

FCC LTE REPORT

Certification

Applicant Name:

SAMSUNG Electronics Co., Ltd.

Date of Issue:

February 15, 2022

Location:
Address:

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

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

Report No.: HCT-RF-2202-FC010

FCC ID:

A3LSMA736B

APPLICANT:

SAMSUNG Electronics Co., Ltd.

Model(s): SM-A736B/DS
Additional Model(s): SM-A736B
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 – Band26 (1.4)	824.7 – 848.3	1M09G7D	QPSK	0.080	19.01
		1M09W7D	16QAM	0.069	18.36
		1M09W7D	64QAM	0.054	17.31
		1M09W7D	256QAM	0.027	14.29
LTE – Band26 (3)	825.5 – 847.5	2M71G7D	QPSK	0.080	19.02
		2M70W7D	16QAM	0.069	18.36
		2M70W7D	64QAM	0.053	17.24
		2M71W7D	256QAM	0.026	14.17
LTE – Band26 (5)	826.5 – 846.5	4M51G7D	QPSK	0.093	19.69
		4M50W7D	16QAM	0.081	19.06
		4M51W7D	64QAM	0.062	17.92
		4M53W7D	256QAM	0.030	14.74
LTE – Band26 (10)	829.0 – 844.0	9M00G7D	QPSK	0.097	19.88
		8M98W7D	16QAM	0.086	19.34
		9M00W7D	64QAM	0.066	18.22
		8M98W7D	256QAM	0.030	14.71
LTE – Band26 (15)	831.5 – 841.5	13M5G7D	QPSK	0.083	19.17
		13M5W7D	16QAM	0.075	18.76
		13M5W7D	64QAM	0.055	17.42
		13M4W7D	256QAM	0.026	14.19

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-2202-FC010

REVIEWED BY



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

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-2202-FC010	February 15, 2022	- First Approval Report

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

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMA736B
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§22, §2
EUT Type:	Mobile Phone
Model(s):	SM-A736B/DS
Additional Model(s):	SM-A736B
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:	January 10, 2022 ~ February 10, 2022
Serial number:	Radiated: R3CRB0BP4PA Conducted: 5a1ad468e1347ece

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.

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 $\geq 3 \times$ RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $> 2 \times$ 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 1MHz 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 1GHz, 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;

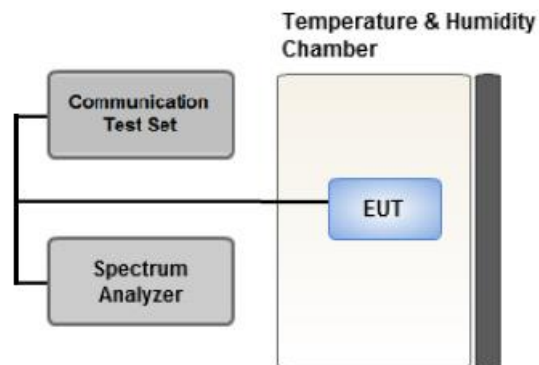
$$\text{Result}_{(\text{dBm})} = P_g_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

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 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.

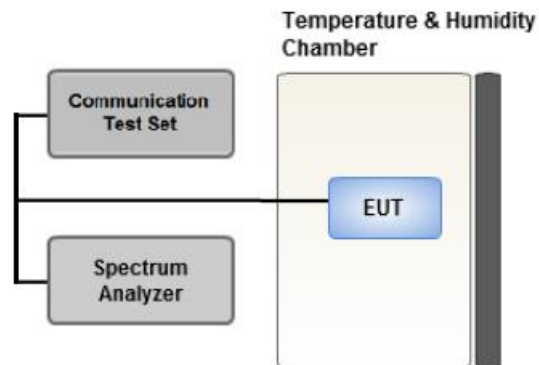
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

3.5 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.

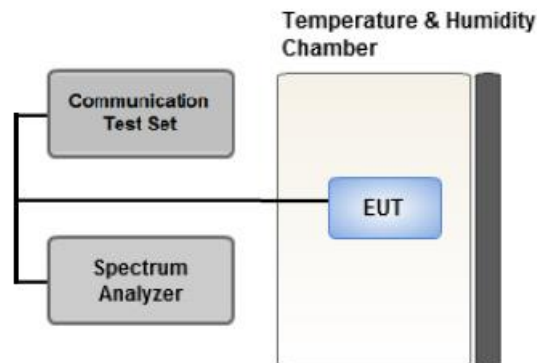
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

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 $\geq 2 \times \text{Span} / \text{RBW}$

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

Test Notes

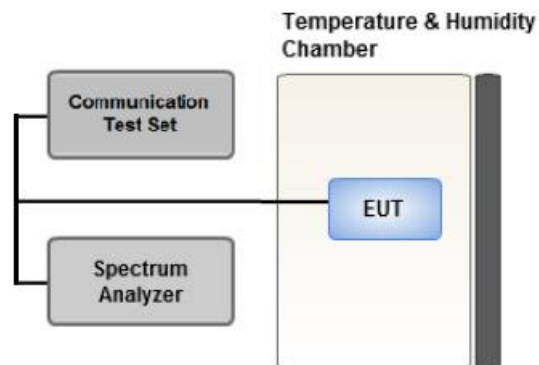
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of The authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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.
Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
Worst case : Stand alone
- We were performed the RSE test in condition of co-location. There has no significant emission raised.
- WWAN + WLAN 5 GHz + BT (Worst case : Stand alone)
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 10 MHz)
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data
- SM-A736B/DS & additional models were tested and the worst case results are reported.
(Worst case : SM-A736B/DS)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset	Axis
Effective Isotropic Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	1.4	Low	1	3	X
			Mid	1	0	
			High	1	5	
		3	Low	1	8	
			Mid	1	0	
			High	1	14	
		5	Low Mid, High	1	0	
		10	Low Mid, High	1	0	
		15	Low Mid, High	1	0	
Radiated Spurious and Harmonic Emissions	QPSK	10	Low Mid, High	1	0	Y

3.9 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
- SM-A736B/DS & additional models were tested and the worst case results are reported.

(Worst case : SM-A736B/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
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
		1.4, 3, 5, 10, 15	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	1.4, 3, 5, 10, 15	Low, Mid, High	1	0

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	04/12/2023	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	05/18/2022	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.	6200863156	12/29/2022	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_{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)	$< 43 + 10\log_{10} (P[\text{Watts}])$ 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	$< 2.5 \text{ ppm}$	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)	$< 7 \text{ Watts max. ERP}$	PASS
Radiated Spurious and Harmonic Emissions	§2.1053, §22.917(a)	$< 43 + 10\log_{10} (P[\text{Watts}])$ 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

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	dBm
824.7	LTE 26 (1.4 MHz)	QPSK	-32.40	30.65	-10.24	1.40	H	< 7.00	0.080	19.01
		16-QAM	-33.05	30.00	-10.24	1.40	H		0.069	18.36
		64-QAM	-34.10	28.95	-10.24	1.40	H		0.054	17.31
		256-QAM	-37.12	25.93	-10.24	1.40	H		0.027	14.29
836.5		QPSK	-32.74	30.30	-10.19	1.41	H		0.074	18.70
		16-QAM	-33.41	29.63	-10.19	1.41	H		0.064	18.03
		64-QAM	-34.46	28.58	-10.19	1.41	H		0.050	16.98
		256-QAM	-37.46	25.58	-10.19	1.41	H		0.025	13.98
848.3		QPSK	-32.94	30.22	-10.14	1.42	H		0.073	18.66
		16-QAM	-33.55	29.61	-10.14	1.42	H		0.064	18.05
		64-QAM	-34.57	28.59	-10.14	1.42	H		0.050	17.03
		256-QAM	-37.56	25.60	-10.14	1.42	H		0.025	14.04

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
825.5	LTE 26 (3 MHz)	QPSK	-32.36	30.66	-10.24	1.40	H	< 7.00	0.080	19.02
		16-QAM	-33.02	30.00	-10.24	1.40	H		0.069	18.36
		64-QAM	-34.14	28.88	-10.24	1.40	H		0.053	17.24
		256-QAM	-37.21	25.81	-10.24	1.40	H		0.026	14.17
836.5		QPSK	-32.48	30.56	-10.19	1.41	H		0.079	18.96
		16-QAM	-33.26	29.78	-10.19	1.41	H		0.066	18.18
		64-QAM	-34.31	28.73	-10.19	1.41	H		0.052	17.13
		256-QAM	-37.41	25.63	-10.19	1.41	H		0.025	14.03
847.5		QPSK	-32.78	30.41	-10.15	1.42	H		0.077	18.85
		16-QAM	-33.47	29.72	-10.15	1.42	H		0.065	18.16
		64-QAM	-34.52	28.67	-10.15	1.42	H		0.051	17.11
		256-QAM	-37.60	25.59	-10.15	1.42	H		0.025	14.03

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
826.5	LTE 26 (5 MHz)	QPSK	-31.68	31.32	-10.24	1.40	H	< 7.00	0.093	19.69
		16-QAM	-32.31	30.69	-10.24	1.40	H		0.081	19.06
		64-QAM	-33.45	29.55	-10.24	1.40	H		0.062	17.92
		256-QAM	-36.63	26.37	-10.24	1.40	H		0.030	14.74
836.5		QPSK	-32.02	31.02	-10.19	1.41	H		0.088	19.42
		16-QAM	-32.67	30.37	-10.19	1.41	H		0.075	18.77
		64-QAM	-33.66	29.38	-10.19	1.41	H		0.060	17.78
		256-QAM	-36.88	26.16	-10.19	1.41	H		0.029	14.56
846.5		QPSK	-32.36	30.82	-10.15	1.42	H		0.084	19.25
		16-QAM	-33.02	30.16	-10.15	1.42	H		0.072	18.59
		64-QAM	-34.02	29.16	-10.15	1.42	H		0.058	17.59
		256-QAM	-37.21	25.97	-10.15	1.42	H		0.028	14.40

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
829.0	LTE 26 (10 MHz)	QPSK	-31.62	31.50	-10.22	1.40	H	< 7.00	0.097	19.88
		16-QAM	-32.26	30.86	-10.22	1.40	H		0.084	19.24
		64-QAM	-33.38	29.74	-10.22	1.40	H		0.065	18.12
		256-QAM	-36.79	26.33	-10.22	1.40	H		0.030	14.71
836.5		QPSK	-31.73	31.31	-10.19	1.41	H		0.094	19.71
		16-QAM	-32.10	30.94	-10.19	1.41	H		0.086	19.34
		64-QAM	-33.22	29.82	-10.19	1.41	H		0.066	18.22
		256-QAM	-36.81	26.23	-10.19	1.41	H		0.029	14.63
844.0		QPSK	-32.16	30.90	-10.14	1.41	H		0.086	19.35
		16-QAM	-32.80	30.26	-10.14	1.41	H		0.074	18.71
		64-QAM	-33.88	29.18	-10.14	1.41	H		0.058	17.63
		256-QAM	-37.27	25.79	-10.14	1.41	H		0.027	14.24

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP	
								W	W	dBm
831.5	LTE B26 (15 MHz)	QPSK	-32.17	30.78	-10.21	1.40	H	< 7.00	0.083	19.17
		16-QAM	-32.75	30.20	-10.21	1.40	H		0.072	18.59
		64-QAM	-33.95	29.00	-10.21	1.40	H		0.055	17.39
		256-QAM	-37.29	25.66	-10.21	1.40	H		0.025	14.05
836.5		QPSK	-32.33	30.71	-10.19	1.41	H		0.082	19.11
		16-QAM	-32.68	30.36	-10.19	1.41	H		0.075	18.76
		64-QAM	-34.02	29.02	-10.19	1.41	H		0.055	17.42
		256-QAM	-37.25	25.79	-10.19	1.41	H		0.026	14.19
841.5		QPSK	-32.69	30.43	-10.17	1.41	H		0.077	18.85
		16-QAM	-33.20	29.92	-10.17	1.41	H		0.068	18.34
		64-QAM	-34.37	28.75	-10.17	1.41	H		0.052	17.17
		256-QAM	-37.72	25.40	-10.17	1.41	H		0.024	13.82

8.2 RADIATED SPURIOUS EMISSIONS

MODE: LTE B26
 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	-52.66	9.76	-63.18	2.01	V	-55.43	-13.00
	2 487.00	-53.52	10.62	-58.02	2.49	H	-49.89	-13.00
	3 316.00	-57.07	12.19	-58.44	2.91	H	-49.15	-13.00
26915 (836.5)	1 673.00	-52.06	9.82	-62.57	2.01	V	-54.76	-13.00
	2 509.50	-53.90	10.70	-58.20	2.50	V	-50.00	-13.00
	3 346.00	-56.48	12.37	-58.14	2.92	V	-48.69	-13.00
26990 (844.0)	1 688.00	-52.52	9.94	-62.93	2.03	H	-55.02	-13.00
	2 532.00	-54.99	10.70	-58.74	2.50	H	-50.54	-13.00
	3 376.00	-56.98	12.50	-58.64	2.93	H	-49.06	-13.00

8.3 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	1.0915
			16-QAM			1.0916
			64-QAM			1.0942
			256-QAM			1.0893
	3 MHz		QPSK	15		2.7071
			16-QAM			2.6965
			64-QAM			2.7023
			256-QAM			2.7057
	5 MHz		QPSK	25		4.5098
			16-QAM			4.5039
			64-QAM			4.5098
			256-QAM			4.5275
	10 MHz		QPSK	50		8.9971
			16-QAM			8.9809
			64-QAM			8.9992
			256-QAM			8.9818
	15 MHz		QPSK	75		13.457
			16-QAM			13.476
			64-QAM			13.472
			256-QAM			13.426

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)
26	1.4	824.7	3.6955	27.976	-67.201	-39.225	-13.00
		836.5	3.7079	27.976	-67.217	-39.241	
		848.3	3.7094	27.976	-67.052	-39.076	
	3	825.5	3.6955	27.976	-67.155	-39.179	
		836.5	3.7079	27.976	-67.450	-39.474	
		847.5	3.7119	27.976	-67.361	-39.385	
	5	826.5	3.6880	27.976	-66.902	-38.926	
		836.5	3.6880	27.976	-67.410	-39.434	
		846.5	3.6910	27.976	-67.319	-39.343	
	10	829.0	3.7054	27.976	-67.236	-39.260	
		836.5	3.7024	27.976	-66.889	-38.913	
		844.0	3.6730	27.976	-67.208	-39.232	
	15	831.5	3.6845	27.976	-67.307	-39.331	
		836.5	3.6870	27.976	-67.296	-39.320	
		841.5	3.6895	27.976	-67.093	-39.117	

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 + 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

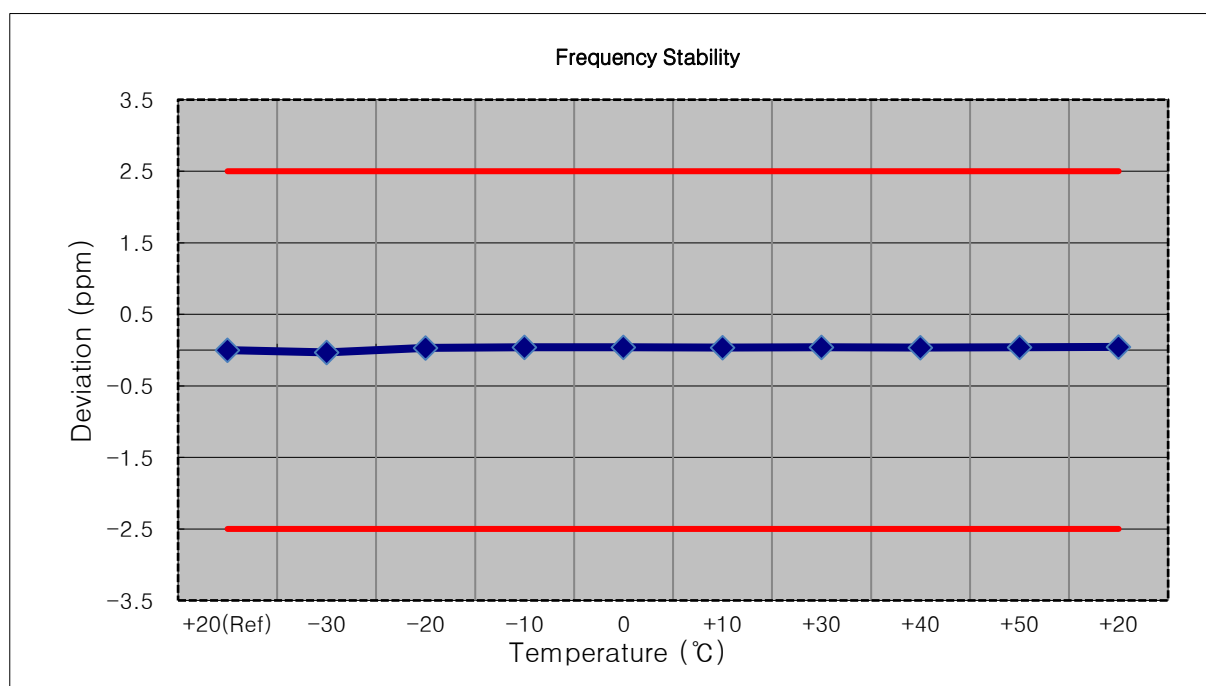
8.5 BAND EDGE

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

8.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

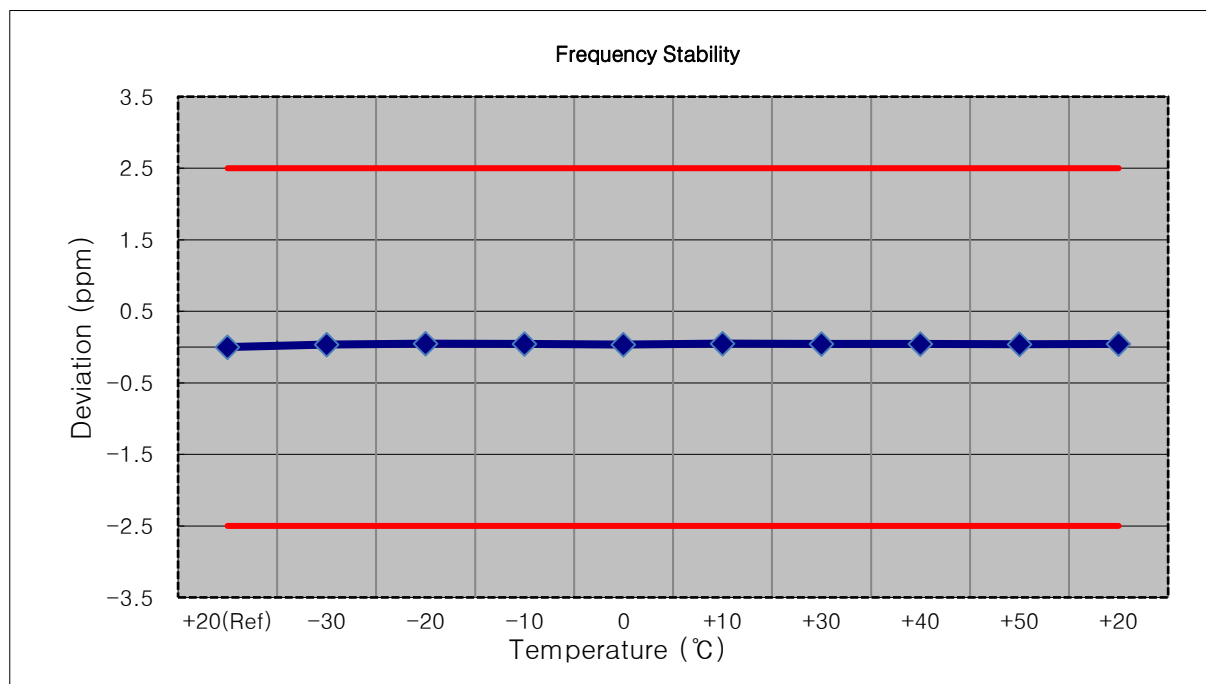
MODE:	<u>LTE 26</u>
OPERATING FREQUENCY:	<u>836,500,000 Hz</u>
CHANNEL:	<u>26915 (1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.860 VDC</u>
DEVIATION LIMIT:	<u>± 0.000 25 % or 2.5 ppm</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	836 500 029	0.0	0.000 000	0.000
100 %		-30	836 500 002	-27.1	-0.000 003	-0.032
100 %		-20	836 500 055	25.8	0.000 003	0.031
100 %		-10	836 500 062	32.8	0.000 004	0.039
100 %		0	836 500 061	32.1	0.000 004	0.038
100 %		+10	836 500 059	30.0	0.000 004	0.036
100 %		+30	836 500 064	34.3	0.000 004	0.041
100 %		+40	836 500 060	30.3	0.000 004	0.036
100 %		+50	836 500 062	32.8	0.000 004	0.039
Batt. Endpoint	3.550	+20	836 500 066	37.1	0.000 004	0.044



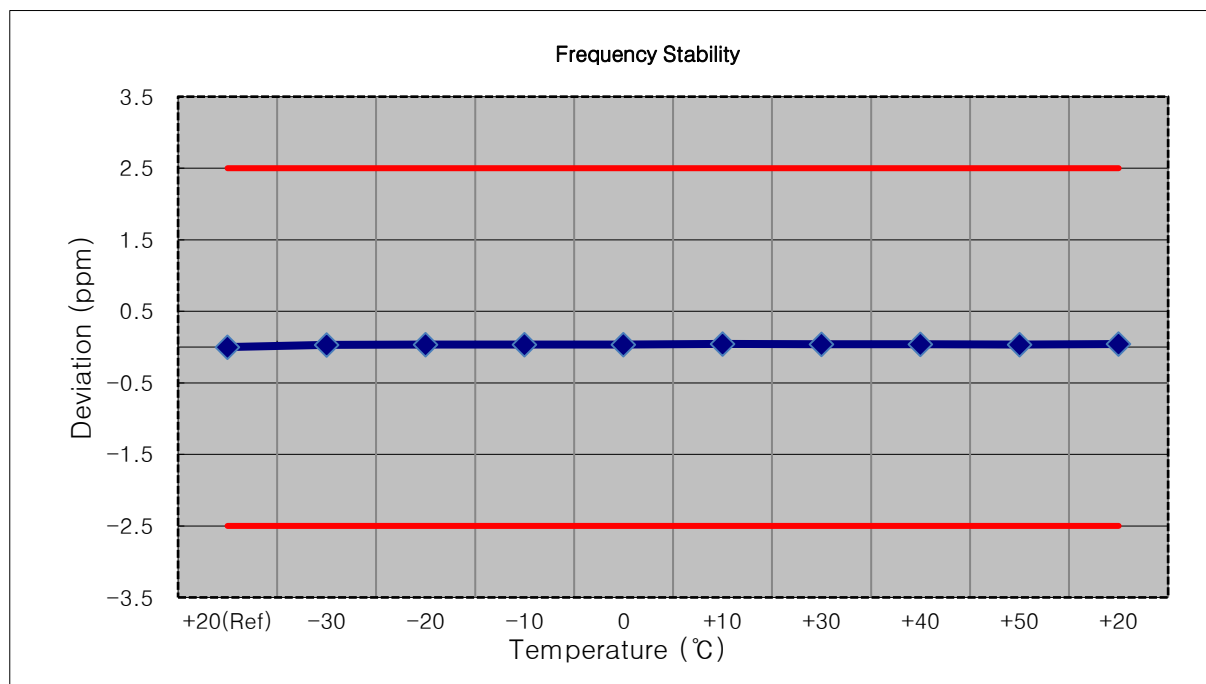
☐ MODE: LTE 26
☐ OPERATING FREQUENCY: 836,500,000 Hz
☐ CHANNEL: 26915 (3 MHz)
☐ REFERENCE VOLTAGE: 3.860 VDC
☐ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	836 500 036	0.0	0.000 000	0.000
100 %		-30	836 500 067	31.1	0.000 004	0.037
100 %		-20	836 500 076	39.9	0.000 005	0.048
100 %		-10	836 500 074	37.7	0.000 005	0.045
100 %		0	836 500 066	29.8	0.000 004	0.036
100 %		+10	836 500 075	39.3	0.000 005	0.047
100 %		+30	836 500 074	38.0	0.000 005	0.045
100 %		+40	836 500 071	35.0	0.000 004	0.042
100 %		+50	836 500 069	32.9	0.000 004	0.039
Batt. Endpoint	3.550	+20	836 500 072	36.1	0.000 004	0.043



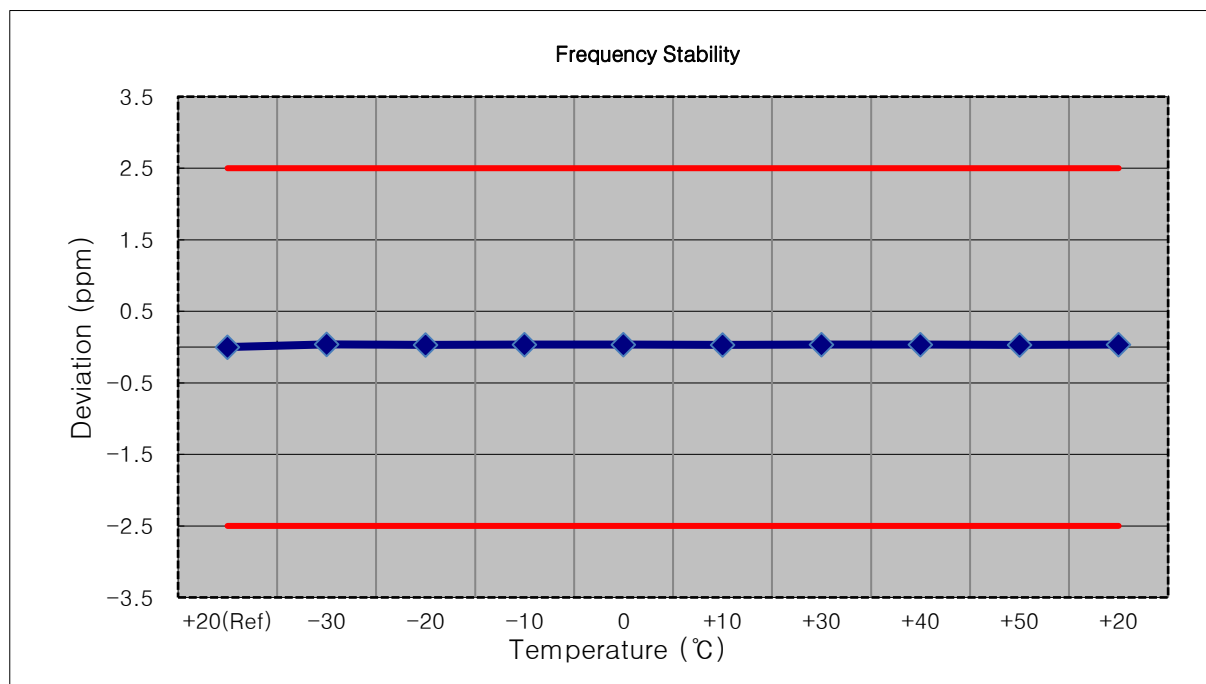
☐ MODE: LTE 26
☐ OPERATING FREQUENCY: 836,500,000 Hz
☐ CHANNEL: 26915 (5 MHz)
☐ REFERENCE VOLTAGE: 3.860 VDC
☐ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	836 500 033	0.0	0.000 000	0.000
100 %		-30	836 500 060	26.7	0.000 003	0.032
100 %		-20	836 500 062	28.9	0.000 003	0.035
100 %		-10	836 500 064	30.9	0.000 004	0.037
100 %		0	836 500 064	31.1	0.000 004	0.037
100 %		+10	836 500 068	35.2	0.000 004	0.042
100 %		+30	836 500 066	33.1	0.000 004	0.040
100 %		+40	836 500 065	31.4	0.000 004	0.038
100 %		+50	836 500 064	31.1	0.000 004	0.037
Batt. Endpoint	3.550	+20	836 500 068	35.3	0.000 004	0.042



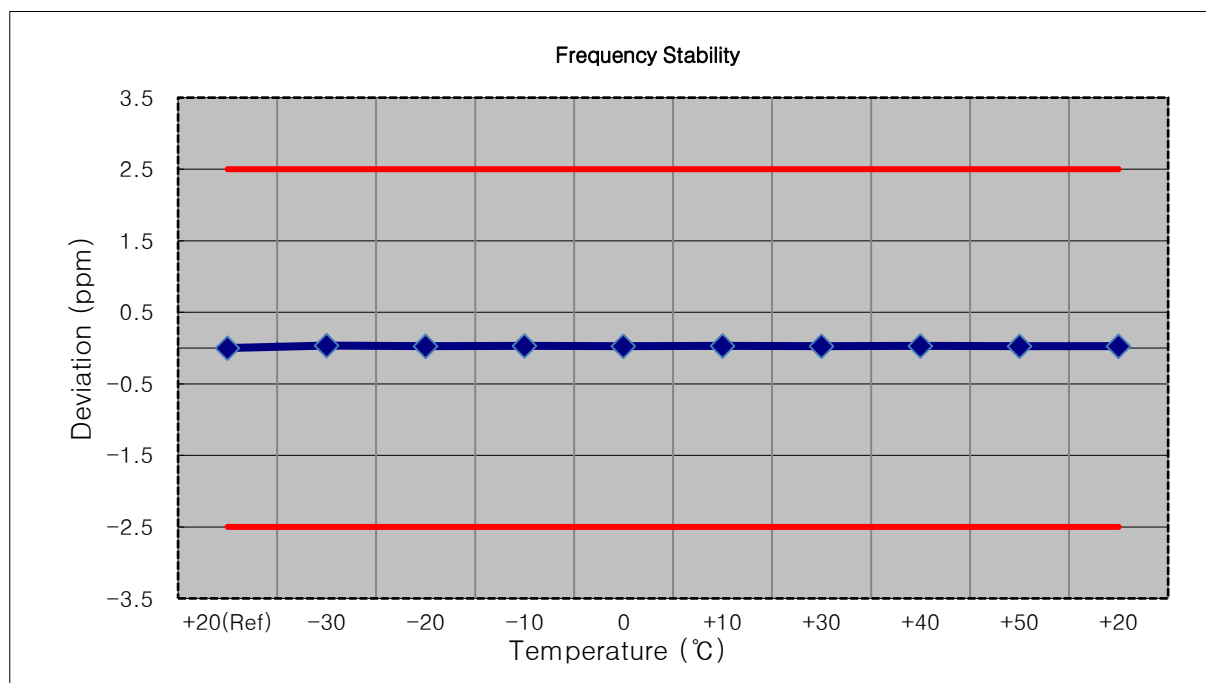
□ MODE: LTE 26
 □ OPERATING FREQUENCY: 836,500,000 Hz
 □ CHANNEL: 26915 (10 MHz)
 □ REFERENCE VOLTAGE: 3.860 VDC
 □ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	836 500 026	0.0	0.000 000	0.000
100 %		-30	836 500 057	31.2	0.000 004	0.037
100 %		-20	836 500 052	26.4	0.000 003	0.032
100 %		-10	836 500 054	28.3	0.000 003	0.034
100 %		0	836 500 053	27.8	0.000 003	0.033
100 %		+10	836 500 052	26.6	0.000 003	0.032
100 %		+30	836 500 056	30.3	0.000 004	0.036
100 %		+40	836 500 056	30.1	0.000 004	0.036
100 %		+50	836 500 052	26.8	0.000 003	0.032
Batt. Endpoint	3.550	+20	836 500 054	28.8	0.000 003	0.034



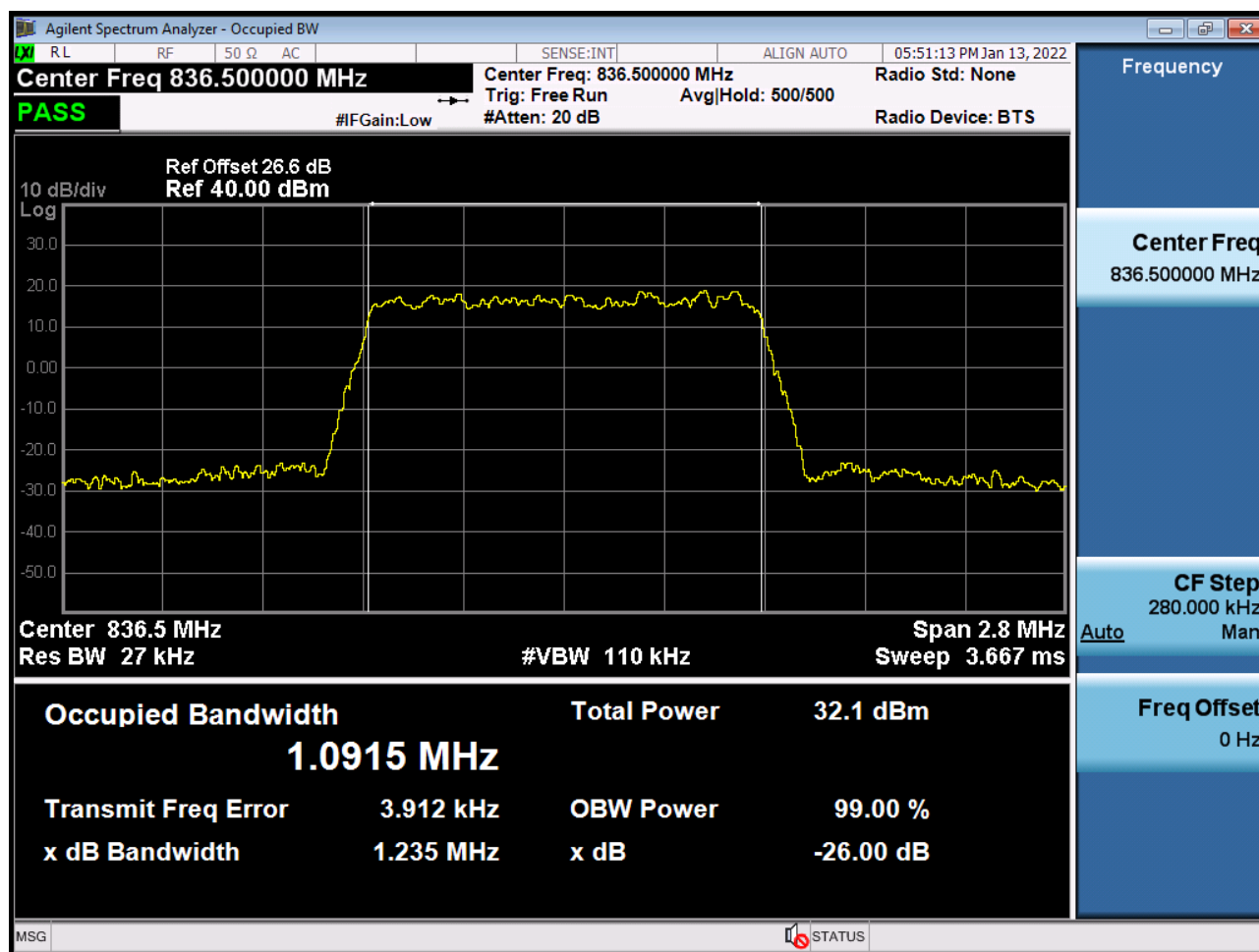
☐ MODE: LTE B26
☐ OPERATING FREQUENCY: 836,500,000 Hz
☐ CHANNEL: 26915 (15 MHz)
☐ REFERENCE VOLTAGE: 3.860 VDC
☐ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	836 500 024	0.0	0.000 000	0.000
100 %		-30	836 500 055	29.1	0.000 003	0.035
100 %		-20	836 500 047	21.9	0.000 003	0.026
100 %		-10	836 500 050	24.1	0.000 003	0.029
100 %		0	836 500 046	20.3	0.000 002	0.024
100 %		+10	836 500 051	25.3	0.000 003	0.030
100 %		+30	836 500 047	21.7	0.000 003	0.026
100 %		+40	836 500 051	25.8	0.000 003	0.031
100 %		+50	836 500 048	22.0	0.000 003	0.026
Batt. Endpoint	3.550	+20	836 500 048	22.1	0.000 003	0.026

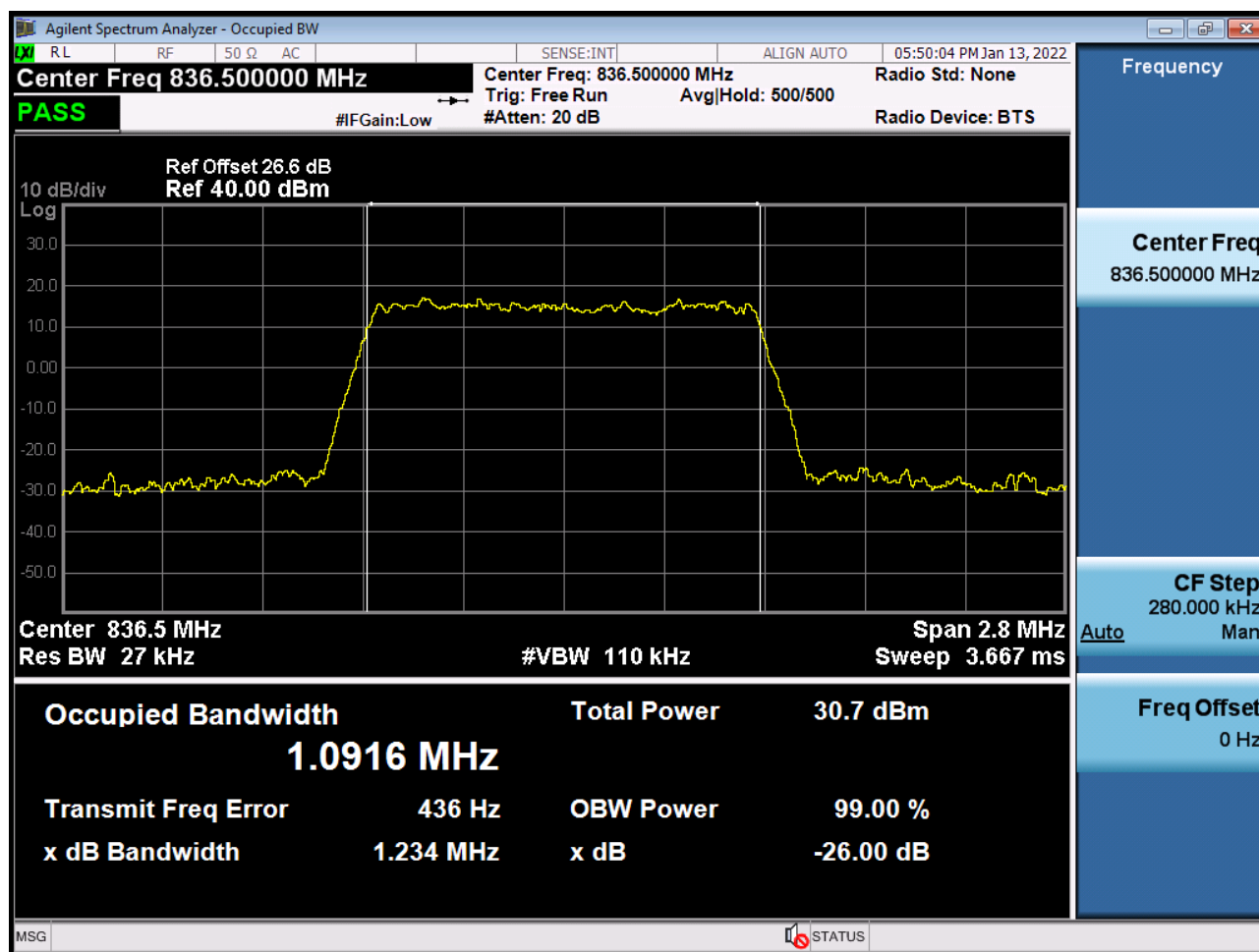


9. TEST PLOTS

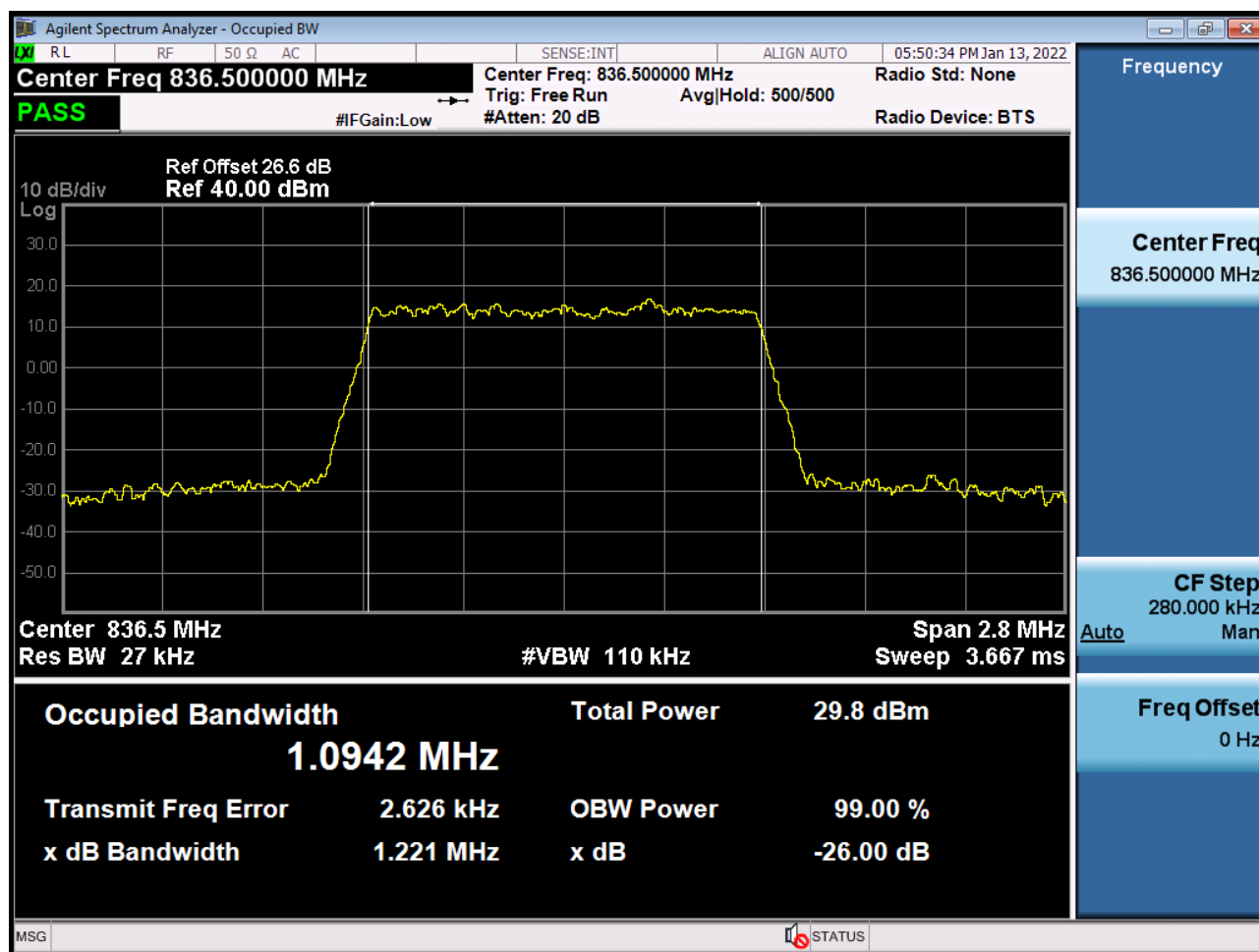
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 QPSK_RB6_0)



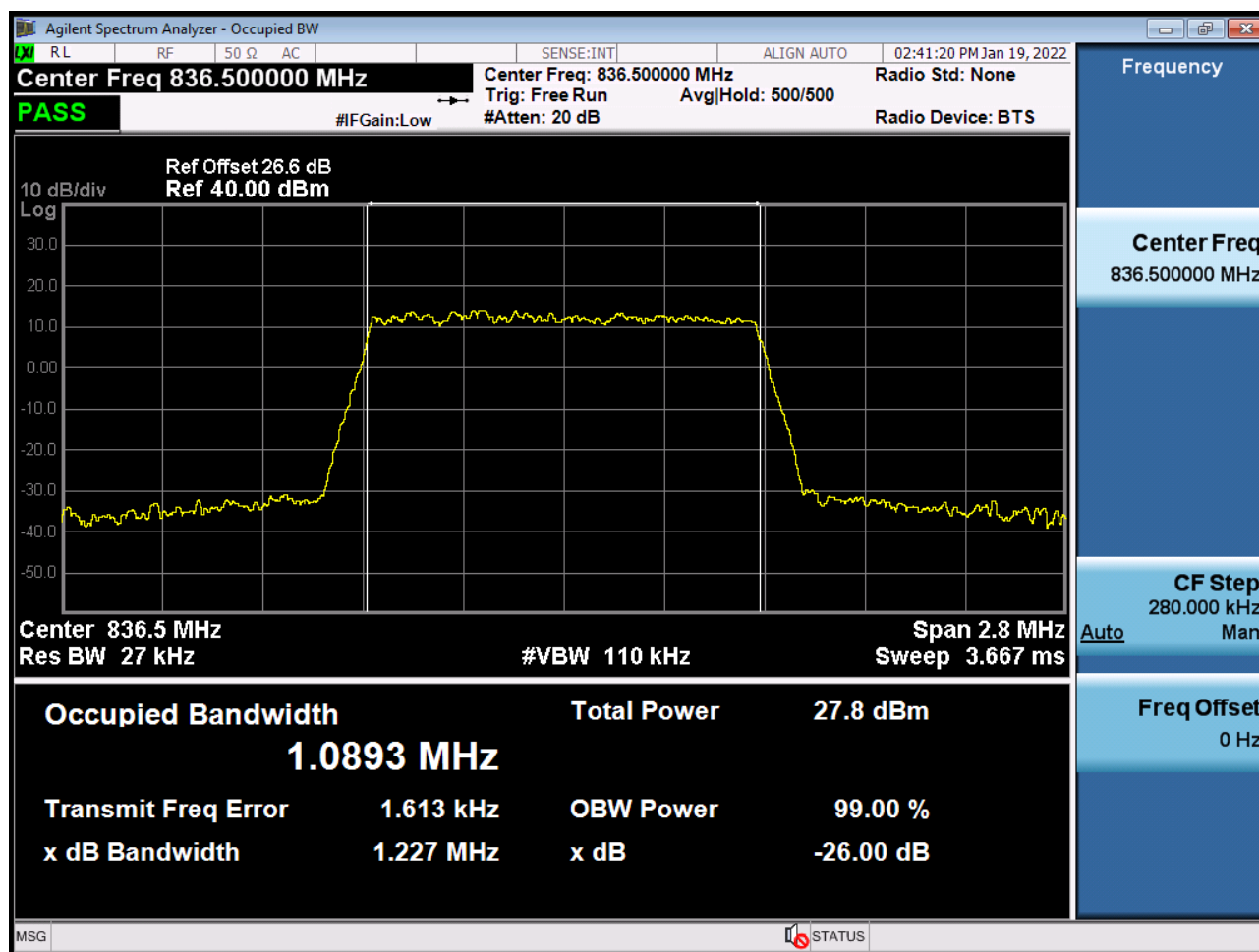
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 16QAM_RB6_0)



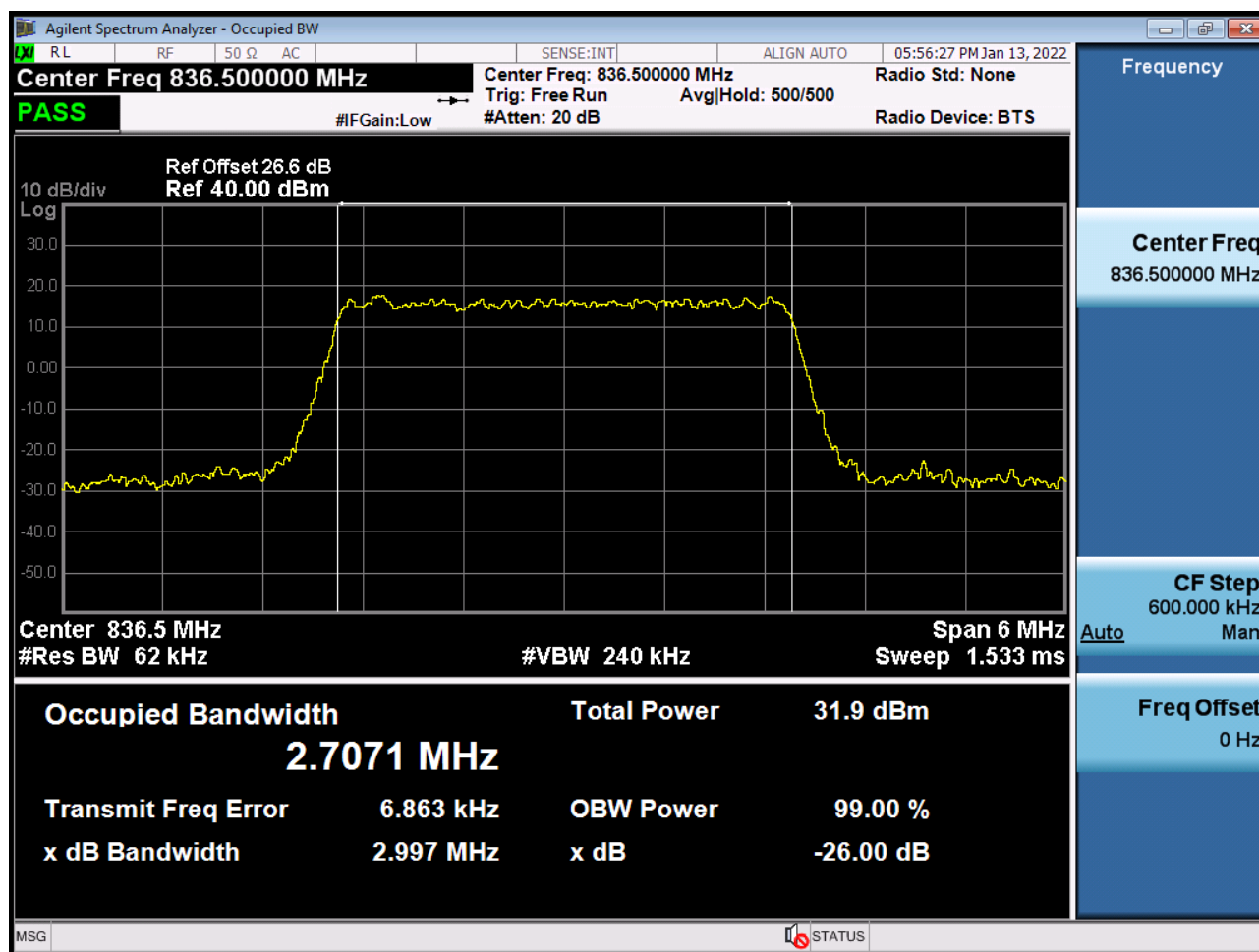
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 64QAM_RB6_0)



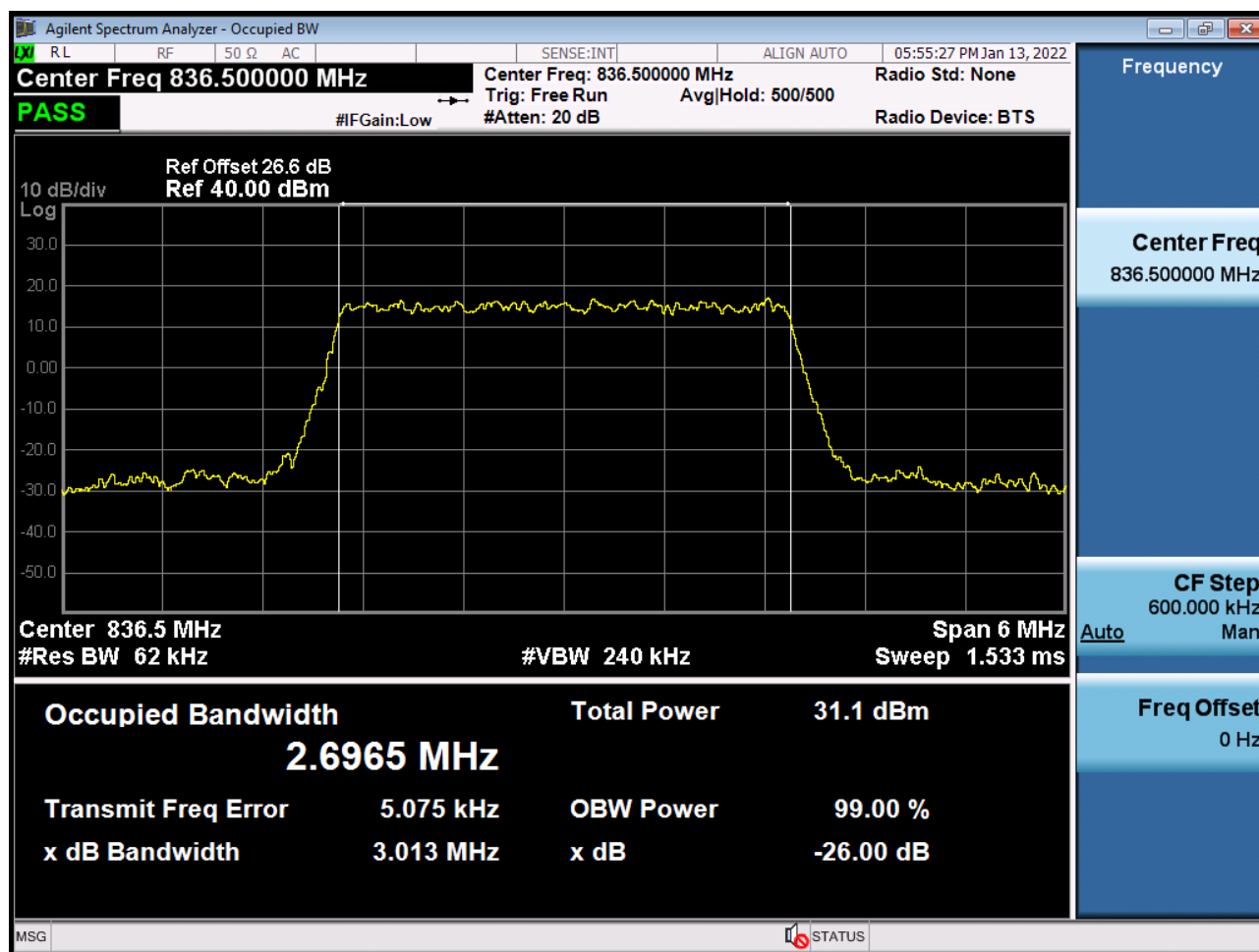
BAND26. Occupied Bandwidth Plot (1.4 M BW Ch.26915 256QAM_RB6_0)



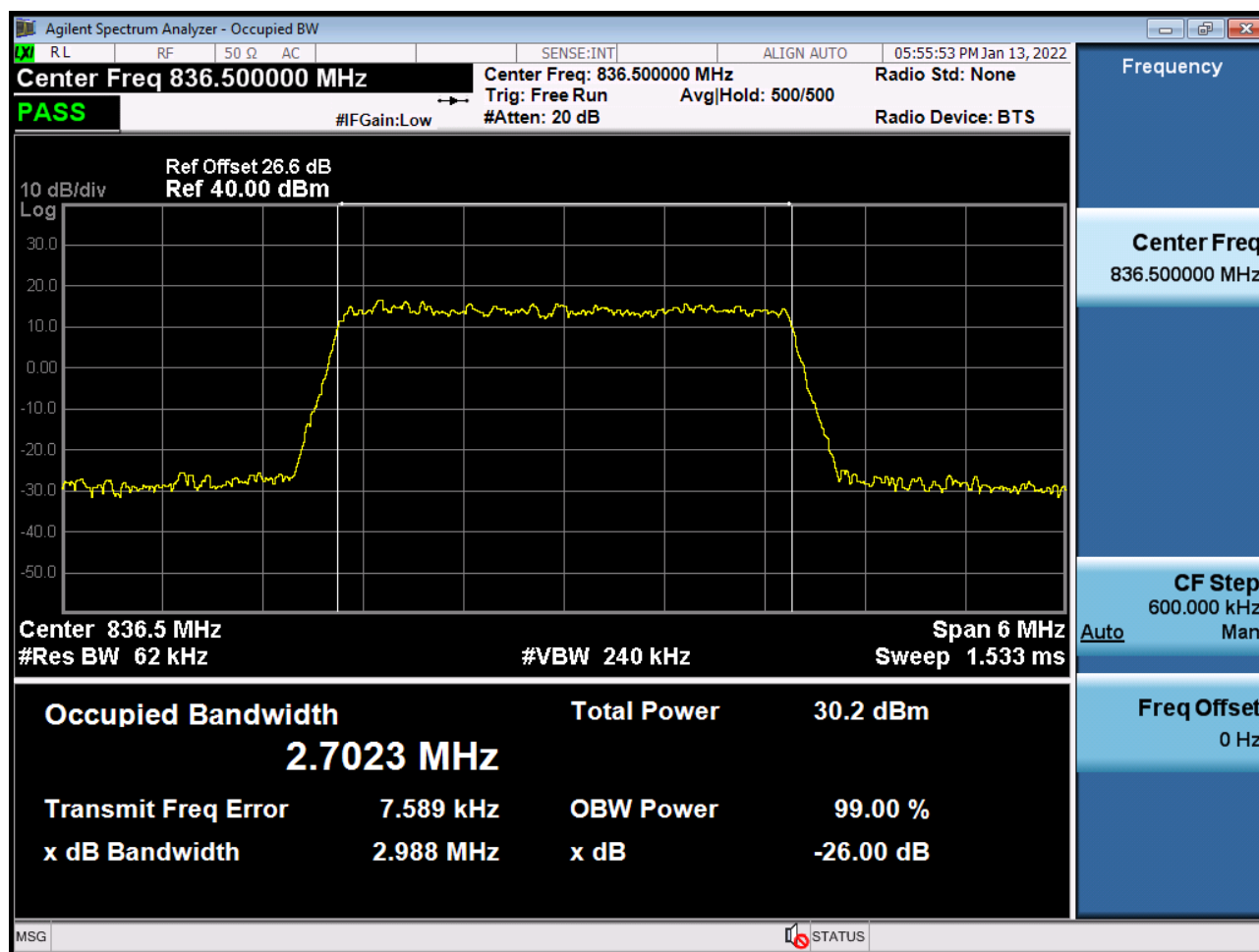
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 QPSK_RB15_0)



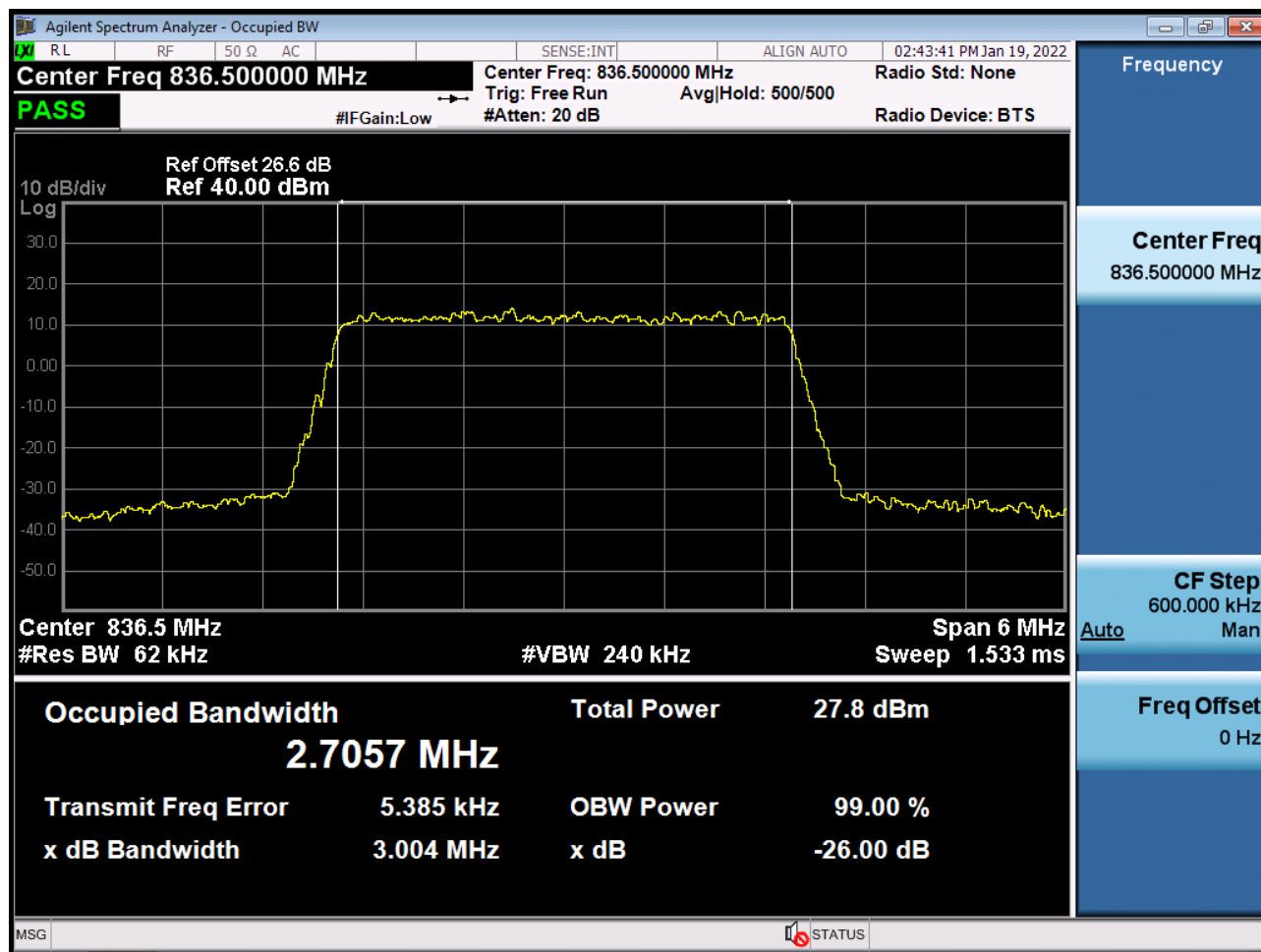
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 16QAM_RB15_0)



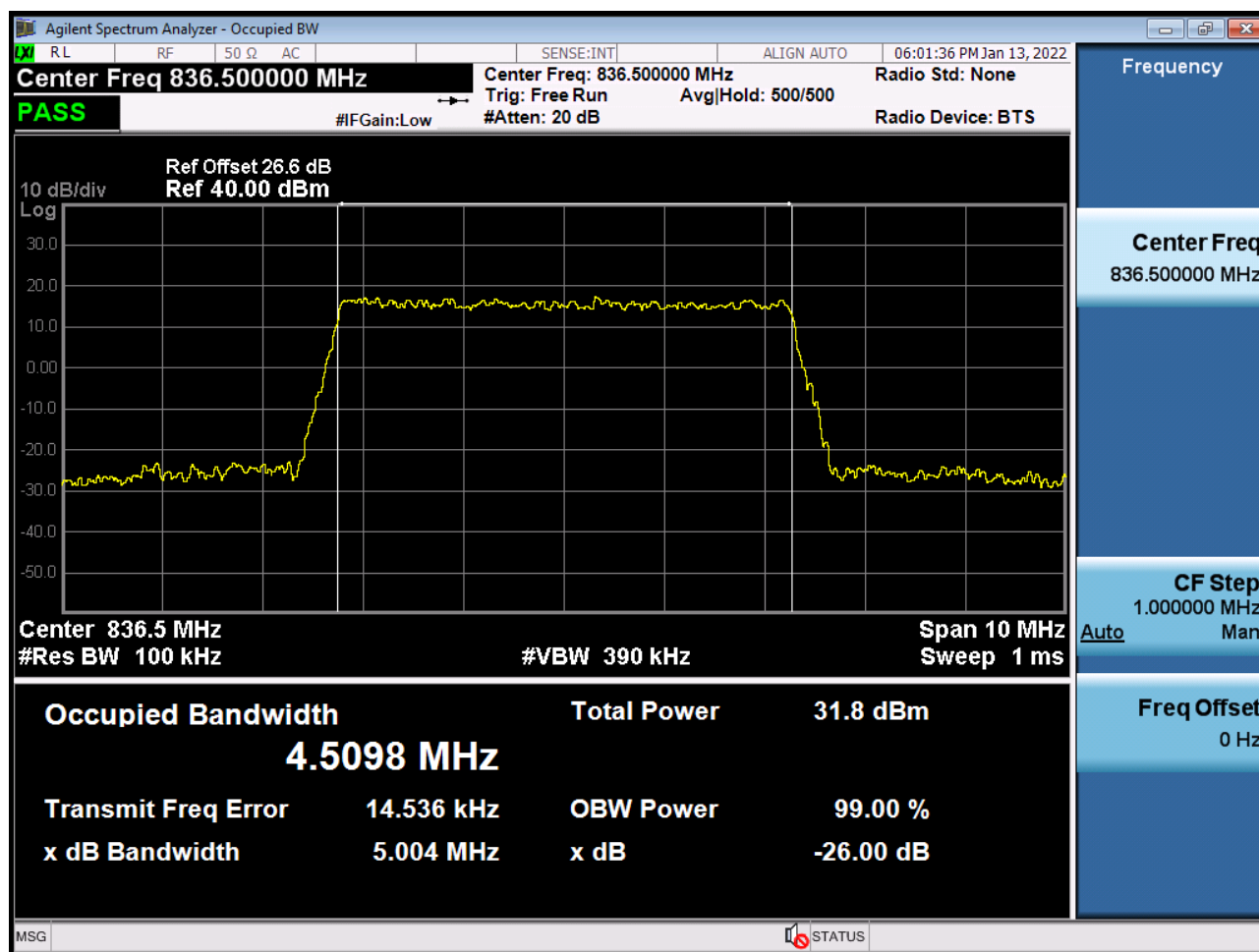
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 64QAM_RB15_0)



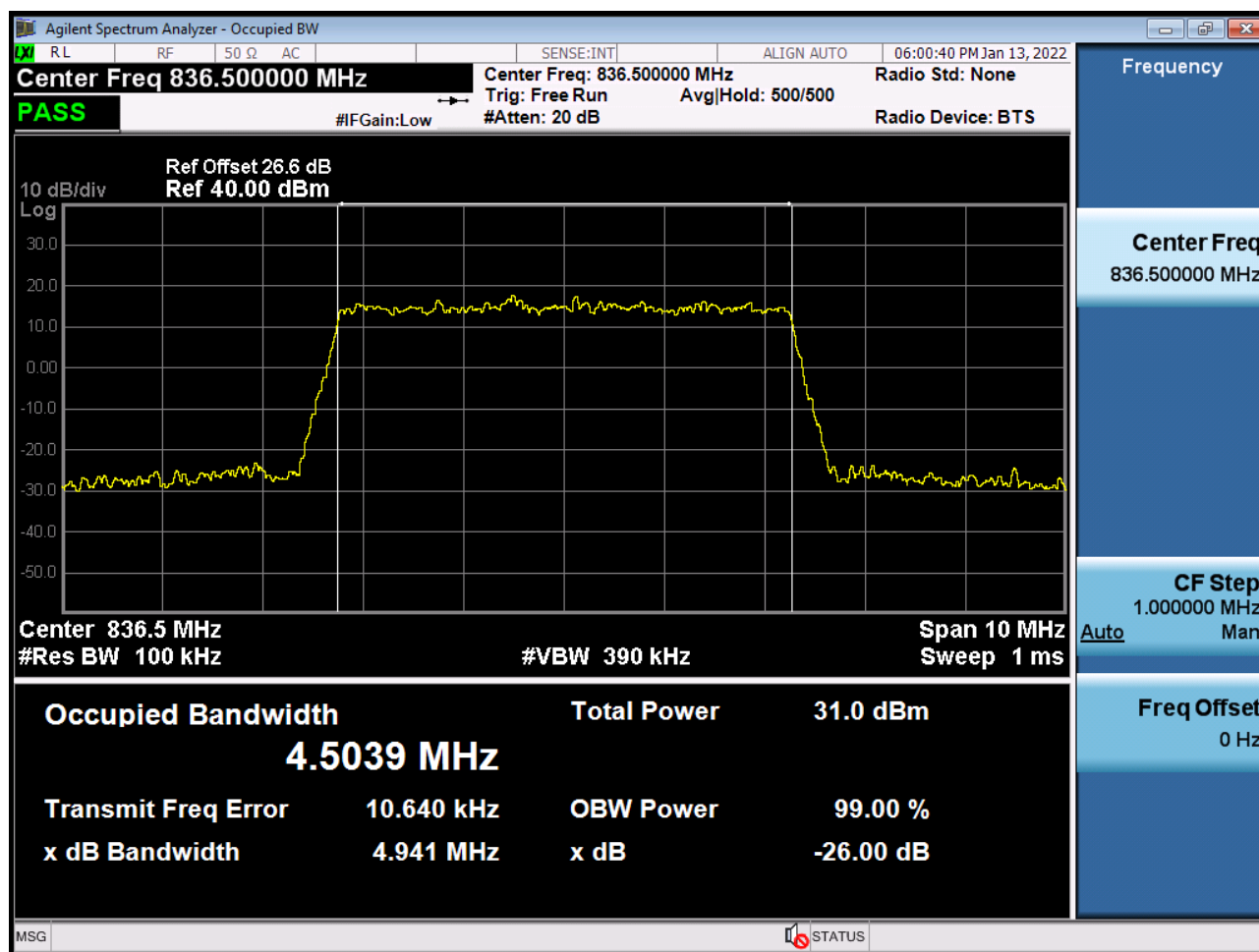
BAND26. Occupied Bandwidth Plot (3 M BW Ch.26915 256QAM_RB15_0)



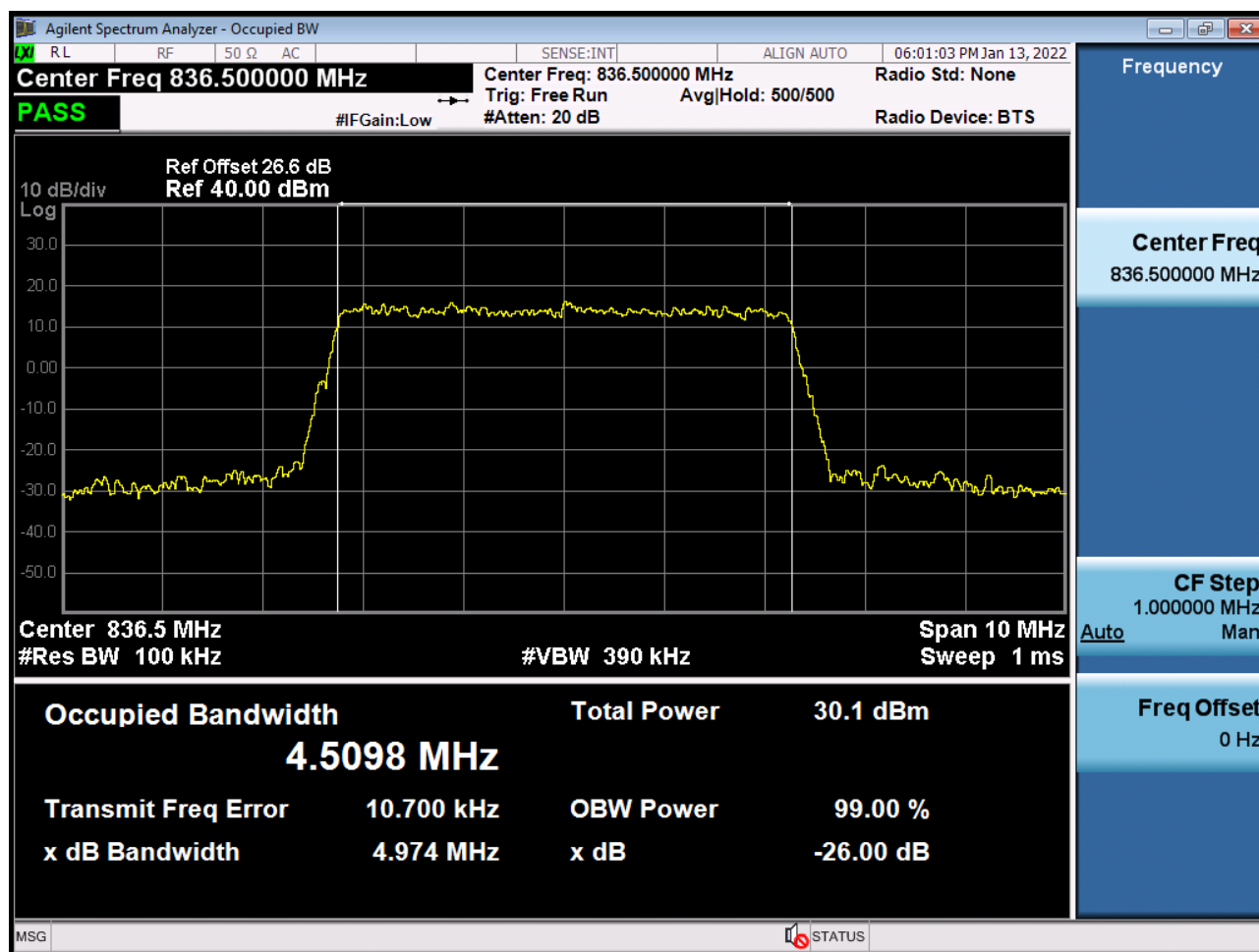
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 QPSK_RB25_0)



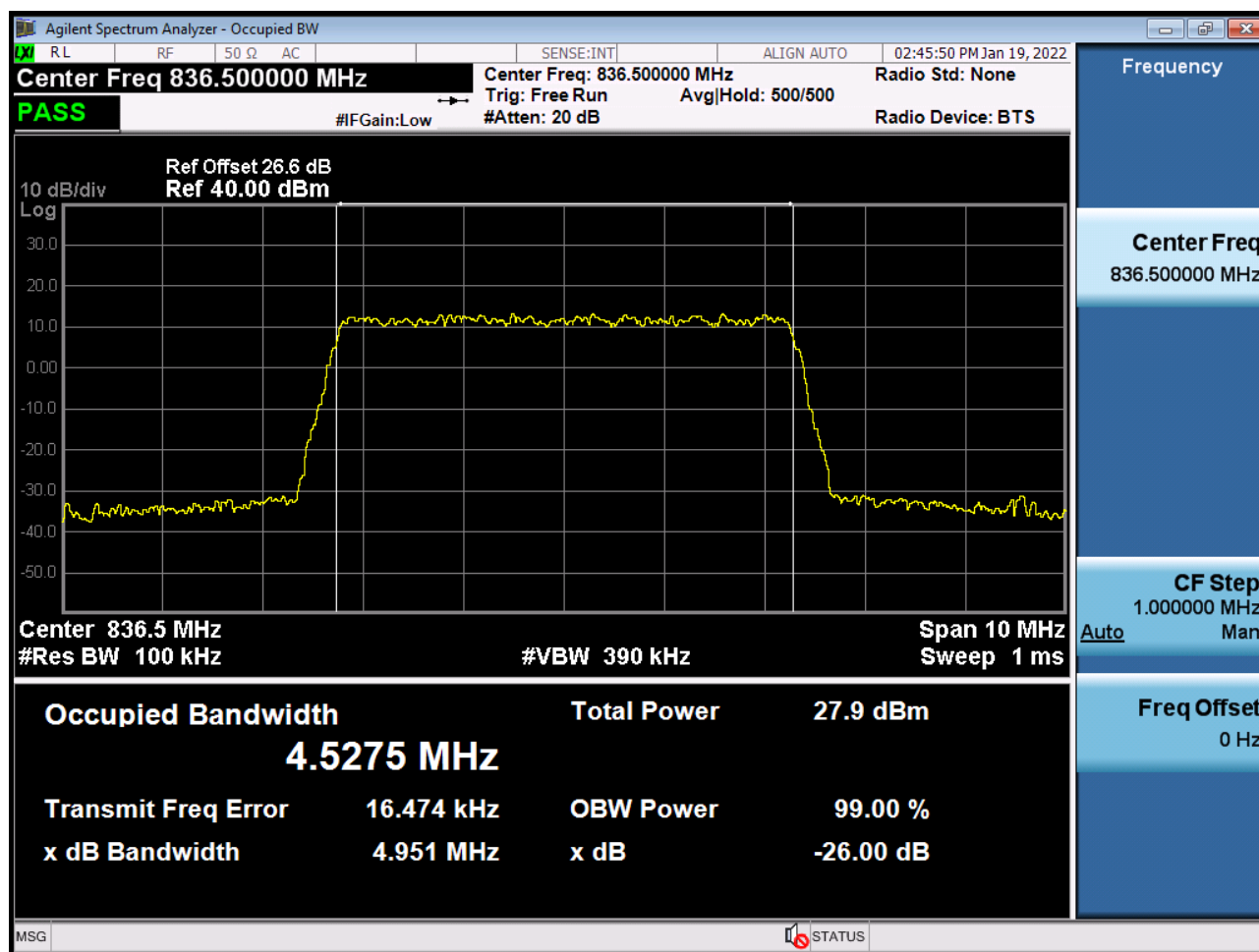
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 16QAM_RB25_0)



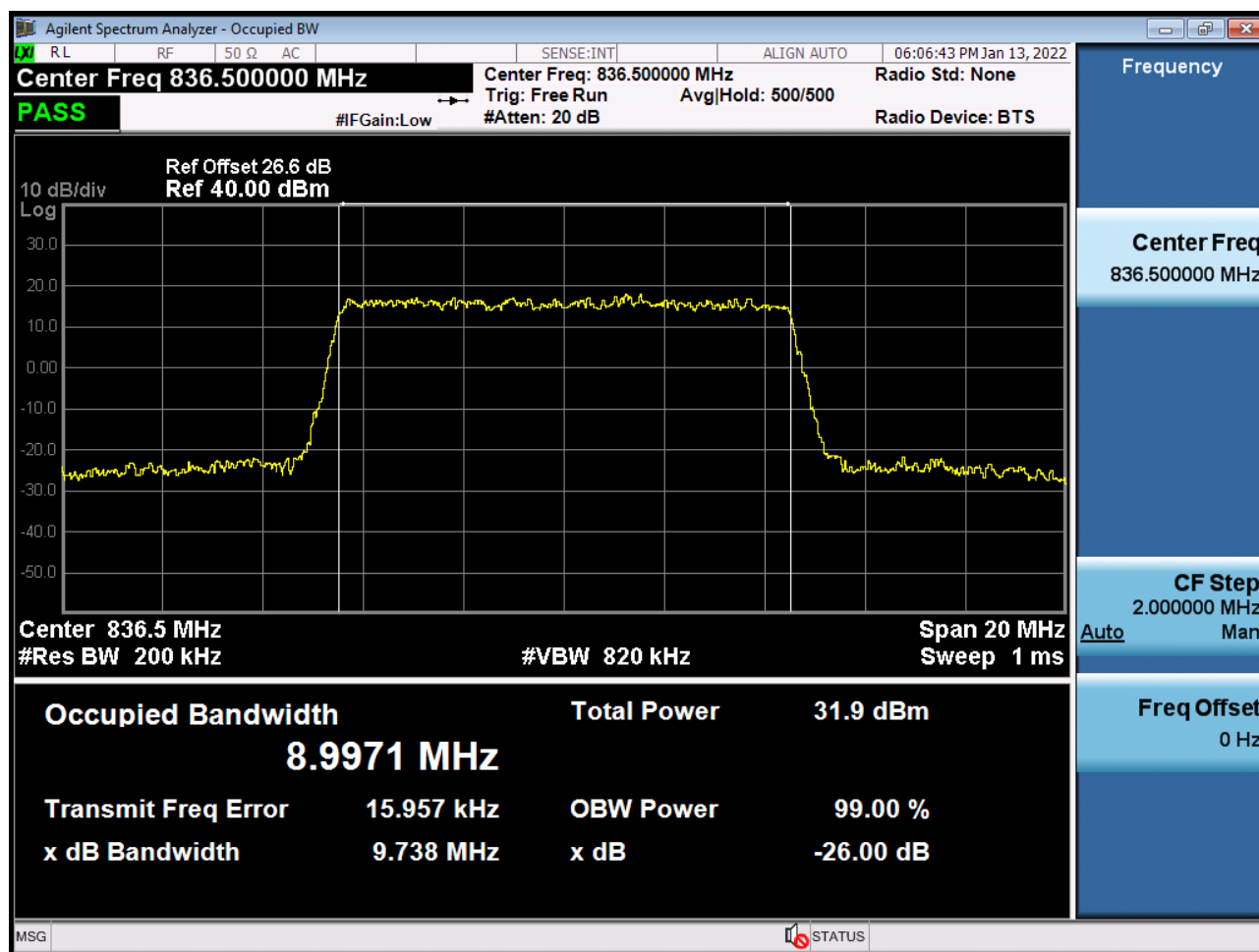
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 64QAM_RB25_0)



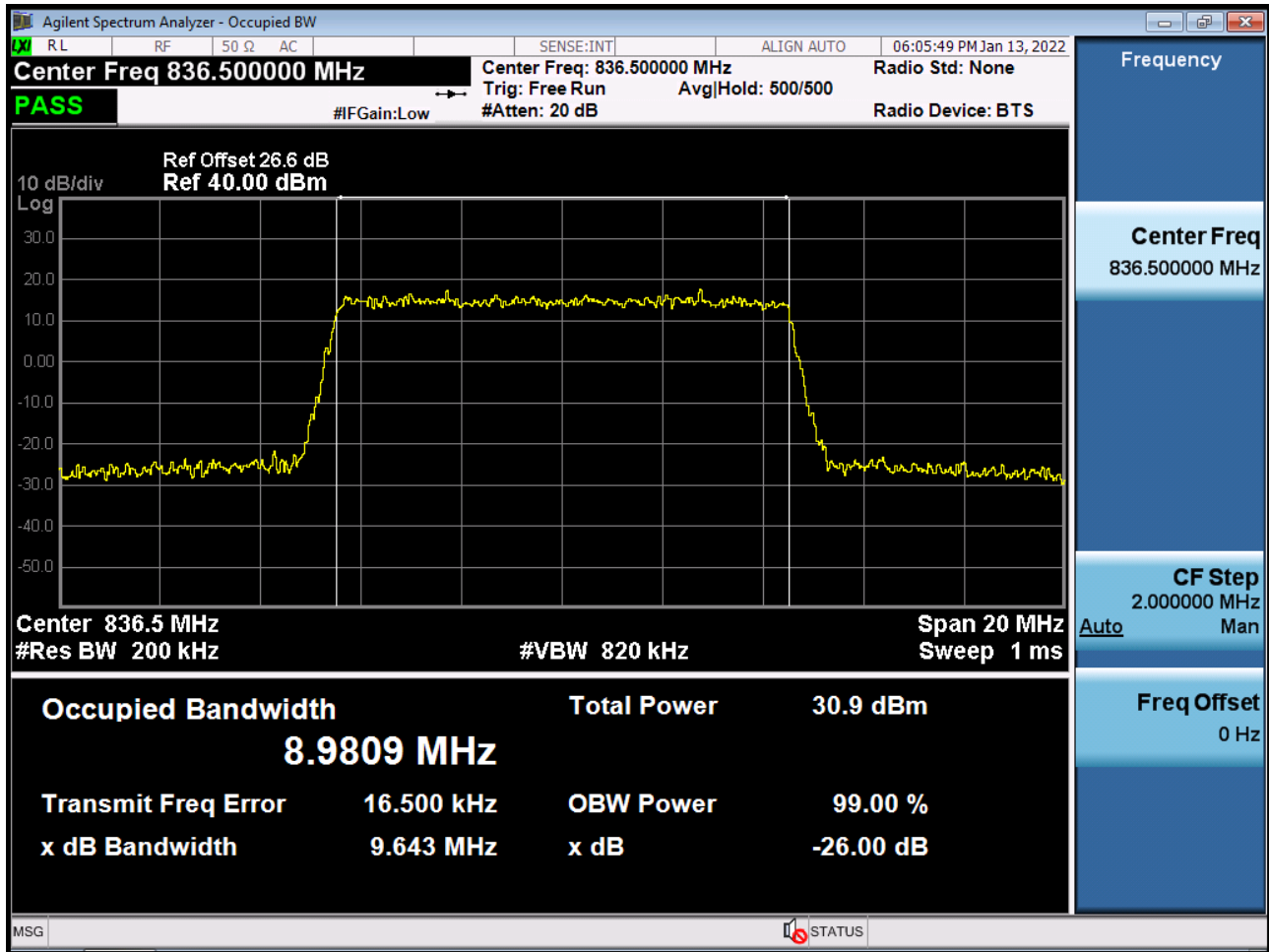
BAND26. Occupied Bandwidth Plot (5 M BW Ch.26915 256QAM_RB25_0)



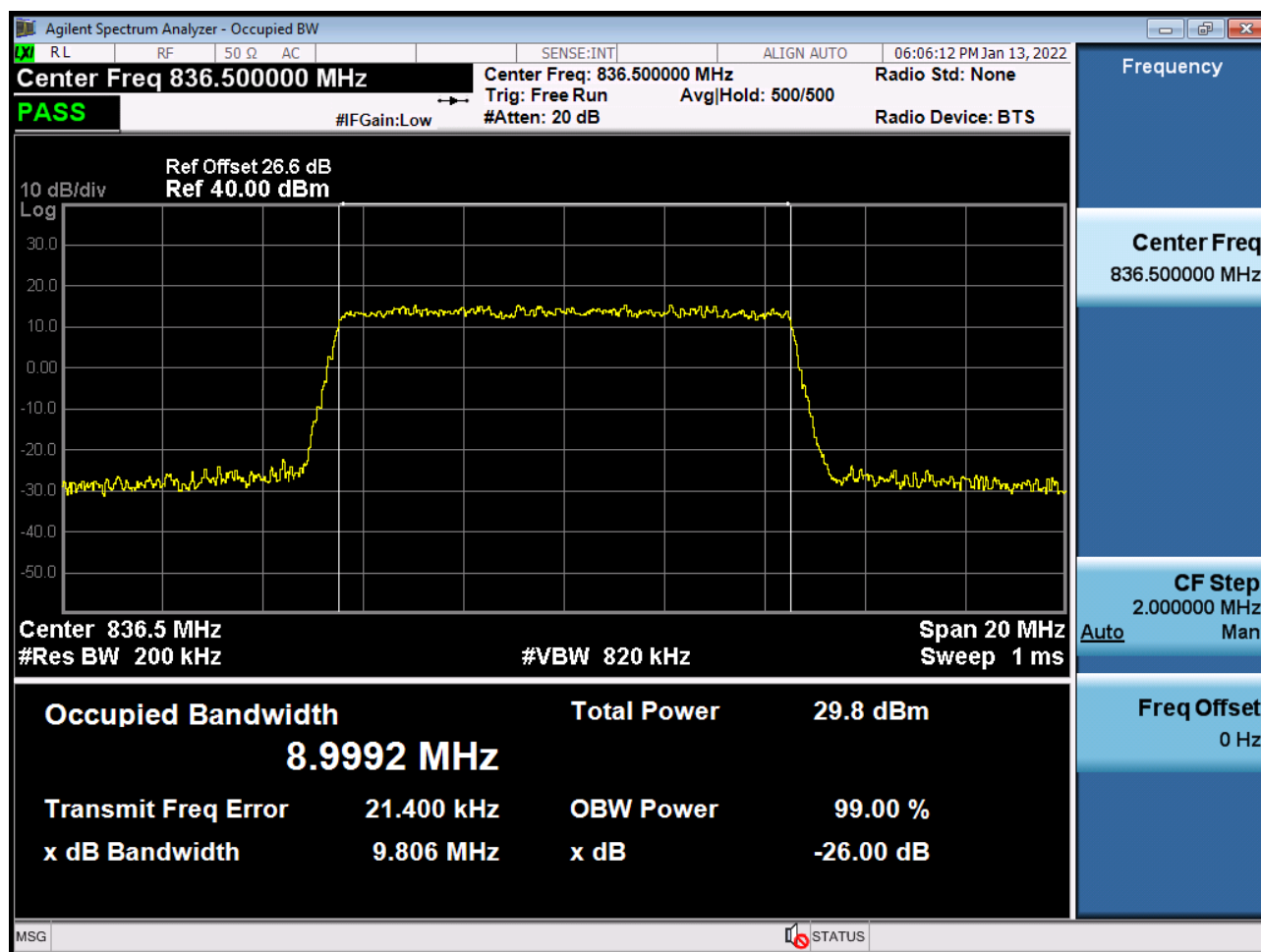
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 QPSK_RB50_0)



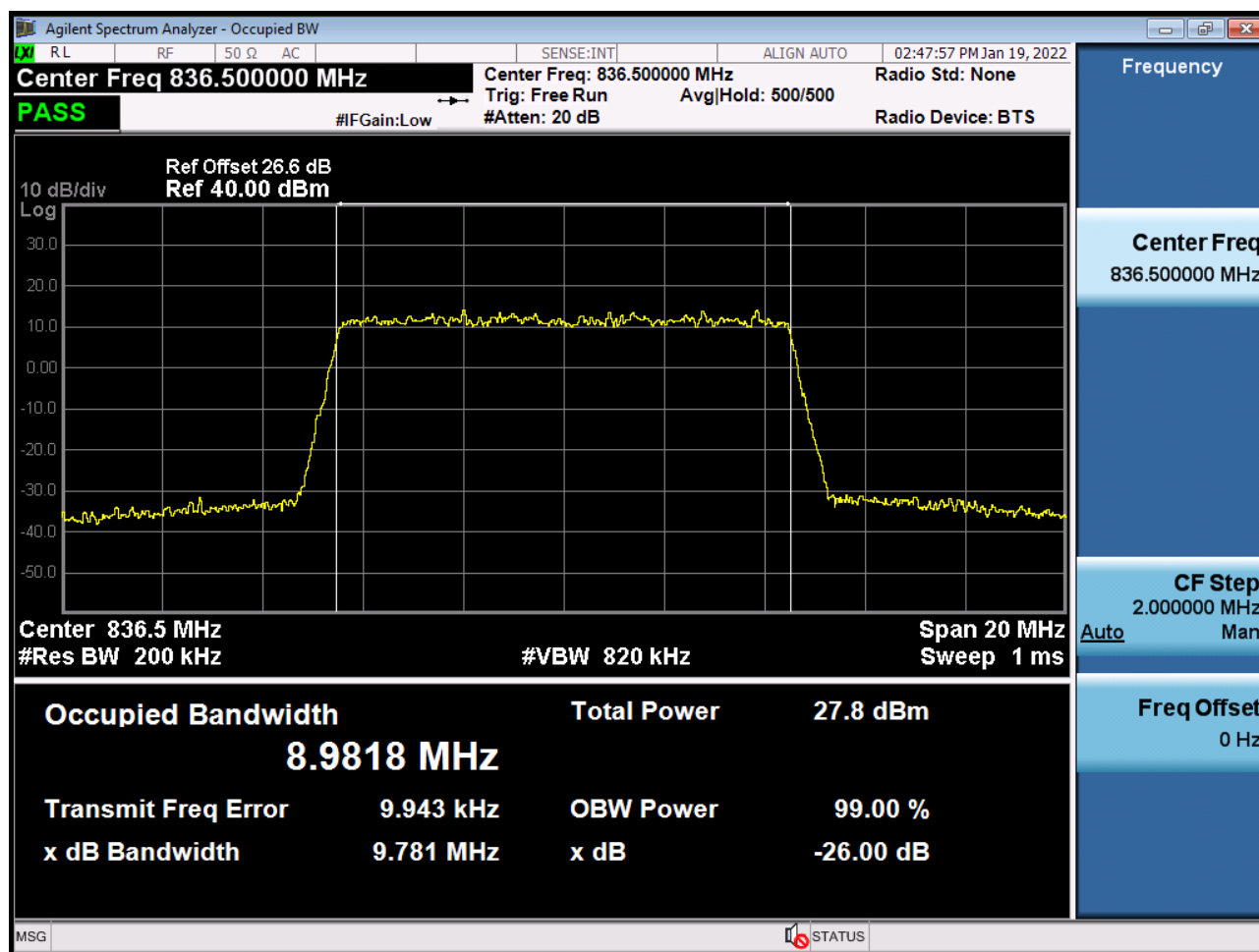
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 16QAM_RB50_0)



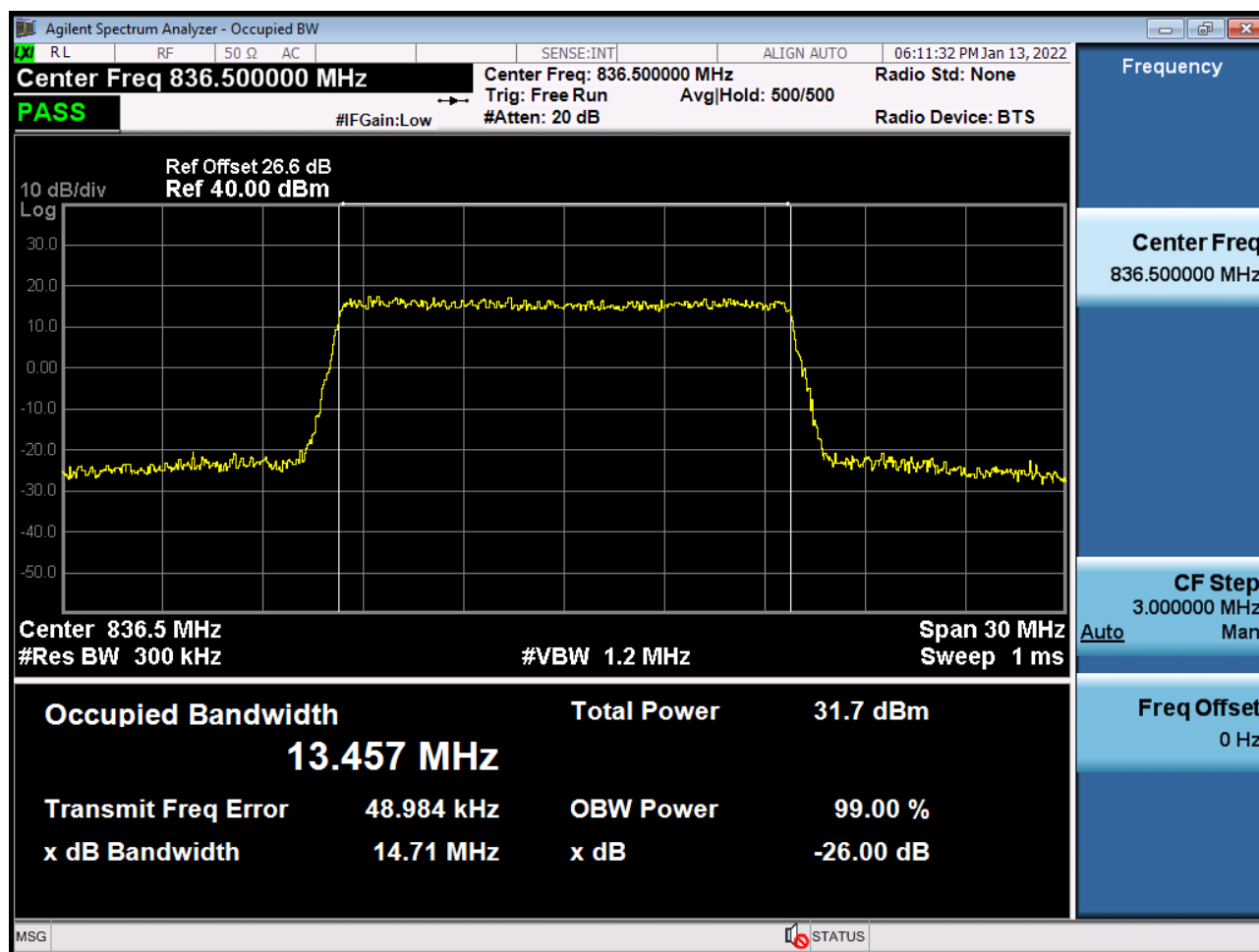
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 64QAM_RB50_0)



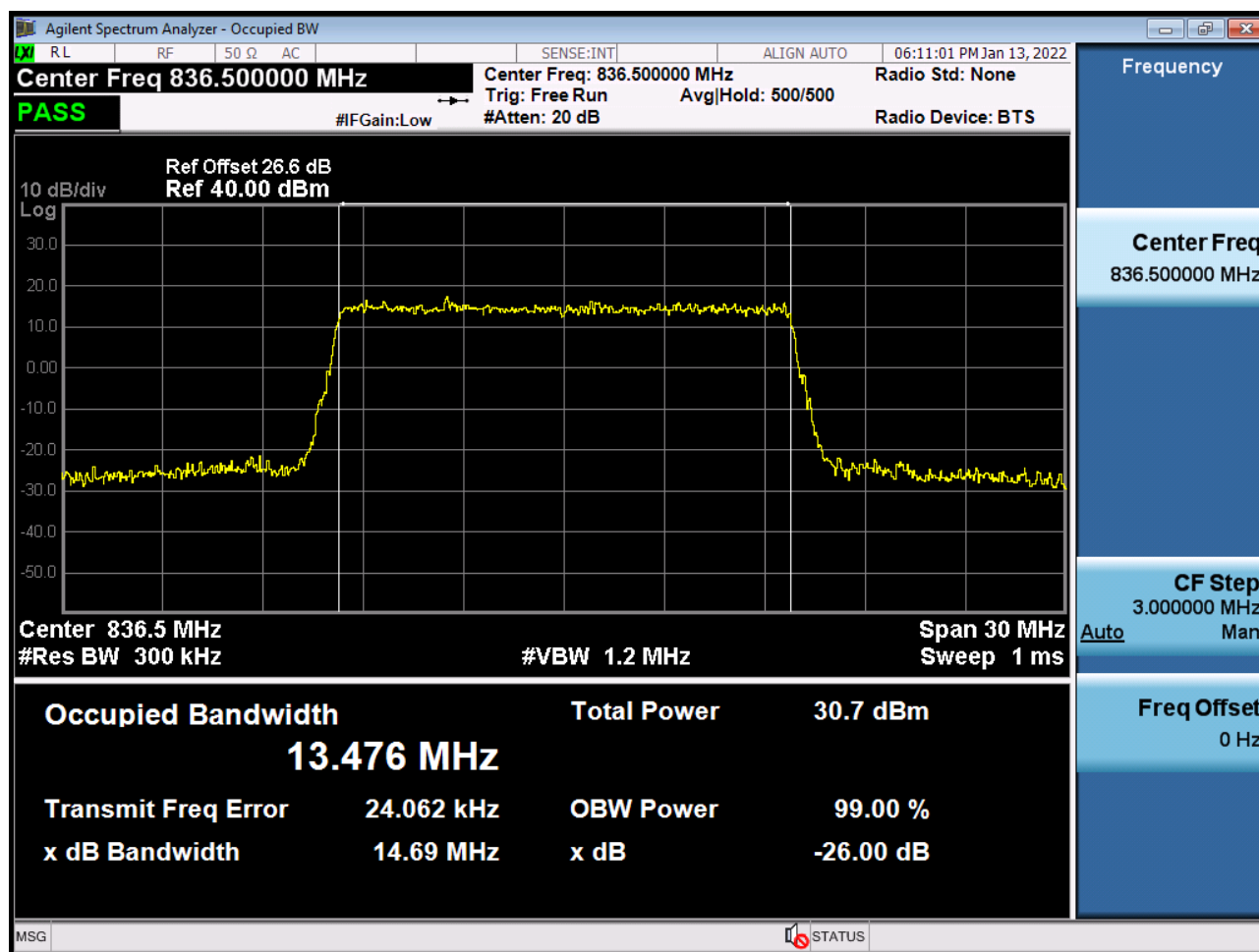
BAND26. Occupied Bandwidth Plot (10 M BW Ch.26915 256QAM_RB50_0)



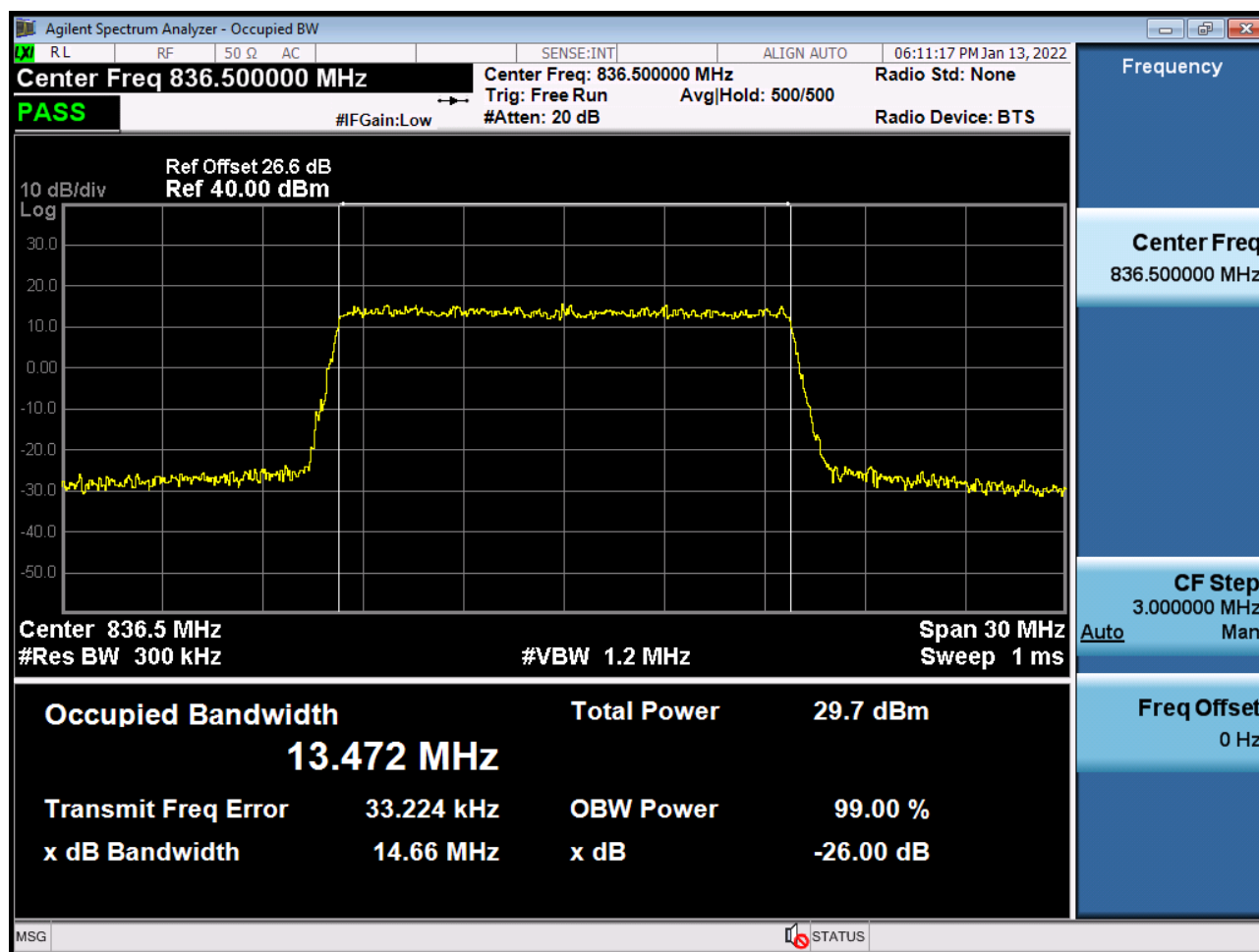
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 QPSK RB 75_0)



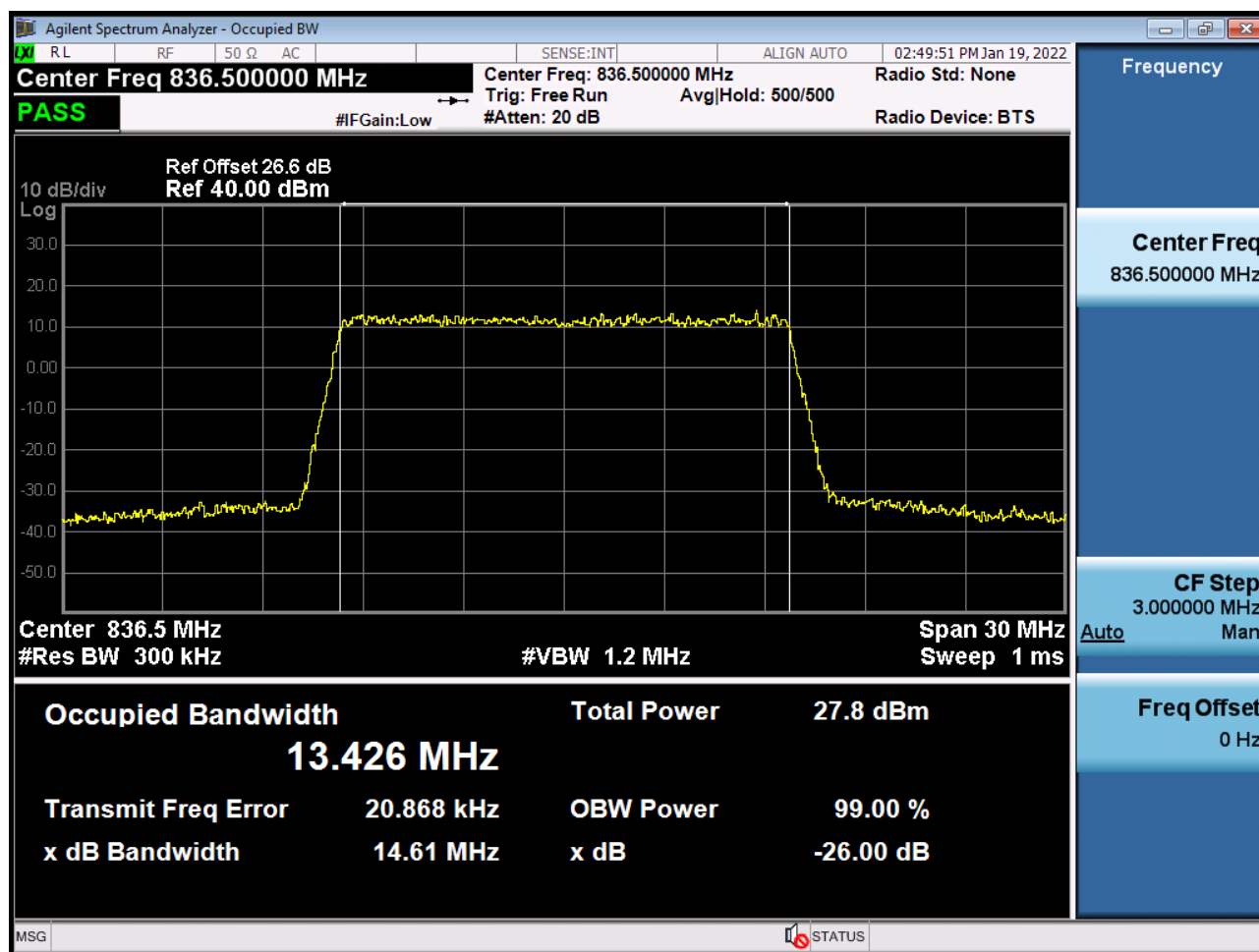
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26915 16QAM RB 75_0)



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



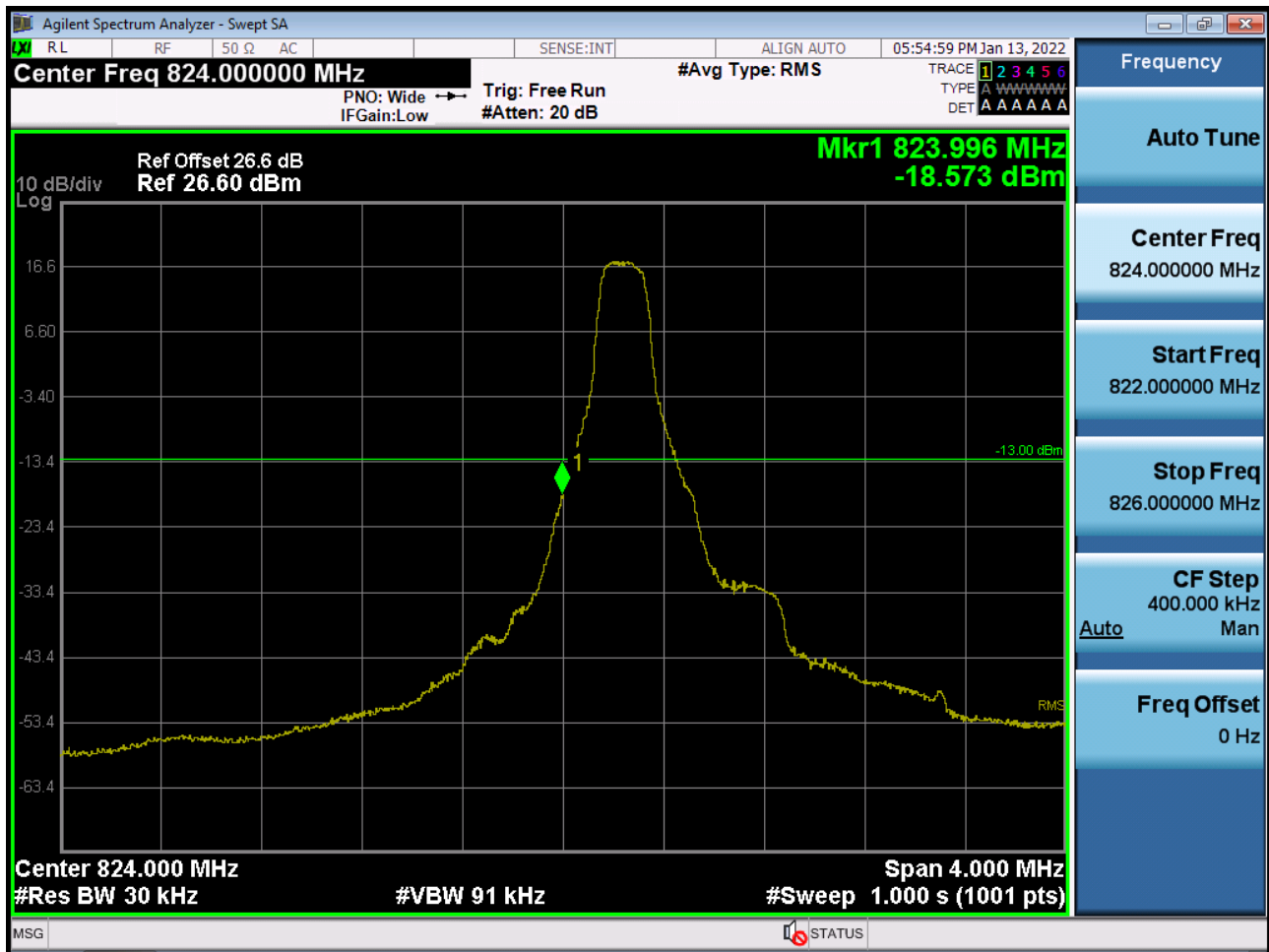
BAND26. Lower Band Edge Plot (1.4 M BW Ch.26797 QPSK_RB6_Offset 0)



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)



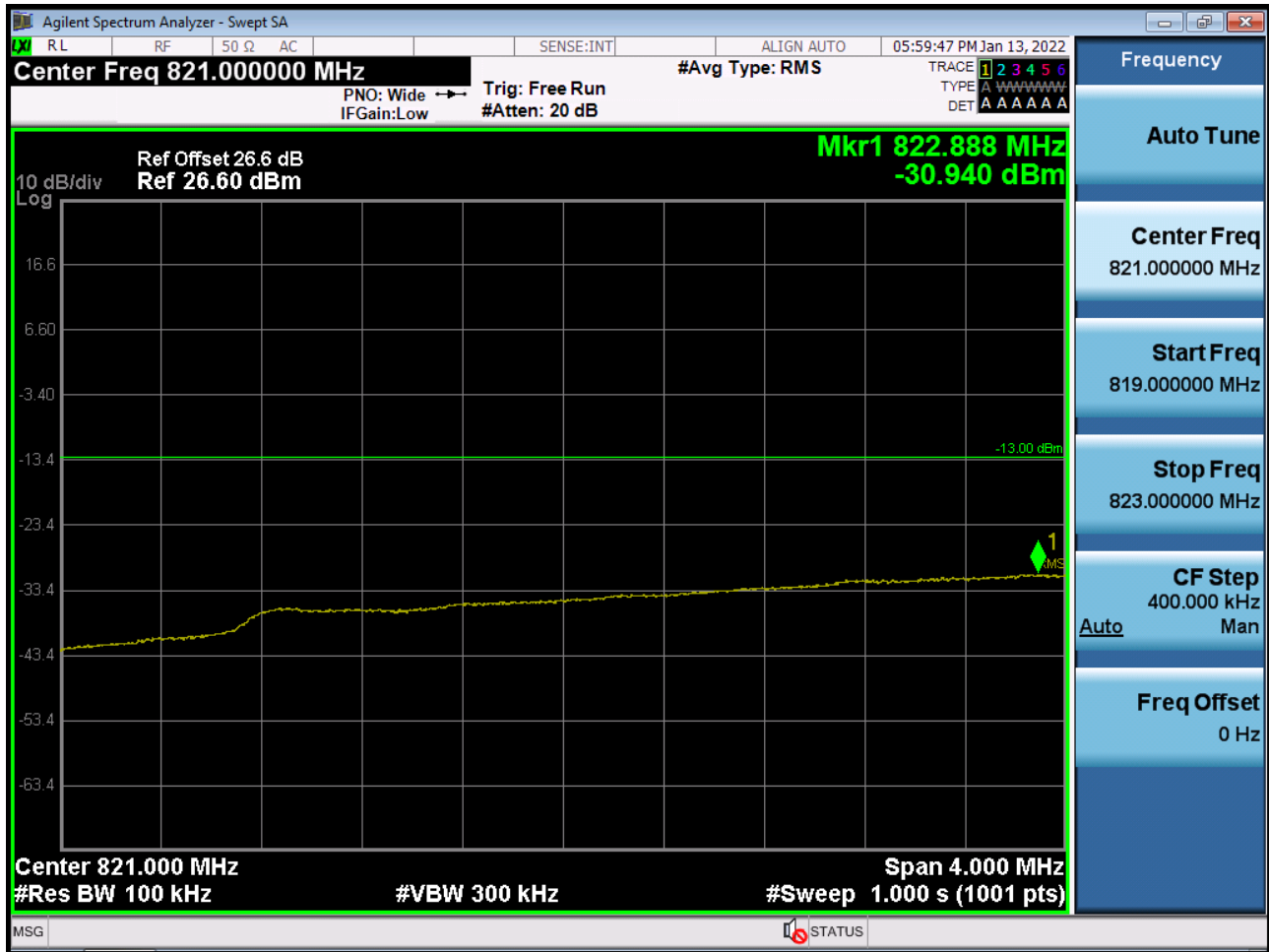
BAND26. Lower Band Edge Plot (5 M BW Ch.26815 QPSK_RB1_Offset 0)



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)



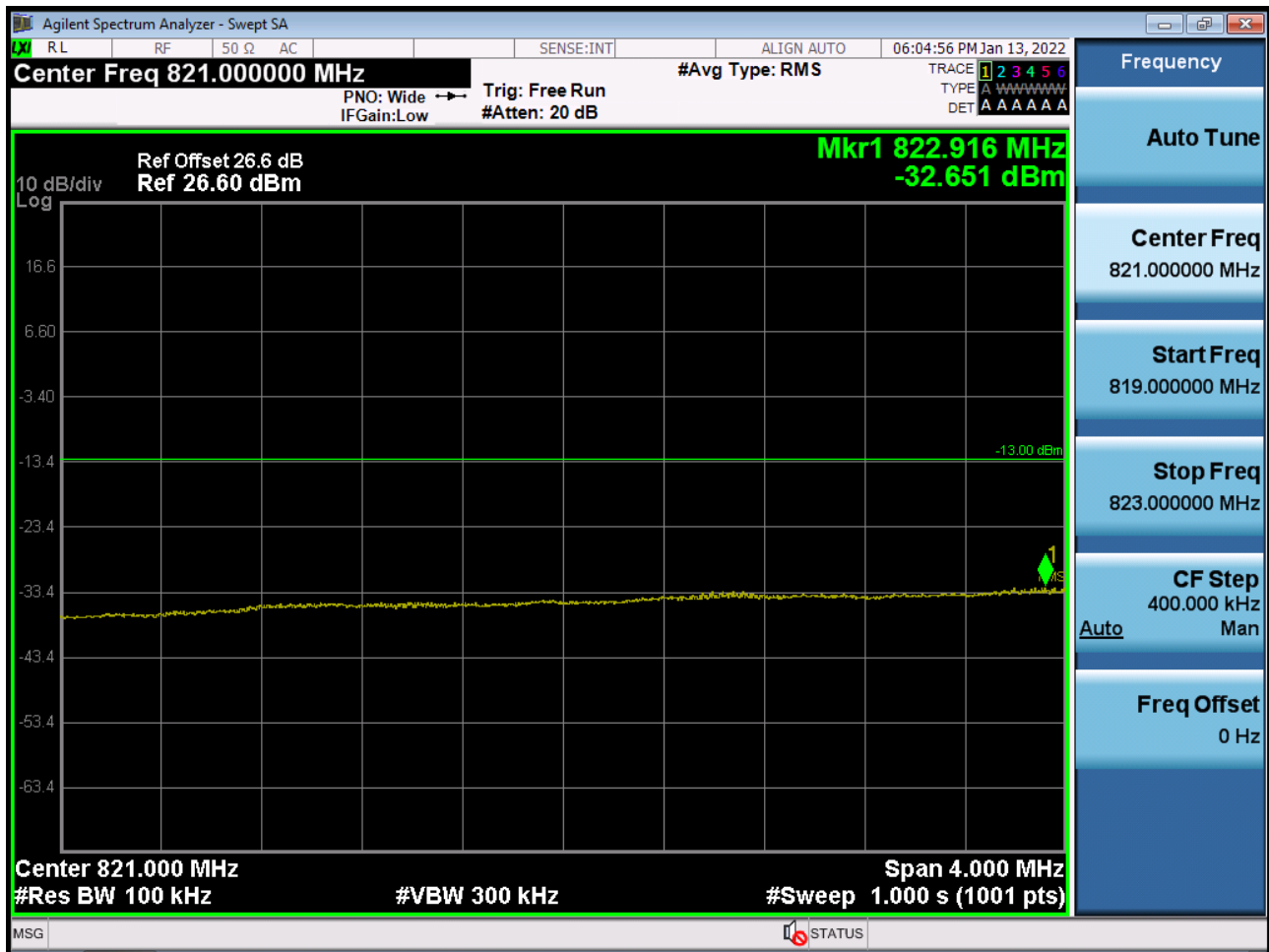
BAND26. Lower Band Edge Plot (10 M BW Ch.26840 QPSK_RB1_Offset 0)



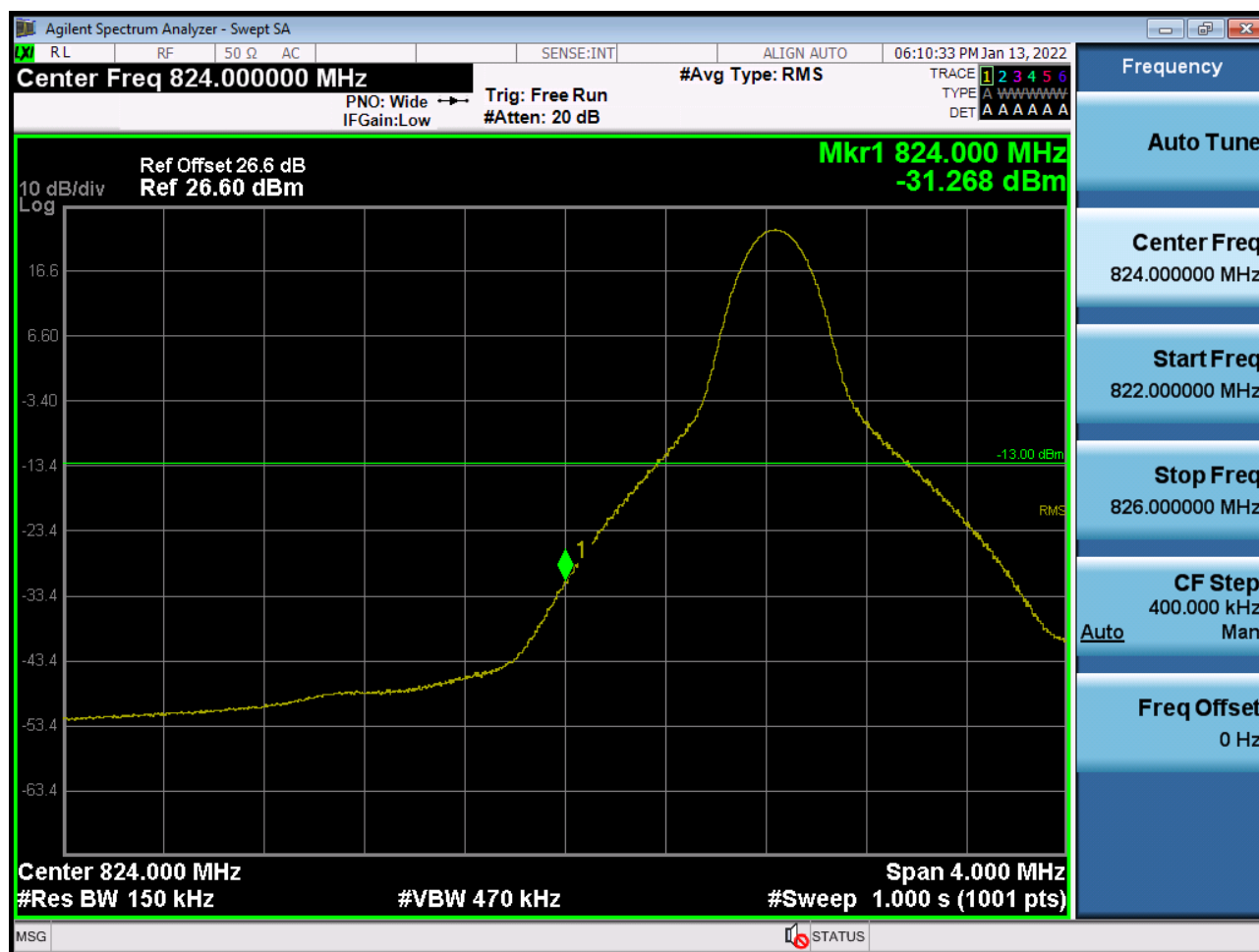
BAND26. Lower Band Edge Plot (10 M BW Ch.26840 QPSK_RB50_Offset 0)



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)



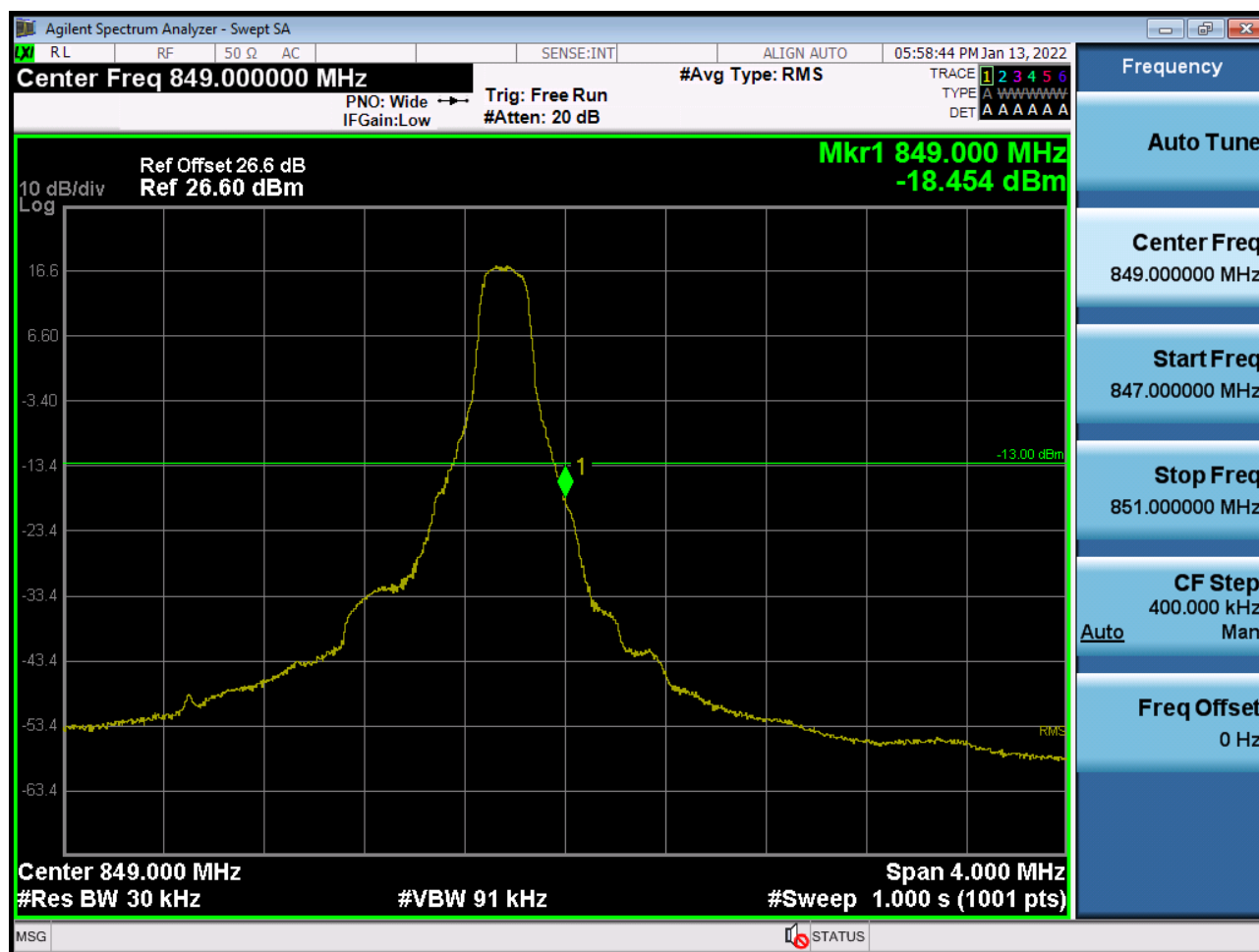
BAND26. Upper Band Edge Plot (1.4 M BW Ch.27033 QPSK_RB6_Offset 0)



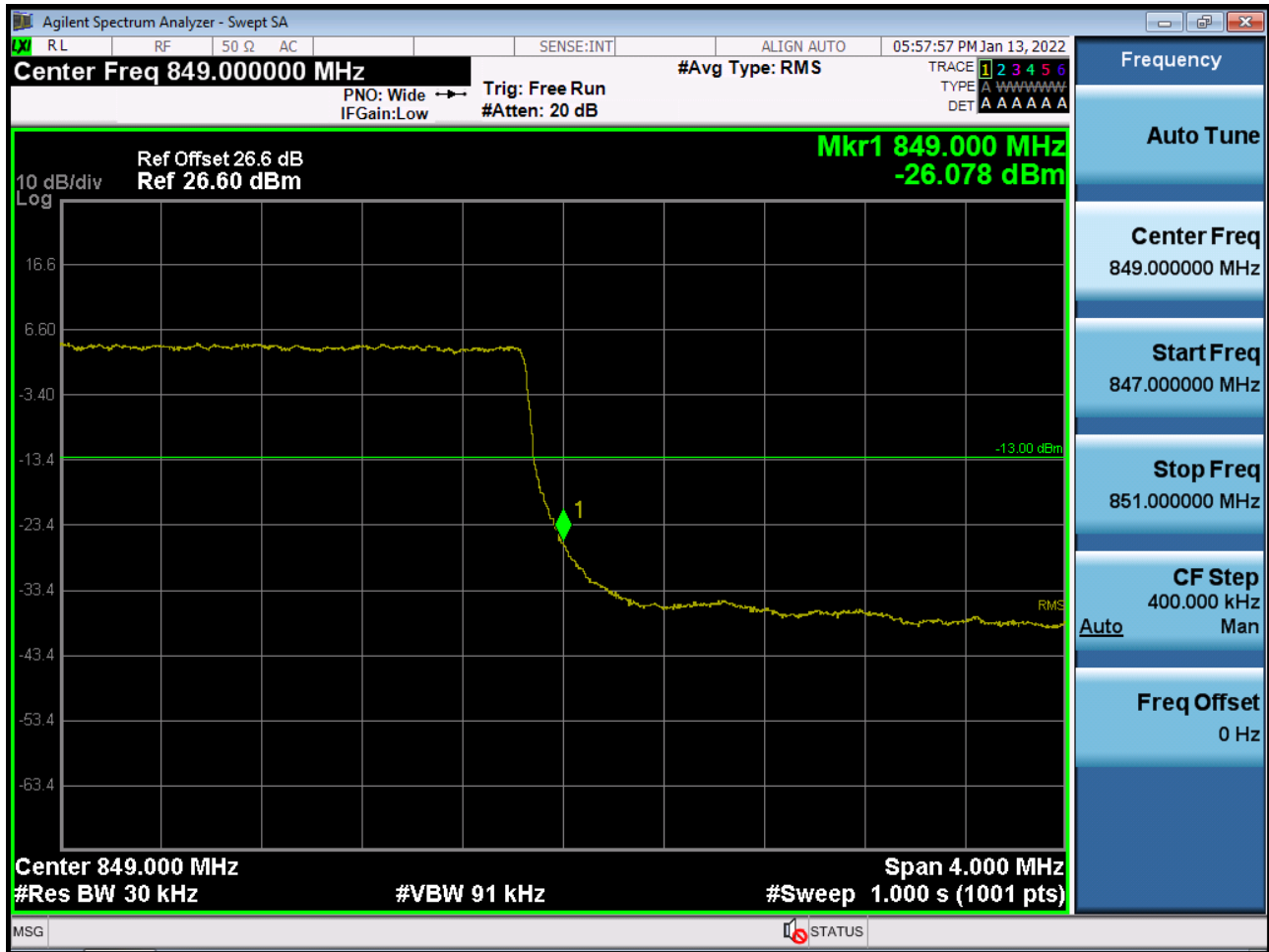
BAND26. Upper Extended Band Edge Plot (1.4 M BW Ch.27033 QPSK_RB6_0)



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)



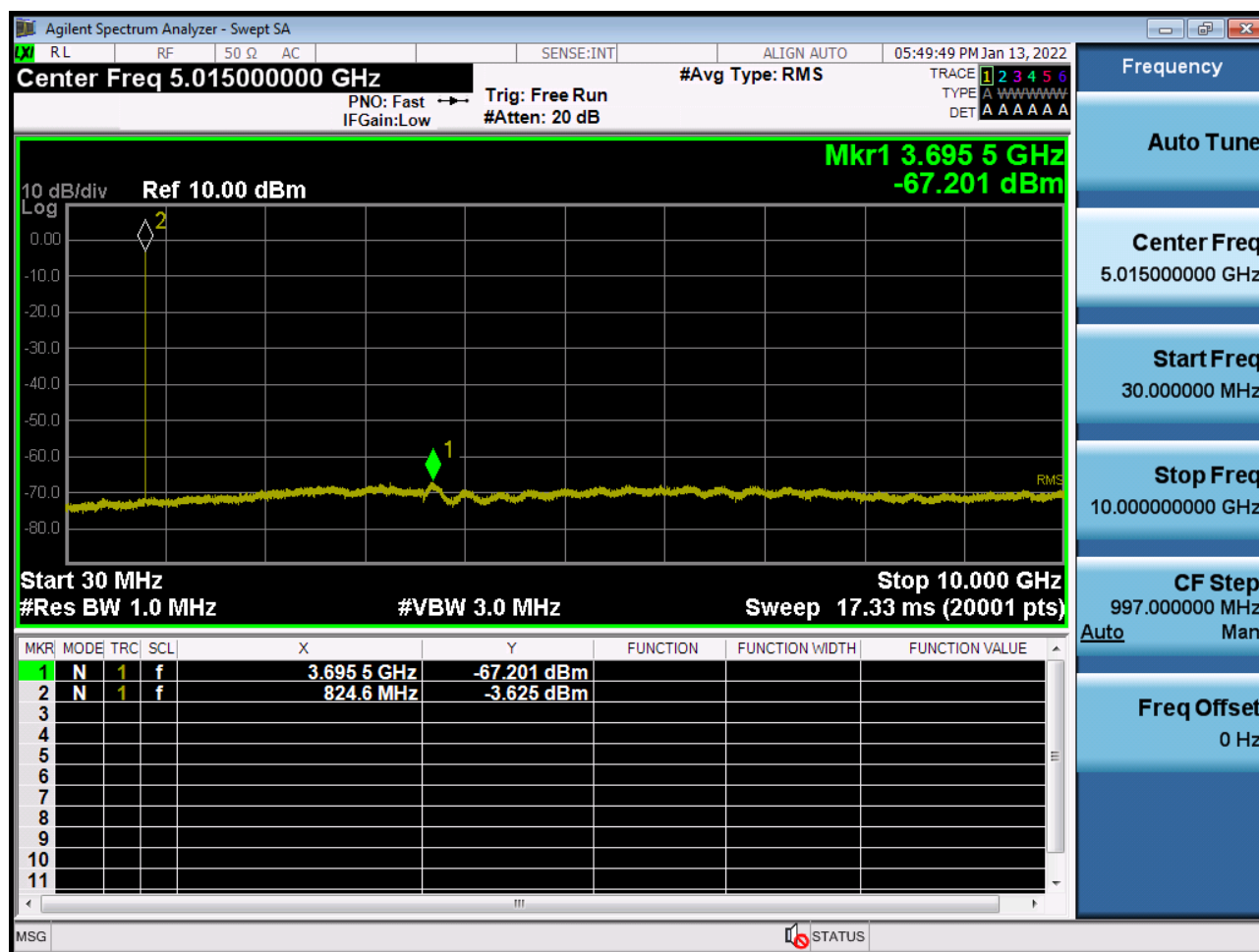
BAND 26. Upper Band Edge Plot (15 M BW Ch.26965 QPSK_RB75_Offset 0)



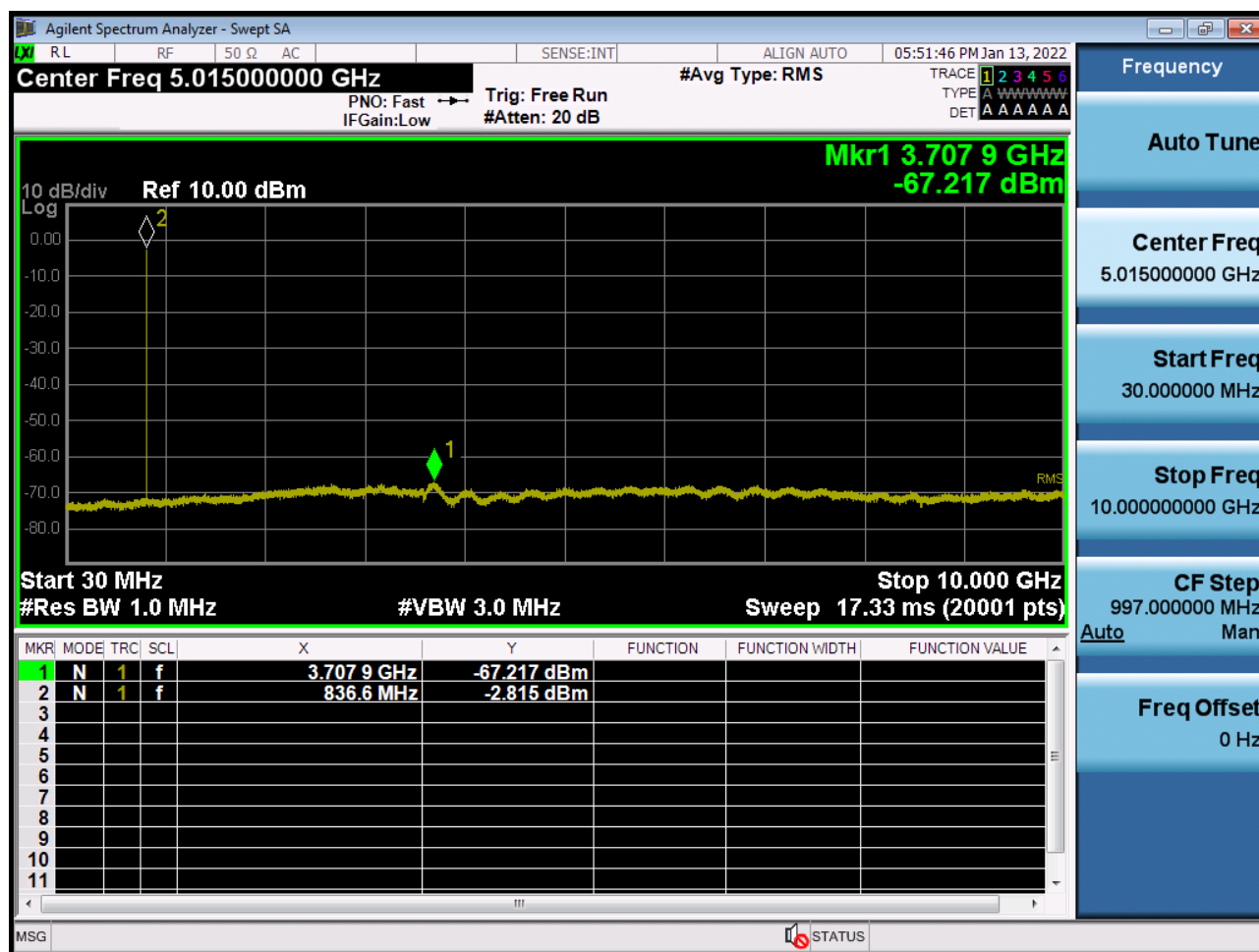
BAND 26. Upper Extended Band Edge Plot (15 M BW Ch.26965 QPSK_RB75_0)



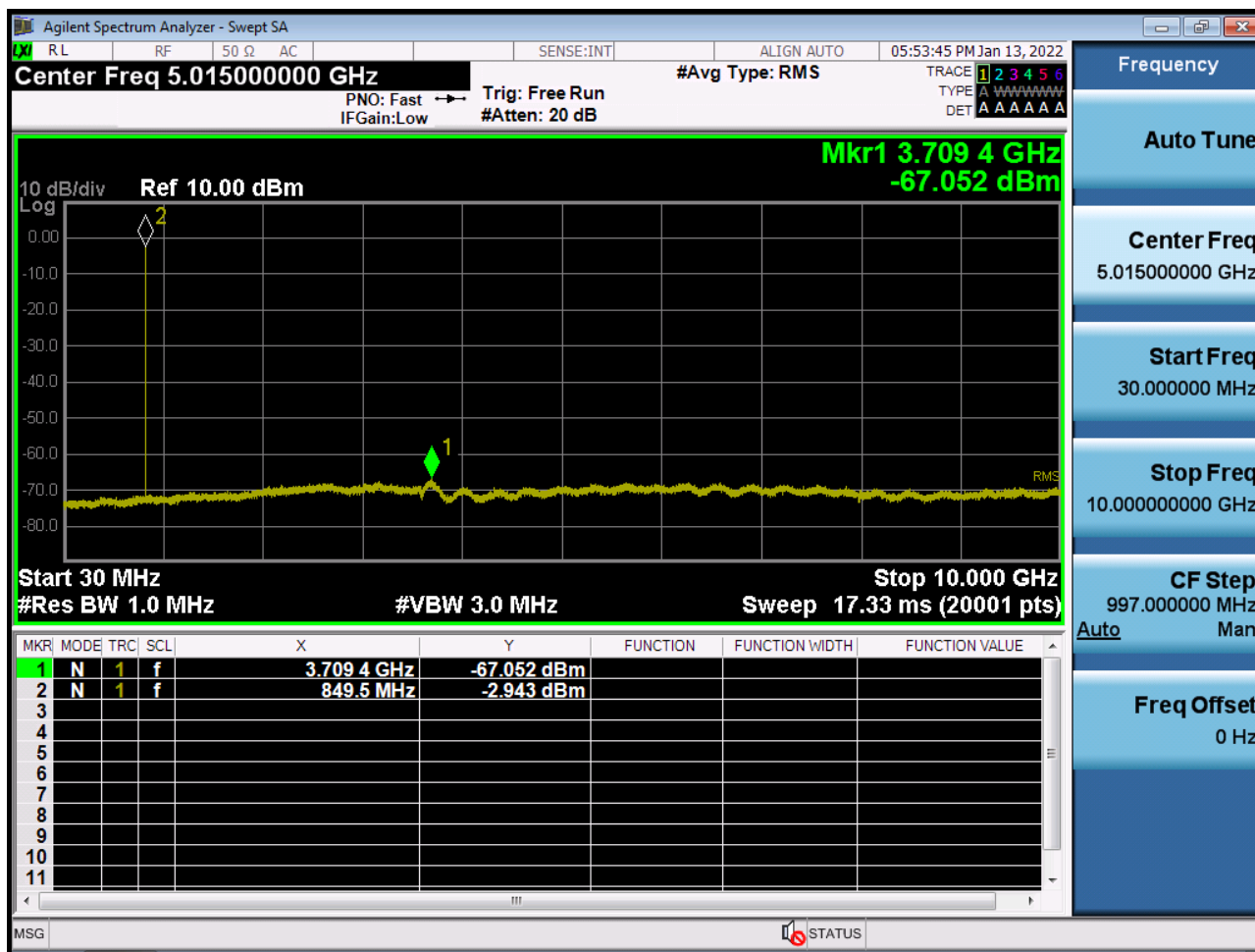
BAND26. Conducted Spurious Plot (26797ch_1.4 MHz_QPSK_RB 1_0)



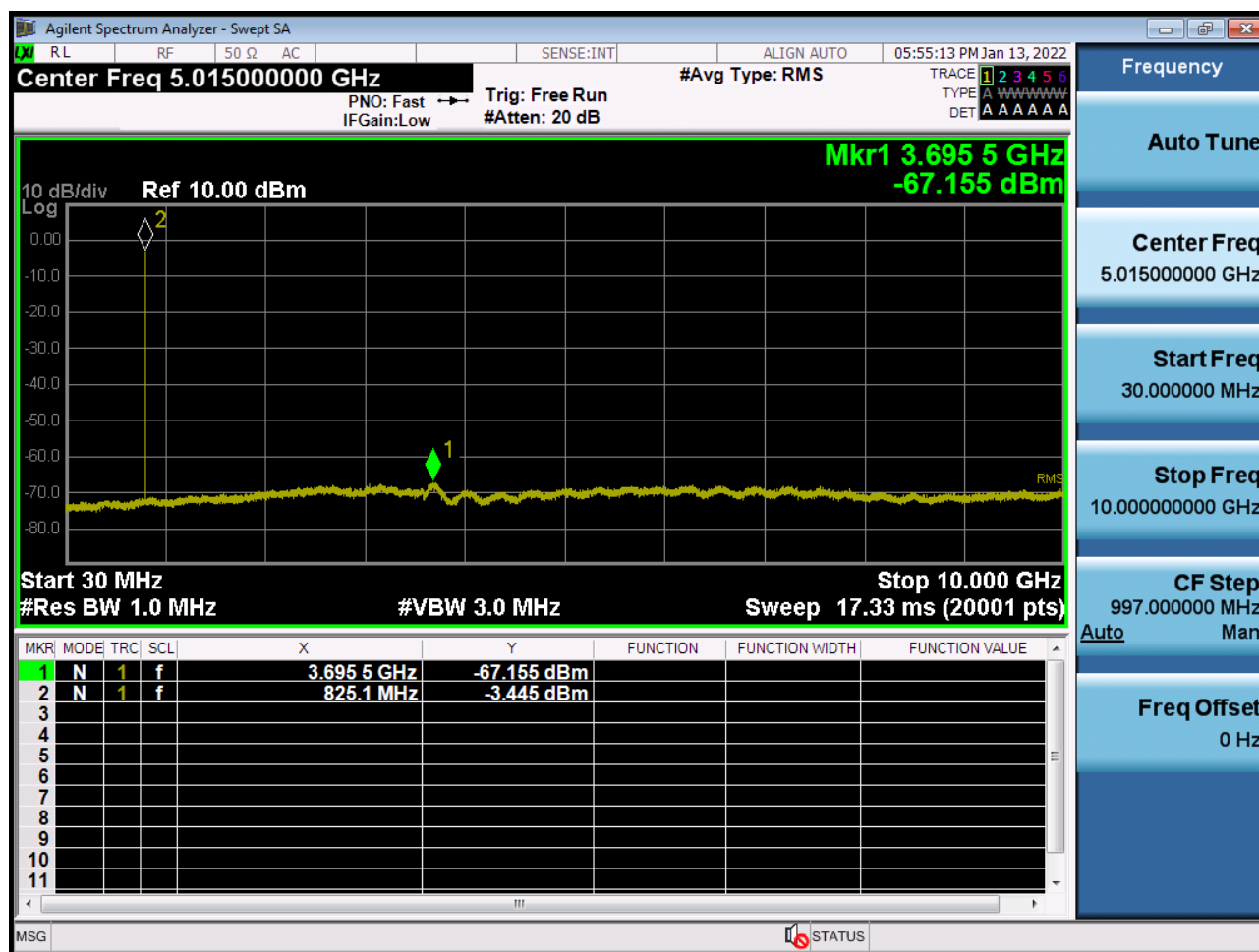
BAND26. Conducted Spurious Plot (26915ch_1.4 MHz_QPSK_RB 1_0)



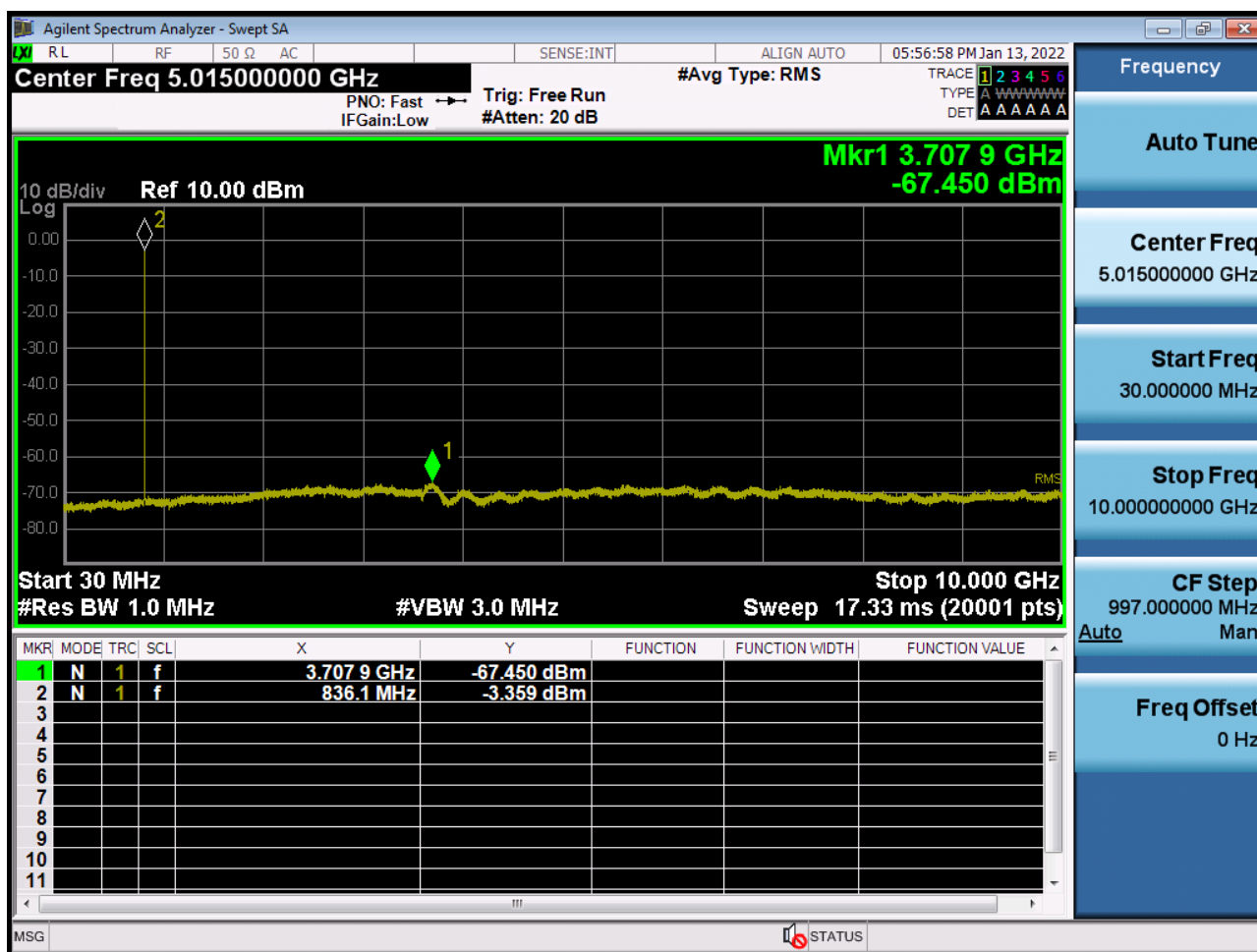
BAND26. Conducted Spurious Plot (27033ch_1.4 MHz_QPSK_RB 1_0)



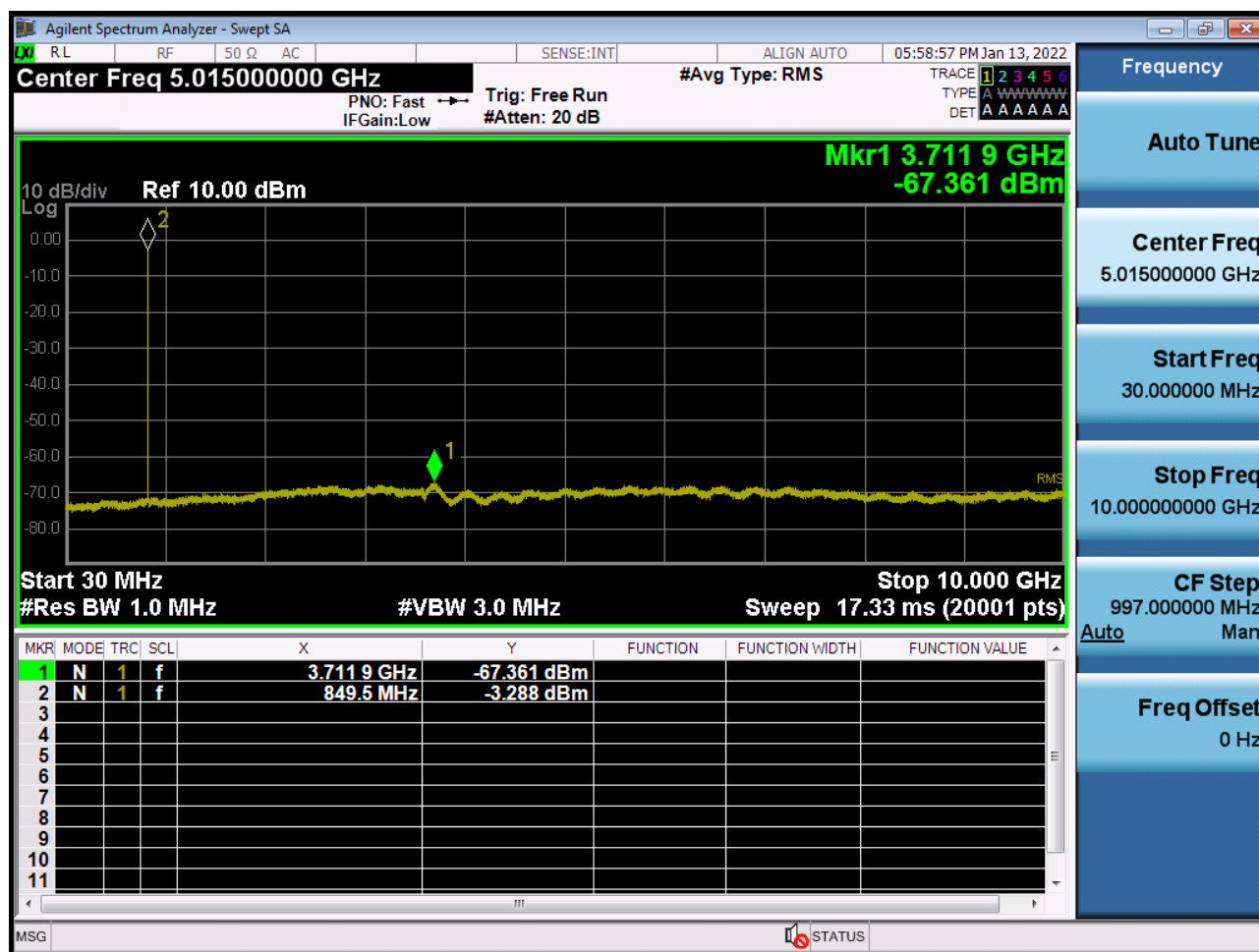
BAND26. Conducted Spurious Plot (26805ch_3 MHz_QPSK_RB 1_0)



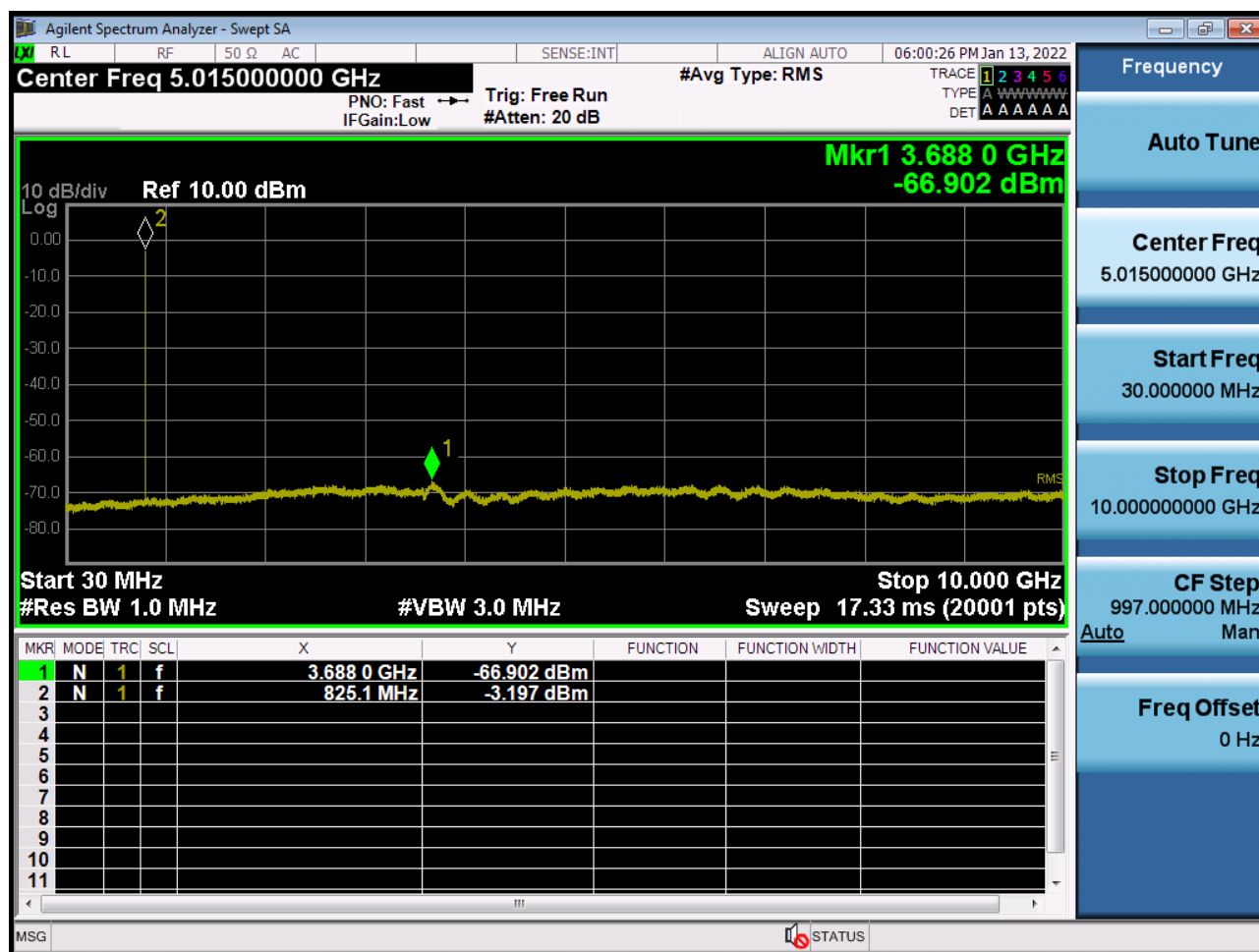
BAND26. Conducted Spurious Plot (26915ch_3 MHz_QPSK_RB 1_0)



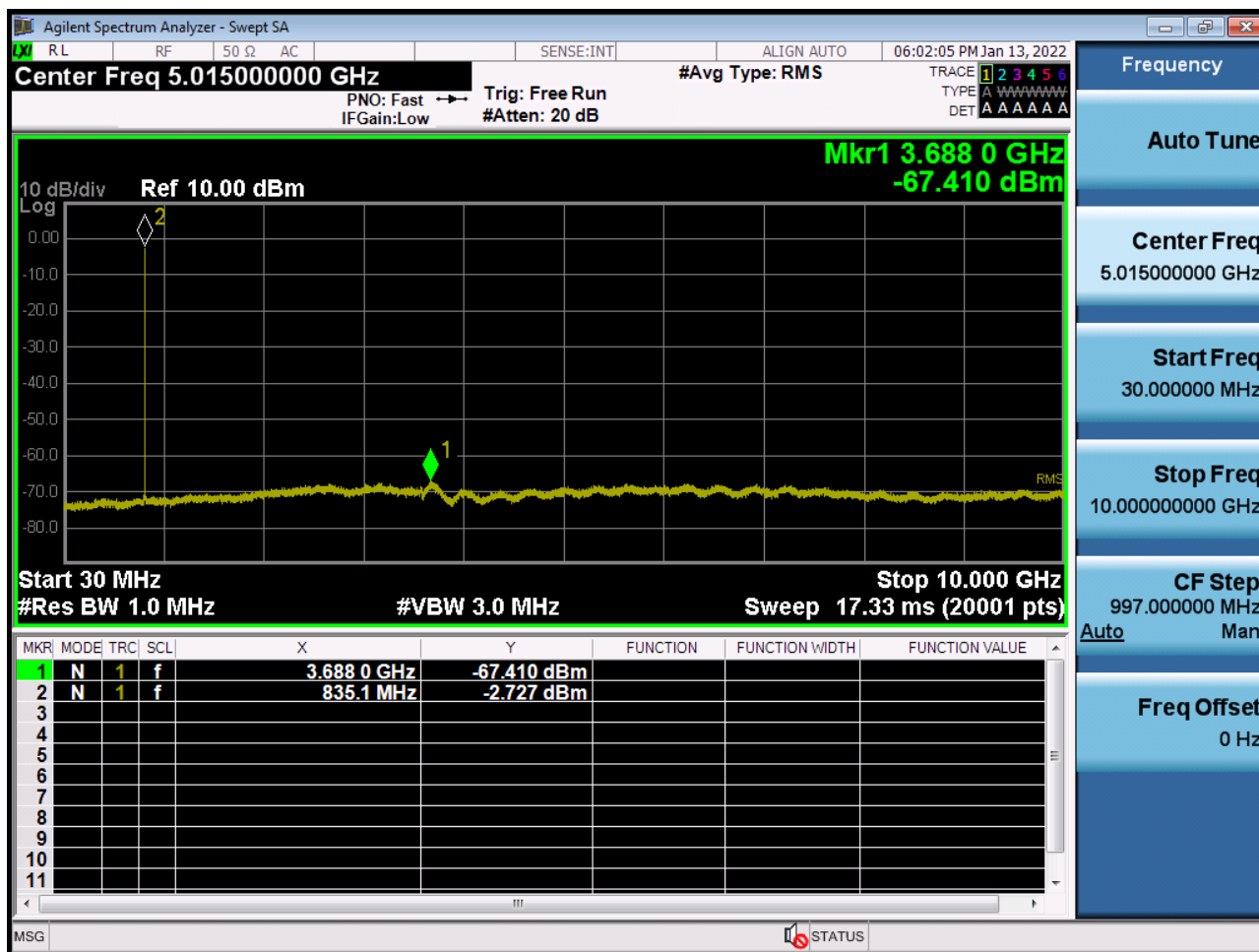
BAND26. Conducted Spurious Plot (27025ch_3 MHz_QPSK_RB 1_0)



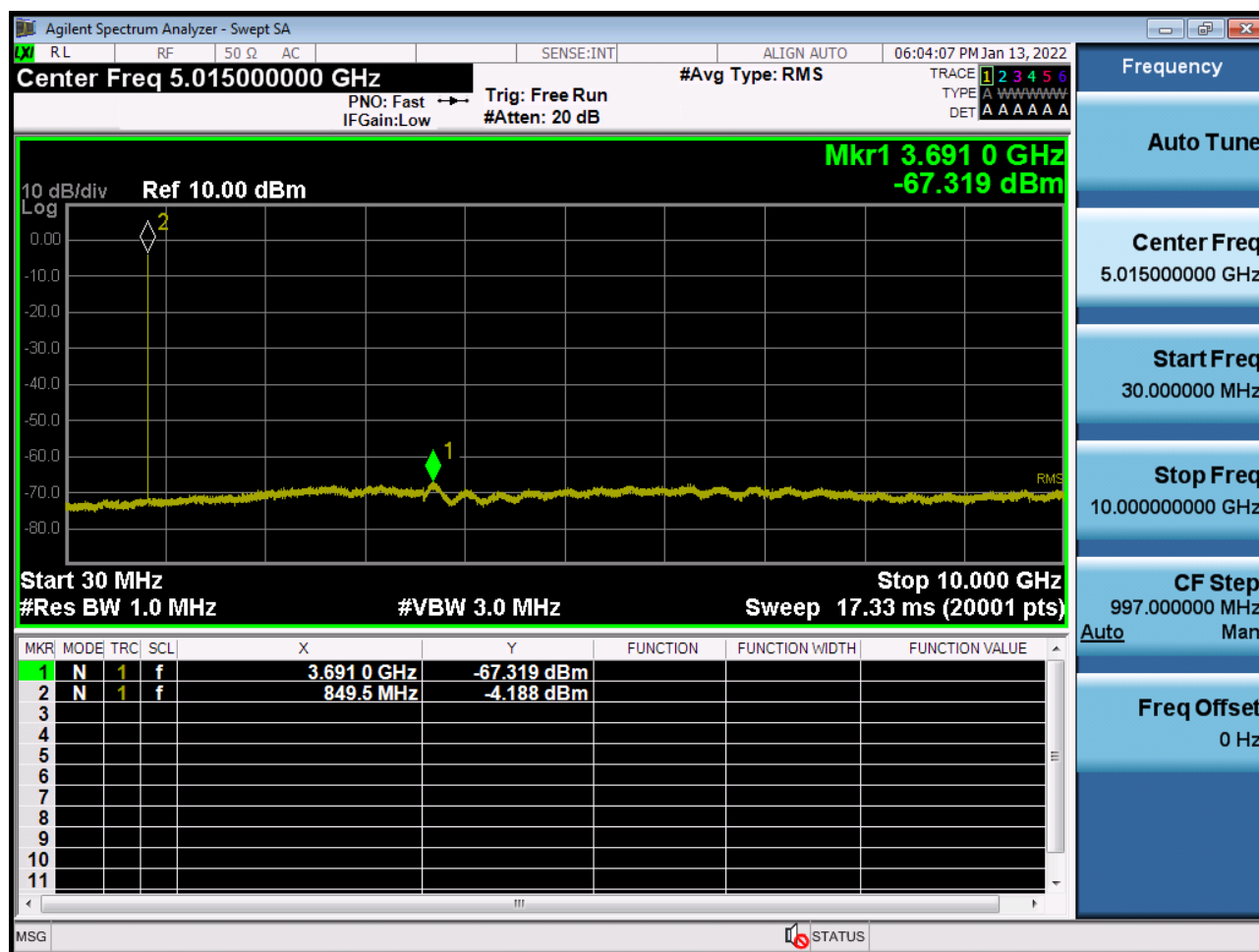
BAND26. Conducted Spurious Plot (26815ch_5 MHz_QPSK_RB 1_0)



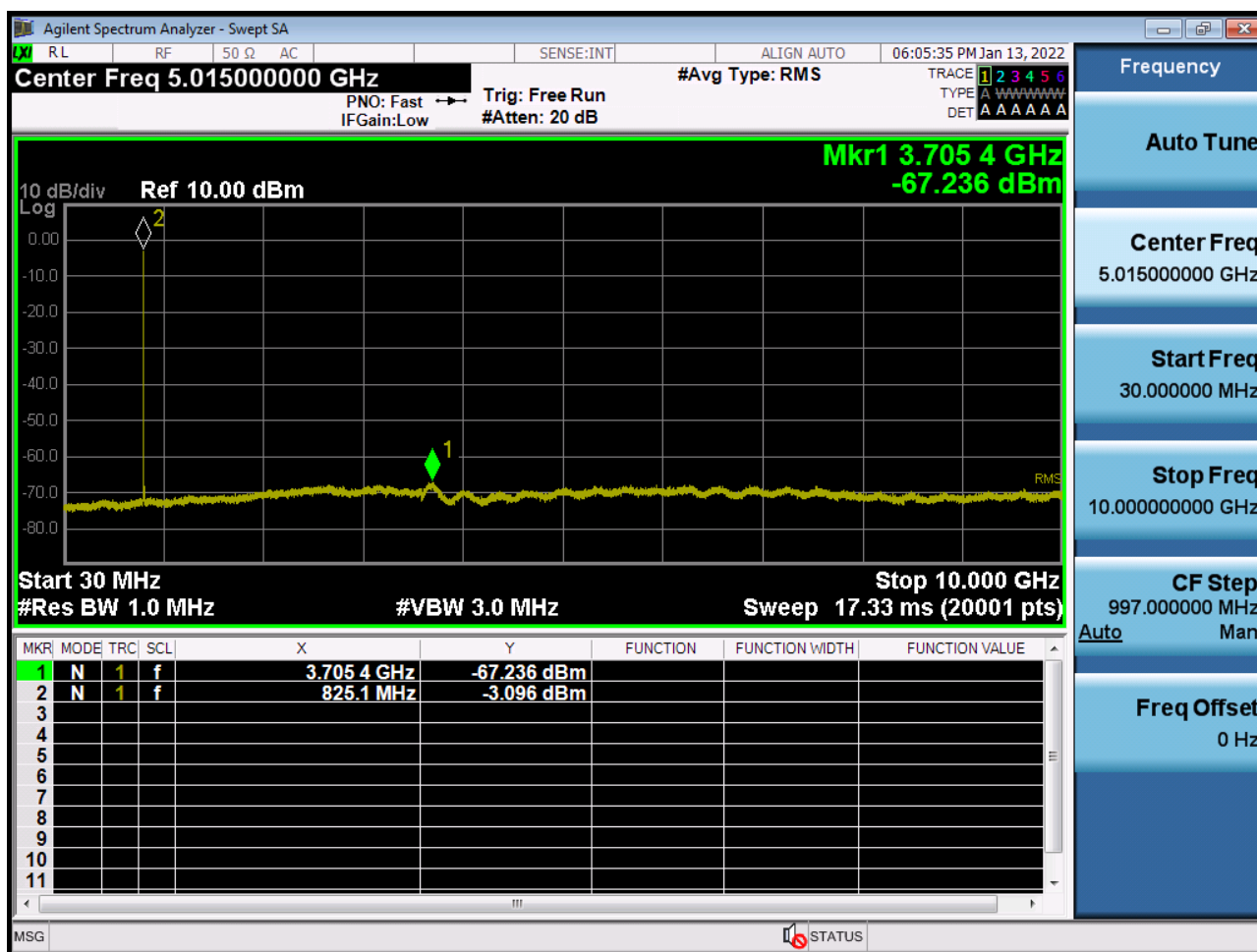
BAND26. Conducted Spurious Plot (26915ch_5 MHz_QPSK_RB 1_0)



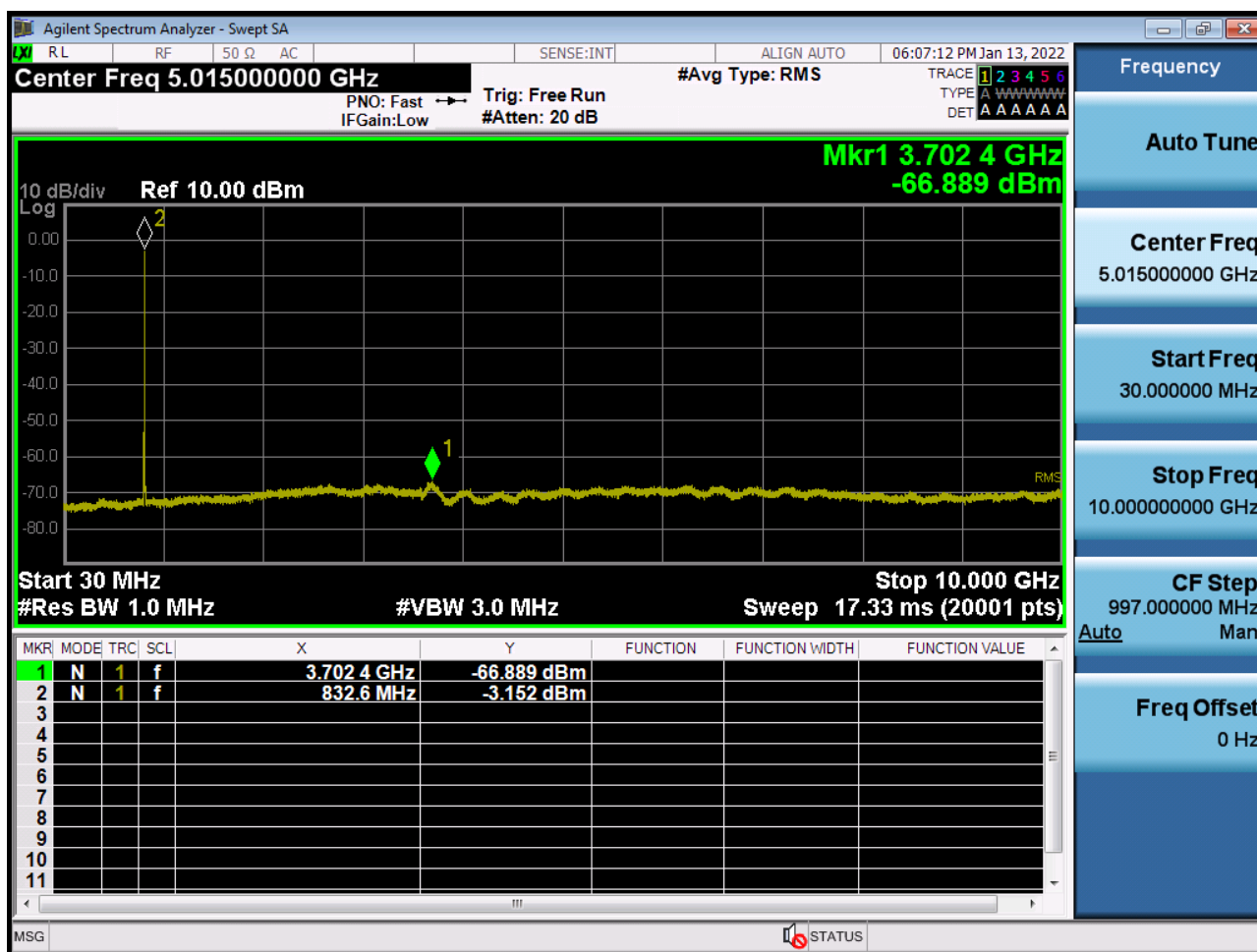
BAND26. Conducted Spurious Plot (27015ch_5 MHz_QPSK_RB 1_0)



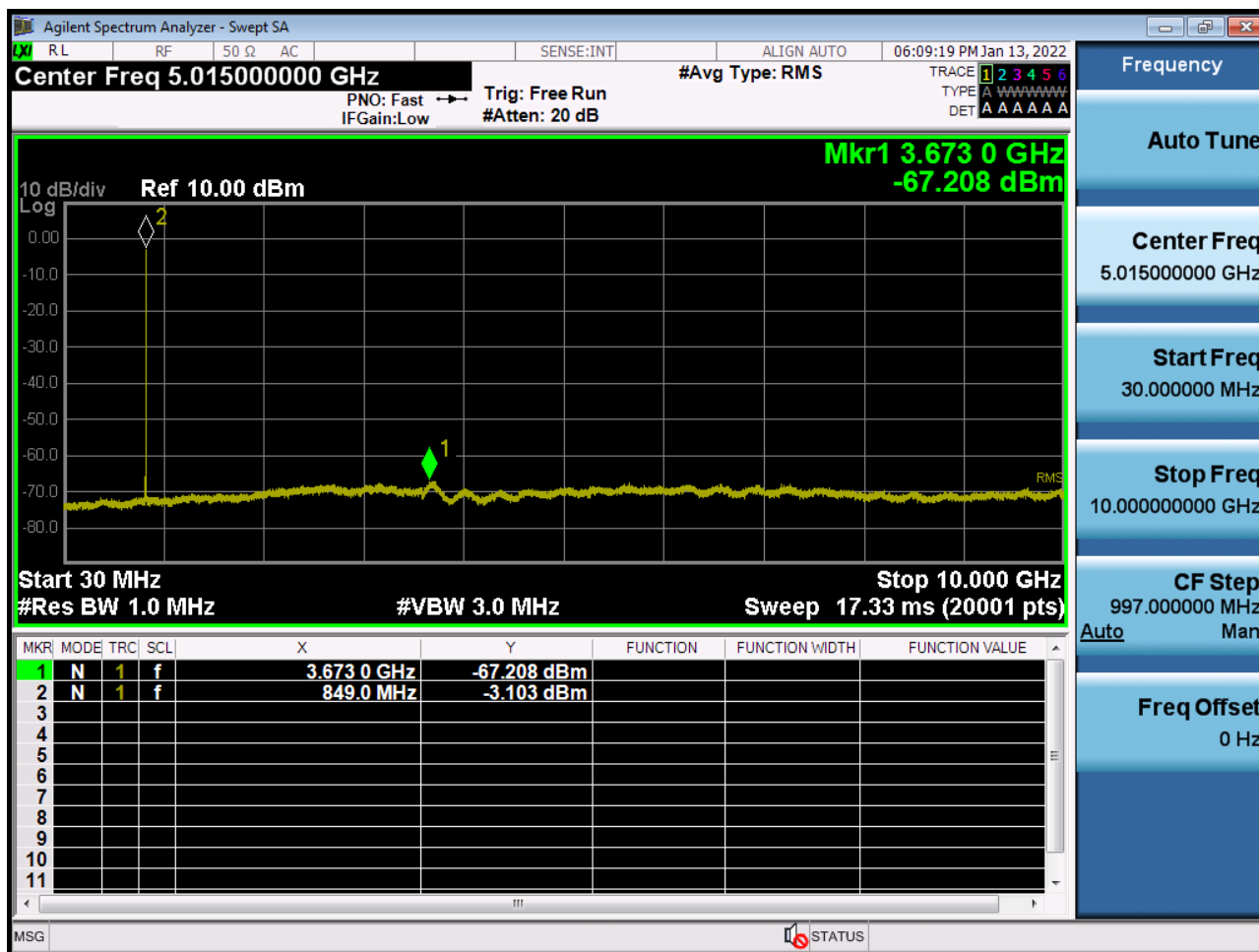
BAND26. Conducted Spurious Plot (26840ch_10 MHz_QPSK_RB 1_0)



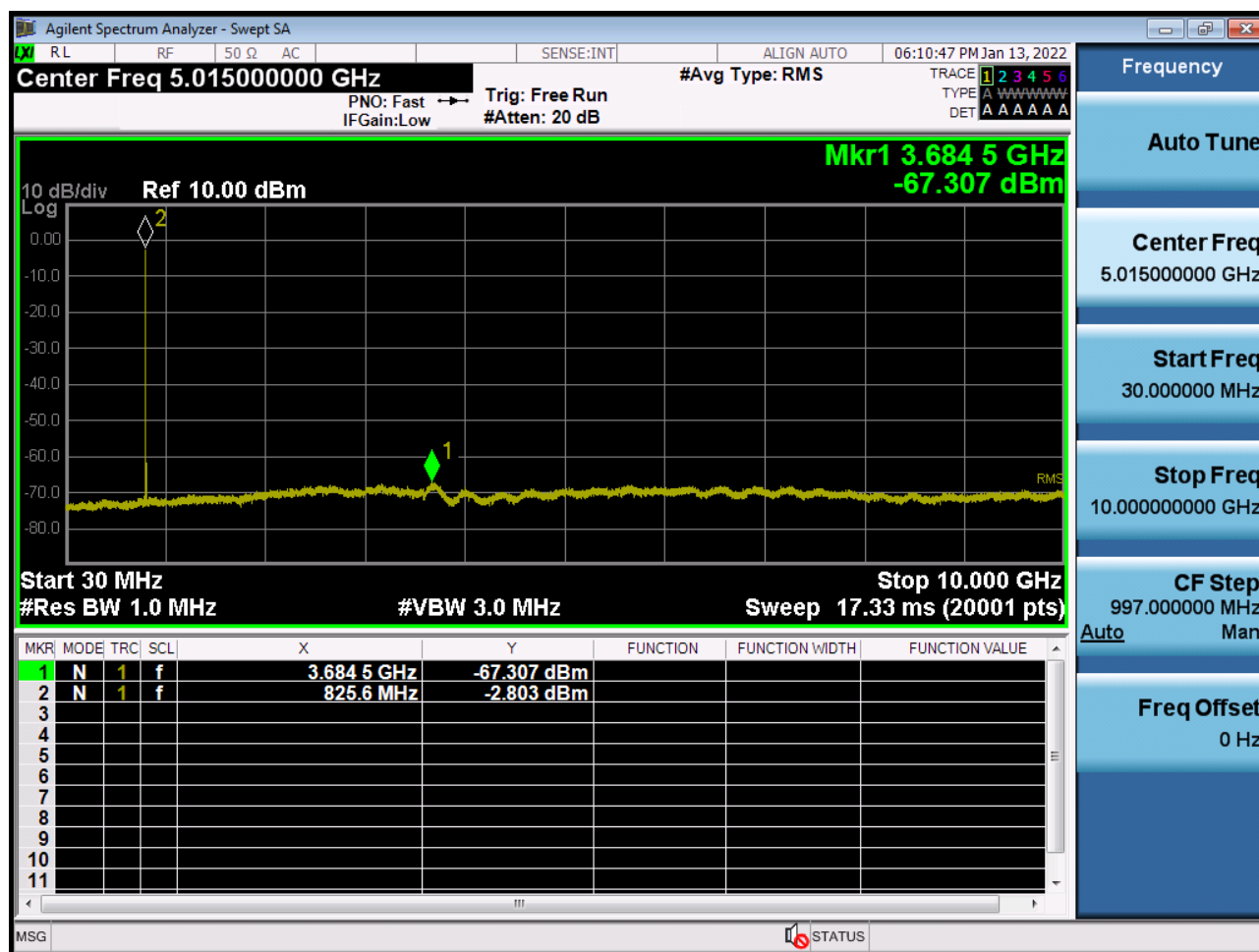
BAND26. Conducted Spurious Plot (26915ch_10 MHz_QPSK_RB 1_0)



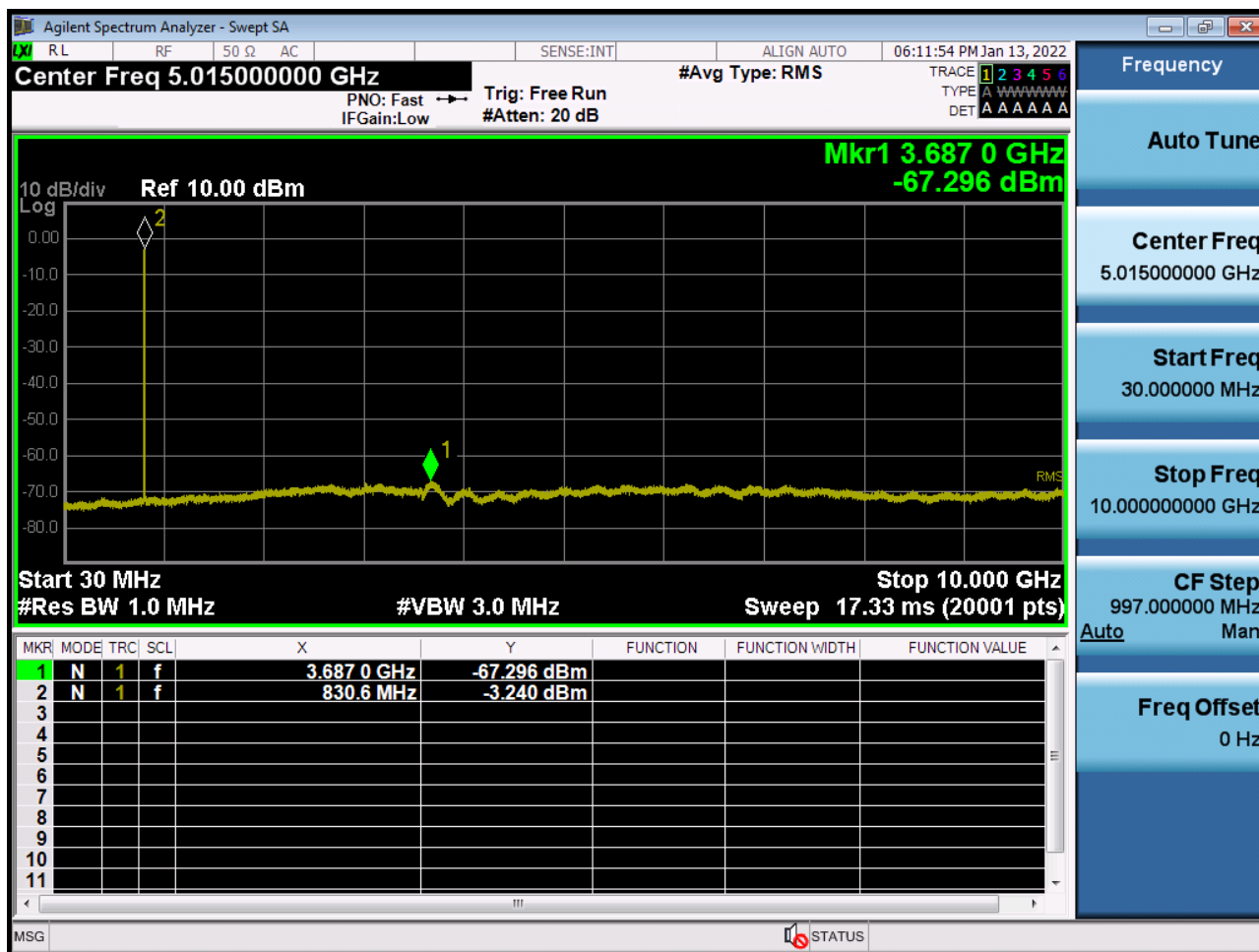
BAND26. Conducted Spurious Plot (26990ch_10 MHz_QPSK_RB 1_0)



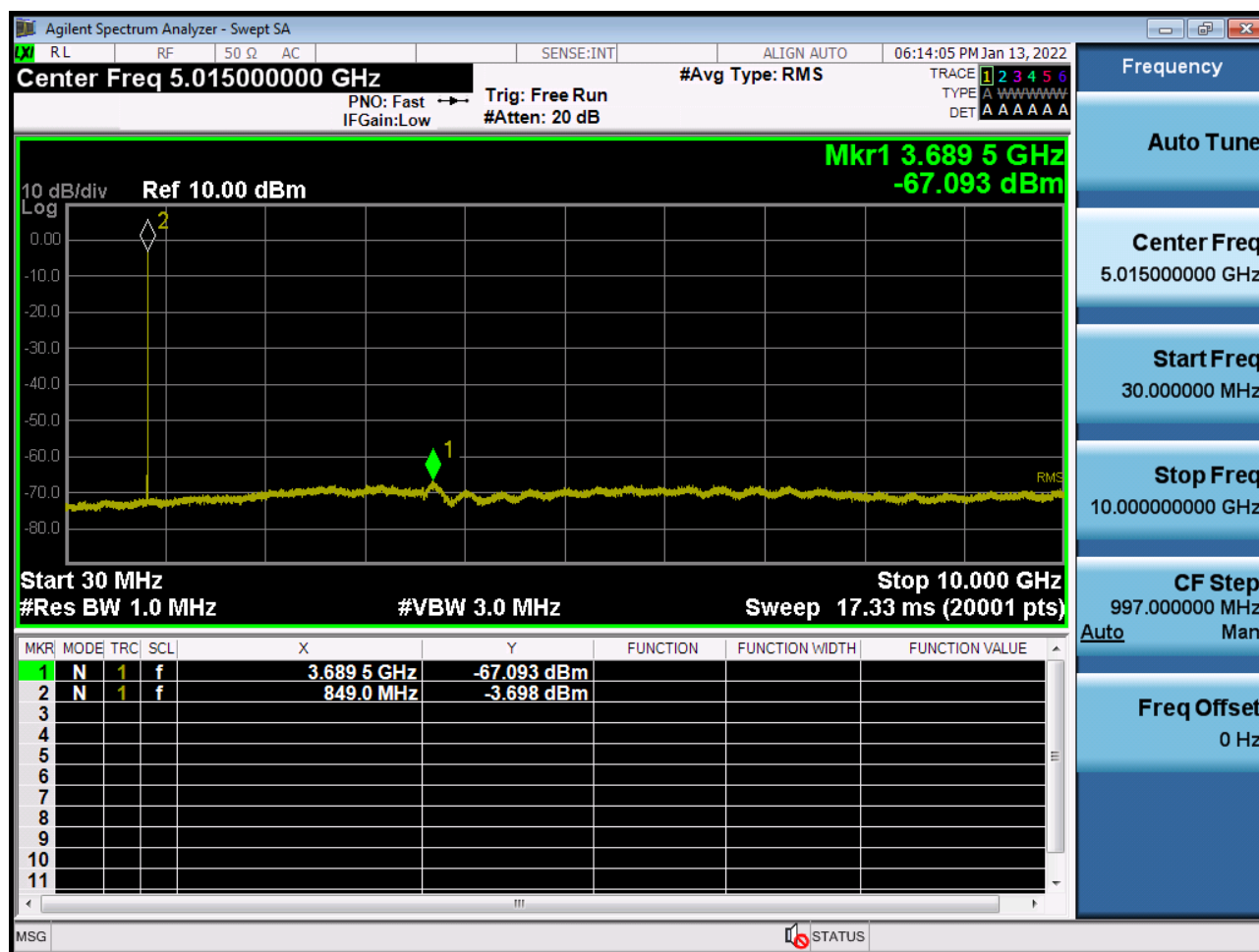
BAND 26. Conducted Spurious (26865ch_15 MHz_QPSK_RB 1_0)



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



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



10. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2202-FC010-P