

TEST REPORT

FCC LTE B26(Part90) Test for SM-S931B/DS
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2410-FC050

DATE OF ISSUE
October 29, 2024

Tested by
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TEST REPORT

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HCT-RF-2410-FC050

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Additional Model

SM-S931B

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

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

Product Name

Mobile Phone

Model Name

SM-S931B/DS

Date of Test

August 21, 2024 ~ October 28, 2024

FCC ID

A3LSMS931B

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing

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

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

Test Standard Used

FCC Rule Part : § 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	October 29, 2024	Initial Release

Notice

Content

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

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

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

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

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

Information provided by the applicant is marked **.

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

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

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

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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:	A3LSMS931B
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§ 90, § 22
EUT Type:	Mobile phone
Model(s):	SM-S931B/DS
Additional Model(s)	SM-S931B
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:	August 21, 2024 ~ October 28, 2024
Serial number:	Radiated : R3CX80PTCAD Conducted : R3CX80PTCEN

1.1 MAXIMUM OUTPUT POWER

Main1

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
LTE – Band26 (1.4)	814.7 – 824.0	1M10G7D	QPSK	0.244	23.88
		1M10W7D	16QAM	0.207	23.16
		1M10W7D	64QAM	0.167	22.23
		1M10W7D	256QAM	0.080	19.01
LTE – Band26 (3)	815.5 – 824.0	2M71G7D	QPSK	0.243	23.86
		2M71W7D	16QAM	0.211	23.25
		2M72W7D	64QAM	0.166	22.21
		2M71W7D	256QAM	0.079	18.98
LTE – Band26 (5)	816.5 – 824.0	4M54G7D	QPSK	0.248	23.95
		4M51W7D	16QAM	0.205	23.11
		4M50W7D	64QAM	0.157	21.96
		4M52W7D	256QAM	0.078	18.92
LTE – Band26 (10)	819.0 – 824.0	9M01G7D	QPSK	0.244	23.87
		9M00W7D	16QAM	0.207	23.16
		8M99W7D	64QAM	0.155	21.89
		9M00W7D	256QAM	0.078	18.94
LTE – Band26 (15)	821.5	13M5G7D	QPSK	0.250	23.98
		13M5W7D	16QAM	0.206	23.13
		13M5W7D	64QAM	0.154	21.88
		13M5W7D	256QAM	0.076	18.81

Sub1

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	0.248	23.95
		1M10W7D	16QAM	0.212	23.26
		1M10W7D	64QAM	0.164	22.15
		1M09W7D	256QAM	0.079	18.98
LTE – Band26 (3)	815.5 – 824.0	2M71G7D	QPSK	0.249	23.97
		2M71W7D	16QAM	0.212	23.27
		2M72W7D	64QAM	0.162	22.10
		2M72W7D	256QAM	0.079	18.98
LTE – Band26 (5)	816.5 – 824.0	4M52G7D	QPSK	0.249	23.97
		4M52W7D	16QAM	0.212	23.27
		4M52W7D	64QAM	0.162	22.10
		4M53W7D	256QAM	0.079	18.98
LTE – Band26 (10)	819.0 – 824.0	9M00G7D	QPSK	0.247	23.92
		8M99W7D	16QAM	0.202	23.06
		9M00W7D	64QAM	0.160	22.04
		9M00W7D	256QAM	0.079	18.98
LTE – Band26 (15)	821.5	13M5G7D	QPSK	0.247	23.93
		13M5W7D	16QAM	0.192	22.83
		13M5W7D	64QAM	0.159	22.01
		13M5W7D	256QAM	0.077	18.89

2. INTRODUCTION

2.1 DESCRIPTION OF EUT

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

2.2 MEASURING INSTRUMENT CALIBRATION

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

2.3 TEST FACILITY

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

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
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
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

3.2 CONDUCTED OUTPUT POWER

Test Overview

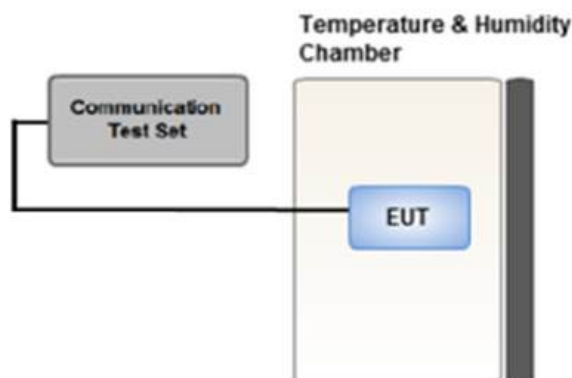
According to ANSI C63.26-2015 Section 5.2.1 when measuring the maximum RF output power from such devices, control over the EUT must be provided either through special test software (provided by manufacturer specifically for compliance testing, but not accessible by an end user) or through use of a base 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 in accordance with ANSI/TIA-603-E-2016 Clause 2.2.17.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW, not to exceed 1 MHz
3. VBW $\geq$ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points > 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Note

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

The power is calculated by the following formula;

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

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

3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value.
These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration
4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

3.4 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA-603-E-2016.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $> 2 \times$ span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10th harmonics from 9 kHz.

Test Note

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

The spurious emissions is calculated by the following formula;

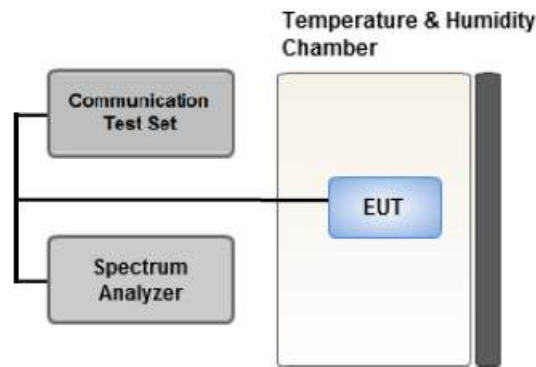
$$\text{Result}_{(\text{dBm})} = P_g_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

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

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

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

3.5 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.

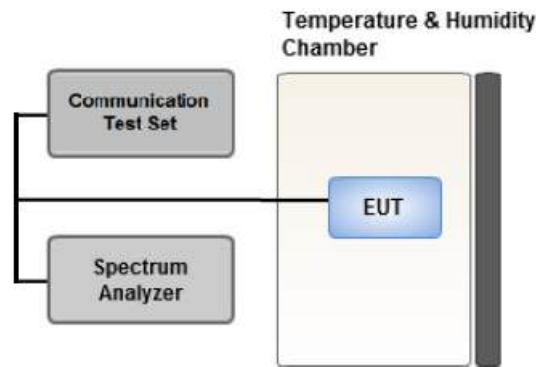
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

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

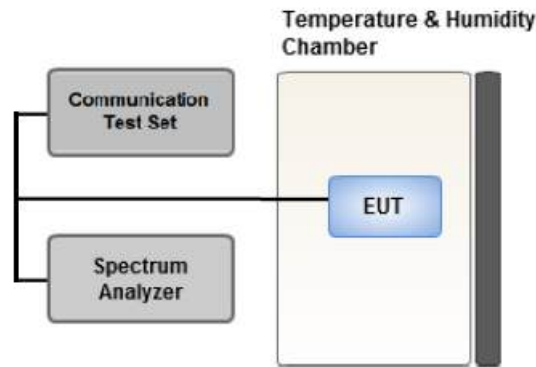
Test Overview

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 = RMS
4. Trace Mode = trace average
5. Sweep time = auto
6. Number of points in sweep $\geq$ 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

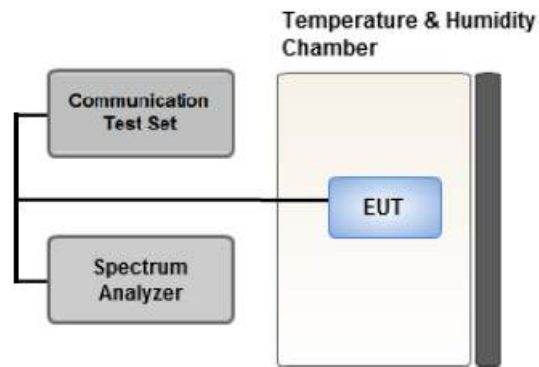
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW :
 - EA licensee's frequency block by up to and including 37.5 kHz : 300 Hz
 - EA licensee's frequency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

Test Notes

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 : 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.
- SM-S931B/DS & additional models were tested and the worst case results are reported.
(Worst case : SM-S931B/DS)

[Main1 Worst case]

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

[Sub1 Worst case]

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

3.10 WORST CASE(CONDUCTED TEST)

- Worst case : Of all modulation, We have tested modulation of the high Conducted Output Power.
 - SM-S931B/DS & additional models were tested and the worst case results are reported.
- (Worst case : SM-S931B/DS)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5	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	Switch box(1.2 G HPF+LNA)	HCT CO., LTD.,	F1L1	08/21/2025	Annual
RF Switching System	Switch box(3.3 G HPF+LNA)	HCT CO., LTD.,	F1L2	08/21/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F1L4	08/21/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F1L7	08/21/2025	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/17/2025	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/17/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/11/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/19/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/06/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	08/19/2026	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	11/17/2024	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	12/11/2024	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. MEASUREMENT UNCERTAINTY

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

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

Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.98 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.70 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.52 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.66 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, $k=2$)

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	PASS
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 (Main1)

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	23.88	0.244	23.87	0.244	100
		1	3	23.88	0.244	23.87	0.244	100
		1	5	23.73	0.236	23.71	0.235	100
		3	0	23.85	0.243	23.82	0.241	100
		3	1	23.73	0.236	23.73	0.236	100
		3	3	23.85	0.243	23.84	0.242	100
		6	0	22.30	0.170	22.28	0.169	100
	16QAM	1	0	23.07	0.203	23.04	0.201	100
		1	3	22.96	0.198	22.93	0.196	100
		1	5	22.98	0.199	22.96	0.198	100
		3	0	23.16	0.207	23.12	0.205	100
		3	1	22.99	0.199	22.95	0.197	100
		3	3	23.02	0.200	23.00	0.200	100
		6	0	21.87	0.154	21.83	0.152	100
	64QAM	1	0	21.99	0.158	21.98	0.158	100
		1	3	22.07	0.161	22.05	0.160	100
		1	5	22.04	0.160	22.01	0.159	100
		3	0	22.23	0.167	22.20	0.166	100
		3	1	21.79	0.151	21.75	0.150	100
		3	3	22.03	0.160	22.02	0.159	100
		6	0	20.98	0.125	20.94	0.124	100
	256QAM	1	0	18.96	0.079	18.92	0.078	100
		1	3	18.92	0.078	18.90	0.078	100
		1	5	18.93	0.078	18.89	0.078	100
		3	0	18.77	0.075	18.75	0.075	100
		3	1	19.01	0.080	18.99	0.079	100
		3	3	18.95	0.079	18.91	0.078	100
		6	0	18.79	0.076	18.77	0.075	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	23.79	0.239	23.75	0.237	100
		1	7	23.86	0.243	23.86	0.243	100
		1	14	23.73	0.236	23.70	0.234	100
		8	0	22.87	0.194	22.86	0.193	100
		8	3	22.82	0.191	22.80	0.191	100
		8	7	22.82	0.191	22.78	0.190	100
		15	0	22.88	0.194	22.84	0.192	100
	16QAM	1	0	23.25	0.211	23.25	0.211	100
		1	7	23.14	0.206	23.11	0.204	100
		1	14	22.92	0.196	22.91	0.196	100
		8	0	21.93	0.156	21.91	0.155	100
		8	3	21.90	0.155	21.87	0.154	100
		8	7	21.86	0.153	21.86	0.153	100
		15	0	21.88	0.154	21.85	0.153	100
	64QAM	1	0	22.21	0.166	22.18	0.165	100
		1	7	22.03	0.160	22.02	0.159	100
		1	14	22.07	0.161	22.03	0.160	100
		8	0	20.85	0.122	20.82	0.121	100
		8	3	20.93	0.124	20.90	0.123	100
		8	7	20.83	0.121	20.79	0.120	100
		15	0	20.89	0.123	20.88	0.122	100
	256QAM	1	0	18.86	0.077	18.82	0.076	100
		1	7	18.98	0.079	18.98	0.079	100
		1	14	18.93	0.078	18.91	0.078	100
		8	0	18.85	0.077	18.81	0.076	100
		8	3	18.86	0.077	18.83	0.076	100
		8	7	18.85	0.077	18.84	0.077	100
		15	0	18.85	0.077	18.82	0.076	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	23.78	0.239	23.76	0.238	100
		1	12	23.95	0.248	23.91	0.246	100
		1	24	23.61	0.230	23.61	0.229	100
		12	0	22.85	0.193	22.82	0.192	100
		12	6	22.86	0.193	22.83	0.192	100
		12	11	22.75	0.188	22.74	0.188	100
		25	0	22.68	0.185	22.64	0.184	100
	16QAM	1	0	23.05	0.202	23.02	0.201	100
		1	12	23.11	0.205	23.09	0.204	100
		1	24	22.95	0.197	22.94	0.197	100
		12	0	21.84	0.153	21.82	0.152	100
		12	6	21.97	0.157	21.94	0.156	100
		12	11	21.78	0.151	21.76	0.150	100
		25	0	21.77	0.150	21.75	0.150	100
	64QAM	1	0	21.95	0.157	21.91	0.155	100
		1	12	21.93	0.156	21.91	0.155	100
		1	24	21.96	0.157	21.95	0.157	100
		12	0	20.92	0.124	20.91	0.123	100
		12	6	20.92	0.124	20.89	0.123	100
		12	11	20.76	0.119	20.73	0.118	100
		25	0	20.75	0.119	20.75	0.119	100
	256QAM	1	0	18.92	0.078	18.91	0.078	100
		1	12	18.80	0.076	18.76	0.075	100
		1	24	18.73	0.075	18.72	0.074	100
		12	0	18.89	0.077	18.87	0.077	100
		12	6	18.88	0.077	18.88	0.077	100
		12	11	18.73	0.075	18.71	0.074	100
		25	0	18.79	0.076	18.77	0.075	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				819 MHz		
				dBm	W	
10	QPSK	1	0	23.87	0.244	100
		1	24	23.76	0.238	100
		1	49	23.71	0.235	100
		25	0	22.82	0.191	100
		25	12	22.83	0.192	100
		25	24	22.70	0.186	100
		50	0	22.77	0.189	100
	16QAM	1	0	22.99	0.199	100
		1	24	23.16	0.207	100
		1	49	23.11	0.205	100
		25	0	21.76	0.150	100
		25	12	21.86	0.154	100
		25	24	21.75	0.150	100
		50	0	21.79	0.151	100
	64QAM	1	0	21.87	0.154	100
		1	24	21.89	0.155	100
		1	49	21.87	0.154	100
		25	0	20.81	0.121	100
		25	12	20.86	0.122	100
		25	24	20.76	0.119	100
		50	0	20.81	0.121	100
	256QAM	1	0	18.84	0.077	100
		1	24	18.94	0.078	100
		1	49	18.68	0.074	100
		25	0	18.78	0.075	100
		25	12	18.84	0.077	100
		25	24	18.68	0.074	100
		50	0	18.81	0.076	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				821.5 MHz		
				dBm	W	
15	QPSK	1	0	23.66	0.232	100
		1	36	23.81	0.240	100
		1	74	23.98	0.250	100
		36	0	22.68	0.186	100
		36	18	22.57	0.181	100
		36	39	22.50	0.178	100
		75	0	22.58	0.181	100
	16QAM	1	0	22.89	0.195	100
		1	36	22.58	0.181	100
		1	74	23.13	0.206	100
		36	0	21.65	0.146	100
		36	18	21.62	0.145	100
		36	39	21.46	0.140	100
		75	0	21.61	0.145	100
	64QAM	1	0	21.88	0.154	100
		1	36	21.73	0.149	100
		1	74	21.67	0.147	100
		36	0	20.66	0.116	100
		36	18	20.59	0.114	100
		36	39	20.55	0.113	100
		75	0	20.59	0.114	100
	256QAM	1	0	18.81	0.076	100
		1	36	18.68	0.074	100
		1	74	18.66	0.073	100
		36	0	18.63	0.073	100
		36	18	18.66	0.073	100
		36	39	18.51	0.071	100
		75	0	18.60	0.072	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	-34.76	27.68	-10.29	1.44	V	< 100	0.039	15.95	1	5
		16QAM	-35.45	26.99	-10.29	1.44	V		0.034	15.26		
		64QAM	-36.49	25.95	-10.29	1.44	V		0.026	14.22		
		256QAM	-39.61	22.83	-10.29	1.44	V		0.013	11.10		
823.3		QPSK	-34.35	27.99	-10.25	1.44	V		0.043	16.30	1	5
		16QAM	-35.04	27.30	-10.25	1.44	V		0.036	15.61		
		64QAM	-36.08	26.26	-10.25	1.44	V		0.029	14.57		
		256QAM	-39.19	23.15	-10.25	1.44	V		0.014	11.46		

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	-34.63	27.77	-10.29	1.44	V	< 100	0.040	16.04	1	14
		16QAM	-35.37	27.03	-10.29	1.44	V		0.034	15.30		
		64QAM	-36.44	25.96	-10.29	1.44	V		0.026	14.23		
		256QAM	-39.60	22.80	-10.29	1.44	V		0.013	11.07		
822.5		QPSK	-34.19	28.19	-10.25	1.44	V		0.045	16.50	1	14
		16QAM	-34.98	27.40	-10.25	1.44	V		0.037	15.71		
		64QAM	-36.07	26.31	-10.25	1.44	V		0.029	14.62		
		256QAM	-39.18	23.20	-10.25	1.44	V		0.014	11.51		

Freq (MHz)	Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol	Limit	ERP		RB	
								W	W	dBm	Size	Offset
816.5	LTE B26/ 5 MHz	QPSK	-34.67	27.68	-10.28	1.44	V	< 100	0.039	15.96	1	24
		16QAM	-35.42	26.93	-10.28	1.44	V		0.033	15.21		
		64QAM	-36.47	25.88	-10.28	1.44	V		0.026	14.16		
		256QAM	-39.61	22.74	-10.28	1.44	V		0.013	11.02		
821.5		QPSK	-34.28	28.16	-10.26	1.44	V		0.044	16.46	1	24
		16QAM	-35.03	27.41	-10.26	1.44	V		0.037	15.71		
		64QAM	-36.12	26.32	-10.26	1.44	V		0.029	14.62		
		256QAM	-39.22	23.22	-10.26	1.44	V		0.014	11.52		

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	-34.19	28.23	-10.27	1.44	V	< 100	0.045	16.52	1	49
		16QAM	-35.03	27.39	-10.27	1.44	V		0.037	15.68		
		64QAM	-36.10	26.32	-10.27	1.44	V		0.029	14.61		
		256QAM	-39.12	23.30	-10.27	1.44	V		0.014	11.59		

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	-33.70	28.74	-10.26	1.44	V	< 100	0.051	17.04	1	74
		16QAM	-34.55	27.89	-10.26	1.44	V		0.042	16.19		
		64QAM	-35.65	26.79	-10.26	1.44	V		0.032	15.09		
		256QAM	-38.79	23.65	-10.26	1.44	V		0.016	11.95		

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	-47.84	9.65	-66.44	2.00	H	-58.79	-13.00	1	74
	2 464.50	-33.75	10.42	-49.63	2.59	V	-41.80	-13.00		
	3 286.00	-47.72	12.01	-62.57	2.95	V	-53.51	-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	1.0948
			16QAM			1.0995
			64QAM			1.0970
			256QAM			1.1031
	3 MHz	822.5	QPSK	15		2.7103
			16QAM			2.7062
			64QAM			2.7168
			256QAM			2.7111
	5 MHz	821.5	QPSK	25		4.5347
			16QAM			4.5136
			64QAM			4.4984
			256QAM			4.5163
	10 MHz	819.0	QPSK	50		9.0066
			16QAM			9.0002
			64QAM			8.9924
			256QAM			8.9982
	15 MHz	821.5	QPSK	75		13.506
			16QAM			13.491
			64QAM			13.504
			256QAM			13.485

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 70 ~ 89.

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	3.1715	27.976	-67.159	-39.183	-13.00
		823.3	3.7059	27.976	-67.440	-39.464	
	3	815.5	3.1795	27.976	-67.133	-39.157	
		822.5	3.7015	27.976	-67.020	-39.044	
	5	816.5	3.1775	27.976	-67.289	-39.313	
		821.5	3.6905	27.976	-67.355	-39.379	
	10	819.0	3.7154	27.976	-67.179	-39.203	
	15	821.5	3.6855	27.976	-66.961	-38.985	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 110 ~ 117.
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

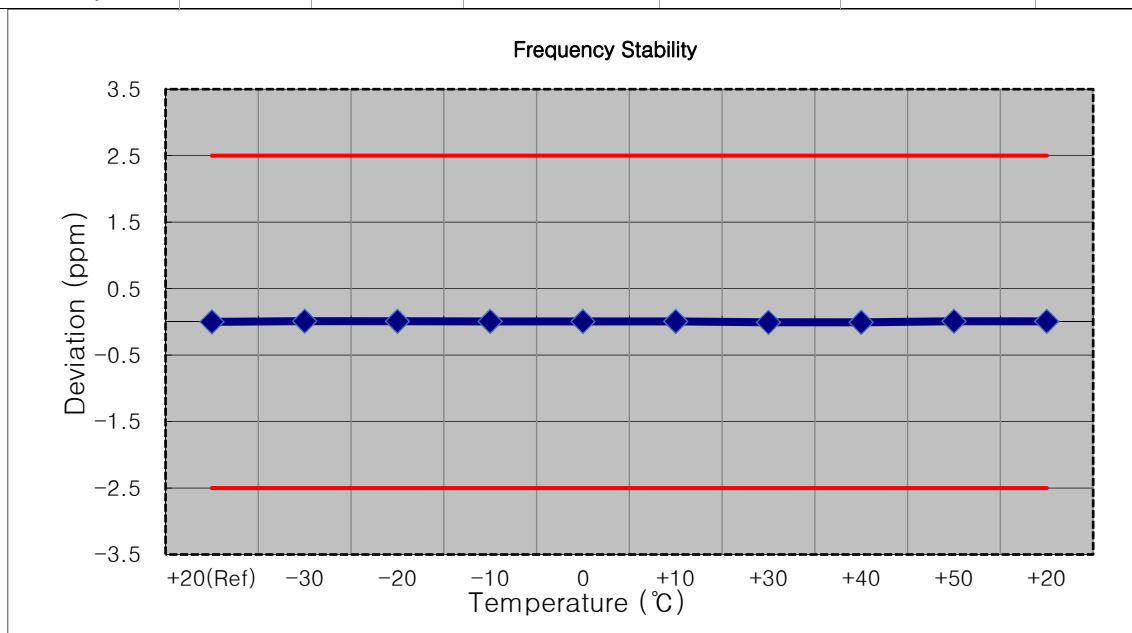
8.6 CHANNEL EDGE

- Plots of the EUT's Band Edge are shown Page 90 ~ 109.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

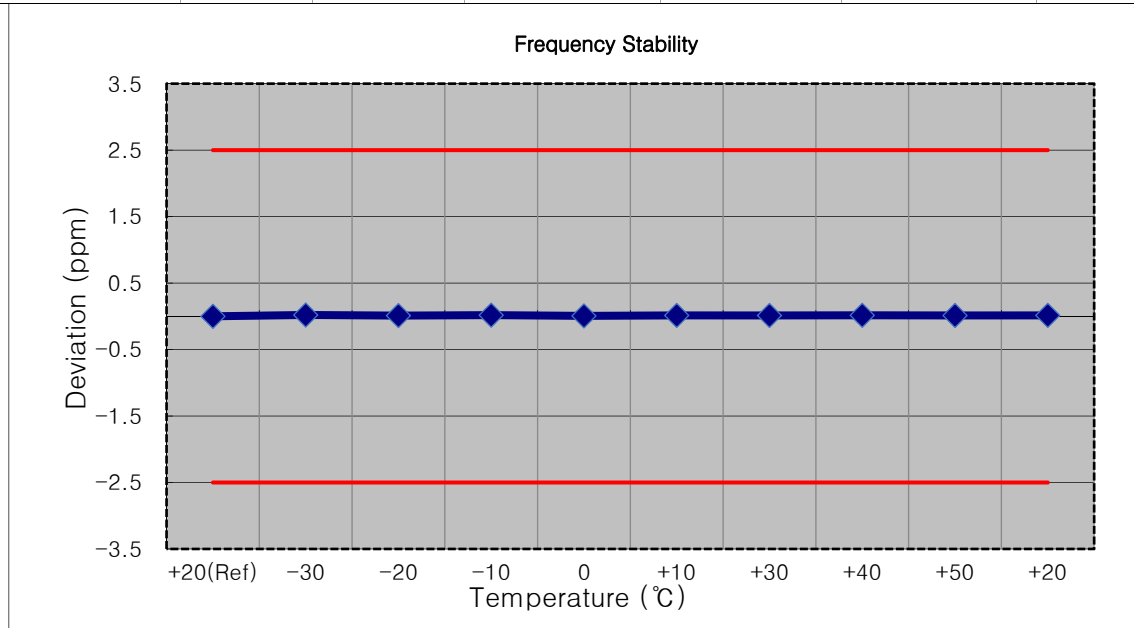
MODE:	LTE 26
OPERATING FREQUENCY:	814,700,000 Hz
CHANNEL:	26697(1.4 MHz)
REFERENCE VOLTAGE:	3.880 VDC
DEVIATION LIMIT:	$\pm 0.000\ 25\ \%$ or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.880	+20(Ref)	814 700 005	0.0	0.000 000	0.000
100 %		-30	814 700 013	8.2	0.000 001	0.010
100 %		-20	814 700 012	7.0	0.000 001	0.009
100 %		-10	814 700 011	5.5	0.000 001	0.007
100 %		0	814 700 010	5.0	0.000 001	0.006
100 %		+10	814 700 011	5.4	0.000 001	0.007
100 %		+30	814 700 000	-5.6	-0.000 001	-0.007
100 %		+40	814 699 999	-5.8	-0.000 001	-0.007
100 %		+50	814 700 013	7.3	0.000 001	0.009
Batt. Endpoint	3.300	+20	814 700 011	6.0	0.000 001	0.007



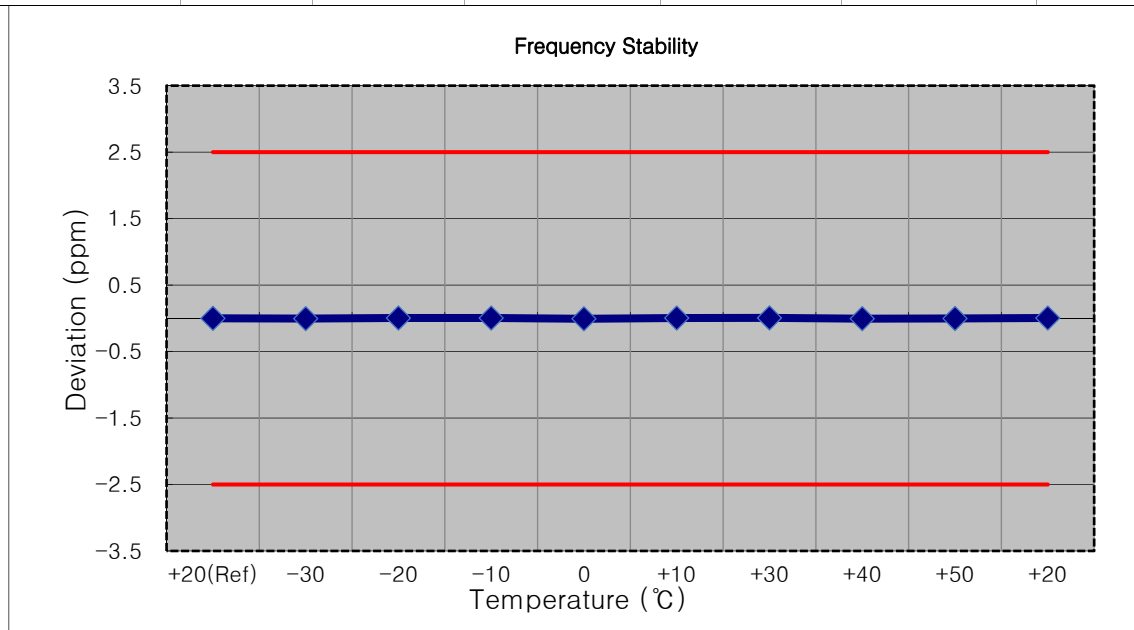
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 815,500,000 Hz
 ■ CHANNEL: 26705(3 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	815 500 013	0.0	0.000 000	0.000
100 %		-30	815 500 030	16.4	0.000 002	0.020
100 %		-20	815 500 022	8.9	0.000 001	0.011
100 %		-10	815 500 028	14.4	0.000 002	0.018
100 %		0	815 500 018	5.0	0.000 001	0.006
100 %		+10	815 500 024	11.0	0.000 001	0.013
100 %		+30	815 500 024	10.4	0.000 001	0.013
100 %		+40	815 500 025	12.3	0.000 002	0.015
100 %		+50	815 500 023	10.3	0.000 001	0.013
Batt. Endpoint	3.300	+20	815 500 024	11.3	0.000 001	0.014



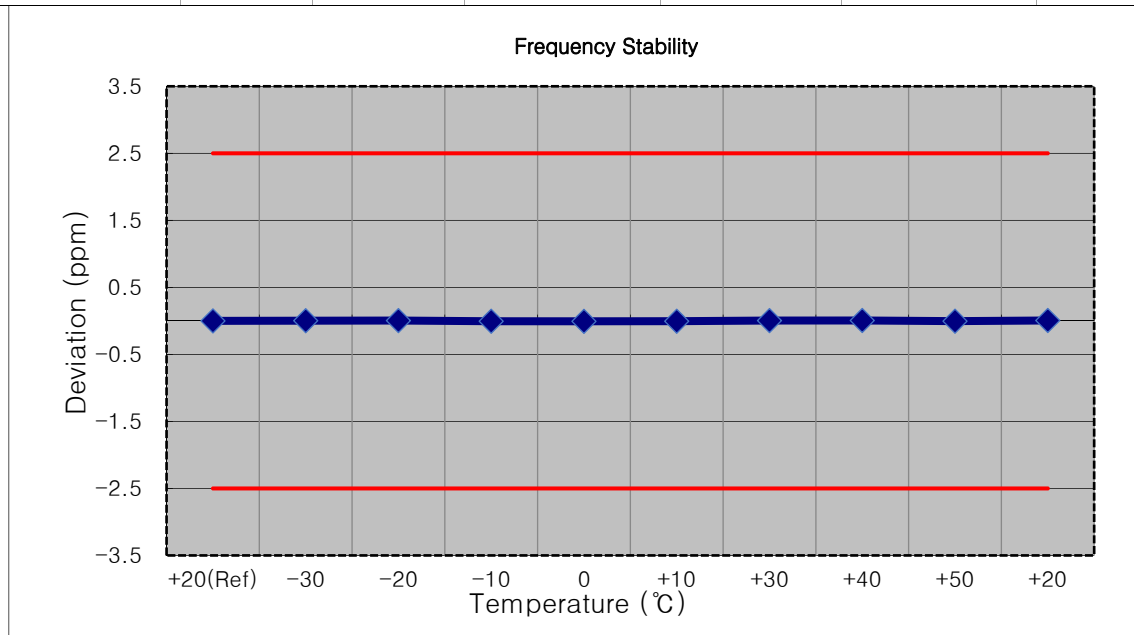
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 816,500,000 Hz
 ■ CHANNEL: 26715(5 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	816 500 003	0.0	0.000 000	0.000
100 %		-30	816 499 999	-3.3	0.000 000	-0.004
100 %		-20	816 500 007	3.9	0.000 000	0.005
100 %		-10	816 500 006	3.8	0.000 000	0.005
100 %		0	816 499 997	-5.5	-0.000 001	-0.007
100 %		+10	816 500 006	3.4	0.000 000	0.004
100 %		+30	816 500 008	5.3	0.000 001	0.006
100 %		+40	816 499 998	-4.2	-0.000 001	-0.005
100 %		+50	816 500 000	-2.2	0.000 000	-0.003
Batt. Endpoint	3.300	+20	816 500 007	4.0	0.000 000	0.005



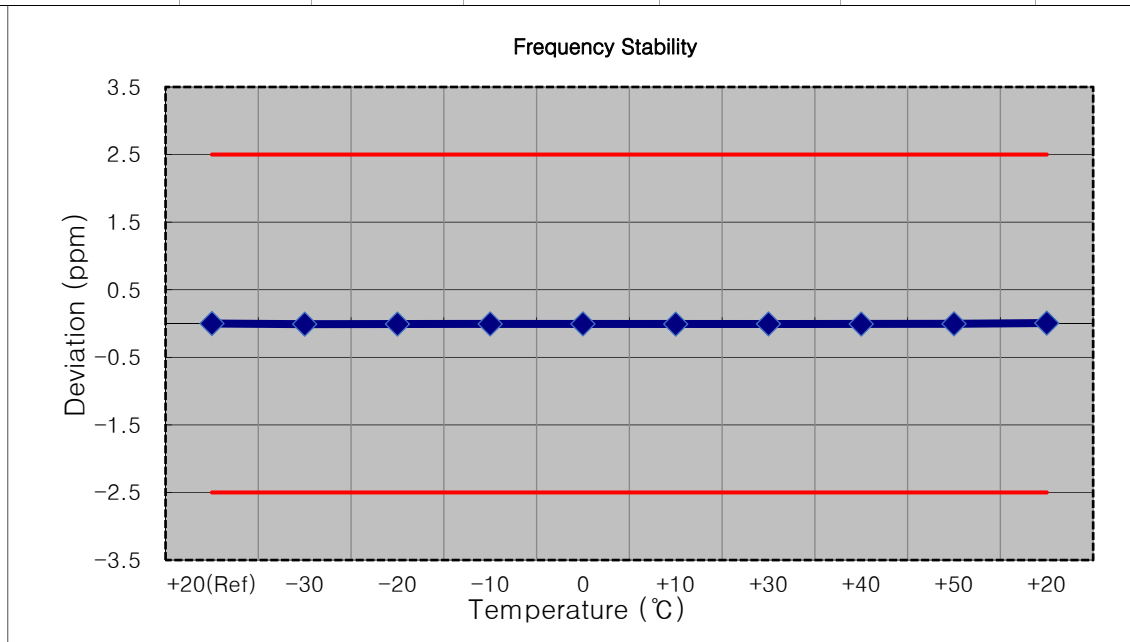
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 819,000,000 Hz
 ■ CHANNEL: 26740(10 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	819 000 005	0.0	0.000 000	0.000
100 %		-30	819 000 007	2.4	0.000 000	0.003
100 %		-20	819 000 009	3.9	0.000 000	0.005
100 %		-10	819 000 001	-4.1	-0.000 001	-0.005
100 %		0	818 999 999	-5.2	-0.000 001	-0.006
100 %		+10	819 000 001	-3.9	0.000 000	-0.005
100 %		+30	819 000 009	4.1	0.000 001	0.005
100 %		+40	819 000 010	4.9	0.000 001	0.006
100 %		+50	819 000 002	-3.1	0.000 000	-0.004
Batt. Endpoint	3.300	+20	819 000 009	4.8	0.000 001	0.006



MODE:	<u>LTE 26</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)	821 500 004	0.0	0.000 000	0.000
100 %		-30	821 499 996	-7.9	-0.000 001	-0.010
100 %		-20	821 499 998	-6.5	-0.000 001	-0.008
100 %		-10	821 499 999	-5.2	-0.000 001	-0.006
100 %		0	821 500 000	-4.1	0.000 000	-0.005
100 %		+10	821 499 997	-6.7	-0.000 001	-0.008
100 %		+30	821 500 000	-4.2	-0.000 001	-0.005
100 %		+40	821 499 998	-6.5	-0.000 001	-0.008
100 %		+50	821 500 001	-3.5	0.000 000	-0.004
Batt. Endpoint	3.300	+20	821 500 010	5.6	0.000 001	0.007



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	23.76	0.237	100
		1	3	23.85	0.243	100
		1	5	23.70	0.234	100
		3	0	22.83	0.192	100
		3	1	22.78	0.190	100
		3	3	22.80	0.191	100
		6	0	22.88	0.194	100
	16QAM	1	0	23.23	0.211	100
		1	3	23.10	0.204	100
		1	5	22.90	0.195	100
		3	0	21.92	0.156	100
		3	1	21.88	0.154	100
		3	3	21.85	0.153	100
		6	0	21.85	0.153	100
	64QAM	1	0	22.21	0.166	100
		1	3	22.01	0.159	100
		1	5	22.06	0.161	100
		3	0	20.83	0.121	100
		3	1	20.92	0.124	100
		3	3	20.79	0.120	100
		6	0	20.87	0.122	100
	256QAM	1	0	18.85	0.077	100
		1	3	18.96	0.079	100
		1	5	18.92	0.078	100
		3	0	18.81	0.076	100
		3	1	18.83	0.076	100
		3	3	18.84	0.076	100
		6	0	18.81	0.076	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
3	QPSK	1	0	23.75	0.237	100
		1	7	23.83	0.242	100
		1	14	23.72	0.236	100
		8	0	22.87	0.193	100
		8	3	22.78	0.190	100
		8	7	22.81	0.191	100
		15	0	22.87	0.194	100
	16QAM	1	0	23.22	0.210	100
		1	7	23.11	0.205	100
		1	14	22.90	0.195	100
		8	0	21.92	0.156	100
		8	3	21.86	0.154	100
		8	7	21.83	0.153	100
		15	0	21.86	0.154	100
	64QAM	1	0	22.18	0.165	100
		1	7	22.01	0.159	100
		1	14	22.03	0.160	100
		8	0	20.83	0.121	100
		8	3	20.90	0.123	100
		8	7	20.82	0.121	100
		15	0	20.88	0.122	100
	256QAM	1	0	18.83	0.076	100
		1	7	18.96	0.079	100
		1	14	18.89	0.078	100
		8	0	18.83	0.076	100
		8	3	18.83	0.076	100
		8	7	18.83	0.076	100
		15	0	18.82	0.076	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
5	QPSK	1	0	23.75	0.237	100
		1	12	23.85	0.242	100
		1	24	23.71	0.235	100
		12	0	22.87	0.194	100
		12	6	22.79	0.190	100
		12	11	22.79	0.190	100
		25	0	22.87	0.194	100
	16QAM	1	0	23.24	0.211	100
		1	12	23.11	0.205	100
		1	24	22.88	0.194	100
		12	0	21.90	0.155	100
		12	6	21.87	0.154	100
		12	11	21.85	0.153	100
		25	0	21.88	0.154	100
	64QAM	1	0	22.18	0.165	100
		1	12	22.01	0.159	100
		1	24	22.06	0.161	100
		12	0	20.85	0.122	100
		12	6	20.89	0.123	100
		12	11	20.82	0.121	100
		25	0	20.88	0.122	100
	256QAM	1	0	18.83	0.076	100
		1	12	18.94	0.078	100
		1	24	18.89	0.078	100
		12	0	18.81	0.076	100
		12	6	18.84	0.077	100
		12	11	18.84	0.077	100
		25	0	18.84	0.077	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
10	QPSK	1	0	23.77	0.238	100
		1	24	23.85	0.243	100
		1	49	23.72	0.236	100
		25	0	22.84	0.192	100
		25	12	22.82	0.191	100
		25	24	22.81	0.191	100
		50	0	22.86	0.193	100
	16QAM	1	0	23.25	0.211	100
		1	24	23.11	0.205	100
		1	49	22.89	0.195	100
		25	0	21.92	0.156	100
		25	12	21.87	0.154	100
		25	24	21.82	0.152	100
		50	0	21.87	0.154	100
	64QAM	1	0	22.17	0.165	100
		1	24	21.99	0.158	100
		1	49	22.03	0.160	100
		25	0	20.83	0.121	100
		25	12	20.91	0.123	100
		25	24	20.79	0.120	100
		50	0	20.88	0.122	100
	256QAM	1	0	18.85	0.077	100
		1	24	18.97	0.079	100
		1	49	18.89	0.077	100
		25	0	18.81	0.076	100
		25	12	18.86	0.077	100
		25	24	18.83	0.076	100
		50	0	18.82	0.076	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	-34.31	27.99	-10.24	1.44	V	< 7.00	0.043	16.31	1	5
		16QAM	-34.95	27.35	-10.24	1.44	V		0.037	15.67		
		64QAM	-36.04	26.26	-10.24	1.44	V		0.029	14.58		
		256QAM	-39.15	23.15	-10.24	1.44	V		0.014	11.47		

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	-34.15	28.15	-10.24	1.44	V	< 7.00	0.044	16.47	1	14
		16QAM	-34.92	27.38	-10.24	1.44	V		0.037	15.70		
		64QAM	-35.98	26.32	-10.24	1.44	V		0.029	14.64		
		256QAM	-39.11	23.19	-10.24	1.44	V		0.014	11.51		

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/ 5 MHz	QPSK	-34.09	28.21	-10.24	1.44	V	< 7.00	0.045	16.53	1	24
		16QAM	-34.75	27.55	-10.24	1.44	V		0.039	15.87		
		64QAM	-35.86	26.44	-10.24	1.44	V		0.030	14.76		
		256QAM	-39.03	23.27	-10.24	1.44	V		0.014	11.59		

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	-33.70	28.60	-10.24	1.44	V	< 7.00	0.049	16.92	1	49
		16QAM	-34.47	27.83	-10.24	1.44	V		0.041	16.15		
		64QAM	-35.65	26.65	-10.24	1.44	V		0.031	14.97		
		256QAM	-38.72	23.58	-10.24	1.44	V		0.016	11.90		

8.8.3 RADIATED SPURIOUS EMISSIONS

☐ MODE: LTE B26
☐ 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	-47.16	9.70	-65.82	2.02	H	-58.14	-13.00	1	49
	2 472.00	-36.38	10.46	-52.22	2.59	H	-44.35	-13.00		
	3 296.00	-47.04	12.07	-62.01	2.95	V	-52.89	-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	3.6970	27.976	-67.260	-39.284	-13.00
	3		3.7039	27.976	-67.208	-39.232	
	5		3.7189	27.976	-67.011	-39.035	
	10		3.7059	27.976	-67.034	-39.058	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 119 ~ 122.
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 123 ~ 134.

8.8.6 BAND EDGE(Part22)

- Test Channel : 26790(824.0 MHz)
- Plots of the EUT's Band Edge are shown Page 135 ~ 142.

9. TEST DATA (Sub1)

9.1 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	23.95	0.248	23.92	0.247	100
		1	3	23.79	0.239	23.75	0.237	100
		1	5	23.86	0.243	23.83	0.241	100
		3	0	23.88	0.244	23.85	0.243	100
		3	1	23.85	0.243	23.81	0.240	100
		3	3	23.93	0.247	23.93	0.247	100
		6	0	22.26	0.168	22.25	0.168	100
	16QAM	1	0	23.15	0.207	23.12	0.205	100
		1	3	23.26	0.212	23.24	0.211	100
		1	5	23.16	0.207	23.15	0.207	100
		3	0	22.91	0.195	22.89	0.195	100
		3	1	22.92	0.196	22.90	0.195	100
		3	3	23.06	0.202	23.03	0.201	100
		6	0	21.95	0.157	21.92	0.155	100
	64QAM	1	0	22.04	0.160	22.01	0.159	100
		1	3	21.93	0.156	21.90	0.155	100
		1	5	22.05	0.160	22.02	0.159	100
		3	0	22.08	0.161	22.04	0.160	100
		3	1	22.15	0.164	22.15	0.164	100
		3	3	21.95	0.157	21.93	0.156	100
		6	0	20.82	0.121	20.81	0.121	100
	256QAM	1	0	18.98	0.079	18.97	0.079	100
		1	3	18.75	0.075	18.74	0.075	100
		1	5	18.86	0.077	18.84	0.077	100
		3	0	18.94	0.078	18.93	0.078	100
		3	1	18.96	0.079	18.95	0.079	100
		3	3	18.89	0.077	18.87	0.077	100
		6	0	18.81	0.076	18.81	0.076	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	23.97	0.249	23.96	0.249	100
		1	7	23.81	0.240	23.80	0.240	100
		1	14	23.81	0.240	23.80	0.240	100
		8	0	22.83	0.192	22.79	0.190	100
		8	3	22.86	0.193	22.85	0.193	100
		8	7	22.86	0.193	22.83	0.192	100
		15	0	22.82	0.191	22.81	0.191	100
	16QAM	1	0	23.08	0.203	23.05	0.202	100
		1	7	23.27	0.212	23.25	0.211	100
		1	14	23.05	0.202	23.05	0.202	100
		8	0	21.93	0.156	21.89	0.155	100
		8	3	21.94	0.156	21.93	0.156	100
		8	7	21.82	0.152	21.80	0.151	100
		15	0	21.90	0.155	21.89	0.154	100
	64QAM	1	0	21.97	0.157	21.96	0.157	100
		1	7	22.06	0.161	22.04	0.160	100
		1	14	22.10	0.162	22.08	0.161	100
		8	0	20.97	0.125	20.94	0.124	100
		8	3	20.96	0.125	20.95	0.124	100
		8	7	20.84	0.121	20.80	0.120	100
		15	0	20.91	0.123	20.90	0.123	100
	256QAM	1	0	18.91	0.078	18.87	0.077	100
		1	7	18.86	0.077	18.82	0.076	100
		1	14	18.98	0.079	18.95	0.079	100
		8	0	18.94	0.078	18.90	0.078	100
		8	3	18.92	0.078	18.90	0.078	100
		8	7	18.80	0.076	18.77	0.075	100
		15	0	18.87	0.077	18.83	0.076	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	23.97	0.249	23.97	0.249	100
		1	12	23.81	0.240	23.77	0.238	100
		1	24	23.81	0.240	23.79	0.239	100
		12	0	22.83	0.192	22.81	0.191	100
		12	6	22.86	0.193	22.82	0.192	100
		12	11	22.86	0.193	22.83	0.192	100
		25	0	22.82	0.191	22.81	0.191	100
	16QAM	1	0	23.08	0.203	23.05	0.202	100
		1	12	23.27	0.212	23.24	0.211	100
		1	24	23.05	0.202	23.04	0.201	100
		12	0	21.93	0.156	21.92	0.156	100
		12	6	21.94	0.156	21.91	0.155	100
		12	11	21.82	0.152	21.79	0.151	100
		25	0	21.90	0.155	21.87	0.154	100
	64QAM	1	0	21.97	0.157	21.93	0.156	100
		1	12	22.06	0.161	22.05	0.160	100
		1	24	22.10	0.162	22.09	0.162	100
		12	0	20.97	0.125	20.96	0.125	100
		12	6	20.96	0.125	20.94	0.124	100
		12	11	20.84	0.121	20.80	0.120	100
		25	0	20.91	0.123	20.91	0.123	100
	256QAM	1	0	18.91	0.078	18.89	0.077	100
		1	12	18.86	0.077	18.85	0.077	100
		1	24	18.98	0.079	18.97	0.079	100
		12	0	18.94	0.078	18.91	0.078	100
		12	6	18.92	0.078	18.90	0.078	100
		12	11	18.80	0.076	18.76	0.075	100
		25	0	18.87	0.077	18.85	0.077	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				819 MHz		
				dBm	W	
10	QPSK	1	0	23.71	0.235	100
		1	24	23.92	0.247	100
		1	49	23.70	0.235	100
		25	0	22.86	0.193	100
		25	12	22.86	0.193	100
		25	24	22.73	0.187	100
		50	0	22.88	0.194	100
	16QAM	1	0	23.00	0.200	100
		1	24	23.06	0.202	100
		1	49	22.84	0.192	100
		25	0	21.88	0.154	100
		25	12	21.97	0.157	100
		25	24	21.76	0.150	100
		50	0	21.85	0.153	100
	64QAM	1	0	21.95	0.157	100
		1	24	22.04	0.160	100
		1	49	21.83	0.152	100
		25	0	20.91	0.123	100
		25	12	20.90	0.123	100
		25	24	20.78	0.120	100
		50	0	20.90	0.123	100
	256QAM	1	0	18.91	0.078	100
		1	24	18.98	0.079	100
		1	49	18.77	0.075	100
		25	0	18.83	0.076	100
		25	12	18.86	0.077	100
		25	24	18.78	0.075	100
		50	0	18.80	0.076	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				821.5 MHz		
				dBm	W	
15	QPSK	1	0	23.76	0.238	100
		1	36	23.93	0.247	100
		1	74	23.57	0.228	100
		36	0	22.77	0.189	100
		36	18	22.62	0.183	100
		36	39	22.64	0.183	100
		75	0	22.71	0.187	100
	16QAM	1	0	22.83	0.192	100
		1	36	22.80	0.191	100
		1	74	22.83	0.192	100
		36	0	21.83	0.152	100
		36	18	21.63	0.146	100
		36	39	21.64	0.146	100
		75	0	21.62	0.145	100
	64QAM	1	0	21.84	0.153	100
		1	36	21.85	0.153	100
		1	74	22.01	0.159	100
		36	0	20.75	0.119	100
		36	18	20.59	0.115	100
		36	39	20.56	0.114	100
		75	0	20.67	0.117	100
	256QAM	1	0	18.89	0.077	100
		1	36	18.76	0.075	100
		1	74	18.64	0.073	100
		36	0	18.73	0.075	100
		36	18	18.63	0.073	100
		36	39	18.59	0.072	100
		75	0	18.59	0.072	100

9.2 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	-31.58	30.86	-10.29	1.44	H	< 100	0.082	19.13	1	0
		16QAM	-32.30	30.14	-10.29	1.44	H		0.069	18.41		
		64QAM	-33.46	28.98	-10.29	1.44	H		0.053	17.25		
		256QAM	-36.57	25.87	-10.29	1.44	H		0.026	14.14		
823.3		QPSK	-31.80	30.54	-10.25	1.44	H		0.077	18.85	1	0
		16QAM	-32.51	29.83	-10.25	1.44	H		0.065	18.14		
		64QAM	-33.63	28.71	-10.25	1.44	H		0.050	17.02		
		256QAM	-36.69	25.65	-10.25	1.44	H		0.025	13.96		

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	-31.64	30.76	-10.29	1.44	H	< 100	0.080	19.03	1	0
		16QAM	-32.38	30.02	-10.29	1.44	H		0.067	18.29		
		64QAM	-33.46	28.94	-10.29	1.44	H		0.053	17.21		
		256QAM	-36.56	25.84	-10.29	1.44	H		0.026	14.11		
822.5		QPSK	-31.83	30.55	-10.25	1.44	H		0.077	18.86	1	0
		16QAM	-32.60	29.78	-10.25	1.44	H		0.064	18.09		
		64QAM	-33.65	28.73	-10.25	1.44	H		0.051	17.04		
		256QAM	-36.73	25.65	-10.25	1.44	H		0.025	13.96		

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	-31.60	30.75	-10.28	1.44	H	< 100	0.080	19.03	1	0
		16QAM	-32.35	30.00	-10.28	1.44	H		0.067	18.28		
		64QAM	-33.47	28.88	-10.28	1.44	H		0.052	17.16		
		256QAM	-36.61	25.74	-10.28	1.44	H		0.025	14.02		
821.5		QPSK	-31.81	30.63	-10.26	1.44	H		0.078	18.93	1	0
		16QAM	-32.48	29.96	-10.26	1.44	H		0.067	18.26		
		64QAM	-33.61	28.83	-10.26	1.44	H		0.052	17.13		
		256QAM	-36.71	25.73	-10.26	1.44	H		0.025	14.03		

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	-31.68	30.74	-10.27	1.44	H	< 100	0.080	19.03	1	0
		16QAM	-32.45	29.97	-10.27	1.44	H		0.067	18.26		
		64QAM	-33.54	28.88	-10.27	1.44	H		0.052	17.17		
		256QAM	-36.59	25.83	-10.27	1.44	H		0.026	14.12		

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	-31.58	30.86	-10.26	1.44	H	< 100	0.082	19.16	1	0
		16QAM	-32.44	30.00	-10.26	1.44	H		0.068	18.30		
		64QAM	-33.57	28.87	-10.26	1.44	H		0.052	17.17		
		256QAM	-36.58	25.86	-10.26	1.44	H		0.026	14.16		

Note

1. Limit: None (for reporting purposes only)

9.3 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	-46.01	9.65	-64.61	2.00	V	-56.96	-13.00	1	0
	2 464.50	-36.75	10.42	-52.63	2.59	H	-44.80	-13.00		
	3 286.00	-47.19	12.01	-62.04	2.95	V	-52.98	-13.00		

9.4 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	1.0972
			16QAM			1.1031
			64QAM			1.1012
			256QAM			1.0927
	3 MHz	822.5	QPSK	15		2.7119
			16QAM			2.7089
			64QAM			2.7150
			256QAM			2.7171
	5 MHz	821.5	QPSK	25		4.5181
			16QAM			4.5150
			64QAM			4.5186
			256QAM			4.5274
	10 MHz	819.0	QPSK	50		8.9963
			16QAM			8.9876
			64QAM			9.0038
			256QAM			9.0038
	15 MHz	821.5	QPSK	75		13.485
			16QAM			13.508
			64QAM			13.484
			256QAM			13.458

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 144 ~ 163.

9.5 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
26	1.4	814.7	3.7054	27.976	-67.166	-39.190	-13.00
		823.3	3.6935	27.976	-67.277	-39.301	
	3	815.5	3.1825	27.976	-66.953	-38.977	
		822.5	3.7024	27.976	-67.145	-39.169	
	5	816.5	3.1666	27.976	-67.361	-39.385	
		821.5	3.6925	27.976	-67.165	-39.189	
	10	819.0	3.6830	27.976	-67.449	-39.473	
	15	821.5	3.7020	27.976	-67.023	-39.047	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 184 ~ 191.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor (dB) = Cable Loss + Ext. Attenuator + Power Splitter

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

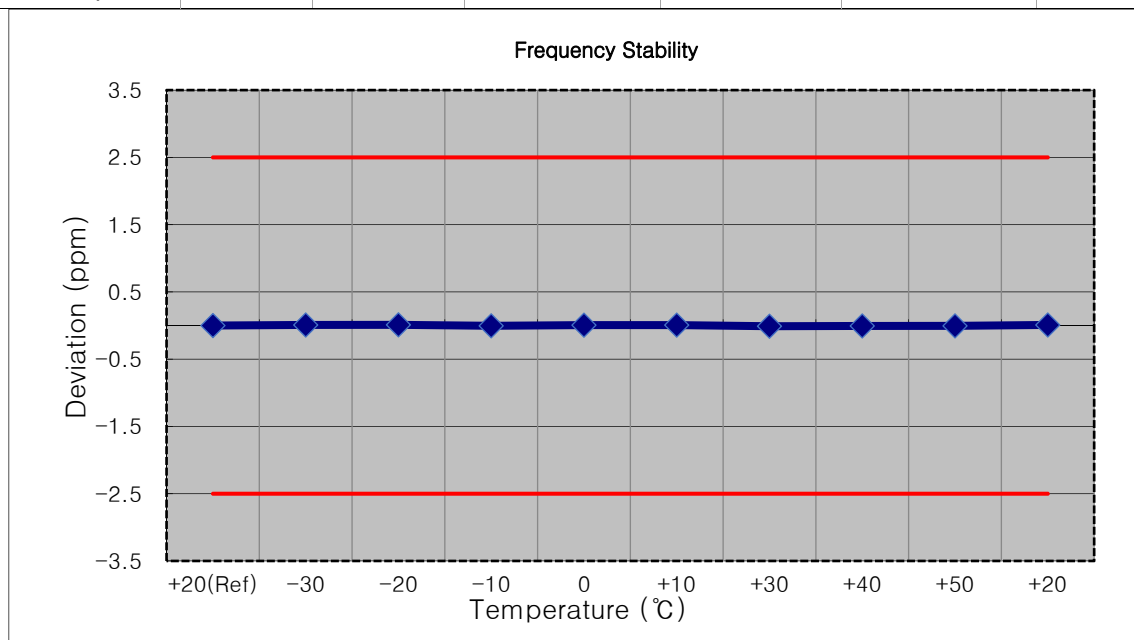
9.6 CHANNEL EDGE

- Plots of the EUT's Band Edge are shown Page 164 ~ 183.

9.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

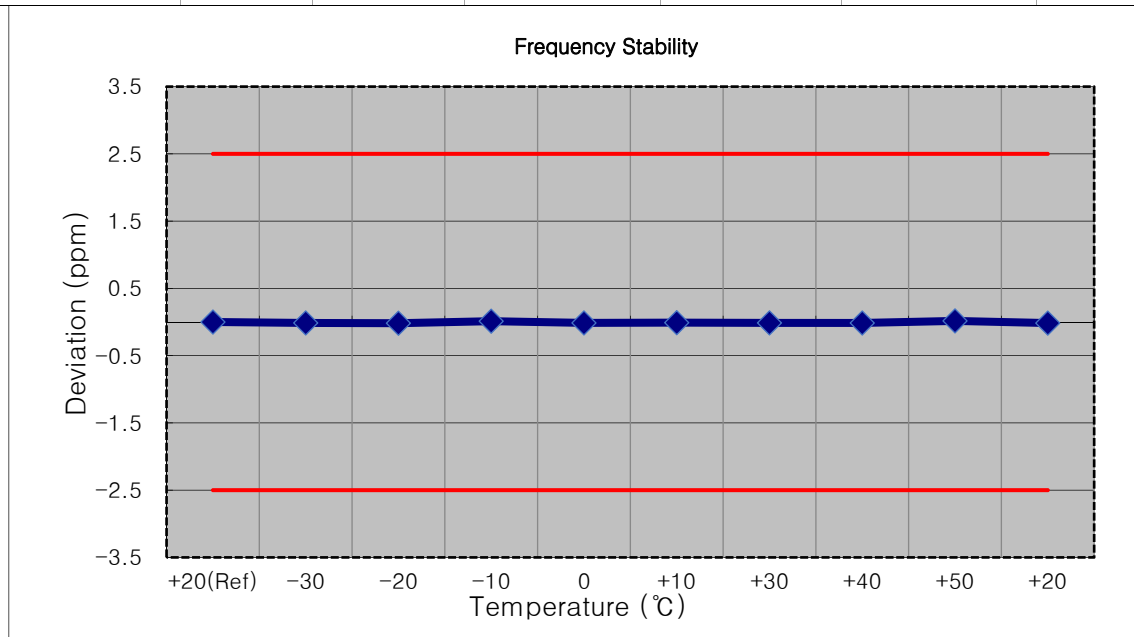
MODE:	LTE 26
OPERATING FREQUENCY:	814,700,000 Hz
CHANNEL:	26697(1.4 MHz)
REFERENCE VOLTAGE:	3.880 VDC
DEVIATION LIMIT:	$\pm 0.000\ 25\ \%$ or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	814 699 996	0.0	0.000 000	0.000
100 %		-30	814 700 003	6.9	0.000 001	0.008
100 %		-20	814 700 005	8.8	0.000 001	0.011
100 %		-10	814 699 992	-3.4	0.000 000	-0.004
100 %		0	814 700 001	5.1	0.000 001	0.006
100 %		+10	814 700 001	5.5	0.000 001	0.007
100 %		+30	814 699 988	-8.1	-0.000 001	-0.010
100 %		+40	814 699 991	-4.8	-0.000 001	-0.006
100 %		+50	814 699 992	-3.8	0.000 000	-0.005
Batt. Endpoint	3.300	+20	814 700 003	7.2	0.000 001	0.009



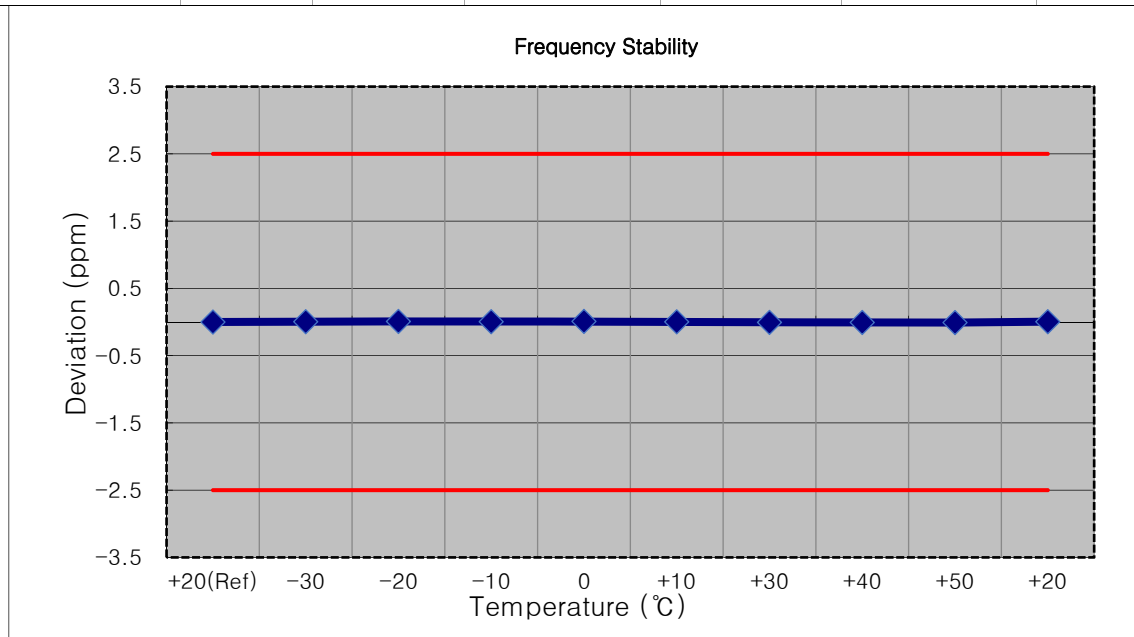
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 815,500,000 Hz
 ■ CHANNEL: 26705(3 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	815 500 009	0.0	0.000 000	0.000
100 %		-30	815 499 997	-11.4	-0.000 001	-0.014
100 %		-20	815 499 994	-14.4	-0.000 002	-0.018
100 %		-10	815 500 019	10.2	0.000 001	0.013
100 %		0	815 499 998	-11.0	-0.000 001	-0.013
100 %		+10	815 500 001	-7.7	-0.000 001	-0.009
100 %		+30	815 499 998	-10.6	-0.000 001	-0.013
100 %		+40	815 499 997	-11.6	-0.000 001	-0.014
100 %		+50	815 500 022	13.4	0.000 002	0.016
Batt. Endpoint	3.300	+20	815 499 996	-12.8	-0.000 002	-0.016



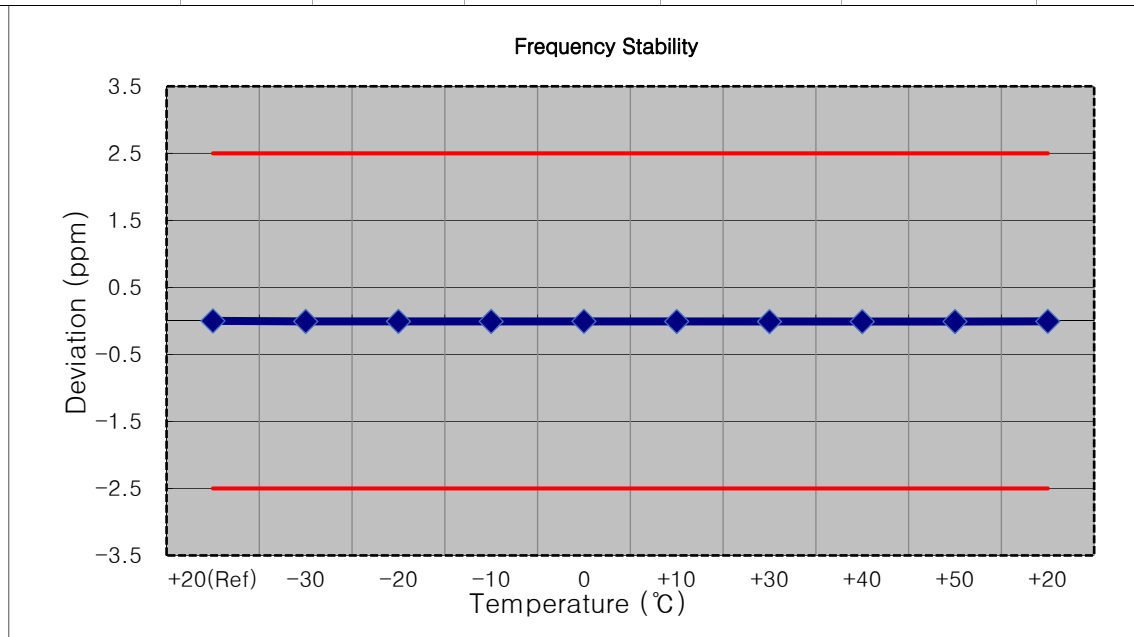
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 816,500,000 Hz
 ■ CHANNEL: 26715(5 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	816 500 007	0.0	0.000 000	0.000
100 %		-30	816 500 011	3.7	0.000 000	0.005
100 %		-20	816 500 014	6.9	0.000 001	0.008
100 %		-10	816 500 011	3.5	0.000 000	0.004
100 %		0	816 500 015	7.4	0.000 001	0.009
100 %		+10	816 500 010	2.7	0.000 000	0.003
100 %		+30	816 500 003	-4.9	-0.000 001	-0.006
100 %		+40	816 500 002	-5.3	-0.000 001	-0.006
100 %		+50	816 500 001	-6.7	-0.000 001	-0.008
Batt. Endpoint	3.300	+20	816 500 012	4.1	0.000 001	0.005



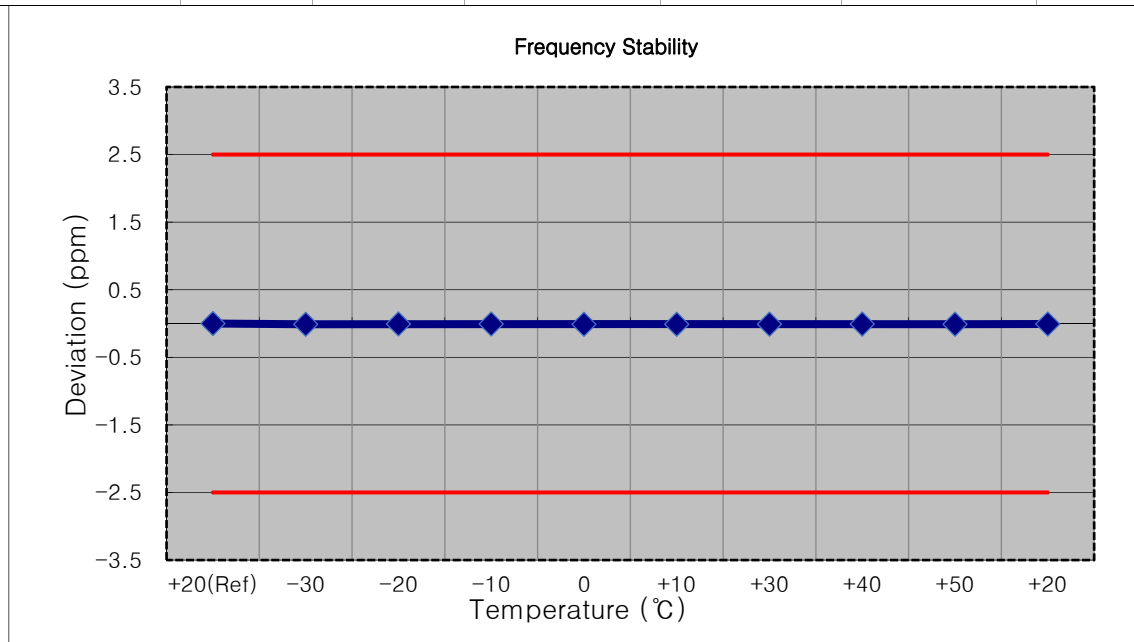
■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 819,000,000 Hz
 ■ CHANNEL: 26740(10 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	818 999 995	0.0	0.000 000	0.000
100 %		-30	818 999 989	-6.5	-0.000 001	-0.008
100 %		-20	818 999 989	-6.3	-0.000 001	-0.008
100 %		-10	818 999 989	-6.3	-0.000 001	-0.008
100 %		0	818 999 990	-5.5	-0.000 001	-0.007
100 %		+10	818 999 988	-7.0	-0.000 001	-0.009
100 %		+30	818 999 987	-8.4	-0.000 001	-0.010
100 %		+40	818 999 987	-8.5	-0.000 001	-0.010
100 %		+50	818 999 987	-8.2	-0.000 001	-0.010
Batt. Endpoint	3.300	+20	818 999 990	-5.8	-0.000 001	-0.007



■ MODE: LTE 26
 ■ OPERATING FREQUENCY: 821,500,000 Hz
 ■ CHANNEL: 26765(15 MHz)
 ■ REFERENCE VOLTAGE: 3.880 VDC
 ■ DEVIATION LIMIT: $\pm 0.000\ 25\ \%$ or 2.5 ppm

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.880	+20(Ref)	821 499 992	0.0	0.000 000	0.000
100 %		-30	821 499 983	-9.1	-0.000 001	-0.011
100 %		-20	821 499 987	-5.2	-0.000 001	-0.006
100 %		-10	821 499 987	-5.7	-0.000 001	-0.007
100 %		0	821 499 983	-9.0	-0.000 001	-0.011
100 %		+10	821 499 983	-8.9	-0.000 001	-0.011
100 %		+30	821 499 985	-7.3	-0.000 001	-0.009
100 %		+40	821 499 986	-6.5	-0.000 001	-0.008
100 %		+50	821 499 984	-8.3	-0.000 001	-0.010
Batt. Endpoint	3.300	+20	821 499 986	-5.8	-0.000 001	-0.007



9.8 STRADDLE CHANNEL

9.8.1 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	23.94	0.248	100
		1	3	23.79	0.239	100
		1	5	23.82	0.241	100
		3	0	23.86	0.243	100
		3	1	23.85	0.242	100
		3	3	23.93	0.247	100
		6	0	22.25	0.168	100
	16QAM	1	0	23.12	0.205	100
		1	3	23.22	0.210	100
		1	5	23.13	0.205	100
		3	0	22.88	0.194	100
		3	1	22.91	0.196	100
		3	3	23.06	0.202	100
		6	0	21.94	0.156	100
	64QAM	1	0	22.01	0.159	100
		1	3	21.89	0.155	100
		1	5	22.01	0.159	100
		3	0	22.07	0.161	100
		3	1	22.12	0.163	100
		3	3	21.92	0.156	100
		6	0	20.79	0.120	100
	256QAM	1	0	18.98	0.079	100
		1	3	18.73	0.075	100
		1	5	18.84	0.076	100
		3	0	18.91	0.078	100
		3	1	18.96	0.079	100
		3	3	18.89	0.077	100
		6	0	18.79	0.076	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
3	QPSK	1	0	23.95	0.248	100
		1	7	23.76	0.238	100
		1	14	23.84	0.242	100
		8	0	23.87	0.244	100
		8	3	23.84	0.242	100
		8	7	23.90	0.245	100
		15	0	22.22	0.167	100
	16QAM	1	0	23.13	0.206	100
		1	7	23.25	0.211	100
		1	14	23.15	0.206	100
		8	0	22.91	0.195	100
		8	3	22.91	0.195	100
		8	7	23.06	0.202	100
		15	0	21.91	0.155	100
	64QAM	1	0	22.02	0.159	100
		1	7	21.91	0.155	100
		1	14	22.02	0.159	100
		8	0	22.07	0.161	100
		8	3	22.15	0.164	100
		8	7	21.93	0.156	100
		15	0	20.81	0.120	100
	256QAM	1	0	18.96	0.079	100
		1	7	18.72	0.074	100
		1	14	18.83	0.076	100
		8	0	18.91	0.078	100
		8	3	18.95	0.079	100
		8	7	18.86	0.077	100
		15	0	18.77	0.075	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
5	QPSK	1	0	23.91	0.246	100
		1	12	23.78	0.239	100
		1	24	23.82	0.241	100
		12	0	23.86	0.243	100
		12	6	23.84	0.242	100
		12	11	23.93	0.247	100
		25	0	22.24	0.167	100
	16QAM	1	0	23.13	0.206	100
		1	12	23.22	0.210	100
		1	24	23.13	0.205	100
		12	0	22.91	0.195	100
		12	6	22.90	0.195	100
		12	11	23.05	0.202	100
		25	0	21.91	0.155	100
	64QAM	1	0	22.02	0.159	100
		1	12	21.92	0.156	100
		1	24	22.01	0.159	100
		12	0	22.05	0.160	100
		12	6	22.14	0.164	100
		12	11	21.91	0.155	100
		25	0	20.81	0.121	100
	256QAM	1	0	18.96	0.079	100
		1	12	18.73	0.075	100
		1	24	18.84	0.077	100
		12	0	18.93	0.078	100
		12	6	18.96	0.079	100
		12	11	18.87	0.077	100
		25	0	18.81	0.076	100

Band Width	Modulation	RB Size	RB Offset	Max. output power(dBm)		Limit (W)
				824 MHz		
				dBm	W	
10	QPSK	1	0	23.94	0.248	100
		1	24	23.76	0.238	100
		1	49	23.82	0.241	100
		25	0	23.86	0.243	100
		25	12	23.83	0.241	100
		25	24	23.90	0.245	100
		50	0	22.24	0.168	100
	16QAM	1	0	23.11	0.205	100
		1	24	23.24	0.211	100
		1	49	23.14	0.206	100
		25	0	22.90	0.195	100
		25	12	22.89	0.194	100
		25	24	23.02	0.201	100
		50	0	21.94	0.156	100
	64QAM	1	0	22.04	0.160	100
		1	24	21.92	0.156	100
		1	49	22.04	0.160	100
		25	0	22.08	0.161	100
		25	12	22.13	0.163	100
		25	24	21.94	0.156	100
		50	0	20.80	0.120	100
	256QAM	1	0	18.97	0.079	100
		1	24	18.72	0.074	100
		1	49	18.83	0.076	100
		25	0	18.91	0.078	100
		25	12	18.92	0.078	100
		25	24	18.86	0.077	100
		50	0	18.78	0.076	100

9.8.2 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	-31.93	30.37	-10.24	1.44	H	< 7.00	0.074	18.69	1	0
		16QAM	-32.58	29.72	-10.24	1.44	H		0.064	18.04		
		64QAM	-33.66	28.64	-10.24	1.44	H		0.050	16.96		
		256QAM	-36.76	25.54	-10.24	1.44	H		0.024	13.86		

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	-31.77	30.53	-10.24	1.44	H	< 7.00	0.077	18.85	1	0
		16QAM	-32.59	29.71	-10.24	1.44	H		0.064	18.03		
		64QAM	-33.62	28.68	-10.24	1.44	H		0.050	17.00		
		256QAM	-36.70	25.60	-10.24	1.44	H		0.025	13.92		

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	-31.81	30.49	-10.24	1.44	H	< 7.00	0.076	18.81	1	0
		16QAM	-32.52	29.78	-10.24	1.44	H		0.065	18.10		
		64QAM	-33.65	28.65	-10.24	1.44	H		0.050	16.97		
		256QAM	-36.70	25.60	-10.24	1.44	H		0.025	13.92		

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	-31.80	30.50	-10.24	1.44	H	< 7.00	0.076	18.82	1	0
		16QAM	-32.57	29.73	-10.24	1.44	H		0.064	18.05		
		64QAM	-33.68	28.62	-10.24	1.44	H		0.049	16.94		
		256QAM	-36.71	25.59	-10.24	1.44	H		0.025	13.91		

9.8.3 RADIATED SPURIOUS EMISSIONS

☐ MODE: LTE B26
☐ MODULATION SIGNAL: 3 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	-47.58	9.70	-66.24	2.02	H	-58.56	-13.00	1	0
	2 472.00	-35.36	10.46	-51.20	2.59	H	-43.33	-13.00		
	3 296.00	-47.66	12.07	-62.63	2.95	H	-53.51	-13.00		

9.8.4 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	3.7104	27.976	-67.208	-39.232	-13.00
	3		3.6855	27.976	-67.417	-39.441	
	5		3.7254	27.976	-67.111	-39.135	
	10		3.6930	27.976	-67.250	-39.274	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 193 ~ 196.
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

9.8.5 CHANNEL EDGE(Part90)

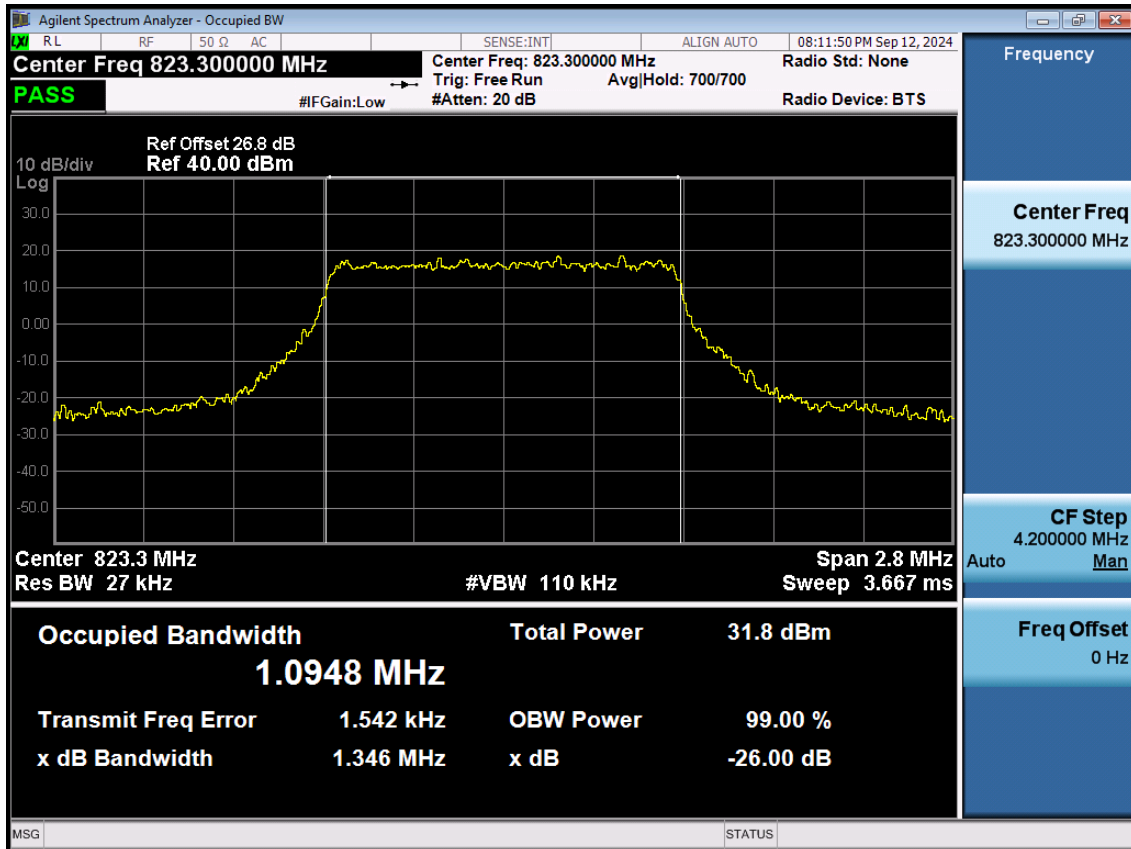
- Test Channel : 26790(824.0MHz)
- Plots of the EUT's Band Edge are shown Page 197 ~ 208.

9.8.6 BAND EDGE(Part22)

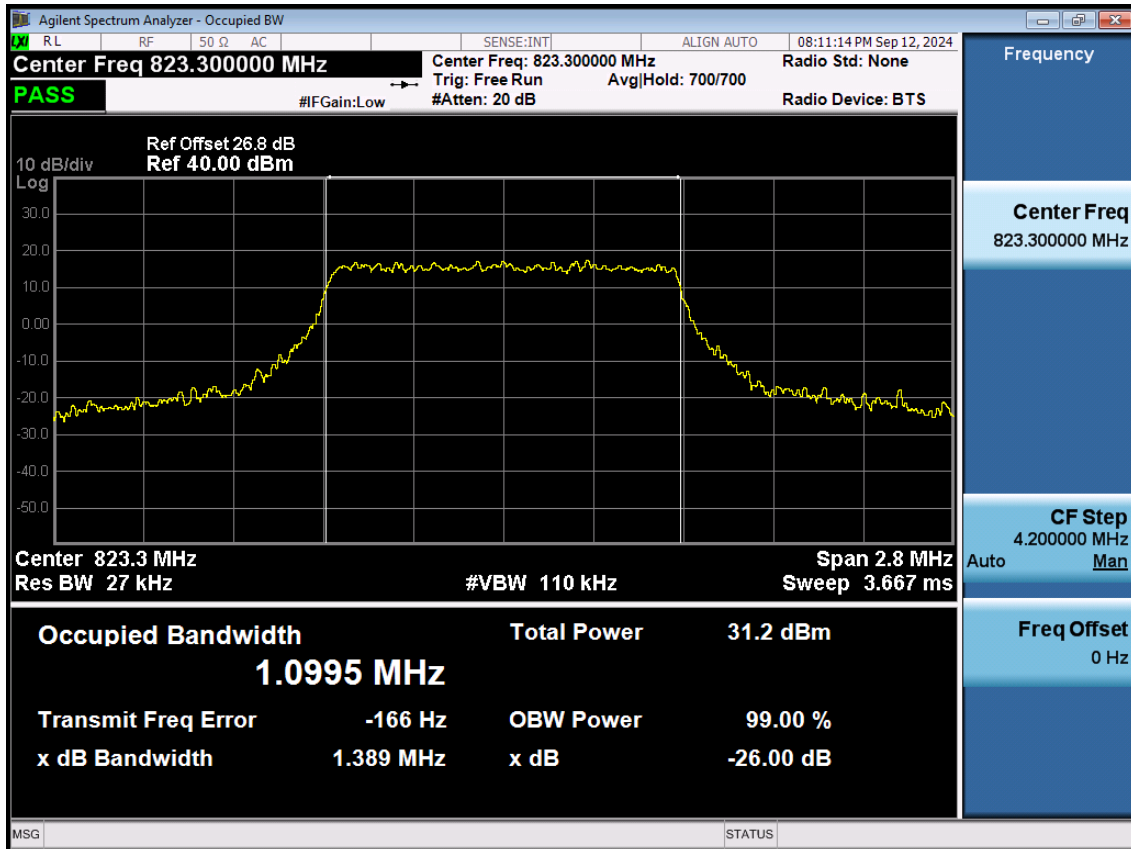
- Test Channel : 26790(824.0 MHz)
- Plots of the EUT's Band Edge are shown Page 209 ~ 216.

10. TEST PLOTS (Main1)

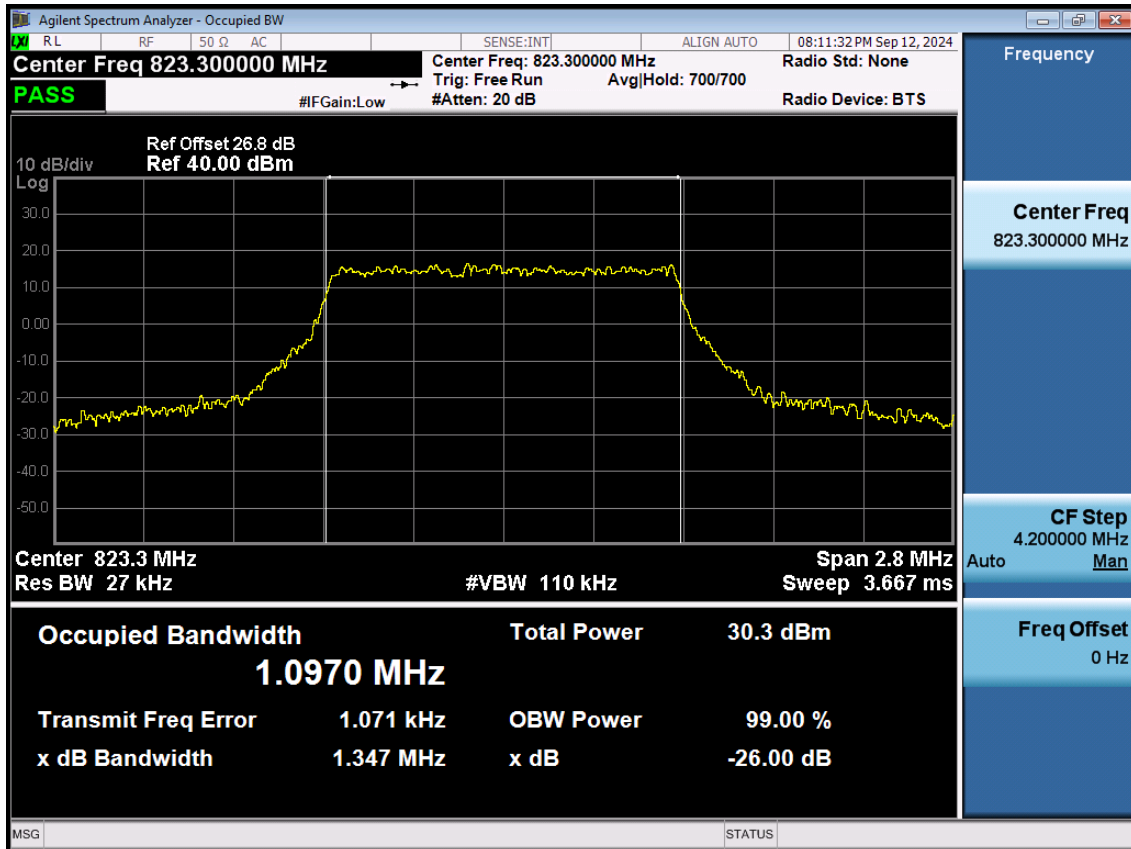
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 QPSK RB 6_0)



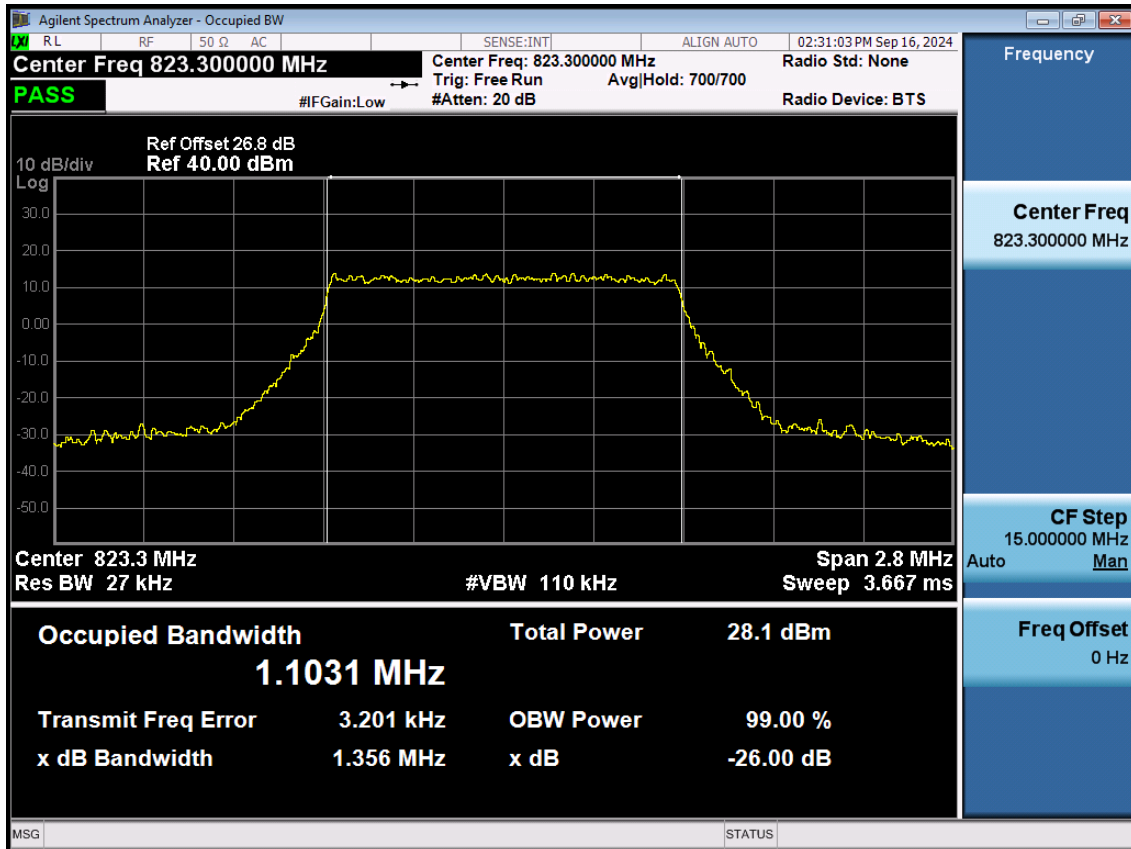
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 16QAM RB 6_0)



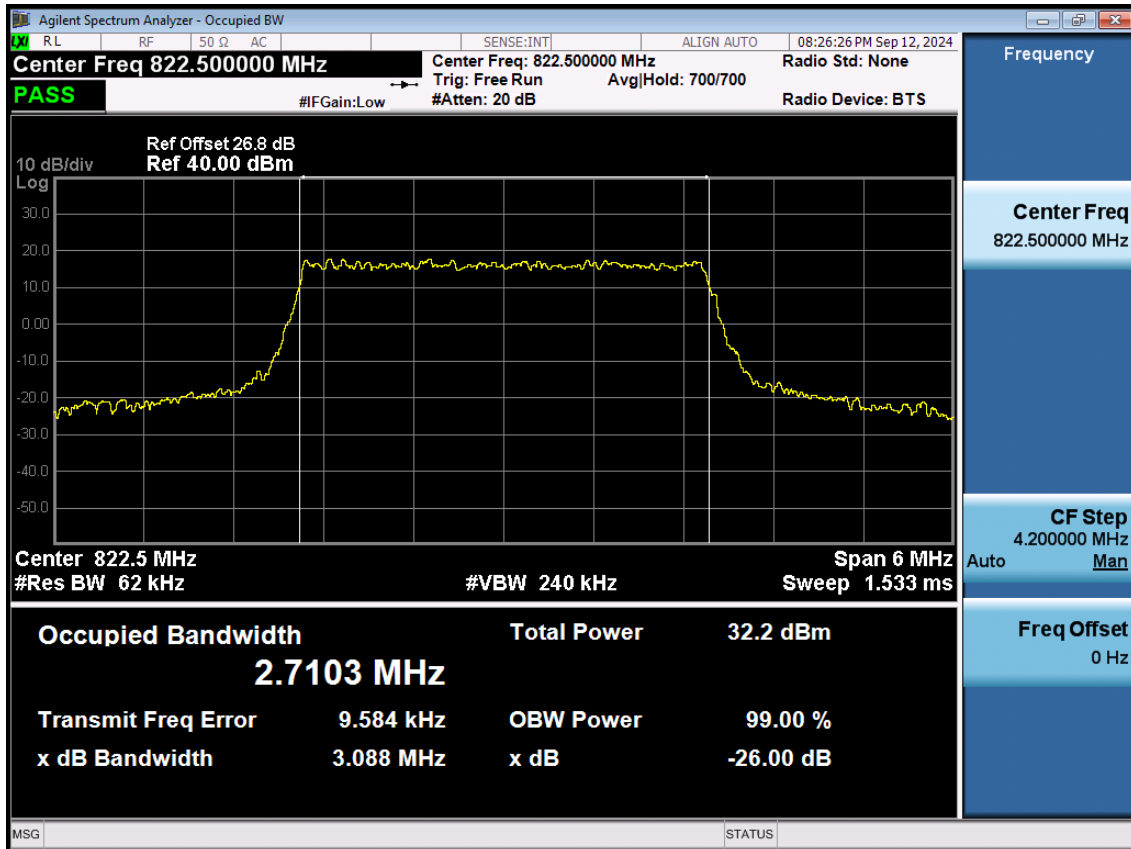
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 64QAM RB 6_0)



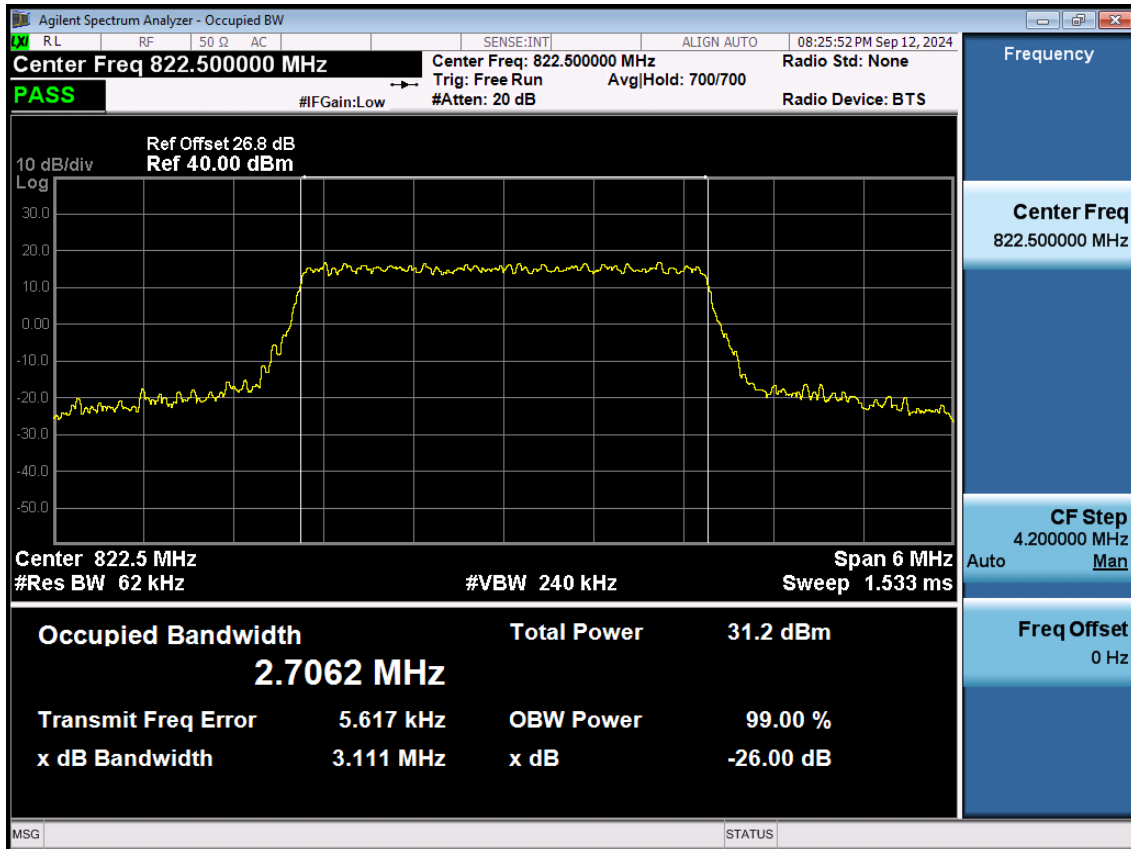
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 256QAM RB 6_0)



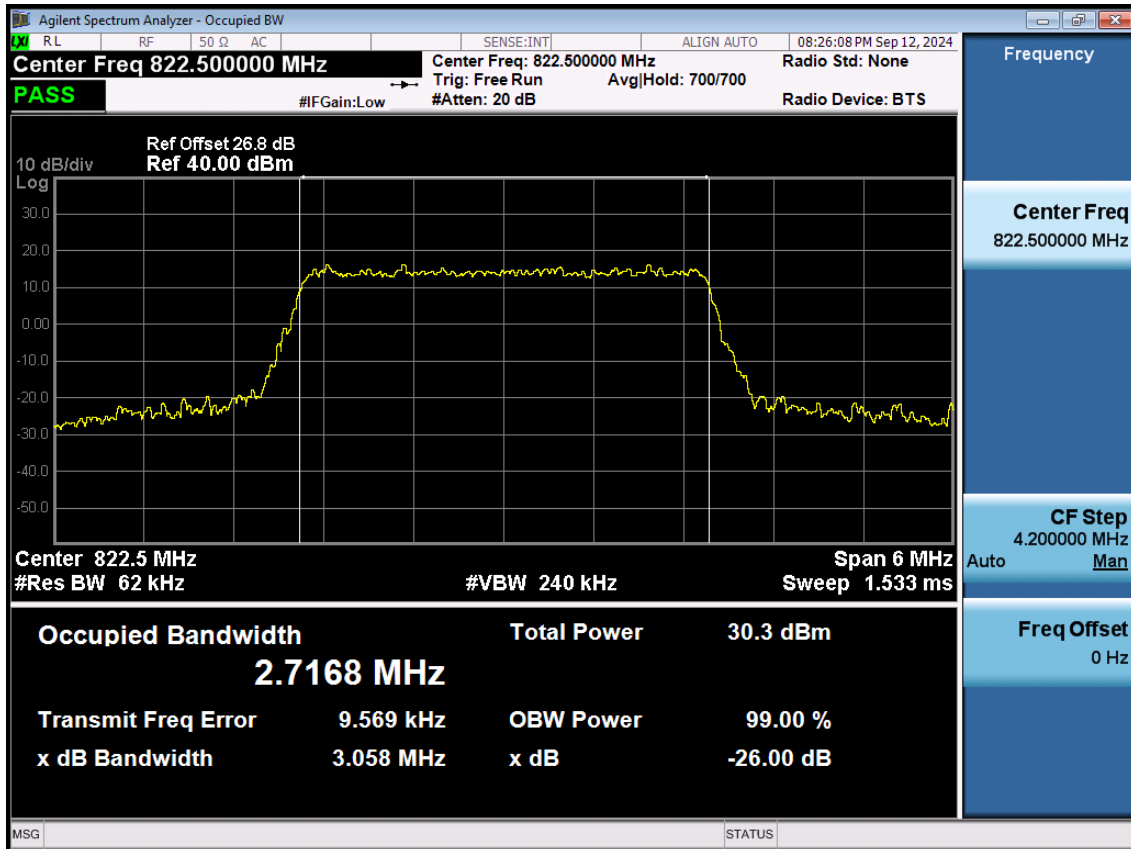
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 QPSK RB 15_0)



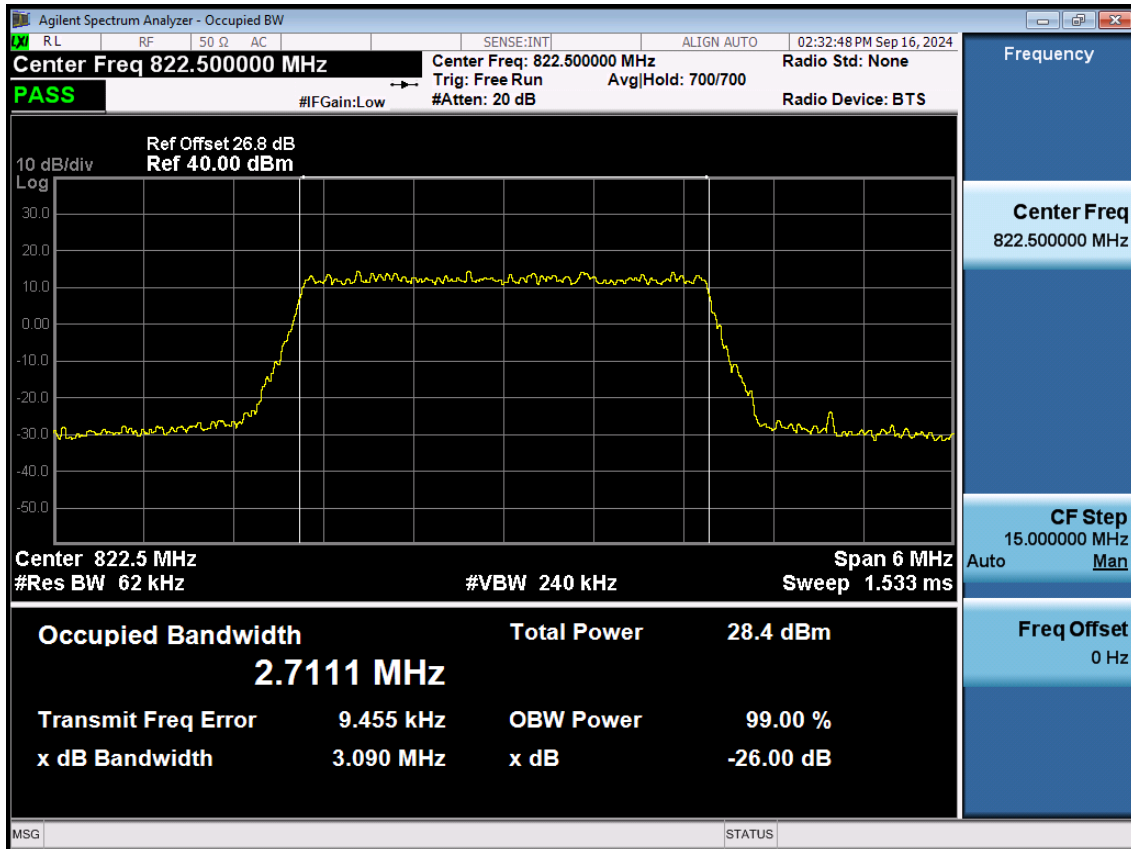
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 16QAM RB 15_0)



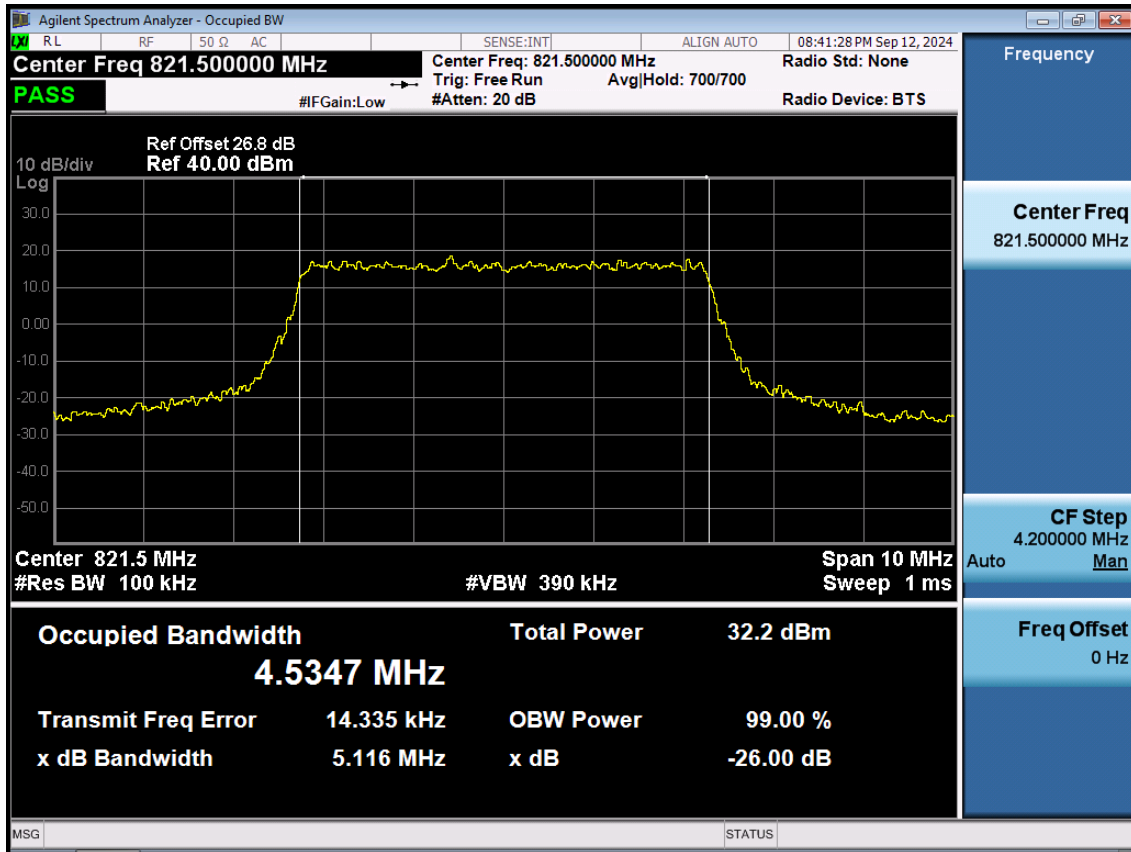
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 64QAM RB 15_0)



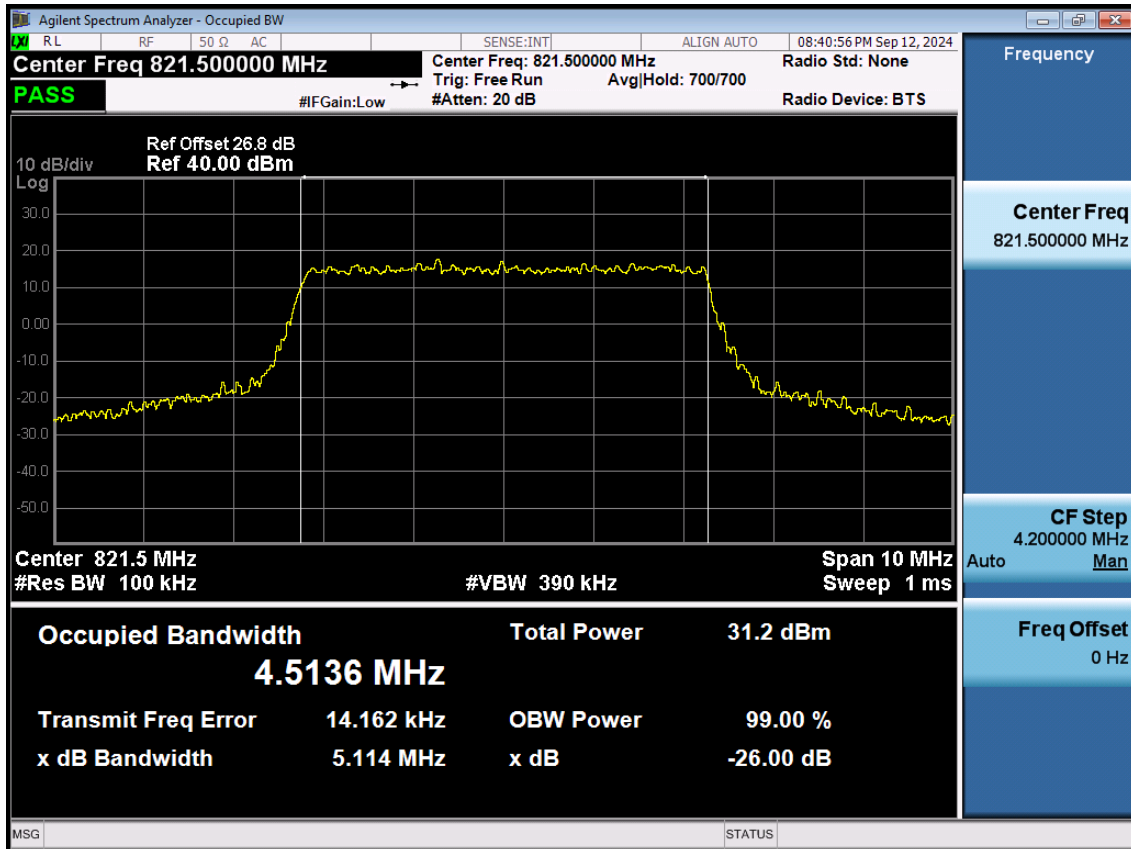
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 256QAM RB 15_0)



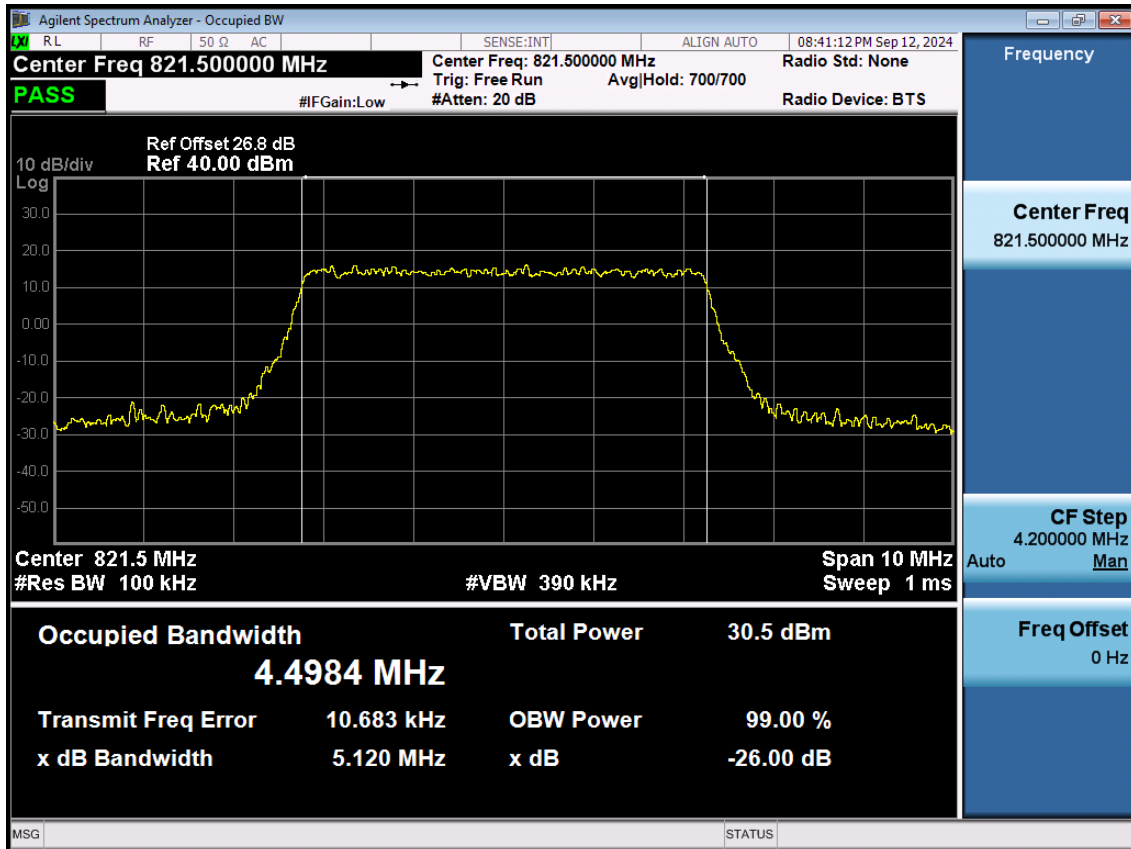
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 QPSK RB 25_0)



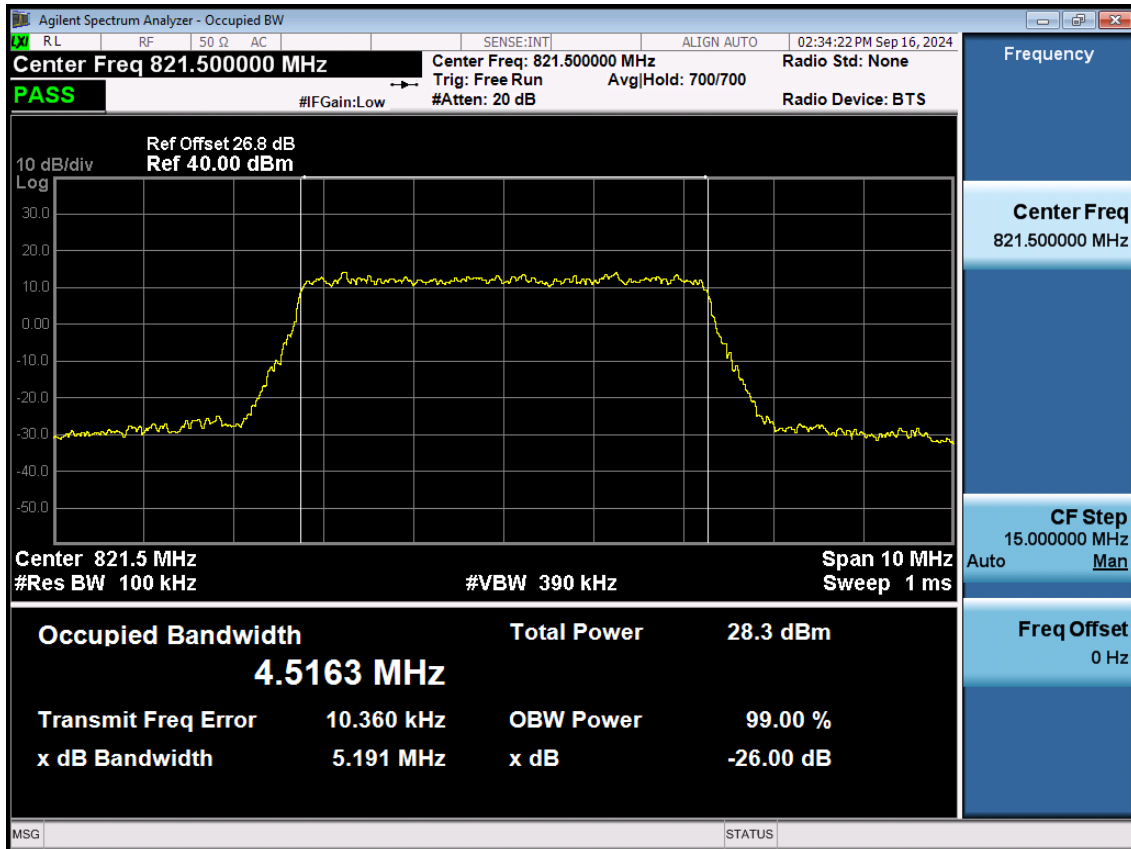
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 16QAM RB 25_0)



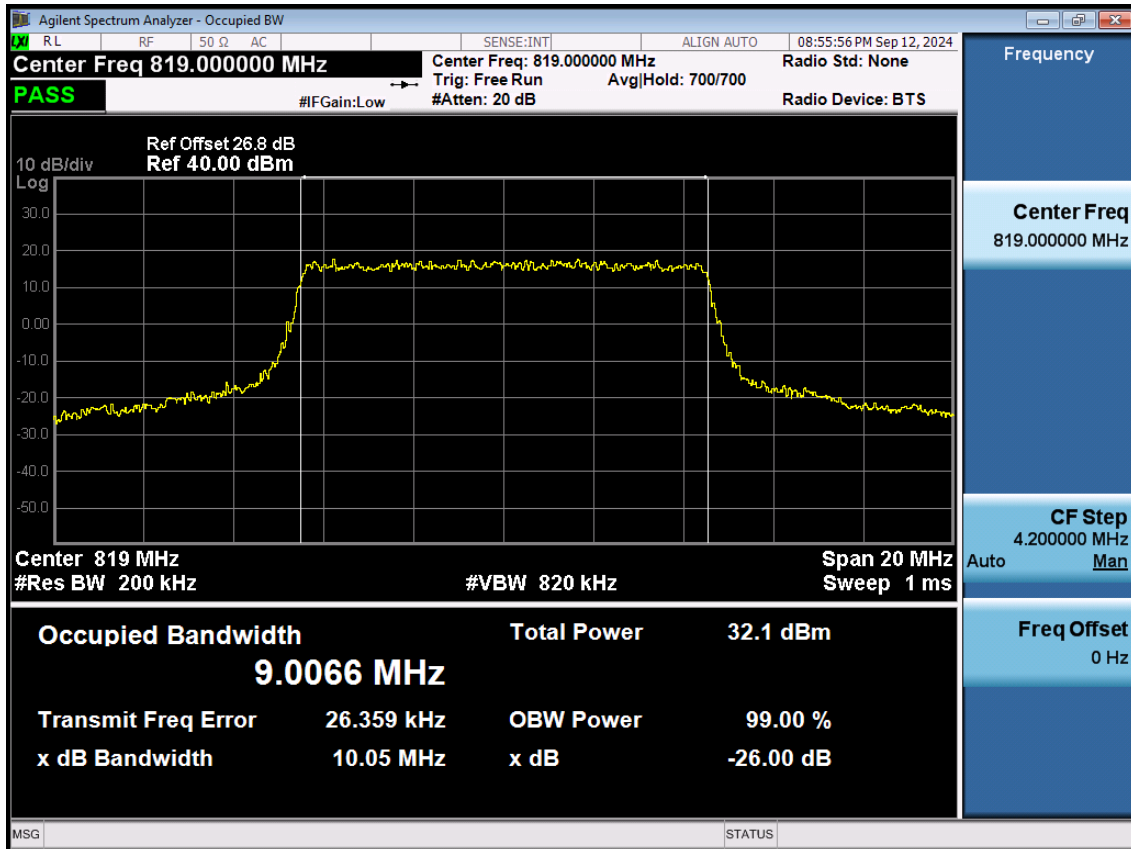
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 64QAM RB 25_0)



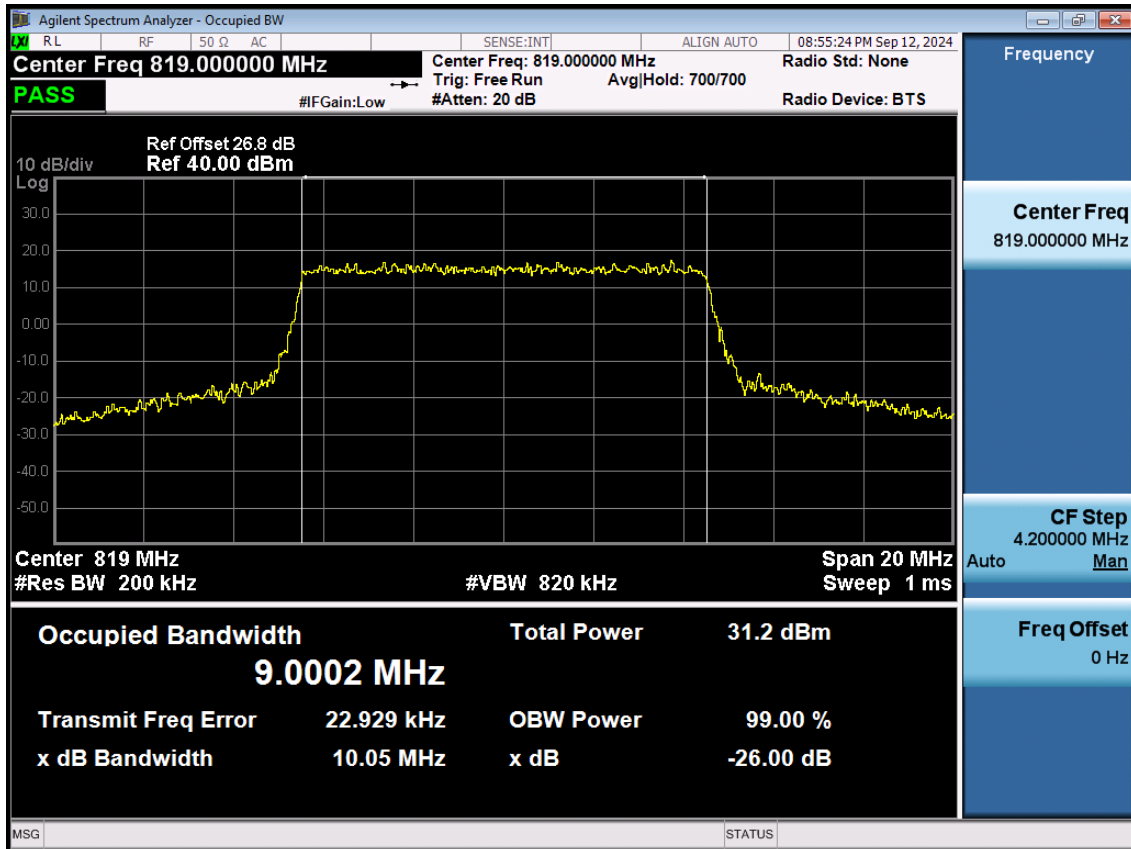
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 256QAM RB 25_0)



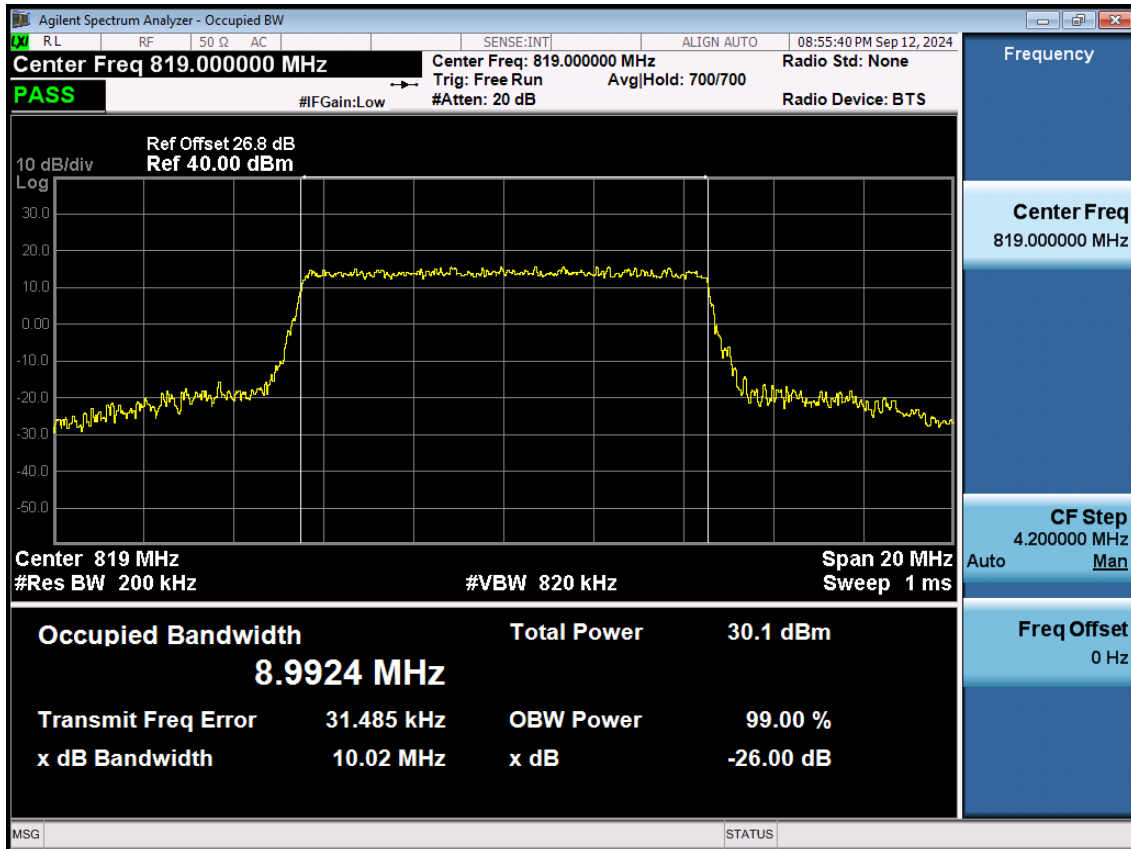
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 QPSK RB 50_0)



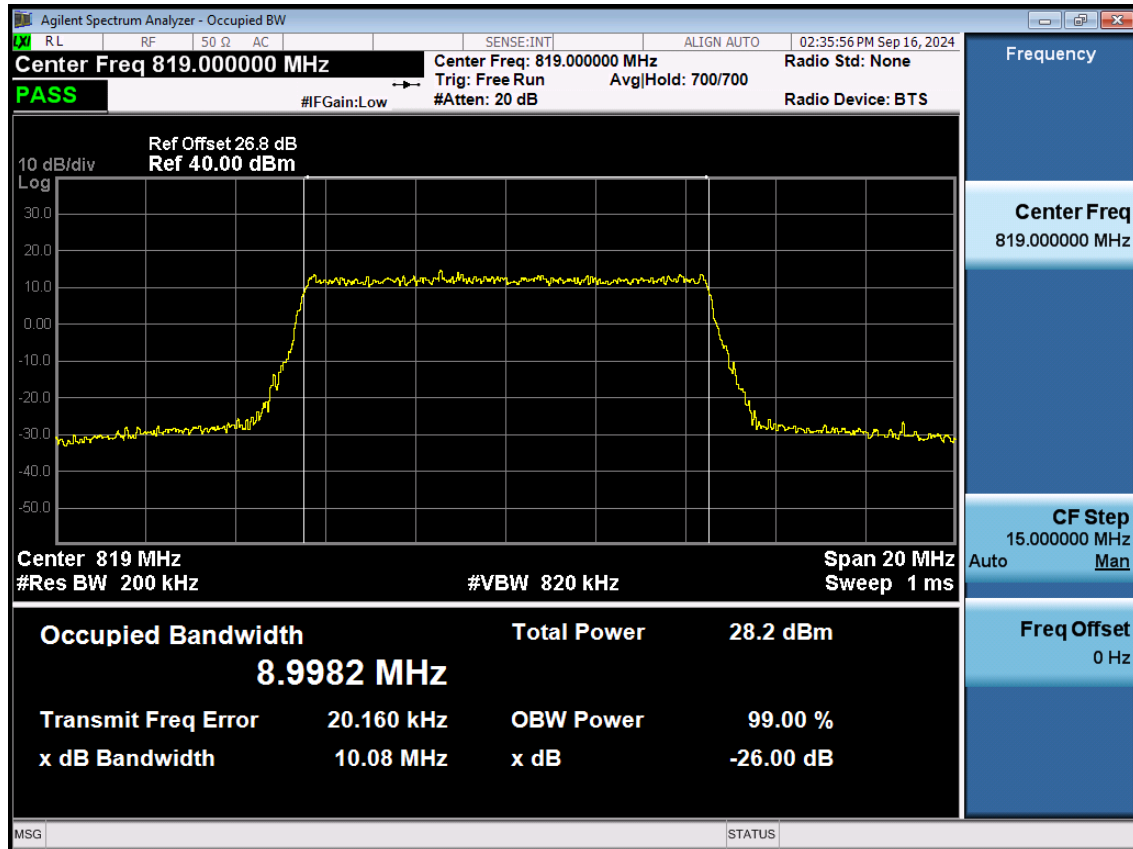
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 16QAM RB 50_0)



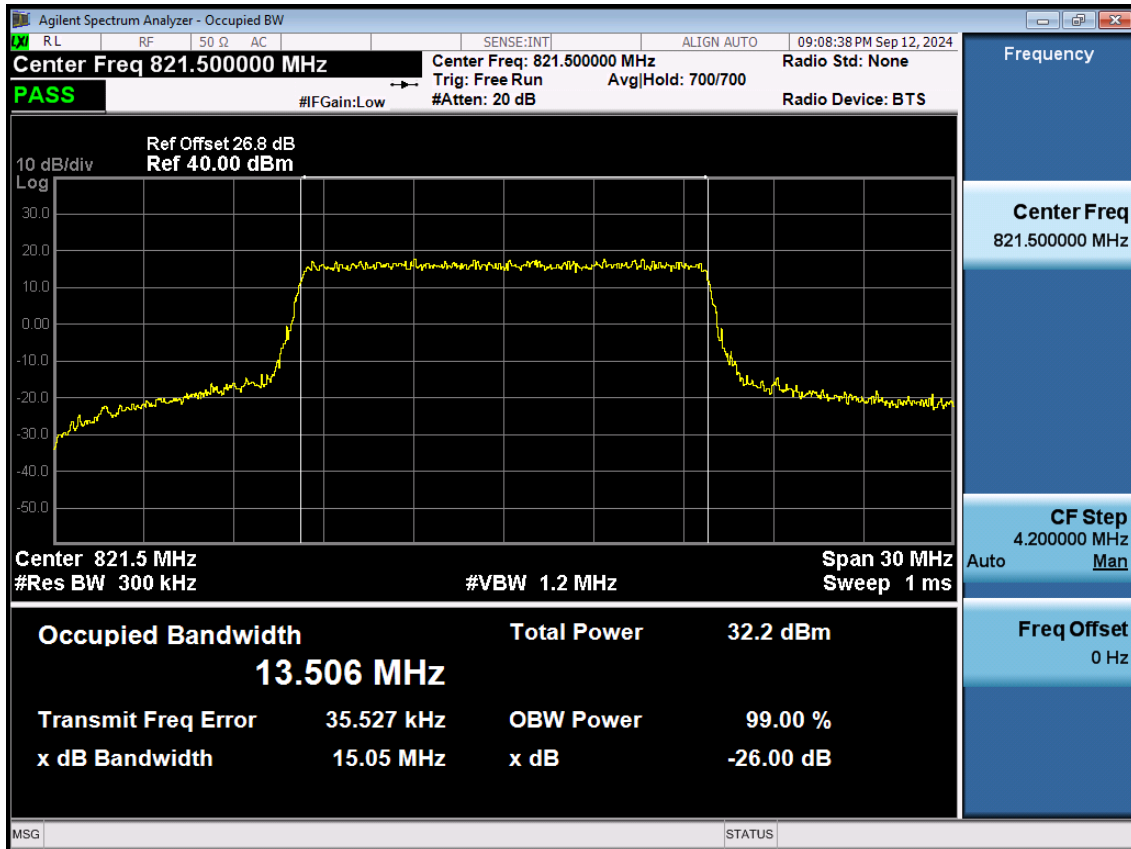
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 64QAM RB 50_0)



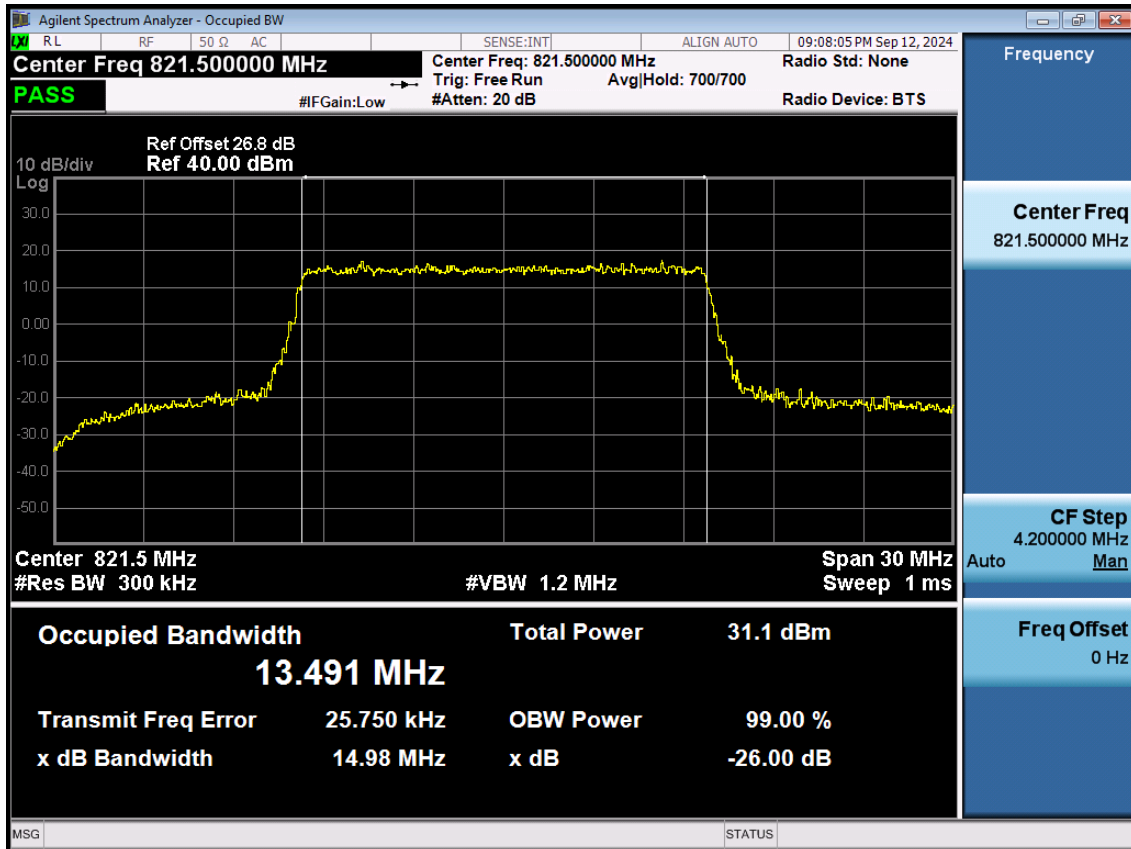
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 256QAM RB 50_0)



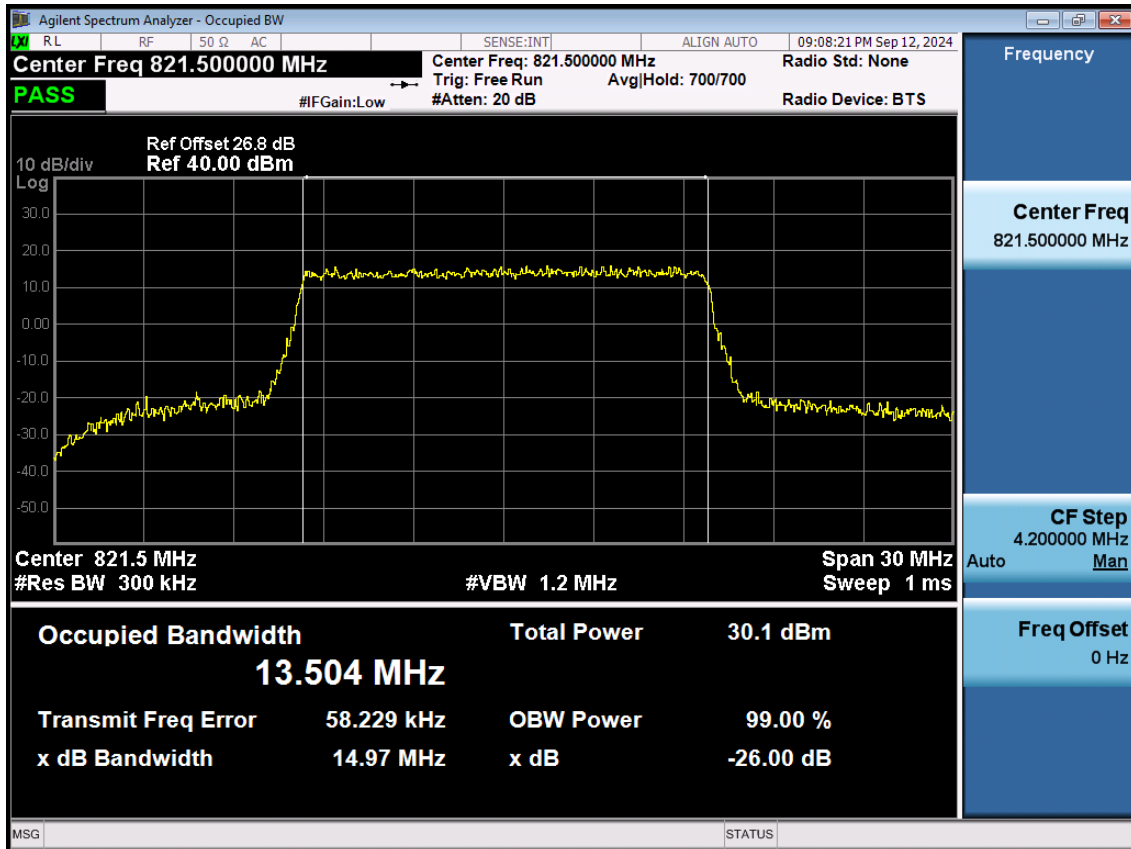
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 QPSK RB 75_0)



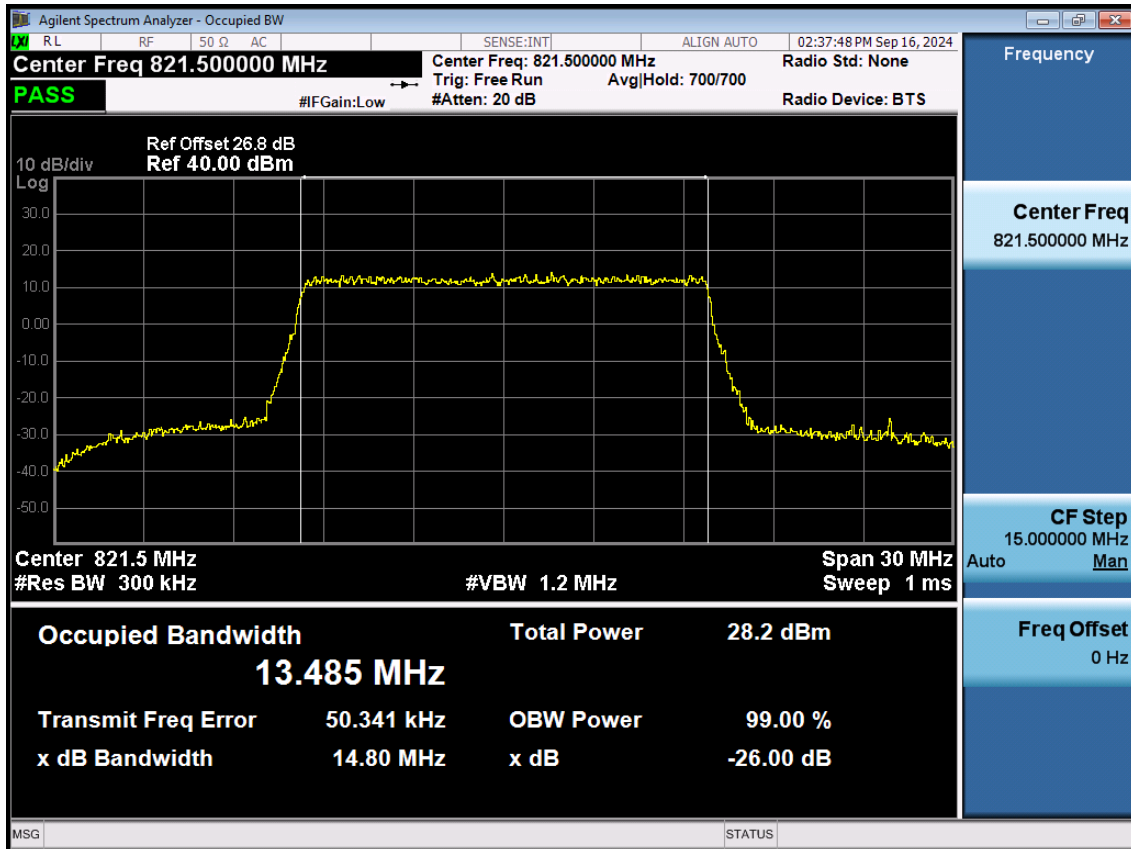
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 16QAM RB 75_0)



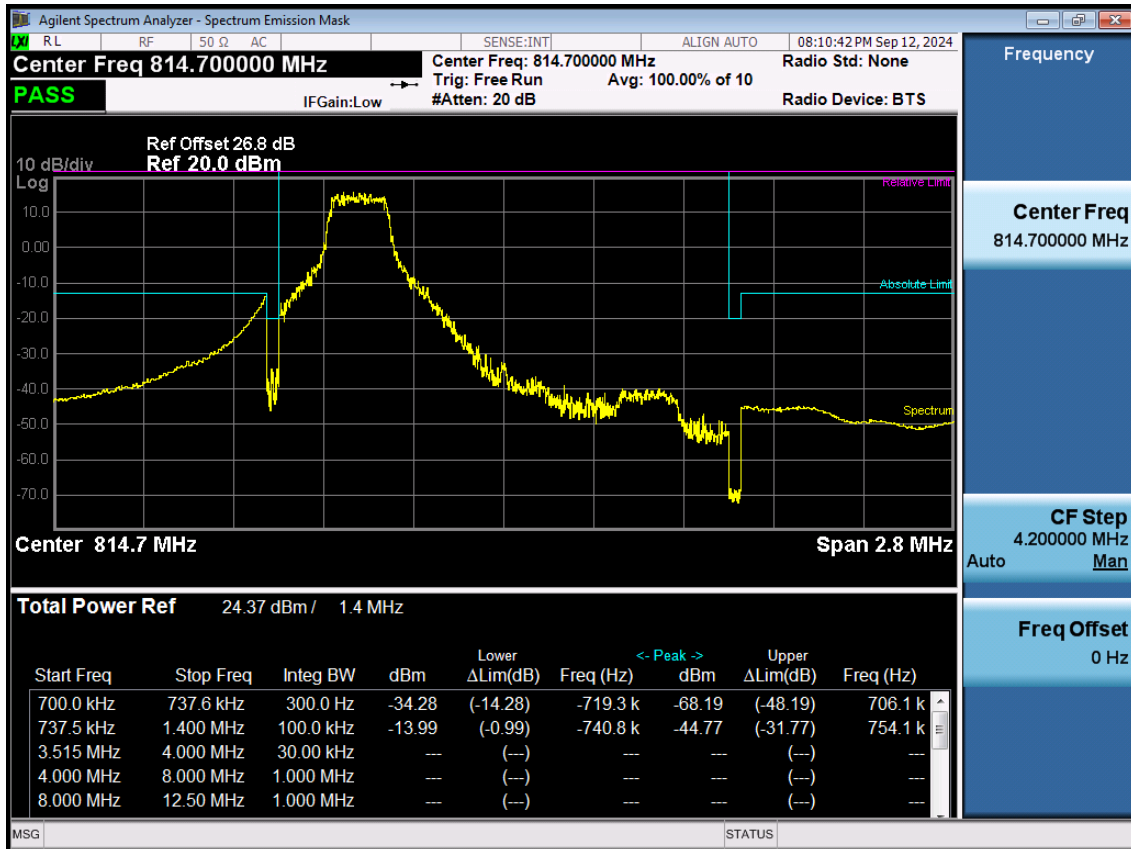
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 64QAM RB 75_0)



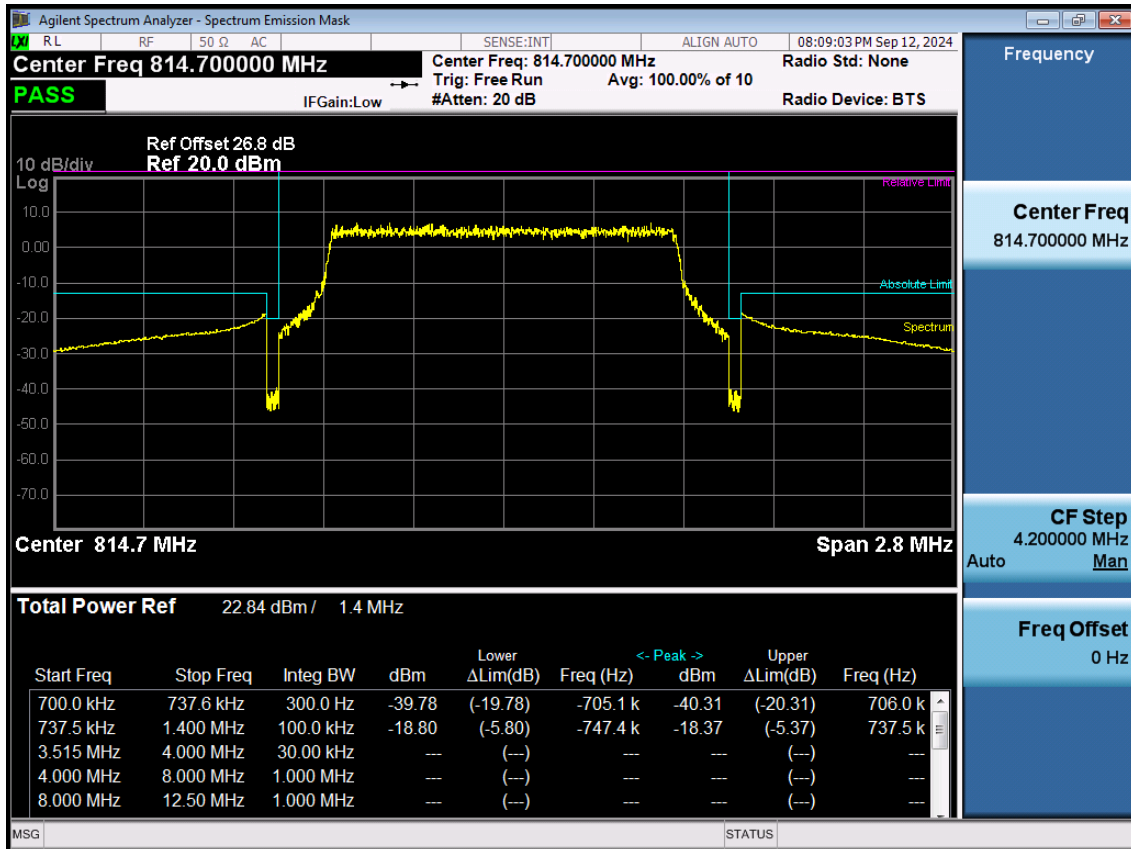
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 256QAM RB 75_0)



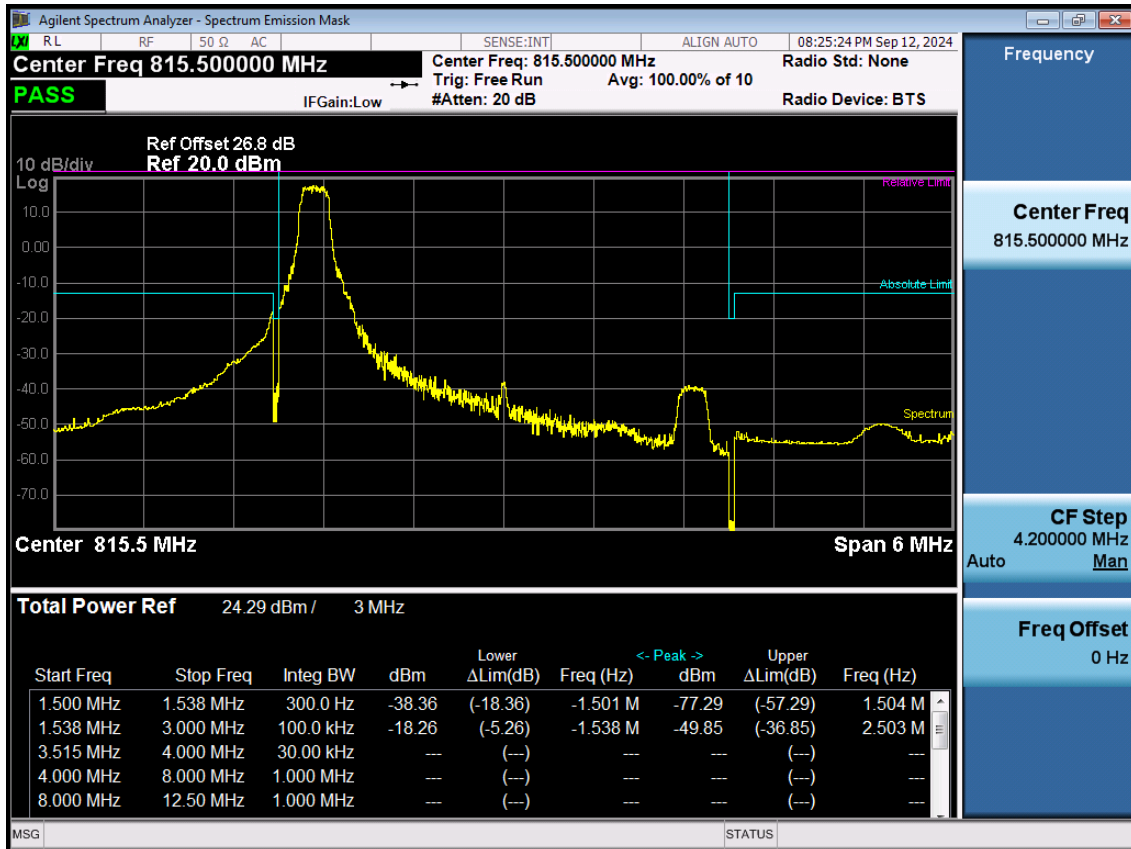
BAND 26. Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK RB 1, Offset 0)



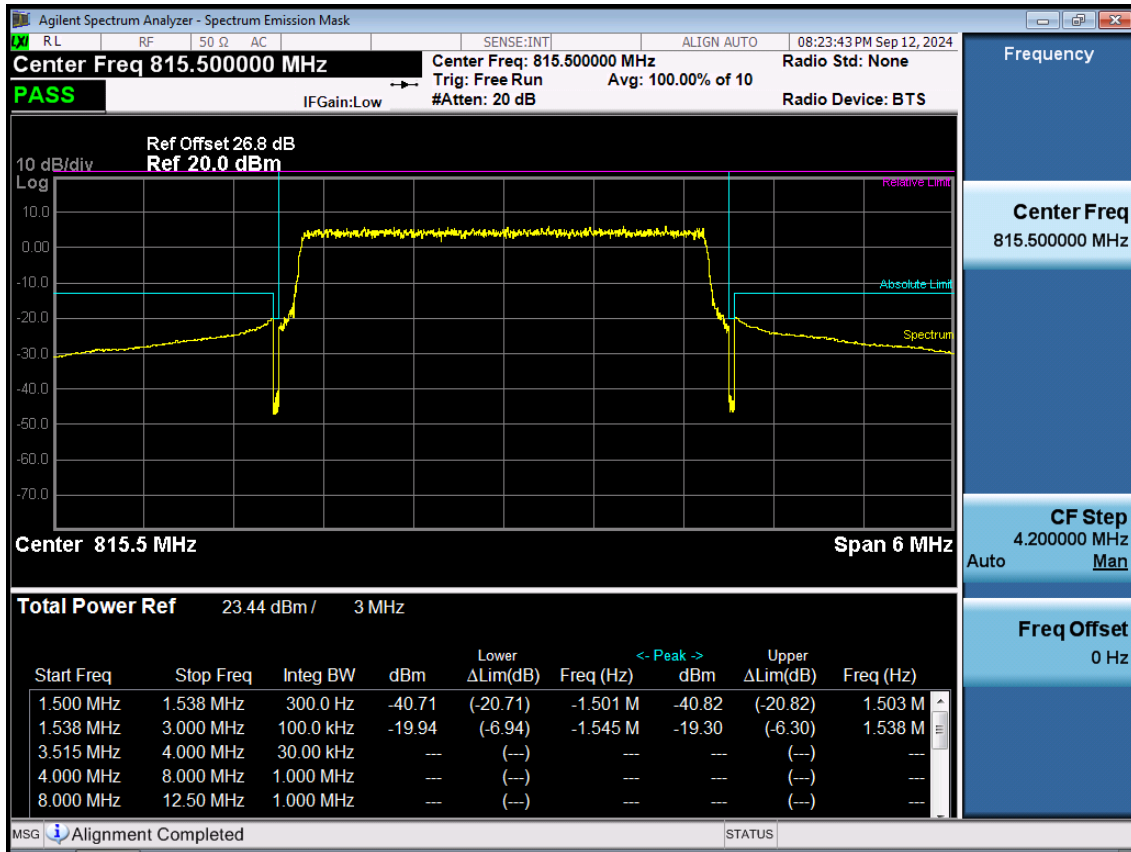
BAND 26. Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK_RB6_Offset 0)



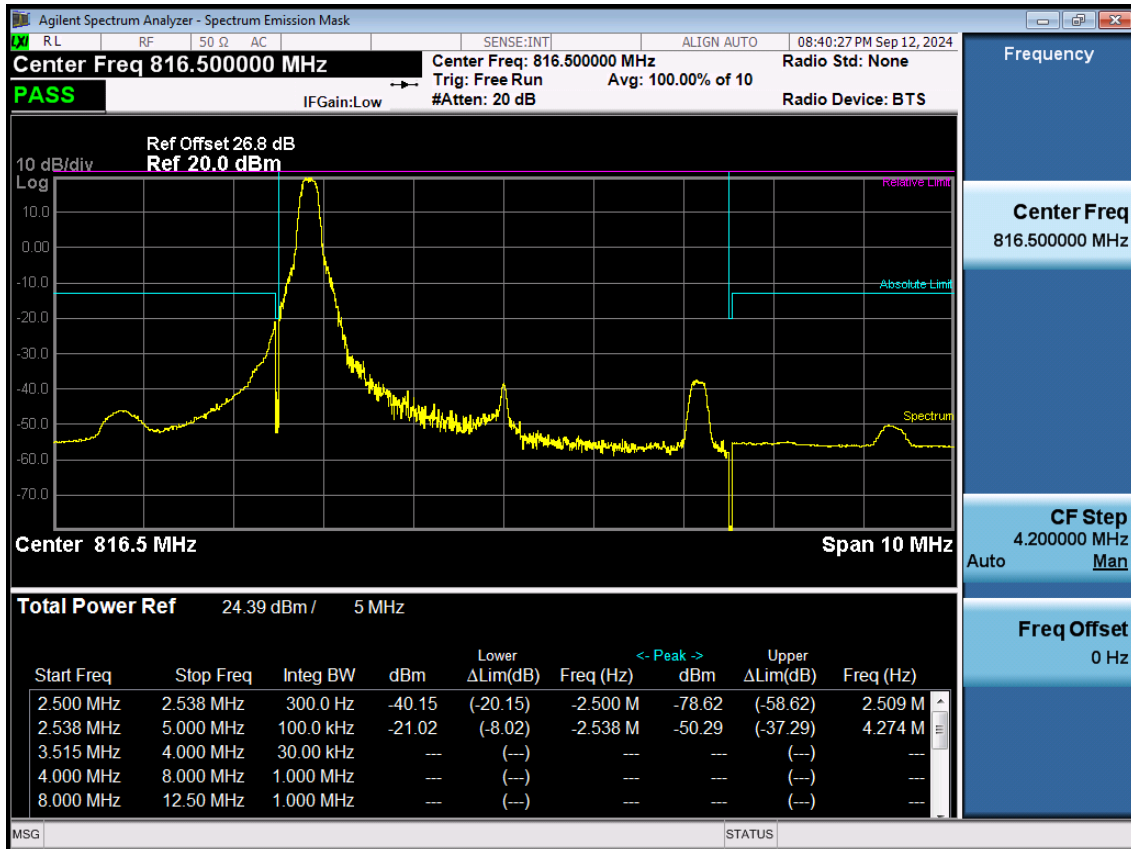
BAND 26. Lower Channel Edge Plot (3 M BW Ch.26705 QPSK RB 1, Offset 0)



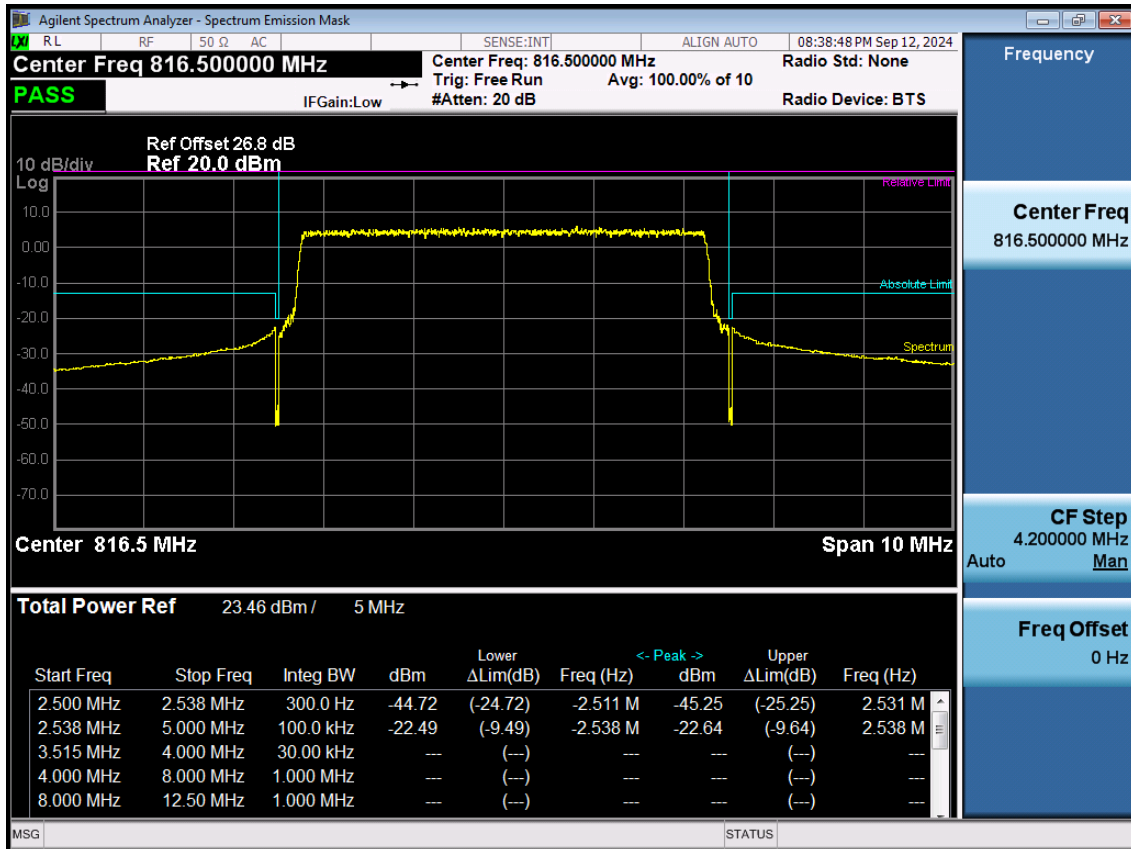
BAND 26. Lower Channel Edge Plot (3 M BW Ch.26705 QPSK_RB15_Offset 0)



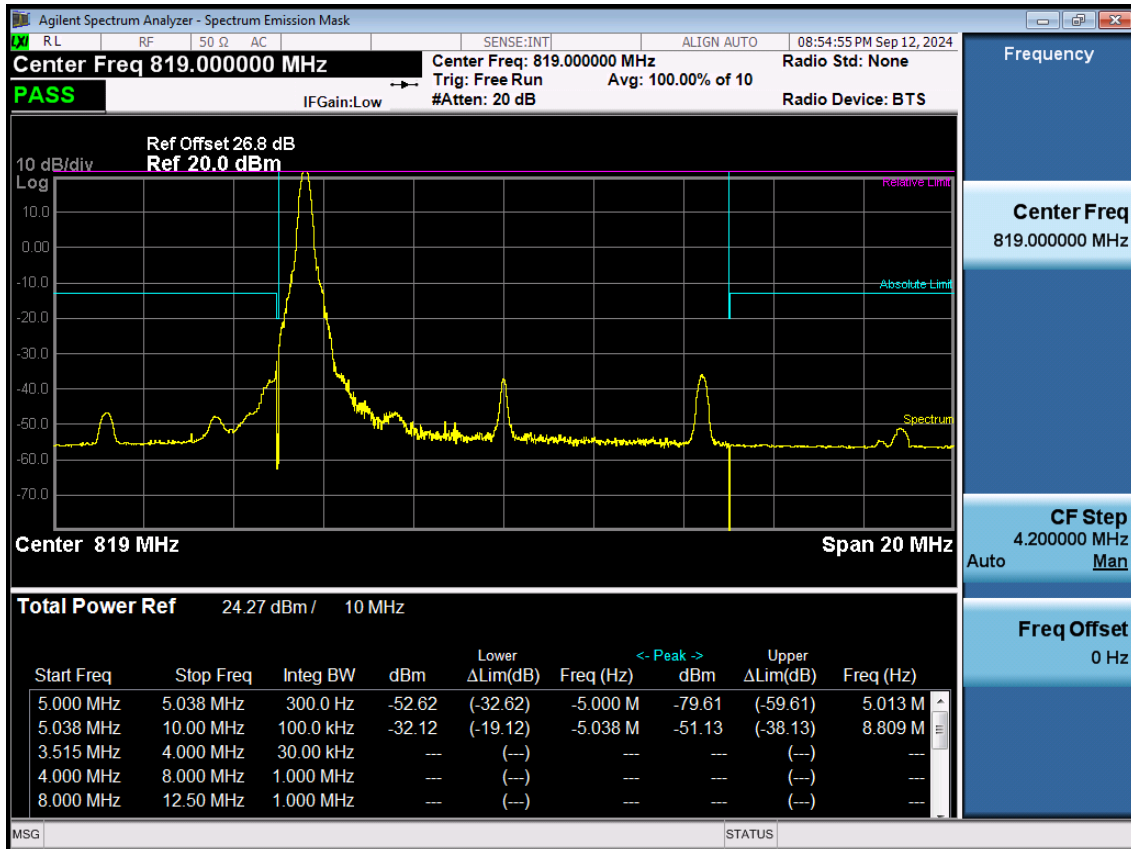
BAND 26. Lower Channel Edge Plot (5 M BW Ch.26715 QPSK RB 1, Offset 0)



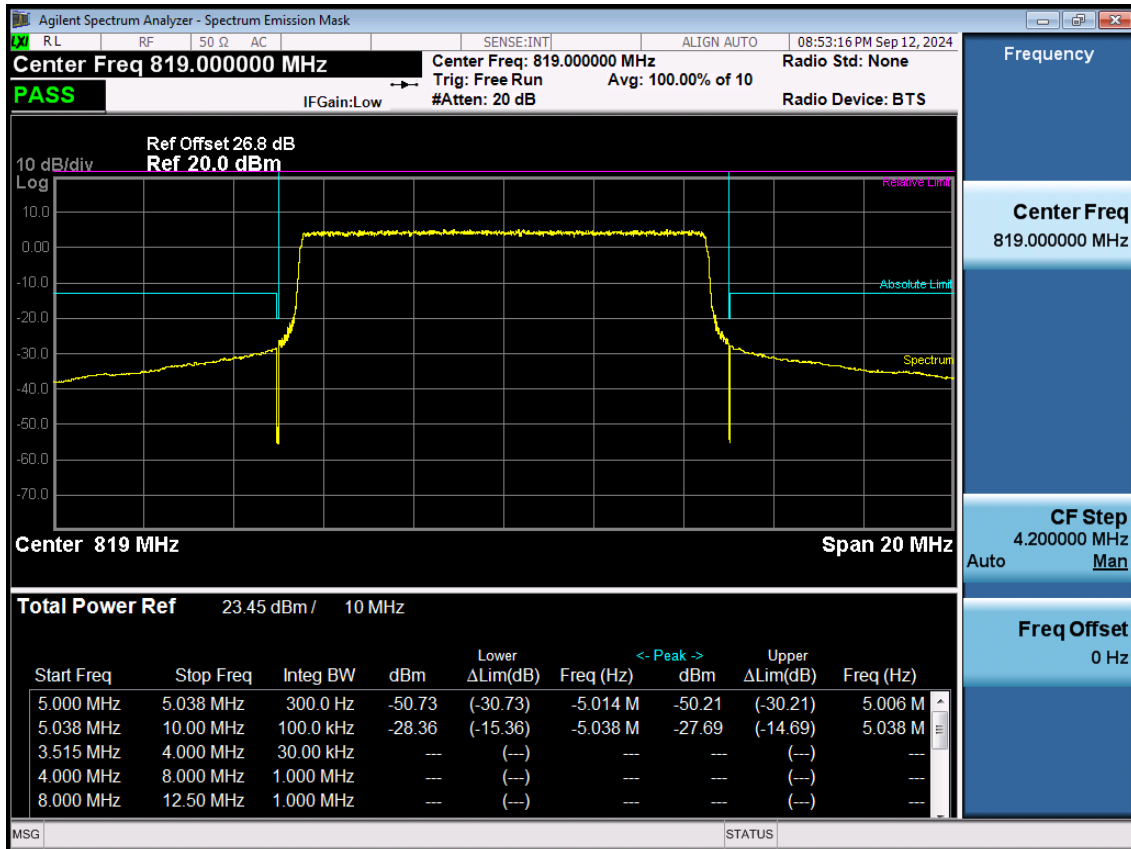
BAND 26. Lower Channel Edge Plot (5 M BW Ch.26715 QPSK_RB25_Offset 0)



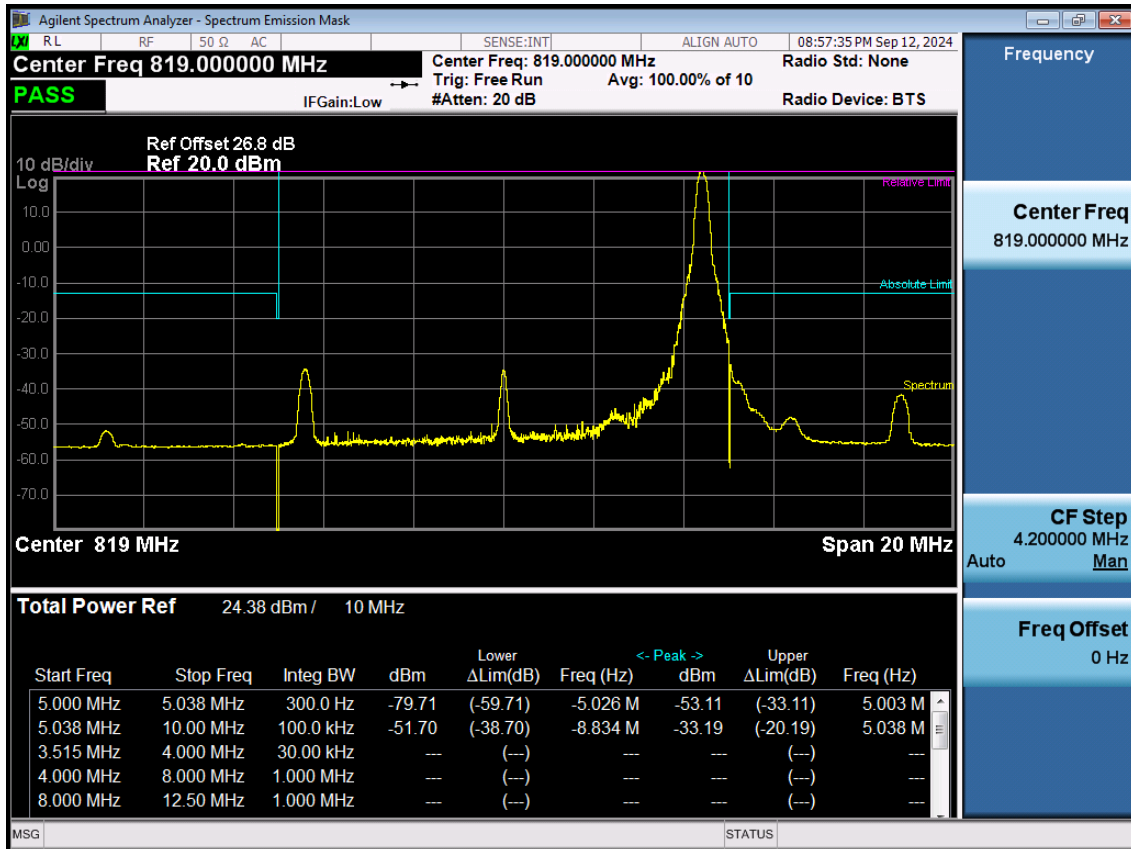
BAND 26. Low Channel Edge Plot (10 M BW Ch.26740 QPSK RB 1, Offset 0)



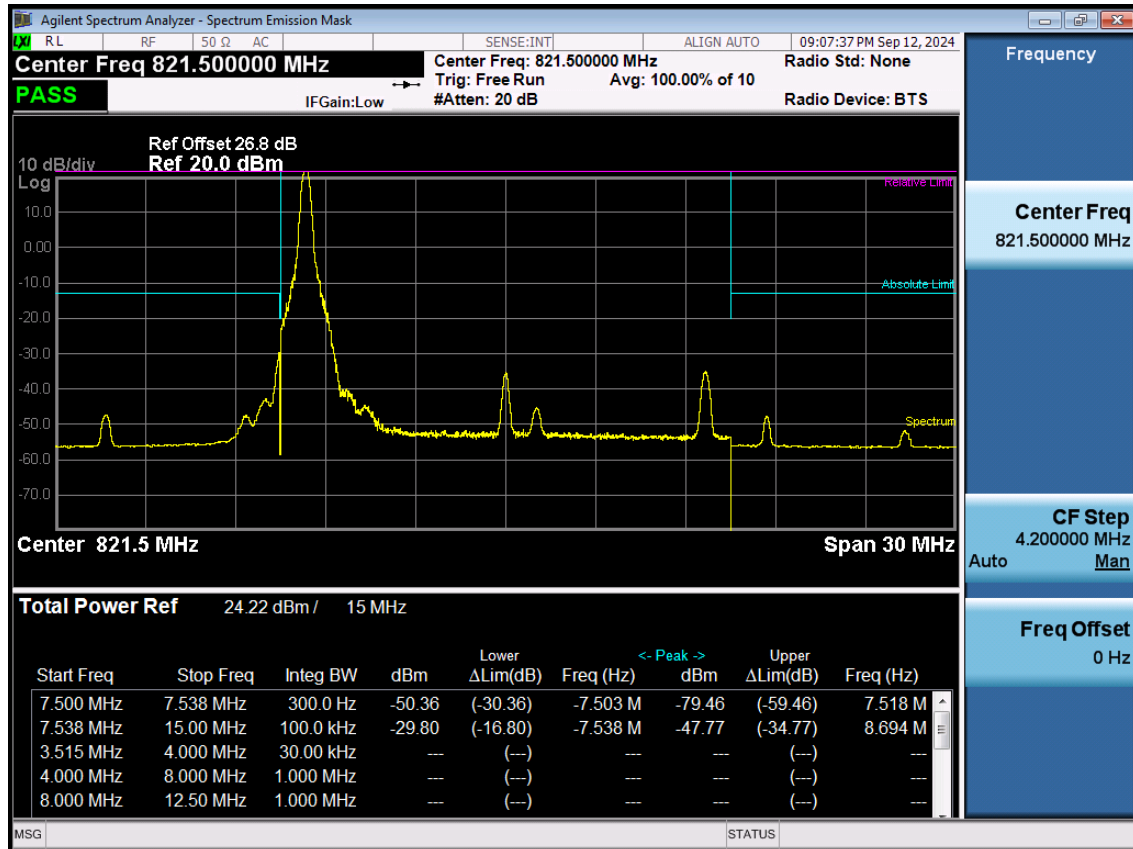
BAND 26. Low Channel Edge Plot (10 M BW Ch.26740 QPSK_RB50_Offset 0)



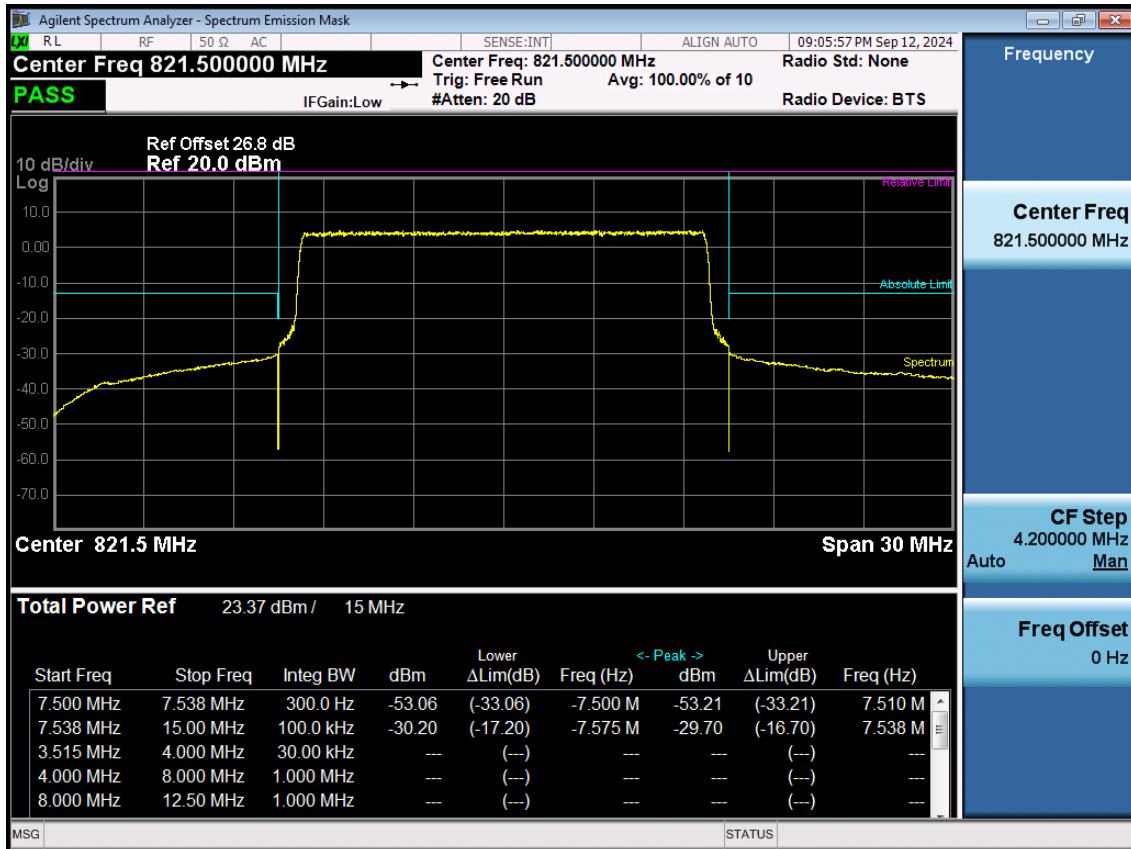
BAND 26. Mid Channel Edge Plot (10 M BW Ch. 26740 QPSK_RB1_Offset 49)



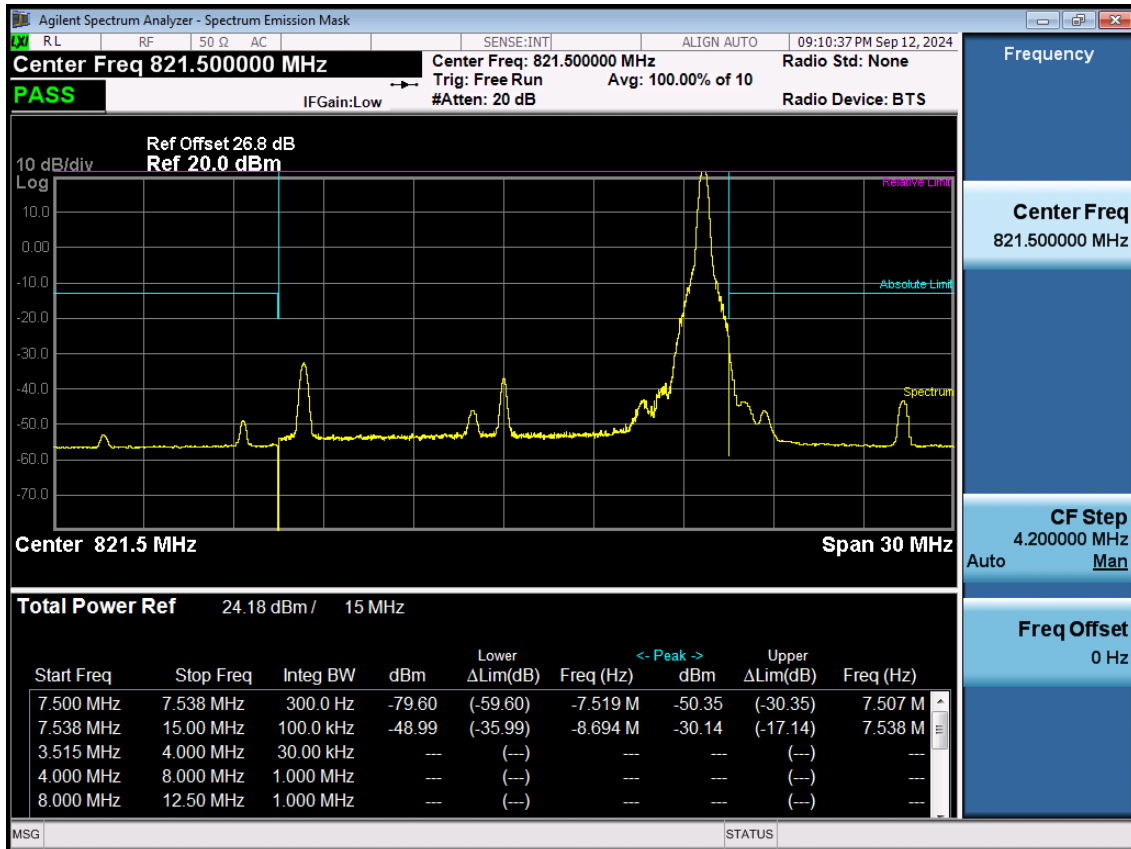
BAND 26. Low Channel Edge Plot (15 M BW Ch.26765 QPSK RB 1, Offset 0)



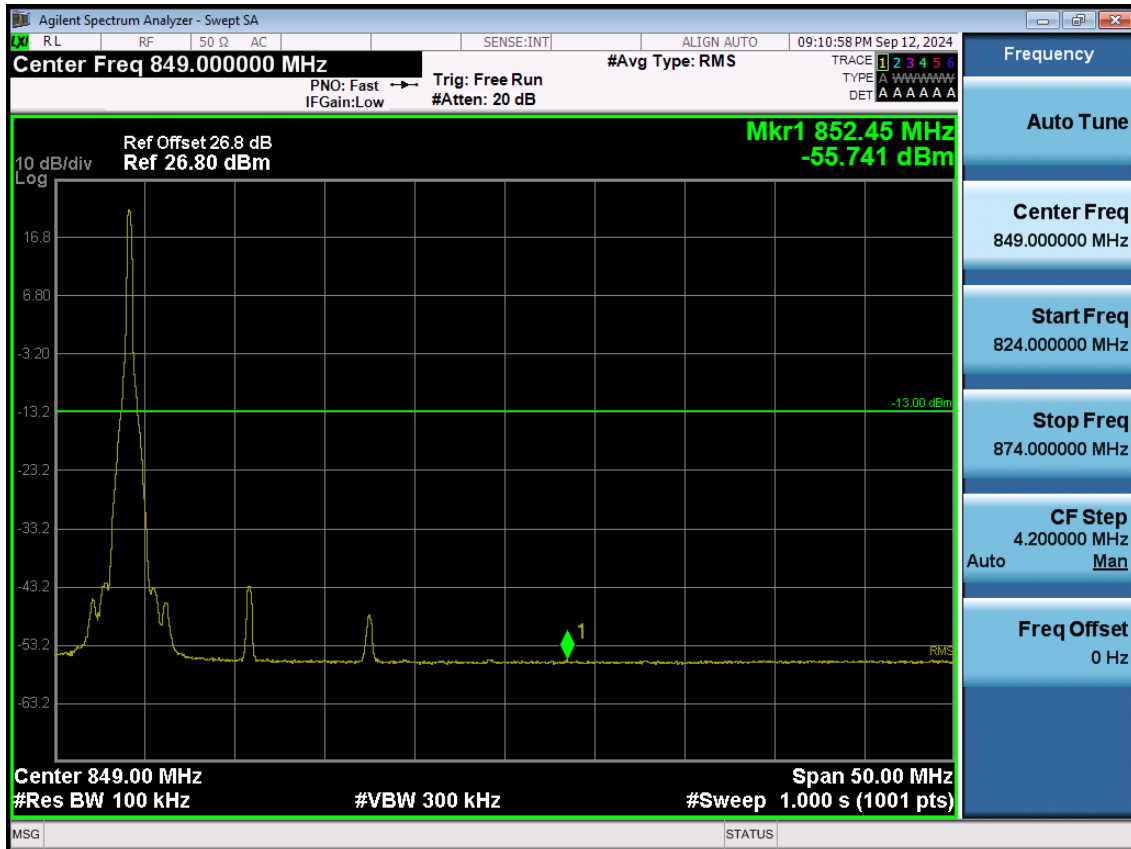
BAND 26. Low Channel Edge Plot (15 M BW Ch.26765 QPSK RB 75, Offset0)



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



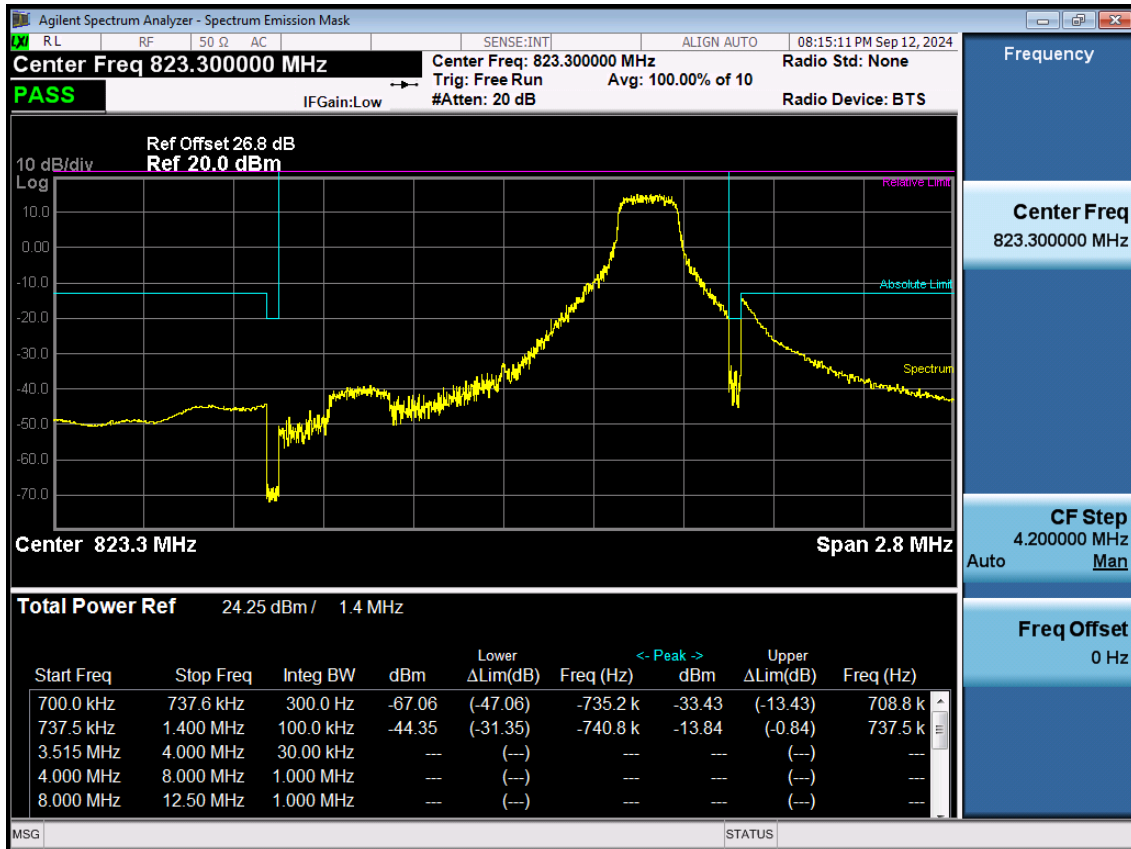
BAND 26. Mid Band Edge Plot (15 M BW Ch.26765 QPSK RB 1, Offset74)



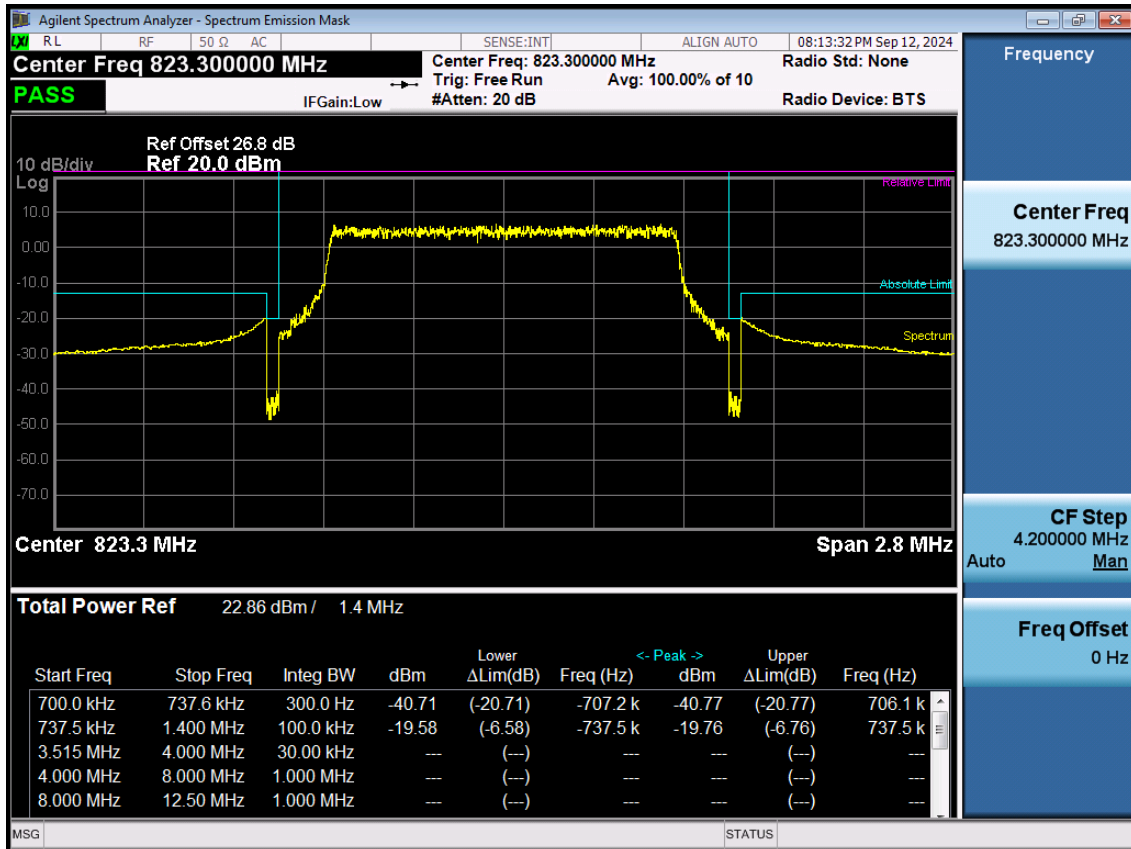
BAND 26. Mid Band Edge Plot (15 M BW Ch.26765 QPSK_RB75_Offset 0)



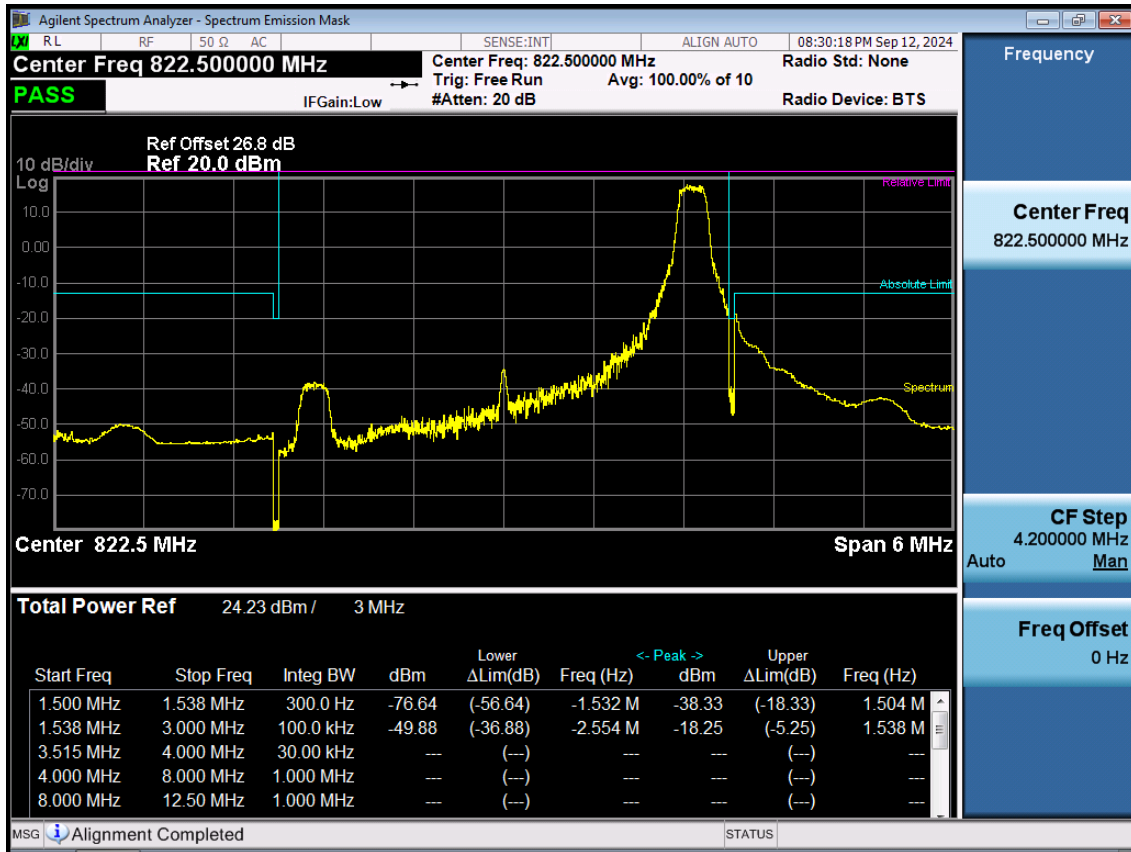
BAND 26. Upper Channel Edge Plot (1.4 M BW Ch.26783 QPSK_RB1_Offset 5)



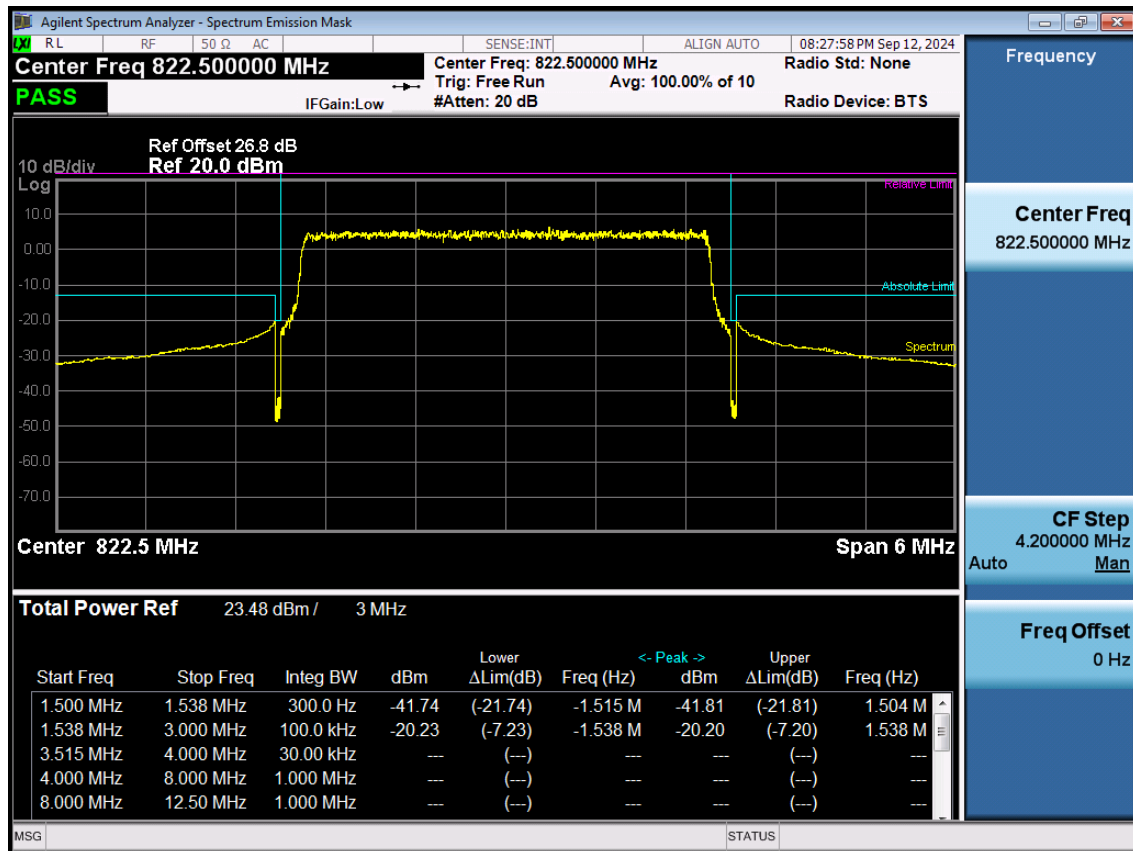
BAND 26. Upper Channel Edge Plot (1.4 M BW Ch.26783 QPSK_RB6_Offset 0)



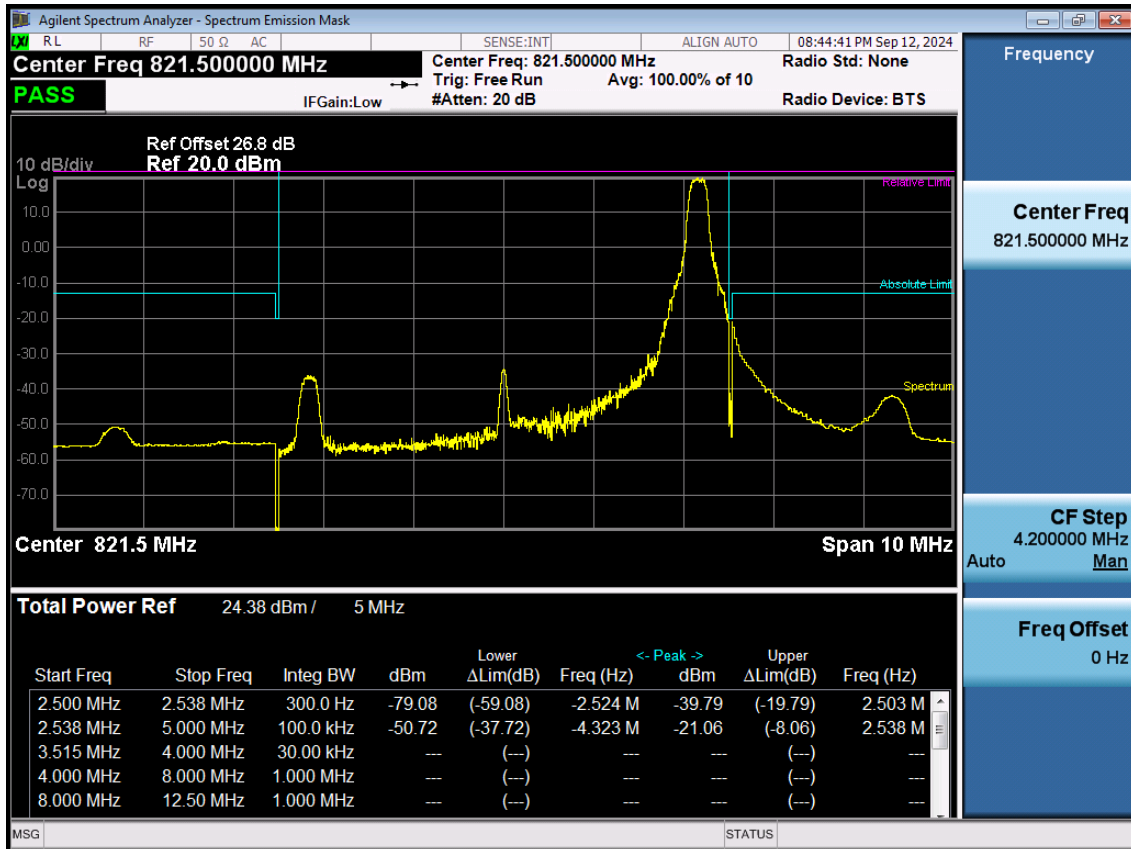
BAND 26. Upper Channel Edge Plot (3 M BW Ch.26775 QPSK_RB1_Offset 14)



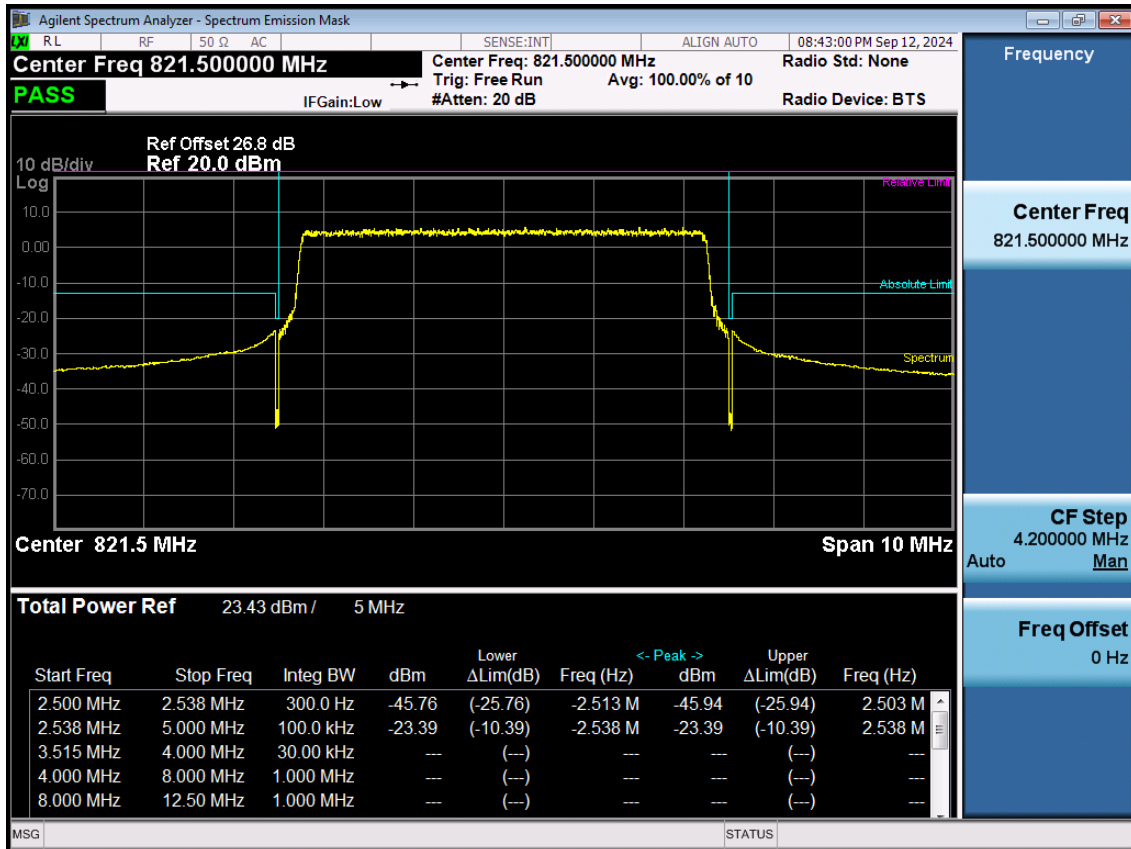
BAND 26. Upper Channel Edge Plot (3 M BW Ch.26775 QPSK_RB15_Offset 0)



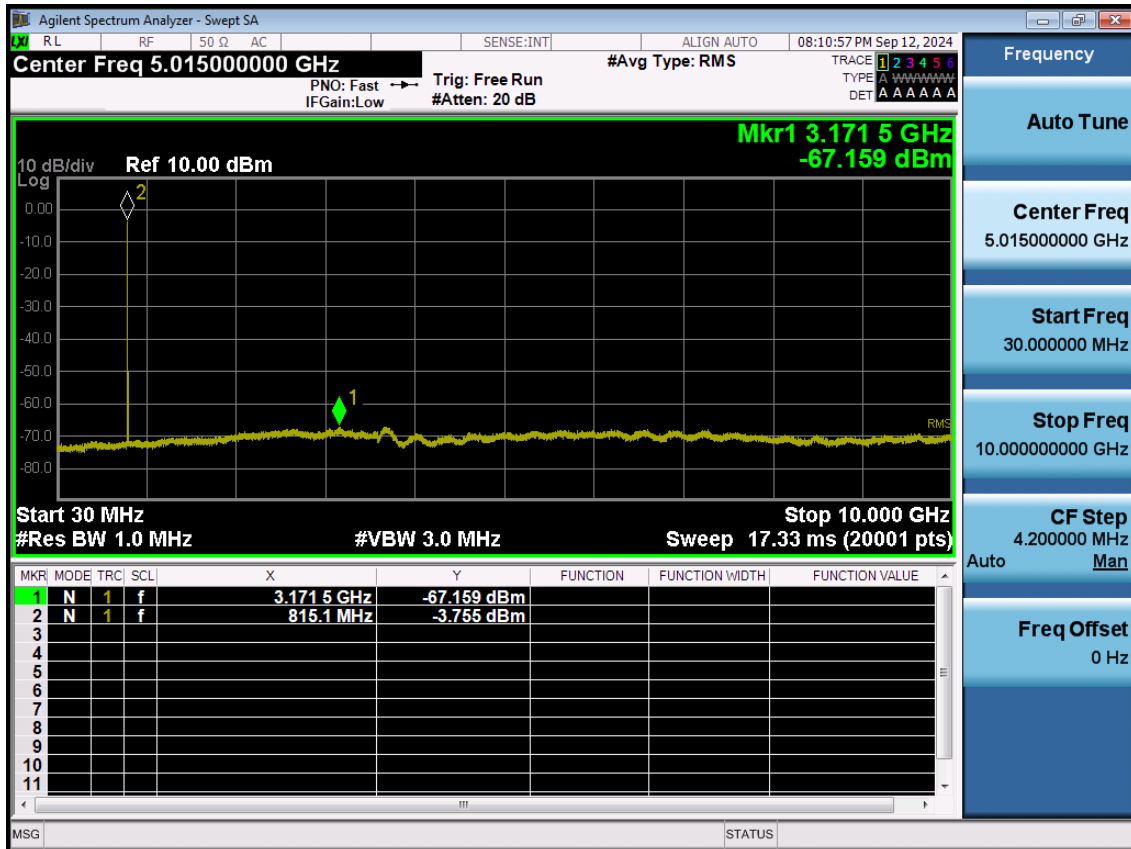
BAND 26. Upper Channel Edge Plot (5 M BW Ch.26765 QPSK_RB1_Offset 24)



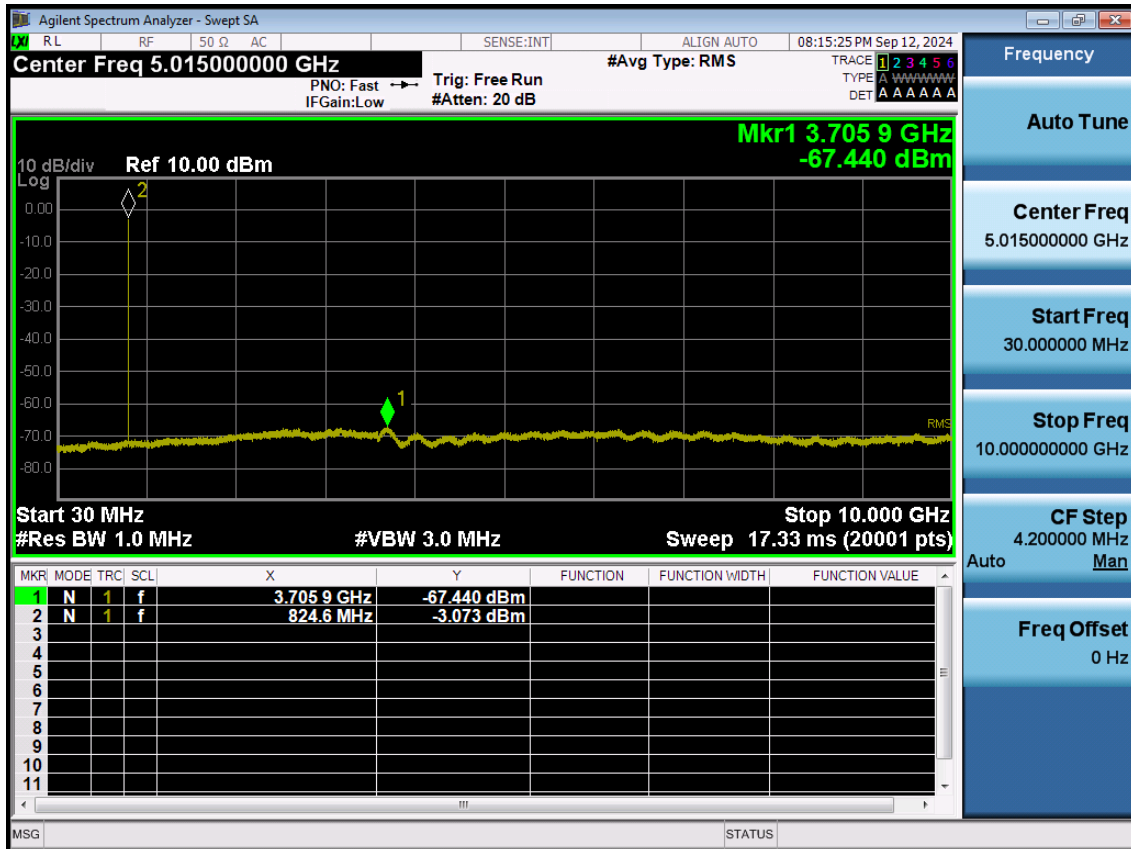
BAND 26. Upper Channel Edge Plot (5 M BW Ch.26765 QPSK_RB25_Offset 0)



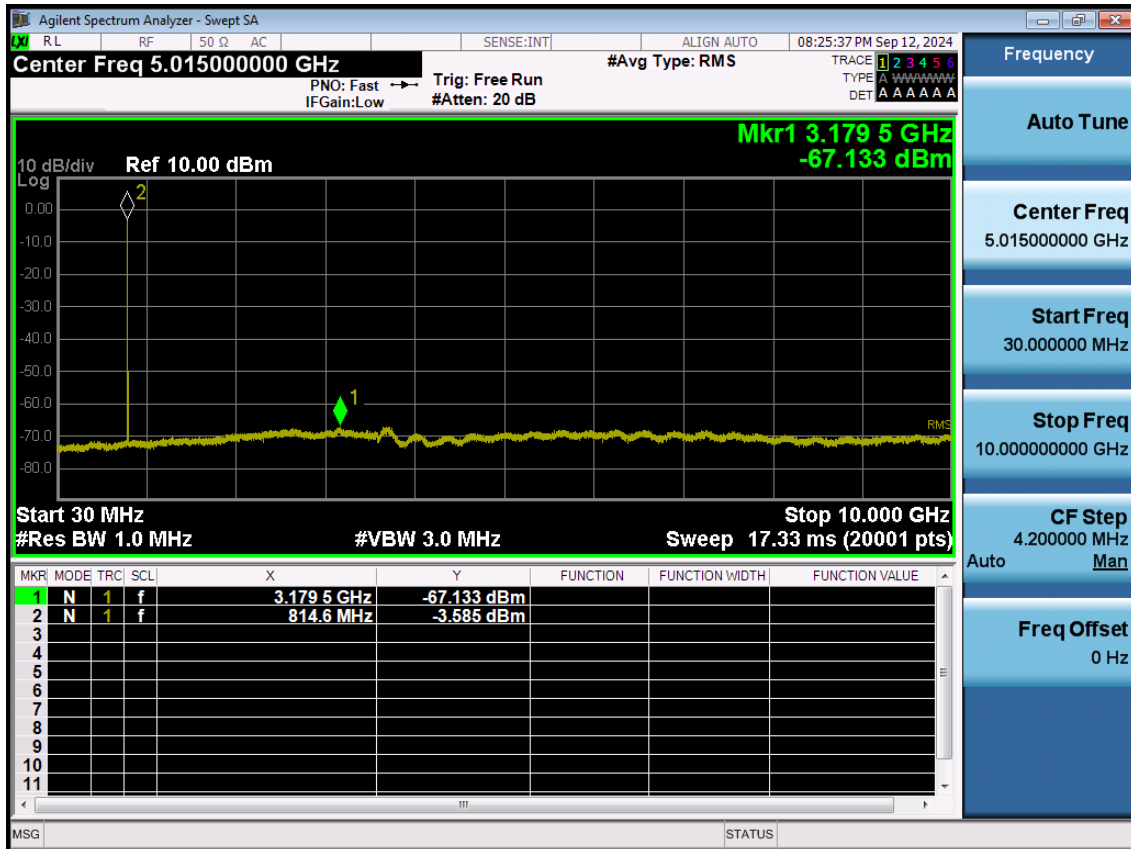
BAND 26. Conducted Spurious (26697 ch_1.4 MHz_QPSK_RB 1_0)



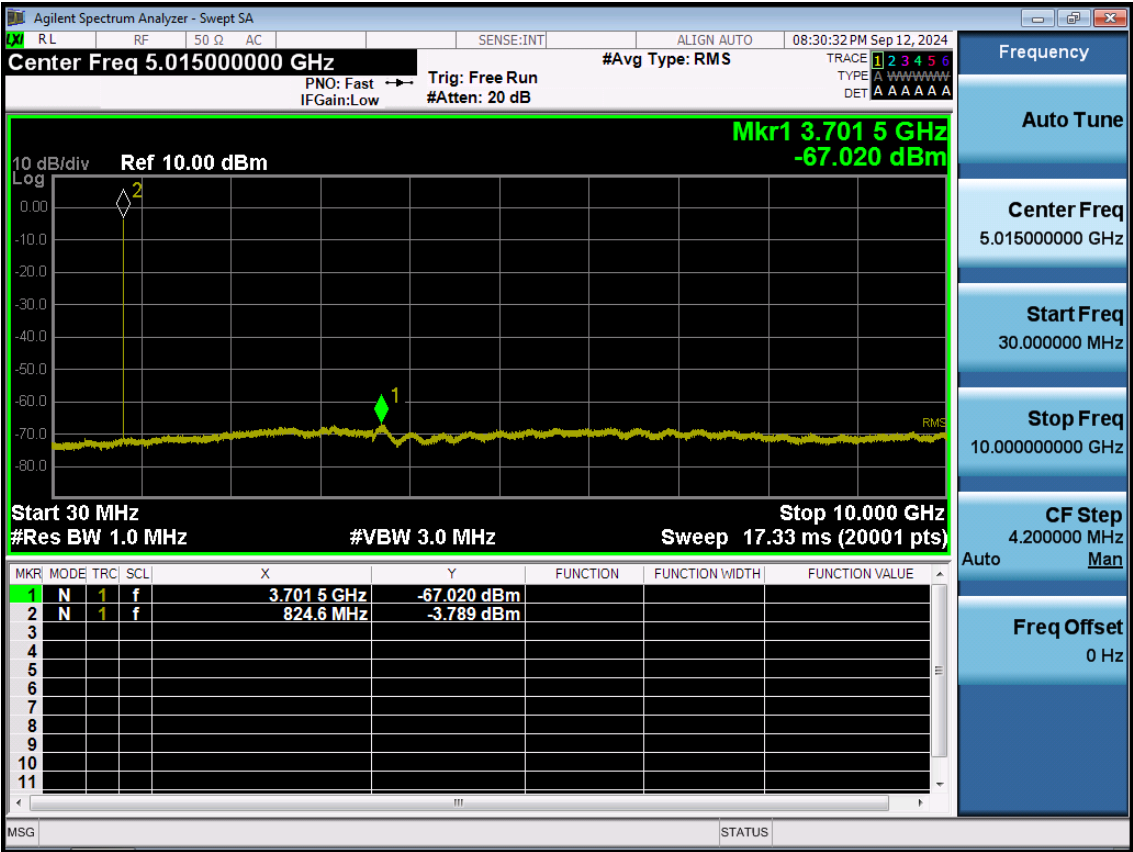
BAND 26. Conducted Spurious (26783 ch_1.4 MHz_QPSK_RB 1_0)



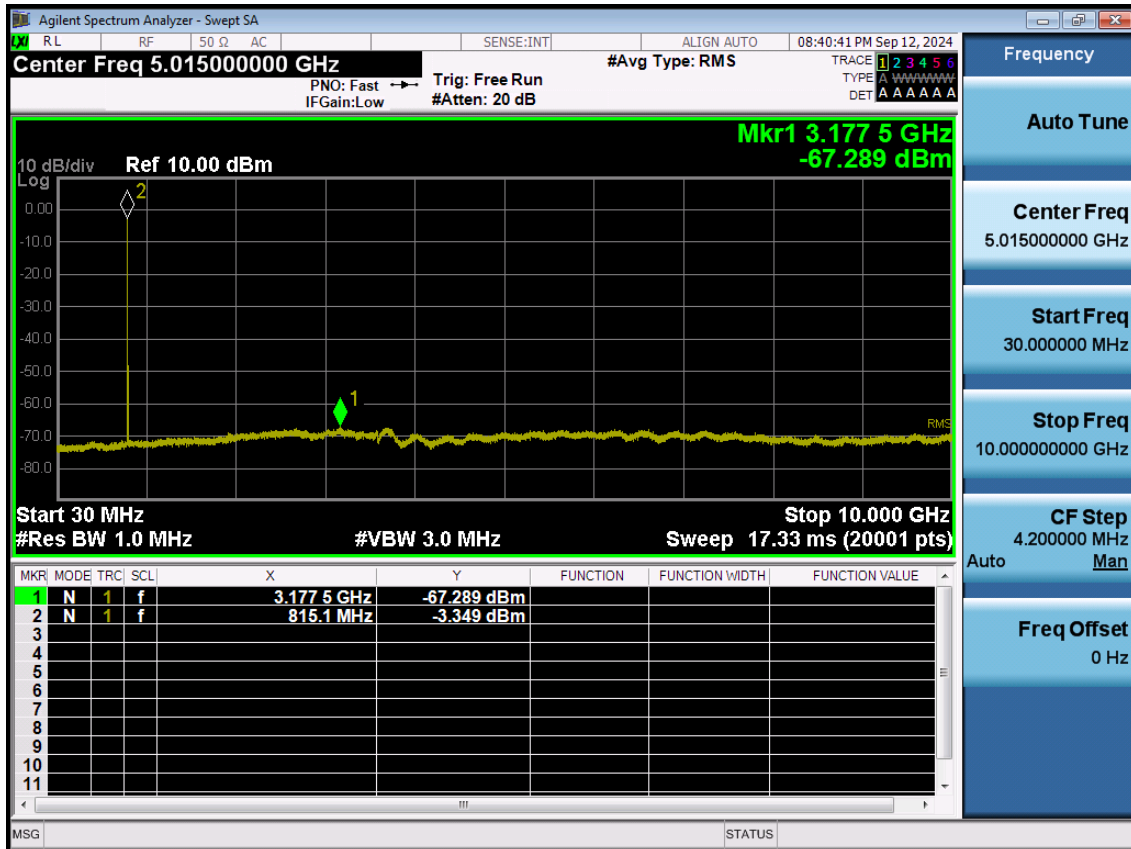
BAND 26. Conducted Spurious (26705 ch_3 MHz_QPSK_RB 1_0)



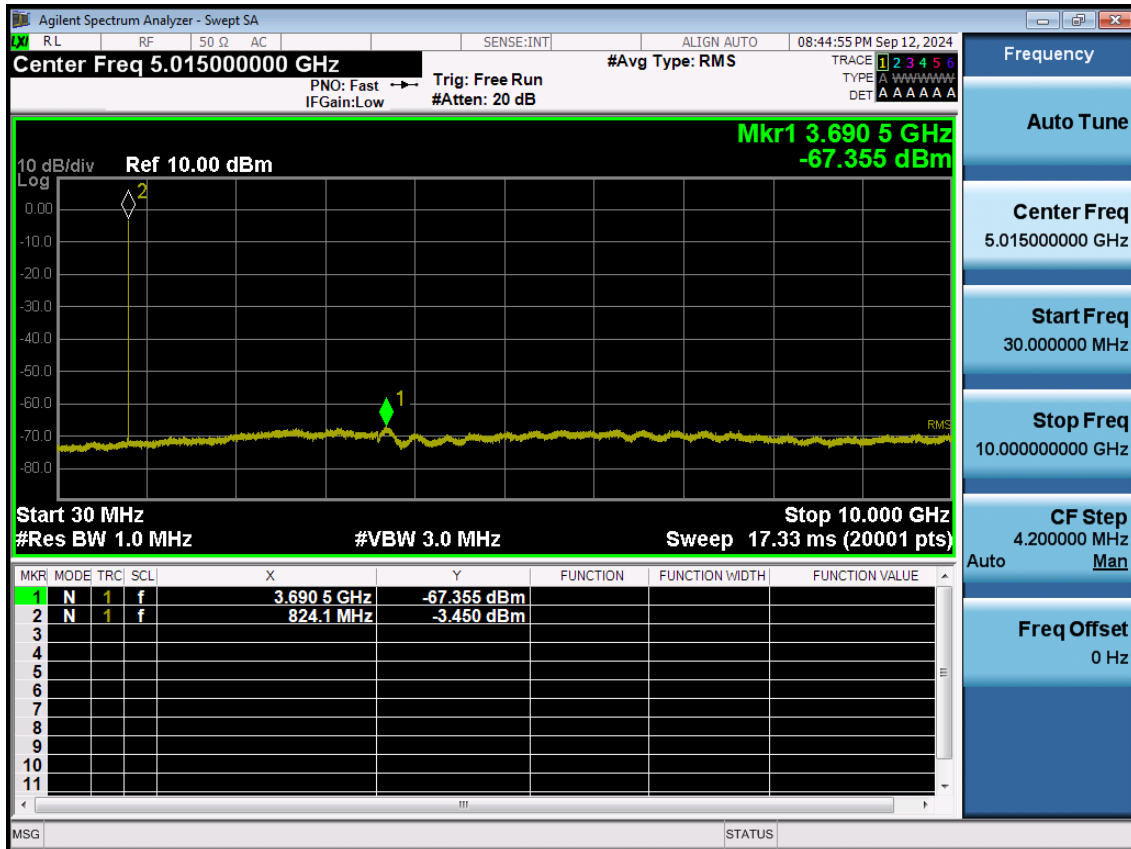
BAND 26. Conducted Spurious (26775 ch_3 MHz_QPSK_RB 1_0)



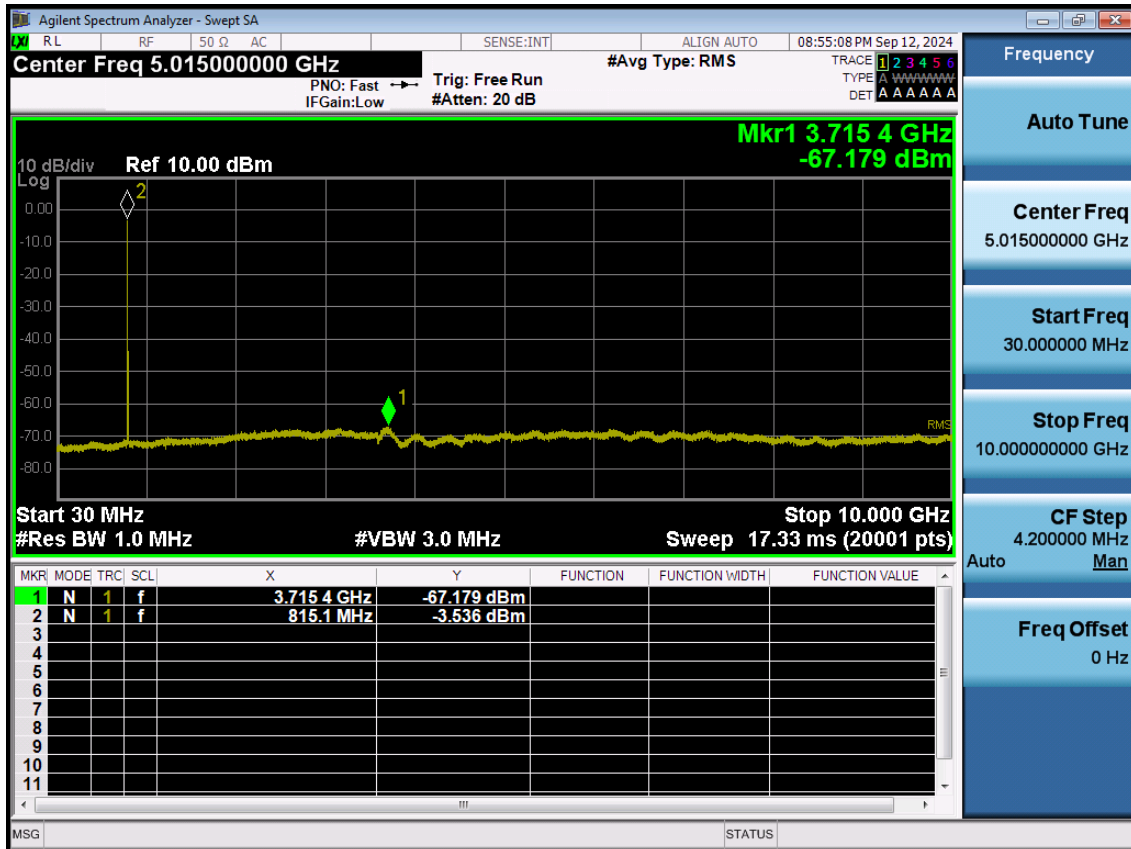
BAND 26. Conducted Spurious (26715 ch_5 MHz_QPSK_RB 1_0)



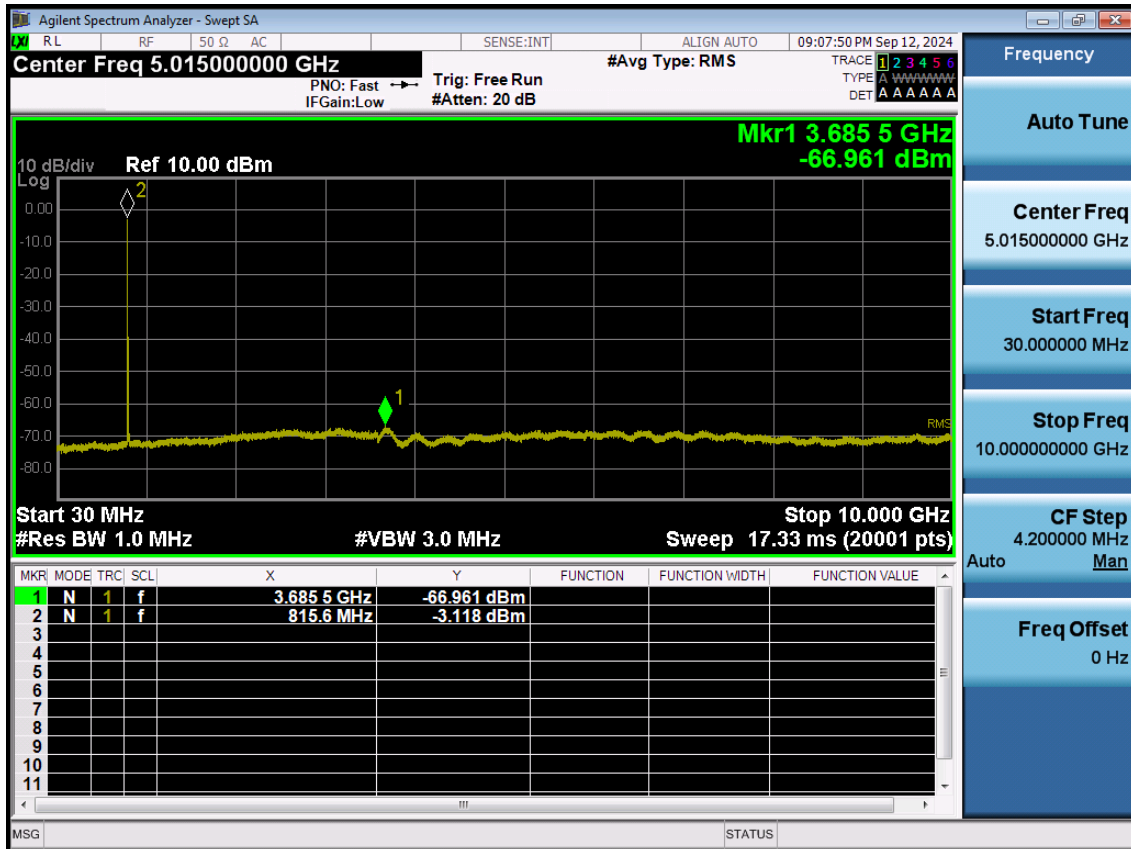
BAND 26. Conducted Spurious (26765 ch_5 MHz_QPSK_RB 1_0)



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

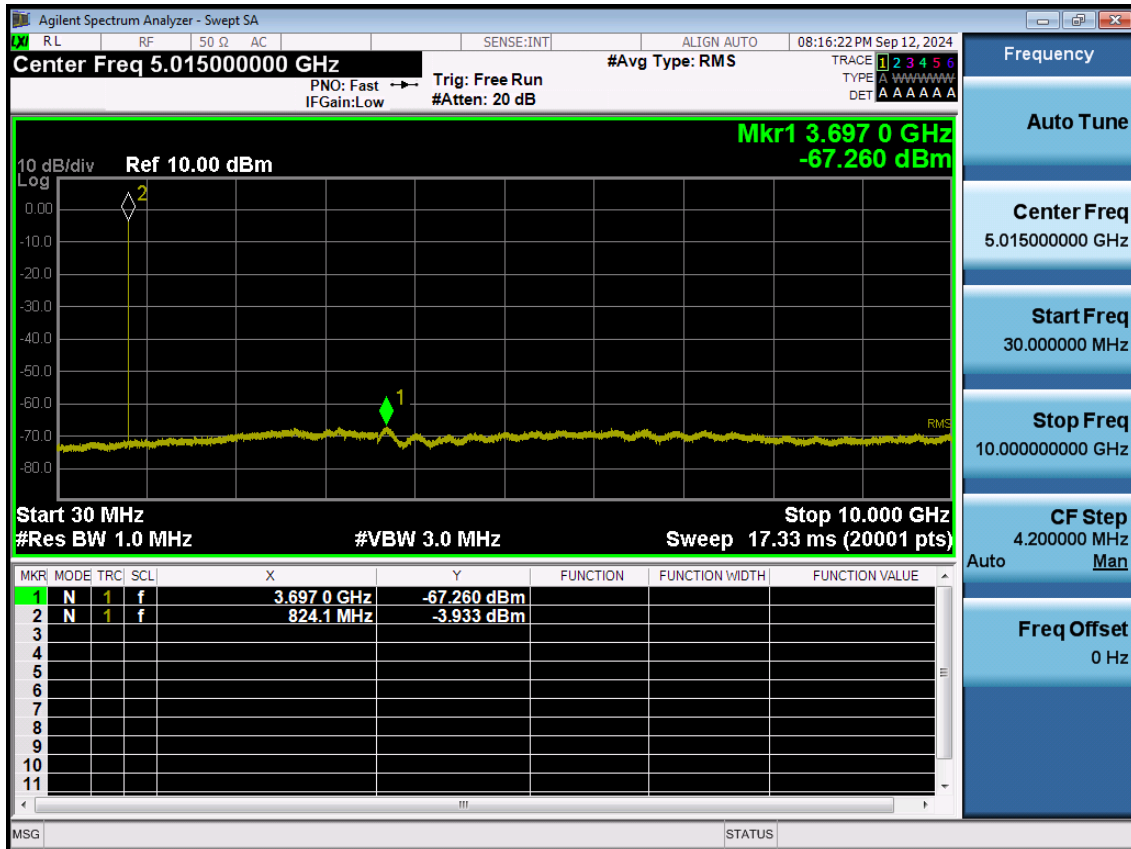


BAND 26. Conducted Spurious (26765 ch_15 MHz_QPSK_RB 1_0)

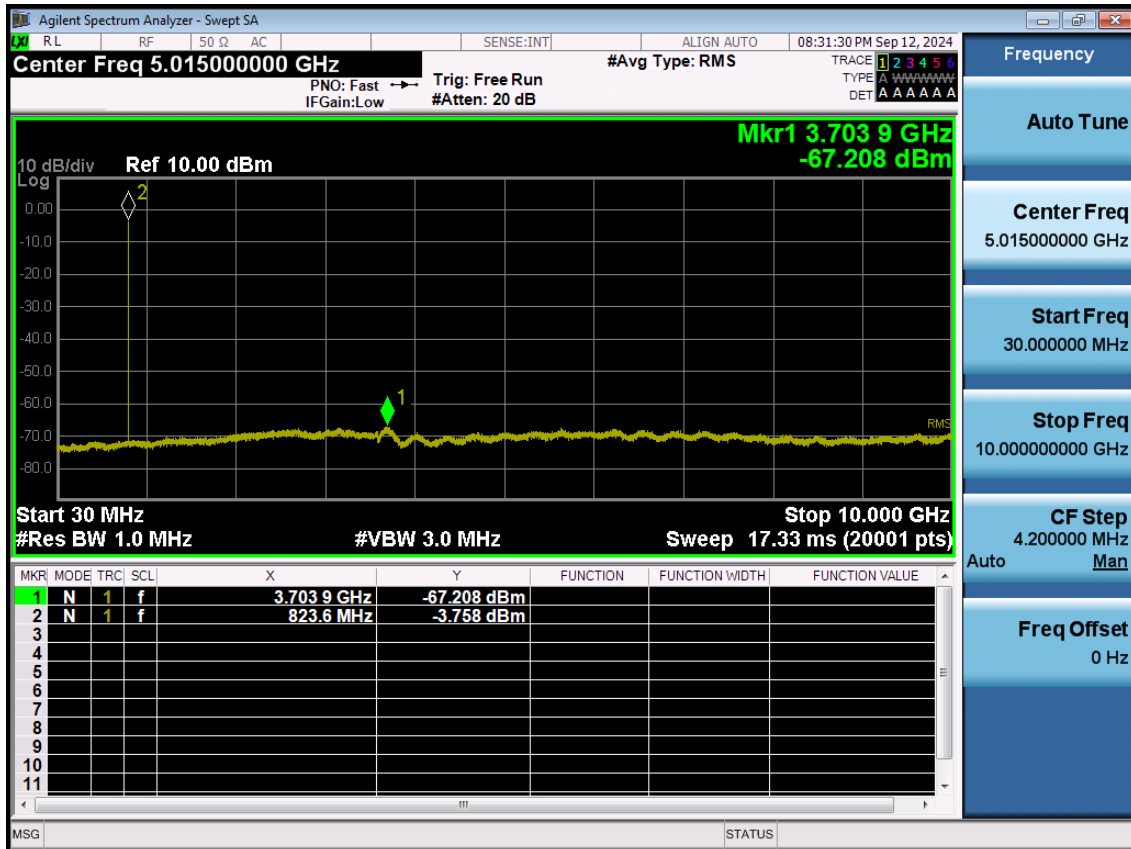


11. TEST PLOTS (STRADDLE CHANNEL_Main1)

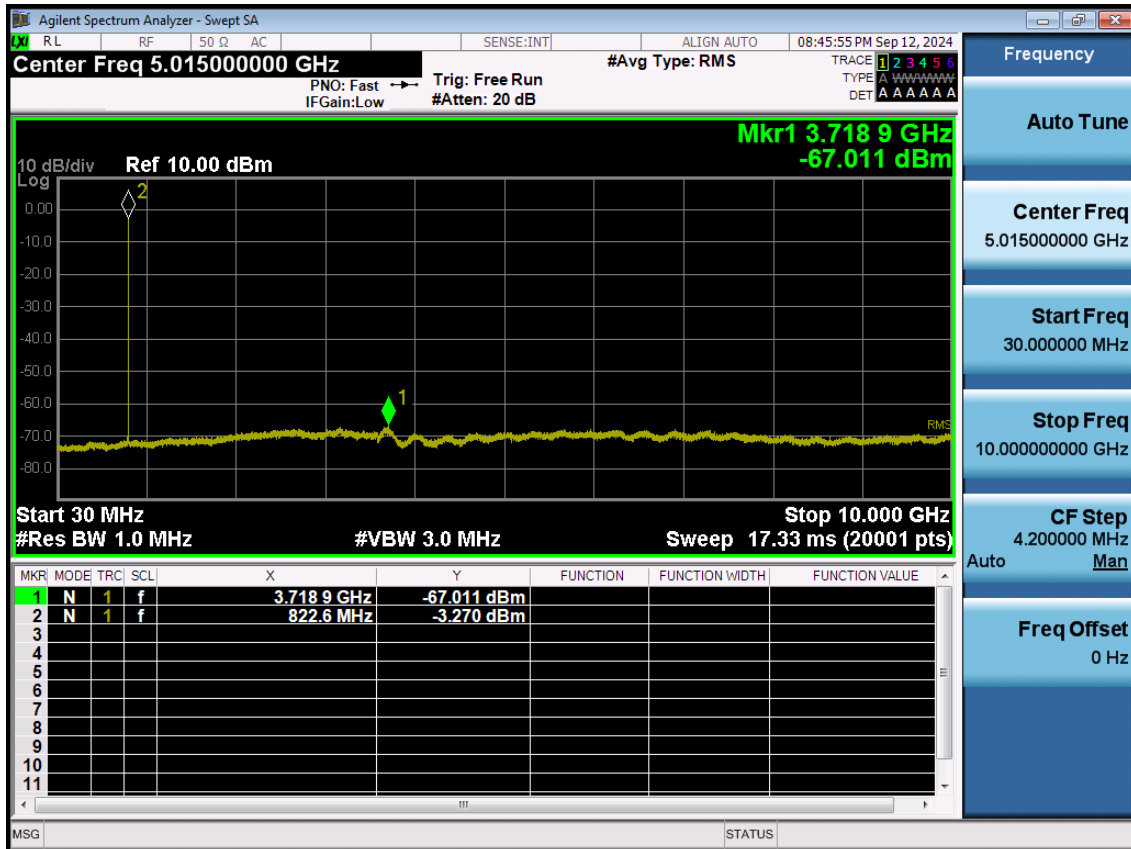
BAND 26. Conducted Spurious (1.4 MHz_QPSK_RB 1_0)



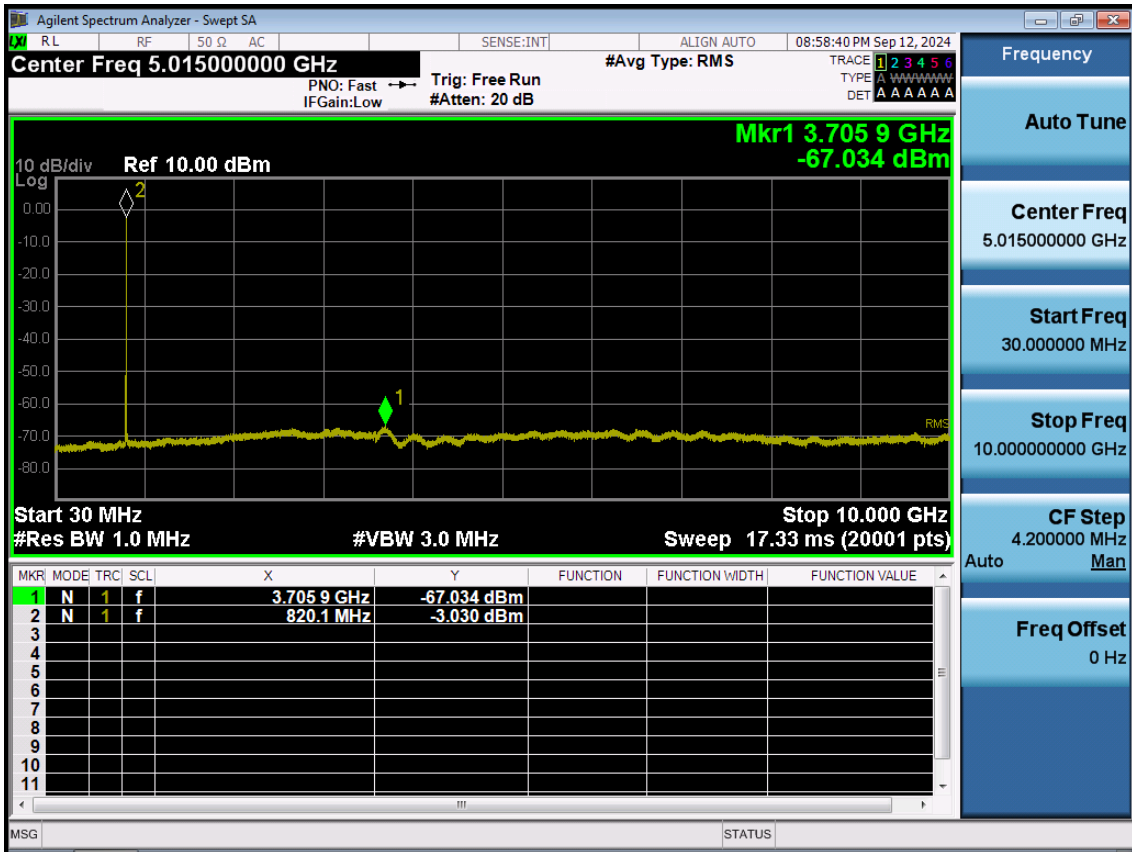
BAND 26. Conducted Spurious (3 MHz_QPSK_RB 1_0)



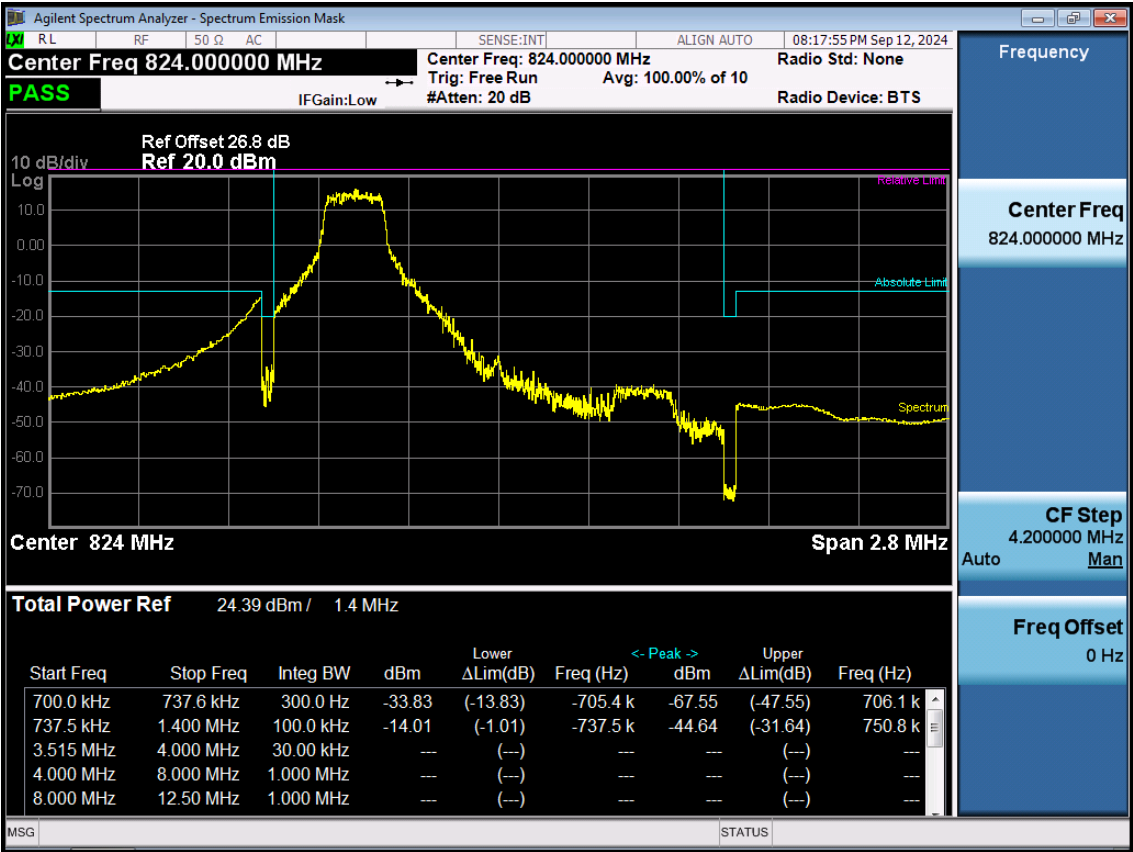
BAND 26. Conducted Spurious (5 MHz_QPSK_RB 1_0)



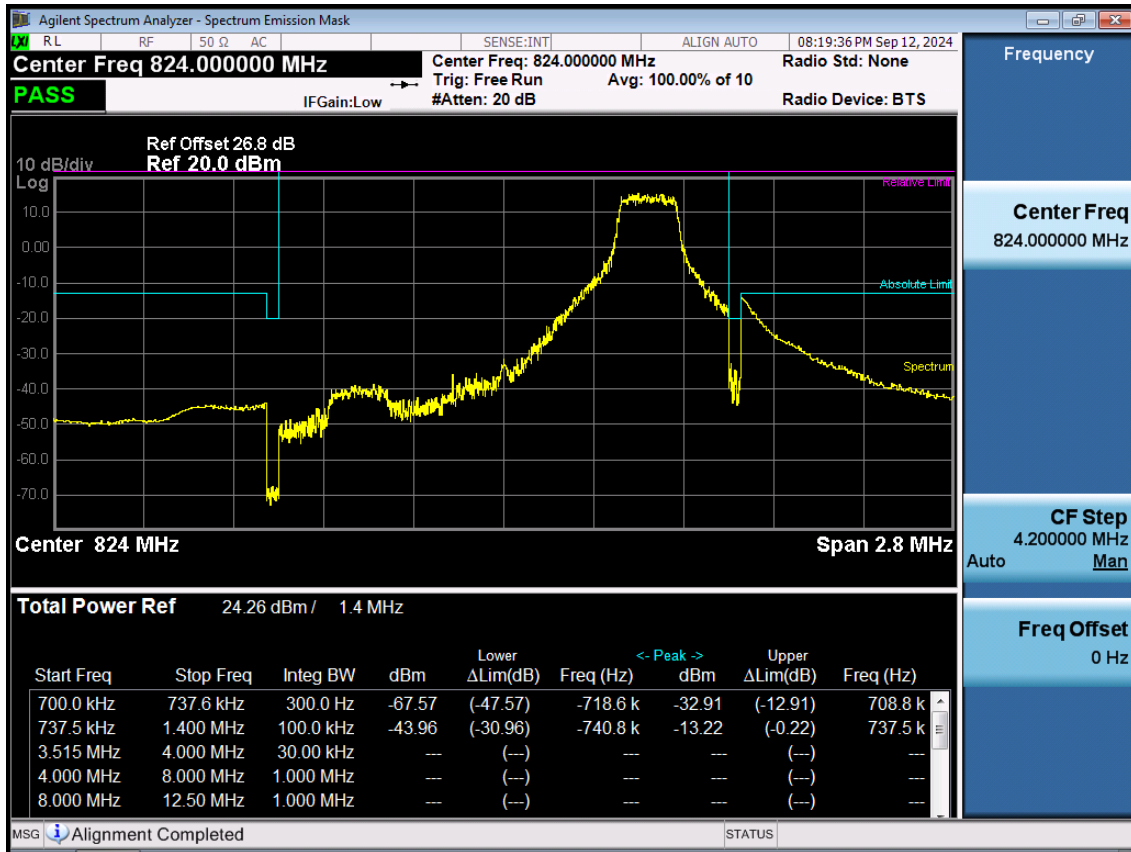
BAND 26. Conducted Spurious (10 MHz_QPSK_RB 1_0)



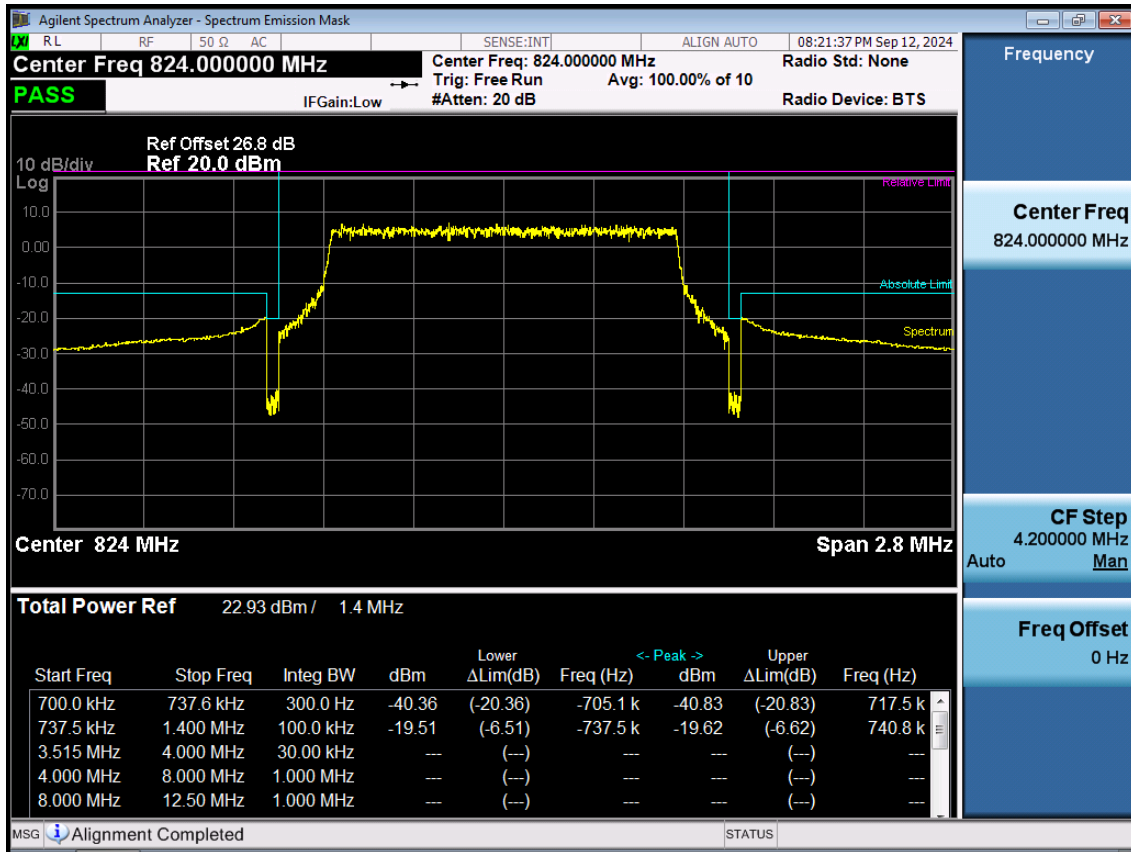
BAND 26. Channel Edge (1.4 MHz_QPSK_RB 1_0)



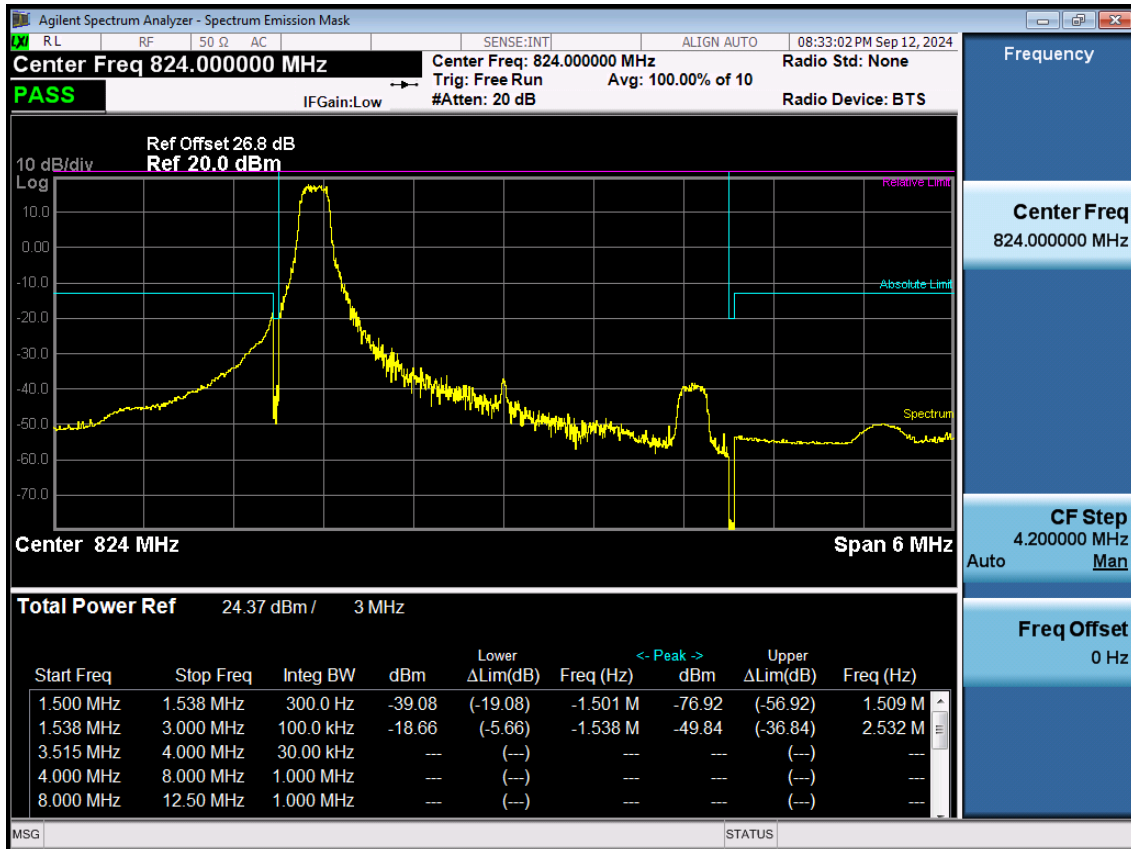
BAND 26. Channel Edge (1.4 MHz_QPSK_RB 1_5)



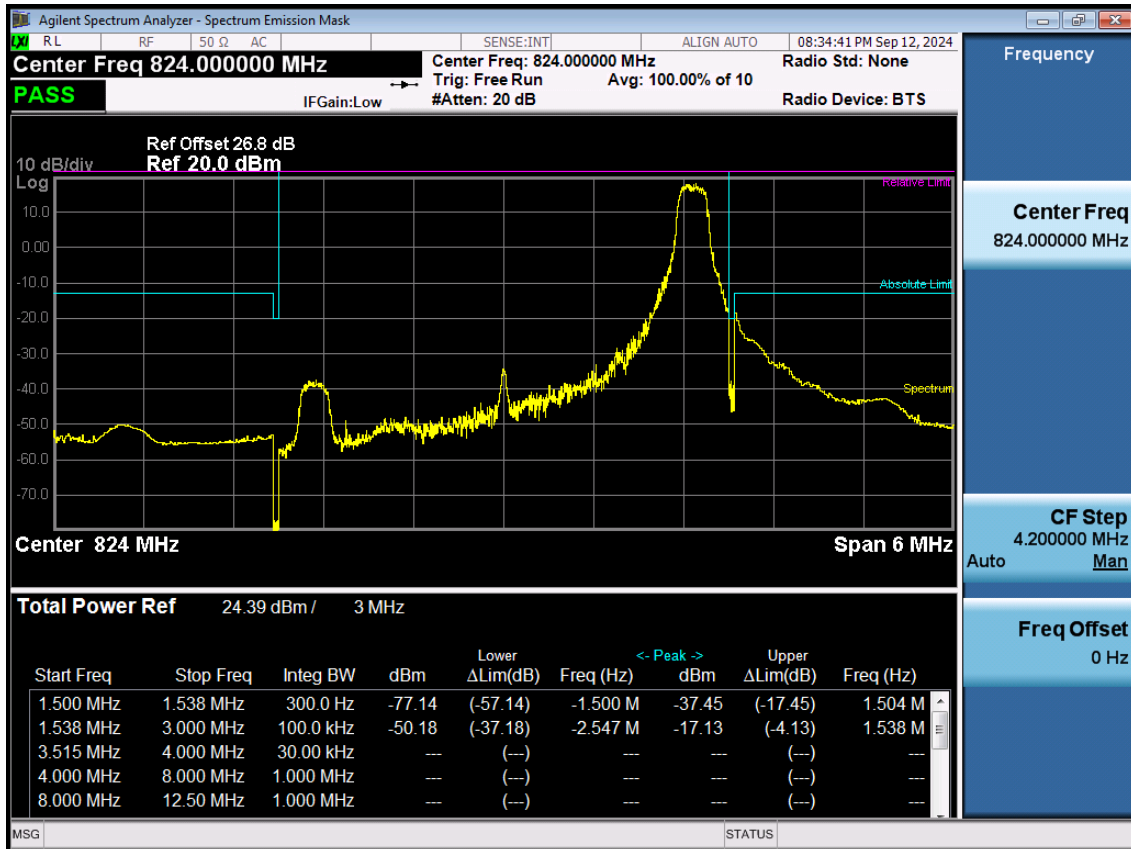
BAND 26. Channel Edge (1.4 MHz_QPSK_Full RB)



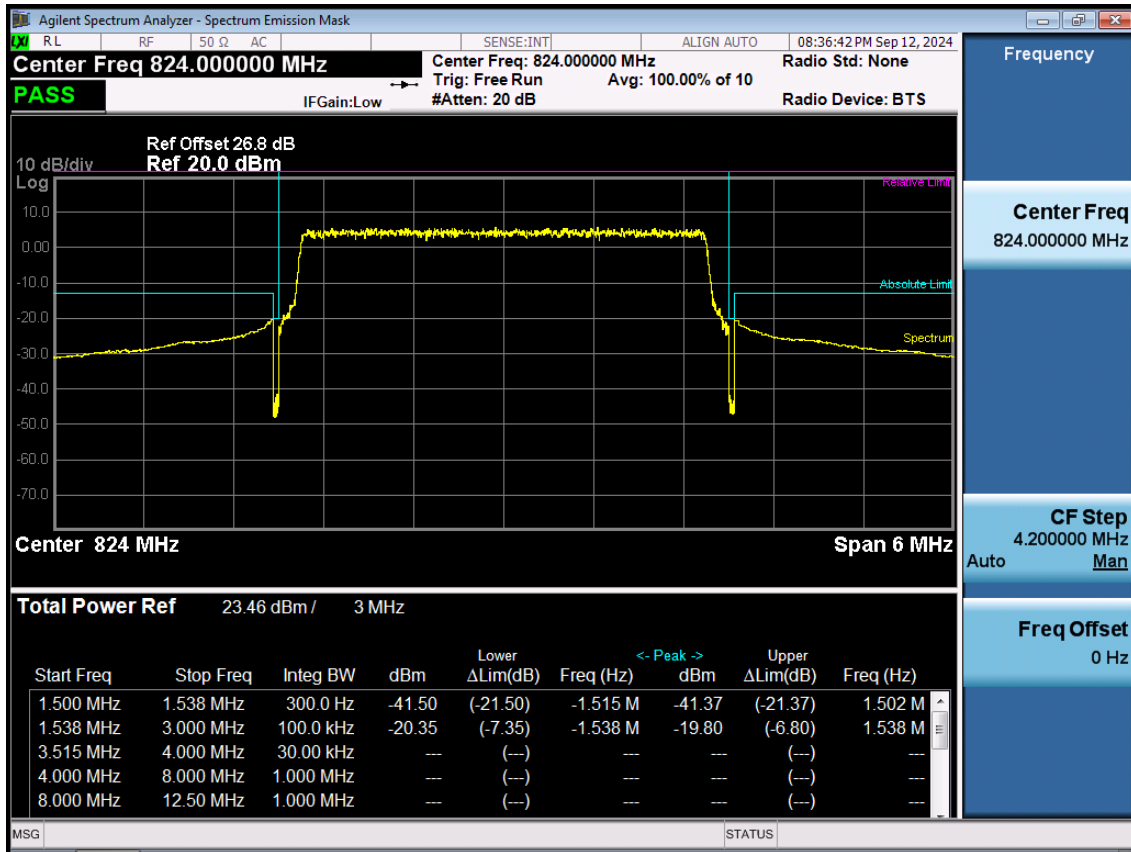
BAND 26. Channel Edge (3 MHz_QPSK_RB 1_0)



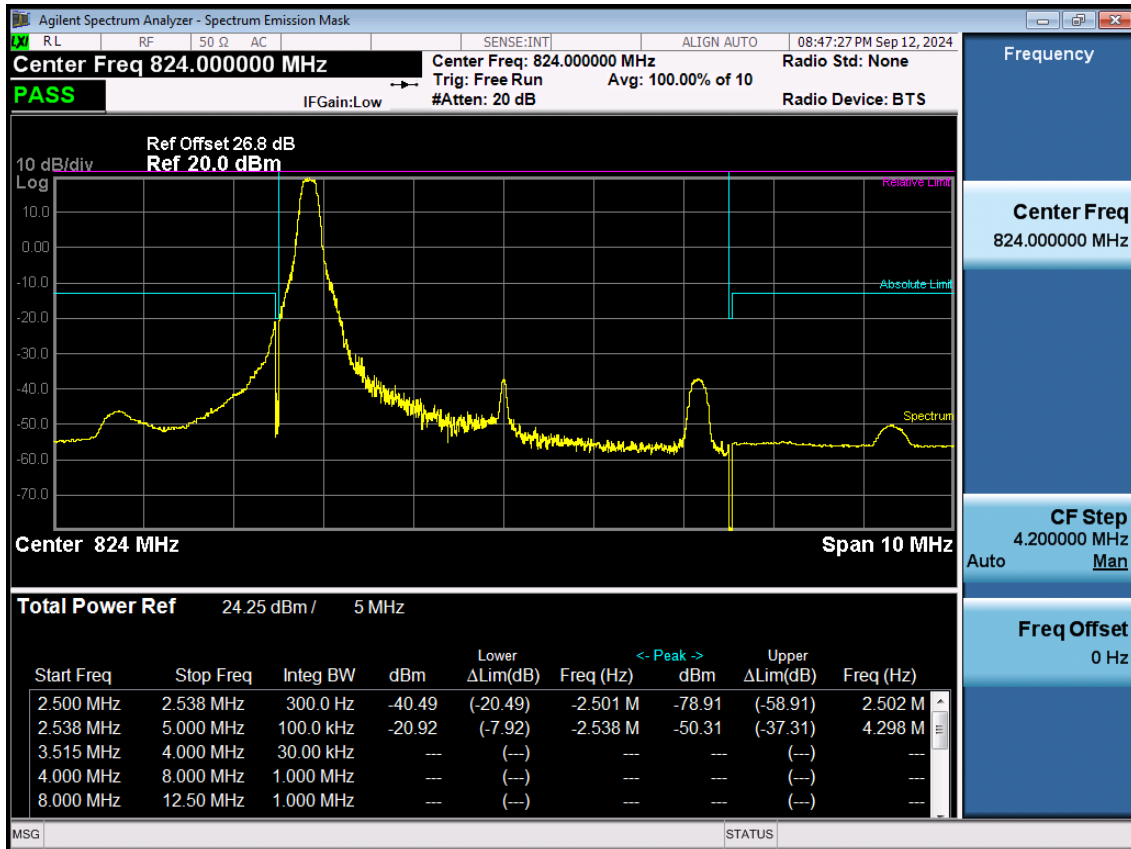
BAND 26. Channel Edge (3 MHz_QPSK_RB 1_14)



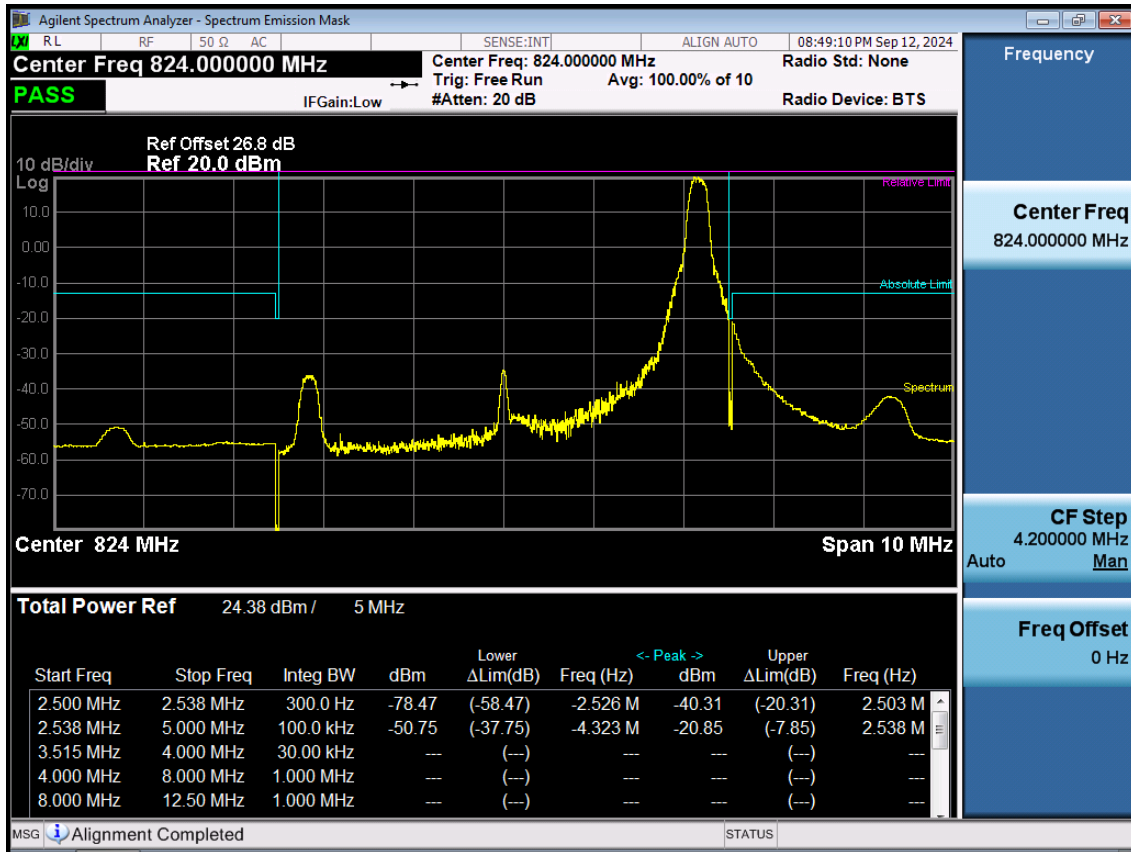
BAND 26. Channel Edge (3 MHz_QPSK_Full RB)



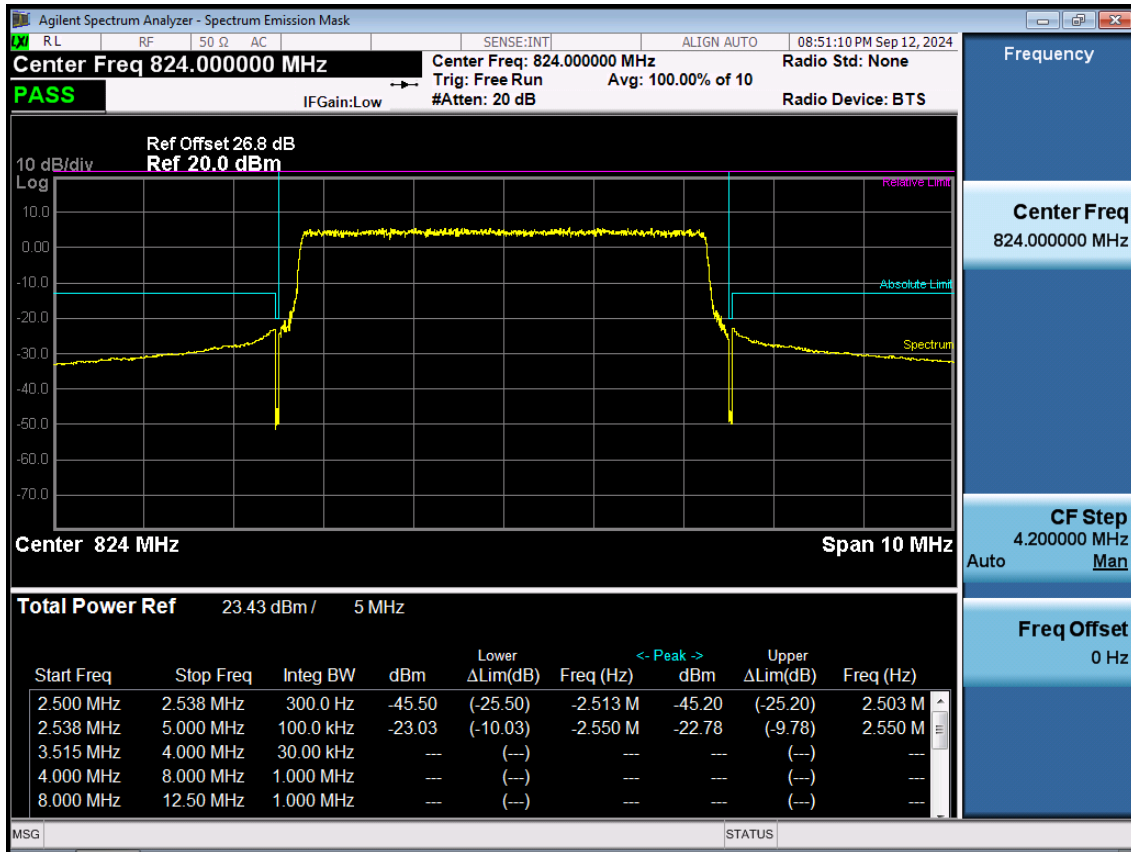
BAND 26. Channel Edge (5 MHz_QPSK_RB 1_0)



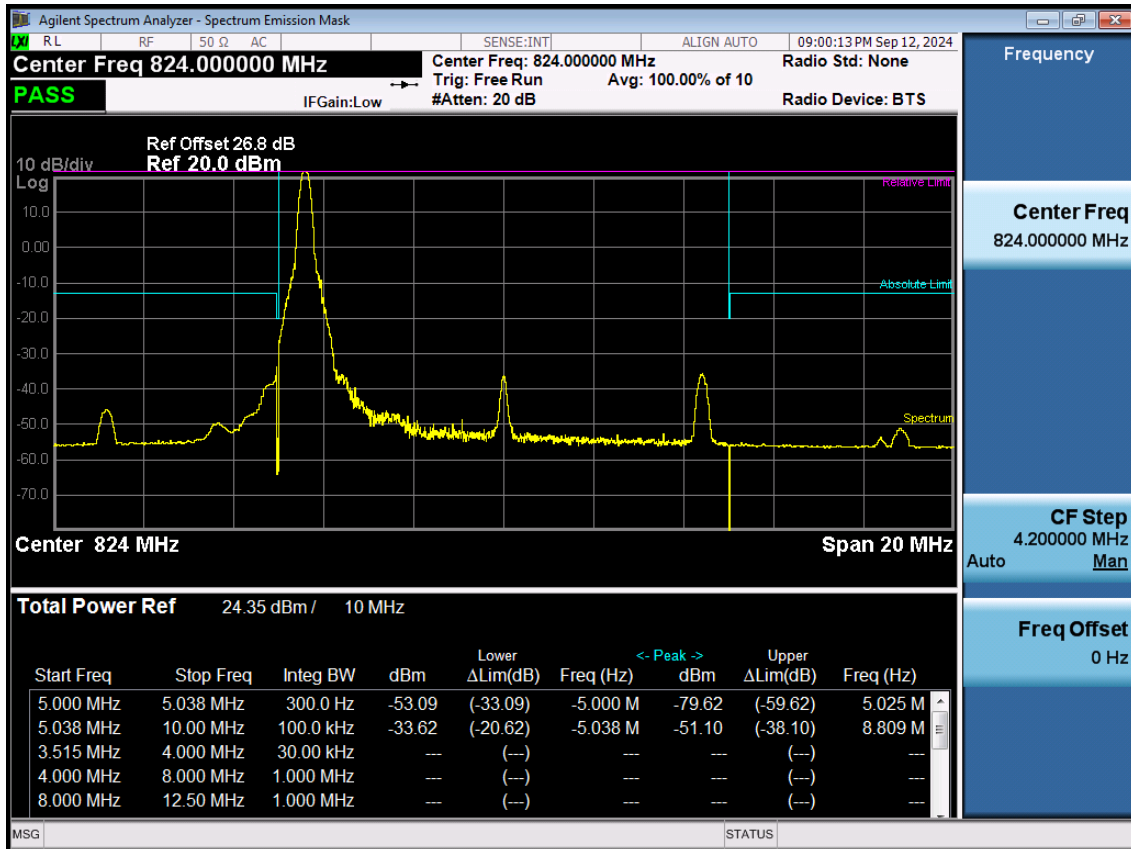
BAND 26. Channel Edge (5 MHz_QPSK_RB 1_24)



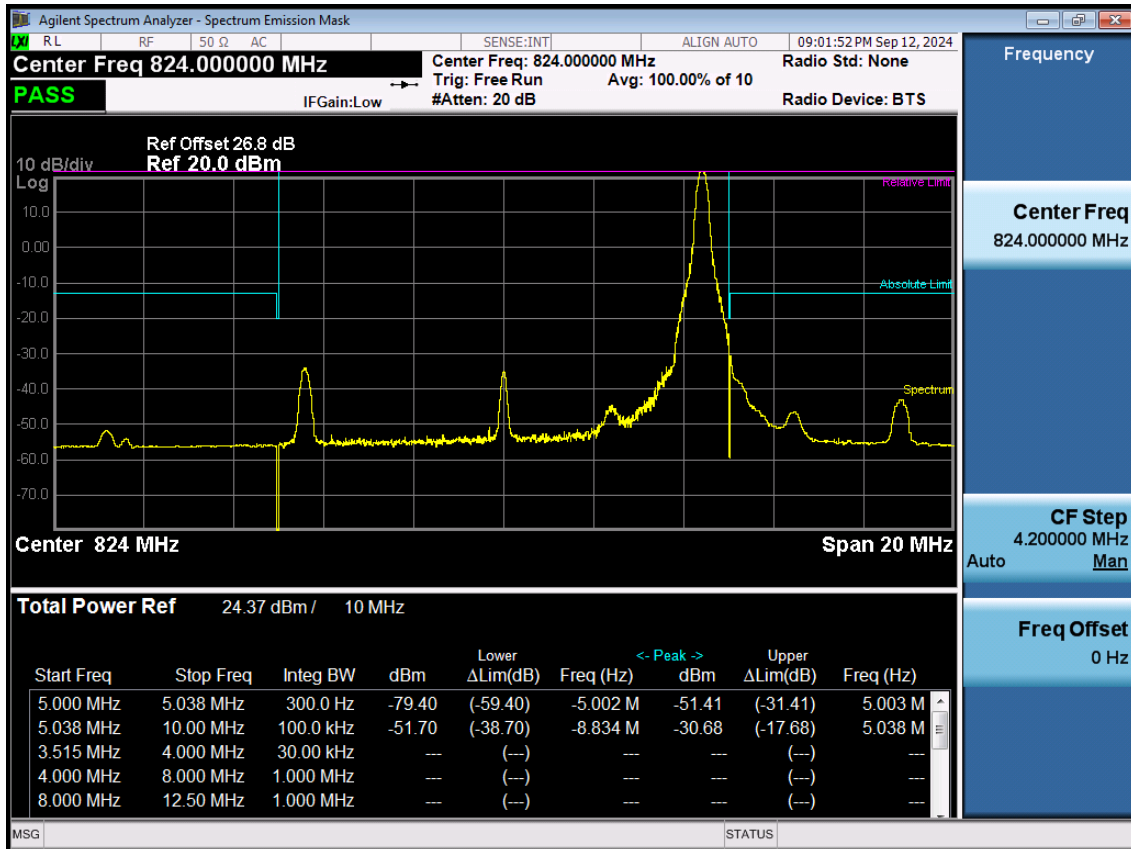
BAND 26. Channel Edge (5 MHz_QPSK_Full RB)



BAND 26. Channel Edge (10 MHz_QPSK_RB 1_0)



BAND 26. Channel Edge (10 MHz_QPSK_RB 1_49)



Agilent Spectrum Analyzer - Spectrum Emission Mask

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:03:52 PM Sep 12, 2024

Center Freq 824.000000 MHz **Center Freq: 824.000000 MHz** **Radio Std: None**
PASS IF Gain: Low **Trig: Free Run** **Avg: 100.00% of 10**
#Atten: 20 dB **Radio Device: BTS**

Ref Offset 26.8 dB
Ref 20.0 dBm

10 dB/div
Log

Relative Limit
Absolute Limit
Spectrum

Center 824 MHz **Span 20 MHz**

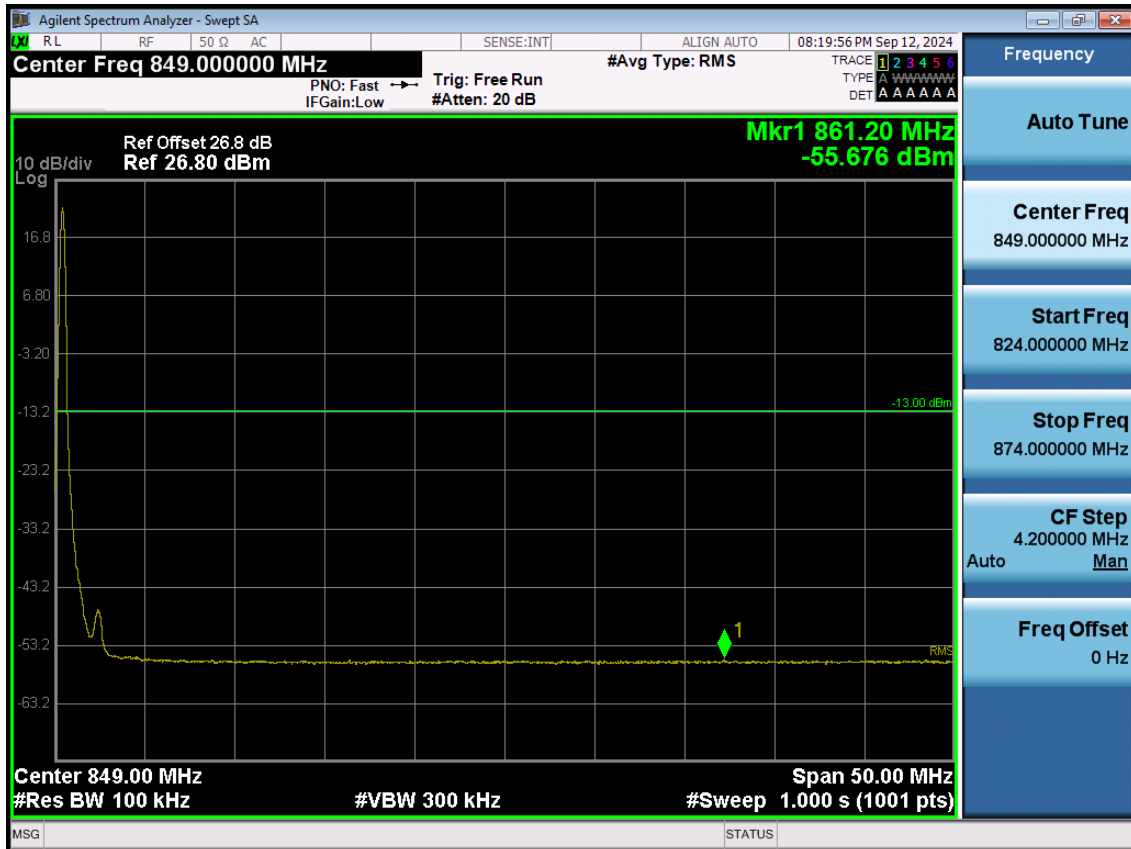
Total Power Ref 23.46 dBm / 10 MHz

Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	<- Peak -> dBm	Upper ΔLim(dB)	Freq (Hz)
5.000 MHz	5.038 MHz	300.0 Hz	-50.65	(-30.65)	-5.033 M	-50.35	(-30.35)	5.006 M
5.038 MHz	10.00 MHz	100.0 kHz	-27.41	(-14.41)	-5.038 M	-27.46	(-14.46)	5.038 M
3.515 MHz	4.000 MHz	30.00 kHz	---	(--)	---	---	(--)	---
4.000 MHz	8.000 MHz	1.000 MHz	---	(--)	---	---	(--)	---
8.000 MHz	12.50 MHz	1.000 MHz	---	(--)	---	---	(--)	---

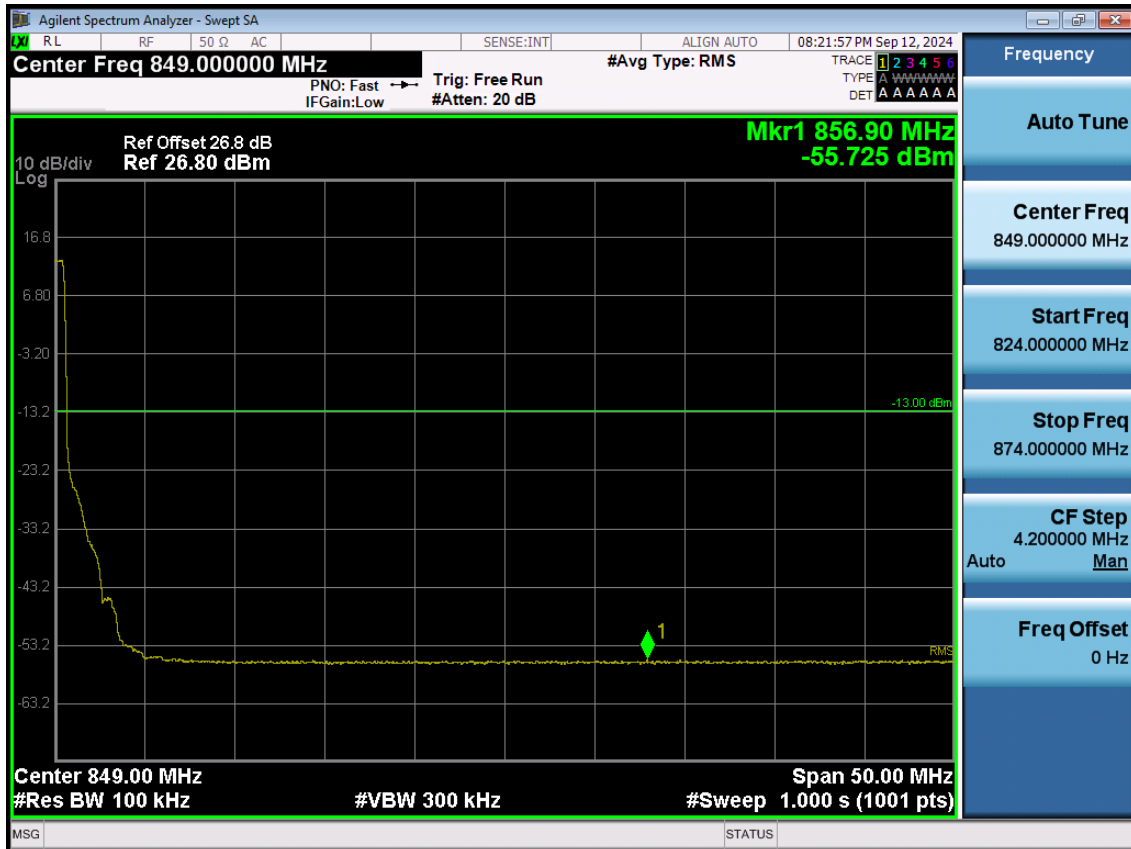
MSG STATUS

Frequency
Center Freq
824.000000 MHz
CF Step
4.200000 MHz
Auto Man
Freq Offset
0 Hz

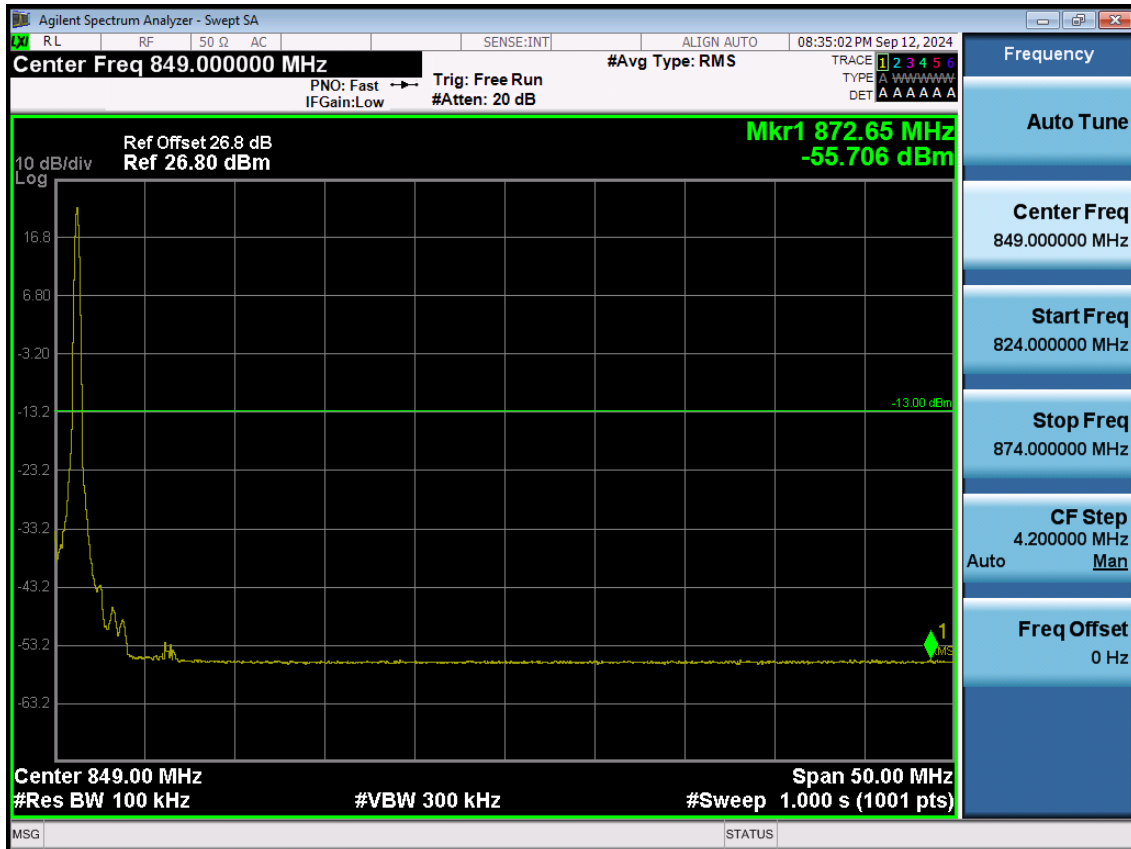
BAND 26. Band Edge (1.4 MHz_QPSK_RB 1_5)



BAND 26. Band Edge (1.4 MHz_QPSK_FullRB)



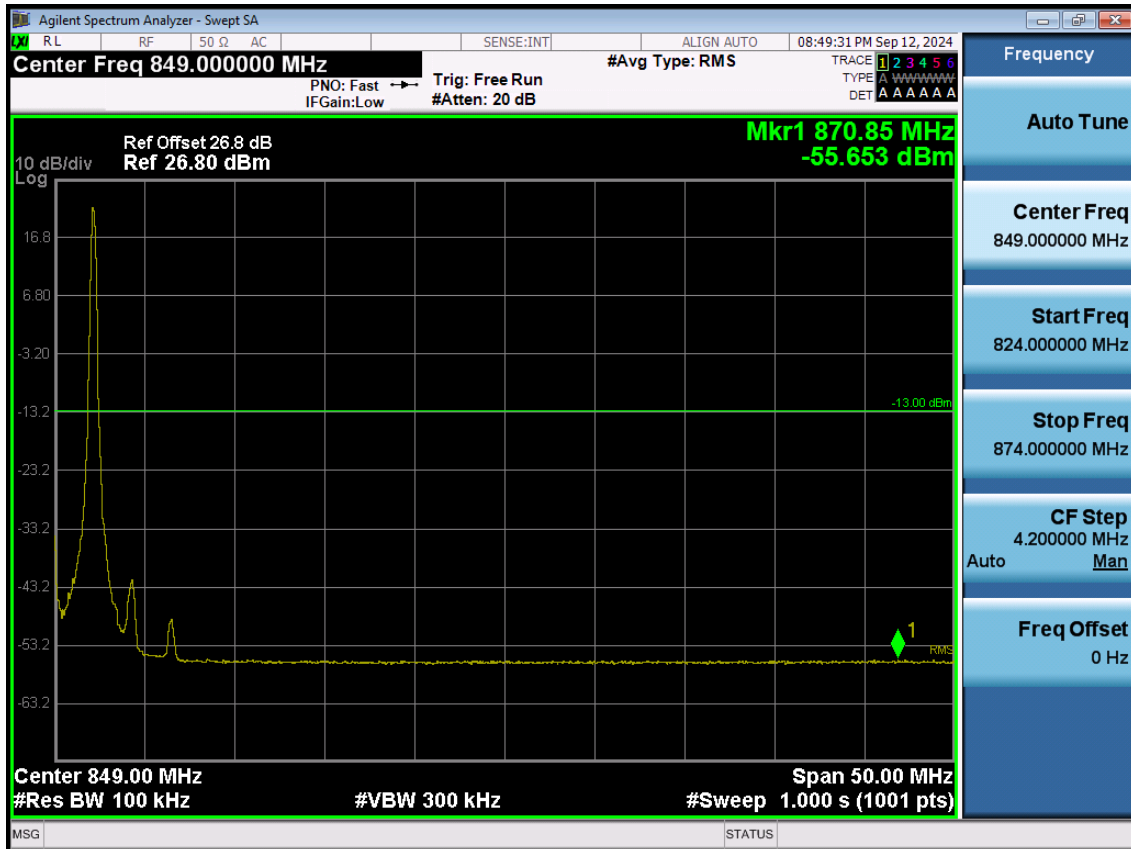
BAND 26. Band Edge (3 MHz_QPSK_RB 1_14)



BAND 26. Band Edge (3 MHz_QPSK_ Full RB)



BAND 26. Band Edge (5 MHz_QPSK_RB 1_24)



BAND 26. Band Edge (5 MHz_QPSK_ Full RB)



BAND 26. Band Edge (10 MHz_QPSK_RB 1_49)

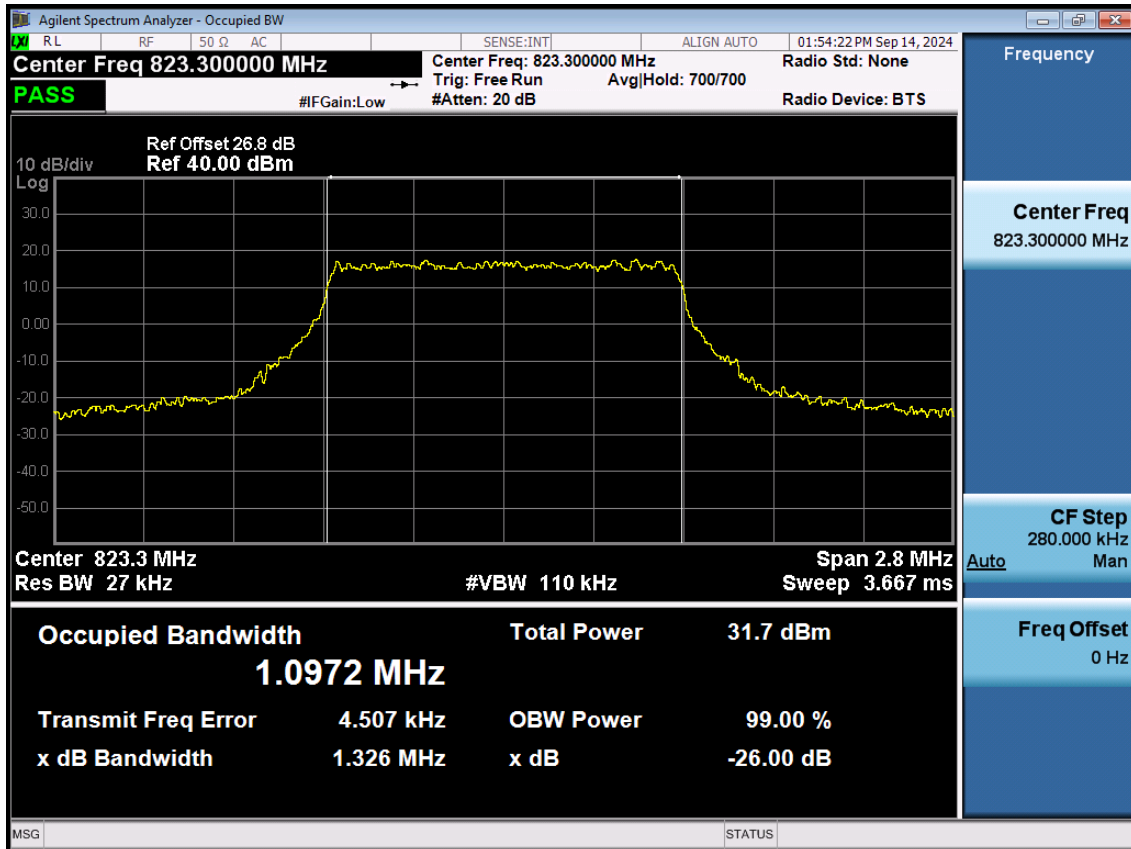


BAND 26. Band Edge (10 MHz_QPSK_ Full RB)

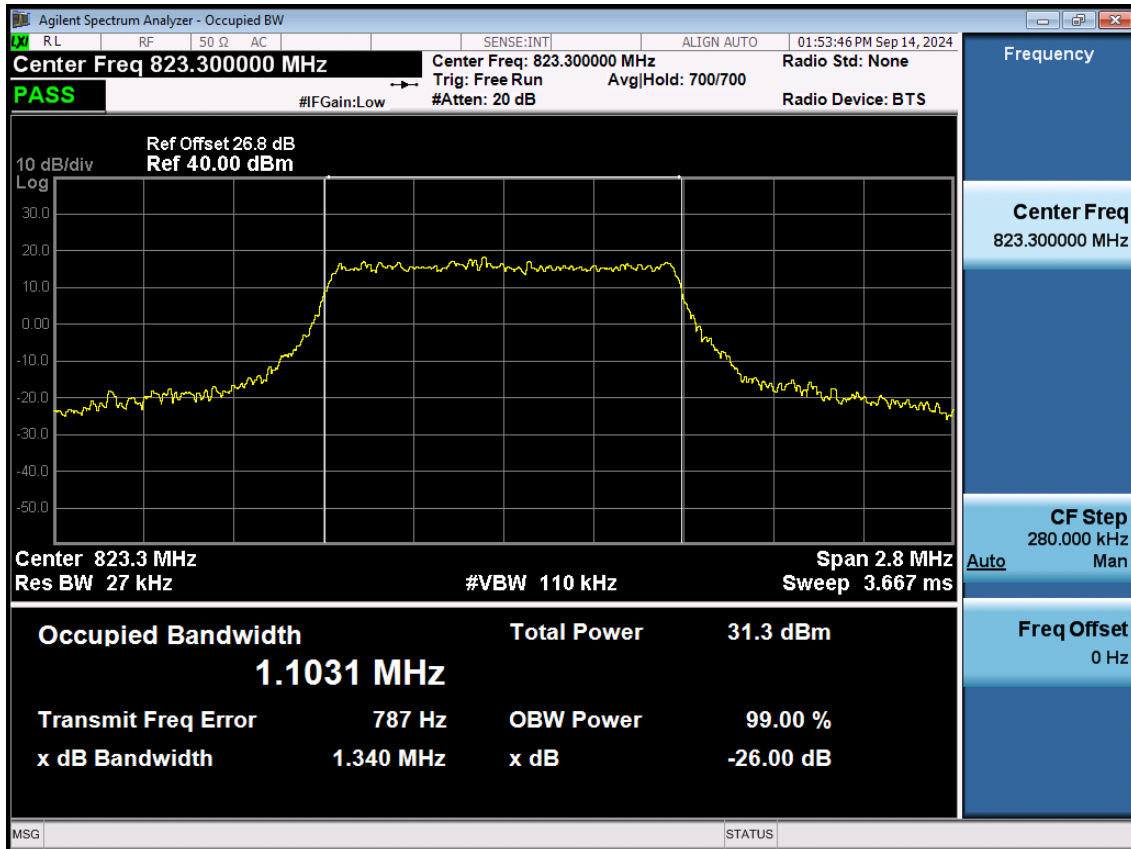


12. TEST PLOTS (Sub1)

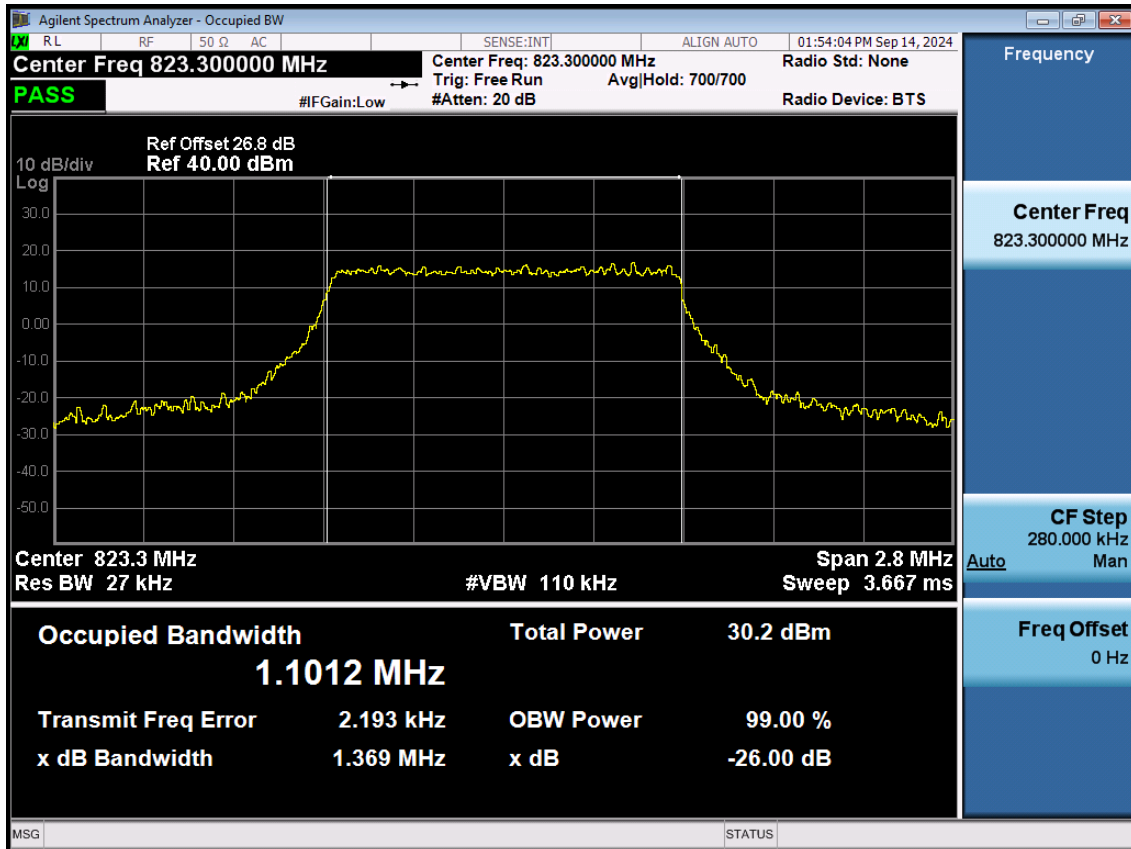
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 QPSK RB 6_0)



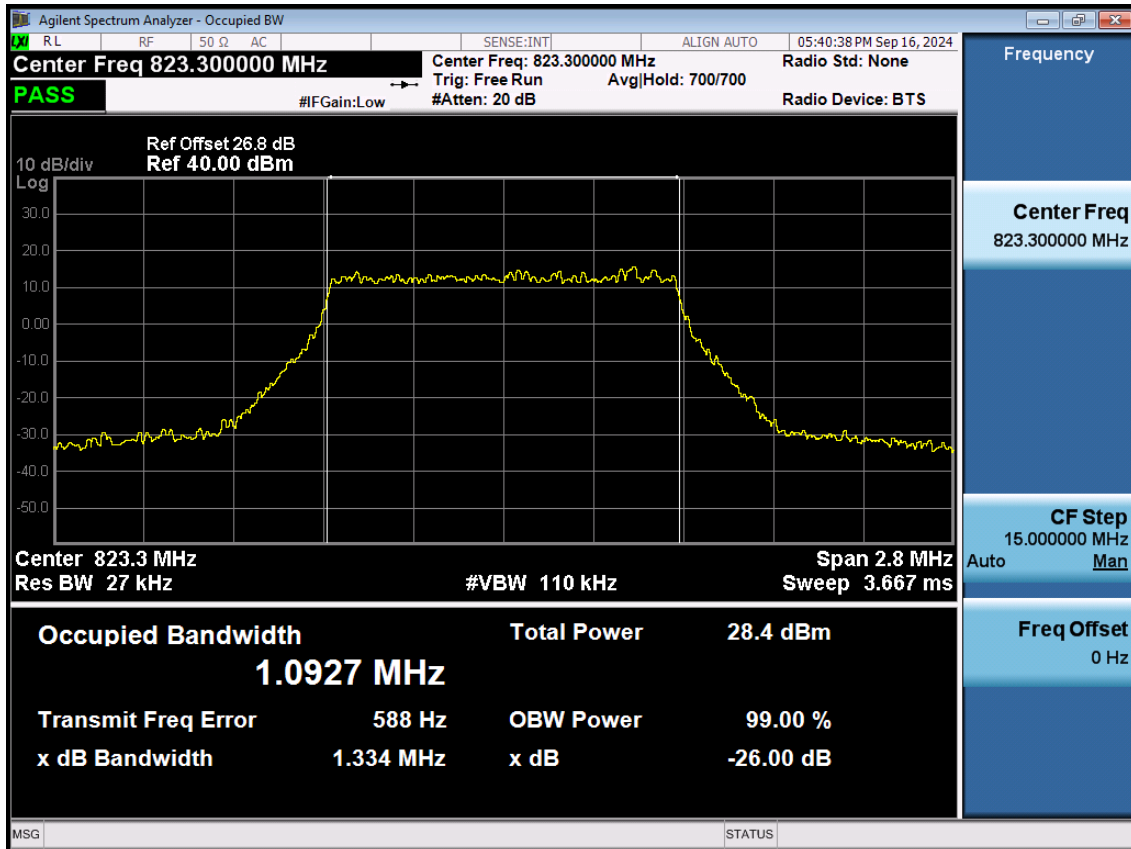
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 16QAM RB 6_0)



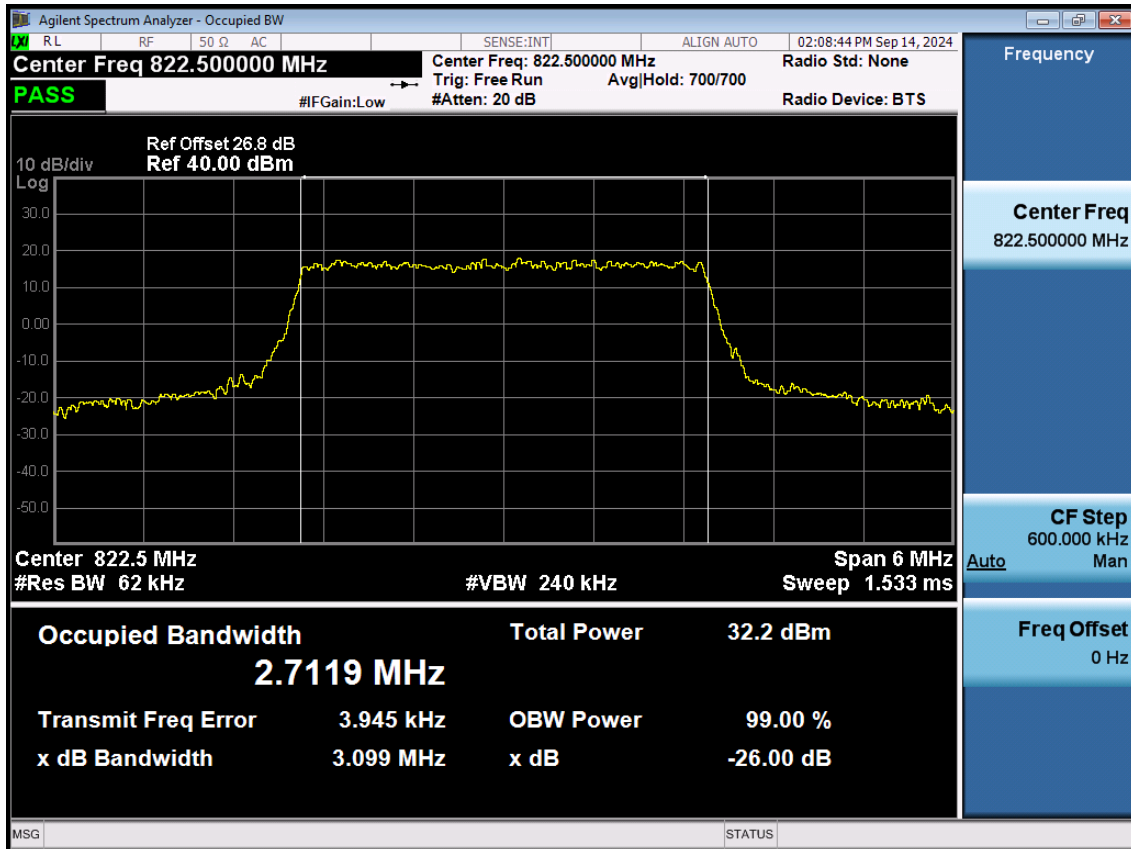
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 64QAM RB 6_0)



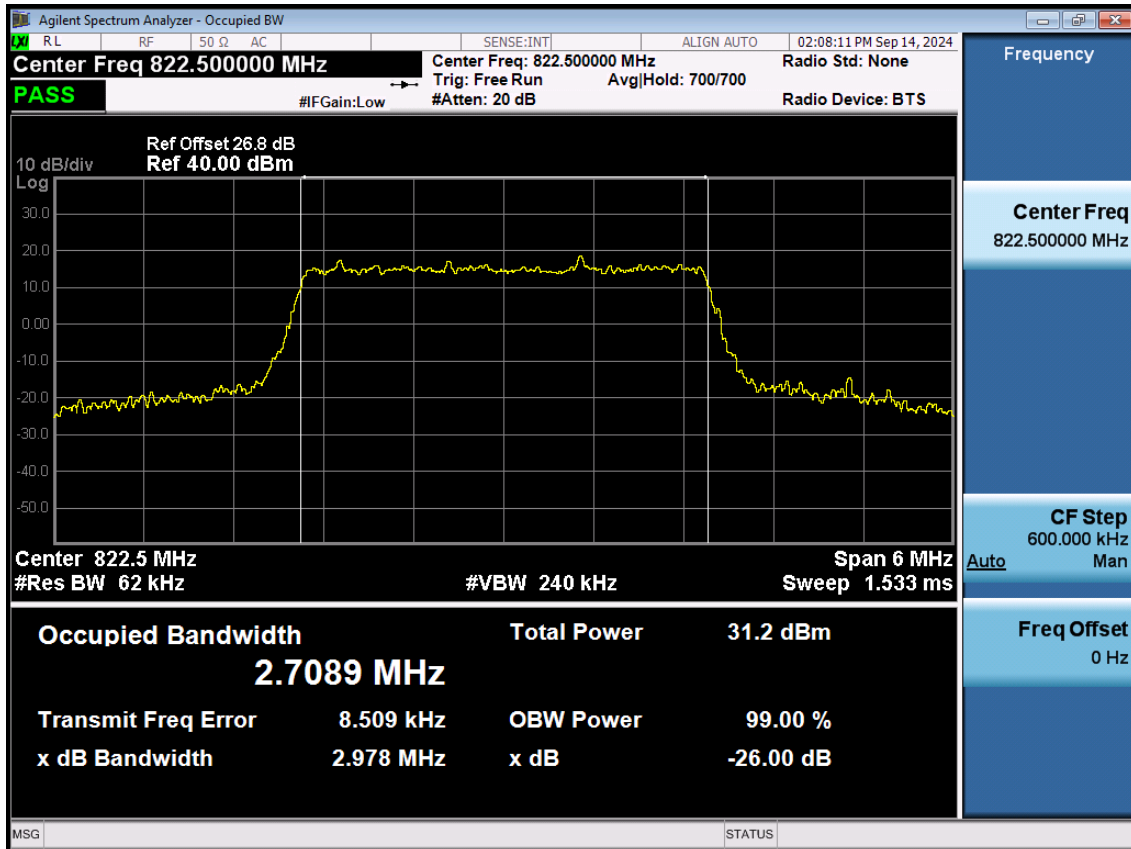
BAND 26. Occupied Bandwidth Plot (1.4 M BW Ch.26783 256QAM RB 6_0)



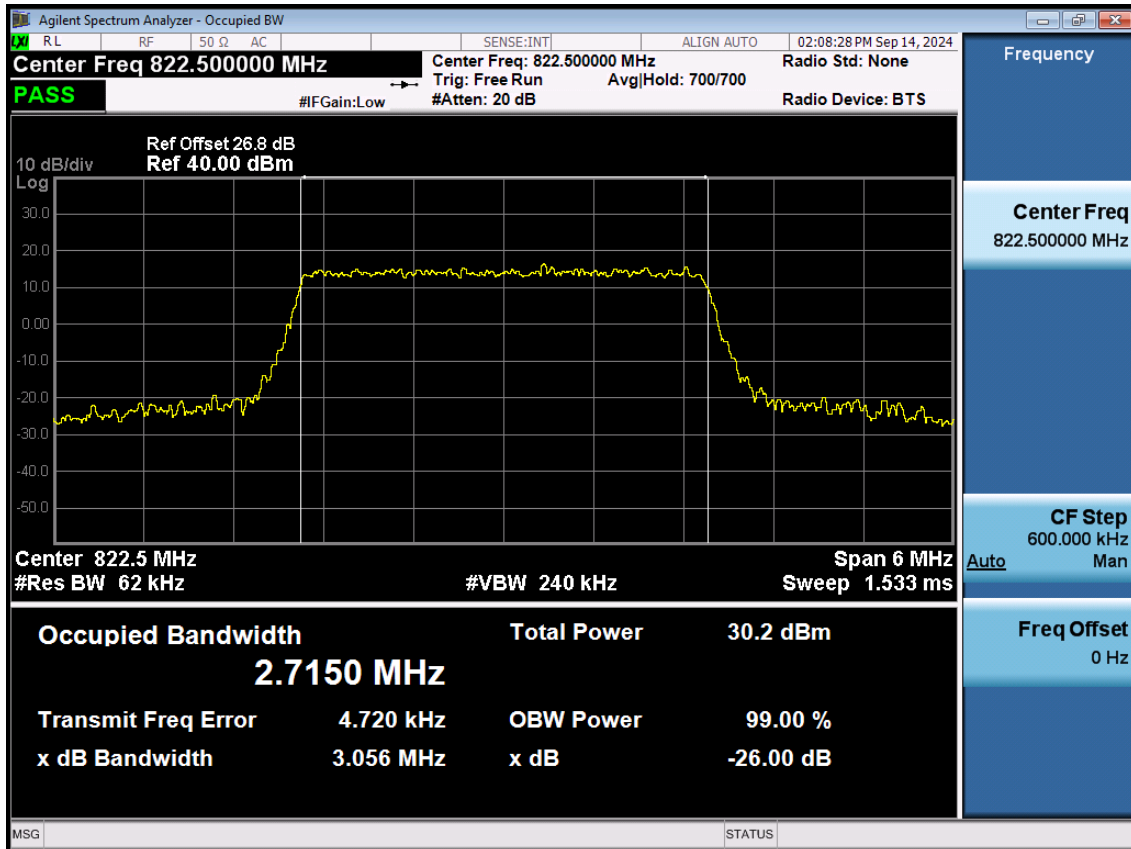
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 QPSK RB 15_0)



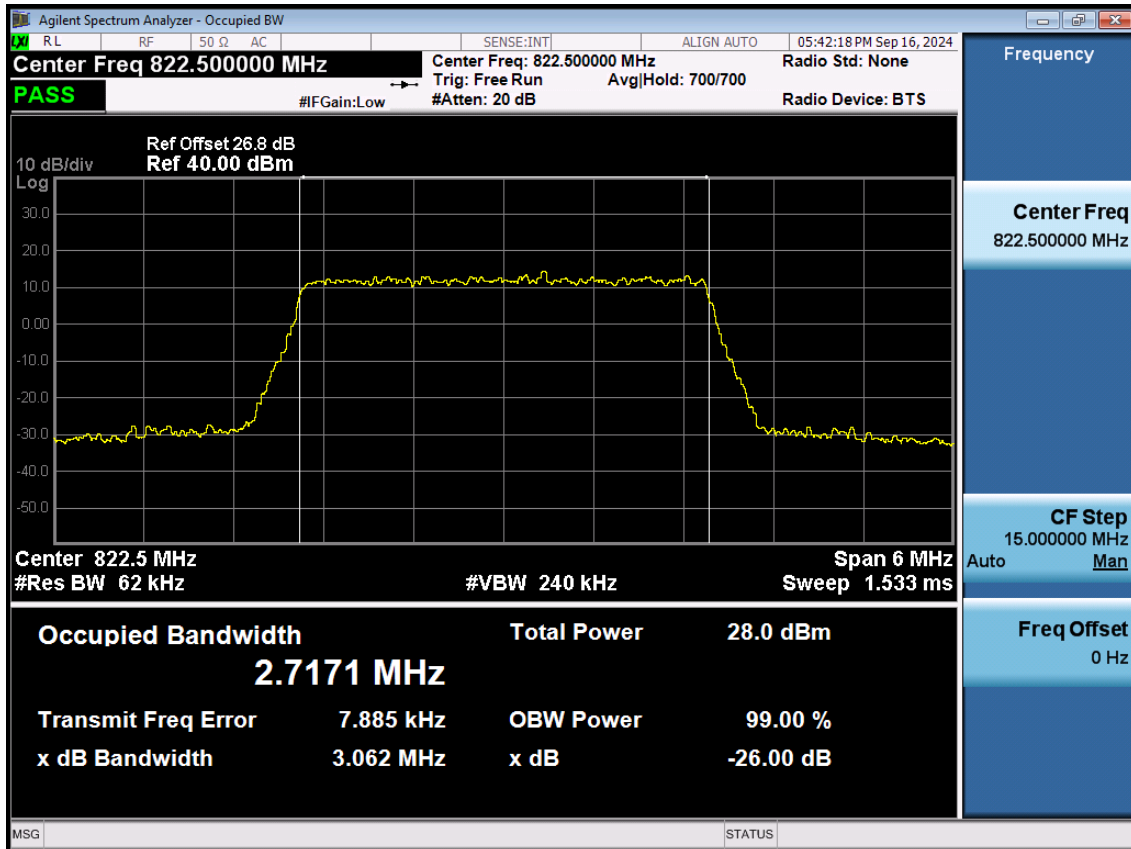
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 16QAM RB 15_0)



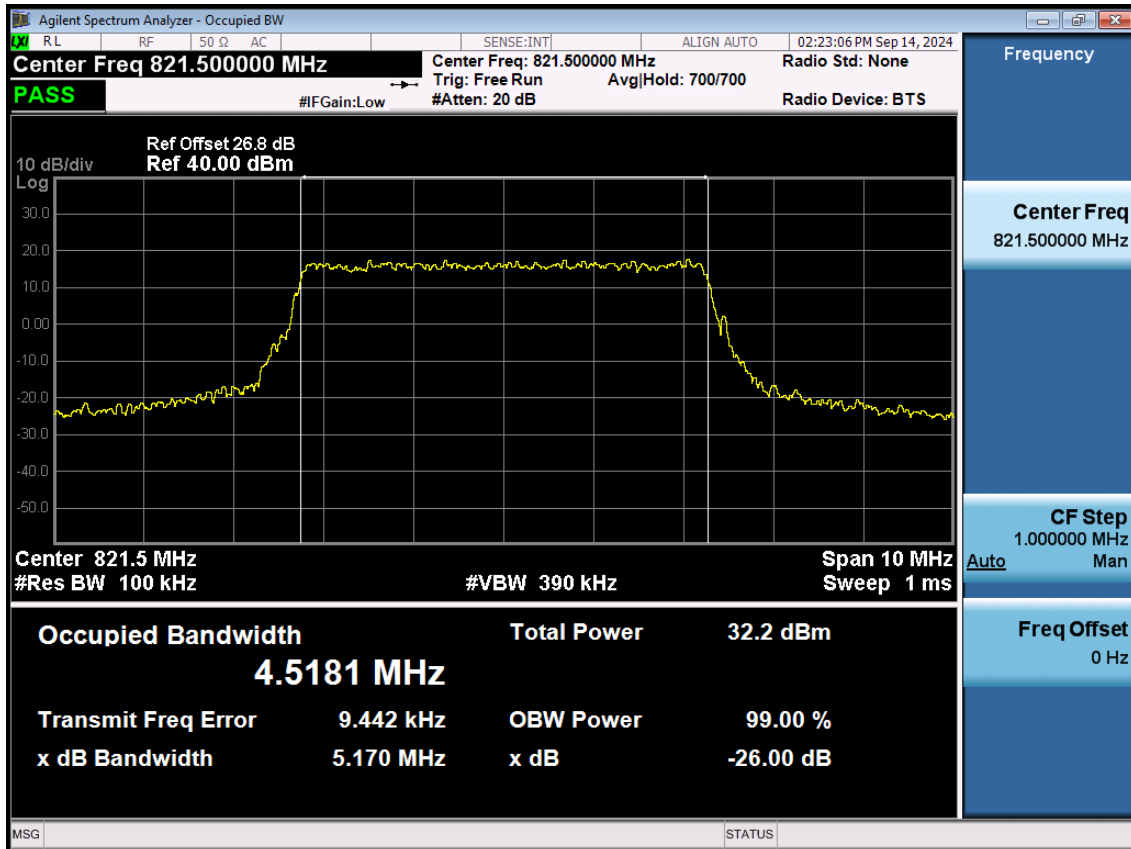
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 64QAM RB 15_0)



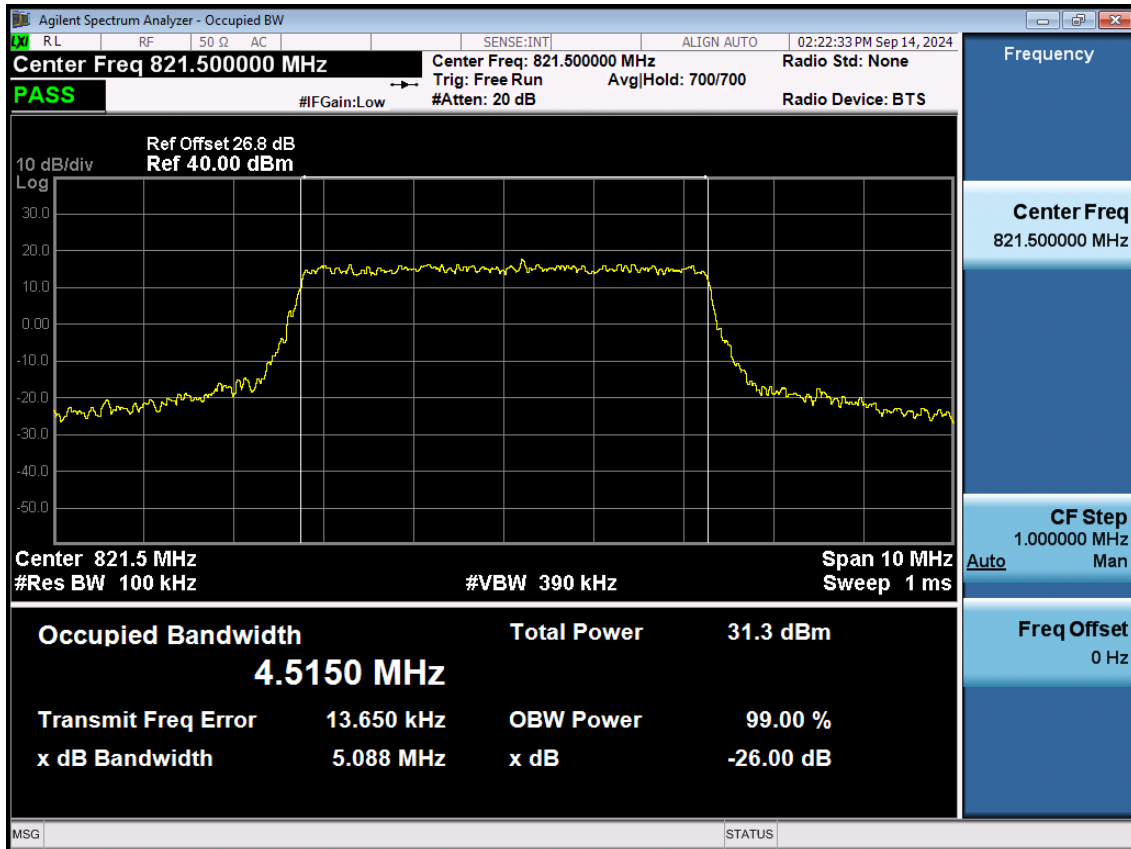
BAND 26. Occupied Bandwidth Plot (3 M BW Ch.26775 256QAM RB 15_0)



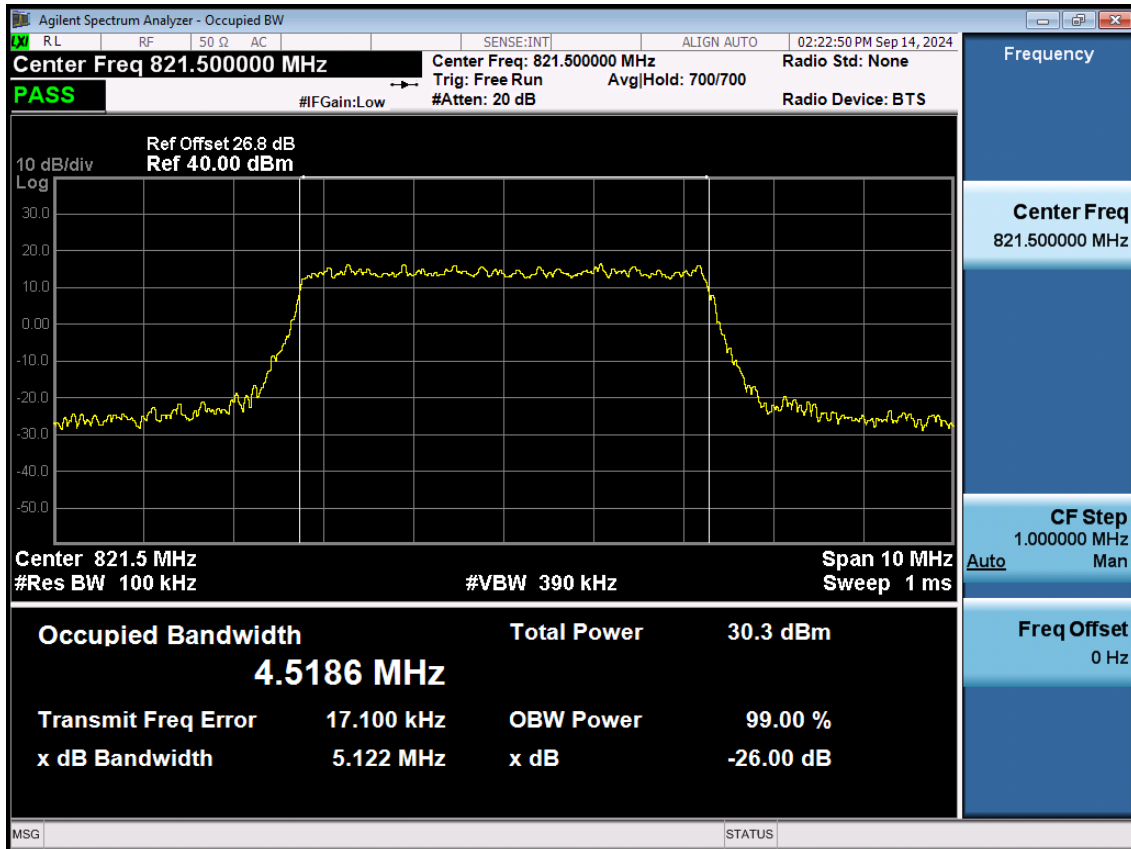
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 QPSK RB 25_0)



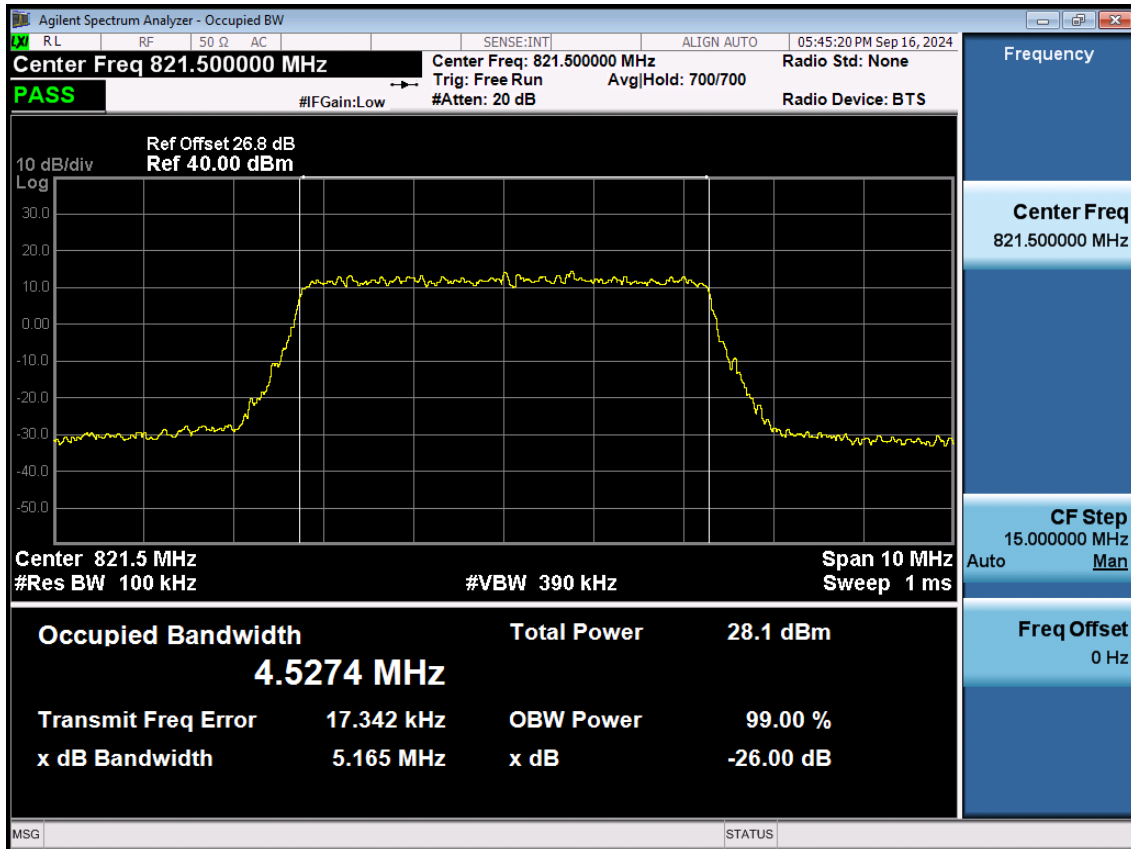
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 16QAM RB 25_0)



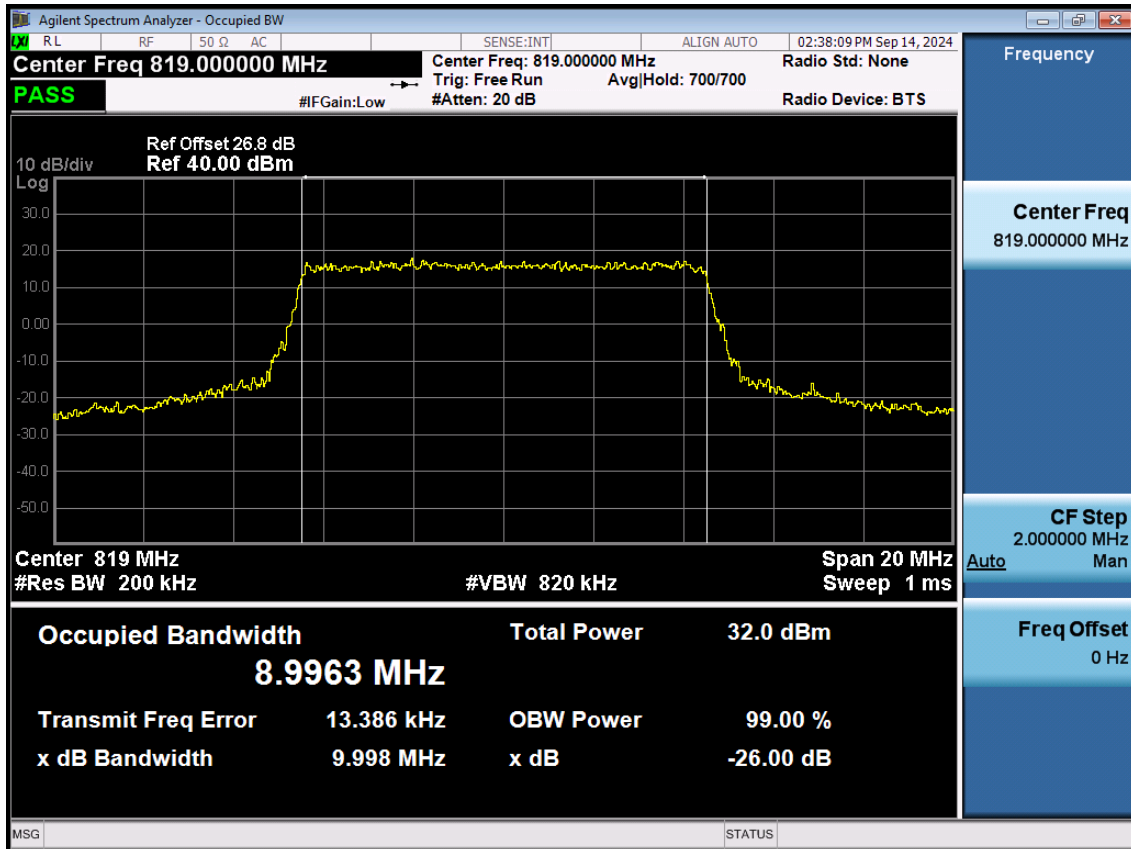
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 64QAM RB 25_0)



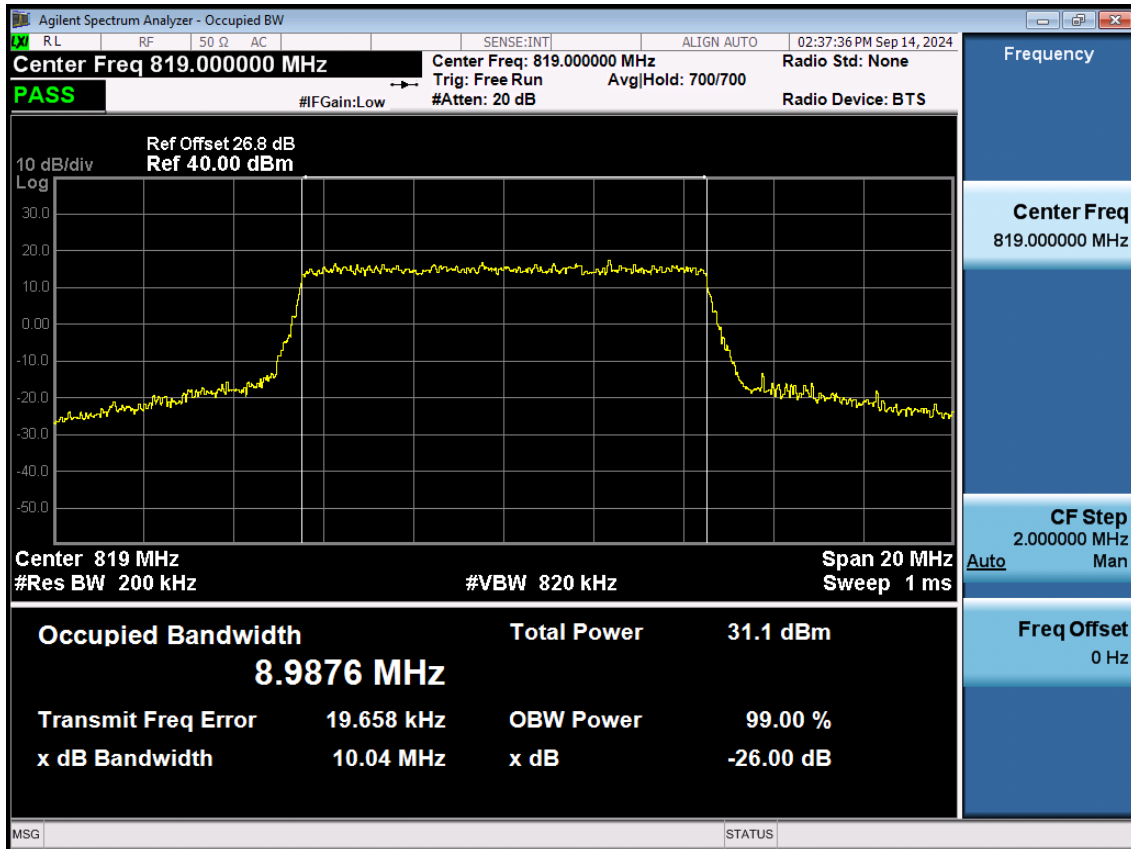
BAND 26. Occupied Bandwidth Plot (5 M BW Ch.26765 256QAM RB 25_0)



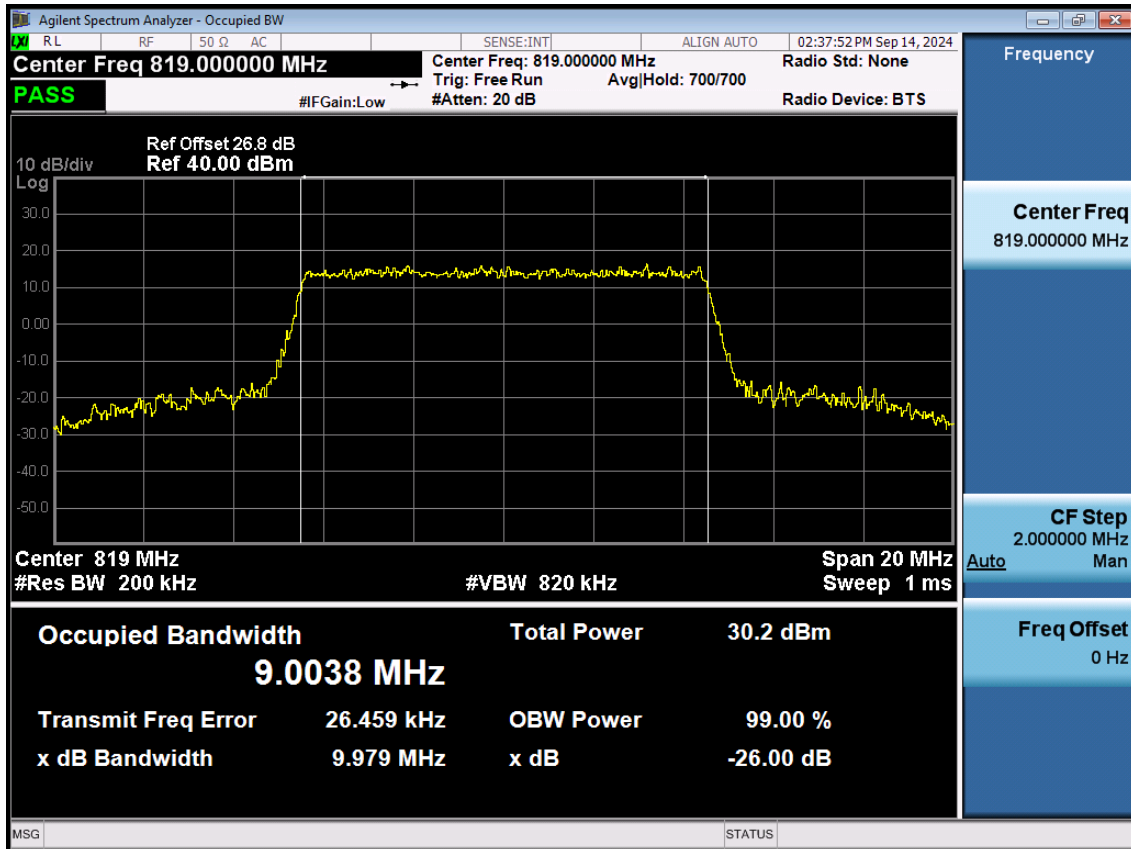
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 QPSK RB 50_0)



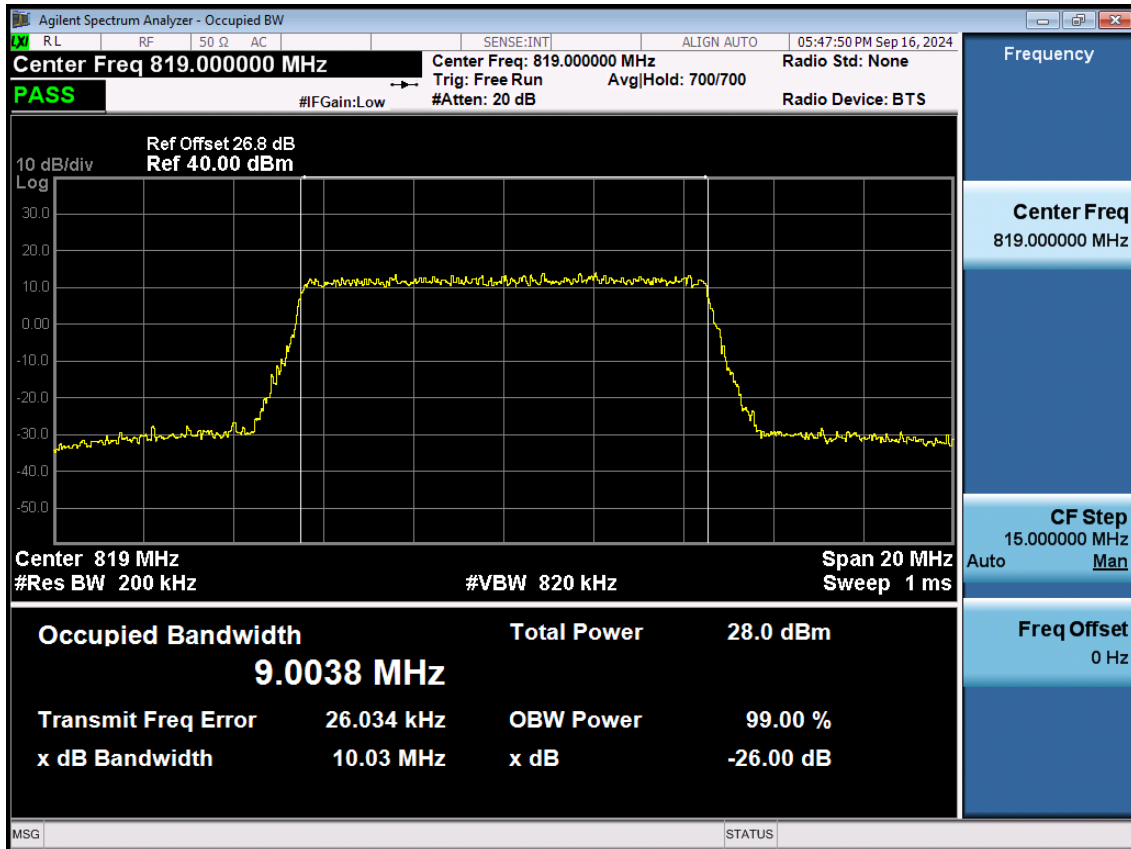
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 16QAM RB 50_0)



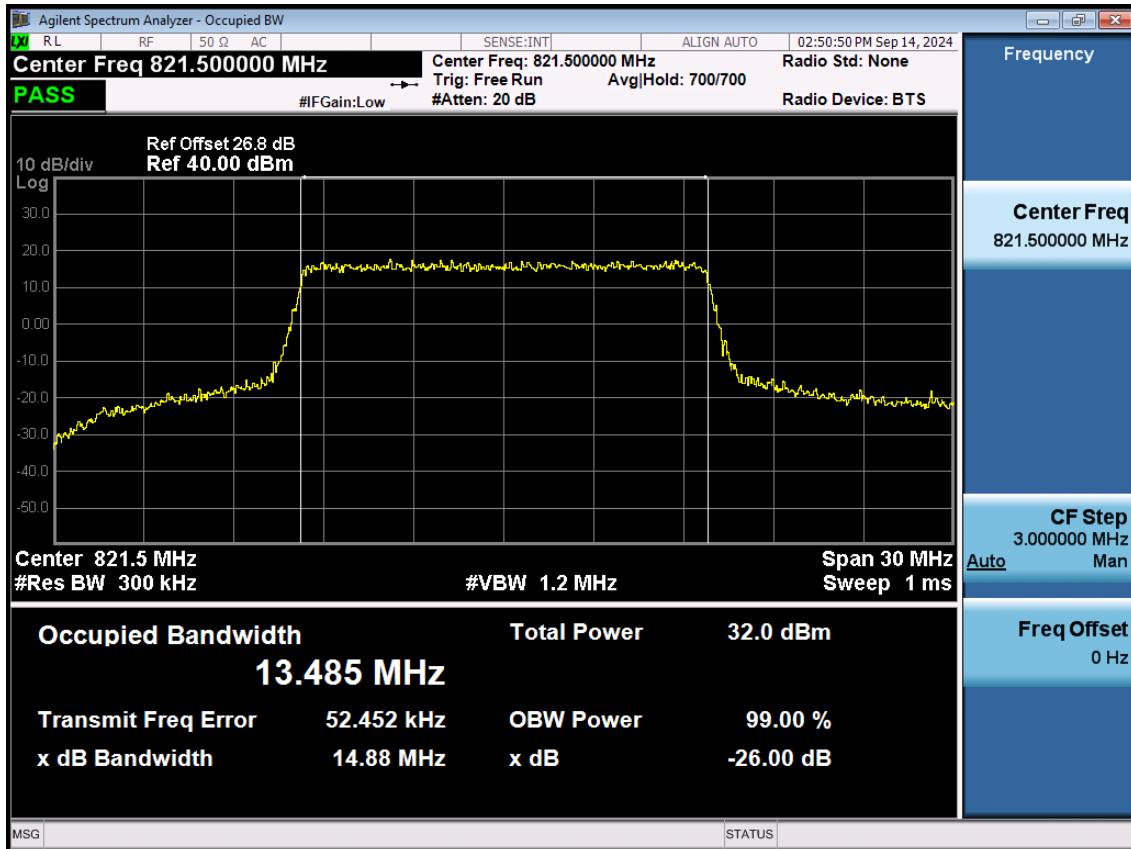
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 64QAM RB 50_0)



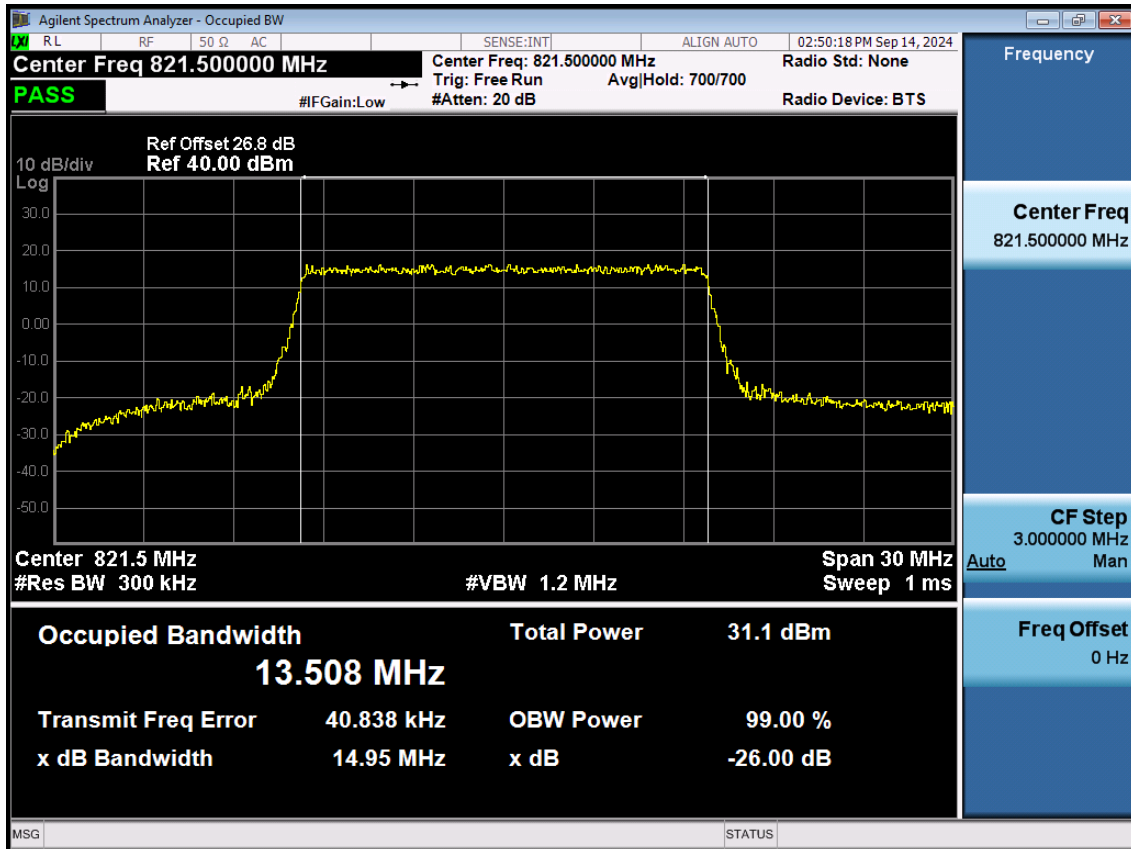
BAND 26. Occupied Bandwidth Plot (10 M BW Ch.26740 256QAM RB 50_0)



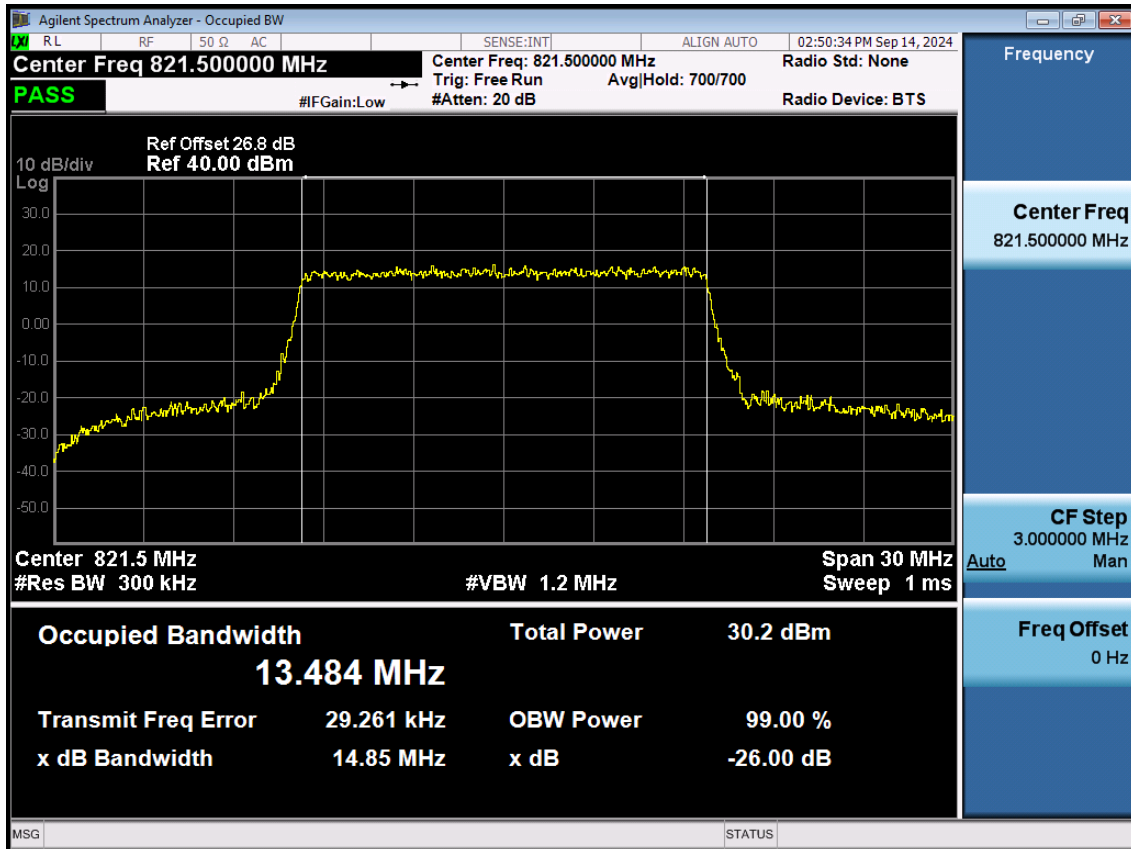
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 QPSK RB 75_0)



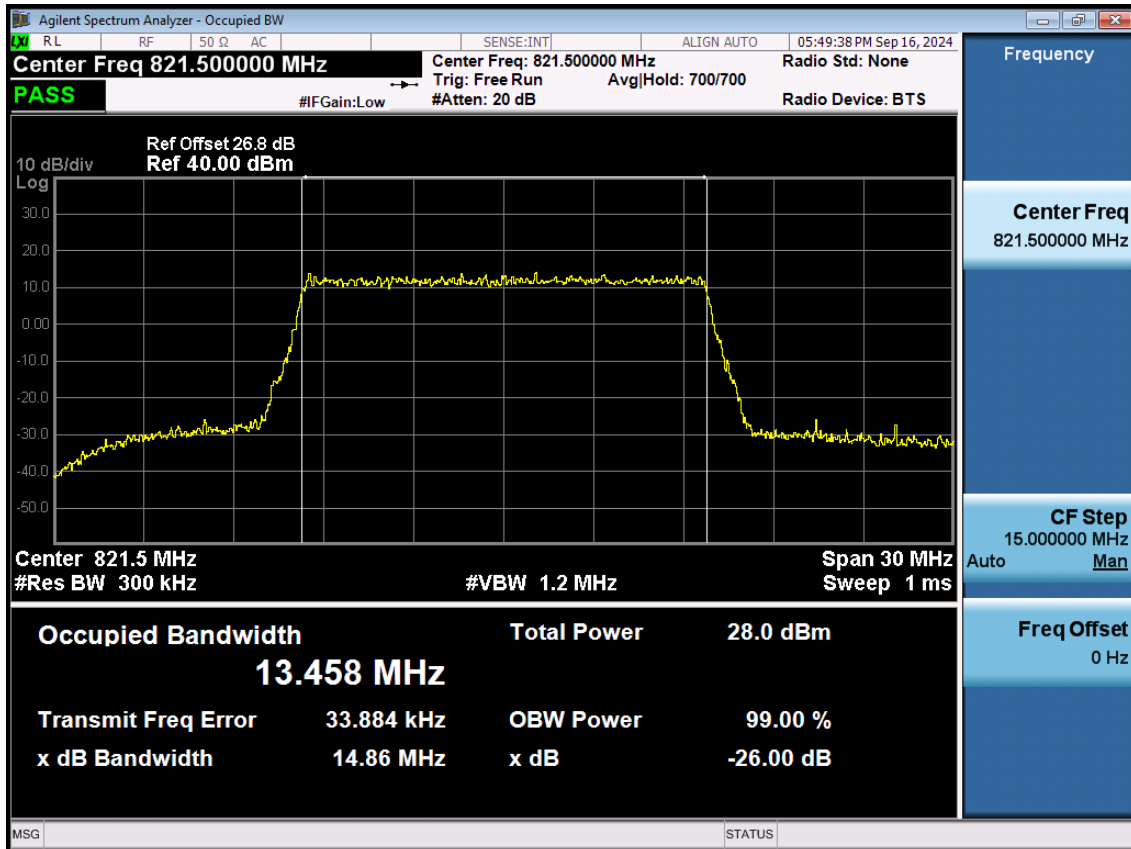
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 16QAM RB 75_0)



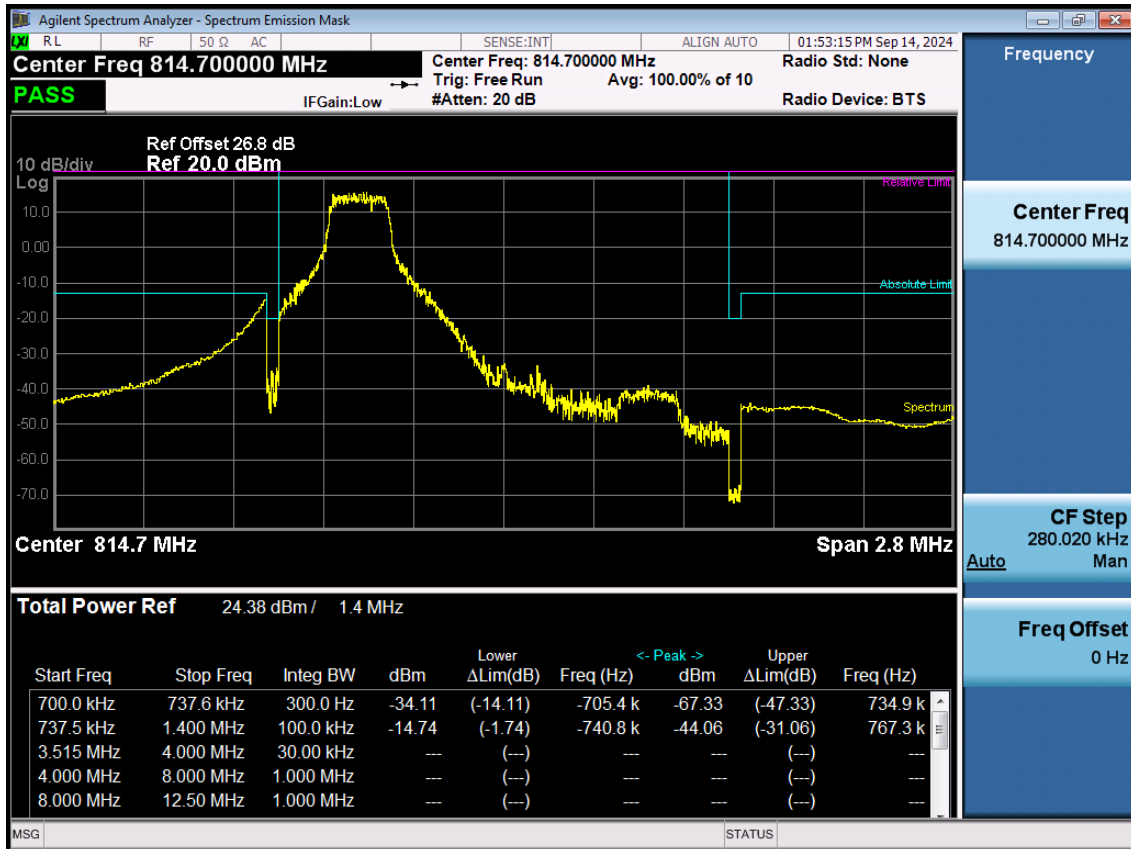
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 64QAM RB 75_0)



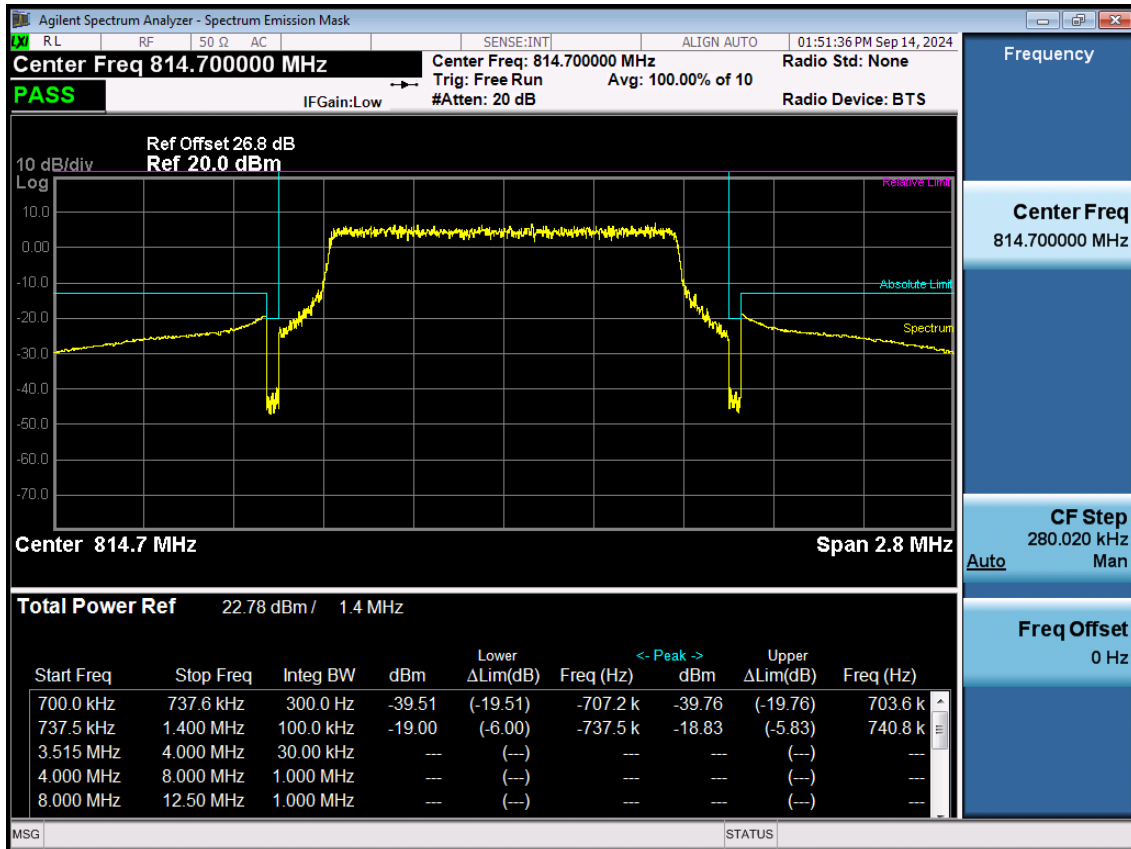
BAND 26. Occupied Bandwidth Plot (15 M BW Ch.26765 256QAM RB 75_0)



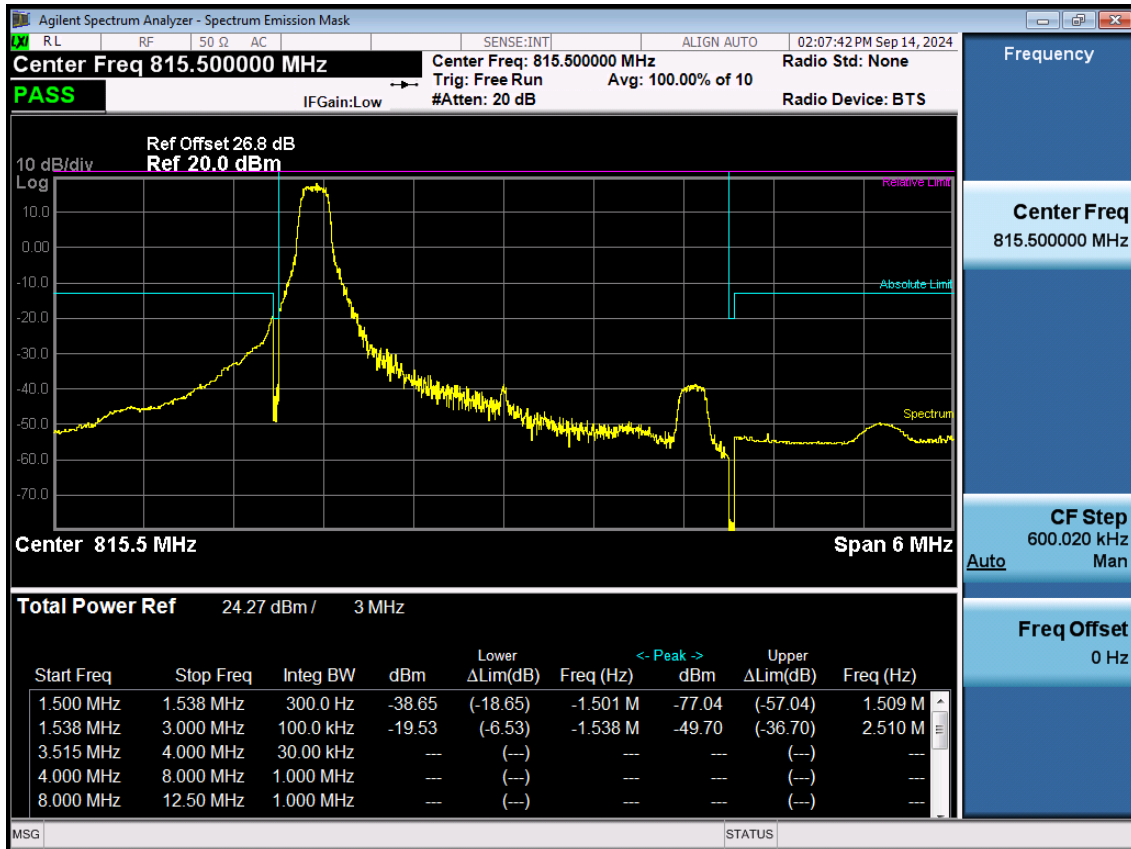
BAND 26. Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK RB 1, Offset 0)



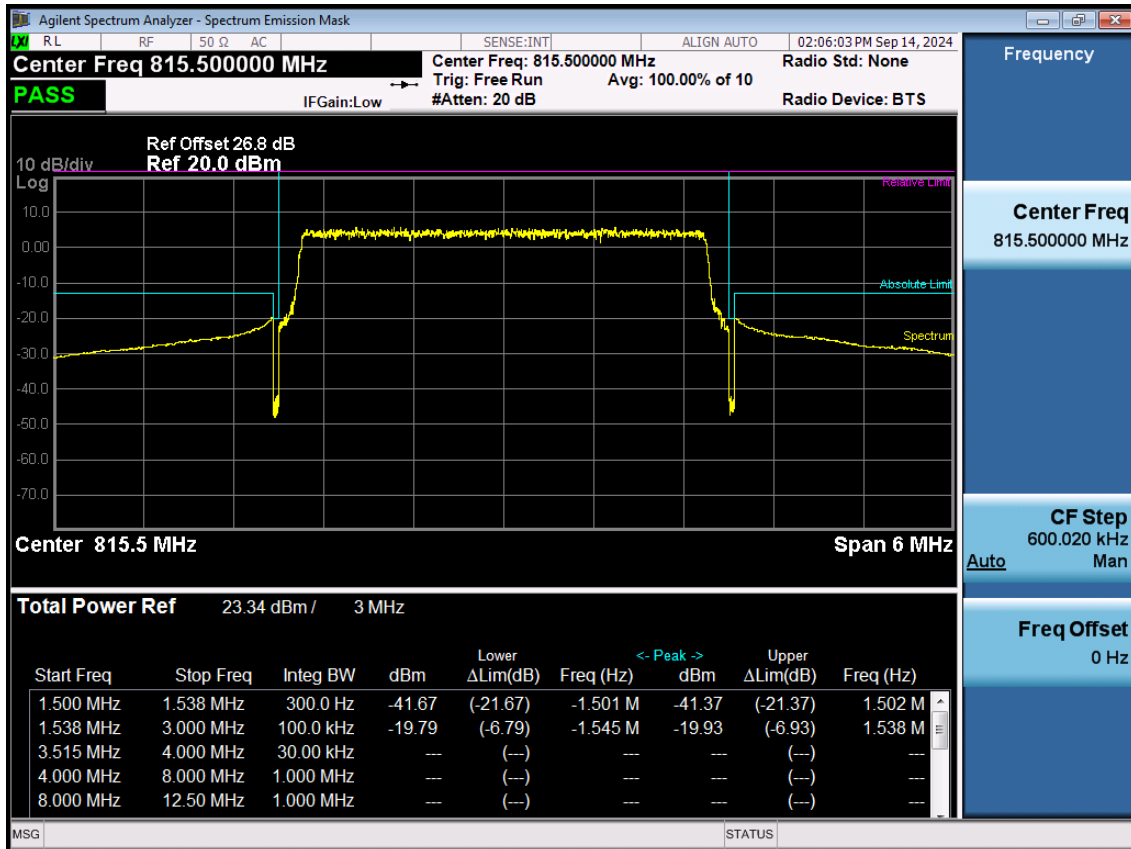
BAND 26. Lower Channel Edge Plot (1.4 M BW Ch.26697 QPSK_RB6_Offset 0)



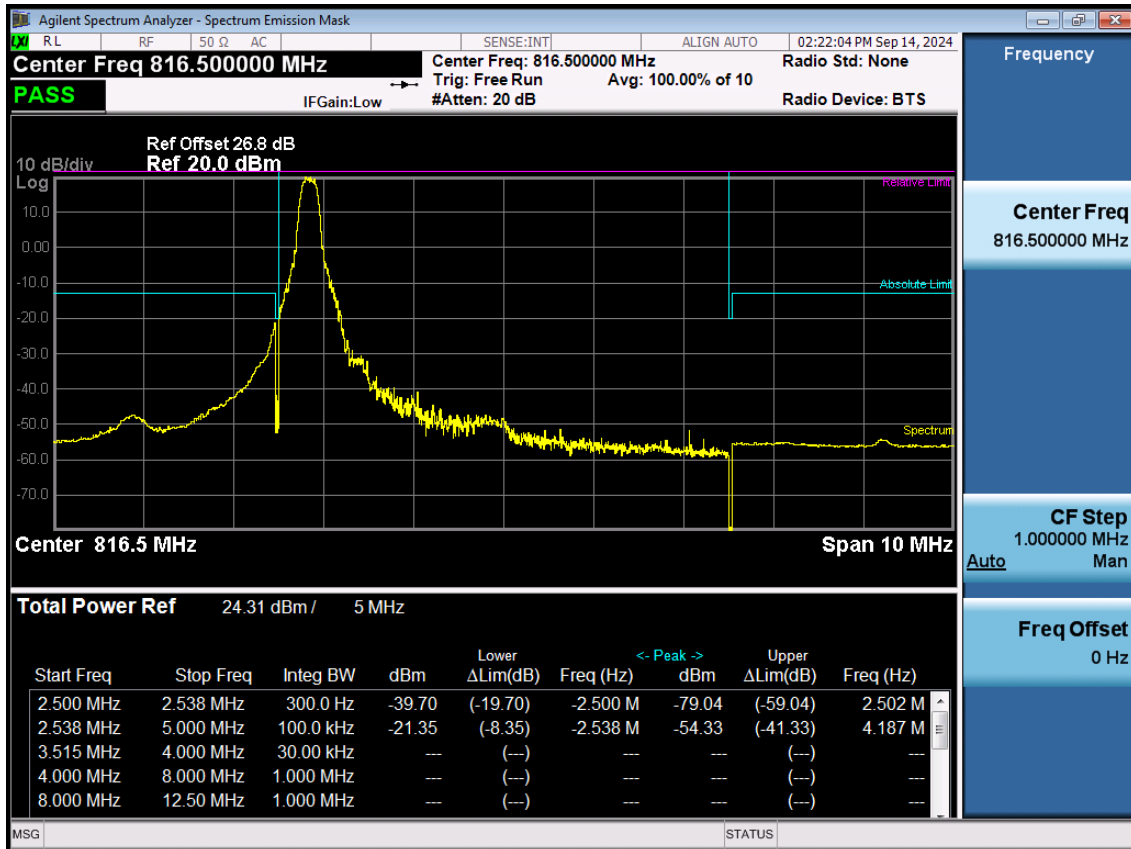
BAND 26. Lower Channel Edge Plot (3 M BW Ch.26705 QPSK RB 1, Offset 0)



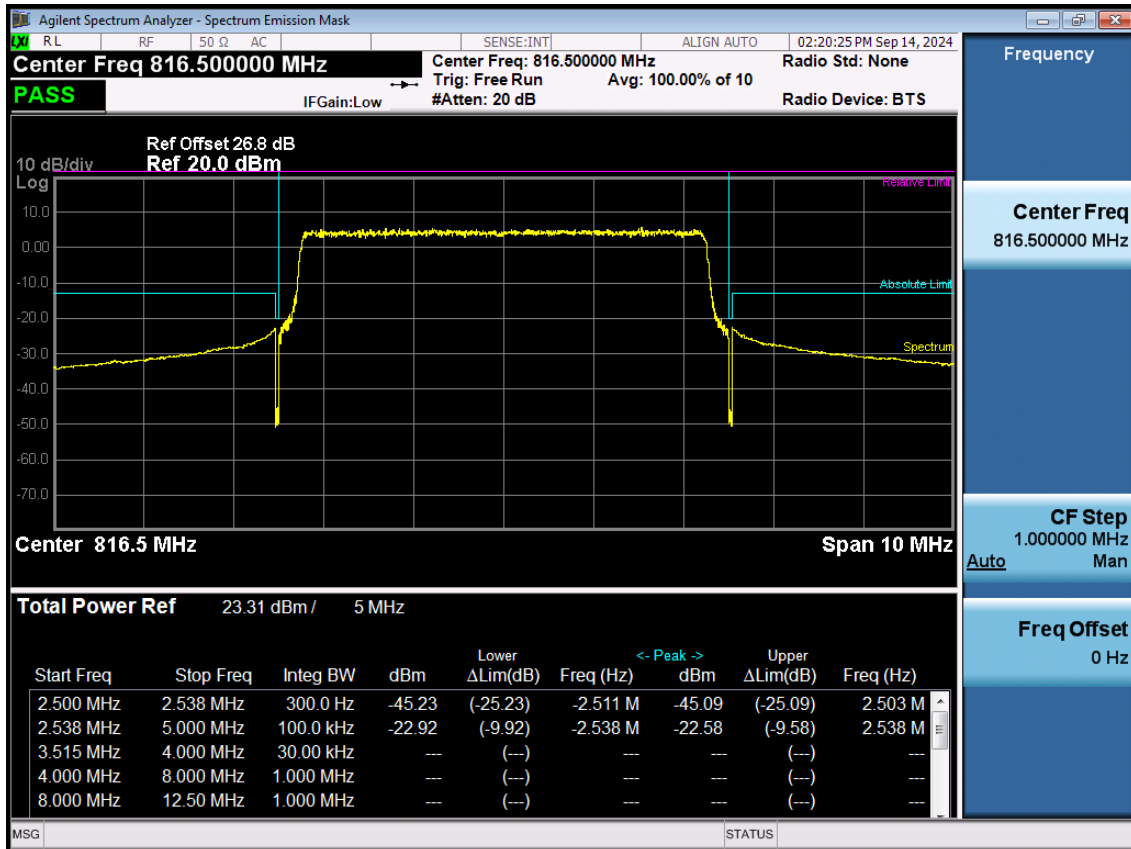
BAND 26. Lower Channel Edge Plot (3 M BW Ch.26705 QPSK_RB15_Offset 0)



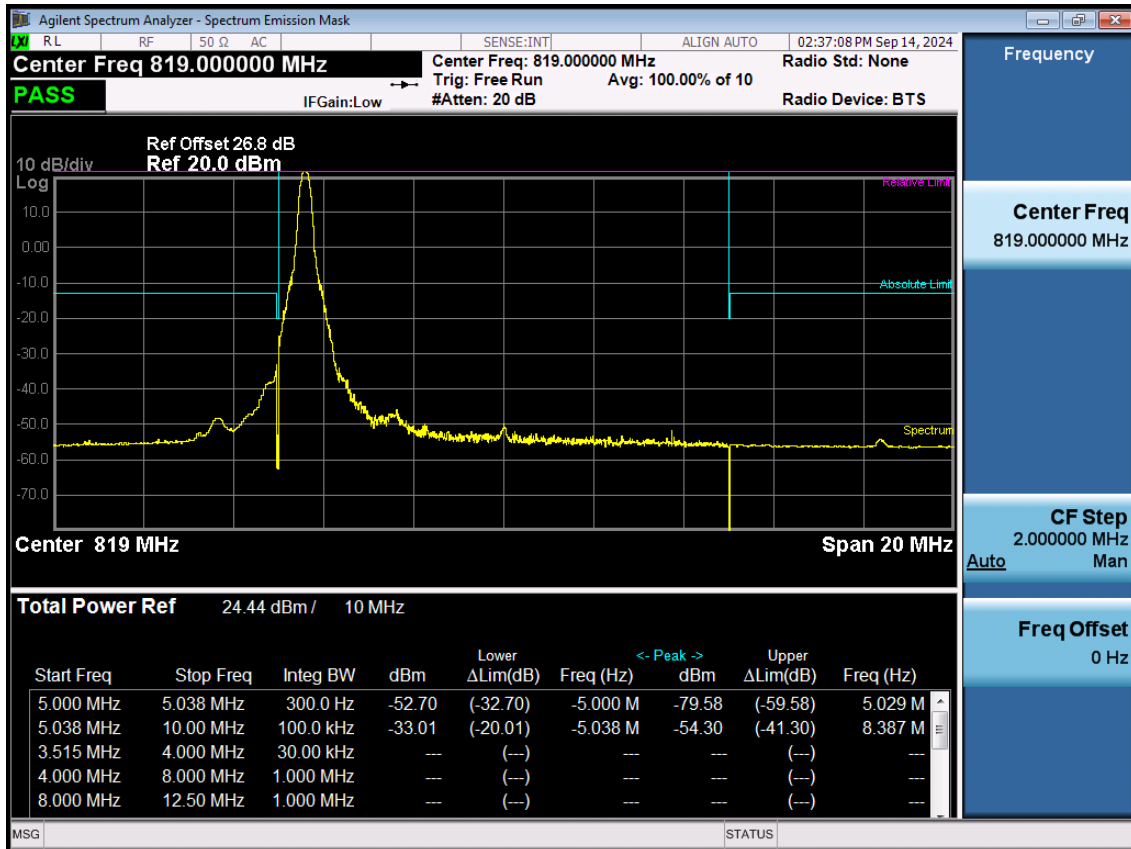
BAND 26. Lower Channel Edge Plot (5 M BW Ch.26715 QPSK RB 1, Offset 0)



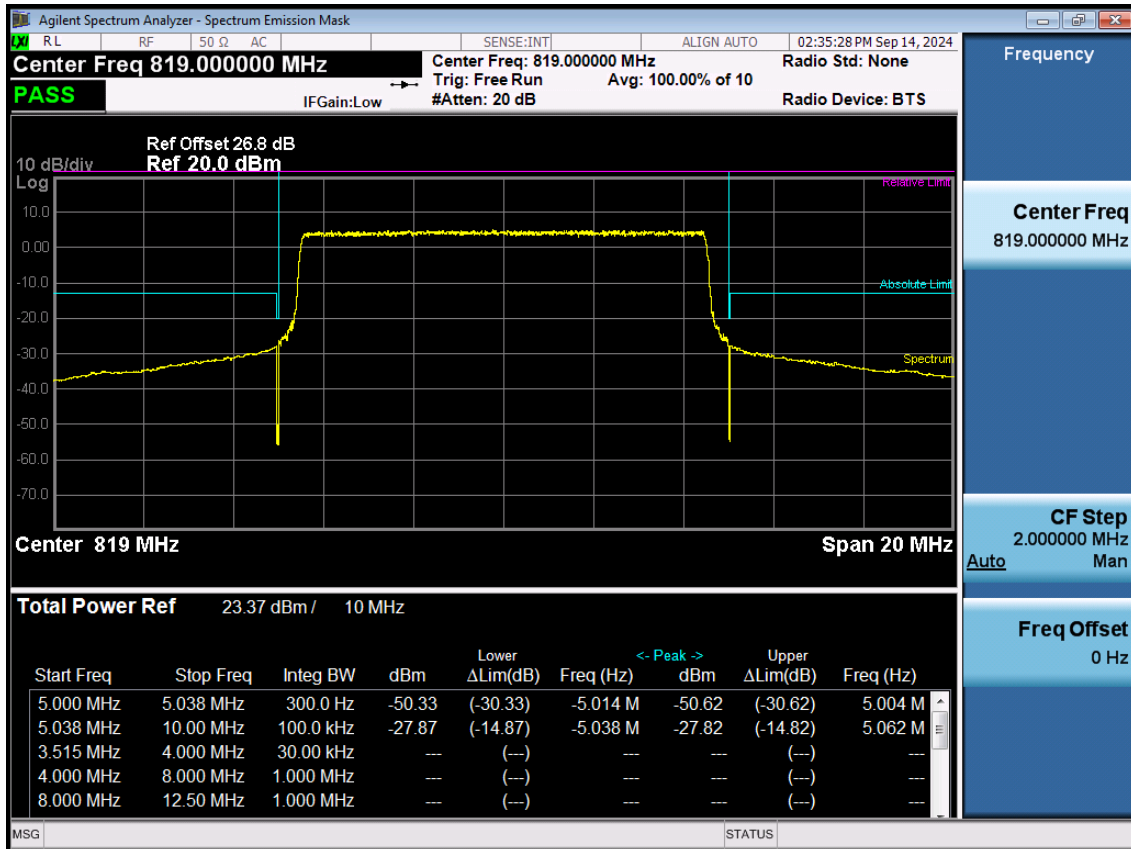
BAND 26. Lower Channel Edge Plot (5 M BW Ch.26715 QPSK_RB25_Offset 0)



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)

