

TEST REPORT

FCC LTE B26(Part22) Test for SM-S931B/DS
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2410-FC049

DATE OF ISSUE
October 29, 2024

Tested by
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TEST REPORT

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HCT-RF-2410-FC049

DATE OF ISSUE

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Additional Model

SM-S931B

Applicant**SAMSUNG Electronics Co., Ltd.**

129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of
Korea

Product Name

Mobile Phone

Model Name

SM-S931B/DS

Date of Test

August 21, 2024 ~ October 28, 2024

FCC ID

A3LSMS931B

Location of Test☒ Permanent Testing Lab ☐ On Site Testing

(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-
do, 17383 Republic of Korea)

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

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	October 29, 2024	Initial Release

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

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

CONTENTS

1. GENERAL INFORMATION	6
1.1 MAXIMUM OUTPUT POWER.....	7
2. INTRODUCTION	9
2.1 DESCRIPTION OF EUT	9
2.2 MEASURING INSTRUMENT CALIBRATION.....	9
2.3 TEST FACILITY	9
3. DESCRIPTION OF TESTS.....	10
3.1 TEST PROCEDURE.....	10
3.2 RADIATED POWER	11
3.3 RADIATED SPURIOUS EMISSIONS	12
3.4 PEAK- TO- AVERAGE RATIO.....	13
3.5 OCCUPIED BANDWIDTH.	14
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	15
3.7 BAND EDGE	16
3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE.....	18
3.9 WORST CASE(RADIATED TEST).....	19
3.10 WORST CASE(CONDUCTED TEST)	20
4. LIST OF TEST EQUIPMENT	21
5. MEASUREMENT UNCERTAINTY	22
6. SUMMARY OF TEST RESULTS.....	23
7. SAMPLE CALCULATION	24
8. TEST DATA (Main1).....	26
8.1 EFFECTIVE RADIATED POWER	26
8.2 RADIATED SPURIOUS EMISSIONS	29
8.3 PEAK-TO-AVERAGE RATIO.....	30
8.4 OCCUPIED BANDWIDTH	31
8.5 CONDUCTED SPURIOUS EMISSIONS.....	32
8.6 BAND EDGE	32
8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE.....	33
9. TEST DATA (Sub1)	38
9.1 EFFECTIVE RADIATED POWER	38
9.2 RADIATED SPURIOUS EMISSIONS	41
9.3 PEAK-TO-AVERAGE RATIO.....	42
9.4 OCCUPIED BANDWIDTH	43

9.5 CONDUCTED SPURIOUS EMISSIONS.....	44
9.6 BAND EDGE	44
9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE.....	45
10. TEST PLOTS (Main1).....	50
11. TEST PLOTS (Sub1)	136
12. ANNEX A_ TEST SETUP PHOTO	222

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMS931B
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§ 22
EUT Type:	Mobile phone
Model(s):	SM-S931B/DS
Additional Model(s)	SM-S931B
Tx Frequency:	824.7 MHz – 848.3 MHz (LTE – Band 26 (1.4 MHz)) 825.5 MHz – 847.5 MHz (LTE – Band 26 (3 MHz)) 826.5 MHz – 846.5 MHz (LTE – Band 26 (5 MHz)) 829.0 MHz – 844.0 MHz (LTE – Band 26 (10 MHz)) 831.5 MHz – 841.5 MHz (LTE – Band 26 (15 MHz))
Date(s) of Tests:	August 21, 2024 ~ October 28, 2024
Serial number:	Radiated : R3CX80PTCAD Conducted : R3CX80PTCEN

1.1 MAXIMUM OUTPUT POWER

Main1

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band26 (1.4)	824.7 – 848.3	1M10G7D	QPSK	0.053	17.24
		1M10W7D	16QAM	0.045	16.53
		1M11W7D	64QAM	0.035	15.42
		1M10W7D	256QAM	0.017	12.31
LTE – Band26 (3)	825.5 – 847.5	2M72G7D	QPSK	0.054	17.32
		2M71W7D	16QAM	0.045	16.57
		2M72W7D	64QAM	0.036	15.53
		2M71W7D	256QAM	0.017	12.37
LTE – Band26 (5)	826.5 – 846.5	4M52G7D	QPSK	0.055	17.40
		4M52W7D	16QAM	0.046	16.67
		4M53W7D	64QAM	0.036	15.59
		4M51W7D	256QAM	0.017	12.40
LTE – Band26 (10)	829.0 – 844.0	9M03G7D	QPSK	0.054	17.30
		9M00W7D	16QAM	0.045	16.58
		9M00W7D	64QAM	0.035	15.45
		9M03W7D	256QAM	0.017	12.36
LTE – Band26 (15)	831.5 – 841.5	13M5G7D	QPSK	0.057	17.53
		13M5W7D	16QAM	0.046	16.65
		13M5W7D	64QAM	0.036	15.56
		13M5W7D	256QAM	0.018	12.52

Sub1

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band26 (1.4)	824.7 – 848.3	1M10G7D	QPSK	0.076	18.82
		1M10W7D	16QAM	0.066	18.18
		1M10W7D	64QAM	0.052	17.13
		1M10W7D	256QAM	0.025	14.01
LTE – Band26 (3)	825.5 – 847.5	2M72G7D	QPSK	0.076	18.83
		2M72W7D	16QAM	0.065	18.13
		2M72W7D	64QAM	0.051	17.09
		2M72W7D	256QAM	0.025	13.91
LTE – Band26 (5)	826.5 – 846.5	4M52G7D	QPSK	0.079	18.97
		4M51W7D	16QAM	0.067	18.23
		4M53W7D	64QAM	0.052	17.16
		4M51W7D	256QAM	0.025	14.03
LTE – Band26 (10)	829.0 – 844.0	9M01G7D	QPSK	0.079	18.98
		8M99W7D	16QAM	0.066	18.20
		8M99W7D	64QAM	0.052	17.13
		9M00W7D	256QAM	0.025	14.03
LTE – Band26 (15)	831.5 – 841.5	13M5G7D	QPSK	0.077	18.85
		13M5W7D	16QAM	0.062	17.89
		13M5W7D	64QAM	0.049	16.89
		13M5W7D	256QAM	0.024	13.84

2. INTRODUCTION

2.1 DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub 6. It also supports IEEE 802.11 a/b/g/n/ac/ax/be (20/40/80/160/320 MHz), Bluetooth(iPA, ePA), BT LE(iPA, ePA), NFC, WPT, WIFI 6E

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
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4
Conducted Output Power	- N/A (See SAR Report)
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

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 in accordance with ANSI/TIA-603-E-2016 Clause 2.2.17.

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 according to ANSI/TIA-603-E-2016.

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;

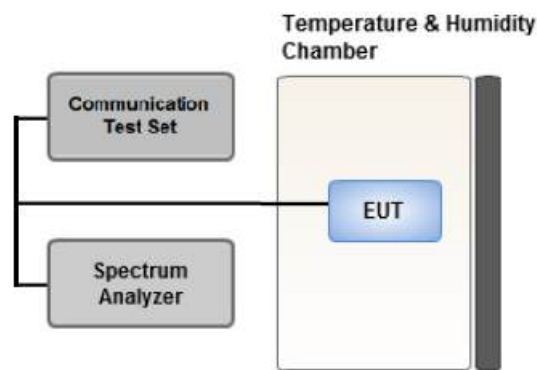
$$\text{Result}_{(\text{dBm})} = P_g_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

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



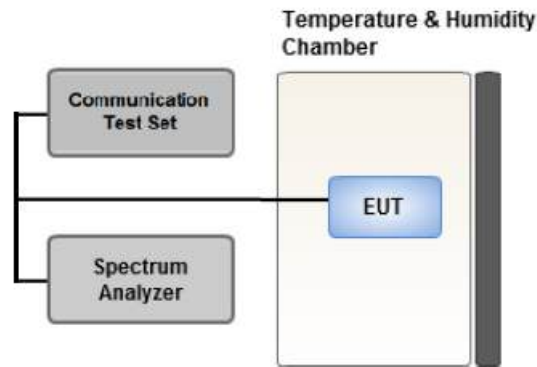
Test setup

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.

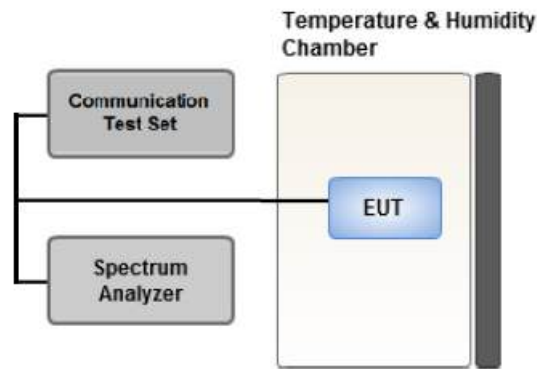
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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 $\geq 3 \times$ 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.

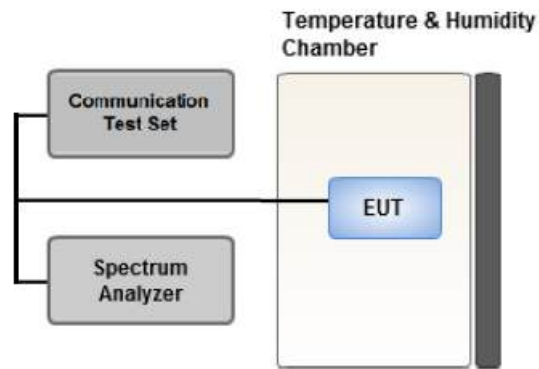
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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 = RMS
4. Trace Mode = trace average
5. Sweep time = auto
6. Number of points in sweep $\geq 2 \times \text{Span} / \text{RBW}$

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.

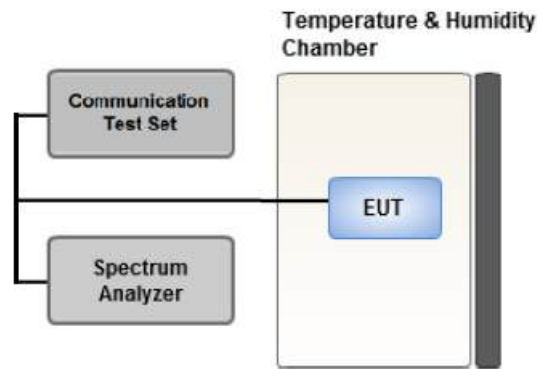
In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

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 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 : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
Worst case : Stand alone
- 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.
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 15 MHz(Main1), 10 MHz(Sub1))
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data
- Please refer to the table below.
- SM-S931B/DS & additional models were tested and the worst case results are reported.
(Worst case : SM-S931B/DS)

[Main1 Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	See Section 8.1		Y
Radiated Spurious and Harmonic Emissions	QPSK	See Section 8.2		X

[Sub1 Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	See Section 9.1		X
Radiated Spurious and Harmonic Emissions	QPSK	See Section 9.2		X

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
 - SM-S931B/DS & additional models were tested and the worst case results are reported.
- (Worst case : SM-S931B/DS)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15	Mid	Full RB	0
Peak-To-Average Ratio	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15	Mid	Full RB	0
Band Edge	QPSK	1.4	Low	1	0
			High	1	5
		3	Low	1	0
			High	1	14
		5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	49
		15	Low	1	0
			High	1	74
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	1.4, 3, 5, 10, 15	Low, Mid, High	Full RB	0
			Low, Mid, High	1	0

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	Switch box(1.2 G HPF+LNA)	HCT CO., LTD.,	F1L1	08/21/2025	Annual
RF Switching System	Switch box(3.3 G HPF+LNA)	HCT CO., LTD.,	F1L2	08/21/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F1L4	08/21/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F1L7	08/21/2025	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	93008124	02/19/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/17/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/11/2025	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	REOHDE & SCHWARZ	100931	08/06/2025	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
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	11/17/2024	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	12/11/2024	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
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 dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.98 (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

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	<u>See Note1</u>
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

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

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 (Main1)

8.1 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
824.7	LTE 26 (1.4 MHz)	QPSK	-34.09	28.23	-10.24	1.44	V	< 7.00	0.045	16.55	1	5
		16-QAM	-34.84	27.48	-10.24	1.44	V		0.038	15.80		
		64-QAM	-35.97	26.35	-10.24	1.44	V		0.029	14.67		
		256-QAM	-39.06	23.26	-10.24	1.44	V		0.014	11.58		
836.5		QPSK	-33.55	28.87	-10.18	1.45	V		0.053	17.24	1	0
		16-QAM	-34.26	28.16	-10.18	1.45	V		0.045	16.53		
		64-QAM	-35.37	27.05	-10.18	1.45	V		0.035	15.42		
		256-QAM	-38.48	23.94	-10.18	1.45	V		0.017	12.31		
848.3		QPSK	-34.08	28.61	-10.12	1.45	V		0.051	17.04	1	0
		16-QAM	-34.80	27.89	-10.12	1.45	V		0.043	16.32		
		64-QAM	-35.88	26.81	-10.12	1.45	V		0.033	15.24		
		256-QAM	-39.07	23.62	-10.12	1.45	V		0.016	12.05		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
825.5	LTE 26 (3 MHz)	QPSK	-33.98	28.38	-10.24	1.44	V	< 7.00	0.047	16.70	1	14
		16-QAM	-34.70	27.66	-10.24	1.44	V		0.040	15.98		
		64-QAM	-35.79	26.57	-10.24	1.44	V		0.031	14.89		
		256-QAM	-38.95	23.41	-10.24	1.44	V		0.015	11.73		
836.5		QPSK	-33.47	28.95	-10.18	1.45	V		0.054	17.32	1	0
		16-QAM	-34.22	28.20	-10.18	1.45	V		0.045	16.57		
		64-QAM	-35.26	27.16	-10.18	1.45	V		0.036	15.53		
		256-QAM	-38.42	24.00	-10.18	1.45	V		0.017	12.37		
847.5		QPSK	-34.14	28.58	-10.12	1.45	V		0.050	17.01	1	0
		16-QAM	-34.91	27.81	-10.12	1.45	V		0.042	16.24		
		64-QAM	-35.99	26.73	-10.12	1.45	V		0.033	15.16		
		256-QAM	-39.19	23.53	-10.12	1.45	V		0.016	11.96		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
826.5	LTE 26 (5 MHz)	QPSK	-33.74	28.67	-10.23	1.44	V	< 7.00	0.050	17.00	1	24
		16-QAM	-34.40	28.01	-10.23	1.44	V		0.043	16.34		
		64-QAM	-35.52	26.89	-10.23	1.44	V		0.033	15.22		
		256-QAM	-38.70	23.71	-10.23	1.44	V		0.016	12.04		
836.5		QPSK	-33.39	29.03	-10.18	1.45	V		0.055	17.40	1	0
		16-QAM	-34.12	28.30	-10.18	1.45	V		0.046	16.67		
		64-QAM	-35.20	27.22	-10.18	1.45	V		0.036	15.59		
		256-QAM	-38.39	24.03	-10.18	1.45	V		0.017	12.40		
846.5		QPSK	-34.09	28.67	-10.13	1.45	V		0.051	17.09	1	0
		16-QAM	-34.84	27.92	-10.13	1.45	V		0.043	16.34		
		64-QAM	-35.95	26.81	-10.13	1.45	V		0.033	15.23		
		256-QAM	-39.16	23.60	-10.13	1.45	V		0.016	12.02		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
829.0	LTE 26 (10 MHz)	QPSK	-33.44	28.92	-10.22	1.44	V	< 7.00	0.053	17.26	1	49
		16-QAM	-34.24	28.12	-10.22	1.44	V		0.044	16.46		
		64-QAM	-35.31	27.05	-10.22	1.44	V		0.035	15.39		
		256-QAM	-38.39	23.97	-10.22	1.44	V		0.017	12.31		
836.5		QPSK	-33.51	28.91	-10.18	1.45	V		0.053	17.28	1	0
		16-QAM	-34.21	28.21	-10.18	1.45	V		0.045	16.58		
		64-QAM	-35.34	27.08	-10.18	1.45	V		0.035	15.45		
		256-QAM	-38.43	23.99	-10.18	1.45	V		0.017	12.36		
844.0		QPSK	-33.75	28.89	-10.14	1.45	V		0.054	17.30	1	0
		16-QAM	-34.57	28.07	-10.14	1.45	V		0.044	16.48		
		64-QAM	-35.62	27.02	-10.14	1.45	V		0.035	15.43		
		256-QAM	-38.72	23.92	-10.14	1.45	V		0.017	12.33		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
831.5	LTE 26 (15 MHz)	QPSK	-33.60	28.74	-10.20	1.45	V	< 7.00	0.051	17.09	1	74
		16-QAM	-34.26	28.08	-10.20	1.45	V		0.044	16.43		
		64-QAM	-35.37	26.97	-10.20	1.45	V		0.034	15.32		
		256-QAM	-38.45	23.89	-10.20	1.45	V		0.017	12.24		
836.5		QPSK	-33.55	28.87	-10.18	1.45	V		0.053	17.24	1	0
		16-QAM	-34.36	28.06	-10.18	1.45	V		0.044	16.43		
		64-QAM	-35.54	26.88	-10.18	1.45	V		0.033	15.25		
		256-QAM	-38.54	23.88	-10.18	1.45	V		0.017	12.25		
841.5		QPSK	-33.34	29.13	-10.15	1.45	V		0.057	17.53	1	0
		16-QAM	-34.22	28.25	-10.15	1.45	V		0.046	16.65		
		64-QAM	-35.31	27.16	-10.15	1.45	V		0.036	15.56		
		256-QAM	-38.35	24.12	-10.15	1.45	V		0.018	12.52		

8.2 RADIATED SPURIOUS EMISSIONS

■ MODE: LTE 26
 ■ MODULATION SIGNAL: 15 MHz QPSK
 ■ DISTANCE: 3 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit	RB	
									Size	Offset
26865 (831.5)	1 663.00	-47.60	9.79	-66.30	2.04	V	-58.55	-13.00	1	74
	2 494.50	-33.86	10.66	-49.48	2.50	H	-41.32	-13.00		
	3 326.00	-47.17	12.25	-62.67	2.99	V	-53.41	-13.00		
26915 (836.5)	1 673.00	-44.76	9.85	-63.47	2.05	H	-55.67	-13.00	1	0
	2 509.50	-32.88	10.70	-48.24	2.51	H	-40.05	-13.00		
	3 346.00	-47.43	12.37	-62.91	2.96	H	-53.50	-13.00		
26965 (841.5)	1 683.00	-47.62	9.91	-66.30	2.06	V	-58.45	-13.00	1	0
	2 524.50	-32.57	10.70	-48.46	2.54	H	-40.30	-13.00		
	3 366.00	-47.41	12.46	-62.61	2.96	V	-53.11	-13.00		

8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
26	1.4 MHz	836.5	QPSK	6	0	5.19
			16-QAM			5.80
			64-QAM			6.24
			256-QAM			6.56
	3 MHz		QPSK	15		4.55
			16-QAM			5.75
			64-QAM			6.25
			256-QAM			6.55
	5 MHz		QPSK	25		4.62
			16-QAM			5.58
			64-QAM			6.19
			256-QAM			6.53
	10 MHz		QPSK	50		4.64
			16-QAM			5.58
			64-QAM			6.15
			256-QAM			6.51
	15 MHz		QPSK	75		4.63
			16-QAM			5.59
			64-QAM			6.16
			256-QAM			6.55

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 71 ~ 90.

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
26	1.4 MHz	836.5	QPSK	6	0	1.1019
			16-QAM			1.0953
			64-QAM			1.1057
			256-QAM			1.1017
	3 MHz		QPSK	15		2.7158
			16-QAM			2.7142
			64-QAM			2.7186
			256-QAM			2.7091
	5 MHz		QPSK	25		4.5156
			16-QAM			4.5147
			64-QAM			4.5249
			256-QAM			4.5130
	10 MHz		QPSK	50		9.0250
			16-QAM			8.9977
			64-QAM			9.0032
			256-QAM			9.0332
	15 MHz		QPSK	75		13.505
			16-QAM			13.526
			64-QAM			13.498
			256-QAM			13.473

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 51 ~ 70.

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)
26	1.4	824.7	3.6800	27.976	-67.410	-39.434	-13.00
		836.5	3.7069	27.976	-67.481	-39.505	
		848.3	3.1661	27.976	-67.477	-39.501	
	3	825.5	3.1626	27.976	-67.310	-39.334	
		836.5	3.7044	27.976	-67.275	-39.299	
		847.5	3.6935	27.976	-67.287	-39.311	
	5	826.5	3.7049	27.976	-67.122	-39.146	
		836.5	3.7104	27.976	-66.996	-39.020	
		846.5	3.1725	27.976	-67.017	-39.041	
	10	829.0	3.7069	27.976	-66.945	-38.969	
		836.5	3.6955	27.976	-67.026	-39.050	
		844.0	3.1785	27.976	-67.622	-39.646	
	15	831.5	3.7124	27.976	-67.162	-39.186	
		836.5	3.6750	27.976	-67.366	-39.390	
		841.5	3.6795	27.976	-66.991	-39.015	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 121 ~ 135.
2. Conducted Spurious Emissions was tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor (dB) = Cable Loss + Ext. Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	25.270
1 – 5	27.976
5 – 10	28.591
10 – 15	29.116
15 – 20	29.489
Above 20(26.5)	30.131

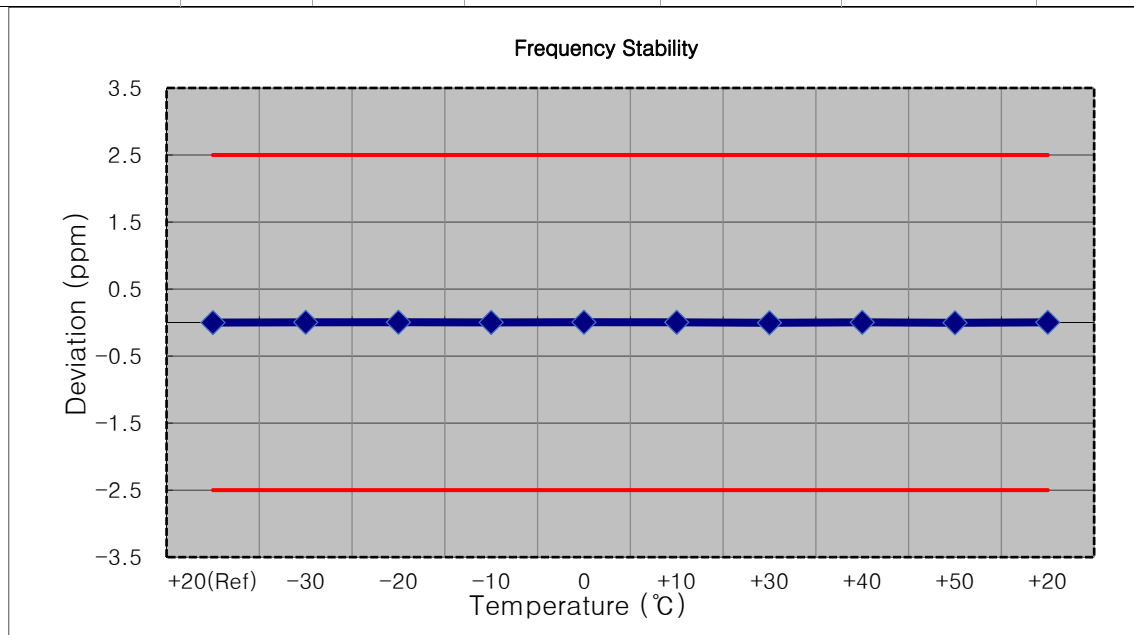
8.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 91 ~ 120.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

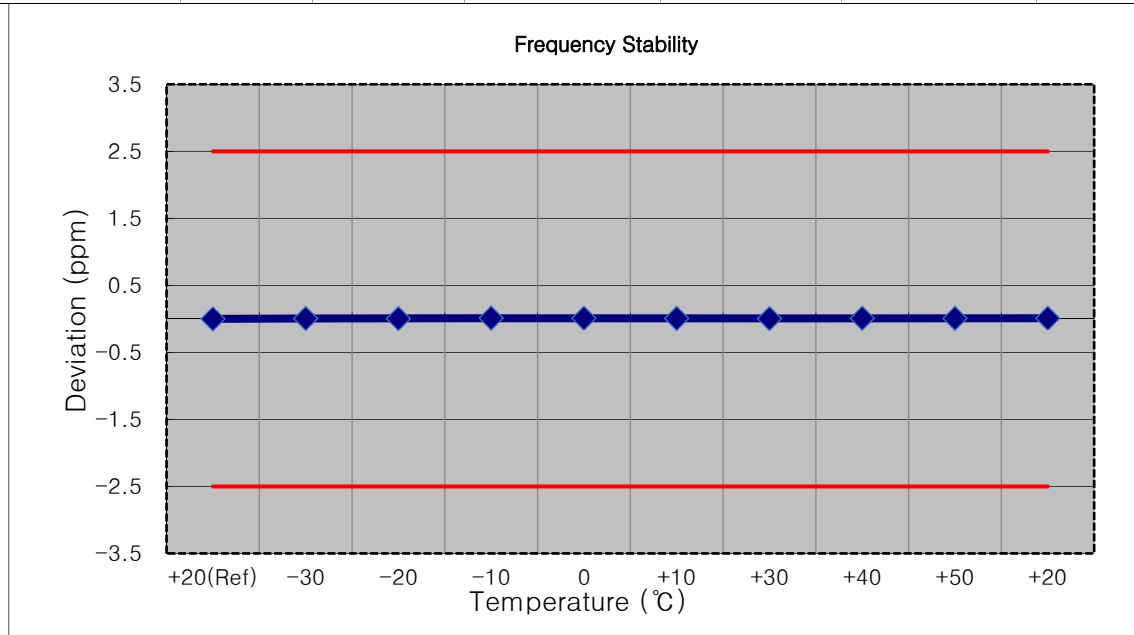
MODE:	LTE 26
OPERATING FREQUENCY:	836,500,000 Hz
CHANNEL:	26915 (1.4 MHz)
REFERENCE VOLTAGE:	3.880 VDC
DEVIATION LIMIT:	$\pm 0.000\ 25\ \%$ or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 499 997	0.0	0.000 000	0.000
100 %		-30	836 500 001	3.2	0.000 000	0.004
100 %		-20	836 500 002	4.2	0.000 001	0.005
100 %		-10	836 499 999	2.0	0.000 000	0.002
100 %		0	836 500 002	4.2	0.000 001	0.005
100 %		+10	836 500 000	3.1	0.000 000	0.004
100 %		+30	836 499 995	-2.8	0.000 000	-0.003
100 %		+40	836 500 000	3.0	0.000 000	0.004
100 %		+50	836 499 995	-2.7	0.000 000	-0.003
Batt. Endpoint	3.300	+20	836 500 000	2.7	0.000 000	0.003



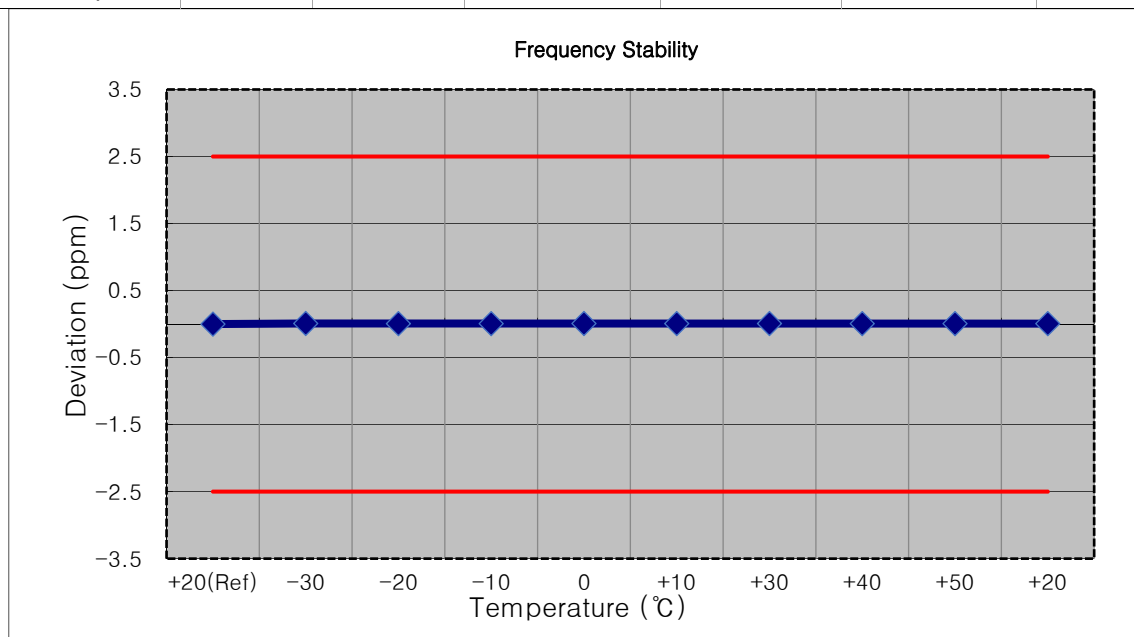
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (3 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 008	0.0	0.000 000	0.000
100 %		-30	836 500 013	5.2	0.000 001	0.006
100 %		-20	836 500 012	4.2	0.000 001	0.005
100 %		-10	836 500 018	9.8	0.000 001	0.012
100 %		0	836 500 016	8.1	0.000 001	0.010
100 %		+10	836 500 014	6.1	0.000 001	0.007
100 %		+30	836 500 012	4.2	0.000 001	0.005
100 %		+40	836 500 016	8.1	0.000 001	0.010
100 %		+50	836 500 015	6.6	0.000 001	0.008
Batt. Endpoint	3.300	+20	836 500 016	8.2	0.000 001	0.010



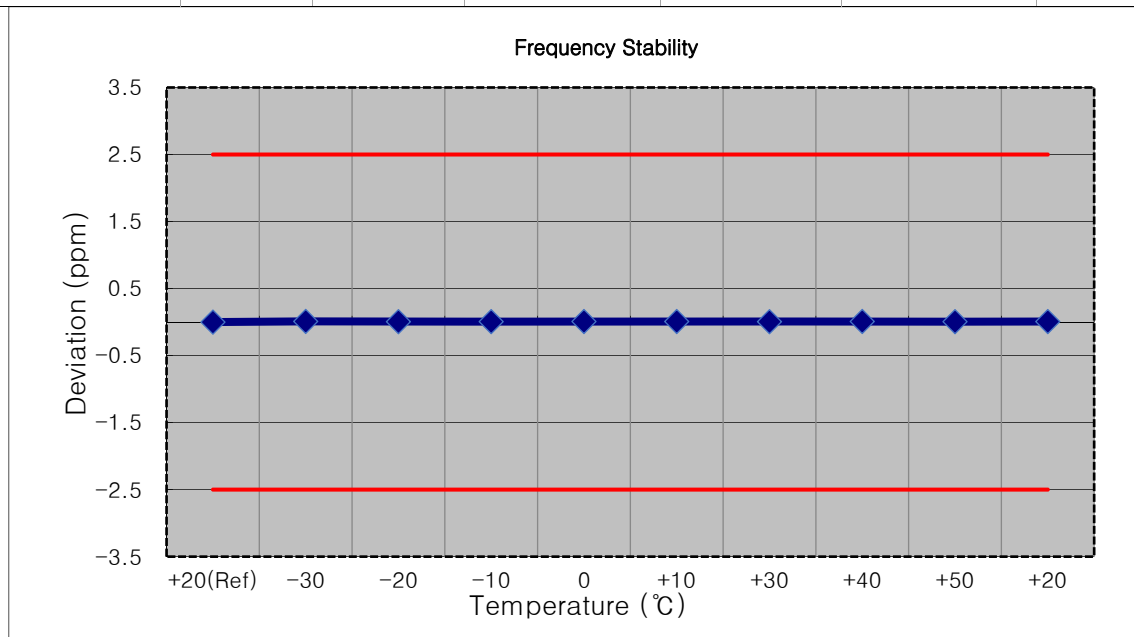
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (5 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 008	0.0	0.000 000	0.000
100 %		-30	836 500 015	7.6	0.000 001	0.009
100 %		-20	836 500 014	5.8	0.000 001	0.007
100 %		-10	836 500 014	5.9	0.000 001	0.007
100 %		0	836 500 015	7.1	0.000 001	0.008
100 %		+10	836 500 014	6.4	0.000 001	0.008
100 %		+30	836 500 015	7.3	0.000 001	0.009
100 %		+40	836 500 014	6.0	0.000 001	0.007
100 %		+50	836 500 014	5.8	0.000 001	0.007
Batt. Endpoint	3.300	+20	836 500 013	5.5	0.000 001	0.007



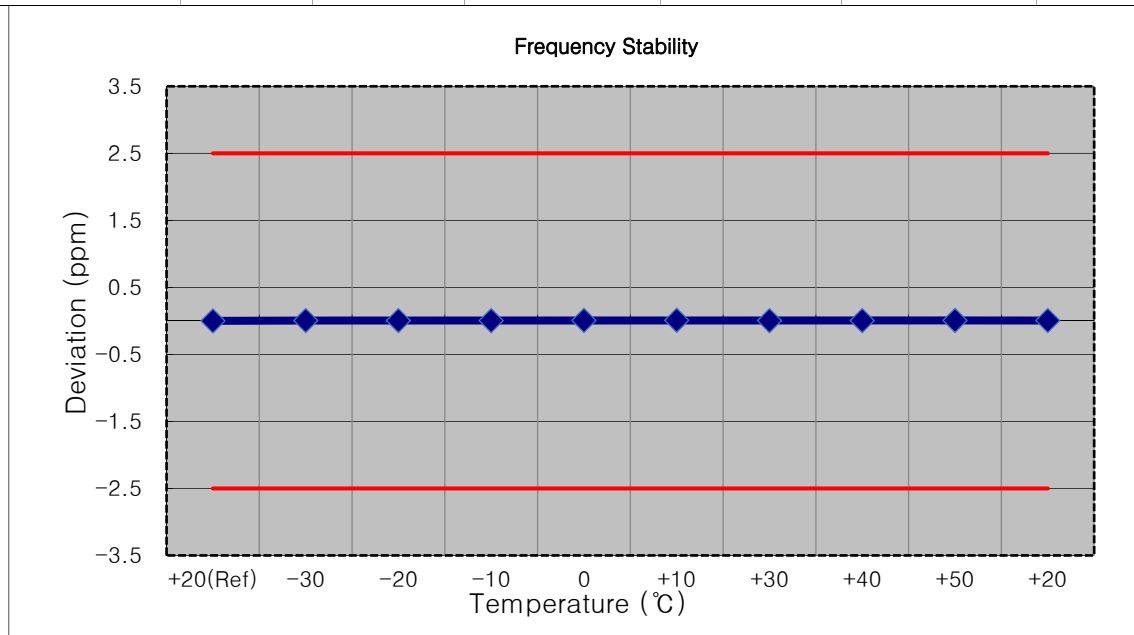
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (10 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 005	0.0	0.000 000	0.000
100 %		-30	836 500 014	8.7	0.000 001	0.010
100 %		-20	836 500 010	5.3	0.000 001	0.006
100 %		-10	836 500 011	6.0	0.000 001	0.007
100 %		0	836 500 012	6.8	0.000 001	0.008
100 %		+10	836 500 012	7.3	0.000 001	0.009
100 %		+30	836 500 010	4.9	0.000 001	0.006
100 %		+40	836 500 012	7.5	0.000 001	0.009
100 %		+50	836 500 010	4.9	0.000 001	0.006
Batt. Endpoint	3.300	+20	836 500 012	6.7	0.000 001	0.008



■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (15 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 008	0.0	0.000 000	0.000
100 %		-30	836 500 009	4.4	0.000 001	0.005
100 %		-20	836 500 009	3.7	0.000 000	0.004
100 %		-10	836 500 008	3.2	0.000 000	0.004
100 %		0	836 500 011	5.7	0.000 001	0.007
100 %		+10	836 500 013	8.2	0.000 001	0.010
100 %		+30	836 500 008	3.4	0.000 000	0.004
100 %		+40	836 500 009	3.8	0.000 000	0.005
100 %		+50	836 500 011	5.7	0.000 001	0.007
Batt. Endpoint	3.300	+20	836 500 009	4.3	0.000 001	0.005



9. TEST DATA (Sub1)

9.1 EFFECTIVE RADIATED POWER

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
824.7	LTE 26 (1.4 MHz)	QPSK	-32.03	30.29	-10.24	1.44	H	< 7.00	0.073	18.61	1	5
		16-QAM	-32.71	29.61	-10.24	1.44	H		0.062	17.93		
		64-QAM	-33.72	28.60	-10.24	1.44	H		0.049	16.92		
		256-QAM	-36.84	25.48	-10.24	1.44	H		0.024	13.80		
836.5		QPSK	-32.04	30.38	-10.18	1.45	H		0.075	18.75	1	3
		16-QAM	-32.77	29.65	-10.18	1.45	H		0.063	18.02		
		64-QAM	-33.86	28.56	-10.18	1.45	H		0.049	16.93		
		256-QAM	-36.95	25.47	-10.18	1.45	H		0.024	13.84		
848.3		QPSK	-32.30	30.39	-10.12	1.45	H		0.076	18.82	1	0
		16-QAM	-32.94	29.75	-10.12	1.45	H		0.066	18.18		
		64-QAM	-33.99	28.70	-10.12	1.45	H		0.052	17.13		
		256-QAM	-37.11	25.58	-10.12	1.45	H		0.025	14.01		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
825.5	LTE 26 (3 MHz)	QPSK	-31.98	30.38	-10.24	1.44	H	< 7.00	0.074	18.70	1	14
		16-QAM	-32.73	29.63	-10.24	1.44	H		0.062	17.95		
		64-QAM	-33.83	28.53	-10.24	1.44	H		0.048	16.85		
		256-QAM	-36.92	25.44	-10.24	1.44	H		0.024	13.76		
836.5		QPSK	-32.12	30.30	-10.18	1.45	H		0.074	18.67	1	8
		16-QAM	-32.78	29.64	-10.18	1.45	H		0.063	18.01		
		64-QAM	-33.83	28.59	-10.18	1.45	H		0.050	16.96		
		256-QAM	-36.95	25.47	-10.18	1.45	H		0.024	13.84		
847.5		QPSK	-32.32	30.40	-10.12	1.45	H		0.076	18.83	1	0
		16-QAM	-33.02	29.70	-10.12	1.45	H		0.065	18.13		
		64-QAM	-34.06	28.66	-10.12	1.45	H		0.051	17.09		
		256-QAM	-37.24	25.48	-10.12	1.45	H		0.025	13.91		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
826.5	LTE 26 (5 MHz)	QPSK	-32.35	30.06	-10.23	1.44	H	< 7.00	0.069	18.39	1	24
		16-QAM	-33.06	29.35	-10.23	1.44	H		0.059	17.68		
		64-QAM	-34.15	28.26	-10.23	1.44	H		0.046	16.59		
		256-QAM	-37.25	25.16	-10.23	1.44	H		0.022	13.49		
836.5		QPSK	-32.10	30.32	-10.18	1.45	H		0.074	18.69	1	13
		16-QAM	-32.73	29.69	-10.18	1.45	H		0.064	18.06		
		64-QAM	-33.89	28.53	-10.18	1.45	H		0.049	16.90		
		256-QAM	-36.96	25.46	-10.18	1.45	H		0.024	13.83		
846.5		QPSK	-32.21	30.55	-10.13	1.45	H		0.079	18.97	1	0
		16-QAM	-32.95	29.81	-10.13	1.45	H		0.067	18.23		
		64-QAM	-34.02	28.74	-10.13	1.45	H		0.052	17.16		
		256-QAM	-37.15	25.61	-10.13	1.45	H		0.025	14.03		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
829.0	LTE 26 (10 MHz)	QPSK	-32.18	30.18	-10.22	1.44	H	< 7.00	0.071	18.52	1	49
		16-QAM	-32.97	29.39	-10.22	1.44	H		0.059	17.73		
		64-QAM	-34.09	28.27	-10.22	1.44	H		0.046	16.61		
		256-QAM	-37.11	25.25	-10.22	1.44	H		0.023	13.59		
836.5		QPSK	-32.08	30.34	-10.18	1.45	H		0.074	18.71	1	25
		16-QAM	-32.88	29.54	-10.18	1.45	H		0.062	17.91		
		64-QAM	-33.97	28.45	-10.18	1.45	H		0.048	16.82		
		256-QAM	-36.99	25.43	-10.18	1.45	H		0.024	13.80		
844.0		QPSK	-32.07	30.57	-10.14	1.45	H		0.079	18.98	1	0
		16-QAM	-32.85	29.79	-10.14	1.45	H		0.066	18.20		
		64-QAM	-33.92	28.72	-10.14	1.45	H		0.052	17.13		
		256-QAM	-37.02	25.62	-10.14	1.45	H		0.025	14.03		

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
831.5	LTE 26 (15 MHz)	QPSK	-32.05	30.29	-10.20	1.45	H	< 7.00	0.073	18.64	1	74
		16-QAM	-32.98	29.36	-10.20	1.45	H		0.059	17.71		
		64-QAM	-34.05	28.29	-10.20	1.45	H		0.046	16.64		
		256-QAM	-37.15	25.19	-10.20	1.45	H		0.023	13.54		
836.5		QPSK	-31.99	30.43	-10.18	1.45	H		0.076	18.80	1	38
		16-QAM	-32.91	29.51	-10.18	1.45	H		0.061	17.88		
		64-QAM	-33.97	28.45	-10.18	1.45	H		0.048	16.82		
		256-QAM	-37.00	25.42	-10.18	1.45	H		0.024	13.79		
841.5		QPSK	-32.02	30.45	-10.15	1.45	H		0.077	18.85	1	0
		16-QAM	-32.98	29.49	-10.15	1.45	H		0.062	17.89		
		64-QAM	-33.98	28.49	-10.15	1.45	H		0.049	16.89		
		256-QAM	-37.03	25.44	-10.15	1.45	H		0.024	13.84		

9.2 RADIATED SPURIOUS EMISSIONS

■ MODE: LTE 26
 ■ MODULATION SIGNAL: 10 MHz QPSK
 ■ DISTANCE: 3 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit	RB	
									Size	Offset
26840 (829.0)	1 658.00	-46.55	9.76	-65.22	2.03	V	-57.49	-13.00	1	49
	2 487.00	-35.42	10.58	-51.12	2.53	H	-43.07	-13.00		
	3 316.00	-48.14	12.19	-63.55	2.99	V	-54.35	-13.00		
26915 (836.5)	1 673.00	-47.35	9.85	-66.06	2.05	V	-58.26	-13.00	1	25
	2 509.50	-33.81	10.70	-49.17	2.51	H	-40.98	-13.00		
	3 346.00	-48.02	12.37	-63.50	2.96	V	-54.09	-13.00		
26990 (844.0)	1 688.00	-48.39	9.94	-67.08	2.06	V	-59.20	-13.00	1	0
	2 532.00	-32.66	10.70	-48.44	2.54	H	-40.28	-13.00		
	3 376.00	-48.27	12.50	-63.43	2.98	H	-53.91	-13.00		

9.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
26	1.4 MHz	836.5	QPSK	6	0	5.21
			16-QAM			5.83
			64-QAM			6.27
			256-QAM			6.58
	3 MHz		QPSK	15		4.57
			16-QAM			5.77
			64-QAM			6.27
			256-QAM			6.59
	5 MHz		QPSK	25		4.64
			16-QAM			5.59
			64-QAM			6.21
			256-QAM			6.56
	10 MHz		QPSK	50		4.65
			16-QAM			5.58
			64-QAM			6.17
			256-QAM			6.53
	15 MHz		QPSK	75		4.67
			16-QAM			5.65
			64-QAM			6.20
			256-QAM			6.54

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 157 ~ 176.

9.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
26	1.4 MHz	836.5	QPSK	6	0	1.0968
			16-QAM			1.1010
			64-QAM			1.1002
			256-QAM			1.1006
	3 MHz		QPSK	15		2.7154
			16-QAM			2.7201
			64-QAM			2.7161
			256-QAM			2.7162
	5 MHz		QPSK	25		4.5184
			16-QAM			4.5079
			64-QAM			4.5280
			256-QAM			4.5049
	10 MHz		QPSK	50		9.0114
			16-QAM			8.9914
			64-QAM			8.9914
			256-QAM			8.9952
	15 MHz		QPSK	75		13.511
			16-QAM			13.470
			64-QAM			13.479
			256-QAM			13.494

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 137 ~ 156.

9.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
26	1.4	824.7	3.7094	27.976	-67.363	-39.387	-13.00
		836.5	2.5539	27.976	-67.256	-39.280	
		848.3	3.7294	27.976	-66.992	-39.016	
	3	825.5	3.6910	27.976	-67.141	-39.165	
		836.5	3.6980	27.976	-67.104	-39.128	
		847.5	3.6890	27.976	-67.348	-39.372	
	5	826.5	3.6975	27.976	-67.080	-39.104	
		836.5	3.1755	27.976	-67.135	-39.159	
		846.5	3.6840	27.976	-67.041	-39.065	
	10	829.0	3.6940	27.976	-67.079	-39.103	
		836.5	3.6895	27.976	-66.976	-39.000	
		844.0	3.6765	27.976	-67.120	-39.144	
	15	831.5	3.6930	27.976	-67.211	-39.235	
		836.5	3.1596	27.976	-67.287	-39.311	
		841.5	3.6865	27.976	-67.195	-39.219	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 207 ~ 221.
2. Conducted Spurious Emissions was tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor (dB) = Cable Loss + Ext. Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	25.270
1 – 5	27.976
5 – 10	28.591
10 – 15	29.116
15 – 20	29.489
Above 20(26.5)	30.131

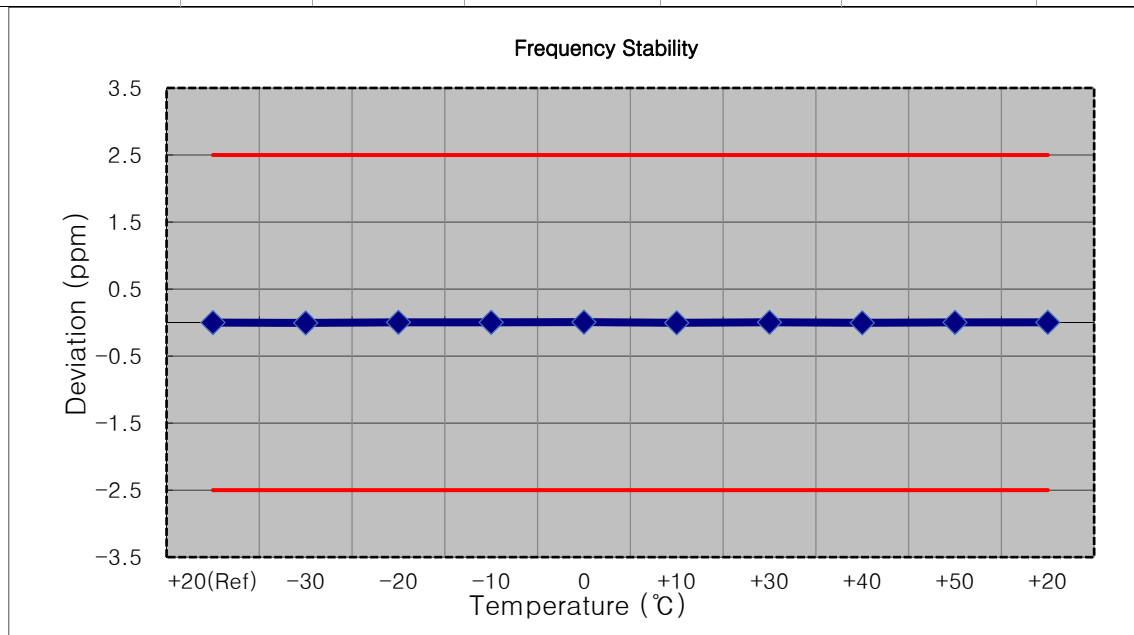
9.6 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 177 ~ 206.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

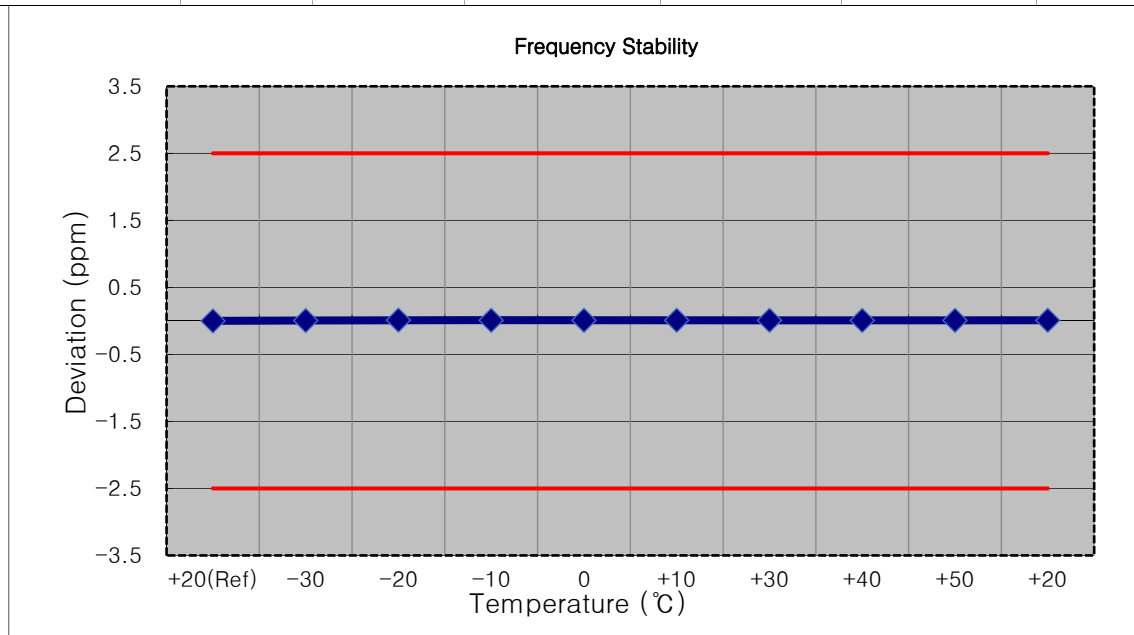
■ MODE:	<u>LTE 26</u>
■ OPERATING FREQUENCY:	<u>836,500,000 Hz</u>
■ CHANNEL:	<u>26915 (1.4 MHz)</u>
■ REFERENCE VOLTAGE:	<u>3.880 VDC</u>
■ DEVIATION LIMIT:	<u>± 0.000 25 % or 2.5 ppm</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 499 998	0.0	0.000 000	0.000
100 %		-30	836 499 993	-4.5	-0.000 001	-0.005
100 %		-20	836 500 001	3.2	0.000 000	0.004
100 %		-10	836 500 001	2.8	0.000 000	0.003
100 %		0	836 500 004	5.6	0.000 001	0.007
100 %		+10	836 499 995	-2.7	0.000 000	-0.003
100 %		+30	836 500 002	3.6	0.000 000	0.004
100 %		+40	836 499 995	-3.0	0.000 000	-0.004
100 %		+50	836 500 000	2.3	0.000 000	0.003
Batt. Endpoint	3.300	+20	836 500 001	2.9	0.000 000	0.003



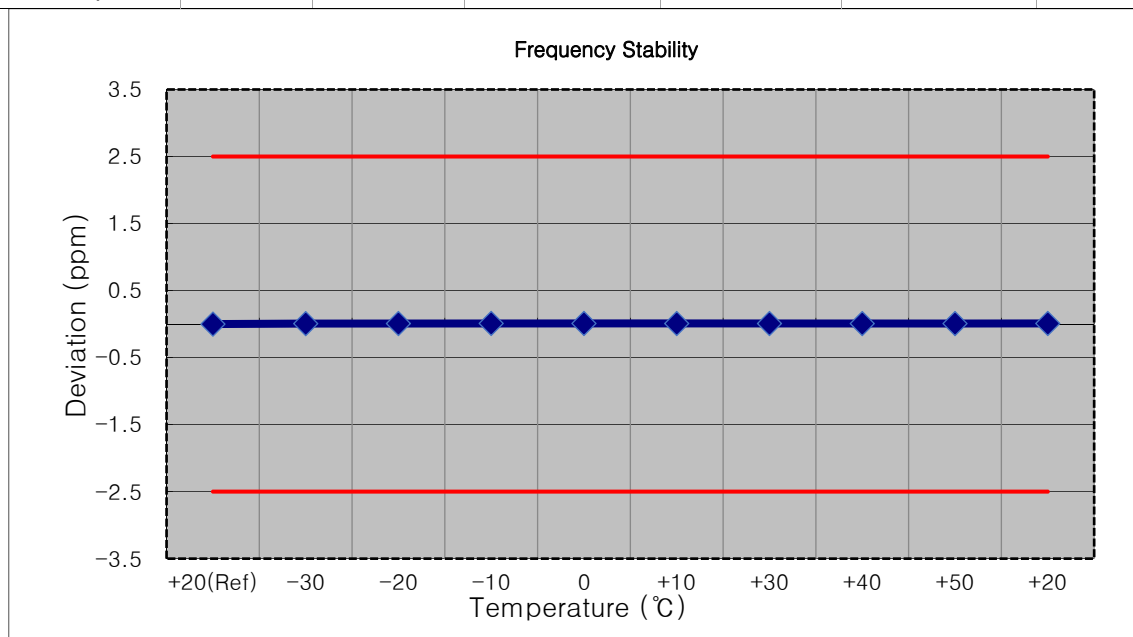
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (3 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 003	0.0	0.000 000	0.000
100 %		-30	836 500 008	4.6	0.000 001	0.005
100 %		-20	836 500 013	9.6	0.000 001	0.011
100 %		-10	836 500 011	7.3	0.000 001	0.009
100 %		0	836 500 011	7.3	0.000 001	0.009
100 %		+10	836 500 011	8.0	0.000 001	0.010
100 %		+30	836 500 011	7.3	0.000 001	0.009
100 %		+40	836 500 009	6.0	0.000 001	0.007
100 %		+50	836 500 010	6.7	0.000 001	0.008
Batt. Endpoint	3.300	+20	836 500 011	7.3	0.000 001	0.009



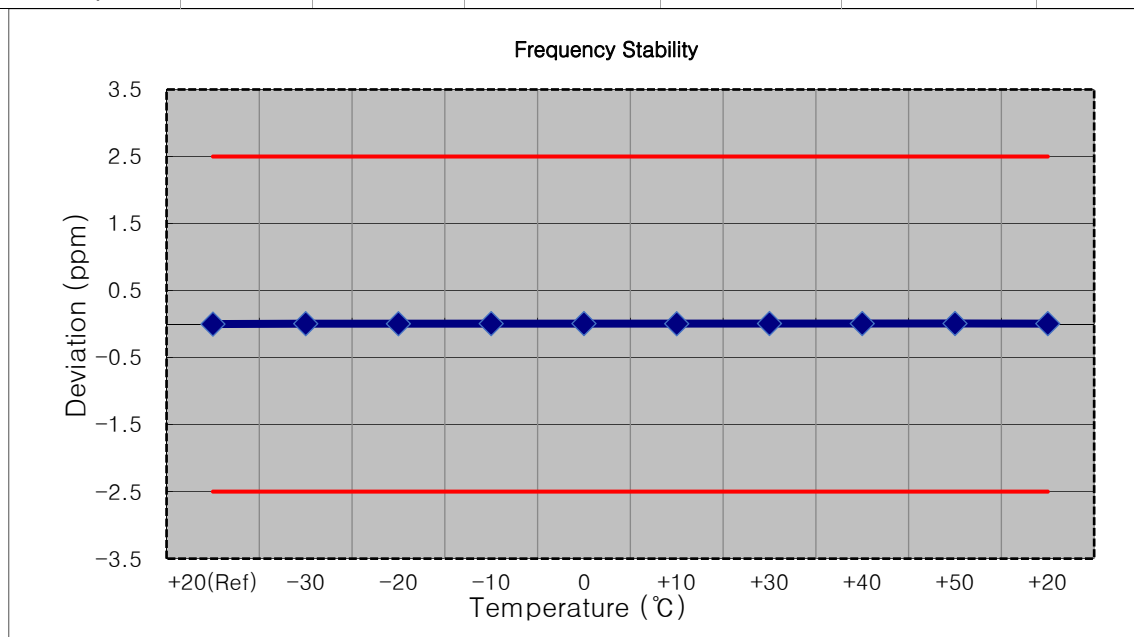
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (5 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 007	0.0	0.000 000	0.000
100 %		-30	836 500 013	6.0	0.000 001	0.007
100 %		-20	836 500 014	6.8	0.000 001	0.008
100 %		-10	836 500 016	8.7	0.000 001	0.010
100 %		0	836 500 015	7.9	0.000 001	0.009
100 %		+10	836 500 014	7.2	0.000 001	0.009
100 %		+30	836 500 014	7.2	0.000 001	0.009
100 %		+40	836 500 013	6.3	0.000 001	0.008
100 %		+50	836 500 013	6.5	0.000 001	0.008
Batt. Endpoint	3.300	+20	836 500 015	7.9	0.000 001	0.009



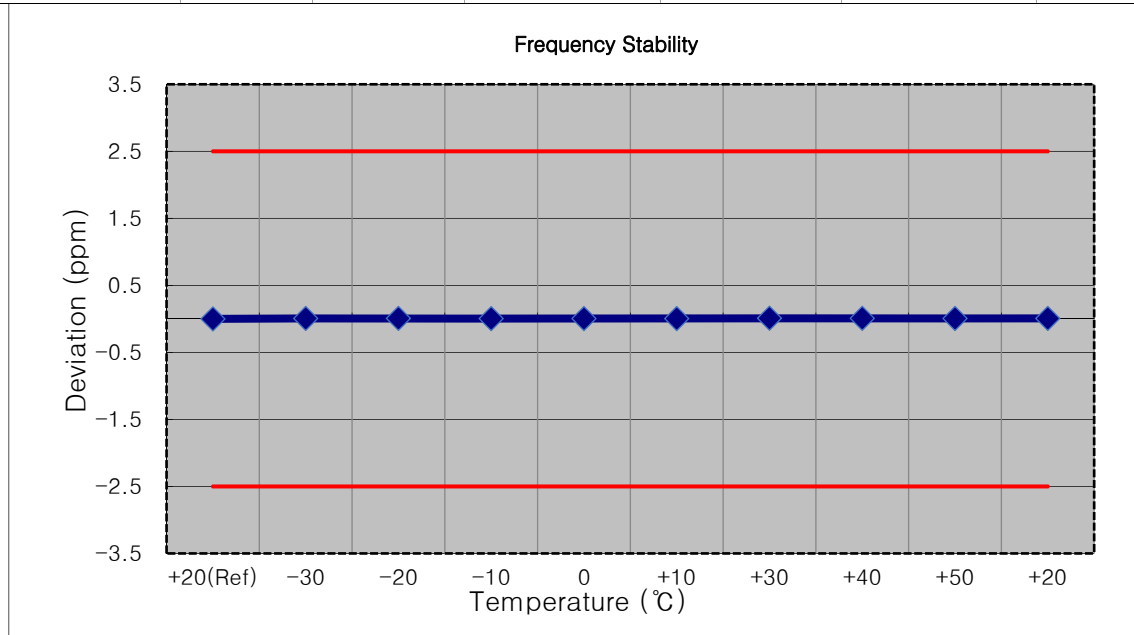
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (10 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 008	0.0	0.000 000	0.000
100 %		-30	836 500 013	5.0	0.000 001	0.006
100 %		-20	836 500 012	4.5	0.000 001	0.005
100 %		-10	836 500 013	5.5	0.000 001	0.007
100 %		0	836 500 014	6.4	0.000 001	0.008
100 %		+10	836 500 012	4.7	0.000 001	0.006
100 %		+30	836 500 015	7.4	0.000 001	0.009
100 %		+40	836 500 014	6.4	0.000 001	0.008
100 %		+50	836 500 015	7.2	0.000 001	0.009
Batt. Endpoint	3.300	+20	836 500 013	5.5	0.000 001	0.007



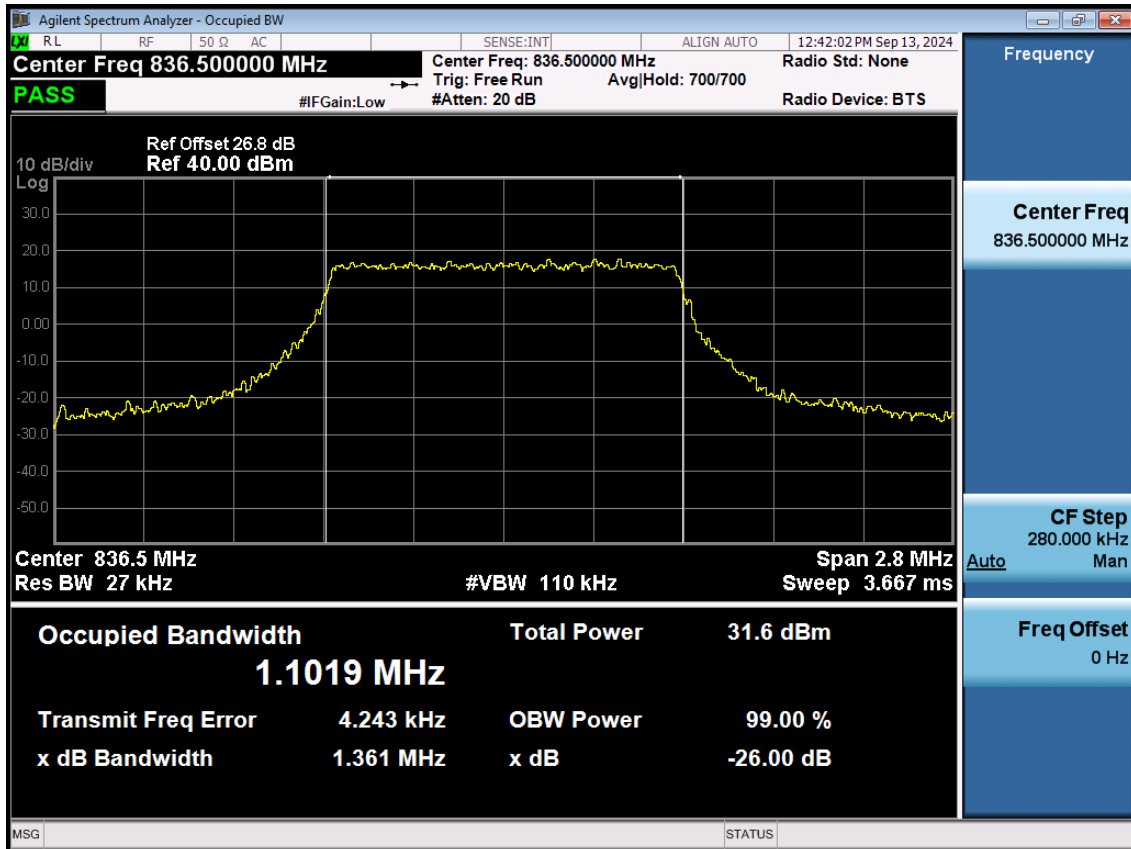
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 836,500,000 Hz
 ■ CHANNEL: 26915 (15 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 007	0.0	0.000 000	0.000
100 %		-30	836 500 013	5.8	0.000 001	0.007
100 %		-20	836 500 014	6.3	0.000 001	0.008
100 %		-10	836 500 011	3.7	0.000 000	0.004
100 %		0	836 500 012	4.1	0.000 000	0.005
100 %		+10	836 500 011	3.8	0.000 000	0.005
100 %		+30	836 500 016	8.4	0.000 001	0.010
100 %		+40	836 500 015	7.2	0.000 001	0.009
100 %		+50	836 500 013	5.3	0.000 001	0.006
Batt. Endpoint	3.300	+20	836 500 013	5.9	0.000 001	0.007

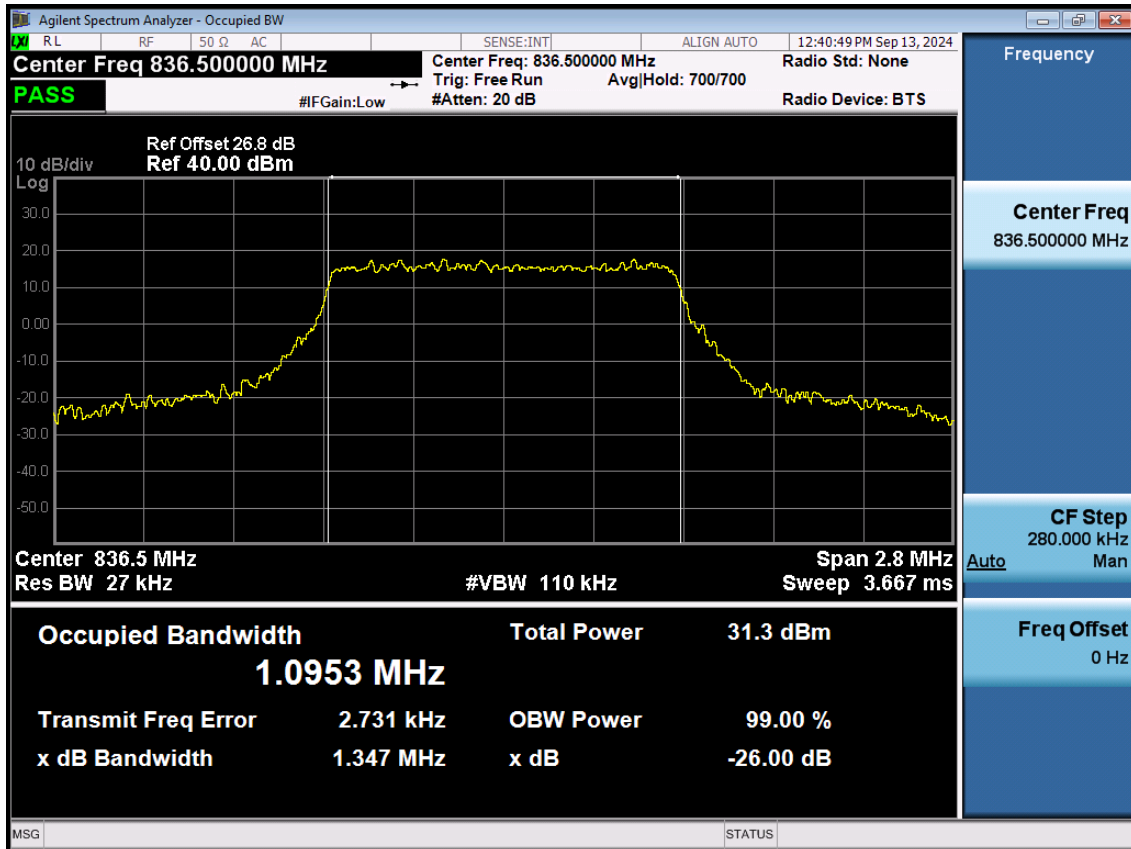


10. TEST PLOTS (Main1)

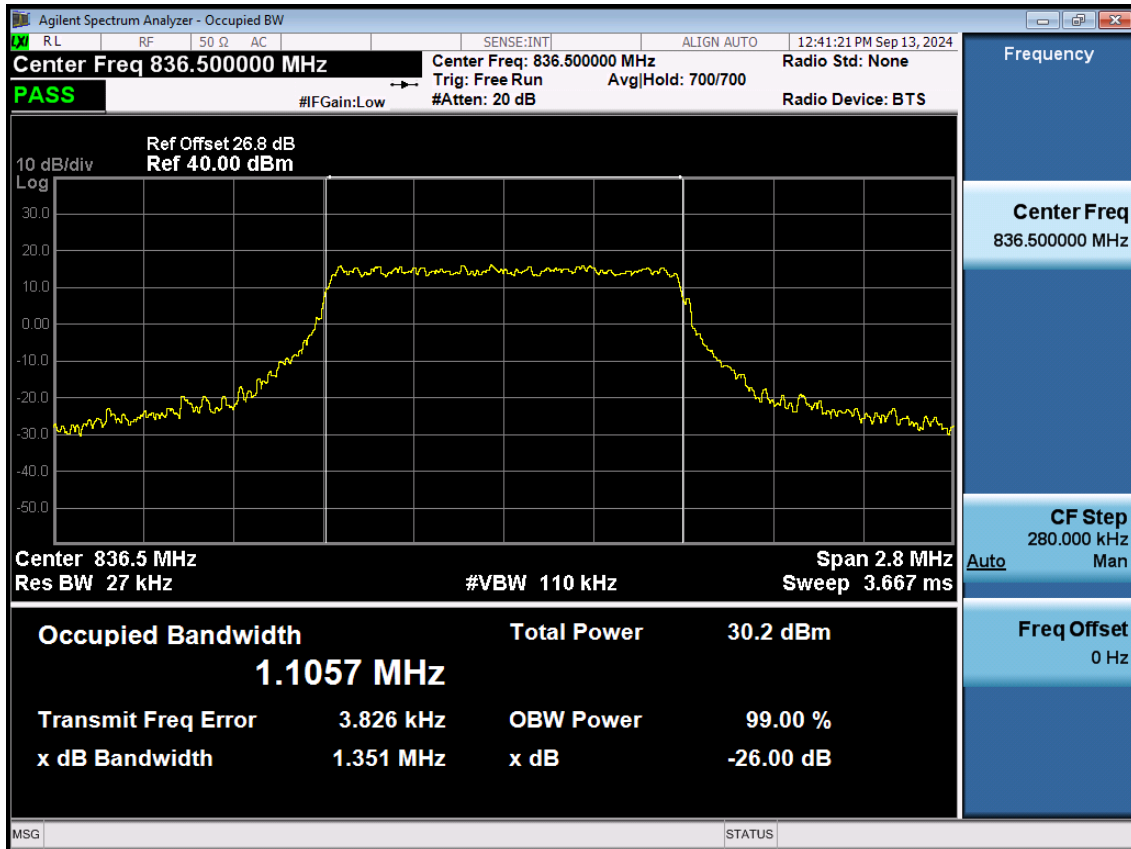
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 QPSK_RB6_0)



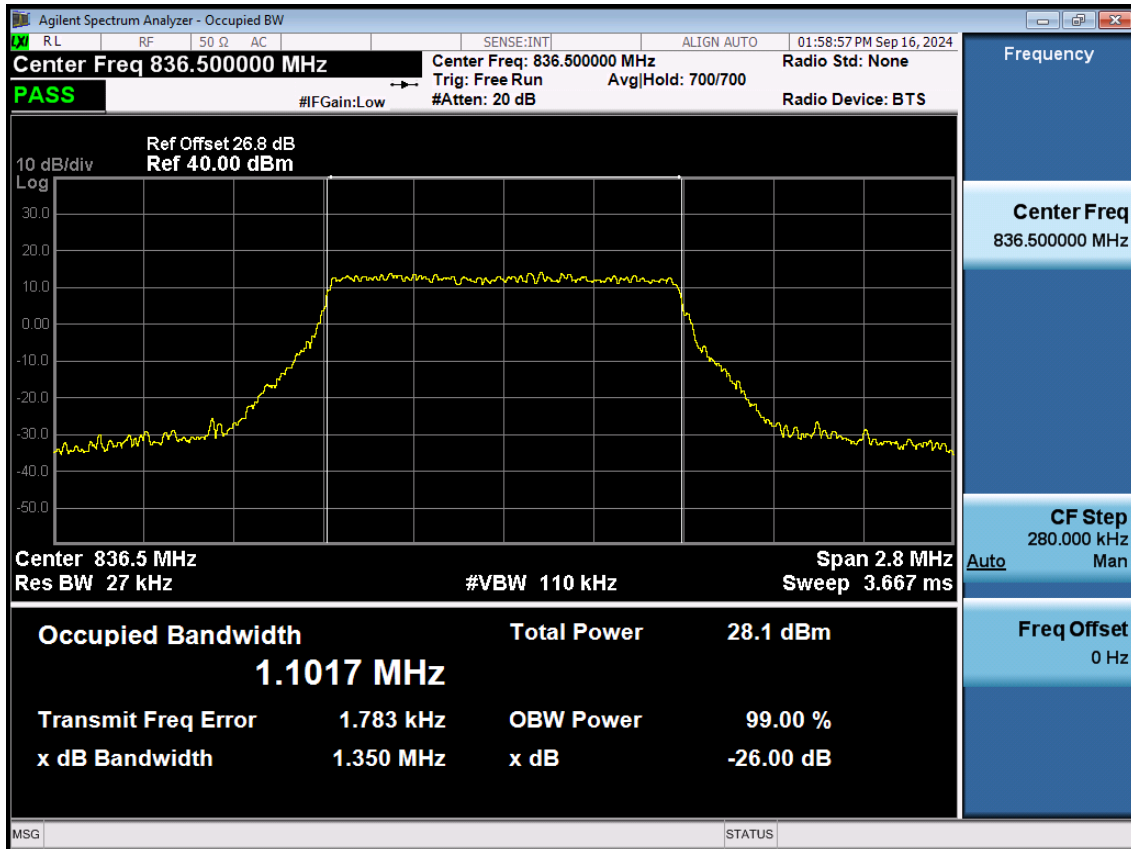
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 16QAM_RB6_0)



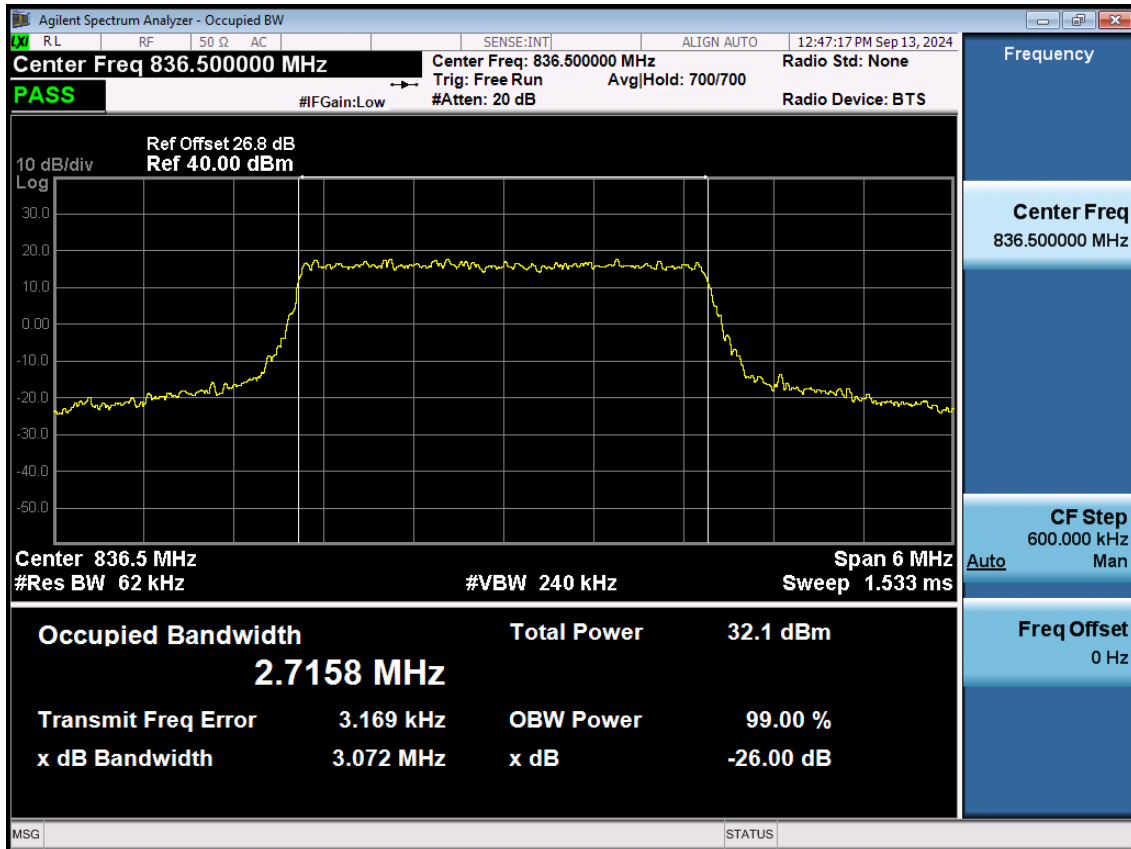
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 64QAM_RB6_0)



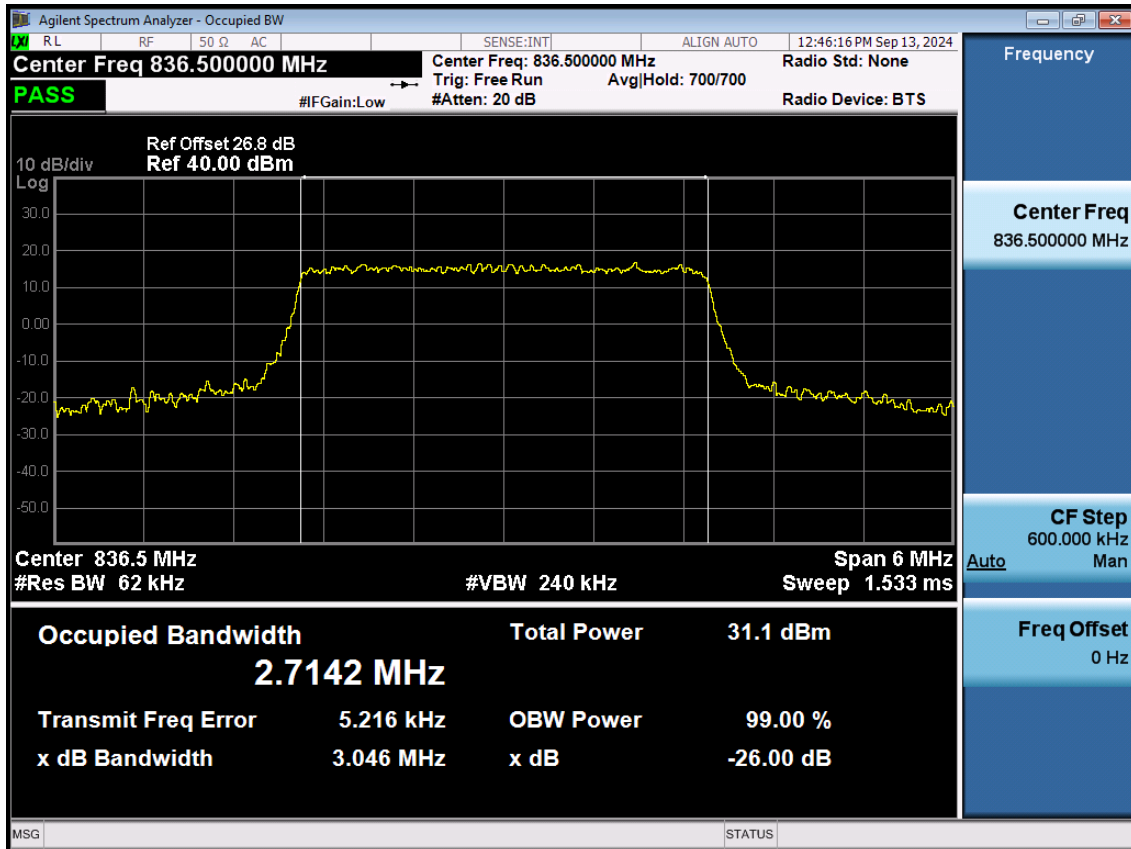
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 256QAM_RB6_0)



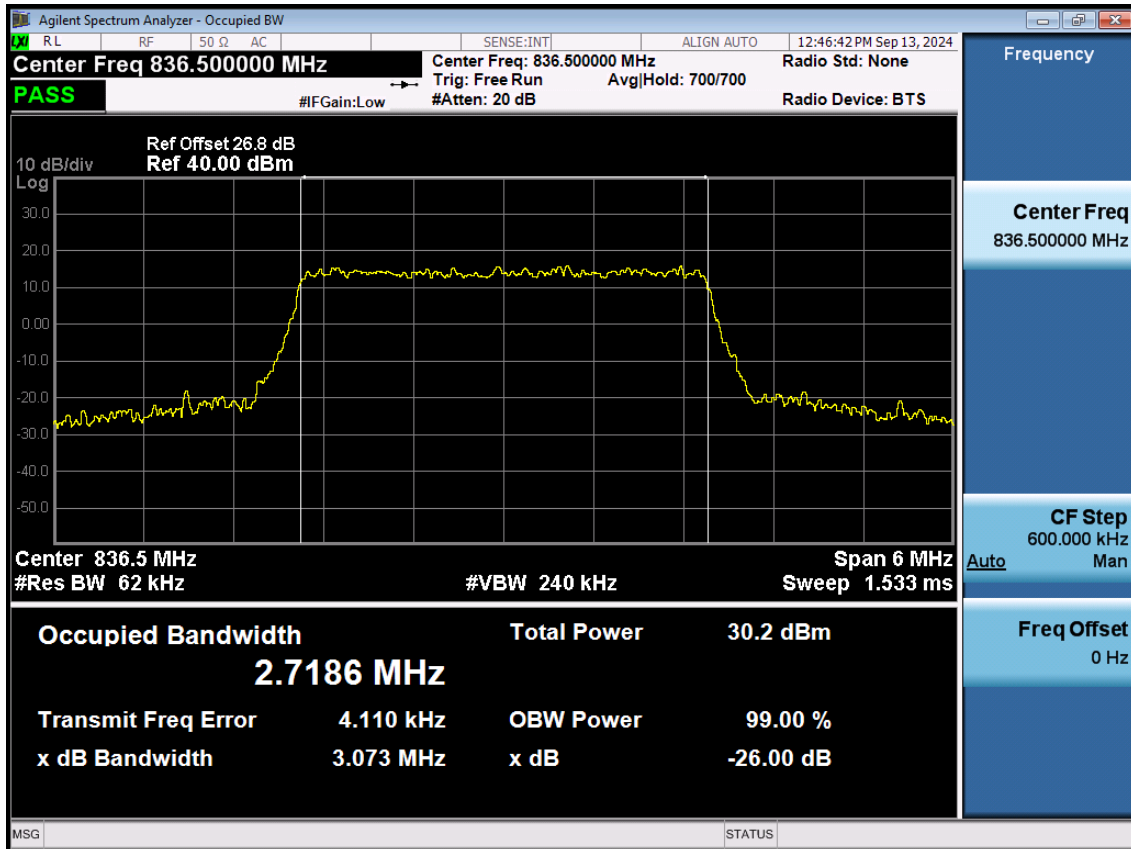
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 QPSK_RB15_0)



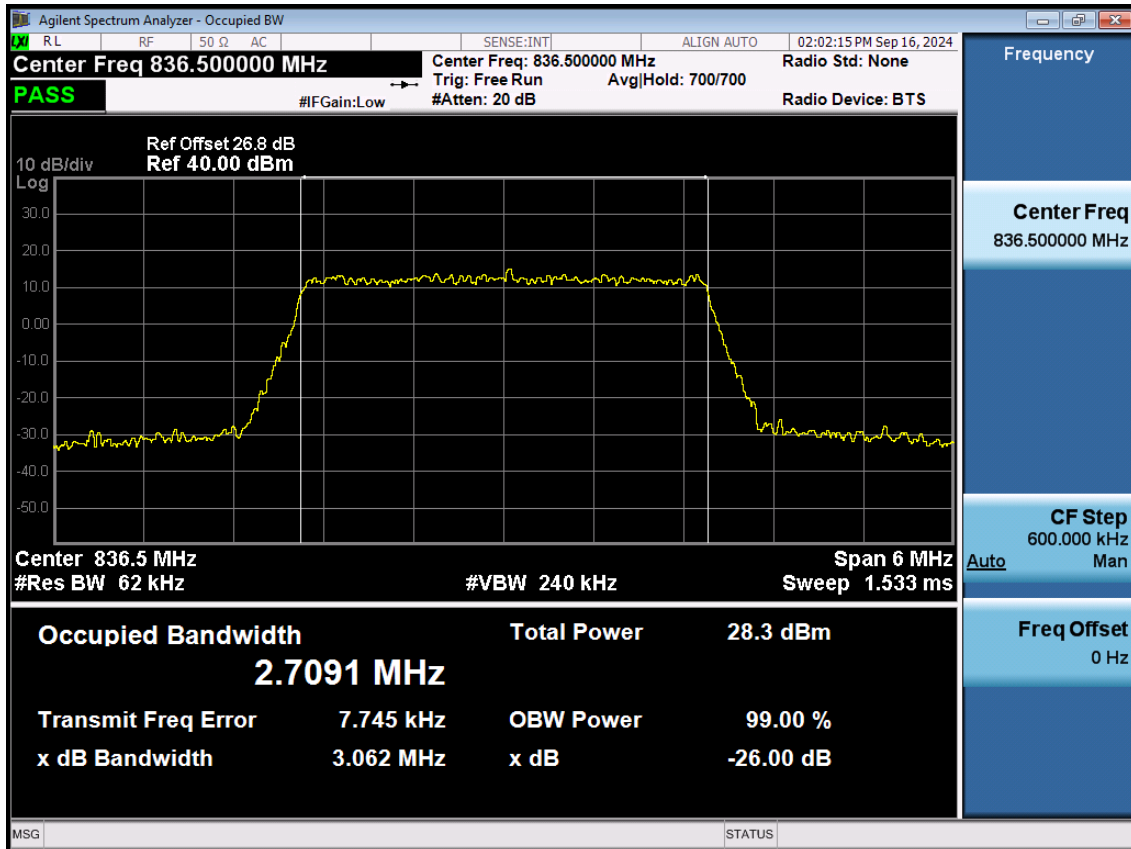
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 16QAM_RB15_0)



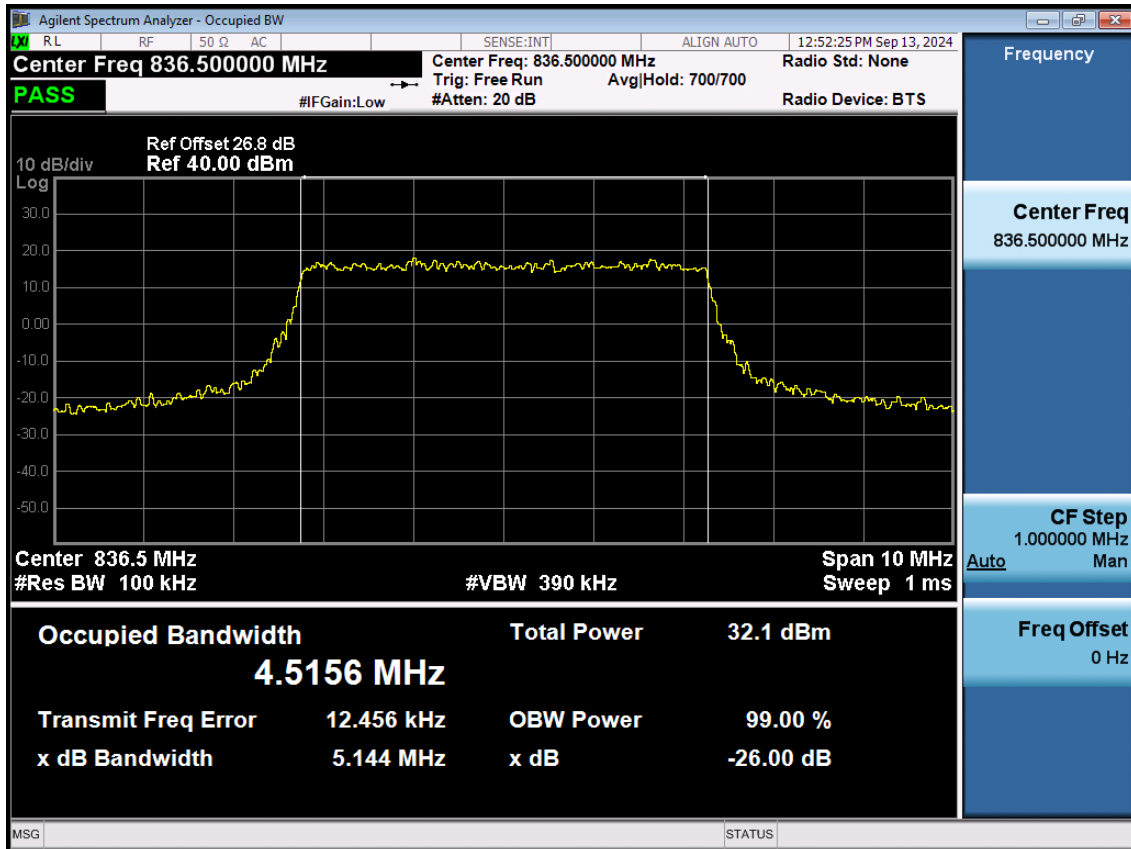
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 64QAM_RB15_0)



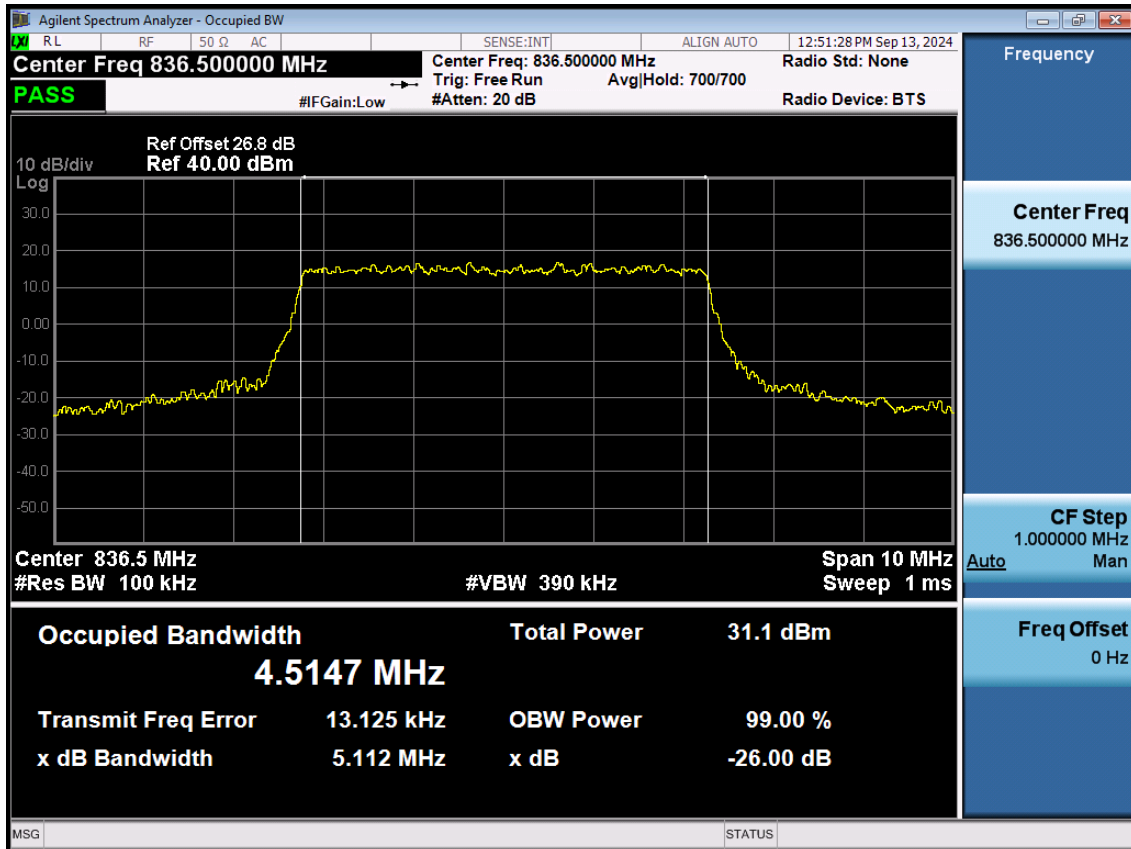
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 256QAM_RB15_0)



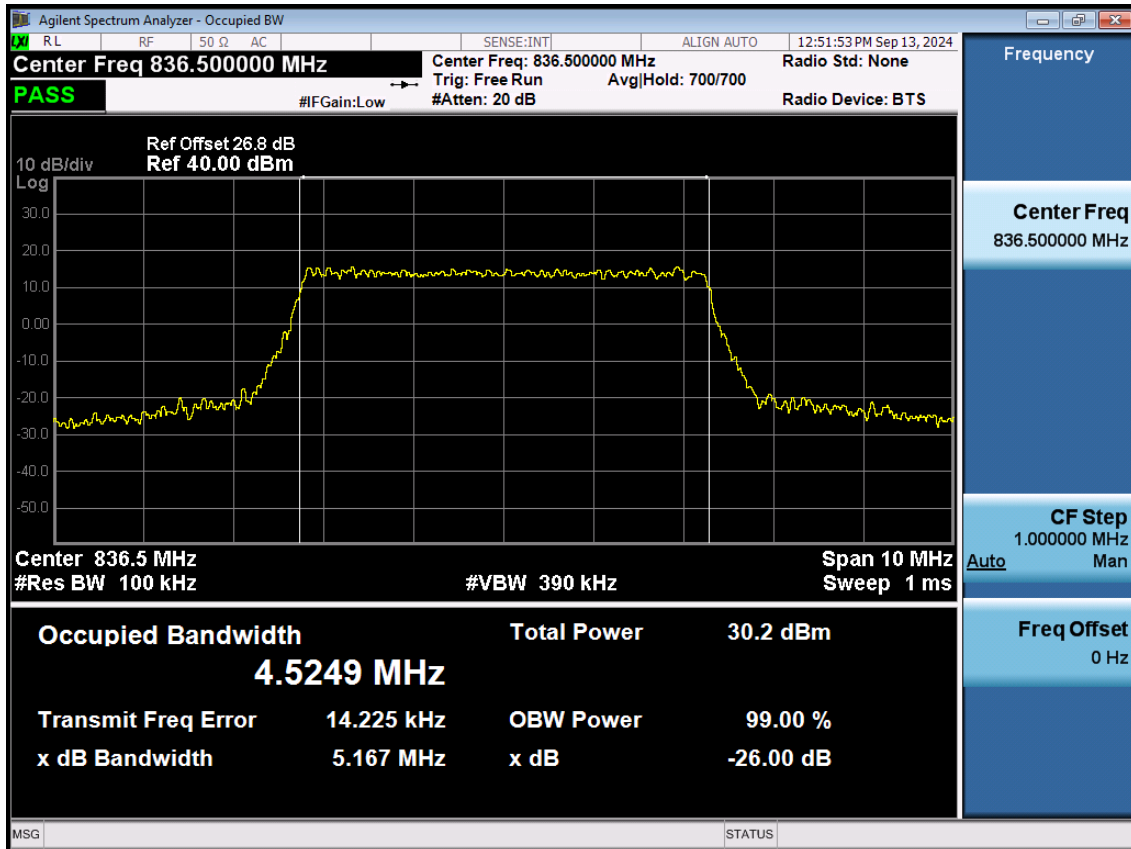
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 QPSK_RB25_0)



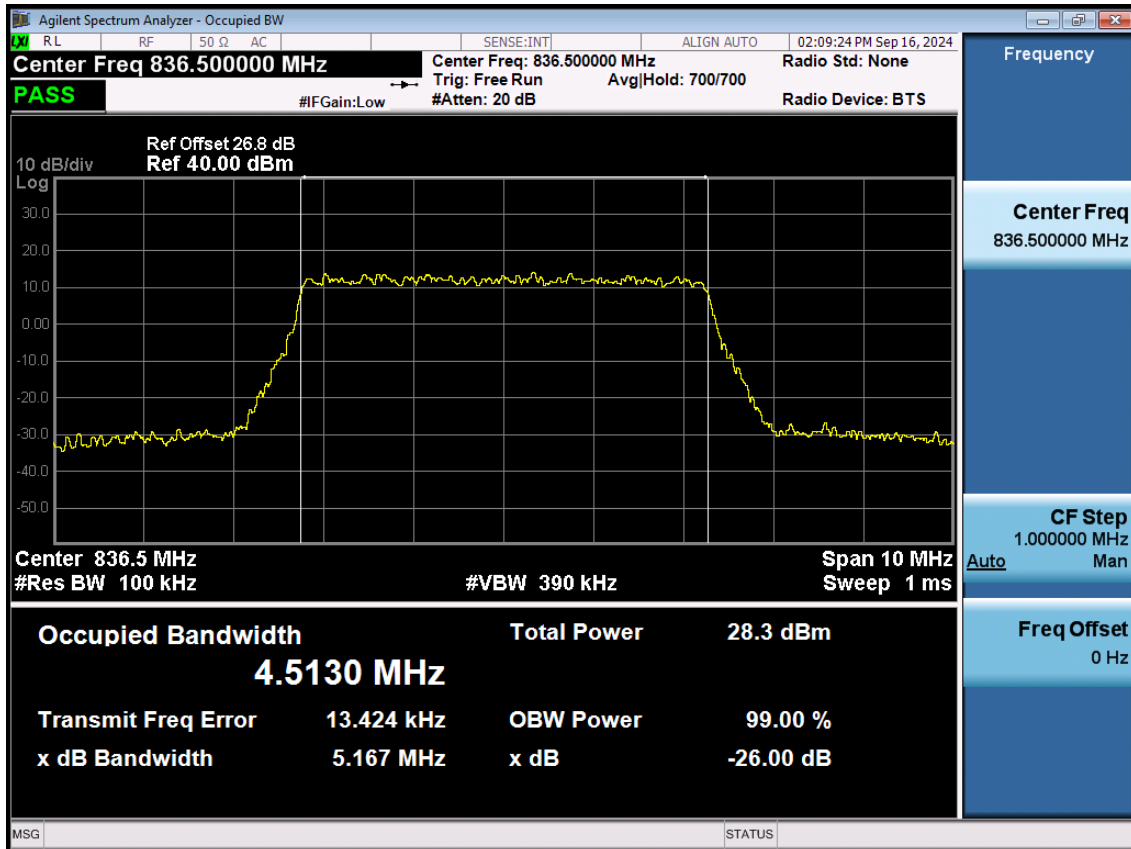
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 16QAM_RB25_0)



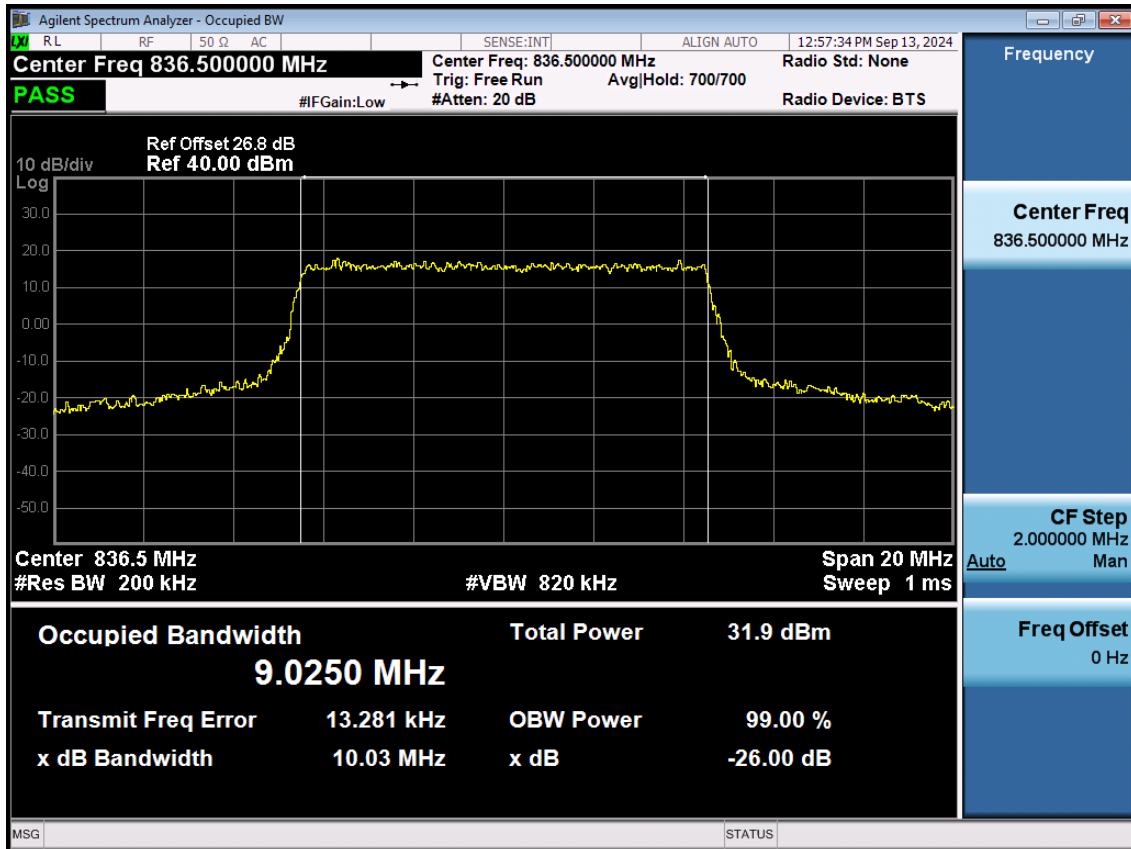
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 64QAM_RB25_0)



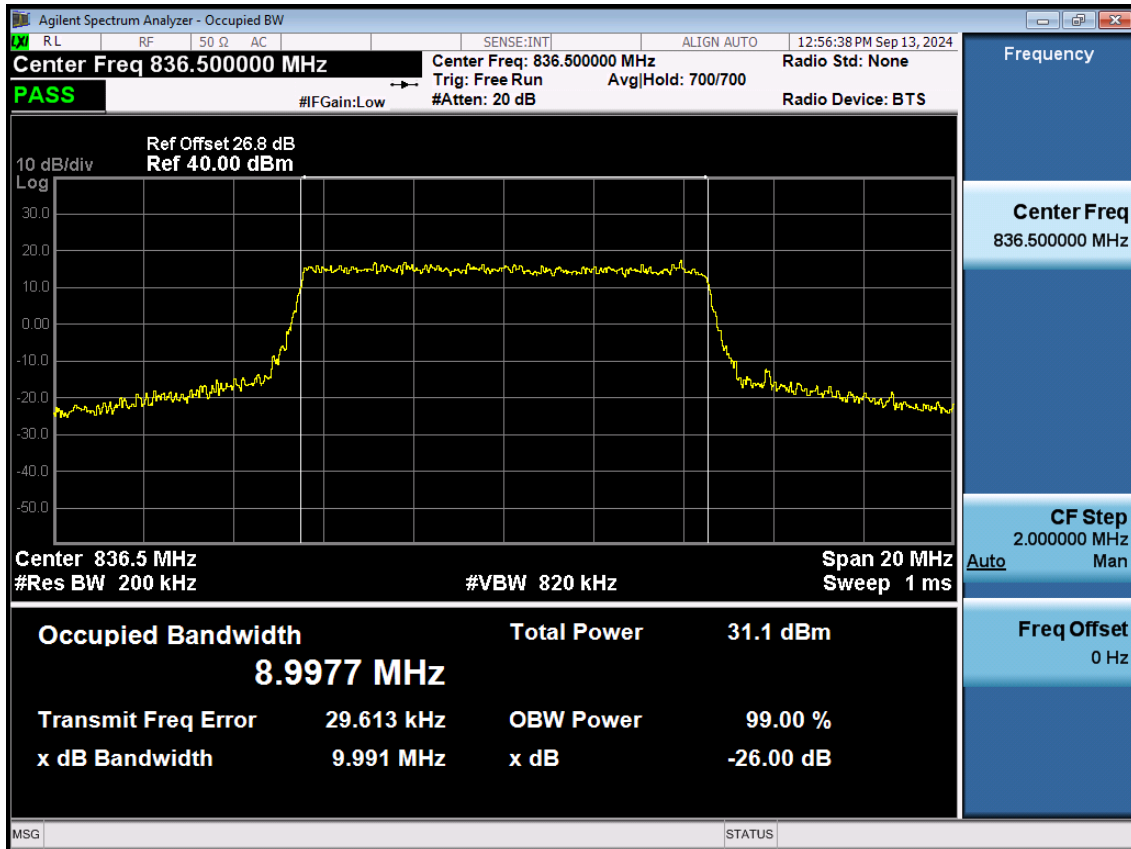
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 256QAM_RB25_0)



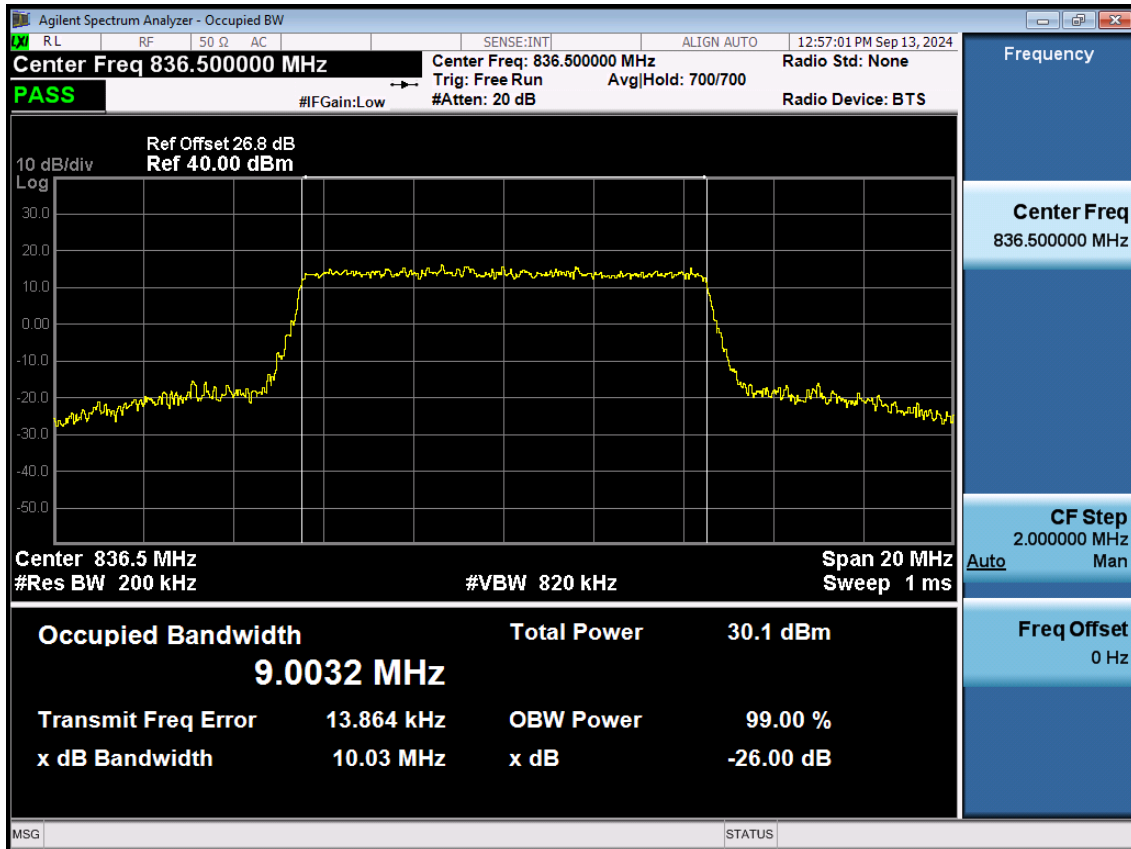
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 QPSK_RB50_0)



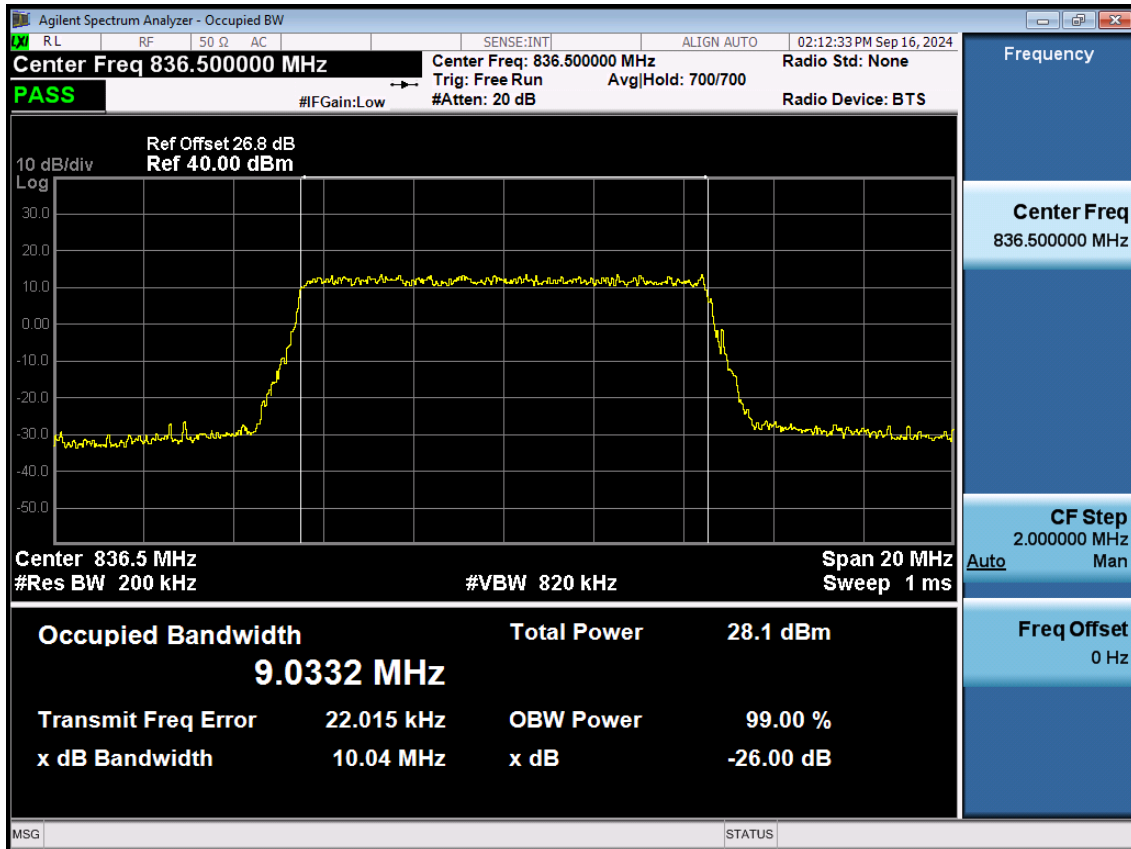
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 16QAM_RB50_0)



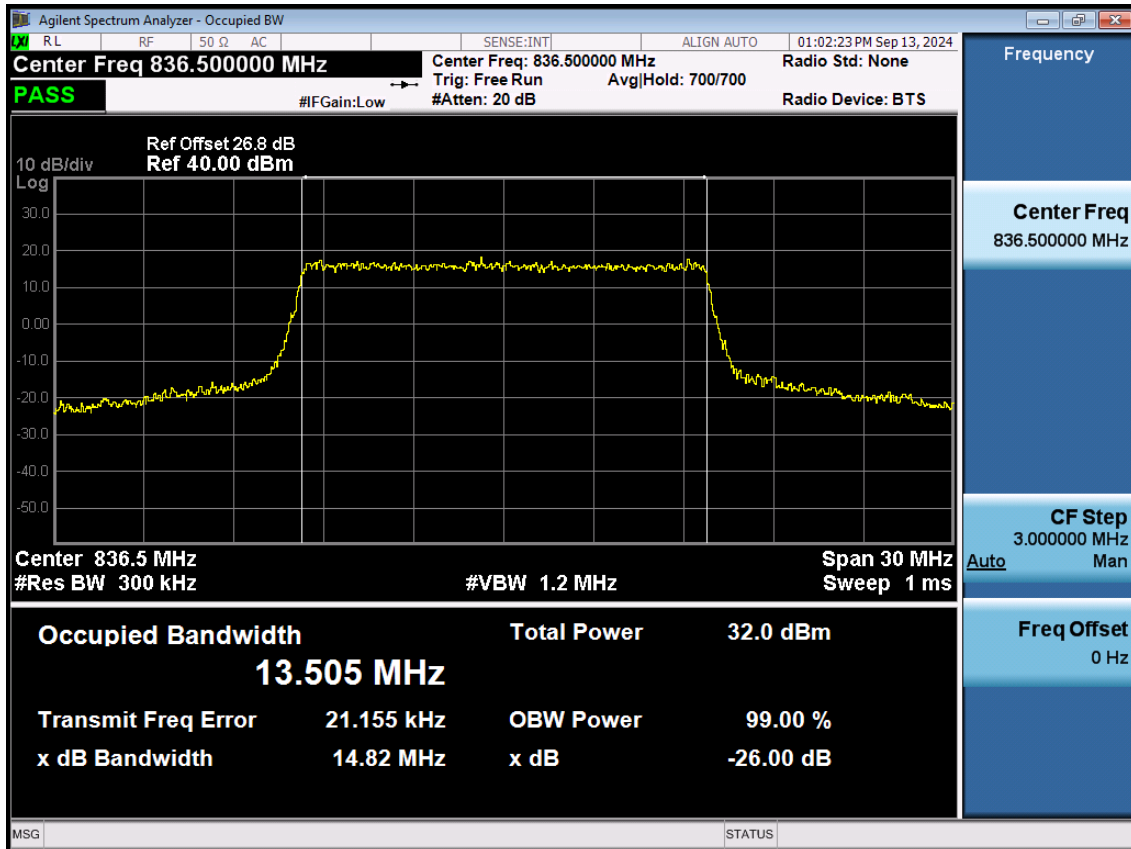
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 64QAM_RB50_0)



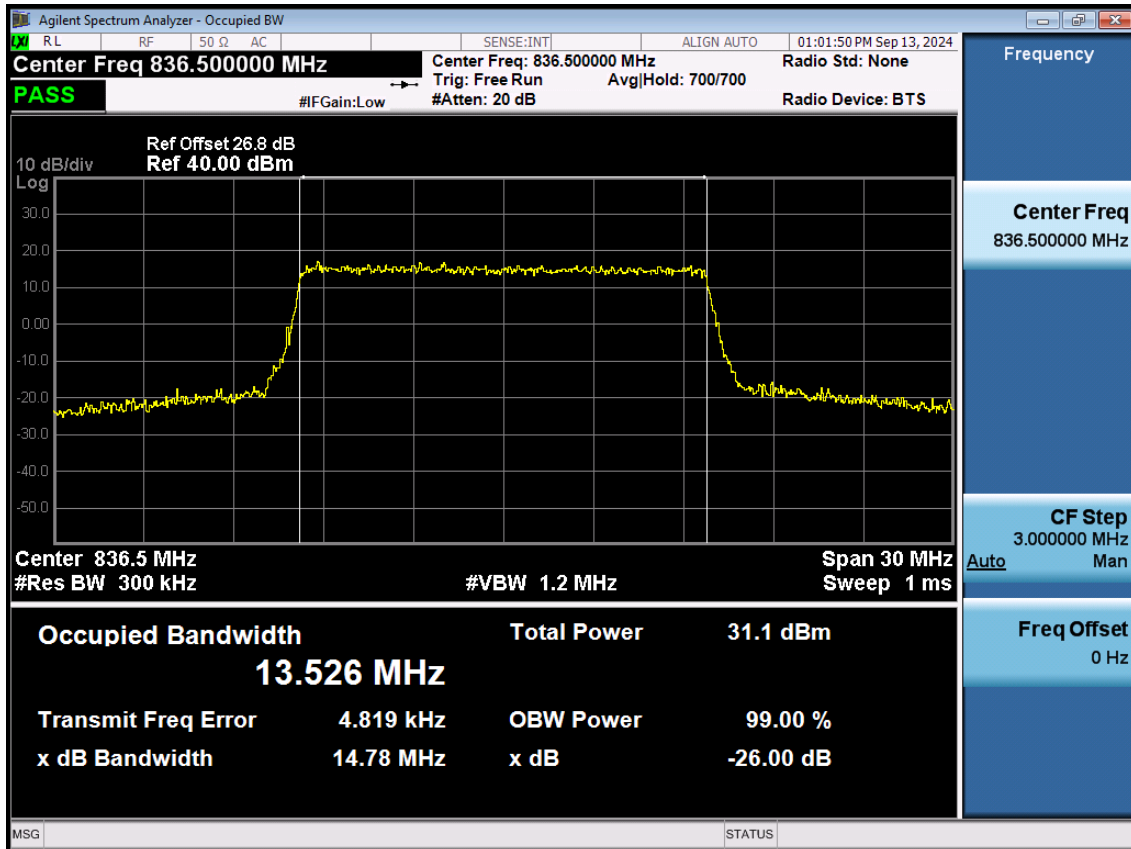
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 256QAM_RB50_0)



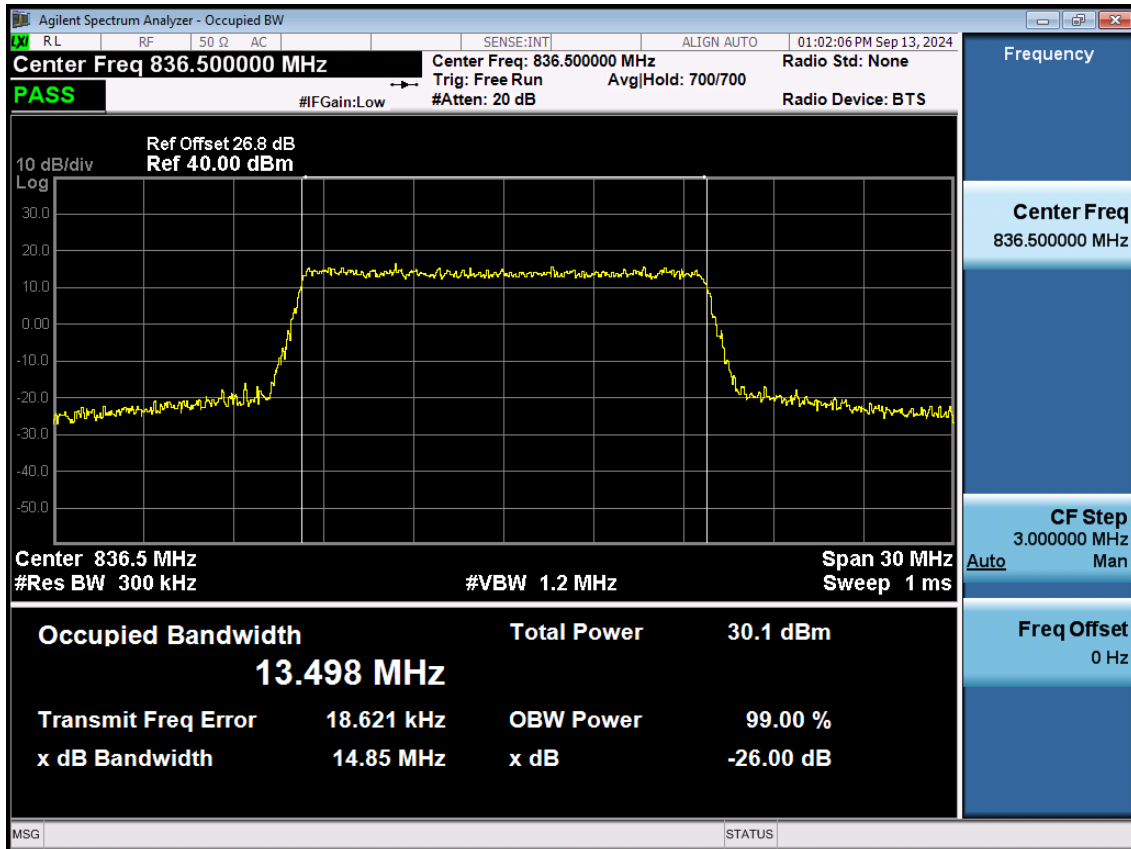
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 QPSK RB 75_0)



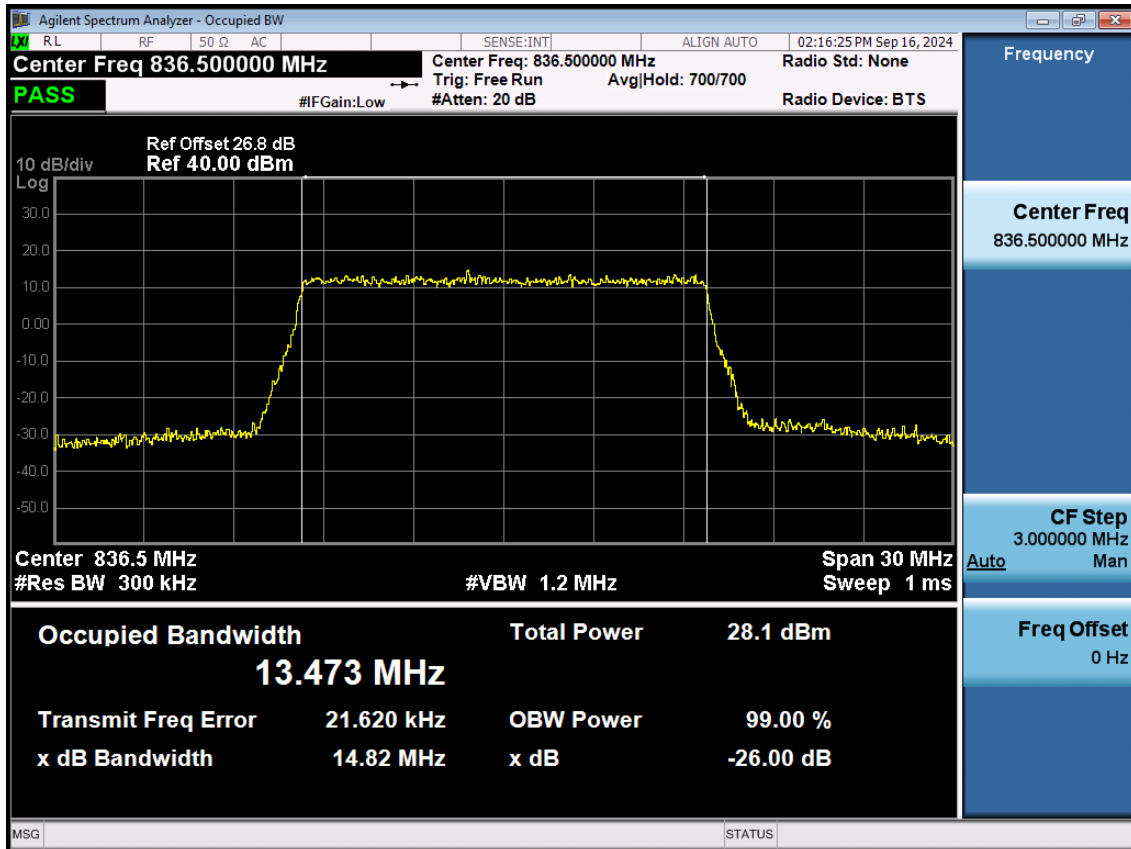
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 16QAM RB 75_0)



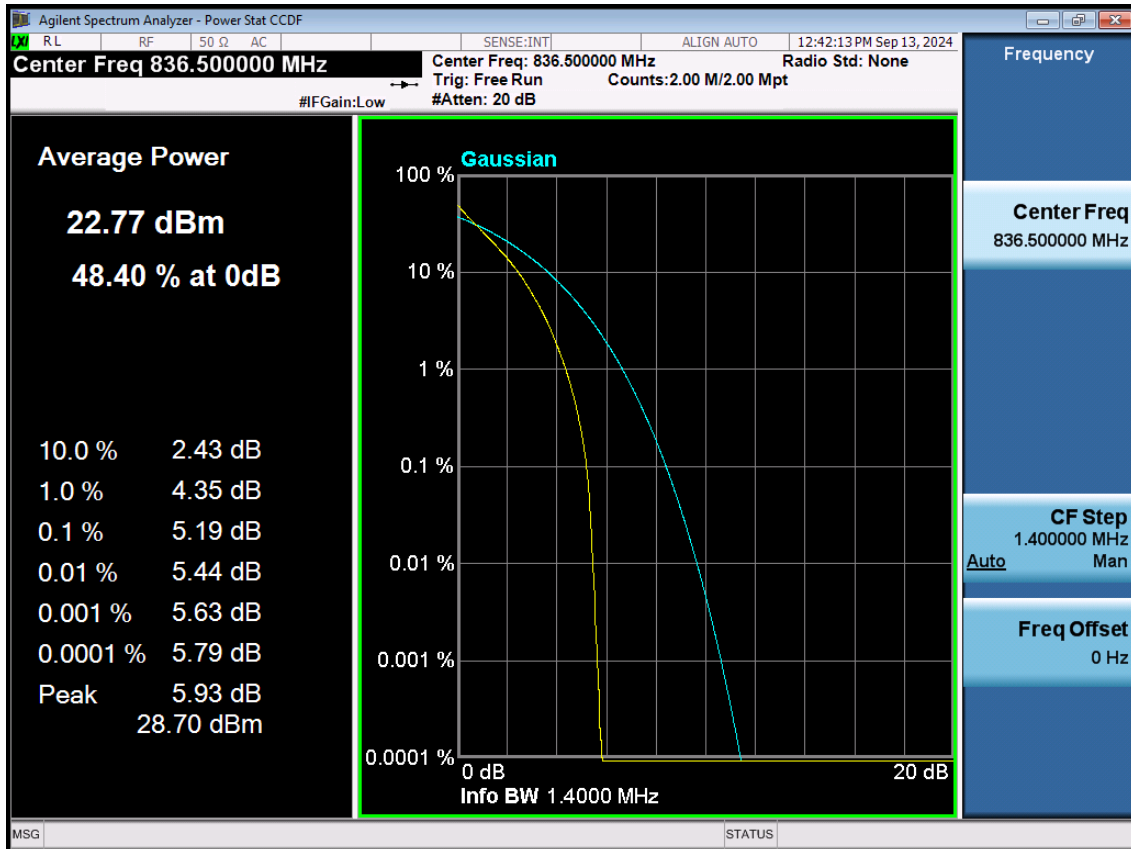
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 64QAM RB 75_0)



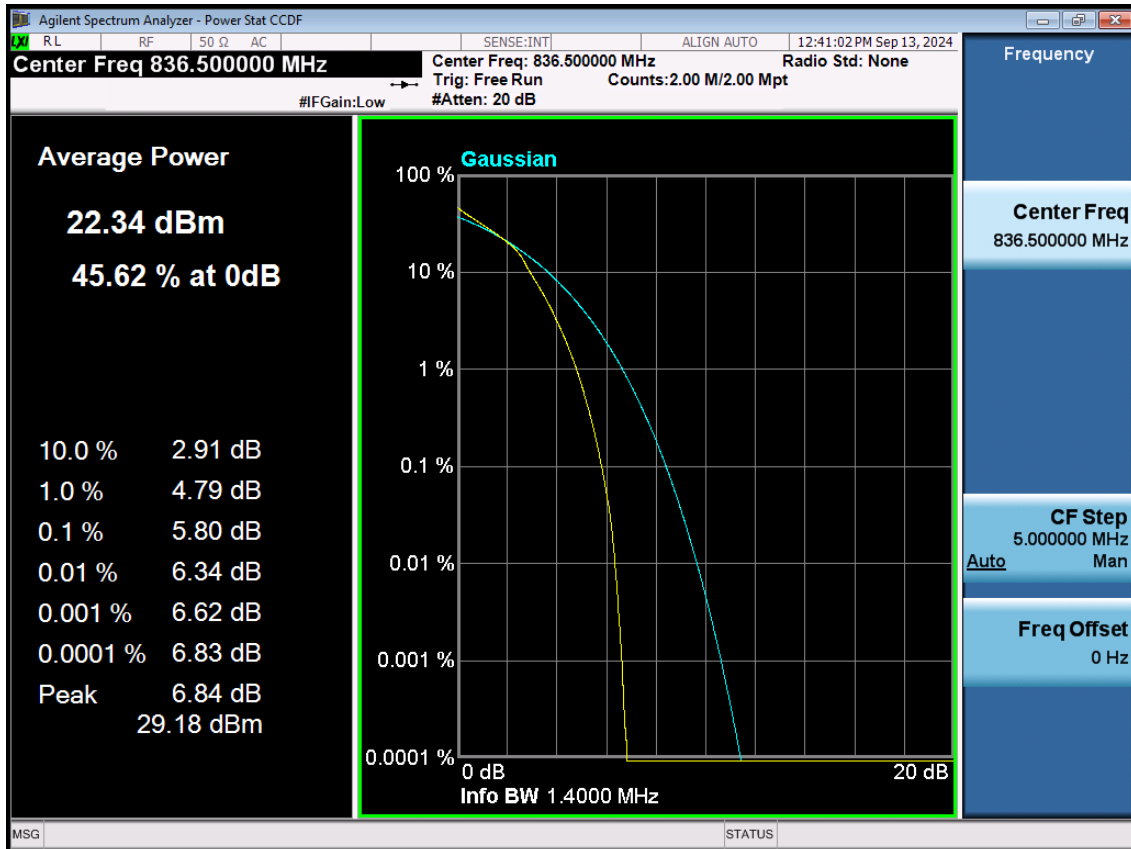
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 256QAM RB 75_0)



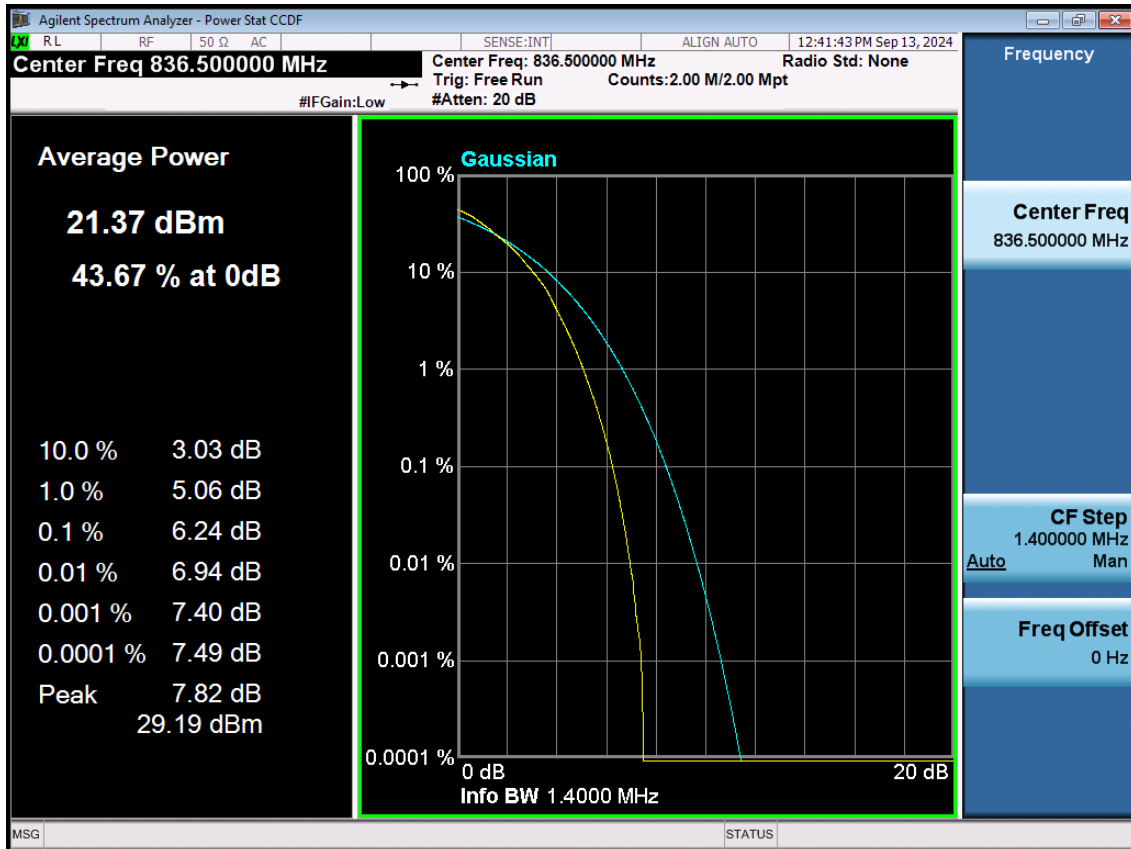
BAND26. PAR Plot (1.4 M BW Ch.26915 QPSK_RB6_0)



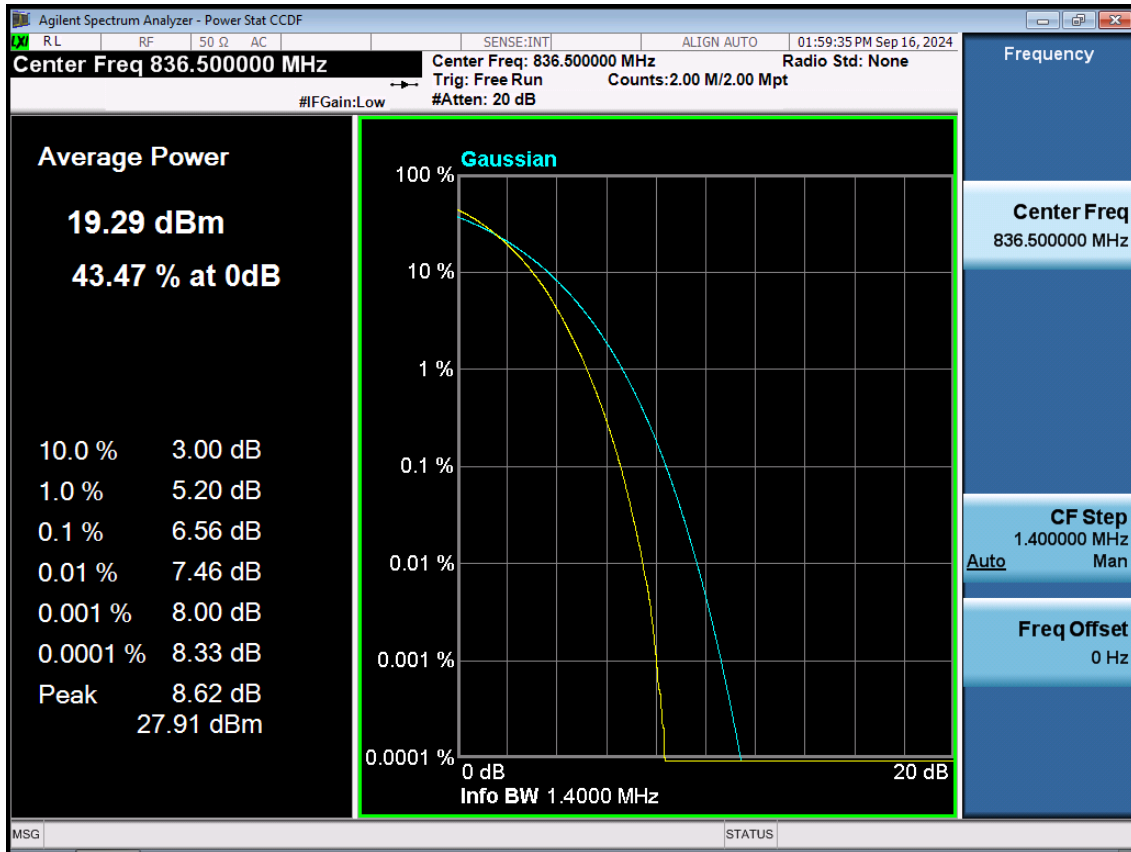
BAND26. PAR Plot (1.4 M BW Ch.26915 16QAM_RB6_0)



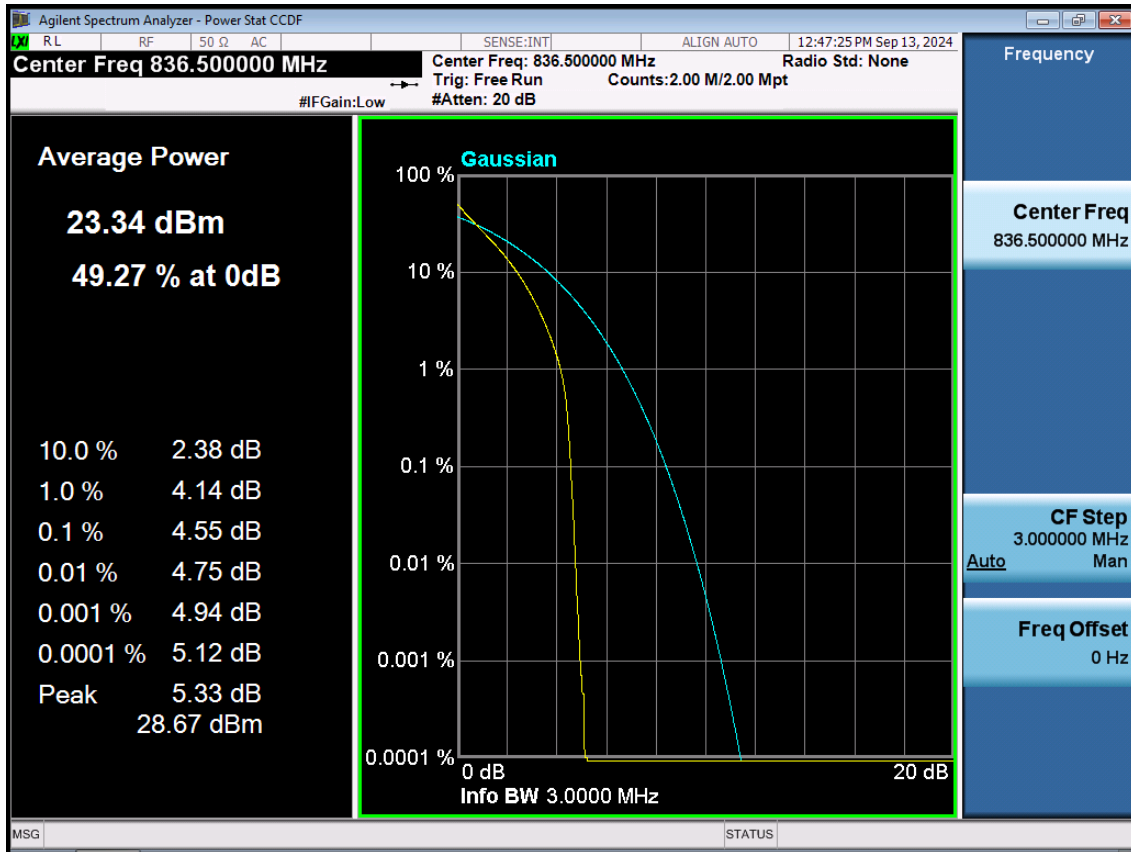
BAND26. PAR Plot (1.4 M BW Ch.26915 64QAM_RB6_0)



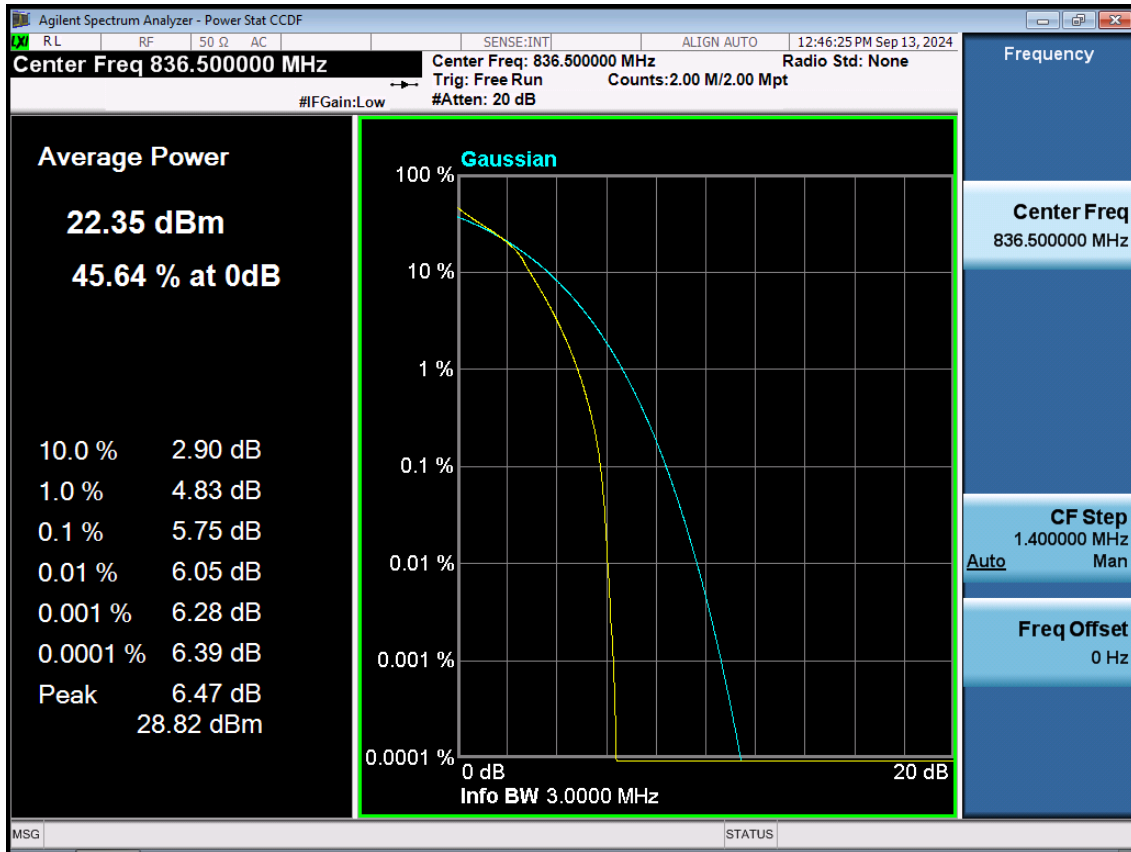
BAND26. PAR Plot (1.4 M BW Ch.26915 256QAM_RB6_0)



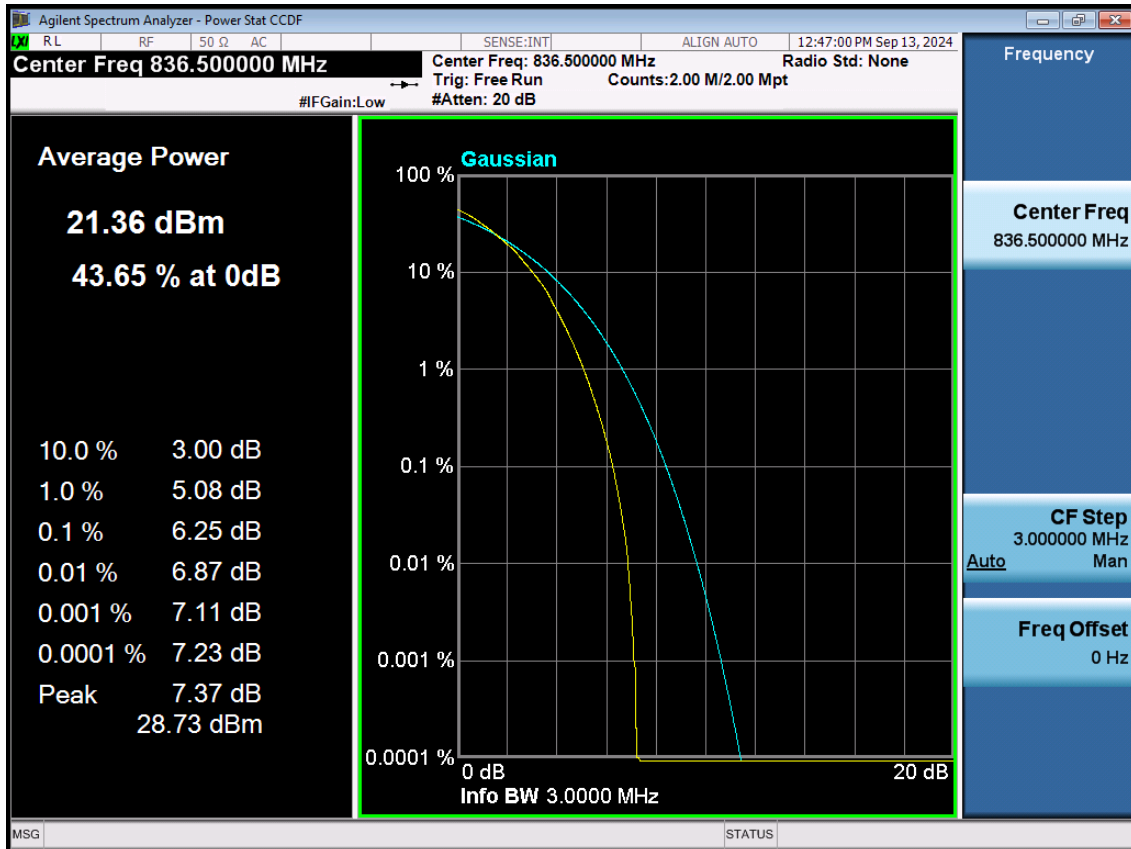
BAND26. PAR Plot (3 M BW Ch.26915 QPSK_RB15_0)



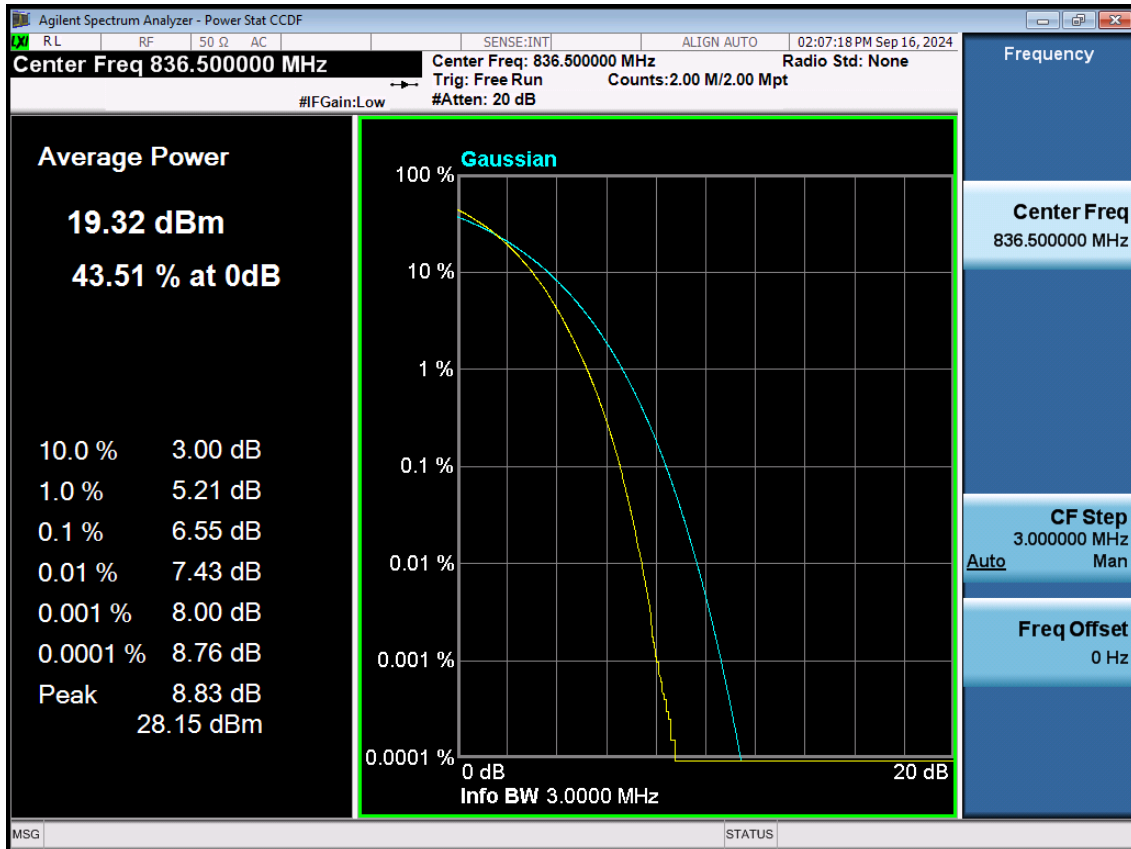
BAND26 PAR Plot (3 M BW Ch.26915 16QAM_RB15_0)



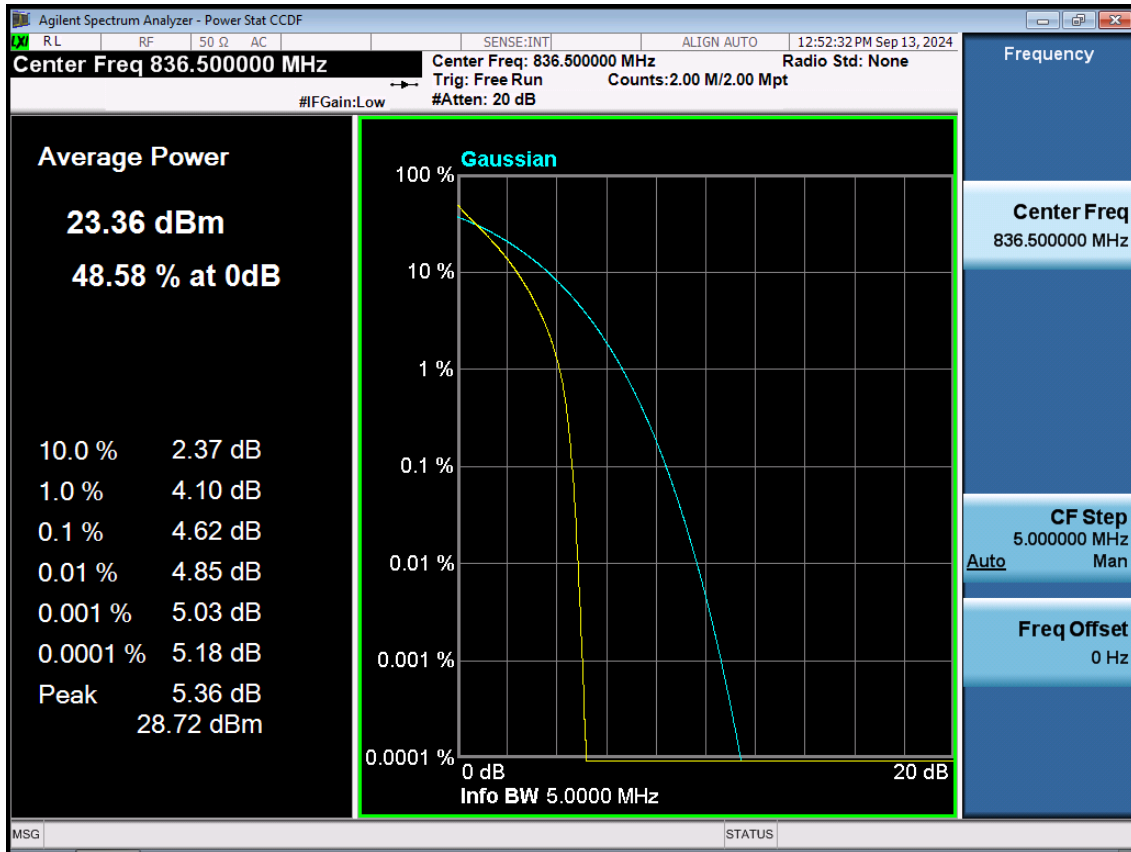
BAND26. PAR Plot (3 M BW Ch.26915 64QAM_RB15_0)



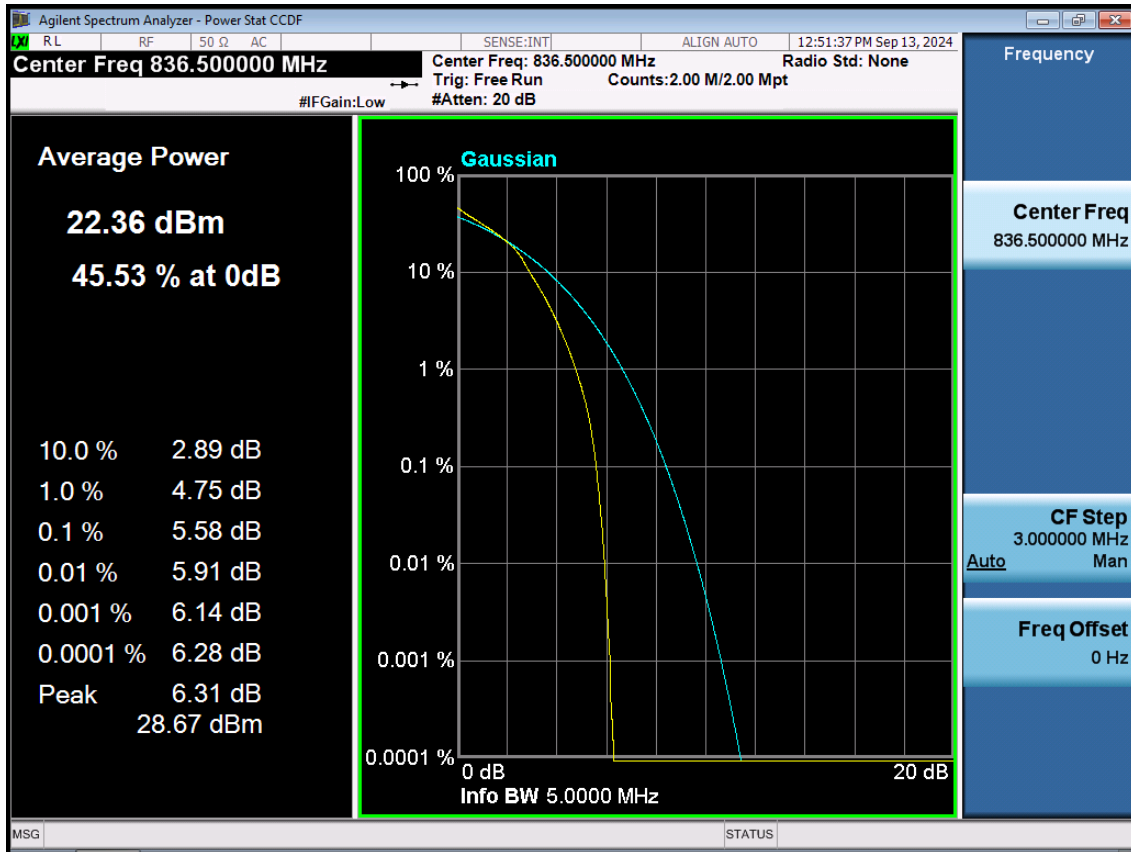
BAND26. PAR Plot (3 M BW Ch.26915 256QAM_RB15_0)



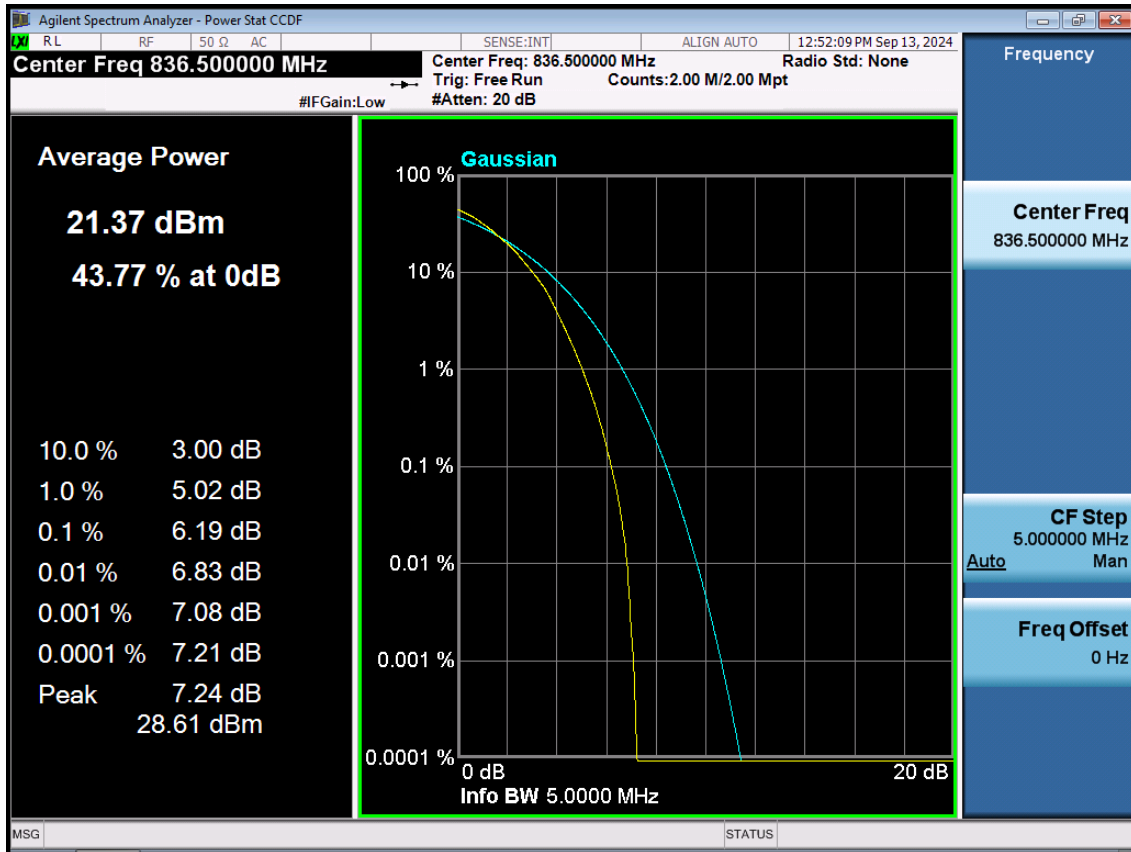
BAND26. PAR Plot (5 M BW Ch.26915 QPSK_RB25_0)



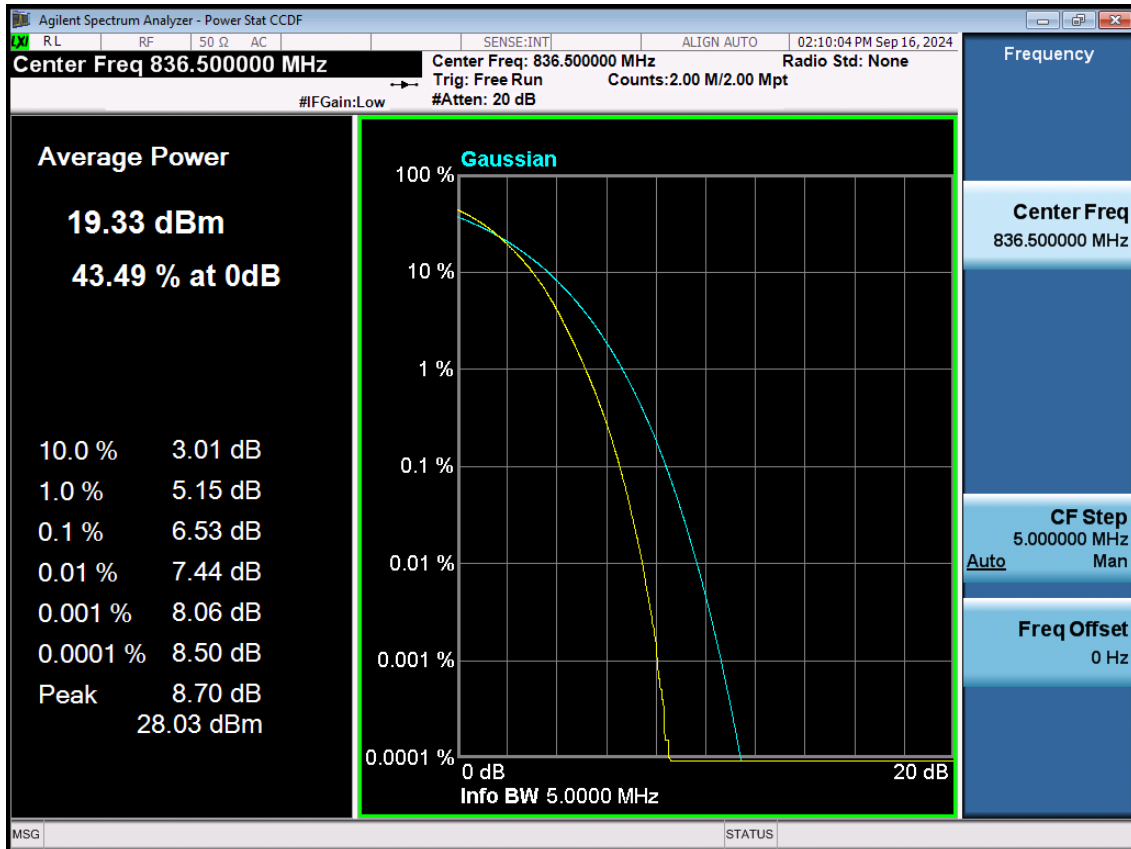
BAND26. PAR Plot (5 M BW Ch.26915 16QAM_RB25_0)



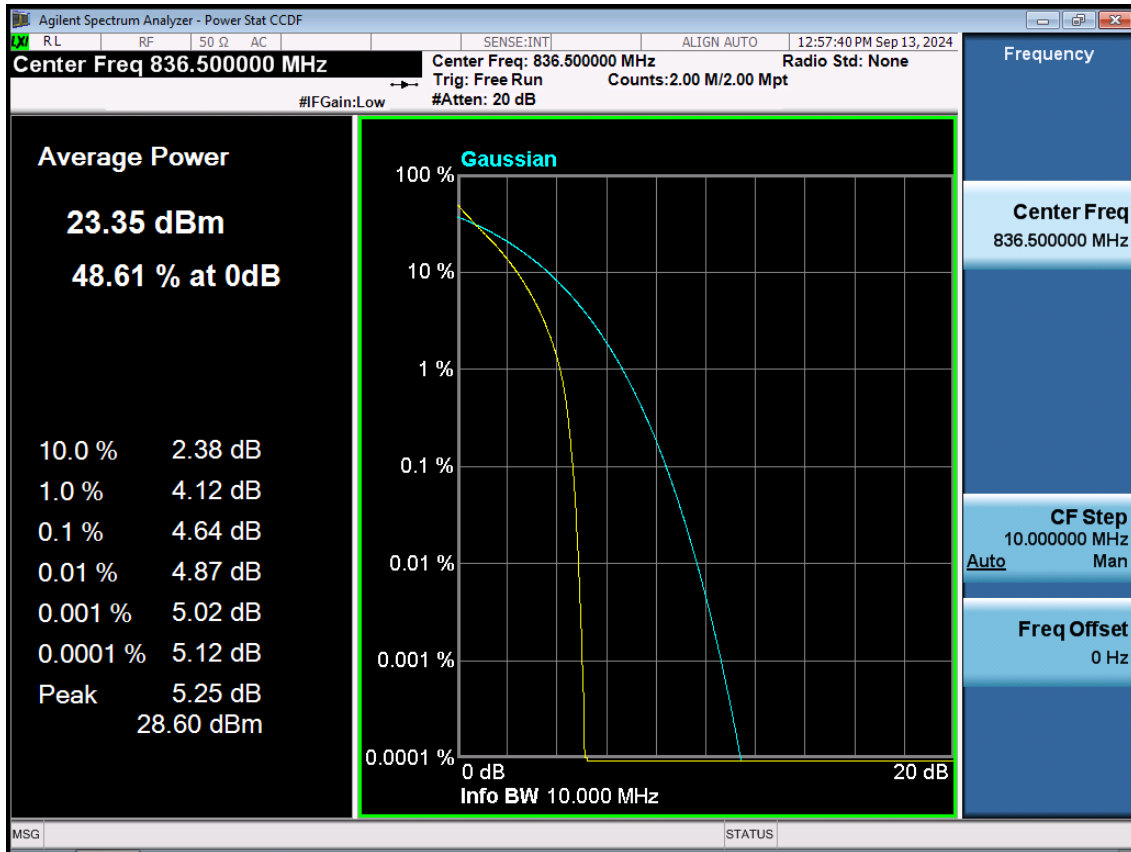
BAND26. PAR Plot (5 M BW Ch.26915 64QAM_RB25_0)



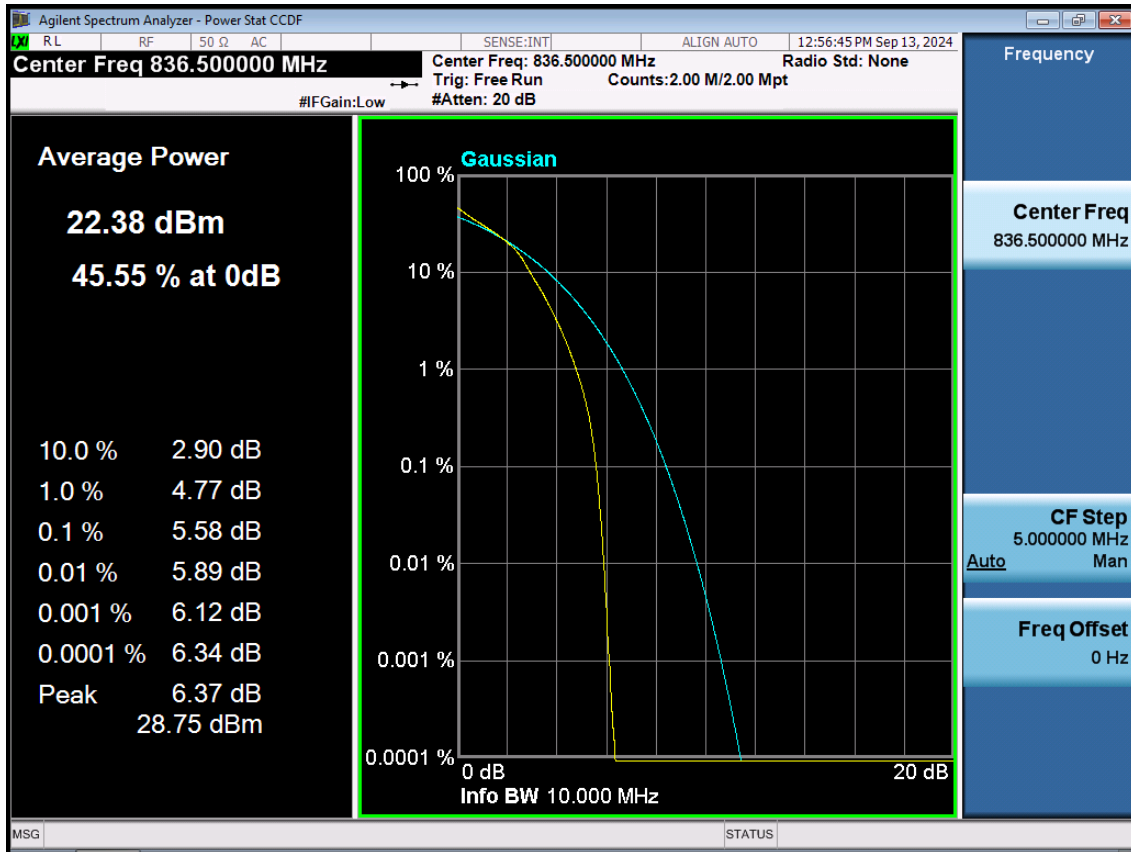
BAND26. PAR Plot (5 M BW Ch.26915 256QAM_RB25_0)



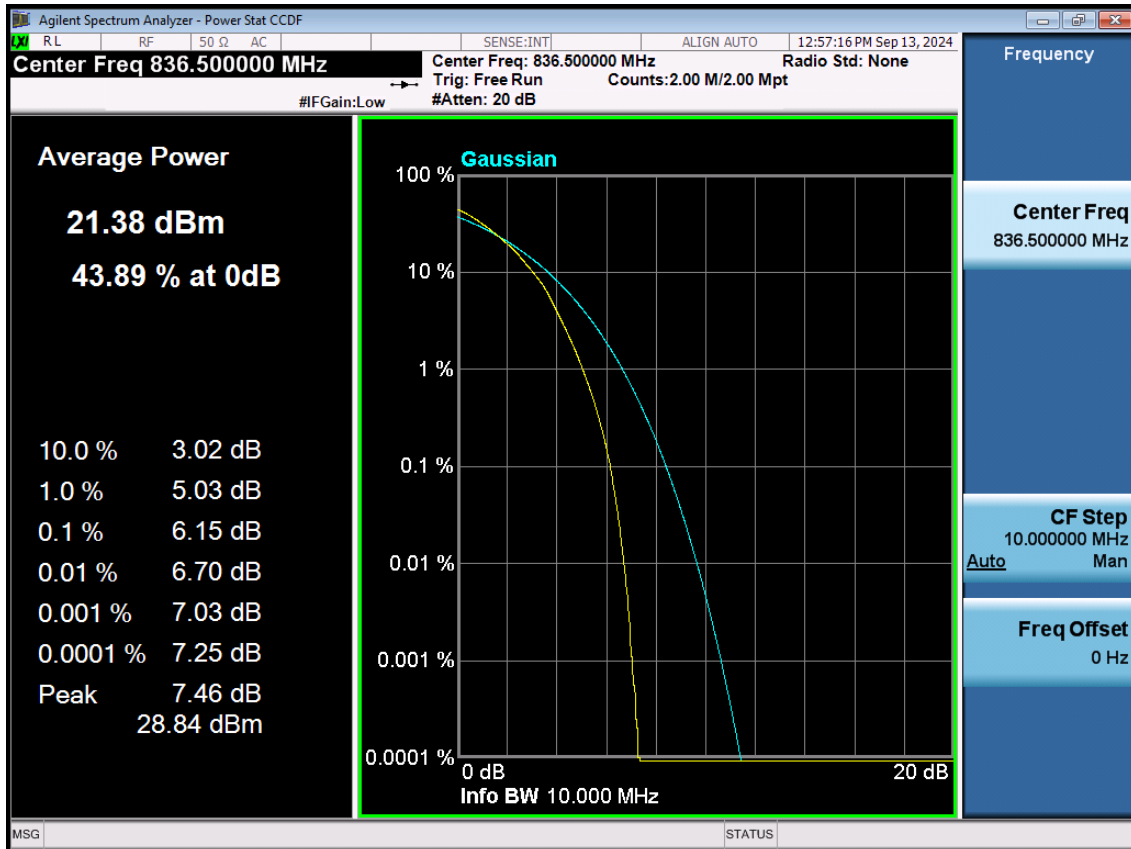
BAND26. PAR Plot (10 M BW Ch.26915 QPSK_RB50_0)



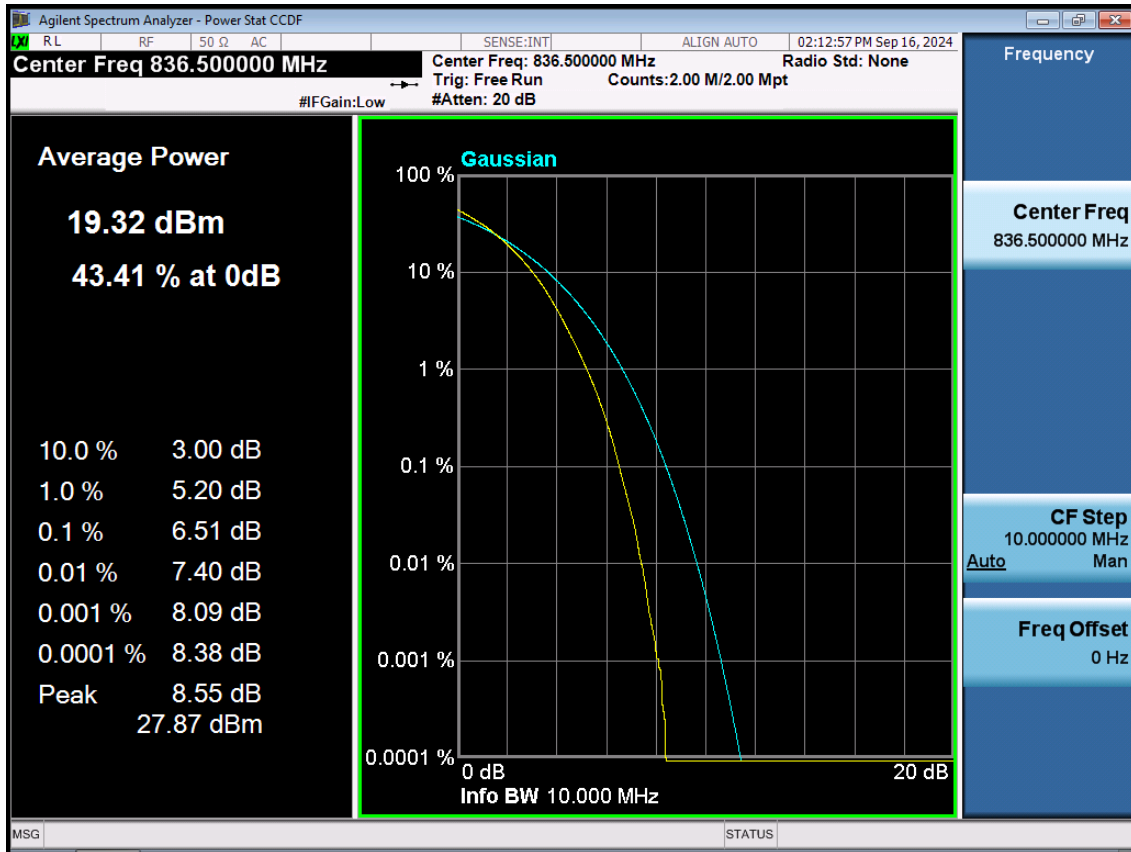
BAND26. PAR Plot (10 M BW Ch.26915 16QAM_RB50_0)



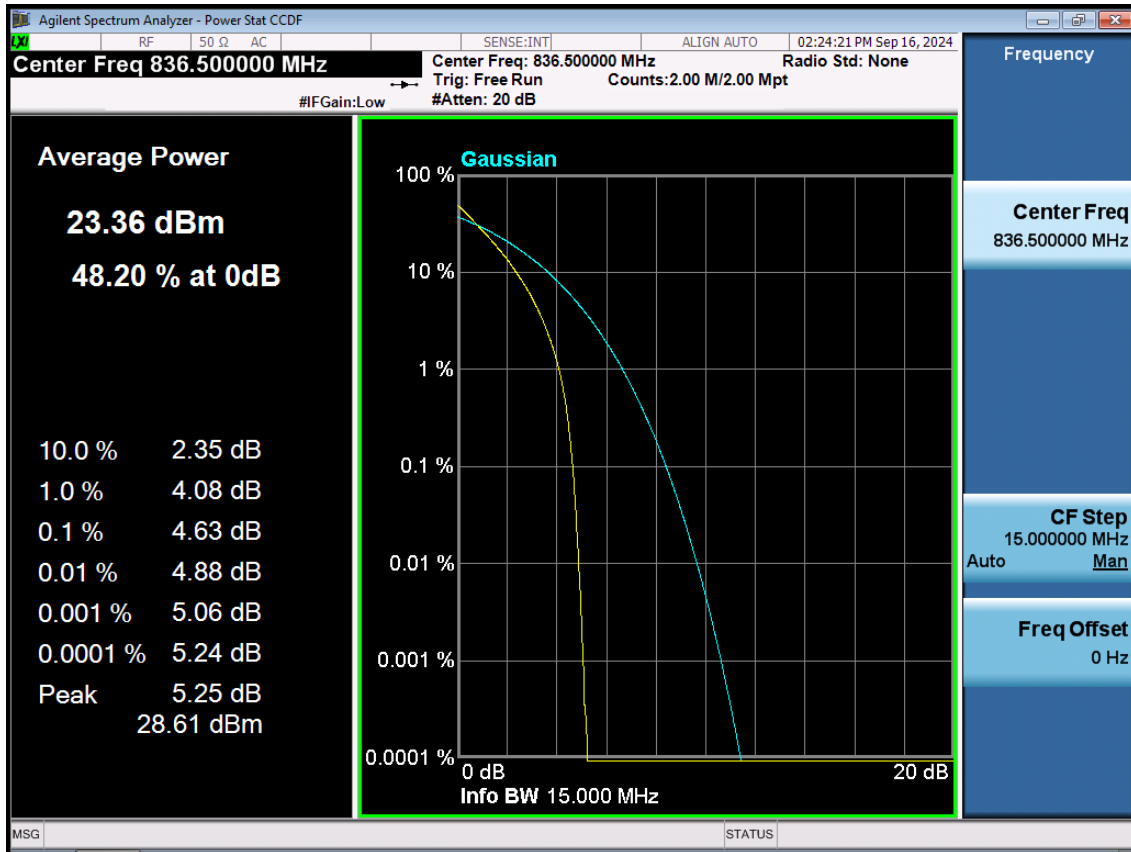
BAND26. PAR Plot (10 M BW Ch.26915 64QAM_RB50_0)



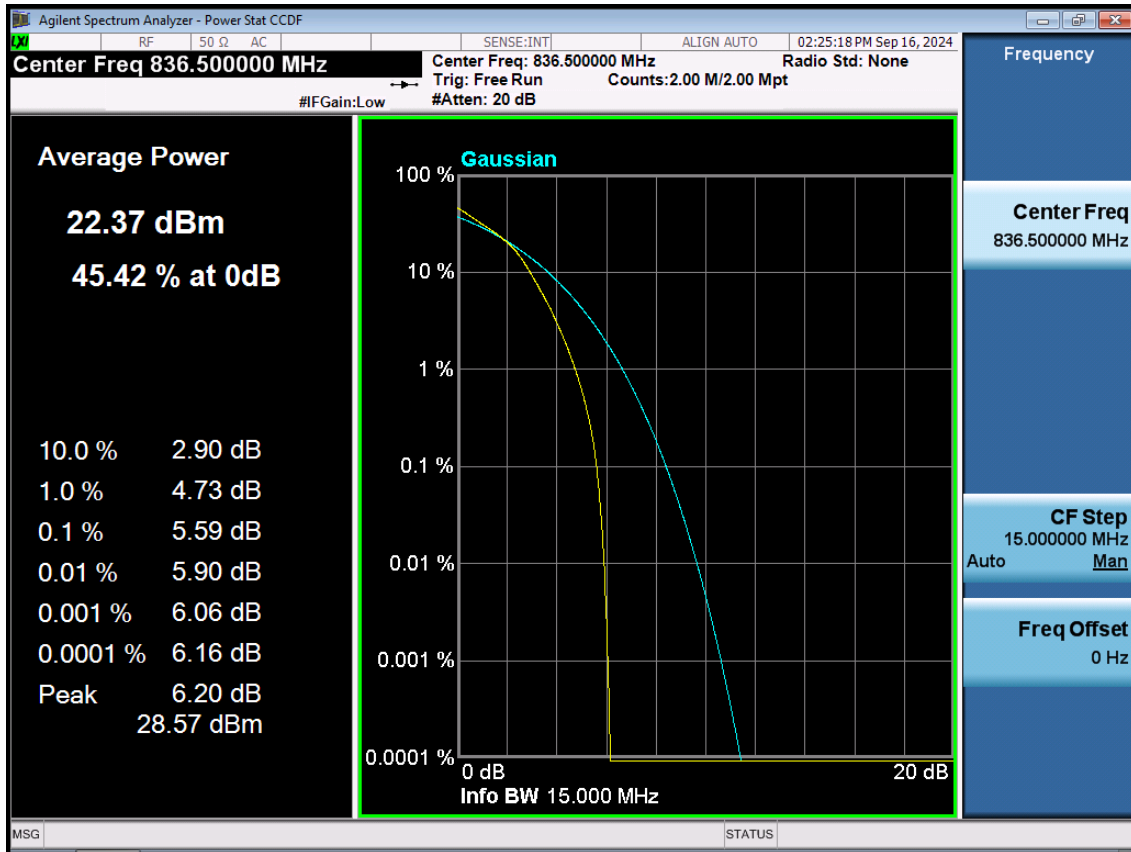
BAND26. PAR Plot (10 M BW Ch.26915 256QAM_RB50_0)



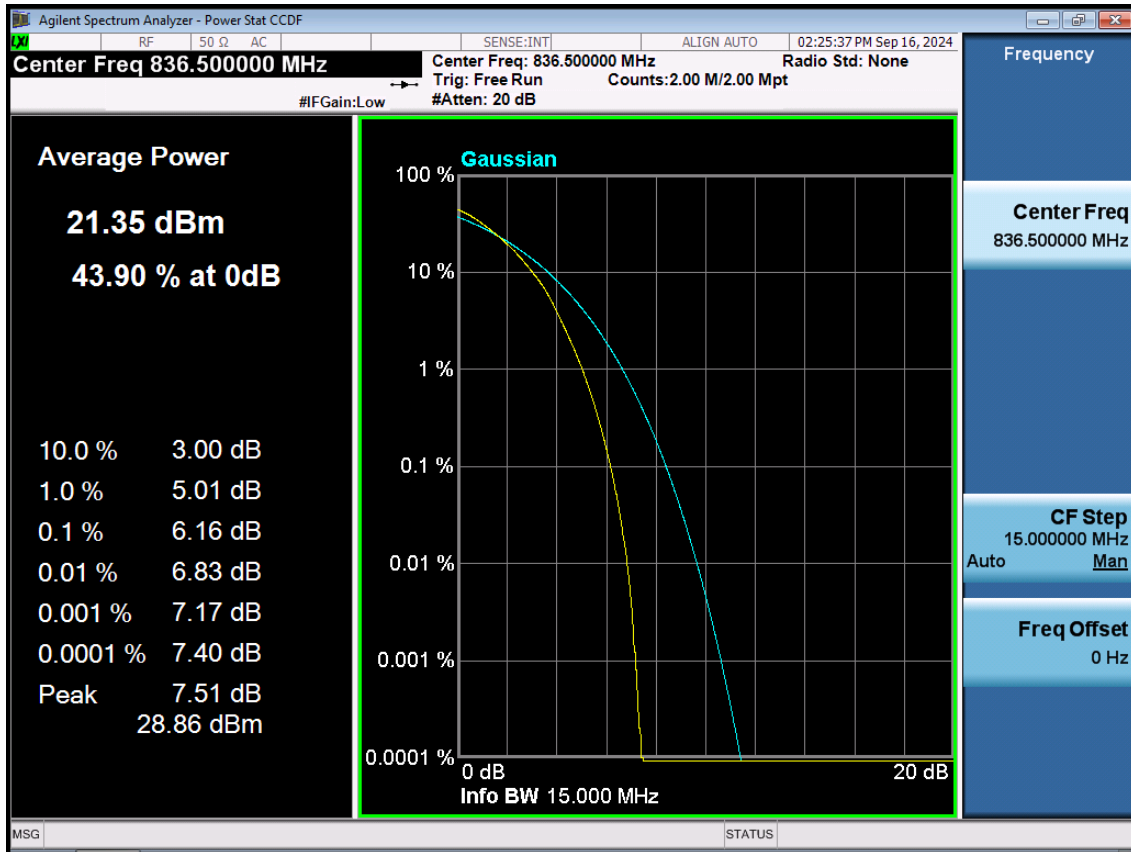
BAND 26. PAR Plot (15 M BW Ch.26915 QPSK RB 75_0)



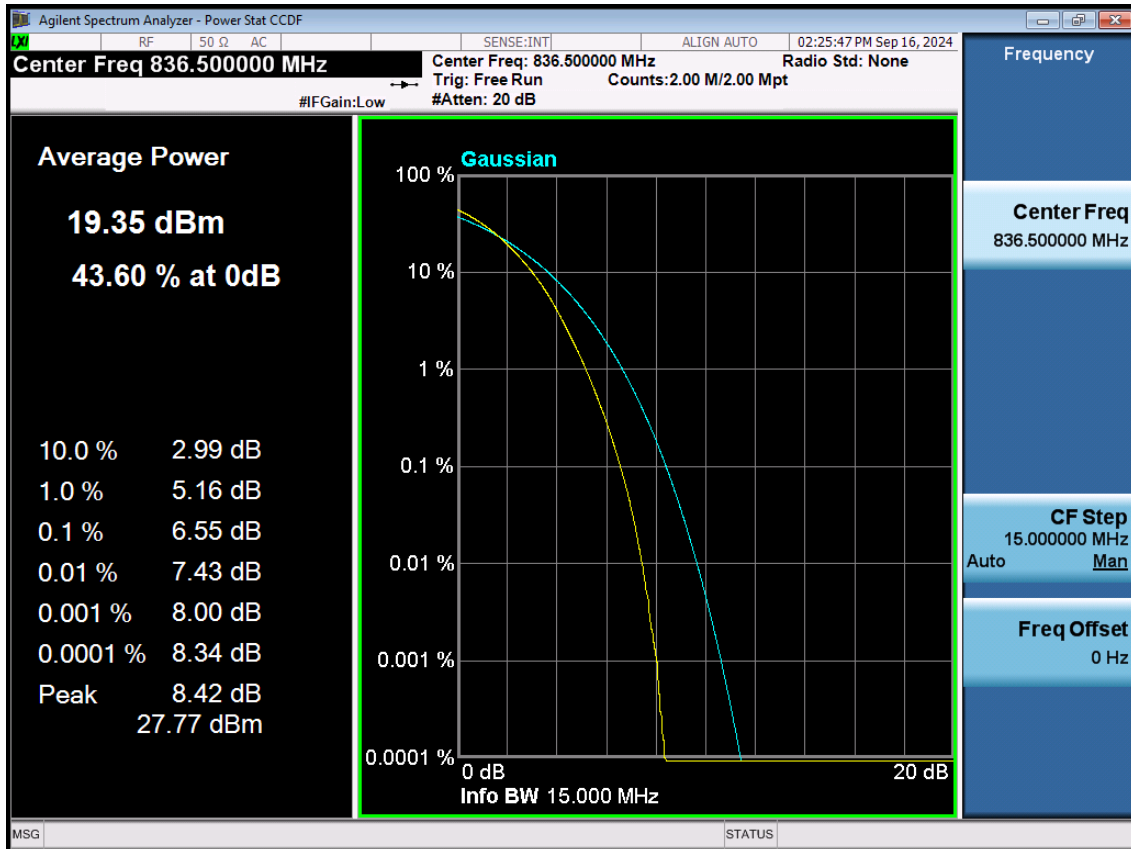
BAND 26. PAR Plot (15 M BW Ch.26915 16QAM RB 75_0)



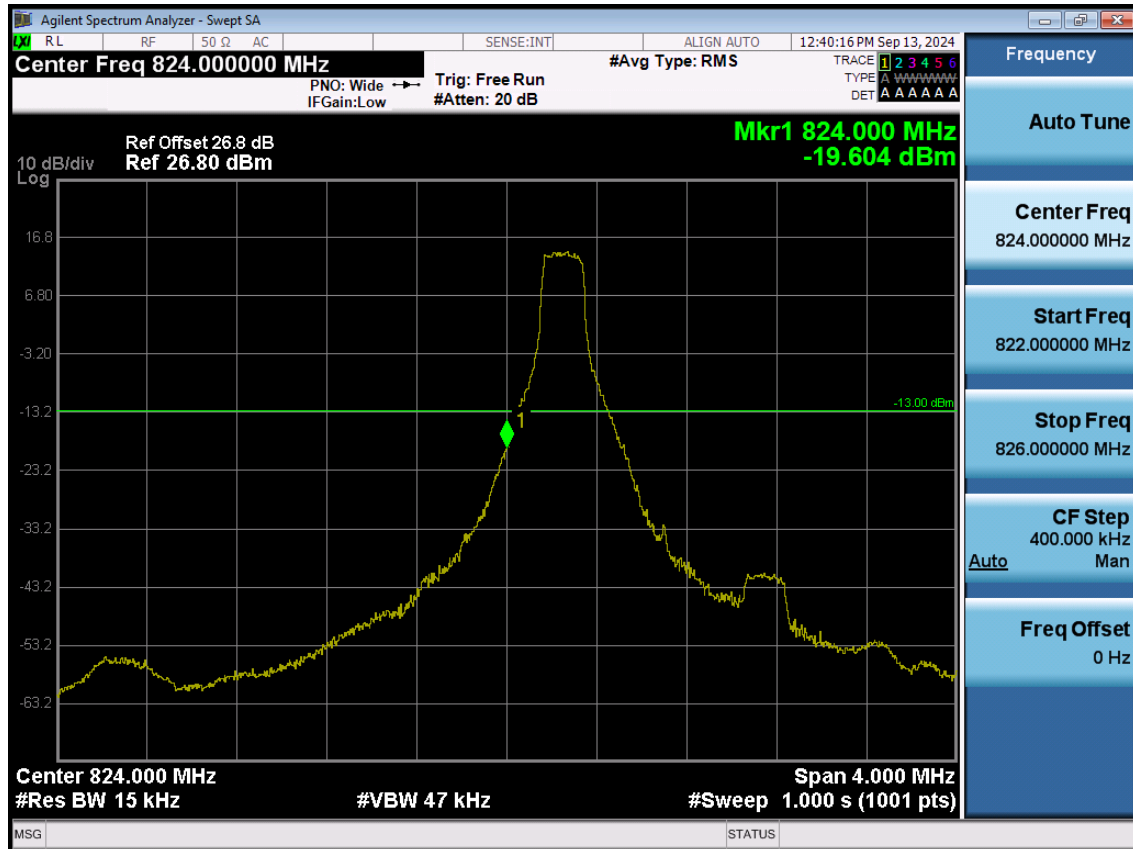
BAND 26. PAR Plot (15 M BW Ch.26915 64QAM RB 75_0)



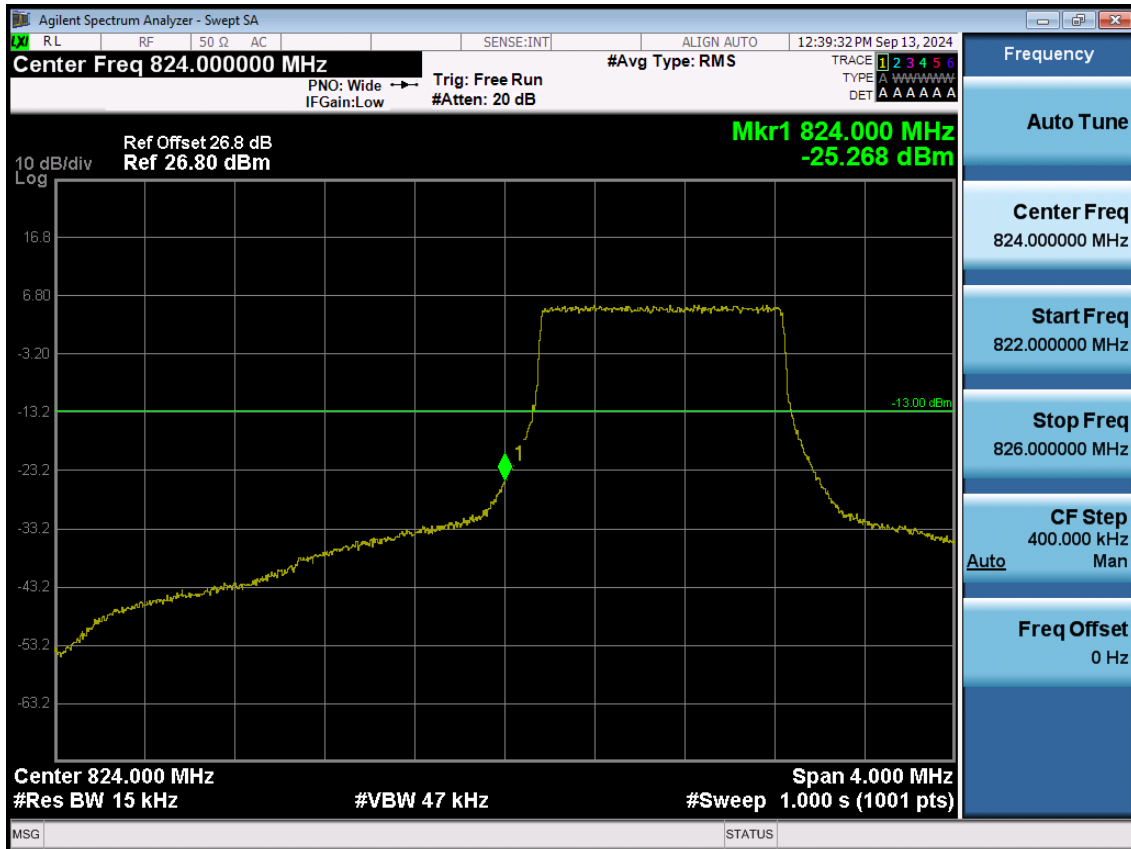
BAND 26. PAR Plot (15 M BW Ch.26915 256QAM RB 75_0)



BAND26. Lower Band Edge Plot (1.4 M BW Ch.26797 QPSK_RB1_Offset 0)



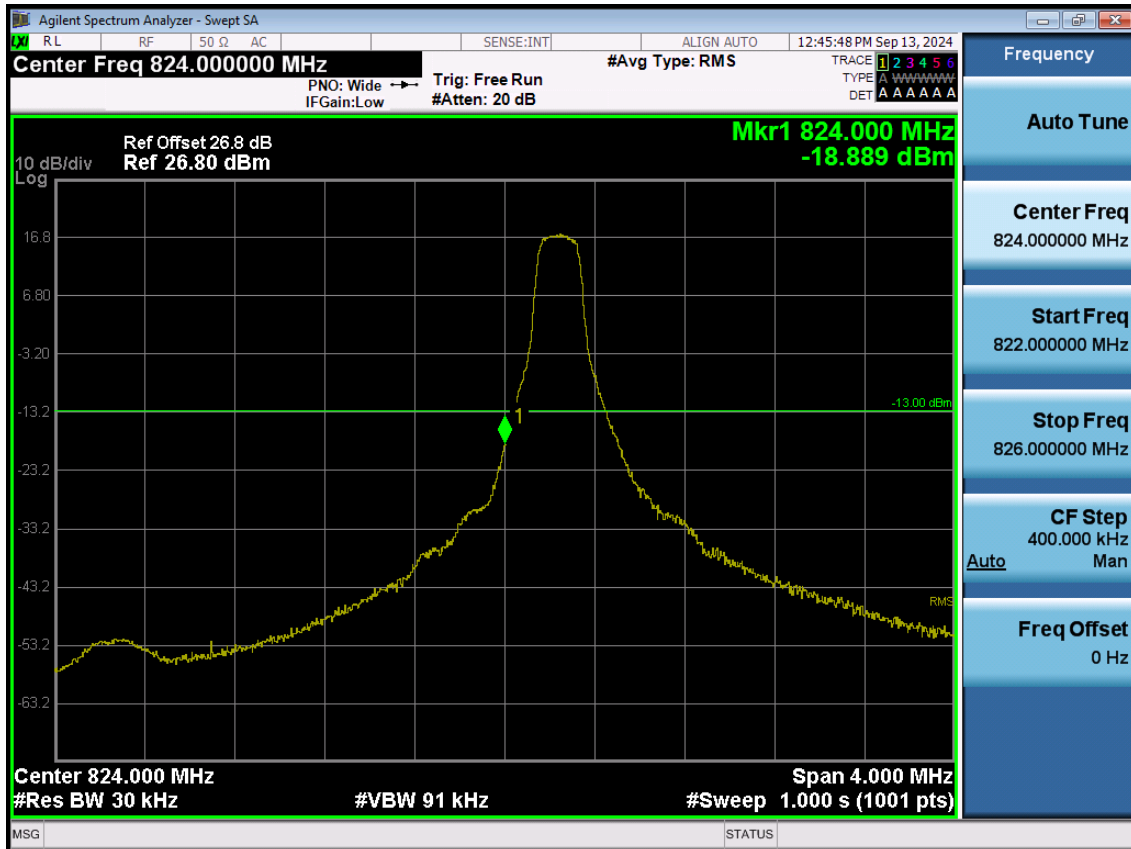
BAND26. Lower Band Edge Plot (1.4 M BW Ch.26797 QPSK_RB6_Offset 0)



BAND26. Lower Extended Band Edge Plot (1.4 M BW Ch.26797 QPSK_RB6_0)



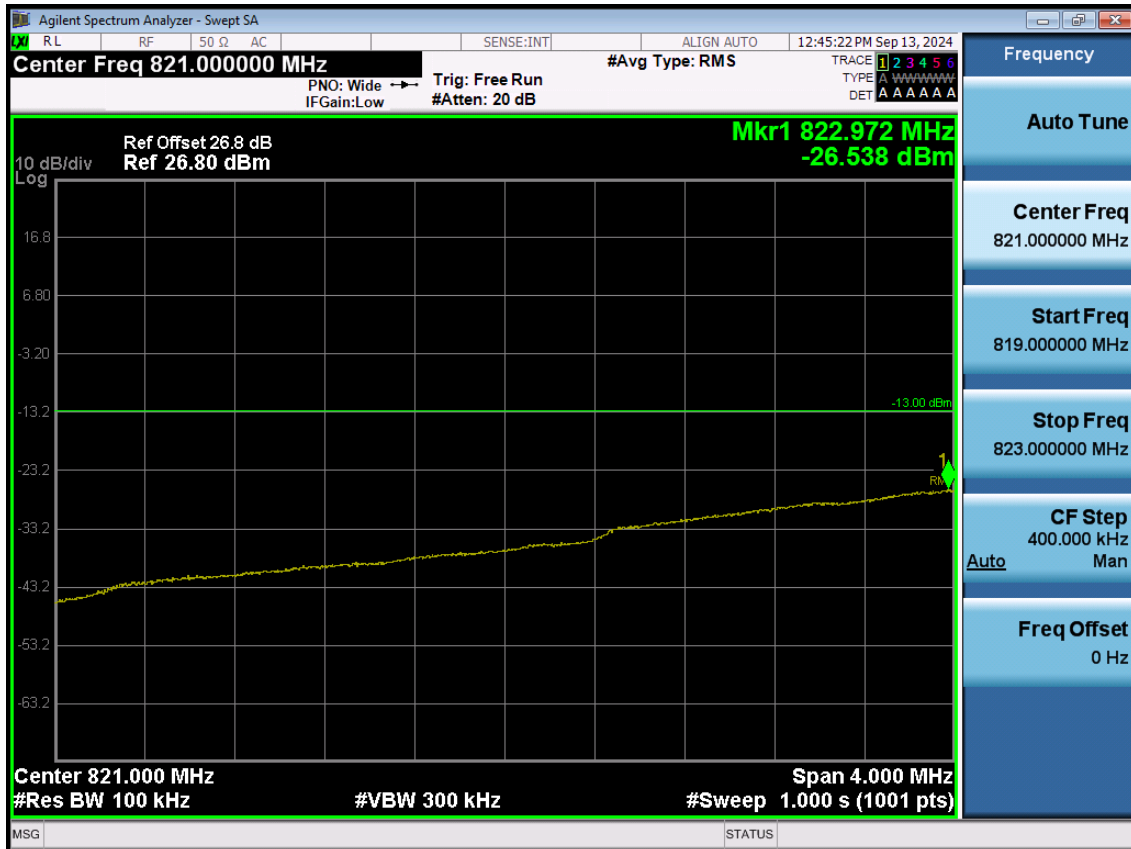
BAND26. Lower Band Edge Plot (3 M BW Ch.26805 QPSK_RB1_Offset 0)



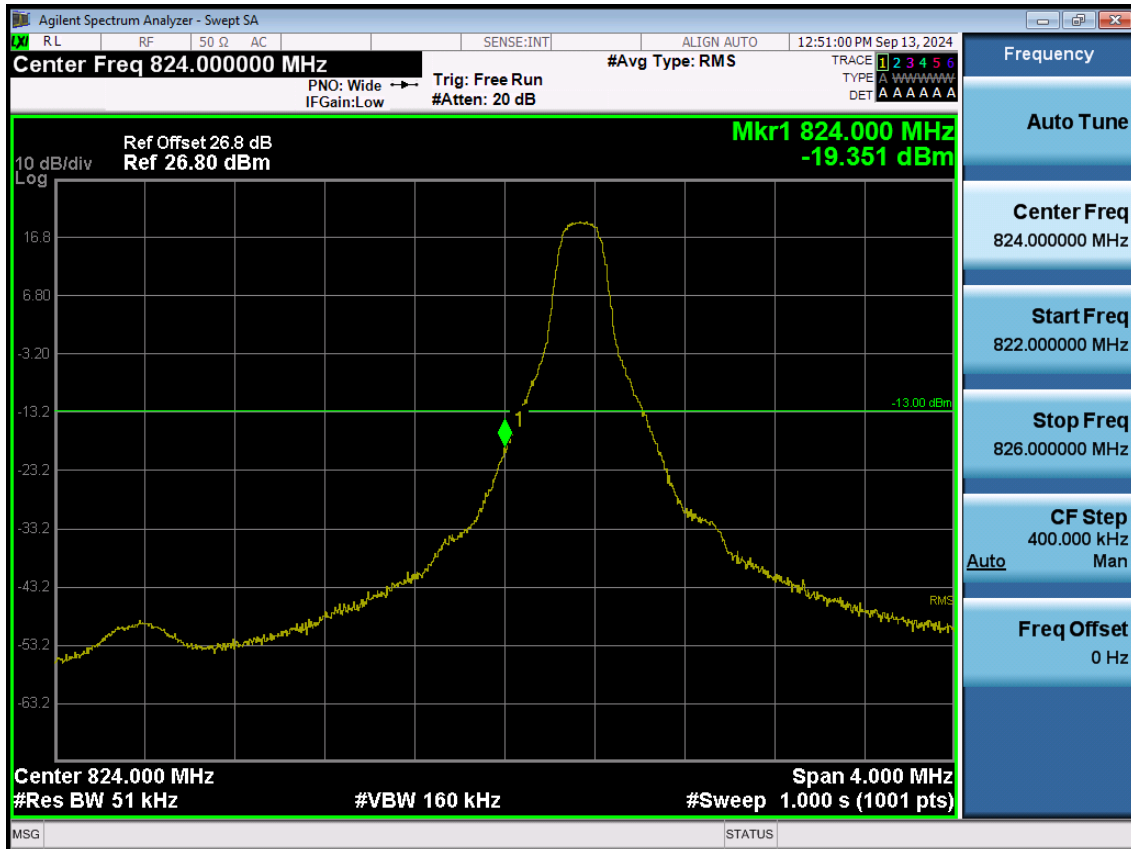
BAND26. Lower Band Edge Plot (3 M BW Ch.26805 QPSK_RB15_Offset 0)



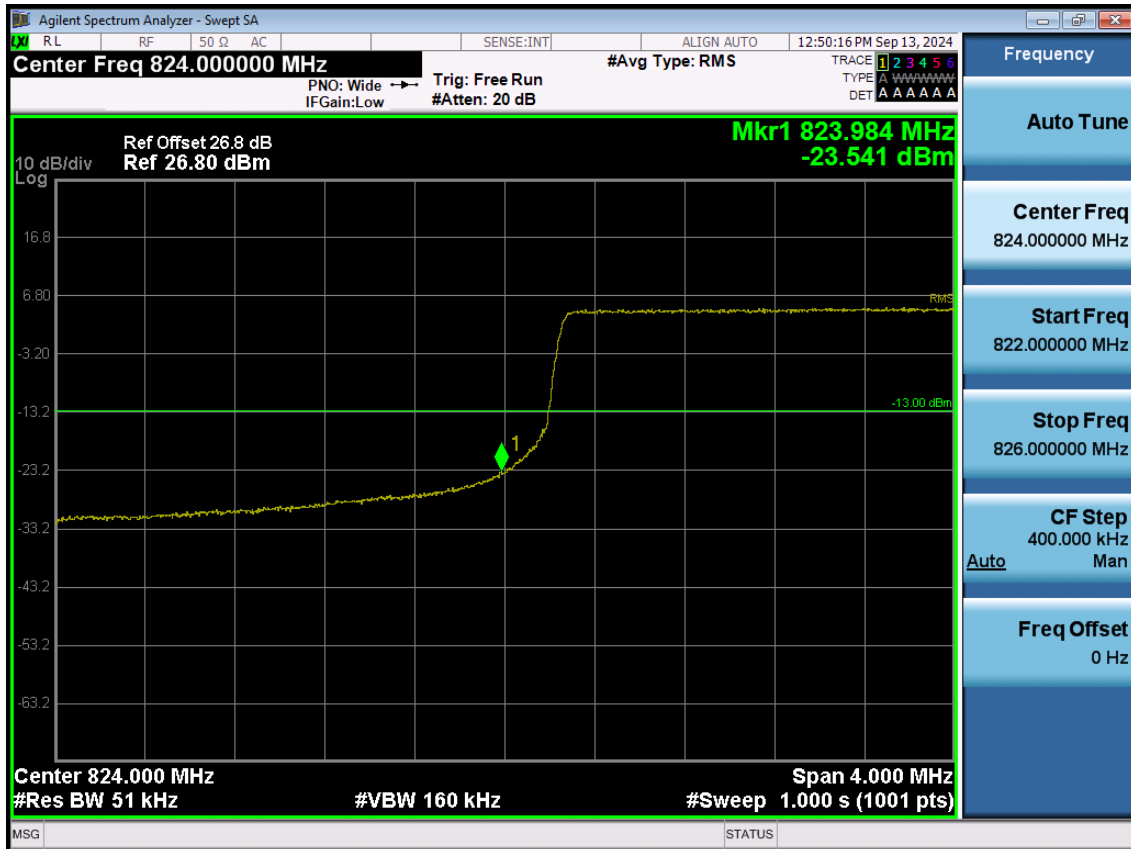
BAND26. Lower Extended Band Edge Plot (3 M BW Ch.26805 QPSK_RB15_0)



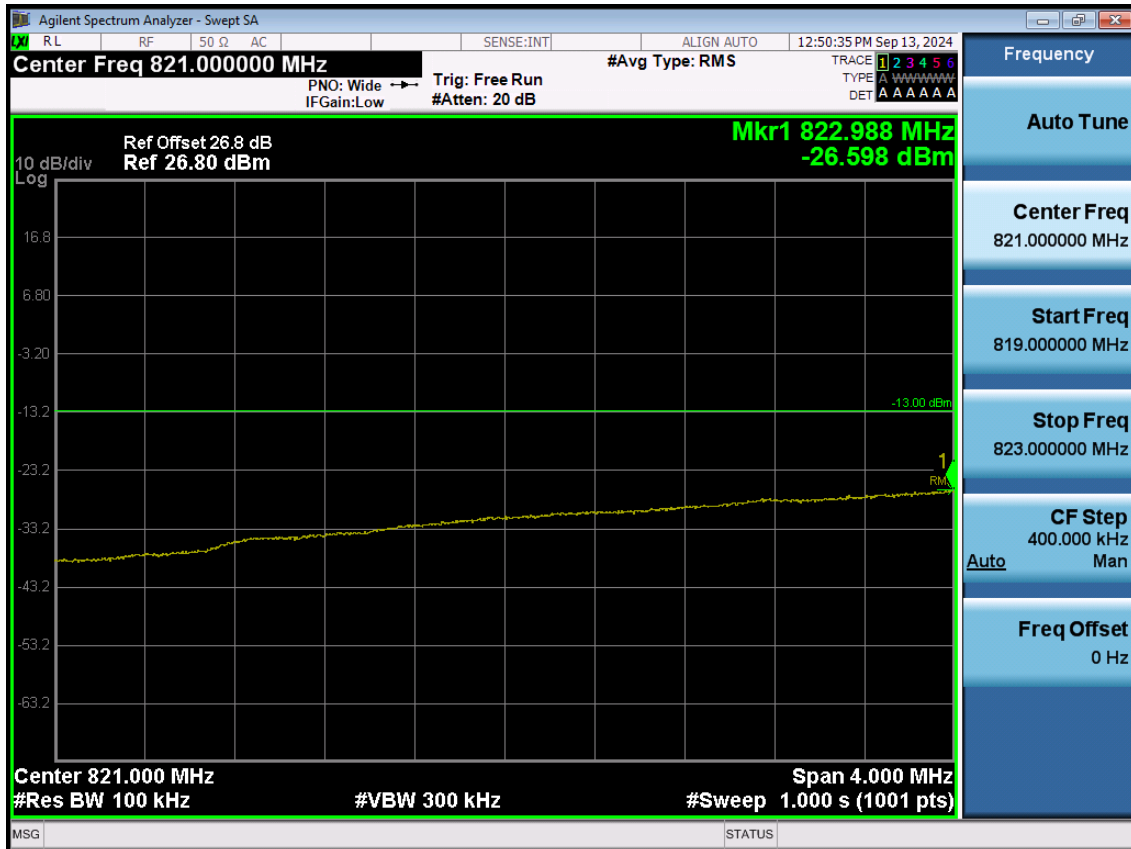
BAND26. Lower Band Edge Plot (5 M BW Ch.26815 QPSK_RB1_Offset 0)



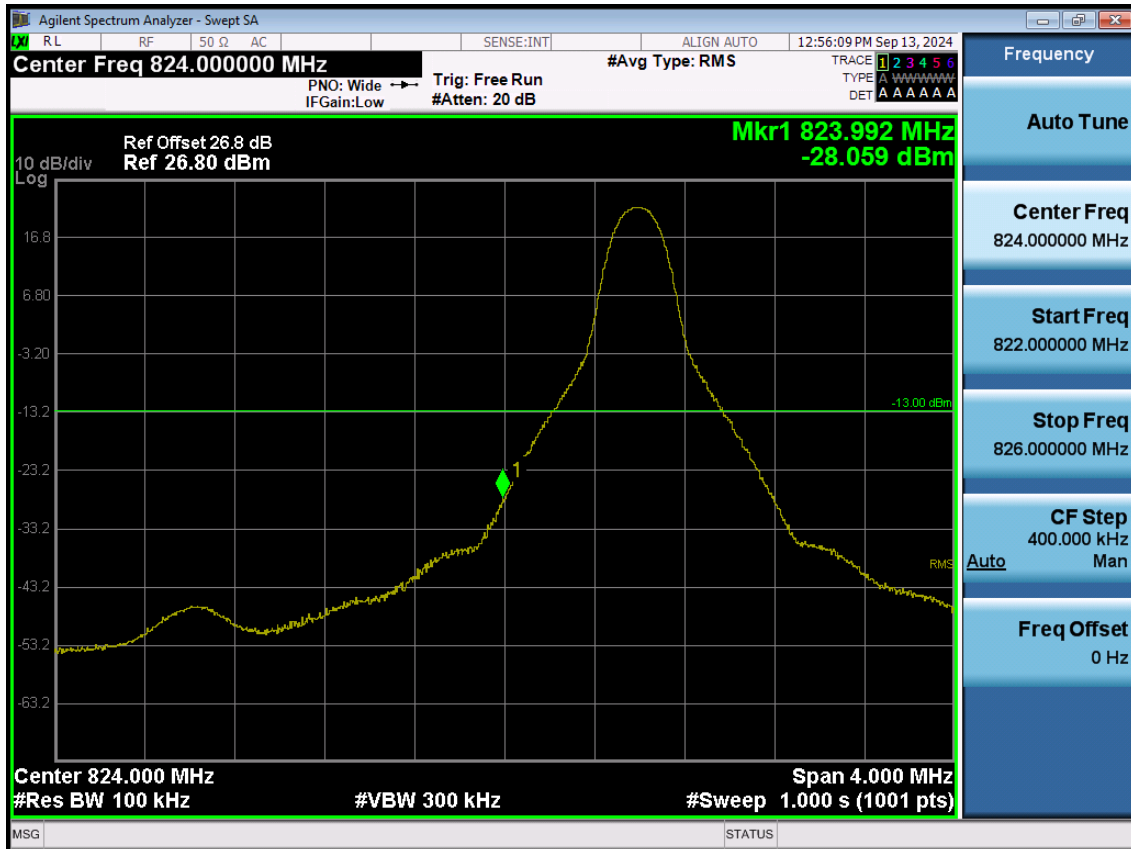
BAND26. Lower Band Edge Plot (5 M BW Ch.26815 QPSK_RB25_Offset 0)



BAND26. Lower Extended Band Edge Plot (5 M BW Ch.26815 QPSK_RB25_0)



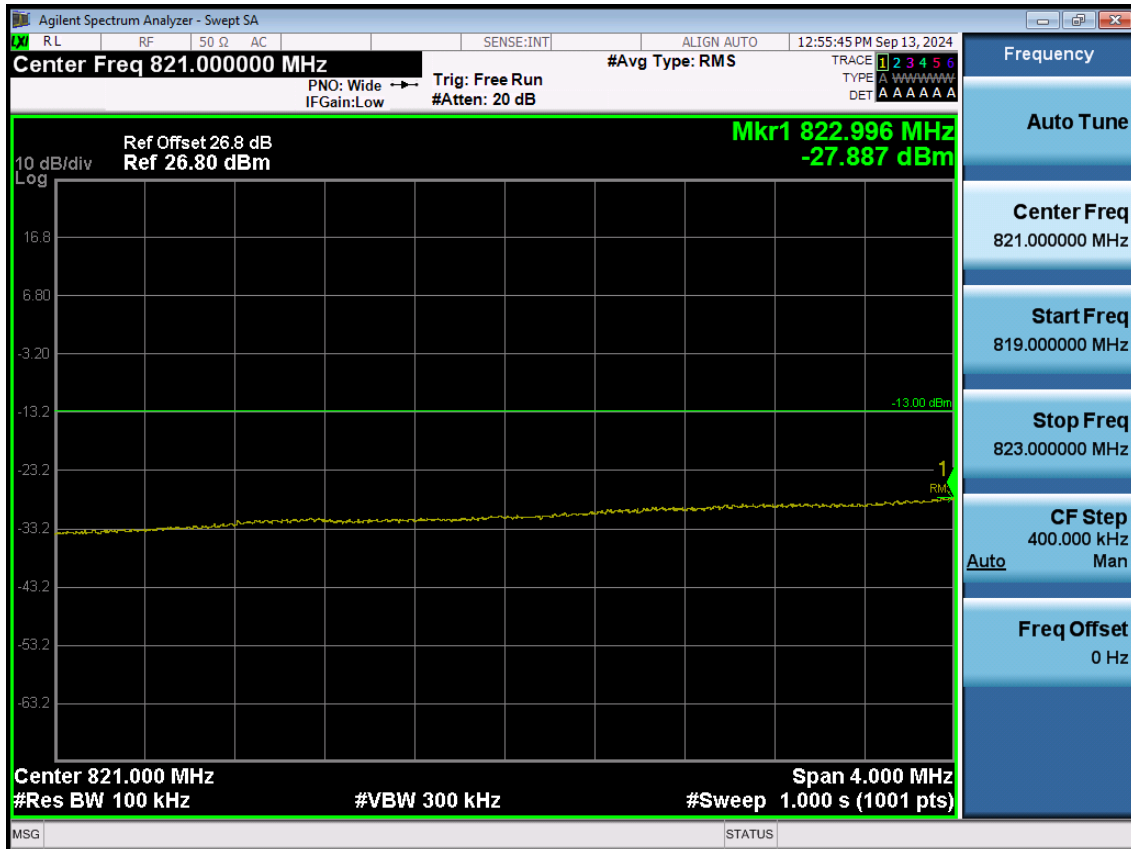
BAND26. Lower Band Edge Plot (10 M BW Ch.26840 QPSK_RB1_Offset 0)



BAND26. Lower Band Edge Plot (10 M BW Ch.26840 QPSK_RB50_Offset 0)



BAND26. Lower Extended Band Edge Plot (10 M BW Ch.26840 QPSK_RB50_0)



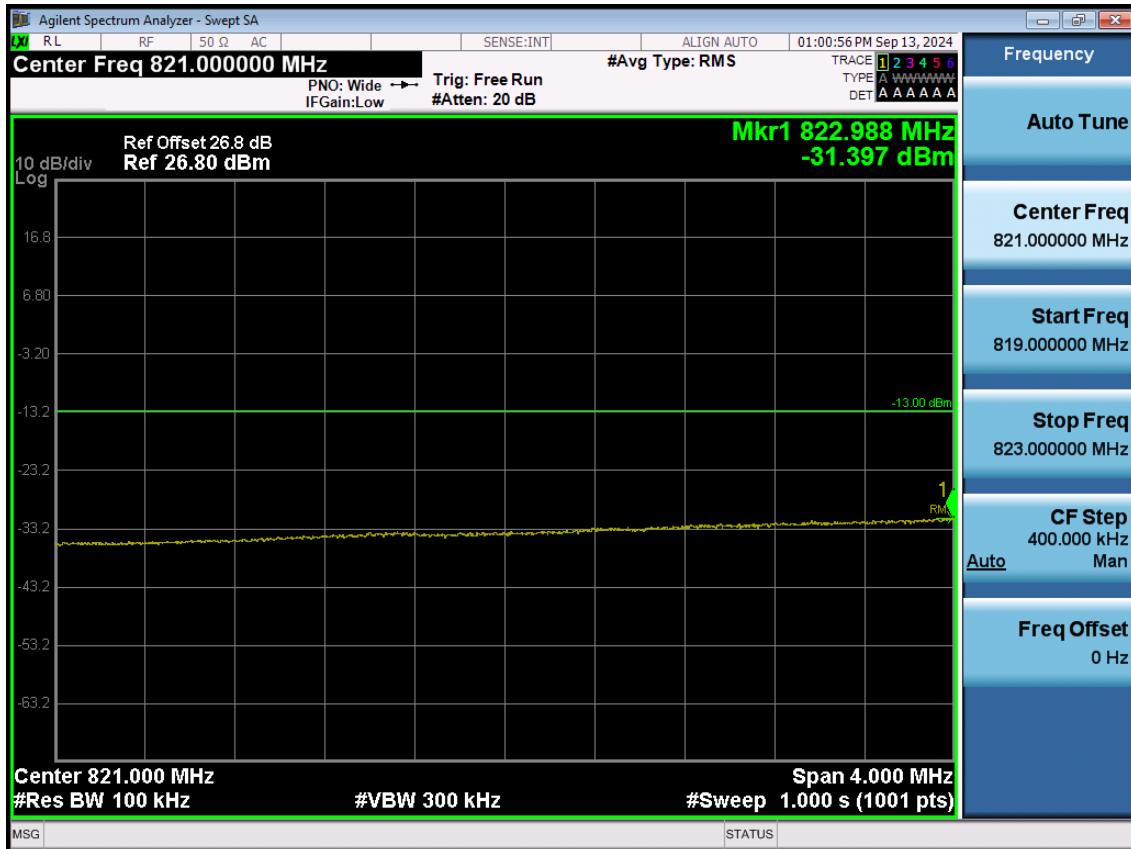
BAND 26. Lower Band Edge Plot (15 M BW Ch.26865 QPSK_RB1_Offset 0)



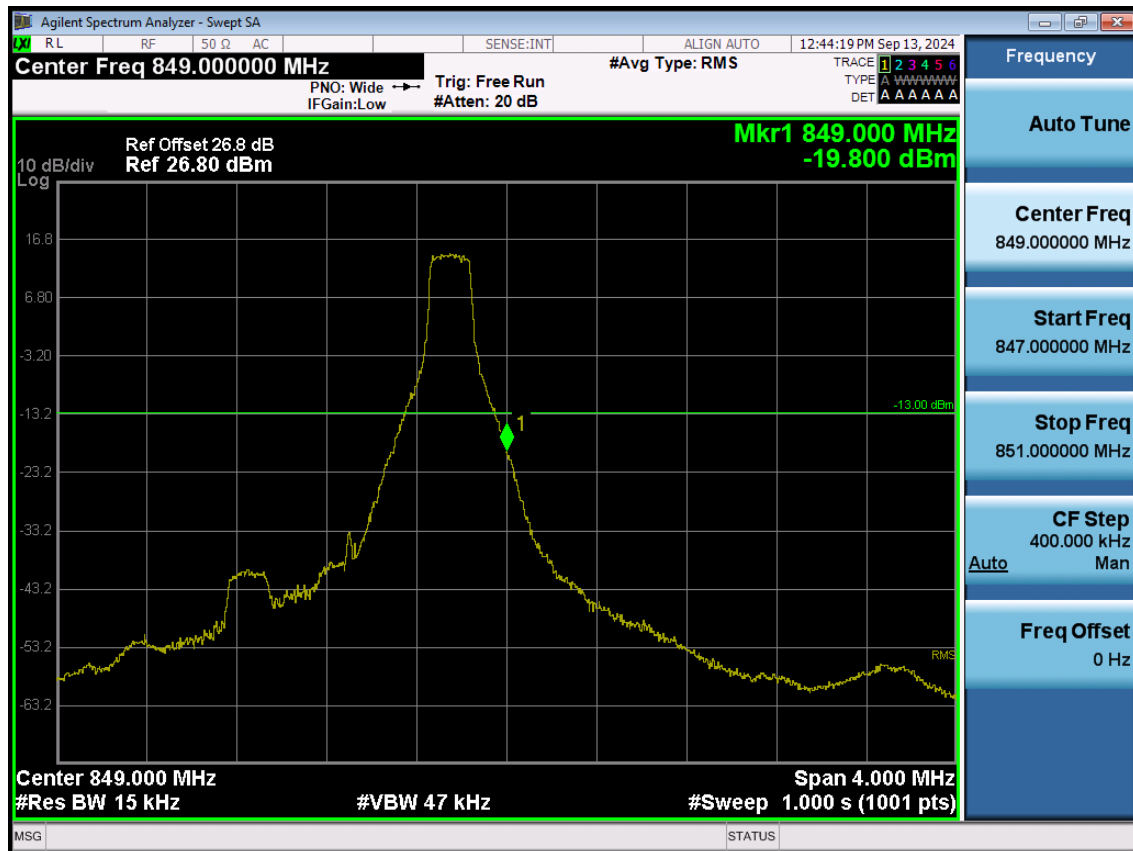
BAND 26. Lower Band Edge Plot (15 M BW Ch.26865 QPSK_RB75_Offset 0)



BAND 26. Lower Extended Band Edge Plot (15 M BW Ch.26865 QPSK_RB75_0)



BAND26. Upper Band Edge Plot (1.4 M BW Ch.27033 QPSK_RB1_Offset 5)



BAND26. Upper Band Edge Plot (1.4 M BW Ch.27033 QPSK_RB6_Offset 0)



BAND26. Upper Extended Band Edge Plot (1.4 M BW Ch.27033 QPSK_RB6_0)



BAND26. Upper Band Edge Plot (3 M BW Ch.27025 QPSK_RB1_Offset 14)



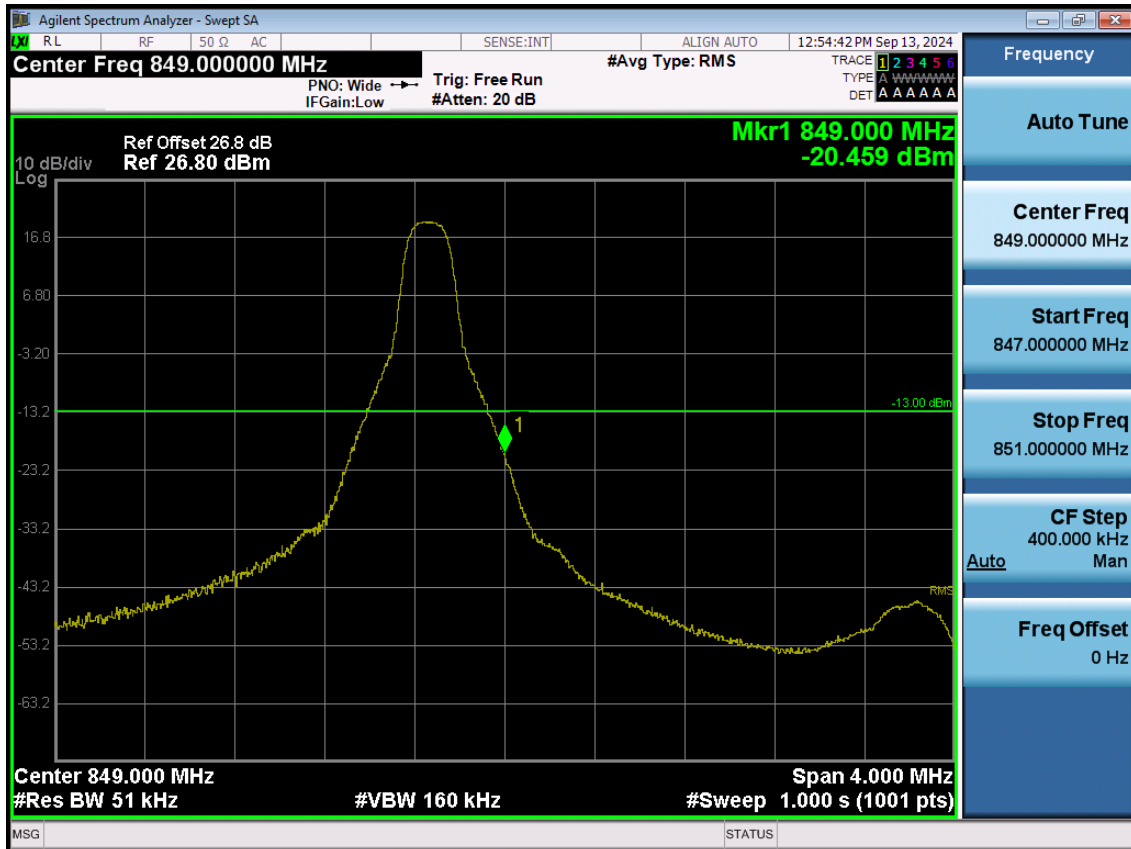
BAND26. Upper Band Edge Plot (3 M BW Ch.27025 QPSK_RB15_Offset 0)



BAND26. Upper Extended Band Edge Plot (3 M BW Ch.27025 QPSK_RB15_0)



BAND26. Upper Band Edge Plot (5 M BW Ch.27015 QPSK_RB1_Offset 24)



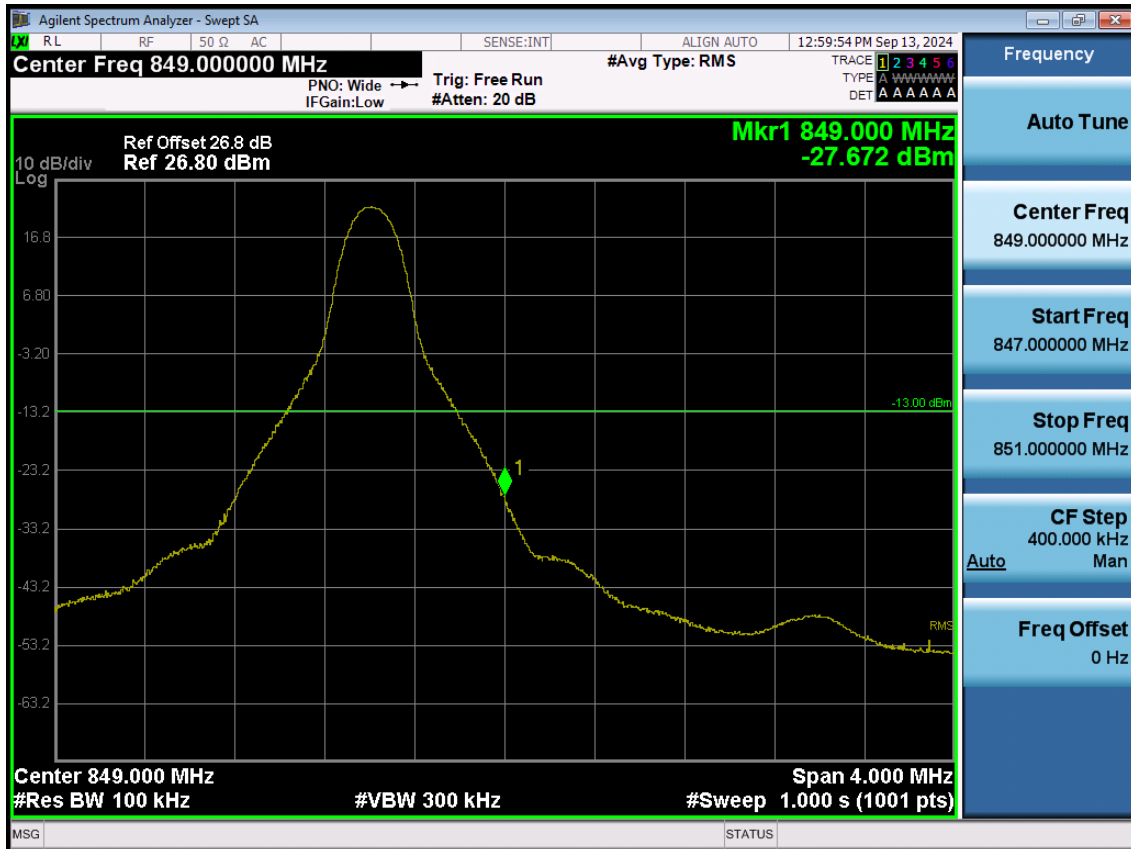
BAND26. Upper Band Edge Plot (5 M BW Ch.27015 QPSK_RB25_Offset 0)



BAND26. Upper Extended Band Edge Plot (5 M BW Ch.27015 QPSK_RB25_0)



BAND26. Upper Band Edge Plot (10 M BW Ch.26990 QPSK_RB1_Offset 49)



BAND26. Upper Band Edge Plot (10 M BW Ch.26990 QPSK_RB50_Offset 0)



BAND26. Upper Extended Band Edge Plot (10 M BW Ch.26990 QPSK_RB50_0)



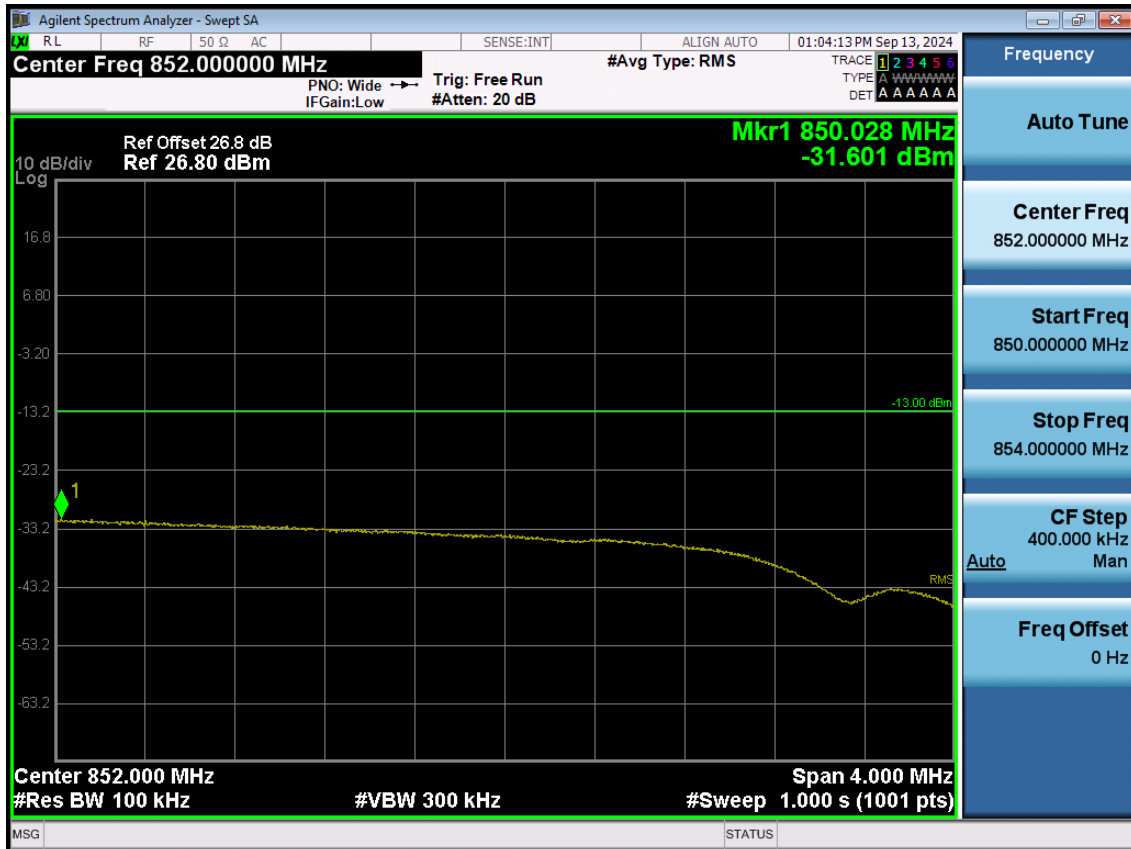
BAND 26. Upper Band Edge Plot (15 M BW Ch.26965 QPSK_RB1_Offset 74)



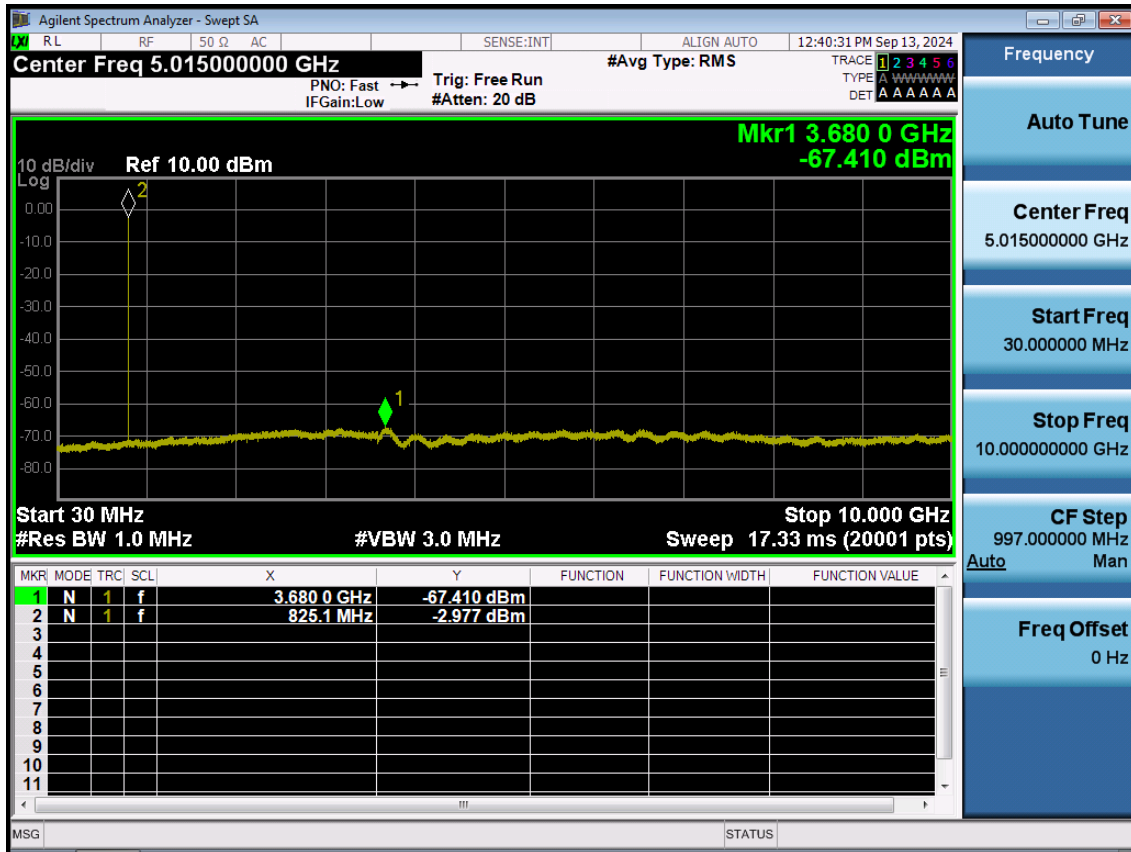
BAND 26. Upper Band Edge Plot (15 M BW Ch.26965 QPSK_RB75_Offset 0)



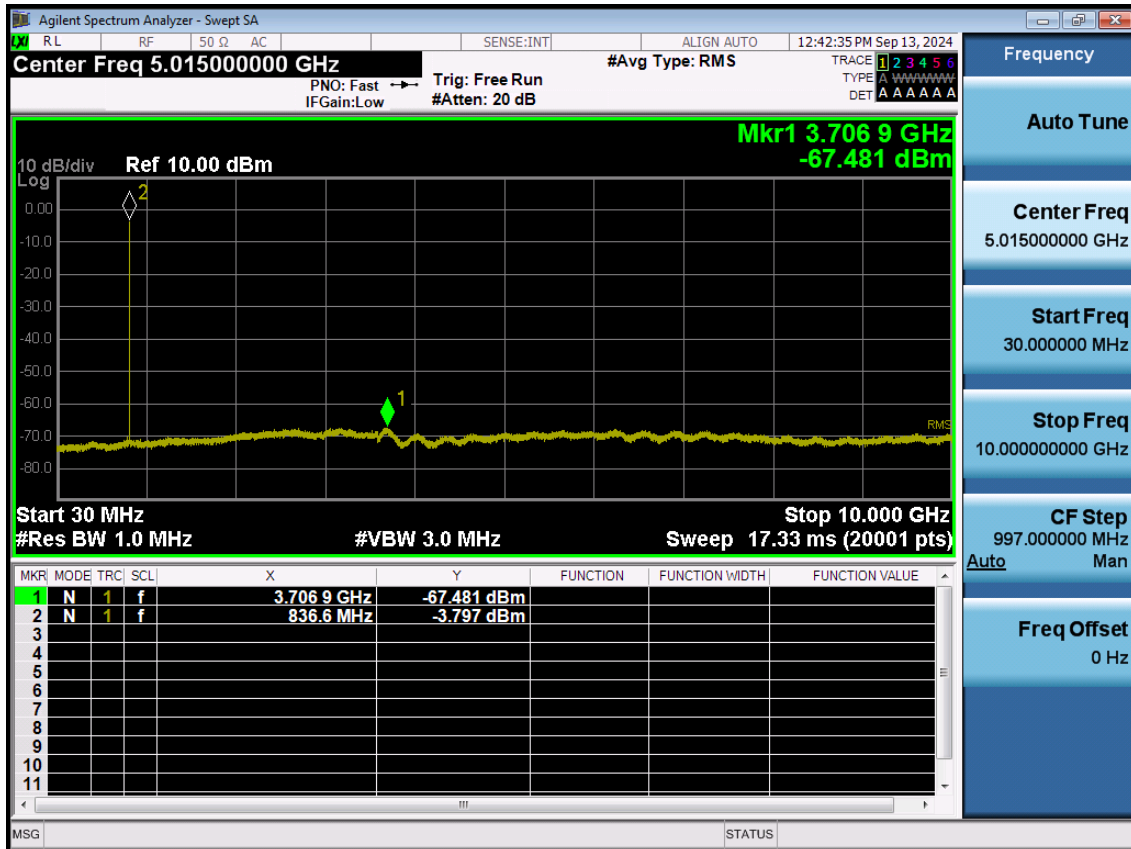
BAND 26. Upper Extended Band Edge Plot (15 M BW Ch.26965 QPSK_RB75_0)



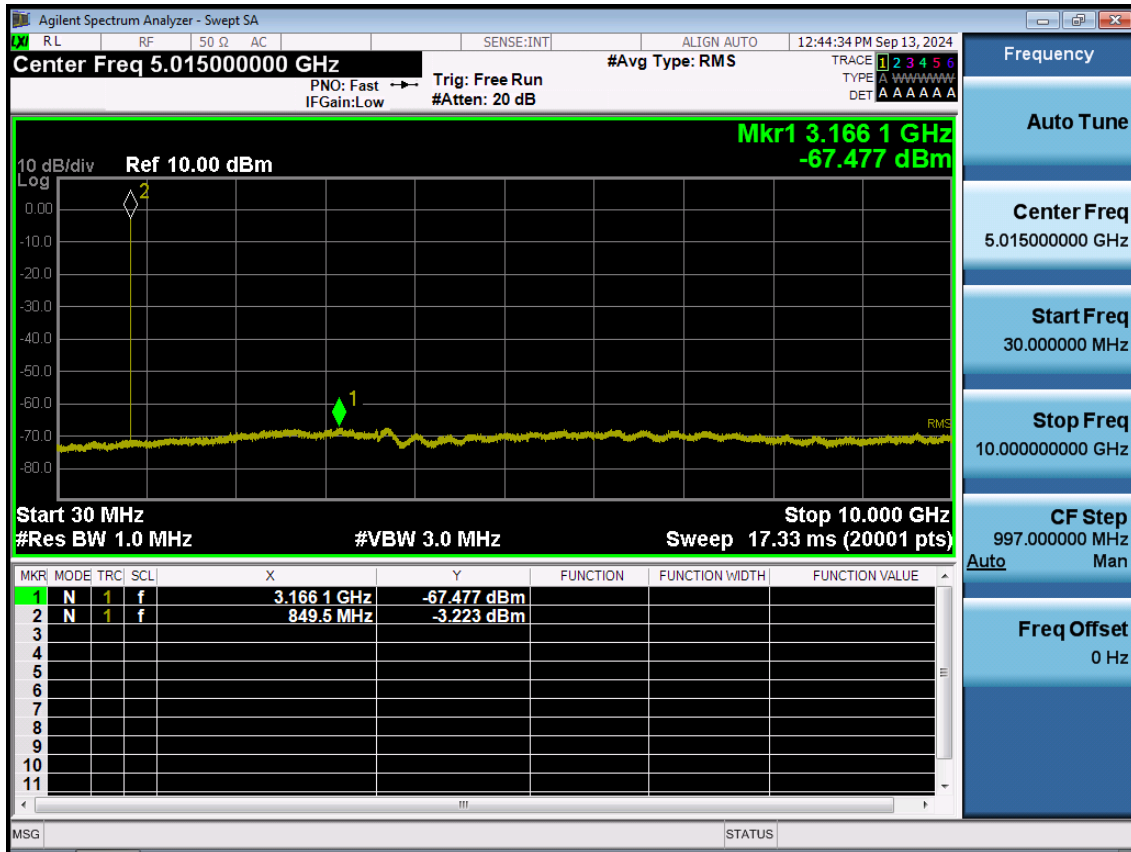
BAND26. Conducted Spurious Plot (26797ch_1.4 MHz_QPSK_RB 1_0)



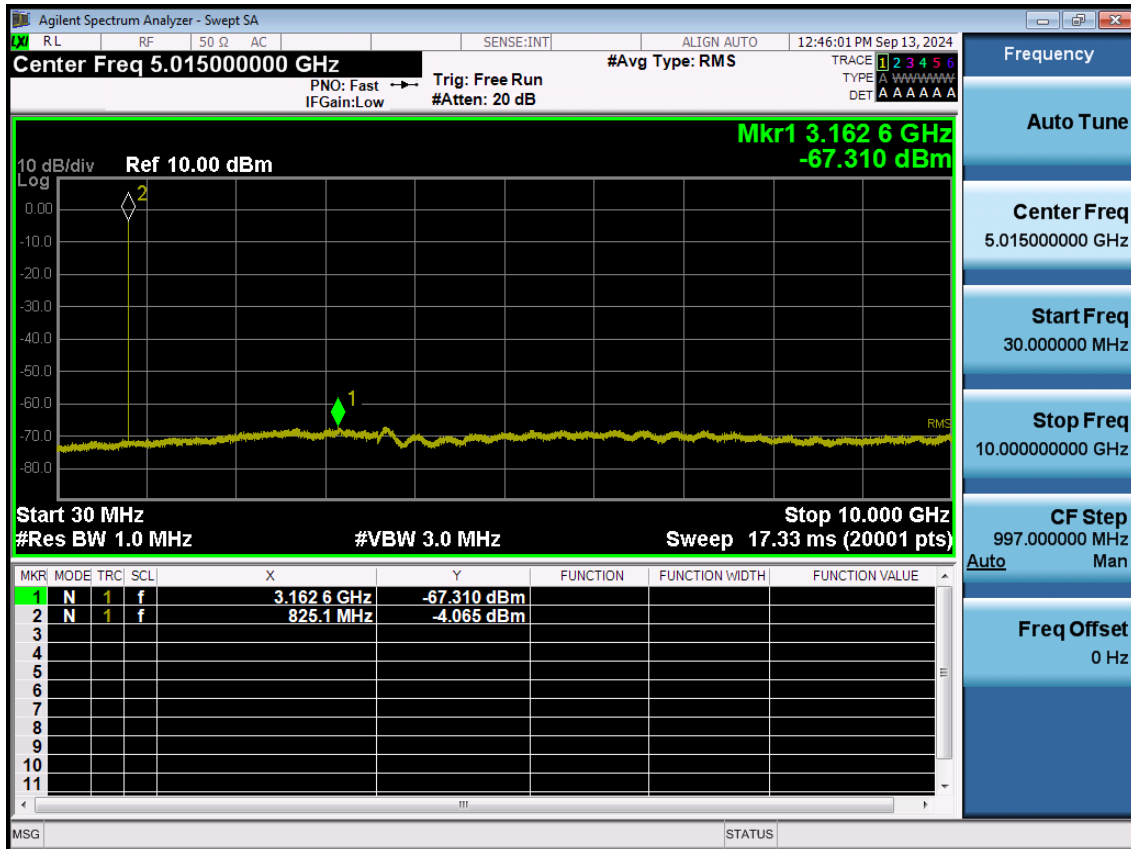
BAND26. Conducted Spurious Plot (26915ch_1.4 MHz_QPSK_RB 1_0)



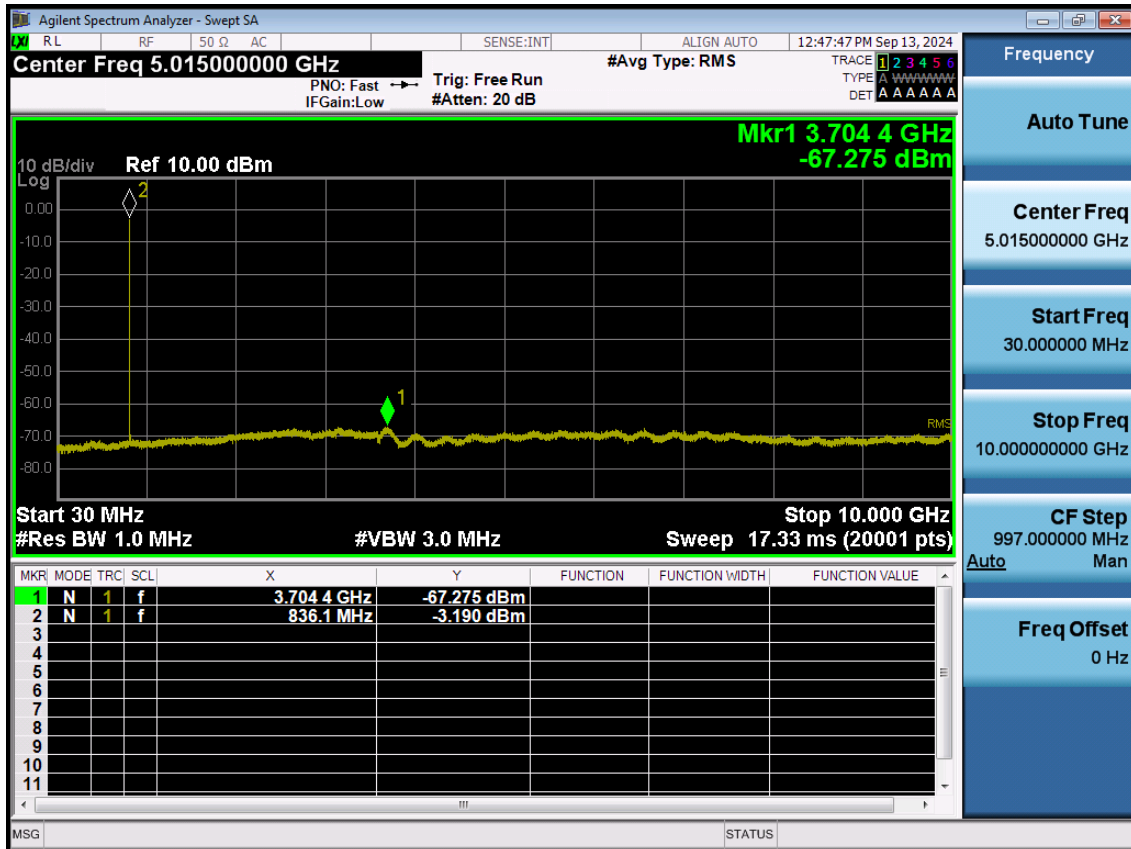
BAND26. Conducted Spurious Plot (27033ch_1.4 MHz_QPSK_RB 1_0)



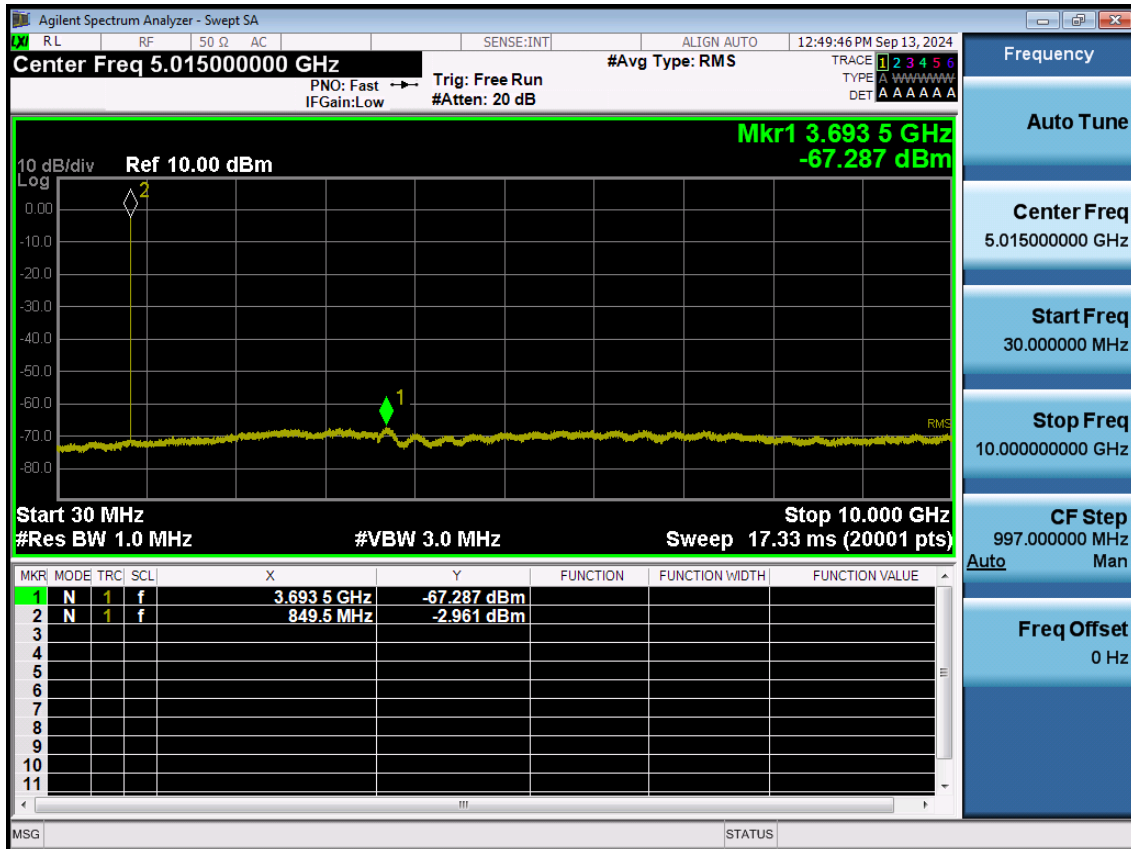
BAND26. Conducted Spurious Plot (26805ch_3 MHz_QPSK_RB 1_0)



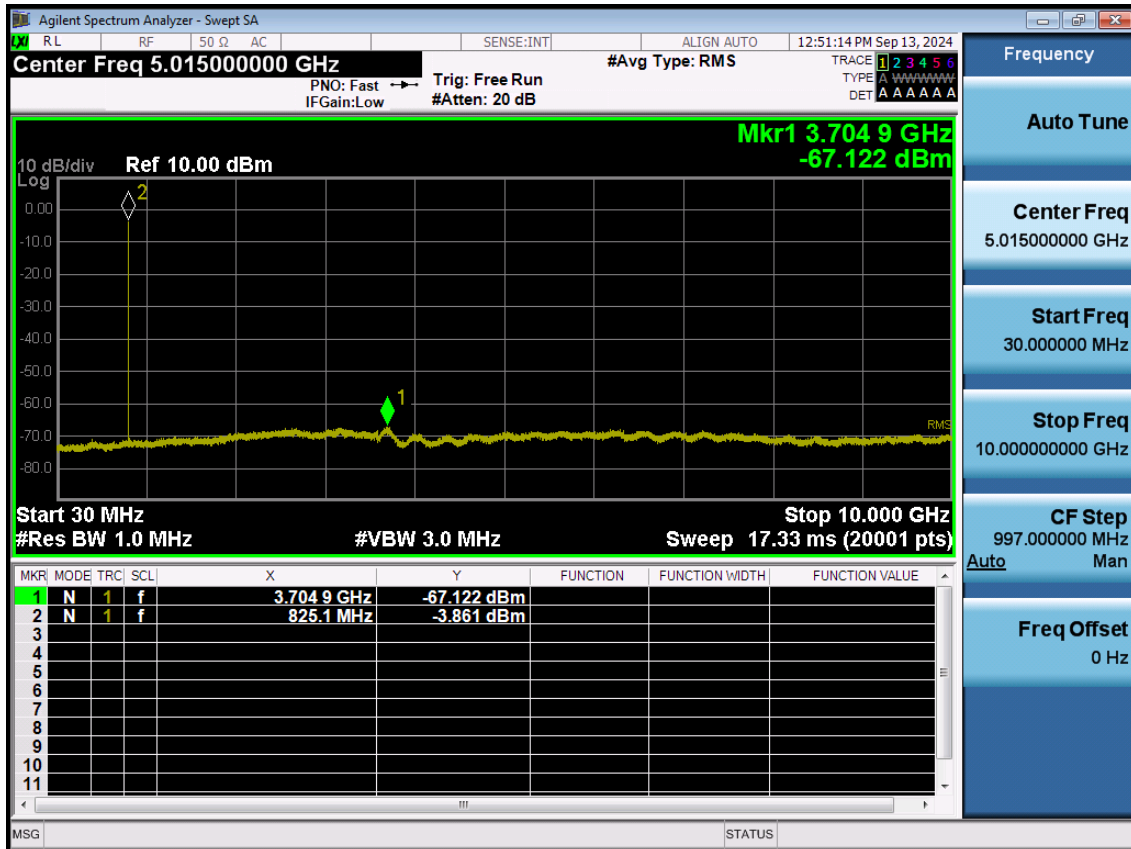
BAND26. Conducted Spurious Plot (26915ch_3 MHz_QPSK_RB 1_0)



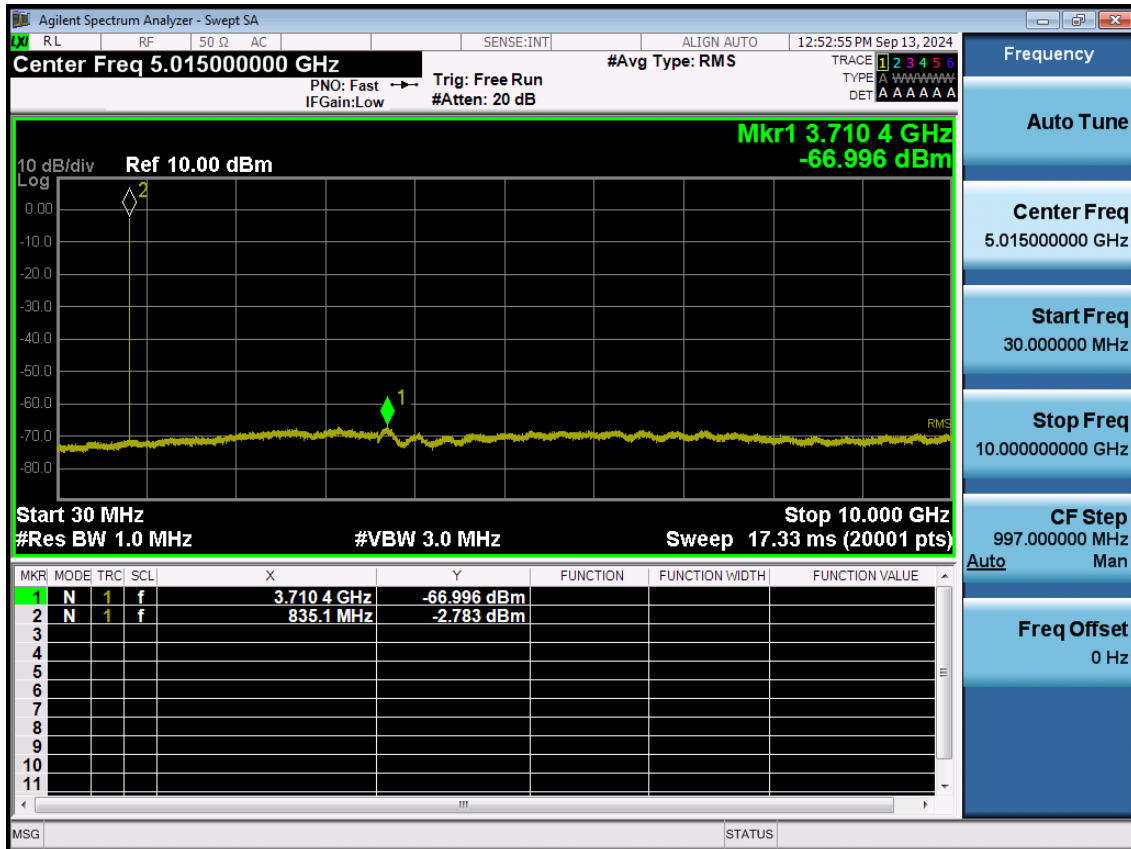
BAND26. Conducted Spurious Plot (27025ch_3 MHz_QPSK_RB 1_0)



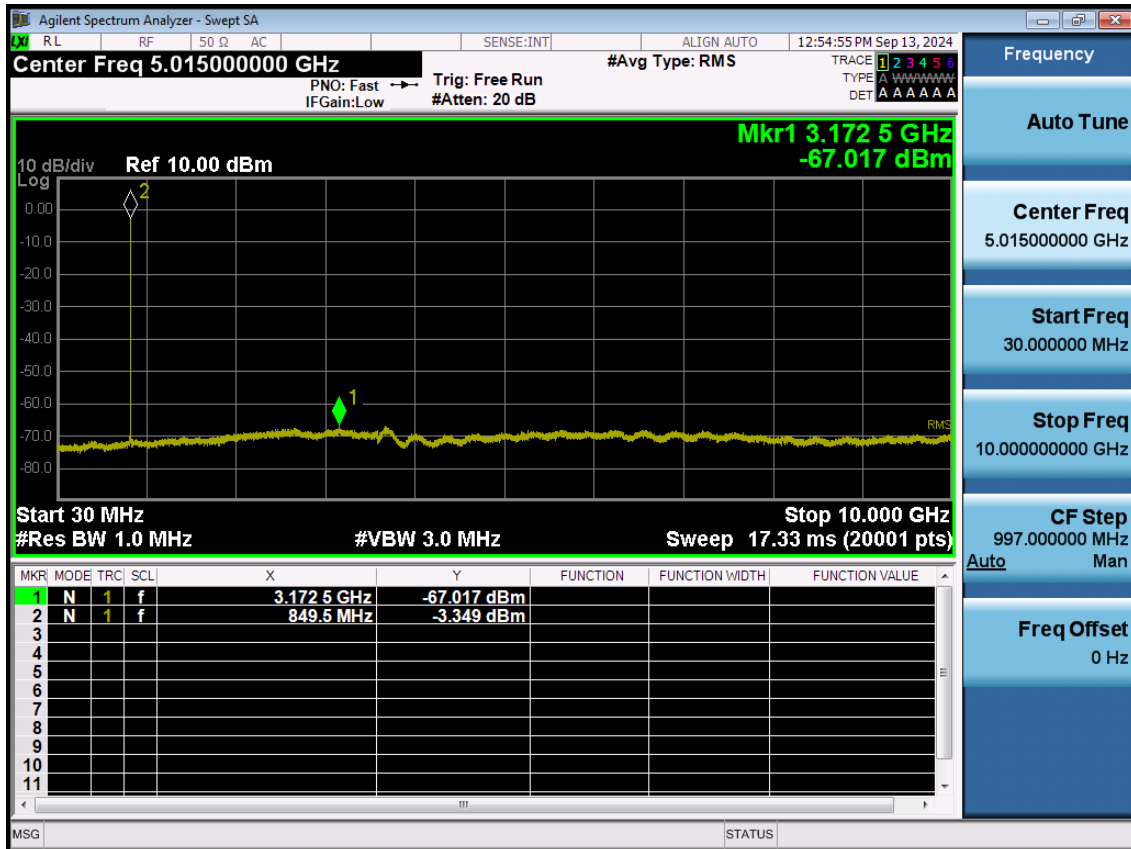
BAND26. Conducted Spurious Plot (26815ch_5 MHz_QPSK_RB 1_0)



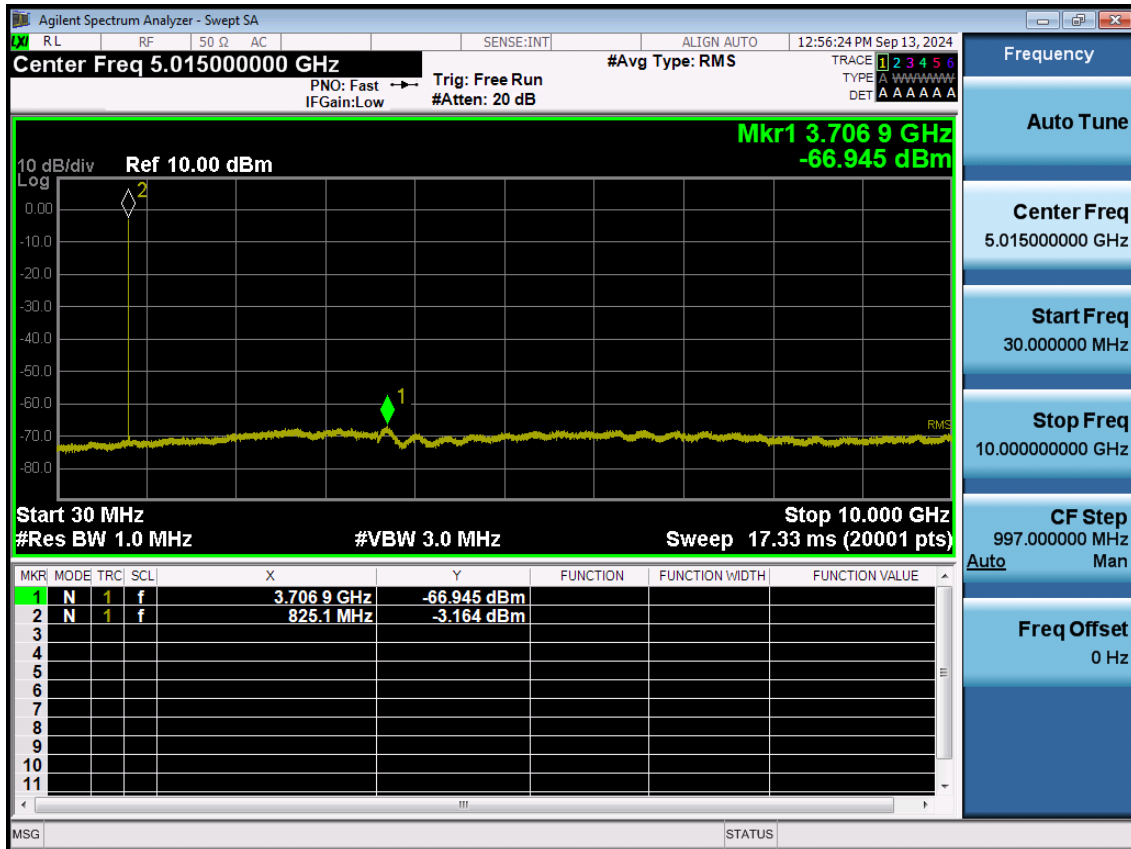
BAND26. Conducted Spurious Plot (26915ch_5 MHz_QPSK_RB 1_0)



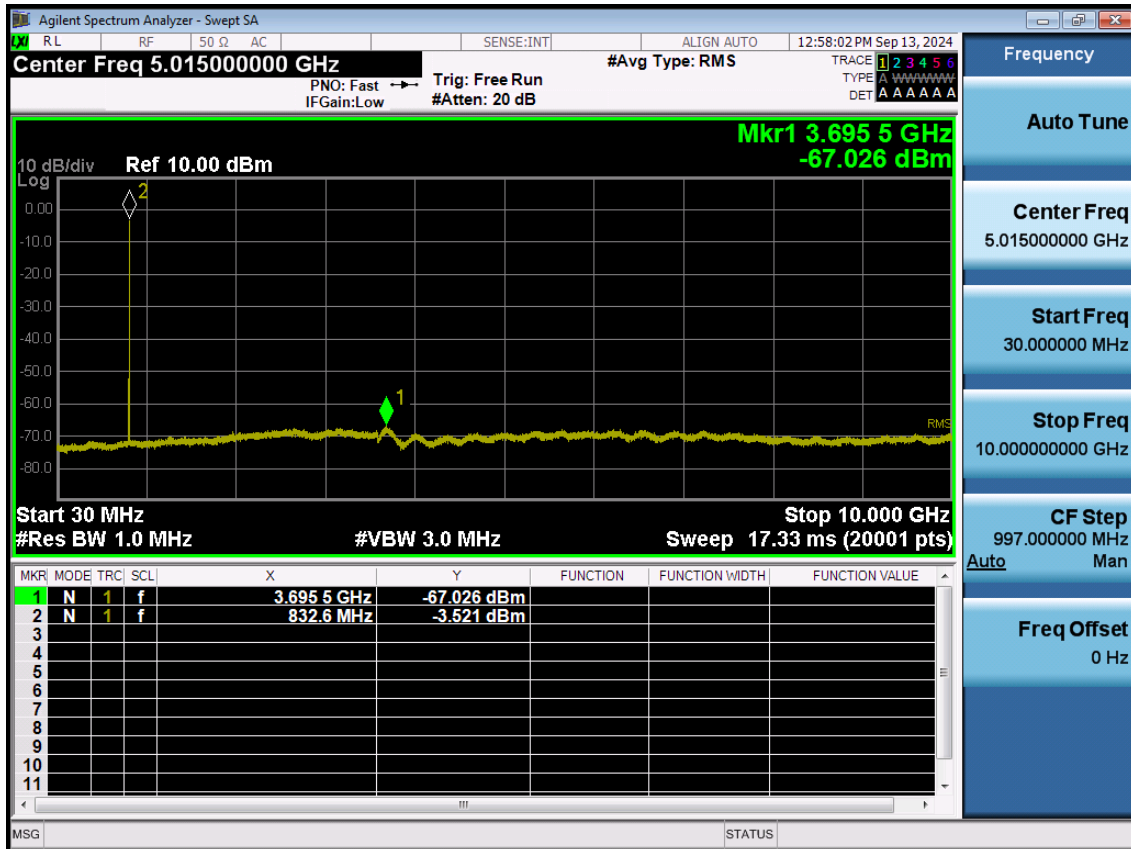
BAND26. Conducted Spurious Plot (27015ch_5 MHz_QPSK_RB 1_0)



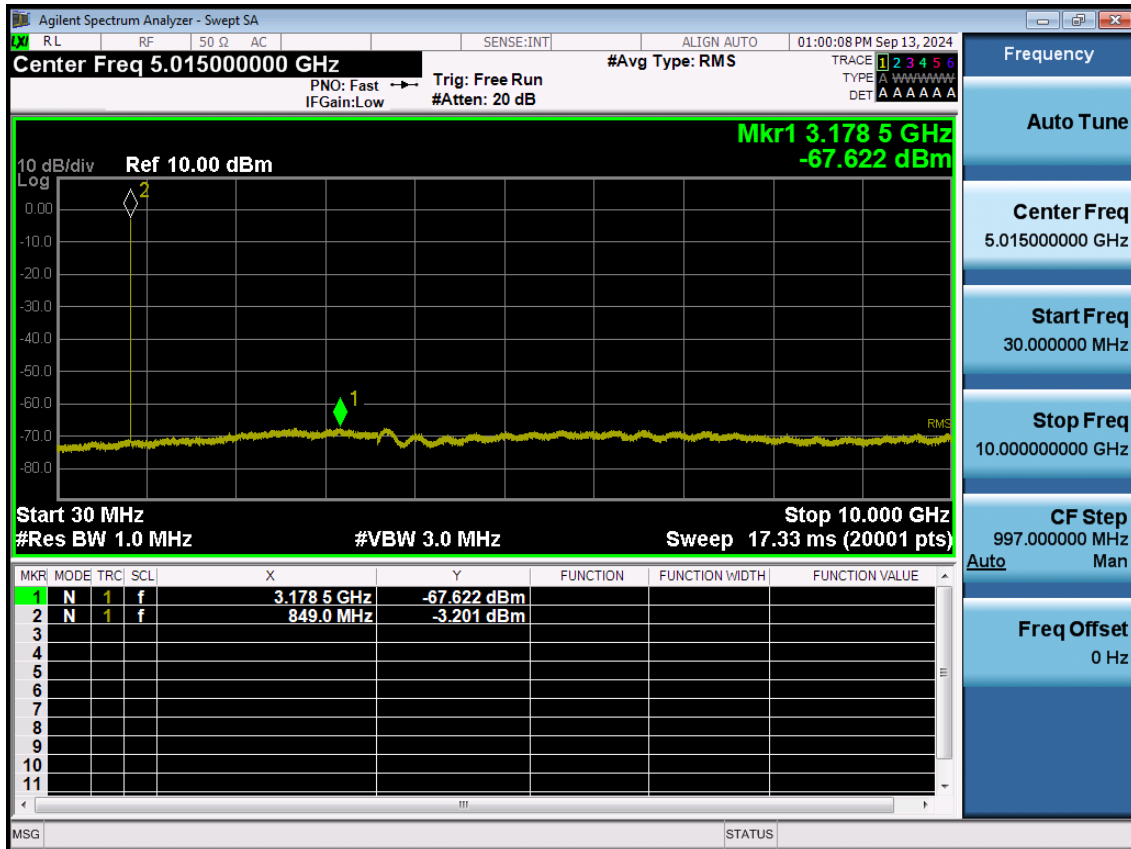
BAND26. Conducted Spurious Plot (26840ch_10 MHz_QPSK_RB 1_0)



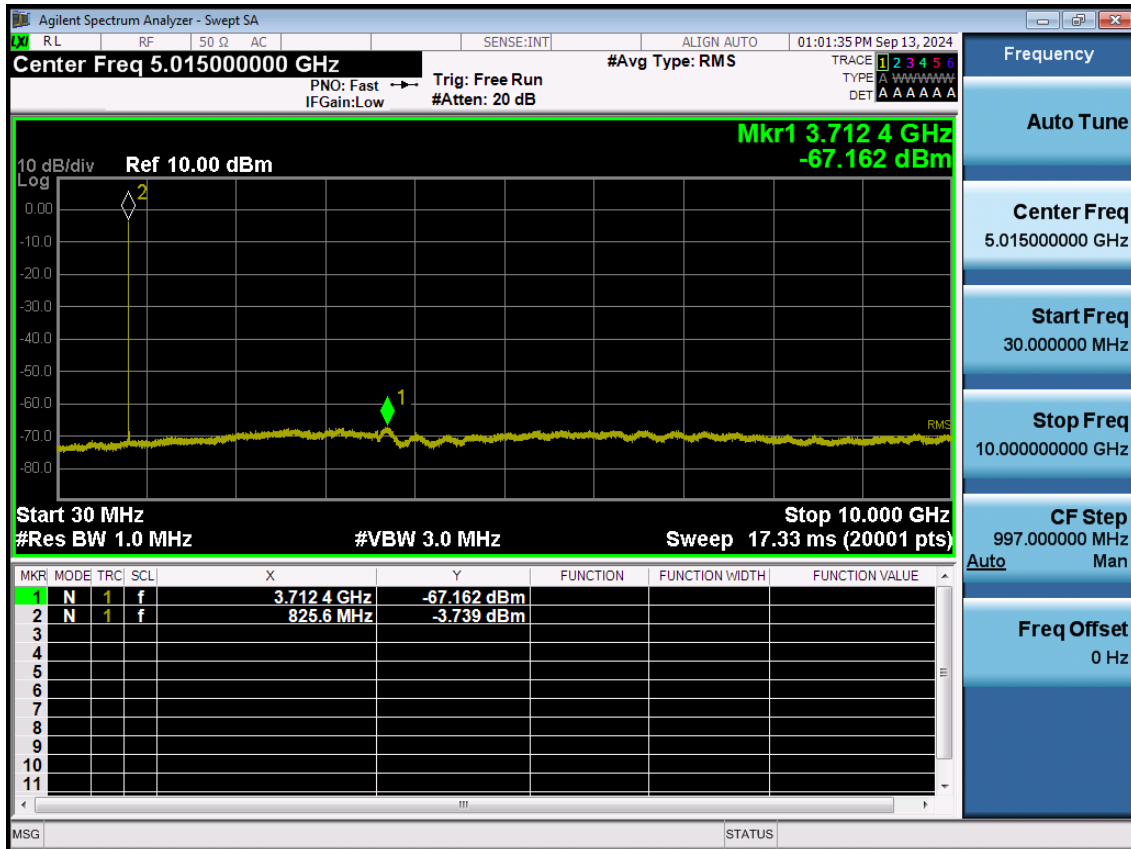
BAND26. Conducted Spurious Plot (26915ch_10 MHz_QPSK_RB 1_0)



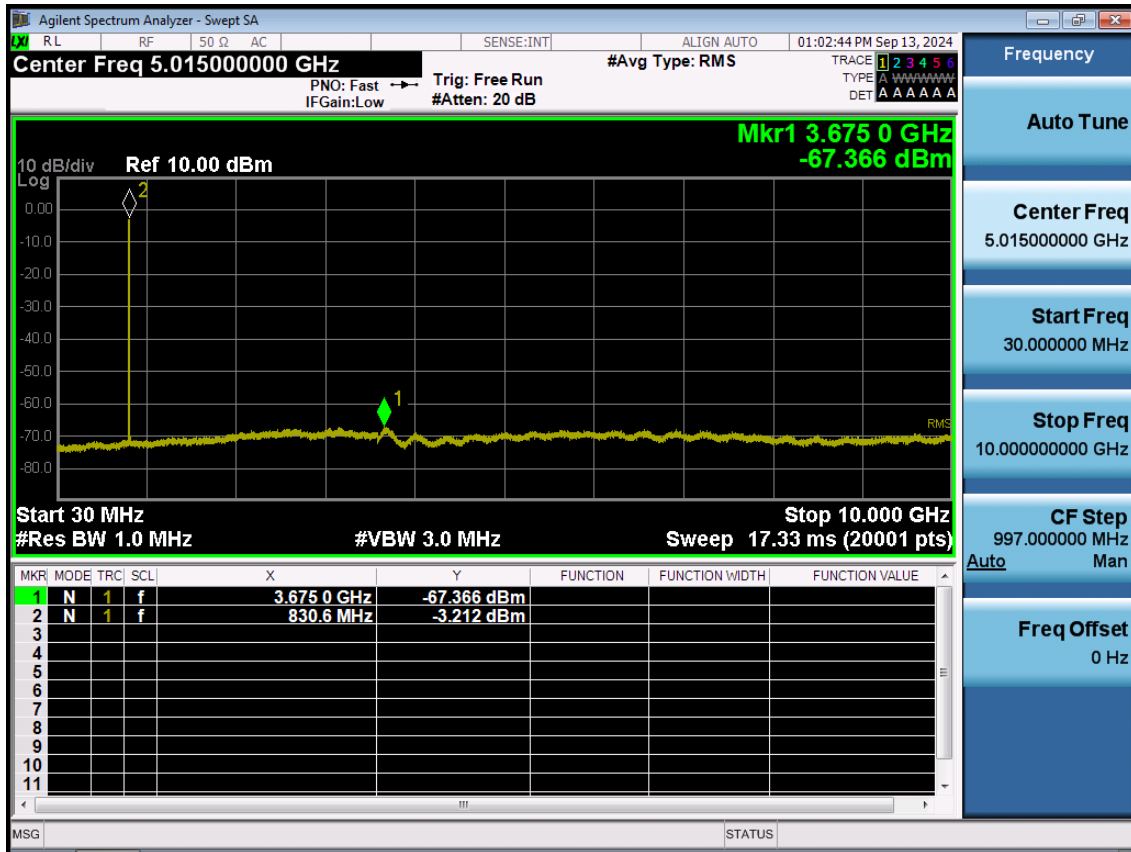
BAND26. Conducted Spurious Plot (26990ch_10 MHz_QPSK_RB 1_0)



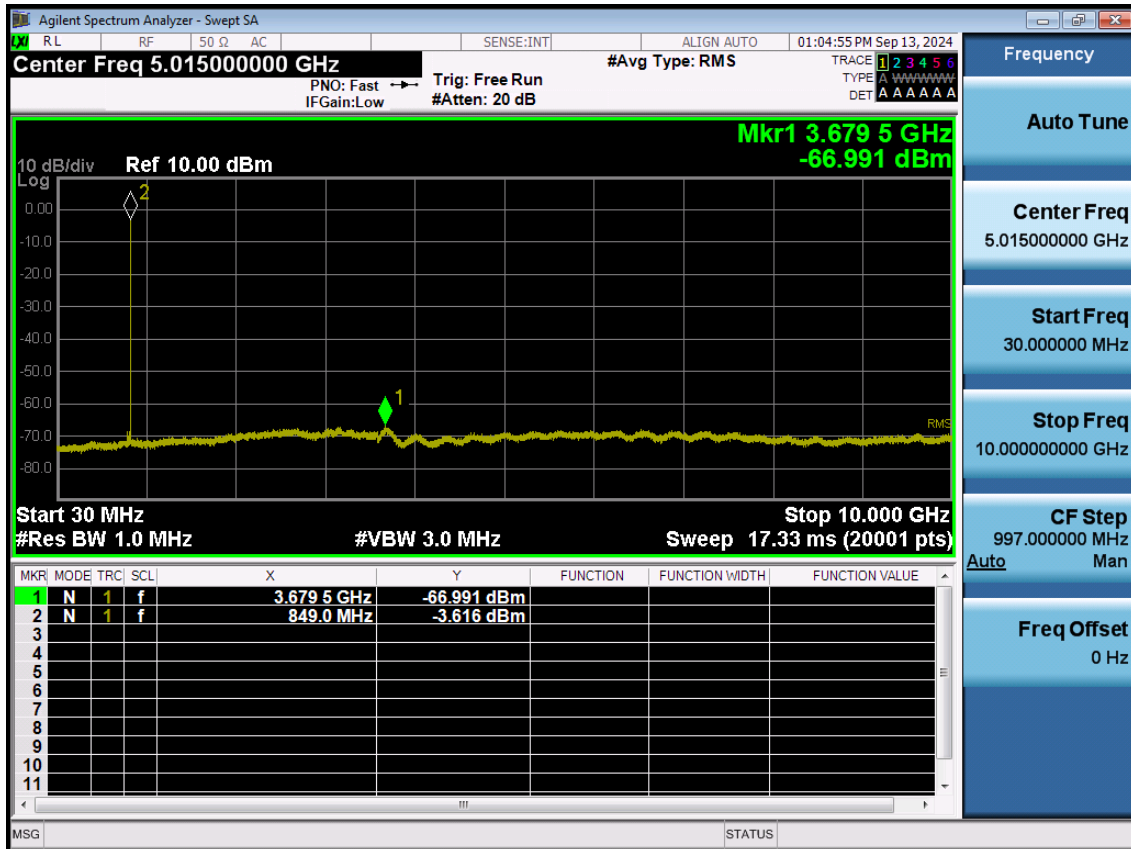
BAND 26. Conducted Spurious (26865ch_15 MHz_QPSK_RB 1_0)



BAND 26. Conducted Spurious (26915ch_15 MHz_QPSK_RB 1_0)

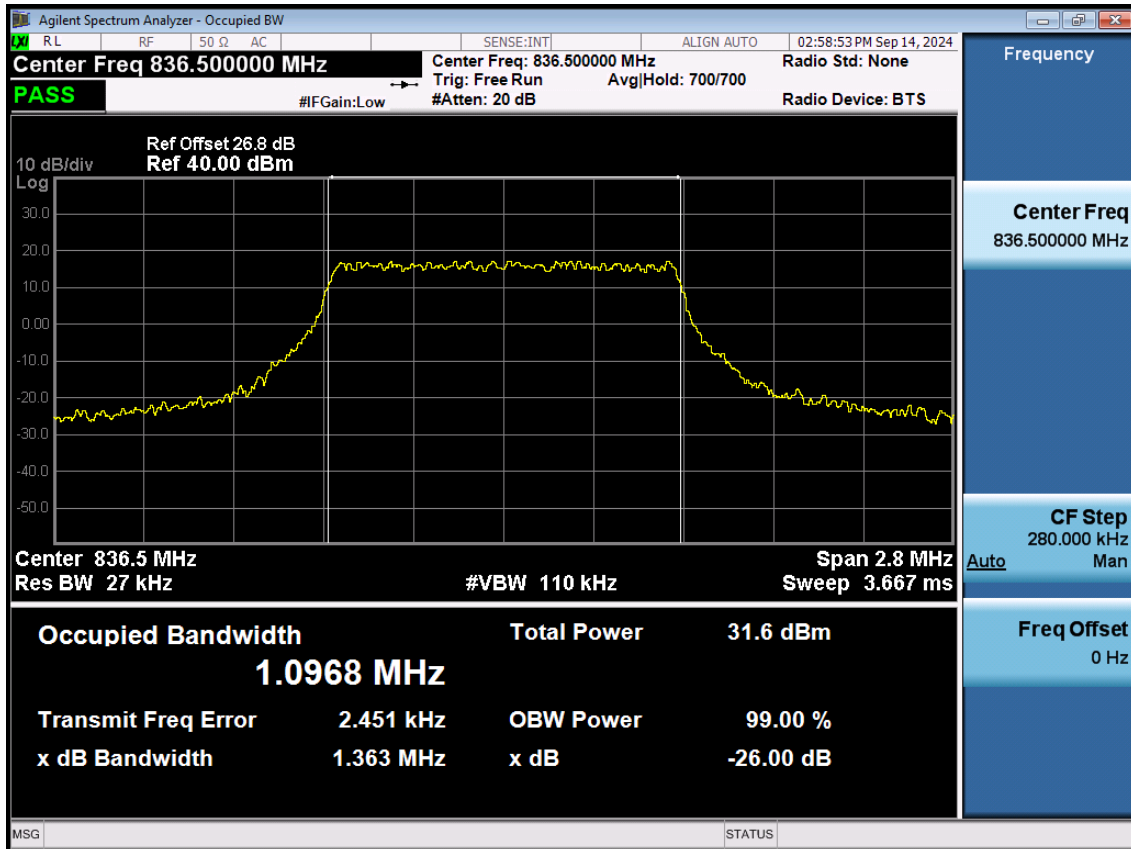


BAND 26. Conducted Spurious (26965ch_15 MHz_QPSK_RB 1_0)

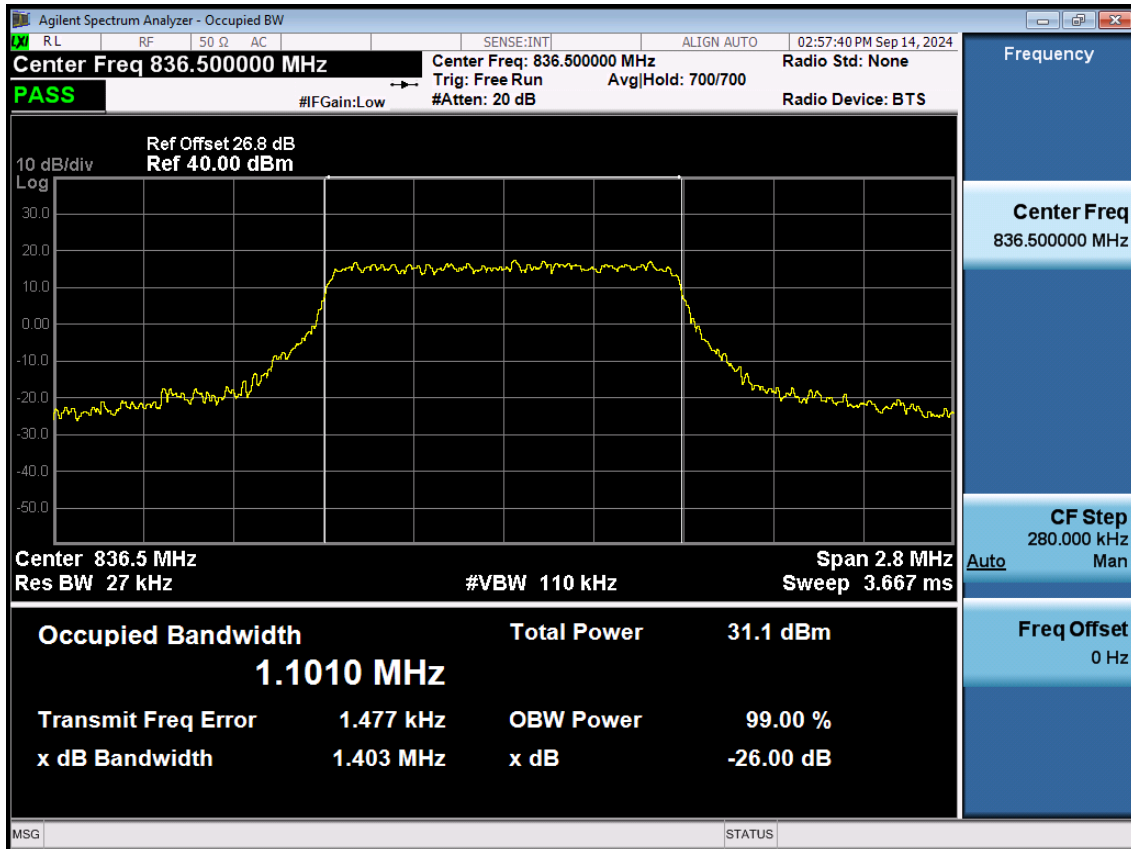


11. TEST PLOTS (Sub1)

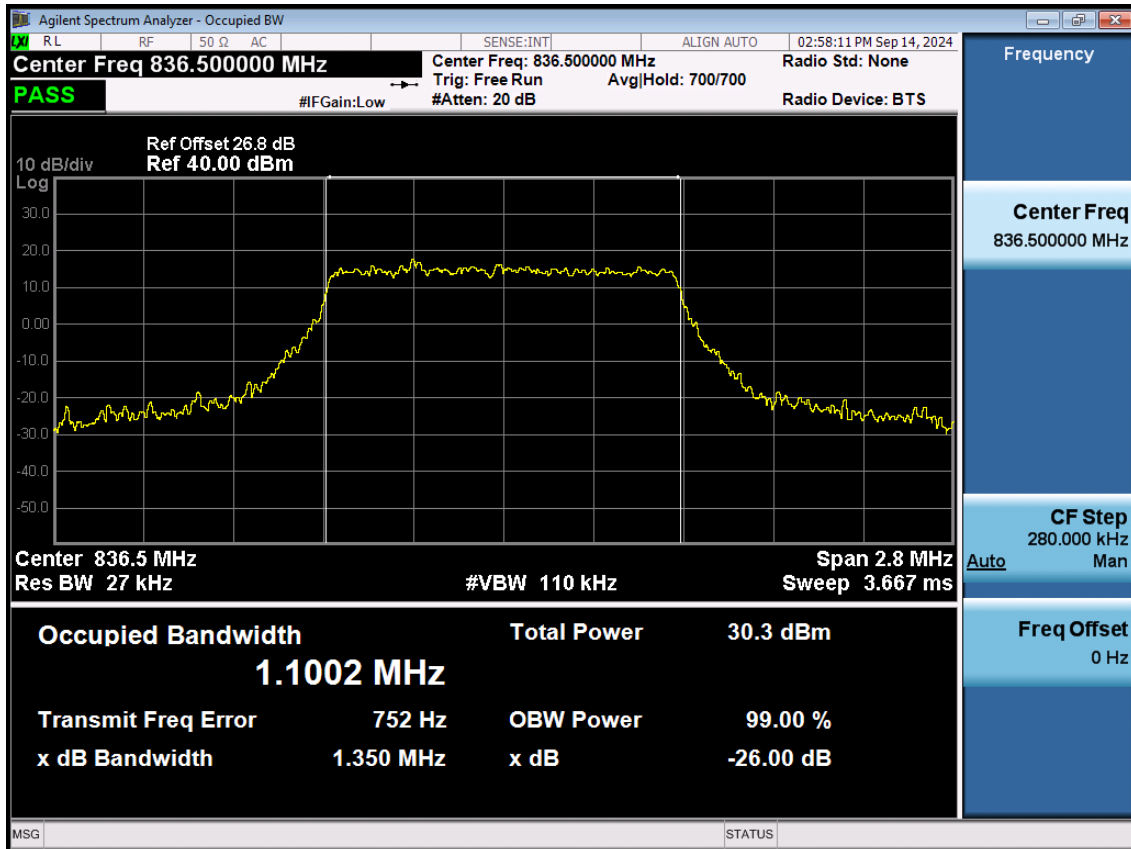
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 QPSK_RB6_0)



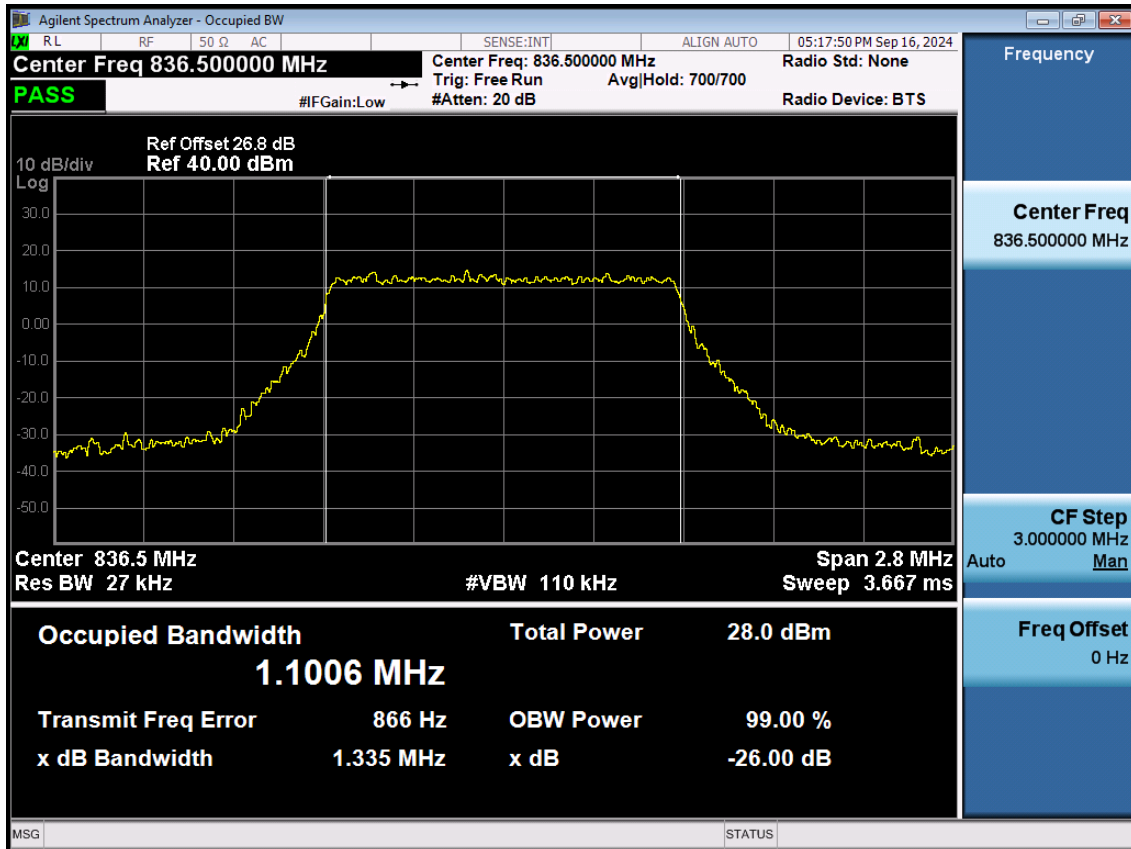
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 16QAM_RB6_0)



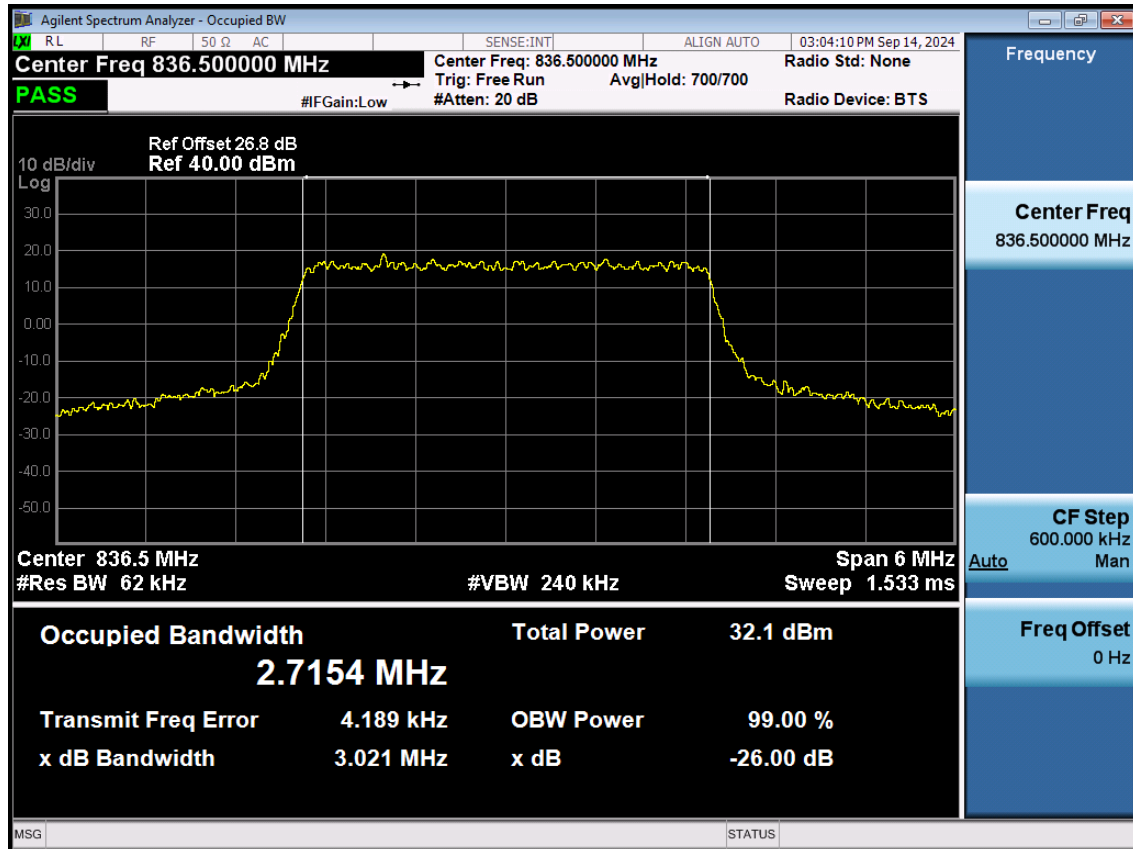
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 64QAM_RB6_0)



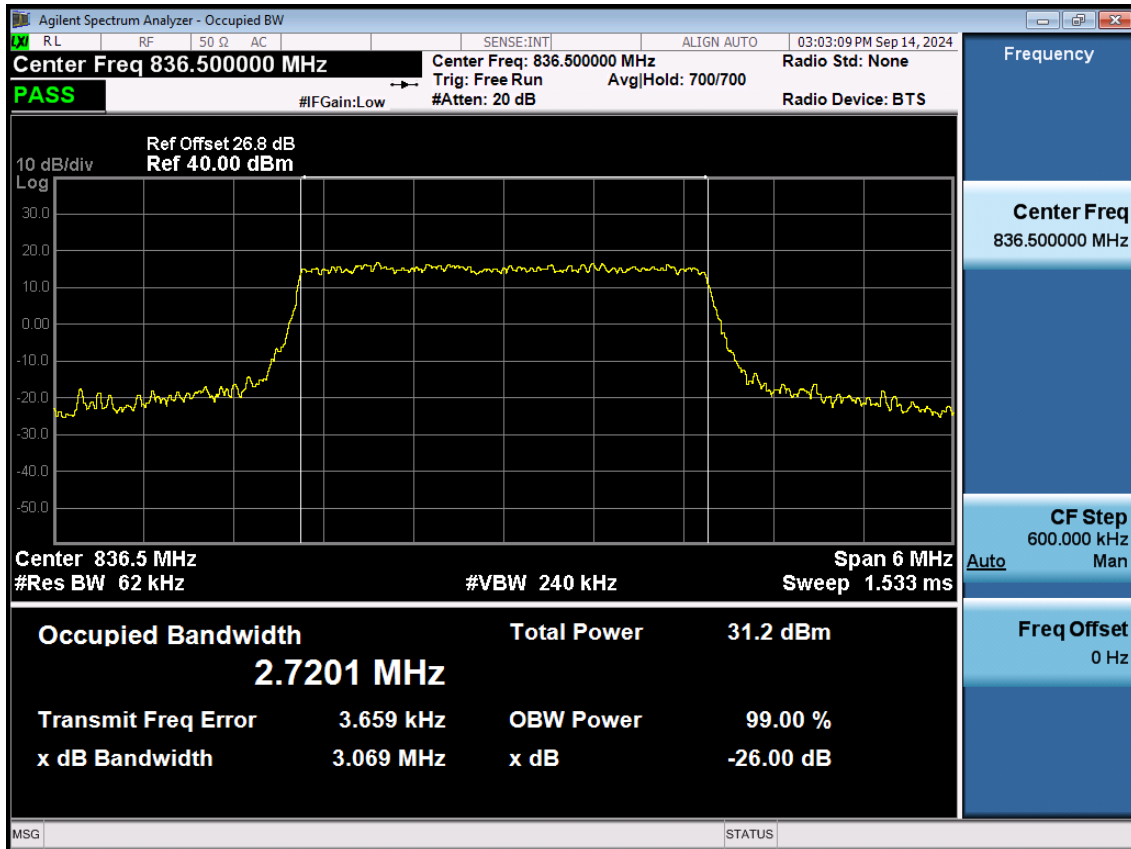
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 256QAM_RB6_0)



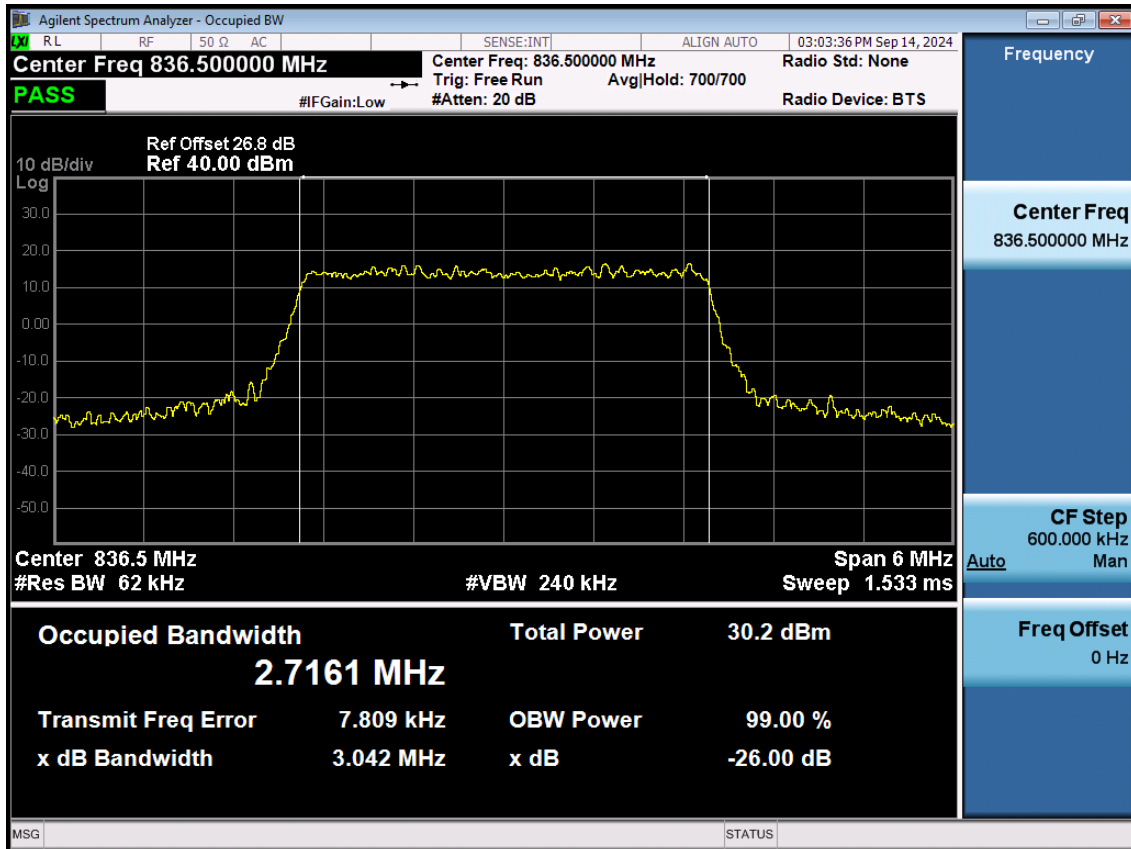
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 QPSK_RB15_0)



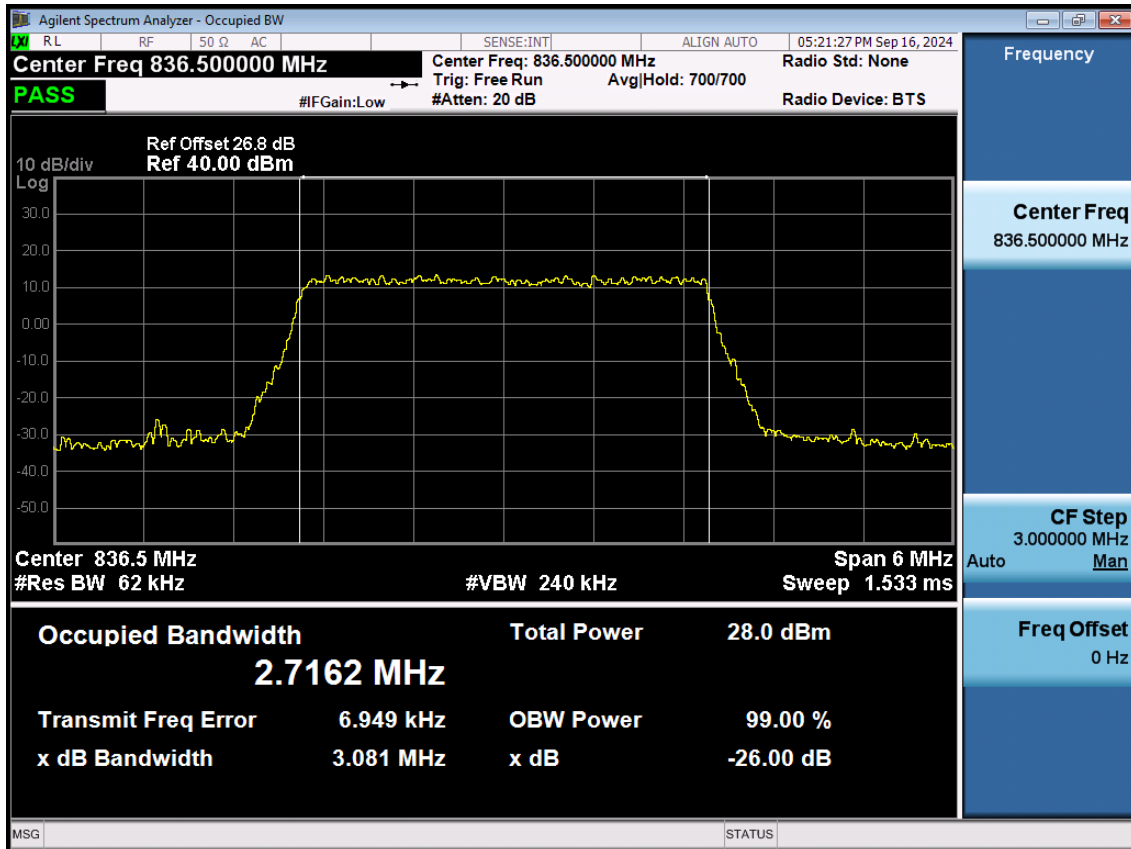
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 16QAM_RB15_0)



BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 64QAM_RB15_0)



BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 256QAM_RB15_0)



Agilent Spectrum Analyzer - Occupied BW

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 03:09:21 PM Sep 14, 2024

Center Freq 836.500000 MHz **Center Freq: 836.500000 MHz** **Radio Std: None**

PASS #IFGain:Low Trig: Free Run Avg|Hold: 700/700 Radio Device: BTS

Ref Offset 26.8 dB
Ref 40.00 dBm

10 dB/div
Log

Center 836.5 MHz **Span 10 MHz**
#Res BW 100 kHz **#VBW 390 kHz** **Sweep 1 ms**

Occupied Bandwidth **Total Power** **32.0 dBm**
4.5184 MHz

Transmit Freq Error **11.404 kHz** **OBW Power** **99.00 %**
x dB Bandwidth **5.170 MHz** **x dB** **-26.00 dB**

Frequency

Center Freq
836.500000 MHz

CF Step
1.000000 MHz
Man

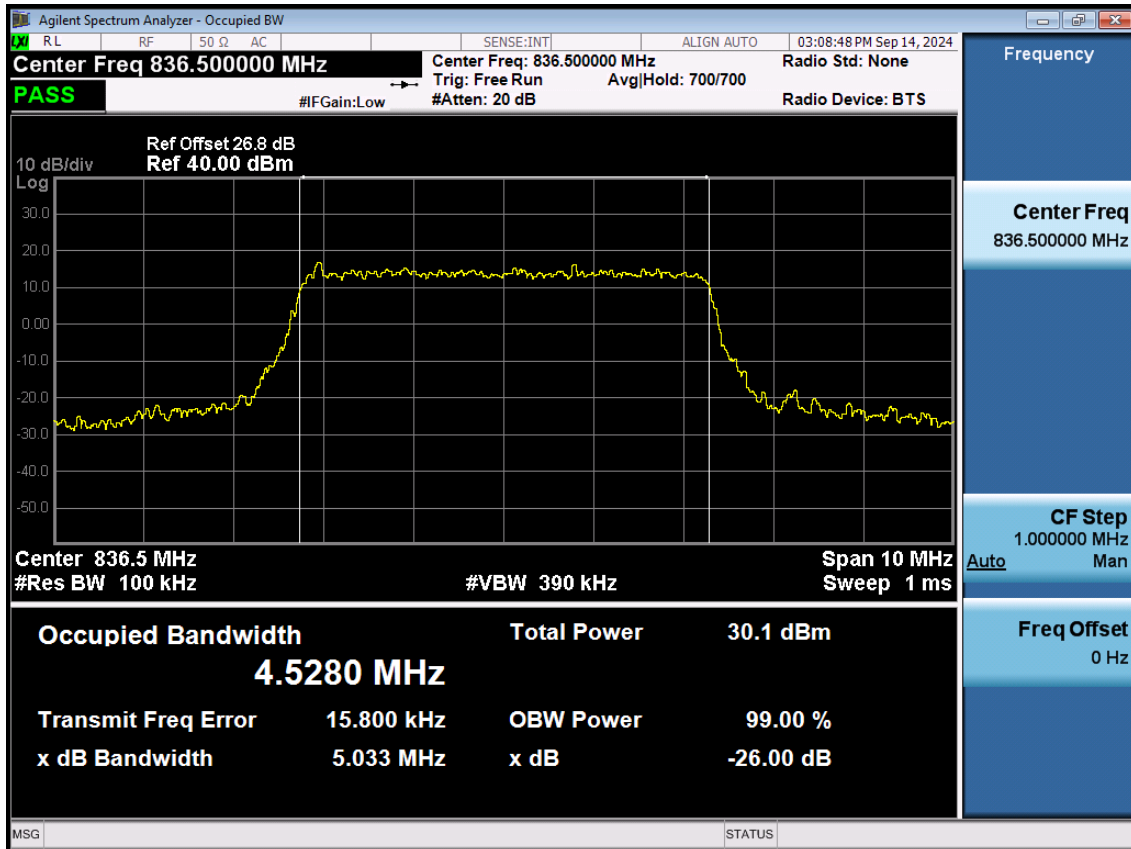
Freq Offset
0 Hz

MSG STATUS

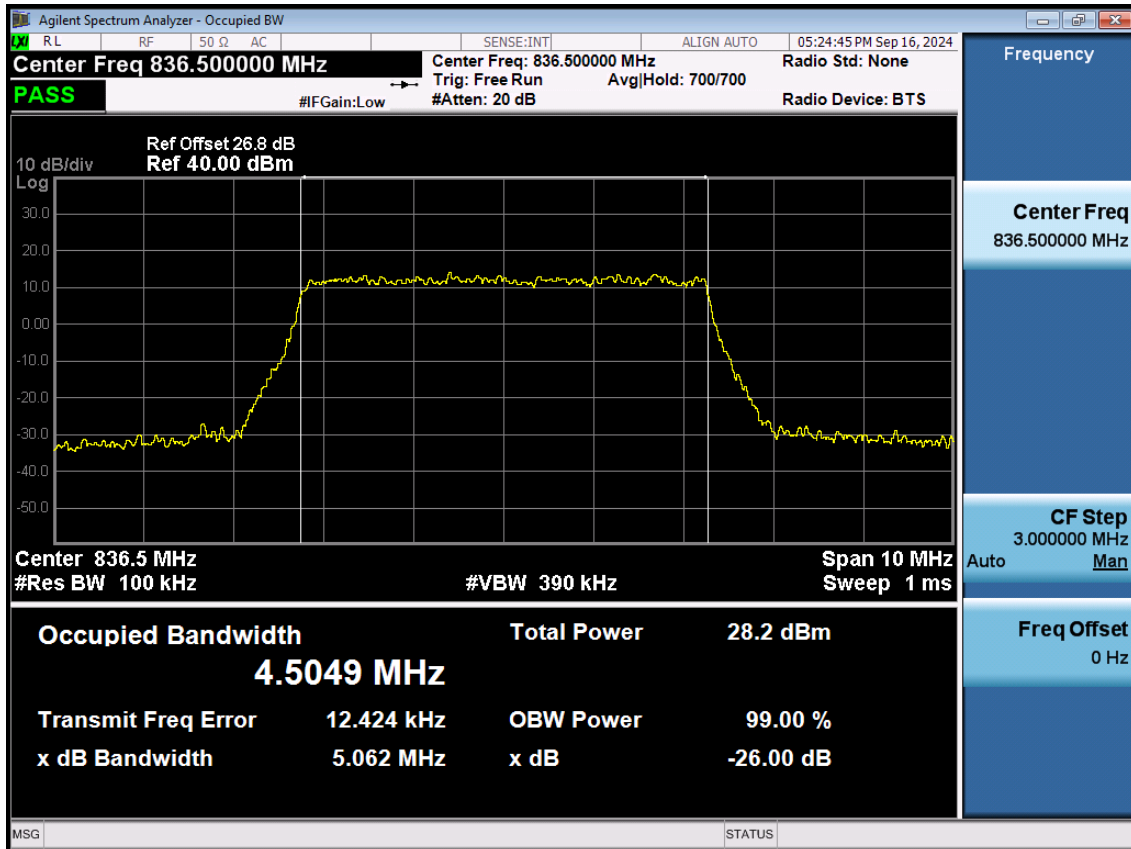
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 16QAM_RB25_0)



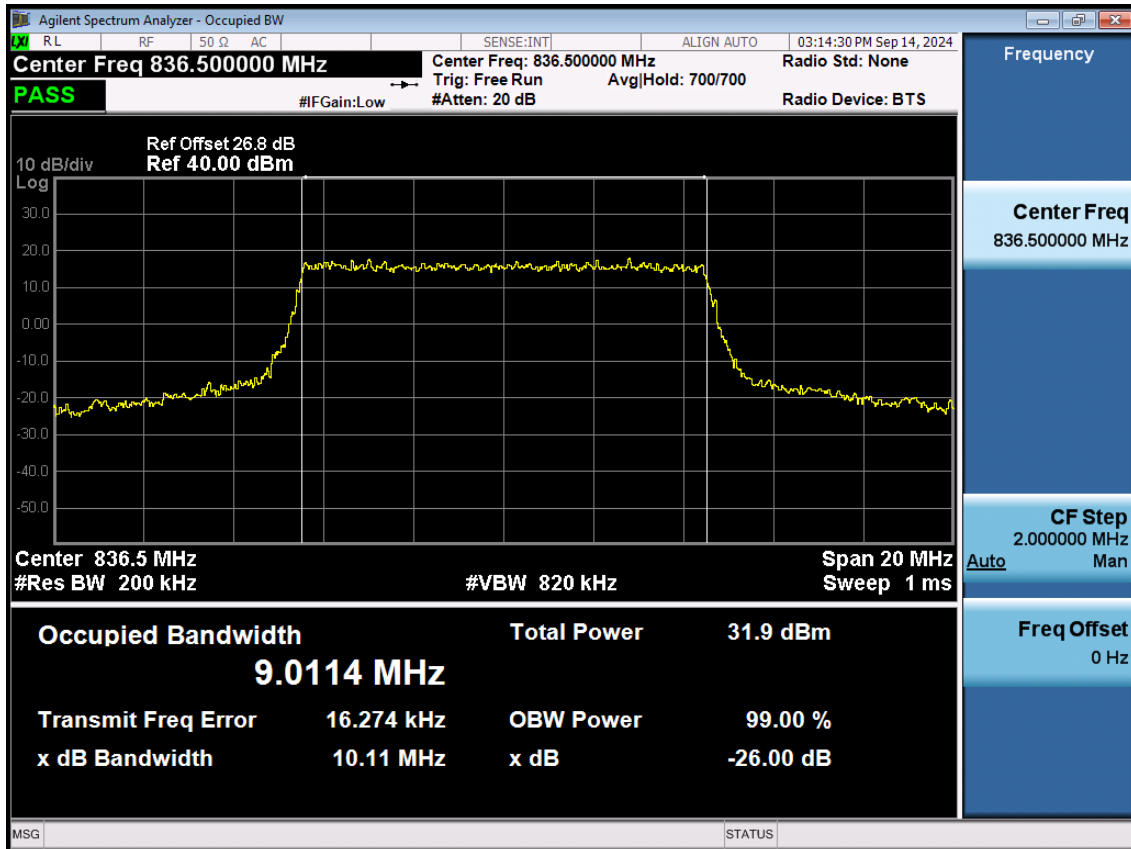
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 64QAM_RB25_0)



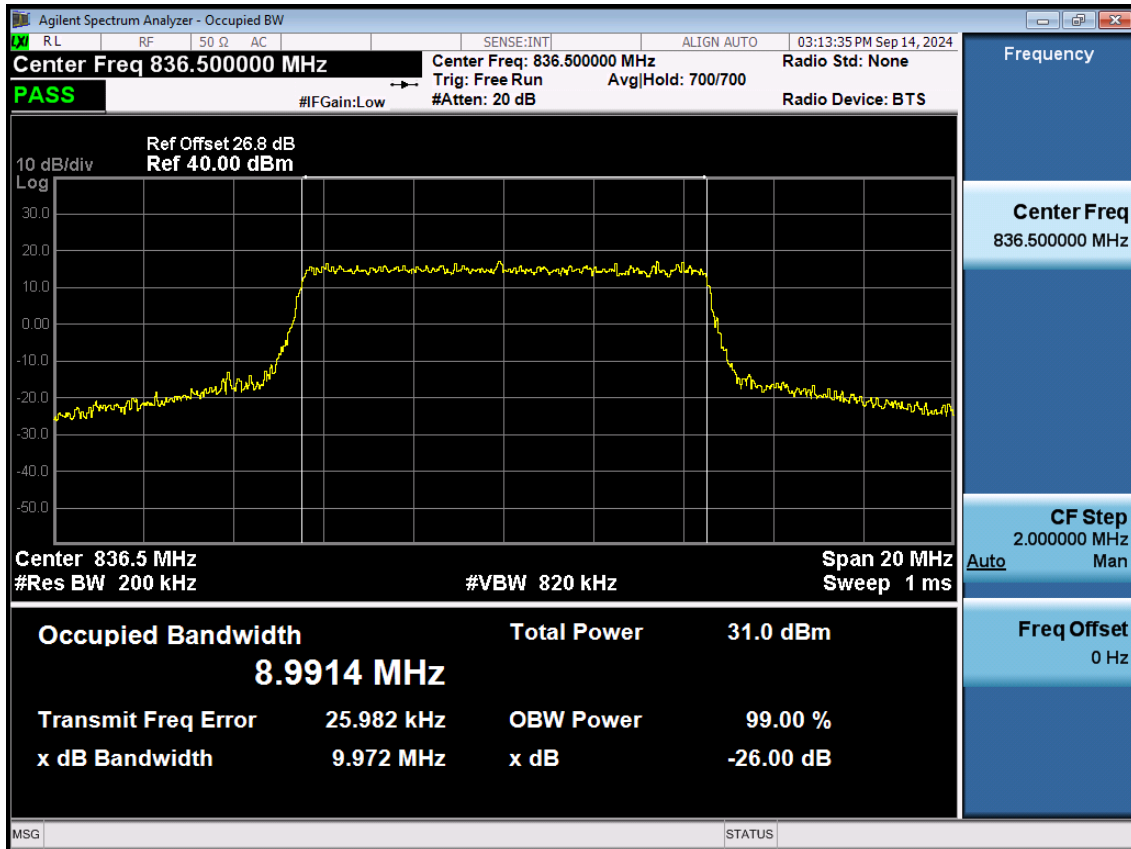
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 256QAM_RB25_0)



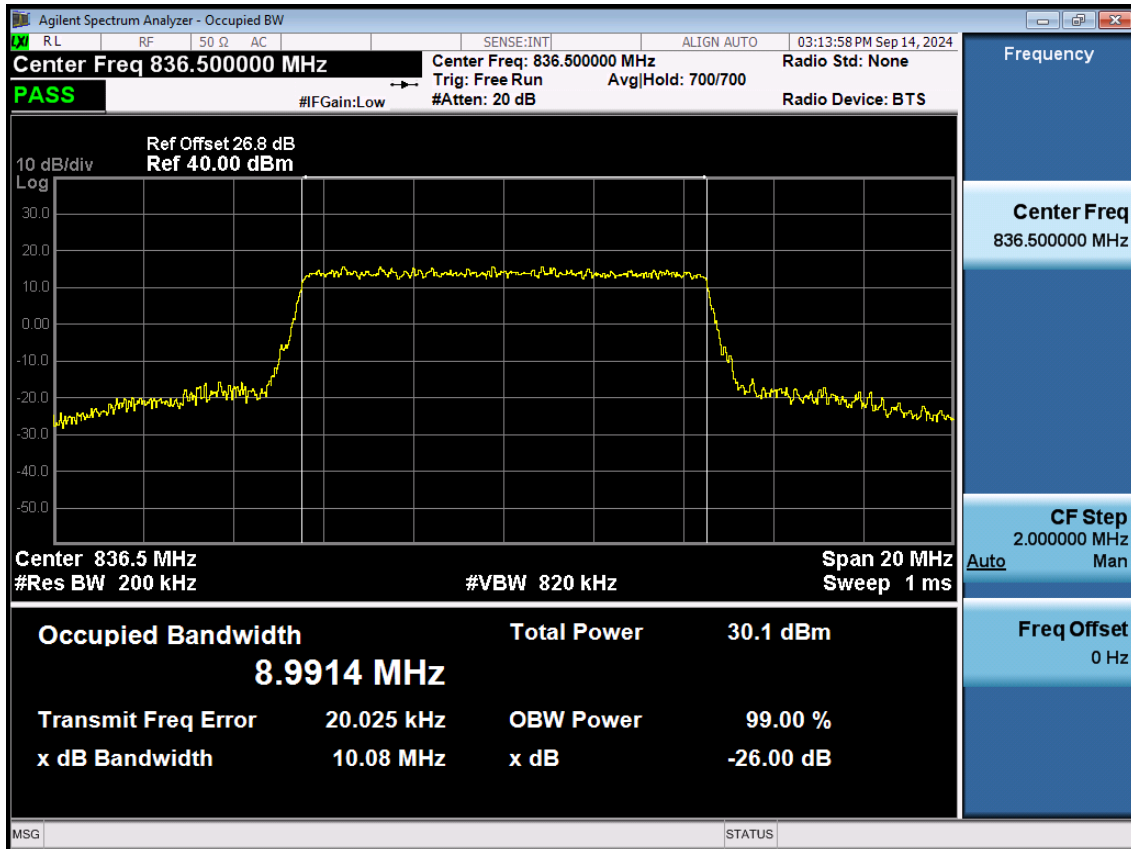
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 QPSK_RB50_0)



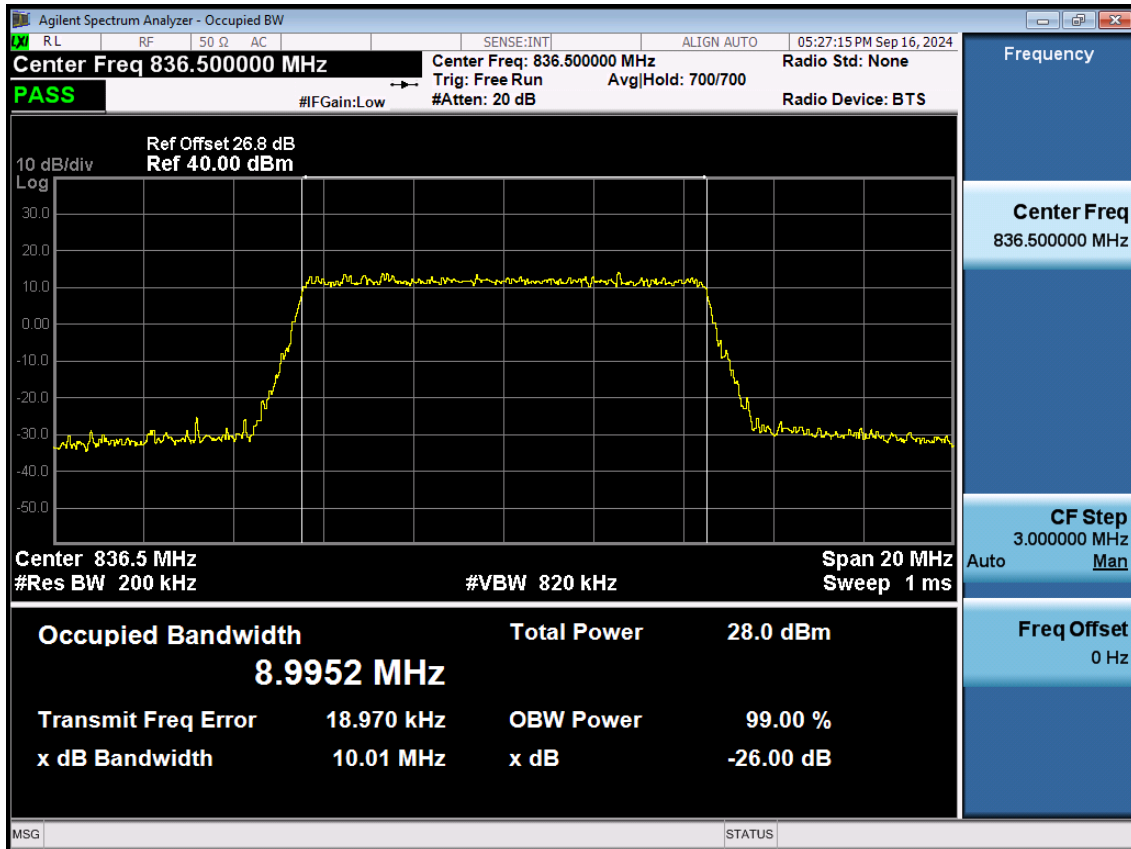
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 16QAM_RB50_0)



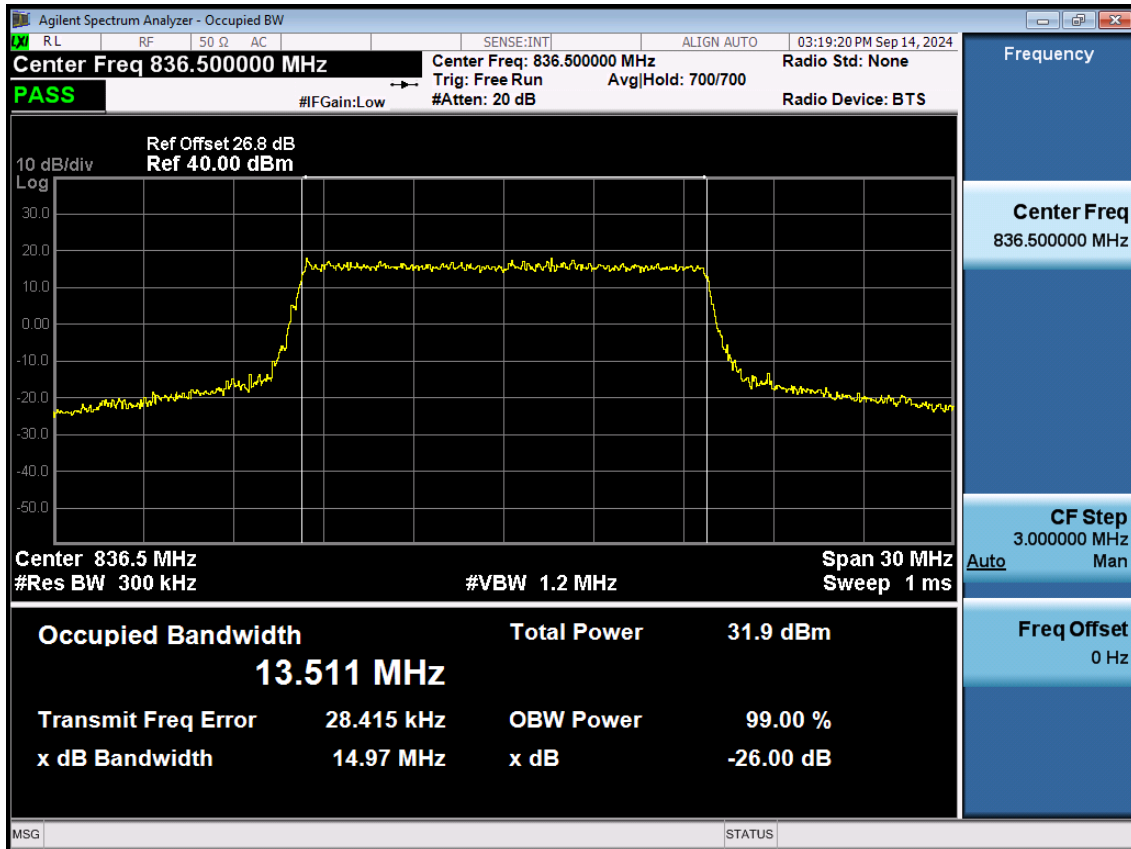
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 64QAM_RB50_0)



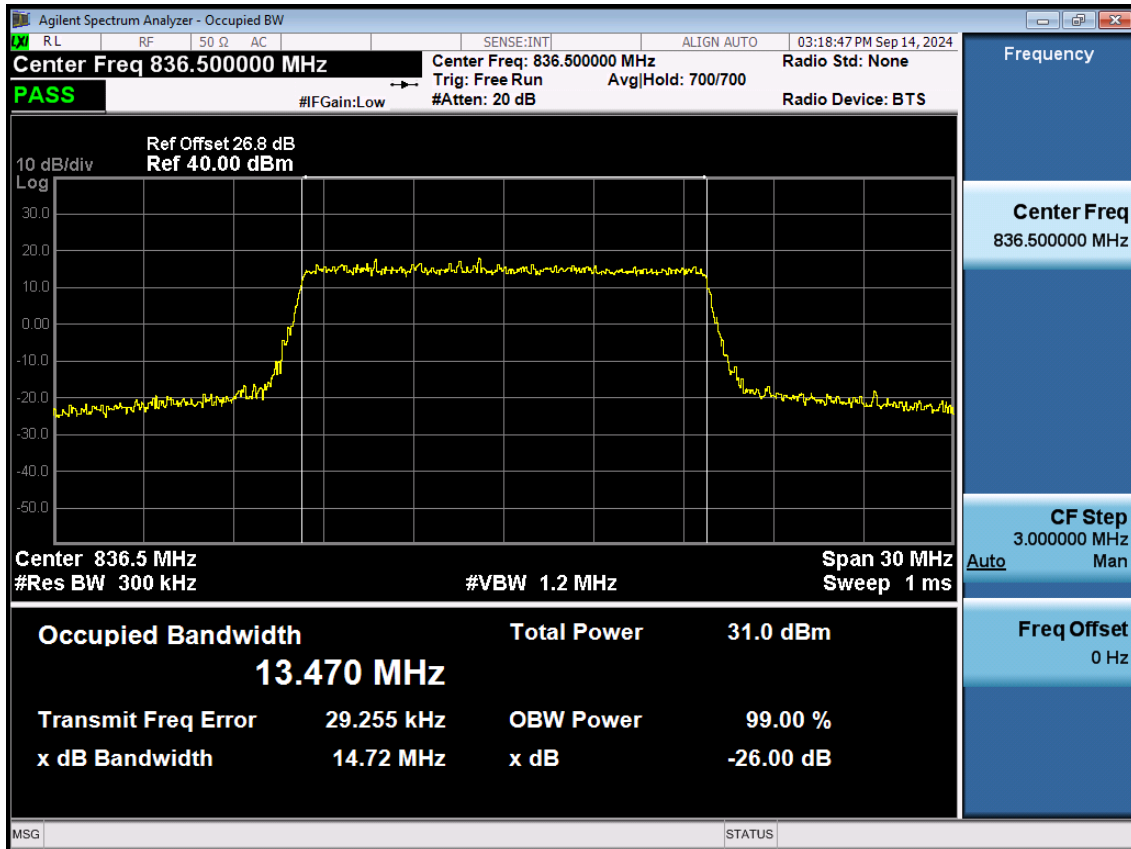
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 256QAM_RB50_0)



BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 QPSK RB 75_0)



BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 16QAM RB 75_0)



BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 64QAM RB 75_0)

