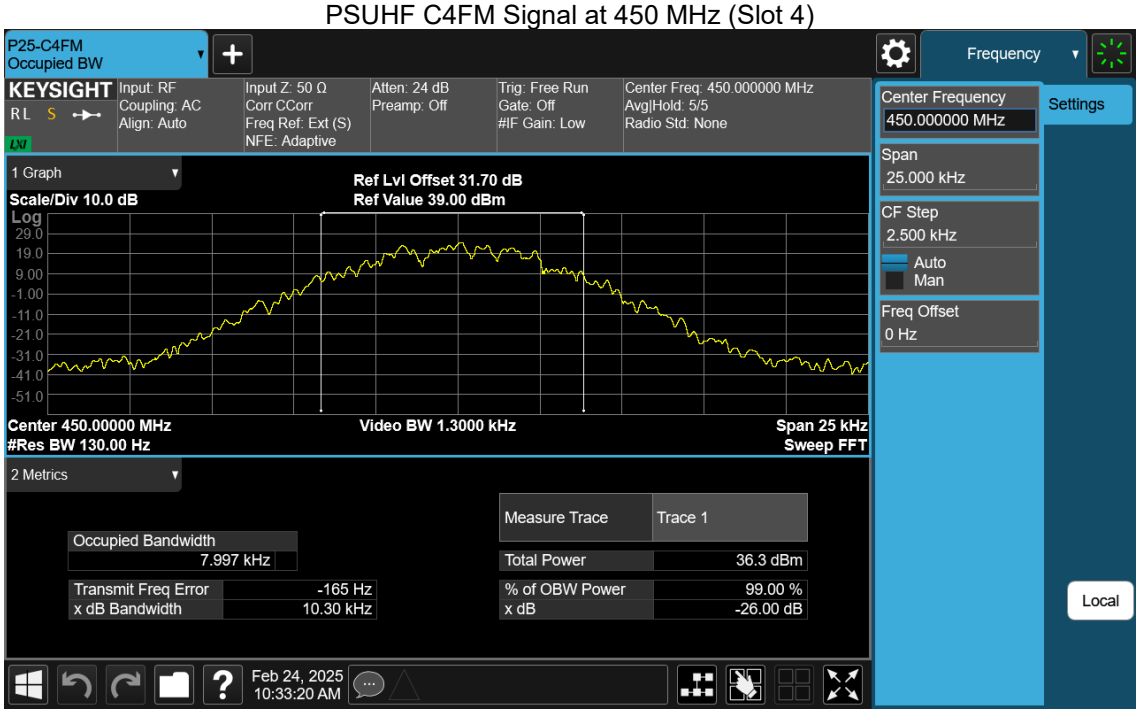
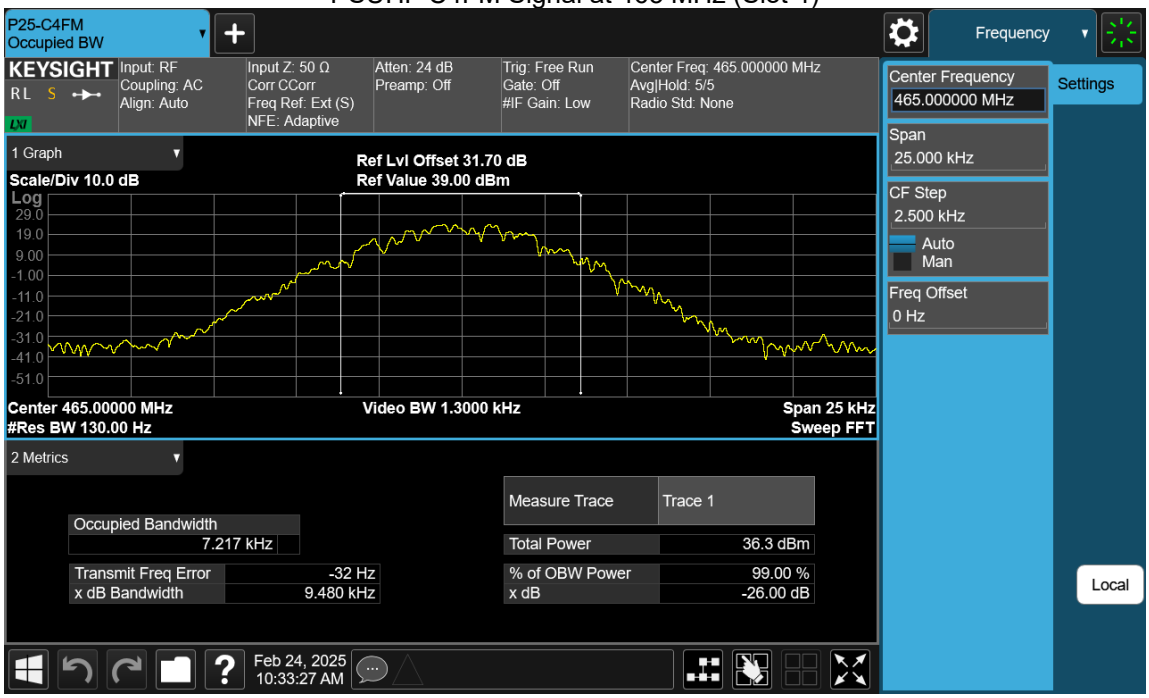
PSUHF C4FM Signal at 480 MHz (Slot 4)


PSUHF C4FM Signal at 450 MHz (Slot 4)



PSUHF C4FM Signal at 465 MHz (Slot 4)



## 3. Out of Band Rejection

| | | | |
|---|---|---|---|
| Governing Doc | RSS-119, Issue 12 2015, Amendment (April 1, 2022)<br>RSS-Gen, Issue 5 2018<br>FCC Part 90 | Room Temperature (°C) | 20.5 |
| Test Procedure | ANSI C63.26-2015,<br>Section 7.2.3.2<br>KDB 935210 D05, v01r04, Clause 3.3, 4.3 | Relative Humidity (%) | 38.6 |
| Test Location | Richmond | Barometric Pressure (kPa) | 101.8 |
| Test Engineer | Jack Qin | Date | February 24, 2025 |
| EUT Voltage | ☒ +48VDC ☐ 120VAC @ 60Hz | | |

| Test Equipment Used | Manufacturer | Model | Serial Number | Calibration date | Calibration due |
|---|---|---|---|---|---|
| Signal Generator | Keysight | N5172B | MY53050270 | Dec 12, 2023 | Dec 12, 2026 |
| Spectrum Analyzer | Keysight | N9020B | MY62153079 | Oct 25, 2023 | Aug 1, 2025 |

| | |
|---|---|
| Frequency Range: | ☒ Product Passband ± 250% |
| Detector: | ☒ Peak |
| RBW/VBW: | ☒ 1 to 5% of the EUT passband / ≥ 3 X RBW |
| Type of Facility: | ☒ Tabletop |
| Distance: | ☒ Direct |

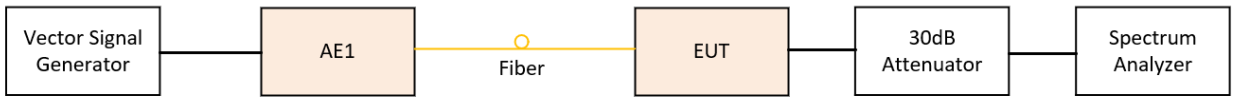
Compliant ☒ Non-Compliant ☐ Not Applicable ☐

### Test setup

The procedure used was ANSI/TIA-603-E-2016 and FCC KDB 935210 D05 Indus Booster Basic Meas v01r03. The signal booster was set to maximum gain. A swept CW signal was set to the range of ±250 % of the product pass band. The CW ampltitude was set to 3 dB below the AGC threshold so that the ALC should not activate throughout the test.

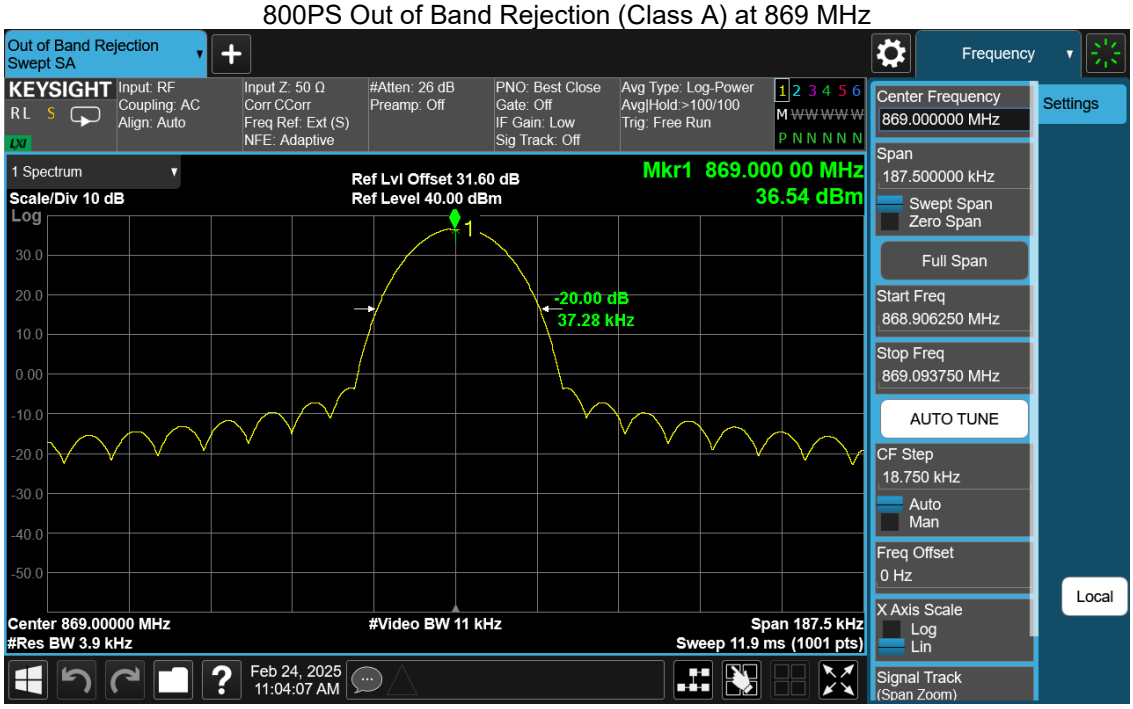
After the max-hold sweep trace was completed, a marker was set to the peak amplitude, and a 20dB bandwidth was measured between two additional markers fall 20 dB from the peak.

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



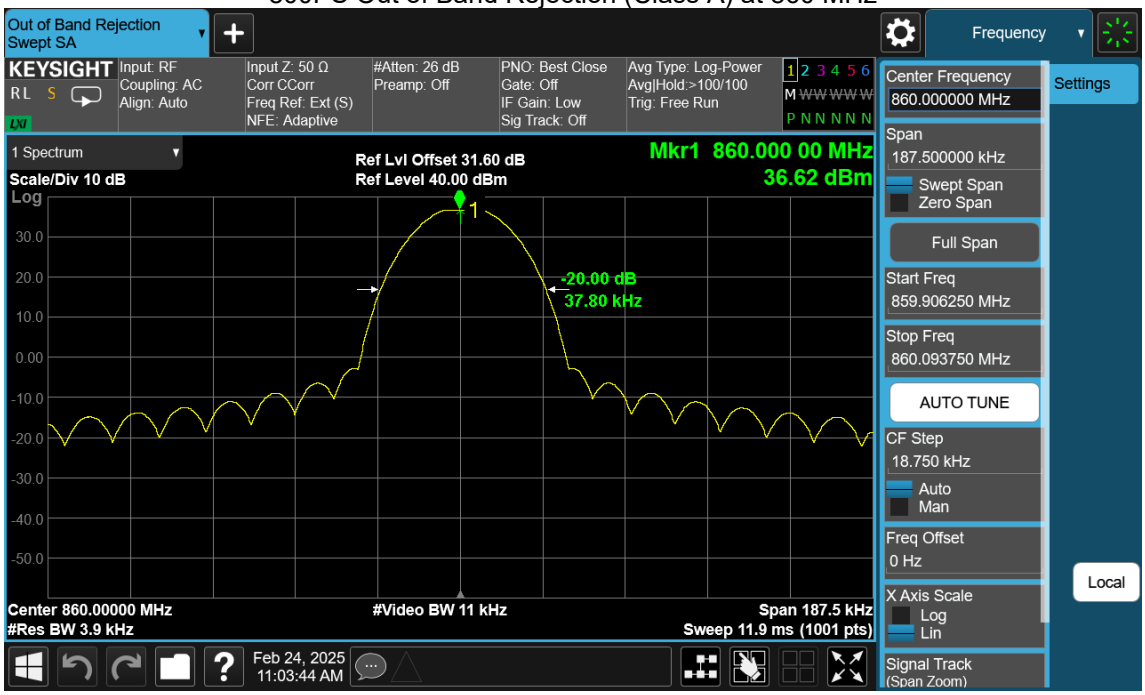
## Test results

800PS Out of Band Rejection (Class A) at 869 MHz

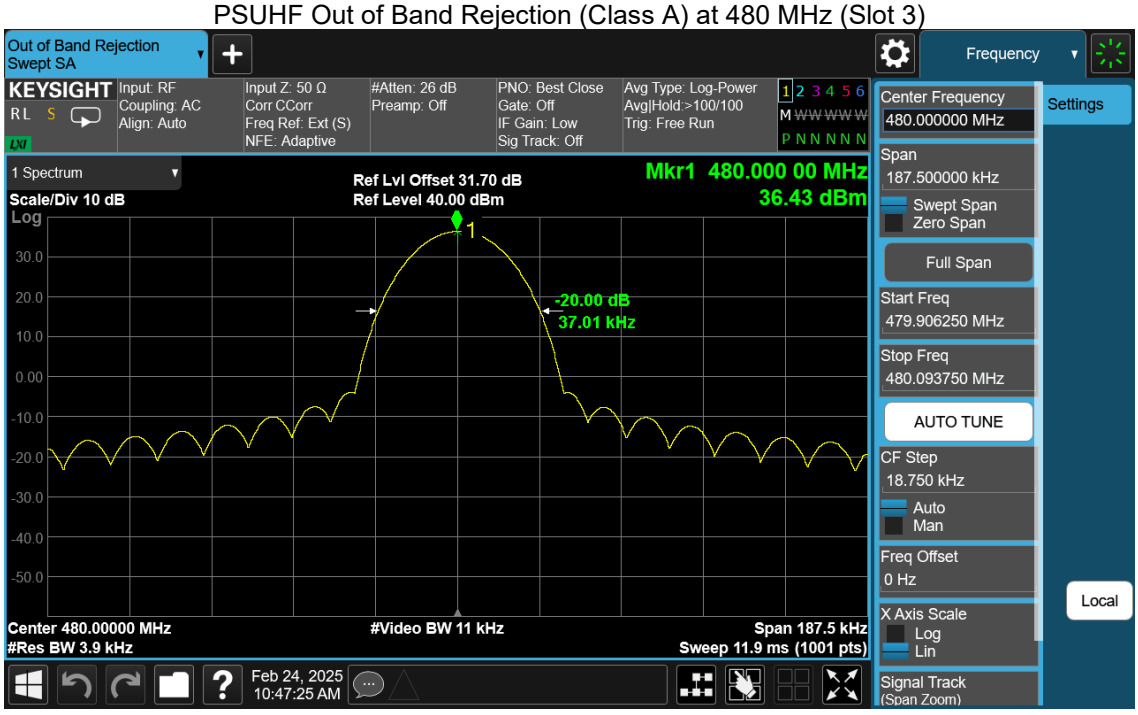



800PS Out of Band Rejection (Class A) at 851 MHz

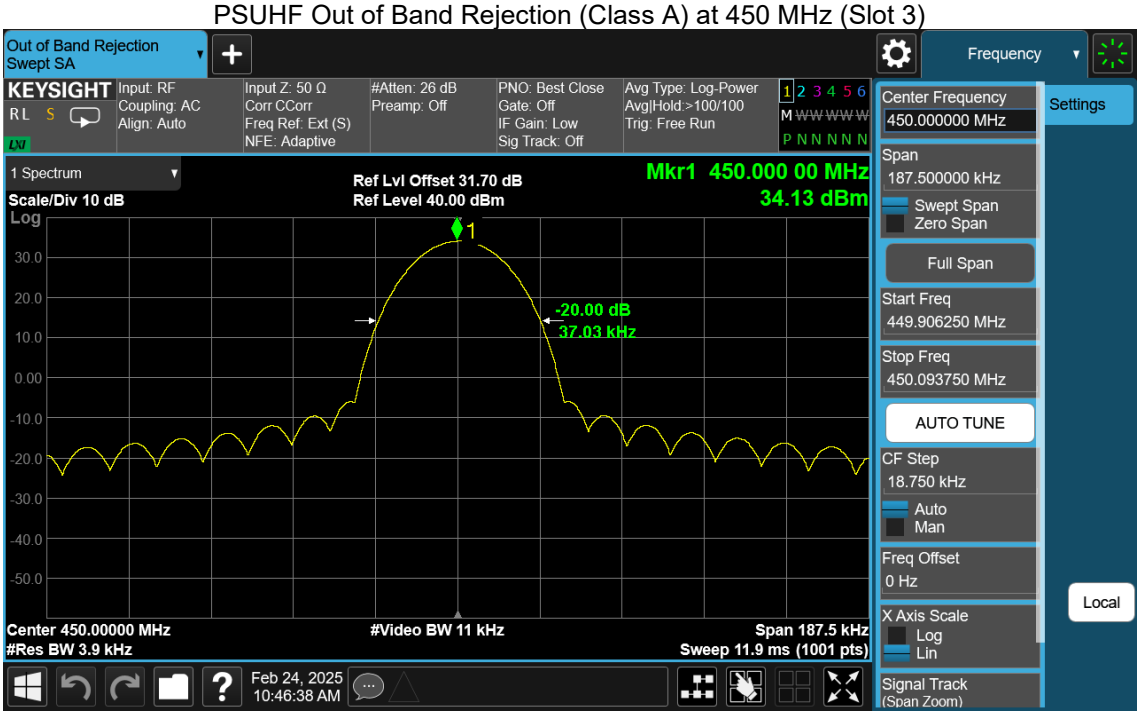
800PS Out of Band Rejection (Class A) at 860 MHz



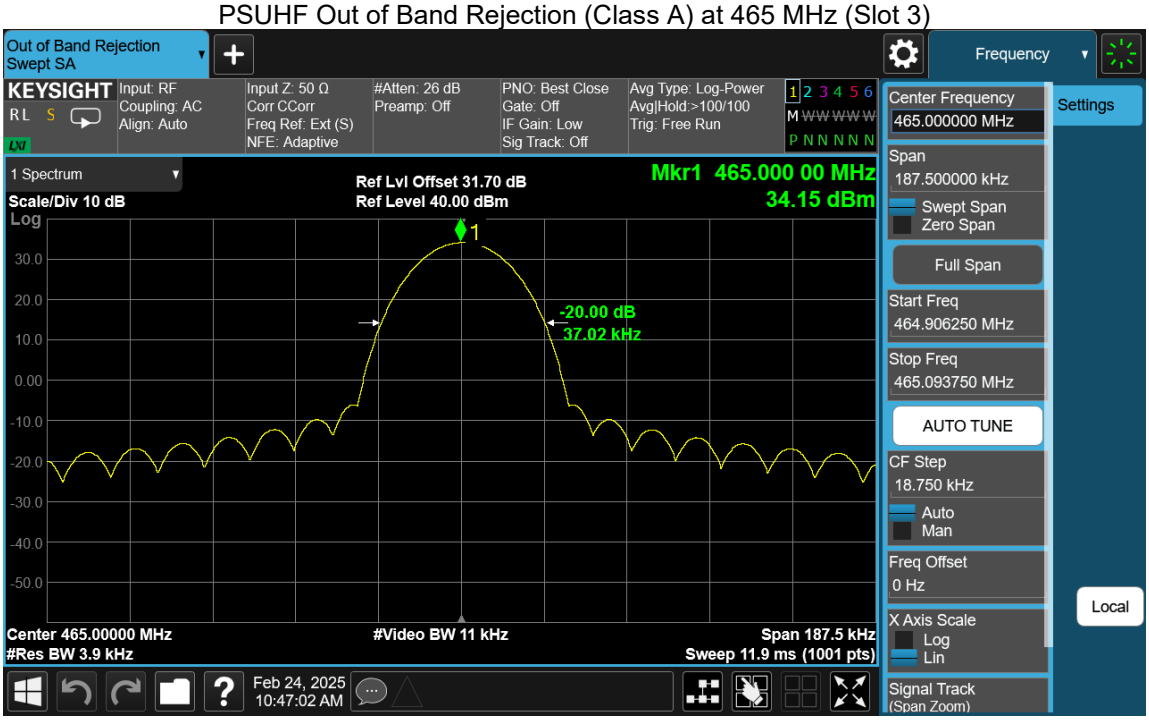

PSUHF Out of Band Rejection (Class A) at 480 MHz (Slot 3)



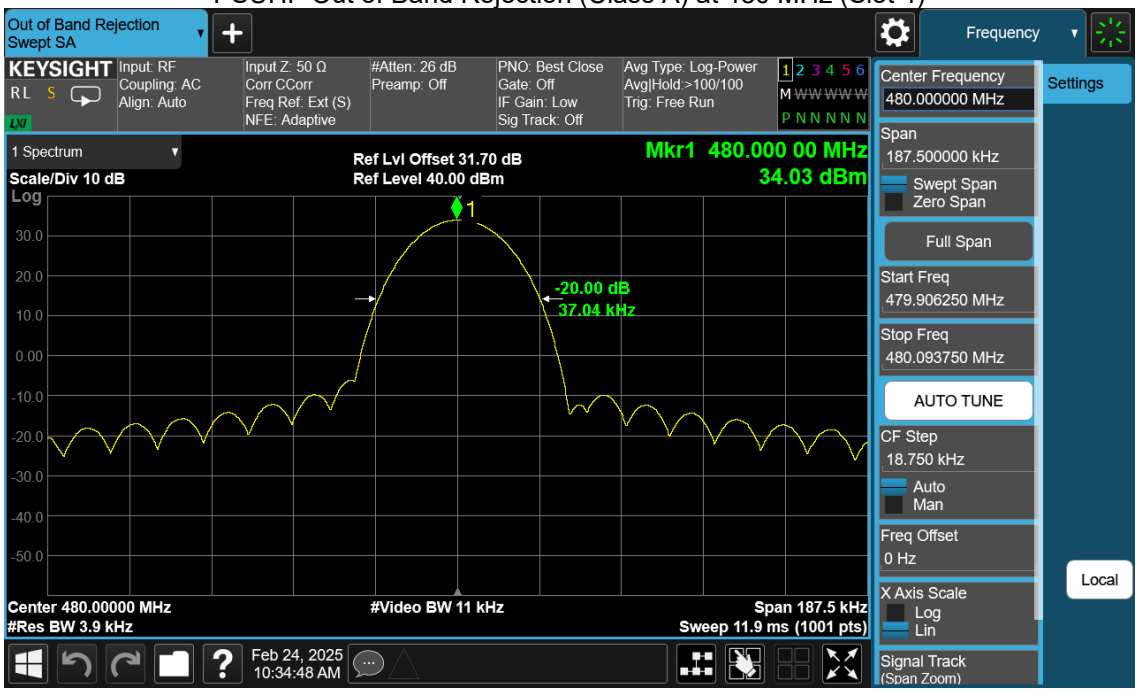
PSUHF Out of Band Rejection (Class A) at 450 MHz (Slot 3)



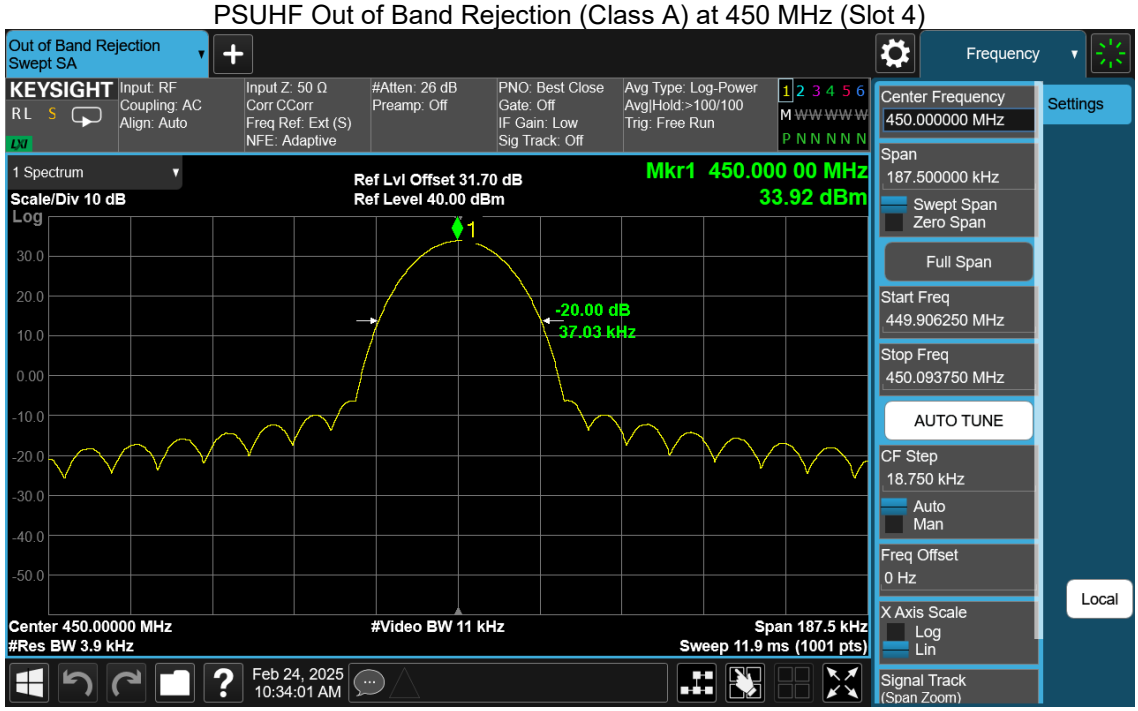

PSUHF Out of Band Rejection (Class A) at 465 MHz (Slot 3)



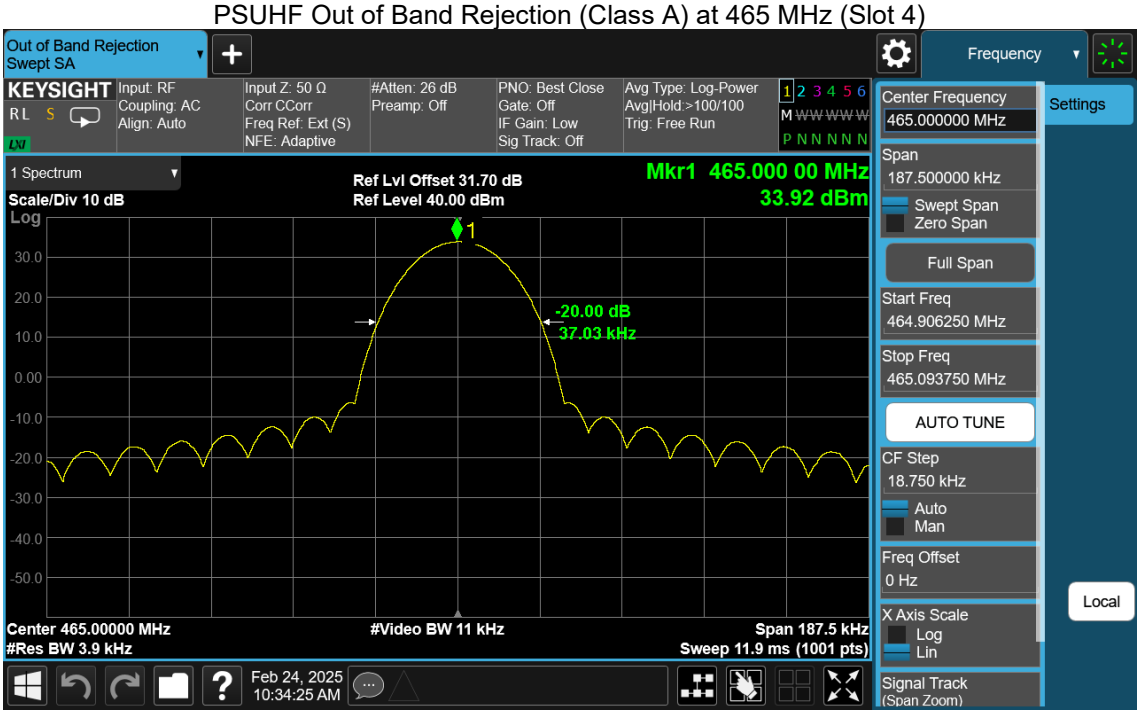
PSUHF Out of Band Rejection (Class A) at 480 MHz (Slot 4)




PSUHF Out of Band Rejection (Class A) at 450 MHz (Slot 4)



PSUHF Out of Band Rejection (Class A) at 465 MHz (Slot 4)



## 4. Input-Versus-Output Signal Comparison

| | | | |
|---|---|---|---|
| Governing Doc | FCC Part 90.210 (j) (h) (g) (c) (d) and (e) | Room Temperature (°C) | 20.5 |
| Test Procedure | ANSI/TIA-603- E;<br>FCC KDB 935210 D05, v01r03 | Relative Humidity (%) | 38.6 |
| Test Location | Richmond | Barometric Pressure (kPa) | 101.8 |
| Test Engineer | Jack Qin | Date | February 24, 2025 |
| EUT Voltage | ☒ +48VDC ☐ 120VAC @ 60Hz | | |

| Test Equipment Used | Manufacturer | Model | Serial Number | Calibration date | Calibration due |
|---|---|---|---|---|---|
| Signal Generator | Keysight | N5172B | MY53050270 | Dec 12, 2023 | Dec 12, 2026 |
| Spectrum Analyzer | Keysight | N9020B | MY62153079 | Oct 25, 2023 | Aug 1, 2025 |

| | |
|---|---|
| Frequency Range: | ☒ 451 MHz – 469 MHz; ☒ 850 MHz – 880 MHz |
| Detector: | ☒ Peak |
| RBW/VBW: | ☒100 Hz |
| Type of Facility: | ☒ Testbench |
| Distance: | ☒ direct connect |
| Arrangement of EUT: | ☒ Table-top only ☐ Floor-standing only ☐ Rack Mounted |

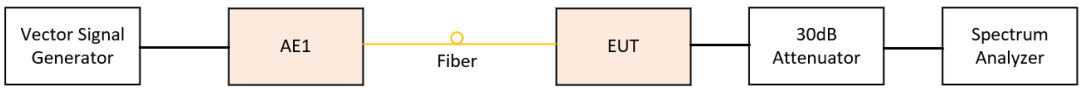
Signal of all types of modulation is contained within the emission mask.

Compliant ☒ Non-Compliant ☐ Not Applicable ☐

### Test setup

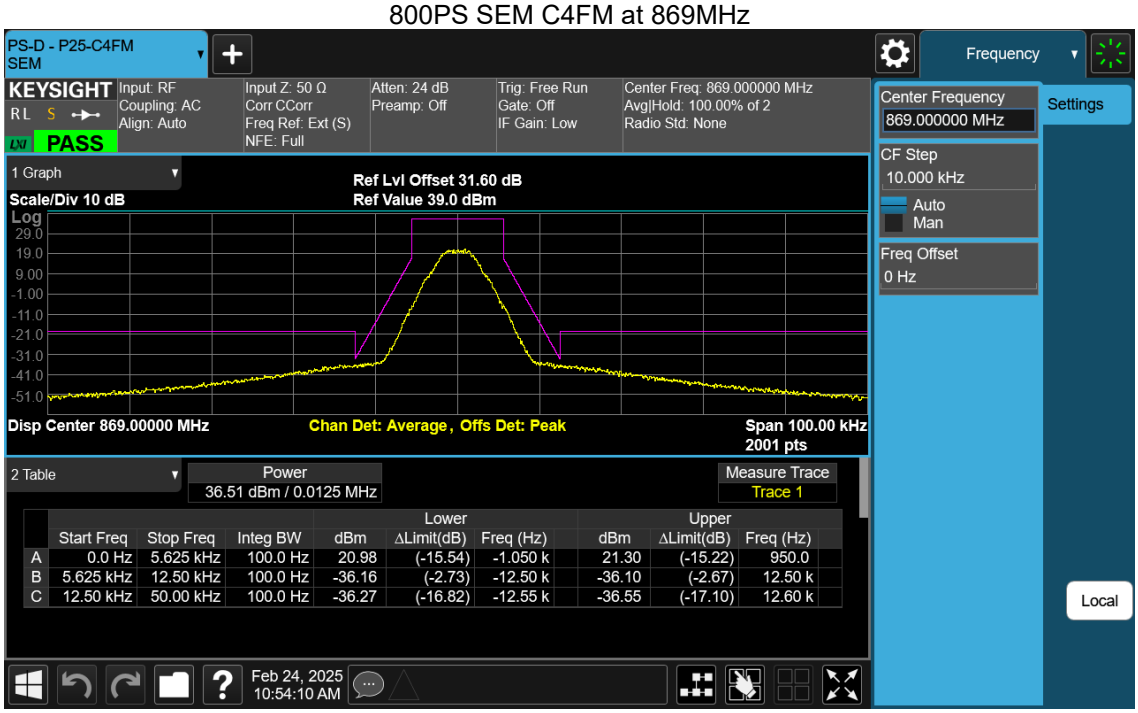
Spectrum Emission Mask is measured by connecting a Spectrum Analyzer to the RF output connector. The input power was adjusted to produce maximum output power on the antenna port. The reference level was measured with integrated BW of the designated channel BW. The emission was measured with RBW 100 Hz.

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

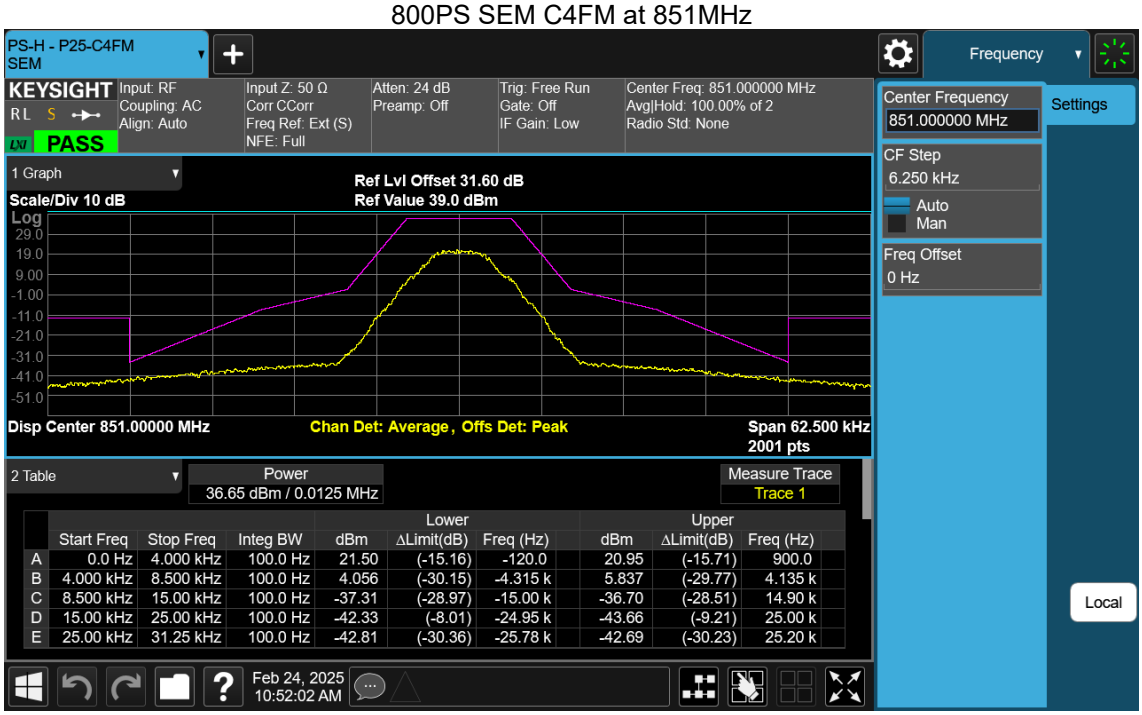


## Test results

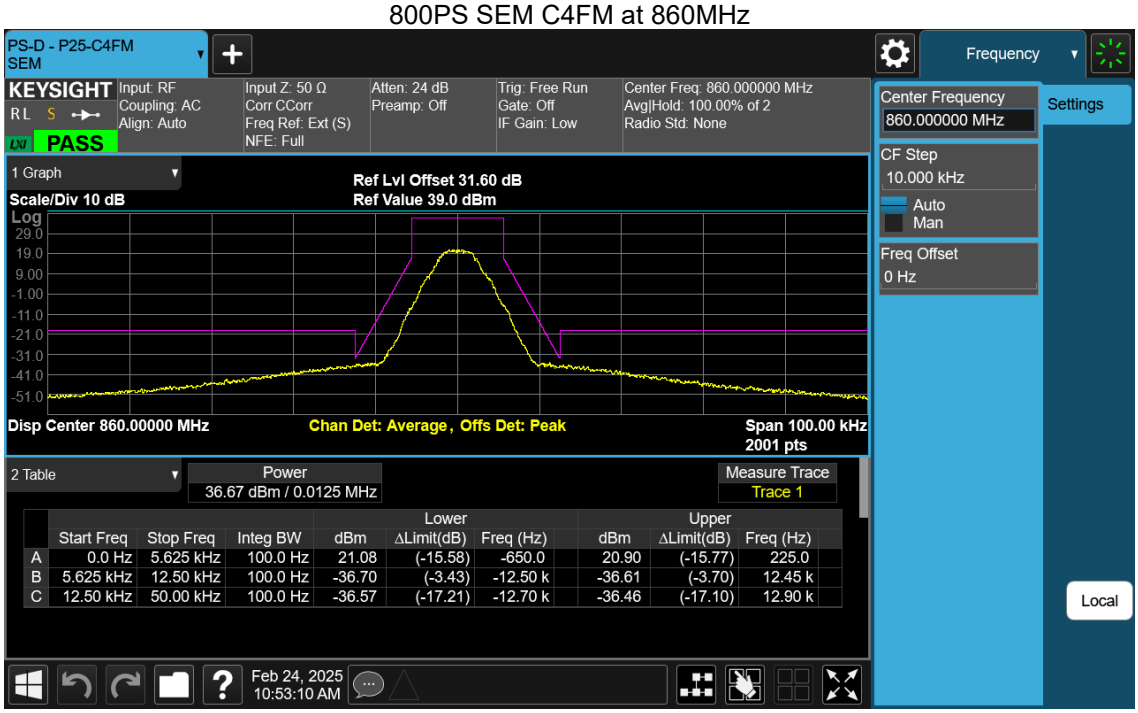
800PS SEM C4FM at 869MHz



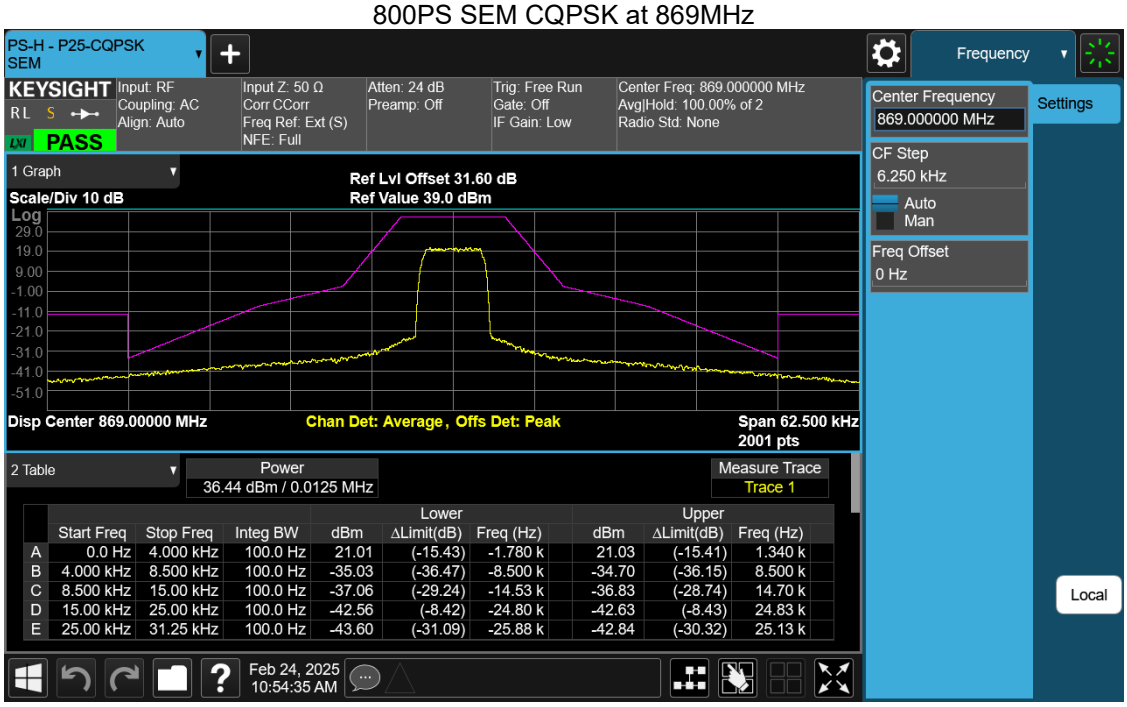

800PS SEM C4FM at 851MHz



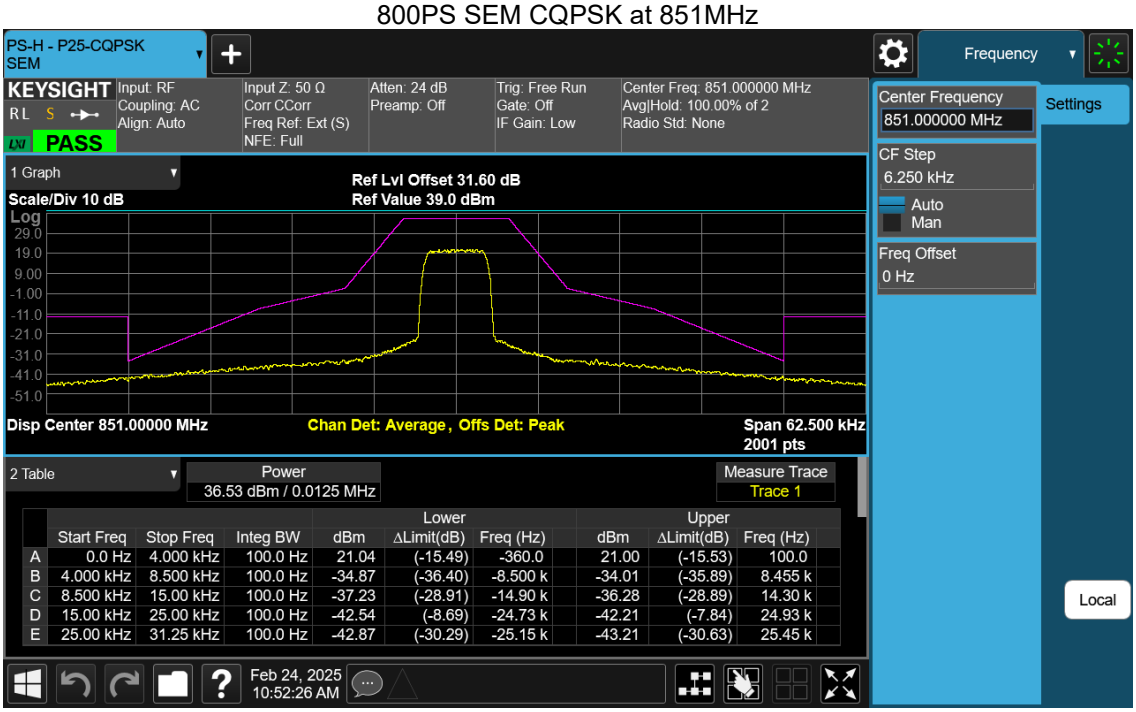
800PS SEM C4FM at 860MHz



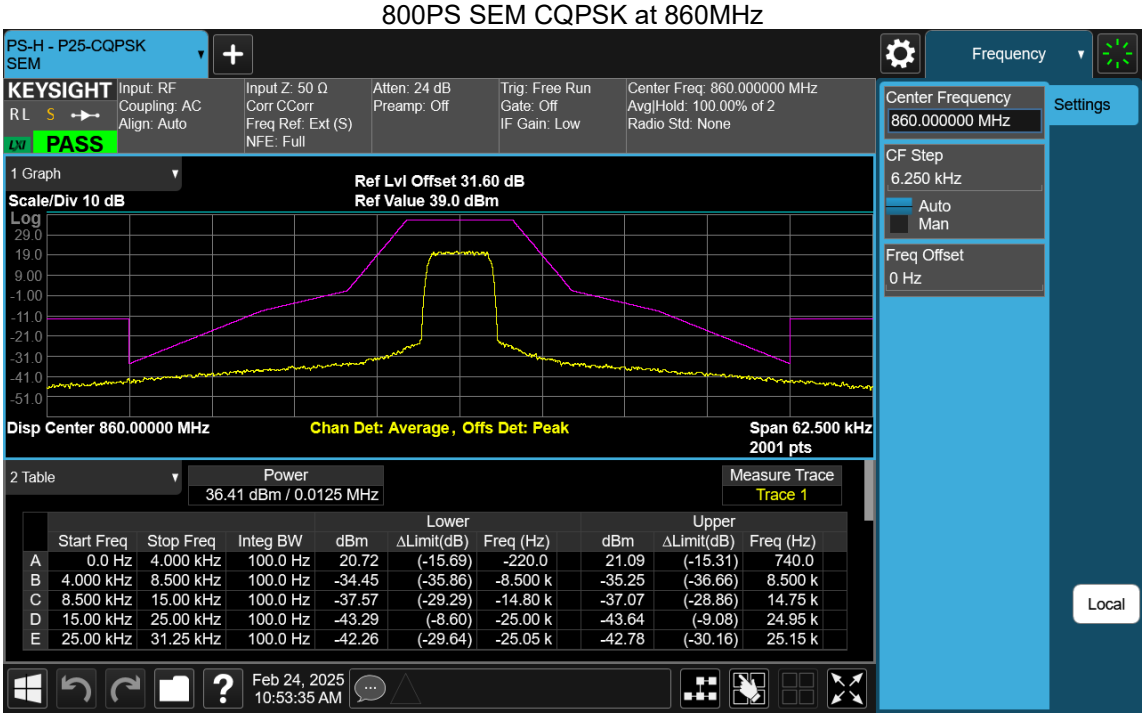

800PS SEM CQPSK at 869MHz



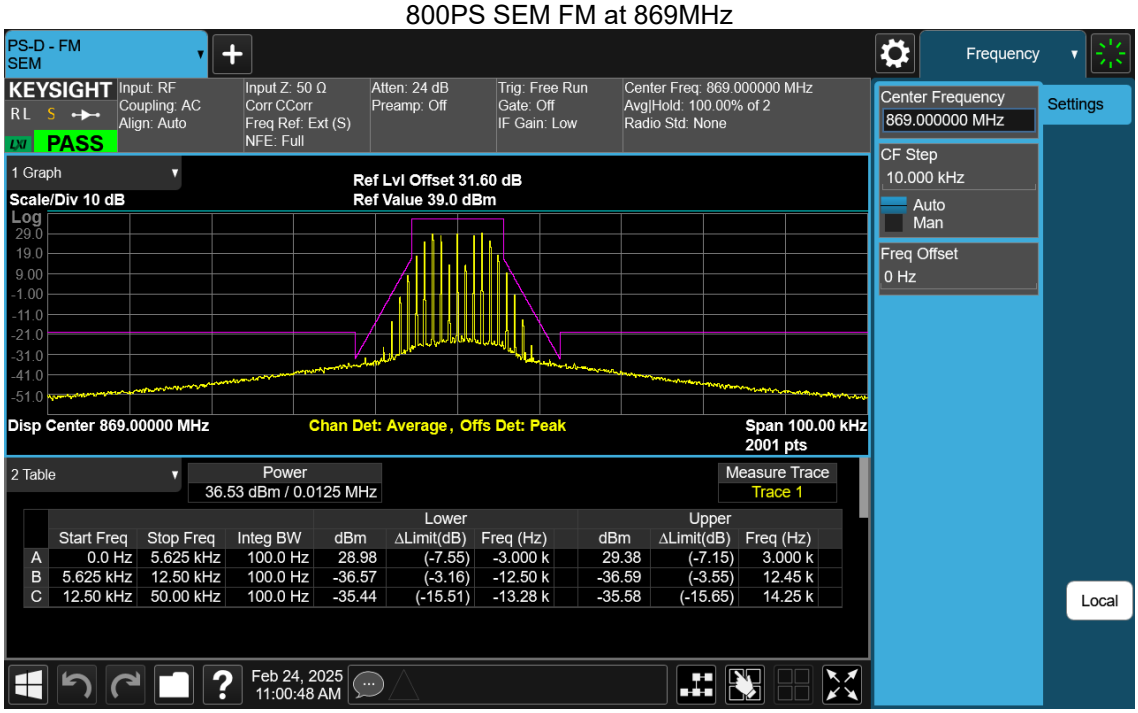
800PS SEM CQPSK at 851MHz



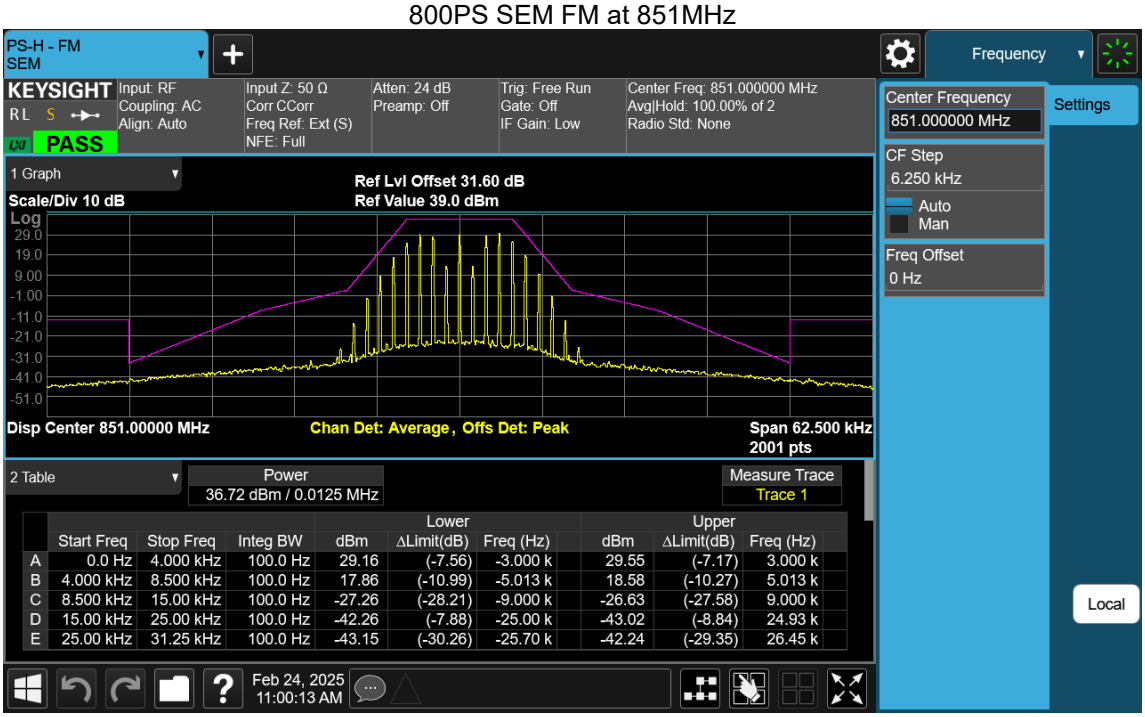

800PS SEM CQPSK at 860MHz



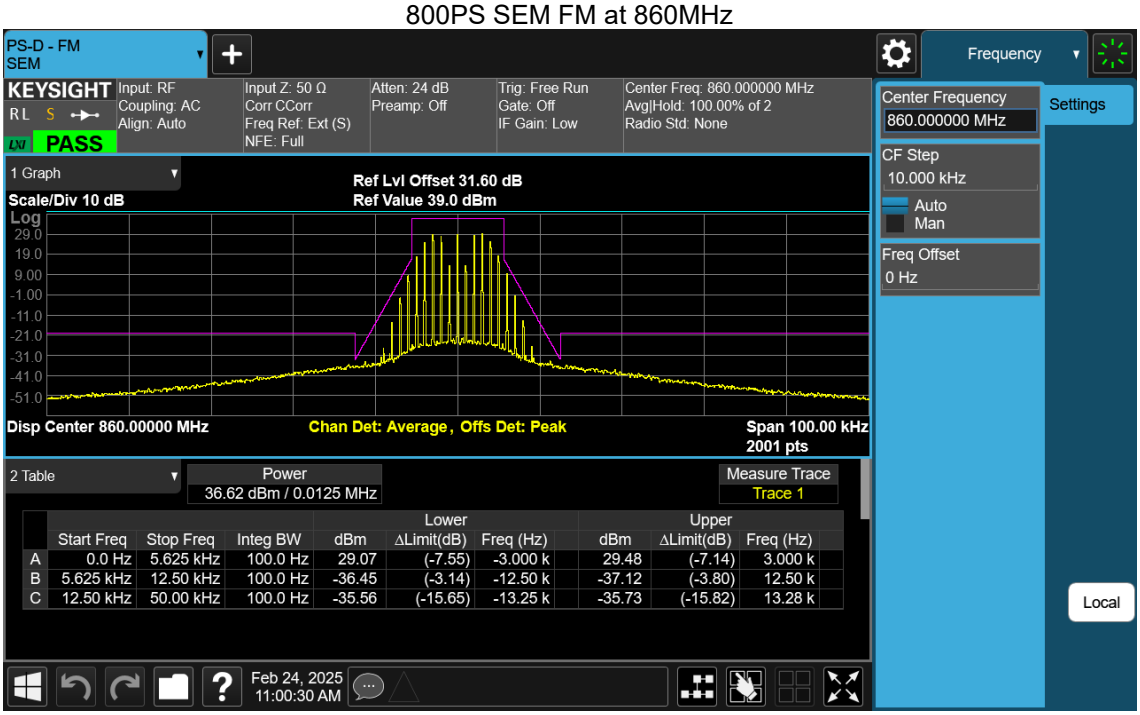
800PS SEM FM at 869MHz



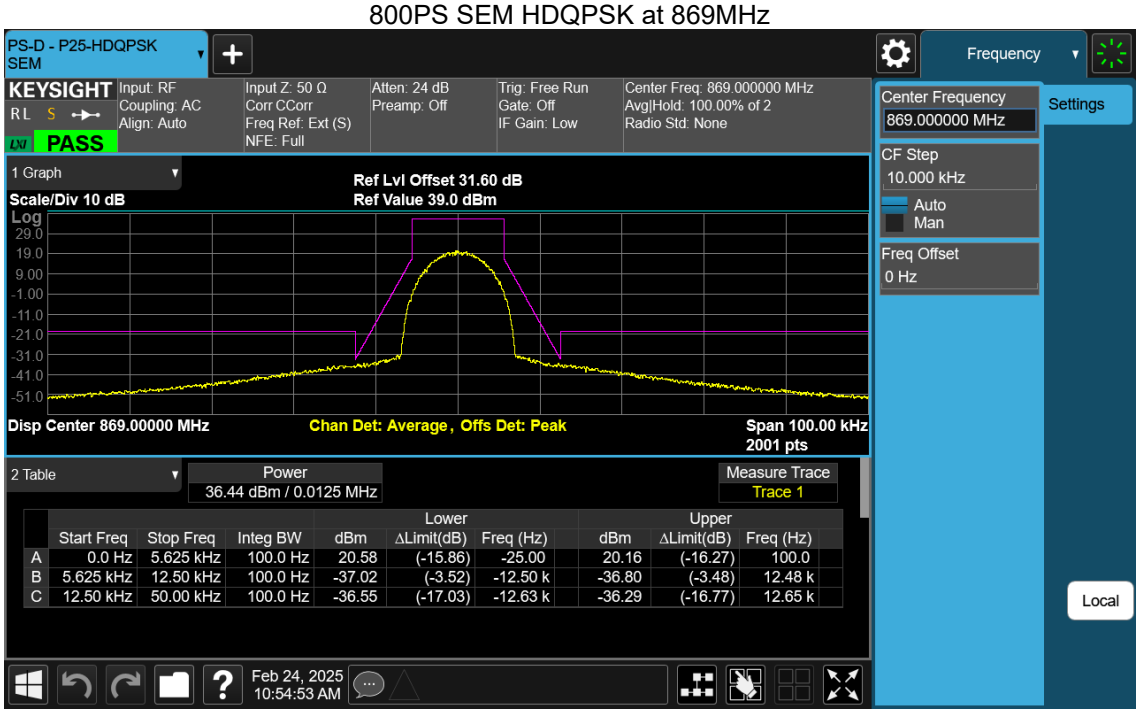

800PS SEM FM at 851MHz



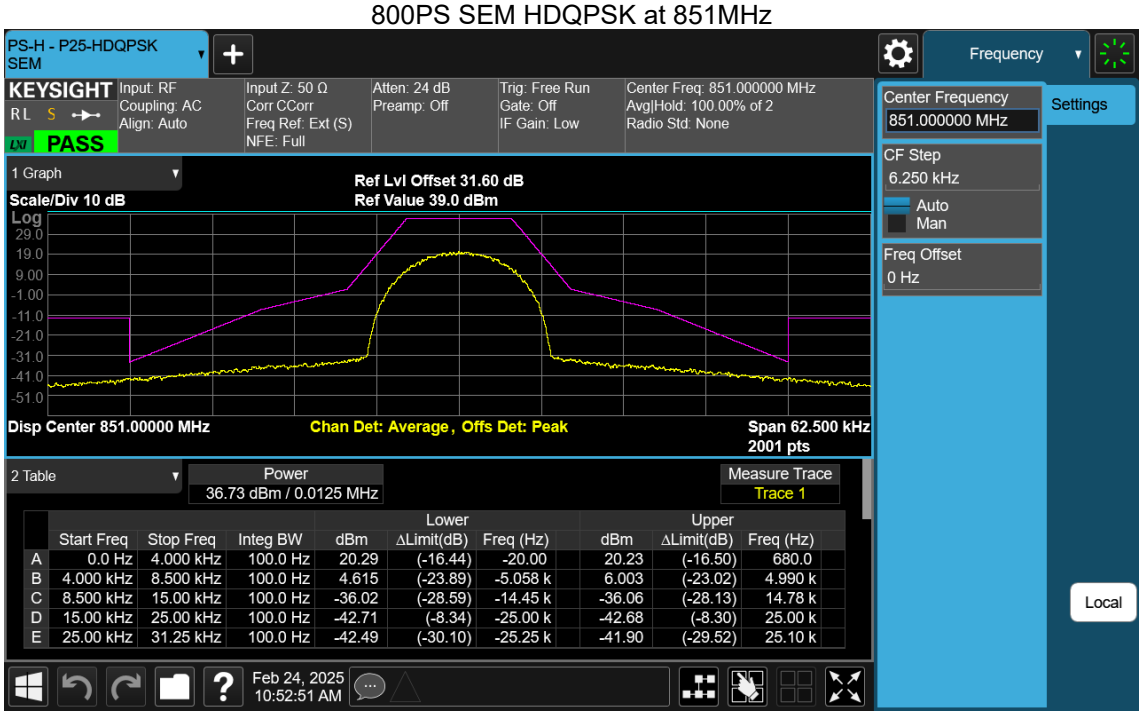
800PS SEM FM at 860MHz



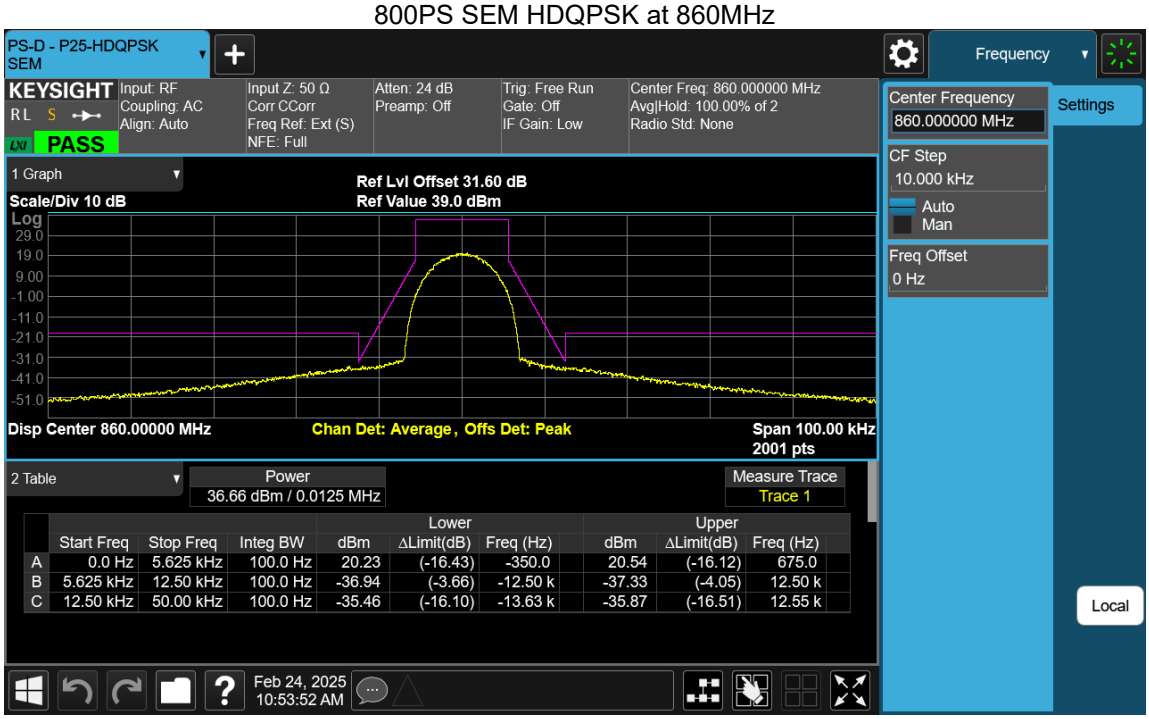

800PS SEM HDQPSK at 869MHz



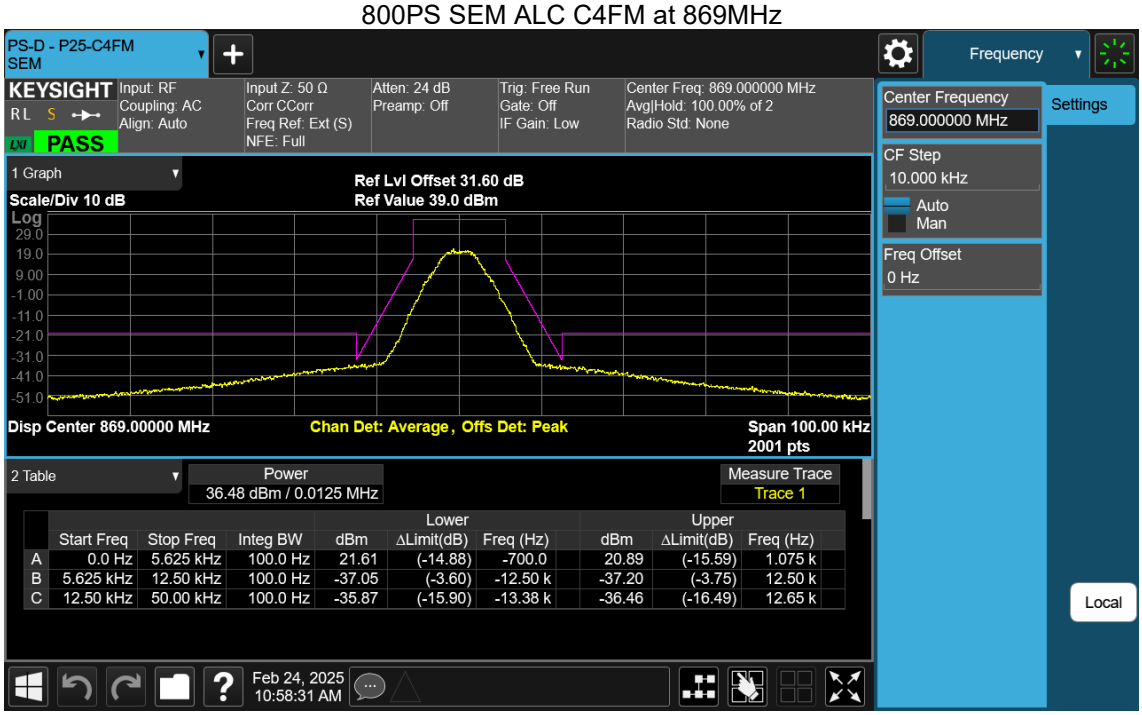
800PS SEM HDQPSK at 851MHz



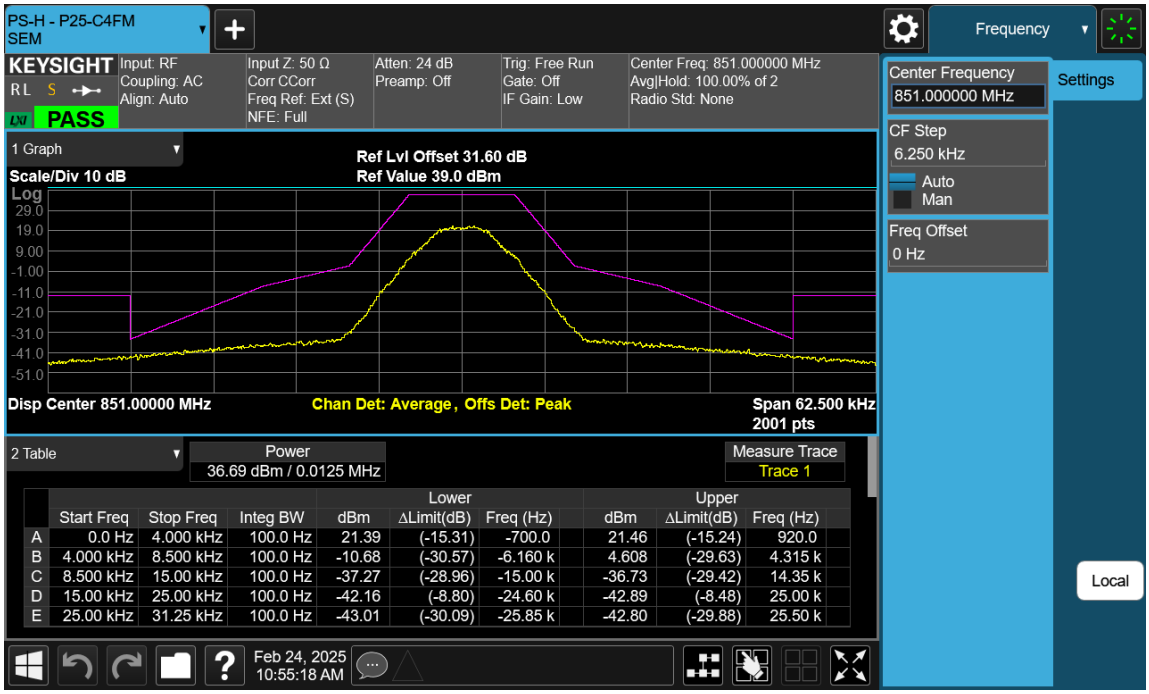

800PS SEM HDQPSK at 860MHz



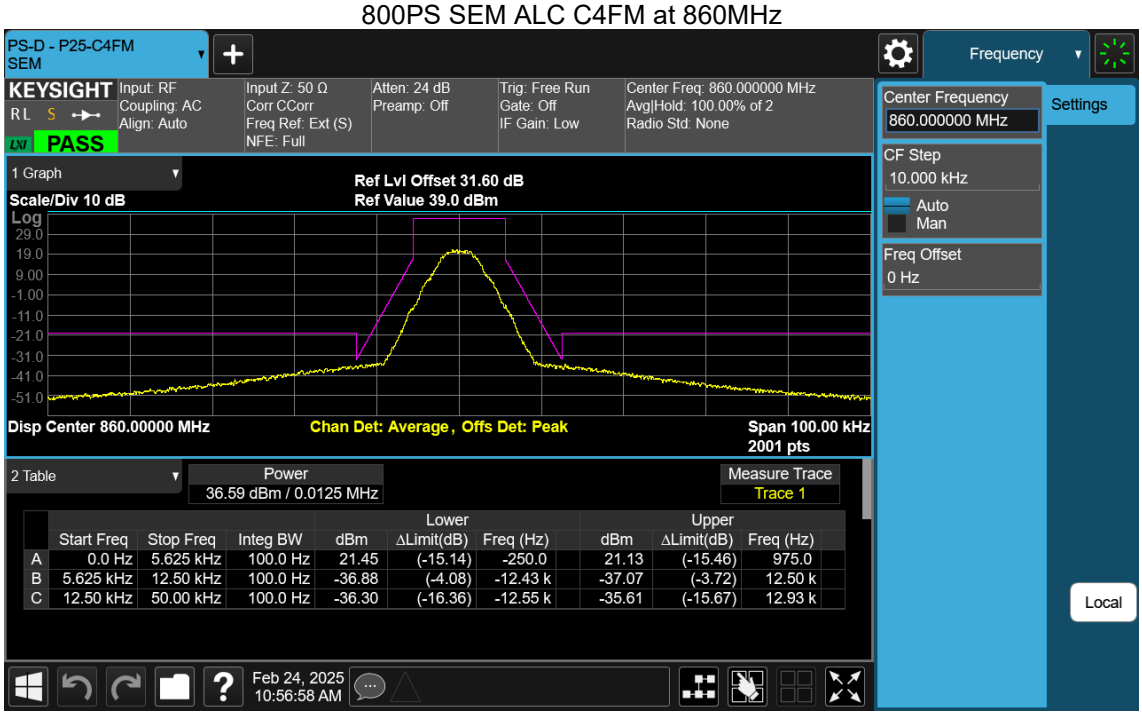
800PS SEM ALC C4FM at 869MHz



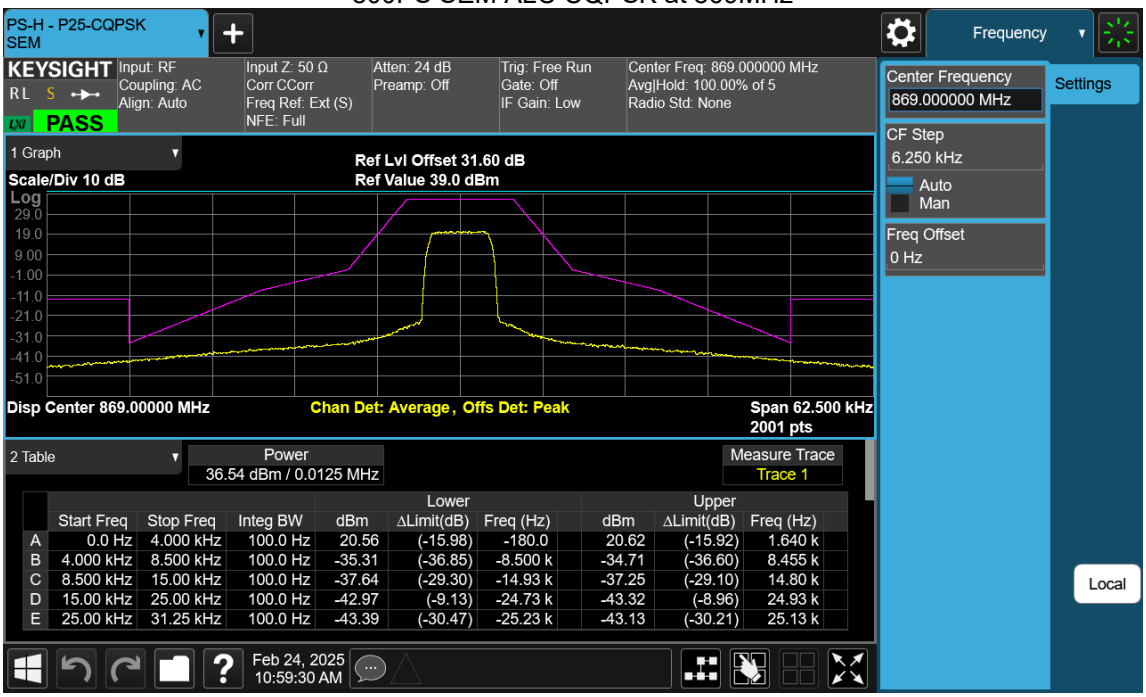

800PS SEM ALC C4FM at 851MHz



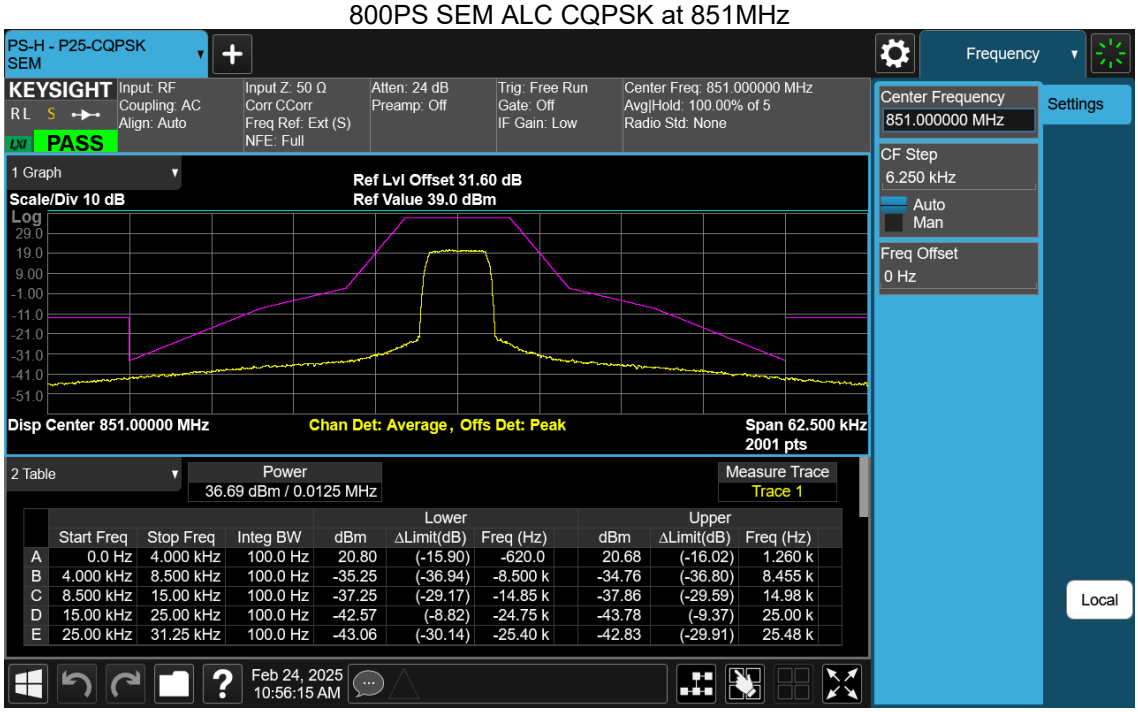
800PS SEM ALC C4FM at 860MHz




800PS SEM ALC CQPSK at 869MHz

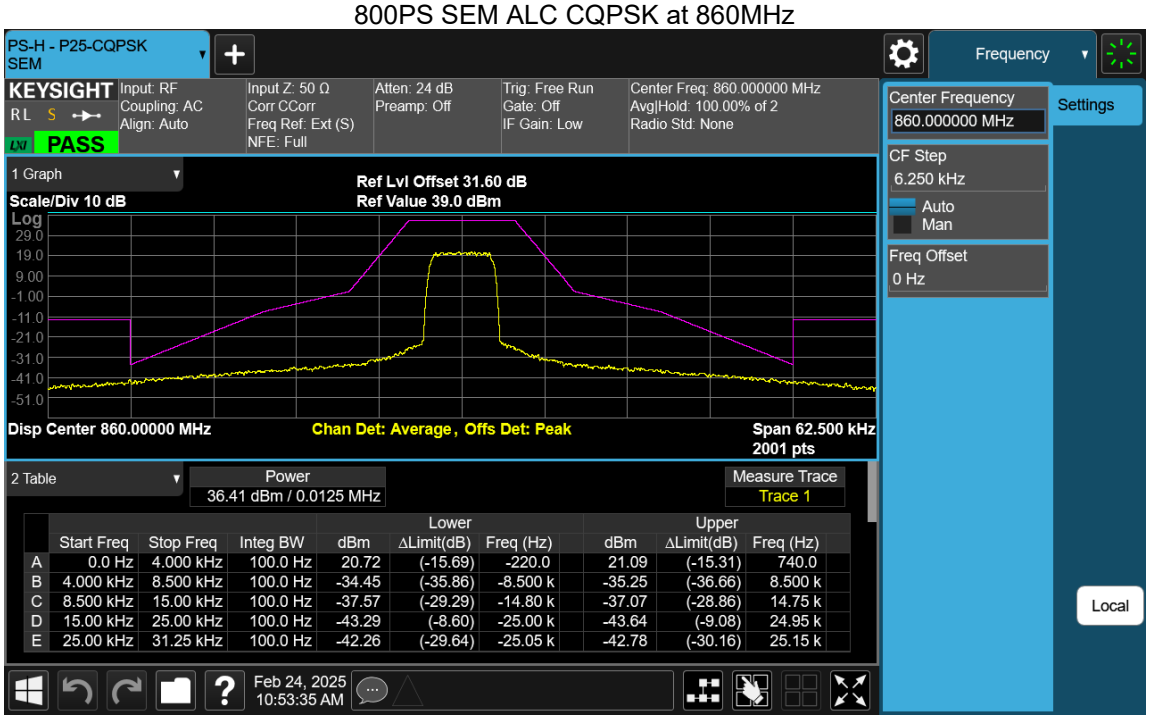


800PS SEM ALC CQPSK at 851MHz



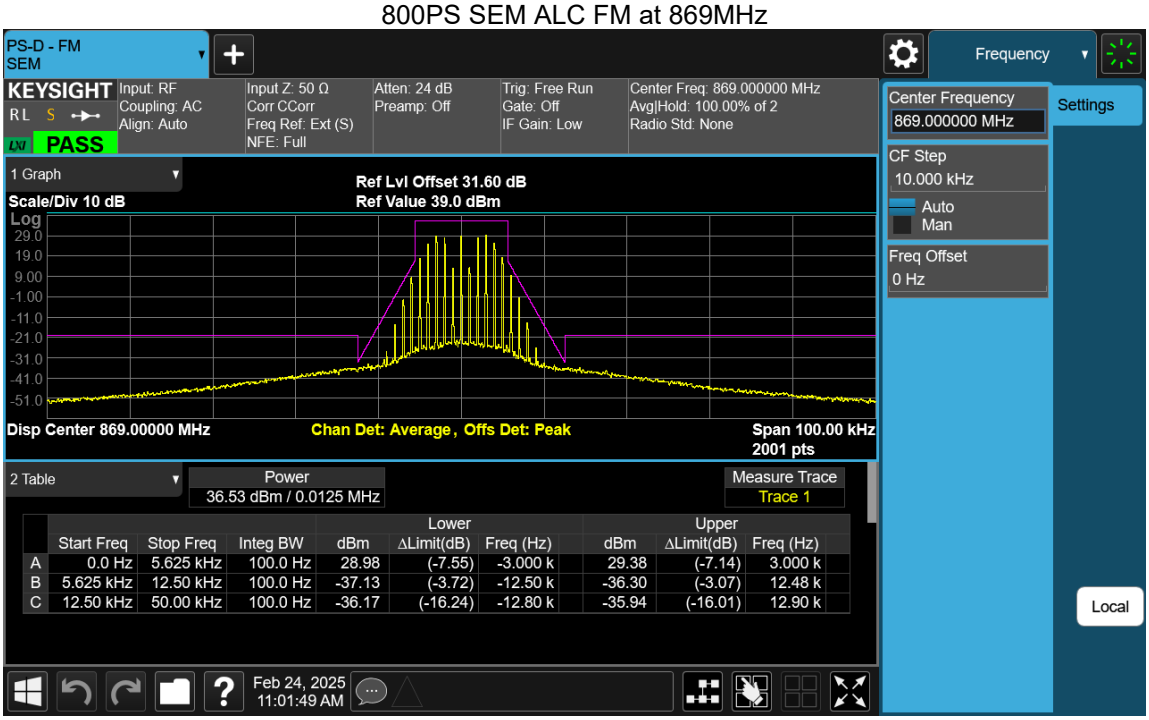

| | | | | | Lower | | | Upper | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Start Freq | Stop Freq | Integ BW | dBm | ΔLimit(dB) | Freq (Hz) | dBm | ΔLimit(dB) | Freq (Hz) |
| A | 0.0 Hz | 4.000 kHz | 100.0 Hz | 20.80 | (-15.90) | -620.0 | 20.68 | (-16.02) | 1.260 k |
| B | 4.000 kHz | 8.500 kHz | 100.0 Hz | -35.25 | (-36.94) | -8.500 k | -34.76 | (-36.80) | 8.455 k |
| C | 8.500 kHz | 15.00 kHz | 100.0 Hz | -37.25 | (-29.17) | -14.85 k | -37.86 | (-29.59) | 14.98 k |
| D | 15.00 kHz | 25.00 kHz | 100.0 Hz | -42.57 | (-8.82) | -24.75 k | -43.78 | (-9.37) | 25.00 k |
| E | 25.00 kHz | 31.25 kHz | 100.0 Hz | -43.06 | (-30.14) | -25.40 k | -42.83 | (-29.91) | 25.48 k |

800PS SEM ALC CQPSK at 860MHz

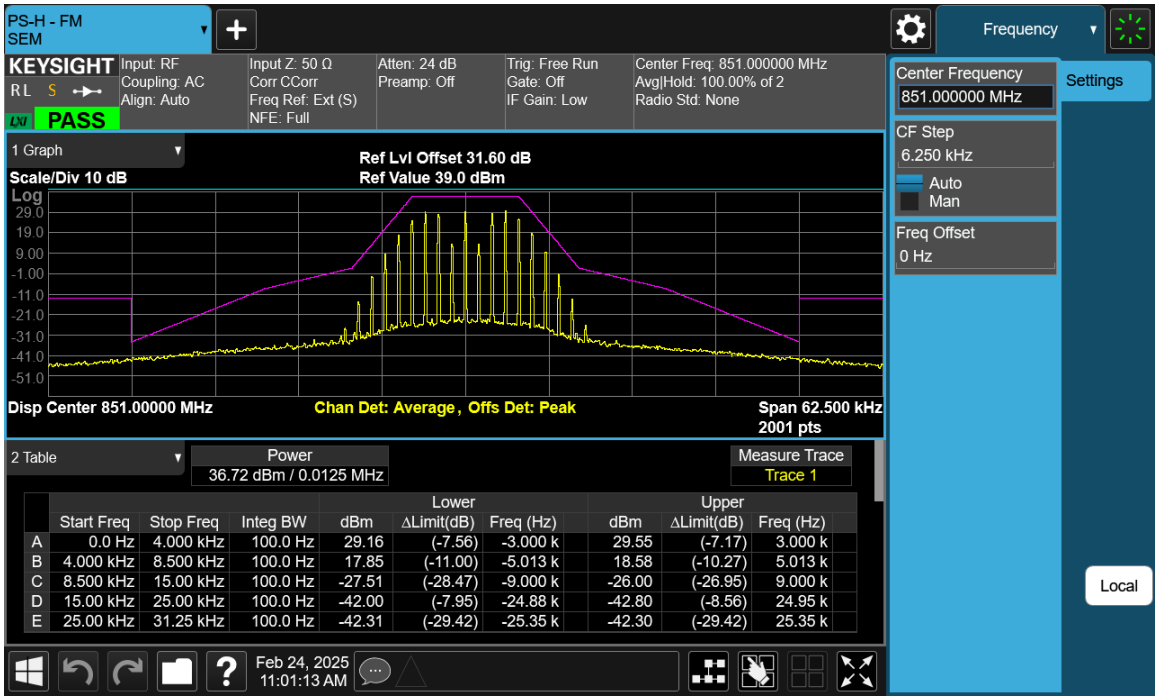



| | | | | | Lower | | | Upper | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Start Freq | Stop Freq | Integ BW | dBm | ΔLimit(dB) | Freq (Hz) | dBm | ΔLimit(dB) | Freq (Hz) |
| A | 0.0 Hz | 4.000 kHz | 100.0 Hz | 20.72 | (-15.69) | -220.0 | 21.09 | (-15.31) | 740.0 |
| B | 4.000 kHz | 8.500 kHz | 100.0 Hz | -34.45 | (-35.86) | -8.500 k | -35.25 | (-36.66) | 8.500 k |
| C | 8.500 kHz | 15.00 kHz | 100.0 Hz | -37.57 | (-29.29) | -14.80 k | -37.07 | (-28.86) | 14.75 k |
| D | 15.00 kHz | 25.00 kHz | 100.0 Hz | -43.29 | (-8.60) | -25.00 k | -43.64 | (-9.08) | 24.95 k |
| E | 25.00 kHz | 31.25 kHz | 100.0 Hz | -42.26 | (-29.64) | -25.05 k | -42.78 | (-30.16) | 25.15 k |

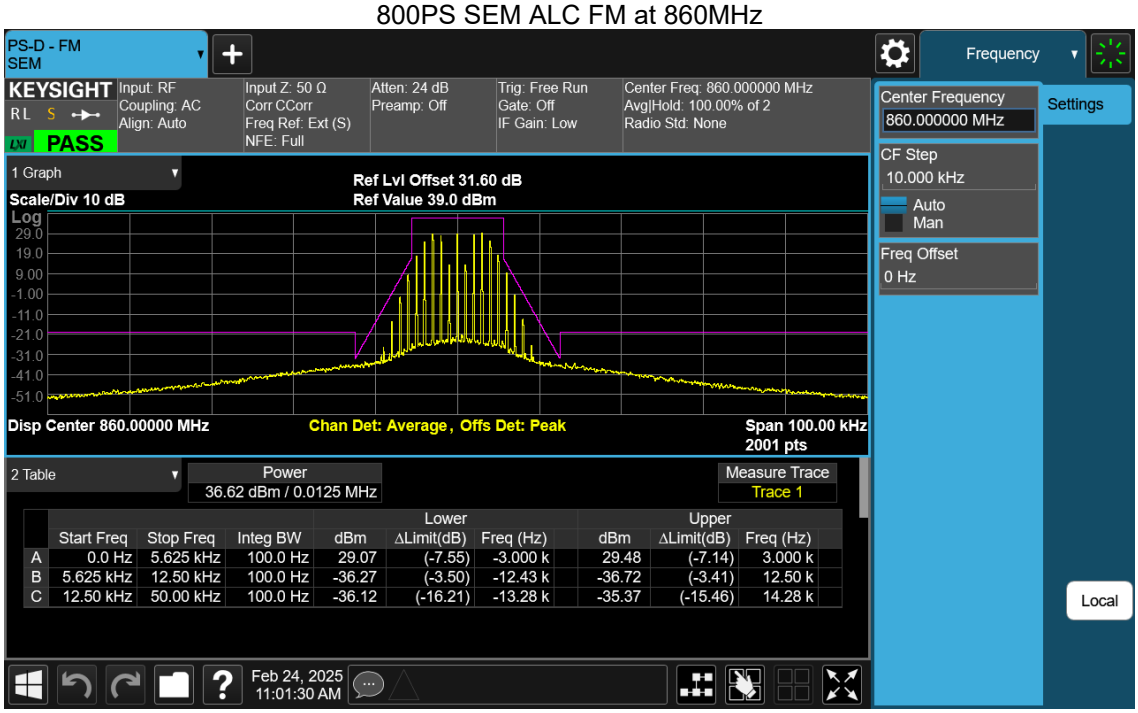
800PS SEM ALC FM at 869MHz



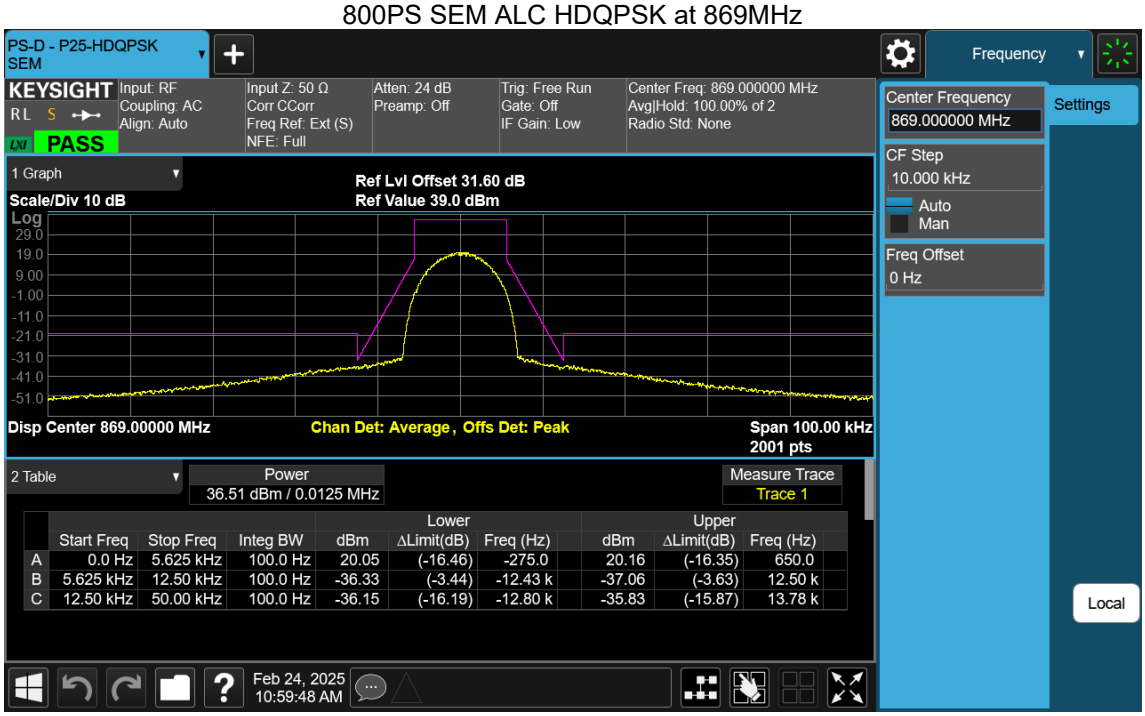

800PS SEM ALC FM at 851MHz



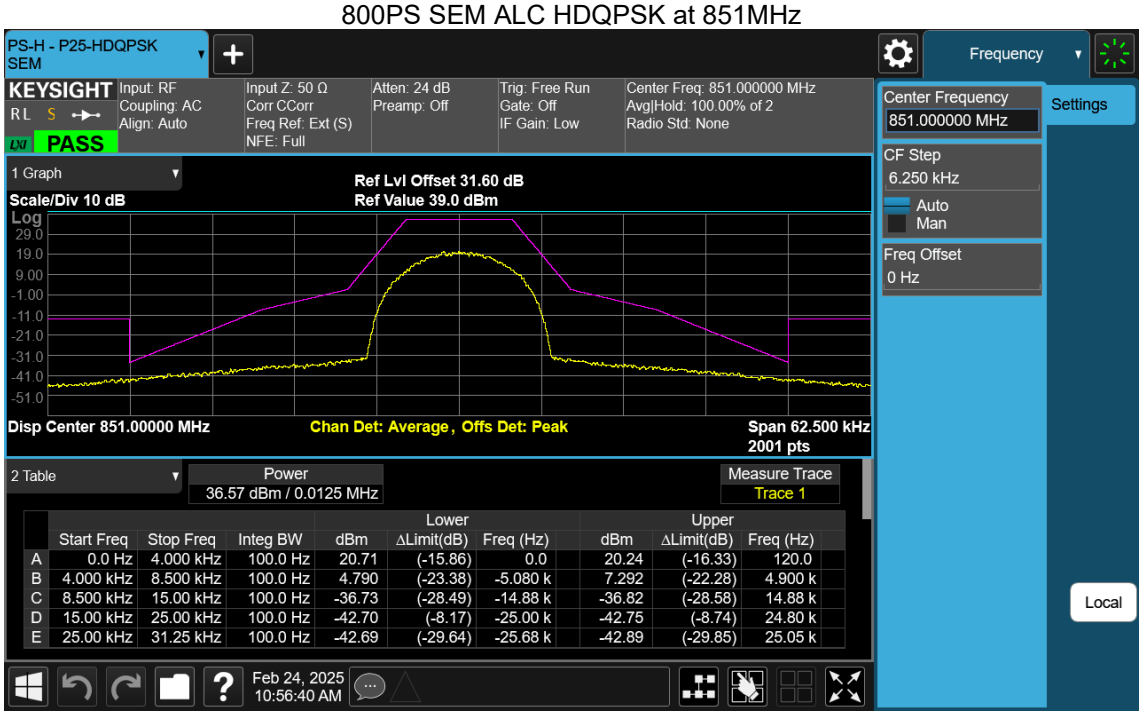
800PS SEM ALC FM at 860MHz




800PS SEM ALC HDQPSK at 869MHz

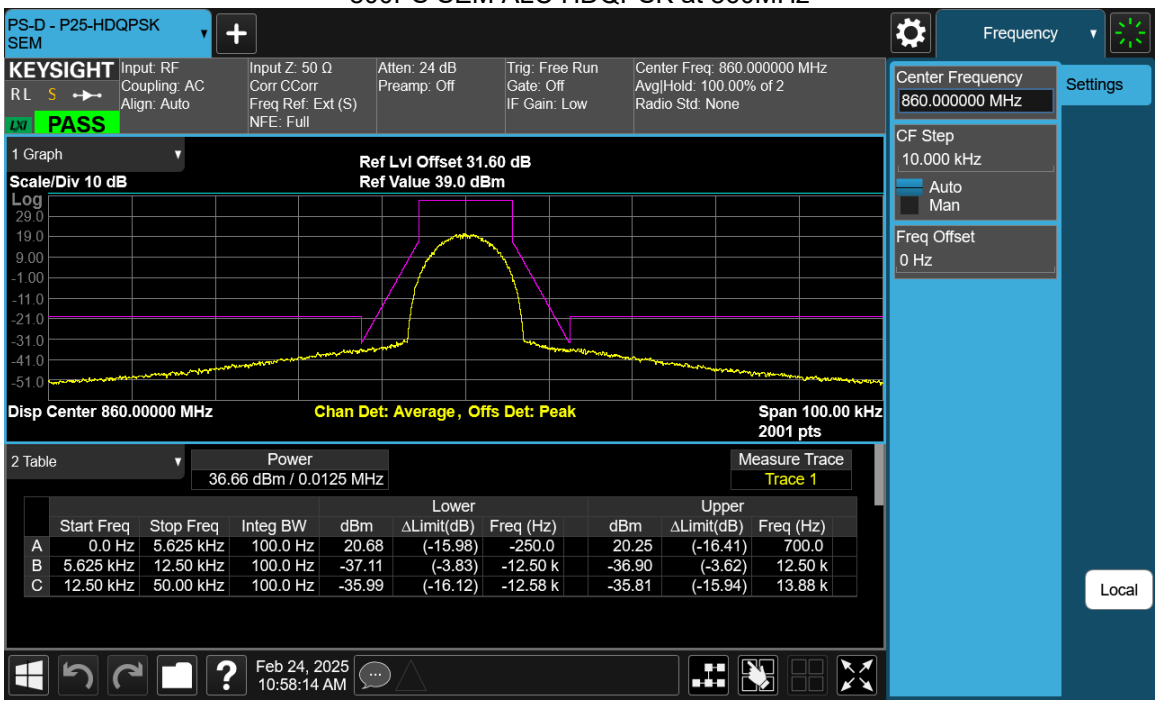


800PS SEM ALC HDQPSK at 851MHz



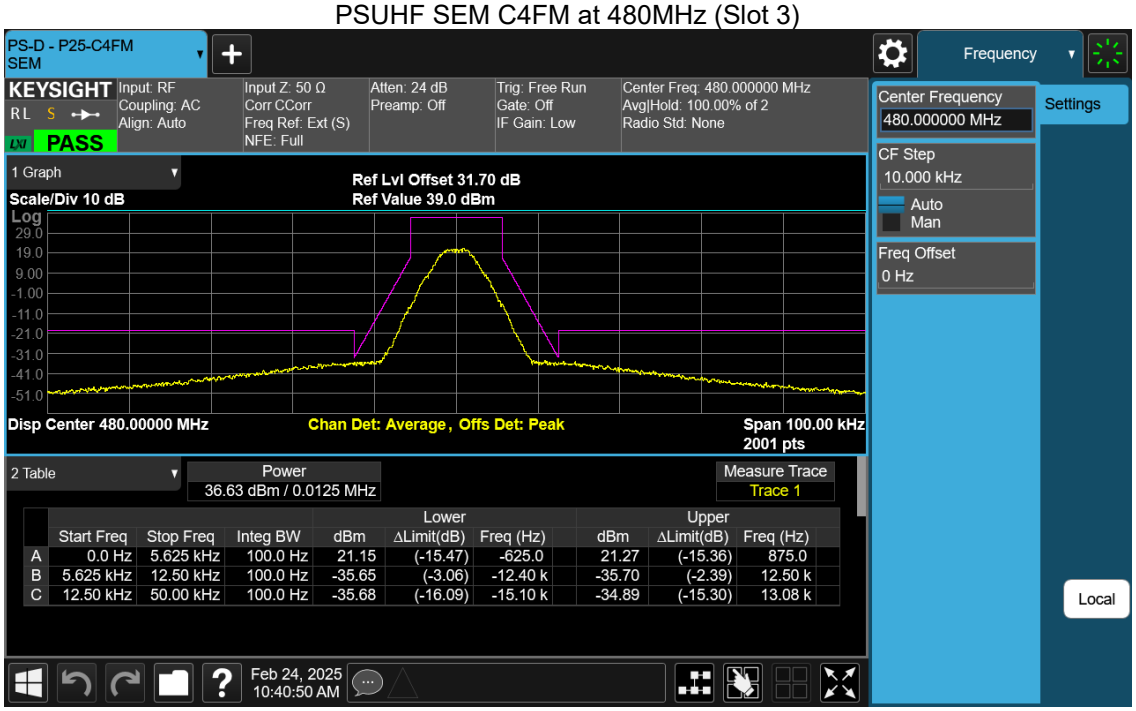

| | | | | Lower | | | Upper | | |
|---|---|---|---|---|---|---|---|---|---|
| | Start Freq | Stop Freq | Integ BW | dBm | ΔLimit(dB) | Freq (Hz) | dBm | ΔLimit(dB) | Freq (Hz) |
| A | 0.0 Hz | 4.000 kHz | 100.0 Hz | 20.71 | (-15.86) | 0.0 | 20.24 | (-16.33) | 120.0 |
| B | 4.000 kHz | 8.500 kHz | 100.0 Hz | 4.790 | (-23.38) | -5.080 k | 7.292 | (-22.28) | 4.900 k |
| C | 8.500 kHz | 15.00 kHz | 100.0 Hz | -36.73 | (-28.49) | -14.88 k | -36.82 | (-28.58) | 14.88 k |
| D | 15.00 kHz | 25.00 kHz | 100.0 Hz | -42.70 | (-8.17) | -25.00 k | -42.75 | (-8.74) | 24.80 k |
| E | 25.00 kHz | 31.25 kHz | 100.0 Hz | -42.69 | (-29.64) | -25.68 k | -42.89 | (-29.85) | 25.05 k |

800PS SEM ALC HDQPSK at 860MHz

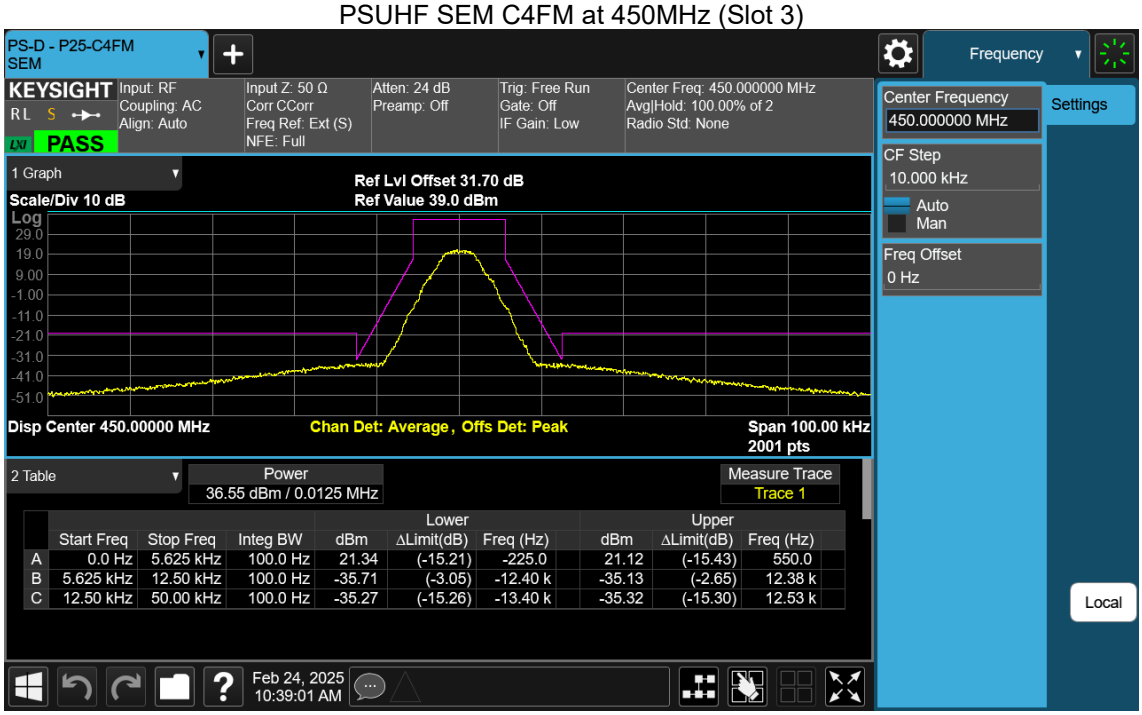



| | | | | Lower | | | Upper | | |
|---|---|---|---|---|---|---|---|---|---|
| | Start Freq | Stop Freq | Integ BW | dBm | ΔLimit(dB) | Freq (Hz) | dBm | ΔLimit(dB) | Freq (Hz) |
| A | 0.0 Hz | 5.625 kHz | 100.0 Hz | 20.68 | (-15.98) | -250.0 | 20.25 | (-16.41) | 700.0 |
| B | 5.625 kHz | 12.50 kHz | 100.0 Hz | -37.11 | (-3.83) | -12.50 k | -36.90 | (-3.62) | 12.50 k |
| C | 12.50 kHz | 50.00 kHz | 100.0 Hz | -35.99 | (-16.12) | -12.58 k | -35.81 | (-15.94) | 13.88 k |

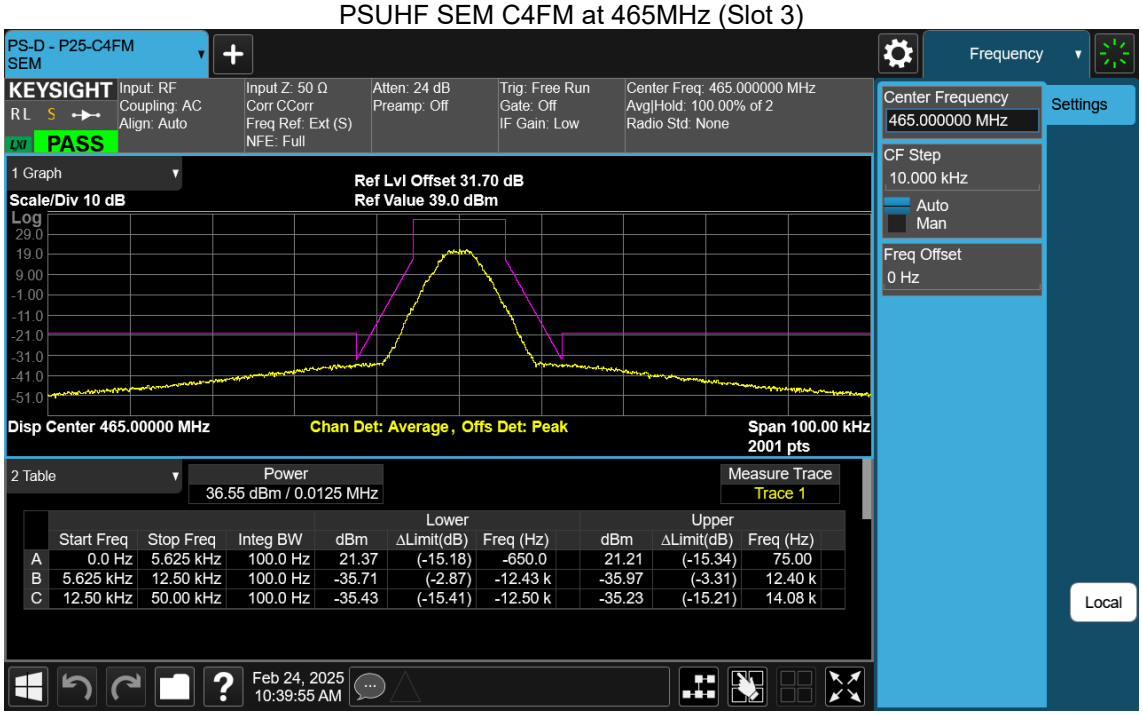
PSUHF SEM C4FM at 480MHz (Slot 3)



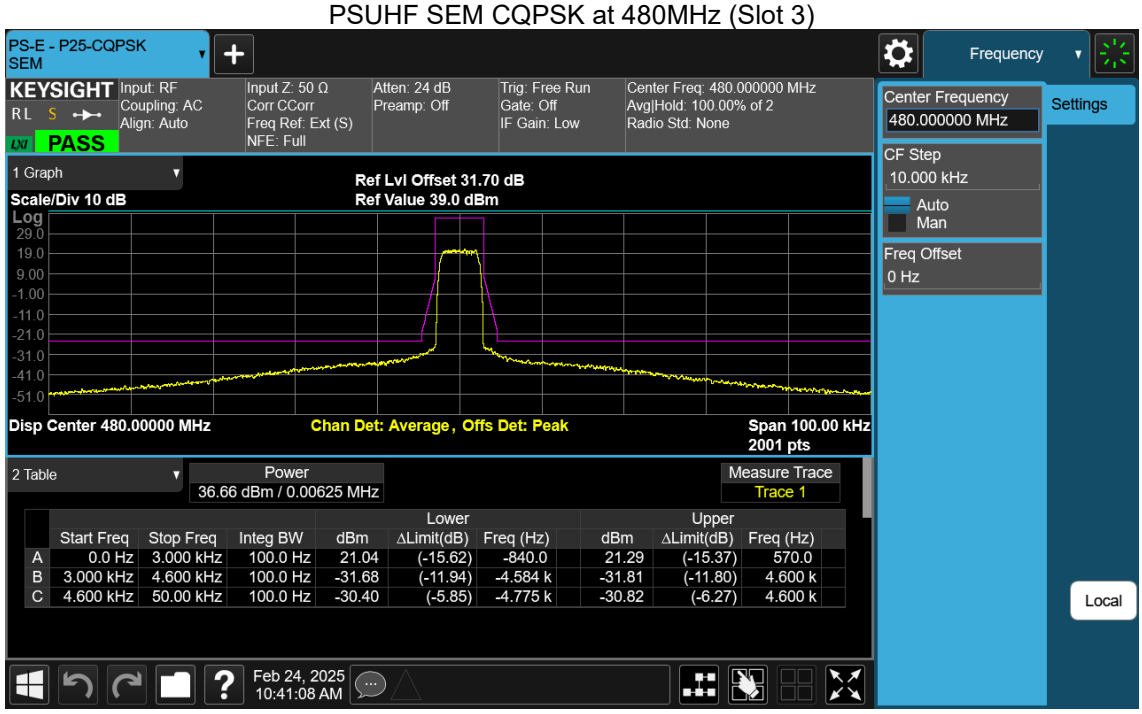

PSUHF SEM C4FM at 450MHz (Slot 3)



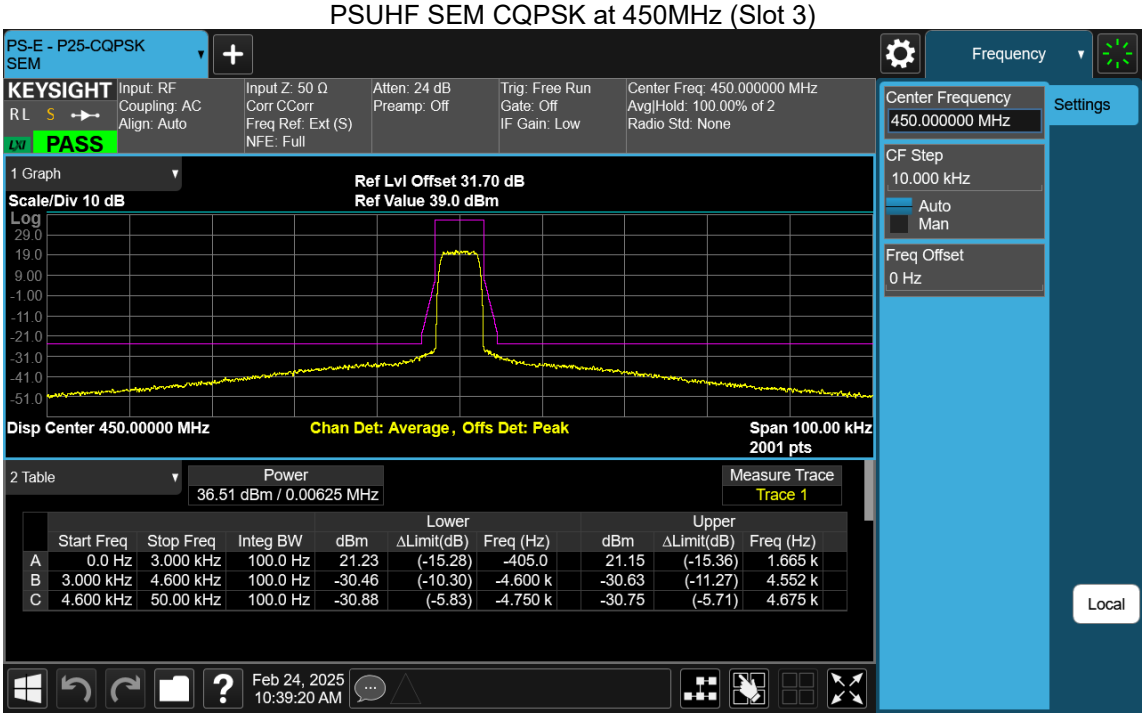
PSUHF SEM C4FM at 465MHz (Slot 3)



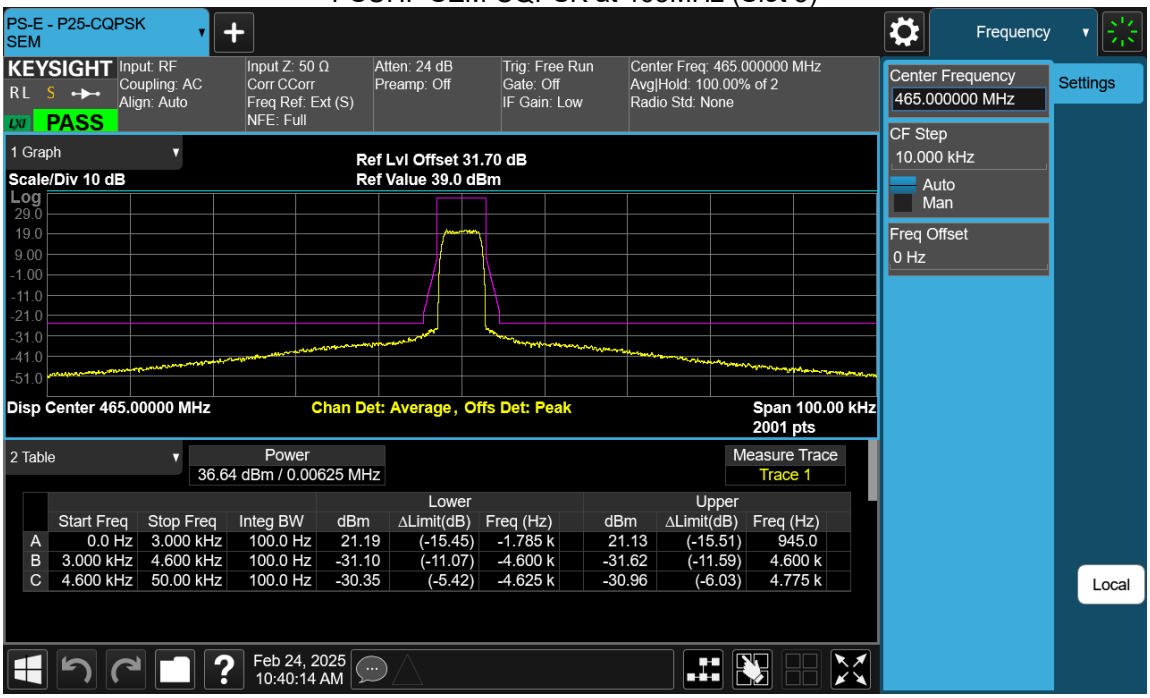

PSUHF SEM CQPSK at 480MHz (Slot 3)



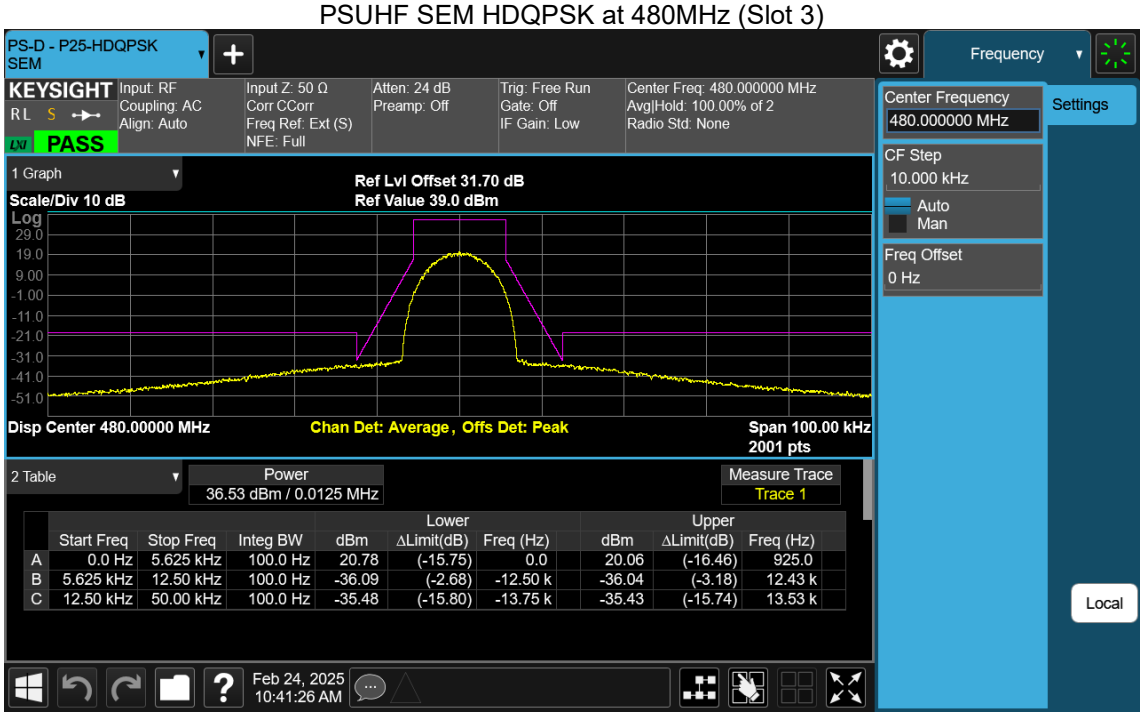
PSUHF SEM CQPSK at 450MHz (Slot 3)



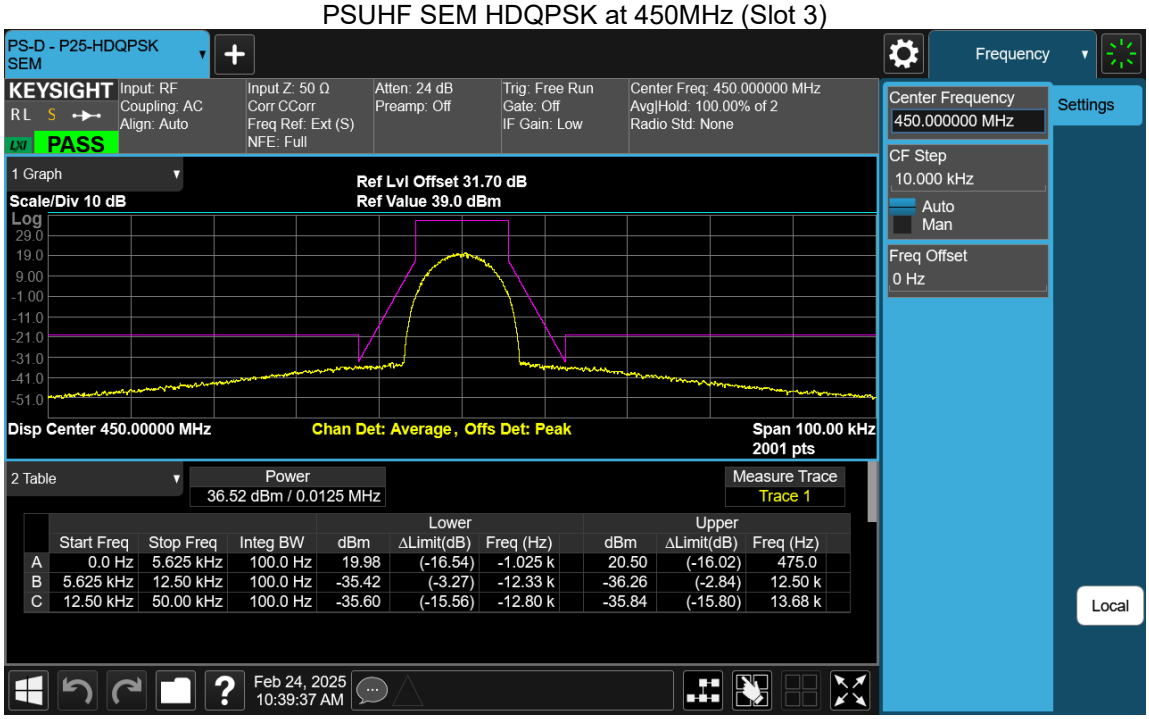

PSUHF SEM CQPSK at 465MHz (Slot 3)



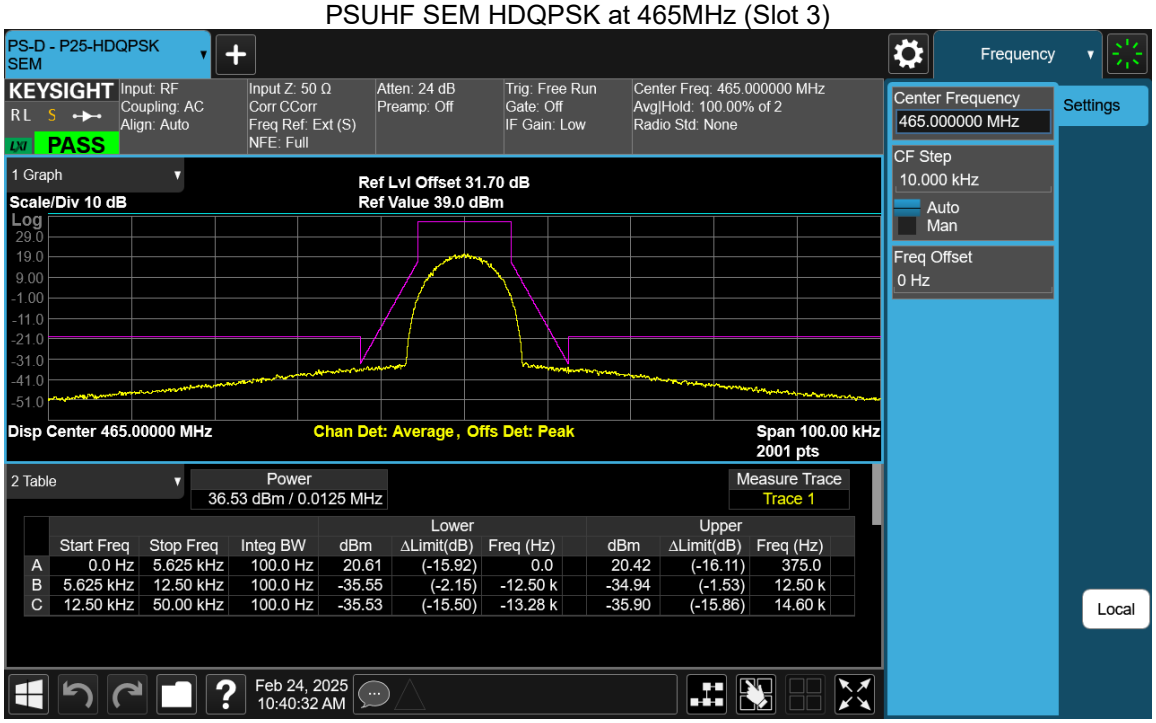
PSUHF SEM HDQPSK at 480MHz (Slot 3)



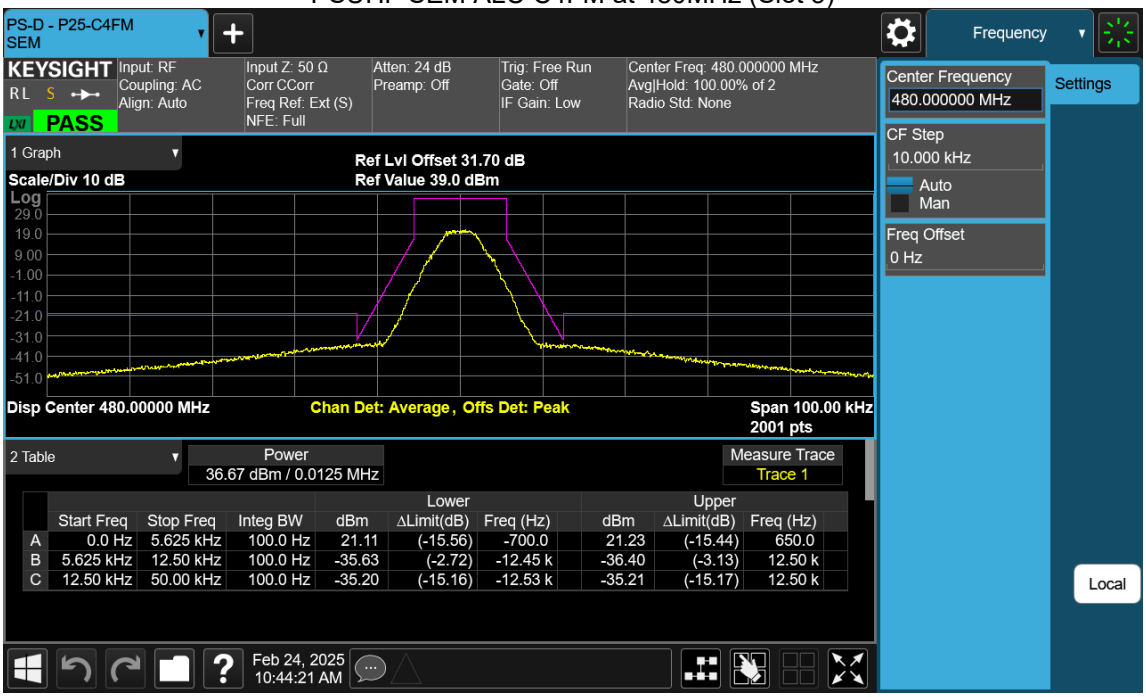

PSUHF SEM HDQPSK at 450MHz (Slot 3)



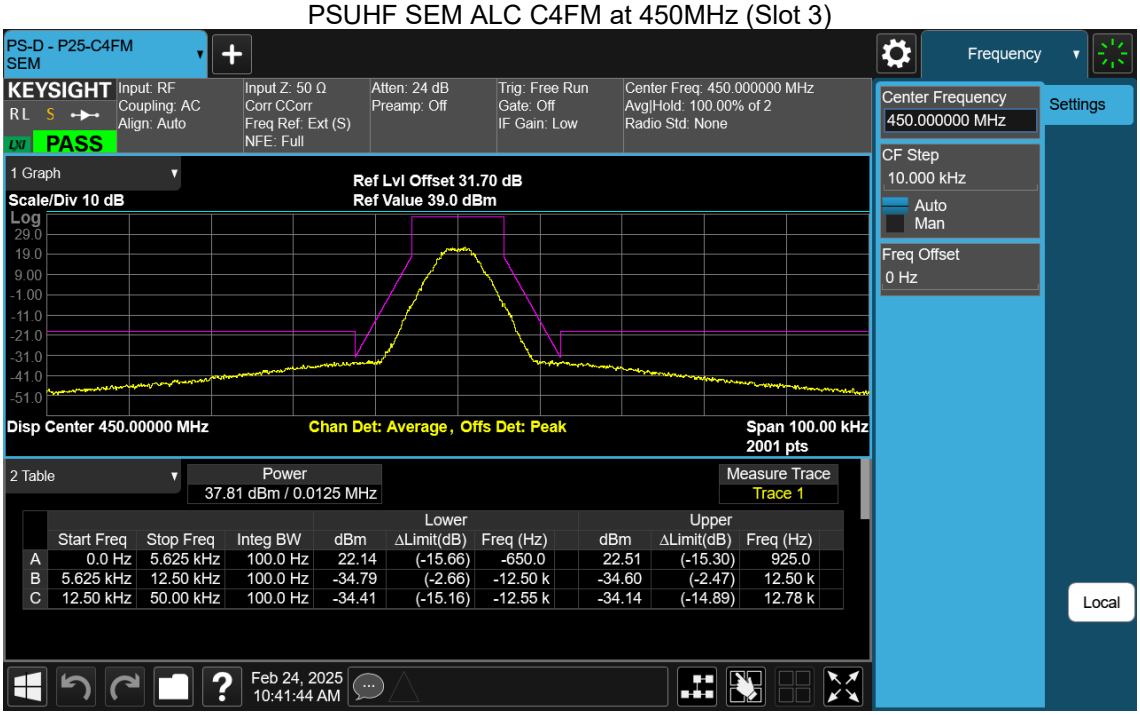
PSUHF SEM HDQPSK at 465MHz (Slot 3)



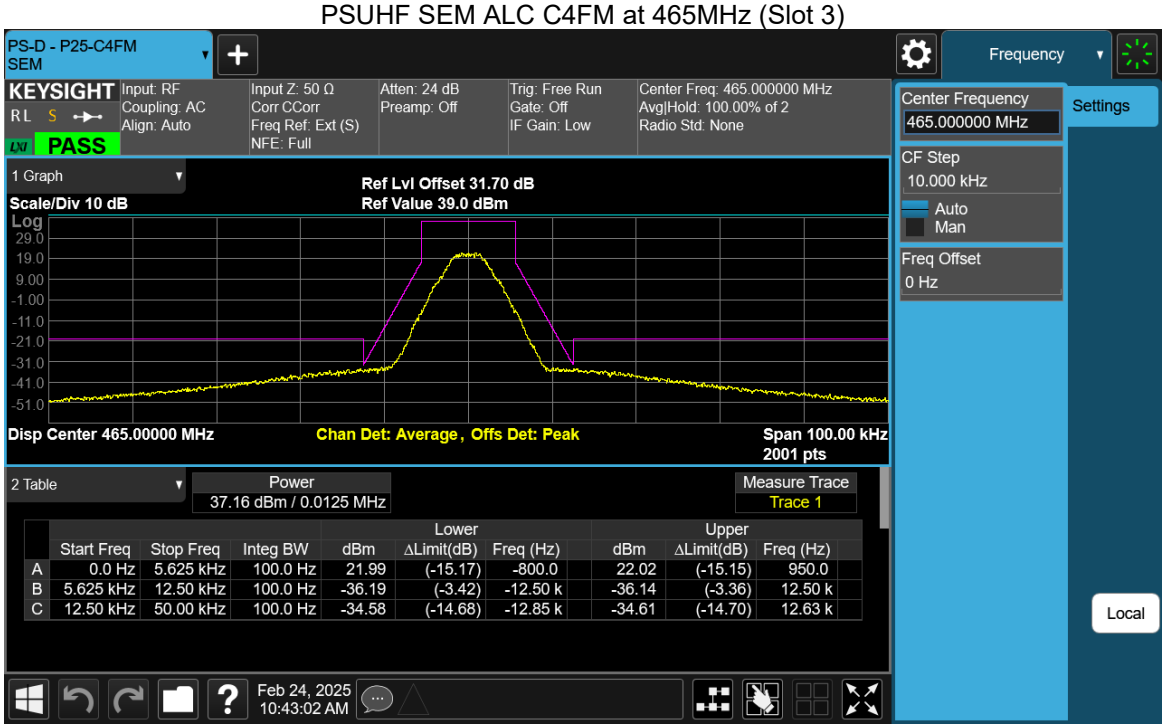

PSUHF SEM ALC C4FM at 480MHz (Slot 3)



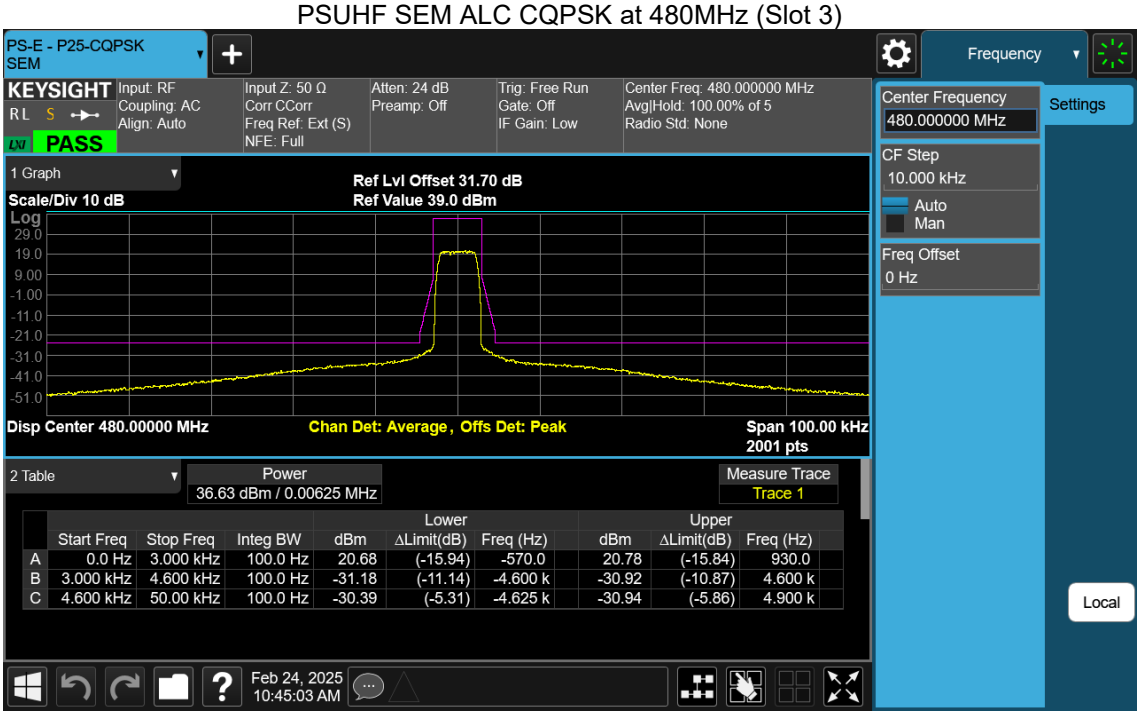
PSUHF SEM ALC C4FM at 450MHz (Slot 3)



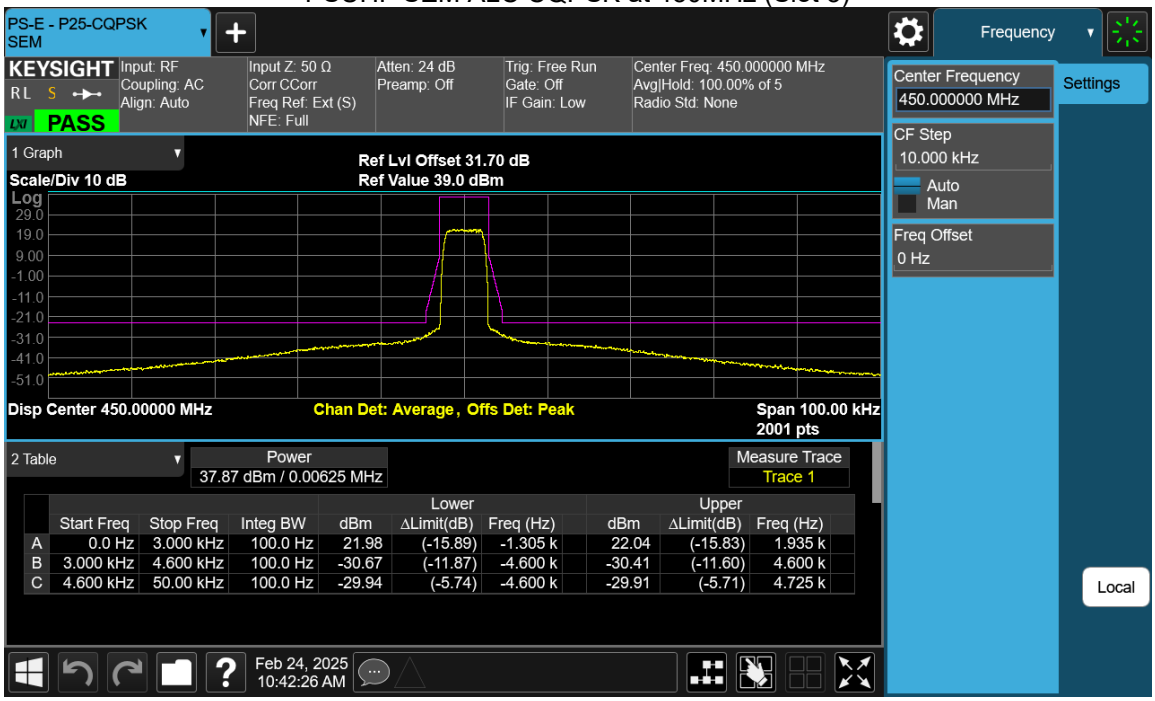

PSUHF SEM ALC C4FM at 465MHz (Slot 3)



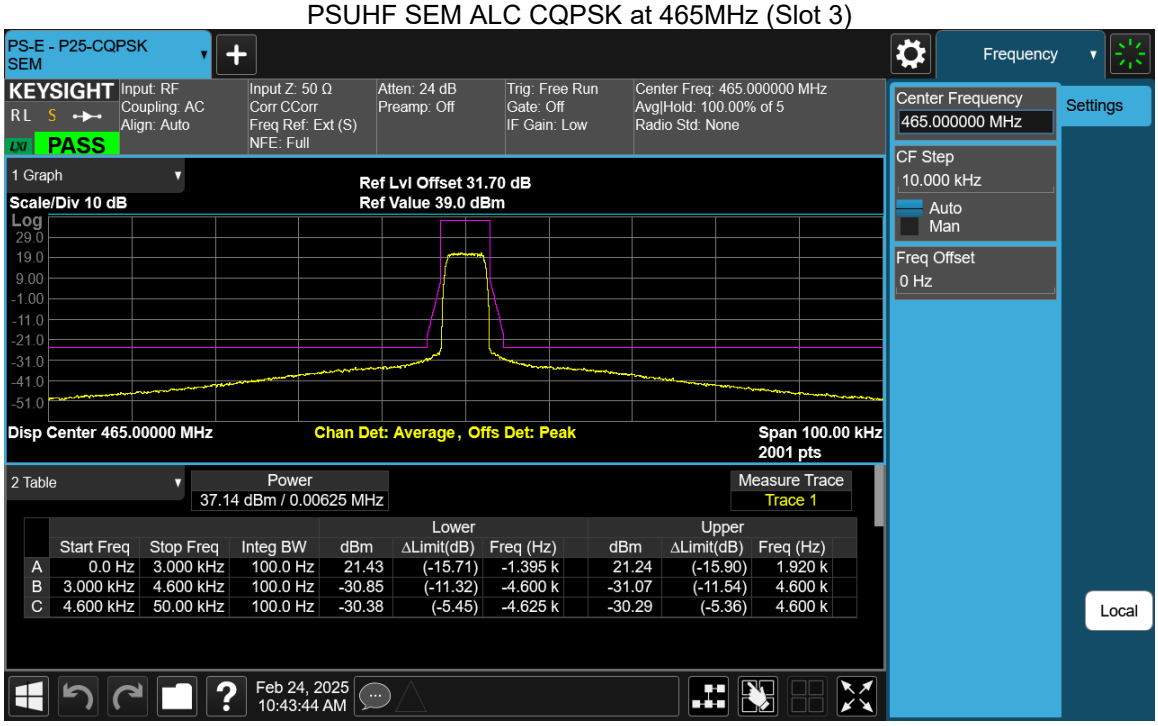
PSUHF SEM ALC CQPSK at 480MHz (Slot 3)



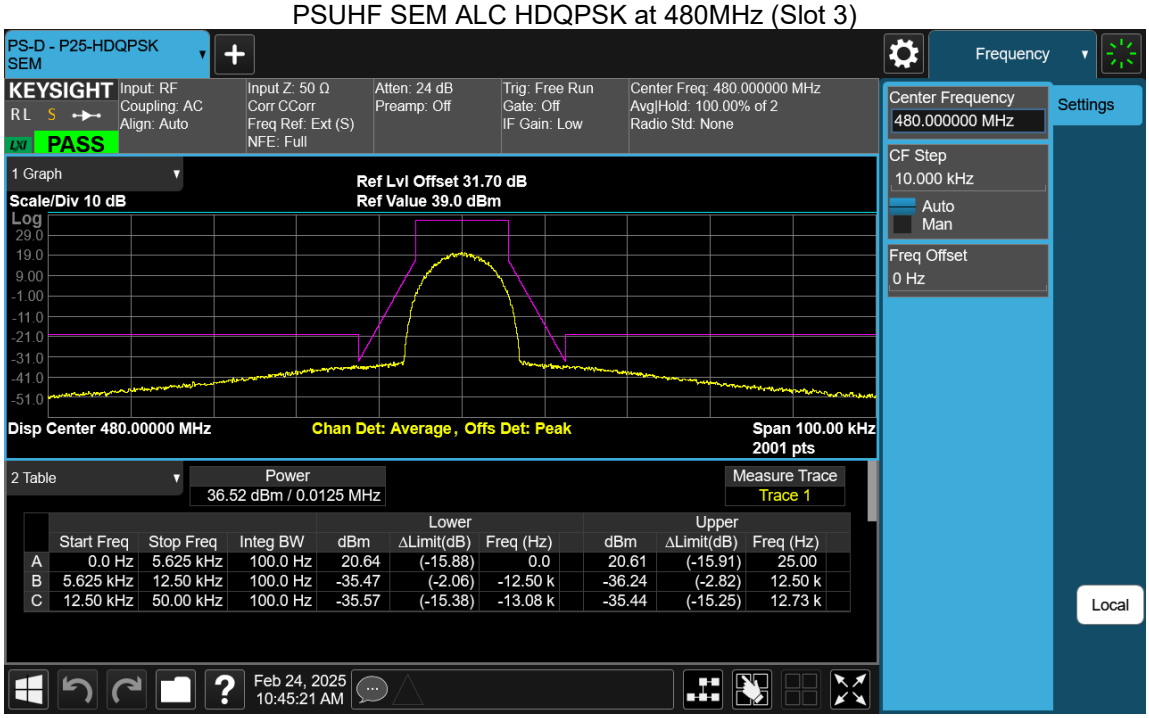

PSUHF SEM ALC CQPSK at 450MHz (Slot 3)



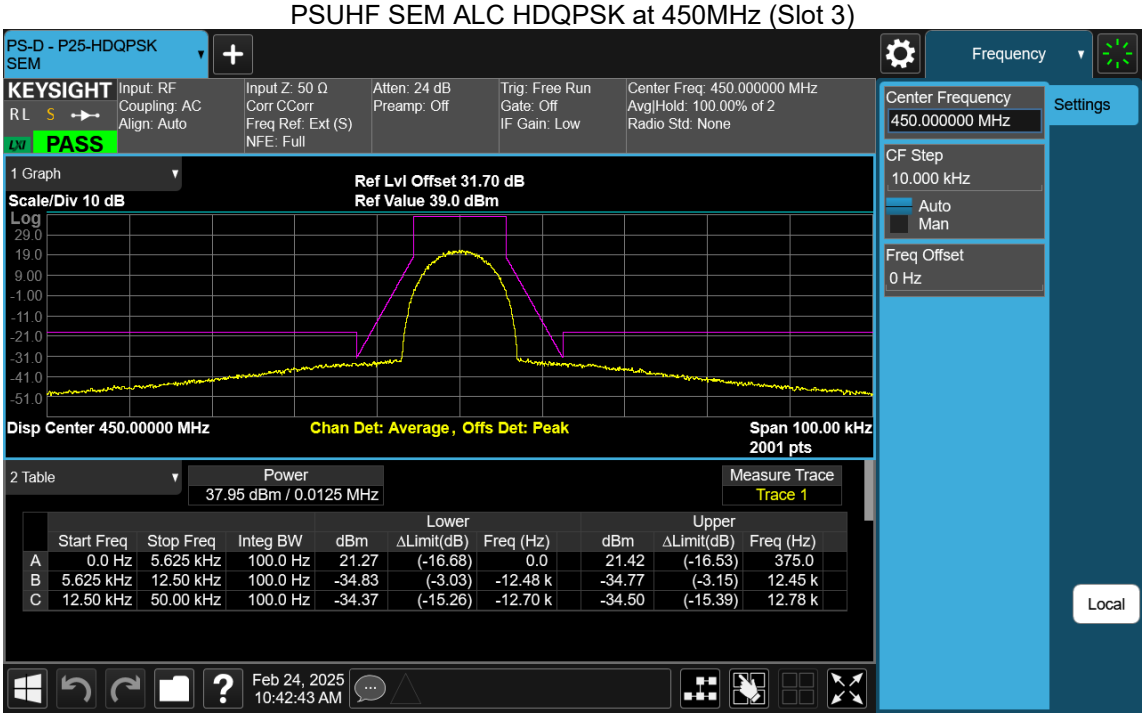
PSUHF SEM ALC CQPSK at 465MHz (Slot 3)




PSUHF SEM ALC HDQPSK at 480MHz (Slot 3)



PSUHF SEM ALC HDQPSK at 450MHz (Slot 3)




PSUHF SEM ALC HDQPSK at 465MHz (Slot 3)