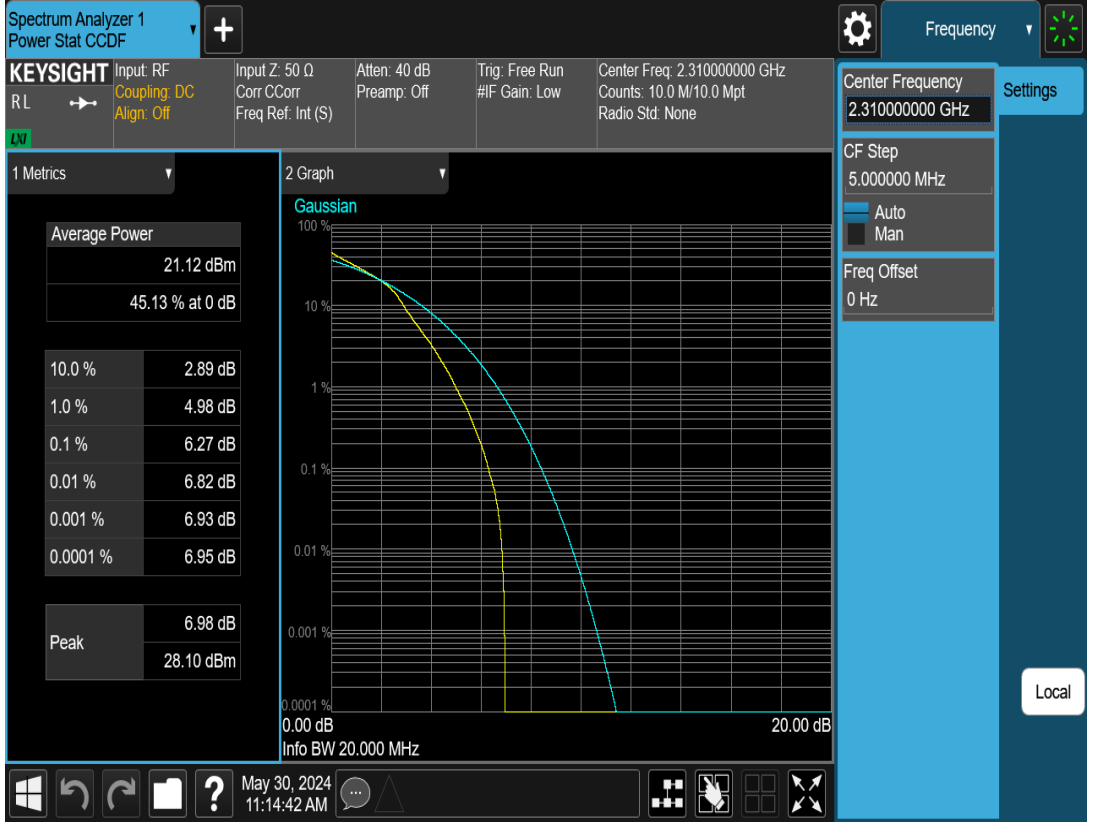
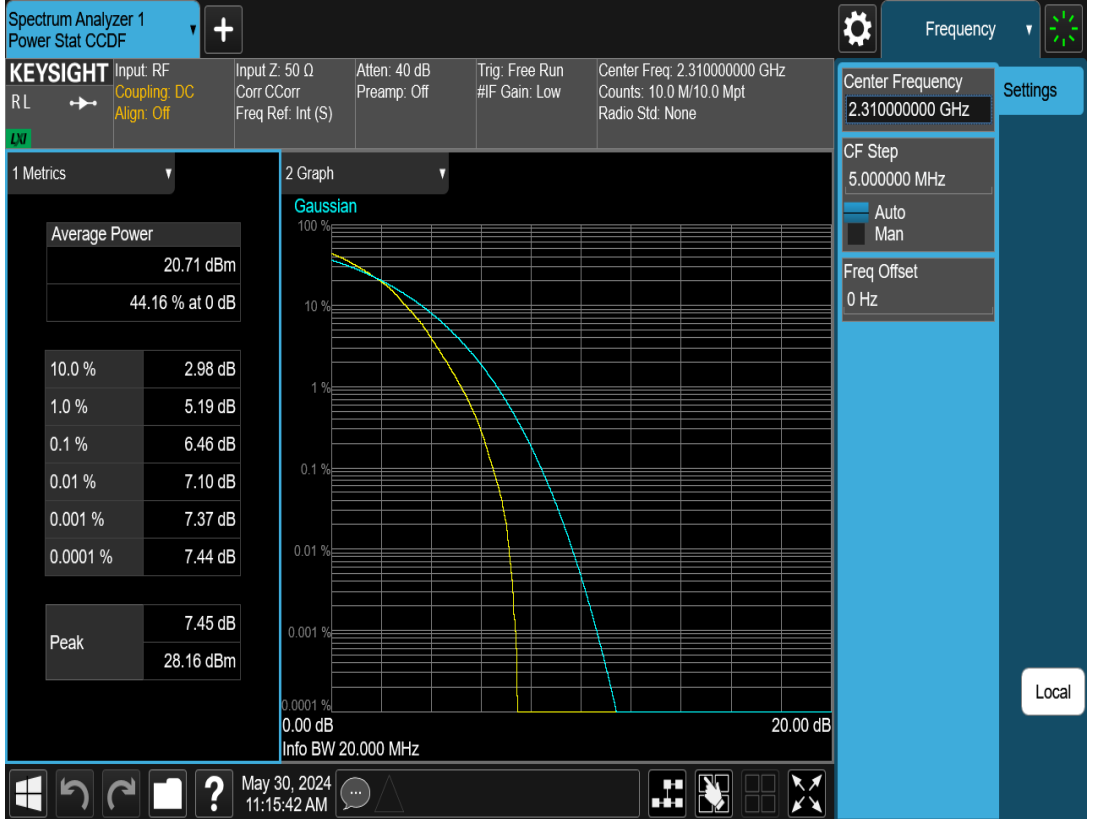


N30-10M-PAPR-M-DFT-s-OFDM-16QAM-Outer_Full



N30-10M-PAPR-M-DFT-s-OFDM-64QAM-Outer_Full



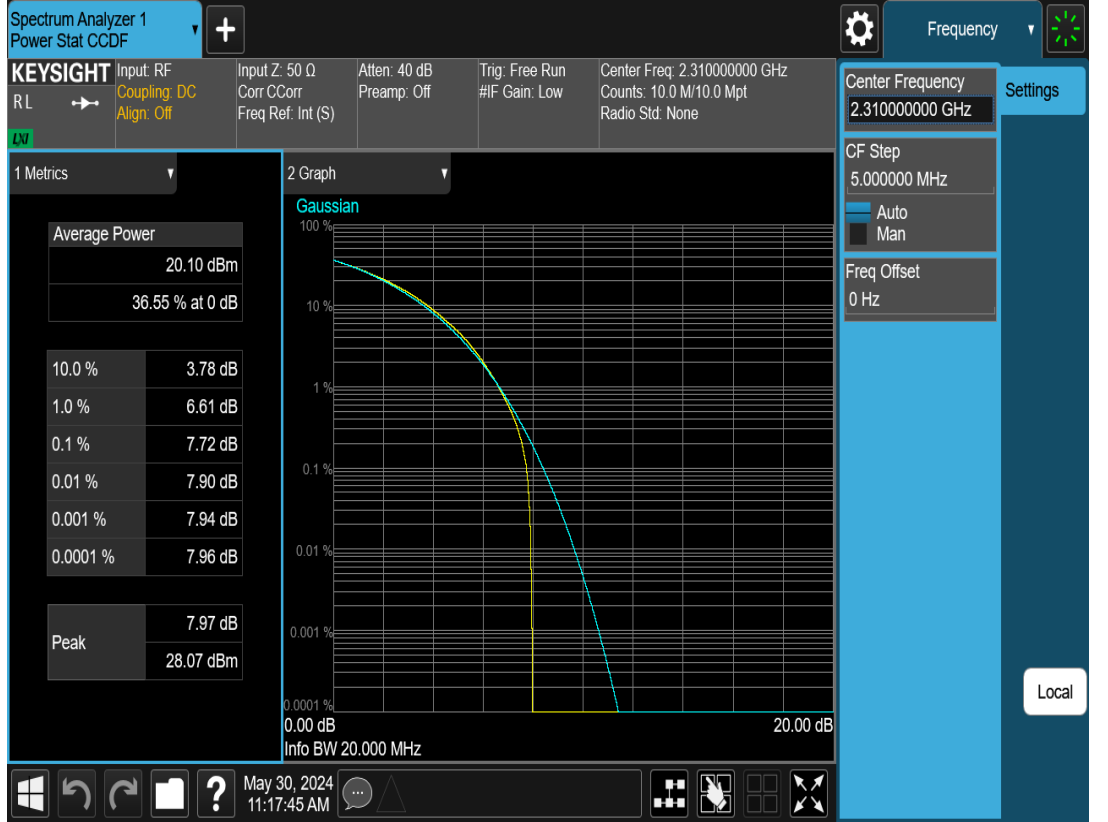
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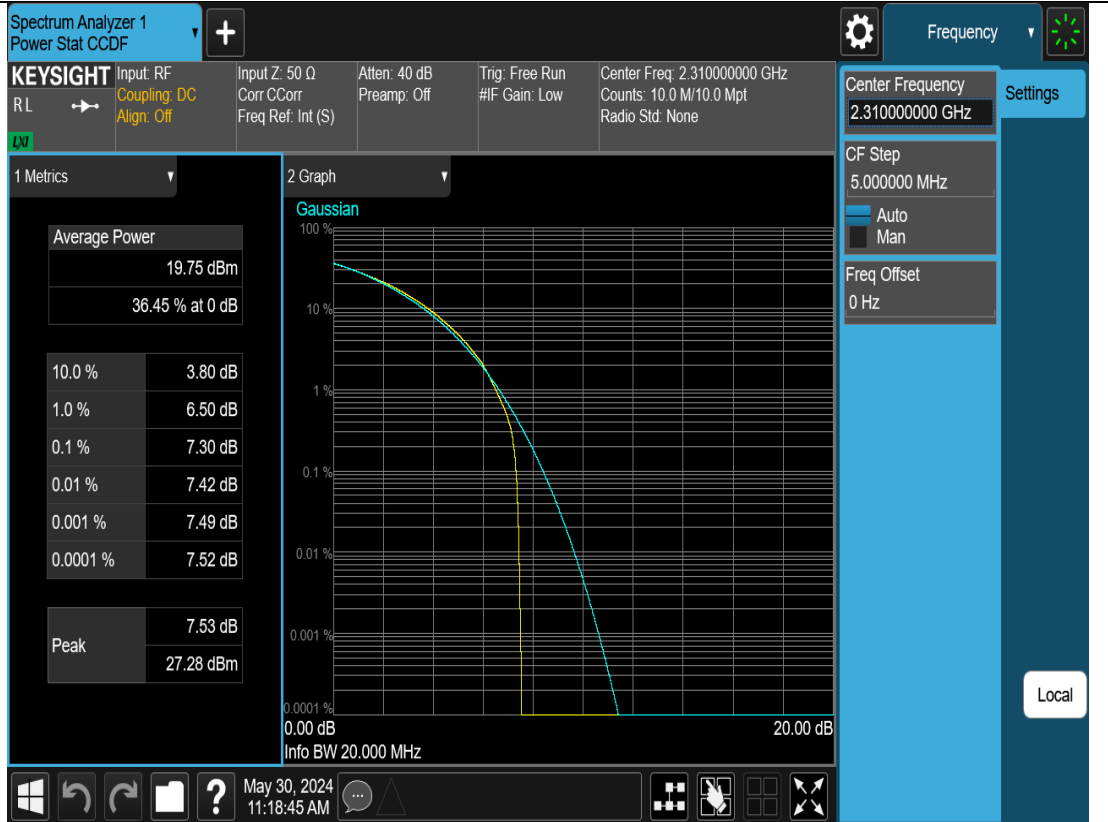
N30-10M-PAPR-M-CP-OFDM-QPSK-Outer_Full



N30-10M-PAPR-M-CP-OFDM-16QAM-Outer_Full



N30-10M-PAPR-M-CP-OFDM-64QAM-Outer_Full



N30-10M-PAPR-M-CP-OFDM-256QAM-Outer_Full

Spectrum Analyzer 1
Power Stat CCDF

KEYSIGHT Input RF Input Z: 50 Ω Atten: 40 dB Trig: Free Run Center Freq: 2.310000000 GHz
RL Coupling: DC Corr: CCorr Preamp: Off #F Gain: Low Counts: 10.0 M/10.0 Mpt
Align: Off Freq Ref: Int (S) Radio Std: None

1 Metrics

Average Power	
	16.69 dBm
	35.56 % at 0 dB
10.0 %	3.72 dB
1.0 %	6.90 dB
0.1 %	8.66 dB
0.01 %	9.70 dB
0.001 %	9.95 dB
0.0001 %	10.00 dB
Peak	
	10.02 dB
	26.71 dBm

2 Graph

Gaussian

Settings

Center Frequency
2.310000000 GHz

CF Step
5.000000 MHz

Auto
Man

Freq Offset
0 Hz

Local

May 30, 2024
11:19:52 AM

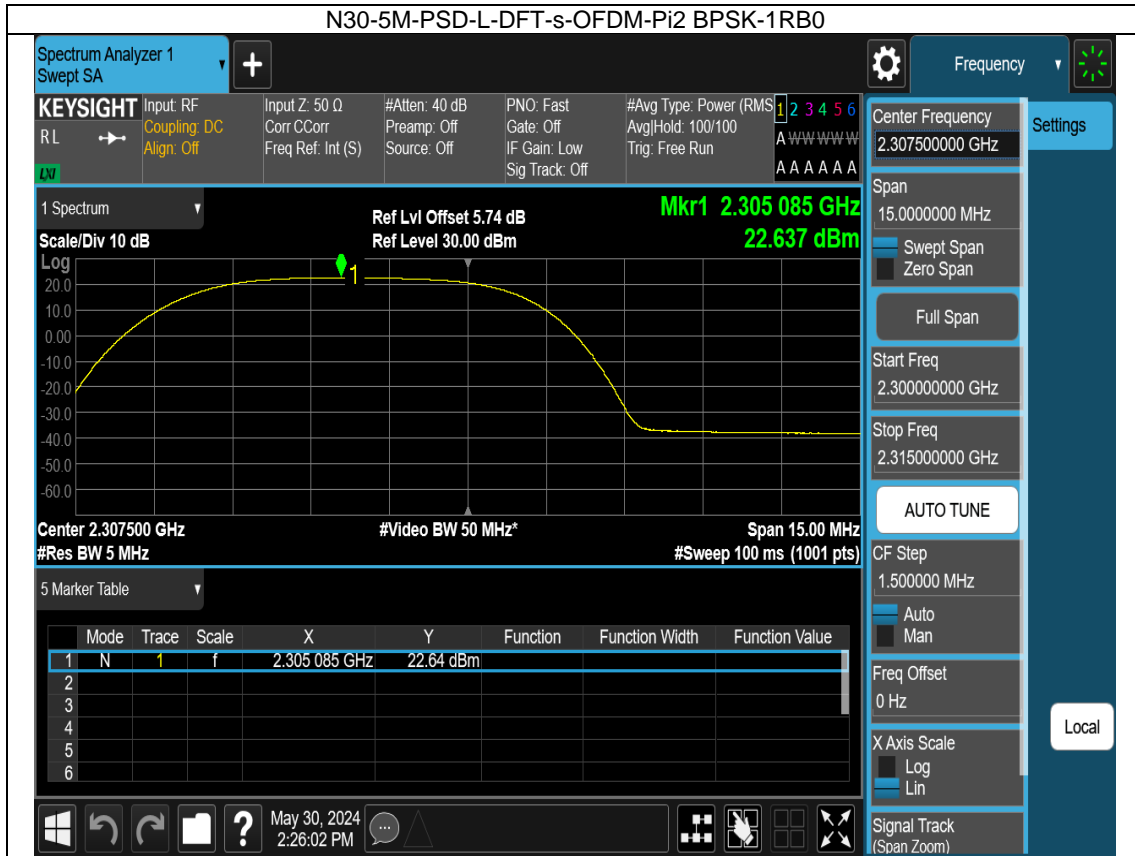
Power spectral density

Test Result

5G NR N30 SCS=15kHz 5MHz					
Modulation		RB Allocation	Power spectral density (dBm)	Limit/5MHz (dBm)	Verdict
DFT-s-OFDM PI/2 BPSK	Low CH	1RB0	22.637	23.98	Pass
DFT-s-OFDM QPSK		1RB0	21.315	23.98	Pass
DFT-s-OFDM 16QAM		1RB0	20.439	23.98	Pass
DFT-s-OFDM 64QAM		1RB0	20.228	23.98	Pass
DFT-s-OFDM 256QAM		1RB0	18.353		
CP-OFDM QPSK		1RB0	20.358	23.98	Pass
CP-OFDM 16QAM		1RB0	20.747	23.98	Pass
CP-OFDM 64QAM		1RB0	19.885	23.98	Pass
CP-OFDM 256QAM		1RB0	16.855		
DFT-s-OFDM PI/2 BPSK	Midd CH	1RB0	22.870	23.98	Pass
DFT-s-OFDM QPSK		1RB0	21.464	23.98	Pass
DFT-s-OFDM 16QAM		1RB0	20.727	23.98	Pass
DFT-s-OFDM 64QAM		1RB0	20.495	23.98	Pass
DFT-s-OFDM 256QAM		1RB0	18.833		
CP-OFDM QPSK		1RB0	20.375	23.98	Pass
CP-OFDM 16QAM		1RB0	20.808	23.98	Pass
CP-OFDM 64QAM		1RB0	20.035	23.98	Pass
CP-OFDM 256QAM		1RB0	16.943		
DFT-s-OFDM PI/2 BPSK	High CH	1RB0	22.915	23.98	Pass
DFT-s-OFDM QPSK		1RB0	21.534	23.98	Pass
DFT-s-OFDM 16QAM		1RB0	20.893	23.98	Pass
DFT-s-OFDM 64QAM		1RB0	20.497	23.98	Pass
DFT-s-OFDM 256QAM		1RB0	18.966		
CP-OFDM QPSK		1RB0	20.623	23.98	Pass
CP-OFDM 16QAM		1RB0	20.908	23.98	Pass
CP-OFDM 64QAM		1RB0	20.463	23.98	Pass
CP-OFDM 256QAM		1RB0	17.074		

5G NR N30 SCS=15kHz 10MHz					
Modulation		RB Allocation	Power spectral density (dBm)	Limit/5MHz (dBm)	Verdict
DFT-s-OFDM PI/2 BPSK	Midd CH	1RB0	22.690	23.98	Pass
DFT-s-OFDM QPSK		1RB0	22.265	23.98	Pass
DFT-s-OFDM 16QAM		1RB0	21.291	23.98	Pass
DFT-s-OFDM 64QAM		1RB0	20.906	23.98	Pass
DFT-s-OFDM 256QAM		1RB0	18.966		
CP-OFDM QPSK		1RB0	20.527	23.98	Pass
CP-OFDM 16QAM		1RB0	20.657	23.98	Pass
CP-OFDM 64QAM		1RB0	20.226	23.98	Pass
CP-OFDM 256QAM		1RB0	17.520		

Power spectral density test graph



N30-5M-PSD-L-DFT-s-OFDM-QPSK-1RB0

Spectrum Analyzer 1
Swept SA

KEYSIGHT Input RF
RL Coupling: DC
Align: Off

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

#Atten: 40 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

1 2 3 4 5 6
A www www
A A A A A A

Center Frequency
2.307500000 GHz

Span
15.0000000 MHz

Swept Span
Zero Span

Full Span

Start Freq
2.300000000 GHz

Stop Freq
2.315000000 GHz

AUTO TUNE

CF Step
1.500000 MHz

Auto
Man

Freq Offset
0 Hz

X Axis Scale
Log
Lin

Signal Track
(Span Zoom)

Settings
Local

1 Spectrum
Scale/Div 10 dB
Log

Ref Lvl Offset 5.74 dB
Ref Level 30.00 dBm

Mkr1 2.305 145 GHz
21.315 dBm

Center 2.307500 GHz
#Res BW 5 MHz
#Video BW 50 MHz*
Span 15.00 MHz
#Sweep 100 ms (1001 pts)

5 Marker Table

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.305 145 GHz	21.32 dBm		
2							
3							
4							
5							
6							

May 30, 2024
2:26:28 PM

N30-5M-PSD-L-DFT-s-OFDM-16QAM-1RB0

Spectrum Analyzer 1
Swept SA

KEYSIGHT Input RF
RL Coupling: DC
Align: Off

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

#Atten: 40 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

1 2 3 4 5 6
A www www
A A A A A A

Center Frequency
2.307500000 GHz

Span
15.0000000 MHz

Swept Span
Zero Span

Full Span

Start Freq
2.300000000 GHz

Stop Freq
2.315000000 GHz

AUTO TUNE

CF Step
1.500000 MHz

Auto
Man

Freq Offset
0 Hz

X Axis Scale
Log
Lin

Signal Track
(Span Zoom)

Settings
Local

1 Spectrum
Scale/Div 10 dB
Log

Ref Lvl Offset 5.74 dB
Ref Level 30.00 dBm

Mkr1 2.304 980 GHz
20.439 dBm

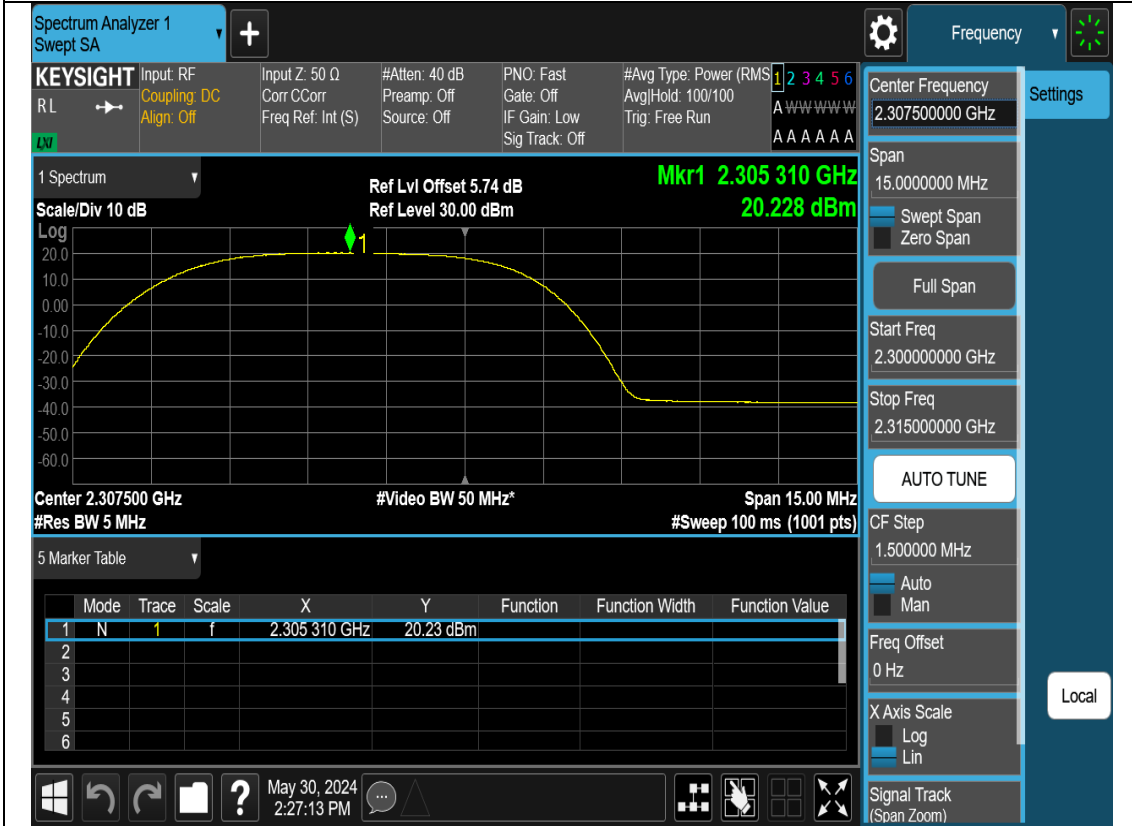
Center 2.307500 GHz
#Res BW 5 MHz
#Video BW 50 MHz*
Span 15.00 MHz
#Sweep 100 ms (1001 pts)

5 Marker Table

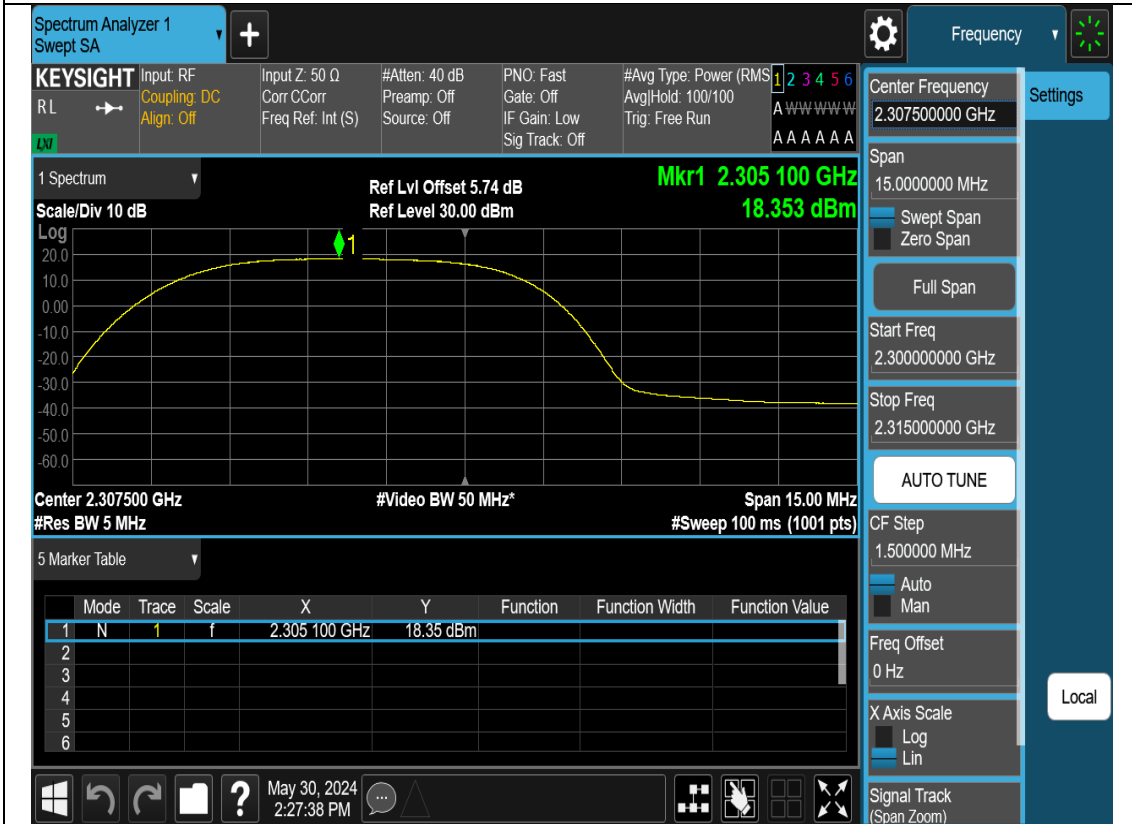
Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.304 980 GHz	20.44 dBm		
2							
3							
4							
5							
6							

May 30, 2024
2:26:51 PM

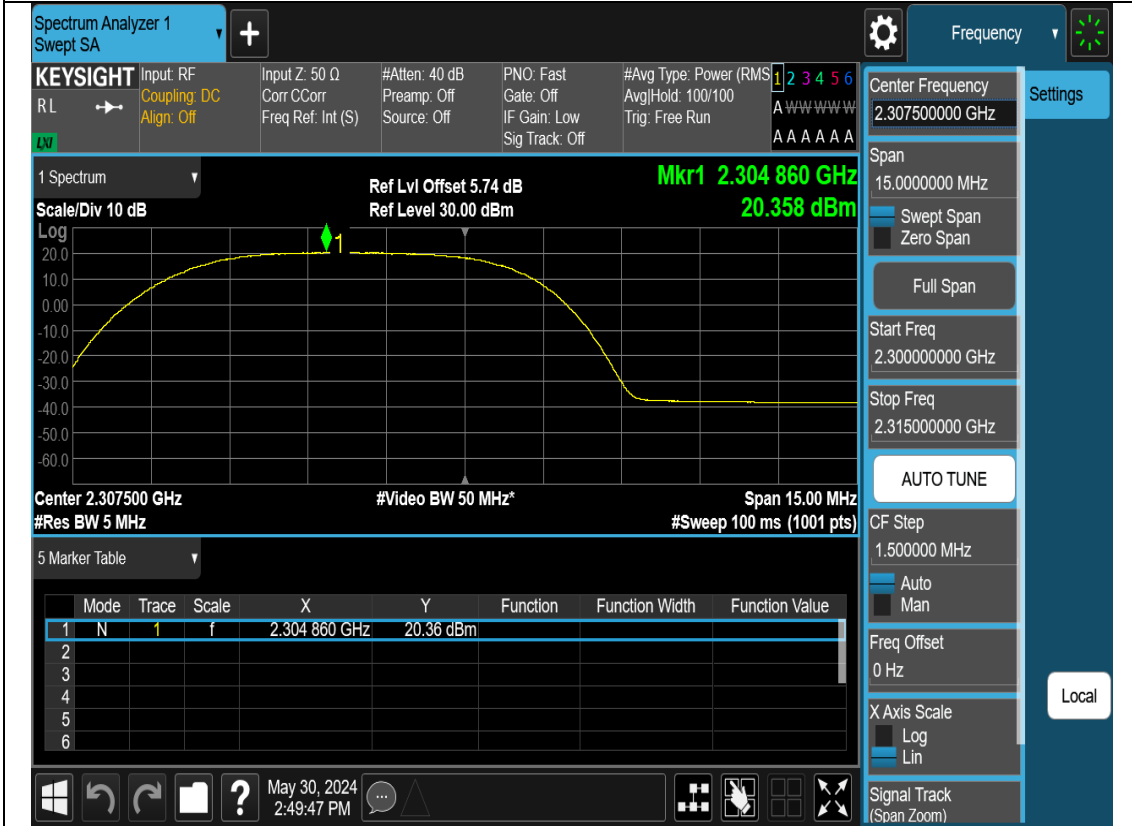
N30-5M-PSD-L-DFT-s-OFDM-64QAM-1RB0



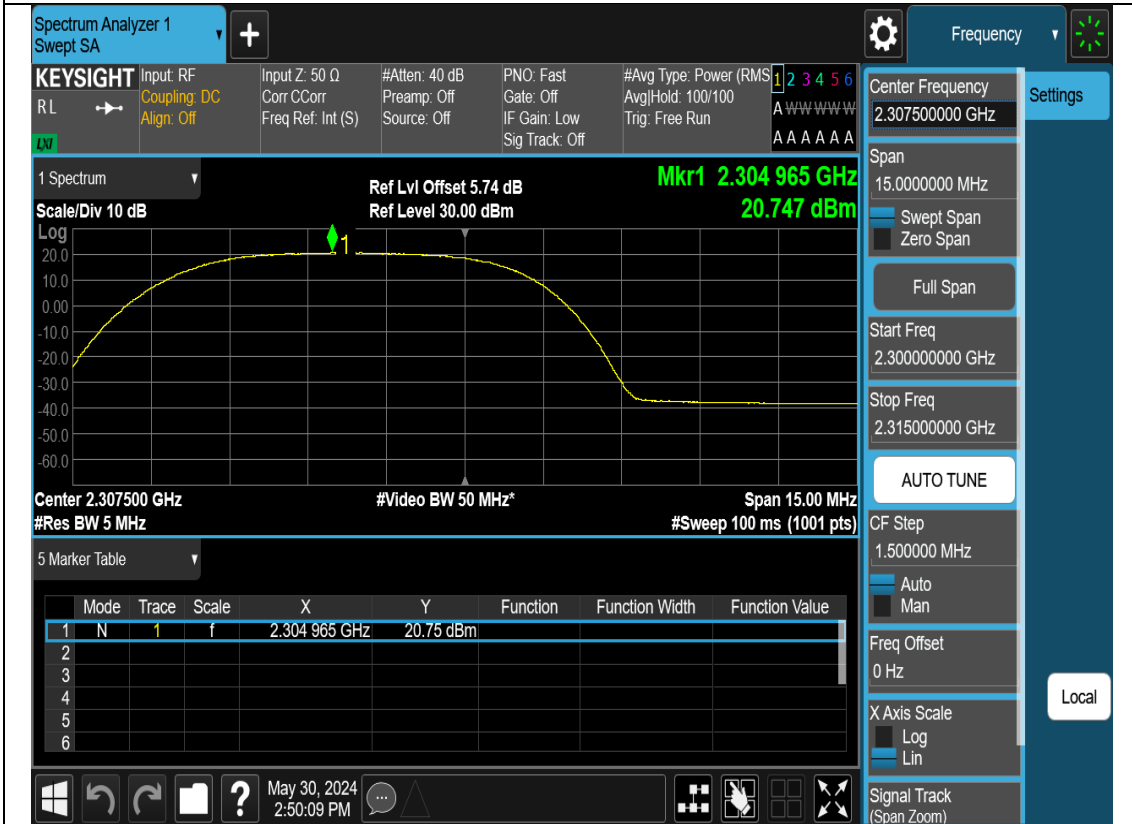
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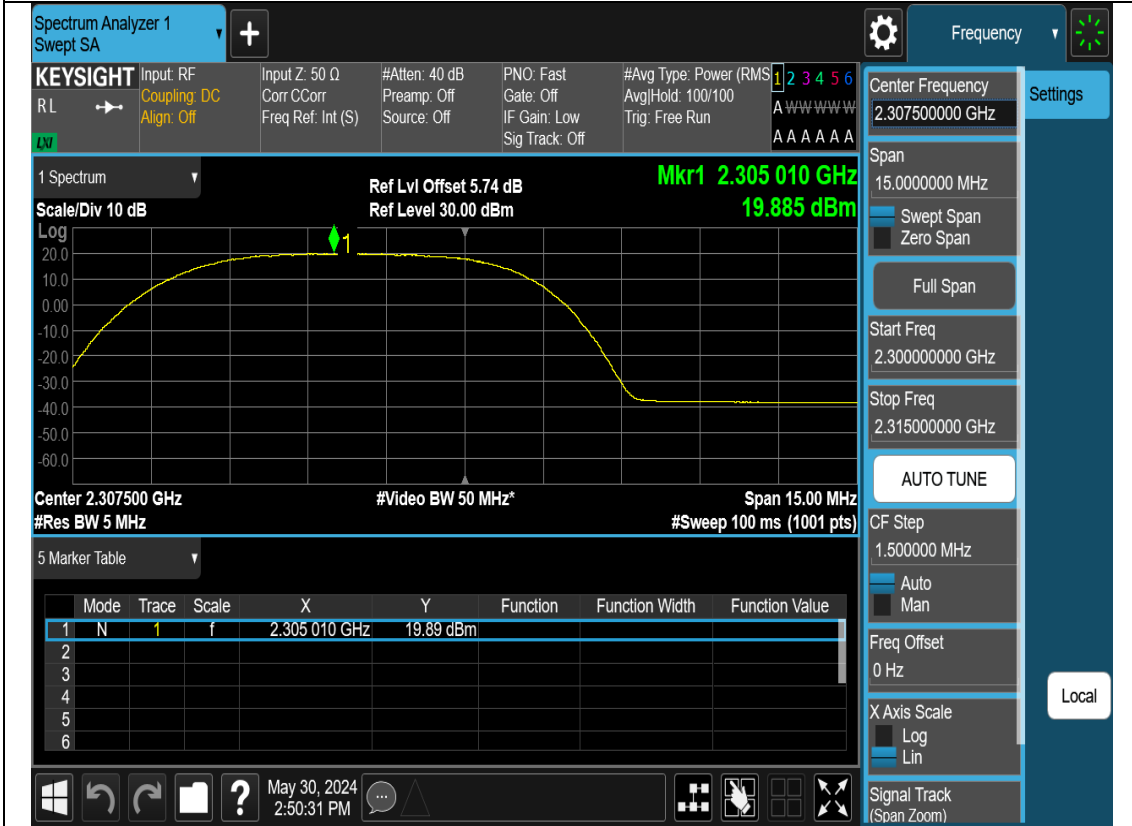
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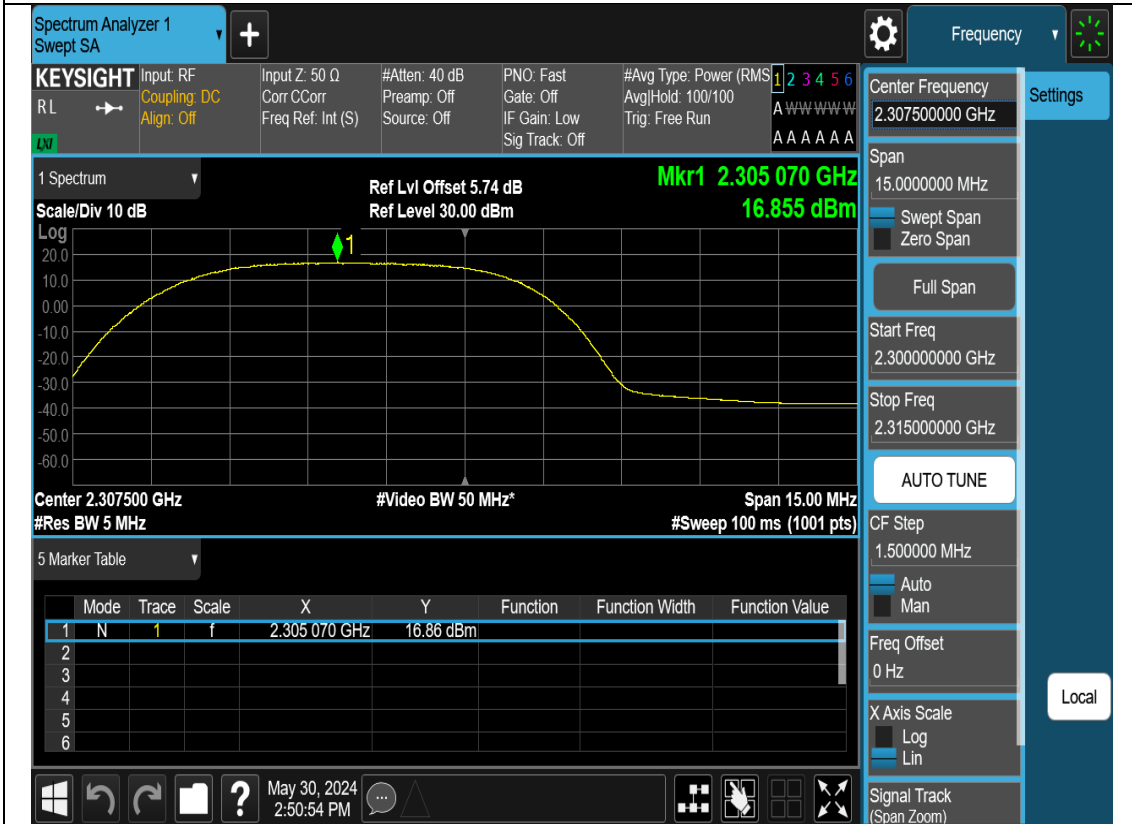
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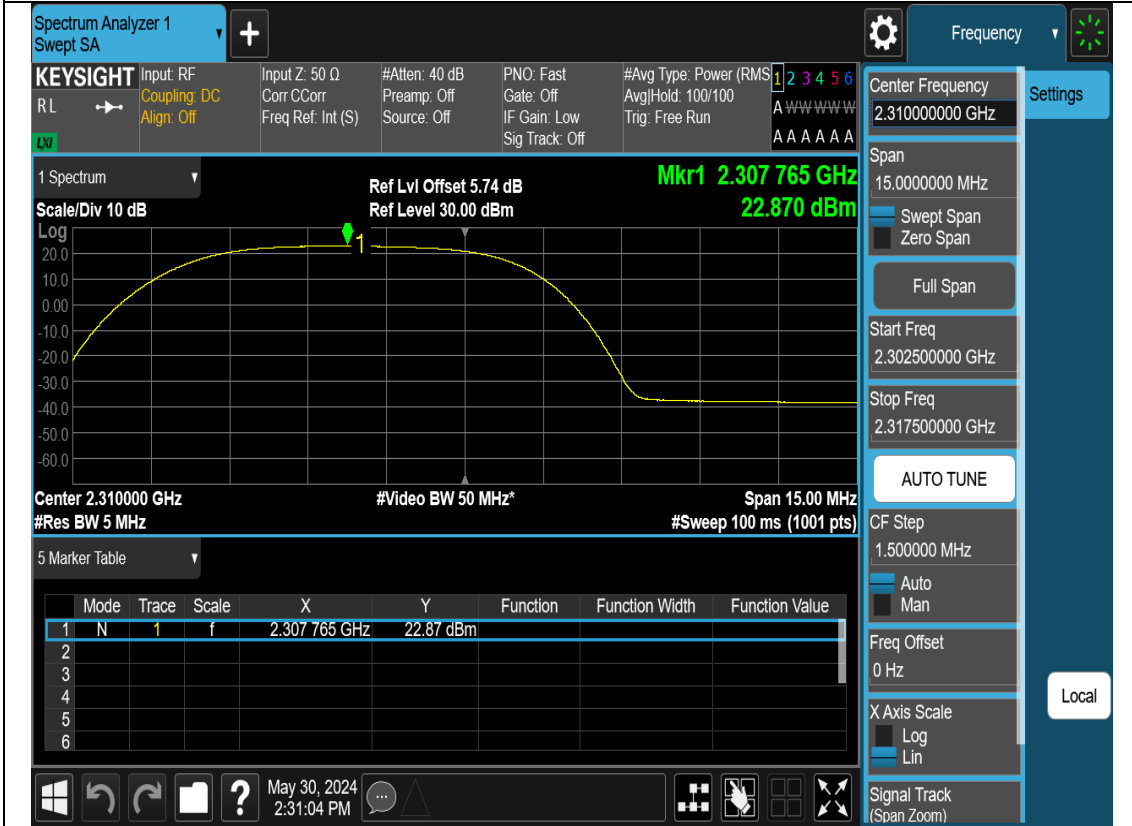
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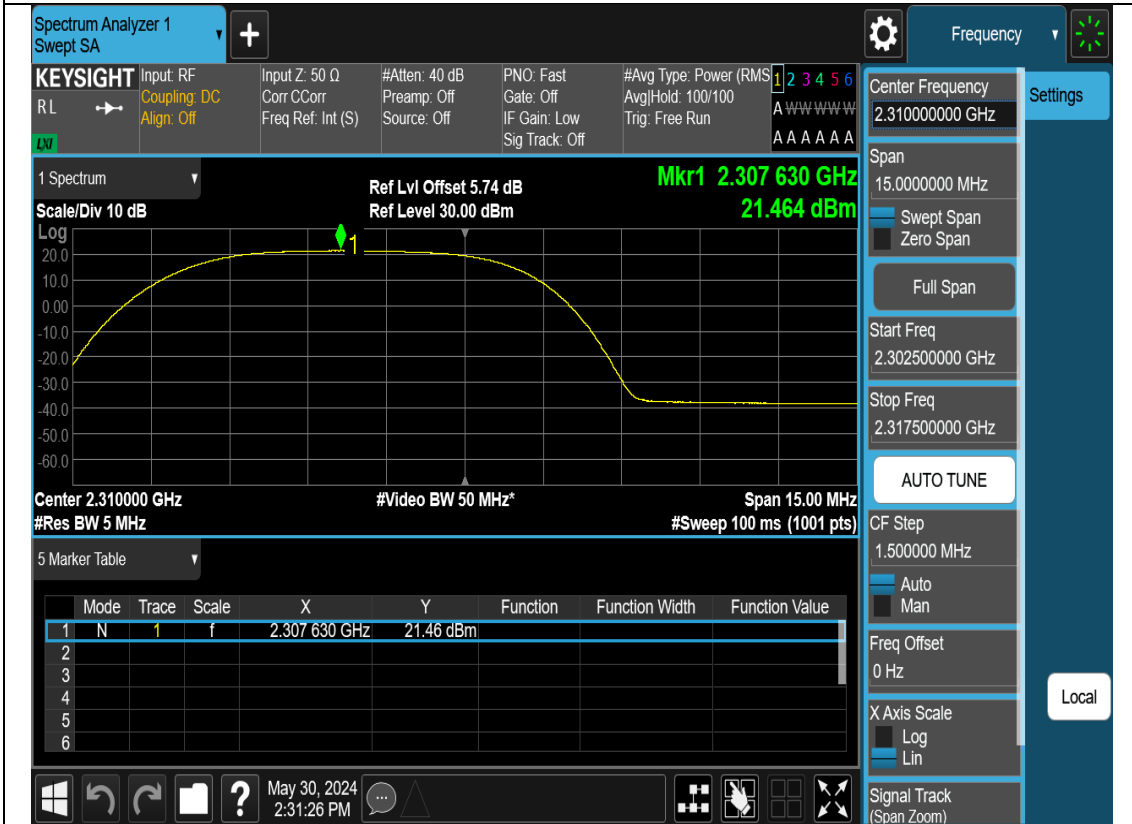
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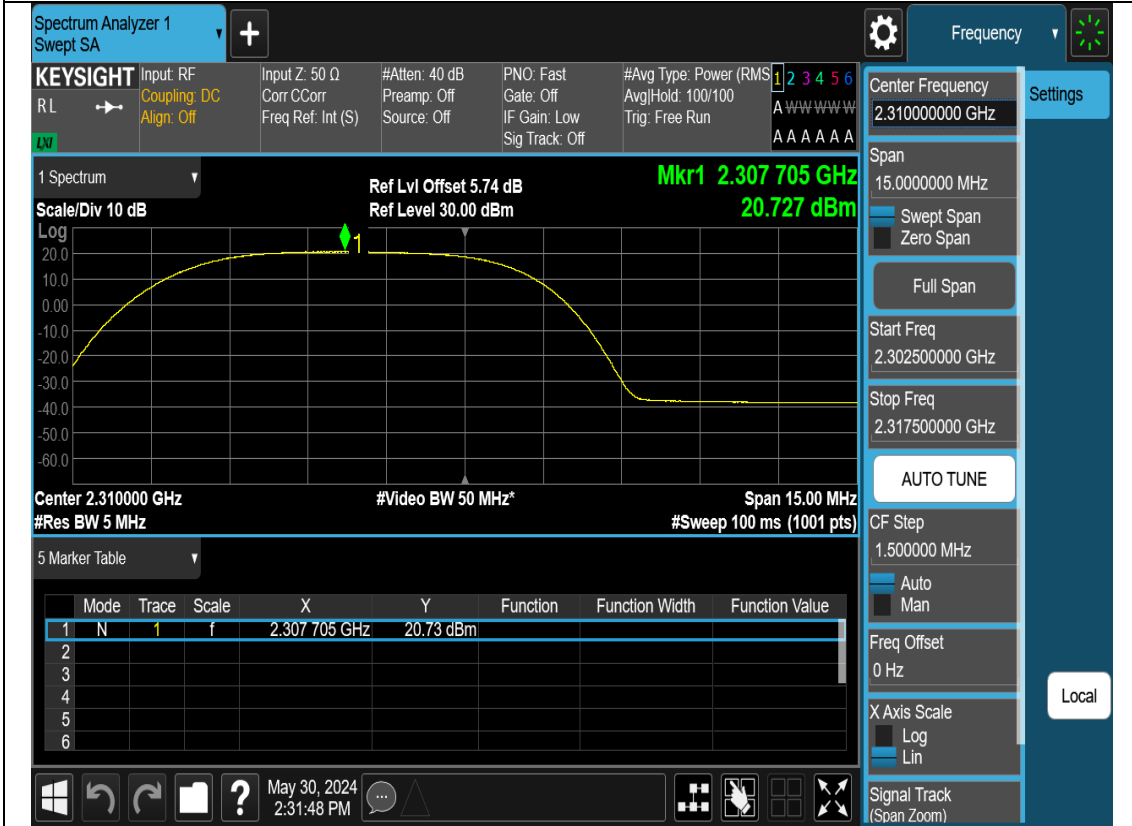
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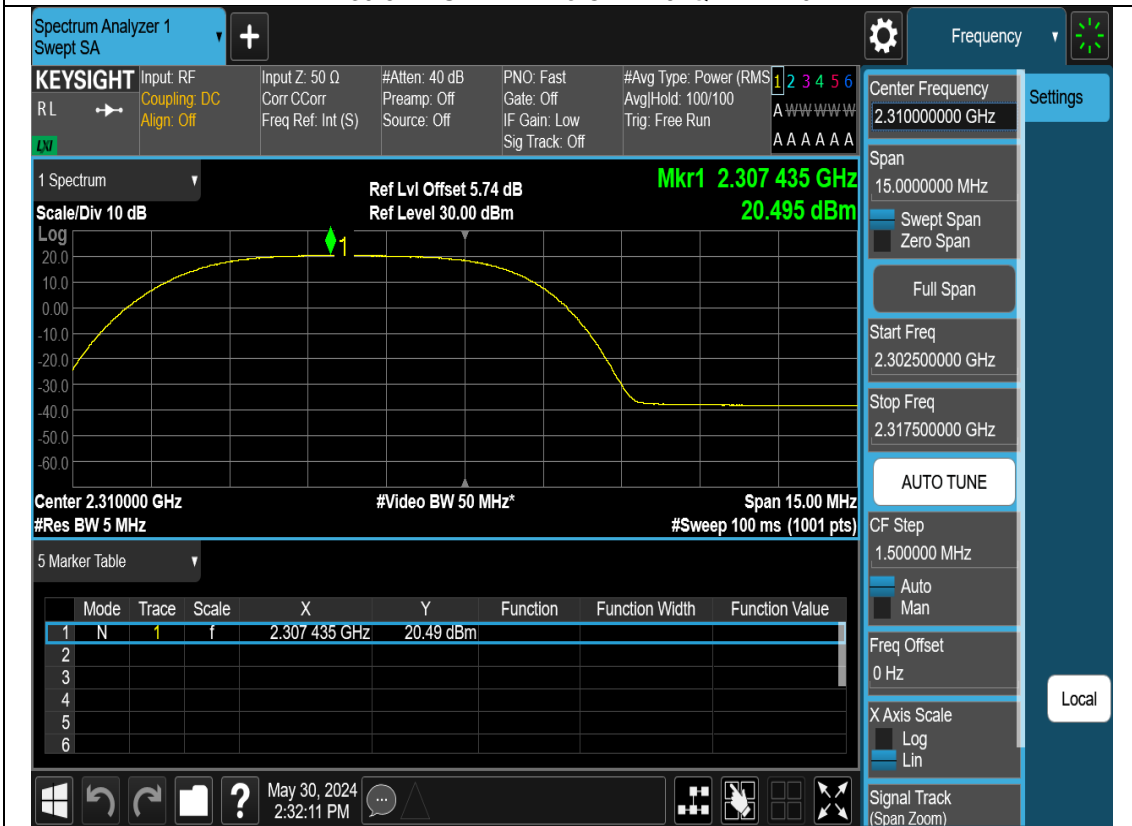
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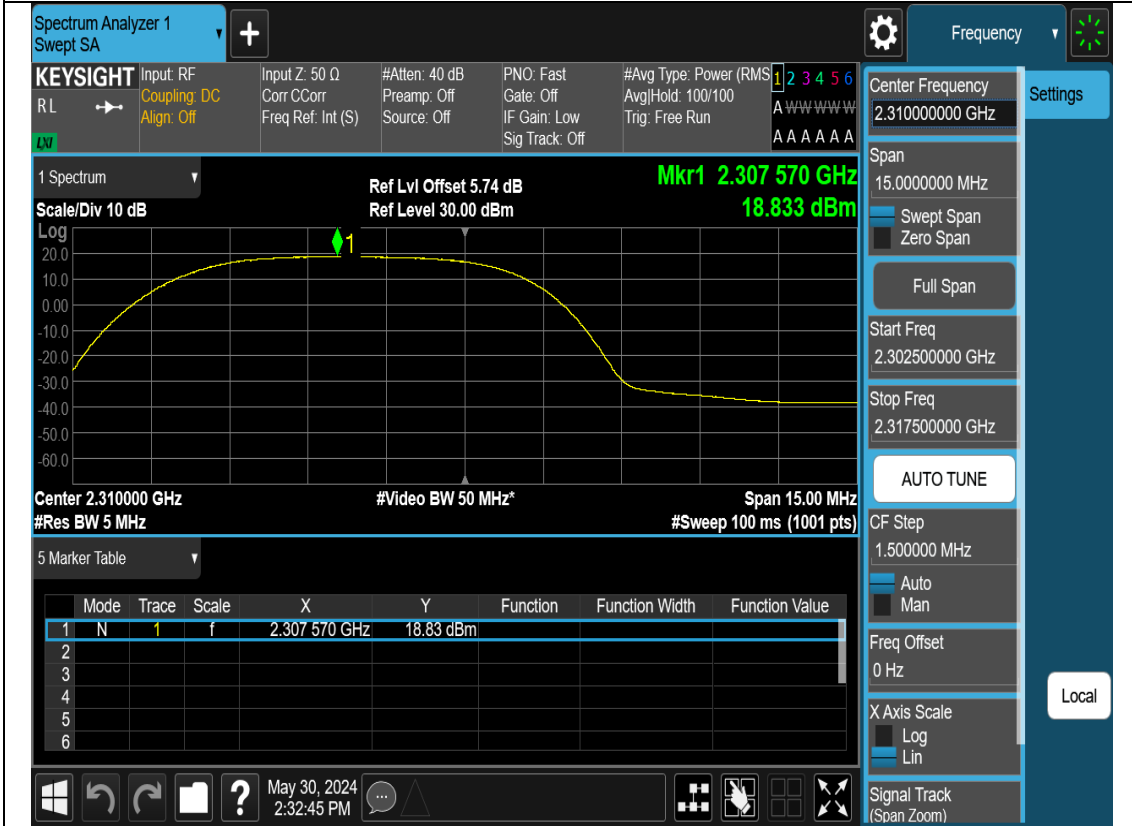
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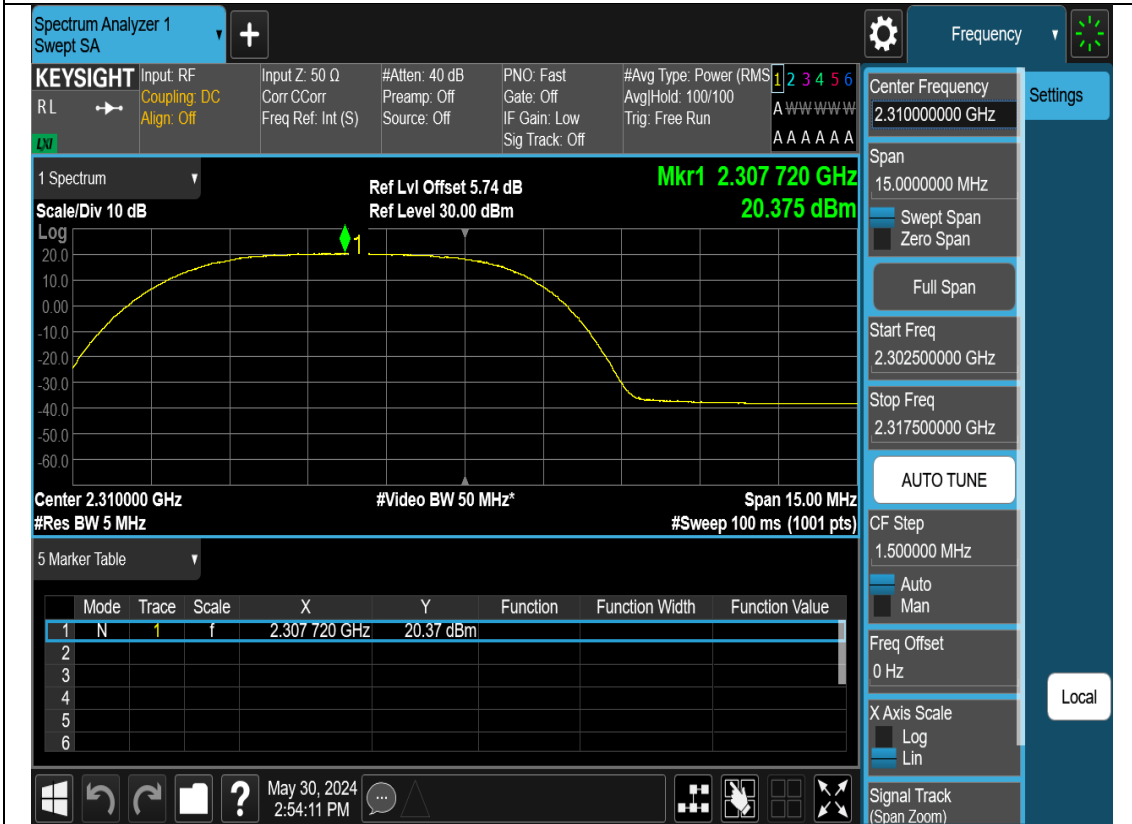
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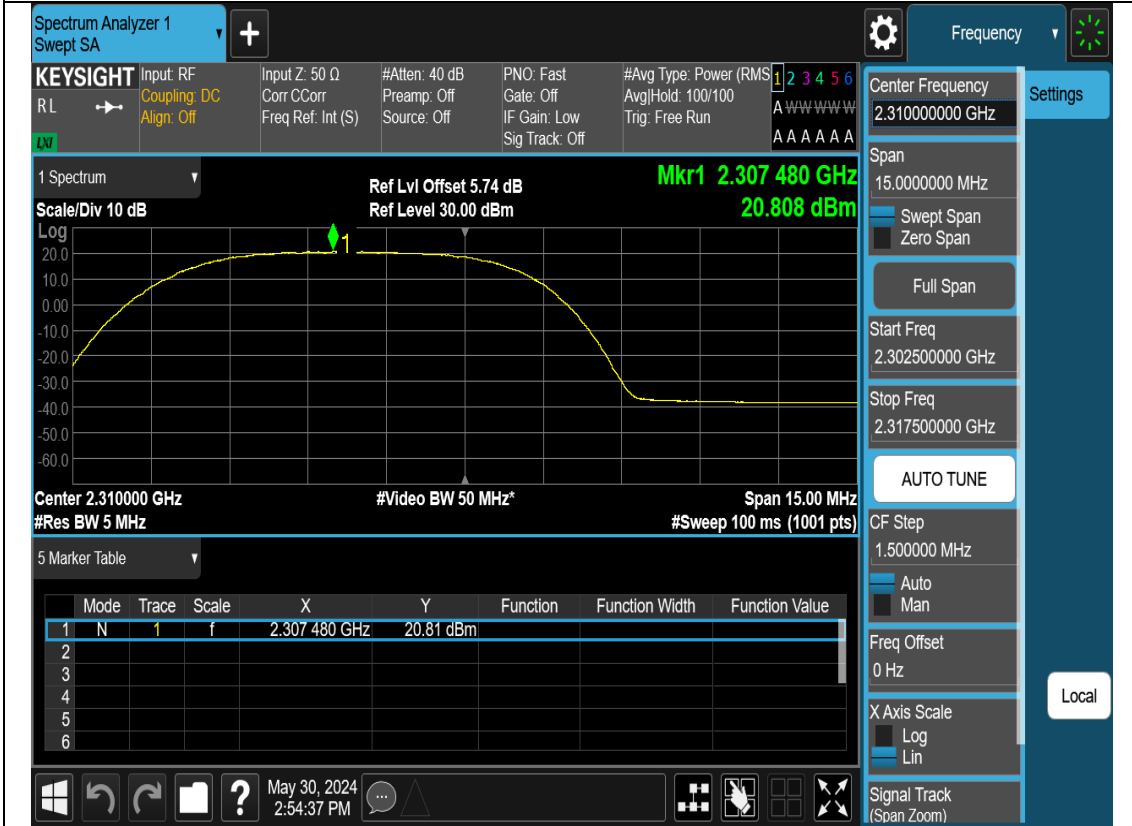
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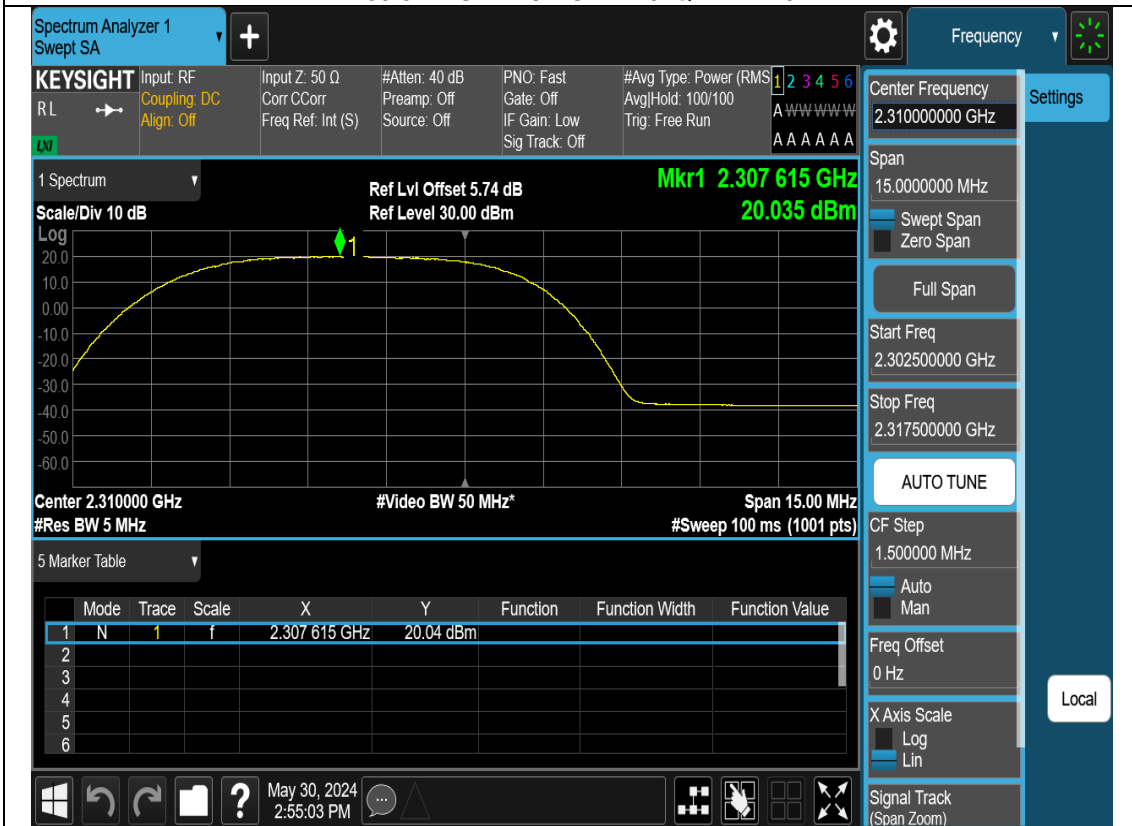
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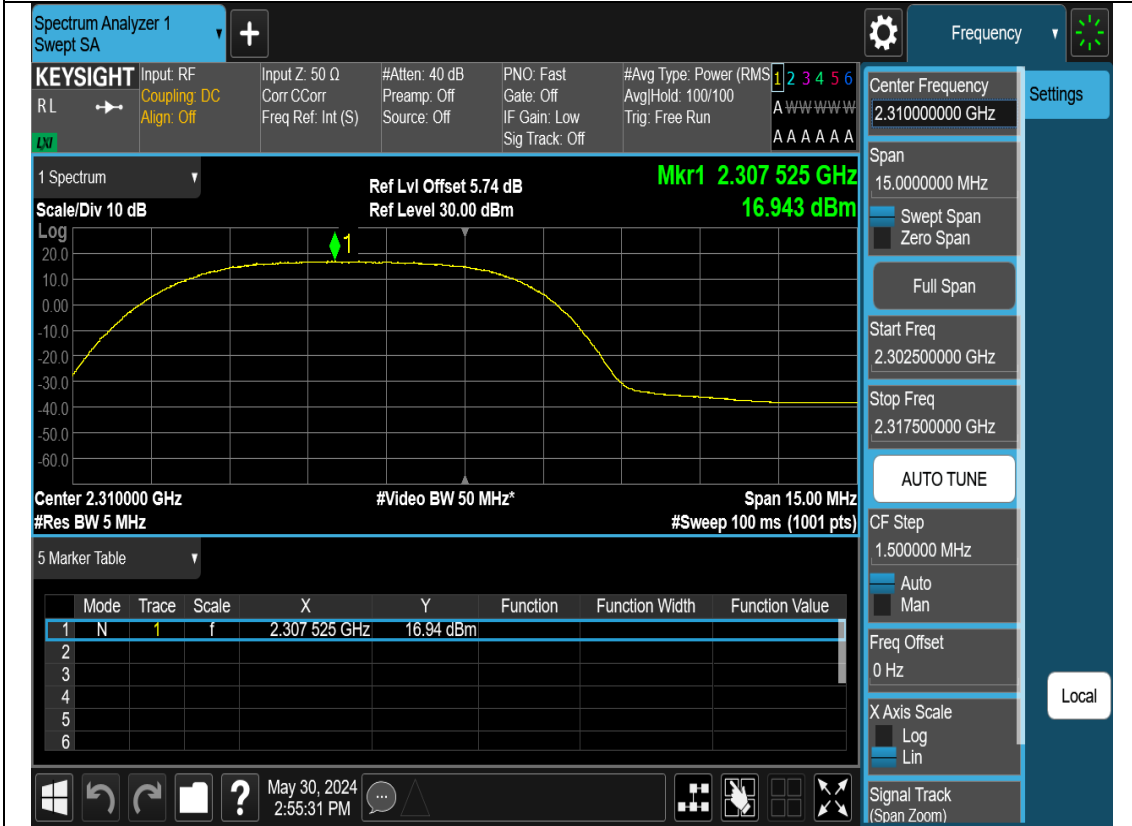
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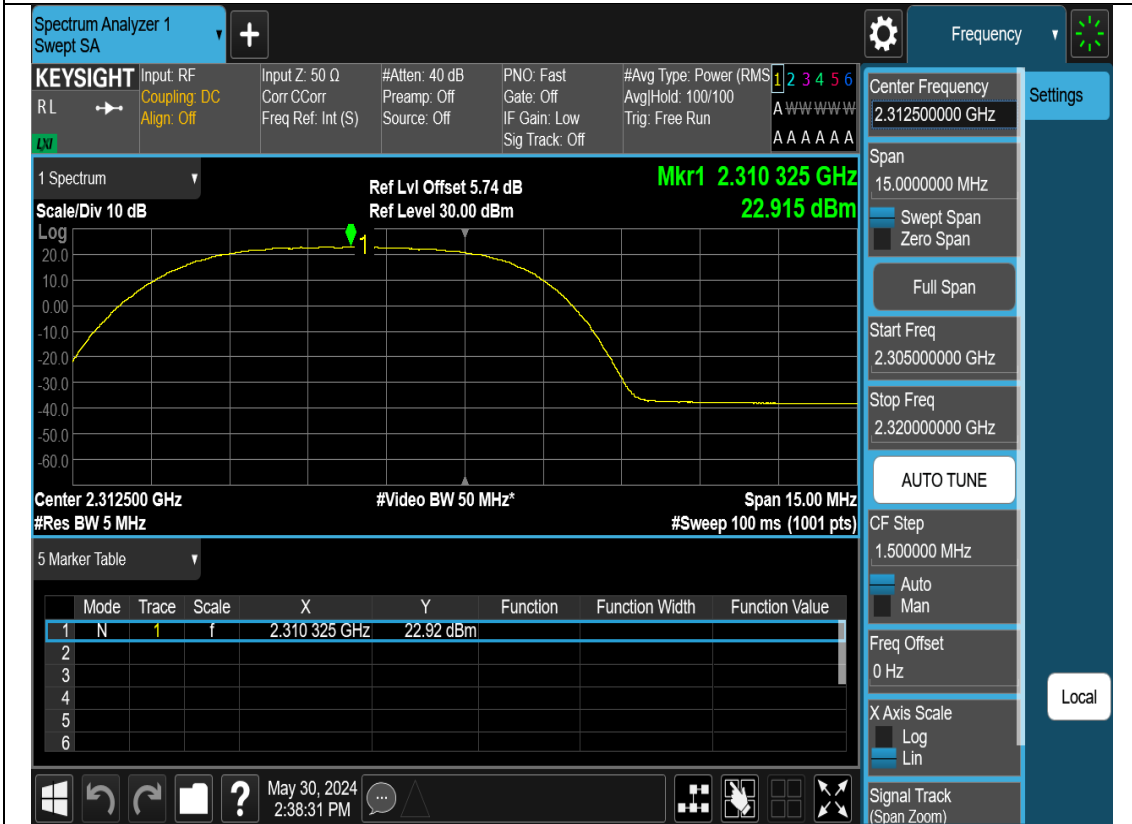
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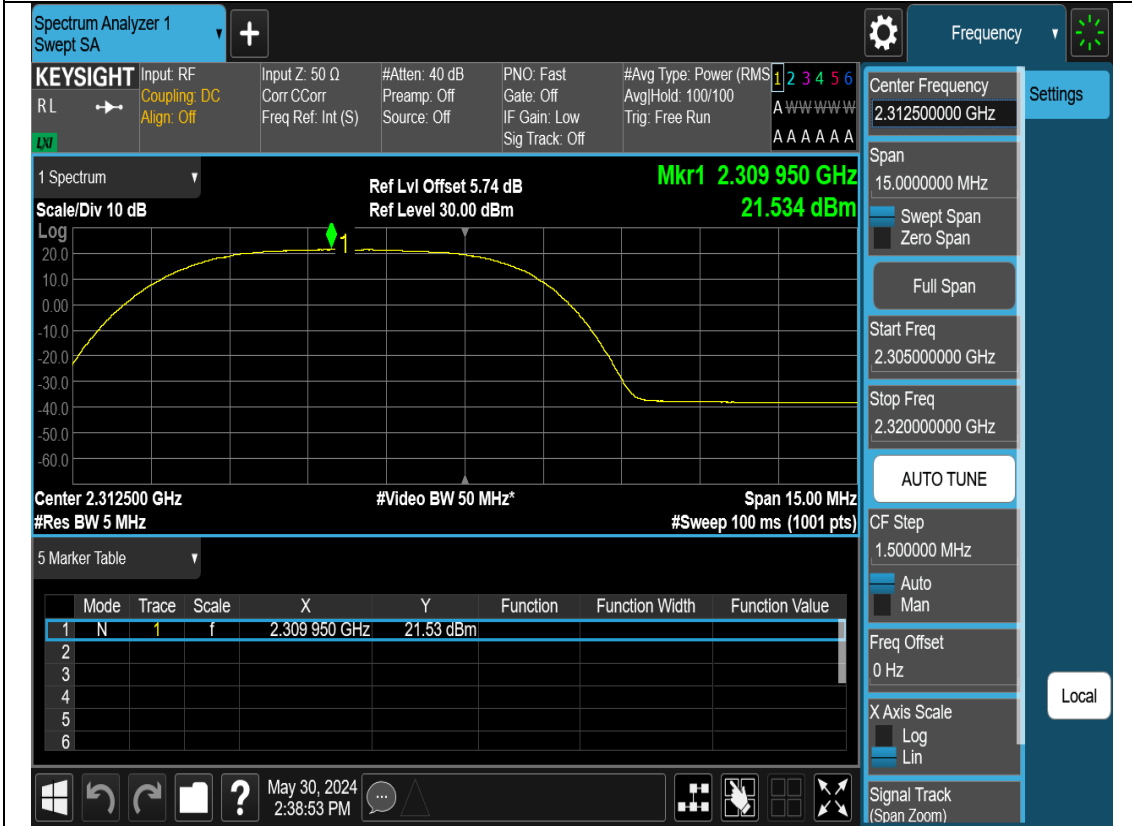
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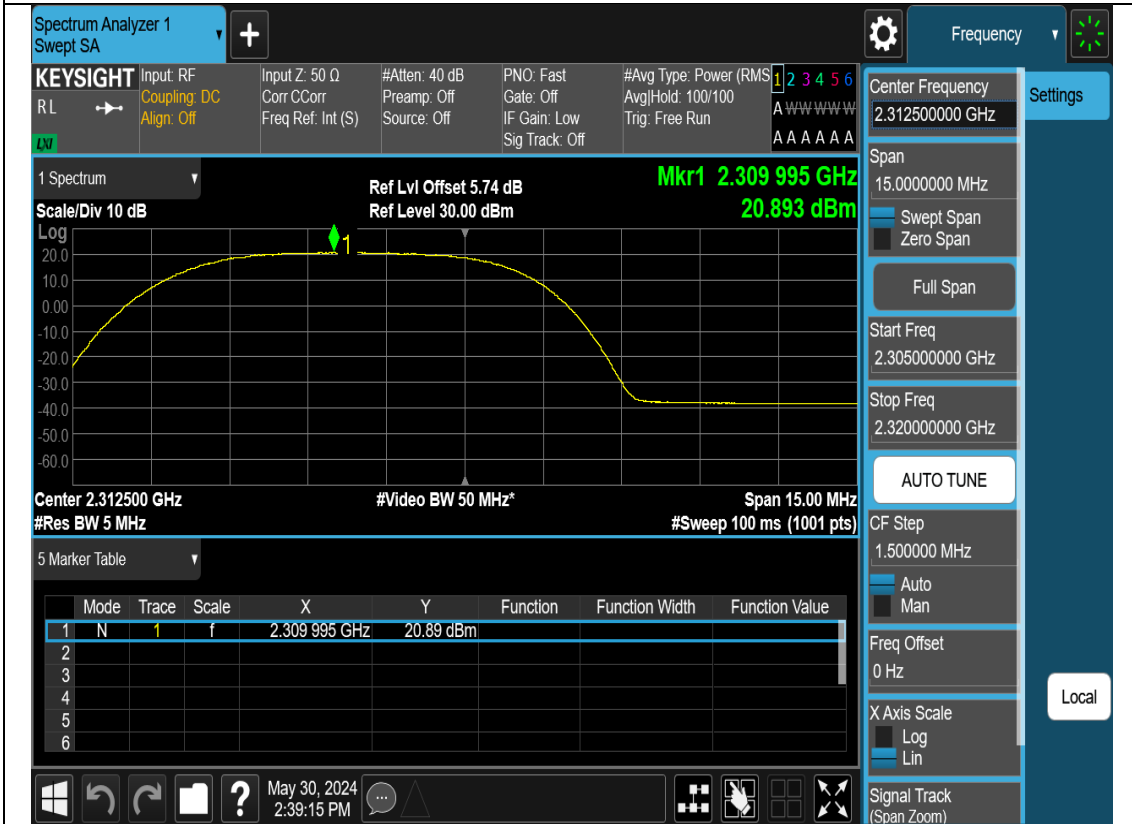
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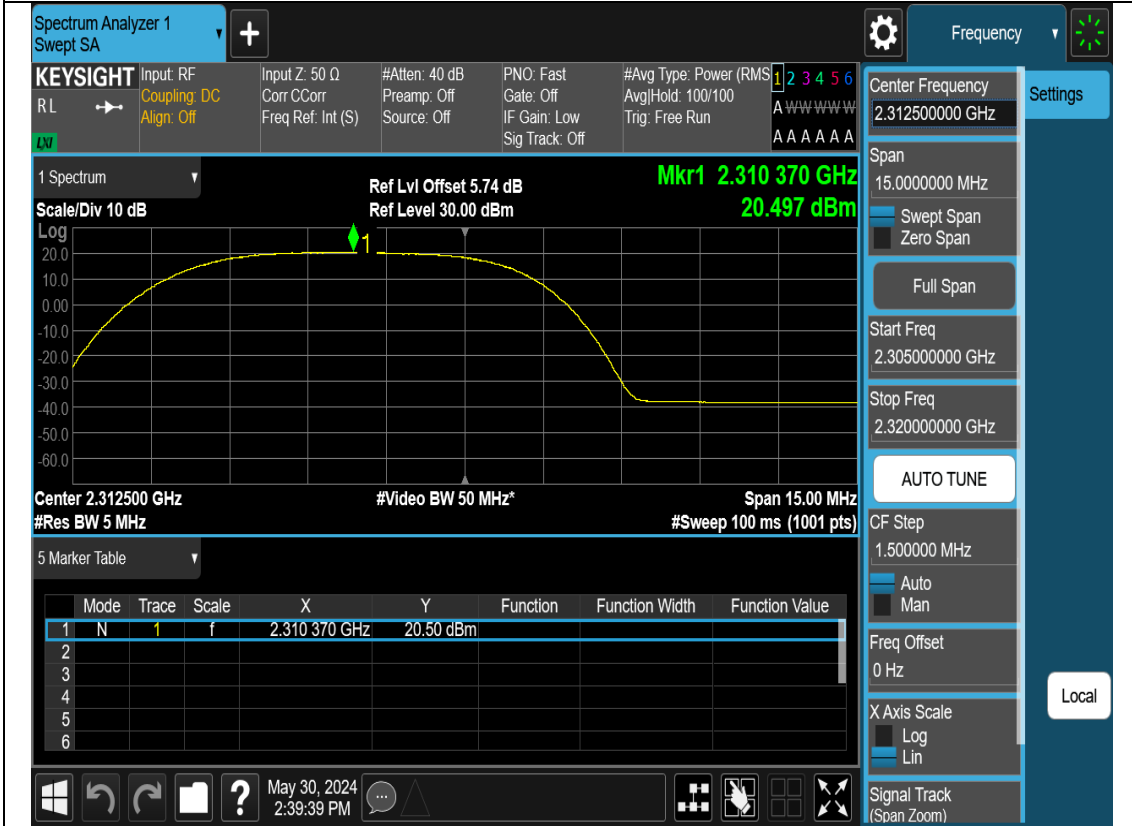
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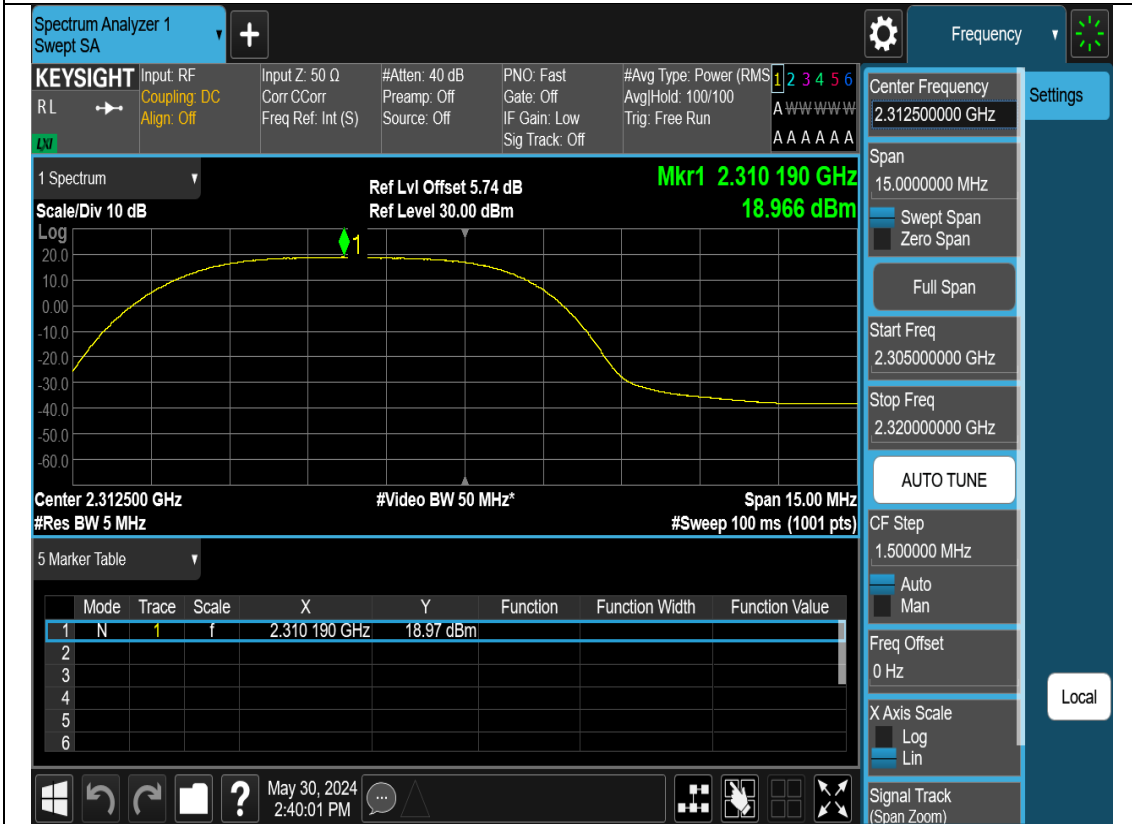
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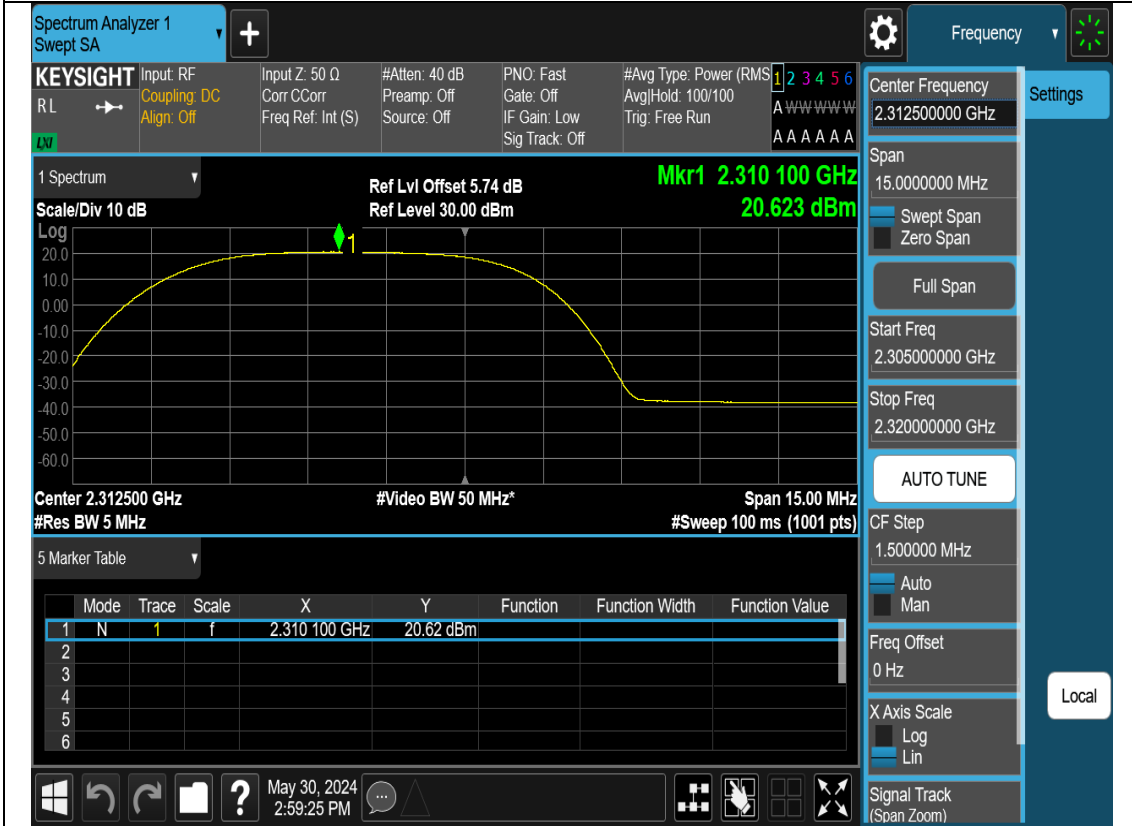
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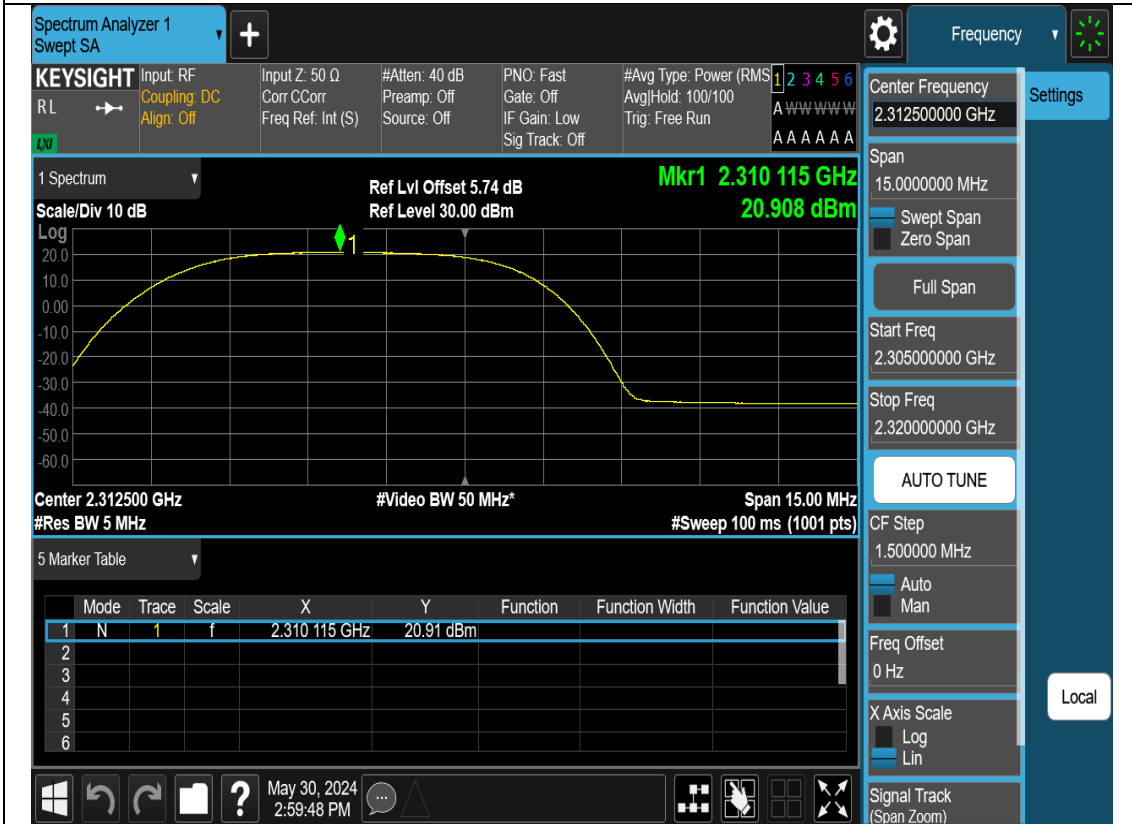
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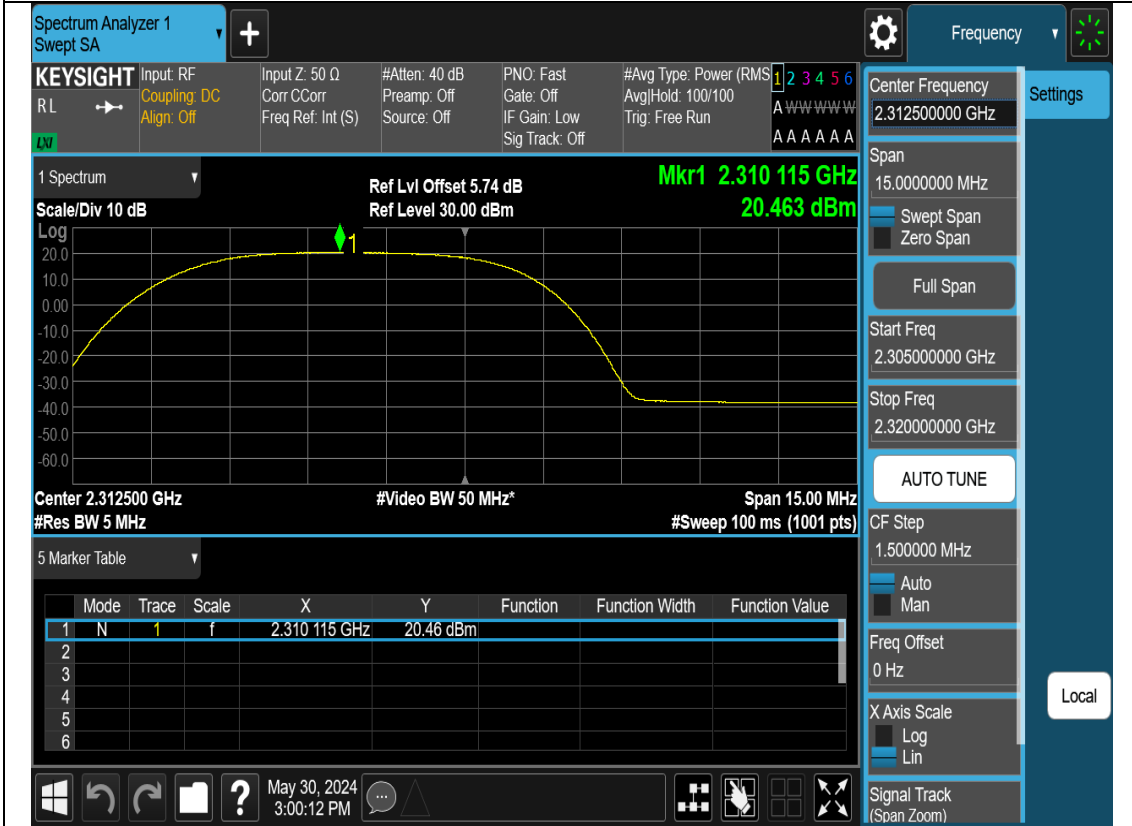
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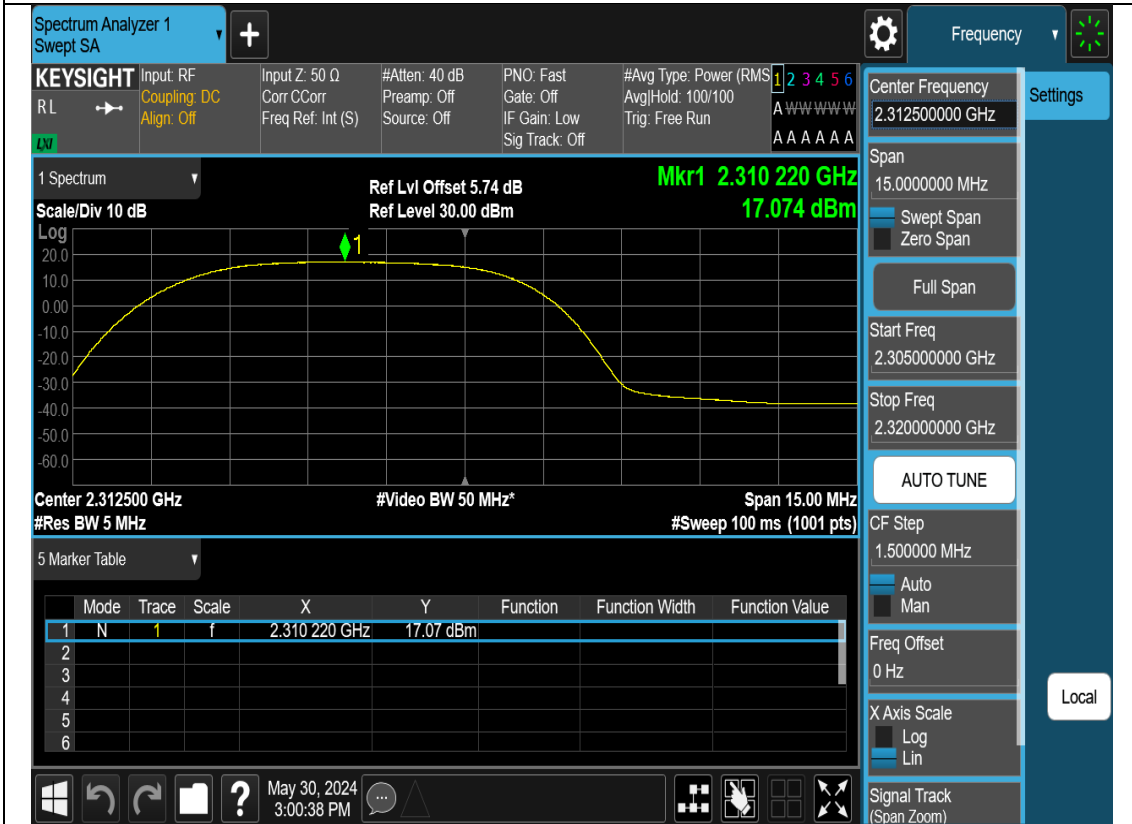
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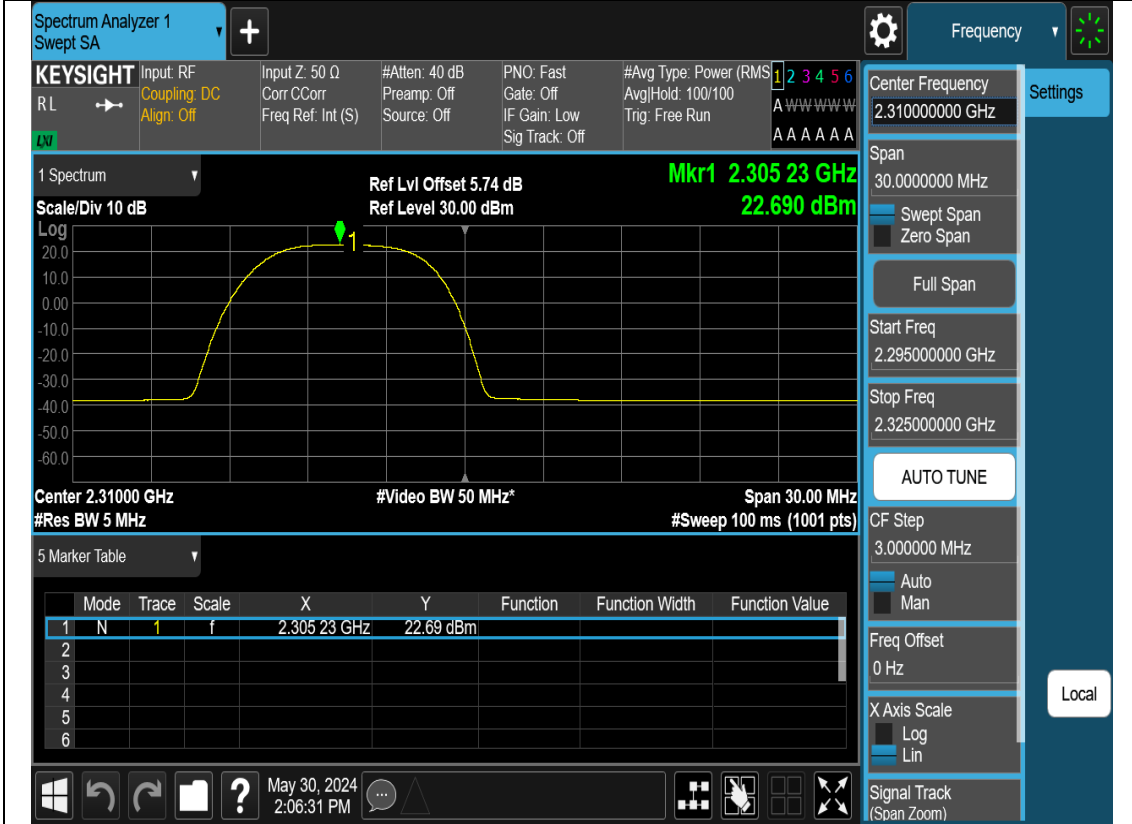
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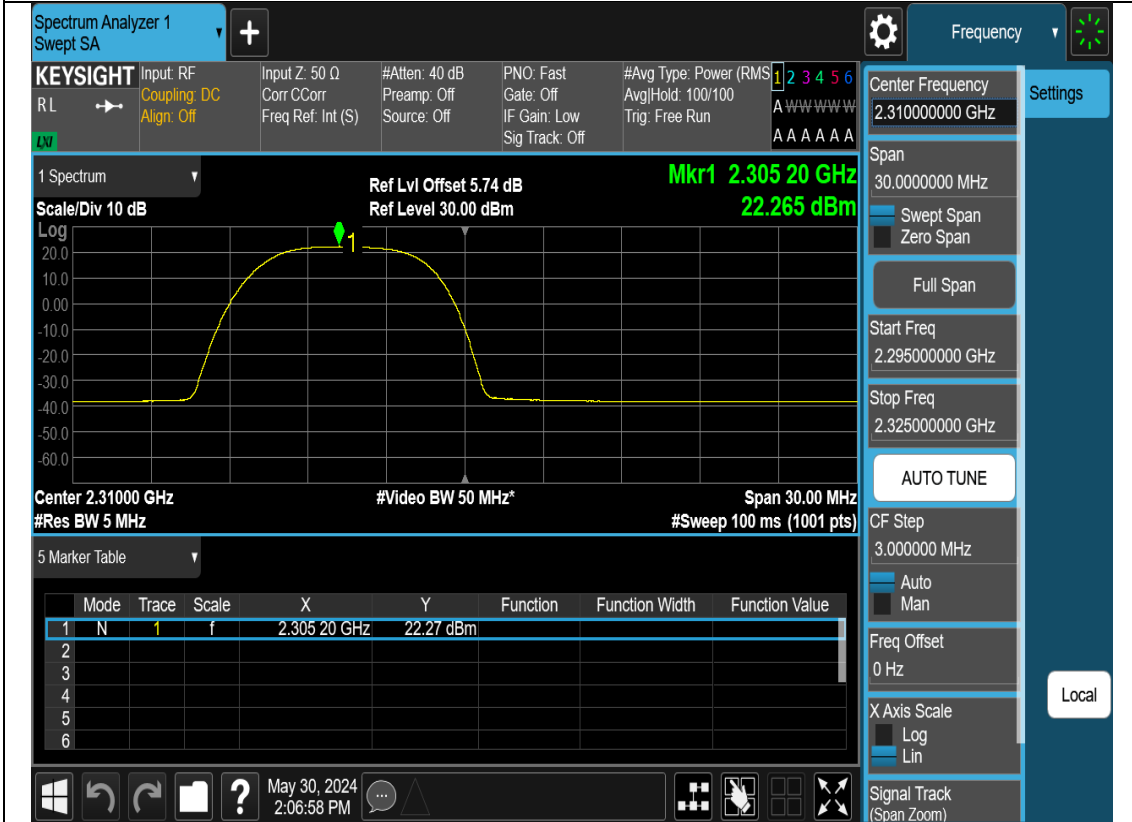
N30-5M-PSD-H-CP-OFDM-256QAM-1RB0



N30-10M-PSD-M-DFT-s-OFDM-Pi2 BPSK-1RB0



N30-10M-PSD-M-DFT-s-OFDM-QPSK-1RB0



N30-10M-PSD-M-DFT-s-OFDM-16QAM-1RB0

Spectrum Analyzer 1
Swept SA

KEYSIGHT Input RF
RL Coupling: DC
Align: Off

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

#Atten: 40 dB
Preamp: Off
Source: Off

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

#Avg Type: Power (RMS) 1 2 3 4 5 6
Avg/Hold: 100/100
Trig: Free Run

Center Frequency 2.31000000 GHz

Span 30.0000000 MHz

Swept Span
Zero Span

Full Span

Start Freq 2.295000000 GHz

Stop Freq 2.325000000 GHz

AUTO TUNE

CF Step 3.000000 MHz

Auto
Man

Freq Offset 0 Hz

X Axis Scale
Log
Lin

Signal Track (Span Zoom)

Settings

Local

1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 5.74 dB
Ref Level 30.00 dBm
Mkr1 2.305 17 GHz
21.291 dBm

Center 2.31000 GHz #Video BW 50 MHz* Span 30.00 MHz
#Res BW 5 MHz #Sweep 100 ms (1001 pts)

5 Marker Table

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.305 17 GHz	21.29 dBm		
2							
3							
4							
5							
6							

May 30, 2024 2:07:21 PM

N30-10M-PSD-M-DFT-s-OFDM-64QAM-1RB0

Spectrum Analyzer 1
Swept SA

KEYSIGHT Input RF
RL Coupling: DC
Align: Off

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

#Atten: 40 dB
Preamp: Off
Source: Off

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

#Avg Type: Power (RMS) 1 2 3 4 5 6
Avg/Hold: 100/100
Trig: Free Run

Center Frequency 2.31000000 GHz

Span 30.0000000 MHz

Swept Span
Zero Span

Full Span

Start Freq 2.295000000 GHz

Stop Freq 2.325000000 GHz

AUTO TUNE

CF Step 3.000000 MHz

Auto
Man

Freq Offset 0 Hz

X Axis Scale
Log
Lin

Signal Track (Span Zoom)

Settings

Local

1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 5.74 dB
Ref Level 30.00 dBm
Mkr1 2.305 14 GHz
20.906 dBm

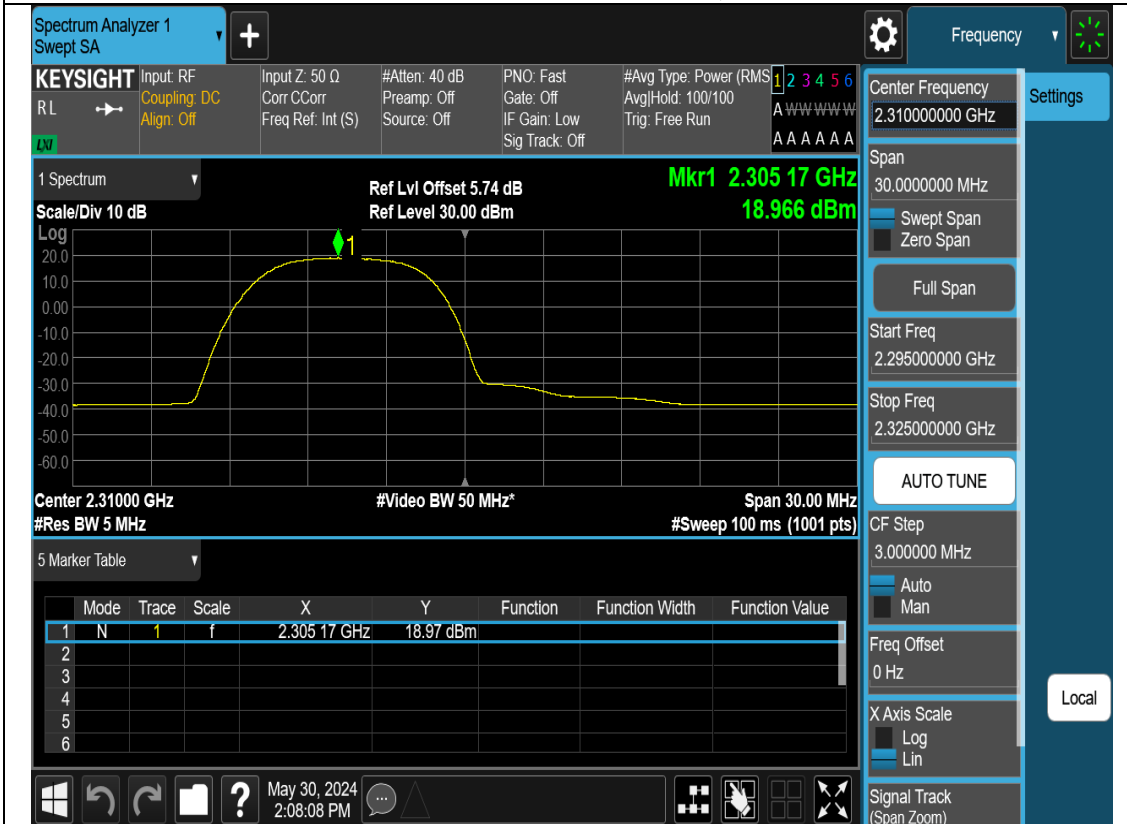
Center 2.31000 GHz #Video BW 50 MHz* Span 30.00 MHz
#Res BW 5 MHz #Sweep 100 ms (1001 pts)

5 Marker Table

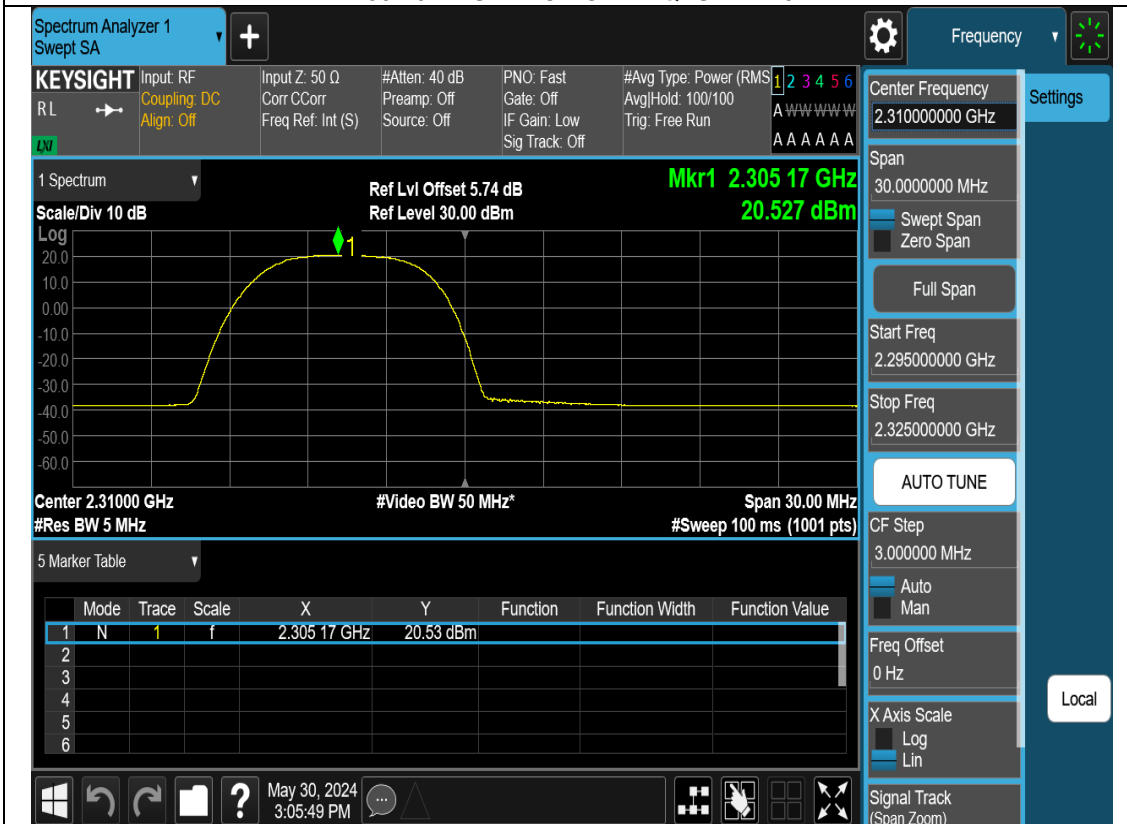
Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.305 14 GHz	20.91 dBm		
2							
3							
4							
5							
6							

May 30, 2024 2:07:43 PM

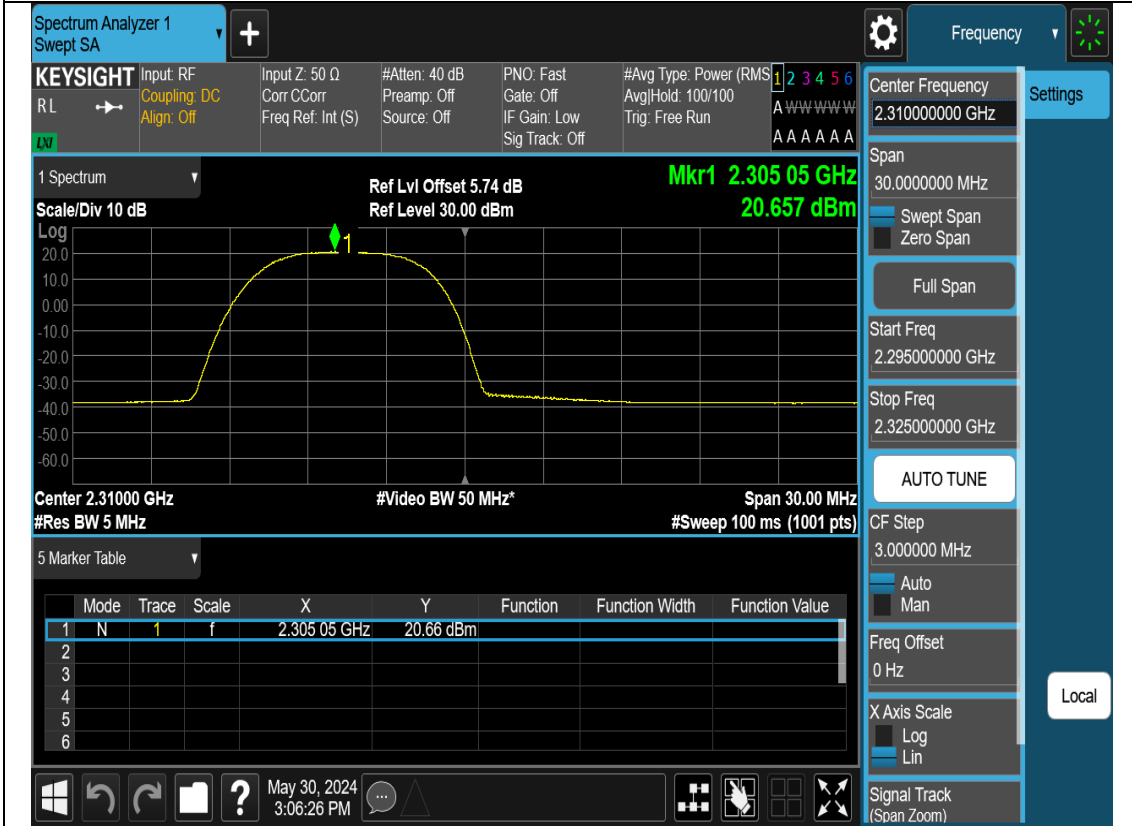
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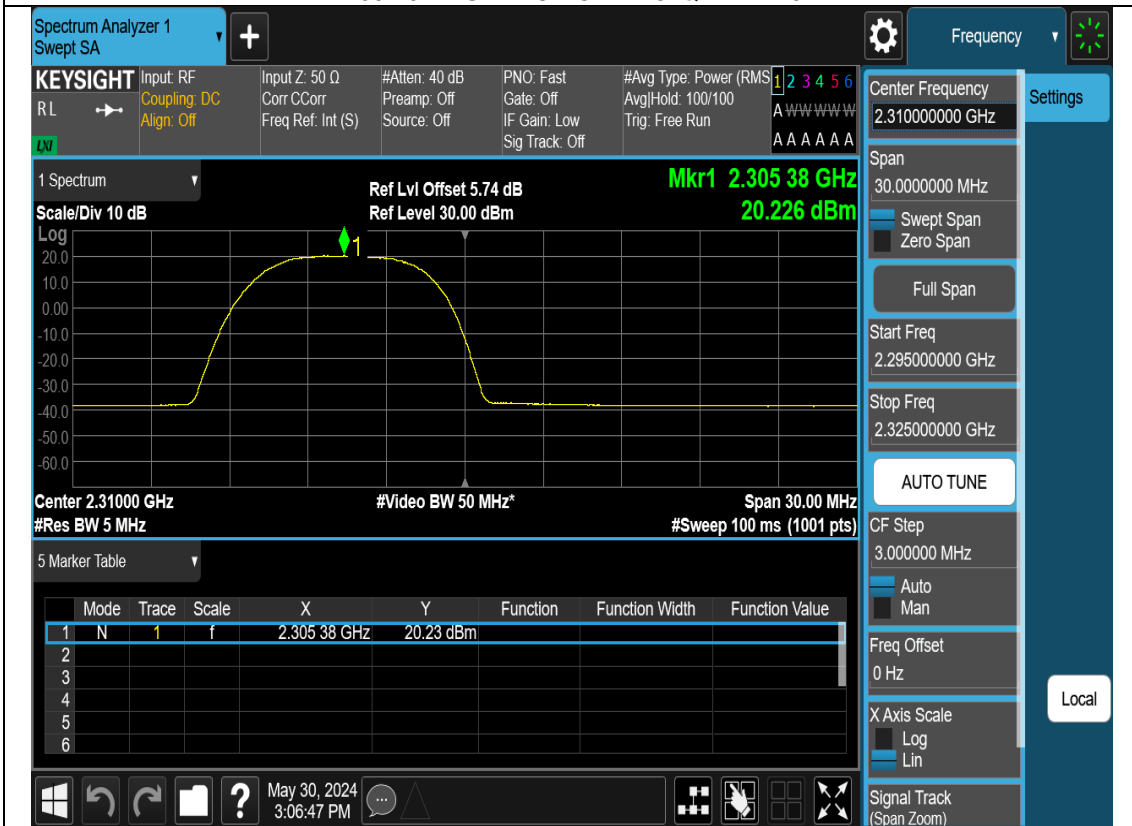
N30-10M-PSD-M-CP-OFDM-QPSK-1RB0



N30-10M-PSD-M-CP-OFDM-16QAM-1RB0



N30-10M-PSD-M-CP-OFDM-64QAM-1RB0



N30-10M-PSD-M-CP-OFDM-256QAM-1RB0

Spectrum Analyzer 1
Swept SA

KEYSIGHT Input RF
RL Coupling: DC
Align: Off

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

#Atten: 40 dB
Preamp: Off
Source: Off

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

#Avg Type: Power (RMS) 1 2 3 4 5 6
Avg/Hold: 100/100
Trig: Free Run

Frequency

Center Frequency
2.31000000 GHz

Span
30.000000 MHz

Swept Span
Zero Span

Full Span

Start Freq
2.29500000 GHz

Stop Freq
2.32500000 GHz

AUTO TUNE

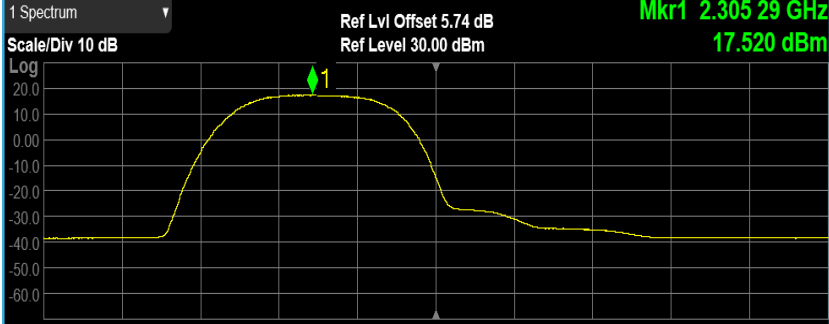
CF Step
3.000000 MHz

Auto
Man

Freq Offset
0 Hz

X Axis Scale
Log
Lin

Signal Track
(Span Zoom)



5 Marker Table

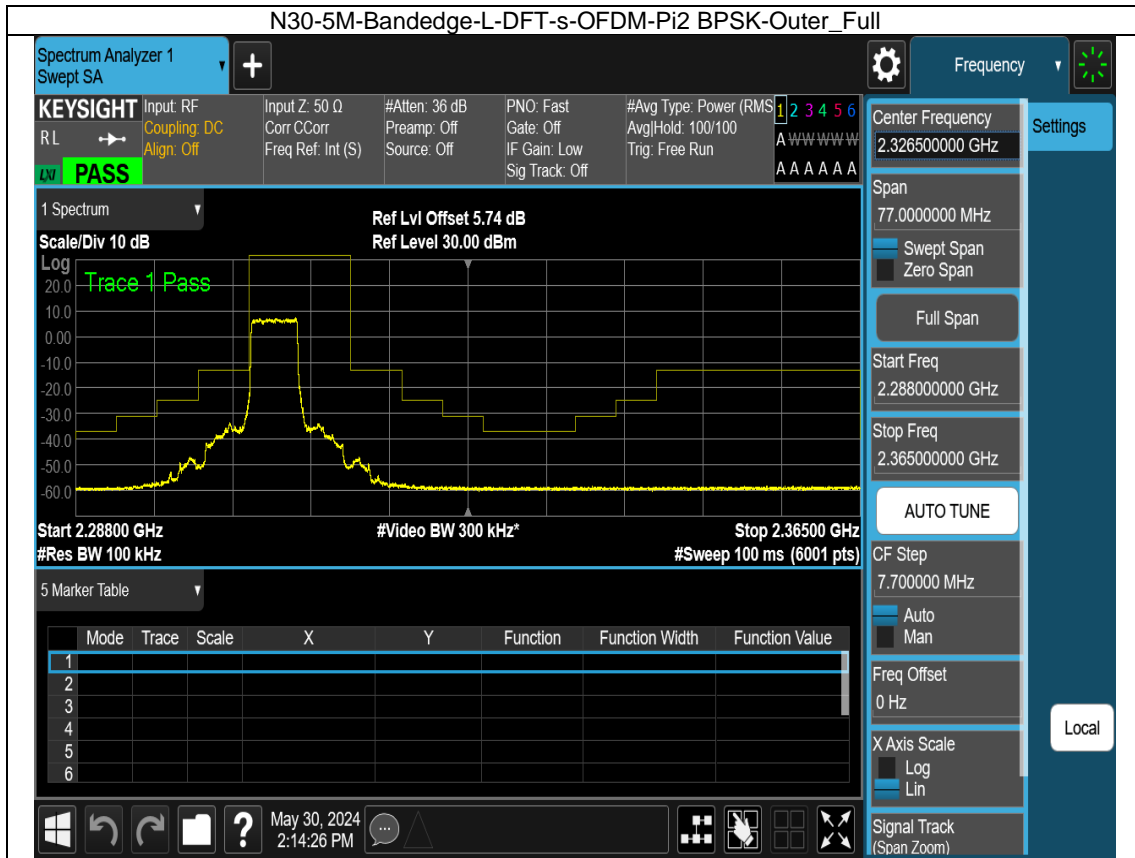
Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.305 29 GHz	17.52 dBm		
2							
3							
4							
5							
6							

May 30, 2024
3:07:08 PM

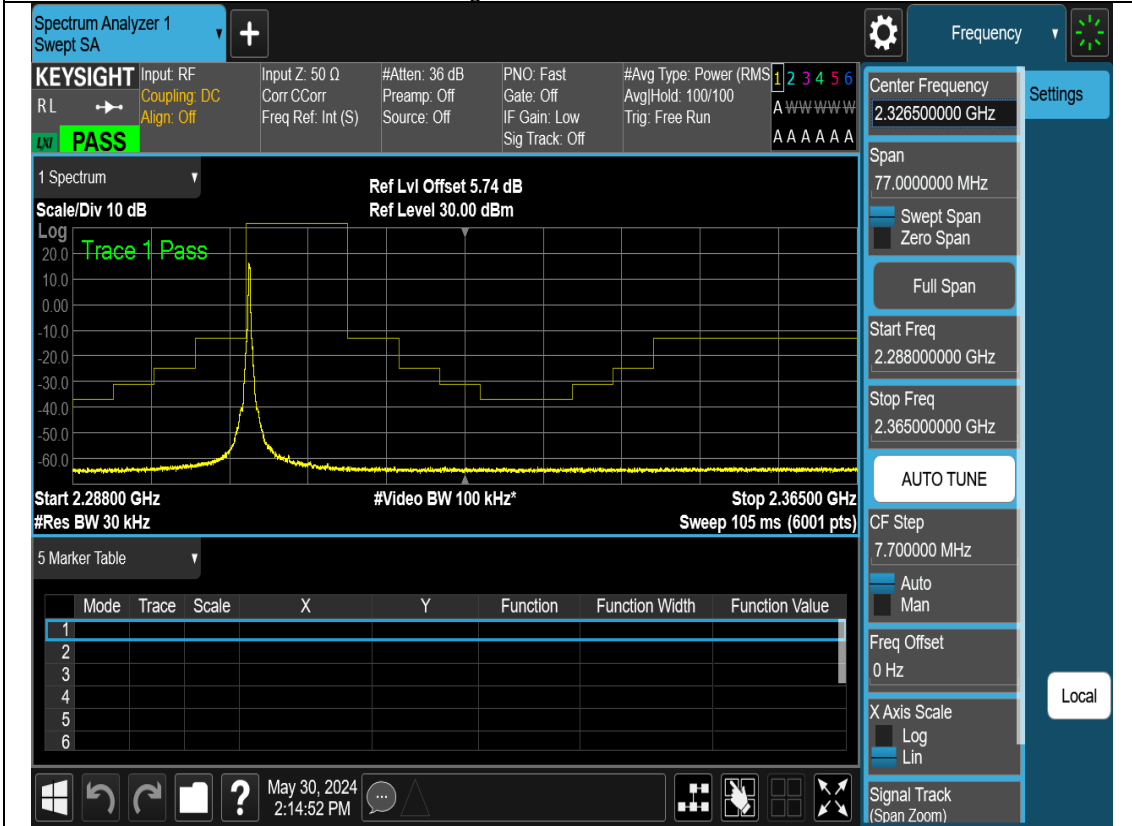
Settings

Local

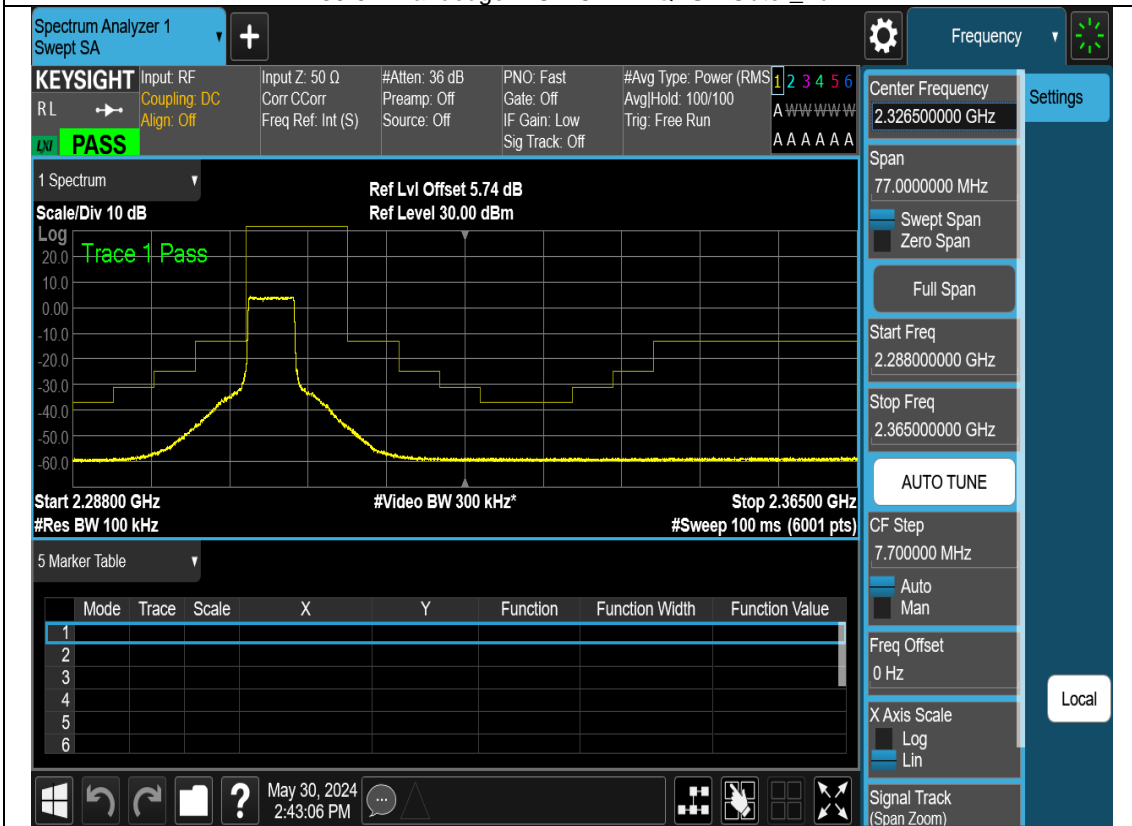
Bandedge test graph



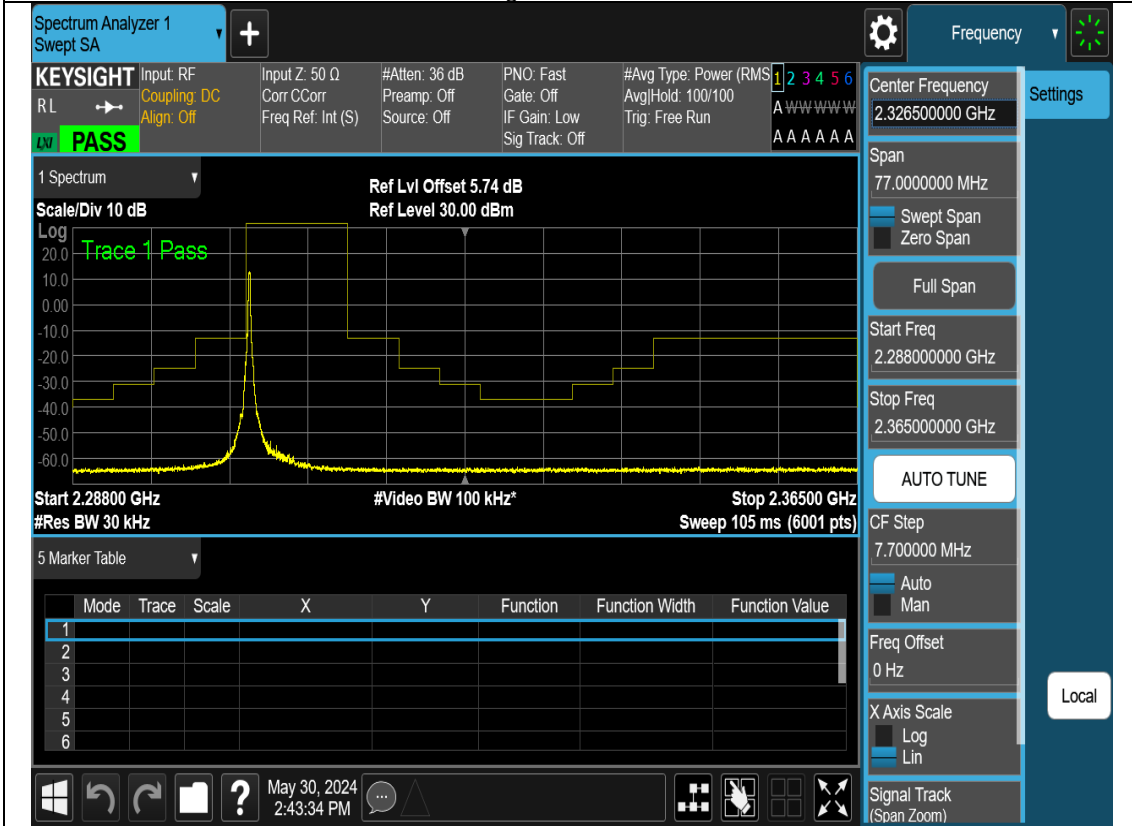
N30-5M-Bandedge-L-DFT-s-OFDM-Pi2 BPSK-1RB0



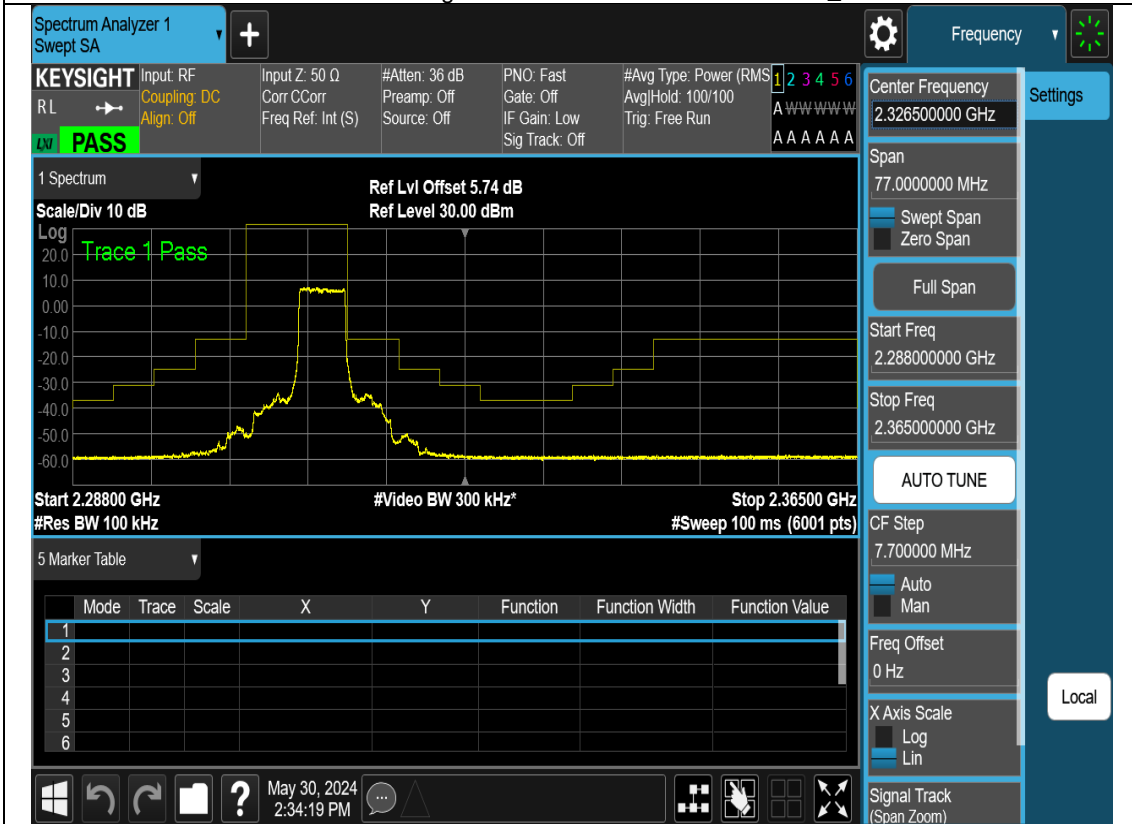
N30-5M-Bandedge-L-CP-OFDM-QPSK-Outer_Full



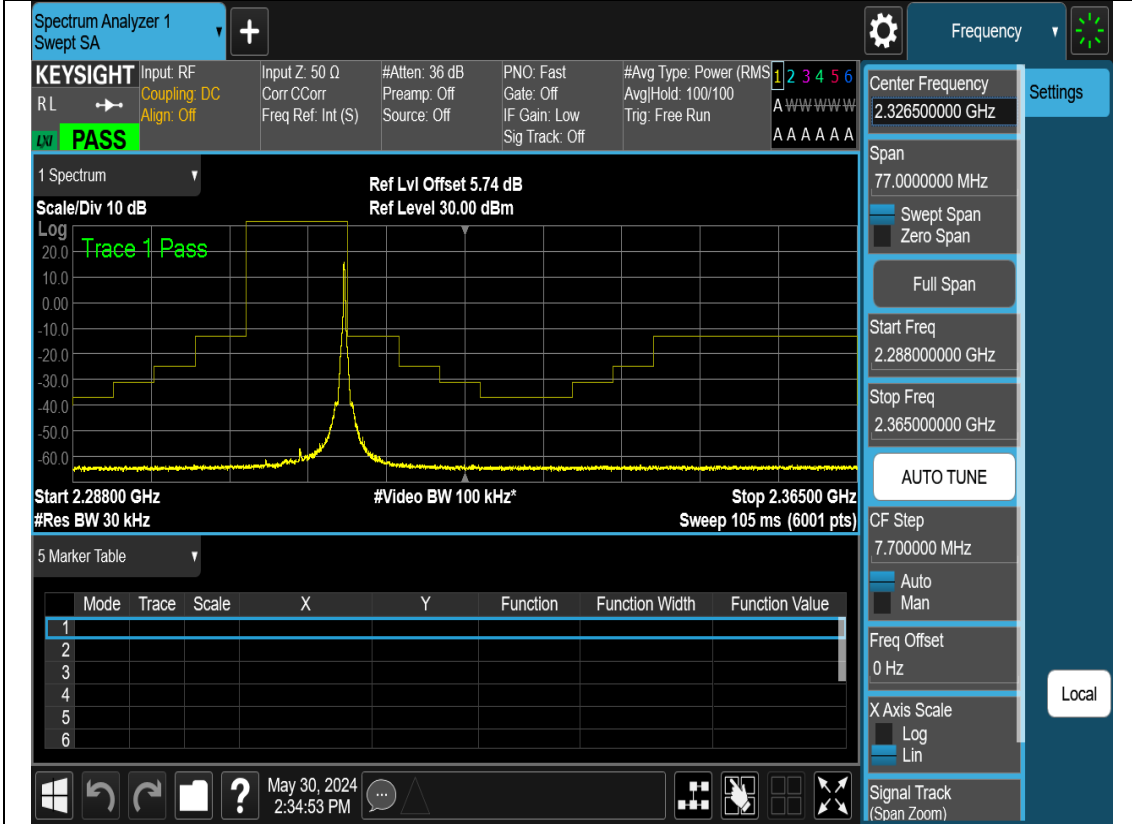
N30-5M-Bandedge-L-CP-OFDM-QPSK-1RB0



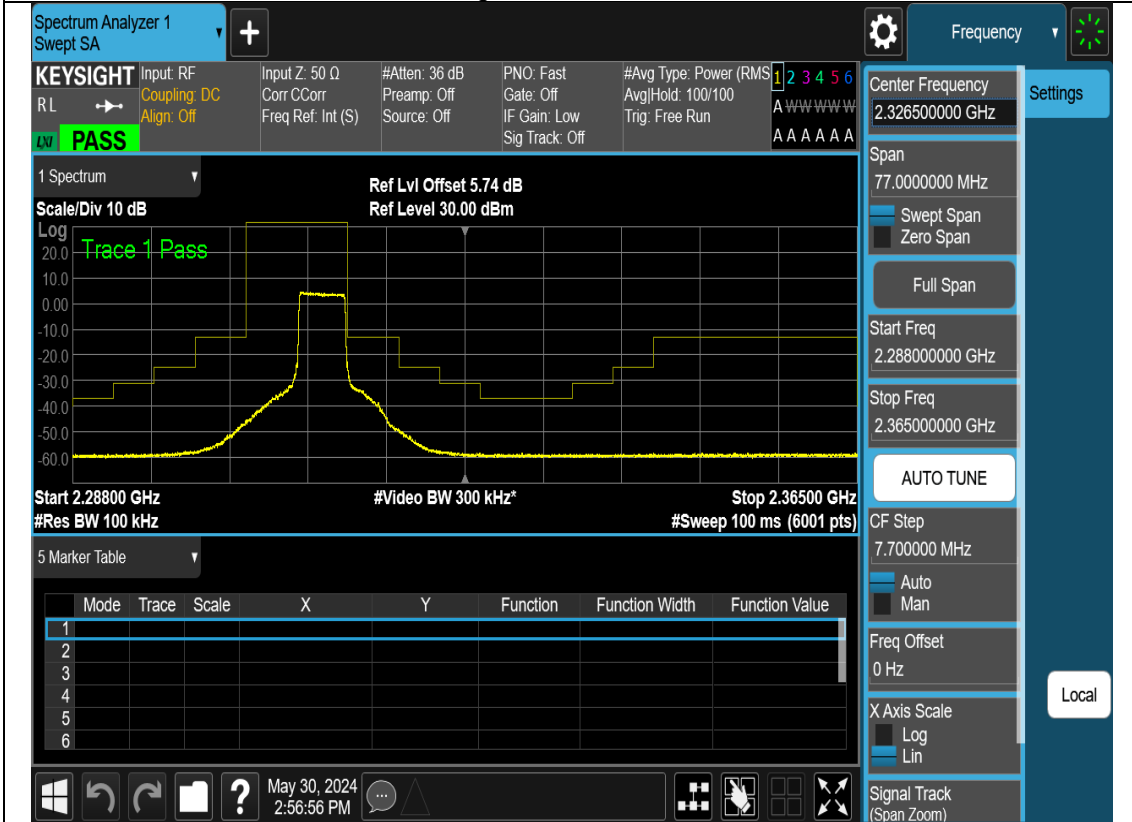
N30-5M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-Outer_Full



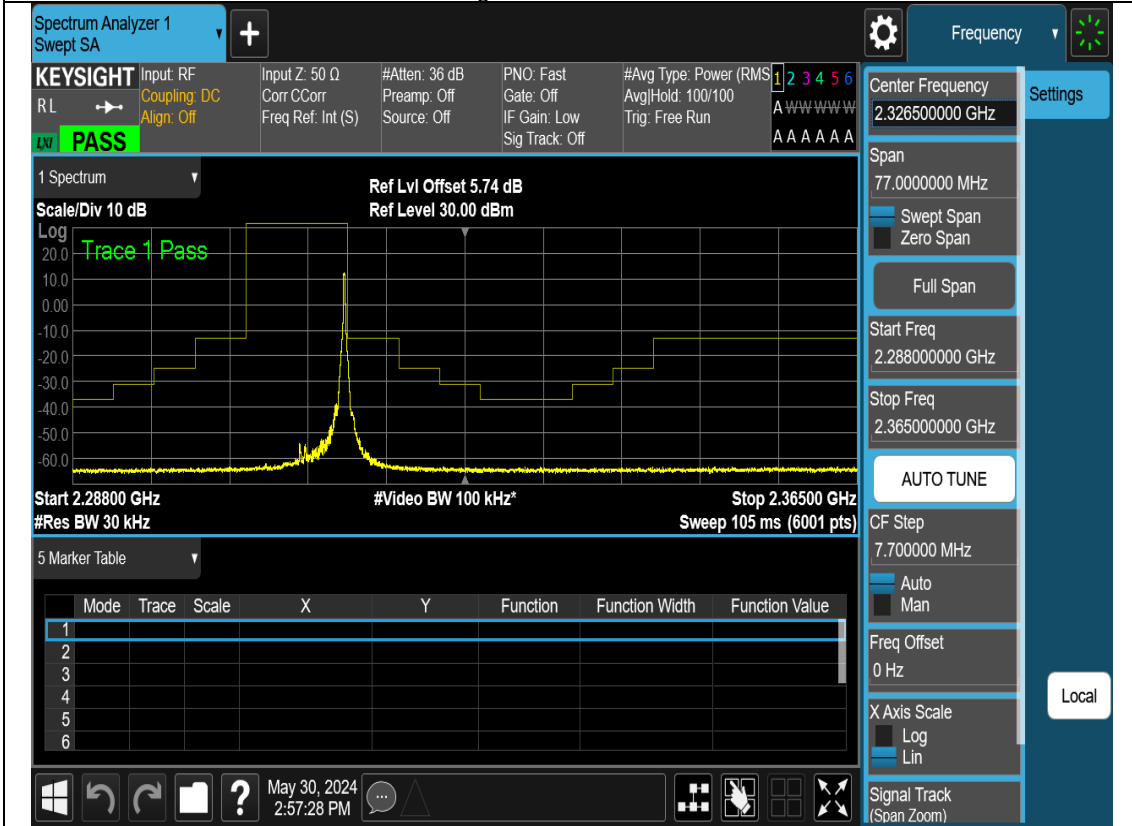
N30-5M-Bandedge-H-DFT-s-OFDM-Pi2 BPSK-1RB_MAX



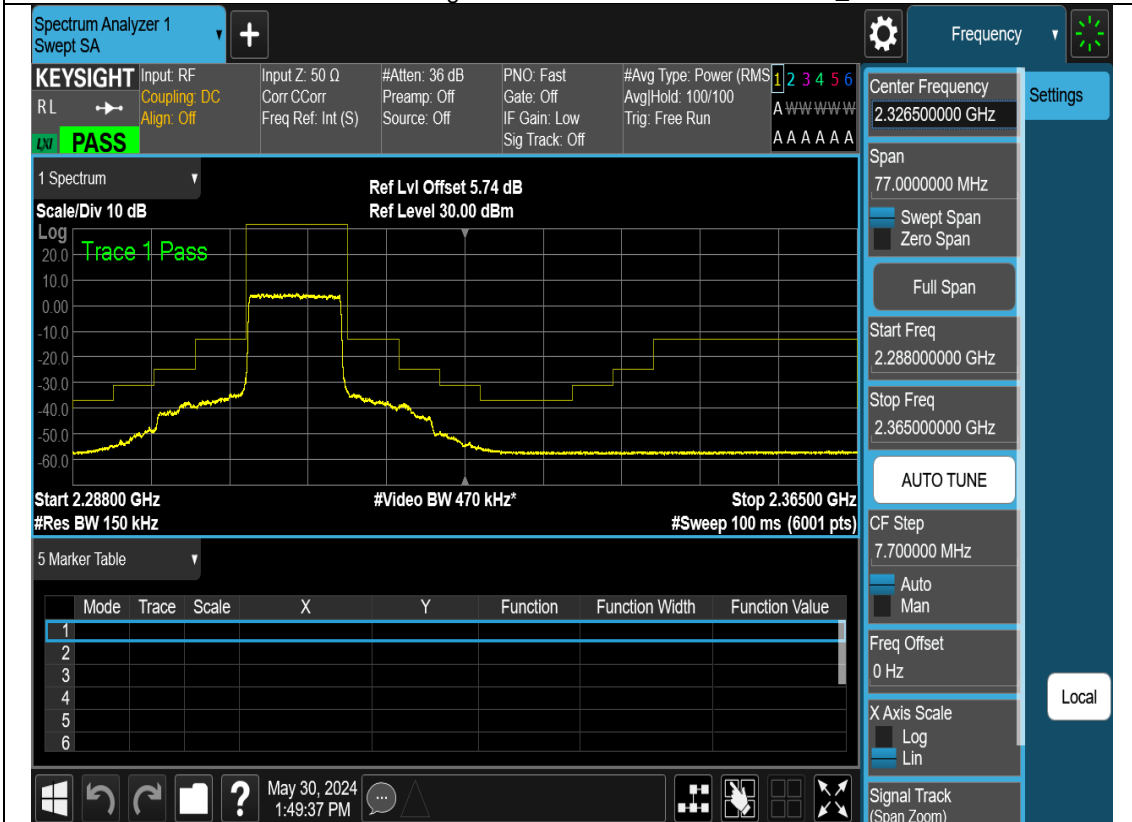
N30-5M-Bandedge-H-CP-OFDM-QPSK-Outer_Full



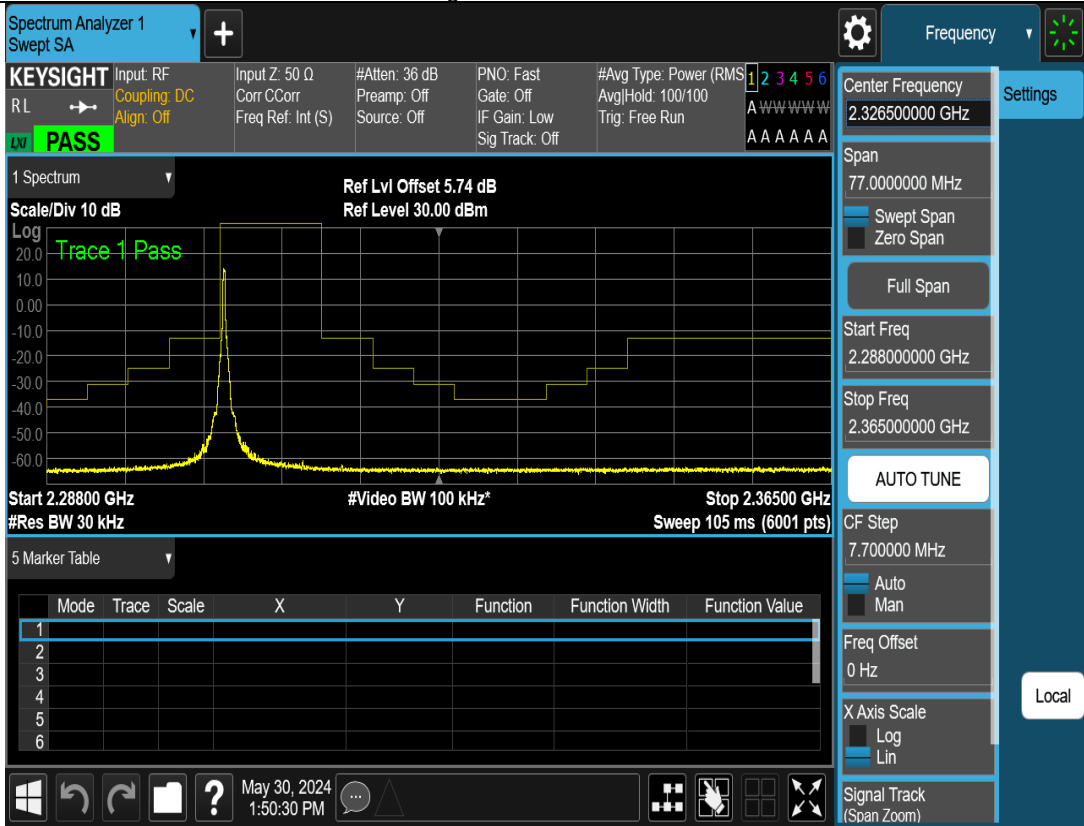
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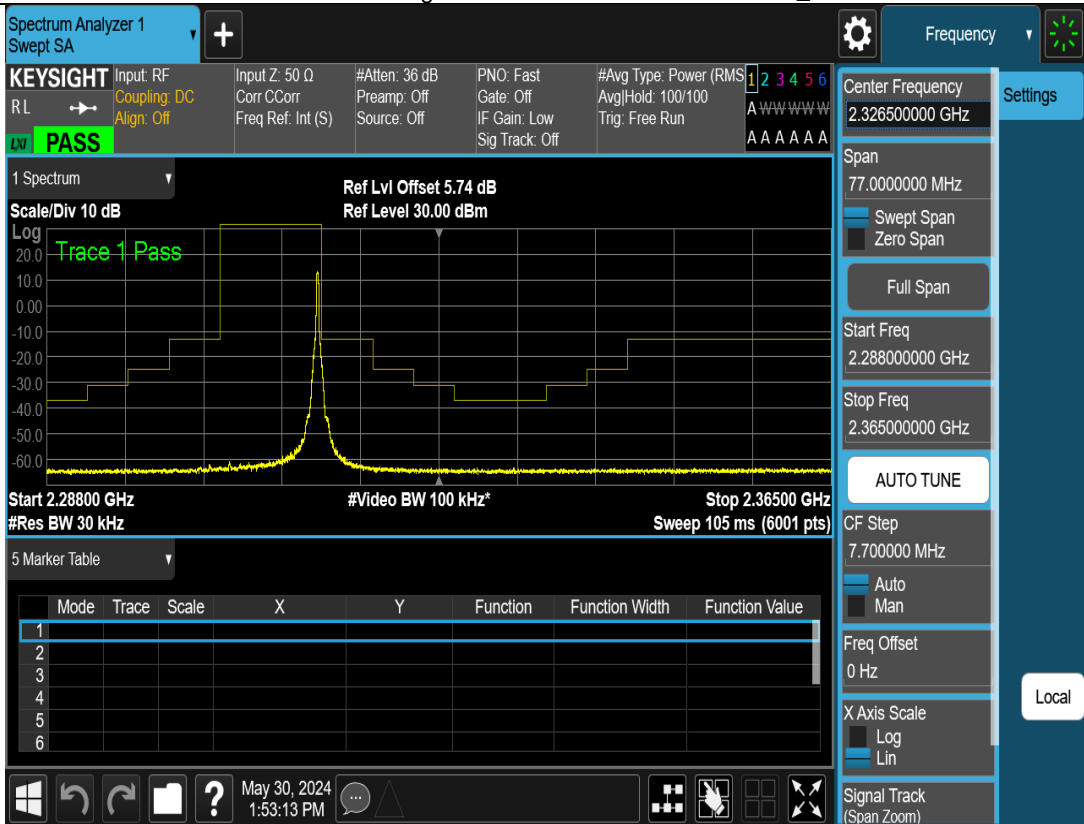
N30-10M-Bandedge-M-DFT-s-OFDM-Pi2 BPSK-Outer_Full



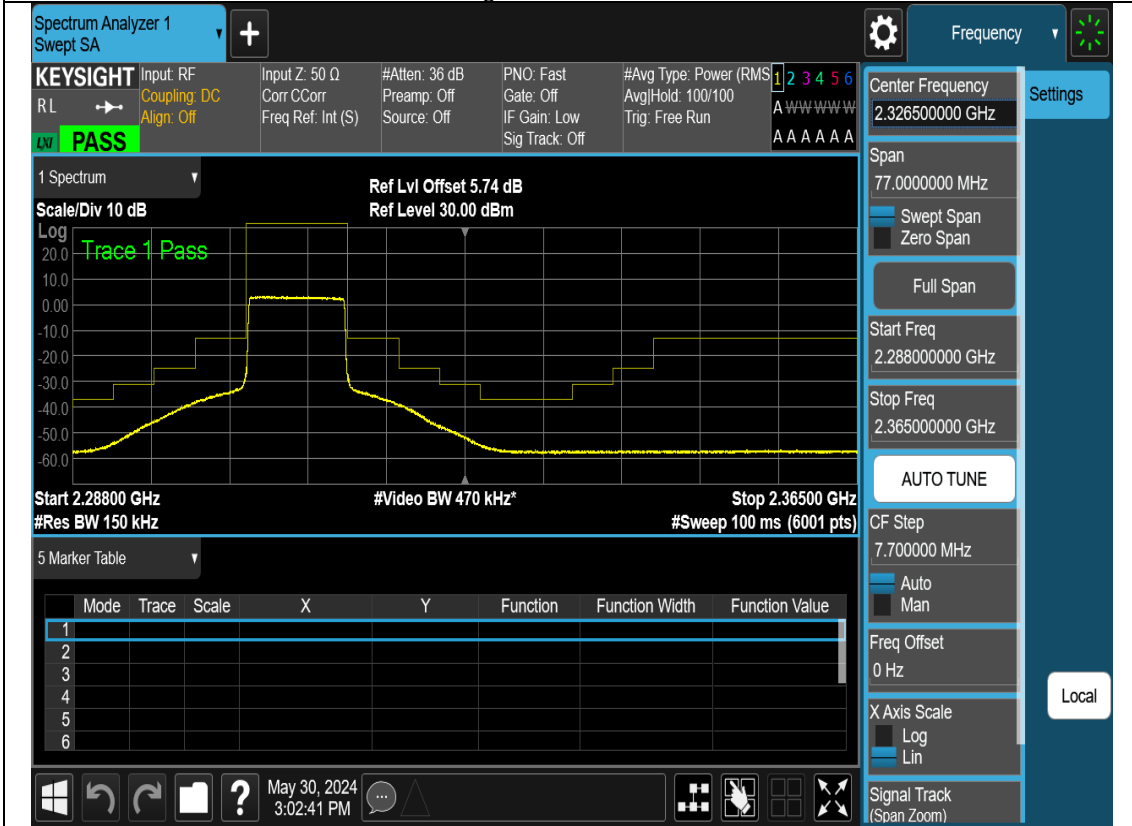
N30-10M-Bandedge-M-DFT-s-OFDM-Pi2 BPSK-1RB0



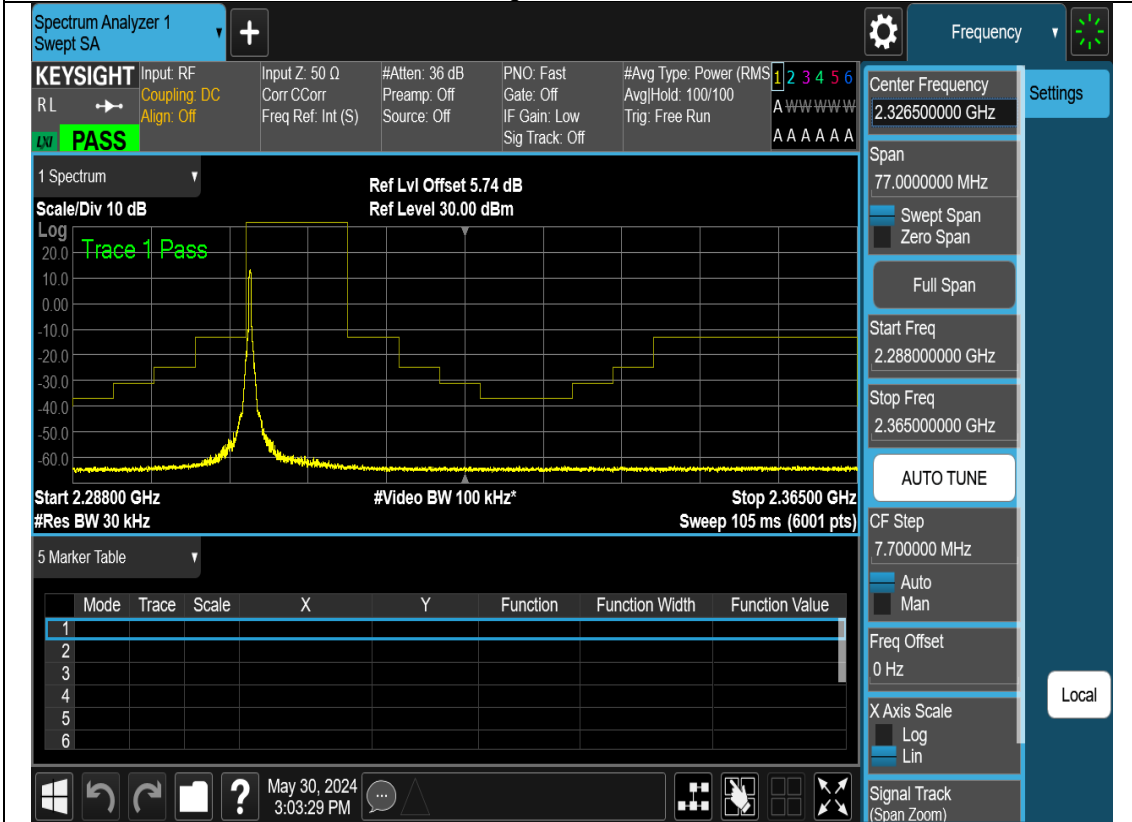
N30-10M-Bandedge-M-DFT-s-OFDM-Pi2 BPSK-1RB_MAX



N30-10M-Bandedge-M-CP-OFDM-QPSK-Outer_Full



N30-10M-Bandedge-M-CP-OFDM-QPSK-1RB0



N30-10M-Bandedge-M-CP-OFDM-QPSK-1RB_MAX

Spectrum Analyzer 1
Swept SA

KEYSIGHT Input RF
 RL → Coupling: DC
 Align: Off

Input Z: 50 Ω #Atten: 36 dB PNO: Fast #Avg Type: Power (RMS) 1 2 3 4 5 6
 Corr: C Corr Preamp: Off Gate: Off Avg/Hold: 100/100
 Freq Ref: Int (S) Source: Off IF Gain: Low Trig: Free Run A www www
 Sig Track: Off A A A A A A

1 Spectrum Ref Lvl Offset 5.74 dB
 Scale/Div 10 dB Ref Level 30.00 dBm

Log
 Trace 1 Pass

Start 2.28800 GHz #Video BW 100 kHz* Stop 2.36500 GHz
 #Res BW 30 kHz Sweep 105 ms (6001 pts)

5 Marker Table

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1							
2							
3							
4							
5							
6							

Frequency

Center Frequency
2.326500000 GHz

Span
77.0000000 MHz

Swept Span
Zero Span

Full Span

Start Freq
2.288000000 GHz

Stop Freq
2.365000000 GHz

AUTO TUNE

CF Step
7.700000 MHz

Auto
Man

Freq Offset
0 Hz

X Axis Scale
Log
Lin

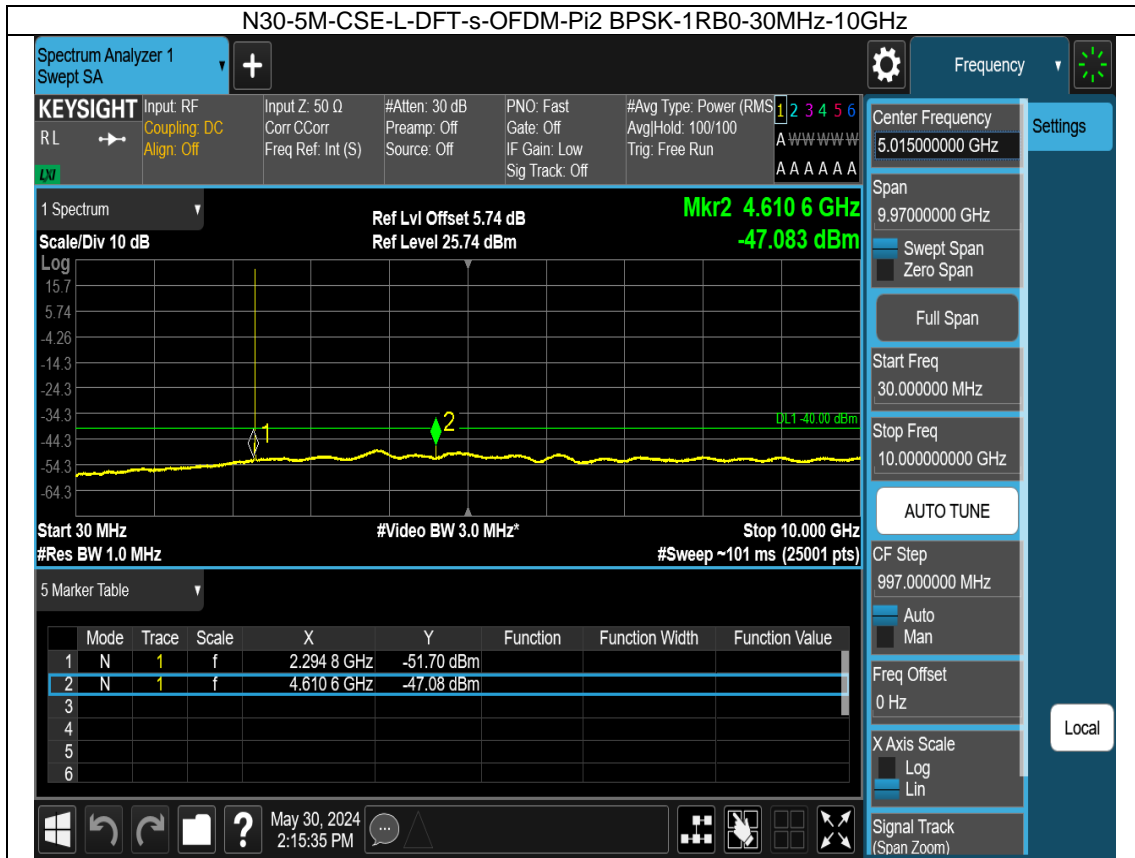
Signal Track
(Span Zoom)

Settings

Local

Windows taskbar: May 30, 2024 3:05:13 PM

Conducted spurious emissions test graph



N30-5M-CSE-L-DFT-s-OFDM-Pi2 BPSK-1RB0-10GHz-24GHz

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input RF Coupling: DC Align: Off

Input Z: 50 Ω Corr: C Corr Freq Ref: Int (S) #Atten: 20 dB Preamp: Off Source: Off PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) AvglHold: 100/100 Trig: Free Run

Center Frequency: 17.000000000 GHz

Span: 14.000000000 GHz

Start Freq: 10.000000000 GHz

Stop Freq: 24.000000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 5.74 dB

Ref Level 15.74 dBm

Mkr1 23.963 8 GHz -57.531 dBm

Log

Start 10.000 GHz #Res BW 1.0 MHz #Video BW 3.0 MHz* Stop 24.000 GHz #Sweep ~103 ms (36001 pts)

5 Marker Table

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	23.963 8 GHz	-57.53 dBm		
2							
3							
4							
5							
6							

May 30, 2024 2:20:42 PM

N30-5M-CSE-L-CP-OFDM-QPSK-1RB0-30MHz-10GHz

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input RF Coupling: DC Align: Off

Input Z: 50 Ω Corr: C Corr Freq Ref: Int (S) #Atten: 30 dB Preamp: Off Source: Off PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) AvglHold: 100/100 Trig: Free Run

Center Frequency: 5.015000000 GHz

Span: 9.970000000 GHz

Start Freq: 30.000000000 MHz

Stop Freq: 10.000000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 5.74 dB

Ref Level 25.74 dBm

Mkr2 3.867 7 GHz -48.370 dBm

Log

Start 30 MHz #Res BW 1.0 MHz #Video BW 3.0 MHz* Stop 10.000 GHz #Sweep ~101 ms (25001 pts)

5 Marker Table

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.294 8 GHz	-52.11 dBm		
2	N	1	f	3.867 7 GHz	-48.37 dBm		
3							
4							
5							
6							

May 30, 2024 2:44:16 PM

N30-5M-CSE-L-CP-OFDM-QPSK-1RB0-10GHz-24GHz

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input RF: Coupling: DC, Align: Off

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

#Atten: 20 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: 17.000000000 GHz

Span: 14.0000000 GHz

Start Freq: 10.000000000 GHz

Stop Freq: 24.000000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 5.74 dB, Ref Level 15.74 dBm

Mkr1 23.968 9 GHz, -57.700 dBm

Start 10.000 GHz, #Res BW 1.0 MHz, #Video BW 3.0 MHz*, Stop 24.000 GHz, #Sweep ~103 ms (36001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	23.968 9 GHz			-57.70 dBm
2							
3							
4							
5							
6							

May 30, 2024 2:45:03 PM

N30-5M-CSE-M-DFT-s-OFDM-Pi2 BPSK-1RB0-30MHz-10GHz

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input RF: Coupling: DC, Align: Off

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

#Atten: 30 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 5.74 dB, Ref Level 25.74 dBm

Mkr2 4.615 8 GHz, -46.230 dBm

Start 30 MHz, #Res BW 1.0 MHz, #Video BW 3.0 MHz*, Stop 10.000 GHz, #Sweep ~101 ms (25001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.293 6 GHz			-51.82 dBm
2	N	1	f	4.615 8 GHz			-46.23 dBm
3							
4							
5							
6							

May 30, 2024 2:29:47 PM