



# REPORT

For

## **Avari Wireless Corporation**

1400 112th Ave SE, Ste 100, Bellevue, WA, USA 98004

Date of Issue: July 9, 2025  
Report No.: 20.01.25-1206-1  
Revision No: Rev 0  
Project No.: 25-1206  
Equipment: Single Band Medium Power Air Master Unit  
Model No.: AMU37-1-PS-B-21-1N-D0-1  
FCC ID: 2BA6EAMU371PSB21B  
ISED ID: 32235-AMU371PSB  
HVIN: AMU37-1-PS-B-21-1N-D0-1

### **ONE STOP GLOBAL CERTIFICATION SOLUTIONS**

ISO 17025 ACCREDITED

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ISO 17065 ACCREDITED

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## TEST REPORT

### RSS-119 — Land Mobile and Fixed Equipment Operating in the Frequency Range 27.41-960 MHz RSS-Gen — General Requirements for Compliance of Radio Apparatus FCC Part 90 - PRIVATE LAND MOBILE RADIO SERVICES

Report Reference No. ....:	20.01.25-1206-1	
Report Revision History .....	Rev. 0 July 9, 2025	
Compiled by (+ signature) .....	Zara Vali	<i>Zahra Vali</i>
Approved by (+ signature) .....	Jack Qin	<i>Jack Qin</i>
Date of issue .....	July 9, 2025	
Total number of pages .....	74	
FCC Site Registration No.:	CA5970	
IC Site Registration No.:	5970A-2	
Testing Laboratory .....	LabTest Certification Inc.	
Address .....	Unit 3128-20800 Westminster HWY, Richmond, BC, V6V 2W3, Canada	
Applicant's name .....	Avari Wireless Corporation	
Address .....	8618 Commerce Court, Burnaby, BC V5A 4N6 Canada 1400 112th Ave SE, Ste 100, Bellevue, WA, USA 98004	
Manufacturer's Name .....	Avari Wireless Corporation	
Address .....	8618 Commerce Court, Burnaby, BC V5A 4N6 Canada 1400 112th Ave SE, Ste 100, Bellevue, WA, USA 98004	
Test specification:		
Standards .....	<ul style="list-style-type: none"> <li>➤ RSS-119, Issue 12 2015, Amendment (April 1, 2022)</li> <li>➤ RSS-Gen, Issue 5 2018</li> <li>➤ RSS-131, Issue 4 2022</li> <li>➤ FCC Part 90</li> <li>➤ FCC Part 2</li> </ul>	
Test procedure .....	<ul style="list-style-type: none"> <li>➤ ANSI C63.26: 2015</li> <li>➤ KDB 935210 D05, v01r04</li> </ul>	
Test item description :		
Trade Mark .....	AMU37™	
Model/Type reference (HVIN) .....	AMU37-1-PS-B-21-1N-D0-1	

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FVIN.....:	7
PMN.....:	VL-Series Remote Unit
Serial Number.....:	10911233E01BF6001
FCC ID.....:	2BA6EAMU371PSB21B
ISED ID.....:	32235-AMU371PSB
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object .....	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Date of receipt of test item .....	June 16, 2025
Date of performance of tests .....	June 16-17, 2025

## Revision History

Revision	Date	Reason For Change	Author
0	July 9, 2025	Initial Data	Zara Vali

## Result Summary

The tests indicated in Test Summary were performed on the product constructed as described below. The test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item tested. LabTest does not make any claims of compliance for samples or variants which were not tested.

The Compliance Status is a judgment based on the direct measurements and calculated highest emissions to appropriate standard limits. Measurement uncertainty values, provided on calibration certificates, were not be used in the judgment of the final status of compliance.

Test Item	Standard	Measurement Method	Result
AGC Threshold	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 2 2.1046(a) FCC Part 90	ANSI C63.26-2015, Section 7.2.3.1 KDB 935210 D05, v01r04, Clause 3.2, 4.2	PASS
Occupied Bandwidth	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 2 2.1046(a) FCC Part 90	ANSI C63.26-2015, Section 7.2.3.1 KDB 935210 D05, v01r04	PASS
Out of Band Rejection	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	ANSI C63.26-2015, Section 7.2.3.2 KDB 935210 D05, v01r04, Clause 3.3, 4.3	PASS
Input-versus-output Signal Comparison	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	ANSI C63.26-2015, Section 7.2.3.3 KDB 935210 D05, v01r04, Clause 3.4, 4.4	PASS
Input/output Power and Amplifier/Booster Gain	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	ANSI C63.26-2015, Section 7.2.3.4 KDB 935210 D05, v01r04, Clause 3.5, 4.5	PASS
Noise Figure	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	ANSI C63.26-2015, Section 7.2.3.5 KDB 935210 D05, v01r04, Clause 4.6	PASS
Measuring out-of-band/out-of-block (including intermodulation) and spurious emissions	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	ANSI C63.26-2015, Section 7.2.3.6 Section 7.2.3.7 KDB 935210 D05, v01r04, Clause 3.6, 4.7	PASS
Frequency stability	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 2.1055	ANSI C63.26-2015, Section 7.2.3.8 KDB 935210 D05, v01r04, Clause 3.7, 4.8	N/A

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Spurious emissions radiated measurements above 1 GHz	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90 FCC Part 2.1053	ANSI C63.26-2015, Section 7.2.3.9 KDB 935210 D05, v01r04, Clause 3.8, 4.9	PASS
Spurious radiated emissions below 1 GHz	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90 FCC Part 2.1053	ANSI C63.26-2015, Section 5.5 KDB 935210 D05, v01r04, Clause 3.8, 4.9	PASS
Conducted Emissions at AC Main	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	ANSI C63.4: 2014	PASS

## 1. EUT Information

### EUT Description and Variant Models

#### Description:

The AMU37 800PS is a single-band off-air fed master unit. The AMU37 PS accepts Downlink analog RF signals from off-air donor antenna and transmits Uplink RF signal back to macro tower at 5 W maximum power. The single-band unit supports one band in a sealed chassis. On the downlink path the AMU37 PS translates analog RF content into a digital data stream, and then transports the data stream to remote units on one to eight optical links, each operating at 10 Gbps. Because radio signal is processed and combined in the digital domain, no passive intermodulation (PIM) is introduced. On the Uplink path the AMU37 PS does the reverse. It receives data stream from the remotes, which are then converted back to analog RF. The signal is filtered and amplified to a composite power of 5 W maximum, and then delivered back to the macro tower through outdoor directional antenna.

The AMU37 PS also supports 1 Gbps Ethernet backhaul for transporting the data from IP devices such as security cameras and Wi-Fi access points located close to remote units.

The intentional transmitter only exists in the uplink path and hence the EMC tests in this report is dedicated to the uplink emission.

To build up a complete signal booster system, the RU37 remote unit was connected as the Auxiliary device. The signal was injected and ejected via coaxial cables.

EUT Picture



#### Variant Models:

The following 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 models tested. LabTest does not make any claims of compliance for samples or variants which were not tested.

The variant models of AMU37-1-PS-B-21-1N-D0-1 are listed as follows:

AMU33-1-PS-B-21-1N-D0-1  
AMU37-1-PS-B-21-1N-A0-1  
AMU33-1-PS-B-21-1N-A0-1

Application for .....	PS 800MHz Air Master Unit, Single Band Medium Power AMU
Passing Transmit Frequency .....	806 MHz – 824 MHz
Operating Transmit Frequency FCC .....	806 MHz – 824 MHz
Passing Receive Frequency .....	851 MHz – 869 MHz
Operating Receive Frequency FCC.....	851 MHz – 869 MHz
Number of Channels .....	Up to 32 channels
Rated RF Output (e.i.r.p.) .....	37 dBm
Modulation Type .....	P25 Phase I C4FM, CQPSK; P25 Phase II HDQPSK on full band of Band 800 FM on Band 800 between 806 MHz – 824 MHz only;
Equipment mobility .....	Fixed
Operating condition.....	-40 to +50 °C
Mass of equipment (g) .....	< 36,000g
Dimensions (W X D X H)	434.1 x 683.4 x 314.2 mm
Supply Voltage:	<u>48V</u> DC <u>3.1</u> Amps
If DC Power:	<input type="checkbox"/> Internal Power Supply <input checked="" type="checkbox"/> External Power Supply <input type="checkbox"/> Battery <div style="margin-left: 20px;"> <input type="checkbox"/> Nickel Cadmium  <input type="checkbox"/> Alkaline  <input type="checkbox"/> Nickel-Metal Hydride  <input type="checkbox"/> Lithium-Ion  <input type="checkbox"/> Other </div>

### Client Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Comments
EUT	AMU37, 800 PS	Avari Wireless Corporation	VL-AMU37-1-PS-B-21-1N-D0-1	EUT where the RF (I/O) antenna is attached via duplexers/multiplexer when necessary.
AE1	RU37, 150PS, 450PS, 800PS	Avari Wireless Corporation	VL-RU37-3-PS-BFH-21-D0-1	Auxiliary equipment which is connected to the signal source.
AE2	Element Manager (DMC)	Avari Wireless Corporation	EM-1A	Auxiliary equipment provides the configuration and control interface to AMU37 and RU37.
AE3	Power Supply	MeanWell	HGL-480H-48	AC to DC Converter, I/P: 120VAC, 60Hz, 5.5A O/P: +48VDC, 480W
Abbreviations: EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, or SIM - Simulator (Not Subjected to Test)				

### Software and Firmware

Use*	Description	Version
EUT	Software installed	7.2.1-0.6069
AE1	Software installed	7.2.1-0.6069
AE2	Software installed	7.2.1-0.1773
Abbreviations: EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, or 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	1 * 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					

### Power Interface

Mode #	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
1	48	3.1	149	DC	-	DC power port is connected to AC/DC convertor.

### EUT Operation Modes

Mode #	Description
1	UL and DL transmission and receiving ON

### EUT Configuration Modes

Mode #	Description
1	AMU maximum input threshold set to -55 dBm coming from the RU, uplink attenuation set to 0dB; RU uplink and downlink attenuation set to 0dB.

## 2. Description of Test Setup

### Test Equipment Verified for function

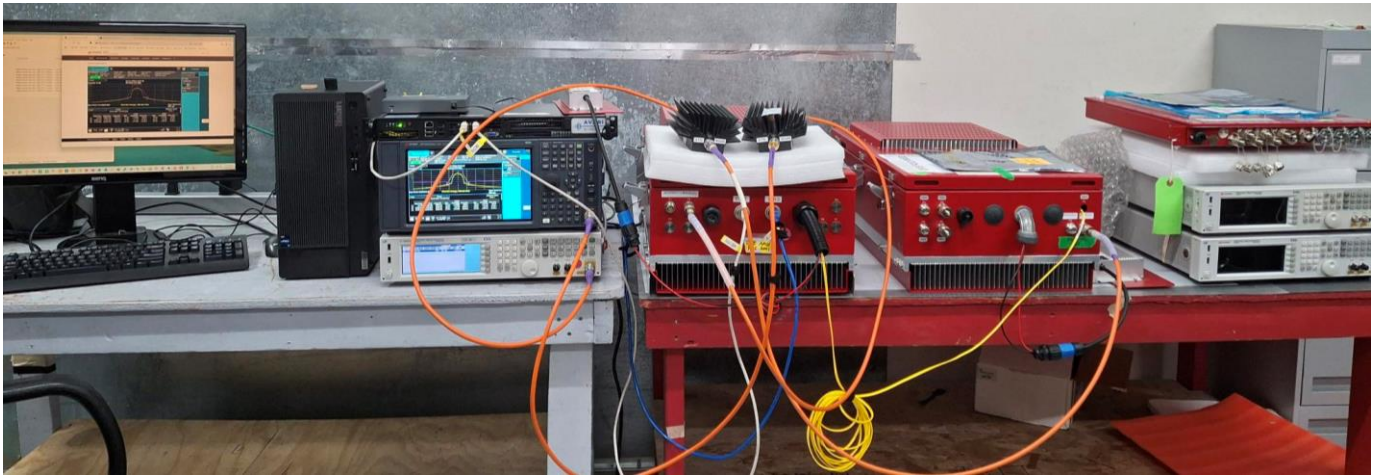
Model #	Description	Checked Function	Results
KT-N9038A	Spectrum Analyzer	Frequency and Amplitude	Connected 50MHz and -20 dBm Ref_signal and checked OK
JB1	Antenna, 30 to 2000MHz	Checked structure	Normal – no damage
SAS-571	Antenna, 1 to 18GHz	Checked structure	Normal – no damage
KT-N5172B	Signal Generator	Frequency, Amplitude and Modulation	Within MFR Specs
KT-N9020B-526	MXA Signal Analyzer	Frequency and Amplitude	Within MFR Specs

### Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests:

Parameter	Uncertainty
Radio Frequency	±1 ppm
Total RF Power: Conducted	±1 dB
RF Power Density: Conducted	±2.75 dB
Spurious Emissions: Conducted	±3 dB
Temperature	±1 °C
Humidity	±5 %
DC and Low Frequency Voltages	±3 %
Radiated Emission, 30 to 18,000MHz	± 4.95 dB

### Test Station Photo



### Test Station Cables and Loads

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

### Test Station Insertion Loss

	Band 800
DL Transmitter	31.7
UL Receiver	0.7

### 3. Test Result

#### 3.1 AGC Threshold

Governing Doc	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 2 2.1046(a) FCC Part 90		Room Temperature (°C)	21	
Test Procedure	ANSI C63.26-2015, Section 7.2.3.1 KDB 935210 D05, v01r04, Clause 3.2, 4.2		Relative Humidity (%)	45	
Test Location	Bench top, Richmond Lab		Barometric Pressure (hPa)	1012	
Test Engineer	Zara Vali		Date	June 16, 2025	
EUT Voltage	<input checked="" type="checkbox"/> +48VDC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B-506	MY53050270	Dec 12, 2023	Dec 12, 2026
Spectrum Analyzer	Keysight	N9020B-526	MY62153079	Aug 1, 2023	Aug 1, 2025
Frequency Range:	<input checked="" type="checkbox"/> 806 MHz – 824 MHz				
Detector:	<input checked="" type="checkbox"/> Peak				
Type of Facility:	<input checked="" type="checkbox"/> Test bench				
Distance:	<input checked="" type="checkbox"/> Direct				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
Output power is: less than or equal 36.36 dBm in 800 band					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

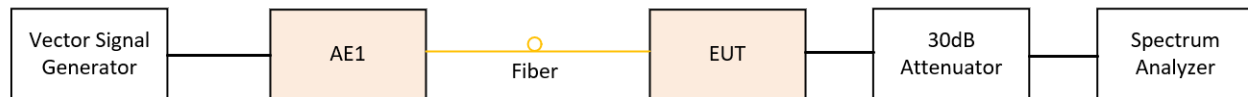
## Test setup

### 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 with configuration 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.



## Results – Output Power FCC Requirement

Frequency Range (MHz)	Frequency (MHz)	Input Power Trip ALC (dBm)	Output Power (dBm)	Output Power (Watt)
800PS 806 - 824	806	-51.8	36.33	4.30
	815	-51.2	36.36	5.33
	824	-49	36.29	4.26

### 3.2 Occupied Bandwidth

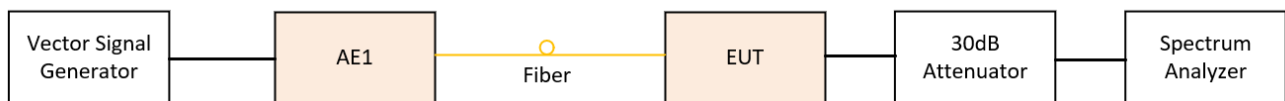
Governing Doc	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 2 2.1046(a) FCC Part 90	Room Temperature (°C)	21		
Test Procedure	ANSI C63.26: 2015	Relative Humidity (%)	45		
Test Location	Bench top, Richmond Lab	Barometric Pressure (hPa)	1012		
Test Engineer	Zara Vali	Date	June 16, 2025		
EUT Voltage	<input checked="" type="checkbox"/> +48VDC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B-506	MY53050270	Dec 12, 2023	Dec 12, 2026
Spectrum Analyzer	Keysight	N9020B-526	MY62153079	Aug 1, 2023	Aug 1, 2025
Frequency Range:	<input checked="" type="checkbox"/> 806 MHz – 824 MHz				
Detector:	<input checked="" type="checkbox"/> Peak				
Type of Facility:	<input checked="" type="checkbox"/> Test bench				
Distance:	<input checked="" type="checkbox"/> Direct				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
Output signal has an 99% occupied channel bandwidth less than the designated channel bandwidth on any location on the operating band. <ul style="list-style-type: none"> <li>- C4FM &lt;= 8.1948 kHz</li> <li>- CQPSK &lt;= 4.9001 kHz</li> <li>- HDQPSK &lt;= 9.4423 kHz</li> <li>- FM &lt;= 10.0849 kHz</li> </ul>					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

## 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

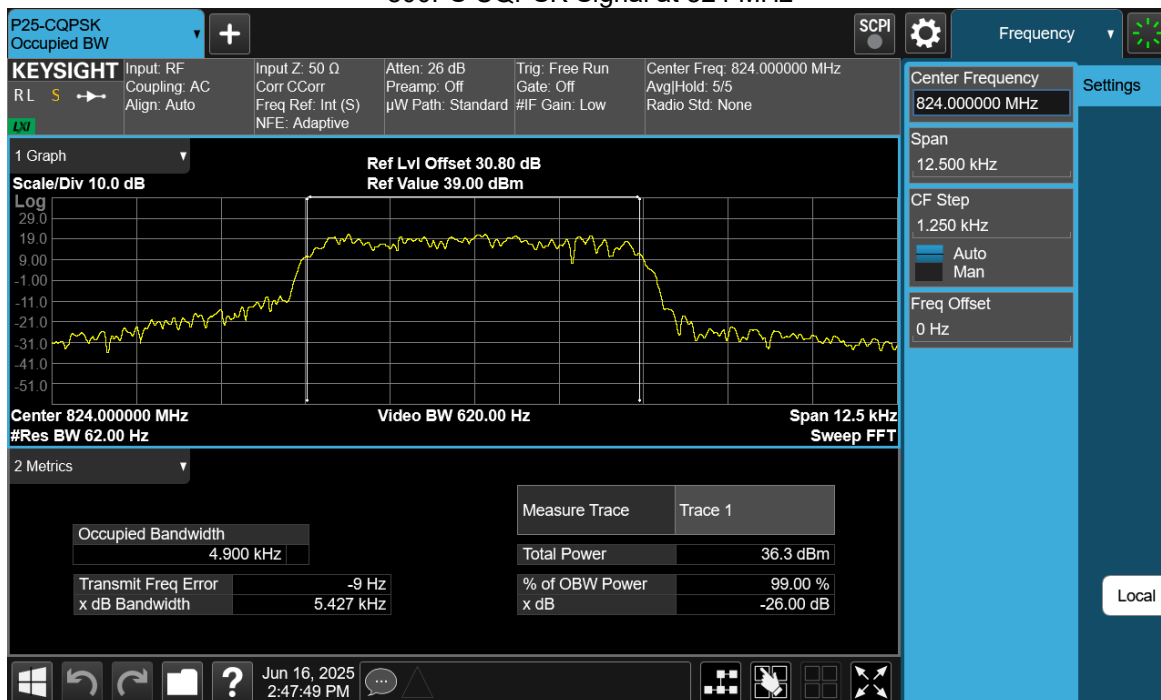
The EUT was set to **Operation Mode #1 with configuration Mode #1**.

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

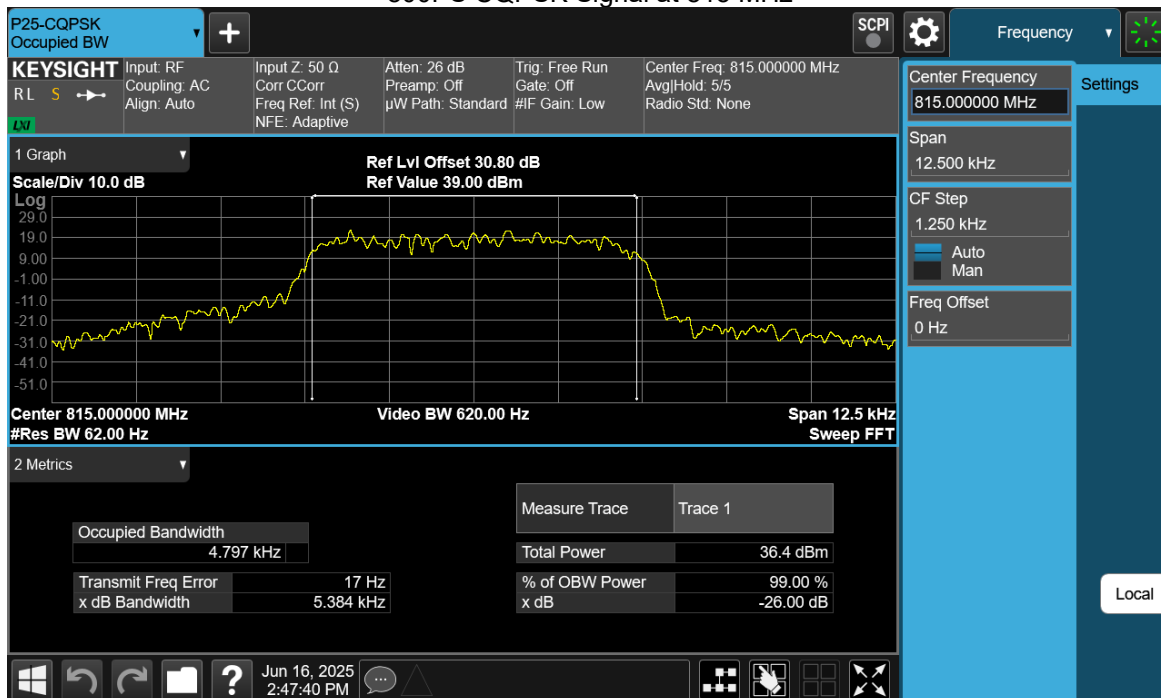


## Results – Occupied Bandwidth 800PS

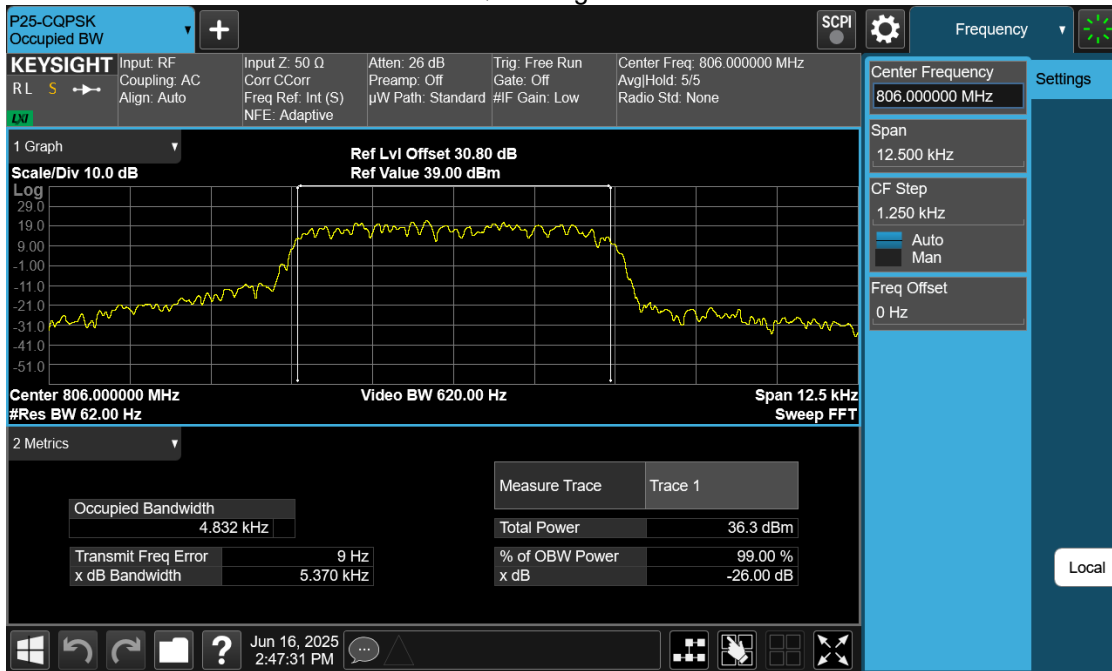
800PS CQPSK Signal at 824 MHz



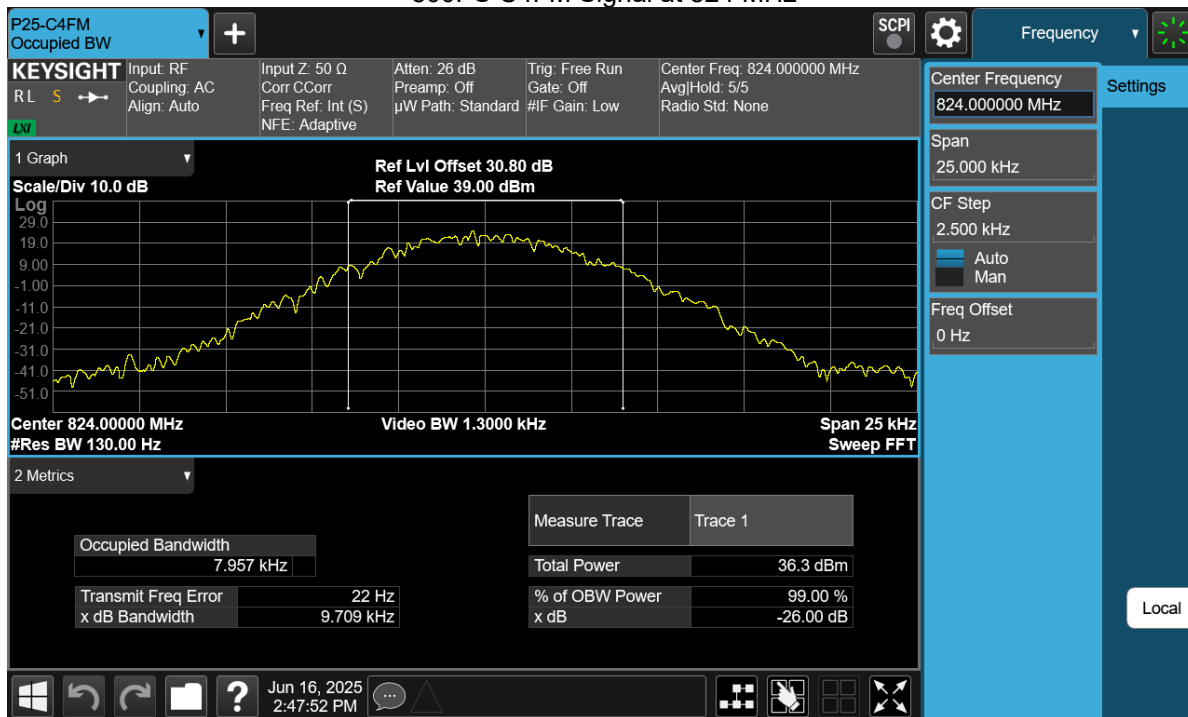
800PS CQPSK Signal at 815 MHz



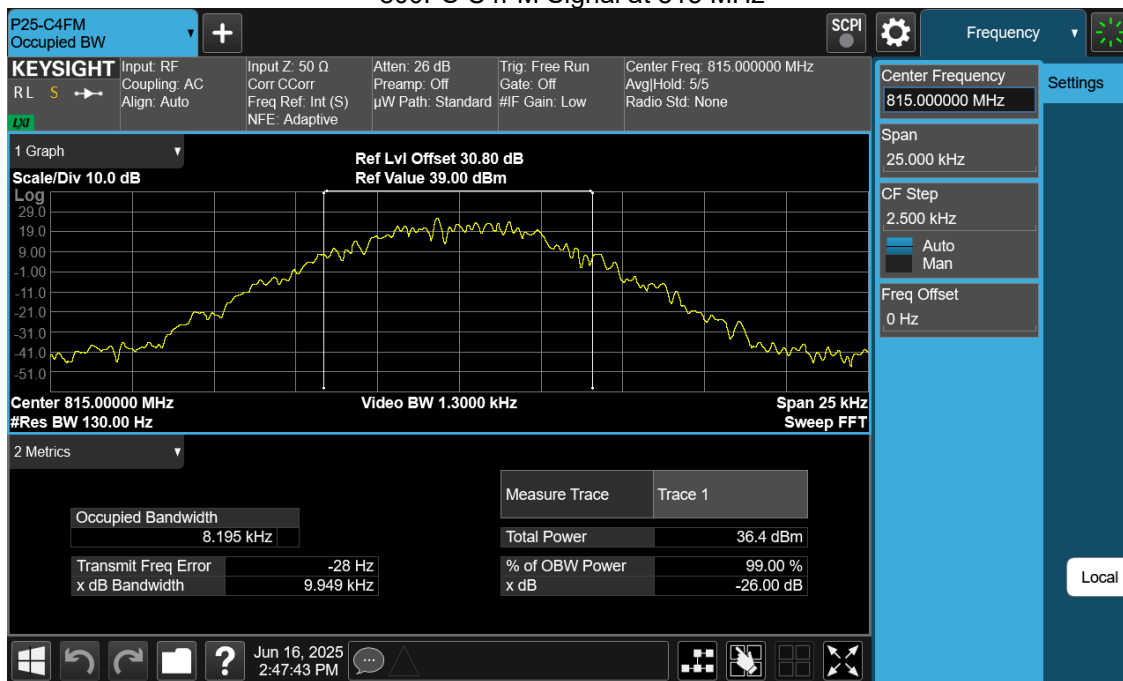
### 800PS CQPSK Signal at 806 MHz



### 800PS C4FM Signal at 824 MHz



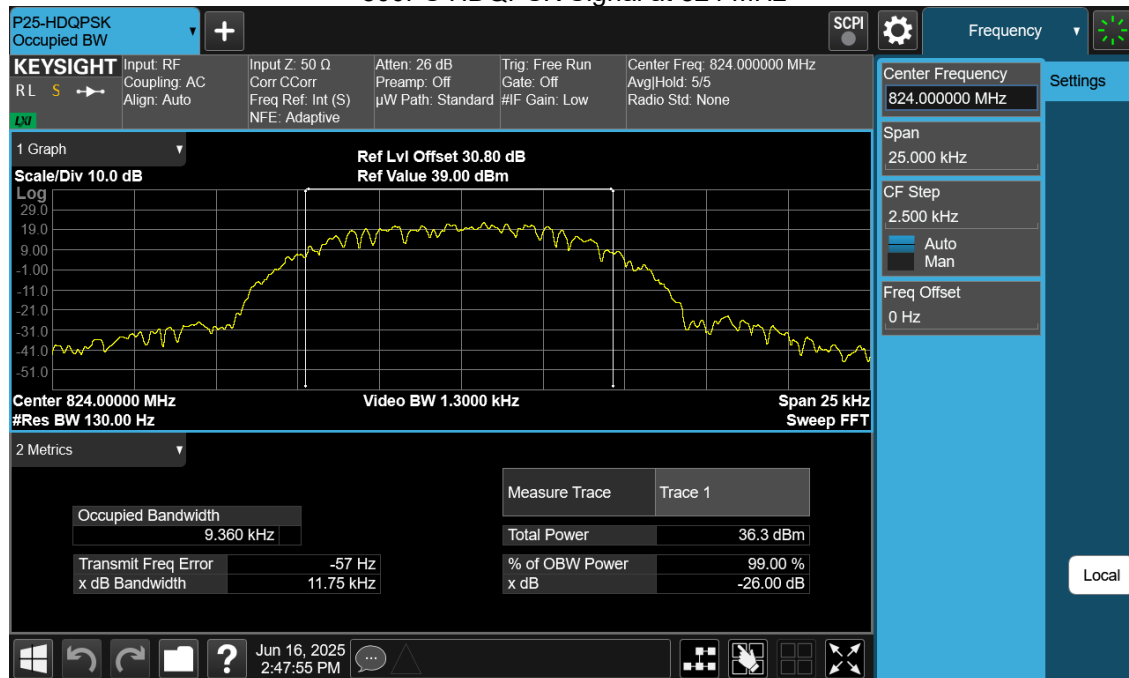
### 800PS C4FM Signal at 815 MHz



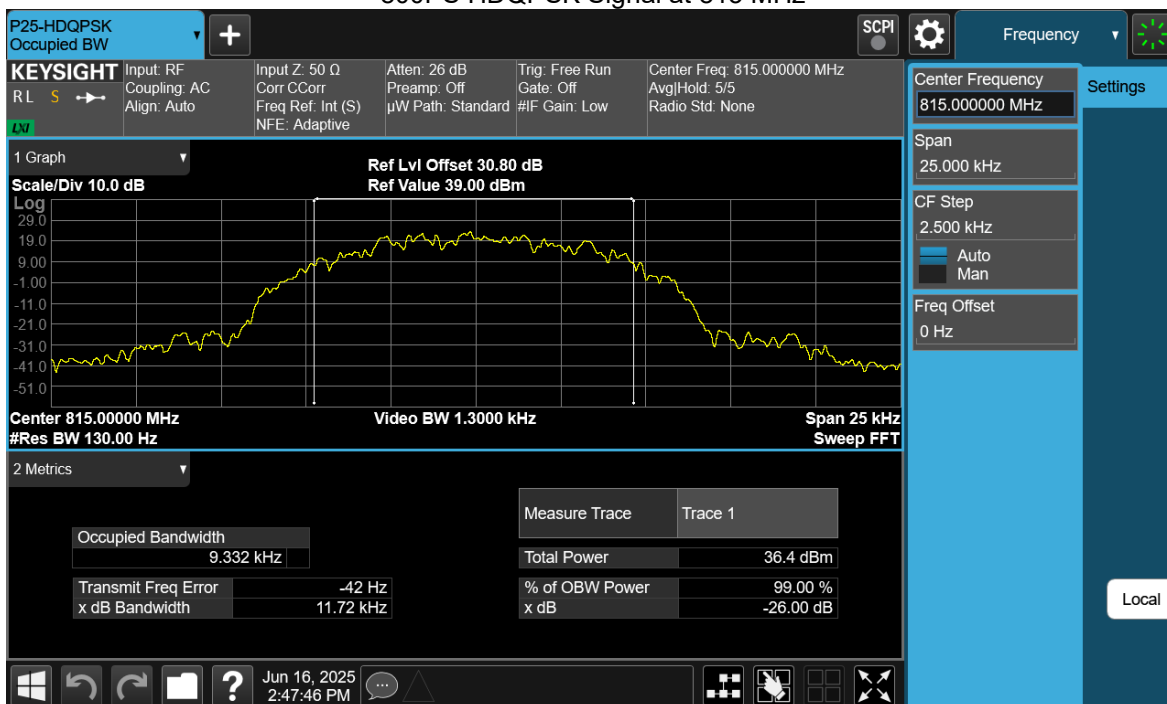
### 800PS C4FM Signal at 806 MHz



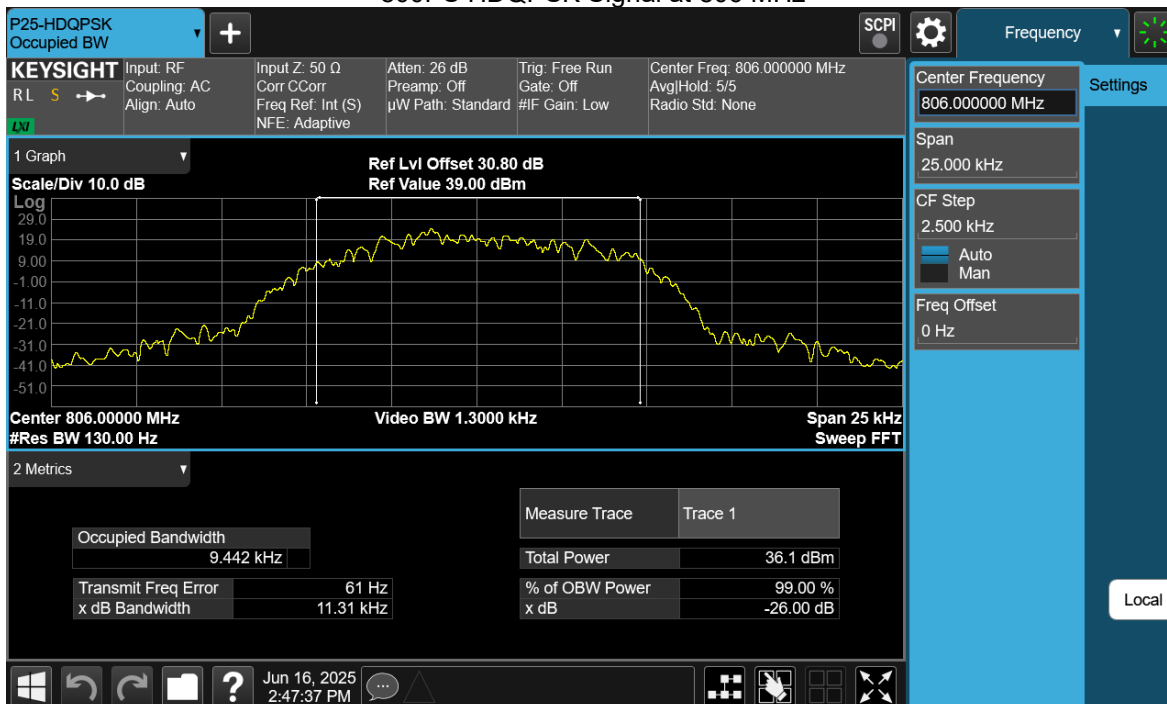
### 800PS HDQPSK Signal at 824 MHz



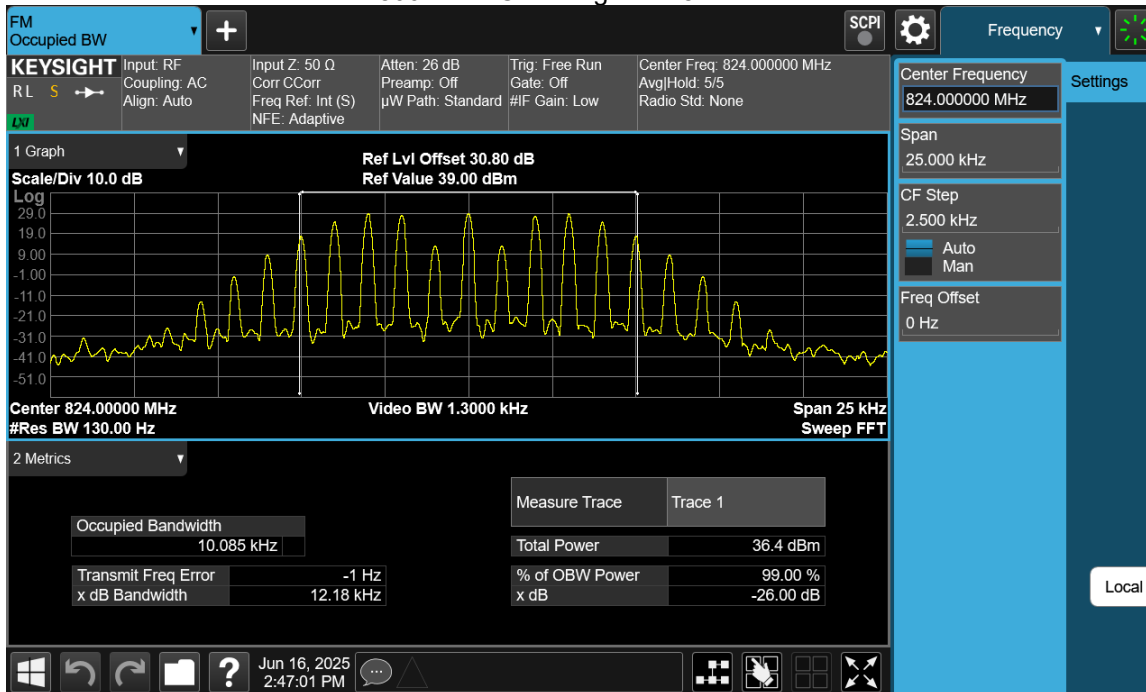
### 800PS HDQPSK Signal at 815 MHz



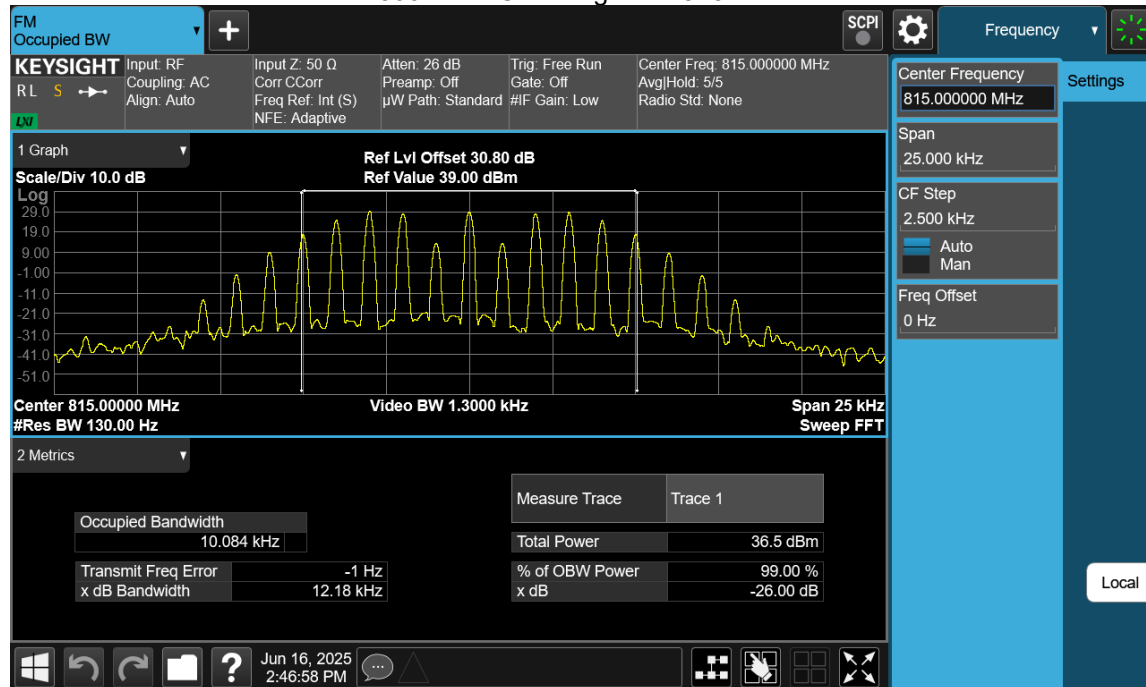
### 800PS HDQPSK Signal at 806 MHz



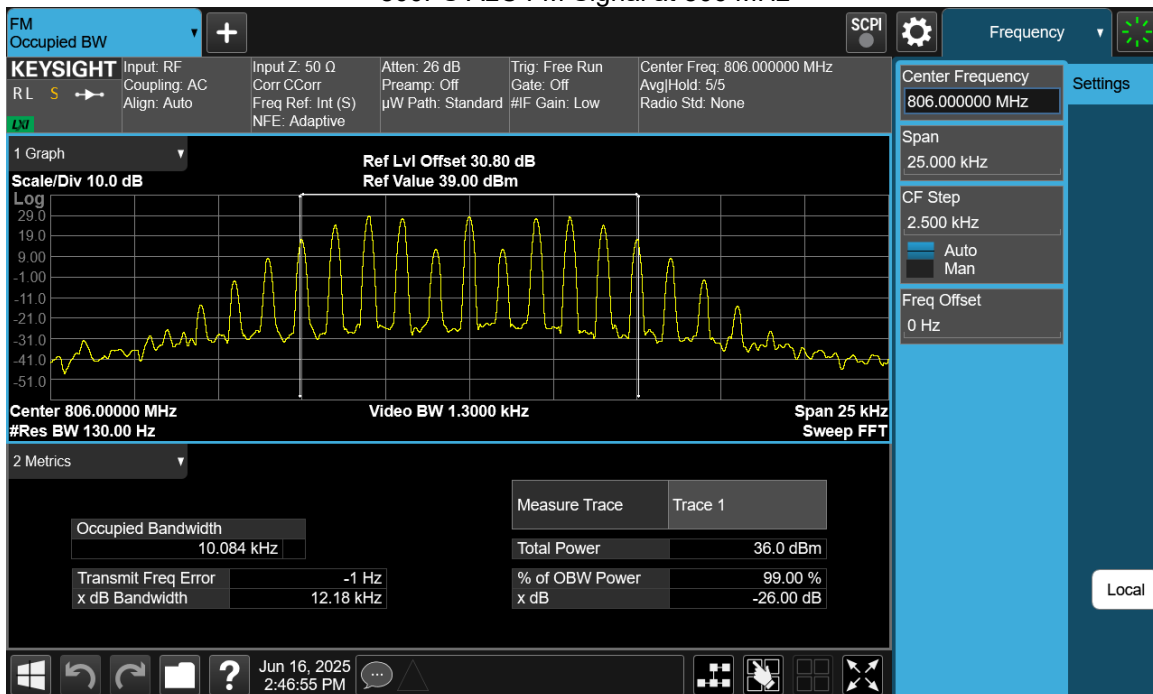
### 800PS ALC FM Signal at 824 MHz



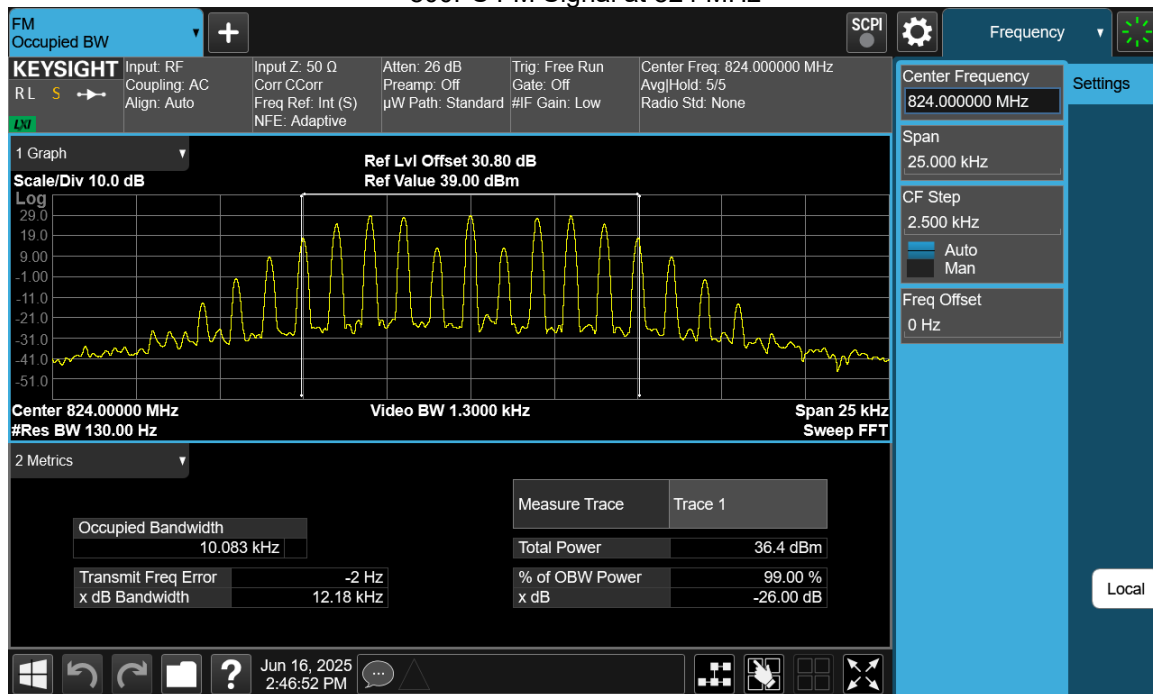
### 800PS ALC FM Signal at 815 MHz



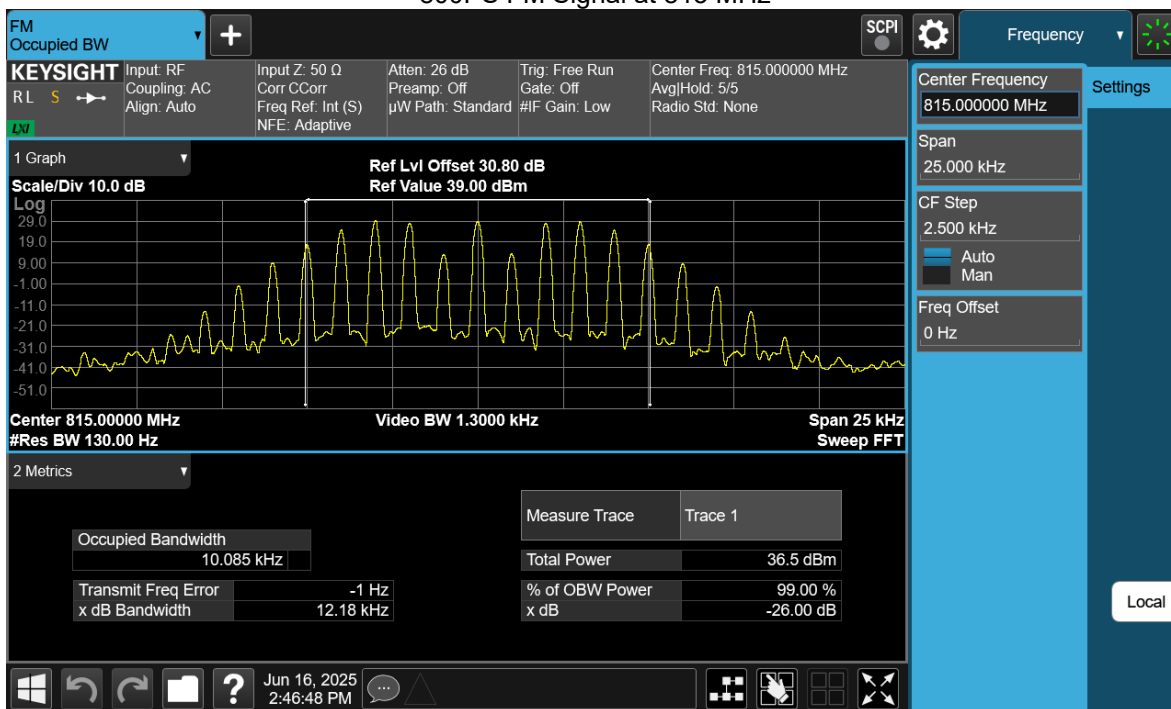
### 800PS ALC FM Signal at 806 MHz



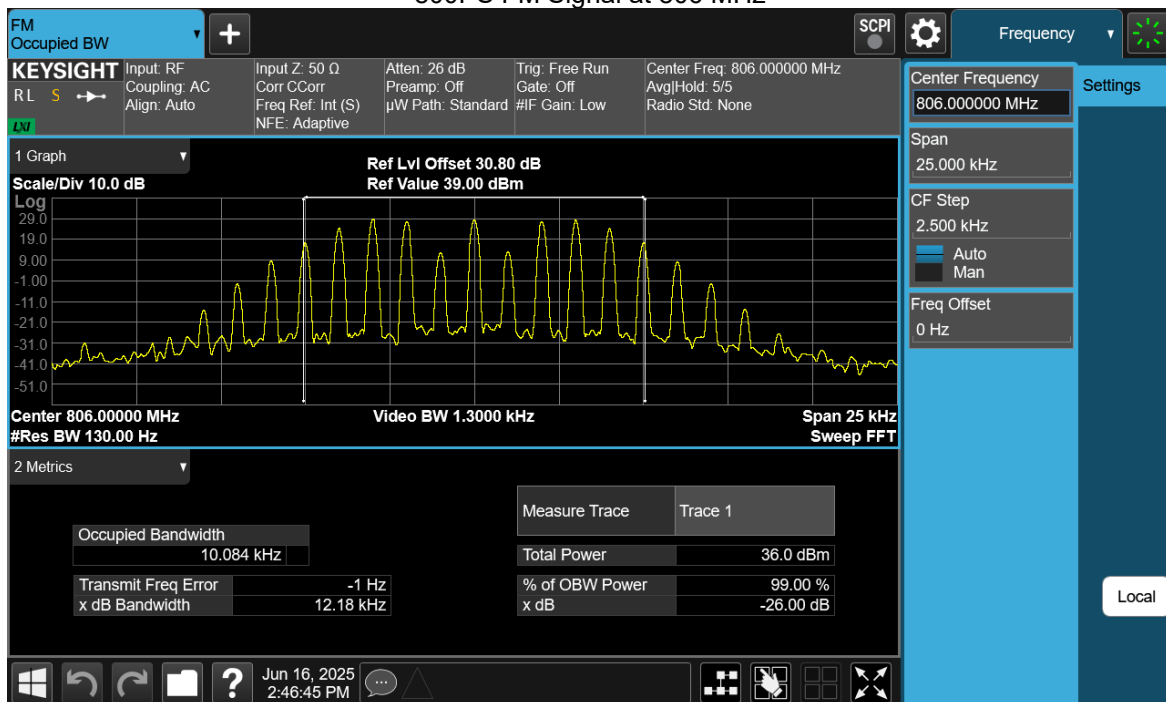
### 800PS FM Signal at 824 MHz



### 800PS FM Signal at 815 MHz



### 800PS FM Signal at 806 MHz



### 3.3 Out of Band Rejection

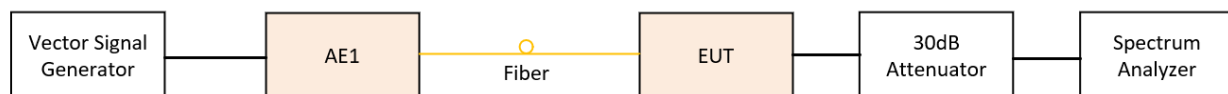
Governing Doc	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	Room Temperature (°C)	20.5		
Test Procedure	ANSI C63.26-2015, Section 7.2.3.2 KDB 935210 D05, v01r04, Clause 3.3, 4.3	Relative Humidity (%)	38.6		
Test Location	Bench top, Richmond Lab	Barometric Pressure	101.8		
Test Engineer	Zara Vali	Date	June 16, 2025		
EUT Voltage	<input checked="" type="checkbox"/> +48VDC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B-506	MY53050270	Dec 12, 2023	Dec 12, 2026
Spectrum Analyzer	Keysight	N9020B-526	MY62153079	Aug 1, 2023	Aug 1, 2025
Frequency Range:	<input checked="" type="checkbox"/> Product Passband $\pm$ 250%				
Detector:	<input checked="" type="checkbox"/> Peak				
RBW/VBW:	<input checked="" type="checkbox"/> 1 to 5% of the EUT passband / $\geq$ 3 X RBW				
Type of Facility:	<input checked="" type="checkbox"/> Tabletop				
Distance:	<input checked="" type="checkbox"/> Direct				
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

### Test setup

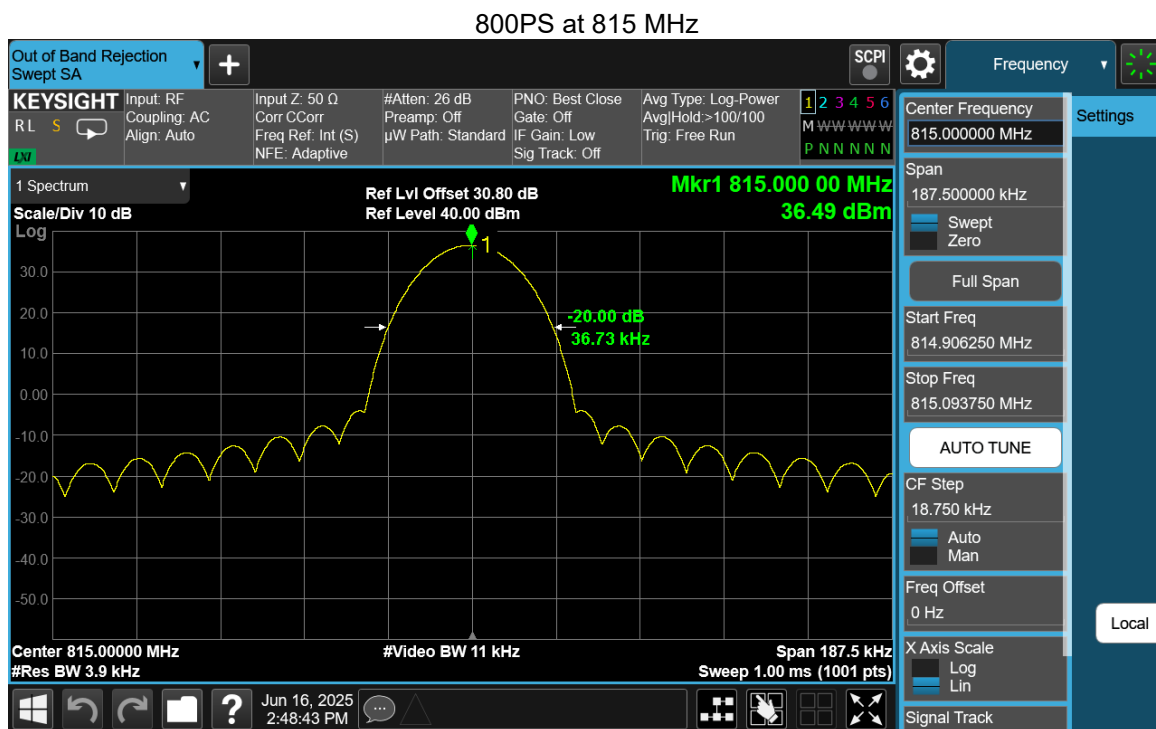
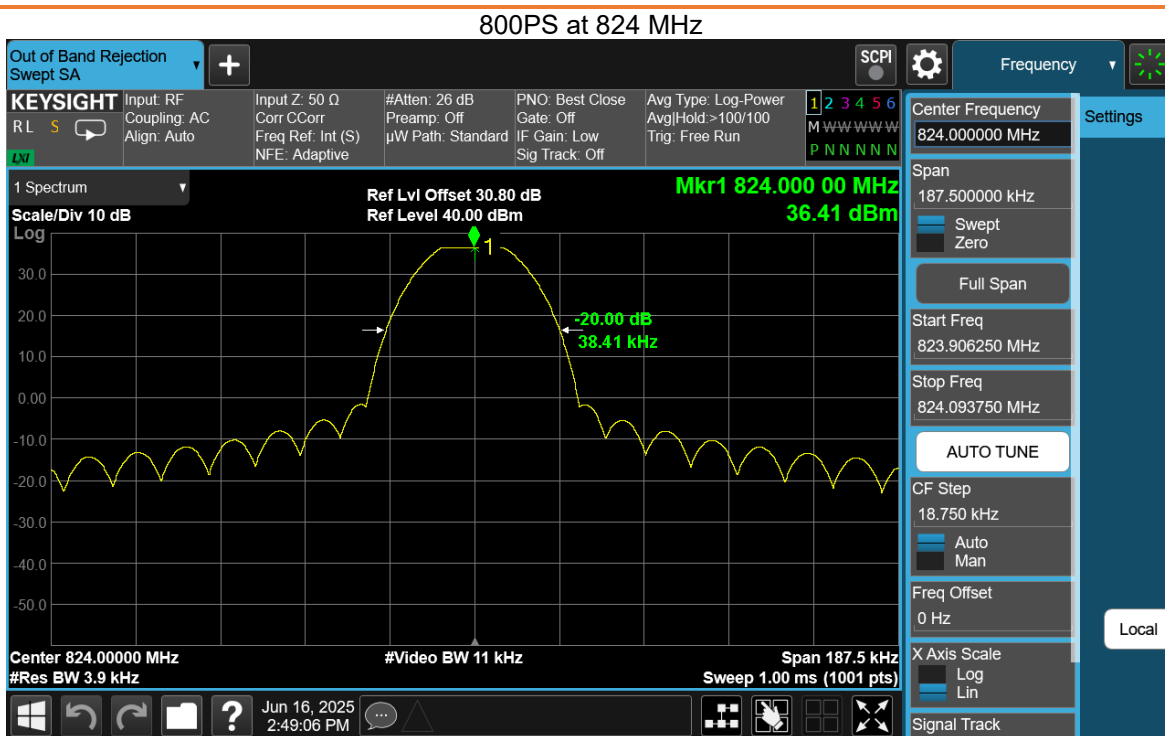
The procedure used was ANSI C63.26-2015. The signal booster was set to maximum gain. A swept CW signal was set to the range of  $\pm$ 250 % of the product pass band. The CW amplitude was set to 3 dB below the AGC threshold so that the ALC should not activate throughout the test.

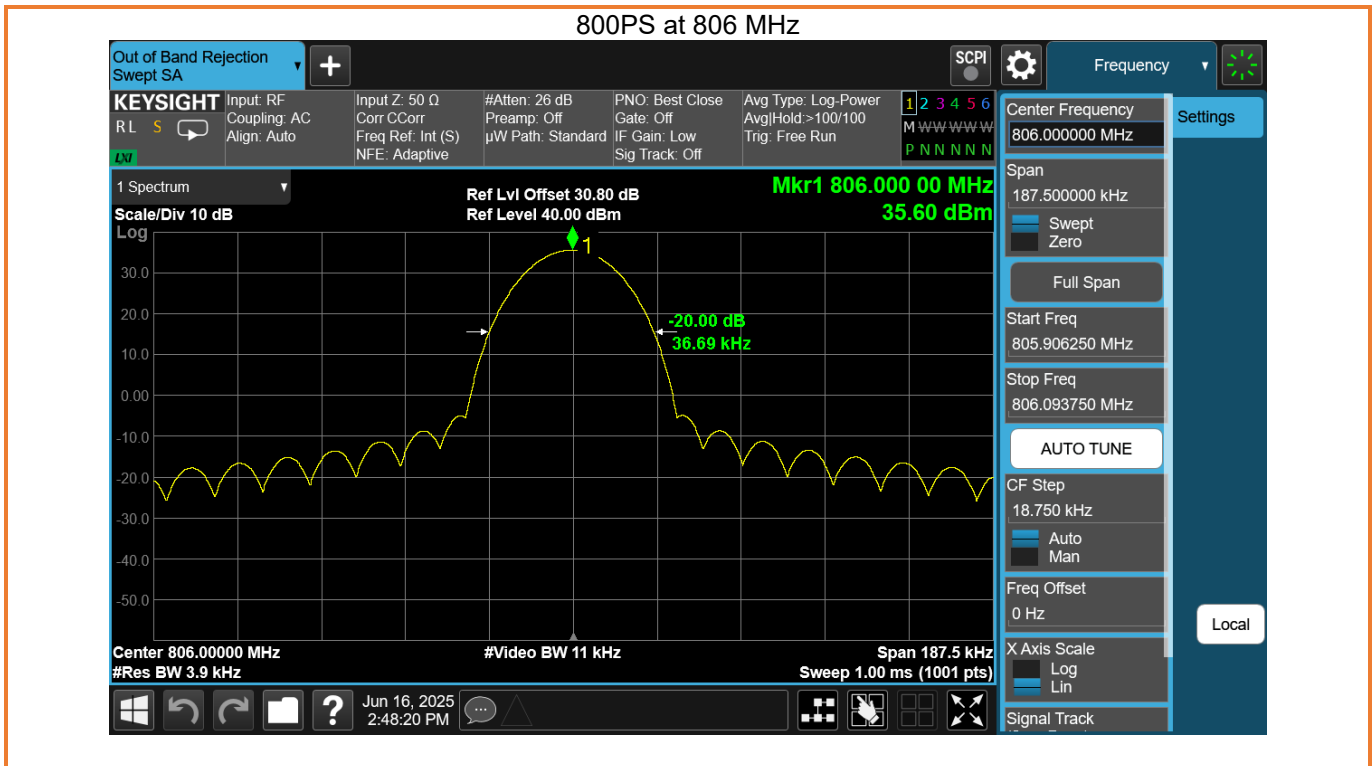
After the max-hold sweep trace was completed, a marker was set to the peak amplitude, and a 20dB bandwidth was measured between two additional markers fall 20 dB from the peak.

The EUT was set to Operation Mode #1 with configuration Mode #1.



## Results - Out of Band Rejection (800PS)





### 3.4 Input-Versus-Output Signal Comparison

Governing Doc	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90		Room Temperature (°C)	20.5	
Test Procedure	ANSI C63.26-2015, Section 7.2.3.3 KDB 935210 D05, v01r04, Clause 3.4, 4.4		Relative Humidity (%)	38.6	
Test Location	Bench top, Richmond Lab		Barometric Pressure (kPa)	101.8	
Test Engineer	Zara Vali		Date	June 16, 2025	
EUT Voltage	<input checked="" type="checkbox"/> +48VDC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B-506	MY53050270	Dec 12, 2023	Dec 12, 2026
Spectrum Analyzer	Keysight	N9020B-526	MY62153079	Aug 1, 2023	Aug 1, 2025
Frequency Range:	<input checked="" type="checkbox"/> 806 MHz – 824 MHz				
Detector:	<input checked="" type="checkbox"/> Peak				
RBW/VBW:	<input checked="" type="checkbox"/> 100 Hz				
Type of Facility:	<input checked="" type="checkbox"/> Testbench				
Distance:	<input checked="" type="checkbox"/> direct connect				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
Signal of all types of modulation is contained within the emission mask.					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

## 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.

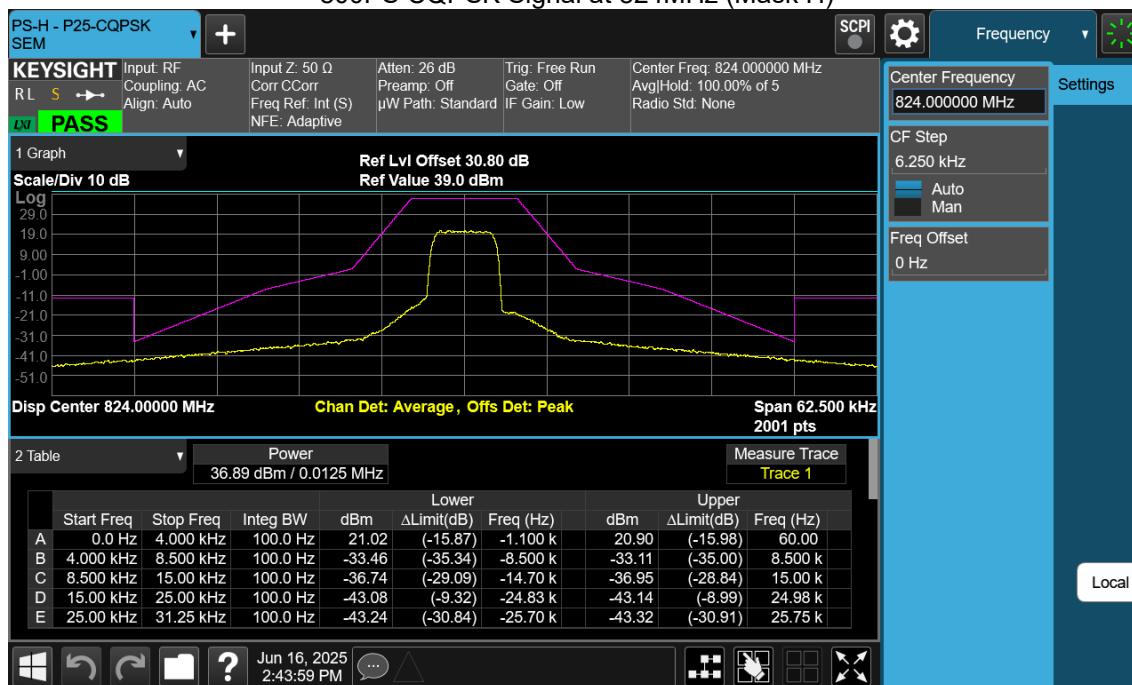
Mask types according to FCC § 90.210 Emission masks were applied to all measurements. The mask applied is specified in the title of each plot.

The EUT was set to **Operation Mode #1 with configuration Mode #1**.

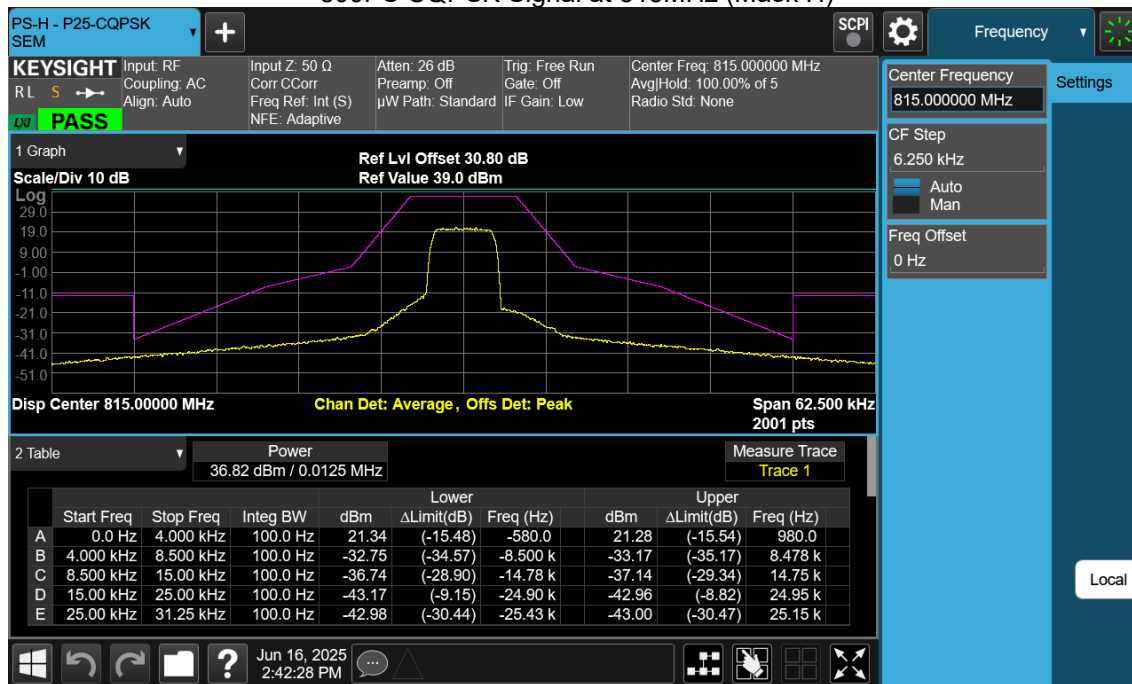


## Results - Spectrum Emission Mask (800PS)

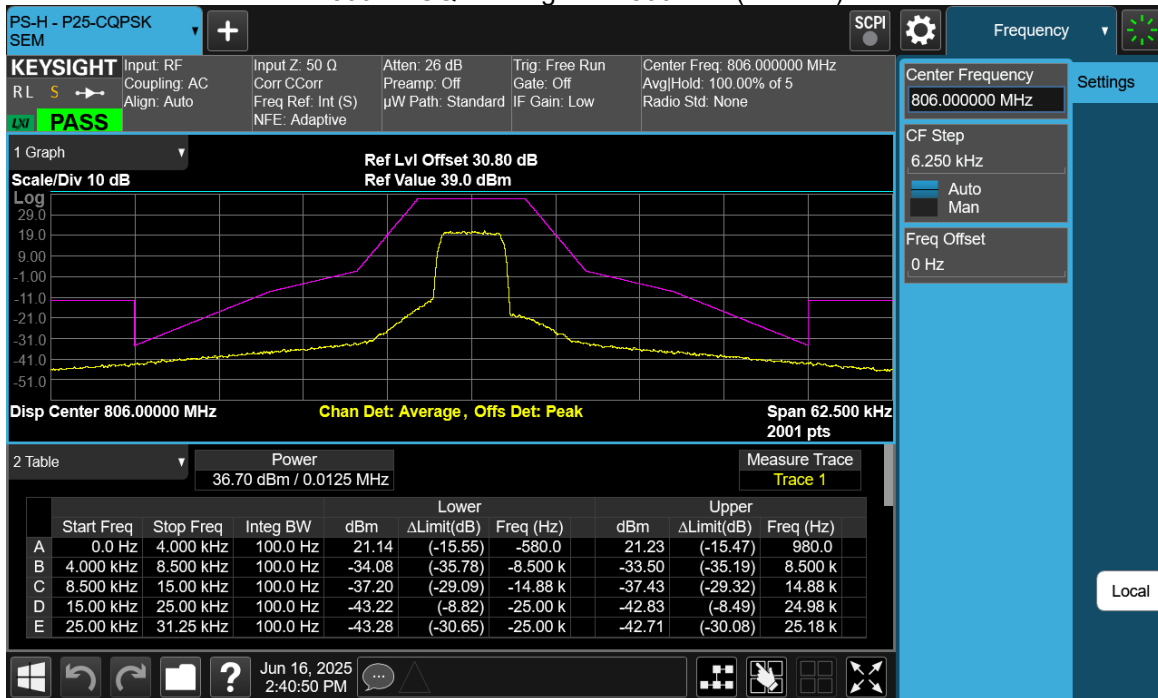
800PS CQPSK Signal at 824MHz (Mask H)



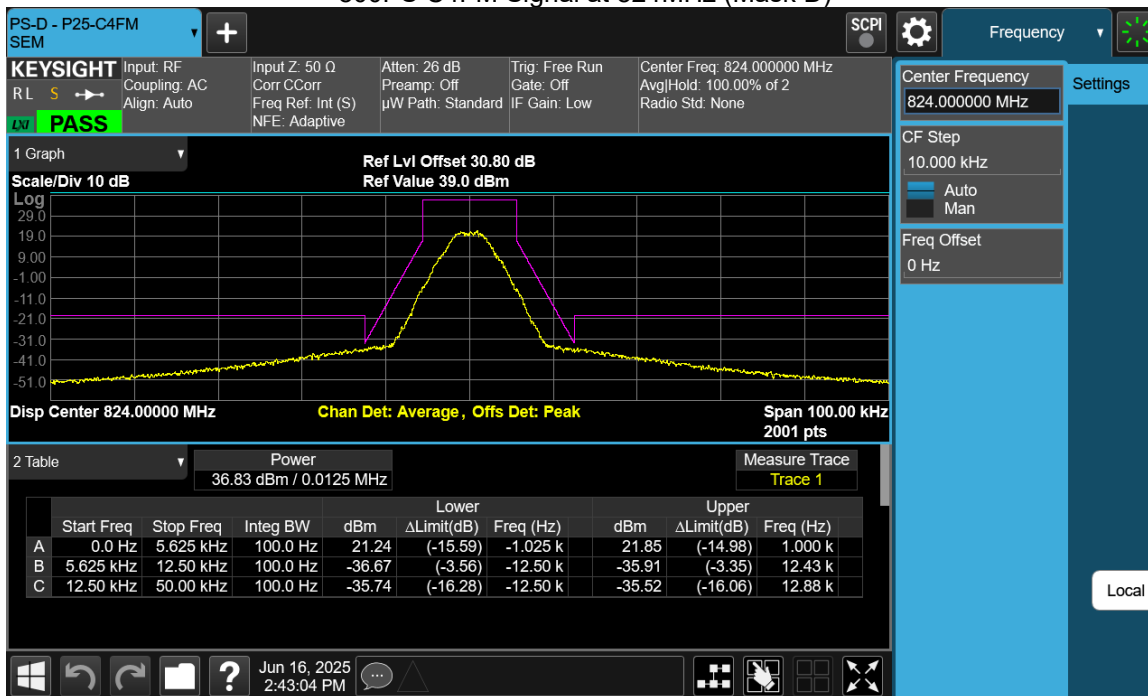
800PS CQPSK Signal at 815MHz (Mask H)



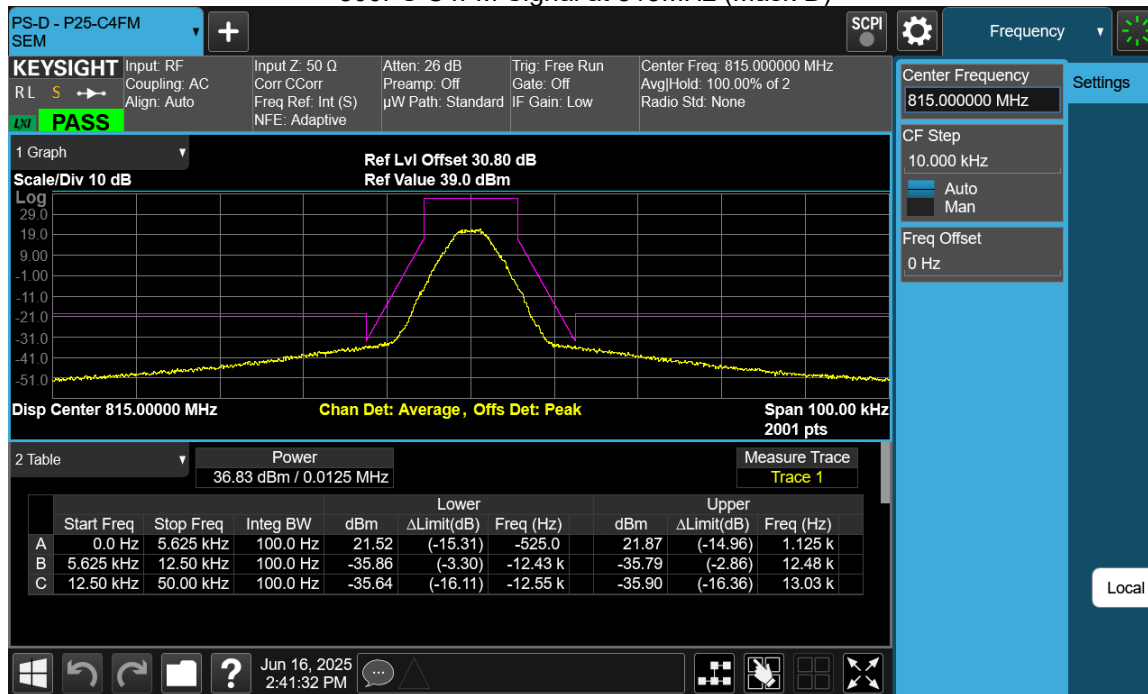
### 800PS CQPSK Signal at 806MHz (Mask H)



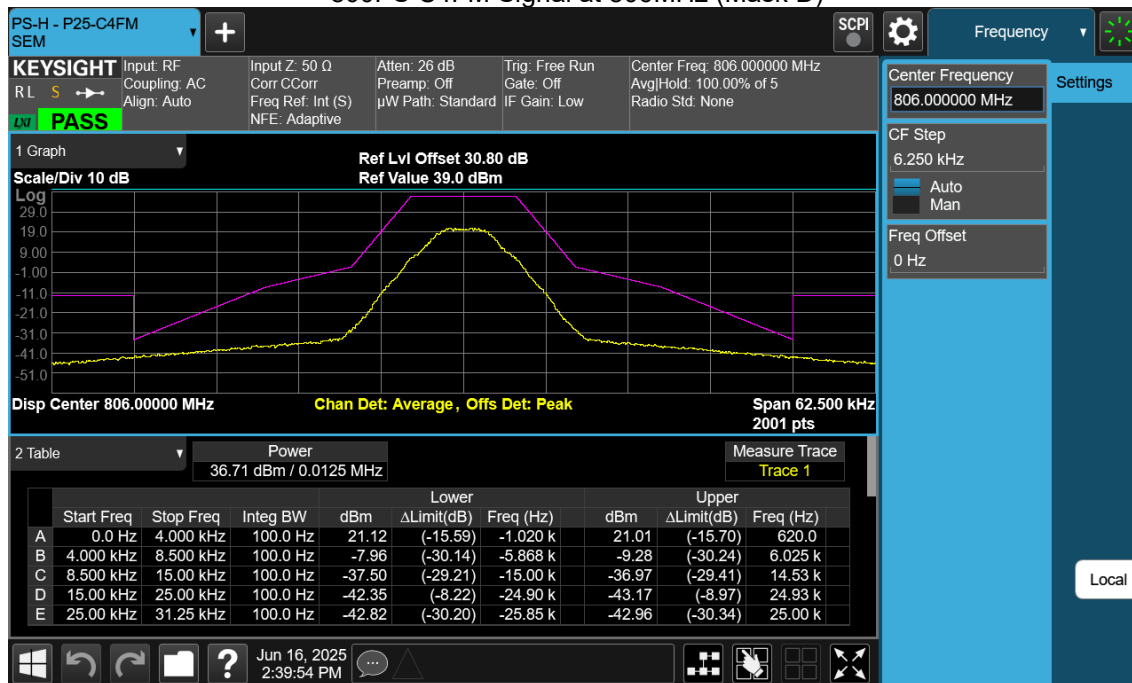
### 800PS C4FM Signal at 824MHz (Mask D)



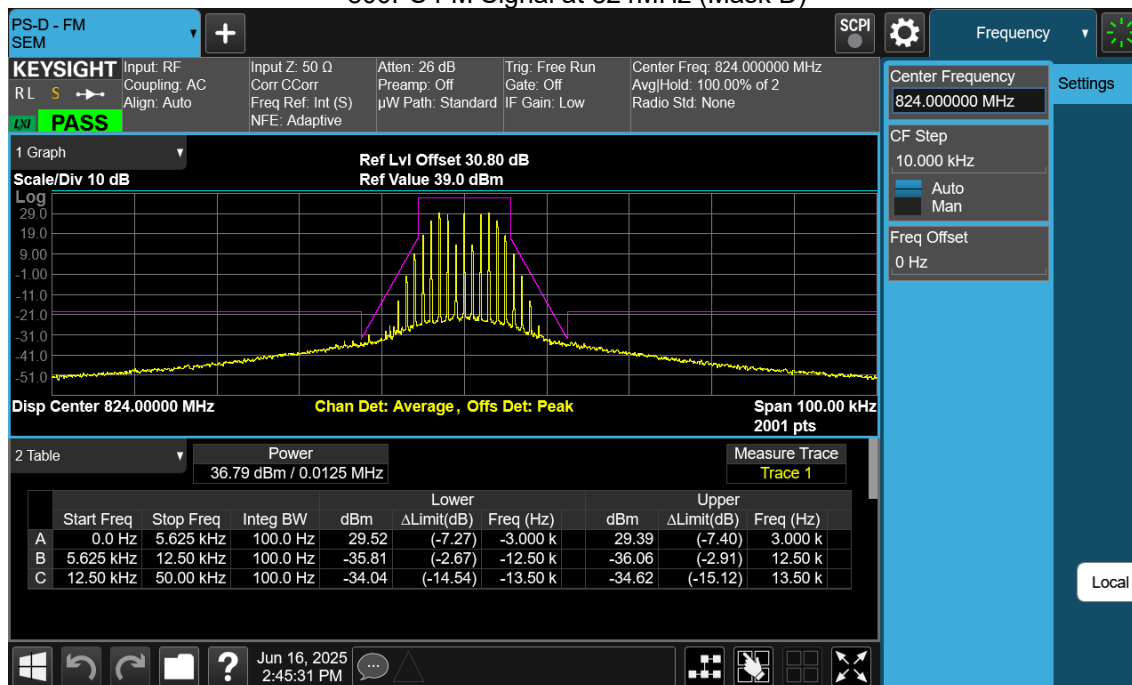
### 800PS C4FM Signal at 815MHz (Mask D)



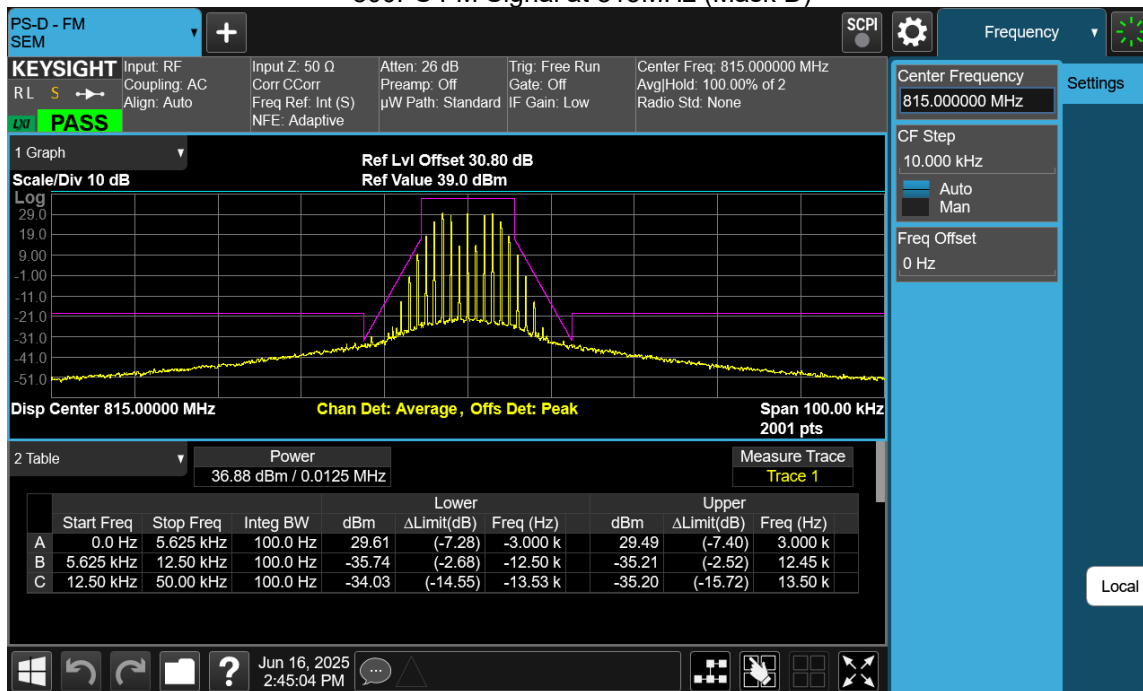
### 800PS C4FM Signal at 806MHz (Mask D)



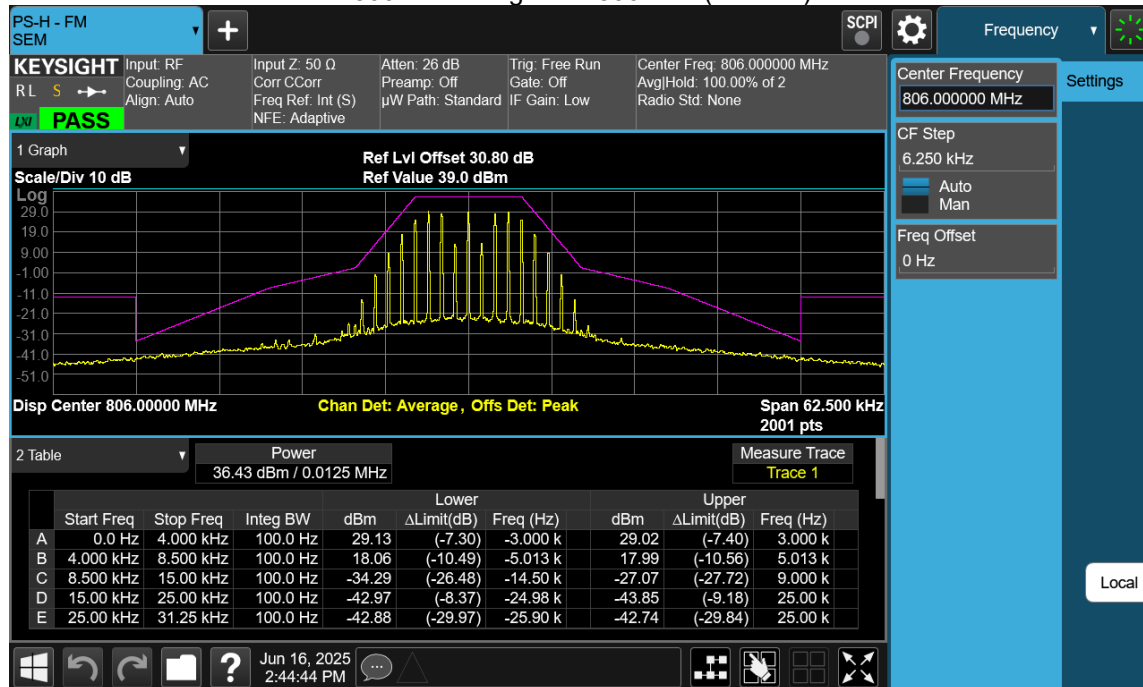
### 800PS FM Signal at 824MHz (Mask D)



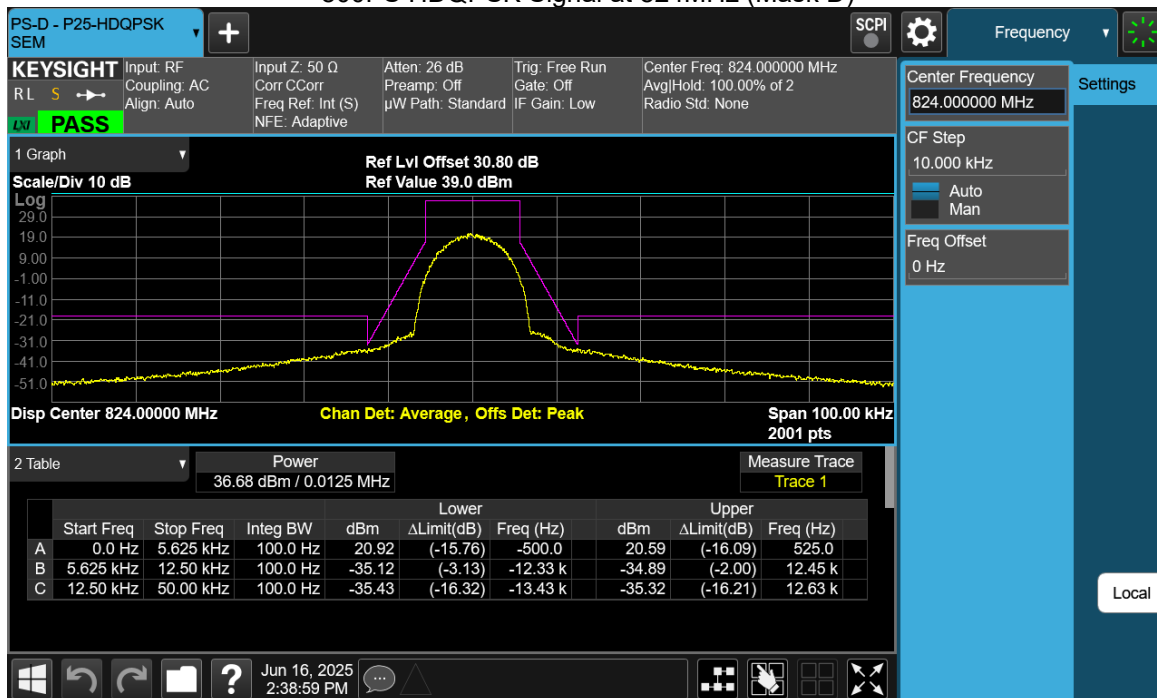
### 800PS FM Signal at 815MHz (Mask D)



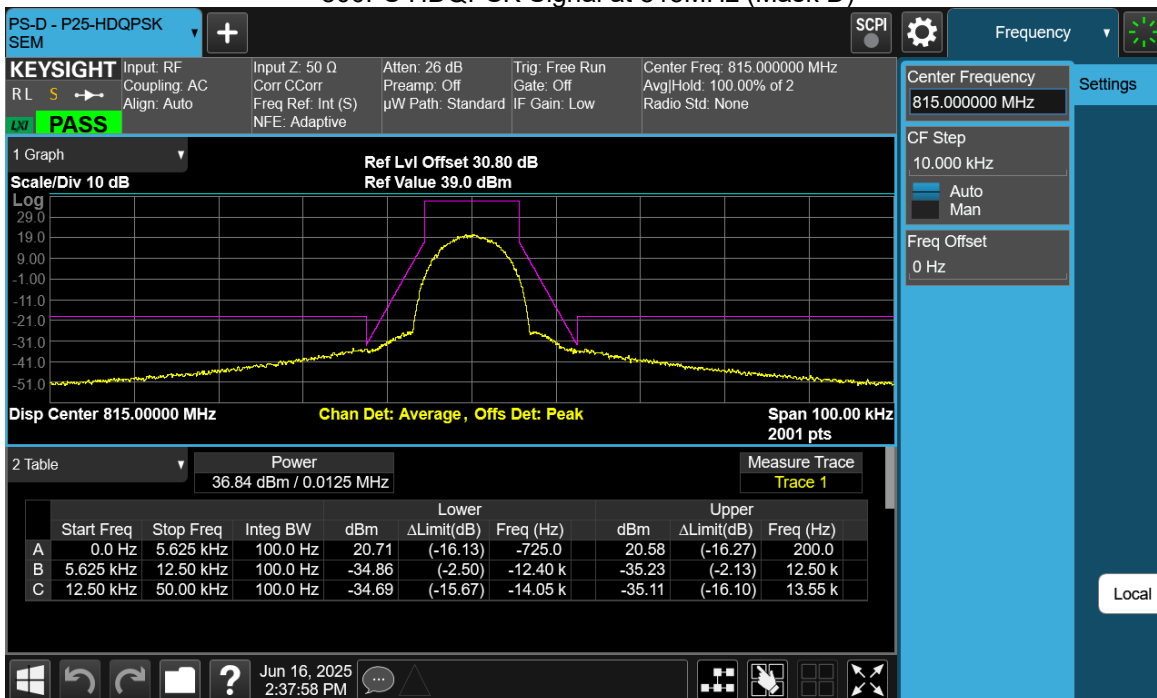
### 800PS FM Signal at 806MHz (Mask H)



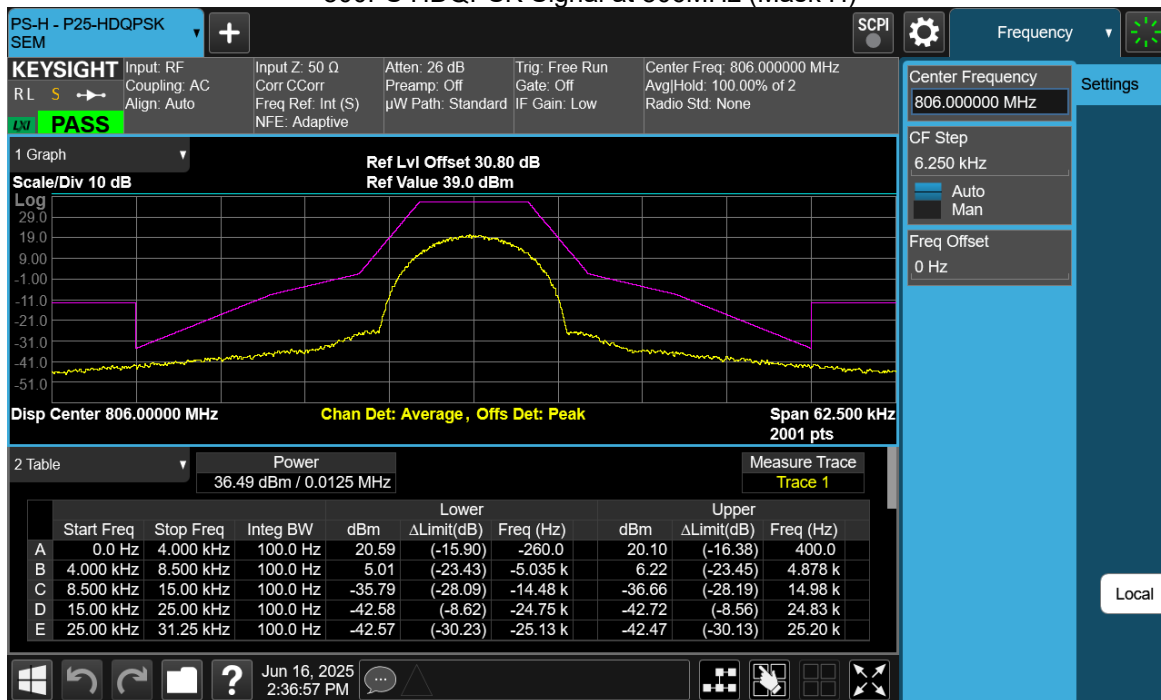
### 800PS HDQPSK Signal at 824MHz (Mask D)



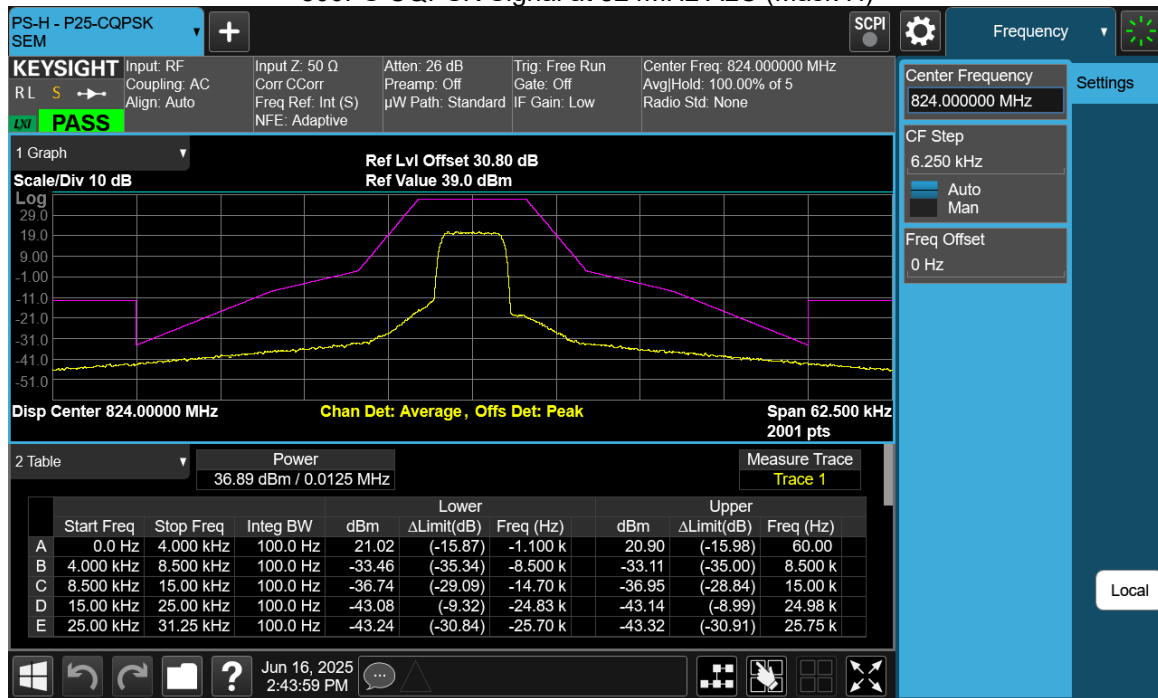
### 800PS HDQPSK Signal at 815MHz (Mask D)



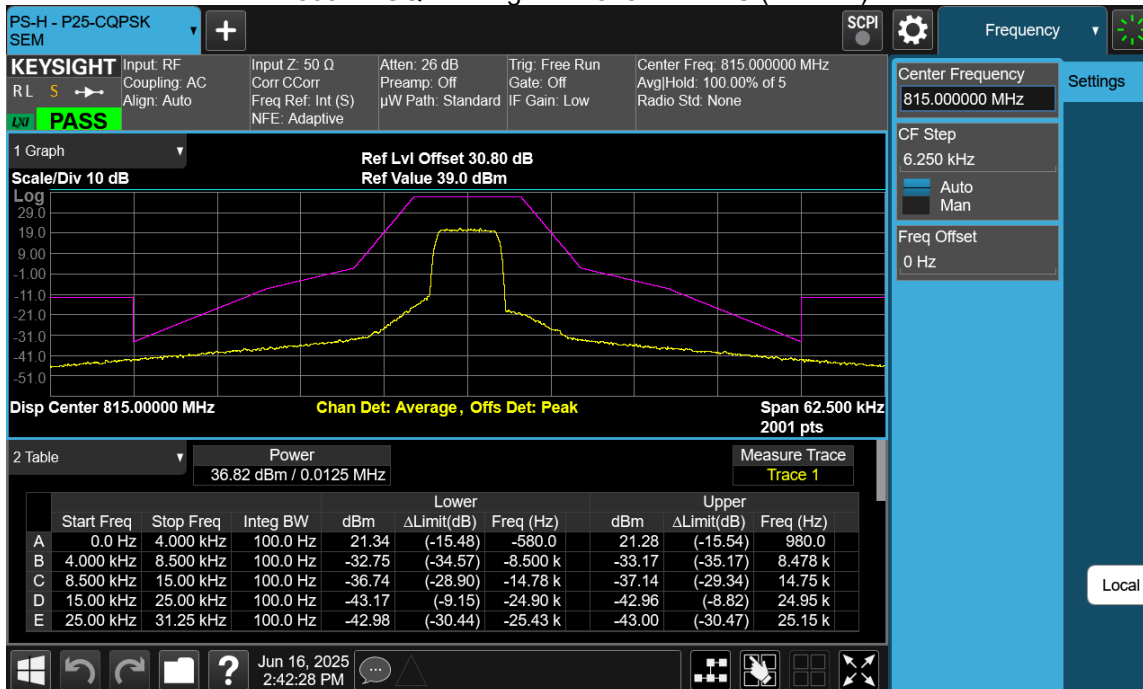
### 800PS HDQPSK Signal at 806MHz (Mask H)



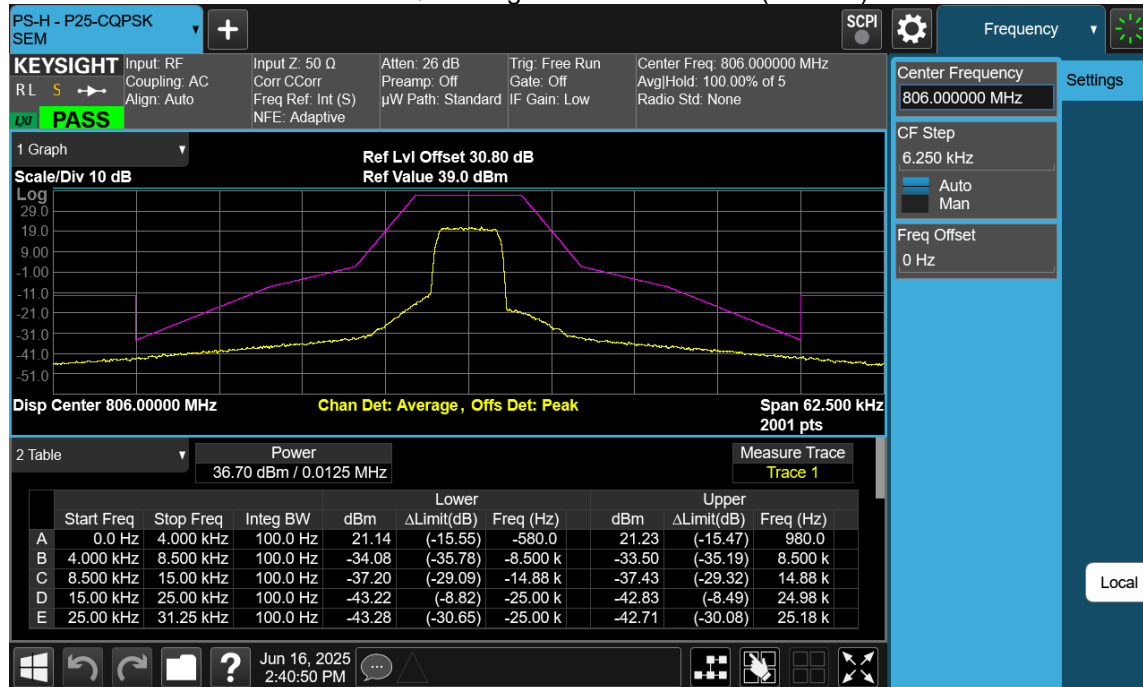
### 800PS CQPSK Signal at 824MHz ALC (Mask H)



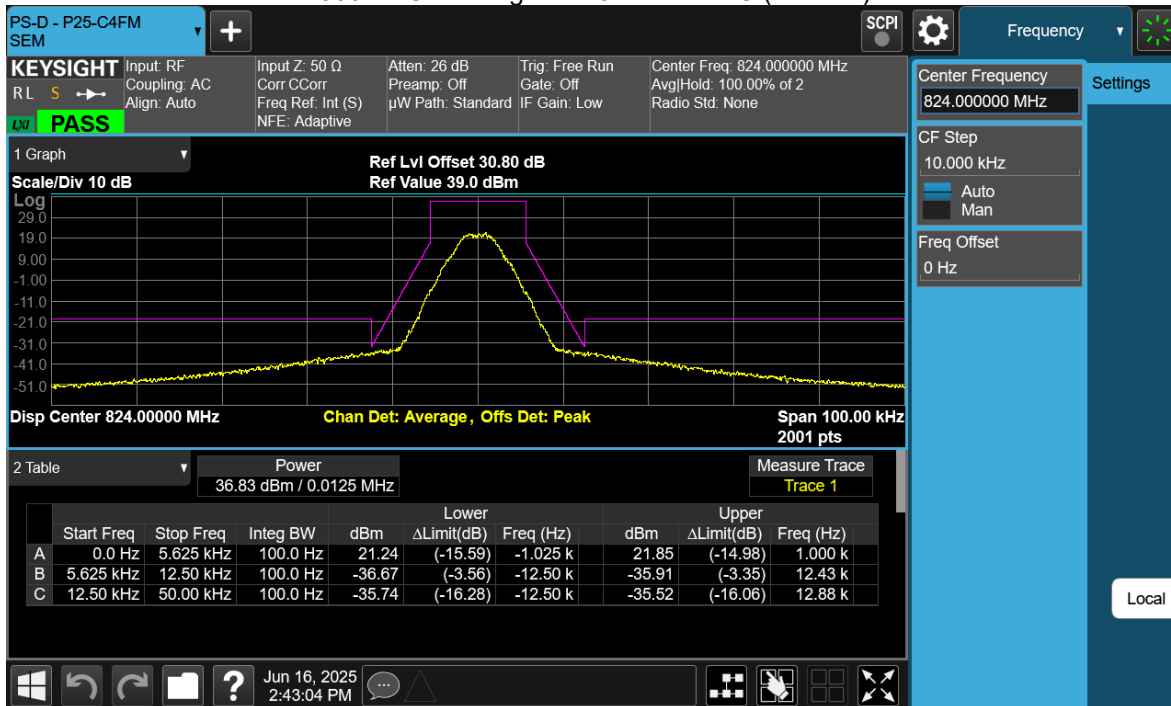
### 800PS CQPSK Signal at 815MHz ALC (Mask H)



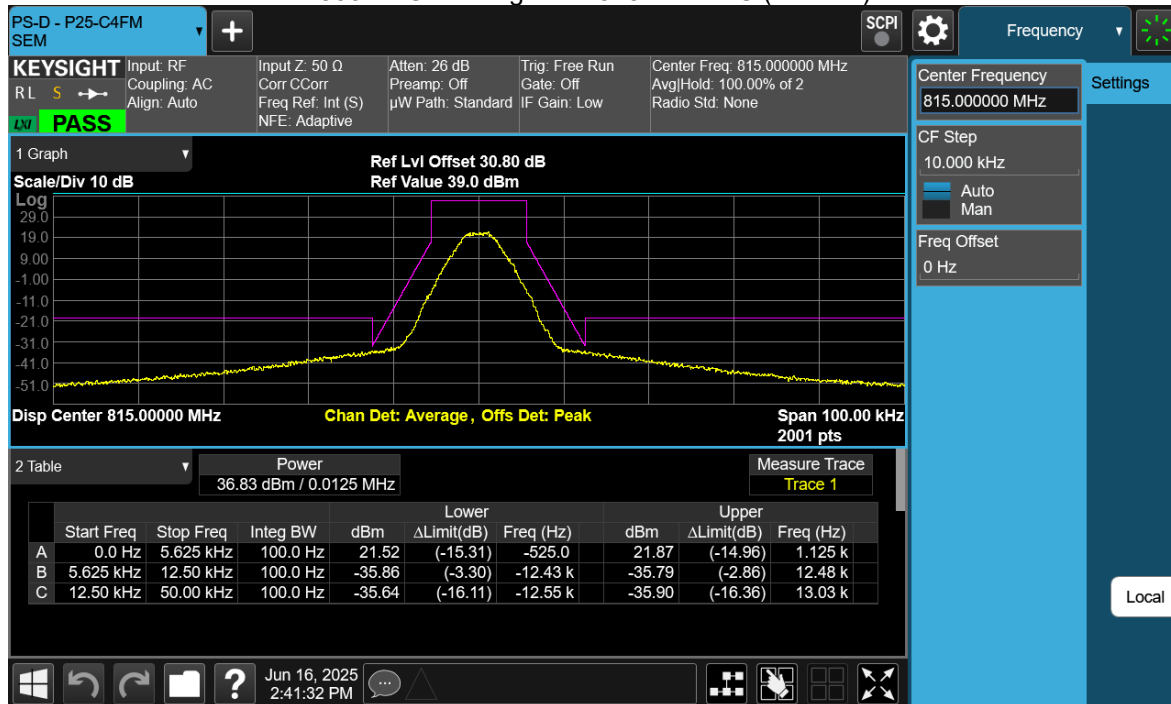
### 800PS CQPSK Signal at 806MHz ALC (Mask H)



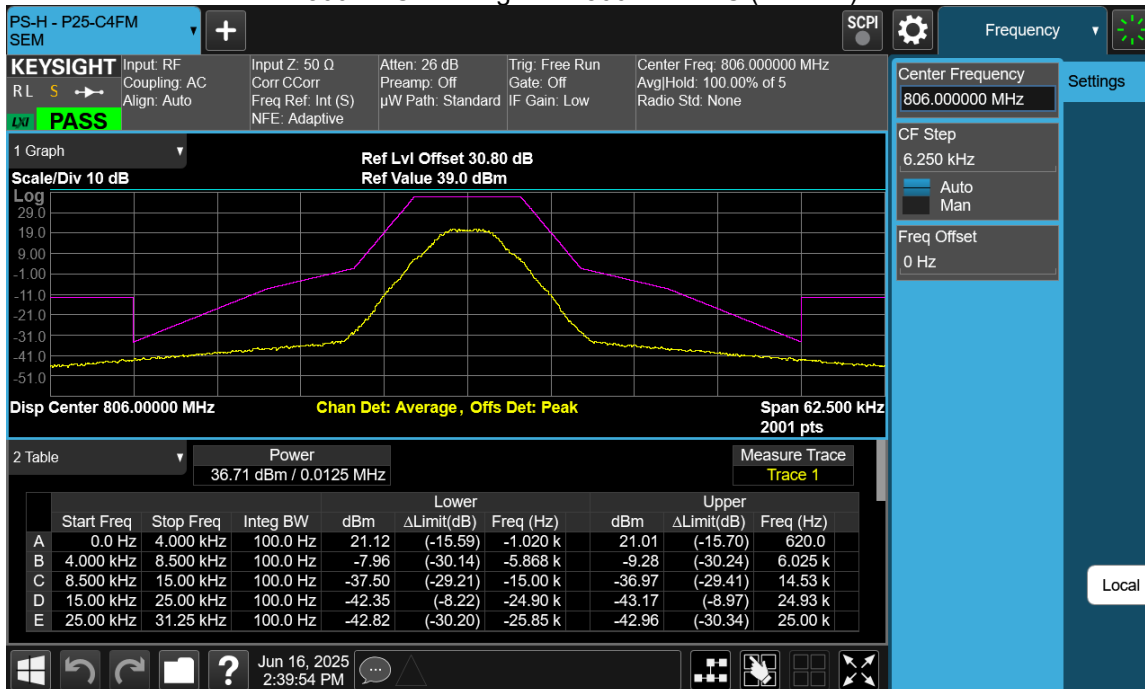
### 800PS C4FM Signal at 824MHz ALC (Mask D)



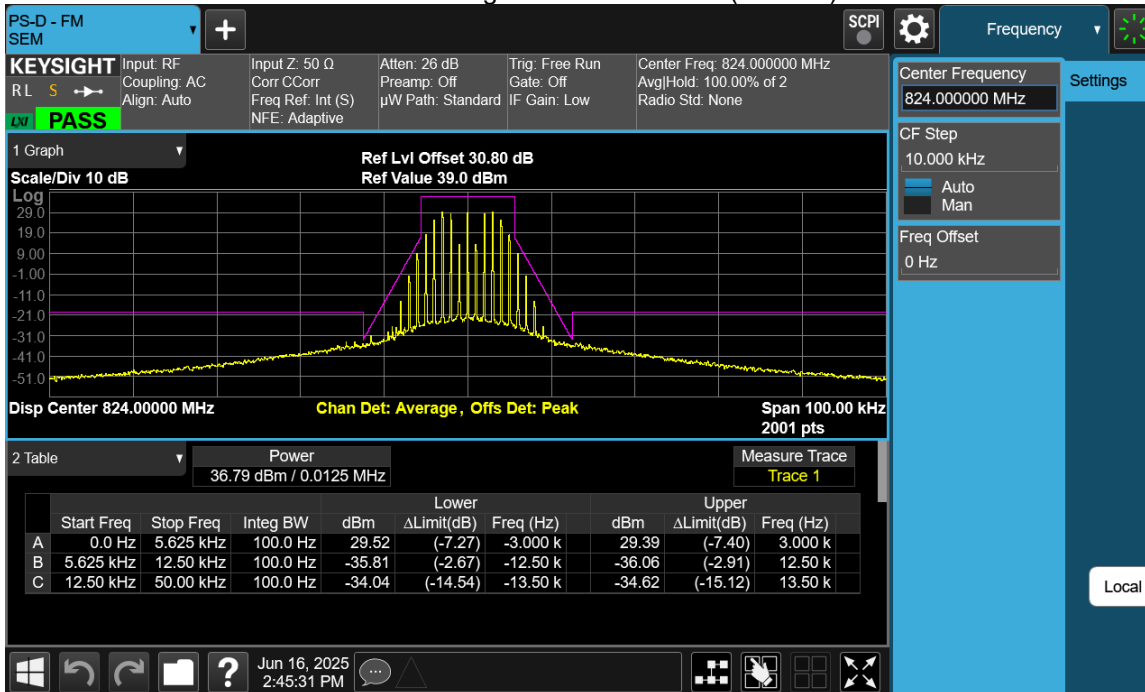
### 800PS C4FM Signal at 815MHz ALC (Mask D)



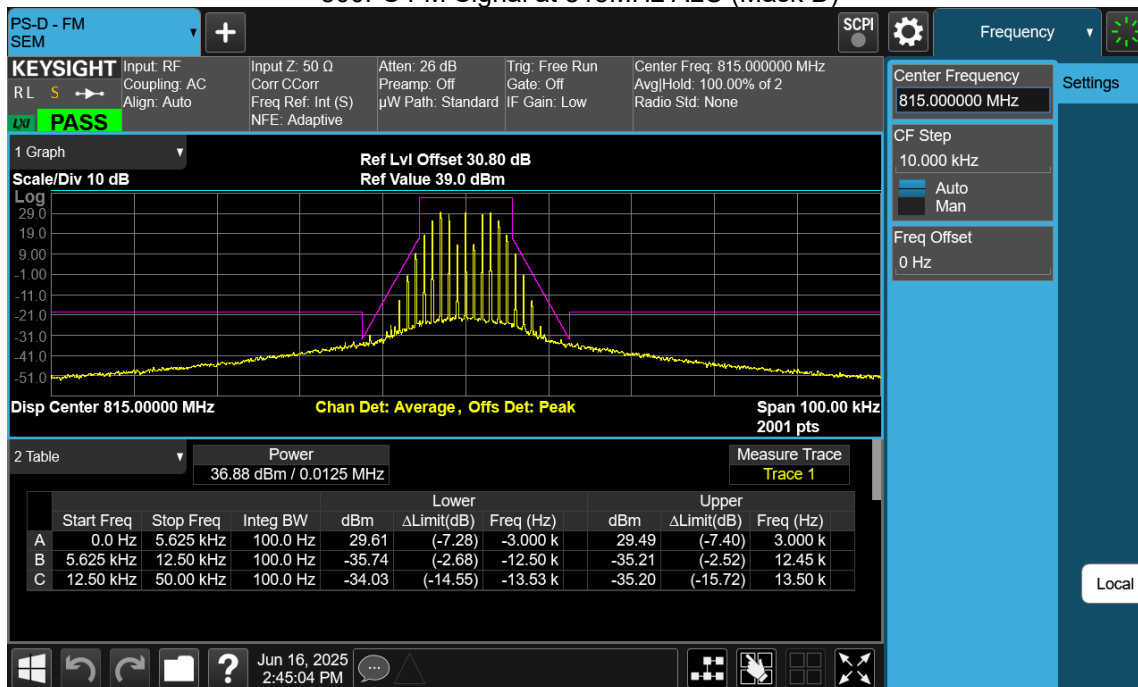
### 800PS C4FM Signal at 806MHz ALC (Mask H)



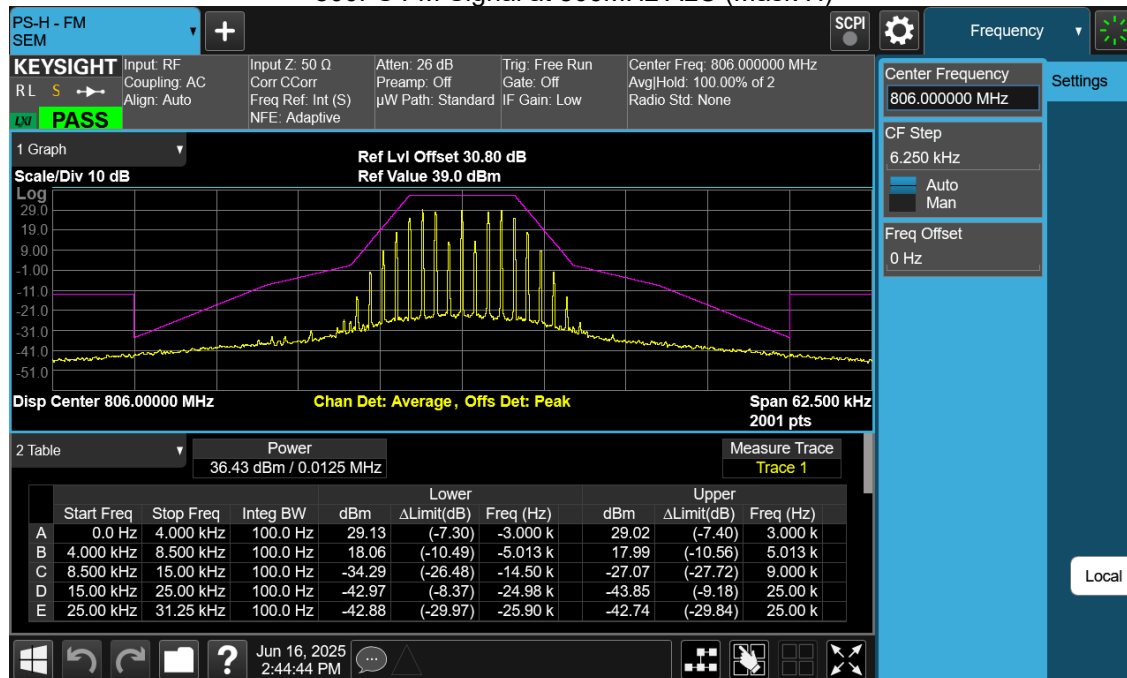
### 800PS FM Signal at 824MHz ALC(Mask D)



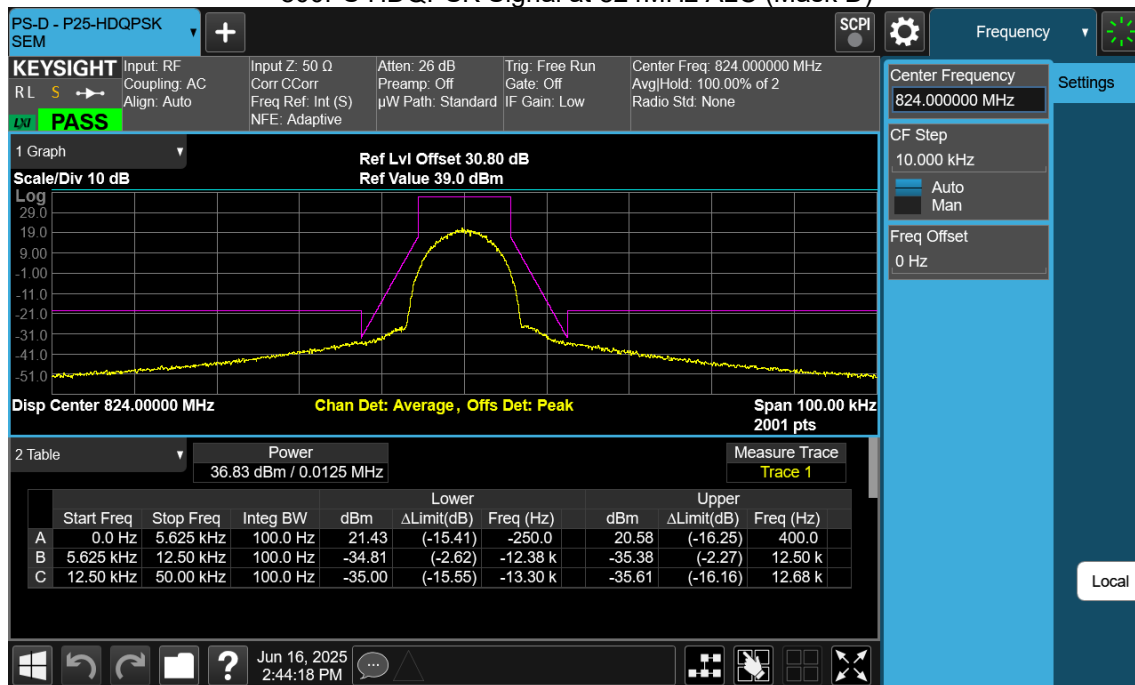
### 800PS FM Signal at 815MHz ALC (Mask D)



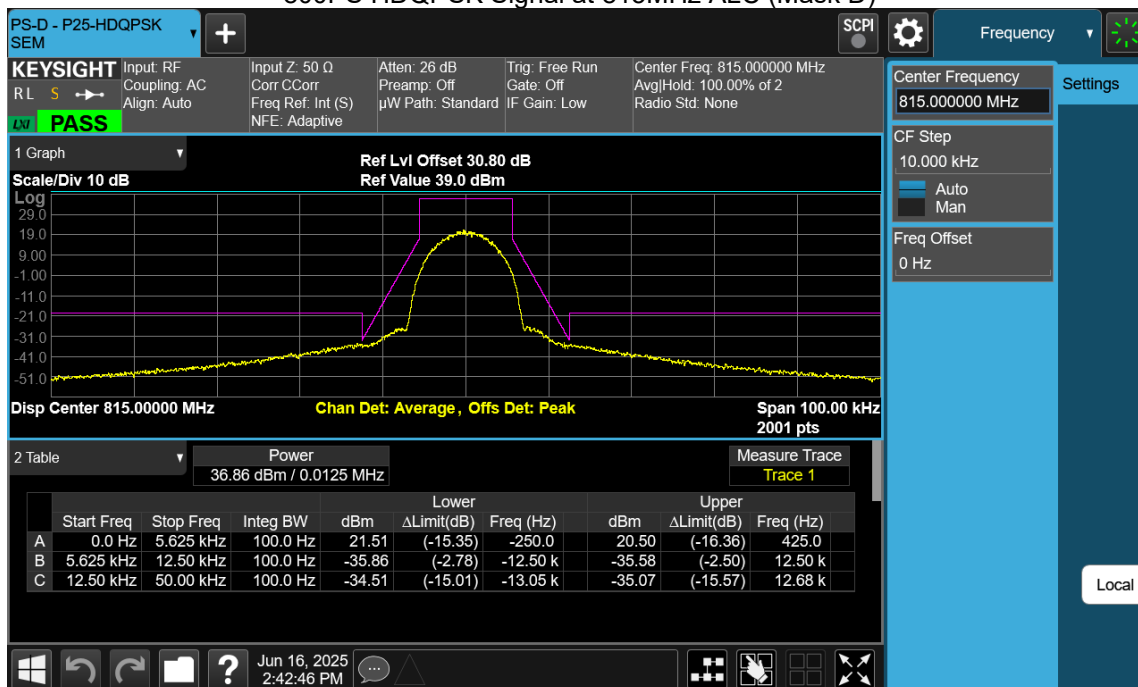
### 800PS FM Signal at 806MHz ALC (Mask H)

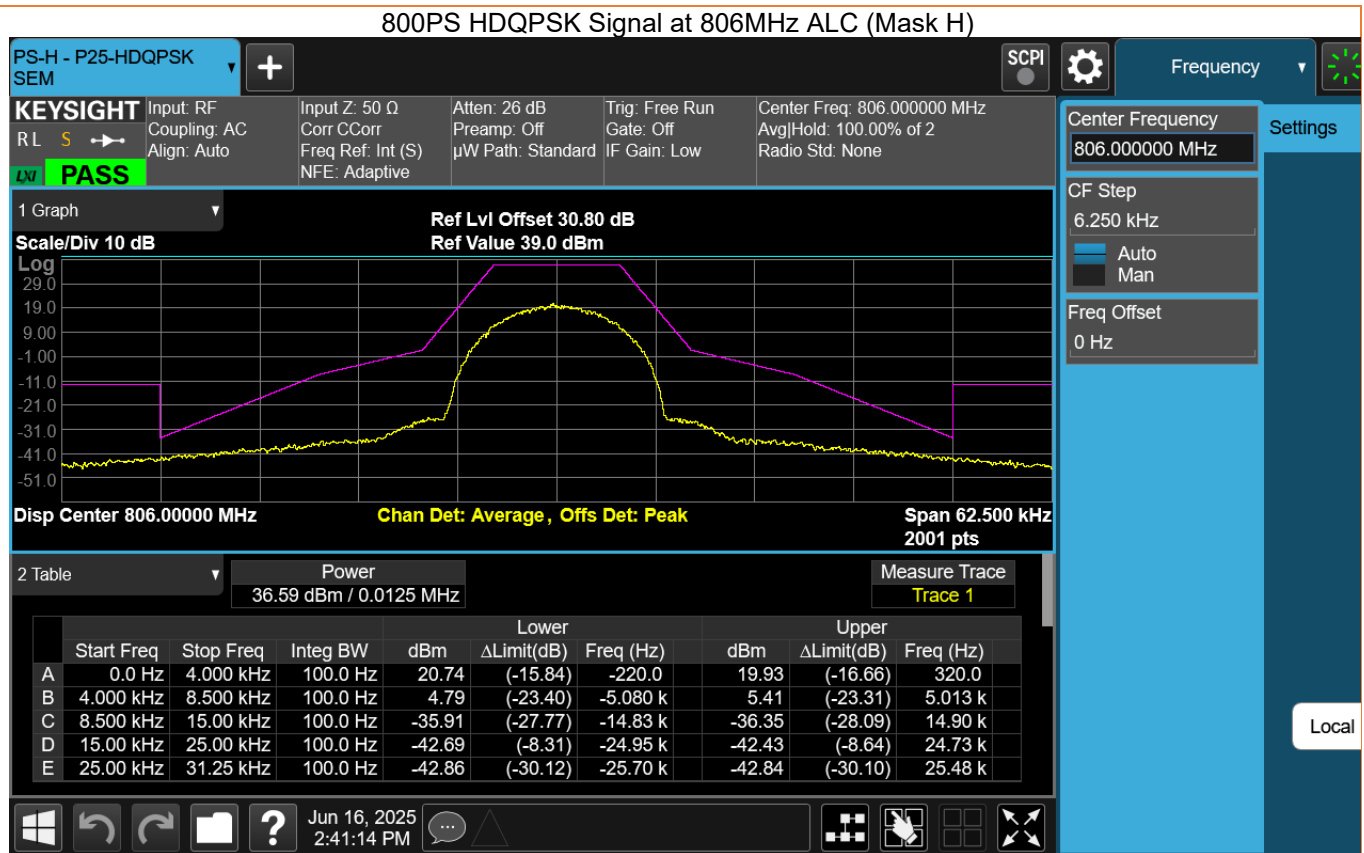


### 800PS HDQPSK Signal at 824MHz ALC (Mask D)



### 800PS HDQPSK Signal at 815MHz ALC (Mask D)





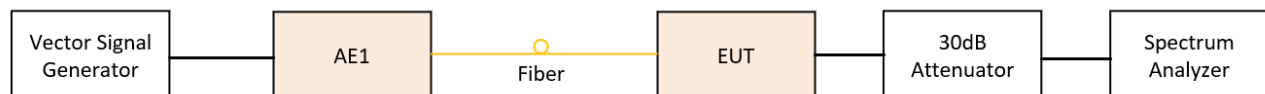
### 3.5 Input/Output Power and Amplifier/Booster Gain

Governing Doc	RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	Room Temperature (°C)	20.5		
Test Procedure	ANSI C63.26-2015, Section 7.2.3.4 KDB 935210 D05, v01r04, Clause 3.5, 4.5	Relative Humidity (%)	38.6		
Test Location	Bench top, Richmond Lab	Barometric Pressure (kPa)	101.8		
Test Engineer	Zara Vali	Date	June 16, 2025		
EUT Voltage	<input checked="" type="checkbox"/> +48VDC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B-506	MY53050270	Dec 12, 2023	Dec 12, 2026
Spectrum Analyzer	Keysight	N9020B-526	MY62153079	Aug 1, 2023	Aug 1, 2025
Span:	<input checked="" type="checkbox"/> Max Gain Frequency $\pm$ 1500kHz				
Detector:	<input checked="" type="checkbox"/> Peak				
RBW/VBW:	<input checked="" type="checkbox"/> 100k Hz/ 300 kHz				
Type of Facility:	<input checked="" type="checkbox"/> Tabletop				
Distance:	<input checked="" type="checkbox"/> Direct				
Maximum booster gain is 49.57 dB.					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

### Test setup

The procedure used was ANSI C63.26-2015: A CW tone was input at the frequency where the system gain is the maximum in the pass band, with the nominal input power level. The spectrum analyzer was connected to the output RF port via a 50 Ohm 30 dB attenuator. The maximum hold trace and peak detector was used to capture the output power. The output power minus the input power equals to the booster gain in dB.

The EUT was set to **Operation Mode #1** with configuration **Mode #1**.



Prepared by: LabTest Certification Inc.  
Date Issued: July 9, 2025  
Project No.: 25-1206

Client: Avari Wireless Inc.  
Report No.: 20.01.25-1206-1  
Revision No.: Rev 0

**Results**

Test Band	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)
800 PS	815	-51.2	36.36	87.56

### 3.6 Out-Of-Band / Out-Of-Block Intermodulation and Spurious Emissions

Governing Doc	RSS-131, Issue 4, 2022 S10.5 RSS-119, Issue 12 2015, Amendment (April 1, 2022) RSS-Gen, Issue 5 2018 FCC Part 90	Room Temperature (°C)	20.5		
Test Procedure	ANSI C63.26-2015, Section 7.2.3.6 Section 7.2.3.7 KDB 935210 D05, v01r04, Clause 3.6, 4.7	Relative Humidity (%)	38.6		
Test Location	Bench top, Richmond Lab	Barometric Pressure (kPa)	101.8		
Test Engineer	Zara Vali	Date	June 16, 2025		
EUT Voltage	<input checked="" type="checkbox"/> +48VDC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B-506	MY53050270	Dec 12, 2023	Dec 12, 2026
Spectrum Analyzer	Keysight	N9020B-526	MY62153079	Aug 1, 2023	Aug 1, 2025
Frequency Range:	<input checked="" type="checkbox"/> Max Gain Frequency $\pm$ 50kHz				
Detector:	<input checked="" type="checkbox"/> Average				
RBW/VBW:	<input checked="" type="checkbox"/> 100/910Hz				
Type of Facility:	<input checked="" type="checkbox"/> Tabletop				
Distance:	<input checked="" type="checkbox"/> Direct				

As per RSS-Gen, Spurious Emissions include intermodulation products. Test procedures are carried out according to the ANSI C63.36-2015. Spurious Emissions requirements are specified in RSS-131 Section 10.5. RSS-131 section 10.3 also states the requirement that the effective radiated power (ERP) of intermodulation products shall not exceed -30dBm in a 10kHz measurement bandwidth. This requirement is related to deployment practice similar to FCC 47 CFR 90.219 which specifies the following good engineering practice. It is not a standard.

*"Good engineering practice must be used in regard to the radiation of intermodulation products and noise, such that interference to licensed communications systems is avoided. In the event of harmful interference caused by any given deployment, the FCC may require additional attenuation or filtering of the emissions and/or noise from signal boosters or signal booster systems, as necessary to eliminate the interference."*

As part of the system commissioning practice, professional Zone Enhancer installer/field technician measures the intermodulation products by attaching a spectrum analyser to the output of the Remote Unit in the field. Since every deployment is different with different passive distribution network, field technician is required to assess the ERP of the intermodulation products at the antenna by taking into account the total passive component losses and make the necessary adjustments to meet the -30dBm requirement. For some jurisdiction, lower than -30dBm is required.

The intermodulation product of 2 tone is below the -13dBm emission limit with input power

- 0.5 dB below AGC threshold
- 2 dB below AGC threshold
- 3 dB above AGC threshold

Compliant ☒

Non-Compliant ☐

Not Applicable ☐

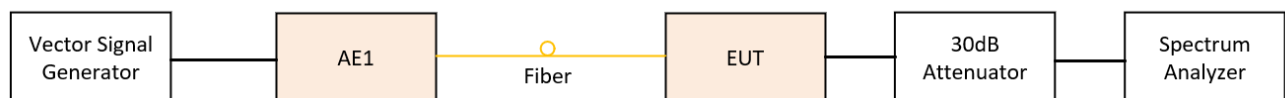
## Test setup

The procedure used was ANSI C63.26-2015. Two tones (CW) method was used. The input power to the amplifier was set at maximum drive level by combining the two tones. The two tones were chosen in such a way (1) the third order intermodulation product frequencies are located within the pass band of the DUT and (2) they produce the worst-case emissions out of band.

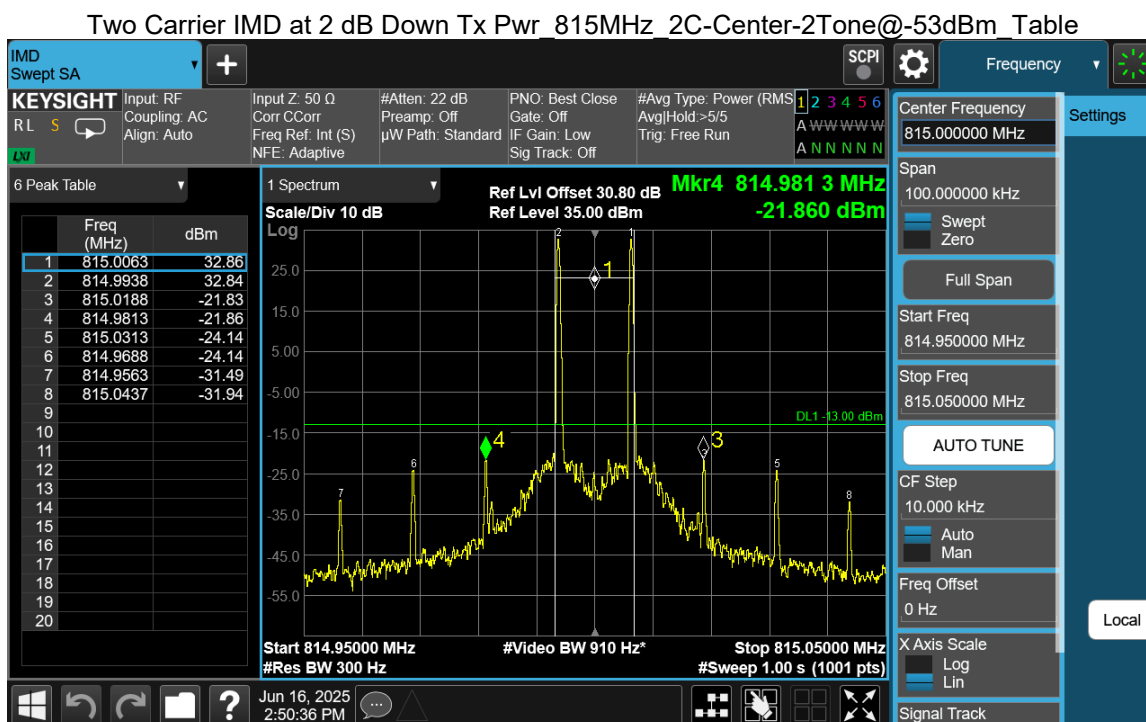
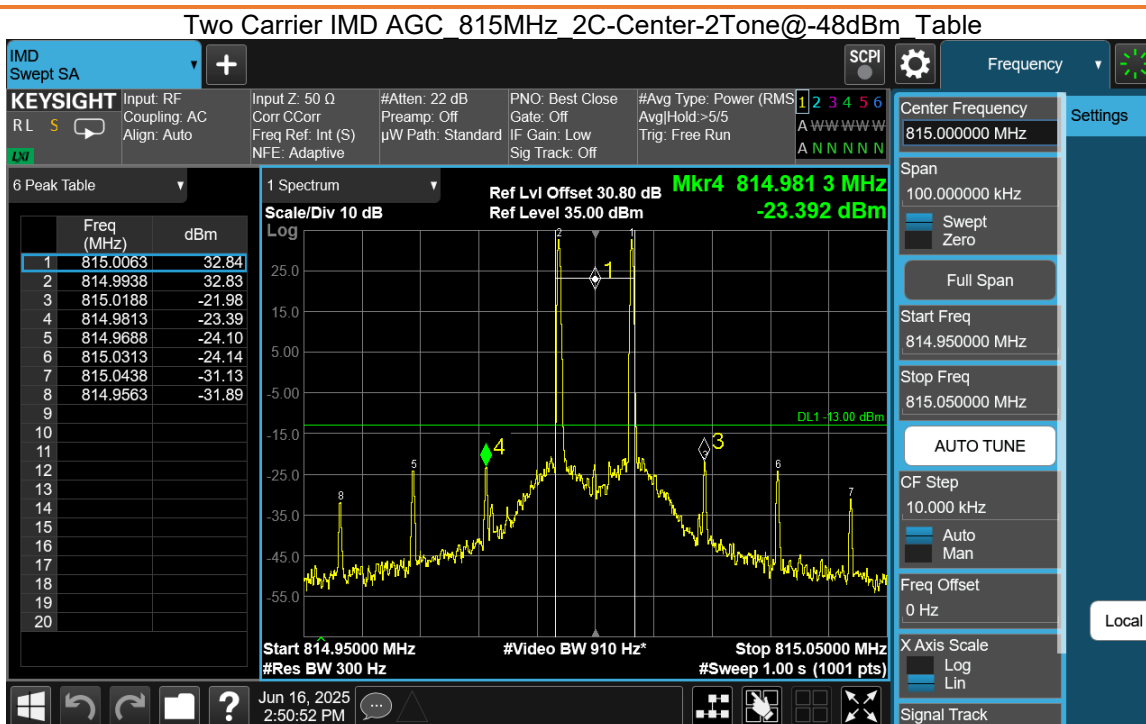
Based on ANSI C63.26-2015, the two tone was located on either side of the maximum gain frequency in the passing band, and separated with the available spacing, which is 12.5kHz.

Measurements were performed with modulated -tone at identical input amplitude which produced integrated maximum rated output power.

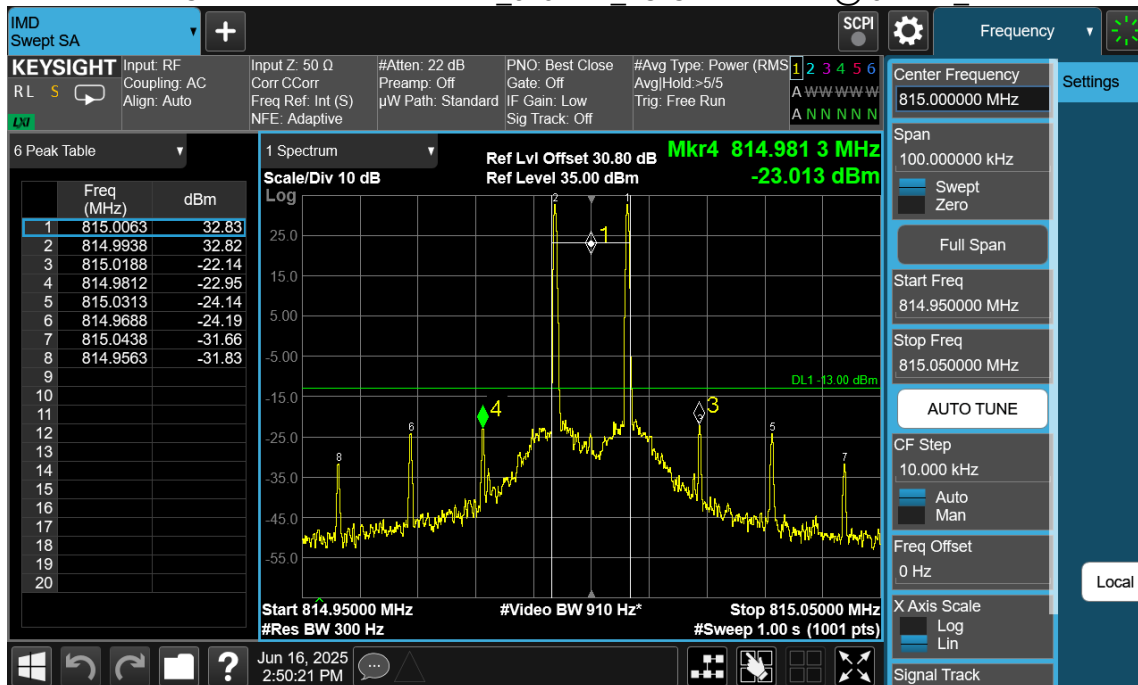
The EUT was set to **Operation Mode #1 with configuration Mode #1.**



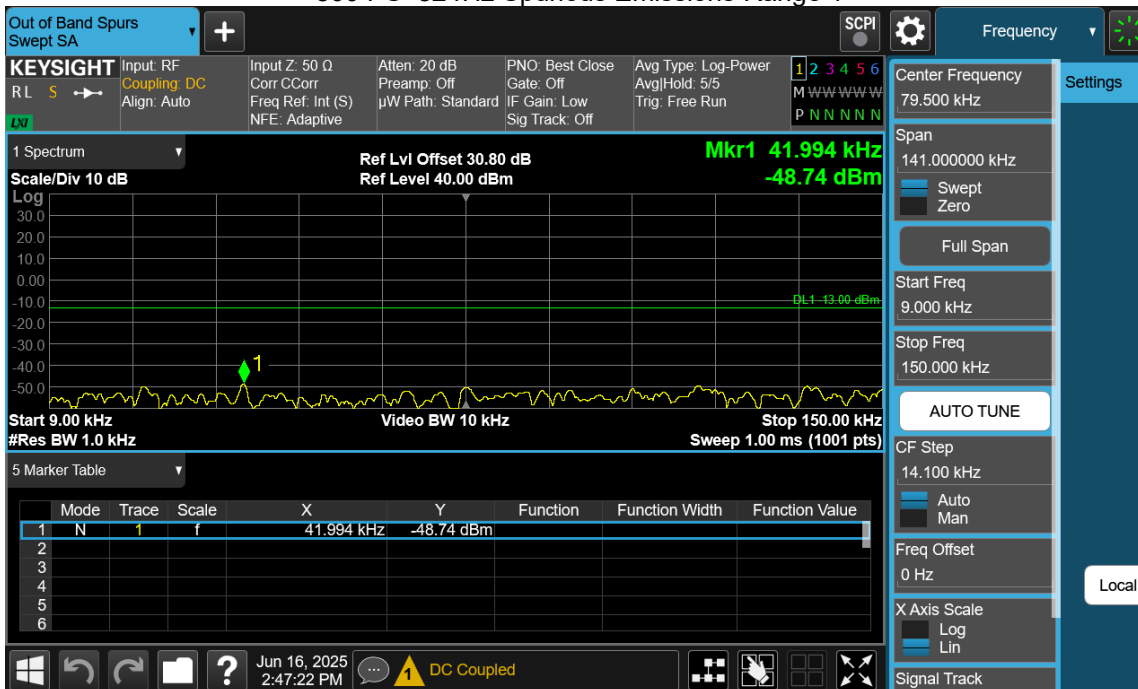
## Results



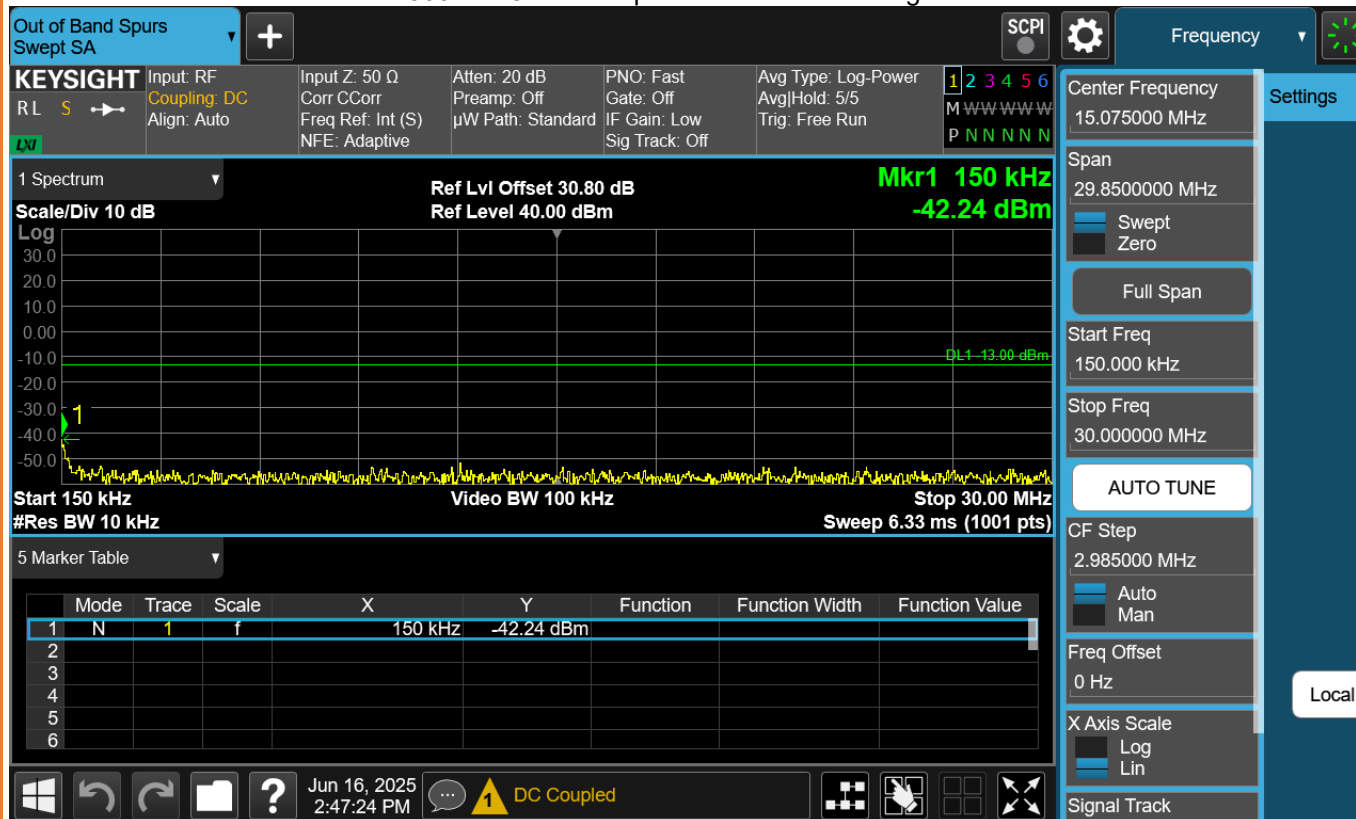
### Two Carrier IMD at Max Tx Pwr 815MHz 2C-Center-2Tone@-52dBm Table



### 800 PS 824Hz Spurious Emissions Range 1



### 800 PS 824MHz Spurious Emissions Range 2



### 800 PS 824MHz Spurious Emissions Range 3

