

TEST REPORT

FCC Sub6 n26(Part22) Test for TM15FNEUJL1
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2502-FC091-R1

DATE OF ISSUE
April 8, 2025

Tested by
Beom Jin Cho



Technical Manager
Jong Seok Lee



Accredited by KOLAS, Republic of KOREA

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TEST REPORT

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April 08, 2025

Applicant	LG Electronics Inc. 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea
Product Name	Telematics
Model Name	TM15FNEUJL1
Date of Test	December 9, 2024 ~ February 24, 2025
FCC ID	BEJTM15FNEUJL1
Location of Test	☒ Permanent Testing Lab ☐ On Site Testing (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)
FCC Classification	PCS Licensed Transmitter (PCB)
Test Standard Used	FCC Rule Part: § 22
Test Results	PASS

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	February 24, 2025	Initial Release
1	April 08, 2025	Revised the Product Name.

Notice

Content

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section § 2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S. C. 853(a)

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA.

(KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197)

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	LG Electronics Inc.
Address:	128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea
FCC ID:	BEJTM15FNEUJL1
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§ 22
EUT Type:	Telematics
Model(s):	TM15FNEUJL1
SCS(kHz):	15
Bandwidth(MHz):	5, 10, 15, 20
Waveform:	CP-OFDM, DFT-S-OFDM
Modulation:	DFT-S-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
Tx Frequency:	826.5 MHz – 846.5 MHz (Sub6 n26(5) (5 MHz)) 829.0 MHz – 844.0 MHz (Sub6 n26(5) (10 MHz)) 831.5 MHz – 841.5 MHz (Sub6 n26(5) (15 MHz)) 834.0 MHz – 839.0 MHz (Sub6 n26(5) (20 MHz))
Date(s) of Tests:	December 9, 2024 ~ February 24, 2025
Serial number:	Radiated : 410VIXV000304(NAD) Conducted : 410VIXV000305(NAD)
Antenna Information	Please refer to the Antenna Specification document.

1.1 MAXIMUM OUTPUT POWER

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
Sub6 n26(5) (5)	826.5 – 846.5	4M51G7D	PI/2 BPSK	0.224	23.51
		4M51G7D	QPSK	0.223	23.48
		4M50W7D	16QAM	0.175	22.44
		4M51W7D	64QAM	0.122	20.87
		4M50W7D	256QAM	0.079	18.97
Sub6 n26(5) (10)	829.0 – 844.0	8M98G7D	PI/2 BPSK	0.215	23.32
		8M97G7D	QPSK	0.215	23.32
		8M95W7D	16QAM	0.166	22.20
		8M97W7D	64QAM	0.121	20.84
		8M98W7D	256QAM	0.074	18.68
Sub6 n26(5) (15)	831.5 – 841.5	13M5G7D	PI/2 BPSK	0.216	23.34
		13M5G7D	QPSK	0.215	23.33
		13M4W7D	16QAM	0.173	22.37
		13M5W7D	64QAM	0.119	20.77
		13M5W7D	256QAM	0.078	18.91
Sub6 n26(5) (20)	834.0 – 839.0	17M9G7D	PI/2 BPSK	0.219	23.41
		17M9G7D	QPSK	0.219	23.41
		17M9W7D	16QAM	0.167	22.22
		17M9W7D	64QAM	0.119	20.77
		17M8W7D	256QAM	0.076	18.78

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

Please refer to the [2G3G] Test Report.

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Radiated Power	- ANSI C63.26-2015 – Section 5.2.4.4 - KDB 971168 D01 v03r01 – Section 5.8
Radiated Spurious and Harmonic Emissions	- ANSI C63.26-2015 – Section 5.5.3 - KDB 971168 D01 v03r01 – Section 5.8

3.2 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW, not to exceed 1 MHz
3. VBW $\geq$ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points > 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Note

1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
2. A half wave dipole is then substituted in place of the EUT. For emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The power is calculated by the following formula;

$$P_d \text{ (dBm)} = P_g \text{ (dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.

3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value.

These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration

4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $> 2 \times$ span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10th harmonics from 9 kHz.

Test Note

1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
2. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data
3. For spurious emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated. The spurious emissions is calculated by the following formula;

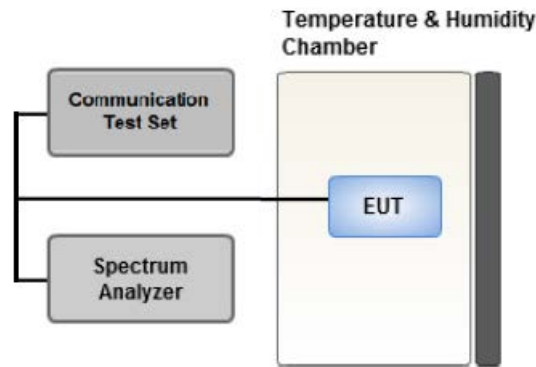
$$\text{Result}_{(\text{dBm})} = P_g_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

Where: P_g is the generator output power into the substitution antenna.

If the fundamental frequency is below 1 GHz, RF output power has been converted to EIRP.

$$\text{EIRP}_{(\text{dBm})} = \text{ERP}_{(\text{dBm})} + 2.15$$

3.4 PEAK- TO- AVERAGE RATIO



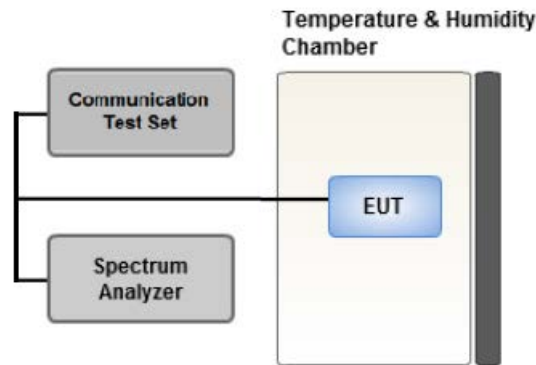
Test setup

① CCDF Procedure for PAPR

Test Settings

1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:
 - .- for continuous transmissions, set to 1 ms,
 - .- or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1 %.

3.5 OCCUPIED BANDWIDTH.



Test setup

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

The EUT makes a call to the communication simulator.

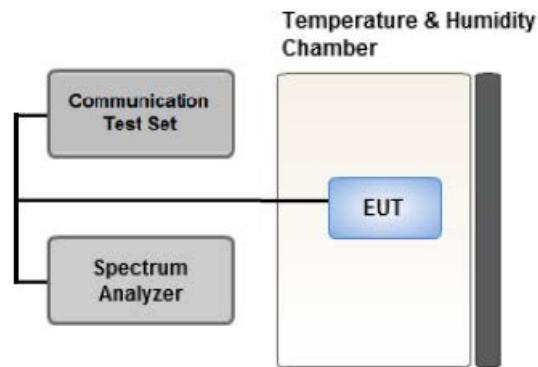
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5 % of the expected OBW
3. VBW $\geq$ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5 % of the 99 % occupied bandwidth observed in Step 7

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

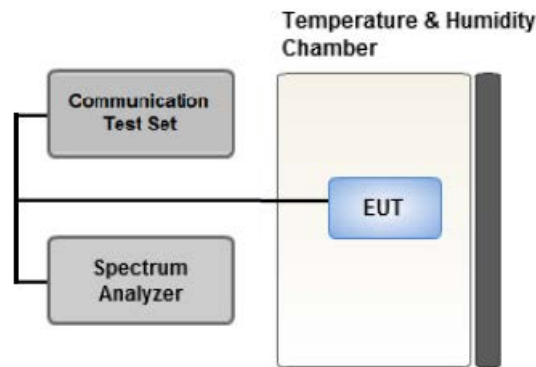
Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

1. RBW = 1 MHz
2. VBW $\geq$ 3 MHz
3. Detector = Peak
4. Trace Mode = Max Hold
5. Sweep time = auto
6. Number of points in sweep $\geq$ 2 x Span / RBW

3.7 BAND EDGE



Test setup

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points $\geq 2 \times \text{Span/RBW}$
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Notes

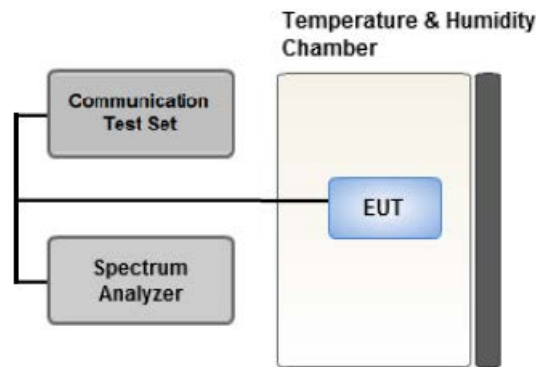
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

All measurements were done at 2 channels (low and high operational frequency range.)

The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

Where $\text{Margin} < 1$ dB the emission level is either corrected by $10 \log(1 \text{ MHz} / \text{RB})$ or the emission is integrated over a 1 MHz bandwidth to determine the final result. When using the integration method the integration window is either centered on the emission or, for emissions at the band edge, centered by an offset of 500 kHz from the block edge so that the integration window is the 1 MHz adjacent to the block edge.

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.

The frequency stability of the transmitter is measured by:

1. Temperature:

The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.

2. Primary Supply Voltage:

- . - Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.
- . - For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter.
Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

3.9 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
Mode: SA Only
- JIG was used to test the EUT. (EUT + JIG)
- All simultaneous transmission scenarios of operation were investigated, and the test results showed no additional significant emissions relative to the least restrictive limit were observed.
Therefore, only the worst case(stand-alone) results were reported.
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
Please refer to the table below.
- NR Band 26 (5/10/15/20 MHz) overlaps the entire frequency range of NR Band 5 (5/10/15/20 MHz) and they have the same Tune-up power.
Therefore, test data provided in this report covers Sub6 n26 as well as Sub6 n5.
- In the case of radiated spurious emissions, all bandwidth of operation was investigated and the worst case bandwidth results are reported. (Worst case : 20 MHz)

[Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Radiated Power	PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	See Section 8.1		Z
Radiated Spurious and Harmonic Emissions	PI/2 BPSK	See Section 8.2		Z

3.10 WORST CASE(CONDUCTED TEST)

- Waveform : All Waveform of operation were investigated and the worst case configuration results are reported.
(Worst case: DFT-S-OFDM)
- Modulation : All Modulation of operation were investigated and the worst case configuration results are reported.
(Worst case: PI/2 BPSK)
- All modes of operation were investigated and the worst case configuration results are reported.
Mode: SA Only
- JIG was used to test the EUT. (EUT + JIG)
- NR Band 26 (5/10/15/20 MHz) overlaps the entire frequency range of NR Band 5 (5/10/15/20 MHz) and they have the same Tune-up power.
Therefore, test data provided in this report covers Sub6 n26 as well as Sub6 n5.
- All RB sizes, offsets of operation were investigated and the worst case configuration results are reported.
Please refer to the table below..

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	Pi2/BPSK, QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20	Mid	Full RB	0
Peak-To-Average Ratio	Pi2/BPSK, QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20	Mid	Full RB	0
Band-edge	Pi2/BPSK	5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	51
		15	Low	1	0
			High	1	78
		20	Low	1	0
			High	1	105
	Pi2/BPSK	5, 10, 15, 20	Low, High	Full RB	0
			Low, Mid, High	1	1

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	Switch box(1 G HPF+LNA)	HCT CO., LTD.,	F2L2	12/12/2025	Annual
RF Switching System	Switch box(3 G HPF+LNA)	HCT CO., LTD.,	F2L3	12/12/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F2L5	12/12/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F2L14	12/12/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/17/2025	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93022487	06/27/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03197	11/28/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03201	11/28/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/19/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	ROHDE & SCHWARZ	101733	09/19/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	08/19/2026	Biennial
Radio Communication Test Station	MT8000A	Anritsu Corp.	6272613402	08/28/2025	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
Signal & Spectrum Analyzer (2 Hz~67 GHz)	FSW67	REOHDE & SCHWARZ	101736	05/23/2025	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ($\pm$ kHz)
Occupied Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ dB)
Block Edge	0.70 (Confidence level about 95 %, $k=2$)
Conducted Spurious Emissions	1.18 (Confidence level about 95 %, $k=2$)
Peak- to- Average Ratio	0.68 (Confidence level about 95 %, $k=2$)
Radiated Power	4.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.70 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.52 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.66 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, $k=2$)

6. SUMMARY OF TEST RESULTS

Note. The decision rule applies 'simple acceptance'

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§ 2.1051, § 22.917(a)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§ 2.1046	N/A	See Note1
Peak- to- Average Ratio	§ 22.913(d)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§ 2.1055, § 22.355	< 2.5 ppm	PASS

Note:

1. See SAR Report
2. Conducted test were tested using 5G Wireless Tester.

6.2 Test Condition: Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Effective Radiated Power	§ 22.913(a)(5)	< 7 Watts max. ERP	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 22.917(a)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	PASS

Note:

1. Radiated tests were tested using 5G Wireless Tester.

6.3. Data Referencing

Rule Part	Test item	Data Referencing	Comments
§2.1049	Occupied Bandwidth	Y	-
§2.1051, §22.917(a)	Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	Y	-
§22.913(d)	Peak- to- Average Ratio	Y	-
§2.1055, §22.355	Frequency stability / variation of ambient temperature	Y	-
§22.913(a)(5)	Effective Radiated Power Equivalent Isotropic Radiated Power	Y	Spot-check
§2.1053, §22.917(a)	Radiated Spurious and Harmonic Emissions	Y	Spot-check
§2.1046	Conducted Output Power	Y	-

Spot-Check Result

1. Data was leveraged from model TM15FNEUJL0 for the certification of TM15FNEUJL1.
2. Please refer to the [FCC Evaluation] Report

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	ERP	
channel	Freq.(MHz)						W	dBm
128	824.20	-21.37	38.40	-10.61	0.95	H	0.483	26.84

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power.

7.2 EIRP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol.	EIRP	
channel	Freq.(MHz)						W	dBm
20175	1,732.50	-15.75	18.45	9.90	1.76	H	0.456	26.59

$$\text{EIRP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW
GSM BW = 249 kHz
G = Phase Modulation
X = Cases not otherwise covered
W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W
GSM BW = 249 kHz
G = Phase Modulation
7 = Quantized/Digital Info
W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W
WCDMA BW = 4.17 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D
LTE BW = 4.48 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D
LTE BW = 4.48 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission; telemetry; telecommand

8. TEST DATA

8.1 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured	Substitute	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
826.5	Sub6 n26(5) 5 MHz [15 kHz]	PI/2 BPSK	-27.51	35.40	-9.95	1.44	H	< 7.00	0.252	24.01	1	12
		QPSK	-27.60	35.31	-9.95	1.44	H		0.246	23.92		
		16-QAM	-28.64	34.27	-9.95	1.44	H		0.194	22.88		
		64-QAM	-30.12	32.79	-9.95	1.44	H		0.138	21.40		
		256-QAM	-32.05	30.86	-9.95	1.44	H		0.088	19.47		
836.5		PI/2 BPSK	-27.76	35.10	-9.90	1.45	H		0.237	23.75	1	1
		QPSK	-27.77	35.09	-9.90	1.45	H		0.237	23.74		
		16-QAM	-28.89	33.97	-9.90	1.45	H		0.183	22.62		
		64-QAM	-30.34	32.52	-9.90	1.45	H		0.131	21.17		
		256-QAM	-32.22	30.64	-9.90	1.45	H		0.085	19.29		
1846.5		PI/2 BPSK	-28.63	34.66	-9.85	1.45	H		0.217	23.36	1	1
		QPSK	-28.69	34.60	-9.85	1.45	H		0.214	23.30		
		16-QAM	-29.65	33.64	-9.85	1.45	H		0.171	22.34		
		64-QAM	-31.18	32.11	-9.85	1.45	H		0.120	20.81		
		256-QAM	-33.13	30.16	-9.85	1.45	H		0.077	18.86		

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured	Substitute	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
829.0	Sub6 n26(5) 10 MHz [15 kHz]	PI/2 BPSK	-27.61	35.24	-9.95	1.44	H	< 7.00	0.242	23.85	1	50
		QPSK	-27.70	35.15	-9.95	1.44	H		0.237	23.76		
		16-QAM	-28.68	34.17	-9.95	1.44	H		0.190	22.78		
		64-QAM	-30.22	32.63	-9.95	1.44	H		0.133	21.24		
		256-QAM	-32.19	30.66	-9.95	1.44	H		0.084	19.27		
836.5		PI/2 BPSK	-27.55	35.31	-9.90	1.45	H		0.249	23.96	1	1
		QPSK	-27.60	35.26	-9.90	1.45	H		0.246	23.91		
		16-QAM	-28.55	34.31	-9.90	1.45	H		0.198	22.96		
		64-QAM	-30.05	32.81	-9.90	1.45	H		0.140	21.46		
		256-QAM	-32.13	30.73	-9.90	1.45	H		0.087	19.38		
844.0		PI/2 BPSK	-28.47	34.77	-9.85	1.45	H	0.222	23.47	1	1	
		QPSK	-28.55	34.69	-9.85	1.45	H	0.218	23.39			
		16-QAM	-29.48	33.76	-9.85	1.45	H	0.176	22.46			
		64-QAM	-30.82	32.42	-9.85	1.45	H	0.129	21.12			
		256-QAM	-32.82	30.42	-9.85	1.45	H	0.082	19.12			

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured	Substitute	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
831.5	Sub6 n26(5) 15 MHz [15 kHz]	PI/2 BPSK	-27.45	35.31	-9.95	1.45	H	< 7.00	0.246	23.91	1	39
		QPSK	-27.58	35.18	-9.95	1.45	H		0.239	23.78		
		16-QAM	-28.63	34.13	-9.95	1.45	H		0.187	22.73		
		64-QAM	-30.04	32.72	-9.95	1.45	H		0.136	21.32		
		256-QAM	-32.13	30.63	-9.95	1.45	H		0.084	19.23		
836.5		PI/2 BPSK	-27.54	35.32	-9.90	1.45	H		0.250	23.97	1	1
		QPSK	-27.59	35.27	-9.90	1.45	H		0.247	23.92		
		16-QAM	-28.59	34.27	-9.90	1.45	H		0.196	22.92		
		64-QAM	-30.05	32.81	-9.90	1.45	H		0.140	21.46		
		256-QAM	-31.96	30.90	-9.90	1.45	H		0.090	19.55		
841.5		PI/2 BPSK	-27.76	35.32	-9.85	1.45	H	0.252	24.02	1	1	
		QPSK	-27.79	35.29	-9.85	1.45	H	0.251	23.99			
		16-QAM	-28.87	34.21	-9.85	1.45	H	0.195	22.91			
		64-QAM	-30.32	32.76	-9.85	1.45	H	0.140	21.46			
		256-QAM	-32.28	30.80	-9.85	1.45	H	0.089	19.50			

Freq (MHz)	Mod/ Bandwidth [SCS (kHz)]	Modulation	Measured	Substitute	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
			Level (dBm)	Level (dBm)				W	W	dBm	Size	Offset
834.0	Sub6 n26(5) 20 MHz [15 kHz]	PI/2 BPSK	-27.51	35.23	-9.95	1.45	H	< 7.00	0.242	23.83	1	1
		QPSK	-27.60	35.14	-9.95	1.45	H		0.236	23.74		
		16-QAM	-28.59	34.15	-9.95	1.45	H		0.188	22.75		
		64-QAM	-30.11	32.63	-9.95	1.45	H		0.133	21.23		
		256-QAM	-32.25	30.49	-9.95	1.45	H		0.081	19.09		
836.5		PI/2 BPSK	-28.40	34.46	-9.90	1.45	H		0.205	23.11	1	1
		QPSK	-28.41	34.45	-9.90	1.45	H		0.204	23.10		
		16-QAM	-29.45	33.41	-9.90	1.45	H		0.161	22.06		
		64-QAM	-30.31	32.55	-9.90	1.45	H		0.132	21.20		
		256-QAM	-32.05	30.81	-9.90	1.45	H		0.088	19.46		
839.0		PI/2 BPSK	-27.46	35.56	-9.85	1.45	H	0.267	24.26	1	1	
		QPSK	-27.50	35.52	-9.85	1.45	H	0.265	24.22			
		16-QAM	-28.60	34.42	-9.85	1.45	H	0.205	23.12			
		64-QAM	-30.04	32.98	-9.85	1.45	H	0.147	21.68			
		256-QAM	-31.96	31.06	-9.85	1.45	H	0.095	19.76			

8.2 RADIATED SPURIOUS EMISSIONS

■ NR Band:	<u>N26(5)</u>
■ Bandwidth:	<u>20 MHz</u>
■ Modulation:	<u>PI/2 BPSK</u>
■ Distance:	<u>3 meters</u>
■ SCS:	<u>15 kHz</u>

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
166800 (834.0)	1 668.00	-50.41	9.57	-65.65	2.05	H	-58.13	-13.00	1	1
	2 502.00	-52.01	10.27	-63.27	2.50	H	-55.50	-13.00		
	3 336.00	-54.10	11.10	-62.72	2.98	H	-54.60	-13.00		
	4 170.00	-53.79	11.72	-59.62	3.39	H	-51.29	-13.00		
	5 004.00	-56.14	11.15	-57.31	3.71	H	-49.87	-13.00		
167300 (836.5)	1 673.00	-52.32	9.60	-67.59	2.05	H	-60.04	-13.00	1	1
	2 509.50	-55.63	10.26	-66.91	2.51	H	-59.16	-13.00		
	3 346.00	-55.91	11.10	-64.57	2.96	H	-56.43	-13.00		
	4 182.50	-52.65	11.72	-58.31	3.40	H	-49.99	-13.00		
	5 019.00	-57.35	11.15	-58.45	3.69	H	-50.99	-13.00		
167800 (839.0)	1 678.00	-50.36	9.63	-65.65	2.06	H	-58.08	-13.00	1	1
	2 517.00	-52.79	10.26	-64.08	2.53	H	-56.35	-13.00		
	3 356.00	-52.85	11.11	-61.61	2.95	H	-53.45	-13.00		
	4 195.00	-54.22	11.72	-59.79	3.43	H	-51.50	-13.00		
	5 034.00	-54.31	11.14	-55.49	3.67	H	-48.02	-13.00		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
Sub6 n26(5)	5 MHz	836.5	BPSK	25	0	4.09
			QPSK			4.63
			16-QAM			5.92
			64-QAM			6.23
			256-QAM			6.84
	10 MHz		BPSK	50		4.10
			QPSK			4.60
			16-QAM			5.59
			64-QAM			6.10
			256-QAM			6.66
	15 MHz		BPSK	75		3.90
			QPSK			4.59
			16-QAM			5.52
			64-QAM			6.00
			256-QAM			6.62
	20 MHz		BPSK	100		3.74
			QPSK			4.60
			16-QAM			5.56
			64-QAM			6.03
			256-QAM			6.58

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 57 ~ 76.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Sub6 n26(5)	5 MHz	836.5	BPSK	25	0	4.5099
			QPSK			4.5127
			16-QAM			4.4984
			64-QAM			4.5067
			256-QAM			4.4991
	10 MHz		BPSK	50		8.9761
			QPSK			8.9673
			16-QAM			8.9511
			64-QAM			8.9661
			256-QAM			8.9808
	15 MHz		BPSK	75		13.479
			QPSK			13.451
			16-QAM			13.418
			64-QAM			13.471
			256-QAM			13.452
	20 MHz		BPSK	100		17.924
			QPSK			17.891
			16-QAM			17.857
			64-QAM			17.879
			256-QAM			17.832

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 37 ~ 56.

8.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
Sub6 n26(5)	5	826.5	7.1586	27.520	-60.923	-33.403	-13.00
		836.5	4.8655	26.600	-61.162	-34.562	
		846.5	4.1177	26.600	-61.831	-35.231	
	10	829.0	3.9981	26.600	-61.716	-35.116	
		836.5	3.7588	26.600	-61.006	-34.406	
		844.0	4.0679	26.600	-61.054	-34.454	
	15	831.5	4.0379	26.600	-61.676	-35.076	
		836.5	5.7328	27.520	-61.774	-34.254	
		841.5	6.0319	27.520	-61.437	-33.917	
	20	834.0	6.0220	27.520	-61.620	-34.100	
		836.5	9.5214	27.520	-61.432	-33.912	
		839.0	6.0120	27.520	-60.920	-33.400	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 101 ~ 112.
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor(dB) = Cable Loss + Ext. Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	26.080
1 – 5	26.600
5 – 10	27.520
10 – 15	29.120
15 – 20	31.710
Above 20	32.350

8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 77 ~ 100.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- ☐ BandWidth: 5 MHz
☐ Voltage(100 %): 12.000 VDC
☐ Deviation Limit: $\pm 0.000\ 25\ %$ or $2.5\ ppm$

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
836.5	100 %	+20(Ref)	836 499 994	0.0	0.000 000	0.000
	100 %	-30	836 499 988	-6.5	-0.000 001	-0.008
	100 %	-20	836 499 987	-6.7	-0.000 001	-0.008
	100 %	-10	836 499 997	3.4	0.000 000	0.004
	100 %	0	836 499 997	3.2	0.000 000	0.004
	100 %	+10	836 499 997	2.9	0.000 000	0.003
	100 %	+30	836 499 996	2.3	0.000 000	0.003
	100 %	+40	836 499 996	1.8	0.000 000	0.002
	100 %	+50	836 499 996	1.9	0.000 000	0.002
	85%	+20	836 499 995	0.9	0.000 000	0.001
	115%	+20	836 499 997	3.2	0.000 000	0.004

■ BandWidth: 10 MHz
 ■ Voltage(100 %): 12.000 VDC
 ■ Deviation Limit: ± 0.000 25 % or 2.5 ppm

Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
836.5	100 %	+20(Ref)	836 500 004	0.0	0.000 000	0.000
	100 %	-30	836 500 007	3.4	0.000 000	0.004
	100 %	-20	836 500 006	2.8	0.000 000	0.003
	100 %	-10	836 500 006	2.7	0.000 000	0.003
	100 %	0	836 500 006	2.3	0.000 000	0.003
	100 %	+10	836 500 006	2.4	0.000 000	0.003
	100 %	+30	836 500 006	1.9	0.000 000	0.002
	100 %	+40	836 500 006	1.9	0.000 000	0.002
	100 %	+50	836 500 005	1.7	0.000 000	0.002
	85%	+20	836 500 007	2.9	0.000 000	0.003
	115%	+20	836 500 006	2.1	0.000 000	0.003

☐ BandWidth: 15 MHz
☐ Voltage(100 %): 12.000 VDC
☐ Deviation Limit: ± 0.000 25 % or 2.5 ppm

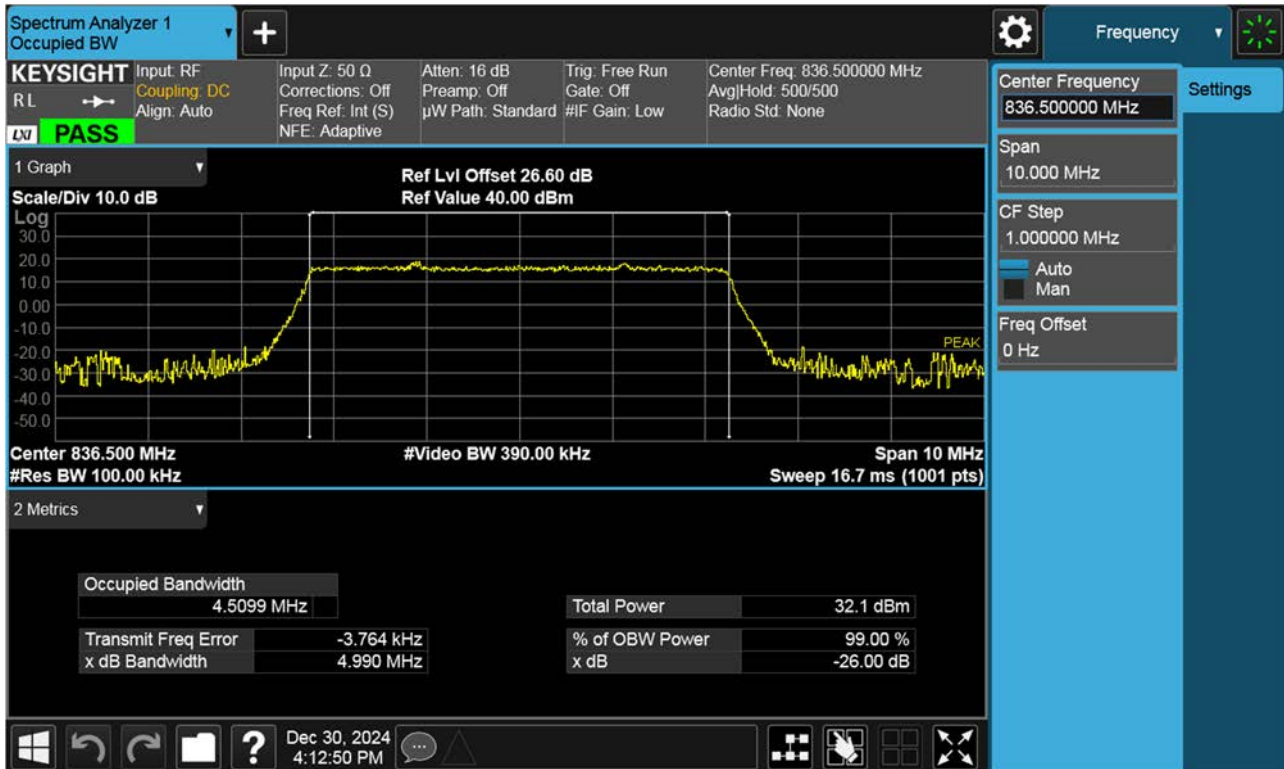
Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
836.5	100 %	+20(Ref)	836 499 999	0.0	0.000 000	0.000
	100 %	-30	836 499 997	-1.8	0.000 000	-0.002
	100 %	-20	836 499 996	-2.3	0.000 000	-0.003
	100 %	-10	836 499 996	-2.5	0.000 000	-0.003
	100 %	0	836 499 996	-2.8	0.000 000	-0.003
	100 %	+10	836 499 996	-2.9	0.000 000	-0.004
	100 %	+30	836 500 006	7.4	0.000 001	0.009
	100 %	+40	836 499 995	-3.5	0.000 000	-0.004
	100 %	+50	836 499 995	-3.9	0.000 000	-0.005
	85%	+20	836 499 994	-4.5	-0.000 001	-0.005
	115%	+20	836 500 003	3.9	0.000 000	0.005

■ BandWidth: 20 MHz
 ■ Voltage(100 %): 12.000 VDC
 ■ Deviation Limit: ± 0.000 25 % or 2.5 ppm

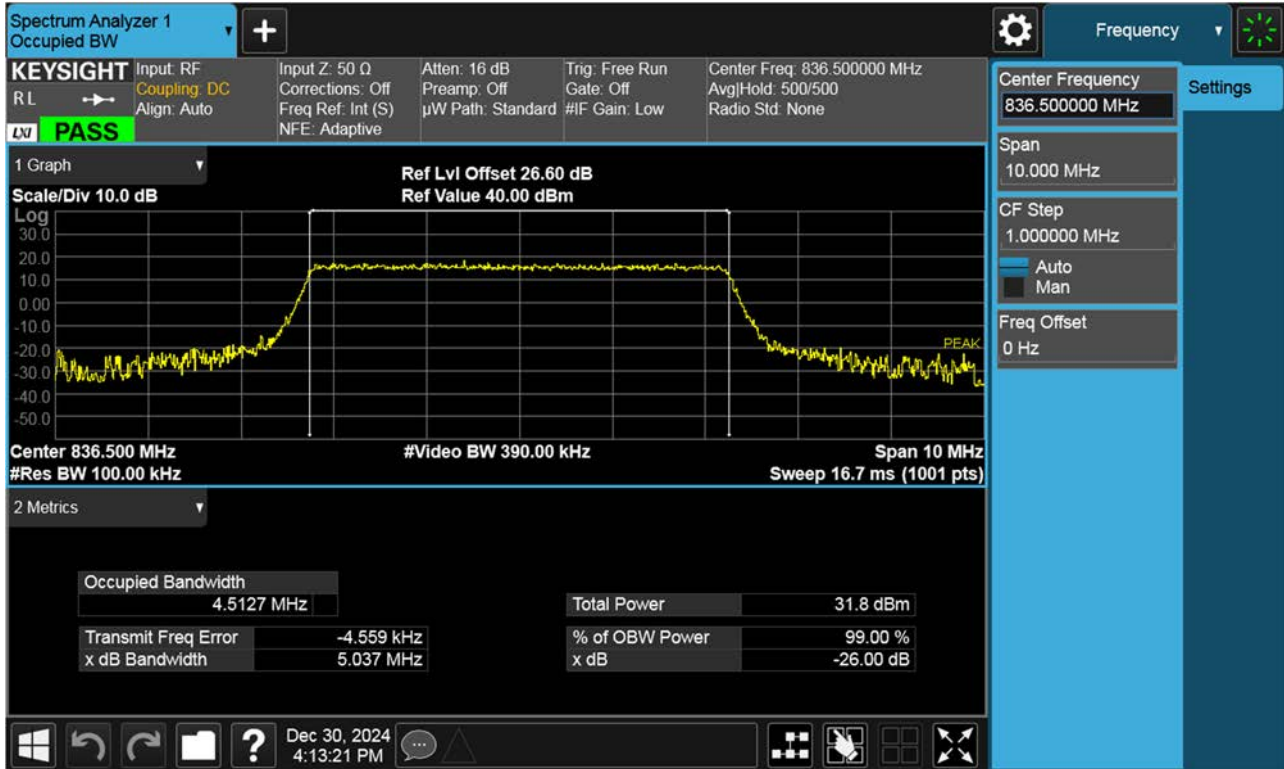
Test. Frequency	Voltage	Temp.	Frequency	Frequency Error	Deviation	ppm
(MHz)	(%)	(°C)	(Hz)	(Hz)	(%)	
836.5	100 %	+20(Ref)	836 500 001	0.0	0.000 000	0.000
	100 %	-30	836 500 001	0.1	0.000 000	0.000
	100 %	-20	836 500 000	-0.6	0.000 000	-0.001
	100 %	-10	836 500 000	-0.9	0.000 000	-0.001
	100 %	0	836 499 999	-1.2	0.000 000	-0.001
	100 %	+10	836 499 999	-1.7	0.000 000	-0.002
	100 %	+30	836 499 998	-2.3	0.000 000	-0.003
	100 %	+40	836 499 998	-2.6	0.000 000	-0.003
	100 %	+50	836 499 997	-3.2	0.000 000	-0.004
	85%	+20	836 500 002	1.2	0.000 000	0.001
	115%	+20	836 500 001	0.3	0.000 000	0.000

9. TEST PLOTS

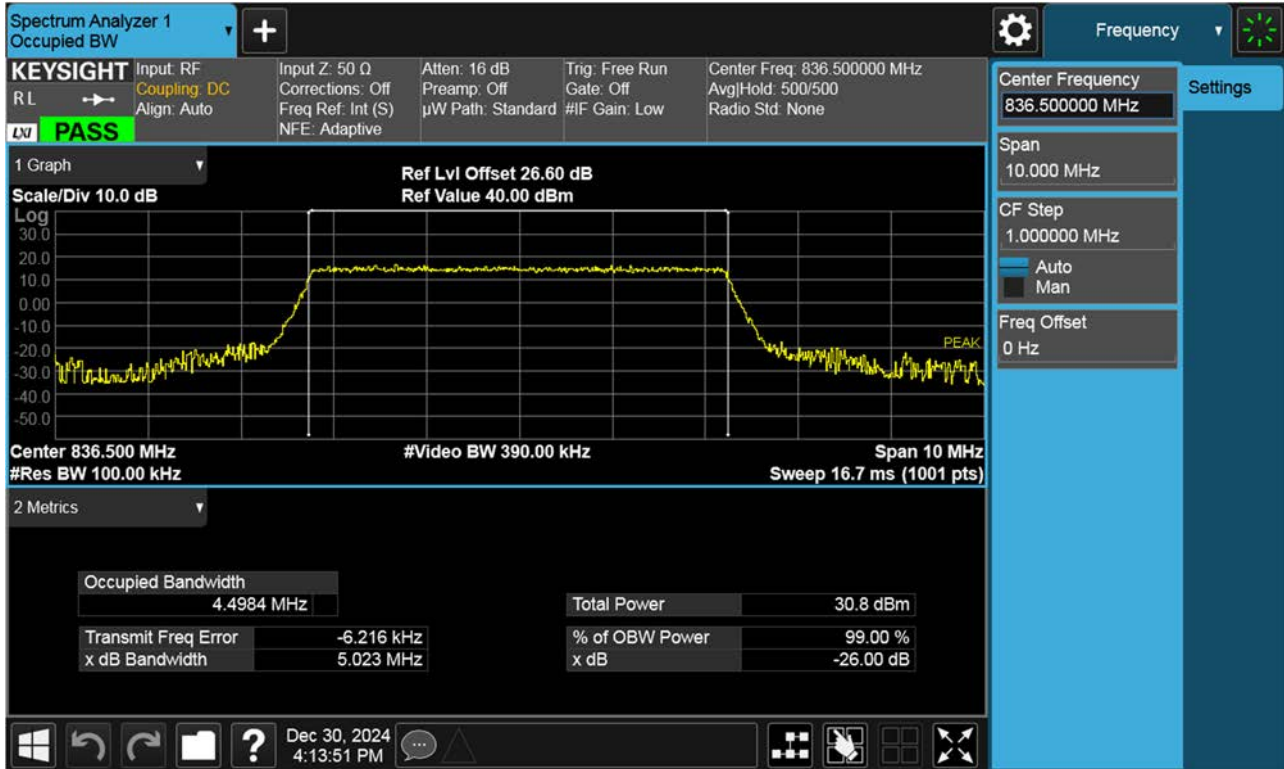
Occupied Bandwidth Plot (5 M BW Ch.167300 BPSK_RB 25_0)



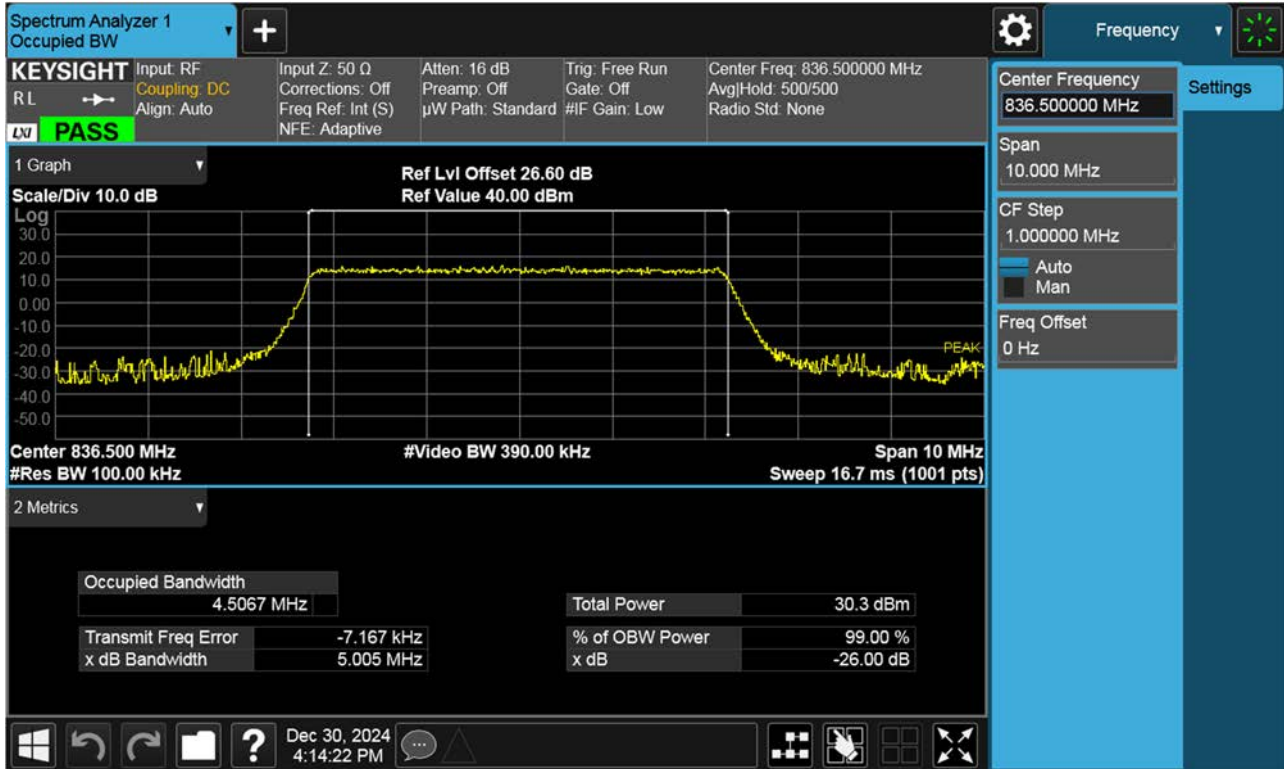
Occupied Bandwidth Plot (5 M BW Ch.167300 QPSK_RB 25_0)



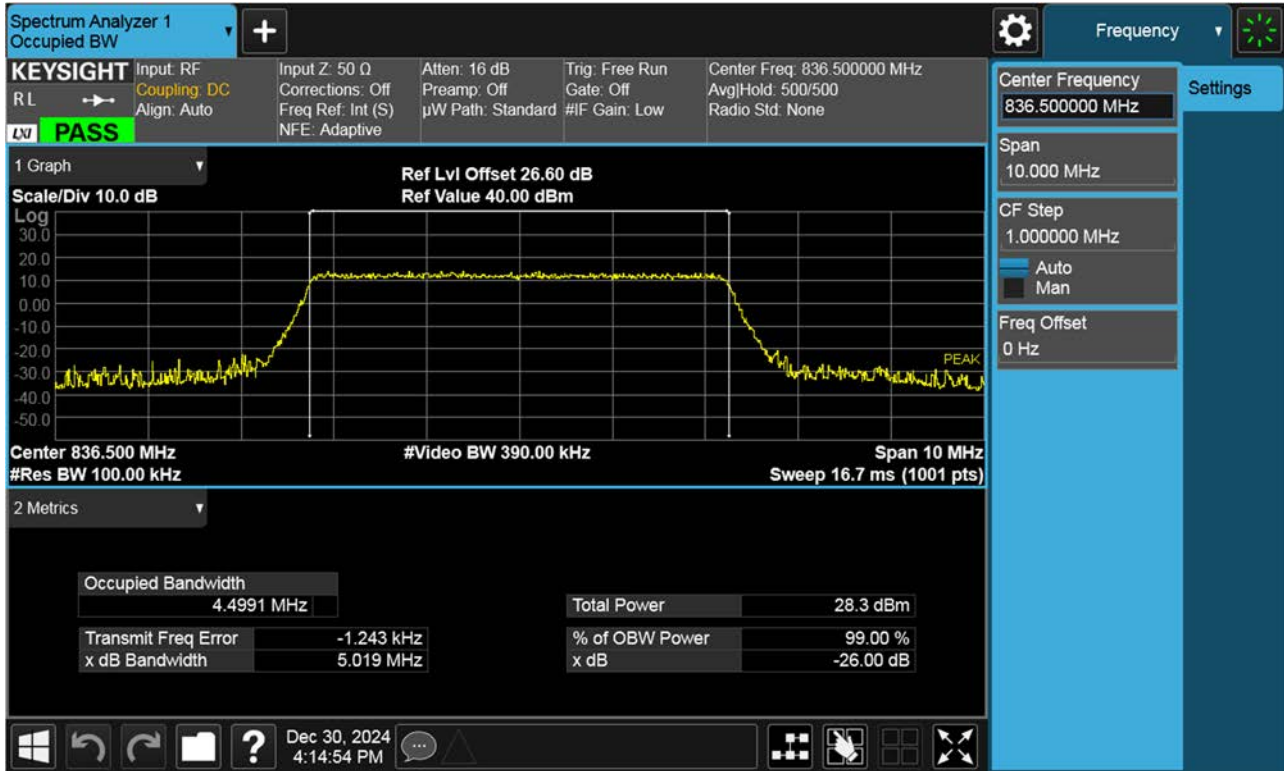
Occupied Bandwidth Plot (5 M BW Ch.167300 16QAM_RB 25_0)



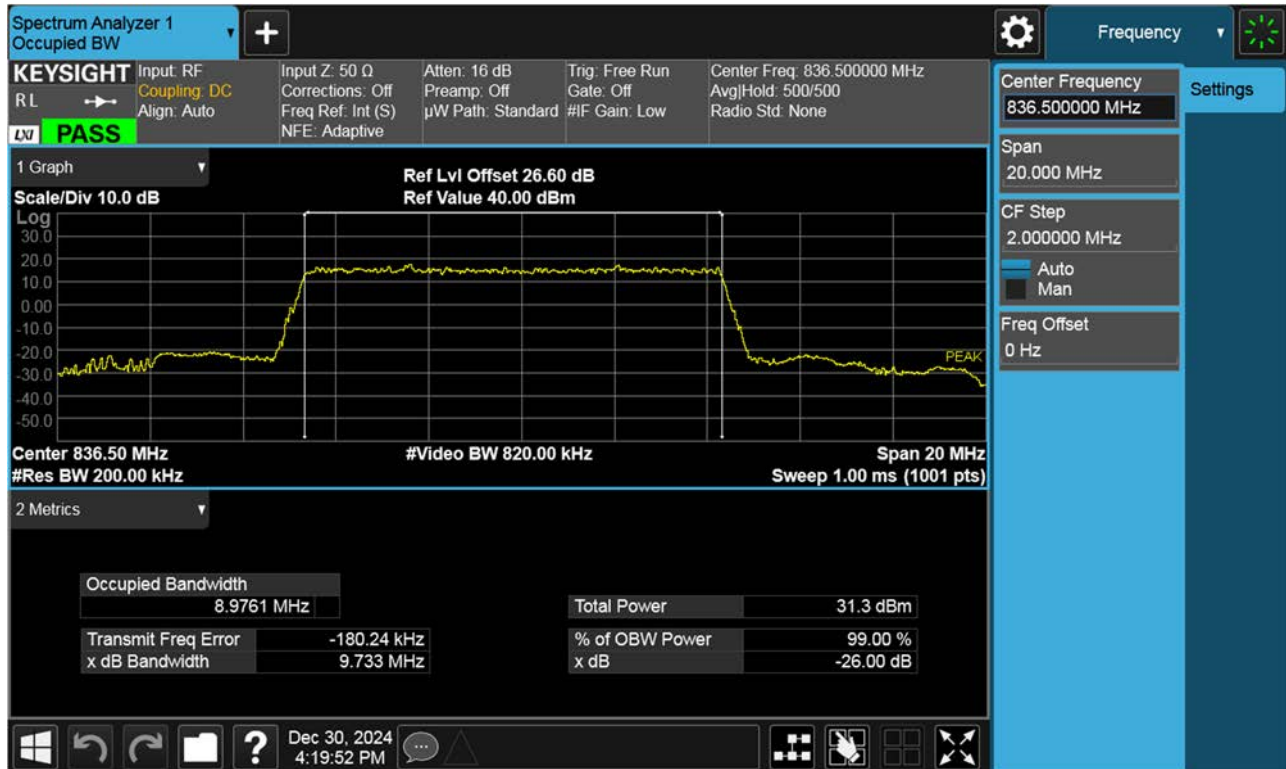
Occupied Bandwidth Plot (5 M BW Ch.167300 64QAM_RB 25_0)



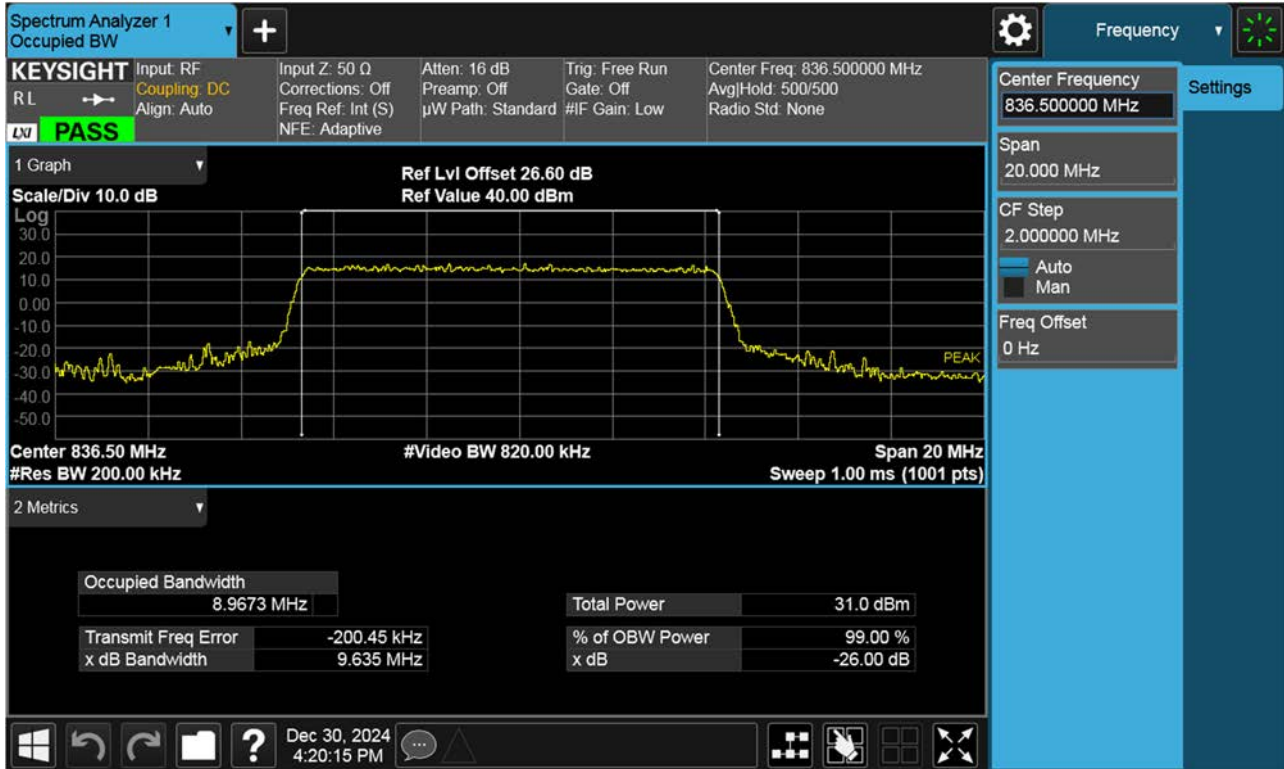
Occupied Bandwidth Plot (5 M BW Ch.167300 256QAM_RB 25_0)



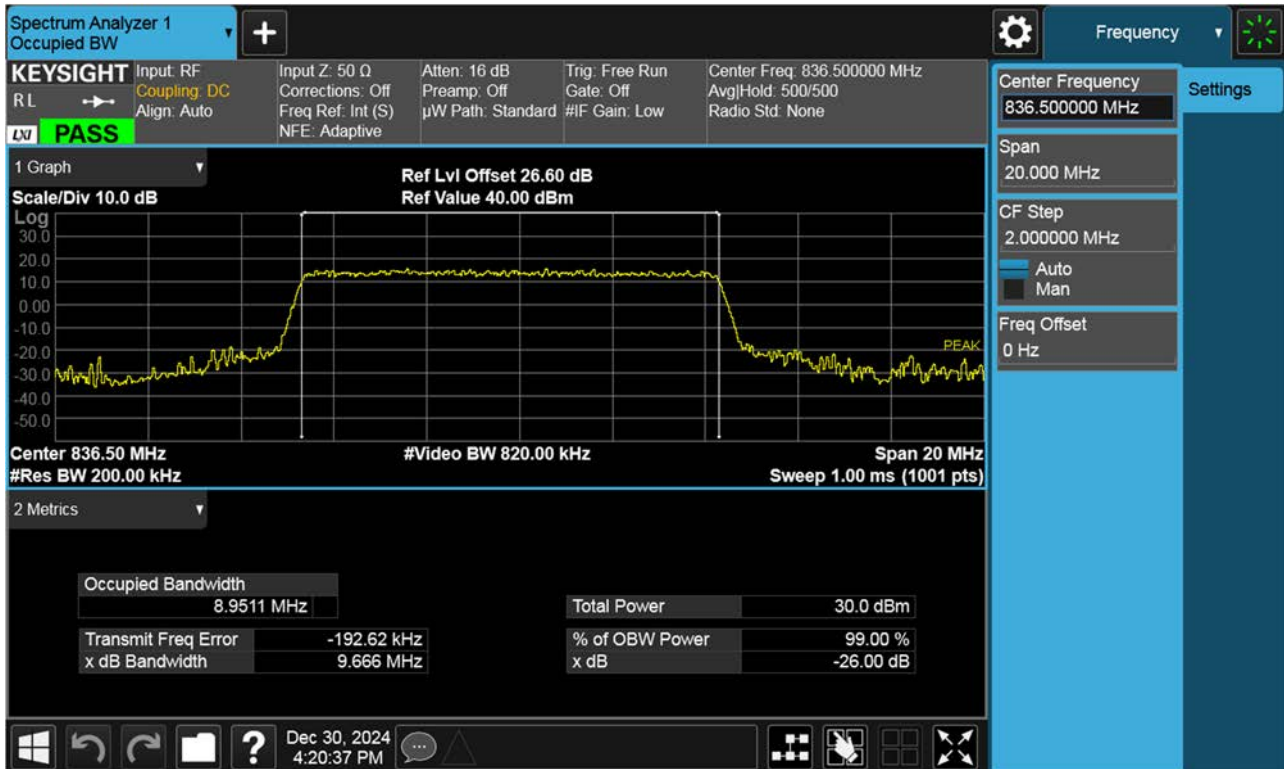
Occupied Bandwidth Plot (10 M BW Ch.167300 BPSK_RB 50_0)



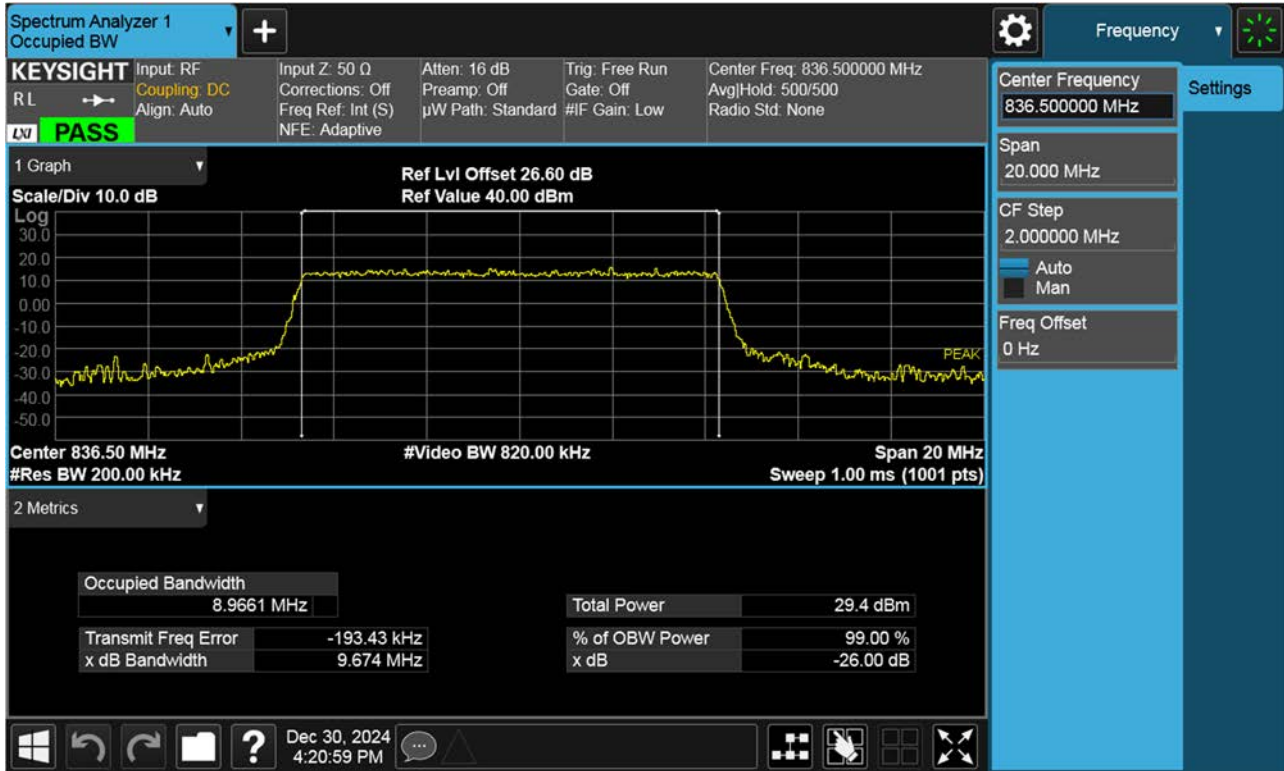
Occupied Bandwidth Plot (10 M BW Ch.167300 QPSK_RB 50_0)



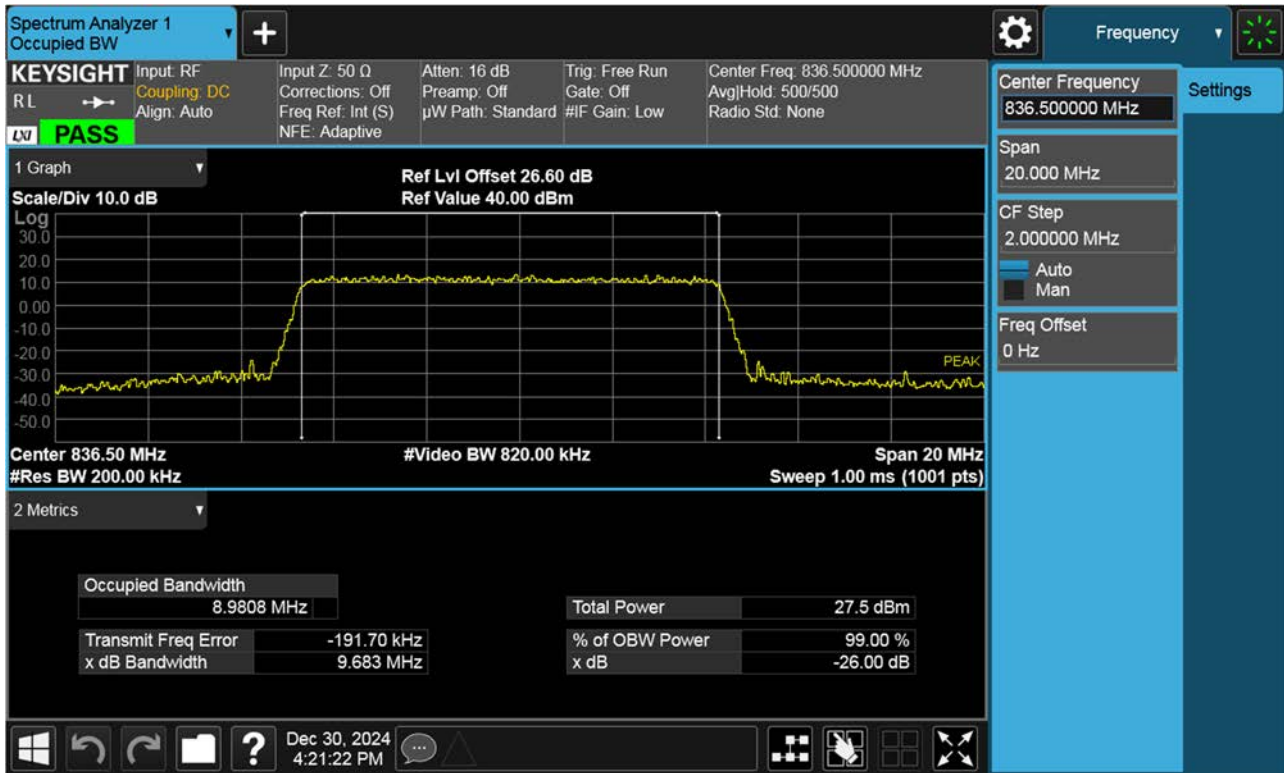
Occupied Bandwidth Plot (10 M BW Ch.167300 16QAM_RB 50_0)



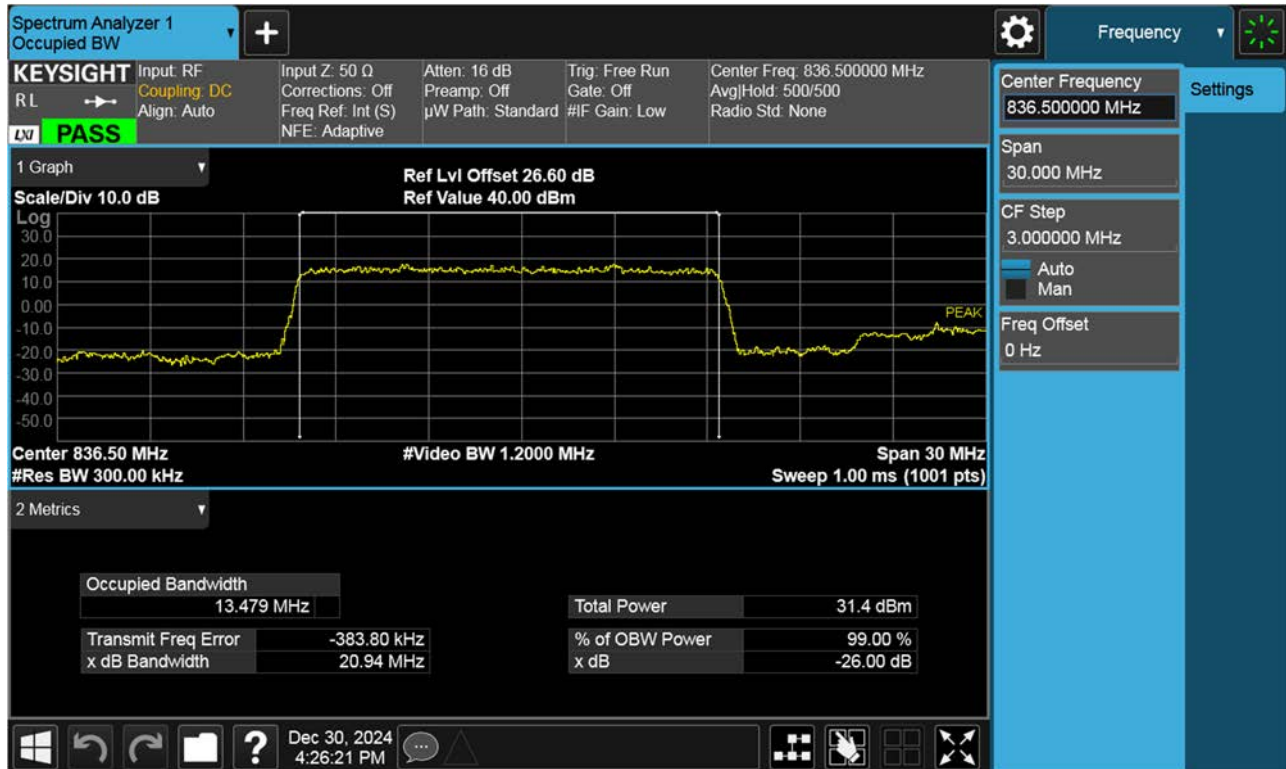
Occupied Bandwidth Plot (10 M BW Ch.167300 64QAM_RB 50_0)



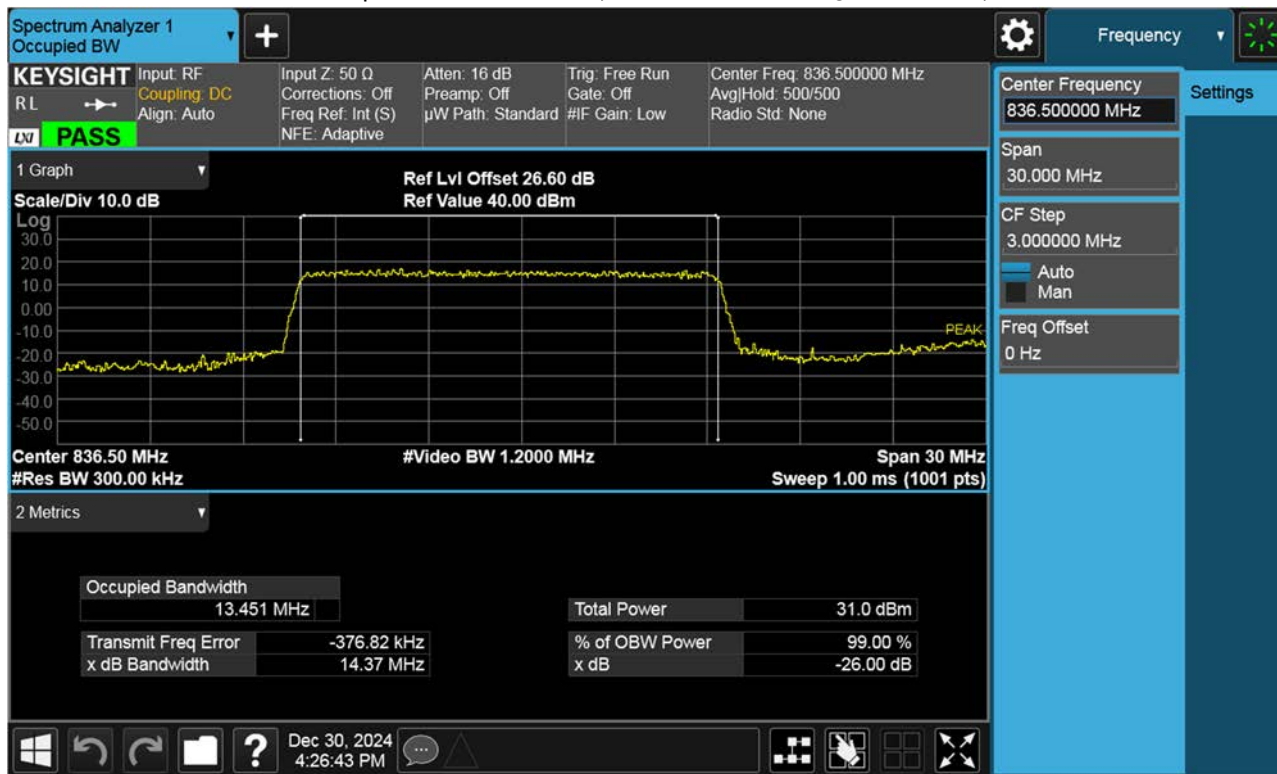
Occupied Bandwidth Plot (10 M BW Ch.167300 256QAM_RB 50_0)



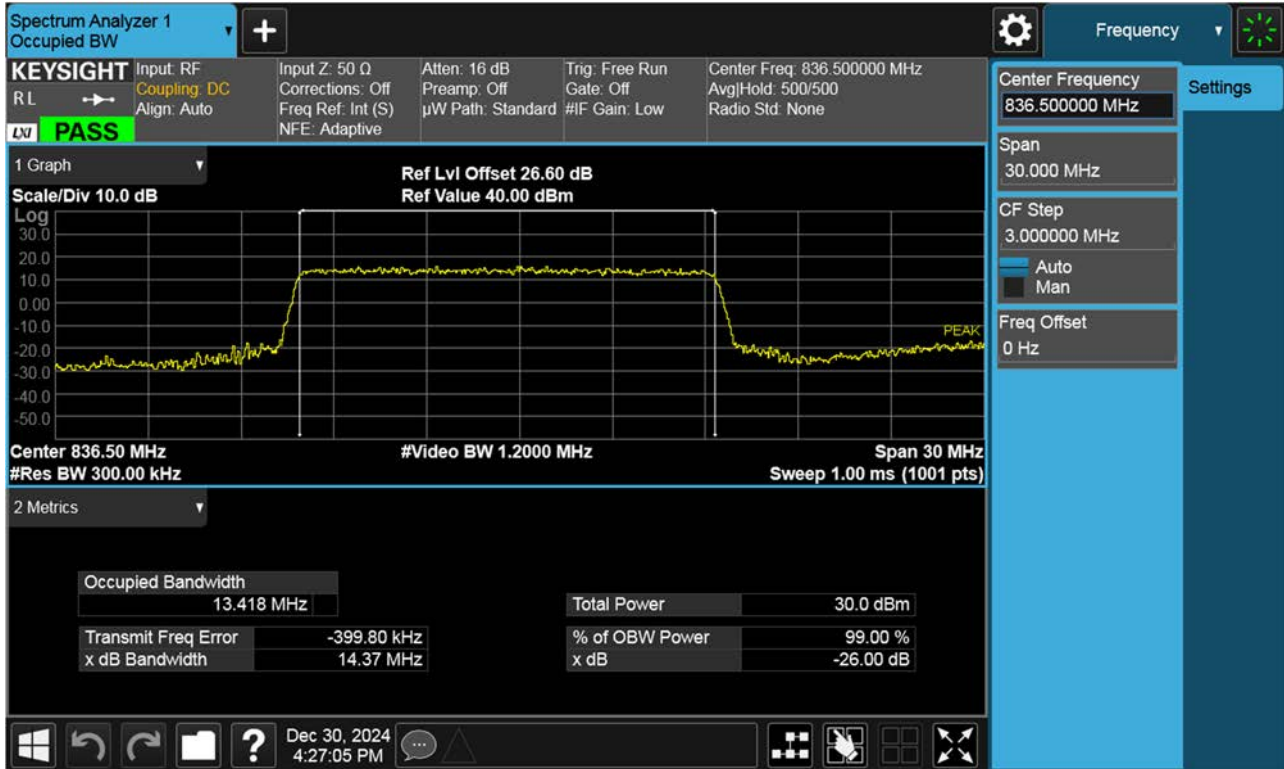
Occupied Bandwidth Plot (15 M BW Ch.167300 BPSK RB 75_0)



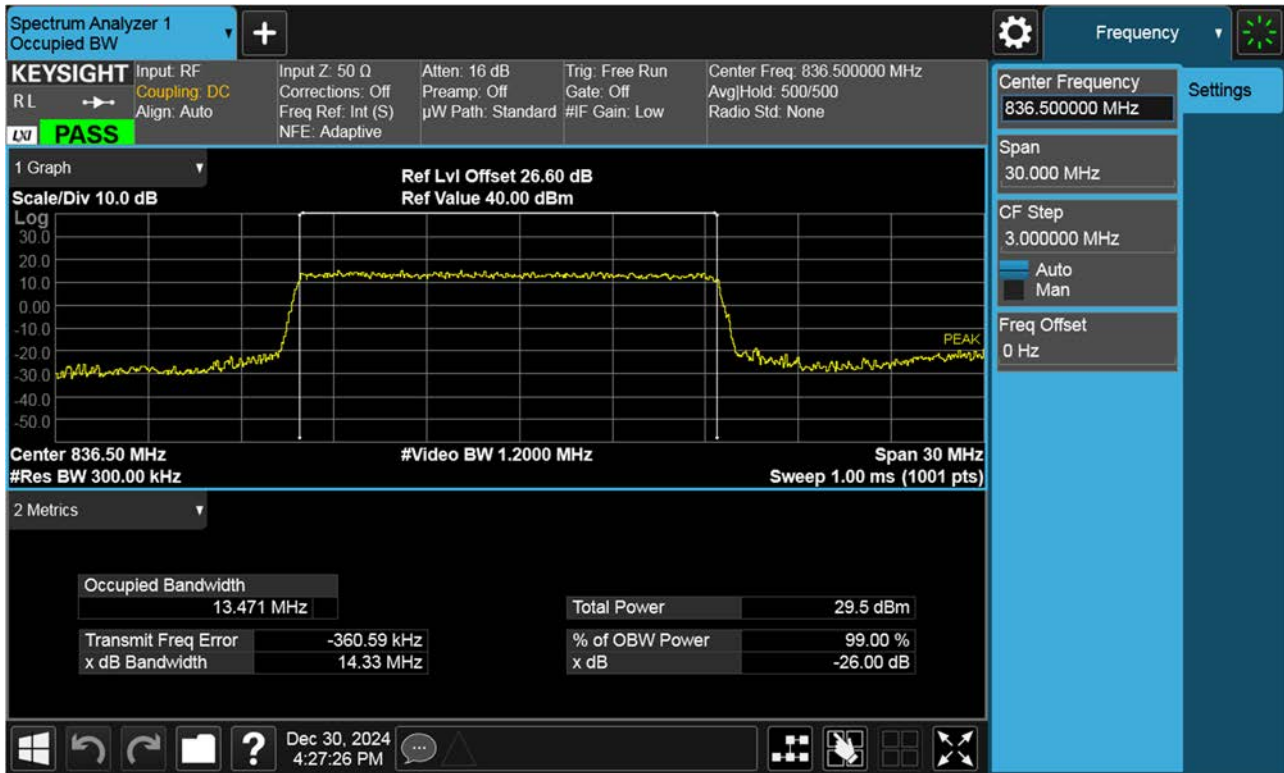
Occupied Bandwidth Plot (15 M BW Ch.167300 QPSK RB 75_0)



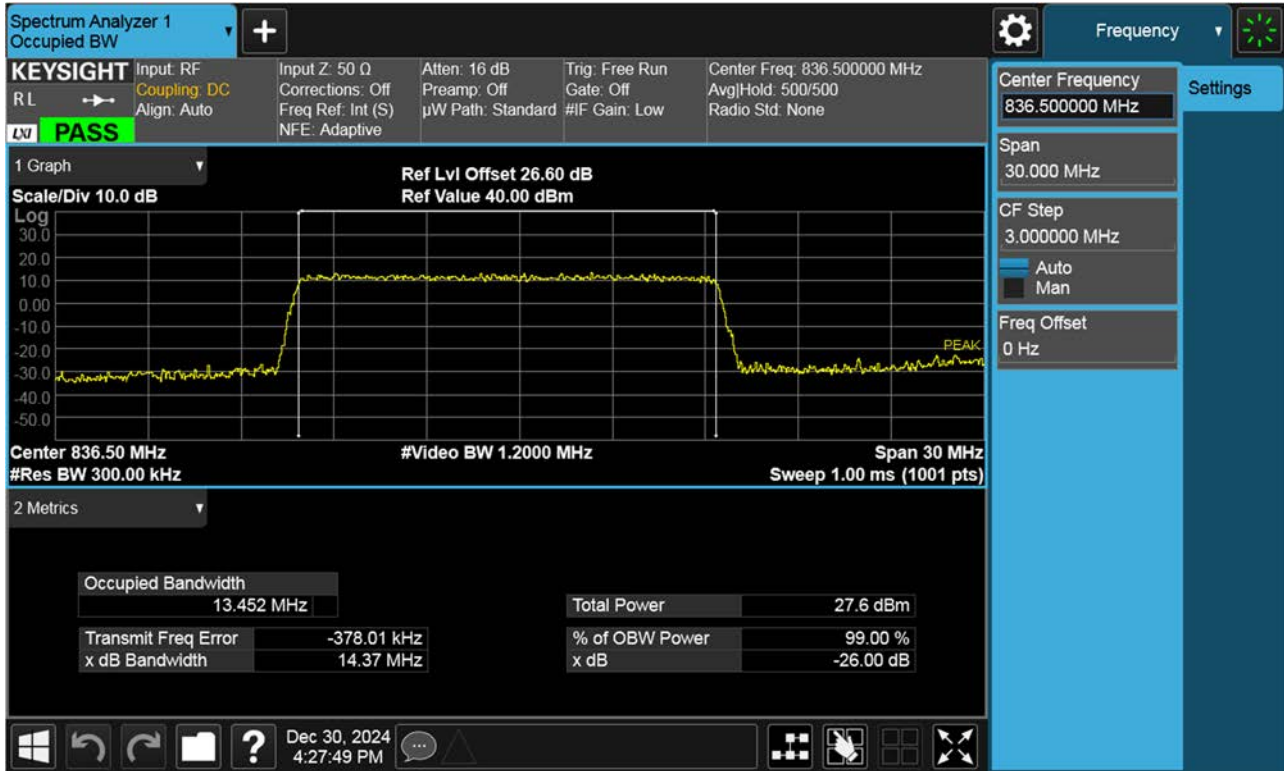
Occupied Bandwidth Plot (15 M BW Ch.167300 16QAM RB 75_0)



Occupied Bandwidth Plot (15 M BW Ch.167300 64QAM RB 75_0)



Occupied Bandwidth Plot (15 M BW Ch.167300 256QAM RB 75_0)



Occupied Bandwidth Plot (20 M BW Ch.167300 BPSK RB 100_0)



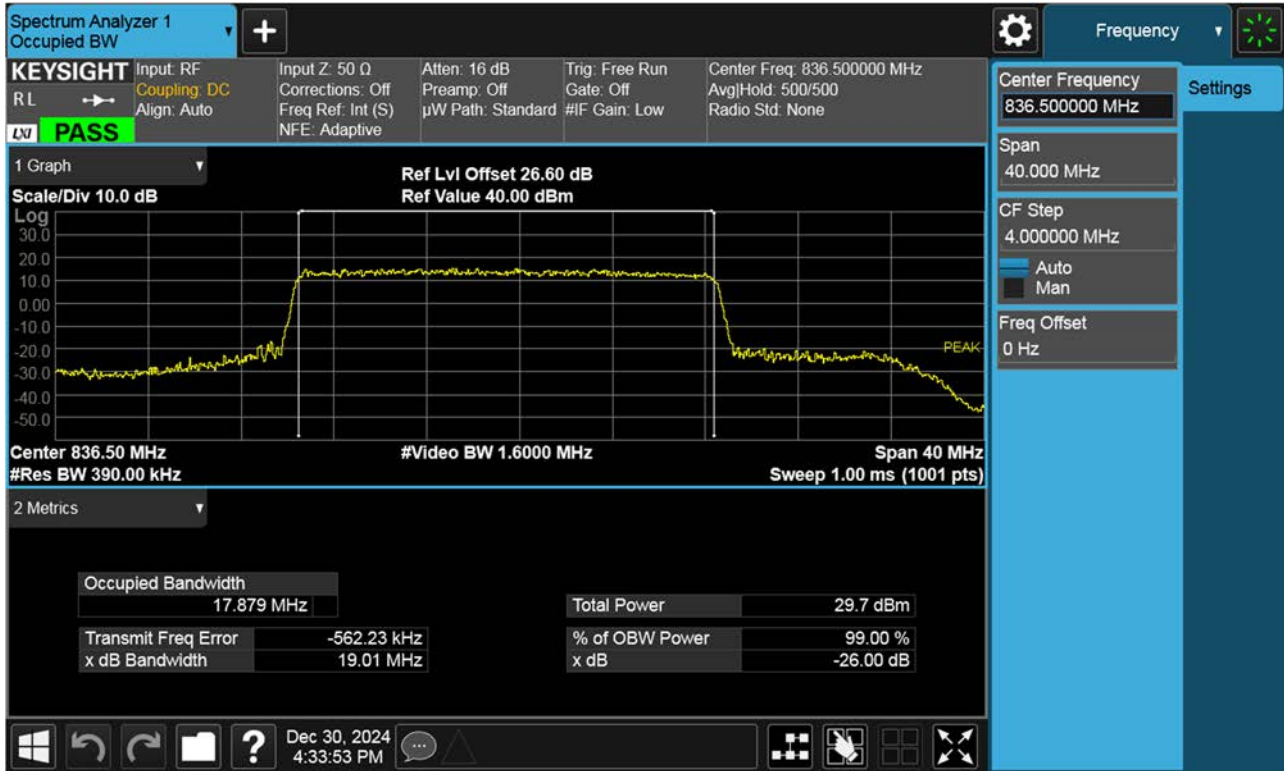
Occupied Bandwidth Plot (20 M BW Ch.167300 QPSK RB 100_0)



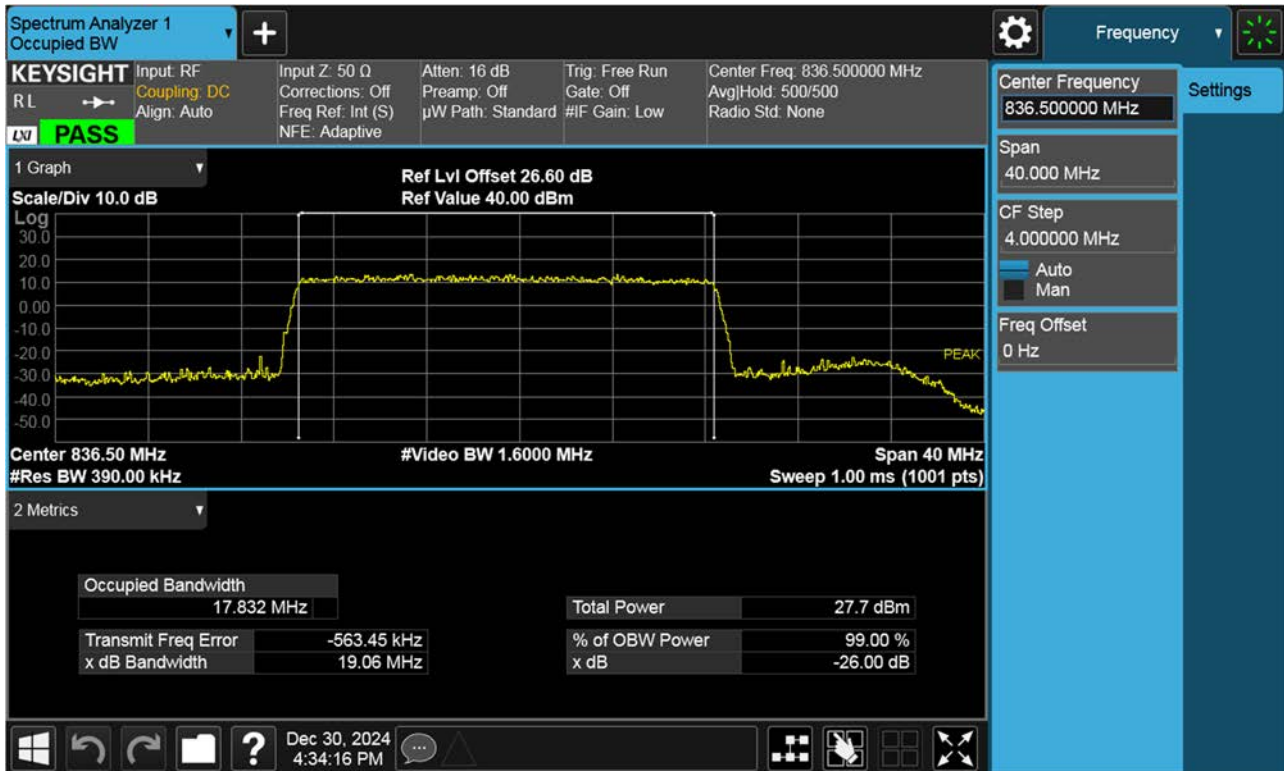
Occupied Bandwidth Plot (20 M BW Ch.167300 16QAM RB 100_0)



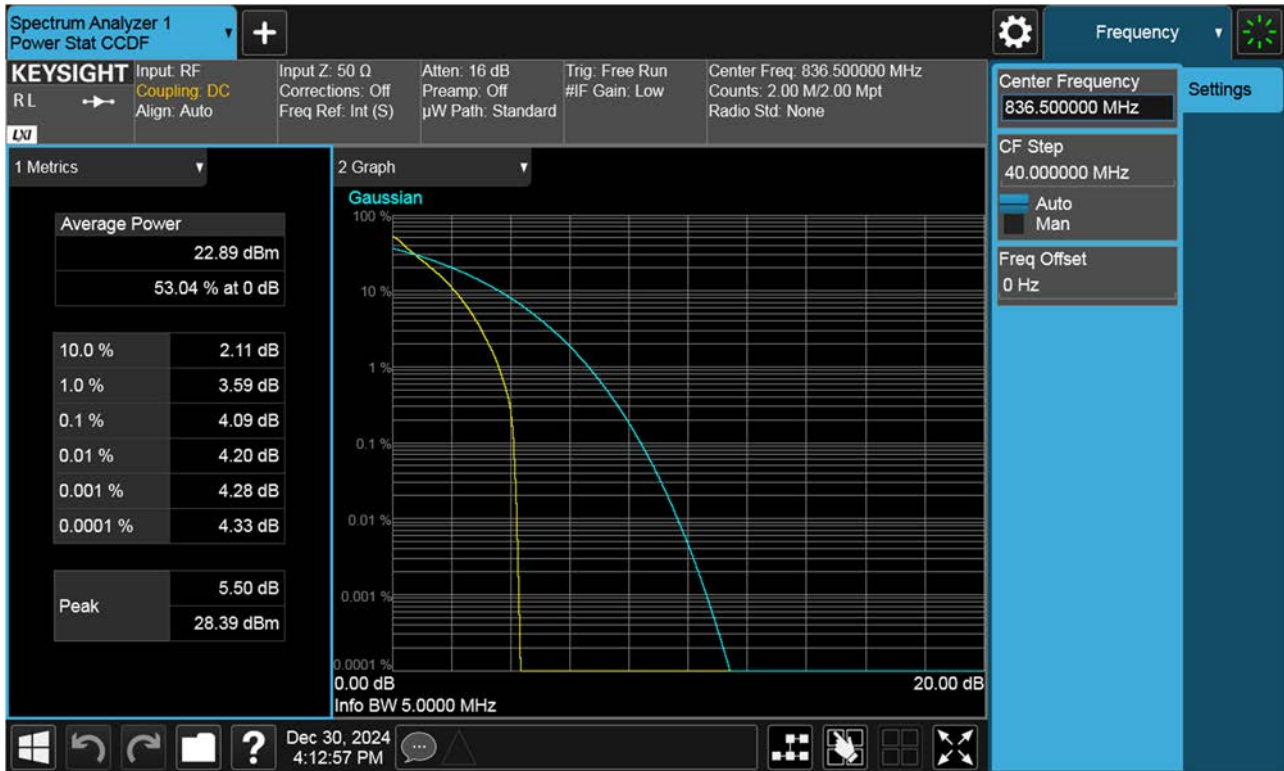
Occupied Bandwidth Plot (20 M BW Ch.167300 64QAM RB 100_0)



Occupied Bandwidth Plot (20 M BW Ch.167300 256QAM RB 100_0)



PAR Plot (5 M BW Ch.167300 BPSK_RB 25_0)



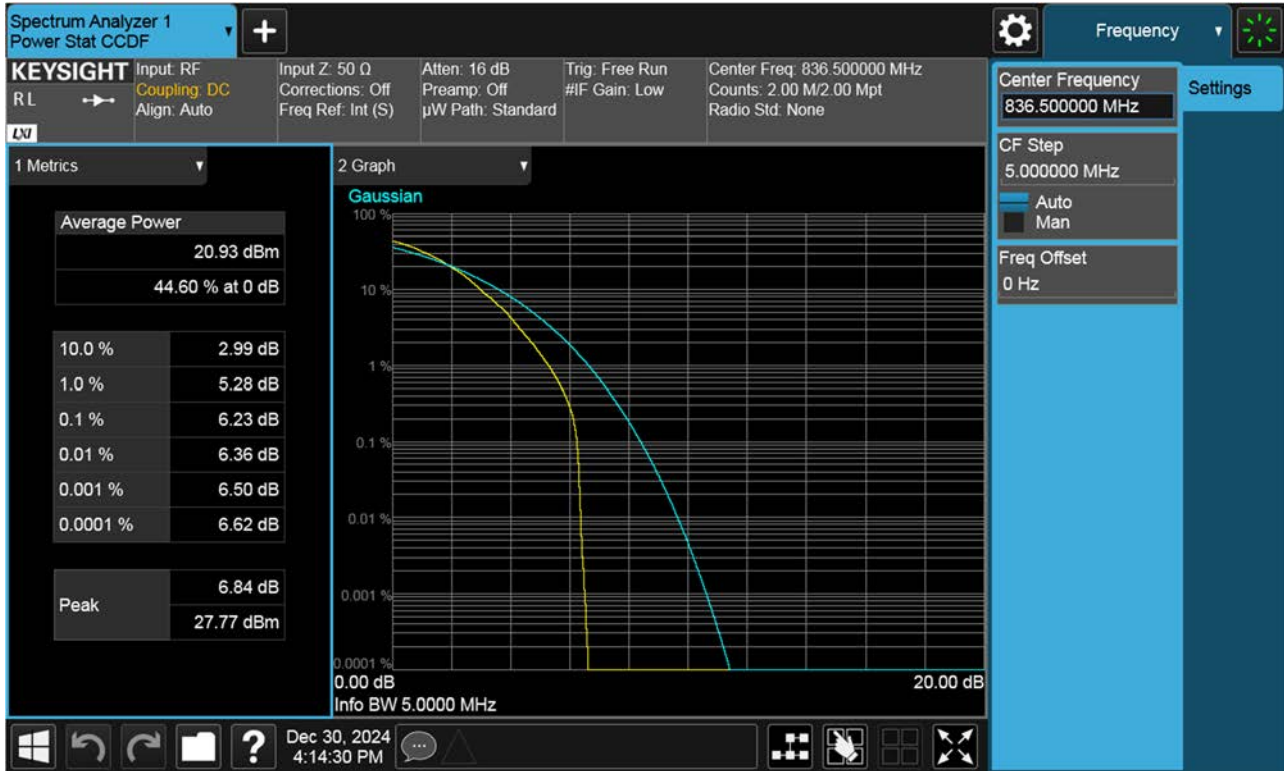
PAR Plot (5 M BW Ch.167300 QPSK_RB 25_0)



PAR Plot (5 M BW Ch.167300 16QAM_RB 25_0)



PAR Plot (5 M BW Ch.167300 64QAM_RB 25_0)



PAR Plot (5 M BW Ch.167300 256QAM_RB 25_0)



PAR Plot (10 M BW Ch.167300 BPSK_RB 50_0)



PAR Plot (10 M BW Ch.167300 QPSK_RB 50_0)



PAR Plot (10 M BW Ch.167300 16QAM_RB 50_0)



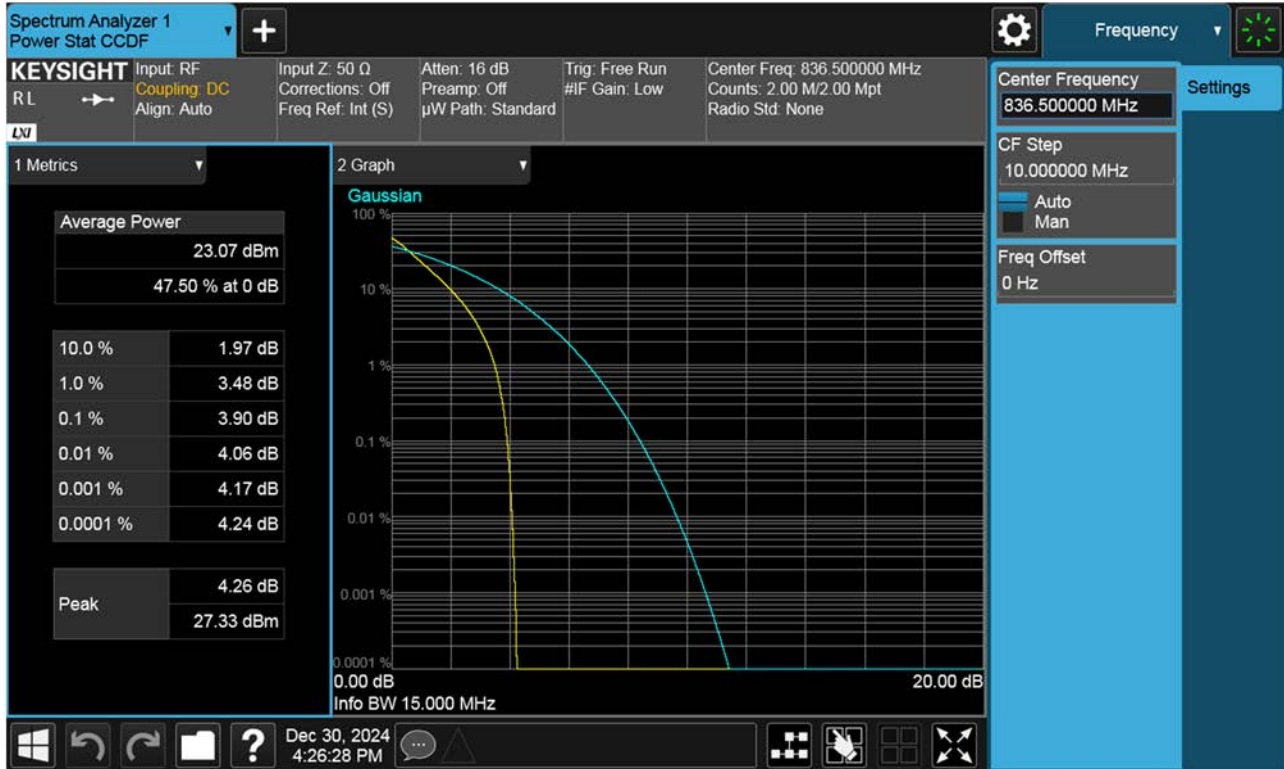
PAR Plot (10 M BW Ch.167300 64QAM_RB 50_0)



PAR Plot (10 M BW Ch.167300 256QAM_RB 50_0)



PAR Plot (15 M BW Ch.167300 BPSK RB 75_0)



PAR Plot (15 M BW Ch.167300 QPSK RB 75_0)



PAR Plot (15 M BW Ch.167300 16QAM RB 75_0)



PAR Plot (15 M BW Ch.167300 64QAM RB 75_0)



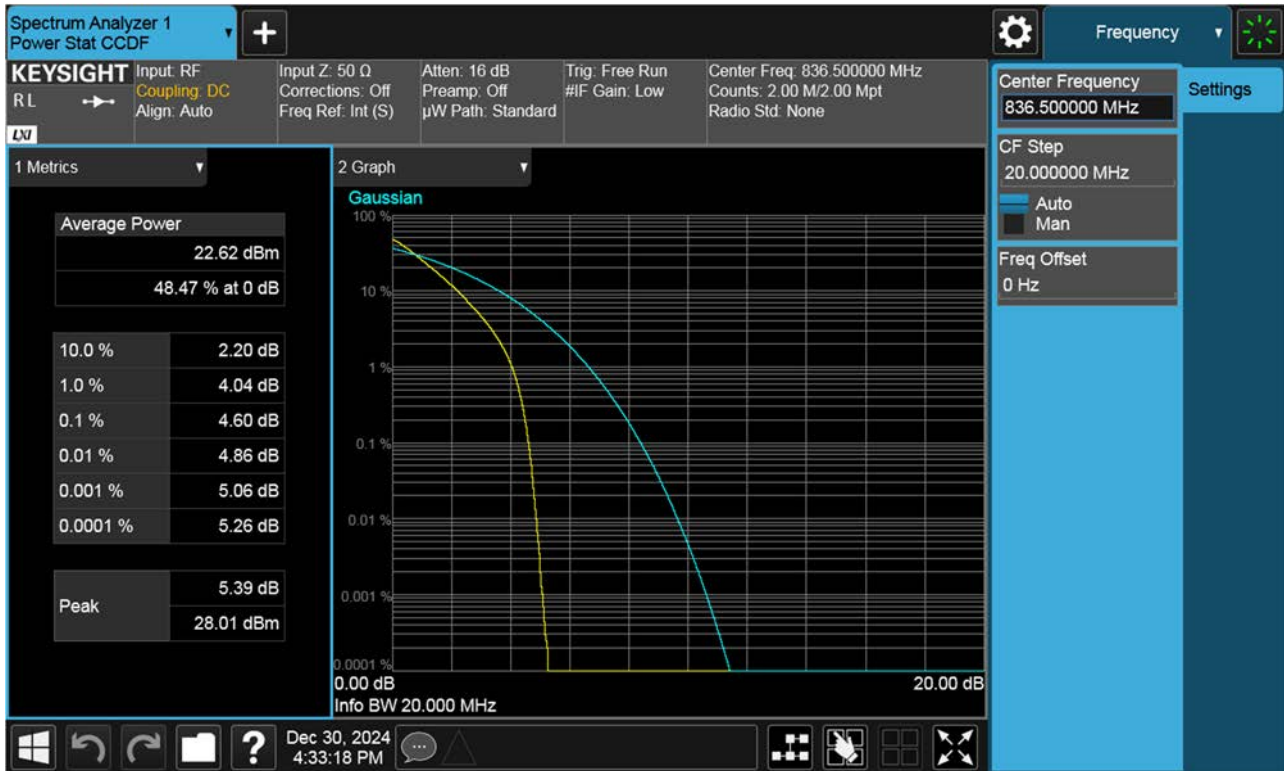
PAR Plot (15 M BW Ch.167300 256QAM RB 75_0)



PAR Plot (20 M BW Ch.167300 BPSK RB 100_0)



PAR Plot (20 M BW Ch.167300 QPSK RB 100_0)



PAR Plot (20 M BW Ch.167300 16QAM RB 100_0)



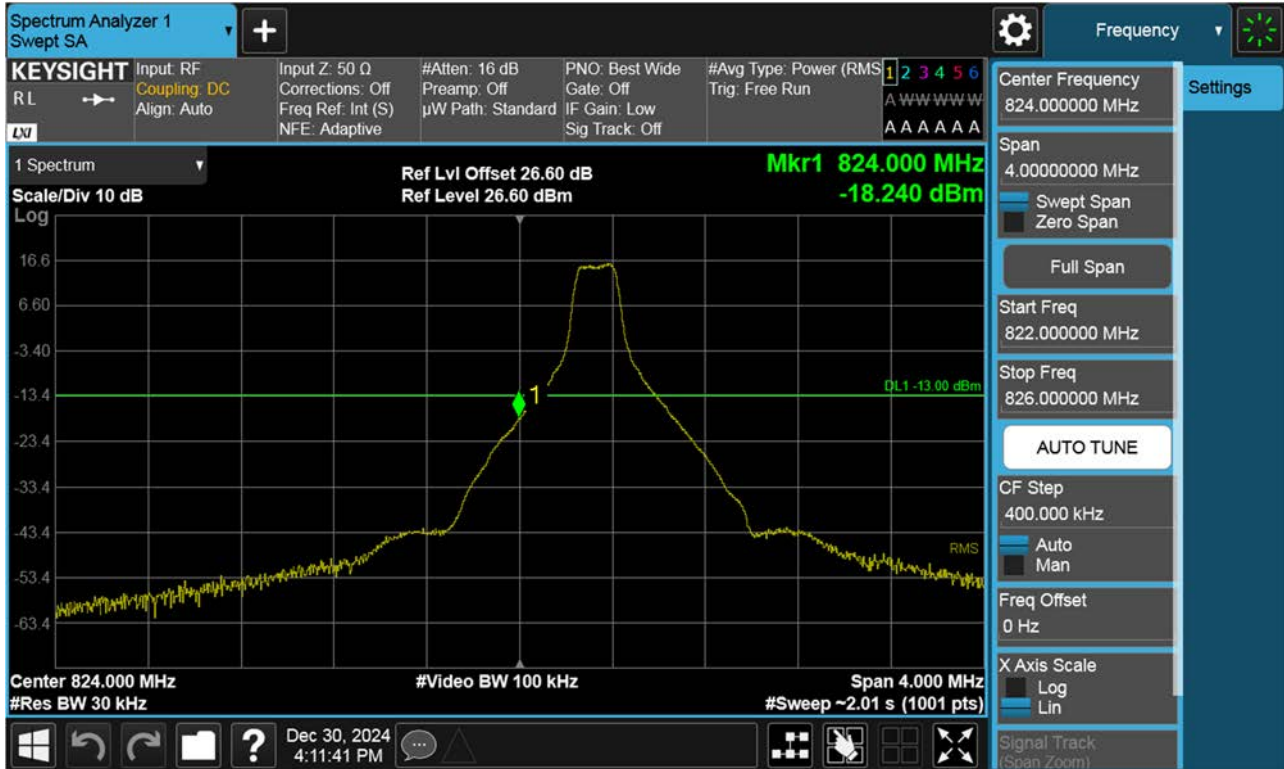
PAR Plot (20 M BW Ch.167300 64QAM RB 100_0)



PAR Plot (20 M BW Ch.167300 256QAM RB 100_0)



Lower Band Edge Plot (5 M BW Ch.165300 BPSK_RB 1_Offset 0)



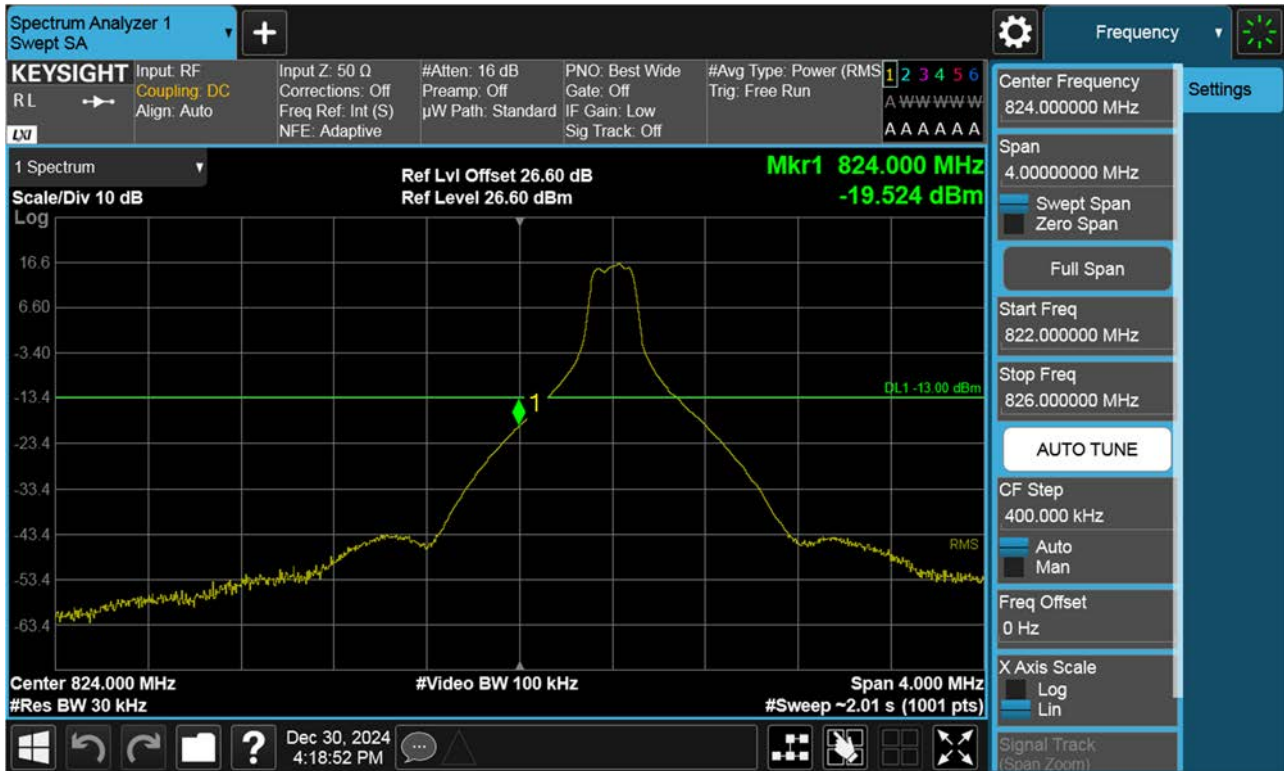
Lower Band Edge Plot (5 M BW Ch.165300 BPSK_RB 25_Offset 0)



Lower Extended Band Edge Plot (5 M BW Ch.165300 BPSK_RB 25_0)



Lower Band Edge Plot (10 M BW Ch.165800 BPSK_RB 1_Offset 0)



Lower Band Edge Plot (10 M BW Ch.165800 BPSK_RB 50_Offset 0)



Lower Extended Band Edge Plot (10 M BW Ch.165800 BPSK_RB 50_0)



Lower Band Edge Plot (15 M BW Ch.166300 BPSK_RB 1_Offset 0)



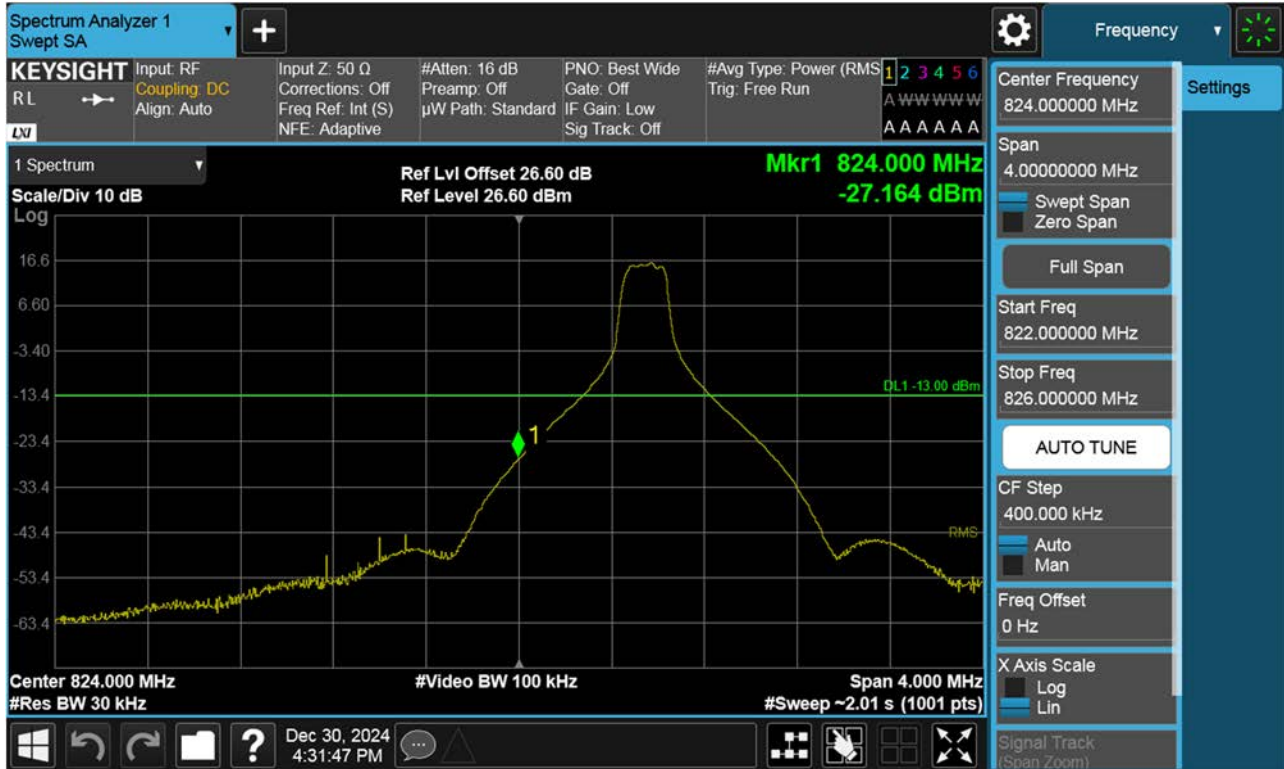
Lower Band Edge Plot (15 M BW Ch.166300 BPSK_RB 75_Offset 0)



Lower Extended Band Edge Plot (15 M BW Ch.166300 BPSK_RB 75_0)



Lower Band Edge Plot (20 M BW Ch.166800 BPSK_RB 1_Offset 0)



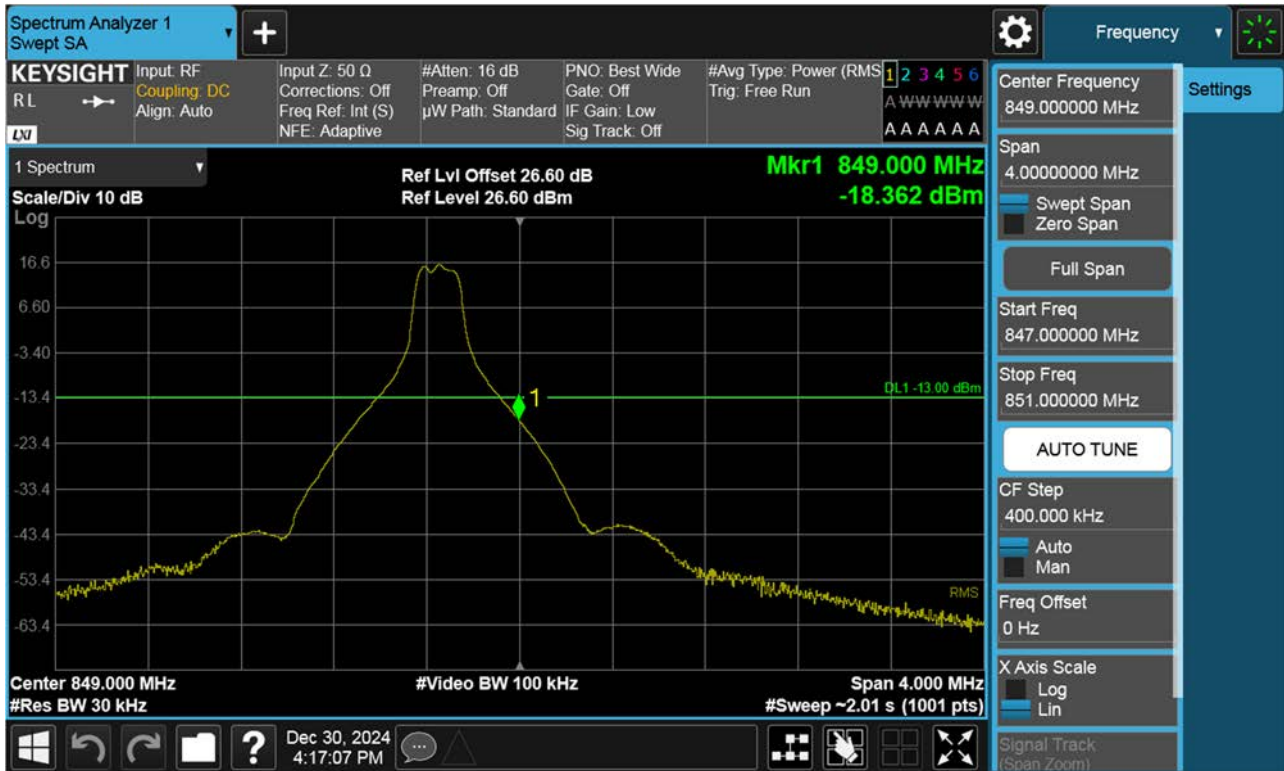
Lower Band Edge Plot (20 M BW Ch.166800 BPSK_RB 100_Offset 0)



Lower Extended Band Edge Plot (20 M BW Ch.166800 BPSK_RB 100_0)



Upper Band Edge Plot (5 M BW Ch.169300 BPSK_RB 1_Offset 24)



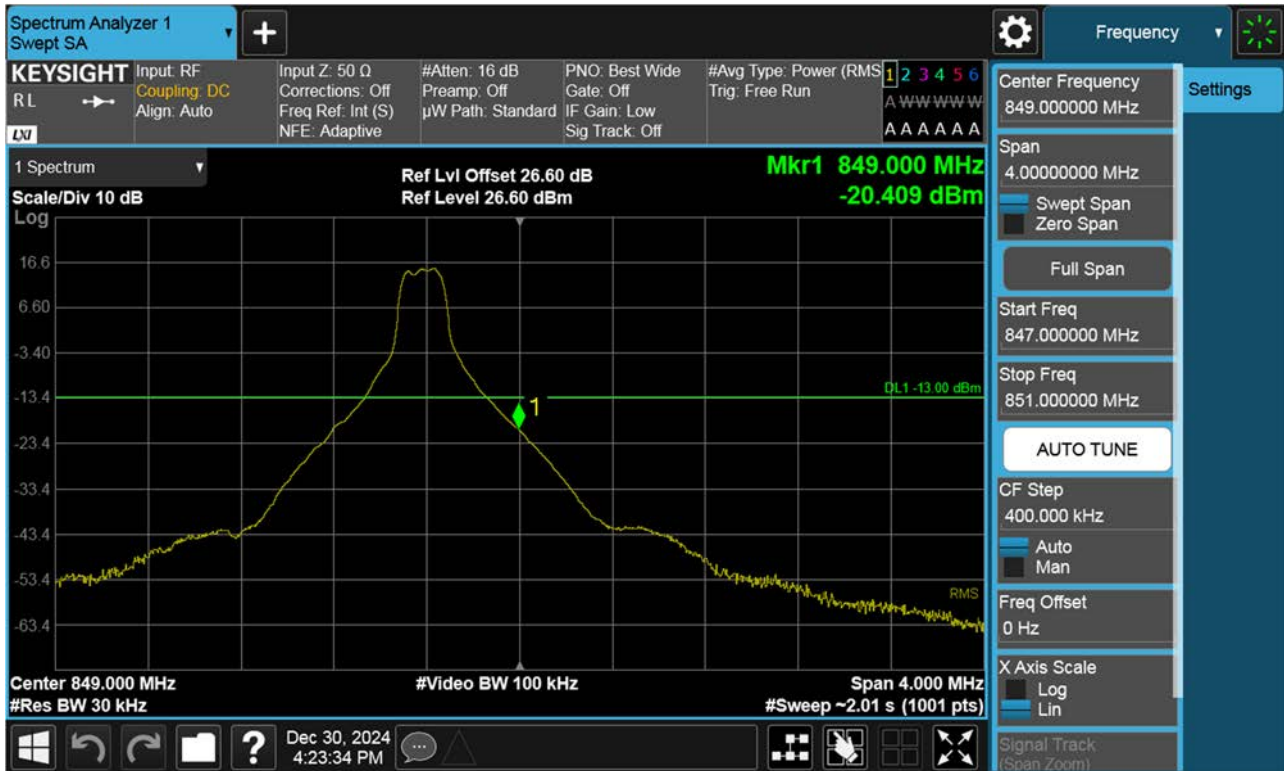
Upper Band Edge Plot (5 M BW Ch.169300 BPSK_RB 25_Offset 0)



Upper Extended Band Edge Plot (5 M BW Ch.169300 BPSK_RB 25_0)



Upper Band Edge Plot (10 M BW Ch.168800 BPSK_RB 1_Offset 49)



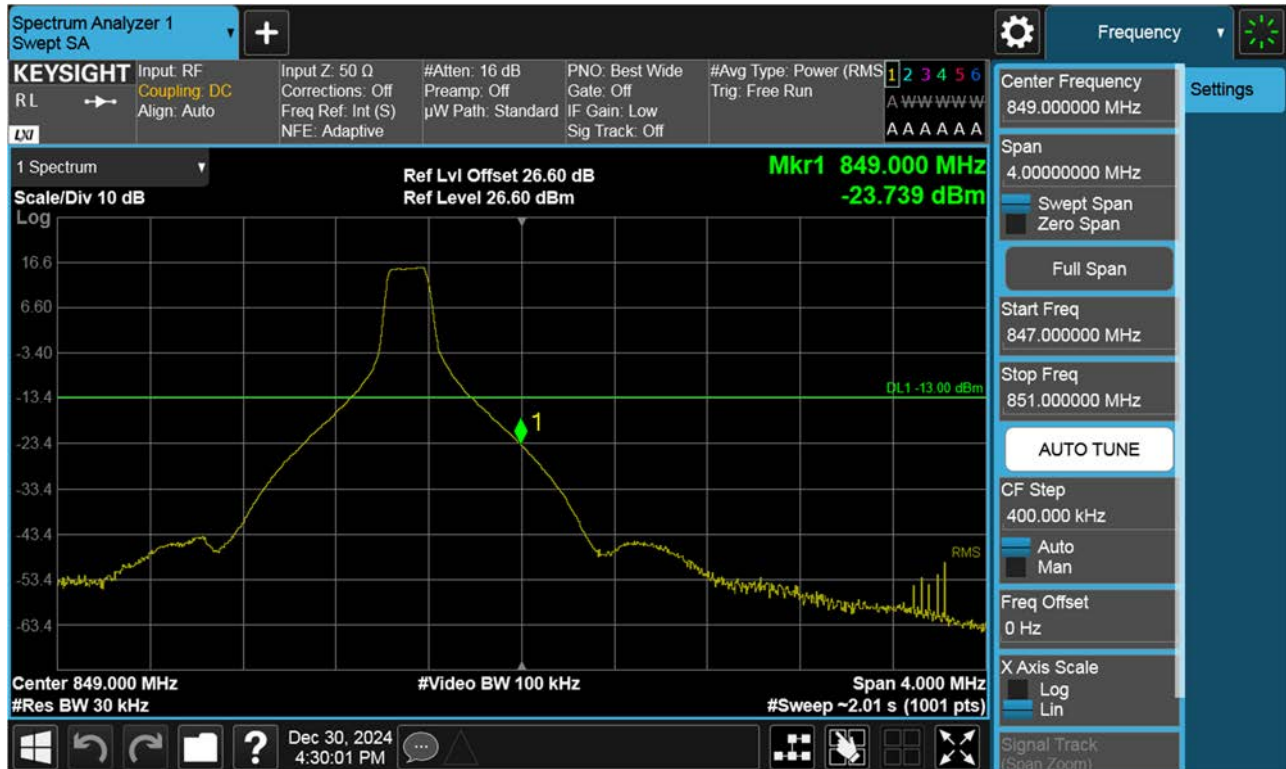
Upper Band Edge Plot (10 M BW Ch.168800 BPSK_RB 50_Offset 0)



Upper Extended Band Edge Plot (10 M BW Ch.168800 BPSK_RB 50_0)



Upper Band Edge Plot (15 M BW Ch.168300 BPSK_RB 1_Offset 74)



Upper Band Edge Plot (15 M BW Ch.168300 BPSK_RB 75_Offset 0)



Upper Extended Band Edge Plot (15 M BW Ch.168300 BPSK_RB 75_0)



Upper Band Edge Plot (20 M BW Ch.167800 BPSK_RB 1_Offset 99)



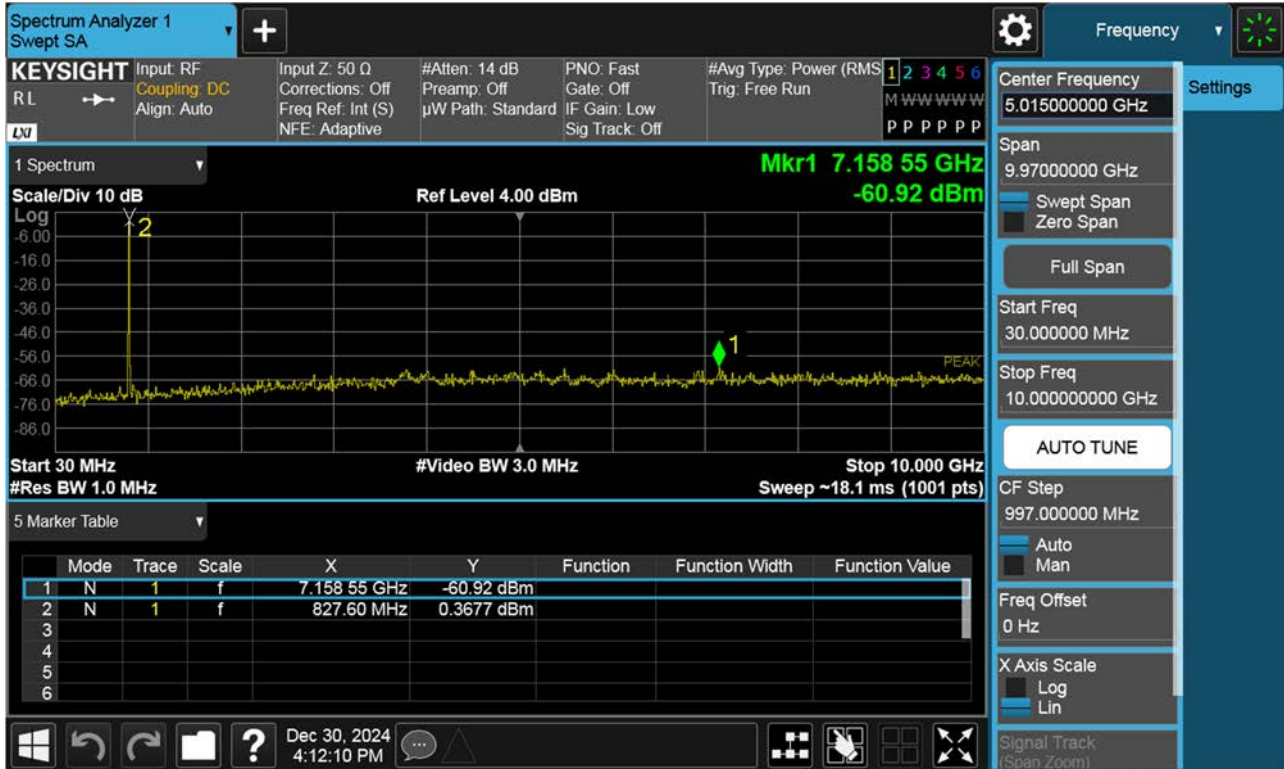
Upper Band Edge Plot (20 M BW Ch.167800 BPSK_RB 100_Offset 0)



Upper Extended Band Edge Plot (20 M BW Ch.167800 BPSK_RB 100_0)



Conducted Spurious Plot (165300ch_5 MHz_BPSK_RB 1_0)



Conducted Spurious Plot (167300ch_5 MHz_BPSK_RB 1_0)

