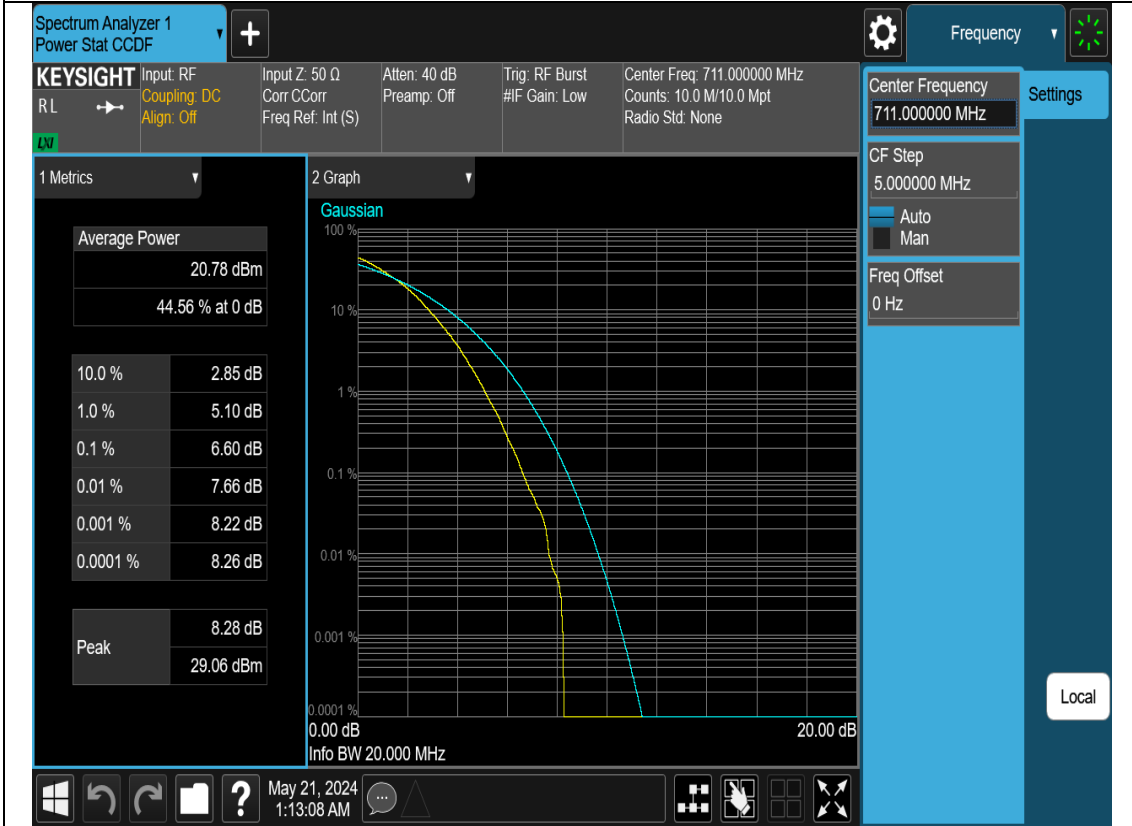


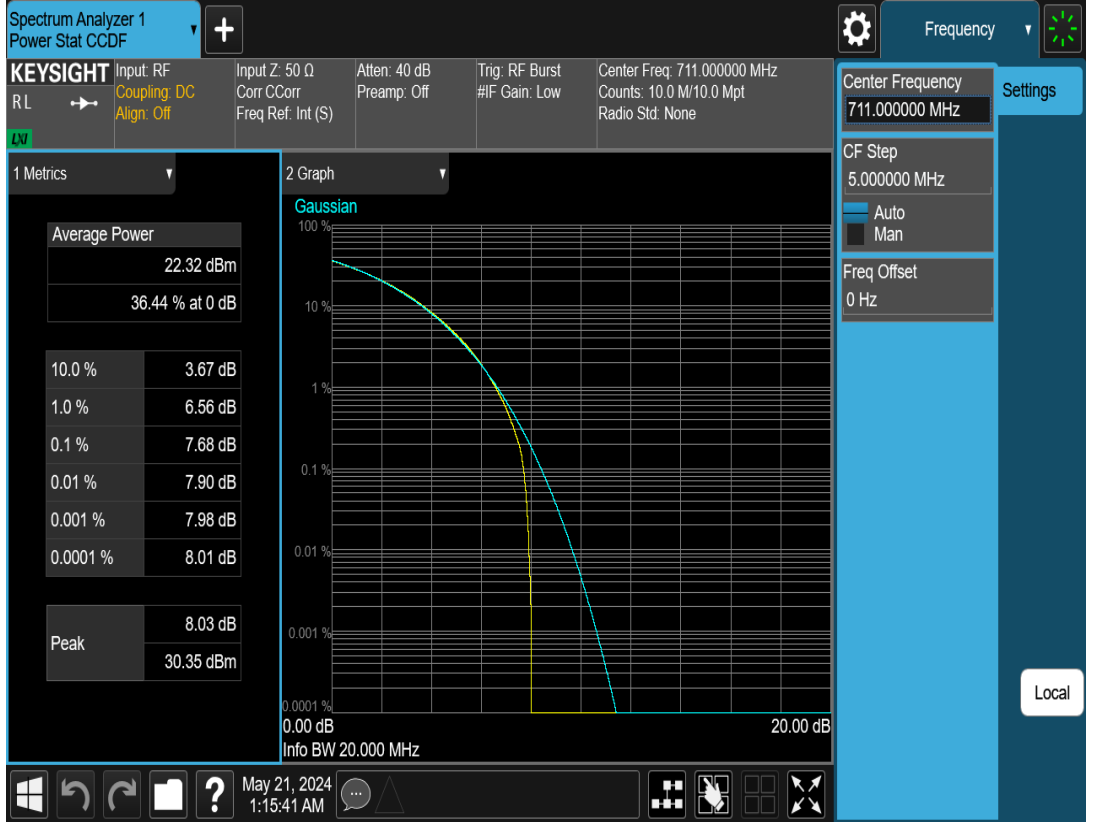
N12-10M-PAPR-H-DFT-s-OFDM-256QAM-Outer_Full



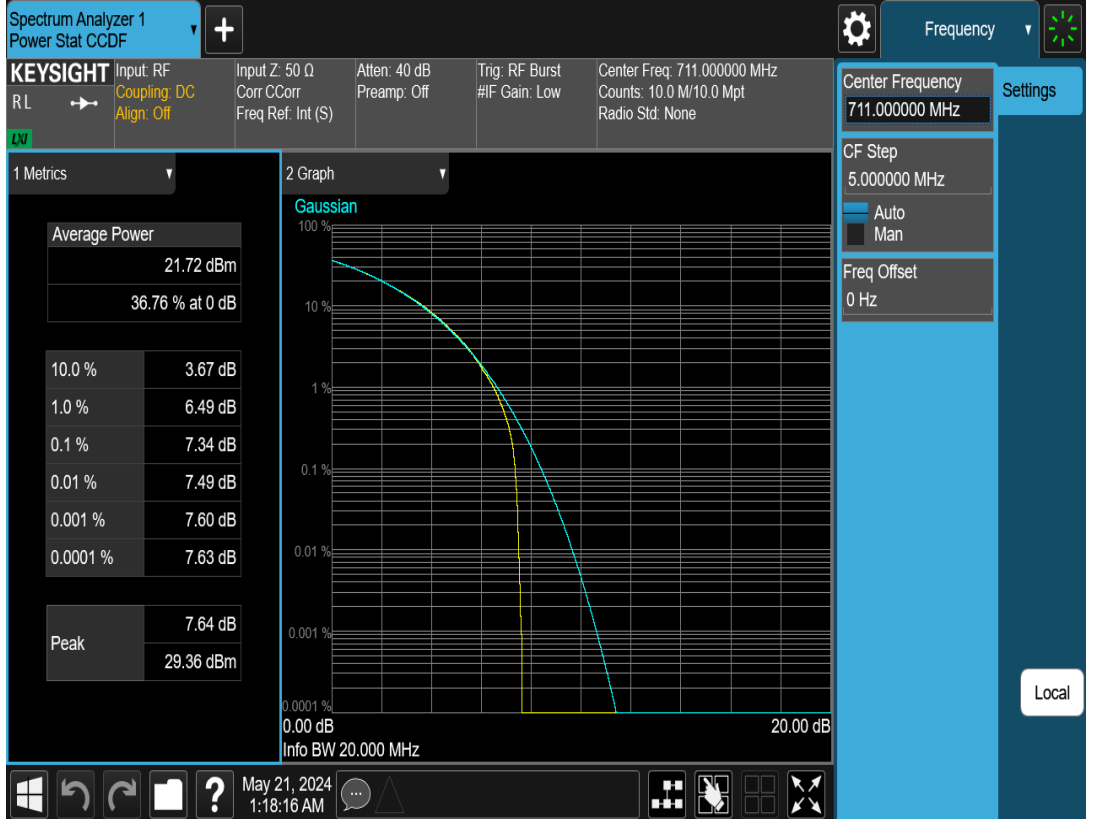
N12-10M-PAPR-H-CP-OFDM-QPSK-Outer_Full



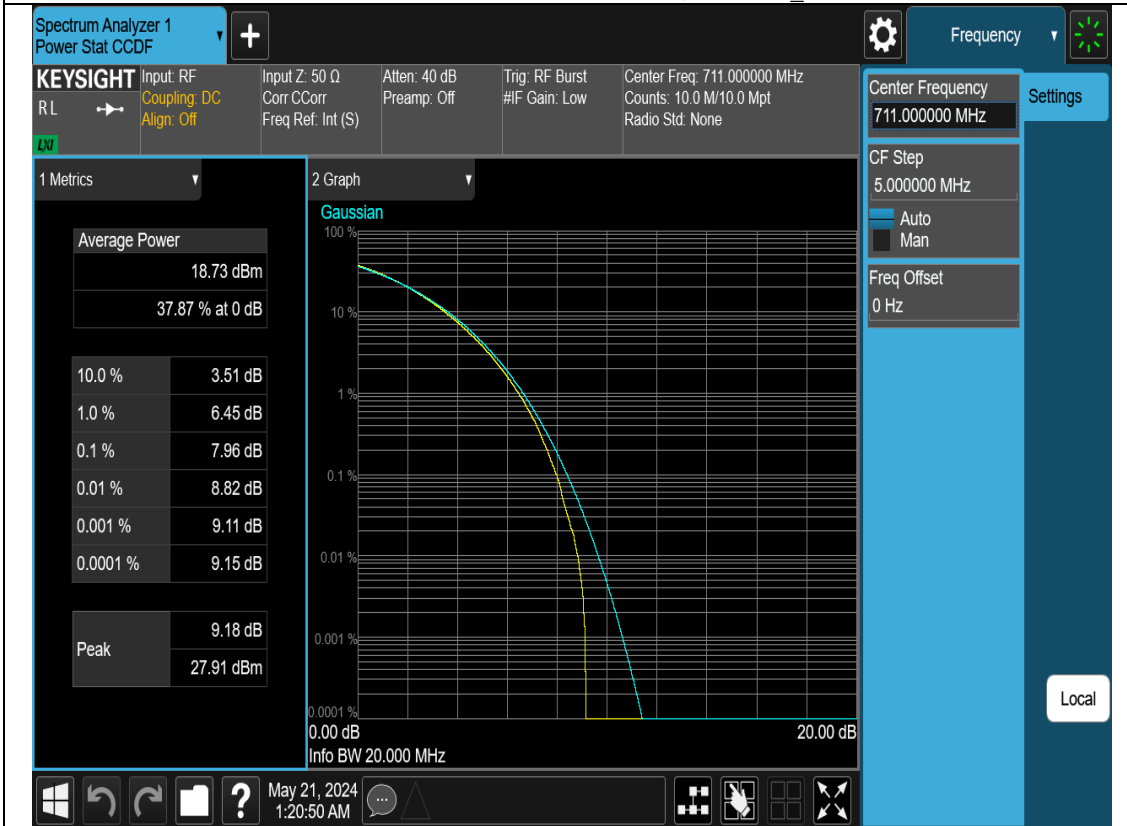
N12-10M-PAPR-H-CP-OFDM-16QAM-Outer_Full



N12-10M-PAPR-H-CP-OFDM-64QAM-Outer_Full



N12-10M-PAPR-H-CP-OFDM-256QAM-Outer_Full



N12-15M-PAPR-L-DFT-s-OFDM-Pi2 BPSK-Outer_Full



N12-15M-PAPR-L-DFT-s-OFDM-QPSK-Outer_Full



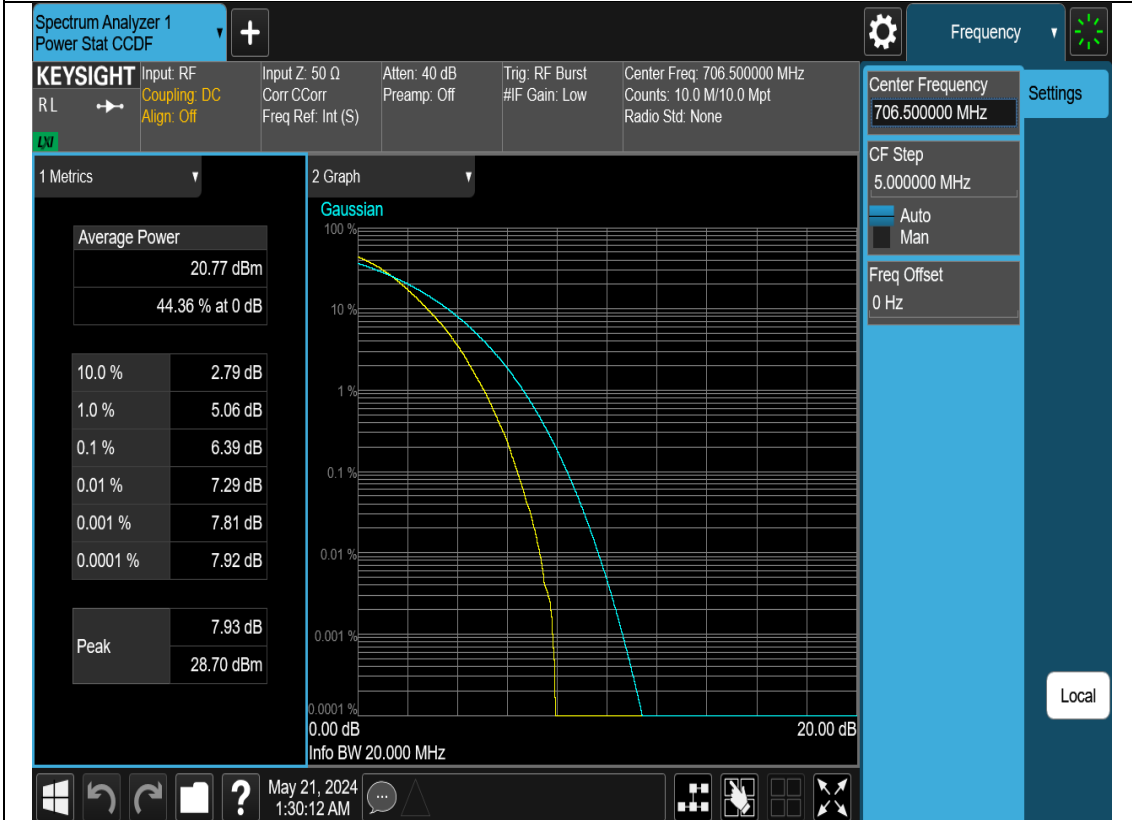
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N12-15M-PAPR-L-DFT-s-OFDM-64QAM-Outer_Full



N12-15M-PAPR-L-DFT-s-OFDM-256QAM-Outer_Full



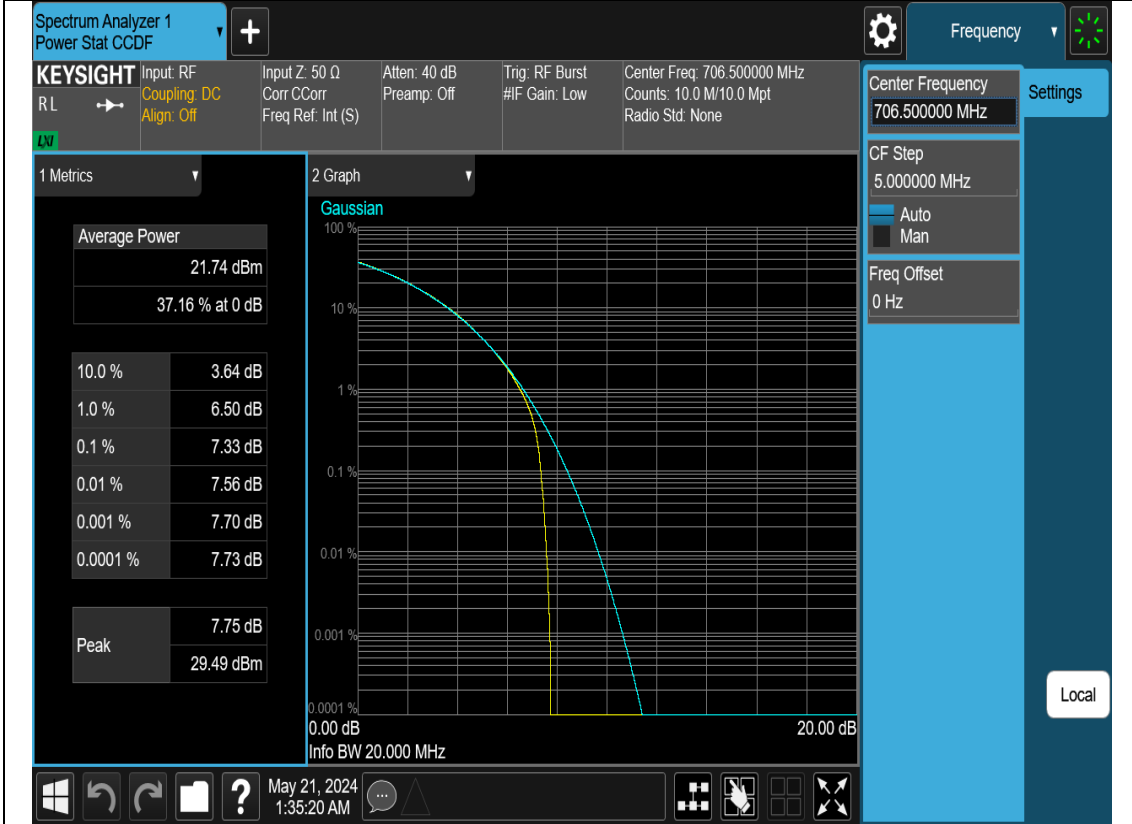
N12-15M-PAPR-L-CP-OFDM-QPSK-Outer_Full



N12-15M-PAPR-L-CP-OFDM-16QAM-Outer_Full



N12-15M-PAPR-L-CP-OFDM-64QAM-Outer_Full



N12-15M-PAPR-L-CP-OFDM-256QAM-Outer_Full



N12-15M-PAPR-M-DFT-s-OFDM-Pi2 BPSK-Outer_Full

Spectrum Analyzer 1
Power Stat CCDF

KEYSIGHT Input: RF
R L Coupling: DC
Align: Off

Input Z: 50 Ω
Corr: CCorr
Freq Ref: Int (S)

Atten: 40 dB
Preamp: Off

Trig: RF Burst
#IF Gain: Low

Center Freq: 707.500000 MHz
Counts: 10.0 M/10.0 Mpt
Radio Std: None

Center Frequency: 707.500000 MHz
CF Step: 5.000000 MHz
Freq Offset: 0 Hz

1 Metrics

Average Power

24.65 dBm
48.10 % at 0 dB

10.0 %	1.82 dB
1.0 %	3.26 dB
0.1 %	4.03 dB
0.01 %	4.36 dB
0.001 %	4.50 dB
0.0001 %	4.54 dB

Peak

4.56 dB
29.21 dBm

2 Graph

Gaussian

100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.00 dB
20.00 dB
Info BW 20.000 MHz

May 21, 2024 2:05:27 AM

Local

N12-15M-PAPR-M-DFT-s-OFDM-QPSK-Outer_Full

Spectrum Analyzer 1
Power Stat CCDF

KEYSIGHT Input: RF
R L Coupling: DC
Align: Off

Input Z: 50 Ω
Corr: CCorr
Freq Ref: Int (S)

Atten: 40 dB
Preamp: Off

Trig: RF Burst
#IF Gain: Low

Center Freq: 707.500000 MHz
Counts: 10.0 M/10.0 Mpt
Radio Std: None

Center Frequency: 707.500000 MHz
CF Step: 5.000000 MHz
Freq Offset: 0 Hz

1 Metrics

Average Power

24.20 dBm
46.87 % at 0 dB

10.0 %	2.23 dB
1.0 %	4.35 dB
0.1 %	5.51 dB
0.01 %	5.90 dB
0.001 %	6.04 dB
0.0001 %	6.08 dB

Peak

6.09 dB
30.29 dBm

2 Graph

Gaussian

100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0.00 dB
20.00 dB
Info BW 20.000 MHz

May 21, 2024 1:23:26 AM

Local

N12-15M-PAPR-M-DFT-s-OFDM-16QAM-Outer_Full



N12-15M-PAPR-M-DFT-s-OFDM-64QAM-Outer_Full



N12-15M-PAPR-M-DFT-s-OFDM-256QAM-Outer_Full

Spectrum Analyzer 1
Power Stat CCDF

KEYSIGHT Input: RF
R L Coupling: DC
Align: Off

Input Z: 50 Ω
Corr: CCorr
Freq Ref: Int (S)

Atten: 40 dB
Preamp: Off

Trig: RF Burst
#IF Gain: Low

Center Freq: 707.500000 MHz
Counts: 10.0 M/10.0 Mpt
Radio Std: None

Center Frequency: 707.500000 MHz
CF Step: 5.000000 MHz
Freq Offset: 0 Hz

1 Metrics

Average Power
20.71 dBm
44.64 % at 0 dB

10.0 %	2.78 dB
1.0 %	5.06 dB
0.1 %	6.40 dB
0.01 %	7.28 dB
0.001 %	7.81 dB
0.0001 %	7.92 dB

Peak
7.94 dB
28.65 dBm

2 Graph
Gaussian

0.0001 %
0.001 %
0.01 %
0.1 %
1 %
10 %
100 %

0.00 dB
20.00 dB

Info BW 20.000 MHz

May 21, 2024 1:31:03 AM

Local

N12-15M-PAPR-M-CP-OFDM-QPSK-Outer_Full

Spectrum Analyzer 1
Power Stat CCDF

KEYSIGHT Input: RF
R L Coupling: DC
Align: Off

Input Z: 50 Ω
Corr: CCorr
Freq Ref: Int (S)

Atten: 40 dB
Preamp: Off

Trig: RF Burst
#IF Gain: Low

Center Freq: 707.500000 MHz
Counts: 10.0 M/10.0 Mpt
Radio Std: None

Center Frequency: 707.500000 MHz
CF Step: 5.000000 MHz
Freq Offset: 0 Hz

1 Metrics

Average Power
22.05 dBm
36.57 % at 0 dB

10.0 %	3.70 dB
1.0 %	6.51 dB
0.1 %	7.71 dB
0.01 %	7.99 dB
0.001 %	8.15 dB
0.0001 %	8.19 dB

Peak
8.22 dB
30.27 dBm

2 Graph
Gaussian

0.0001 %
0.001 %
0.01 %
0.1 %
1 %
10 %
100 %

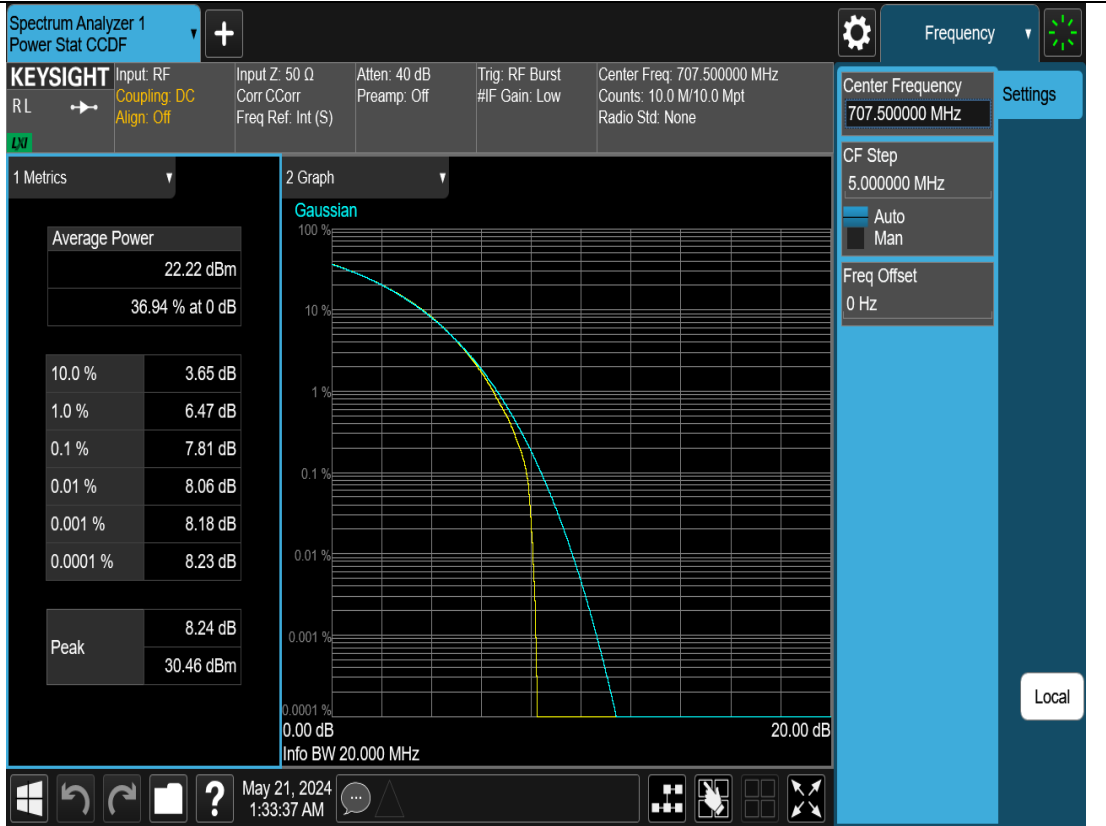
0.00 dB
20.00 dB

Info BW 20.000 MHz

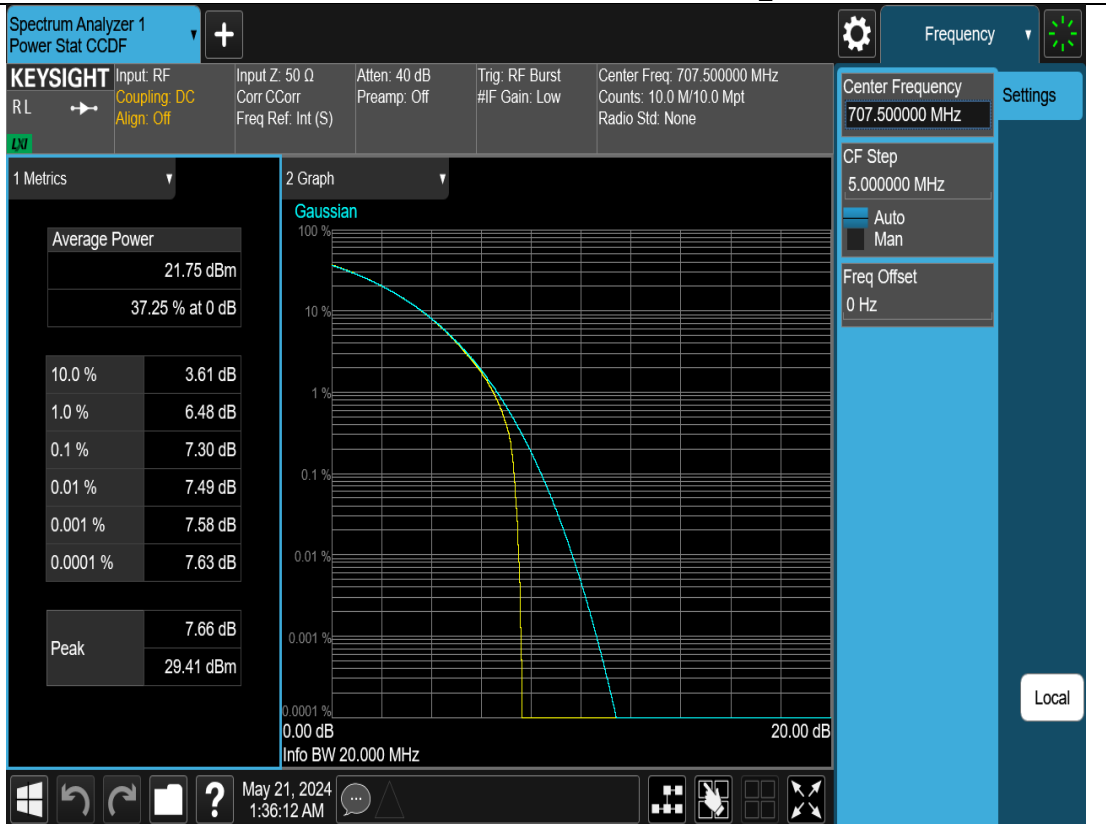
May 21, 2024 2:37:19 AM

Local

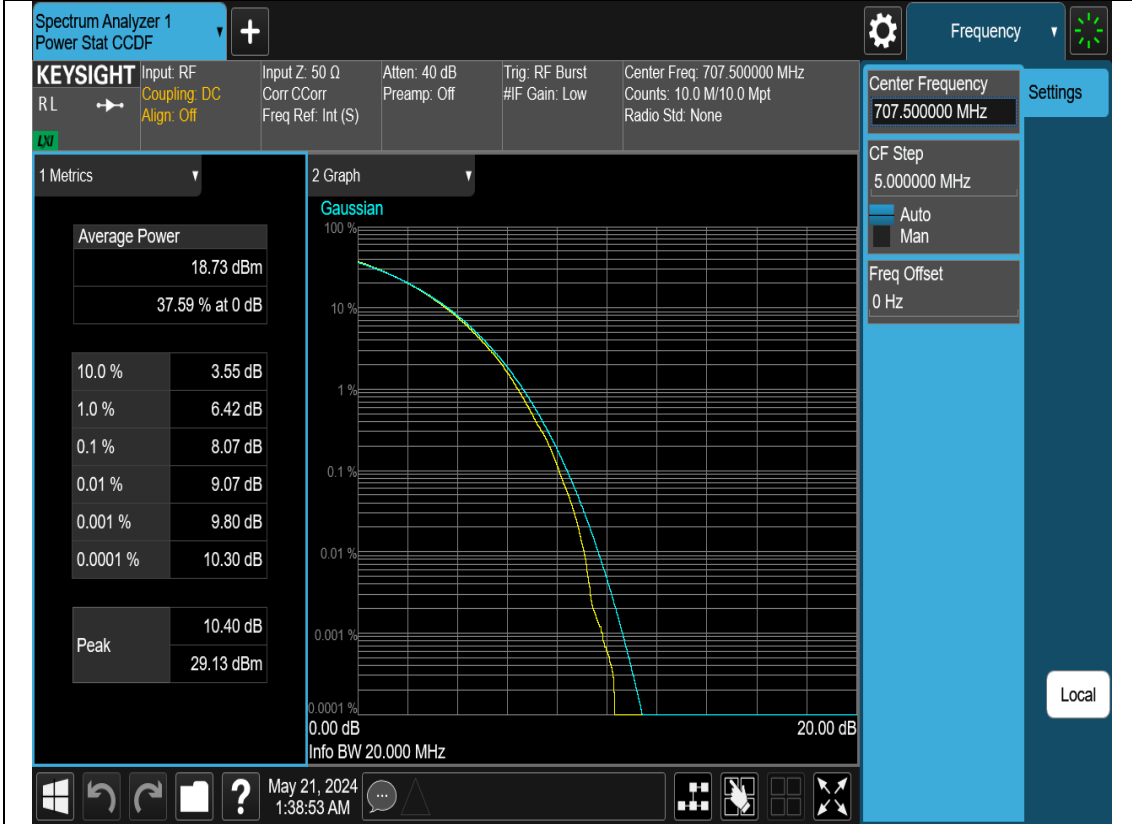
N12-15M-PAPR-M-CP-OFDM-16QAM-Outer_Full



N12-15M-PAPR-M-CP-OFDM-64QAM-Outer_Full



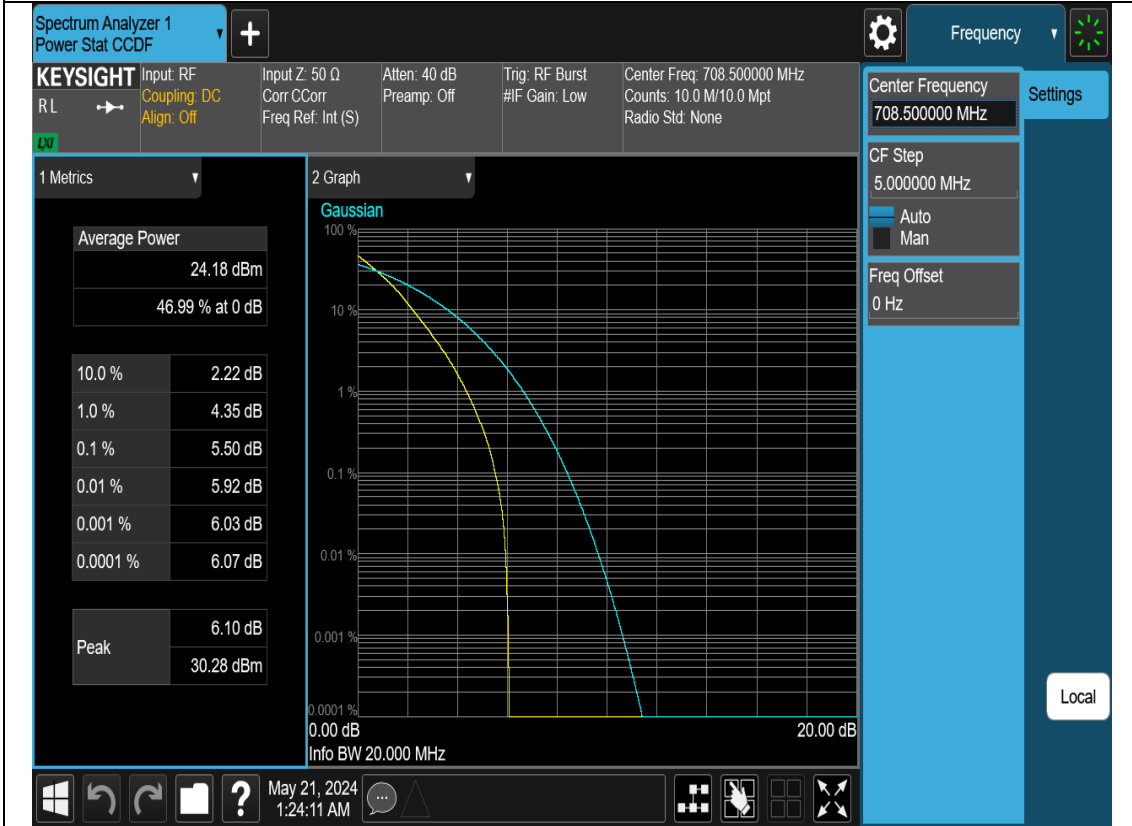
N12-15M-PAPR-M-CP-OFDM-256QAM-Outer_Full



N12-15M-PAPR-H-DFT-s-OFDM-Pi2 BPSK-Outer_Full



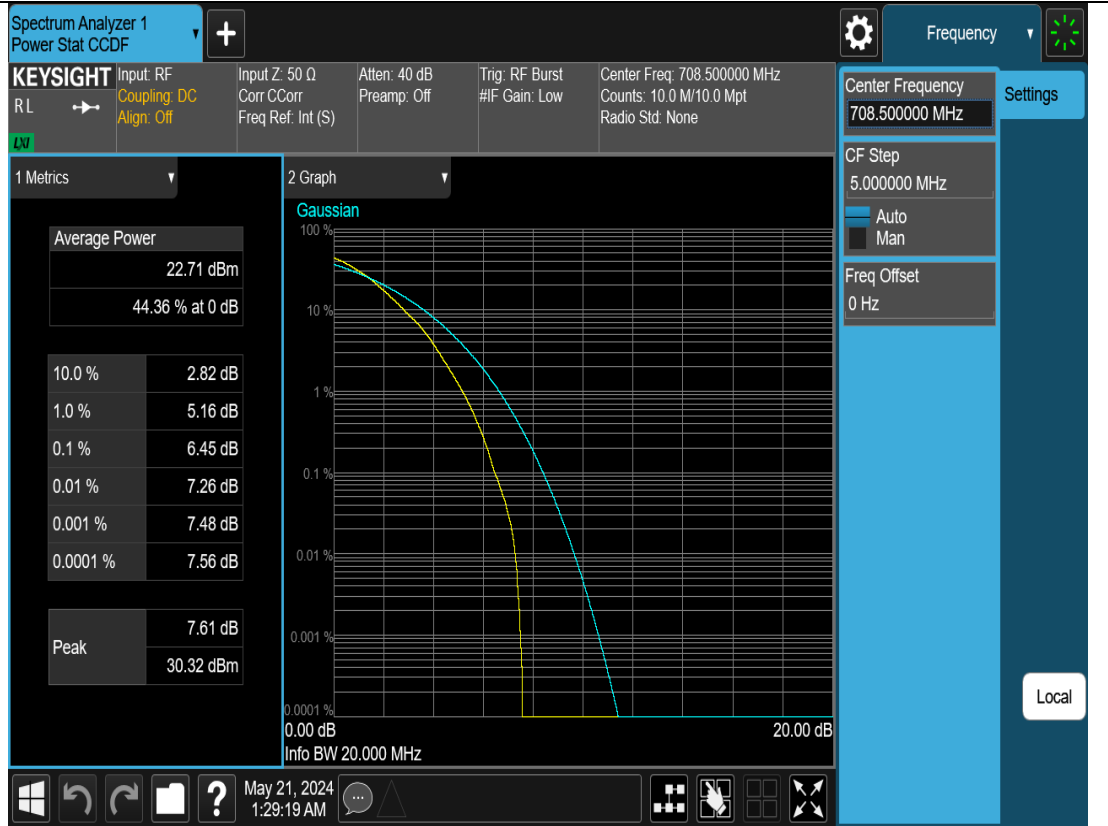
N12-15M-PAPR-H-DFT-s-OFDM-QPSK-Outer_Full



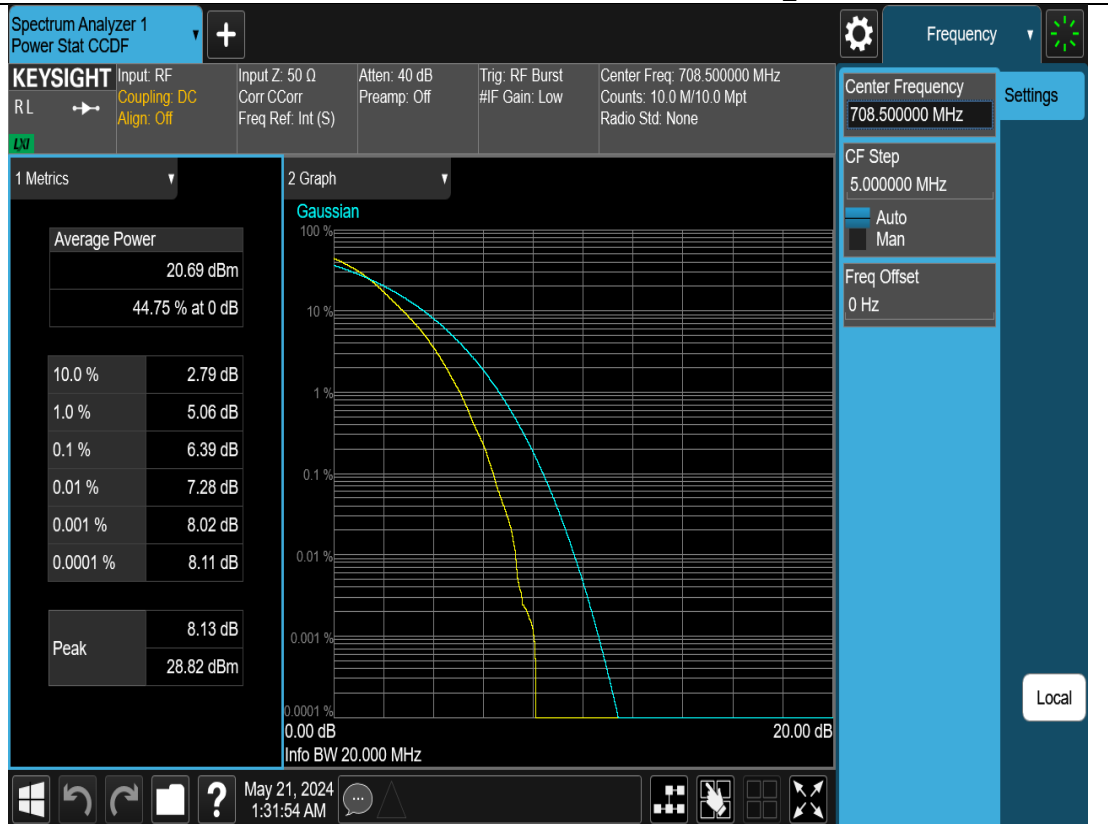
N12-15M-PAPR-H-DFT-s-OFDM-16QAM-Outer_Full



N12-15M-PAPR-H-DFT-s-OFDM-64QAM-Outer_Full



N12-15M-PAPR-H-DFT-s-OFDM-256QAM-Outer_Full



N12-15M-PAPR-H-CP-OFDM-QPSK-Outer_Full

Spectrum Analyzer 1
Power Stat CCDF

KEYSIGHT Input: RF
R L Coupling: DC
Align: Off

Input Z: 50 Ω
Corr: CCorr
Freq Ref: Int (S)

Atten: 40 dB
Preamp: Off

Trig: RF Burst
#IF Gain: Low

Center Freq: 708.500000 MHz
Counts: 10.0 M/10.0 Mpt
Radio Std: None

Center Frequency: 708.500000 MHz
CF Step: 5.000000 MHz
Freq Offset: 0 Hz

1 Metrics

Average Power

22.01 dBm
36.53 % at 0 dB

10.0 %	3.69 dB
1.0 %	6.59 dB
0.1 %	7.74 dB
0.01 %	8.06 dB
0.001 %	8.23 dB
0.0001 %	8.27 dB

Peak

8.28 dB
30.29 dBm

2 Graph

Gaussian

0.0001 %
0.001 %
0.01 %
0.1 %
1 %
10 %
100 %

0.00 dB
20.00 dB

Info BW 20.000 MHz

May 21, 2024
2:38:48 AM

Local

N12-15M-PAPR-H-CP-OFDM-16QAM-Outer_Full

Spectrum Analyzer 1
Power Stat CCDF

KEYSIGHT Input: RF
R L Coupling: DC
Align: Off

Input Z: 50 Ω
Corr: CCorr
Freq Ref: Int (S)

Atten: 40 dB
Preamp: Off

Trig: RF Burst
#IF Gain: Low

Center Freq: 708.500000 MHz
Counts: 10.0 M/10.0 Mpt
Radio Std: None

Center Frequency: 708.500000 MHz
CF Step: 5.000000 MHz
Freq Offset: 0 Hz

1 Metrics

Average Power

22.20 dBm
36.82 % at 0 dB

10.0 %	3.66 dB
1.0 %	6.52 dB
0.1 %	7.82 dB
0.01 %	8.10 dB
0.001 %	8.21 dB
0.0001 %	8.30 dB

Peak

8.32 dB
30.52 dBm

2 Graph

Gaussian

0.0001 %
0.001 %
0.01 %
0.1 %
1 %
10 %
100 %

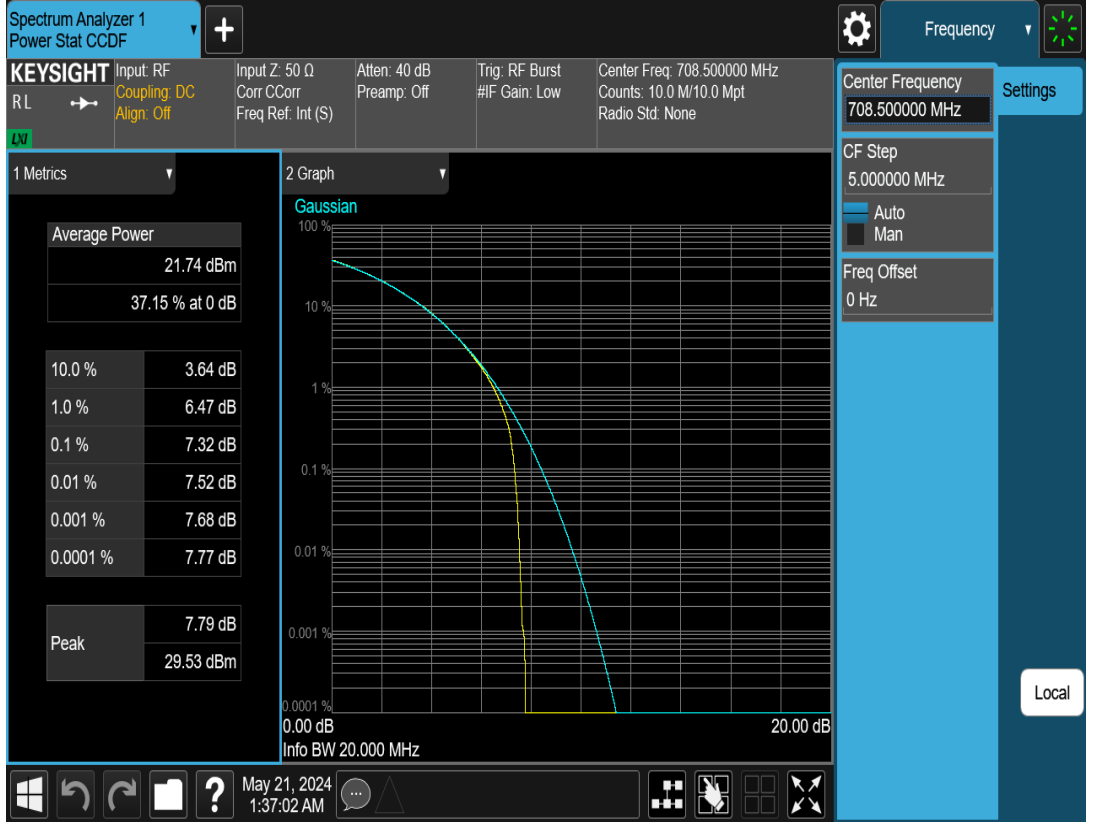
0.00 dB
20.00 dB

Info BW 20.000 MHz

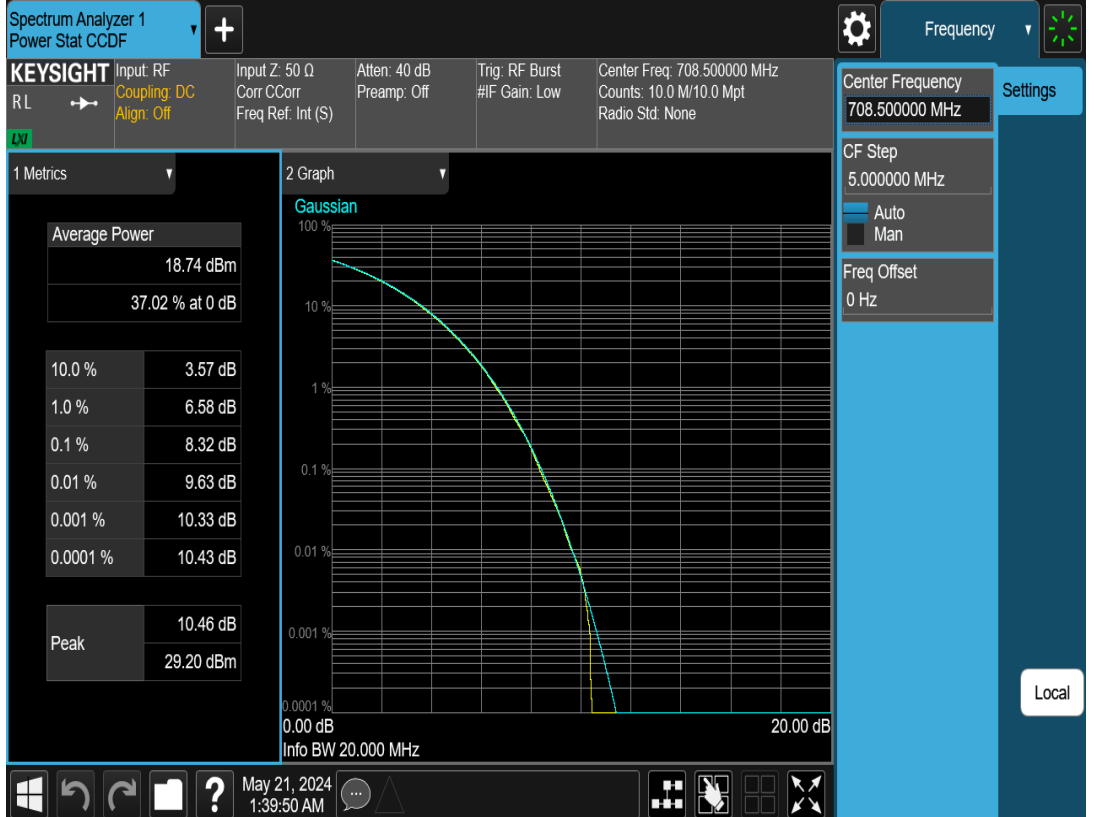
May 21, 2024
1:34:27 AM

Local

N12-15M-PAPR-H-CP-OFDM-64QAM-Outer_Full



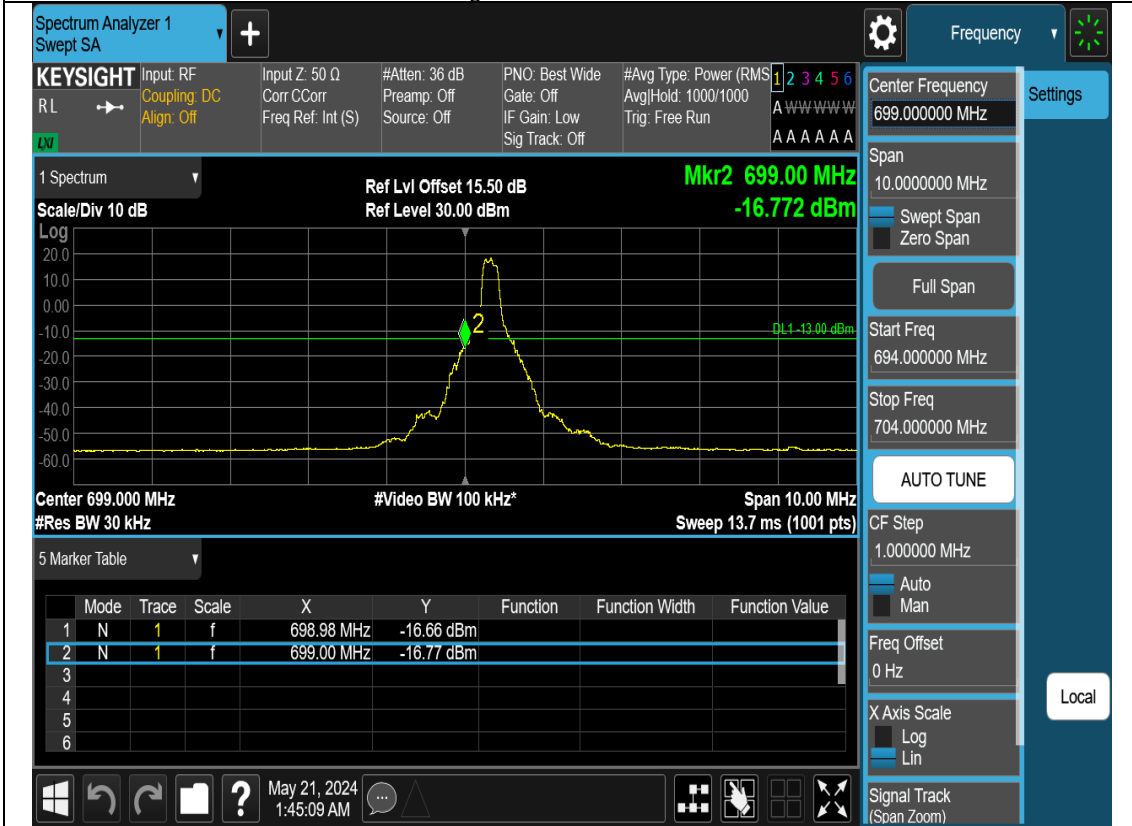
N12-15M-PAPR-H-CP-OFDM-256QAM-Outer_Full



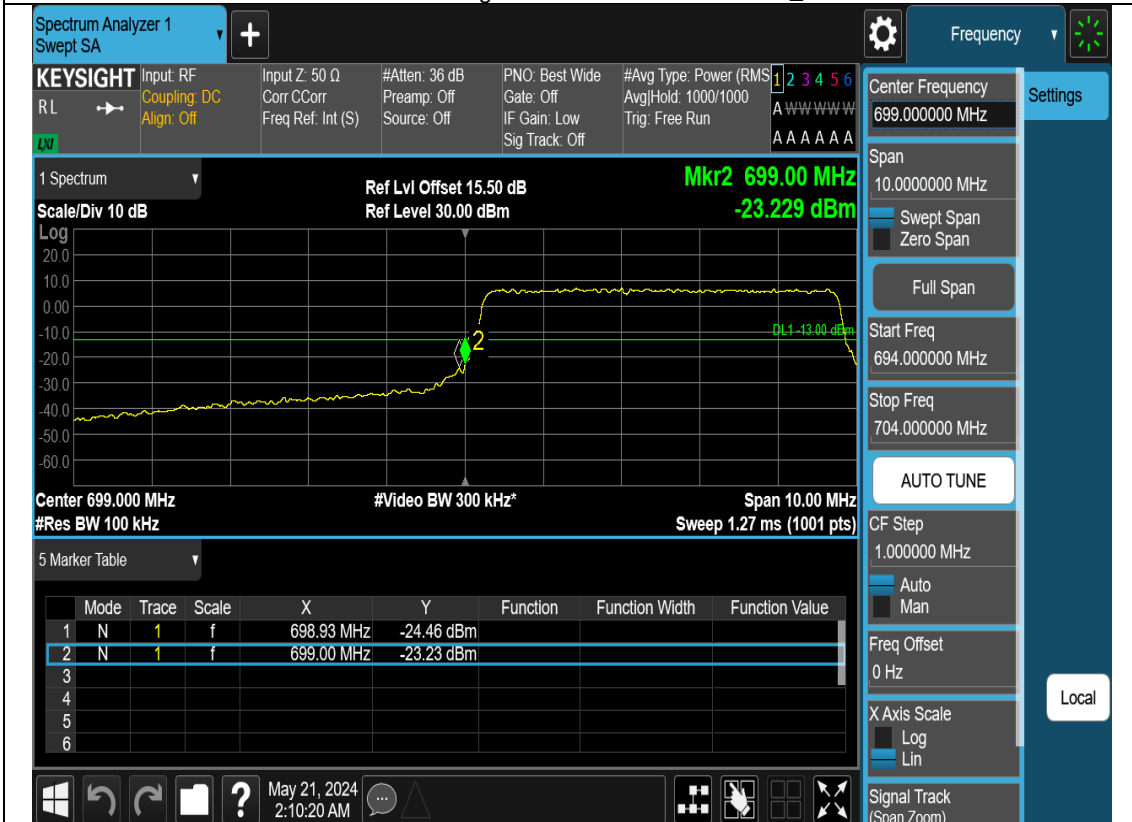
Bandedge test graph



N12-5M-Bandedge-L-DFT-s-OFDM-Pi2 BPSK-1RB0



N12-5M-Bandedge-L-CP-OFDM-QPSK-Outer_Full



N12-5M-Bandedge-L-CP-OFDM-QPSK-1RB0

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input: RF Coupling: DC Align: Off

Input Z: 50 Ω Corr: C Corr Freq Ref: Int (S) #Atten: 36 dB Preamp: Off Source: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Avg/Hold: 1000/1000 Trig: Free Run

Center Frequency 699.000000 MHz

Span 10.000000 MHz

Start Freq 694.000000 MHz

Stop Freq 704.000000 MHz

AUTO TUNE

CF Step 1.000000 MHz

Freq Offset 0 Hz

X Axis Scale Log

Signal Track (Span Zoom)

Ref Lvl Offset 15.50 dB Ref Level 30.00 dB

Mkr2 699.00 MHz -21.124 dBm

DL1 -13.00 dBm

Center 699.000 MHz #Res BW 30 kHz #Video BW 100 kHz* Span 10.00 MHz Sweep 13.7 ms (1001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	698.98 MHz	-21.28 dBm		
2	N	1	f	699.00 MHz	-21.12 dBm		
3							
4							
5							
6							

May 21, 2024 2:10:56 AM

N12-5M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-Outer_Full

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input: RF Coupling: DC Align: Off

Input Z: 50 Ω Corr: C Corr Freq Ref: Int (S) #Atten: 36 dB Preamp: Off Source: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Avg/Hold: 1000/1000 Trig: Free Run

Center Frequency 716.000000 MHz

Span 10.000000 MHz

Start Freq 711.000000 MHz

Stop Freq 721.000000 MHz

AUTO TUNE

CF Step 1.000000 MHz

Freq Offset 0 Hz

X Axis Scale Log

Signal Track (Span Zoom)

Ref Lvl Offset 15.50 dB Ref Level 30.00 dB

Mkr2 716.00 MHz -20.250 dBm

DL1 -13.00 dBm

Center 716.000 MHz #Res BW 100 kHz #Video BW 300 kHz* Span 10.00 MHz Sweep 1.27 ms (1001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	716.02 MHz	-20.67 dBm		
2	N	1	f	716.00 MHz	-20.25 dBm		
3							
4							
5							
6							

May 21, 2024 1:48:07 AM

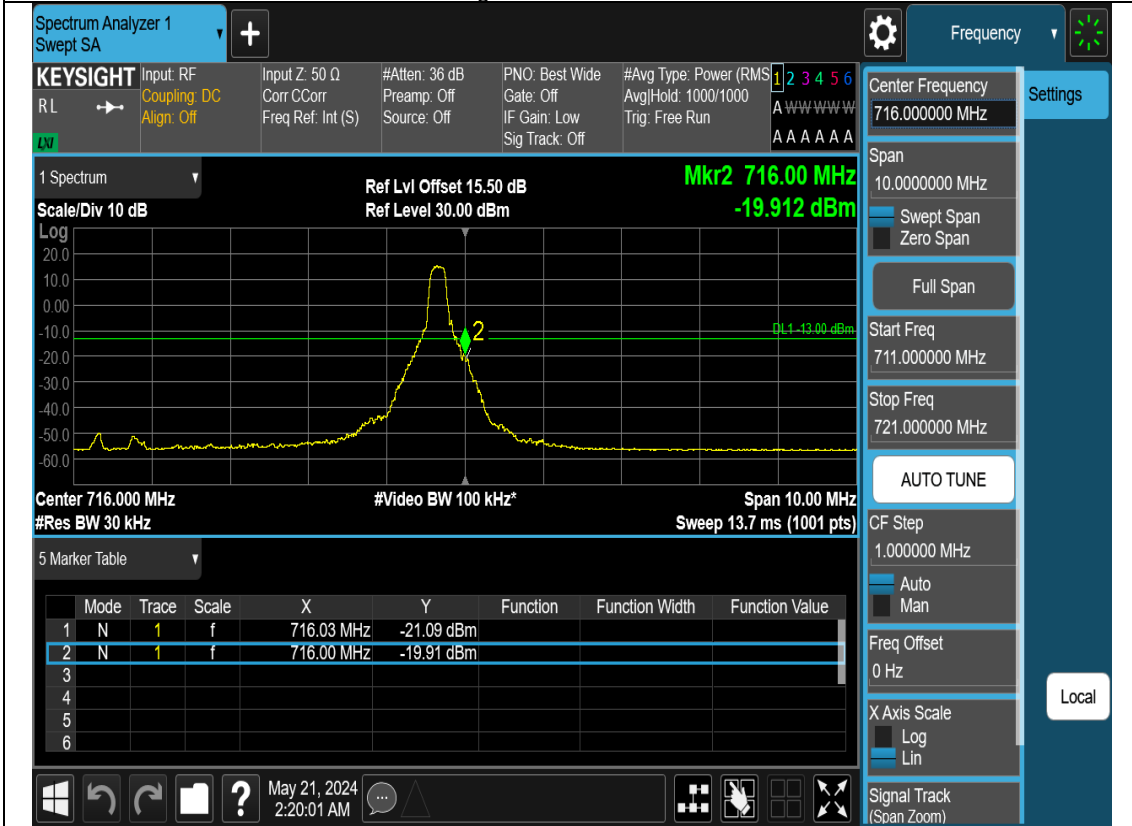
N12-5M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-1RB_MAX



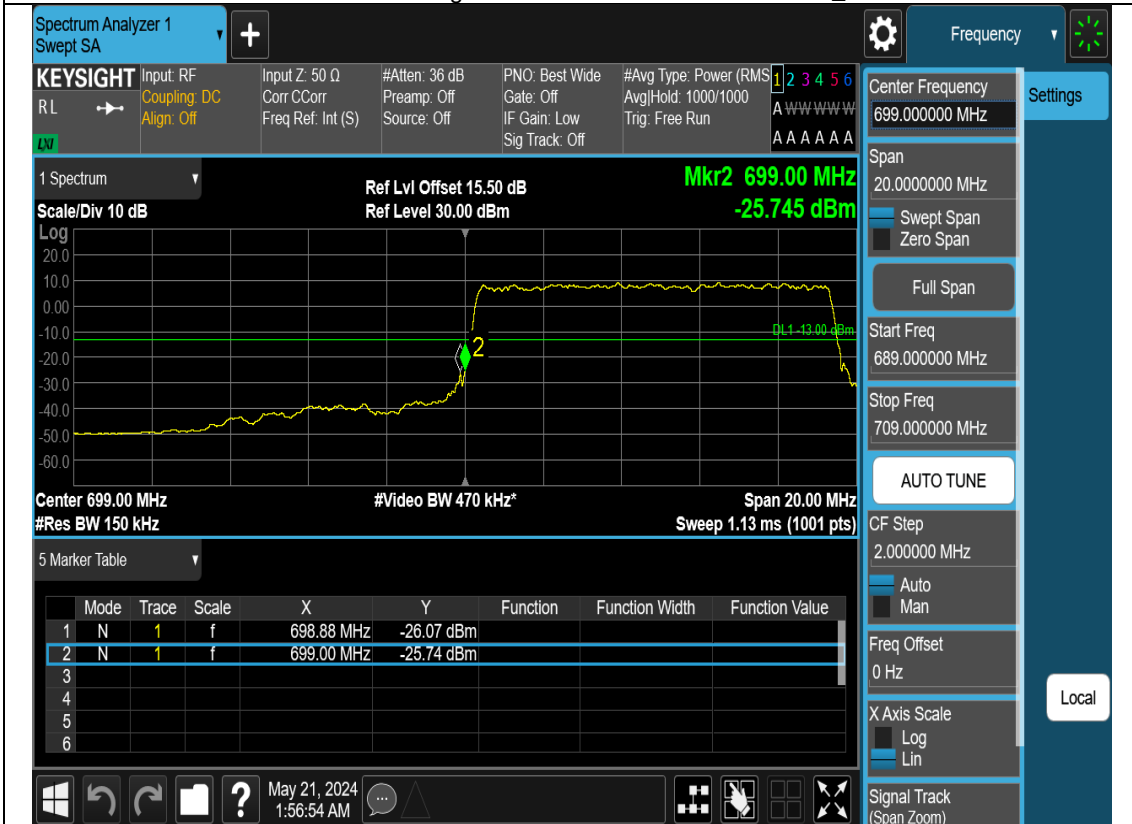
N12-5M-Bandedge-H-CP-OFDM-QPSK-Outer_Full



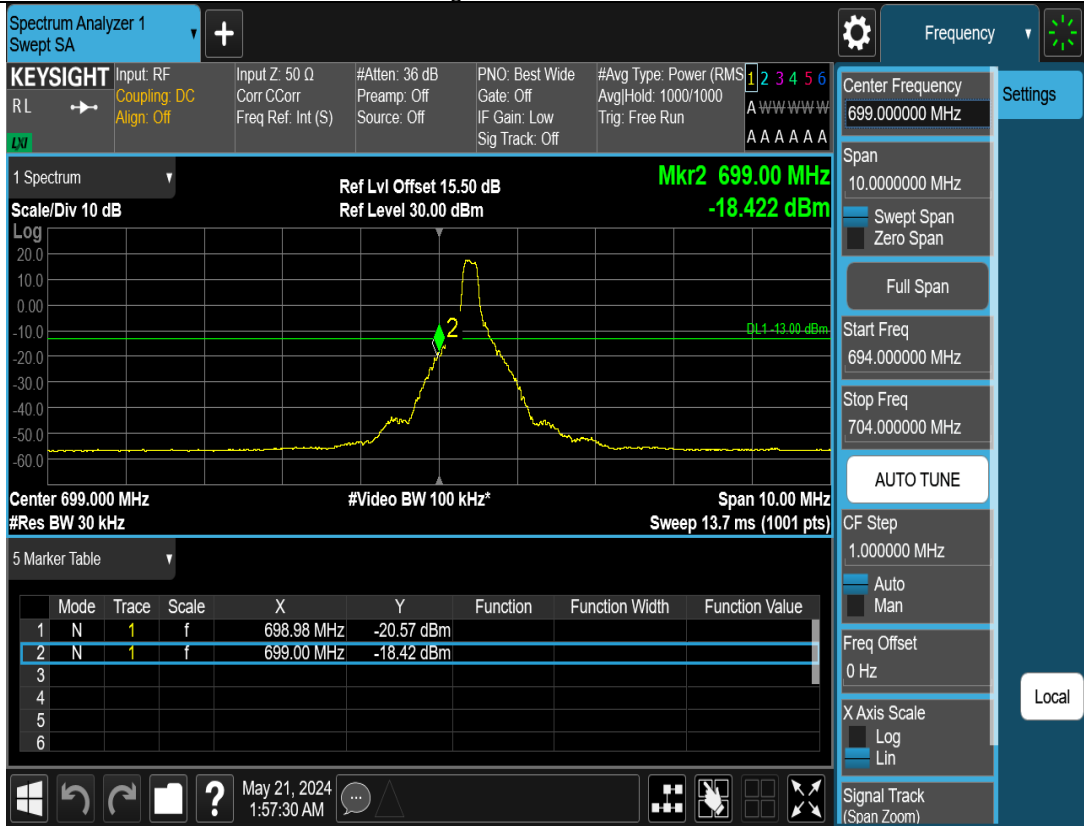
N12-5M-Bandedge-H-CP-OFDM-QPSK-1RB_MAX



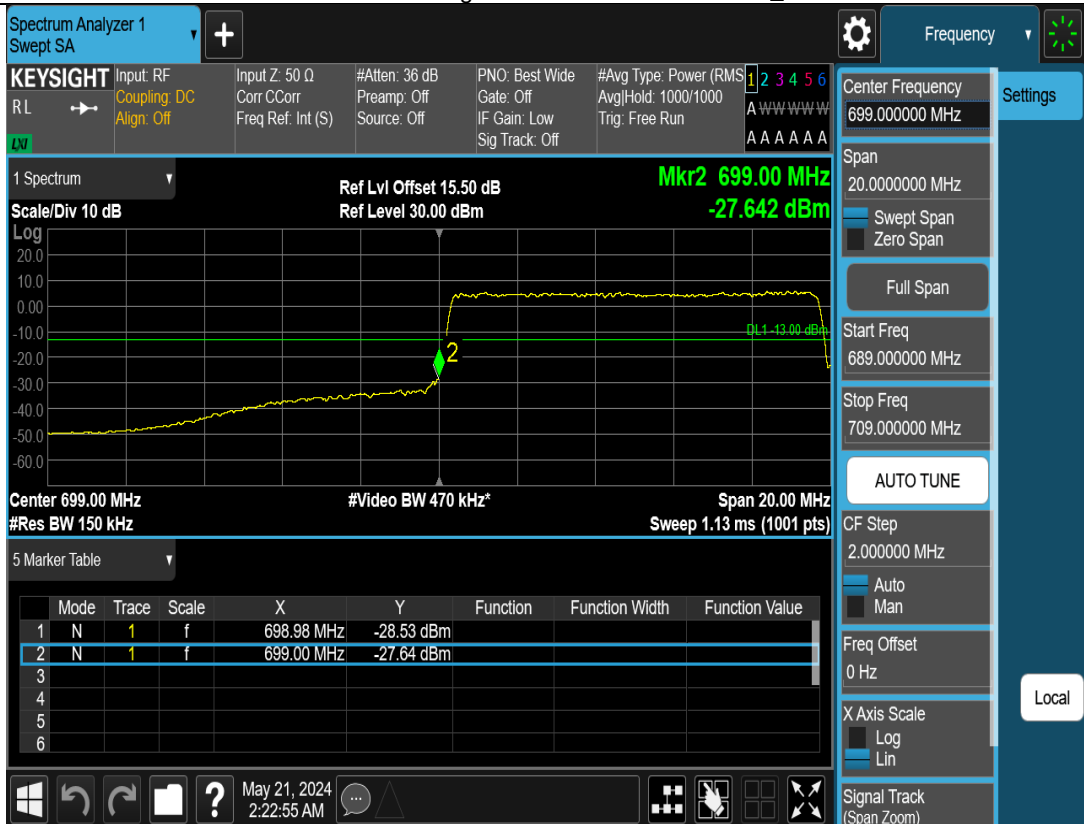
N12-10M-Bandedge-L-DFT-s-OFDM-Pi2 BPSK-Outer_Full



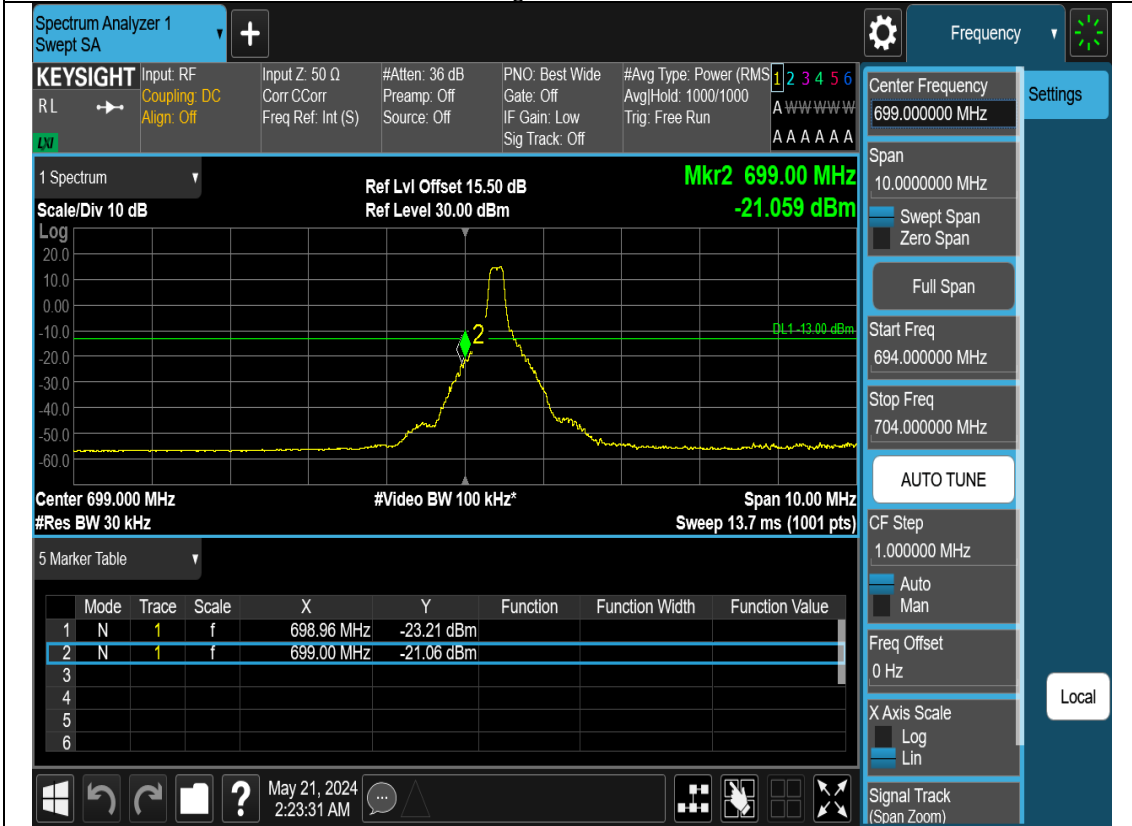
N12-10M-Bandedge-L-DFT-s-OFDM-Pi2 BPSK-1RB0



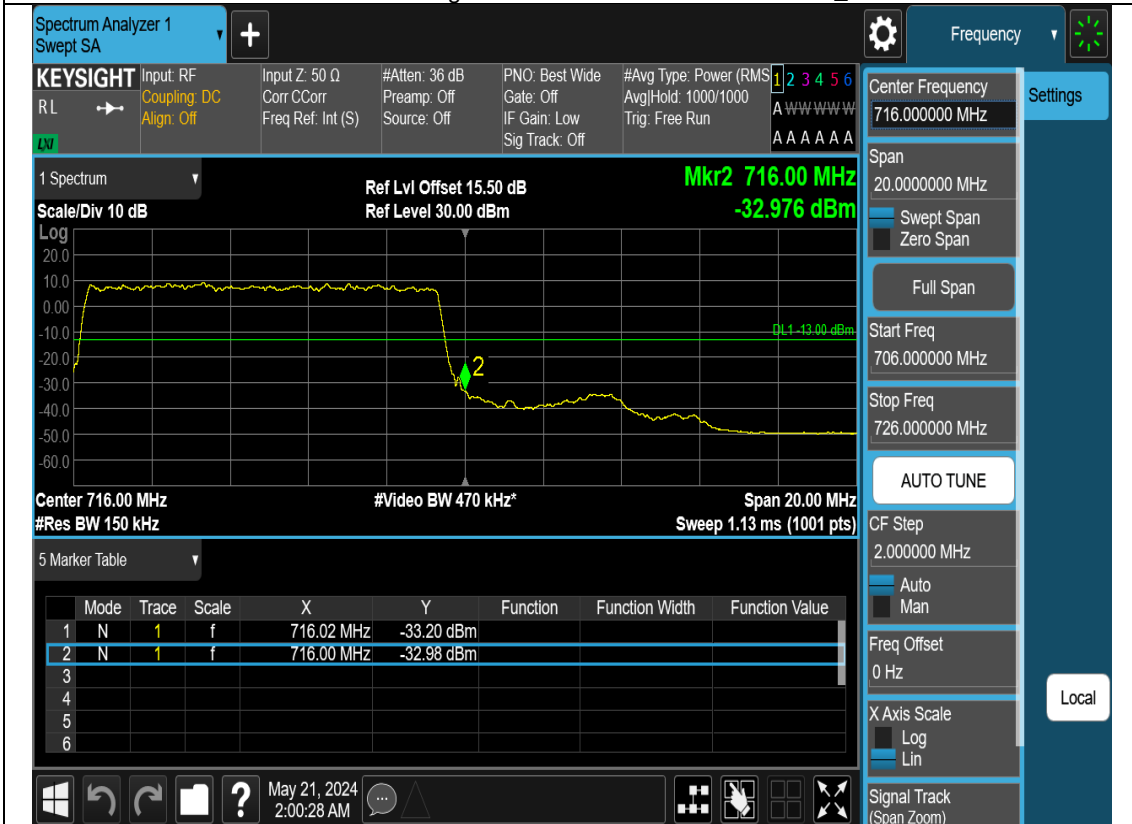
N12-10M-Bandedge-L-CP-OFDM-QPSK-Outer_Full



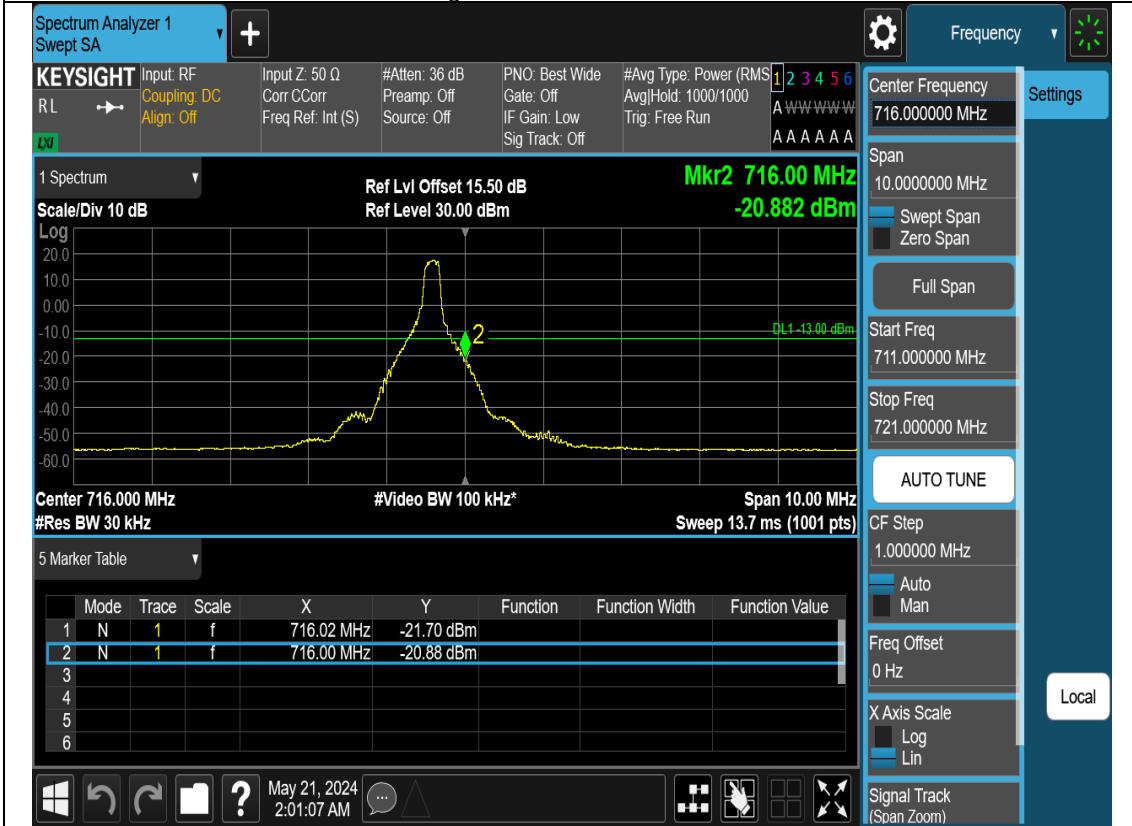
N12-10M-Bandedge-L-CP-OFDM-QPSK-1RB0



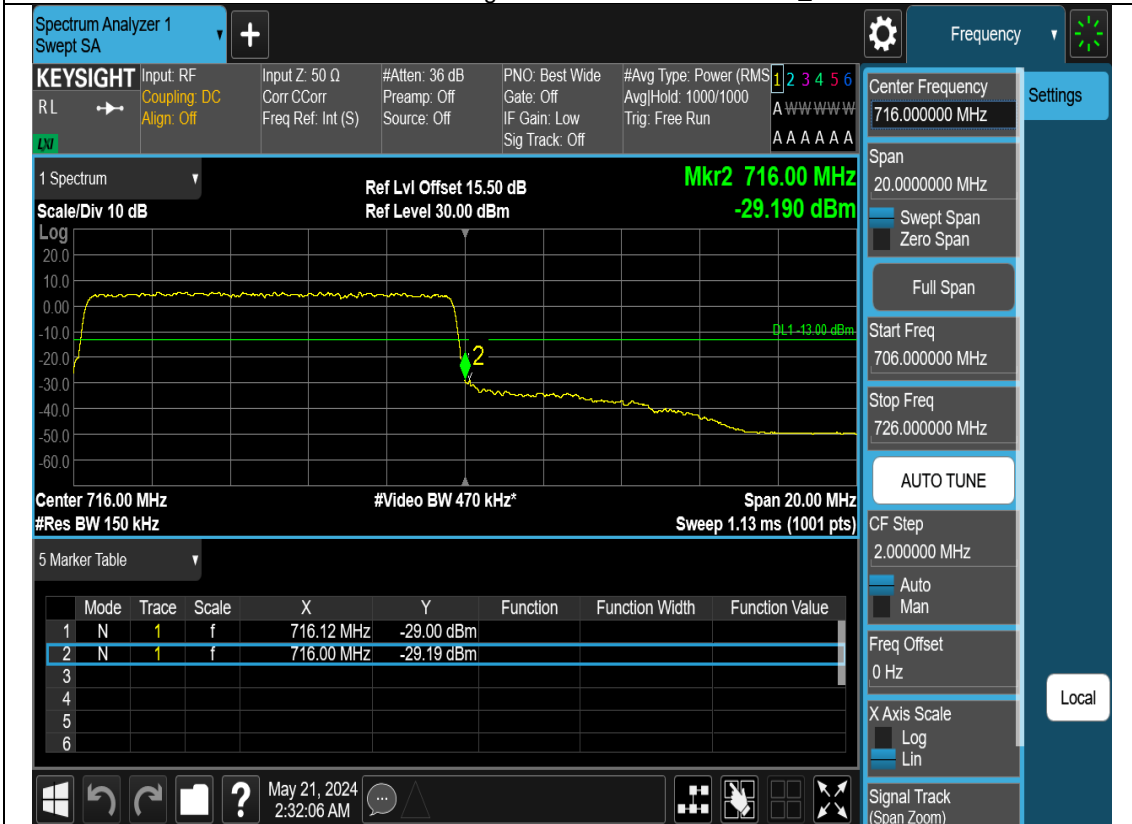
N12-10M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-Outer_Full



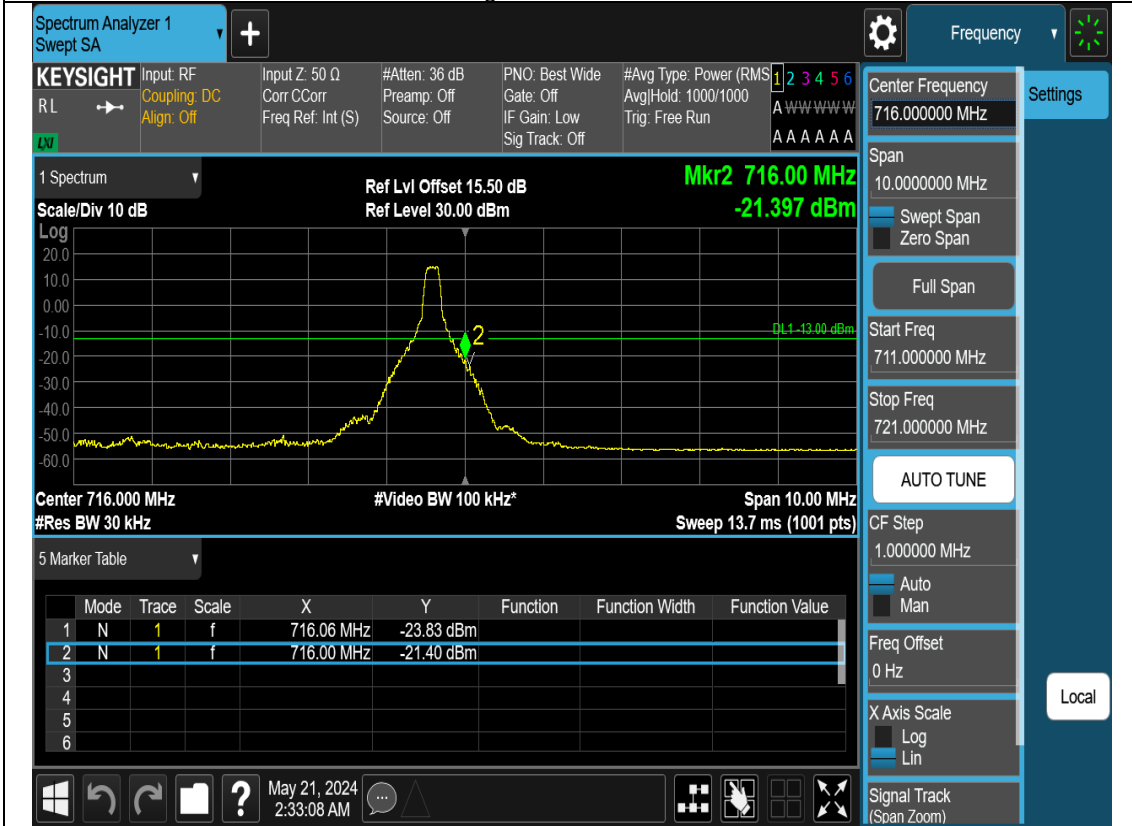
N12-10M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-1RB_MAX



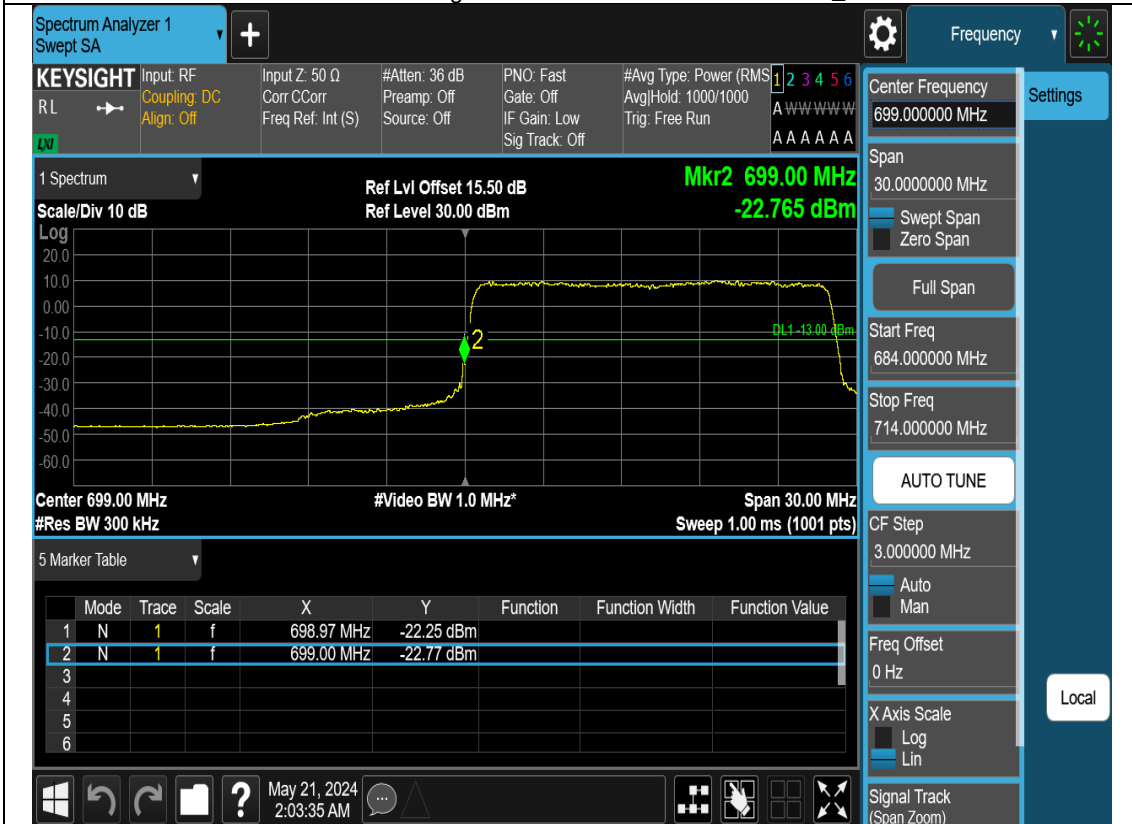
N12-10M-Bandedge-H-CP-OFDM-QPSK-Outer_Full



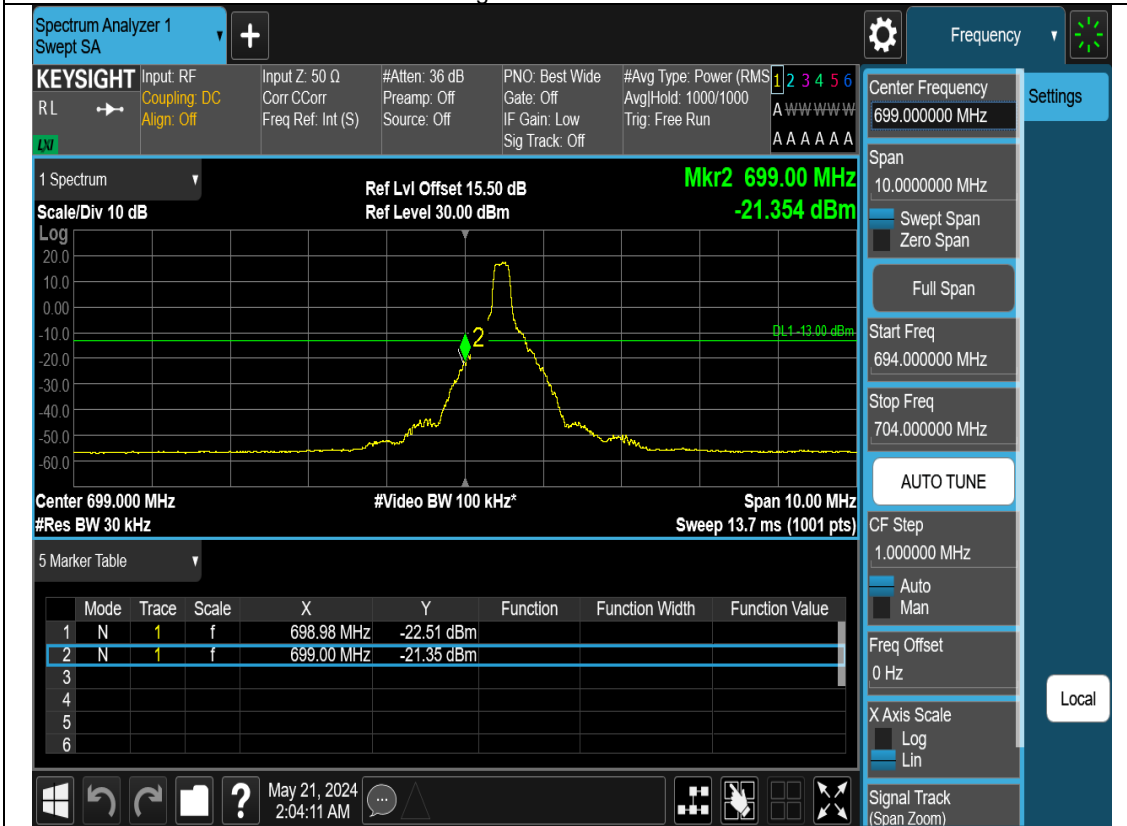
N12-10M-Bandedge-H-CP-OFDM-QPSK-1RB_MAX



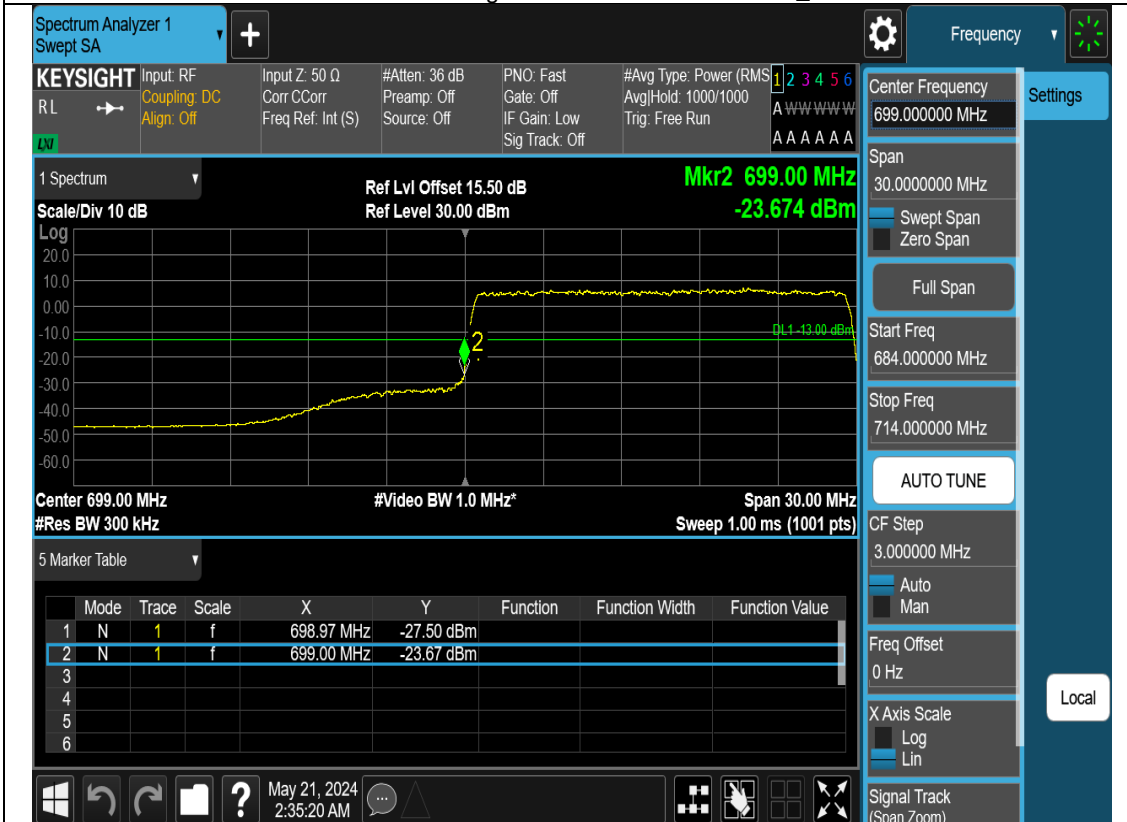
N12-15M-Bandedge-L-DFT-s-OFDM-Pi2 BPSK-Outer_Full



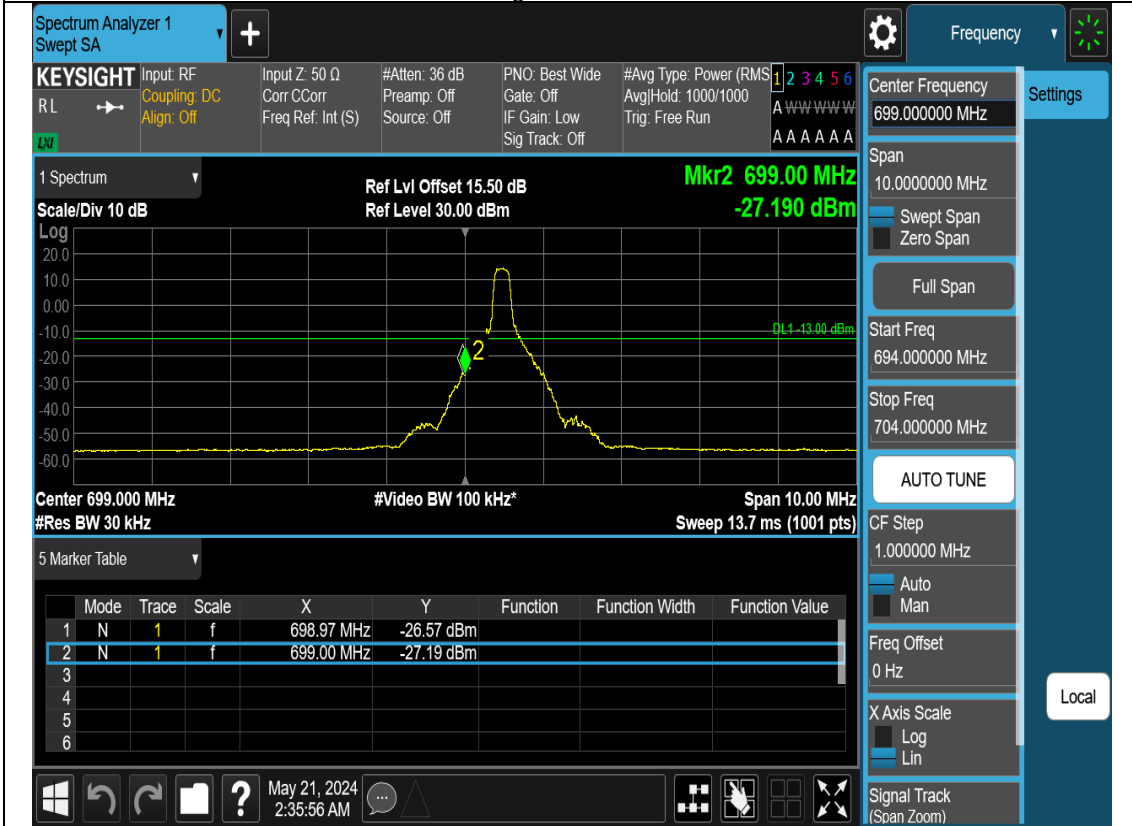
N12-15M-Bandedge-L-DFT-s-OFDM-Pi2 BPSK-1RB0



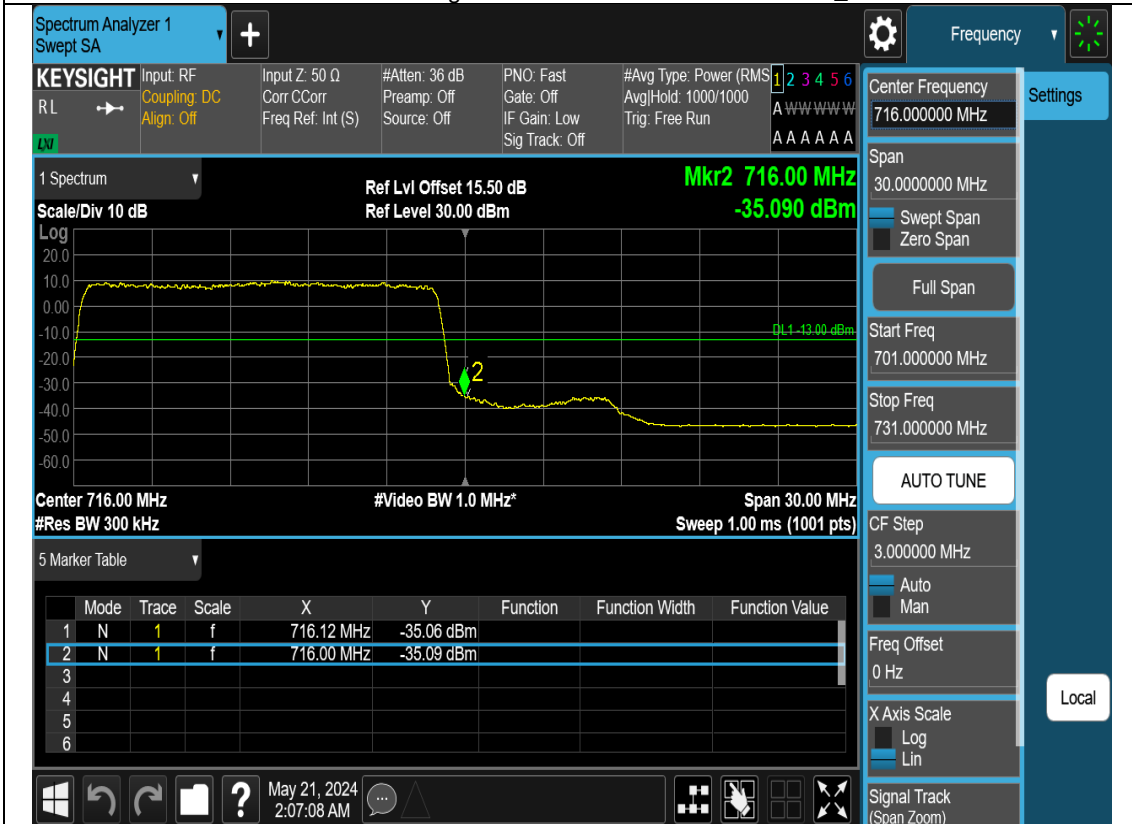
N12-15M-Bandedge-L-CP-OFDM-QPSK-Outer_Full



N12-15M-Bandedge-L-CP-OFDM-QPSK-1RB0



N12-15M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-Outer_Full



N12-15M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-1RB_MAX

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input: RF Coupling: DC Align: Off

Input Z: 50 Ω Corr: C Corr Freq Ref: Int (S) #Atten: 36 dB Preamp: Off Source: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Avg/Hold: 1000/1000 Trig: Free Run

Center Frequency 716.000000 MHz

Span 10.000000 MHz

Start Freq 711.000000 MHz

Stop Freq 721.000000 MHz

AUTO TUNE

CF Step 1.000000 MHz

Freq Offset 0 Hz

X Axis Scale Log

Signal Track (Span Zoom)

Ref Lvl Offset 15.50 dB Ref Level 30.00 dBm

Mkr2 716.00 MHz -23.520 dBm

DL1 -13.00 dBm

Center 716.000 MHz #Res BW 30 kHz #Video BW 100 kHz* Sweep 13.7 ms (1001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	716.02 MHz	-24.30 dBm		
2	N	1	f	716.00 MHz	-23.52 dBm		
3							
4							
5							
6							

May 21, 2024 2:07:48 AM

N12-15M-Bandedge-H-CP-OFDM-QPSK-Outer_Full

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input: RF Coupling: DC Align: Off

Input Z: 50 Ω Corr: C Corr Freq Ref: Int (S) #Atten: 36 dB Preamp: Off Source: Off PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Avg/Hold: 1000/1000 Trig: Free Run

Center Frequency 716.000000 MHz

Span 30.000000 MHz

Start Freq 701.000000 MHz

Stop Freq 731.000000 MHz

AUTO TUNE

CF Step 3.000000 MHz

Freq Offset 0 Hz

X Axis Scale Log

Signal Track (Span Zoom)

Ref Lvl Offset 15.50 dB Ref Level 30.00 dBm

Mkr2 716.00 MHz -20.093 dBm

DL1 -13.00 dBm

Center 716.000 MHz #Res BW 300 kHz #Video BW 1.0 MHz* Sweep 1.00 ms (1001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	716.03 MHz	-23.27 dBm		
2	N	1	f	716.00 MHz	-20.09 dBm		
3							
4							
5							
6							

May 21, 2024 2:39:07 AM

N12-15M-Bandedge-H-CP-OFDM-QPSK-1RB_MAX

Spectrum Analyzer 1
Swept SA

KEYSIGHT Input: RF Input Z: 50 Ω #Atten: 36 dB PNO: Best Wide #Avg Type: Power (RMS) 1 2 3 4 5 6
 RL Coupling: DC Corr: CCorr Preamp: Off Gate: Off Avg/Hold: 1000/1000 A www www w
 Align: Off Freq Ref: Int (S) Source: Off IF Gain: Low Trig: Free Run A A A A A A

1 Spectrum Ref Lvl Offset 15.50 dB **Mkr2 716.00 MHz**
 Scale/Div 10 dB Ref Level 30.00 dBm **-25.713 dBm**

Center 716.000 MHz #Video BW 100 kHz* Span 10.00 MHz
 #Res BW 30 kHz Sweep 13.7 ms (1001 pts)

5 Marker Table

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	716.02 MHz	-25.02 dBm		
2	N	1	f	716.00 MHz	-25.71 dBm		
3							
4							
5							
6							

Frequency

Center Frequency
716.000000 MHz

Span
10.000000 MHz

Swept Span
Zero Span

Full Span

Start Freq
711.000000 MHz

Stop Freq
721.000000 MHz

AUTO TUNE

CF Step
1.000000 MHz

Auto
Man

Freq Offset
0 Hz

X Axis Scale
Log
Lin

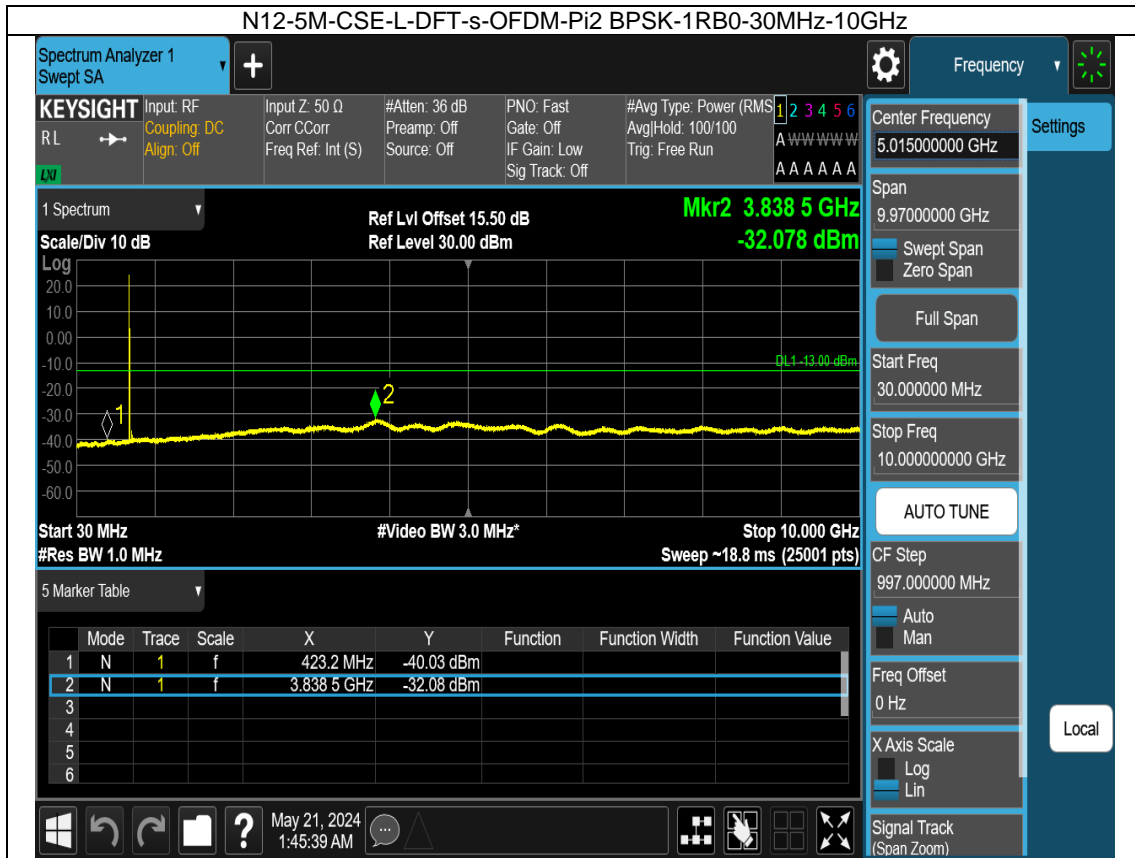
Signal Track
(Span Zoom)

Settings

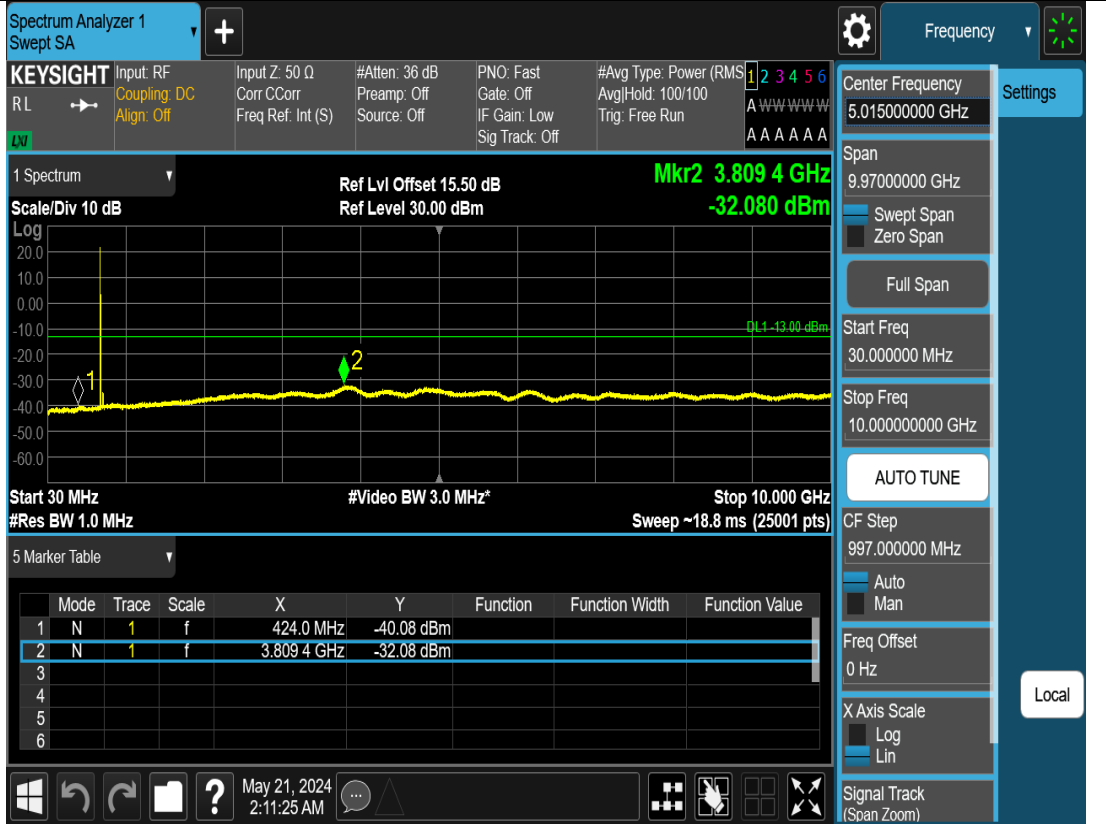
Local

May 21, 2024
2:39:47 AM

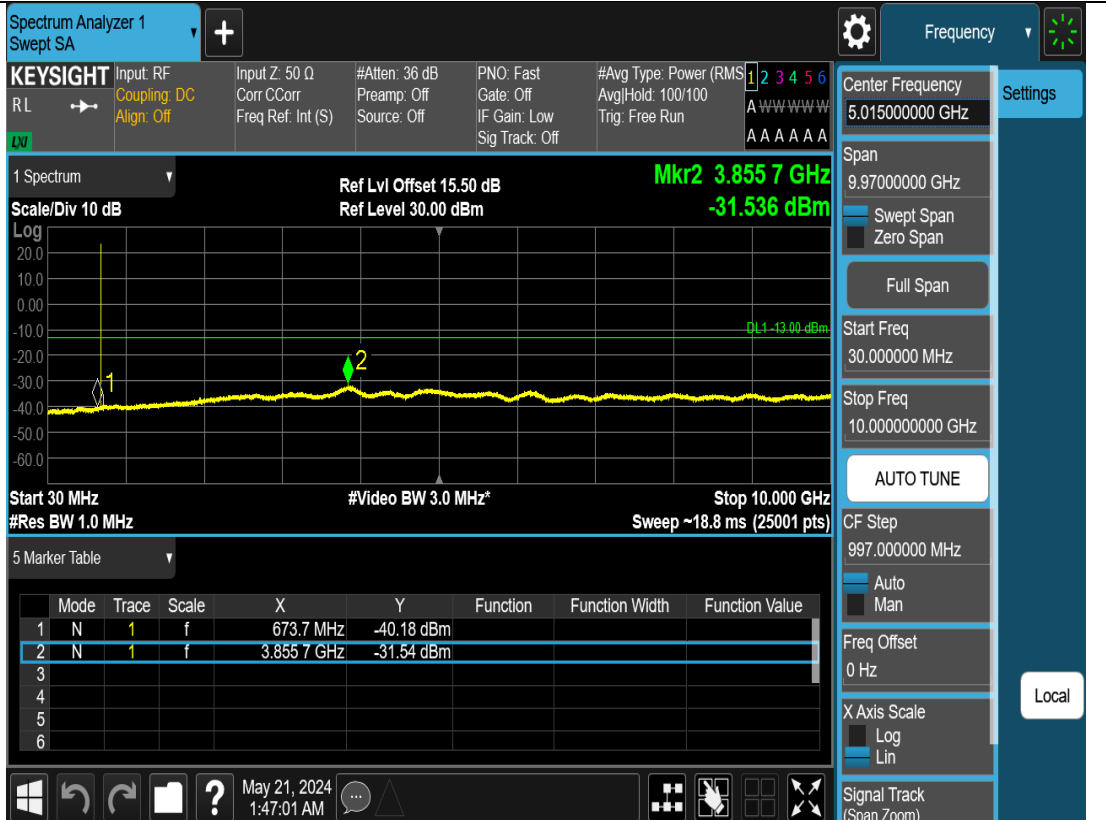
Conducted spurious emissions test graph



N12-5M-CSE-L-CP-OFDM-QPSK-1RB0-30MHz-10GHz



N12-5M-CSE-M-DFT-s-OFDM-Pi2 BPSK-1RB0-30MHz-10GHz



N12-5M-CSE-M-CP-OFDM-QPSK-1RB0-30MHz-10GHz

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input: RF
 RL Coupling: DC
 Align: Off

Input Z: 50 Ω
 Corr: C Corr
 Freq Ref: Int (S)

#Atten: 36 dB
 Preamp: Off
 Source: Off

PNO: Fast
 Gate: Off
 IF Gain: Low
 Sig Track: Off

#Avg Type: Power (RMS)
 Avg/Hold: 100/100
 Trig: Free Run

Center Frequency: 5.015000000 GHz

Span: 9.970000000 GHz

Start Freq: 30.0000000 MHz

Stop Freq: 10.000000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 15.50 dB
 Ref Level 30.00 dBm

Mkr2 3.864 5 GHz
 -32.076 dBm

DL1 -13.00 dBm

Start 30 MHz
 #Res BW 1.0 MHz
 #Video BW 3.0 MHz*
 Stop 10.000 GHz
 Sweep ~18.8 ms (25001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	461.9 MHz	-40.28 dBm		
2	N	1	f	3.864 5 GHz	-32.08 dBm		
3							
4							
5							
6							

May 21, 2024 2:12:56 AM

N12-5M-CSE-H-DFT-s-OFDM-Pi2 BPSK-1RB0-30MHz-10GHz

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input: RF
 RL Coupling: DC
 Align: Off

Input Z: 50 Ω
 Corr: C Corr
 Freq Ref: Int (S)

#Atten: 36 dB
 Preamp: Off
 Source: Off

PNO: Fast
 Gate: Off
 IF Gain: Low
 Sig Track: Off

#Avg Type: Power (RMS)
 Avg/Hold: 100/100
 Trig: Free Run

Center Frequency: 5.015000000 GHz

Span: 9.970000000 GHz

Start Freq: 30.0000000 MHz

Stop Freq: 10.000000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 15.50 dB
 Ref Level 30.00 dBm

Mkr2 3.861 3 GHz
 -32.090 dBm

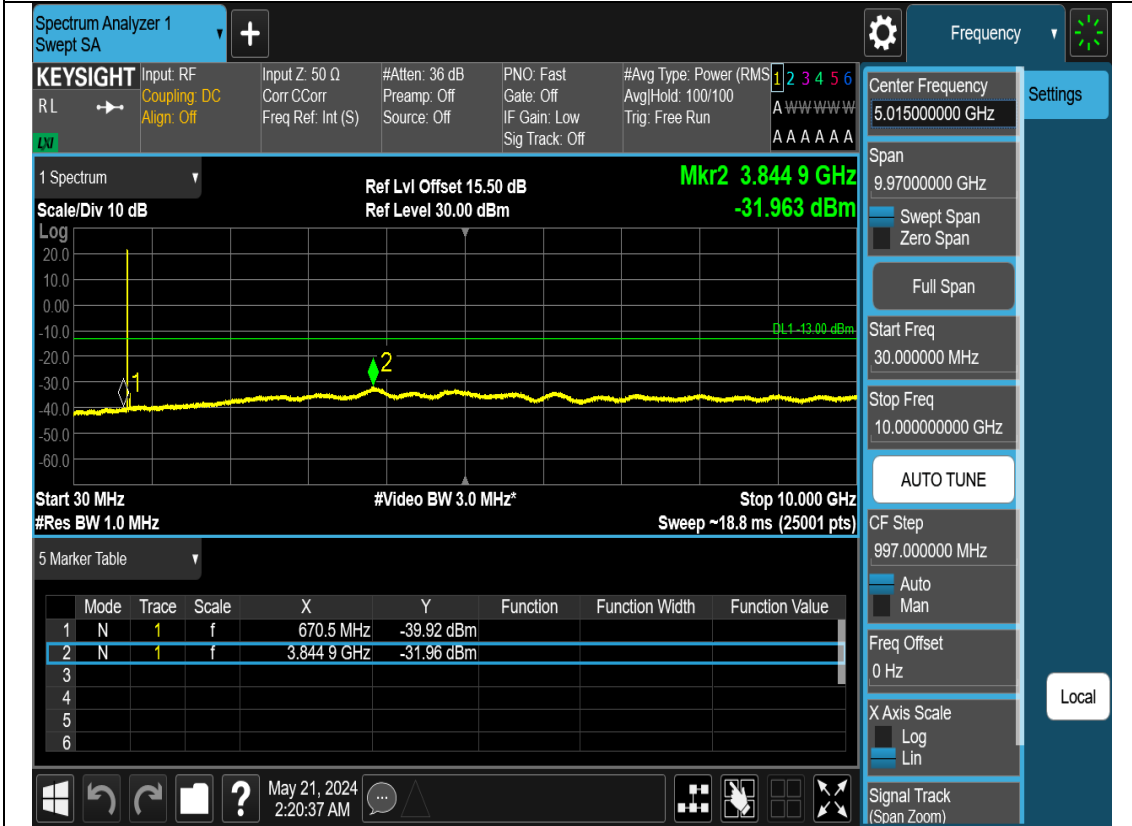
DL1 -13.00 dBm

Start 30 MHz
 #Res BW 1.0 MHz
 #Video BW 3.0 MHz*
 Stop 10.000 GHz
 Sweep ~18.8 ms (25001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	436.8 MHz	-39.87 dBm		
2	N	1	f	3.861 3 GHz	-32.09 dBm		
3							
4							
5							
6							

May 21, 2024 1:50:18 AM

N12-5M-CSE-H-CP-OFDM-QPSK-1RB0-30MHz-10GHz



N12-10M-CSE-L-DFT-s-OFDM-Pi2 BPSK-1RB0-30MHz-10GHz

