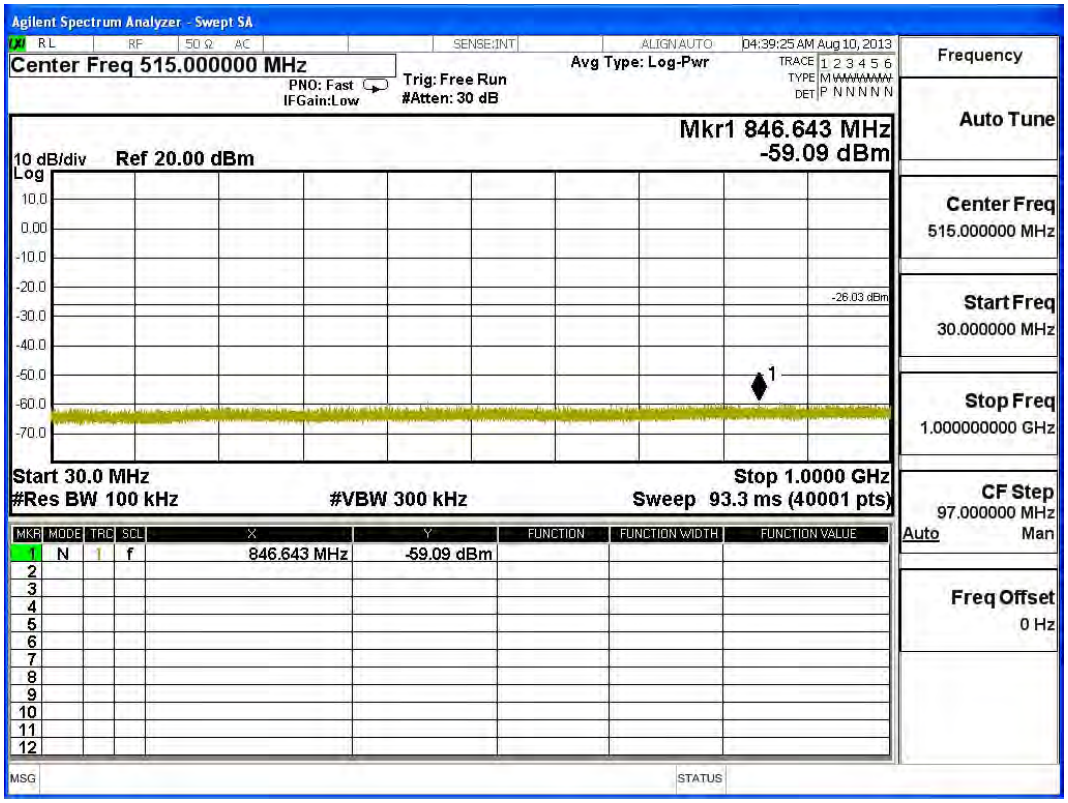
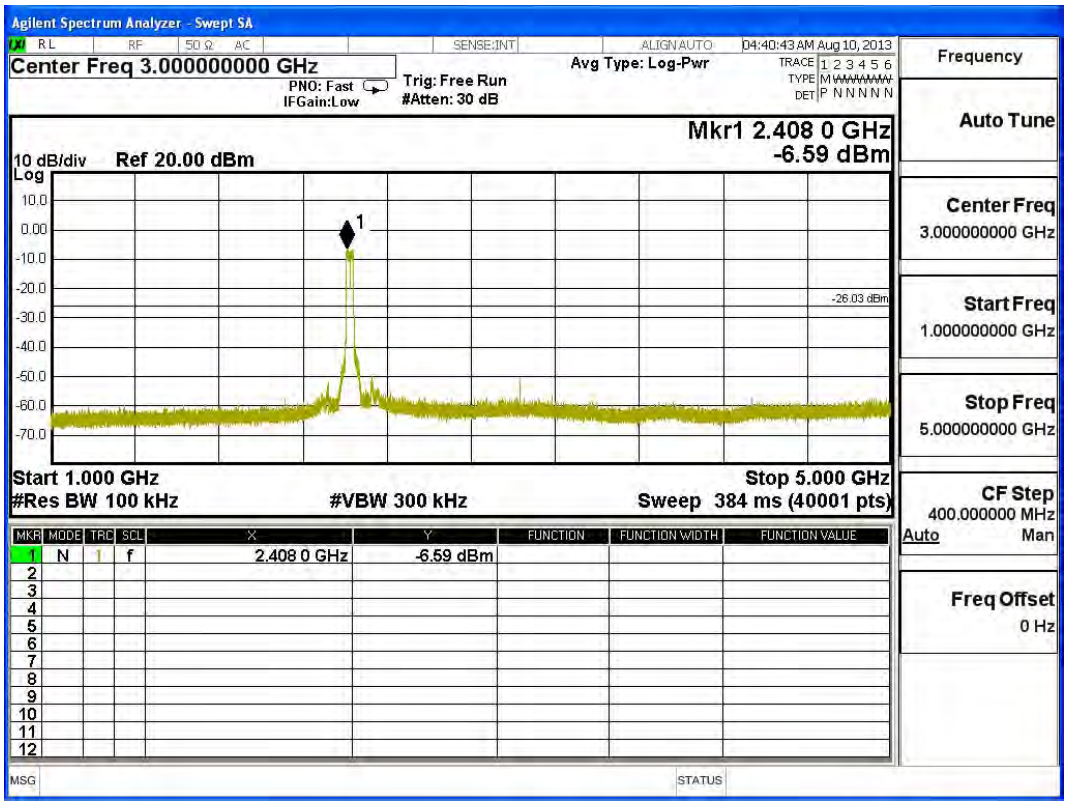
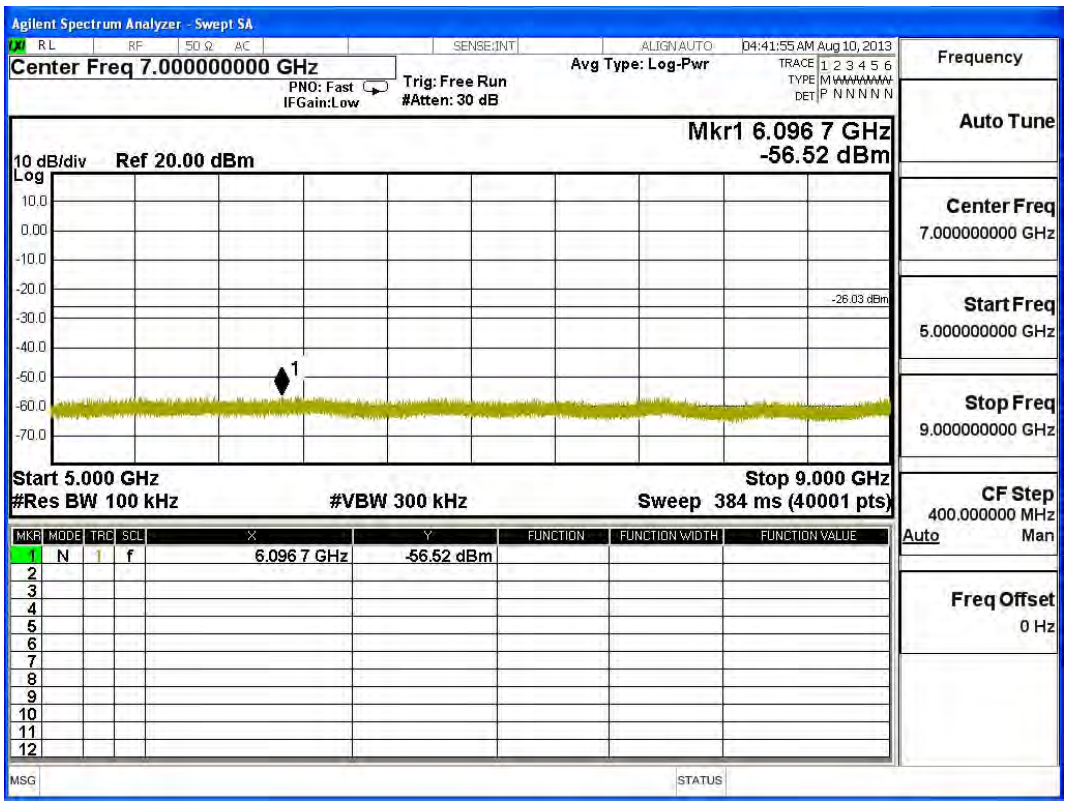
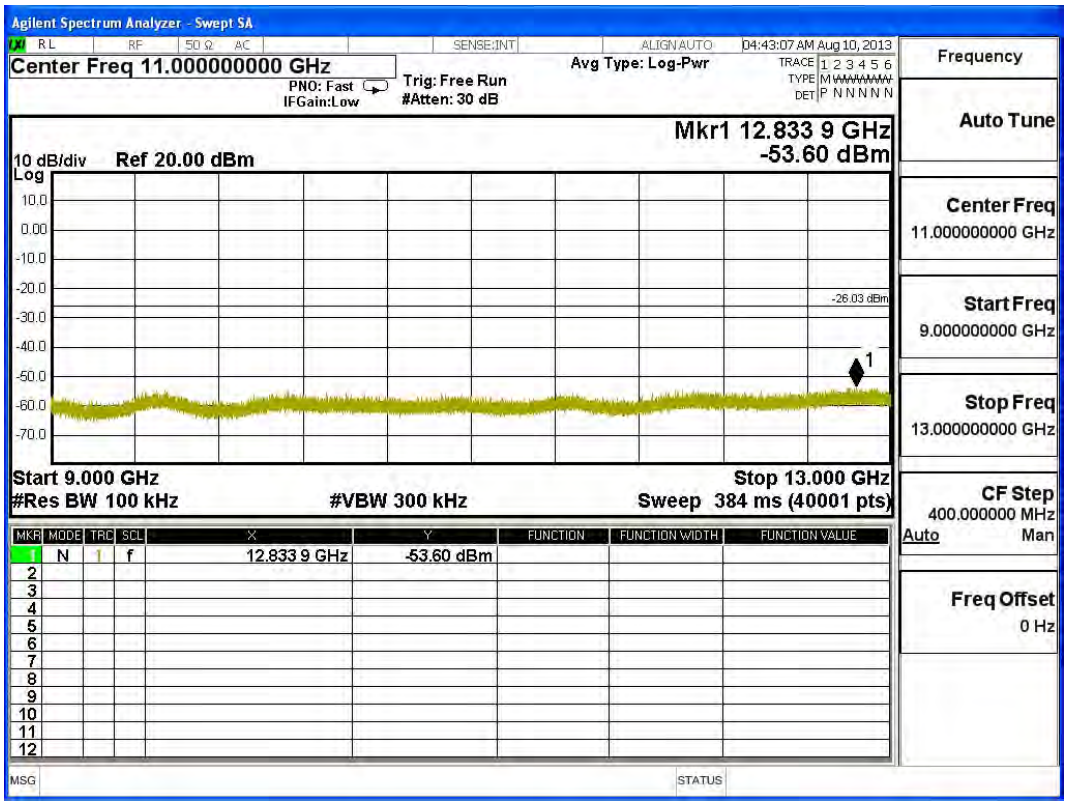
Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)

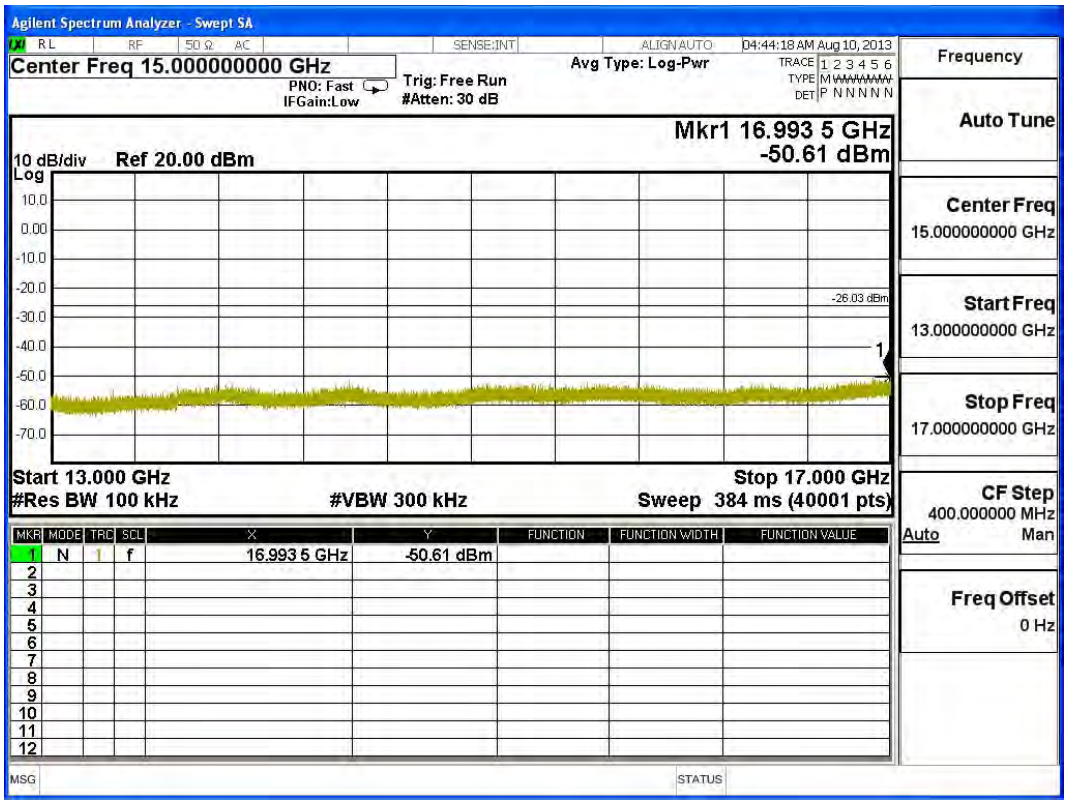
Channel 01 (2422MHz) – Chain A

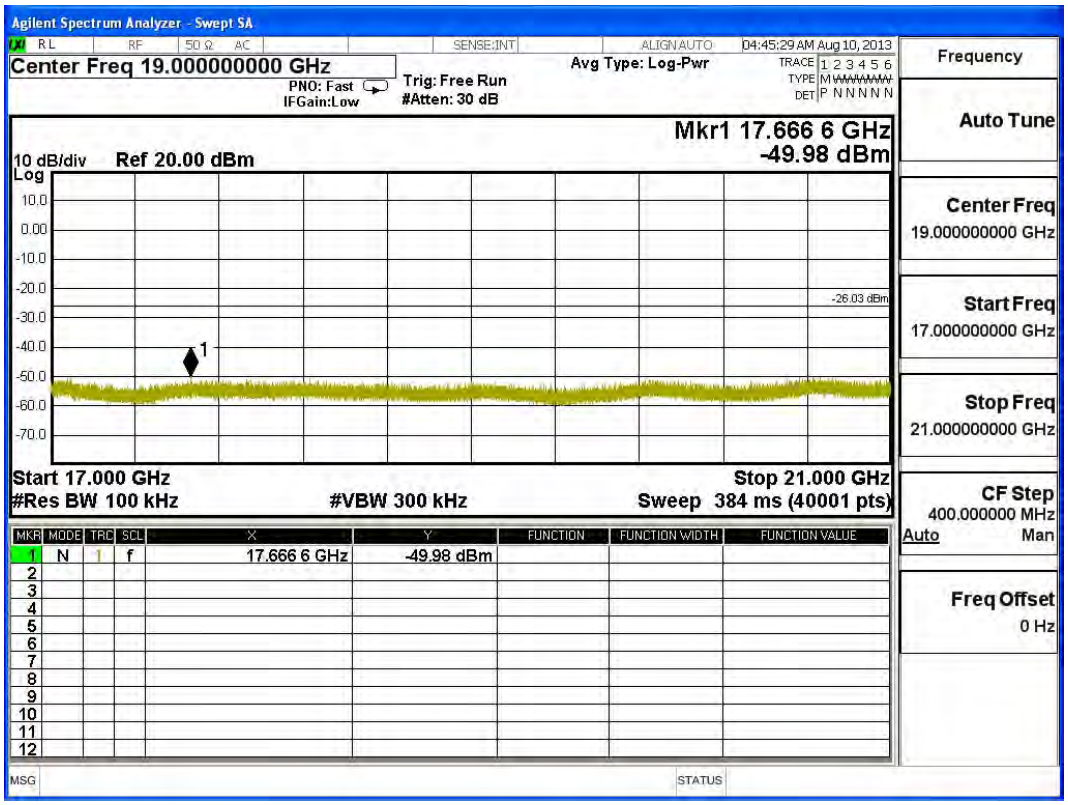


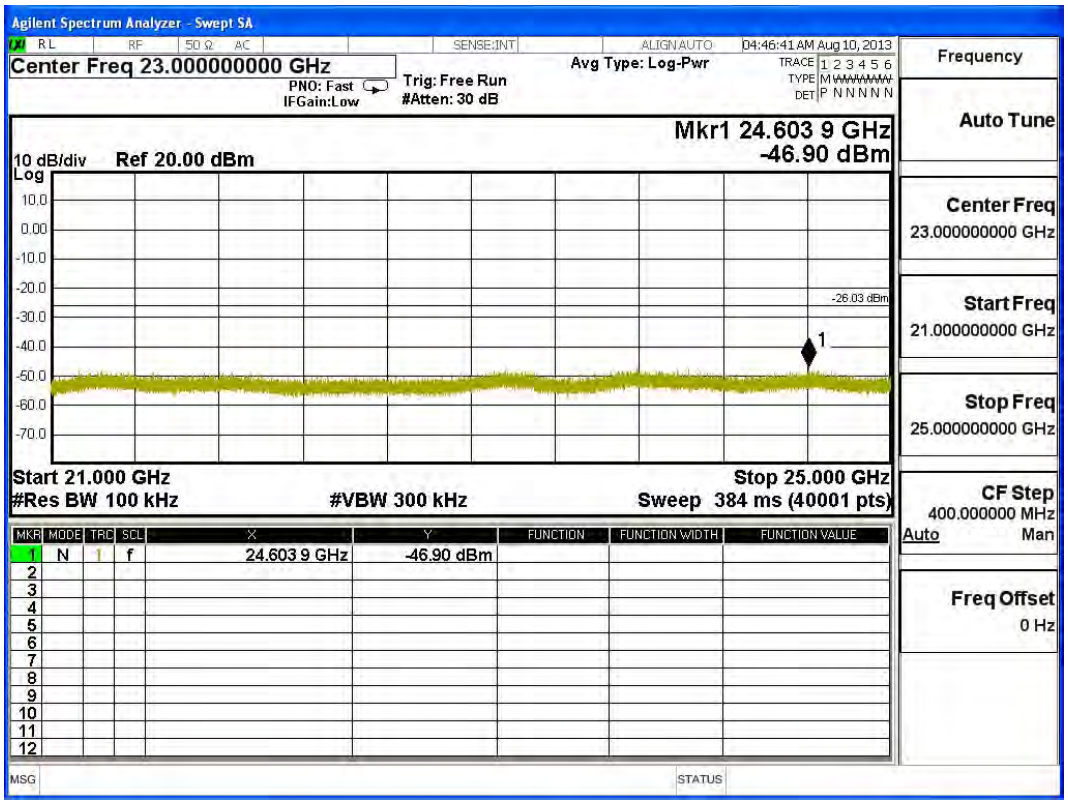

Agilent Spectrum Analyzer - Swept SA
Center Freq 3.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
04:40:43 AM Aug 10, 2013
Mkr1 2.408 0 GHz
-6.59 dBm
10 dB/div
Ref 20.00 dBm
-26.03 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 2.408 0 GHz -6.59 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
04:41:55 AM Aug 10, 2013
Mkr1 6.096 7 GHz
-56.52 dBm
10 dB/div
Ref 20.00 dBm
-26.03 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.096 7 GHz -56.52 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

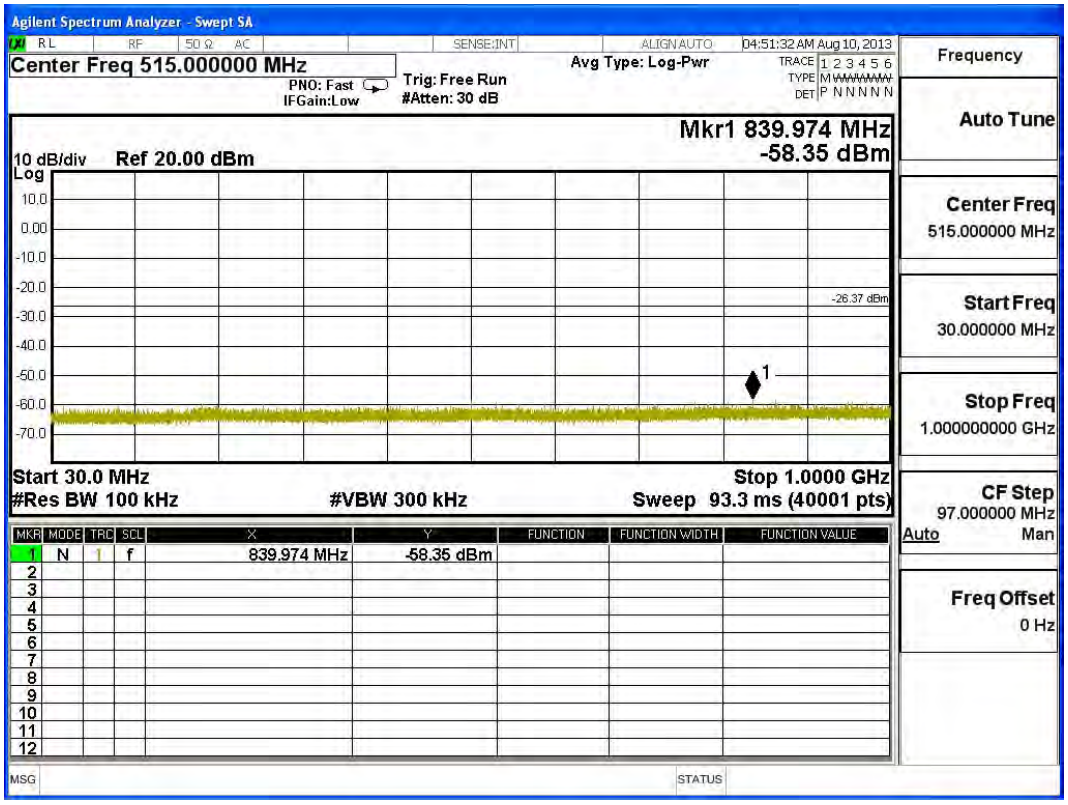

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
04:43:07 AM Aug 10, 2013
Mkr1 12.833 9 GHz
-53.60 dBm
10 dB/div
Ref 20.00 dBm
Log
-26.03 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.833 9 GHz -53.60 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

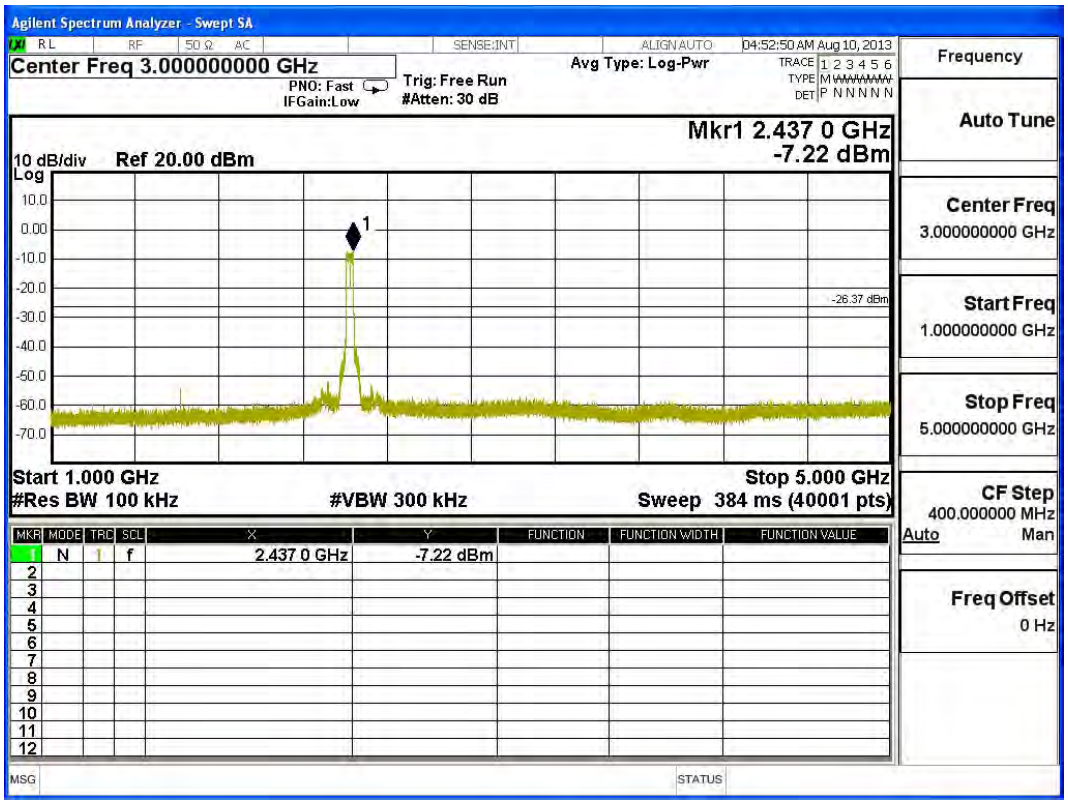

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
04:44:18 AM Aug 10, 2013
Mkr1 16.993 5 GHz
-50.61 dBm
10 dB/div
Ref 20.00 dBm
Log
-26.03 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 16.993 5 GHz -50.61 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

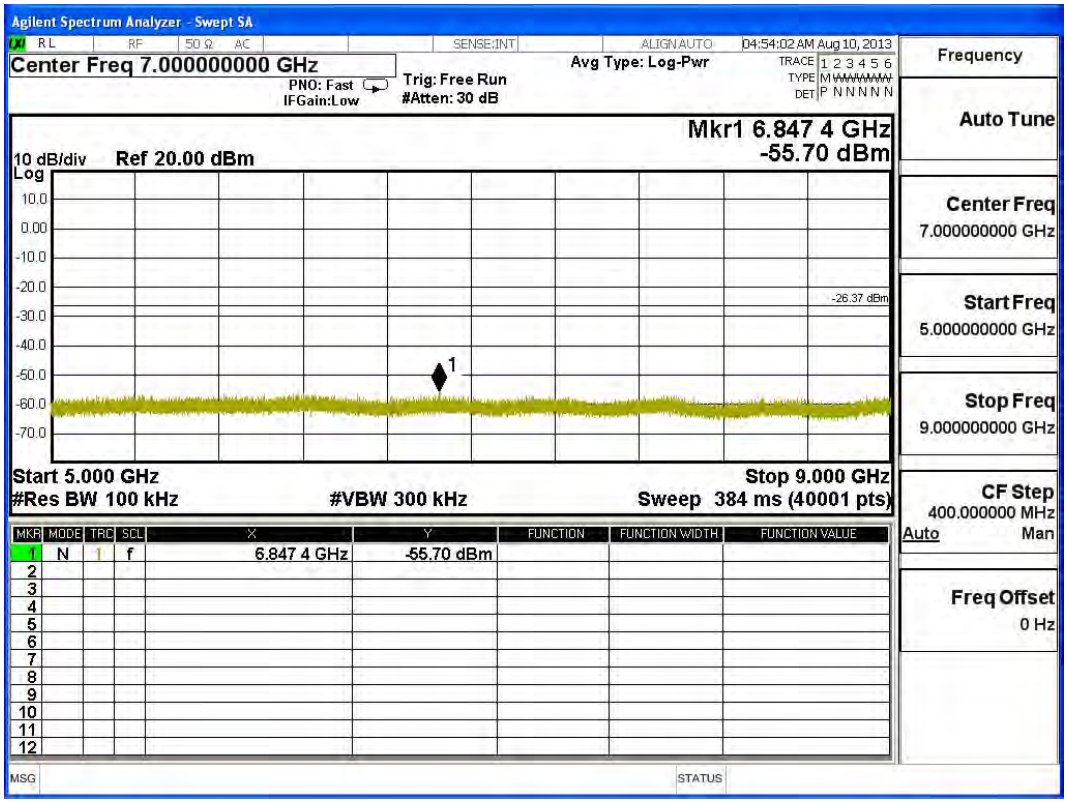

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
04:45:29 AM Aug 10, 2013
Mkr1 17.666 6 GHz
-49.98 dBm
10 dB/div
Ref 20.00 dBm
-26.03 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 17.666 6 GHz -49.98 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

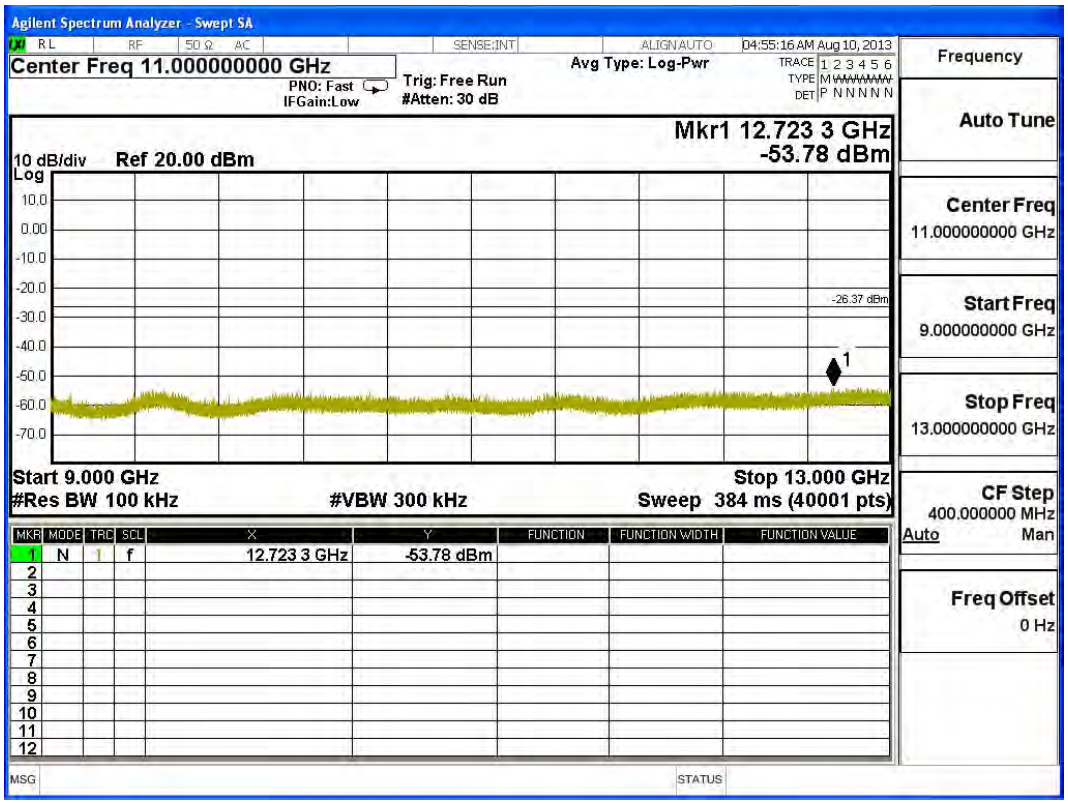

Agilent Spectrum Analyzer - Swept SA
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
04:46:41 AM Aug 10, 2013
Mkr1 24.603 9 GHz
-46.90 dBm
10 dB/div
Ref 20.00 dBm
-26.03 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 24.603 9 GHz -46.90 dBm
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

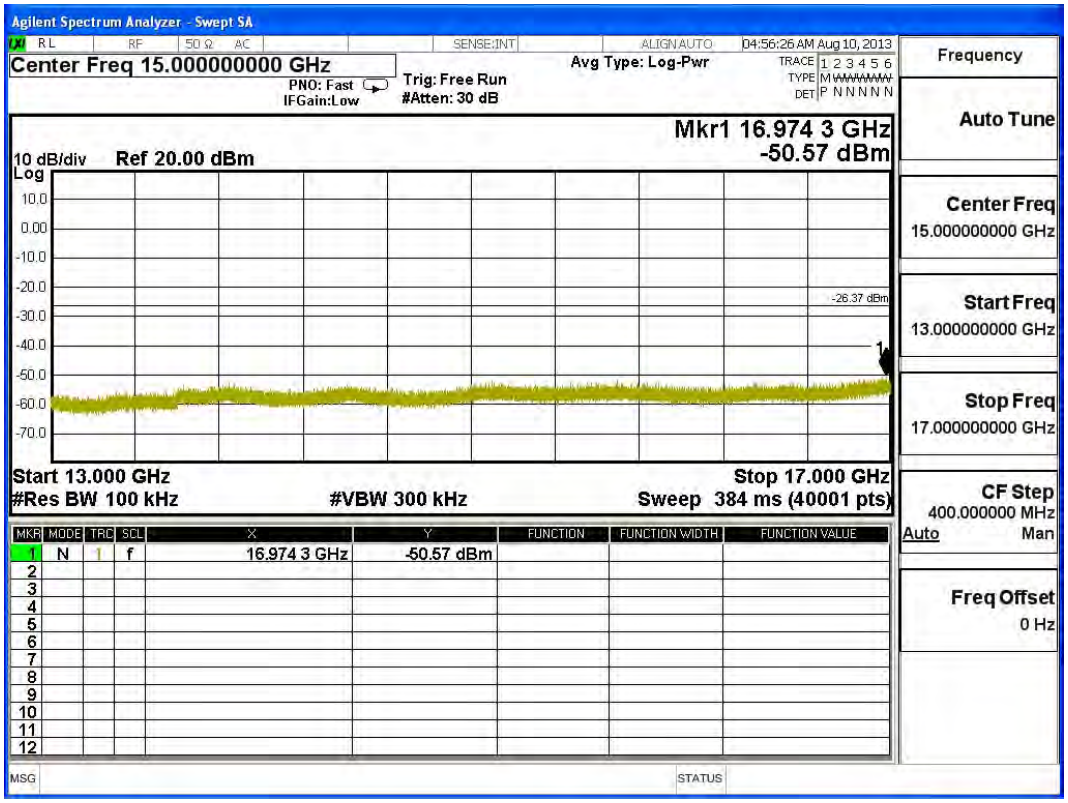
Channel 01 (2422MHz) – Chain B

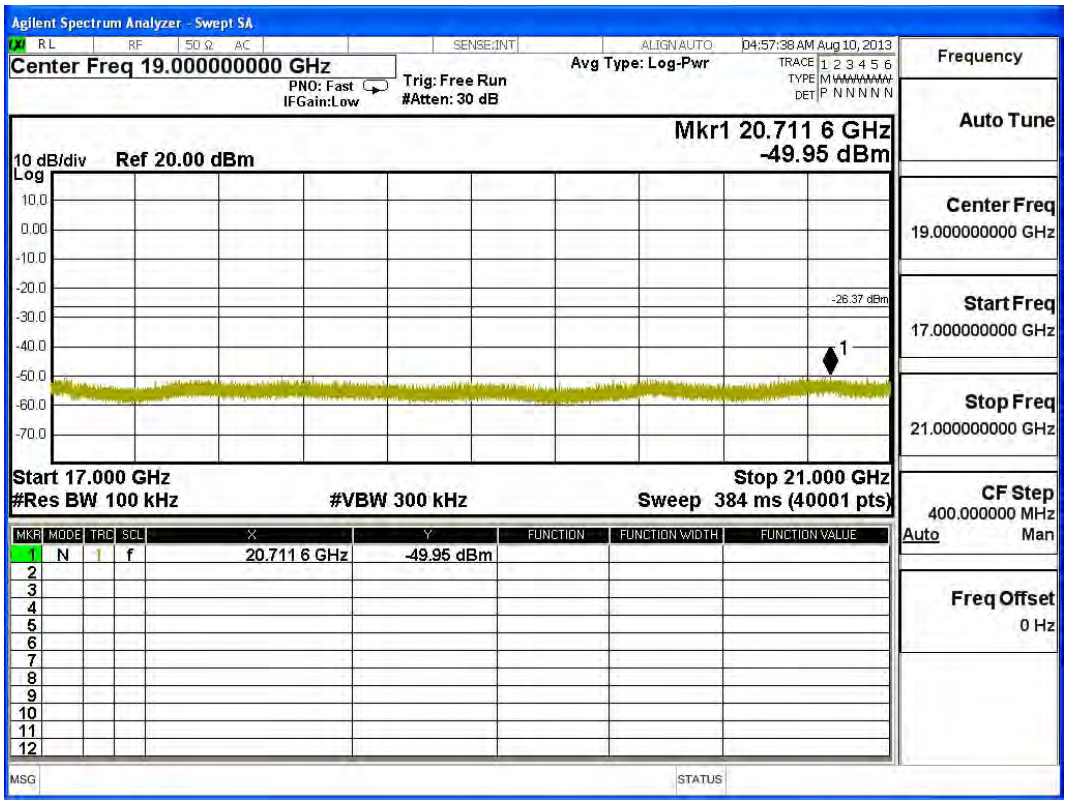


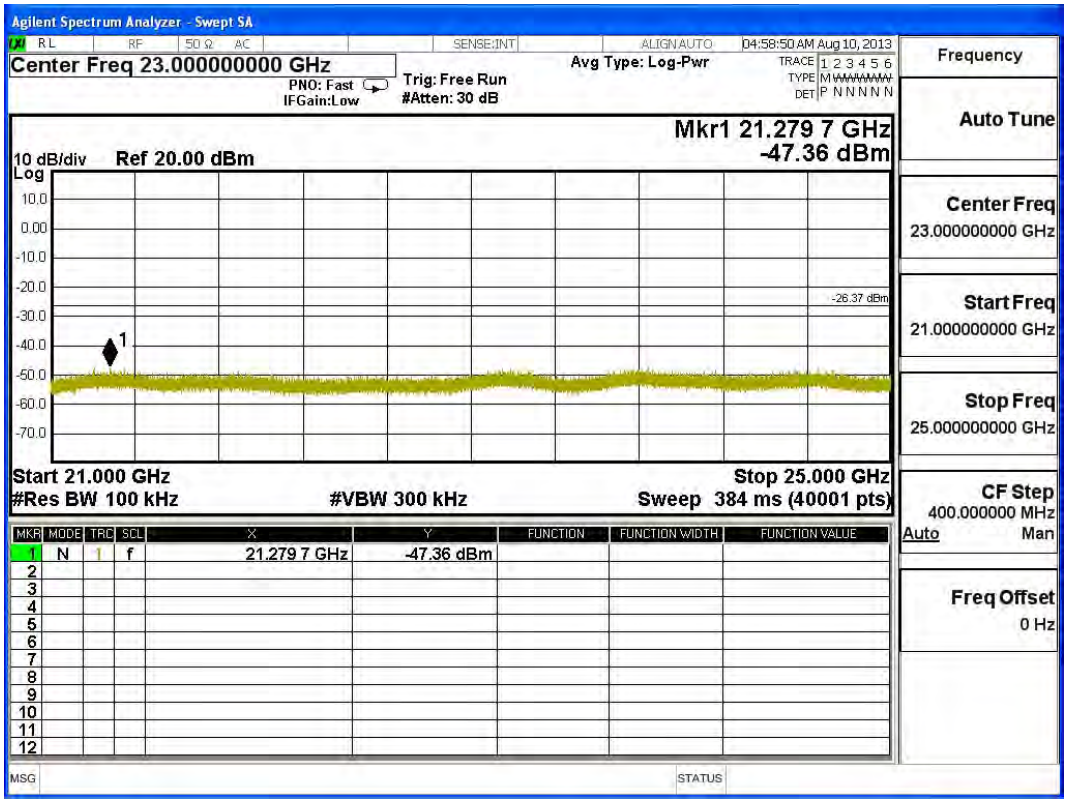



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:54:02 AM Aug 10, 2013
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 6.847 4 GHz
-55.70 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-26.37 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 6.847 4 GHz -55.70 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

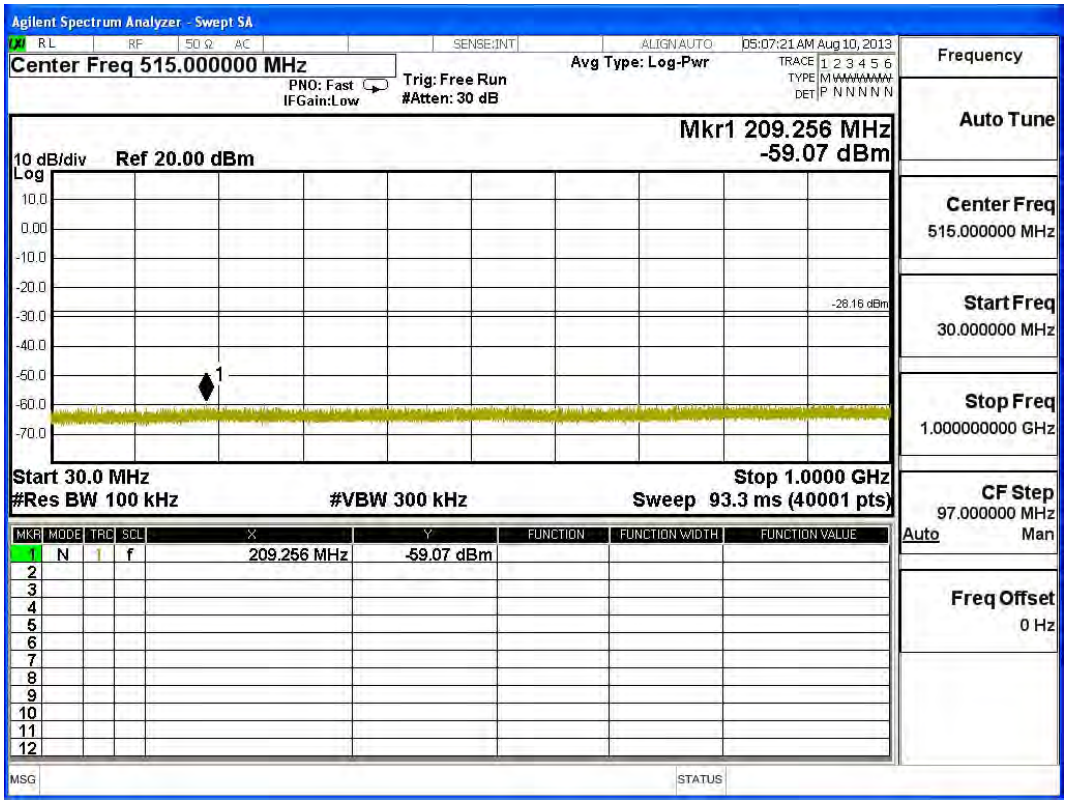

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:55:16 AM Aug 10, 2013
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 12.723 3 GHz
-53.78 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-26.37 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 12.723 3 GHz -53.78 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

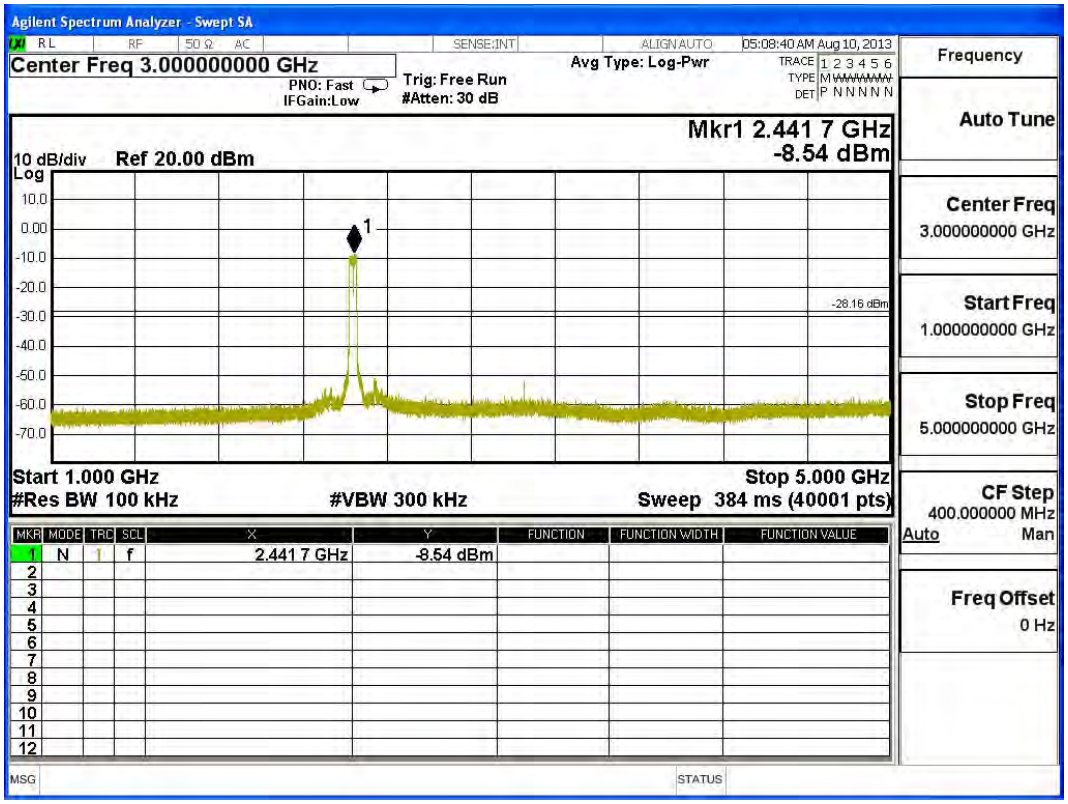

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:56:26 AM Aug 10, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 16.974 3 GHz
-50.57 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-26.37 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.974 3 GHz -50.57 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

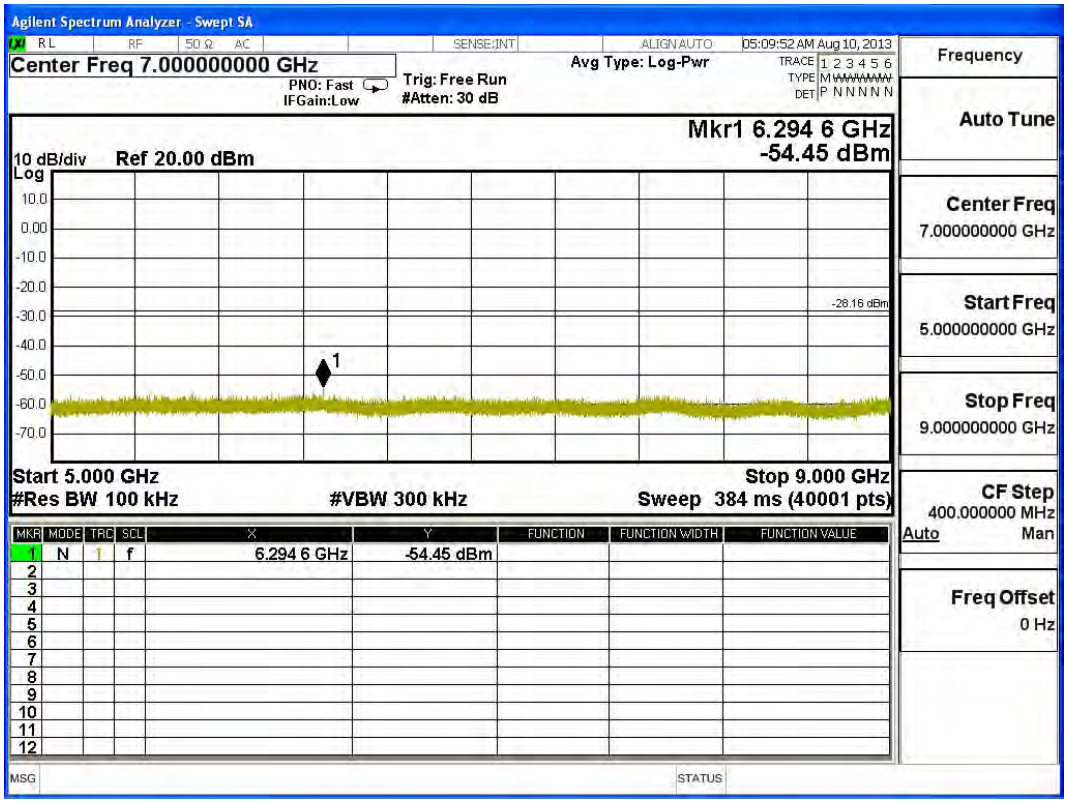

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:57:38 AM Aug 10, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 20.711 6 GHz
-49.95 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-26.37 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.711 6 GHz -49.95 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

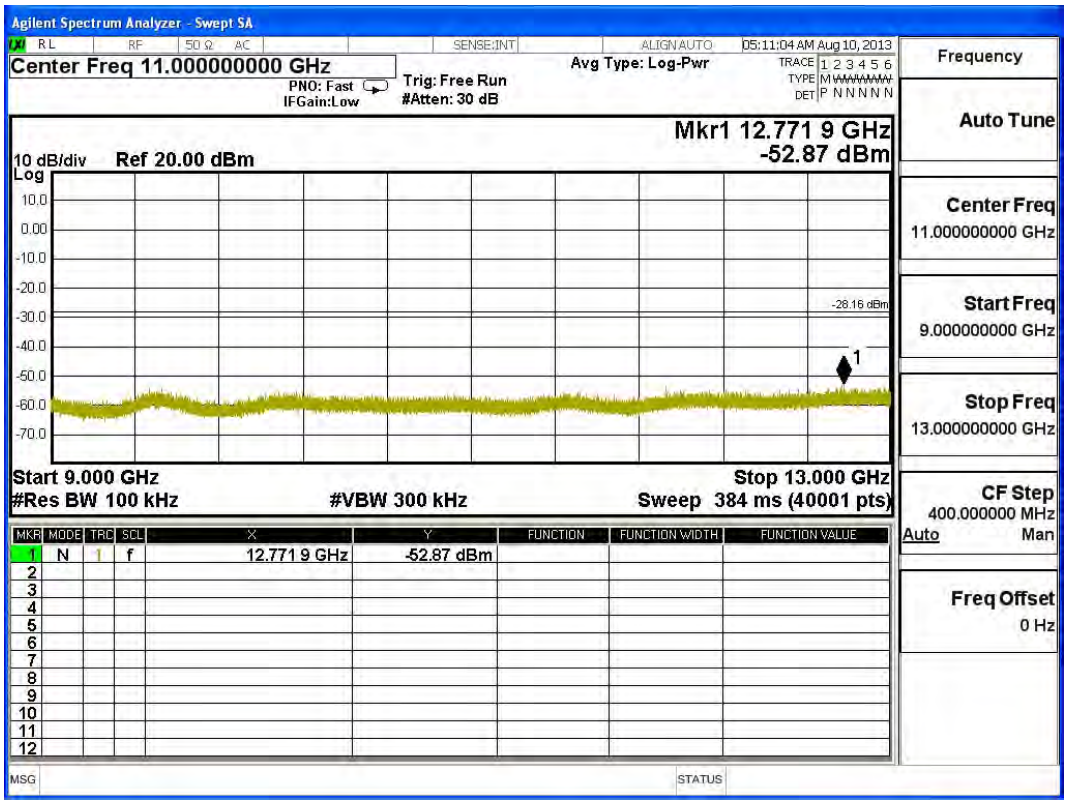

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:58:50 AM Aug 10, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 21.279 7 GHz
-47.36 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-26.37 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 21.279 7 GHz -47.36 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

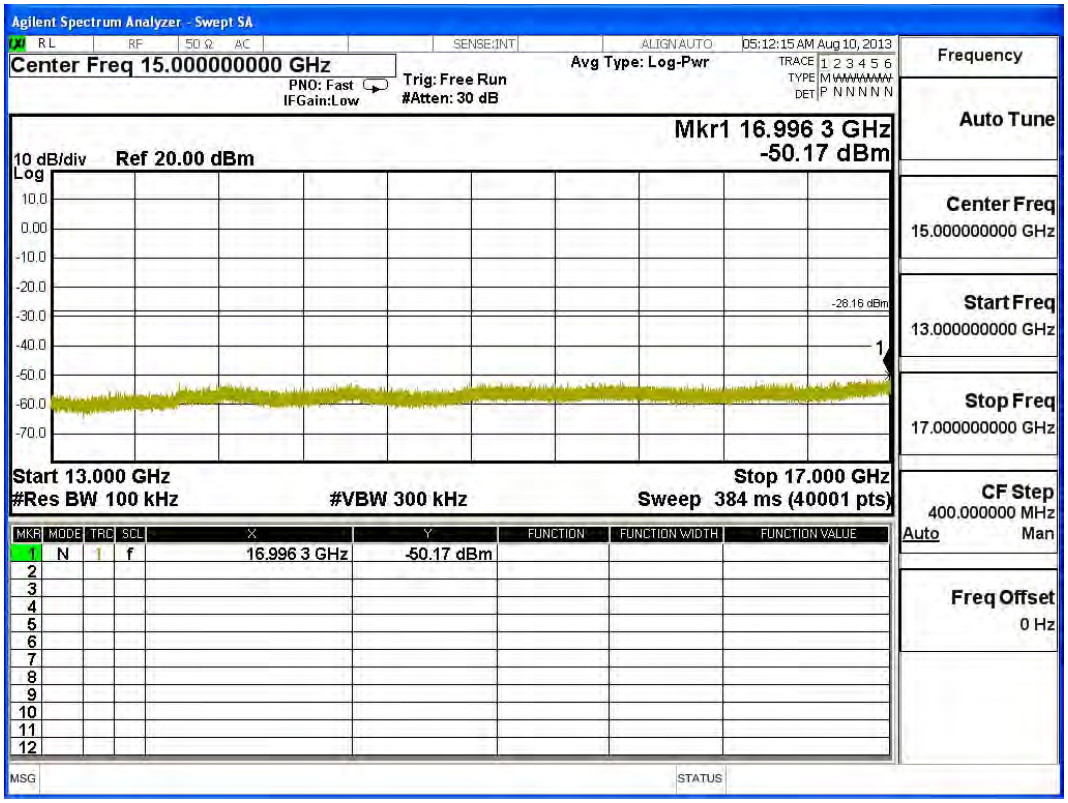
Channel 04 (2437MHz) – Chain A

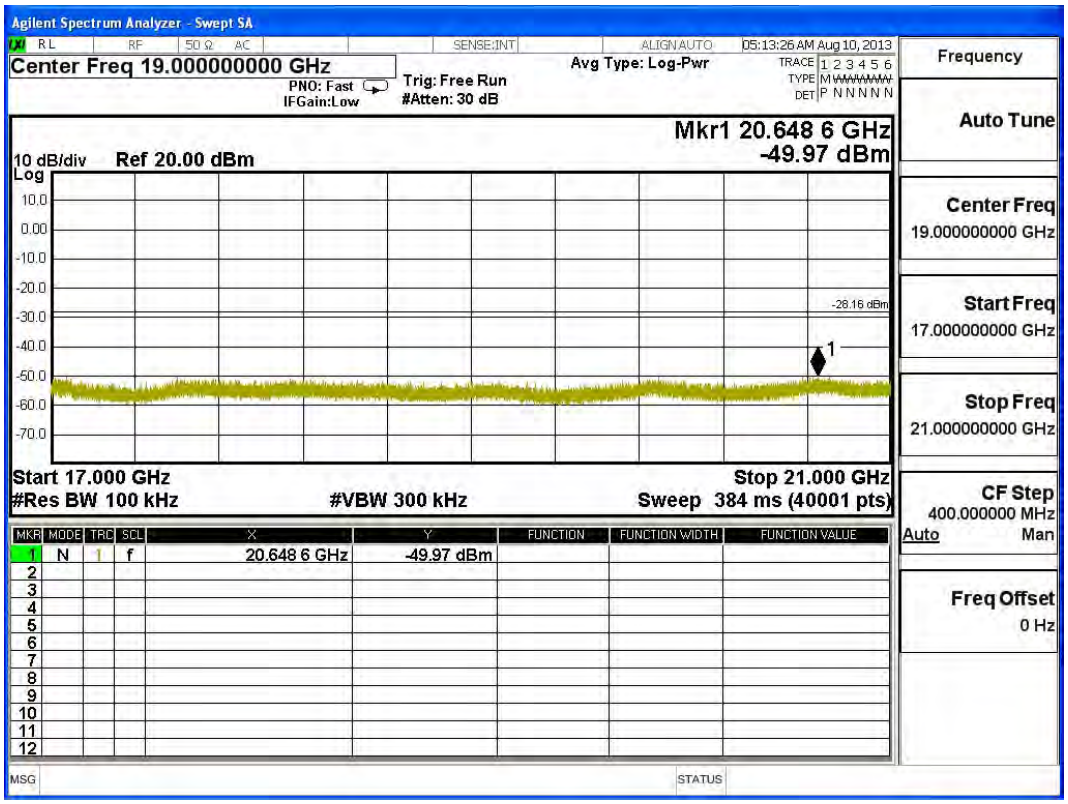


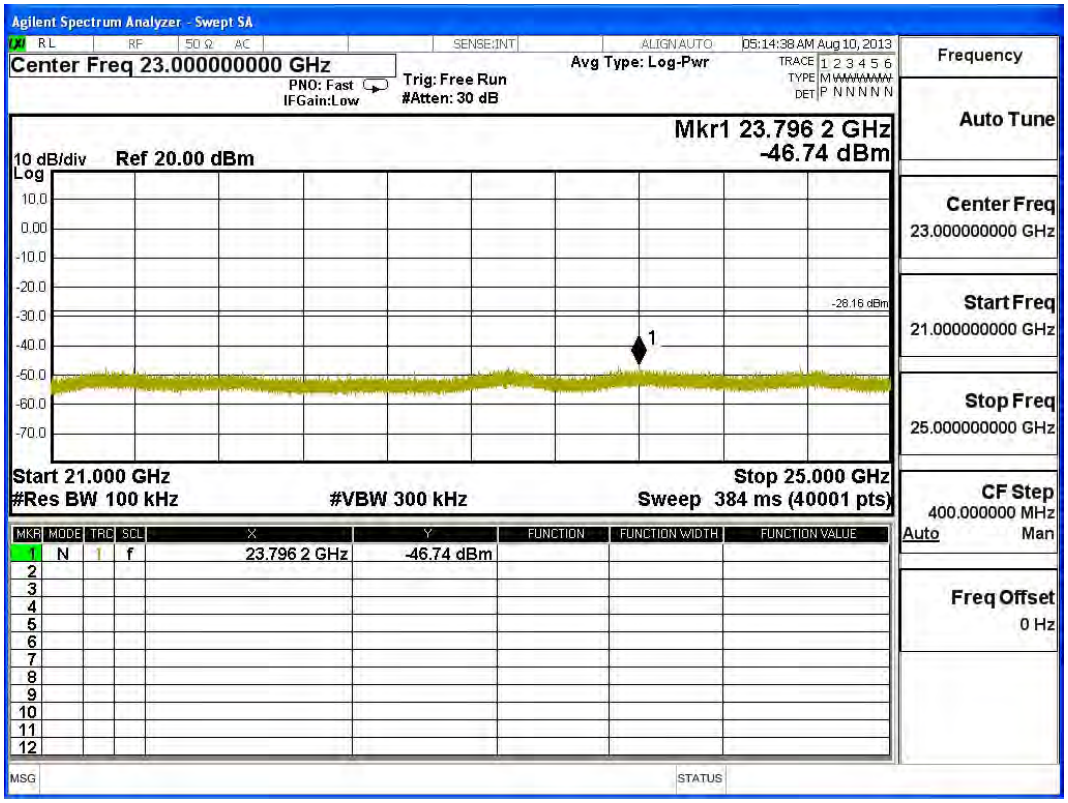



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:09:52 AM Aug 10, 2013
Mkr1 6.294 6 GHz
-54.45 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.16 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.294 6 GHz -54.45 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

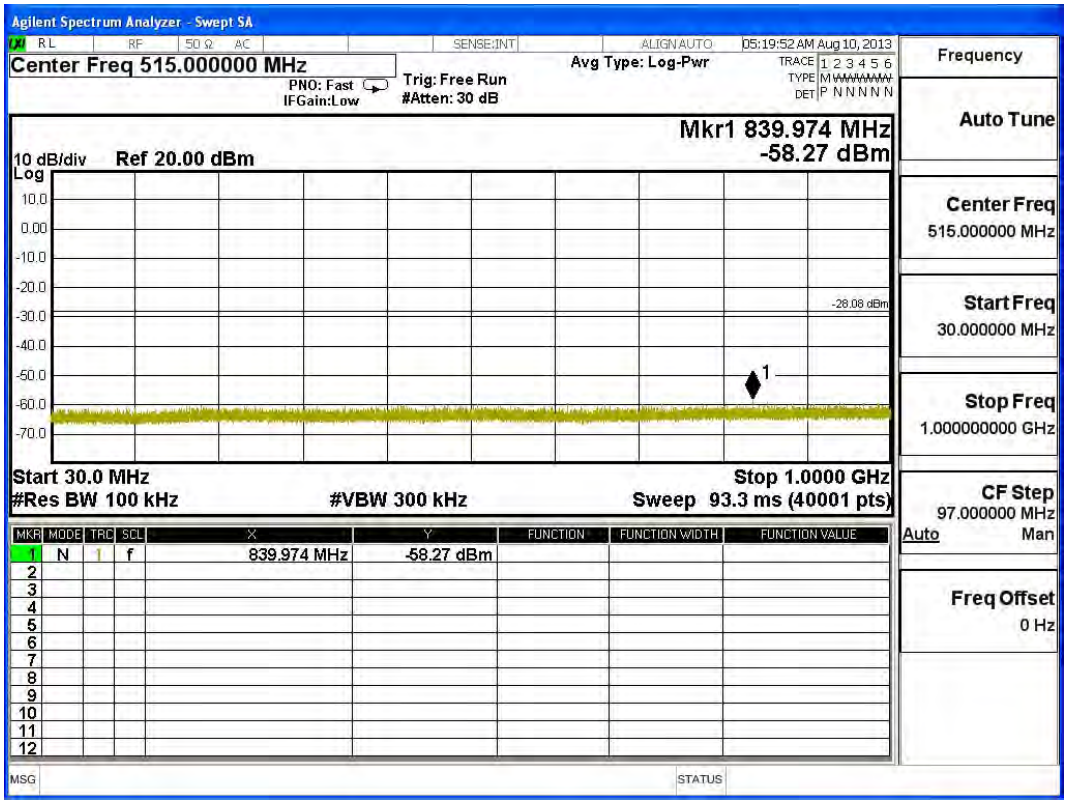

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:11:04 AM Aug 10, 2013
Mkr1 12.771 9 GHz
-52.87 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.16 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.771 9 GHz -52.87 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

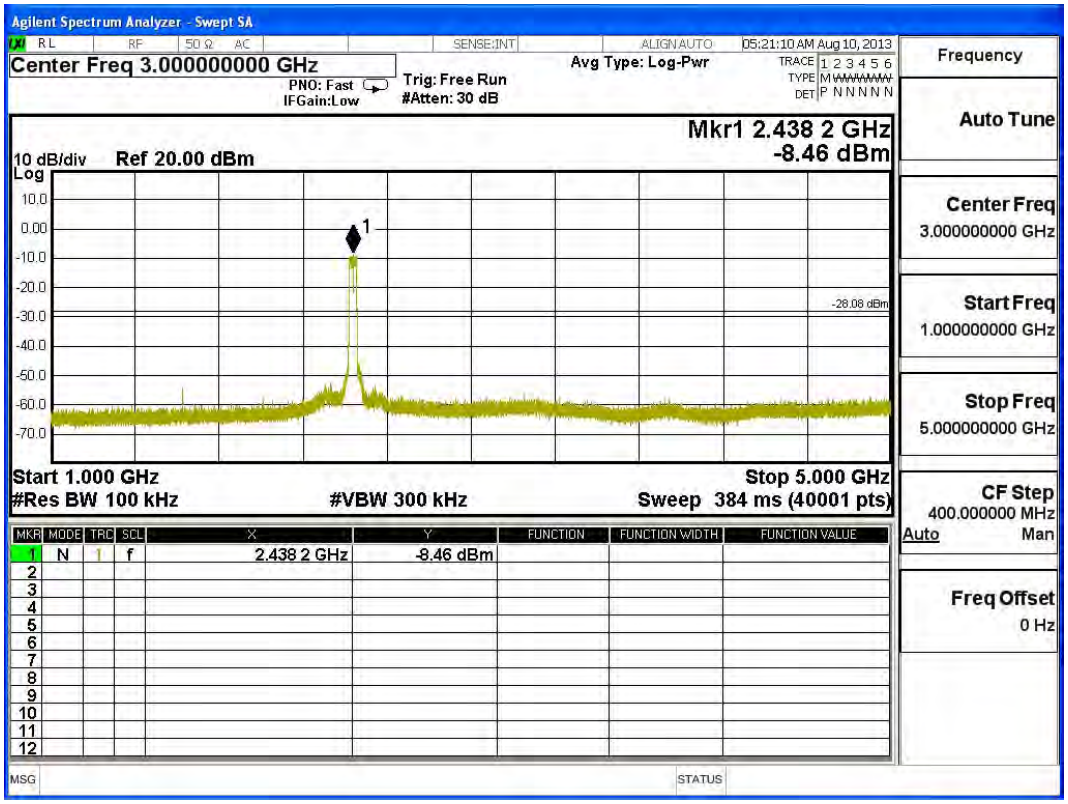

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:12:15 AM Aug 10, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 16.996 3 GHz
-50.17 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-28.16 dBm
1
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.996 3 GHz -50.17 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

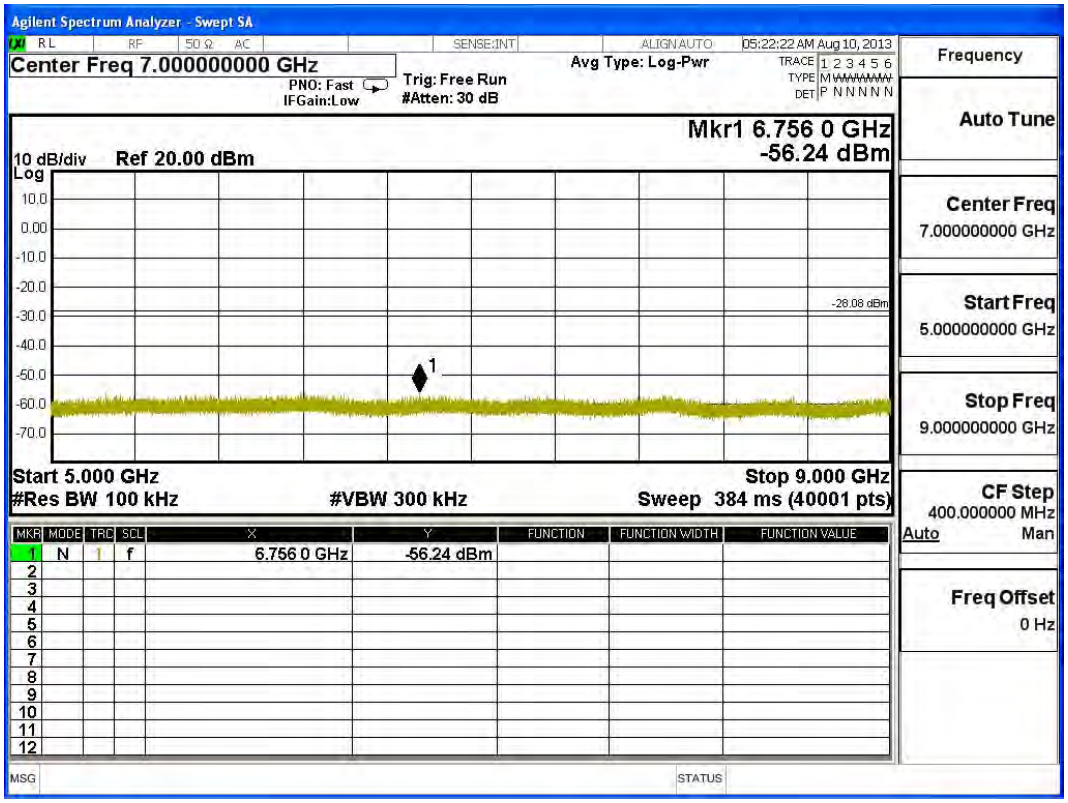

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:13:26 AM Aug 10, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 20.648 6 GHz
-49.97 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-28.16 dBm
1
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.648 6 GHz -49.97 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

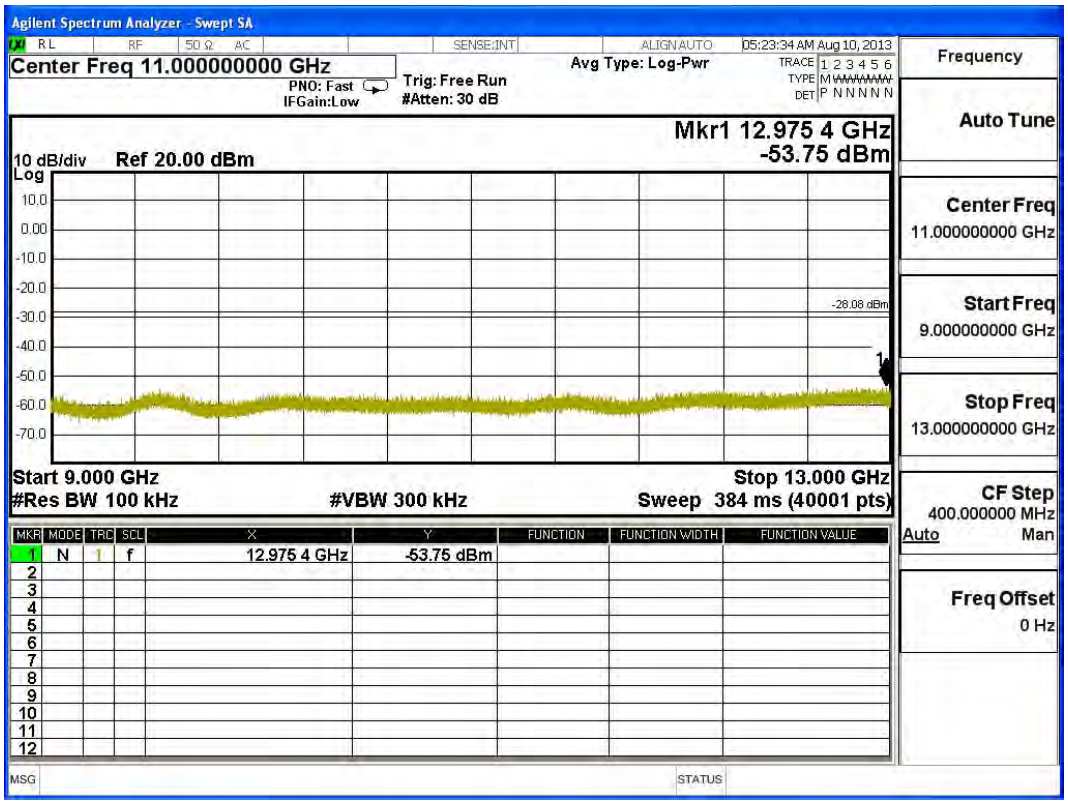

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:14:38 AM Aug 10, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.796 2 GHz
-46.74 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-28.16 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.796 2 GHz -46.74 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

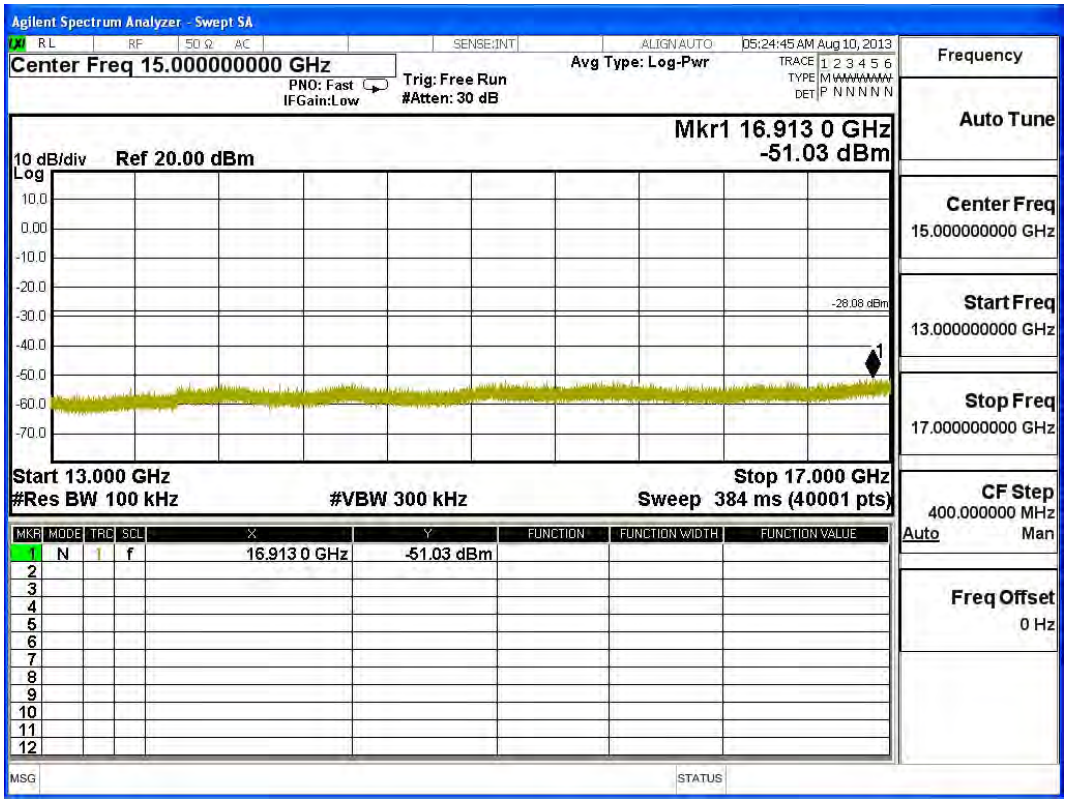
Channel 04 (2437MHz) – Chain B

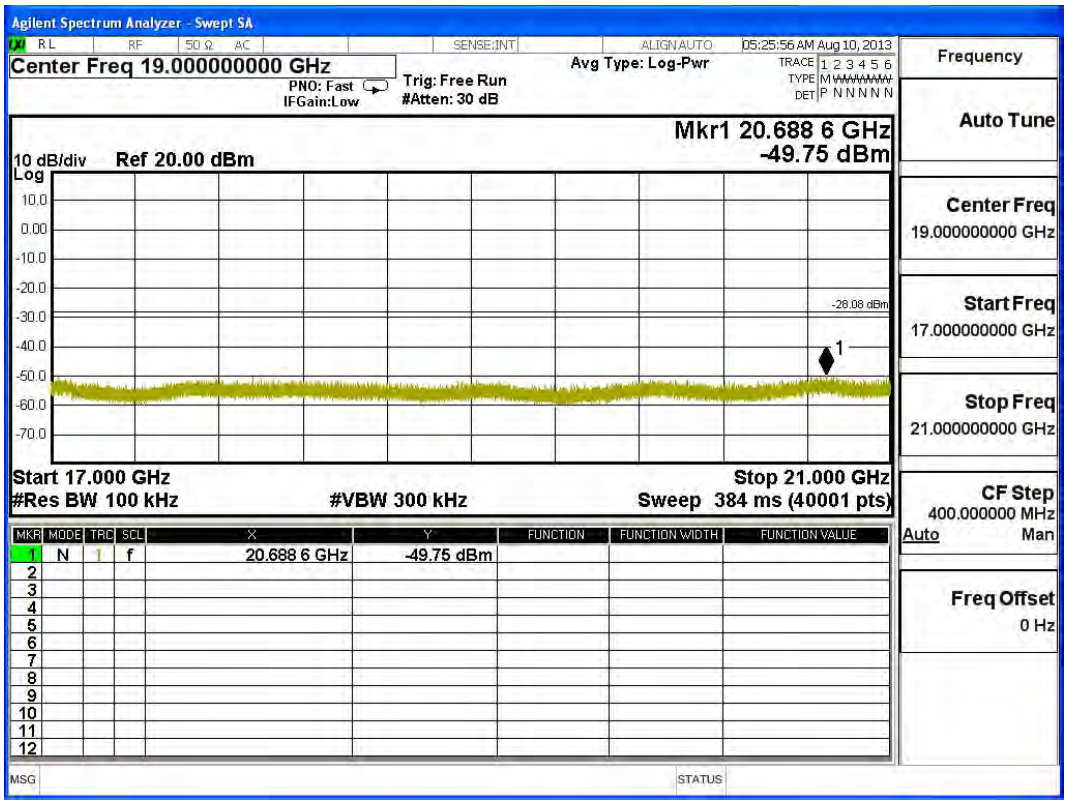


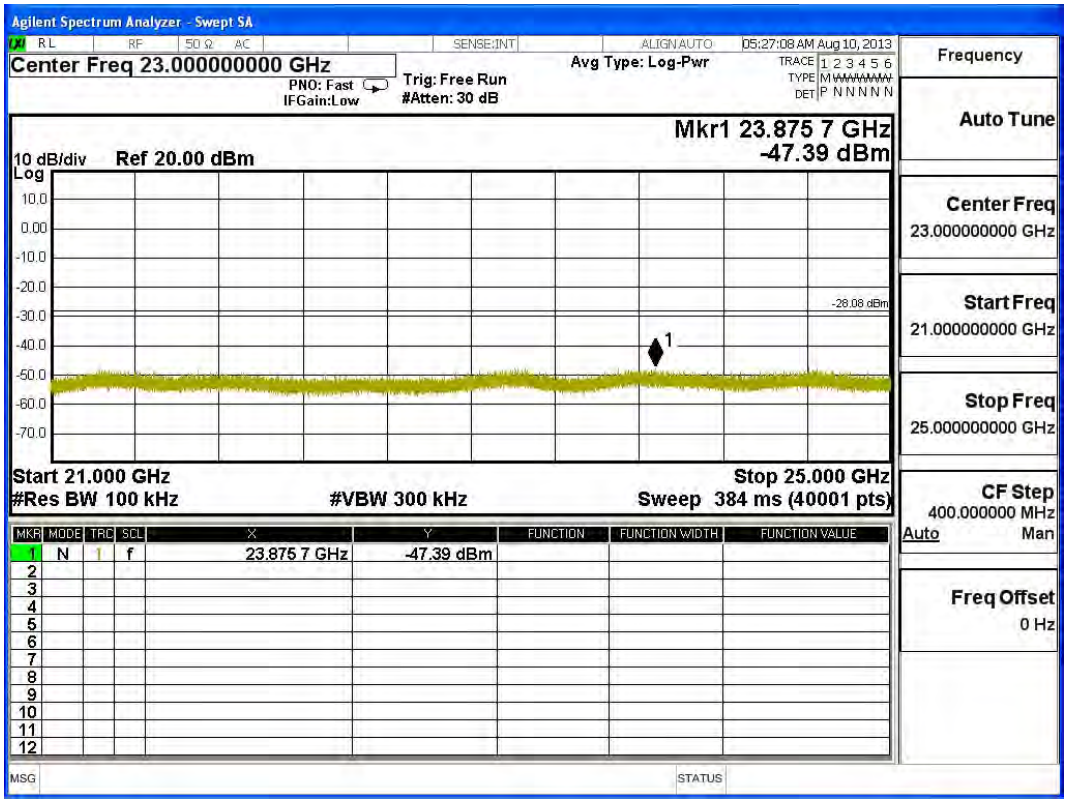



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:22:22 AM Aug 10, 2013
Mkr1 6.756 0 GHz
-56.24 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.08 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.756 0 GHz -56.24 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

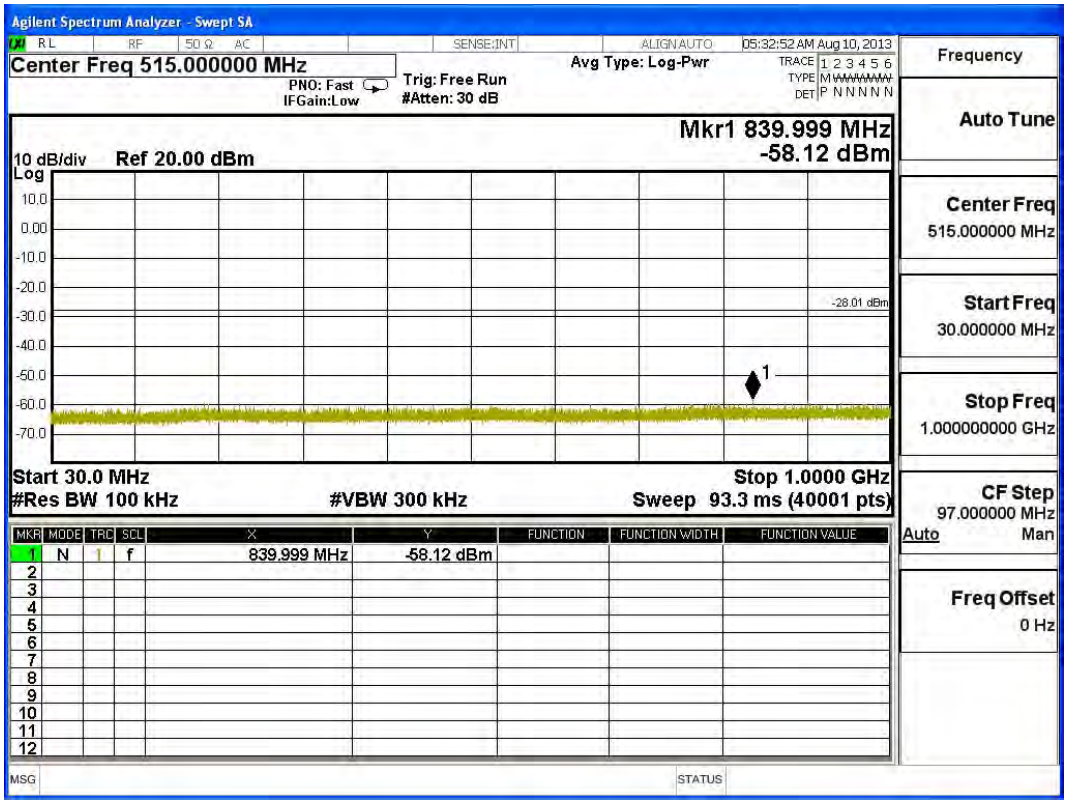

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:23:34 AM Aug 10, 2013
Mkr1 12.975 4 GHz
-53.75 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.08 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.975 4 GHz -53.75 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

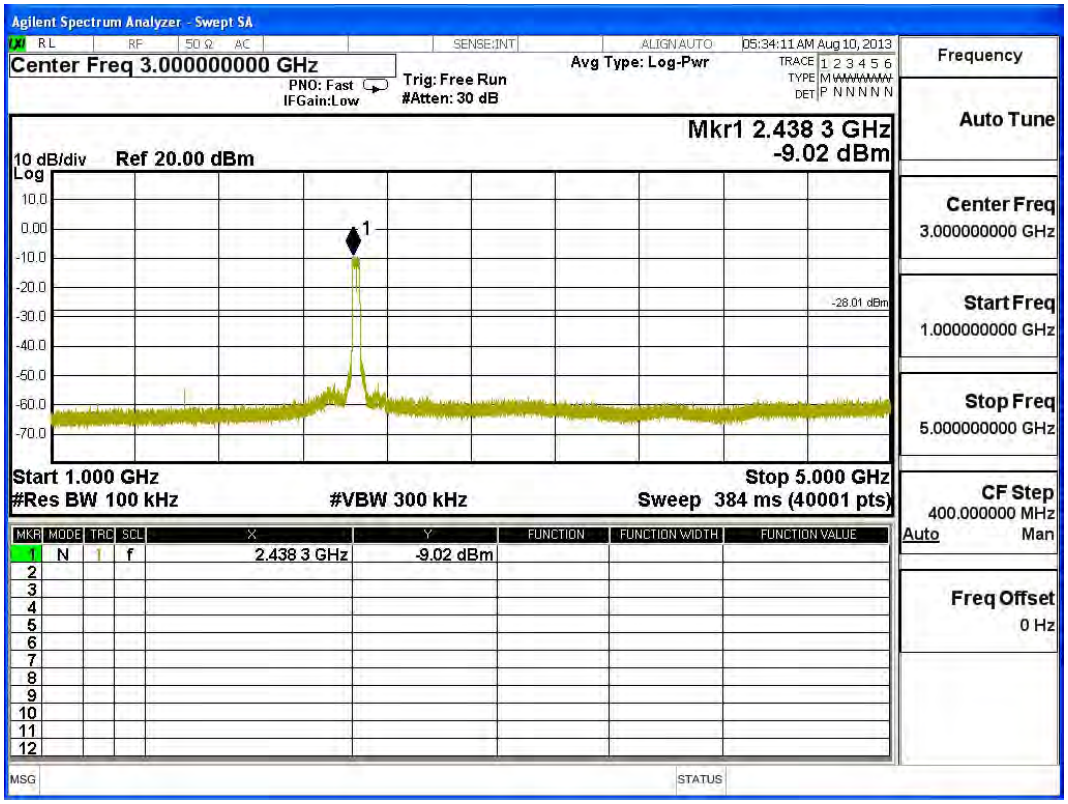

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:24:45 AM Aug 10, 2013
Mkr1 16.913 0 GHz
-51.03 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.08 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 16.913 0 GHz -51.03 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

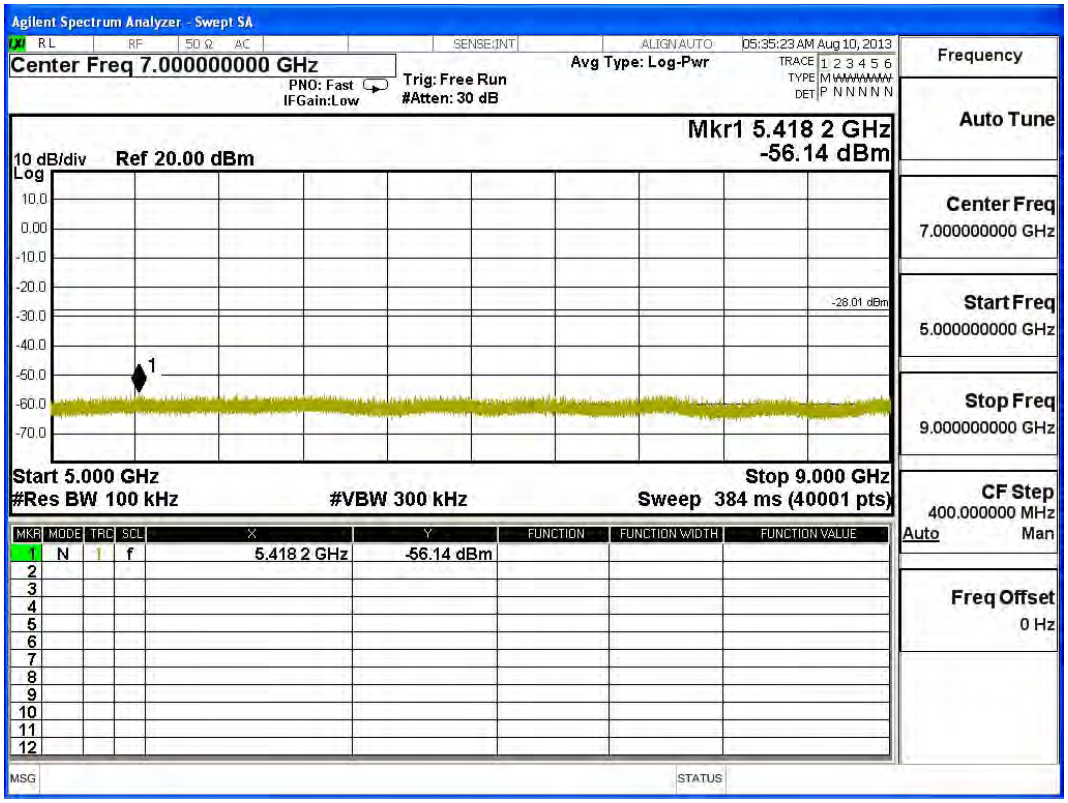

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:25:56 AM Aug 10, 2013
Mkr1 20.688 6 GHz
-49.75 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.08 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 20.688 6 GHz -49.75 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

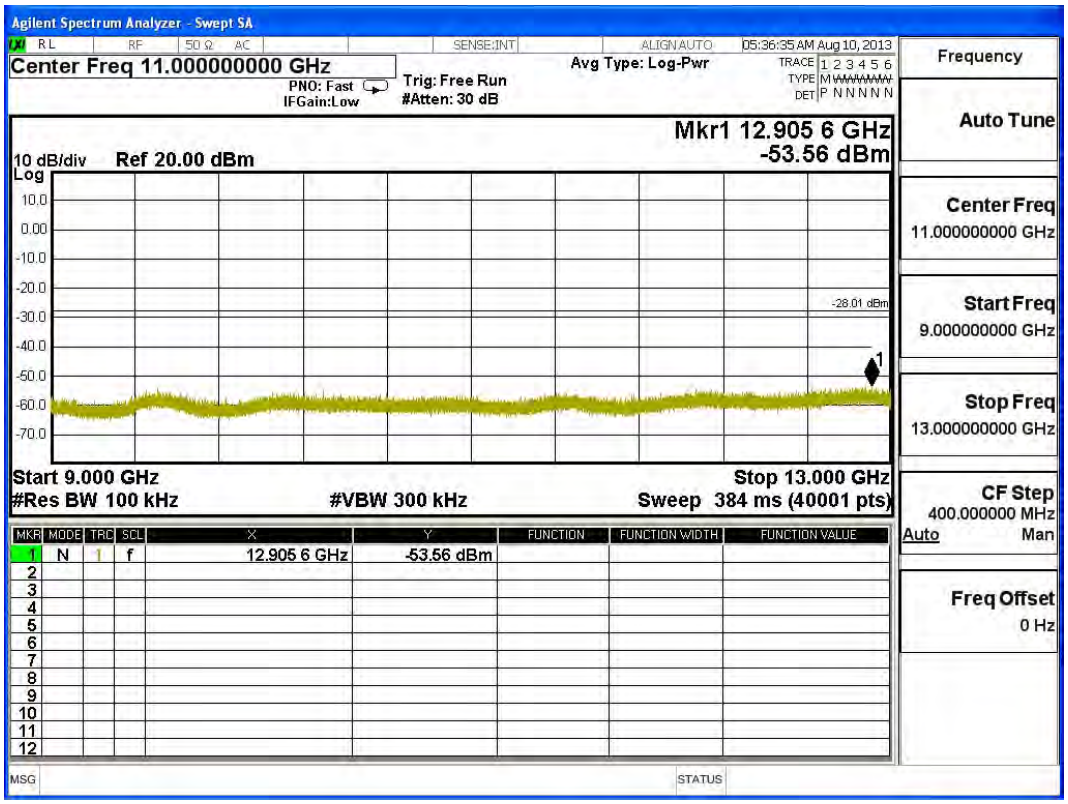

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:27:08 AM Aug 10, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.875 7 GHz
-47.39 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-28.08 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.875 7 GHz -47.39 dBm
2
3
4
5
6
7
8
9
10
11
12
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

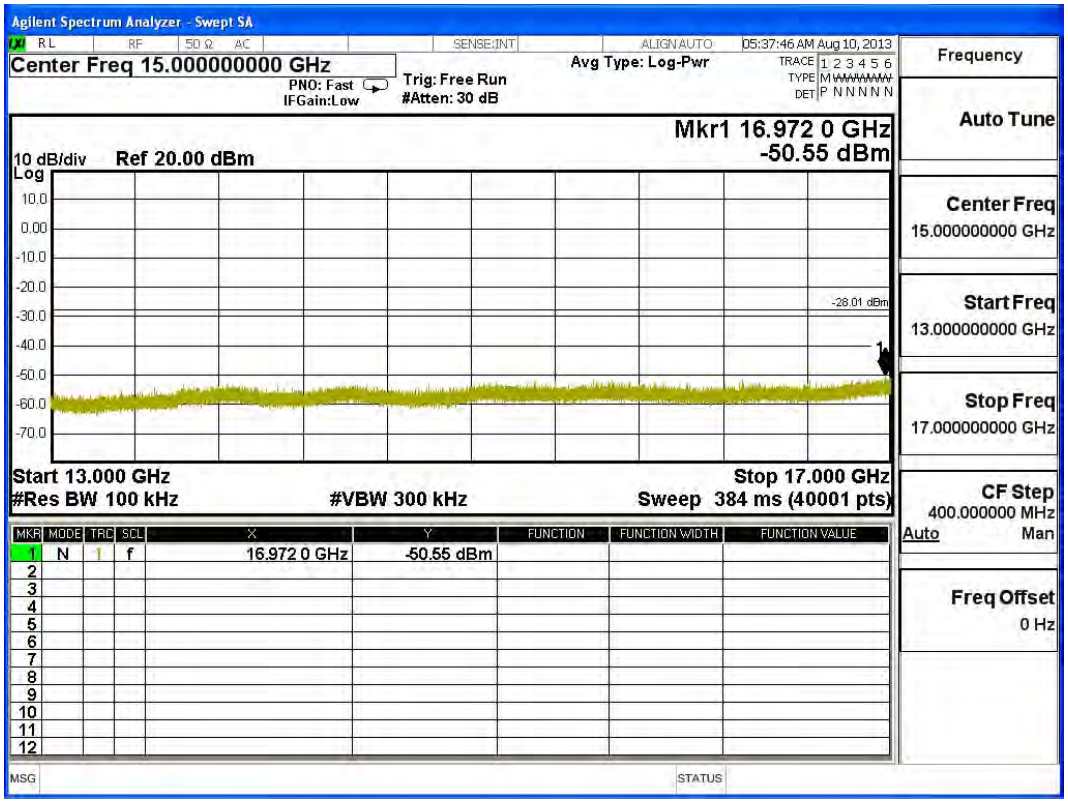
Channel 07 (2452MHz) – Chain A

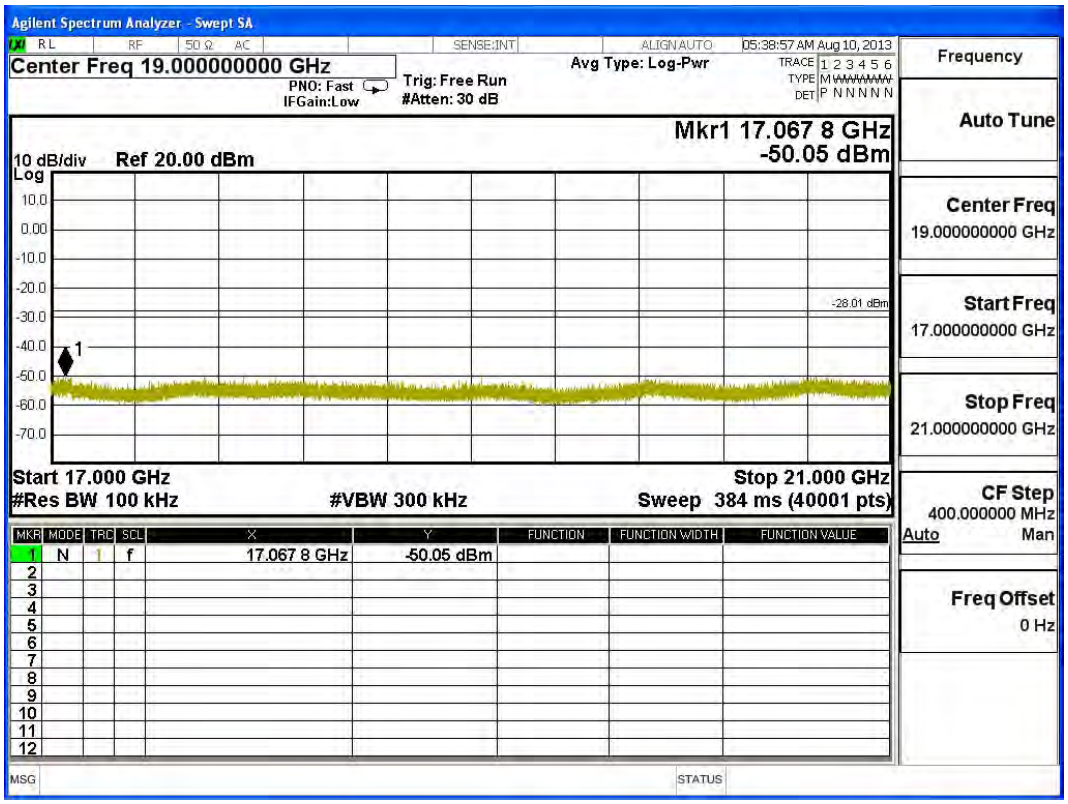


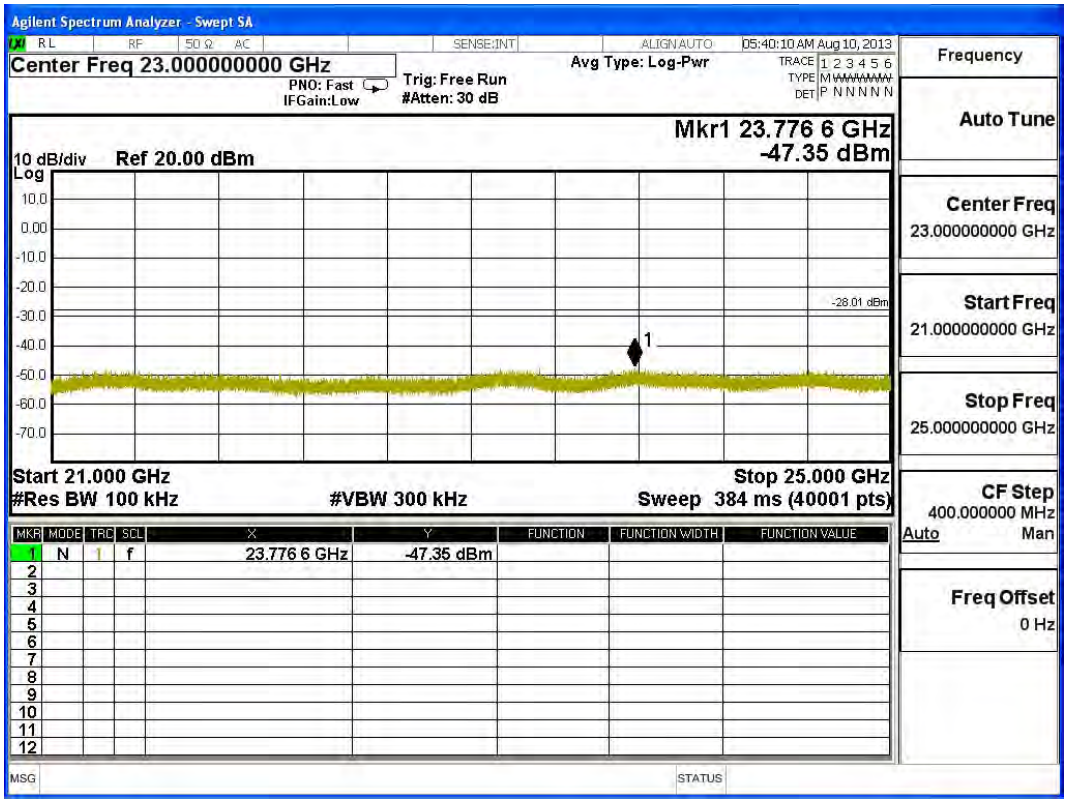



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:35:23 AM Aug 10, 2013
Mkr1 5.418 2 GHz
-56.14 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.01 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 5.418 2 GHz -56.14 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

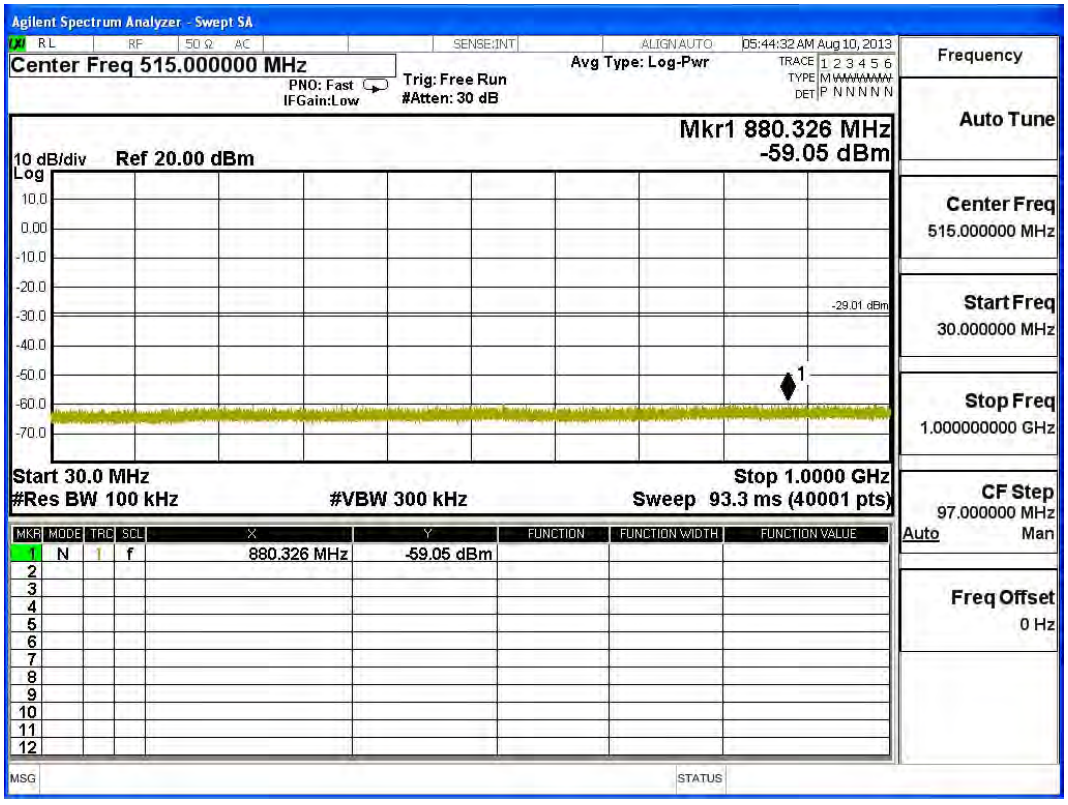

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:36:35 AM Aug 10, 2013
Mkr1 12.905 6 GHz
-53.56 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.01 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.905 6 GHz -53.56 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

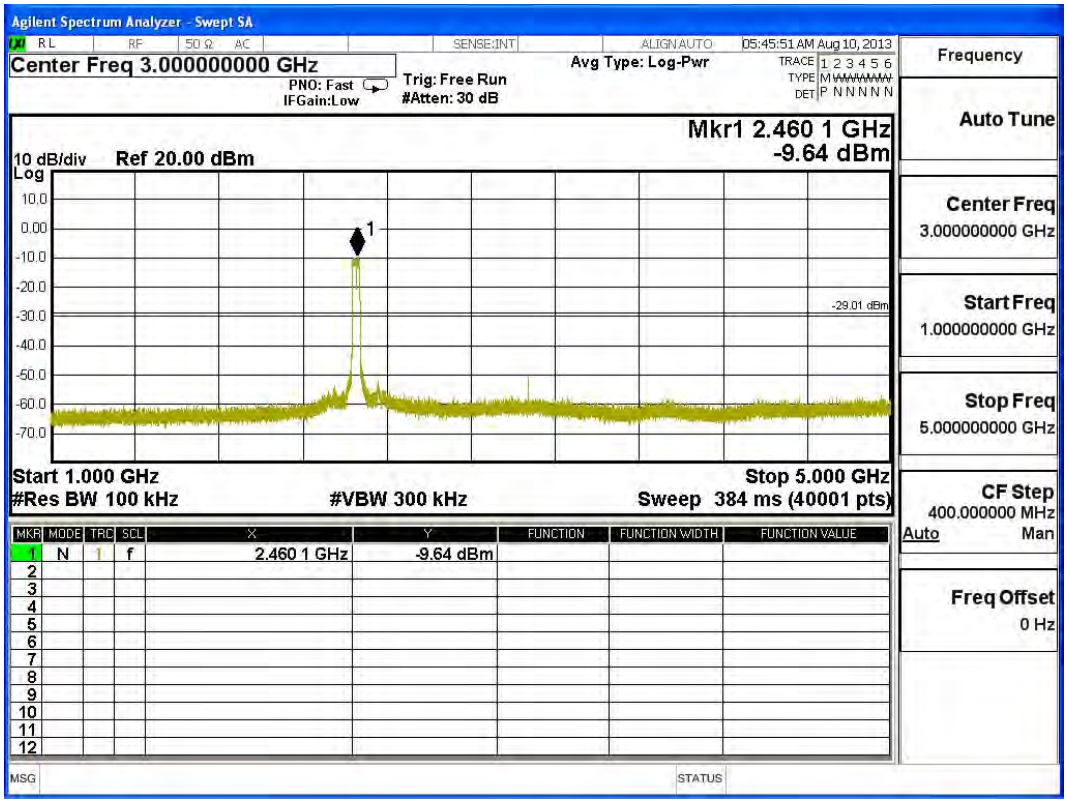

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:37:46 AM Aug 10, 2013
Mkr1 16.972 0 GHz
-50.55 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.01 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 16.972 0 GHz -50.55 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

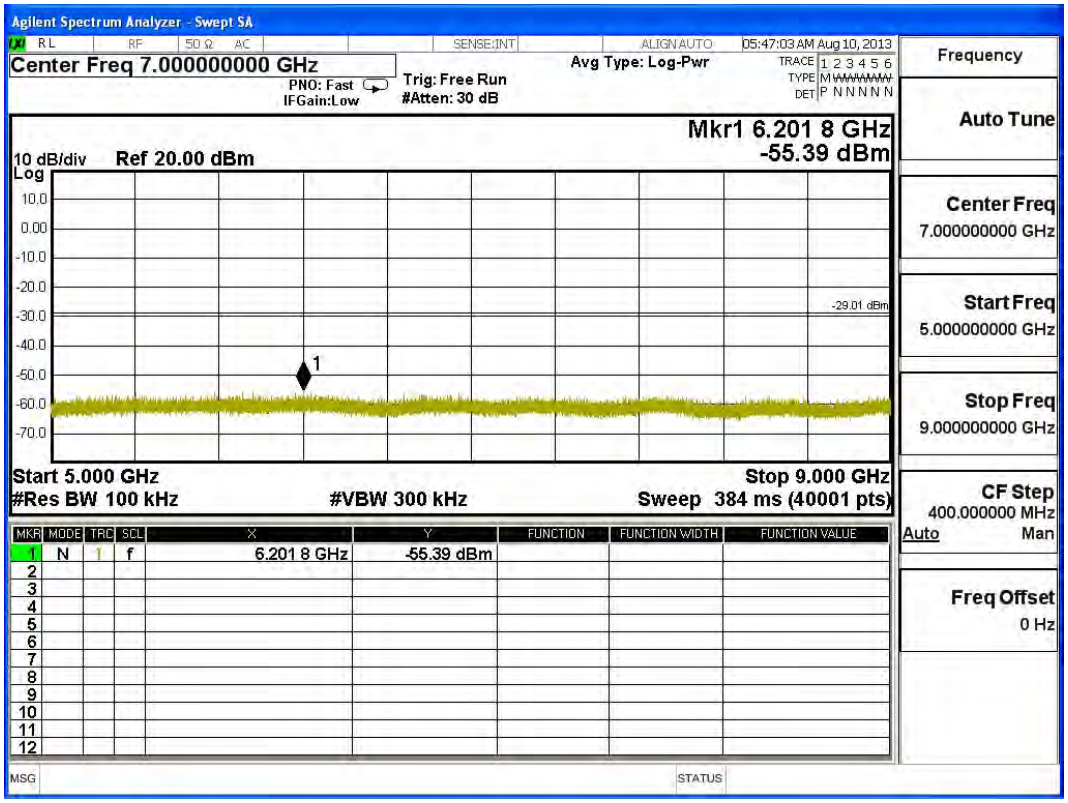

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:38:57 AM Aug 10, 2013
Mkr1 17.067 8 GHz
-50.05 dBm
10 dB/div
Ref 20.00 dBm
Log
-28.01 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 17.067 8 GHz -50.05 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

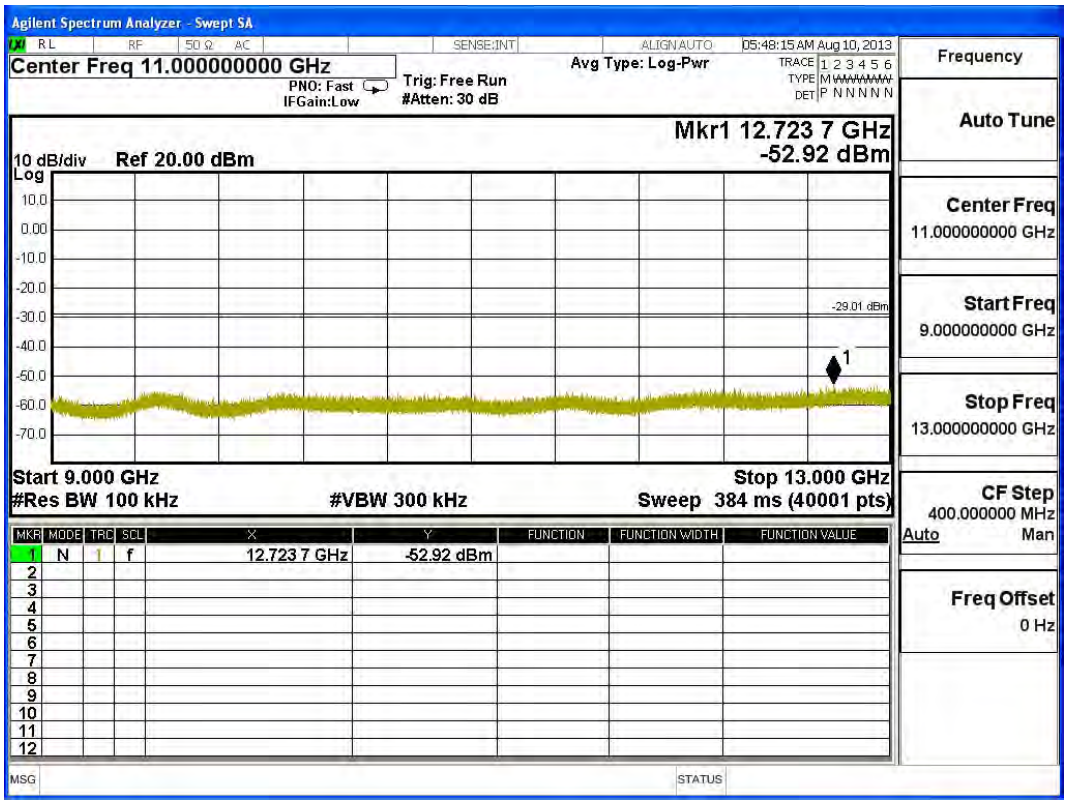

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:40:10 AM Aug 10, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.776 6 GHz
-47.35 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-28.01 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.776 6 GHz -47.35 dBm
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

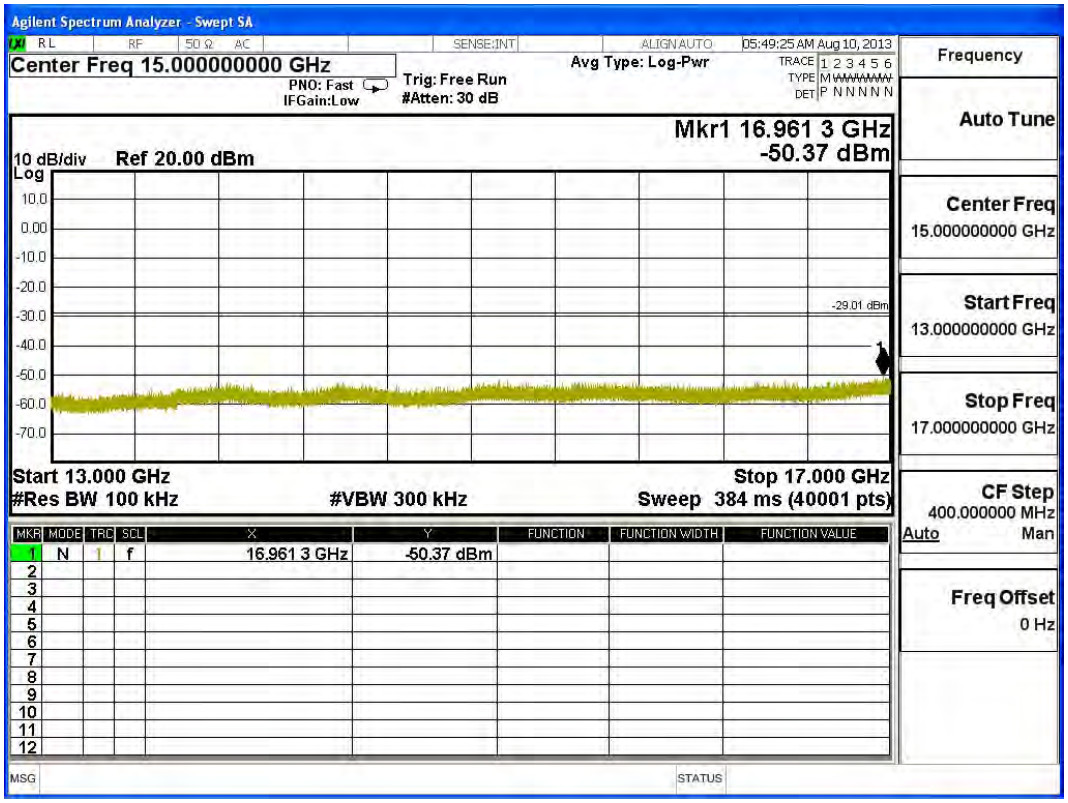
Channel 07 (2452MHz) – Chain B

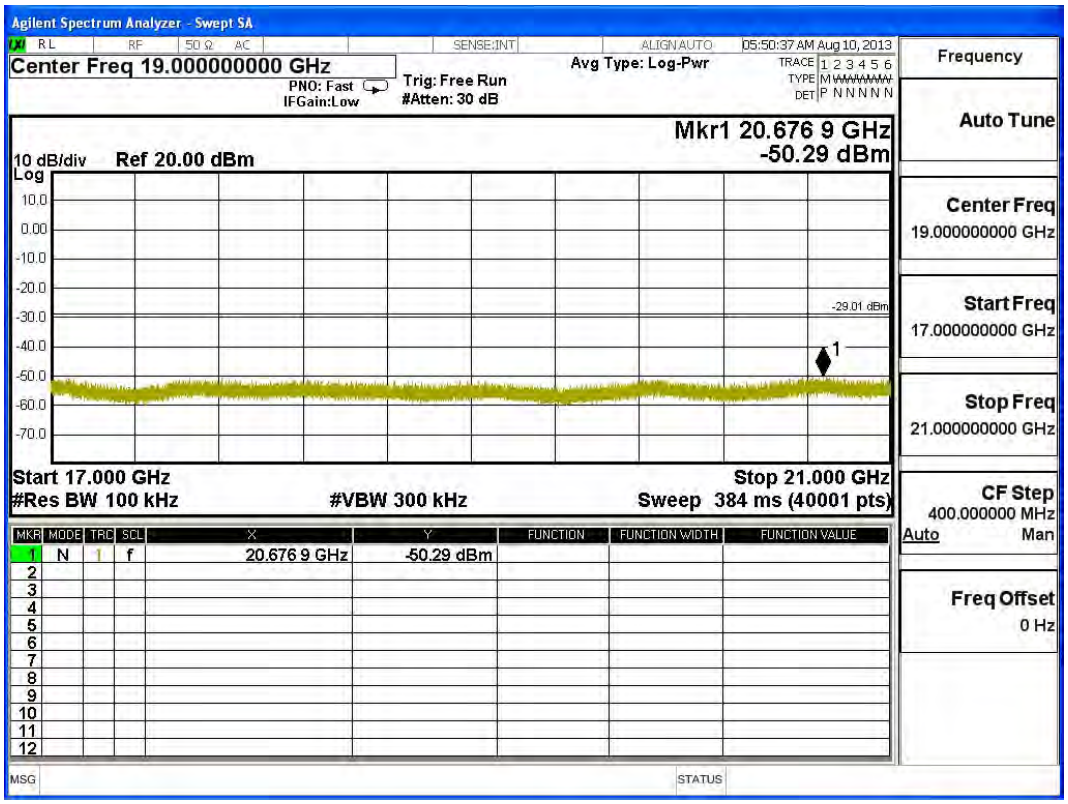


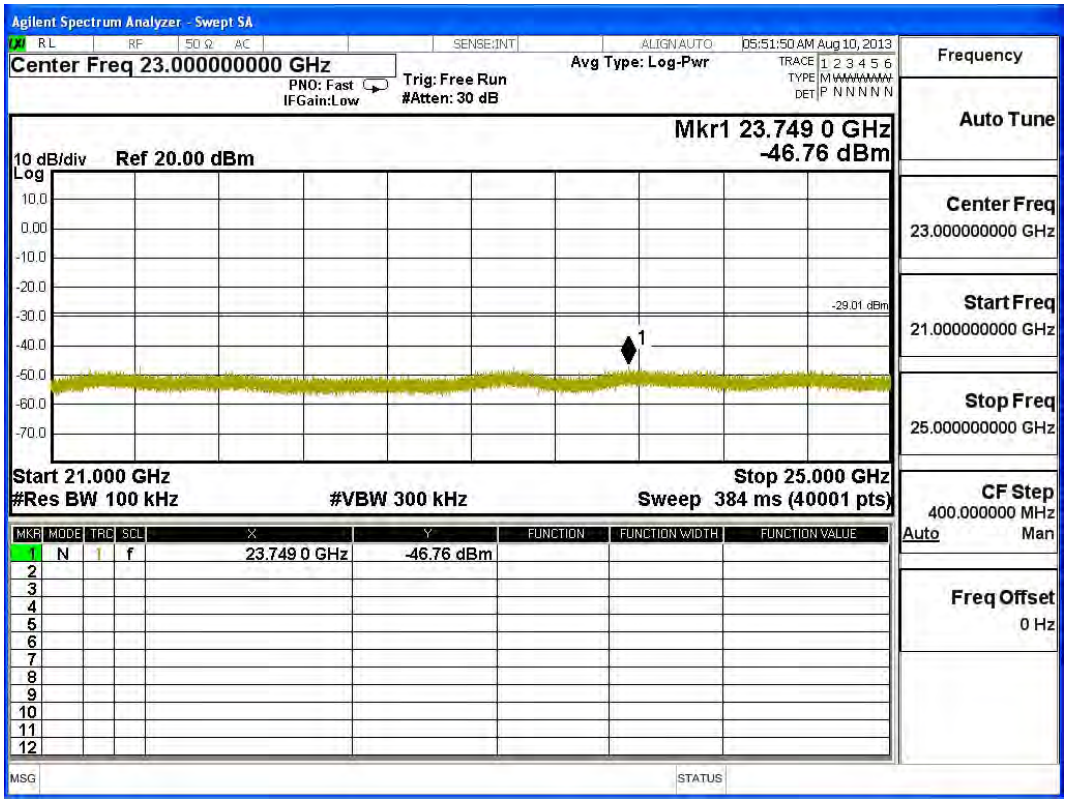



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:47:03 AM Aug 10, 2013
Mkr1 6.201 8 GHz
-55.39 dBm
10 dB/div
Log
Ref 20.00 dBm
-29.01 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.201 8 GHz -55.39 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
05:48:15 AM Aug 10, 2013
Mkr1 12.723 7 GHz
-52.92 dBm
10 dB/div
Log
Ref 20.00 dBm
-29.01 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.723 7 GHz -52.92 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:49:25 AM Aug 10, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 16.961 3 GHz
-50.37 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-29.01 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.961 3 GHz -50.37 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:50:37 AM Aug 10, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 20.676 9 GHz
-50.29 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-29.01 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.676 9 GHz -50.29 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:51:50 AM Aug 10, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.749 0 GHz
-46.76 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-29.01 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.749 0 GHz -46.76 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

6. Band Edge

6.1. Test Equipment

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

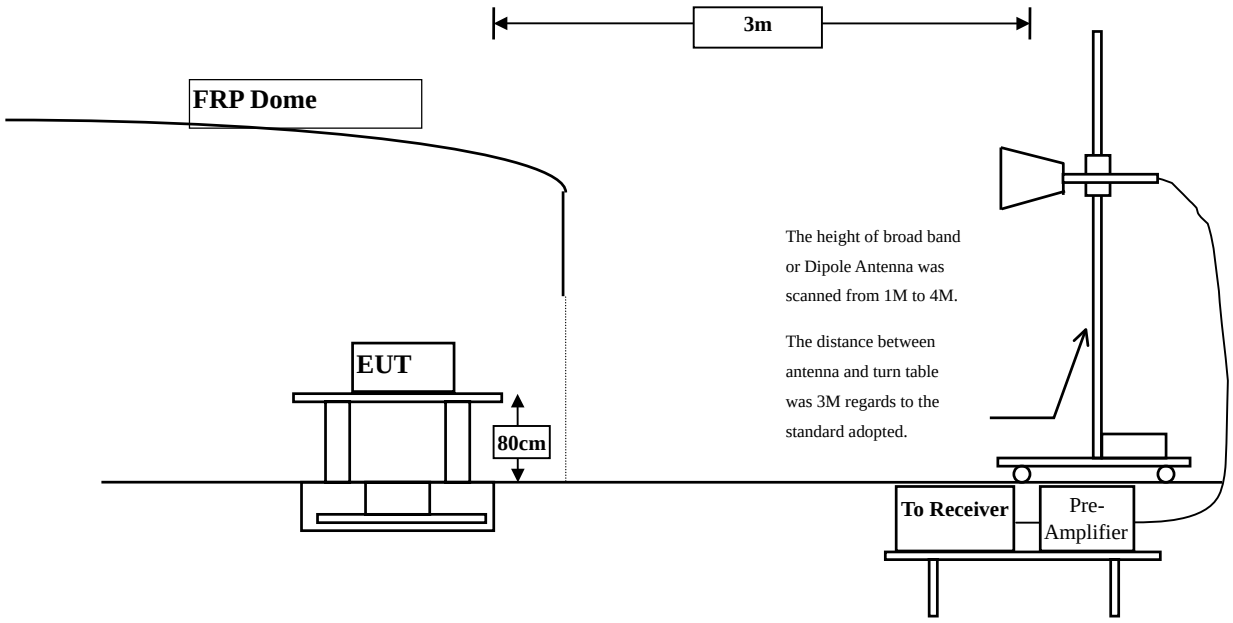
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2013
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2013
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2009 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.000	33.737	25.108	58.845	74.000	54.000	Pass
01 (Peak)	2390.000	33.739	24.097	57.836	74.000	54.000	Pass
01 (Peak)	2413.000	33.775	73.823	107.597	--	--	--
01 (Average)	2390.000	33.739	14.149	47.888	74.000	54.000	Pass
01 (Average)	2414.800	33.778	70.108	103.887	--	--	--

Figure Channel 01: Horizontal (Peak)

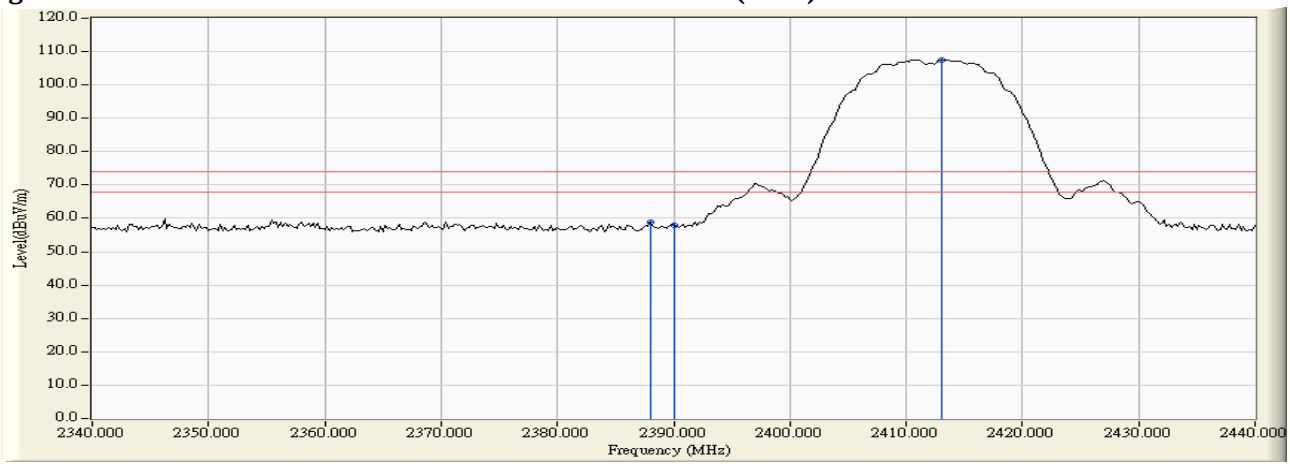
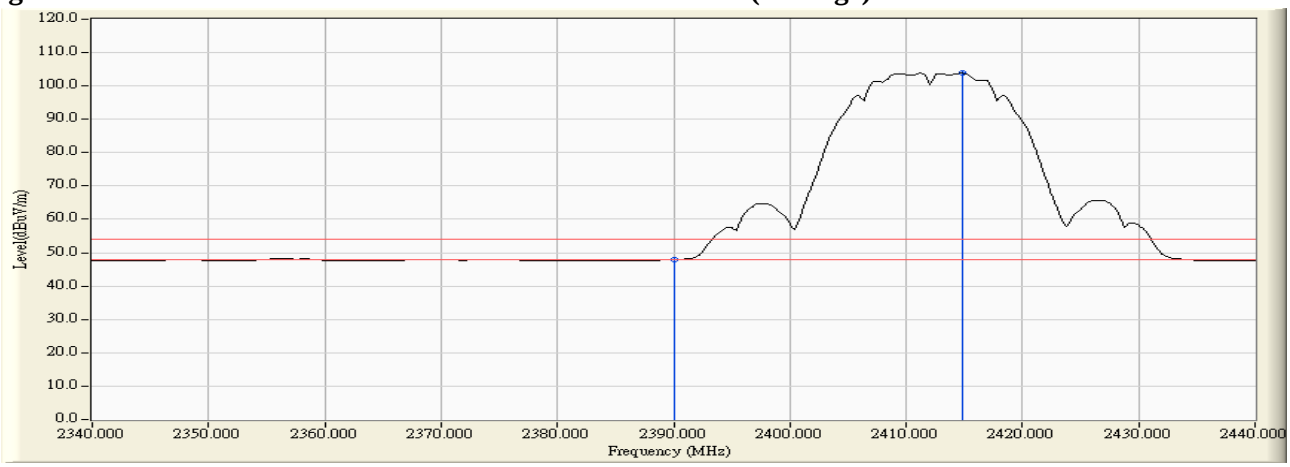


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2362.600	32.459	24.835	57.295	74.000	54.000	Pass
01 (Peak)	2390.000	32.267	22.670	54.937	74.000	54.000	Pass
01 (Peak)	2413.000	32.254	64.153	96.406	--	--	--
01 (Average)	2390.000	32.267	13.140	45.407	74.000	54.000	Pass
01 (Average)	2411.200	32.245	60.453	92.698	--	--	--

Figure Channel 01: Vertical (Peak)

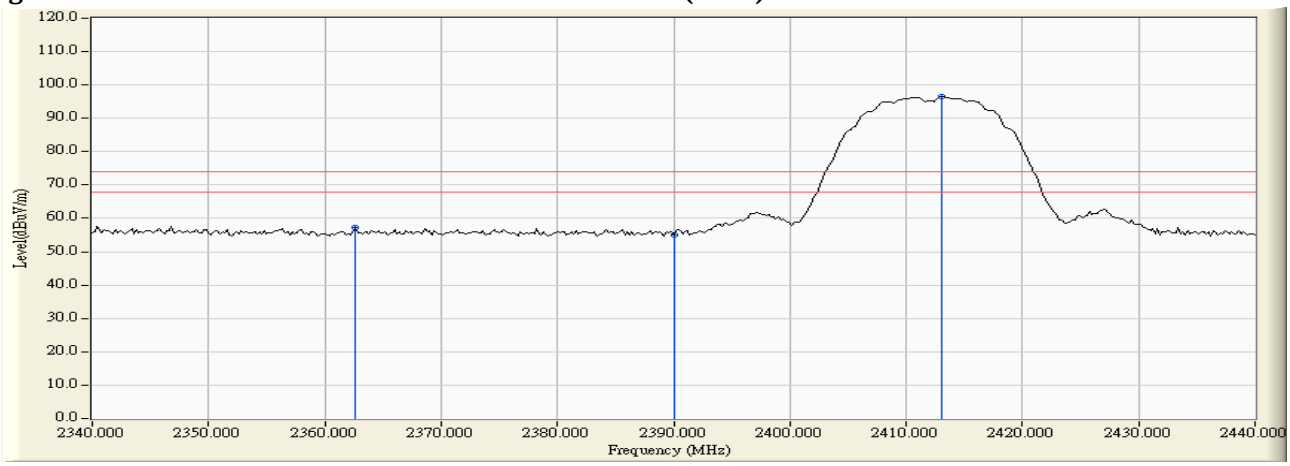
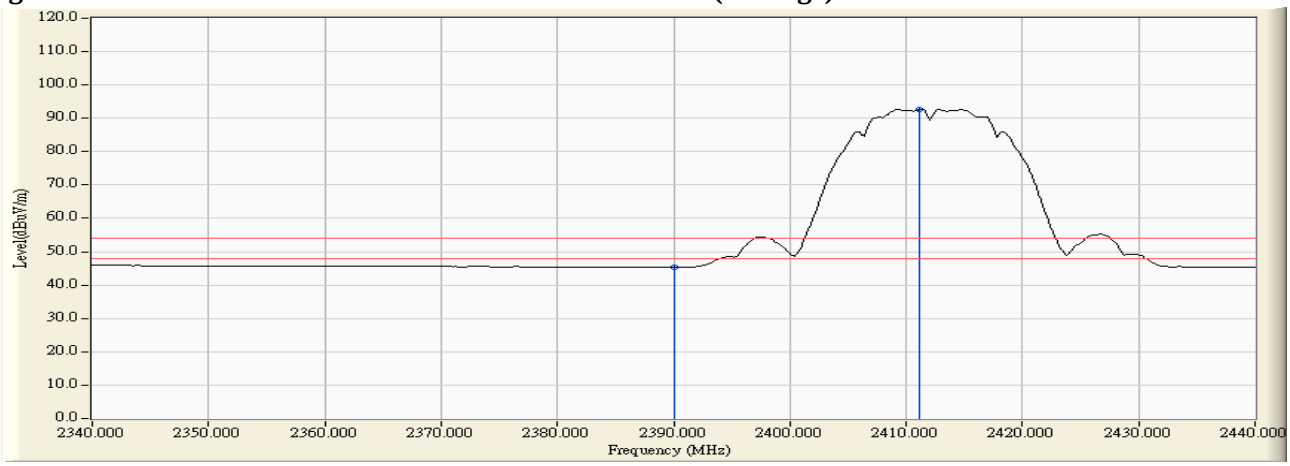


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2462.900	33.895	71.678	105.573	--	--	--
11 (Peak)	2483.500	33.951	24.788	58.738	74.000	54.000	Pass
11 (Average)	2459.300	33.886	68.161	102.047	--	--	--
11 (Average)	2483.500	33.951	13.719	47.669	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

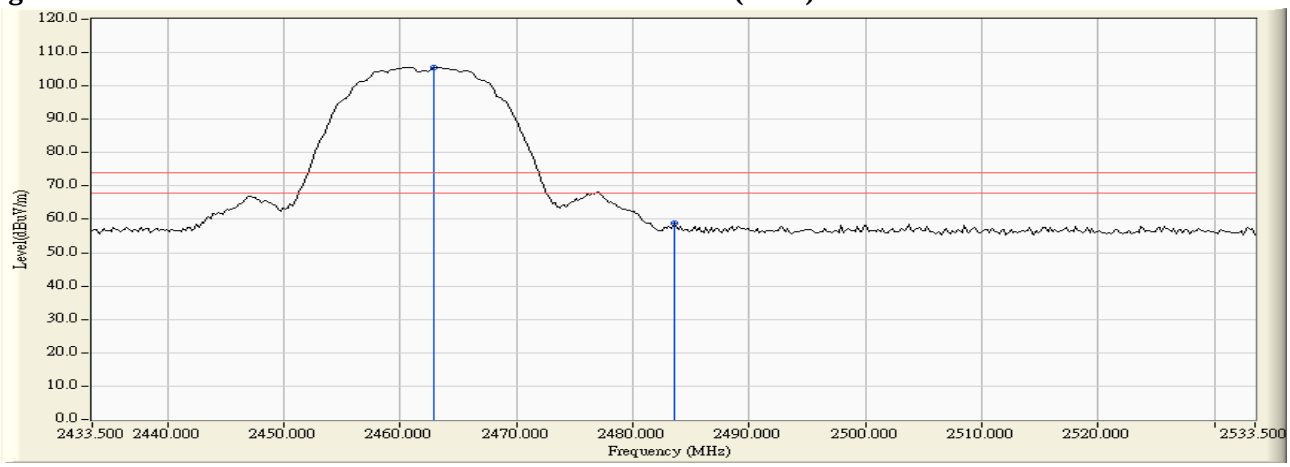
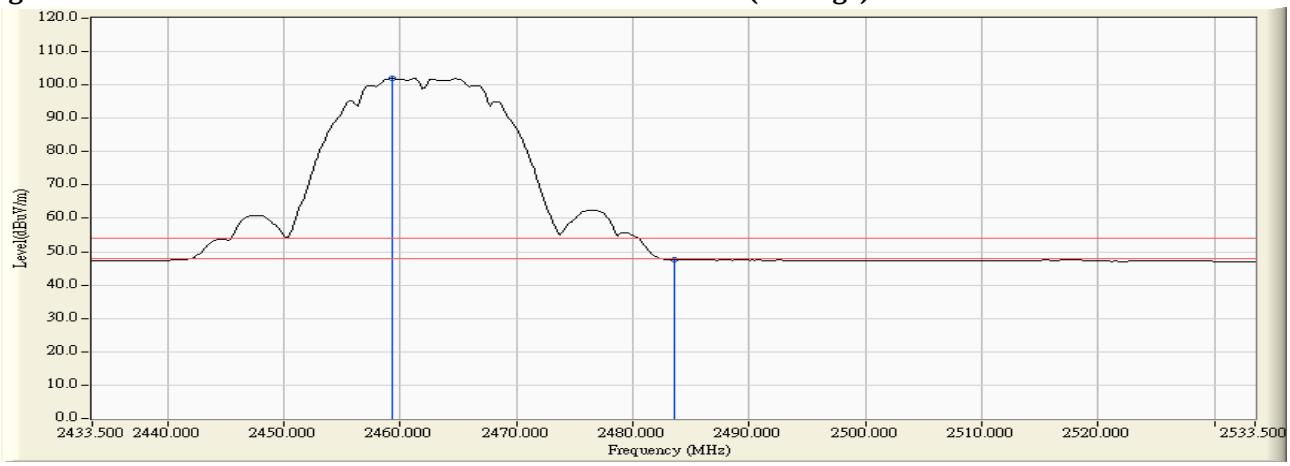


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.900	32.476	63.898	96.373	--	--	--
11 (Peak)	2483.500	32.586	21.836	54.421	74.000	54.000	Pass
11 (Peak)	2504.700	32.688	24.674	57.362	74.000	54.000	Pass
11 (Average)	2459.300	32.468	60.443	92.910	--	--	--
11 (Average)	2483.500	32.586	13.079	45.664	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

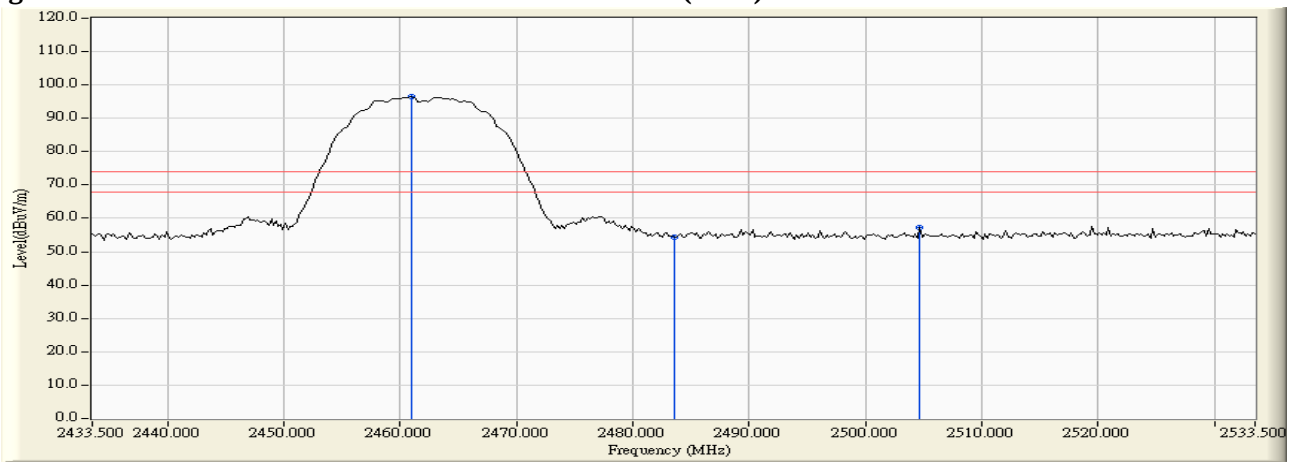
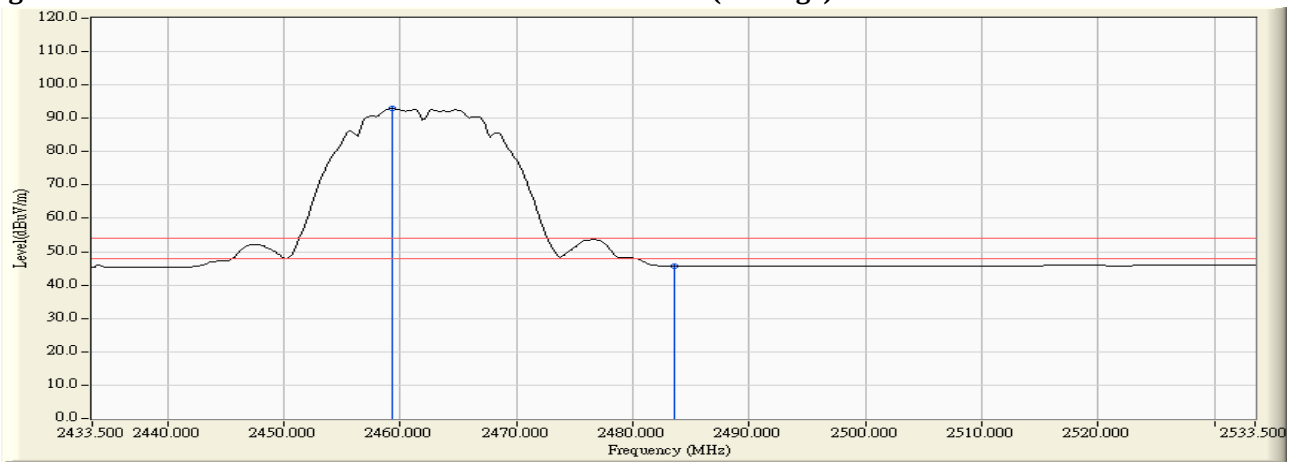


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	33.739	34.655	68.394	74.000	54.000	Pass
01 (Peak)	2414.200	33.777	73.504	107.281	--	--	--
01 (Average)	2390.000	33.739	18.139	51.878	74.000	54.000	Pass
01 (Average)	2414.800	33.778	64.538	98.317	--	--	--

Figure Channel 01: Horizontal (Peak)

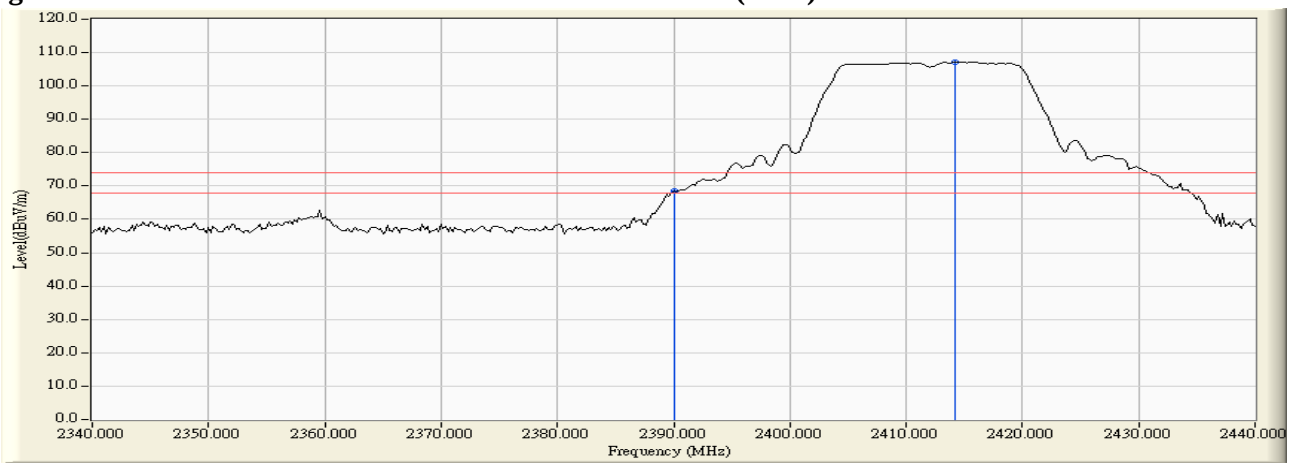
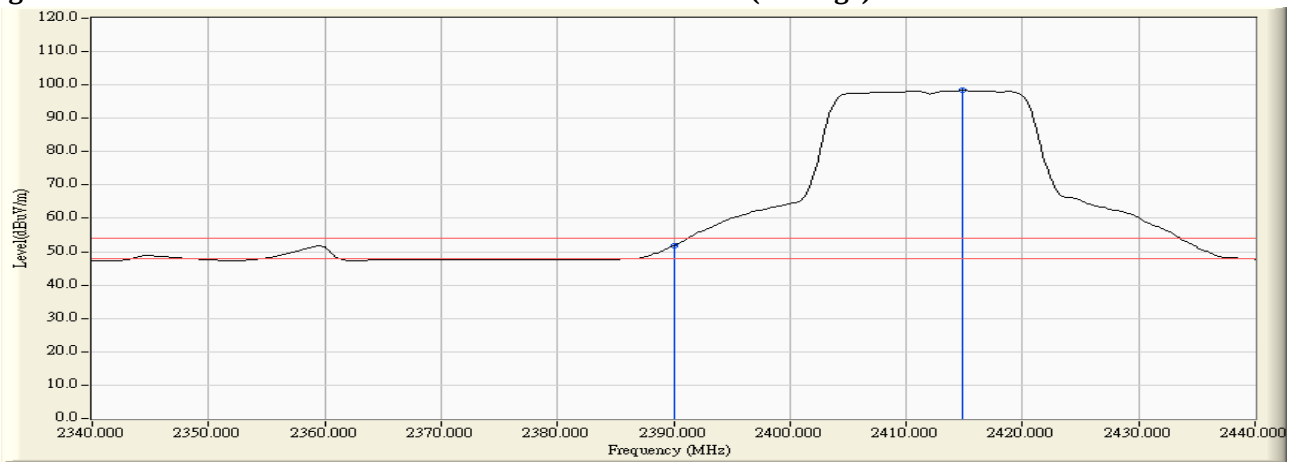


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	32.267	27.004	59.271	74.000	54.000	Pass
01 (Peak)	2414.400	32.260	63.198	95.458	--	--	--
01 (Average)	2390.000	32.267	13.895	46.162	74.000	54.000	Pass
01 (Average)	2414.800	32.261	54.292	86.554	--	--	--

Figure Channel 01: Vertical (Peak)

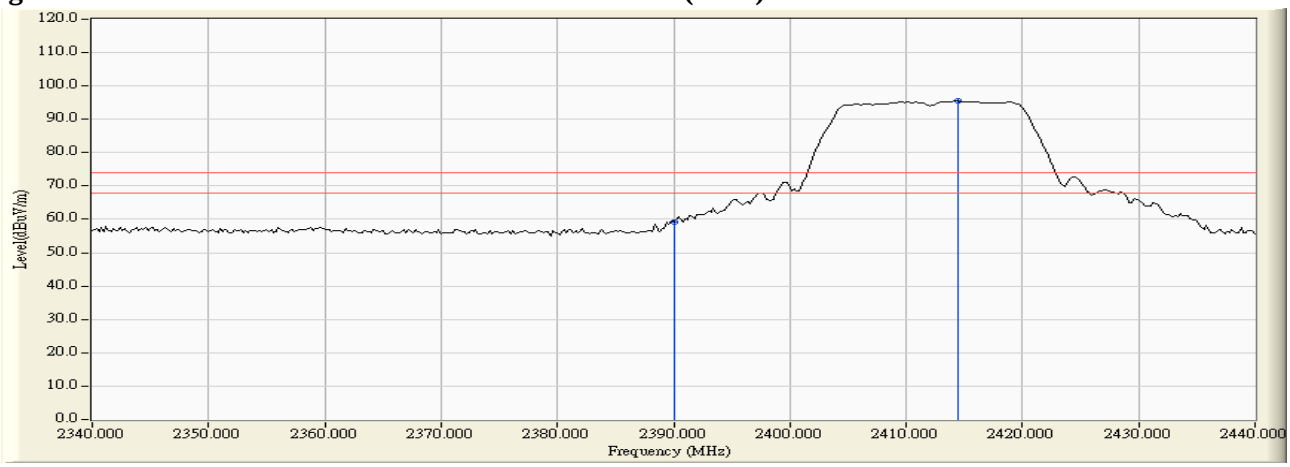
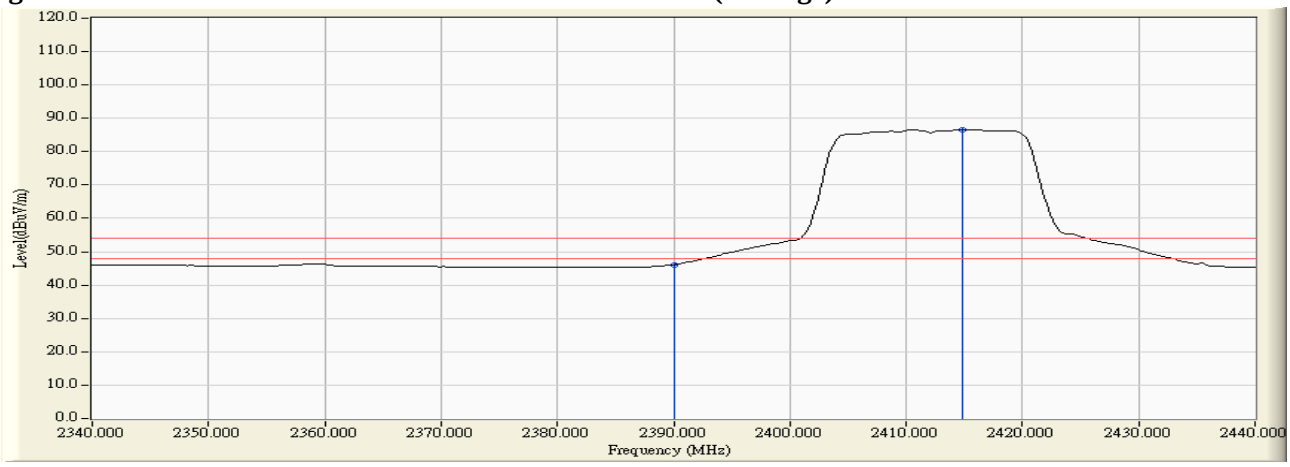


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2458.900	33.885	72.257	106.142	--	--	--
11 (Peak)	2483.500	33.951	35.522	69.472	74.000	54.000	Pass
11 (Average)	2464.900	33.900	63.305	97.205	--	--	--
11 (Average)	2483.500	33.951	17.979	51.929	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

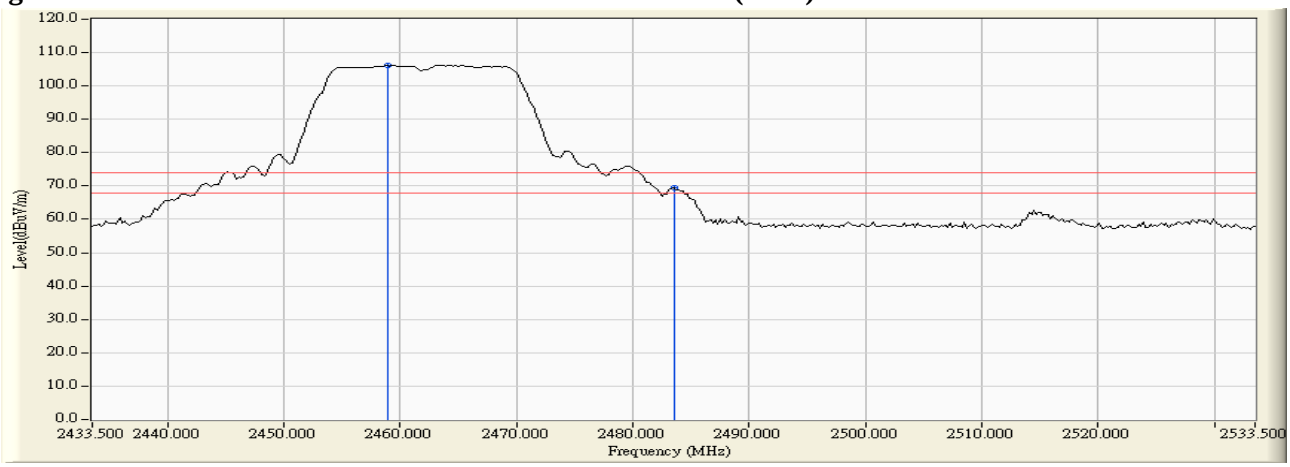
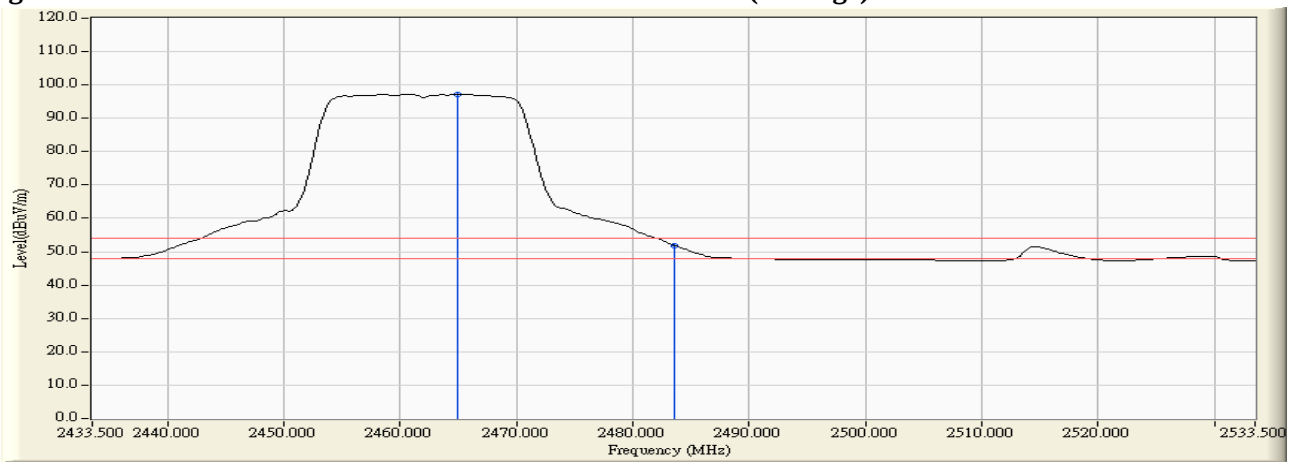


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2458.900	32.466	64.871	97.337	--	--	--
11 (Peak)	2483.500	32.586	28.449	61.034	74.000	54.000	Pass
11 (Average)	2460.700	32.475	55.897	88.371	--	--	--
11 (Average)	2483.500	32.586	14.429	47.014	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

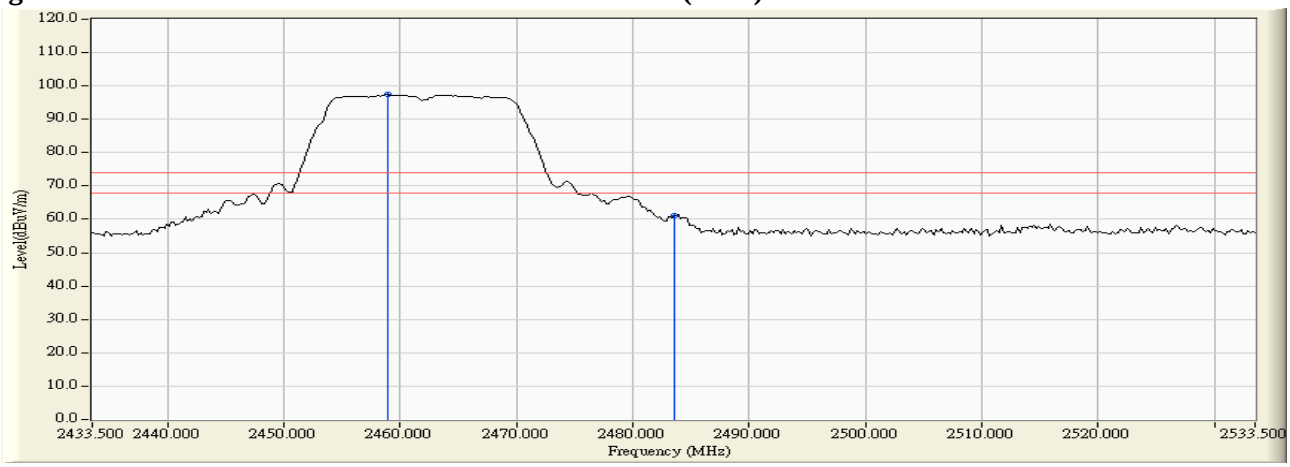
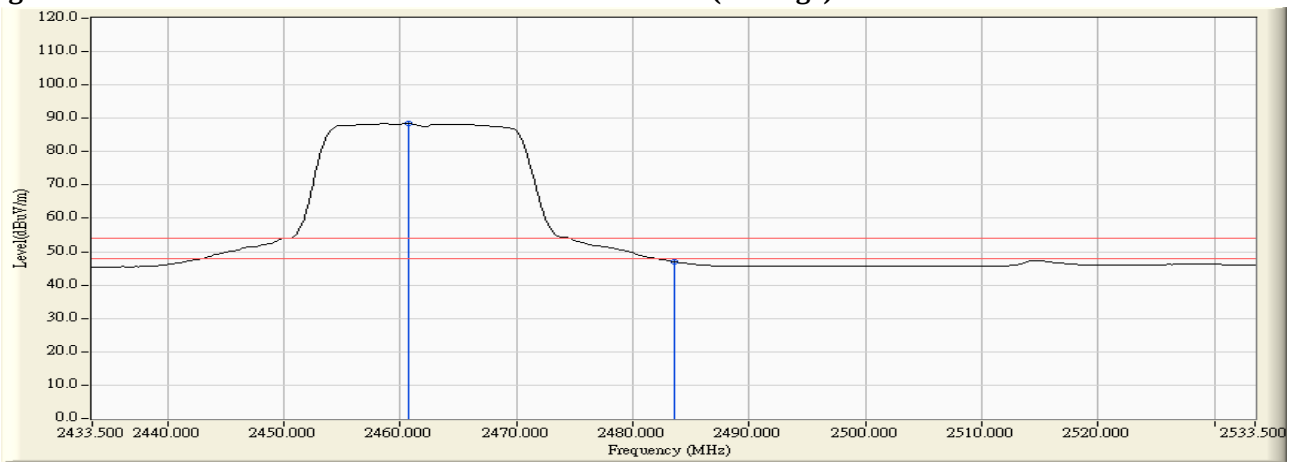


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	33.739	28.286	62.025	74.000	54.000	Pass
01 (Peak)	2407.800	33.765	71.047	104.811	--	--	--
01 (Average)	2390.000	33.739	15.866	49.605	74.000	54.000	Pass
01 (Average)	2408.600	33.766	60.014	93.779	--	--	--

Figure Channel 01: Horizontal (Peak)

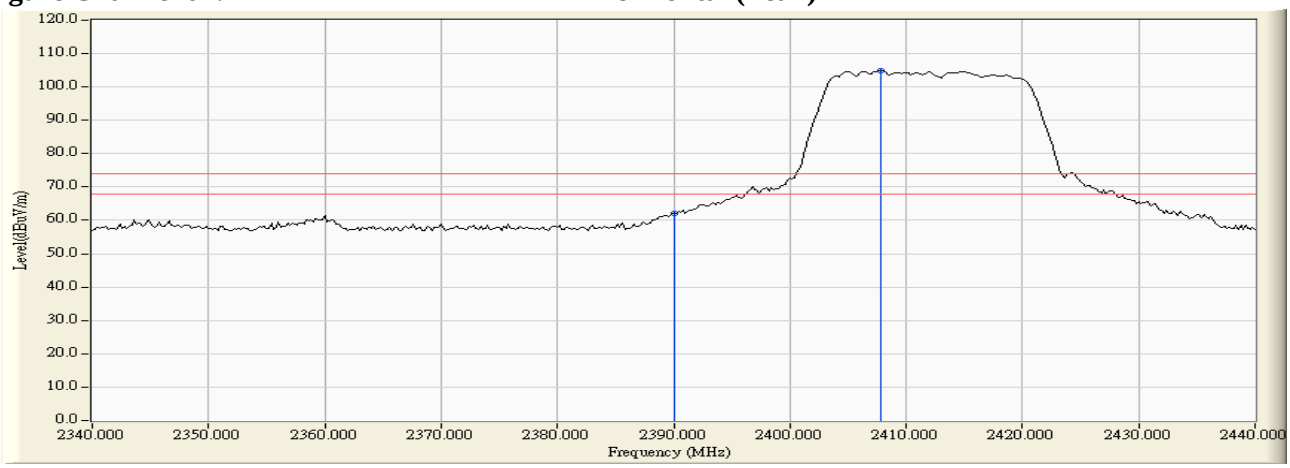
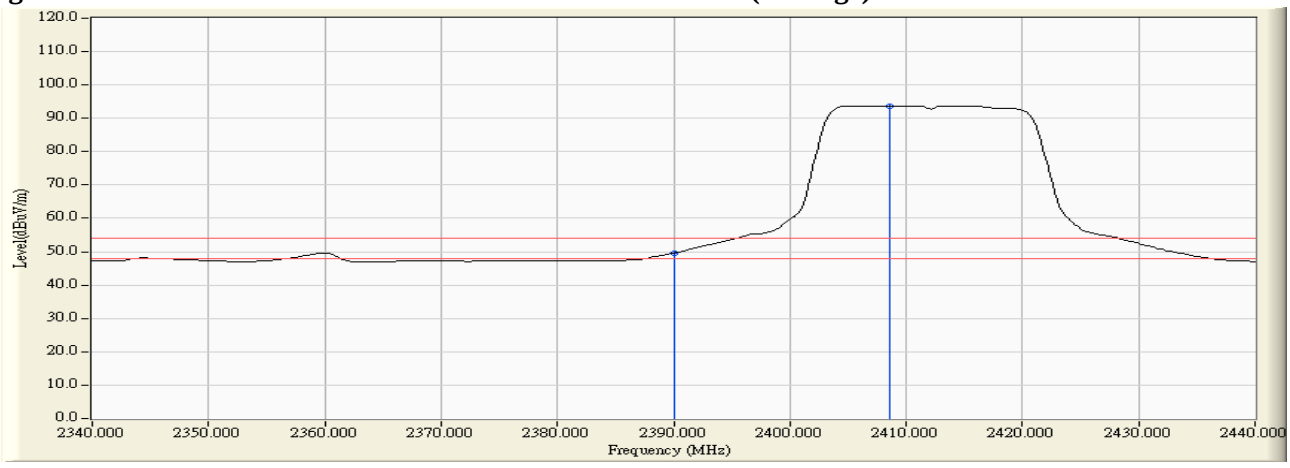


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.400	32.278	25.376	57.654	74.000	54.000	Pass
01 (Peak)	2390.000	32.267	24.097	56.364	74.000	54.000	Pass
01 (Peak)	2413.400	32.255	64.752	97.007	--	--	--
01 (Average)	2390.000	32.267	13.670	45.937	74.000	54.000	Pass
01 (Average)	2415.000	32.263	53.781	86.043	--	--	--

Figure Channel 01: Vertical (Peak)

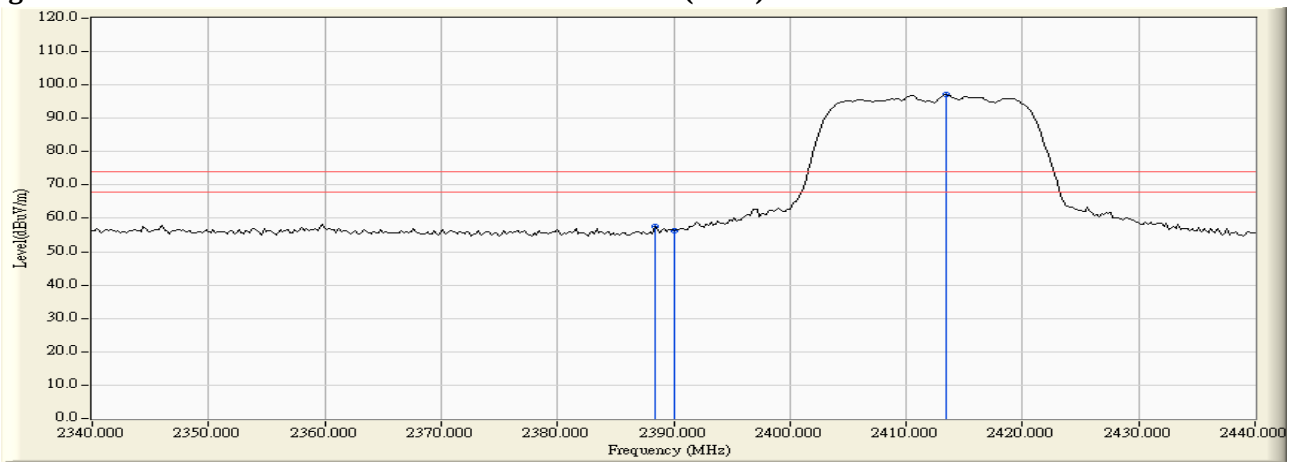
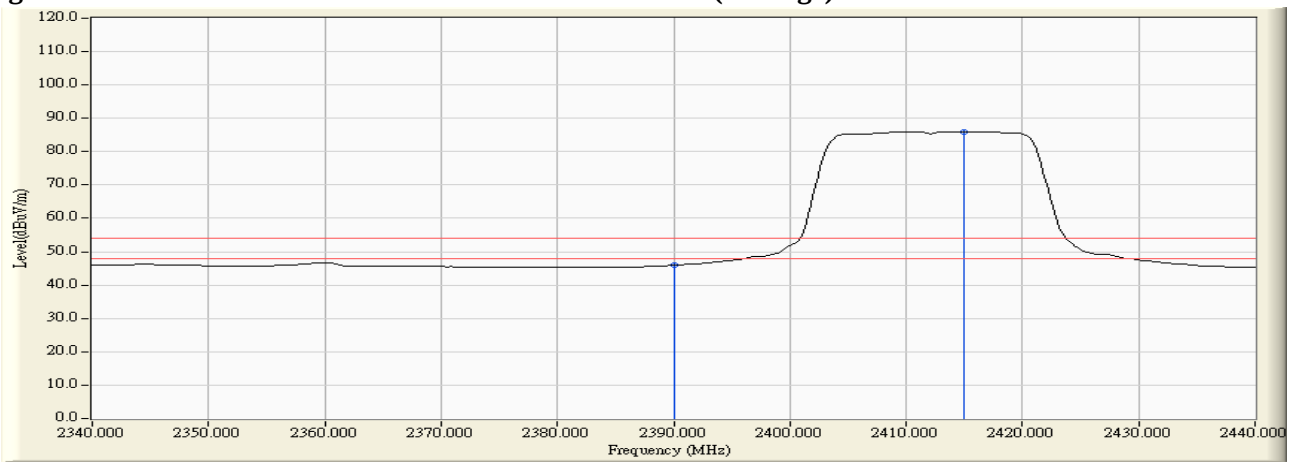


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2463.300	33.895	71.857	105.753	--	--	--
11 (Peak)	2483.500	33.951	29.947	63.897	74.000	54.000	Pass
11 (Peak)	2483.900	33.951	30.936	64.887	74.000	54.000	Pass
11 (Average)	2465.100	33.900	61.104	95.005	--	--	--
11 (Average)	2483.500	33.951	16.243	50.193	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

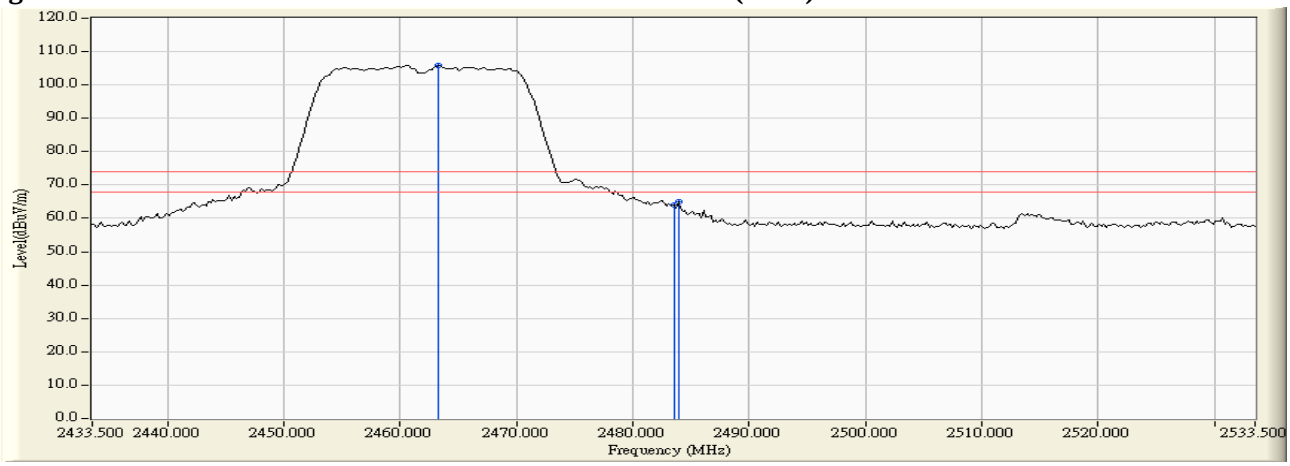
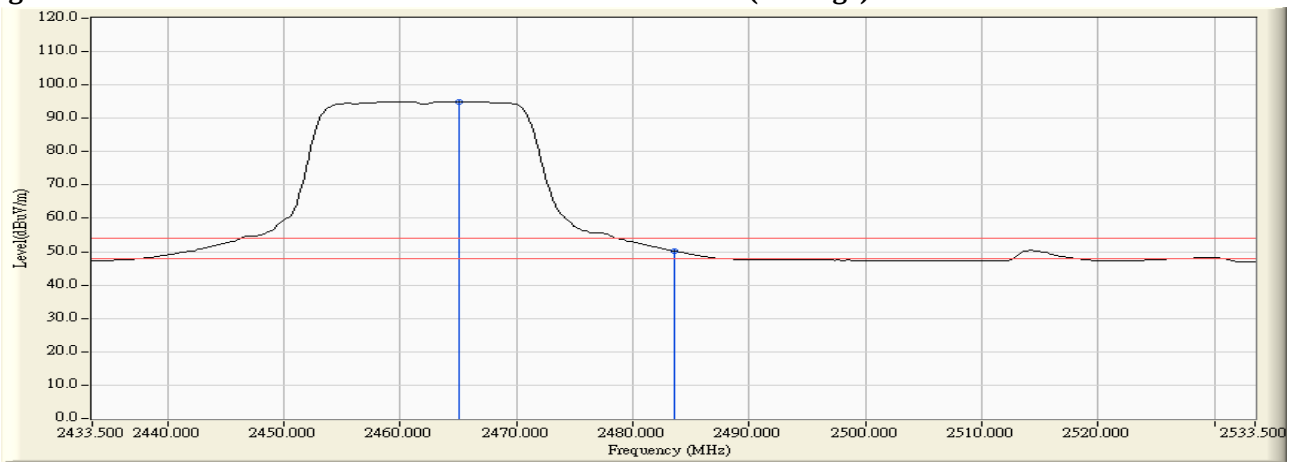


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.300	32.472	66.541	99.013	--	--	--
11 (Peak)	2483.500	32.586	26.468	59.053	74.000	54.000	Pass
11 (Peak)	2484.100	32.588	27.444	60.032	74.000	54.000	Pass
11 (Average)	2459.500	32.468	54.611	87.079	--	--	--
11 (Average)	2483.500	32.586	13.941	46.526	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

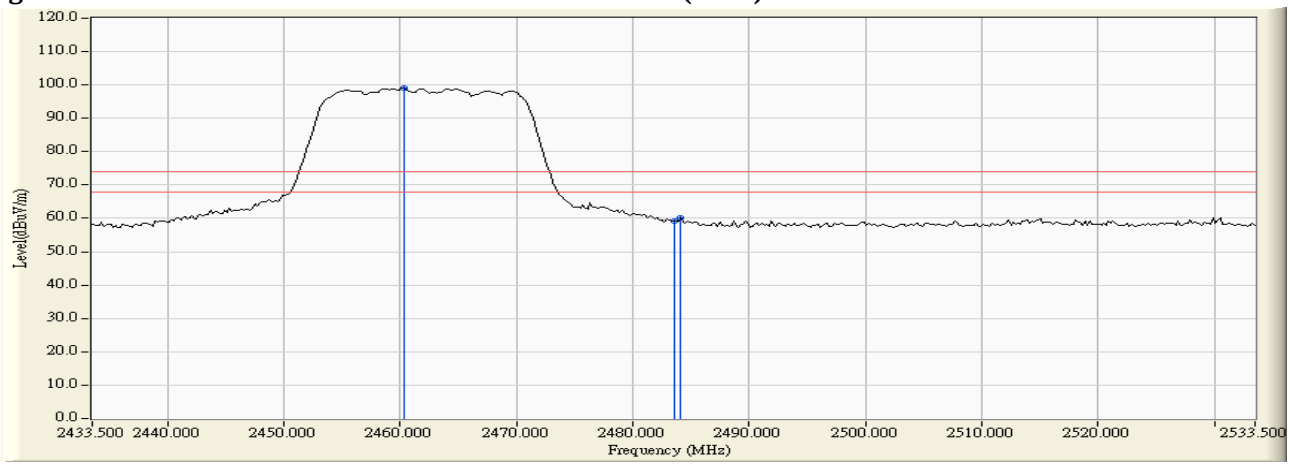
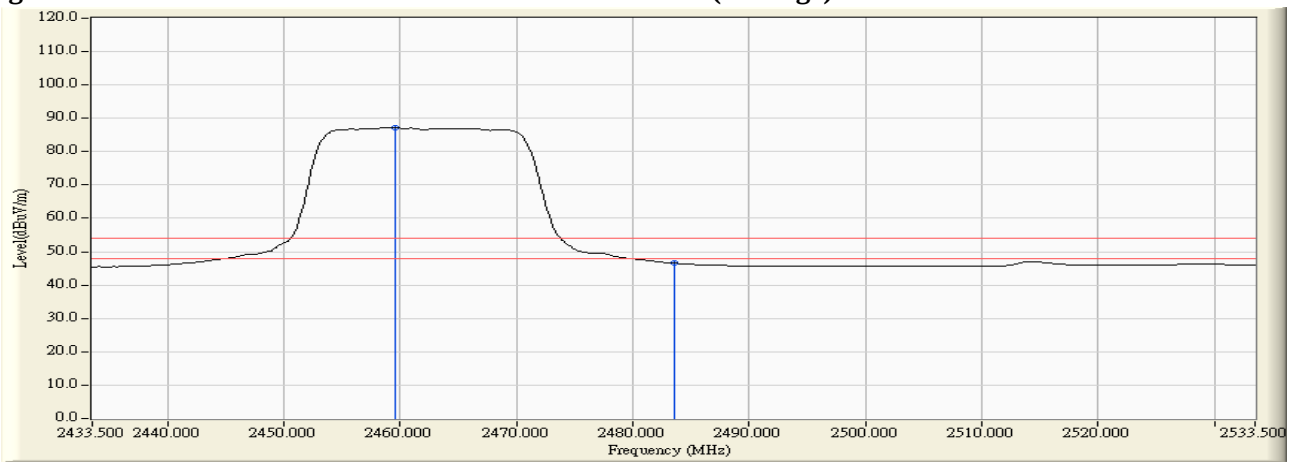


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
03 (Peak)	2388.800	33.738	32.600	66.338	74.000	54.000	Pass
03 (Peak)	2390.000	33.739	30.045	63.784	74.000	54.000	Pass
03 (Peak)	2411.200	33.770	68.464	102.234	--	--	--
03 (Average)	2390.000	33.739	17.993	51.732	74.000	54.000	Pass
03 (Average)	2412.600	33.773	58.118	91.891	--	--	--

Figure Channel 03: Horizontal (Peak)

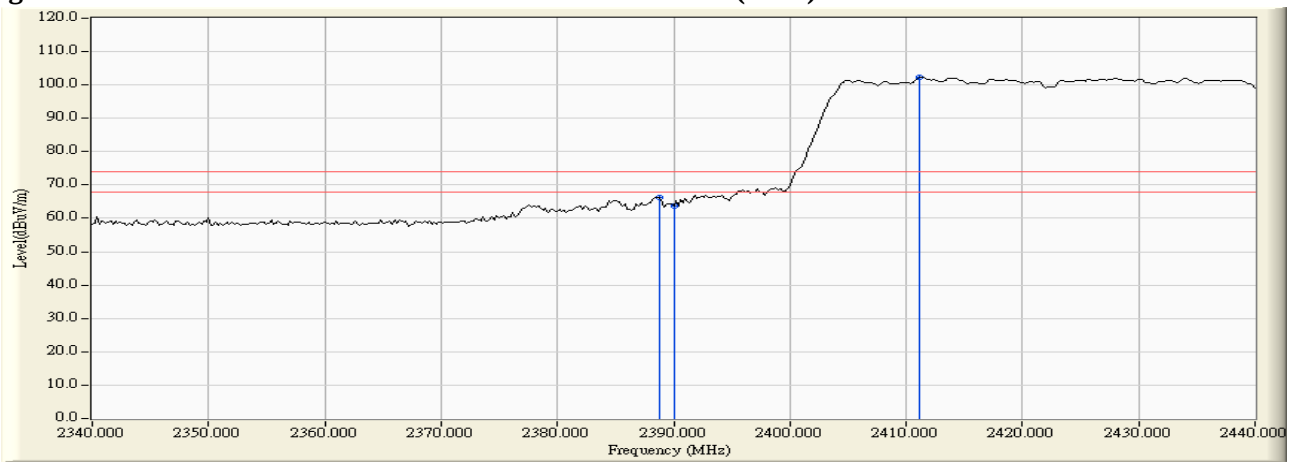
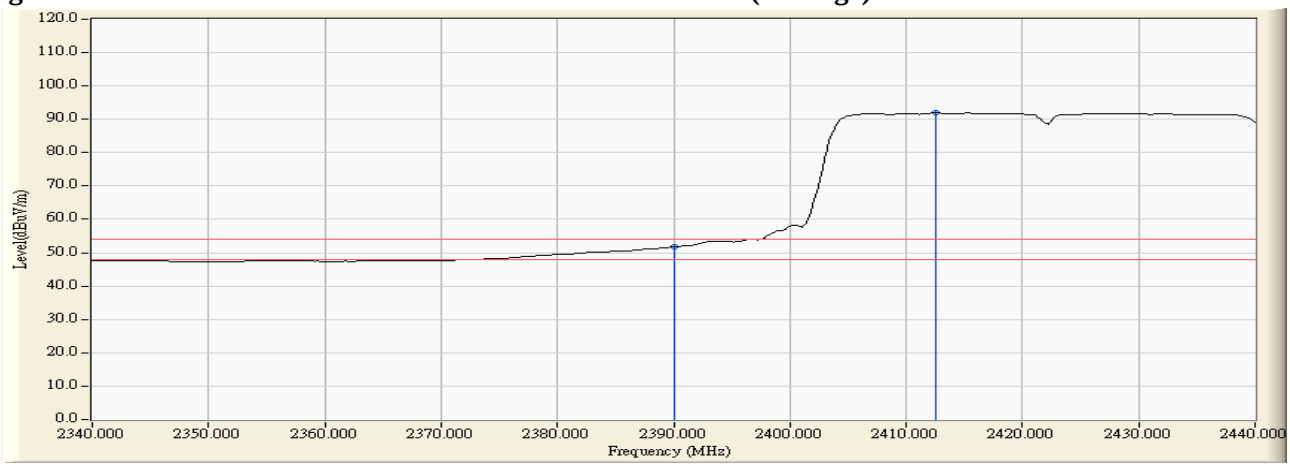


Figure Channel 03: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
03 (Peak)	2383.600	32.311	25.613	57.924	74.000	54.000	Pass
03 (Peak)	2390.000	32.267	24.130	56.397	74.000	54.000	Pass
03 (Peak)	2427.000	32.317	60.993	93.309	--	--	--
03 (Average)	2390.000	32.267	14.164	46.431	74.000	54.000	Pass
03 (Average)	2426.600	32.315	49.905	82.220	--	--	--

Figure Channel 03: Vertical (Peak)

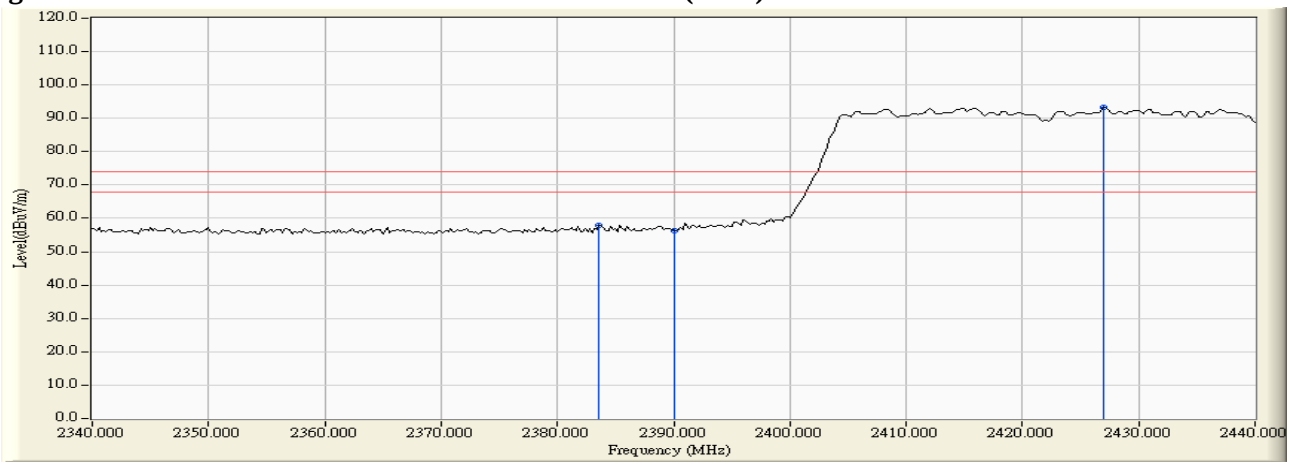
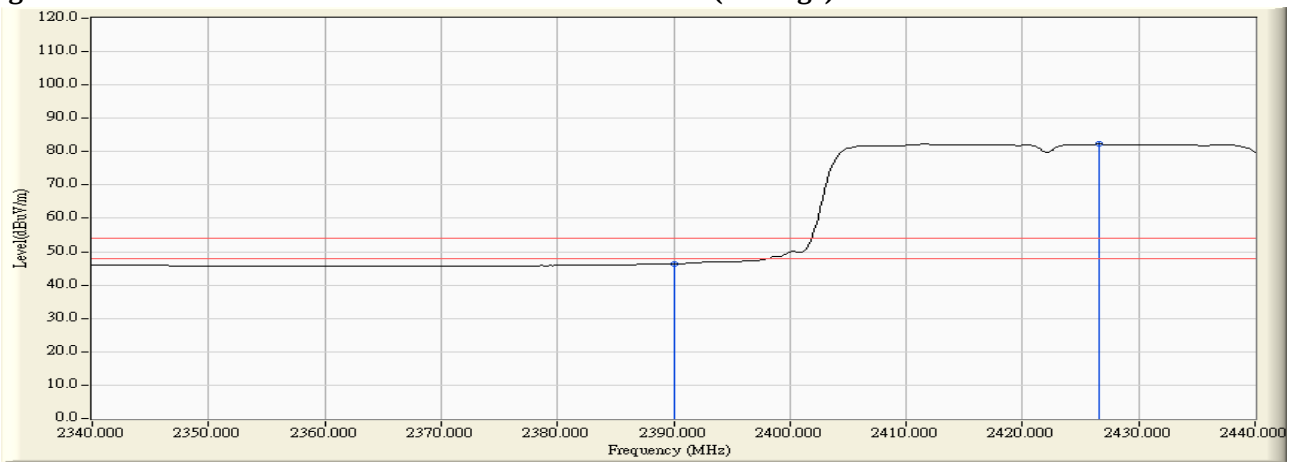


Figure Channel 03: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
09 (Peak)	2455.900	33.877	67.289	101.166	--	--	--
09 (Peak)	2483.500	33.951	28.902	62.852	74.000	54.000	Pass
09 (Average)	2462.500	33.894	56.629	90.523	--	--	--
09 (Average)	2483.500	33.951	16.551	50.501	74.000	54.000	Pass

Figure Channel 09: Horizontal (Peak)

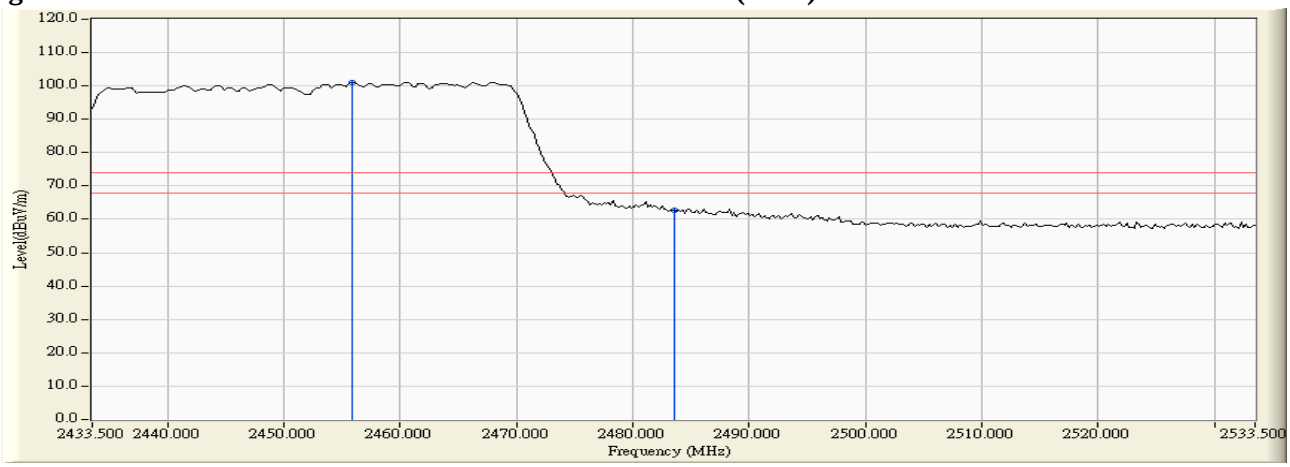
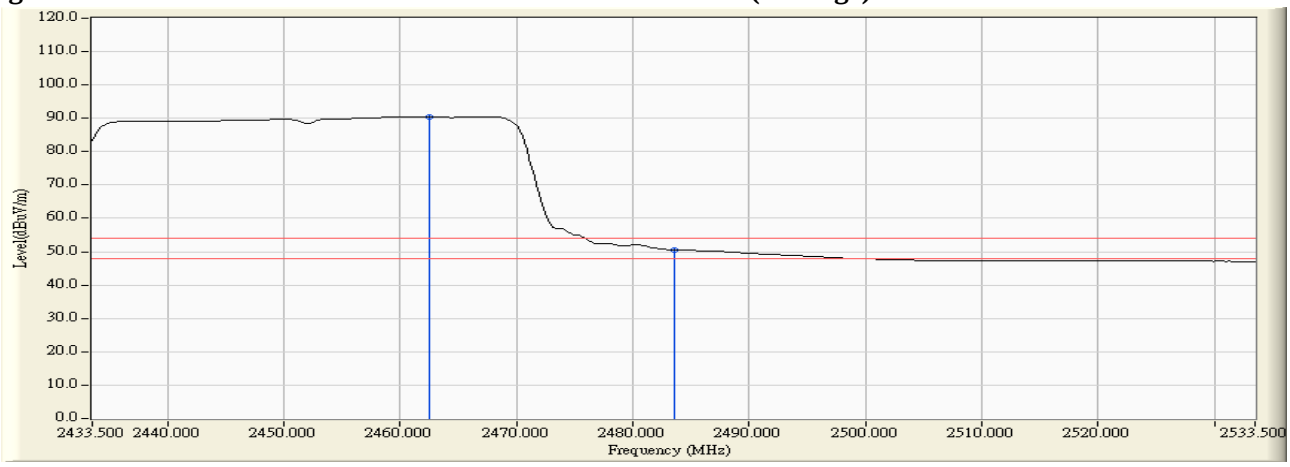


Figure Channel 09: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
09 (Peak)	2438.100	32.367	61.524	93.891	--	--	--
09 (Peak)	2483.500	32.586	25.878	58.463	74.000	54.000	Pass
09 (Average)	2436.500	32.359	50.571	82.931	--	--	--
09 (Average)	2483.500	32.586	13.932	46.517	74.000	54.000	Pass

Figure Channel 09: Vertical (Peak)

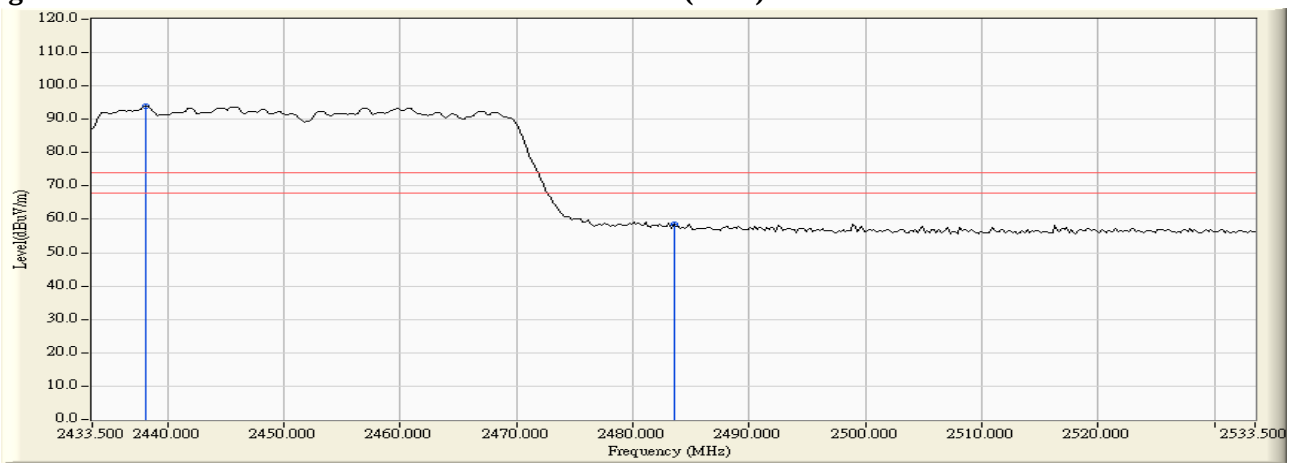
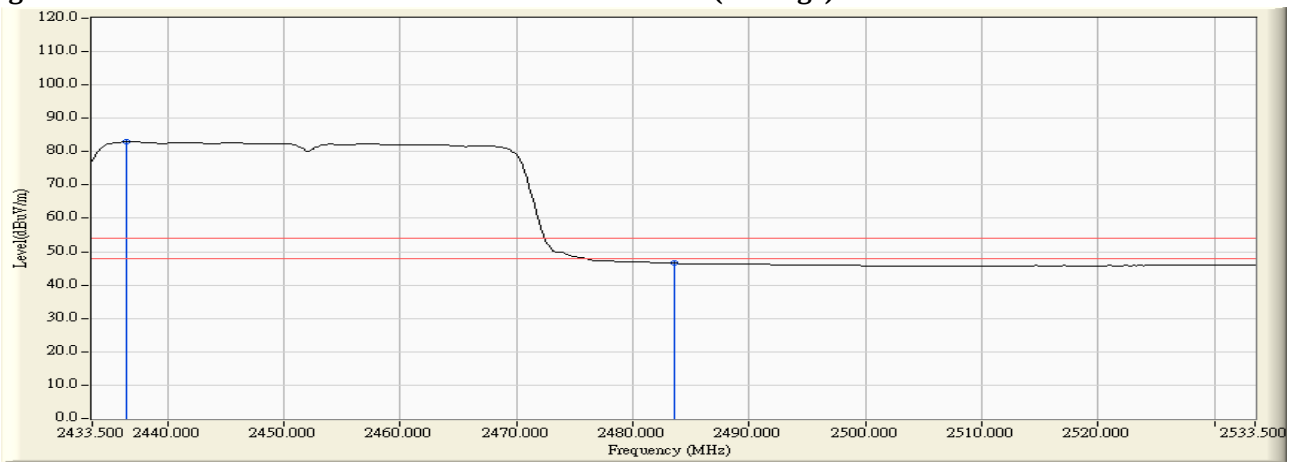


Figure Channel 09: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

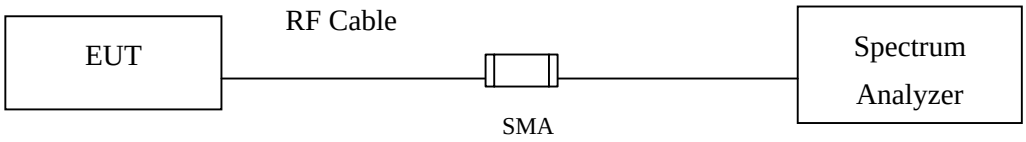
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

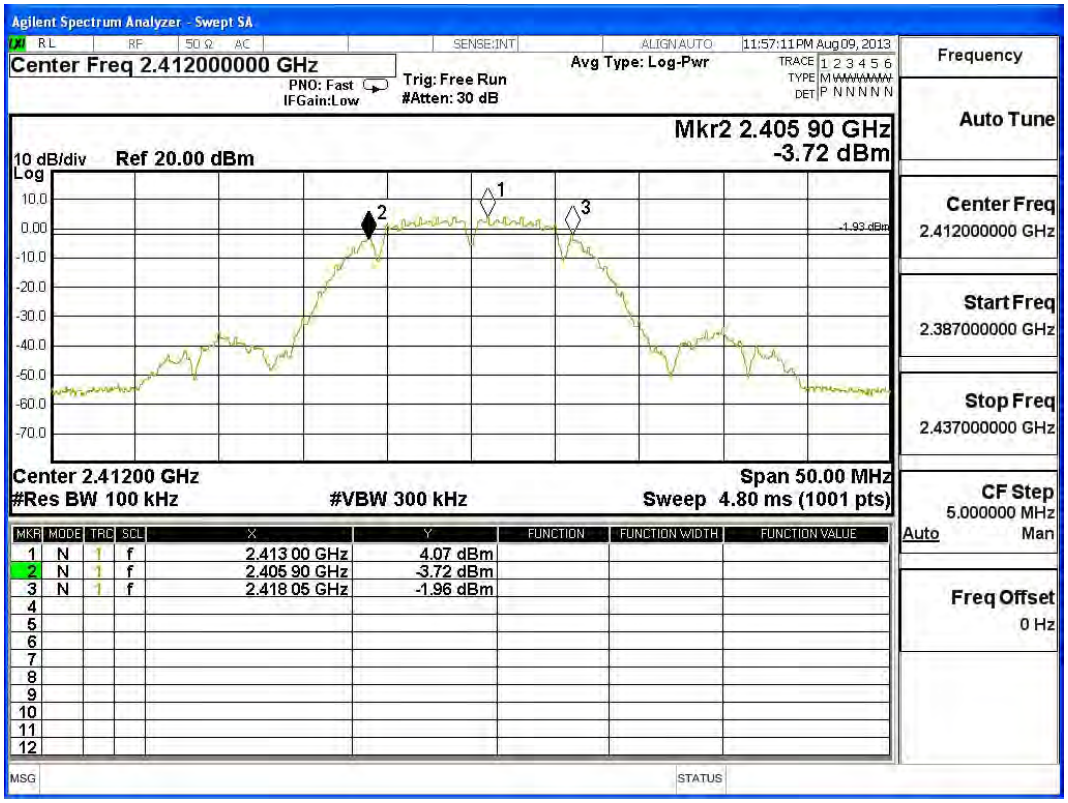
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	12150	>500	Pass

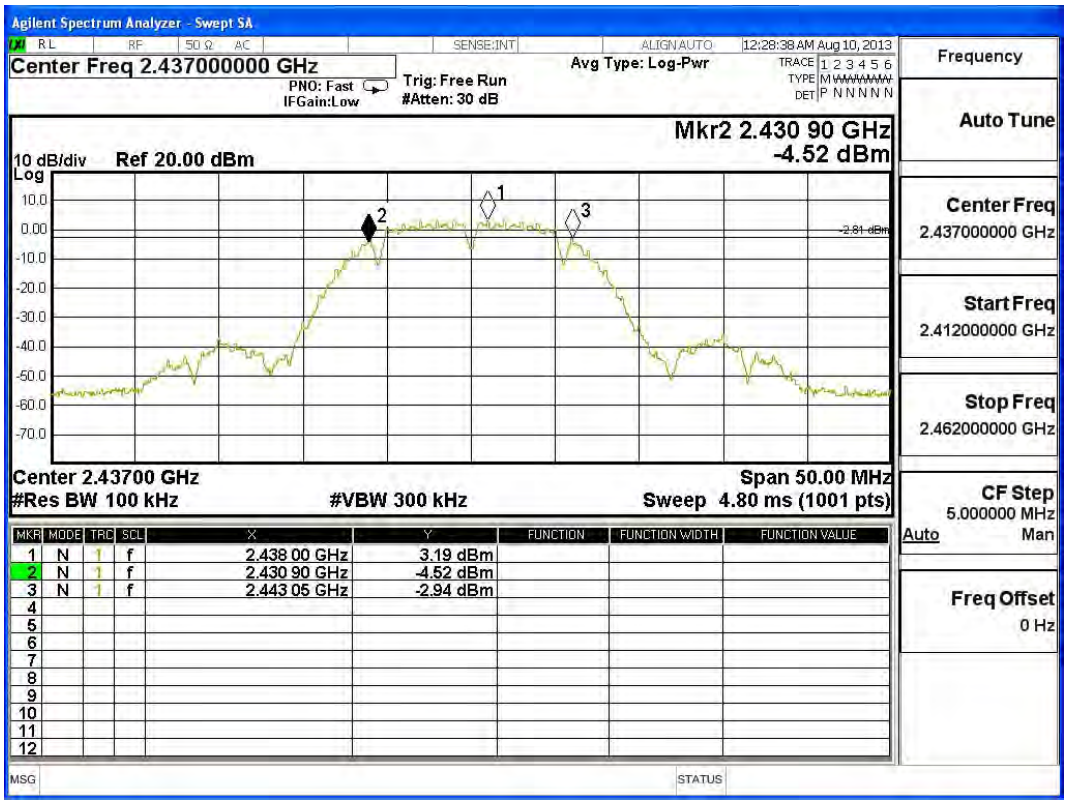
Figure Channel 1:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	12150	>500	Pass

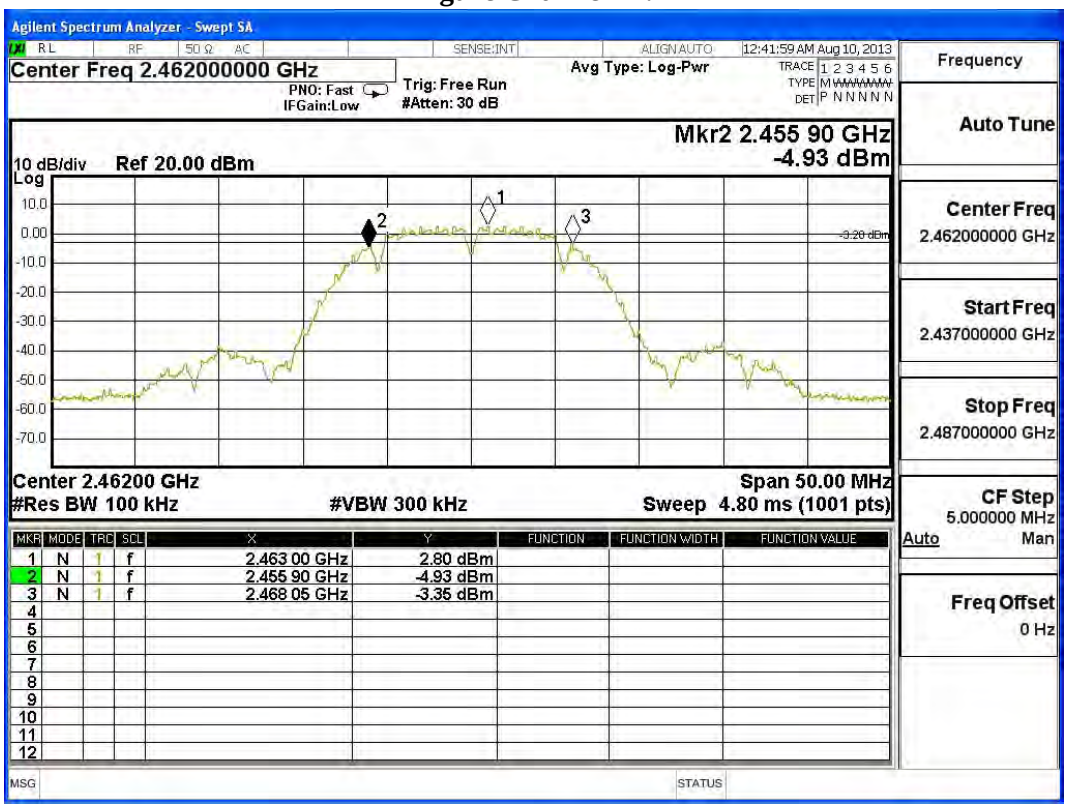
Figure Channel 6:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	12150	>500	Pass

Figure Channel 11:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

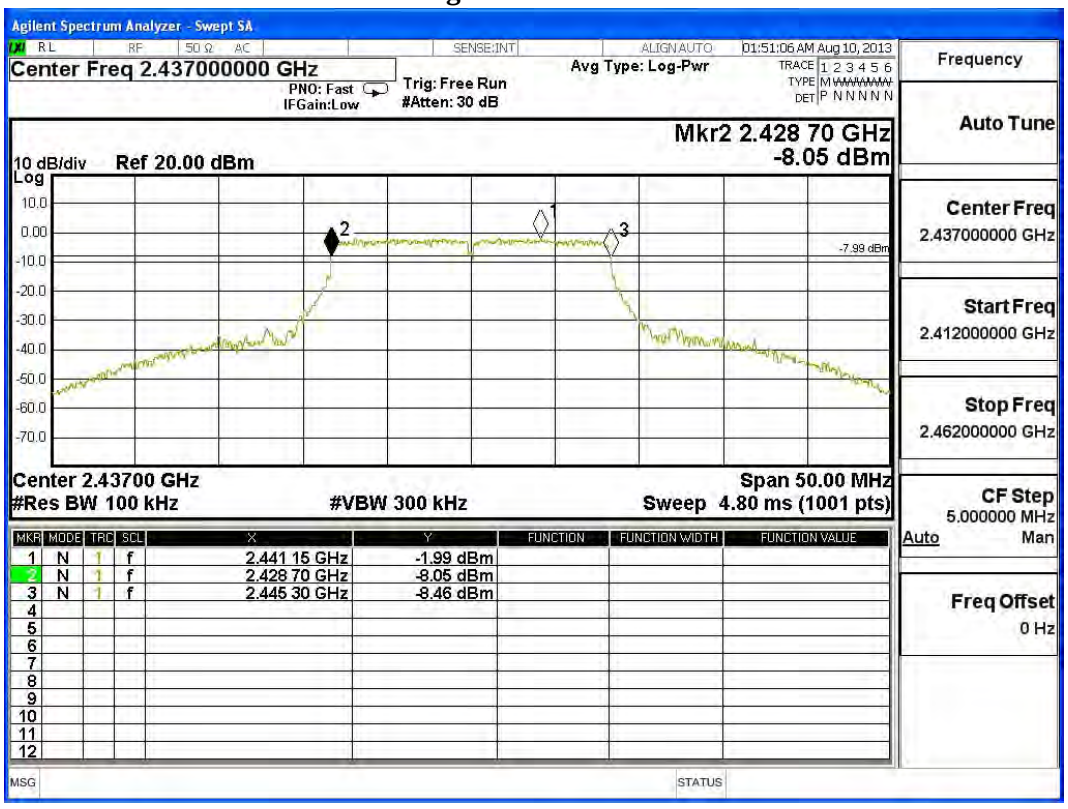
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	16600	>500	Pass

Figure Channel 1:

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	16600	>500	Pass

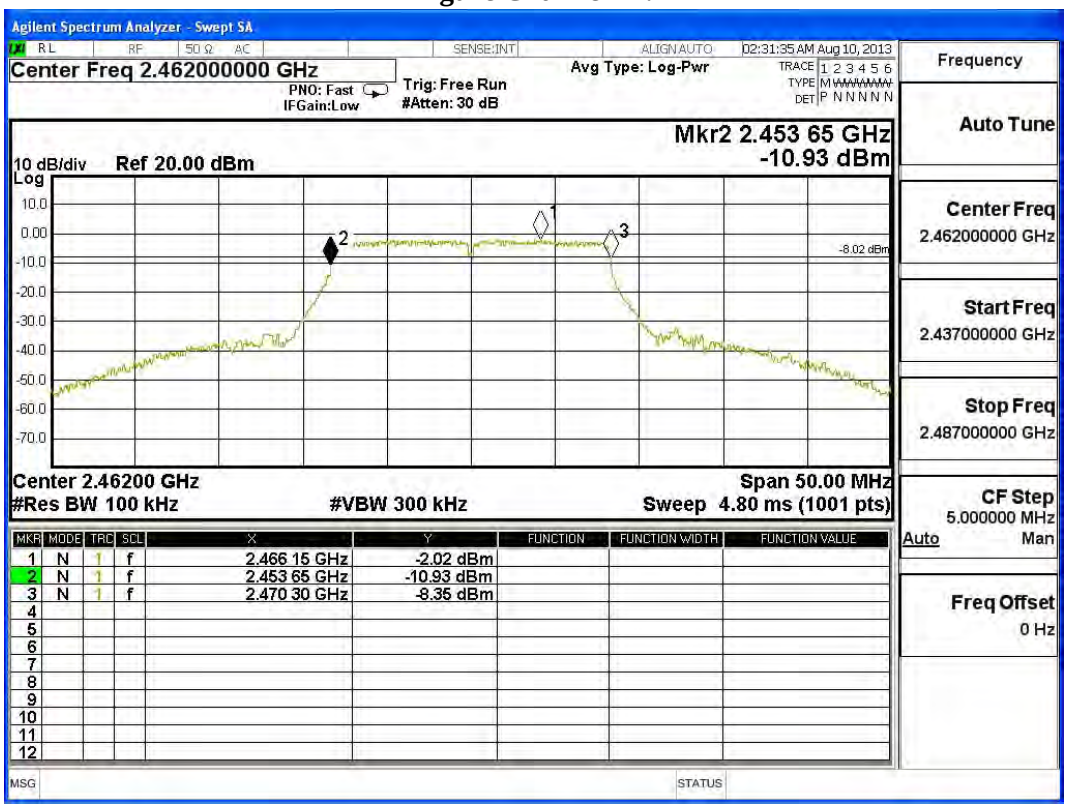
Figure Channel 6:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	16650	>500	Pass

Figure Channel 11:

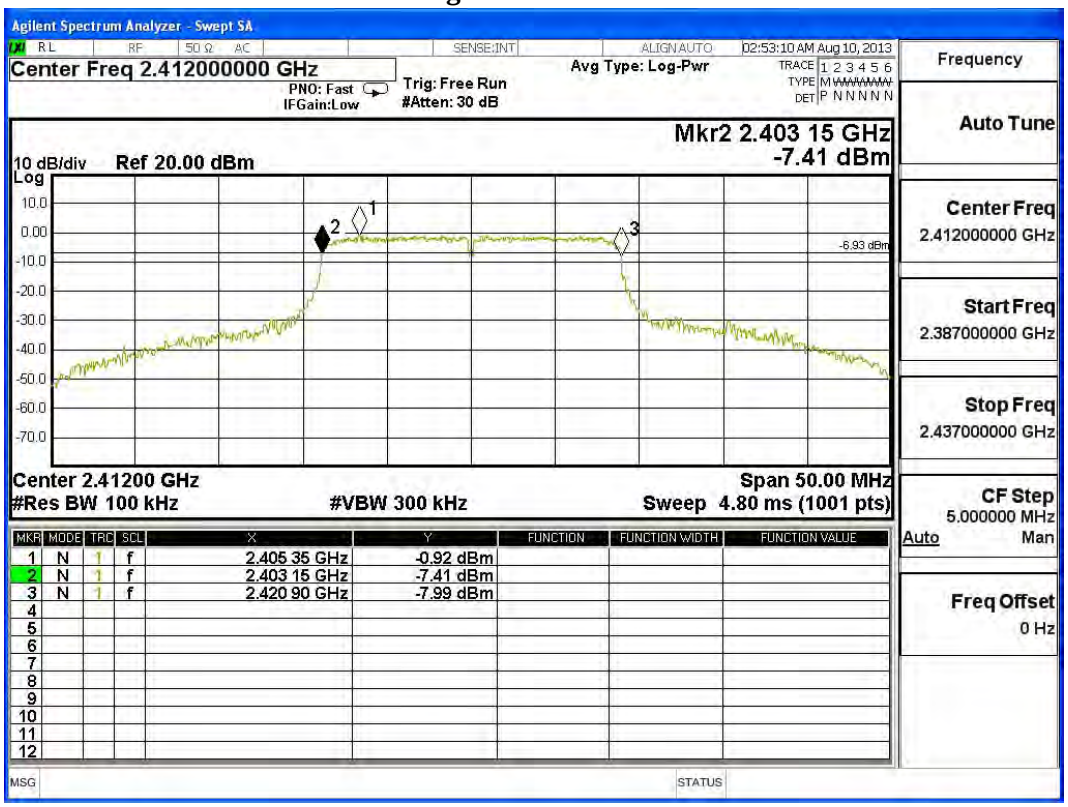


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2412MHz)

Chain - A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	17750	>500	Pass

Figure Channel 1:

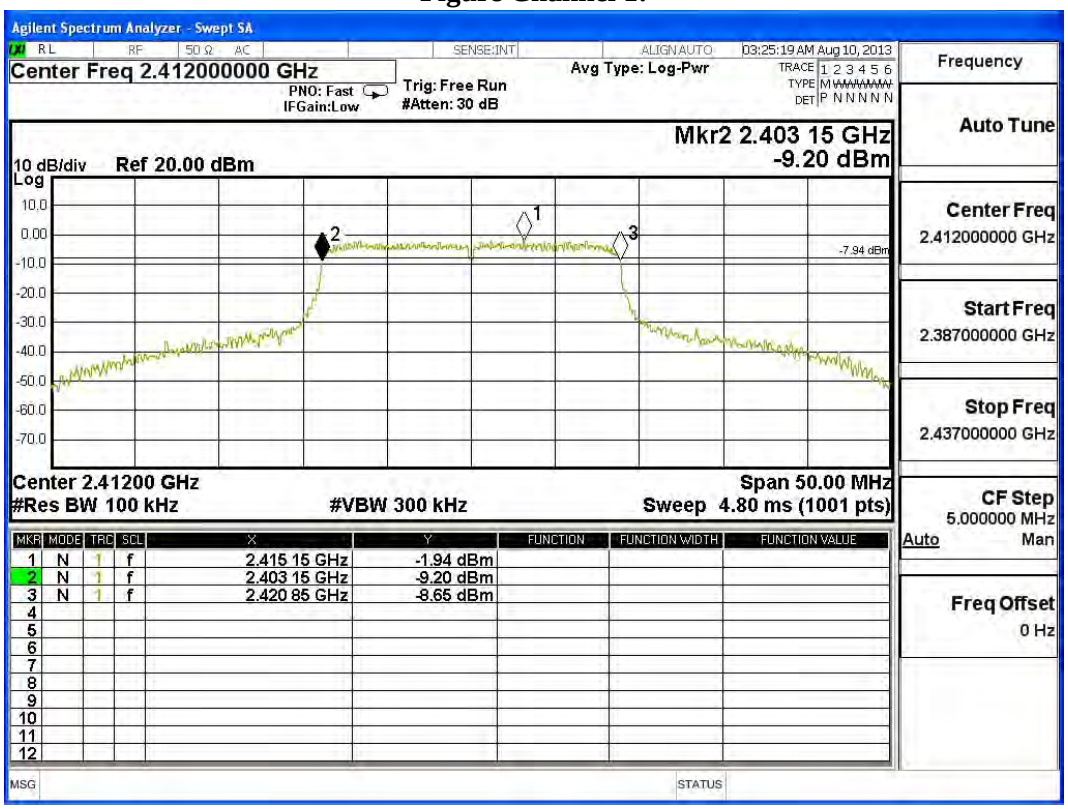


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2412MHz)

Chain - B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	17700	>500	Pass

Figure Channel 1:

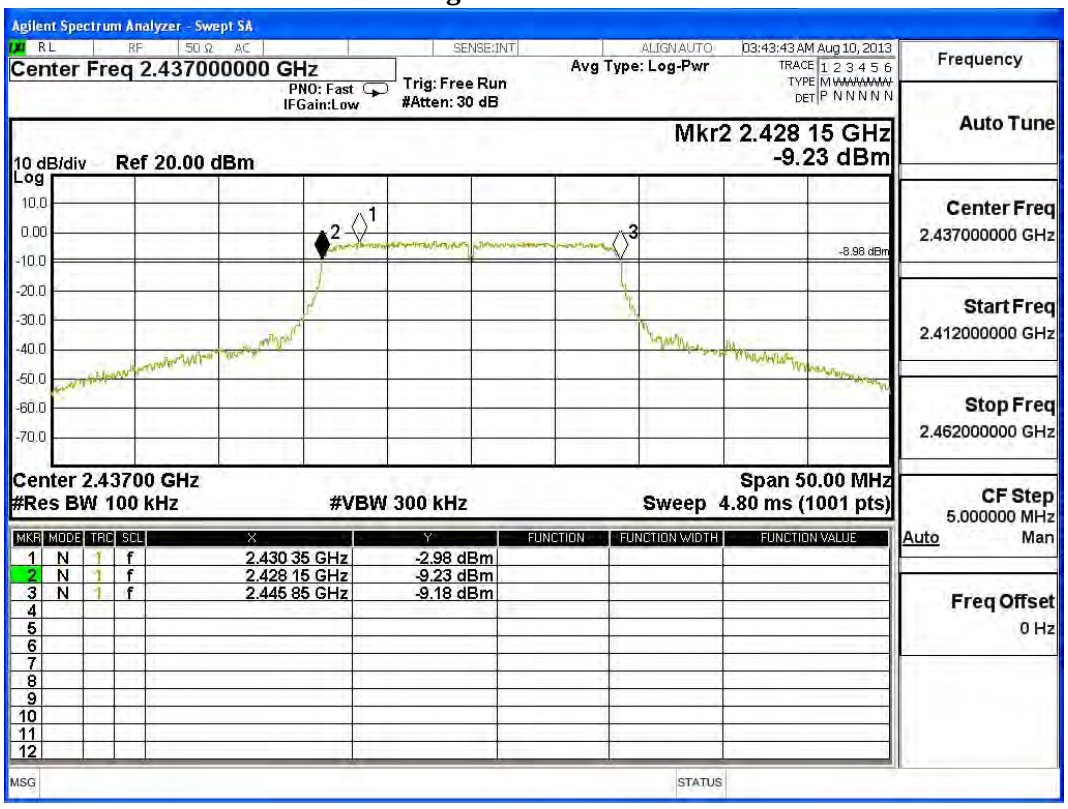


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2437MHz)

Chain - A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	17700	>500	Pass

Figure Channel 6:

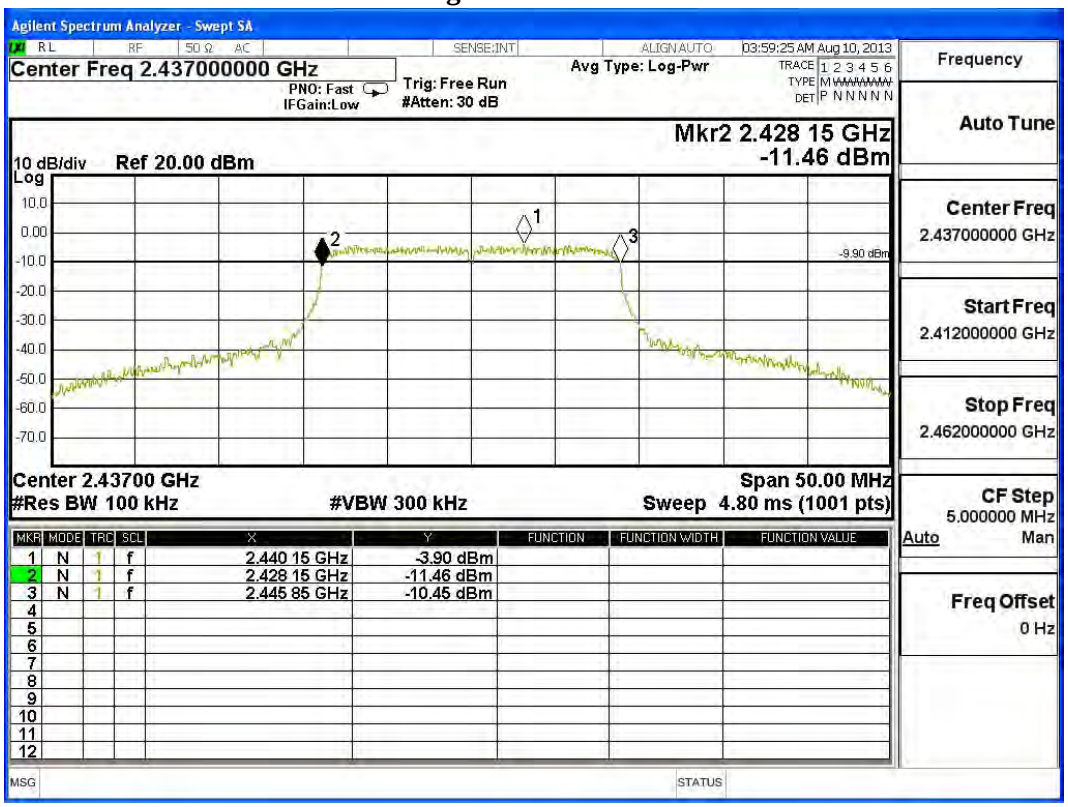


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2437MHz)

Chain - B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	17700	>500	Pass

Figure Channel 6:

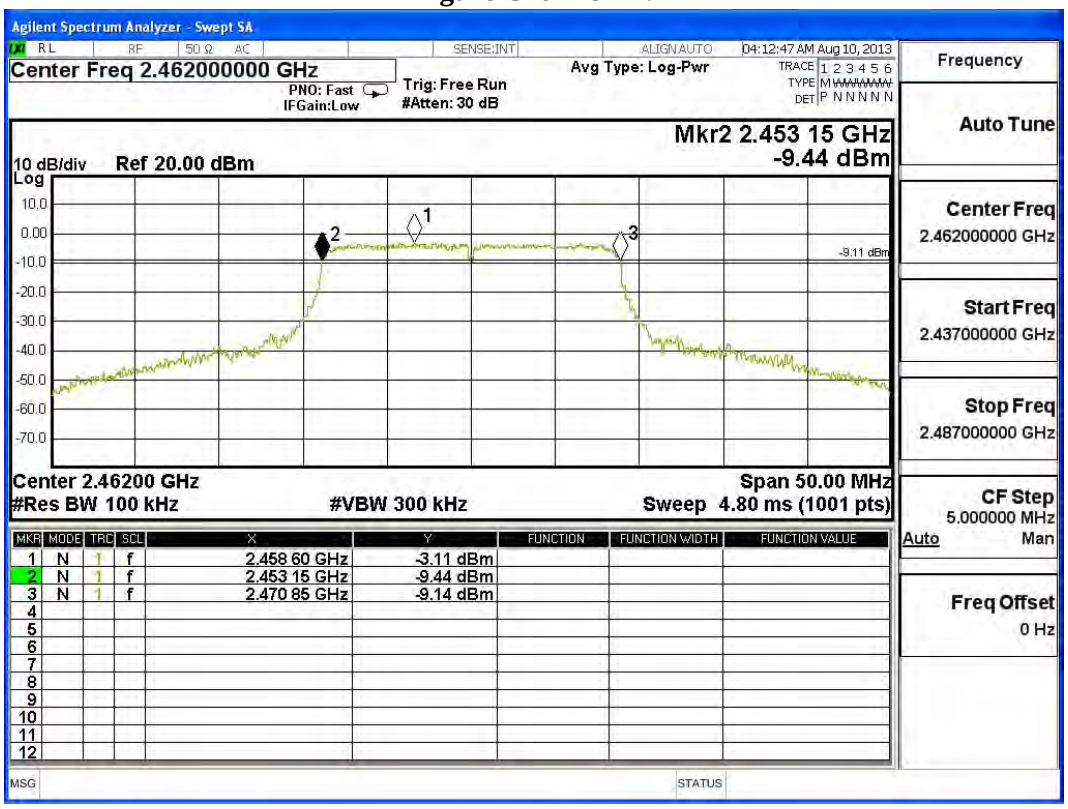


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2462MHz)

Chain - A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	17700	>500	Pass

Figure Channel 11:

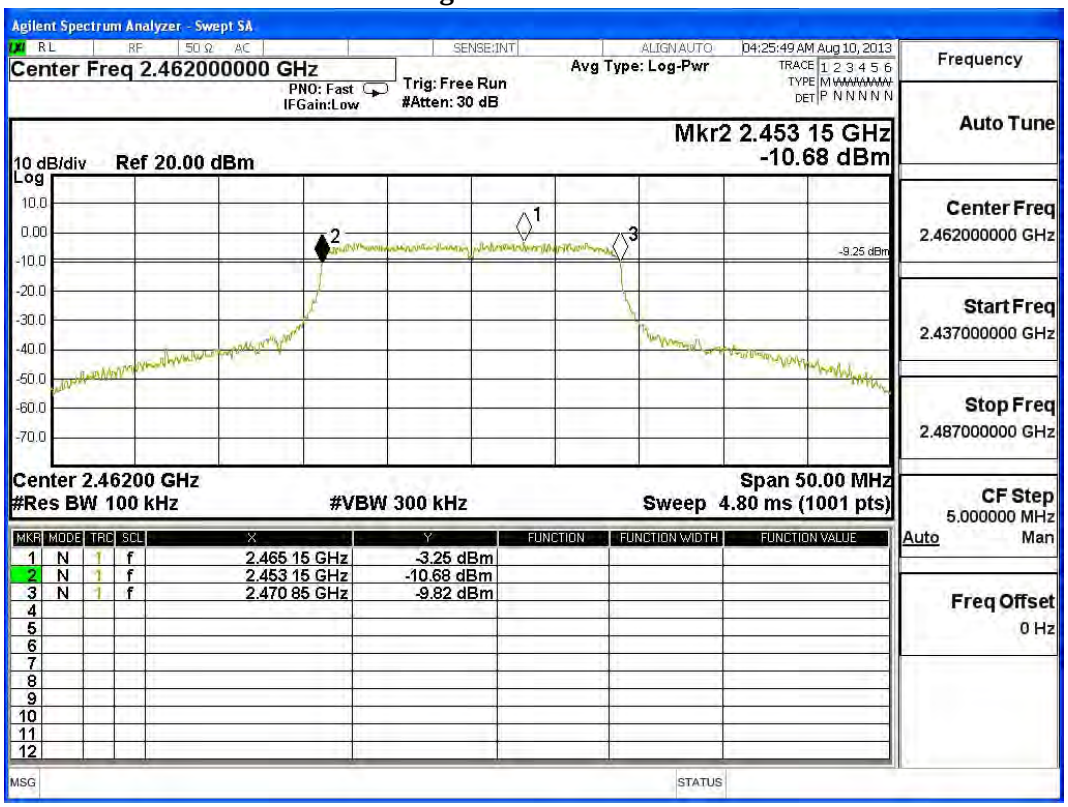


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2462MHz)

Chain - B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	17700	>500	Pass

Figure Channel 11:

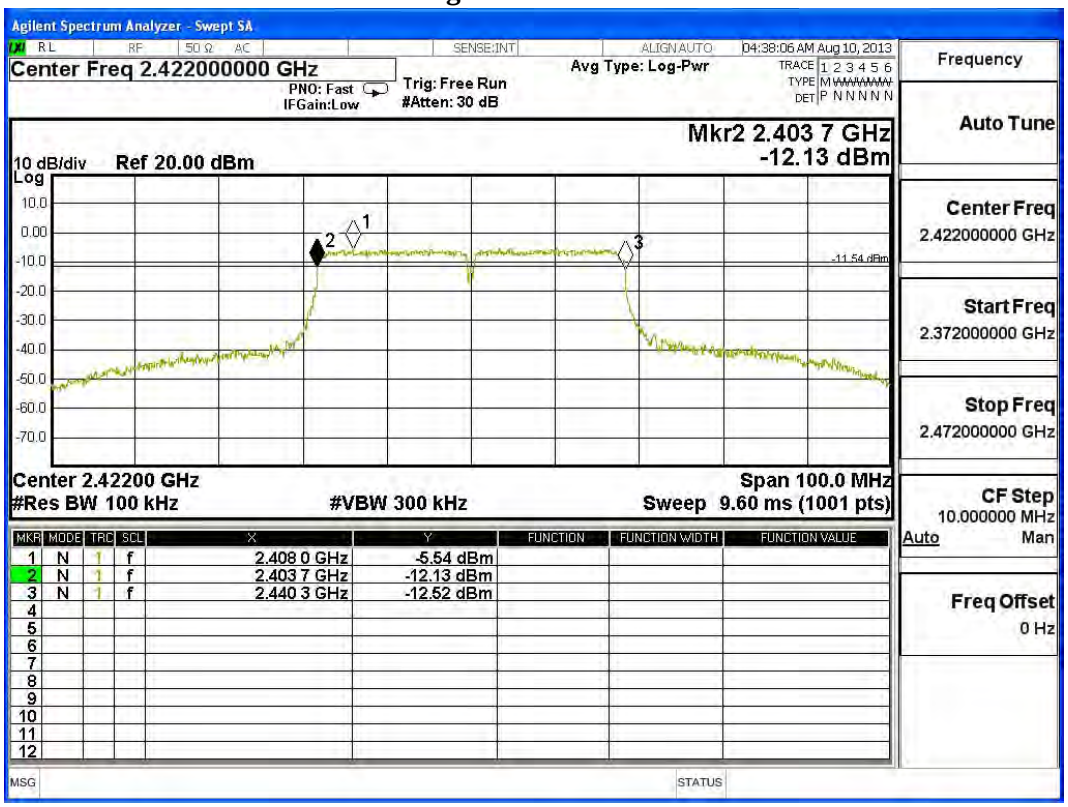


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2422MHz)

Chain - A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
3	2422	36600	>500	Pass

Figure Channel 3:

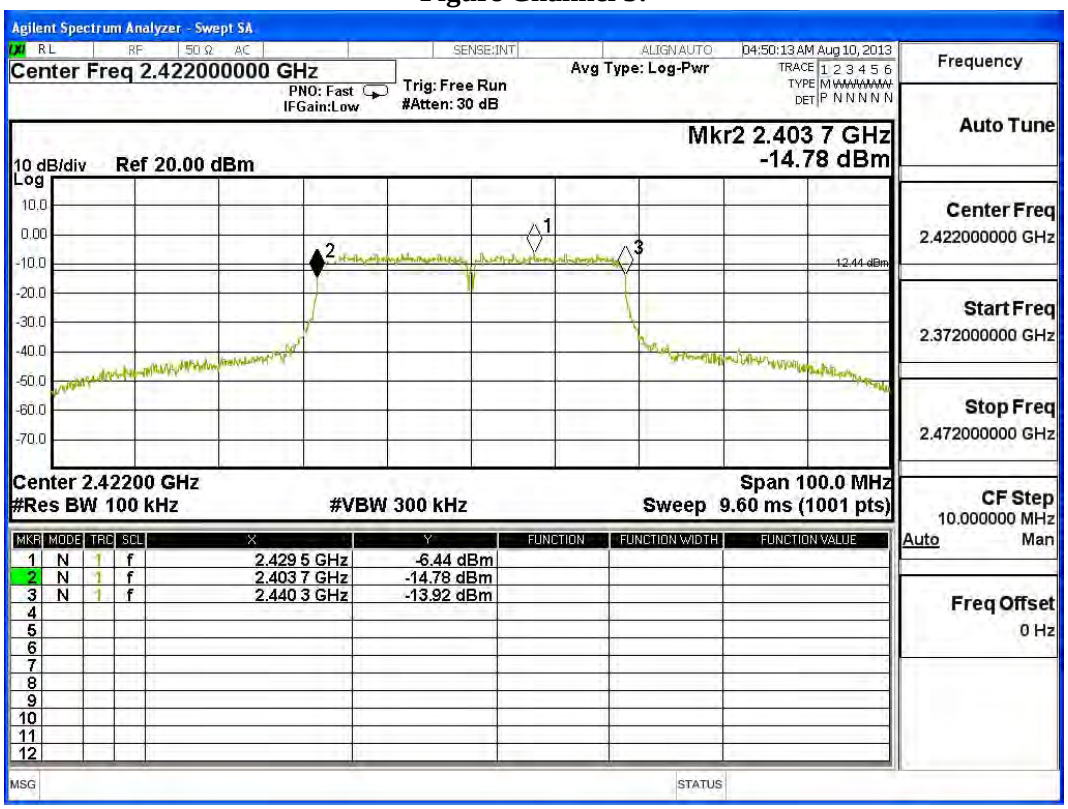


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2422MHz)

Chain - B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
3	2422	36600	>500	Pass

Figure Channel 3:

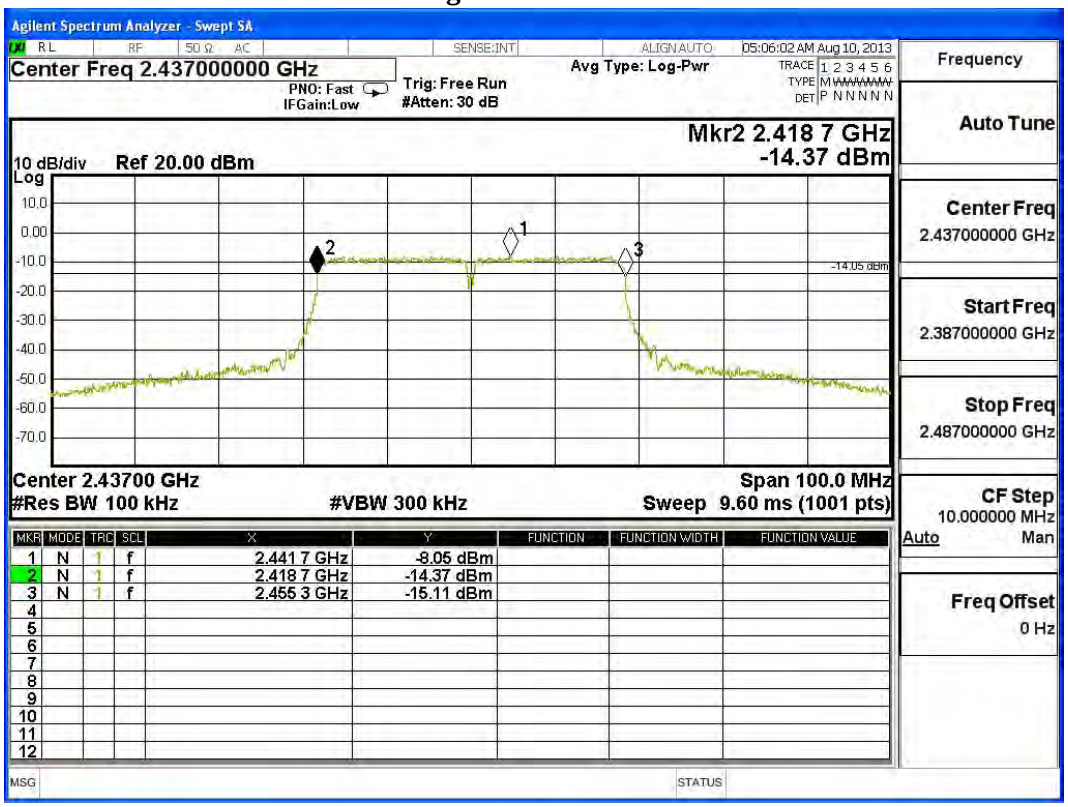


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2437MHz)

Chain - A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	36600	>500	Pass

Figure Channel 6:

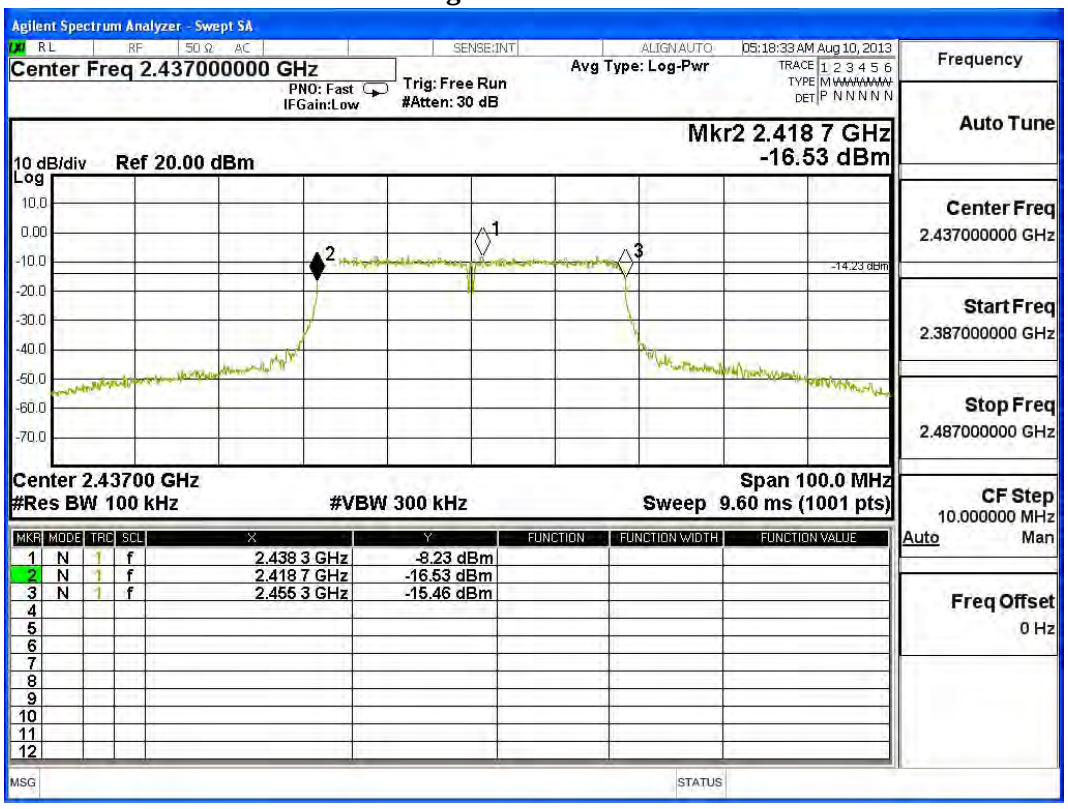


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2437MHz)

Chain - B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	36600	>500	Pass

Figure Channel 6:

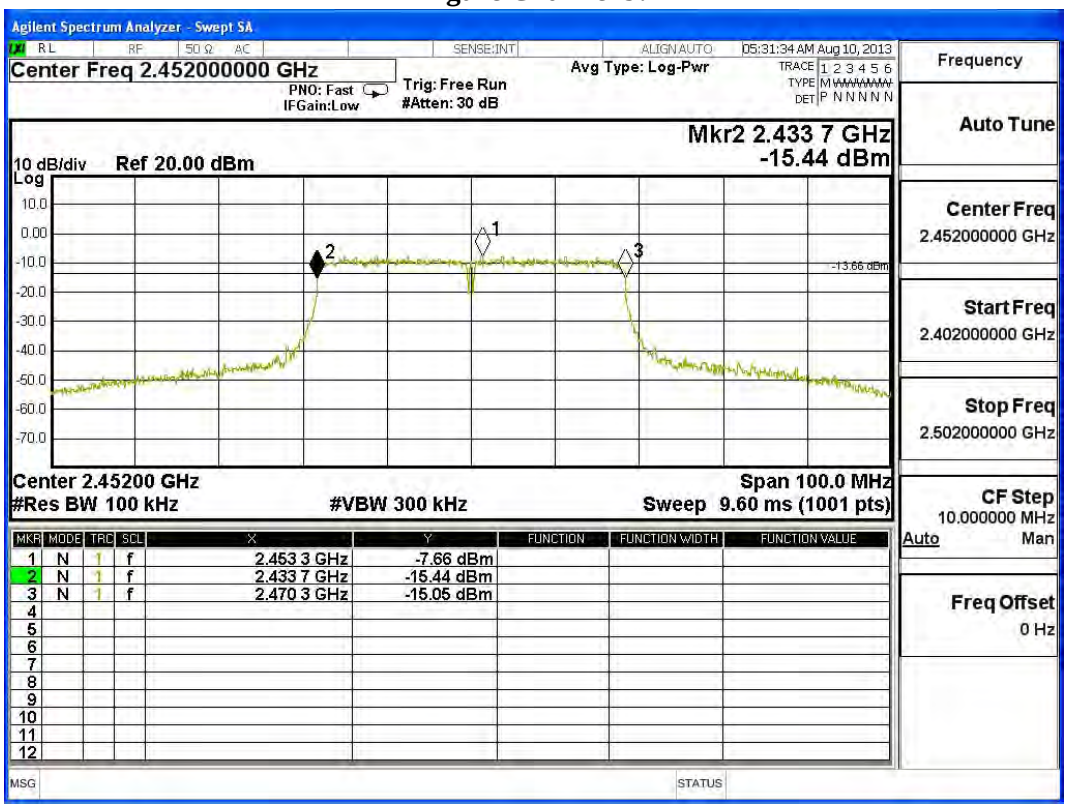


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2452MHz)

Chain - A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
9	2452	36600	>500	Pass

Figure Channel 9:

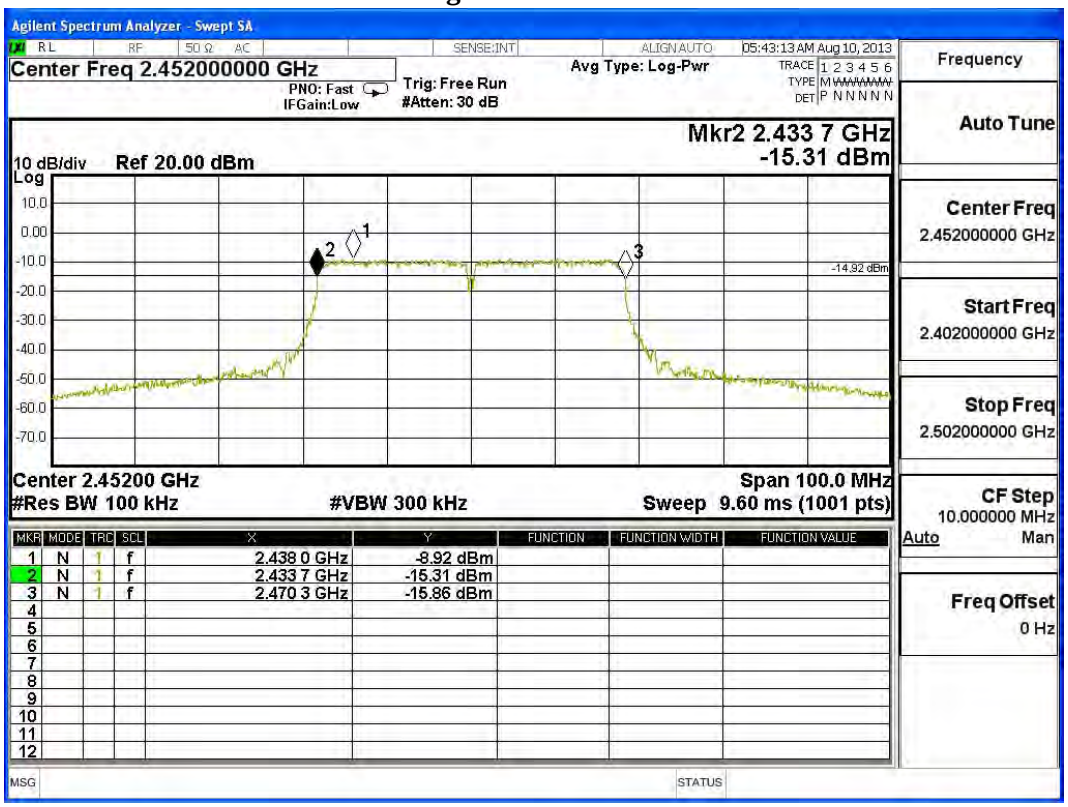


Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2452MHz)

Chain - B

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
9	2452	36600	>500	Pass

Figure Channel 9:



8. Power Density

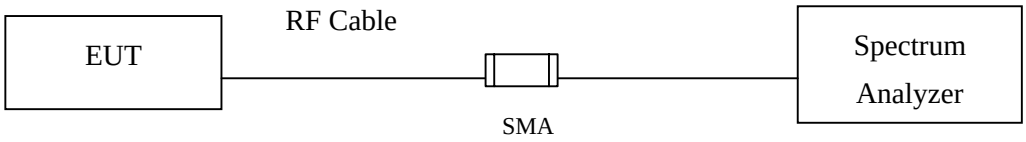
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

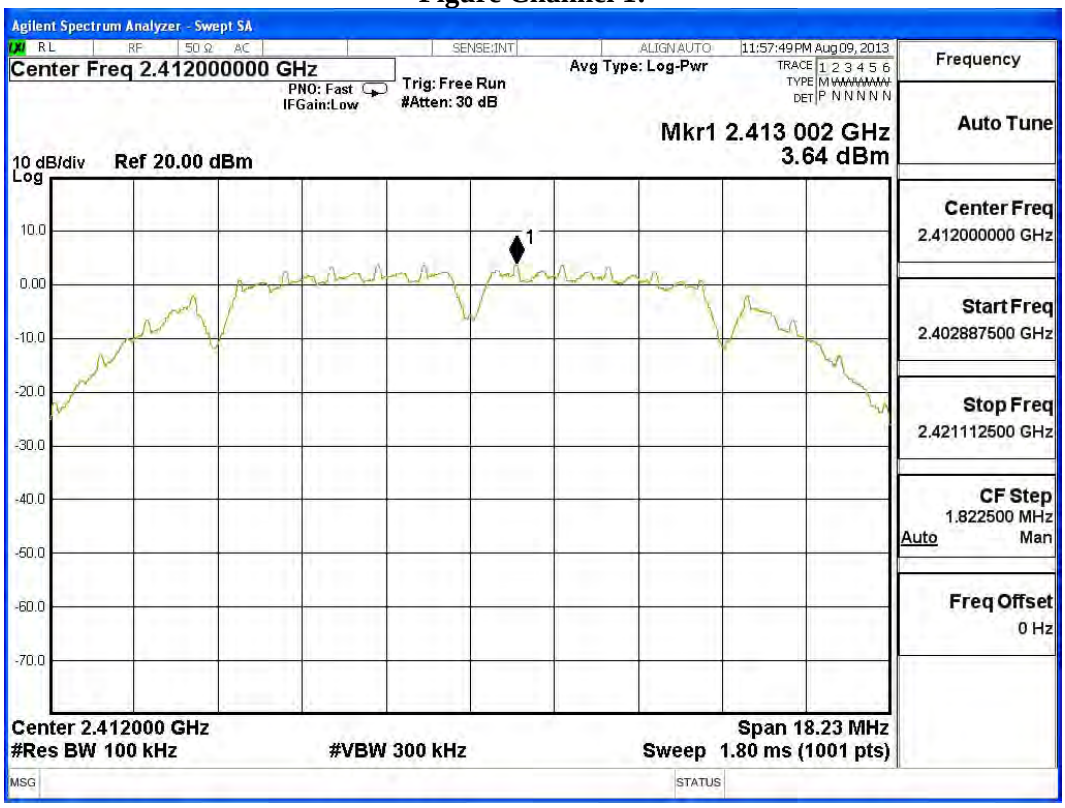
± 1.27 dB

8.6. Test Result of Power Density

Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	3.64	< 8dBm	Pass

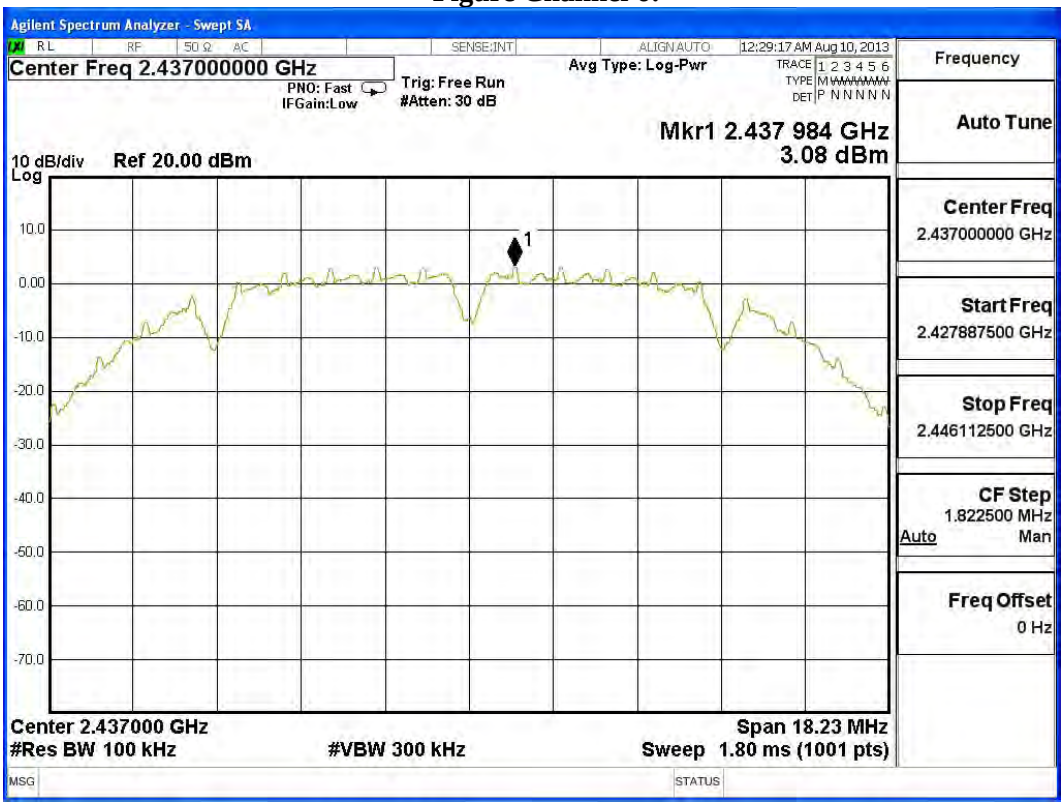
Figure Channel 1:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	3.08	< 8dBm	Pass

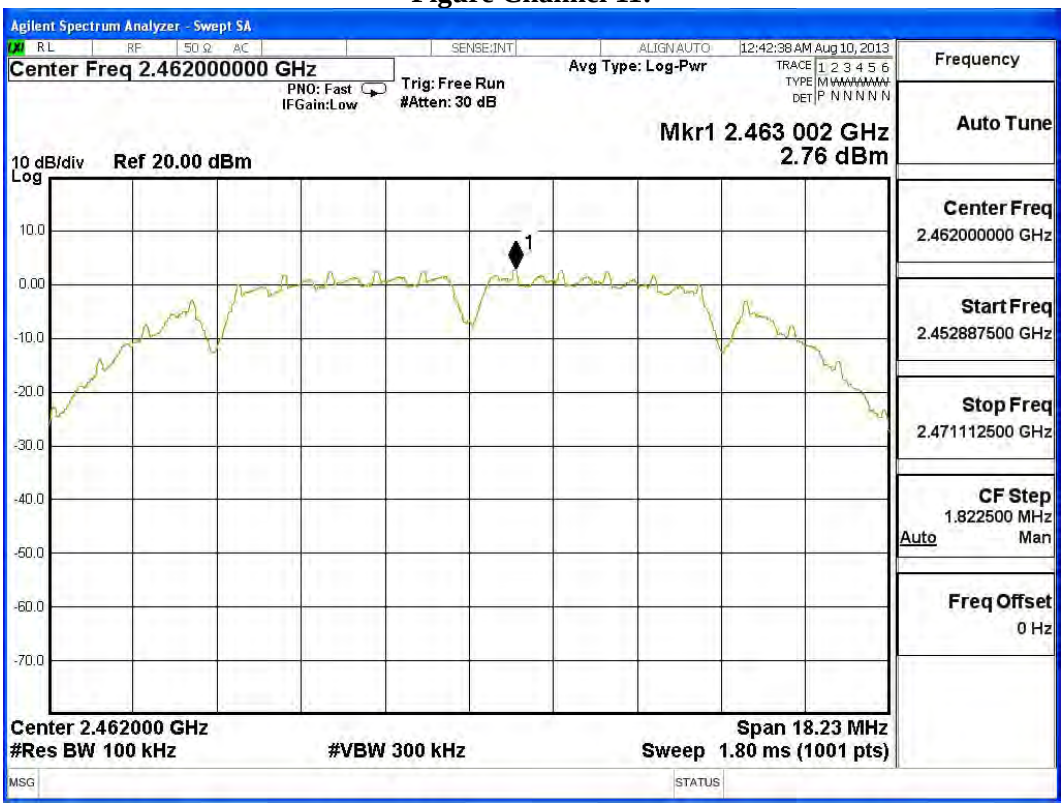
Figure Channel 6:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	2.76	< 8dBm	Pass

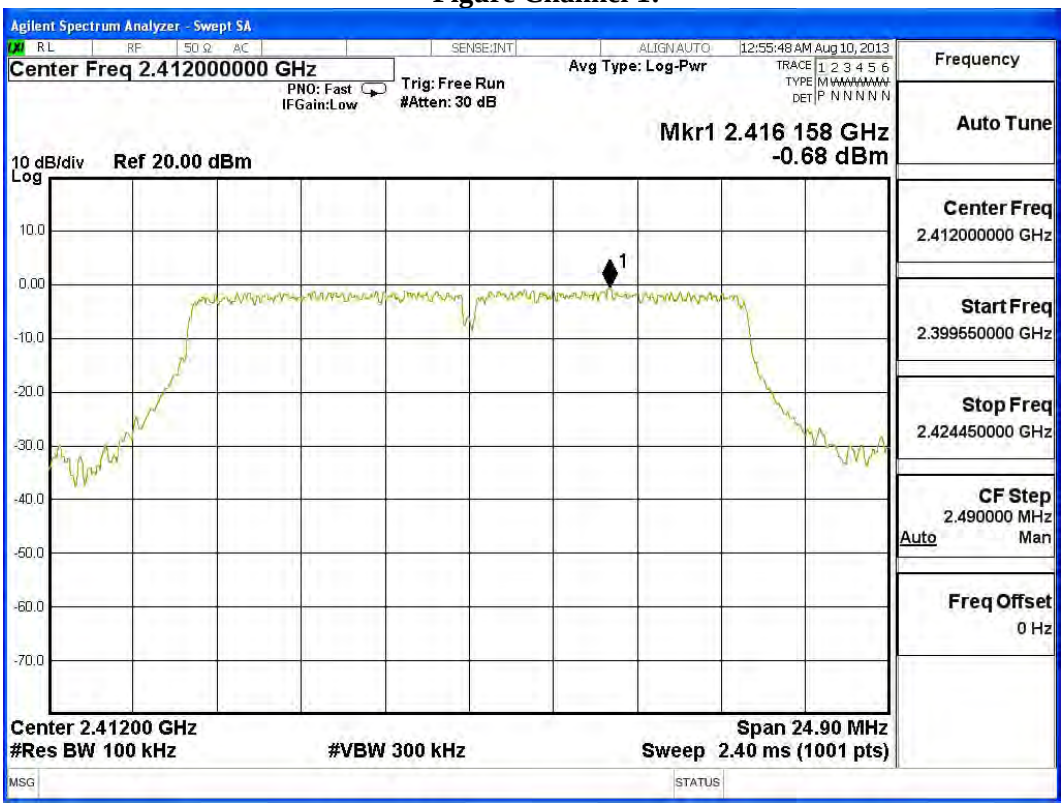
Figure Channel 11:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-0.68	< 8dBm	Pass

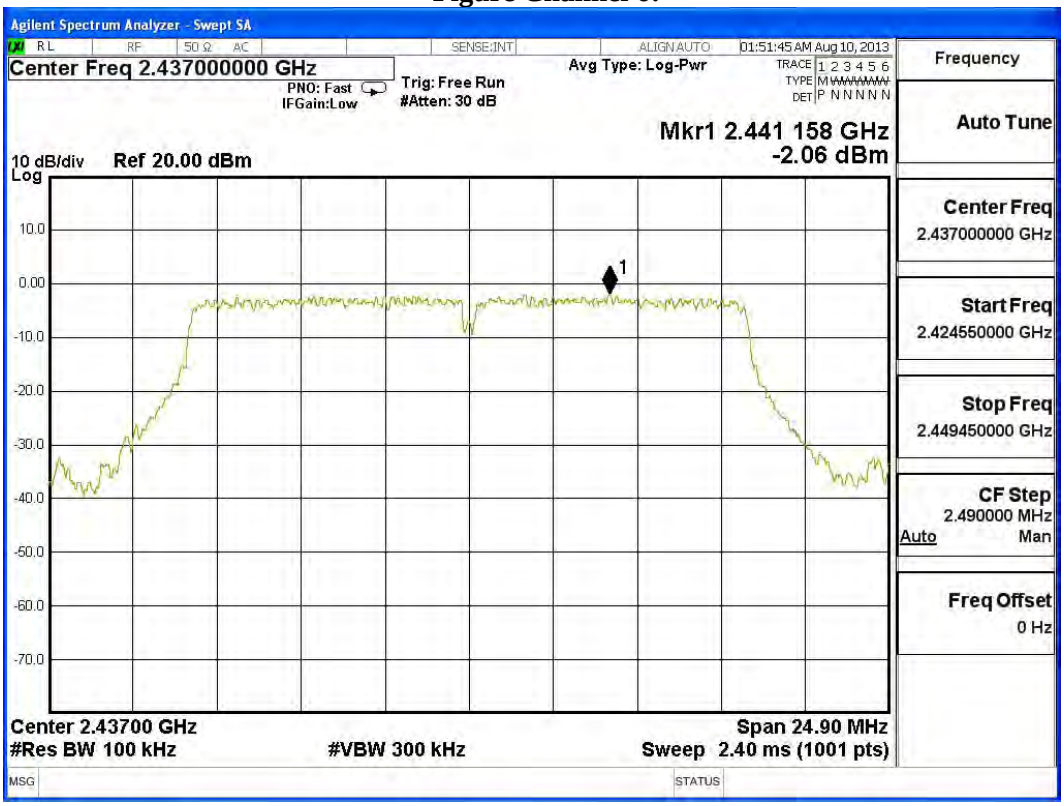
Figure Channel 1:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-2.06	< 8dBm	Pass

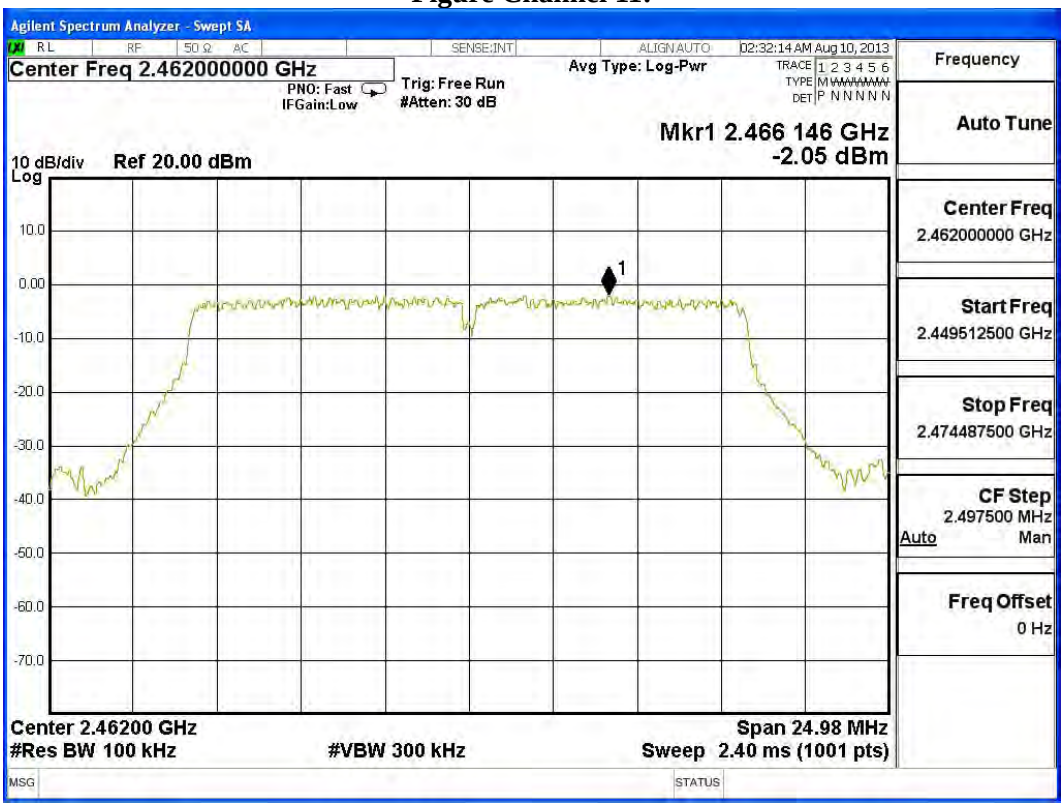
Figure Channel 6:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	-2.05	< 8dBm	Pass

Figure Channel 11:



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2412MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-1.850	1.160	< 8dBm	Pass
B	-2.170	0.840	< 8dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 1: (Chain A)

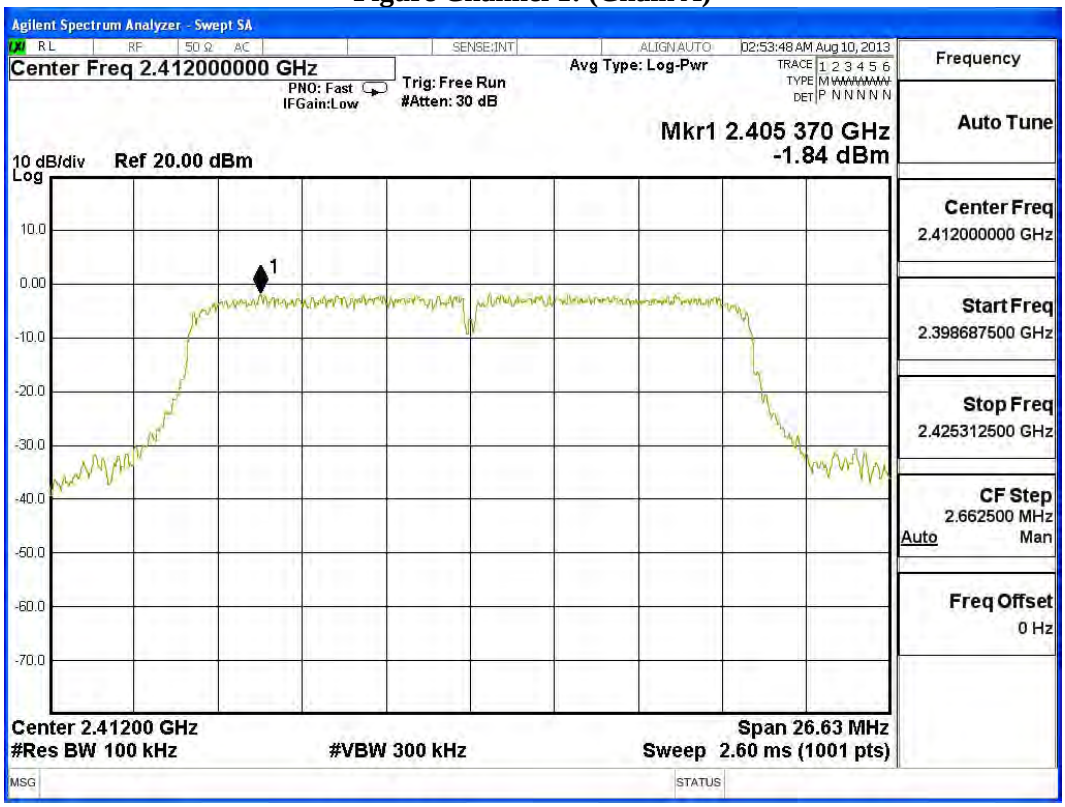
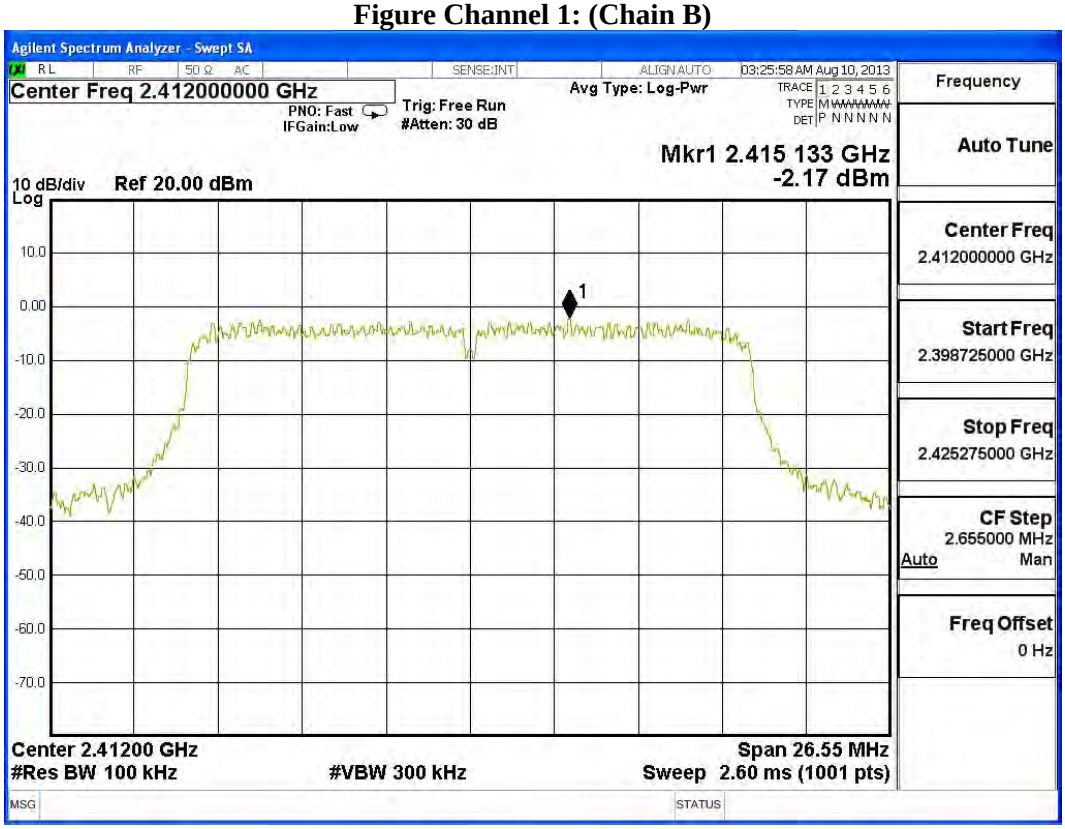


Figure Channel 1: (Chain B)



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2437MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-3.660	-0.650	< 8dBm	Pass
B	-3.790	-0.780	< 8dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 6: (Chain A)

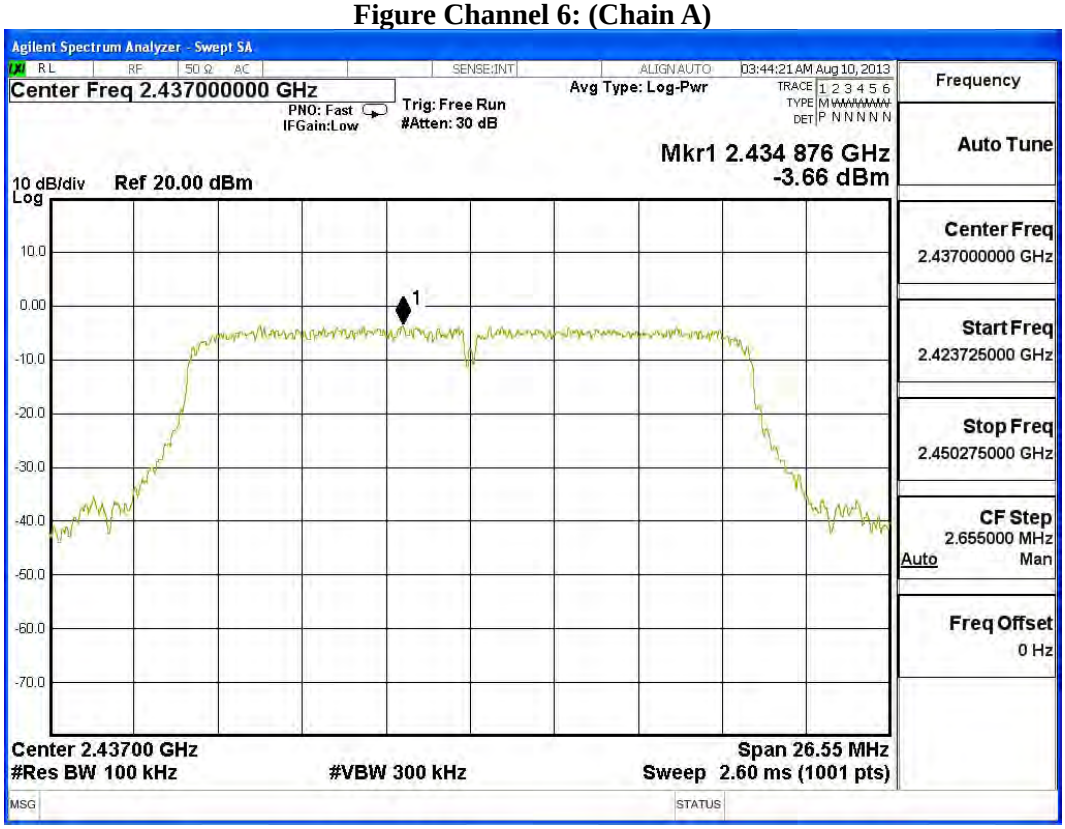
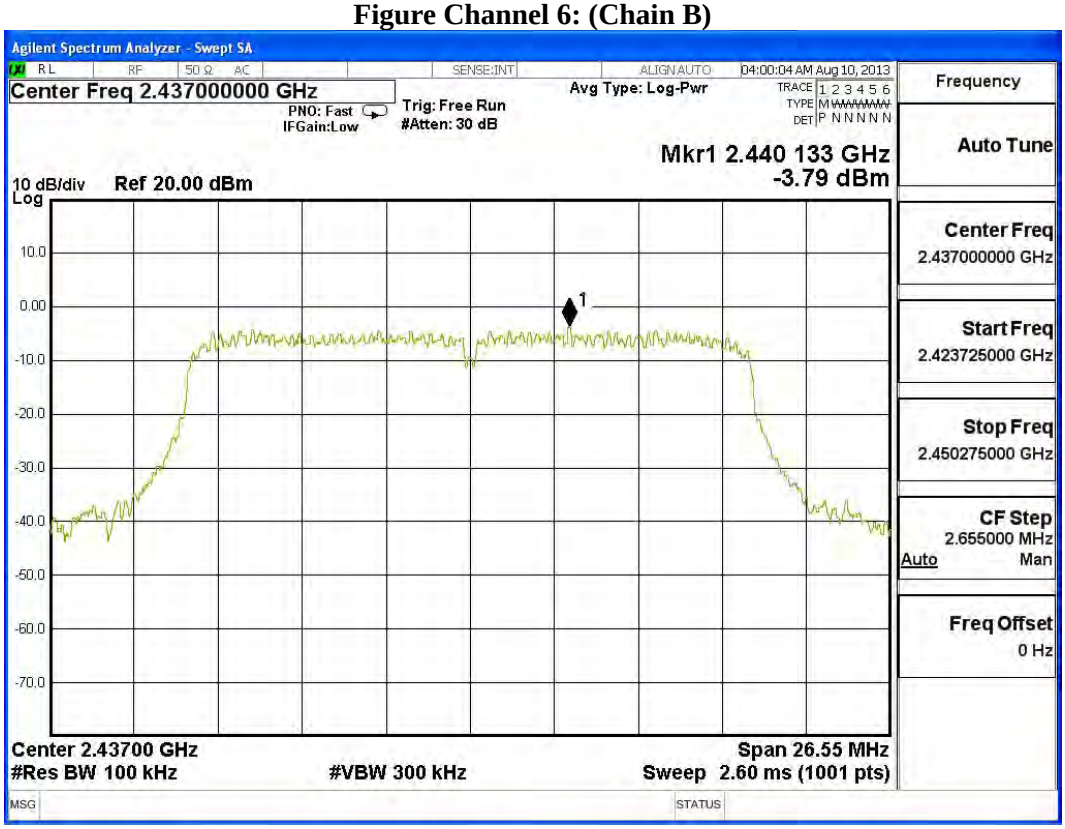


Figure Channel 6: (Chain B)



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (2462MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-3.620	-0.610	< 8dBm	Pass
B	-3.080	-0.070	< 8dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 11: (Chain A)

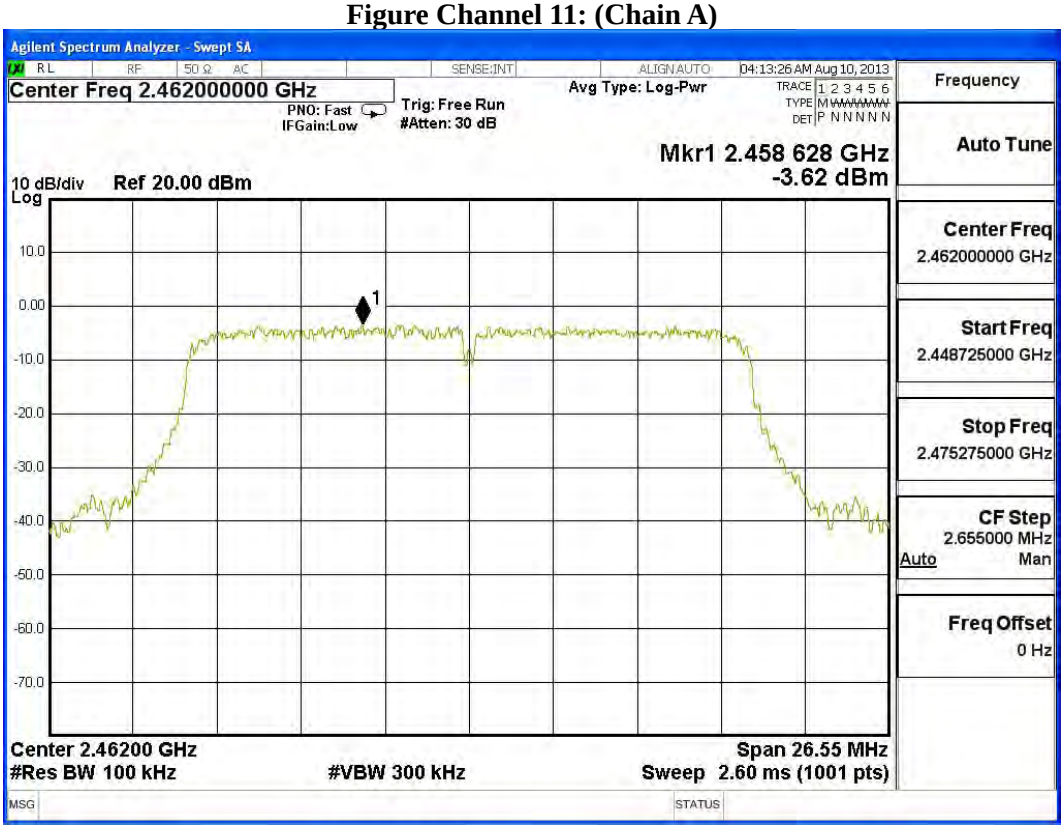
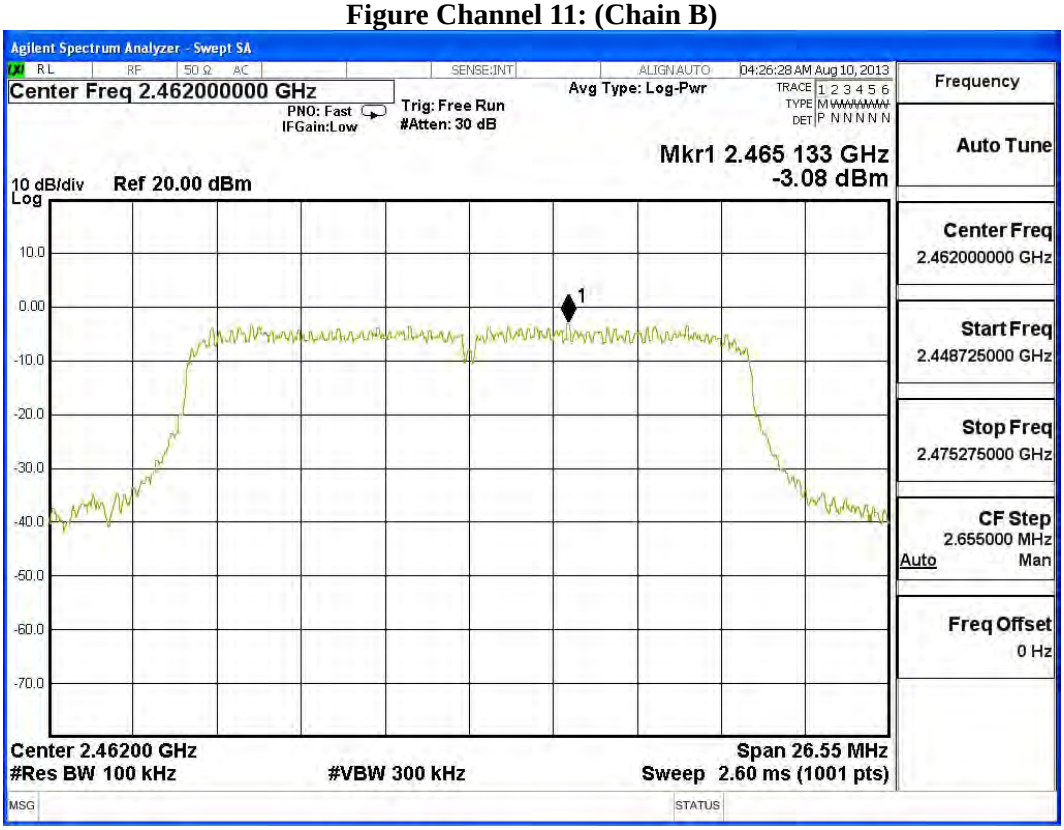


Figure Channel 11: (Chain B)



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2422MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)[1]	Limit	Result
A	-6.030	-3.020	< 8dBm	Pass
B	-6.370	-3.360	< 8dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 3: (Chain A)

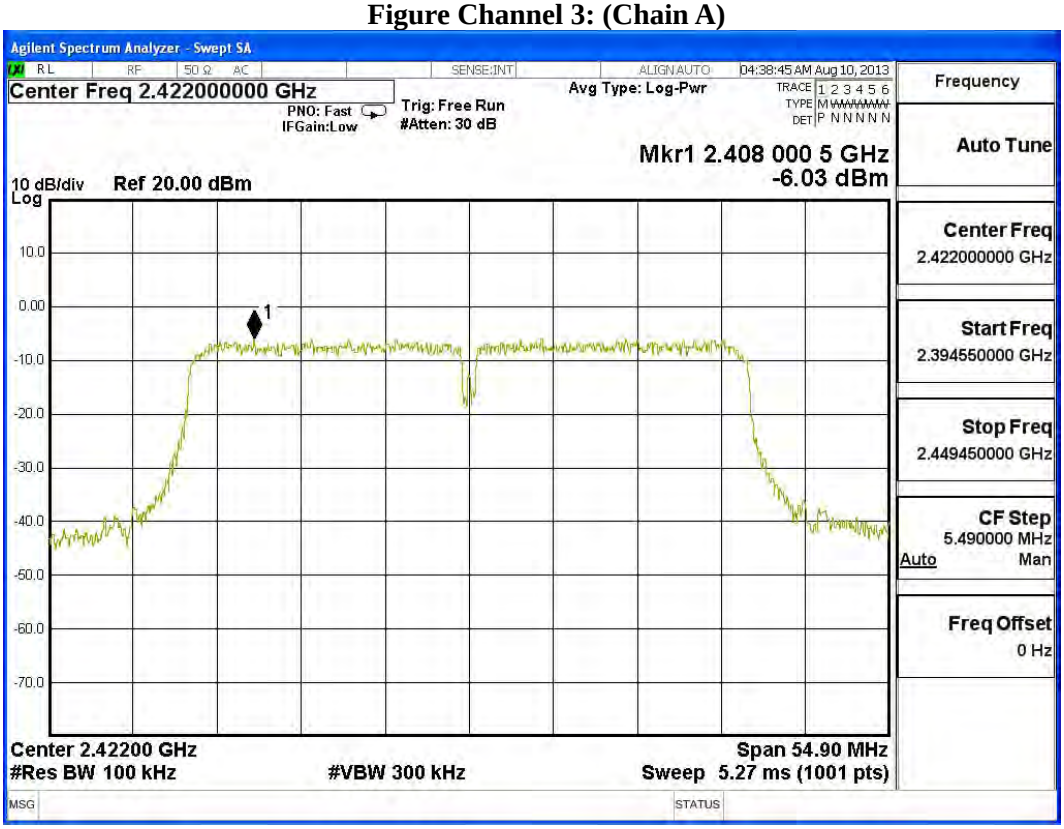
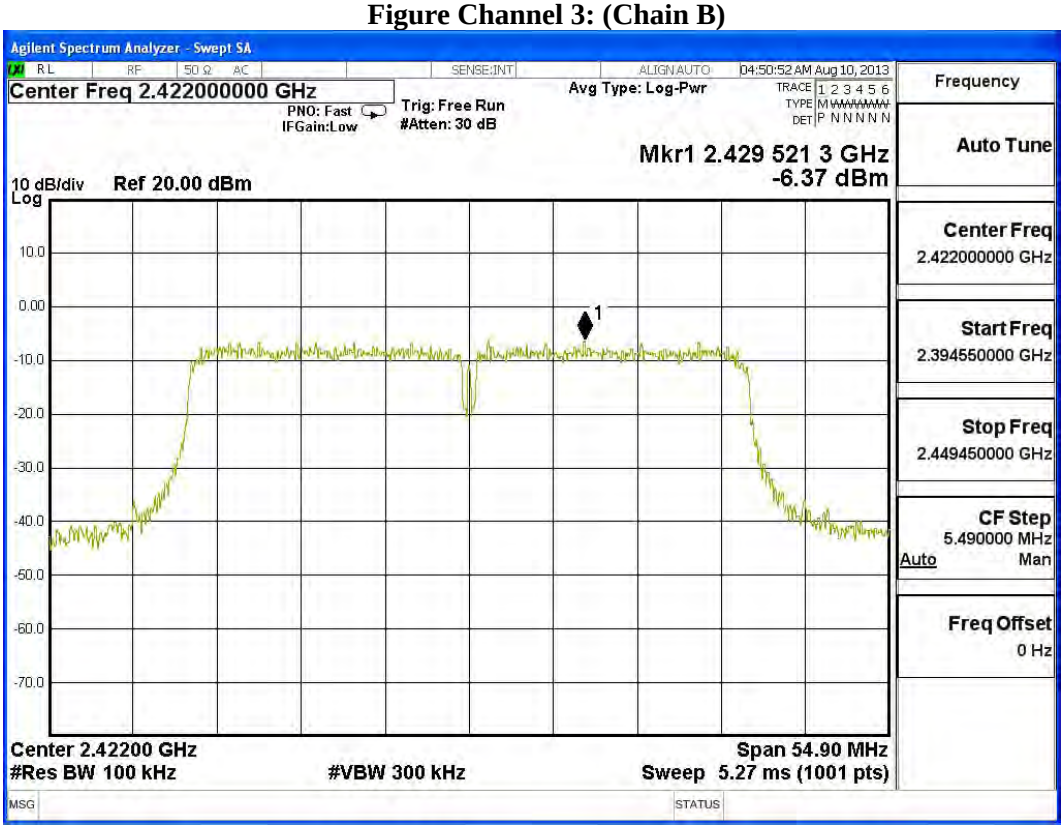


Figure Channel 3: (Chain B)



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2437MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-8.160	-5.150	< 8dBm	Pass
B	-8.080	-5.070	< 8dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 6: (Chain A)

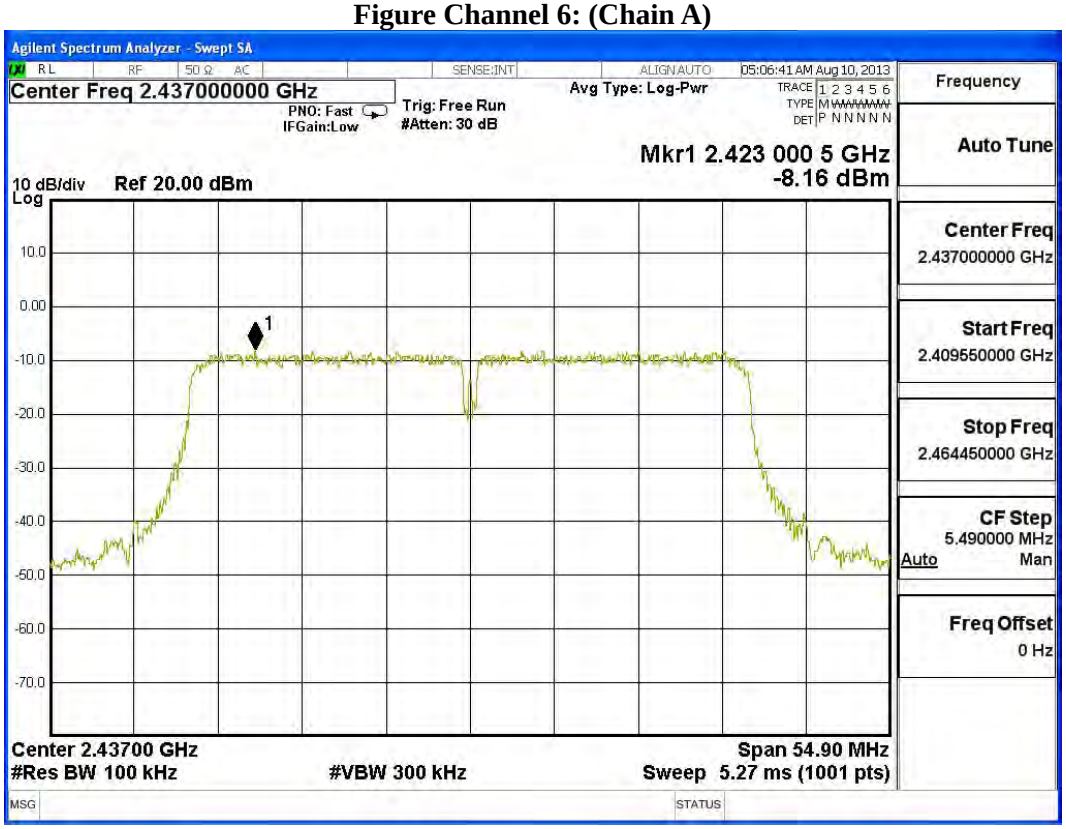
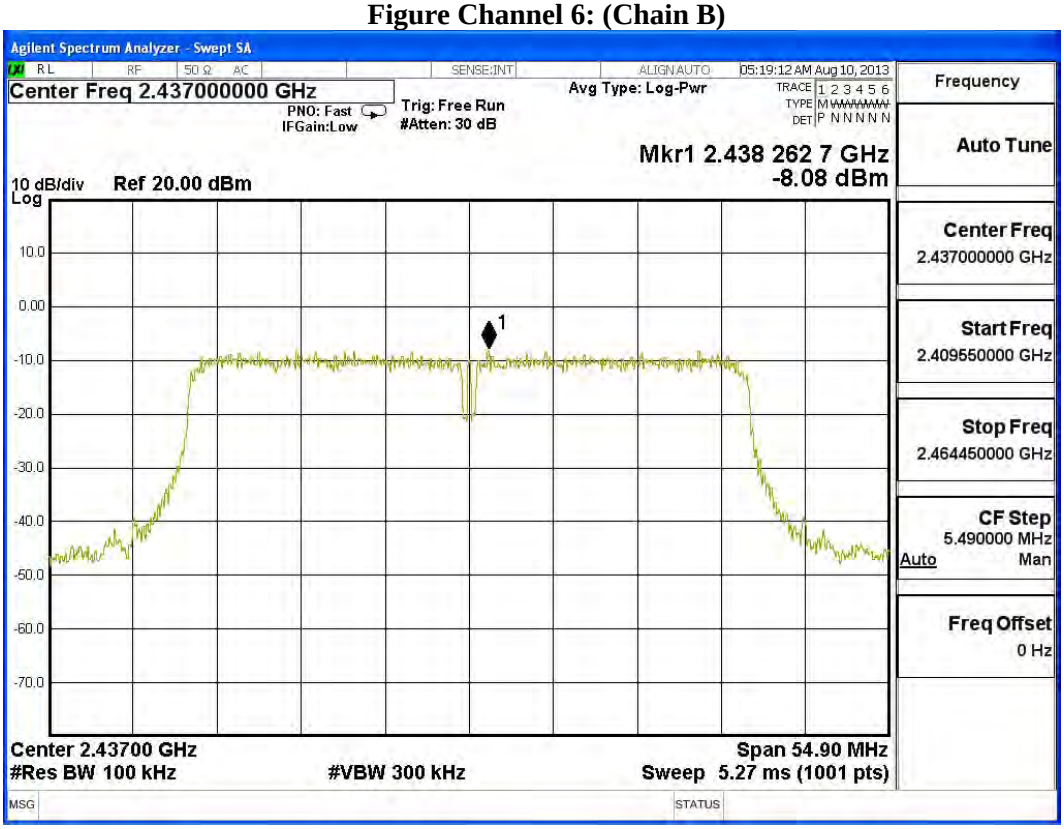


Figure Channel 6: (Chain B)



Product : 802.11b/g/n 2T2R Wireless LAN USB Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2452MHz)

CHAIN	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit	Result
A	-8.010	-5.000	< 8dBm	Pass
B	-9.010	-6.000	< 8dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Figure Channel 9: (Chain A)

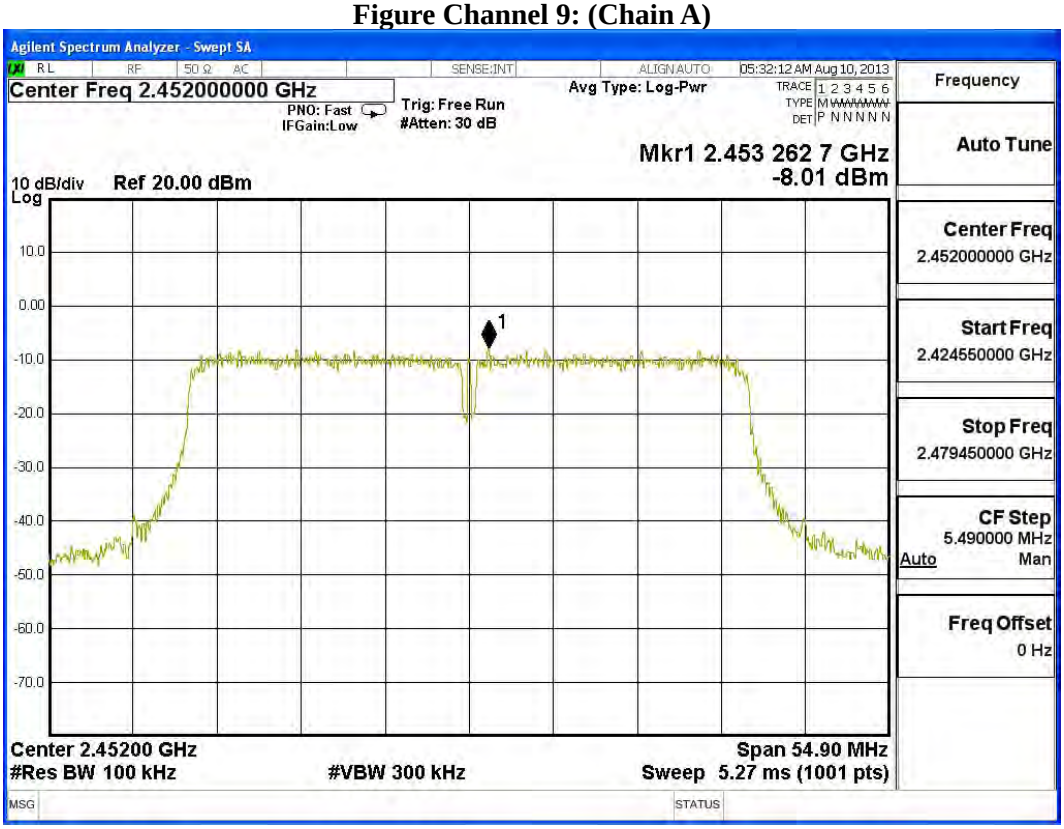
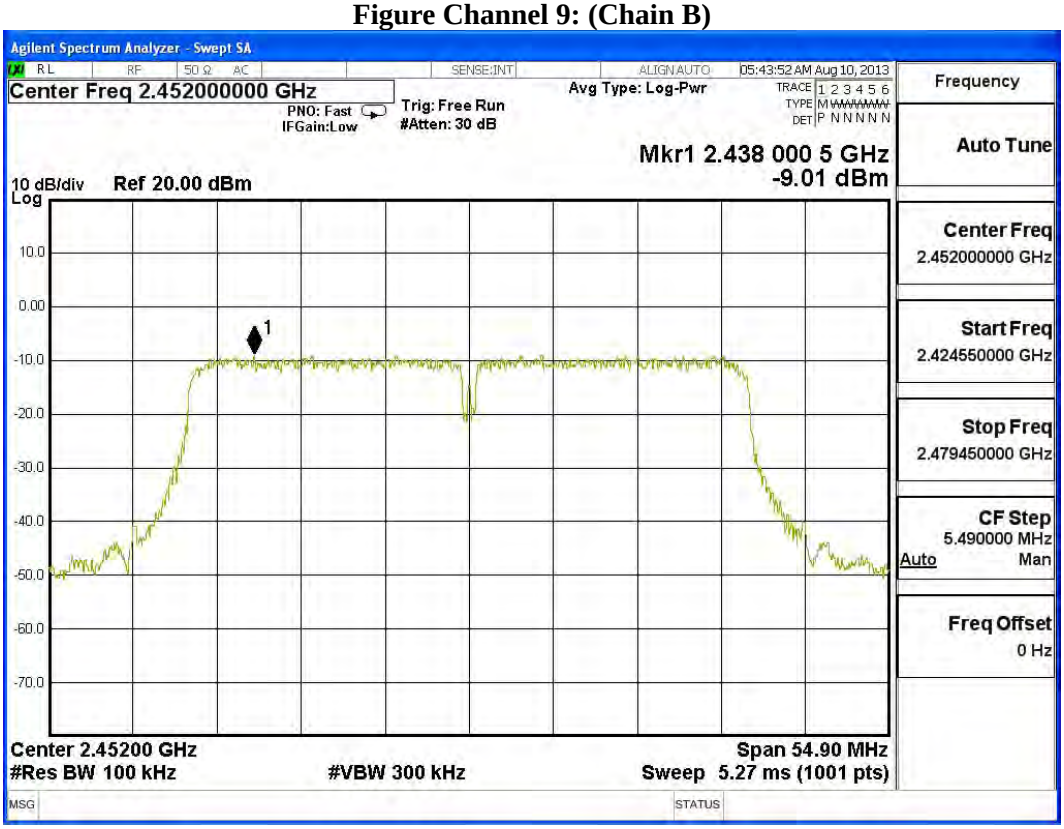


Figure Channel 9: (Chain B)



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.