TEST REPORT

FCC LTE B26(Part90) Test for SM-X526B
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2502-FC043

DATE OF ISSUE
February 17, 2025

Tested by
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Applicant	**SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Product Name Model Name	Tablet SM-X526B
Date of Test	December 26, 2024 ~ February 12, 2025
FCC ID	A3LSMX526B
Location of Test	■ Permanent Testing Lab ☐ On Site Testing (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)
FCC Classification:	PCS Licensed Transmitter (PCB)
Test Standard Used	FCC Rule Part: § 90, § 22
Test Results	PASS

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	February 17, 2025	Initial Release

Notice

Content
The measurements shown in this report were made in accordance with the procedures specified in CFR47 section § 2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)
The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s).
The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***.
When confirmation of authenticity of this test report is required, please contact www.hct.co.kr
The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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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:	A3LSMX526B
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§ 90, § 22
EUT Type:	Tablet
Model(s):	SM-X526B
Tx Frequency:	814.7 MHz – 824.0 MHz (LTE – Band 26 (1.4 MHz)) 815.5 MHz – 824.0 MHz (LTE – Band 26 (3 MHz)) 816.5 MHz – 824.0 MHz (LTE – Band 26 (5 MHz)) 819.0 MHz – 824.0 MHz (LTE – Band 26 (10 MHz)) 821.5 MHz (LTE – Band 26 (15 MHz))
Date(s) of Tests:	December 26, 2024 ~ February 12, 2025
Serial number:	Radiated : R32XC00B7ZP Conducted : R32XC00AZFB

1.1. MAXIMUM OUTPUT POWER

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
LTE – Band26 (1.4)	814.7 – 824.0	1M10G7D	QPSK	0.269	24.30
		1M10W7D	16QAM	0.230	23.61
		1M10W7D	64QAM	0.178	22.51
		1M10W7D	256QAM	0.086	19.37
LTE – Band26 (3)	815.5 – 824.0	2M72G7D	QPSK	0.269	24.30
		2M71W7D	16QAM	0.236	23.73
		2M70W7D	64QAM	0.181	22.58
		2M72W7D	256QAM	0.088	19.45
LTE – Band26 (5)	816.5 – 824.0	4M53G7D	QPSK	0.273	24.36
		4M52W7D	16QAM	0.236	23.73
		4M53W7D	64QAM	0.182	22.59
		4M53W7D	256QAM	0.088	19.46
LTE – Band26 (10)	819.0 – 824.0	9M02G7D	QPSK	0.267	24.27
		9M00W7D	16QAM	0.228	23.57
		8M99W7D	64QAM	0.177	22.48
		9M02W7D	256QAM	0.086	19.35
LTE – Band26 (15)	821.5	13M5G7D	QPSK	0.283	24.52
		13M5W7D	16QAM	0.243	23.86
		13M5W7D	64QAM	0.187	22.73
		13M5W7D	256QAM	0.093	19.67

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

Please refer to the [2G3G] Test Report.

2.2. MEASURING INSTRUMENT CALIBRATION

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

2.3. TEST FACILITY

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

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- KDB 971168 D01 v03r01 - Section 5.2.4 - ANSI C63.26-2015 - Section 5.2.1 & 5.2.4.2
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Radiated Power	- ANSI C63.26-2015 – Section 5.2.4.4 - KDB 971168 D01 v03r01 – Section 5.8
Radiated Spurious and Harmonic Emissions	- ANSI C63.26-2015 – Section 5.5.3 - KDB 971168 D01 v03r01 – Section 5.8

3.2 CONDUCTED OUTPUT POWER

Test Overview

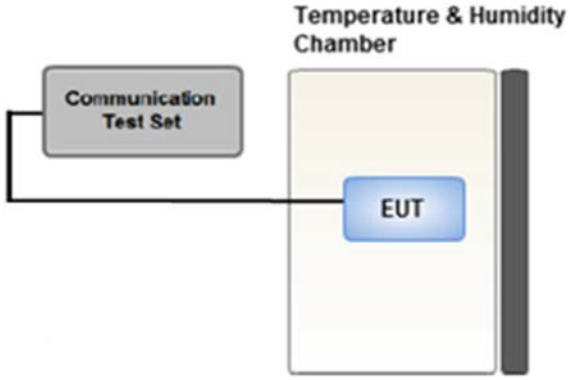
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base station emulator, communications test set, call box, or similar instrumentation that is capable of establishing a communications link with the EUT to enable control over variable parameters (e.g., output power, OBW, etc.).

In some cases, these instruments also include basic digital spectrum analyzer and/or power meter capabilities that can be utilized to measure the RF output power if the specified detectors and requirements can be realized and the measurement functions have been calibrated.

Test Procedure

1. The RF port of the EUT was connected to the Communication Tester via an RF cable.
2. Conducted average power was measured using a calibrated Radio Communication Tester.

Test setup



3.3 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.
The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW, not to exceed 1 MHz
3. VBW ≥ 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;

$$P_{d\ (dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dB)}$$

   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.

3.4 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x 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^{th} 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;

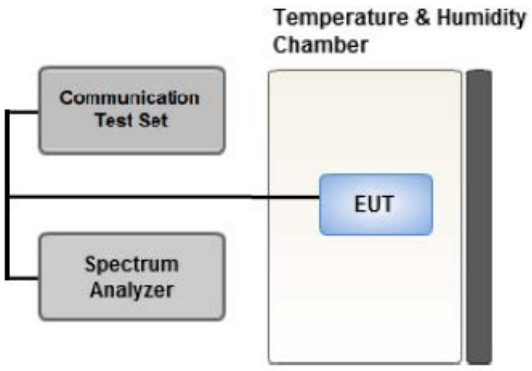
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   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.

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

3.5 OCCUPIED BANDWIDTH.



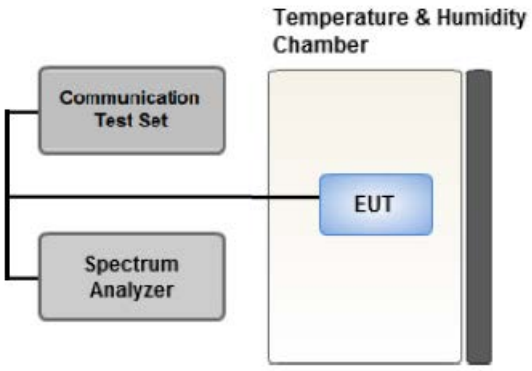
Test setup

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.
The EUT makes a call to the communication simulator.
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.
Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

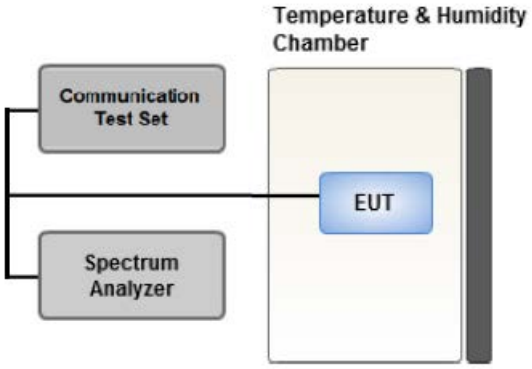
Test Overview

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

Test Settings

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

3.7 CHANNEL 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

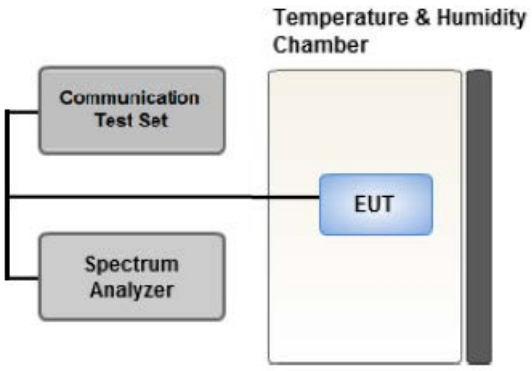
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW :
   .- EA licensee's frequency block by up to and including 37.5 kHz : 300 Hz
   .- EA licensee's frequency block greater than 37.5 kHz : 100 kHz
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Notes

For 90.691(a), RBW=300 Hz for offset less than 37.5 kHz from channel edge and RBW=100 kHz for offsets greater than 37.5 kHz is allowed.

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

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.
The frequency stability of the transmitter is measured by:

1. Temperature:
   The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.
2. Primary Supply Voltage:
   .- Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.
   .- For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

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

3.9 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
  Worst case : Stand alone
- All simultaneous transmission scenarios of operation were investigated, and the test results showed no additional significant emissions relative to the least restrictive limit were observed.
  Therefore, only the worst case(stand-alone) results were reported.
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 15 MHz)
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data.
- All modes of operation were tested and the worst case results are reported.
- Please refer to the table below.

[Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- Worst case : Of all modulation, We have tested modulation of the high Conducted Output Power.

[Worst case]

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

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	Switch box(1 G HPF+LNA)	HCT CO., LTD.,	F2L2	12/12/2025	Annual
RF Switching System	Switch box(3 G HPF+LNA)	HCT CO., LTD.,	F2L3	12/12/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F2L5	12/12/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F2L14	12/12/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/17/2025	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03197	11/28/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03201	11/28/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/19/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	ROHDE & SCHWARZ	101733	09/19/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	08/19/2026	Biennial
Radio Communication Test Station	MT8000A	Anritsu Corp.	6272613402	08/28/2025	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
Signal & Spectrum Analyzer (2 Hz~67 GHz)	FSW67	REOHDE & SCHWARZ	101736	05/23/2025	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
2. 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 (±kHz)
Occupied Bandwidth	95 (Confidence level about 95 %, k=2)
Frequency stability	28 (Confidence level about 95 %, k=2)

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

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	PASS
Channel Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§ 2.1051, § 90.691	< 50 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions within 37.5 kHz of Block Edge	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 § 90.635	< 100 Watts	PASS
Frequency stability / variation of ambient temperature	§ 2.1055, § 90.213 § 22.355	< 2.5 ppm	PASS

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 (Only 15 MHz B.W)	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 90.691 § 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 CONDUCTED OUTPUT POWER

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)				Limit (W)
				814.7 MHz		823.3 MHz		
				dBm	W	dBm	W	
1.4	QPSK	1	0	24.30	0.269	24.28	0.268	100
		1	3	24.07	0.255	24.03	0.253	100
		1	5	24.20	0.263	24.17	0.261	100
		3	0	24.18	0.262	24.15	0.260	100
		3	1	24.13	0.259	24.13	0.259	100
		3	3	24.27	0.267	24.25	0.266	100
		6	0	23.29	0.213	23.27	0.212	100
	16QAM	1	0	23.61	0.230	23.57	0.228	100
		1	3	23.55	0.226	23.54	0.226	100
		1	5	23.56	0.227	23.52	0.225	100
		3	0	23.28	0.213	23.27	0.212	100
		3	1	23.35	0.216	23.35	0.216	100
		3	3	23.40	0.219	23.40	0.219	100
		6	0	22.39	0.173	22.36	0.172	100
	64QAM	1	0	22.41	0.174	22.37	0.173	100
		1	3	22.41	0.174	22.39	0.173	100
		1	5	22.51	0.178	22.49	0.177	100
		3	0	22.33	0.171	22.30	0.170	100
		3	1	22.21	0.166	22.18	0.165	100
		3	3	22.37	0.173	22.36	0.172	100
		6	0	21.32	0.136	21.28	0.134	100
	256QAM	1	0	19.37	0.086	19.34	0.086	100
		1	3	19.24	0.084	19.20	0.083	100
		1	5	19.34	0.086	19.32	0.085	100
		3	0	19.36	0.086	19.34	0.086	100
		3	1	19.27	0.085	19.25	0.084	100
		3	3	19.26	0.084	19.25	0.084	100
		6	0	19.25	0.084	19.21	0.083	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)				Limit (W)
				815.5 MHz		822.5 MHz		
				dBm	W	dBm	W	
3	QPSK	1	0	24.25	0.266	24.26	0.267	100
		1	7	24.13	0.259	24.04	0.253	100
		1	14	24.30	0.269	24.19	0.263	100
		8	0	23.32	0.215	24.17	0.261	100
		8	3	23.26	0.212	24.12	0.258	100
		8	7	23.35	0.216	24.25	0.266	100
		15	0	23.52	0.225	23.25	0.211	100
	16QAM	1	0	23.53	0.225	23.60	0.229	100
		1	7	23.73	0.236	23.52	0.225	100
		1	14	23.60	0.229	23.54	0.226	100
		8	0	22.44	0.175	23.25	0.211	100
		8	3	22.43	0.175	23.35	0.216	100
		8	7	22.44	0.175	23.36	0.217	100
		15	0	22.45	0.176	22.38	0.173	100
	64QAM	1	0	22.58	0.181	22.39	0.173	100
		1	7	22.52	0.179	22.40	0.174	100
		1	14	22.57	0.181	22.48	0.177	100
		8	0	21.36	0.137	22.32	0.171	100
		8	3	21.42	0.139	22.21	0.166	100
		8	7	21.35	0.136	22.34	0.172	100
		15	0	21.41	0.138	21.29	0.134	100
	256QAM	1	0	19.45	0.088	19.36	0.086	100
		1	7	19.45	0.088	19.24	0.084	100
		1	14	19.38	0.087	19.30	0.085	100
		8	0	19.39	0.087	19.36	0.086	100
		8	3	19.27	0.085	19.24	0.084	100
		8	7	19.36	0.086	19.26	0.084	100
		15	0	19.36	0.086	19.25	0.084	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)				Limit (W)
				816.5 MHz		821.5 MHz		
				dBm	W	dBm	W	
5	QPSK	1	0	24.31	0.270	24.27	0.267	100
		1	12	24.14	0.259	24.05	0.254	100
		1	24	24.36	0.273	24.19	0.263	100
		12	0	23.40	0.219	24.15	0.260	100
		12	6	23.38	0.218	24.12	0.258	100
		12	11	23.37	0.217	24.26	0.267	100
		25	0	23.40	0.219	23.26	0.212	100
	16QAM	1	0	23.56	0.227	23.59	0.228	100
		1	12	23.73	0.236	23.53	0.226	100
		1	24	23.66	0.232	23.52	0.225	100
		12	0	22.41	0.174	23.27	0.213	100
		12	6	22.47	0.177	23.32	0.215	100
		12	11	22.38	0.173	23.38	0.218	100
		25	0	22.38	0.173	22.38	0.173	100
	64QAM	1	0	22.45	0.176	22.38	0.173	100
		1	12	22.49	0.177	22.37	0.173	100
		1	24	22.59	0.182	22.50	0.178	100
		12	0	21.39	0.138	22.29	0.170	100
		12	6	21.35	0.136	22.20	0.166	100
		12	11	21.39	0.138	22.33	0.171	100
		25	0	21.35	0.136	21.30	0.135	100
	256QAM	1	0	19.43	0.088	19.34	0.086	100
		1	12	19.46	0.088	19.23	0.084	100
		1	24	19.44	0.088	19.34	0.086	100
		12	0	19.35	0.086	19.35	0.086	100
		12	6	19.36	0.086	19.25	0.084	100
		12	11	19.32	0.086	19.25	0.084	100
		25	0	19.35	0.086	19.23	0.084	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				819 MHz		
				dBm	W	
10	QPSK	1	0	24.27	0.267	100
		1	24	24.05	0.254	100
		1	49	24.17	0.261	100
		25	0	24.14	0.260	100
		25	12	24.13	0.259	100
		25	24	24.25	0.266	100
		50	0	23.27	0.212	100
	16QAM	1	0	23.57	0.228	100
		1	24	23.51	0.225	100
		1	49	23.55	0.226	100
		25	0	23.27	0.213	100
		25	12	23.35	0.216	100
		25	24	23.37	0.217	100
		50	0	22.36	0.172	100
	64QAM	1	0	22.39	0.173	100
		1	24	22.38	0.173	100
		1	49	22.48	0.177	100
		25	0	22.30	0.170	100
		25	12	22.19	0.165	100
		25	24	22.34	0.171	100
		50	0	21.30	0.135	100
	256QAM	1	0	19.35	0.086	100
		1	24	19.24	0.084	100
		1	49	19.31	0.085	100
		25	0	19.35	0.086	100
		25	12	19.26	0.084	100
		25	24	19.22	0.084	100
		50	0	19.23	0.084	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				821.5 MHz		
				dBm	W	
15	QPSK	1	0	24.52	0.283	100
		1	36	24.34	0.272	100
		1	74	24.41	0.276	100
		36	0	23.58	0.228	100
		36	18	23.58	0.228	100
		36	39	23.56	0.227	100
		75	0	23.62	0.230	100
	16QAM	1	0	23.77	0.238	100
		1	36	23.86	0.243	100
		1	74	23.64	0.231	100
		36	0	22.61	0.183	100
		36	18	22.55	0.180	100
		36	39	22.53	0.179	100
		75	0	22.57	0.181	100
	64QAM	1	0	22.71	0.186	100
		1	36	22.73	0.187	100
		1	74	22.52	0.179	100
		36	0	21.60	0.144	100
		36	18	21.59	0.144	100
		36	39	21.54	0.143	100
		75	0	21.54	0.143	100
	256QAM	1	0	19.67	0.093	100
		1	36	19.61	0.091	100
		1	74	19.49	0.089	100
		36	0	19.58	0.091	100
		36	18	19.53	0.090	100
		36	39	19.49	0.089	100
		75	0	19.58	0.091	100

8.2 EFFECTIVE RADIATED POWER

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
814.7	LTE B26/ 1.4 MHz	QPSK	-29.71	33.50	-10.05	1.44	H	< 100	0.159	22.01	1	5
		16QAM	-30.44	32.77	-10.05	1.44	H		0.134	21.28		
		64QAM	-31.52	31.69	-10.05	1.44	H		0.105	20.20		
		256QAM	-34.54	28.67	-10.05	1.44	H		0.052	17.18		
823.3		QPSK	-29.18	33.85	-9.95	1.44	H		0.176	22.46	1	5
		16QAM	-29.88	33.15	-9.95	1.44	H		0.150	21.76		
		64QAM	-30.95	32.08	-9.95	1.44	H		0.117	20.69		
		256QAM	-34.03	29.00	-9.95	1.44	H		0.058	17.61		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
815.5	LTE B26/ 3 MHz	QPSK	-29.44	33.78	-10.05	1.44	H	< 100	0.169	22.29	1	14
		16QAM	-30.12	33.10	-10.05	1.44	H		0.145	21.61		
		64QAM	-31.20	32.02	-10.05	1.44	H		0.113	20.53		
		256QAM	-34.31	28.91	-10.05	1.44	H		0.055	17.42		
822.5		QPSK	-28.91	34.15	-9.95	1.44	H		0.189	22.76	1	14
		16QAM	-29.58	33.48	-9.95	1.44	H		0.162	22.09		
		64QAM	-30.67	32.39	-9.95	1.44	H		0.126	21.00		
		256QAM	-33.79	29.27	-9.95	1.44	H		0.061	17.88		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
816.5	LTE B26/ 5 MHz	QPSK	-29.00	34.20	-10.05	1.44	H	< 100	0.187	22.71	1	24
		16QAM	-29.69	33.51	-10.05	1.44	H		0.159	22.02		
		64QAM	-30.77	32.43	-10.05	1.44	H		0.124	20.94		
		256QAM	-33.85	29.35	-10.05	1.44	H		0.061	17.86		
821.5		QPSK	-28.84	34.26	-9.95	1.44	H		0.194	22.87	1	24
		16QAM	-29.59	33.51	-9.95	1.44	H		0.163	22.12		
		64QAM	-30.68	32.42	-9.95	1.44	H		0.127	21.03		
		256QAM	-33.73	29.37	-9.95	1.44	H		0.063	17.98		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
819.0	LTE B26/ 10 MHz	QPSK	-28.73	34.43	-10.05	1.44	H	< 100	0.197	22.94	1	49
		16QAM	-29.49	33.67	-10.05	1.44	H		0.165	22.18		
		64QAM	-30.55	32.61	-10.05	1.44	H		0.129	21.12		
		256QAM	-33.58	29.58	-10.05	1.44	H		0.064	18.09		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
821.5	LTE B26/ 15 MHz	QPSK	-28.54	34.56	-9.95	1.44	H	< 7.00	0.207	23.17	1	74
		16QAM	-29.51	33.59	-9.95	1.44	H		0.166	22.20		
		64QAM	-30.57	32.53	-9.95	1.44	H		0.130	21.14		
		256QAM	-33.56	29.54	-9.95	1.44	H		0.065	18.15		

Note

1. Limit: None (for reporting purposes only)

8.3 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B26

▣ MODULATION SIGNAL: 15 MHz QPSK

▣ DISTANCE: 3 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit	Size	
									Size	Offset
26765 (821.5)	1 643.00	-48.71	9.39	-63.55	2.00	V	-56.16	-13.00		
	2 464.50	-47.34	10.37	-58.50	2.59	H	-50.72	-13.00		
	3 286.00	-53.40	10.98	-61.51	2.95	H	-53.48	-13.00		

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
Band 26	1.4 MHz	823.3	QPSK	6	0	1.0982
			16QAM			1.0953
			64QAM			1.0953
			256QAM			1.0953
	3 MHz	822.5	QPSK	15		2.7208
			16QAM			2.7086
			64QAM			2.7029
			256QAM			2.7150
	5 MHz	821.5	QPSK	25		4.5271
			16QAM			4.5210
			64QAM			4.5250
			256QAM			4.5251
	10 MHz	819.0	QPSK	50		9.0220
			16QAM			9.0013
			64QAM			8.9923
			256QAM			9.0177
	15 MHz	821.5	QPSK	75		13.495
			16QAM			13.475
			64QAM			13.466
			256QAM			13.472

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 46 ~ 65.

8.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
26	1.4	814.7	3.7189	27.976	-57.562	-29.586	-13.00
		823.3	3.7189	27.976	-57.129	-29.153	
	3	815.5	3.6990	27.976	-57.845	-29.869	
		822.5	2.4727	27.976	-57.747	-29.771	
	5	816.5	3.7189	27.976	-57.248	-29.272	
		821.5	3.7089	27.976	-58.181	-30.205	
	10	819.0	3.1606	27.976	-58.144	-30.168	
	15	821.5	5.5634	28.591	-58.550	-29.959	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 86 ~ 93.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor (dB) = Cable Loss + Ext. Attenuator + Power Splitter

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

8.6 CHANNEL EDGE

- Plots of the EUT's Band Edge are shown Page 66 ~ 85.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

▣ MODE: LTE 26

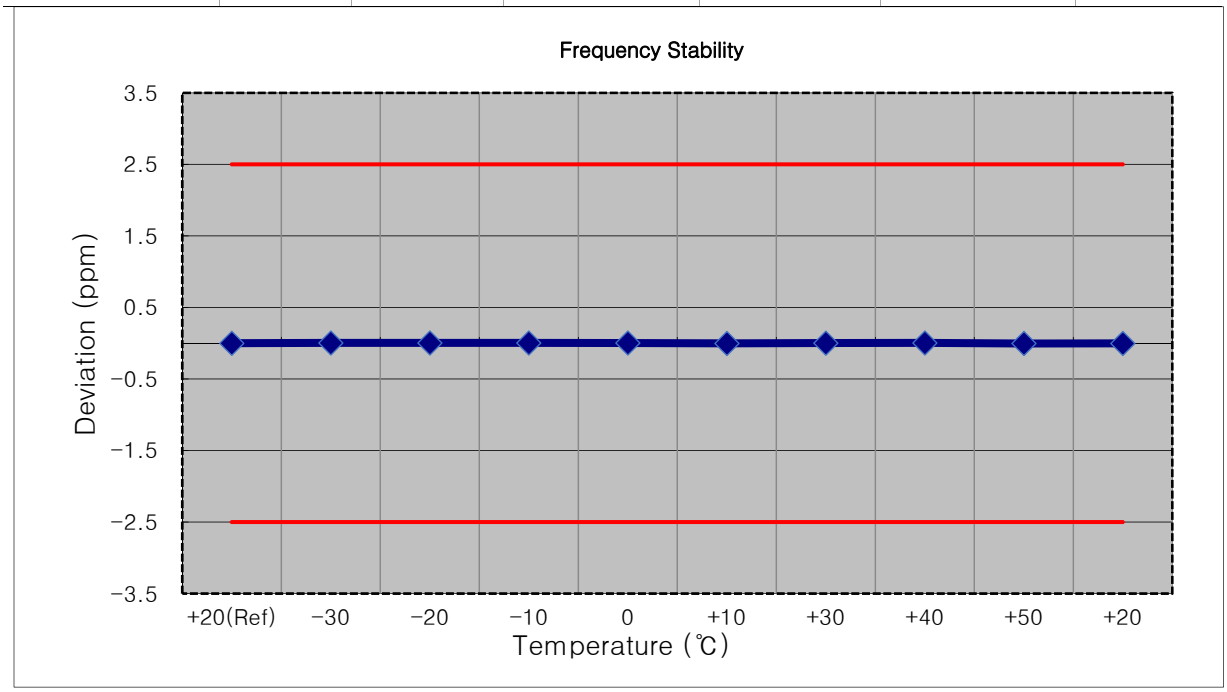
▣ OPERATING FREQUENCY: 814,700,000 Hz

▣ CHANNEL: 26697(1.4 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(℃)	(Hz)	Error (Hz)	(%)	
100 %	3.860	+20(Ref)	814 700 003	0.0	0.000 000	0.000
100 %		-30	814 700 005	2.7	0.000 000	0.003
100 %		-20	814 700 005	2.9	0.000 000	0.004
100 %		-10	814 700 005	2.7	0.000 000	0.003
100 %		0	814 700 006	3.1	0.000 000	0.004
100 %		+10	814 700 000	-2.1	0.000 000	-0.003
100 %		+30	814 700 004	1.2	0.000 000	0.001
100 %		+40	814 700 005	2.6	0.000 000	0.003
100 %		+50	814 700 000	-2.4	0.000 000	-0.003
Batt. Endpoint	3.400	+20	814 700 001	-1.4	0.000 000	-0.002



▣ MODE: LTE 26

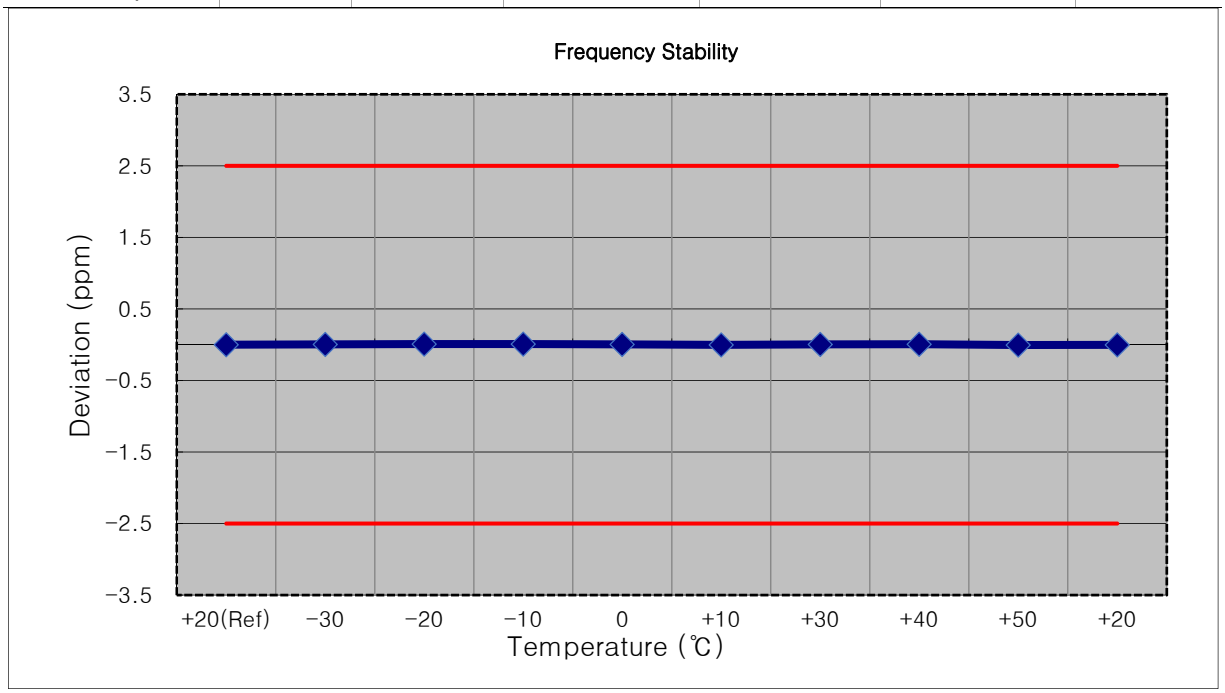
▣ OPERATING FREQUENCY: 815,500,000 Hz

▣ CHANNEL: 26705(3 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.860	+20(Ref)	815 499 997	0.0	0.000 000	0.000
100 %		-30	815 500 000	3.4	0.000 000	0.004
100 %		-20	815 500 003	6.7	0.000 001	0.008
100 %		-10	815 500 003	5.9	0.000 001	0.007
100 %		0	815 500 000	3.2	0.000 000	0.004
100 %		+10	815 499 994	-3.1	0.000 000	-0.004
100 %		+30	815 500 000	3.0	0.000 000	0.004
100 %		+40	815 500 002	5.4	0.000 001	0.007
100 %		+50	815 499 993	-4.0	0.000 000	-0.005
Batt. Endpoint	3.400	+20	815 499 994	-2.5	0.000 000	-0.003



▣ MODE: LTE 26

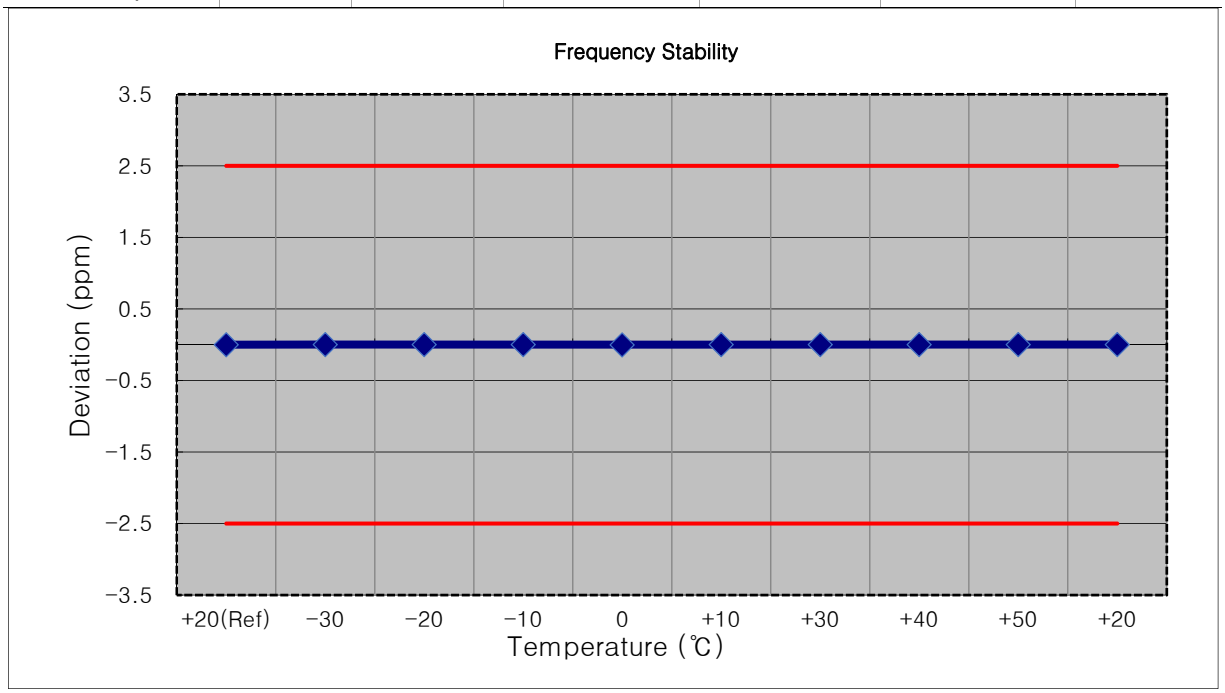
▣ OPERATING FREQUENCY: 816,500,000 Hz

▣ CHANNEL: 26715(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)	816 500 002	0.0	0.000 000	0.000
100 %		-30	816 500 003	1.8	0.000 000	0.002
100 %		-20	816 500 003	1.2	0.000 000	0.001
100 %		-10	816 500 004	2.1	0.000 000	0.003
100 %		0	816 499 999	-2.4	0.000 000	-0.003
100 %		+10	816 500 003	1.4	0.000 000	0.002
100 %		+30	816 500 004	2.1	0.000 000	0.003
100 %		+40	816 500 004	2.0	0.000 000	0.002
100 %		+50	816 500 004	2.1	0.000 000	0.003
Batt. Endpoint	3.400	+20	816 500 003	1.4	0.000 000	0.002



▣ MODE: LTE 26

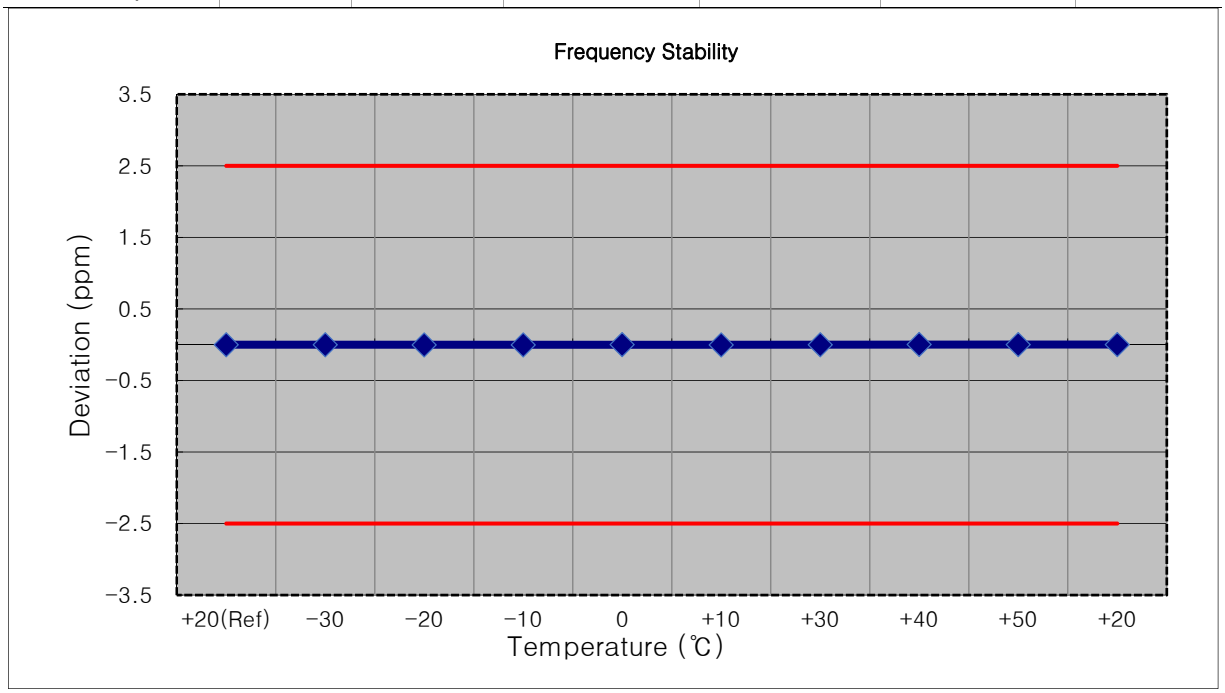
▣ OPERATING FREQUENCY: 819,000,000 Hz

▣ CHANNEL: 26740(10 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.860	+20(Ref)	818 999 998	0.0	0.000 000	0.000
100 %		-30	818 999 997	-0.9	0.000 000	-0.001
100 %		-20	818 999 996	-1.9	0.000 000	-0.002
100 %		-10	818 999 996	-1.7	0.000 000	-0.002
100 %		0	819 000 000	1.7	0.000 000	0.002
100 %		+10	818 999 996	-2.5	0.000 000	-0.003
100 %		+30	818 999 997	-1.2	0.000 000	-0.001
100 %		+40	819 000 000	2.3	0.000 000	0.003
100 %		+50	819 000 000	2.0	0.000 000	0.002
Batt. Endpoint	3.400	+20	819 000 000	2.1	0.000 000	0.003



▣ MODE: LTE 26

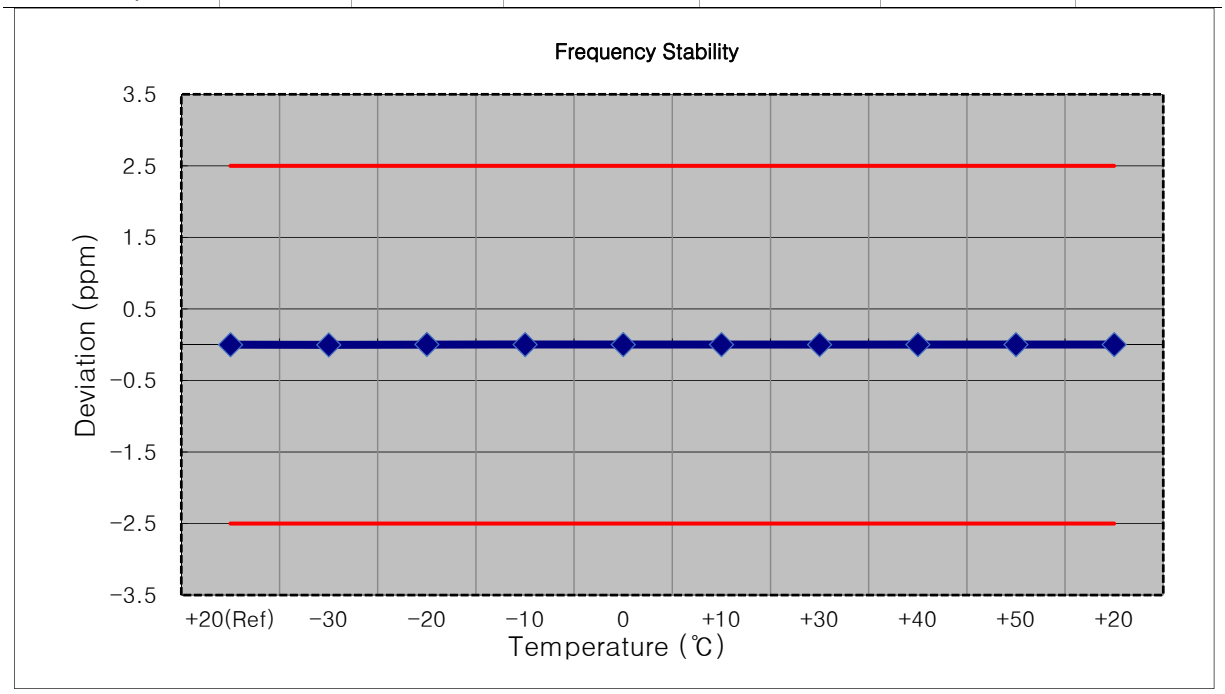
▣ OPERATING FREQUENCY: 821,500,000 Hz

▣ CHANNEL: 26765(15 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.860	+20(Ref)	821 500 002	0.0	0.000 000	0.000
100 %		-30	821 499 999	-2.4	0.000 000	-0.003
100 %		-20	821 500 004	2.7	0.000 000	0.003
100 %		-10	821 500 003	1.6	0.000 000	0.002
100 %		0	821 500 003	1.7	0.000 000	0.002
100 %		+10	821 500 003	1.8	0.000 000	0.002
100 %		+30	821 500 004	2.0	0.000 000	0.002
100 %		+40	821 500 003	1.5	0.000 000	0.002
100 %		+50	821 500 003	1.2	0.000 000	0.001
Batt. Endpoint	3.400	+20	821 500 003	1.6	0.000 000	0.002



8.8 STRADDLE CHANNEL

8.8.1 CONDUCTED OUTPUT POWER

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
1.4	QPSK	1	0	24.28	0.268	100
		1	3	24.06	0.255	100
		1	5	24.18	0.262	100
		3	0	24.15	0.260	100
		3	1	24.09	0.257	100
		3	3	24.27	0.267	100
		6	0	23.29	0.213	100
	16QAM	1	0	23.60	0.229	100
		1	3	23.54	0.226	100
		1	5	23.55	0.226	100
		3	0	23.28	0.213	100
		3	1	23.33	0.215	100
		3	3	23.36	0.217	100
		6	0	22.35	0.172	100
	64QAM	1	0	22.39	0.173	100
		1	3	22.41	0.174	100
		1	5	22.48	0.177	100
		3	0	22.30	0.170	100
		3	1	22.18	0.165	100
		3	3	22.35	0.172	100
		6	0	21.29	0.135	100
	256QAM	1	0	19.35	0.086	100
		1	3	19.23	0.084	100
		1	5	19.33	0.086	100
		3	0	19.32	0.086	100
		3	1	19.25	0.084	100
		3	3	19.22	0.084	100
		6	0	19.23	0.084	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
3	QPSK	1	0	24.30	0.269	100
		1	7	24.04	0.254	100
		1	14	24.19	0.263	100
		8	0	24.15	0.260	100
		8	3	24.12	0.258	100
		8	7	24.26	0.267	100
		15	0	23.28	0.213	100
	16QAM	1	0	23.57	0.228	100
		1	7	23.52	0.225	100
		1	14	23.55	0.226	100
		8	0	23.27	0.213	100
		8	3	23.34	0.216	100
		8	7	23.37	0.217	100
		15	0	22.36	0.172	100
	64QAM	1	0	22.37	0.173	100
		1	7	22.39	0.173	100
		1	14	22.48	0.177	100
		8	0	22.30	0.170	100
		8	3	22.18	0.165	100
		8	7	22.35	0.172	100
		15	0	21.32	0.135	100
	256QAM	1	0	19.35	0.086	100
		1	7	19.20	0.083	100
		1	14	19.30	0.085	100
		8	0	19.36	0.086	100
		8	3	19.24	0.084	100
		8	7	19.26	0.084	100
		15	0	19.22	0.084	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
5	QPSK	1	0	24.26	0.267	100
		1	12	24.04	0.253	100
		1	24	24.19	0.263	100
		12	0	24.17	0.261	100
		12	6	24.11	0.258	100
		12	11	24.25	0.266	100
		25	0	23.28	0.213	100
	16QAM	1	0	23.58	0.228	100
		1	12	23.54	0.226	100
		1	24	23.53	0.225	100
		12	0	23.27	0.213	100
		12	6	23.32	0.215	100
		12	11	23.37	0.217	100
		25	0	22.37	0.173	100
	64QAM	1	0	22.39	0.173	100
		1	12	22.41	0.174	100
		1	24	22.47	0.177	100
		12	0	22.30	0.170	100
		12	6	22.18	0.165	100
		12	11	22.34	0.172	100
		25	0	21.29	0.134	100
	256QAM	1	0	19.36	0.086	100
		1	12	19.22	0.084	100
		1	24	19.32	0.086	100
		12	0	19.32	0.086	100
		12	6	19.25	0.084	100
		12	11	19.25	0.084	100
		25	0	19.24	0.084	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
1+U519:V5460	QPSK	1	0	24.28	0.268	100
		1	24	24.03	0.253	100
		1	49	24.20	0.263	100
		25	0	24.16	0.261	100
		25	12	24.12	0.258	100
		25	24	24.25	0.266	100
		50	0	23.28	0.213	100
	16QAM	1	0	23.59	0.229	100
		1	24	23.53	0.225	100
		1	49	23.55	0.226	100
		25	0	23.25	0.211	100
		25	12	23.33	0.215	100
		25	24	23.39	0.218	100
		50	0	22.39	0.173	100
	64QAM	1	0	22.37	0.173	100
		1	24	22.40	0.174	100
		1	49	22.47	0.177	100
		25	0	22.30	0.170	100
		25	12	22.19	0.166	100
		25	24	22.35	0.172	100
		50	0	21.29	0.135	100
	256QAM	1	0	19.34	0.086	100
		1	24	19.23	0.084	100
		1	49	19.33	0.086	100
		25	0	19.33	0.086	100
		25	12	19.23	0.084	100
		25	24	19.22	0.084	100
		50	0	19.23	0.084	100

8.8.2 EFFECTIVE RADIATED POWER

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
824.0	LTE B26/ 1.4 MHz	QPSK	-28.58	34.42	-9.95	1.44	H	< 7.00	0.201	23.03	1	5
		16QAM	-29.32	33.68	-9.95	1.44	H		0.169	22.29		
		64QAM	-30.52	32.48	-9.95	1.44	H		0.129	21.09		
		256QAM	-33.44	29.56	-9.95	1.44	H		0.066	18.17		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
824.0	LTE B26/ 3 MHz	QPSK	-28.56	34.44	-9.95	1.44	H	< 7.00	0.202	23.05	1	14
		16QAM	-29.11	33.89	-9.95	1.44	H		0.178	22.50		
		64QAM	-30.35	32.65	-9.95	1.44	H		0.134	21.26		
		256QAM	-33.31	29.69	-9.95	1.44	H		0.068	18.30		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
824.0	LTE B26/ 5 MHz	QPSK	-28.48	34.52	-9.95	1.44	H	< 7.00	0.206	23.13	1	24
		16QAM	-29.25	33.75	-9.95	1.44	H		0.172	22.36		
		64QAM	-30.26	32.74	-9.95	1.44	H		0.136	21.35		
		256QAM	-33.38	29.62	-9.95	1.44	H		0.067	18.23		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
824.0	LTE B26/ 10 MHz	QPSK	-28.46	34.54	-9.95	1.44	H	< 7.00	0.207	23.15	1	49
		16QAM	-29.35	33.65	-9.95	1.44	H		0.168	22.26		
		64QAM	-30.25	32.75	-9.95	1.44	H		0.137	21.36		
		256QAM	-33.35	29.65	-9.95	1.44	H		0.067	18.26		

8.8.3 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B26(Straddle)

▣ MODULATION SIGNAL: 10 MHz QPSK

▣ DISTANCE: 3 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit	RB	
									Size	Offset
26790 (824.0)	1 648.00	-49.37	9.44	-64.31	2.02	V	-56.89	-13.00	1	49
	2 472.00	-52.88	10.35	-64.08	2.59	H	-56.32	-13.00		
	3 296.00	-54.13	11.06	-62.29	2.95	H	-54.18	-13.00		

8.8.4 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	824.0	2.6421	27.976	-57.532	-29.556	-13.00
	3		6.5604	28.591	-58.020	-29.429	
	5		3.1008	27.976	-57.741	-29.765	
	10		3.3600	27.976	-57.691	-29.715	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 95 ~ 98.
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

8.8.5 CHANNEL EDGE(Part90)

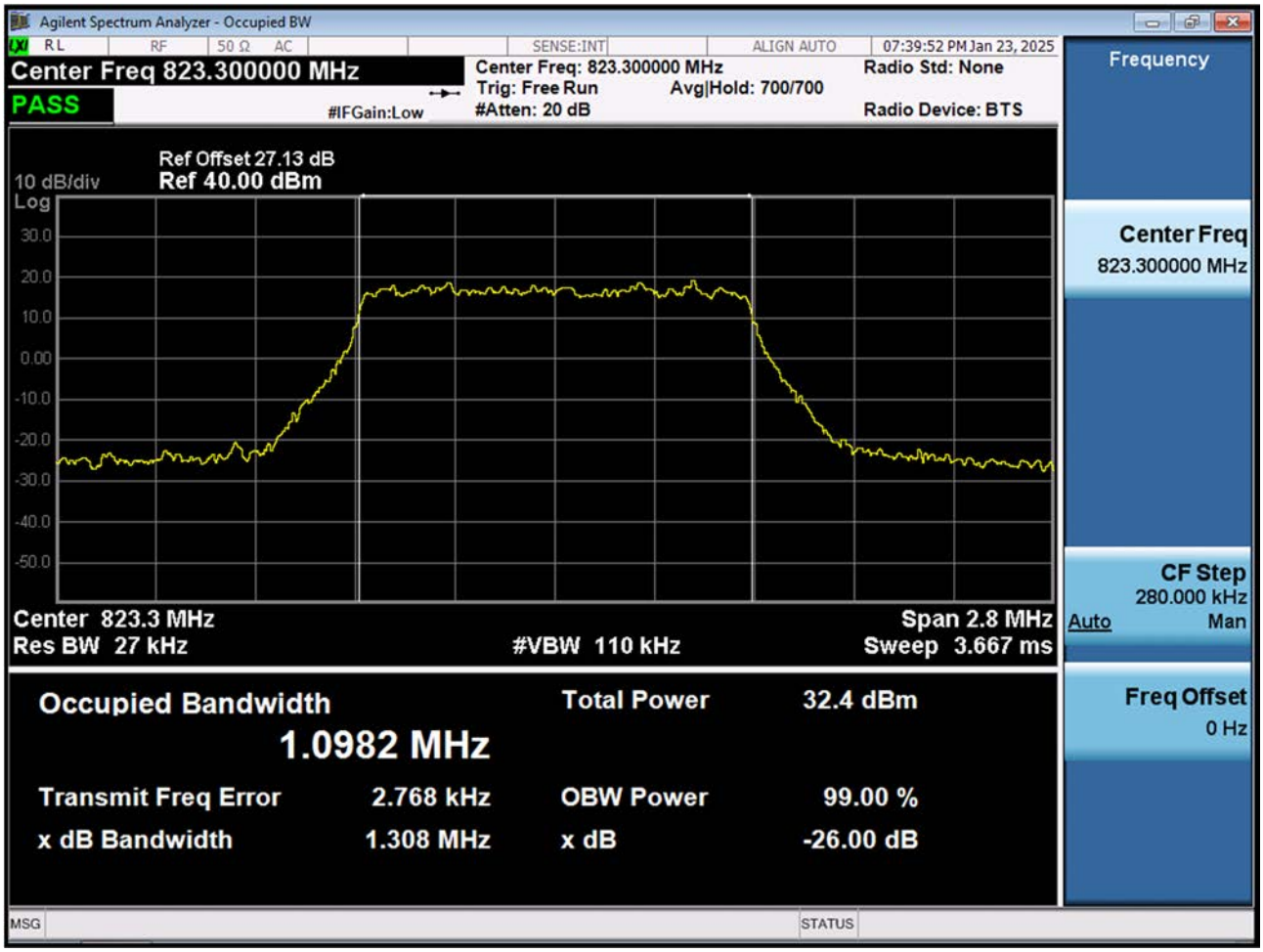
- Test Channel : 26790(824.0MHz)
- Plots of the EUT's Band Edge are shown Page 99 ~ 110.

8.8.6 BAND EDGE(Part22)

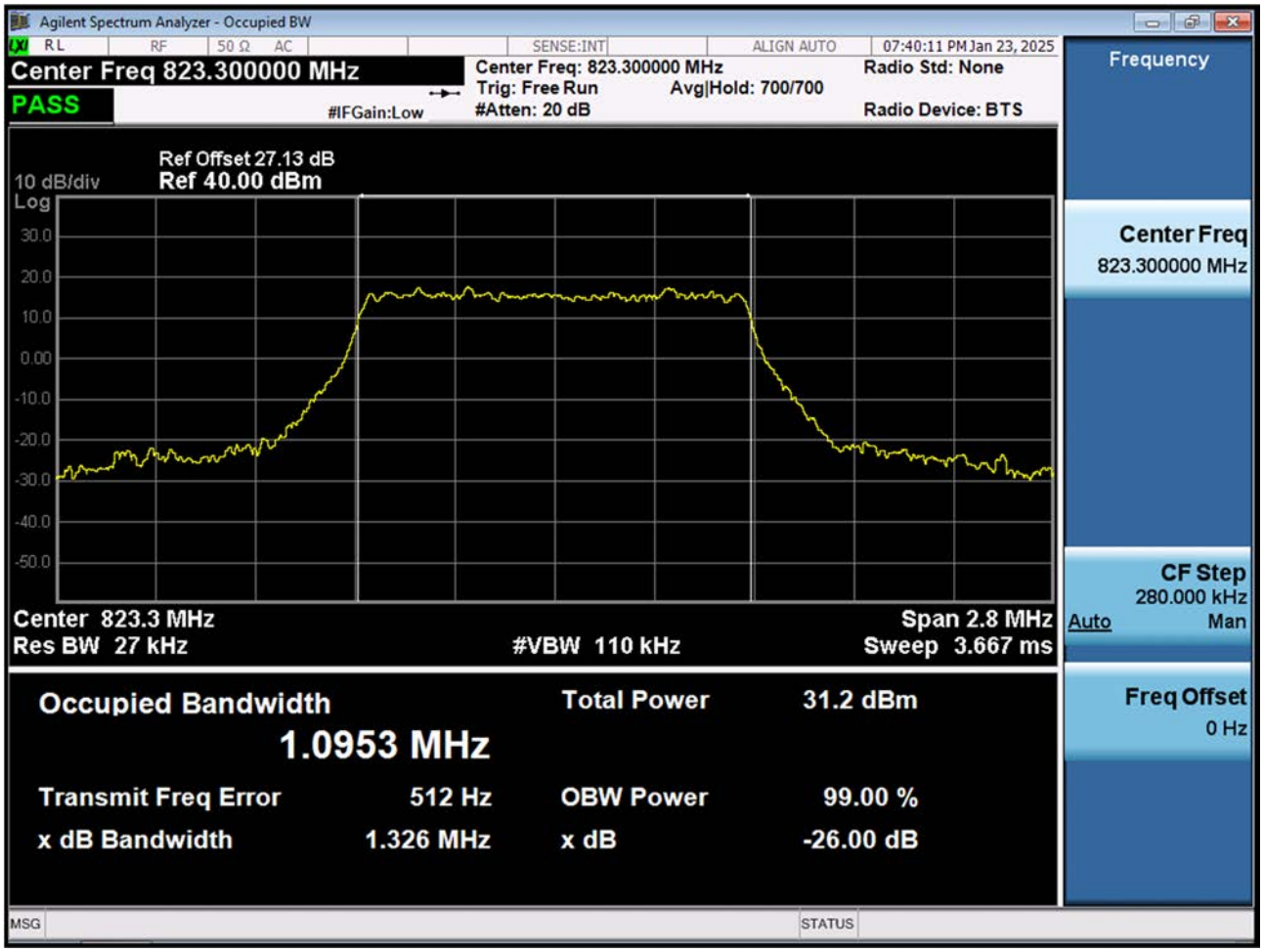
- Test Channel : 26790(824.0 MHz)
- Plots of the EUT's Band Edge are shown Page 111 ~ 118.

9. TEST PLOTS

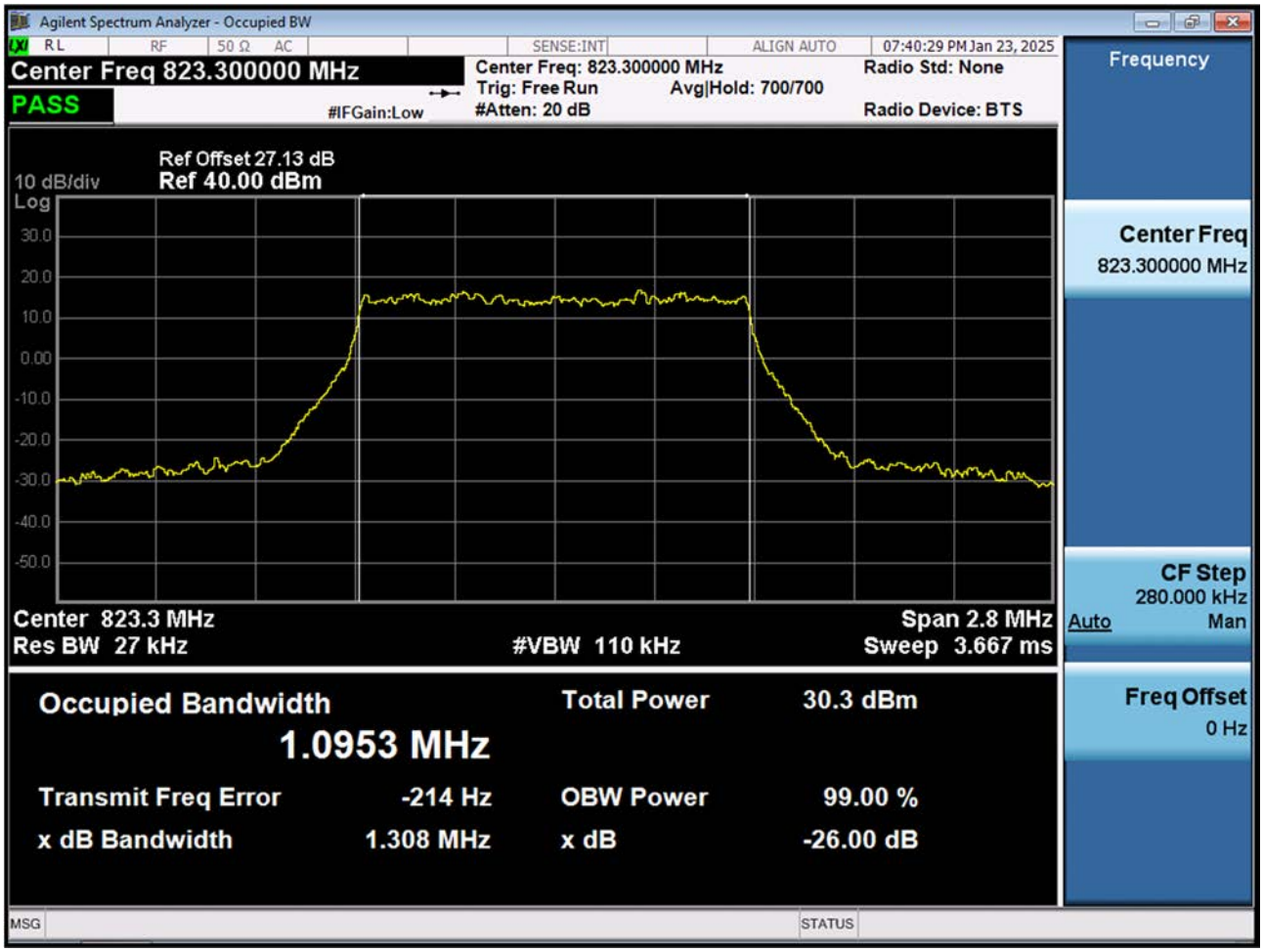
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 QPSK RB 6_0)



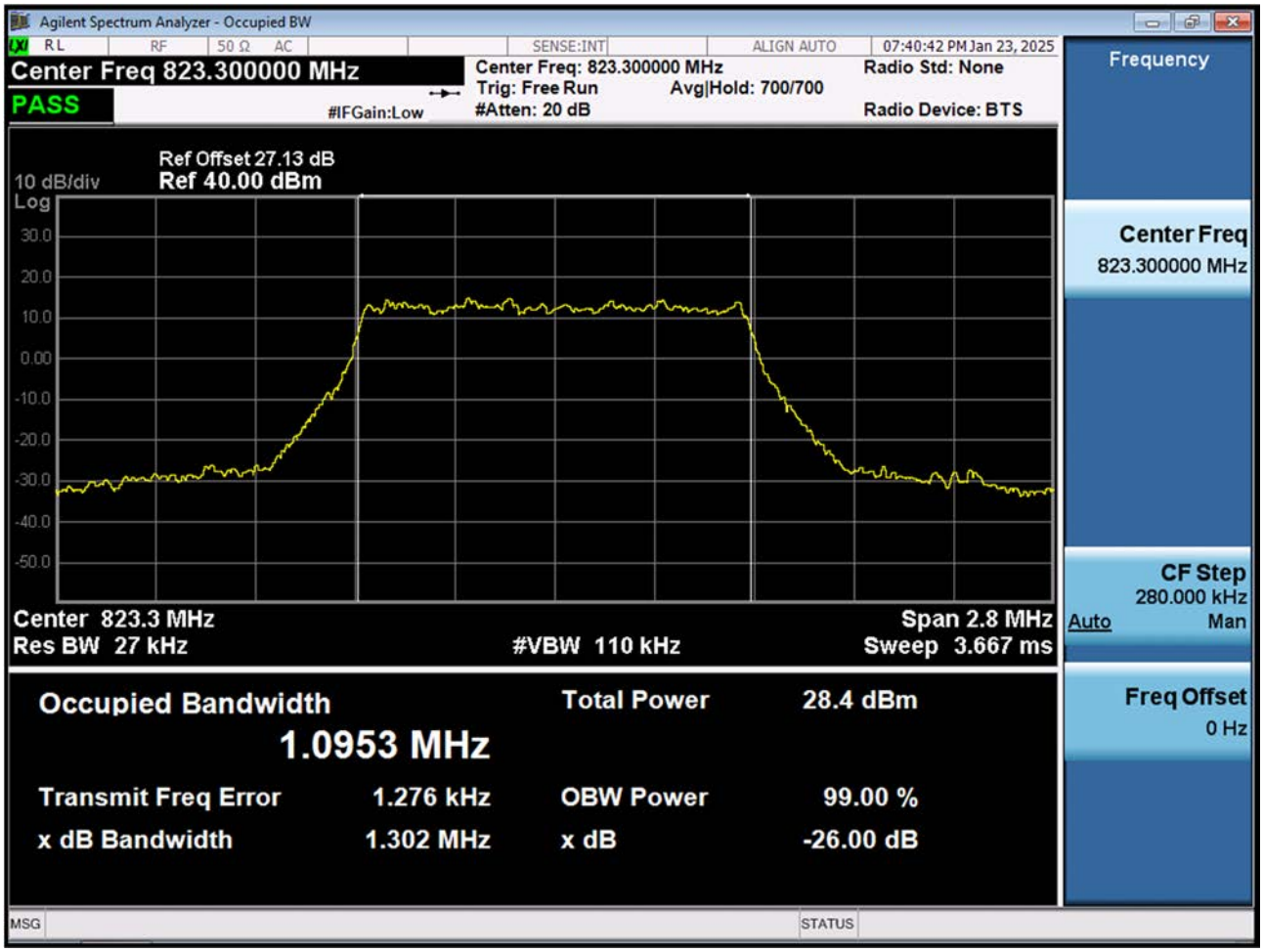
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 16QAM RB 6_0)



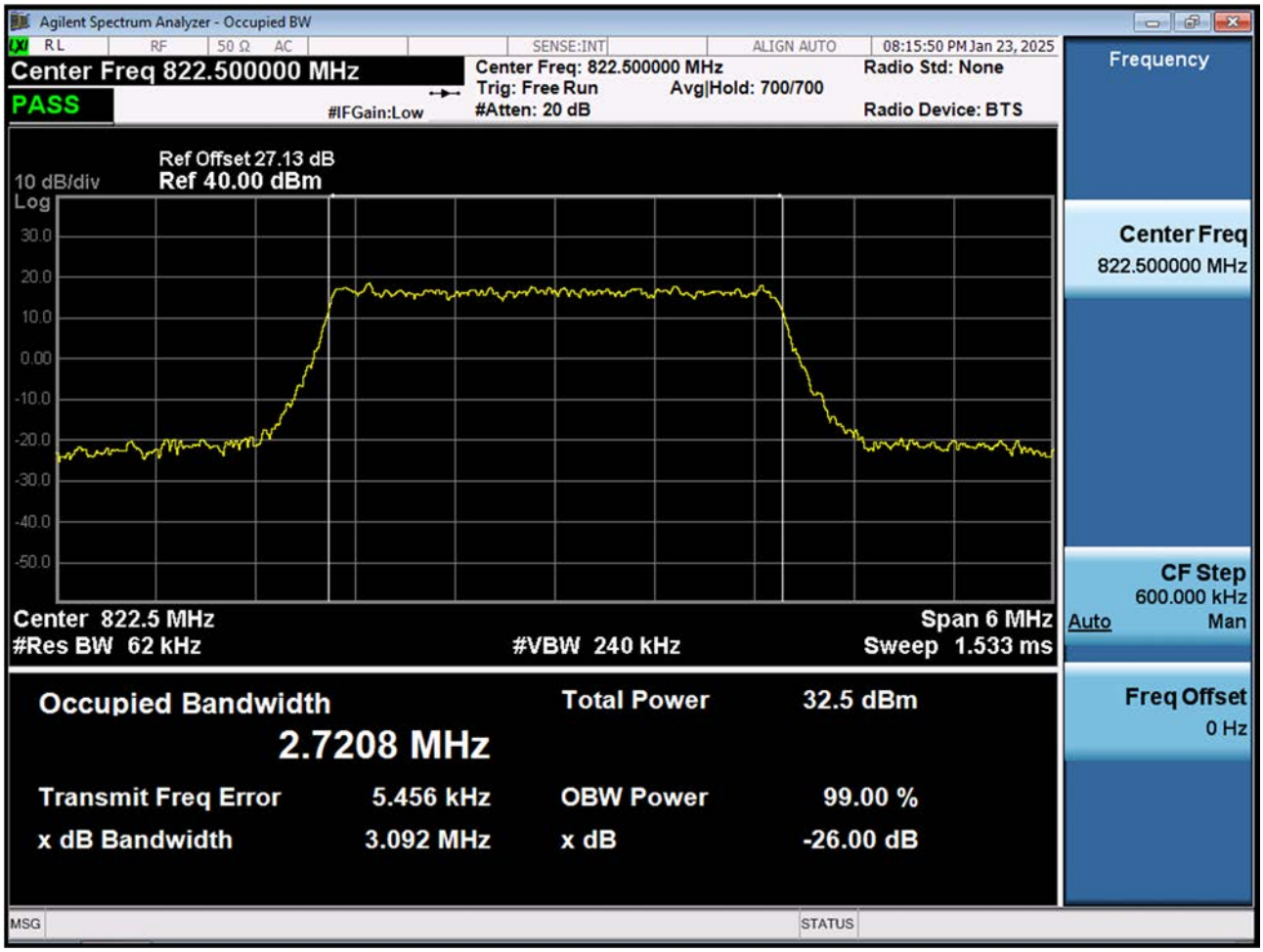
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 64QAM RB 6_0)



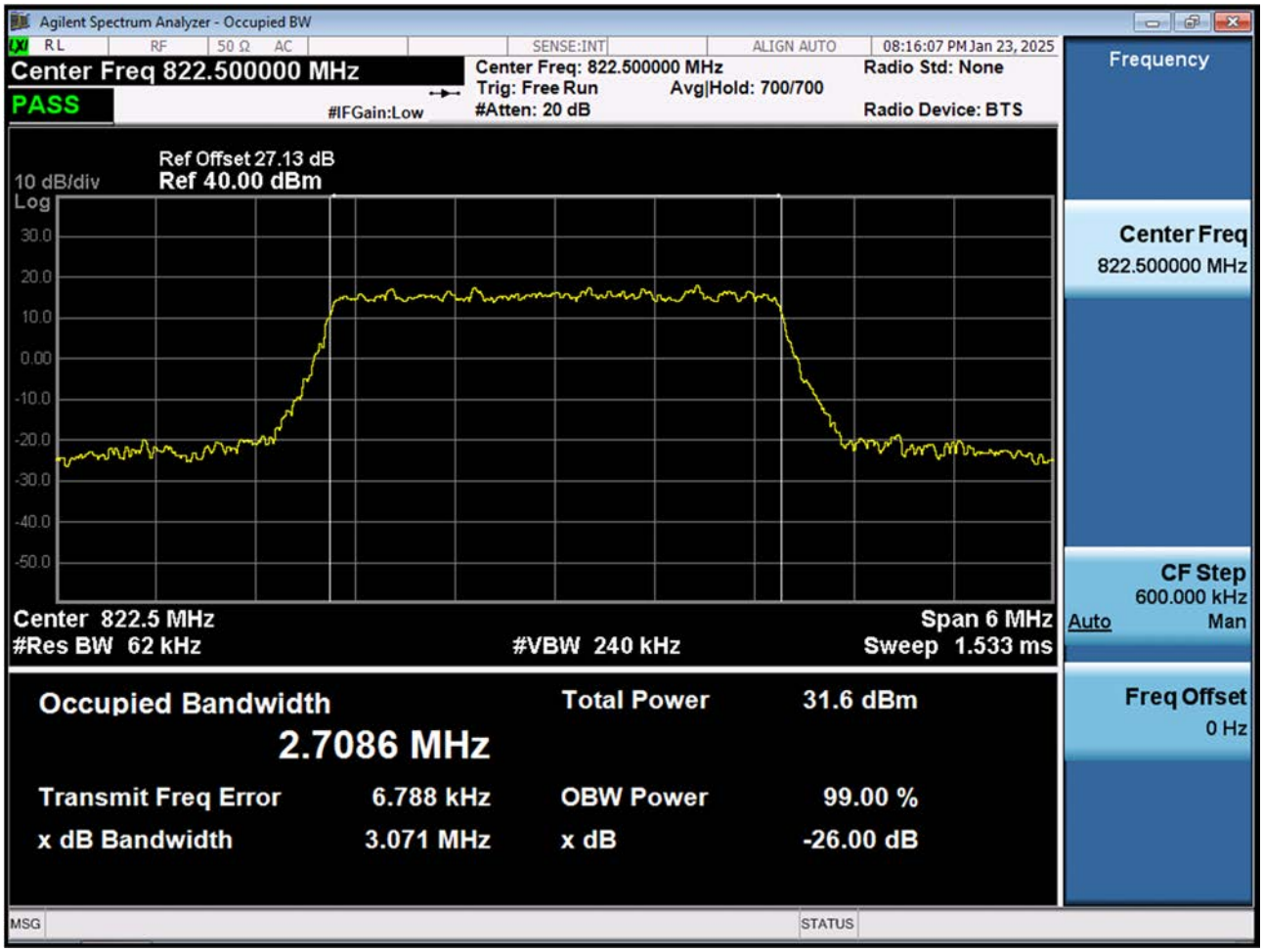
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 256QAM RB 6_0)



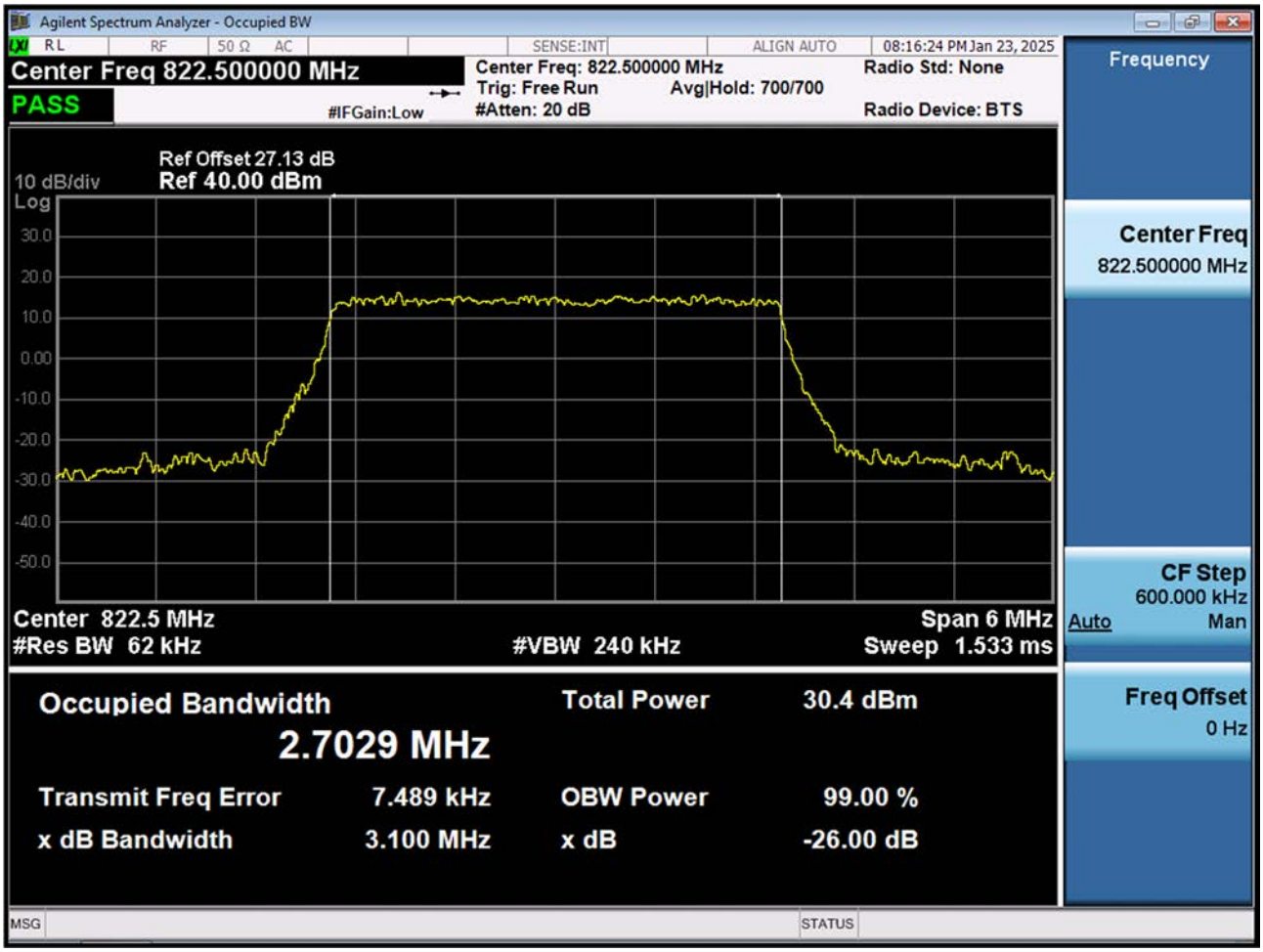
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 QPSK RB 15_0)



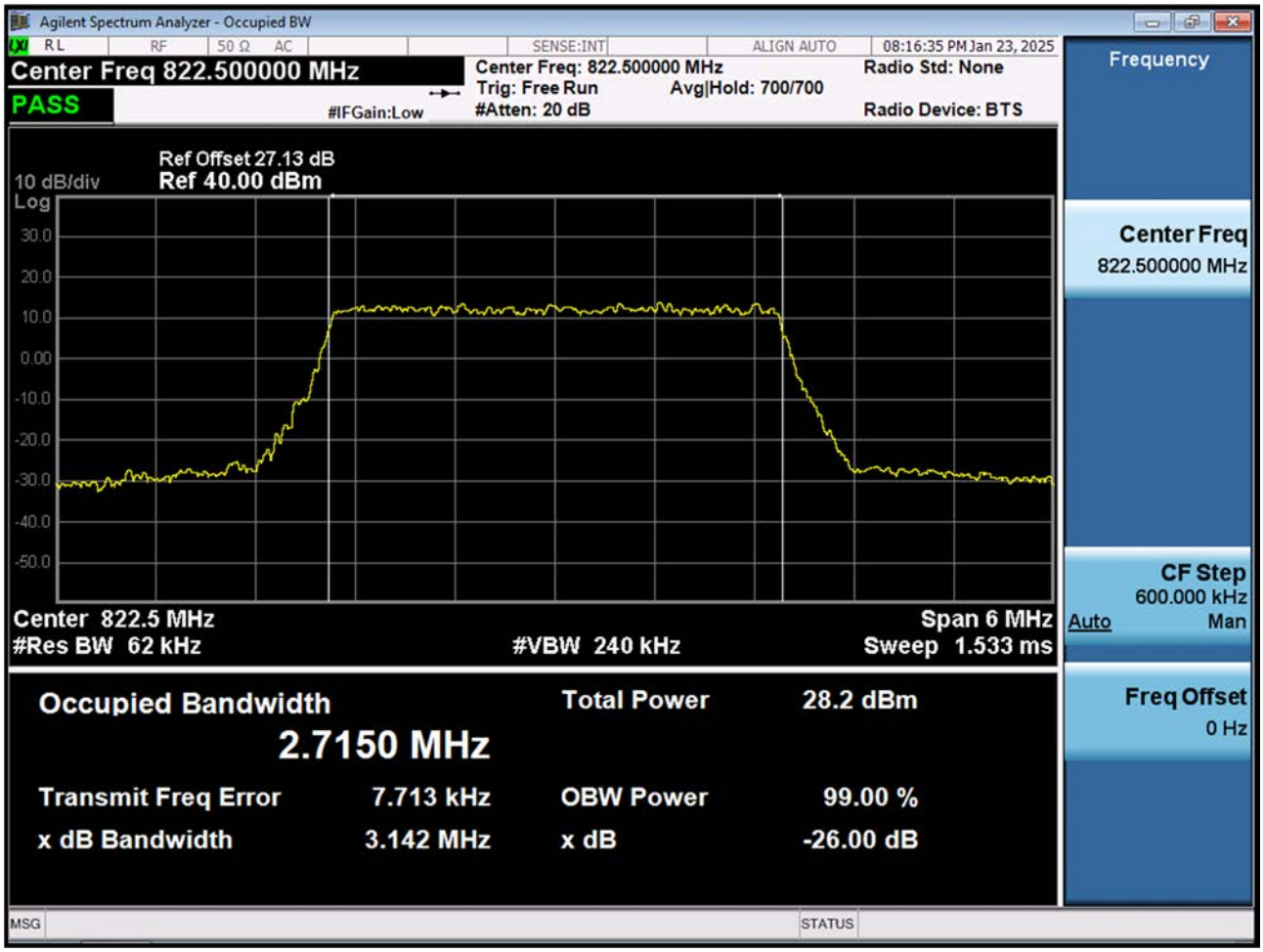
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 16QAM RB 15_0)



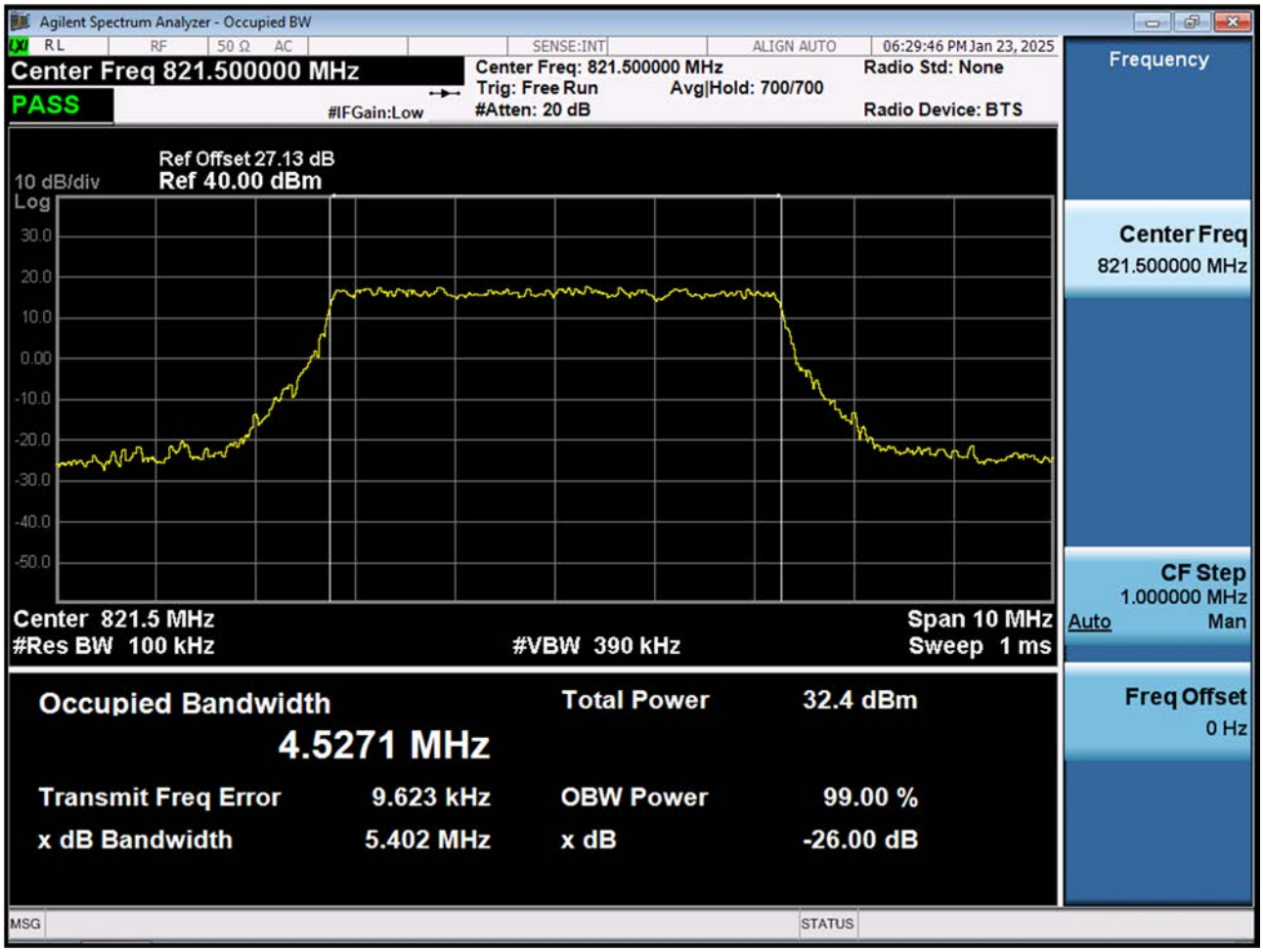
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 64QAM RB 15_0)



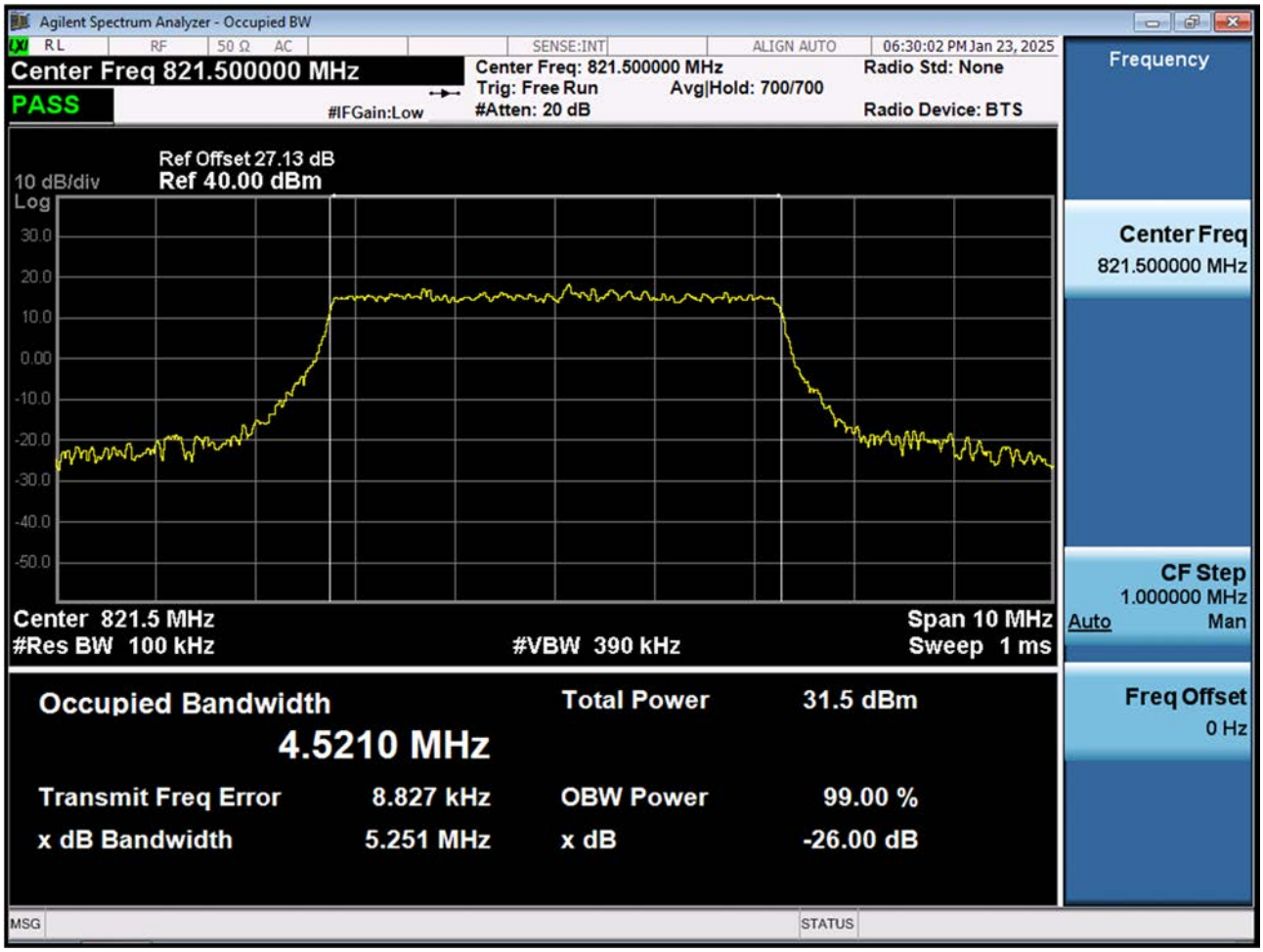
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 256QAM RB 15_0)



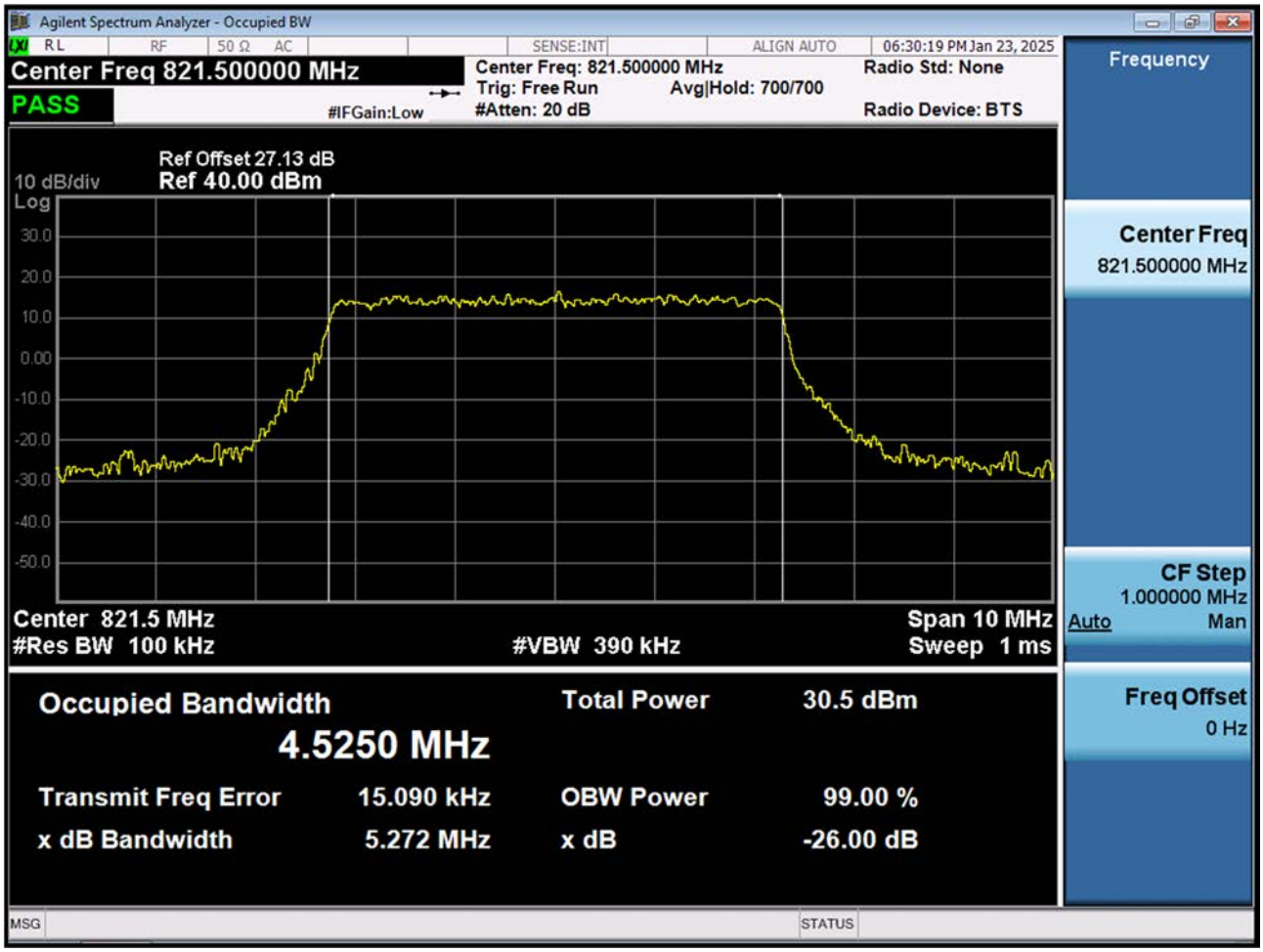
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 QPSK RB 25_0)



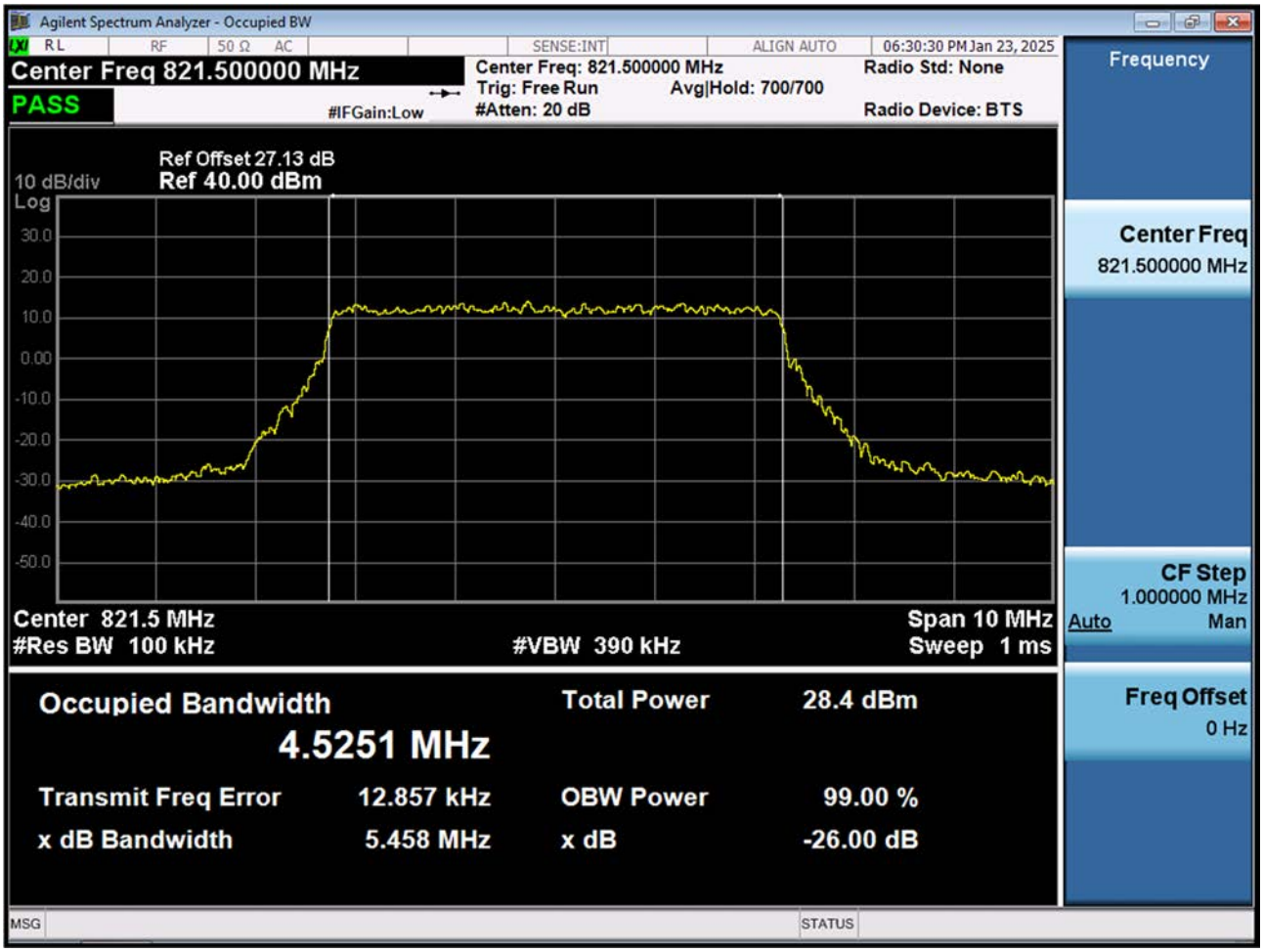
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 16QAM RB 25_0)



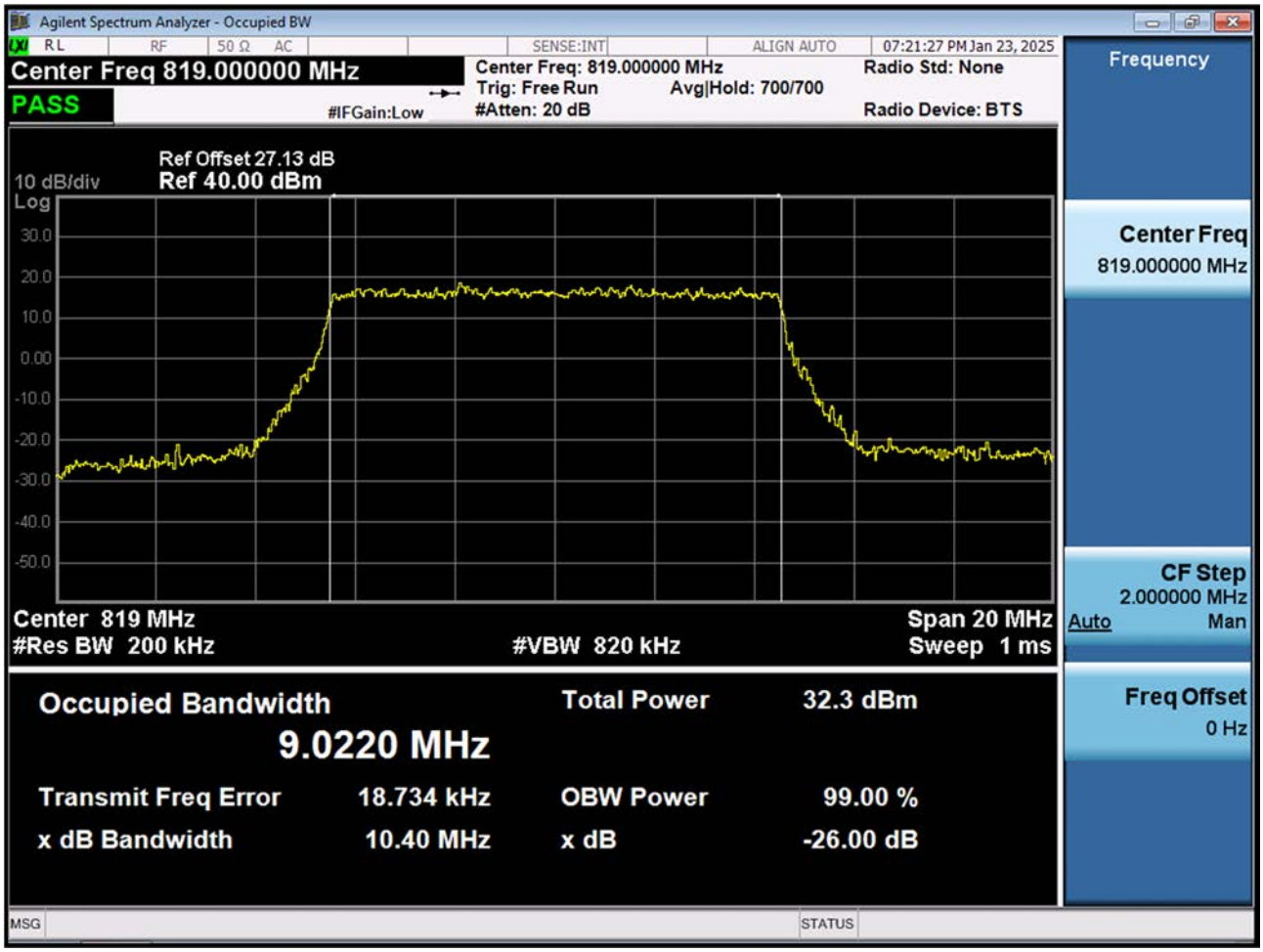
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 64QAM RB 25_0)



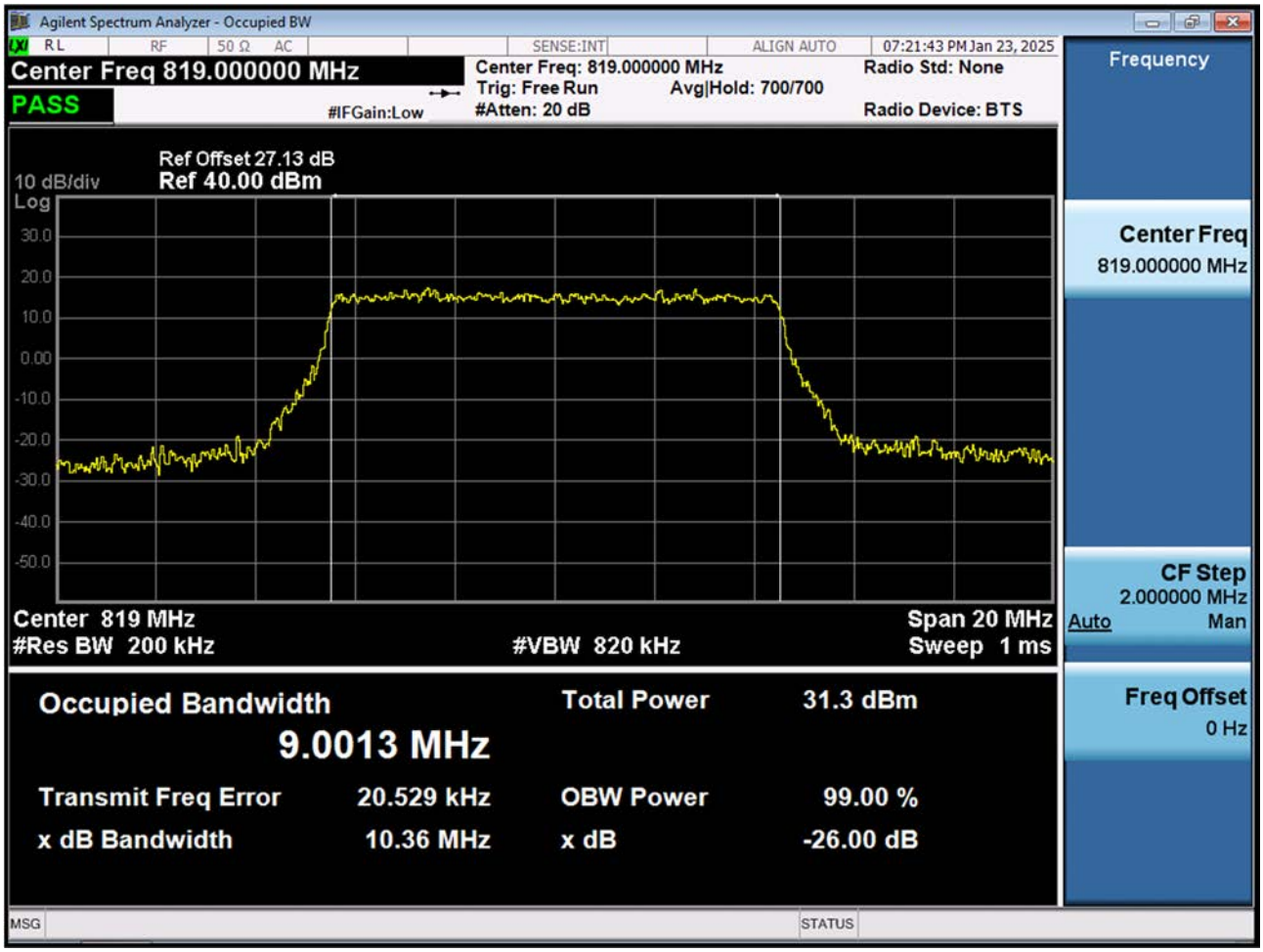
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 256QAM RB 25_0)



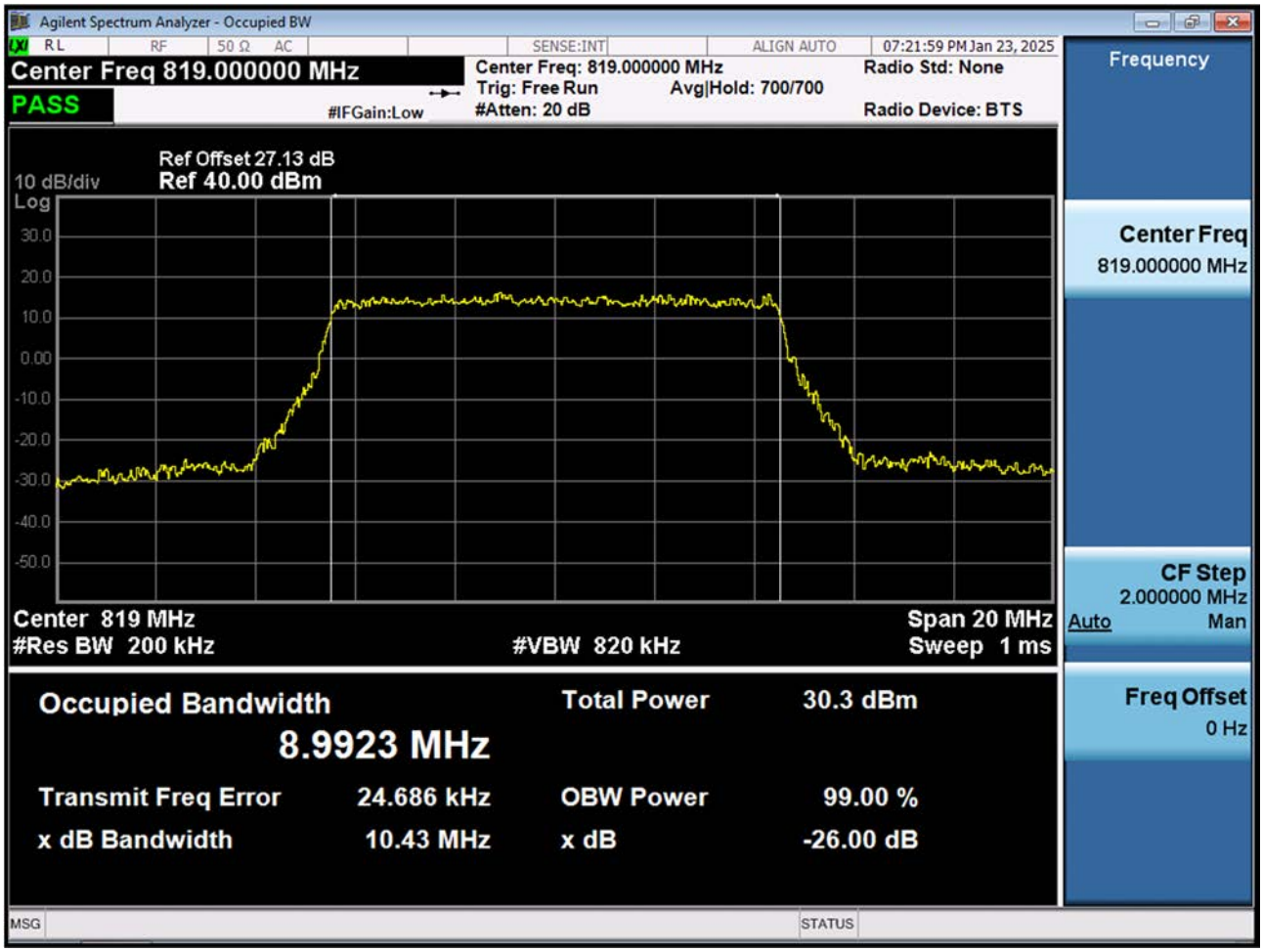
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 QPSK RB 50_0)



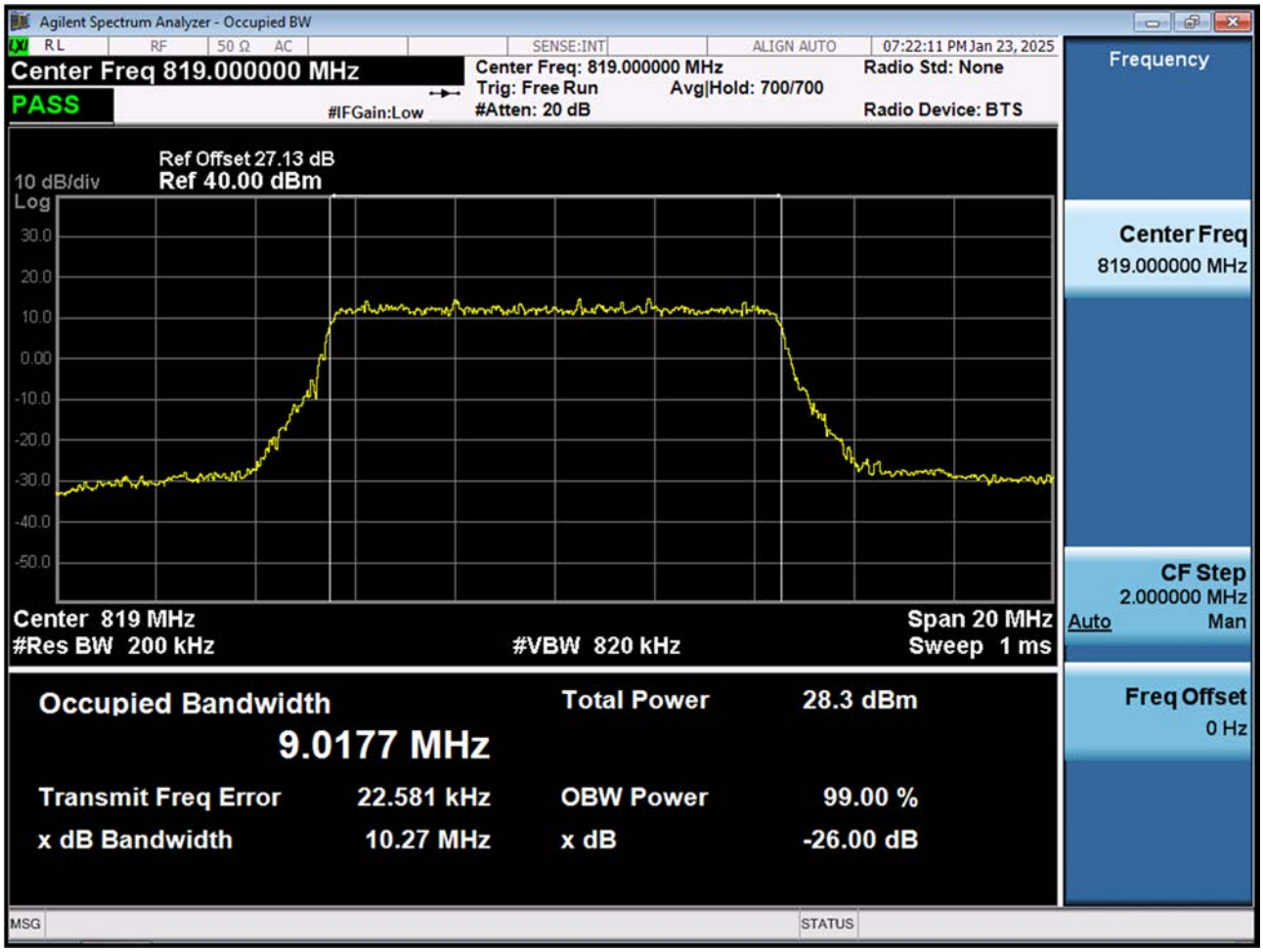
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 16QAM RB 50_0)



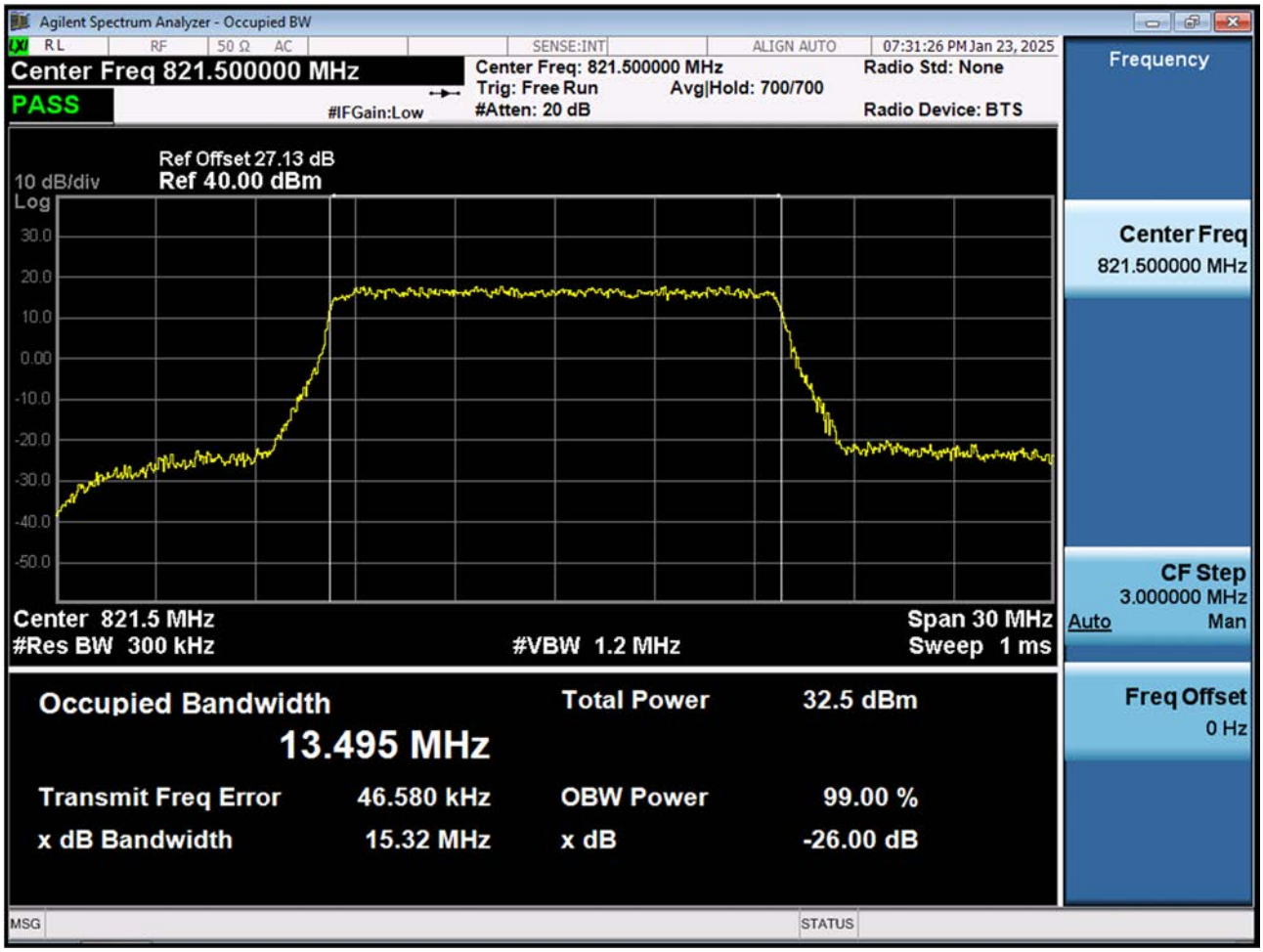
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 64QAM RB 50_0)



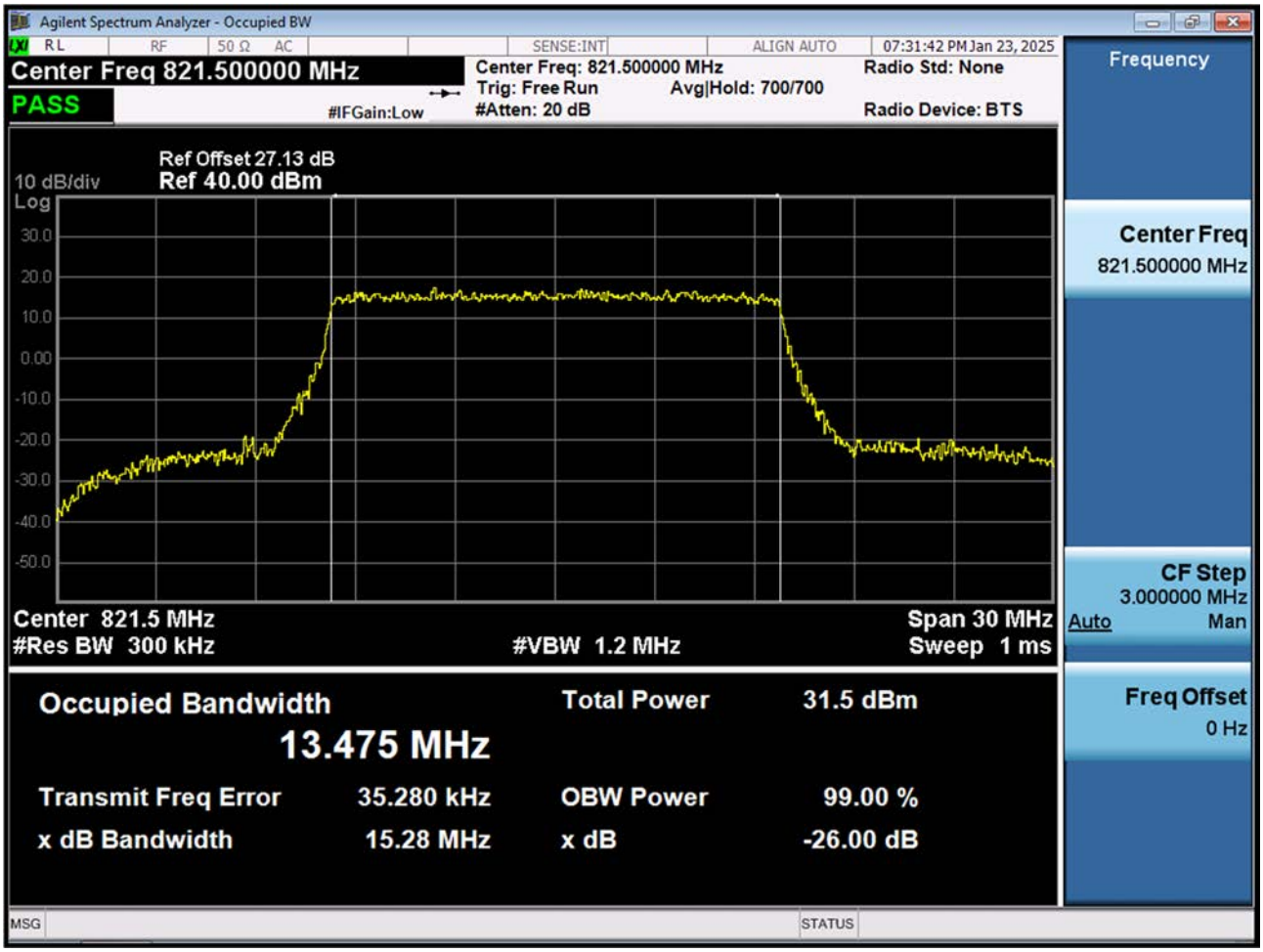
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 256QAM RB 50_0)



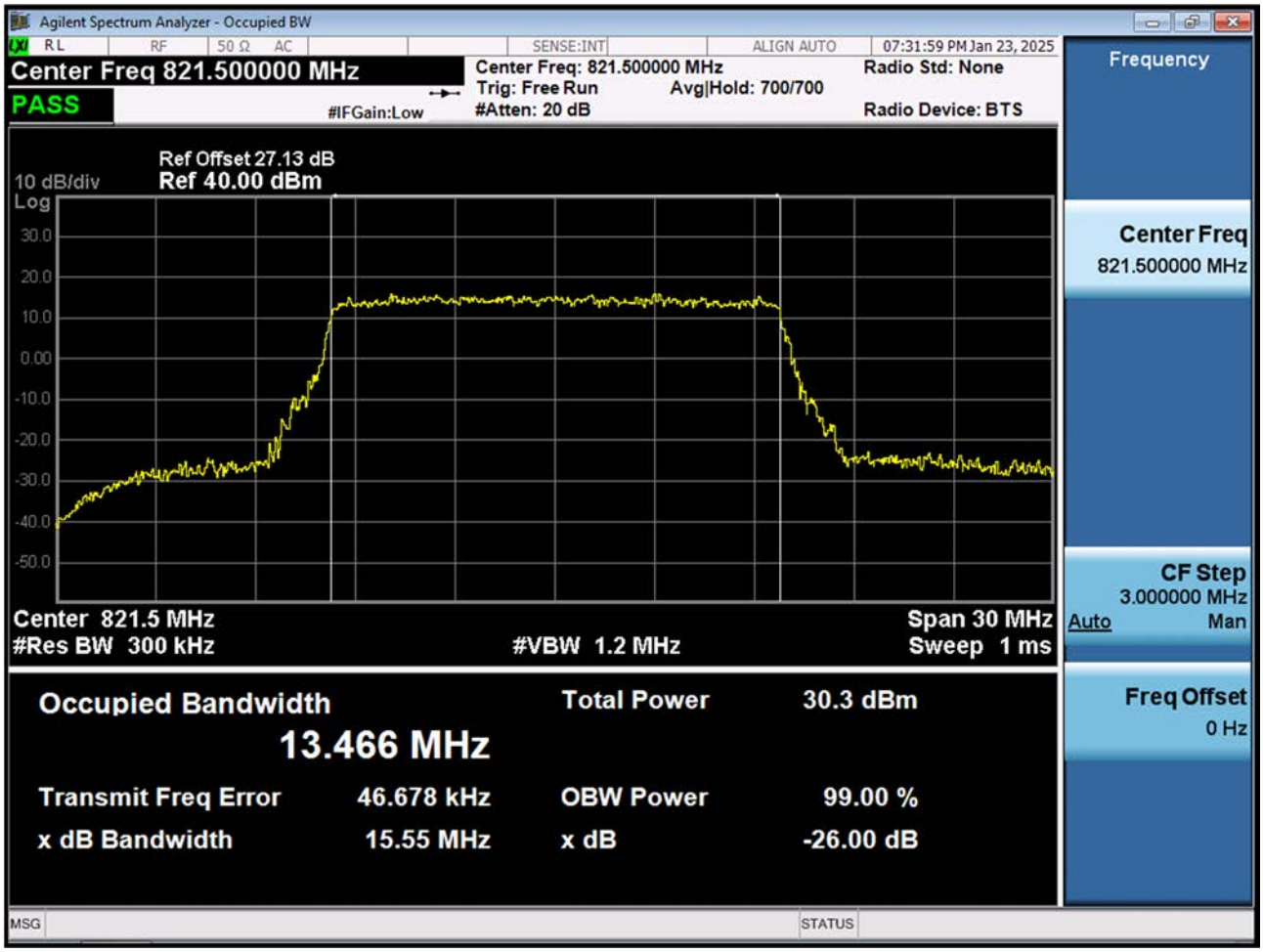
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 QPSK RB 75_0)



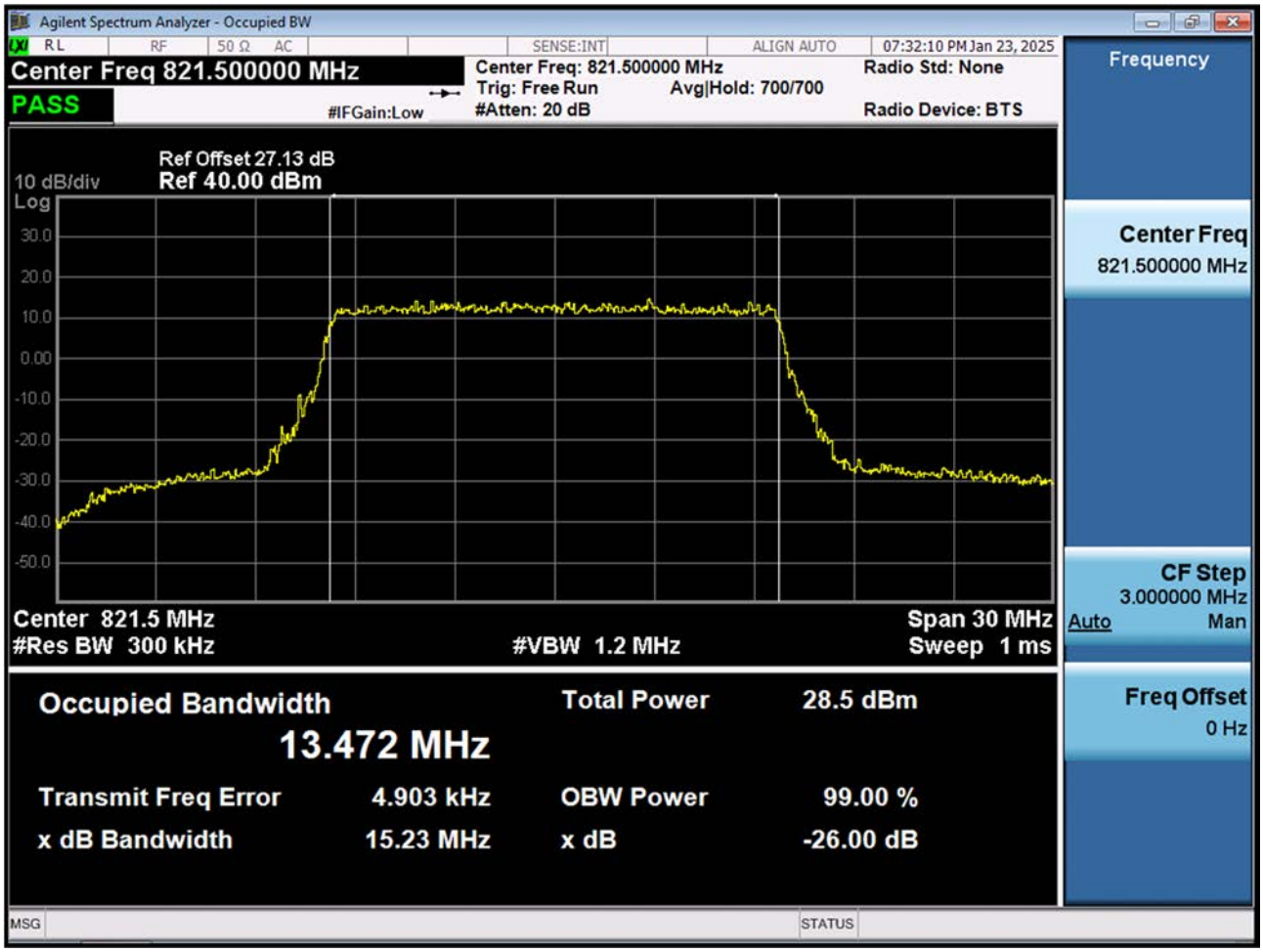
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 16QAM RB 75_0)



BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 64QAM RB 75_0)



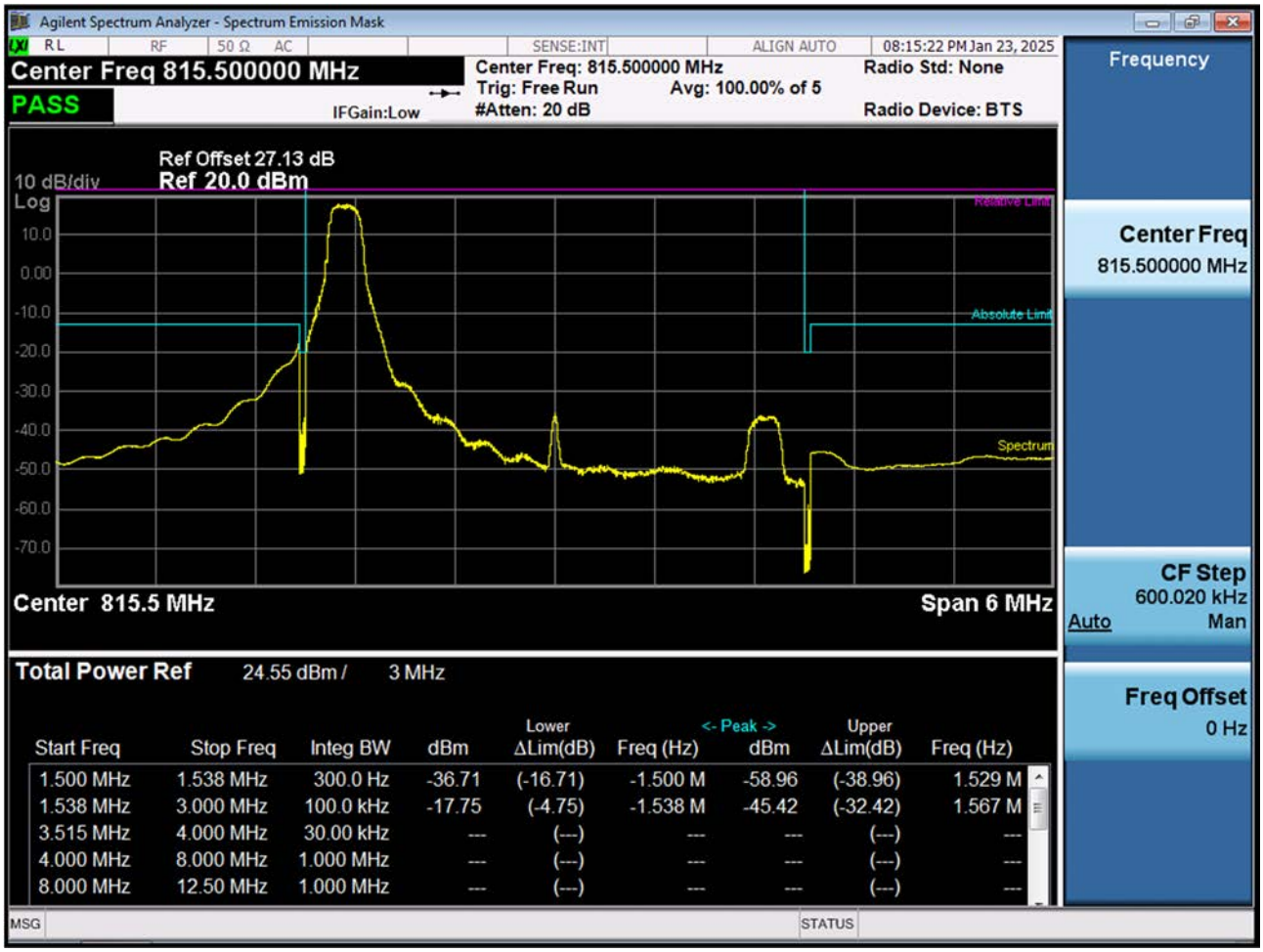
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 256QAM RB 75_0)



BAND 26. Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK RB 1, Offset 0)

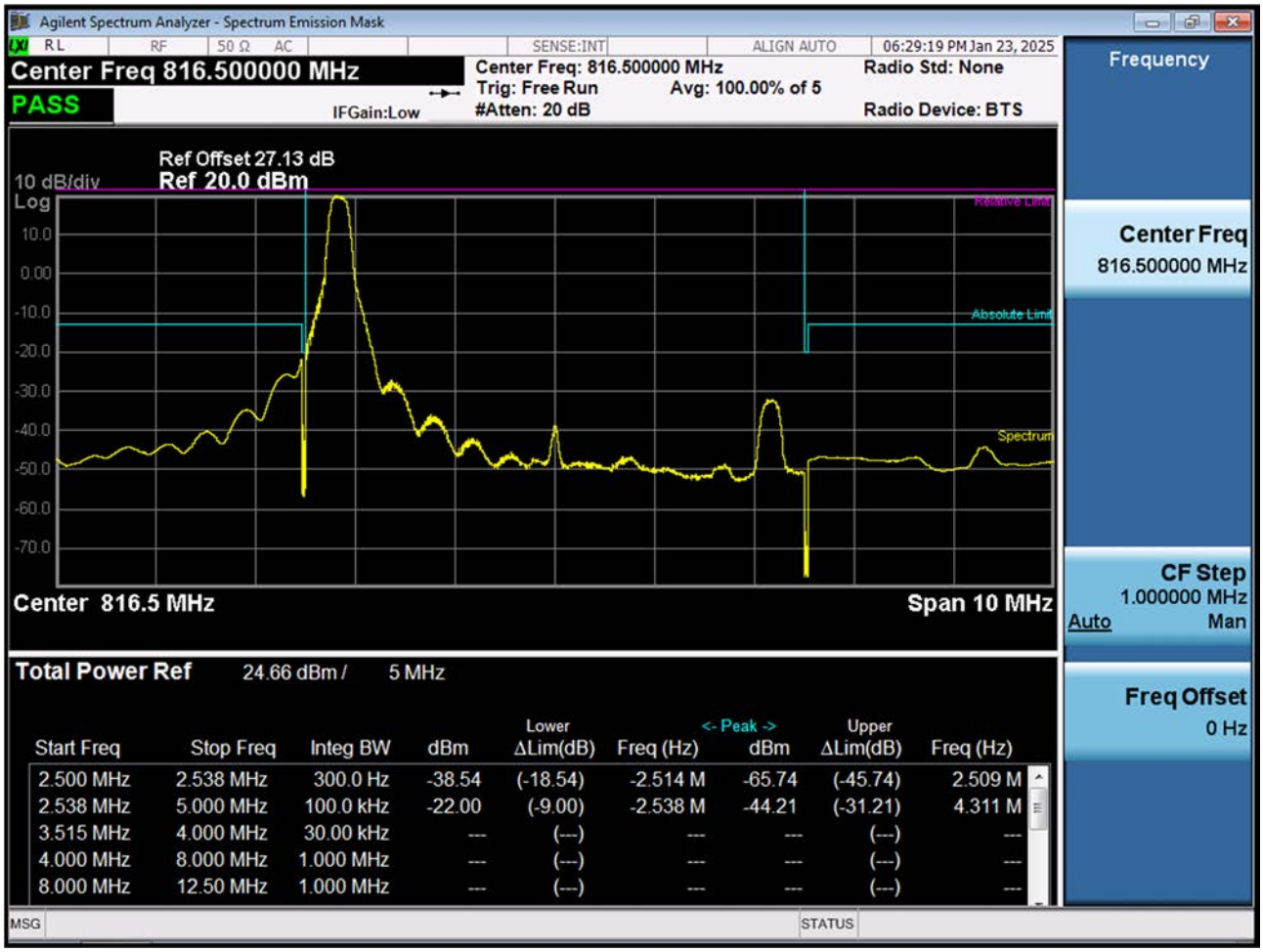
BAND 26. Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK_RB6_Offset 0)

BAND 26. Lower Channel Edge Plot (3 M BW Ch.26705 QPSK RB 1, Offset 0)



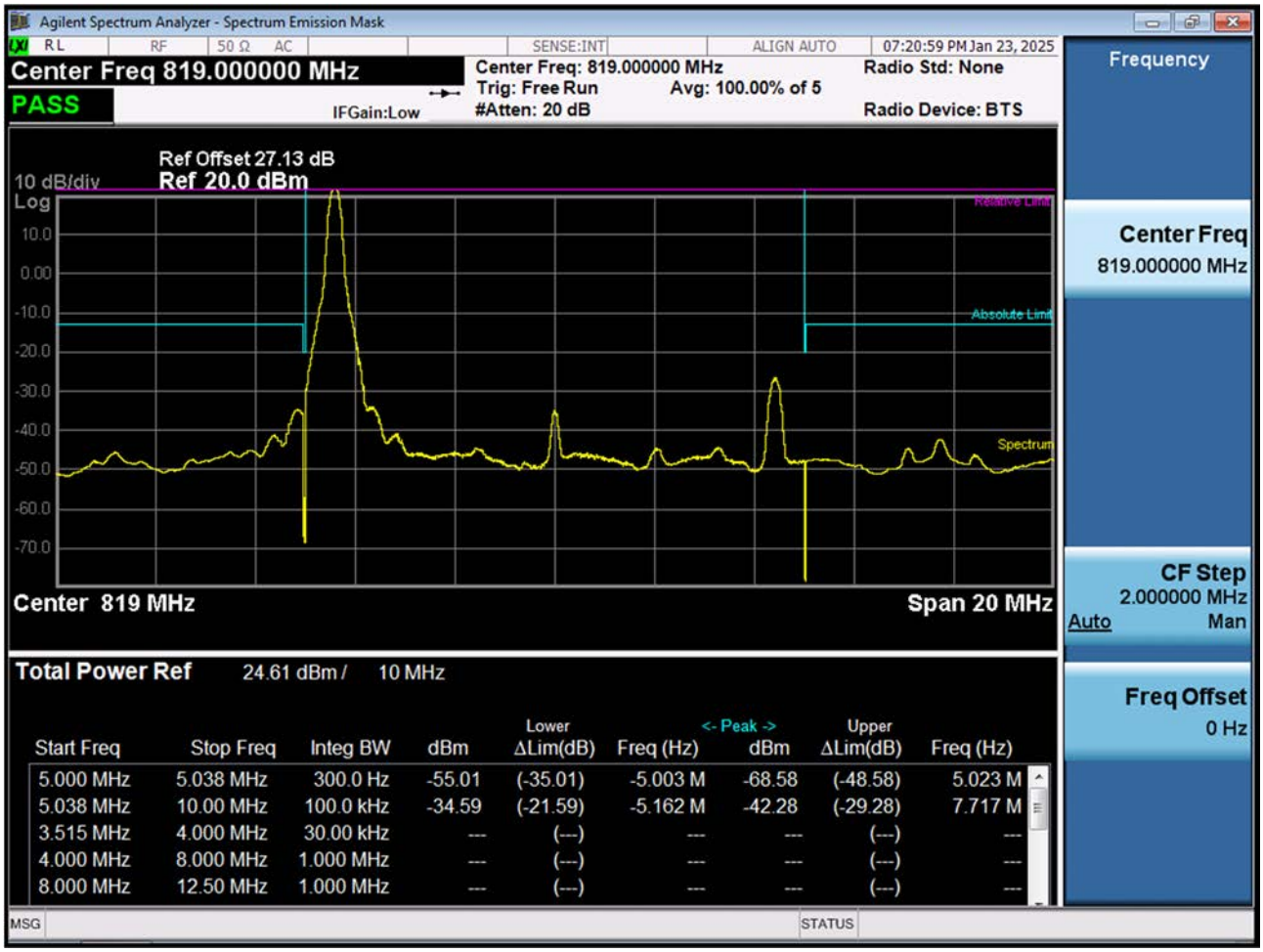
BAND 26. Lower Channel Edge Plot (3 M BW Ch.26705 QPSK_RB15_Offset 0)

BAND 26. Lower Channel Edge Plot (5 M BW Ch.26715 QPSK RB 1, Offset 0)



BAND 26. Lower Channel Edge Plot (5 M BW Ch.26715 QPSK_RB25_Offset 0)

BAND 26. Low Channel Edge Plot (10 M BW Ch.26740 QPSK RB 1, Offset 0)



BAND 26. Low Channel Edge Plot (10 M BW Ch.26740 QPSK_RB50_Offset 0)

BAND 26. Mid Channel Edge Plot (10 M BW Ch. 26740 QPSK_RB1_Offset 49)

BAND 26. Low Channel Edge Plot (15 M BW Ch.26765 QPSK RB 1, Offset 0)

BAND 26. Low Channel Edge Plot (15 M BW Ch.26765 QPSK RB 75, Offset0)

BAND 26. Mid Channel Edge Plot (15 M BW Ch.26765 QPSK_RB1_Offset 74)

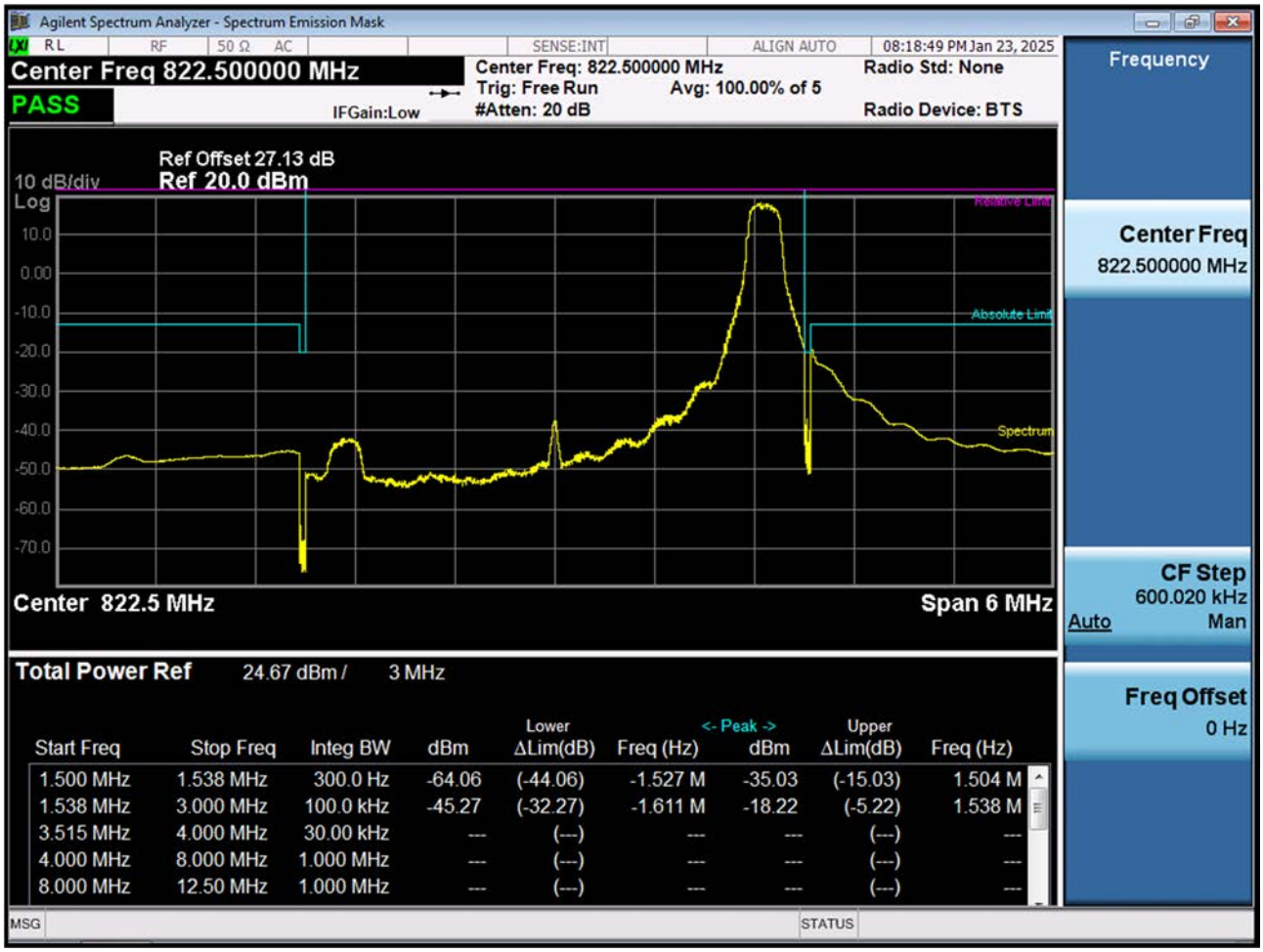
BAND 26. Mid Band Edge Plot (15 M BW Ch.26765 QPSK RB 1, Offset74)

BAND 26. Mid Band Edge Plot (15 M BW Ch.26765 QPSK_RB75_Offset 0)

BAND 26. Upper Channel Edge Plot (1.4 M BW Ch.26783 QPSK_RB1_Offset 5)

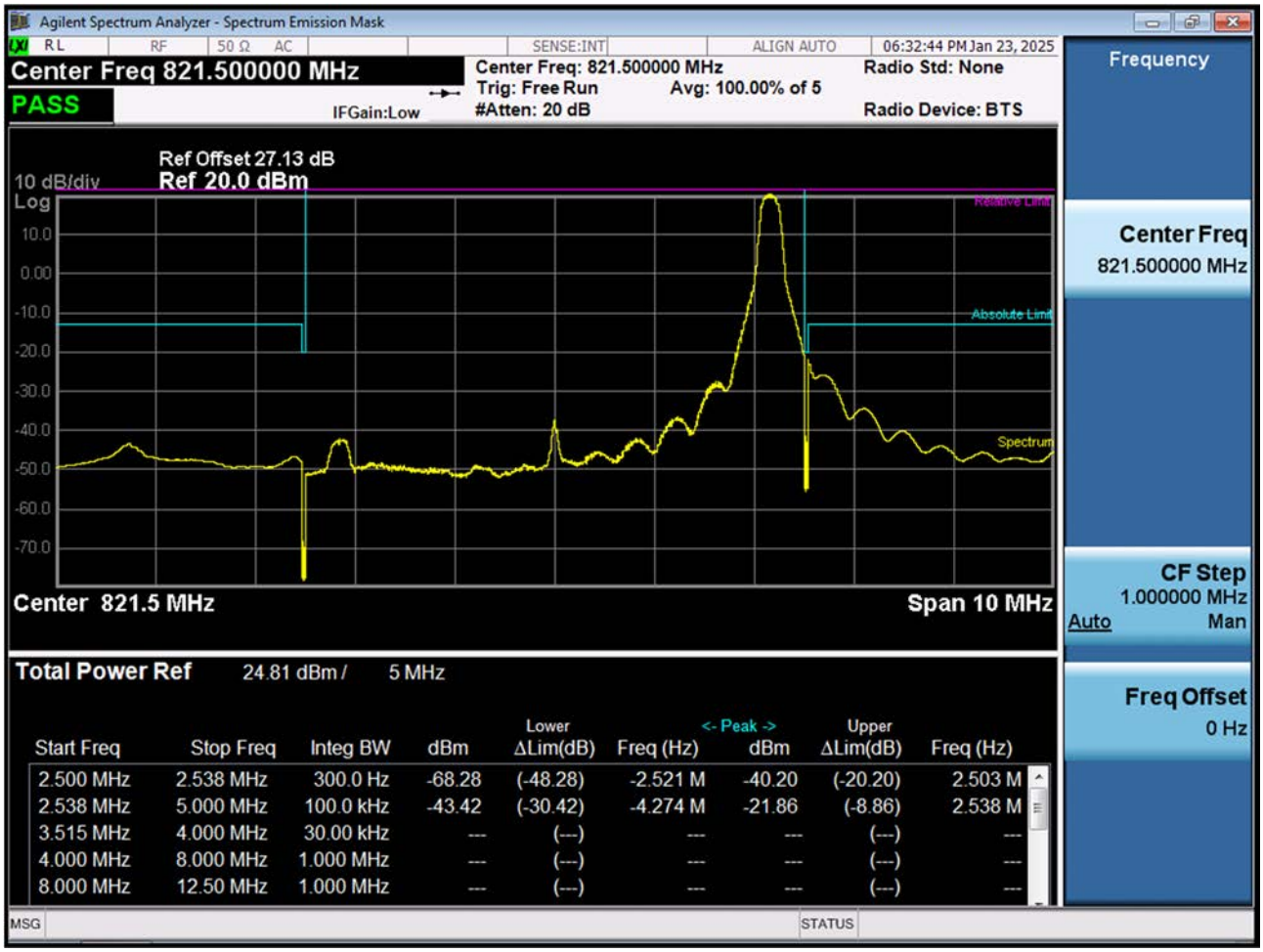
BAND 26. Upper Channel Edge Plot (1.4 M BW Ch.26783 QPSK_RB6_Offset 0)

BAND 26. Upper Channel Edge Plot (3 M BW Ch.26775 QPSK_RB1_Offset 14)



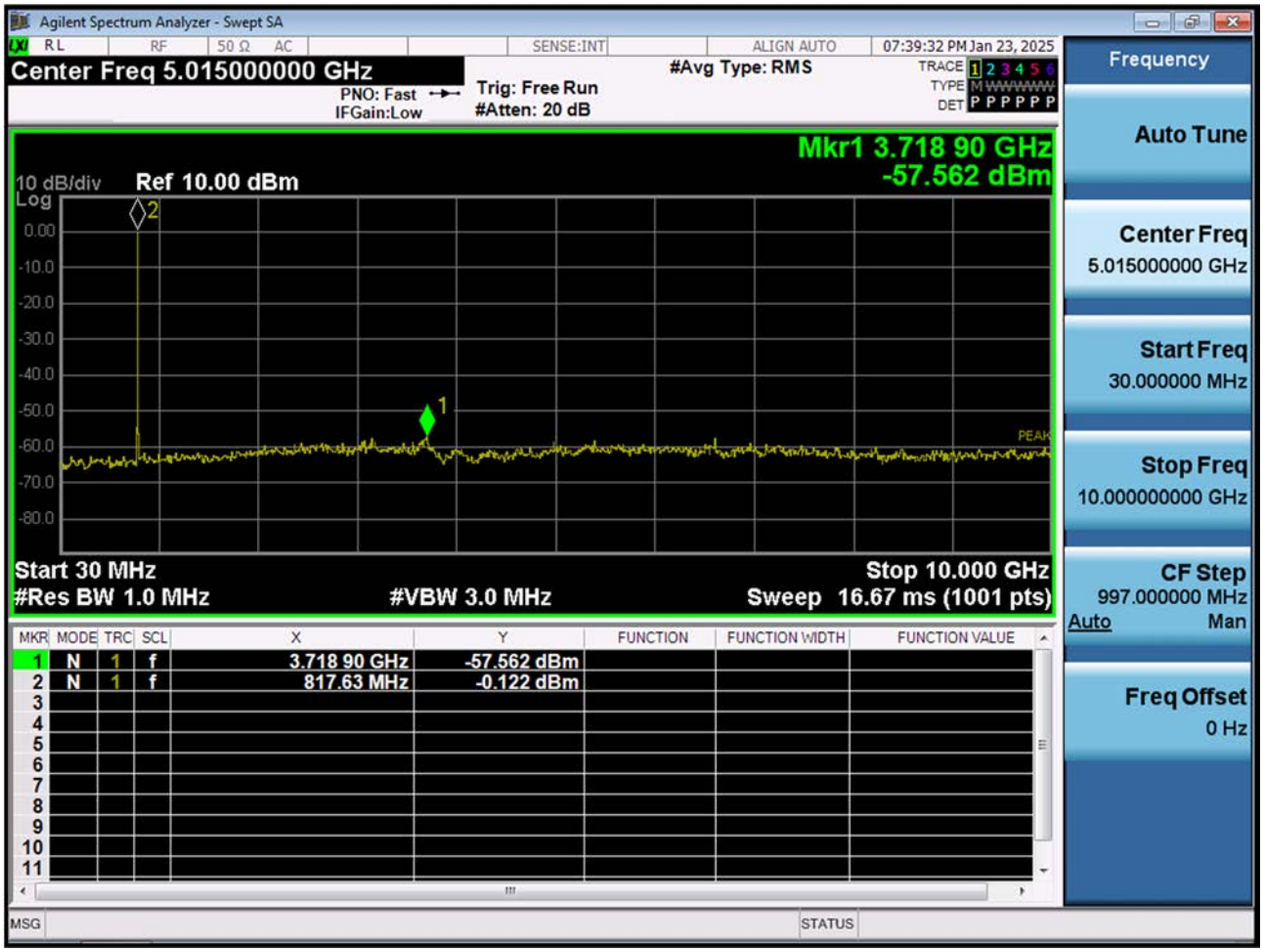
BAND 26. Upper Channel Edge Plot (3 M BW Ch.26775 QPSK_RB15_Offset 0)

BAND 26. Upper Channel Edge Plot (5 M BW Ch.26765 QPSK_RB1_Offset 24)

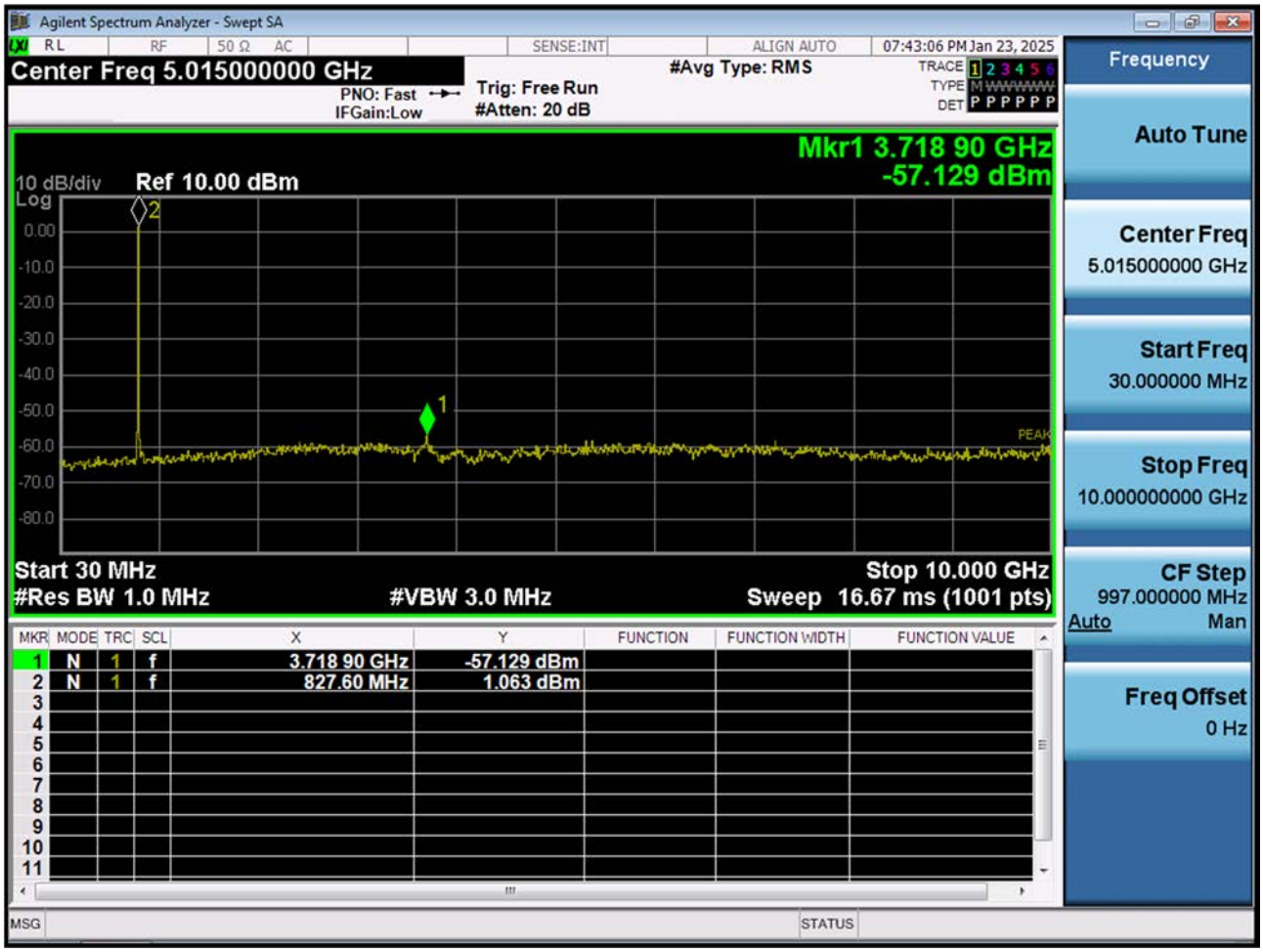


BAND 26. Upper Channel Edge Plot (5 M BW Ch.26765 QPSK_RB25_Offset 0)

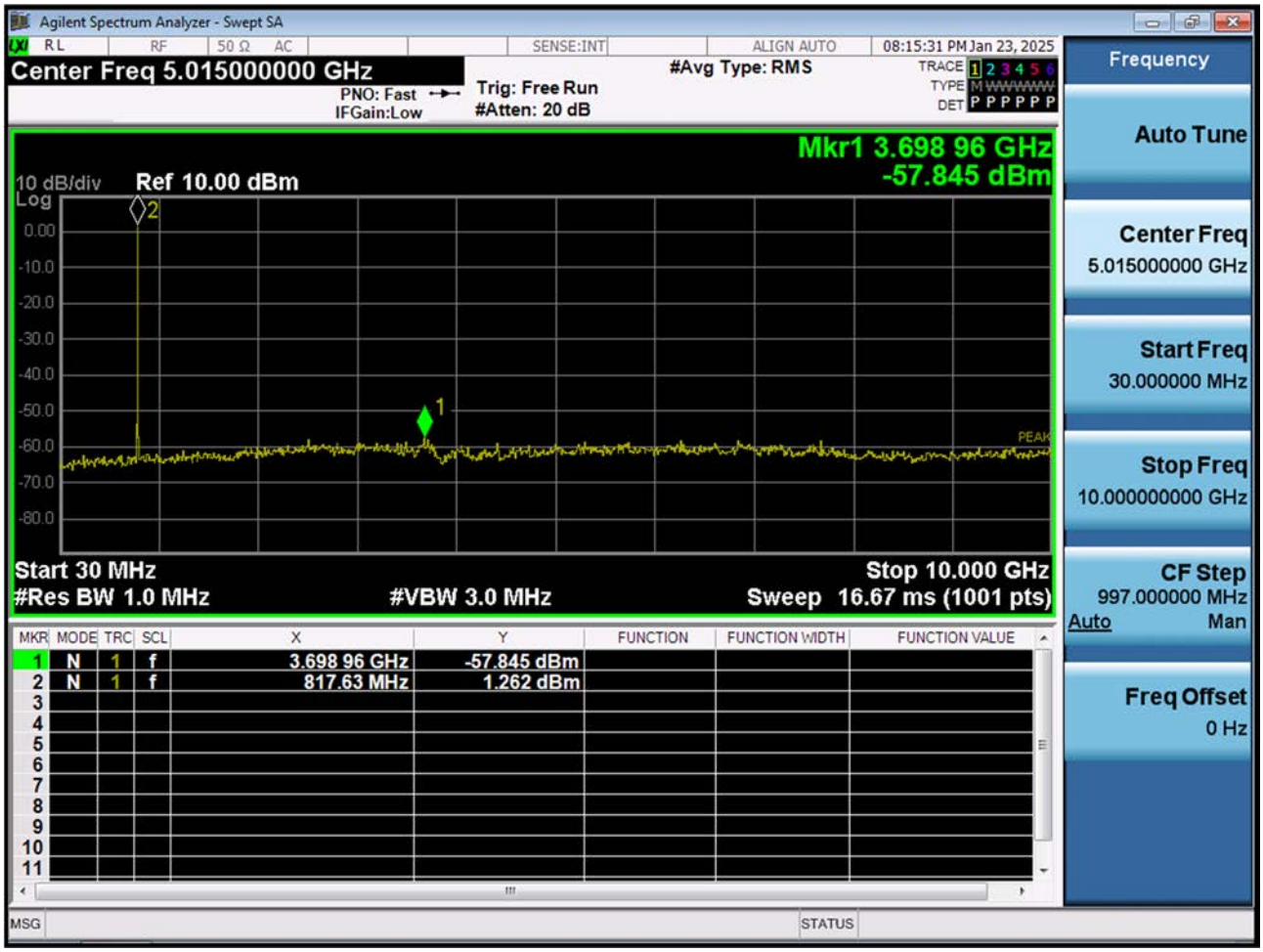
BAND 26. Conducted Spurious (26697 ch_1.4 MHz_QPSK_RB 1_0)



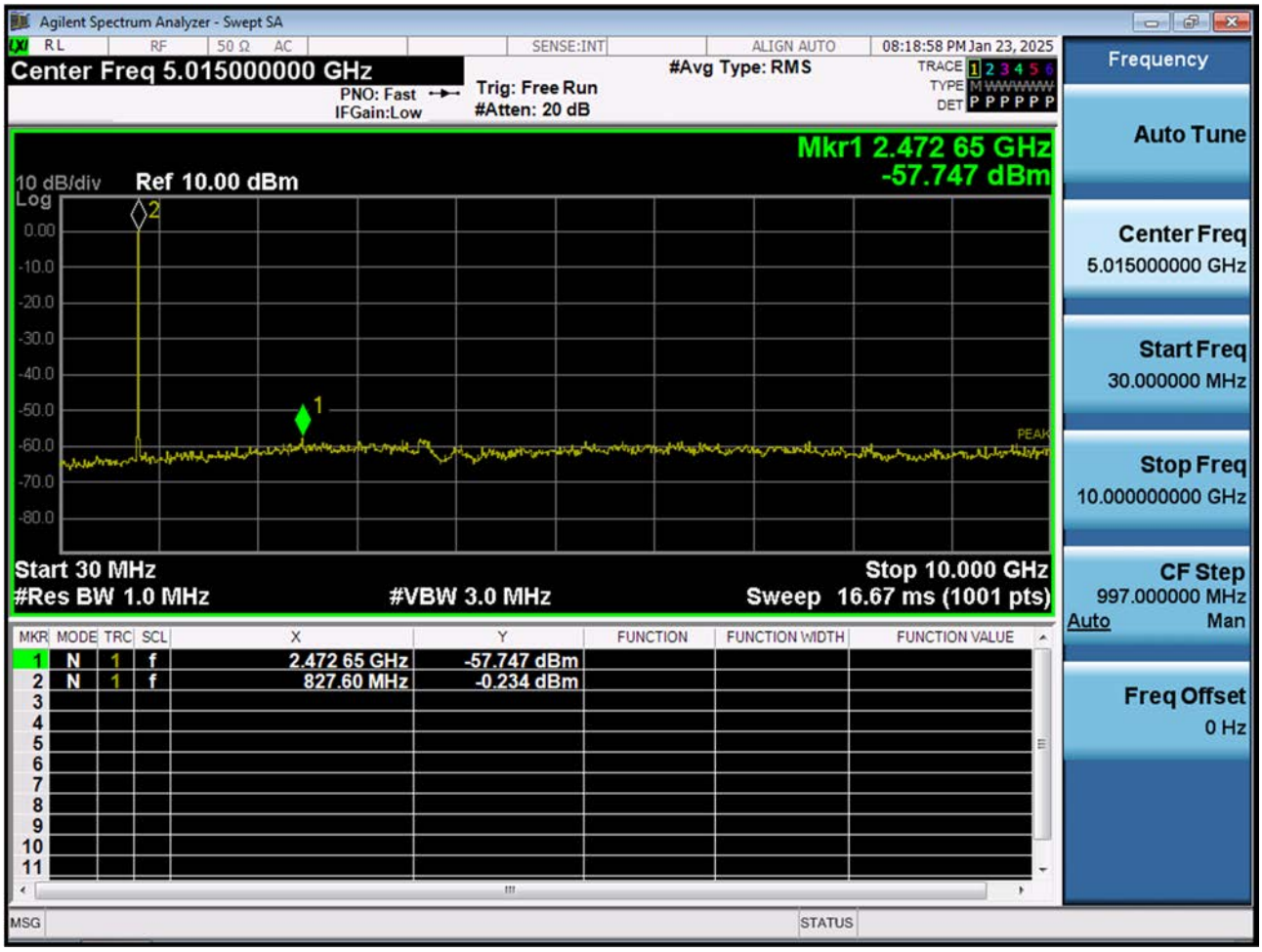
BAND 26. Conducted Spurious (26783 ch_1.4 MHz_QPSK_RB 1_0)



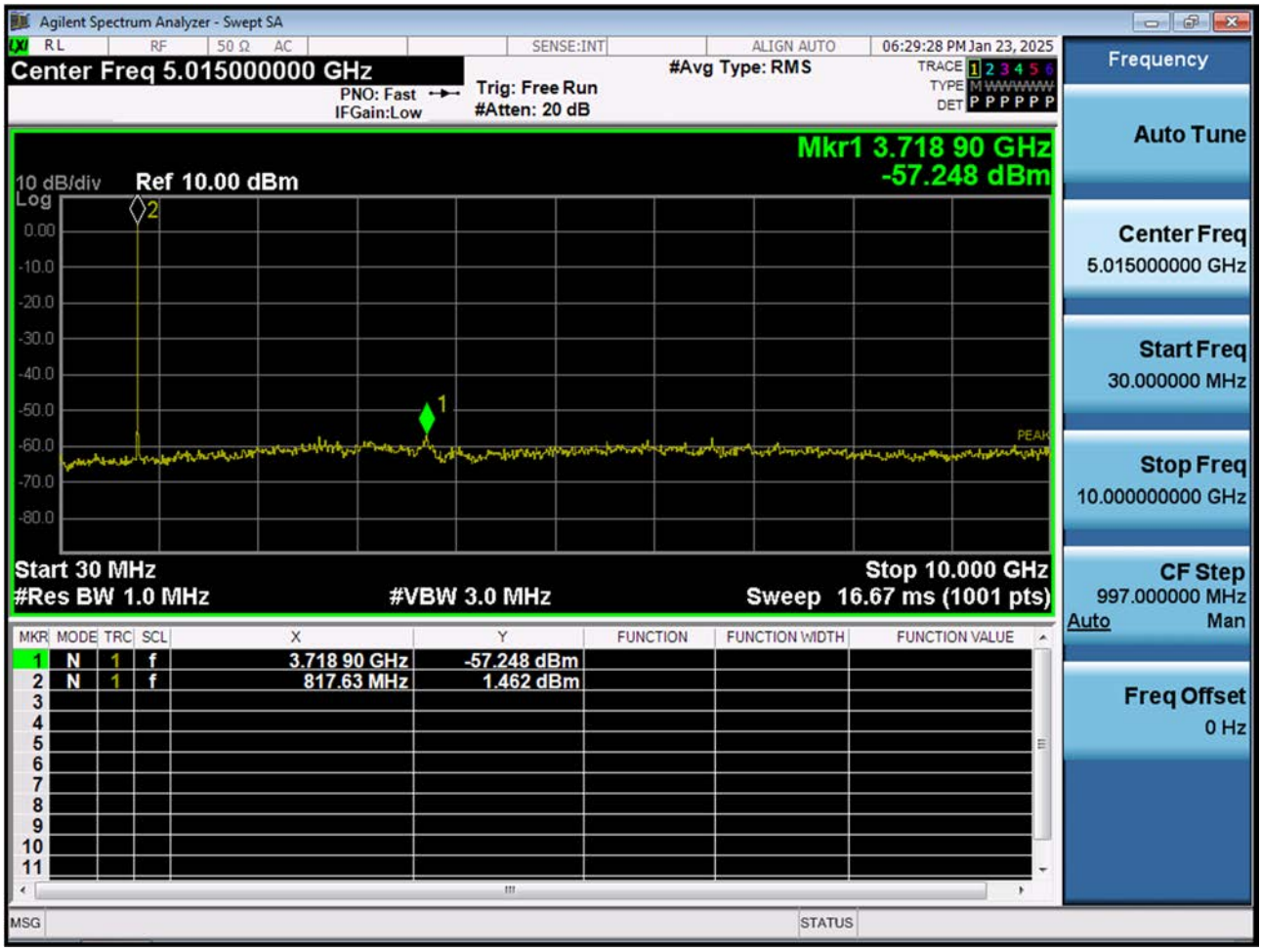
BAND 26. Conducted Spurious (26705 ch_3 MHz_QPSK_RB 1_0)



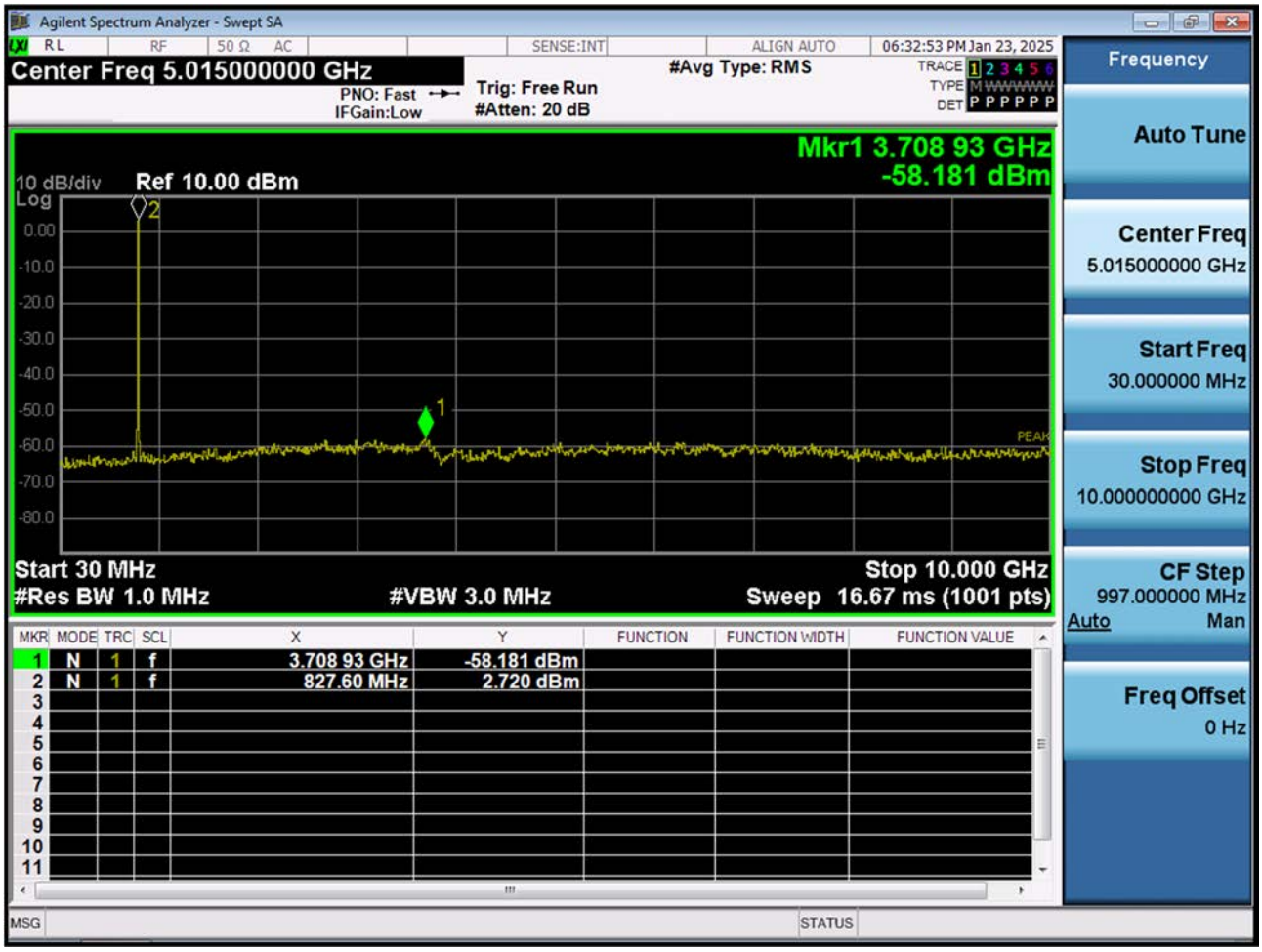
BAND 26. Conducted Spurious (26775 ch_3 MHz_QPSK_RB 1_0)



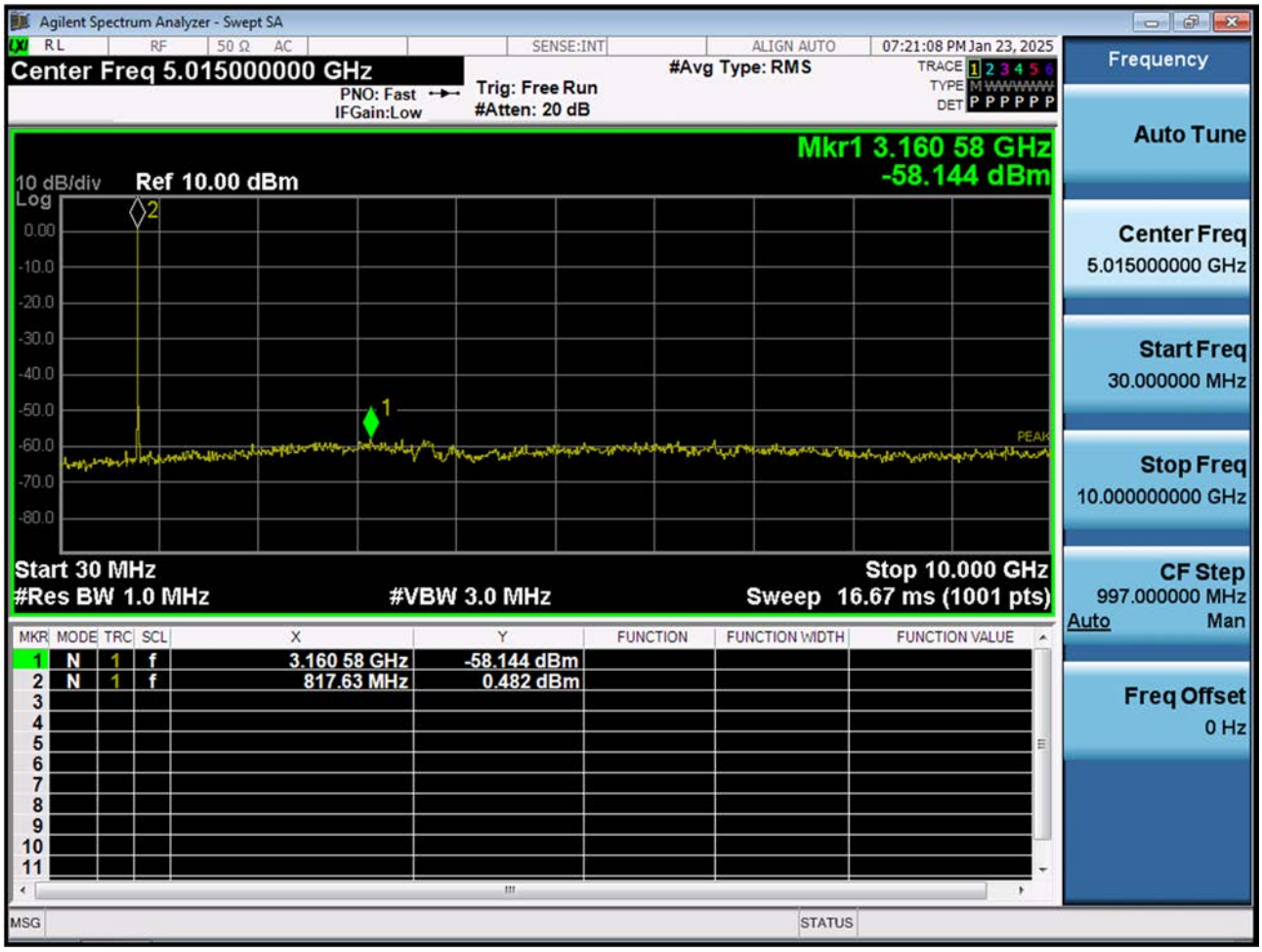
BAND 26. Conducted Spurious (26715 ch_5 MHz_QPSK_RB 1_0)



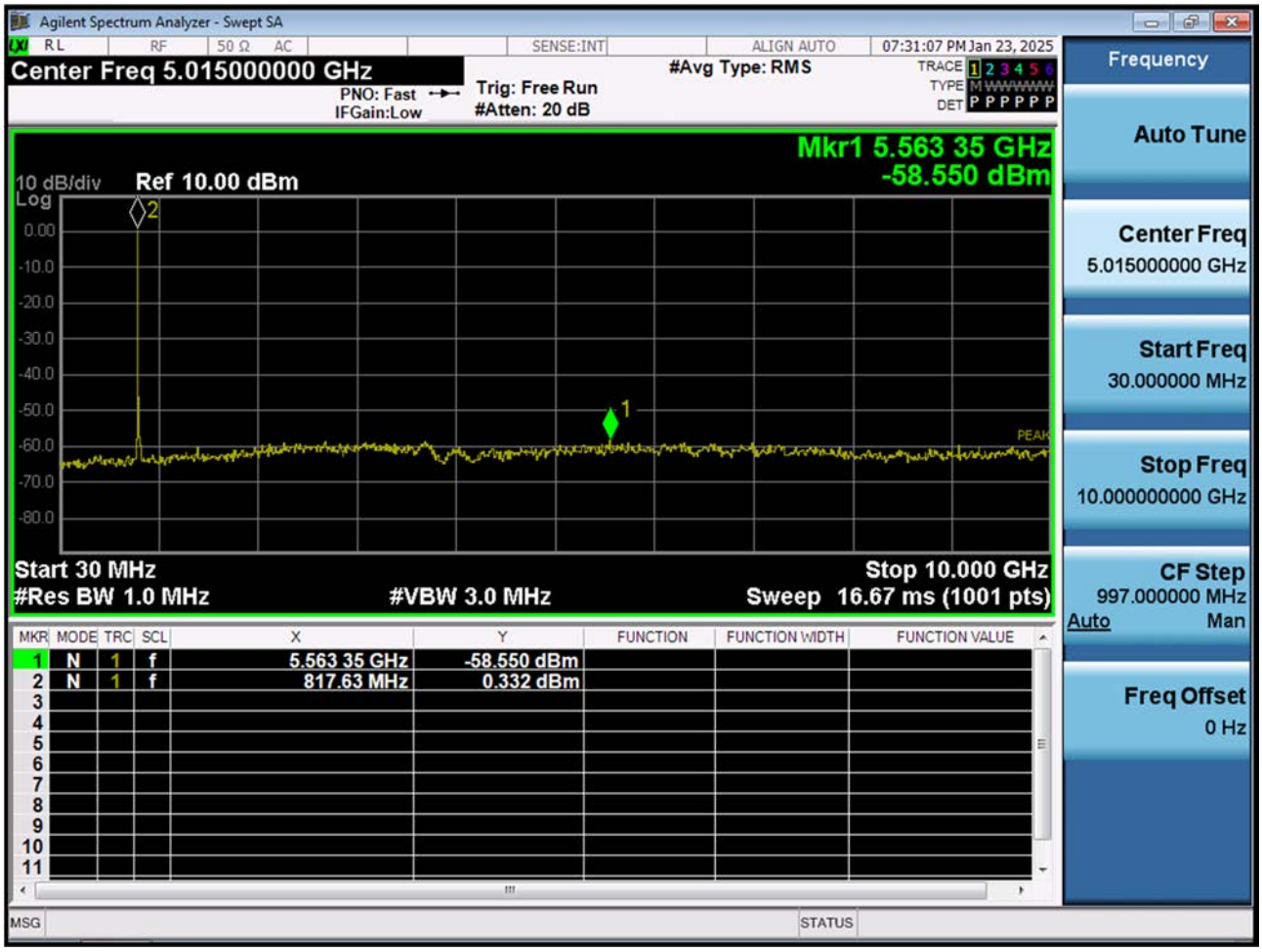
BAND 26. Conducted Spurious (26765 ch_5 MHz_QPSK_RB 1_0)



BAND 26. Conducted Spurious (26740 ch_10 MHz_QPSK_RB 1_0)



BAND 26. Conducted Spurious (26765 ch_15 MHz_QPSK_RB 1_0)



10. TEST PLOTS (STRADDLE CHANNEL)