

TEST REPORT

FCC LTE B26(Part90) Test for SM-A276U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2604-FC020-R1

DATE OF ISSUE
May 15, 2026

Tested by
Jae Ryang Do



Technical Manager
Jong Seok Lee



HCT CO., LTD.
BongJai Huh
BongJai Huh / CEO



HCT CO.,LTD.

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Tel. +82 31 645 6300 Fax. +82 31 645 6401

TEST REPORT

REPORT NO.

HCT-RF-2604-FC020-R1

DATE OF ISSUE

May 15, 2026

Additional Model

SM-A276U1, SM-S276V

Applicant

SAMSUNG Electronics Co., Ltd.

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

Product Name

Mobile Phone

Model Name

SM-A276U

Date of Test

March 11, 2026 ~ April 22, 2026

FCC ID

A3LSMA276U

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 Held to Ear (PCE)

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	April 23, 2026	Initial Release
1	May 15, 2026	Revised the Maximum Output Power on page 6.

Notice

Content

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

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

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

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

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

Information provided by the applicant is marked **.

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

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

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

CONTENTS

1. GENERAL INFORMATION	5
1.1 MAXIMUM OUTPUT POWER.....	6
2. INTRODUCTION	7
2.1. DESCRIPTION OF EUT	7
2.2. MEASURING INSTRUMENT CALIBRATION	7
2.3. TEST FACILITY	7
2.4. EQUIPMENT.....	7
3. DESCRIPTION OF TESTS.....	8
3.1 TEST PROCEDURE.....	8
3.2 CONDUCTED OUTPUT POWER.....	9
3.3 RADIATED POWER.....	10
3.4 RADIATED SPURIOUS EMISSIONS.....	11
3.5 OCCUPIED BANDWIDTH.....	12
3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL	13
3.7 CHANNEL EDGE.....	14
3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE	16
3.9 WORST CASE(RADIATED TEST)	17
3.10 WORST CASE(CONDUCTED TEST).....	18
4. LIST OF TEST EQUIPMENT.....	19
5. MEASUREMENT UNCERTAINTY	20
6. SUMMARY OF TEST RESULTS	21
7. SAMPLE CALCULATION.....	22
8. TEST DATA.....	24
8.1 CONDUCTED OUTPUT POWER.....	24
8.2 EFFECTIVE RADIATED POWER.....	29
8.3 RADIATED SPURIOUS EMISSIONS.....	31
8.4 OCCUPIED BANDWIDTH.....	32
8.5 CONDUCTED SPURIOUS EMISSIONS	33
8.6 CHANNEL EDGE.....	33
8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE	34
8.8 STRADDLE CHANNEL.....	39
8.8.1 CONDUCTED OUTPUT POWER	39
8.8.2 EFFECTIVE RADIATED POWER.....	43
8.8.3 RADIATED SPURIOUS EMISSIONS.....	44
8.8.4 CONDUCTED SPURIOUS EMISSIONS.....	45
8.8.5 CHANNEL EDGE(Part90)	45
8.8.6 BAND EDGE(Part22)	45
9. TEST PLOTS.....	46
9.1 OCCUPIED BANDWIDTH.....	47
9.2 CONDUCTED SPURIOUS EMISSIONS	67
9.3 CHANNEL EDGE.....	75
10. TEST PLOTS(STRADDLE CHANNEL).....	95
10.1 CONDUCTED SPURIOUS EMISSIONS	96
10.2 CHANNEL EDGE(Part90).....	100
10.3 BAND EDGE(Part22)	112
11. ANNEX A_ TEST SETUP PHOTO	120

MEASUREMENT REPORT

1. GENERAL INFORMATION

Model(s):	SM-A276U
Additional Model(s)	SM-A276U1, SM-S276V
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))
Serial number:	Radiated : R37L300TFEN Conducted : 9aece160ab127ece
Antenna Information	Please refer to the Antenna Specification document.

1.1 MAXIMUM OUTPUT POWER

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
LTE – Band26 (1.4)	814.7 – 824.0	1M10G7D	QPSK	0.313	24.95
		1M10W7D	16QAM	0.261	24.17
		1M10W7D	64QAM	0.201	23.04
		1M10W7D	256QAM	0.101	20.05
LTE – Band26 (3)	815.5 – 824.0	2M72G7D	QPSK	0.309	24.90
		2M71W7D	16QAM	0.257	24.10
		2M71W7D	64QAM	0.201	23.04
		2M72W7D	256QAM	0.101	20.06
LTE – Band26 (5)	816.5 – 824.0	4M51G7D	QPSK	0.310	24.91
		4M51W7D	16QAM	0.270	24.32
		4M52W7D	64QAM	0.204	23.10
		4M52W7D	256QAM	0.100	20.02
LTE – Band26 (10)	819.0 – 824.0	8M99G7D	QPSK	0.310	24.92
		8M99W7D	16QAM	0.266	24.25
		9M02W7D	64QAM	0.205	23.12
		8M98W7D	256QAM	0.099	19.97
LTE – Band26 (15)	821.5	13M5G7D	QPSK	0.307	24.87
		13M5W7D	16QAM	0.241	23.82
		13M5W7D	64QAM	0.199	22.99
		13M5W7D	256QAM	0.104	20.16

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.

Detailed description of test facility was submitted to the Commission and accepted dated February 26, 2026 (Registration Number: KR0032).

2.4. EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to ANSI/USEMCSC C63.2-2023, "American National Standard for Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz to 40 GHz".

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
Channel 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

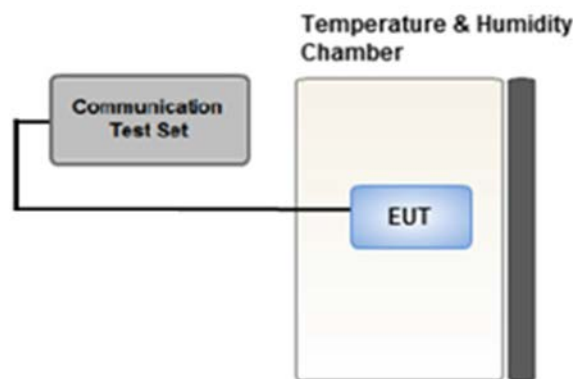
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base 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 $\geq$ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points > 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Note

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

The power is calculated by the following formula;

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

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

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

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

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

3.4 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 $\geq 3 \times$ RBW
3. No. of sweep points $> 2 \times$ span / RBW
4. Detector = Peak
5. Trace mode = Max Hold
6. The trace was allowed to stabilize
7. Test channel : Low/ Middle/ High
8. Frequency range : We are performed all frequency to 10th harmonics from 9 kHz.

Test Note

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

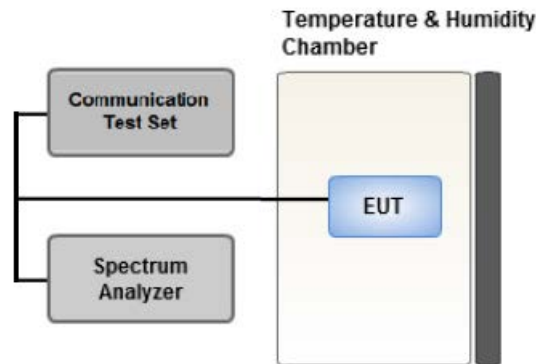
$$\text{Result}_{(\text{dBm})} = P_{g(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

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

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

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

3.5 OCCUPIED BANDWIDTH.



Test setup

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

The EUT makes a call to the communication simulator.

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

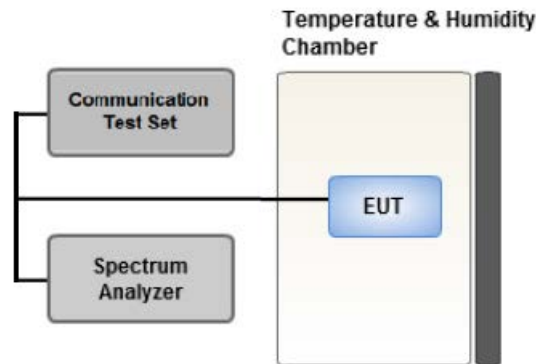
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

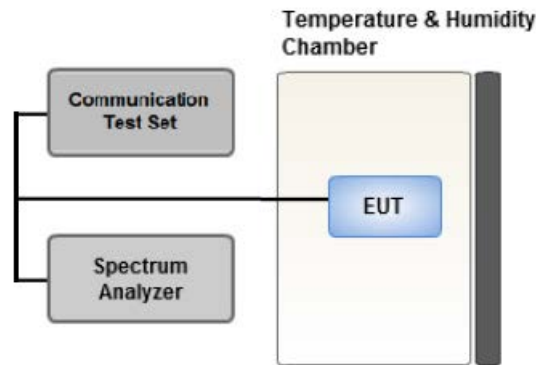
Test Overview

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

Test Settings

1. RBW = 1 MHz
2. VBW $\geq$ 3 MHz
3. Detector = Peak
4. Trace Mode = Max Hold
5. Sweep time = auto
6. Number of points in sweep = 1001

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

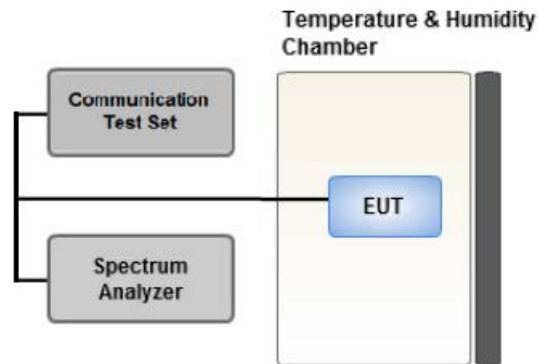
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW :
 - EA licensee's frequency block by up to and including 37.5 kHz : 300 Hz
 - EA licensee's frequency block greater than 37.5 kHz : 100 kHz
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points $\geq 2 \times \text{Span/RBW}$
7. Trace mode = trace average
8. Sweep time > (Number of Points) $\times$ (Symbol Period)
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 $10 \log(1 \text{ MHz} / \text{RB})$ or the emission is integrated over a 1 MHz bandwidth to determine the final result. When using the integration method the integration window is either centered on the emission or, for emissions at the band edge, centered by an offset of 500 kHz from the block edge so that the integration window is the 1 MHz adjacent to the block edge

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

The frequency stability of the transmitter is measured by:

1. Temperature:

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

2. Primary Supply Voltage:

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

Test Settings

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

3.9 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
Worst case : Stand alone
- All simultaneous transmission scenarios of operation were investigated, and the test results showed no additional significant emissions relative to the least restrictive limit were observed.
Therefore, only the worst case(stand-alone) results were reported.
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 10 MHz, 3 MHz(Straddle))
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data.
- Please refer to the table below.
- SM-A276U & additional models were tested and the worst case results are reported.
(Worst case : SM-A276U)

[Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	See Section 8.2		Z
Radiated Spurious and Harmonic Emissions	QPSK	See Section 8.3		Y

3.10 WORST CASE(CONDUCTED TEST)

- Worst case : Of all modulation, We have tested modulation of the high Conducted Output Power.
 - SM-A276U & additional models were tested and the worst case results are reported.
- (Worst case : SM-A276U)

[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
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	INPUT1 + 1GHz HPF + LNA	HCT CO., LTD.,	F2L2	12/01/2026	Annual
RF Switching System	INPUT1 + 3GHz HPF + LNA	HCT CO., LTD.,	F2L3	12/01/2026	Annual
RF Switching System	INPUT1 + 7GHz HPF + LNA	HCT CO., LTD.,	F2L5	12/01/2026	Annual
RF Switching System	INPUT3 + 6GHz HPF + LNA	HCT CO., LTD.,	F2L14	12/01/2026	Annual
Broadband LNA	CBL18265035	CERNEX	22966	10/21/2026	Annual
Broadband LNA	CBL26405040	CERNEX	25956	02/09/2027	Annual
POWER SPLITTER	11667B	Hewlett Packard	5001	04/01/2027	Annual
DC POWER SUPPLY	E3632A	Agilent	MY40010147	07/29/2026	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/05/2028	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93008124	02/04/2027	Annual
Horn Antenna	BBHA 9120D	Schwarzbeck	03197	11/28/2026	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	03201	11/28/2026	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck	BBHA9170124	03/23/2027	Biennial
MXA SIGNAL ANALYZER	N9020A	Agilent	MY52090906	04/08/2027	Annual
20dB ATTENUATOR	8493C	HP	15233	12/10/2026	Annual
Signal Analyzer	FSV 40	ROHDE & SCHWARZ	101733	09/17/2026	Annual
Wireless Communications Set	E5515C	Agilent	MY48360800	07/29/2026	Annual
Loop Antenna	FMZB 1513	Schwarzbeck	1513-333	06/23/2027	Biennial
Trilog Broadband Antenna	VULB 9168	Schwarzbeck	00895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB 9168	Schwarzbeck Mess-Elektronik OHG	01135	08/19/2026	Biennial
Radio Communication Test Station	MT8000A	Anritsu	6272613402	08/18/2026	Annual
SIGNAL GENERATOR	SMB100A	ROHDE & SCHWARZ	177633	07/22/2026	Annual
PXA Signal Analyzer	N9030B	Keysight	MY55480167	05/14/2026	Annual
UXM 5G Wireless Test Platform	E7515B	Keysight	MY60101126	01/29/2027	Annual
Automation Software	FCC 2G/3G/4G Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC NR Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC LTE Radiated	HCT CO., LTD	-	-	-
Automation Software	FCC NR Radiated	HCT CO., LTD	-	-	-

Note:

1. Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update. All reported measurements were performed using equipment within valid calibration.
2. Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

5. MEASUREMENT UNCERTAINTY

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

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

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

Parameter	Expanded Uncertainty ($\pm$ dB)
Block Edge	0.70 (Confidence level about 95 %, $k=2$)
Conducted Spurious Emissions	1.11 (Confidence level about 95 %, $k=2$)
Peak- to- Average Ratio	0.73 (Confidence level about 95 %, $k=2$)
Radiated Power	4.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.54 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.80 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.86 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.44 (Confidence level about 95 %, $k=2$)

6. SUMMARY OF TEST RESULTS

-. The decision rule applies 'simple acceptance'

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	PASS
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

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

- 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 CONDUCTED OUTPUT POWER

Band Width (MHz)	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	24.93	0.311	24.93	0.311	100
		1	3	24.95	0.313	24.94	0.312	100
		1	5	24.91	0.310	24.87	0.307	100
		3	0	24.89	0.308	24.86	0.306	100
		3	1	24.92	0.310	24.88	0.308	100
		3	3	24.92	0.310	24.92	0.310	100
		6	0	23.32	0.215	23.29	0.213	100
	16QAM	1	0	24.06	0.255	24.06	0.255	100
		1	3	24.17	0.261	24.15	0.260	100
		1	5	24.11	0.258	24.10	0.257	100
		3	0	24.06	0.255	24.05	0.254	100
		3	1	23.93	0.247	23.92	0.247	100
		3	3	24.05	0.254	24.02	0.252	100
		6	0	22.88	0.194	22.85	0.193	100
	64QAM	1	0	23.04	0.201	23.04	0.201	100
		1	3	22.98	0.199	22.94	0.197	100
		1	5	22.87	0.194	22.84	0.192	100
		3	0	22.91	0.195	22.88	0.194	100
		3	1	22.98	0.199	22.94	0.197	100
		3	3	23.00	0.200	22.98	0.199	100
		6	0	21.83	0.152	21.79	0.151	100
	256QAM	1	0	19.78	0.095	19.76	0.095	100
		1	3	19.96	0.099	19.93	0.098	100
		1	5	19.73	0.094	19.73	0.094	100
		3	0	19.85	0.097	19.81	0.096	100
		3	1	20.02	0.100	20.01	0.100	100
		3	3	19.90	0.098	19.90	0.098	100
		6	0	19.76	0.095	19.75	0.094	100

Band Width (MHz)	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	24.90	0.309	24.90	0.309	100
		1	7	24.89	0.308	24.87	0.307	100
		1	14	24.76	0.299	24.73	0.297	100
		8	0	23.82	0.241	23.78	0.239	100
		8	3	23.84	0.242	23.84	0.242	100
		8	7	23.91	0.246	23.89	0.245	100
		15	0	23.89	0.245	23.88	0.244	100
	16QAM	1	0	24.05	0.254	24.01	0.252	100
		1	7	24.10	0.257	24.08	0.256	100
		1	14	24.06	0.255	24.03	0.253	100
		8	0	22.98	0.199	22.98	0.199	100
		8	3	22.90	0.195	22.87	0.194	100
		8	7	22.88	0.194	22.85	0.193	100
		15	0	22.88	0.194	22.84	0.192	100
	64QAM	1	0	22.95	0.197	22.92	0.196	100
		1	7	23.04	0.201	23.02	0.200	100
		1	14	22.90	0.195	22.89	0.195	100
		8	0	21.88	0.154	21.88	0.154	100
		8	3	21.92	0.156	21.92	0.156	100
		8	7	21.92	0.156	21.91	0.155	100
		15	0	21.89	0.155	21.85	0.153	100
	256QAM	1	0	19.82	0.096	19.82	0.096	100
		1	7	20.06	0.101	20.03	0.101	100
		1	14	19.88	0.097	19.87	0.097	100
		8	0	19.91	0.098	19.87	0.097	100
		8	3	19.93	0.098	19.91	0.098	100
		8	7	19.86	0.097	19.82	0.096	100
		15	0	19.89	0.097	19.86	0.097	100

Band Width (MHz)	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	24.77	0.300	24.74	0.298	100
		1	12	24.91	0.310	24.89	0.308	100
		1	24	24.77	0.300	24.75	0.299	100
		12	0	23.79	0.239	23.76	0.238	100
		12	6	23.92	0.247	23.89	0.245	100
		12	11	23.89	0.245	23.87	0.244	100
		25	0	23.90	0.245	23.89	0.245	100
	16QAM	1	0	24.03	0.253	24.01	0.252	100
		1	12	24.32	0.270	24.28	0.268	100
		1	24	23.91	0.246	23.88	0.244	100
		12	0	22.80	0.191	22.79	0.190	100
		12	6	22.96	0.198	22.94	0.197	100
		12	11	22.84	0.192	22.83	0.192	100
		25	0	22.87	0.194	22.84	0.192	100
	64QAM	1	0	23.10	0.204	23.07	0.203	100
		1	12	23.00	0.200	22.98	0.199	100
		1	24	23.02	0.200	22.99	0.199	100
		12	0	21.84	0.153	21.83	0.152	100
		12	6	21.89	0.155	21.86	0.153	100
		12	11	21.89	0.155	21.86	0.153	100
		25	0	21.85	0.153	21.83	0.152	100
	256QAM	1	0	19.85	0.097	19.83	0.096	100
		1	12	20.02	0.100	19.98	0.100	100
		1	24	19.81	0.096	19.79	0.095	100
		12	0	19.81	0.096	19.79	0.095	100
		12	6	19.87	0.097	19.85	0.097	100
		12	11	19.85	0.097	19.84	0.096	100
		25	0	19.86	0.097	19.84	0.096	100

Band Width (MHz)	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				819 MHz		
				dBm	W	
10	QPSK	1	0	24.92	0.310	100
		1	24	24.85	0.305	100
		1	49	24.86	0.306	100
		25	0	23.82	0.241	100
		25	12	23.98	0.250	100
		25	24	23.92	0.247	100
		50	0	23.94	0.248	100
	16QAM	1	0	24.21	0.264	100
		1	24	24.19	0.262	100
		1	49	23.97	0.249	100
		25	0	22.83	0.192	100
		25	12	22.91	0.195	100
		25	24	22.84	0.192	100
		50	0	22.86	0.193	100
	64QAM	1	0	22.97	0.198	100
		1	24	23.12	0.205	100
		1	49	22.94	0.197	100
		25	0	21.88	0.154	100
		25	12	21.90	0.155	100
		25	24	21.93	0.156	100
		50	0	21.90	0.155	100
	256QAM	1	0	19.88	0.097	100
		1	24	19.94	0.099	100
		1	49	19.97	0.099	100
		25	0	19.82	0.096	100
		25	12	19.93	0.098	100
		25	24	19.93	0.098	100
		50	0	19.89	0.097	100

Band Width (MHz)	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				821.5 MHz		
				dBm	W	
15	QPSK	1	0	24.87	0.307	100
		1	36	24.87	0.307	100
		1	74	24.80	0.302	100
		36	0	23.82	0.241	100
		36	18	23.82	0.241	100
		36	39	23.69	0.234	100
		75	0	23.83	0.242	100
	16QAM	1	0	23.82	0.241	100
		1	36	23.37	0.217	100
		1	74	23.82	0.241	100
		36	0	22.76	0.189	100
		36	18	22.76	0.189	100
		36	39	22.69	0.186	100
		75	0	22.81	0.191	100
	64QAM	1	0	22.99	0.199	100
		1	36	22.96	0.198	100
		1	74	22.70	0.186	100
		36	0	21.78	0.151	100
		36	18	21.67	0.147	100
		36	39	21.69	0.148	100
		75	0	21.76	0.150	100
	256QAM	1	0	19.79	0.095	100
		1	36	20.16	0.104	100
		1	74	19.80	0.095	100
		36	0	19.76	0.095	100
		36	18	19.76	0.095	100
		36	39	19.69	0.093	100
		75	0	19.76	0.095	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	-33.40	28.65	-10.05	1.44	H	< 100	0.052	17.16	1	5
		16QAM	-34.15	27.90	-10.05	1.44	H		0.044	16.41		
		64QAM	-35.19	26.86	-10.05	1.44	H		0.034	15.37		
		256QAM	-38.27	23.78	-10.05	1.44	H		0.017	12.29		
823.3		QPSK	-32.91	28.70	-9.95	1.44	H		0.054	17.31	1	5
		16QAM	-33.69	27.92	-9.95	1.44	H		0.045	16.53		
		64QAM	-34.75	26.86	-9.95	1.44	H		0.035	15.47		
		256QAM	-37.76	23.85	-9.95	1.44	H		0.018	12.46		

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	-33.29	28.81	-10.05	1.44	H	< 100	0.054	17.32	1	8
		16QAM	-34.00	28.10	-10.05	1.44	H		0.046	16.61		
		64QAM	-35.07	27.03	-10.05	1.44	H		0.036	15.54		
		256QAM	-38.16	23.94	-10.05	1.44	H		0.018	12.45		
822.5		QPSK	-32.90	28.84	-9.95	1.44	H		0.056	17.45	1	14
		16QAM	-33.58	28.16	-9.95	1.44	H		0.048	16.77		
		64QAM	-34.68	27.06	-9.95	1.44	H		0.037	15.67		
		256QAM	-37.74	24.00	-9.95	1.44	H		0.018	12.61		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
816.5	LTE B26 5 MHz	QPSK	-33.10	28.95	-10.05	1.44	H	< 100	0.056	17.46	1	24
		16QAM	-33.92	28.13	-10.05	1.44	H		0.046	16.64		
		64QAM	-34.84	27.21	-10.05	1.44	H		0.037	15.72		
		256QAM	-38.06	23.99	-10.05	1.44	H		0.018	12.50		
821.5	LTE B26 5 MHz	QPSK	-32.91	28.85	-9.95	1.44	H		0.056	17.46	1	24
		16QAM	-33.69	28.07	-9.95	1.44	H		0.047	16.68		
		64QAM	-34.71	27.05	-9.95	1.44	H		0.037	15.66		
		256QAM	-37.72	24.04	-9.95	1.44	H		0.018	12.65		

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	-32.90	29.07	-10.05	1.44	H	< 100	0.057	17.58	1	49
		16QAM	-33.69	28.28	-10.05	1.44	H		0.048	16.79		
		64QAM	-34.72	27.25	-10.05	1.44	H		0.038	15.76		
		256QAM	-37.70	24.27	-10.05	1.44	H		0.019	12.78		

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	-32.96	28.80	-9.95	1.44	H	< 7.00	0.055	17.41	1	74
		16QAM	-33.71	28.05	-9.95	1.44	H		0.046	16.66		
		64QAM	-34.80	26.96	-9.95	1.44	H		0.036	15.57		
		256QAM	-37.68	24.08	-9.95	1.44	H		0.019	12.69		

Note

1. Limit: None (for reporting purposes only)

8.3 RADIATED SPURIOUS EMISSIONS

MODE: LTE B26
 MODULATION SIGNAL: 10 MHz QPSK
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Size	
								Size	Offset
26740 (819.0)	1 638.00	-51.96	9.34	-66.86	1.98	V	-59.50	1	49
		-50.28		-65.18		H	-57.82		
	2 457.00	-52.91	10.40	-64.26	2.56	V	-56.42		
		-51.27		-62.62		H	-54.78		
	3 276.00	-52.59	10.91	-60.99	2.95	V	-53.03		
		-54.01		-62.41		H	-54.45		
	4 095.00	-54.28	11.60	-60.51	3.35	V	-52.26		
		-53.59		-59.82		H	-51.57		
	4 914.00	-55.35	11.33	-57.30	3.62	V	-49.59		
		-54.59		-56.54		H	-48.83		

8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
LTE B26	1.4 MHz	823.3	QPSK	6	0	1.0962
			16QAM			1.0964
			64QAM			1.0996
			256QAM			1.0997
	3 MHz	822.5	QPSK	15		2.7167
			16QAM			2.7100
			64QAM			2.7091
			256QAM			2.7188
	5 MHz	821.5	QPSK	25		4.5084
			16QAM			4.5048
			64QAM			4.5163
			256QAM			4.5201
	10 MHz	819.0	QPSK	50		8.9923
			16QAM			8.9908
			64QAM			9.0210
			256QAM			8.9818
	15 MHz	821.5	QPSK	75		13.484
			16QAM			13.476
			64QAM			13.447
			256QAM			13.485

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)
LTE B26	1.4	814.7	3.1406	27.976	-58.358	-30.382	-13.00
		823.3	6.3011	28.591	-57.317	-28.726	
	3	815.5	2.7020	27.976	-58.263	-30.287	
		822.5	3.6990	27.976	-58.109	-30.133	
	5	816.5	3.7089	27.976	-56.968	-28.992	
		821.5	3.7189	27.976	-57.838	-29.862	
	10	819.0	3.7089	27.976	-58.239	-30.263	
	15	821.5	3.0808	27.976	-58.184	-30.208	

Note:

1. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. Factor (dB) = Cable Loss + Ext. Attenuator + Power Splitter

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

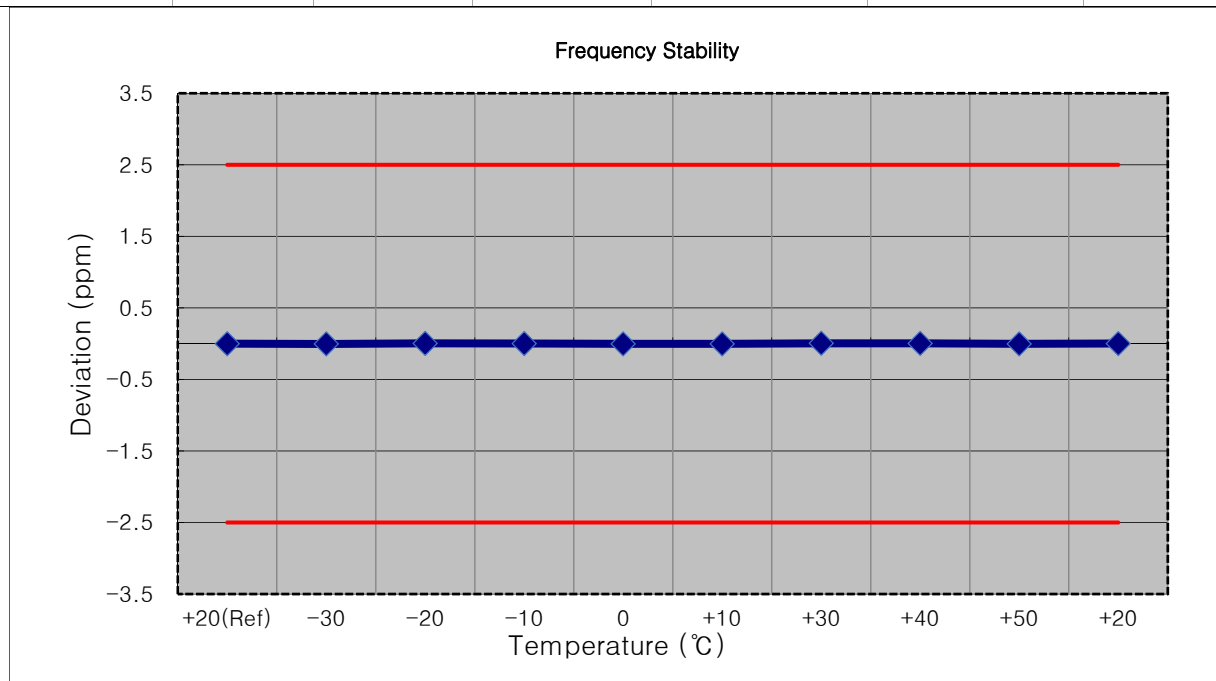
8.6 CHANNEL EDGE

- Plots of the EUT's Band Edge are shown Section 9.3.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

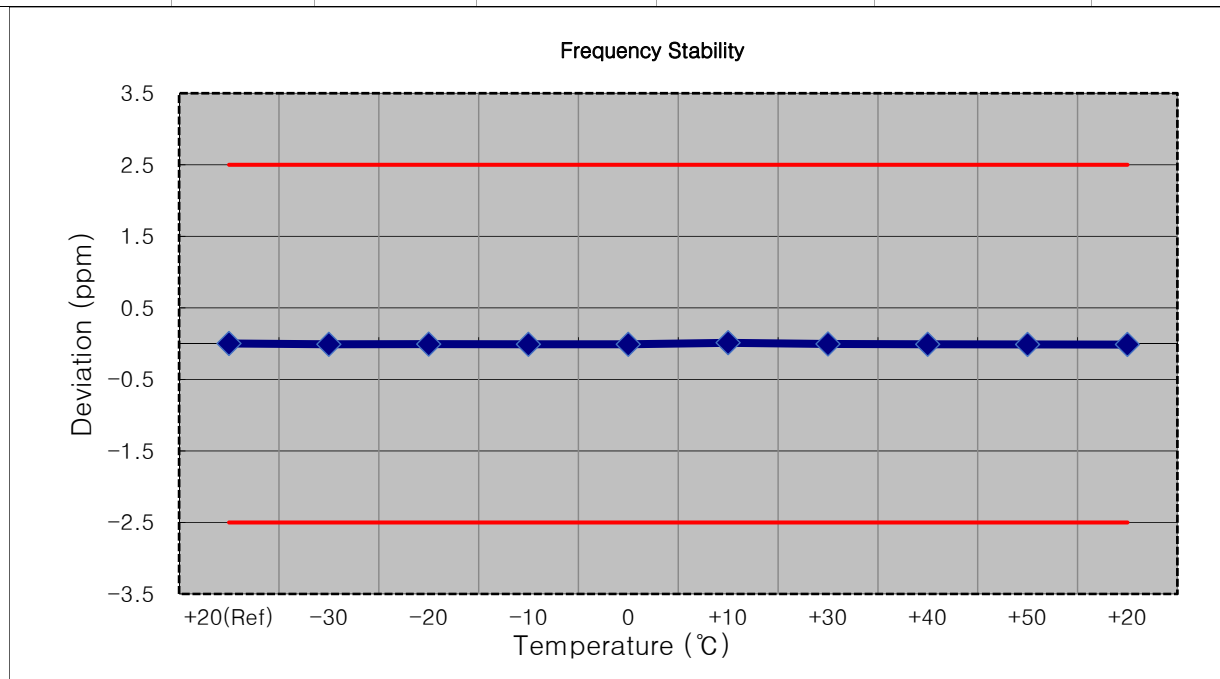
MODE:	<u>LTE B26</u>
OPERATING FREQUENCY:	<u>814,700,000 Hz</u>
CHANNEL:	<u>26697(1.4 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>± 0.000 25 % or 2.5 ppm</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	814 699 998	0.0	0.000 000	0.000
100 %		-30	814 699 995	-2.6	0.000 000	-0.003
100 %		-20	814 700 001	3.6	0.000 000	0.004
100 %		-10	814 700 000	2.2	0.000 000	0.003
100 %		0	814 699 996	-2.3	0.000 000	-0.003
100 %		+10	814 699 996	-1.5	0.000 000	-0.002
100 %		+30	814 700 002	4.2	0.000 001	0.005
100 %		+40	814 700 000	2.6	0.000 000	0.003
100 %		+50	814 699 995	-2.4	0.000 000	-0.003
Batt. Endpoint	3.300	+20	814 699 999	1.6	0.000 000	0.002



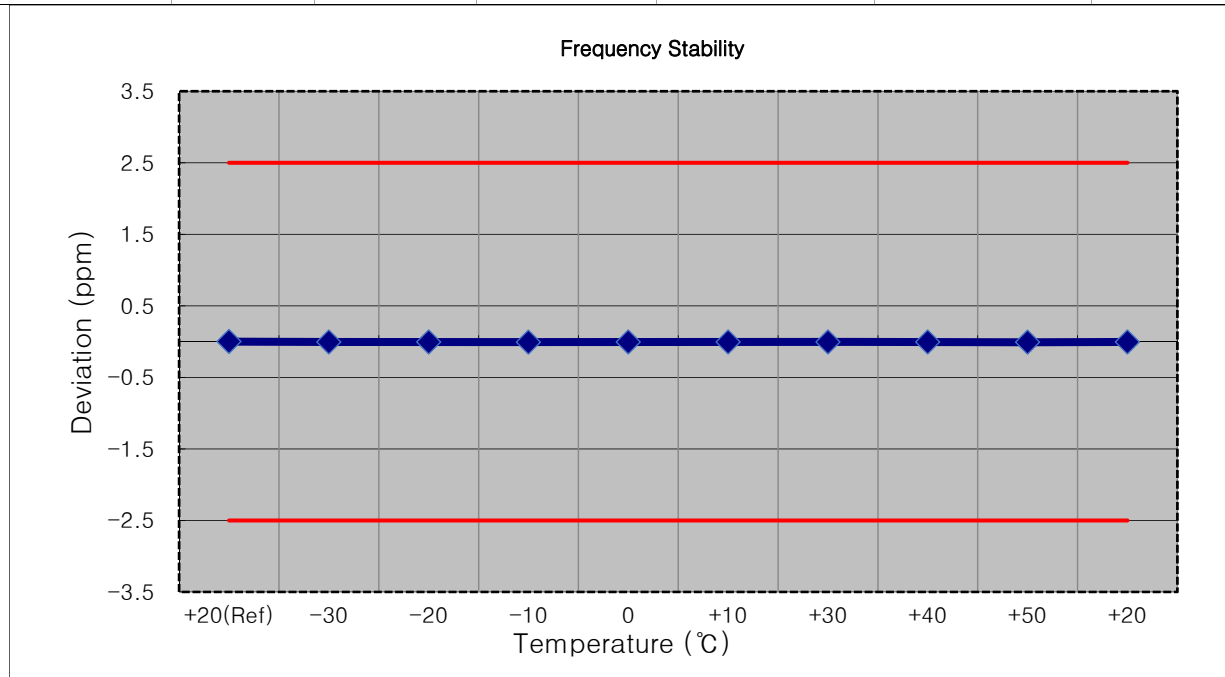
MODE:	<u>LTE B26</u>
OPERATING FREQUENCY:	<u>815,500,000 Hz</u>
CHANNEL:	<u>26705(3 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>± 0.000 25 % or 2.5 ppm</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	815 499 993	0.0	0.000 000	0.000
100 %		-30	815 499 984	-8.9	-0.000 001	-0.011
100 %		-20	815 499 986	-7.3	-0.000 001	-0.009
100 %		-10	815 499 984	-8.7	-0.000 001	-0.011
100 %		0	815 499 984	-8.9	-0.000 001	-0.011
100 %		+10	815 500 002	9.1	0.000 001	0.011
100 %		+30	815 499 987	-5.7	-0.000 001	-0.007
100 %		+40	815 499 983	-9.5	-0.000 001	-0.012
100 %		+50	815 499 983	-9.6	-0.000 001	-0.012
Batt. Endpoint	3.300	+20	815 499 982	-11.2	-0.000 001	-0.014



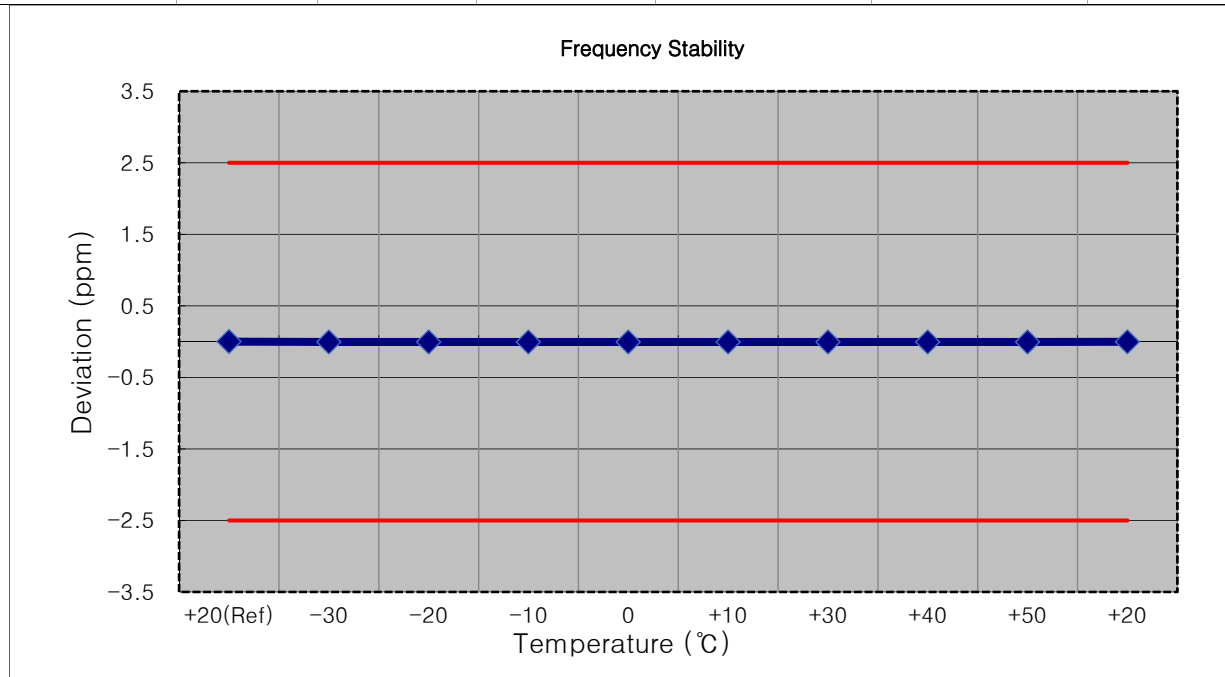
MODE:	<u>LTE B26</u>
OPERATING FREQUENCY:	<u>816,500,000 Hz</u>
CHANNEL:	<u>26715(5 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>± 0.000 25 % or 2.5 ppm</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	816 499 995	0.0	0.000 000	0.000
100 %		-30	816 499 989	-5.8	-0.000 001	-0.007
100 %		-20	816 499 990	-5.3	-0.000 001	-0.006
100 %		-10	816 499 989	-6.6	-0.000 001	-0.008
100 %		0	816 499 989	-5.9	-0.000 001	-0.007
100 %		+10	816 499 990	-5.7	-0.000 001	-0.007
100 %		+30	816 499 989	-5.9	-0.000 001	-0.007
100 %		+40	816 499 990	-5.4	-0.000 001	-0.007
100 %		+50	816 499 988	-6.9	-0.000 001	-0.008
Batt. Endpoint	3.300	+20	816 499 991	-4.3	-0.000 001	-0.005



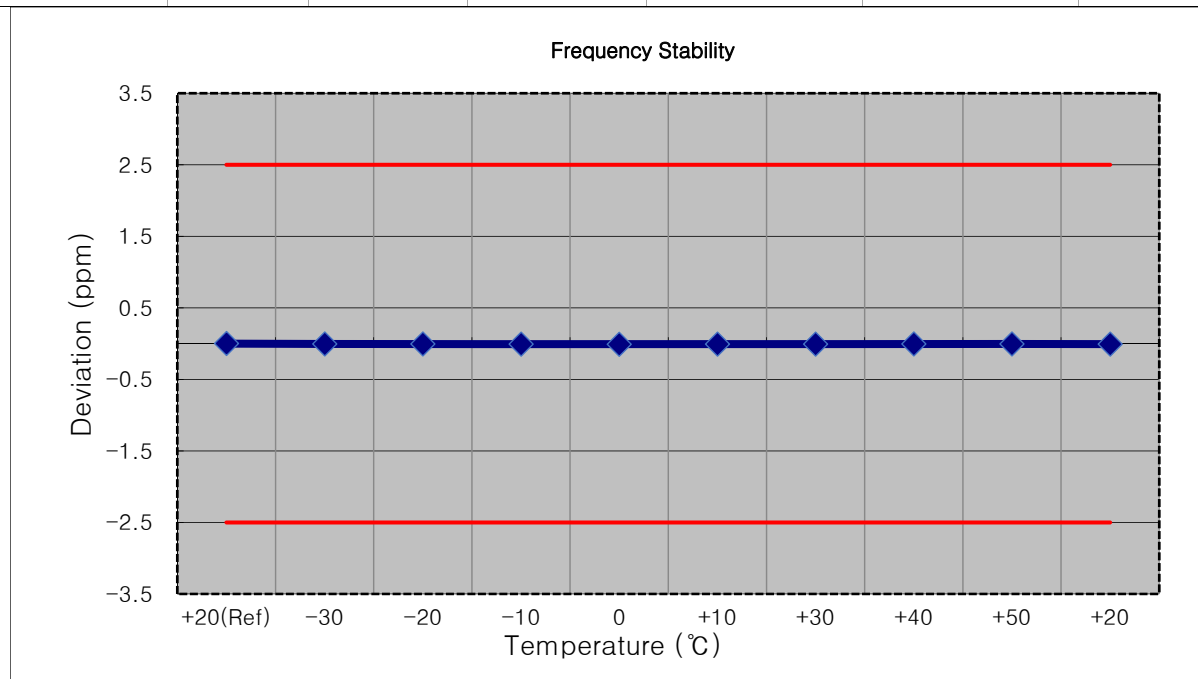
MODE:	<u>LTE B26</u>
OPERATING FREQUENCY:	<u>819,000,000 Hz</u>
CHANNEL:	<u>26740(10 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	<u>± 0.000 25 % or 2.5 ppm</u>

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	818 999 995	0.0	0.000 000	0.000
100 %		-30	818 999 991	-4.6	-0.000 001	-0.006
100 %		-20	818 999 991	-4.6	-0.000 001	-0.006
100 %		-10	818 999 991	-4.4	-0.000 001	-0.005
100 %		0	818 999 990	-5.8	-0.000 001	-0.007
100 %		+10	818 999 991	-4.4	-0.000 001	-0.005
100 %		+30	818 999 991	-4.2	-0.000 001	-0.005
100 %		+40	818 999 989	-5.9	-0.000 001	-0.007
100 %		+50	818 999 990	-5.5	-0.000 001	-0.007
Batt. Endpoint	3.300	+20	818 999 992	-3.5	0.000 000	-0.004



MODE:	<u>LTE B26</u>
OPERATING FREQUENCY:	<u>821,500,000 Hz</u>
CHANNEL:	<u>26765(15 MHz)</u>
REFERENCE VOLTAGE:	<u>3.880 VDC</u>
DEVIATION LIMIT:	$\pm 0.000\ 25\ \%$ or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	821 499 993	0.0	0.000 000	0.000
100 %		-30	821 499 988	-5.4	-0.000 001	-0.007
100 %		-20	821 499 988	-5.1	-0.000 001	-0.006
100 %		-10	821 499 987	-6.7	-0.000 001	-0.008
100 %		0	821 499 985	-8.1	-0.000 001	-0.010
100 %		+10	821 499 987	-6.6	-0.000 001	-0.008
100 %		+30	821 499 987	-6.0	-0.000 001	-0.007
100 %		+40	821 499 987	-5.9	-0.000 001	-0.007
100 %		+50	821 499 989	-4.8	-0.000 001	-0.006
Batt. Endpoint	3.300	+20	821 499 987	-6.3	-0.000 001	-0.008



8.8 STRADDLE CHANNEL

8.8.1 CONDUCTED OUTPUT POWER

Band Width (MHz)	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
1.4	QPSK	1	0	24.86	0.306	100
		1	3	24.85	0.305	100
		1	5	24.75	0.299	100
		3	0	23.81	0.240	100
		3	1	23.83	0.242	100
		3	3	23.91	0.246	100
		6	0	23.88	0.244	100
	16QAM	1	0	24.04	0.254	100
		1	3	24.06	0.255	100
		1	5	24.04	0.254	100
		3	0	22.94	0.197	100
		3	1	22.86	0.193	100
		3	3	22.88	0.194	100
		6	0	22.87	0.194	100
	64QAM	1	0	22.95	0.197	100
		1	3	23.00	0.200	100
		1	5	22.88	0.194	100
		3	0	21.88	0.154	100
		3	1	21.89	0.155	100
		3	3	21.89	0.155	100
		6	0	21.88	0.154	100
	256QAM	1	0	19.79	0.095	100
		1	3	20.05	0.101	100
		1	5	19.86	0.097	100
		3	0	19.89	0.097	100
		3	1	19.91	0.098	100
		3	3	19.82	0.096	100
		6	0	19.89	0.097	100

Band Width (MHz)	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
3	QPSK	1	0	24.88	0.308	100
		1	7	24.88	0.308	100
		1	14	24.73	0.297	100
		8	0	23.80	0.240	100
		8	3	23.81	0.240	100
		8	7	23.87	0.244	100
		15	0	23.87	0.244	100
	16QAM	1	0	24.02	0.252	100
		1	7	24.07	0.255	100
		1	14	24.03	0.253	100
		8	0	22.96	0.198	100
		8	3	22.86	0.193	100
		8	7	22.84	0.192	100
		15	0	22.87	0.194	100
	64QAM	1	0	22.91	0.195	100
		1	7	23.02	0.200	100
		1	14	22.88	0.194	100
		8	0	21.85	0.153	100
		8	3	21.91	0.155	100
		8	7	21.91	0.155	100
		15	0	21.86	0.153	100
	256QAM	1	0	19.81	0.096	100
		1	7	20.02	0.100	100
		1	14	19.85	0.097	100
		8	0	19.91	0.098	100
		8	3	19.90	0.098	100
		8	7	19.85	0.097	100
		15	0	19.88	0.097	100

Band Width (MHz)	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
5	QPSK	1	0	24.74	0.298	100
		1	12	24.90	0.309	100
		1	24	24.76	0.299	100
		12	0	23.76	0.238	100
		12	6	23.90	0.245	100
		12	11	23.87	0.244	100
		25	0	23.90	0.245	100
	16QAM	1	0	24.00	0.251	100
		1	12	24.29	0.269	100
		1	24	23.88	0.244	100
		12	0	22.77	0.189	100
		12	6	22.95	0.197	100
		12	11	22.81	0.191	100
		25	0	22.83	0.192	100
	64QAM	1	0	23.09	0.204	100
		1	12	22.97	0.198	100
		1	24	23.02	0.200	100
		12	0	21.81	0.152	100
		12	6	21.85	0.153	100
		12	11	21.88	0.154	100
		25	0	21.85	0.153	100
	256QAM	1	0	19.82	0.096	100
		1	12	20.01	0.100	100
		1	24	19.79	0.095	100
		12	0	19.77	0.095	100
		12	6	19.86	0.097	100
		12	11	19.82	0.096	100
		25	0	19.83	0.096	100

Band Width (MHz)	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
10	QPSK	1	0	24.92	0.310	100
		1	24	24.84	0.305	100
		1	49	24.87	0.307	100
		25	0	23.80	0.240	100
		25	12	23.99	0.251	100
		25	24	23.92	0.247	100
		50	0	23.92	0.247	100
	16QAM	1	0	24.25	0.266	100
		1	24	24.19	0.262	100
		1	49	23.95	0.248	100
		25	0	22.83	0.192	100
		25	12	22.91	0.195	100
		25	24	22.82	0.191	100
		50	0	22.90	0.195	100
	64QAM	1	0	22.97	0.198	100
		1	24	23.11	0.205	100
		1	49	22.95	0.197	100
		25	0	21.89	0.155	100
		25	12	21.90	0.155	100
		25	24	21.94	0.156	100
		50	0	21.91	0.155	100
	256QAM	1	0	19.86	0.097	100
		1	24	19.91	0.098	100
		1	49	19.97	0.099	100
		25	0	19.83	0.096	100
		25	12	19.93	0.098	100
		25	24	19.92	0.098	100
		50	0	19.89	0.097	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	-32.75	28.78	-9.95	1.44	H	< 7.00	0.055	17.39	1	5
		16QAM	-33.58	27.95	-9.95	1.44	H		0.045	16.56		
		64QAM	-34.64	26.89	-9.95	1.44	H		0.035	15.50		
		256QAM	-37.68	23.85	-9.95	1.44	H		0.018	12.46		

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	-32.75	28.78	-9.95	1.44	H	< 7.00	0.055	17.39	1	14
		16QAM	-33.55	27.98	-9.95	1.44	H		0.046	16.59		
		64QAM	-34.59	26.94	-9.95	1.44	H		0.036	15.55		
		256QAM	-37.60	23.93	-9.95	1.44	H		0.018	12.54		

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	-32.76	28.77	-9.95	1.44	H	< 7.00	0.055	17.38	1	24
		16QAM	-33.53	28.00	-9.95	1.44	H		0.046	16.61		
		64QAM	-34.62	26.91	-9.95	1.44	H		0.036	15.52		
		256QAM	-37.63	23.90	-9.95	1.44	H		0.018	12.51		

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	-32.76	28.77	-9.95	1.44	H	< 7.00	0.055	17.38	1	49
		16QAM	-33.56	27.97	-9.95	1.44	H		0.046	16.58		
		64QAM	-34.59	26.94	-9.95	1.44	H		0.036	15.55		
		256QAM	-37.52	24.01	-9.95	1.44	H		0.018	12.62		

8.8.3 RADIATED SPURIOUS EMISSIONS

MODE: LTE B26(Straddle)
 MODULATION SIGNAL: 3 MHz QPSK
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Size	
								Size	Offset
26790 (824.0)	1 648.00	-50.73	9.44	-65.63	2.02	V	-58.21	1	14
		-51.06		-65.96		H	-58.54		
	2 472.00	-52.02	10.35	-63.34	2.59	V	-55.58		
		-51.84		-63.16		H	-55.40		
	3 296.00	-53.72	11.06	-62.08	2.95	V	-53.97		
		-52.72		-61.08		H	-52.97		

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)
LTE B26	1.4	824.0	3.6790	27.976	-57.784	-29.808	-13.00
	3		3.6491	27.976	-58.135	-30.159	
	5		3.7488	27.976	-58.332	-30.356	
	10		5.9921	28.591	-58.806	-30.215	

Note:

1. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
3. 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 Section 10.2.

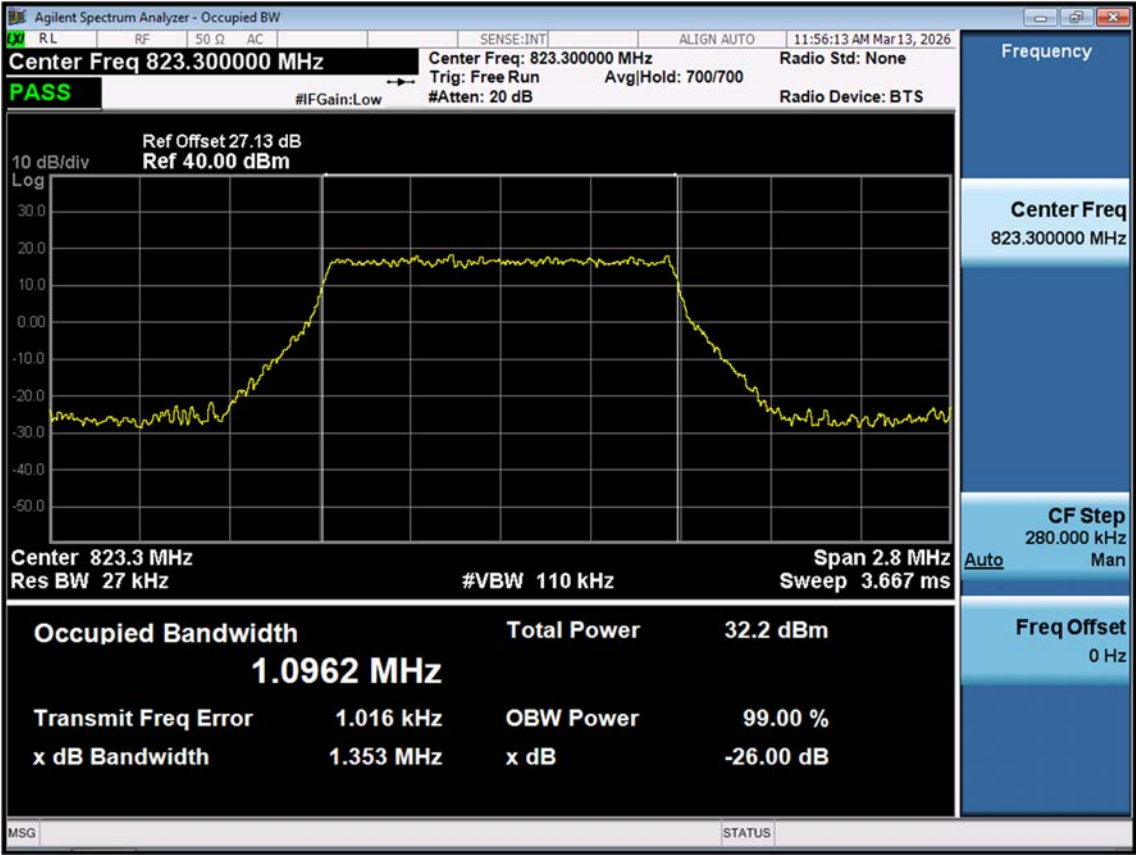
8.8.6 BAND EDGE(Part22)

- Test Channel : 26790(824.0 MHz)
- Plots of the EUT's Band Edge are shown Section 10.3.

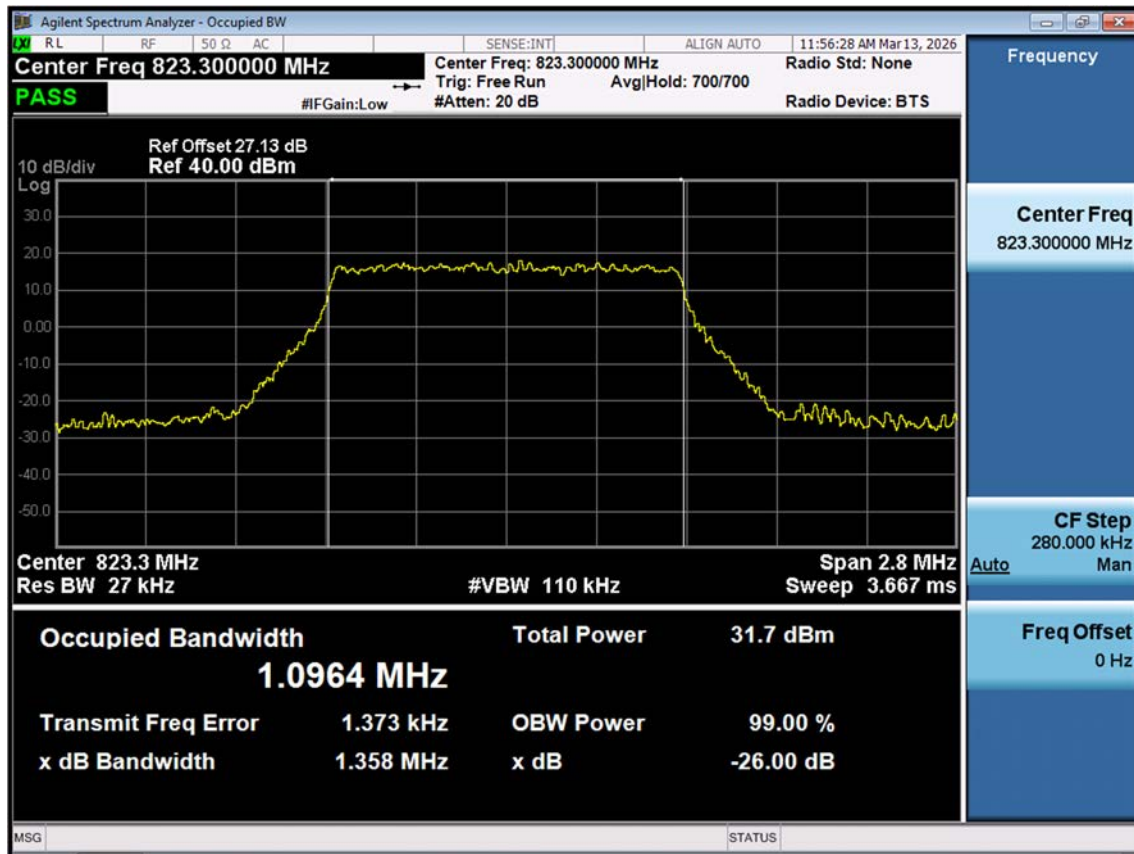
9. TEST PLOTS

9.1 OCCUPIED BANDWIDTH

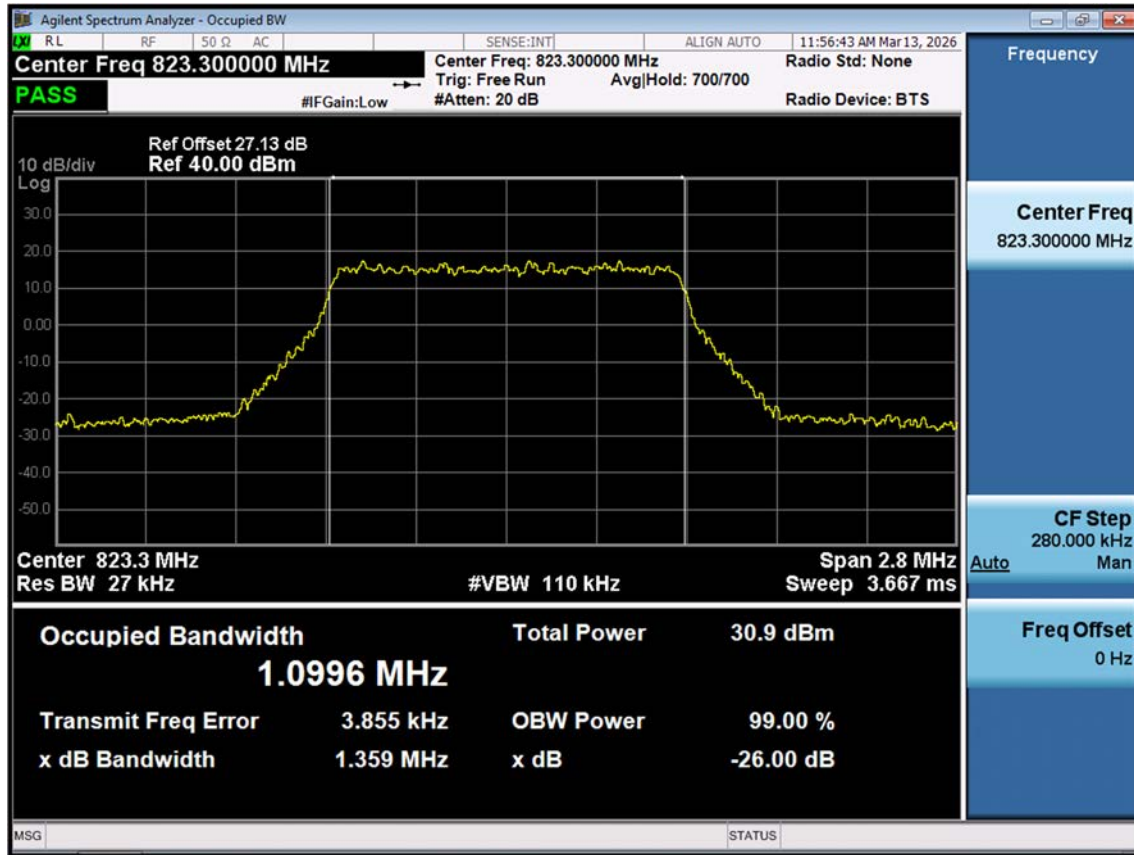
LTE B26_1.4 M_OBW_Mid_QPSK_FullRB



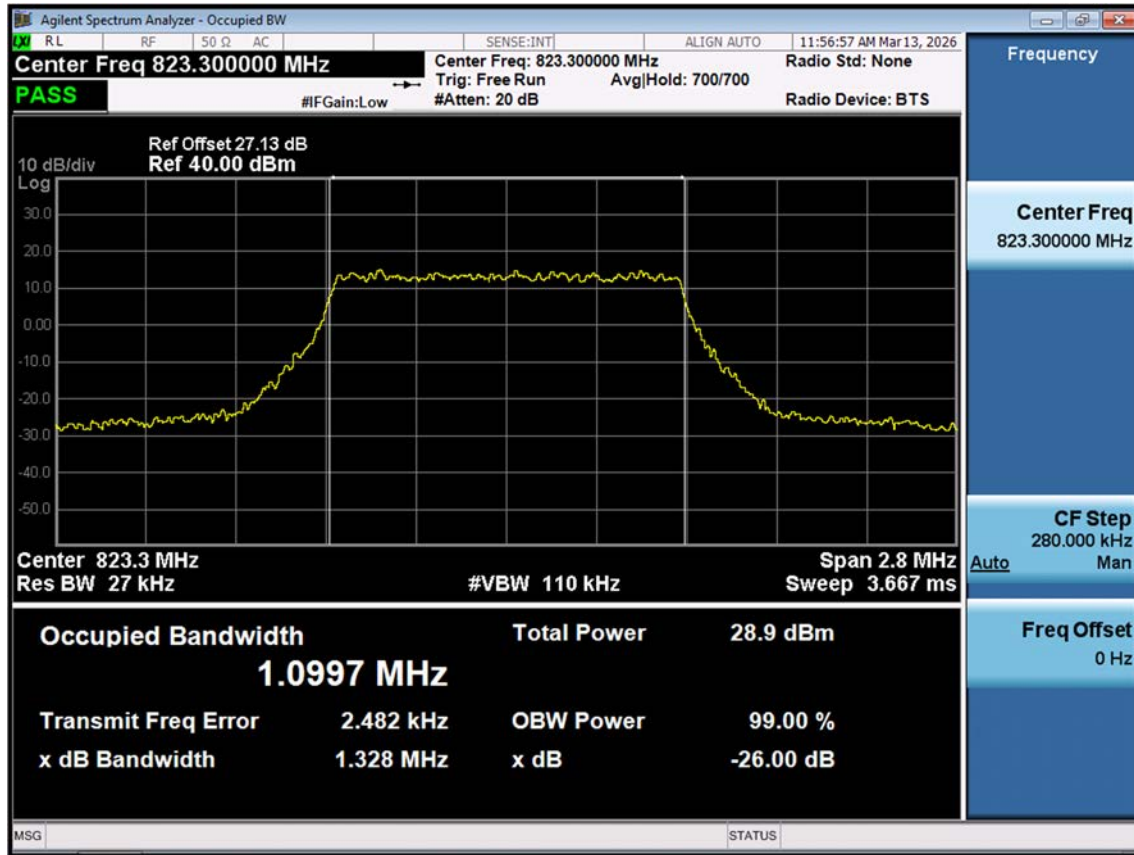
LTE B26_1.4 M_OBW_Mid_16QAM_FullRB



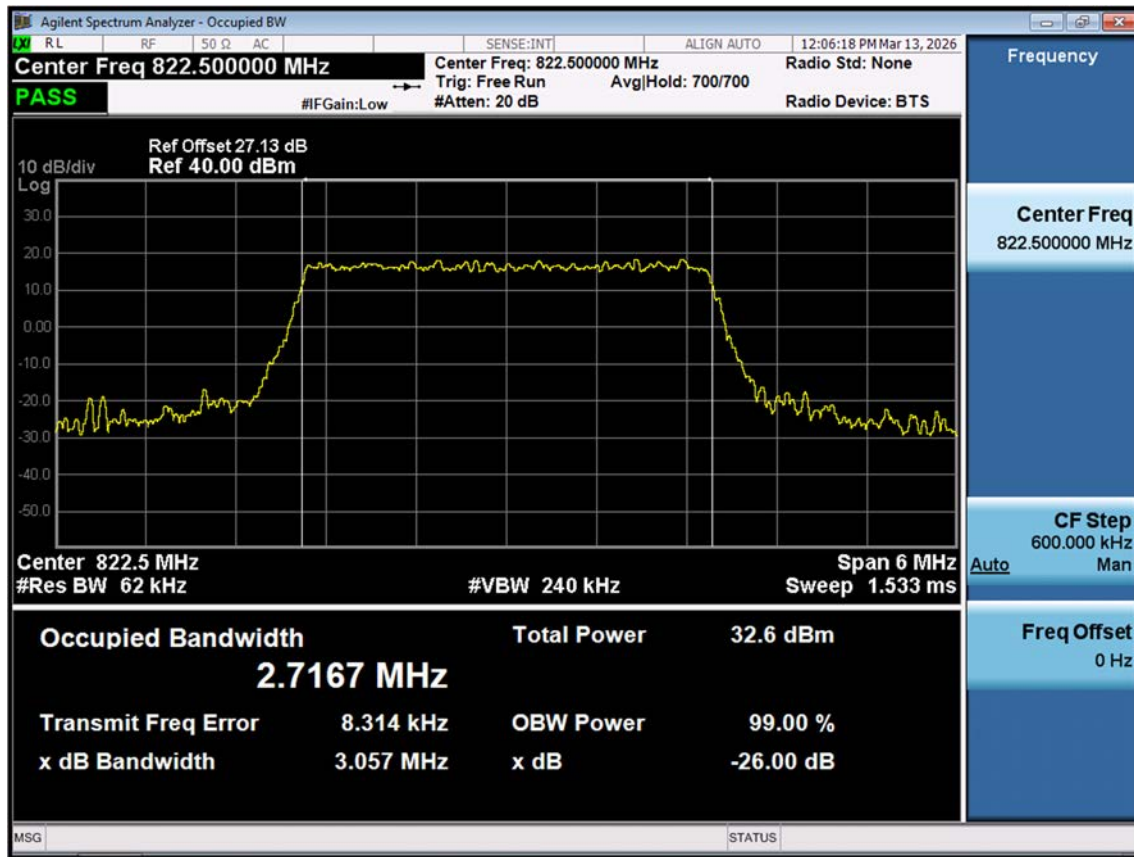
LTE B26_1.4 M_OBW_Mid_64QAM_FullRB



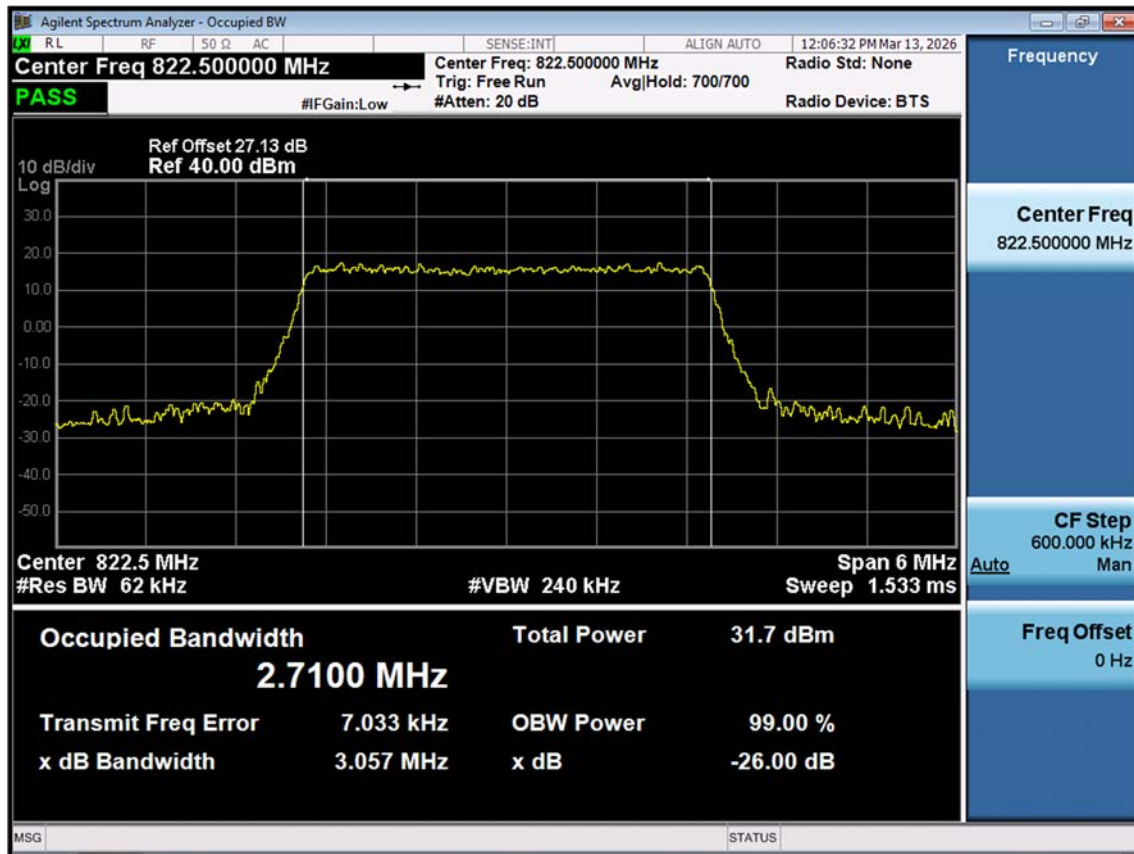
LTE B26_1.4 M_OBW_Mid_256QAM_FullRB



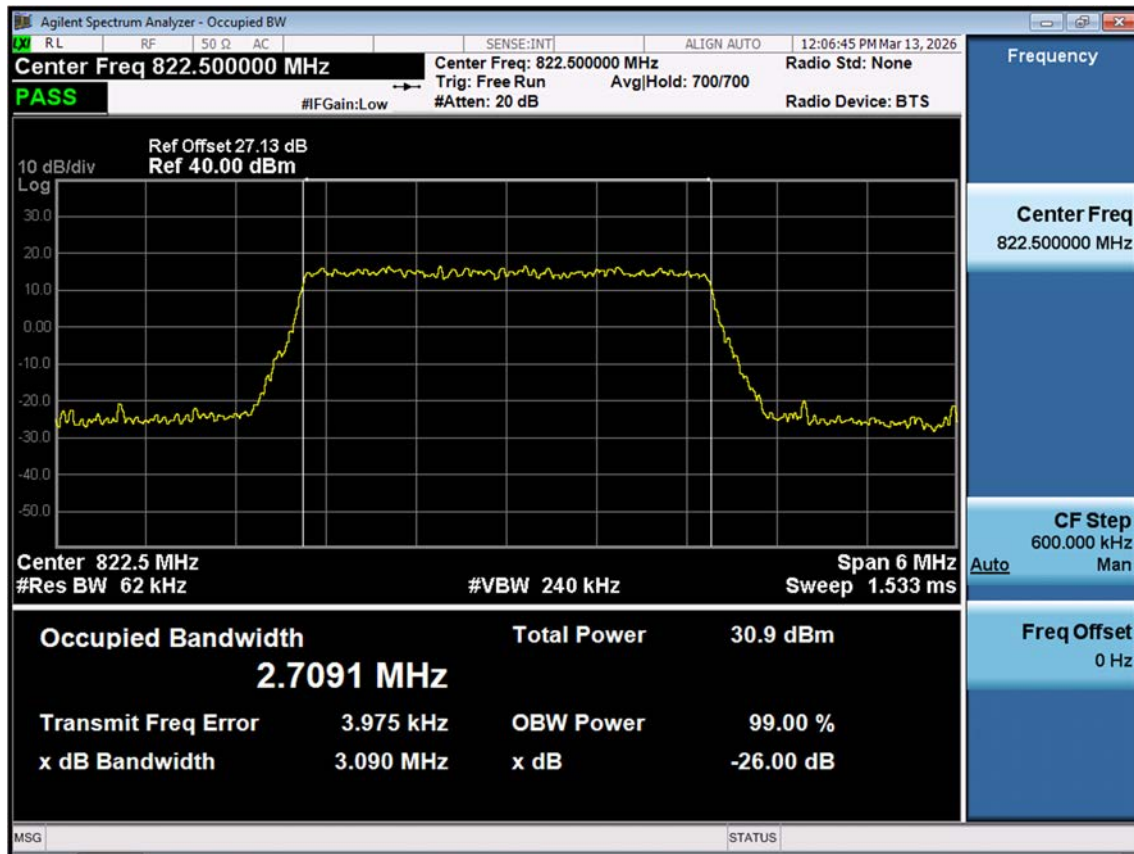
LTE B26_3 M_OBW_Mid_QPSK_FullRB



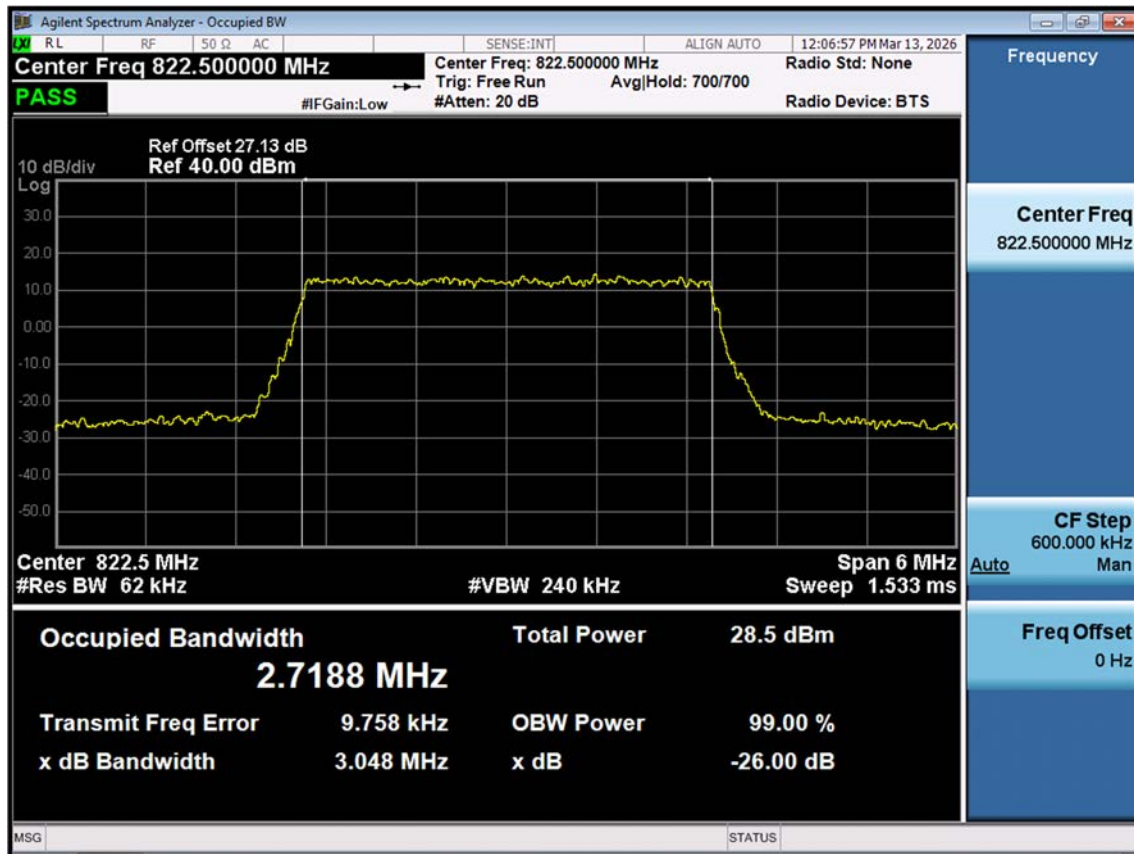
LTE B26_3 M_OBW_Mid_16QAM_FullRB



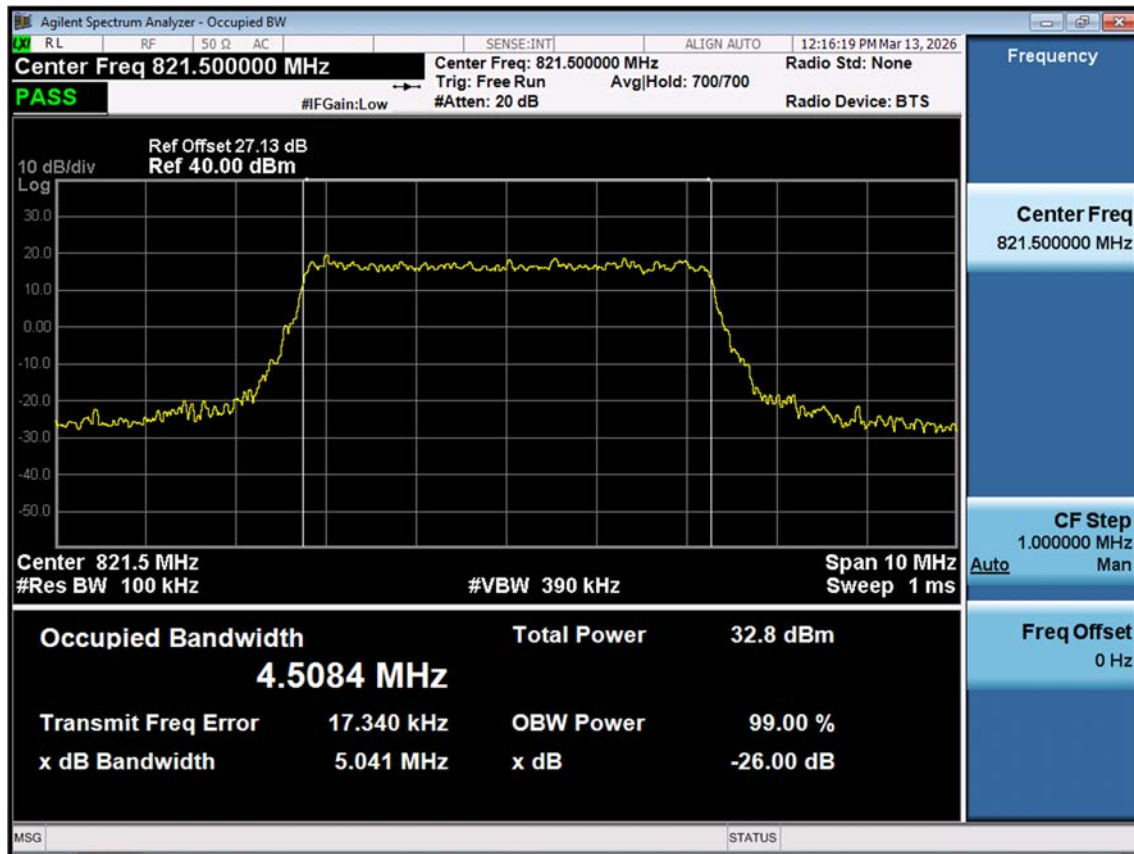
LTE B26_3 M_OBW_Mid_64QAM_FullRB



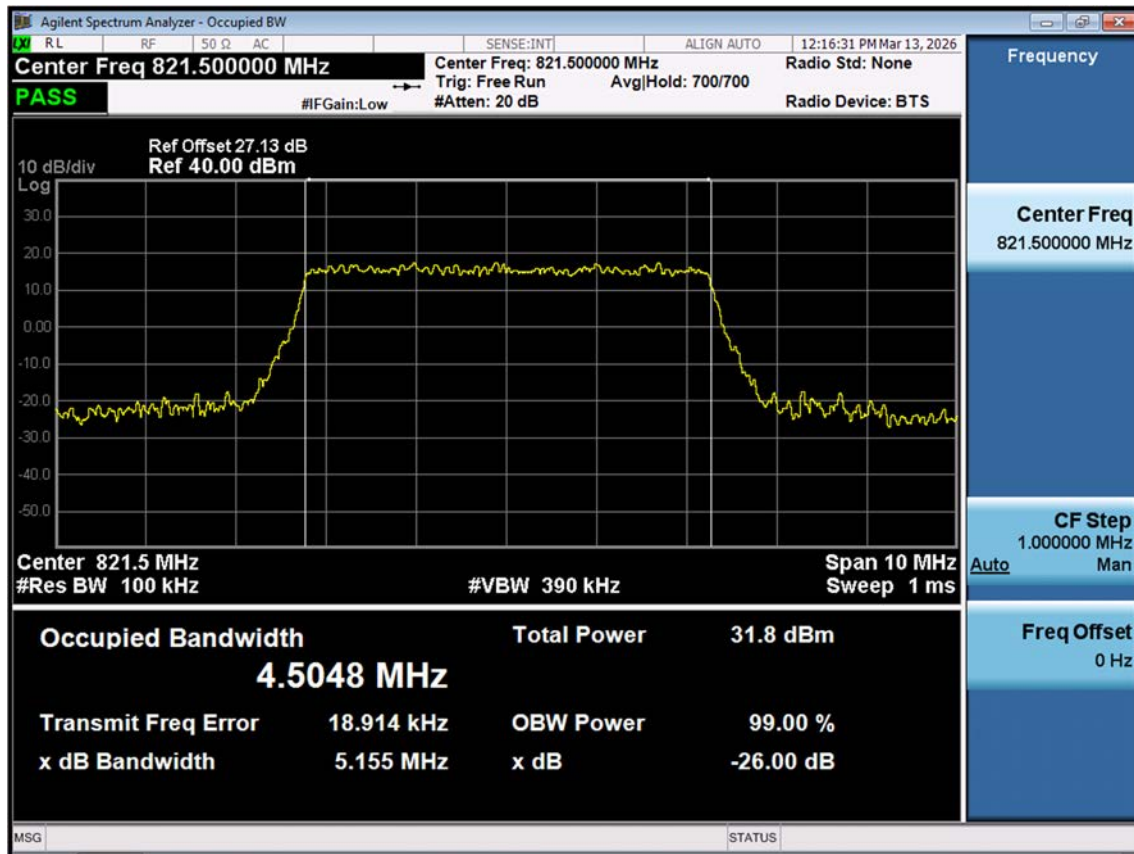
LTE B26_3 M_OBW_Mid_256QAM_FullRB



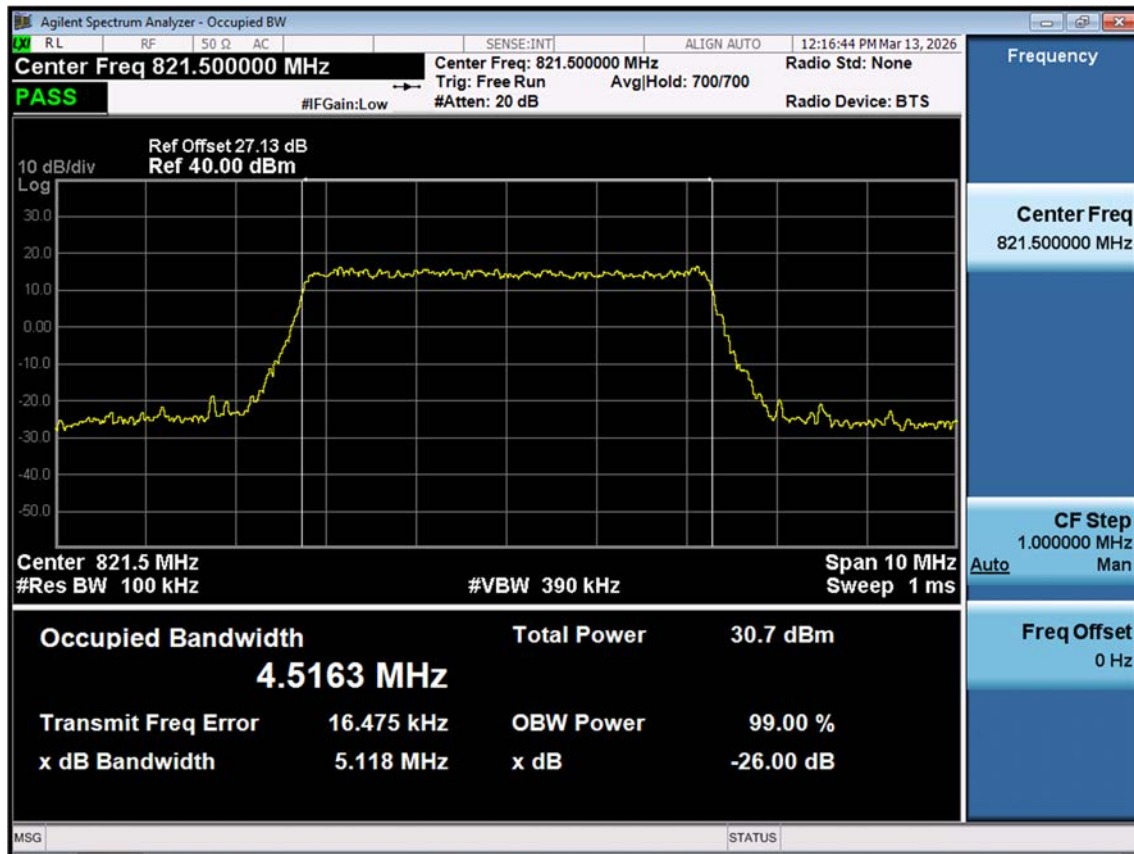
LTE B26_5 M_OBW_Mid_QPSK_FullRB



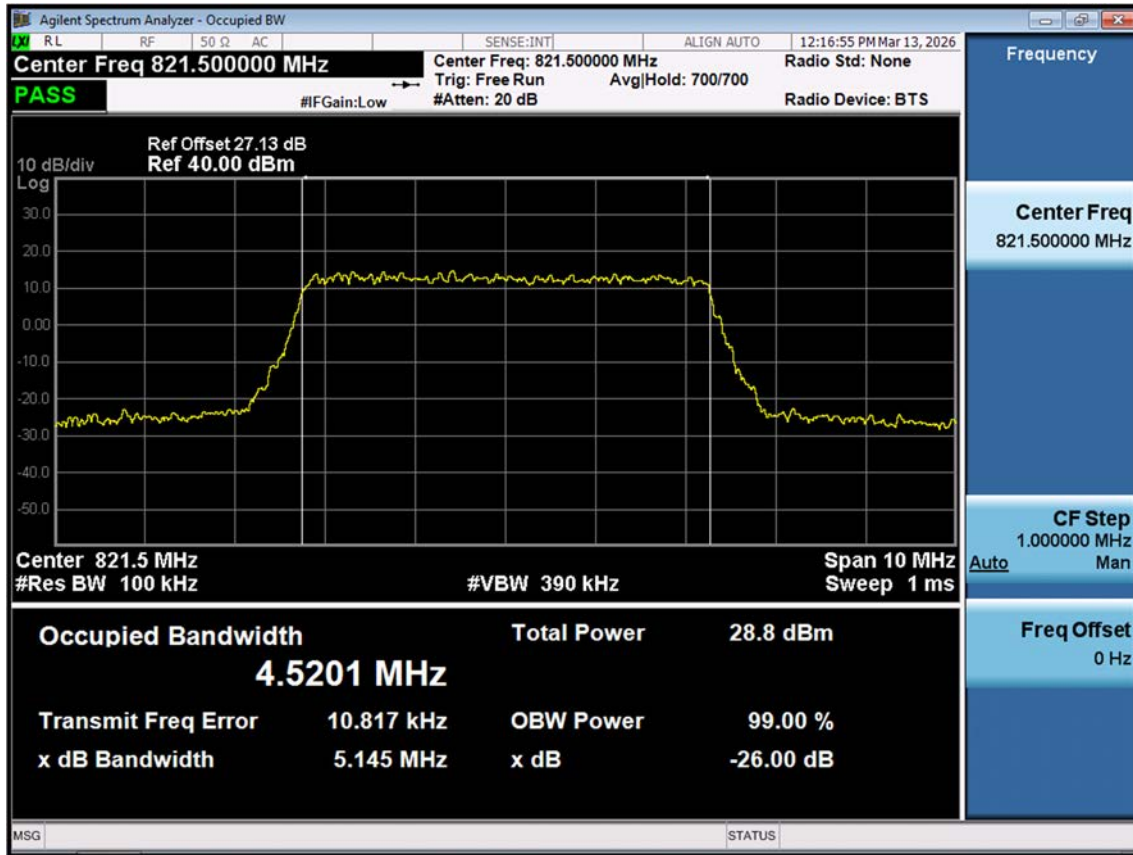
LTE B26_5 M_OBW_Mid_16QAM_FullRB



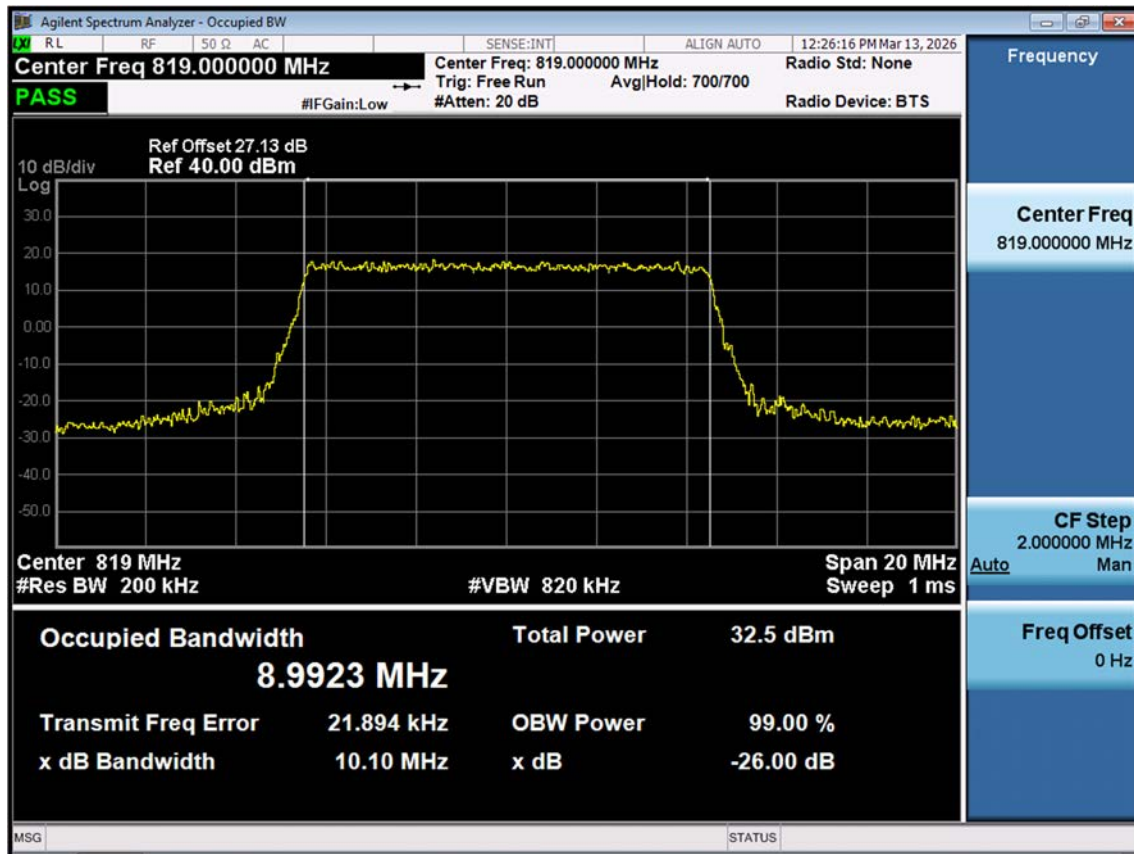
LTE B26_5 M_OBW_Mid_64QAM_FullRB



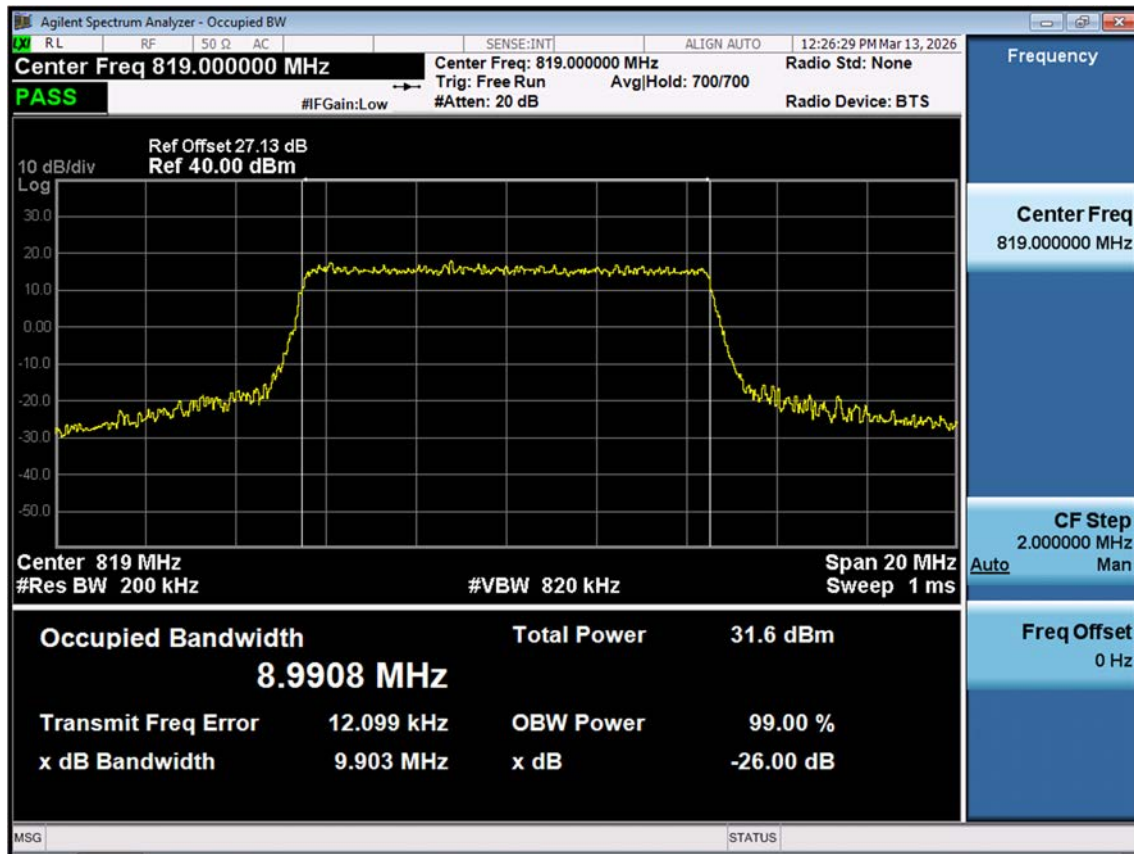
LTE B26_5 M_OBW_Mid_256QAM_FullRB



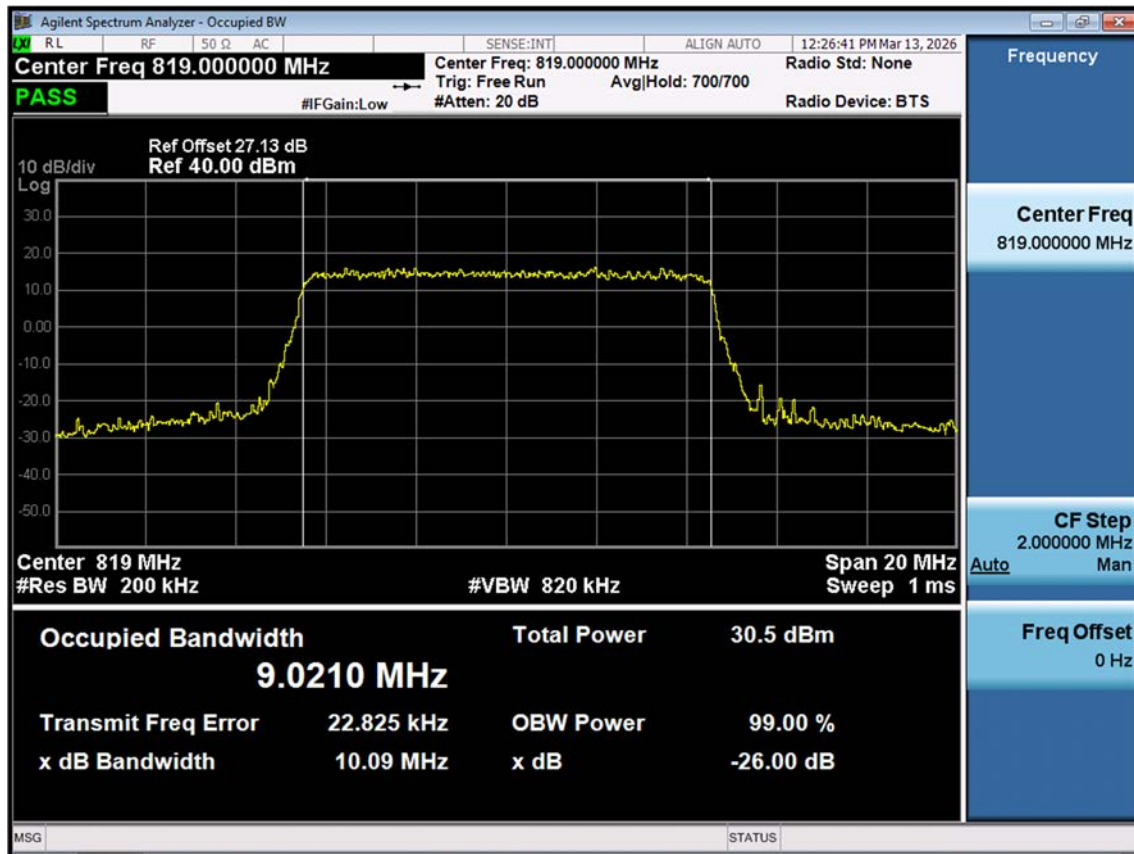
LTE B26_10 M_OBW_Mid_QPSK_FullRB



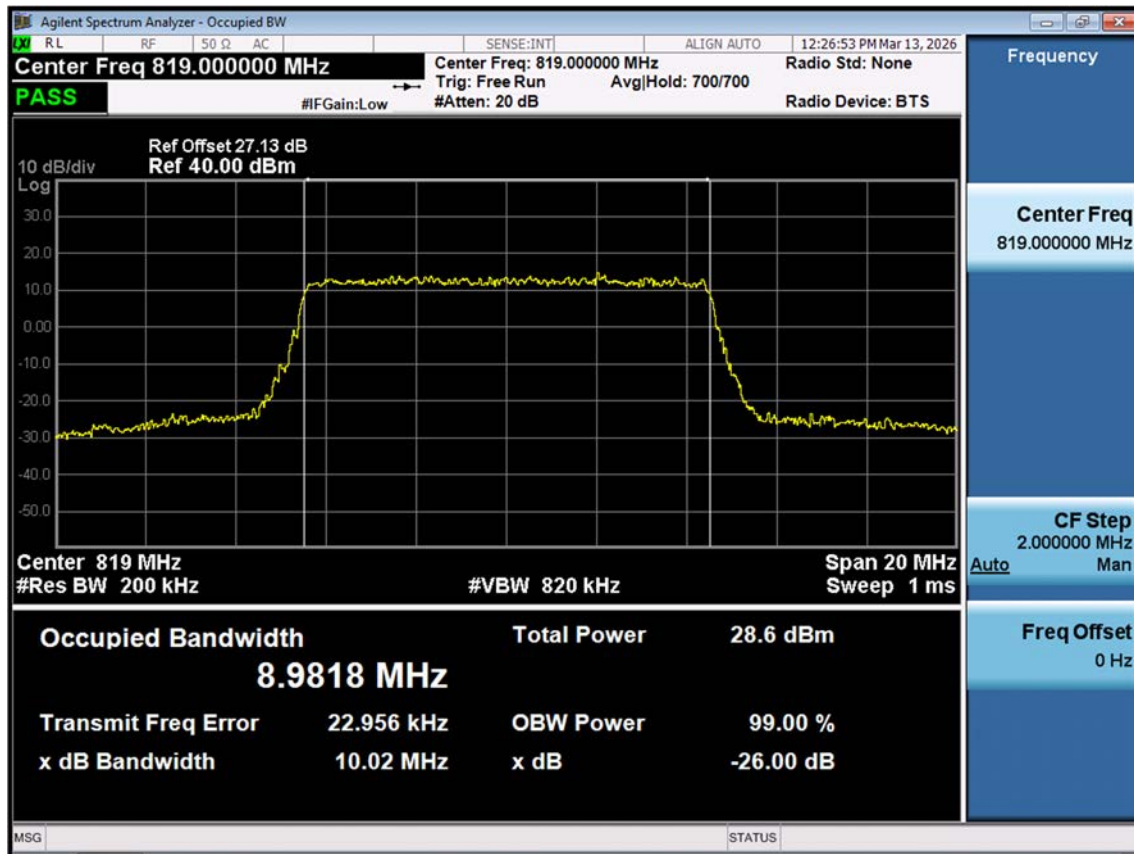
LTE B26_10 M_OBW_Mid_16QAM_FullRB



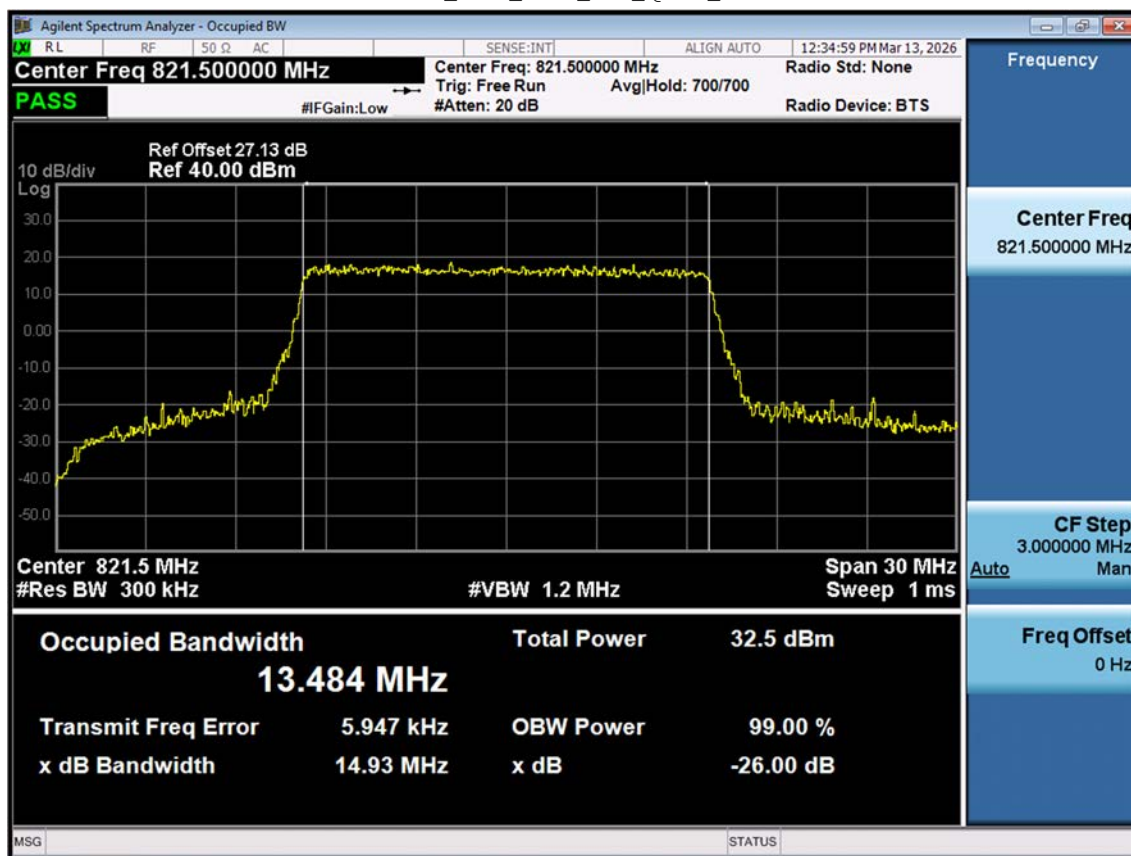
LTE B26_10 M_OBW_Mid_64QAM_FullRB



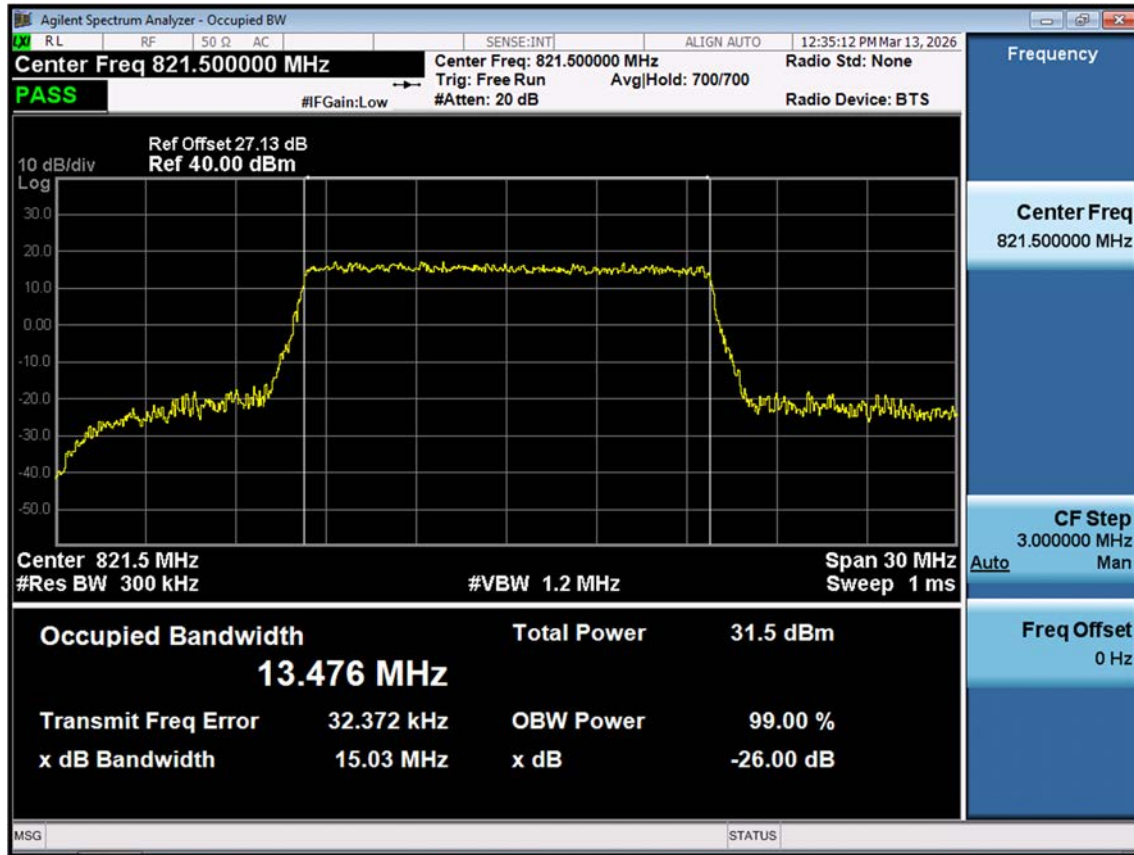
LTE B26_10 M_OBW_Mid_256QAM_FullRB



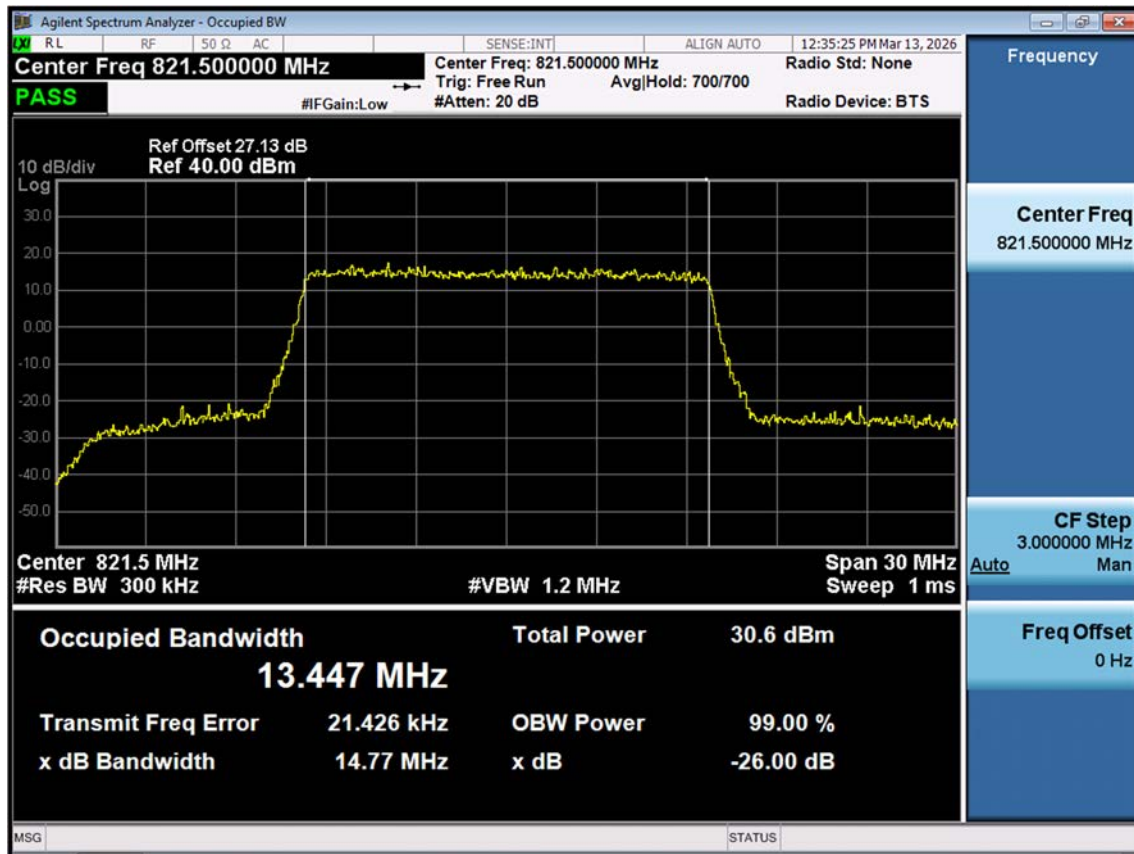
LTE B26_15 M_OBW_Mid_QPSK_FullRB



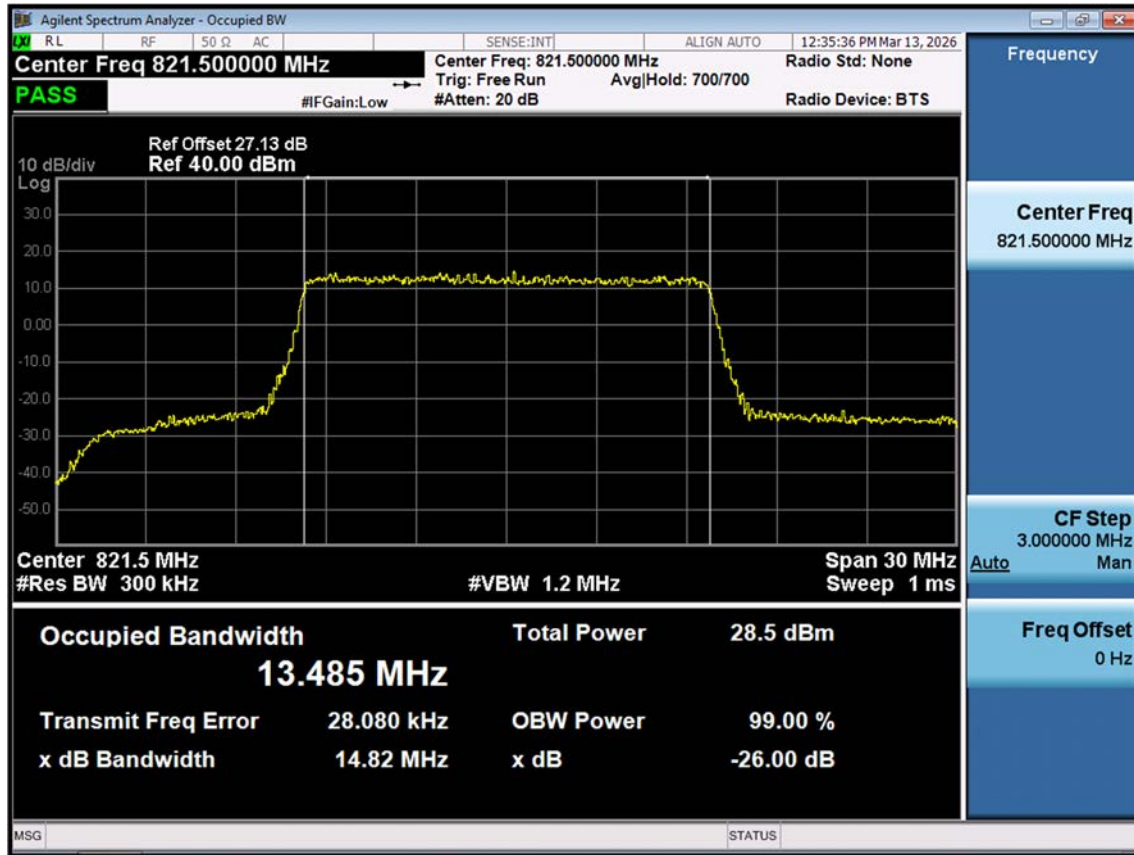
LTE B26_15 M_OBW_Mid_16QAM_FullRB



LTE B26_15 M_OBW_Mid_64QAM_FullRB

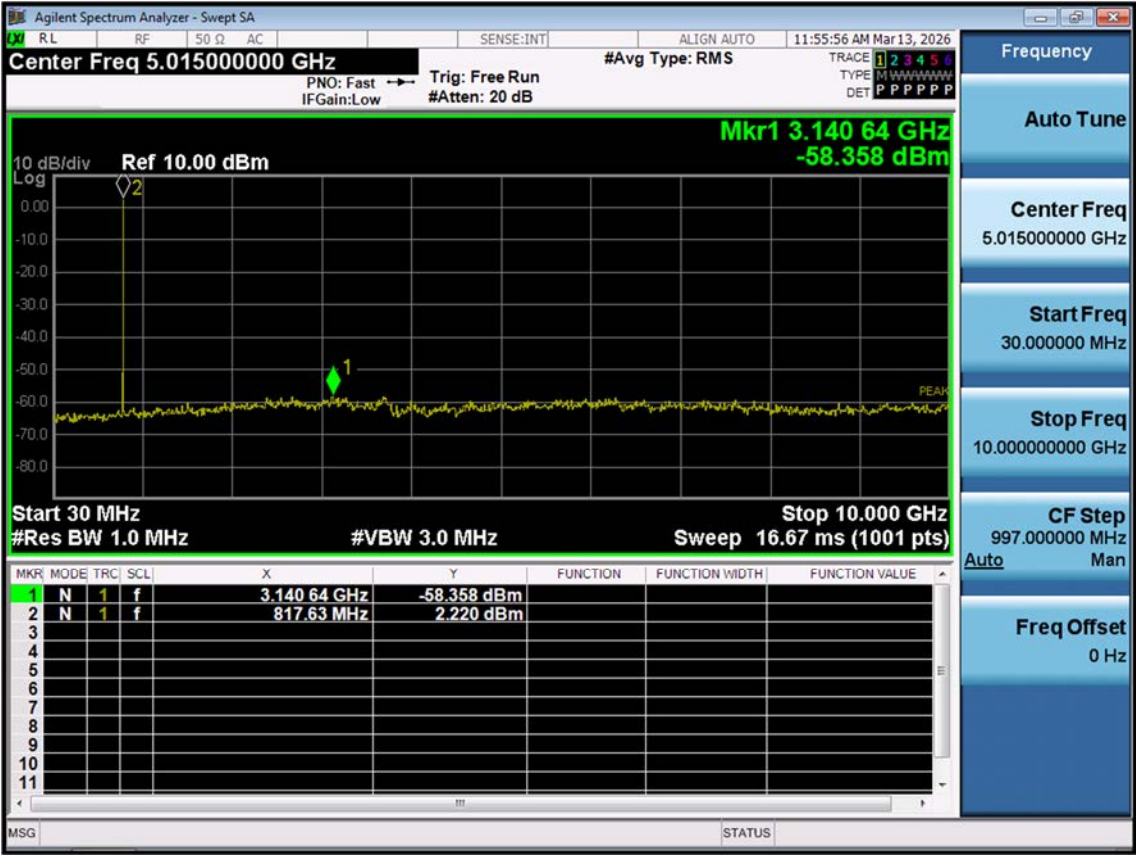


LTE B26_15 M_OBW_Mid_256QAM_FullRB

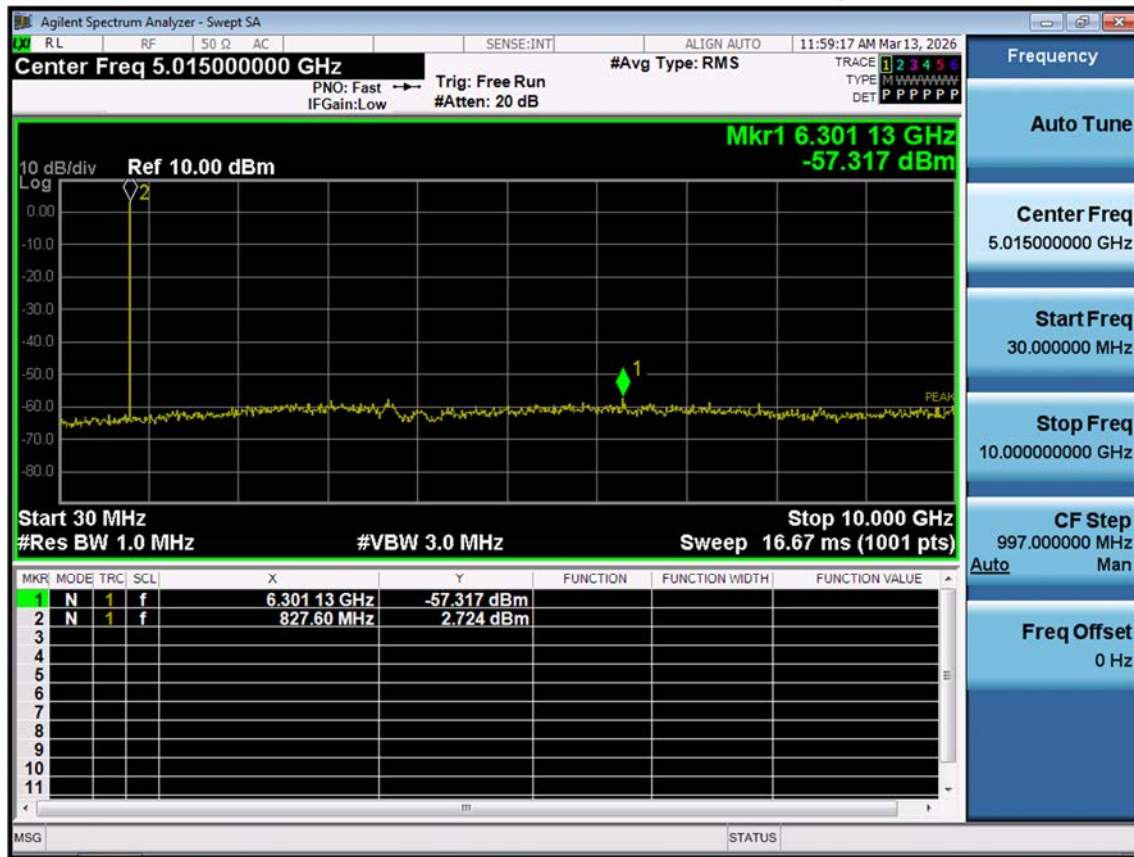


9.2 CONDUCTED SPURIOUS EMISSIONS

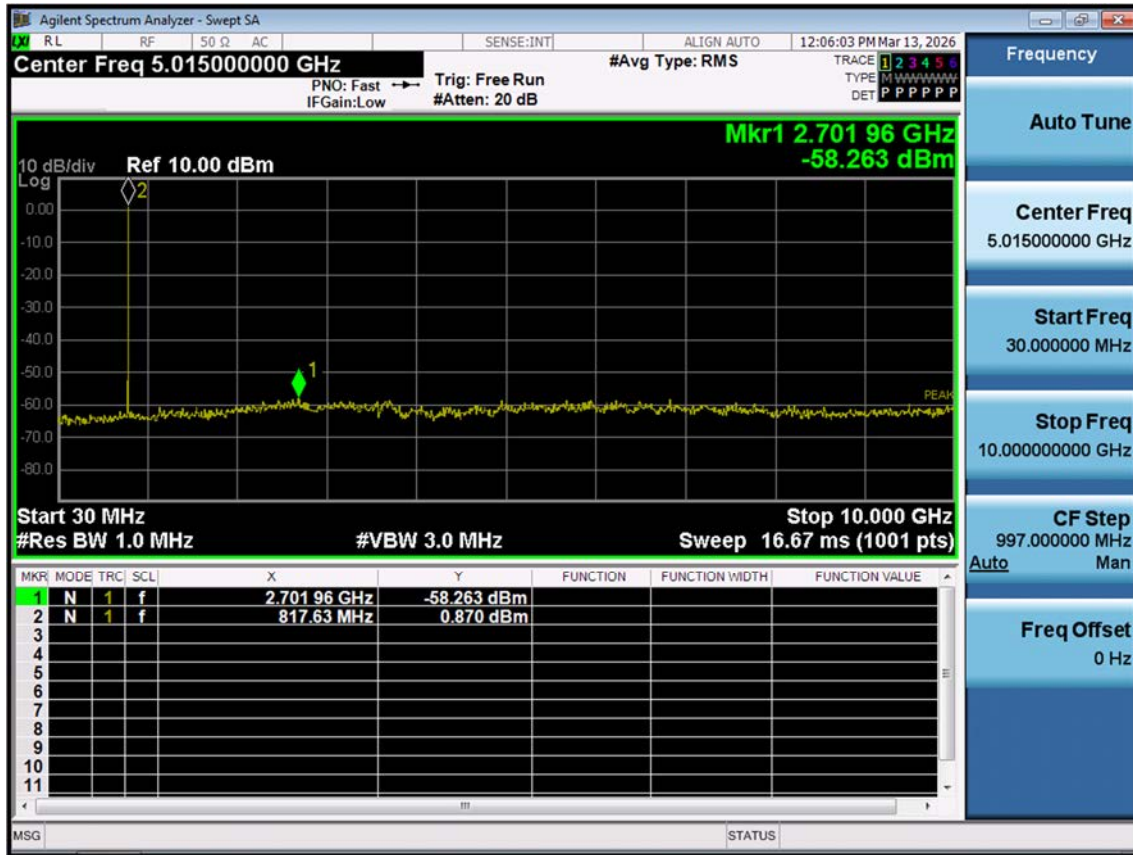
LTE B26_1.4 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB



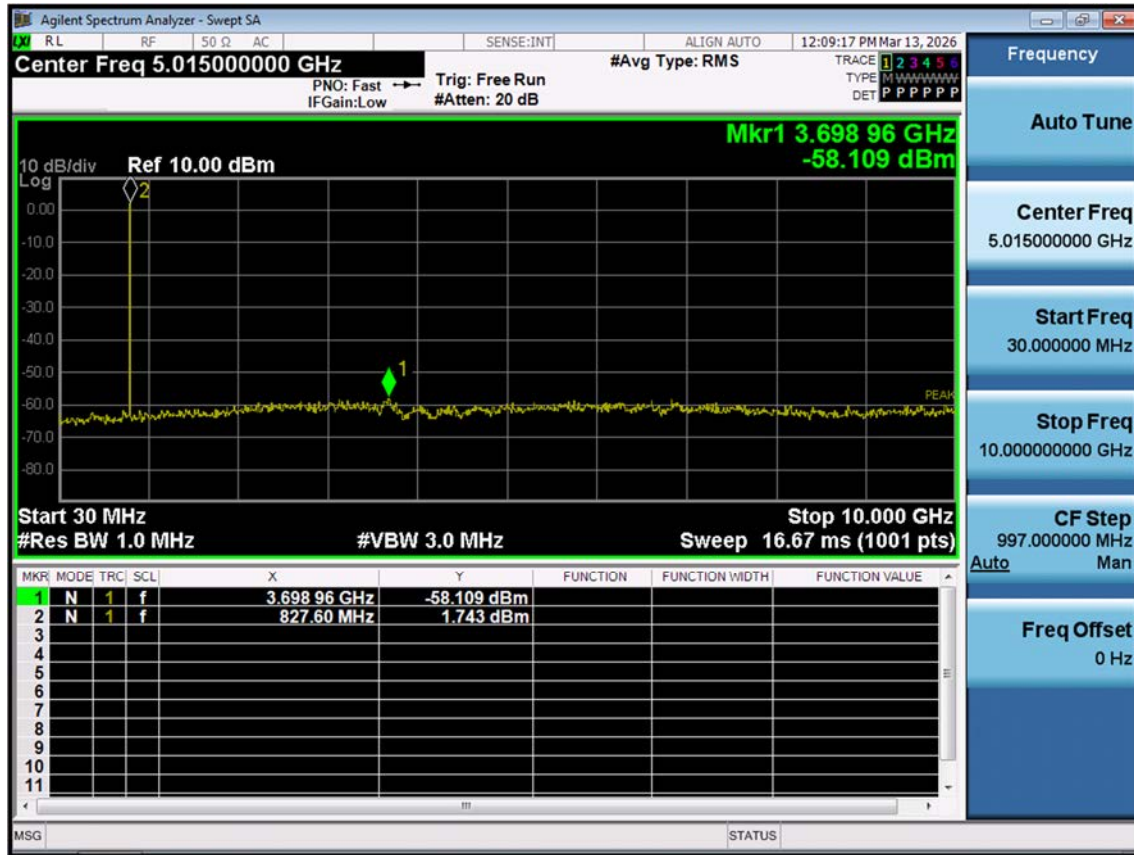
LTE B26_1.4 M_Conducted Spurious Emissions(30 M-10 G)_High_QPSK_1RB



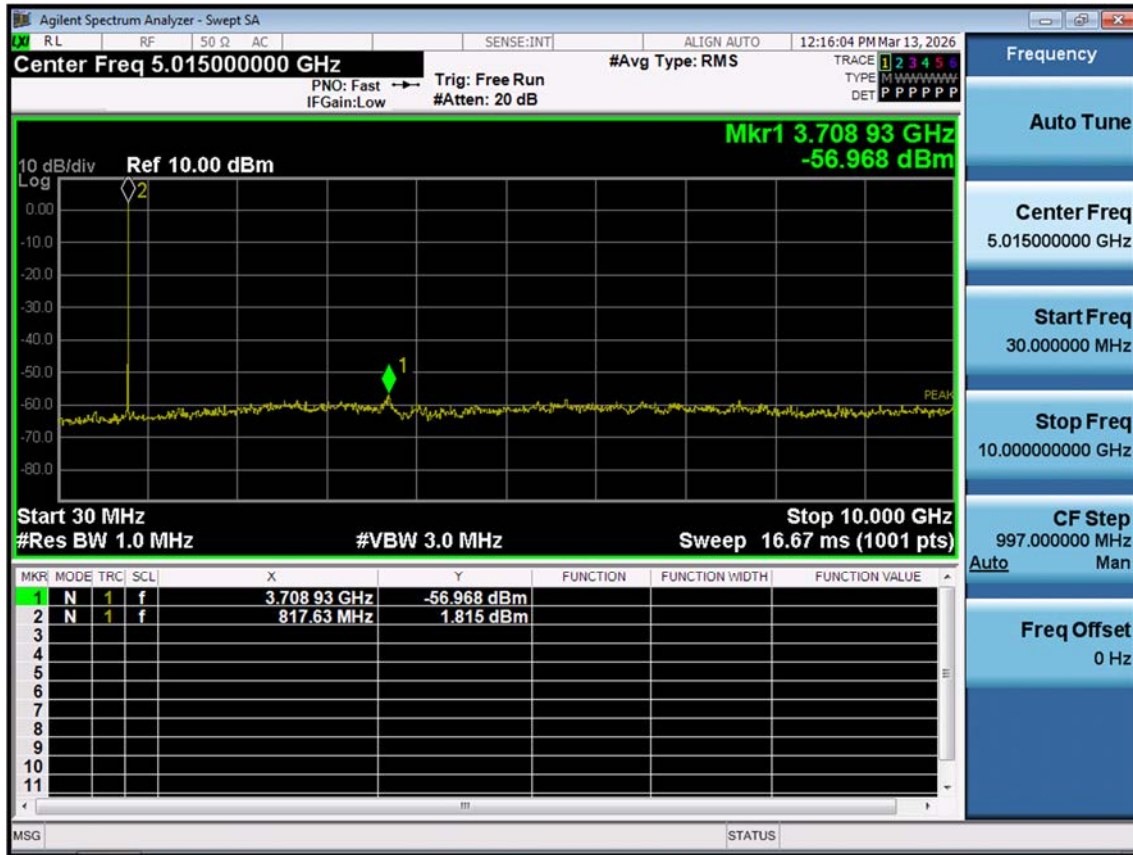
LTE B26_3 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB



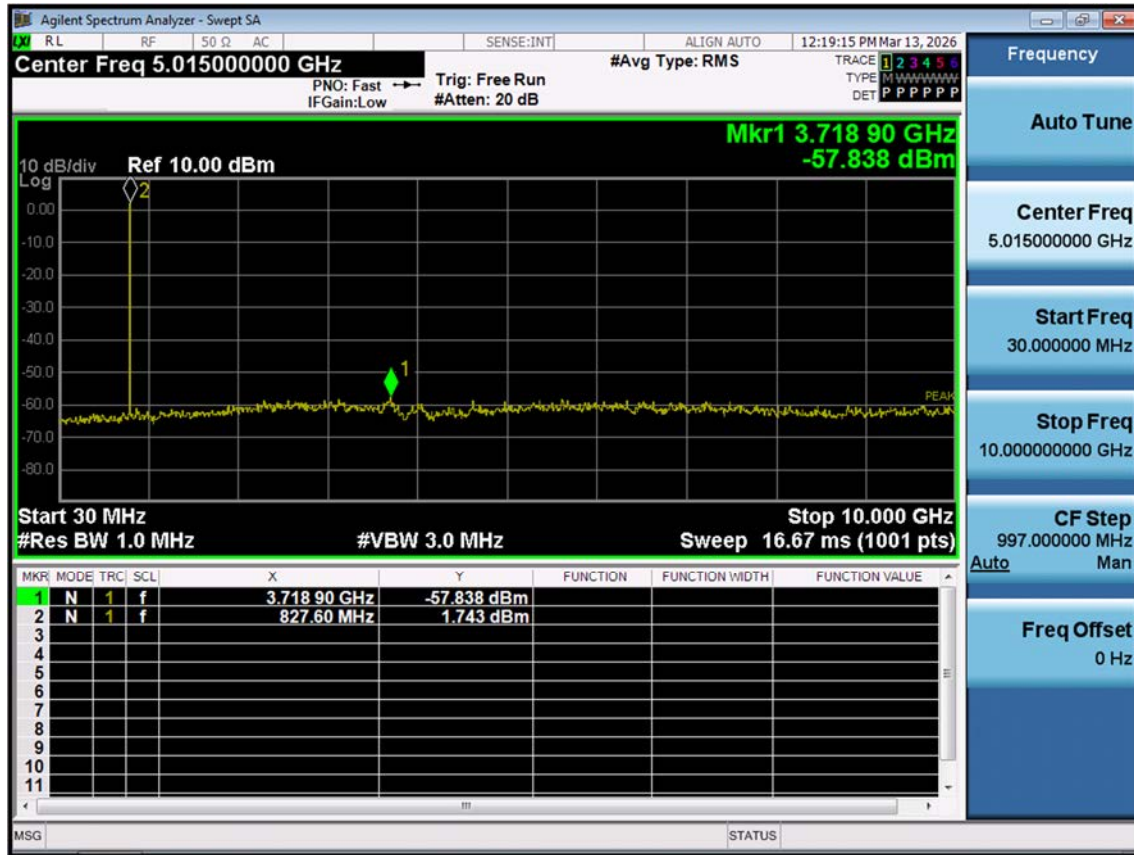
LTE B26_3 M_Conducted Spurious Emissions(30 M-10 G)_High_QPSK_1RB



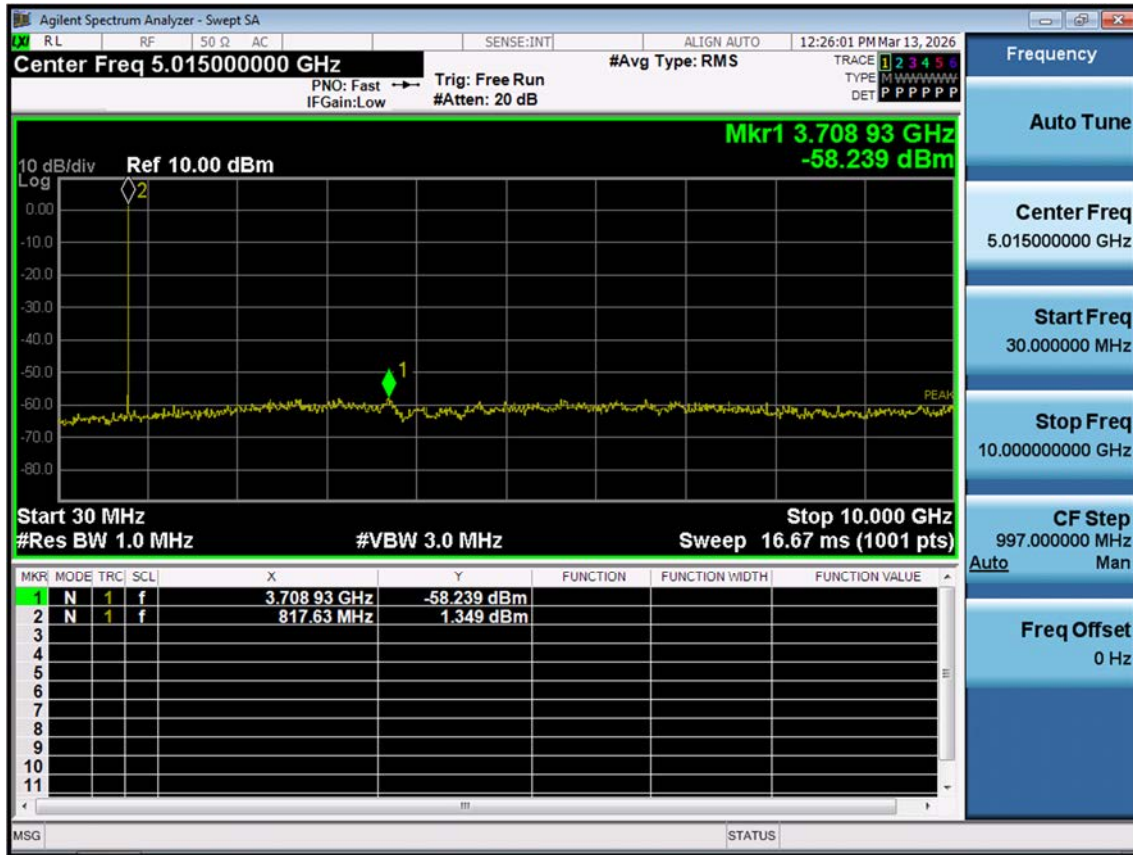
LTE B26_5 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB



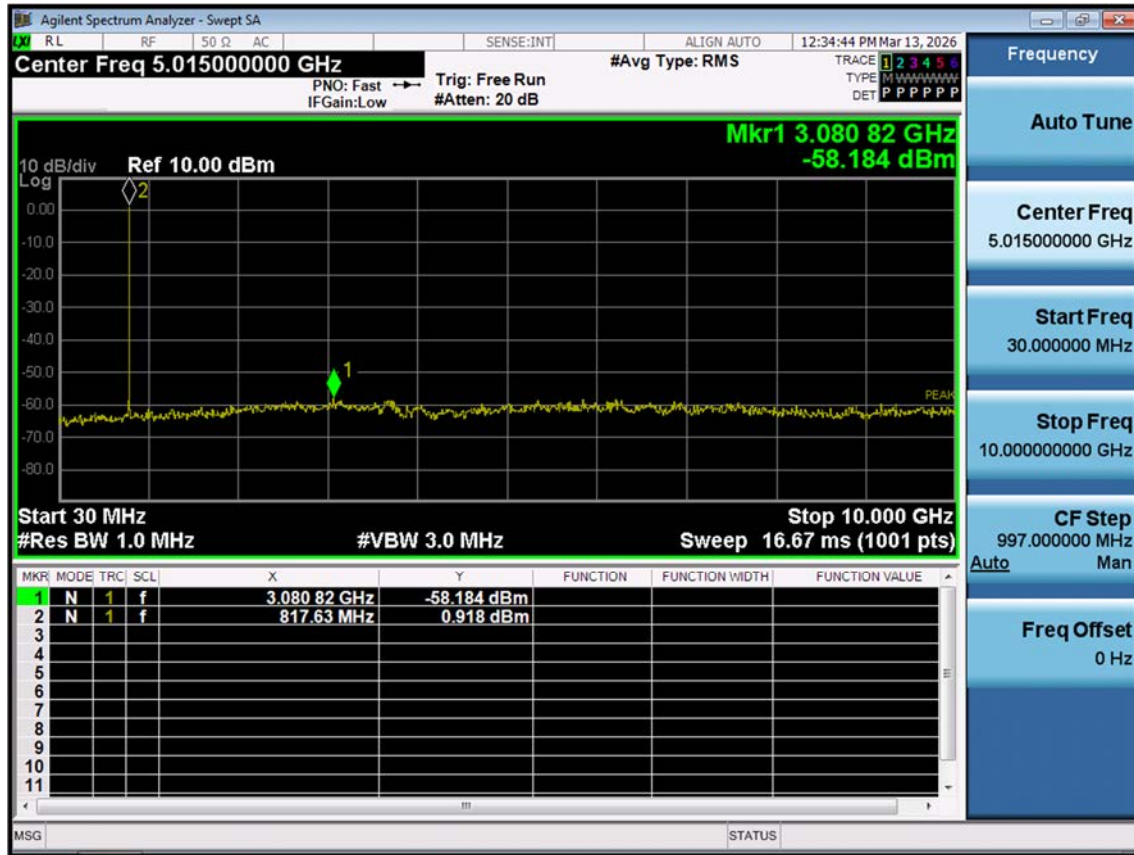
LTE B26_5 M_Conducted Spurious Emissions(30 M-10 G)_High_QPSK_1RB



LTE B26_10 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB



LTE B26_15 M_Conducted Spurious Emissions(30 M-10 G)_Low_QPSK_1RB

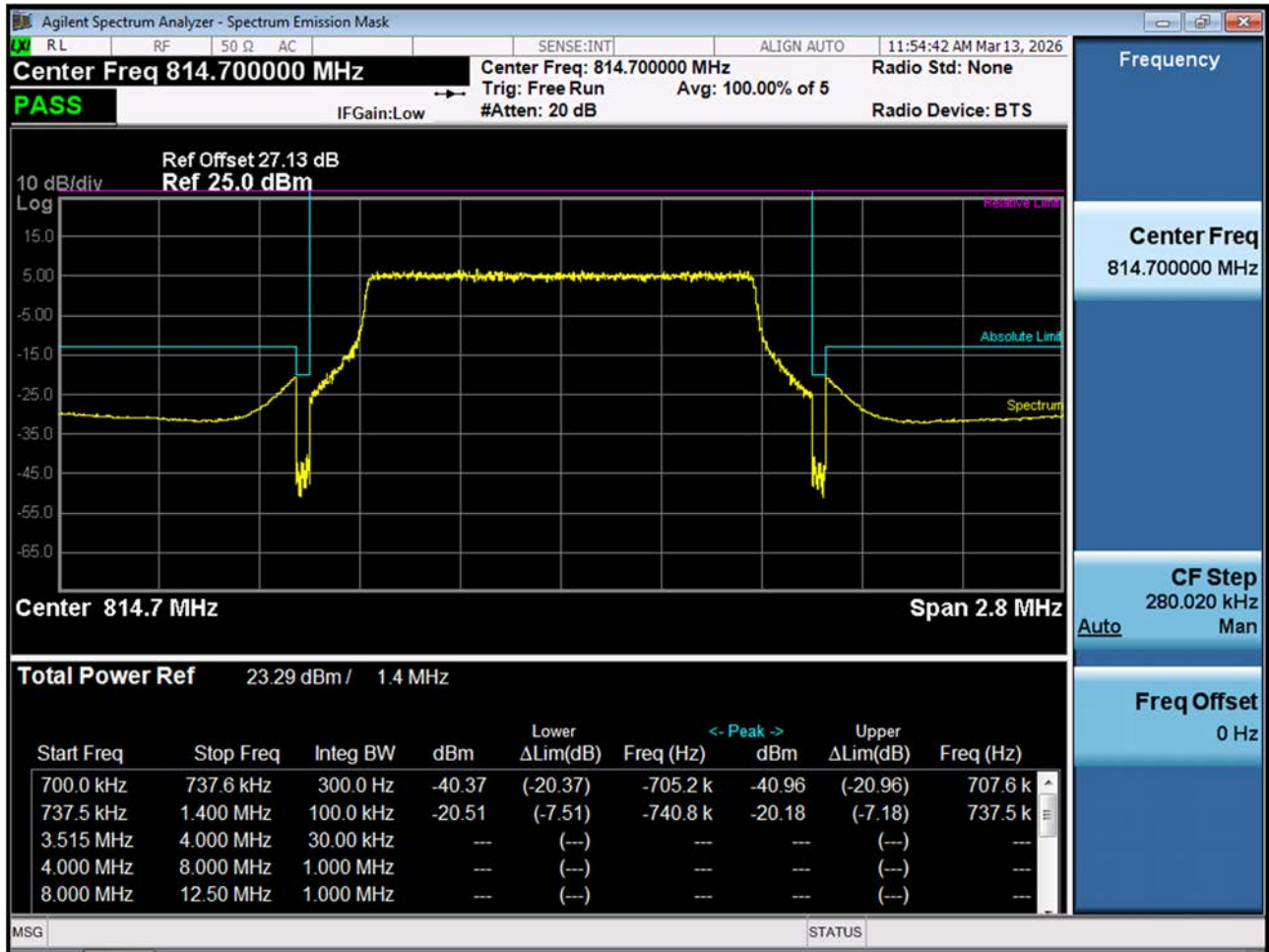


9.3 CHANNEL EDGE

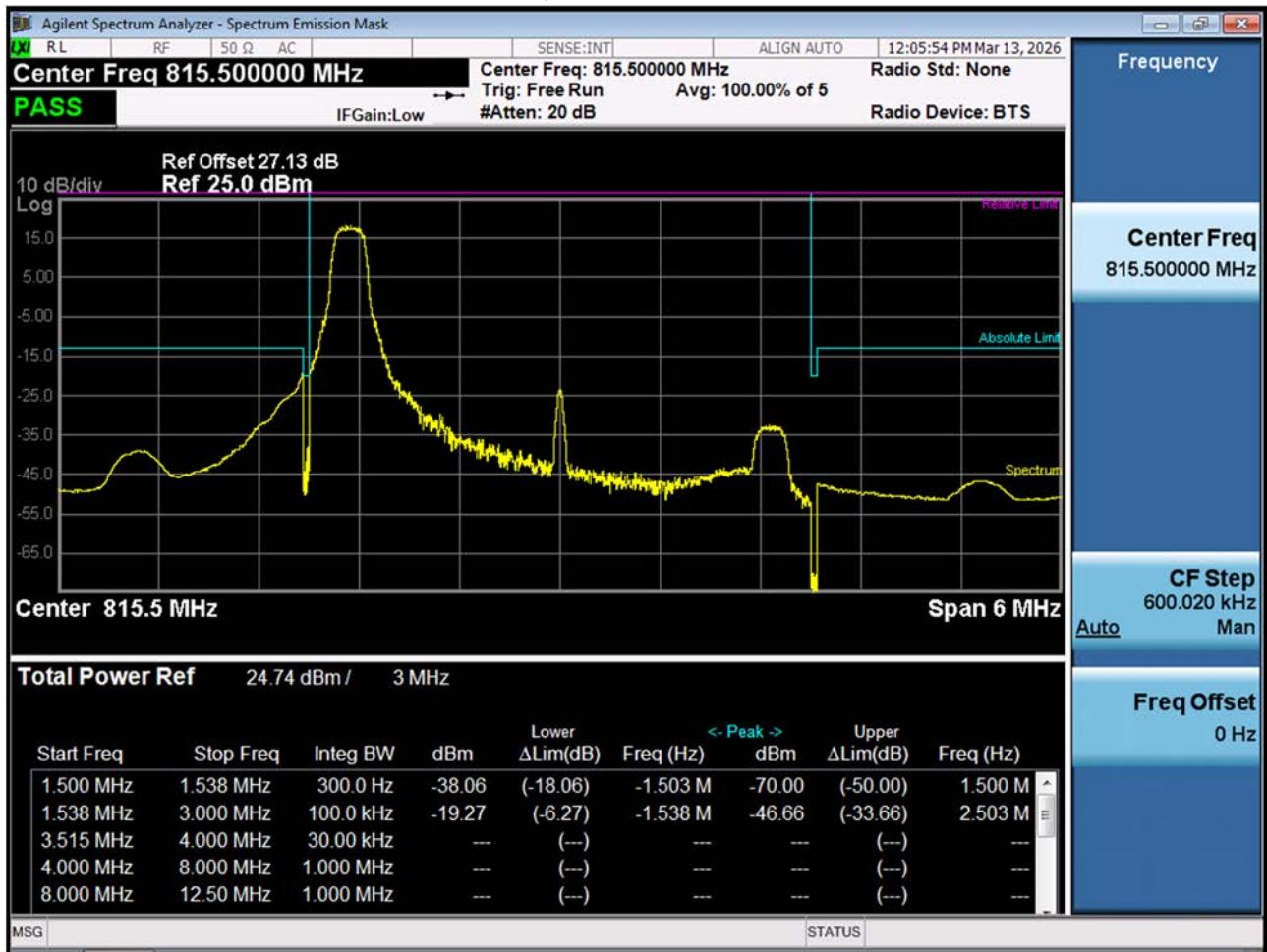
LTE B26_ Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK RB 1, Offset 0)



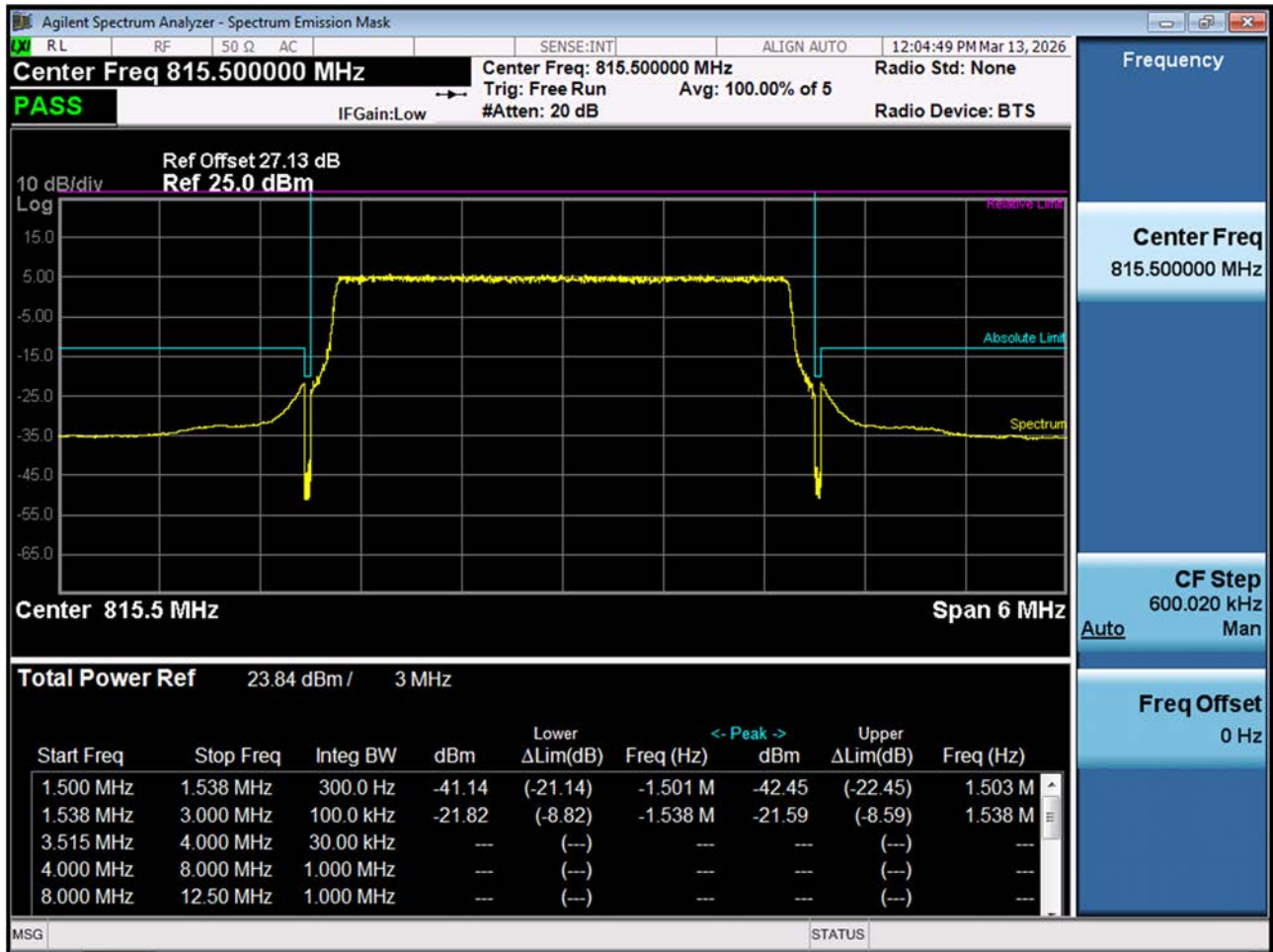
LTE B26_ Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK_RB6_Offset 0)



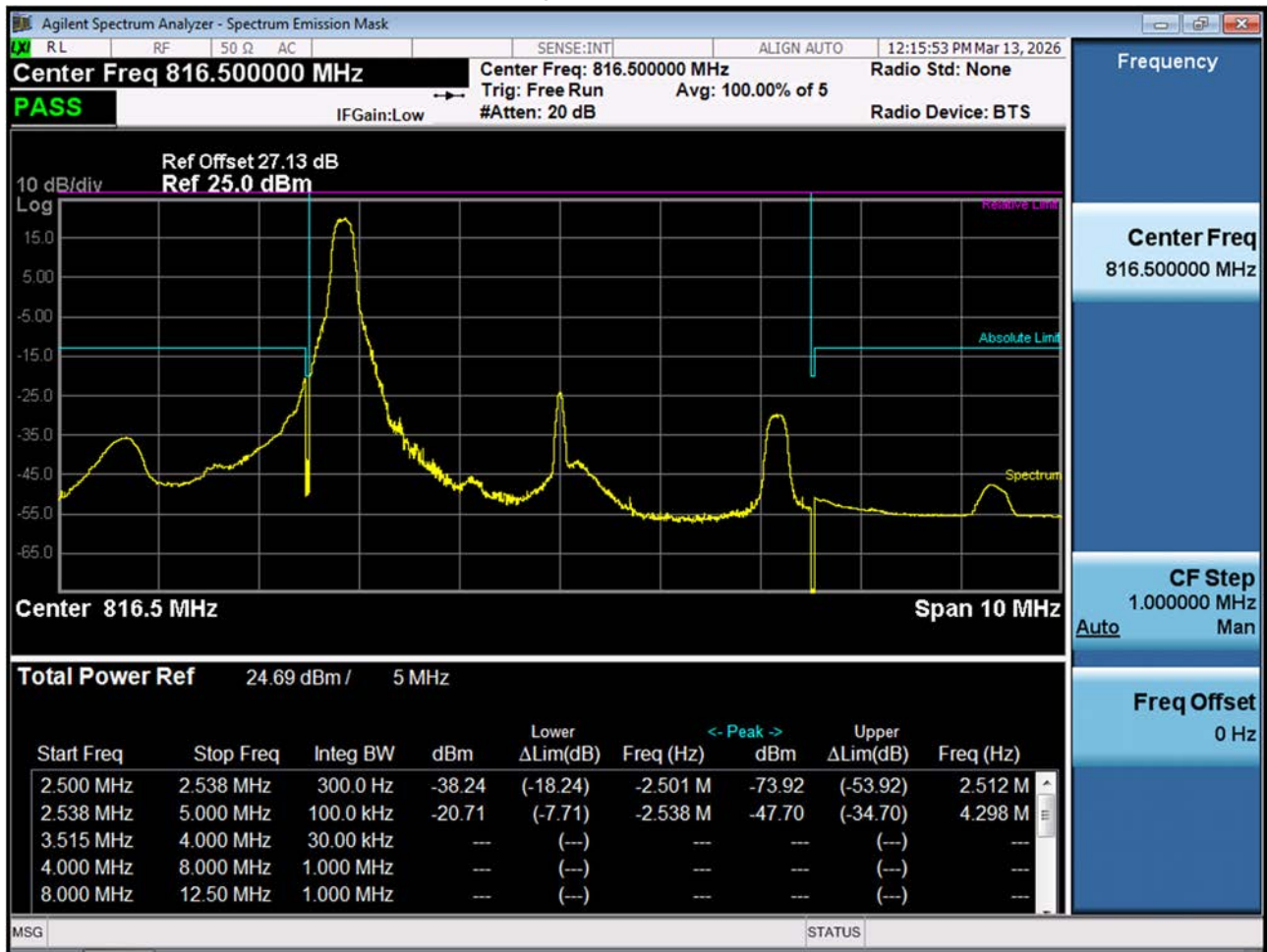
LTE B26_ Lower Channel Edge Plot (3 M BW Ch.26705 QPSK RB 1, Offset 0)



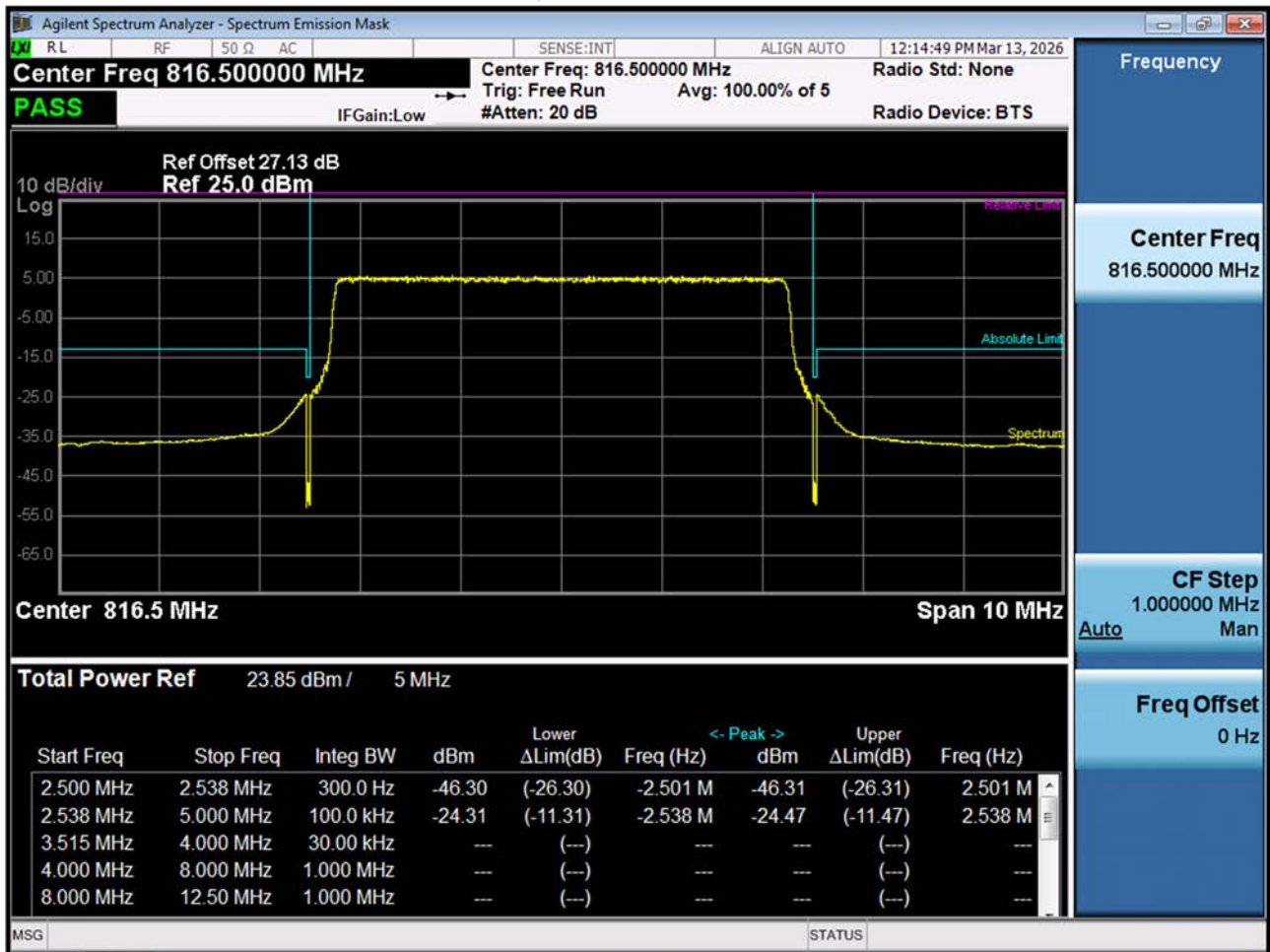
LTE B26_ Lower Channel Edge Plot (3 M BW Ch.26705 QPSK_RB15_Offset 0)



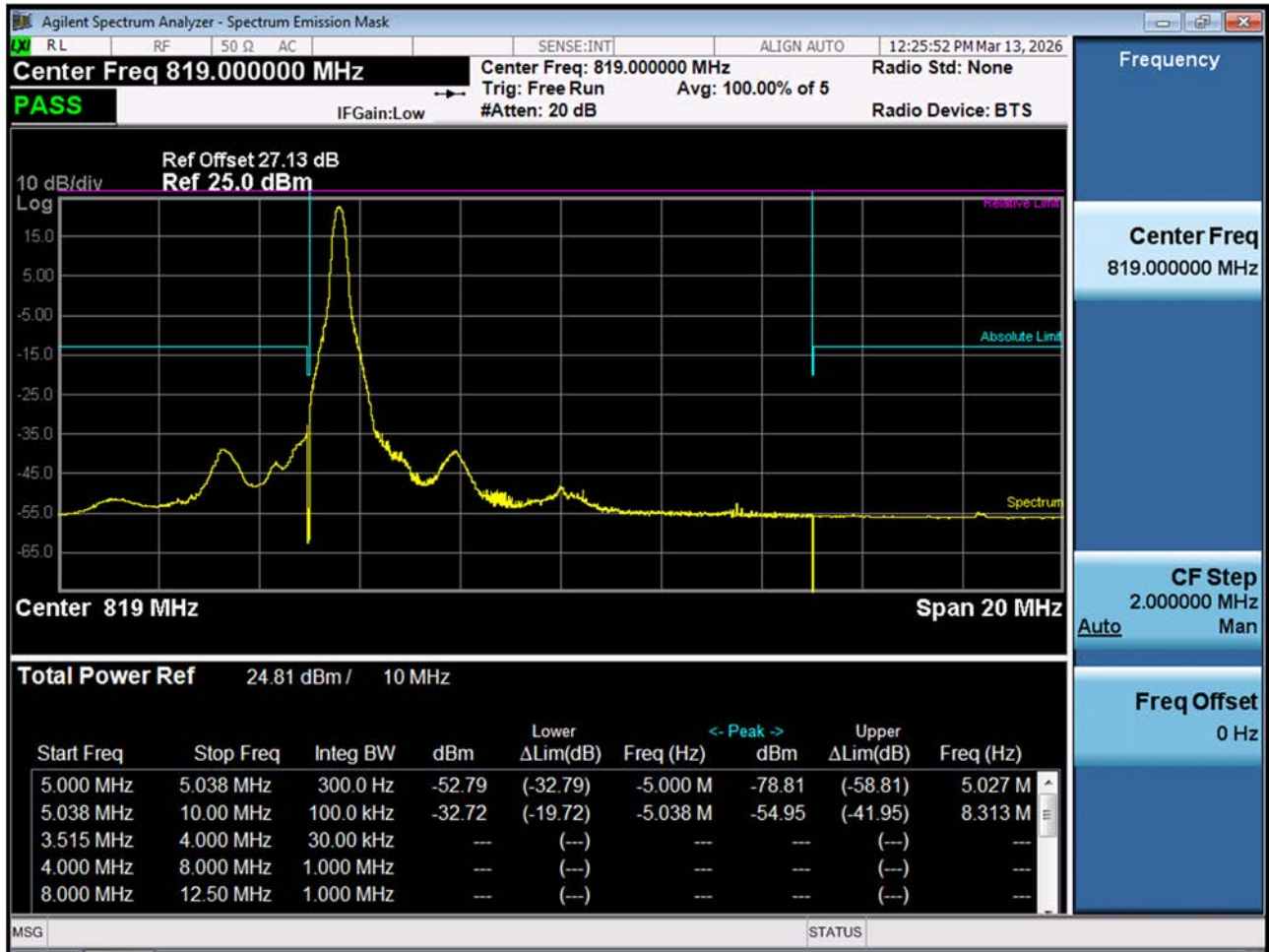
LTE B26_ Lower Channel Edge Plot (5 M BW Ch.26715 QPSK RB 1, Offset 0)



LTE B26_ Lower Channel Edge Plot (5 M BW Ch.26715 QPSK_RB25_Offset 0)



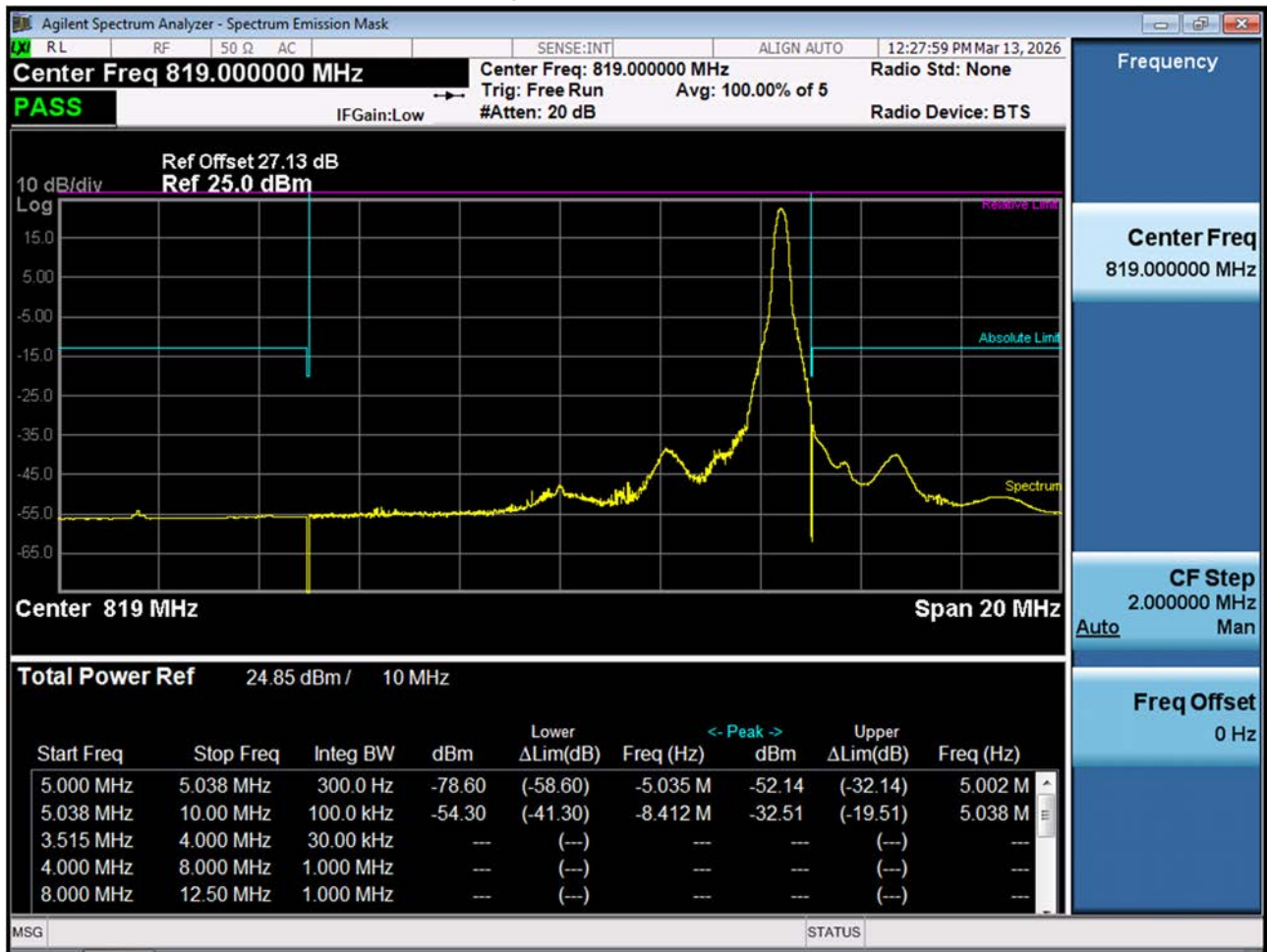
LTE B26_Low Channel Edge Plot (10 M BW Ch.26740 QPSK RB 1, Offset 0)



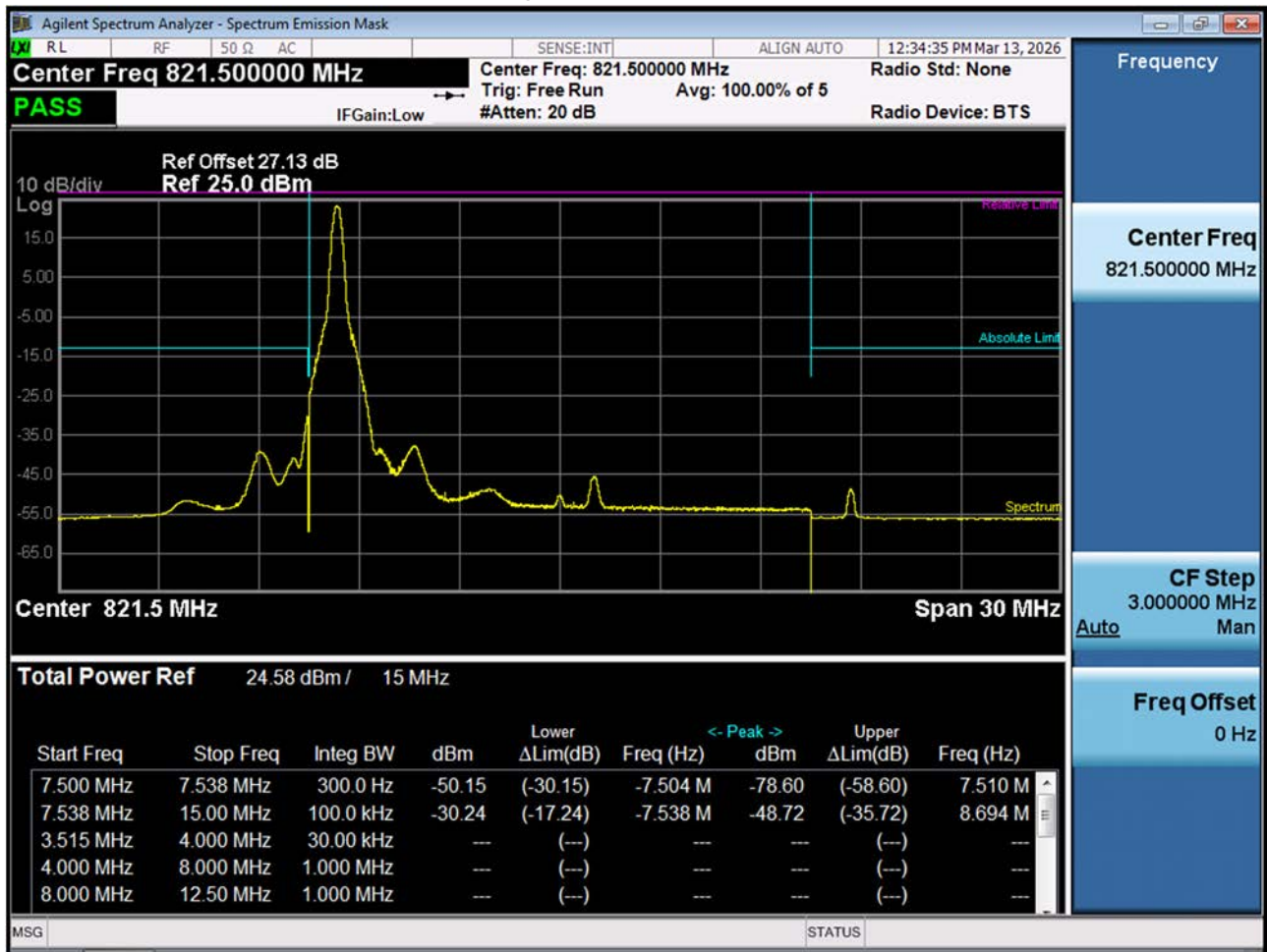
LTE B26_ Low Channel Edge Plot (10 M BW Ch.26740 QPSK_RB50_Offset 0)



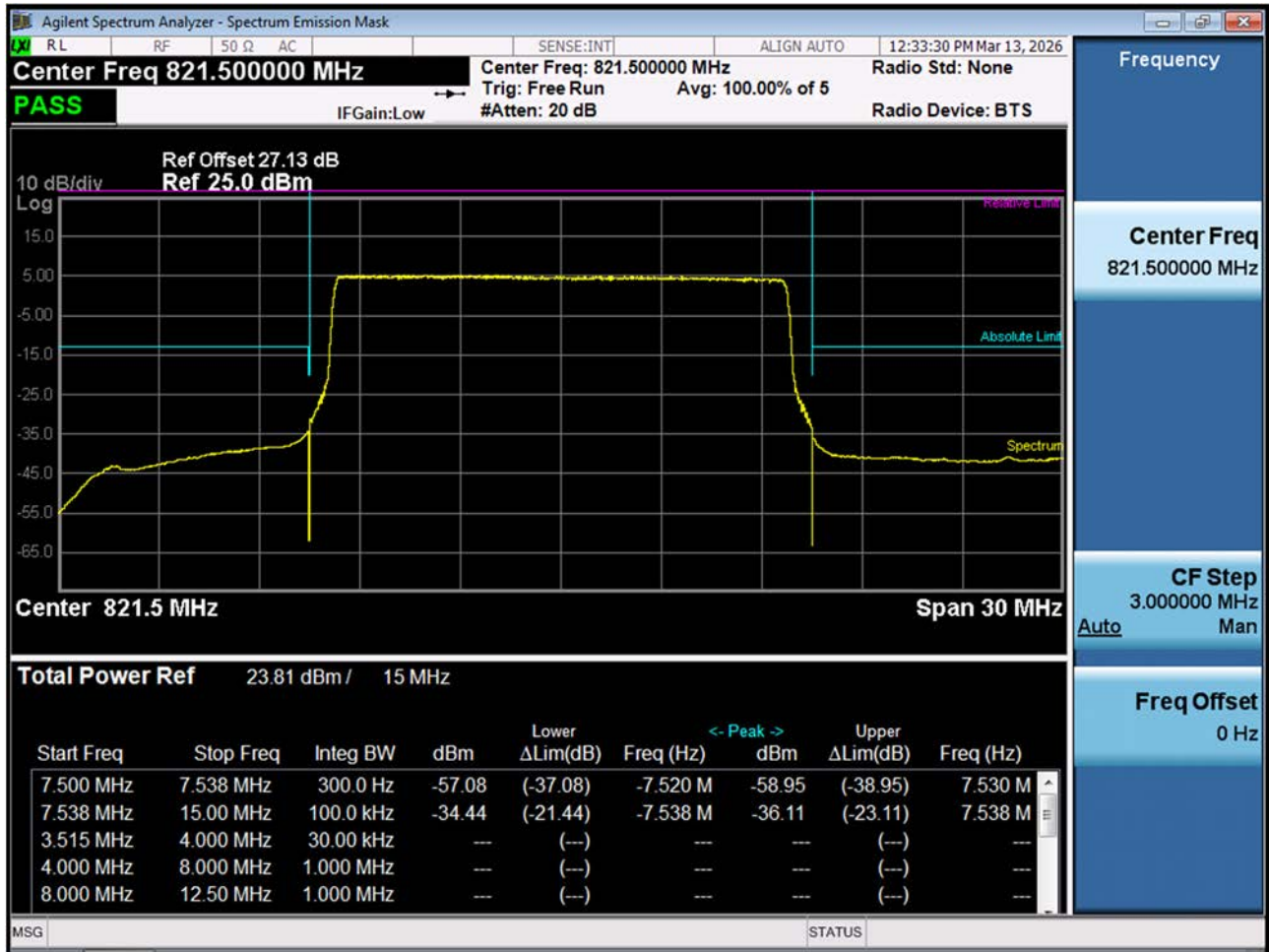
LTE B26_ Mid Channel Edge Plot (10 M BW Ch. 26740 QPSK_RB1_Offset 49)



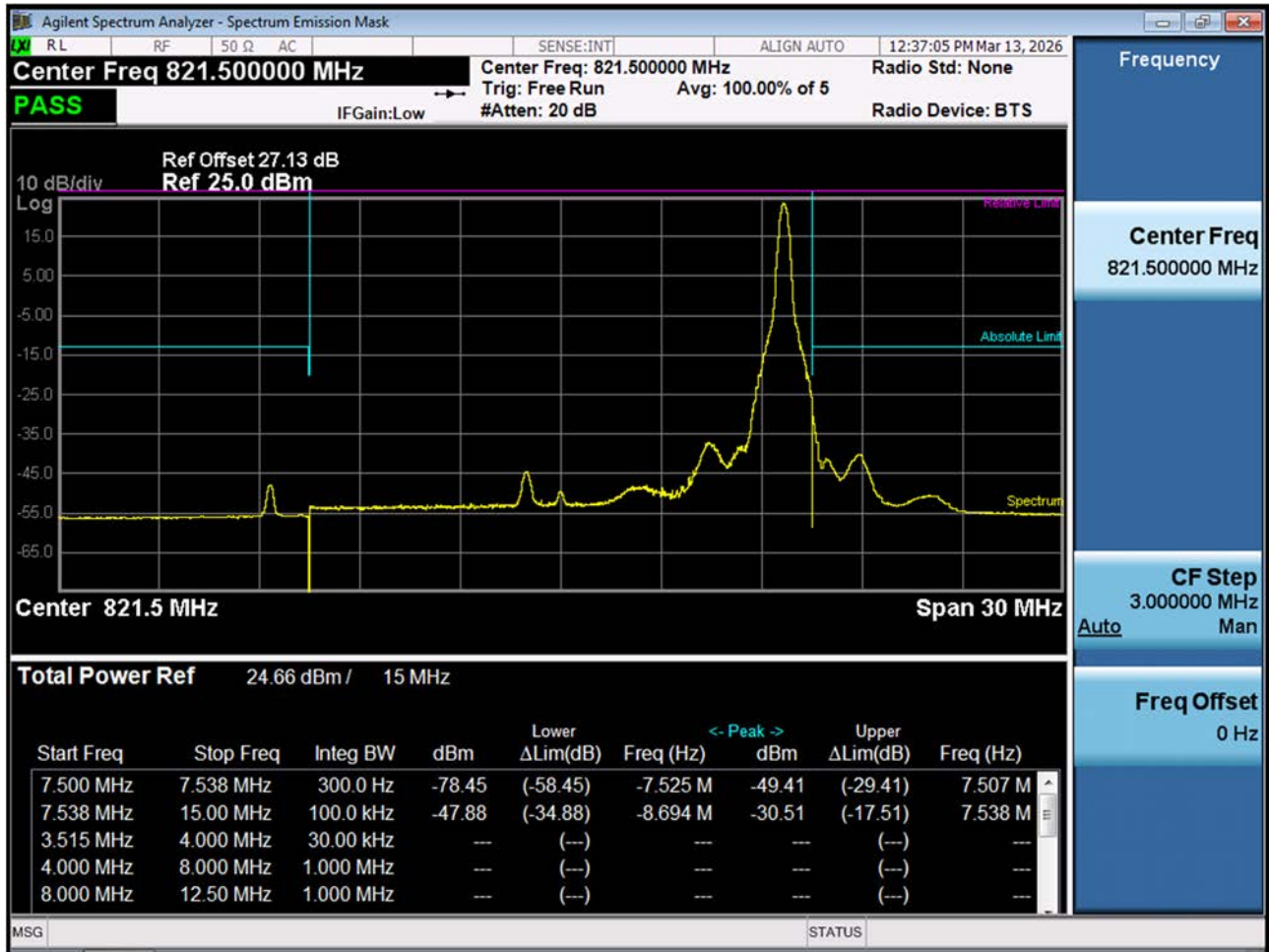
LTE B26_Low Channel Edge Plot (15 M BW Ch.26765 QPSK RB 1, Offset 0)



LTE B26_ Low Channel Edge Plot (15 M BW Ch.26765 QPSK RB 75, Offset0)



LTE B26_Mid Channel Edge Plot (15 M BW Ch.26765 QPSK_RB1_Offset 74)



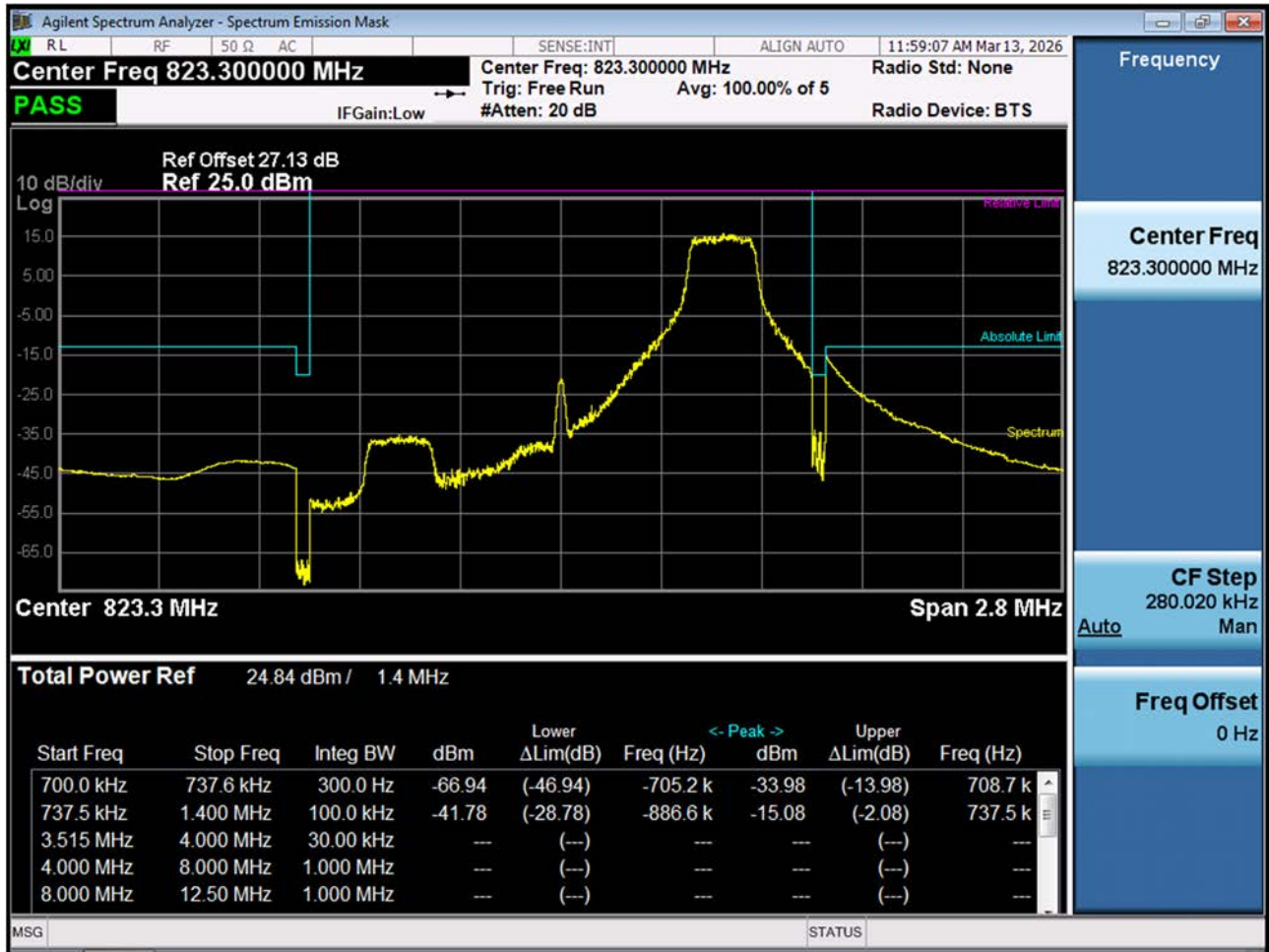
LTE B26_ Mid Band Edge Plot (15 M BW Ch.26765 QPSK RB 1, Offset74)



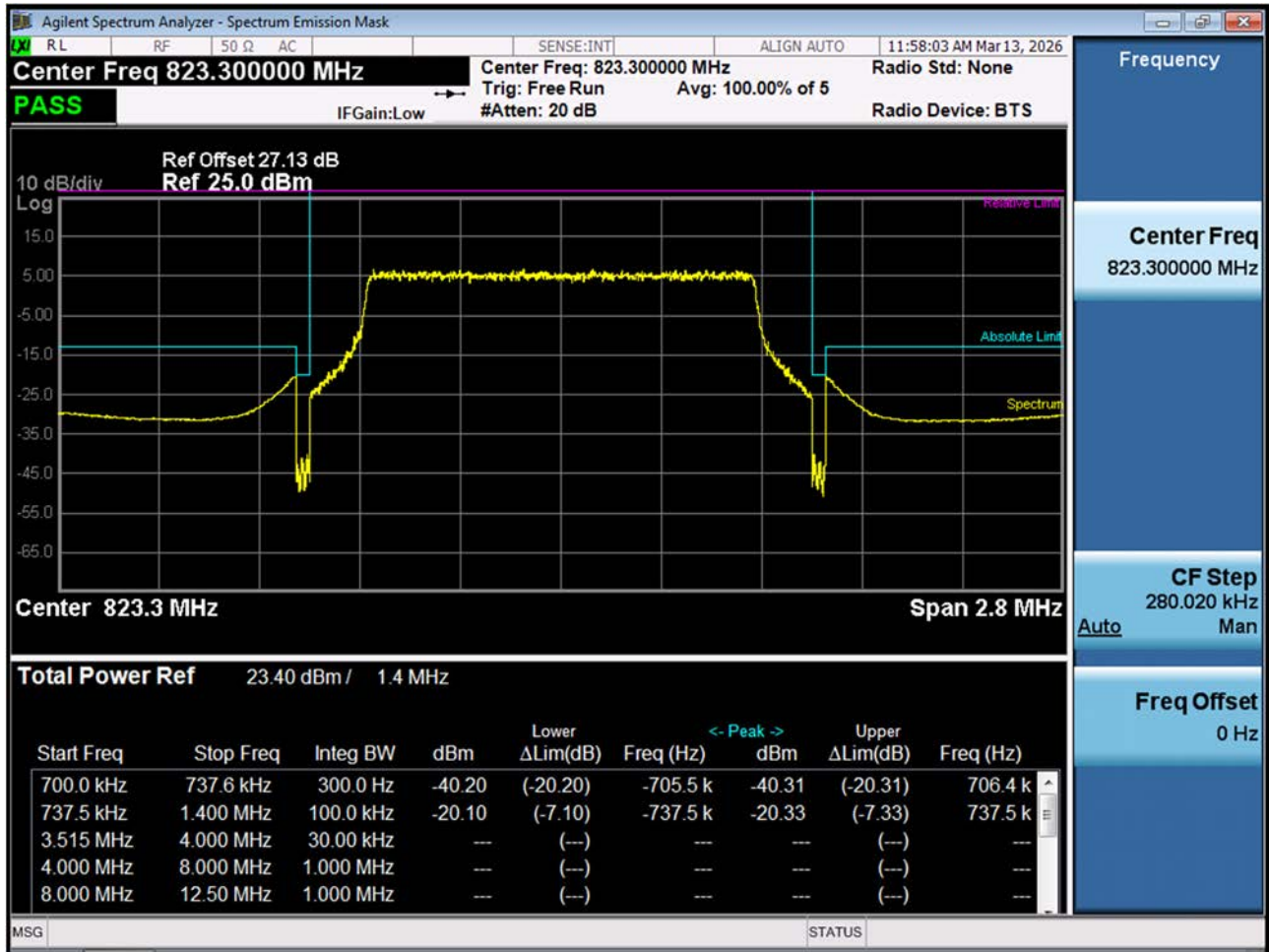
LTE B26_ Mid Band Edge Plot (15 M BW Ch.26765 QPSK_RB75_Offset 0)



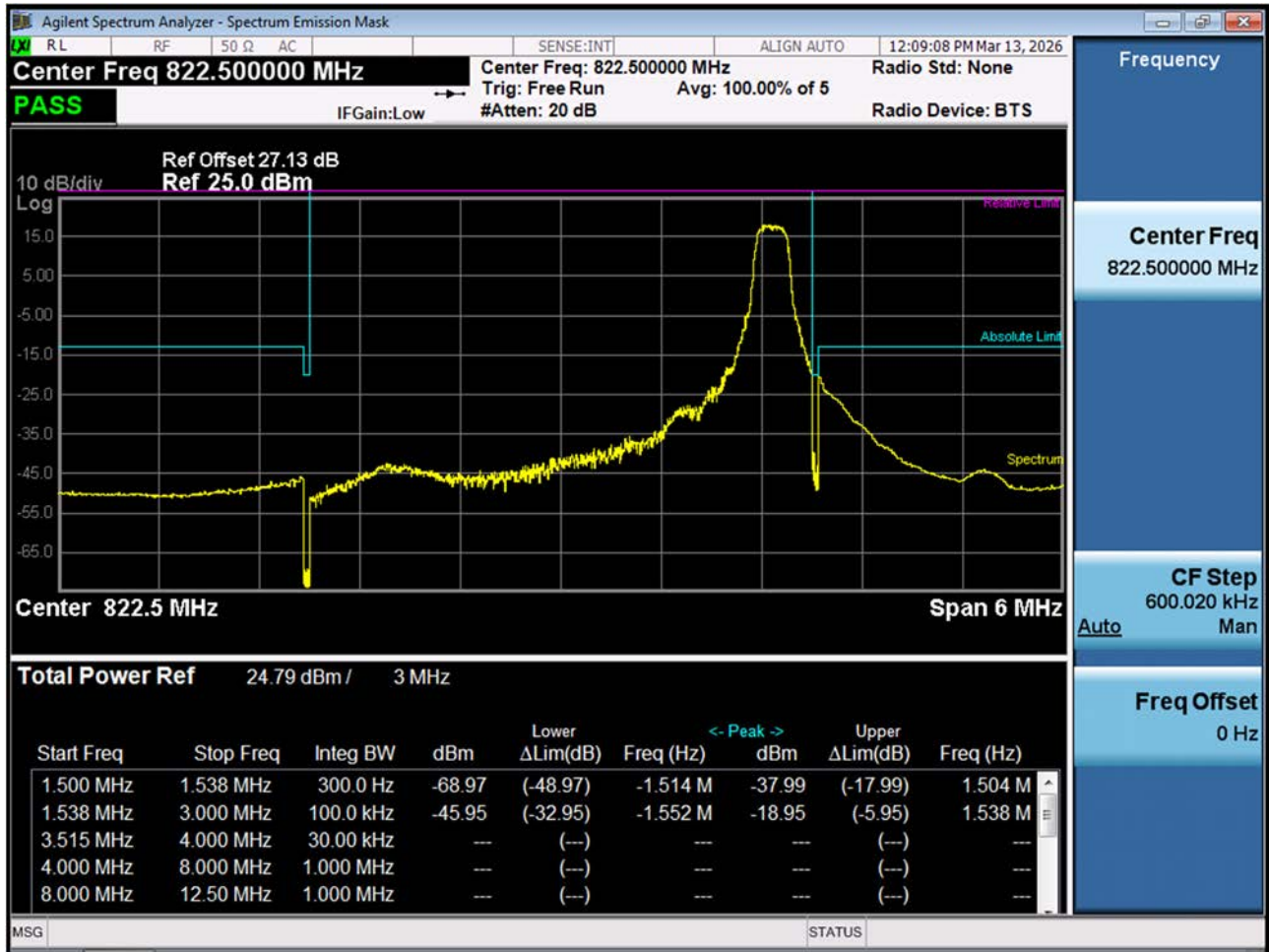
LTE B26_ Upper Channel Edge Plot (1.4 M BW Ch.26783 QPSK_RB1_Offset 5)



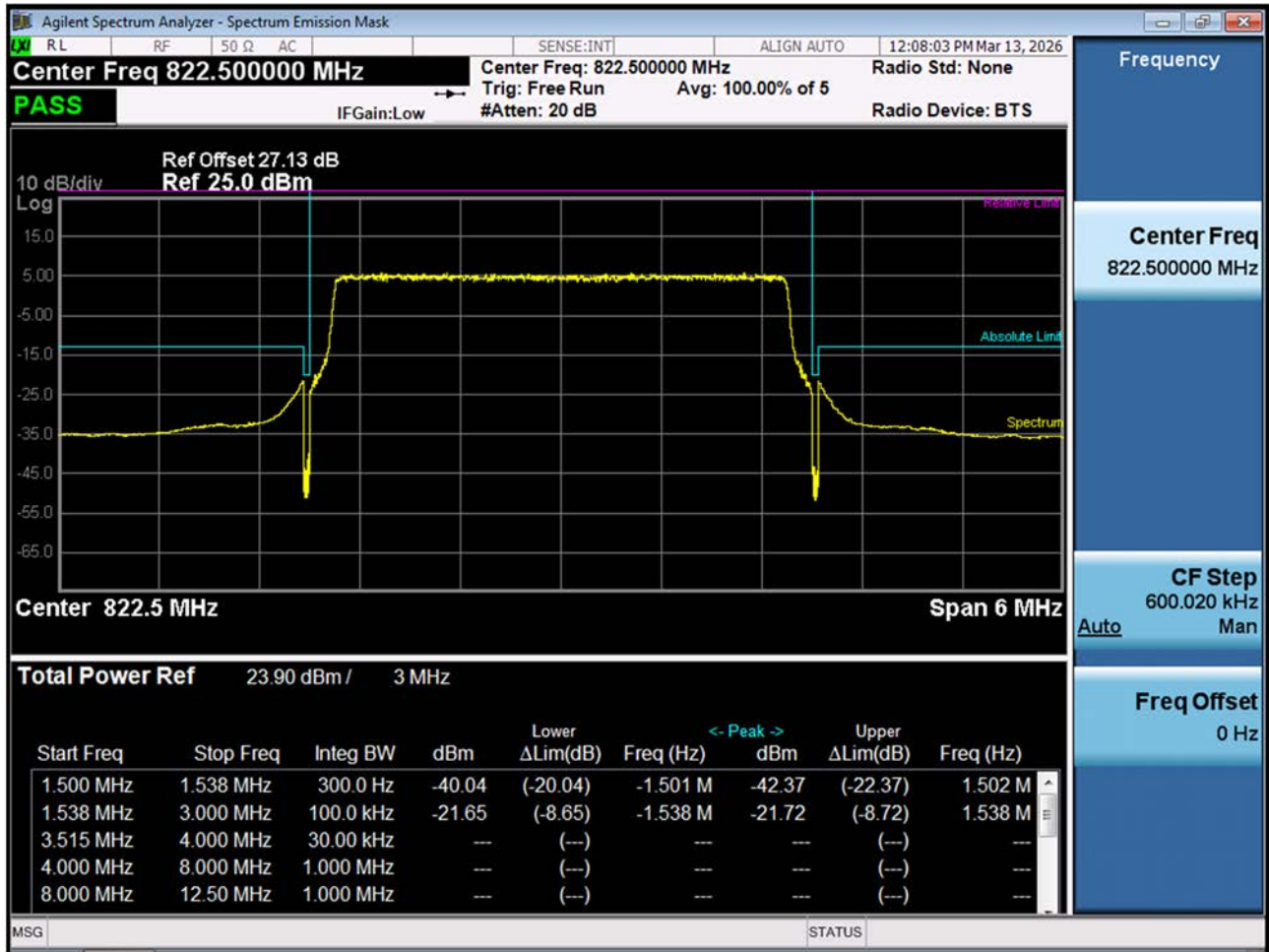
LTE B26_ Upper Channel Edge Plot (1.4 M BW Ch.26783 QPSK_RB6_Offset 0)



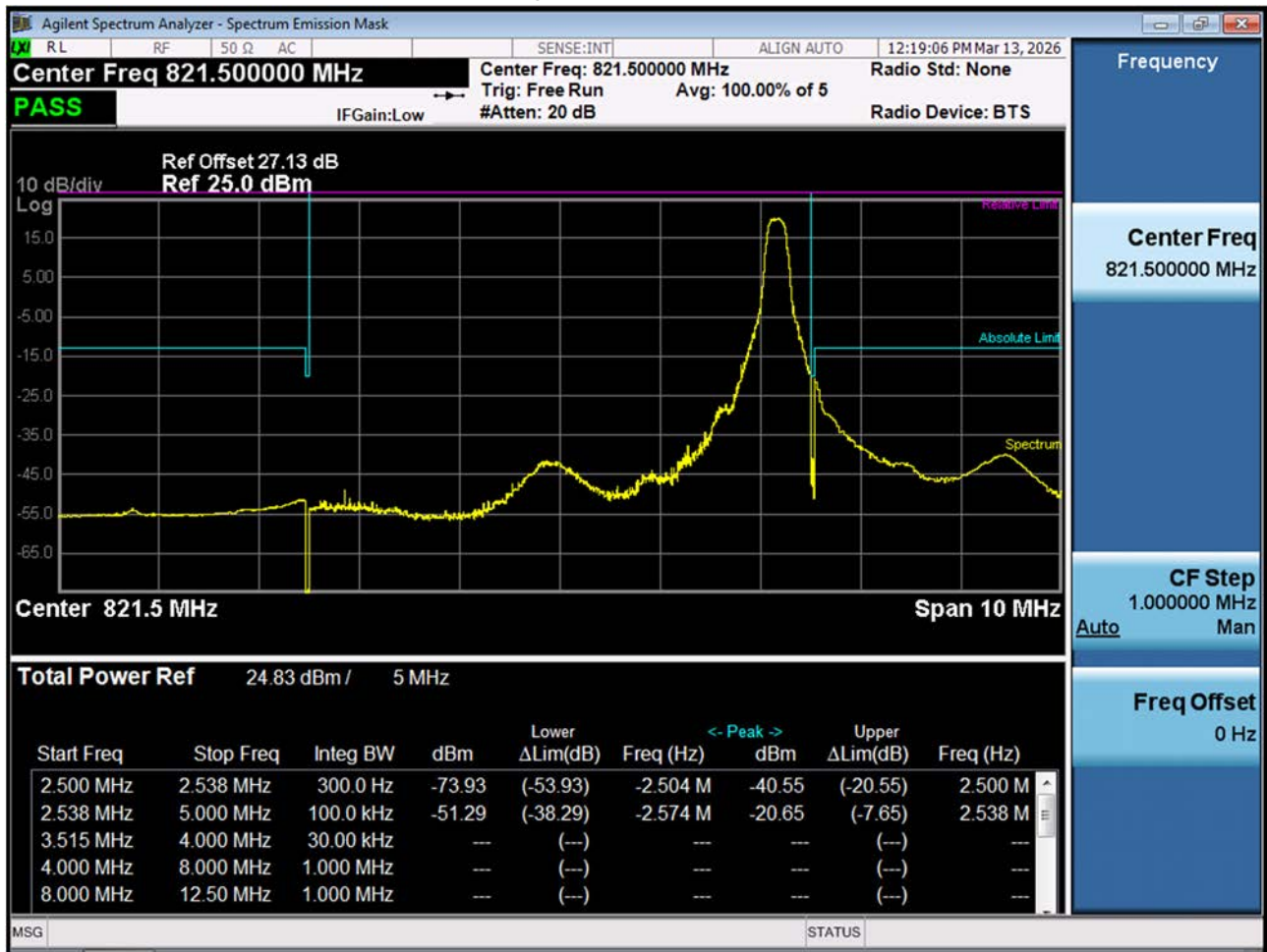
LTE B26_ Upper Channel Edge Plot (3 M BW Ch.26775 QPSK_RB1_Offset 14)



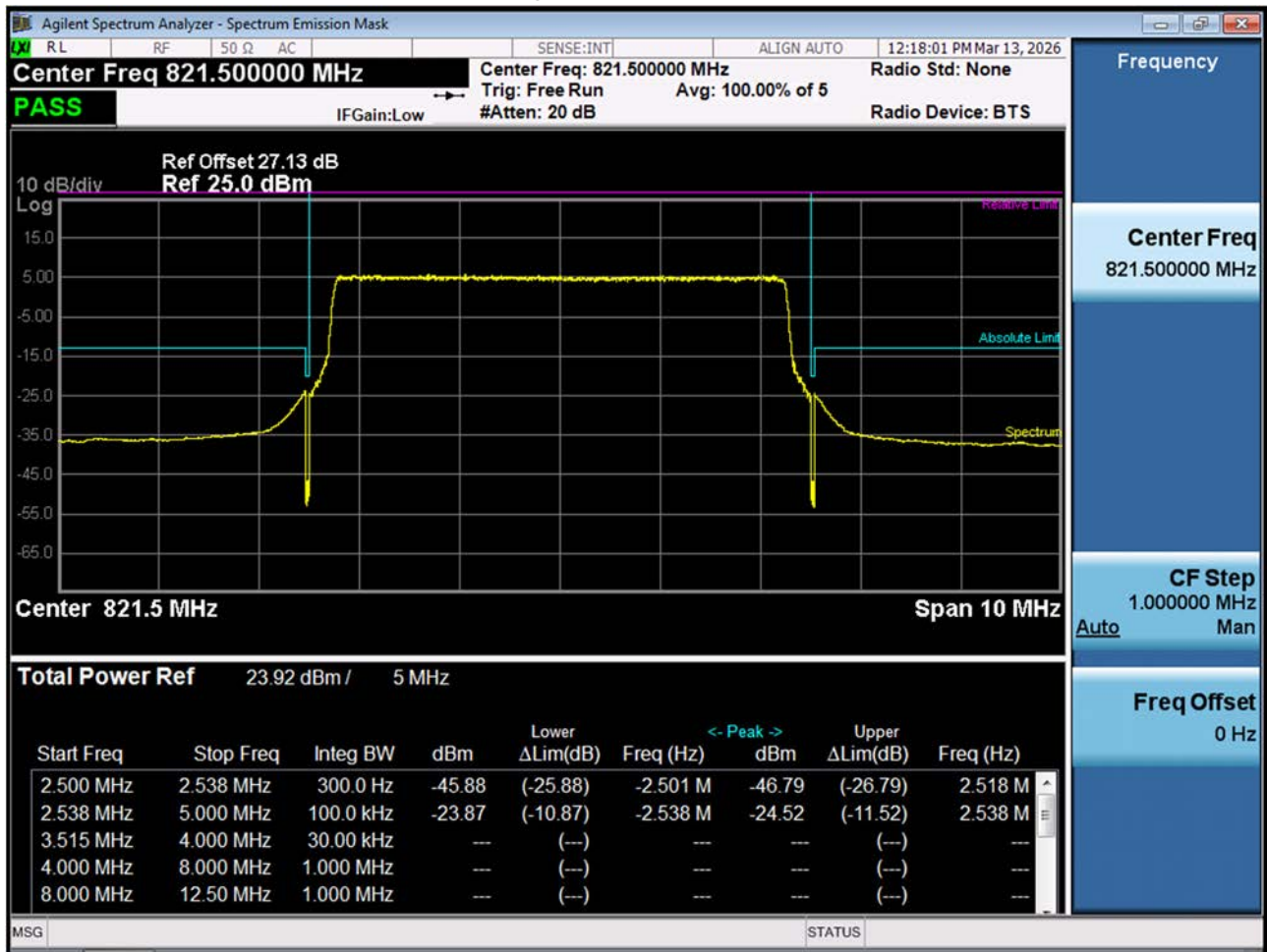
LTE B26_ Upper Channel Edge Plot (3 M BW Ch.26775 QPSK_RB15_Offset 0)



LTE B26_ Upper Channel Edge Plot (5 M BW Ch.26765 QPSK_RB1_Offset 24)



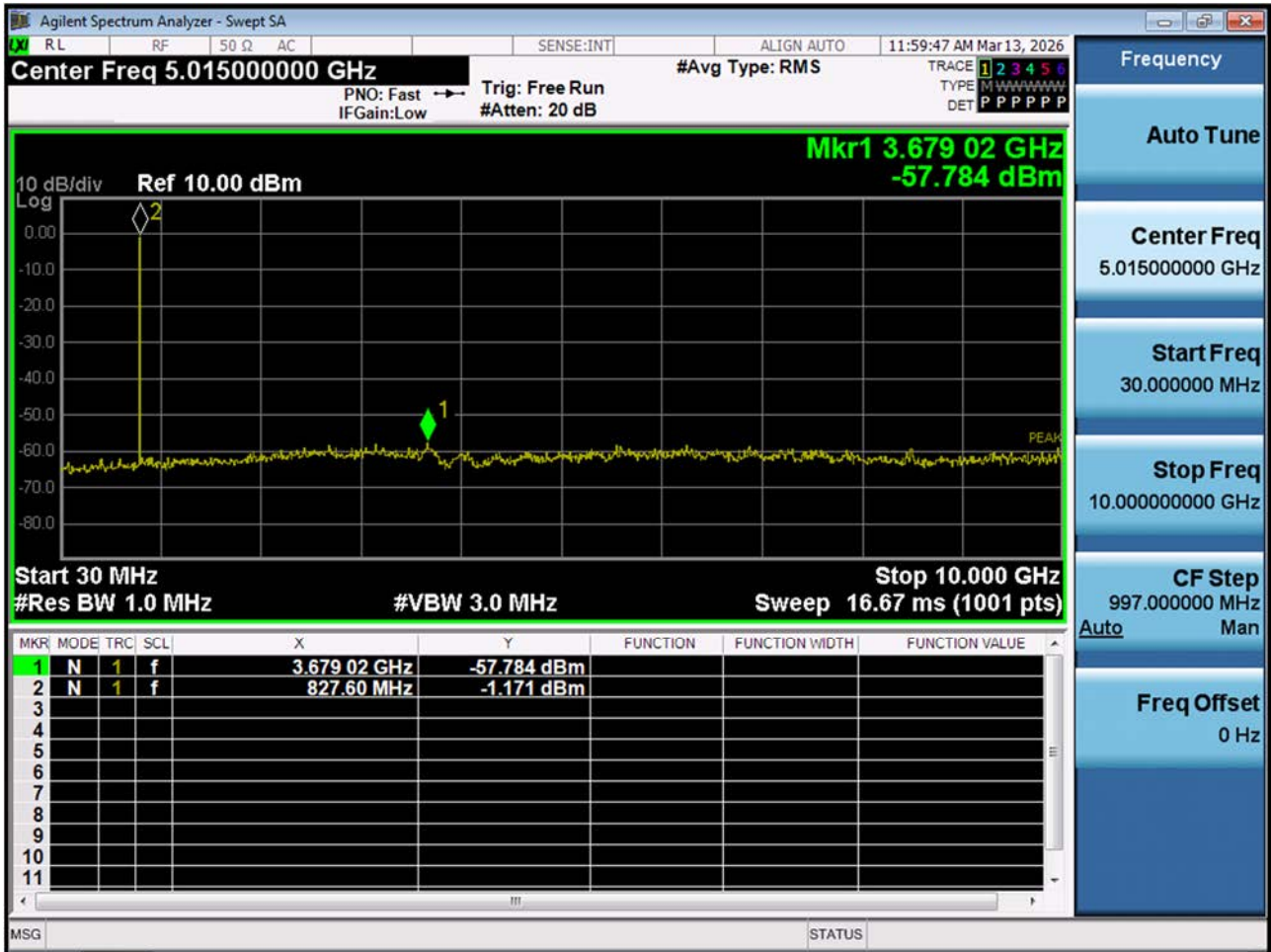
LTE B26_ Upper Channel Edge Plot (5 M BW Ch.26765 QPSK_RB25_Offset 0)



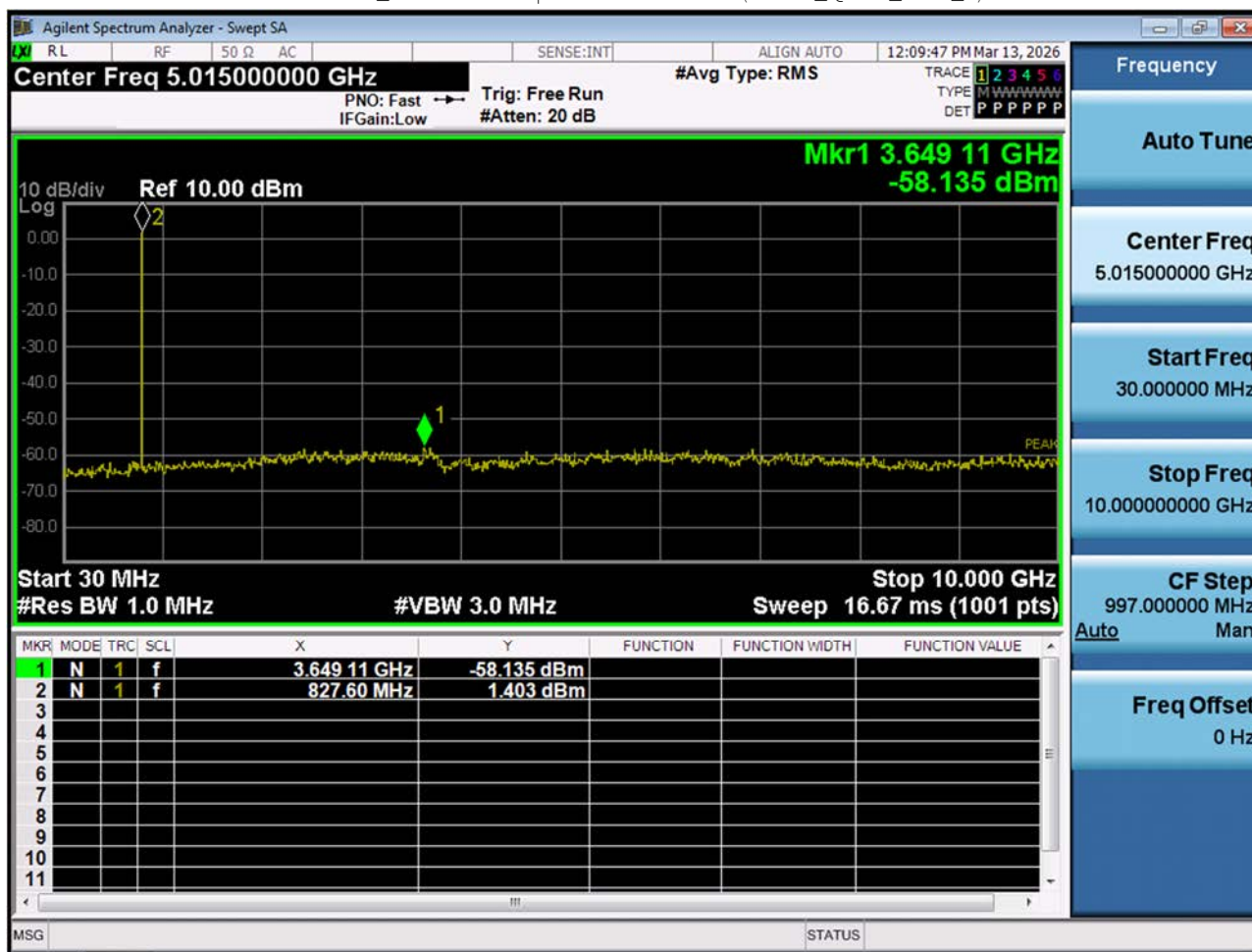
10. TEST PLOTS(STRADDLE CHANNEL)

10.1 CONDUCTED SPURIOUS EMISSIONS

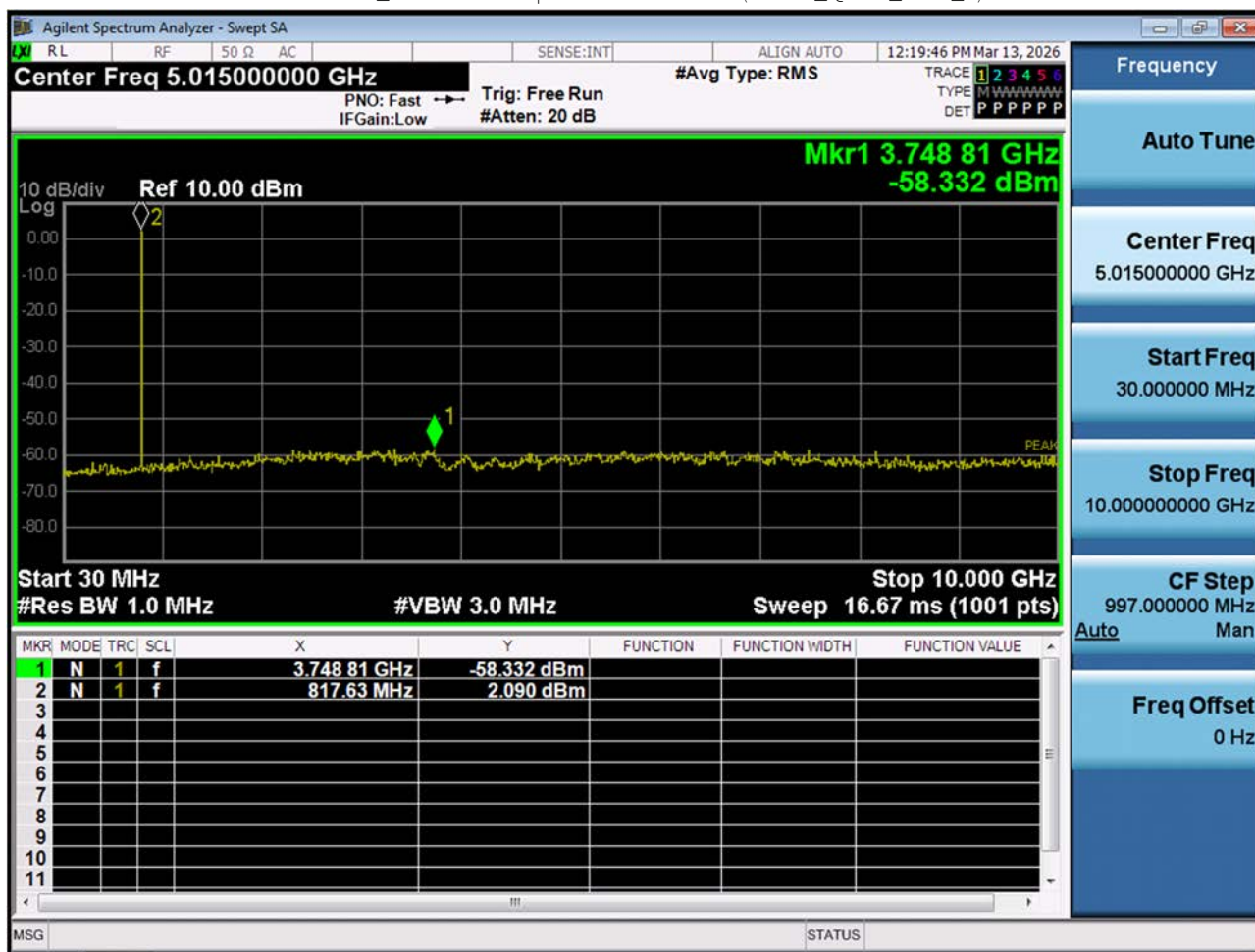
LTE B26_ Conducted Spurious Emissions (1.4 MHz_QPSK_RB 1_0)



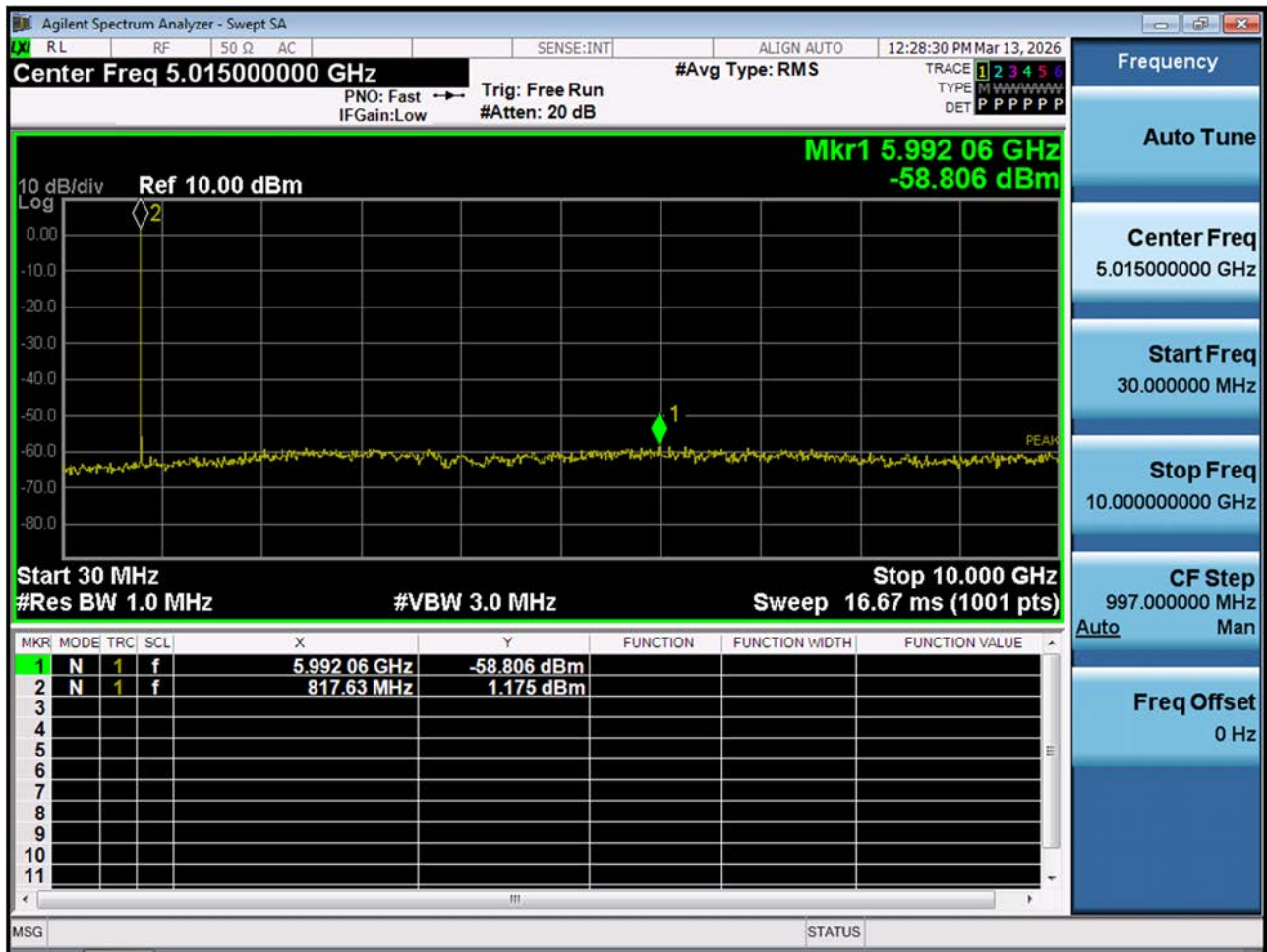
LTE B26_ Conducted Spurious Emissions (3 MHz_QPSK_RB 1_0)



LTE B26_ Conducted Spurious Emissions (5 MHz_QPSK_RB 1_0)

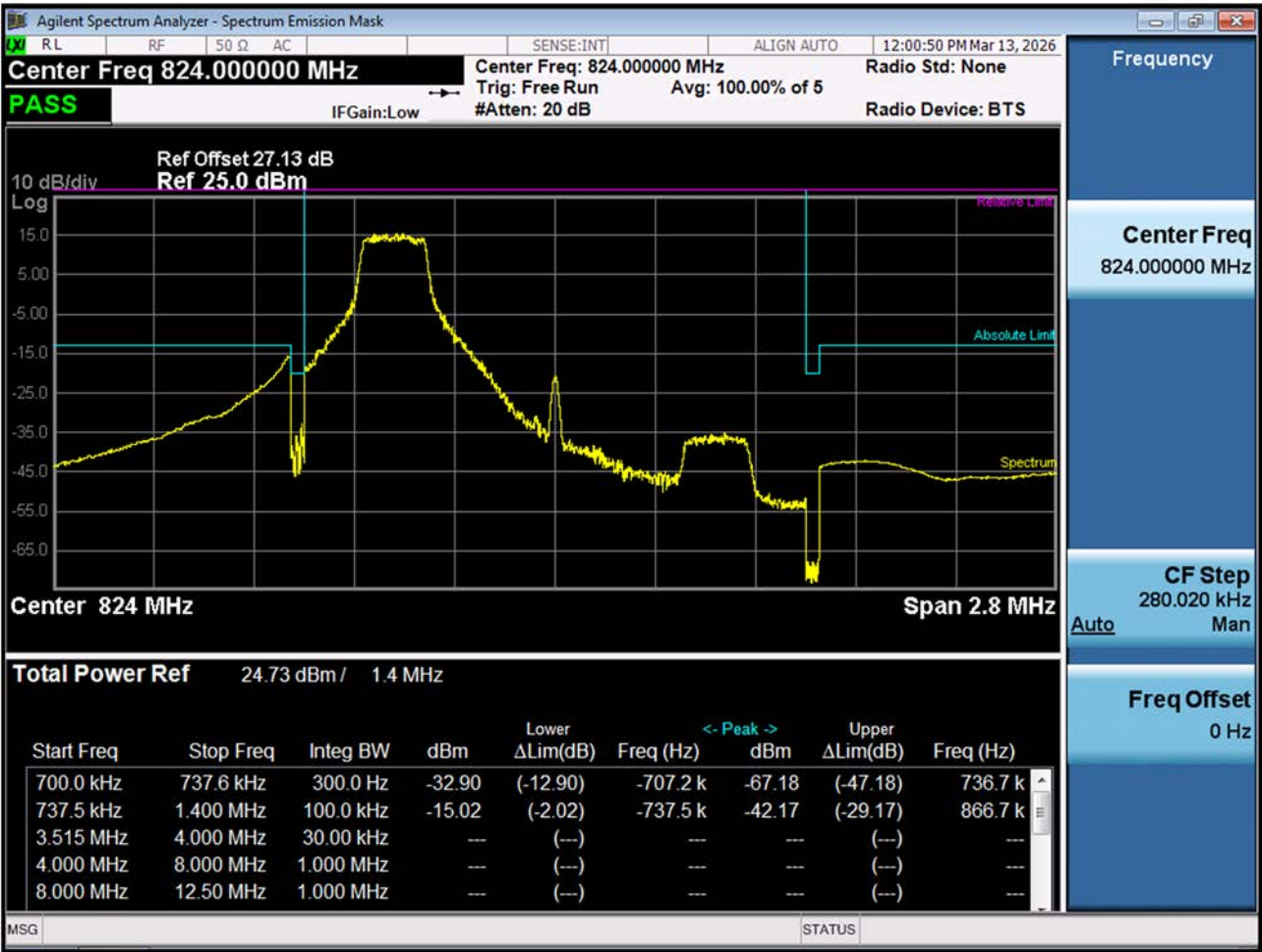


LTE B26_ Conducted Spurious Emissions (10 MHz_QPSK_RB 1_0)



10.2 CHANNEL EDGE(Part90)

LTE B26_Channel Edge (1.4 MHz_QPSK_RB 1_0)



LTE B26_Channel Edge (1.4 MHz_QPSK_RB 1_5)

