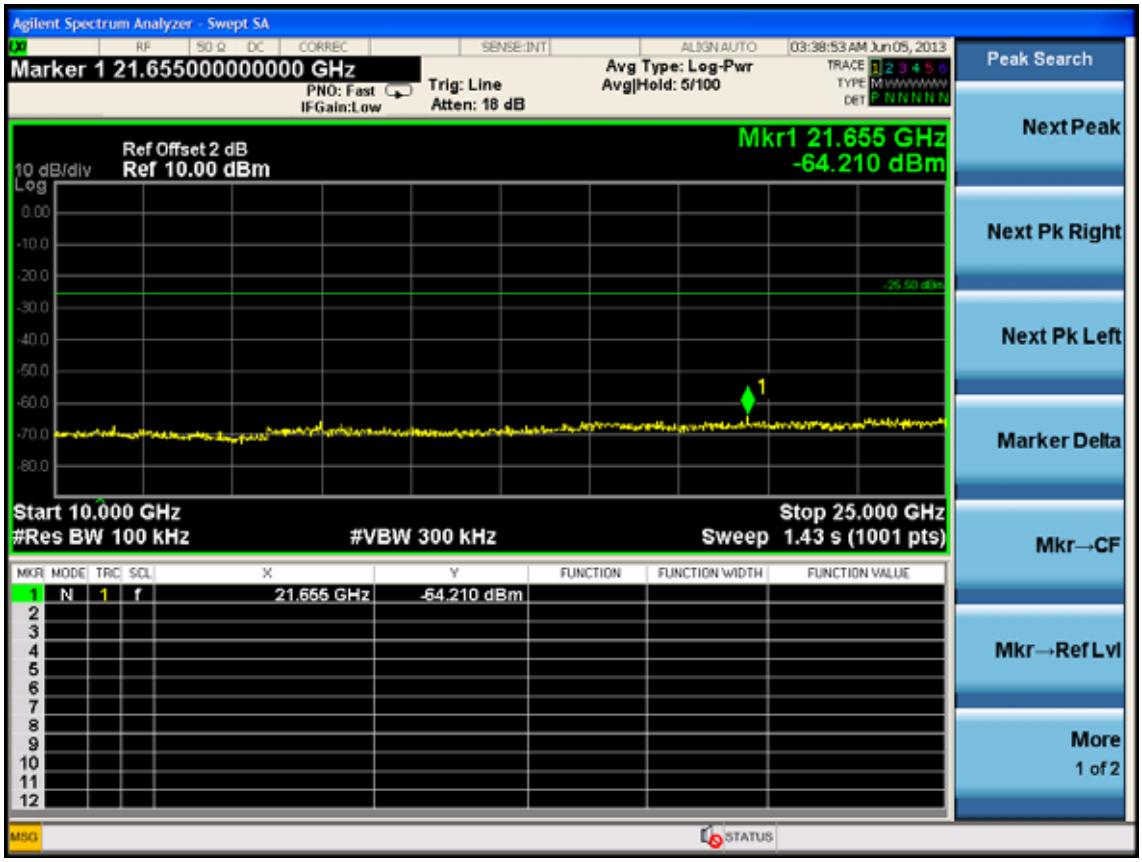

Agilent Spectrum Analyzer - Swept SA
Marker 1 24.520000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold: 5/100
03:41:47 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 24.520 GHz
-64.240 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 1.43 s (1001 pts)
1 N 1 f 24.520 GHz -64.240 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

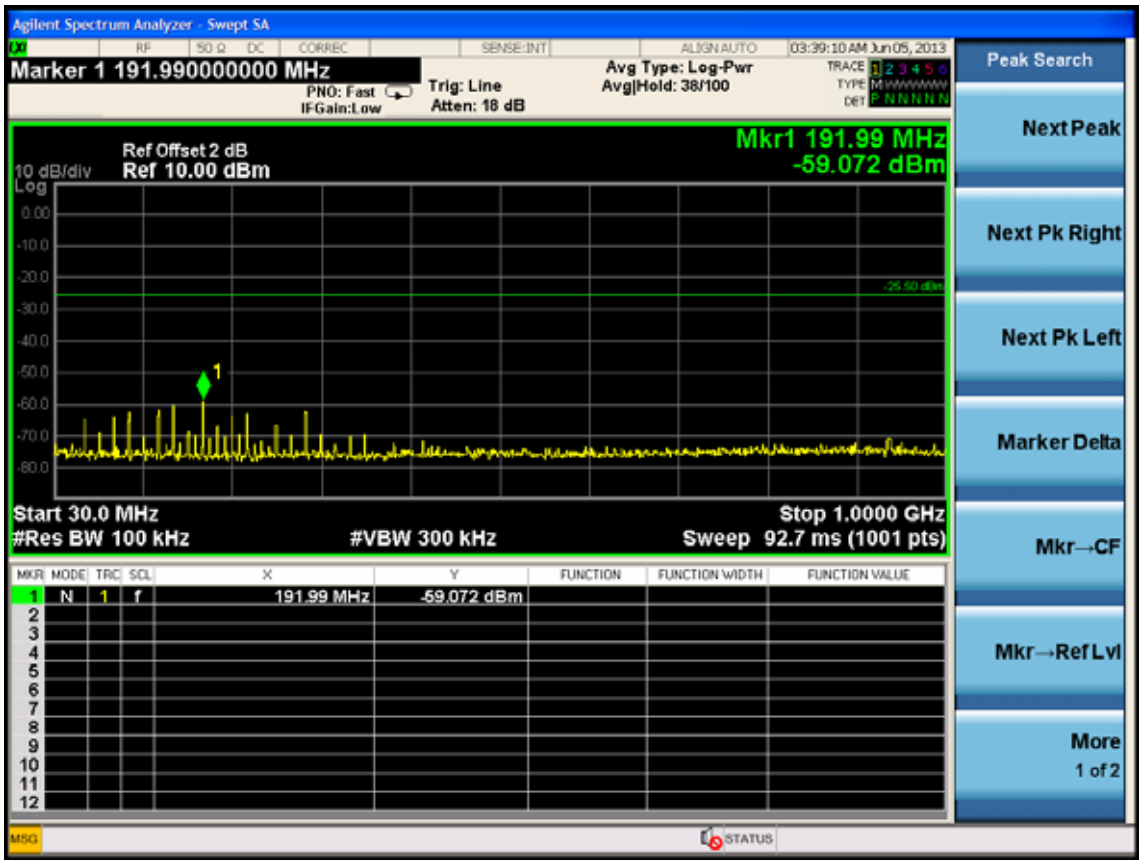

Agilent Spectrum Analyzer - Swept SA
Marker 1 191.990000000 MHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold: 39/100
03:42:00 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 191.99 MHz
-59.732 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.7 ms (1001 pts)
1 N 1 f 191.99 MHz -59.732 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.310000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
03:43:37 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr4 2.386 000 GHz
-60.258 dBm
Start 2.31000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.40500 GHz
Sweep 9.13 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.402 150 GHz -2.870 dBm
2 N 1 f 2.390 000 GHz -71.350 dBm
3 N 1 f 2.400 000 GHz -54.465 dBm
4 N 1 f 2.386 000 GHz -60.258 dBm
Frequency
Auto Tune
Center Freq
2.357500000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.405000000 GHz
CF Step
9.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

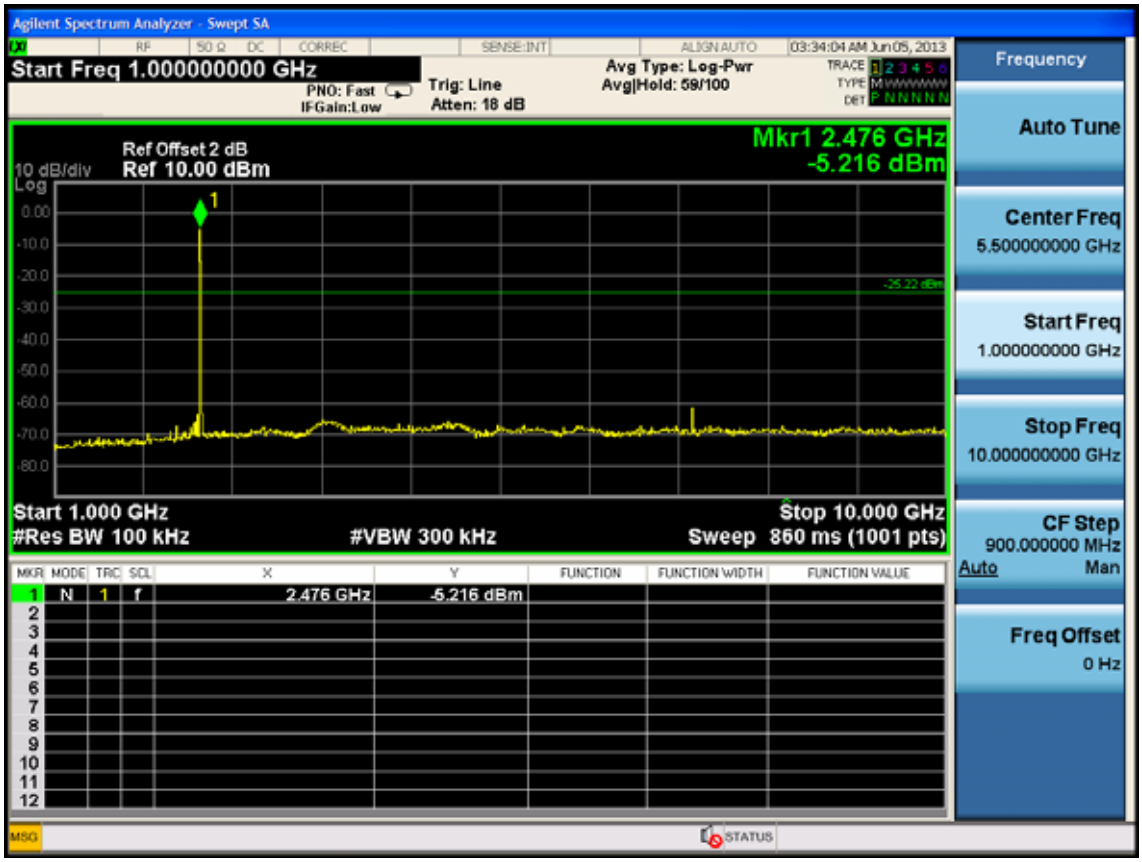
2441MHz

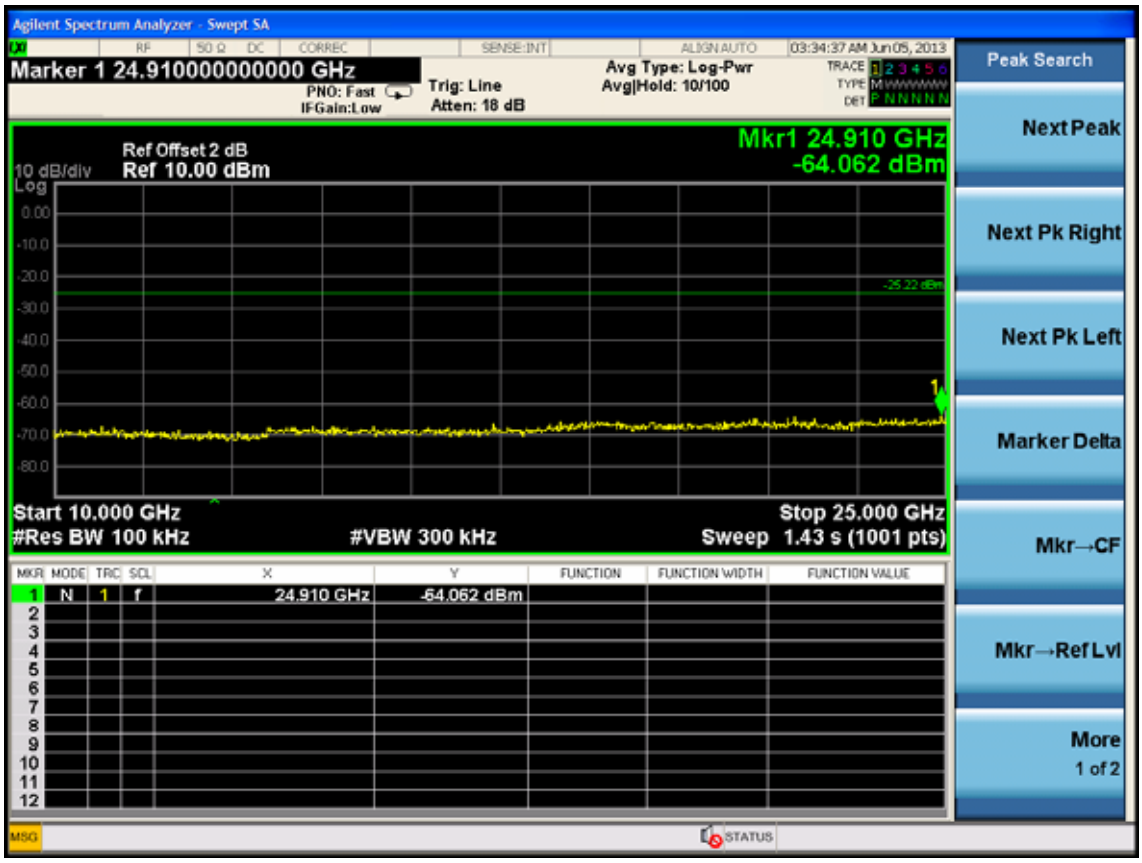

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold: 30/100
03:38:29 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.440 GHz
-5.504 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 860 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.440 GHz -5.504 dBm
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
900.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

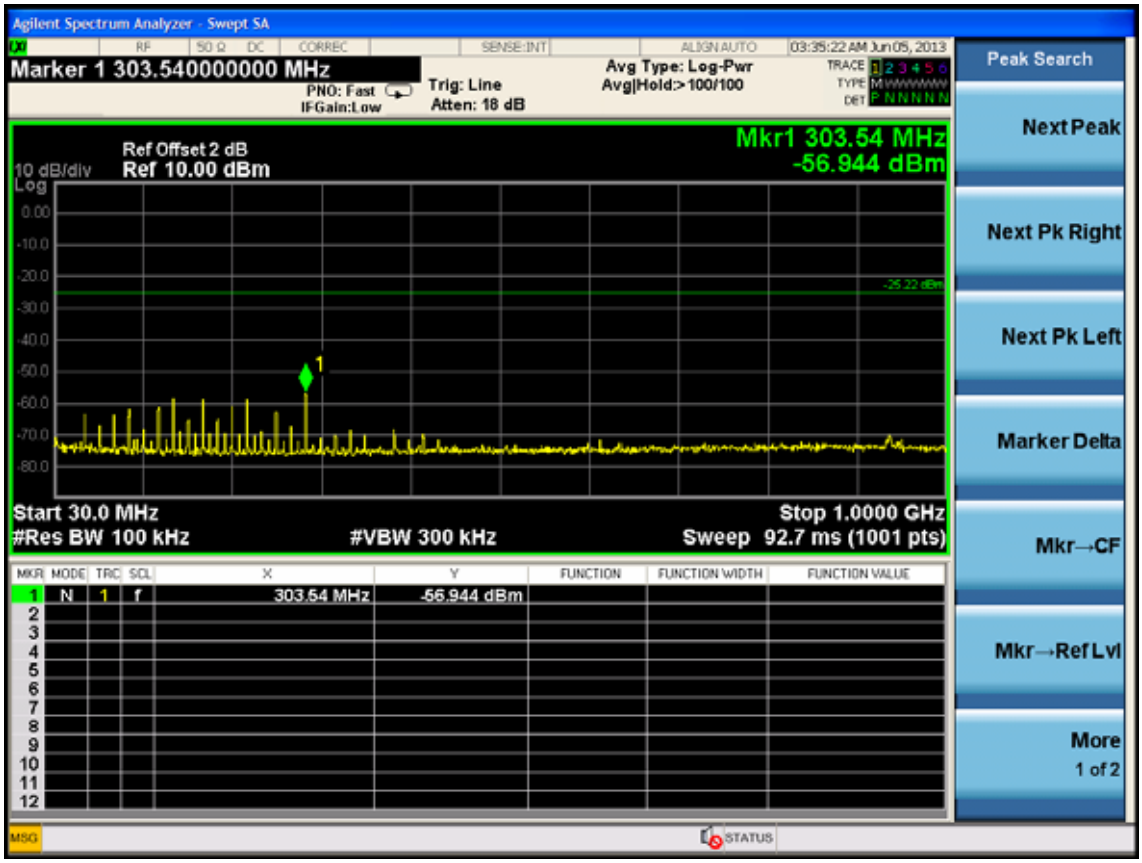

Agilent Spectrum Analyzer - Swept SA
Marker 1 21.655000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold: 5/100
03:38:53 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 21.655 GHz
-64.210 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 1.43 s (1001 pts)
1 N 1 f 21.655 GHz -64.210 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

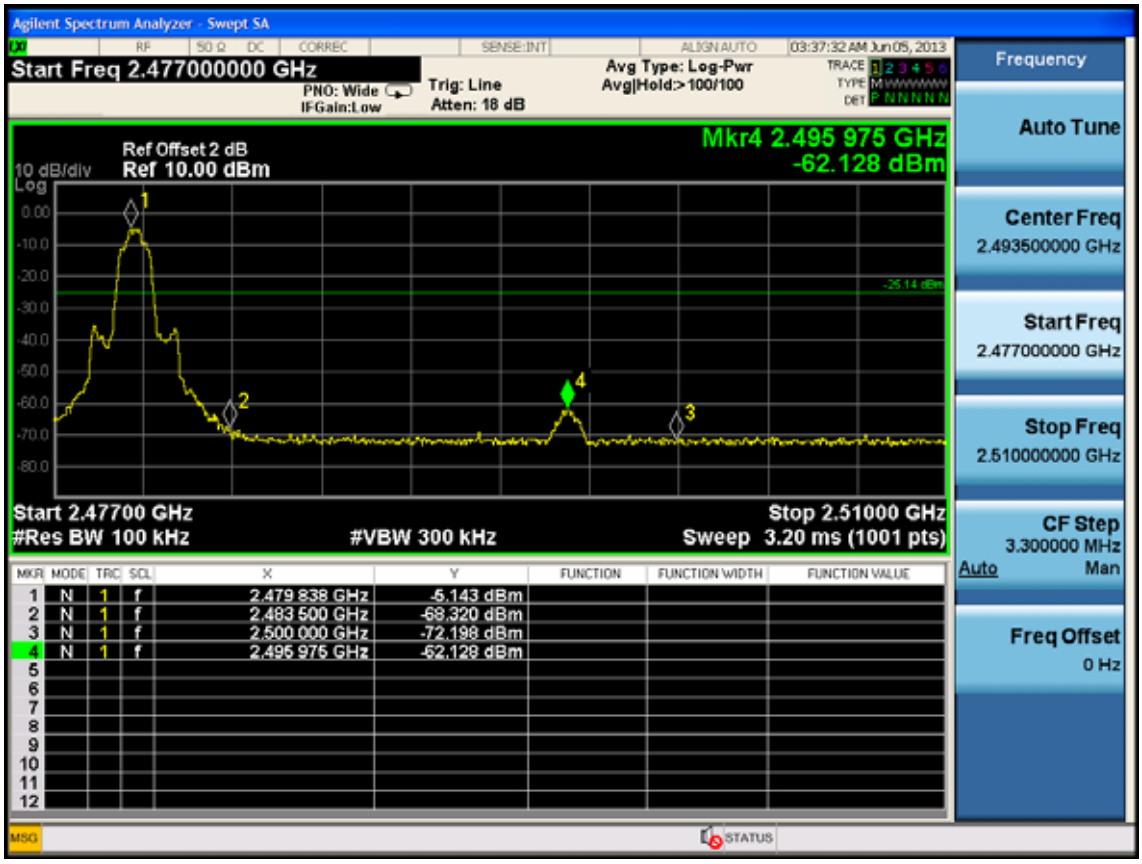

Agilent Spectrum Analyzer - Swept SA
Marker 1 191.990000000 MHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold: 38/100
03:39:10 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 191.99 MHz
-59.072 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.7 ms (1001 pts)
1 N 1 f 191.99 MHz -59.072 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

2480MHz

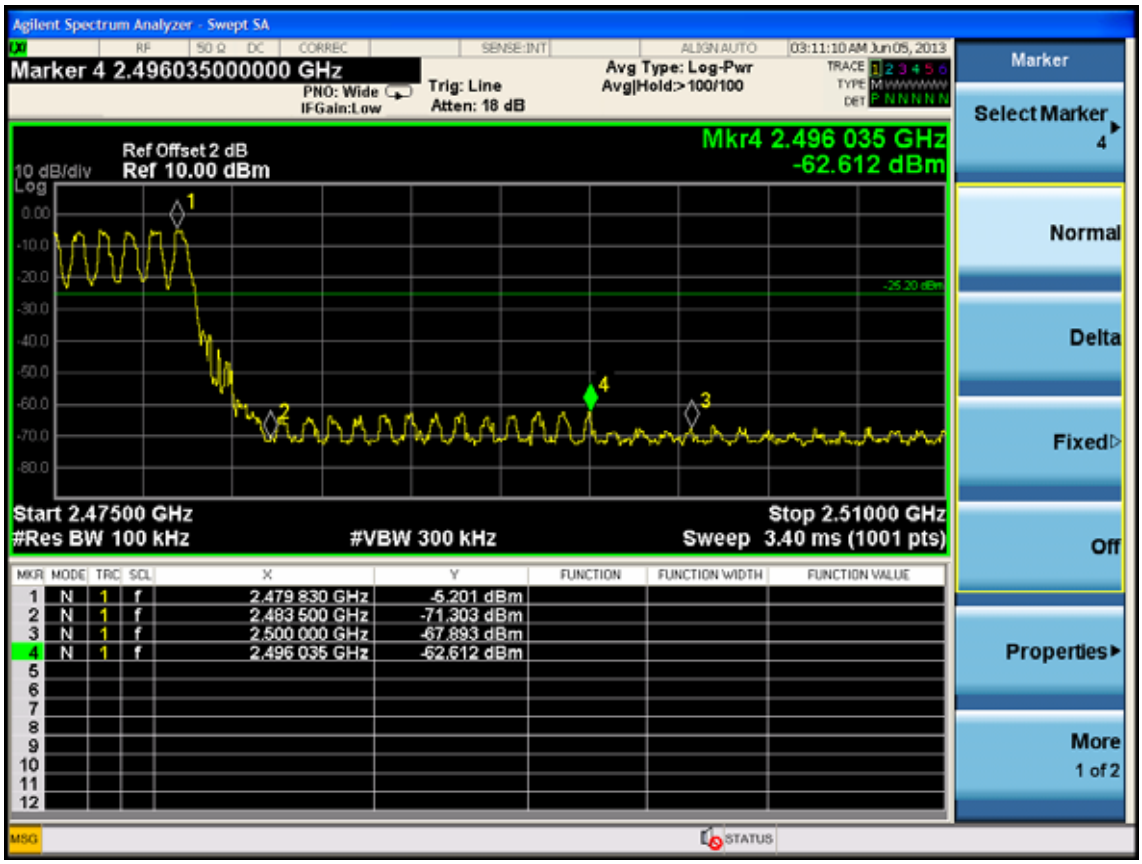

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold: 58/100
03:34:04 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.476 GHz
-5.216 dBm
-25.22 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 860 ms (1001 pts)
1 N 1 f 2.476 GHz -5.216 dBm
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
900.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

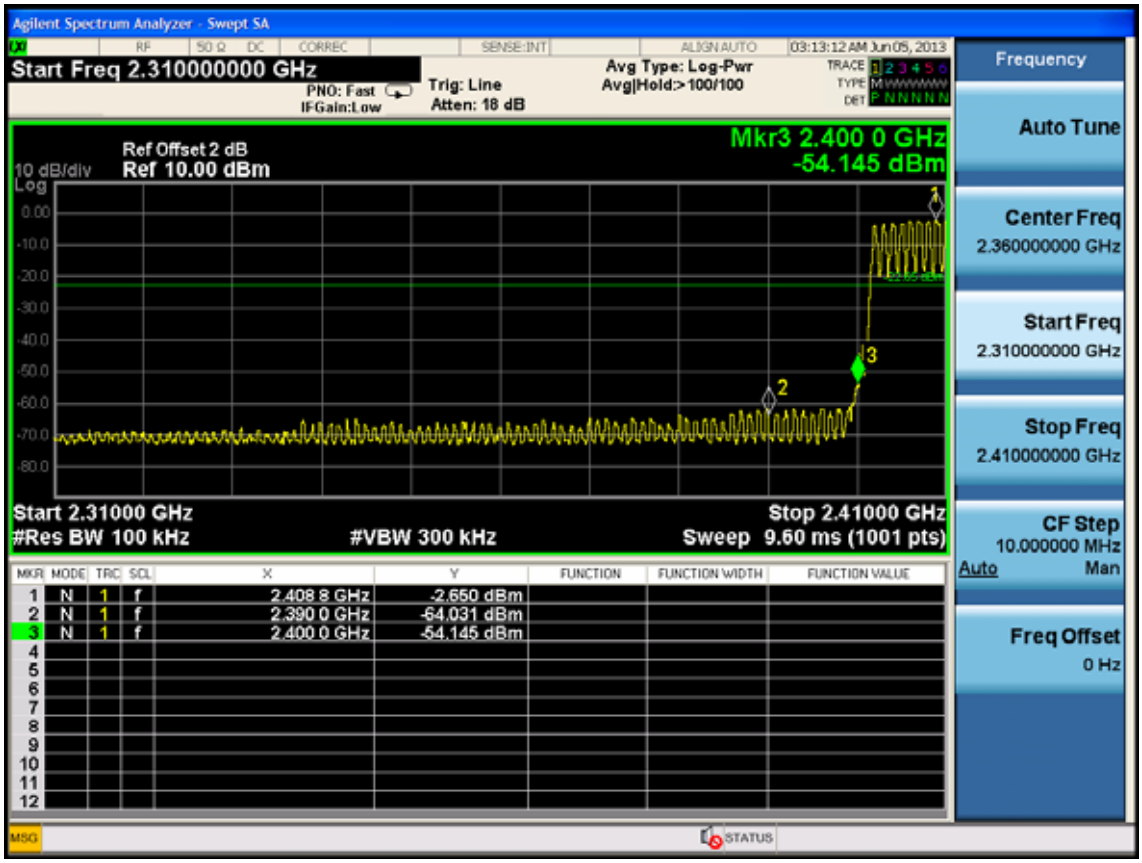

Agilent Spectrum Analyzer - Swept SA
Marker 1 24.910000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold: 10/100
03:34:37 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 24.910 GHz
-64.062 dBm
-25.22 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 1.43 s (1001 pts)
1 N 1 f 24.910 GHz -64.062 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
Marker 1 303.540000000 MHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
03:35:22 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 303.54 MHz
-56.944 dBm
-25.22 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.7 ms (1001 pts)
1 N 1 f 303.54 MHz -56.944 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

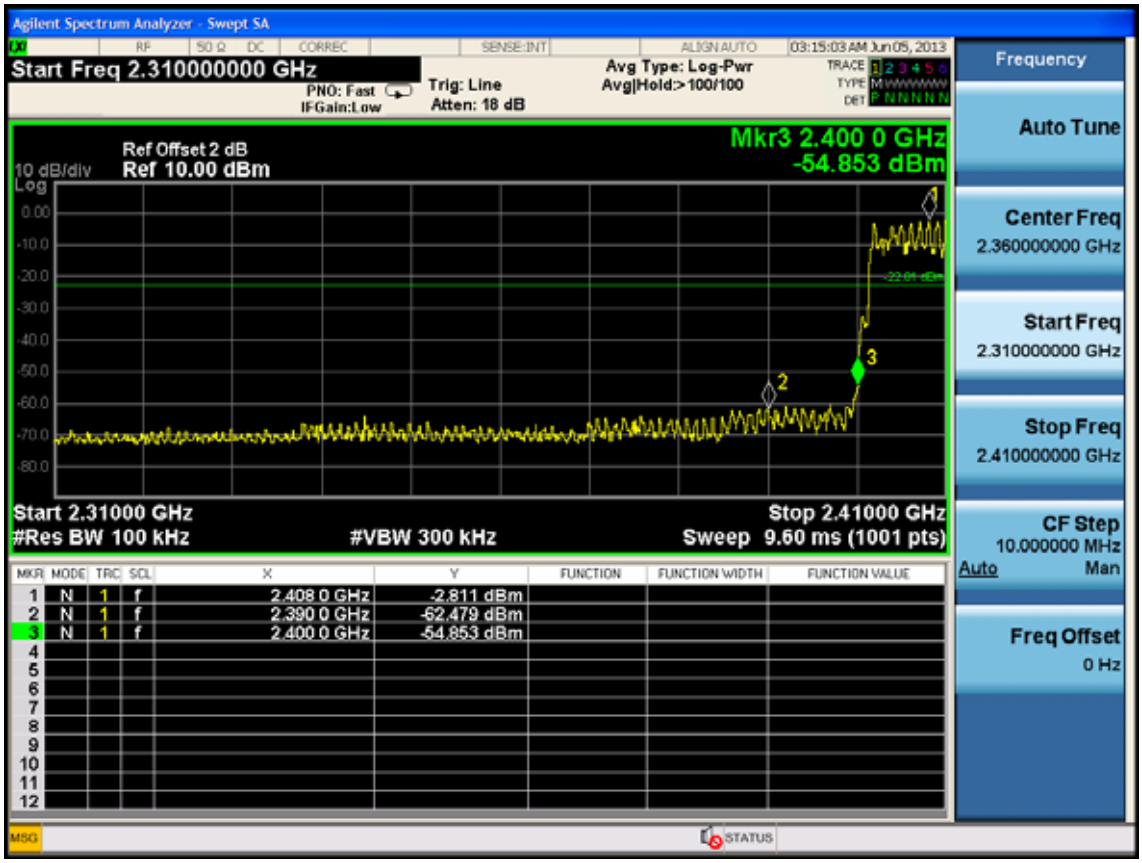

Agilent Spectrum Analyzer - Swept SA
Start Freq 2.477000000 GHz
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
03:37:32 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr4 2.495 975 GHz
-62.128 dBm
-25.14 dBm
Start 2.47700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.51000 GHz
Sweep 3.20 ms (1001 pts)
1 N 1 f 2.479 838 GHz -5.143 dBm
2 N 1 f 2.483 500 GHz -68.320 dBm
3 N 1 f 2.500 000 GHz -72.198 dBm
4 N 1 f 2.495 975 GHz -62.128 dBm
Frequency
Auto Tune
Center Freq
2.493500000 GHz
Start Freq
2.477000000 GHz
Stop Freq
2.510000000 GHz
CF Step
3.300000 MHz
Auto
Man
Freq Offset
0 Hz

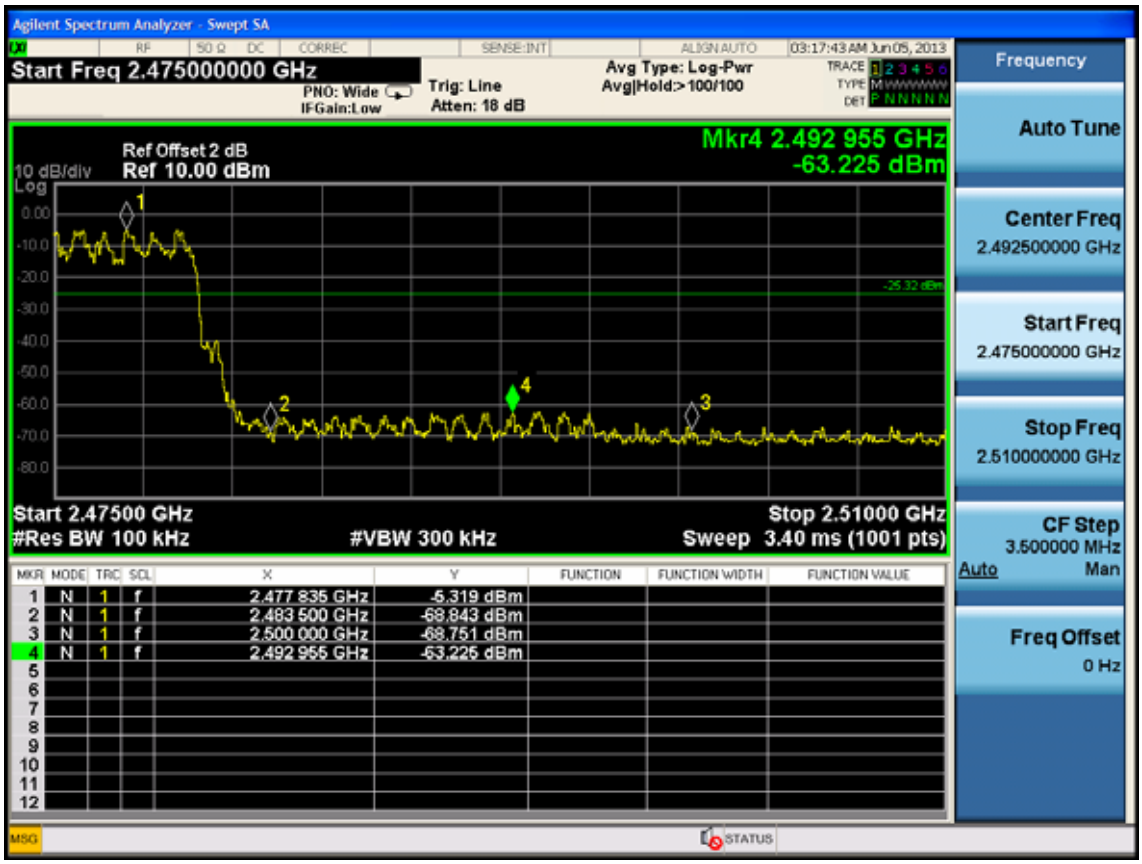
Hopping on GFSK





8-DPSK


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.310000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
03:15:03 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr3 2.400 0 GHz
-54.853 dBm
Start 2.31000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.41000 GHz
Sweep 9.60 ms (1001 pts)
1 N 1 f 2.408 0 GHz -2.811 dBm
2 N 1 f 2.390 0 GHz -62.479 dBm
3 N 1 f 2.400 0 GHz -54.853 dBm
Frequency
Auto Tune
Center Freq
2.360000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.410000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.475000000 GHz
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
03:17:43 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr4 2.492 955 GHz
-63.225 dBm
Start 2.47500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.51000 GHz
Sweep 3.40 ms (1001 pts)
1 N 1 f 2.477 835 GHz -5.319 dBm
2 N 1 f 2.483 500 GHz -68.843 dBm
3 N 1 f 2.500 000 GHz -68.751 dBm
4 N 1 f 2.492 955 GHz -63.225 dBm
Frequency
Auto Tune
Center Freq
2.492500000 GHz
Start Freq
2.475000000 GHz
Stop Freq
2.510000000 GHz
CF Step
3.500000 MHz
Auto
Man
Freq Offset
0 Hz

6. CARRIER FREQUENCY SEPARATION TEST

6.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Oct.31, 12	1 Year

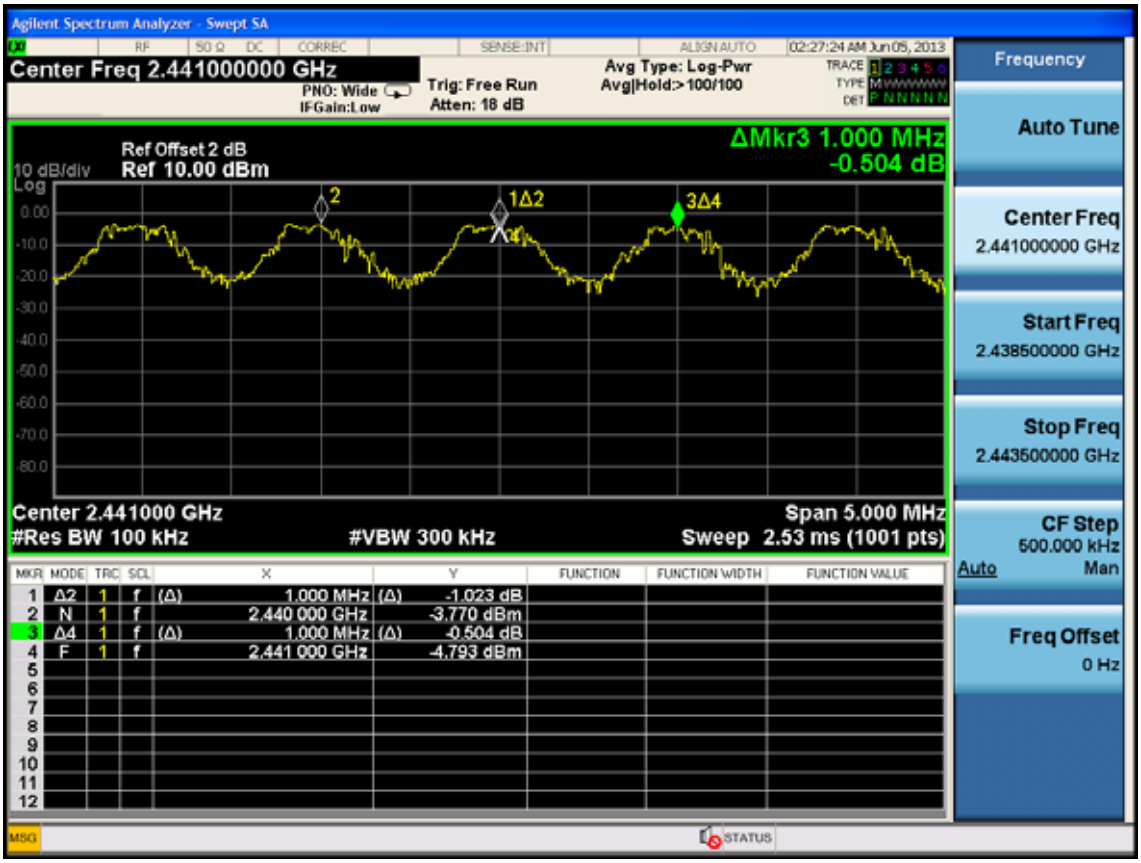
6.2.Limit

Frequency hopping systems shall have hopping channel carrier frequency separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

6.3.Test Results.

EUT: PlayJam GameStick Bluetooth HID Controller		
M/N: PJGS2358		
Test Date: 2013-06-05	Test site: RF Chamber	Tested by: Leo-Li
Tested by: Leo-Li	Test site: RF site	Temperature：25℃

Test Mode	Channel separation	Conclusion
8-DPSK	1.0MHz	PASS
GFSK	1.0MHz	PASS


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
02:27:24 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
ΔMkr3 1.000 MHz
-0.504 dB
Center 2.441000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 5.000 MHz
Sweep 2.53 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 Δ2 1 f (Δ) 1.000 MHz (Δ) -1.023 dB
2 N 1 f 2.440 000 GHz -3.770 dBm
3 Δ4 1 f (Δ) 1.000 MHz (Δ) -0.504 dB
4 F 1 f 2.441 000 GHz -4.793 dBm
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.438500000 GHz
Stop Freq
2.443500000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

7. 20 DB BANDWIDTH TEST

7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Oct.31, 12	1 Year

7.2. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

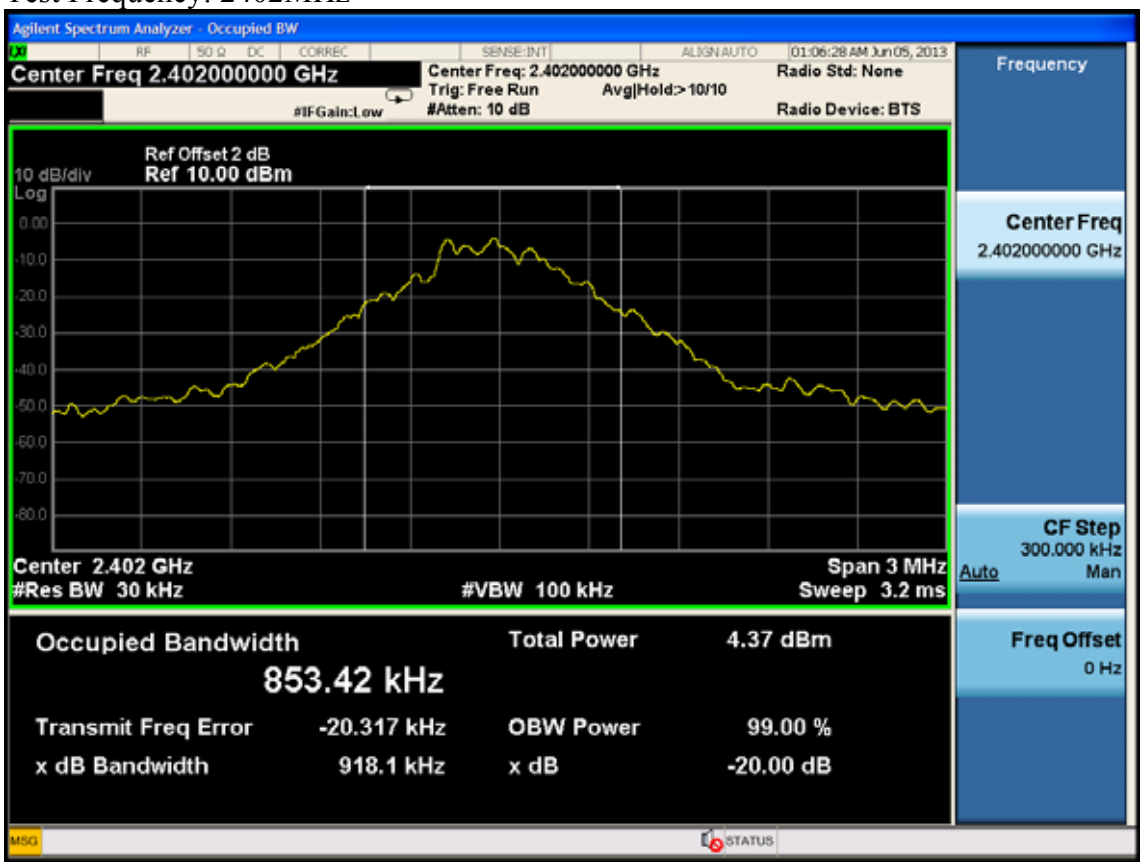
7.3. Test Results

EUT: PlayJam GameStick Bluetooth HID Controller		
M/N: PJGS2358		
Test Date: 2013-06-05	Test site: RF Chamber	Tested by: Leo-Li
Tested by: Leo-Li	Test site: RF site	Temperature：25℃

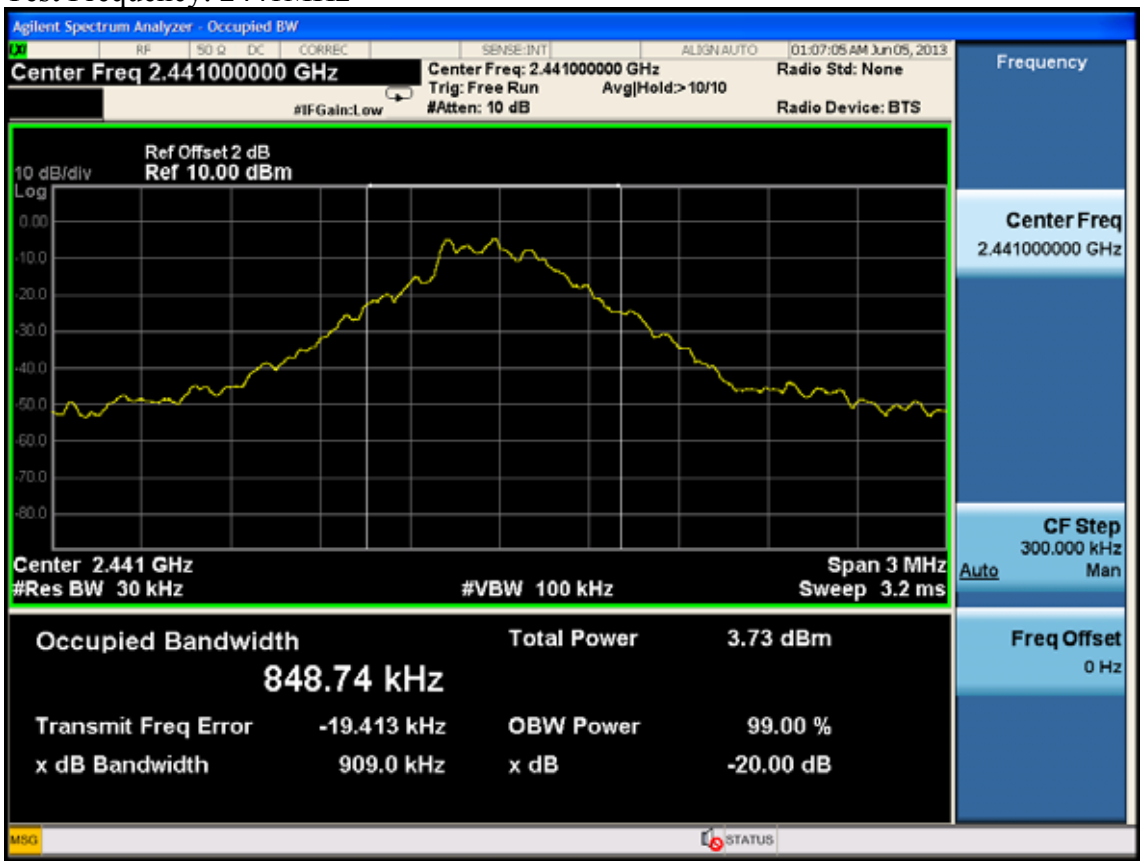
Test Mode	CH (MHz)	20dB bandwidth (KHz)	Limit (KHz)
GFSK	2402	918.1	N/A
	2441	909.0	N/A
	2480	862.2	N/A
8-DPSK	2402	1222	N/A
	2441	1218	N/A
	2480	1215	N/A
Conclusion：PASS			

GFSK

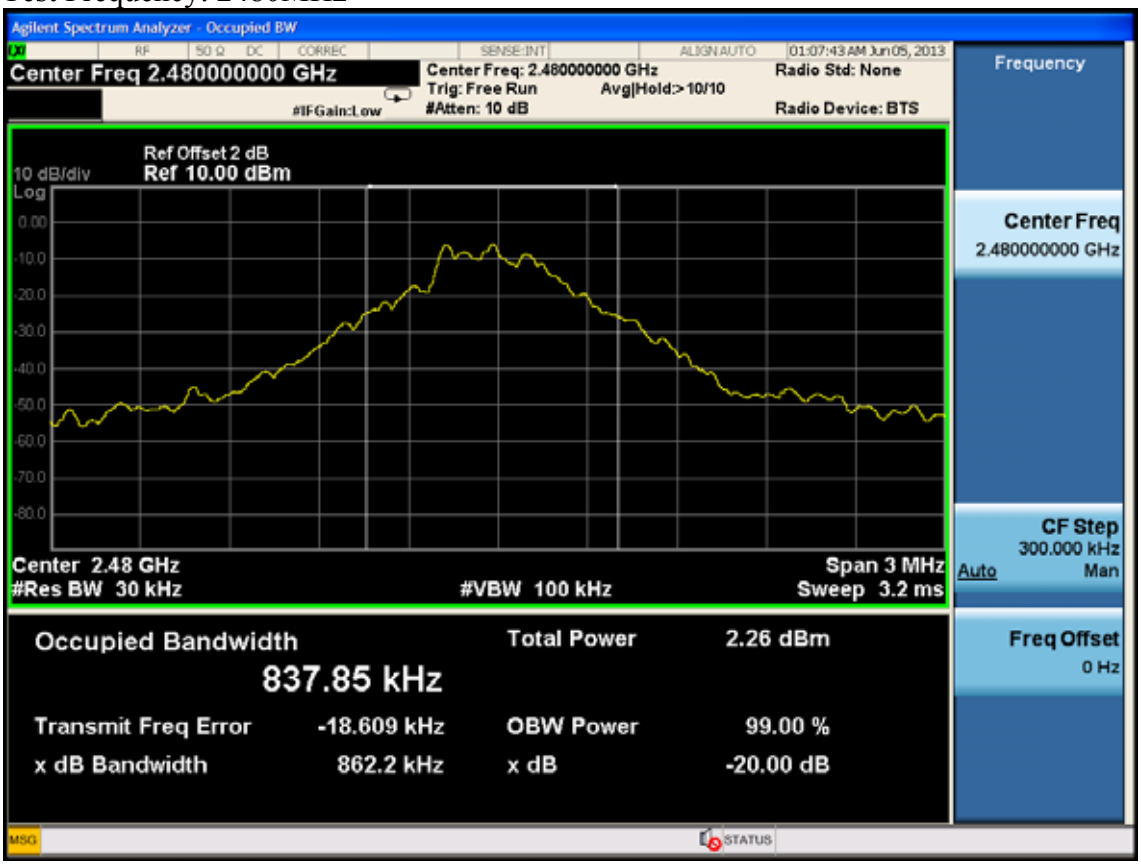
Test Frequency: 2402MHz



Test Frequency: 2441MHz

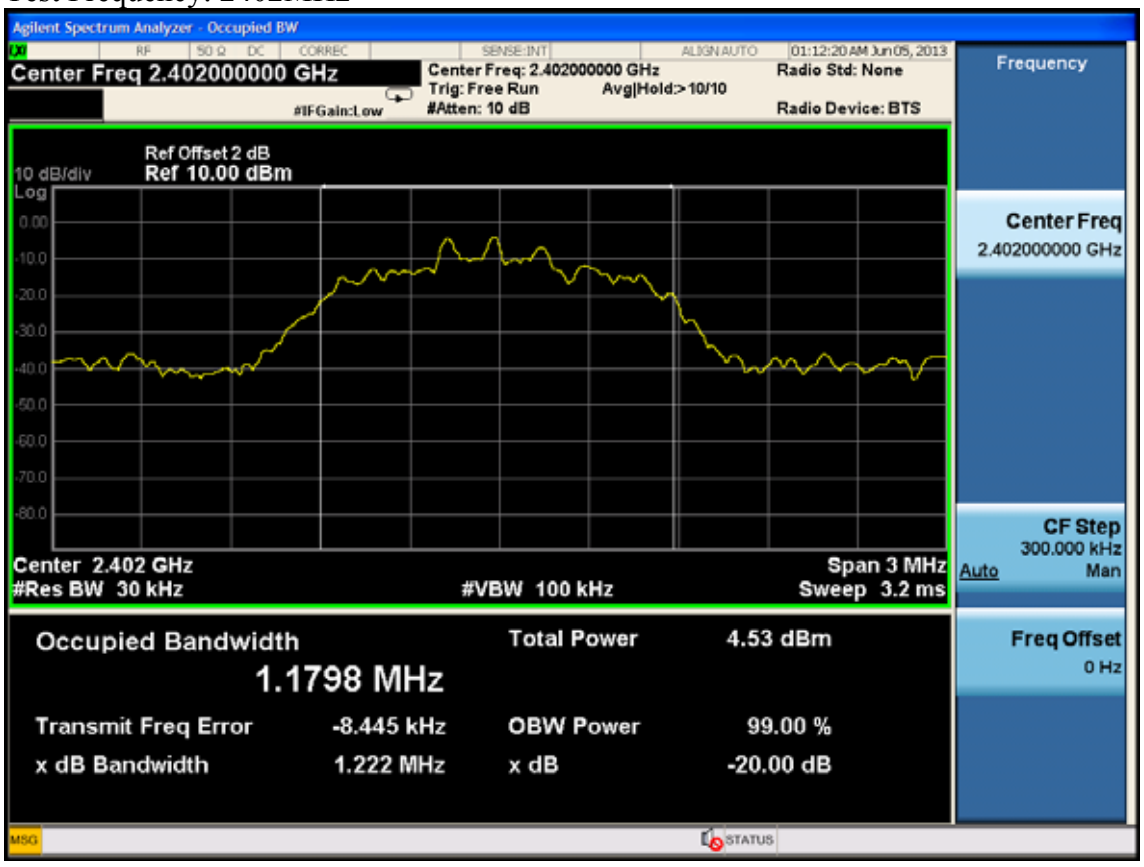


Test Frequency: 2480MHz

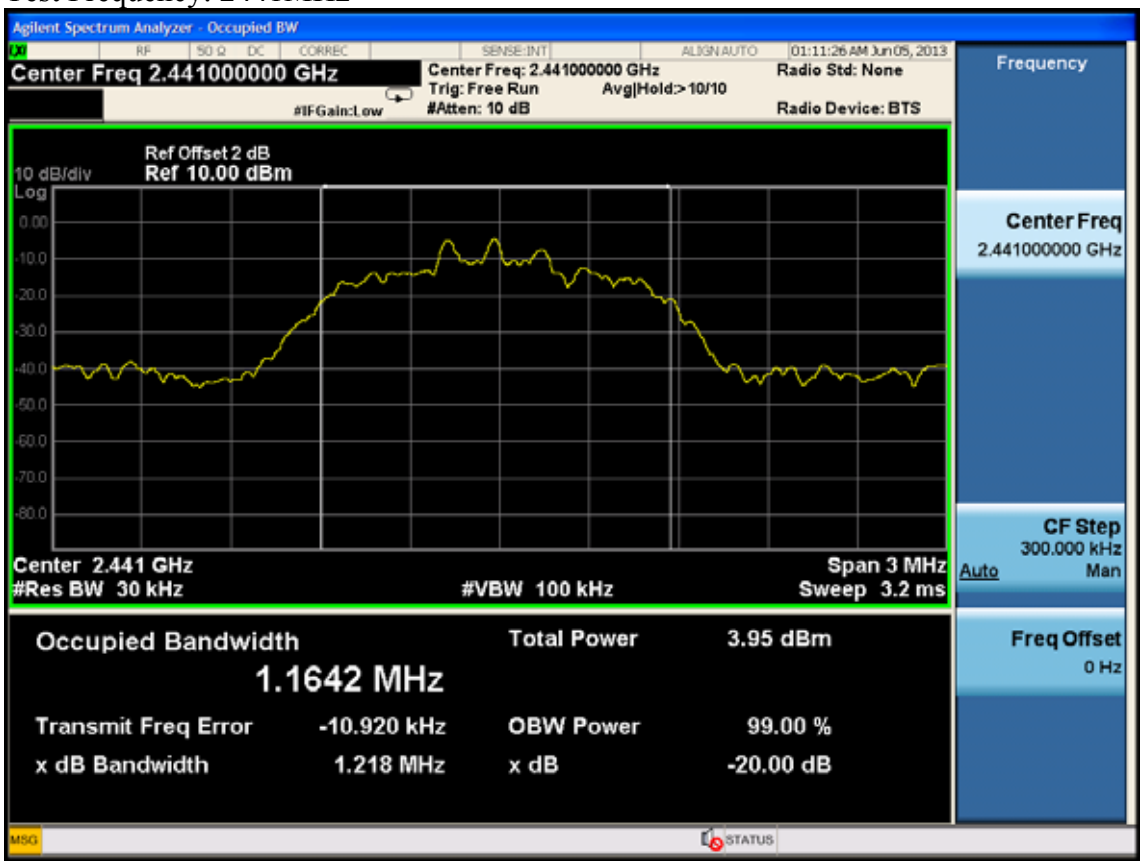


8-DPSK

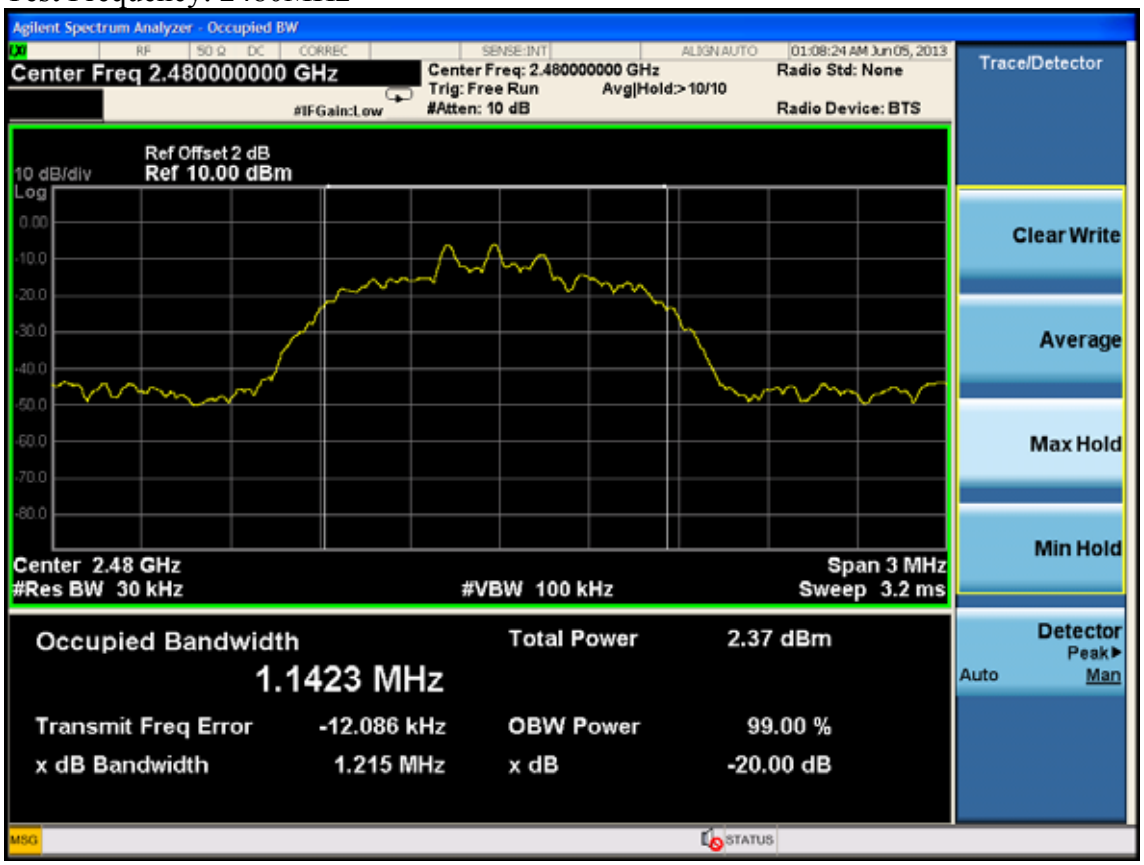
Test Frequency: 2402MHz



Test Frequency: 2441MHz



Test Frequency: 2480MHz



8. NUMBER OF HOPPING FREQUENCY TEST

8.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Oct.31, 12	1 Year

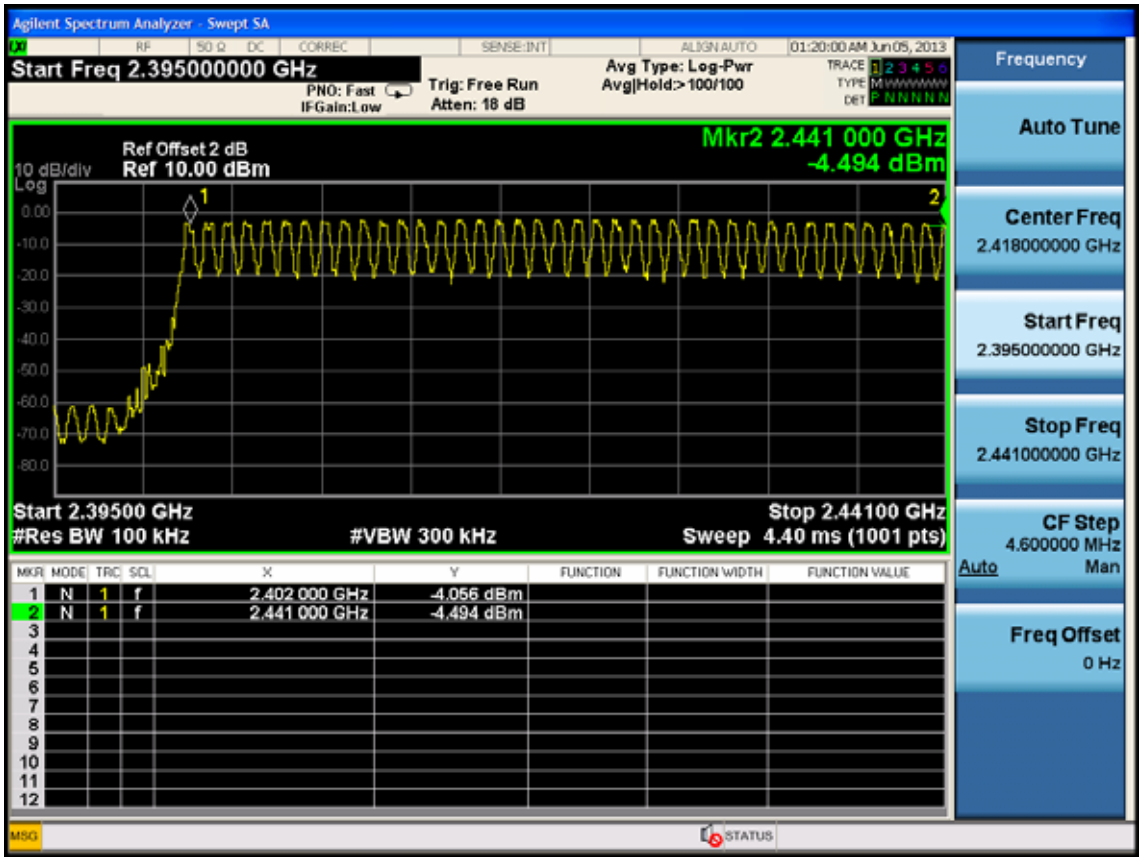
8.2.Limit

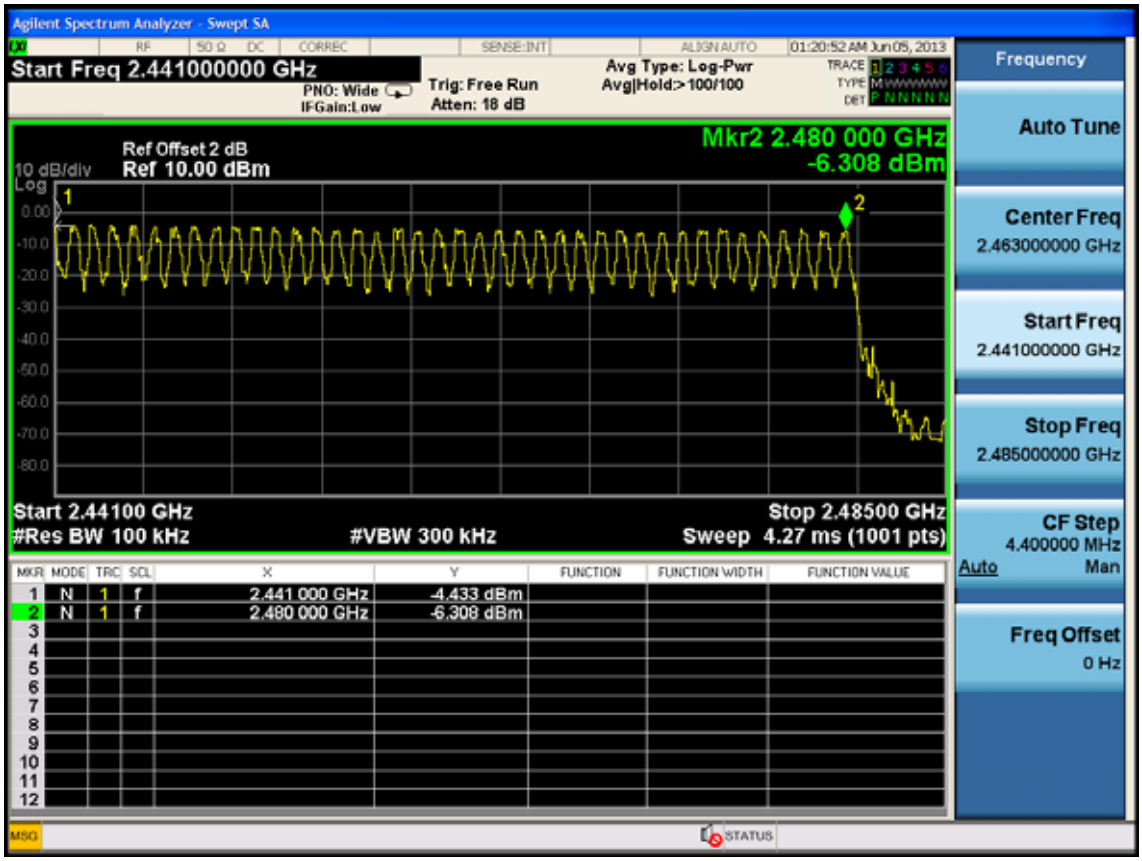
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

8.3.Test Results

EUT: PlayJam GameStick Bluetooth HID Controller		
M/N: PJGS2358		
Test Date: 2013-06-05	Test site: RF Chamber	Tested by: Leo-Li
Tested by: Leo-Li	Test site: RF site	Temperature：25℃

Test Mode	Number of channel	Limit	Conclusion
8-DPSK	79	>=15	PASS
GFSK	79	>=15	PASS


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.395000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:20:00 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr2 2.441 000 GHz
-4.494 dBm
Start 2.39500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.44100 GHz
Sweep 4.40 ms (1001 pts)
1 N 1 f 2.402 000 GHz -4.056 dBm
2 N 1 f 2.441 000 GHz -4.494 dBm
Frequency
Auto Tune
Center Freq
2.418000000 GHz
Start Freq
2.395000000 GHz
Stop Freq
2.441000000 GHz
CF Step
4.600000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Start Freq 2.441000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
01:20:52 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr2 2.480 000 GHz
-6.308 dBm
Start 2.44100 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48500 GHz
Sweep 4.27 ms (1001 pts)
1 N 1 f 2.441 000 GHz -4.433 dBm
2 N 1 f 2.480 000 GHz -6.308 dBm
Frequency
Auto Tune
Center Freq
2.463000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.485000000 GHz
CF Step
4.400000 MHz
Auto
Man
Freq Offset
0 Hz

9. DWELL TIME

9.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Oct.31, 12	1 Year

9.2.Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

9.3.Test Results

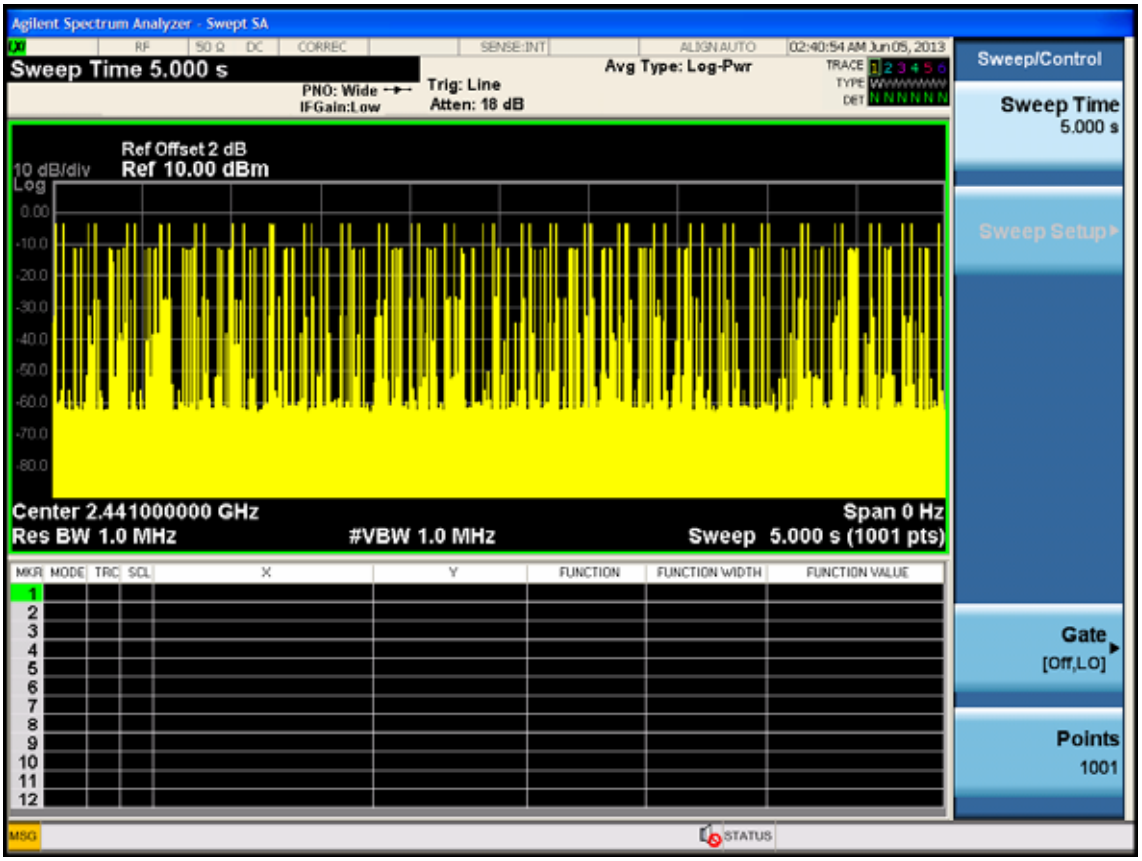
EUT: PlayJam GameStick Bluetooth HID Controller		
M/N: PJGS2358		
Test Date: 2013-06-05	Test site: RF Chamber	Tested by: Leo-Li
Tested by: Leo-Li	Test site: RF site	Temperature：25℃

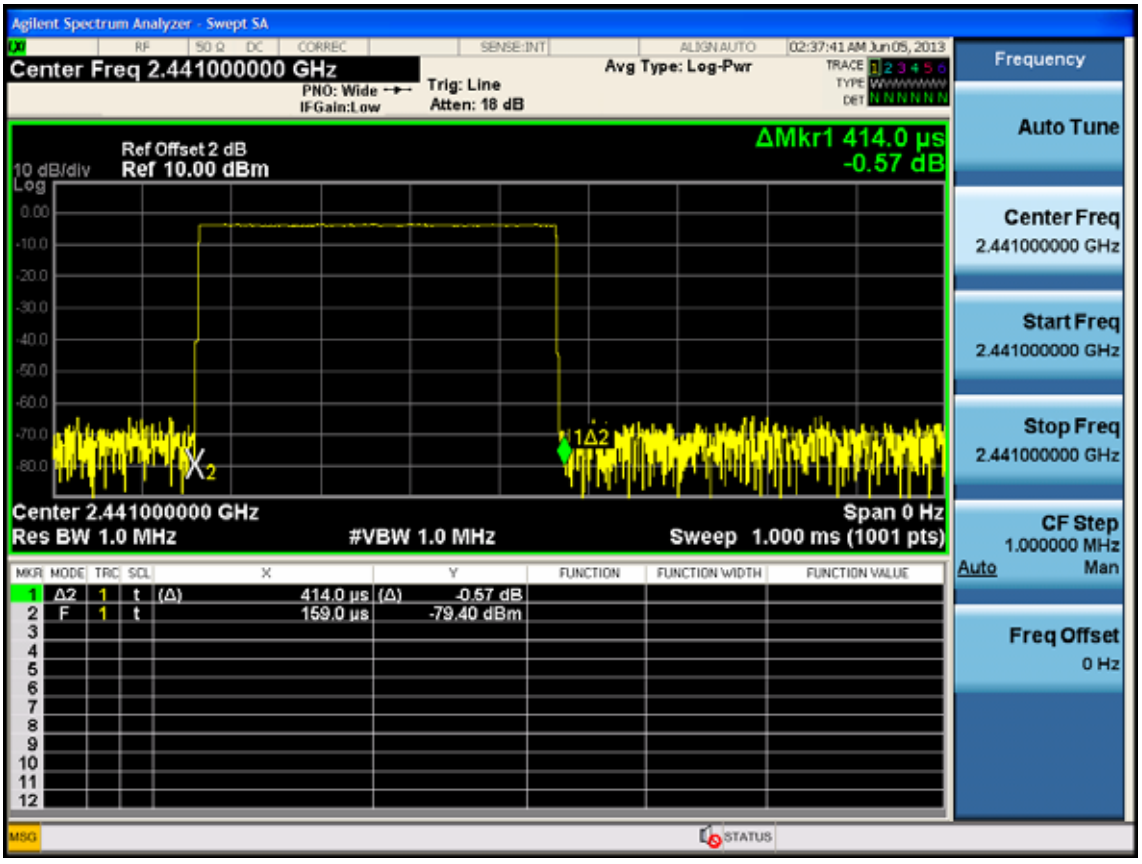
Mode		dwell time	Limit	Conclusion
GFSK	DH1	51hops/5s*0.4*79chanels*0.414ms =133.44048ms	<400ms	PASS
	DH3	26hops/5s*0.4*79chanels*1.670ms =274.4144ms	<400ms	PASS
	DH5	17hops/5s*0.4*79chanels*2.930ms=314.7992ms	<400ms	PASS
8-DPSK	DH1	51hops/5s*0.4*79chanels*0.442ms =142.46544ms	<400ms	PASS
	DH3	26hops/5s*0.4*79chanels*1.714ms =281.64448ms	<400ms	PASS
	DH5	17hops/5s*0.4*79chanels*2.940ms =315.8736ms	<400ms	PASS

Note: All the lower levels were signal from receiver's, and should not considered in here.

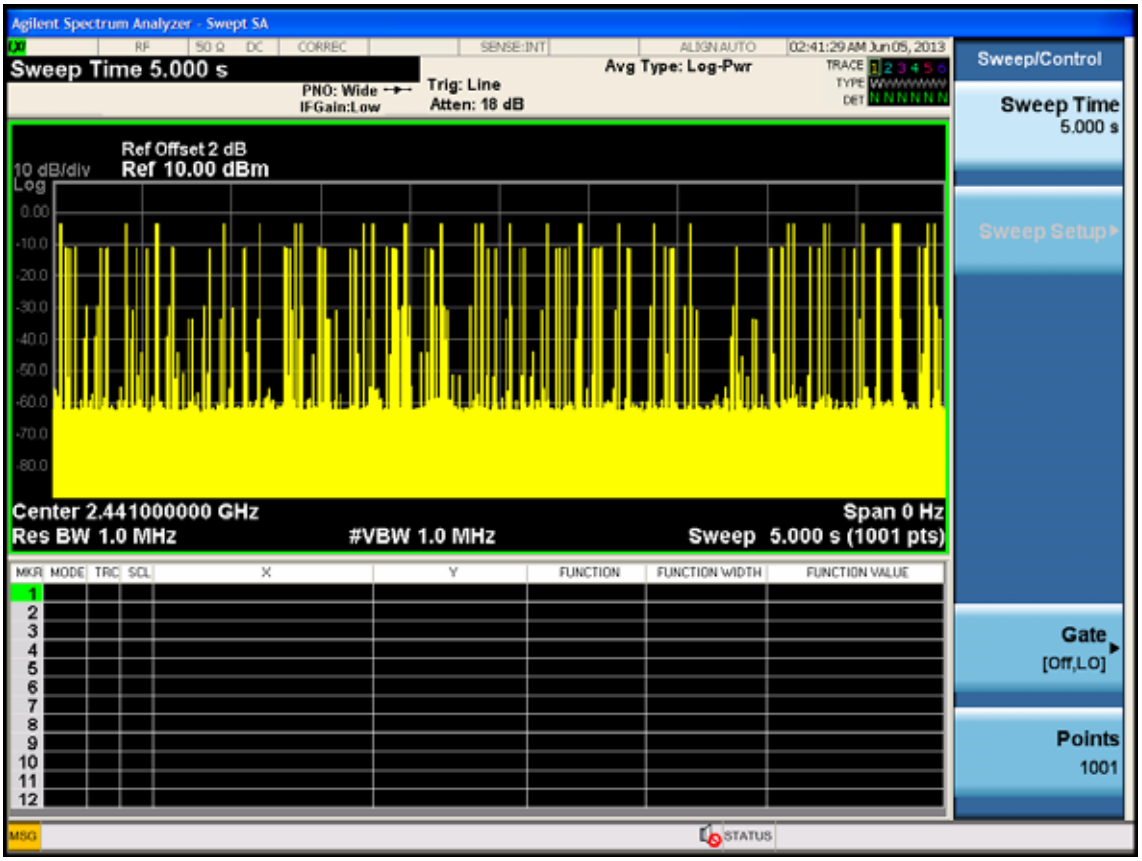
GFSK

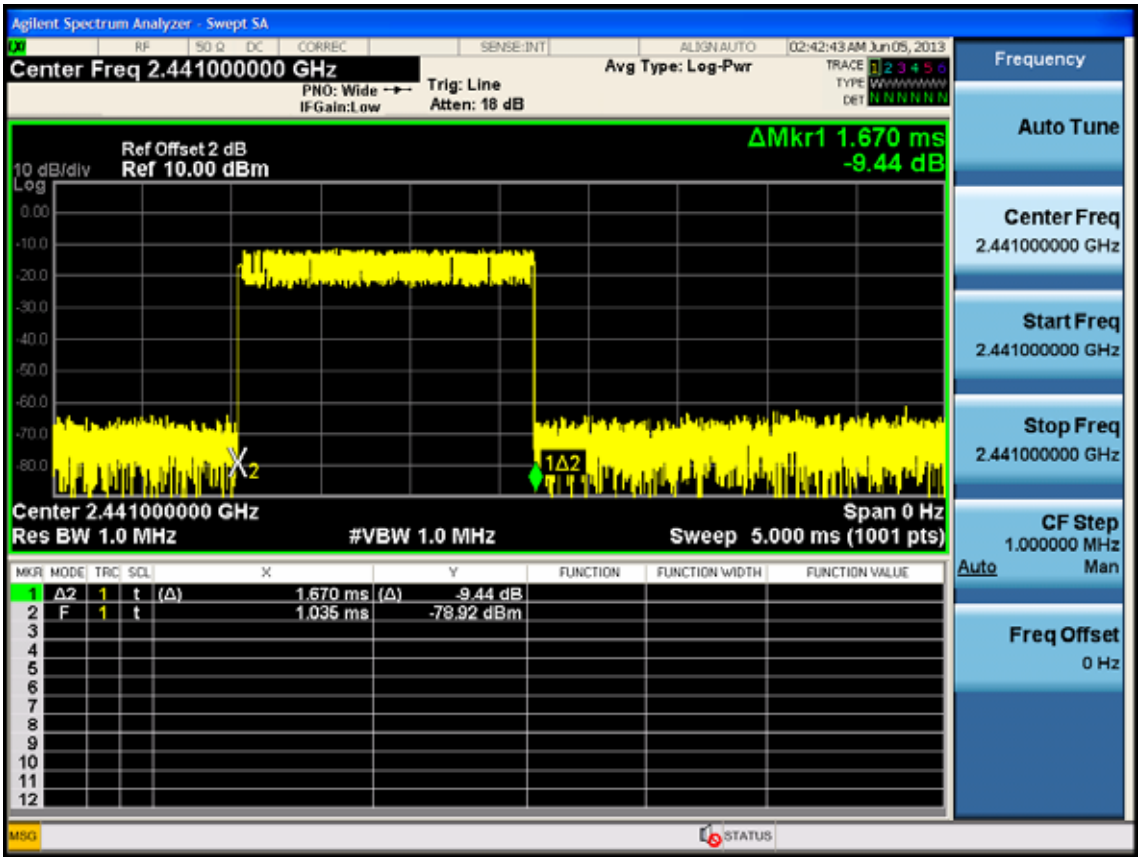
DH 1


Agilent Spectrum Analyzer - Swept SA
Sweep Time 5.000 s
Avg Type: Log-Pwr
02:40:54 AM Jun 05, 2013
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 s (1001 pts)
Sweep/Control
Sweep Time
5.000 s
Sweep Setup
Gate
[Off,LO]
Points
1001

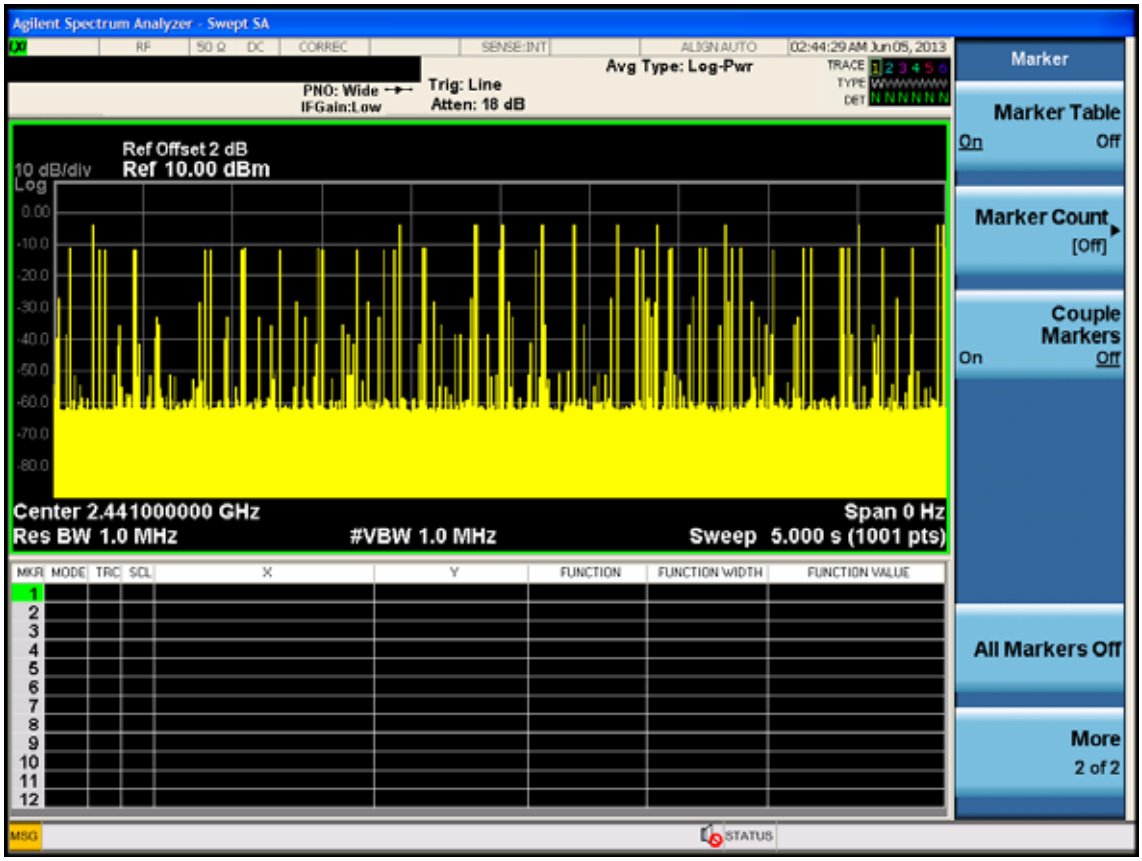

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Avg Type: Log-Pwr
02:37:41 AM Jun 05, 2013
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
ΔMkr1 414.0 µs
-0.57 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

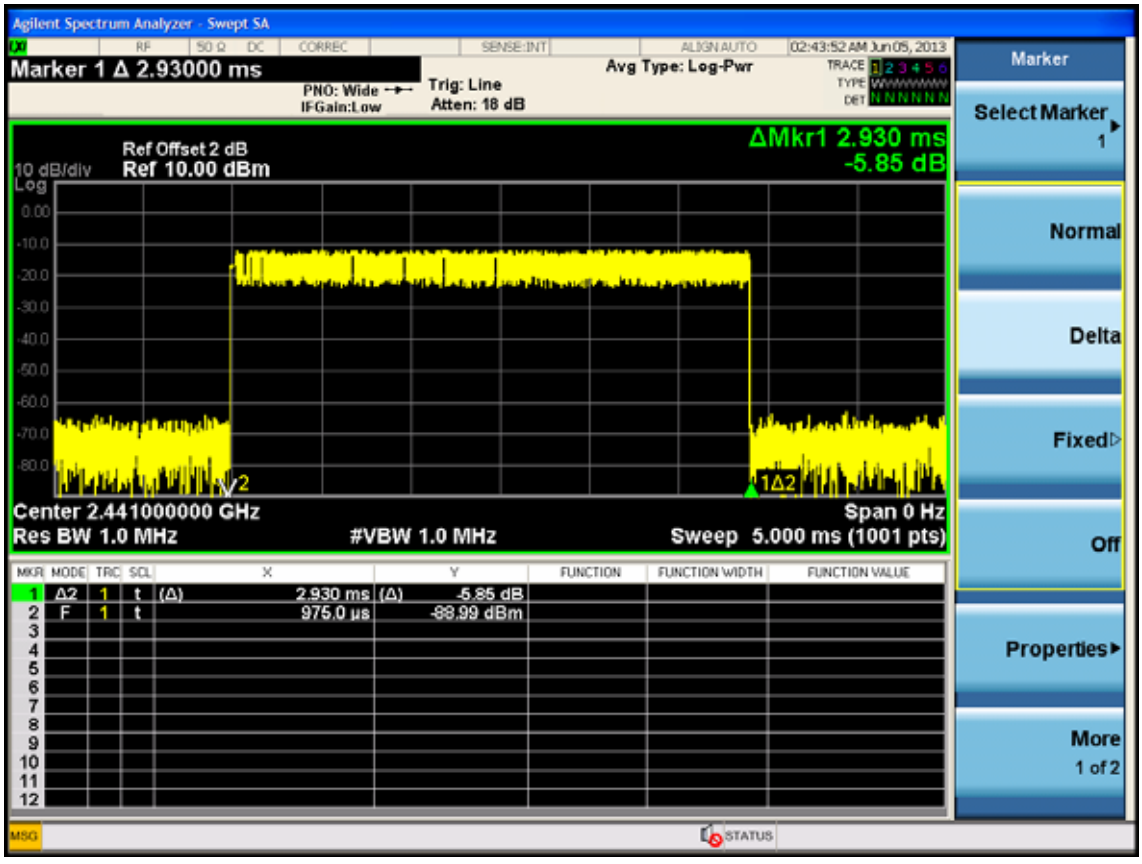
DH 3


Agilent Spectrum Analyzer - Swept SA
Sweep Time 5.000 s
Avg Type: Log-Pwr
02:41:29 AM Jun 05, 2013
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 s (1001 pts)
Sweep/Control
Sweep Time
5.000 s
Sweep Setup
Gate
[Off,LO]
Points
1001


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Avg Type: Log-Pwr
02:42:43 AM Jun 05, 2013
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
ΔMkr1 1.670 ms
-9.44 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
1 Δ2 1 t (Δ) 1.670 ms (Δ) -9.44 dB
2 F 1 t 1.035 ms -78.92 dBm
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

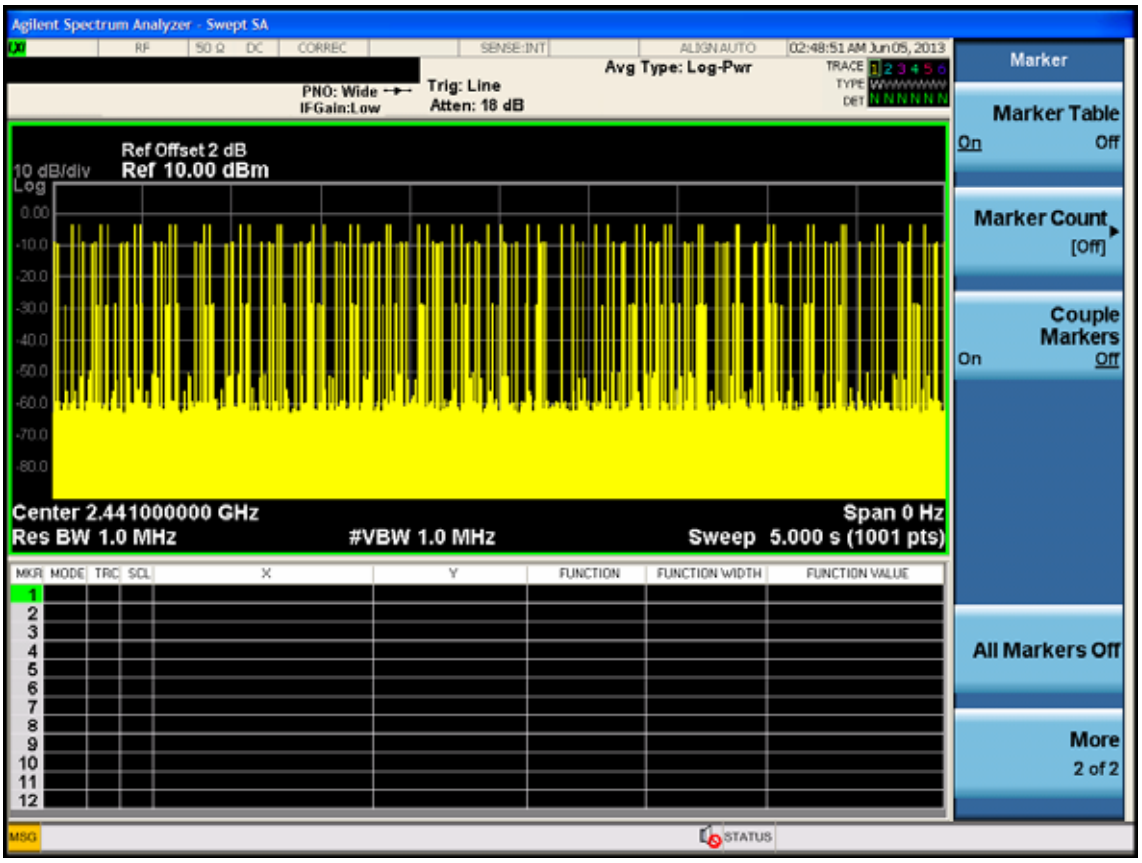
DH 5

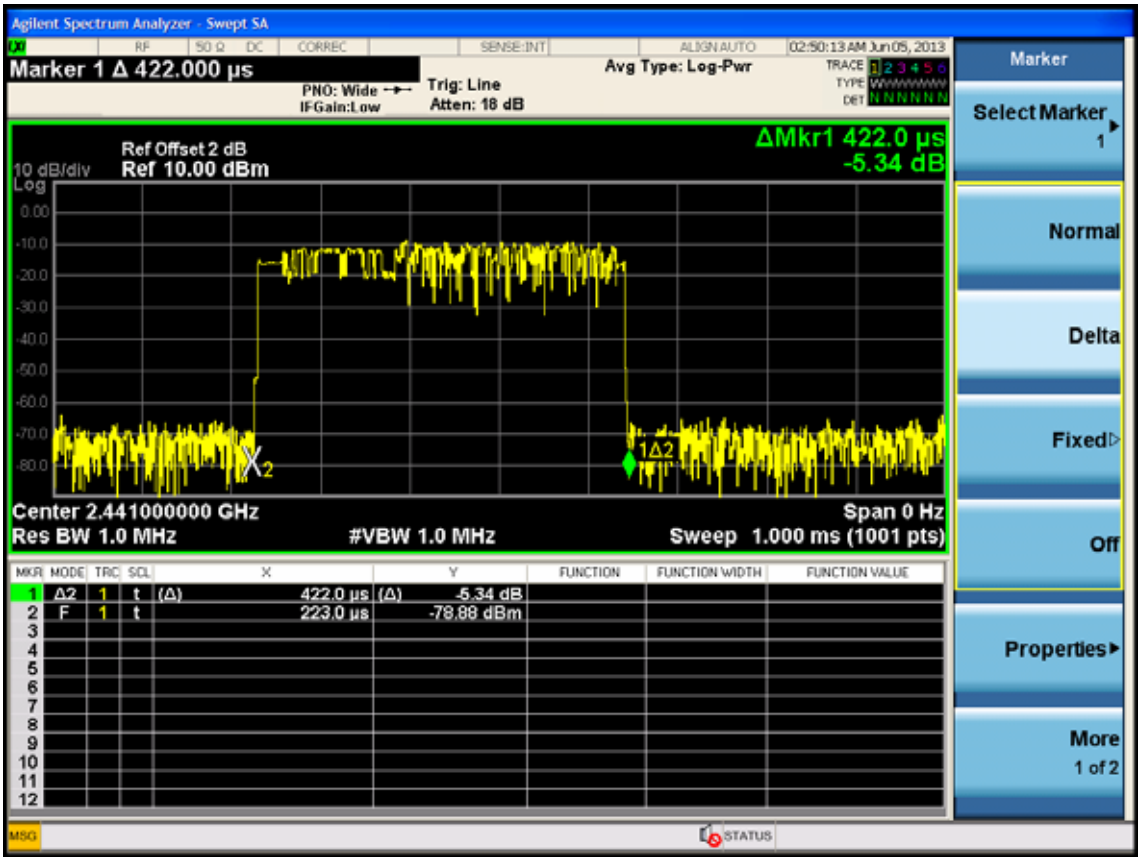

Agilent Spectrum Analyzer - Swept SA
Avg Type: Log-Pwr
02:44:29 AM Jun 05, 2013
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 s (1001 pts)
Marker
Marker Table
On Off
Marker Count
[Off]
Couple Markers
On Off
All Markers Off
More
2 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 2.93000 ms
Avg Type: Log-Pwr
02:43:52 AM Jun 05, 2013
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
ΔMkr1 2.930 ms
-5.85 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 ms (1001 pts)
1 Δ2 2.930 ms (Δ) -5.85 dB
2 F 975.0 µs -88.99 dBm
Marker
Select Marker
1
Normal
Delta
Fixed
Off
Properties
More
1 of 2

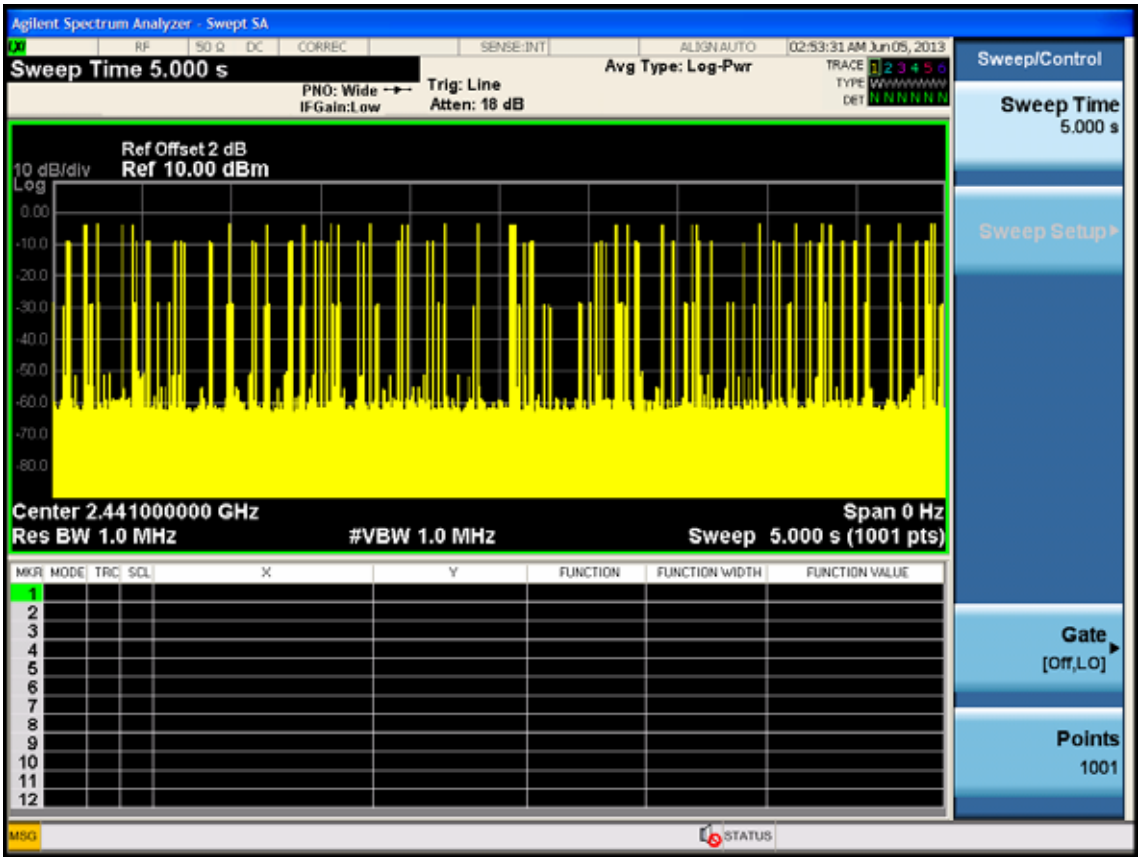
8-DPSK

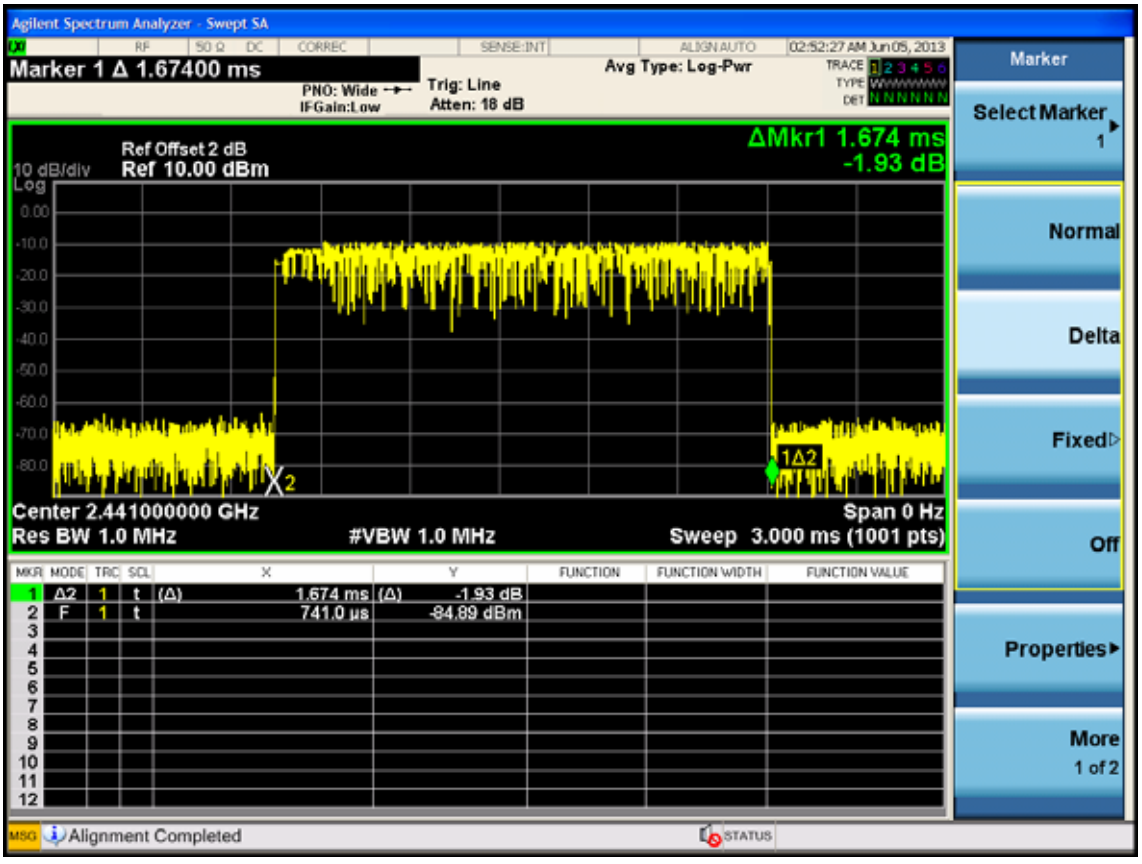
DH 1


Agilent Spectrum Analyzer - Swept SA
02:48:51 AM Jun 05, 2013
Avg Type: Log-Pwr
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 s (1001 pts)
Marker
Marker Table
On Off
Marker Count
[Off]
Couple Markers
On Off
All Markers Off
More
2 of 2

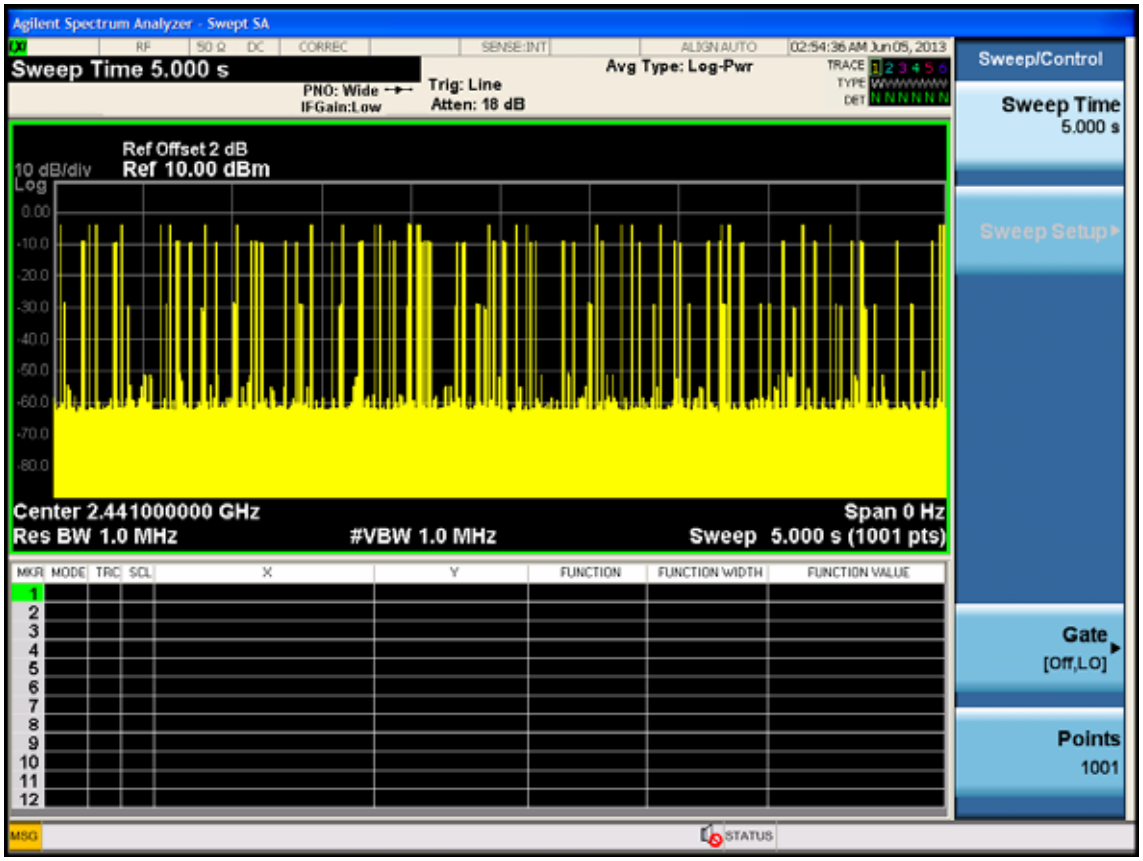

Agilent Spectrum Analyzer - Swept SA
02:50:13 AM Jun 05, 2013
Marker 1 Δ 422.000 µs
Avg Type: Log-Pwr
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
ΔMkr1 422.0 µs
-5.34 dB
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 1.000 ms (1001 pts)
1 Δ2 1 t (Δ) 422.0 µs (Δ) -5.34 dB
2 F 1 t 223.0 µs -78.88 dBm
Marker
Select Marker
1
Normal
Delta
Fixed
Off
Properties
More
1 of 2

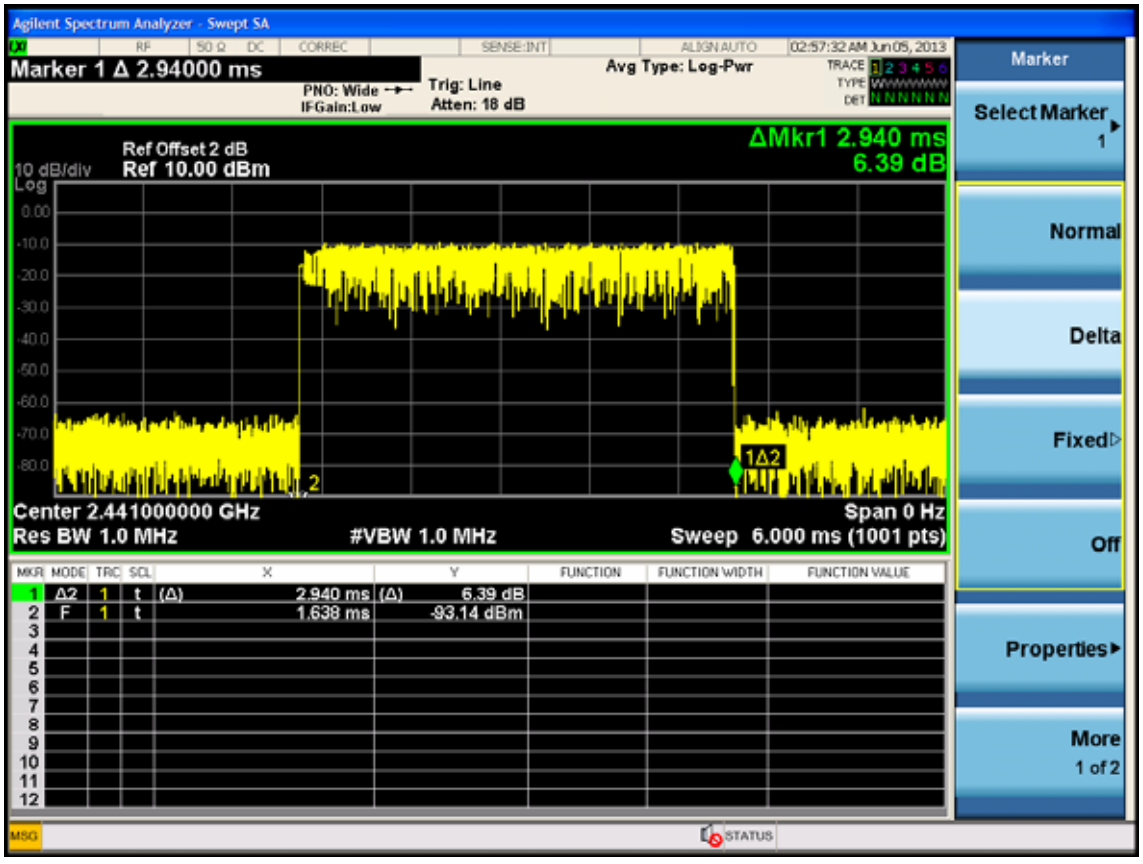
DH 3


Agilent Spectrum Analyzer - Swept SA
Sweep Time 5.000 s
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
02:53:31 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 s (1001 pts)
Sweep/Control
Sweep Time
5.000 s
Sweep Setup
Gate
[Off,LO]
Points
1001


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 1.67400 ms
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
02:52:27 AM Jun 05, 2013
ΔMkr1 1.674 ms
-1.93 dB
Ref Offset 2 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 3.000 ms (1001 pts)
1 Δ2 1 t (Δ) 1.674 ms (Δ) -1.93 dB
2 F 1 t 741.0 µs -84.89 dBm
Marker
Select Marker
1
Normal
Delta
Fixed
Off
Properties
More
1 of 2
Alignment Completed

DH 5


Agilent Spectrum Analyzer - Swept SA
Sweep Time 5.000 s
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
02:54:36 AM Jun 05, 2013
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 5.000 s (1001 pts)
Sweep/Control
Sweep Time
5.000 s
Sweep Setup
Gate
[Off,LO]
Points
1001


Agilent Spectrum Analyzer - Swept SA
Marker 1 Δ 2.94000 ms
PNO: Wide
IFGain:Low
Trig: Line
Atten: 18 dB
Avg Type: Log-Pwr
02:57:32 AM Jun 05, 2013
ΔMkr1 2.940 ms
6.39 dB
Ref Offset 2 dB
10 dB/div
Log
Ref 10.00 dBm
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 6.000 ms (1001 pts)
1 Δ2 1 t (Δ) 2.940 ms (Δ) 6.39 dB
2 F 1 t 1.638 ms -93.14 dBm
Marker
Select Marker
1
Normal
Delta
Fixed
Off
Properties
More
1 of 2

10. MAXIMUM PEAK OUTPUT POWER TEST

10.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Oct.31, 12	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Antenna	EMCO	3115	9510-4580	May.31, 13	1Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year
5	Power Meter	Anritsu	ML2487A	6K00002472	May.08, 13	1Year
6	Power Sensor	Anritsu	MA2491A	033005	May.08, 13	1Year

10.2. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

10.3. Test Procedure

1. Connected the EUT's antenna port to spectrum analyzer.
2. Set the RBW> Bandwidth of test Frequency and put the test Frequency, Set the Span large enough to capture the entire signal
3. Use a peak detector on max hold
4. Reading the value from the Spectrum analyzer

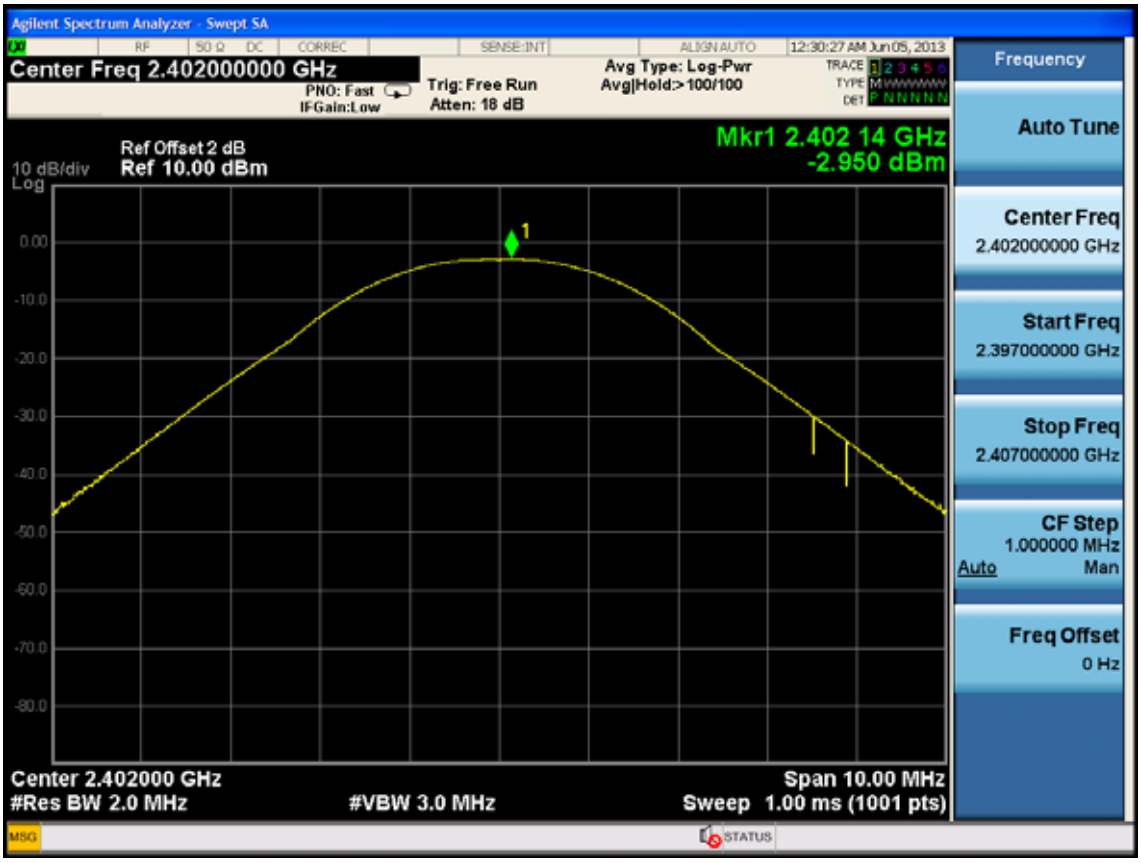
Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

10.4.Test Results

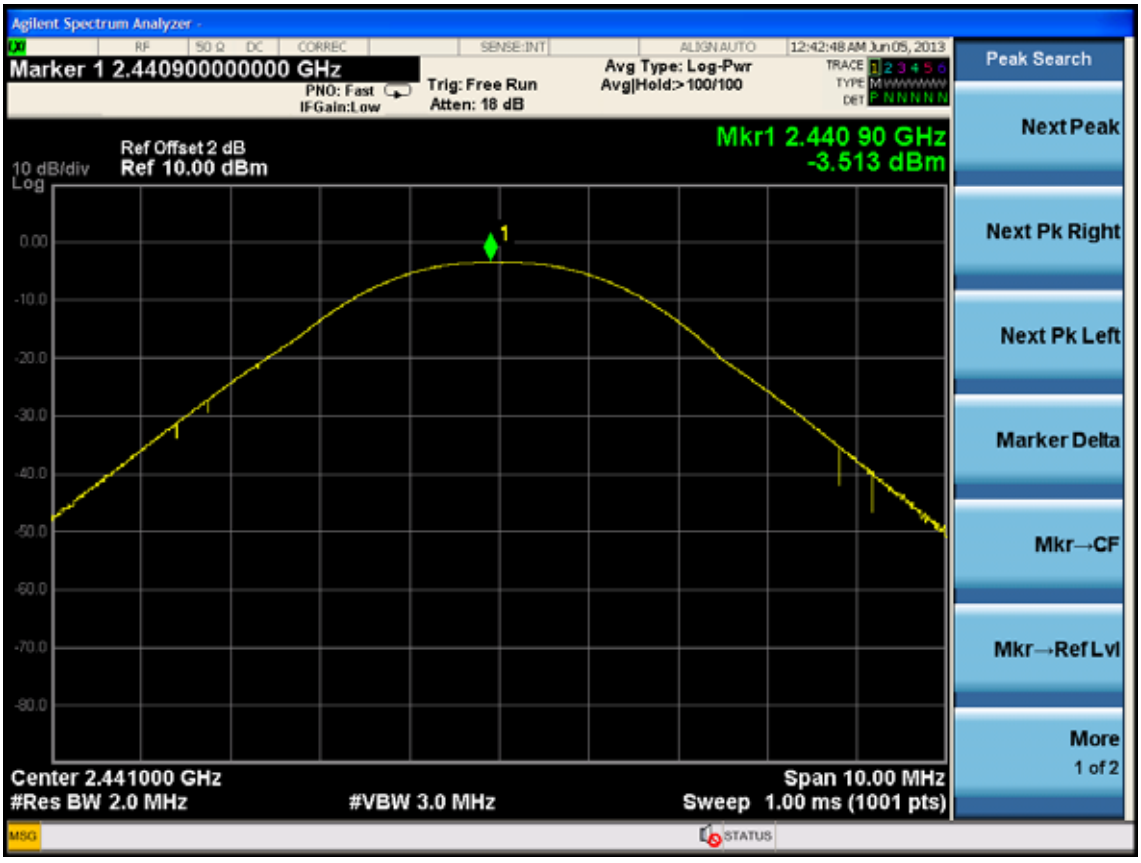
EUT: PlayJam GameStick Bluetooth HID Controller			
M/N: PJGS2358			
Test date: 2013-06-05	Pressure: 101.2±1.0 kpa		Humidity: 54.3±1.0%
Tested by: Leo-Li	Test site: RF site		Temperature:24.2±1.0 ℃
Test Mode	CH (MHz)	Peak output Power （dBm）	Limit (dBm)
GFSK	2402	-2.950	30
	2441	-3.513	30
	2480	-4.930	30
8-DPSK	2402	-2.840	30
	2441	-3.386	30
	2480	-4.704	30
Conclusion: PASS			

GFSK

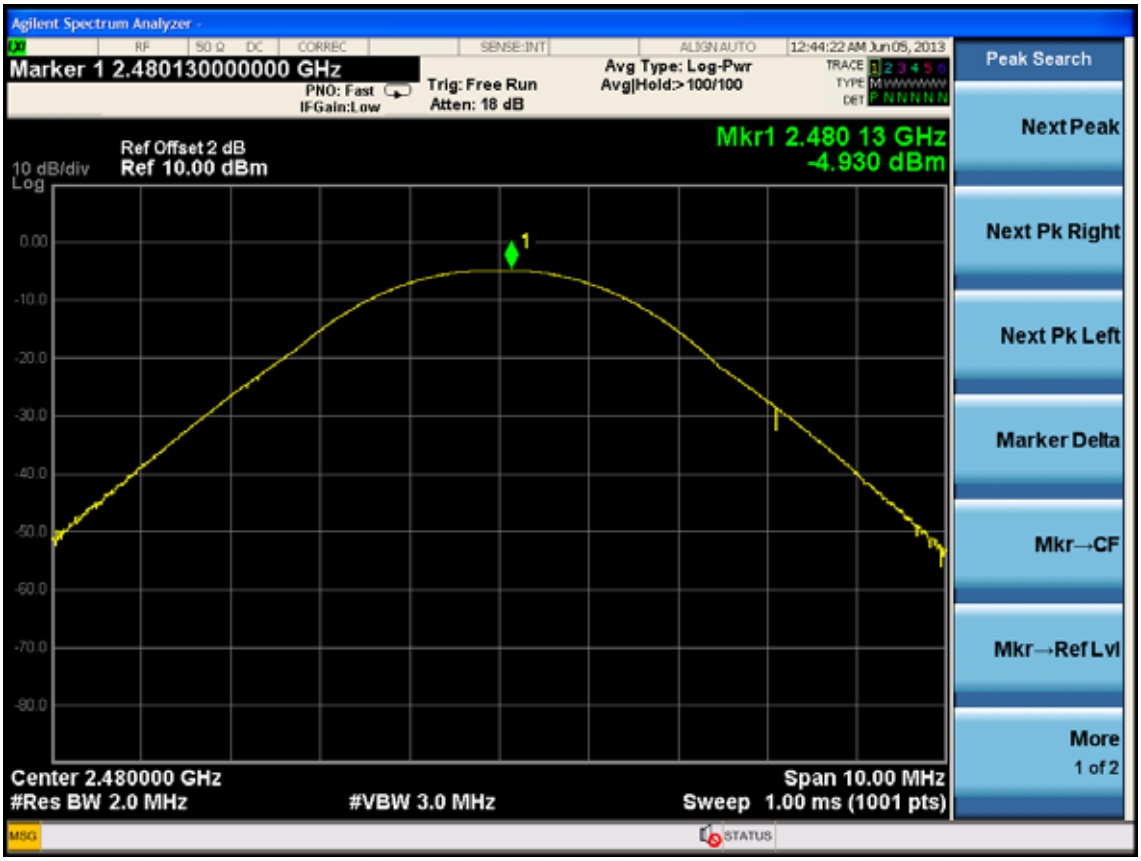
2402MHz



2441MHz

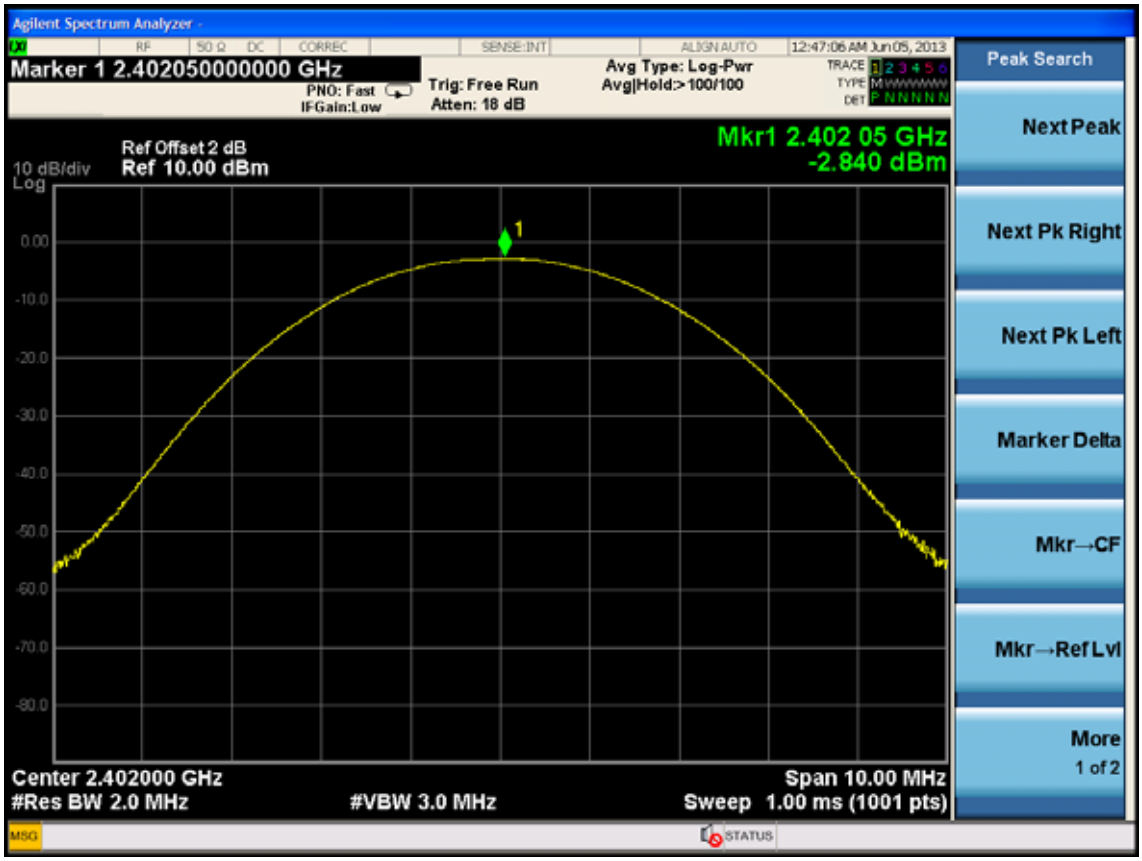


2480MHz

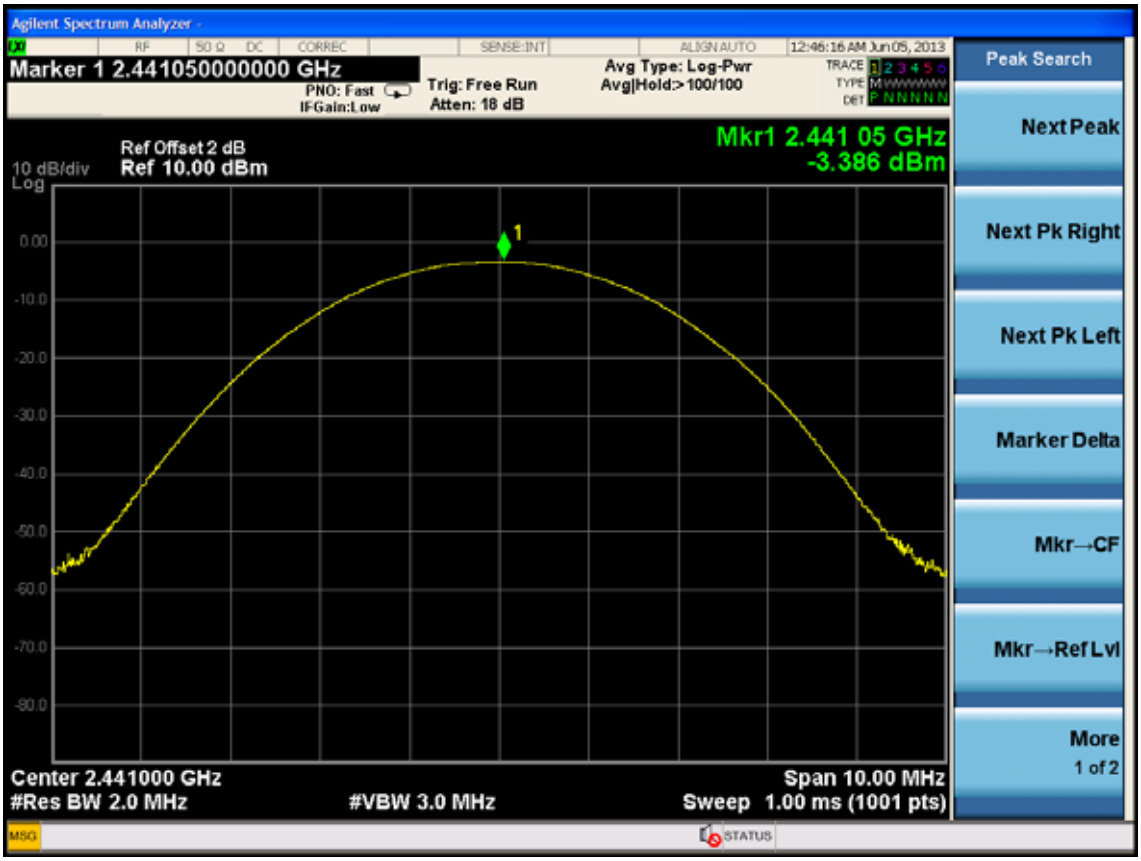


8-DPSK

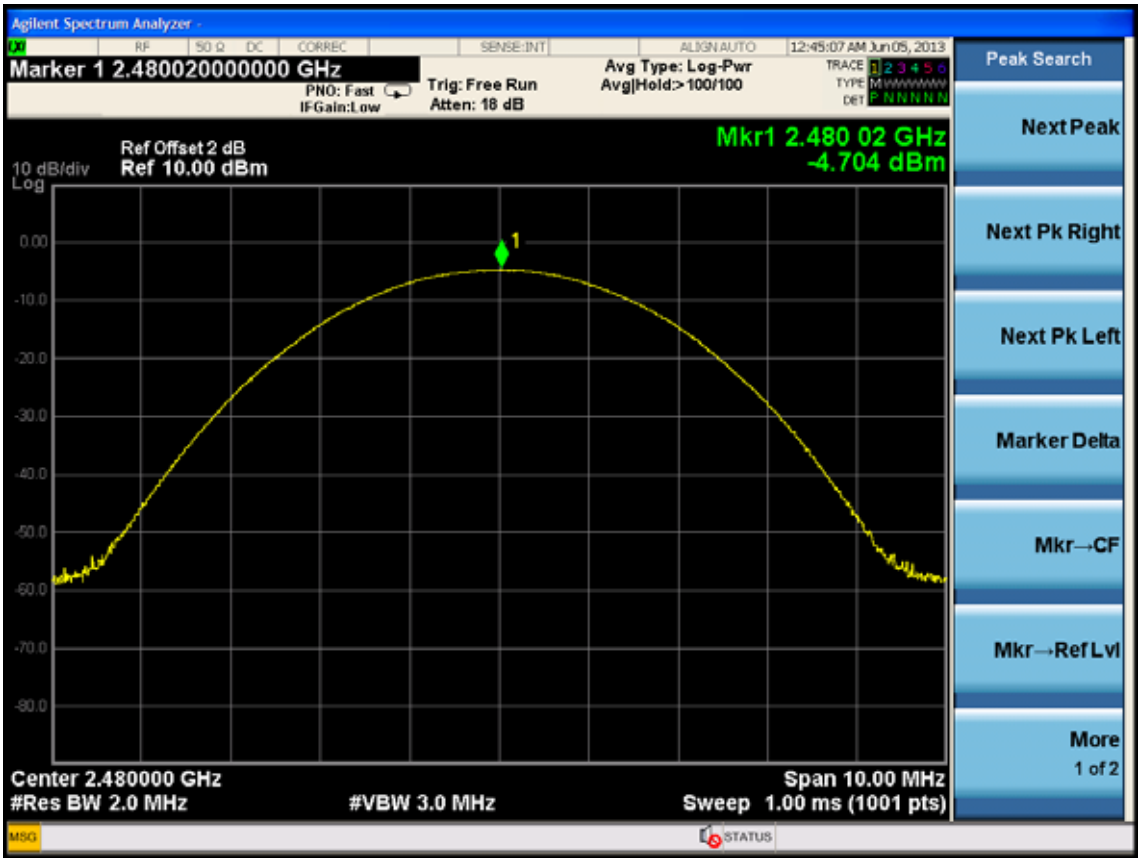
2402MHz



2441MHz



2480MHz



11.BANDEDGE COMPLIANCE TEST

11.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	May.08, 13	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Antenna	EMCO	3115	4580	May.08, 13	1Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year

11.2.Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

11.3.Test Produce

For upper band emissions that are up to two bandwidths(2MHz) away (2483.5MHz to 2485.5MHz） from the band-edge use below produce:

1. Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to 100KHz and with a video bandwidth 300KHz. Record the peak levels of the fundamental emission and the relevant band-edge emission, Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not a field strength measurement, it is only a relative measurement to determine the amount by which the emission drops at the band edge relative to the highest fundamental emission level.
2. Subtract the delta measured in step (1) from the maximum field strengths measured in clause 4 .The resultant field strengths are then used to determine band-edge compliance as required by Section 15.205

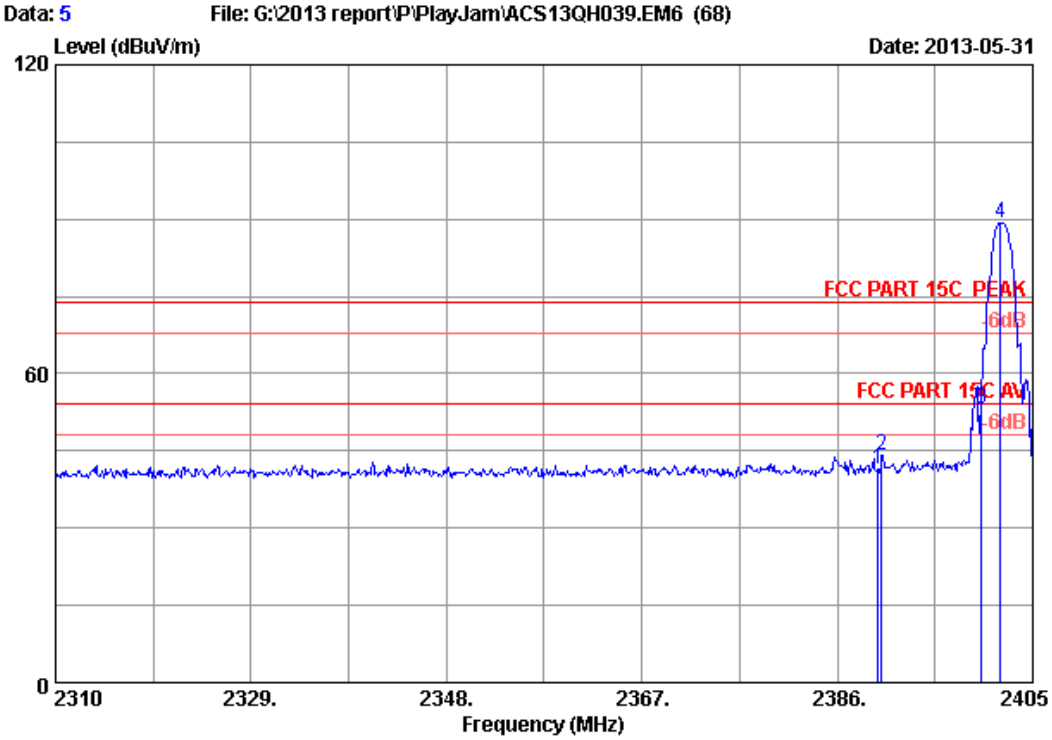
For emissions above two bandwidths away from the band-edge use below produce:

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
   (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
   (b) This is pulse Modulation device a duty cycle factor was used to calculate average level based measured peak level.

11.4.Test Results

Pass (The testing data was attached in the next pages.)

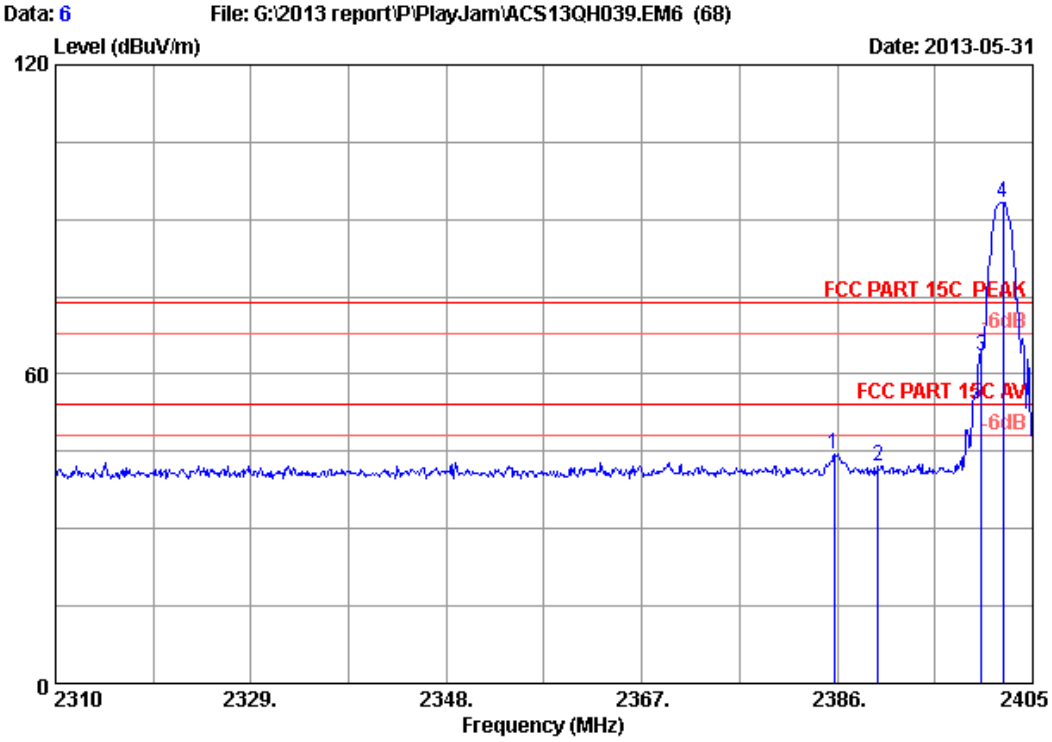
Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.



Site no. : 3m Chamber Data no. : 5
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode GFSK 2402MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	26.70	6.00	35.92	44.64	41.42	74.00	32.58	Peak
2	2390.275	26.70	6.00	35.92	47.23	44.01	74.00	29.99	Peak
3	2400.000	26.76	6.02	35.92	56.20	53.06	74.00	20.94	Peak
4	2401.865	26.77	6.02	35.92	92.46	89.33	74.00	-15.33	Peak

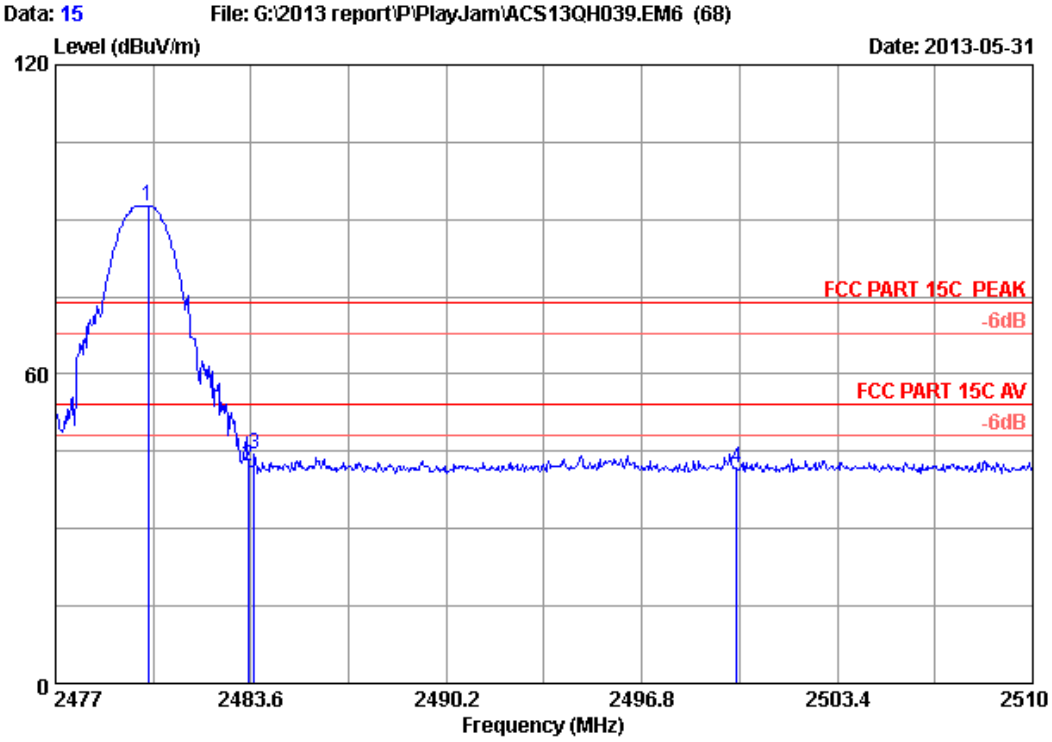
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 6
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode GFSK 2402MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2385.715	26.67	5.99	35.92	47.81	44.55	74.00	29.45	Peak
2	2390.000	26.70	6.00	35.92	45.36	42.14	74.00	31.86	Peak
3	2400.000	26.76	6.02	35.92	66.52	63.38	74.00	10.62	Peak
4	2402.150	26.77	6.02	35.92	96.39	93.26	74.00	-19.26	Peak

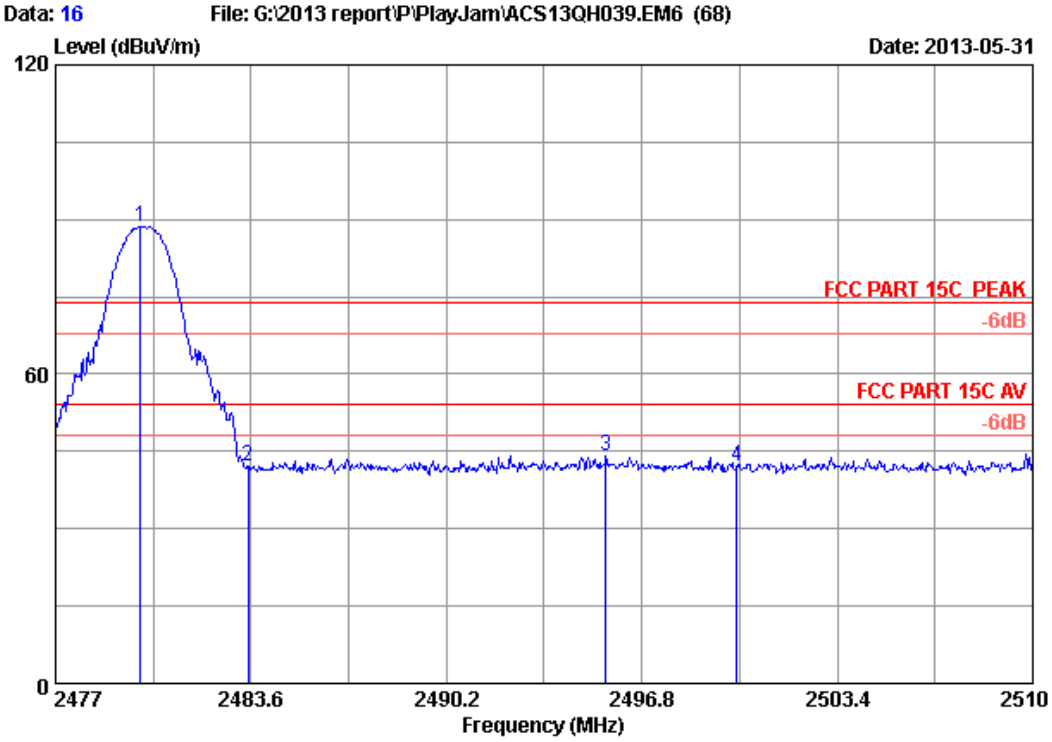
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 15
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode GFSK 2480MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.135	27.27	6.15	35.92	95.24	92.74	74.00	-18.74	Peak
2	2483.500	27.29	6.16	35.92	44.63	42.16	74.00	31.84	Peak
3	2483.699	27.30	6.16	35.92	46.91	44.45	74.00	29.55	Peak
4	2500.000	27.40	6.19	35.93	44.09	41.75	74.00	32.25	Peak

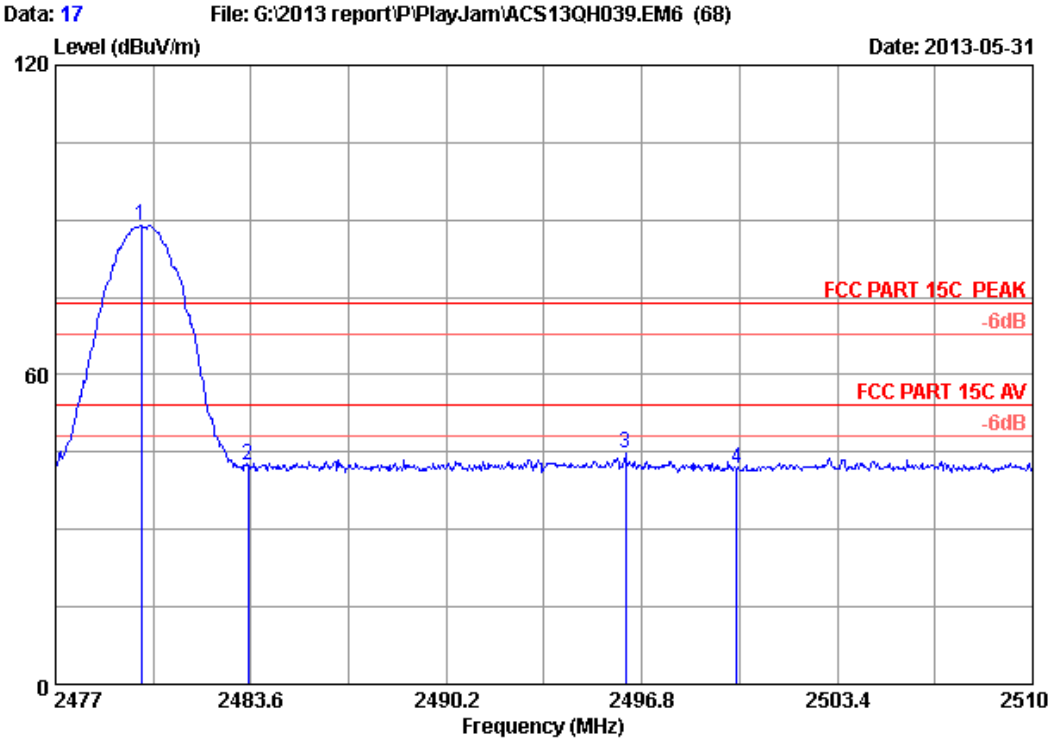
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 16
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode GFSK 2480MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.871	27.27	6.15	35.92	91.06	88.56	74.00	-14.56	Peak
2	2483.500	27.29	6.16	35.92	44.53	42.06	74.00	31.94	Peak
3	2495.579	27.37	6.18	35.92	46.63	44.26	74.00	29.74	Peak
4	2500.000	27.40	6.19	35.93	44.39	42.05	74.00	31.95	Peak

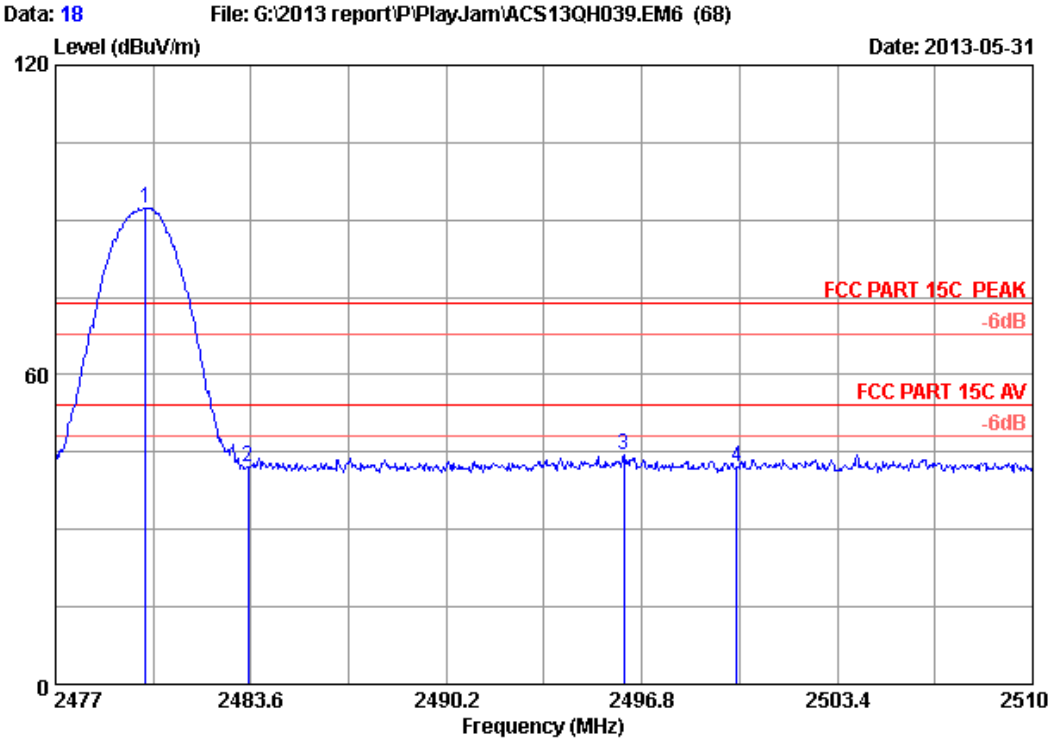
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 17
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode 8DPSK 2480MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.904	27.27	6.15	35.92	91.40	88.90	74.00	-14.90	Peak
2	2483.500	27.29	6.16	35.92	44.82	42.35	74.00	31.65	Peak
3	2496.239	27.38	6.18	35.92	47.10	44.74	74.00	29.26	Peak
4	2500.000	27.40	6.19	35.93	44.01	41.67	74.00	32.33	Peak

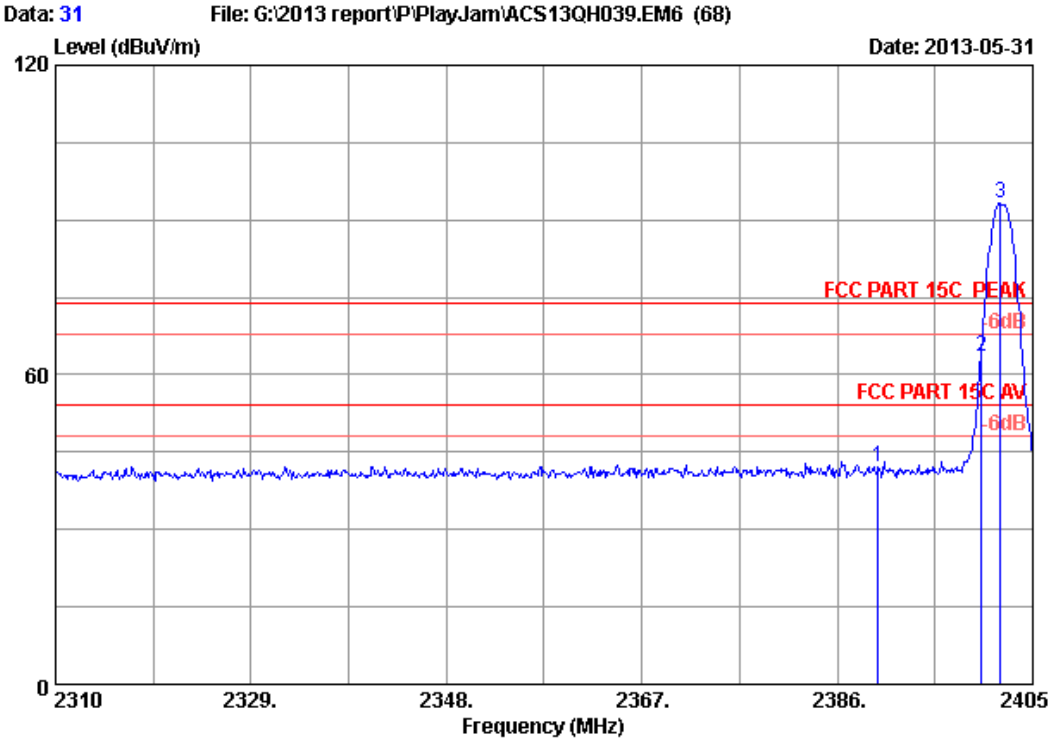
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 18
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode 8DPSK 2480MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.036	27.27	6.15	35.92	94.77	92.27	74.00	-18.27	Peak
2	2483.500	27.29	6.16	35.92	44.69	42.22	74.00	31.78	Peak
3	2496.206	27.38	6.18	35.92	46.79	44.43	74.00	29.57	Peak
4	2500.000	27.40	6.19	35.93	44.54	42.20	74.00	31.80	Peak

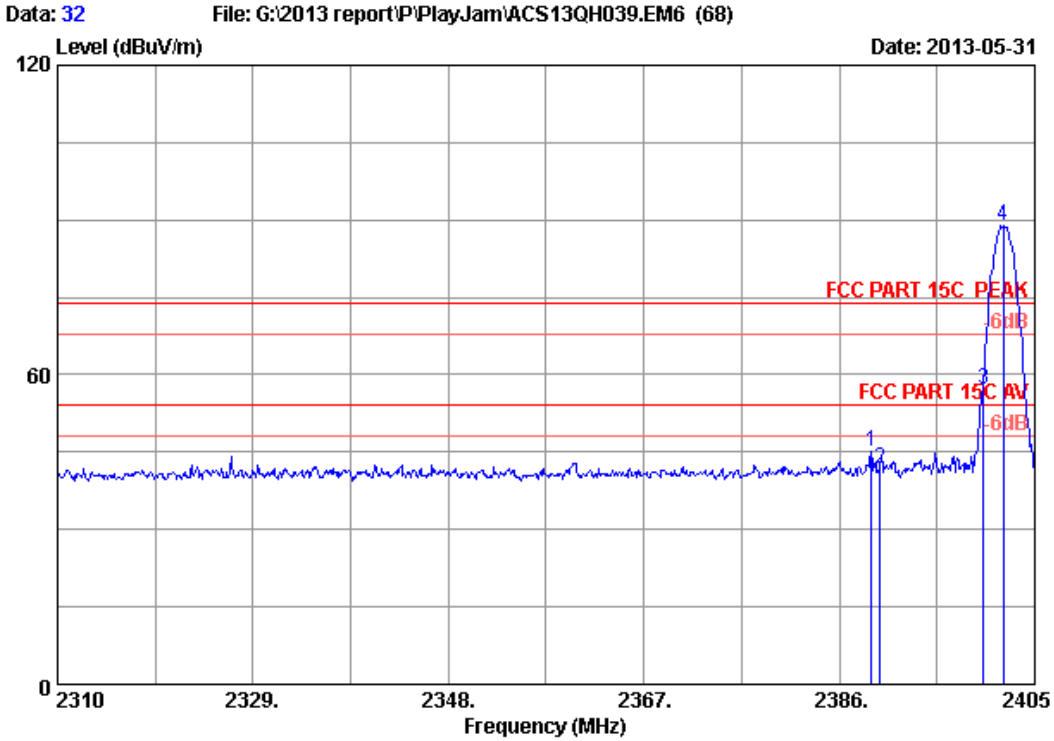
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 31
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode 8DPSK 2402MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	26.70	6.00	35.92	45.33	42.11	74.00	31.89	Peak
2	2400.000	26.76	6.02	35.92	66.62	63.48	74.00	10.52	Peak
3	2401.865	26.77	6.02	35.92	96.38	93.25	74.00	-19.25	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 32
Dis. / Ant. : 3m 2012 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24.2*C/56% Engineer : Tony_Yan
EUT : 2.4G Wireless keyboard with multimedia keys
Power supply : DC 5V From Adapter Input AC120V/60Hz
Test mode : Tx Mode 8DPSK 2402MHz
M/N : PJGS2358
:

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.135	26.69	6.00	35.92	48.20	44.97	74.00	29.03	Peak
2	2390.000	26.70	6.00	35.92	44.96	41.74	74.00	32.26	Peak
3	2400.000	26.76	6.02	35.92	60.19	57.05	74.00	16.95	Peak
4	2401.960	26.77	6.02	35.92	92.13	89.00	74.00	-15.00	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

12. DEVIATION TO TEST SPECIFICATIONS

[NONE]