HCT
Testing and Certification

# TEST REPORT

FCC LTE B42 Test for TM19FNEUHD2
Certification

**APPLICANT**
LG Electronics Inc.

**REPORT NO.**
HCT-RF-2412-FC055

**DATE OF ISSUE**
December 20, 2024

| | |
|---|---|
| **Tested by**<br>Jae Ryang Do | |
| **Technical Manager**<br>Jong Seok Lee | |

**Accredited by KOLAS, Republic of KOREA**

HCT CO., LTD.
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| | |
|---|---|
| Applicant | **LG Electronics Inc.**<br>128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea |
| Product Name<br>Model Name | Telematics<br>TM19FNEUHD2 |
| Date of Test | October 07, 2024 ~ December 10, 2024 |
| FCC ID | BEJTM19FNEUHD2 |
| Location of Test | ■ Permanent Testing Lab ☐ On Site Testing<br>(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea) |
| FCC Classification: | PCB Licensed Transmitter (PCB) |
| Test Standard Used | FCC Rule Part(s) : § 27 |
| Test Results | PASS |

## REVISION HISTORY

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

| Revision No. | Date of Issue | Description |
|---|---|---|
| 0 | December 20, 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.<br>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)<br><br>The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.<br>The test results have only been applied with the test methods required by the standard(s).<br><br>The laboratory is not accredited for the test results marked *.<br>Information provided by the applicant is marked **.<br>Test results provided by external providers are marked ***.<br><br>When confirmation of authenticity of this test report is required, please contact www.hct.co.kr<br><br>This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA.<br>(KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197) |

## CONTENTS

# MEASUREMENT REPORT

## 1. GENERAL INFORMATION

| | |
|---|---|
| Applicant Name: | LG Electronics Inc. |
| Address: | 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea |
| FCC ID: | BEJTM19FNEUHD2 |
| Application Type: | Certification |
| FCC Classification | PCB Licensed Transmitter (PCB) |
| FCC Rule Part(s): | § 27 |
| EUT Type: | Telematics |
| Model(s): | TM19FNEUHD2 |
| Tx Frequency: | 3452.5 MHz – 3547.5 MHz (LTE – Band42 (5 MHz))<br>3455.0 MHz – 3545.0 MHz (LTE – Band42 (10 MHz))<br>3457.5 MHz – 3542.5 MHz (LTE – Band42 (15 MHz))<br>3460.0 MHz – 3540.0 MHz (LTE – Band42 (20 MHz)) |
| Date(s) of Tests: | October 07, 2024 ~ December 10, 2024 |
| Serial number: | Honda MY26 #23 |
| Antenna Information | Please refer to the Antenna Approval 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 – Band42 (5) | 3452.5 – 3547.5 | 4M47G7D | QPSK | 0.189 | 22.76 |
| | | 4M50W7D | 16QAM | 0.157 | 21.95 |
| | | 4M52W7D | 64QAM | 0.130 | 21.15 |
| | | 4M51W7D | 256QAM | 0.065 | 18.10 |
| LTE – Band42 (10) | 3455.0 – 3545.0 | 8M97G7D | QPSK | 0.192 | 22.84 |
| | | 9M00W7D | 16QAM | 0.169 | 22.27 |
| | | 8M98W7D | 64QAM | 0.133 | 21.23 |
| | | 8M99W7D | 256QAM | 0.065 | 18.14 |
| LTE – Band42 (15) | 3457.5 – 3542.5 | 13M4G7D | QPSK | 0.204 | 23.10 |
| | | 13M5W7D | 16QAM | 0.167 | 22.24 |
| | | 13M5W7D | 64QAM | 0.128 | 21.06 |
| | | 13M6W7D | 256QAM | 0.062 | 17.92 |
| LTE – Band42 (20) | 3460.0 – 3540.0 | 18M0G7D | QPSK | 0.188 | 22.75 |
| | | 18M0W7D | 16QAM | 0.161 | 22.07 |
| | | 18M0W7D | 64QAM | 0.132 | 21.20 |
| | | 17M9W7D | 256QAM | 0.064 | 18.08 |

# 2. INTRODUCTION

## 2.1. DESCRIPTION OF EUT

The EUT was a Telematics with GSM/GPRS/EGPRS/UMTS and LTE, Sub 6.

## 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

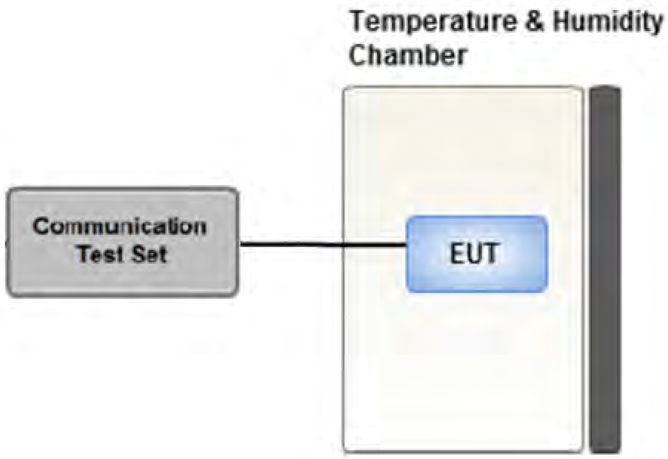
The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the **74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea.**

# 3. DESCRIPTION OF TESTS

## 3.1 TEST PROCEDURE

| Test Description | Test Procedure Used |
|---|---|
| Occupied Bandwidth | - KDB 971168 D01 v03r01 – Section 4.3<br>- ANSI C63.26-2015 – Section 5.4.4 |
| Band Edge | - KDB 971168 D01 v03r01 – Section 6.0<br>- ANSI C63.26-2015 – Section 5.7 |
| Spurious and Harmonic Emissions at Antenna Terminal | - KDB 971168 D01 v03r01 – Section 6.0<br>- ANSI C63.26-2015 – Section 5.7 |
| Conducted Output Power | - KDB 971168 D01 v03r01 - Section 5.2.4<br>- ANSI C63.26-2015 - Section 5.2.1 & 5.2.4.2 |
| Peak- to- Average Ratio | - KDB 971168 D01 v03r01 – Section 5.7<br>- ANSI C63.26-2015 – Section 5.2.3.4 |
| Frequency stability | - ANSI C63.26-2015 – Section 5.6 |
| Radiated Power | - ANSI C63.26-2015 – Section 5.2.4.4<br>- KDB 971168 D01 v03r01 – Section 5.8 |
| Radiated Spurious and Harmonic Emissions | - ANSI C63.26-2015 – Section 5.5.3<br>- KDB 971168 D01 v03r01 – Section 5.8 |

## 3.2 CONDUCTED OUTPUT POWER




Test setup

Test Overview

When an average power meter is used to perform RF output power measurements, the fundamental condition that measurements be performed only over durations of active transmissions at maximum output power level applies.

Conducted Output Power was tested in accordance with KDB971168 D01 Power Meas License Digital Systems v03r01, Section 5.2.

### 3.3 RADIATED POWER

Test Overview

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

Test Settings

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

Test Note

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

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

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

## 3.4 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method.

Test Settings

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

Test Note

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

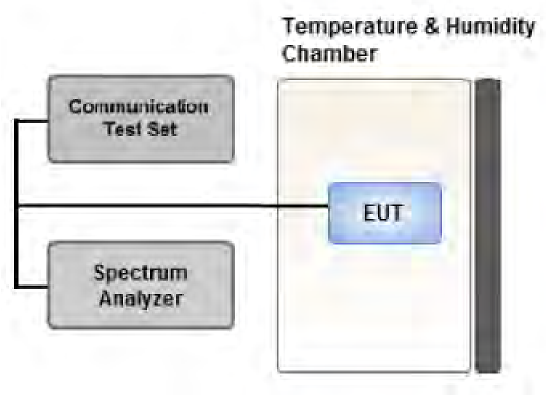
$$\text{Result}_{(dBm)} = Pg_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

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

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

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

## 3.5 PEAK- TO- AVERAGE RATIO




Test setup

① CCDF Procedure for PAPR

Test Settings

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:
   .- for continuous transmissions, set to 1 ms,
   .- or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1 %.

② Alternate Procedure for PAPR

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as as $P_{Pk}$.

Use one of the applicable procedures presented 5.2(ANSI C63.26-2015) to measure the total average power and record as $P_{Avg}$. Determine the P.A.R. from:

$$P.A.R_{(dB)} = P_{Pk\,(dBm)} - P_{Avg\,(dBm)} \quad (P_{Avg} = \text{Average Power} + \text{Duty cycle Factor})$$

Test Settings(Peak Power)

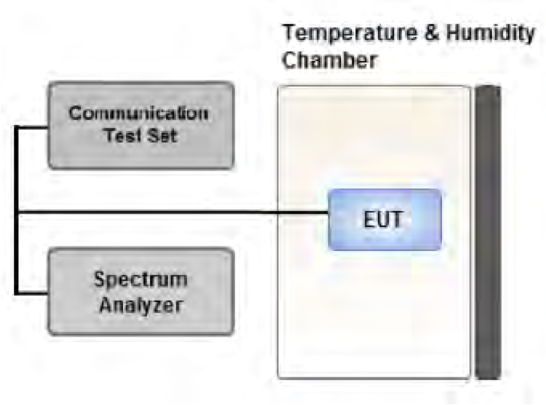
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

1. Set the RBW ≥ OBW.
2. Set VBW ≥ 3 × RBW.
3. Set span ≥ 2 × OBW.
4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the peak amplitude level.

Test Settings(Average Power)

1. Set span to 2 × to 3 × the OBW.
2. Set RBW ≥ OBW.
3. Set VBW ≥ 3 × RBW.
4. Set number of measurement points in sweep ≥ 2 × span / RBW.
5. Sweep time:
   Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
6. Detector = power averaging (rms).
7. Set sweep trigger to "free run."
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
9. Use the peak marker function to determine the maximum amplitude level.
10. Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25 %.

### 3.6 OCCUPIED BANDWIDTH.



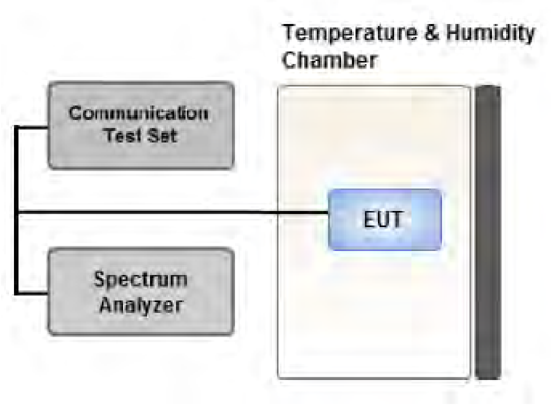

Test setup

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

Test Settings

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

### 3.7 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL




Test setup

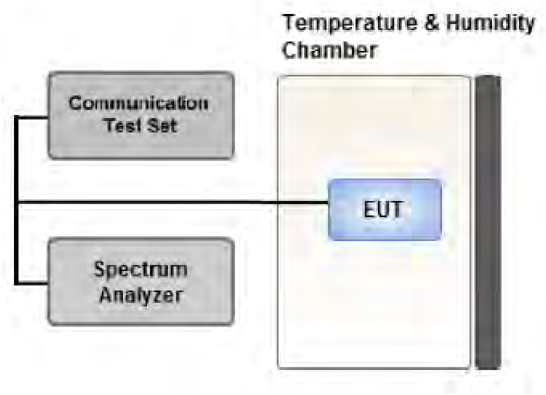
**Test Overview**

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

**Test Settings**

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

### 3.8 BAND EDGE




Test setup

**Test Overview**

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

**Test Settings**

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Notes

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

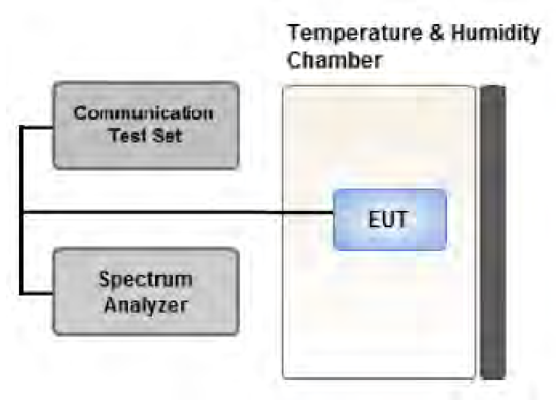
the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

All measurements were done at 2 channels(low and high operational frequency range.)

The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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

## 3.9 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.

## 3.10 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.
- 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.
- 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.

[ Worst case ]

| Test Description | Modulation | RB size | RB offset | Axis |
|---|---|---|---|---|
| **Effective Isotropic Radiated Power** | QPSK,<br>16QAM,<br>64QAM,<br>256QAM | See Section 8.2 | | Y |
| Radiated Spurious and Harmonic Emissions | QPSK | See Section 8.3 | | Y |

### 3.11 WORST CASE(CONDUCTED TEST)

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

[ Worst case ]

| Test Description | Modulation | Bandwidth (MHz) | Frequency | RB size | RB offset |
|---|---|---|---|---|---|
| Occupied Bandwidth | QPSK, 16QAM, 64QAM, 256QAM | 5, 10, 15, 20 | Mid | Full RB | 0 |
| Peak-To-Average Ratio | QPSK, 16QAM, 64QAM, 256QAM | 5, 10, 15, 20 | Mid | Full RB | 0 |
| Band Edge | QPSK | 5 | Low | 1 | 0 |
| | | | High | 1 | 24 |
| | | 10 | Low | 1 | 0 |
| | | | High | 1 | 49 |
| | | 15 | Low | 1 | 0 |
| | | | High | 1 | 74 |
| | | 20 | Low | 1 | 0 |
| | | | High | 1 | 99 |
| | | 5, 10, 15, 20 | Low, Mid, High | Full RB | 0 |
| Spurious and Harmonic Emissions at Antenna Terminal | QPSK | 5, 10, 15, 20 | Low, Mid, High | 1 | 0 |

## 4. LIST OF TEST EQUIPMENT

| Equipment | Model | Manufacturer | Serial No. | Due to Calibration | Calibration Interval |
|---|---|---|---|---|---|
| RF Switching System | Switch box(1.2 G HPF+LNA) | HCT CO., LTD., | F1L1 | 11/11/2025 | Annual |
| RF Switching System | Switch box(3.3 G HPF+LNA) | HCT CO., LTD., | F1L2 | 11/11/2025 | Annual |
| RF Switching System | Switch box(LNA) | HCT CO., LTD., | F1L4 | 11/11/2025 | Annual |
| RF Switching System | Switch box(6 G HPF+LNA) | HCT CO., LTD., | F1L7 | 11/11/2025 | 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 | 11/13/2025 | Annual |
| Wideband Radio Communication Tester | MT8820C | Anritsu Corp. | 6201026545 | 11/20/2025 | Annual |
| SIGNAL GENERATOR (100 kHz ~ 40 GHz) | SMB100A | REOHDE & SCHWARZ | 177633 | 07/26/2025 | Annual |
| Signal Analyzer(5 Hz ~ 40.0 GHz) | N9030B | KEYSIGHT | MY55480167 | 05/17/2025 | Annual |
| FCC LTE Mobile Conducted RF Automation Test Software | - | HCT CO., LTD., | - | - | - |

Note:

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

## 5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.
All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the $U_{CISPR}$ measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

| Parameter | Expanded Uncertainty (±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 |
| Band Edge / Spurious and Harmonic Emissions at Antenna Terminal. | § 2.1051, § 27.53(n)(2) | < -13 dBm | PASS |
| Conducted Output Power | § 2.1046 | N/A | PASS |
| Peak- to- Average Ratio | § 27.50(k)(4) | < 13 dB | PASS |
| Frequency stability / variation of ambient temperature | § 2.1055, § 27.54 | Emission must remain in band | PASS |

Note:
1. All conducted tests were tested using 5G Wireless Tester.

## 6.2 Test Condition : Radiated Test

| Test Description | FCC Part Section(s) | Test Limit | Test Result |
|---|---|---|---|
| Equivalent Isotropic Radiated Power | § 27.50(k)(3) | < 1 Watts max. EIRP | PASS |
| Radiated Spurious and Harmonic Emissions | § 2.1053, § 27.50(n)(2) | < -13 dBm | PASS |

**Note:**
1. Radiated tests were tested using 5G Wireless Tester.

# 7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

| Ch./ Freq. | | Measured Level (dBm) | Substitute Level (dBm) | Ant. Gain (dBd) | C.L | Pol. | ERP | |
|---|---|---|---|---|---|---|---|---|
| channel | Freq.(MHz) | | | | | | W | dBm |
| 128 | 824.20 | -21.37 | 38.40 | -10.61 | 0.95 | H | 0.483 | 26.84 |

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

1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
2) During the test, the turn table is rotated until the maximum signal is found.
3) Record the field strength meter's level.
4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power.

7.2 EIRP Sample Calculation

| Ch./ Freq. | | Measured Level (dBm) | Substitute Level (dBm) | Ant. Gain (dBi) | C.L | Pol. | EIRP | |
|---|---|---|---|---|---|---|---|---|
| channel | Freq.(MHz) | | | | | | W | dBm |
| 20175 | 1,732.50 | -15.75 | 18.45 | 9.90 | 1.76 | H | 0.456 | 26.59 |

EIRP = Substitute LEVEL(dBm) + Ant. Gain – CL(Cable Loss)

1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
2) During the test, the turn table is rotated until the maximum signal is found.
3) Record the field strength meter's level.
4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.

## 7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

# 8. TEST DATA

## 8.1 Conducted Power

| Bandwidth | Modulation | RB Size | RB Offset | Max.Average Power (dBm) | | | Target MPR (dB) | Target Power |
|---|---|---|---|---|---|---|---|---|
| | | | | 42115 | 42590 | 43065 | | |
| | | | | 3452.5 MHz | 3500 MHz | 3547.5 MHz | | |
| 5 MHz | QPSK | 1 | 0 | 22.50 | 22.60 | 22.55 | 0 | 23 |
| | | 1 | 12 | 22.76 | 22.76 | 22.57 | 0 | 23 |
| | | 1 | 24 | 22.71 | 22.65 | 22.50 | 0 | 23 |
| | | 12 | 0 | 21.59 | 21.62 | 21.76 | 1 | 22 |
| | | 12 | 6 | 21.61 | 21.59 | 21.74 | 1 | 22 |
| | | 12 | 11 | 21.60 | 21.55 | 21.75 | 1 | 22 |
| | | 25 | 0 | 21.58 | 21.54 | 21.78 | 1 | 22 |
| | 16QAM | 1 | 0 | 21.94 | 21.73 | 21.92 | 1 | 22 |
| | | 1 | 12 | 21.92 | 21.73 | 21.95 | 1 | 22 |
| | | 1 | 24 | 21.92 | 21.66 | 21.88 | 1 | 22 |
| | | 12 | 0 | 20.67 | 20.57 | 20.82 | 2 | 21 |
| | | 12 | 6 | 20.63 | 20.64 | 20.86 | 2 | 21 |
| | | 12 | 11 | 20.65 | 20.57 | 20.88 | 2 | 21 |
| | | 25 | 0 | 20.65 | 20.52 | 20.92 | 2 | 21 |
| | 64QAM | 1 | 0 | 20.74 | 20.79 | 21.15 | 2 | 21 |
| | | 1 | 12 | 20.73 | 20.84 | 21.05 | 2 | 21 |
| | | 1 | 24 | 20.59 | 20.83 | 21.10 | 2 | 21 |
| | | 12 | 0 | 19.55 | 19.59 | 19.91 | 3 | 20 |
| | | 12 | 6 | 19.50 | 19.65 | 19.93 | 3 | 20 |
| | | 12 | 11 | 19.51 | 19.59 | 19.87 | 3 | 20 |
| | | 25 | 0 | 19.56 | 19.51 | 19.86 | 3 | 20 |
| | 256QAM | 1 | 0 | 17.73 | 17.72 | 18.01 | 5 | 18 |
| | | 1 | 12 | 17.69 | 17.66 | 18.10 | 5 | 18 |
| | | 1 | 24 | 17.84 | 17.68 | 17.91 | 5 | 18 |
| | | 12 | 0 | 17.68 | 17.55 | 17.93 | 5 | 18 |
| | | 12 | 6 | 17.68 | 17.67 | 17.90 | 5 | 18 |
| | | 12 | 11 | 17.70 | 17.55 | 17.92 | 5 | 18 |
| | | 25 | 0 | 17.68 | 17.50 | 17.87 | 5 | 18 |

| Bandwidth | Modulation | RB Size | RB Offset | Max.Average Power (dBm) | | | Target MPR (dB) | Target Power |
|---|---|---|---|---|---|---|---|---|
| | | | | 42140 | 42590 | 43040 | | |
| | | | | 3455 MHz | 3500 MHz | 3545 MHz | | |
| 10 MHz | QPSK | 1 | 0 | 22.84 | 22.76 | 22.60 | 0 | 23 |
| | | 1 | 24 | 22.72 | 22.61 | 22.61 | 0 | 23 |
| | | 1 | 49 | 22.64 | 22.54 | 22.62 | 0 | 23 |
| | | 25 | 0 | 21.94 | 21.57 | 21.78 | 1 | 22 |
| | | 25 | 12 | 21.86 | 21.55 | 21.82 | 1 | 22 |
| | | 25 | 24 | 21.83 | 21.54 | 21.85 | 1 | 22 |
| | | 50 | 0 | 21.90 | 21.52 | 21.83 | 1 | 22 |
| | 16QAM | 1 | 0 | 22.27 | 21.83 | 21.74 | 1 | 22 |
| | | 1 | 24 | 22.09 | 21.77 | 21.93 | 1 | 22 |
| | | 1 | 49 | 22.03 | 21.90 | 22.00 | 1 | 22 |
| | | 25 | 0 | 20.92 | 20.58 | 20.90 | 2 | 21 |
| | | 25 | 12 | 20.96 | 20.55 | 20.88 | 2 | 21 |
| | | 25 | 24 | 20.85 | 20.55 | 20.88 | 2 | 21 |
| | | 50 | 0 | 20.87 | 20.53 | 20.57 | 2 | 21 |
| | 64QAM | 1 | 0 | 21.23 | 20.96 | 20.62 | 2 | 21 |
| | | 1 | 24 | 21.03 | 20.89 | 20.70 | 2 | 21 |
| | | 1 | 49 | 20.99 | 20.94 | 20.79 | 2 | 21 |
| | | 25 | 0 | 19.97 | 19.64 | 19.57 | 3 | 20 |
| | | 25 | 12 | 19.95 | 19.68 | 19.60 | 3 | 20 |
| | | 25 | 24 | 19.87 | 19.69 | 19.55 | 3 | 20 |
| | | 50 | 0 | 19.87 | 19.64 | 20.33 | 3 | 20 |
| | 256QAM | 1 | 0 | 18.14 | 17.77 | 17.86 | 5 | 18 |
| | | 1 | 24 | 17.95 | 17.87 | 17.83 | 5 | 18 |
| | | 1 | 49 | 18.01 | 17.87 | 17.62 | 5 | 18 |
| | | 25 | 0 | 17.98 | 17.71 | 17.72 | 5 | 18 |
| | | 25 | 12 | 17.93 | 17.73 | 17.67 | 5 | 18 |
| | | 25 | 24 | 17.51 | 17.68 | 17.60 | 5 | 18 |
| | | 50 | 0 | 17.59 | 17.71 | 17.70 | 5 | 18 |

| Bandwidth | Modulation | RB Size | RB Offset | Max.Average Power (dBm) | | | Target MPR (dB) | Target Power |
|---|---|---|---|---|---|---|---|---|
| | | | | 42165 | 42590 | 43015 | | |
| | | | | 3457.5 MHz | 3500 MHz | 3542.5 MHz | | |
| 15 MHz | QPSK | 1 | 0 | 22.68 | 22.54 | 22.59 | 0 | 23 |
| | | 1 | 36 | 22.54 | 22.51 | 23.10 | 0 | 23 |
| | | 1 | 74 | 22.61 | 22.57 | 23.02 | 0 | 23 |
| | | 36 | 0 | 21.86 | 21.54 | 21.69 | 1 | 22 |
| | | 36 | 18 | 21.78 | 21.61 | 21.65 | 1 | 22 |
| | | 36 | 39 | 21.64 | 21.66 | 22.09 | 1 | 22 |
| | | 75 | 0 | 21.75 | 21.59 | 21.59 | 1 | 22 |
| | 16QAM | 1 | 0 | 22.24 | 21.76 | 21.85 | 1 | 22 |
| | | 1 | 36 | 21.89 | 21.89 | 21.83 | 1 | 22 |
| | | 1 | 74 | 21.88 | 22.03 | 21.59 | 1 | 22 |
| | | 36 | 0 | 20.87 | 20.56 | 20.71 | 2 | 21 |
| | | 36 | 18 | 20.80 | 20.68 | 20.69 | 2 | 21 |
| | | 36 | 39 | 20.66 | 20.69 | 21.14 | 2 | 21 |
| | | 75 | 0 | 20.79 | 20.59 | 20.62 | 2 | 21 |
| | 64QAM | 1 | 0 | 21.01 | 20.78 | 20.95 | 2 | 21 |
| | | 1 | 36 | 21.05 | 20.93 | 20.93 | 2 | 21 |
| | | 1 | 74 | 20.88 | 21.06 | 20.67 | 2 | 21 |
| | | 36 | 0 | 19.90 | 19.56 | 19.76 | 3 | 20 |
| | | 36 | 18 | 19.81 | 19.62 | 19.68 | 3 | 20 |
| | | 36 | 39 | 19.69 | 19.73 | 20.15 | 3 | 20 |
| | | 75 | 0 | 19.76 | 19.62 | 19.65 | 3 | 20 |
| | 256QAM | 1 | 0 | 17.89 | 17.55 | 17.87 | 5 | 18 |
| | | 1 | 36 | 17.80 | 17.92 | 17.86 | 5 | 18 |
| | | 1 | 74 | 17.71 | 17.92 | 17.60 | 5 | 18 |
| | | 36 | 0 | 17.85 | 17.57 | 17.72 | 5 | 18 |
| | | 36 | 18 | 17.78 | 17.68 | 17.67 | 5 | 18 |
| | | 36 | 39 | 17.65 | 17.68 | 17.50 | 5 | 18 |
| | | 75 | 0 | 17.76 | 17.62 | 17.64 | 5 | 18 |

| Bandwidth | Modulation | RB Size | RB Offset | Max.Average Power (dBm) | | | Target MPR (dB) | Target Power |
|---|---|---|---|---|---|---|---|---|
| | | | | 42190 | 42590 | 42990 | | |
| | | | | 3460 MHz | 3500 MHz | 3540 MHz | | |
| 20 MHz | QPSK | 1 | 0 | 22.67 | 22.51 | 22.67 | 0 | 23 |
| | | 1 | 49 | 22.54 | 22.75 | 22.57 | 0 | 23 |
| | | 1 | 99 | 22.52 | 22.64 | 22.73 | 0 | 23 |
| | | 50 | 0 | 21.78 | 21.53 | 21.85 | 1 | 22 |
| | | 50 | 25 | 21.68 | 21.61 | 21.84 | 1 | 22 |
| | | 50 | 49 | 21.61 | 21.65 | 21.76 | 1 | 22 |
| | | 100 | 0 | 21.71 | 21.60 | 21.81 | 1 | 22 |
| | 16QAM | 1 | 0 | 22.04 | 21.74 | 22.06 | 1 | 22 |
| | | 1 | 49 | 21.84 | 21.89 | 21.98 | 1 | 22 |
| | | 1 | 99 | 21.73 | 22.07 | 21.81 | 1 | 22 |
| | | 50 | 0 | 20.84 | 20.55 | 20.93 | 2 | 21 |
| | | 50 | 25 | 20.74 | 20.62 | 20.86 | 2 | 21 |
| | | 50 | 49 | 20.68 | 20.70 | 20.74 | 2 | 21 |
| | | 100 | 0 | 20.77 | 20.60 | 20.84 | 2 | 21 |
| | 64QAM | 1 | 0 | 20.84 | 20.57 | 21.20 | 2 | 21 |
| | | 1 | 49 | 20.66 | 20.86 | 21.06 | 2 | 21 |
| | | 1 | 99 | 20.59 | 21.02 | 20.81 | 2 | 21 |
| | | 50 | 0 | 19.88 | 19.58 | 19.92 | 3 | 20 |
| | | 50 | 25 | 19.75 | 19.65 | 19.87 | 3 | 20 |
| | | 50 | 49 | 19.64 | 19.74 | 19.79 | 3 | 20 |
| | | 100 | 0 | 19.77 | 19.63 | 19.86 | 3 | 20 |
| | 256QAM | 1 | 0 | 17.82 | 17.53 | 18.02 | 5 | 18 |
| | | 1 | 49 | 17.67 | 17.70 | 18.08 | 5 | 18 |
| | | 1 | 99 | 17.56 | 18.03 | 17.78 | 5 | 18 |
| | | 50 | 0 | 17.90 | 17.53 | 17.91 | 5 | 18 |
| | | 50 | 25 | 17.79 | 17.62 | 17.88 | 5 | 18 |
| | | 50 | 49 | 17.70 | 17.71 | 17.76 | 5 | 18 |
| | | 100 | 0 | 17.75 | 17.61 | 17.83 | 5 | 18 |

## 8.2 EQUIVALENT ISOTROPIC RADIATED POWER

| Freq (MHz) | Mod/ Bandwidth [SCS (kHz)] | Modulation | Measured Level (dBm) | Substitute Level (dBm) | Ant. Gain (dBi) | C.L | Pol | Limit | EIRP | | RB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | W | W | dBm | Size | Offset |
| 3452.5 | LTE B42 (5 MHz) | QPSK | -23.73 | 13.82 | 12.50 | 3.00 | H | < 1.00 | 0.215 | 23.32 | 1 | 24 |
| | | 16-QAM | -24.53 | 13.02 | 12.50 | 3.00 | H | | 0.179 | 22.52 | | |
| | | 64-QAM | -25.49 | 12.06 | 12.50 | 3.00 | H | | 0.143 | 21.56 | | |
| | | 256-QAM | -28.51 | 9.04 | 12.50 | 3.00 | H | | 0.071 | 18.54 | | |
| 3500.0 | | QPSK | -23.56 | 15.08 | 12.40 | 3.04 | H | | 0.278 | 24.44 | 1 | 0 |
| | | 16-QAM | -24.35 | 14.29 | 12.40 | 3.04 | H | | 0.232 | 23.65 | | |
| | | 64-QAM | -25.36 | 13.28 | 12.40 | 3.04 | H | | 0.184 | 22.64 | | |
| | | 256-QAM | -28.35 | 10.29 | 12.40 | 3.04 | H | | 0.092 | 19.65 | | |
| 3547.5 | | QPSK | -24.35 | 14.79 | 12.40 | 3.09 | H | | 0.257 | 24.10 | 1 | 0 |
| | | 16-QAM | -25.14 | 14.00 | 12.40 | 3.09 | H | | 0.214 | 23.31 | | |
| | | 64-QAM | -26.11 | 13.03 | 12.40 | 3.09 | H | | 0.171 | 22.34 | | |
| | | 256-QAM | -29.10 | 10.04 | 12.40 | 3.09 | H | | 0.086 | 19.35 | | |

| Freq (MHz) | Mod/ Bandwidth [SCS (kHz)] | Modulation | Measured Level (dBm) | Substitute Level (dBm) | Ant. Gain (dBi) | C.L | Pol | Limit | EIRP | | RB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | W | W | dBm | Size | Offset |
| 3455.0 | LTE B42 (10 MHz) | QPSK | -23.90 | 13.74 | 12.49 | 2.99 | H | < 1.00 | 0.211 | 23.25 | 1 | 49 |
| | | 16-QAM | -24.53 | 13.11 | 12.49 | 2.99 | H | | 0.183 | 22.62 | | |
| | | 64-QAM | -25.54 | 12.10 | 12.49 | 2.99 | H | | 0.145 | 21.61 | | |
| | | 256-QAM | -28.56 | 9.08 | 12.49 | 2.99 | H | | 0.072 | 18.59 | | |
| 3500.0 | | QPSK | -23.58 | 15.06 | 12.40 | 3.04 | H | | 0.277 | 24.42 | 1 | 0 |
| | | 16-QAM | -24.33 | 14.31 | 12.40 | 3.04 | H | | 0.233 | 23.67 | | |
| | | 64-QAM | -25.30 | 13.34 | 12.40 | 3.04 | H | | 0.186 | 22.70 | | |
| | | 256-QAM | -28.31 | 10.33 | 12.40 | 3.04 | H | | 0.093 | 19.69 | | |
| 3545.0 | | QPSK | -24.37 | 14.72 | 12.40 | 3.08 | H | | 0.254 | 24.05 | 1 | 0 |
| | | 16-QAM | -25.03 | 14.06 | 12.40 | 3.08 | H | | 0.218 | 23.39 | | |
| | | 64-QAM | -26.08 | 13.01 | 12.40 | 3.08 | H | | 0.171 | 22.34 | | |
| | | 256-QAM | -29.05 | 10.04 | 12.40 | 3.08 | H | | 0.086 | 19.37 | | |

| Freq (MHz) | Mod/ Bandwidth [SCS (kHz)] | Modulation | Measured Level (dBm) | Substitute Level (dBm) | Ant. Gain (dBi) | C.L | Pol | Limit | EIRP | | RB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | W | W | dBm | Size | Offset |
| 3457.5 | LTE B42 (15 MHz) | QPSK | -23.79 | 13.95 | 12.48 | 2.97 | H | < 1.00 | 0.222 | 23.46 | 1 | 74 |
| | | 16-QAM | -24.53 | 13.21 | 12.48 | 2.97 | H | | 0.187 | 22.72 | | |
| | | 64-QAM | -25.52 | 12.22 | 12.48 | 2.97 | H | | 0.149 | 21.73 | | |
| | | 256-QAM | -28.56 | 9.18 | 12.48 | 2.97 | H | | 0.074 | 18.69 | | |
| 3500.0 | | QPSK | -23.65 | 14.99 | 12.40 | 3.04 | H | | 0.272 | 24.35 | 1 | 0 |
| | | 16-QAM | -24.48 | 14.16 | 12.40 | 3.04 | H | | 0.225 | 23.52 | | |
| | | 64-QAM | -25.53 | 13.11 | 12.40 | 3.04 | H | | 0.177 | 22.47 | | |
| | | 256-QAM | -28.57 | 10.07 | 12.40 | 3.04 | H | | 0.088 | 19.43 | | |
| 3542.5 | | QPSK | -24.14 | 14.90 | 12.40 | 3.06 | H | | 0.265 | 24.24 | 1 | 0 |
| | | 16-QAM | -24.92 | 14.12 | 12.40 | 3.06 | H | | 0.222 | 23.46 | | |
| | | 64-QAM | -25.91 | 13.13 | 12.40 | 3.06 | H | | 0.177 | 22.47 | | |
| | | 256-QAM | -28.91 | 10.13 | 12.40 | 3.06 | H | | 0.089 | 19.47 | | |

| Freq (MHz) | Mod/ Bandwidth [SCS (kHz)] | Modulation | Measured Level (dBm) | Substitute Level (dBm) | Ant. Gain (dBi) | C.L | Pol | Limit | EIRP | | RB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | W | W | dBm | Size | Offset |
| 3460.0 | LTE B42 (20 MHz) | QPSK | -23.68 | 14.06 | 12.48 | 2.97 | H | < 1.00 | 0.228 | 23.57 | 1 | 99 |
| | | 16-QAM | -24.48 | 13.26 | 12.48 | 2.97 | H | | 0.189 | 22.77 | | |
| | | 64-QAM | -25.49 | 12.25 | 12.48 | 2.97 | H | | 0.150 | 21.76 | | |
| | | 256-QAM | -28.53 | 9.21 | 12.48 | 2.97 | H | | 0.074 | 18.72 | | |
| 3500.0 | | QPSK | -23.78 | 14.86 | 12.40 | 3.04 | H | | 0.264 | 24.22 | 1 | 0 |
| | | 16-QAM | -24.49 | 14.15 | 12.40 | 3.04 | H | | 0.224 | 23.51 | | |
| | | 64-QAM | -25.51 | 13.13 | 12.40 | 3.04 | H | | 0.177 | 22.49 | | |
| | | 256-QAM | -28.59 | 10.05 | 12.40 | 3.04 | H | | 0.087 | 19.41 | | |
| 3540.0 | | QPSK | -24.23 | 14.81 | 12.40 | 3.06 | H | | 0.260 | 24.15 | 1 | 0 |
| | | 16-QAM | -25.05 | 13.99 | 12.40 | 3.06 | H | | 0.215 | 23.33 | | |
| | | 64-QAM | -26.02 | 13.02 | 12.40 | 3.06 | H | | 0.172 | 22.36 | | |
| | | 256-QAM | -29.04 | 10.00 | 12.40 | 3.06 | H | | 0.086 | 19.34 | | |

## 8.3 RADIATED SPURIOUS EMISSIONS

▣ MODE: LTE B42

▣ MODULATION SIGNAL: 5 MHz QPSK

▣ DISTANCE: 1 meters

| Freq (MHz) | Measured Freq (MHz) | Measured Level (dBm) | Ant. Gain (dBi) | Substitute Level (dBm) | C.L | Pol | Result (dBm) | Limit (dBm) | RB Size | RB Offset |
|---|---|---|---|---|---|---|---|---|---|---|
| 42115 (3452.5) | 6 905.00 | -38.86 | 11.95 | -43.33 | 4.40 | V | -35.78 | -13.00 | 1 | 24 |
| | 10 357.50 | -55.00 | 10.52 | -48.81 | 5.55 | V | -43.84 | -13.00 | | |
| | 13 810.00 | -58.18 | 12.41 | -47.98 | 6.53 | H | -42.10 | -13.00 | | |
| 42590 (3500.0) | 7 000.00 | -41.50 | 11.47 | -45.09 | 4.45 | H | -38.07 | -13.00 | 1 | 0 |
| | 10 500.00 | -53.85 | 10.45 | -47.74 | 5.64 | H | -42.93 | -13.00 | | |
| | 14 000.00 | -57.59 | 11.94 | -46.44 | 6.55 | H | -41.05 | -13.00 | | |
| 43065 (3547.5) | 7 095.00 | 47.47 | 11.16 | 44.19 | 4.48 | H | 50.86 | -13.00 | 1 | 0 |
| | 10 642.50 | -52.57 | 10.56 | -46.63 | 5.61 | V | -41.68 | -13.00 | | |
| | 14 190.00 | -57.18 | 11.69 | -45.03 | 6.63 | V | -39.97 | -13.00 | | |

▣ MODE: LTE B42

▣ MODULATION SIGNAL: 10 MHz QPSK

▣ DISTANCE: 1 meters

| Freq (MHz) | Measured Freq (MHz) | Measured Level (dBm) | Ant. Gain (dBi) | Substitute Level (dBm) | C.L | Pol | Result (dBm) | Limit (dBm) | RB | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Size | Offset |
| 42140 (3455.0) | 6 910.00 | -40.41 | 11.95 | -44.41 | 4.39 | H | -36.85 | -13.00 | 1 | 49 |
| | 10 365.00 | -56.58 | 10.52 | -50.17 | 5.55 | H | -45.20 | -13.00 | | |
| | 13 820.00 | -57.41 | 12.41 | -47.19 | 6.55 | H | -41.33 | -13.00 | | |
| 42590 (3500.0) | 7 000.00 | -42.58 | 11.47 | -46.17 | 4.45 | H | -39.15 | -13.00 | 1 | 0 |
| | 10 500.00 | -56.28 | 10.45 | -50.17 | 5.64 | V | -45.36 | -13.00 | | |
| | 14 000.00 | -57.67 | 11.94 | -46.52 | 6.55 | V | -41.13 | -13.00 | | |
| 43040 (3545.0) | 7 090.00 | -45.06 | 11.24 | -48.65 | 4.48 | V | -41.89 | -13.00 | 1 | 0 |
| | 10 635.00 | -54.11 | 10.56 | -48.28 | 5.62 | H | -43.33 | -13.00 | | |
| | 14 180.00 | -57.87 | 11.69 | -45.15 | 6.56 | V | -40.02 | -13.00 | | |

▣ MODE: LTE B42

▣ MODULATION SIGNAL: 15 MHz QPSK

▣ DISTANCE: 1 meters

| Freq (MHz) | Measured Freq (MHz) | Measured Level (dBm) | Ant. Gain (dBi) | Substitute Level (dBm) | C.L | Pol | Result (dBm) | Limit (dBm) | RB | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Size | Offset |
| 42165 (3457.5) | 6 915.00 | -40.73 | 11.95 | -44.28 | 4.39 | H | -36.72 | -13.00 | 1 | 74 |
| | 10 372.50 | -56.23 | 10.52 | -49.61 | 5.55 | H | -44.64 | -13.00 | | |
| | 13 830.00 | -57.65 | 12.41 | -47.25 | 6.55 | H | -41.39 | -13.00 | | |
| 42590 (3500.0) | 7 000.00 | -41.69 | 11.47 | -45.28 | 4.45 | H | -38.26 | -13.00 | 1 | 0 |
| | 10 500.00 | -55.39 | 10.45 | -49.28 | 5.64 | V | -44.47 | -13.00 | | |
| | 14 000.00 | -57.76 | 11.94 | -46.61 | 6.55 | V | -41.22 | -13.00 | | |
| 43015 (3542.5) | 7 085.00 | -42.76 | 11.24 | -46.25 | 4.49 | H | -39.49 | -13.00 | 1 | 0 |
| | 10 627.50 | -50.77 | 10.56 | -45.04 | 5.62 | V | -40.10 | -13.00 | | |
| | 14 170.00 | -57.32 | 11.69 | -44.35 | 6.52 | V | -39.18 | -13.00 | | |

▣ MODE: LTE B42

▣ MODULATION SIGNAL: 20 MHz QPSK

▣ DISTANCE: 1 meters

| Freq (MHz) | Measured Freq (MHz) | Measured Level (dBm) | Ant. Gain (dBi) | Substitute Level (dBm) | C.L | Pol | Result (dBm) | Limit (dBm) | RB | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Size | Offset |
| 42190 (3460.0) | 6 920.00 | -40.45 | 11.95 | -43.55 | 4.39 | H | -35.99 | -13.00 | 1 | 99 |
| | 10 380.00 | -56.34 | 10.52 | -49.54 | 5.56 | V | -44.58 | -13.00 | | |
| | 13 840.00 | -57.40 | 12.41 | -46.71 | 6.53 | V | -40.83 | -13.00 | | |
| 42590 (3500.0) | 7 000.00 | -41.03 | 11.47 | -44.62 | 4.45 | H | -37.60 | -13.00 | 1 | 0 |
| | 10 500.00 | -55.93 | 10.45 | -49.82 | 5.64 | V | -45.01 | -13.00 | | |
| | 14 000.00 | -57.63 | 11.94 | -46.48 | 6.55 | H | -41.09 | -13.00 | | |
| 42990 (3540.0) | 7 080.00 | -42.92 | 11.24 | -46.31 | 4.49 | V | -39.56 | -13.00 | 1 | 0 |
| | 10 620.00 | -55.92 | 10.56 | -49.97 | 5.65 | H | -45.06 | -13.00 | | |
| | 14 160.00 | -57.52 | 11.69 | -44.76 | 6.51 | V | -39.58 | -13.00 | | |

## 8.4 PEAK-TO-AVERAGE RATIO

| Band | Band Width | Frequency (MHz) | Modulation | Resource Block Size | Resource Block Offset | Data (dB ) |
|---|---|---|---|---|---|---|
| 42 | 5MHz | 3500.0 | QPSK | Full RB | 0 | 5.03 |
| | | | 16-QAM | | | 5.82 |
| | | | 64-QAM | | | 6.40 |
| | | | 256-QAM | | | 6.58 |
| | 10MHz | | QPSK | | | 5.01 |
| | | | 16-QAM | | | 5.87 |
| | | | 64-QAM | | | 6.38 |
| | | | 256-QAM | | | 6.59 |
| | 15MHz | | QPSK | | | 5.02 |
| | | | 16-QAM | | | 5.83 |
| | | | 64-QAM | | | 6.41 |
| | | | 256-QAM | | | 6.48 |
| | 20MHz | | QPSK | | | 4.95 |
| | | | 16-QAM | | | 5.80 |
| | | | 64-QAM | | | 6.48 |
| | | | 256-QAM | | | 6.46 |

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 46 ~ 61.

## 8.5 OCCUPIED BANDWIDTH

| Band | Band Width | Frequency (MHz) | Modulation | Resource Block Size | Resource Block Offset | Data ( MHz ) |
|---|---|---|---|---|---|---|
| 42 | 5MHz | 3500.0 | QPSK | Full RB | 0 | 4.4737 |
| | | | 16-QAM | | | 4.5015 |
| | | | 64-QAM | | | 4.5211 |
| | | | 256-QAM | | | 4.5054 |
| | 10MHz | | QPSK | | | 8.9711 |
| | | | 16-QAM | | | 9.0043 |
| | | | 64-QAM | | | 8.9759 |
| | | | 256-QAM | | | 8.9937 |
| | 15MHz | | QPSK | | | 13.448 |
| | | | 16-QAM | | | 13.481 |
| | | | 64-QAM | | | 13.497 |
| | | | 256-QAM | | | 13.547 |
| | 20MHz | | QPSK | | | 17.976 |
| | | | 16-QAM | | | 17.953 |
| | | | 64-QAM | | | 17.947 |
| | | | 256-QAM | | | 17.933 |

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 62 ~ 77.

## 8.6 CONDUCTED SPURIOUS EMISSIONS

| Band | Band Width (MHz) | Frequency (MHz) | Frequency of Maximum Harmonic (GHz) | Factor (dB) | Measurement Maximum Data (dBm) | Result (dBm) | Limit (dBm) |
|---|---|---|---|---|---|---|---|
| 42 | 5 | 3452.500 | 34.8040 | 34.189 | -68.050 | -33.861 | -13.00 |
| | | 3500.000 | 36.0000 | 34.189 | -68.370 | -34.181 | |
| | | 3547.500 | 35.1420 | 34.189 | -68.880 | -34.691 | |
| | 10 | 3455.000 | 35.7140 | 34.189 | -68.170 | -33.981 | |
| | | 3500.000 | 34.5440 | 34.189 | -68.310 | -34.121 | |
| | | 3545.000 | 35.0640 | 34.189 | -69.270 | -35.081 | |
| | 15 | 3457.500 | 35.9480 | 34.189 | -67.790 | -33.601 | |
| | | 3500.000 | 35.8700 | 34.189 | -68.790 | -34.601 | |
| | | 3542.500 | 35.5320 | 34.189 | -69.350 | -35.161 | |
| | 20 | 3460.000 | 35.6100 | 34.189 | -65.930 | -31.741 | |
| | | 3500.000 | 35.8960 | 34.189 | -67.920 | -33.731 | |
| | | 3540.000 | 35.0640 | 34.189 | -67.520 | -33.331 | |

Note:
1. Plots of the EUT's Conducted Spurious Emissions are shown Page 78 ~ 101.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Duty Cycle factor already applied on the factor.
- Duty Cycle factor(dB) = 3.979
- Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Splitter
- Result(dBm) = Reading + Factor

| Frequency Range (GHz) | Factor [dB] |
|---|---|
| 0.03 – 1 | 31.479 |
| 1 – 5 | 32.091 |
| 5 – 10 | 32.613 |
| 10 – 15 | 33.224 |
| 15 – 20 | 33.490 |
| Above 20 | 34.189 |

## 8.7 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 102 ~ 149.

## 8.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- BandWidth: 5 MHz
- Voltage(100 %): 13.200 VDC
- LIMIT: Emission must remain in band

| Test. Frequncy (MHz) | Voltage (%) | Temp. (℃) | Frequency (Hz) | Frequency Error (Hz) | Deviation (%) | ppm |
|---|---|---|---|---|---|---|
| 3452.500 | 100 % | +20(Ref) | 3452 499 977 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3452 499 957 | -20.9 | -0.000 001 | -0.006 |
| | 100 % | -20 | 3452 499 965 | -12.7 | 0.000 000 | -0.004 |
| | 100 % | -10 | 3452 499 972 | -5.1 | 0.000 000 | -0.001 |
| | 100 % | 0 | 3452 499 955 | -22.8 | -0.000 001 | -0.007 |
| | 100 % | +10 | 3452 499 961 | -16.4 | 0.000 000 | -0.005 |
| | 100 % | +30 | 3452 499 974 | -3.1 | 0.000 000 | -0.001 |
| | 100 % | +40 | 3452 499 961 | -16.3 | 0.000 000 | -0.005 |
| | 100 % | +50 | 3452 499 969 | -8.8 | 0.000 000 | -0.003 |
| | 115 % | +20 | 3452 499 962 | -15.7 | 0.000 000 | -0.005 |
| | 85 % | +20 | 3452 499 960 | -17.5 | -0.000 001 | -0.005 |
| 3547.500 | 100 % | +20(Ref) | 3547 499 988 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3547 499 979 | -9.4 | 0.000 000 | -0.003 |
| | 100 % | -20 | 3547 499 970 | -18.5 | -0.000 001 | -0.005 |
| | 100 % | -10 | 3547 499 973 | -14.8 | 0.000 000 | -0.004 |
| | 100 % | 0 | 3547 499 974 | -14.1 | 0.000 000 | -0.004 |
| | 100 % | +10 | 3547 499 981 | -6.8 | 0.000 000 | -0.002 |
| | 100 % | +30 | 3547 499 971 | -17.1 | 0.000 000 | -0.005 |
| | 100 % | +40 | 3547 499 983 | -4.7 | 0.000 000 | -0.001 |
| | 100 % | +50 | 3547 499 978 | -9.8 | 0.000 000 | -0.003 |
| | 115 % | +20 | 3547 499 978 | -10.5 | 0.000 000 | -0.003 |
| | 85 % | +20 | 3547 499 977 | -11.5 | 0.000 000 | -0.003 |

▣ BandWidth: 10 MHz

▣ Voltage(100 %): 13.200 VDC

▣ LIMIT: Emission must remain in band

| Test. Frequncy (MHz) | Voltage (%) | Temp. (℃) | Frequency (Hz) | Frequency Error (Hz) | Deviation (%) | ppm |
|---|---|---|---|---|---|---|
| 3455.000 | 100 % | +20(Ref) | 3454 999 959 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3454 999 931 | -27.7 | -0.000 001 | -0.008 |
| | 100 % | -20 | 3454 999 921 | -38.2 | -0.000 001 | -0.011 |
| | 100 % | -10 | 3454 999 936 | -22.7 | -0.000 001 | -0.007 |
| | 100 % | 0 | 3454 999 923 | -35.9 | -0.000 001 | -0.010 |
| | 100 % | +10 | 3454 999 935 | -23.8 | -0.000 001 | -0.007 |
| | 100 % | +30 | 3454 999 922 | -37.2 | -0.000 001 | -0.011 |
| | 100 % | +40 | 3454 999 933 | -26.0 | -0.000 001 | -0.008 |
| | 100 % | +50 | 3454 999 924 | -35.0 | -0.000 001 | -0.010 |
| | 115 % | +20 | 3454 999 928 | -31.0 | -0.000 001 | -0.009 |
| | 85 % | +20 | 3454 999 935 | -24.0 | -0.000 001 | -0.007 |
| 3545.000 | 100 % | +20(Ref) | 3544 999 979 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3544 999 967 | -12.3 | 0.000 000 | -0.003 |
| | 100 % | -20 | 3544 999 962 | -17.2 | 0.000 000 | -0.005 |
| | 100 % | -10 | 3544 999 956 | -23.1 | -0.000 001 | -0.007 |
| | 100 % | 0 | 3544 999 966 | -13.4 | 0.000 000 | -0.004 |
| | 100 % | +10 | 3544 999 963 | -16.3 | 0.000 000 | -0.005 |
| | 100 % | +30 | 3544 999 973 | -6.5 | 0.000 000 | -0.002 |
| | 100 % | +40 | 3544 999 969 | -10.8 | 0.000 000 | -0.003 |
| | 100 % | +50 | 3544 999 970 | -9.8 | 0.000 000 | -0.003 |
| | 115 % | +20 | 3544 999 971 | -8.4 | 0.000 000 | -0.002 |
| | 85 % | +20 | 3544 999 969 | -10.5 | 0.000 000 | -0.003 |

- BandWidth: 15 MHz
- Voltage(100 %): 13.200 VDC
- LIMIT: Emission must remain in band

| Test. Frequncy (MHz) | Voltage (%) | Temp. (℃) | Frequency (Hz) | Frequency Error (Hz) | Deviation (%) | ppm |
|---|---|---|---|---|---|---|
| 3457.500 | 100 % | +20(Ref) | 3457 499 985 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3457 499 980 | -5.5 | 0.000 000 | -0.002 |
| | 100 % | -20 | 3457 499 966 | -19.6 | -0.000 001 | -0.006 |
| | 100 % | -10 | 3457 499 977 | -7.8 | 0.000 000 | -0.002 |
| | 100 % | 0 | 3457 499 970 | -15.5 | 0.000 000 | -0.004 |
| | 100 % | +10 | 3457 499 967 | -18.0 | -0.000 001 | -0.005 |
| | 100 % | +30 | 3457 499 965 | -20.3 | -0.000 001 | -0.006 |
| | 100 % | +40 | 3457 499 969 | -15.8 | 0.000 000 | -0.005 |
| | 100 % | +50 | 3457 499 980 | -4.7 | 0.000 000 | -0.001 |
| | 115 % | +20 | 3457 499 981 | -3.8 | 0.000 000 | -0.001 |
| | 85 % | +20 | 3457 499 973 | -11.7 | 0.000 000 | -0.003 |
| 3542.500 | 100 % | +20(Ref) | 3542 499 978 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3542 499 969 | -8.5 | 0.000 000 | -0.002 |
| | 100 % | -20 | 3542 499 970 | -7.5 | 0.000 000 | -0.002 |
| | 100 % | -10 | 3542 499 963 | -14.6 | 0.000 000 | -0.004 |
| | 100 % | 0 | 3542 499 957 | -20.8 | -0.000 001 | -0.006 |
| | 100 % | +10 | 3542 499 965 | -12.4 | 0.000 000 | -0.004 |
| | 100 % | +30 | 3542 499 958 | -19.3 | -0.000 001 | -0.005 |
| | 100 % | +40 | 3542 499 962 | -15.3 | 0.000 000 | -0.004 |
| | 100 % | +50 | 3542 499 968 | -9.5 | 0.000 000 | -0.003 |
| | 115 % | +20 | 3542 499 969 | -8.8 | 0.000 000 | -0.002 |
| | 85 % | +20 | 3542 499 967 | -10.8 | 0.000 000 | -0.003 |

▣ BandWidth: 20 MHz

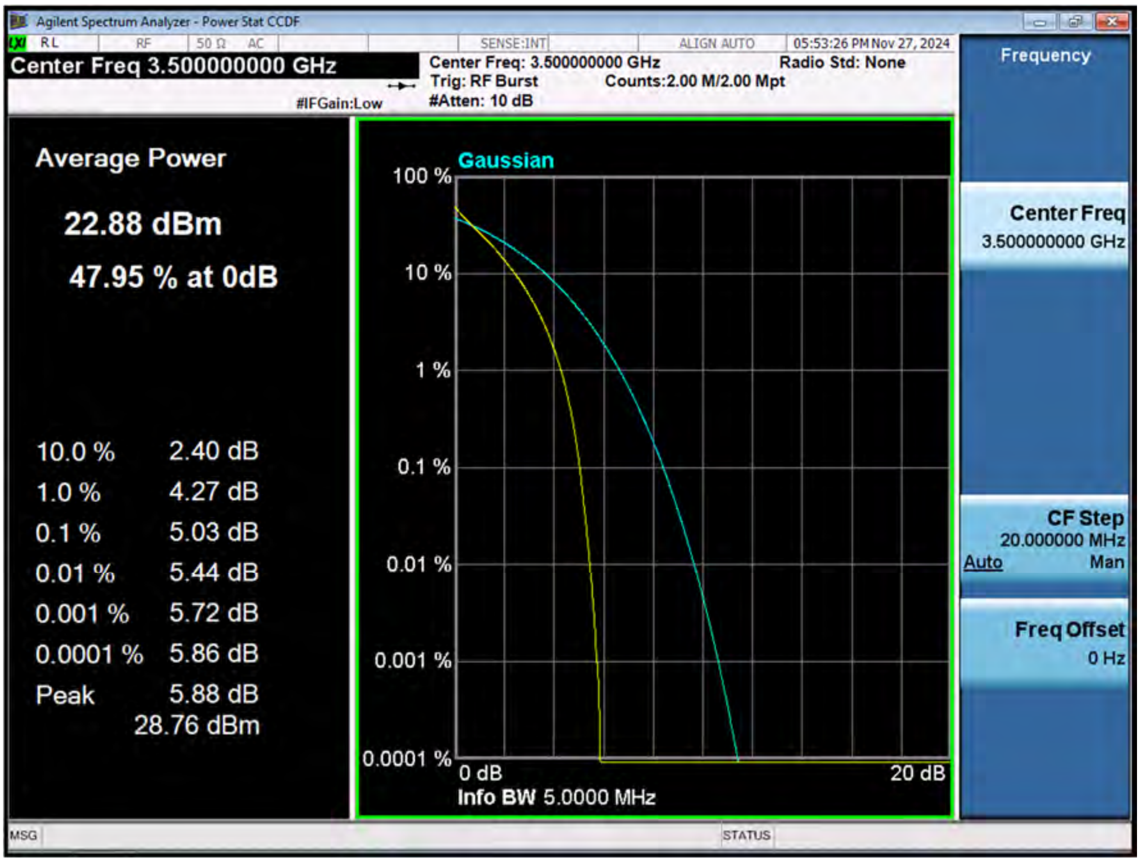
▣ Voltage(100 %): 13.200 VDC

▣ LIMIT: Emission must remain in band

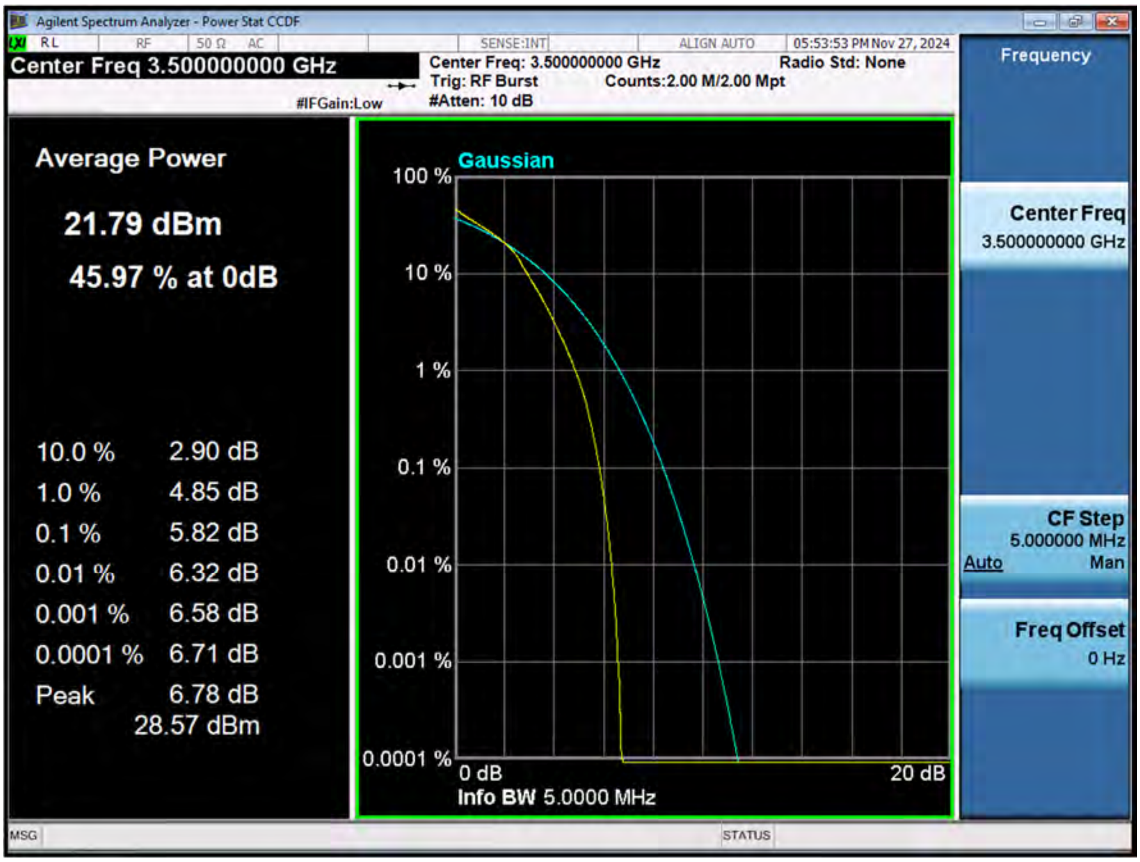
| Test. Frequncy (MHz) | Voltage (%) | Temp. (°C) | Frequency (Hz) | Frequency Error (Hz) | Deviation (%) | ppm |
|---|---|---|---|---|---|---|
| 3460.000 | 100 % | +20(Ref) | 3459 999 996 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3459 999 984 | -11.5 | 0.000 000 | -0.003 |
| | 100 % | -20 | 3459 999 984 | -12.3 | 0.000 000 | -0.004 |
| | 100 % | -10 | 3459 999 982 | -13.5 | 0.000 000 | -0.004 |
| | 100 % | 0 | 3459 999 975 | -20.7 | -0.000 001 | -0.006 |
| | 100 % | +10 | 3459 999 978 | -17.9 | -0.000 001 | -0.005 |
| | 100 % | +30 | 3459 999 983 | -13.2 | 0.000 000 | -0.004 |
| | 100 % | +40 | 3459 999 975 | -21.3 | -0.000 001 | -0.006 |
| | 100 % | +50 | 3459 999 987 | -8.7 | 0.000 000 | -0.003 |
| | 115 % | +20 | 3459 999 988 | -7.4 | 0.000 000 | -0.002 |
| | 85 % | +20 | 3459 999 985 | -11.0 | 0.000 000 | -0.003 |
| 3540.000 | 100 % | +20(Ref) | 3539 999 986 | 0.0 | 0.000 000 | 0.000 |
| | 100 % | -30 | 3539 999 978 | -8.6 | 0.000 000 | -0.002 |
| | 100 % | -20 | 3539 999 965 | -20.7 | -0.000 001 | -0.006 |
| | 100 % | -10 | 3539 999 976 | -10.1 | 0.000 000 | -0.003 |
| | 100 % | 0 | 3539 999 969 | -16.9 | 0.000 000 | -0.005 |
| | 100 % | +10 | 3539 999 981 | -5.6 | 0.000 000 | -0.002 |
| | 100 % | +30 | 3539 999 973 | -12.9 | 0.000 000 | -0.004 |
| | 100 % | +40 | 3539 999 964 | -22.1 | -0.000 001 | -0.006 |
| | 100 % | +50 | 3539 999 974 | -12.2 | 0.000 000 | -0.003 |
| | 115 % | +20 | 3539 999 975 | -10.9 | 0.000 000 | -0.003 |
| | 85 % | +20 | 3539 999 972 | -14.2 | 0.000 000 | -0.004 |

## 9. TEST PLOTS

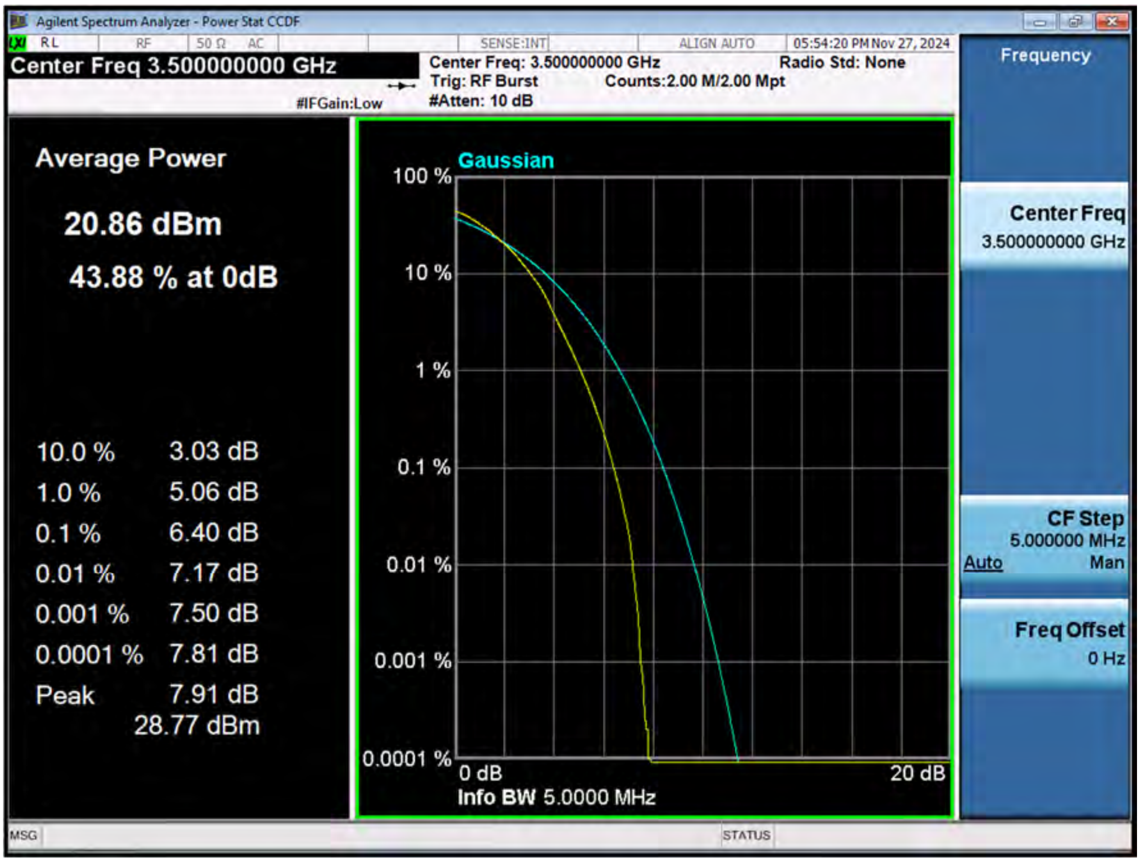
LTE B42_5 M_PAR_Mid_QPSK_FullRB



LTE B42_5 M_PAR_Mid_16QAM_FullRB



LTE B42_5 M_PAR_Mid_64QAM_FullRB



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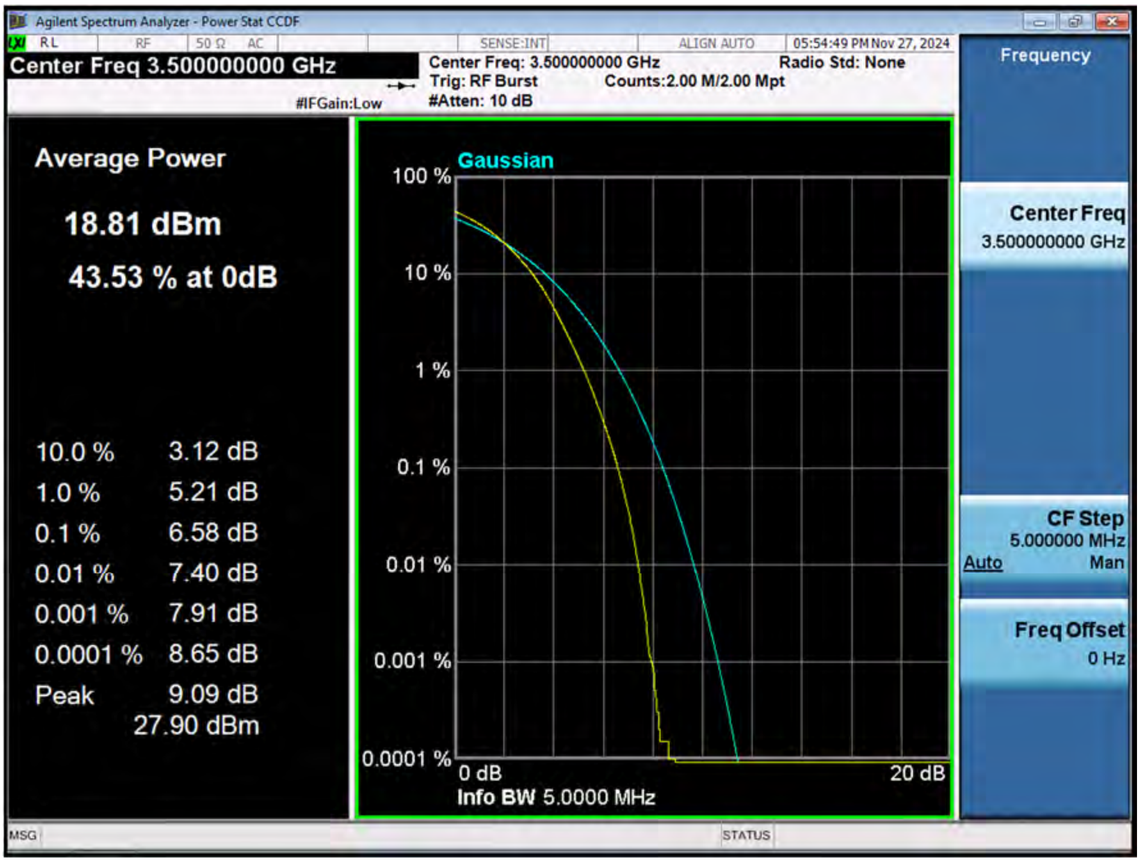

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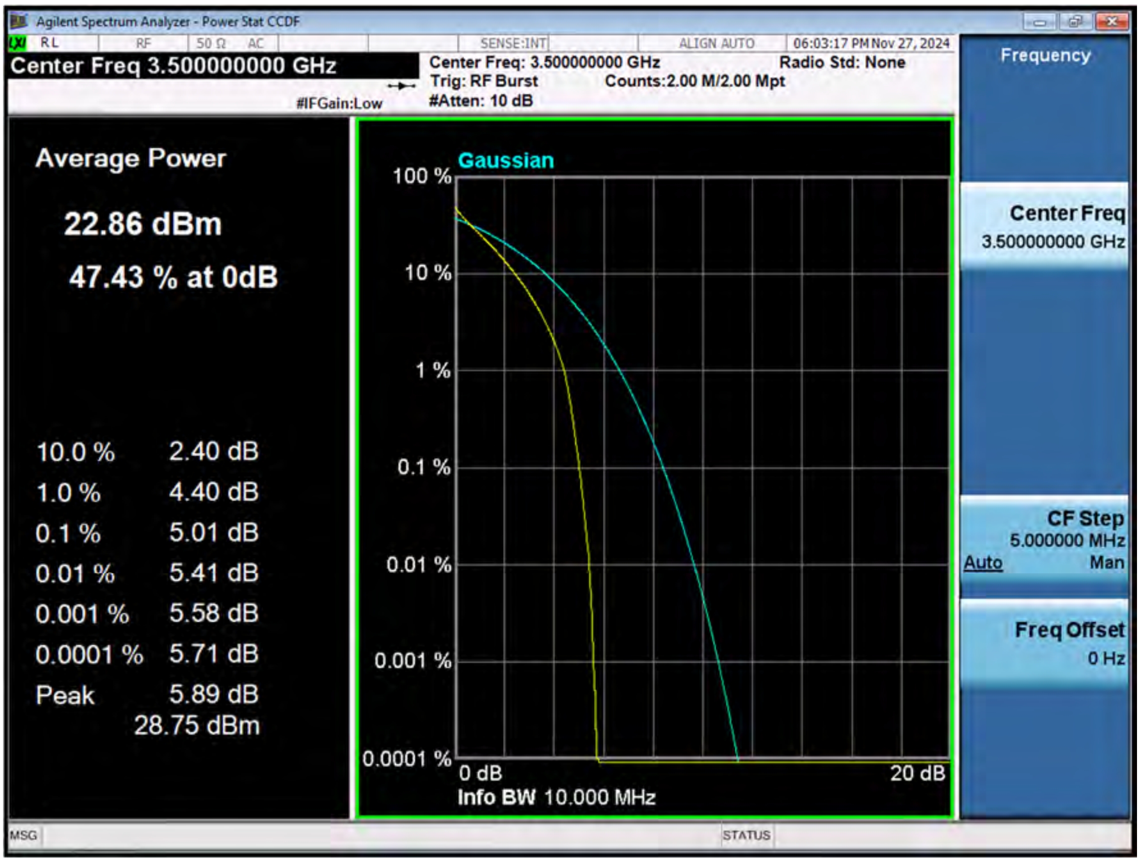

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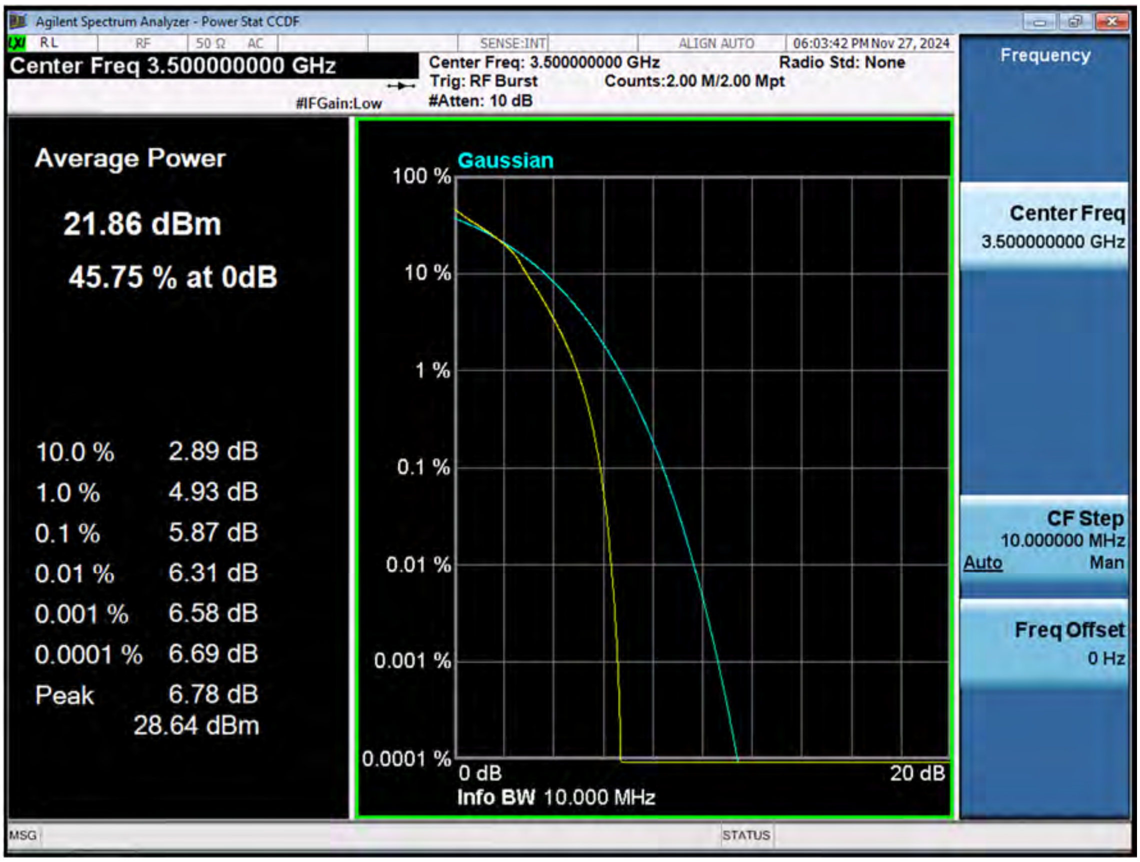

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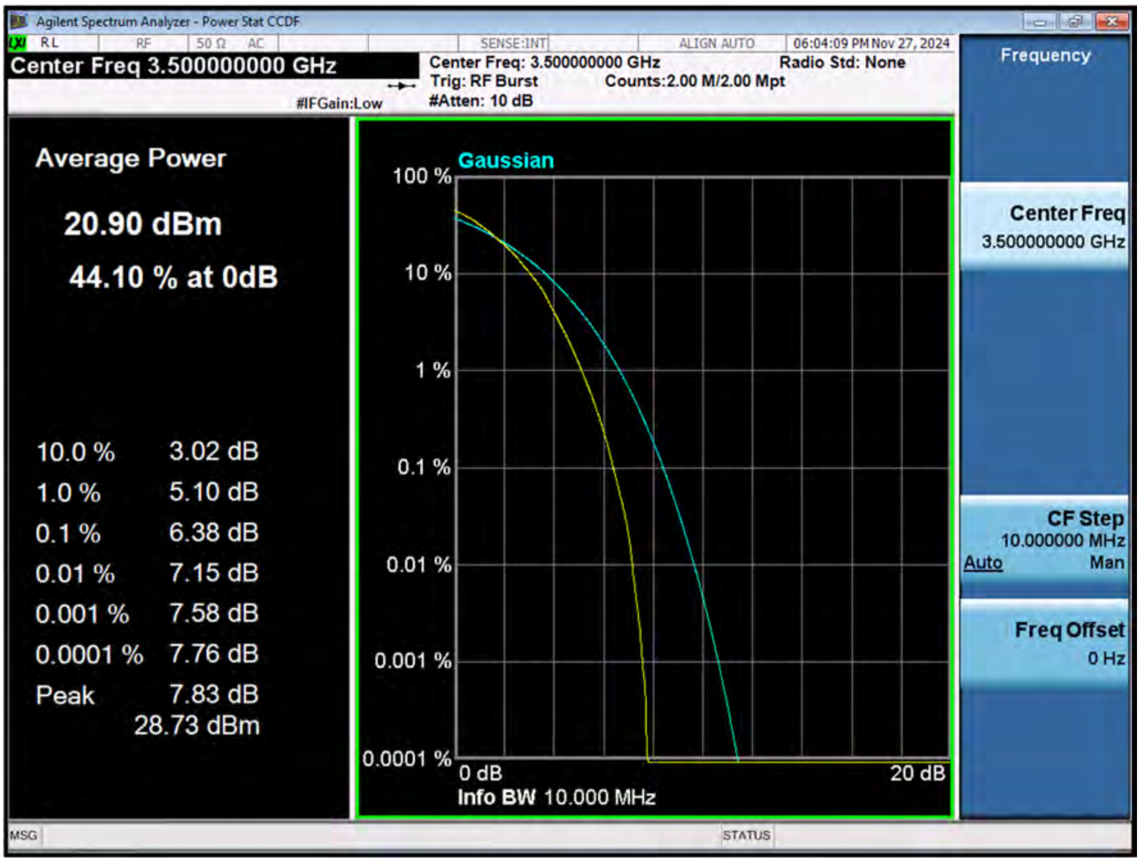

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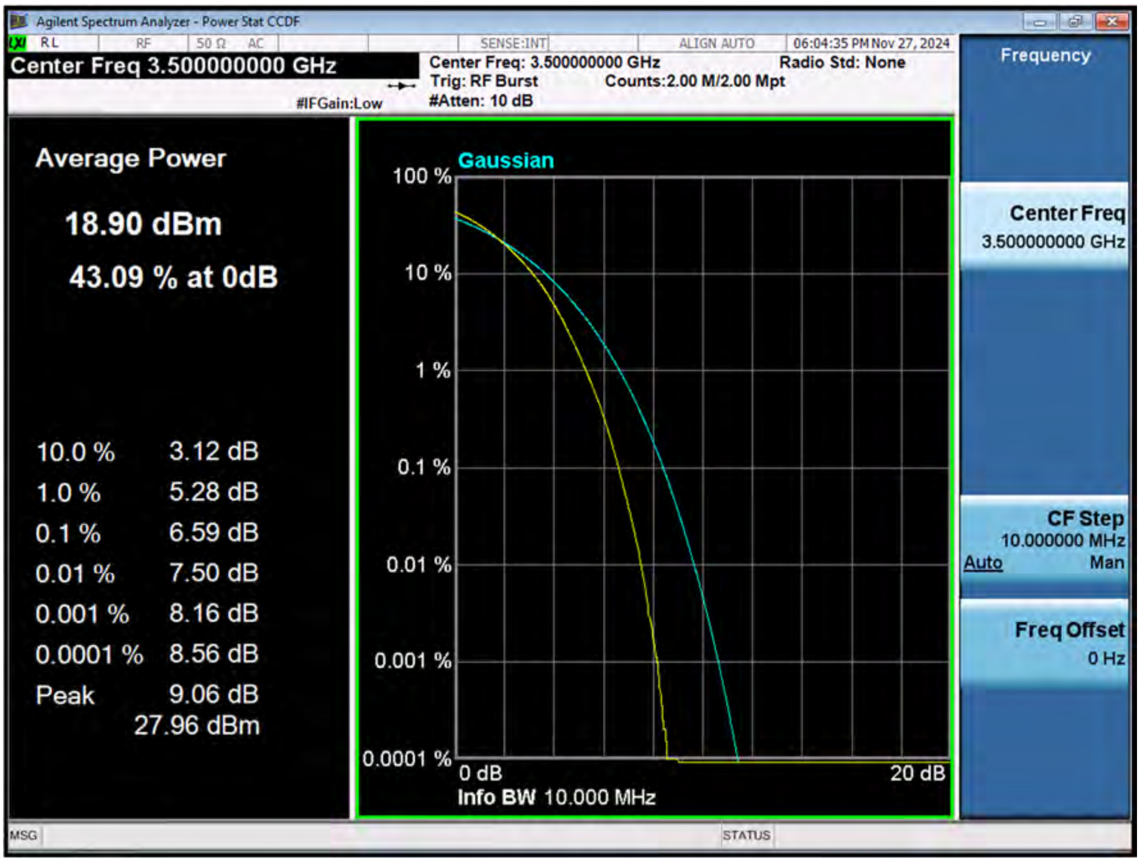
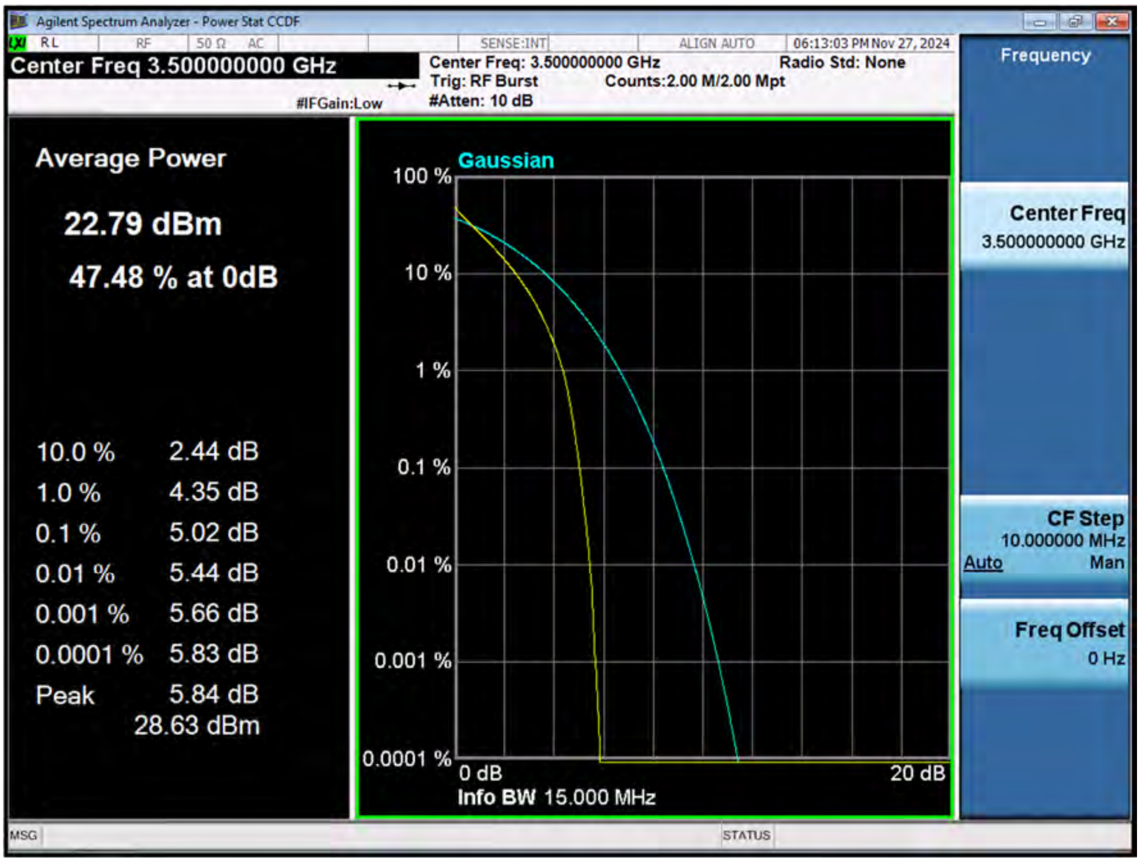


LTE B42_15 M_PAR_Mid_QPSK_FullRB



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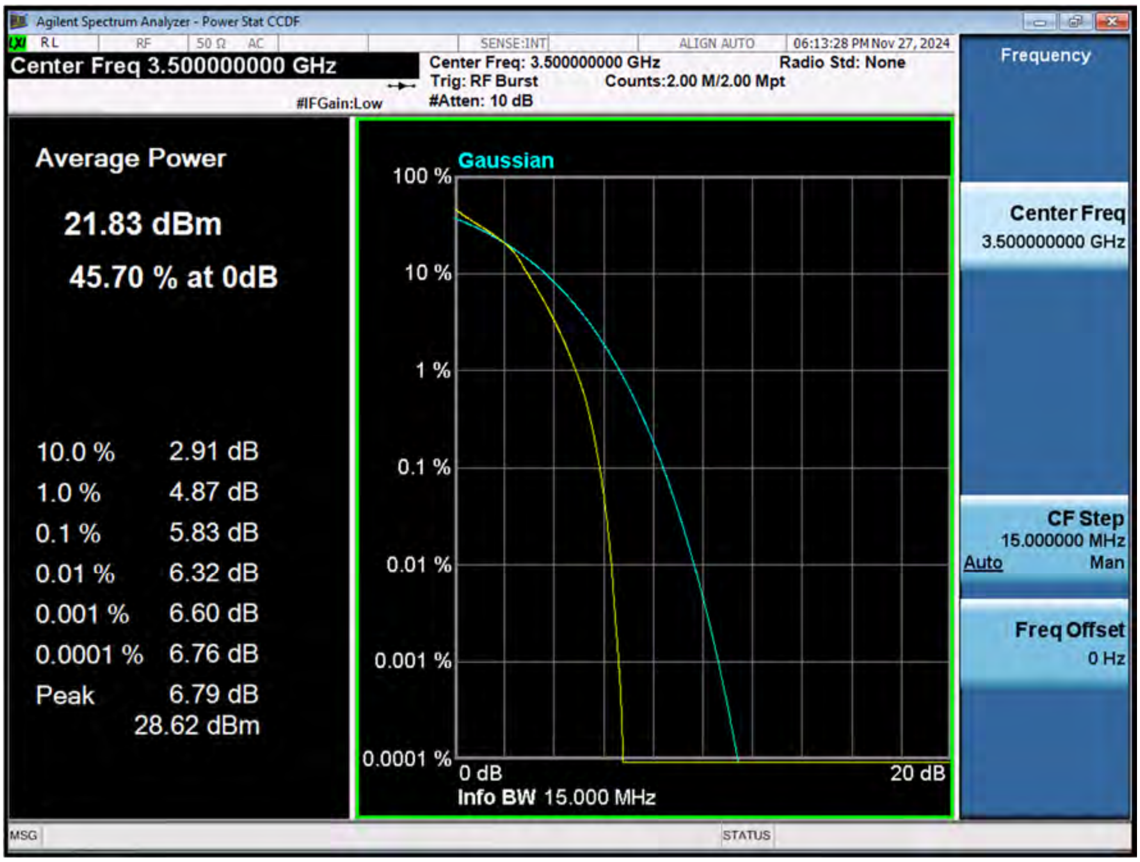

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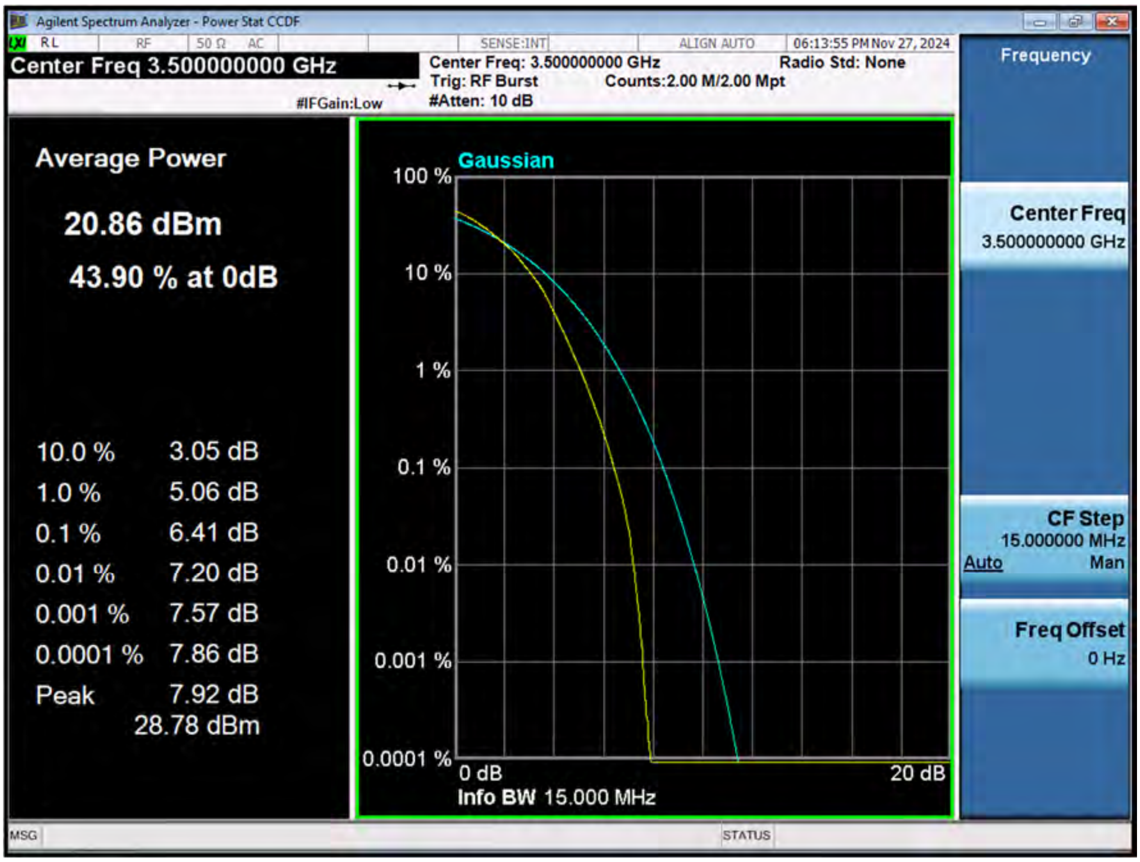
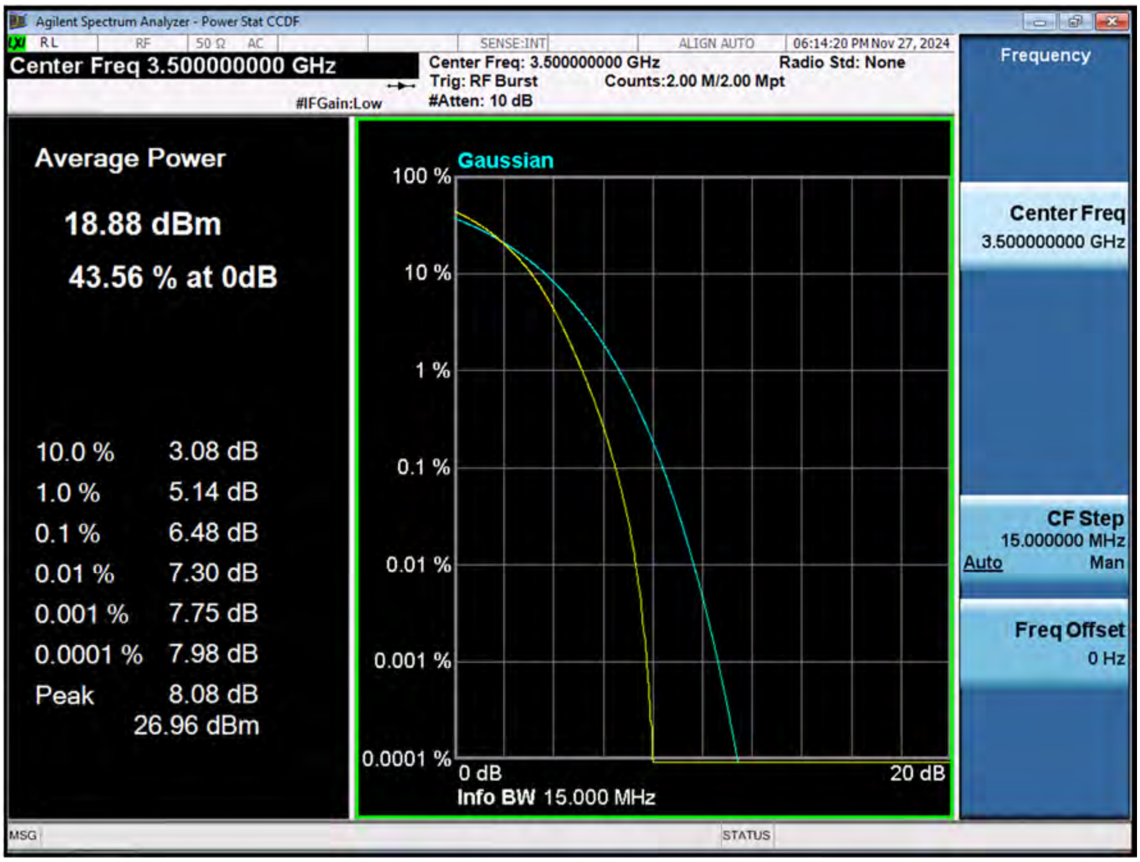
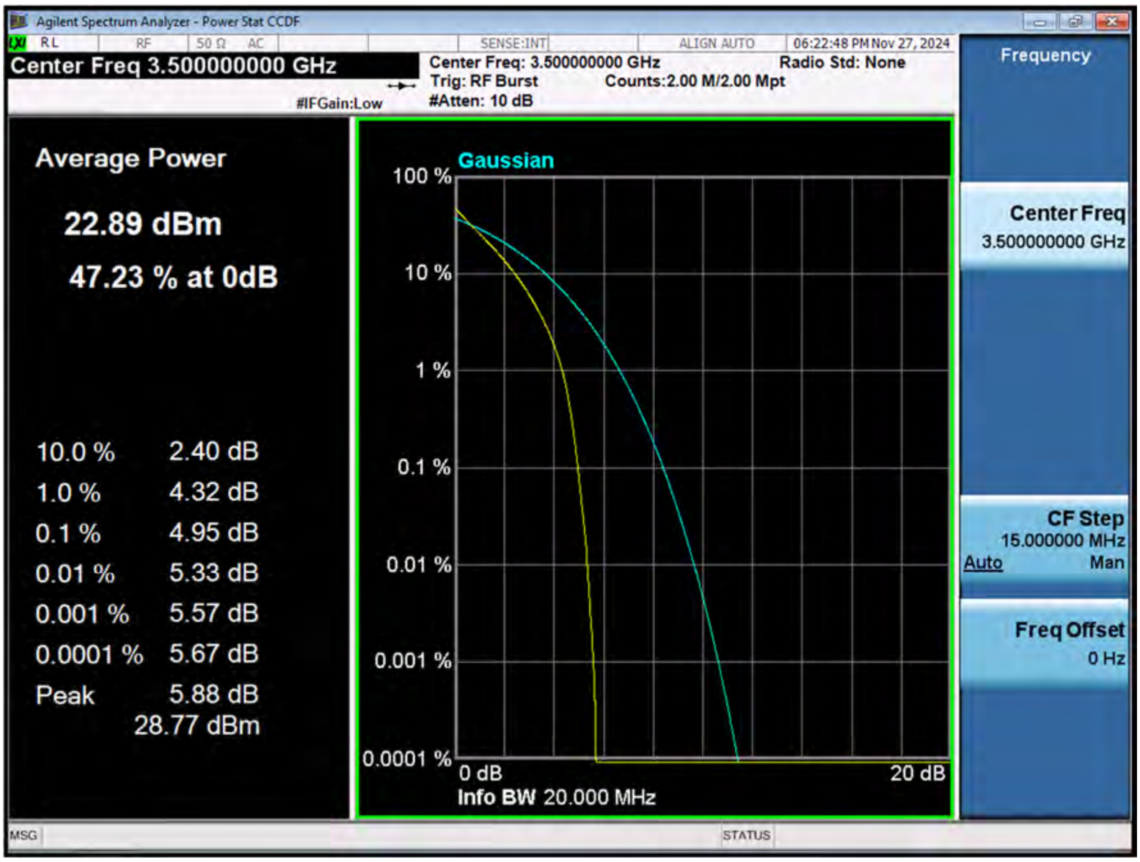


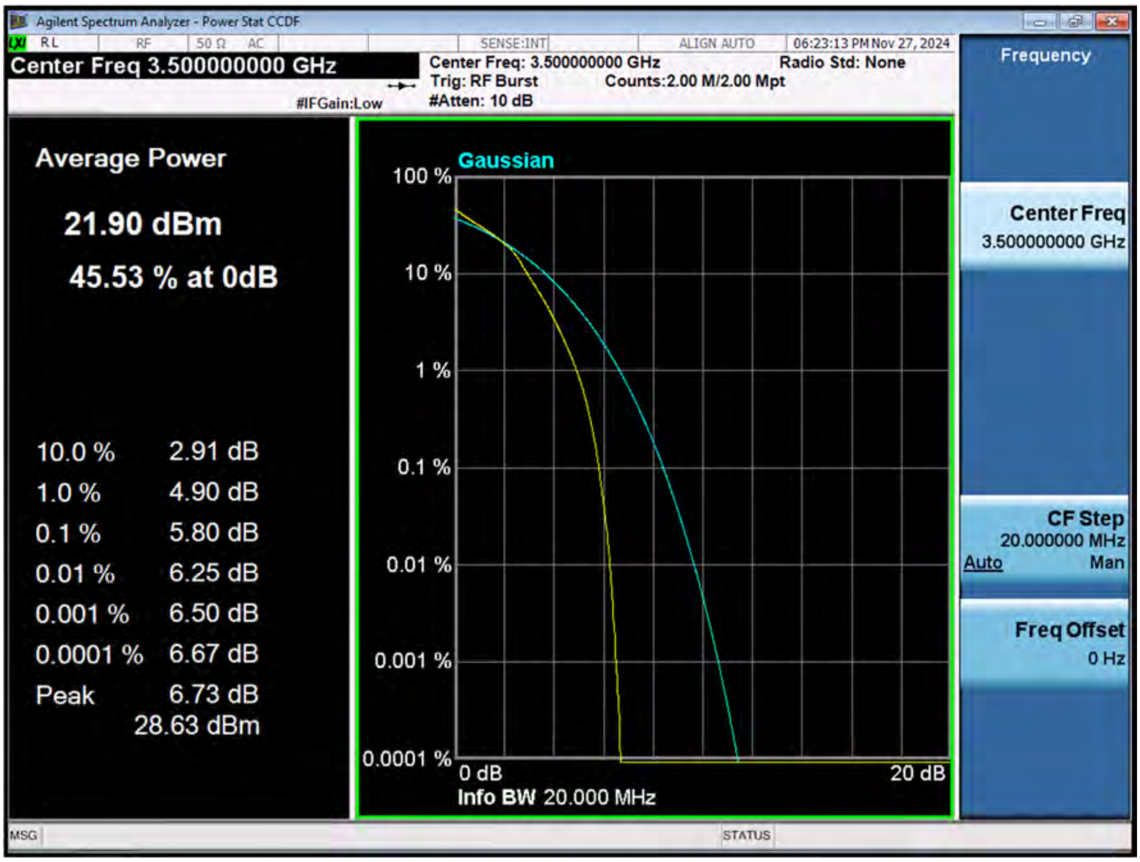
LTE B42_15 M_PAR_Mid_256QAM_FullRB



LTE B42_20 M_PAR_Mid_QPSK_FullRB



LTE B42_20 M_PAR_Mid_16QAM_FullRB



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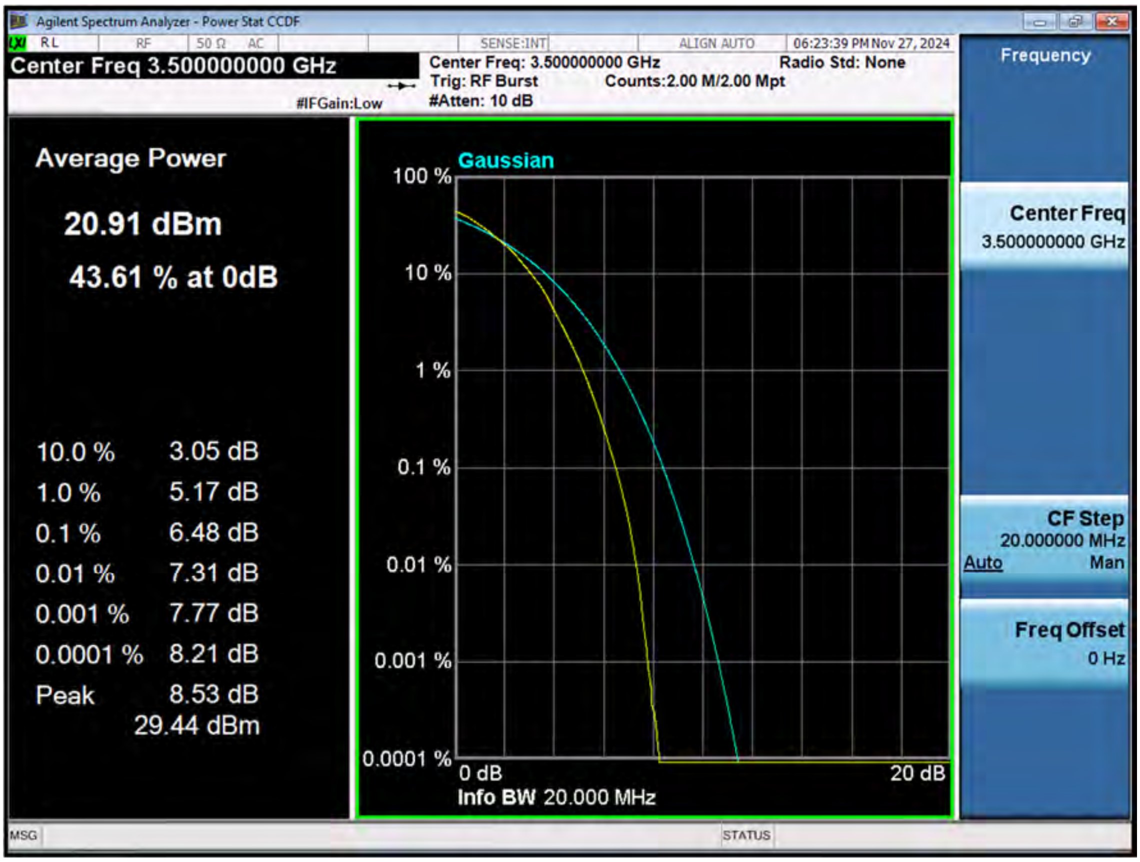
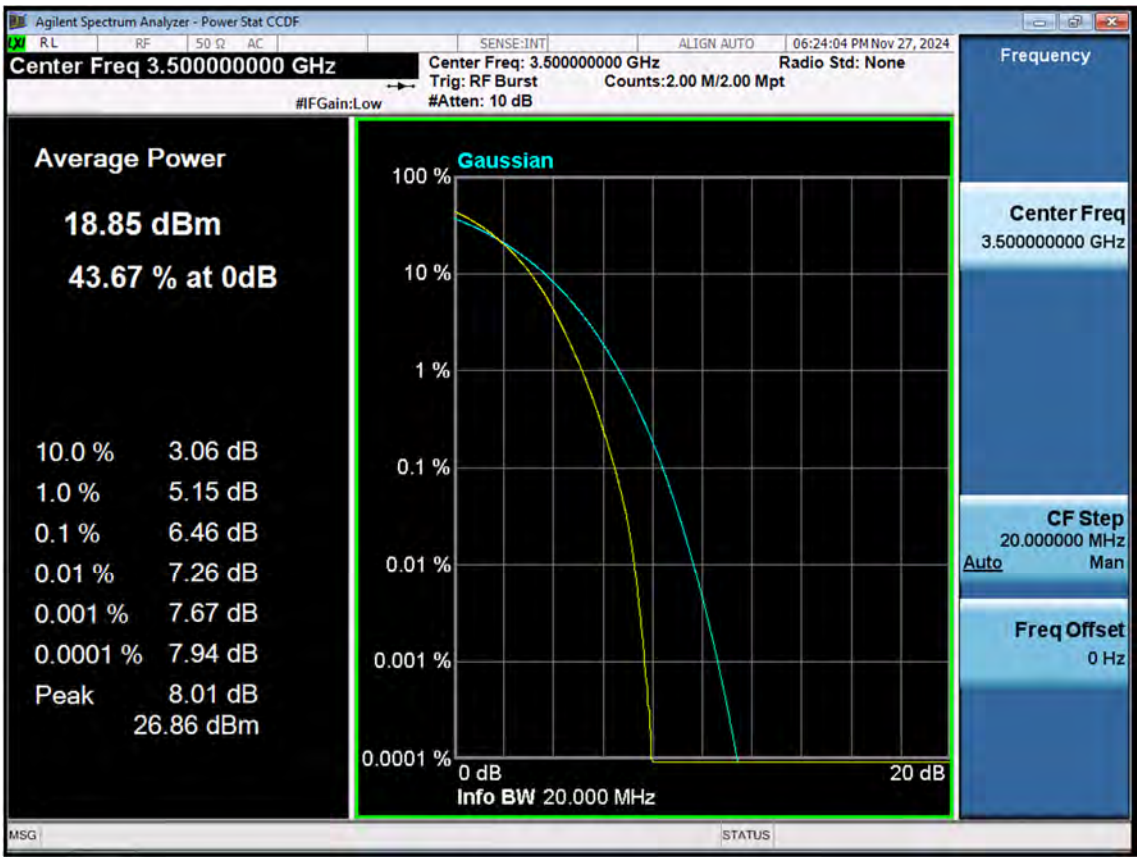
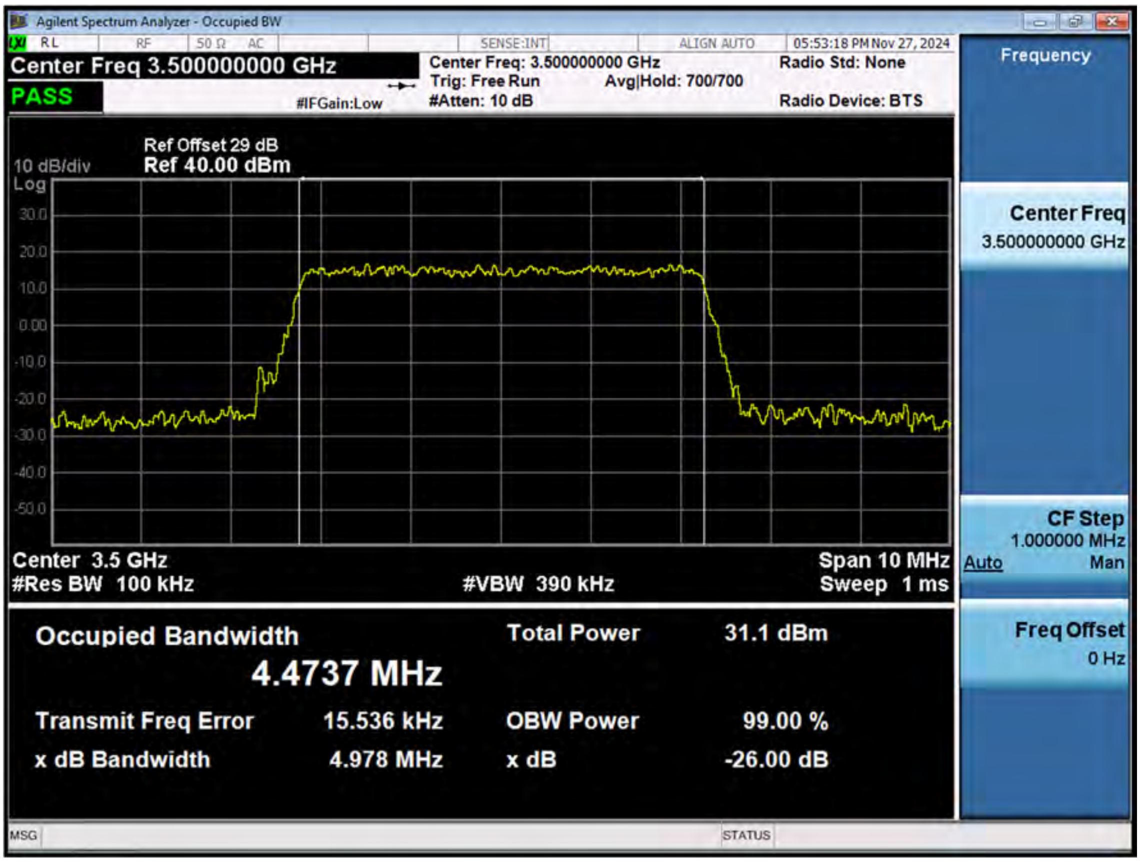


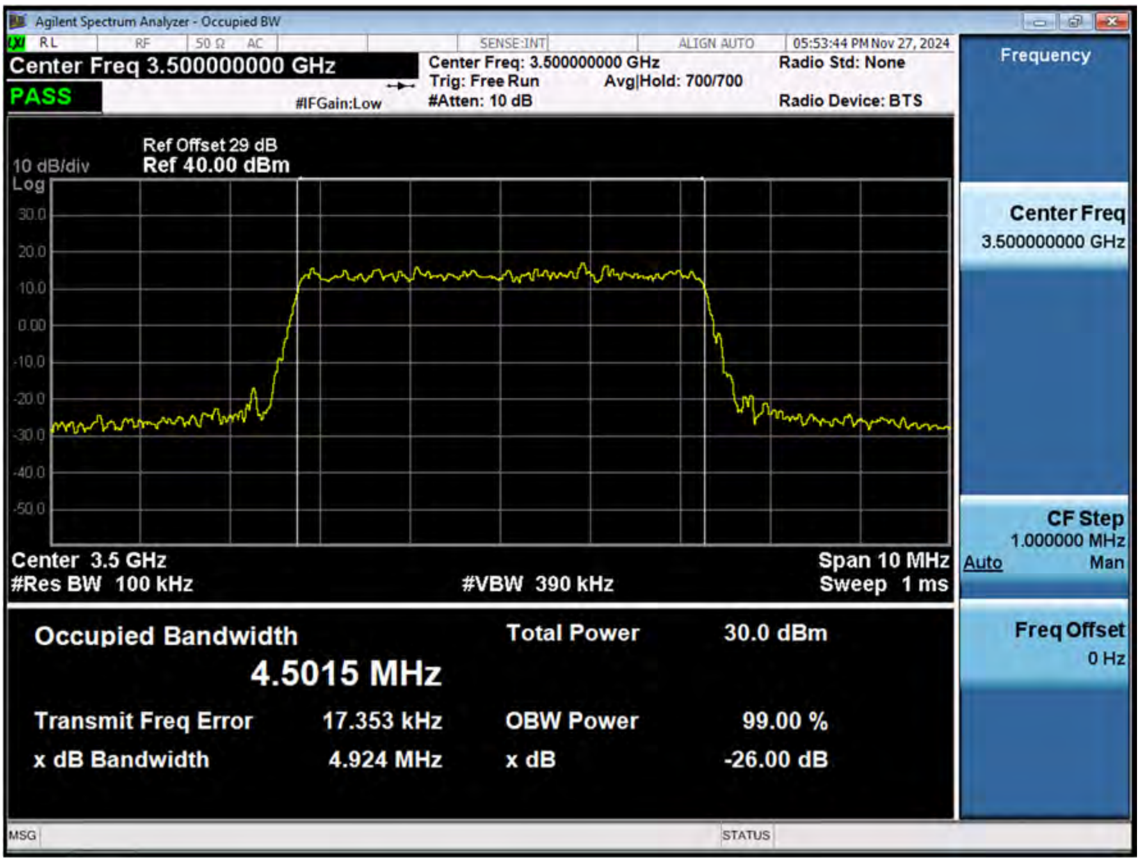
LTE B42_20 M_PAR_Mid_256QAM_FullRB



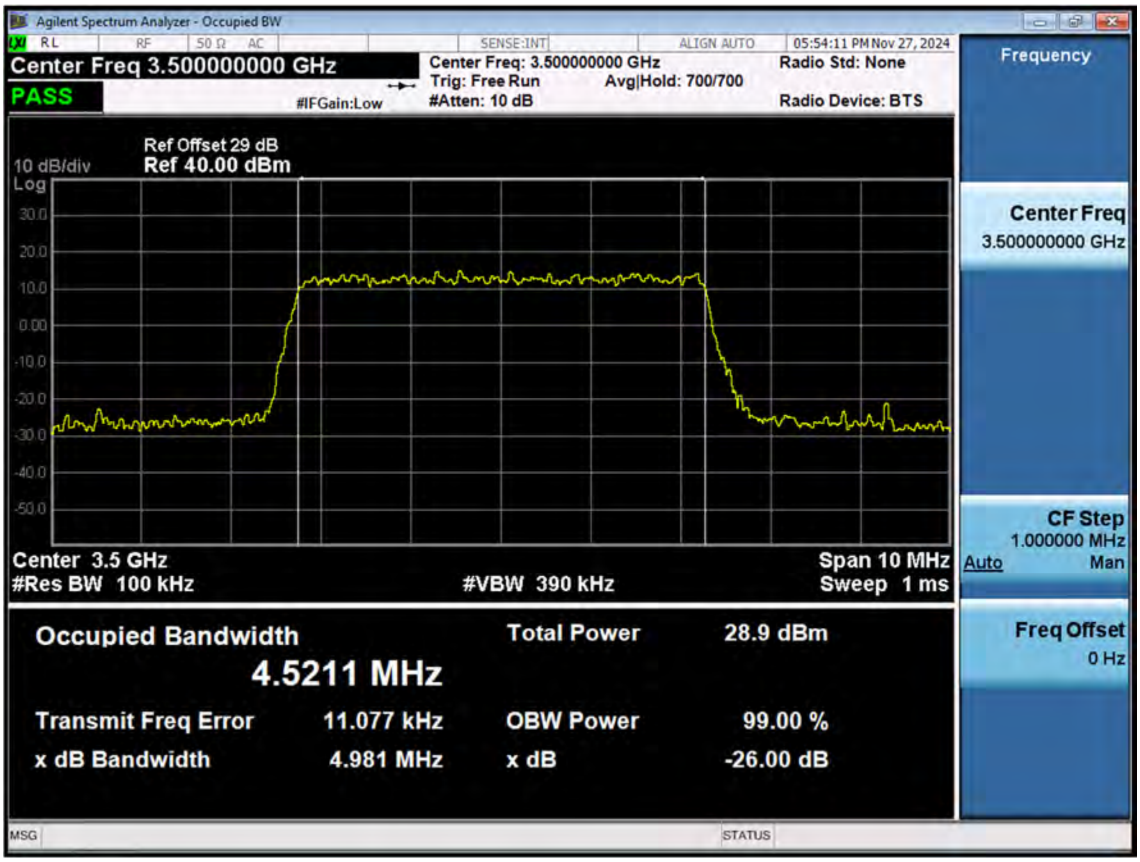
LTE B42_5 M_OBW_Mid_QPSK_FullRB



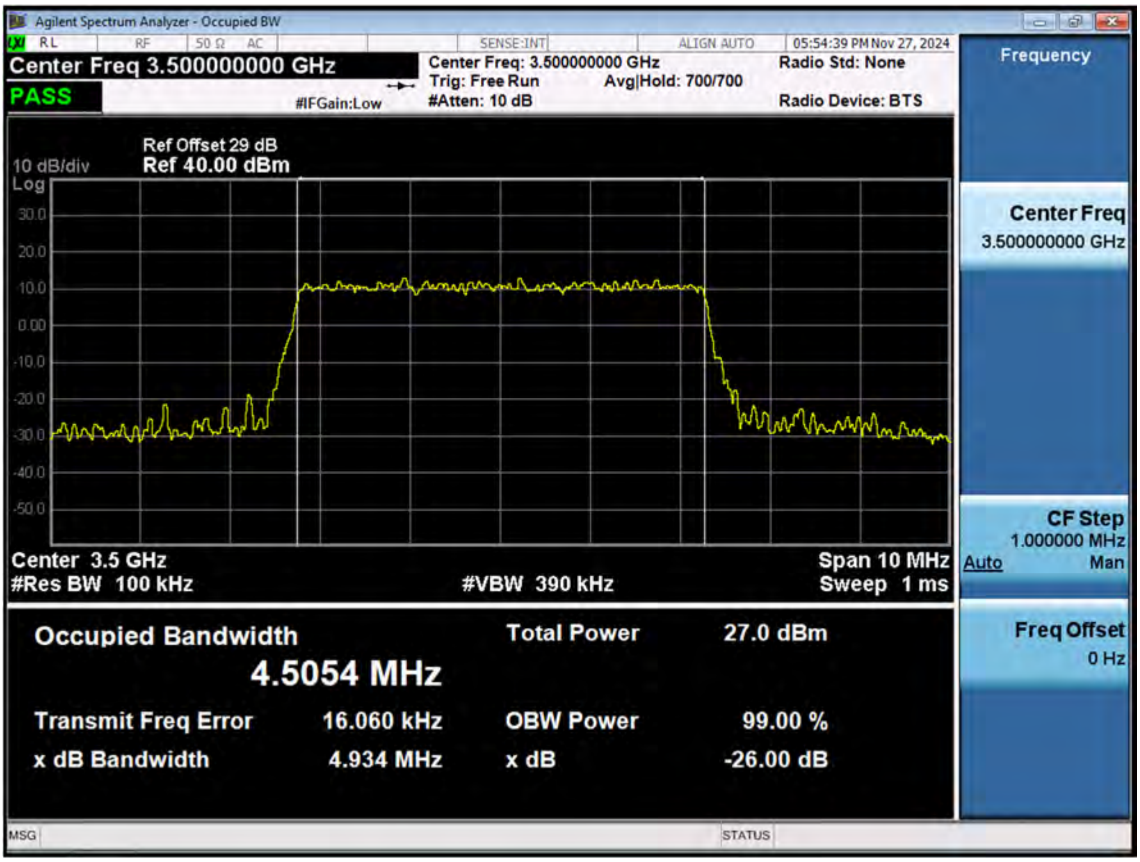
LTE B42_5 M_OBW_Mid_16QAM_FullRB



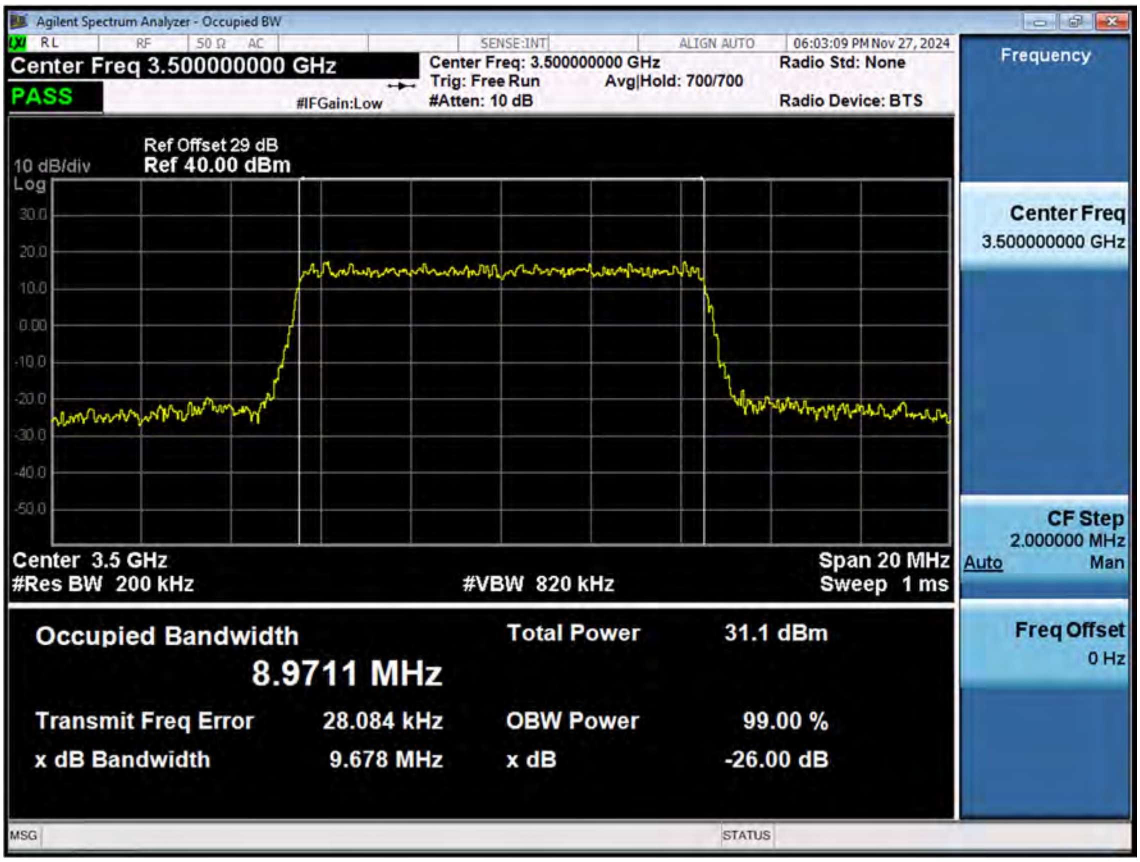
LTE B42_5 M_OBW_Mid_64QAM_FullRB



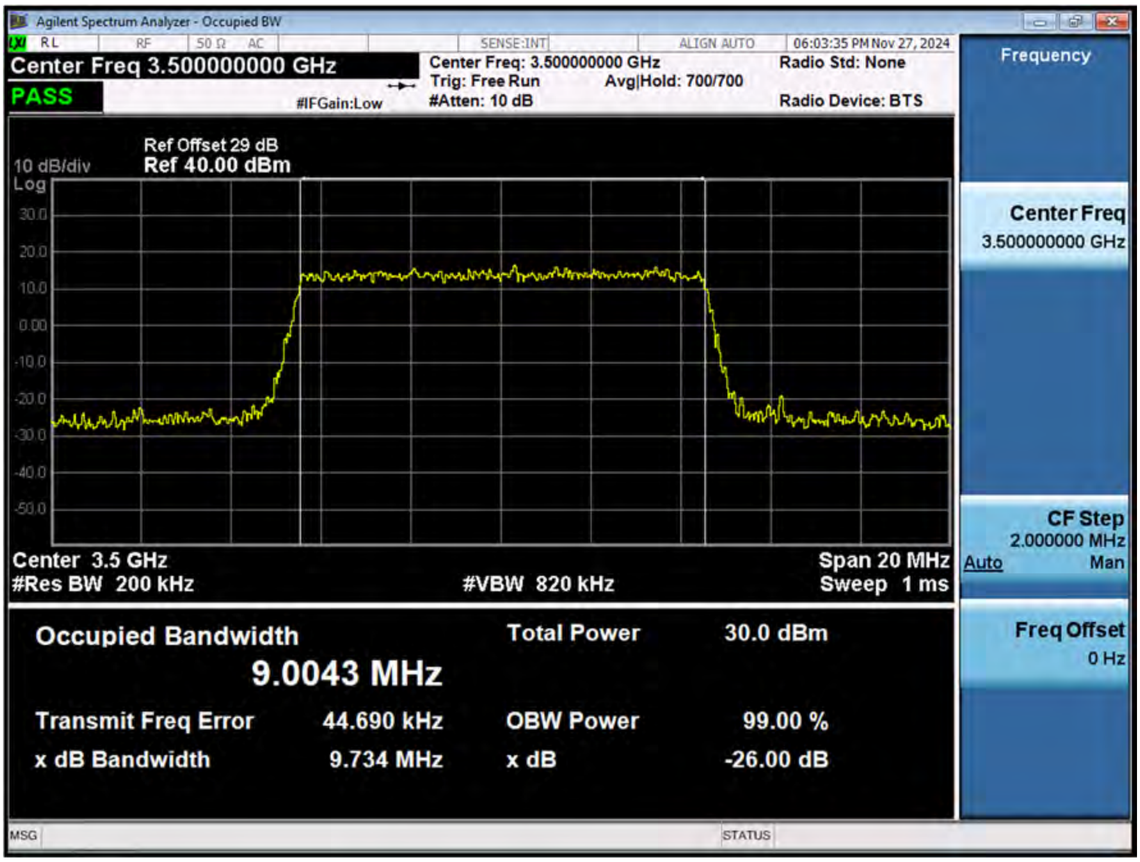
LTE B42_5 M_OBW_Mid_256QAM_FullRB



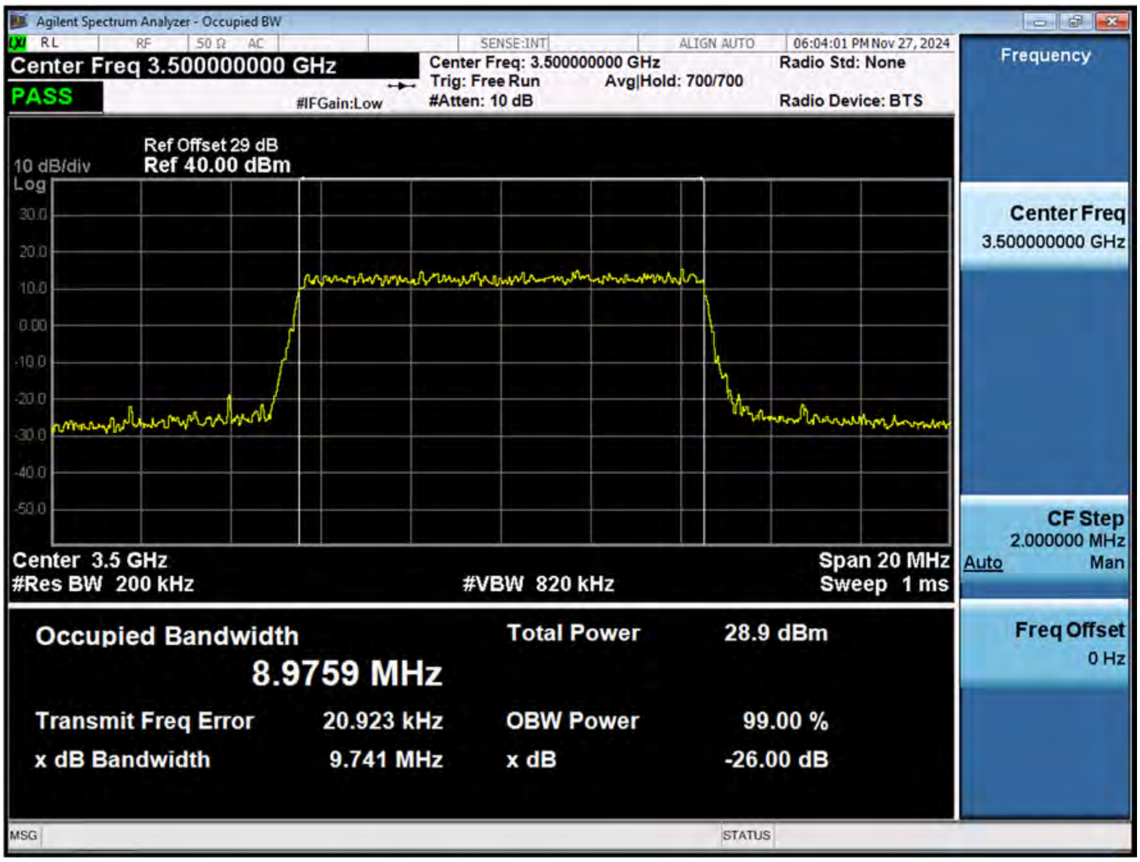
LTE B42_10 M_OBW_Mid_QPSK_FullRB



LTE B42_10 M_OBW_Mid_16QAM_FullRB



LTE B42_10 M_OBW_Mid_64QAM_FullRB



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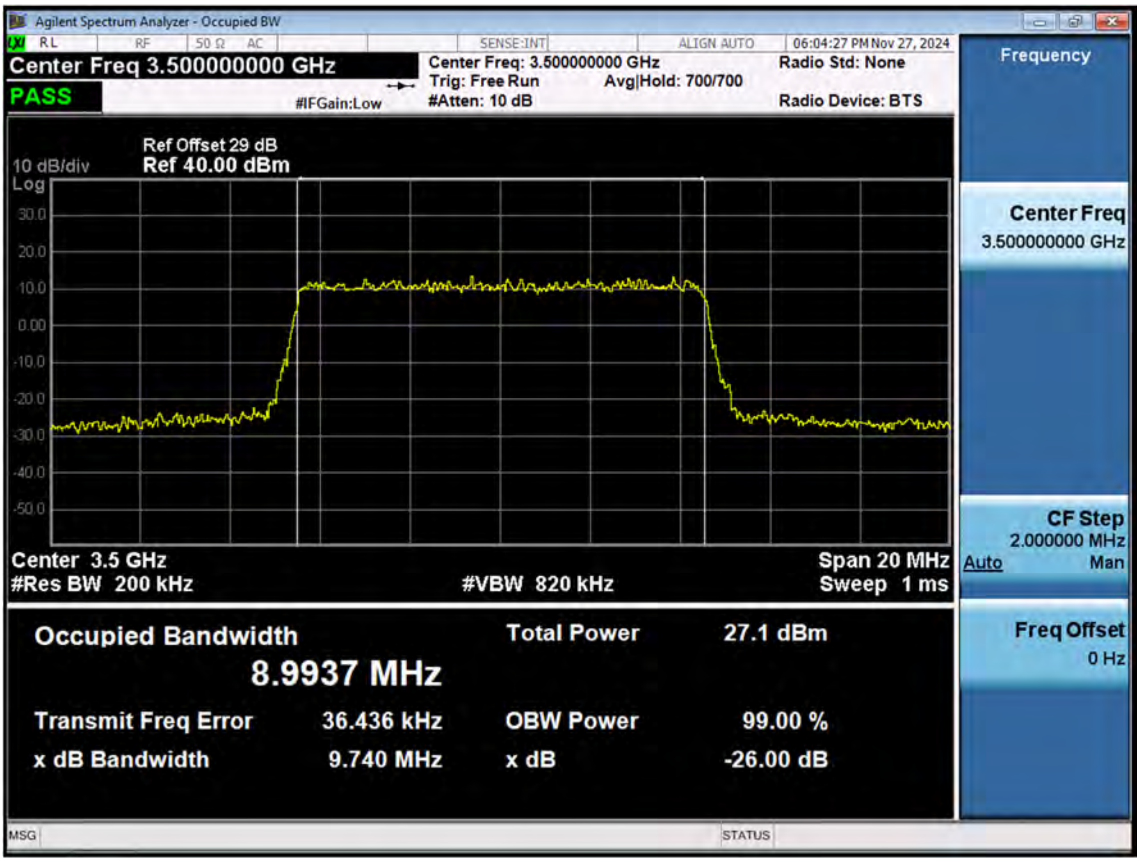

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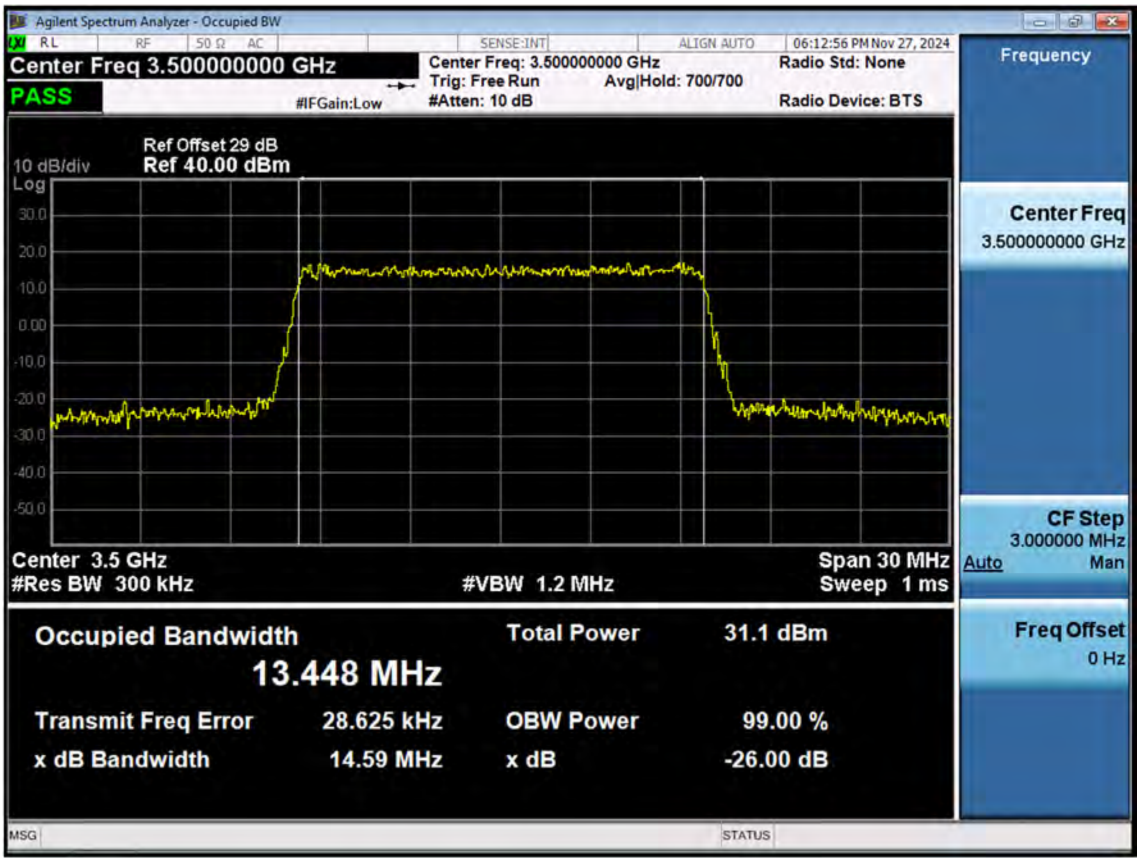

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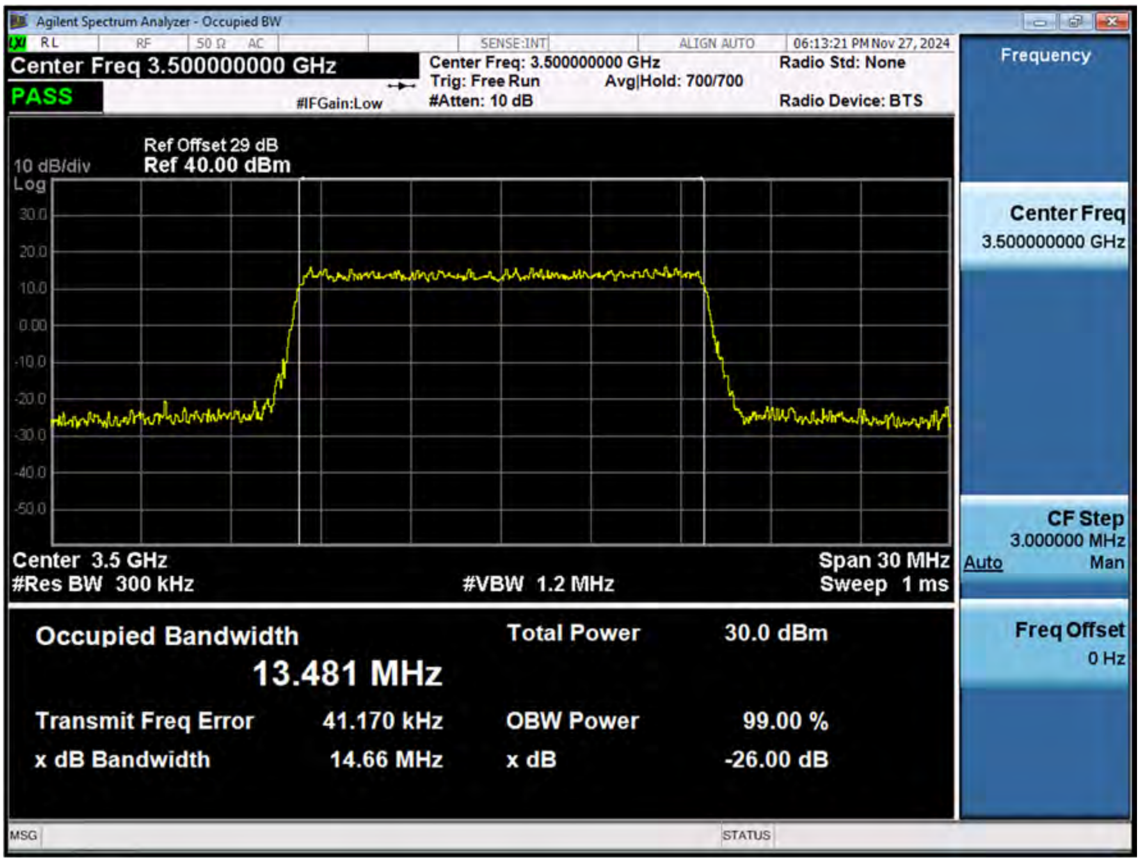

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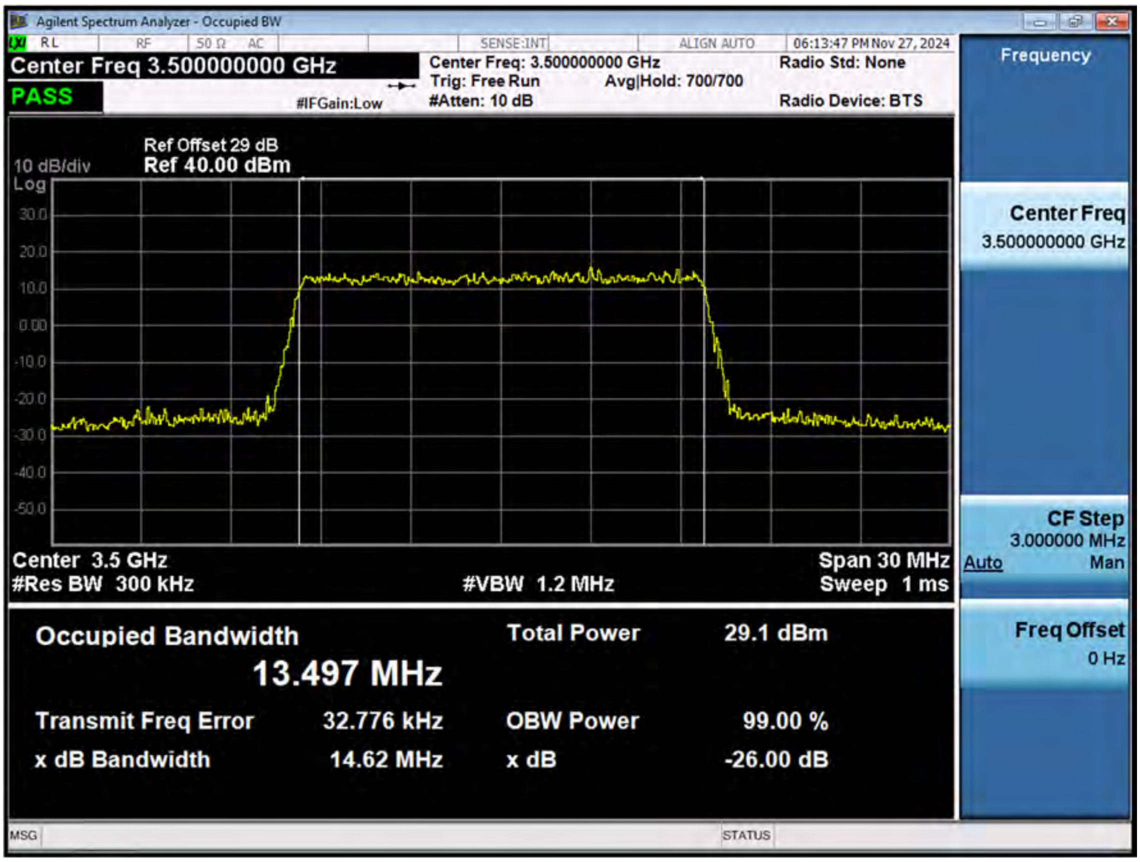

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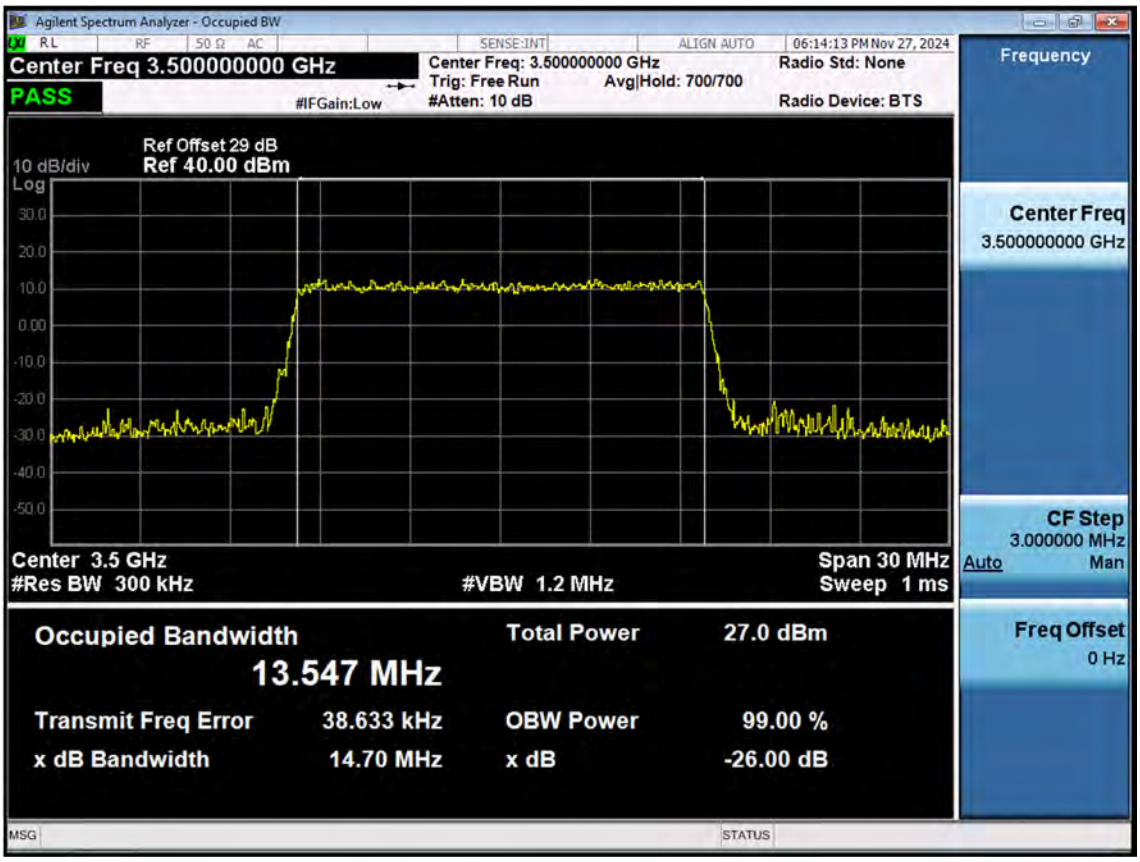

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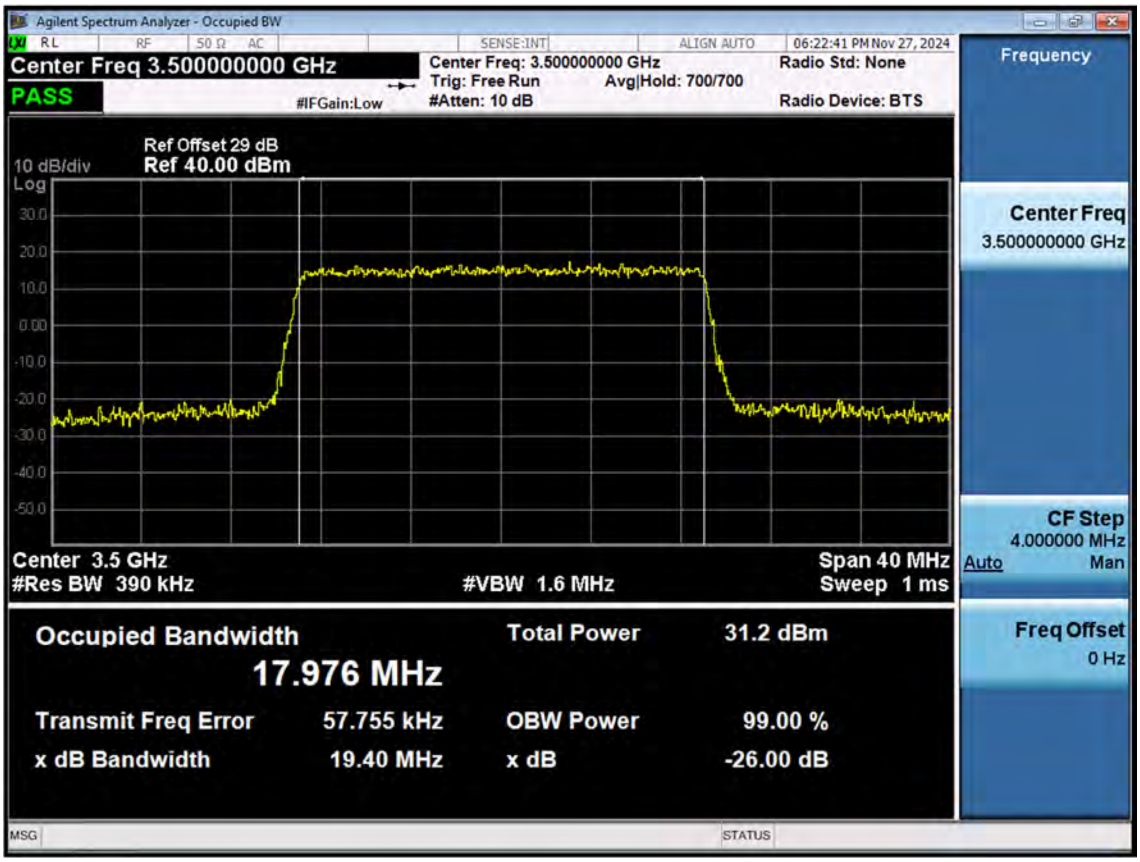

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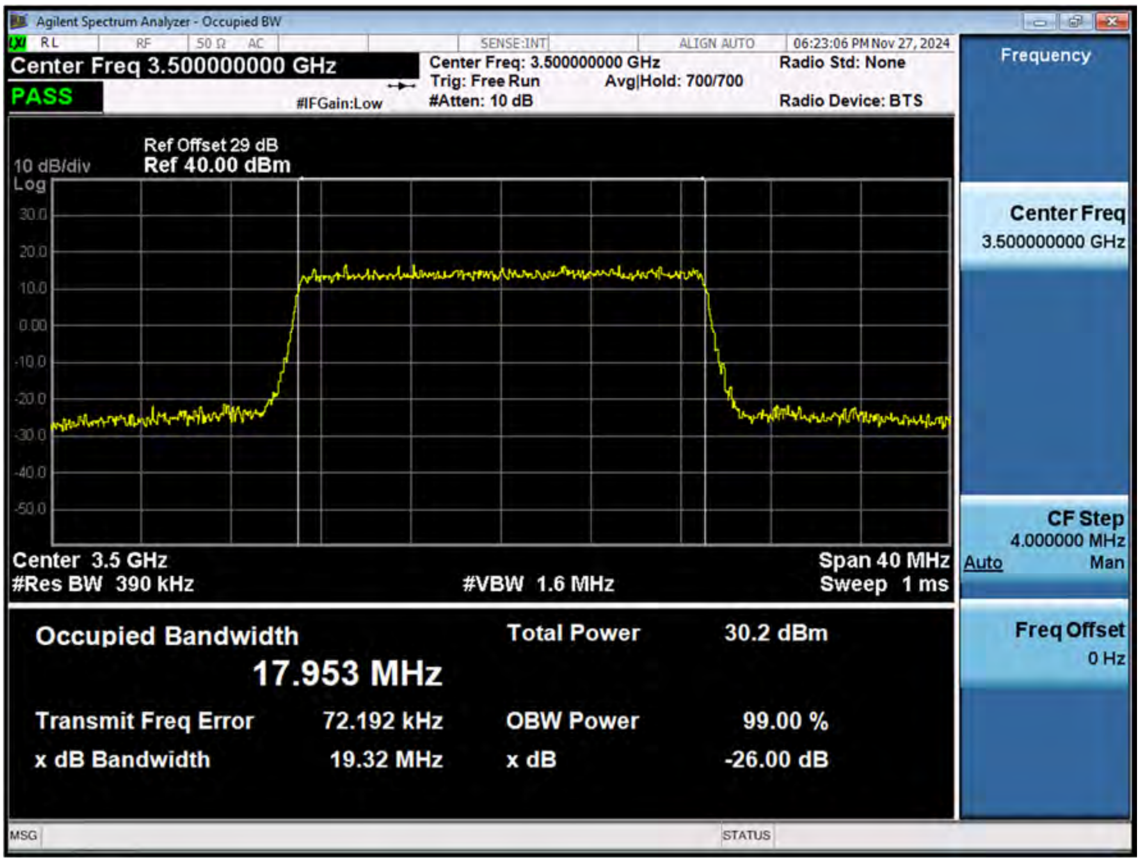

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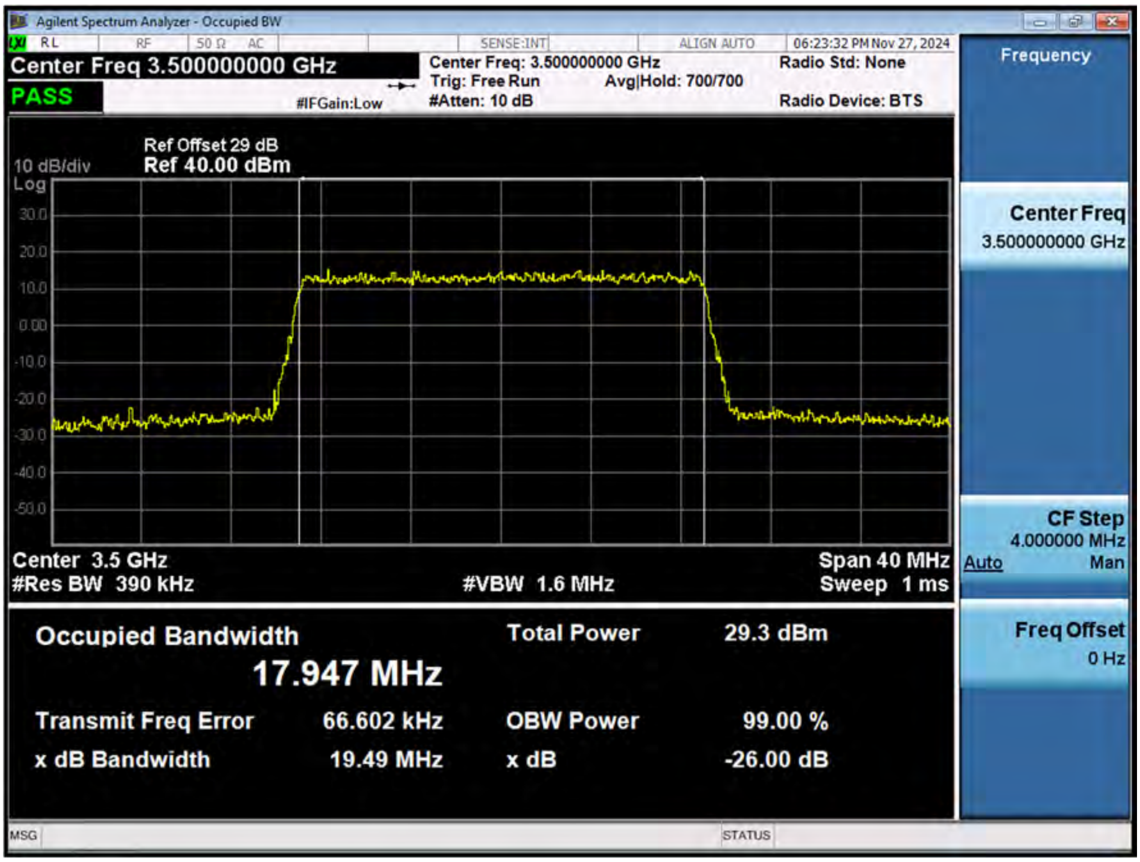

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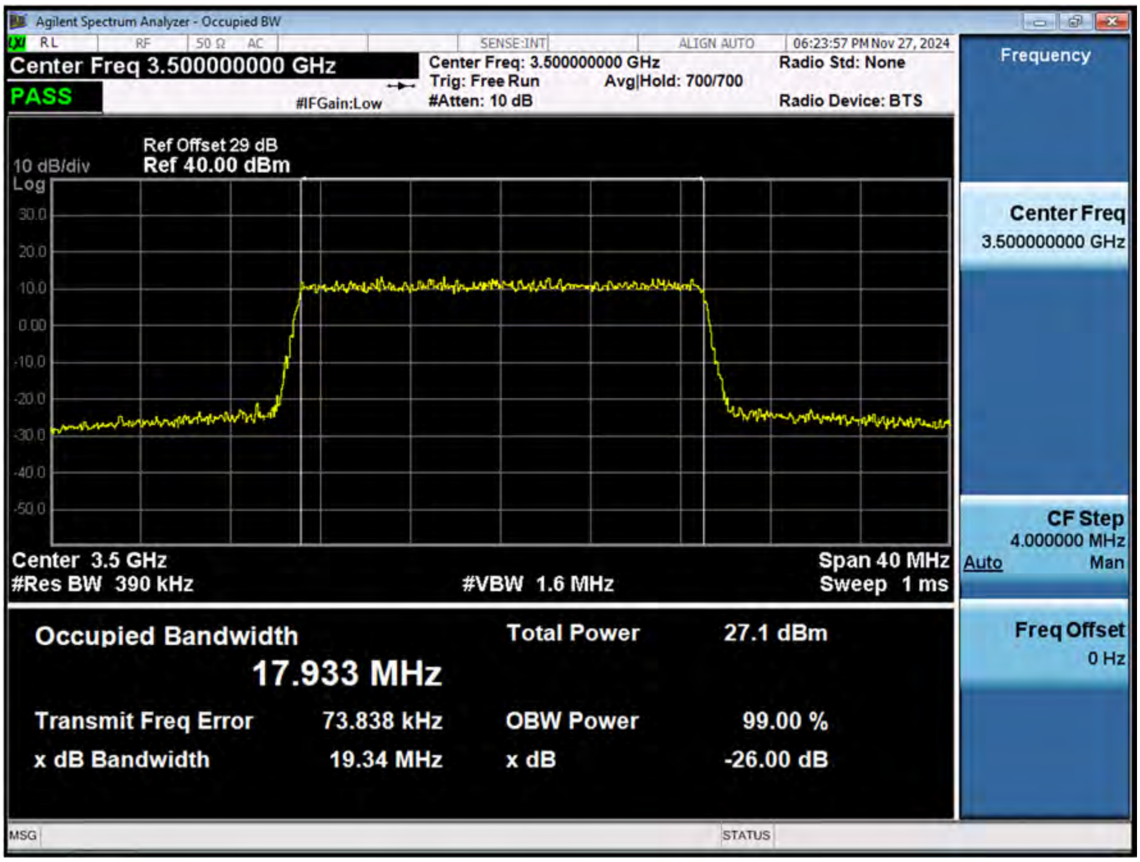
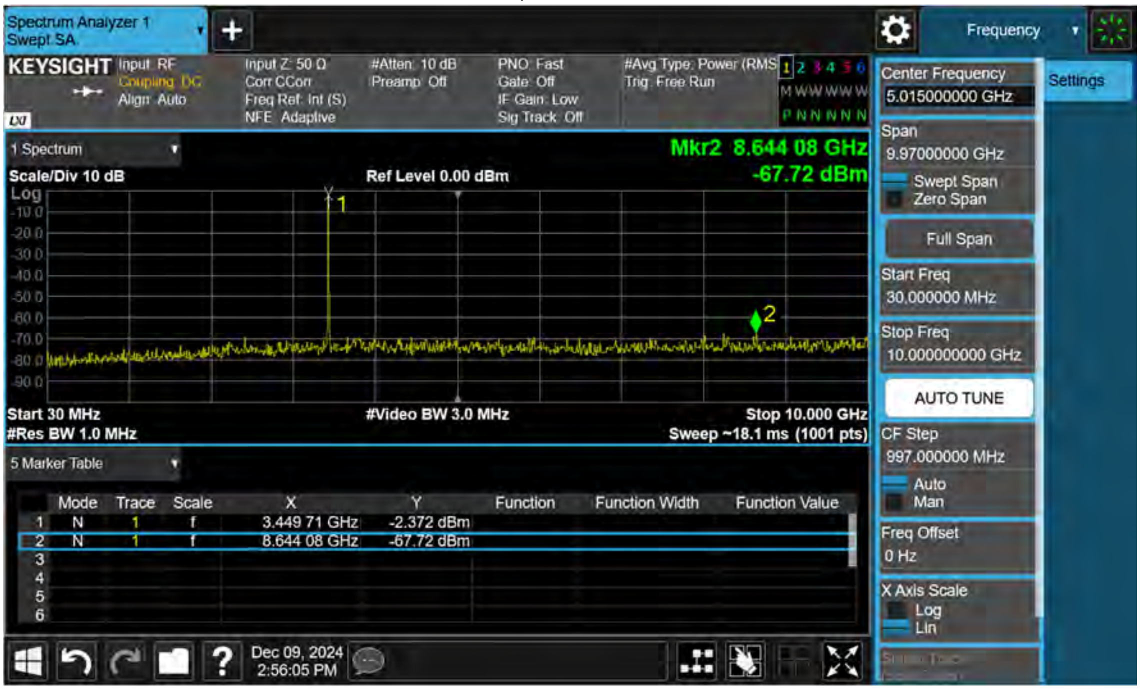


LTE B42_5 M_Conducted Spurious(30 M-10 G)_Low_QPSK_1RB



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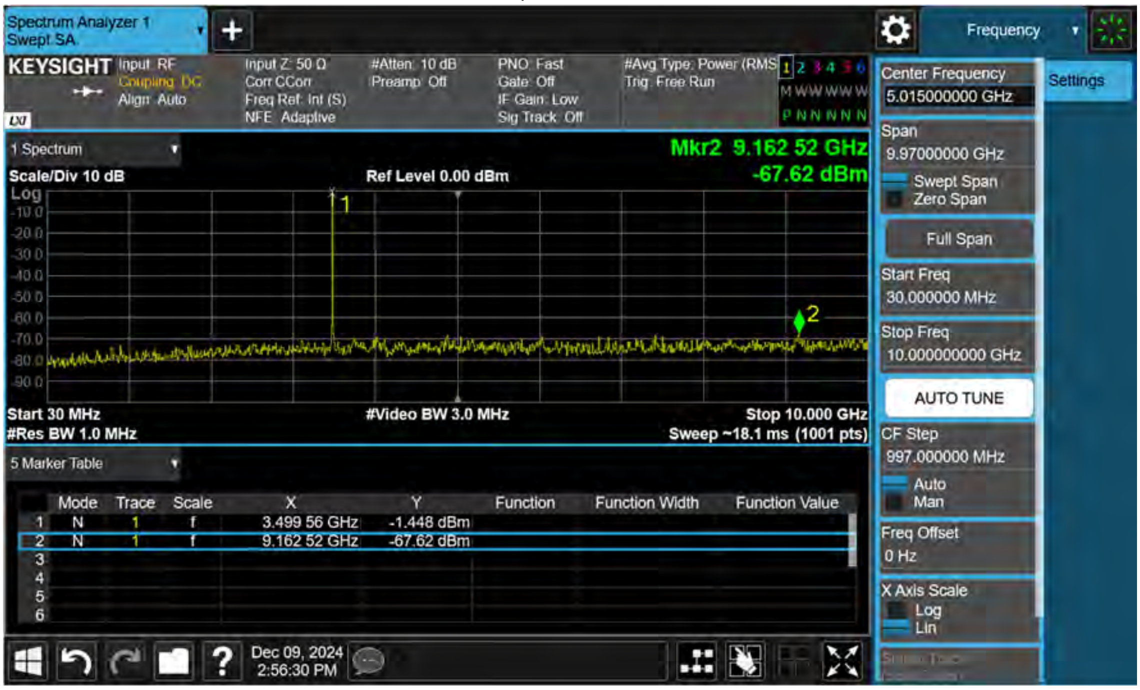

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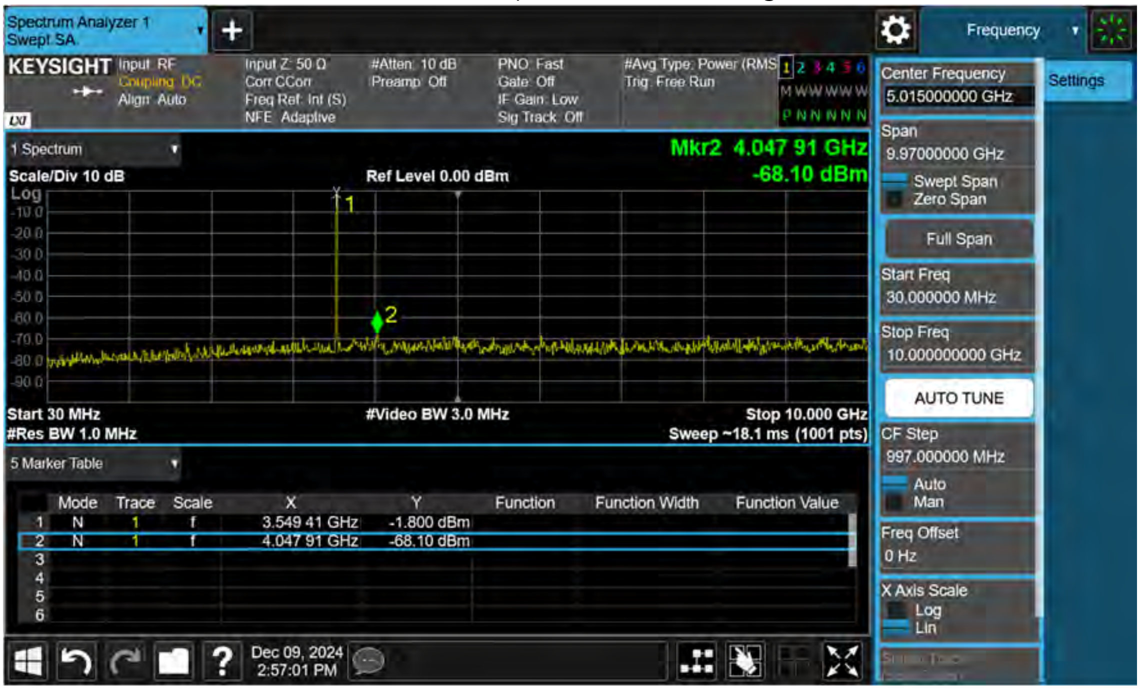

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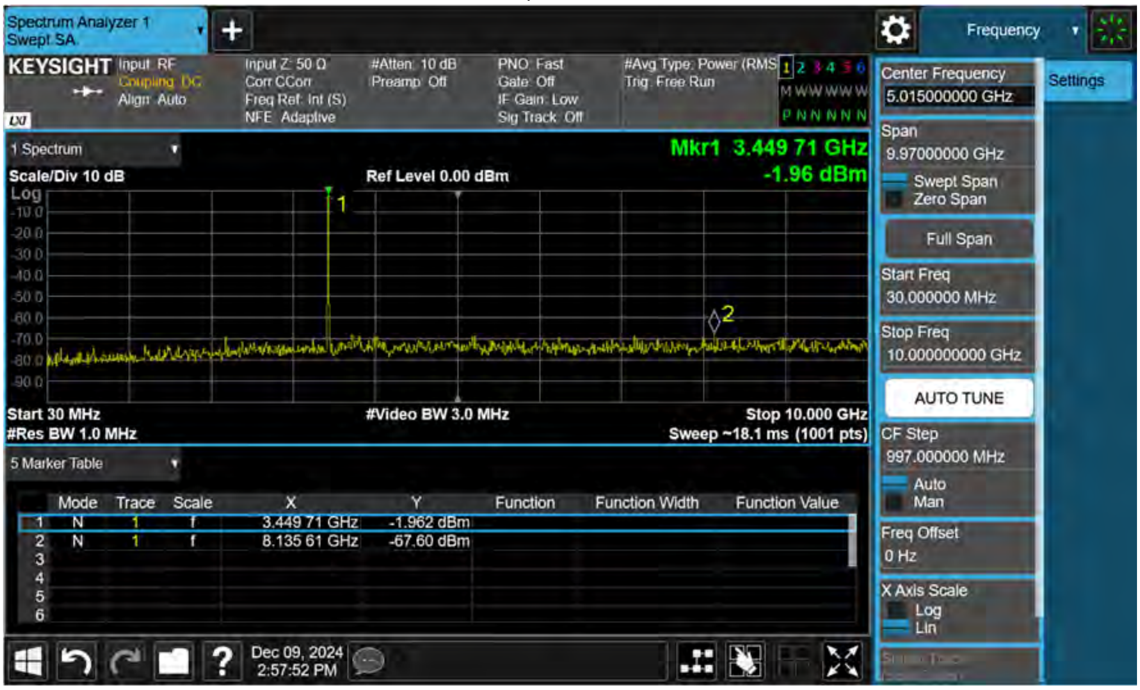

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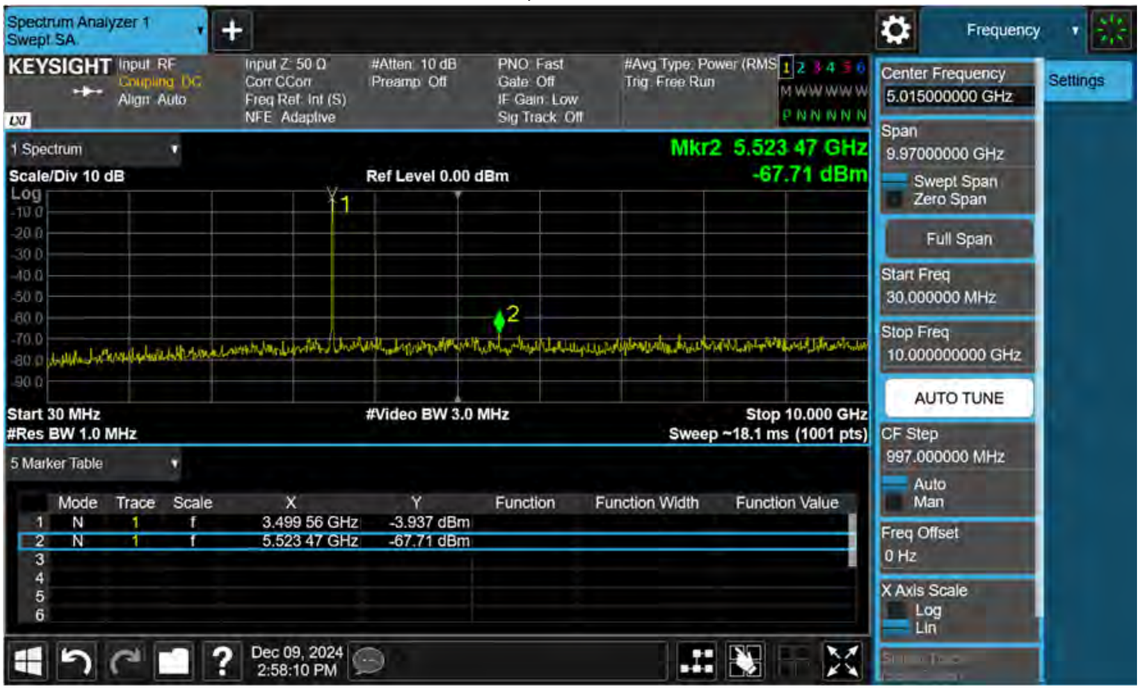

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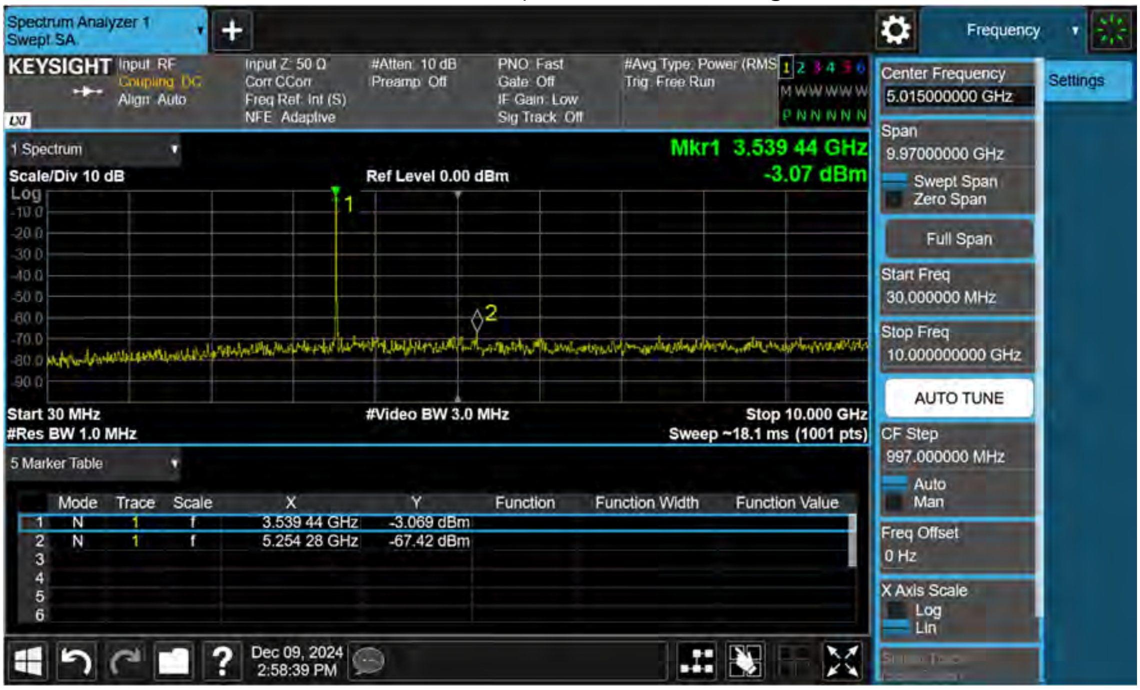

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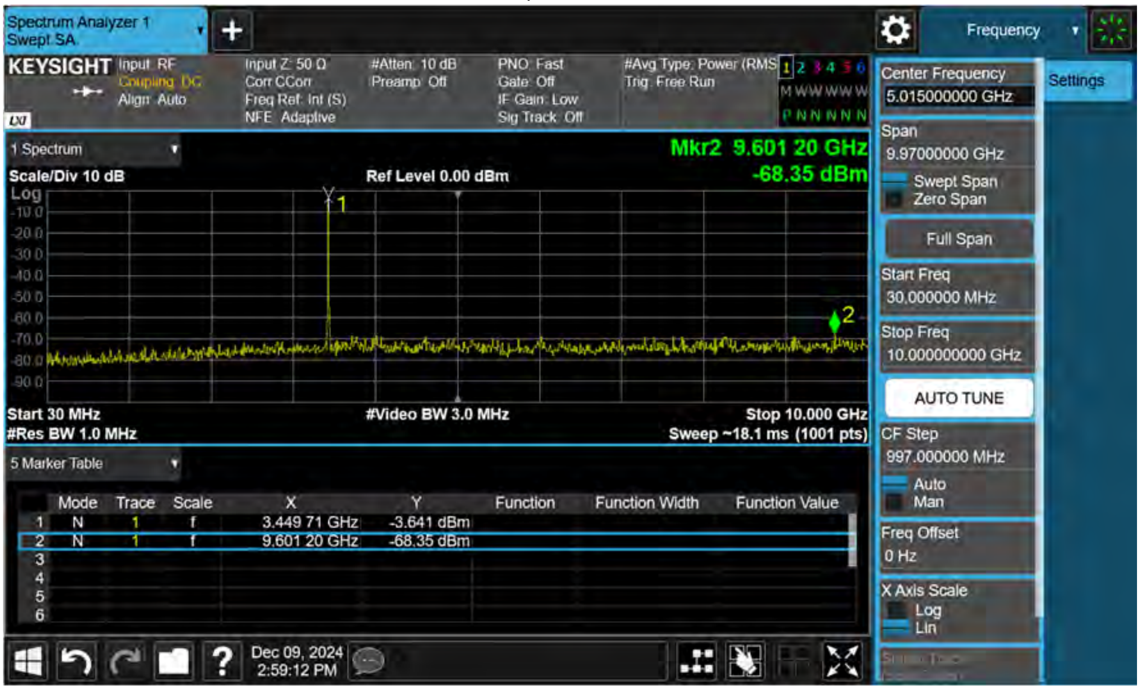

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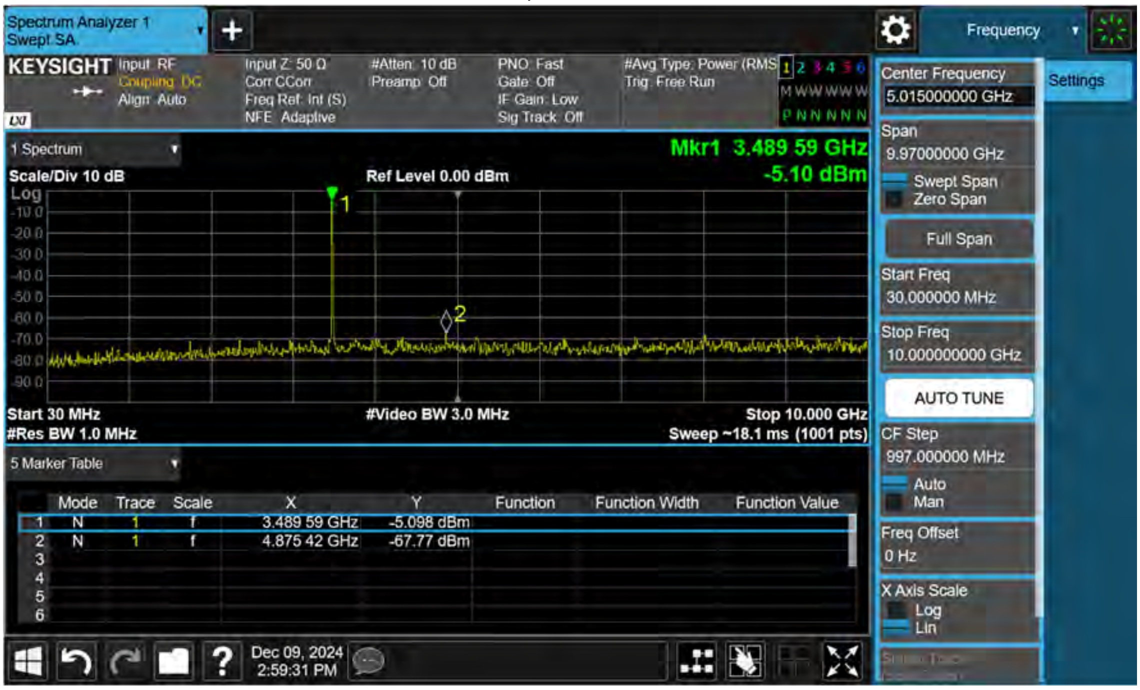

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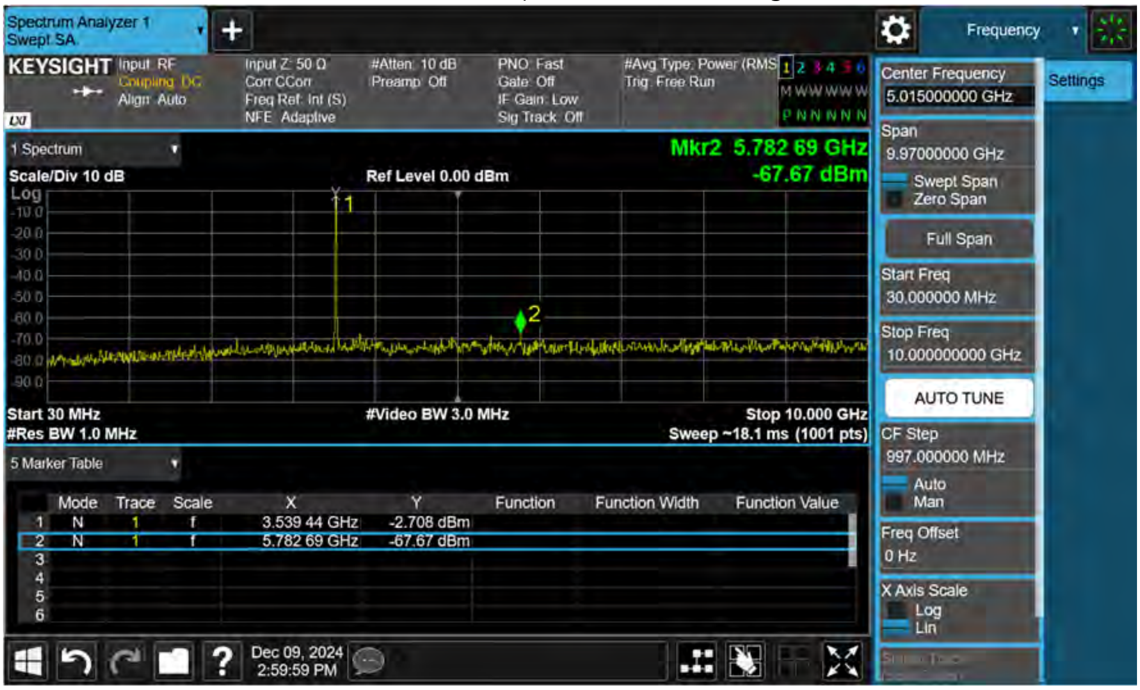

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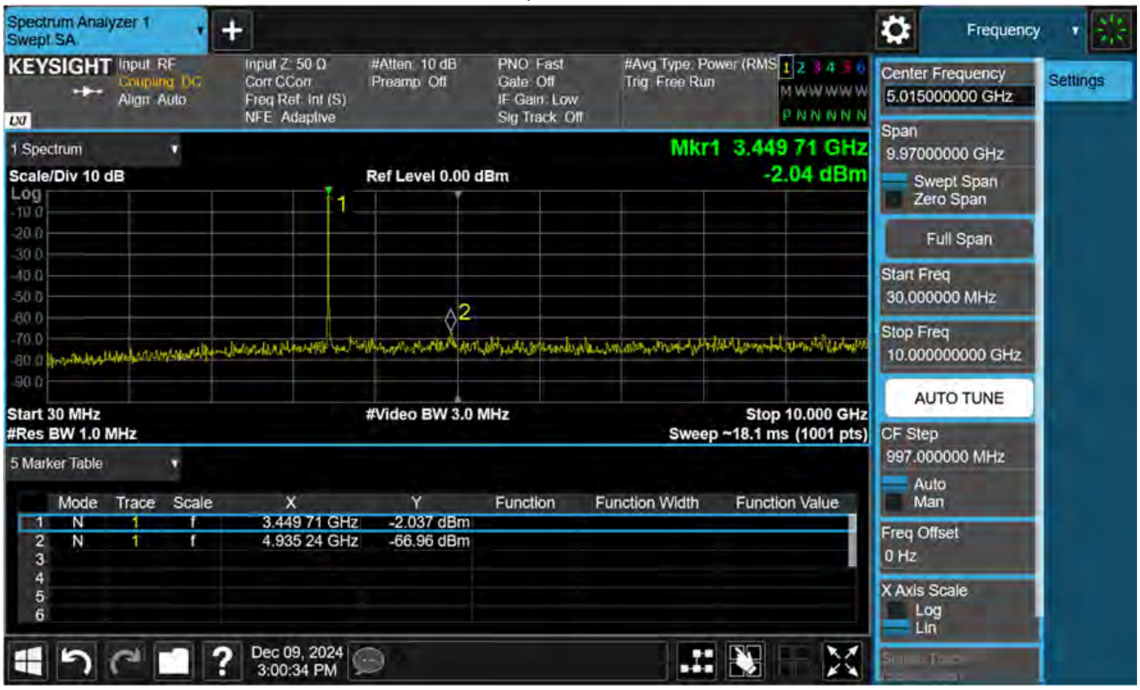

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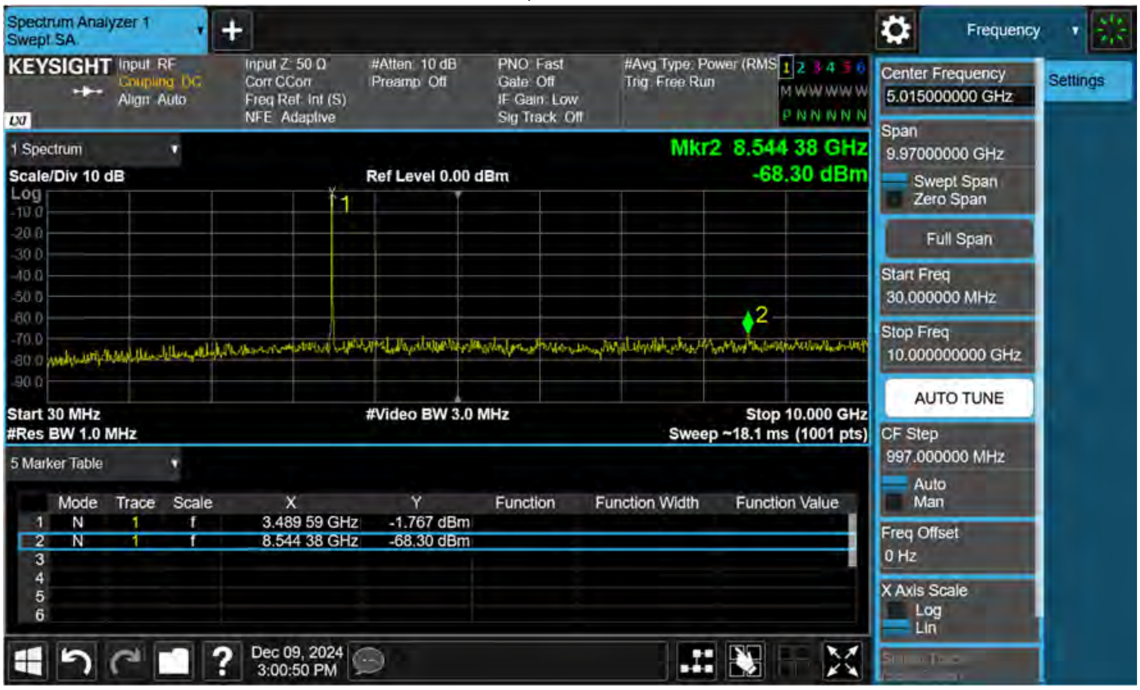

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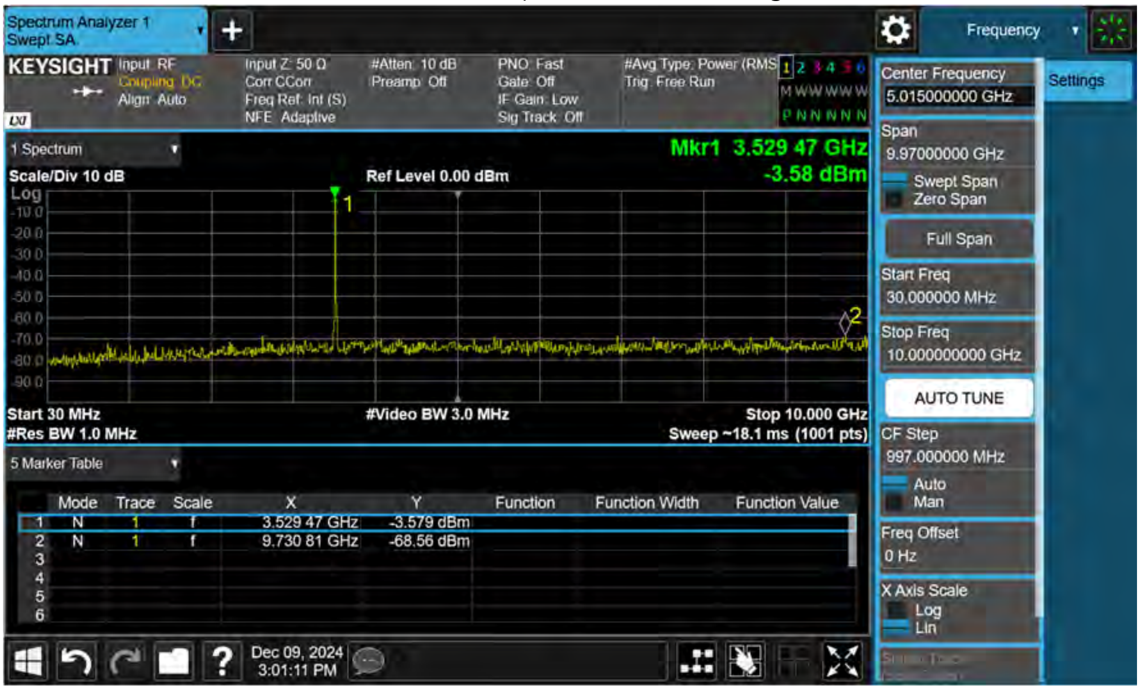
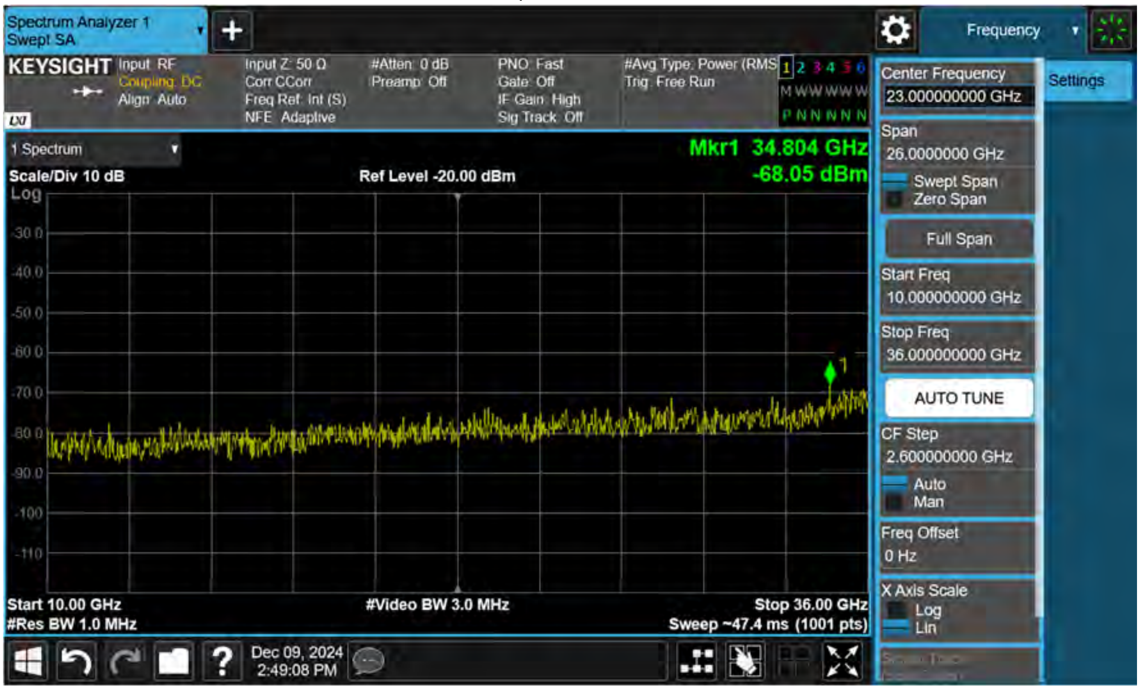


LTE B42_5 M_Conducted Spurious(Above10 G)_Low_QPSK_1RB



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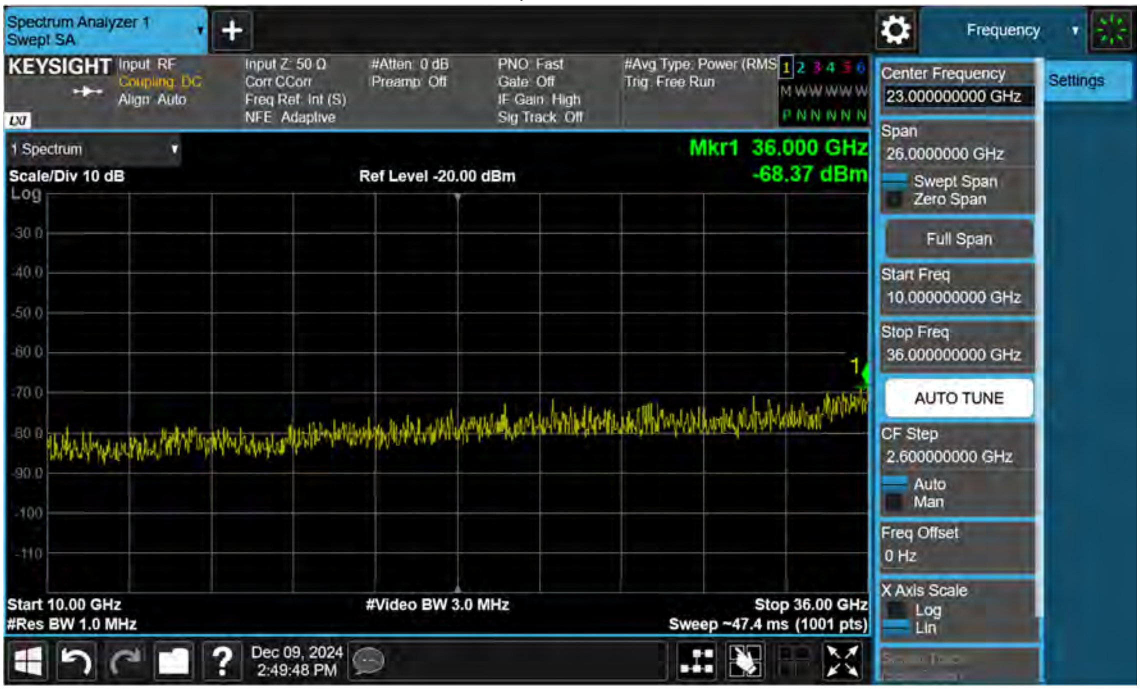

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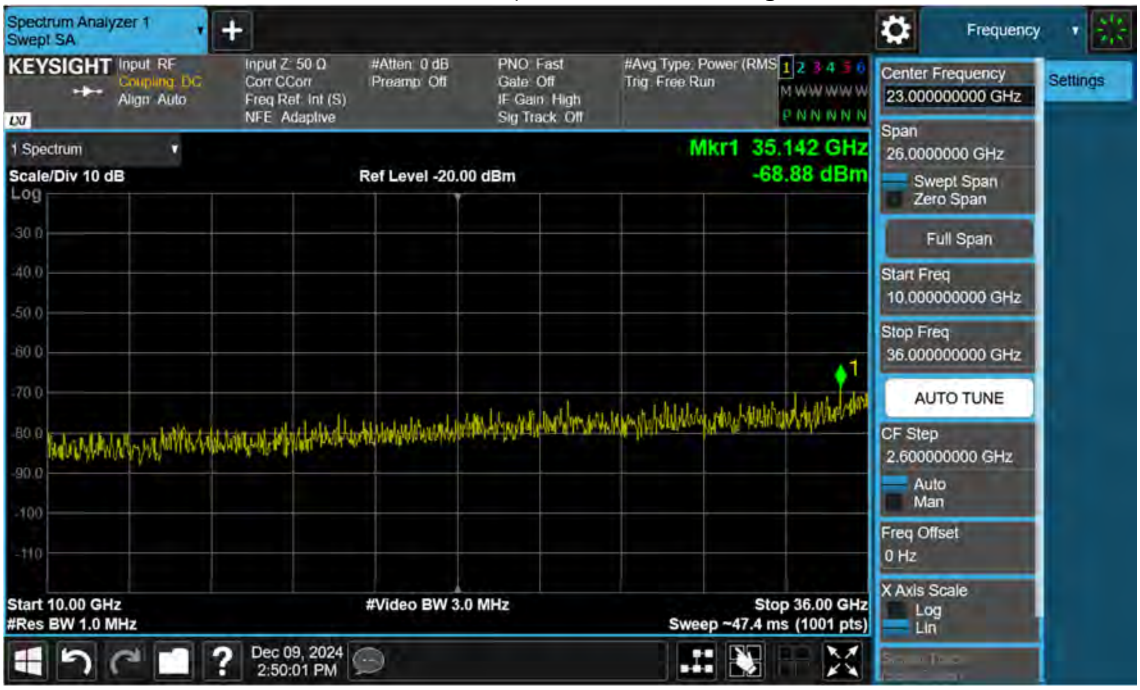

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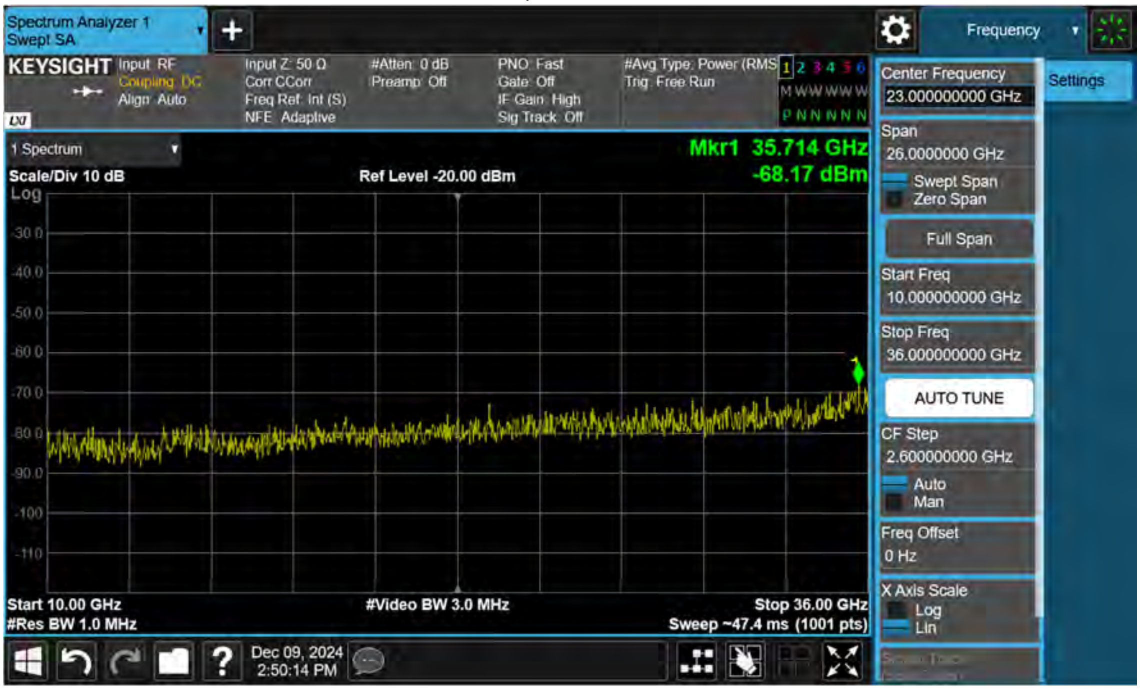

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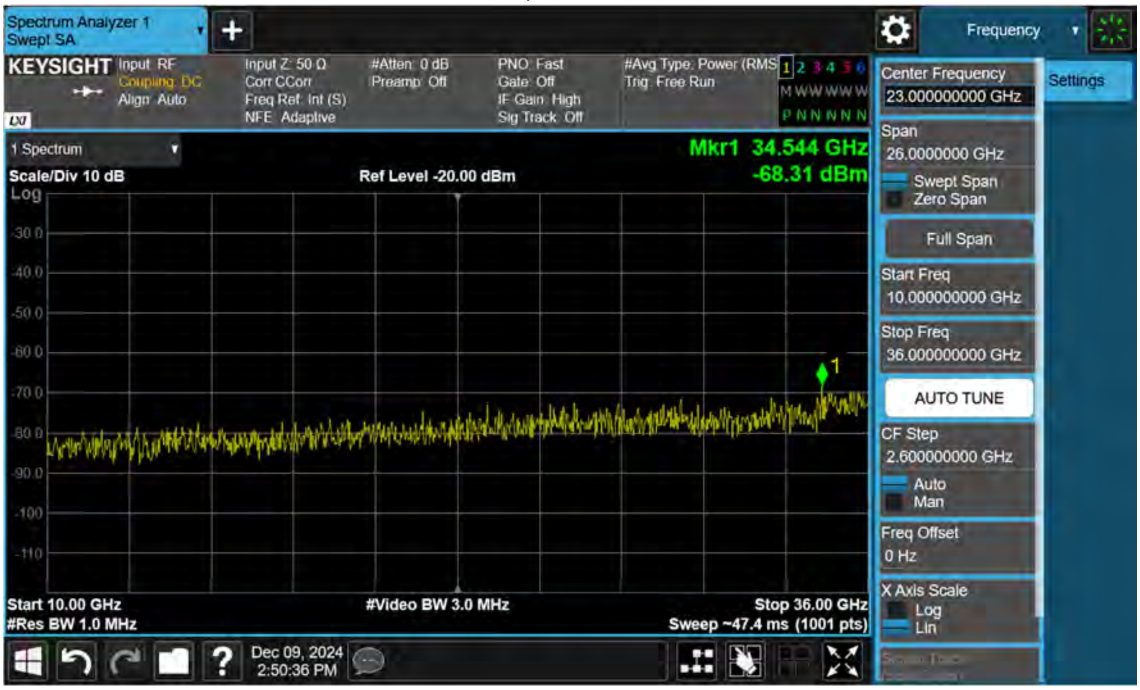

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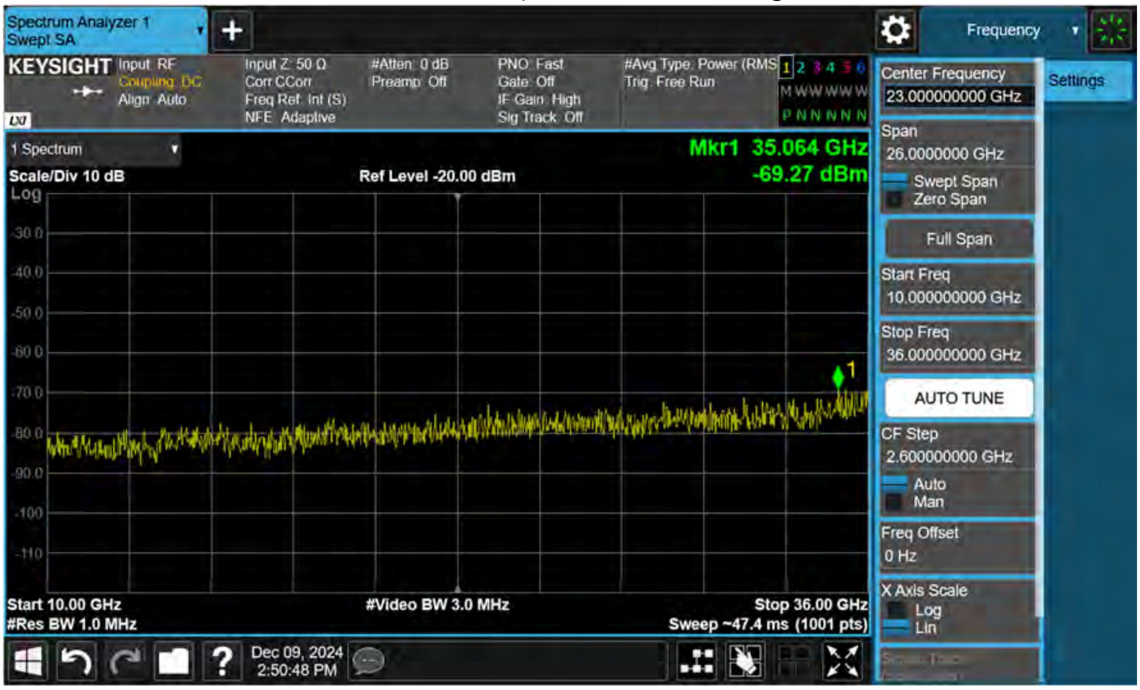

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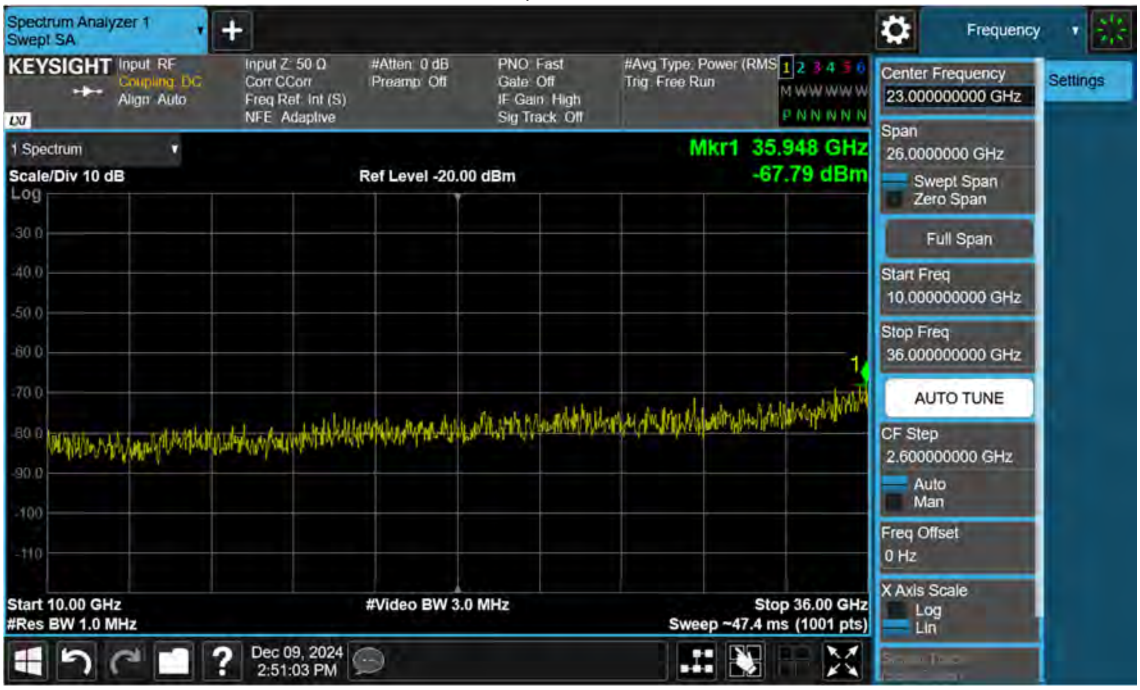

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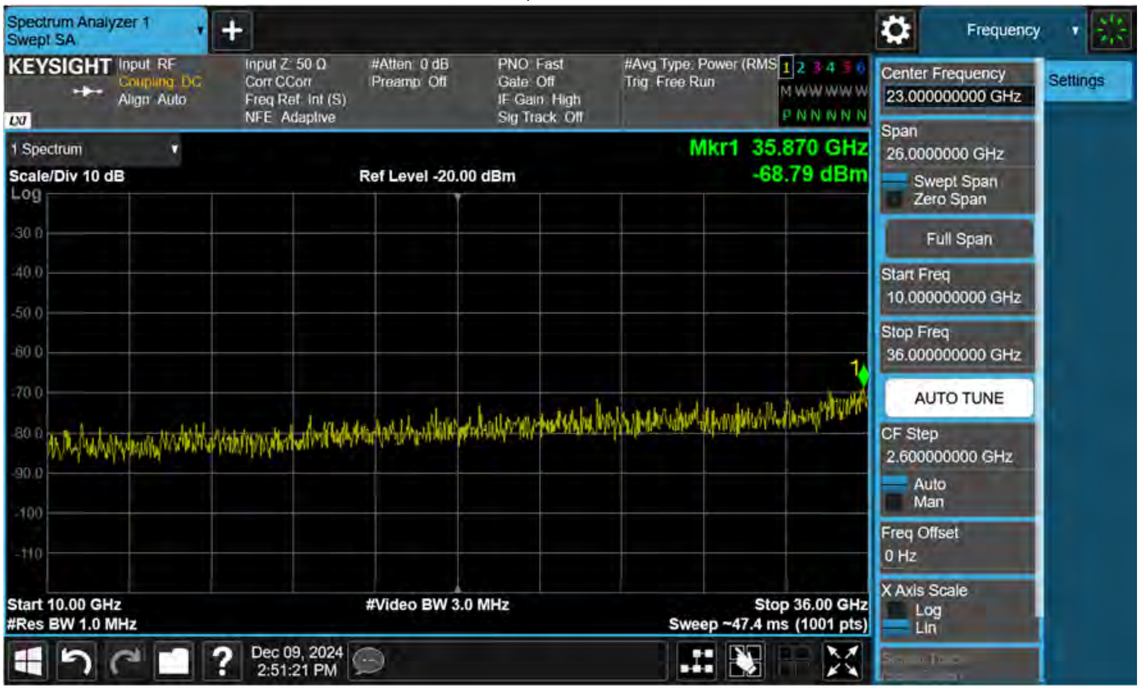

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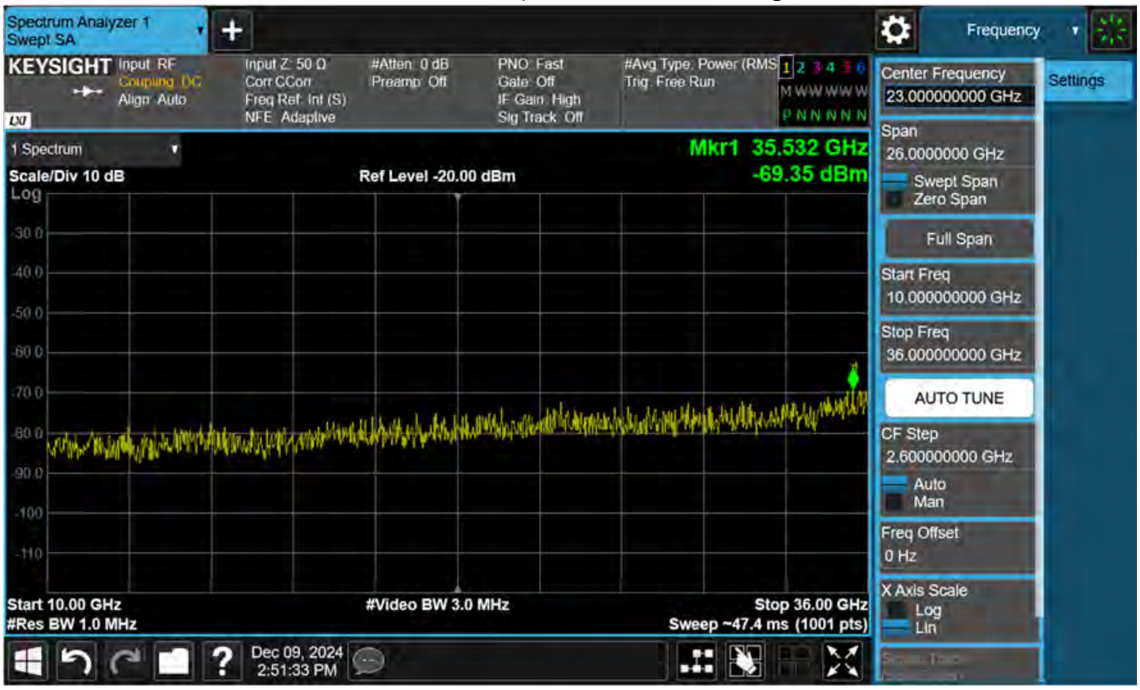

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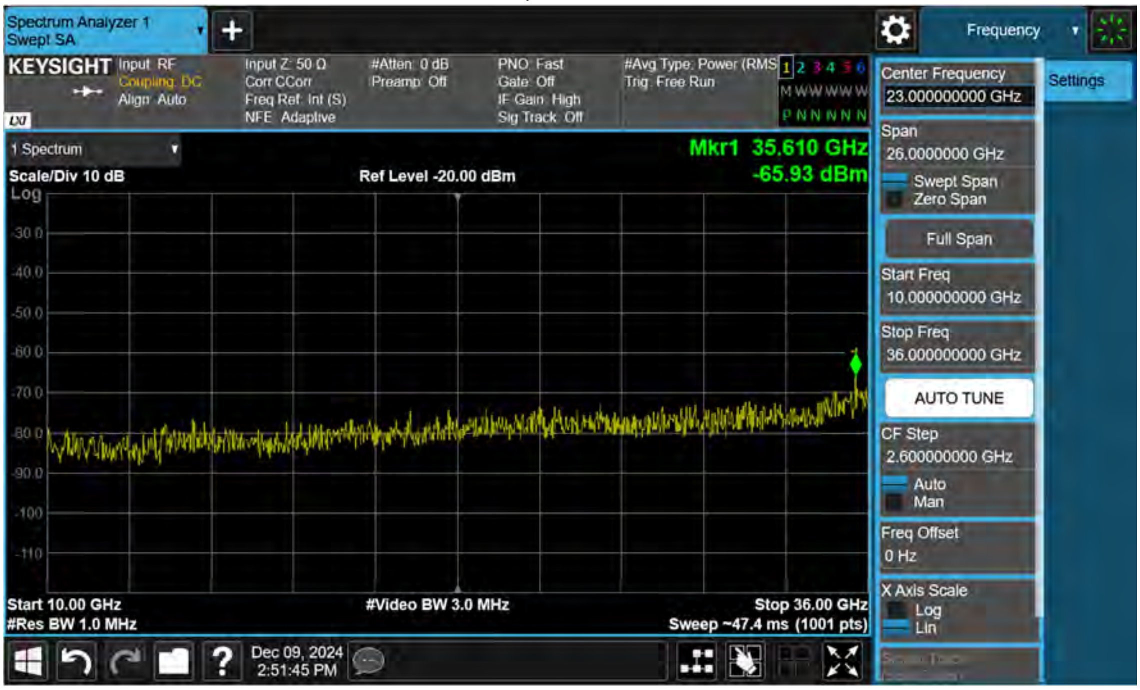

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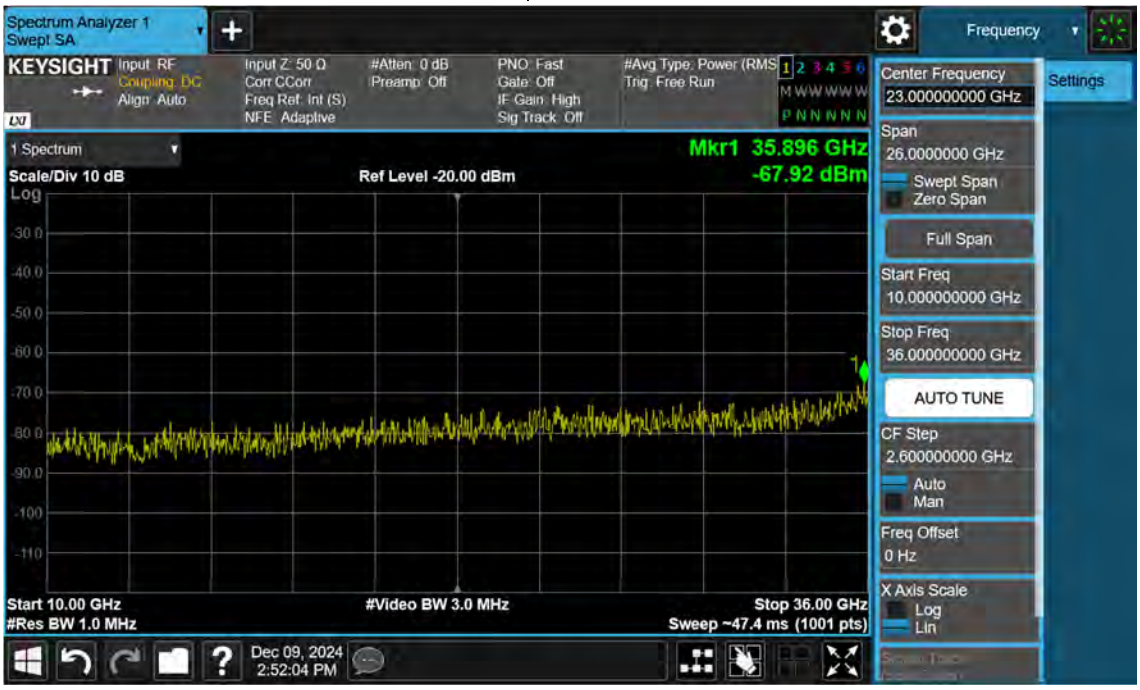

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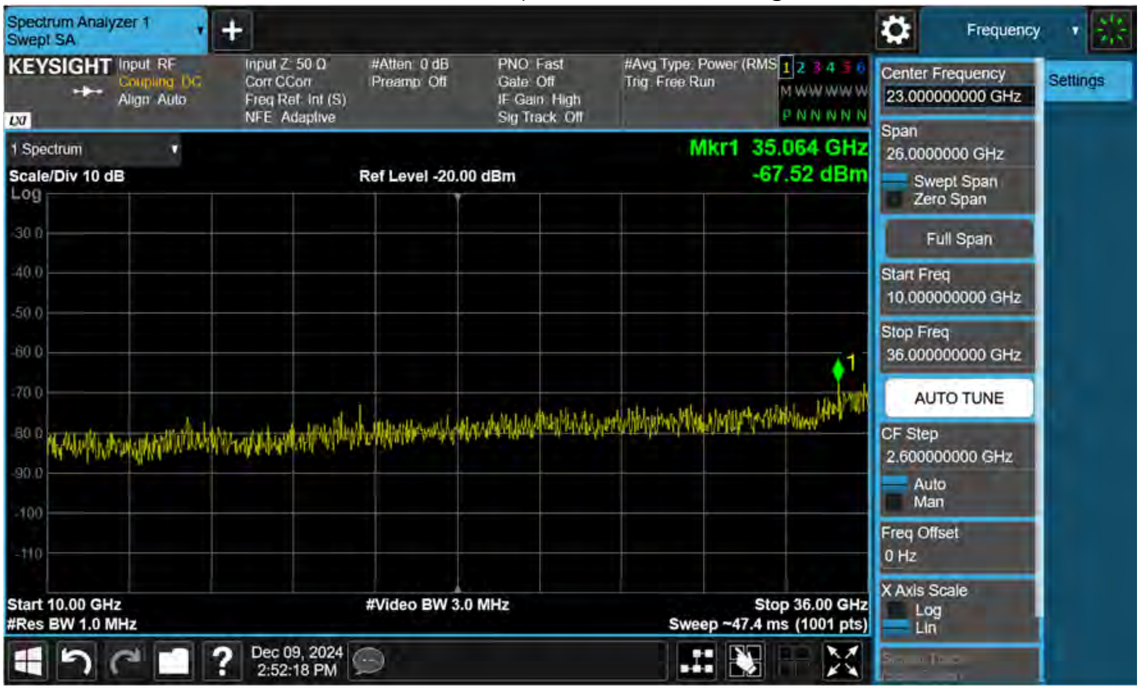
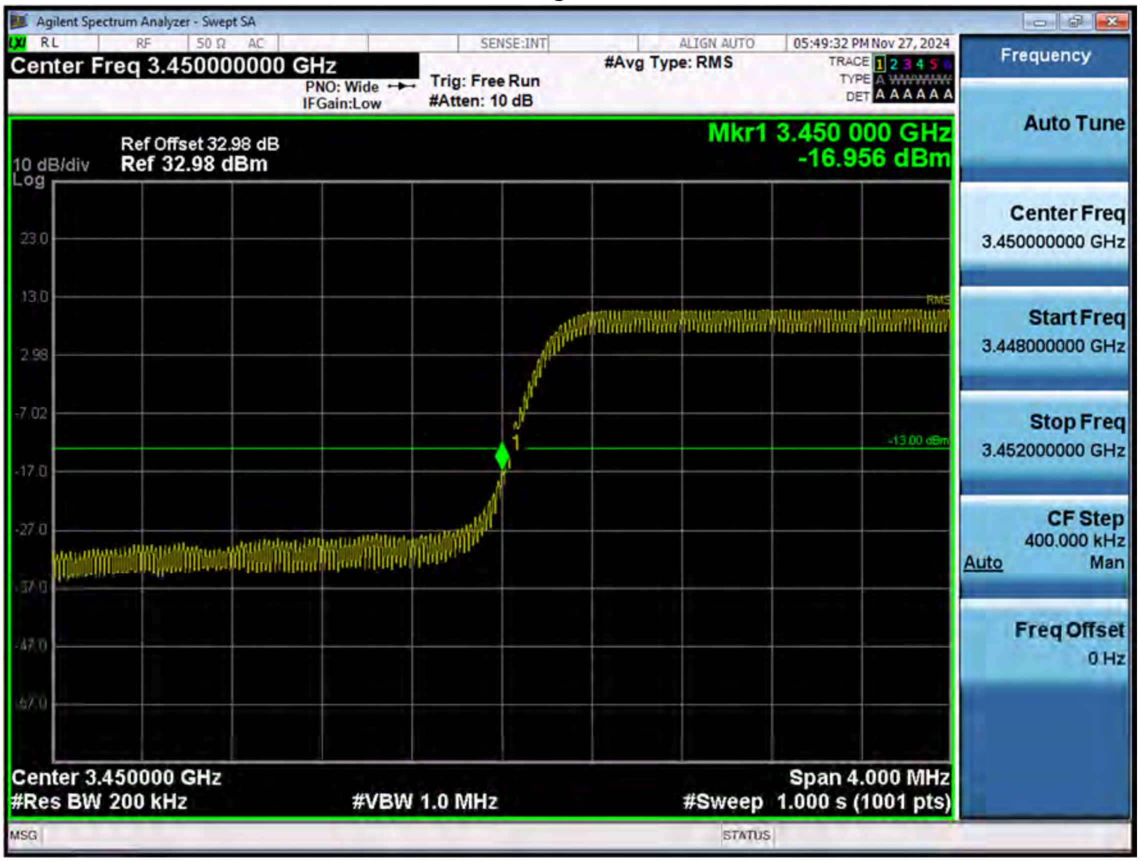


LTE B42_5 M_Band Edge_Low_QPSK_Full RB (1)



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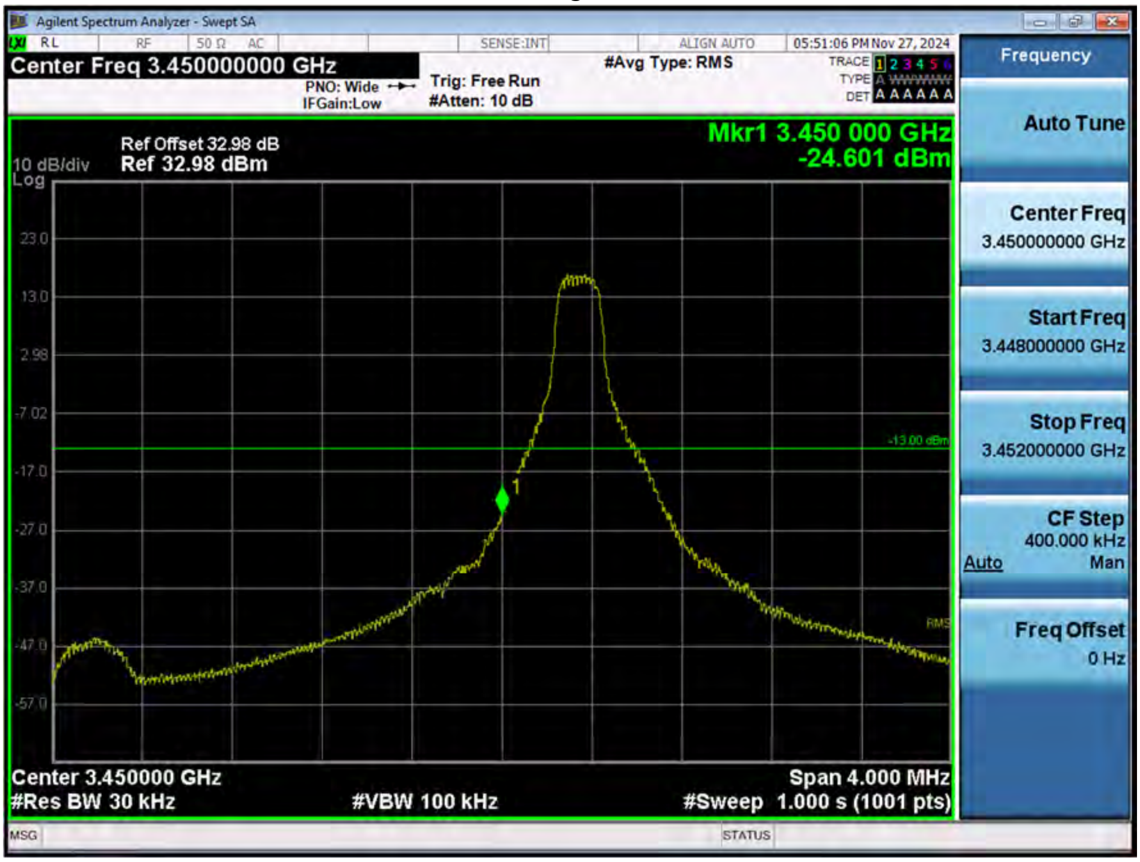


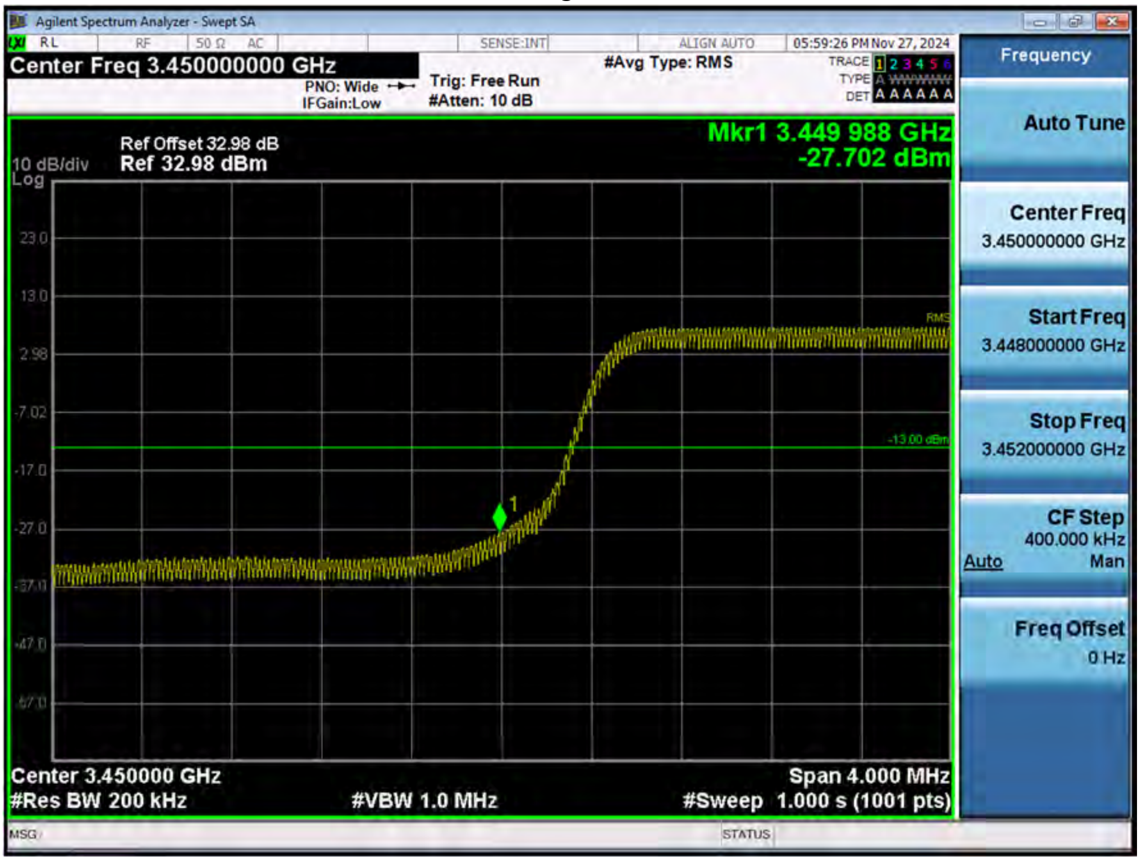
LTE B42_5 M_Band Edge_Low_QPSK_Full RB (2)

LTE B42_5 M_Band Edge_Low_QPSK_1RB (2)

LTE B42_5 M_Band Edge_Low_QPSK_Full RB (3)

LTE B42_5 M_Band Edge_Low_QPSK_1RB (3)

LTE B42_10 M_Band Edge_Low_QPSK_Full RB (1)



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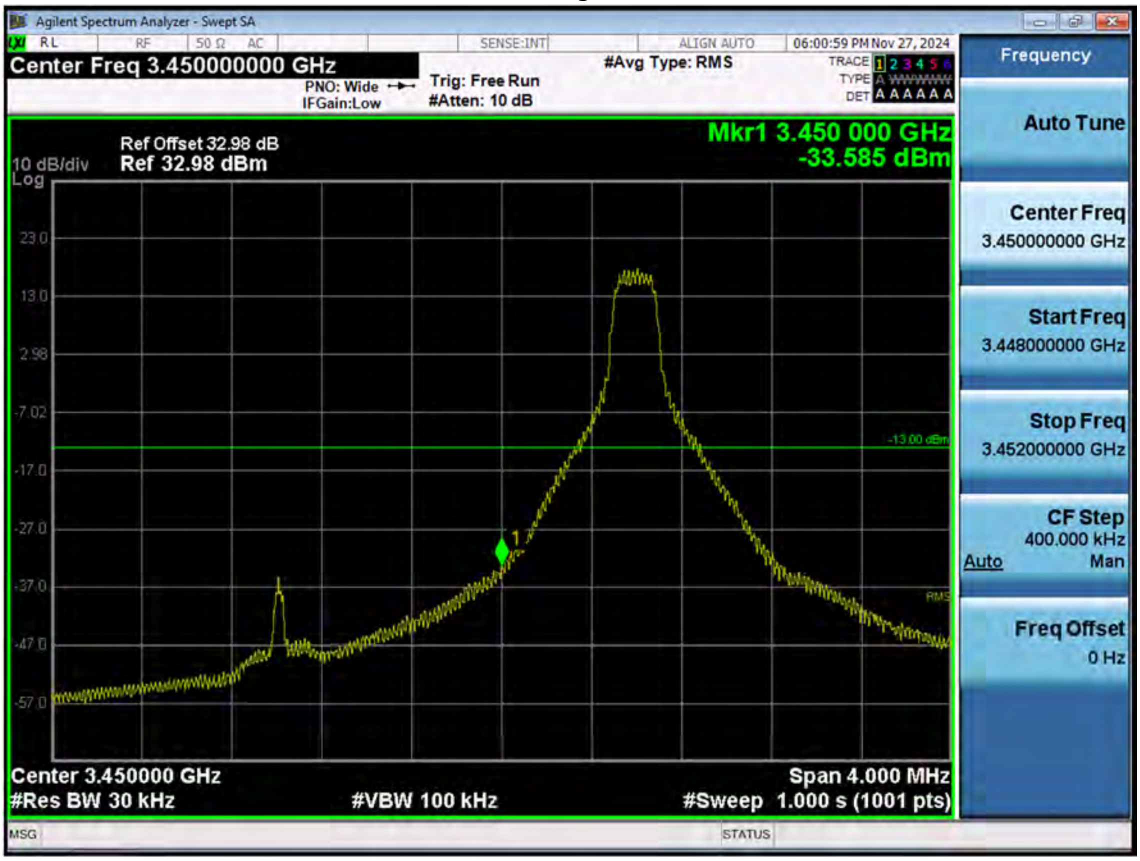

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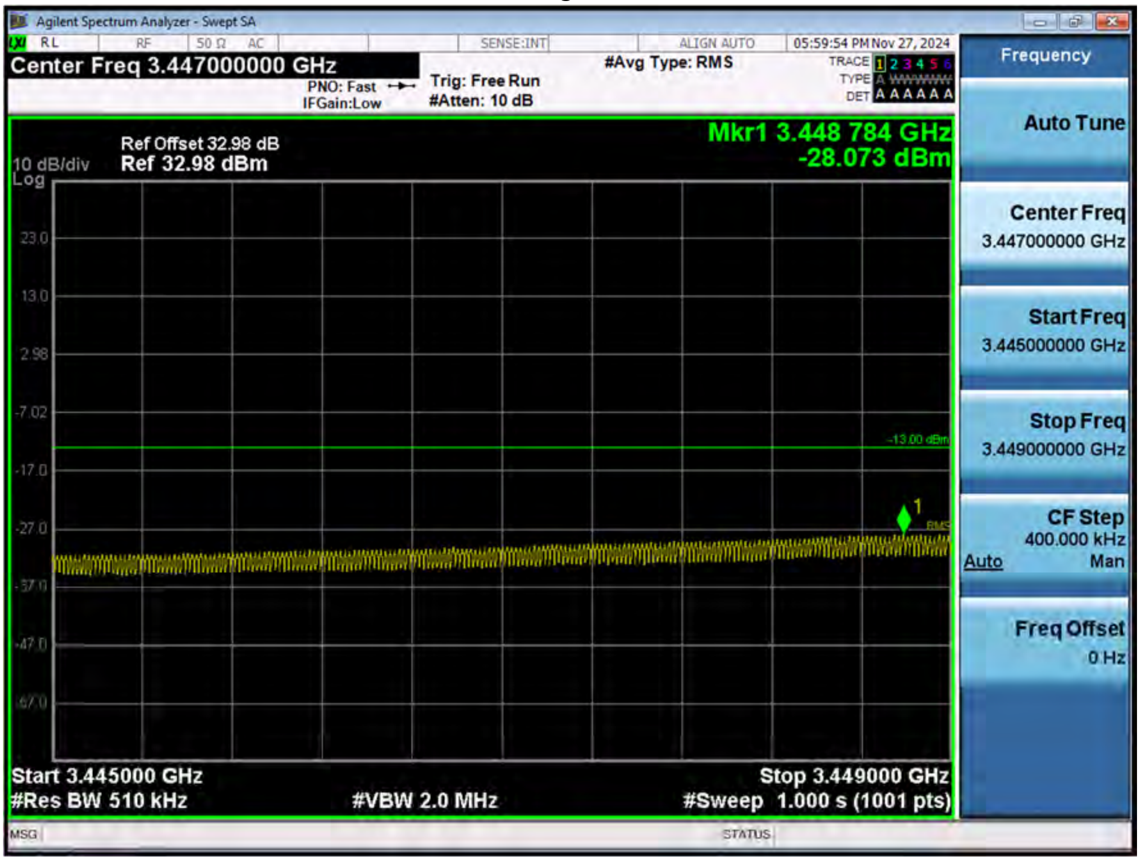

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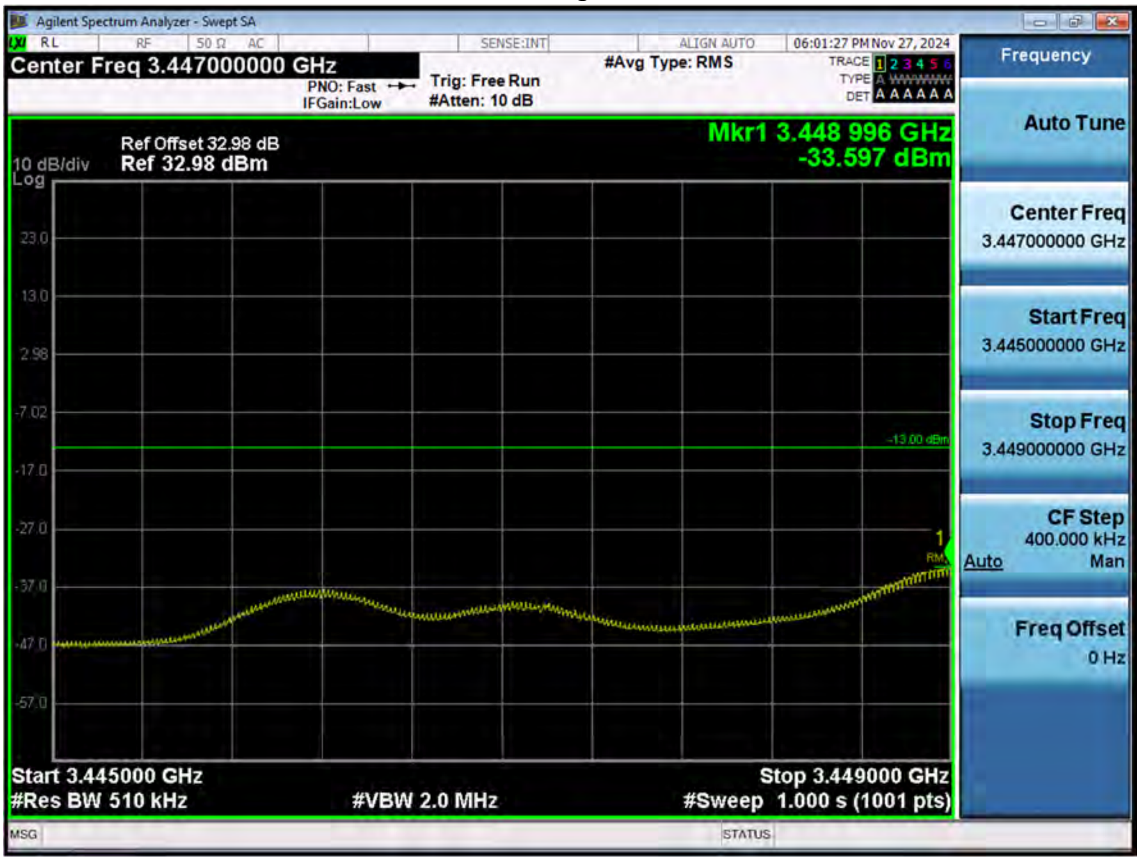
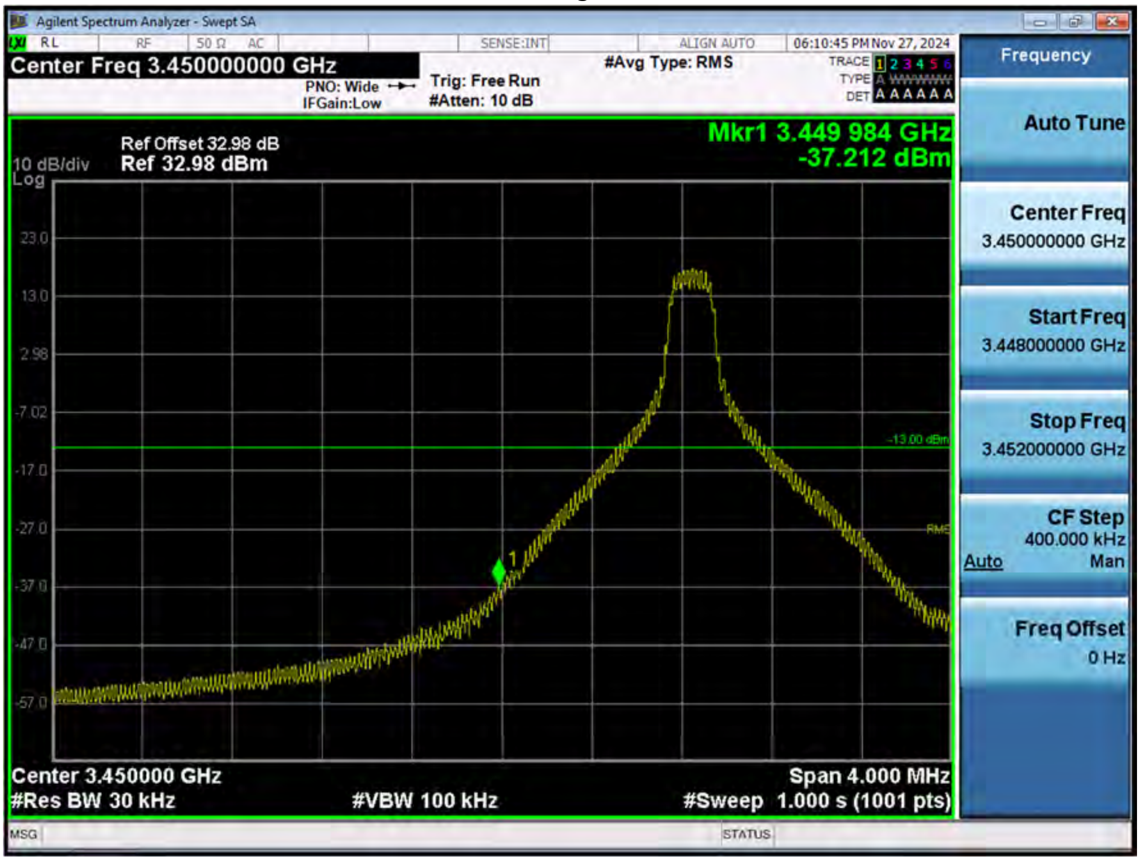


LTE B42_10 M_Band Edge_Low_QPSK_Full RB (3)

LTE B42_10 M_Band Edge_Low_QPSK_1RB (3)

LTE B42_15 M_Band Edge_Low_QPSK_Full RB (1)

LTE B42_15 M_Band Edge_Low_QPSK_1RB (1)



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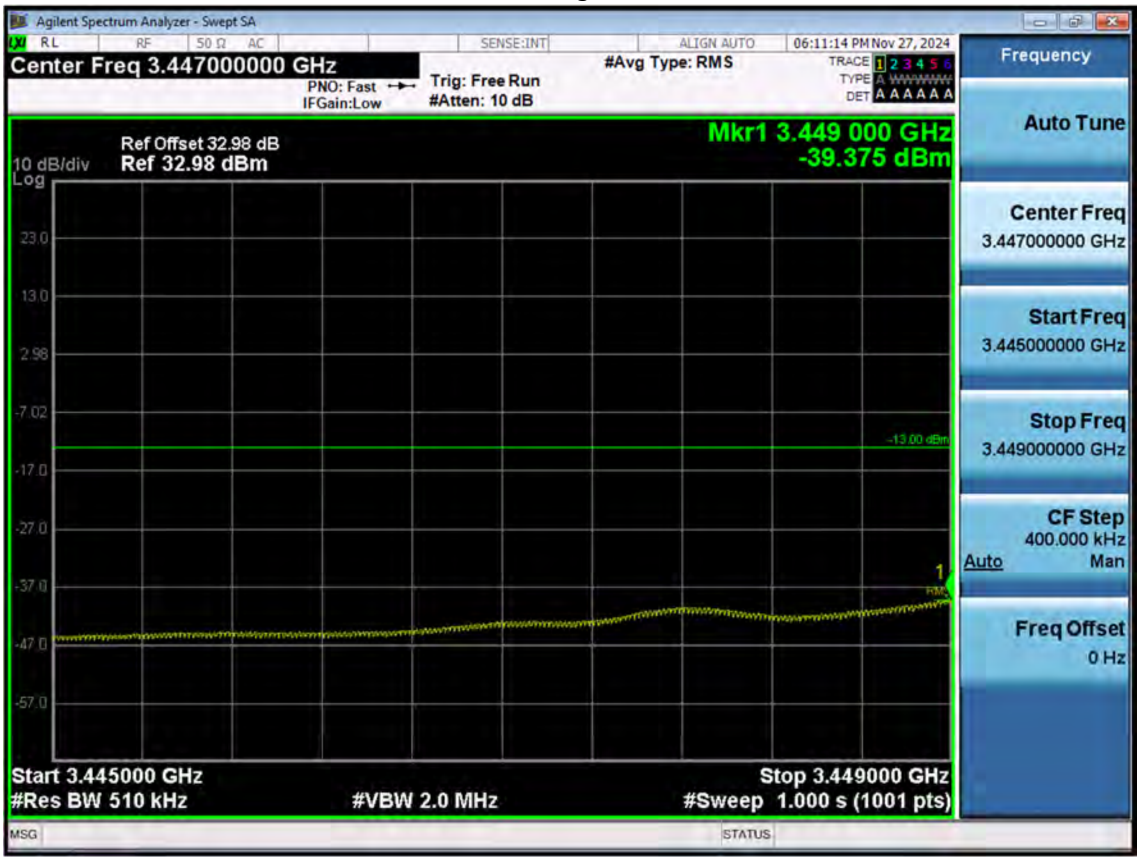

LTE B42_15 M_Band Edge_Low_QPSK_Full RB (3)

LTE B42_15 M_Band Edge_Low_QPSK_1RB (3)

LTE B42_20 M_Band Edge_Low_QPSK_Full RB (1)

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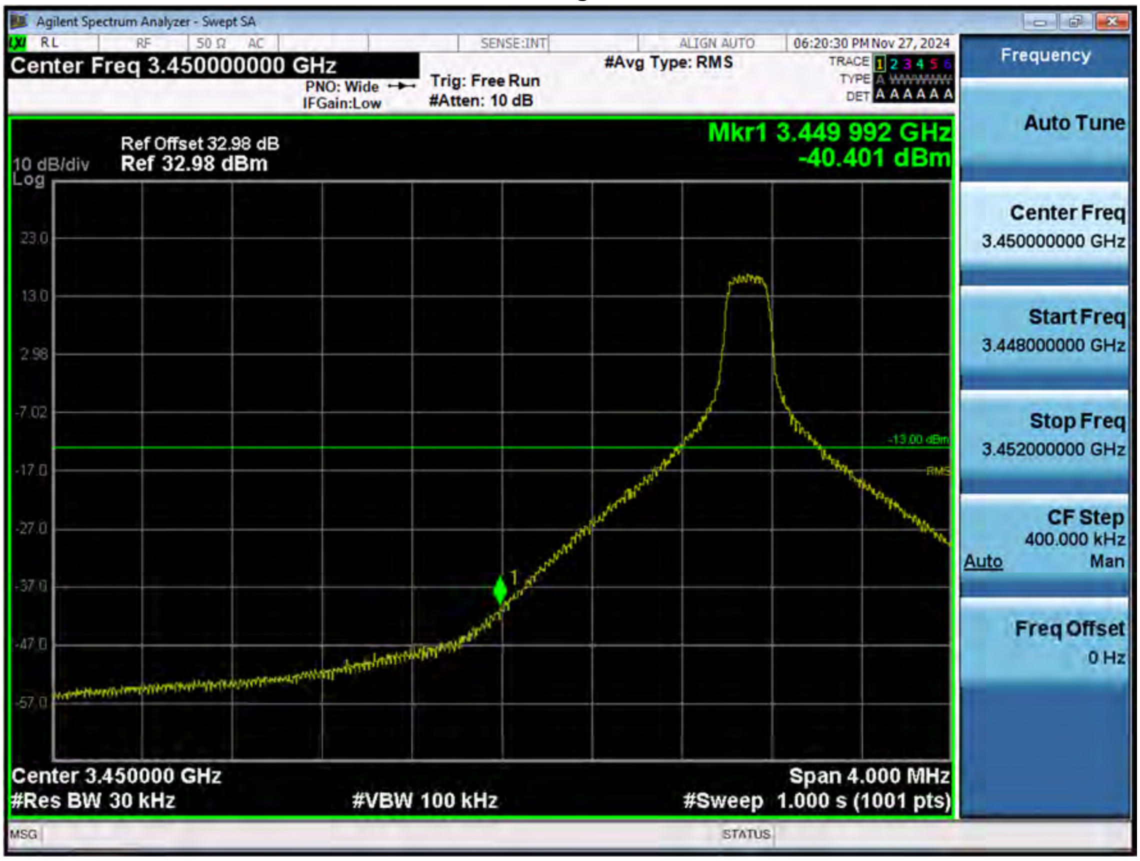

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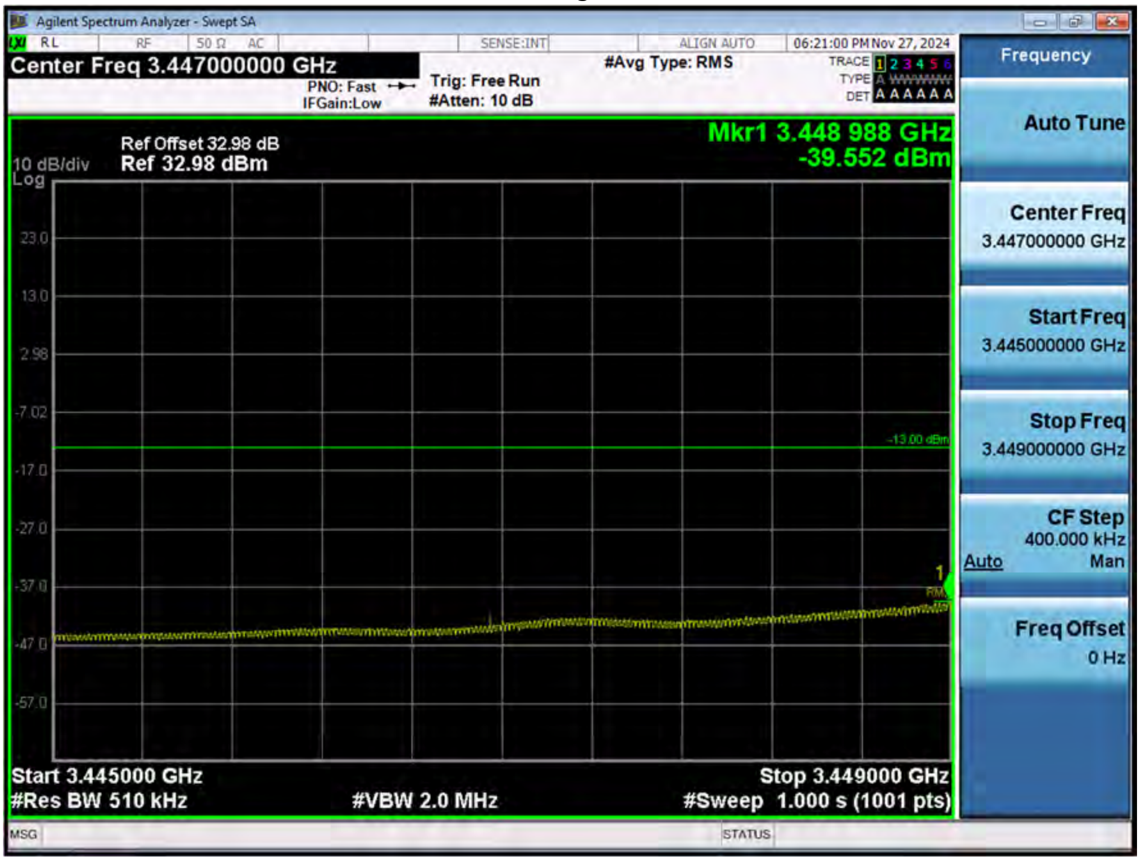
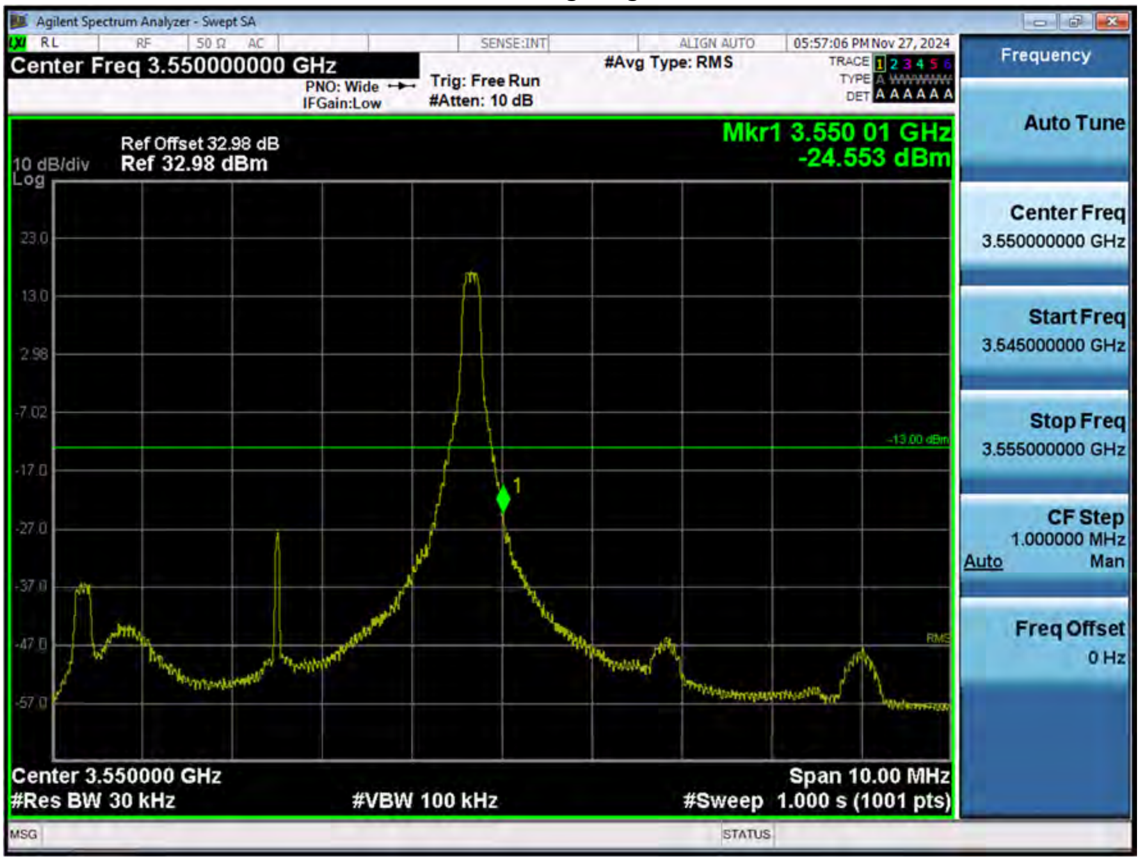


LTE B42_20 M_Band Edge_Low_QPSK_Full RB (3)

LTE B42_20 M_Band Edge_Low_QPSK_1RB (3)

LTE B42_5 M_Band Edge_High_QPSK_Full RB (1)

LTE B42_5 M_Band Edge_High_QPSK_1RB (1)



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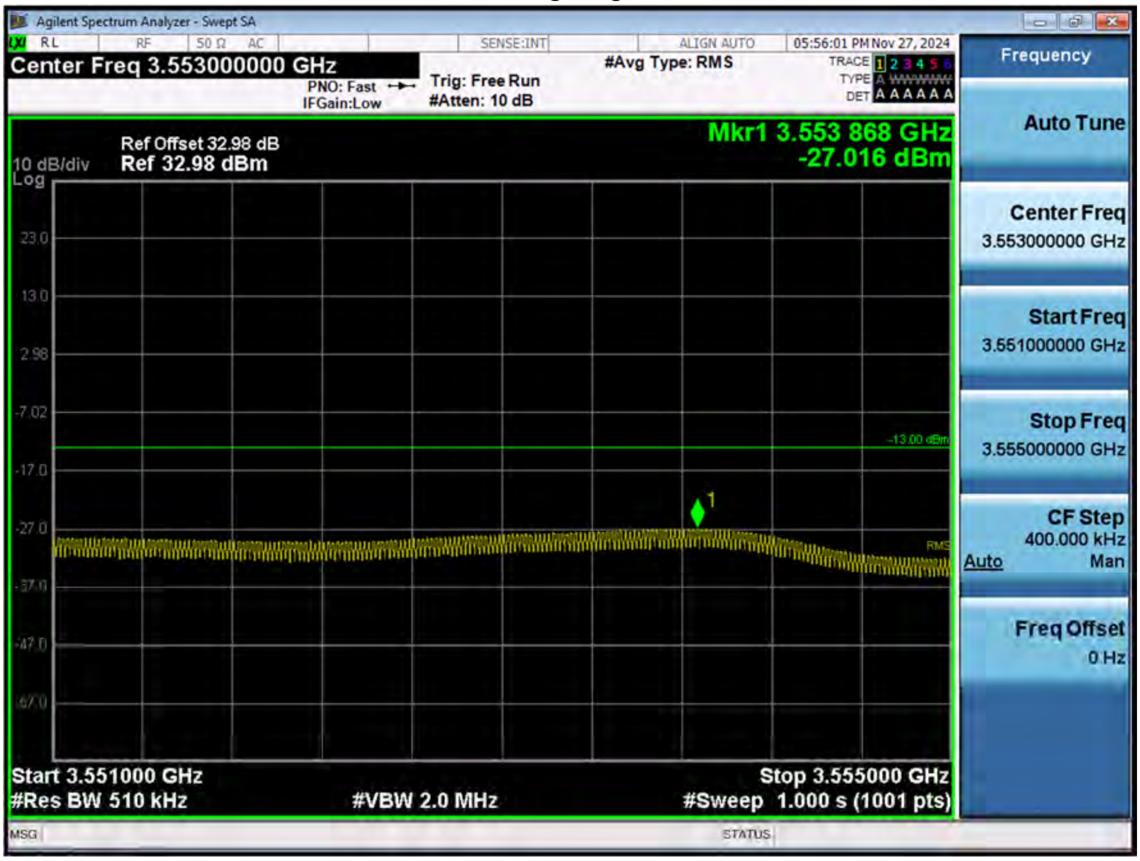

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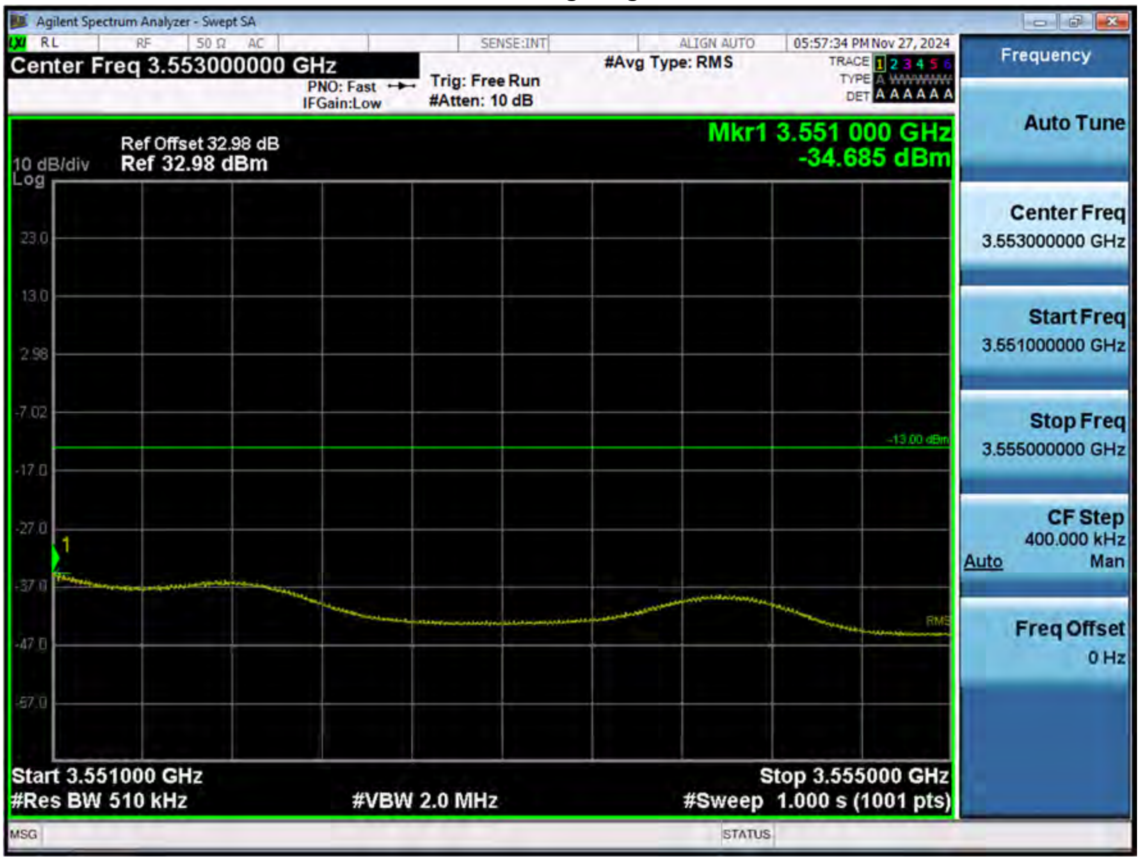

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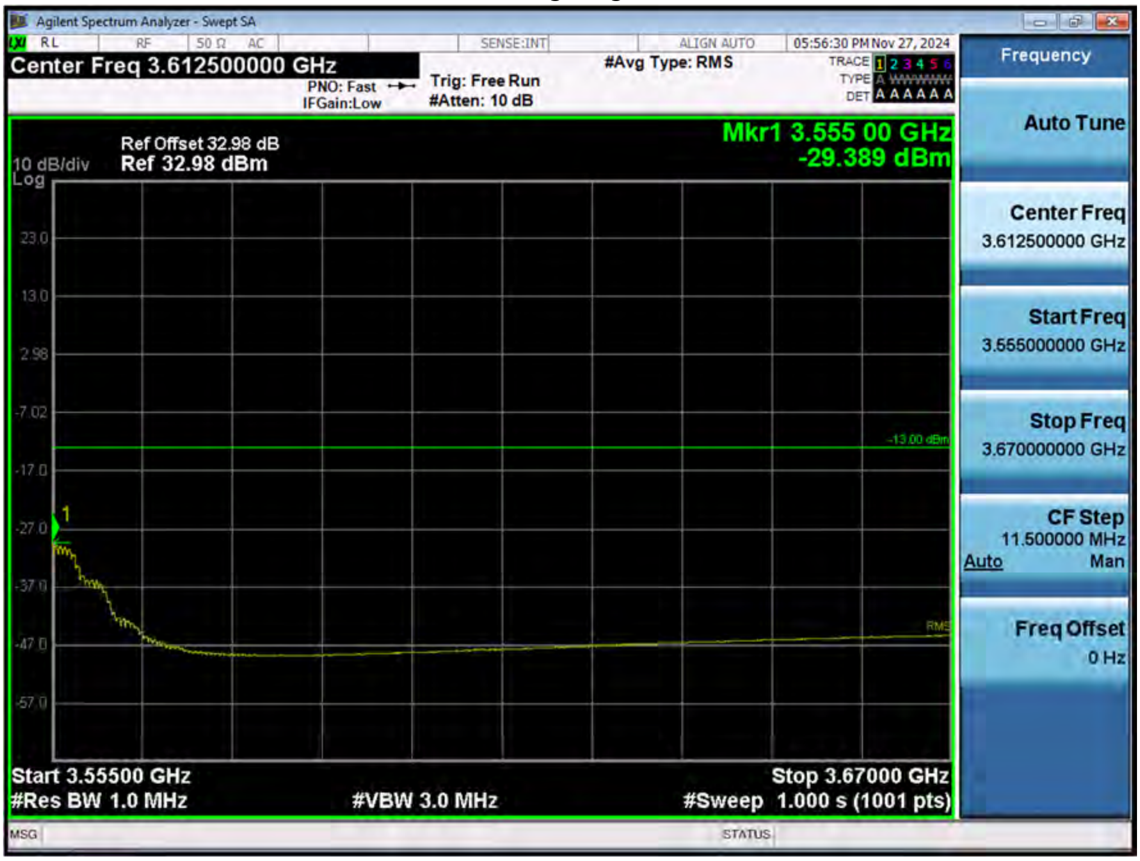

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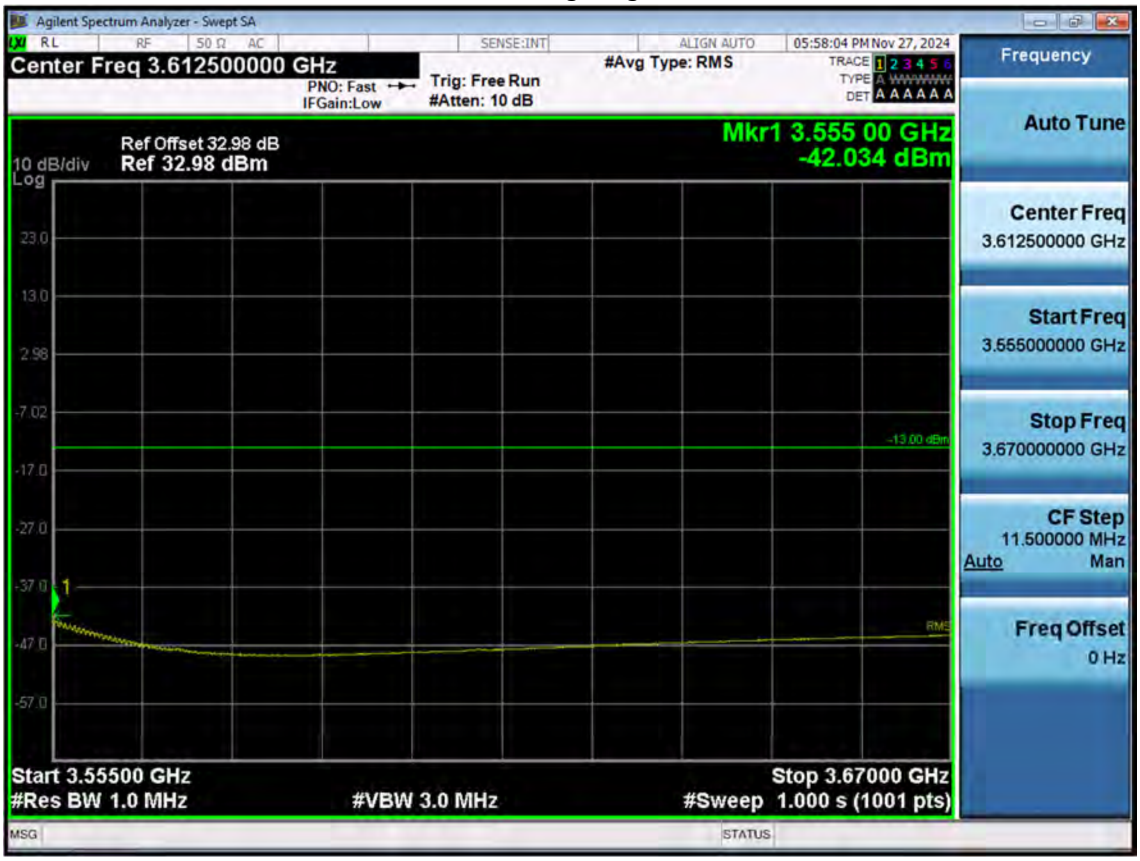
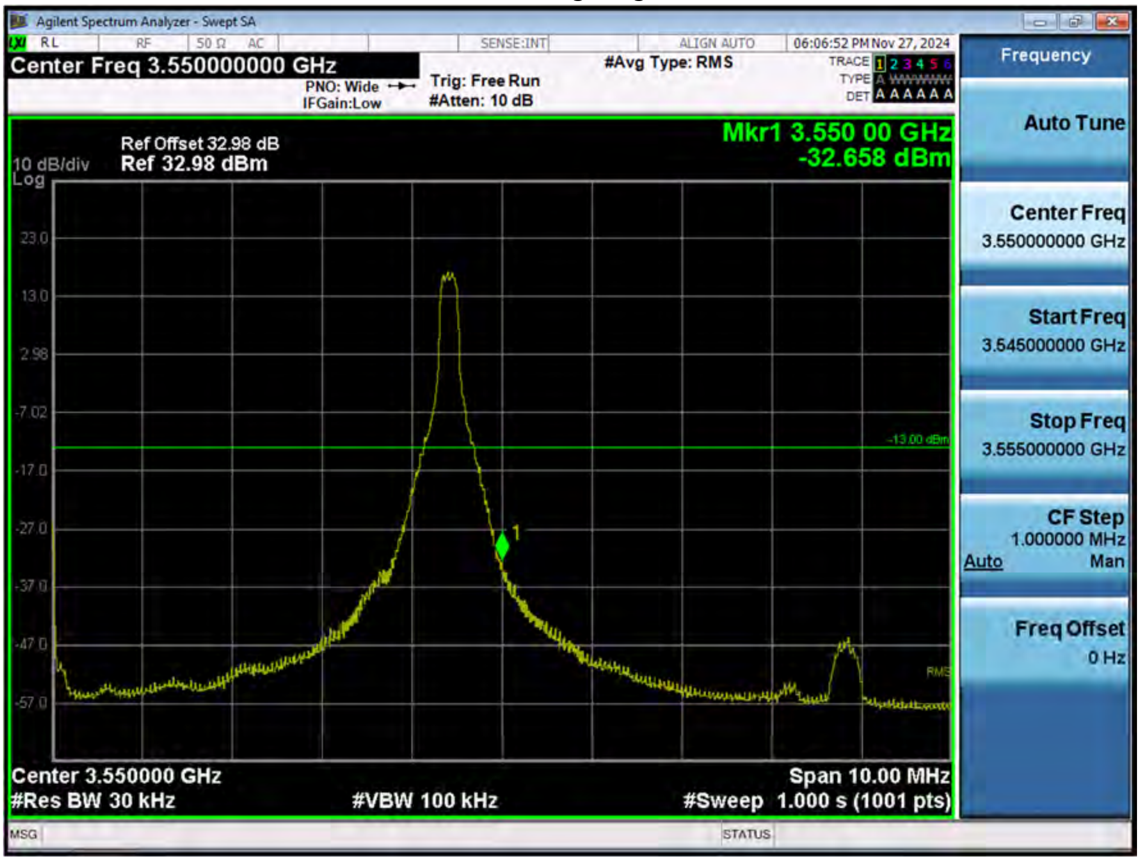


LTE B42_10 M_Band Edge_High_QPSK_Full RB (1)

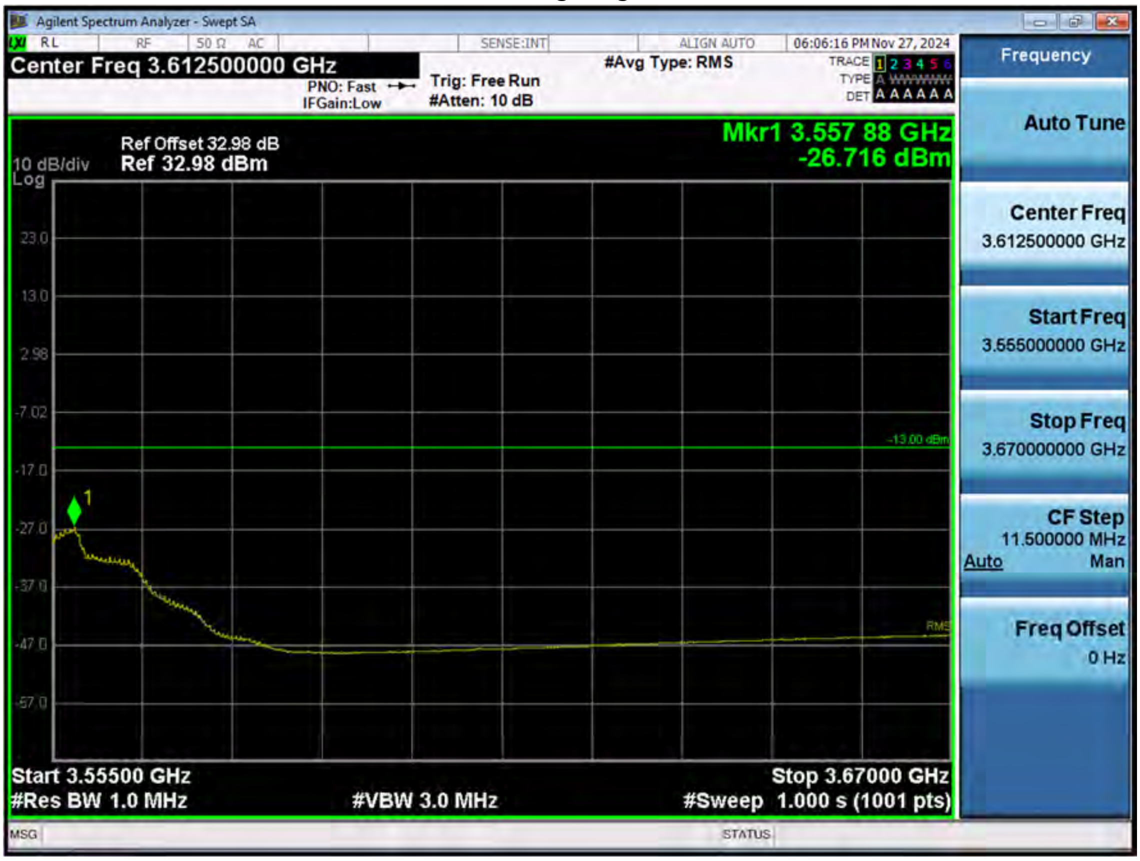
LTE B42_10 M_Band Edge_High_QPSK_1RB (1)



LTE B42_10 M_Band Edge_High_QPSK_Full RB (2)

LTE B42_10 M_Band Edge_High_QPSK_1RB (2)

LTE B42_10 M_Band Edge_High_QPSK_Full RB (3)



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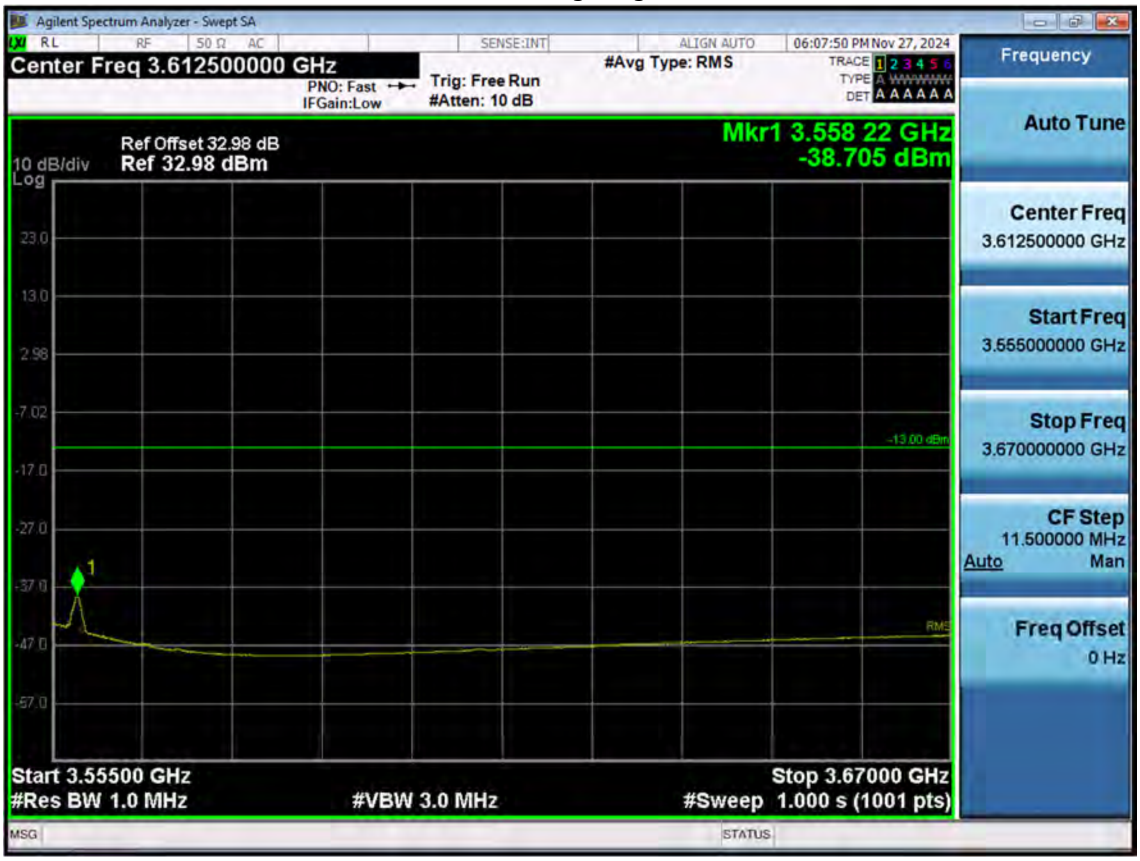

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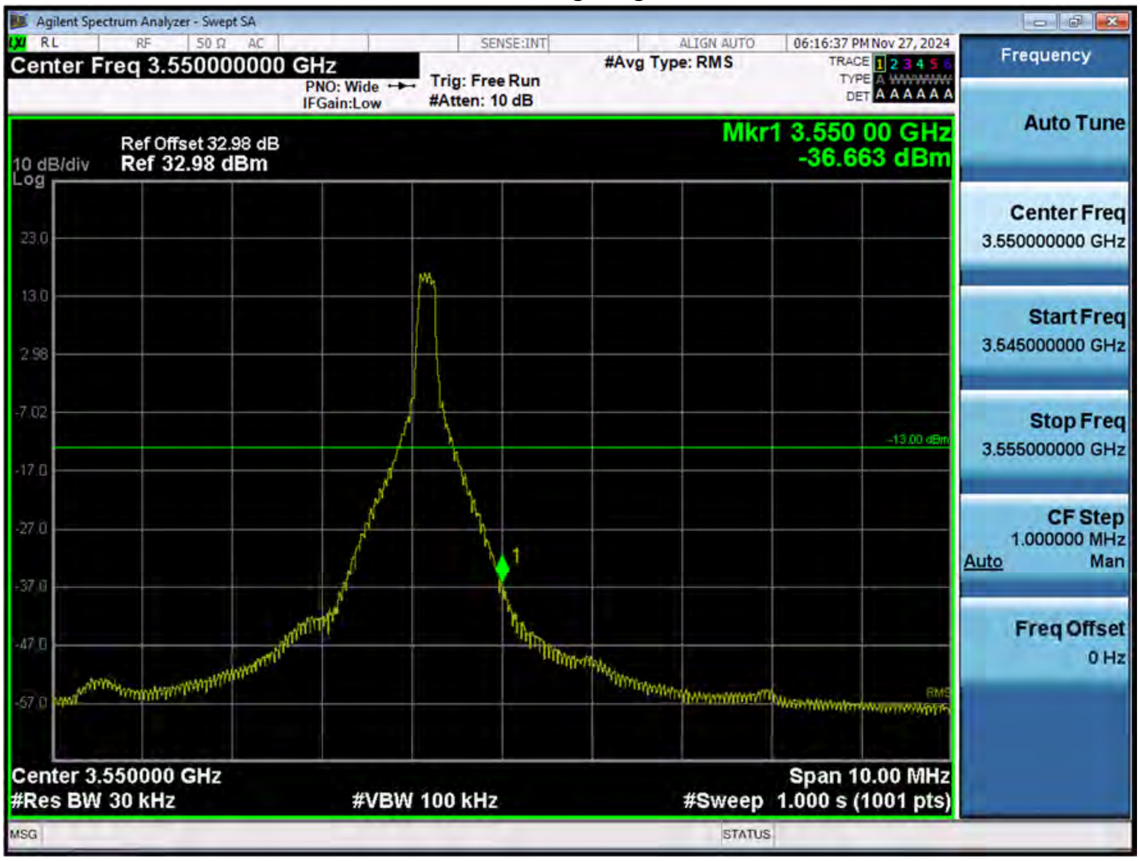

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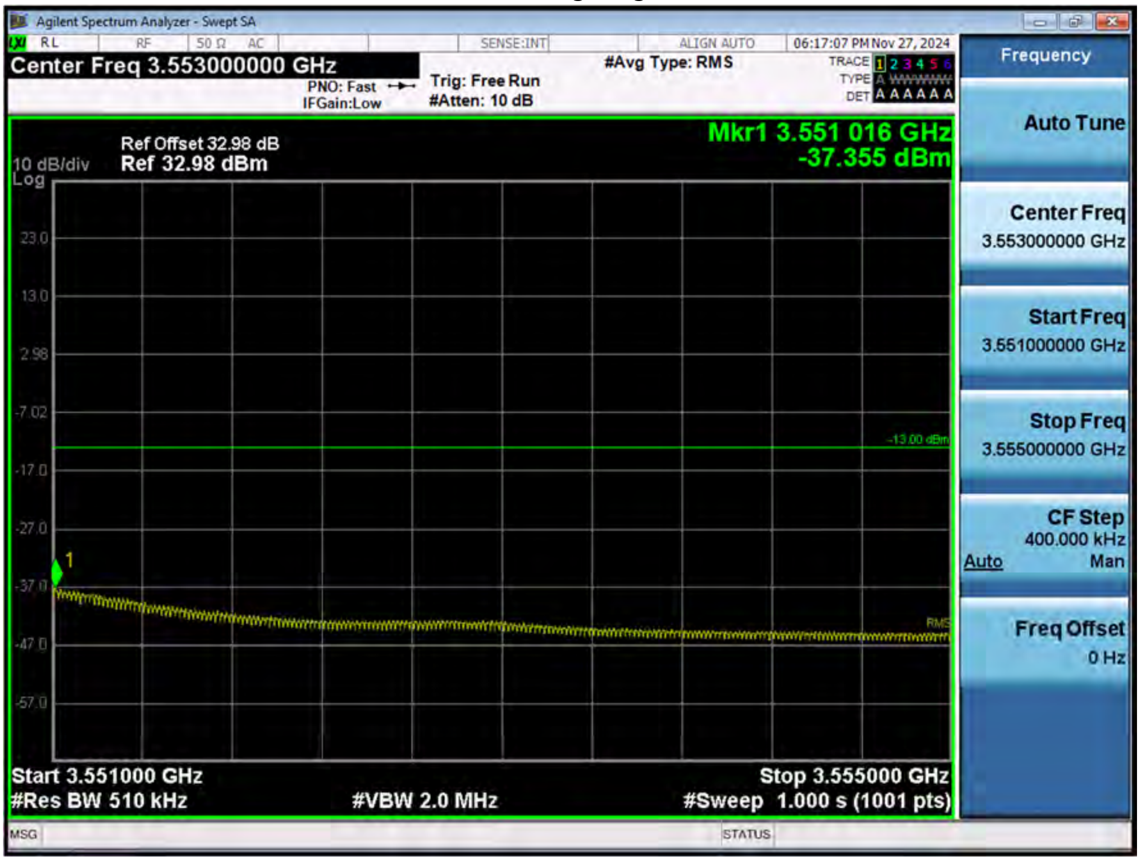
LTE B42_15 M_Band Edge_High_QPSK_1RB (2)



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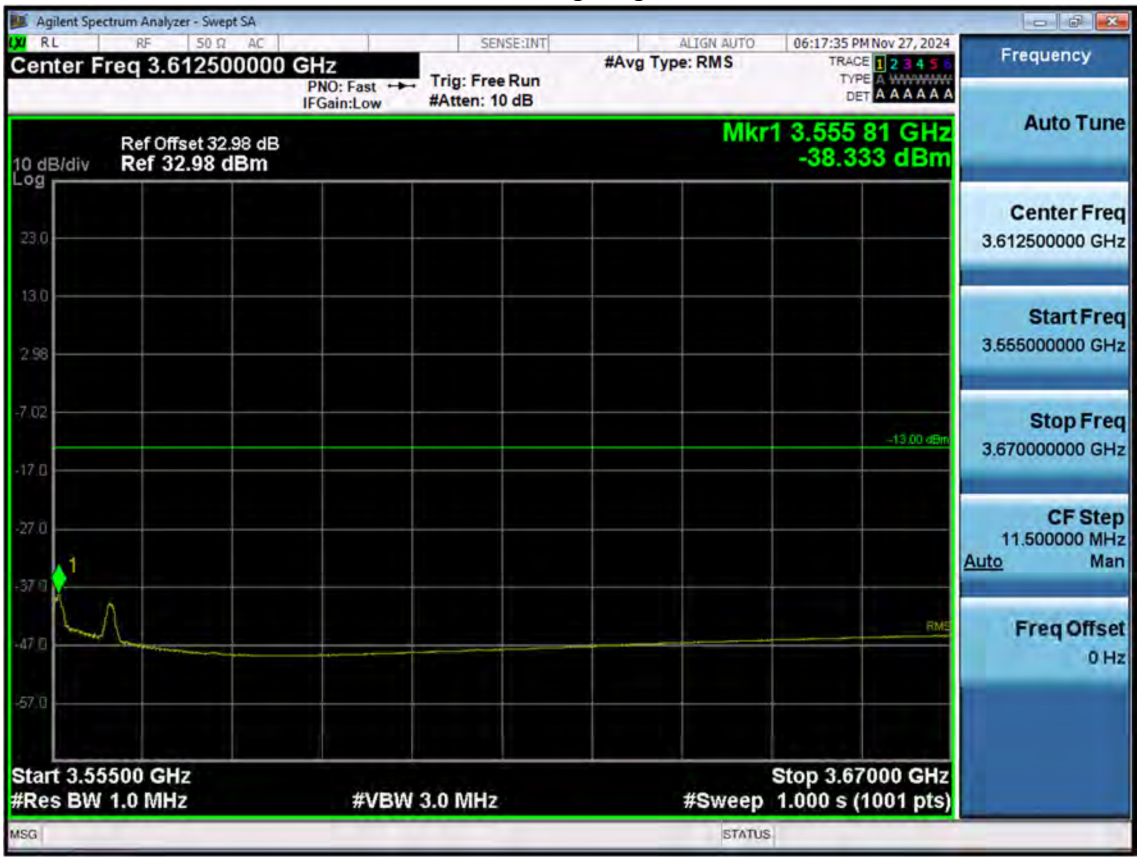

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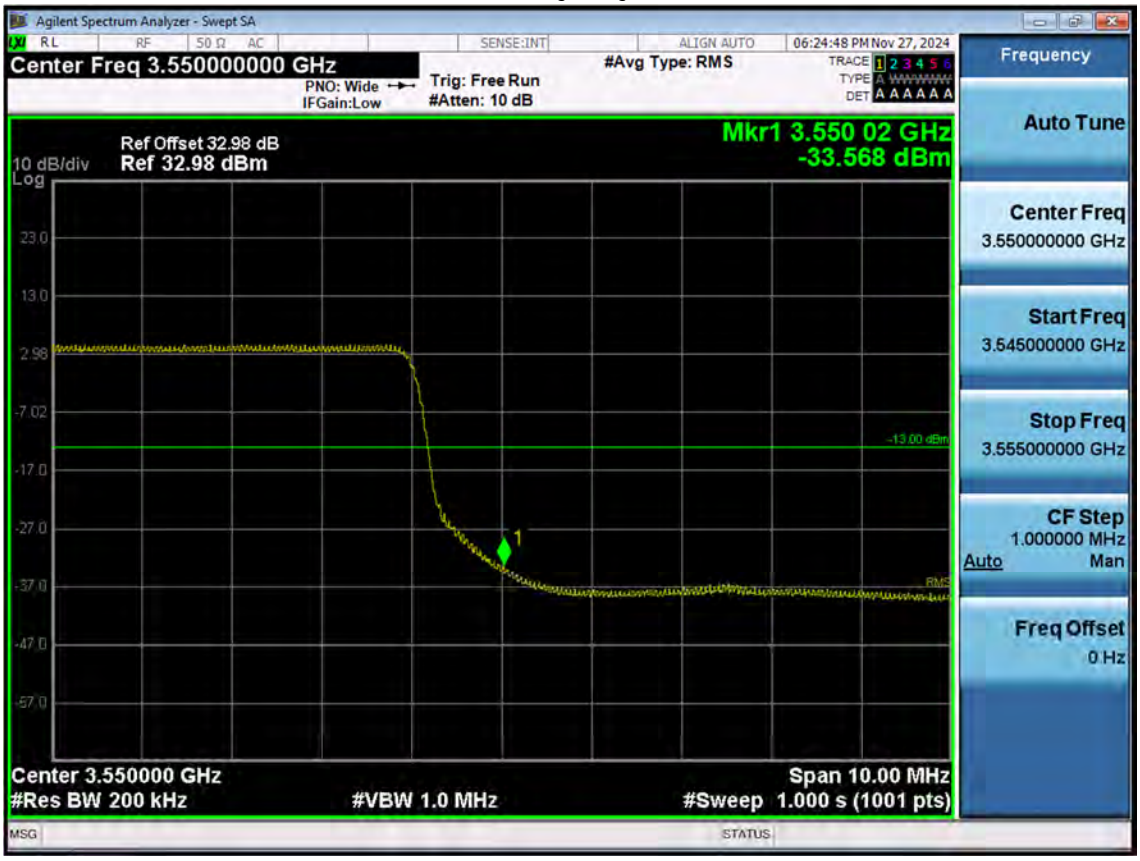

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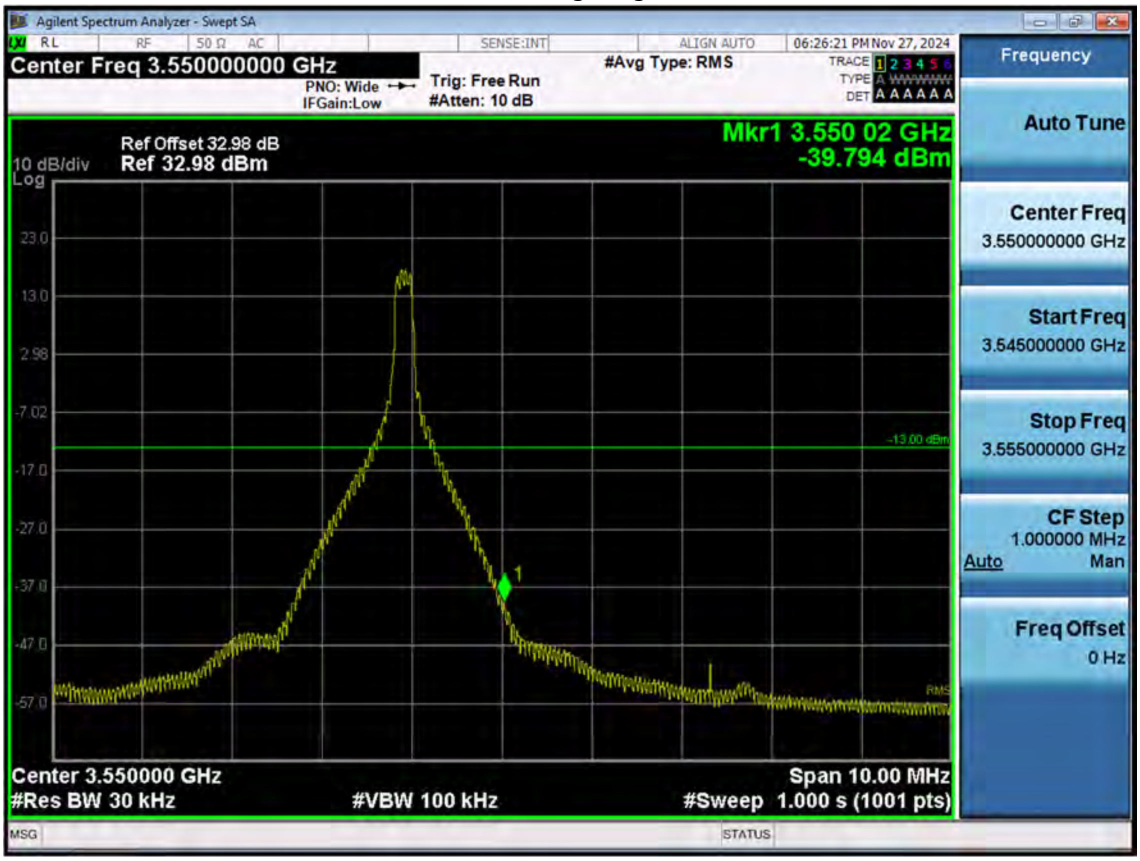

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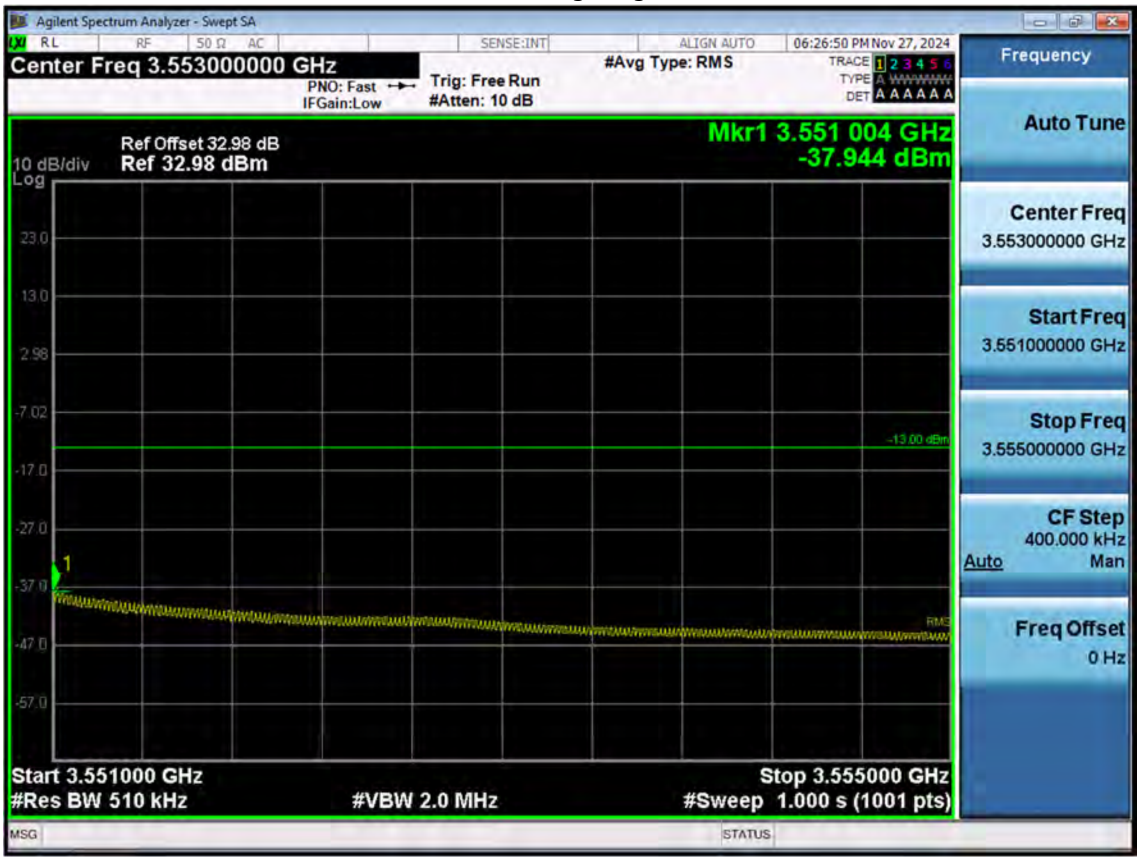
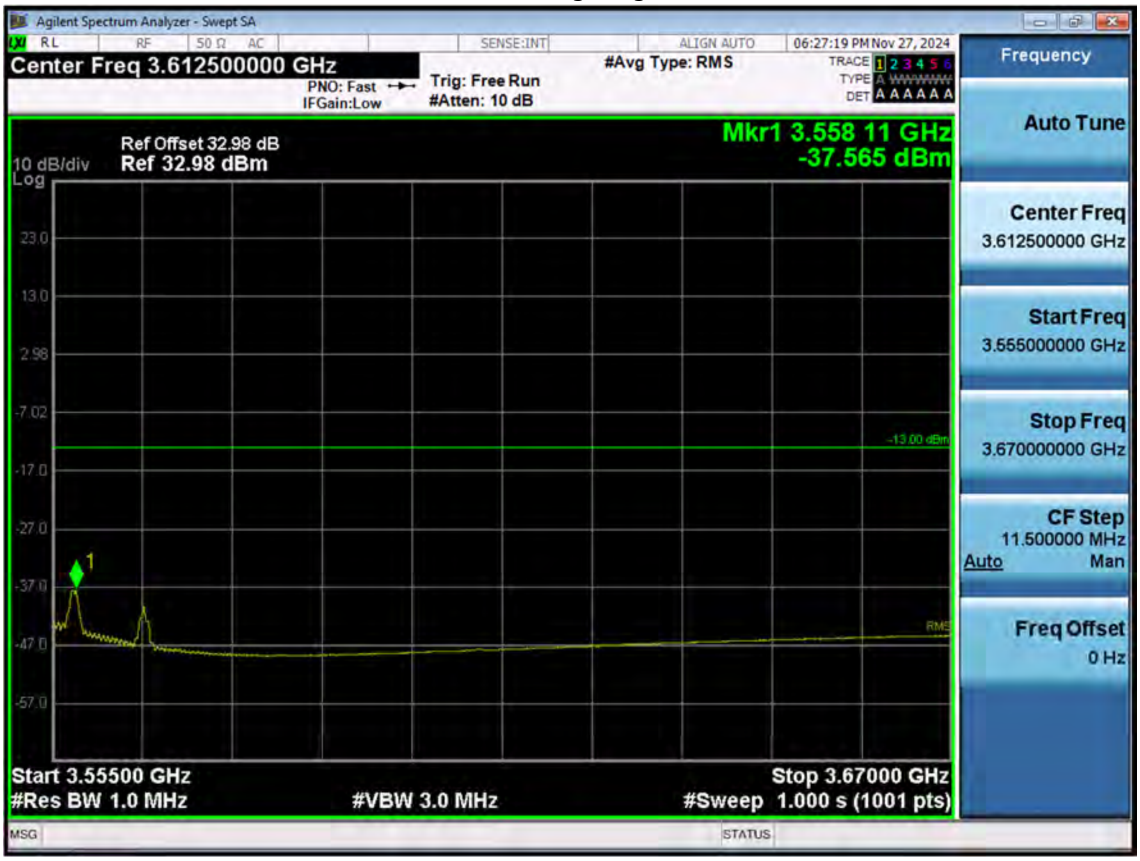
LTE B42_20 M_Band Edge_High_QPSK_1RB (2)



LTE B42_20 M_Band Edge_High_QPSK_Full RB (3)

LTE B42_20 M_Band Edge_High_QPSK_1RB (3)



## 10. ANNEX A_ TEST SETUP PHOTO

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

| No. | Description |
| --- | --- |
| 1 | HCT-RF-2412-FC055-P |