

# FCC LTE REPORT

## Certification

**Applicant Name:**

SAMSUNG Electronics Co., Ltd.

**Date of Issue:**

November 05, 2021

**Address:**

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

**Location:**

 HCT CO., LTD.,  
 74, Seoicheon-ro 578beon-gil, Majang-myeon,  
 Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

**Report No.:** HCT-RF-2110-FC049-R1

**FCC ID:** A3LSMS901B

**APPLICANT:** SAMSUNG Electronics Co., Ltd.

Model(s): SM-S901B/DS  
 EUT Type: Mobile Phone  
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)  
 FCC Rule Part(s): §22, §2

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band5/26 (1.4)	824.7 – 848.3	1M10G7D	QPSK	0.108	20.32
		1M10W7D	16QAM	0.072	18.60
		1M10W7D	64QAM	0.055	17.42
		1M10W7D	256QAM	0.044	16.41
LTE – Band5/26 (3)	825.5 – 847.5	2M72G7D	QPSK	0.107	20.31
		2M71W7D	16QAM	0.072	18.55
		2M72W7D	64QAM	0.056	17.50
		2M72W7D	256QAM	0.044	16.40
LTE – Band5/26 (5)	826.5 – 846.5	4M53G7D	QPSK	0.107	20.31
		4M53W7D	16QAM	0.073	18.64
		4M51W7D	64QAM	0.057	17.54
		4M51W7D	256QAM	0.044	16.42
LTE – Band5/26 (10)	829.0 – 844.0	9M04G7D	QPSK	0.113	20.54
		9M06W7D	16QAM	0.075	18.75
		9M05W7D	64QAM	0.059	17.67
		9M00W7D	256QAM	0.046	16.65
LTE – Band26 (15)	831.5 – 841.5	13M5G7D	QPSK	0.109	20.38
		13M5W7D	16QAM	0.072	18.57
		13M5W7D	64QAM	0.056	17.52
		13M5W7D	256QAM	0.045	16.49

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)

Report No.: HCT-RF-2110-FC049-R1

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REVIEWED BY



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Report prepared by : Jae Mun Do  
Engineer of Telecommunication Testing Center

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Report approved by : Jong Seok Lee  
Manager of Telecommunication Testing Center

This test results were applied only to the test methods required by the standard.

This laboratory is not accredited for the test results marked \*.

The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

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## Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2110-FC049	October 28, 2021	- First Approval Report
HCT-RF-2110-FC049-R1	November 05, 2021	- Revised the 6 page.

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

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# MEASUREMENT REPORT

## 1. GENERAL INFORMATION

<b>Applicant Name:</b>	SAMSUNG Electronics Co., Ltd.
<b>Address:</b>	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
<b>FCC ID:</b>	A3LSMS901B
<b>Application Type:</b>	Certification
<b>FCC Classification:</b>	PCS Licensed Transmitter Held to Ear (PCE)
<b>FCC Rule Part(s):</b>	§22, §2
<b>EUT Type:</b>	Mobile Phone
<b>Model(s):</b>	SM-S901B/DS
<b>Tx Frequency:</b>	824.7 MHz – 848.3 MHz (LTE – Band5 / 26 (1.4 MHz)) 825.5 MHz – 847.5 MHz (LTE – Band5 / 26 (3 MHz)) 826.5 MHz – 846.5 MHz (LTE – Band5 / 26 (5 MHz)) 829.0 MHz – 844.0 MHz (LTE – Band5 / 26 (10 MHz)) 831.5 MHz – 841.5 MHz (LTE – Band 26 (15 MHz))
<b>Date(s) of Tests:</b>	September 18, 2021 ~ October 25, 2021
<b>Serial number:</b>	Radiated: R3CR809BXFP Conducted: R3CR809C6BE

## **2. INTRODUCTION**

### **2.1. DESCRIPTION OF EUT**

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub6.

It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80), Bluetooth, BT LE, NFC, WPT.

### **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, 17383, Rep. 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)
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 10<sup>th</sup> 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;

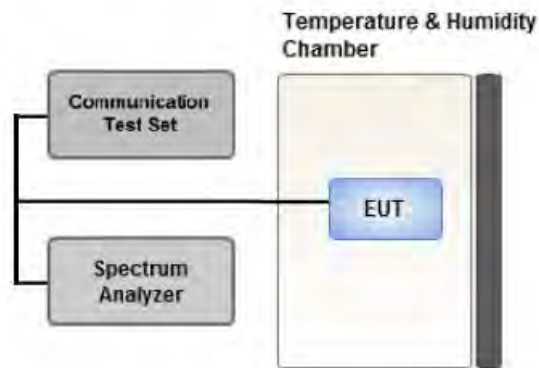
$$\text{Result}_{(dBm)} = P_g_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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.

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

### 3.4 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.

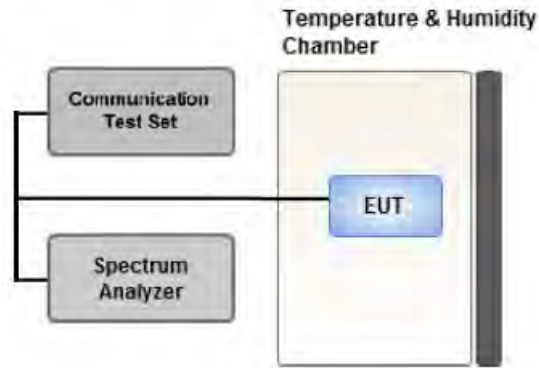
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

### 3.5 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



**Test setup**

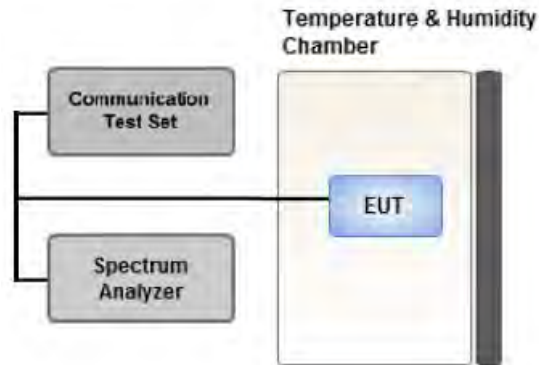
#### **Test Overview**

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 x Span / RBW

### 3.6 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  $\geq 2 \times \text{Span}/\text{RBW}$
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

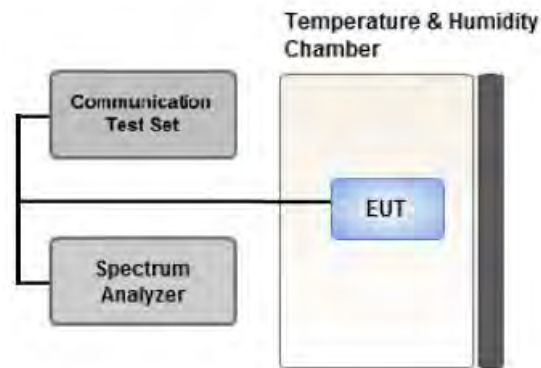
#### **Test Notes**

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.

### 3.7 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.

**3.8 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. (In the case of radiated spurious emissions, only the B.W result that confirmed the maximum radiated power was reported.)
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data.
- LTE Band 26(1.4 M/3 M/5 M/10 M) overlaps the entire frequency range of LTE Band 5(1.4 M/3 M/5 M/10 M) and they have the same Tune-up power.

Therefore, test data provided in this report covers Band 5 as well as Band 26.

[ Worst case ]

Test Description	Modulation	RB size	RB offset	Axis
Effective Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	1	0	Y
Radiated Spurious and Harmonic Emissions	QPSK	1	0	X

### 3.9 WORST CASE(CONDUCTED TEST)

- LTE Band 26(1.4 M/3 M/5 M/10 M) overlaps the entire frequency range of LTE Band 5(1.4 M/3 M/5 M/10 M) and they have the same Tune-up power.

Therefore, test data provided in this report covers Band 5 as well as Band 26.

- All modes of operation were investigated and the worst case configuration results are reported.

[ Worst case ]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
<b>Occupied Bandwidth</b>	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15	Mid	Full RB	0
<b>Band Edge</b>	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
1.4, 3, 5, 10, 15	Low, High	Full RB	0		
	<b>Spurious and Harmonic Emissions at Antenna Terminal</b>	QPSK	1.4, 3, 5, 10, 15	Low, Mid, High	1

#### 4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
H.P.F	FBSR-02B(WHK1.2/15 G-10EF)	T&M SYSTEM	-	03/02/2022	Annual
H.P.F	FBSR-02B(WHK3.3/18 G-10EF)	T&M SYSTEM	-	03/02/2022	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	11275	04/07/2022	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/28/2022	Annual
Dipole Antenna	UHAP	Schwarzbeck	557	04/05/2023	Biennial
Dipole Antenna	UHAP	Schwarzbeck	558	04/05/2023	Biennial
Chamber	SU-642	ESPEC	93008124	03/15/2022	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/30/2022	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/15/2023	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	10/13/2022	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	02/11/2022	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY50200093	11/17/2021	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	06/01/2022	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	09/29/2022	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2022	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/19/2022	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/03/2023	Biennial
Hybrid Antenna	VULB9168	Schwarzbeck	760	02/22/2023	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262116770	07/12/2022	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	01/07/2022	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2022	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	06/02/2022	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  $U_{\text{CISPR}}$  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)	1.82 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70 (Confidence level about 95 %, $k=2$ )
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05 (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>
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

ERP = Substitute LEVEL(dBm) + Ant. Gain – 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

EIRP = Substitute LEVEL(dBm) + Ant. Gain – 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	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
									W	W
824.7	LTE B5/ 26 (1.4 MHz)	QPSK	-31.09	31.96	-10.24	1.40	V	< 7.00	0.108	20.32
		16-QAM	-32.81	30.24	-10.24	1.40	V		0.072	18.60
		64-QAM	-33.99	29.06	-10.24	1.40	V		0.055	17.42
		256-QAM	-35.00	28.05	-10.24	1.40	V		0.044	16.41
836.5		QPSK	-31.61	31.43	-10.19	1.41	V		0.096	19.83
		16-QAM	-33.35	29.69	-10.19	1.41	V		0.064	18.09
		64-QAM	-34.55	28.49	-10.19	1.41	V		0.049	16.89
		256-QAM	-35.50	27.54	-10.19	1.41	V		0.039	15.94
848.3		QPSK	-32.48	30.68	-10.14	1.42	V		0.082	19.12
		16-QAM	-34.30	28.86	-10.14	1.42	V		0.054	17.30
		64-QAM	-35.30	27.86	-10.14	1.42	V		0.043	16.30
		256-QAM	-36.32	26.84	-10.14	1.42	V		0.034	15.28

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit	ERP	
									W	W
825.5	LTE B5/ 26 (3 MHz)	QPSK	-31.07	31.95	-10.24	1.40	V	< 7.00	0.107	20.31
		16-QAM	-32.83	30.19	-10.24	1.40	V		0.072	18.55
		64-QAM	-33.88	29.14	-10.24	1.40	V		0.056	17.50
		256-QAM	-34.98	28.04	-10.24	1.40	V		0.044	16.40
836.5		QPSK	-31.59	31.45	-10.19	1.41	V		0.097	19.85
		16-QAM	-33.39	29.65	-10.19	1.41	V		0.064	18.05
		64-QAM	-34.52	28.52	-10.19	1.41	V		0.049	16.92
		256-QAM	-35.48	27.56	-10.19	1.41	V		0.039	15.96
847.5		QPSK	-32.28	30.91	-10.15	1.42	V		0.086	19.35
		16-QAM	-34.05	29.14	-10.15	1.42	V		0.057	17.58
		64-QAM	-35.12	28.07	-10.15	1.42	V		0.045	16.51
		256-QAM	-36.13	27.06	-10.15	1.42	V		0.035	15.50

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit W	ERP	
									W	dBm
826.5	LTE B5/ 26 (5 MHz)	QPSK	-31.06	31.94	-10.24	1.40	V	< 7.00	0.107	20.31
		16-QAM	-32.73	30.27	-10.24	1.40	V		0.073	18.64
		64-QAM	-33.83	29.17	-10.24	1.40	V		0.057	17.54
		256-QAM	-34.95	28.05	-10.24	1.40	V		0.044	16.42
836.5		QPSK	-31.52	31.52	-10.19	1.41	V		0.098	19.92
		16-QAM	-33.27	29.77	-10.19	1.41	V		0.066	18.17
		64-QAM	-34.35	28.69	-10.19	1.41	V		0.051	17.09
		256-QAM	-35.40	27.64	-10.19	1.41	V		0.040	16.04
846.5		QPSK	-31.93	31.25	-10.15	1.42	V		0.093	19.68
		16-QAM	-33.60	29.58	-10.15	1.42	V		0.063	18.01
		64-QAM	-34.70	28.48	-10.15	1.42	V		0.049	16.91
		256-QAM	-35.76	27.42	-10.15	1.42	V		0.038	15.85

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit W	ERP	
									W	dBm
829.0	LTE B5/ 26 (10 MHz)	QPSK	-30.96	32.16	-10.22	1.40	V	< 7.00	0.113	20.54
		16-QAM	-32.75	30.37	-10.22	1.40	V		0.075	18.75
		64-QAM	-33.83	29.29	-10.22	1.40	V		0.059	17.67
		256-QAM	-34.85	28.27	-10.22	1.40	V		0.046	16.65
836.5		QPSK	-31.22	31.82	-10.19	1.41	V		0.105	20.22
		16-QAM	-33.07	29.97	-10.19	1.41	V		0.069	18.37
		64-QAM	-34.12	28.92	-10.19	1.41	V		0.054	17.32
		256-QAM	-35.13	27.91	-10.19	1.41	V		0.043	16.31
844.0		QPSK	-31.65	31.41	-10.14	1.41	V		0.097	19.86
		16-QAM	-33.46	29.60	-10.14	1.41	V		0.064	18.05
		64-QAM	-34.51	28.55	-10.14	1.41	V		0.050	17.00
		256-QAM	-35.53	27.53	-10.14	1.41	V		0.040	15.98

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBd)	C.L	Pol	Limit		ERP	
								W	W	dBm	dBm
831.5	LTE B26 (15 MHz)	QPSK	-30.96	31.99	-10.21	1.40	V	< 7.00	0.109	20.38	
		16-QAM	-32.77	30.18	-10.21	1.40	V		0.072	18.57	
		64-QAM	-33.82	29.13	-10.21	1.40	V		0.056	17.52	
		256-QAM	-34.85	28.10	-10.21	1.40	V		0.045	16.49	
836.5		QPSK	-31.17	31.87	-10.19	1.41	V		0.107	20.27	
		16-QAM	-32.92	30.12	-10.19	1.41	V		0.071	18.52	
		64-QAM	-34.06	28.98	-10.19	1.41	V		0.055	17.38	
		256-QAM	-35.08	27.96	-10.19	1.41	V		0.043	16.36	
841.5		QPSK	-31.39	31.73	-10.17	1.41	V		0.103	20.15	
		16-QAM	-33.18	29.94	-10.17	1.41	V		0.069	18.36	
		64-QAM	-34.24	28.88	-10.17	1.41	V		0.054	17.30	
		256-QAM	-35.23	27.89	-10.17	1.41	V		0.043	16.31	

**8.2 RADIATED SPURIOUS EMISSIONS**

- ▣ MODE: LTE B5/ 26
- ▣ MODULATION SIGNAL: 10 MHz QPSK
- ▣ DISTANCE: 3 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBd)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit
26840 (829.0)	1 658.00	-53.13	9.76	-63.65	2.01	H	-55.90	-13.00
	2 487.00	-54.59	10.62	-59.09	2.49	V	-50.96	-13.00
	3 316.00	-57.65	12.19	-59.02	2.91	V	-49.73	-13.00
26915 (836.5)	1,673.00	-51.44	9.82	-61.95	2.01	H	-54.14	-13.00
	2,509.50	-55.26	10.70	-59.56	2.50	V	-51.36	-13.00
	3,346.00	-57.86	12.37	-59.52	2.92	H	-50.07	-13.00
26990 (844.0)	1 688.00	-52.94	9.94	-63.35	2.03	V	-55.44	-13.00
	2 532.00	-55.50	10.70	-59.25	2.50	V	-51.05	-13.00
	3 376.00	-58.60	12.50	-60.26	2.93	H	-50.68	-13.00



**8.3 OCCUPIED BANDWIDTH**

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data ( MHz )
5/ 26	1.4 MHz	836.5	QPSK	6	0	1.0995
			16-QAM			1.0980
			64-QAM			1.0996
			256-QAM			1.0967
	3 MHz		QPSK	15		2.7175
			16-QAM			2.7127
			64-QAM			2.7231
			256-QAM			2.7185
	5 MHz		QPSK	25		4.5246
			16-QAM			4.5253
			64-QAM			4.5133
			256-QAM			4.5112
	10 MHz		QPSK	50		9.0379
			16-QAM			9.0578
			64-QAM			9.0537
			256-QAM			8.9978
26	15 MHz	QPSK	75	13.508		
		16-QAM		13.489		
		64-QAM		13.536		
		256-QAM		13.461		

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 33 ~ 52.

**8.4 CONDUCTED SPURIOUS EMISSIONS**

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
5/ 26	1.4	824.7	3.7005	27.976	-67.314	-39.338	-13.00
		836.5	3.6915	27.976	-67.144	-39.168	
		848.3	3.7204	27.976	-66.933	-38.957	
	3	825.5	3.6955	27.976	-67.423	-39.447	
		836.5	3.6780	27.976	-67.153	-39.177	
		847.5	3.6765	27.976	-67.329	-39.353	
	5	826.5	3.1347	27.976	-67.231	-39.255	
		836.5	3.6860	27.976	-67.177	-39.201	
		846.5	3.7039	27.976	-67.300	-39.324	
	10	829.0	3.7064	27.976	-67.428	-39.452	
		836.5	3.6980	27.976	-67.201	-39.225	
		844.0	3.6965	27.976	-67.100	-39.124	
26	15	831.5	3.6835	27.976	-67.631	-39.655	
		836.5	3.6995	27.976	-67.349	-39.373	
		841.5	3.6955	27.976	-66.980	-39.004	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 83 ~ 97.
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 + 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

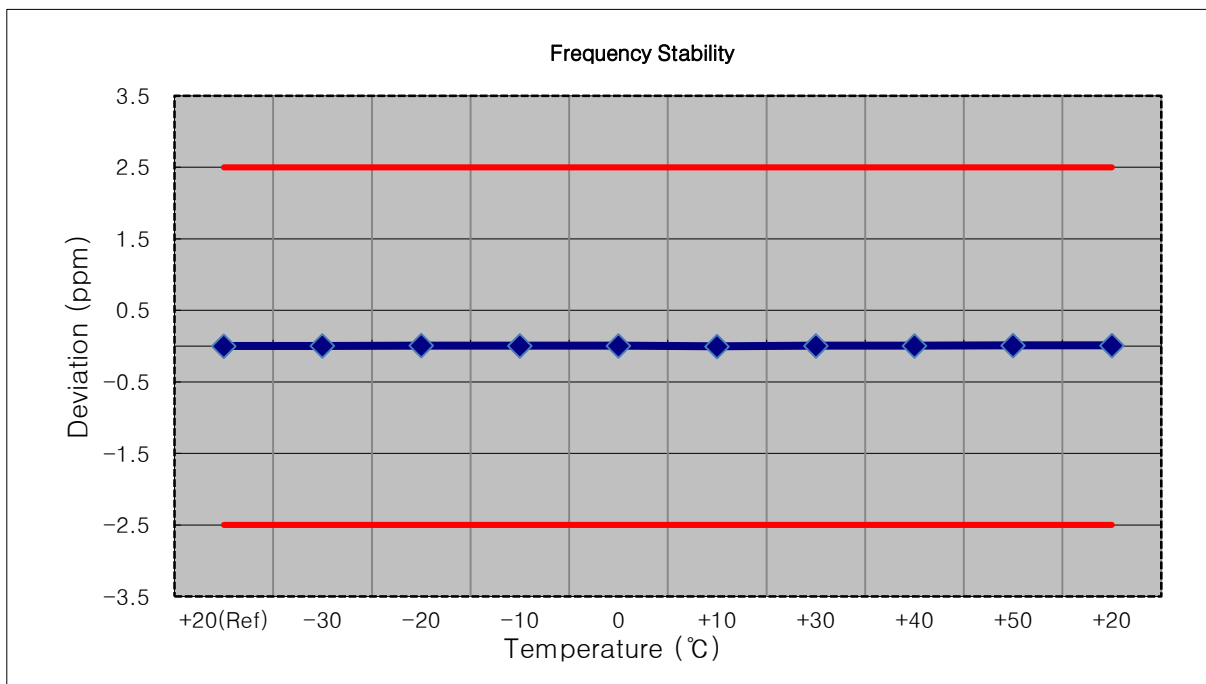
**8.5 BAND EDGE**

- Plots of the EUT's Band Edge are shown Page 53 ~ 82.

**8.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE**

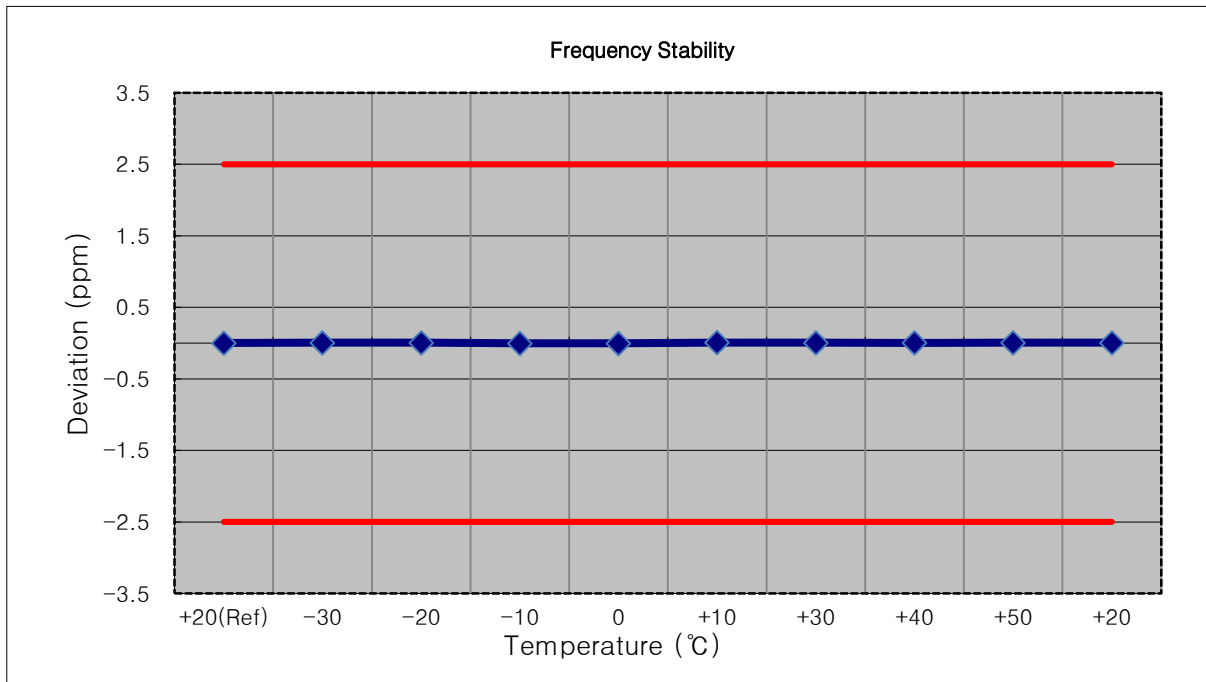
- ▣ MODE: LTE B5/ 26
- ▣ OPERATING FREQUENCY: 836,500,000 Hz
- ▣ CHANNEL: 26915 (1.4 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

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	836 500 008	2.6	0.000 000	0.003
100 %		-20	836 500 011	6.1	0.000 001	0.007
100 %		-10	836 500 009	3.4	0.000 000	0.004
100 %		0	836 500 009	3.9	0.000 000	0.005
100 %		+10	836 500 002	-2.9	0.000 000	-0.003
100 %		+30	836 500 009	3.4	0.000 000	0.004
100 %		+40	836 500 009	4.2	0.000 001	0.005
100 %		+50	836 500 012	7.1	0.000 001	0.008
Batt. Endpoint		3.350	+20	836 500 012	7.2	0.000 001



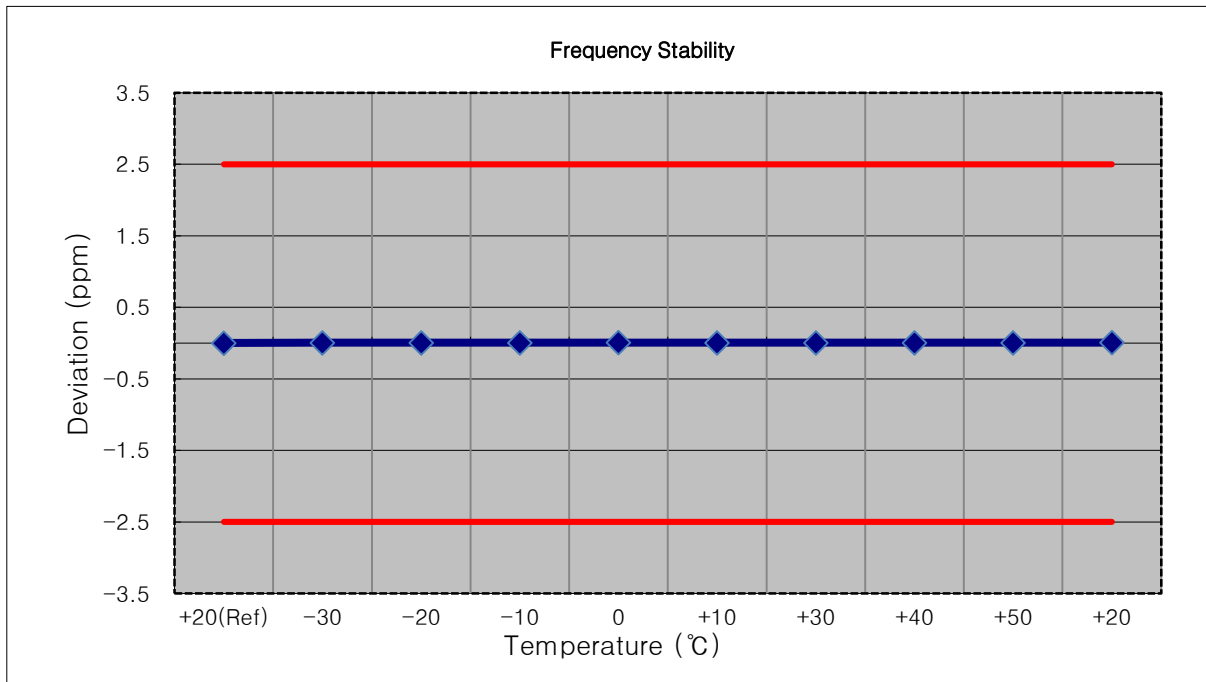
- ▣ MODE: LTE B5/ 26
- ▣ OPERATING FREQUENCY: 836,500,000 Hz
- ▣ CHANNEL: 26915 (3 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

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	4.3	0.000 001	0.005
100 %		-20	836 500 008	4.4	0.000 001	0.005
100 %		-10	836 500 000	-3.4	0.000 000	-0.004
100 %		0	836 500 000	-3.0	0.000 000	-0.004
100 %		+10	836 500 009	5.9	0.000 001	0.007
100 %		+30	836 500 008	4.3	0.000 001	0.005
100 %		+40	836 500 006	2.8	0.000 000	0.003
100 %		+50	836 500 008	4.7	0.000 001	0.006
Batt. Endpoint		3.350	+20	836 500 008	4.2	0.000 001



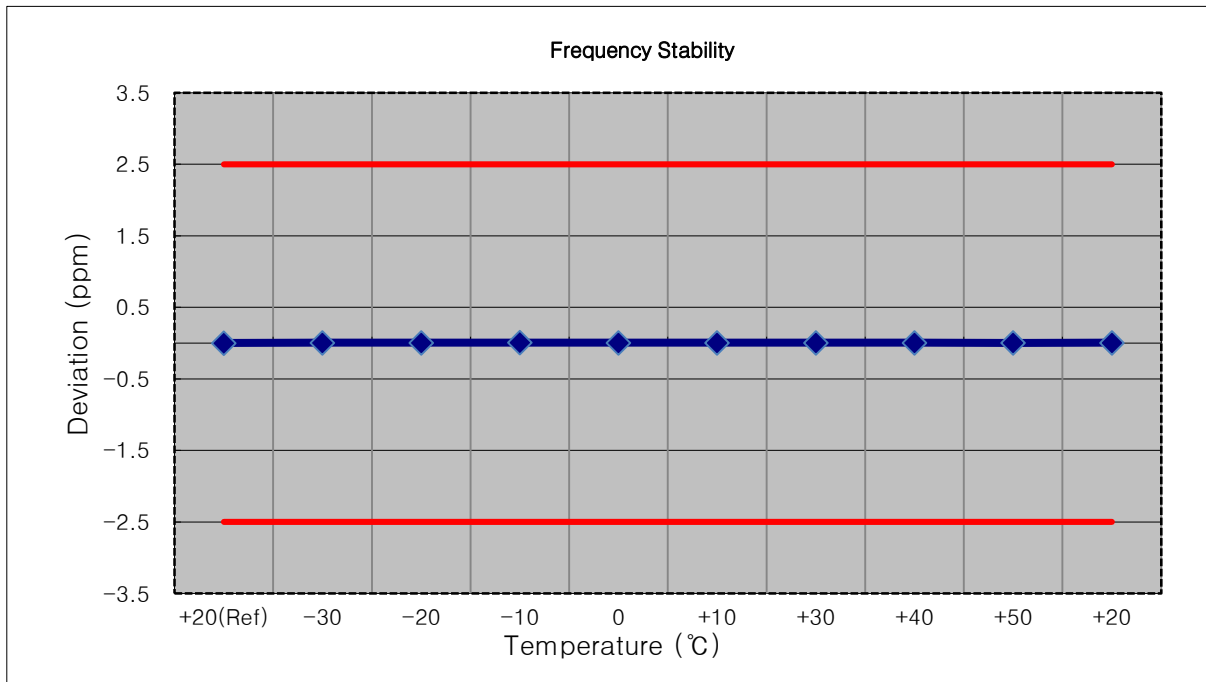
- ▣ MODE: LTE B5/ 26
- ▣ OPERATING FREQUENCY: 836,500,000 Hz
- ▣ CHANNEL: 26915 (5 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 005	0.0	0.000 000	0.000
100 %		-30	836 500 010	4.8	0.000 001	0.006
100 %		-20	836 500 009	3.5	0.000 000	0.004
100 %		-10	836 500 010	4.5	0.000 001	0.005
100 %		0	836 500 011	5.9	0.000 001	0.007
100 %		+10	836 500 009	4.0	0.000 000	0.005
100 %		+30	836 500 009	3.6	0.000 000	0.004
100 %		+40	836 500 009	3.9	0.000 000	0.005
100 %		+50	836 500 009	3.7	0.000 000	0.004
Batt. Endpoint	3.350	+20	836 500 010	5.2	0.000 001	0.006



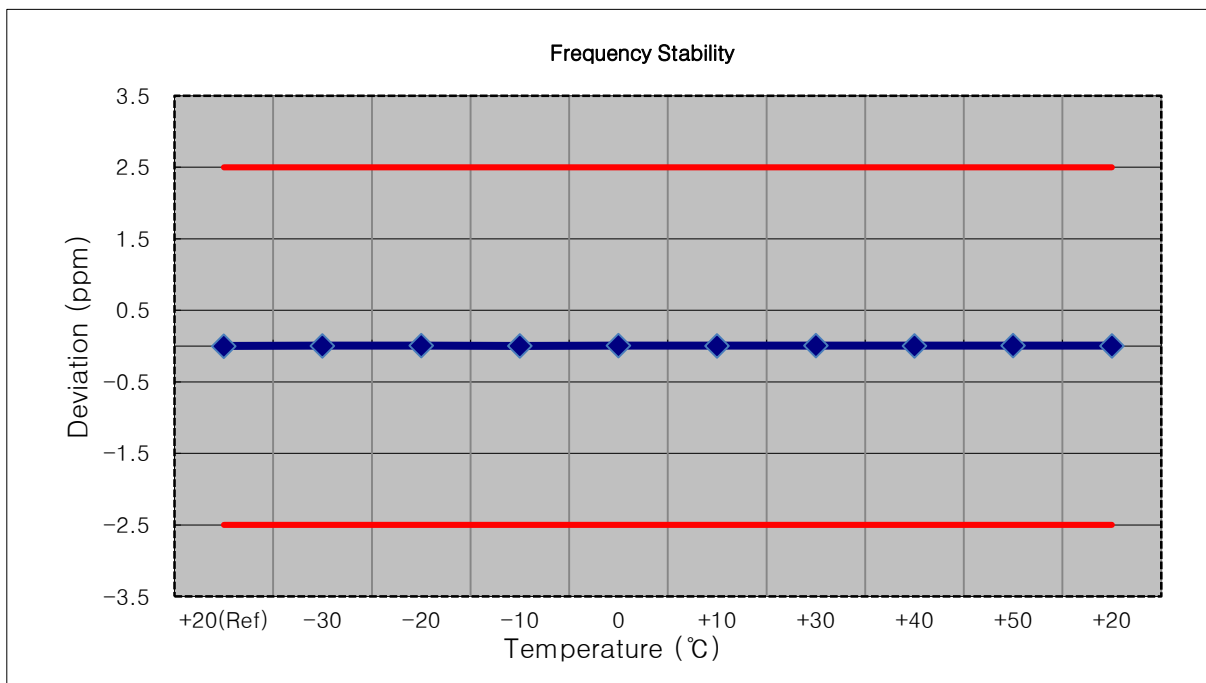
- ▣ MODE: LTE B5/ 26
- ▣ OPERATING FREQUENCY: 836,500,000 Hz
- ▣ CHANNEL: 26915 (10 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 004	0.0	0.000 000	0.000
100 %		-30	836 500 008	4.0	0.000 000	0.005
100 %		-20	836 500 007	3.5	0.000 000	0.004
100 %		-10	836 500 009	5.5	0.000 001	0.007
100 %		0	836 500 009	4.7	0.000 001	0.006
100 %		+10	836 500 008	4.5	0.000 001	0.005
100 %		+30	836 500 008	4.1	0.000 000	0.005
100 %		+40	836 500 008	4.1	0.000 000	0.005
100 %		+50	836 500 005	1.5	0.000 000	0.002
Batt. Endpoint		3.350	+20	836 500 008	4.0	0.000 000



- ▣ MODE: LTE B26
- ▣ OPERATING FREQUENCY: 836,500,000 Hz
- ▣ CHANNEL: 26915 (15 MHz)
- ▣ REFERENCE VOLTAGE: 3.880 VDC
- ▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

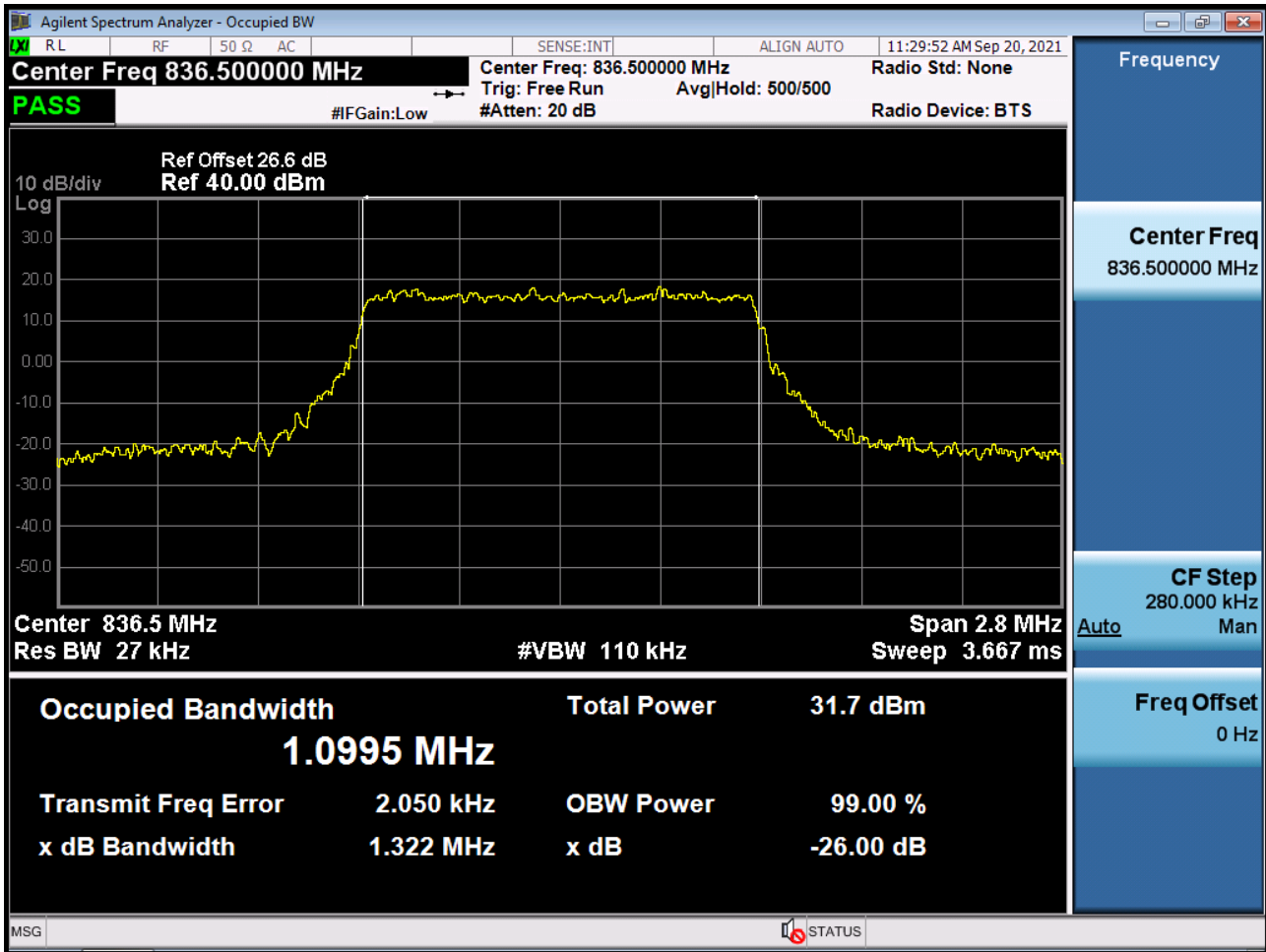
Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	836 500 007	0.0	0.000 000	0.000
100 %		-30	836 500 008	4.3	0.000 001	0.005
100 %		-20	836 500 010	6.5	0.000 001	0.008
100 %		-10	836 500 007	2.9	0.000 000	0.003
100 %		0	836 500 010	6.0	0.000 001	0.007
100 %		+10	836 500 008	3.7	0.000 000	0.004
100 %		+30	836 500 009	5.2	0.000 001	0.006
100 %		+40	836 500 008	4.0	0.000 000	0.005
100 %		+50	836 500 010	5.9	0.000 001	0.007
Batt. Endpoint		3.350	+20	836 500 007	3.4	0.000 000



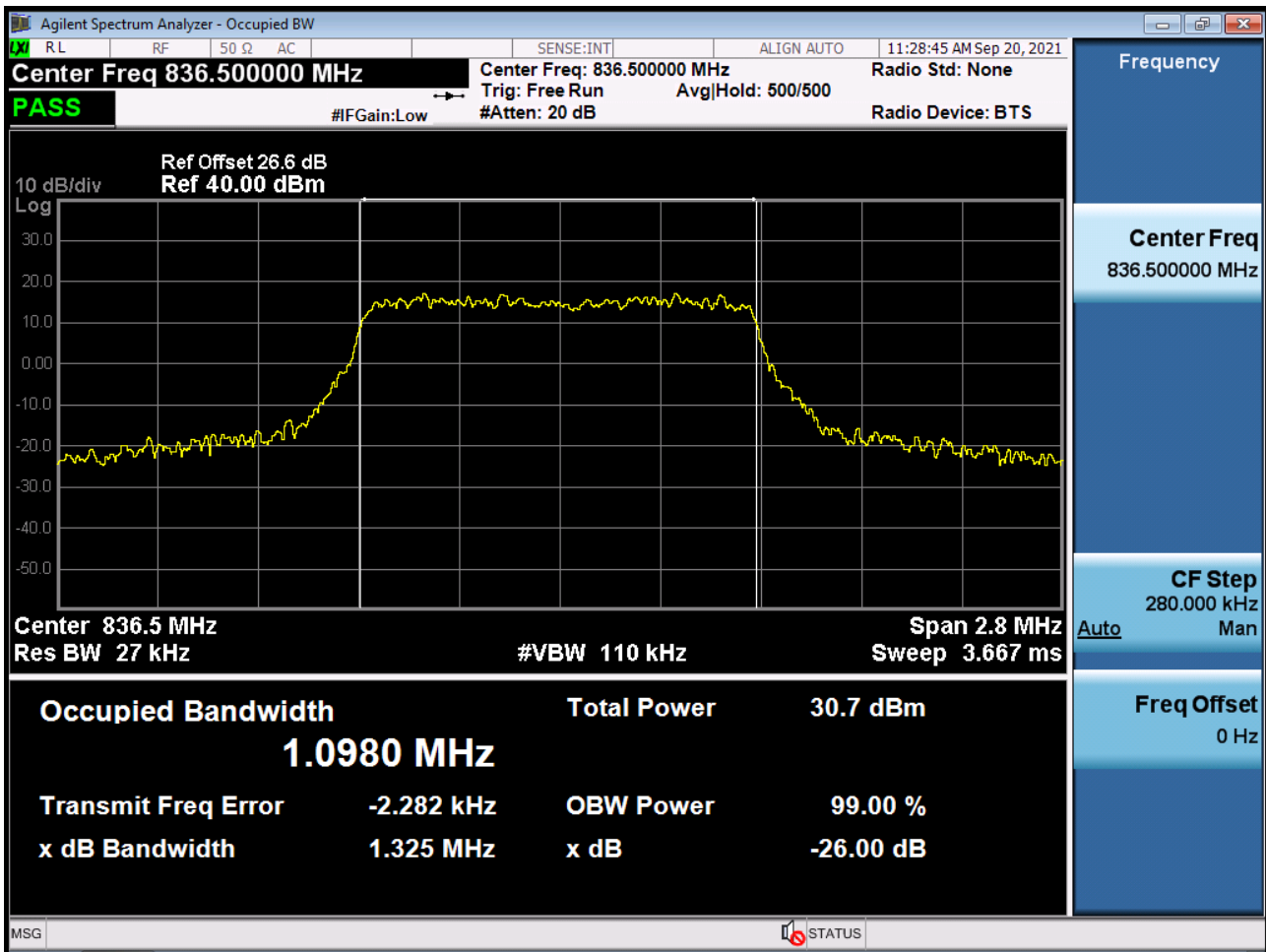
## 9. TEST PLOTS



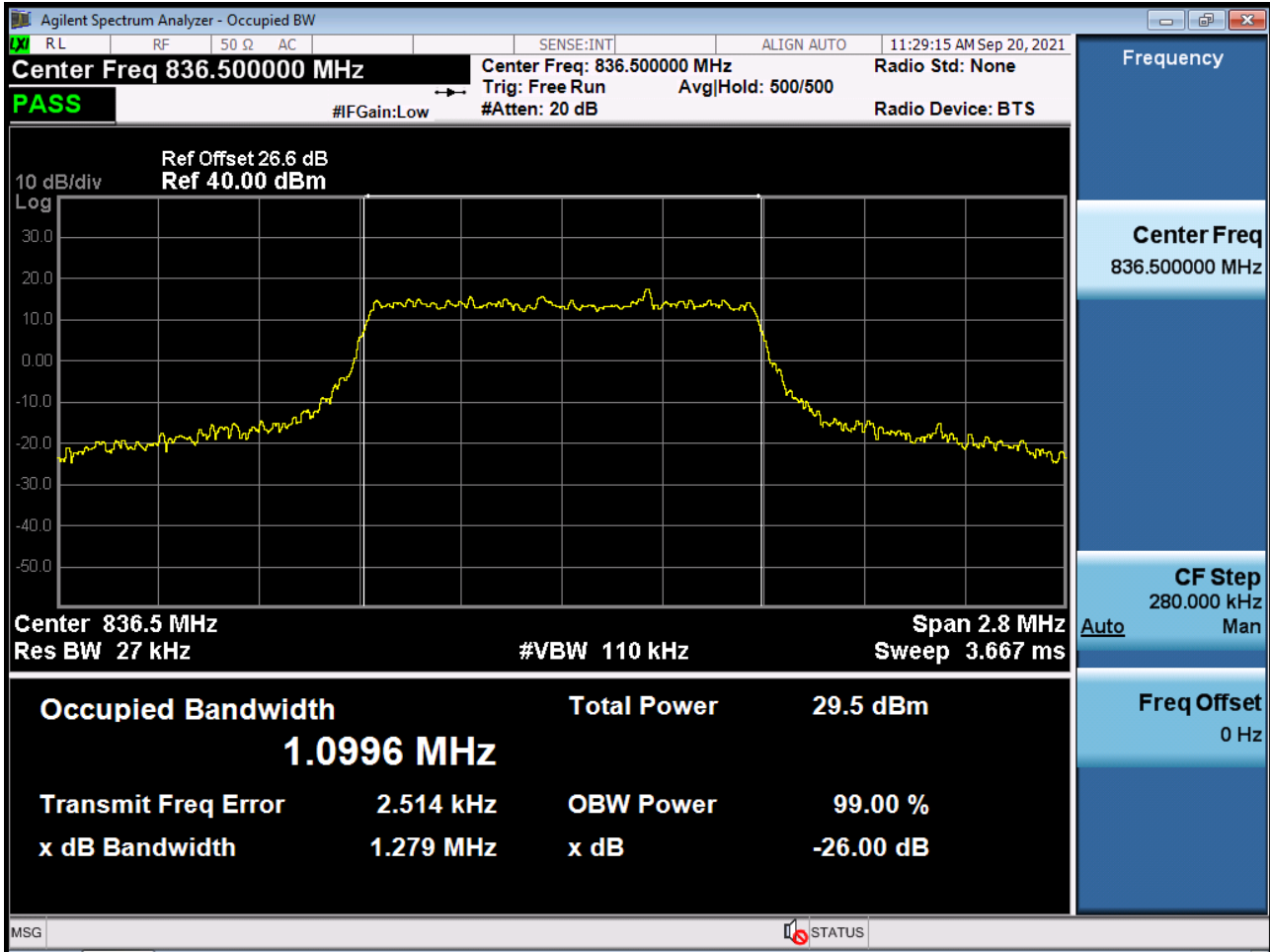
BAND5/ 26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 QPSK\_RB6\_0)



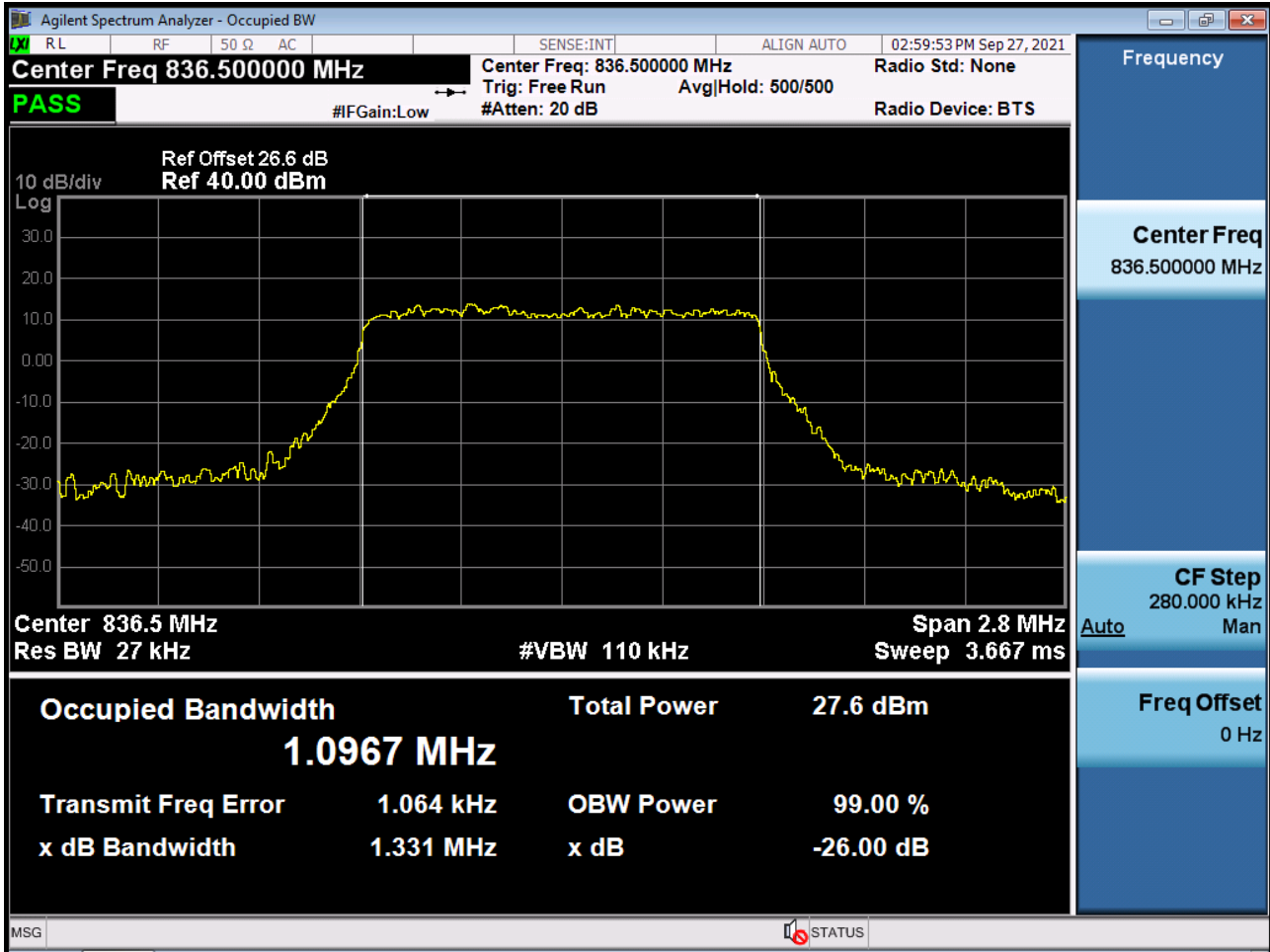
BAND5/ 26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 16QAM\_RB6\_0)



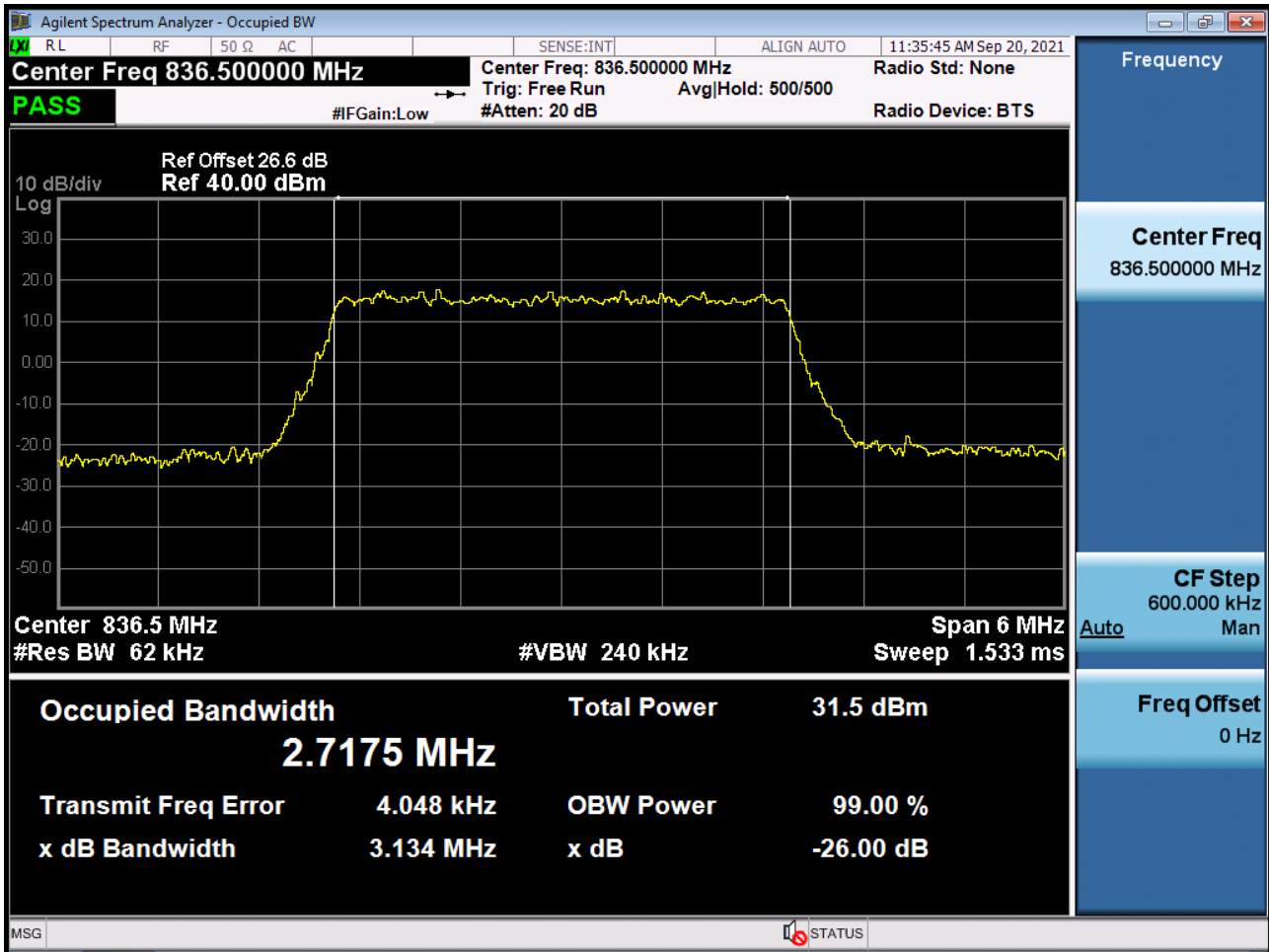
BAND5/ 26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 64QAM\_RB6\_0)



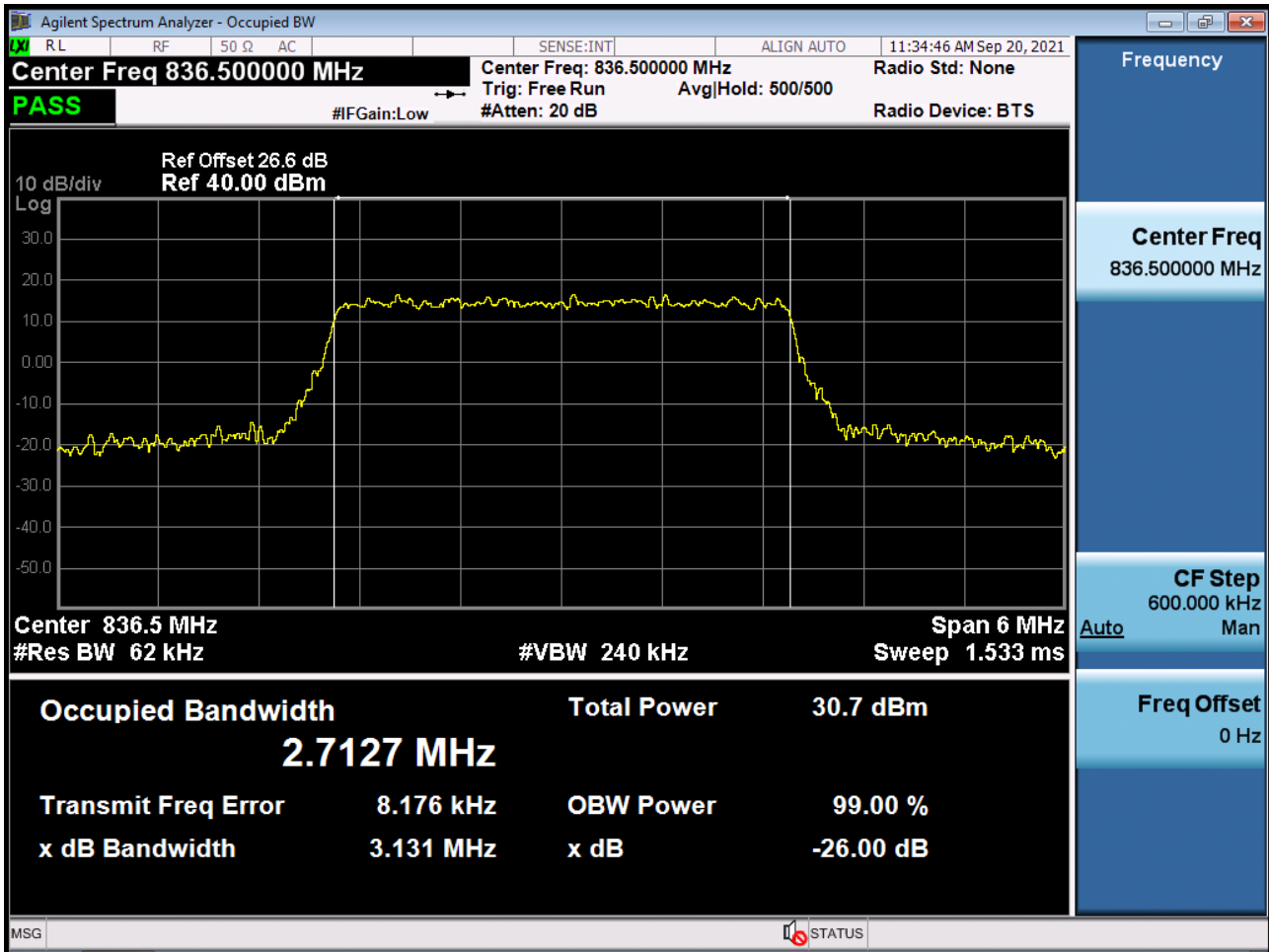
BAND5/ 26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 256QAM\_RB6\_0)



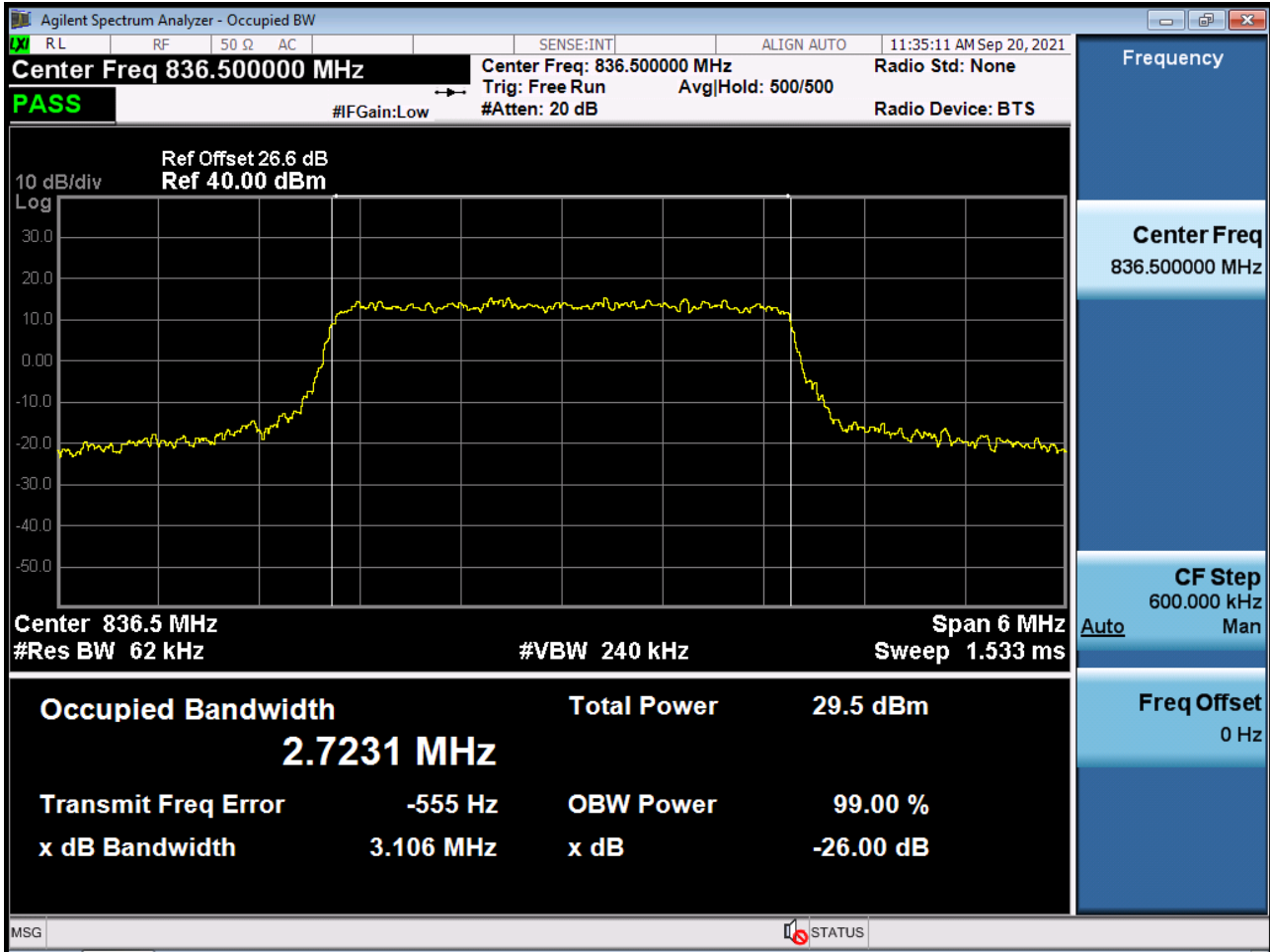
BAND5/ 26. Occupied Bandwidth Plot (3 M BW Ch.26915 QPSK\_RB15\_0)



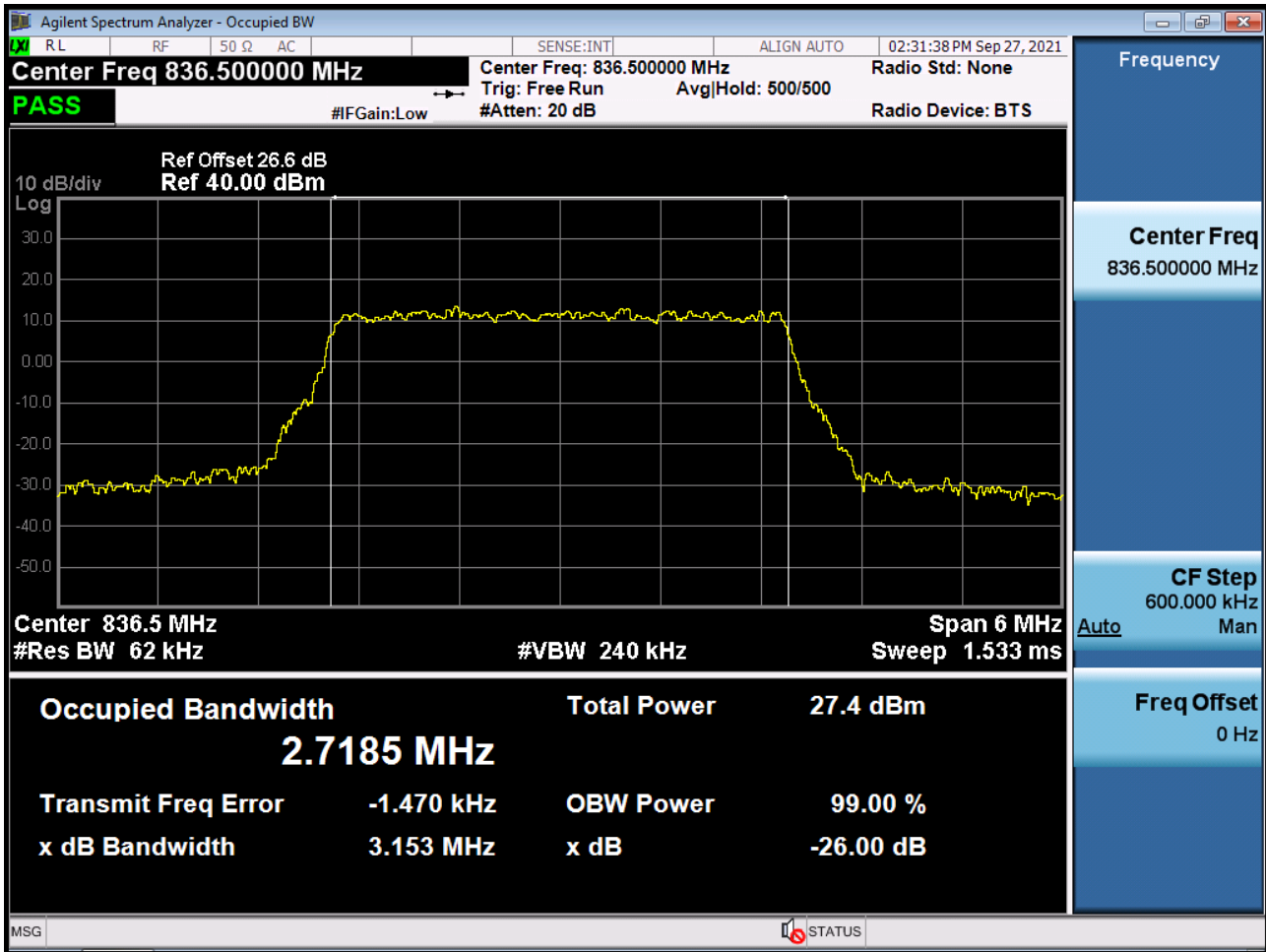
BAND5/ 26. Occupied Bandwidth Plot (3 M BW Ch.26915 16QAM\_RB15\_0)



BAND5/ 26. Occupied Bandwidth Plot (3 M BW Ch.26915 64QAM\_RB15\_0)

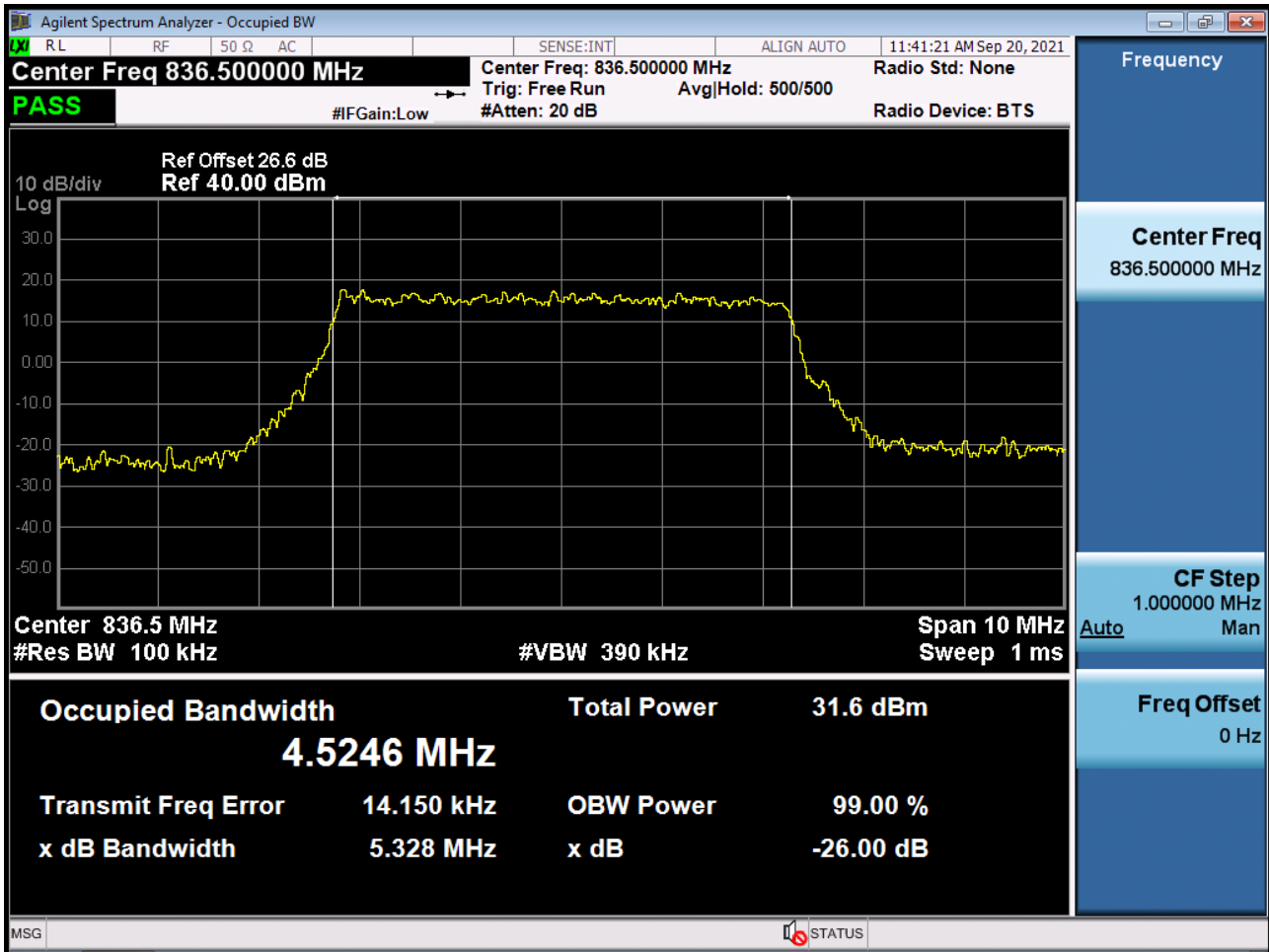


BAND5/ 26. Occupied Bandwidth Plot (3 M BW Ch.26915 256QAM\_RB15\_0)

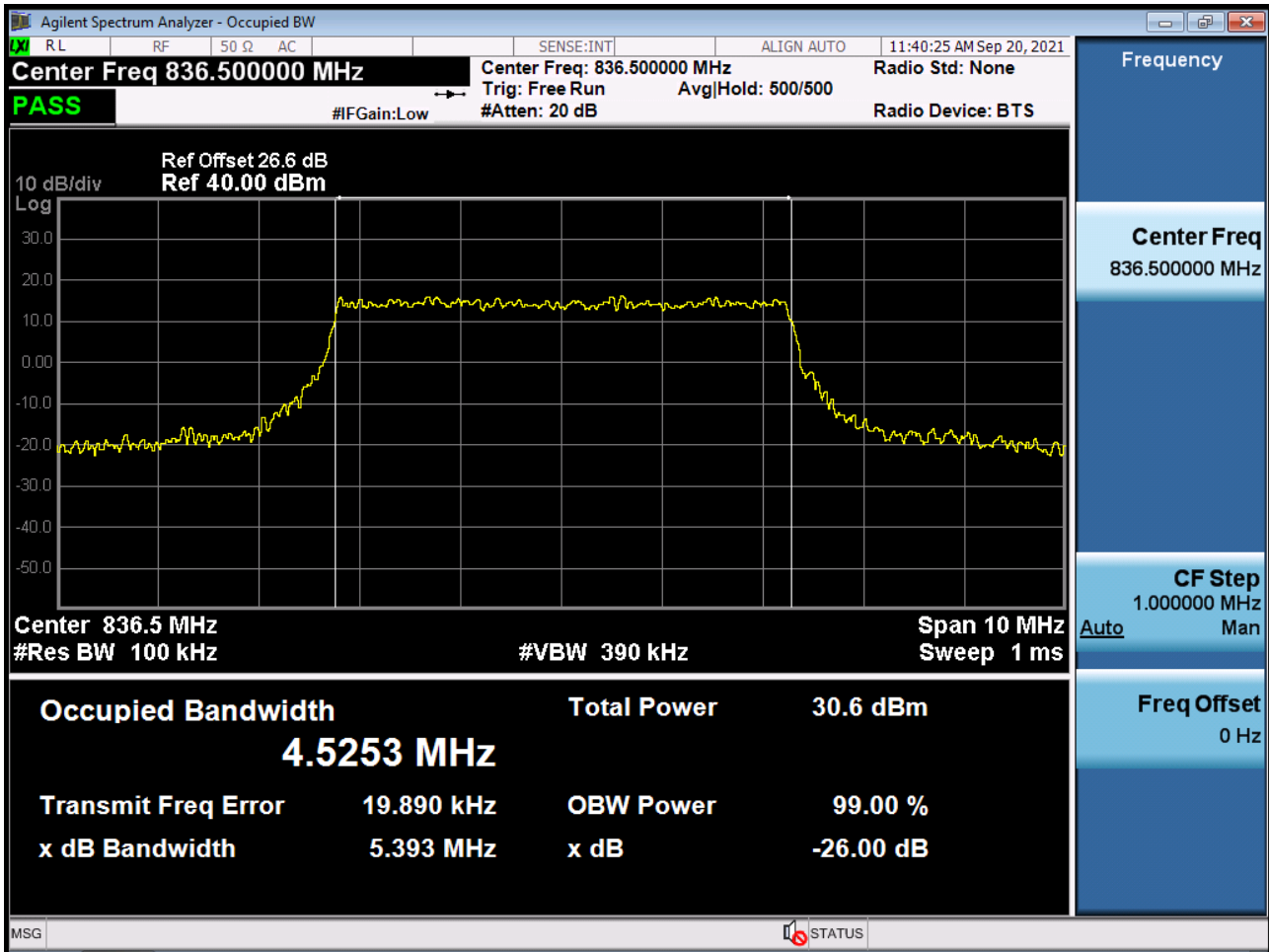




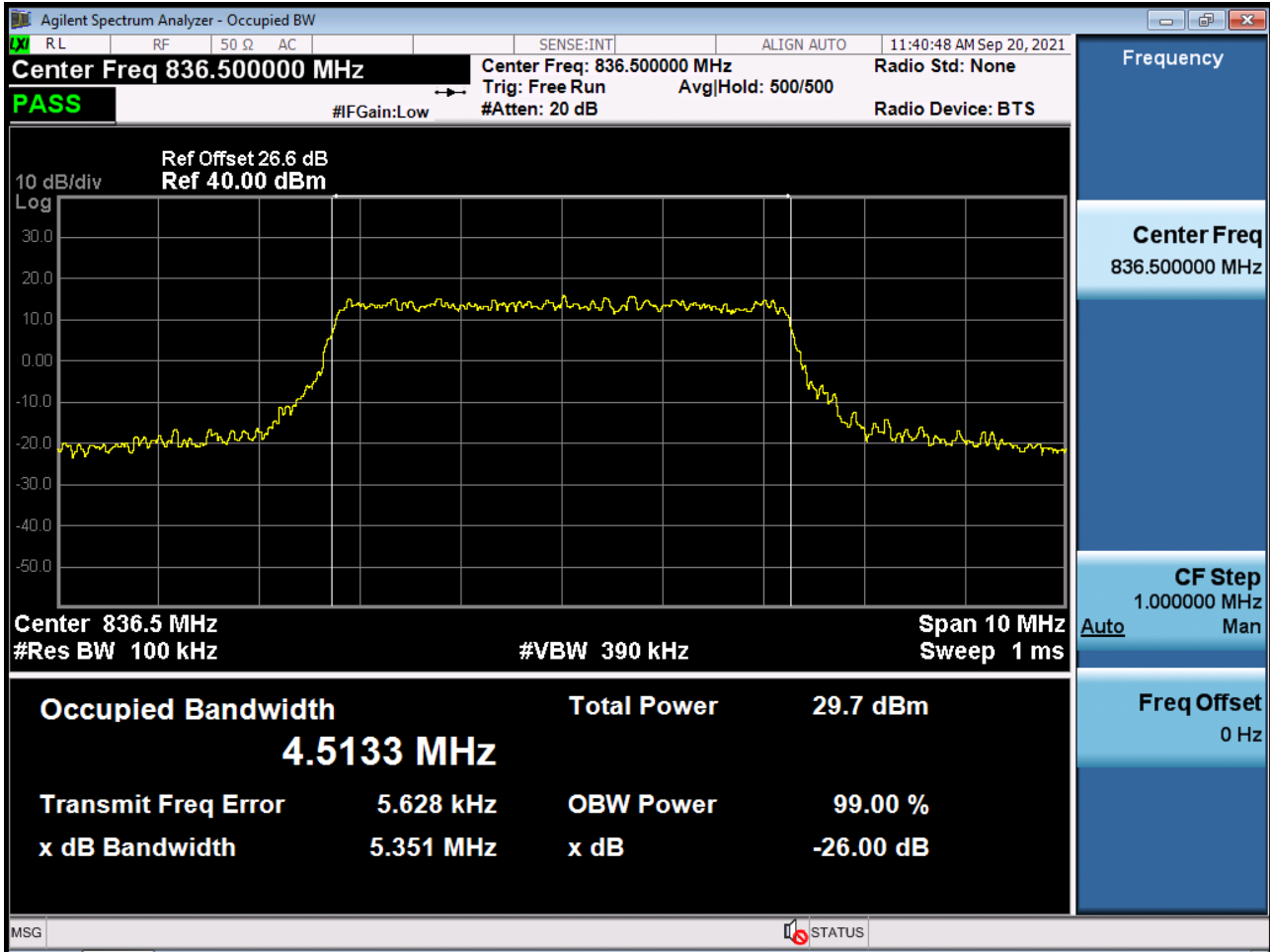
BAND5/ 26. Occupied Bandwidth Plot (5 M BW Ch.26915 QPSK\_RB25\_0)



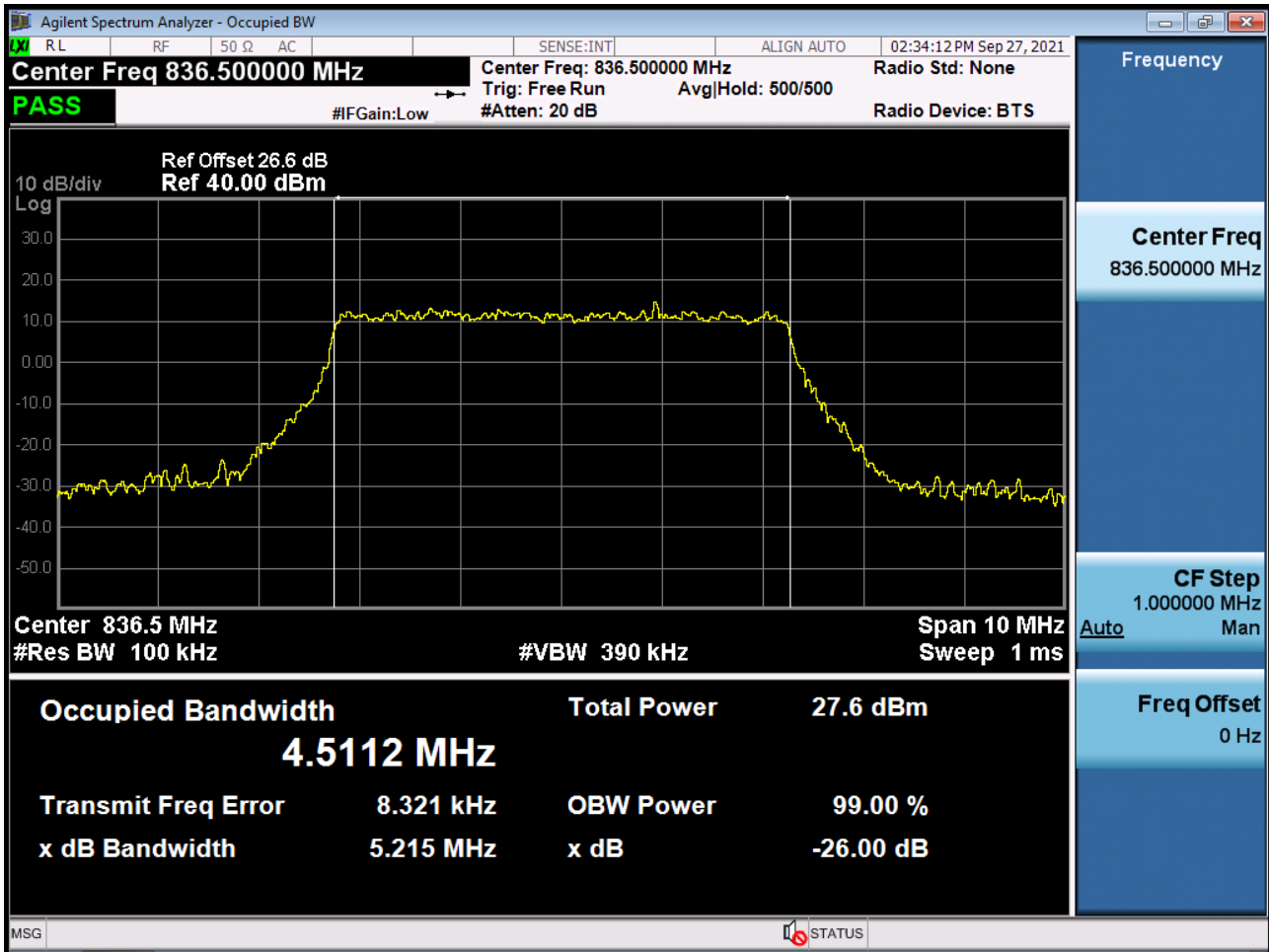
BAND5/ 26. Occupied Bandwidth Plot (5 M BW Ch.26915 16QAM\_RB25\_0)



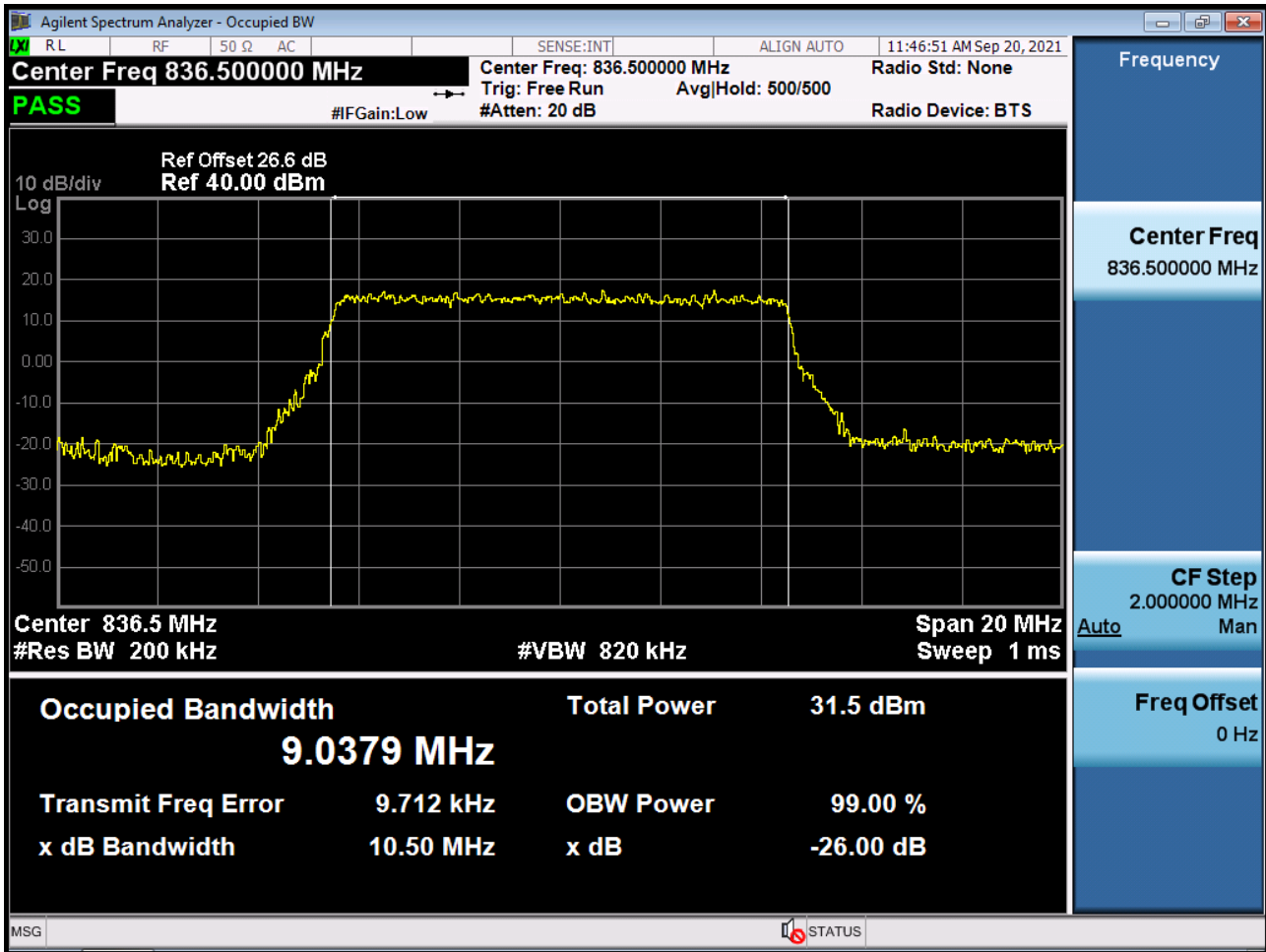
BAND5/ 26. Occupied Bandwidth Plot (5 M BW Ch.26915 64QAM\_RB25\_0)



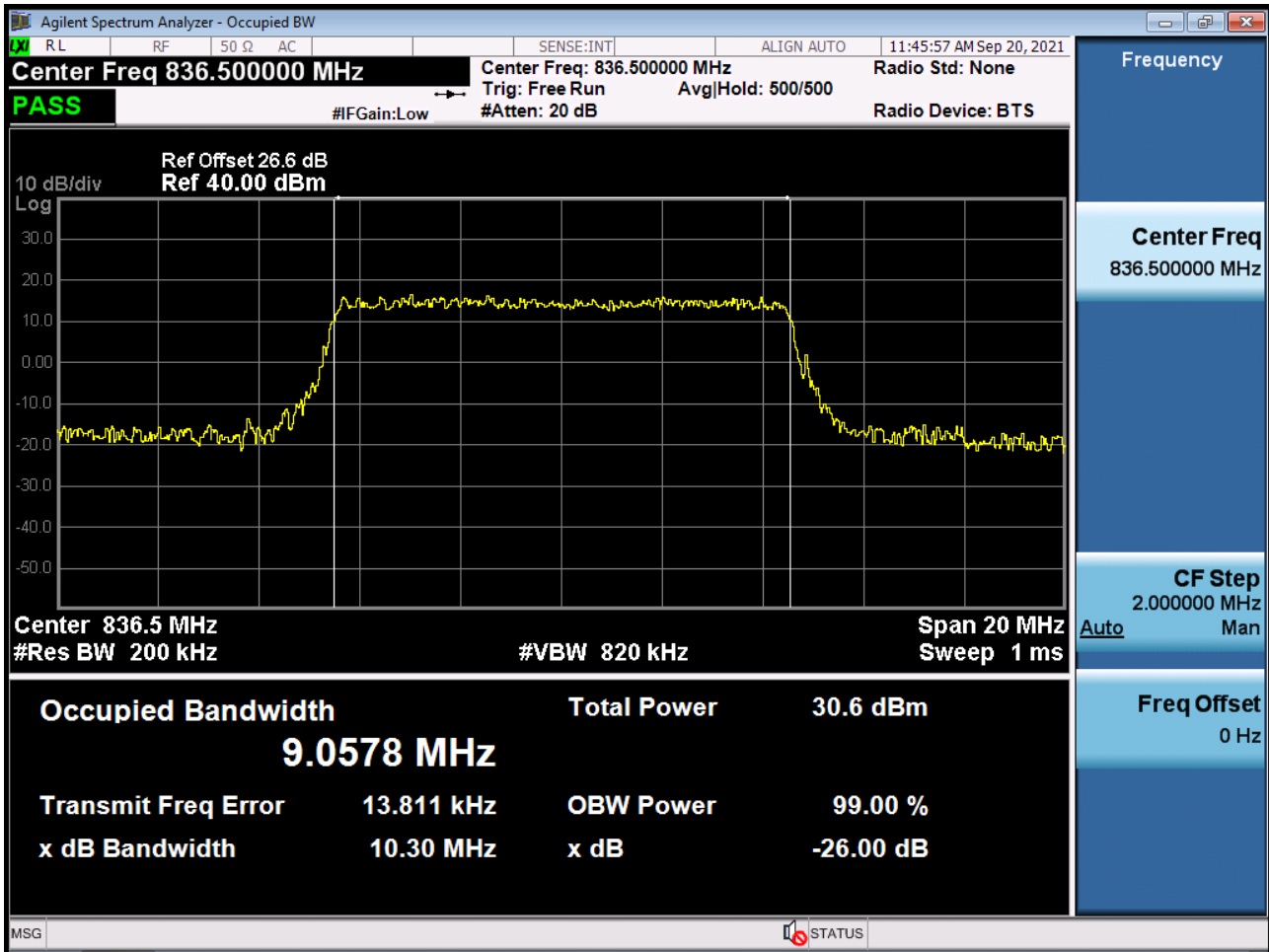
BAND5/ 26. Occupied Bandwidth Plot (5 M BW Ch.26915 256QAM\_RB25\_0)



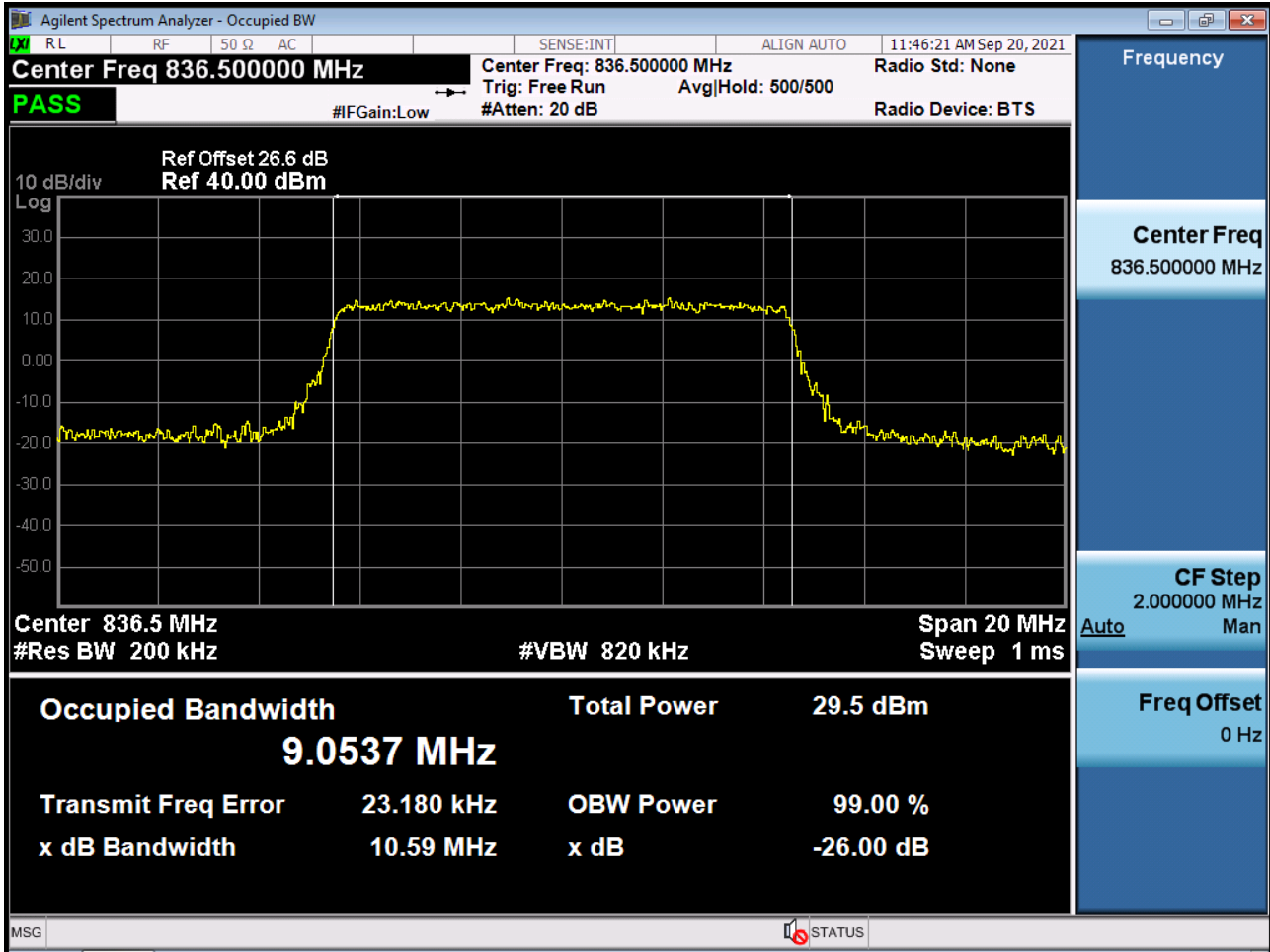
BAND5/ 26. Occupied Bandwidth Plot (10 M BW Ch.26915 QPSK\_RB50\_0)



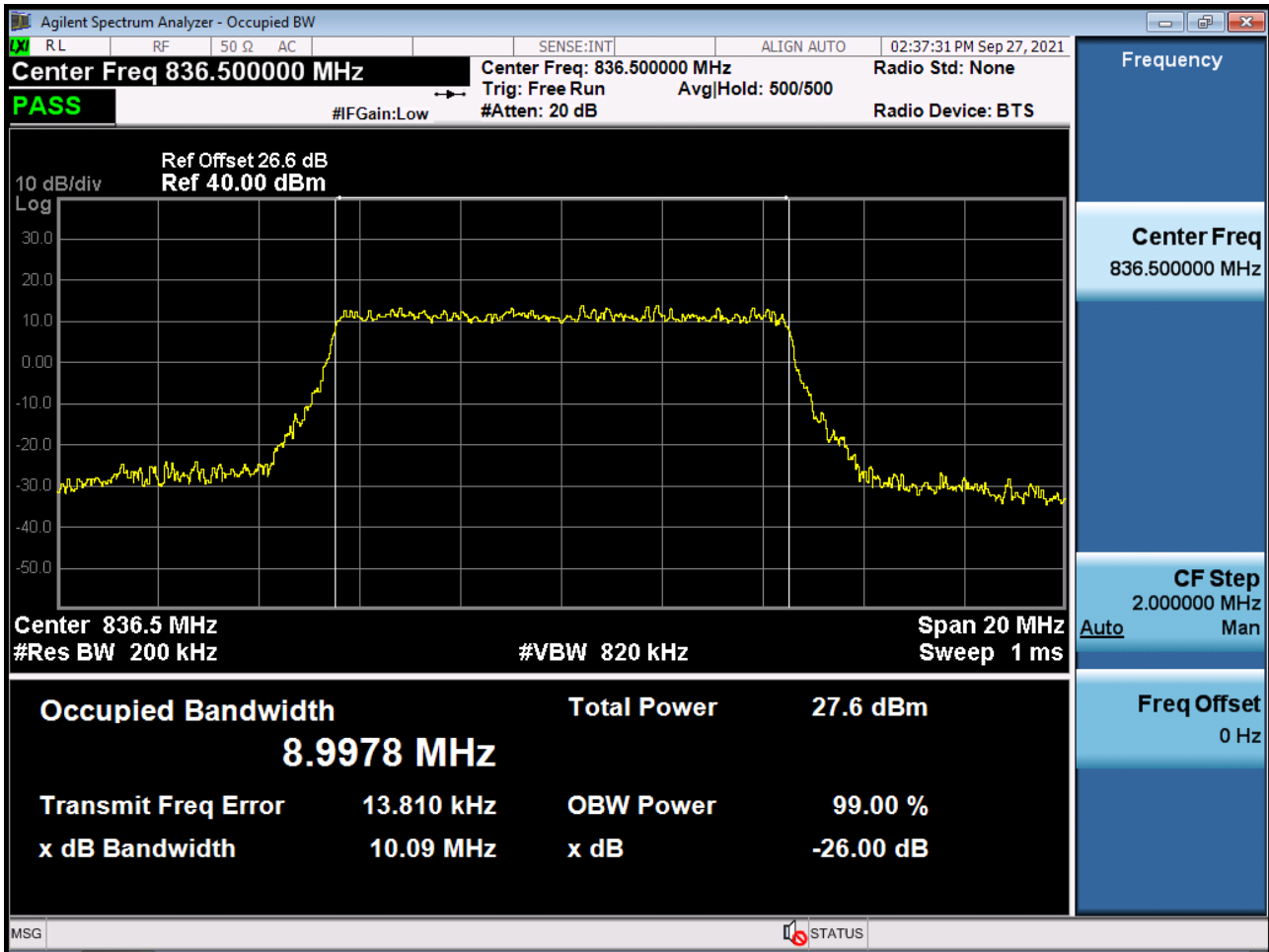
BAND5/ 26. Occupied Bandwidth Plot (10 M BW Ch.26915 16QAM\_RB50\_0)



BAND5/ 26. Occupied Bandwidth Plot (10 M BW Ch.26915 64QAM\_RB50\_0)

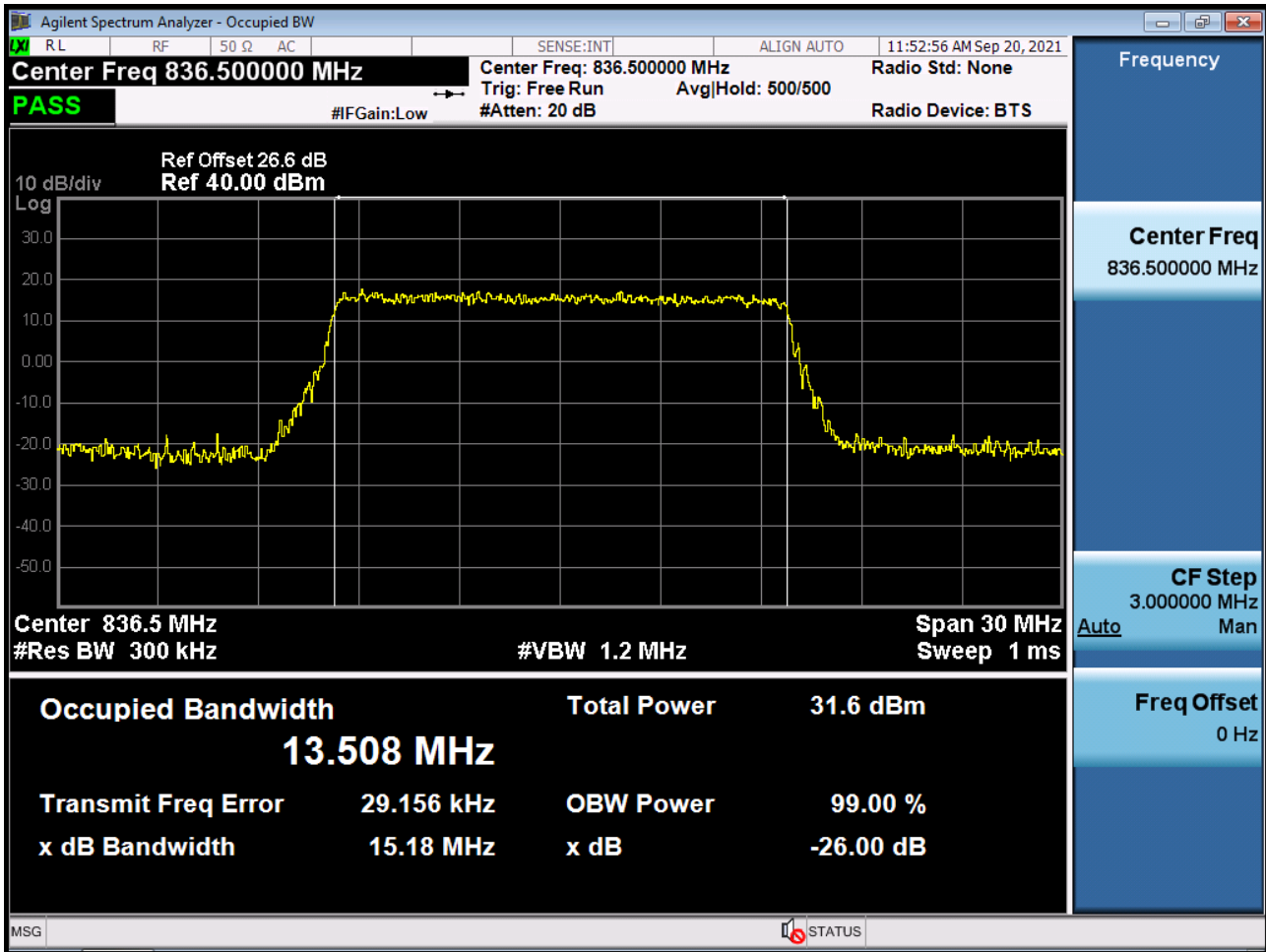


BAND5/ 26. Occupied Bandwidth Plot (10 M BW Ch.26915 256QAM\_RB50\_0)

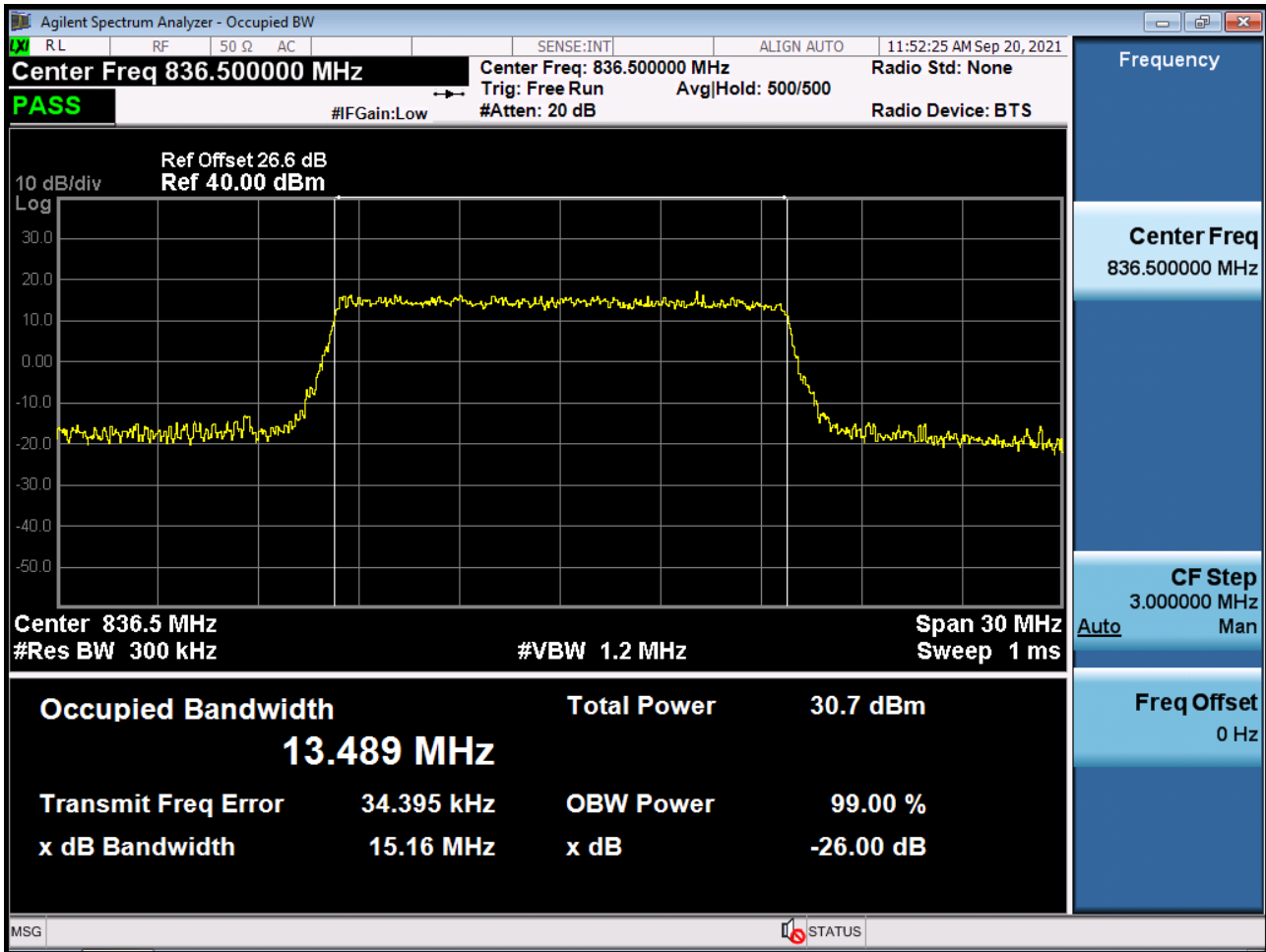




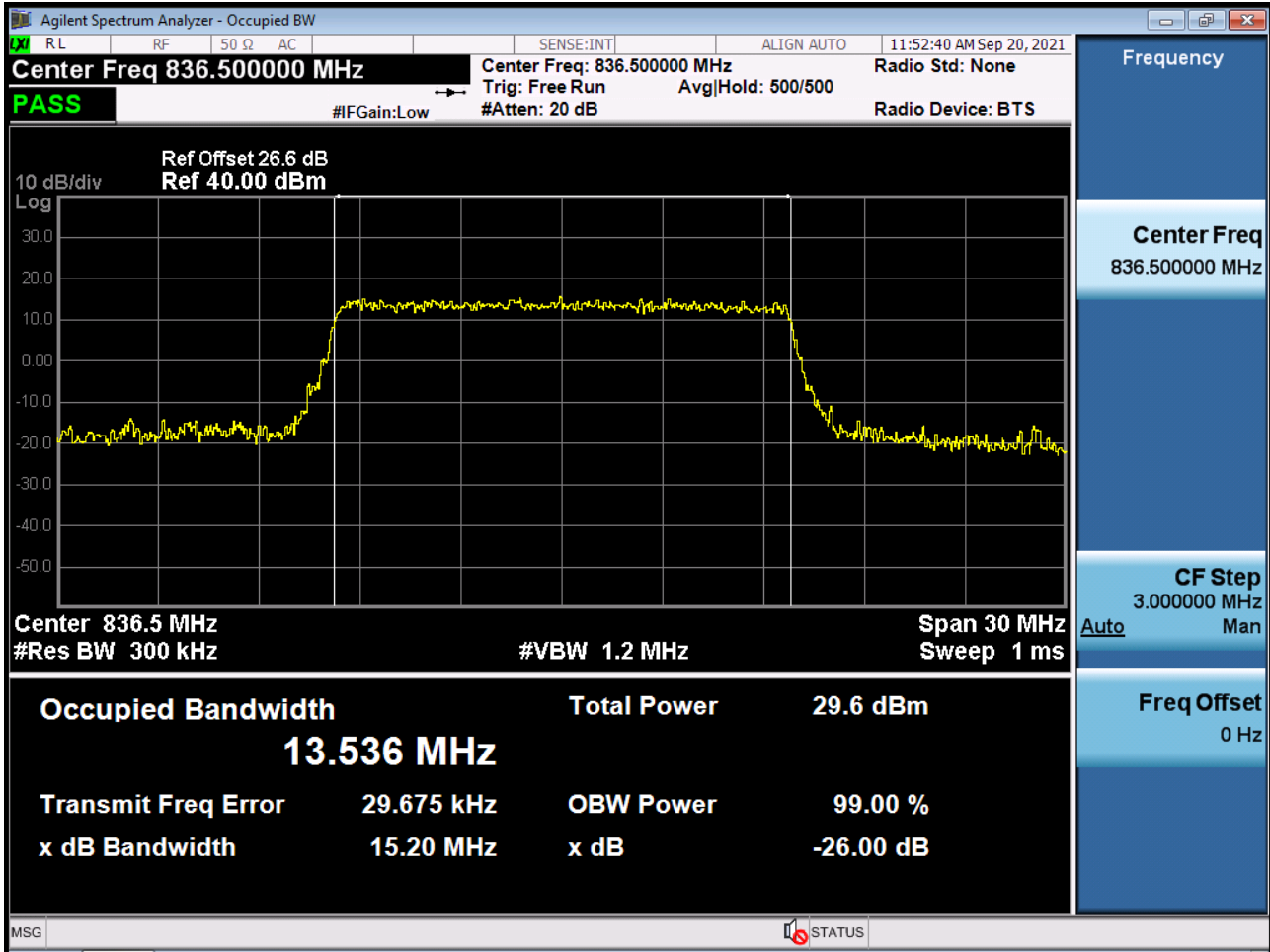
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 QPSK RB 75\_0)



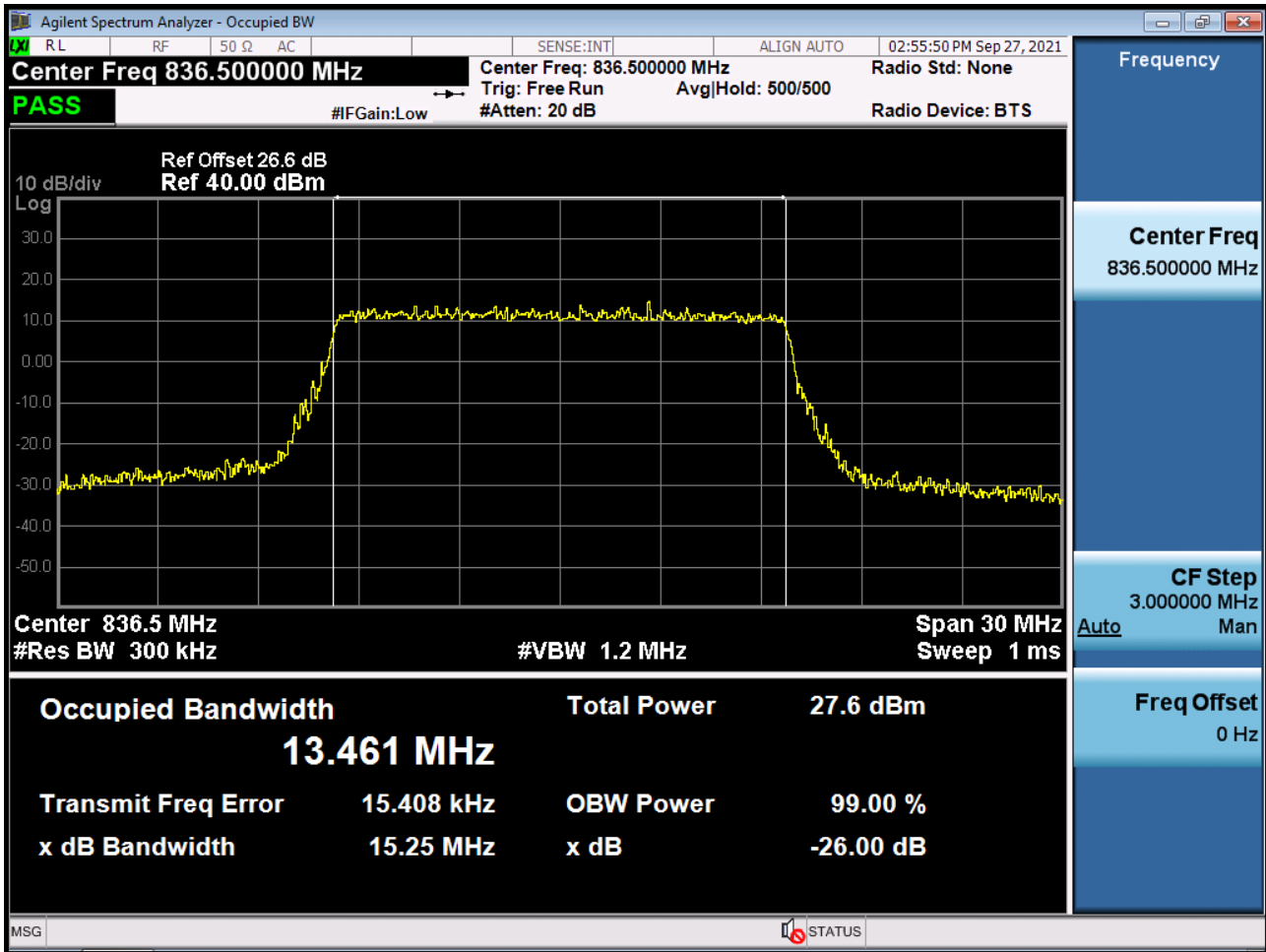
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 16QAM RB 75\_0)



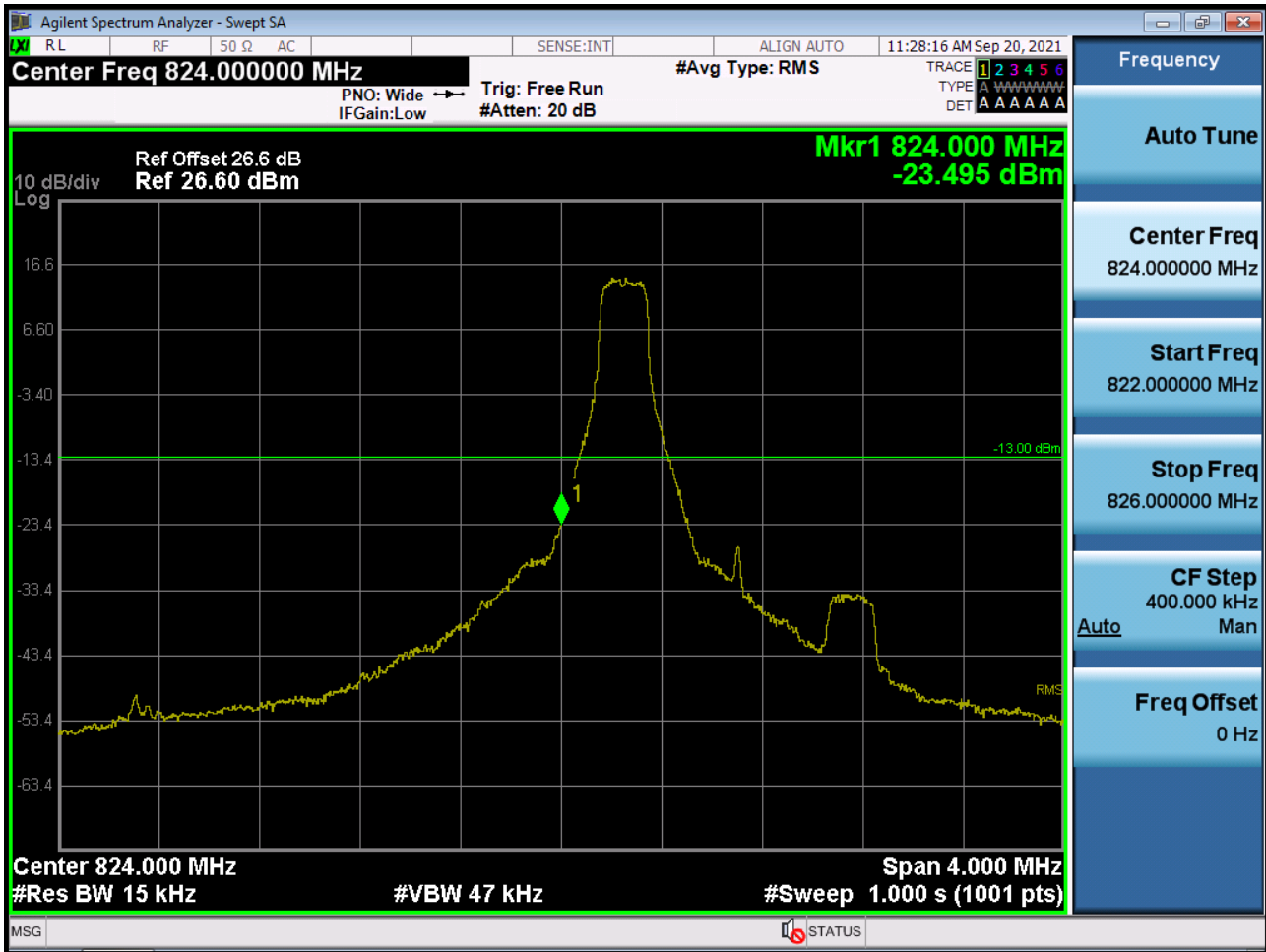
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 64QAM RB 75\_0)



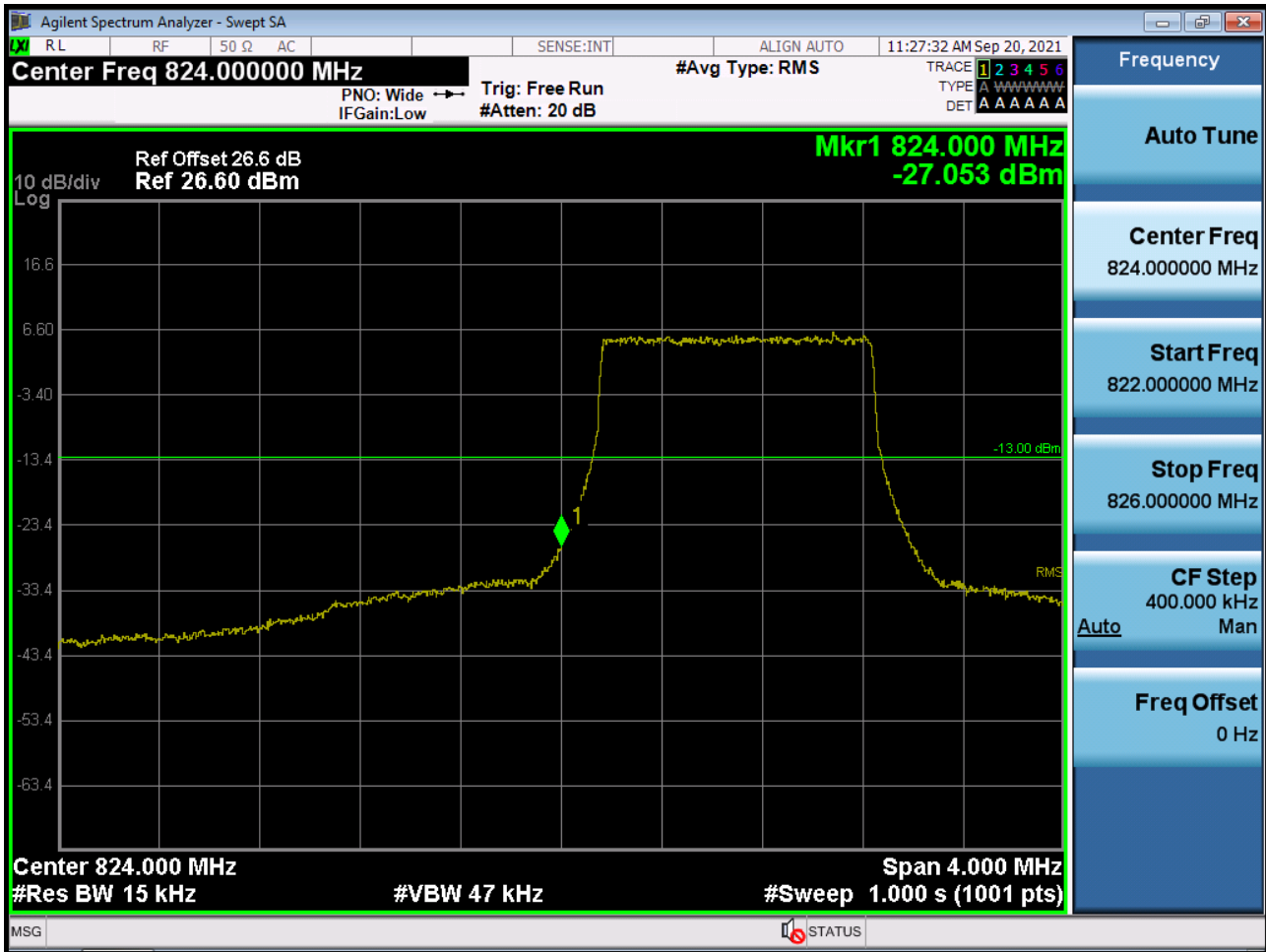
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 256QAM RB 75\_0)



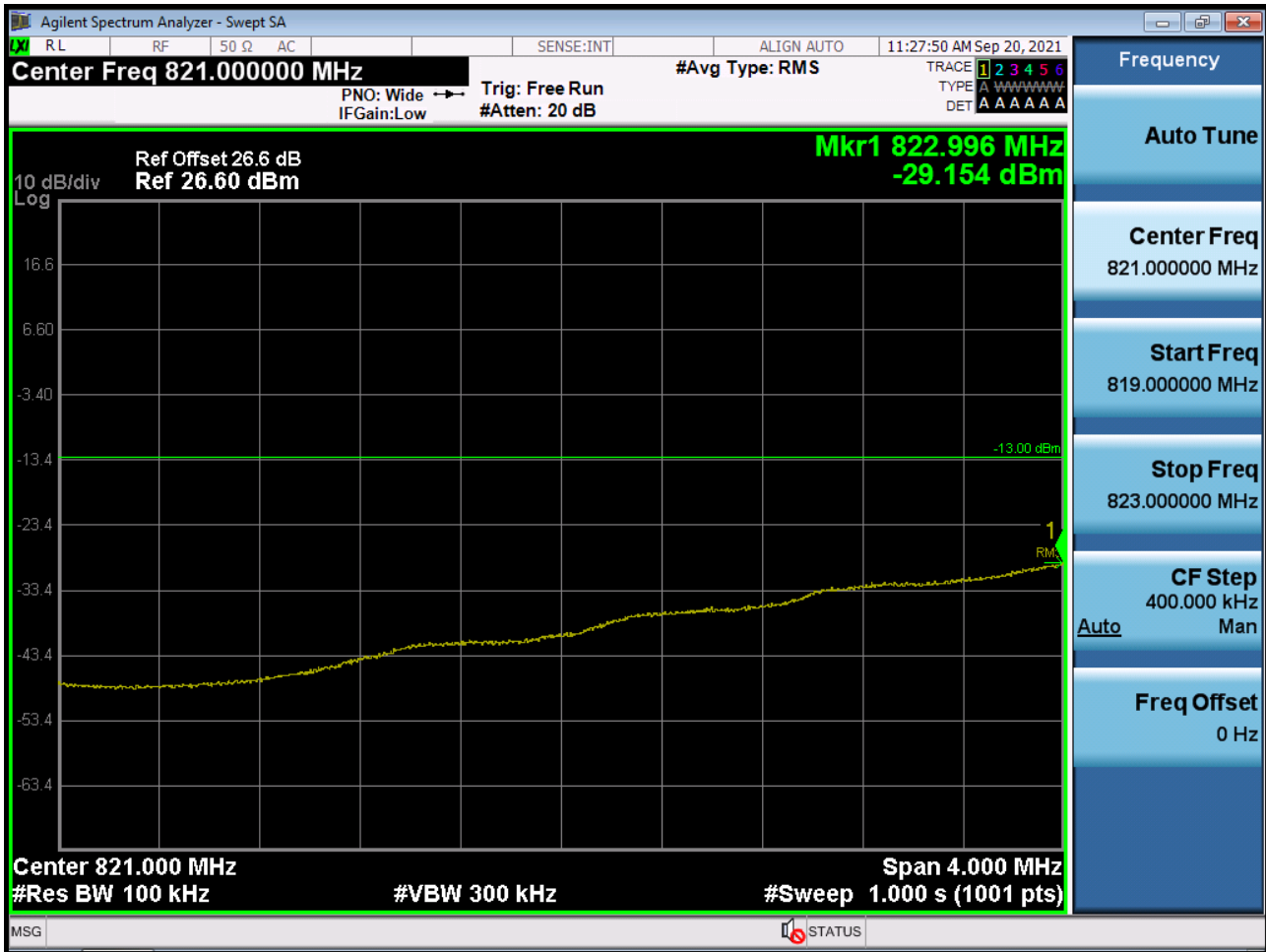
BAND5/ 26. Lower Band Edge Plot (1.4 M BW Ch.26797 QPSK\_RB1\_Offset 0)



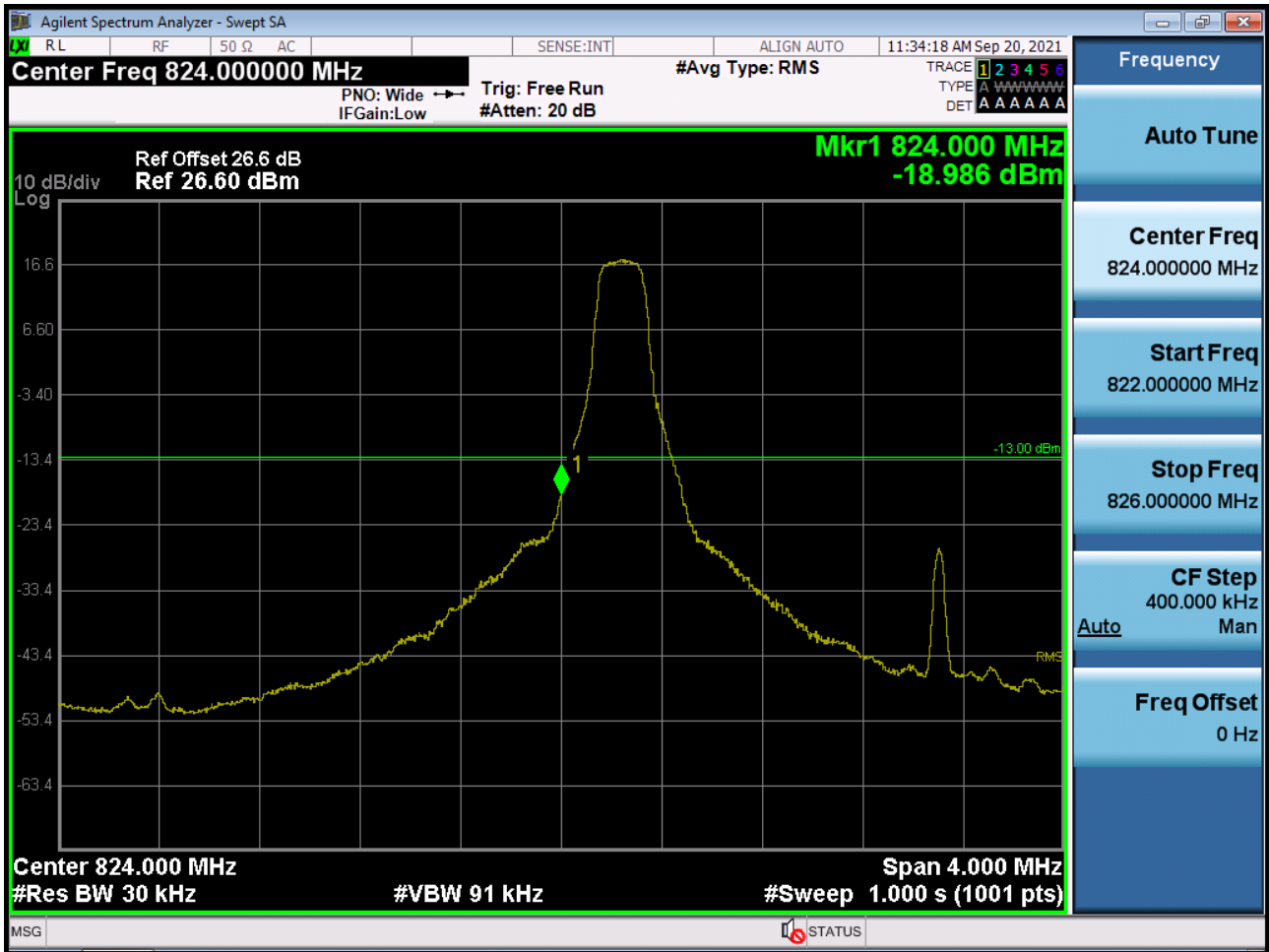
BAND5/ 26. Lower Band Edge Plot (1.4 M BW Ch.26797 QPSK\_RB6\_Offset 0)



BAND5/ 26. Lower Extended Band Edge Plot (1.4 M BW Ch.26797 QPSK\_RB6\_0)



BAND5/ 26. Lower Band Edge Plot (3 M BW Ch.26805 QPSK\_RB1\_Offset 0)

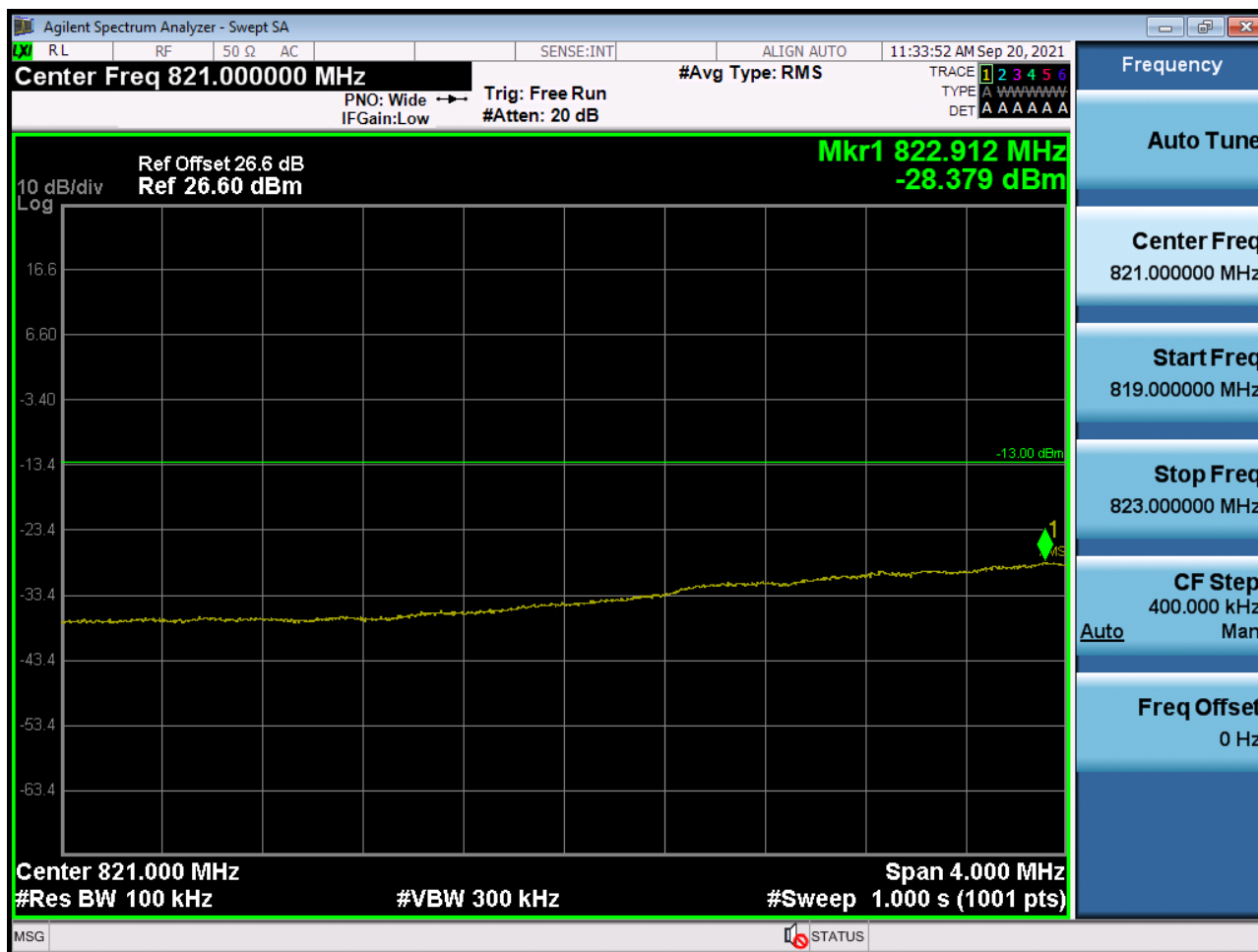




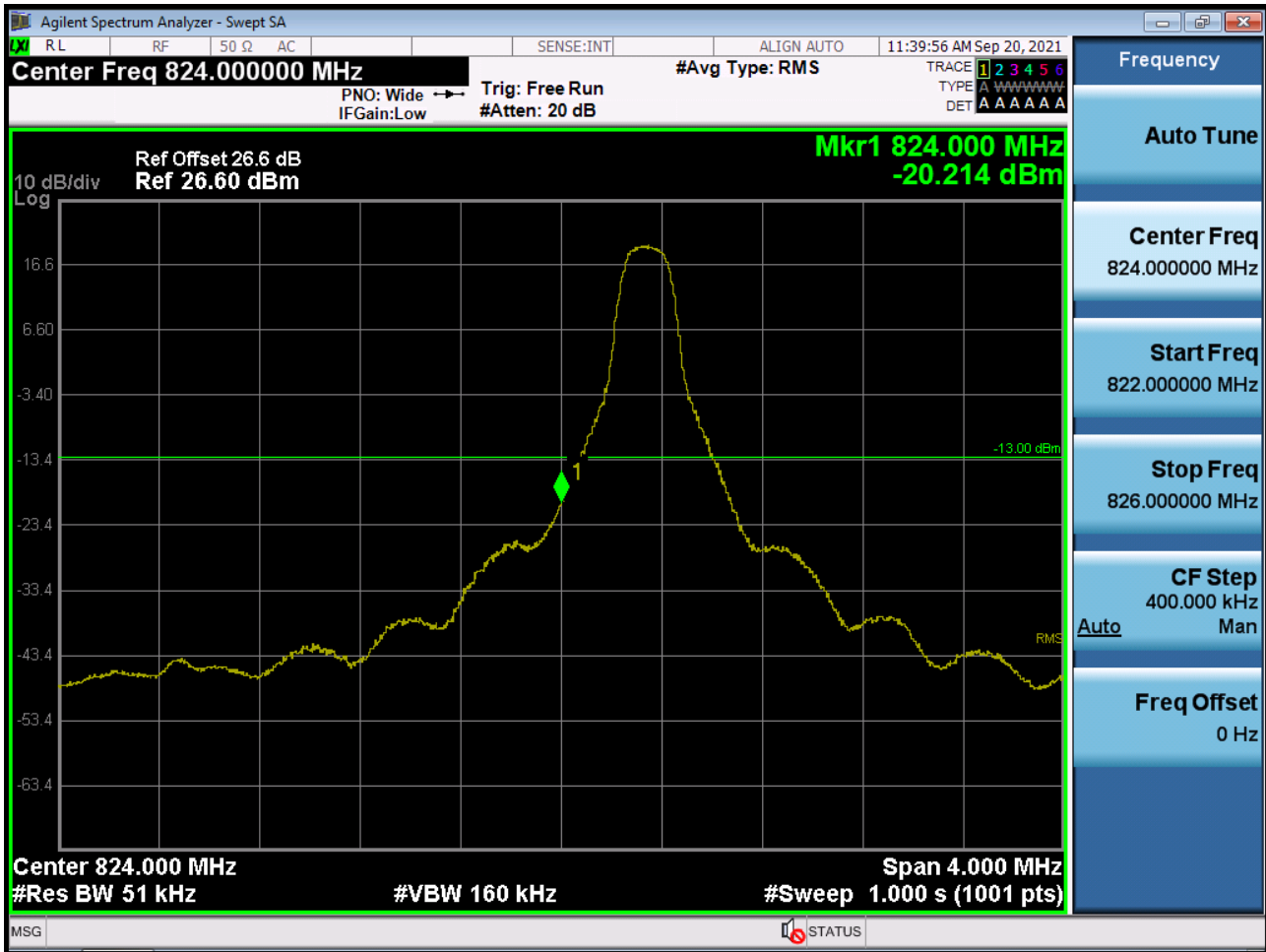
BAND5/ 26. Lower Band Edge Plot (3 M BW Ch.26805 QPSK\_RB15\_Offset 0)



BAND5/ 26. Lower Extended Band Edge Plot (3 M BW Ch.26805 QPSK\_RB15\_0)



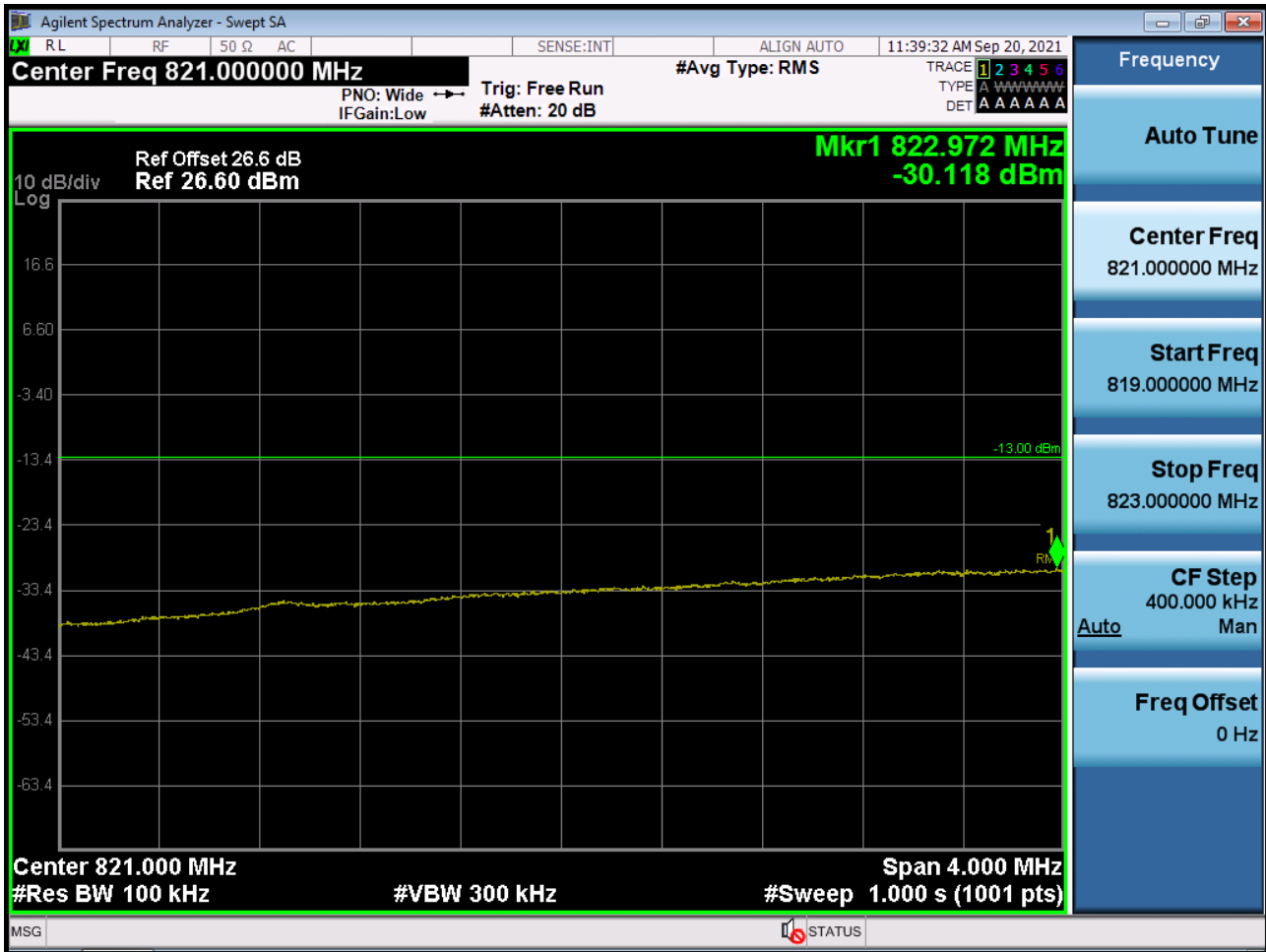
BAND5/ 26. Lower Band Edge Plot (5 M BW Ch.26815 QPSK\_RB1\_Offset 0)



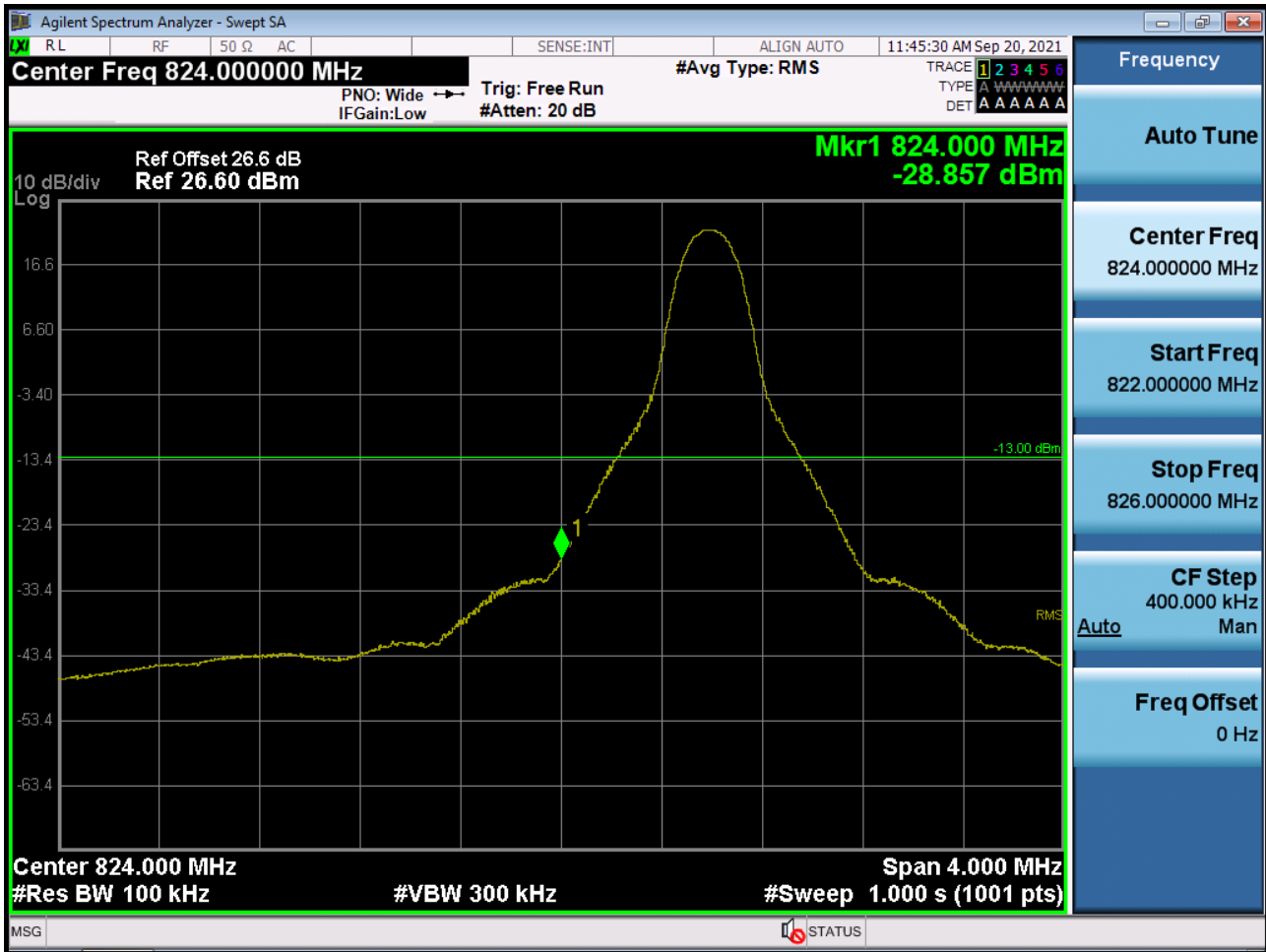
BAND5/ 26. Lower Band Edge Plot (5 M BW Ch.26815 QPSK\_RB25\_Offset 0)



BAND5/ 26. Lower Extended Band Edge Plot (5 M BW Ch.26815 QPSK\_RB25\_0)



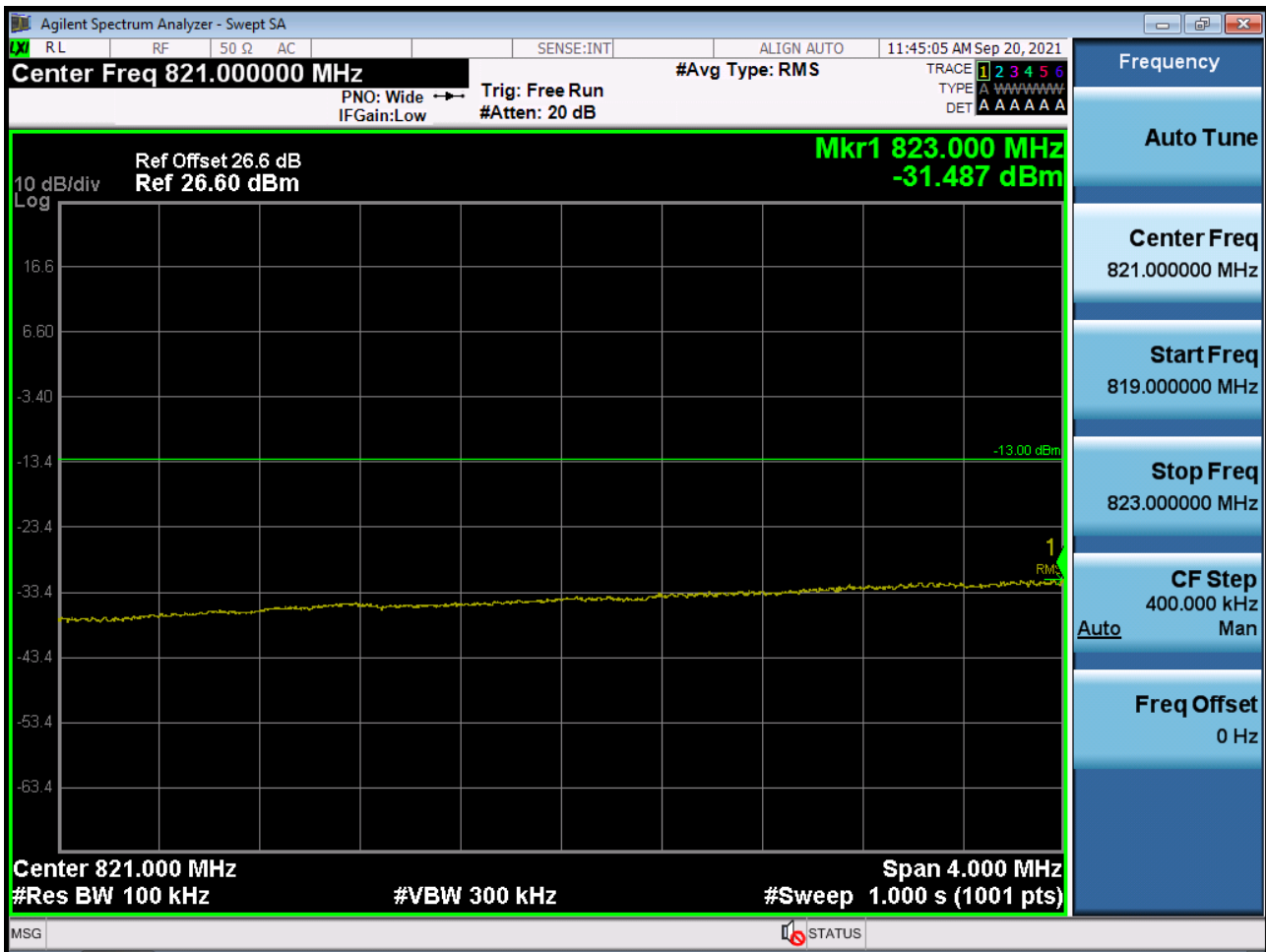
BAND5/ 26. Lower Band Edge Plot (10 M BW Ch.26840 QPSK\_RB1\_Offset 0)



BAND5/ 26. Lower Band Edge Plot (10 M BW Ch.26840 QPSK\_RB50\_Offset 0)

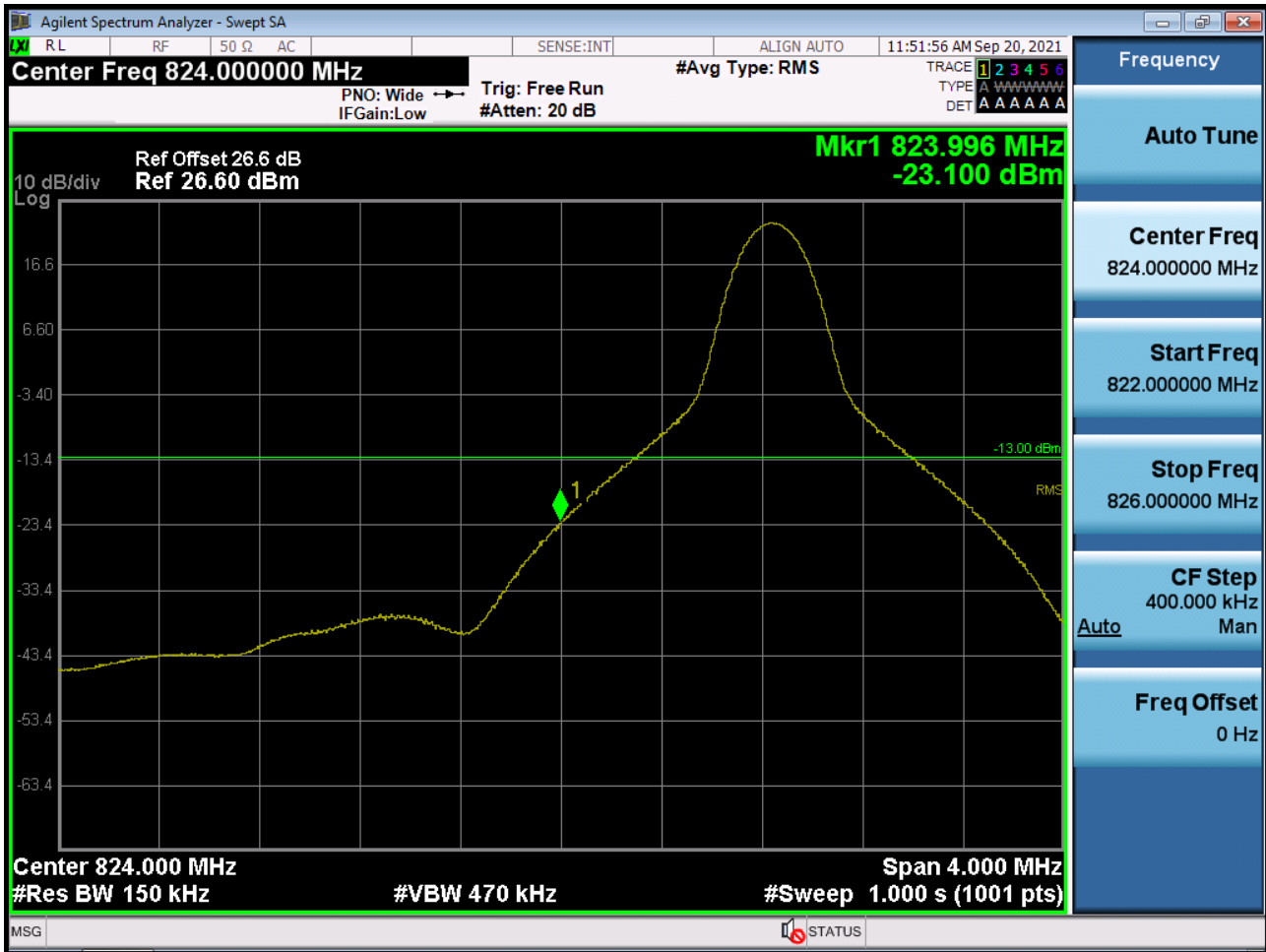


BAND5/ 26. Lower Extended Band Edge Plot (10 M BW Ch.26840 QPSK\_RB50\_0)





BAND 26. Lower Band Edge Plot (15 M BW Ch.26865 QPSK\_RB1\_Offset 0)

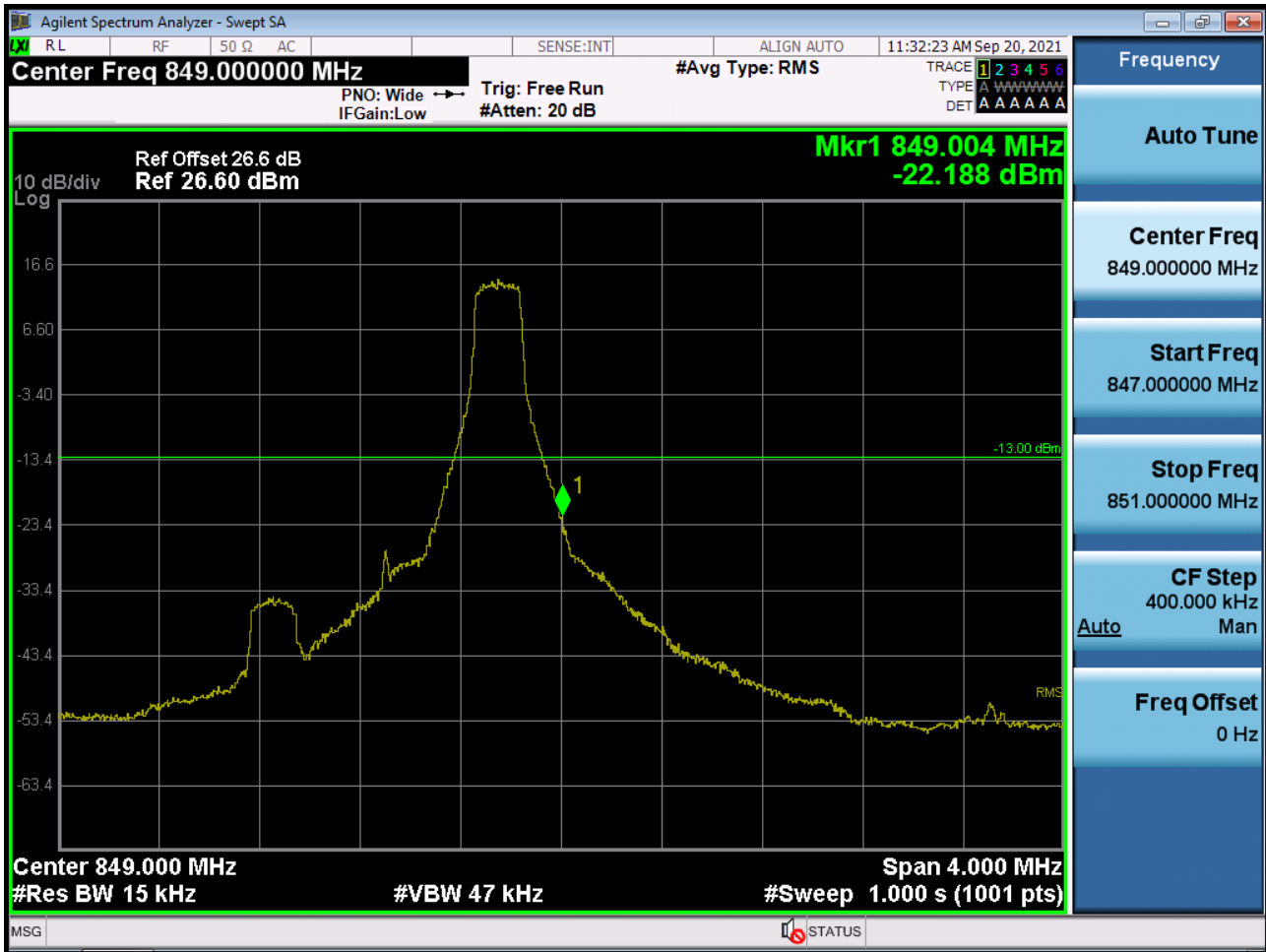


BAND 26. Lower Band Edge Plot (15 M BW Ch.26865 QPSK\_RB75\_Offset 0)

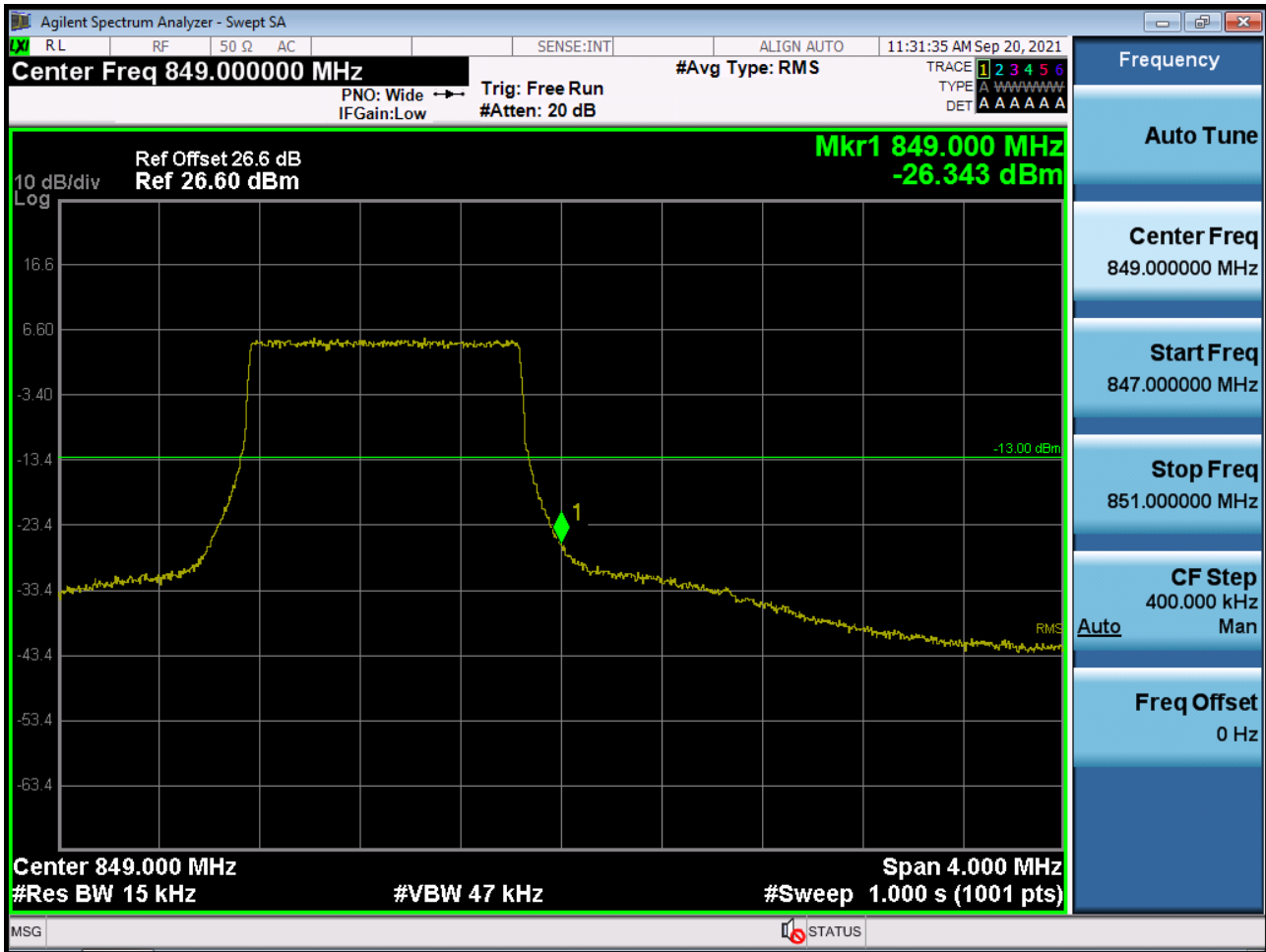




BAND5/ 26. Upper Band Edge Plot (1.4 M BW Ch.27033 QPSK\_RB1\_Offset 5)



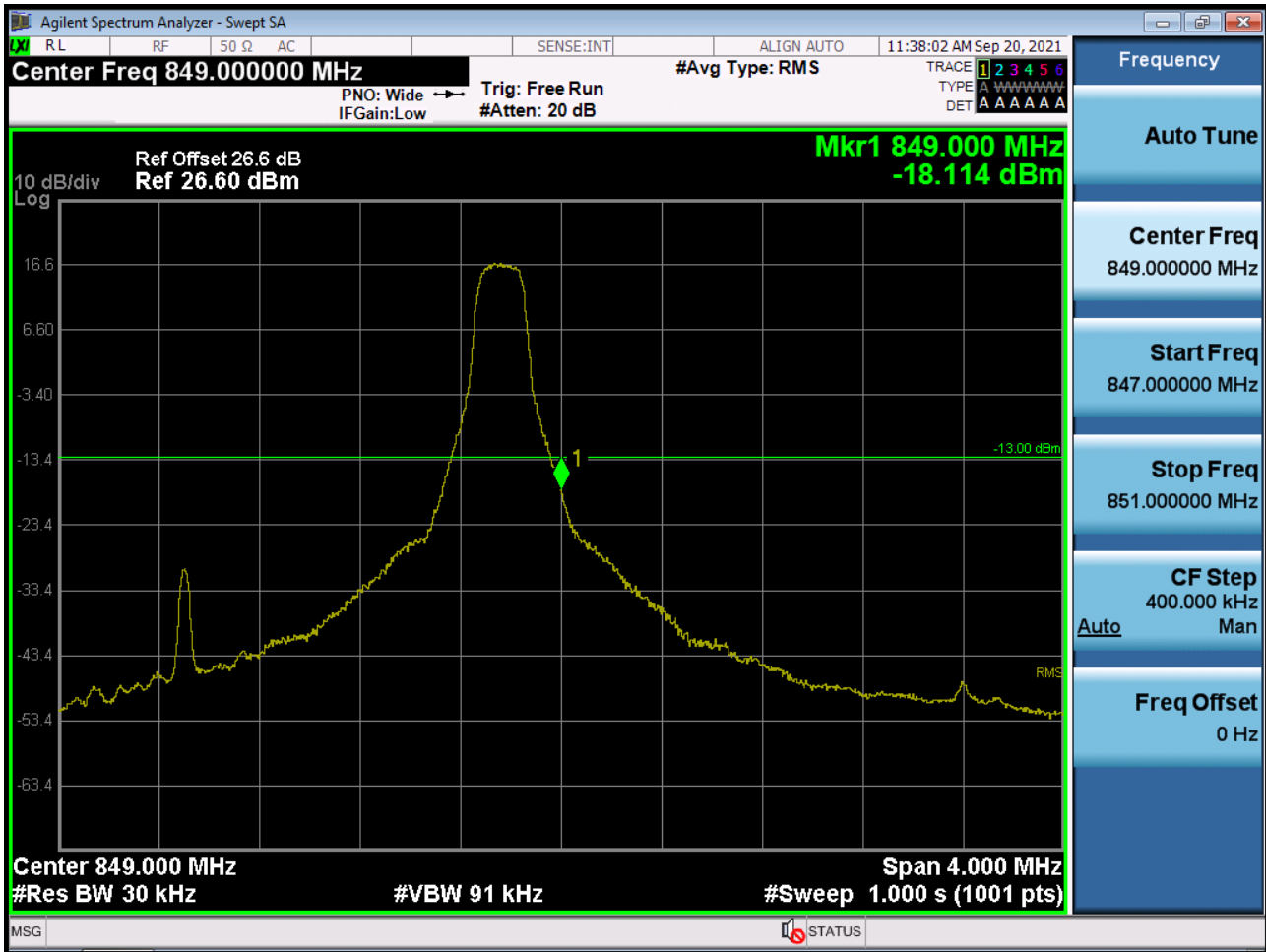
BAND5/ 26. Upper Band Edge Plot (1.4 M BW Ch.27033 QPSK\_RB6\_Offset 0)



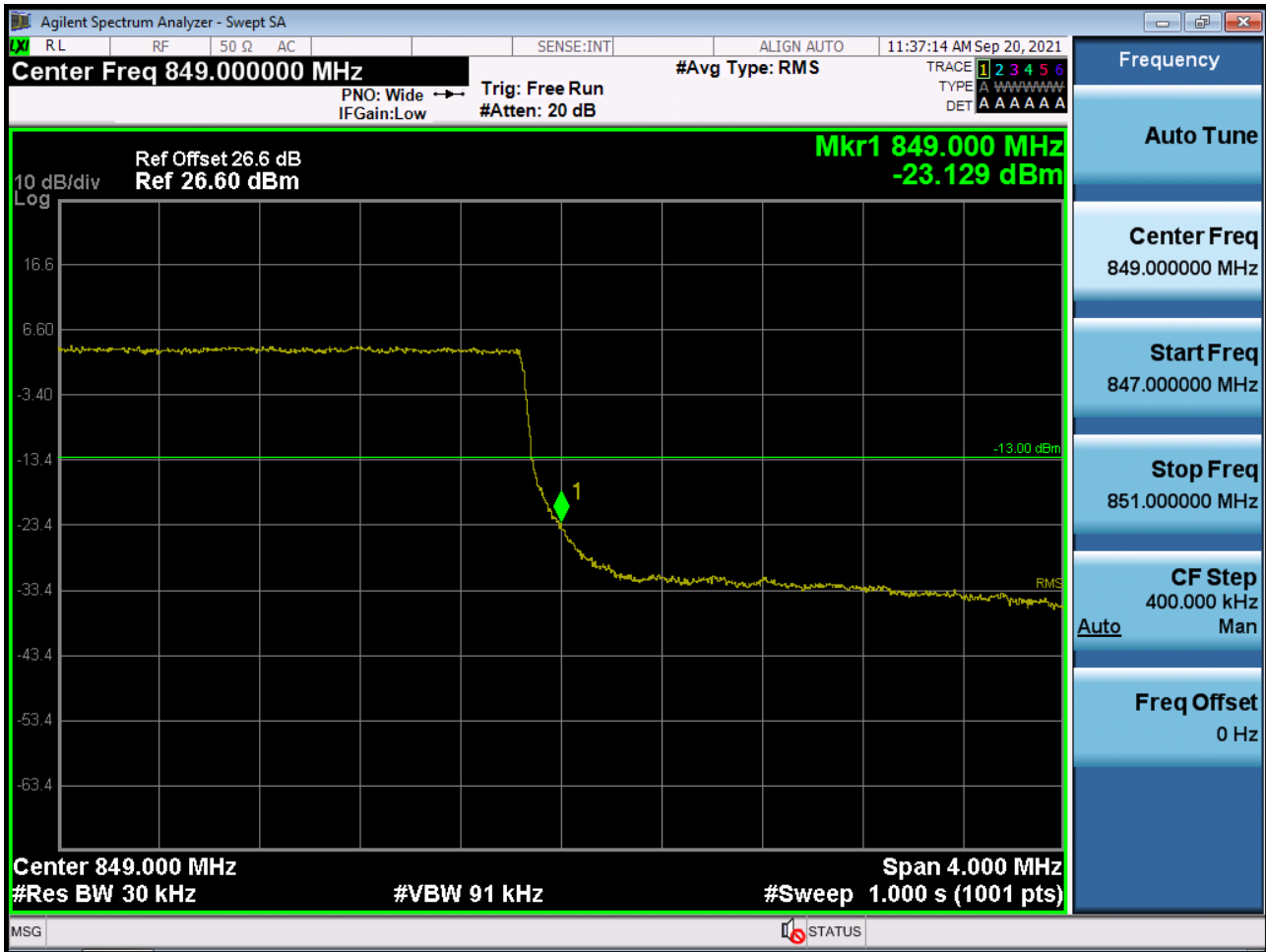
BAND5/ 26. Upper Extended Band Edge Plot (1.4 M BW Ch.27033 QPSK\_RB6\_0)



BAND5/ 26. Upper Band Edge Plot (3 M BW Ch.27025 QPSK\_RB1\_Offset 14)



BAND5/ 26. Upper Band Edge Plot (3 M BW Ch.27025 QPSK\_RB15\_Offset 0)





BAND5/ 26. Upper Extended Band Edge Plot (3 M BW Ch.27025 QPSK\_RB15\_0)



BAND5/ 26. Upper Band Edge Plot (5 M BW Ch.27015 QPSK\_RB1\_Offset 24)



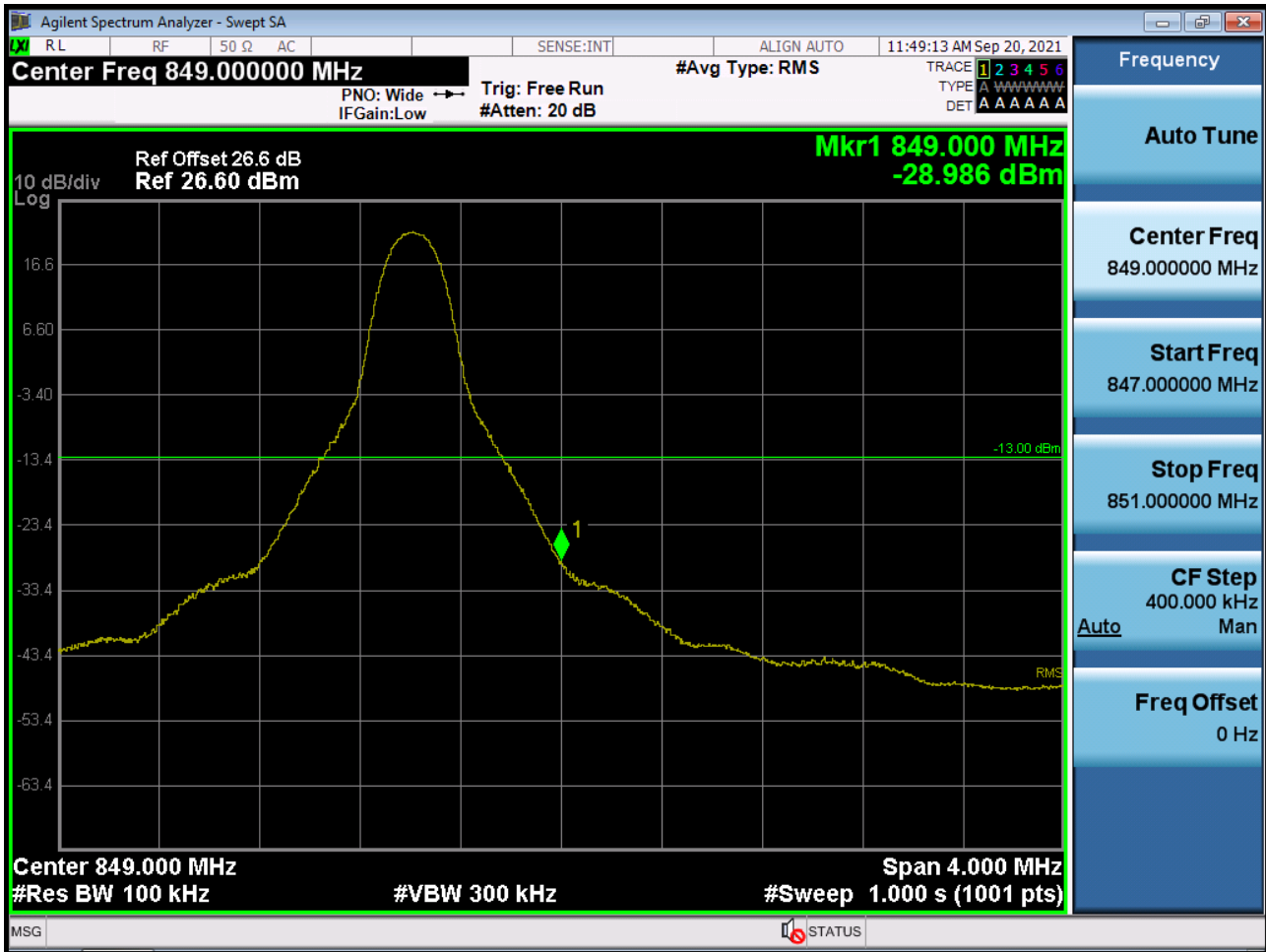
BAND5/ 26. Upper Band Edge Plot (5 M BW Ch.27015 QPSK\_RB25\_Offset 0)



BAND5/ 26. Upper Extended Band Edge Plot (5 M BW Ch.27015 QPSK\_RB25\_0)



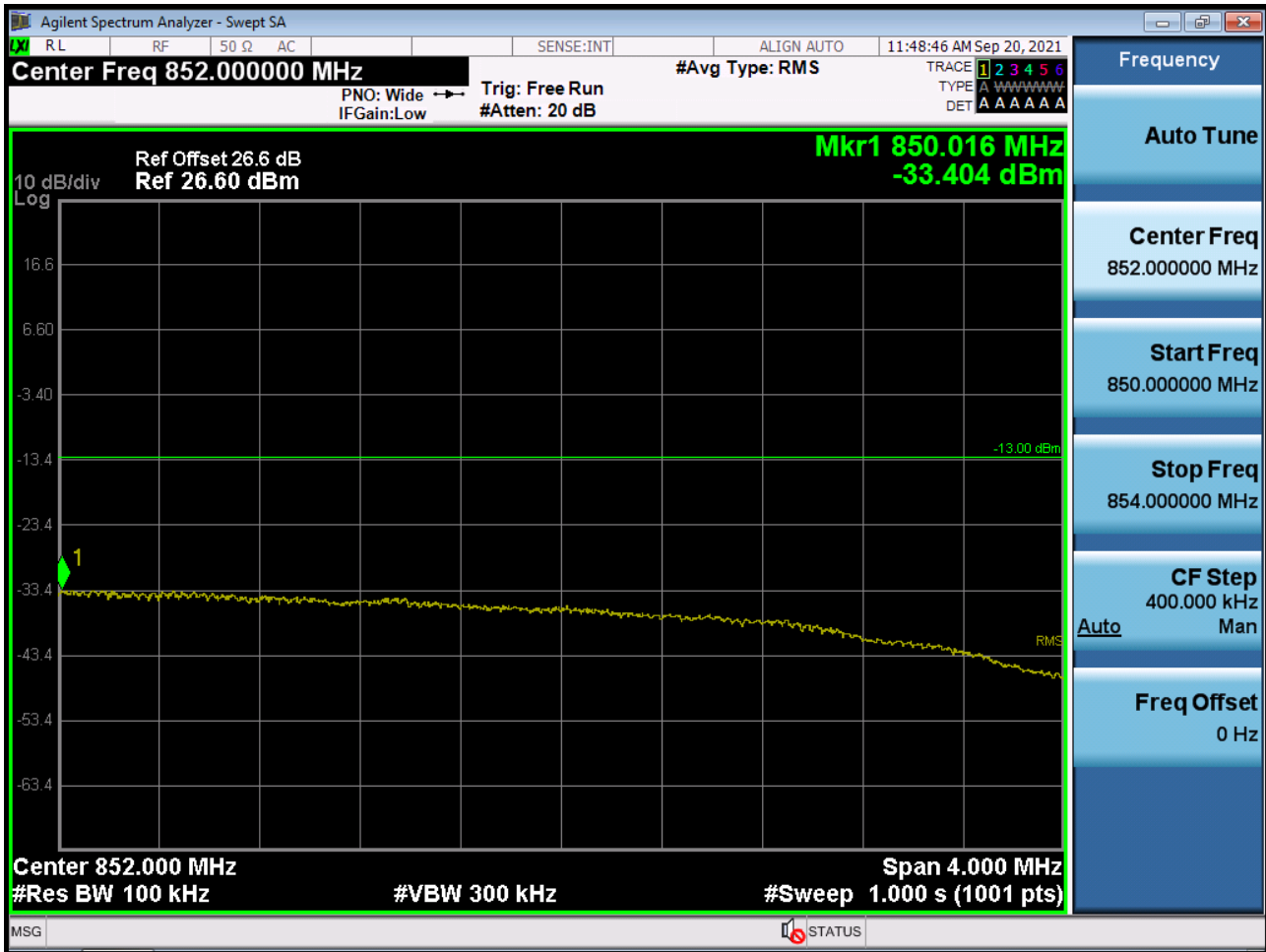
BAND5/ 26. Upper Band Edge Plot (10 M BW Ch.26990 QPSK\_RB1\_Offset 49)



BAND5/ 26. Upper Band Edge Plot (10 M BW Ch.26990 QPSK\_RB50\_Offset 0)



BAND5/ 26. 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)



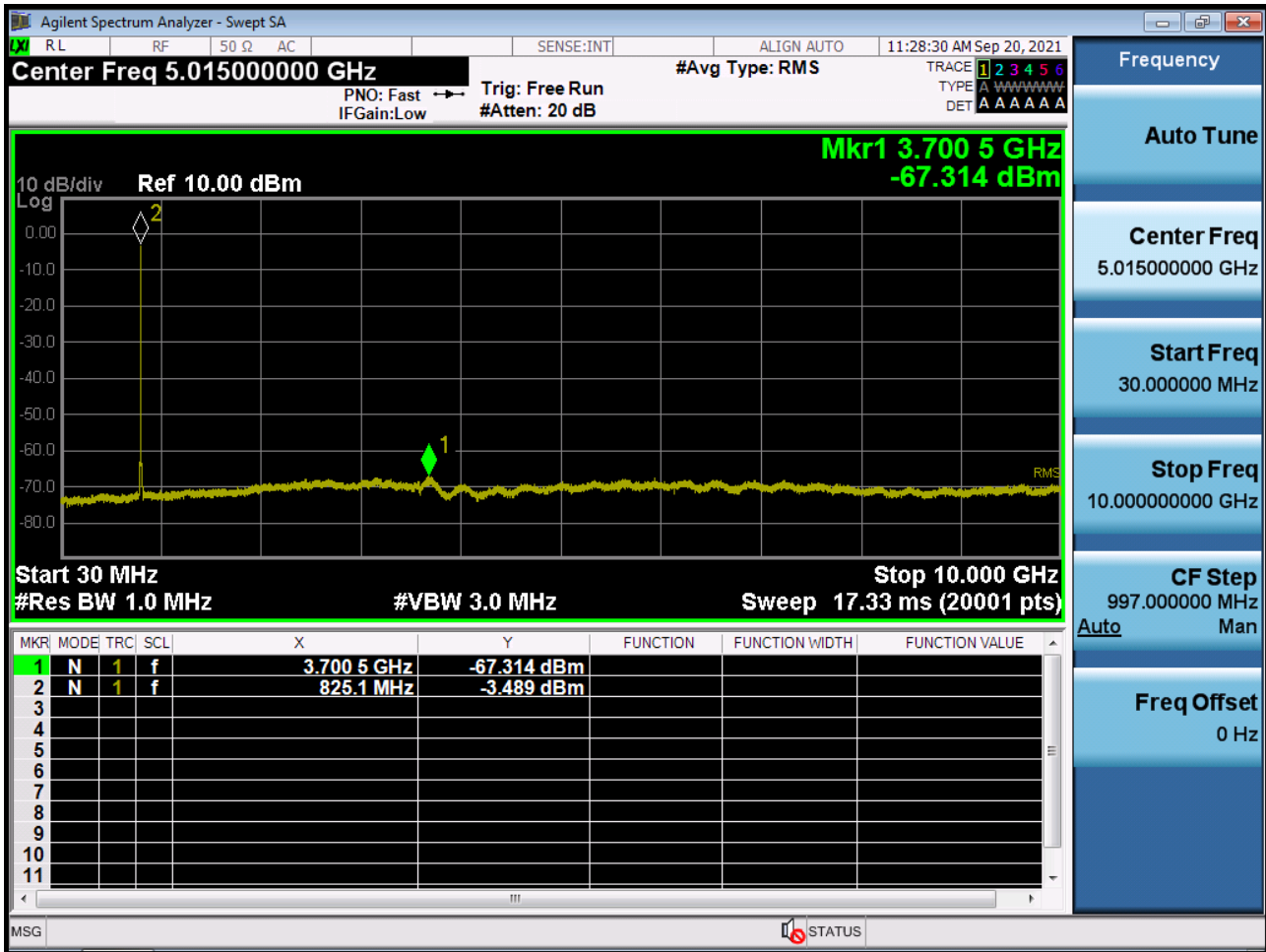


BAND 26. Upper Band Edge Plot (15 M BW Ch.26965 QPSK\_RB75\_Offset 0)

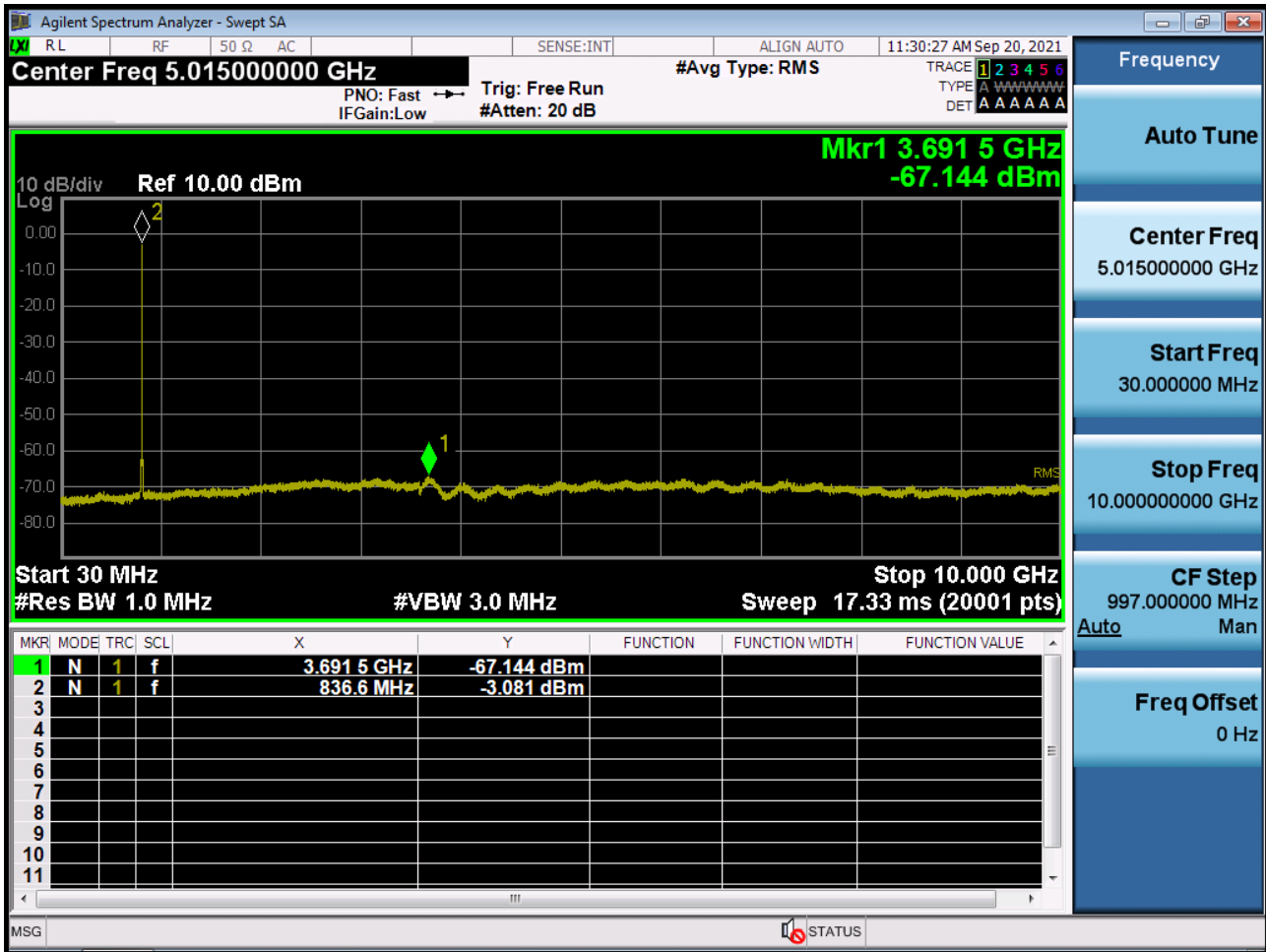




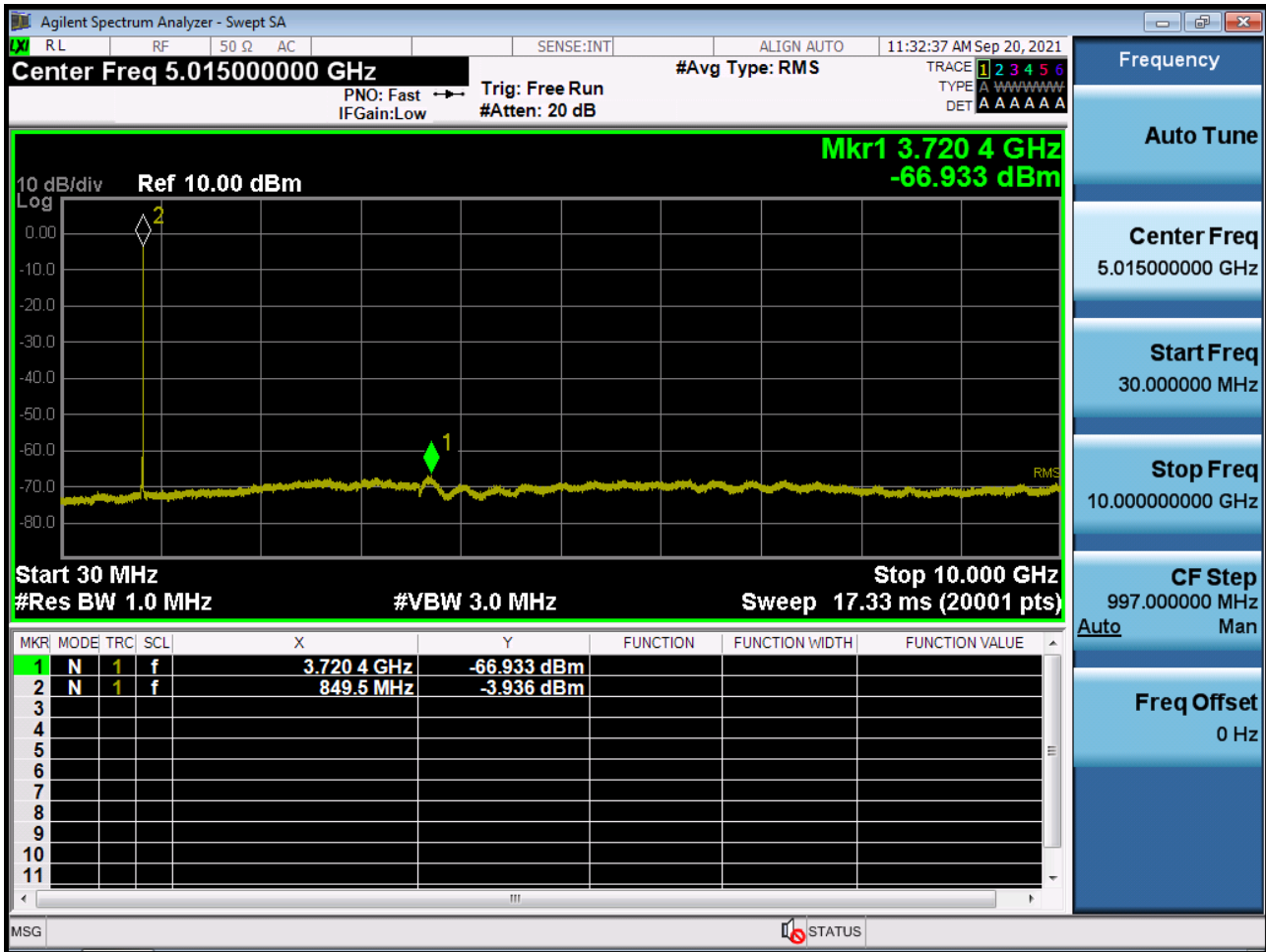
BAND5/ 26. Conducted Spurious Plot (26797ch\_1.4 MHz\_QPSK\_RB 1\_0)



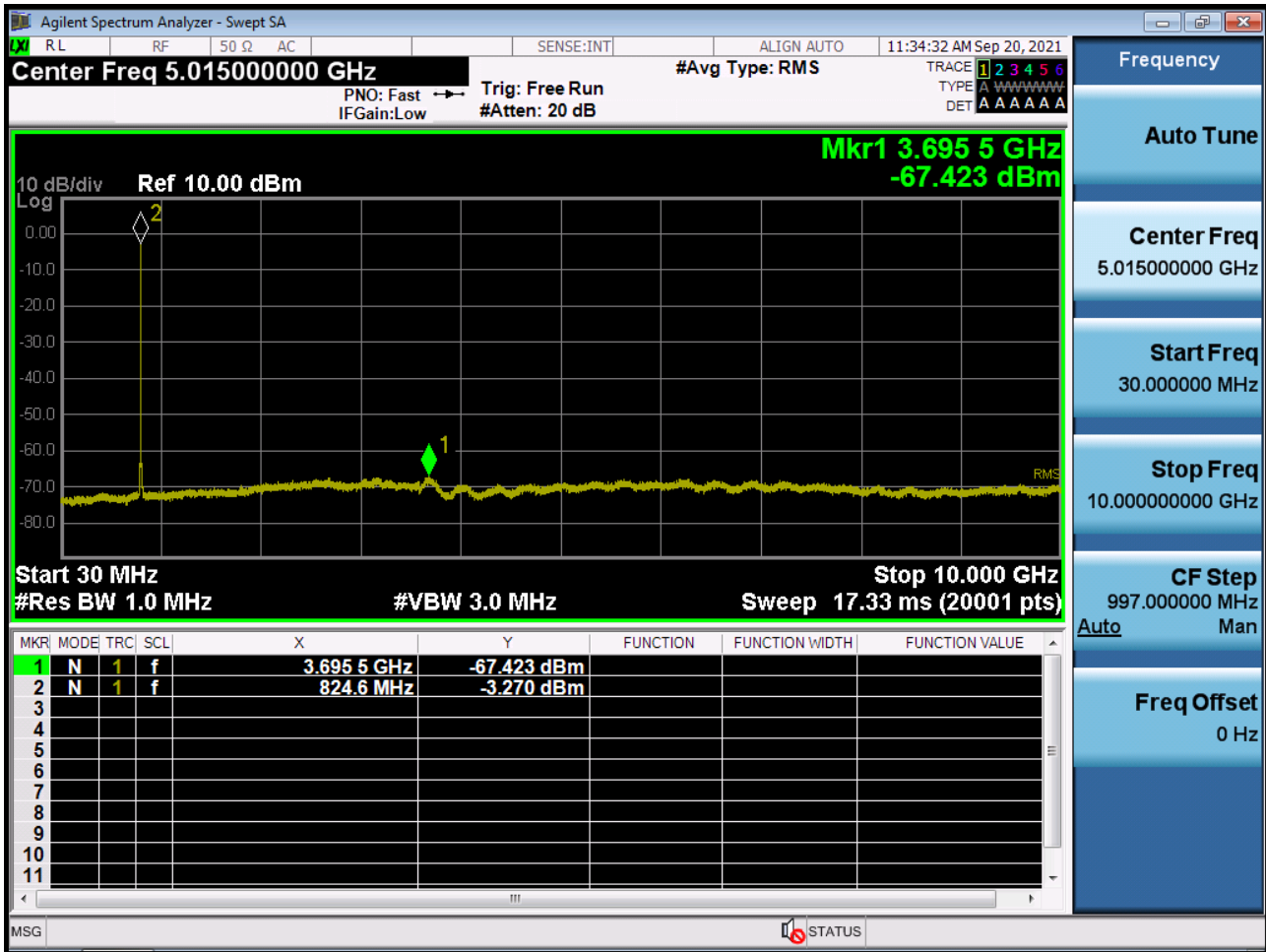
BAND5/ 26. Conducted Spurious Plot (26915ch\_1.4 MHz\_QPSK\_RB 1\_0)



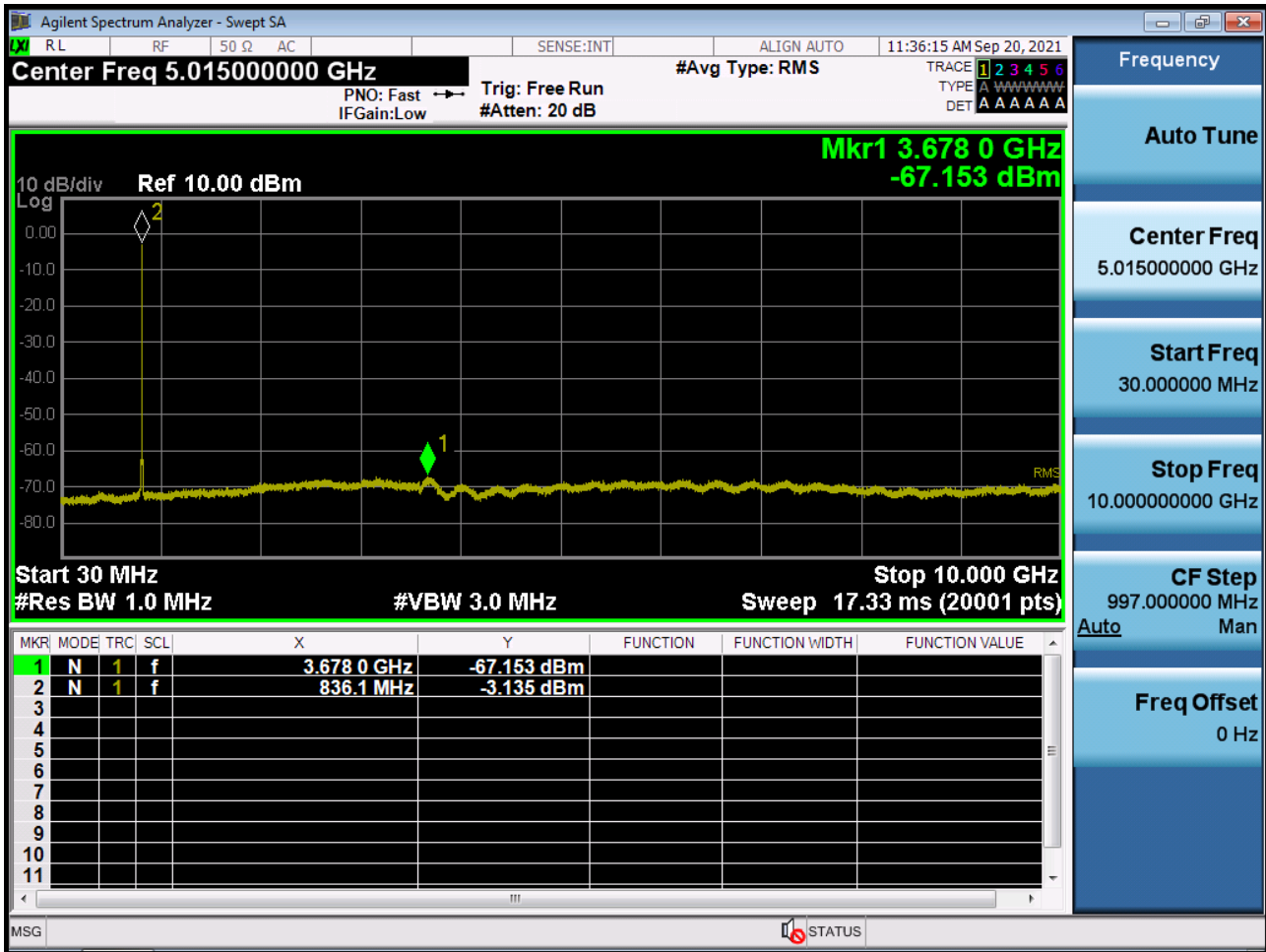
BAND5/ 26. Conducted Spurious Plot (27033ch\_1.4 MHz\_QPSK\_RB 1\_0)



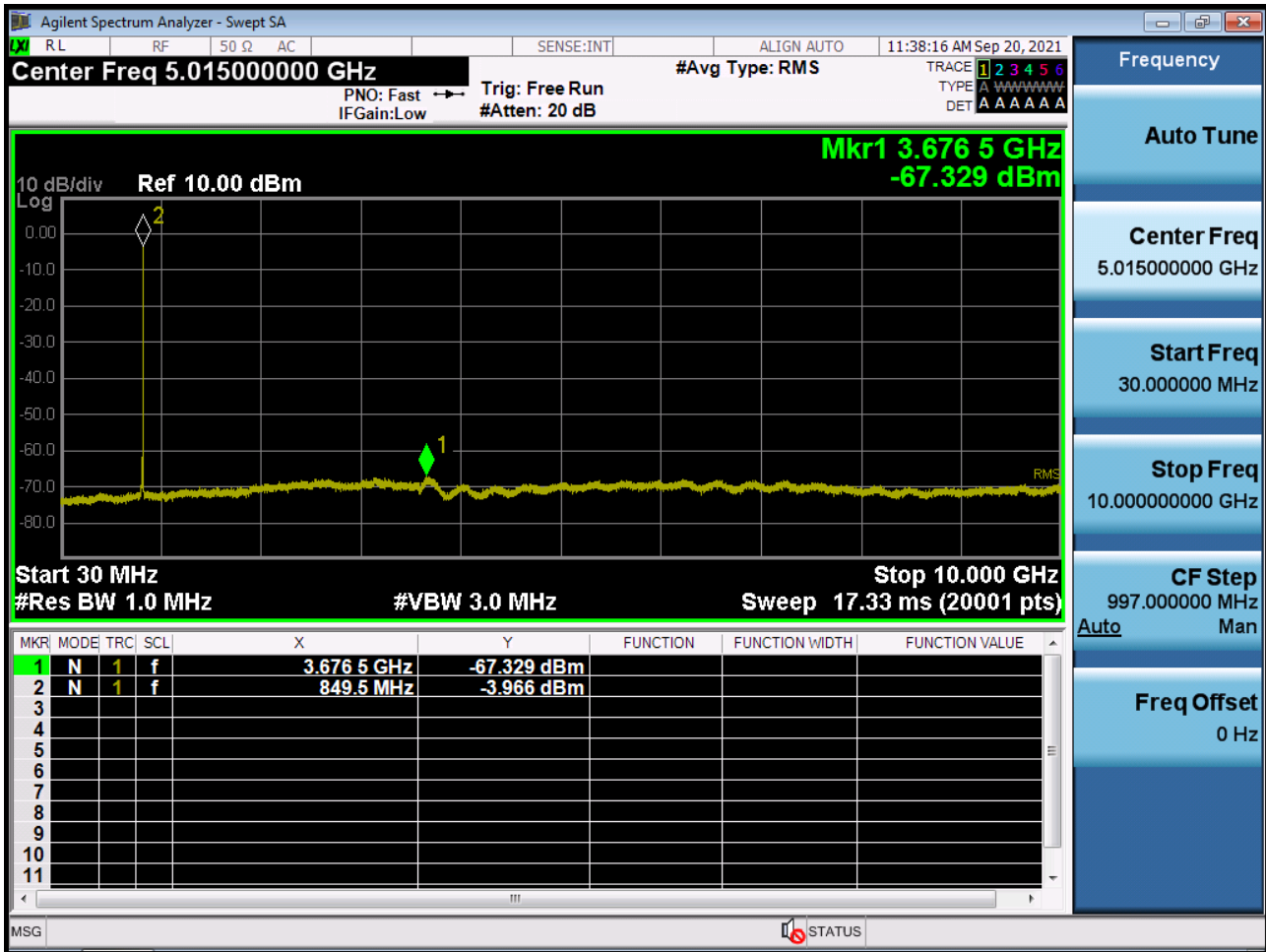
BAND5/ 26. Conducted Spurious Plot (26805ch\_3 MHz\_QPSK\_RB 1\_0)



BAND5/ 26. Conducted Spurious Plot (26915ch\_3 MHz\_QPSK\_RB 1\_0)

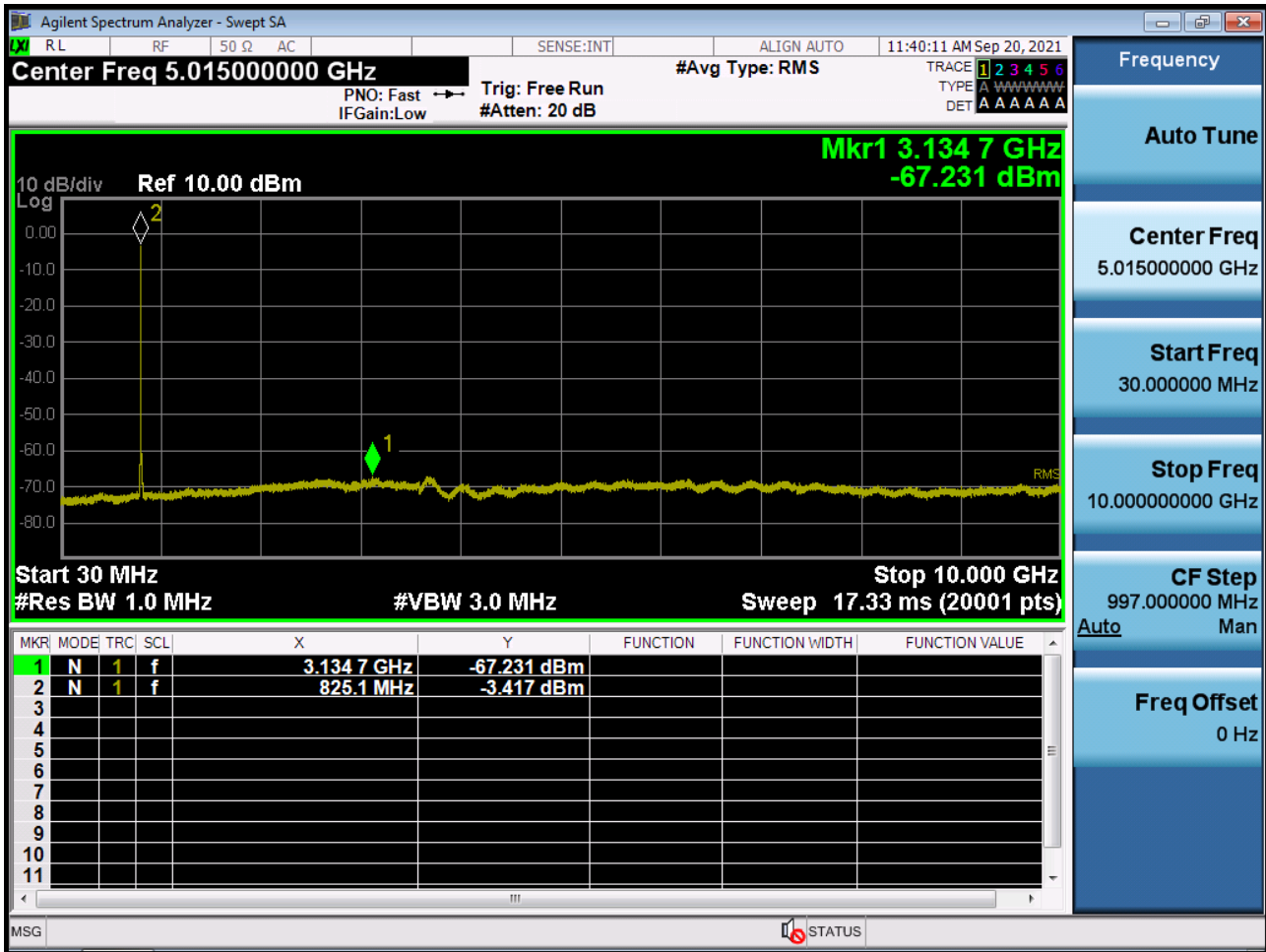


BAND5/ 26. Conducted Spurious Plot (27025ch\_3 MHz\_QPSK\_RB 1\_0)

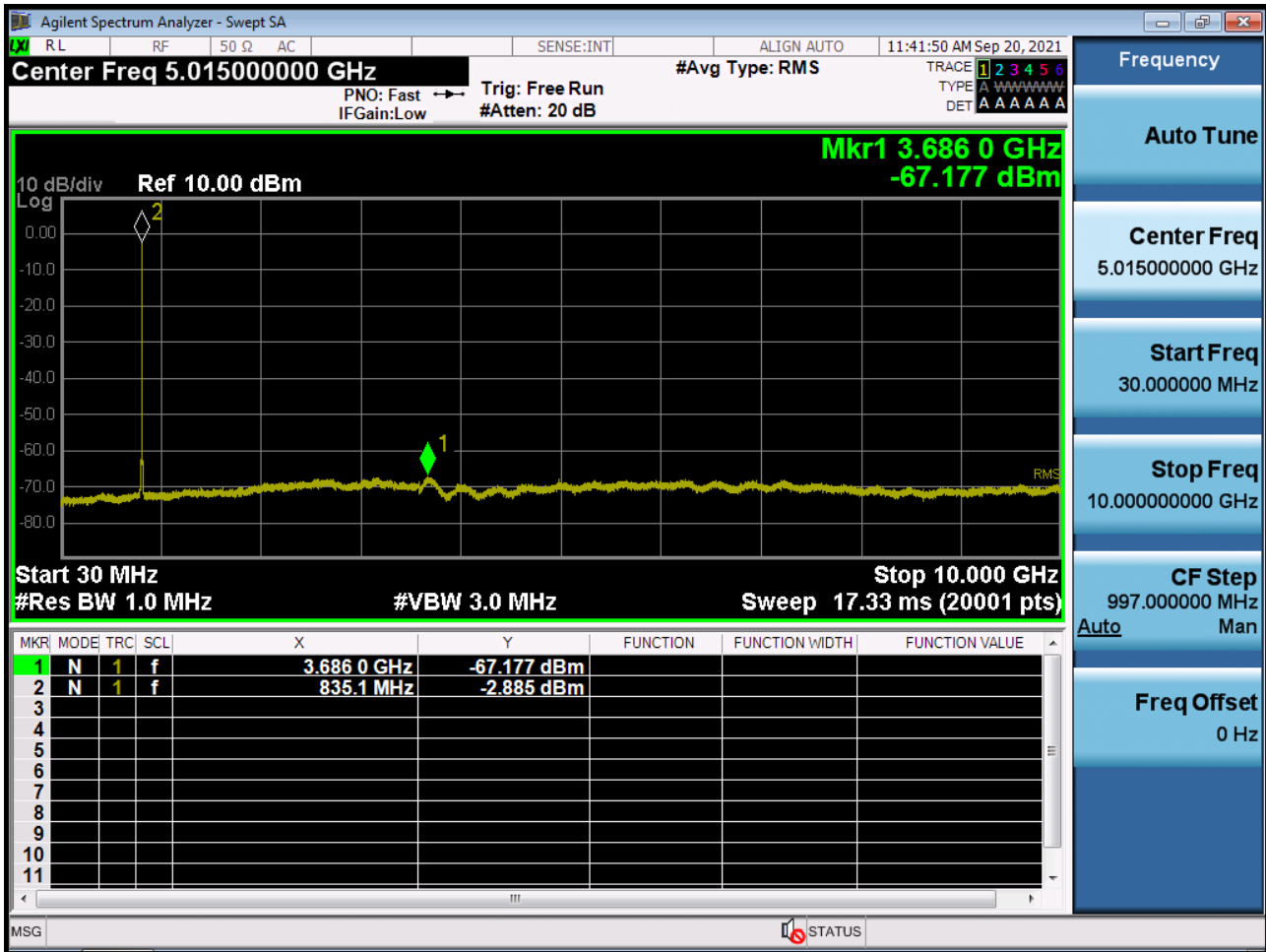




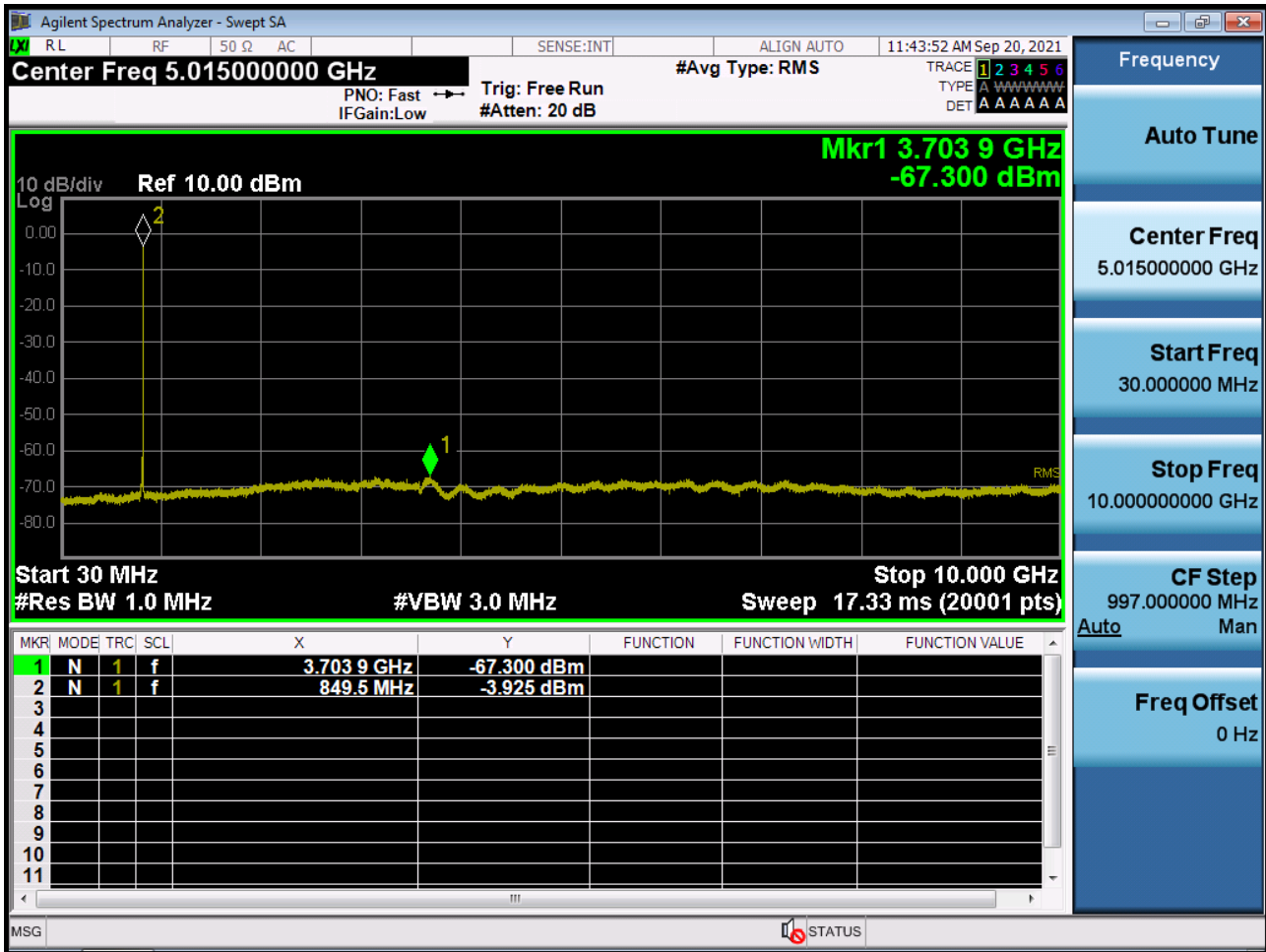
BAND5/ 26. Conducted Spurious Plot (26815ch\_5 MHz\_QPSK\_RB 1\_0)



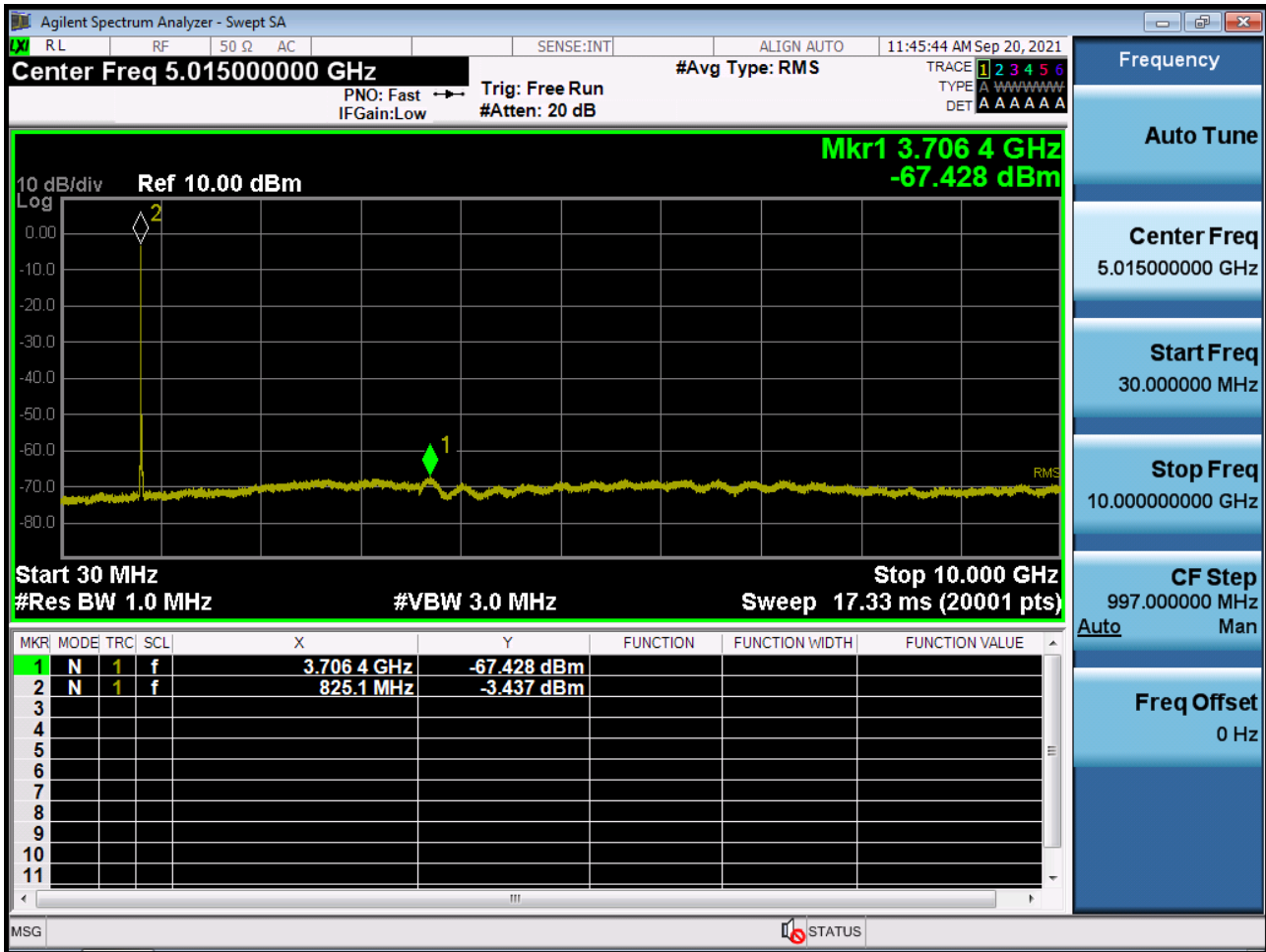
BAND5/ 26. Conducted Spurious Plot (26915ch\_5 MHz\_QPSK\_RB 1\_0)



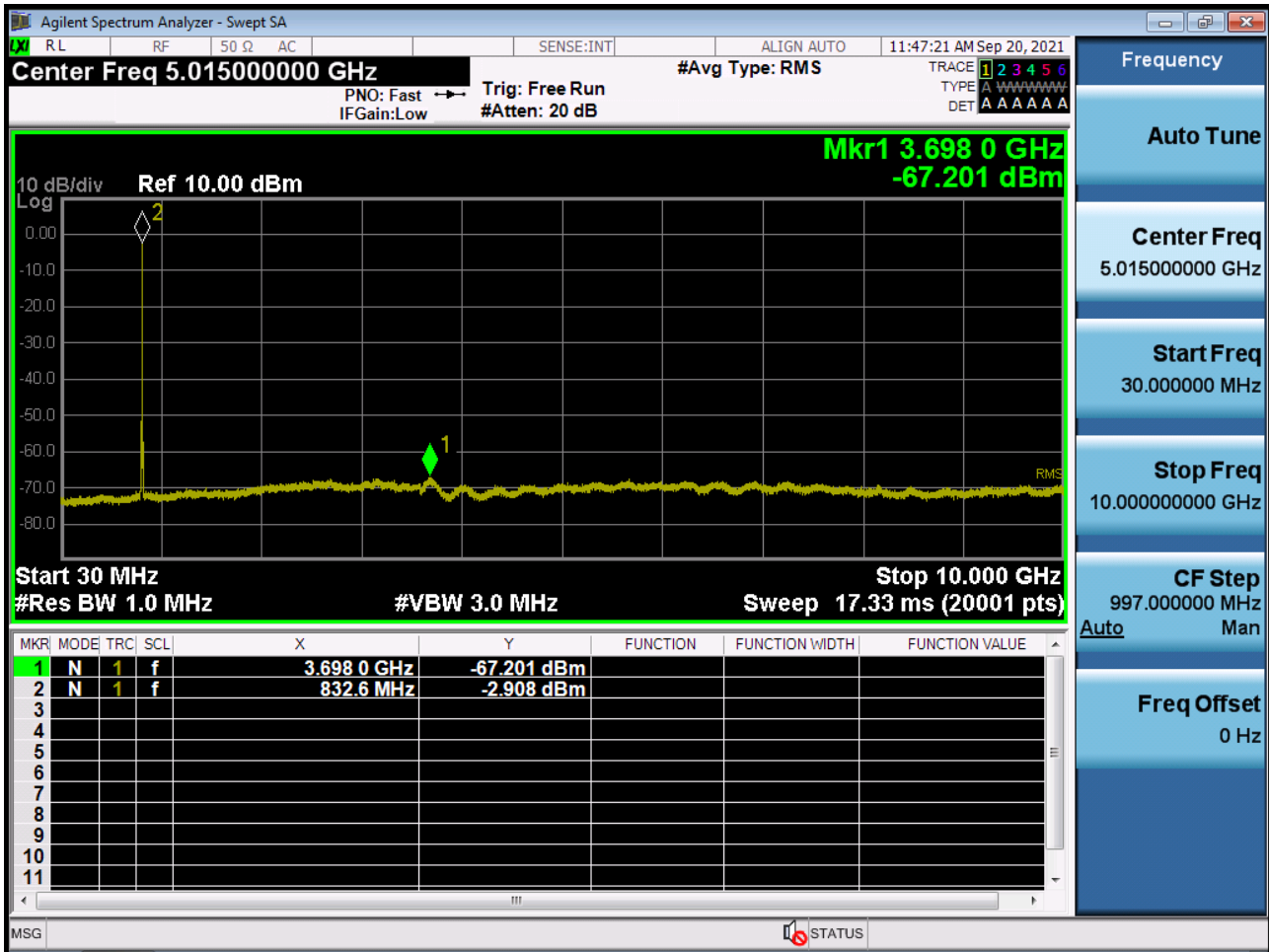
BAND5/ 26. Conducted Spurious Plot (27015ch\_5 MHz\_QPSK\_RB 1\_0)



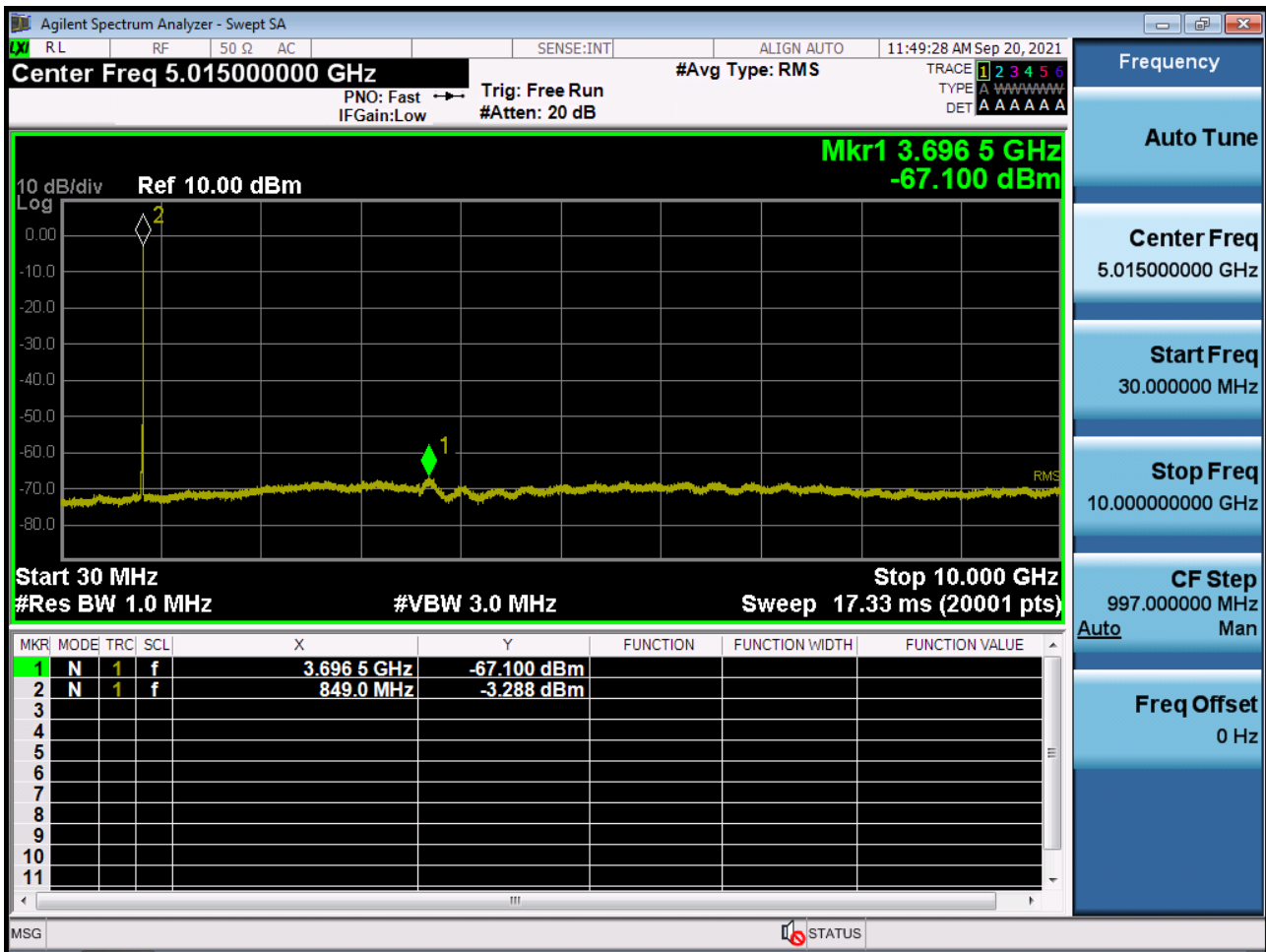
BAND5/ 26. Conducted Spurious Plot (26840ch\_10 MHz\_QPSK\_RB 1\_0)



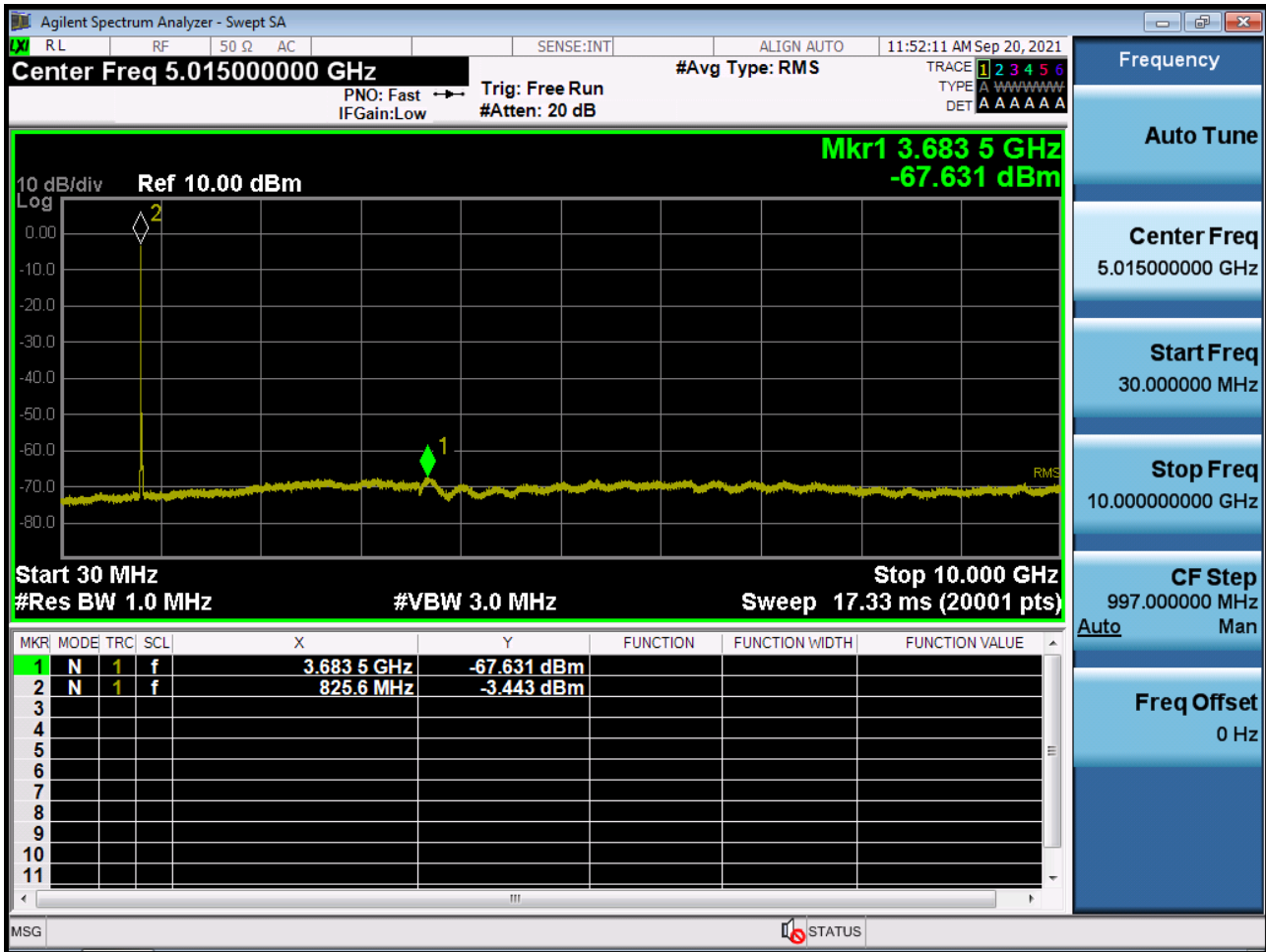
BAND5/ 26. Conducted Spurious Plot (26915ch\_10 MHz\_QPSK\_RB 1\_0)



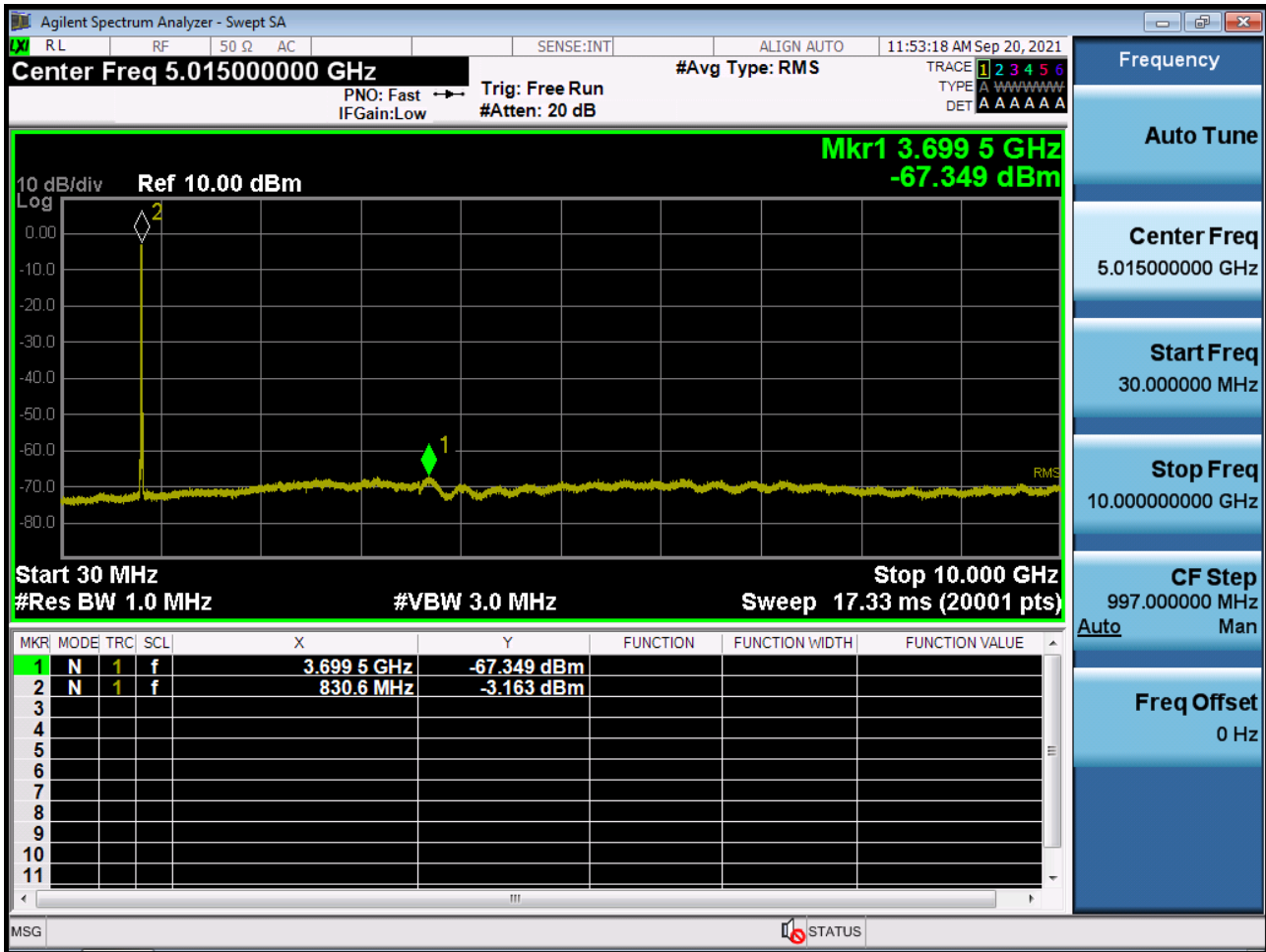
BAND5/ 26. Conducted Spurious Plot (26990ch\_10 MHz\_QPSK\_RB 1\_0)



BAND 26. Conducted Spurious (26865ch\_15 MHz\_QPSK\_RB 1\_0)

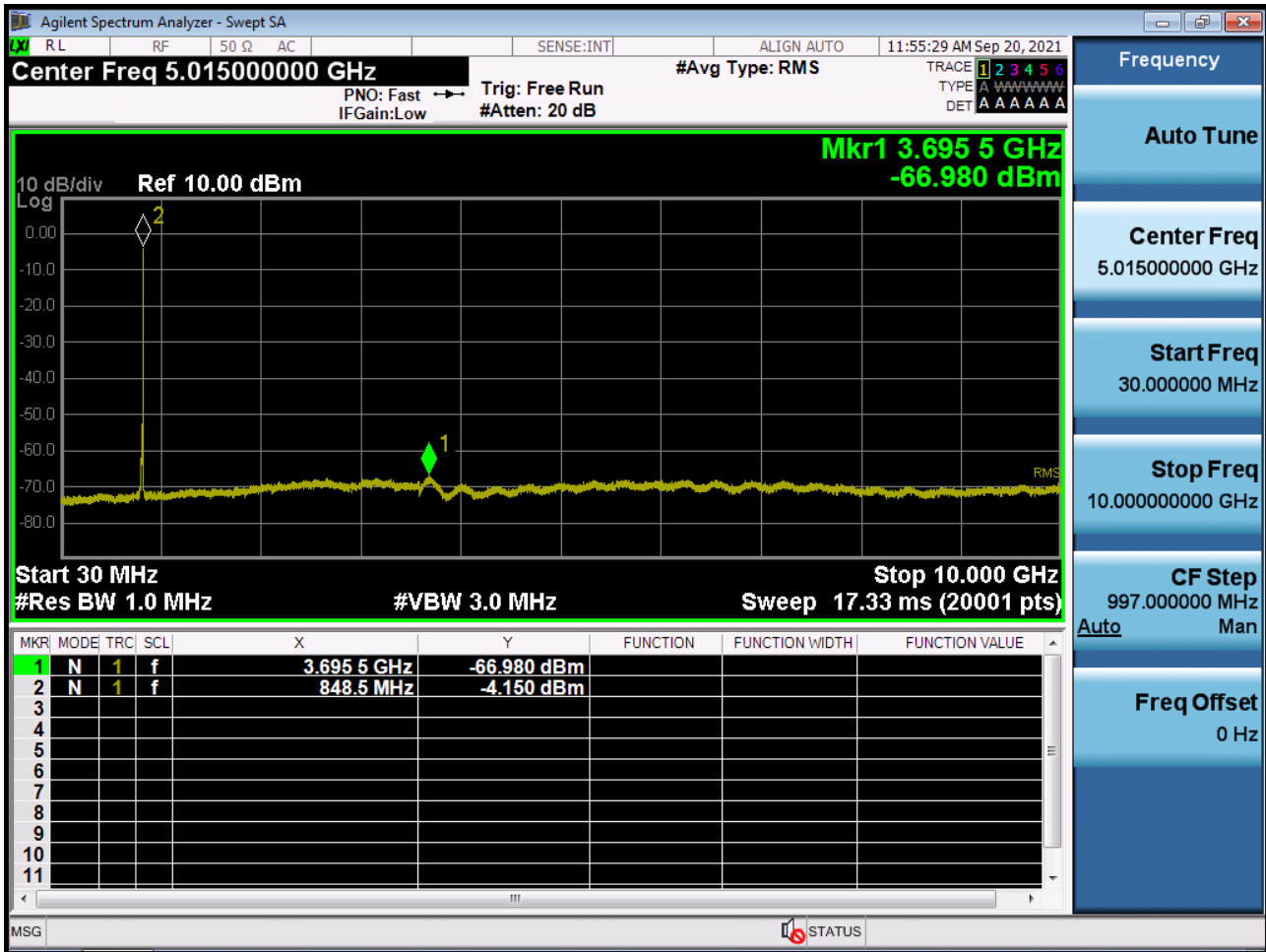


BAND 26. Conducted Spurious (26915ch\_15 MHz\_QPSK\_RB 1\_0)





BAND 26. Conducted Spurious (26965ch\_15 MHz\_QPSK\_RB 1\_0)



## 10. ANNEX A\_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2110-FC049-P