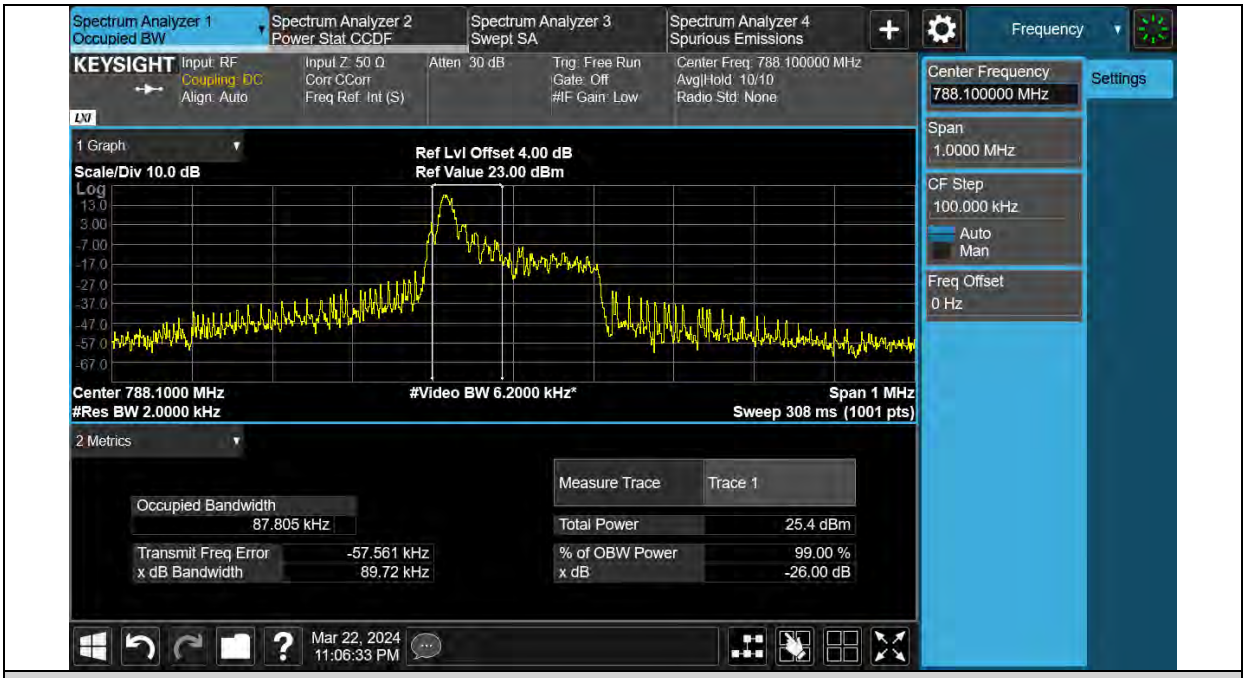
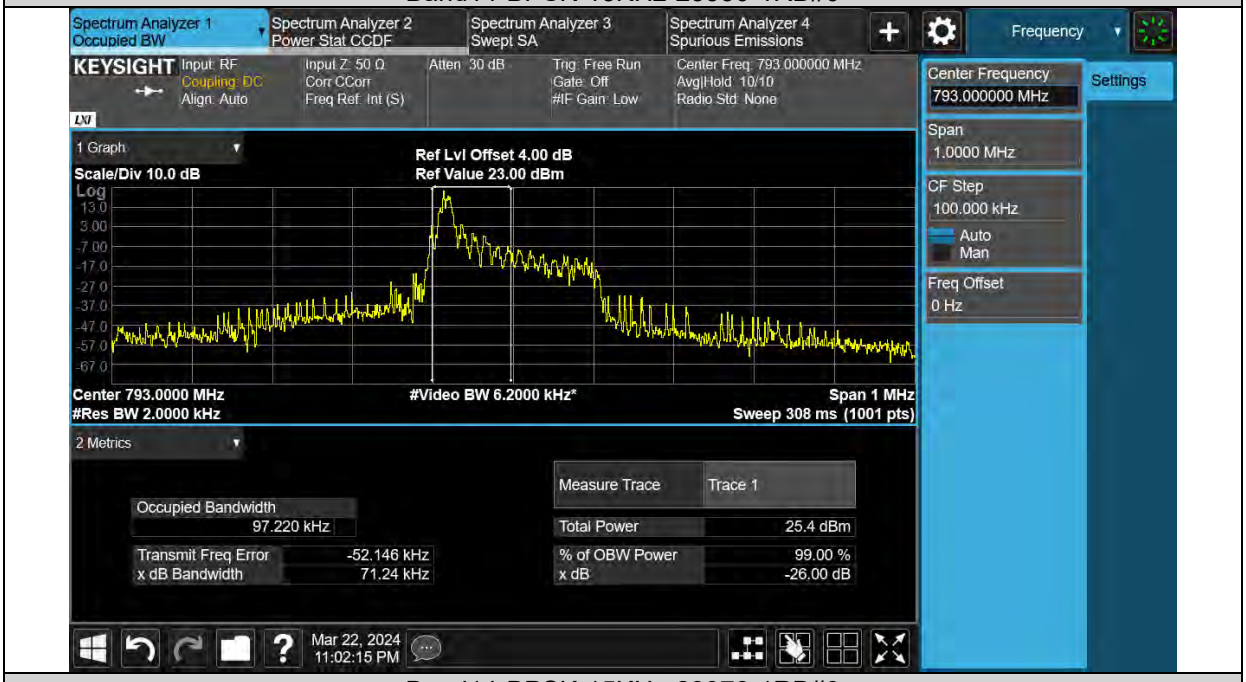
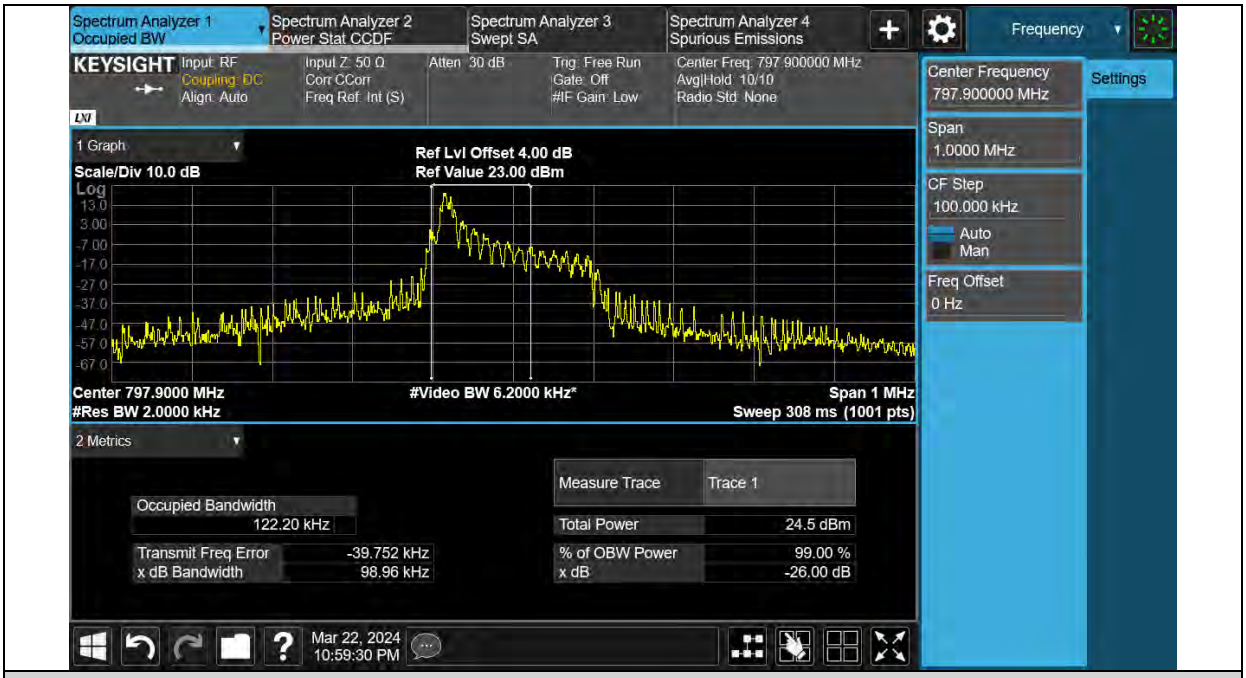


Band14-BPSK-15KHz-23330-1RB#0

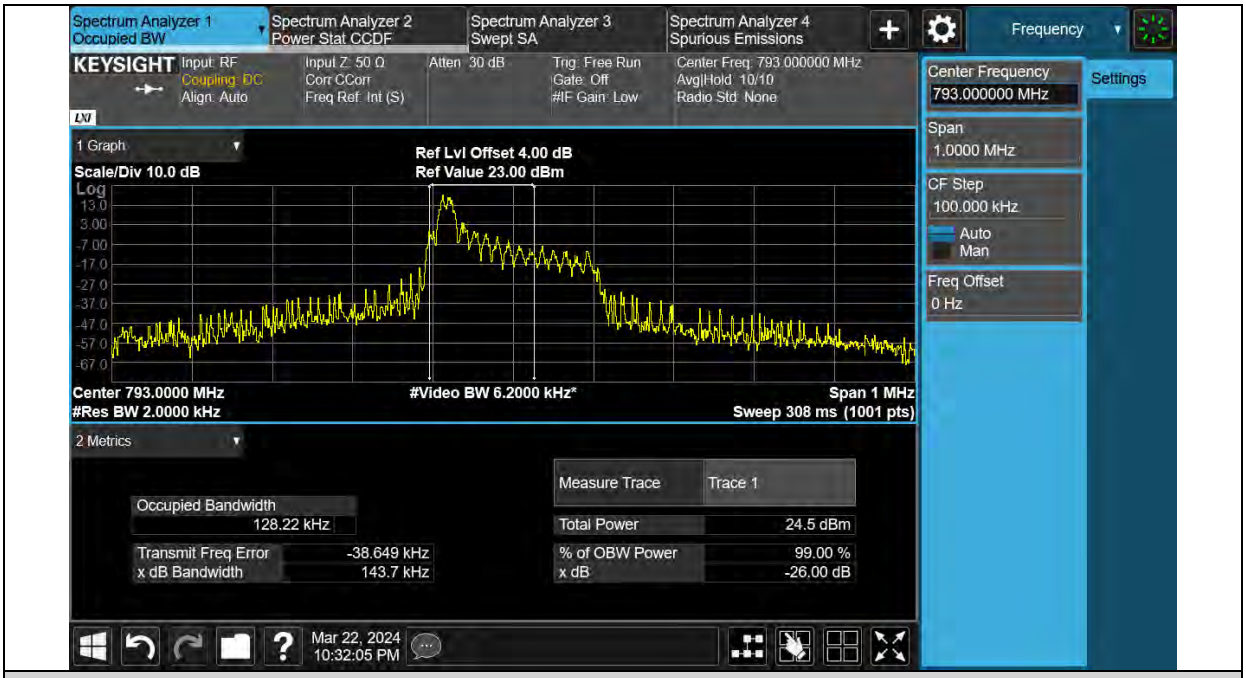


Band14-BPSK-15KHz-23378-1RB#0

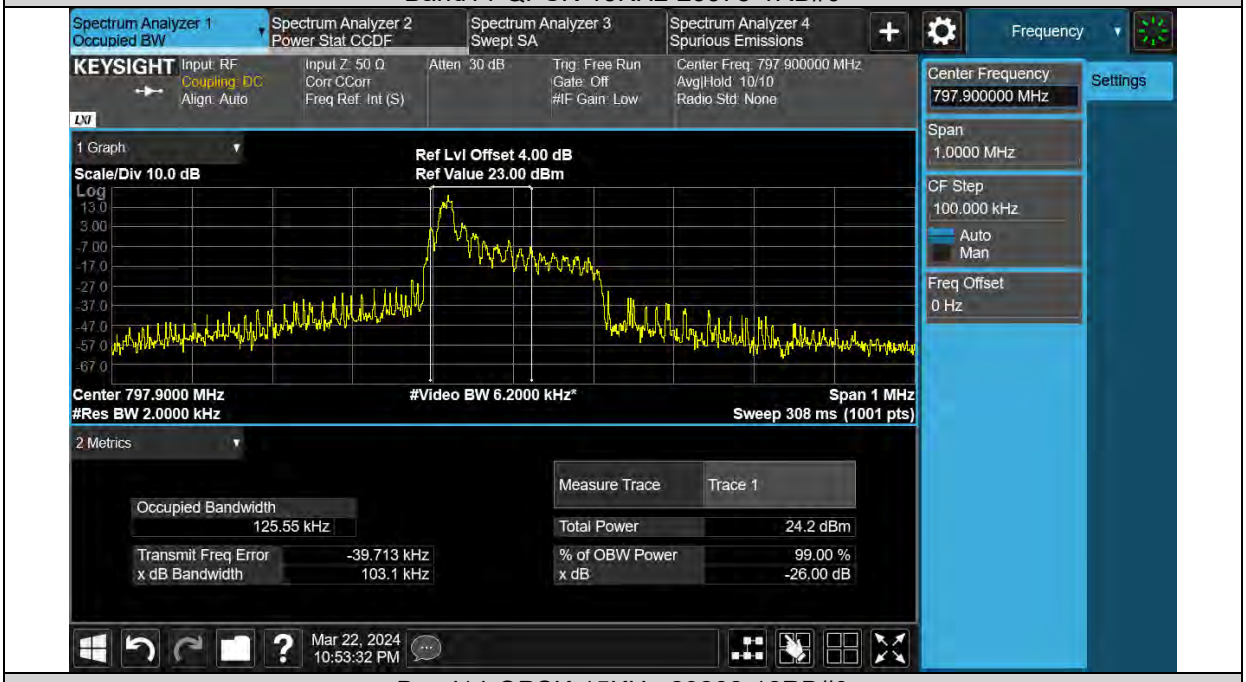


Band14-QPSK-15KHz-23282-1RB#0

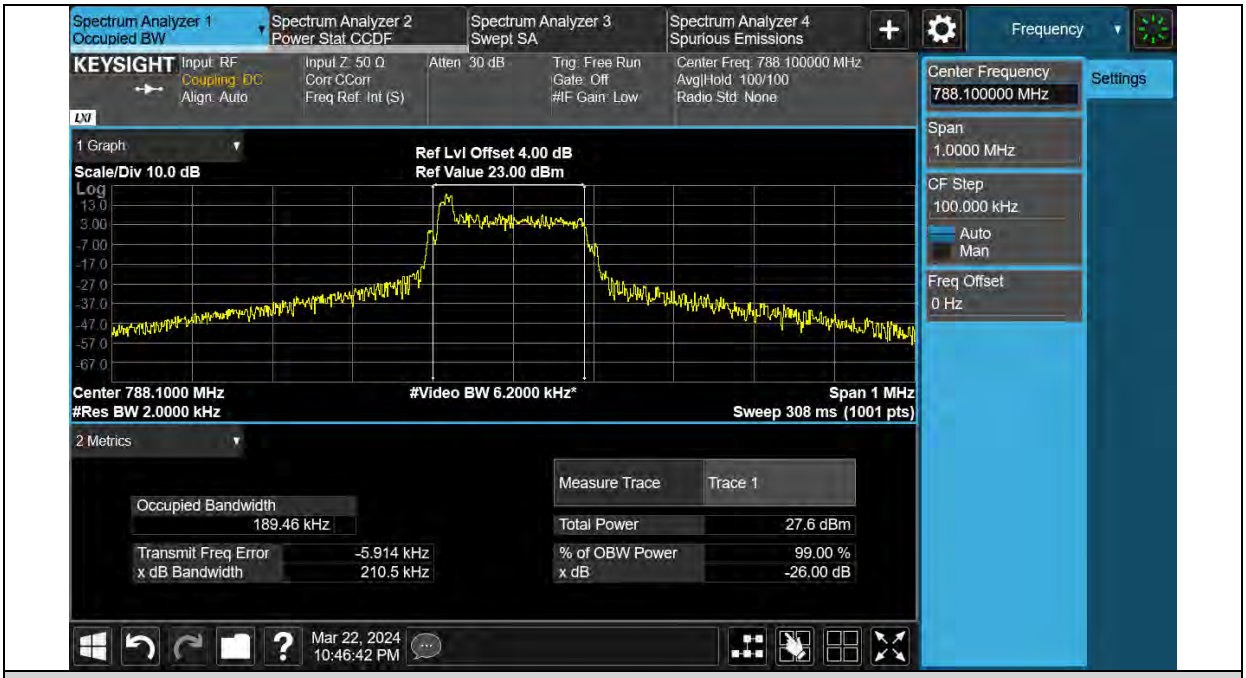
Band14-QPSK-15KHz-23330-1RB#0



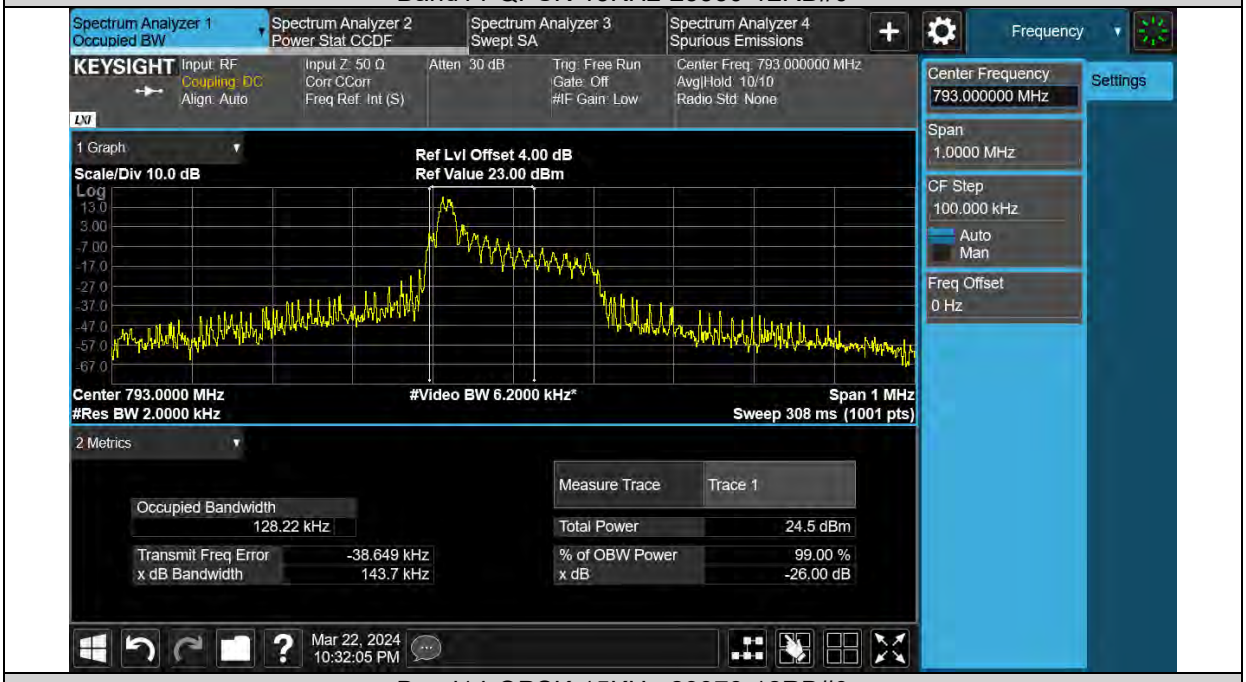
Band14-QPSK-15KHz-23378-1RB#0



Band14-QPSK-15KHz-23282-12RB#0



Band14-QPSK-15KHz-23330-12RB#0



Band14-QPSK-15KHz-23378-12RB#0

Spectrum Analyzer 1
Occupied BW
Spectrum Analyzer 2
Power Stat CCDF
Spectrum Analyzer 3
Swept SA
Spectrum Analyzer 4
Spurious Emissions
Frequency
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
Atten: 30 dB
Trig: Free Run
Gate: Off
#IF Gain: Low
Center Freq: 797.900000 MHz
Avg|Hold: 100/100
Radio Std: None
Center Frequency
797.900000 MHz
Settings
Span
1.0000 MHz
CF Step
100.000 kHz
Auto
Man
Freq Offset
0 Hz
1 Graph
Scale/Div 10.0 dB
Log
Ref Lvl Offset 4.00 dB
Ref Value 23.00 dBm
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-67.0
Center 797.9000 MHz
#Res BW 2.0000 kHz
#Video BW 6.2000 kHz*
Span 1 MHz
Sweep 308 ms (1001 pts)
2 Metrics
Occupied Bandwidth
185.79 kHz
Transmit Freq Error
-3.551 kHz
x dB Bandwidth
211.7 kHz
Measure Trace
Trace 1
Total Power
27.2 dBm
% of OBW Power
99.00 %
x dB
-26.00 dB
Mar 22, 2024
10:52:12 PM

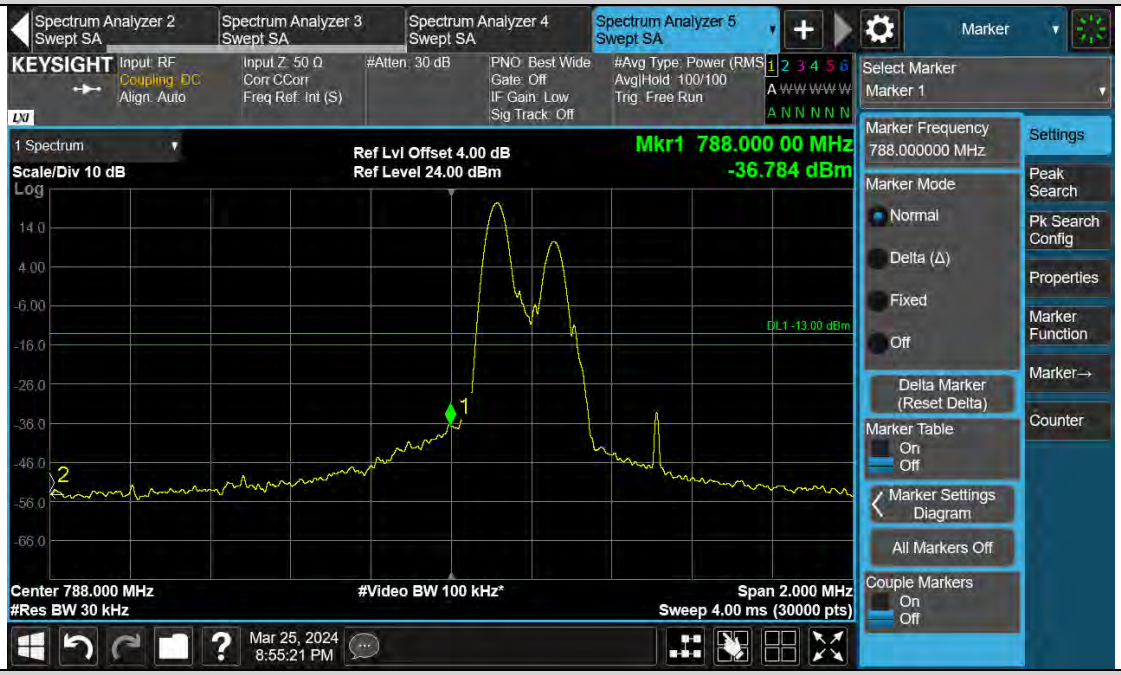
BAND EDGE

Test Result

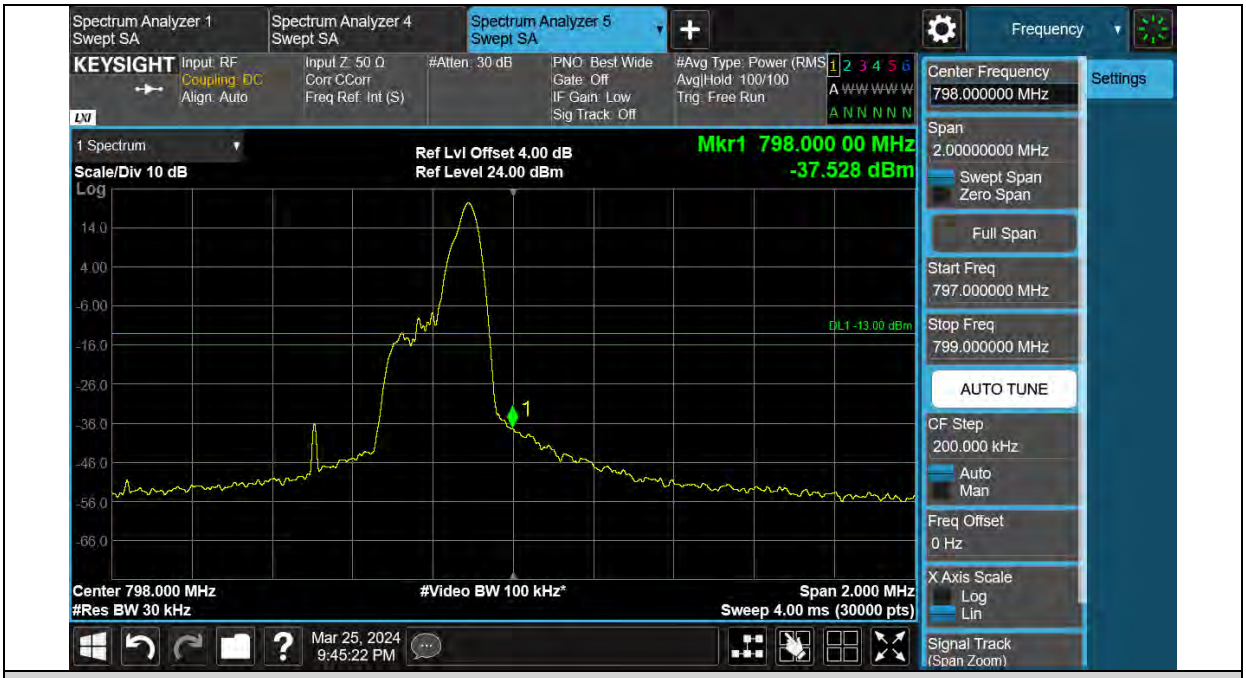
Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Result(dBm)	Verdict
Band14	BPSK	3.75	23282	1RB#0	See Graph	PASS
Band14	BPSK	3.75	23378	1RB#47	See Graph	PASS
Band14	QPSK	3.75	23282	1RB#0	See Graph	PASS
Band14	QPSK	3.75	23378	1RB#47	See Graph	PASS
Band14	BPSK	15	23282	1RB#0	See Graph	PASS
Band14	BPSK	15	23378	1RB#11	See Graph	PASS
Band14	QPSK	15	23282	1RB#0	See Graph	PASS
Band14	QPSK	15	23378	1RB#11	See Graph	PASS
Band14	QPSK	15	23282	12RB#0	See Graph	PASS
Band14	QPSK	15	23378	12RB#0	See Graph	PASS

Test Graphs

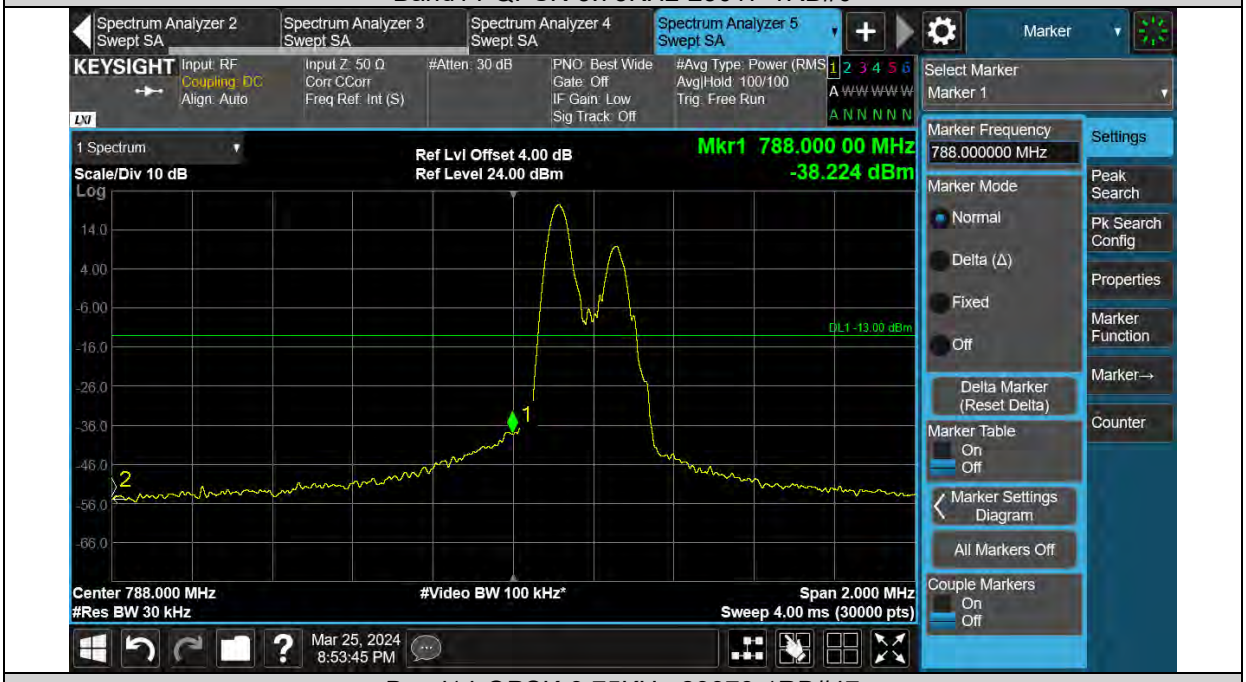
Band14-BPSK-3.75KHz-23017-1RB#0



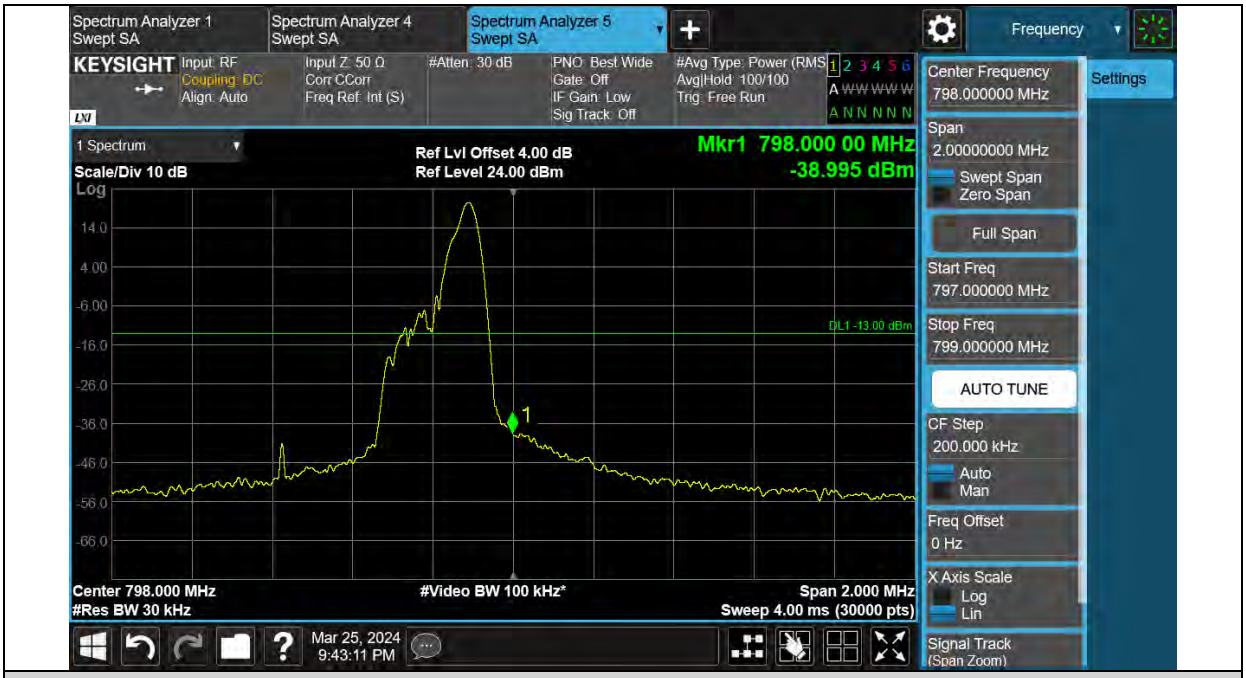
Band14-BPSK-3.75KHz-23378-1RB#47



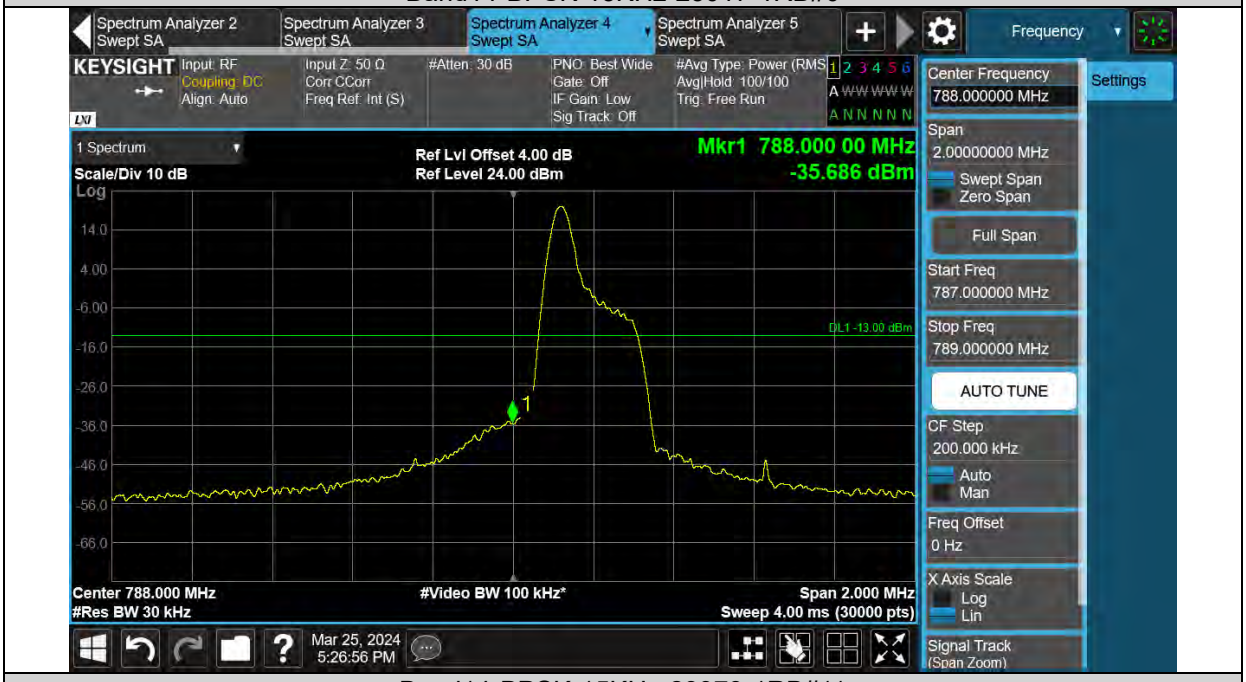
Band14-QPSK-3.75KHz-23017-1RB#0



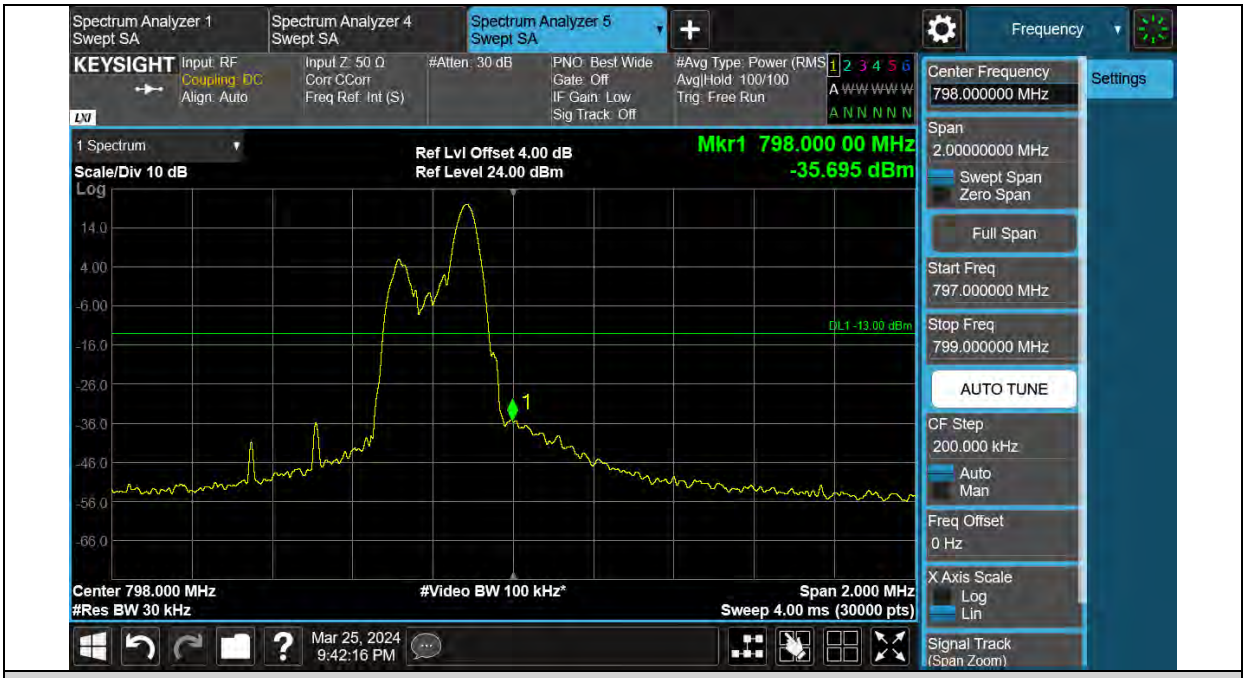
Band14-QPSK-3.75KHz-23378-1RB#47



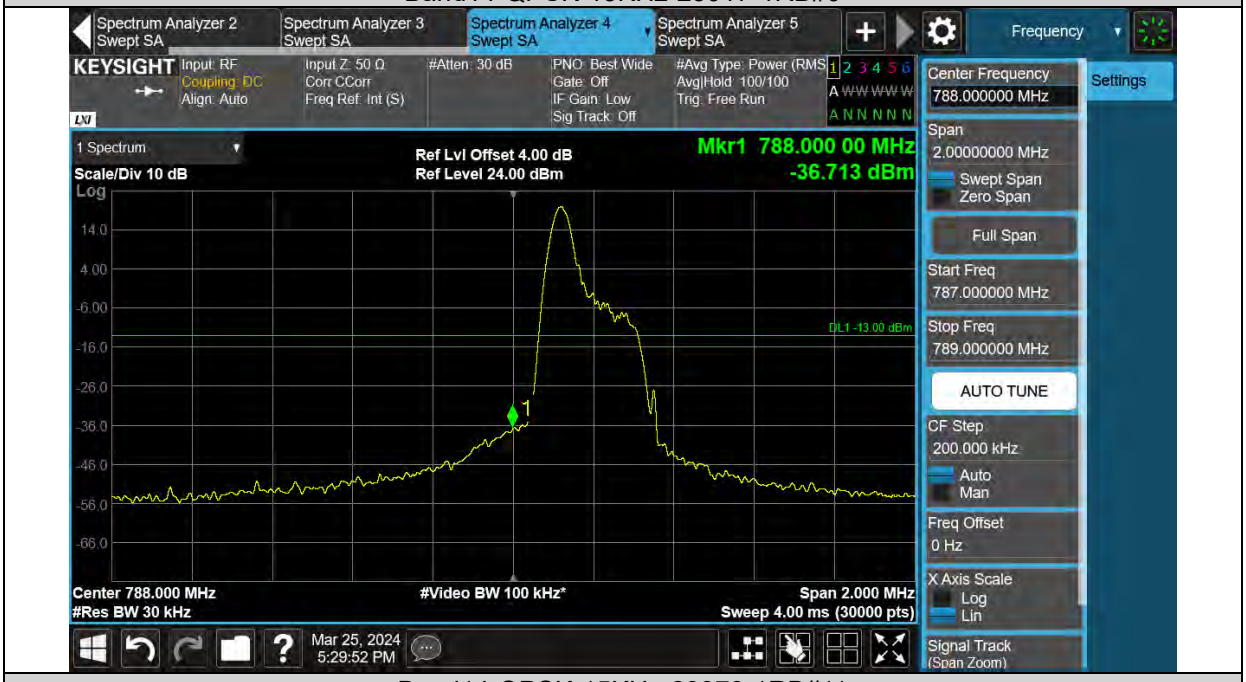
Band14-BPSK-15KHz-23017-1RB#0



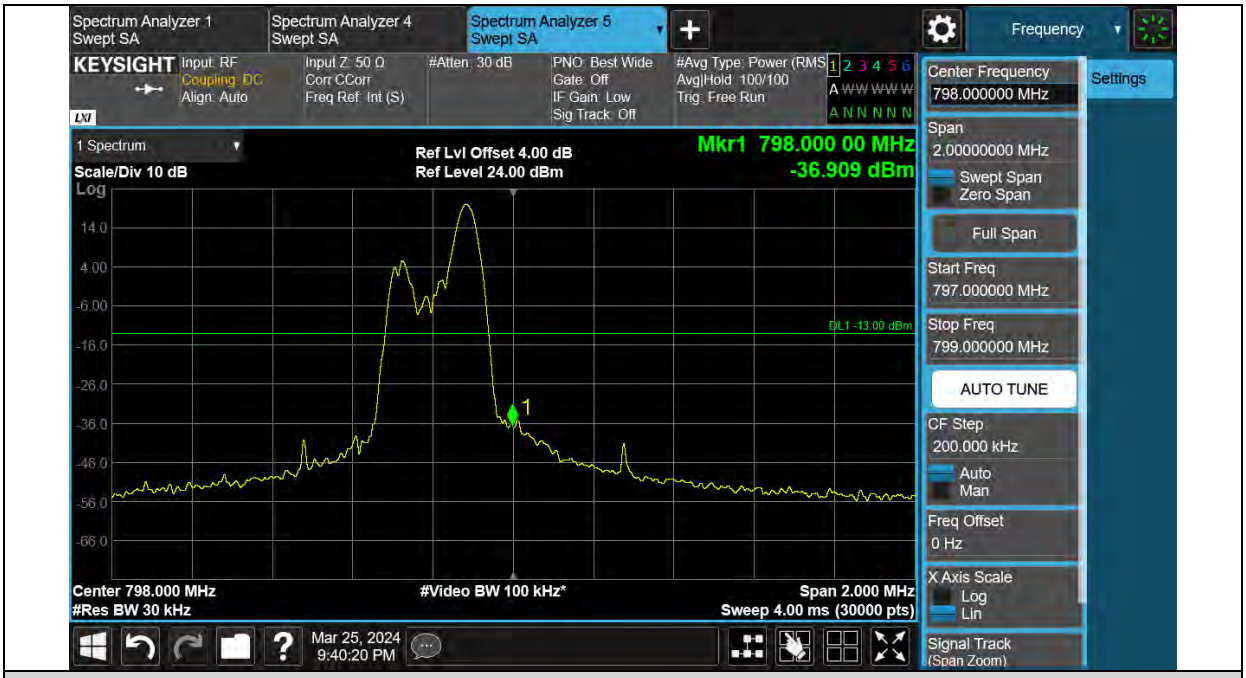
Band14-BPSK-15KHz-23378-1RB#11



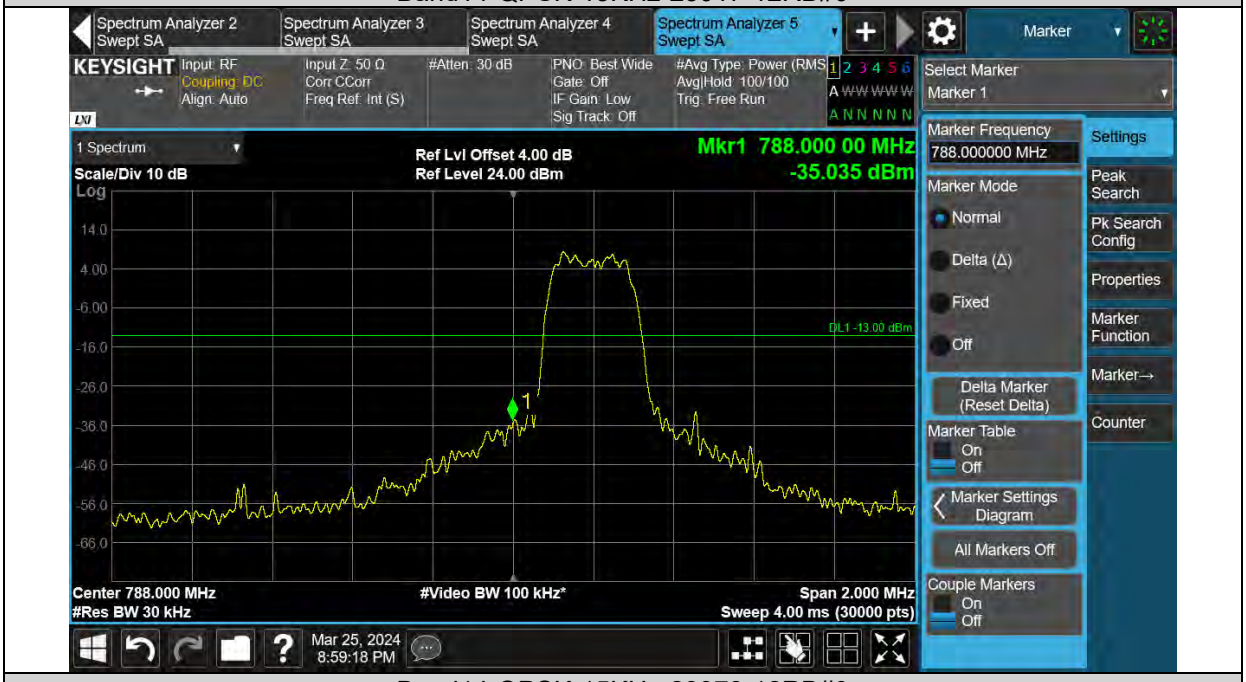
Band14-QPSK-15KHz-23017-1RB#0



Band14-QPSK-15KHz-23378-1RB#11

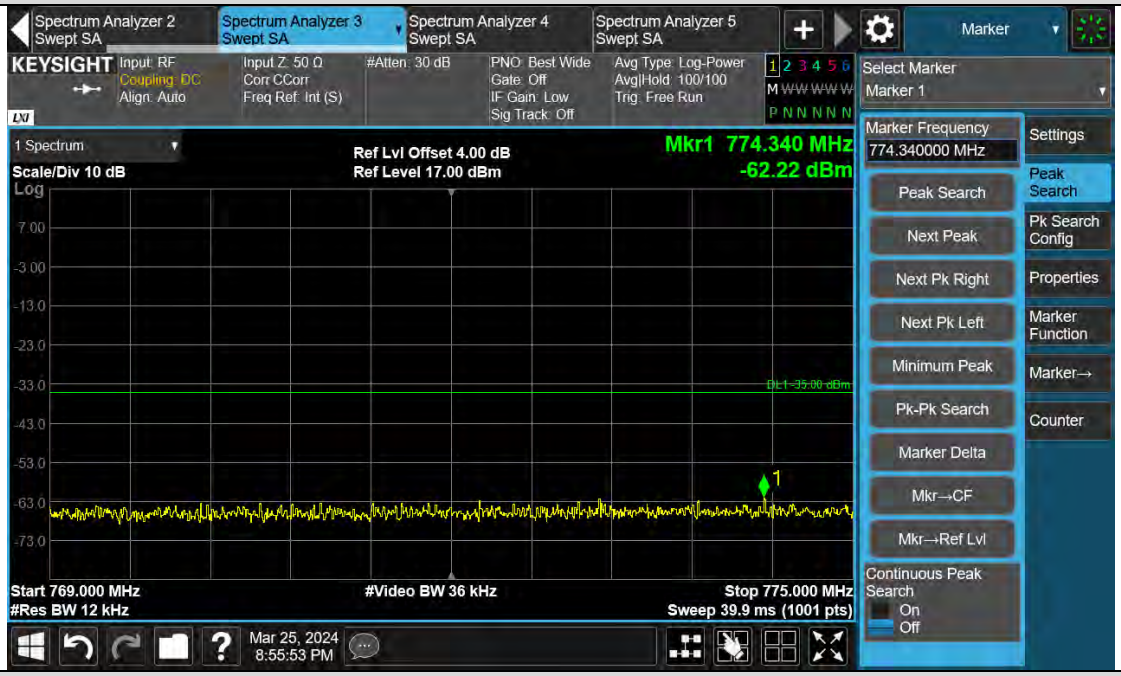


Band14-QPSK-15KHz-23017-12RB#0

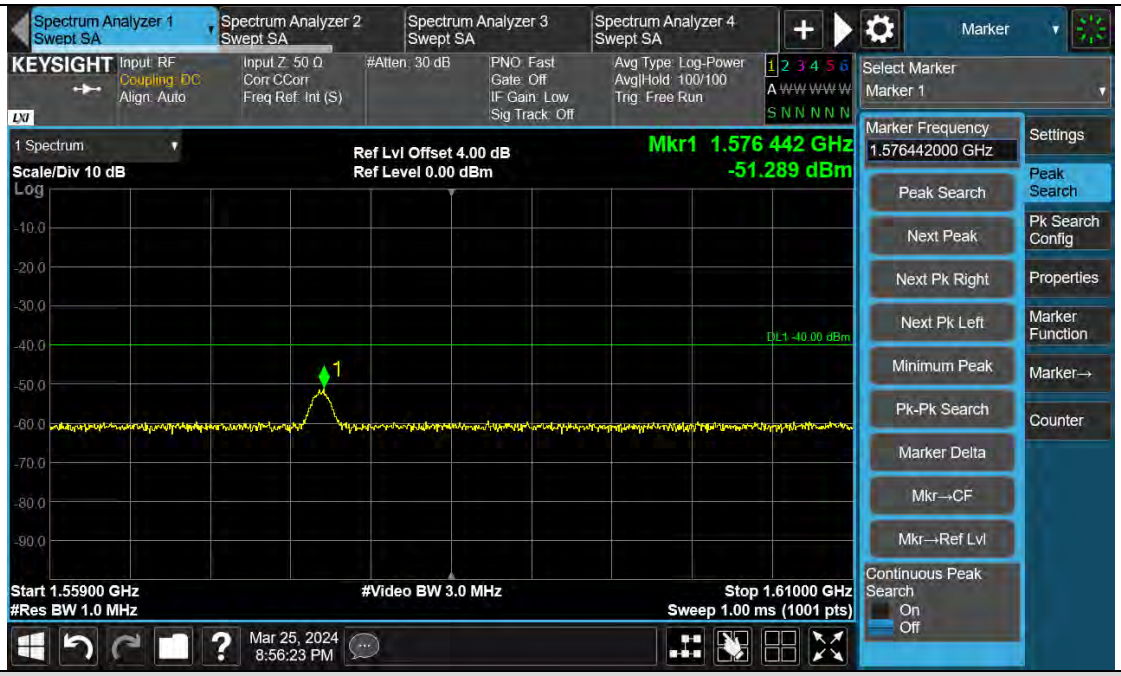


Band14-QPSK-15KHz-23378-12RB#0

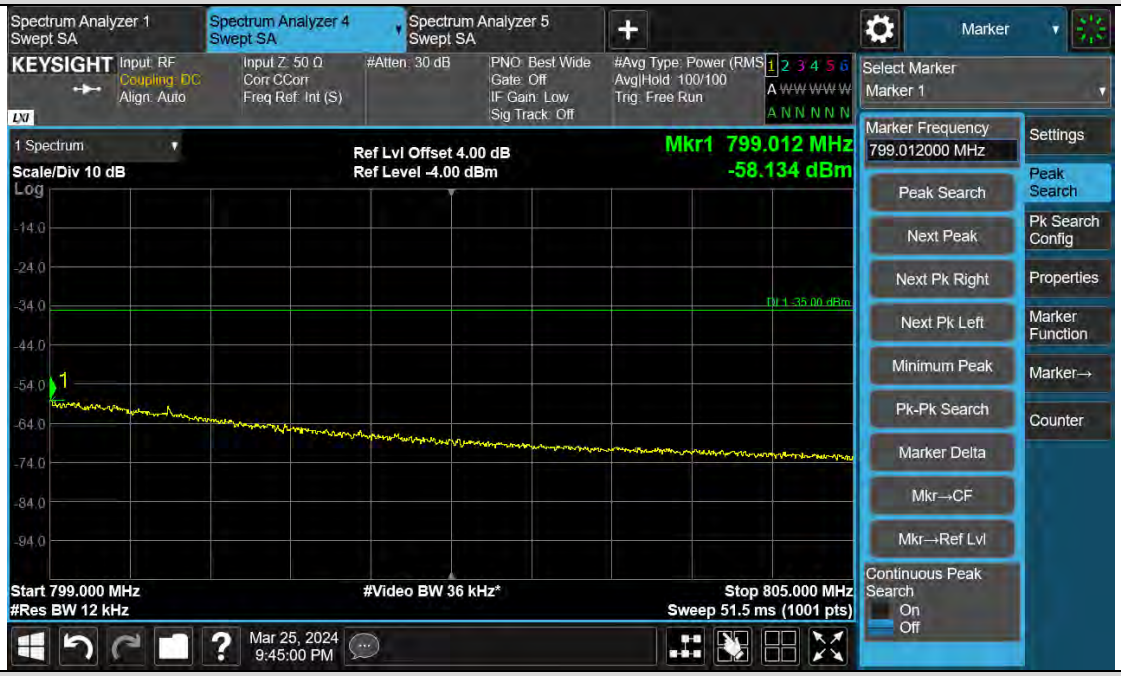
Band14-BPSK-3.75KHz-23017-1RB#0-769M~775M



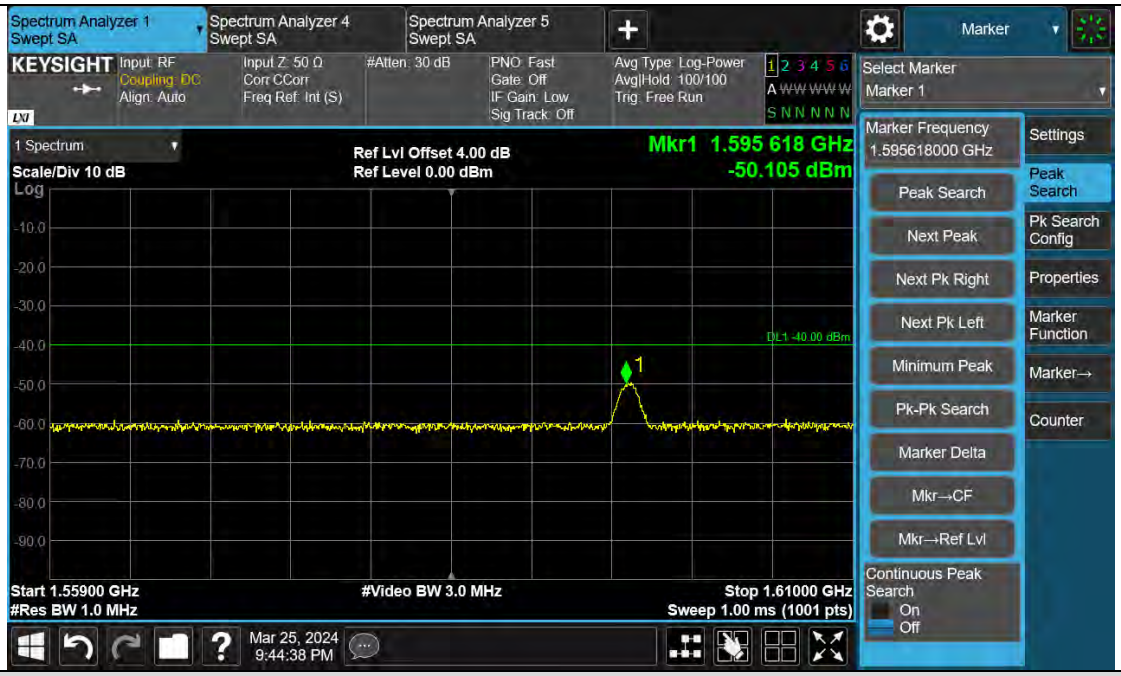
Band14-BPSK-3.75KHz-23017-1RB#0-1559M~1610M



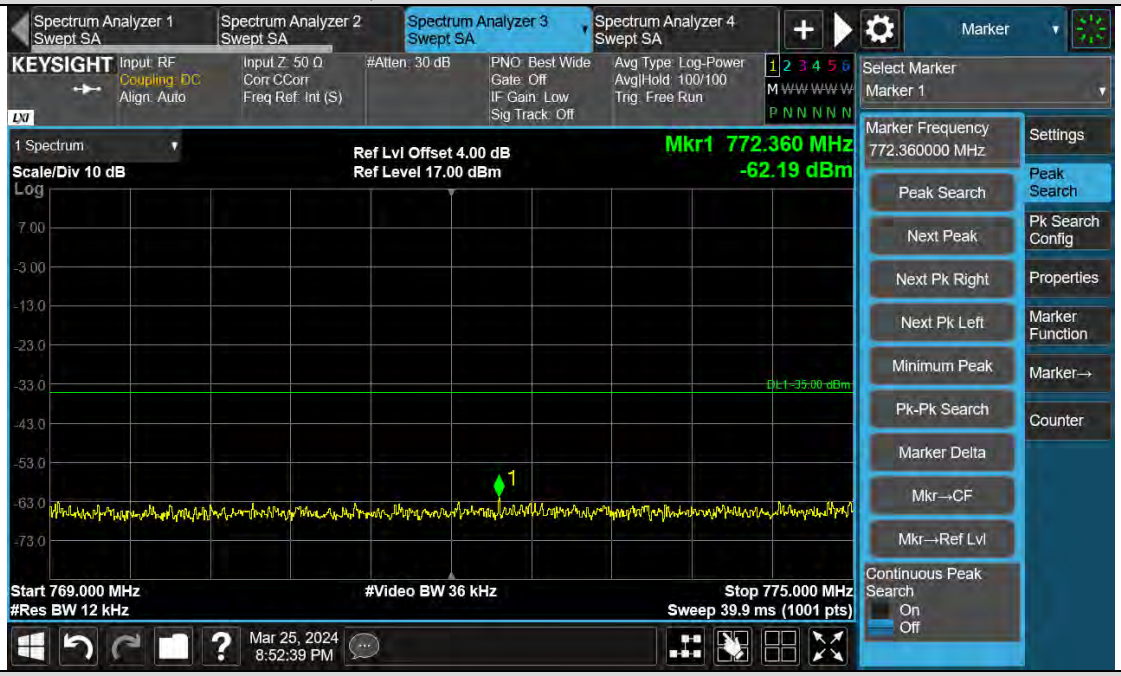
Band14-BPSK-3.75KHz-23378-1RB#47-793M~805M



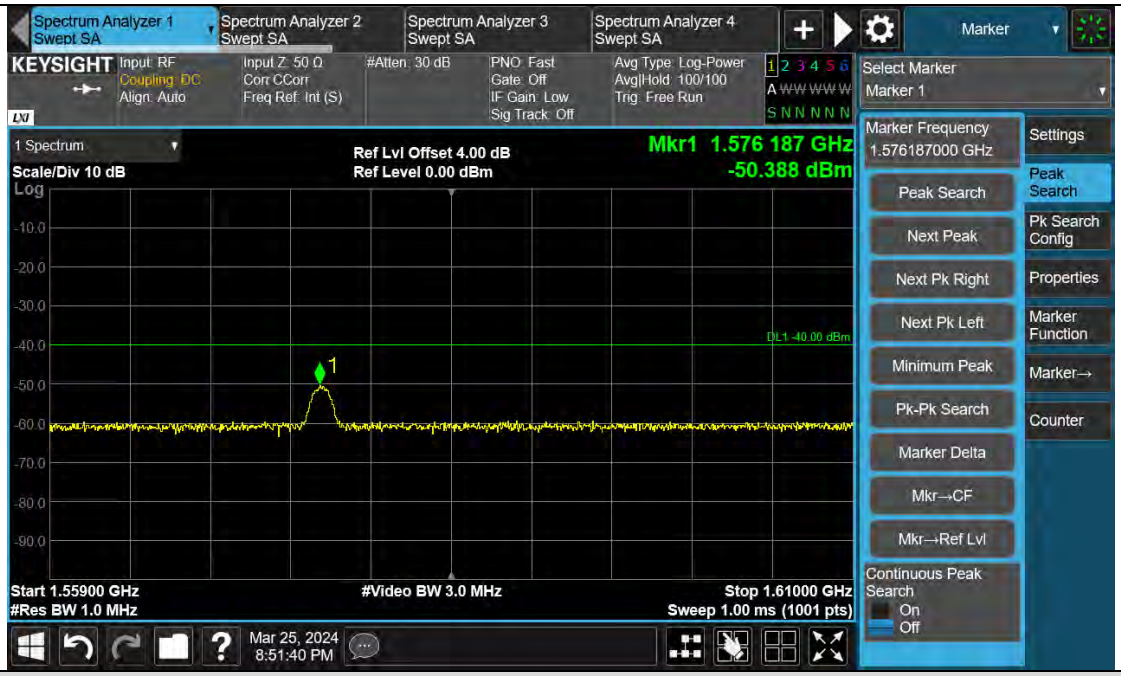
Band14-BPSK-3.75KHz-23378-1RB#47-1559M~1610M



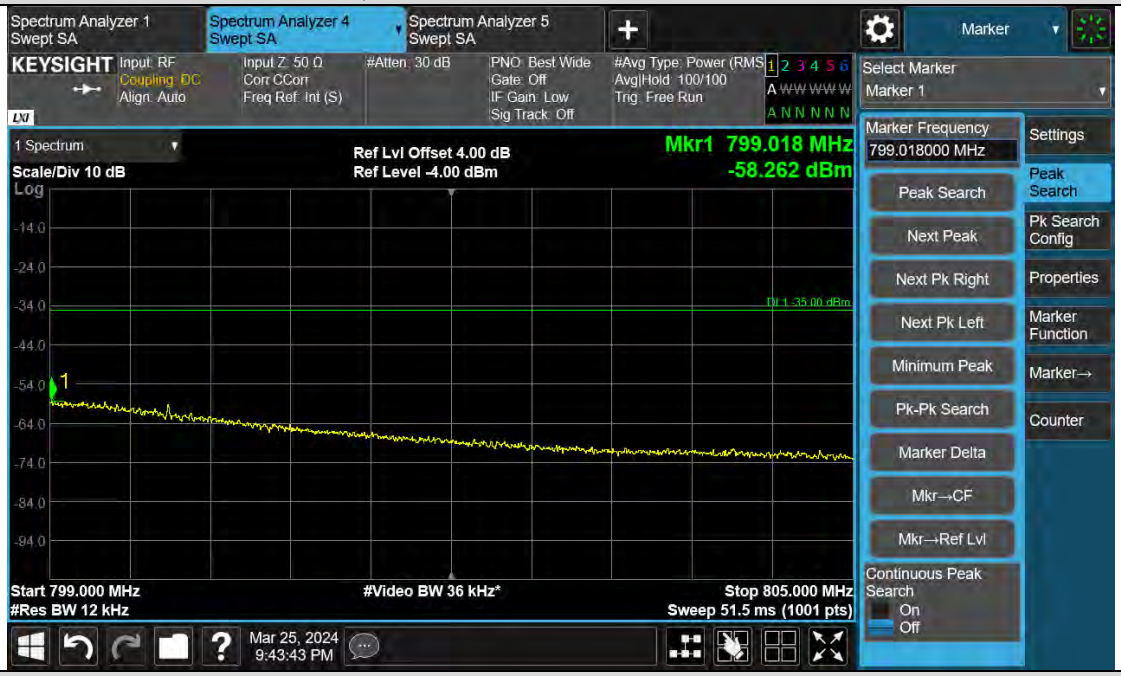
Band14-QPSK-3.75KHz-23017-1RB#0-769M~775M



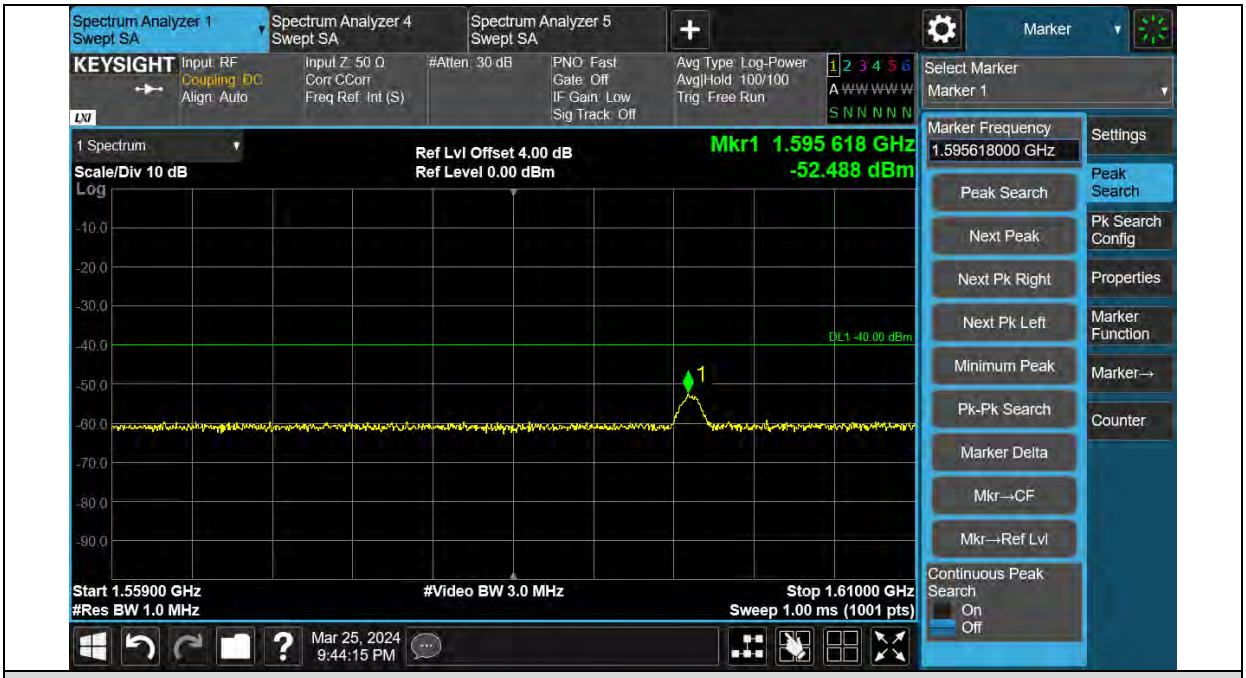
Band14-QPSK-3.75KHz-23017-1RB#0-1559M~1610M



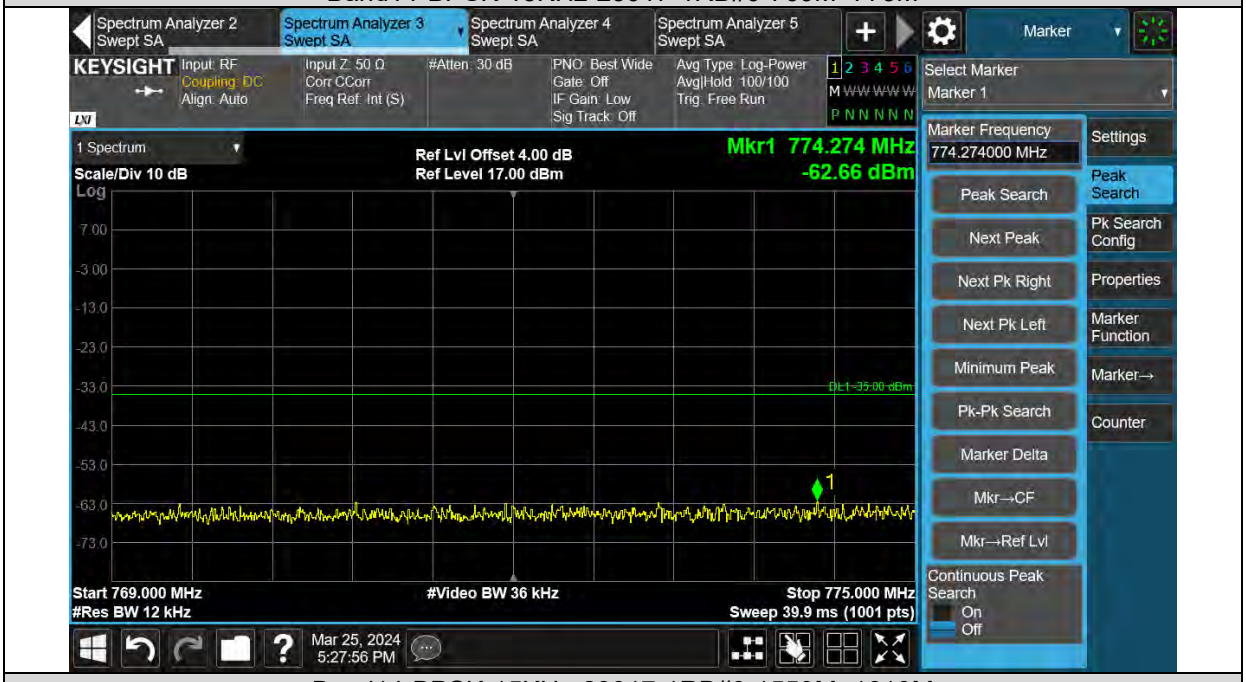
Band14-QPSK-3.75KHz-23378-1RB#47-793M~805M



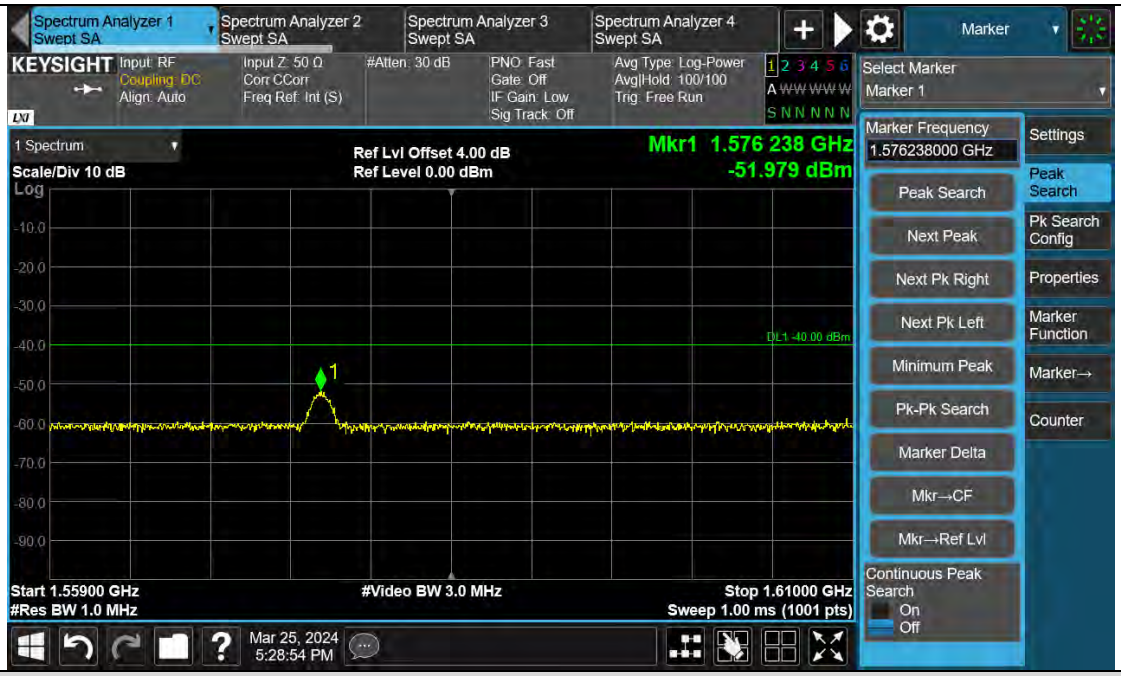
Band14-QPSK-3.75KHz-23378-1RB#47-1559M~1610M



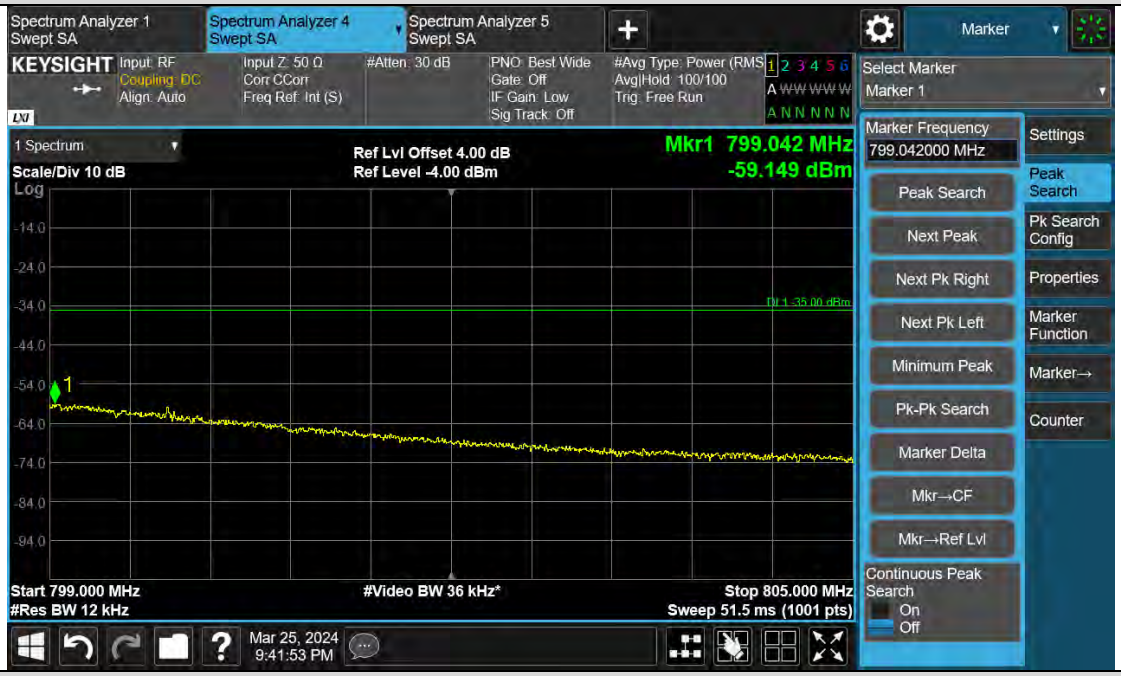
Band14-BPSK-15KHz-23017-1RB#0-769M~775M



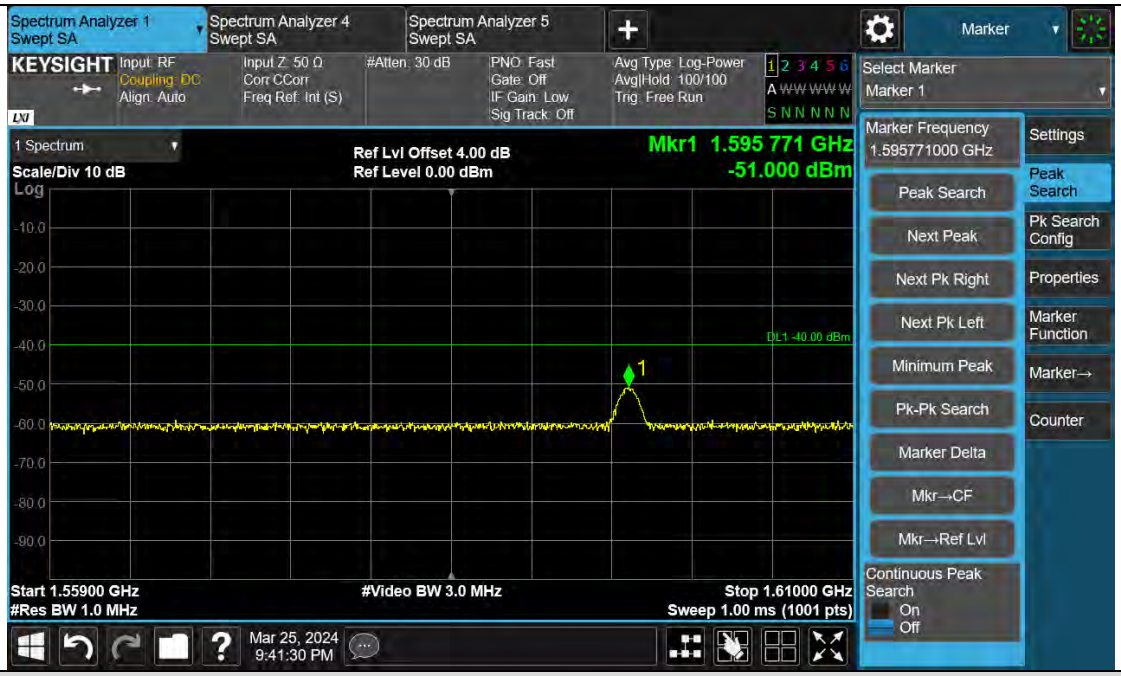
Band14-BPSK-15KHz-23017-1RB#0-1559M~1610M



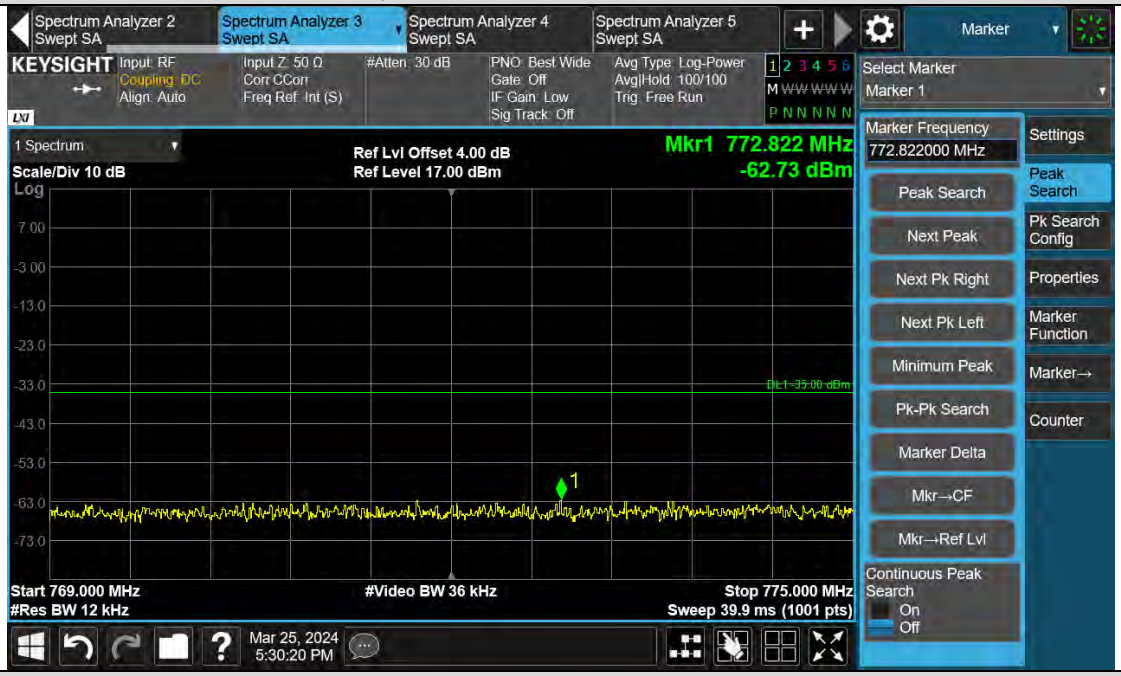
Band14-BPSK-15KHz-23378-1RB#11-793M~805M



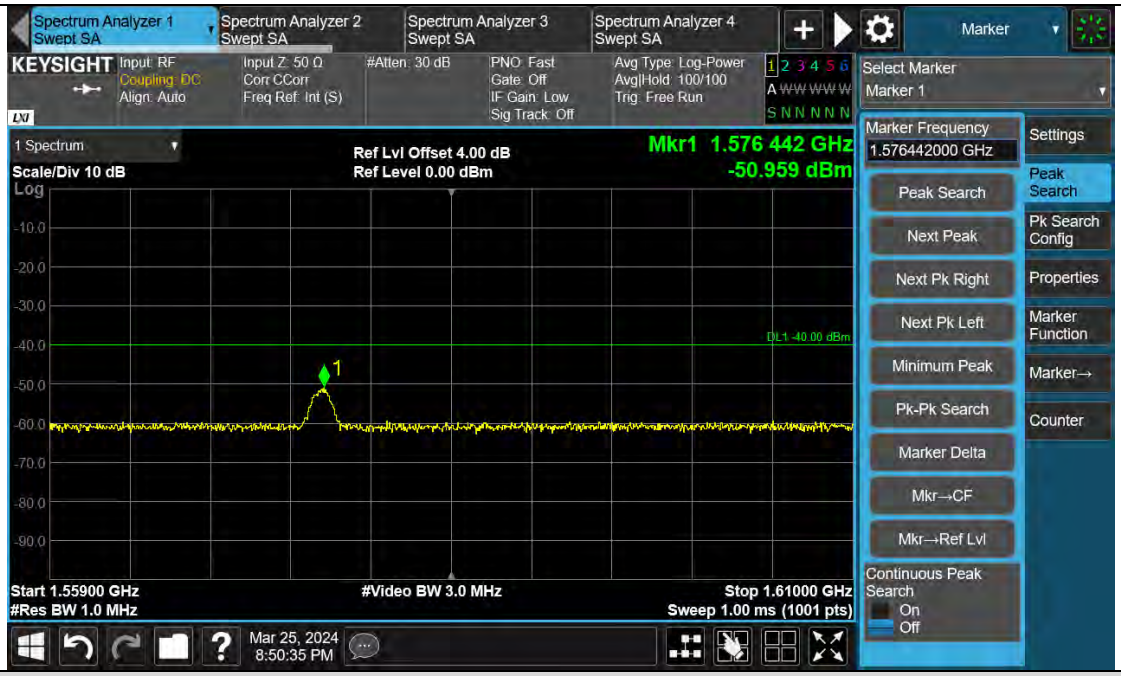
Band14-BPSK-15KHz-23378-1RB#11-1559M~1610M



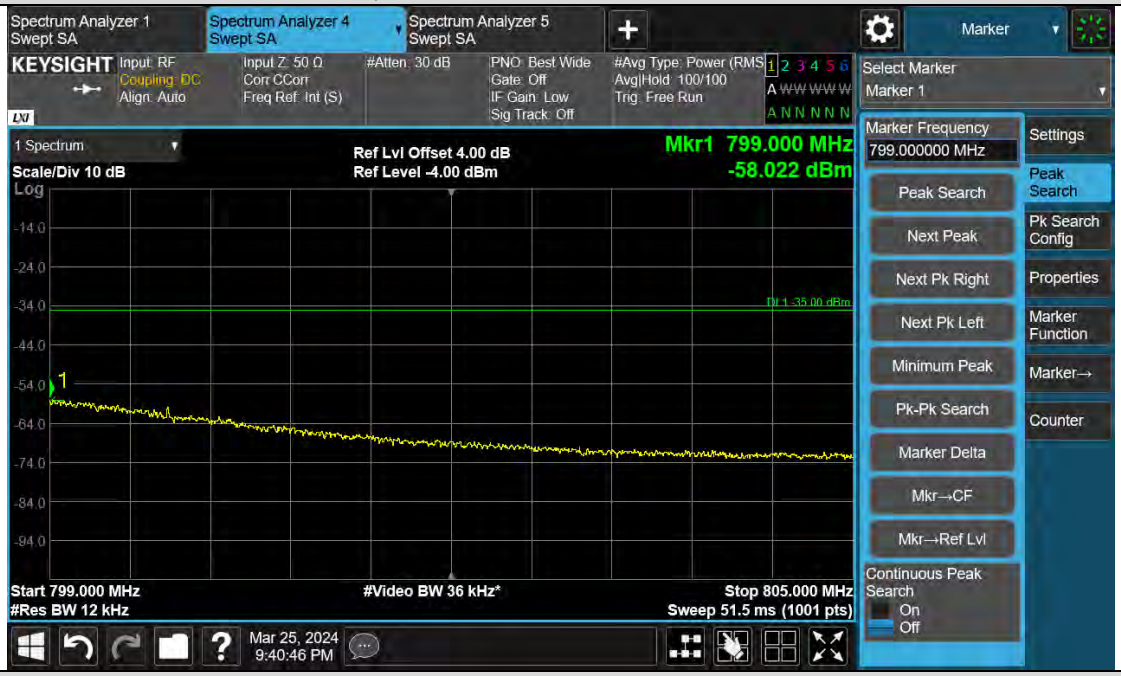
Band14-QPSK-15KHz-23017-1RB#0-769M~775M



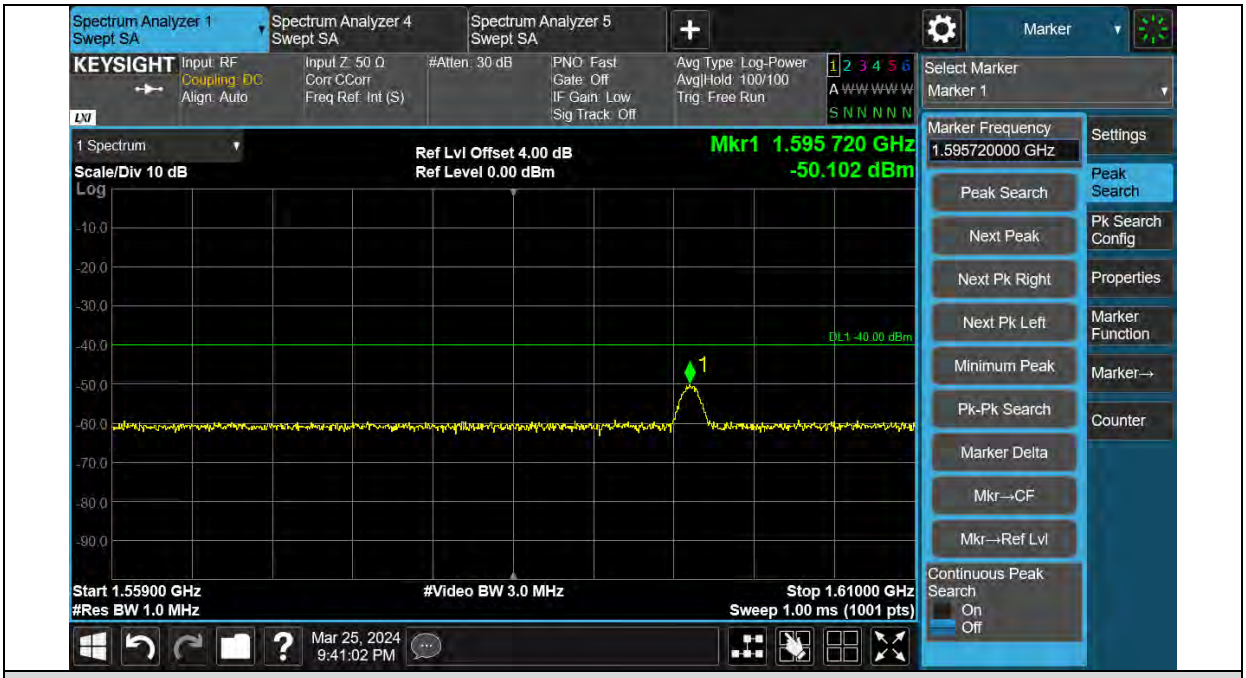
Band14-QPSK-15KHz-23017-1RB#0-1559M~1610M



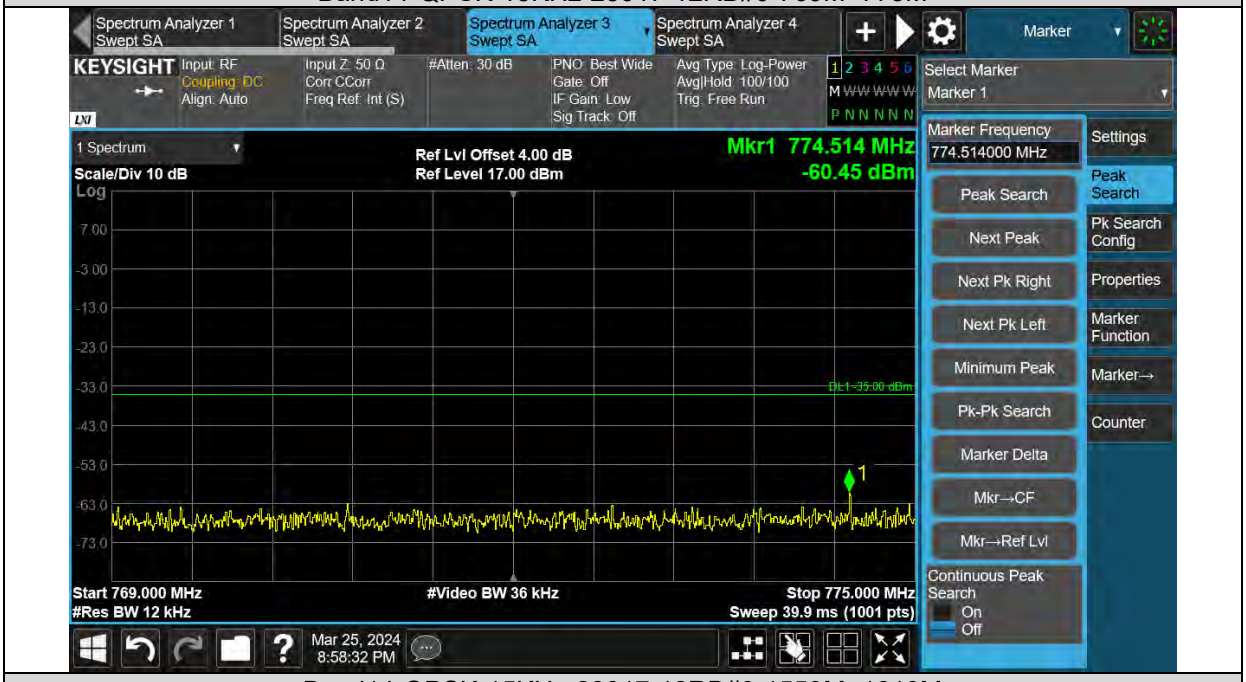
Band14-QPSK-15KHz-23378-1RB#11-793M~805M



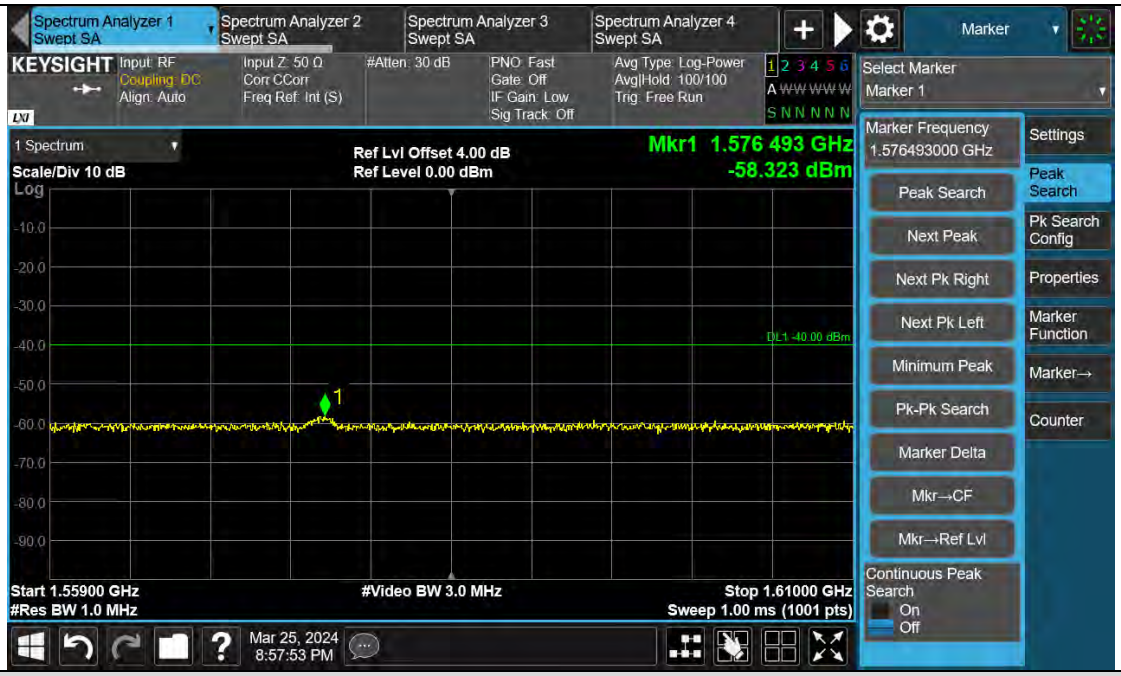
Band14-QPSK-15KHz-23378-1RB#11-1559M~1610M



Band14-QPSK-15KHz-23017-12RB#0-769M~775M

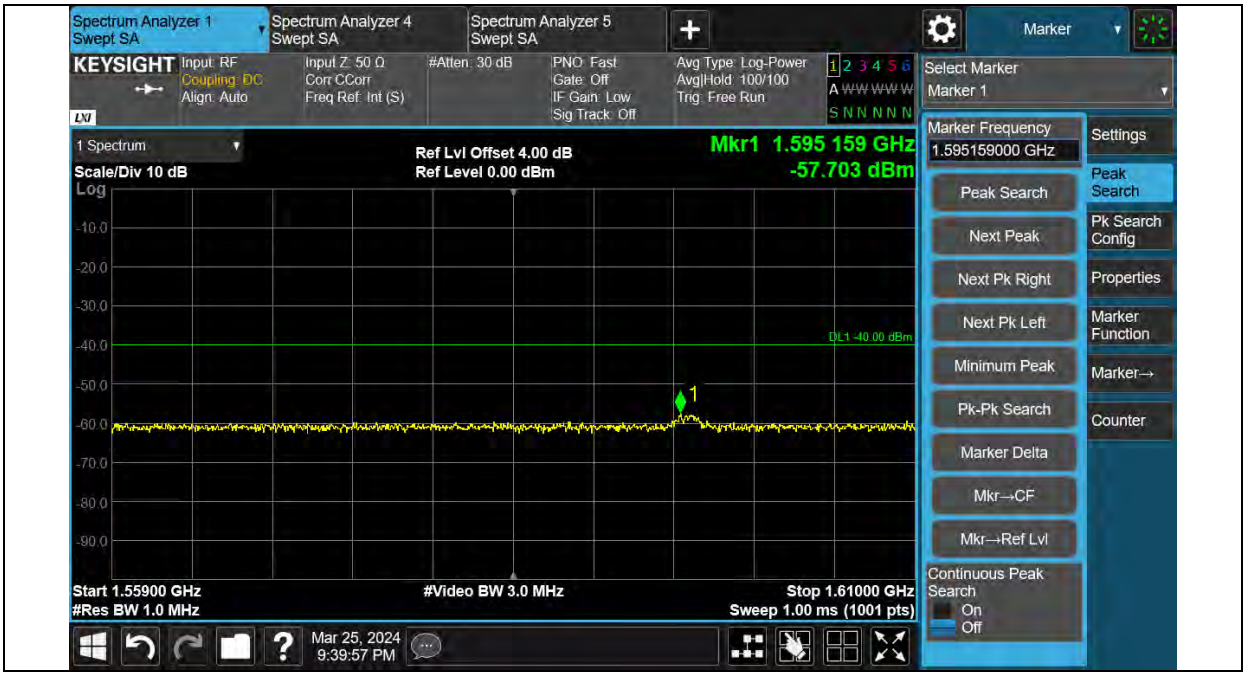


Band14-QPSK-15KHz-23017-12RB#0-1559M~1610M



Band14-QPSK-15KHz-23378-12RB#0-793M~805M

Band14-QPSK-15KHz-23378-12RB#0-1559M~1610M


Spectrum Analyzer 1
Swept SA
Spectrum Analyzer 4
Swept SA
Spectrum Analyzer 5
Swept SA
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 30 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Log-Power
Avg|Hold: 100/100
Trig: Free Run
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 4.00 dB
Ref Level 0.00 dBm
Mkr1 1.595 159 GHz
-57.703 dBm
DL1 -40.00 dBm
Start 1.55900 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz
Stop 1.61000 GHz
Sweep 1.00 ms (1001 pts)
Marker Frequency
1.595159000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
Mar 25, 2024
9:39:57 PM

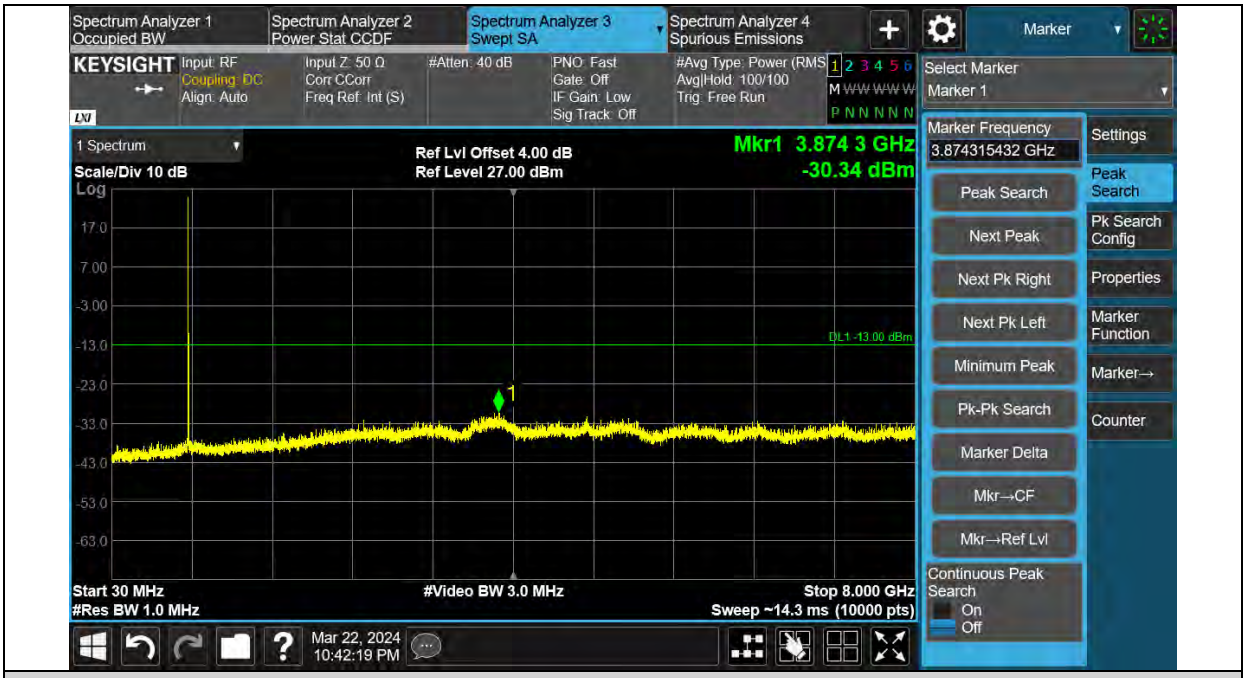
CONDUCTED SPURIOUS EMISSION

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Frequency Range	Result (dBm)	Verdict
Band14	BPSK	3.75	23282	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	BPSK	3.75	23330	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	BPSK	3.75	23378	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	3.75	23282	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	3.75	23330	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	3.75	23378	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	BPSK	15	23282	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	BPSK	15	23330	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	BPSK	15	23378	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	15	23282	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	15	23330	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	15	23378	1RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	15	23282	12RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	15	23330	12RB#0	Range:30M~8000M	See Graph	PASS
Band14	QPSK	15	23378	12RB#0	Range:30M~8000M	See Graph	PASS

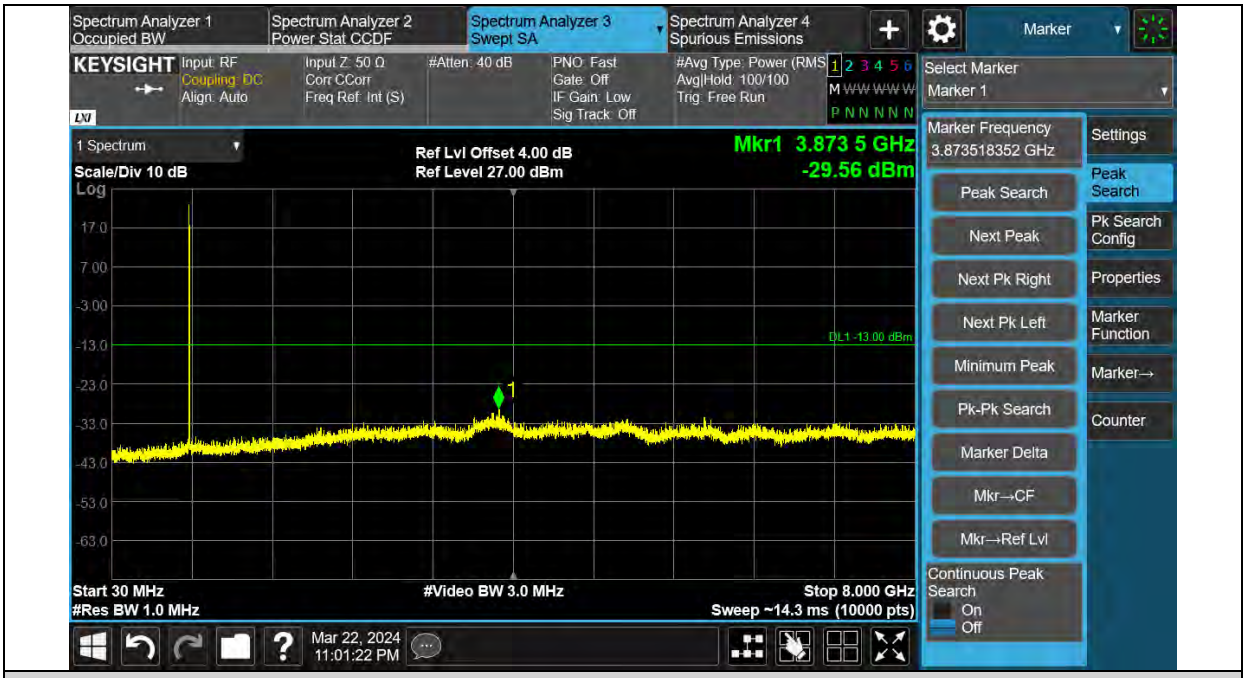
Test Graphs

Band14-BPSK-3.75KHz-23282-1RB#0



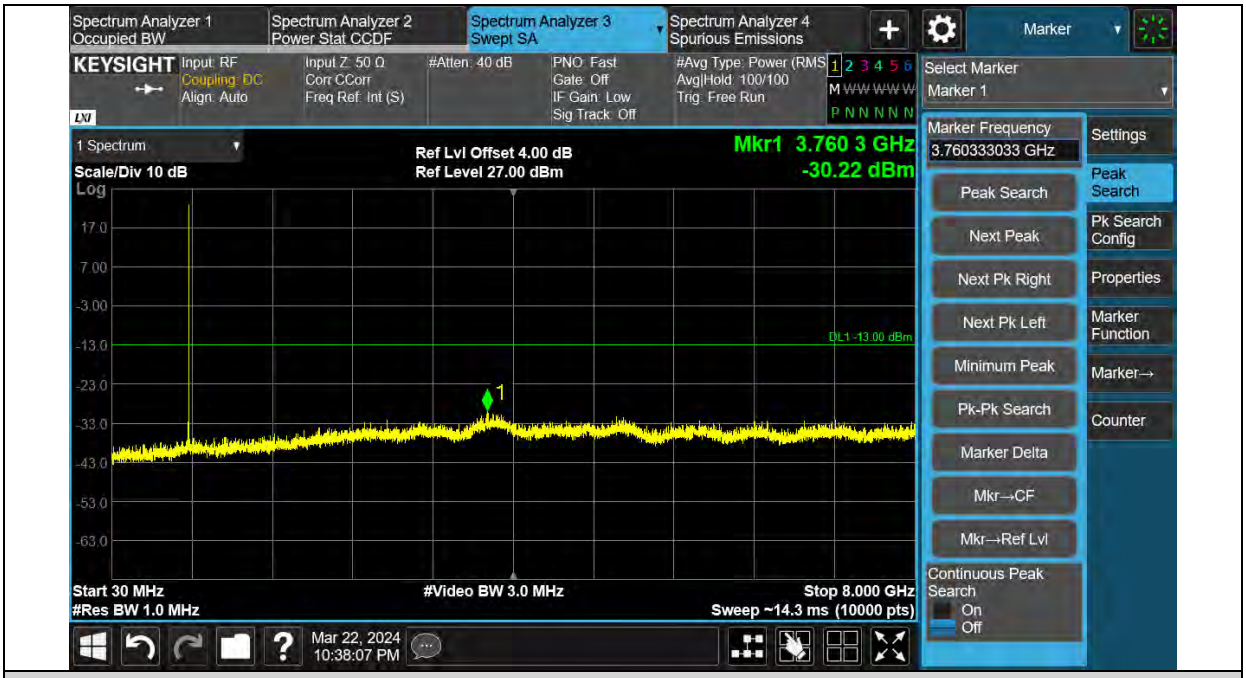
Band14-BPSK-3.75KHz-23330-1RB#0

Band14-BPSK-3.75KHz-23378-1RB#0



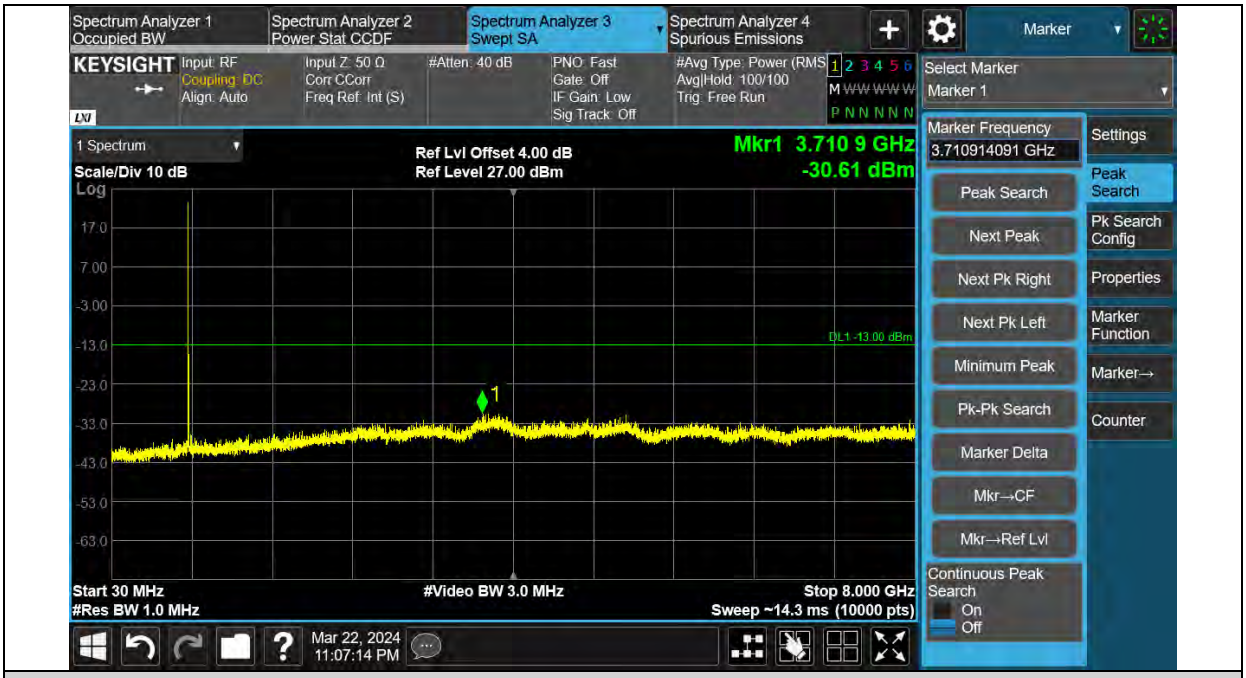
Band14-QPSK-3.75KHz-23282-1RB#0

Band14-QPSK-3.75KHz-23330-1RB#0



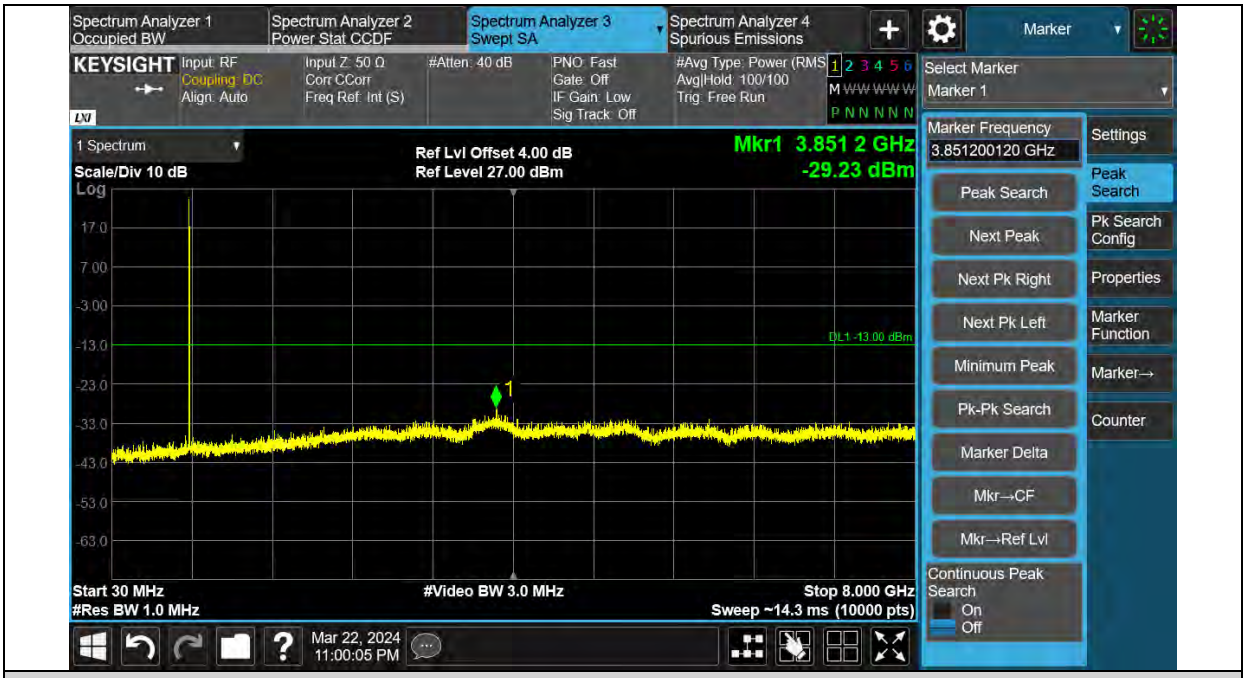
Band14-QPSK-3.75KHz-23378-1RB#0

Band14-BPSK-15KHz-23282-1RB#0



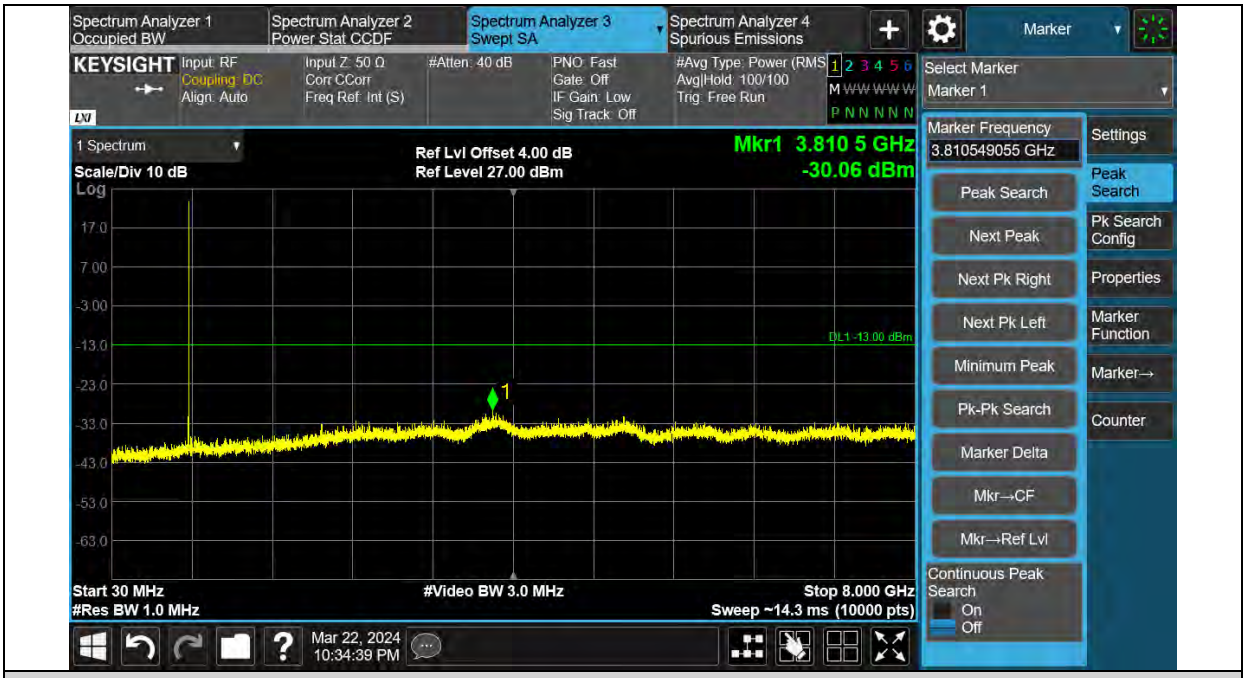
Band14-BPSK-15KHz-23330-1RB#0

Band14-BPSK-15KHz-23378-1RB#0



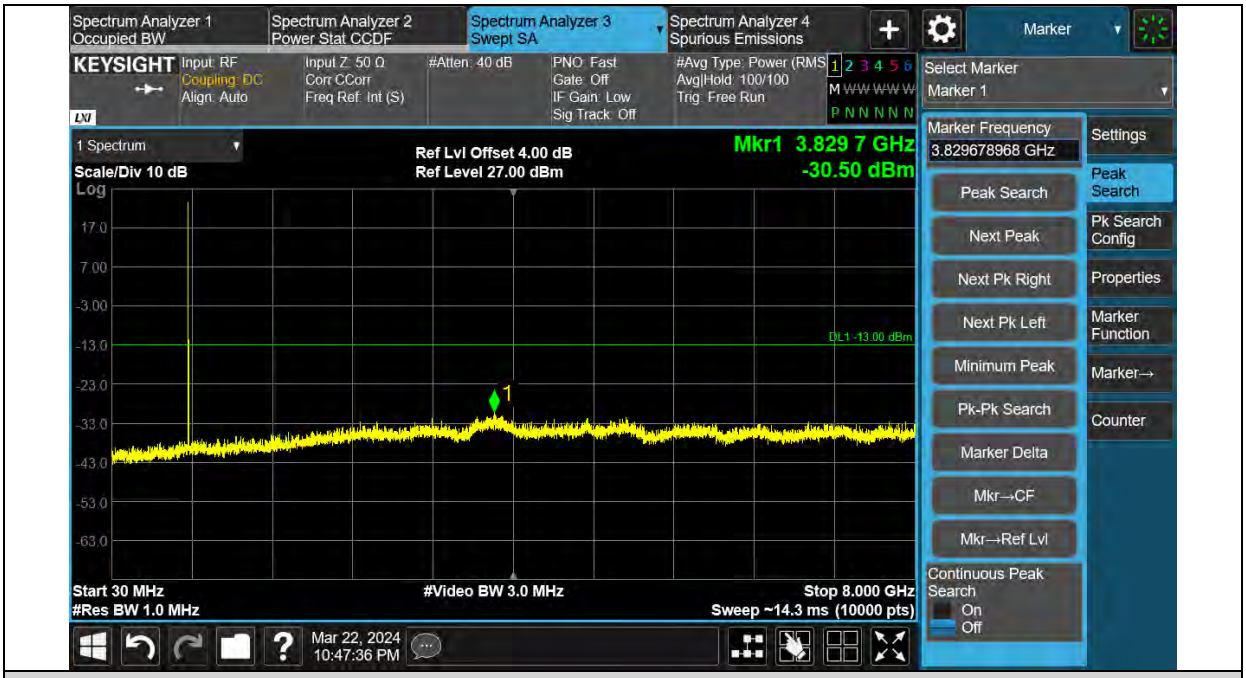
Band14-QPSK-15KHz-23282-1RB#0

Band14-QPSK-15KHz-23330-1RB#0

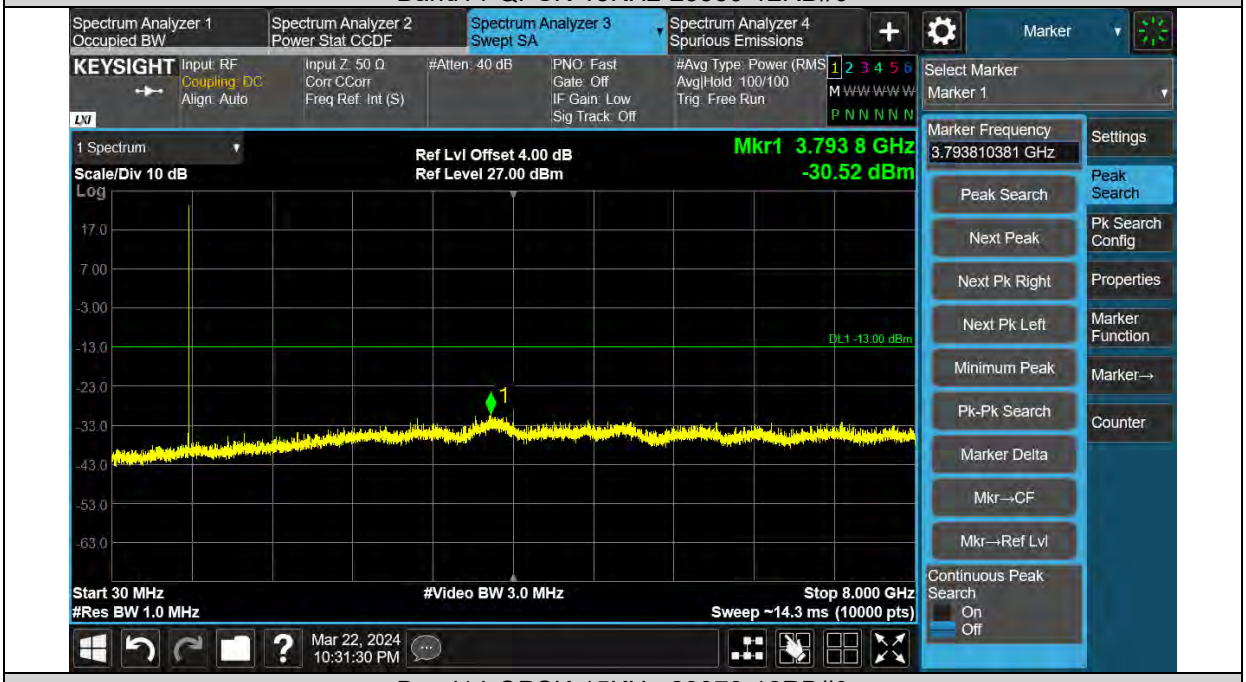


Band14-QPSK-15KHz-23378-1RB#0

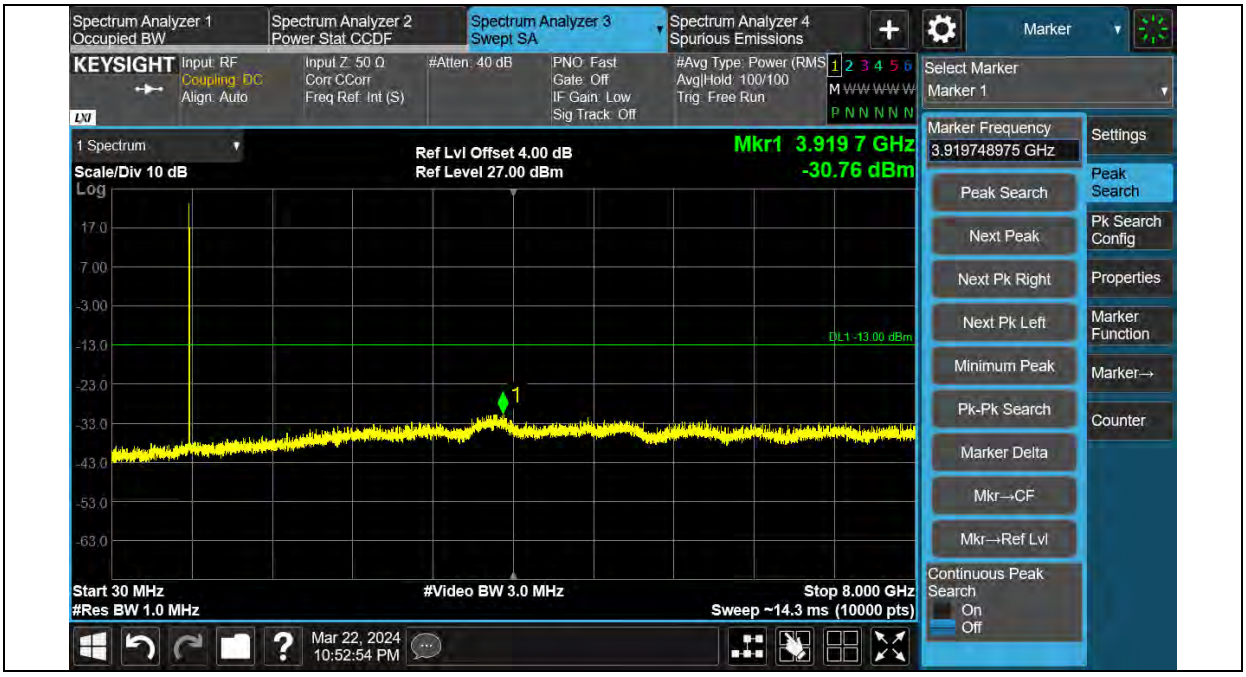
Band14-QPSK-15KHz-23282-12RB#0



Band14-QPSK-15KHz-23330-12RB#0



Band14-QPSK-15KHz-23378-12RB#0


Spectrum Analyzer 1
Occupied BW
Spectrum Analyzer 2
Power Stat CCDF
Spectrum Analyzer 3
Swept SA
Spectrum Analyzer 4
Spurious Emissions
Marker
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 40 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
#Avg Type: Power (RMS)
Avg|Hold: 100/100
Trig: Free Run
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 4.00 dB
Ref Level 27.00 dBm
Mkr1 3.919 7 GHz
-30.76 dBm
DL1 -13.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz
Stop 8.000 GHz
Sweep ~14.3 ms (10000 pts)
Mar 22, 2024
10:52:54 PM
Marker Frequency
3.919748975 GHz
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Settings
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter

FREQUENCY STABILITY

Test Result

Voltage								
Band	Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band14	QPSK	23330	VL	NT	7.73	0.031828	±2.5	PASS
Band14	QPSK	23330	VN	NT	24.35	0.031238	±2.5	PASS
Band14	QPSK	23330	VH	NT	25.69	0.032957	±2.5	PASS
Band14	BPSK	23330	VL	NT	33.93	0.043389	±2.5	PASS
Band14	BPSK	23330	VN	NT	13.76	0.017596	±2.5	PASS
Band14	BPSK	23330	VH	NT	21.76	0.027826	±2.5	PASS

Temperature								
Band	Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band14	QPSK	23330	NV	-30	6.31	0.008069	±2.5	PASS
Band14	QPSK	23330	NV	-20	-24.2	-0.030946	±2.5	PASS
Band14	QPSK	23330	NV	-10	-14.5	-0.018542	±2.5	PASS
Band14	QPSK	23330	NV	0	-8.4	-0.010742	±2.5	PASS
Band14	QPSK	23330	NV	10	7.1	0.009079	±2.5	PASS
Band14	QPSK	23330	NV	20	-4.8	-0.006138	±2.5	PASS
Band14	QPSK	23330	NV	30	-1.5	-0.001918	±2.5	PASS
Band14	QPSK	23330	NV	40	-16.5	-0.021100	±2.5	PASS
Band14	QPSK	23330	NV	50	-5.4	-0.006905	±2.5	PASS
Band14	BPSK	23330	NV	-30	23.5	0.030051	±2.5	PASS
Band14	BPSK	23330	NV	-20	15.3	0.019565	±2.5	PASS
Band14	BPSK	23330	NV	-10	-12.8	-0.016368	±2.5	PASS
Band14	BPSK	23330	NV	0	0.8	0.001023	±2.5	PASS
Band14	BPSK	23330	NV	10	1.2	0.001535	±2.5	PASS
Band14	BPSK	23330	NV	20	13	0.016624	±2.5	PASS
Band14	BPSK	23330	NV	30	-6	-0.007673	±2.5	PASS
Band14	BPSK	23330	NV	40	-9.1	-0.011637	±2.5	PASS
Band14	BPSK	23330	NV	50	22.1	0.028261	±2.5	PASS

CAT-M: LTE BAND26

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	Result(dB)	Limit(dB)	Verdict
Band26	1.4MHz	QPSK	26697	5.02	13	PASS
Band26	1.4MHz	QPSK	26740	5.45	13	PASS
Band26	1.4MHz	QPSK	26783	5.01	13	PASS
Band26	1.4MHz	16QAM	26697	4.97	13	PASS
Band26	1.4MHz	16QAM	26740	6.26	13	PASS
Band26	1.4MHz	16QAM	26783	6.59	13	PASS
Band26	3MHz	QPSK	26705	5.00	13	PASS
Band26	3MHz	QPSK	26740	5.01	13	PASS
Band26	3MHz	QPSK	26775	4.87	13	PASS
Band26	3MHz	16QAM	26705	6.25	13	PASS
Band26	3MHz	16QAM	26740	6.15	13	PASS
Band26	3MHz	16QAM	26775	6.60	13	PASS
Band26	5MHz	QPSK	26715	6.26	13	PASS
Band26	5MHz	QPSK	26740	5.82	13	PASS
Band26	5MHz	QPSK	26765	6.32	13	PASS
Band26	5MHz	16QAM	26715	5.94	13	PASS
Band26	5MHz	16QAM	26740	5.28	13	PASS
Band26	5MHz	16QAM	26765	6.07	13	PASS
Band26	10MHz	QPSK	26740	7.24	13	PASS
Band26	10MHz	16QAM	26740	6.76	13	PASS

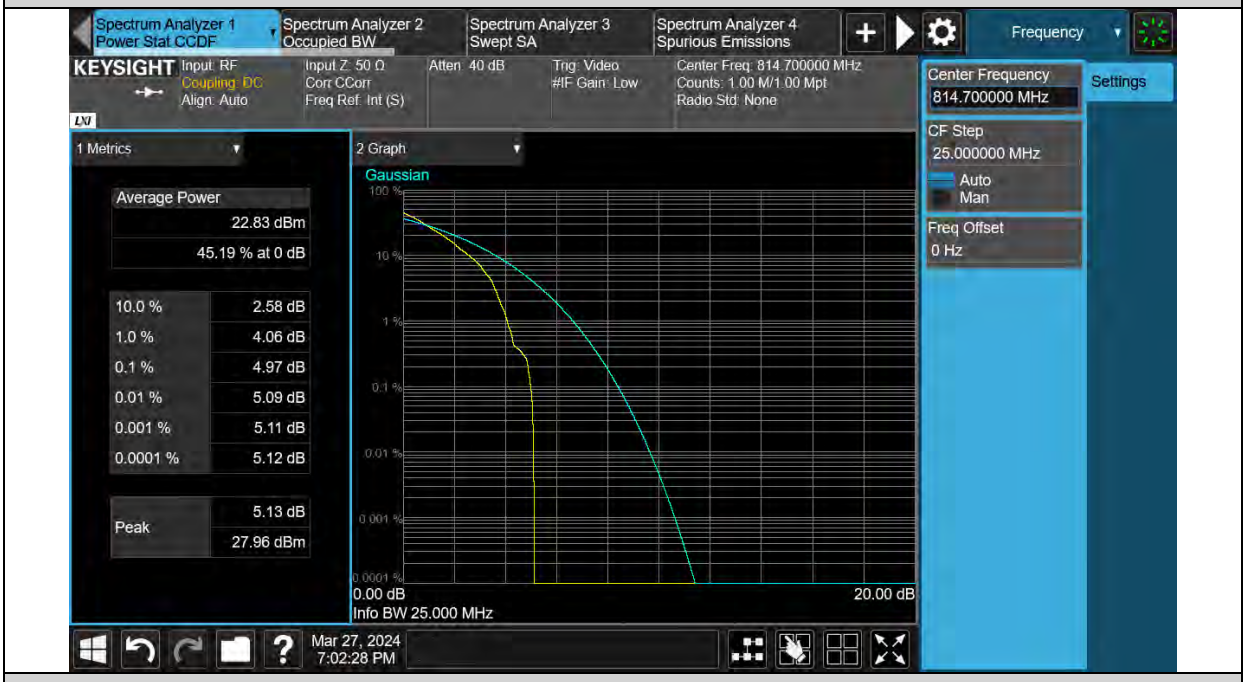
est Graphs

Band26-1.4MHz-QPSK-26697

Band26-1.4MHz-QPSK-26740

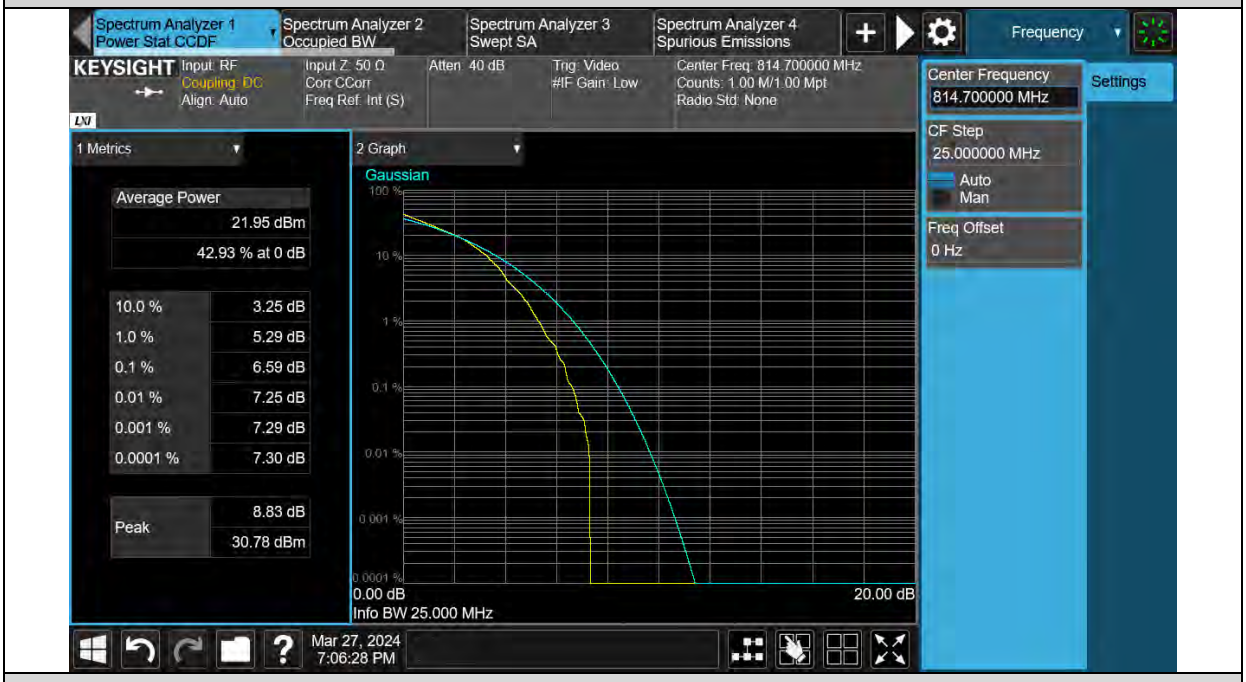
Band26-1.4MHz-QPSK-26783

Band26-1.4MHz-16QAM-26697



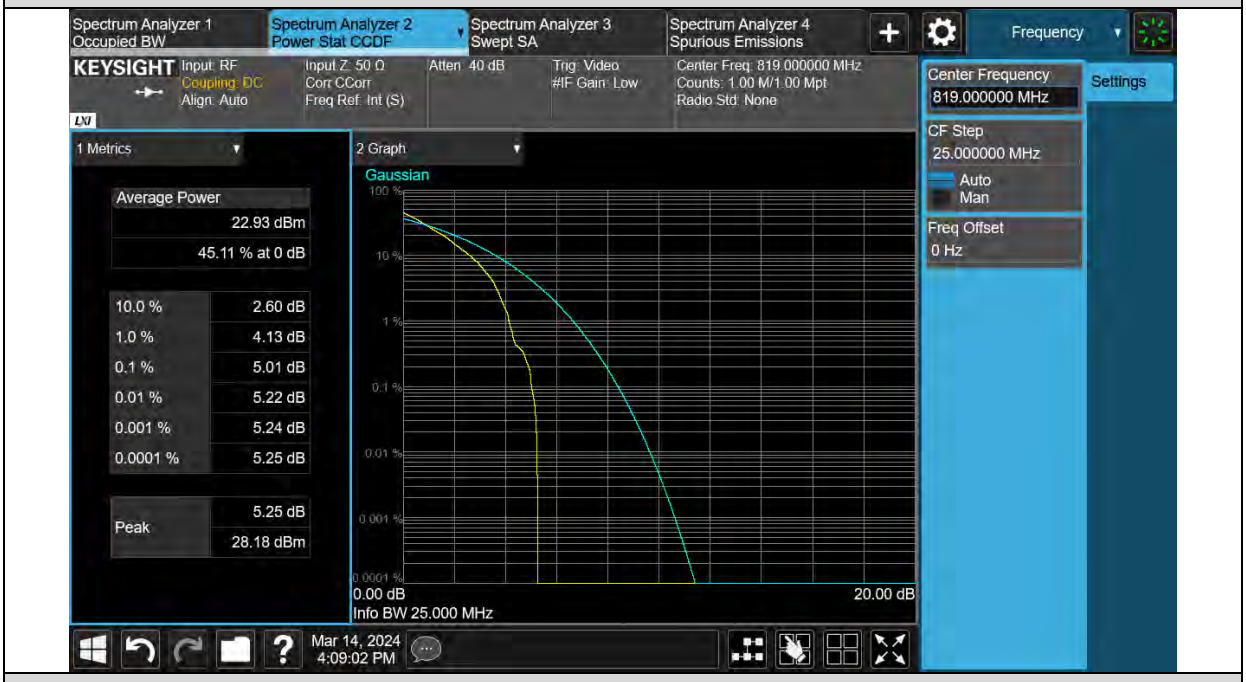
Band26-1.4MHz-16QAM-26740

Band26-1.4MHz-16QAM-26783

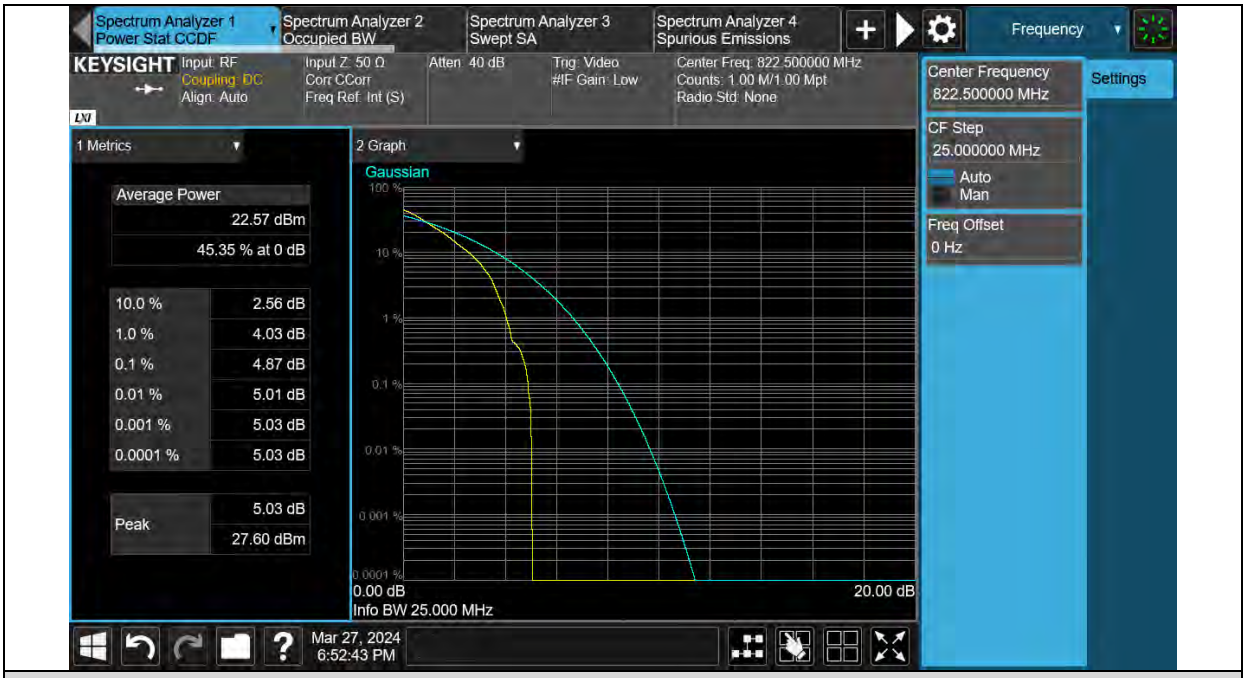


Band26-3MHz-QPSK-26705

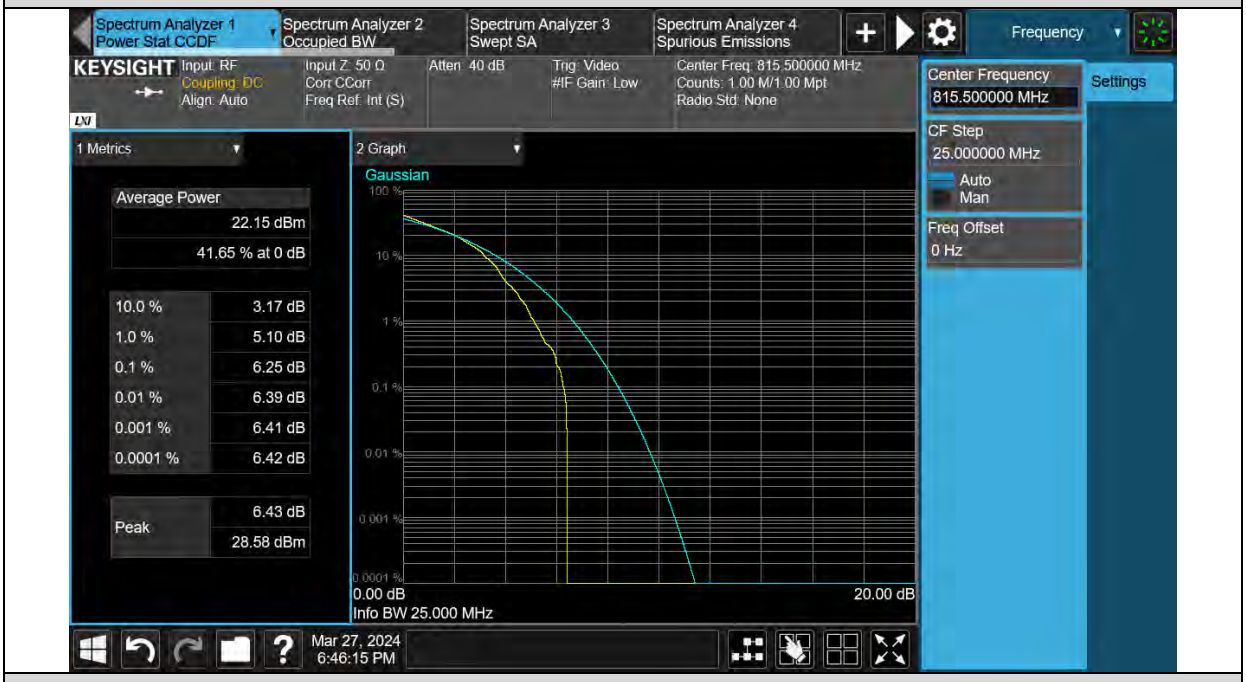
Band26-3MHz-QPSK-26740



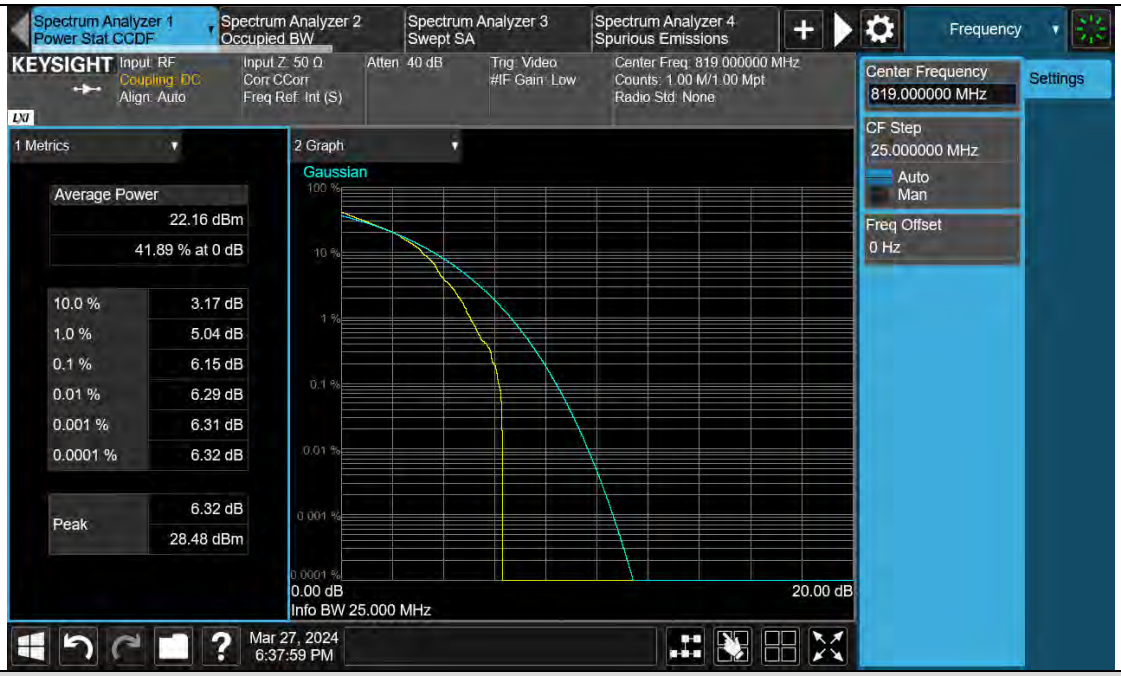
Band26-3MHz-QPSK-26775



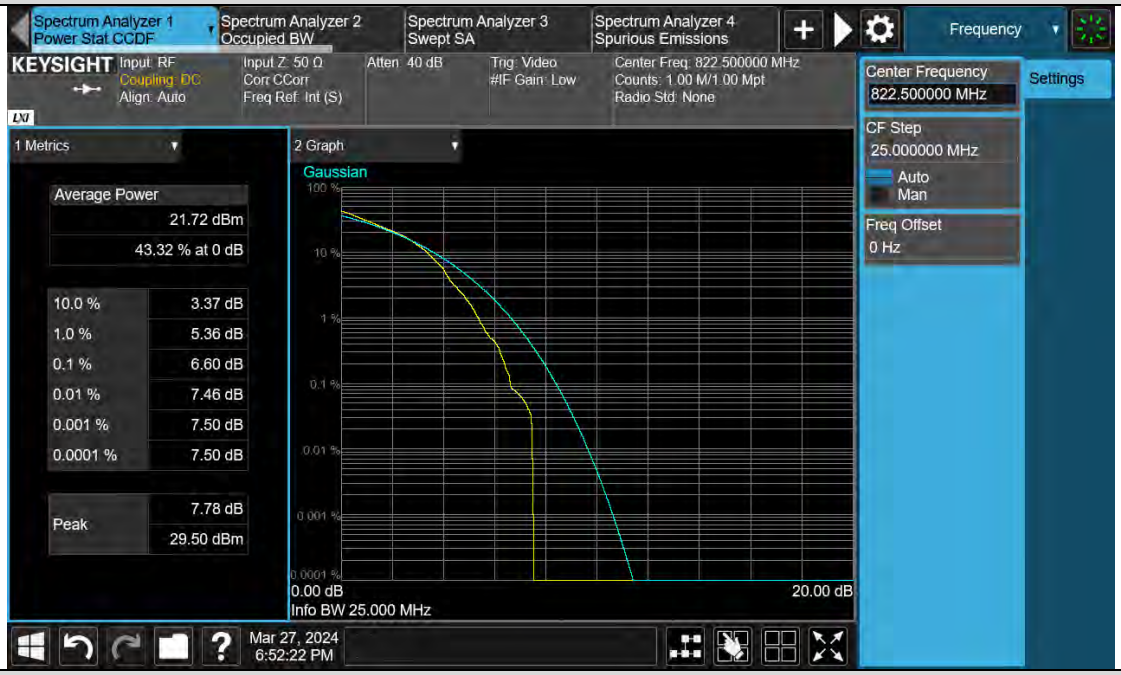
Band26-3MHz-16QAM-26705



Band26-3MHz-16QAM-26740

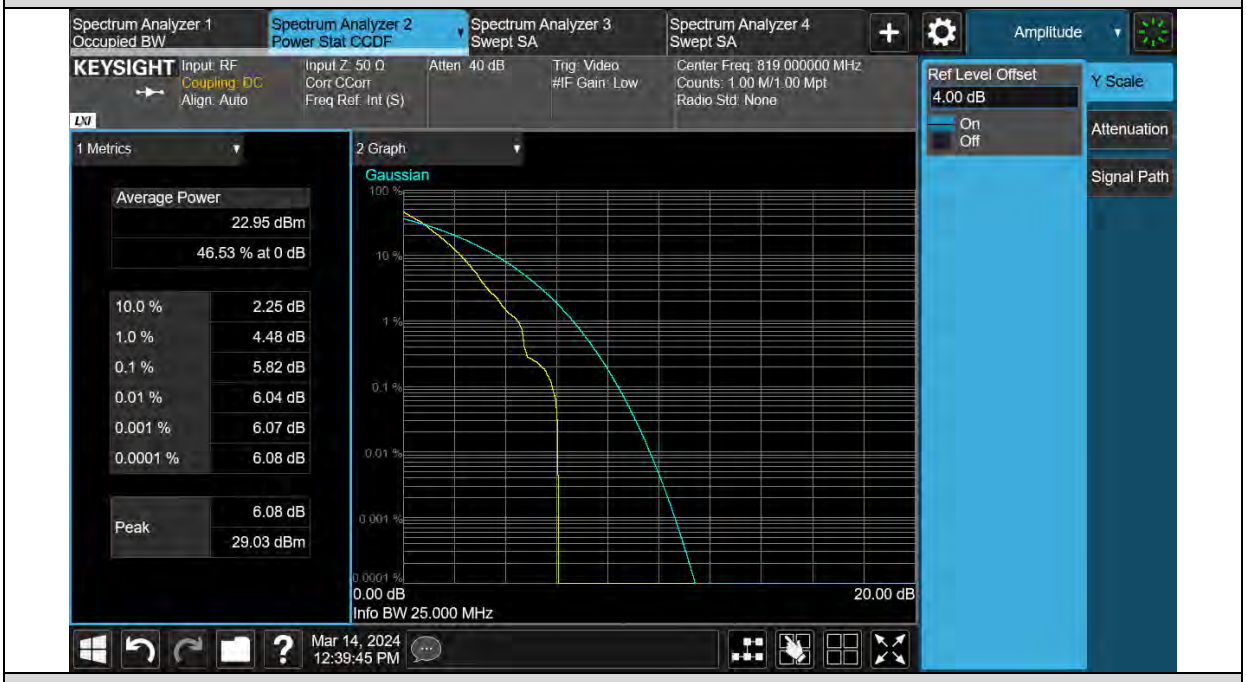


Band26-3MHz-16QAM-26775



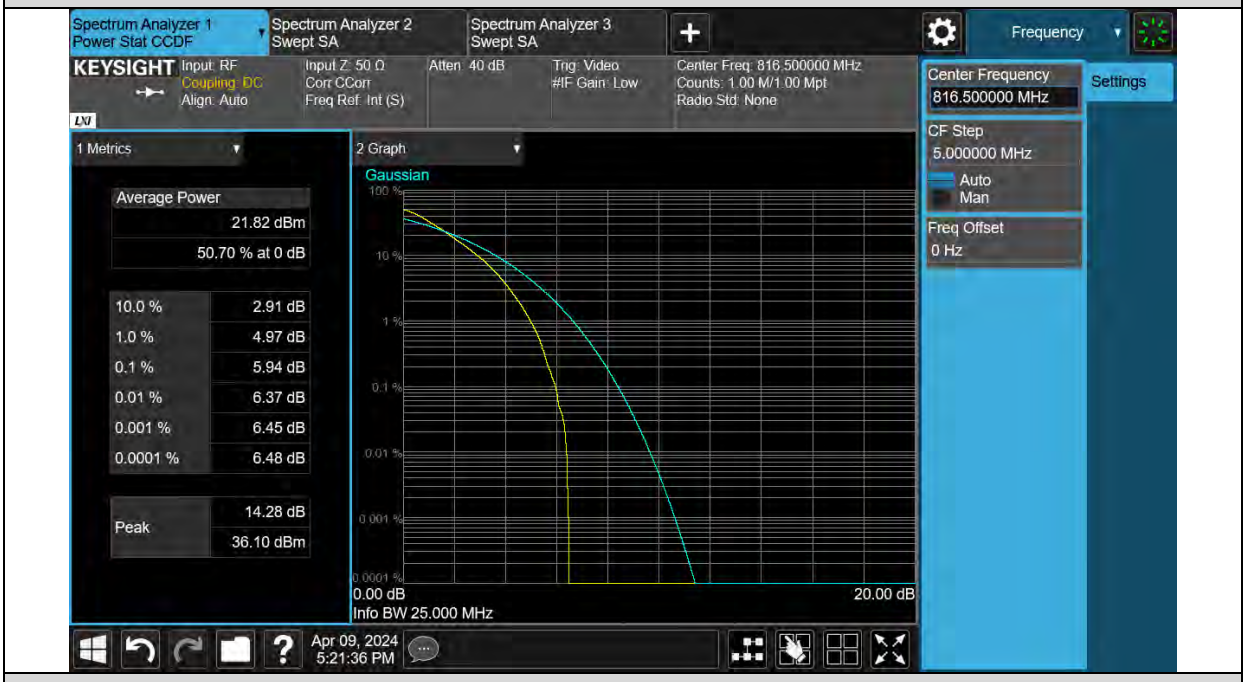
Band26-5MHz-QPSK-26715

Band26-5MHz-QPSK-26740

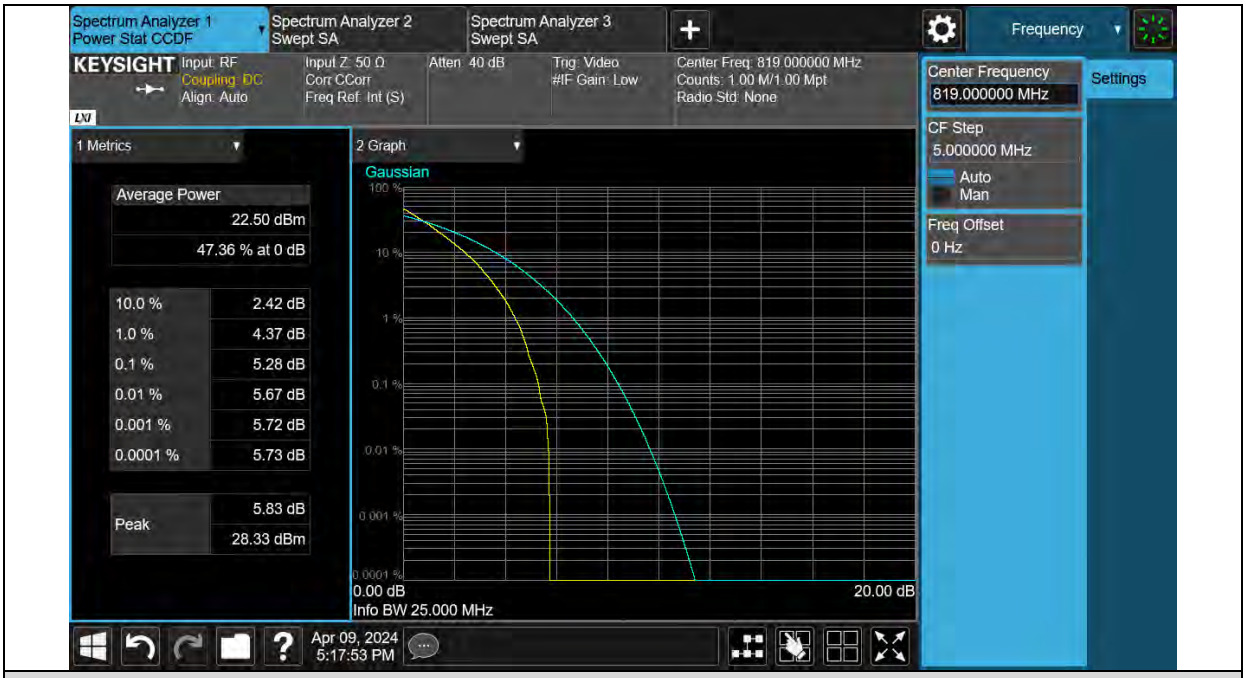


Band26-5MHz-QPSK-26765

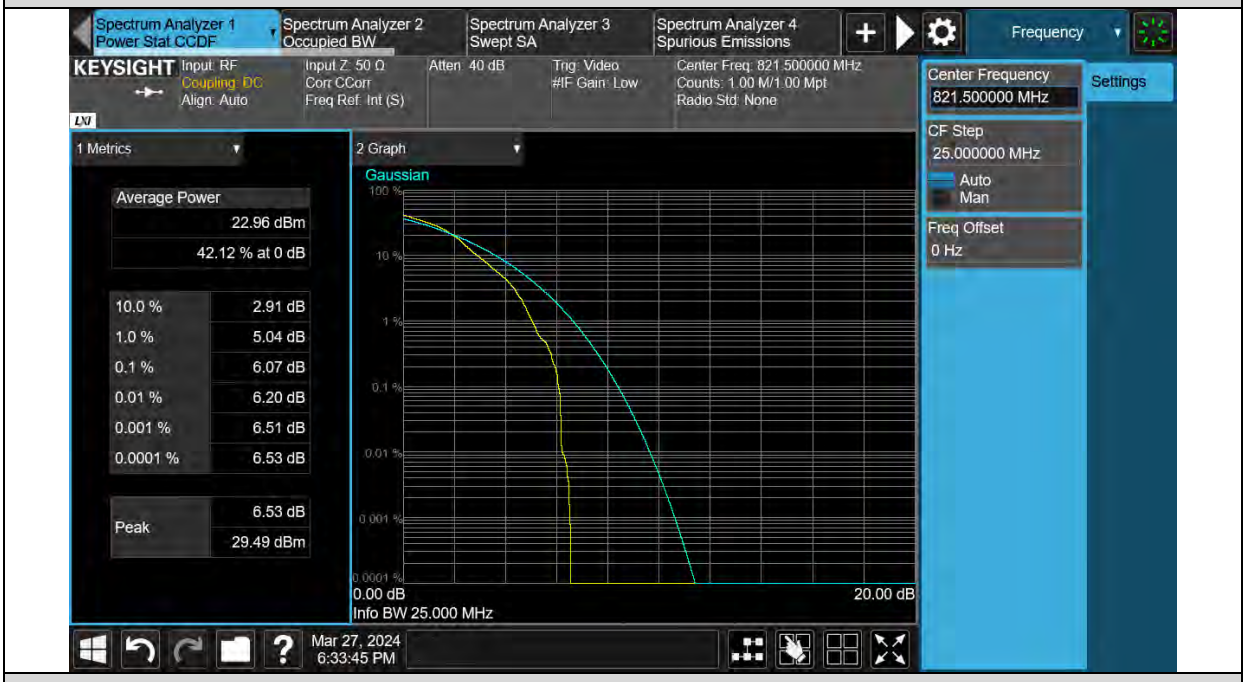
Band26-5MHz-16QAM-26715



Band26-5MHz-16QAM-26740

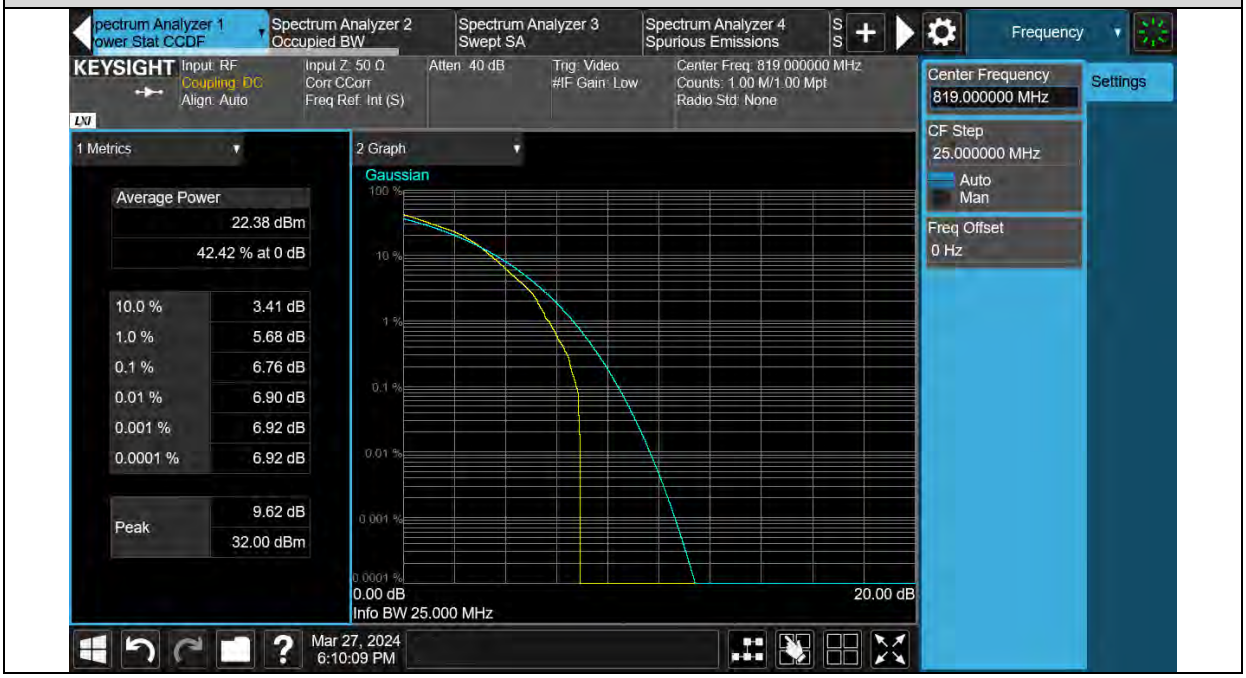


Band26-5MHz-16QAM-26765



Band26-10MHz-QPSK-26740

Band26-10MHz-16QAM-26740



26DB BANDWIDTH AND OCCUPIED BANDWIDTH

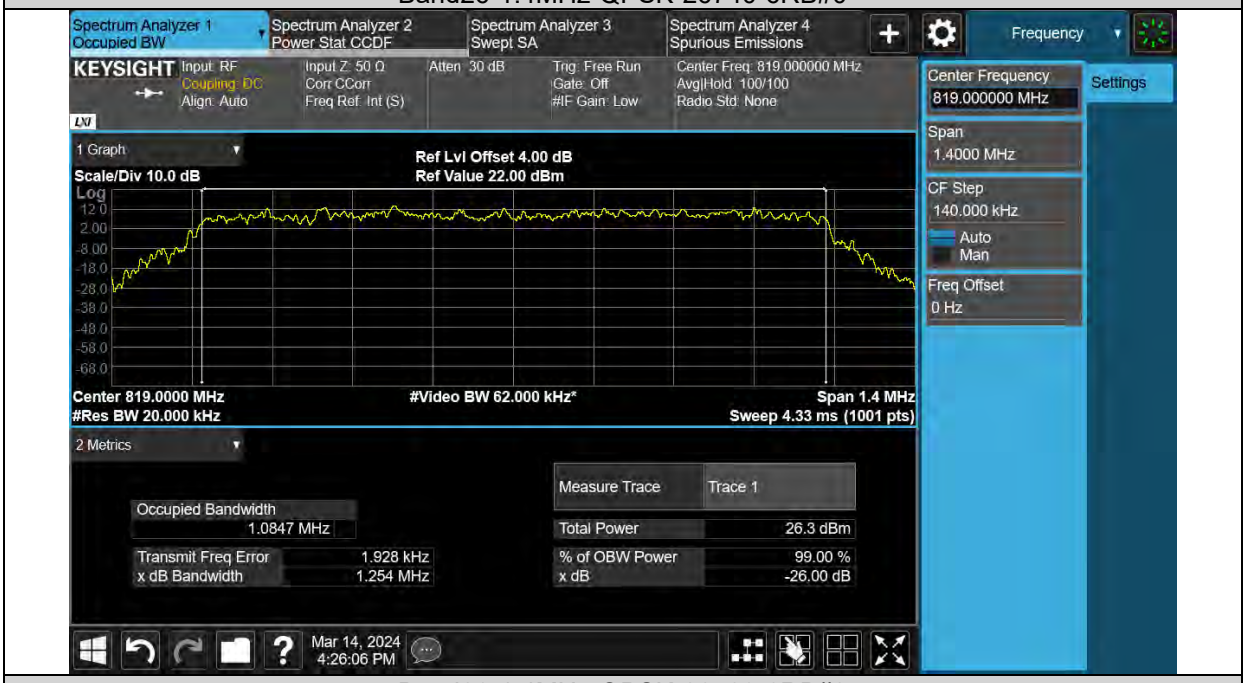
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band26	1.4MHz	QPSK	26697	6RB#0	1.0762	1.256	PASS
Band26	1.4MHz	QPSK	26740	6RB#0	1.0847	1.254	PASS
Band26	1.4MHz	QPSK	26783	6RB#0	1.0786	1.233	PASS
Band26	1.4MHz	16QAM	26697	6RB#0	1.0739	1.265	PASS
Band26	1.4MHz	16QAM	26740	6RB#0	1.0811	1.283	PASS
Band26	1.4MHz	16QAM	26783	6RB#0	1.0791	1.245	PASS
Band26	3MHz	QPSK	26705	6RB#0	1.0740	1.251	PASS
Band26	3MHz	QPSK	26740	6RB#0	1.0820	1.268	PASS
Band26	3MHz	QPSK	26775	6RB#0	1.0742	1.271	PASS
Band26	3MHz	16QAM	26705	6RB#0	1.0825	1.256	PASS
Band26	3MHz	16QAM	26740	6RB#0	1.0715	1.268	PASS
Band26	3MHz	16QAM	26775	6RB#0	1.0793	1.248	PASS
Band26	5MHz	QPSK	26715	6RB#0	1.0753	1.264	PASS
Band26	5MHz	QPSK	26740	6RB#0	1.0773	1.266	PASS
Band26	5MHz	QPSK	26765	6RB#0	1.0812	1.268	PASS
Band26	5MHz	16QAM	26715	6RB#0	1.0736	1.254	PASS
Band26	5MHz	16QAM	26740	6RB#0	1.0733	1.285	PASS
Band26	5MHz	16QAM	26765	6RB#0	1.0749	1.258	PASS
Band26	10MHz	QPSK	26740	6RB#0	1.0761	1.264	PASS
Band26	10MHz	16QAM	26740	6RB#0	1.0732	1.278	PASS

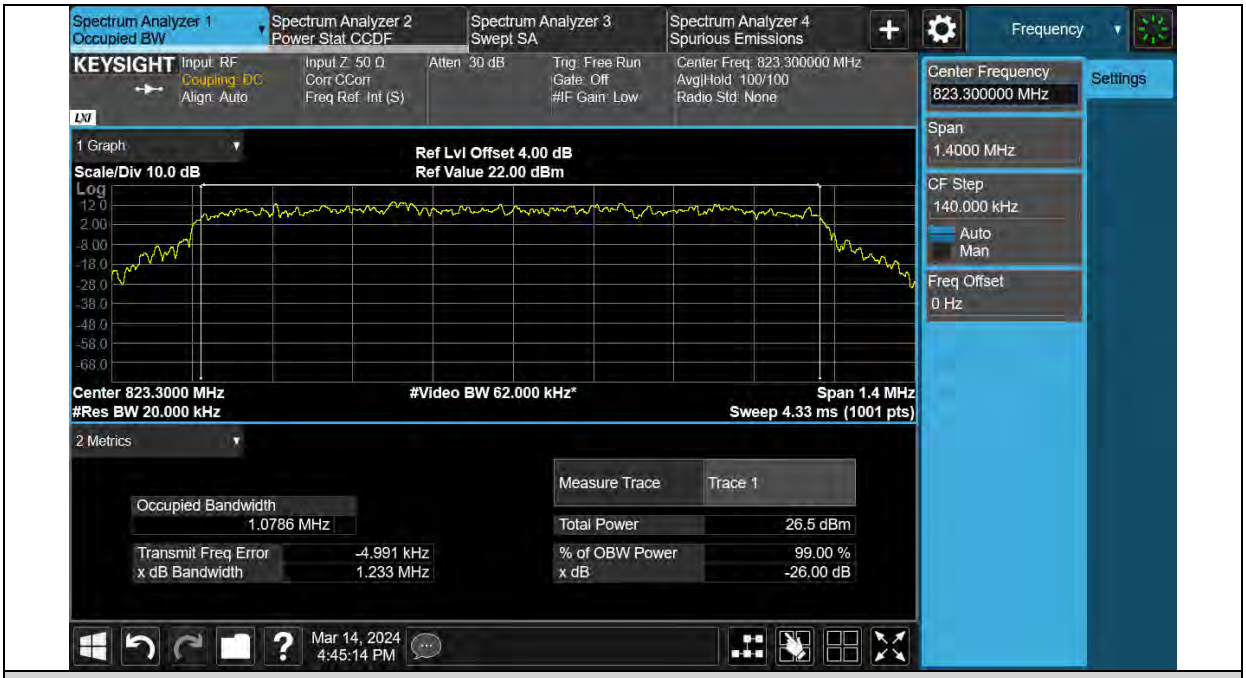
Test Graphs

Band26-1.4MHz-QPSK-26697-6RB#0

Band26-1.4MHz-QPSK-26740-6RB#0

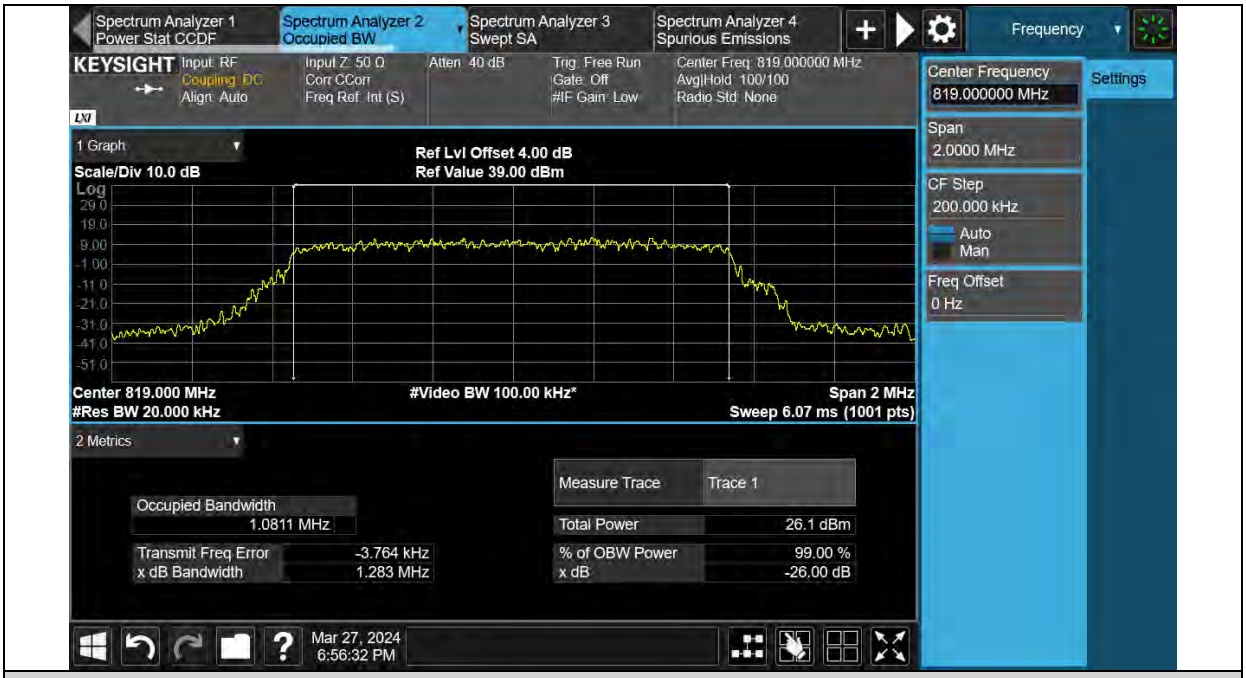


Band26-1.4MHz-QPSK-26783-6RB#0

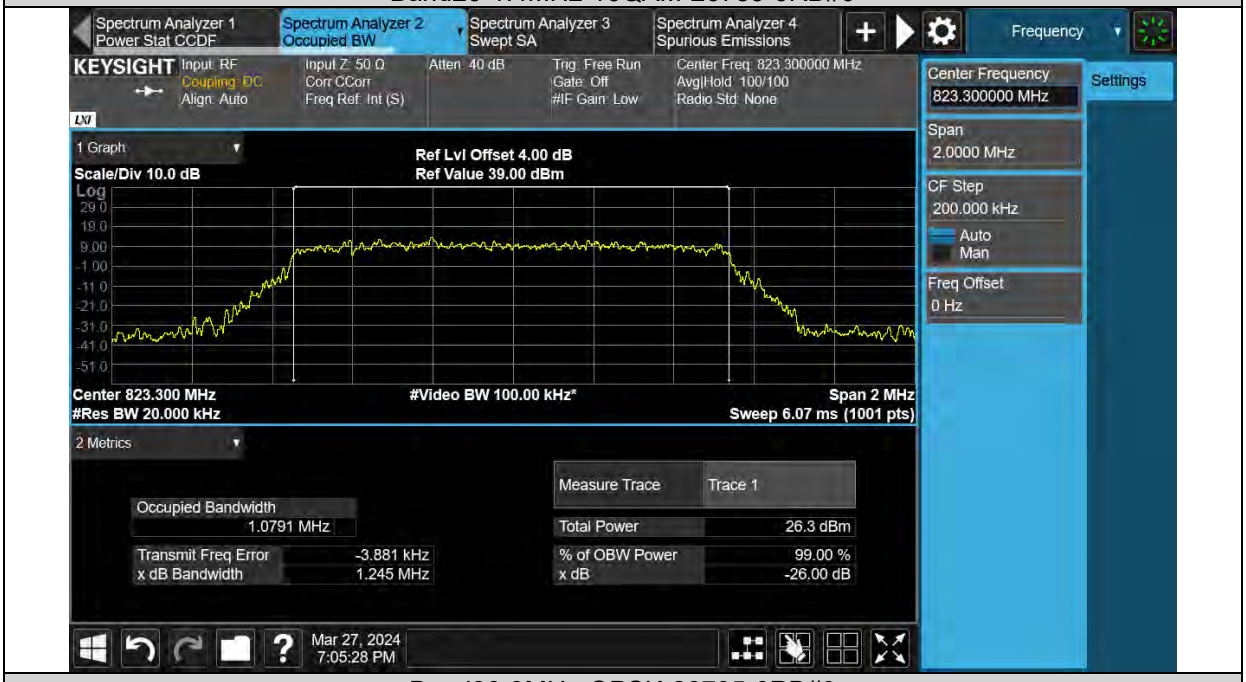


Band26-1.4MHz-16QAM-26697-6RB#0

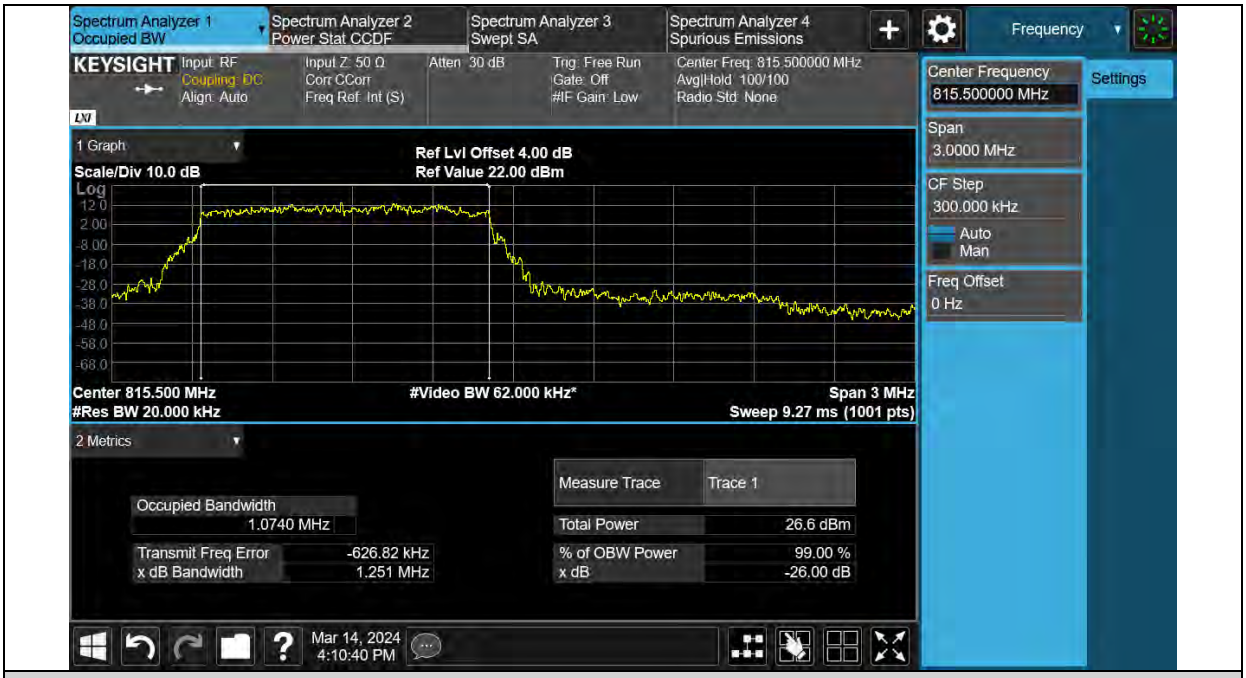
Band26-1.4MHz-16QAM-26740-6RB#0



Band26-1.4MHz-16QAM-26783-6RB#0

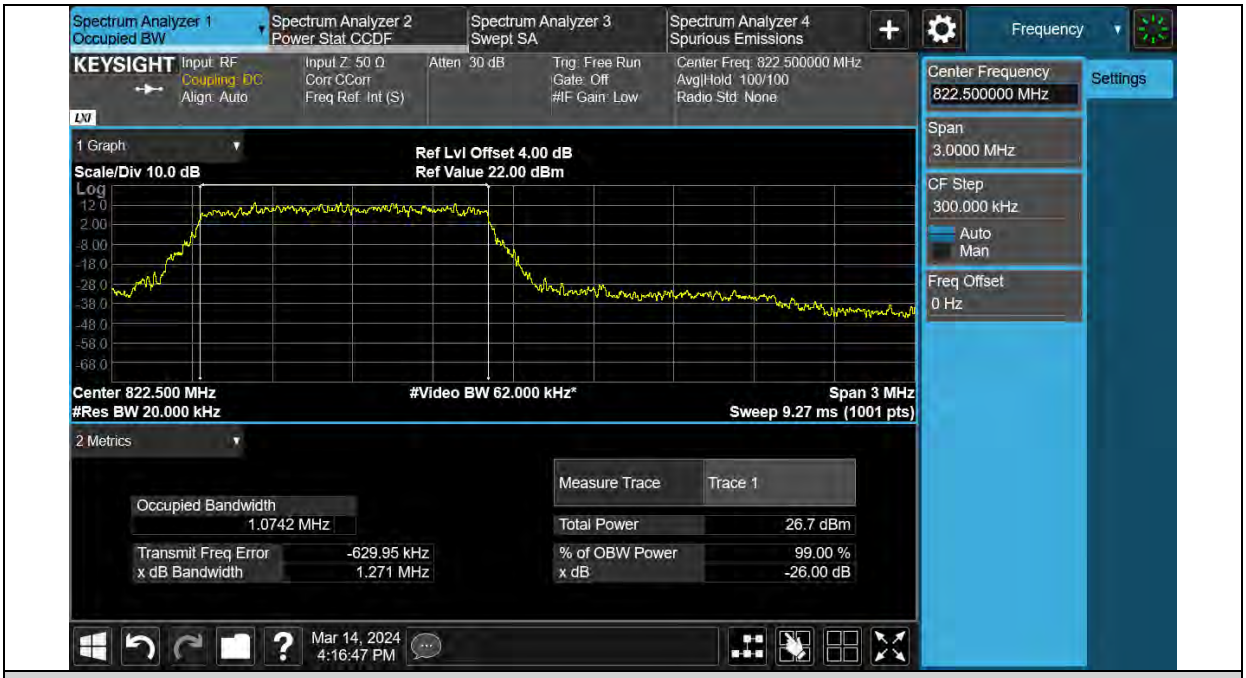


Band26-3MHz-QPSK-26705-6RB#0



Band26-3MHz-QPSK-26740-6RB#0

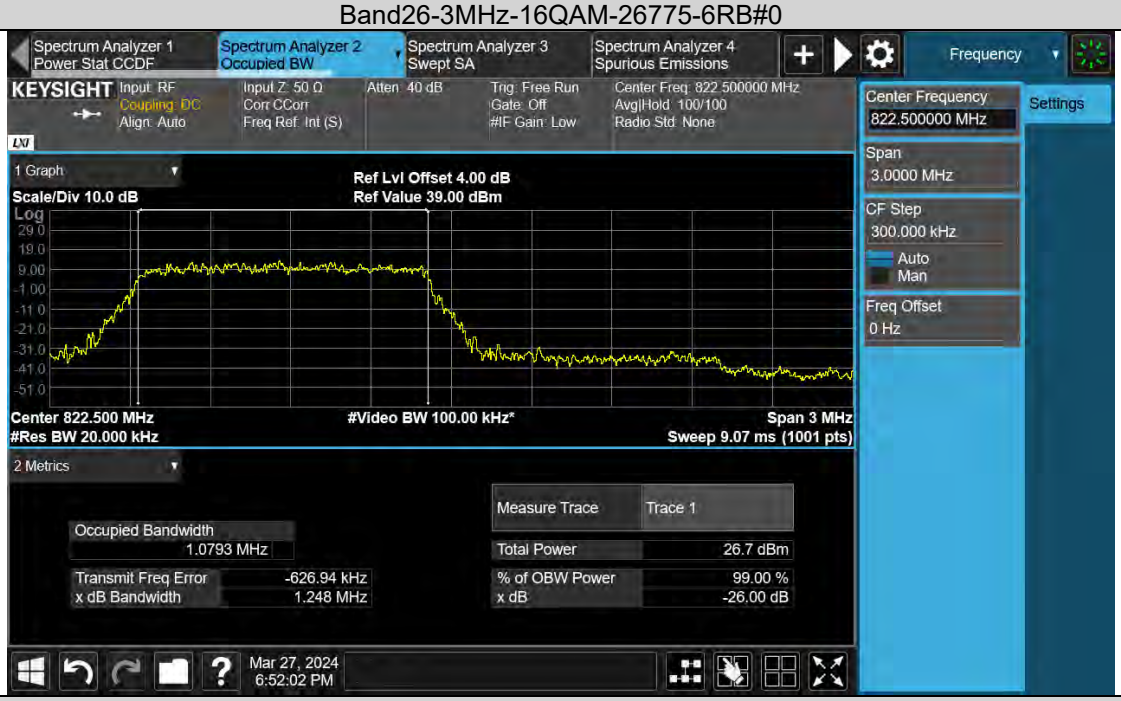
Band26-3MHz-QPSK-26775-6RB#0



Band26-3MHz-16QAM-26705-6RB#0

Band26-3MHz-16QAM-26740-6RB#0

Band26-3MHz-16QAM-26775-6RB#0



Band26-5MHz-QPSK-26715-6RB#0

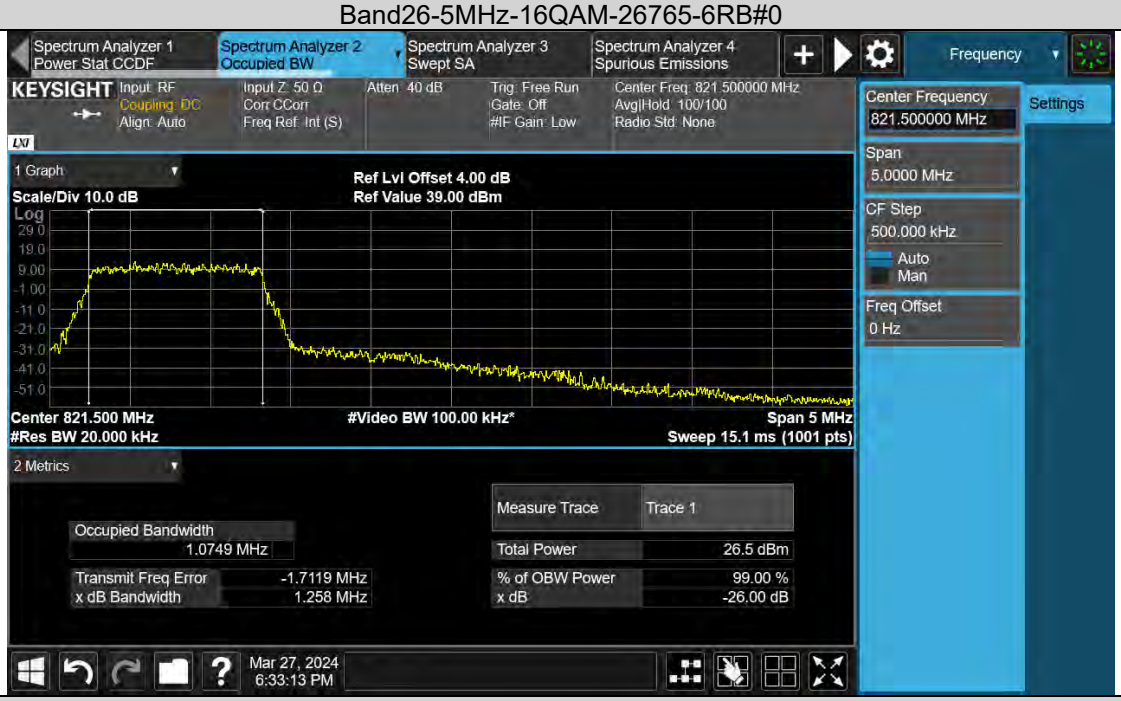
Band26-5MHz-QPSK-26740-6RB#0

Band26-5MHz-QPSK-26765-6RB#0

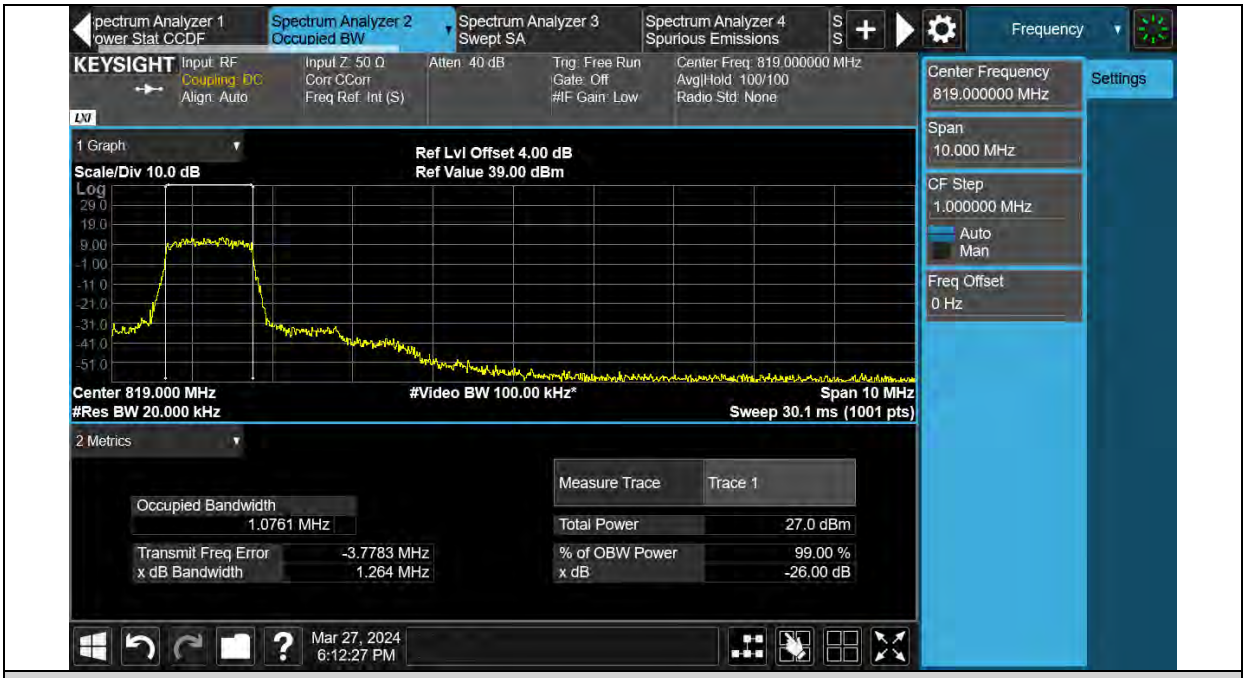
Band26-5MHz-16QAM-26715-6RB#0

Band26-5MHz-16QAM-26740-6RB#0

Band26-5MHz-16QAM-26765-6RB#0



Band26-10MHz-QPSK-26740-6RB#0



Band26-10MHz-16QAM-26740-6RB#0