



EMC TEST REPORT

For

Avari Wireless, Inc.
1400 112th Ave SE, Ste 100
Bellevue, WA, 98004
USA

Date	20265-05-27
Report No.	20.01.25-5595-1
Revision No.	01
Project No.	25-5595
Equipment	Tri-Band Medium Power Remote Unit
Model No.	VL-RU37-3-PS-ABG-71-1N-D0-1
FCC ID	2BA6ERU373PSABG71A

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Prepared by: LabTest Certification Inc.
Date Issued: 2025-05-27
Project No.: 25-5595

Client: Avari Wireless Inc.
Report No.: 20.01.25-5595-1
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EMC Test Report		
Report Reference No.	20.01.25-5595-1	
Compiled by (+ signature)	Jack Qin	
Date of Issue	2026-05-27	
Total Number of Pages	116	
Testing Laboratory	LabTest Certification Inc.	
Address	Unit 205 – 8291 92 St, Delta, BC, Canada, V4G 0A4	
FCC Test FirmRegistration Number	721268	
ISED CAB Identifier Number	CA5970	
ISED Test Lab(s) Company Number	5970A	
Applicant's Name	Avari Wireless, Inc.	
Address	1400 112th Ave SE, Ste 100, Bellevue, WA, USA, 98004	
Canadian Rep Company Number	32235	
Manufacture's Name	Avari Wireless Corporation	
Address	8618 Commerce Ct, Burnaby, BC V5A 4N6	

Revision History

Revision	Date	Reason For Change	Author(s)
1	2026-05-27	Initial	Jack Qin

Test Conditions

General Conditions	1. This report is only referred to the item that has undergone the test. 2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities. 3. This document is only valid if complete; no partial reproduction can be made without previous written permission of LabTest. 4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of LabTest.						
Environmental reference conditions	The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits: <table><tr><td>Temperature</td><td>Humidity</td><td>Atmospheric pressure</td></tr><tr><td>21 °C</td><td>45 %</td><td>1012 Bar</td></tr></table> If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.	Temperature	Humidity	Atmospheric pressure	21 °C	45 %	1012 Bar
Temperature	Humidity	Atmospheric pressure					
21 °C	45 %	1012 Bar					

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EUT (Equipment Under Test) Information

EUT Name	RU37
Description	RU37 Tri-Band Public Safety Tri-Band UHF-700-800
EUT Picture	
Model Number	RU37
Serial Number	10911240E01BFA001
Software and Firmware	7.4.0-0.6113
FCC Certification Number	2BA6ERU373PSABG71A

Model Number of Variant Models

Note: The above variant models were not tested as part of this evaluation but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. LabTest does not make any claims of compliance for samples or variants which were not tested.

The variant models of VL-RU37-3-PS-ABG-71-1N-D0-1 are listed as follow:

Tri Band

VL-RU33-3-PS-ABG-71-1N-D0-1
VL-RU37-3-PS-ABG-71-1N-A0-1
VL-RU33-3-PS-ABG-71-1N-A0-1

Dual Band

VL-RU37-2-PS-AB-71-1N-D0-1
VL-RU33-2-PS-AB-71-1N-D0-1
VL-RU37-2-PS-AB-71-1N-A0-1
VL-RU33-2-PS-AB-71-1N-A0-1
VL-RU37-2-PS-AG-71-1N-D0-1
VL-RU33-2-PS-AG-71-1N-D0-1
VL-RU37-2-PS-AG-71-1N-A0-1
VL-RU33-2-PS-AG-71-1N-A0-1
VL-RU37-2-PS-BG-71-1N-D0-1
VL-RU33-2-PS-BG-71-1N-D0-1
VL-RU37-2-PS-BG-71-1N-A0-1
VL-RU33-2-PS-BG-71-1N-A0-1

Single Band

VL-RU37-1-PS-A-71-1N-D0-1
VL-RU33-1-PS-A-71-1N-D0-1
VL-RU37-1-PS-A-71-1N-A0-1
VL-RU33-1-PS-A-71-1N-A0-1
VL-RU37-1-PS-B71-1N-D0-1
VL-RU33-1-PS-B-71-1N-D0-1
VL-RU37-1-PS-B-71-1N-A0-1
VL-RU33-1-PS-B-71-1N-A0-1
VL-RU37-1-PS-G-71-1N-D0-1
VL-RU33-1-PS-G-71-1N-D0-1

	VL-RU37-1-PS-G-71-1N-A0-1 VL-RU33-1-PS-G-71-1N-A0-1
Passing Transmit Frequency	851 MHz – 869 MHz 758 MHz – 775 MHz 406.1 MHz – 425 MHz
Operating Transmit Frequency	851 MHz – 854 MHz & 854 MHz – 869 MHz 758 MHz – 775 MHz 406.1 MHz - 410 MHz & 410 MHz - 420 MHz & 420 MHz - 425 MHz
Passing Receive Frequency	806 MHz – 824 MHz 788 MHz – 805 MHz 406.1 MHz - 430 MHz
Operating Receive Frequency	806 MHz – 809 MHz & 809 MHz to 824 MHz 788 MHz – 805 MHz 406.1 MHz - 410 MHz & 410 MHz - 420 MHz & 420 MHz - 430 MHz
Number of Channels	Up to 64 Channels
Modulation Type	P25 Phase I C4FM, CQPSK; P25 Phase II HDQPSK on full band of Band 800, Band 450 and Band 150 FM on Band 800 between 851 MHz – 869 MHz only
Equipment mobility	Fixed
Operating condition	-40 to +50 °C
Weight	< 27,700g
Dimensions (W X D X H)	410 mm X 230 mm X 696 mm
Input Power	48VDC, 3A

EUT Operation Modes During Tests

Mode #	Description
1	UL and DL transmission and receiving ON

Support Equipment

Use*	Product Type	Manufacturer	Model	Description
AE1	AMU37, 800PS, 700PS, UHFPS	Avari Wireless Inc.	VL-AMU37-3-PS-ABG-71-1N-D0-1	Auxiliary equipment, which is the front end of signal booster system air interfaced to donor Base Station.

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AE2	Element Manager (EM)	Avari Wireless Inc.	EM-1A	Auxiliary equipment provides the configuration and control interface to <i>DMU</i> and <i>RU37</i> .
AE3	Power Supply	Meanwell	HGL-480H-48	AC to DC Converter, I/P: 120VAC, 60Hz, 5.5A O/P: +48VDC, 480W
Abbreviations: AE - Auxiliary/Associated Equipment SIM - Simulator (Not Subjected to Test)				

Input/Output Ports

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
1	DC Power Port	DC	No	No	Dual feed 48 VDC Assembly
2	1 * RF Input/Output Ports	I/O	No	No	N-Type Coaxial
3	2 * Optical Fibre I/O Ports	I/O	No	No	LC/UPC Duplex
4	2 * TP	TP	No	No	RJ-45
*Note: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical I/O = Signal Input or Output Port (Not Involved in Process Control) TP = Telecommunication Ports					

Cables

Model #	Manufacture	Description
3 x TM8-N1S1-60	MegaPhase	N male to SMA male coaxial cable in 60 inches
1 x 49-30-34	Aeroflex	30dB 25W attenuator

Result Summary

Testing was conducted on the product as described in the preceding section. The following Test Results sections include the original data, covering test setup, measurement results, and photographs. No deviations from the applicable standard(s) were made unless specifically noted.

The results demonstrate that the tested sample complies with the applicable standard(s). These results apply solely to the tested sample; no claim of compliance is made for other or untested variants. Compliance was determined by comparing measured emissions against the specified limits. Measurement uncertainties listed in calibration certificates were not considered in the final compliance assessment.

Test	Regulation – FCC Part	Result
1. AGC Threshold	2 2.1046(a) 90.219(d)	Pass
2. Occupied Bandwidth	2 2.1049	Pass
3. Out of Band Rejection	2 2.1046(a) 90.219(d)	Pass
4. Input-versus-output Signal Comparison	90.210	Pass
5. Input/output Power and Amplifier/Booster Gain	90.219	Pass
6. Out-of-band/out-of-block Intermodulation and Spurious Emissions	90.219 (e)(3)	Pass
7. Noise Figure	90.219 (e)(2)	Pass
8. Frequency Stability	90.213	Pass
9. Radiated Spurious Emissions (Transmitter)	90 (§ 90.219 and § 90.210)	Pass
10. Unintentional Radiated Emissions	FCC Part 15 B	Pass
11. AC Power Line Conducted Emissions	FCC Part 15 B	Pass

Test Results

1. ALC Threshold

Regulation	FCC Part 2 2.1046(a); FCC Part 90.219(d)
Test Method	FCC KDB 935210 D05, v01r03, Section 4.2; ANSI TIA-603- E-2016
Test Engineer	Jack Qin
Test Date	2026-02-02
Applied limit	37dBm ± 1dB
Result Summary	Output Power is less than or equal 37.01 dBm in band 800, less than 36.6dBm in 700 band and less than or equal 36.5 dBm in band UHF.
Test Result	Compliant

1.1 Test setup

Description of test set-up:

Output power is measured by connecting a spectrum analyzer to RF output connector of EUT via 30dB attenuator. With a nominal input power and the amplifier properly adjusted the RF output is measured. The EUT was set to Operation Mode #1.

The maximum output power is measured when the Automatic Level Control (ALC) starting to compress the power and hold to a constant level.

Vector Signal Generator

AE1

Fiber

EUT

30dB Attenuator

Spectrum Analyzer

1.2 Test Results

Frequency Range (MHz)	Frequency (MHz)	Input Power Trip ALC (dBm)	Output Power (dBm)	Output Power (Watt)
851 - 869	851	-54.8	37.01	5.02
	860	-52.8	36.63	4.60
	869	-51.6	36.56	4.53
758 – 775	758	-53.2	36.60	4.57
	766.5	-52.8	36.31	4.28
	775	-51.6	36.14	4.11
406.1 - 425	406.1	-52.6	36.50	4.47
	415.55	-53.0	36.43	4.40
	425	-53.0	36.13	4.10

2. Occupied Bandwidth

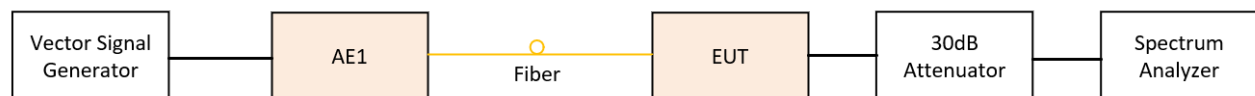
Regulation	FCC Part 2 2.1049
Test Method	FCC KDB 935210 D05, v01r03, Section 4.1; ANSI TIA-603- E-2016
Test Engineer	Jack Qin
Test Date	2026-02-02
Applied limit	Limit for C4FM: < 12.5 kHz Limit for CQPSK: < 6.25 kHz Limit for HDQPSK: < 12.5 kHz Limit for 4 kHz FM with 1kHz deviation: < 12.5 kHz
Result Summary	Output signal has an occupied channel bandwidth less than the designated channel bandwidth on any location on the operating band. - C4FM < 12.5 kHz - CQPSK < 6.25 kHz - HDQPSK < 12.5 kHz - 4 kHz FM with 1kHz deviation < 12.5 kHz.
Test Result	Compliant

2.1 Test Setup

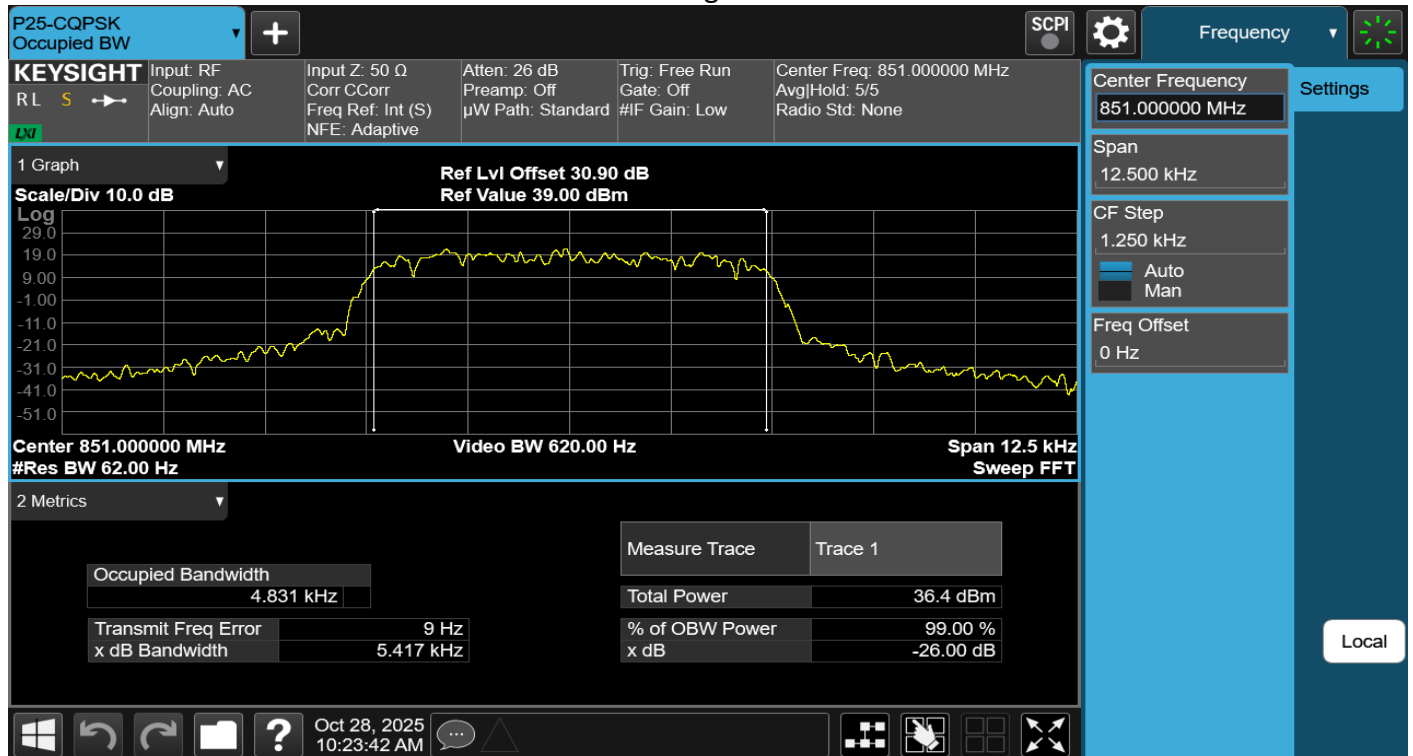
Occupied Bandwidth is measured by connecting a Spectrum Analyzer to the RF output connector via 30dB attenuator. The required measurement resolution bandwidth (RBW) is 1% of the emission bandwidth. 99% energy rule was applied to measure the occupied channel bandwidth. The emission bandwidth is measured as the width of the signal between two frequency points on the channel edge, outside of which the transmission power is attenuated at least 26dB below the transmitter output power

The EUT was set to Operation Mode #1.

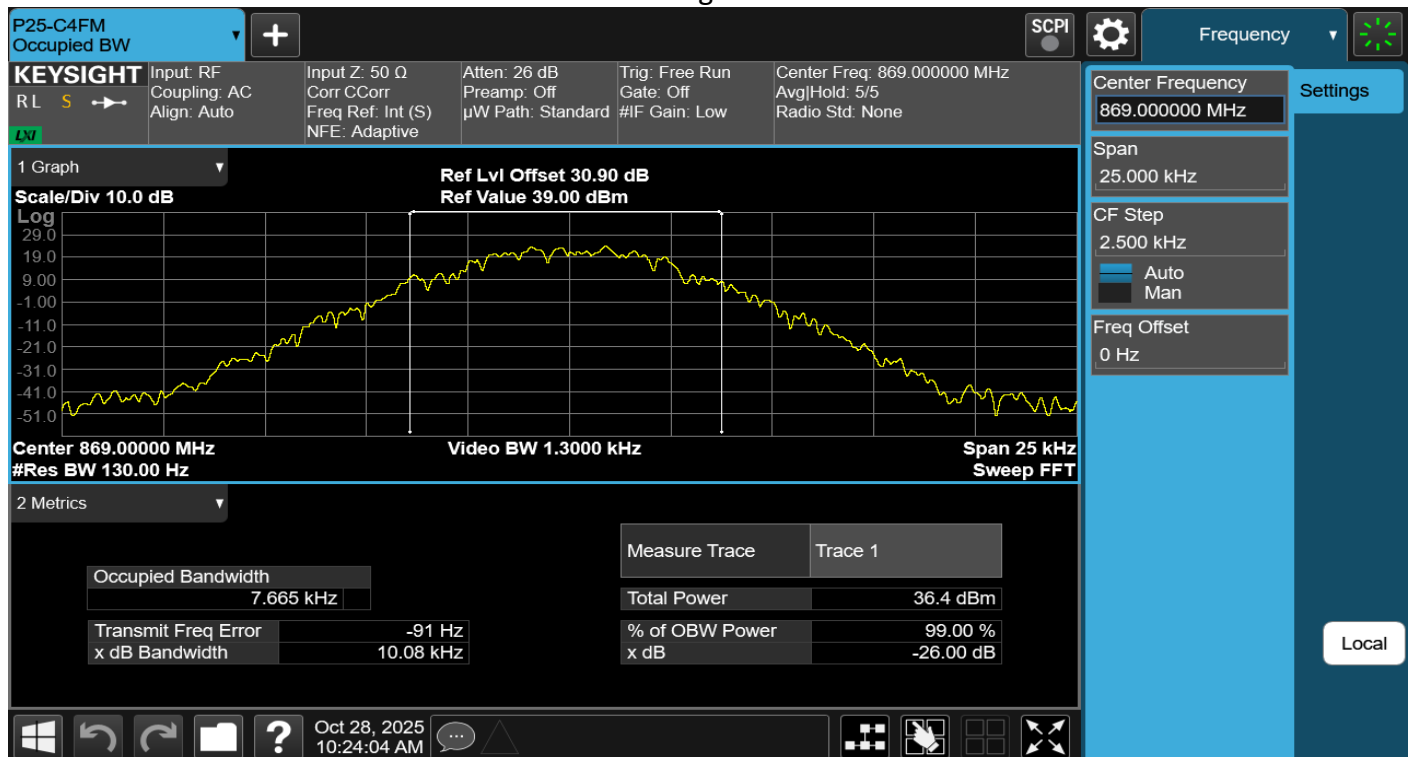
The occupied bandwidth of UL output is measured under one input conditions: Nominal: with input 0.5dB below AGC threshold.



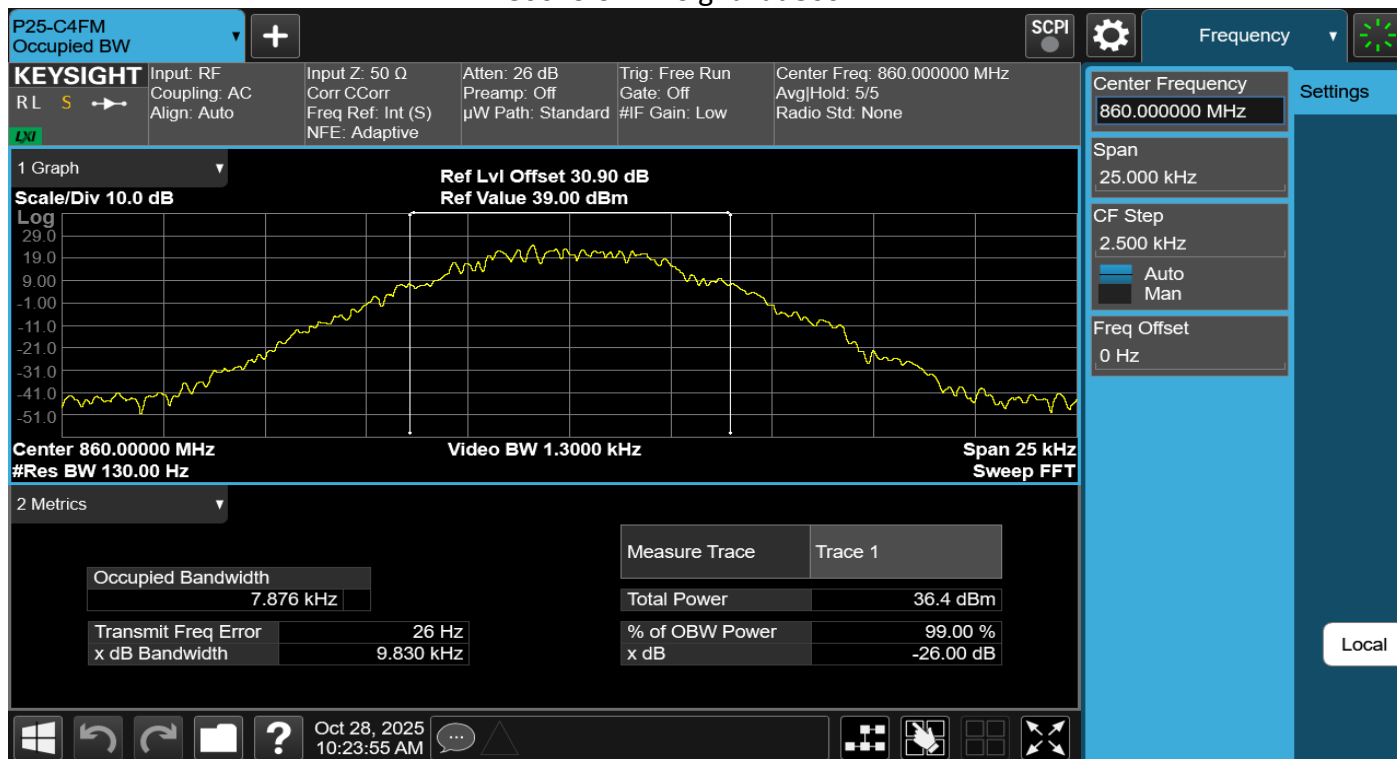
800PS CQPSK Signal at 851 MHz



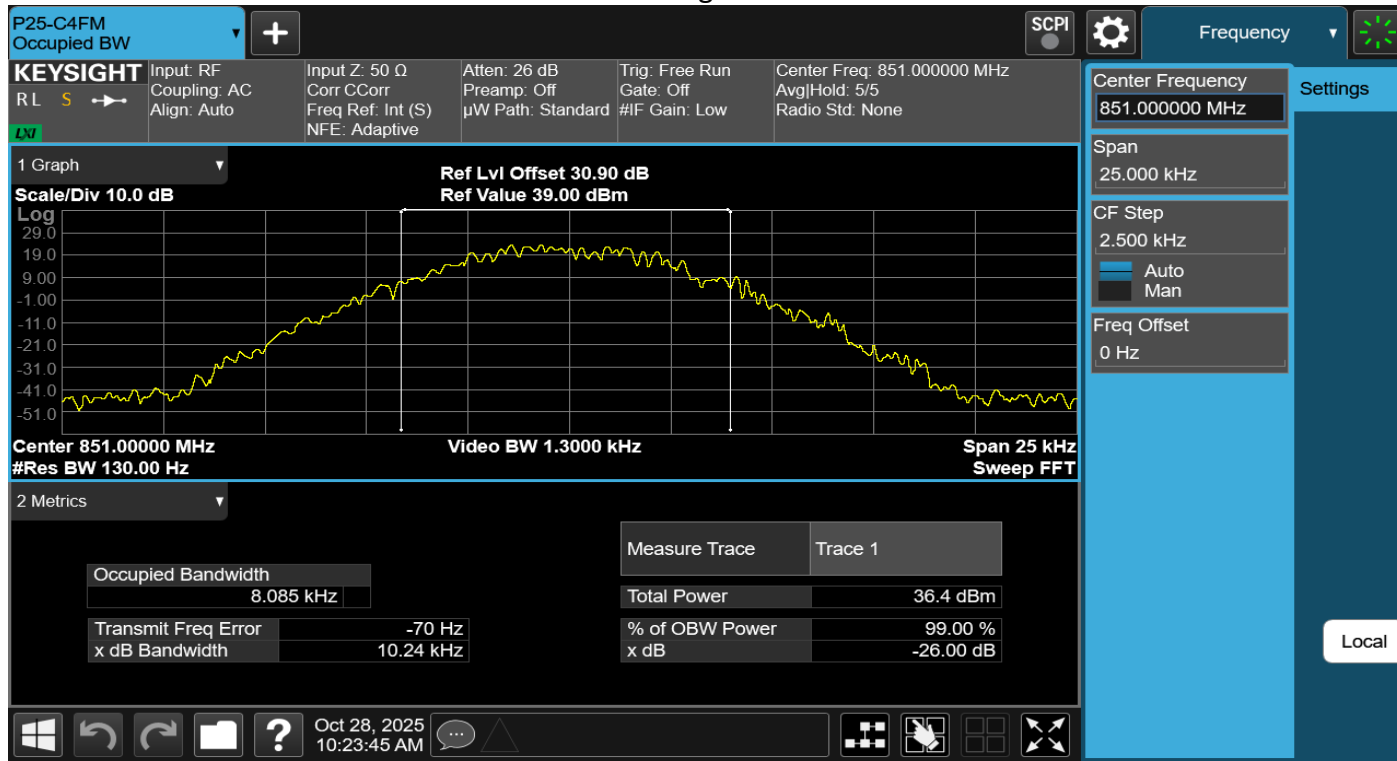
800PS C4FM Signal at 869 MHz



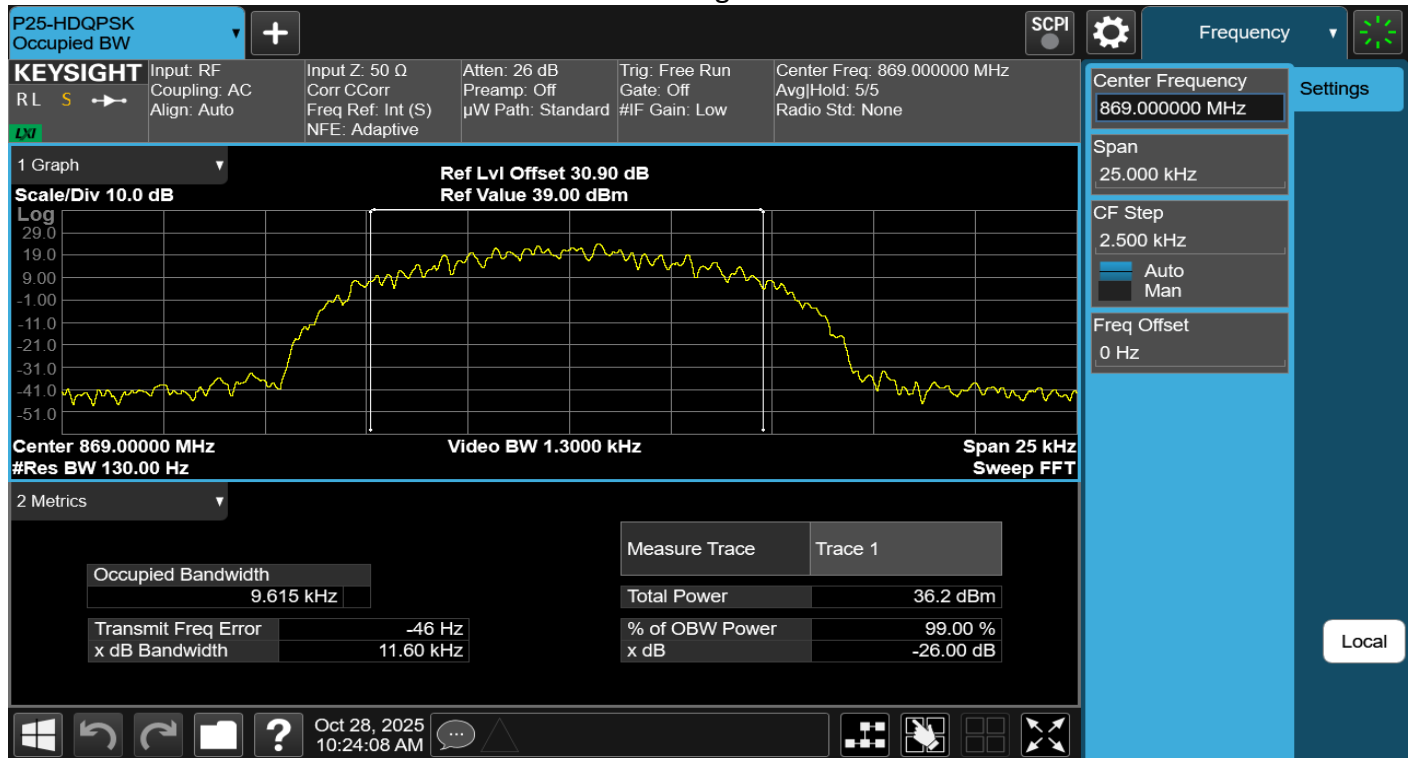
800PS C4FM Signal at 860 MHz



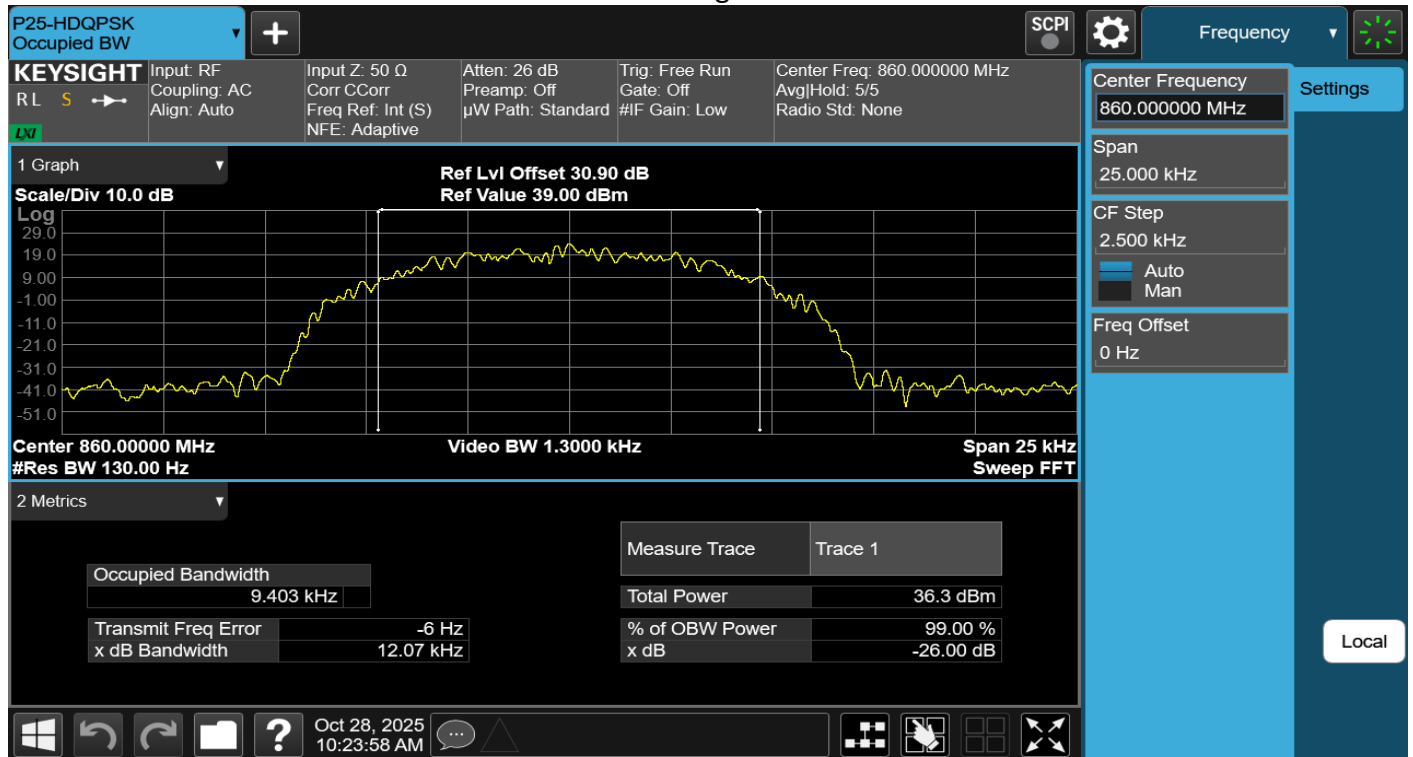
800PS C4FM Signal at 851 MHz



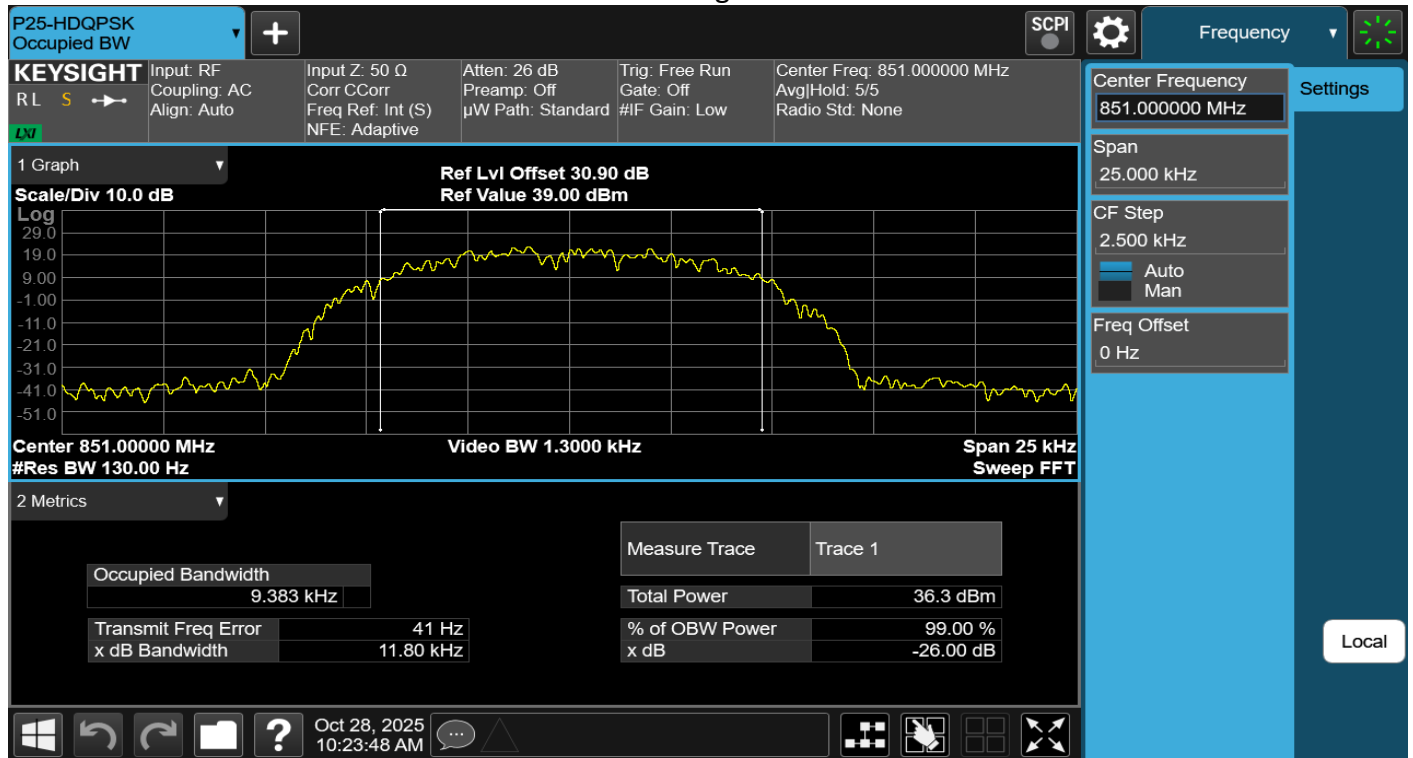
800PS HDQPSK Signal at 869 MHz



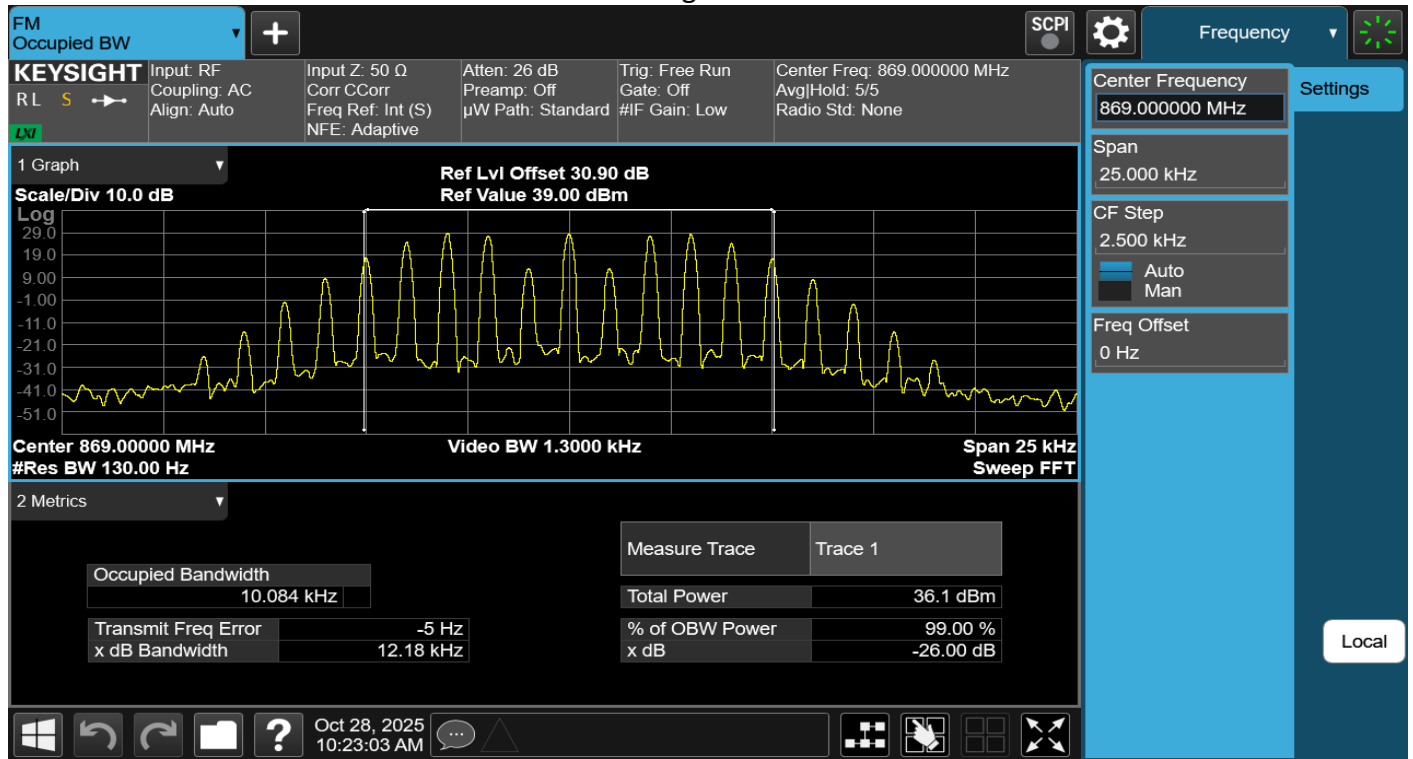
800PS HDQPSK Signal at 860 MHz



800PS HDQPSK Signal at 851 MHz



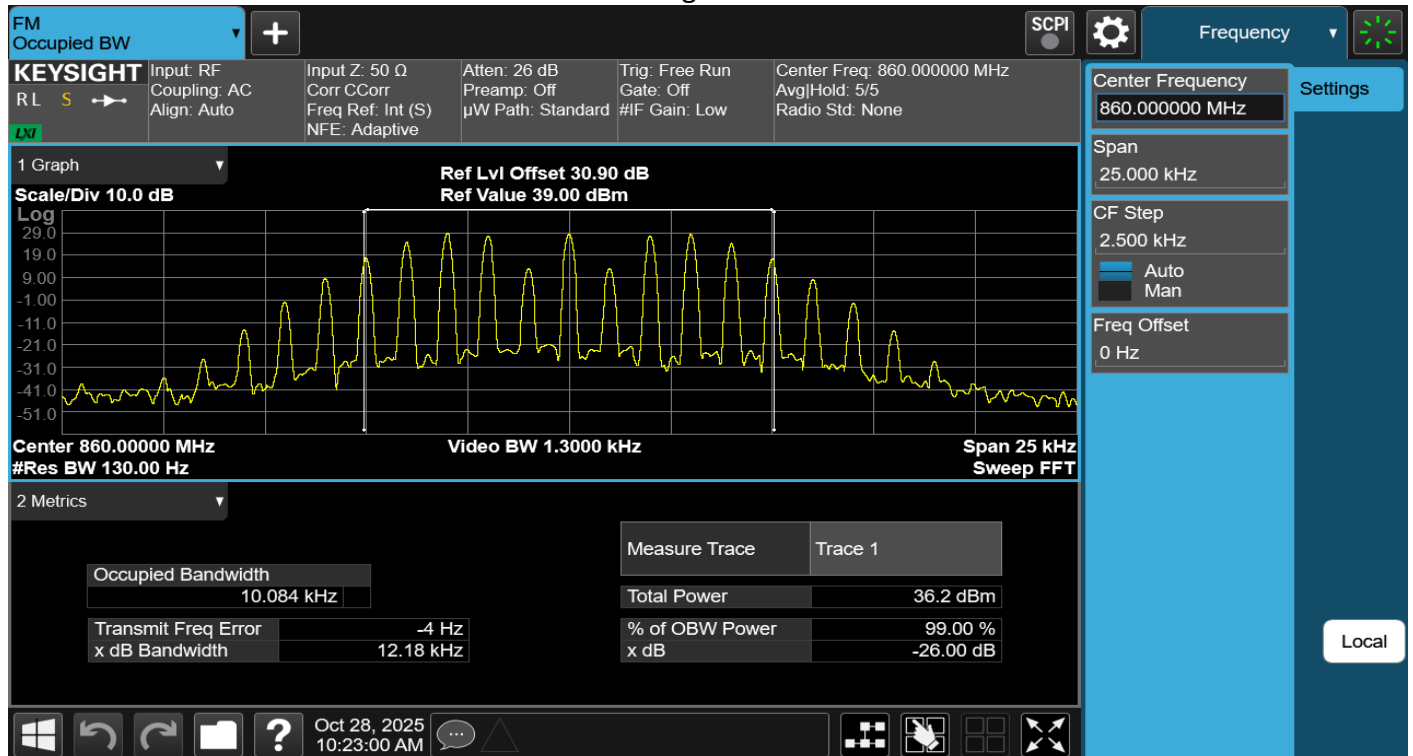
800PS FM Signal at 869 MHz



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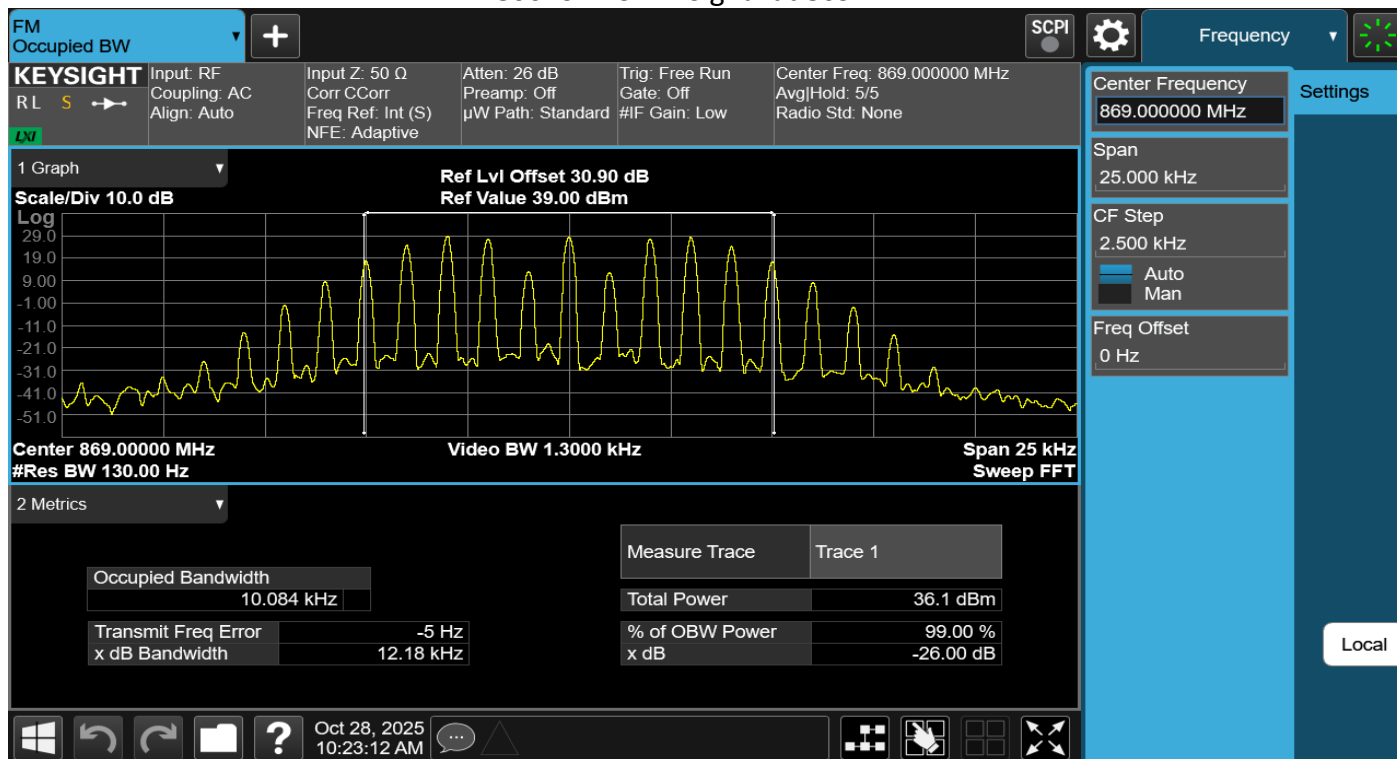
800PS FM Signal at 860 MHz



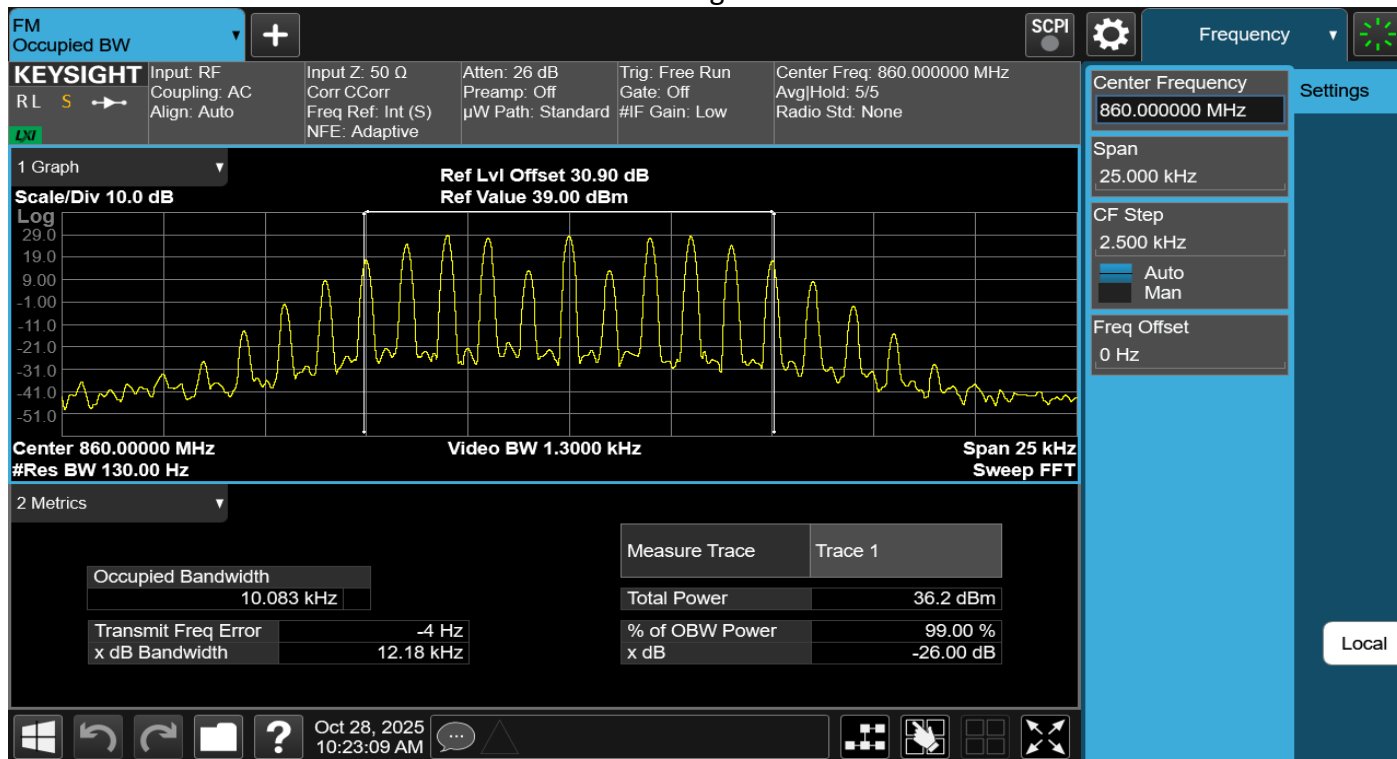
800PS FM Signal at 851 MHz



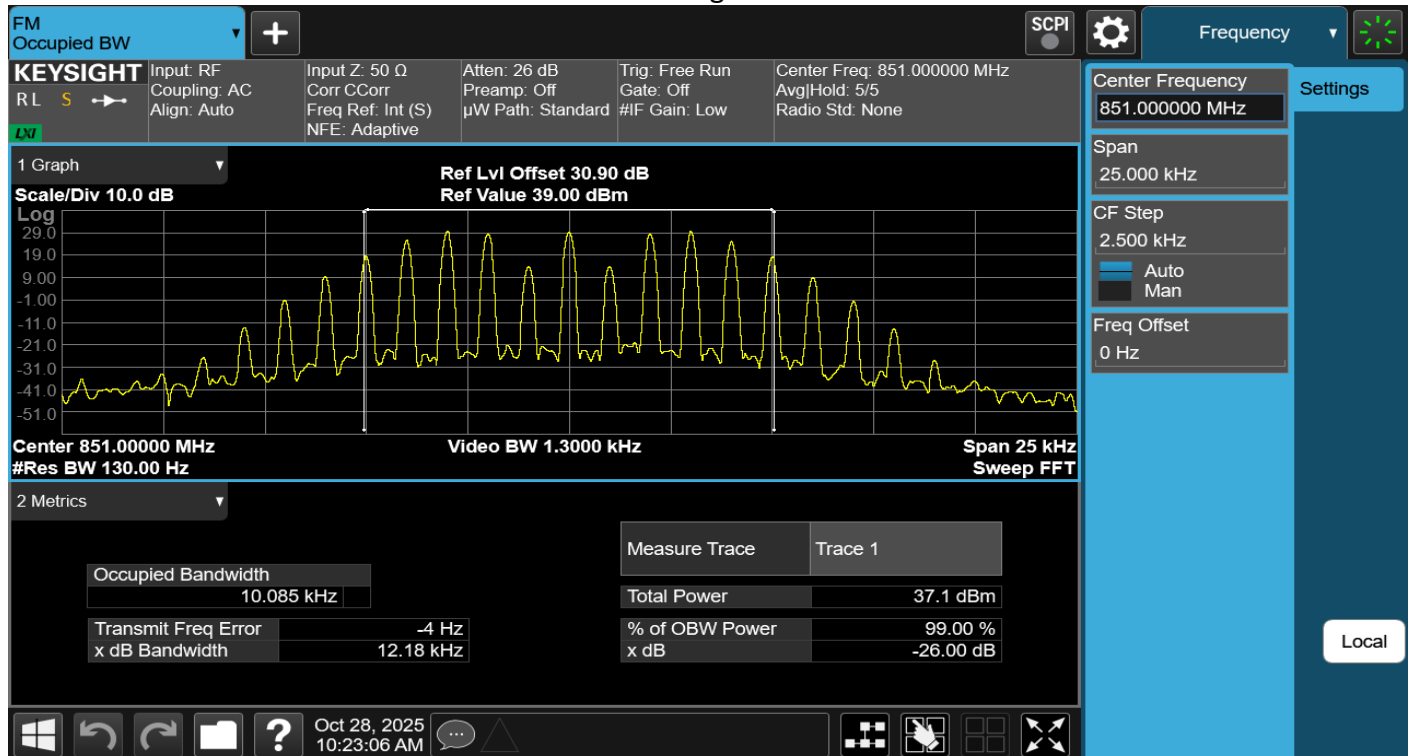
800PS ALC FM Signal at 869 MHz



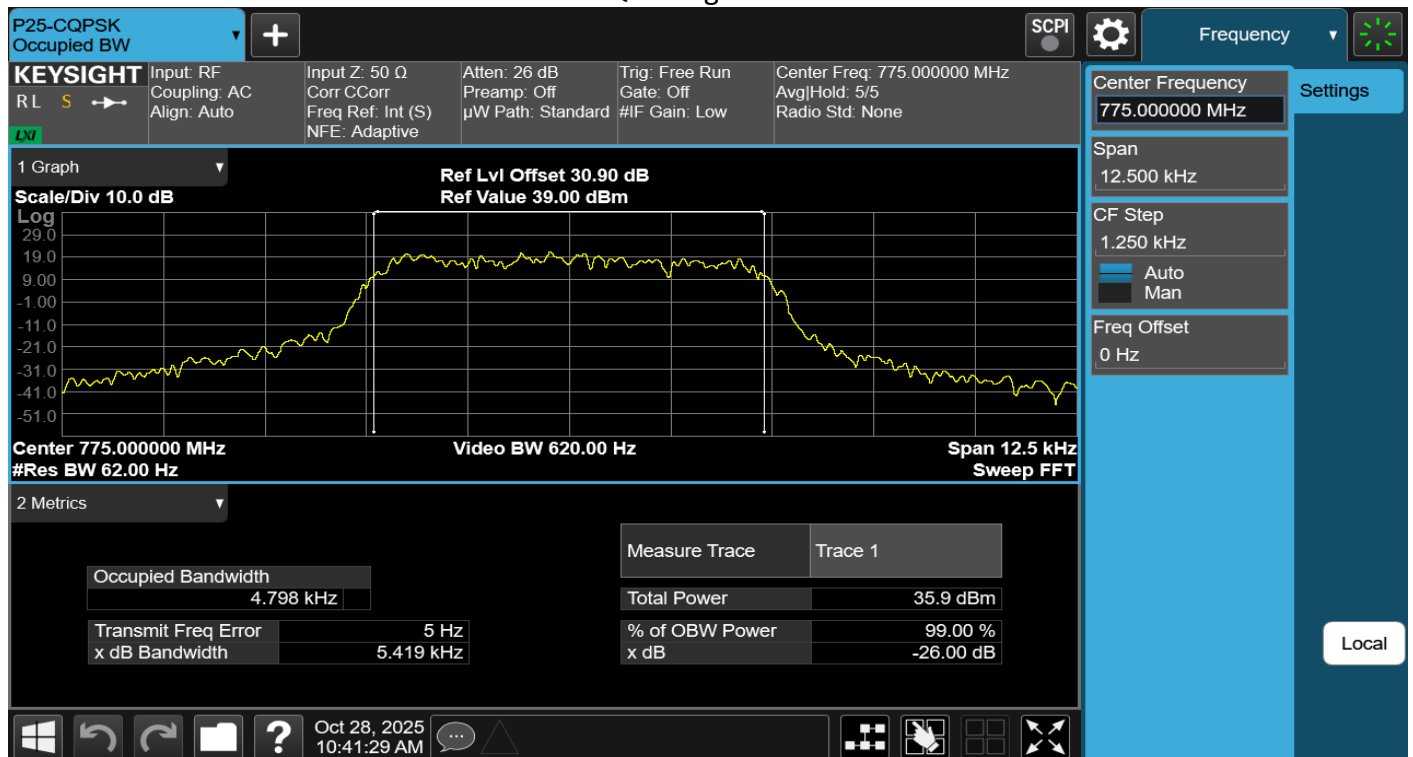
800PS ALC FM Signal at 860 MHz



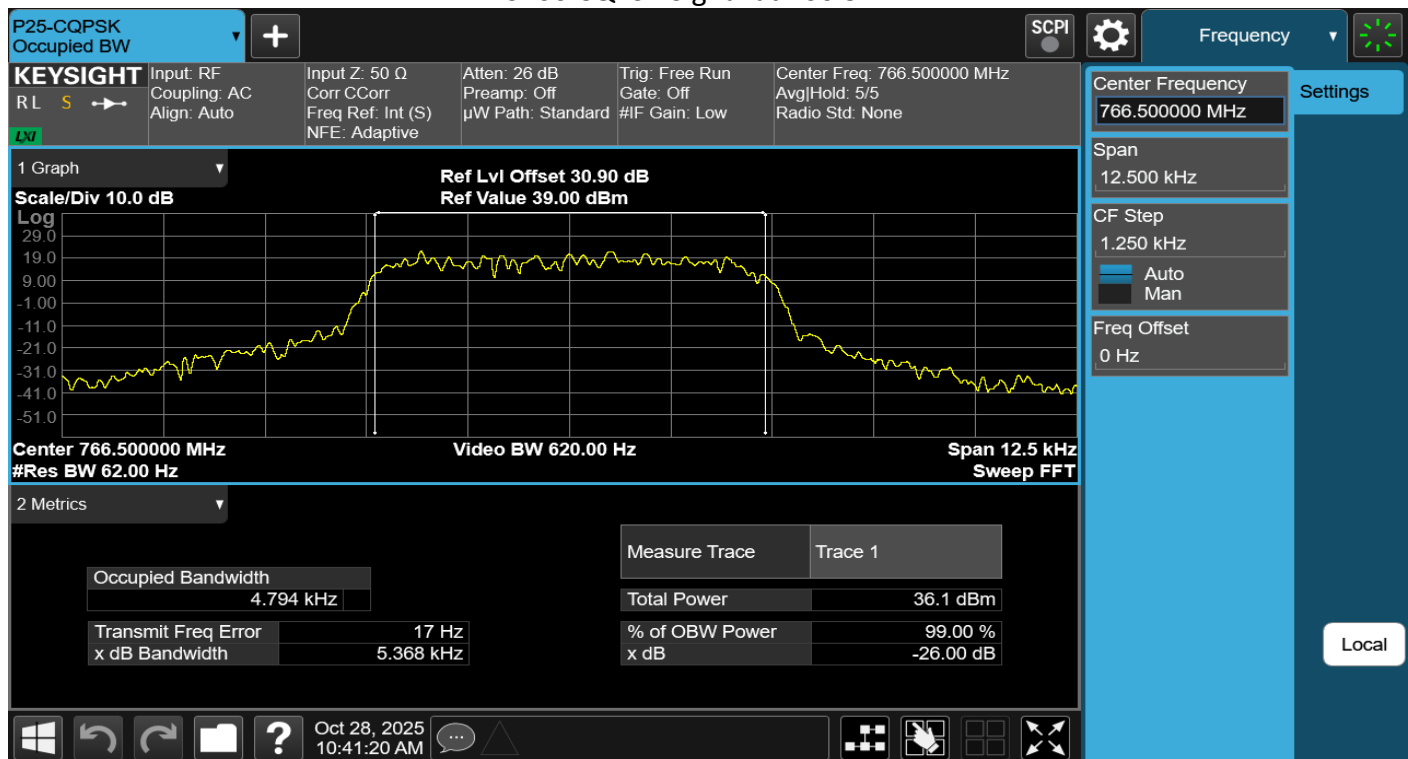
800PS ALC FM Signal at 851 MHz



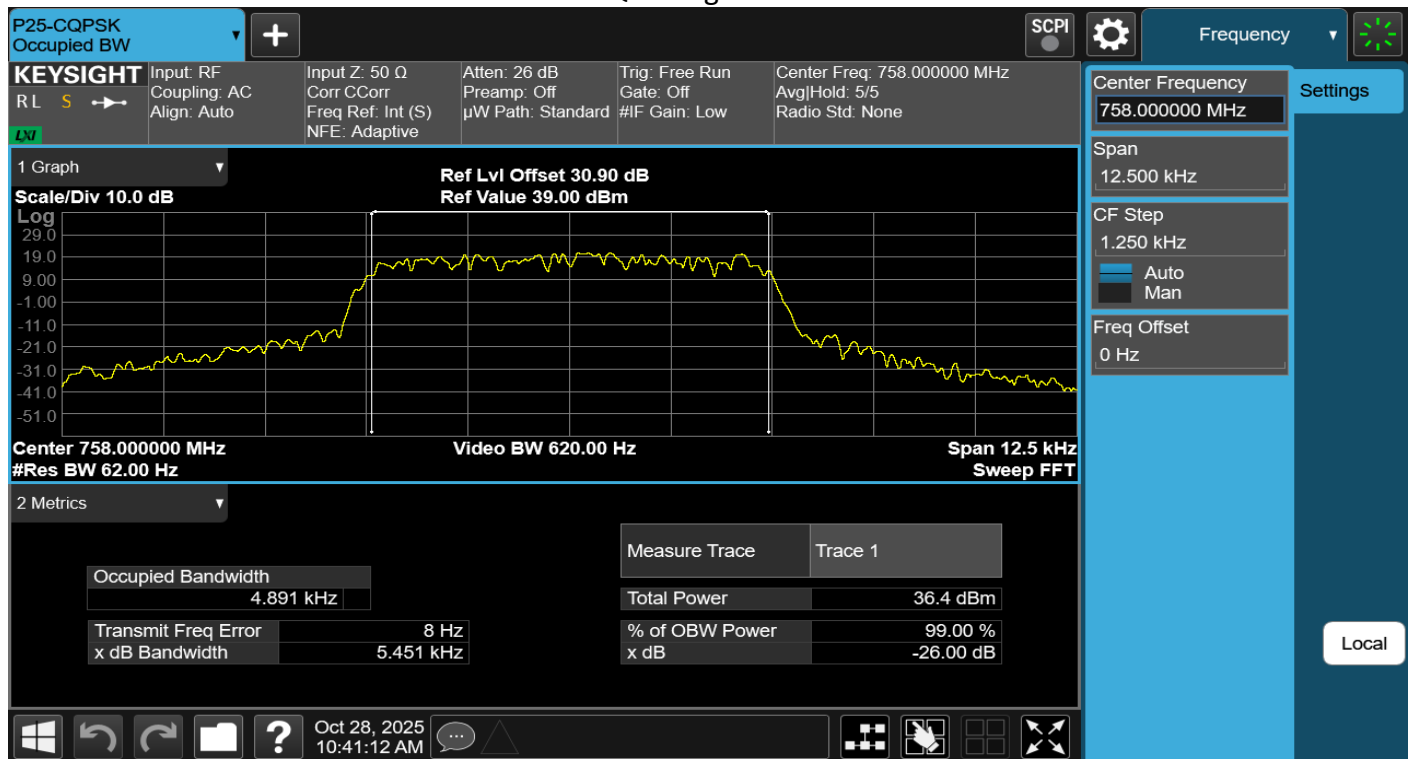
PS700 CQPSK Signal at 775 MHz



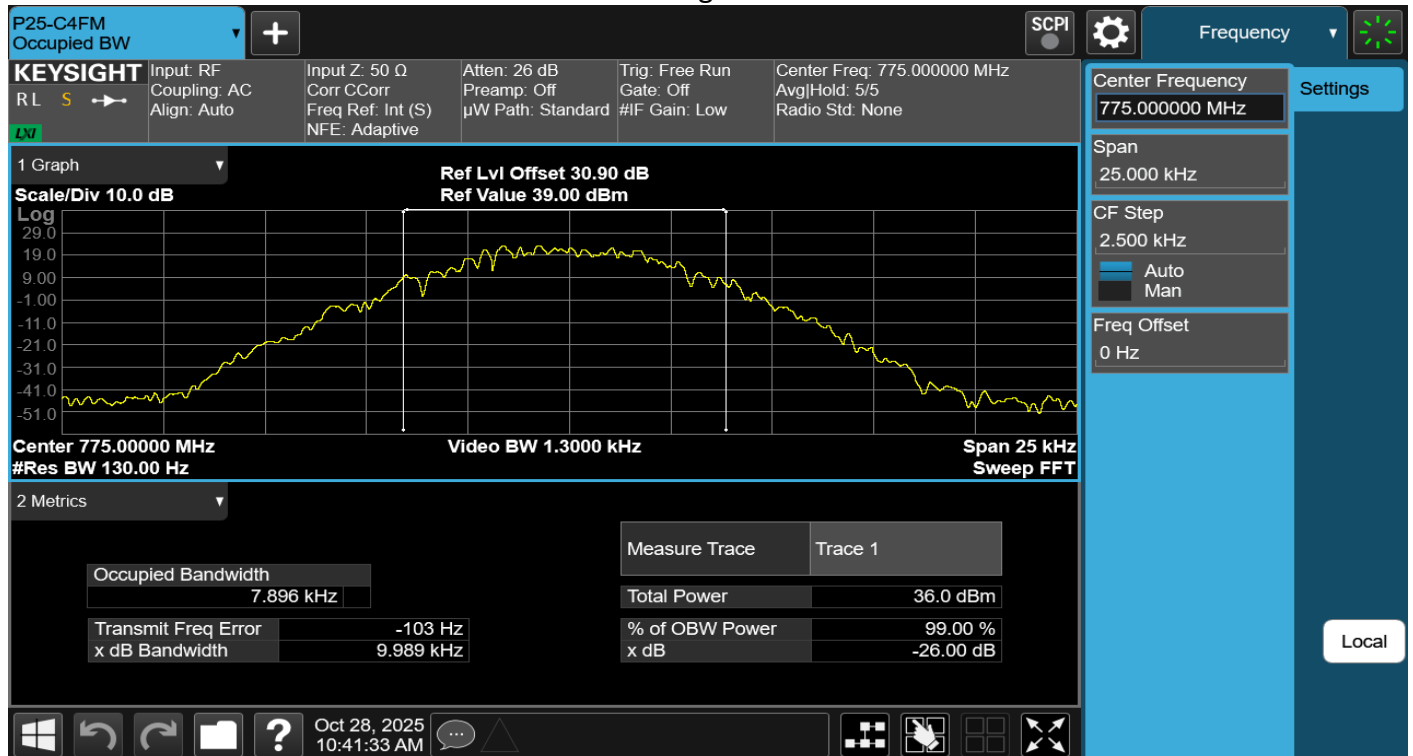
PS700 CQPSK Signal at 766.5 MHz



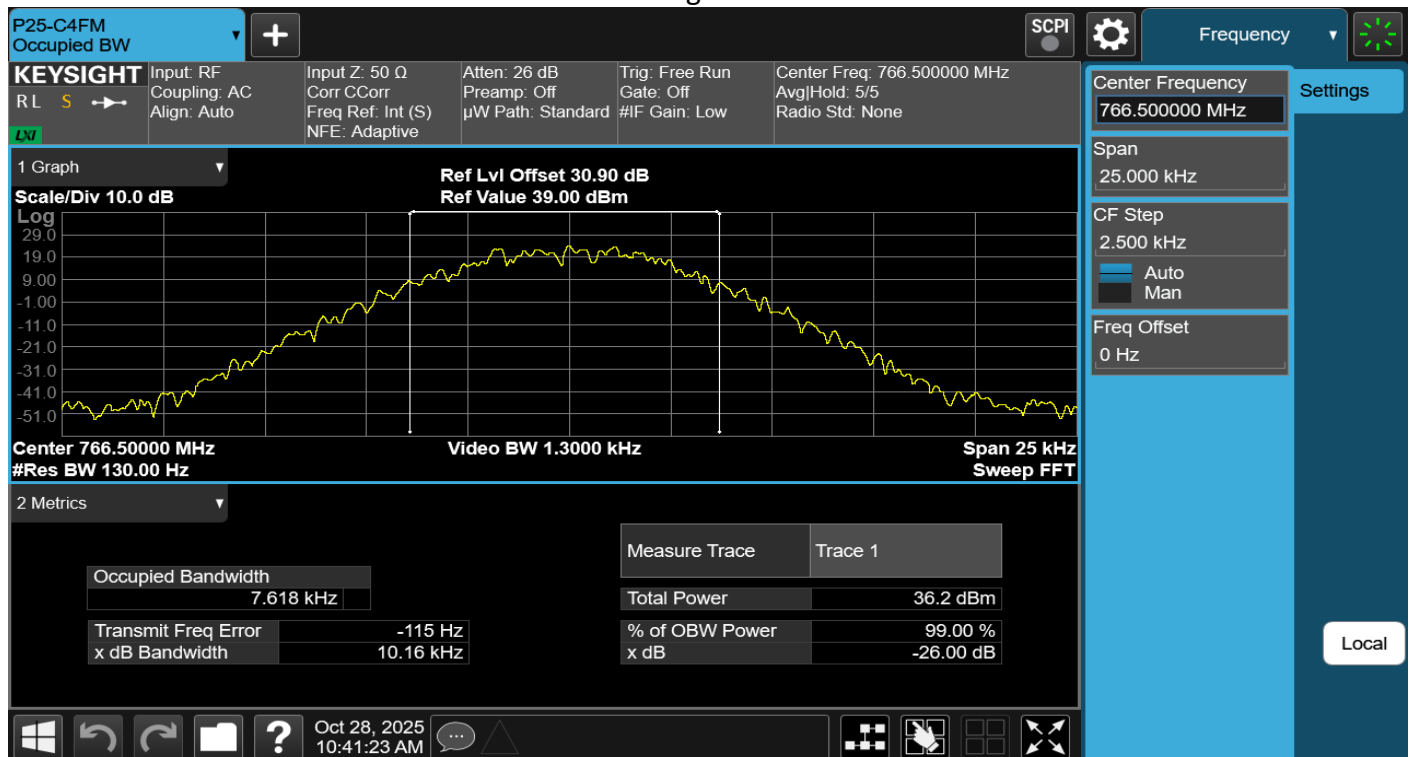
PS700 CQPSK Signal at 758 MHz



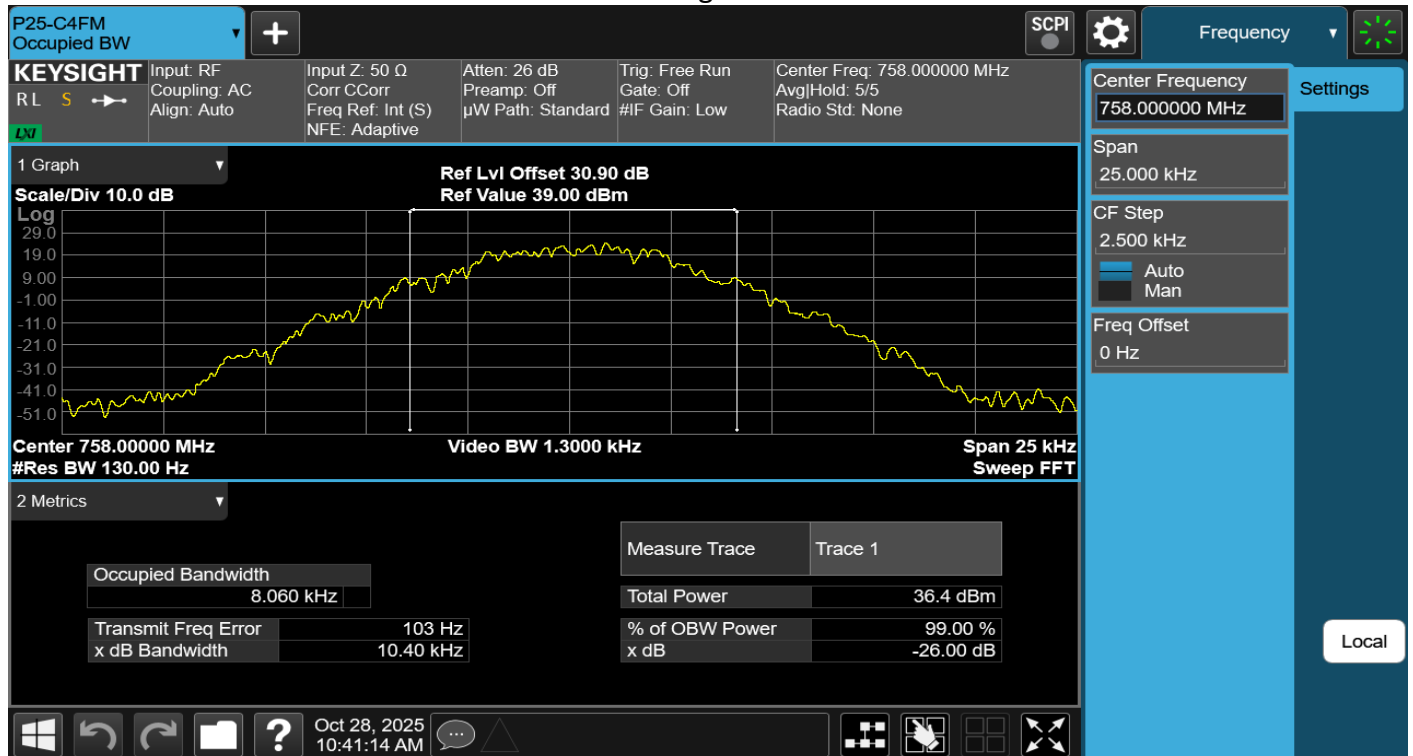
PS700 C4FM Signal at 775 MHz



PS700 C4FM Signal at 766.5 MHz



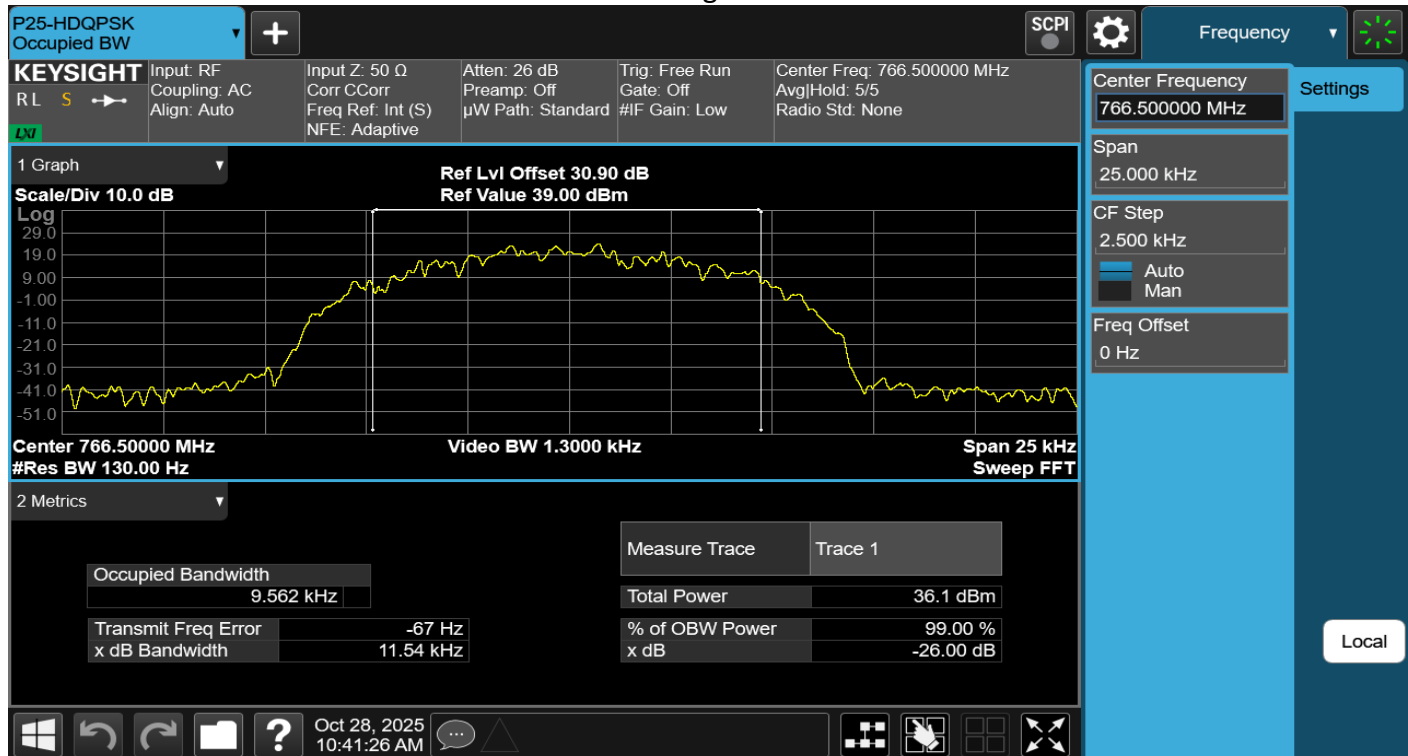
PS700 C4FM Signal at 758 MHz



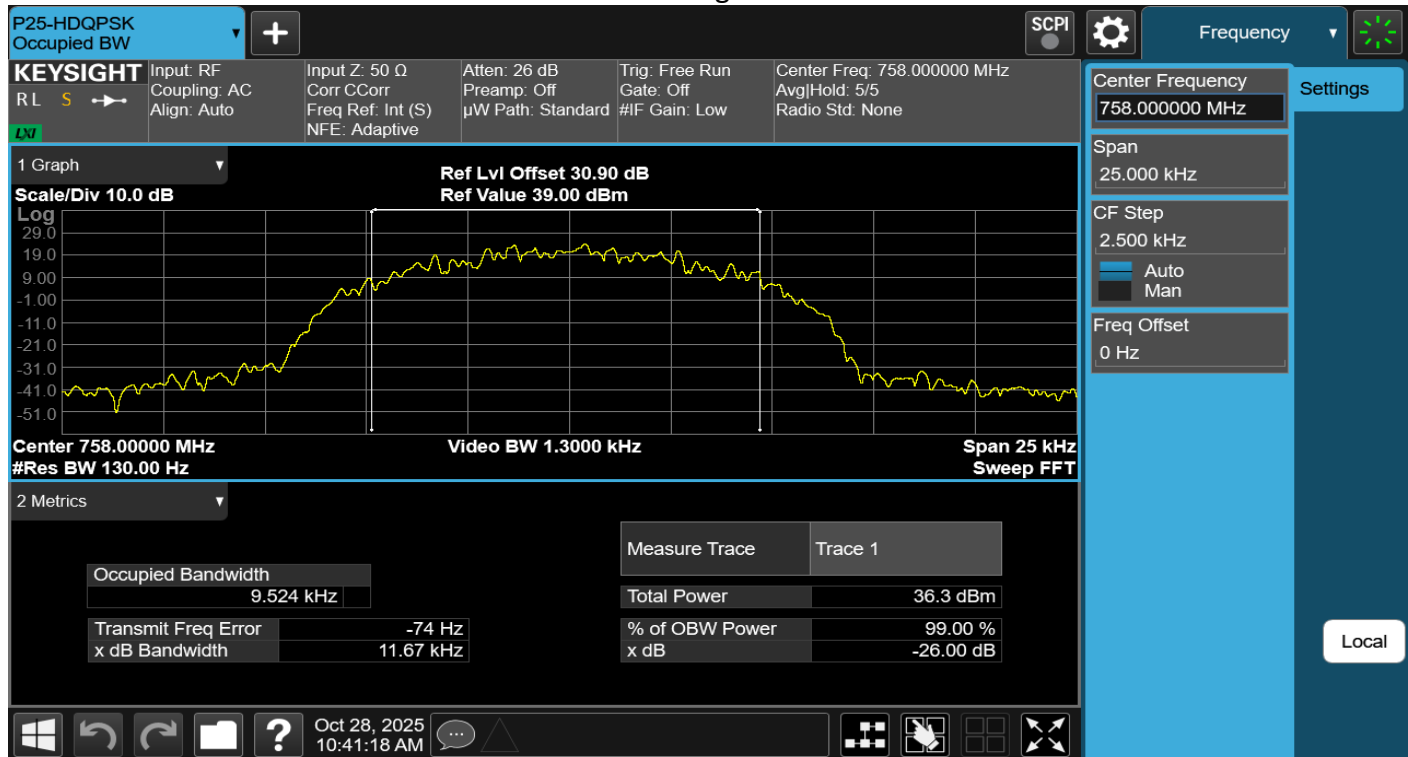
PS700 HDQPSK Signal at 775 MHz



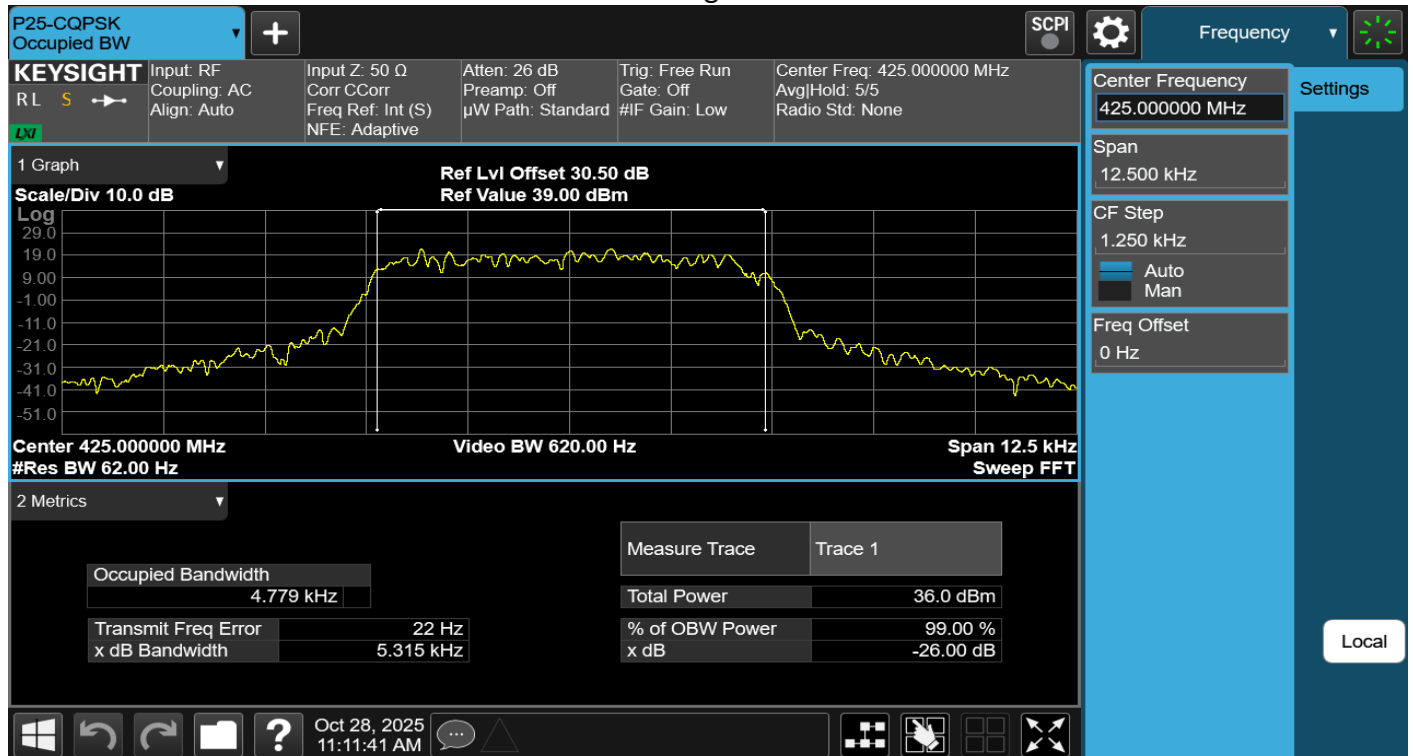
PS700 HDQPSK Signal at 766.5 MHz



PS700 HDQPSK Signal at 758 MHz



PS415 CQPSK Signal at 425 MHz



PS415 CQPSK Signal at 415.55 MHz



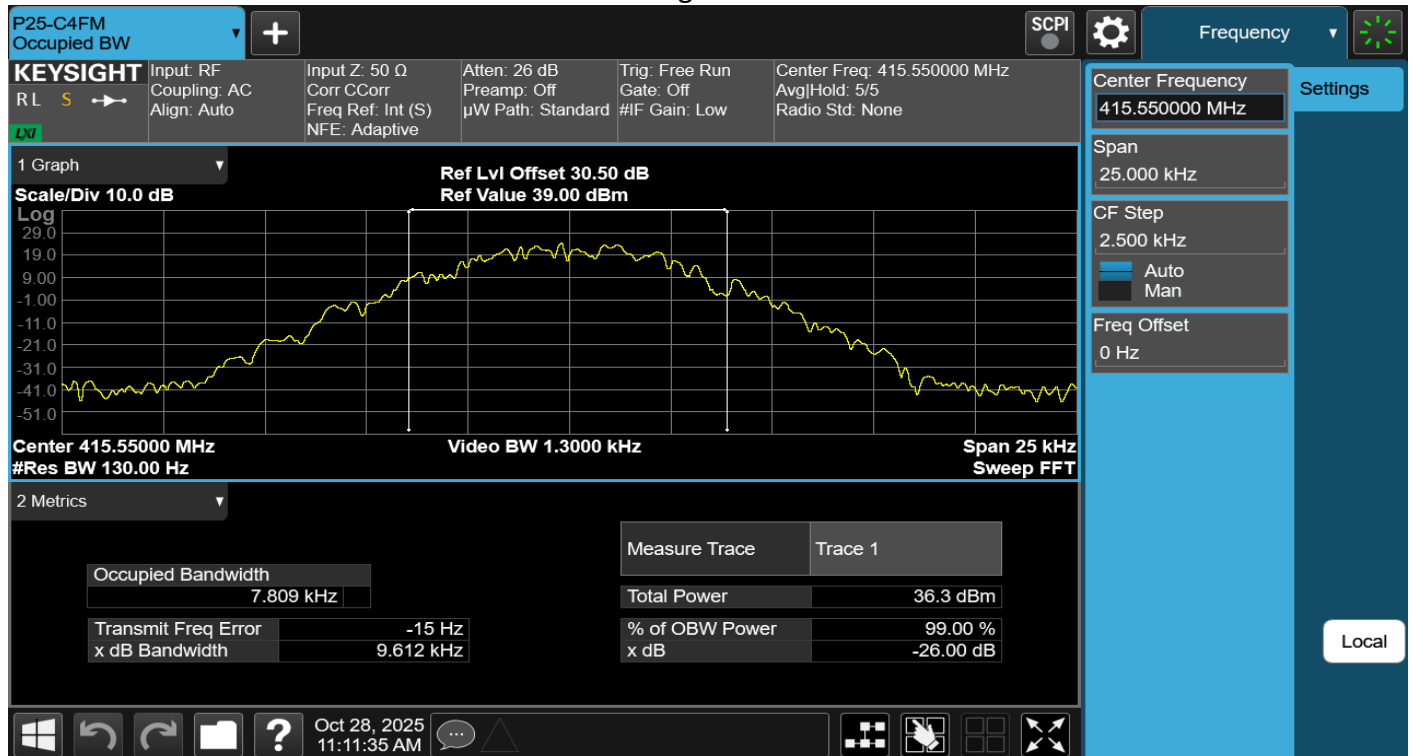
PS415 CQPSK Signal at 406.1 MHz



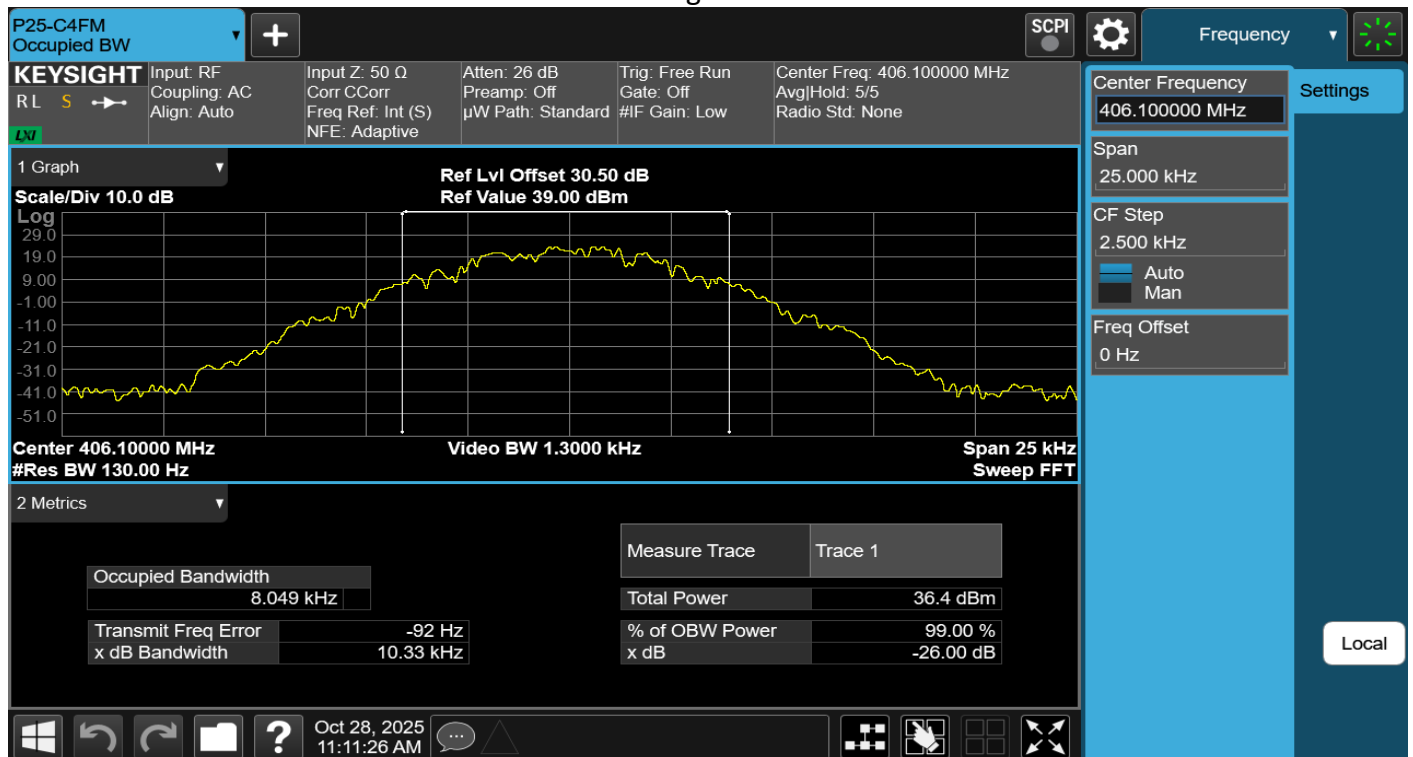
PS415 C4FM Signal at 425 MHz



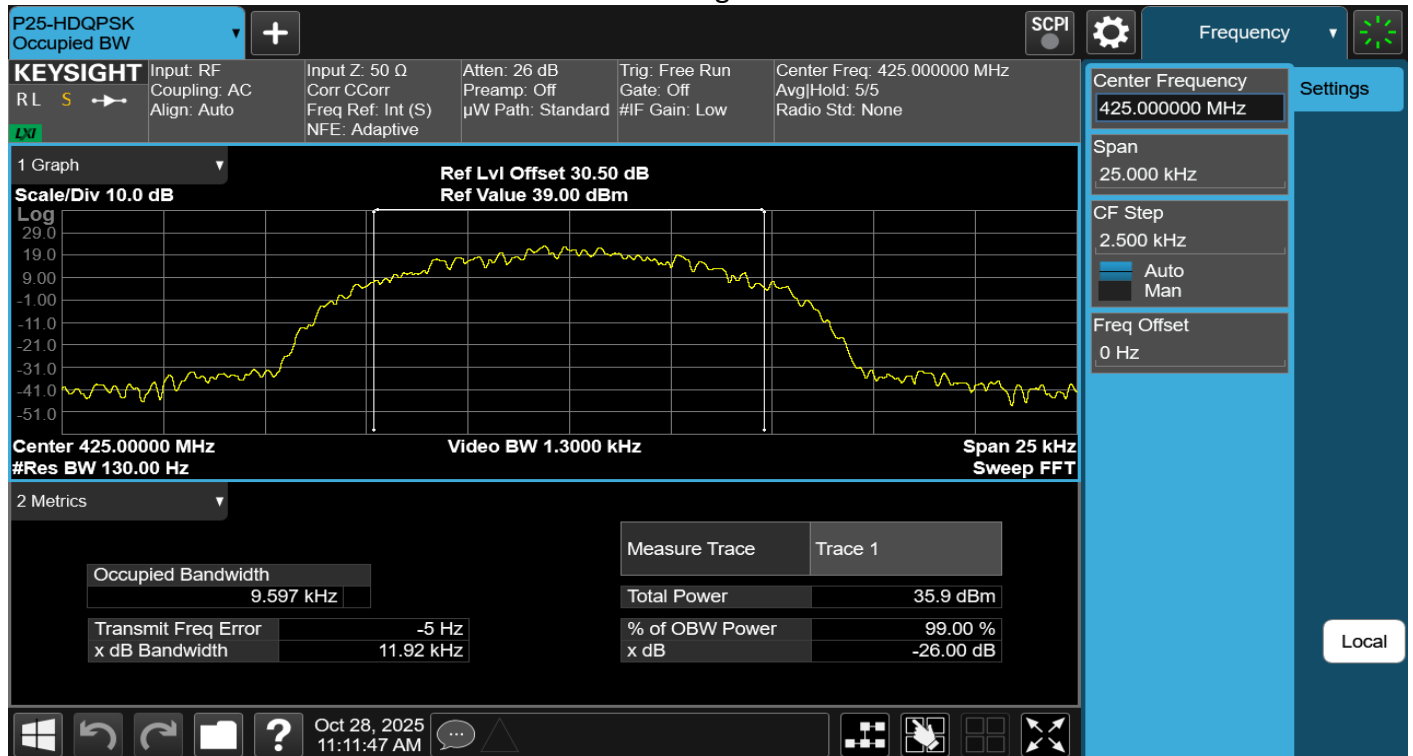
PS415 C4FM Signal at 415.55 MHz



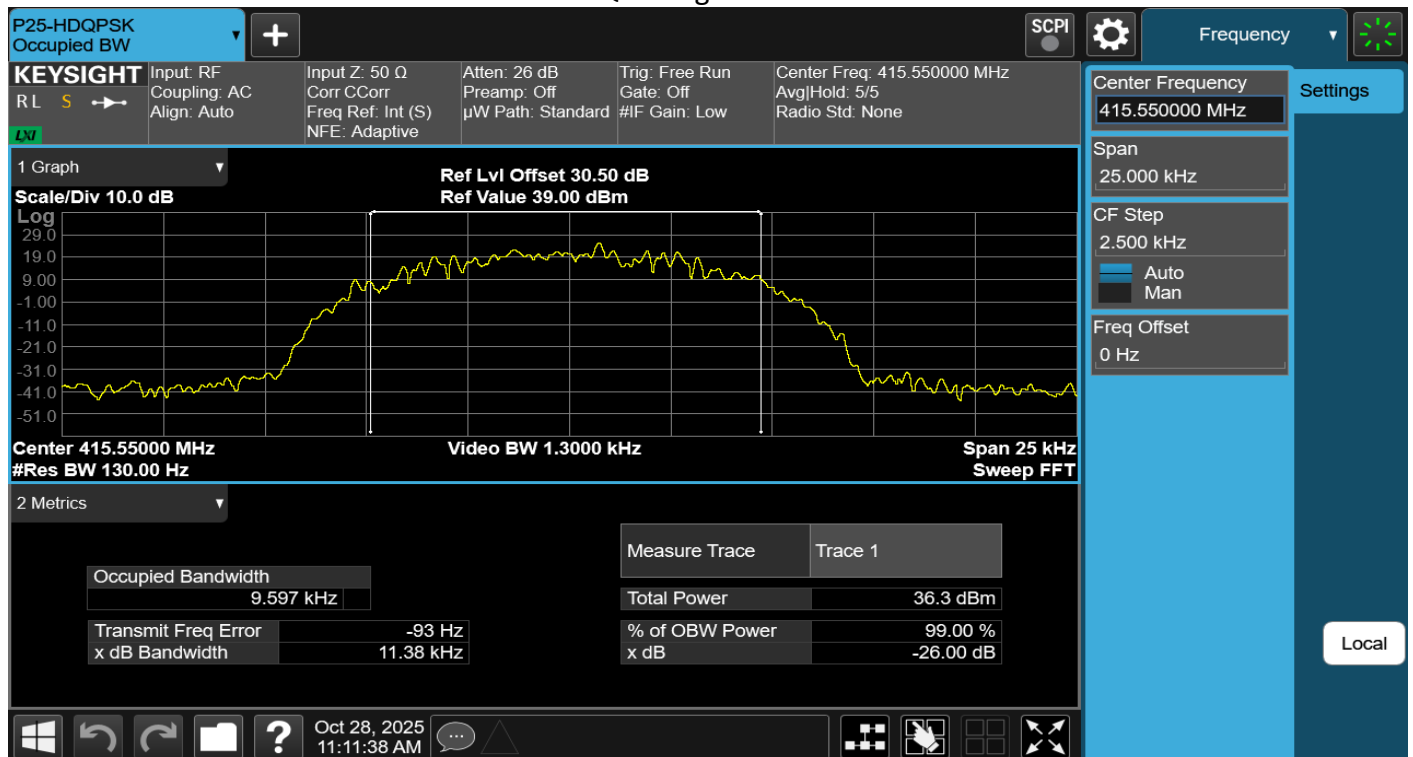
PS415 C4FM Signal at 406.1 MHz



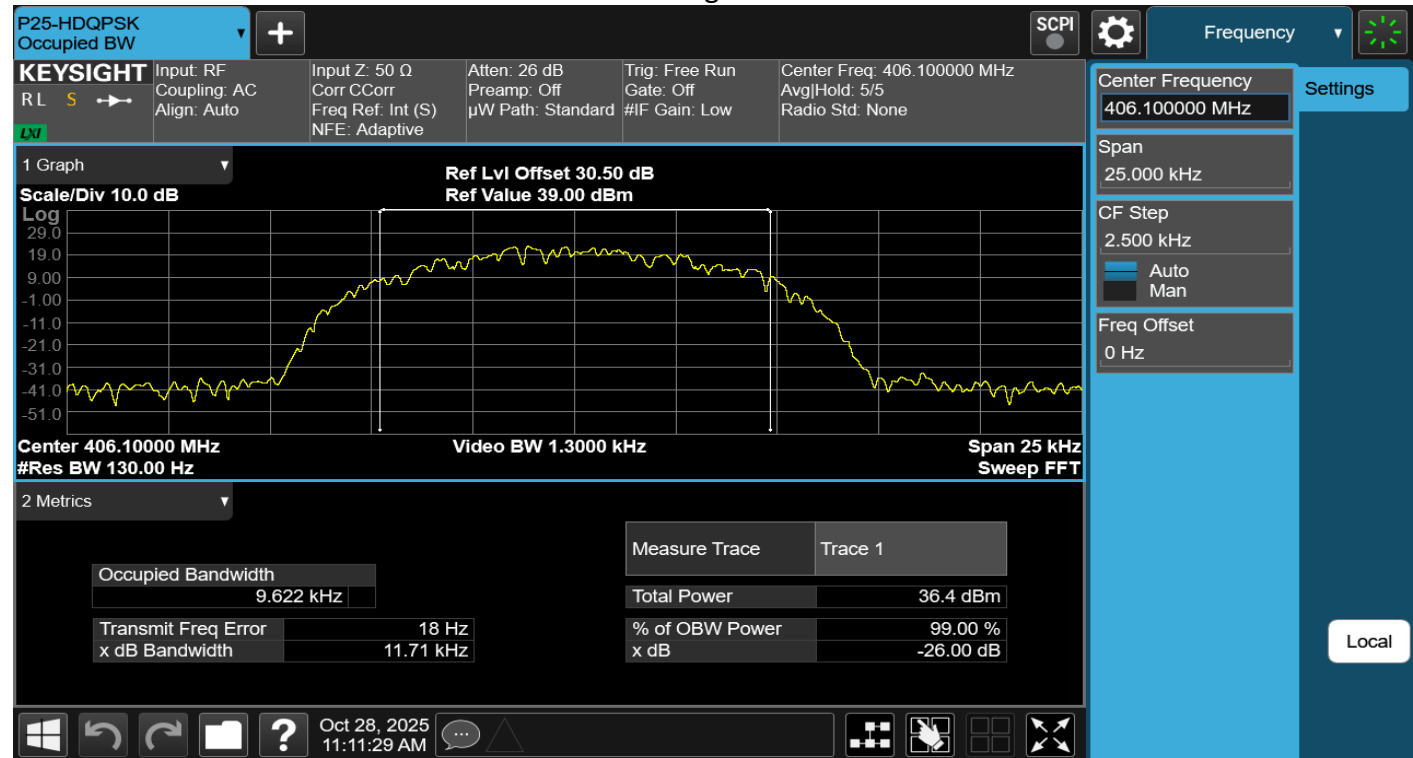
PS415 HDQPSK Signal at 425 MHz



PS415 HDQPSK Signal at 415.55 MHz



PS415 HDQPSK Signal at 406.1 MHz



3. Out of Band Rejection

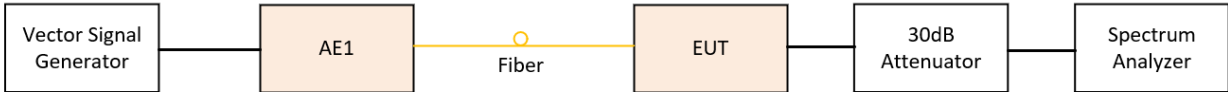
Standard	FCC Part 2 2.1046(a); Part 90.219(d)
Test method	FCC KDB 935210 D05, v01r03, Section 4.3; ANSI TIA-603- E-2016
Test Engineer	Jack Qin
Test Date	2026-02-02
Applied limit	This test is a characterization per FCC KDB 935210 D05 Section 4.3. No regulatory limit is specified.
Result Summary	Refer to section 3.2 for results.
Test Result	Compliant

3.1 Test Setup

The signal booster was set to maximum gain. A swept CW signal was set to the range of $\pm 250\%$ of the product pass band. The CW amplitude was set to 3 dB below the AGC threshold so that the ALC should not activate throughout the test.

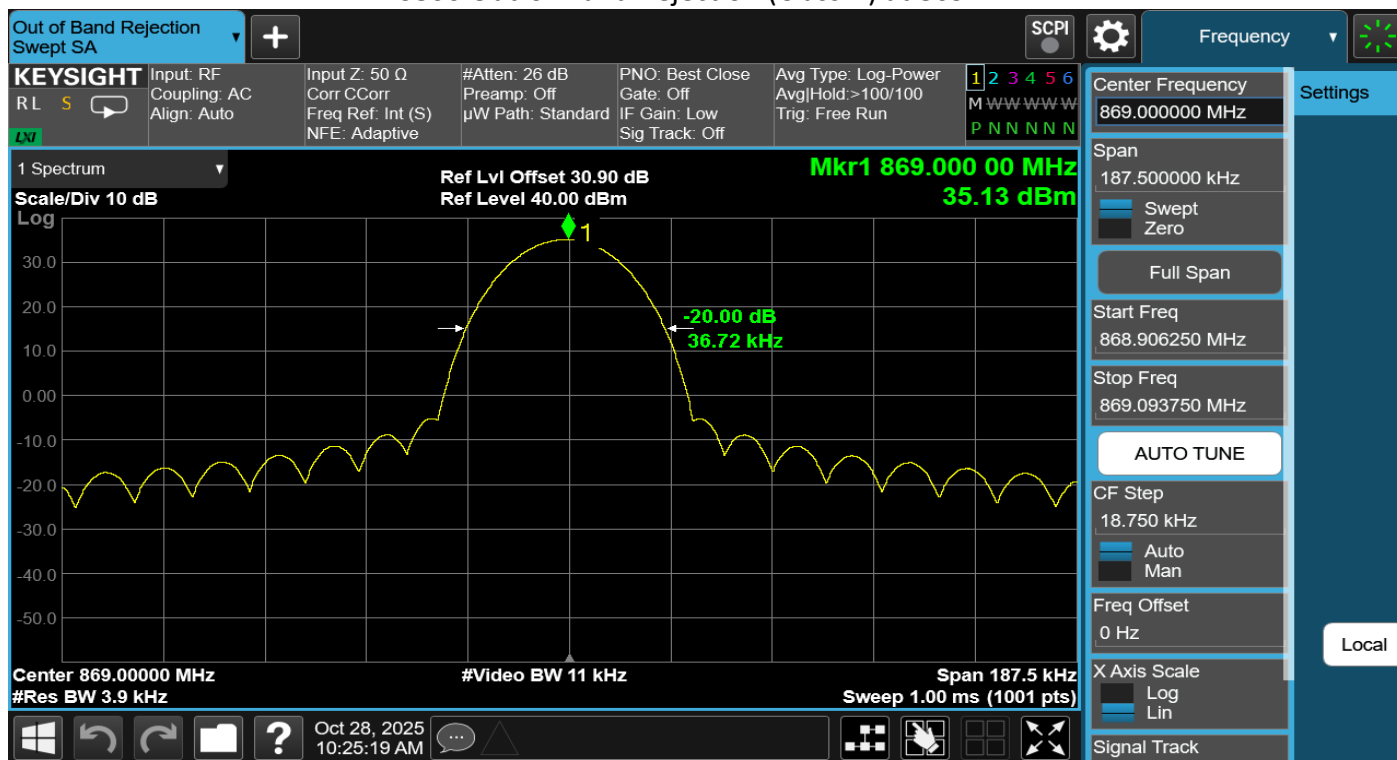
After the max-hold sweep trace was completed, a marker was set to the peak amplitude, and a 20dB bandwidth was measured between two additional markers fall 20 dB from the peak.

The EUT was set to Operation Mode #1.

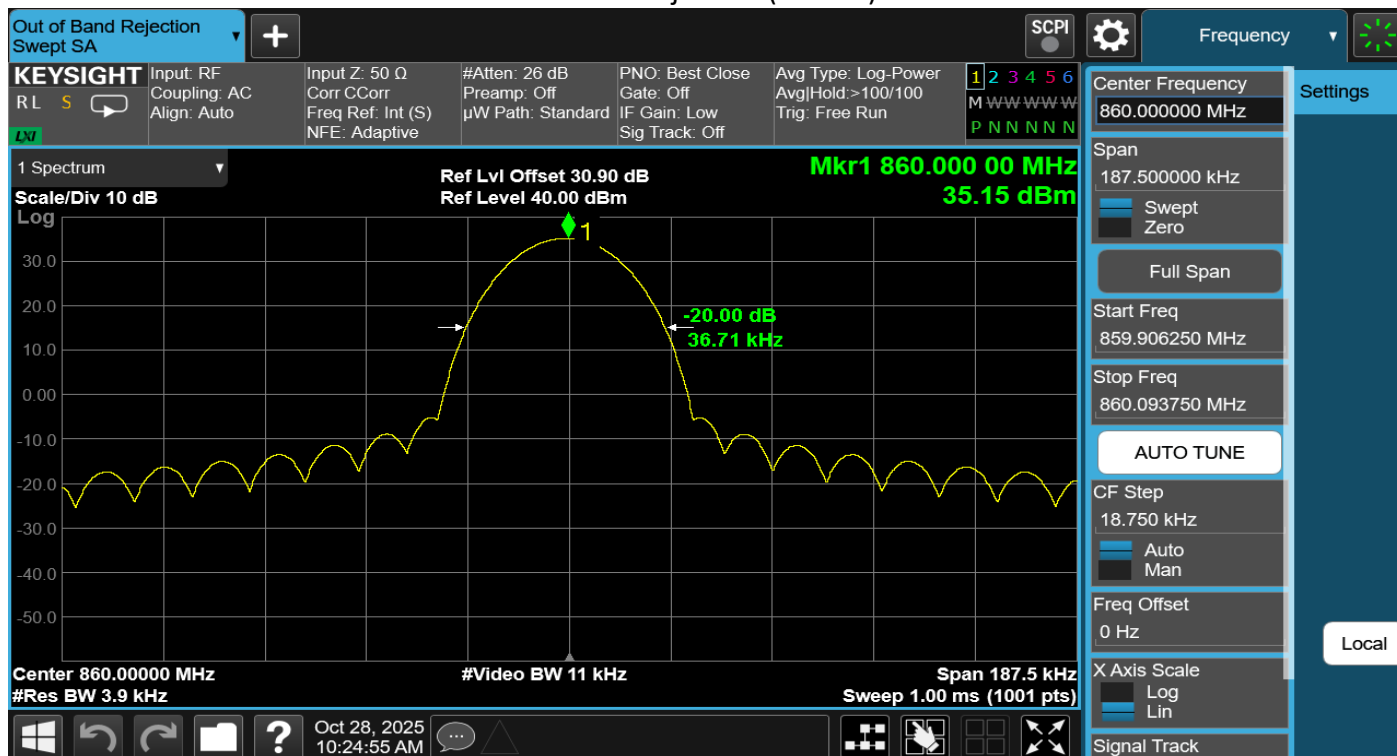


3.2 Out-of-Band Rejection Test Results

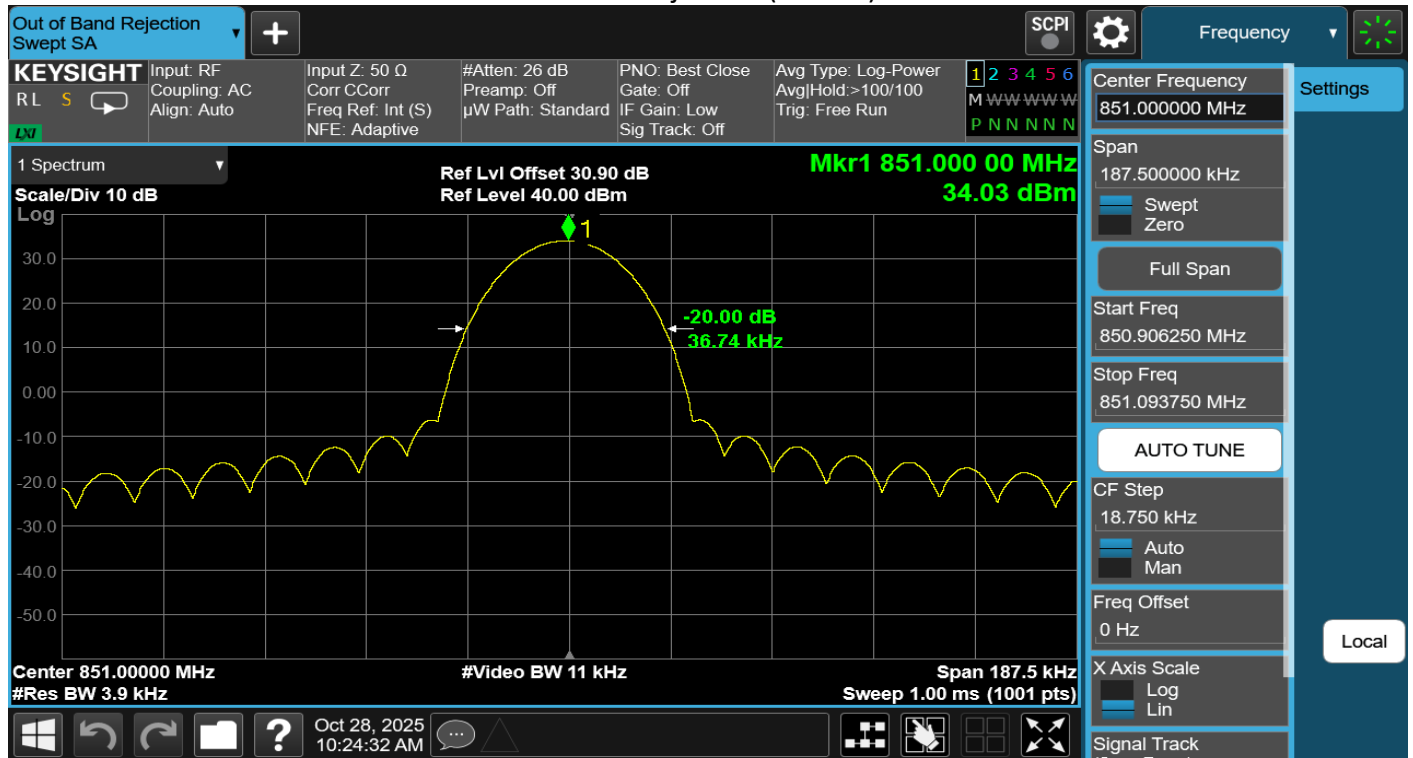
PS800 Out-of-Band Rejection (Class A) at 869 MHz



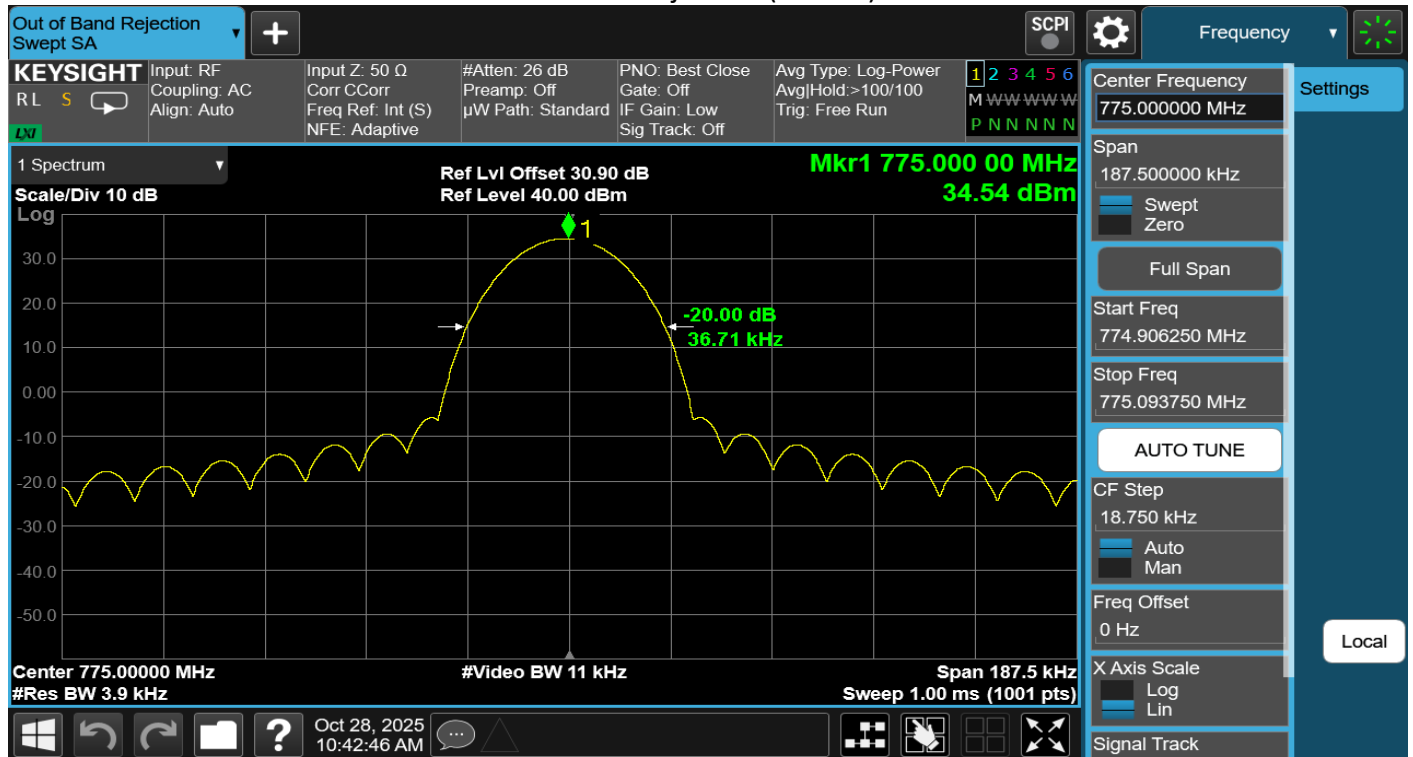
PS800 Out-of-Band Rejection (Class A) at 860 MHz



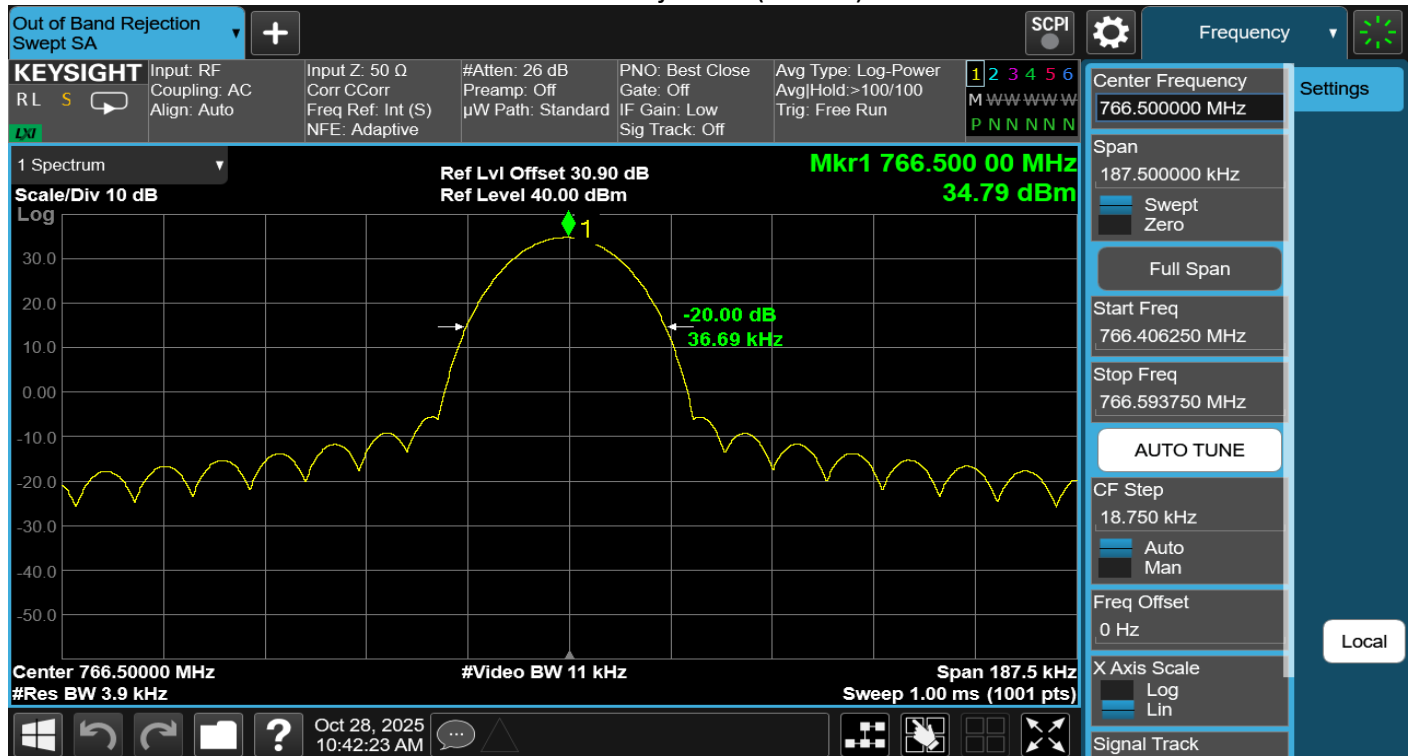
PS800 Out-of-Band Rejection (Class A) at 851 MHz



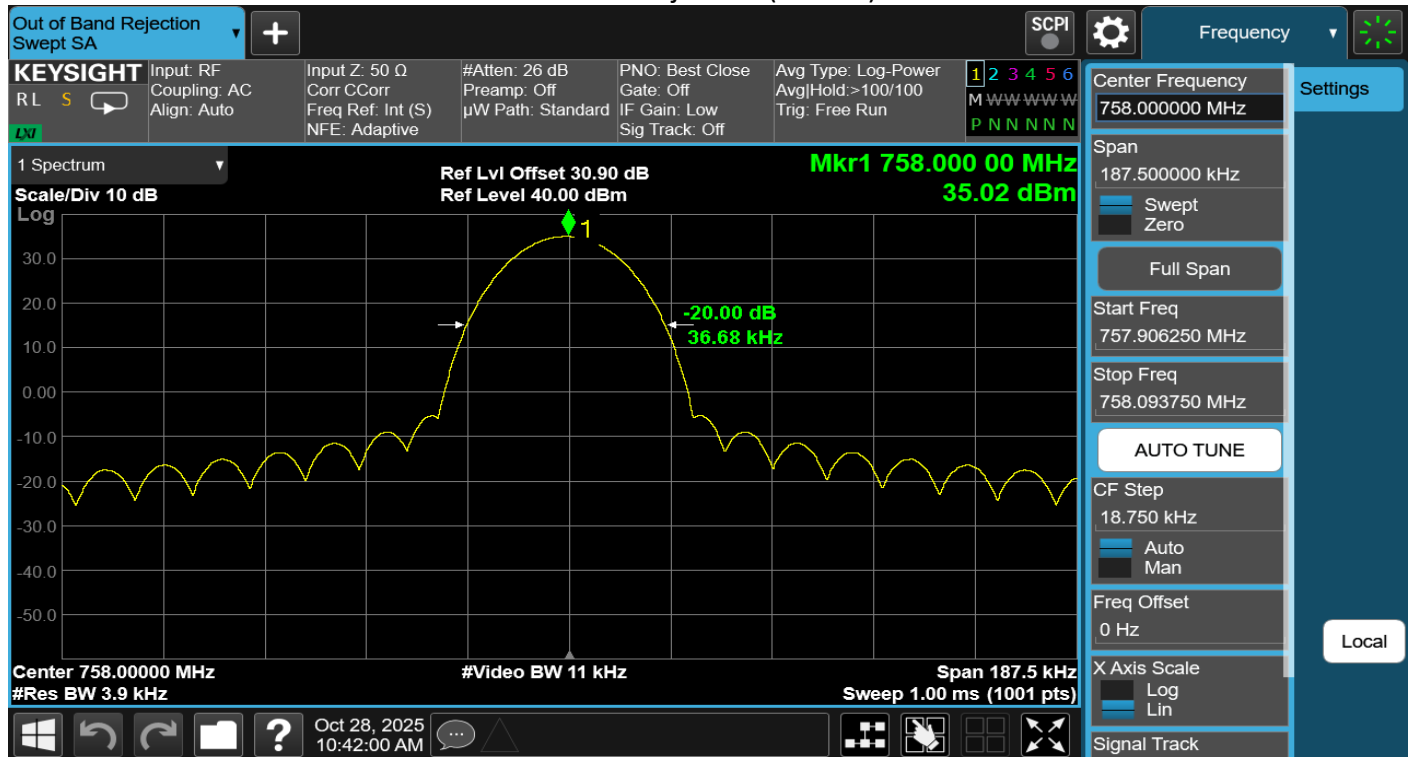
PS700 Out-of-Band Rejection (Class A) at 775 MHz



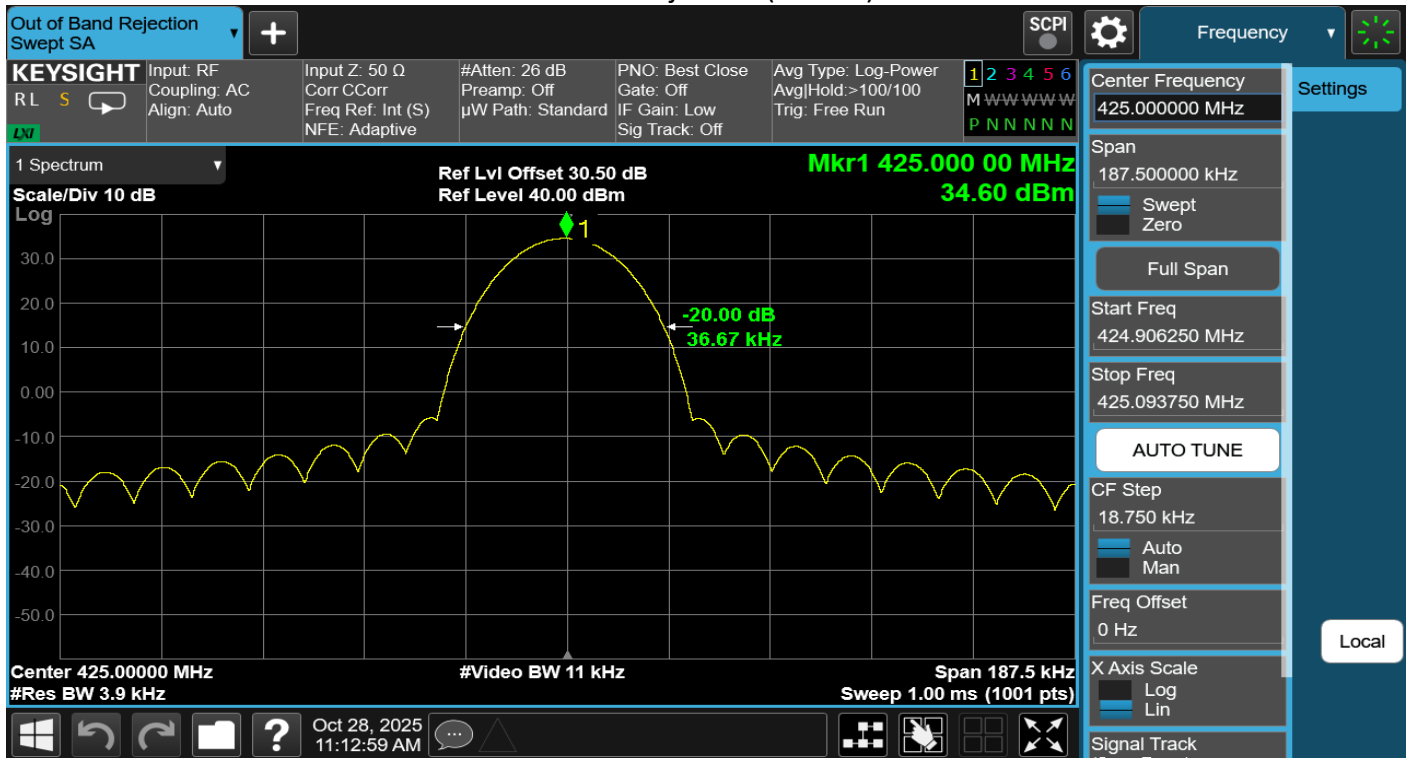
PS700 Out-of-Band Rejection (Class A) at 766.5 MHz



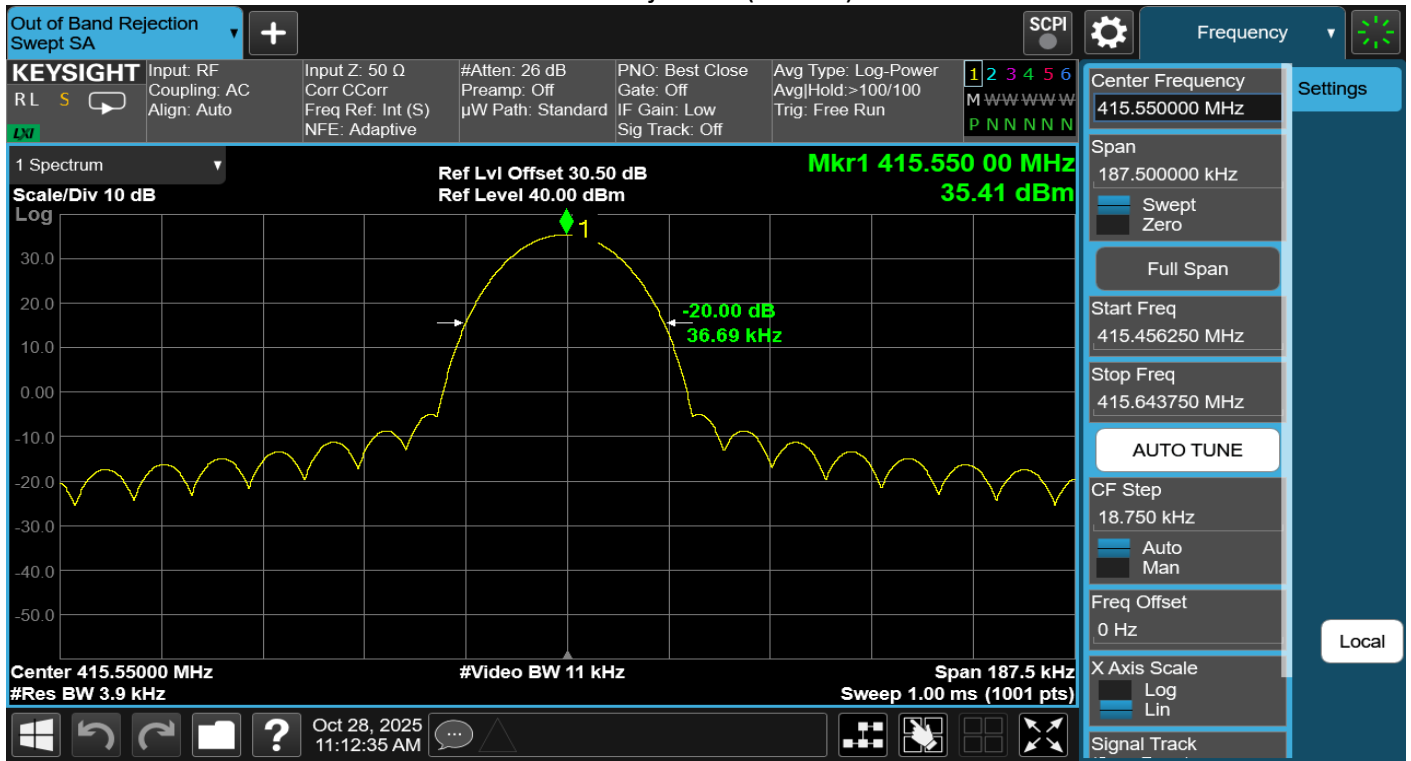
PS700 Out-of-Band Rejection (Class A) at 758 MHz



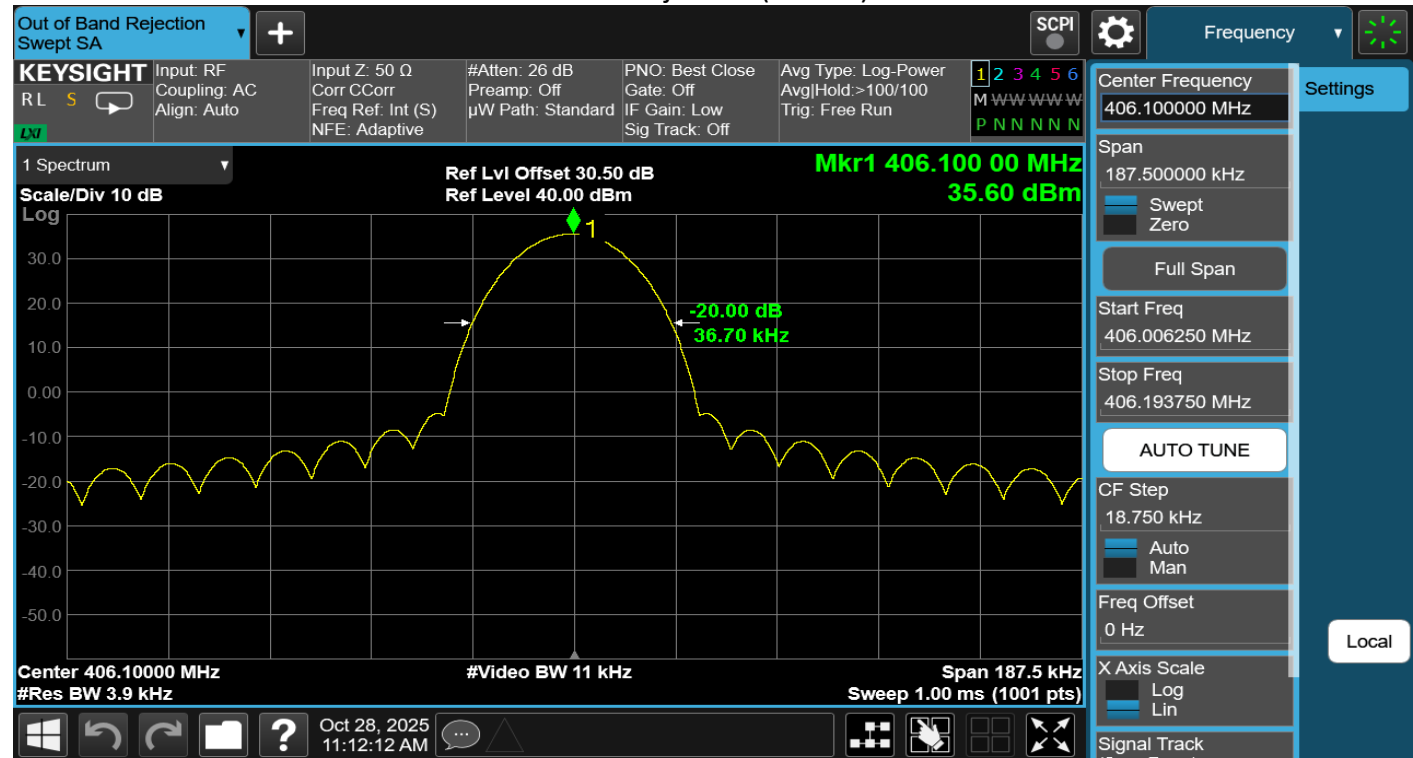
PS415 Out-of-Band Rejection (Class A) at 425 MHz



PS415 Out-of-Band Rejection (Class A) at 415.55 MHz



PS415 Out-of-Band Rejection (Class A) at 406.1 MHz



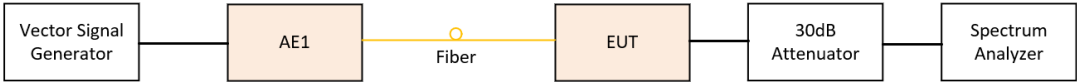
4. Input-Versus-Output Signal Comparison

Standard	FCC Part 90.210 (c), (d), (e) and (h)
Test method	FCC KDB 935210 D05, v01r03, Section 4.4; ANSI TIA-603- E-2016
Test Engineer	Jack Qin
Test Date	2026-02-02
Applied limit	As per emission mask definitions in 90.210
Result Summary	Refer to section 4.2 for results.
Test Result	Compliant

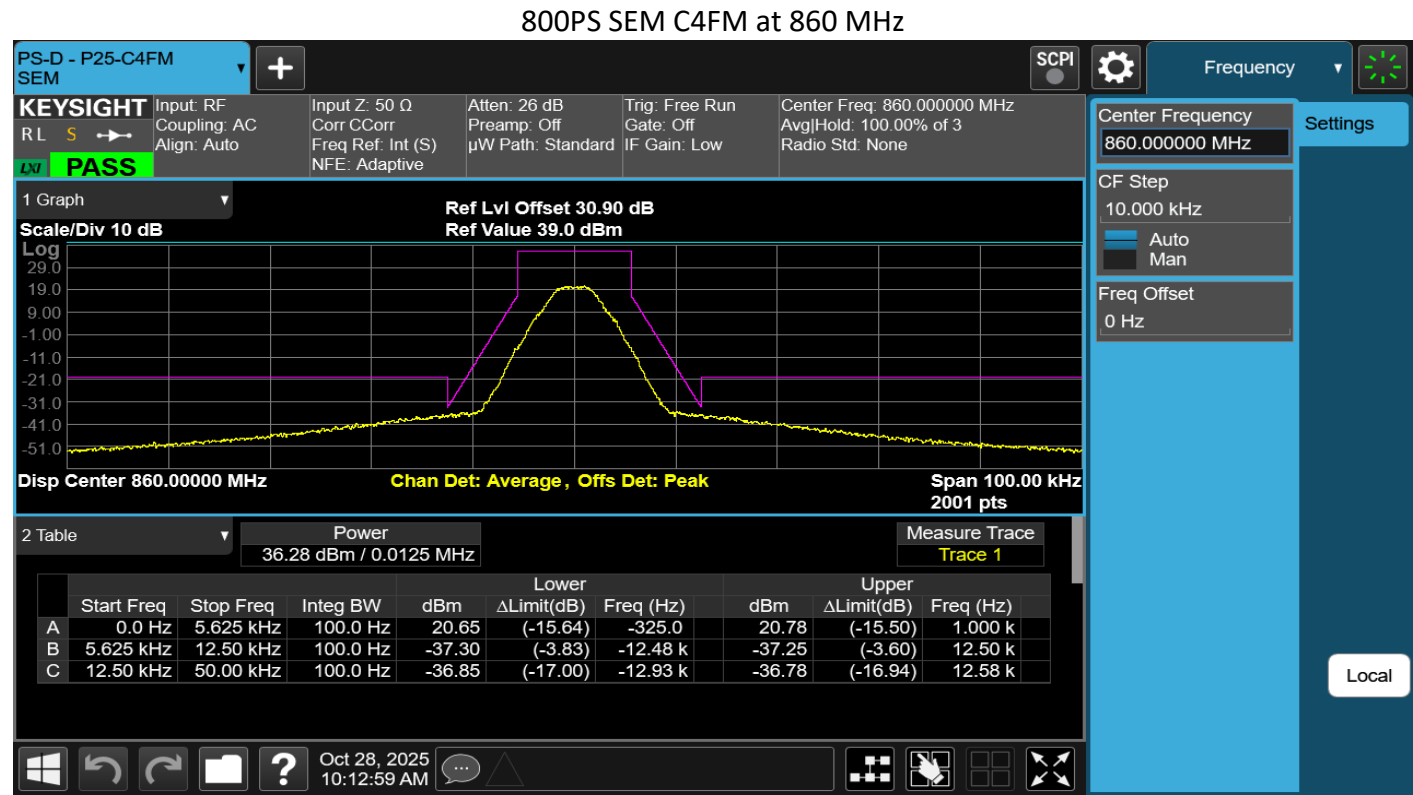
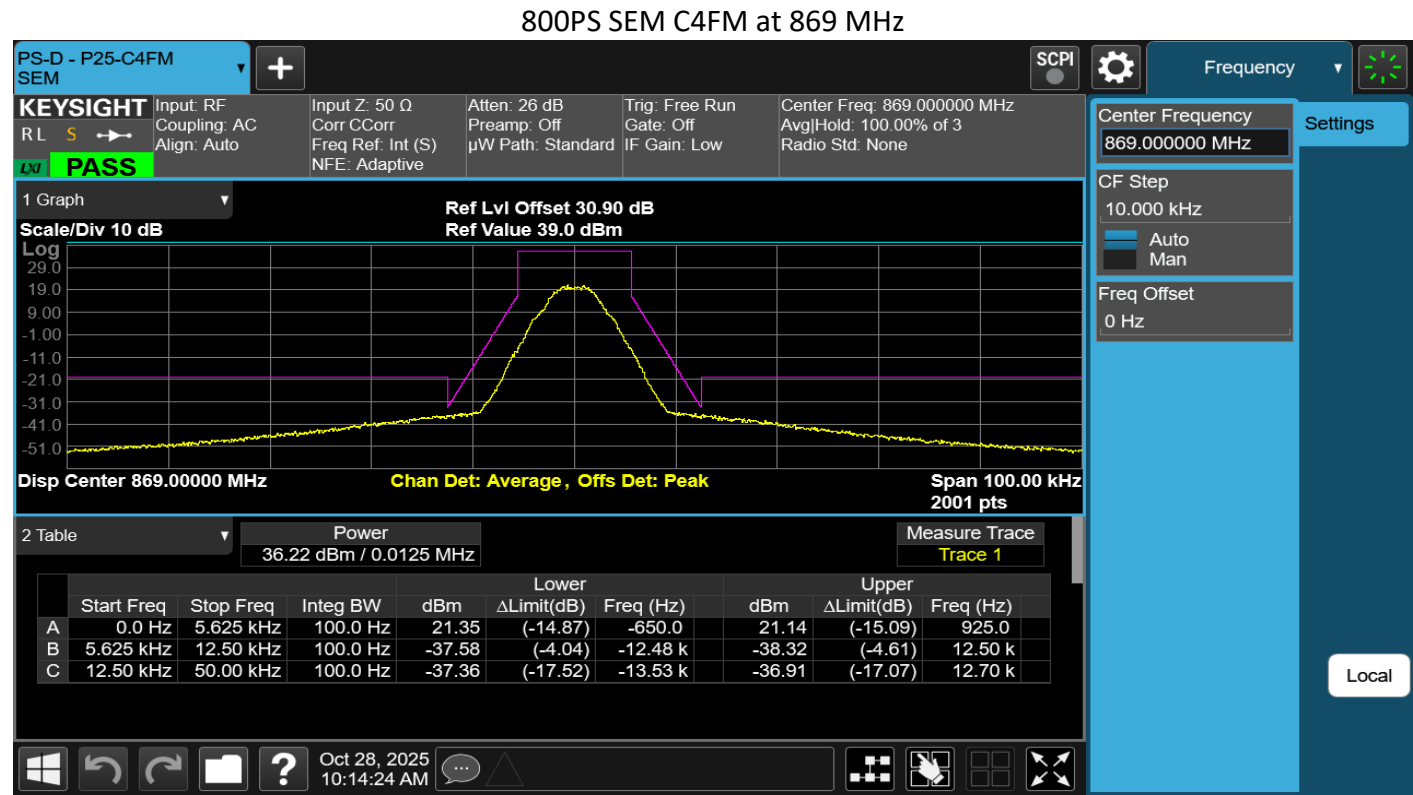
4.1 Test setup

Spectrum Emission Mask is measured by connecting a Spectrum Analyzer to the RF output connector. The input power was adjusted to produce maximum output power on the antenna port. The reference level was measured with integrated BW of the designated channel BW. The emission was measured with RBW 100 Hz. Mask types according to FCC § 90.210 Emission masks were applied to all measurements. The mask applied is specified in the title of each plot.

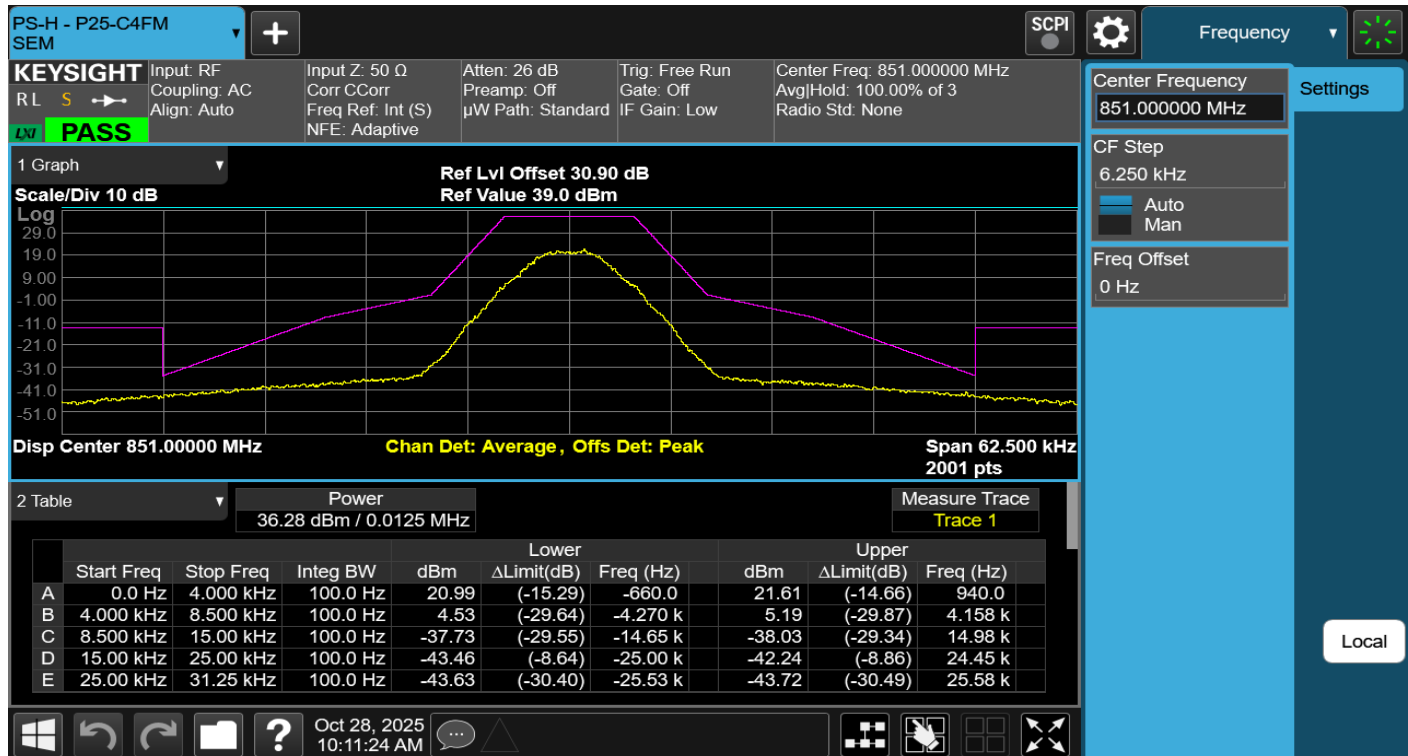
The EUT was set to Operation Mode #1.



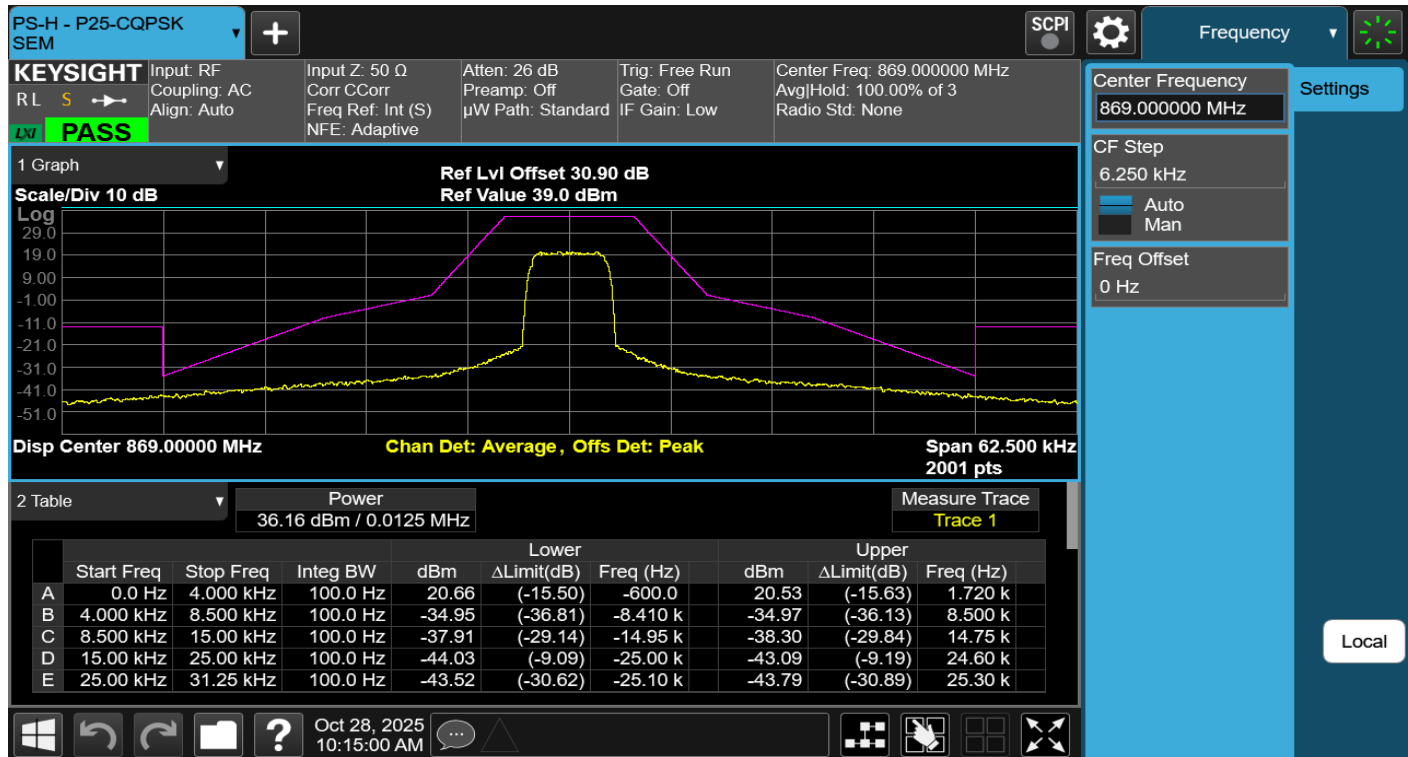
4.2 Spectrum Emission Mask Test Results



800PS SEM C4FM at 851 MHz



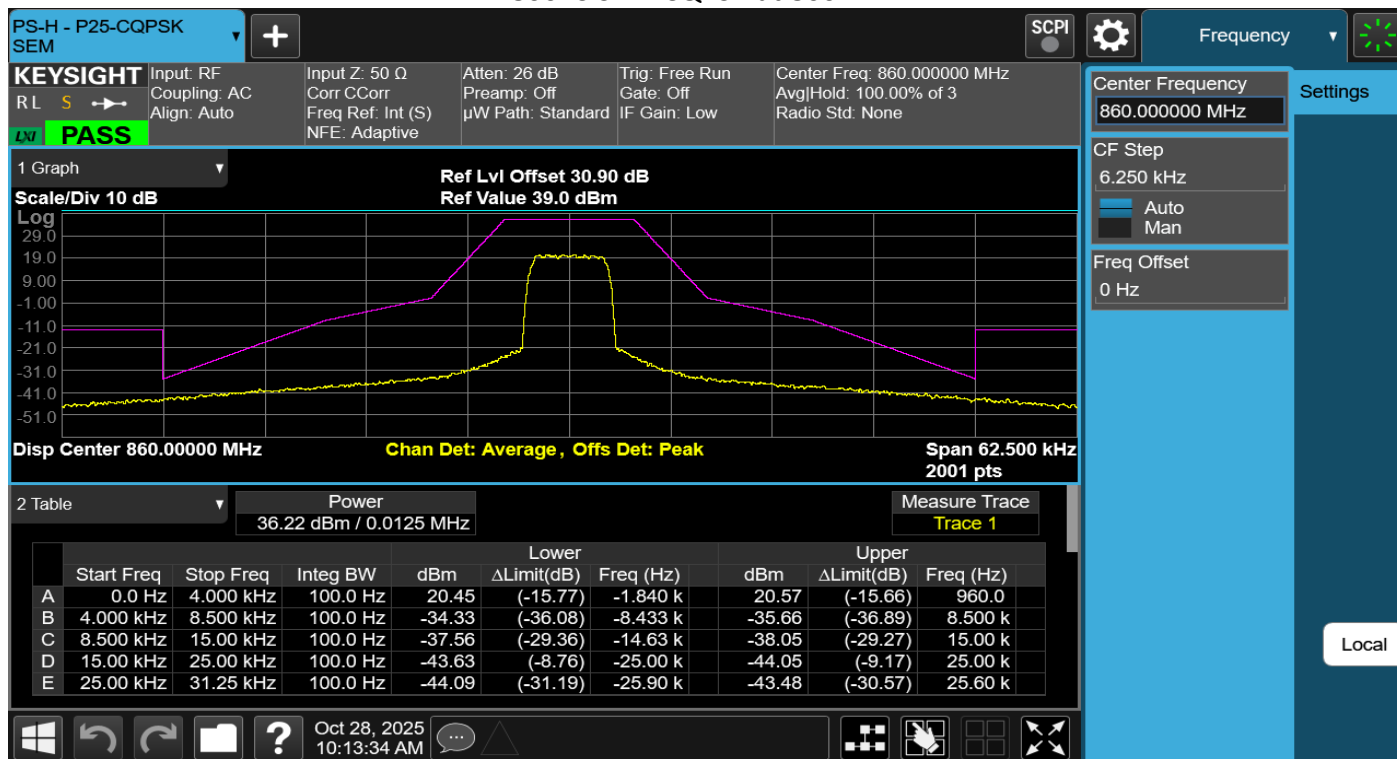
800PS SEM CQPSK at 869 MHz



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800PS SEM CQPSK at 860 MHz



800PS SEM CQPSK at 851 MHz

