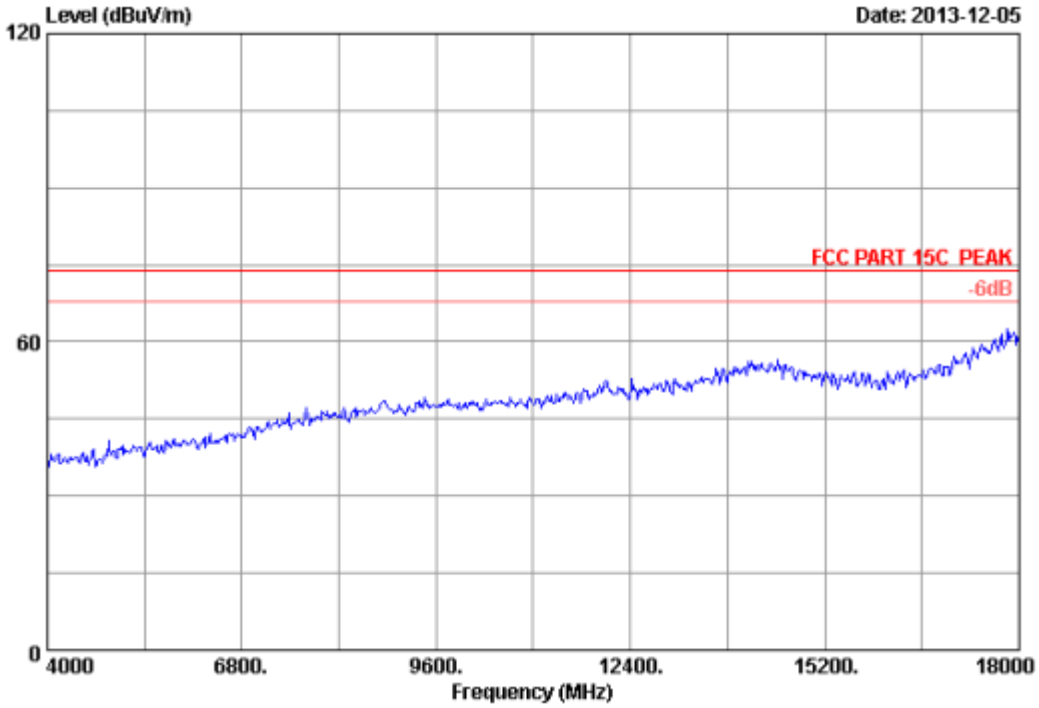
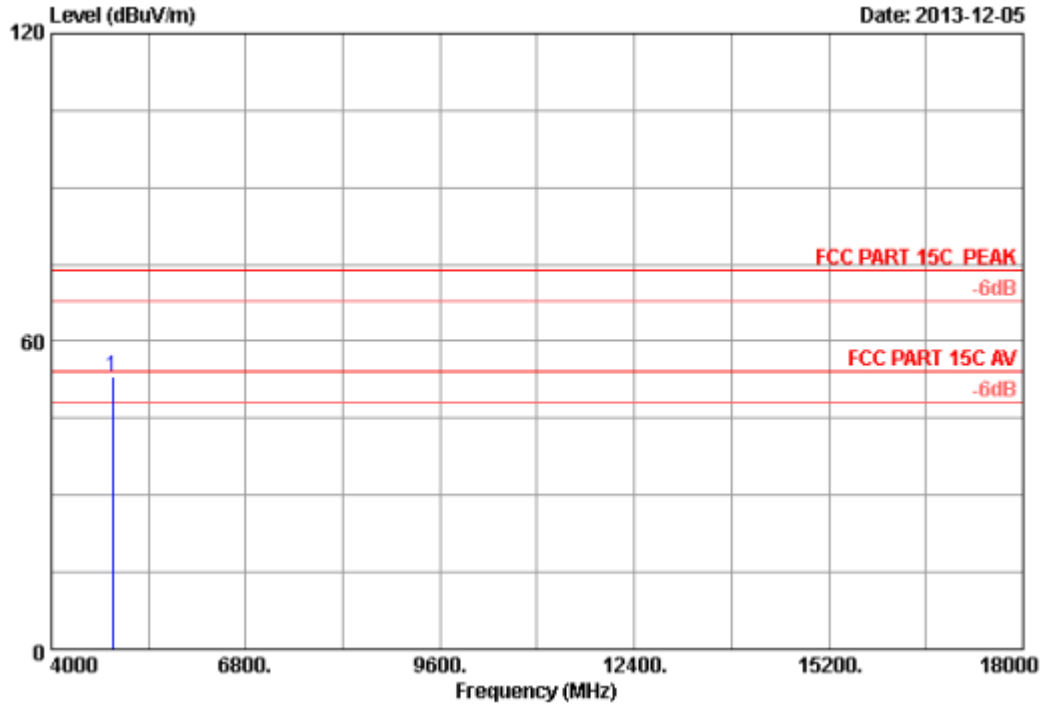
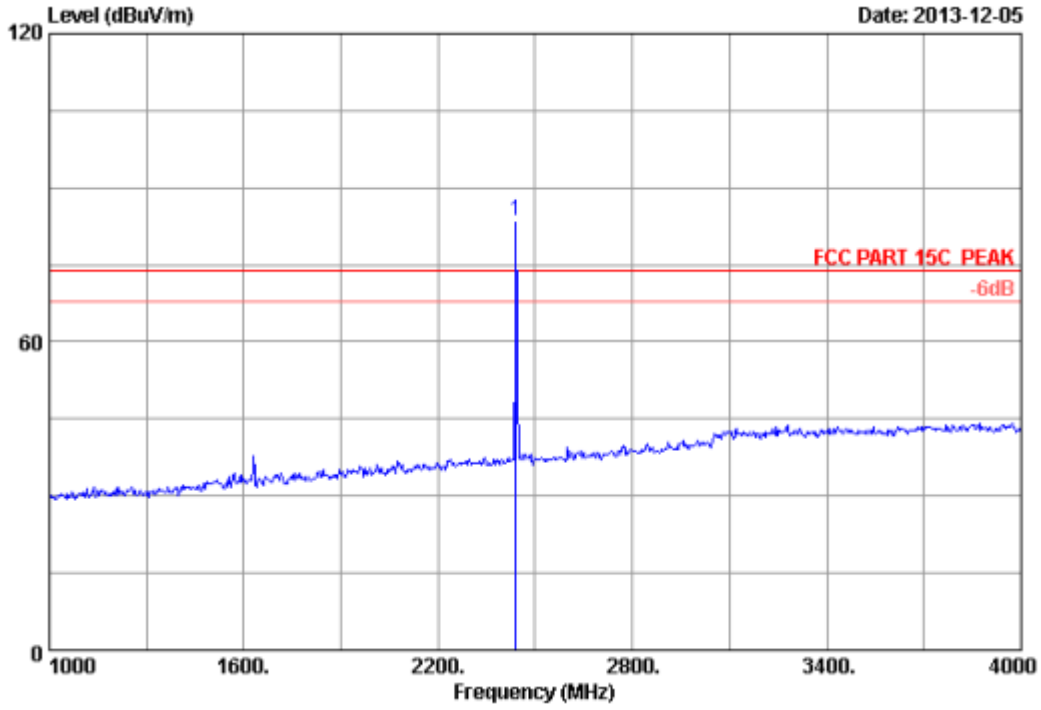


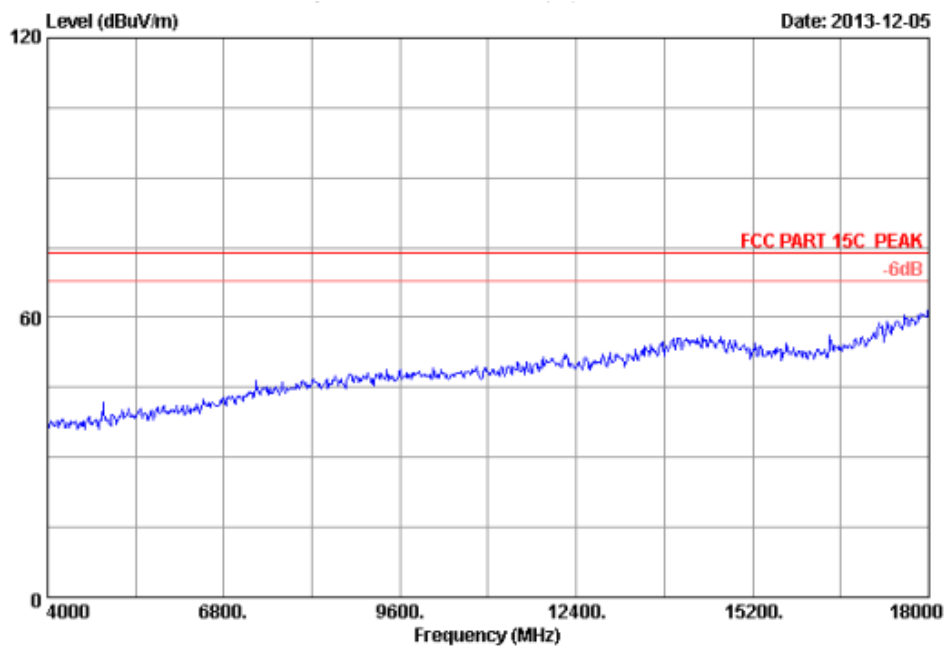


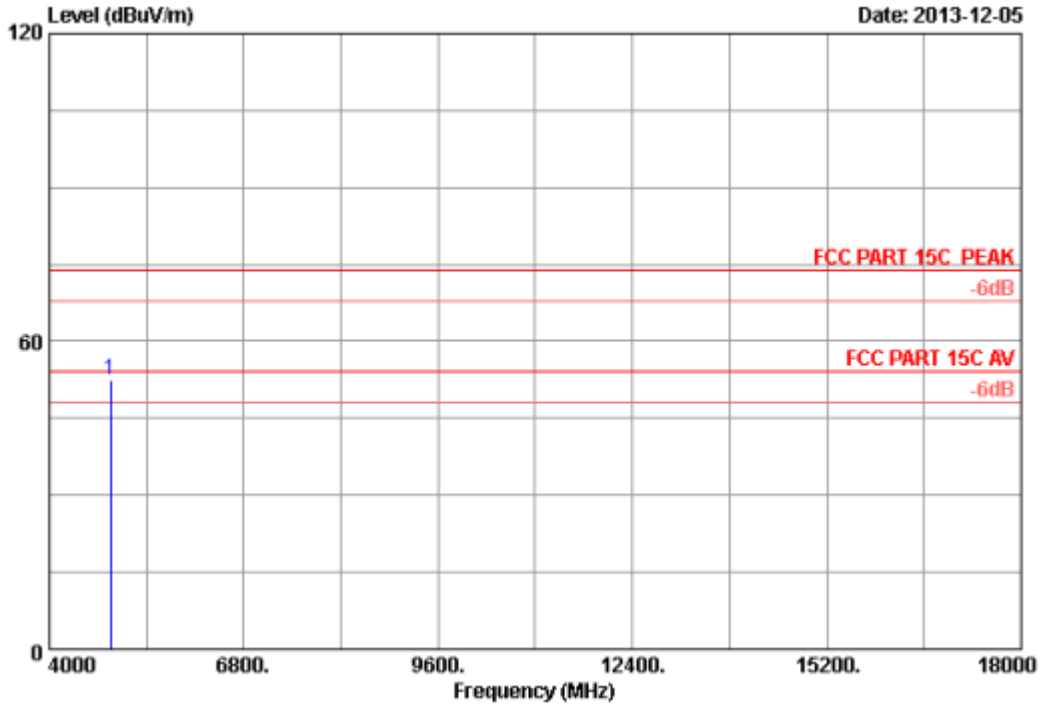
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4882.000	32.99	8.64	35.70	47.34	53.27	74.00	20.73	Peak

6.3.18 Diagram 6-18



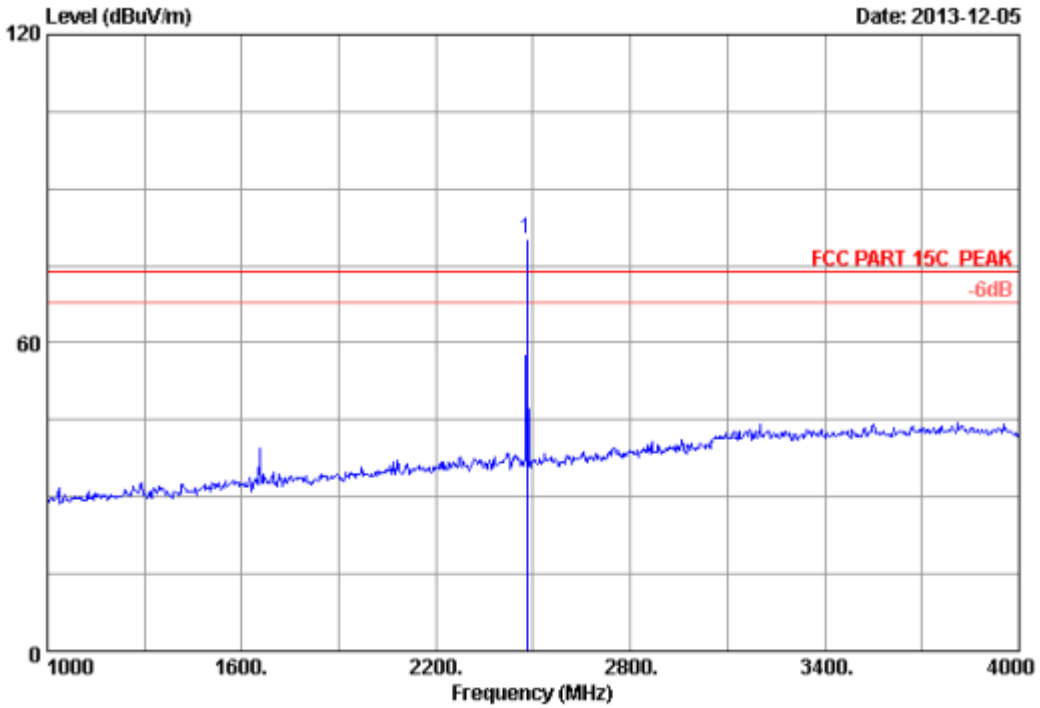
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.000	28.27	5.86	35.70	85.23	83.66			Peak



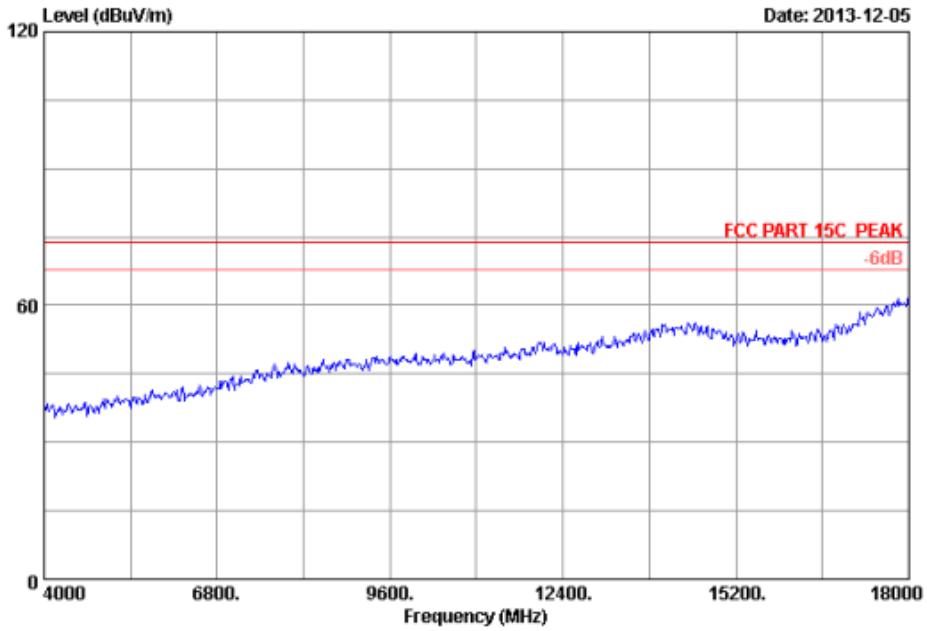


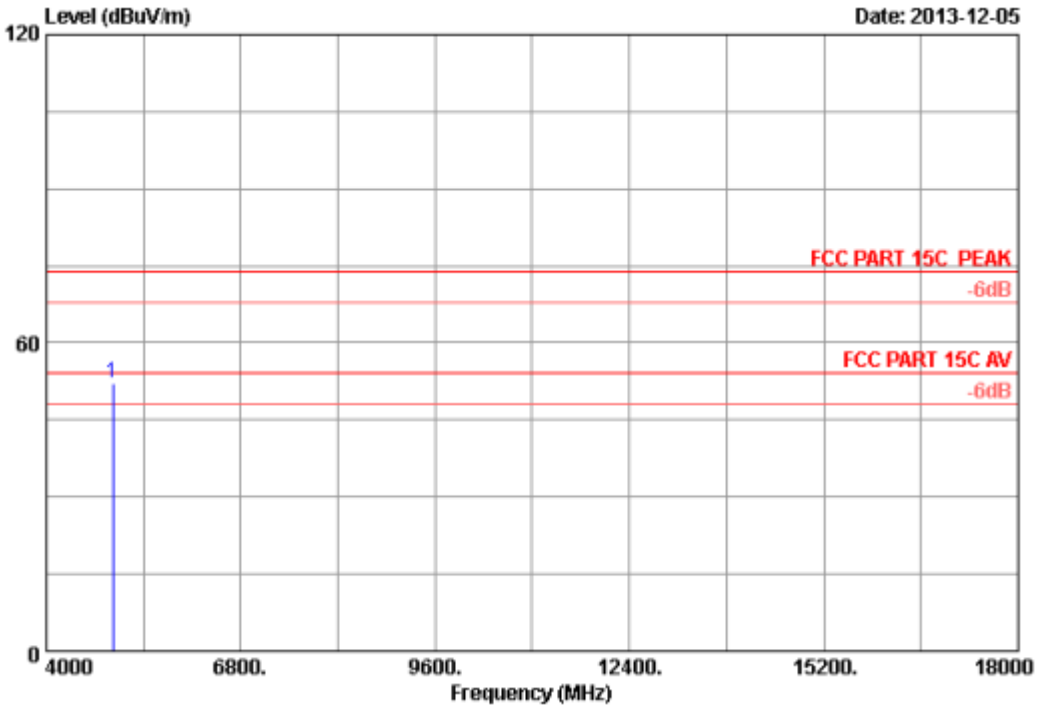
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4882.000	32.99	8.64	35.70	46.53	52.46	74.00	21.54	Peak

6.3.19 Diagram 6-19

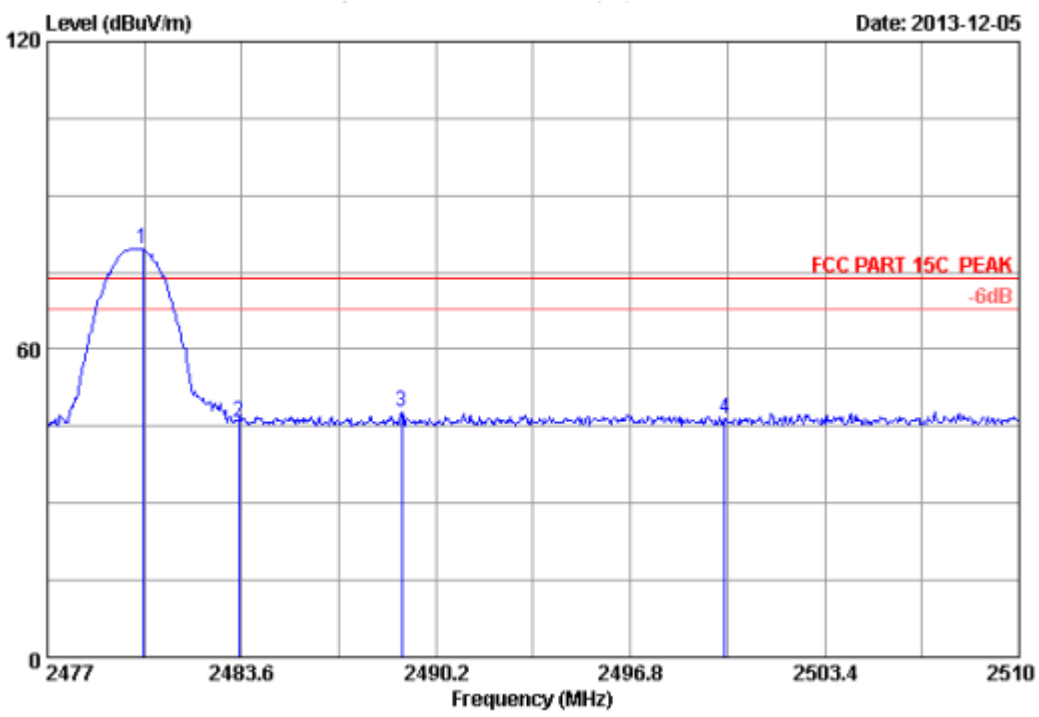


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.36	5.91	35.70	81.76	80.33			Peak



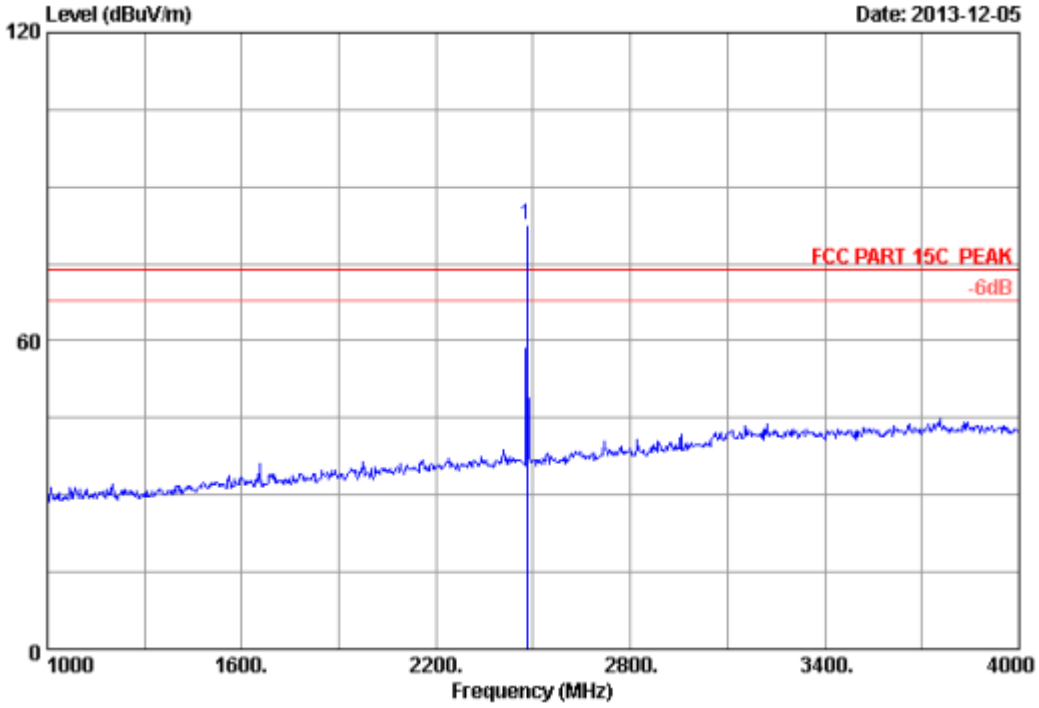


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4960.000	33.13	8.72	35.70	45.86	52.01	74.00	21.99	Peak

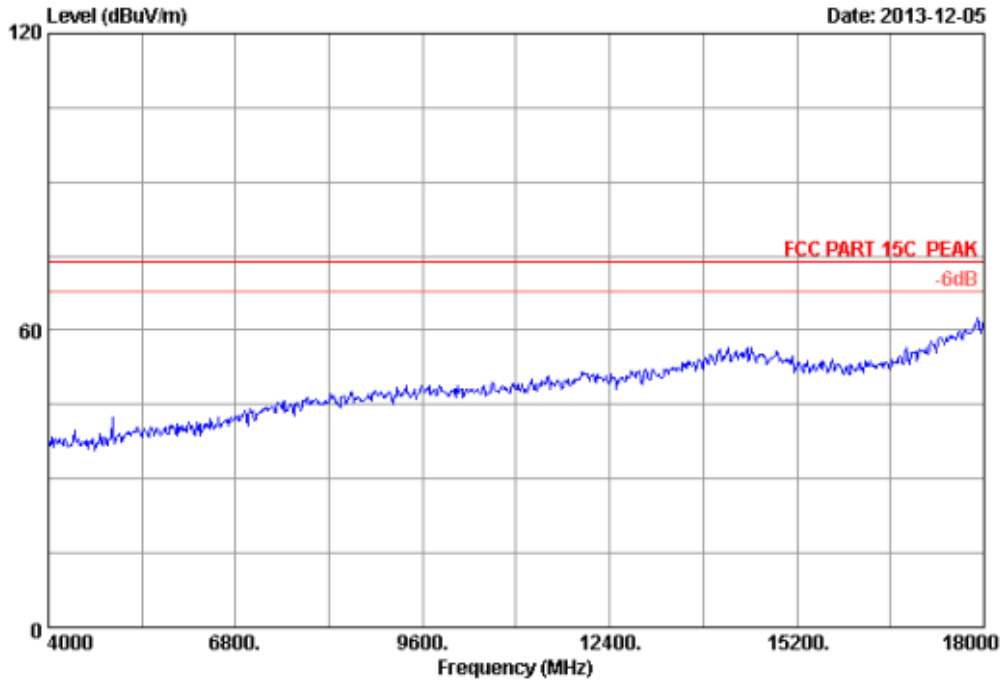


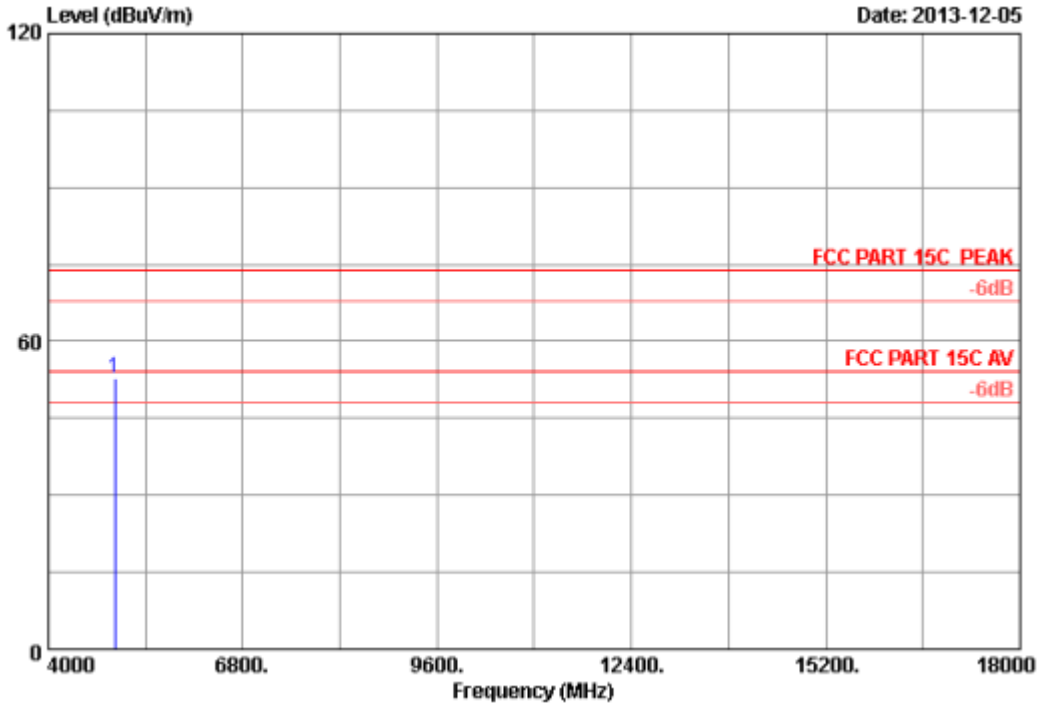
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.234	28.36	5.91	35.70	81.12	79.69			Peak
2	2483.500	28.36	5.92	35.70	47.24	45.82	74.00	28.18	Peak
3	2489.045	28.38	5.93	35.70	49.25	47.86	74.00	26.14	Peak
4	2500.000	28.40	5.94	35.70	47.93	46.57	74.00	27.43	Peak

6.3.20 Diagram 6-20

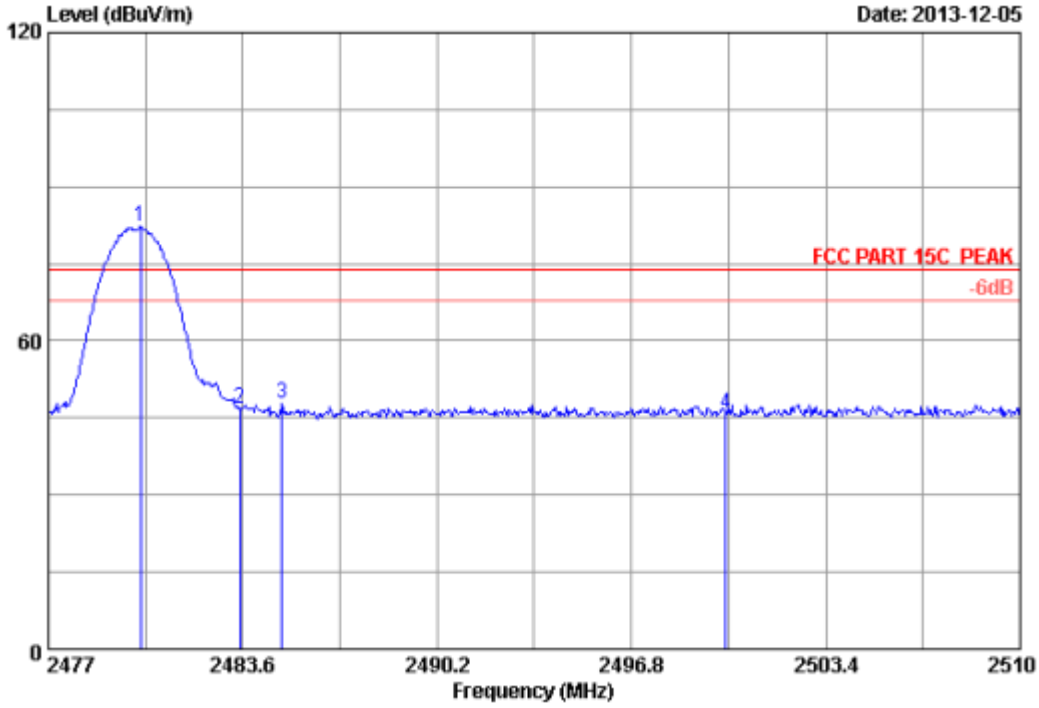


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.36	5.91	35.70	83.95	82.52			Peak





	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	4960.000	33.13	8.72	35.70	46.60	52.75	74.00	21.25	Peak



	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	28.36	5.91	35.70	83.65	82.22			Peak
2	2483.500	28.36	5.92	35.70	48.10	46.68	74.00	27.32	Peak
3	2484.920	28.37	5.92	35.70	49.04	47.63	74.00	26.37	Peak
4	2500.000	28.40	5.94	35.70	47.04	45.68	74.00	28.32	Peak

7. 20 dB & 99%bandwidth Test

7.1 Test Procedure

Clause 15.215(c) 20dB Bandwidth:

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in15.217 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. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

7.2 Measurement Equipment

Item	Equipment	Last Calibration	Type	Serial No.	Manufacturer
1	Spectrum	May.08, 13	E4446A	US44300459	Agilent

7.3 Test Result:

Modulation	Channel	99% bandwidth (kHz)	20dB bandwidth (kHz)
GFSK	CHL	831.49	843.6
	CHM	831.09	838.2
	CHH	833.17	848.1

GFSK diagrams are as below:


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT
ALIGN AUTO
07:21:54 PM Dec 13, 2013
Ref Value 11.00 dBm
Center Freq: 2.402000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 20 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Center 2.402 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
Occupied Bandwidth
831.49 kHz
Total Power 5.04 dBm
Transmit Freq Error -7.471 kHz
OBW Power 99.00 %
x dB Bandwidth 843.6 kHz
x dB -20.00 dB
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT
ALIGN AUTO
07:22:20 PM Dec 13, 2013
Center Freq 2.441000000 GHz
Center Freq: 2.441000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 20 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Center 2.441 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
Occupied Bandwidth
831.09 kHz
Total Power 4.99 dBm
Transmit Freq Error -8.153 kHz
OBW Power 99.00 %
x dB Bandwidth 838.2 kHz
x dB -20.00 dB
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
07:22:43 PM Dec 13, 2013
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 20 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
Occupied Bandwidth
833.17 kHz
Total Power
3.35 dBm
Transmit Freq Error
-7.653 kHz
OBW Power
99.00 %
x dB Bandwidth
848.1 kHz
x dB
-20.00 dB
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
MSG
STATUS

Modulation	Channel	99% bandwidth(MHz)	20dB bandwidth(MHz)
8DPSK	CHL	1.2272	1.211
	CHM	1.1778	1.207
	CHH	1.1508	1.208

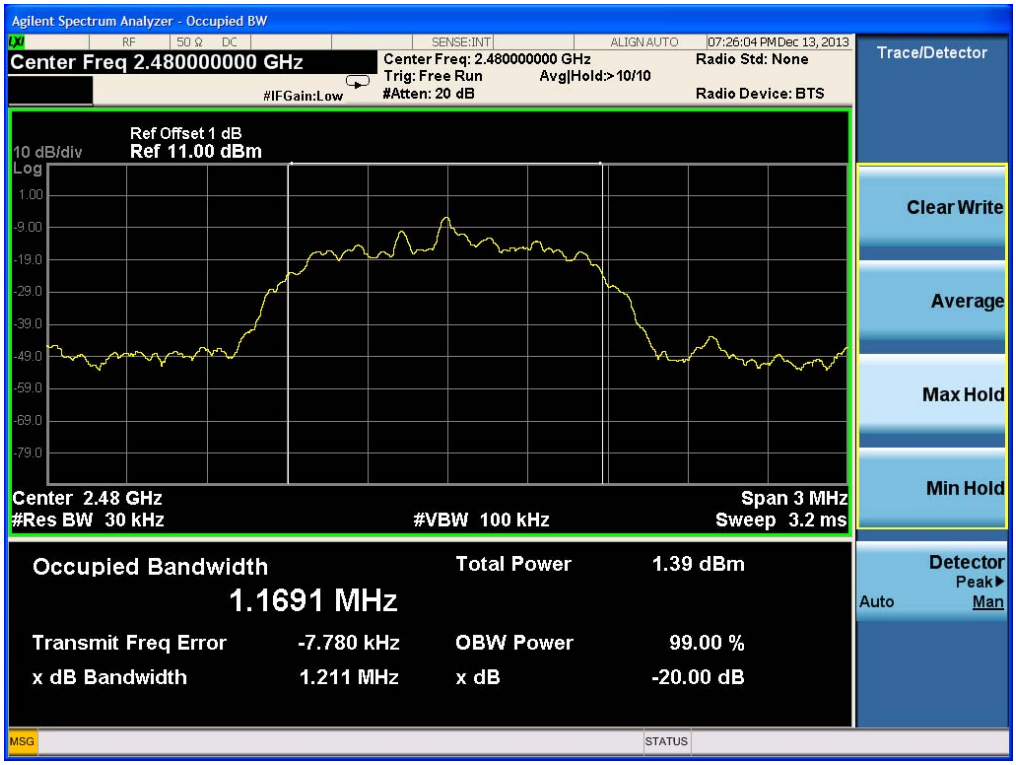
8DPSK diagrams are as below:


Agilent Spectrum Analyzer - Occupied BW
RF
50 Ω
DC
SENSE:INT
ALIGN AUTO
07:24:24 PM Dec 13, 2013
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 20 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Trace/Detector
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
Clear Write
Average
Max Hold
Min Hold
Occupied Bandwidth
1.1508 MHz
Total Power
1.82 dBm
Transmit Freq Error
8.097 kHz
OBW Power
99.00 %
x dB Bandwidth
1.208 MHz
x dB
-20.00 dB
Detector
Peak
Auto
Man
MSG
STATUS

Modulation	Channel	99% bandwidth(MHz)	20dB bandwidth(MHz)
π/4 DQPSK	CHL	1.2695	1.210
	CHM	1.2066	1.215
	CHH	1.1691	1.211

π/4 DQPSK diagrams are as below:


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT
ALIGN AUTO
07:25:40 PM Dec 13, 2013
Center Freq 2.441000000 GHz
Center Freq: 2.441000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 20 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Center 2.441 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
Occupied Bandwidth
1.2066 MHz
Total Power
4.04 dBm
Transmit Freq Error
-4.215 kHz
OBW Power
99.00 %
x dB Bandwidth
1.215 MHz
x dB
-20.00 dB
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω DC
SENSE:INT
ALIGN AUTO
07:26:04 PM Dec 13, 2013
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 20 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
1.00
-9.00
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
Occupied Bandwidth
1.1691 MHz
Total Power
1.39 dBm
Transmit Freq Error
-7.780 kHz
OBW Power
99.00 %
x dB Bandwidth
1.211 MHz
x dB
-20.00 dB
Clear Write
Average
Max Hold
Min Hold
Detector
Peak
Auto
Man
MSG
STATUS

8. Band Edge Compliance Test

8.1 Test Procedure

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

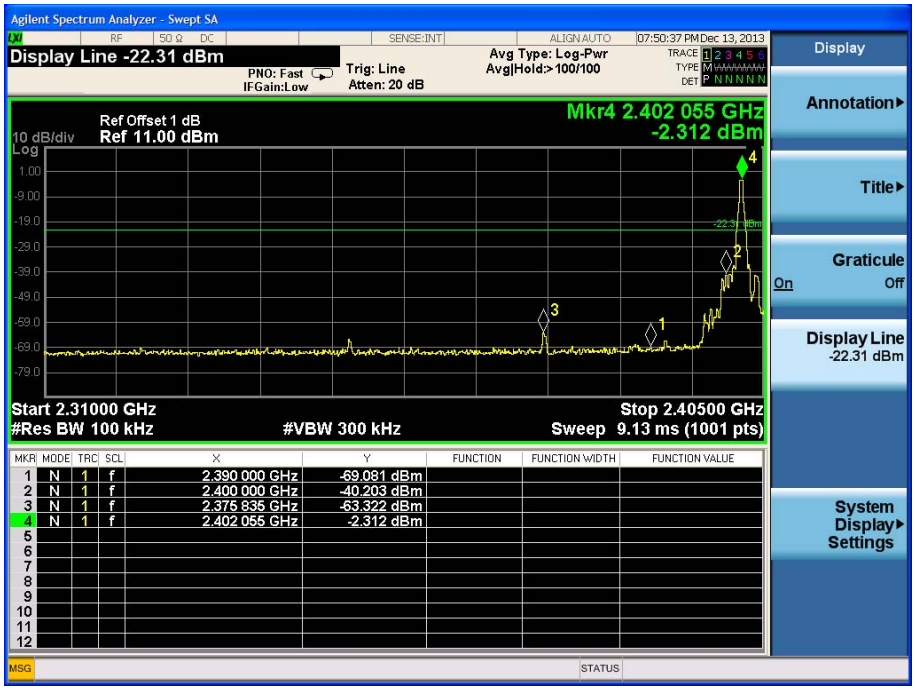
8.2 Measurement Equipment

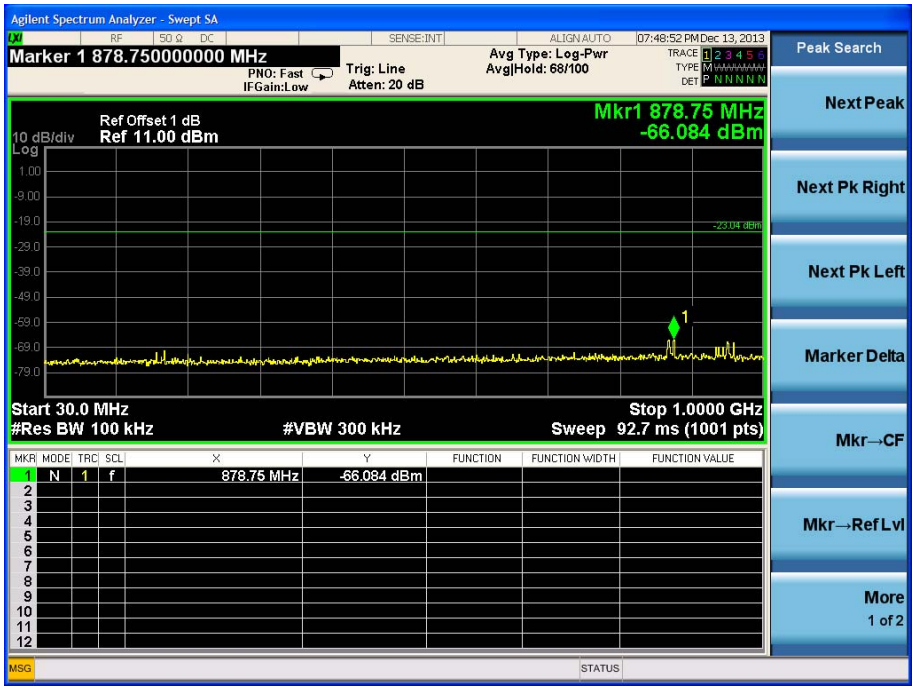
Item	Equipment	Last Calibration	Type	Serial No.	Manufacturer
1	Spectrum	May.08, 13	E4446A	US44300459	Agilent

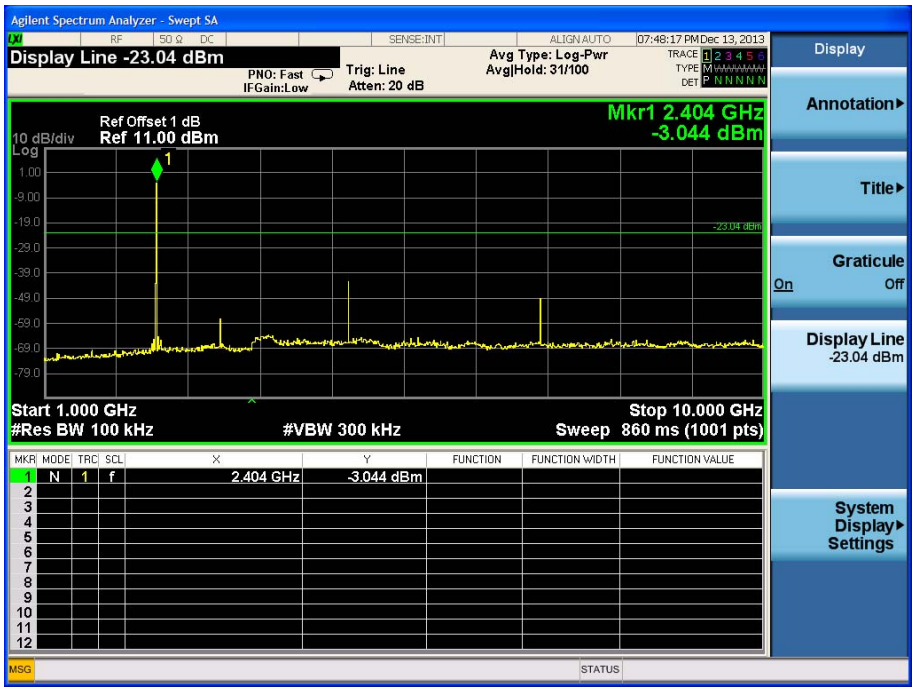
8.3 Test Result

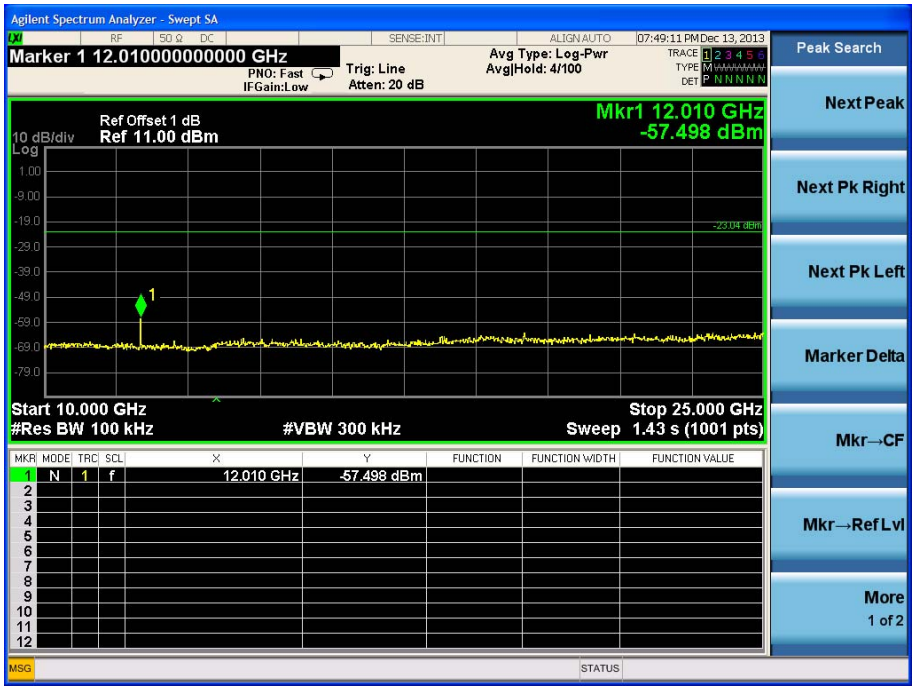
REMARK : Hopping off and Hopping on modes all have been tested, Hopping off mode is the worse case and recorded as below

GFSK Hopping off CHL :

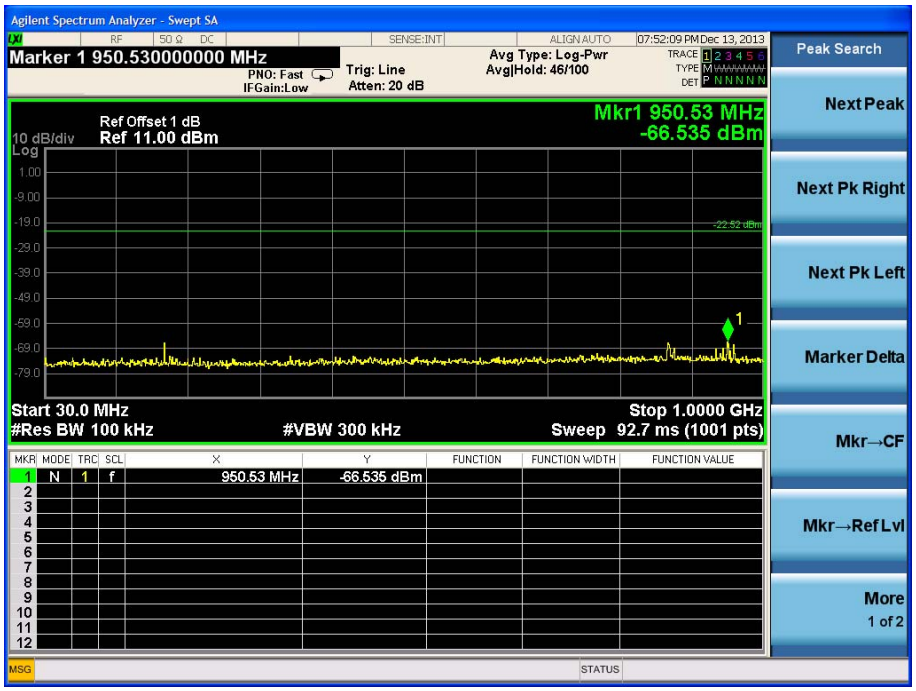


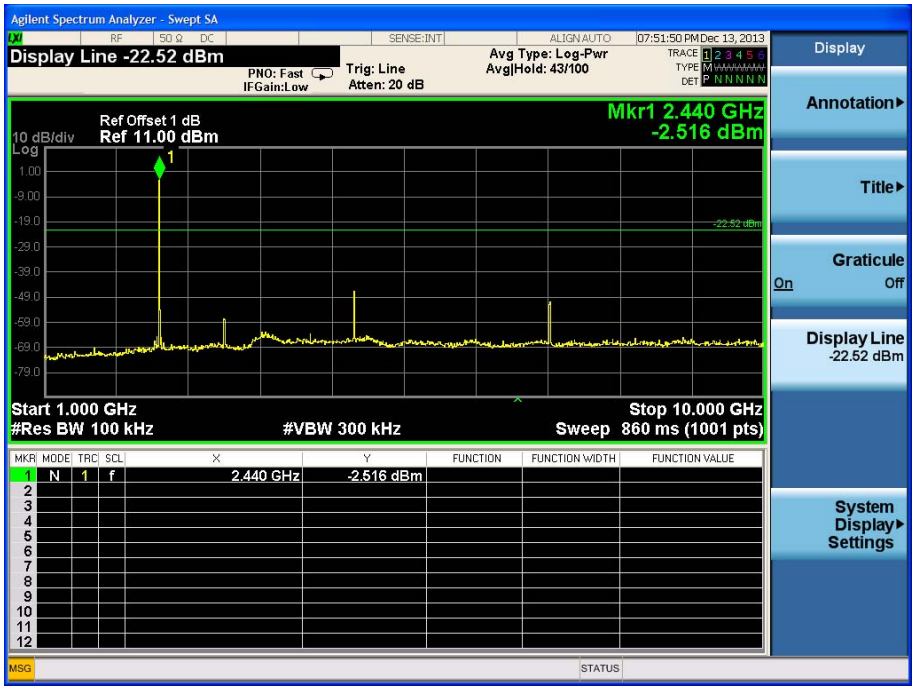

Agilent Spectrum Analyzer - Swept SA
Marker 1 878.750000000 MHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 68/100
07:48:52 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 878.75 MHz
-66.084 dBm
-23.04 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.7 ms (1001 pts)
1 N 1 f 878.75 MHz -66.084 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

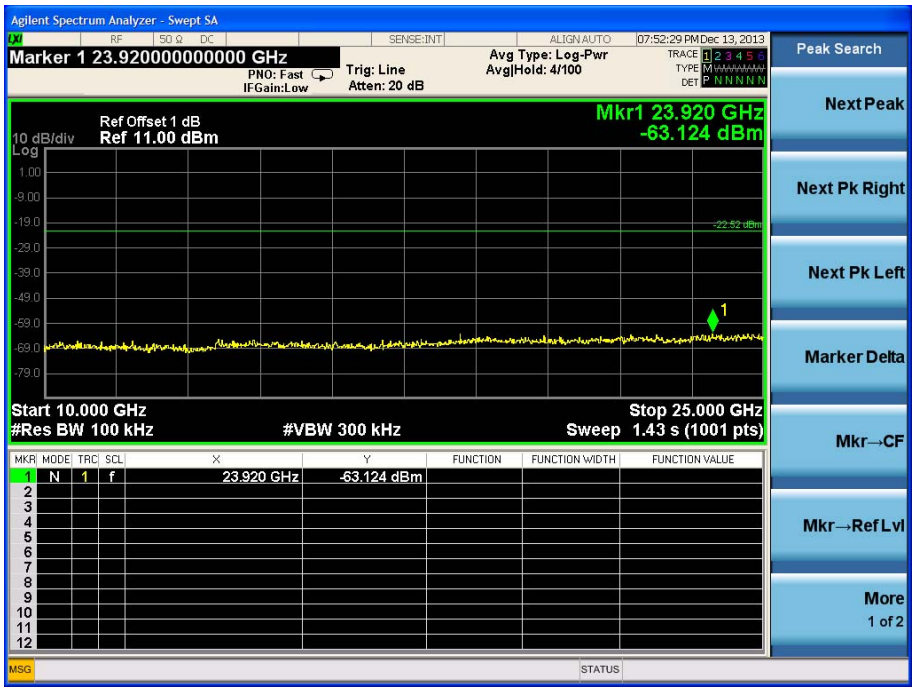

Agilent Spectrum Analyzer - Swept SA
Display Line -23.04 dBm
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 31/100
07:48:17 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 2.404 GHz
-3.044 dBm
-23.04 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 860 ms (1001 pts)
1 N 1 f 2.404 GHz -3.044 dBm
Display
Annotation
Title
Graticule
On Off
Display Line
-23.04 dBm
System
Display
Settings
MSG
STATUS



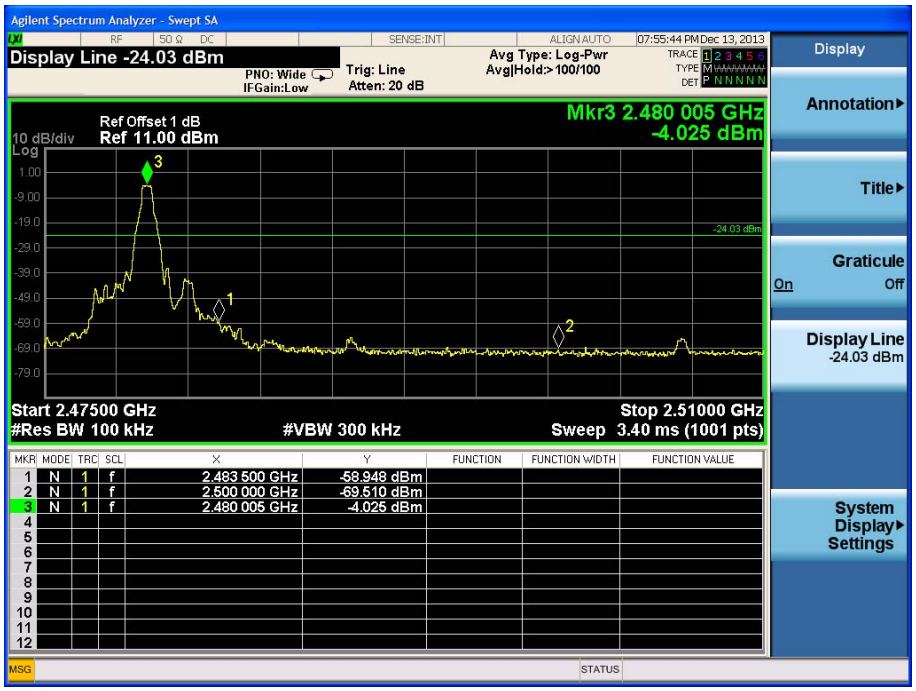
GFSK Hopping off CHM:

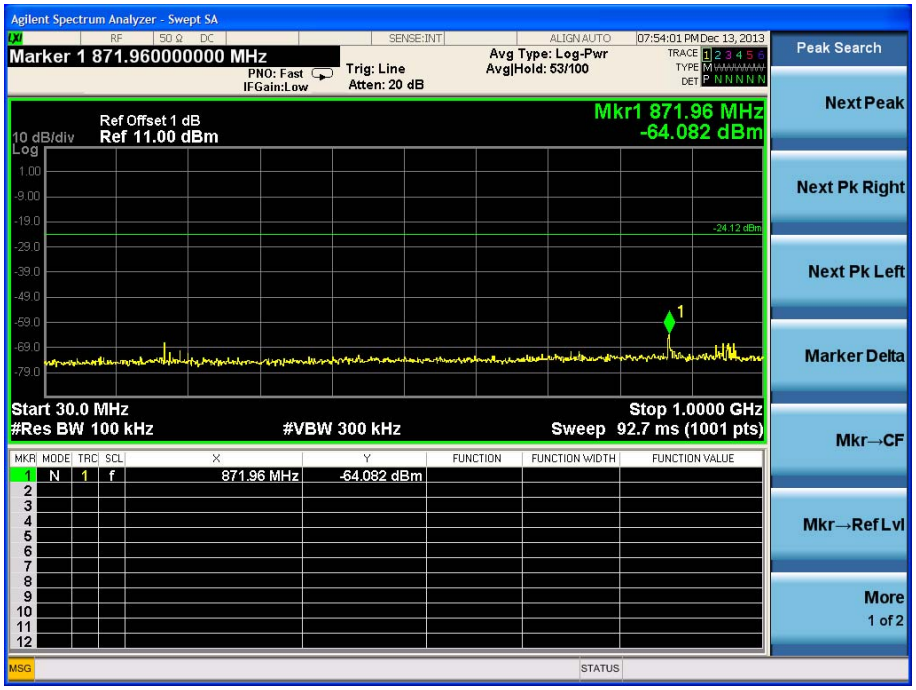


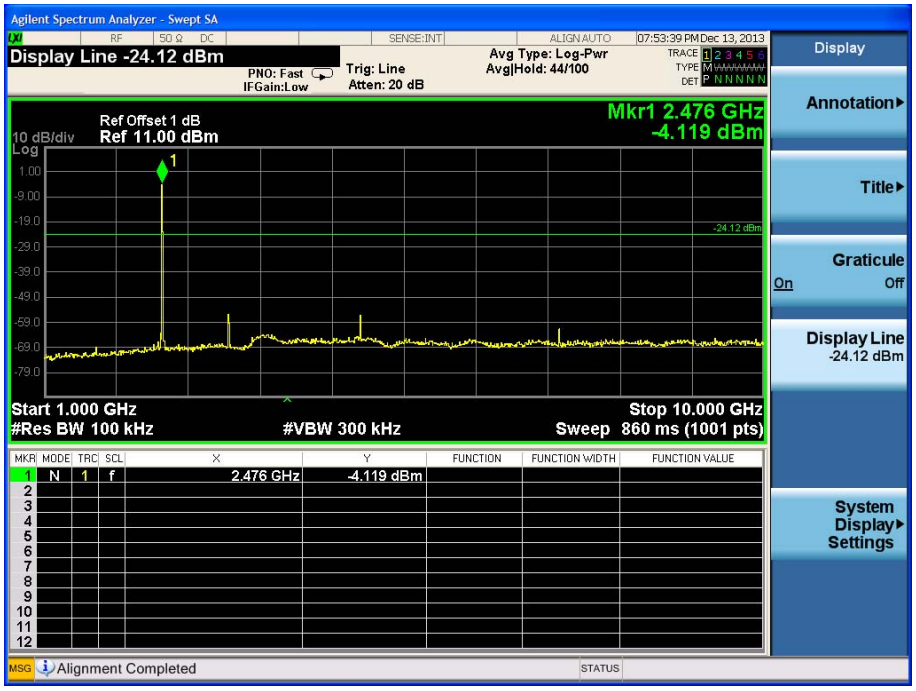

Agilent Spectrum Analyzer - Swept SA
Display Line -22.52 dBm
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 43/100
07:51:50 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 2.440 GHz
-2.516 dBm
-22.52 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 860 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.440 GHz -2.516 dBm
Display
Annotation
Title
Graticule
On Off
Display Line
-22.52 dBm
System
Display
Settings
MSG
STATUS

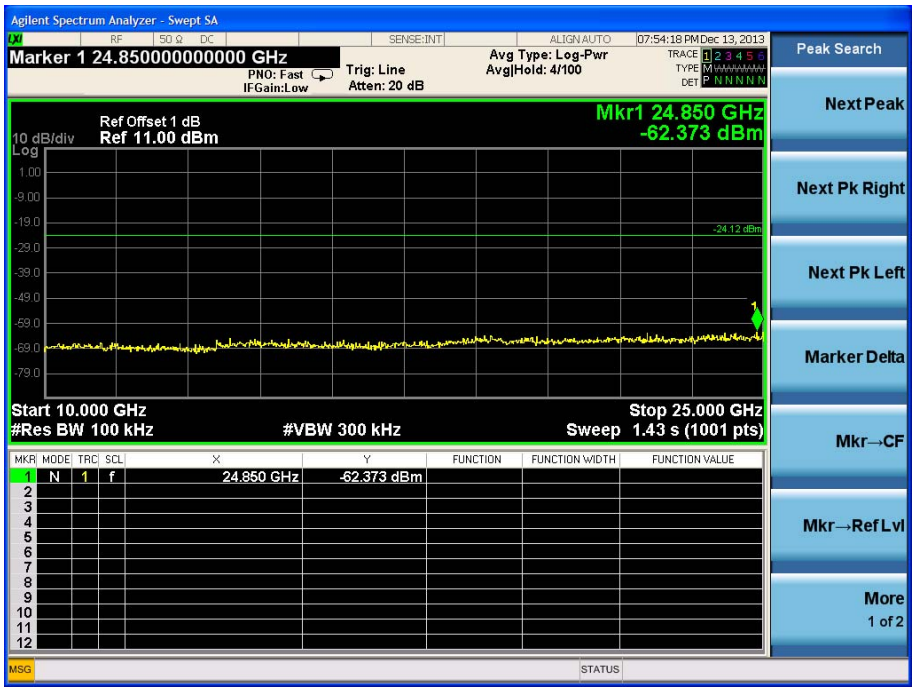

Agilent Spectrum Analyzer - Swept SA
Marker 1 23.920000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 4/100
07:52:29 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 23.920 GHz
-63.124 dBm
-22.52 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 1.43 s (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.920 GHz -63.124 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

GFSK Hopping off CHH :

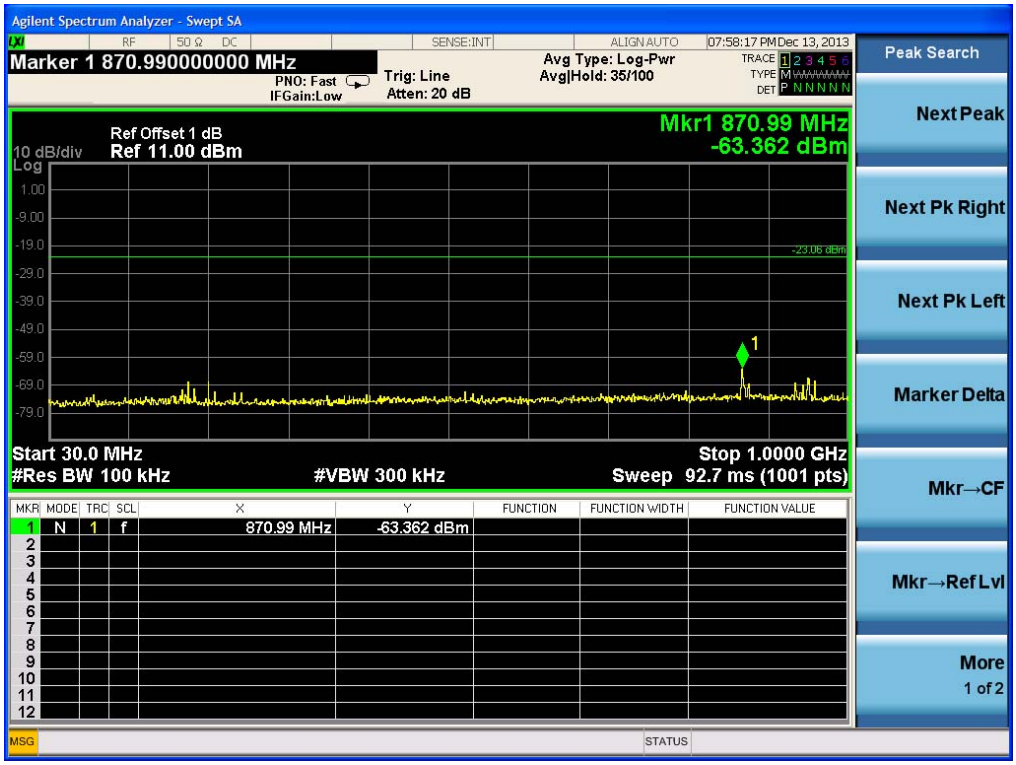


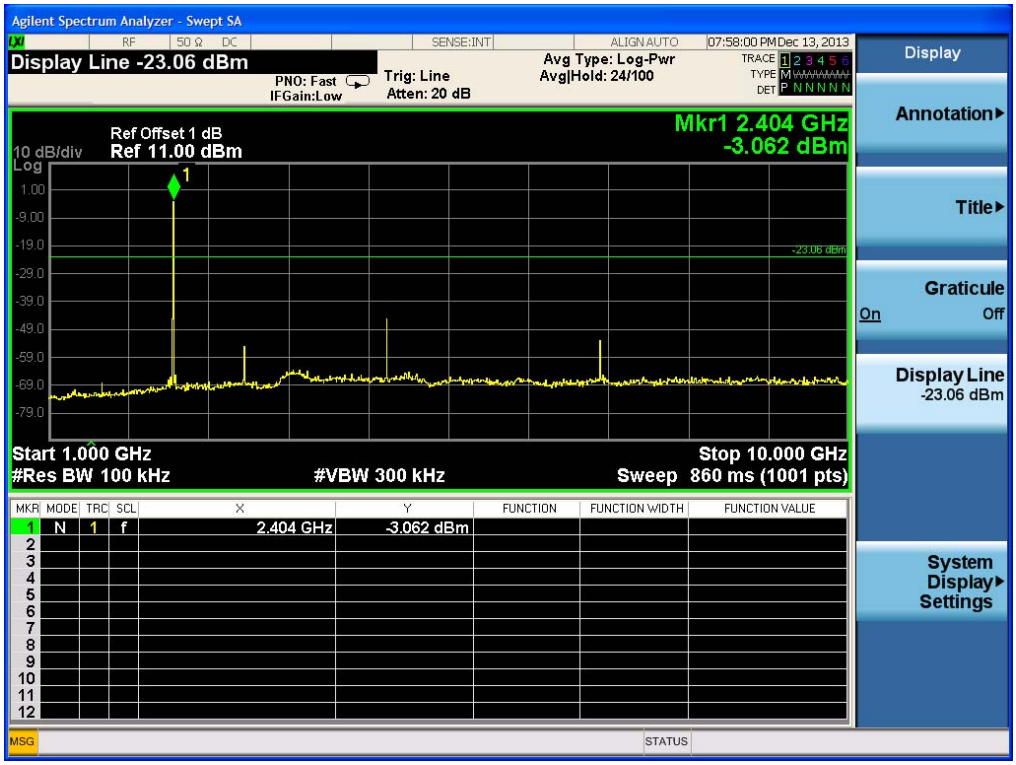


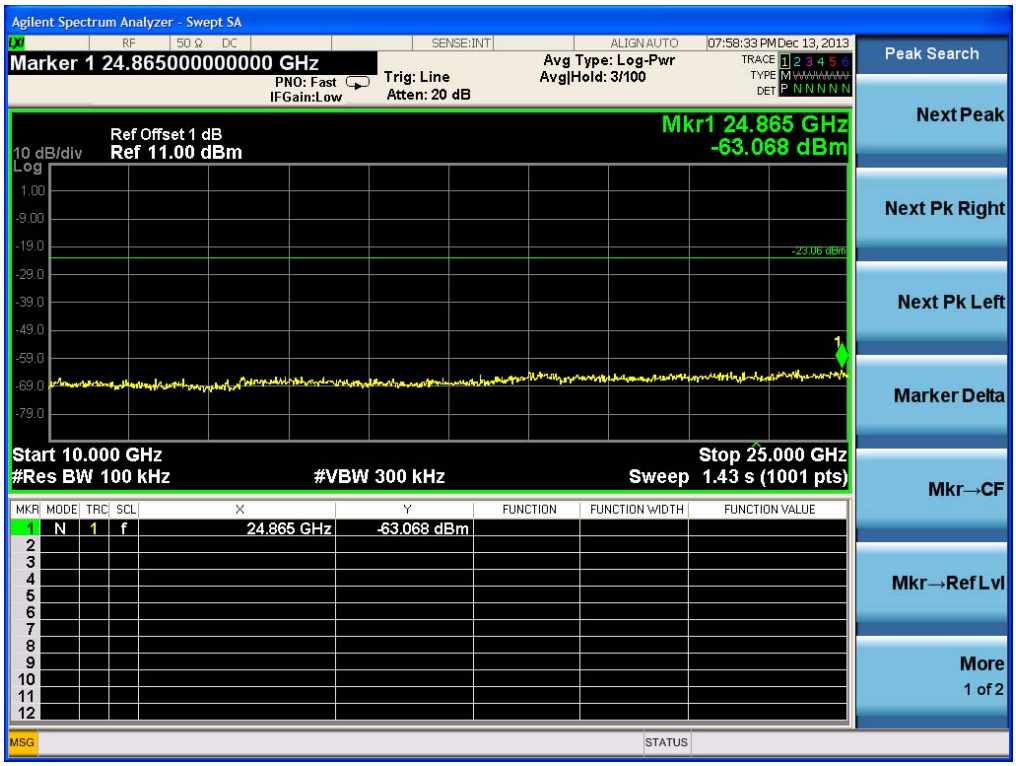

Agilent Spectrum Analyzer - Swept SA
Display Line -24.12 dBm
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
07:53:39 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 2.476 GHz
-4.119 dBm
-24.12 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 860 ms (1001 pts)
1 N 1 f 2.476 GHz -4.119 dBm
Alignment Completed
Display
Annotation
Title
Graticule
On Off
Display Line
-24.12 dBm
System
Display
Settings


Agilent Spectrum Analyzer - Swept SA
Marker 1 24.850000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 4/100
07:54:18 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 24.850 GHz
-62.373 dBm
-24.12 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 24.850 GHz -62.373 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

8DPSK Hopping off CHL :




Agilent Spectrum Analyzer - Swept SA
Display Line -23.06 dBm
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 24/100
07:58:00 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 2.404 GHz
-3.062 dBm
-23.06 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 2.404 GHz -3.062 dBm
Display
Annotation
Title
Graticule
On Off
Display Line
-23.06 dBm
System
Display
Settings
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
Marker 1 24.865000000000 GHz
PNO: Fast
IFGain:Low
Trig: Line
Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
07:58:33 PM Dec 13, 2013
Ref Offset 1 dB
10 dB/div
Ref 11.00 dBm
Log
Mkr1 24.865 GHz
-63.068 dBm
-23.06 dBm
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 1.43 s (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 24.865 GHz -63.068 dBm
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

8DPSK Hopping off CHM :