# FCC CFR47 PART 22H, 24E, 27 CERTIFICATION TEST REPORT

# FCC ID: 2ADWUPSPCM20A0

**Product:** Smartphone

**Trade Mark:** Polaroid

**Model Number:** PSPCM20A0

**Serial Model:** N/A

**Report No.:** SER171213601006E

## Prepared for

ONE DIAMOND ELECTRONICS INC.

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## Prepared by

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# TEST RESULT CERTIFICATION

**Applicant's name** .....: ONE DIAMOND ELECTRONICS INC.

Address .....: 1450 Frazee Road, Suite 303, San Diego, CA 92108, United States.

**Manufacturer's Name** .....: Shenzhen X&F Technology Co., Ltd.

Address .....: Shenzhen, Nanshan District Science and Technology Park Wandelai North Block Building 5&6 Floor

Product name.....: Smartphone

Model and/or type reference ...: PSPCM20A0

Serial Model: N/A

**Standards**.....: FCC CFR 47 Part 22H, Part 24E, Part 27

Test procedure .....: ANSI C63.26:2015

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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**Date of Test** .....

Date (s) of performance of tests ..... 13 Dec. 2017 ~ 05 Jan. 2018

Date of Issue ..... 05 Jan. 2018

Test Result ..... **Pass**

Testing Engineer : Eileen Liu.

(Eileen Liu)

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(Sam Chen)

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# 1. GENERAL INFORMATION

## 1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

| | |
|---|---|
| Product Designation: | Smartphone |
| Trade Mark | Polaroid |
| Model Name | PSPCM20A0 |
| FCC ID: | 2ADWUPSPCM20A0 |
| Frequency Bands: | U.S. Bands:<br>☒LTE FDD Band 2,4,5,7 |
| Frequency Range: | LTE FDD Band 2 Uplink: 1850.7MHz-1909.3MHz,<br>Downlink: 1930.7MHz-1989.3MHz:<br>LTE FDD Band 4 Uplink: 1710MHz-1755MHz,<br>Downlink: 2110MHz-2155MHz<br>LTE FDD Band 5 Uplink: 824.7MHz-849MHz,<br>Downlink: 869.7MHz-894MHz<br>LTE FDD Band 7 Uplink: 2500MHz-2570MHz,<br>Downlink: 2620MHz-2690MHz |
| Type of Modulation: | QPSK/16QAM |
| Antenna: | LDS Antenna |
| Antenna gain: | LTE Main ANT: 2 dBi<br>LTE Aux ANT: 1.5 dBi |
| Power Supply: | DC 3.85V from Battery or DC 5V from USB Port. |
| Battery parameter: | DC 3.85V from Battery |
| Adapter: | Model: RD0501000-USBA-18MG<br>Input: AC 100~240V/50~60Hz, 0.25A<br>Output: DC 5V, 1A |
| Extreme Vol. Limits: | DC 3.66V to 4.43V (Nominal DC 3.85V) |
| Extreme Temp. Tolerance | -30℃ to +50℃ |
| HW Version | PCM2017 |
| SW Version | PSPCM20A0_MX |
| ** Note: The High Voltage 4.43V and Low Voltage 3.66V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage. | |

## 1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2ADWUPSPCM20A0** filing to comply with the FCC Part 22H&24E &27.

### 1.3 TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI/TIA-603-E-2016, FCC CFR 47 Part 2, Part 22, Part 24, Part 27, ANSI C63.26:2015.

### 1.4 TEST FACILITY

The test site used to collect the radiated data is located at:

ShenZhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R.China.

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.26:2015& ANSI C63.4: 2014.

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

### 1.5 SPECIAL ACCESSORIES

The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with EUT intended for FCC grant together.

### 1.6 WORST-CASE CONFIGURATION AND MODE

The worst-case scenario for all measurements is based on the investigation results.

The device has LTE Bands of: Band 2, Band 4, Band 5,Band 7

The RB Size was selected to measure for peak or average ERP and EIRP, which was based on the conducted power verification baseline data.

For the fundamental investigation of radiated emissions, the EUT is investigated for vertical and horizontal antenna orientations and X Y and Z orientations of the EUT alone. After the investigations the worst case was determined to be at X orientation for all LTE bands.

# 2. SYSTEM TEST CONFIGURATION

## 2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

## 2.2 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

## 2.3 CONFIGURATION OF EUT SYSTEM

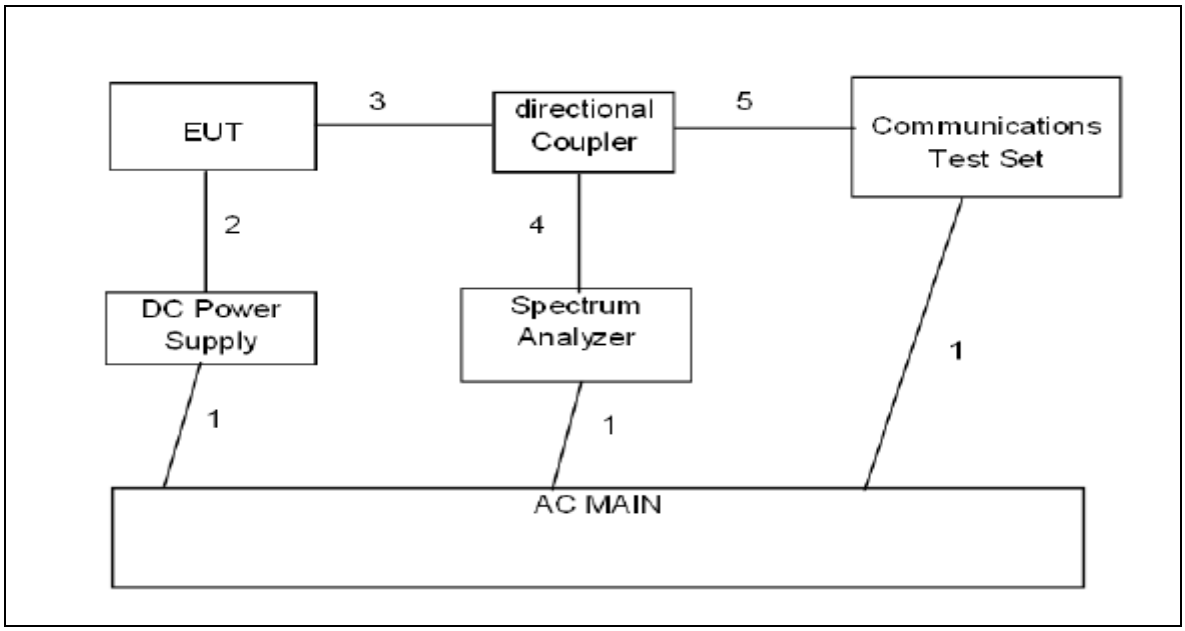
Table 2-1 Equipment Used in EUT System

| Item | Equipment | Model No. | ID or Specification | Note |
|---|---|---|---|---|
| 1 | Smartphone | PSPCM20A0 | FCC ID: 2ADWUPSPCM20A0 | EUT |
| | | | | |
| | | | | |

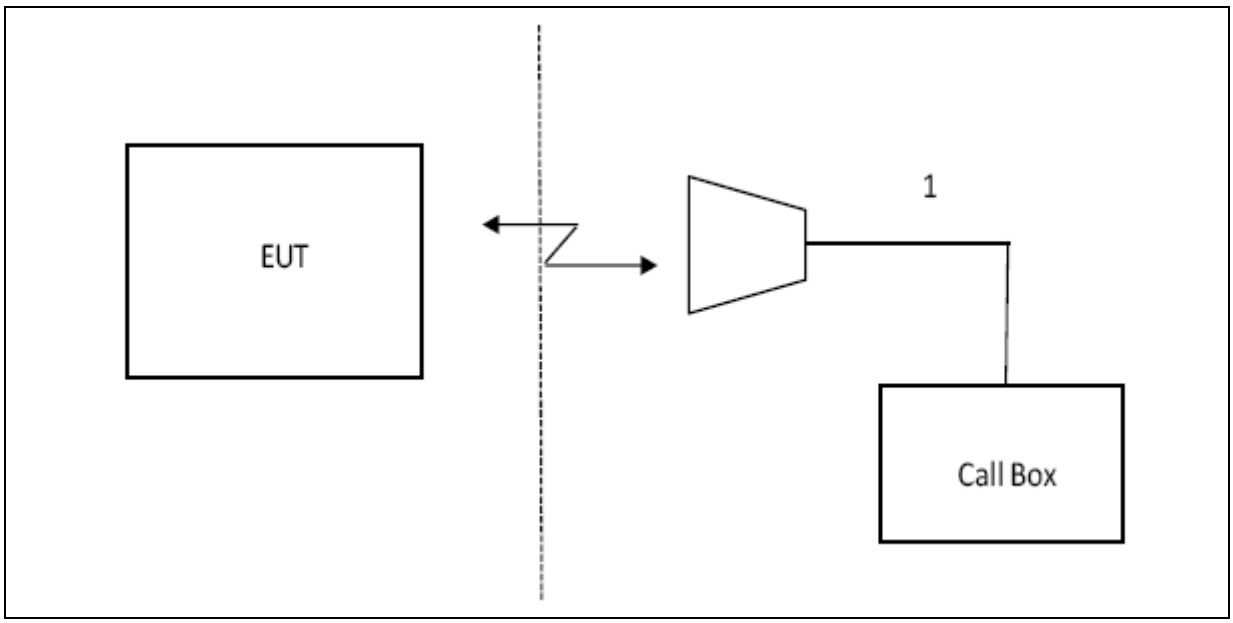
*Note: All the accessories have been used during the test.*
*the following "EUT" in setup diagram means EUT system.*

## 2.4 TEST SETUP

**CONDUCTED SETUP DIAGRAM FOR TESTS**




**RADIATED SETUP DIAGRAM FOR TESTS**



# 3.TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| NAME OF EQUIPMENT | MANUFACTURER | MODEL | SERIAL NUMBER | NEXT CAL. DATE |
|---|---|---|---|---|
| SPECTRUM ANALYZER | AGILENT | E4440A | US44300399 | 2018.6.26 |
| TEST RECEIVER | R&S | ESCI | A0304218 | 2018.6.26 |
| COMMUNICATION TESTER | R&S | CMU200 | A0304247 | 2018.6.26 |
| COMMUNICATION TESTER | R&S | CMW500 | X | 2018.6.26 |
| TEST RECEIVER | R&S | FCKL1528 | A0304230 | 2018.6.26 |
| LISN | SCHWARZBECK | NSLK8127 | A0304233 | 2018.6.26 |
| CLIMATE CHAMBER | ALBATROSS | -- | -- | 2018.6.26 |
| Loop Antenna | Daze | ZN30900N | SEL0097 | 2018.6.26 |
| Bilogical Antenna | A.H. Systems Inc. | SAS-521-4 | N/A | 2018.6.26 |
| Horn Antenna | EM | EM-AH-10180 | N/A | 2018.6.26 |
| DC Power Source | N/A | PS-6005D | 20170402923 | 2020.06.05 |

# 4. OUTPUT POWER

## 4.1 OUTPUT POWER MEASUREMENT

**LTE Measurement Procedure:**

All LTE bands conducted power peak and average are obtained from the CMW500 telecommunication test set. The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3**

| Modulation | Channel bandwidth / Transmission bandwidth (RB) | | | | | | MPR (dB) |
|---|---|---|---|---|---|---|---|
| | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | |
| QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 |
| 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 |
| 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 |

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.3

**Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)**

| Network Signalling value | Requirements (sub-clause) | E-UTRA Band | Channel bandwidth (MHz) | Resources Blocks ($N_{RB}$) | A-MPR (dB) |
|---|---|---|---|---|---|
| NS_01 | 6.6.2.1.1 | Table 5.5-1 | 1.4, 3, 5, 10, 15, 20 | Table 5.6-1 | NA |
| NS_03 | 6.6.2.2.1 | 2, 4,10, 23, 25, 35, 36 | 3 | >5 | ≤ 1 |
| | | | 5 | >6 | ≤ 1 |
| | | | 10 | >6 | ≤ 1 |
| | | | 15 | >8 | ≤ 1 |
| | | | 20 | >10 | ≤ 1 |
| NS_04 | 6.6.2.2.2 | 41 | 5 | >6 | ≤ 1 |
| | | | 10, 15, 20 | See Table 6.2.4-4 | |
| NS_05 | 6.6.3.3.1 | 1 | 10,15,20 | ≥ 50 | ≤ 1 |
| NS_06 | 6.6.2.2.3 | 12, 13, 14, 17 | 1.4, 3, 5, 10 | Table 5.6-1 | n/a |
| NS_07 | 6.6.2.2.3<br>6.6.3.3.2 | 13 | 10 | Table 6.2.4-2 | Table 6.2.4-2 |
| NS_08 | 6.6.3.3.3 | 19 | 10, 15 | > 44 | ≤ 3 |
| NS_09 | 6.6.3.3.4 | 21 | 10, 15 | > 40 | ≤ 1 |
| | | | | > 55 | ≤ 2 |
| NS_10 | | 20 | 15, 20 | Table 6.2.4-3 | Table 6.2.4-3 |
| NS_11 | 6.6.2.2.1 | 23[1] | 1.4, 3, 5, 10 | Table 6.2.4-5 | Table 6.2.4-5 |
| -- | | | | | |
| NS_32 | - | - | - | - | - |
| Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region. | | | | | |

## 4.2 LTE BAND 2

**OUTPUT POWER FOR LTE BAND 2 (1.4MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 2 | 1.4MHz | 18607 | 1850.7 | QPSK | 1 | Low | 23.30 | 28.04 |
| | | | | | 1 | Mid | 23.31 | 28.01 |
| | | | | | 1 | High | 23.32 | 27.99 |
| | | | | | 3 | Low | 23.37 | 28.58 |
| | | | | | 3 | High | 23.35 | 28.60 |
| | | | | | 6 | Low | 22.30 | 28.33 |
| | | | | 16QAM | 1 | Low | 22.41 | 27.59 |
| | | | | | 1 | Mid | 22.38 | 27.60 |
| | | | | | 1 | High | 22.41 | 27.54 |
| | | | | | 3 | Low | 23.47 | 28.54 |
| | | | | | 3 | High | 23.48 | 28.55 |
| | | | | | 6 | Low | 21.34 | 28.35 |
| | 1.4MHz | 18900 | 1880.0 | QPSK | 1 | Low | 23.42 | 28.52 |
| | | | | | 1 | Mid | 23.31 | 28.45 |
| | | | | | 1 | High | 23.41 | 28.46 |
| | | | | | 3 | Low | 23.41 | 28.86 |
| | | | | | 3 | High | 23.31 | 28.79 |
| | | | | | 6 | Low | 22.45 | 28.45 |
| | | | | 16QAM | 1 | Low | 22.45 | 27.65 |
| | | | | | 1 | Mid | 22.33 | 27.54 |
| | | | | | 1 | High | 22.43 | 27.60 |
| | | | | | 3 | Low | 22.36 | 28.73 |
| | | | | | 3 | High | 22.32 | 28.75 |
| | | | | | 6 | Low | 21.31 | 28.41 |
| | 1.4MHz | 19193 | 1909.3 | QPSK | 1 | Low | 23.12 | 27.50 |
| | | | | | 1 | Mid | 22.82 | 27.35 |
| | | | | | 1 | High | 22.90 | 27.25 |
| | | | | | 3 | Low | 22.94 | 27.81 |
| | | | | | 3 | High | 22.83 | 27.79 |
| | | | | | 6 | Low | 22.03 | 28.20 |
| | | | | 16QAM | 1 | Low | 22.11 | 27.25 |
| | | | | | 1 | Mid | 21.87 | 27.13 |
| | | | | | 1 | High | 21.99 | 27.09 |
| | | | | | 3 | Low | 22.38 | 27.77 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 3 | High | 22.35 | 27.78 |
| | | | | | 6 | Low | 21.11 | 28.10 |

**OUTPUT POWER FOR LTE BAND 2 (3.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 2 | 3.0 MHz | 18615 | 1851.5 | QPSK | 1 | Low | 23.41 | 27.74 |
| | | | | | 1 | Mid | 23.32 | 27.66 |
| | | | | | 1 | High | 23.38 | 27.64 |
| | | | | | 8 | Low | 23.37 | 27.63 |
| | | | | | 8 | High | 23.36 | 27.62 |
| | | | | | 15 | Low | 22.42 | 28.82 |
| | | | | 16QAM | 1 | Low | 22.45 | 28.07 |
| | | | | | 1 | Mid | 22.42 | 28.03 |
| | | | | | 1 | High | 22.47 | 27.97 |
| | | | | | 8 | Low | 22.47 | 27.98 |
| | | | | | 8 | High | 22.47 | 27.97 |
| | | | | | 15 | Low | 21.64 | 28.73 |
| | 3.0 MHz | 18900 | 1880.0 | QPSK | 1 | Low | 23.40 | 28.20 |
| | | | | | 1 | Mid | 23.23 | 28.11 |
| | | | | | 1 | High | 23.20 | 28.05 |
| | | | | | 8 | Low | 23.18 | 28.05 |
| | | | | | 8 | High | 23.17 | 28.04 |
| | | | | | 15 | Low | 22.36 | 29.16 |
| | | | | 16QAM | 1 | Low | 22.41 | 27.52 |
| | | | | | 1 | Mid | 22.29 | 27.51 |
| | | | | | 1 | High | 22.29 | 27.46 |
| | | | | | 8 | Low | 22.29 | 27.44 |
| | | | | | 8 | High | 22.28 | 27.44 |
| | | | | | 15 | Low | 21.49 | 28.86 |
| | 3.0 MHz | 19185 | 1908.5 | QPSK | 1 | Low | 22.89 | 27.39 |
| | | | | | 1 | Mid | 22.64 | 27.24 |
| | | | | | 1 | High | 22.62 | 27.04 |
| | | | | | 8 | Low | 22.58 | 27.04 |
| | | | | | 8 | High | 22.56 | 27.02 |
| | | | | | 15 | Low | 21.78 | 28.06 |
| | | | | 16QAM | 1 | Low | 22.03 | 26.69 |
| | | | | | 1 | Mid | 21.86 | 26.57 |
| | | | | | 1 | High | 21.84 | 26.49 |
| | | | | | 8 | Low | 21.82 | 26.46 |
| | | | | | 8 | High | 21.82 | 26.46 |
| | | | | | 15 | Low | 20.90 | 27.42 |

**OUTPUT POWER FOR LTE BAND 2 (5.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 2 | 5.0 MHz | 18625 | 1852.5 | QPSK | 1 | Low | 23.18 | 28.12 |
| | | | | | 1 | Mid | 22.74 | 27.91 |
| | | | | | 1 | High | 23.17 | 27.98 |
| | | | | | 12 | Low | 21.91 | 28.02 |
| | | | | | 12 | High | 21.98 | 27.99 |
| | | | | | 25 | Low | 21.92 | 28.18 |
| | | | | 16QAM | 1 | Low | 22.07 | 27.44 |
| | | | | | 1 | Mid | 21.74 | 27.18 |
| | | | | | 1 | High | 22.20 | 27.39 |
| | | | | | 12 | Low | 21.99 | 28.04 |
| | | | | | 12 | High | 21.99 | 28.11 |
| | | | | | 25 | Low | 21.05 | 28.02 |
| | 5.0 MHz | 18900 | 1880.0 | QPSK | 1 | Low | 23.15 | 28.25 |
| | | | | | 1 | Mid | 22.63 | 27.99 |
| | | | | | 1 | High | 22.93 | 28.16 |
| | | | | | 12 | Low | 21.84 | 27.50 |
| | | | | | 12 | High | 21.78 | 27.50 |
| | | | | | 25 | Low | 21.80 | 28.06 |
| | | | | 16QAM | 1 | Low | 22.21 | 28.12 |
| | | | | | 1 | Mid | 21.77 | 27.93 |
| | | | | | 1 | High | 22.08 | 28.09 |
| | | | | | 12 | Low | 21.77 | 27.45 |
| | | | | | 12 | High | 21.77 | 27.64 |
| | | | | | 25 | Low | 20.89 | 28.69 |
| | 5.0 MHz | 19175 | 1907.5 | QPSK | 1 | Low | 22.83 | 27.30 |
| | | | | | 1 | Mid | 22.20 | 27.08 |
| | | | | | 1 | High | 22.45 | 26.98 |
| | | | | | 12 | Low | 21.51 | 28.17 |
| | | | | | 12 | High | 21.55 | 27.94 |
| | | | | | 25 | Low | 21.52 | 28.08 |
| | | | | 16QAM | 1 | Low | 22.15 | 27.20 |
| | | | | | 1 | Mid | 21.58 | 26.99 |
| | | | | | 1 | High | 21.84 | 26.95 |
| | | | | | 12 | Low | 21.34 | 27.85 |
| | | | | | 12 | High | 21.33 | 27.85 |
| | | | | | 25 | Low | 20.51 | 28.57 |

**OUTPUT POWER FOR LTE BAND 2 (10.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 2 | 10.0 MHz | 18650 | 1855.0 | QPSK | 1 | Low | 22.53 | 27.21 |
| | | | | | 1 | Mid | 22.71 | 27.25 |
| | | | | | 1 | High | 22.68 | 27.22 |
| | | | | | 25 | Low | 21.80 | 27.87 |
| | | | | | 25 | High | 22.03 | 27.95 |
| | | | | | 50 | Low | 21.94 | 28.05 |
| | | | | 16QAM | 1 | Low | 22.11 | 27.80 |
| | | | | | 1 | Mid | 22.31 | 27.71 |
| | | | | | 1 | High | 22.31 | 27.71 |
| | | | | | 25 | Low | 22.05 | 27.93 |
| | | | | | 25 | High | 22.05 | 27.95 |
| | | | | | 50 | Low | 21.04 | 28.30 |
| | 10.0 MHz | 18900 | 1880.0 | QPSK | 1 | Low | 22.64 | 27.63 |
| | | | | | 1 | Mid | 22.53 | 27.58 |
| | | | | | 1 | High | 22.15 | 27.37 |
| | | | | | 25 | Low | 21.70 | 28.50 |
| | | | | | 25 | High | 21.57 | 28.36 |
| | | | | | 50 | Low | 21.65 | 27.94 |
| | | | | 16QAM | 1 | Low | 21.67 | 26.92 |
| | | | | | 1 | Mid | 21.57 | 26.75 |
| | | | | | 1 | High | 21.23 | 26.58 |
| | | | | | 25 | Low | 21.58 | 28.37 |
| | | | | | 25 | High | 21.57 | 28.36 |
| | | | | | 50 | Low | 20.77 | 28.44 |
| | 10.0 MHz | 19150 | 1905.0 | QPSK | 1 | Low | 22.65 | 27.07 |
| | | | | | 1 | Mid | 22.30 | 27.10 |
| | | | | | 1 | High | 21.76 | 26.87 |
| | | | | | 25 | Low | 21.72 | 27.60 |
| | | | | | 25 | High | 21.33 | 27.49 |
| | | | | | 50 | Low | 21.53 | 27.74 |
| | | | | 16QAM | 1 | Low | 21.88 | 26.41 |
| | | | | | 1 | Mid | 21.56 | 26.35 |
| | | | | | 1 | High | 21.02 | 25.87 |
| | | | | | 25 | Low | 21.33 | 27.28 |
| | | | | | 25 | High | 21.32 | 27.29 |
| | | | | | 50 | Low | 20.65 | 27.44 |

OUTPUT POWER FOR LTE BAND 2 (15.0MHZ)

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 2 | 15.0 MHz | 18675 | 1857.5 | QPSK | 1 | Low | 22.81 | 27.42 |
| | | | | | 1 | Mid | 22.91 | 27.37 |
| | | | | | 1 | High | 22.80 | 27.35 |
| | | | | | 36 | Low | 21.89 | 27.87 |
| | | | | | 36 | High | 22.02 | 27.93 |
| | | | | | 75 | Low | 21.97 | 28.53 |
| | | | | 16QAM | 1 | Low | 22.35 | 27.89 |
| | | | | | 1 | Mid | 22.41 | 27.76 |
| | | | | | 1 | High | 22.43 | 27.83 |
| | | | | | 36 | Low | 22.03 | 27.95 |
| | | | | | 36 | High | 22.03 | 27.93 |
| | | | | | 75 | Low | 21.04 | 28.16 |
| | 15.0 MHz | 18900 | 1880.0 | QPSK | 1 | Low | 22.90 | 27.59 |
| | | | | | 1 | Mid | 22.49 | 27.42 |
| | | | | | 1 | High | 22.31 | 27.20 |
| | | | | | 36 | Low | 21.75 | 28.23 |
| | | | | | 36 | High | 21.58 | 28.01 |
| | | | | | 75 | Low | 21.61 | 28.41 |
| | | | | 16QAM | 1 | Low | 22.31 | 27.27 |
| | | | | | 1 | Mid | 21.94 | 27.08 |
| | | | | | 1 | High | 21.77 | 26.89 |
| | | | | | 36 | Low | 21.48 | 28.06 |
| | | | | | 36 | High | 21.47 | 28.02 |
| | | | | | 75 | Low | 20.65 | 27.99 |
| | 15.0 MHz | 19125 | 1902.5 | QPSK | 1 | Low | 22.83 | 27.23 |
| | | | | | 1 | Mid | 22.47 | 27.06 |
| | | | | | 1 | High | 21.80 | 26.91 |
| | | | | | 36 | Low | 21.79 | 27.53 |
| | | | | | 36 | High | 21.52 | 27.45 |
| | | | | | 75 | Low | 21.62 | 28.24 |
| | | | | 16QAM | 1 | Low | 22.02 | 26.56 |
| | | | | | 1 | Mid | 21.72 | 26.39 |
| | | | | | 1 | High | 21.08 | 25.95 |
| | | | | | 36 | Low | 21.31 | 27.45 |
| | | | | | 36 | High | 21.31 | 27.50 |
| | | | | | 75 | Low | 20.73 | 28.03 |

OUTPUT POWER FOR LTE BAND 2 (20.0MHZ)

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 2 | 20.0 MHz | 18700 | 1860.0 | QPSK | 1 | Low | 23.15 | 27.62 |
| | | | | | 1 | Mid | 23.14 | 27.38 |
| | | | | | 1 | High | 22.84 | 27.51 |
| | | | | | 50 | Low | 22.21 | 28.00 |
| | | | | | 50 | High | 22.19 | 27.98 |
| | | | | | 100 | Low | 22.22 | 28.08 |
| | | | | 16QAM | 1 | Low | 22.09 | 27.42 |
| | | | | | 1 | Mid | 22.21 | 27.33 |
| | | | | | 1 | High | 21.90 | 27.41 |
| | | | | | 50 | Low | 21.91 | 27.95 |
| | | | | | 50 | High | 21.92 | 27.98 |
| | | | | | 100 | Low | 21.02 | 28.80 |
| | 20.0 MHz | 18900 | 1880.0 | QPSK | 1 | Low | 23.17 | 27.81 |
| | | | | | 1 | Mid | 22.83 | 27.73 |
| | | | | | 1 | High | 22.65 | 27.39 |
| | | | | | 50 | Low | 21.78 | 28.19 |
| | | | | | 50 | High | 21.52 | 27.96 |
| | | | | | 100 | Low | 21.61 | 28.42 |
| | | | | 16QAM | 1 | Low | 22.41 | 27.70 |
| | | | | | 1 | Mid | 22.01 | 27.50 |
| | | | | | 1 | High | 21.80 | 27.31 |
| | | | | | 50 | Low | 21.42 | 27.94 |
| | | | | | 50 | High | 21.41 | 27.87 |
| | | | | | 100 | Low | 20.68 | 28.27 |
| | 20.0 MHz | 19100 | 1900.0 | QPSK | 1 | Low | 23.00 | 27.32 |
| | | | | | 1 | Mid | 22.85 | 26.94 |
| | | | | | 1 | High | 22.73 | 26.67 |
| | | | | | 50 | Low | 22.23 | 27.69 |
| | | | | | 50 | High | 21.57 | 27.54 |
| | | | | | 100 | Low | 21.62 | 27.86 |
| | | | | 16QAM | 1 | Low | 21.93 | 27.67 |
| | | | | | 1 | Mid | 21.85 | 27.18 |
| | | | | | 1 | High | 21.03 | 27.14 |
| | | | | | 50 | Low | 21.39 | 27.51 |
| | | | | | 50 | High | 21.40 | 27.56 |
| | | | | | 100 | Low | 20.73 | 28.01 |

## 4.3 LTE BAND 4

**OUTPUT POWER FOR LTE BAND 4 (1.4MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 4 | 1.4MHz | 19957 | 1710.7 | QPSK | 1 | Low | 23.09 | 27.61 |
| | | | | | 1 | Mid | 22.87 | 27.55 |
| | | | | | 1 | High | 23.01 | 27.56 |
| | | | | | 3 | Low | 23.03 | 27.96 |
| | | | | | 3 | High | 22.97 | 27.90 |
| | | | | | 6 | Low | 22.22 | 28.10 |
| | | | | 16QAM | 1 | Low | 22.21 | 27.31 |
| | | | | | 1 | Mid | 22.12 | 27.25 |
| | | | | | 1 | High | 22.22 | 27.30 |
| | | | | | 3 | Low | 23.01 | 27.93 |
| | | | | | 3 | High | 23.00 | 27.94 |
| | | | | | 6 | Low | 21.25 | 28.12 |
| | 1.4MHz | 20175 | 1732.5 | QPSK | 1 | Low | 23.04 | 27.82 |
| | | | | | 1 | Mid | 22.96 | 27.76 |
| | | | | | 1 | High | 22.99 | 27.75 |
| | | | | | 3 | Low | 22.95 | 28.40 |
| | | | | | 3 | High | 22.94 | 28.37 |
| | | | | | 6 | Low | 22.13 | 27.95 |
| | | | | 16QAM | 1 | Low | 22.19 | 27.25 |
| | | | | | 1 | Mid | 22.06 | 27.18 |
| | | | | | 1 | High | 22.22 | 27.26 |
| | | | | | 3 | Low | 22.96 | 28.37 |
| | | | | | 3 | High | 22.96 | 28.37 |
| | | | | | 6 | Low | 21.13 | 27.83 |
| | 1.4MHz | 20393 | 1754.3 | QPSK | 1 | Low | 22.98 | 27.00 |
| | | | | | 1 | Mid | 22.77 | 26.91 |
| | | | | | 1 | High | 22.88 | 26.92 |
| | | | | | 3 | Low | 22.96 | 27.38 |
| | | | | | 3 | High | 22.88 | 27.25 |
| | | | | | 6 | Low | 22.08 | 27.31 |
| | | | | 16QAM | 1 | Low | 22.22 | 26.45 |
| | | | | | 1 | Mid | 22.05 | 26.32 |
| | | | | | 1 | High | 22.19 | 26.41 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 3 | Low | 22.93 | 27.26 |
| | | | | | 3 | High | 22.92 | 27.27 |
| | | | | | 6 | Low | 21.14 | 27.27 |

**OUTPUT POWER FOR LTE BAND 4 (3.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 4 | 3.0 MHz | 19965 | 1711.5 | QPSK | 1 | Low | 23.20 | 27.36 |
| | | | | | 1 | Mid | 23.03 | 27.27 |
| | | | | | 1 | High | 23.07 | 27.28 |
| | | | | | 8 | Low | 23.06 | 27.27 |
| | | | | | 8 | High | 23.05 | 27.26 |
| | | | | | 15 | Low | 22.27 | 27.80 |
| | | | | 16QAM | 1 | Low | 22.71 | 27.77 |
| | | | | | 1 | Mid | 22.70 | 27.79 |
| | | | | | 1 | High | 22.70 | 27.79 |
| | | | | | 8 | Low | 22.69 | 27.79 |
| | | | | | 8 | High | 22.68 | 27.81 |
| | | | | | 15 | Low | 21.30 | 27.86 |
| | 3.0 MHz | 20175 | 1732.5 | QPSK | 1 | Low | 23.03 | 27.79 |
| | | | | | 1 | Mid | 22.99 | 27.79 |
| | | | | | 1 | High | 22.96 | 27.71 |
| | | | | | 8 | Low | 22.95 | 27.69 |
| | | | | | 8 | High | 22.94 | 27.68 |
| | | | | | 15 | Low | 22.17 | 28.98 |
| | | | | 16QAM | 1 | Low | 22.16 | 27.22 |
| | | | | | 1 | Mid | 22.16 | 27.27 |
| | | | | | 1 | High | 22.19 | 27.20 |
| | | | | | 8 | Low | 22.19 | 27.19 |
| | | | | | 8 | High | 22.20 | 27.22 |
| | | | | | 15 | Low | 21.27 | 28.12 |
| | 3.0 MHz | 20385 | 1753.5 | QPSK | 1 | Low | 23.06 | 27.11 |
| | | | | | 1 | Mid | 22.91 | 27.02 |
| | | | | | 1 | High | 22.89 | 26.94 |
| | | | | | 8 | Low | 22.90 | 26.95 |
| | | | | | 8 | High | 22.90 | 26.96 |
| | | | | | 15 | Low | 22.16 | 27.88 |
| | | | | 16QAM | 1 | Low | 22.20 | 26.49 |
| | | | | | 1 | Mid | 22.22 | 26.48 |
| | | | | | 1 | High | 22.18 | 26.40 |
| | | | | | 8 | Low | 22.17 | 26.41 |
| | | | | | 8 | High | 22.17 | 26.41 |
| | | | | | 15 | Low | 21.09 | 28.00 |

**OUTPUT POWER FOR LTE BAND 4 (5.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 4 | 5.0 MHz | 19975 | 1712.5 | QPSK | 1 | Low | 23.25 | 28.00 |
| | | | | | 1 | Mid | 22.89 | 27.86 |
| | | | | | 1 | High | 22.97 | 27.91 |
| | | | | | 12 | Low | 22.15 | 28.13 |
| | | | | | 12 | High | 22.00 | 28.07 |
| | | | | | 25 | Low | 22.03 | 28.16 |
| | | | | 16QAM | 1 | Low | 22.14 | 27.21 |
| | | | | | 1 | Mid | 21.88 | 27.06 |
| | | | | | 1 | High | 22.07 | 27.18 |
| | | | | | 12 | Low | 22.03 | 28.07 |
| | | | | | 12 | High | 22.04 | 28.07 |
| | | | | | 25 | Low | 21.20 | 27.91 |
| | 5.0 MHz | 20175 | 1732.5 | QPSK | 1 | Low | 23.15 | 28.05 |
| | | | | | 1 | Mid | 22.77 | 27.94 |
| | | | | | 1 | High | 23.02 | 28.08 |
| | | | | | 12 | Low | 22.02 | 27.67 |
| | | | | | 12 | High | 22.03 | 27.66 |
| | | | | | 25 | Low | 21.99 | 28.18 |
| | | | | 16QAM | 1 | Low | 22.32 | 28.00 |
| | | | | | 1 | Mid | 22.02 | 27.94 |
| | | | | | 1 | High | 22.25 | 28.05 |
| | | | | | 12 | Low | 22.05 | 27.73 |
| | | | | | 12 | High | 22.05 | 27.69 |
| | | | | | 25 | Low | 21.15 | 28.66 |
| | 5.0 MHz | 20375 | 1752.5 | QPSK | 1 | Low | 23.20 | 27.26 |
| | | | | | 1 | Mid | 22.77 | 26.97 |
| | | | | | 1 | High | 22.99 | 26.98 |
| | | | | | 12 | Low | 22.13 | 27.92 |
| | | | | | 12 | High | 21.99 | 27.95 |
| | | | | | 25 | Low | 22.06 | 27.68 |
| | | | | 16QAM | 1 | Low | 22.39 | 27.10 |
| | | | | | 1 | Mid | 22.21 | 26.92 |
| | | | | | 1 | High | 22.35 | 26.92 |
| | | | | | 12 | Low | 22.05 | 27.92 |
| | | | | | 12 | High | 22.06 | 27.94 |
| | | | | | 25 | Low | 21.09 | 27.61 |

**OUTPUT POWER FOR LTE BAND 4 (10.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 4 | 10.0 MHz | 20000 | 1715.0 | QPSK | 1 | Low | 23.21 | 27.41 |
| | | | | | 1 | Mid | 23.18 | 27.37 |
| | | | | | 1 | High | 22.84 | 27.31 |
| | | | | | 25 | Low | 22.19 | 27.84 |
| | | | | | 25 | High | 22.18 | 27.89 |
| | | | | | 50 | Low | 22.20 | 28.23 |
| | | | | 16QAM | 1 | Low | 22.47 | 27.90 |
| | | | | | 1 | Mid | 22.48 | 27.86 |
| | | | | | 1 | High | 22.48 | 27.92 |
| | | | | | 25 | Low | 22.18 | 27.93 |
| | | | | | 25 | High | 22.18 | 27.94 |
| | | | | | 50 | Low | 21.22 | 28.34 |
| | 10.0 MHz | 20175 | 1732.5 | QPSK | 1 | Low | 23.04 | 27.78 |
| | | | | | 1 | Mid | 23.13 | 27.88 |
| | | | | | 1 | High | 23.07 | 27.87 |
| | | | | | 25 | Low | 22.18 | 28.48 |
| | | | | | 25 | High | 22.16 | 28.49 |
| | | | | | 50 | Low | 22.18 | 28.29 |
| | | | | 16QAM | 1 | Low | 22.13 | 27.21 |
| | | | | | 1 | Mid | 22.07 | 27.11 |
| | | | | | 1 | High | 22.15 | 27.29 |
| | | | | | 25 | Low | 22.15 | 28.66 |
| | | | | | 25 | High | 22.16 | 28.56 |
| | | | | | 50 | Low | 21.20 | 28.68 |
| | 10.0 MHz | 20350 | 1750.0 | QPSK | 1 | Low | 23.11 | 27.61 |
| | | | | | 1 | Mid | 23.08 | 27.28 |
| | | | | | 1 | High | 22.77 | 27.06 |
| | | | | | 25 | Low | 22.11 | 27.76 |
| | | | | | 25 | High | 22.10 | 27.58 |
| | | | | | 50 | Low | 22.09 | 27.92 |
| | | | | 16QAM | 1 | Low | 22.24 | 26.76 |
| | | | | | 1 | Mid | 22.16 | 26.59 |
| | | | | | 1 | High | 22.09 | 26.45 |
| | | | | | 25 | Low | 22.10 | 27.48 |
| | | | | | 25 | High | 22.10 | 27.36 |
| | | | | | 50 | Low | 21.09 | 27.79 |

**OUTPUT POWER FOR LTE BAND 4 (15.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 4 | 15.0 MHz | 20025 | 1717.5 | QPSK | 1 | Low | 23.20 | 27.42 |
| | | | | | 1 | Mid | 23.19 | 27.45 |
| | | | | | 1 | High | 22.76 | 27.38 |
| | | | | | 36 | Low | 22.30 | 27.85 |
| | | | | | 36 | High | 22.11 | 27.90 |
| | | | | | 75 | Low | 22.28 | 28.79 |
| | | | | 16QAM | 1 | Low | 22.41 | 27.88 |
| | | | | | 1 | Mid | 22.41 | 27.92 |
| | | | | | 1 | High | 22.44 | 28.05 |
| | | | | | 36 | Low | 22.12 | 27.92 |
| | | | | | 36 | High | 22.13 | 27.95 |
| | | | | | 75 | Low | 21.25 | 28.24 |
| | 15.0 MHz | 20175 | 1732.5 | QPSK | 1 | Low | 23.12 | 27.56 |
| | | | | | 1 | Mid | 23.19 | 27.78 |
| | | | | | 1 | High | 22.98 | 27.58 |
| | | | | | 36 | Low | 22.25 | 28.34 |
| | | | | | 36 | High | 22.23 | 28.38 |
| | | | | | 75 | Low | 22.25 | 28.97 |
| | | | | 16QAM | 1 | Low | 22.49 | 27.25 |
| | | | | | 1 | Mid | 22.44 | 27.44 |
| | | | | | 1 | High | 22.50 | 27.38 |
| | | | | | 36 | Low | 22.25 | 28.46 |
| | | | | | 36 | High | 22.24 | 28.45 |
| | | | | | 75 | Low | 21.22 | 28.36 |
| | 15.0 MHz | 20325 | 1747.5 | QPSK | 1 | Low | 23.16 | 27.85 |
| | | | | | 1 | Mid | 23.15 | 27.50 |
| | | | | | 1 | High | 22.75 | 27.05 |
| | | | | | 36 | Low | 22.19 | 27.96 |
| | | | | | 36 | High | 22.20 | 27.71 |
| | | | | | 75 | Low | 22.18 | 28.34 |
| | | | | 16QAM | 1 | Low | 22.28 | 26.93 |
| | | | | | 1 | Mid | 22.24 | 26.70 |
| | | | | | 1 | High | 22.10 | 26.43 |
| | | | | | 36 | Low | 22.20 | 27.71 |
| | | | | | 36 | High | 22.20 | 27.68 |
| | | | | | 75 | Low | 21.18 | 28.19 |

**OUTPUT POWER FOR LTE BAND 4 (20.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 4 | 20.0 MHz | 20050 | 1720.0 | QPSK | 1 | Low | 23.25 | 27.63 |
| | | | | | 1 | Mid | 23.04 | 27.55 |
| | | | | | 1 | High | 22.69 | 27.71 |
| | | | | | 50 | Low | 22.24 | 27.96 |
| | | | | | 50 | High | 22.01 | 28.05 |
| | | | | | 100 | Low | 22.20 | 28.21 |
| | | | | 16QAM | 1 | Low | 22.42 | 27.43 |
| | | | | | 1 | Mid | 22.40 | 27.48 |
| | | | | | 1 | High | 22.15 | 27.67 |
| | | | | | 50 | Low | 22.02 | 28.06 |
| | | | | | 50 | High | 22.02 | 28.06 |
| | | | | | 100 | Low | 21.24 | 28.88 |
| | 20.0 MHz | 20175 | 1732.5 | QPSK | 1 | Low | 22.92 | 27.70 |
| | | | | | 1 | Mid | 23.12 | 28.05 |
| | | | | | 1 | High | 22.78 | 27.65 |
| | | | | | 50 | Low | 22.20 | 28.23 |
| | | | | | 50 | High | 22.18 | 28.33 |
| | | | | | 100 | Low | 22.19 | 28.78 |
| | | | | 16QAM | 1 | Low | 22.44 | 27.63 |
| | | | | | 1 | Mid | 22.43 | 27.82 |
| | | | | | 1 | High | 22.48 | 27.63 |
| | | | | | 50 | Low | 22.18 | 28.36 |
| | | | | | 50 | High | 22.18 | 28.34 |
| | | | | | 100 | Low | 21.20 | 28.50 |
| | 20.0 MHz | 20300 | 1745.0 | QPSK | 1 | Low | 23.25 | 27.90 |
| | | | | | 1 | Mid | 23.12 | 27.56 |
| | | | | | 1 | High | 22.58 | 26.87 |
| | | | | | 50 | Low | 22.16 | 28.11 |
| | | | | | 50 | High | 22.12 | 27.76 |
| | | | | | 100 | Low | 22.12 | 28.36 |
| | | | | 16QAM | 1 | Low | 22.42 | 28.30 |
| | | | | | 1 | Mid | 22.26 | 27.82 |
| | | | | | 1 | High | 22.05 | 27.25 |
| | | | | | 50 | Low | 22.12 | 27.81 |
| | | | | | 50 | High | 22.13 | 27.79 |
| | | | | | 100 | Low | 21.12 | 28.32 |

## 4.4 LTE BAND 5

**OUTPUT POWER FOR LTE BAND 5 (1.4MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 5 | 1.4MHz | 20407 | 824.7 | QPSK | 1 | Low | 22.28 | 28.62 |
| | | | | | 1 | Mid | 23.30 | 28.45 |
| | | | | | 1 | High | 23.34 | 28.46 |
| | | | | | 3 | Low | 23.33 | 28.71 |
| | | | | | 3 | High | 23.29 | 28.77 |
| | | | | | 6 | Low | 22.30 | 28.69 |
| | | | | 16QAM | 1 | Low | 22.31 | 27.93 |
| | | | | | 1 | Mid | 22.29 | 27.94 |
| | | | | | 1 | High | 22.32 | 27.93 |
| | | | | | 3 | Low | 23.26 | 28.77 |
| | | | | | 3 | High | 23.23 | 28.75 |
| | | | | | 6 | Low | 21.32 | 28.58 |
| | 1.4MHz | 20525 | 836.5 | QPSK | 1 | Low | 23.23 | 27.70 |
| | | | | | 1 | Mid | 23.24 | 27.71 |
| | | | | | 1 | High | 23.26 | 27.69 |
| | | | | | 3 | Low | 23.31 | 28.25 |
| | | | | | 3 | High | 23.28 | 28.33 |
| | | | | | 6 | Low | 22.22 | 27.96 |
| | | | | 16QAM | 1 | Low | 22.20 | 27.15 |
| | | | | | 1 | Mid | 22.19 | 27.20 |
| | | | | | 1 | High | 22.21 | 27.16 |
| | | | | | 3 | Low | 23.28 | 28.34 |
| | | | | | 3 | High | 23.28 | 28.33 |
| | | | | | 6 | Low | 21.16 | 27.86 |
| | 1.4MHz | 20643 | 848.3 | QPSK | 1 | Low | 23.32 | 27.57 |
| | | | | | 1 | Mid | 23.33 | 27.51 |
| | | | | | 1 | High | 23.38 | 27.45 |
| | | | | | 3 | Low | 23.39 | 27.85 |
| | | | | | 3 | High | 23.39 | 27.81 |
| | | | | | 6 | Low | 22.29 | 27.69 |
| | | | | 16QAM | 1 | Low | 22.38 | 26.86 |
| | | | | | 1 | Mid | 22.39 | 26.83 |
| | | | | | 1 | High | 22.41 | 26.80 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 3 | Low | 23.38 | 27.84 |
| | | | | | 3 | High | 23.38 | 27.86 |
| | | | | | 6 | Low | 21.31 | 27.86 |

**OUTPUT POWER FOR LTE BAND 5 (3.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 5 | 3.0 MHz | 20415 | 825.5 | QPSK | 1 | Low | 23.31 | 27.98 |
| | | | | | 1 | Mid | 23.31 | 27.99 |
| | | | | | 1 | High | 23.28 | 27.90 |
| | | | | | 8 | Low | 23.28 | 27.89 |
| | | | | | 8 | High | 23.27 | 27.88 |
| | | | | | 15 | Low | 22.31 | 28.19 |
| | | | | 16QAM | 1 | Low | 22.41 | 28.48 |
| | | | | | 1 | Mid | 22.44 | 28.58 |
| | | | | | 1 | High | 22.45 | 28.43 |
| | | | | | 8 | Low | 22.46 | 28.45 |
| | | | | | 8 | High | 22.47 | 28.47 |
| | | | | | 15 | Low | 21.36 | 28.57 |
| | 3.0 MHz | 20525 | 836.5 | QPSK | 1 | Low | 23.25 | 27.72 |
| | | | | | 1 | Mid | 23.26 | 27.69 |
| | | | | | 1 | High | 23.22 | 27.64 |
| | | | | | 8 | Low | 23.23 | 27.64 |
| | | | | | 8 | High | 23.23 | 27.63 |
| | | | | | 15 | Low | 22.22 | 29.19 |
| | | | | 16QAM | 1 | Low | 22.22 | 27.17 |
| | | | | | 1 | Mid | 22.21 | 27.21 |
| | | | | | 1 | High | 22.18 | 27.10 |
| | | | | | 8 | Low | 22.19 | 27.10 |
| | | | | | 8 | High | 22.19 | 27.12 |
| | | | | | 15 | Low | 21.27 | 28.49 |
| | 3.0 MHz | 20635 | 847.5 | QPSK | 1 | Low | 23.27 | 27.72 |
| | | | | | 1 | Mid | 23.33 | 27.61 |
| | | | | | 1 | High | 23.32 | 27.44 |
| | | | | | 8 | Low | 23.33 | 27.45 |
| | | | | | 8 | High | 23.32 | 27.46 |
| | | | | | 15 | Low | 22.28 | 28.38 |
| | | | | 16QAM | 1 | Low | 22.34 | 26.93 |
| | | | | | 1 | Mid | 22.39 | 26.91 |
| | | | | | 1 | High | 22.41 | 26.79 |
| | | | | | 8 | Low | 22.41 | 26.81 |
| | | | | | 8 | High | 22.40 | 26.78 |
| | | | | | 15 | Low | 21.24 | 27.65 |

**OUTPUT POWER FOR LTE BAND 5 (5.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 5 | 5.0 MHz | 20425 | 826.5 | QPSK | 1 | Low | 23.42 | 28.78 |
| | | | | | 1 | Mid | 23.25 | 28.61 |
| | | | | | 1 | High | 23.33 | 28.61 |
| | | | | | 12 | Low | 22.20 | 28.82 |
| | | | | | 12 | High | 22.34 | 28.80 |
| | | | | | 25 | Low | 22.25 | 28.49 |
| | | | | 16QAM | 1 | Low | 22.28 | 27.79 |
| | | | | | 1 | Mid | 22.24 | 27.76 |
| | | | | | 1 | High | 22.20 | 27.67 |
| | | | | | 12 | Low | 22.34 | 28.74 |
| | | | | | 12 | High | 22.34 | 28.83 |
| | | | | | 25 | Low | 21.32 | 28.51 |
| | 5.0 MHz | 20525 | 836.5 | QPSK | 1 | Low | 23.30 | 28.00 |
| | | | | | 1 | Mid | 23.11 | 27.81 |
| | | | | | 1 | High | 23.25 | 27.84 |
| | | | | | 12 | Low | 22.28 | 27.83 |
| | | | | | 12 | High | 22.23 | 27.71 |
| | | | | | 25 | Low | 22.22 | 28.32 |
| | | | | 16QAM | 1 | Low | 22.33 | 27.86 |
| | | | | | 1 | Mid | 22.31 | 27.80 |
| | | | | | 1 | High | 22.28 | 27.73 |
| | | | | | 12 | Low | 22.25 | 27.63 |
| | | | | | 12 | High | 22.24 | 27.55 |
| | | | | | 25 | Low | 21.26 | 28.11 |
| | 5.0 MHz | 20625 | 846.5 | QPSK | 1 | Low | 23.34 | 27.79 |
| | | | | | 1 | Mid | 23.34 | 27.69 |
| | | | | | 1 | High | 23.38 | 27.44 |
| | | | | | 12 | Low | 22.30 | 28.79 |
| | | | | | 12 | High | 22.32 | 28.57 |
| | | | | | 25 | Low | 22.27 | 28.34 |
| | | | | 16QAM | 1 | Low | 22.43 | 27.63 |
| | | | | | 1 | Mid | 22.47 | 27.56 |
| | | | | | 1 | High | 22.46 | 27.30 |
| | | | | | 12 | Low | 22.30 | 28.60 |
| | | | | | 12 | High | 22.31 | 28.42 |
| | | | | | 25 | Low | 21.28 | 28.90 |

**OUTPUT POWER FOR LTE BAND 5 (10.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 5 | 10.0 MHz | 20450 | 829 | QPSK | 1 | Low | 23.17 | 27.87 |
| | | | | | 1 | Mid | 23.22 | 27.79 |
| | | | | | 1 | High | 22.88 | 27.49 |
| | | | | | 25 | Low | 22.25 | 28.39 |
| | | | | | 25 | High | 22.28 | 28.35 |
| | | | | | 50 | Low | 22.28 | 28.55 |
| | | | | 16QAM | 1 | Low | 22.42 | 28.51 |
| | | | | | 1 | Mid | 22.49 | 28.43 |
| | | | | | 1 | High | 22.42 | 28.18 |
| | | | | | 25 | Low | 22.28 | 28.37 |
| | | | | | 25 | High | 22.27 | 28.35 |
| | | | | | 50 | Low | 21.28 | 28.86 |
| | 10.0 MHz | 20525 | 836.5 | QPSK | 1 | Low | 23.30 | 27.87 |
| | | | | | 1 | Mid | 22.96 | 27.51 |
| | | | | | 1 | High | 23.01 | 27.66 |
| | | | | | 25 | Low | 22.25 | 28.38 |
| | | | | | 25 | High | 22.18 | 28.47 |
| | | | | | 50 | Low | 22.22 | 28.37 |
| | | | | 16QAM | 1 | Low | 22.27 | 27.31 |
| | | | | | 1 | Mid | 22.01 | 26.95 |
| | | | | | 1 | High | 22.14 | 27.19 |
| | | | | | 25 | Low | 22.19 | 28.48 |
| | | | | | 25 | High | 22.19 | 28.34 |
| | | | | | 50 | Low | 21.25 | 28.71 |
| | 10.0 MHz | 20600 | 844 | QPSK | 1 | Low | 23.28 | 27.77 |
| | | | | | 1 | Mid | 23.25 | 27.79 |
| | | | | | 1 | High | 22.90 | 27.37 |
| | | | | | 25 | Low | 22.23 | 28.15 |
| | | | | | 25 | High | 22.25 | 28.08 |
| | | | | | 50 | Low | 22.24 | 28.38 |
| | | | | 16QAM | 1 | Low | 22.38 | 26.97 |
| | | | | | 1 | Mid | 22.34 | 27.02 |
| | | | | | 1 | High | 22.31 | 26.78 |
| | | | | | 25 | Low | 22.24 | 28.07 |
| | | | | | 25 | High | 22.25 | 28.09 |
| | | | | | 50 | Low | 21.25 | 28.23 |

## 4.5 LTE BAND 7

**OUTPUT POWER FOR LTE BAND 7 (5.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 7 | 5.0MHz | 20775 | 2502.5 | QPSK | 1 | Low | 21.70 | 27.16 |
| | | | | | 1 | Mid | 21.02 | 27.05 |
| | | | | | 1 | High | 21.32 | 27.28 |
| | | | | | 12 | Low | 20.83 | 27.05 |
| | | | | | 12 | High | 20.81 | 26.90 |
| | | | | | 25 | Low | 20.88 | 26.98 |
| | | | | 16QAM | 1 | Low | 21.39 | 26.23 |
| | | | | | 1 | Mid | 21.74 | 25.94 |
| | | | | | 1 | High | 21.22 | 26.30 |
| | | | | | 12 | Low | 20.86 | 27.21 |
| | | | | | 12 | High | 20.86 | 27.20 |
| | | | | | 25 | Low | 20.02 | 27.06 |
| | 5.0MHz | 21100 | 2535.0 | QPSK | 1 | Low | 22.72 | 27.53 |
| | | | | | 1 | Mid | 21.61 | 27.04 |
| | | | | | 1 | High | 21.89 | 27.16 |
| | | | | | 12 | Low | 21.10 | 27.12 |
| | | | | | 12 | High | 20.73 | 26.87 |
| | | | | | 25 | Low | 20.84 | 27.26 |
| | | | | 16QAM | 1 | Low | 21.82 | 27.46 |
| | | | | | 1 | Mid | 21.77 | 27.02 |
| | | | | | 1 | High | 21.05 | 27.14 |
| | | | | | 12 | Low | 20.78 | 26.99 |
| | | | | | 12 | High | 20.79 | 26.97 |
| | | | | | 25 | Low | 20.02 | 27.52 |
| | 5.0MHz | 21425 | 2567.5 | QPSK | 1 | Low | 22.69 | 27.48 |
| | | | | | 1 | Mid | 22.64 | 27.05 |
| | | | | | 1 | High | 22.56 | 26.98 |
| | | | | | 12 | Low | 21.74 | 26.35 |
| | | | | | 12 | High | 21.62 | 28.09 |
| | | | | | 25 | Low | 21.91 | 28.30 |
| | | | | 16QAM | 1 | Low | 22.93 | 27.40 |
| | | | | | 1 | Mid | 22.00 | 26.97 |
| | | | | | 1 | High | 22.00 | 26.93 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 12 | Low | 21.63 | 28.08 |
| | | | | | 12 | High | 21.63 | 28.10 |
| | | | | | 25 | Low | 20.99 | 27.85 |

**OUTPUT POWER FOR LTE BAND 7 (10.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 7 | 10.0 MHz | 20800 | 2505.0 | QPSK | 1 | Low | 21.98 | 26.12 |
| | | | | | 1 | Mid | 21.79 | 26.13 |
| | | | | | 1 | High | 21.06 | 26.63 |
| | | | | | 25 | Low | 20.82 | 26.79 |
| | | | | | 25 | High | 20.00 | 27.12 |
| | | | | | 50 | Low | 20.96 | 26.86 |
| | | | | 16QAM | 1 | Low | 21.47 | 26.76 |
| | | | | | 1 | Mid | 21.40 | 26.90 |
| | | | | | 1 | High | 21.83 | 27.37 |
| | | | | | 25 | Low | 20.99 | 27.09 |
| | | | | | 25 | High | 20.99 | 27.07 |
| | | | | | 50 | Low | 20.99 | 27.38 |
| | 10.0 MHz | 21100 | 2535.0 | QPSK | 1 | Low | 22.49 | 27.27 |
| | | | | | 1 | Mid | 21.61 | 26.72 |
| | | | | | 1 | High | 21.12 | 26.53 |
| | | | | | 25 | Low | 21.14 | 27.93 |
| | | | | | 25 | High | 20.58 | 27.63 |
| | | | | | 50 | Low | 20.86 | 27.44 |
| | | | | 16QAM | 1 | Low | 21.57 | 26.83 |
| | | | | | 1 | Mid | 21.72 | 26.11 |
| | | | | | 1 | High | 21.27 | 25.98 |
| | | | | | 25 | Low | 20.63 | 27.64 |
| | | | | | 25 | High | 20.63 | 27.65 |
| | | | | | 50 | Low | 20.03 | 28.14 |
| | 10.0 MHz | 21400 | 2565.0 | QPSK | 1 | Low | 22.80 | 27.76 |
| | | | | | 1 | Mid | 22.76 | 27.36 |
| | | | | | 1 | High | 22.09 | 26.90 |
| | | | | | 25 | Low | 21.89 | 28.08 |
| | | | | | 25 | High | 21.83 | 27.64 |
| | | | | | 50 | Low | 21.17 | 28.31 |
| | | | | 16QAM | 1 | Low | 22.38 | 27.02 |
| | | | | | 1 | Mid | 22.24 | 26.75 |
| | | | | | 1 | High | 21.40 | 26.19 |
| | | | | | 25 | Low | 21.85 | 27.78 |
| | | | | | 25 | High | 21.85 | 27.70 |
| | | | | | 50 | Low | 21.21 | 27.94 |

**OUTPUT POWER FOR LTE BAND 7 (15.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 7 | 15.0 MHz | 20825 | 2507.5 | QPSK | 1 | Low | 21.09 | 26.19 |
| | | | | | 1 | Mid | 21.03 | 26.40 |
| | | | | | 1 | High | 22.01 | 27.21 |
| | | | | | 36 | Low | 20.60 | 26.87 |
| | | | | | 36 | High | 20.55 | 27.65 |
| | | | | | 75 | Low | 20.01 | 27.94 |
| | | | | 16QAM | 1 | Low | 21.52 | 26.82 |
| | | | | | 1 | Mid | 21.43 | 27.12 |
| | | | | | 1 | High | 21.69 | 27.93 |
| | | | | | 36 | Low | 20.42 | 27.67 |
| | | | | | 36 | High | 20.36 | 27.67 |
| | | | | | 75 | Low | 20.12 | 27.50 |
| | 15.0 MHz | 21100 | 2535.0 | QPSK | 1 | Low | 22.95 | 27.46 |
| | | | | | 1 | Mid | 21.61 | 26.60 |
| | | | | | 1 | High | 21.06 | 26.34 |
| | | | | | 36 | Low | 21.41 | 27.95 |
| | | | | | 36 | High | 20.42 | 27.38 |
| | | | | | 75 | Low | 20.88 | 27.75 |
| | | | | 16QAM | 1 | Low | 22.38 | 27.24 |
| | | | | | 1 | Mid | 21.14 | 26.38 |
| | | | | | 1 | High | 21.62 | 26.11 |
| | | | | | 36 | Low | 20.45 | 27.36 |
| | | | | | 36 | High | 20.45 | 27.41 |
| | | | | | 75 | Low | 20.98 | 27.69 |
| | 15.0 MHz | 21375 | 2562.5 | QPSK | 1 | Low | 22.85 | 27.68 |
| | | | | | 1 | Mid | 22.93 | 27.59 |
| | | | | | 1 | High | 22.18 | 26.90 |
| | | | | | 36 | Low | 21.71 | 28.30 |
| | | | | | 36 | High | 21.82 | 27.90 |
| | | | | | 75 | Low | 21.93 | 28.82 |
| | | | | 16QAM | 1 | Low | 22.04 | 26.87 |
| | | | | | 1 | Mid | 22.49 | 27.01 |
| | | | | | 1 | High | 21.50 | 26.26 |
| | | | | | 36 | Low | 21.85 | 27.94 |
| | | | | | 36 | High | 21.85 | 27.94 |
| | | | | | 75 | Low | 21.21 | 28.52 |

**OUTPUT POWER FOR LTE BAND 7 (20.0MHZ)**

| Band | Band Width | Channel | Frequency (MHz) | Modulation | RB Configuration | | Average Power(dBm) | Peak Power(dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | | RB Size | RB Offset | | |
| Band 7 | 20.0 MHz | 20850 | 2510.0 | QPSK | 1 | Low | 21.24 | 26.53 |
| | | | | | 1 | Mid | 21.34 | 26.93 |
| | | | | | 1 | High | 22.81 | 27.95 |
| | | | | | 50 | Low | 20.52 | 27.12 |
| | | | | | 50 | High | 21.33 | 28.47 |
| | | | | | 100 | Low | 20.34 | 27.49 |
| | | | | 16QAM | 1 | Low | 21.98 | 26.33 |
| | | | | | 1 | Mid | 21.70 | 26.88 |
| | | | | | 1 | High | 22.03 | 27.79 |
| | | | | | 50 | Low | 21.40 | 28.49 |
| | | | | | 50 | High | 21.27 | 28.23 |
| | | | | | 100 | Low | 20.62 | 28.80 |
| | 20.0 MHz | 21100 | 2535.0 | QPSK | 1 | Low | 22.87 | 27.87 |
| | | | | | 1 | Mid | 21.53 | 26.81 |
| | | | | | 1 | High | 21.99 | 26.69 |
| | | | | | 50 | Low | 21.50 | 27.96 |
| | | | | | 50 | High | 20.32 | 27.29 |
| | | | | | 100 | Low | 20.99 | 27.92 |
| | | | | 16QAM | 1 | Low | 22.86 | 27.86 |
| | | | | | 1 | Mid | 21.25 | 26.78 |
| | | | | | 1 | High | 21.83 | 26.75 |
| | | | | | 50 | Low | 20.37 | 27.34 |
| | | | | | 50 | High | 20.38 | 27.35 |
| | | | | | 100 | Low | 20.06 | 27.85 |
| | 20.0 MHz | 21350 | 2560.0 | QPSK | 1 | Low | 22.03 | 27.06 |
| | | | | | 1 | Mid | 22.80 | 27.57 |
| | | | | | 1 | High | 22.14 | 26.74 |
| | | | | | 50 | Low | 21.66 | 28.22 |
| | | | | | 50 | High | 21.88 | 28.08 |
| | | | | | 100 | Low | 21.90 | 28.43 |
| | | | | 16QAM | 1 | Low | 21.30 | 27.51 |
| | | | | | 1 | Mid | 22.38 | 27.88 |
| | | | | | 1 | High | 21.47 | 27.18 |
| | | | | | 50 | Low | 21.95 | 28.09 |
| | | | | | 50 | High | 21.94 | 28.03 |
| | | | | | 100 | Low | 20.94 | 28.48 |

# 5. OCCUPIED BANDWIDTH

**RULE PART(S)**

FCC: §2.1049

**LIMITS**

For reporting purposes only

**TEST PROCEDURE**

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

**MODES TESTED**

- ☐ LTE Band 2
- LTE Band 4
- LTE Band 5
- ☐ LTE Band 7

**RESULTS**

**PASS**

**Test results:**

| Band | Mode | RB Size/RB Offset | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | -26dBc Occupied Bandwidth (MHz) |
|---|---|---|---|---|---|
| LTE Band 2 | 1.4MHz BAND QPSK | 6/0 | 1880.0 | 1.08 | 1.24 |
| | 1.4MHz BAND 16QAM | 6/0 | 1880.0 | 1.09 | 1.25 |
| | 3.0MHz BAND QPSK | 15/0 | 1880.0 | 2.69 | 2.90 |
| | 3.0MHz BAND 16QAM | 15/0 | 1880.0 | 2.69 | 2.90 |
| | 5.0MHz BAND QPSK | 25/0 | 1880.0 | 4.50 | 4.87 |
| | 5.0MHz BAND 16QAM | 25/0 | 1880.0 | 4.50 | 4.84 |
| | 10.0MHz BAND QPSK | 50/0 | 1880.0 | 8.97 | 9.54 |
| | 10.0MHz BAND 16QAM | 50/0 | 1880.0 | 8.96 | 9.51 |
| | 15.0MHz BAND QPSK | 75/0 | 1880.0 | 13.46 | 14.26 |
| | 15.0MHz BAND 16QAM | 75/0 | 1880.0 | 13.46 | 14.24 |
| | 20.0MHz BAND QPSK | 100/0 | 1880.0 | 17.96 | 19.02 |
| | 20.0MHz BAND 16QAM | 100/0 | 1880.0 | 17.97 | 19.03 |

| Band | Mode | RB Size/RB Offset | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | -26dBc Occupied Bandwidth (MHz) |
|---|---|---|---|---|---|
| LTE Band 4 | 1.4MHz BAND QPSK | 6/0 | 1732.5 | 1.09 | 1.24 |
| | 1.4MHz BAND 16QAM | 6/0 | 1732.5 | 1.09 | 1.25 |
| | 3.0MHz BAND QPSK | 15/0 | 1732.5 | 2.69 | 2.90 |
| | 3.0MHz BAND 16QAM | 15/0 | 1732.5 | 2.69 | 2.90 |
| | 5.0MHz BAND QPSK | 25/0 | 1732.5 | 4.50 | 4.86 |
| | 5.0MHz BAND 16QAM | 25/0 | 1732.5 | 4.50 | 4.84 |
| | 10.0MHz BAND QPSK | 50/0 | 1732.5 | 8.97 | 9.53 |
| | 10.0MHz BAND 16QAM | 50/0 | 1732.5 | 8.96 | 9.52 |
| | 15.0MHz BAND QPSK | 75/0 | 1732.5 | 13.45 | 14.25 |
| | 15.0MHz BAND 16QAM | 75/0 | 1732.5 | 13.45 | 14.25 |
| | 20.0MHz BAND QPSK | 100/0 | 1732.5 | 17.96 | 19.03 |
| | 20.0MHz BAND 16QAM | 100/0 | 1732.5 | 17.96 | 19.04 |

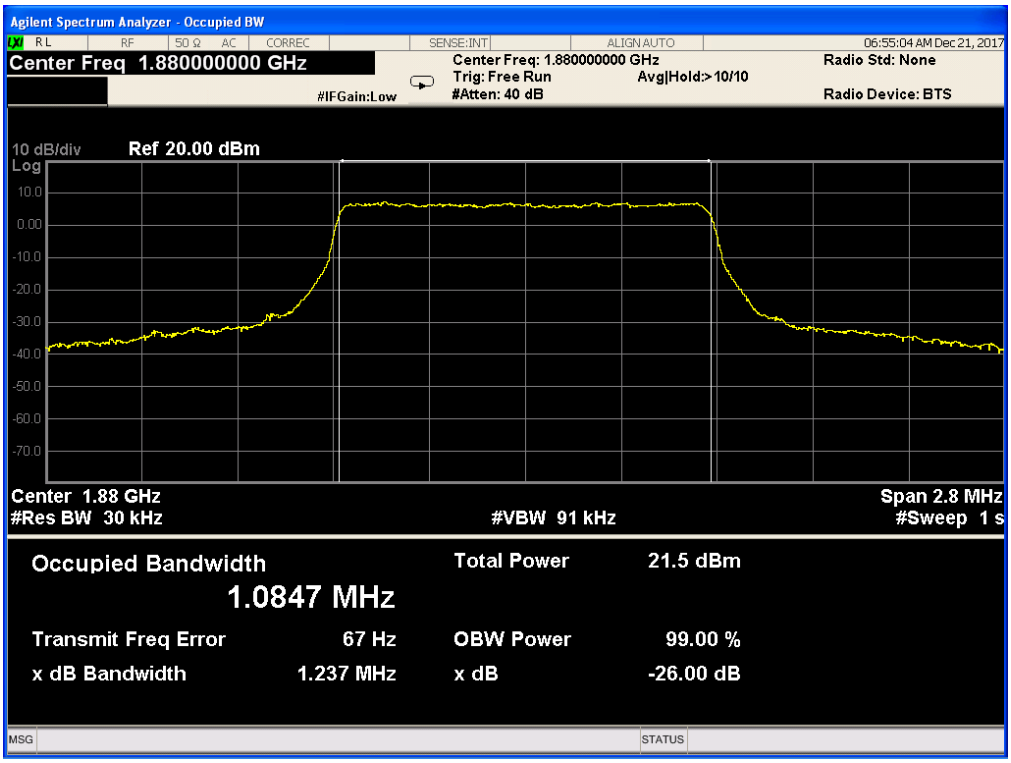
| Band | Mode | RB Size/RB Offset | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | -26dBc Occupied Bandwidth (MHz) |
|---|---|---|---|---|---|
| LTE Band 5 | 1.4MHz BAND QPSK | 6/0 | 836.5 | 1.09 | 1.24 |
| | 1.4MHz BAND 16QAM | 6/0 | 836.5 | 1.08 | 1.25 |
| | 3.0MHz BAND QPSK | 15/0 | 836.5 | 2.69 | 2.90 |
| | 3.0MHz BAND 16QAM | 15/0 | 836.5 | 2.69 | 2.89 |
| | 5.0MHz BAND QPSK | 25/0 | 836.5 | 4.50 | 4.87 |
| | 5.0MHz BAND 16QAM | 25/0 | 836.5 | 4.50 | 4.84 |
| | 10.0MHz BAND QPSK | 50/0 | 836.5 | 8.97 | 9.52 |
| | 10.0MHz BAND 16QAM | 50/0 | 836.5 | 8.97 | 9.53 |

| Band | Mode | RB Size/RB Offset | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | -26dBc Occupied Bandwidth (MHz) |
|---|---|---|---|---|---|
| LTE Band 7 | 5.0MHz BAND QPSK | 25/0 | 2535.0 | 4.50 | 4.87 |
| | 5.0MHz BAND 16QAM | 25/0 | 2535.0 | 4.50 | 4.82 |
| | 10.0MHz BAND QPSK | 50/0 | 2535.0 | 8.96 | 9.52 |
| | 10.0MHz BAND 16QAM | 50/0 | 2535.0 | 8.95 | 9.50 |
| | 15.0MHz BAND QPSK | 75/0 | 2535.0 | 13.44 | 14.22 |
| | 15.0MHz BAND 16QAM | 75/0 | 2535.0 | 13.44 | 14.23 |
| | 20.0MHz BAND QPSK | 100/0 | 2535.0 | 17.92 | 18.99 |
| | 20.0MHz BAND 16QAM | 100/0 | 2535.0 | 17.92 | 18.99 |

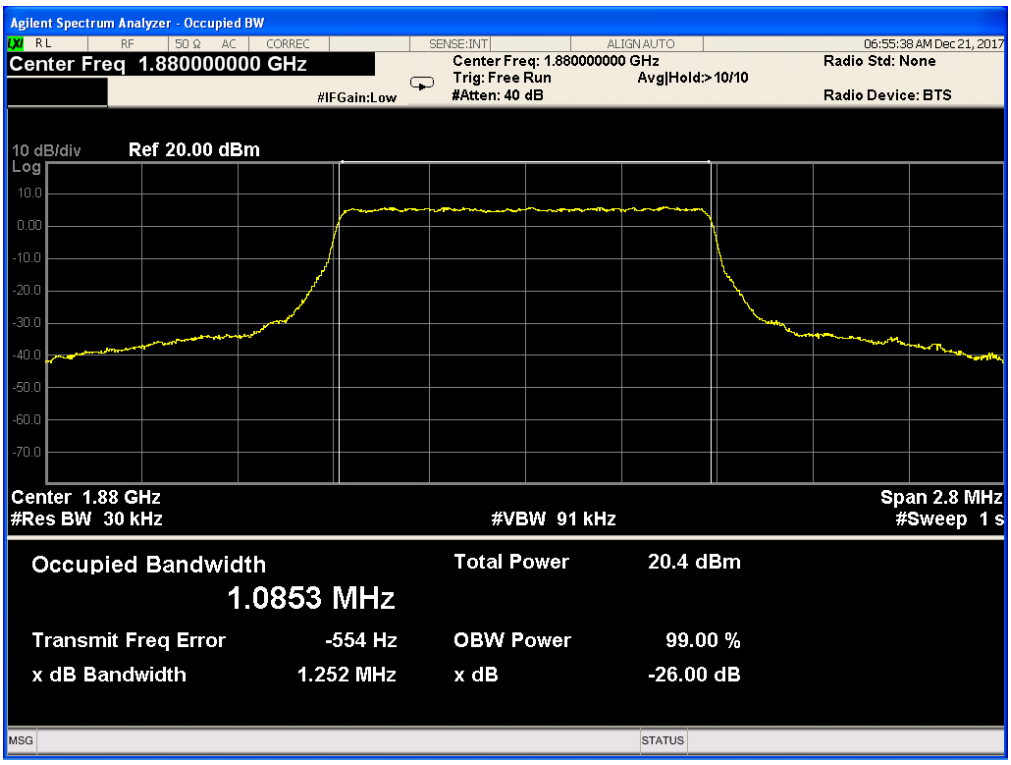
Note: This test was only measured at maximum RB allocation and at CENTER of band for each LTE BW

## 5.1 LTE BAND 2

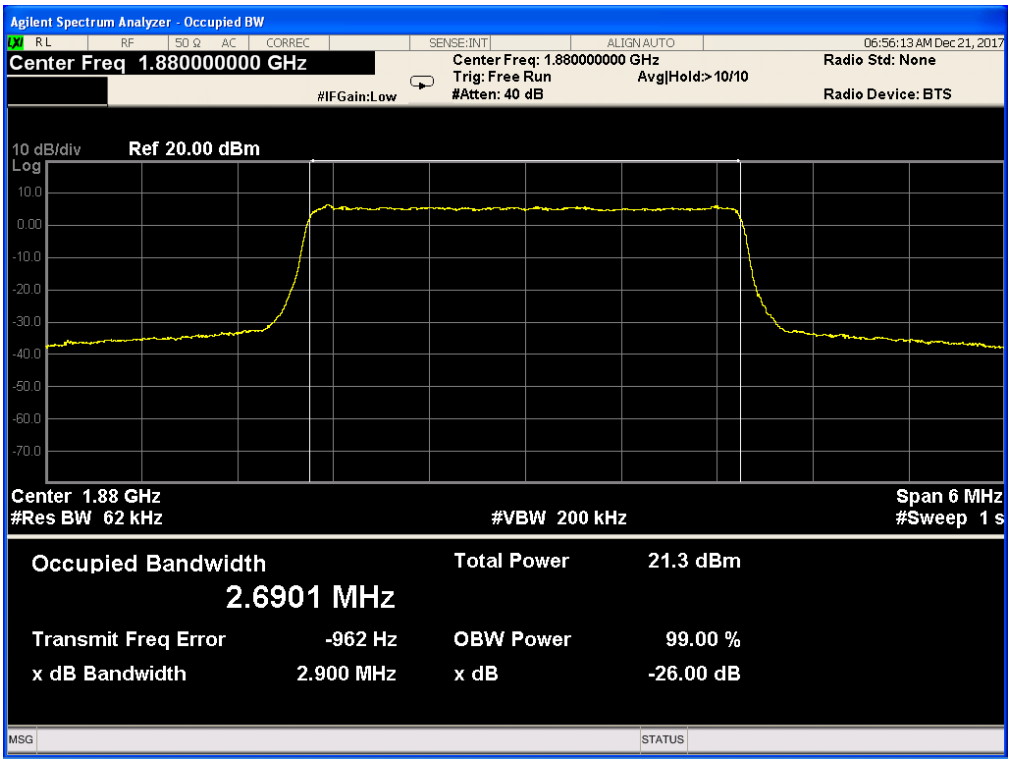
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



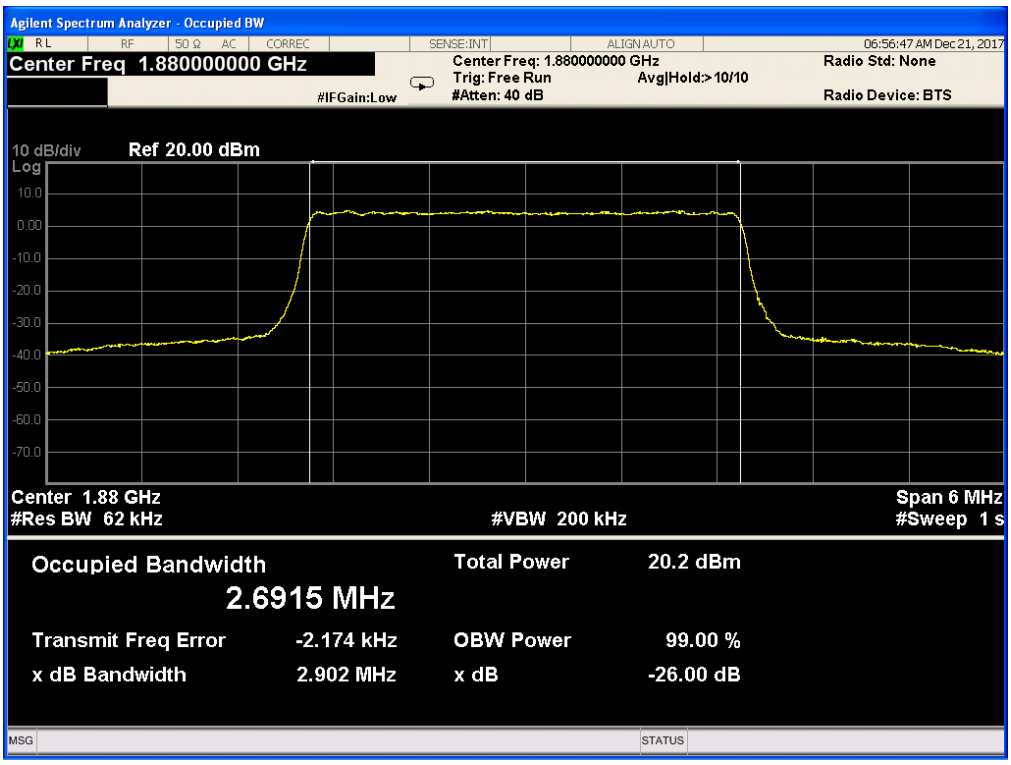

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 6,RB POS. Low,16-QAM*



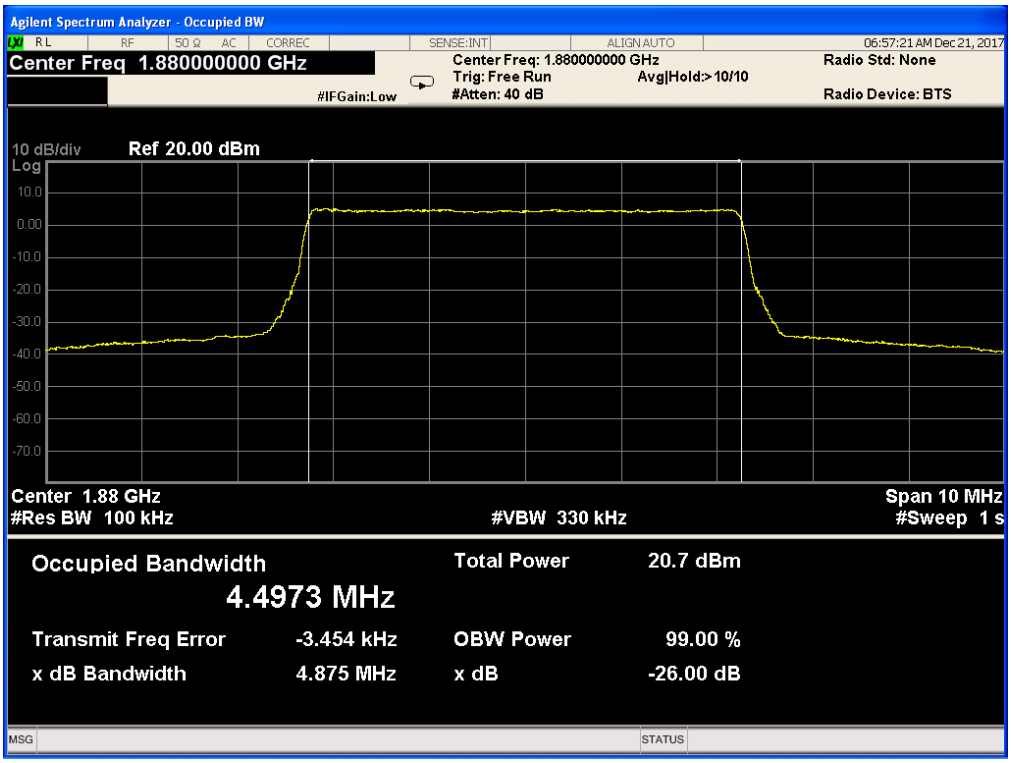
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



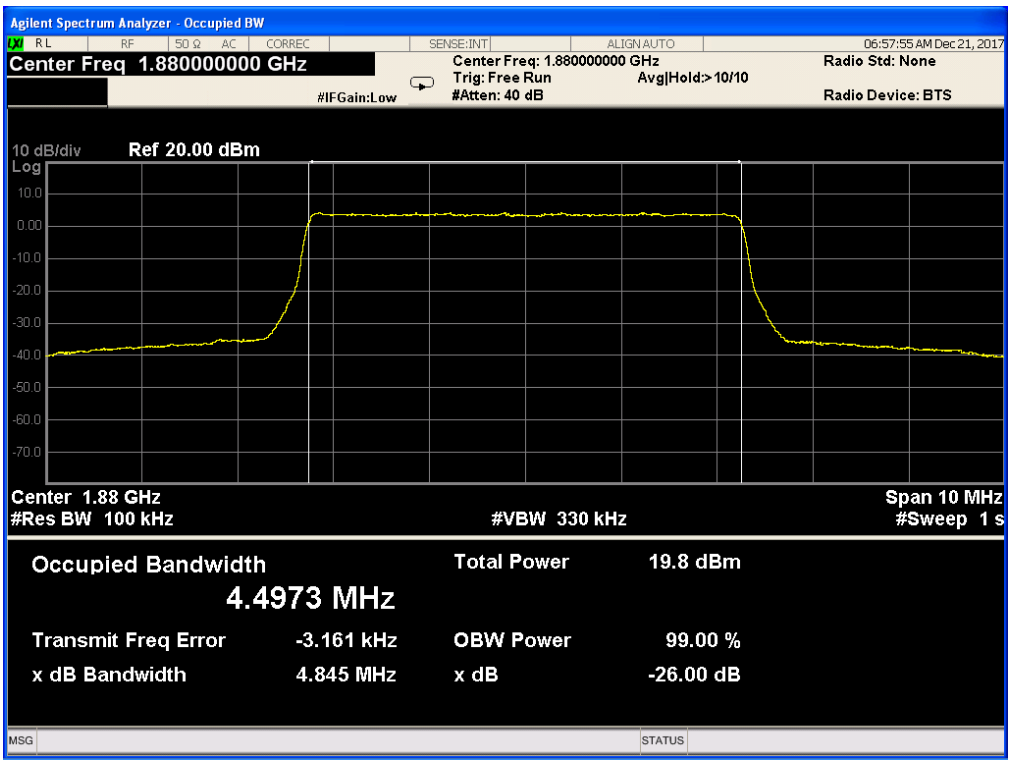

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 15,RB POS. Low,16-QAM*



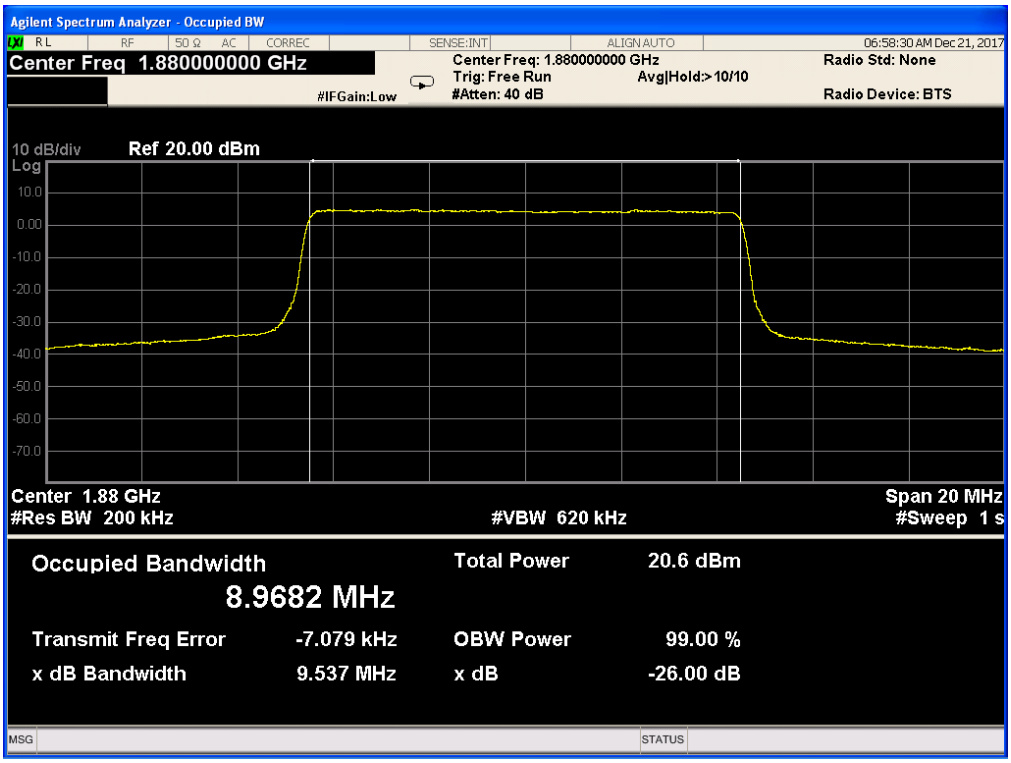
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 25,RB POS. Low,QPSK*



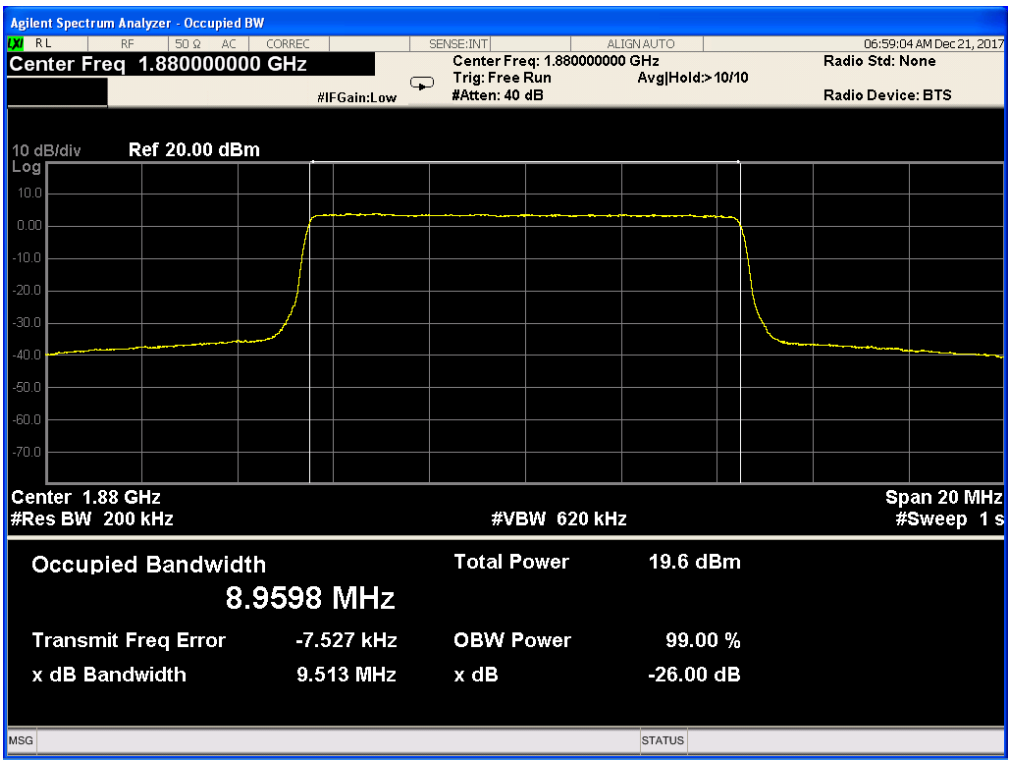

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 25,RB POS. Low,16-QAM*



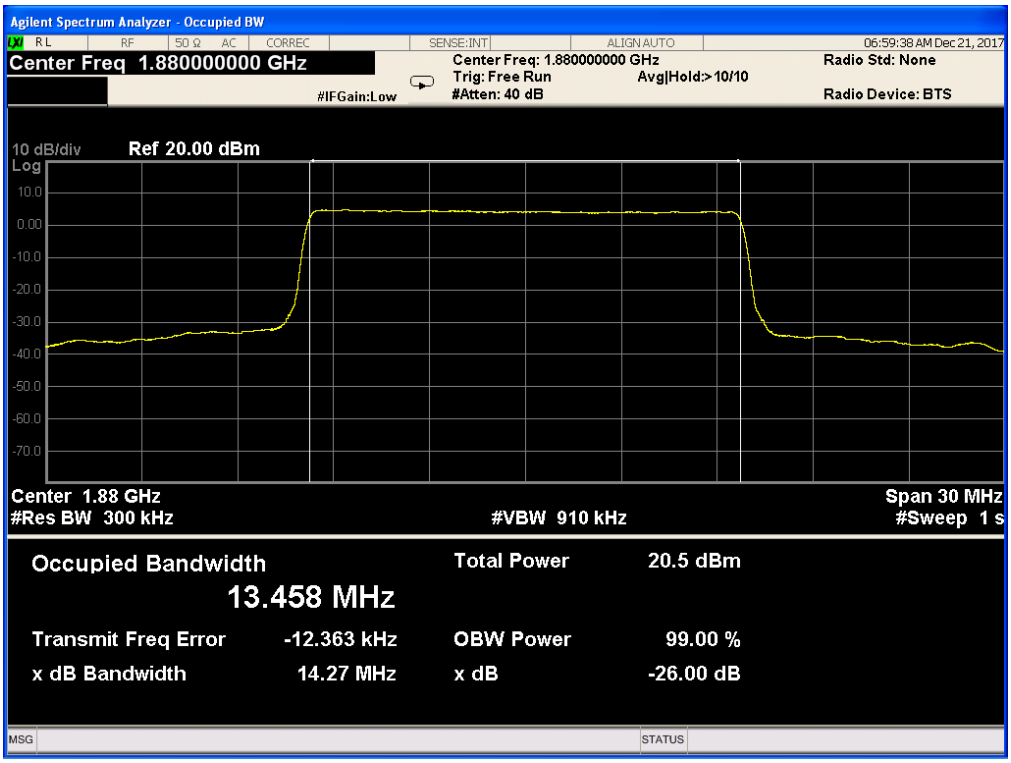
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK*



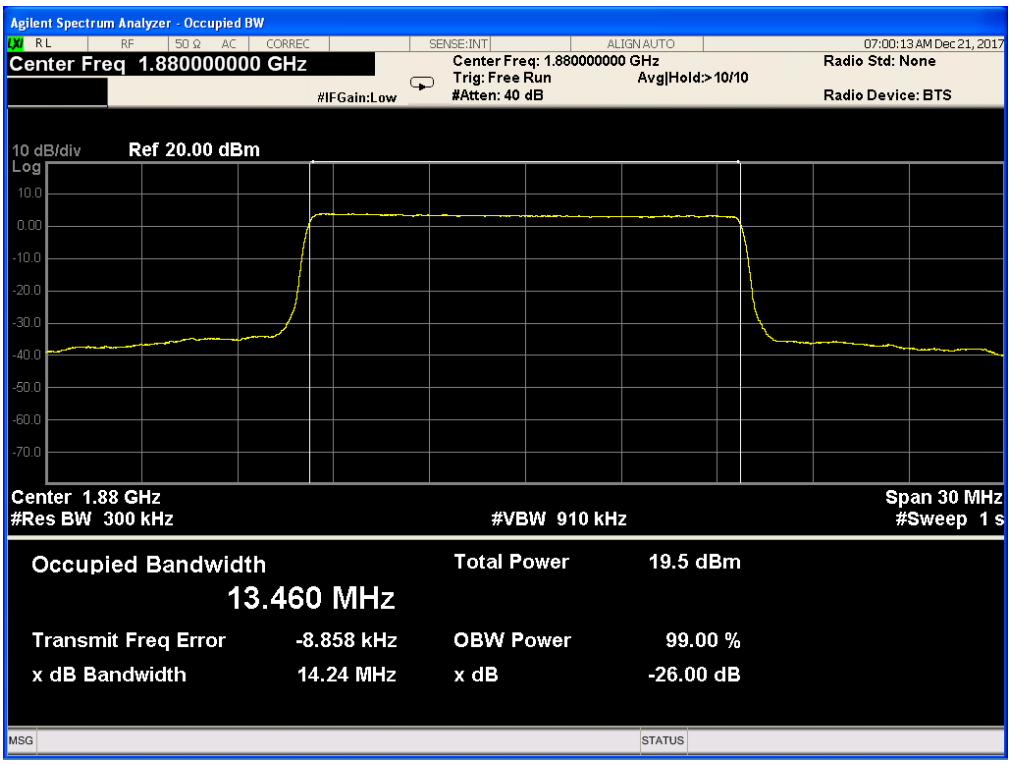

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 50,RB POS. Low,16-QAM*



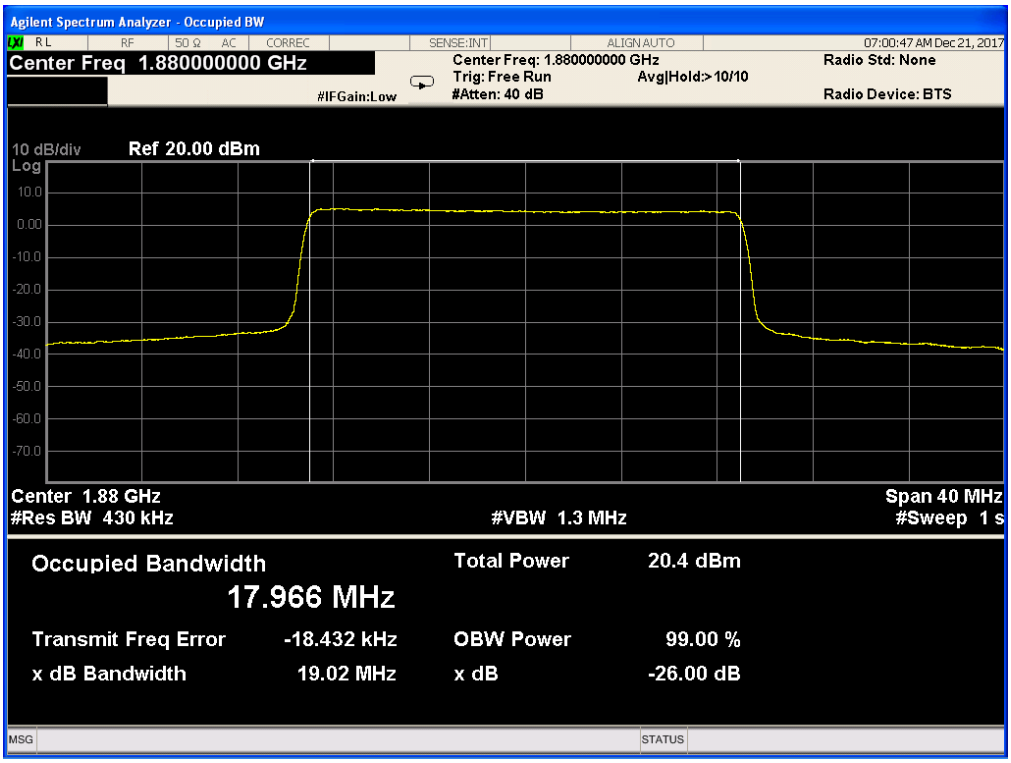
*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 75,RB POS. Low,QPSK*



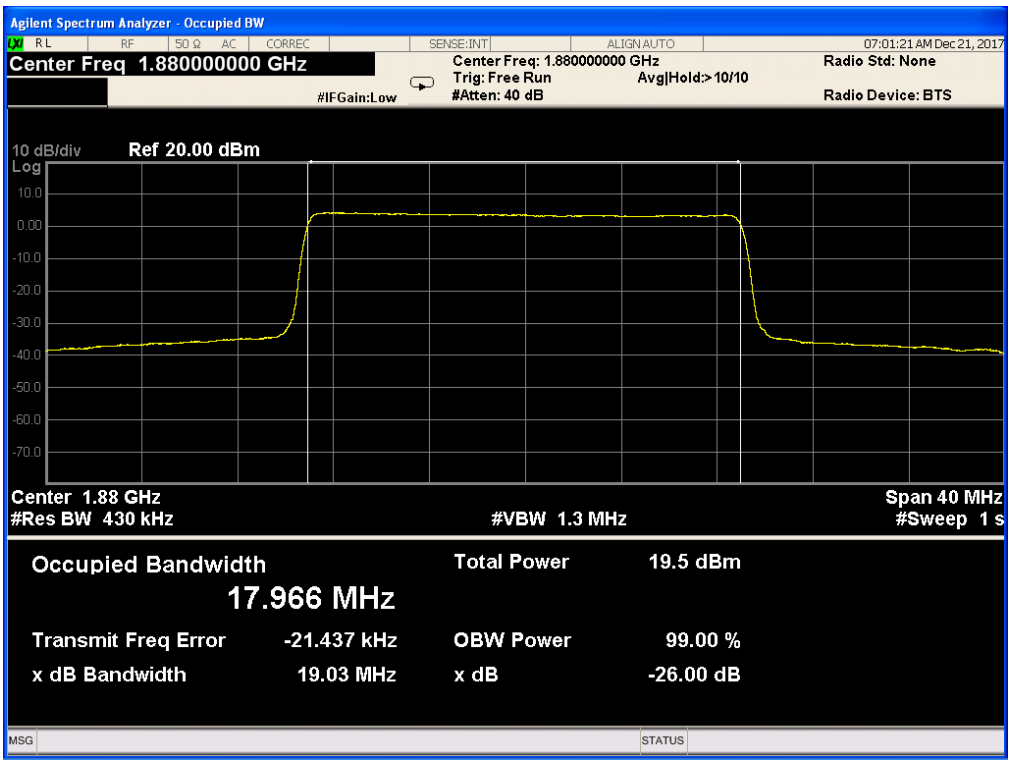

*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 75,RB POS. Low,16-QAM*



*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK*

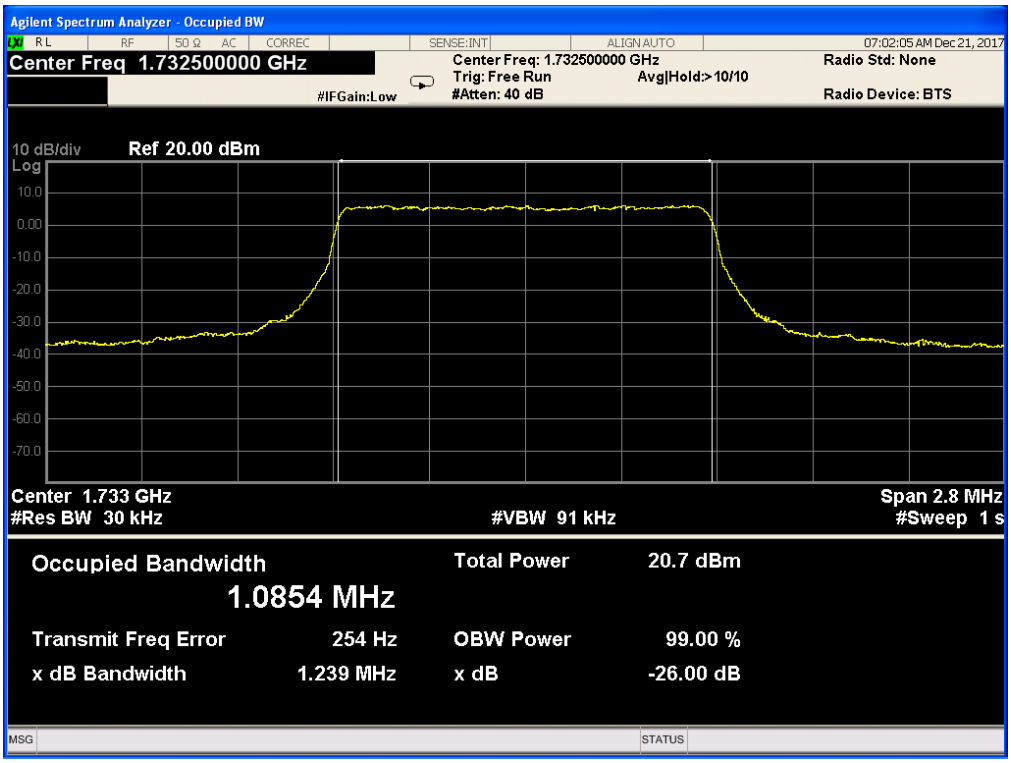



*Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 100,RB POS. Low,16-QAM*

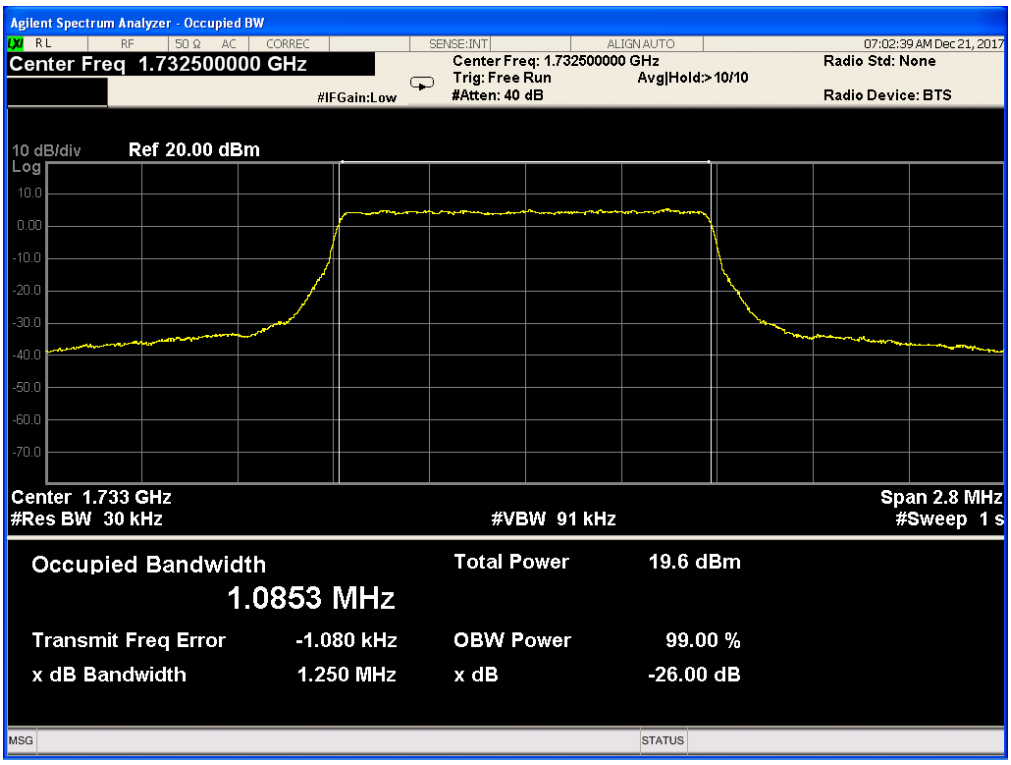


## 5.2 LTE BAND 4

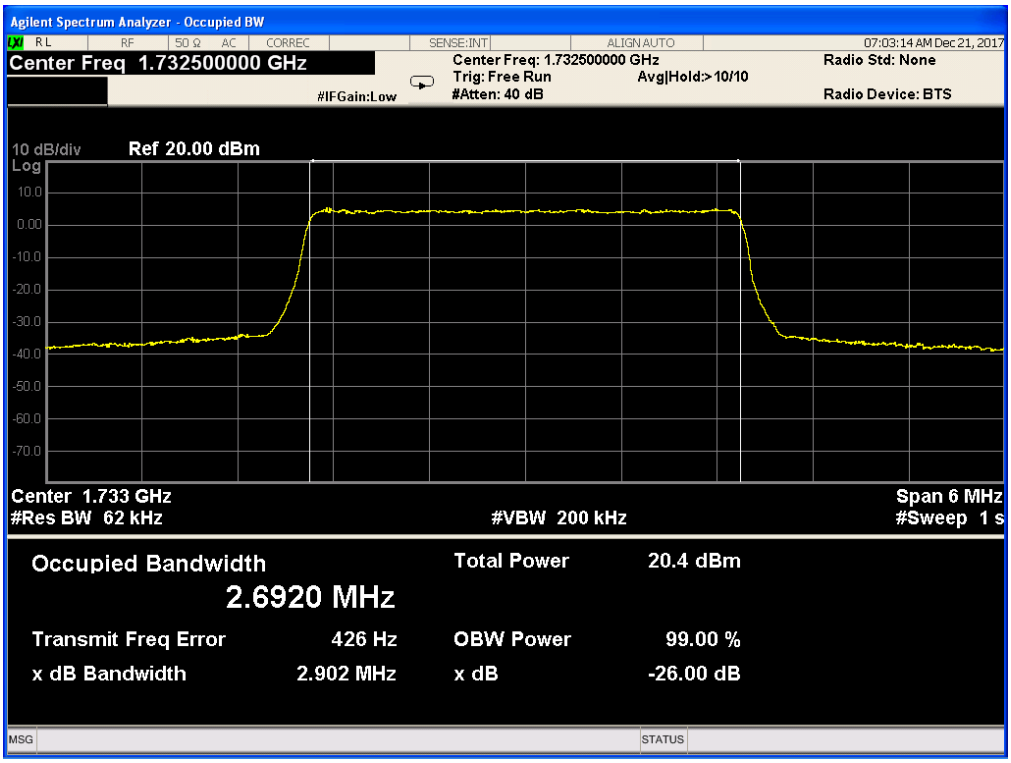
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



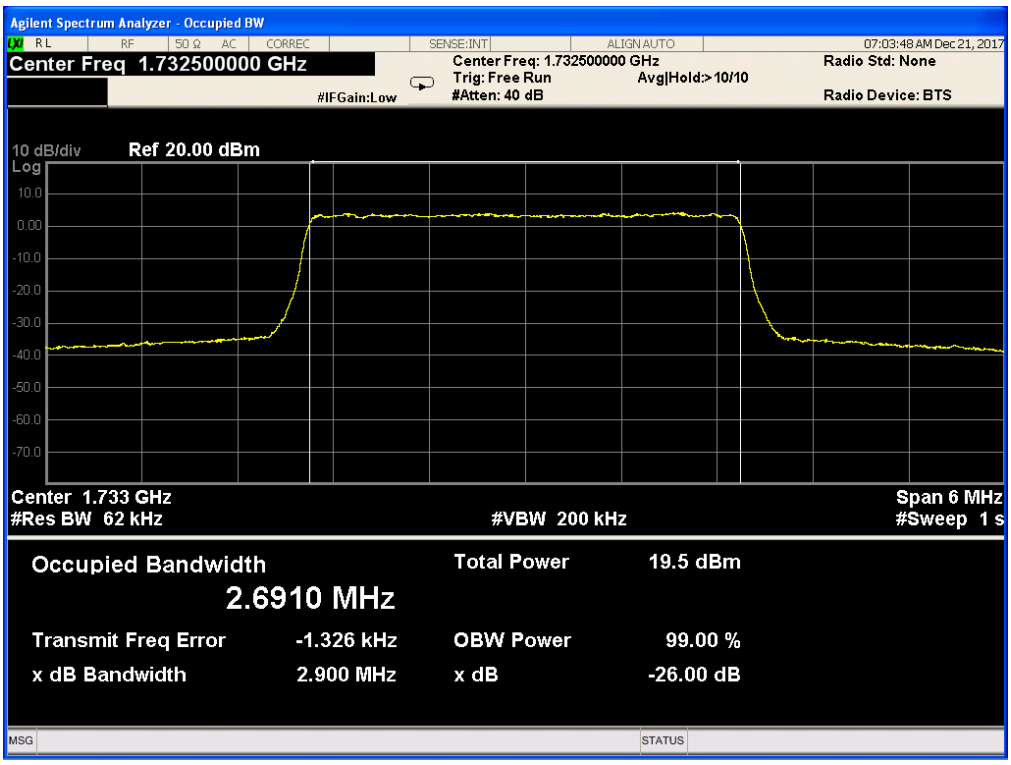

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 6,RB POS. Low,16-QAM*



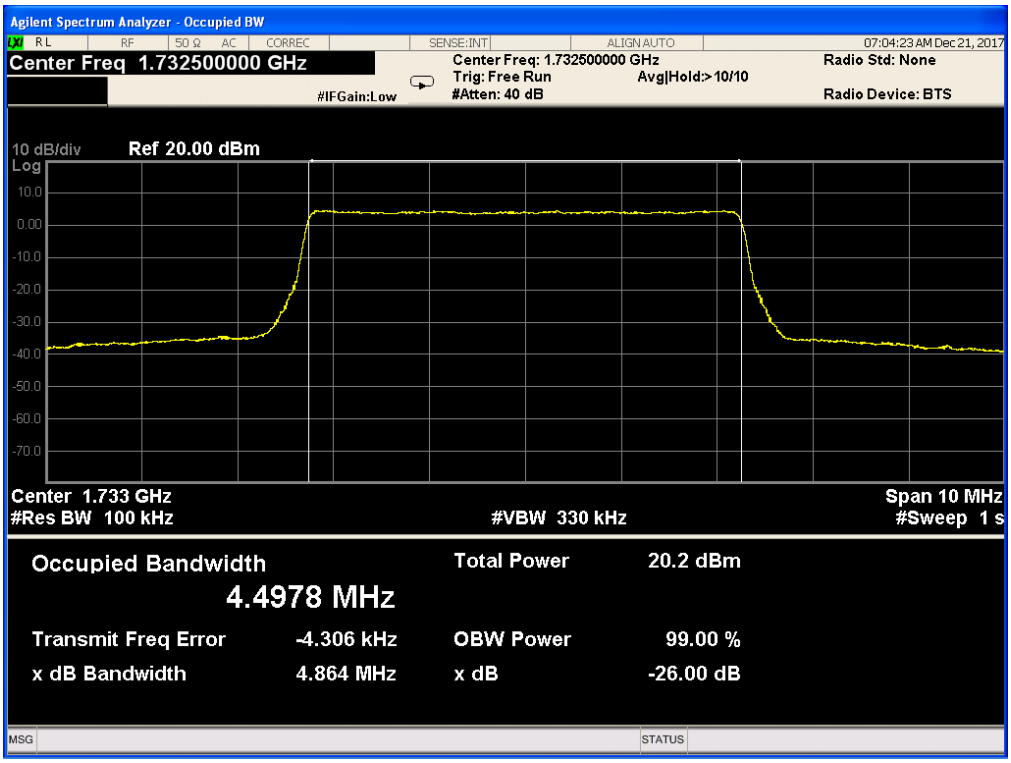
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



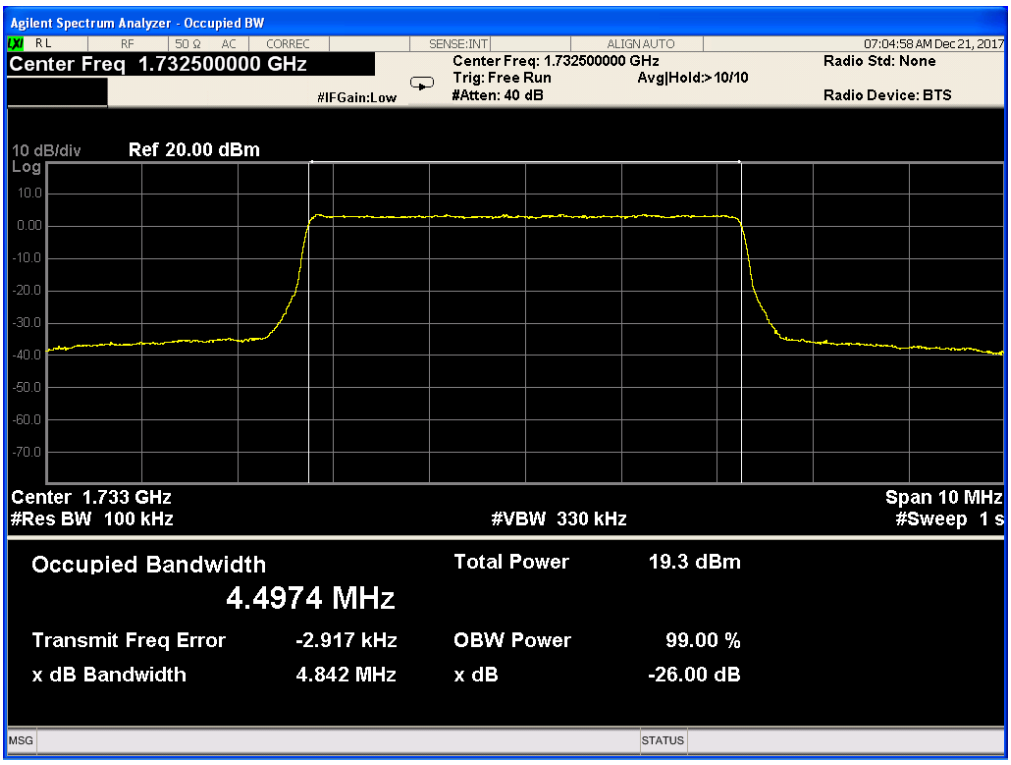

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 15,RB POS. Low,16-QAM*



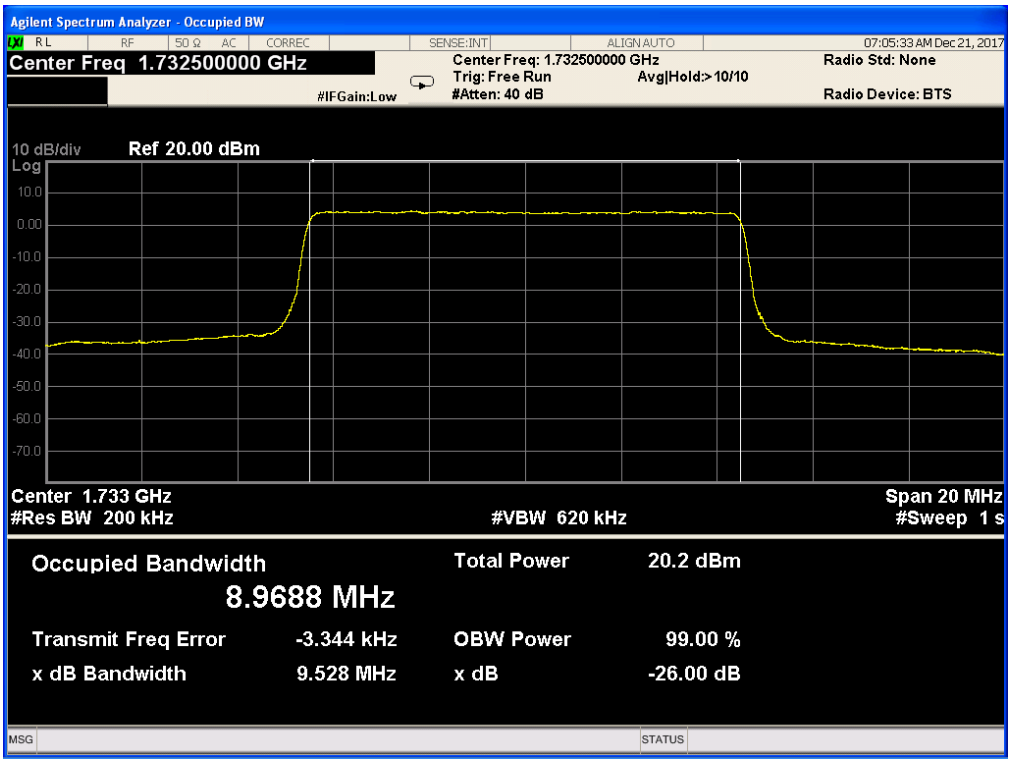
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK*



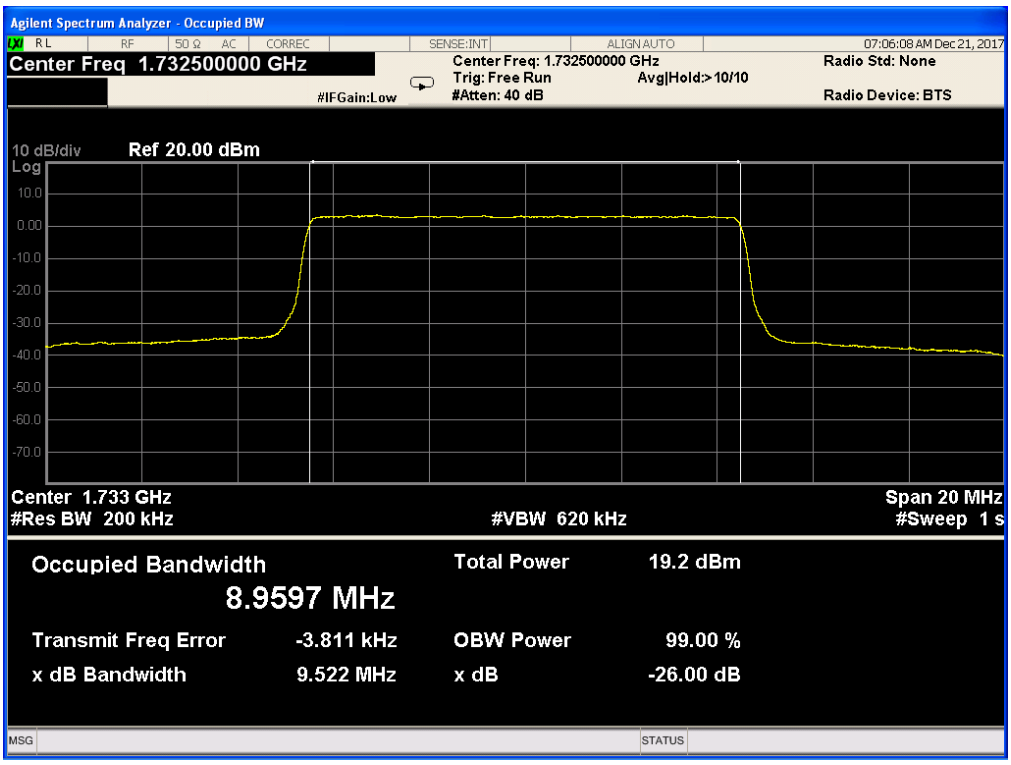

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 25,RB POS. Low,16-QAM*



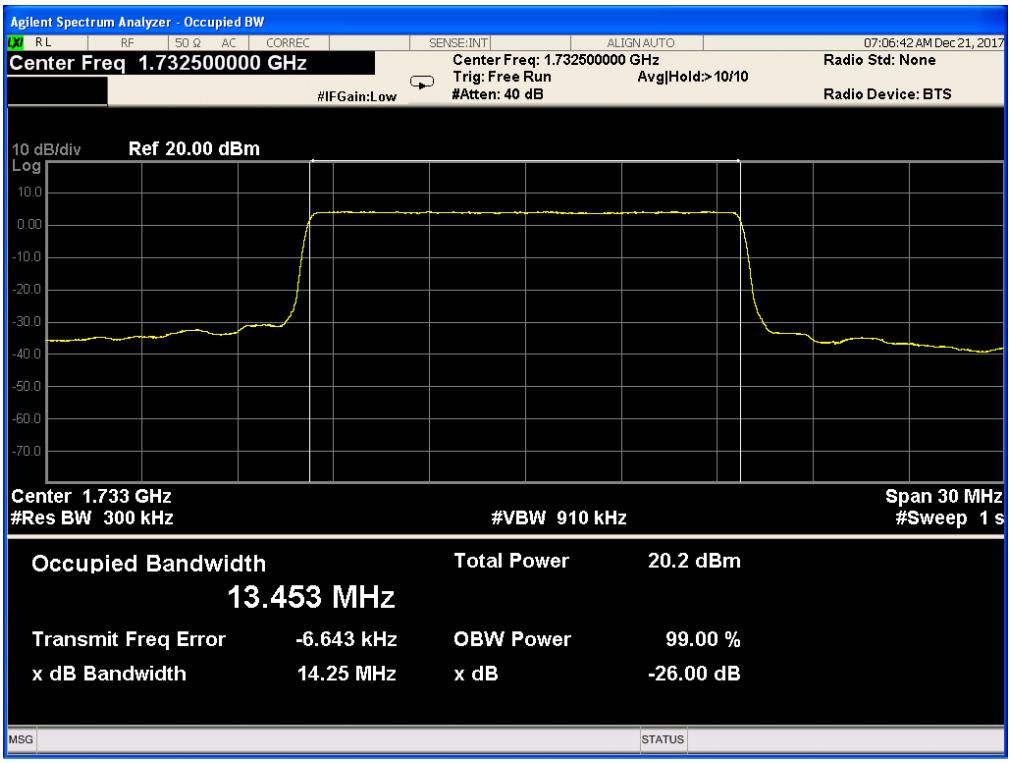
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 50,RB POS. Low,QPSK*



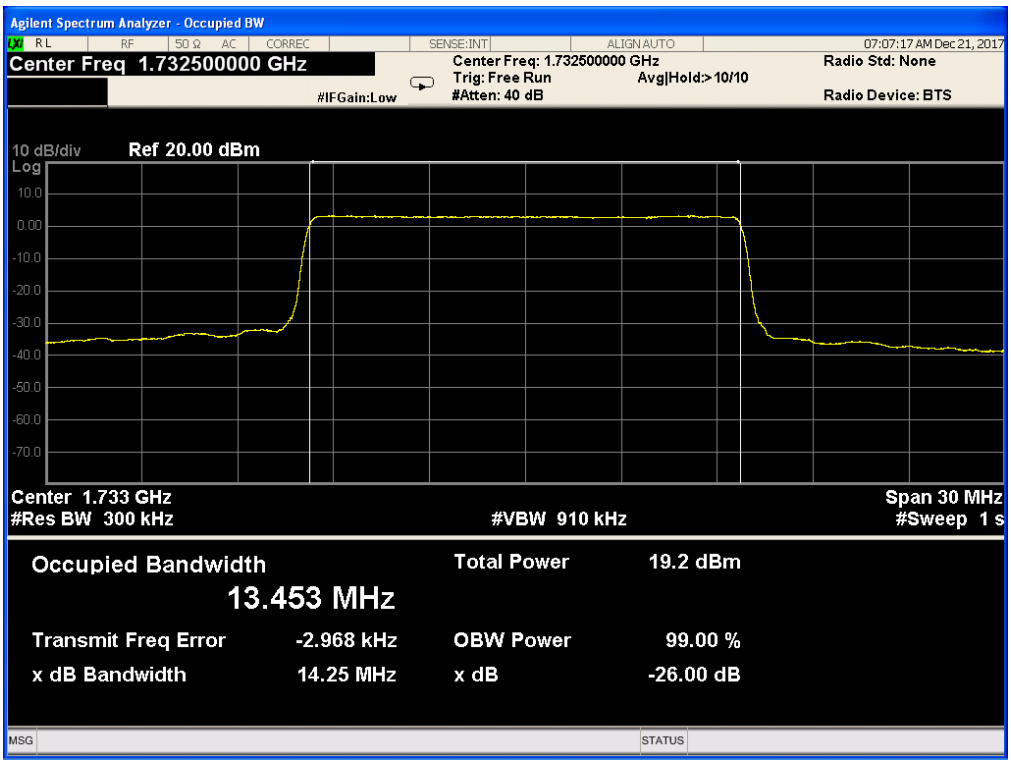

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 50,RB POS. Low,16-QAM*



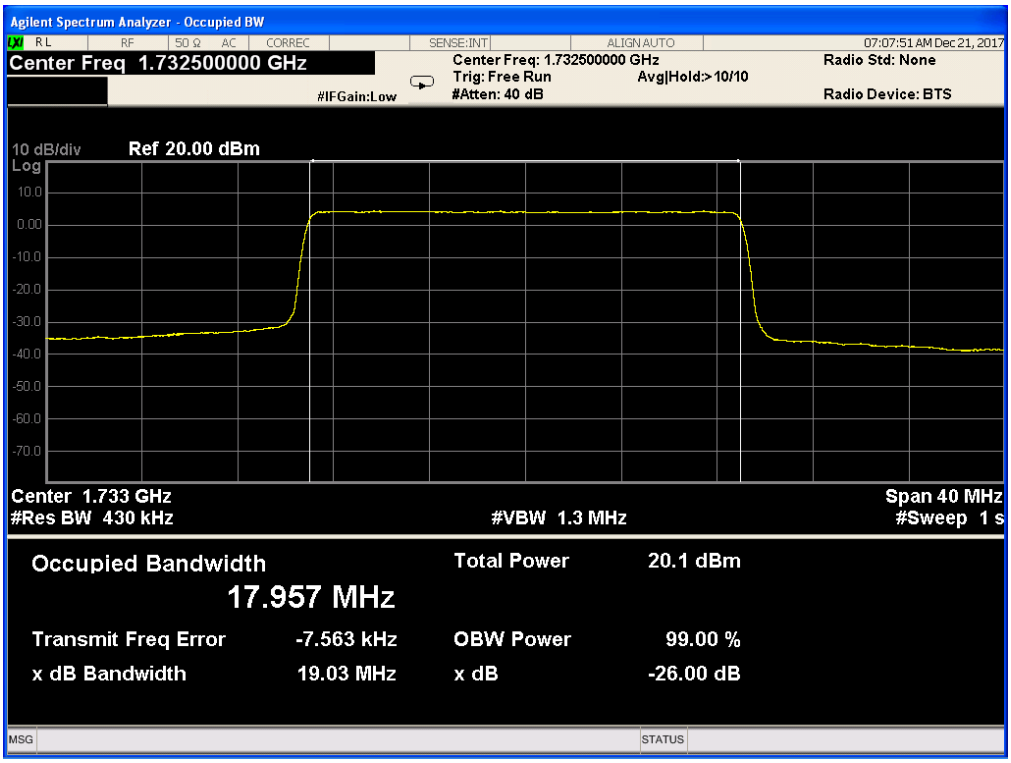
*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK*



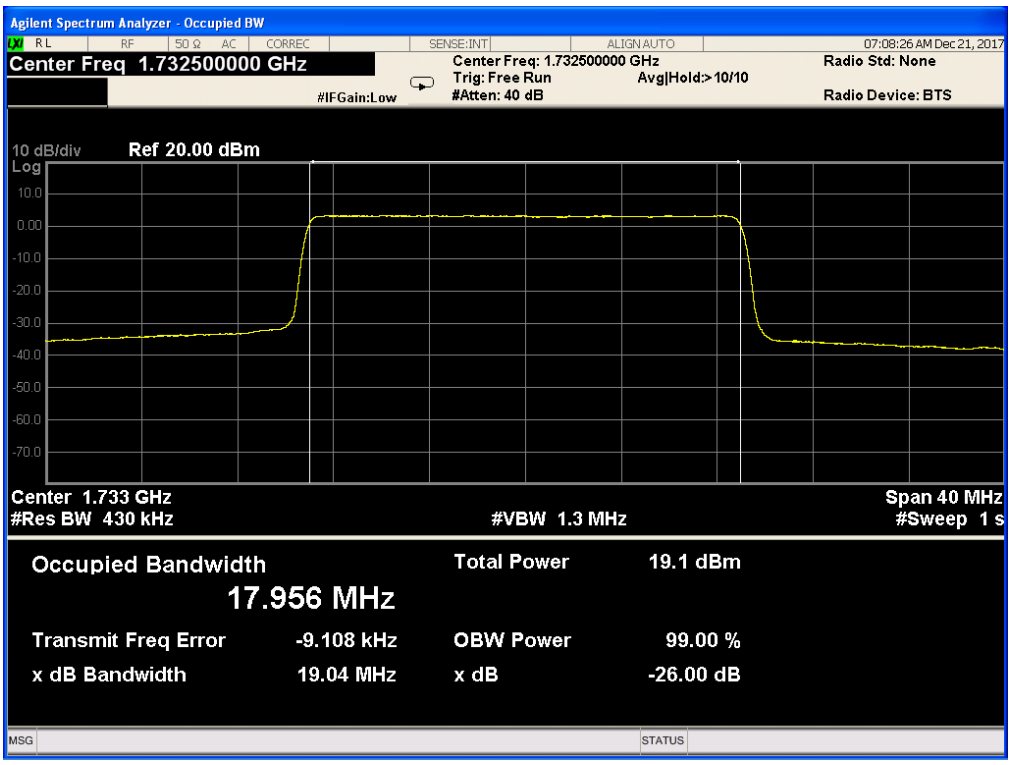

*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 75,RB POS. Low,16-QAM*



*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 100,RB POS. Low,QPSK*

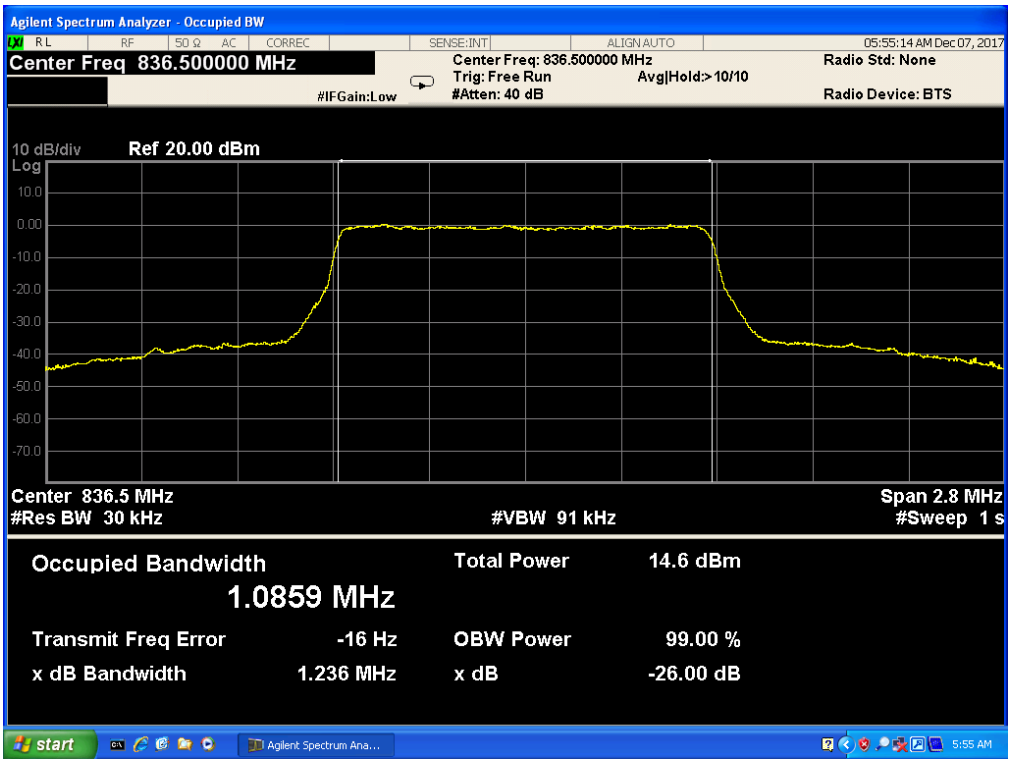



*Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 100,RB POS. Low,16-QAM*

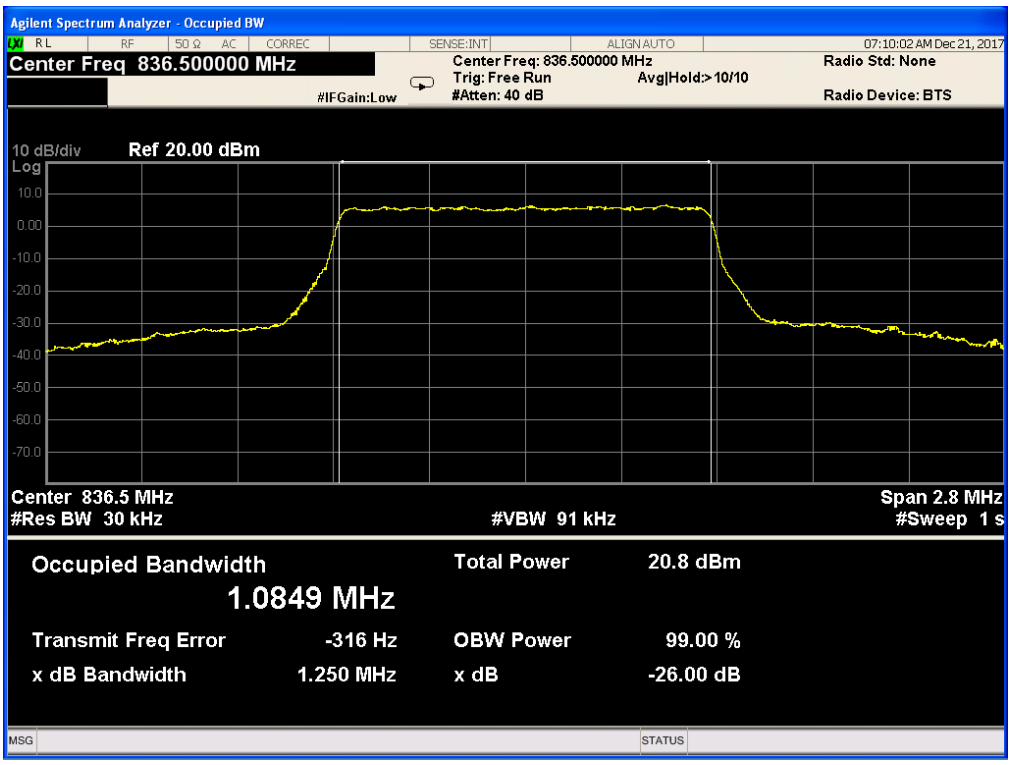


## 5.3 LTE BAND 5

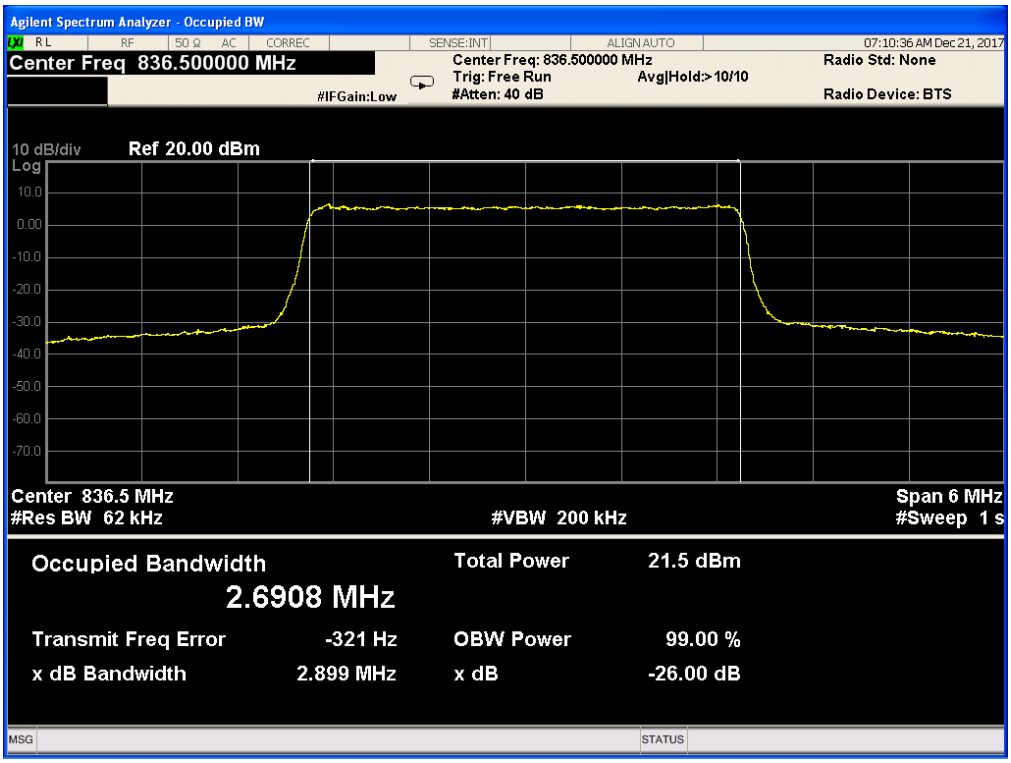
*Band 5,UL Channel 20525,UL Frequency 836.5,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



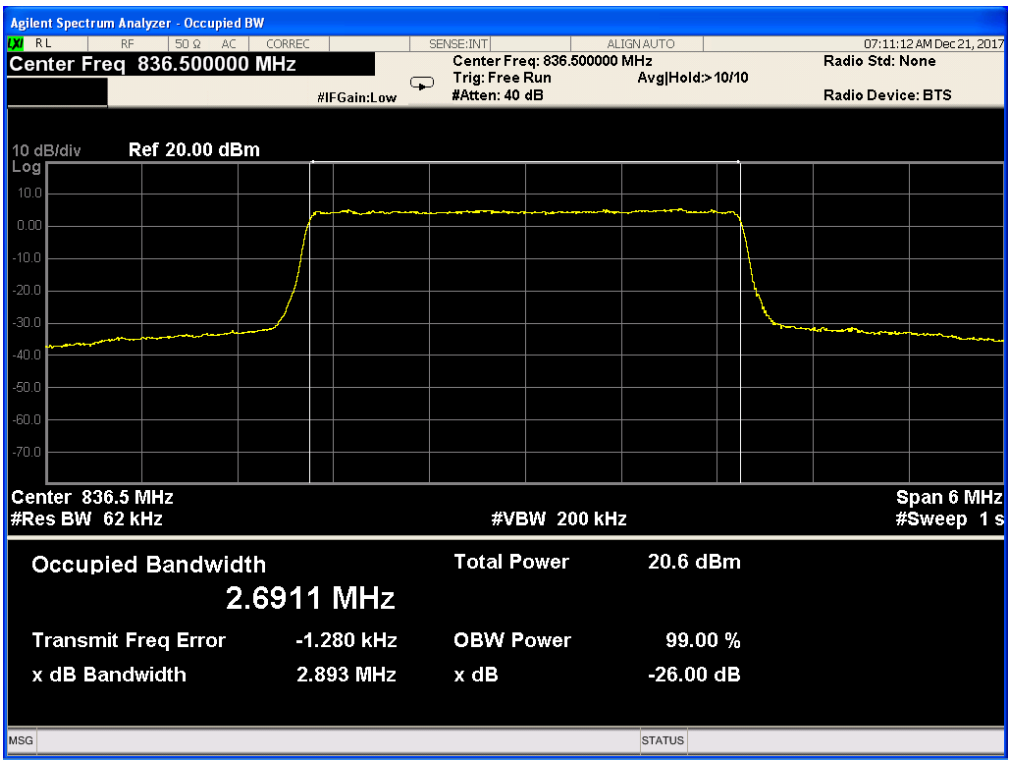

*Band 5,UL Channel 20525,UL Frequency 836.5,BW 1.4,NO. RB 6,RB POS. Low,16-QAM*



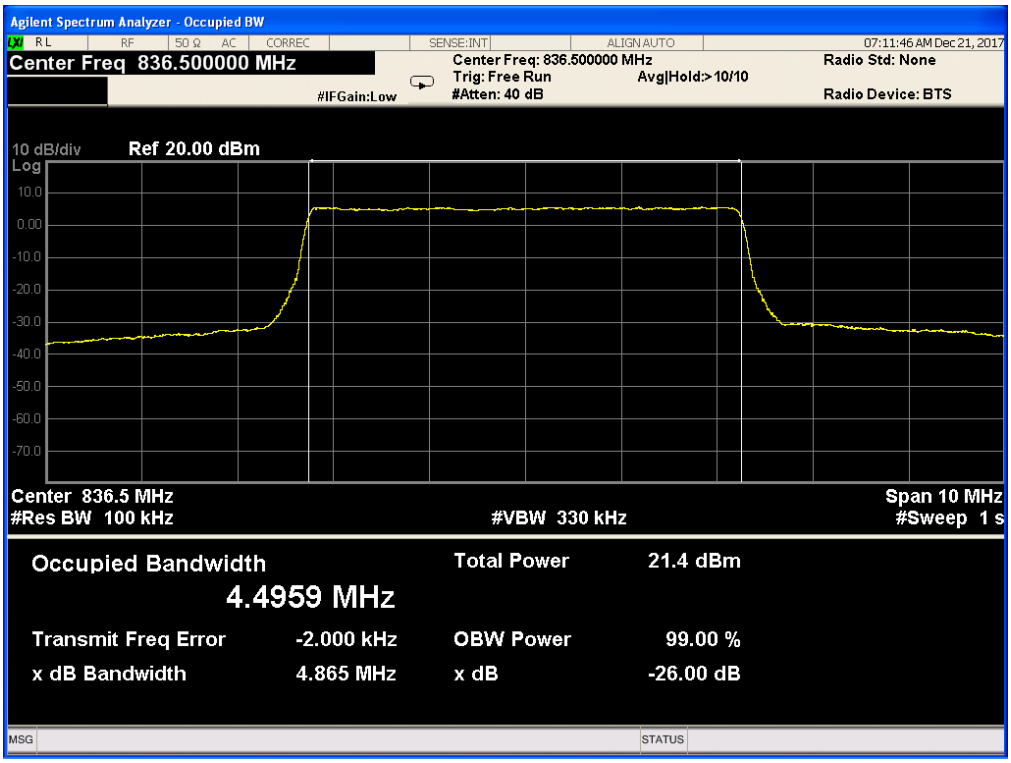
*Band 5,UL Channel 20525,UL Frequency 836.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



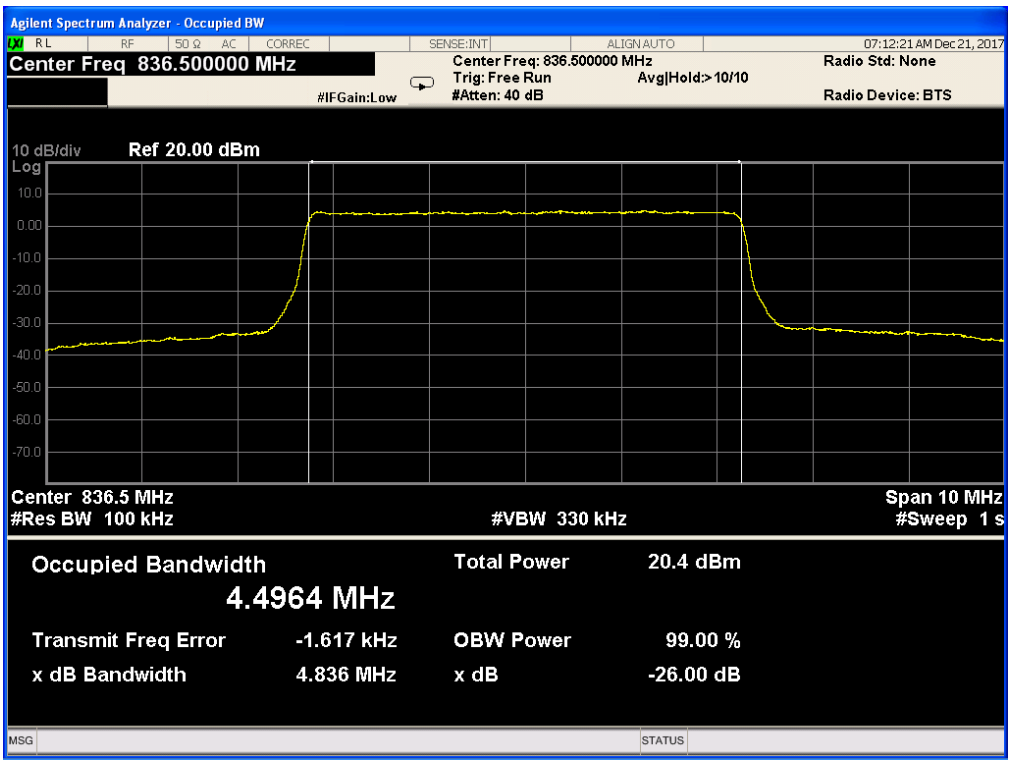

*Band 5,UL Channel 20525,UL Frequency 836.5,BW 3.0,NO. RB 15,RB POS. Low,16-QAM*



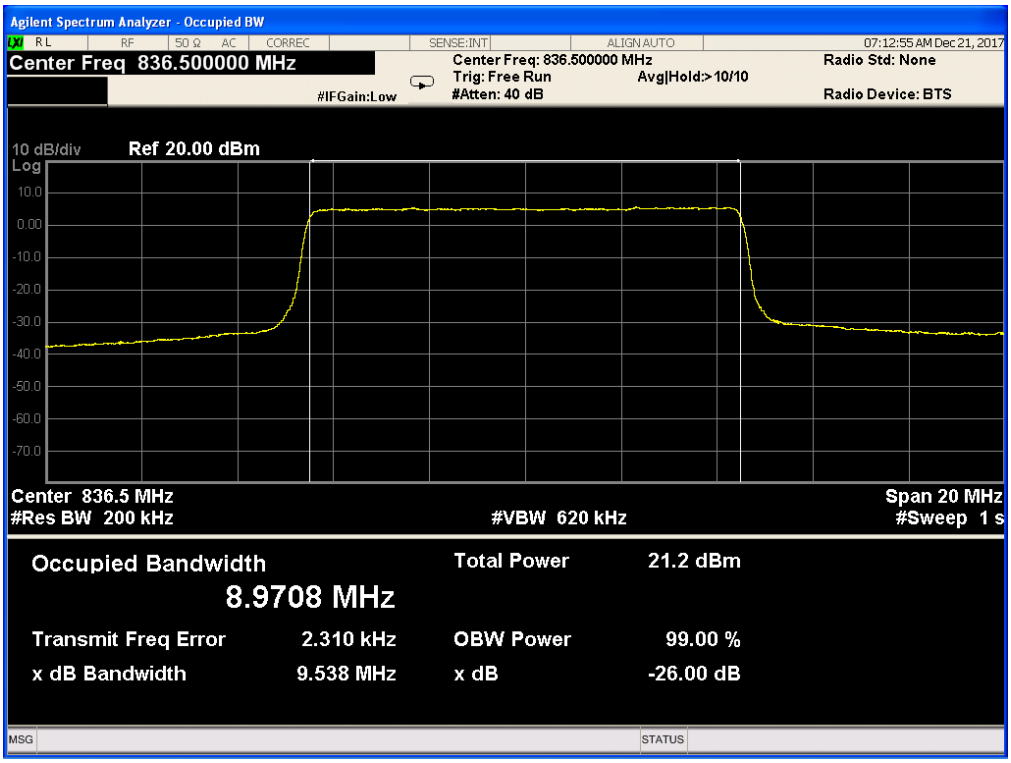
*Band 5,UL Channel 20525,UL Frequency 836.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK*



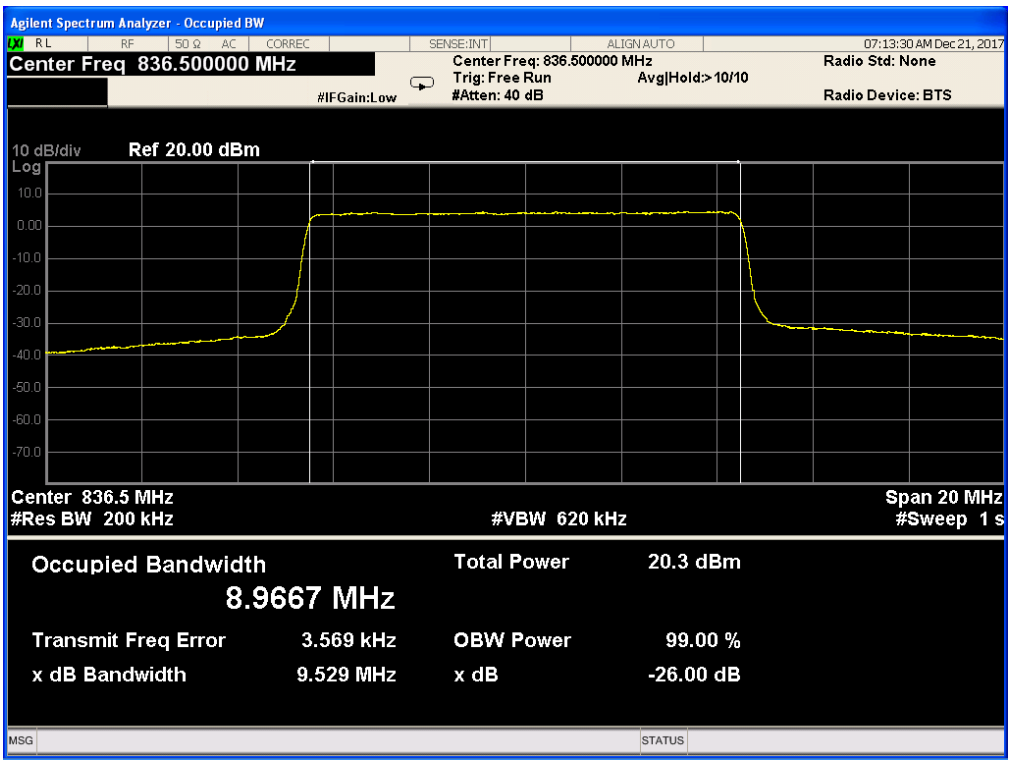

*Band 5,UL Channel 20525,UL Frequency 836.5,BW 5.0,NO. RB 25,RB POS. Low,16-QAM*



*Band 5,UL Channel 20525,UL Frequency 836.5,BW 10.0,NO. RB 50,RB POS. Low,QPSK*

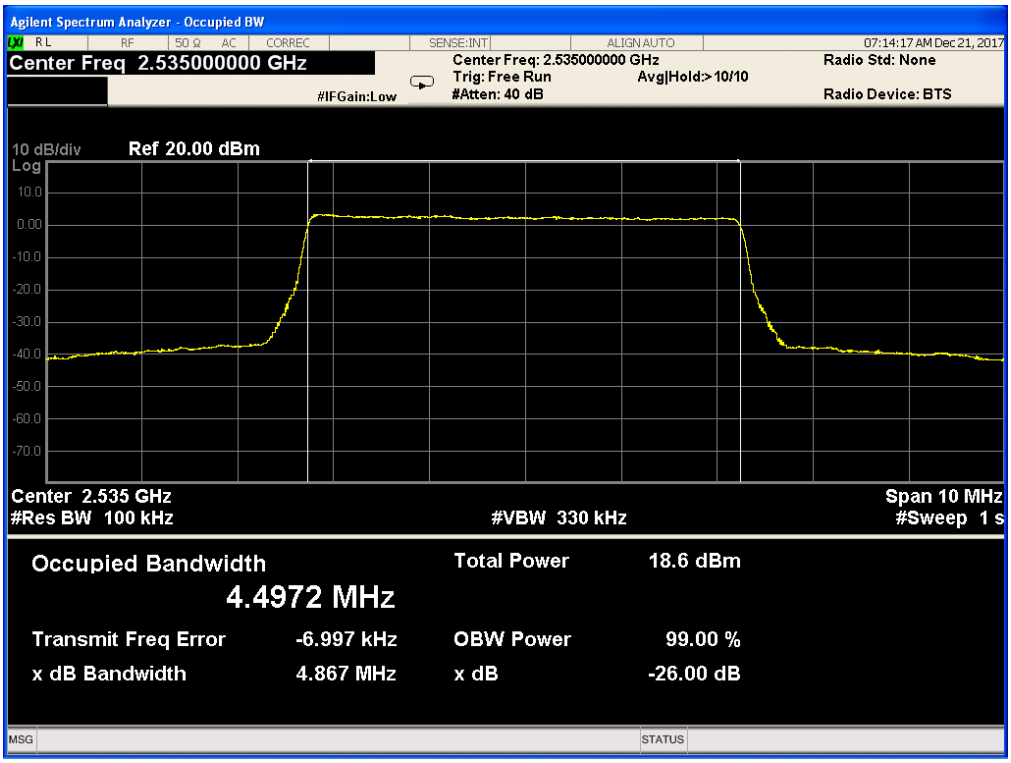



*Band 5,UL Channel 20525,UL Frequency 836.5,BW 10.0,NO. RB 50,RB POS. Low,16-QAM*

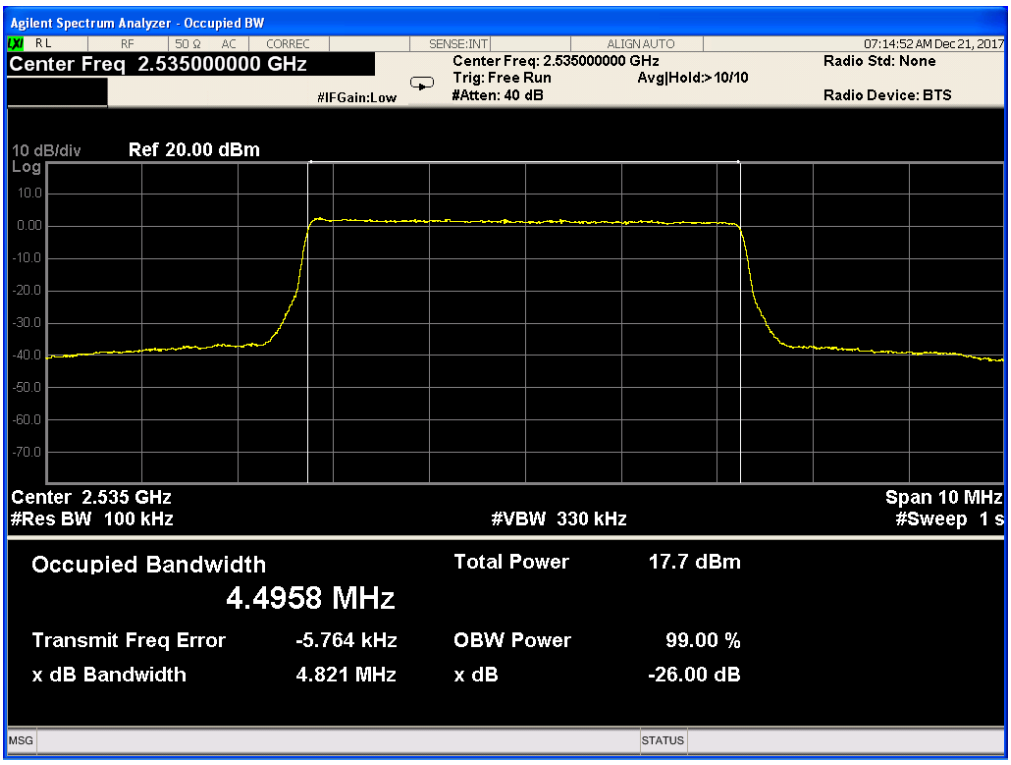


## 5.4 LTE BAND 7

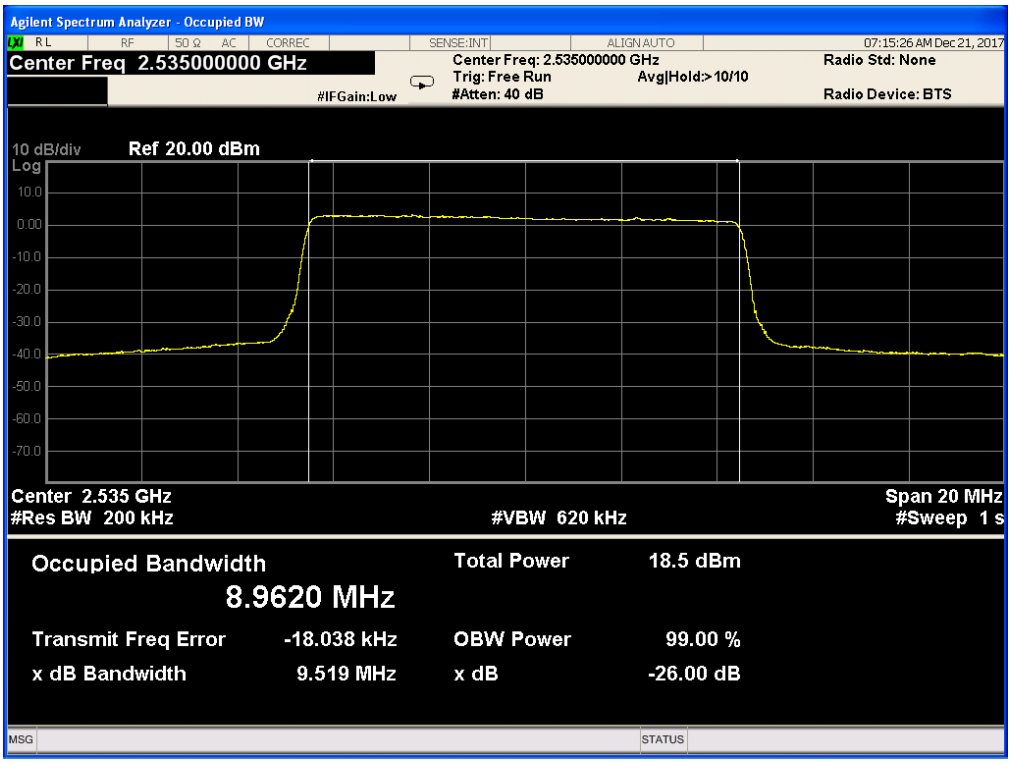
*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 25,RB POS. Low,QPSK*



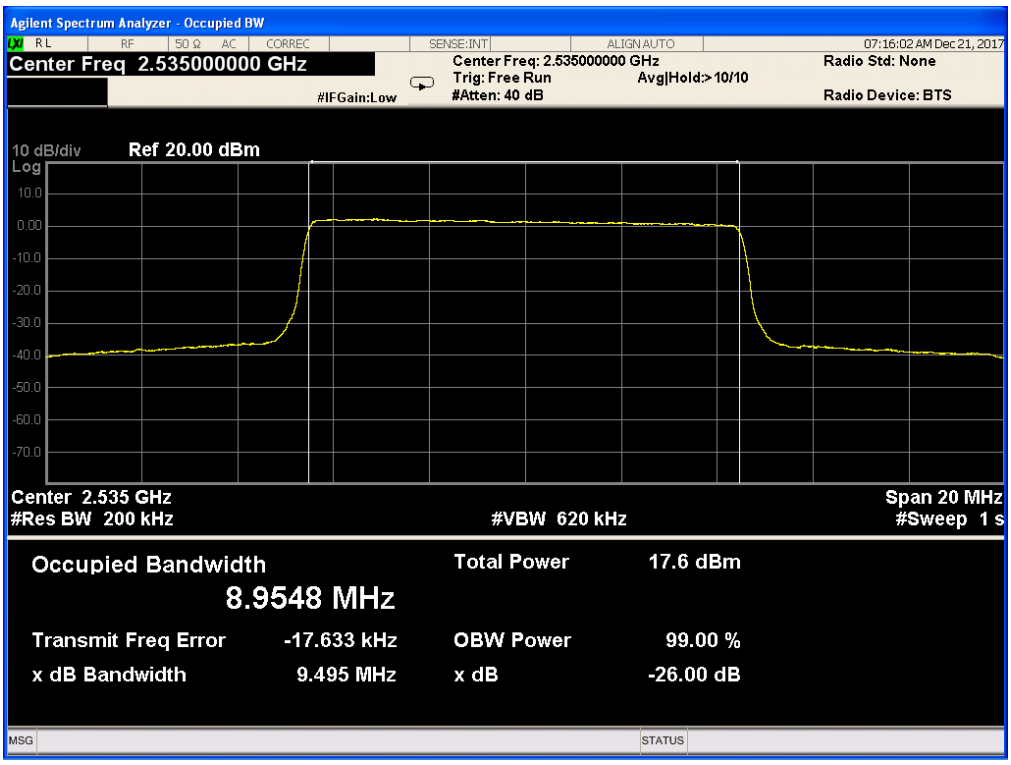

*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 5.0,NO. RB 25,RB POS. Low,16-QAM*



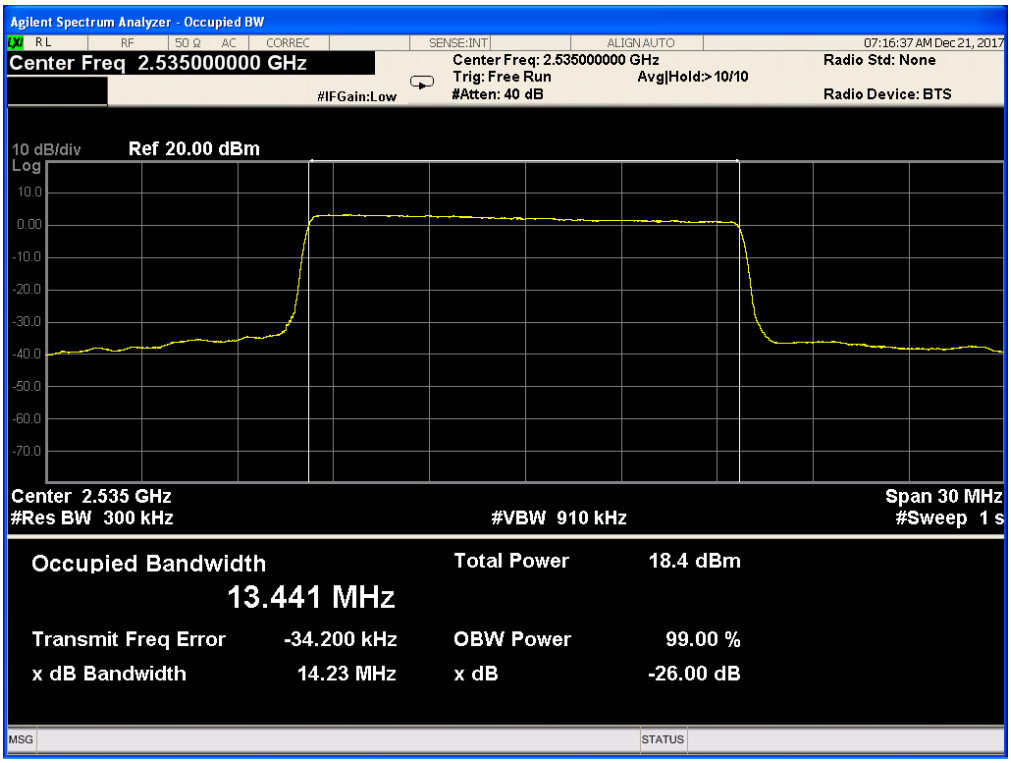
*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK*



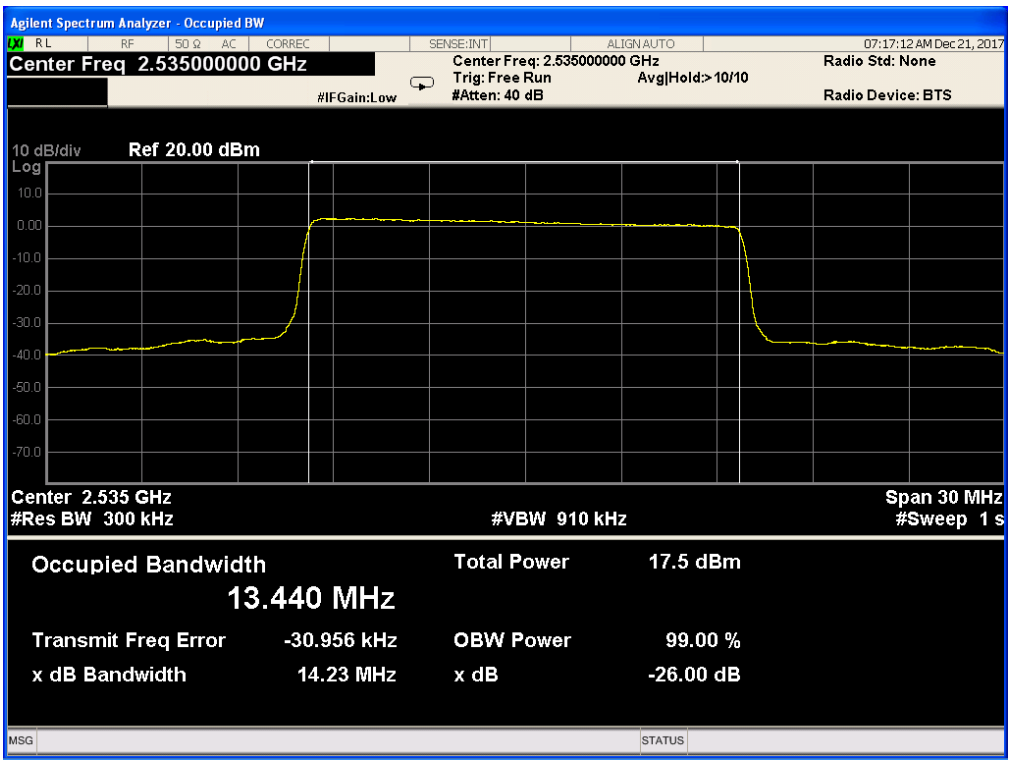

*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 10.0,NO. RB 50,RB POS. Low,16-QAM*



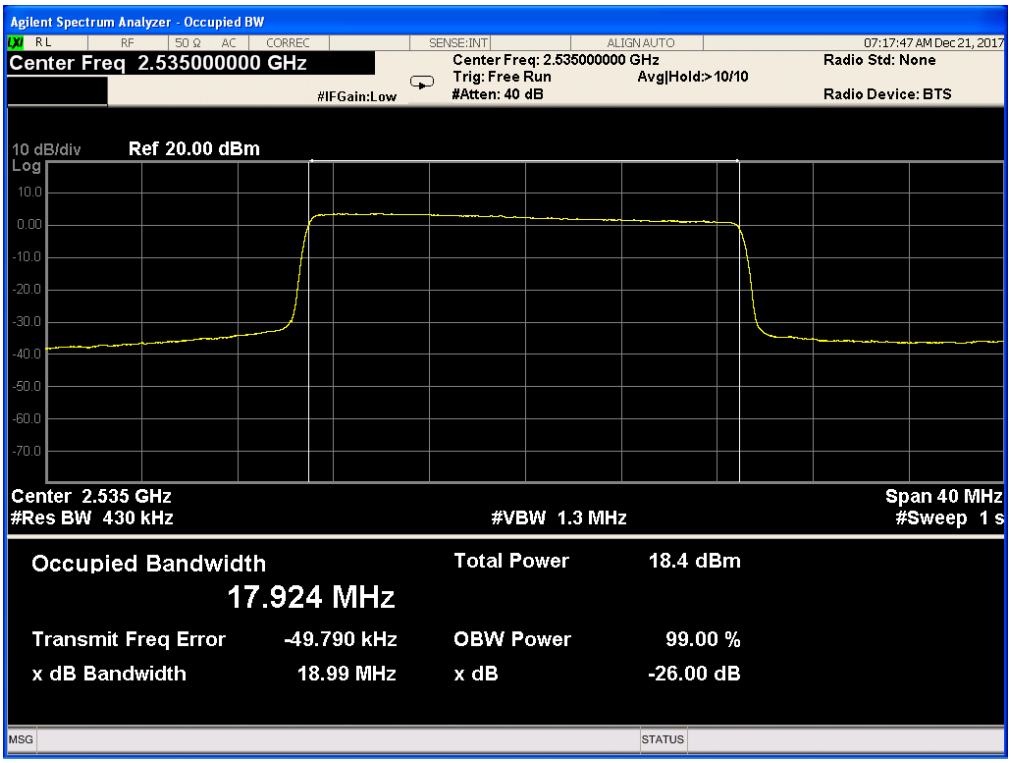
*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 15.0,NO. RB 75,RB POS. Low,QPSK*



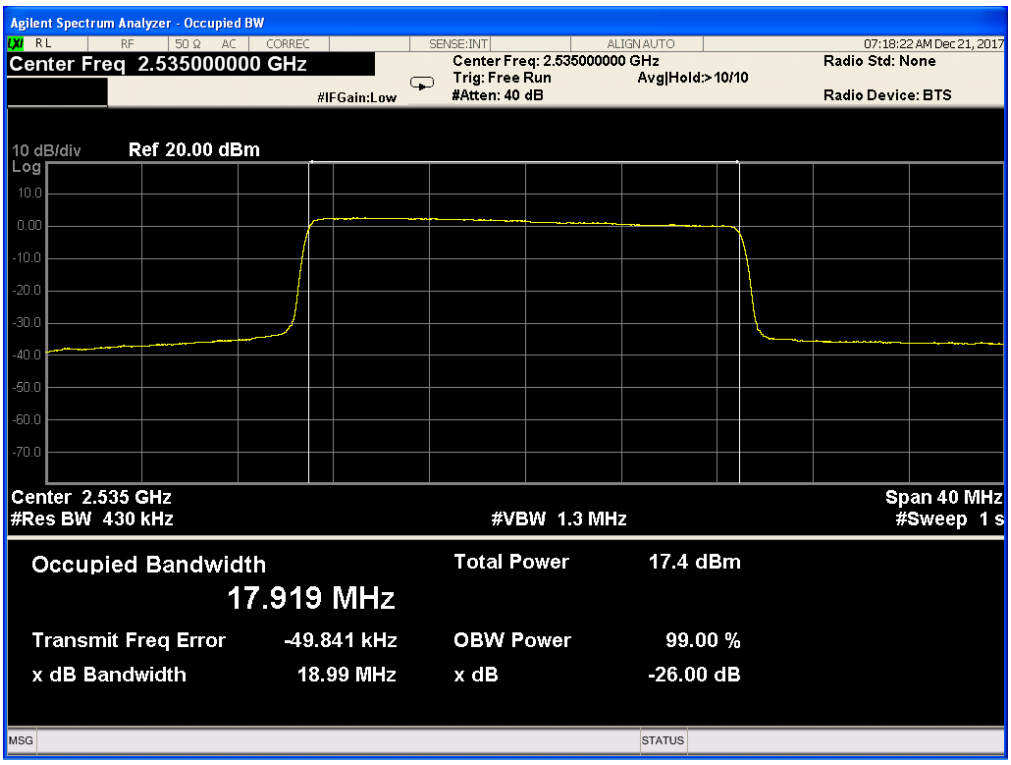

*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 15.0,NO. RB 75,RB POS. Low,16-QAM*



*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK*




*Band 7,UL Channel 21100,UL Frequency 2535.0,BW 20.0,NO. RB 100,RB POS. Low,16-QAM*



# 6. BANDEDGE AND EMISSION MASK

**RULE PART(S)**

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53, and §90.691
FCC: §22.359

**LIMITS**

FCC: §22.359, §24.238,
The 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.

(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.Show citation box.

**TEST PROCEDURE**

The transmitter output was connected to a CMW500Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.
For each band edge measurement:
Set the spectrum analyzer span to include the block edge frequency (704, 716, 824, 849, 1710 and 1755, 1850 and 1910MHz)
Set a marker to point the corresponding band edge frequency in each test case.
Set display line at -13 dBm
Set resolution bandwidth to at least 1% of emission bandwidth.

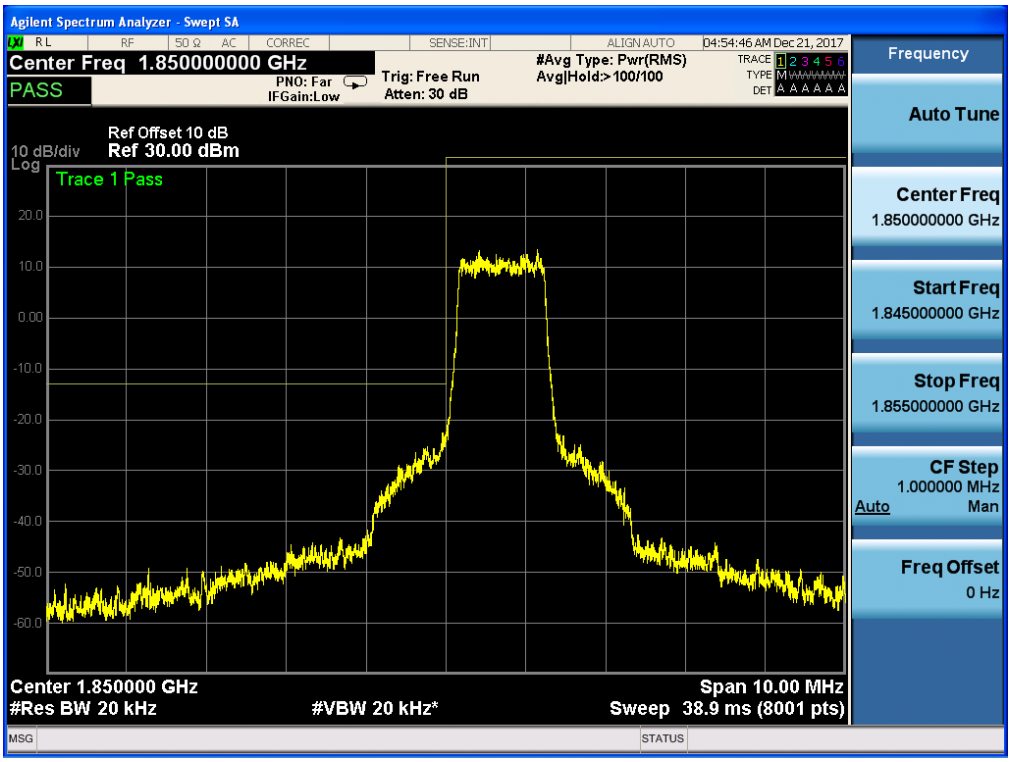
**MODES TESTED**

- ☐ LTE Band 2
- LTE Band 4
- LTE Band 5
- ☐ LTE Band 7

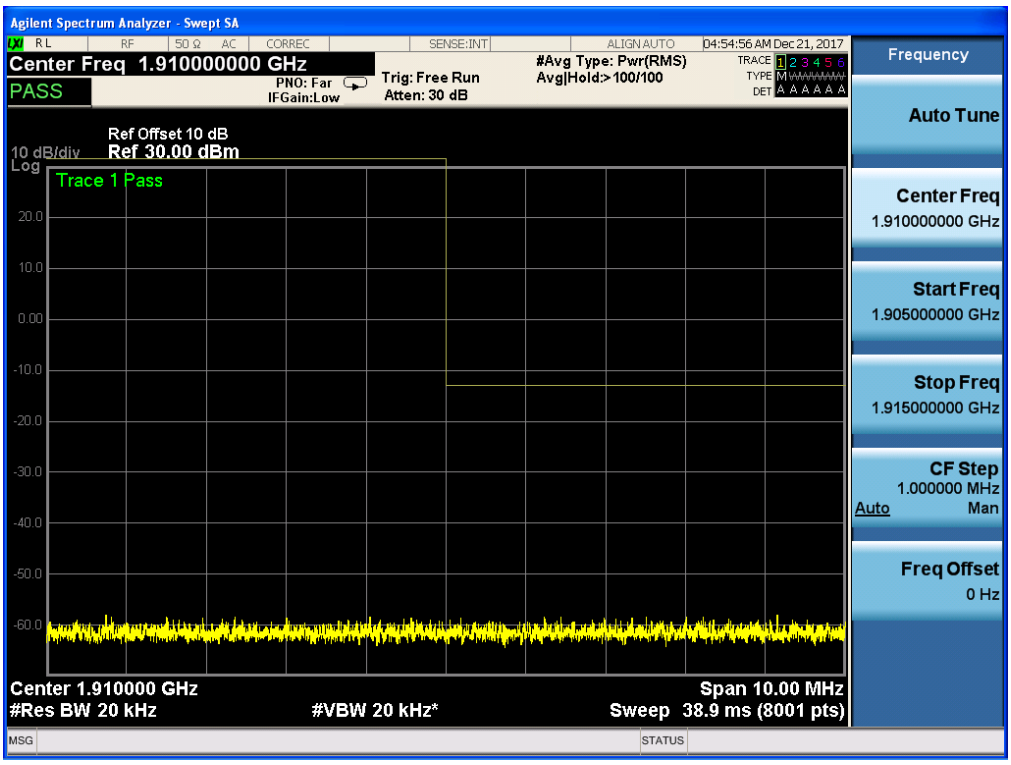
**RESULTS**

## 6.1 LTE BAND 2

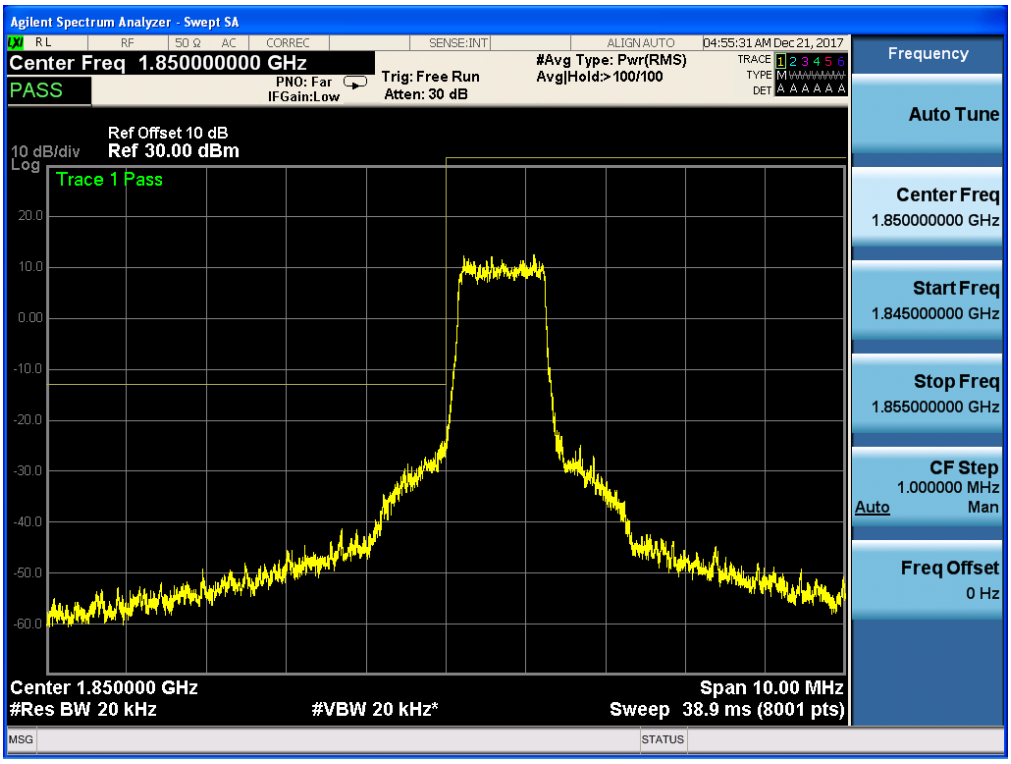
*Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



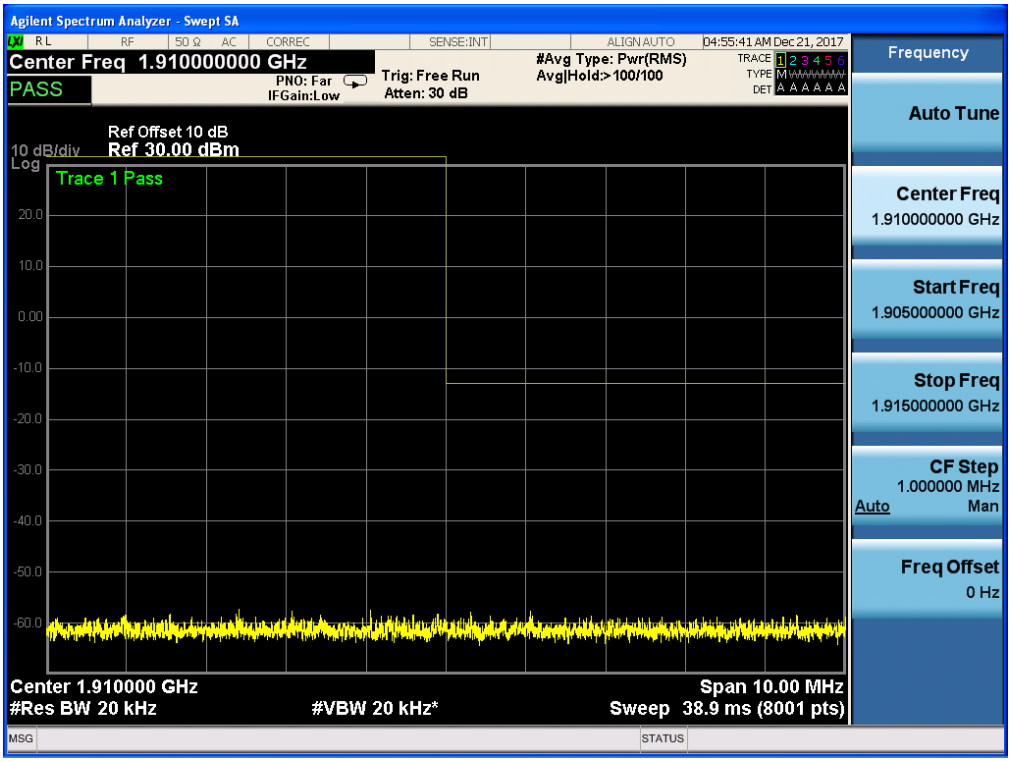

*Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



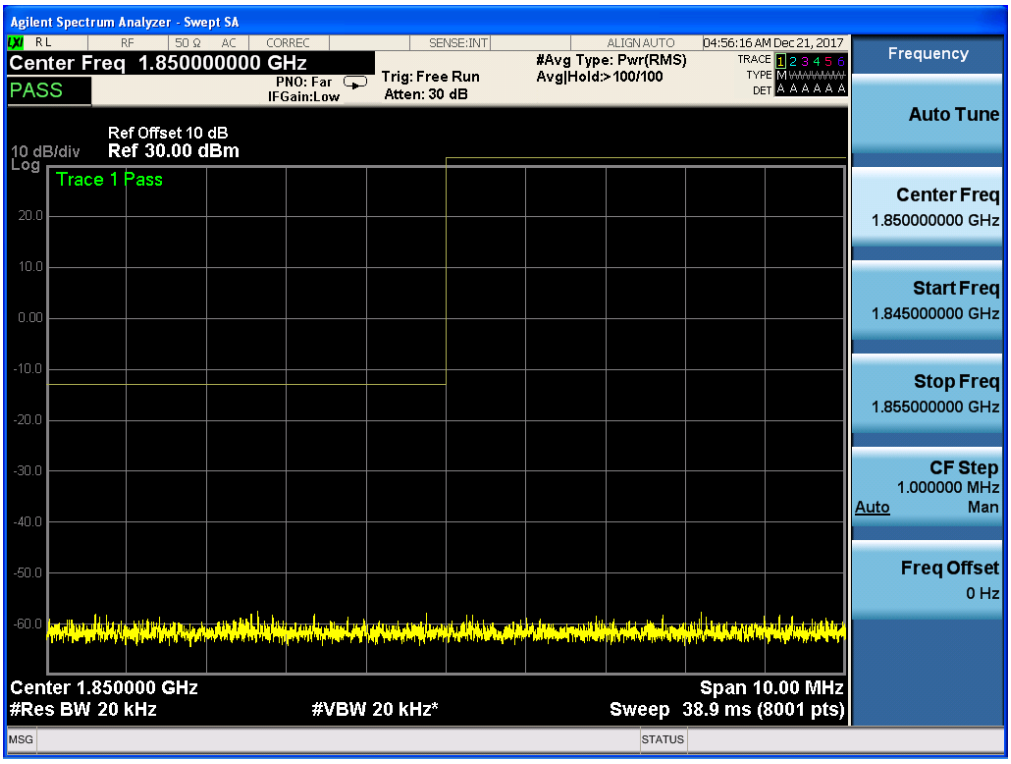
*Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM*



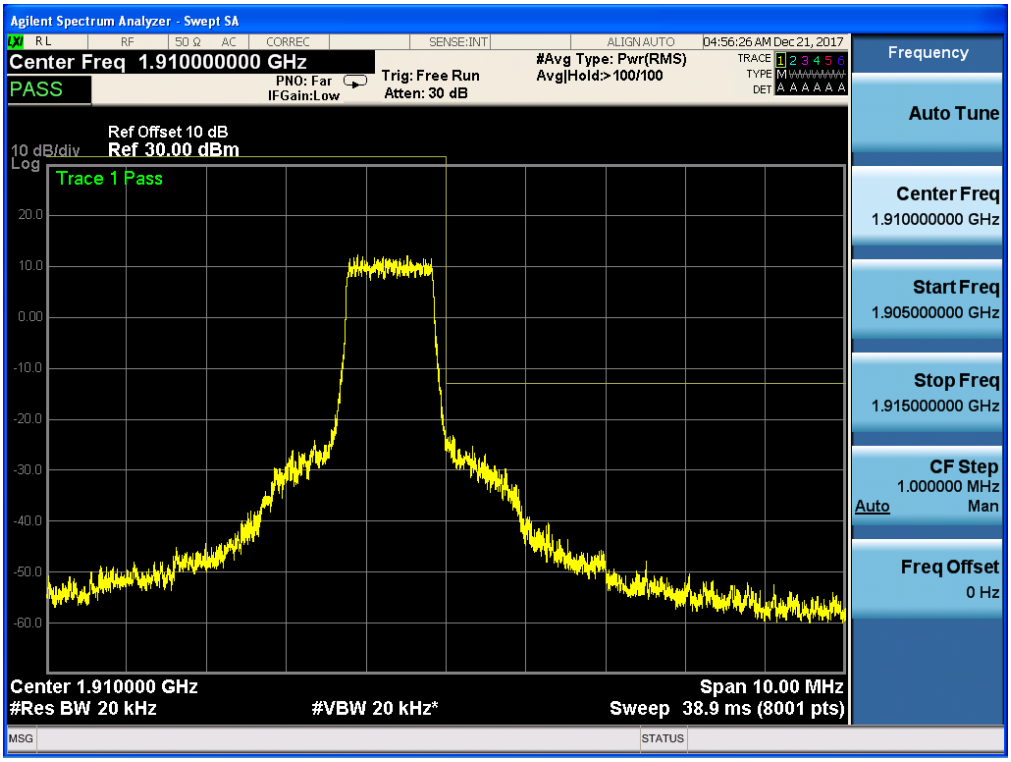

*Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM*



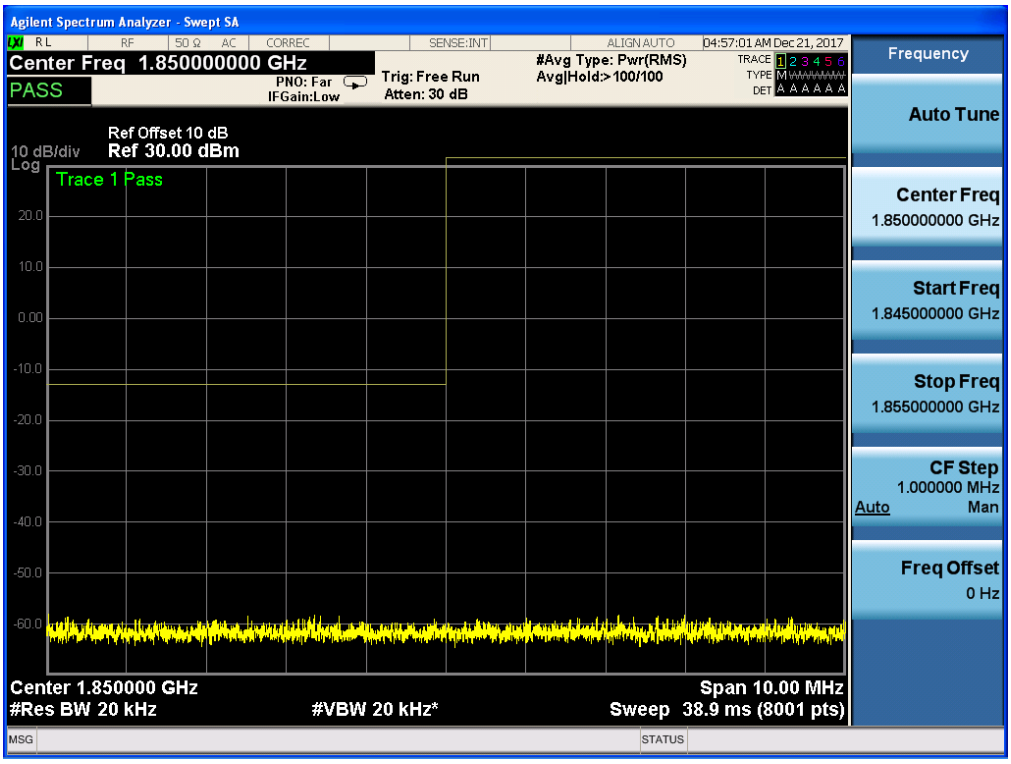
*Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



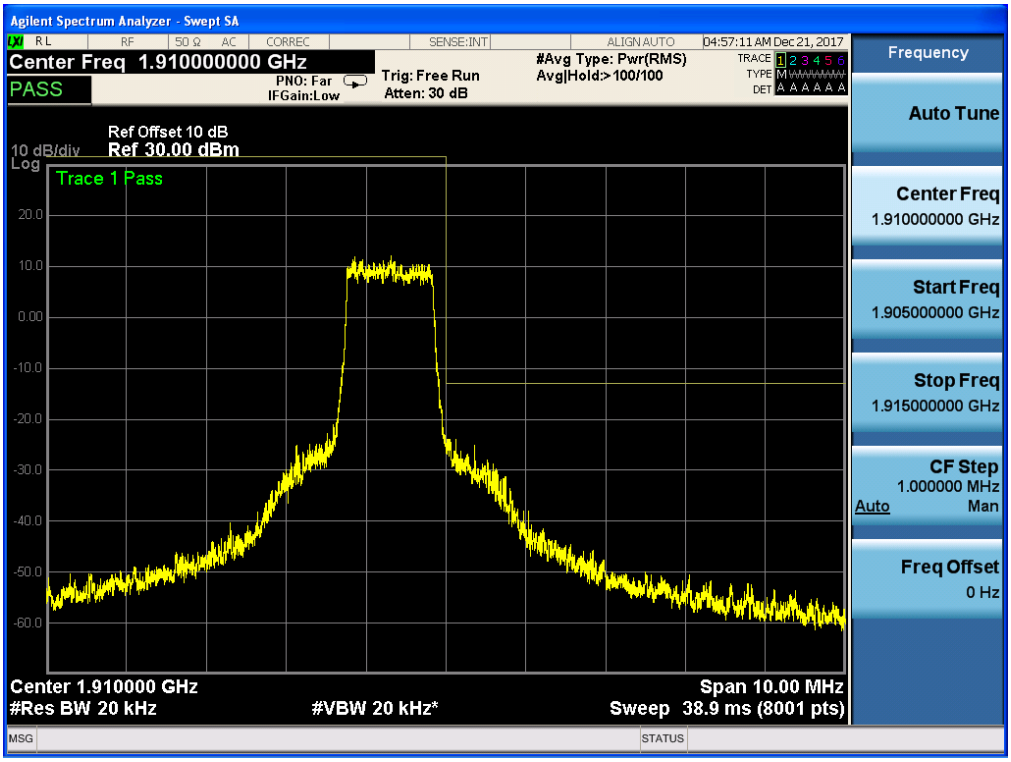

*Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



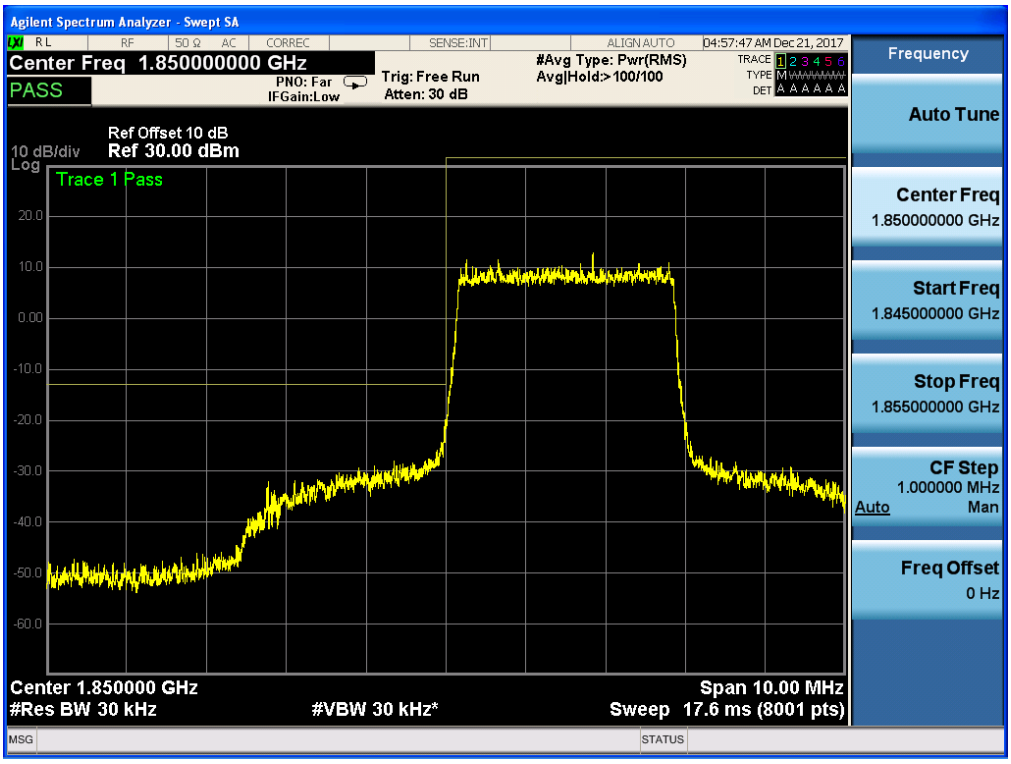
*Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,16QAM*



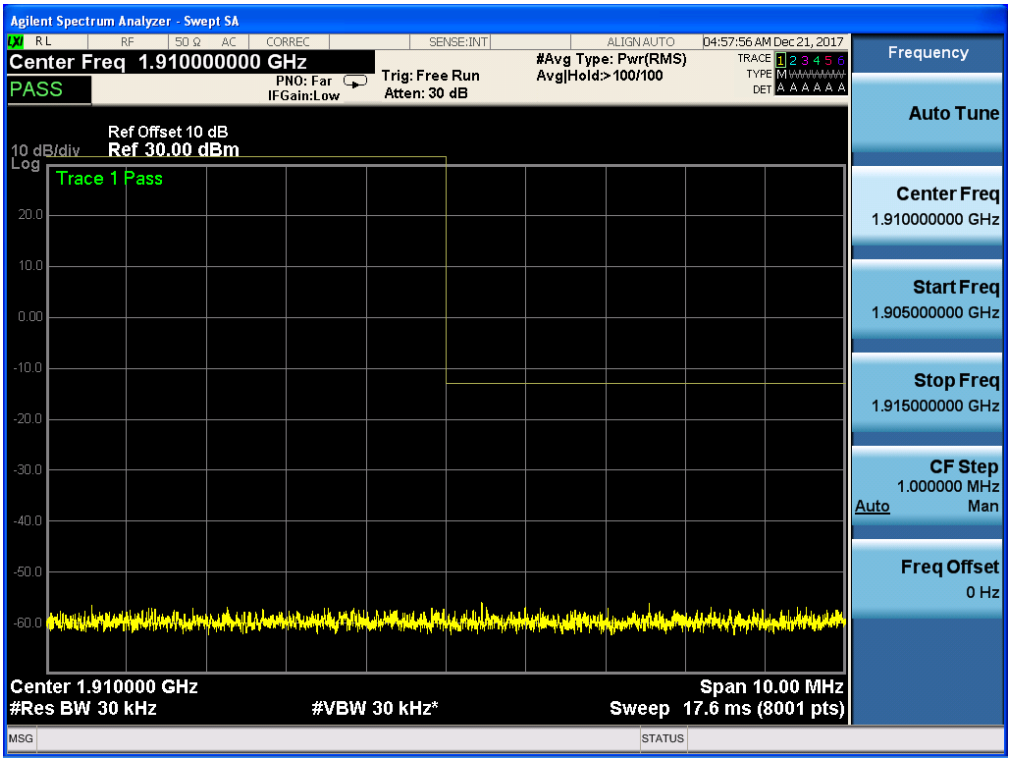

*Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,16QAM*



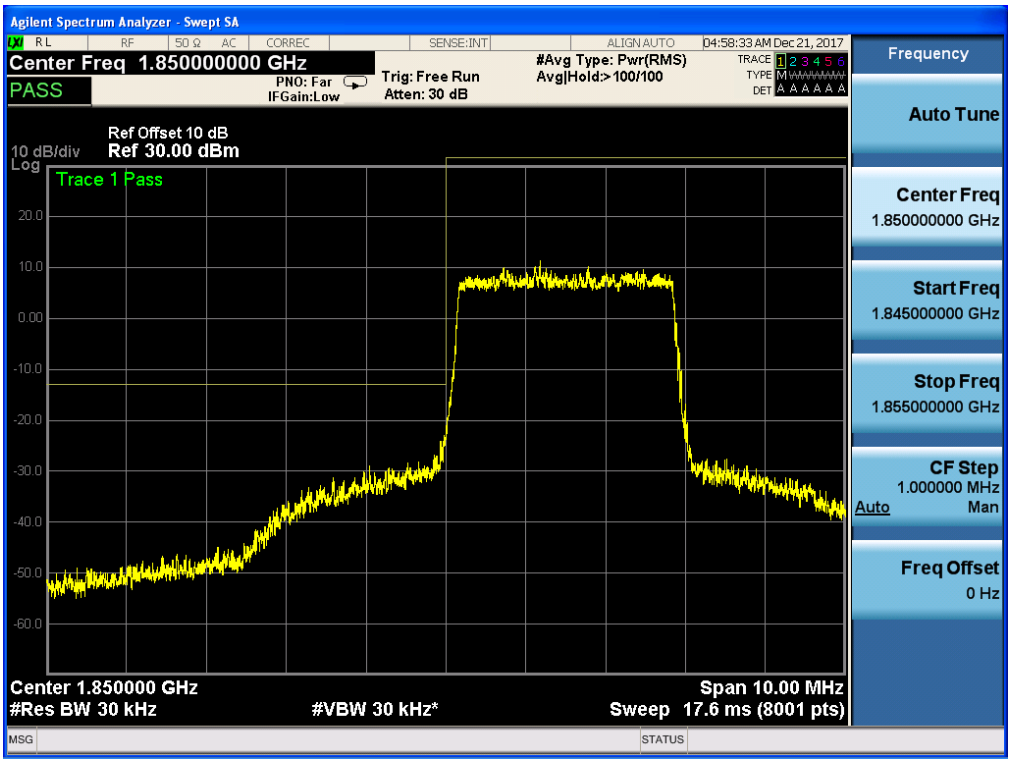
*Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



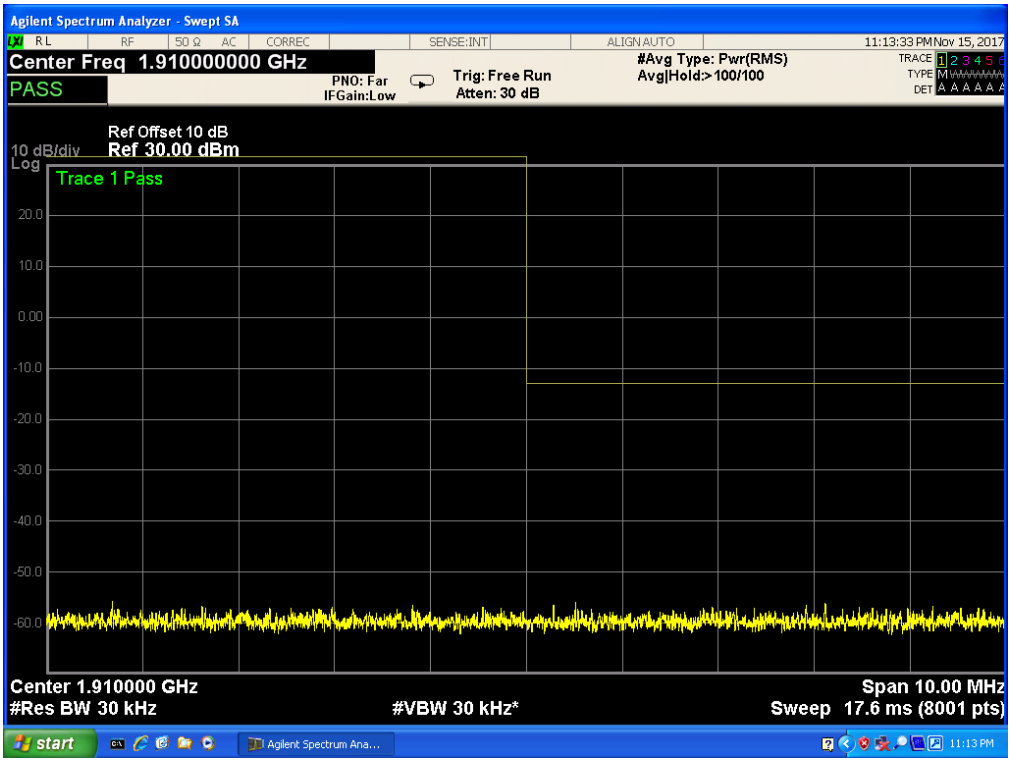

*Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



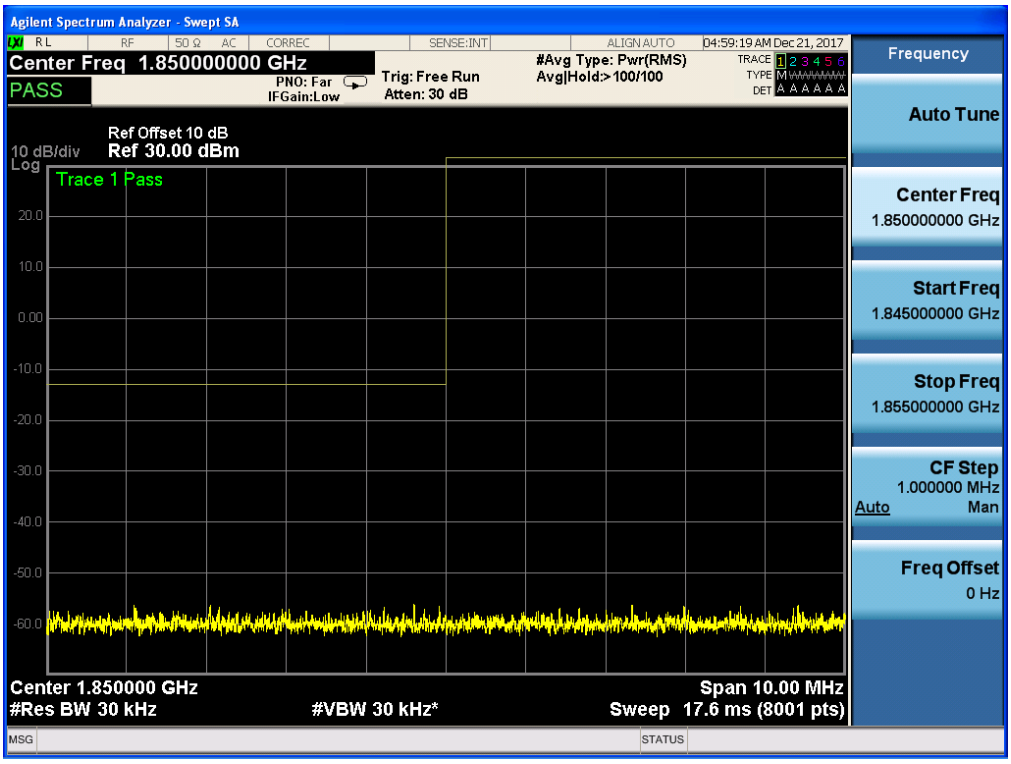
*Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM*



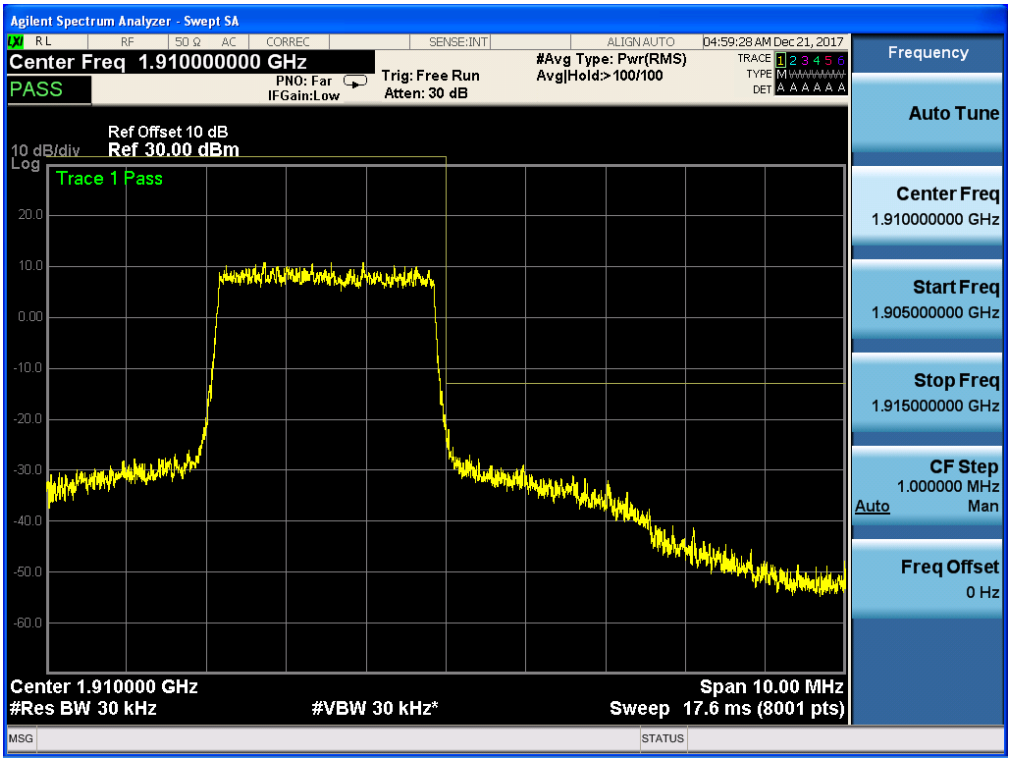

*Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM*



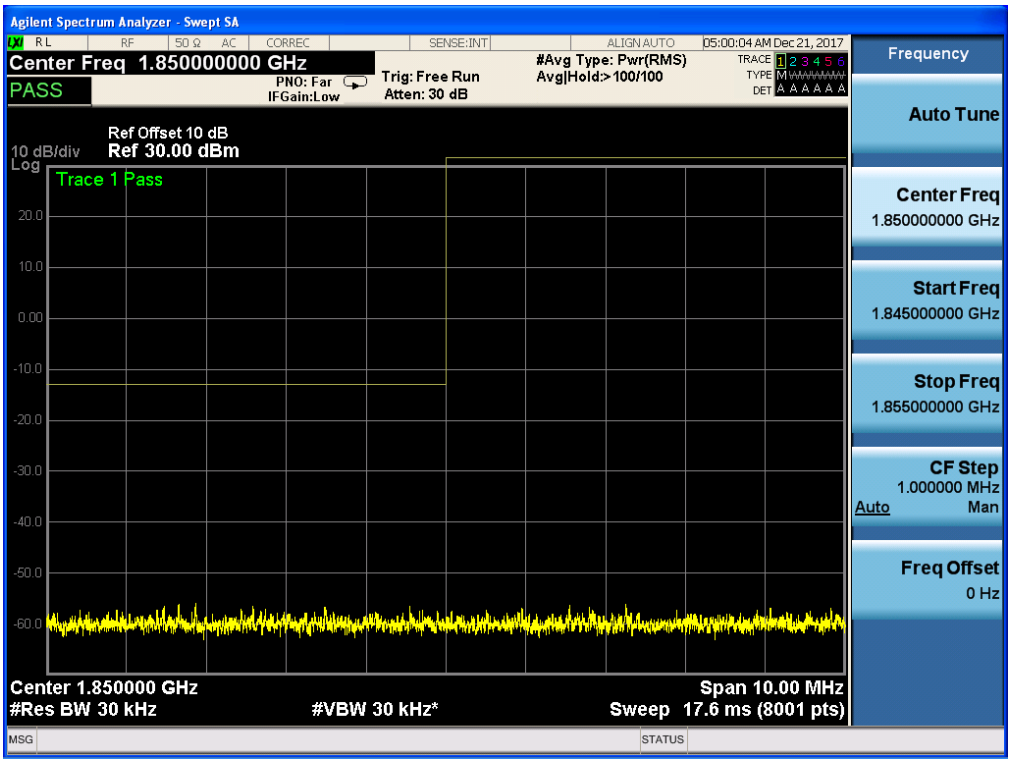
*Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



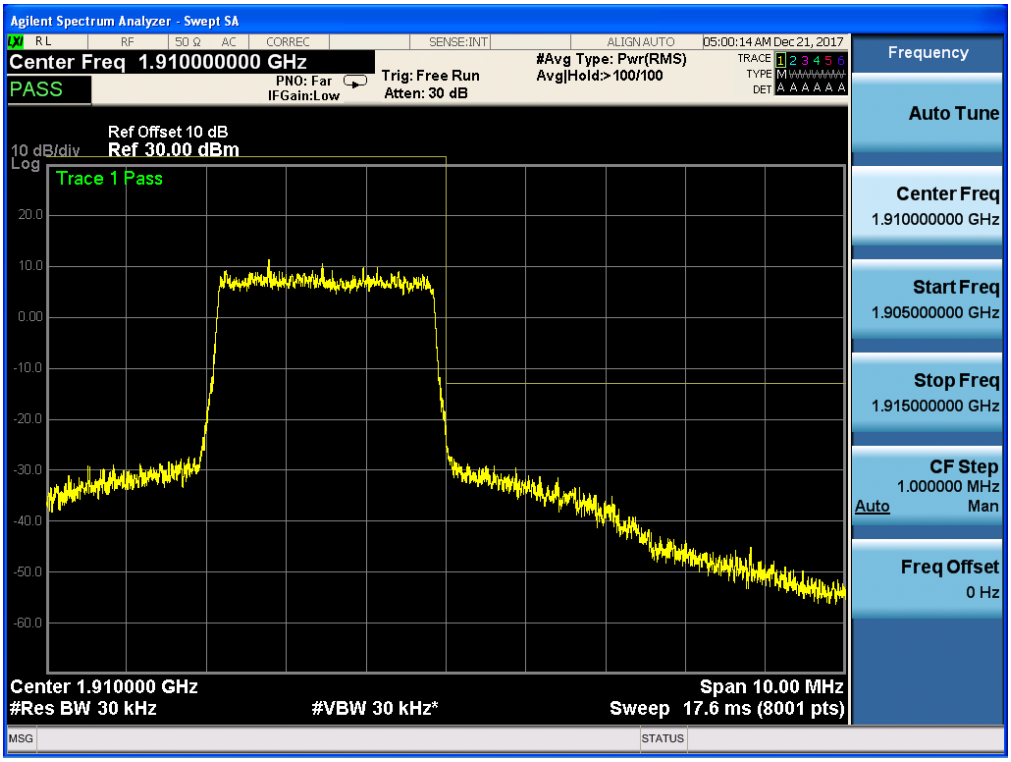

*Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



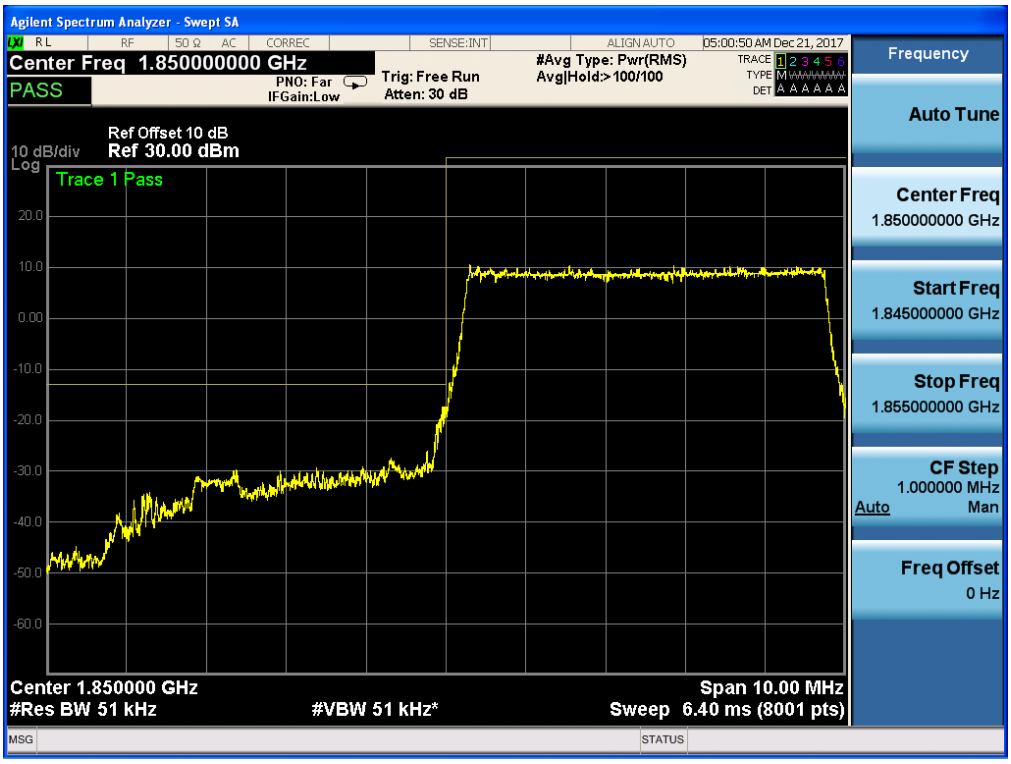
*Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM*




*Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM*



*Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK*

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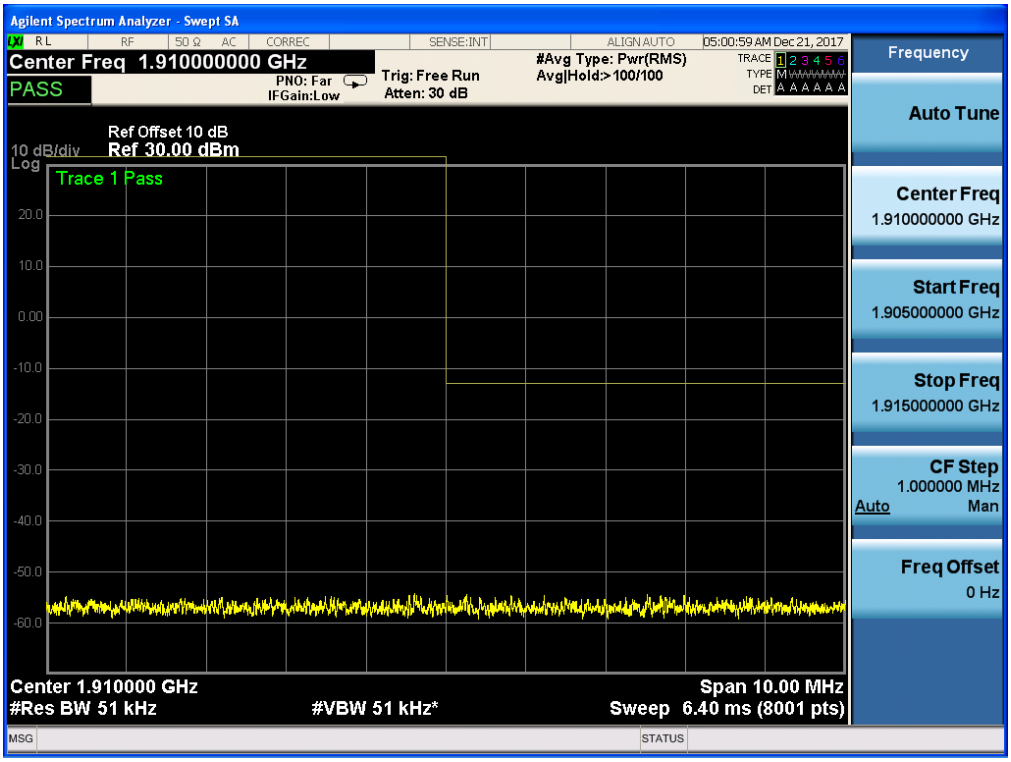

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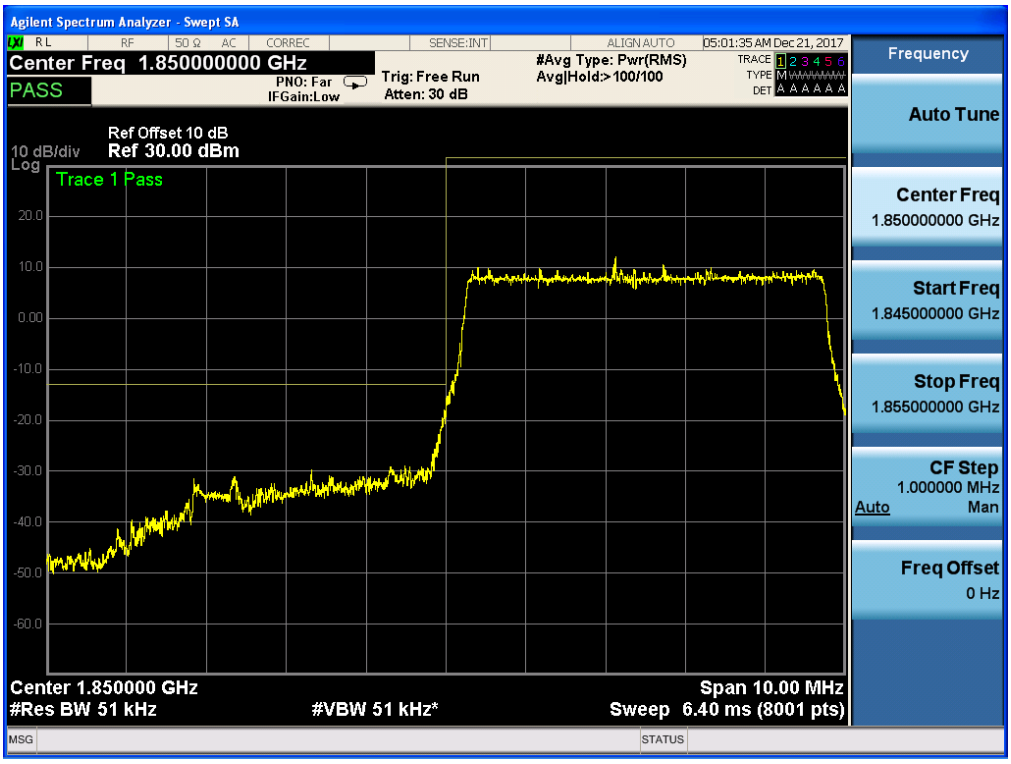
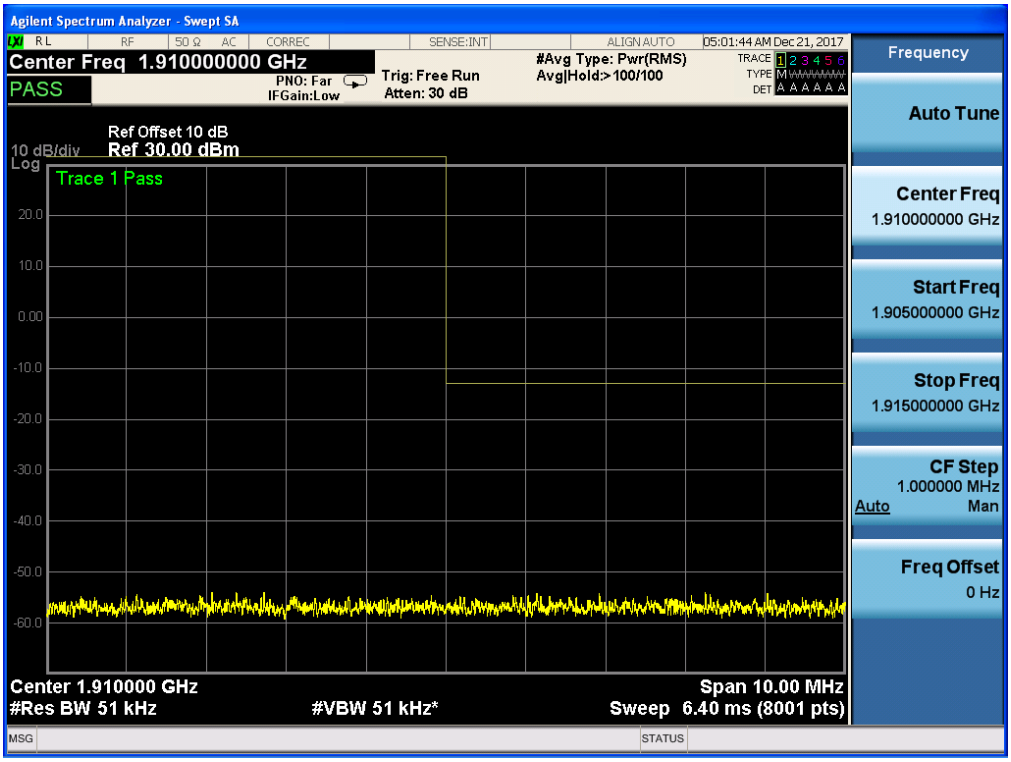
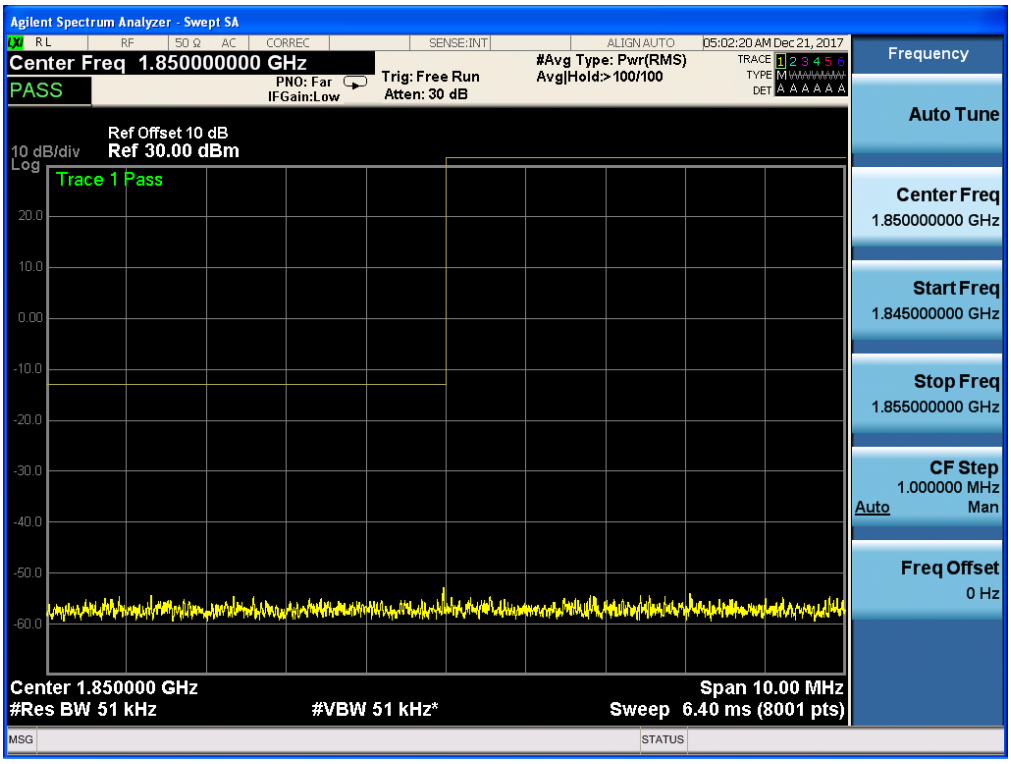


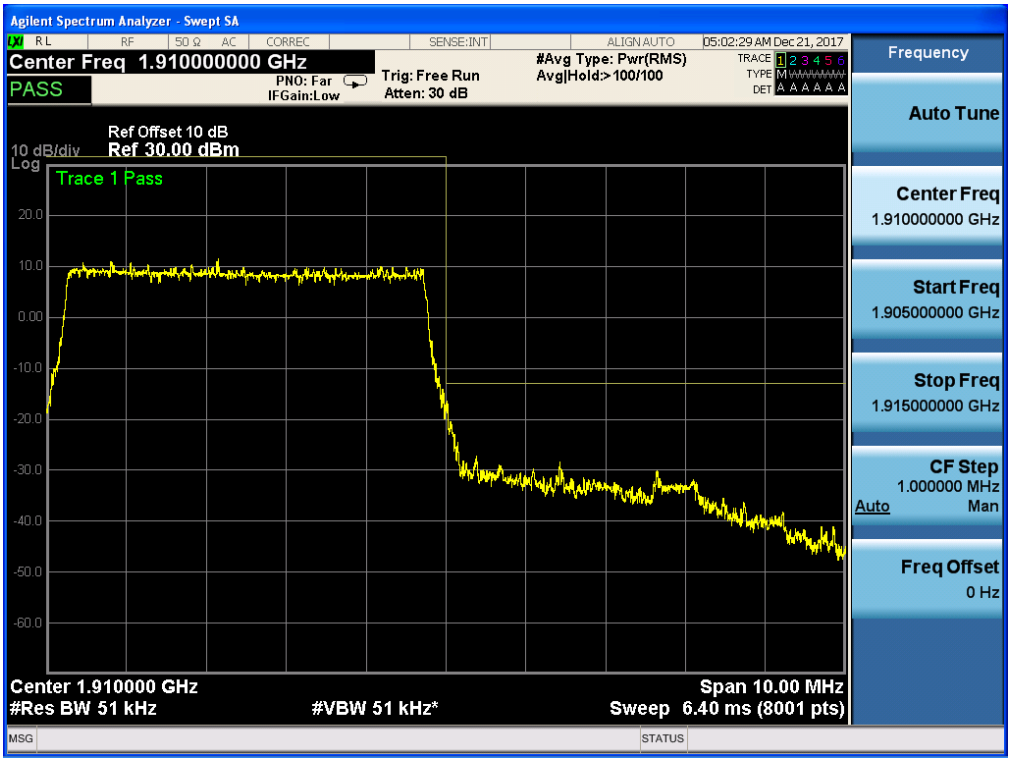

*Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM*



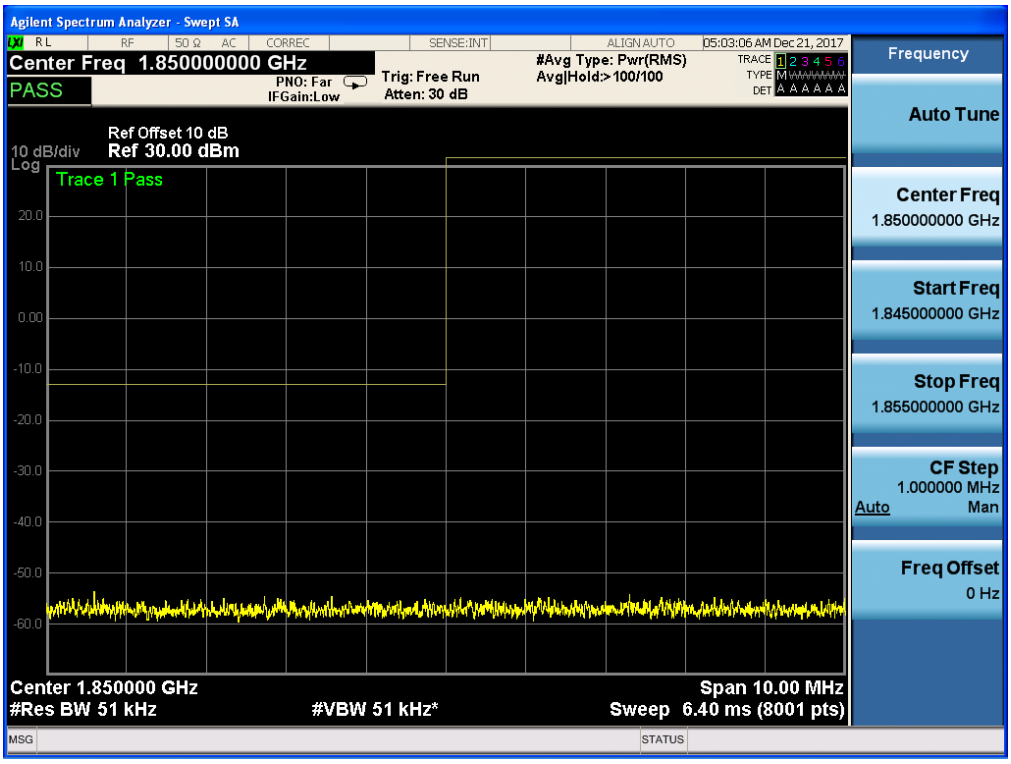
*Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK*



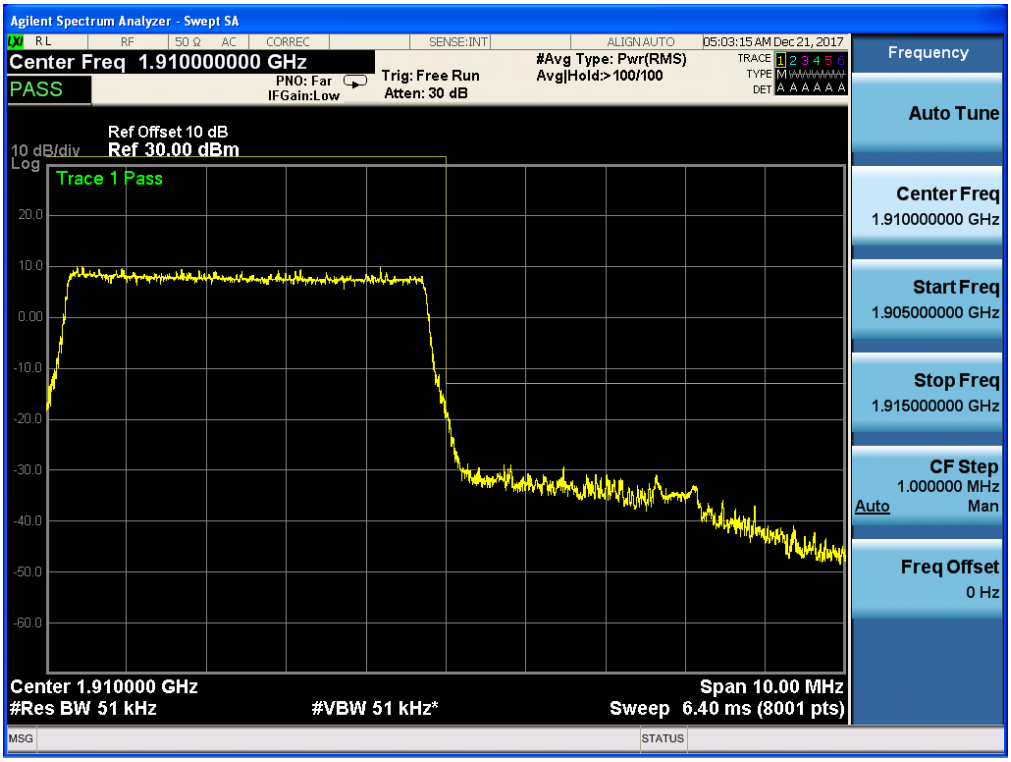

*Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK*



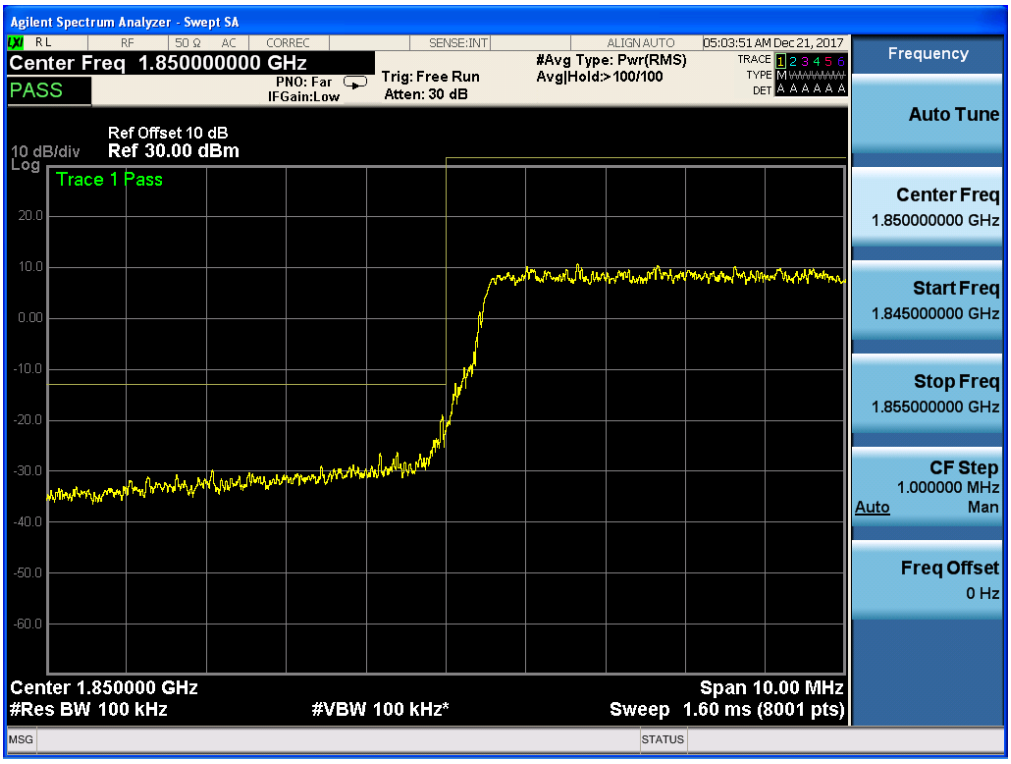
*Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM*



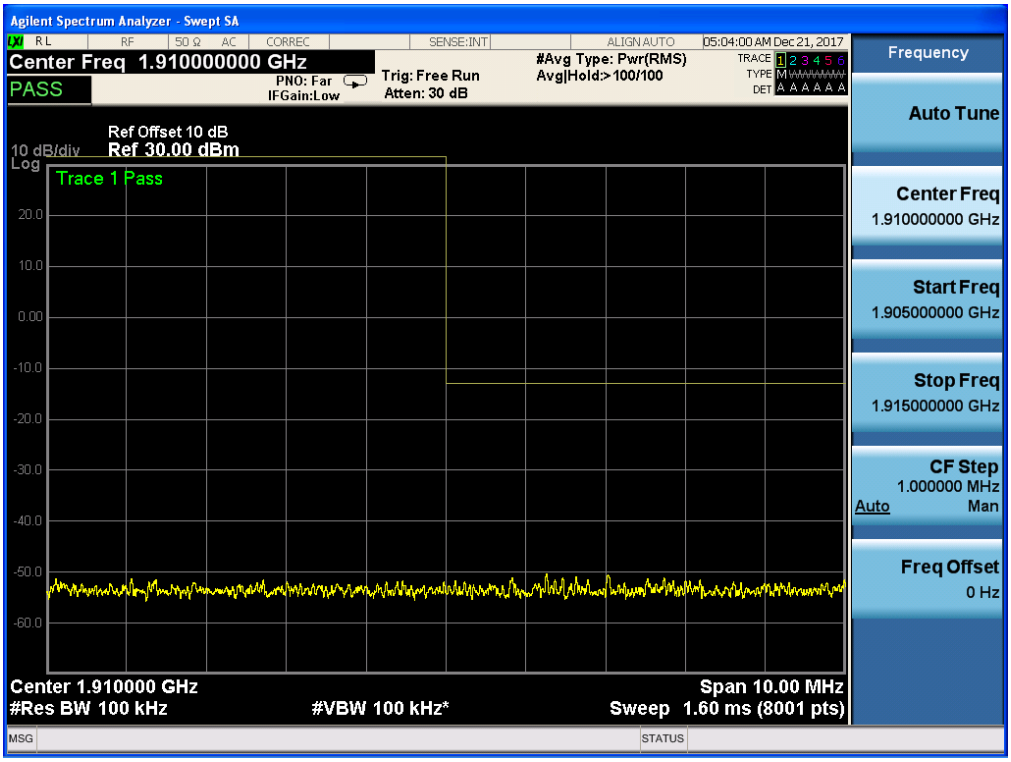

*Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM*



*Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK*




*Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK*



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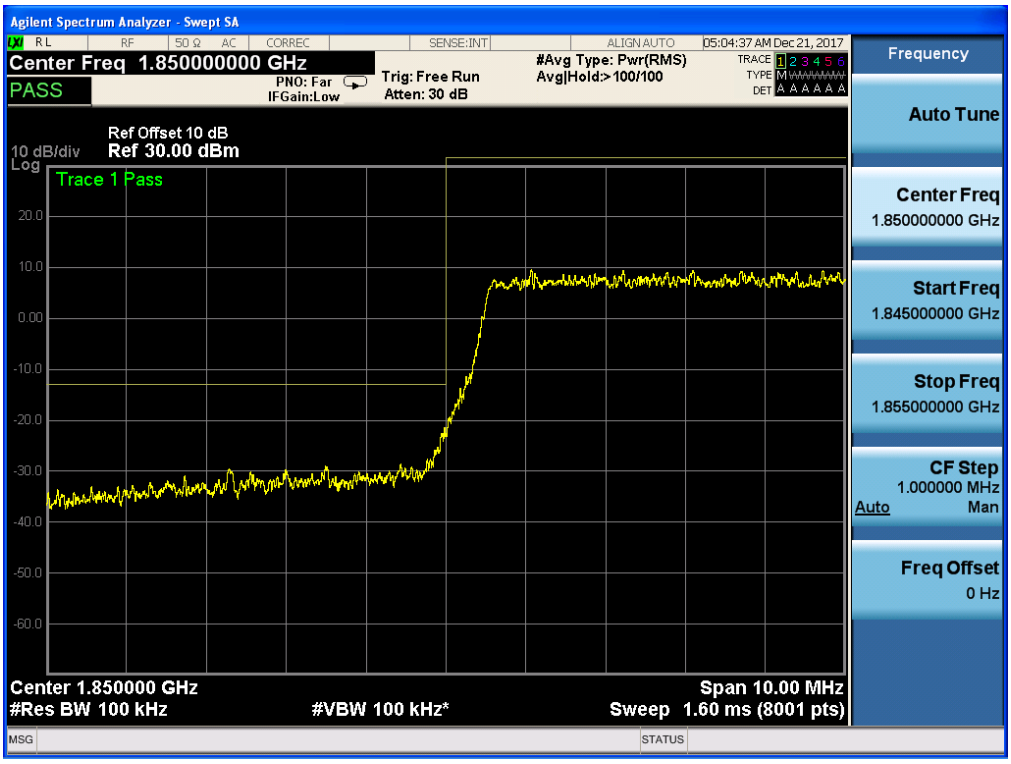
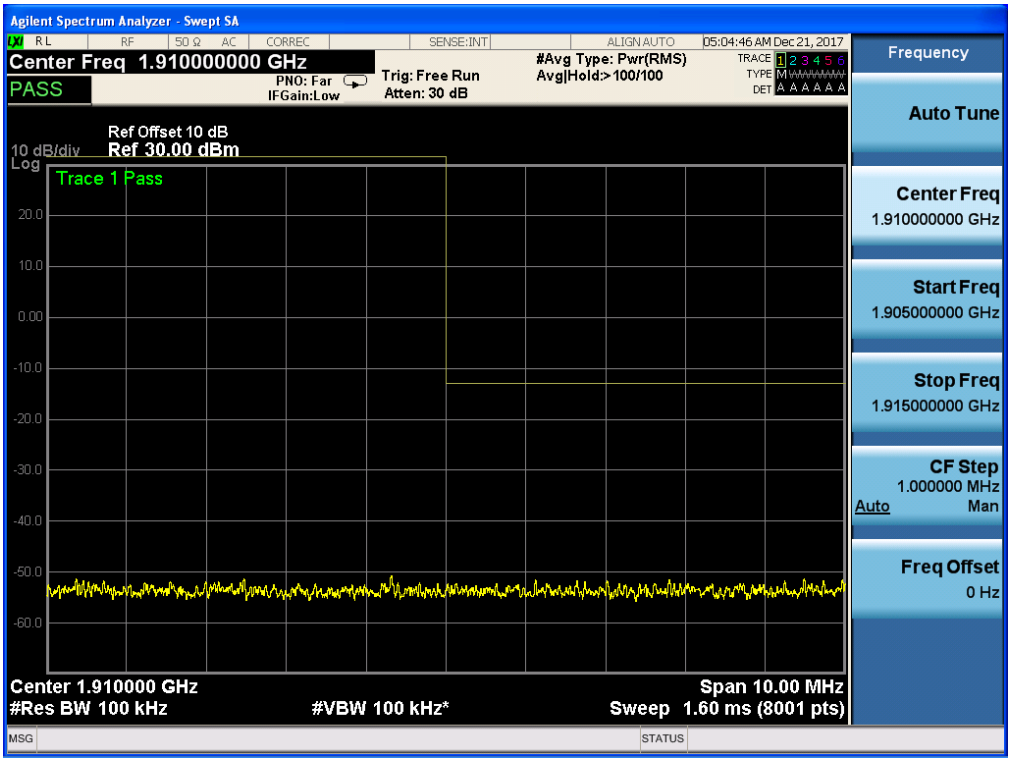
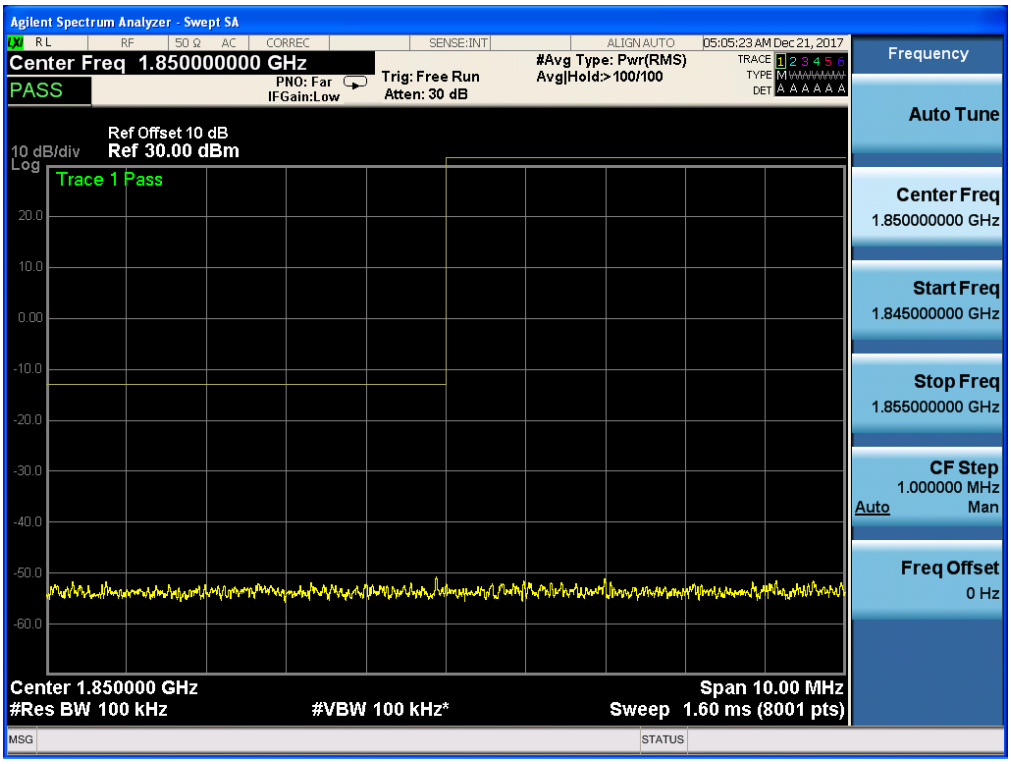


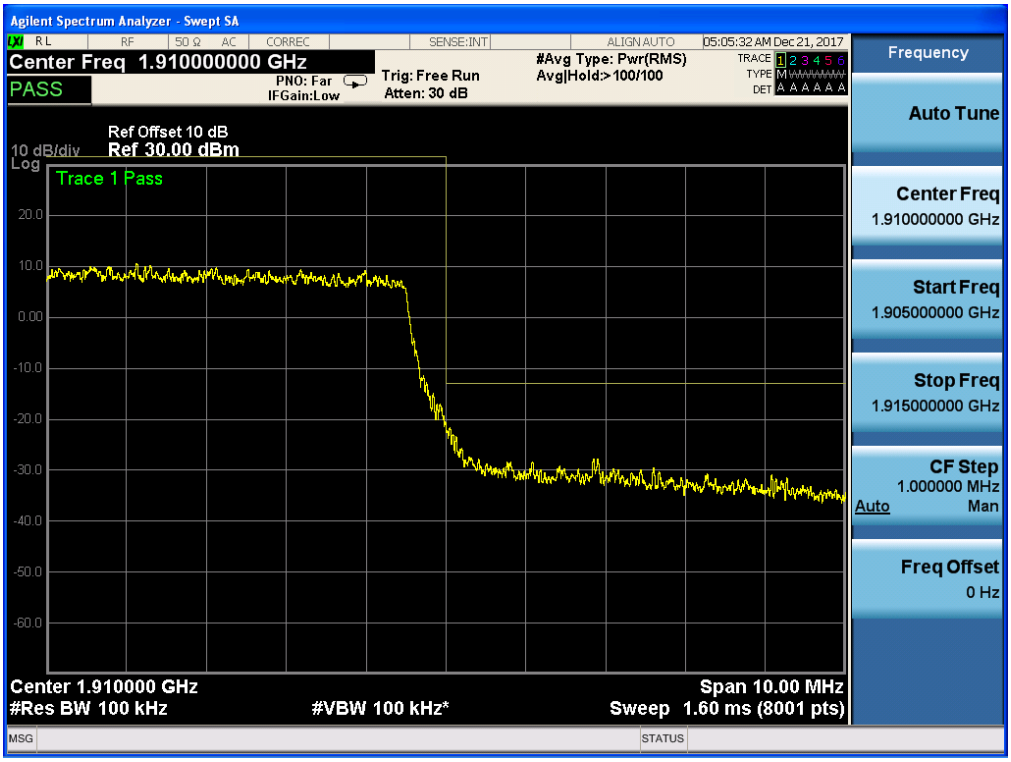

*Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM*



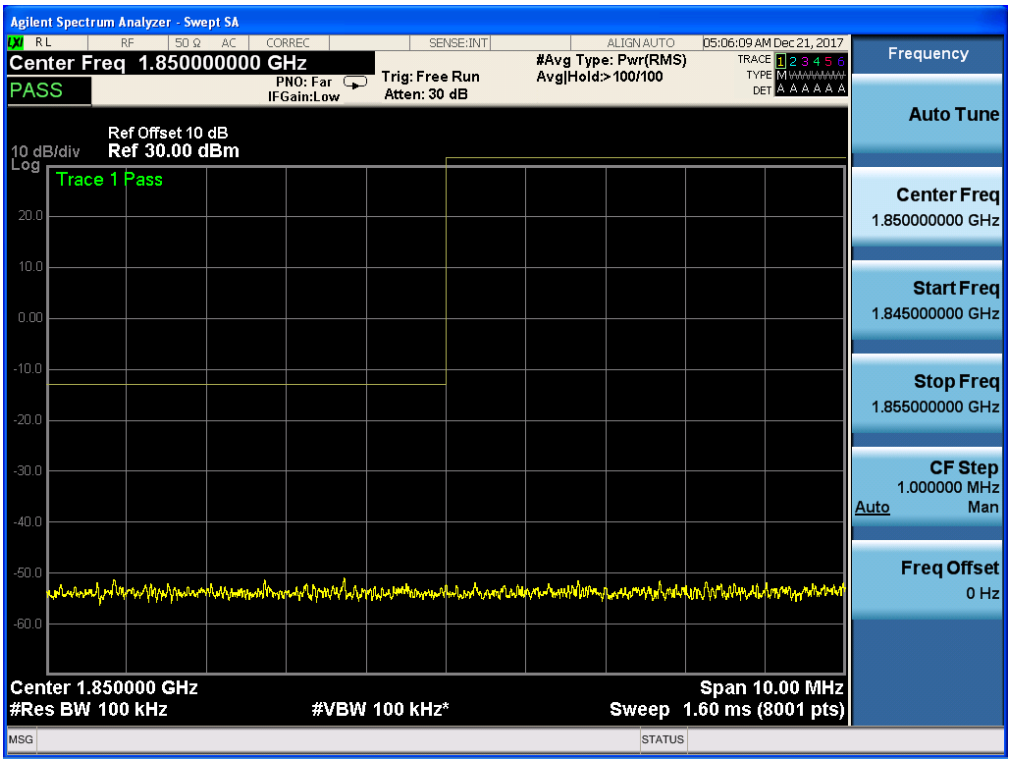
*Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK*



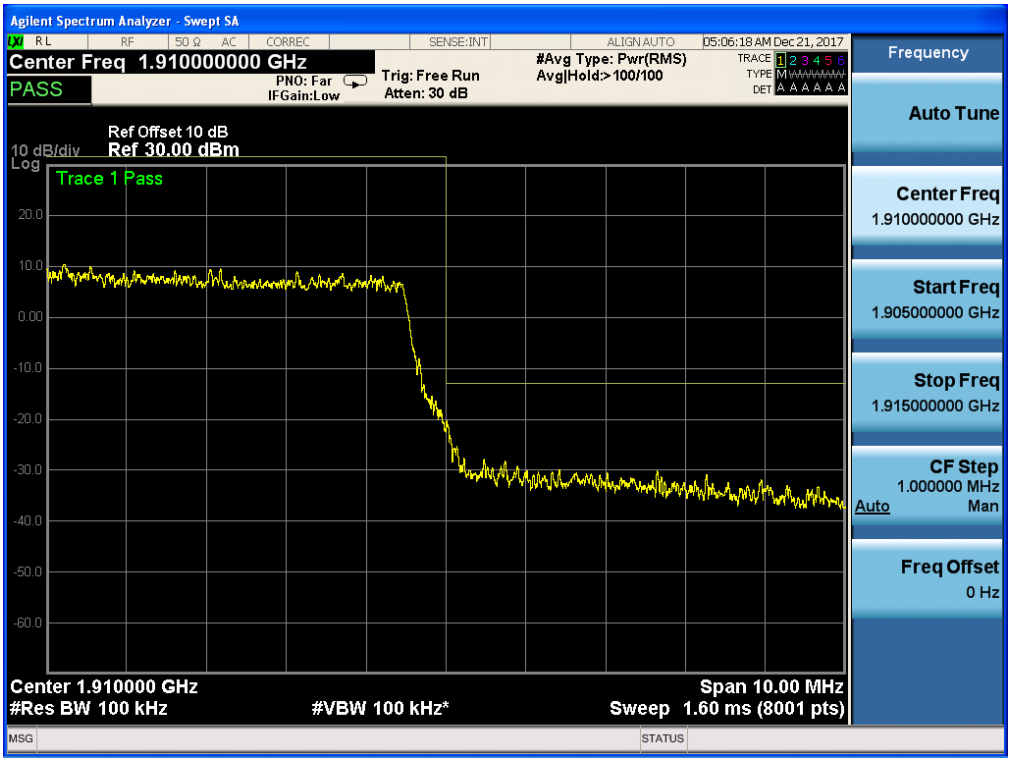

*Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK*



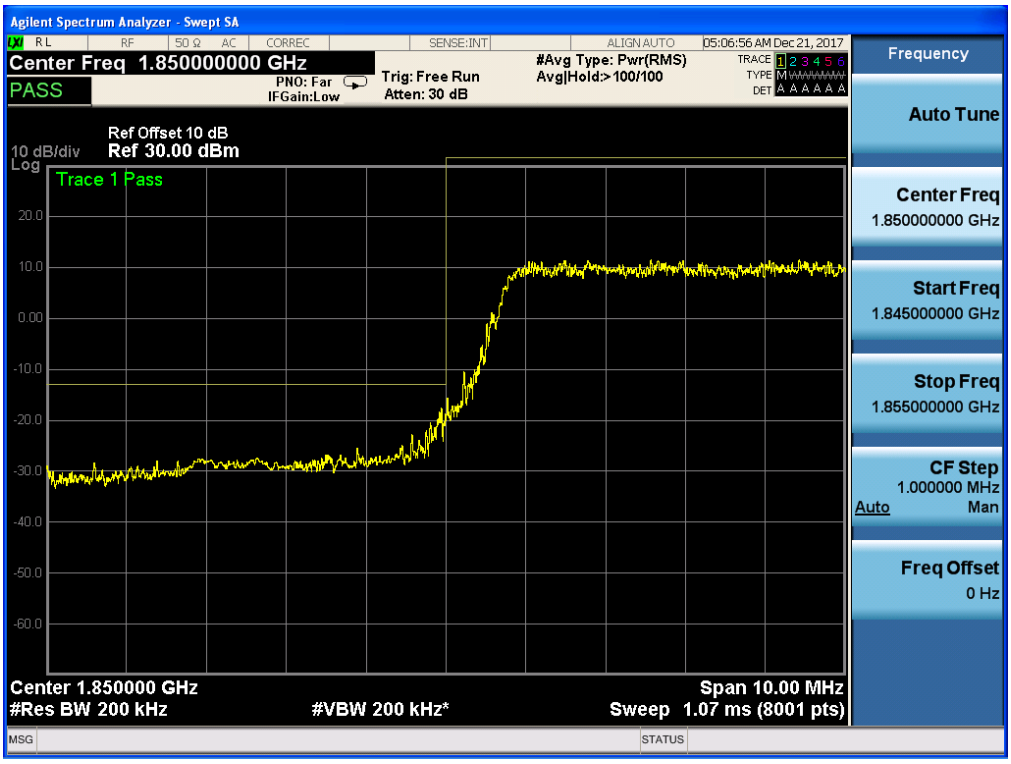
*Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM*



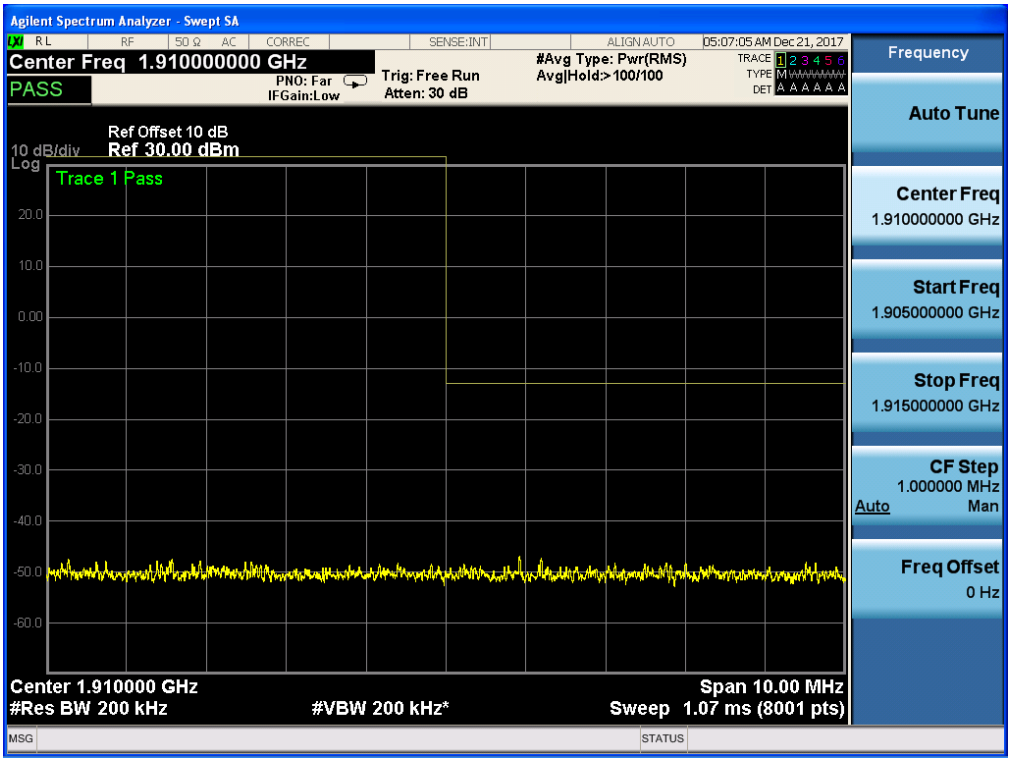

*Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM*



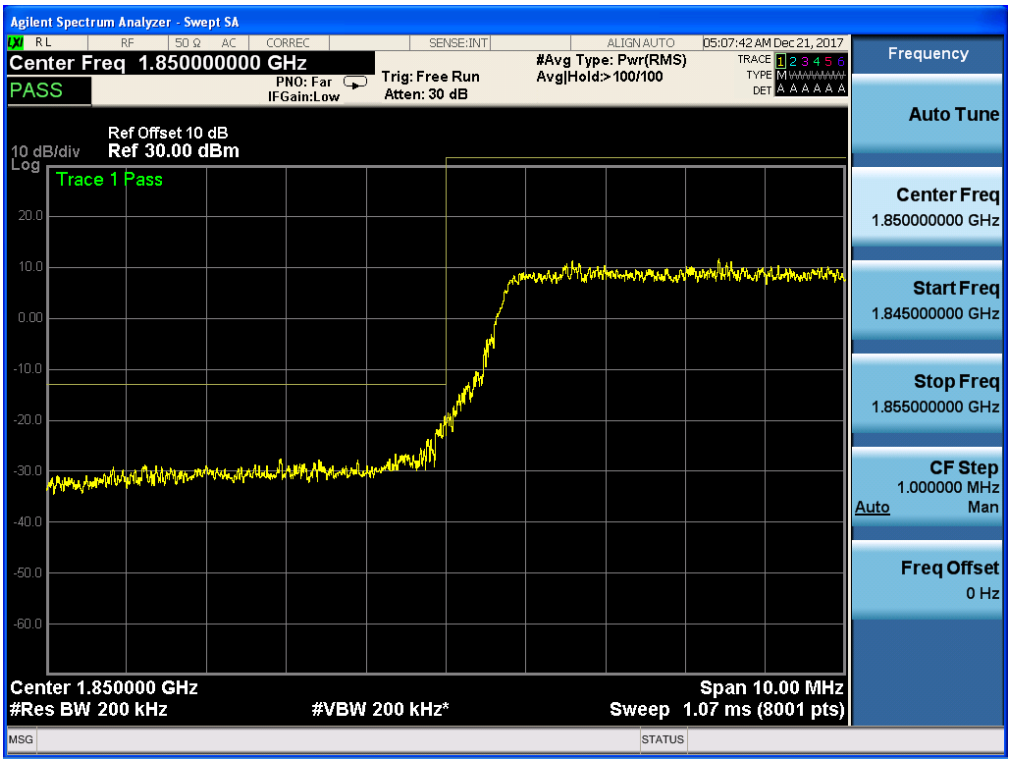
*Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK*



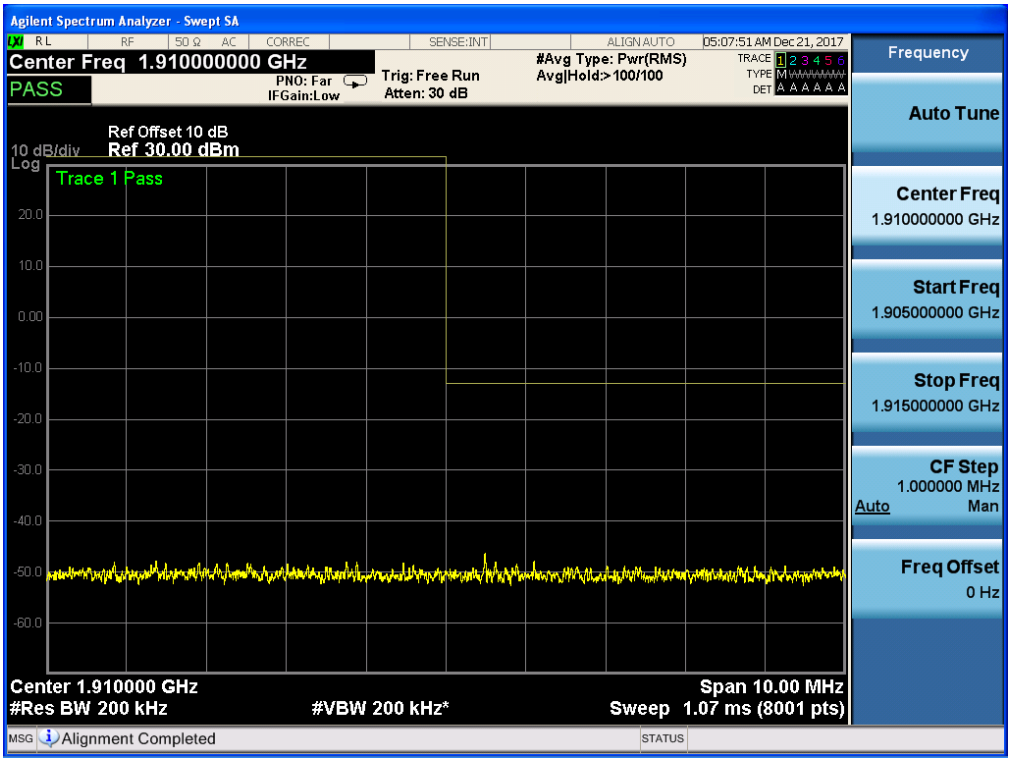

*Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK*



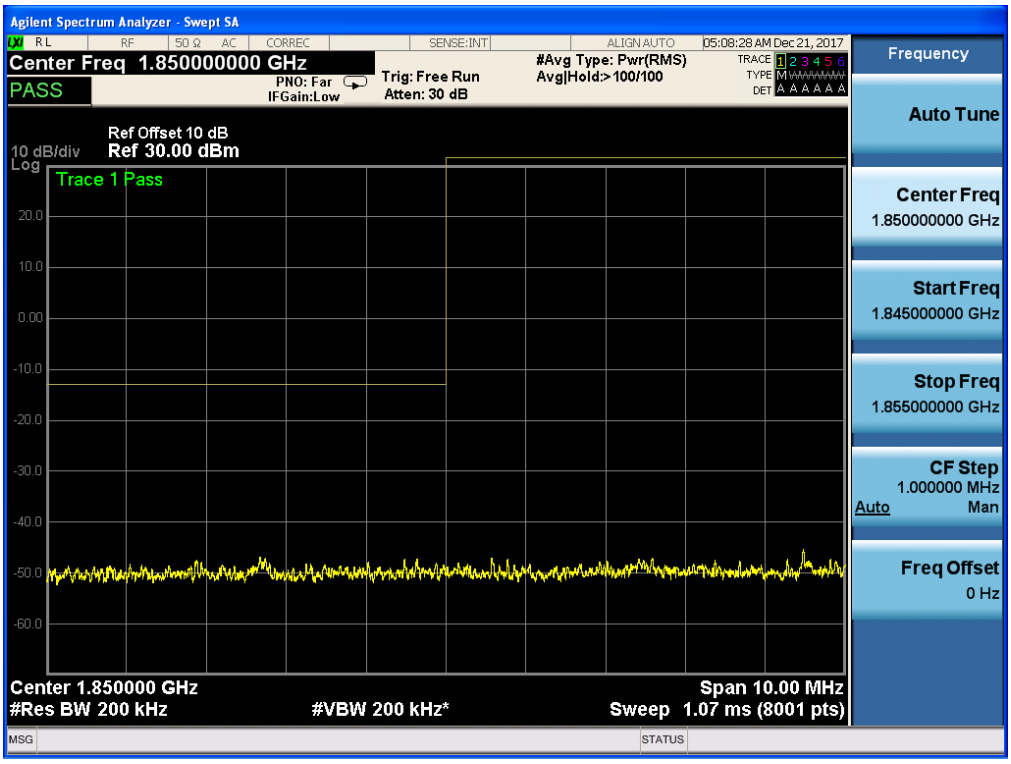
*Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM*



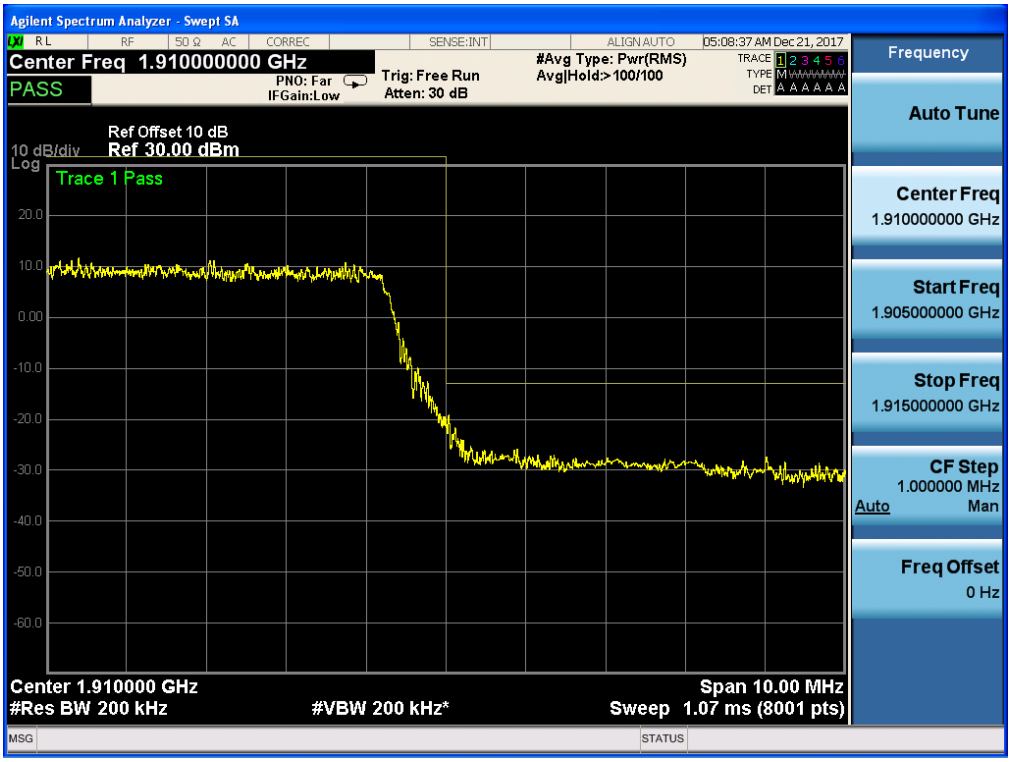

*Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM*



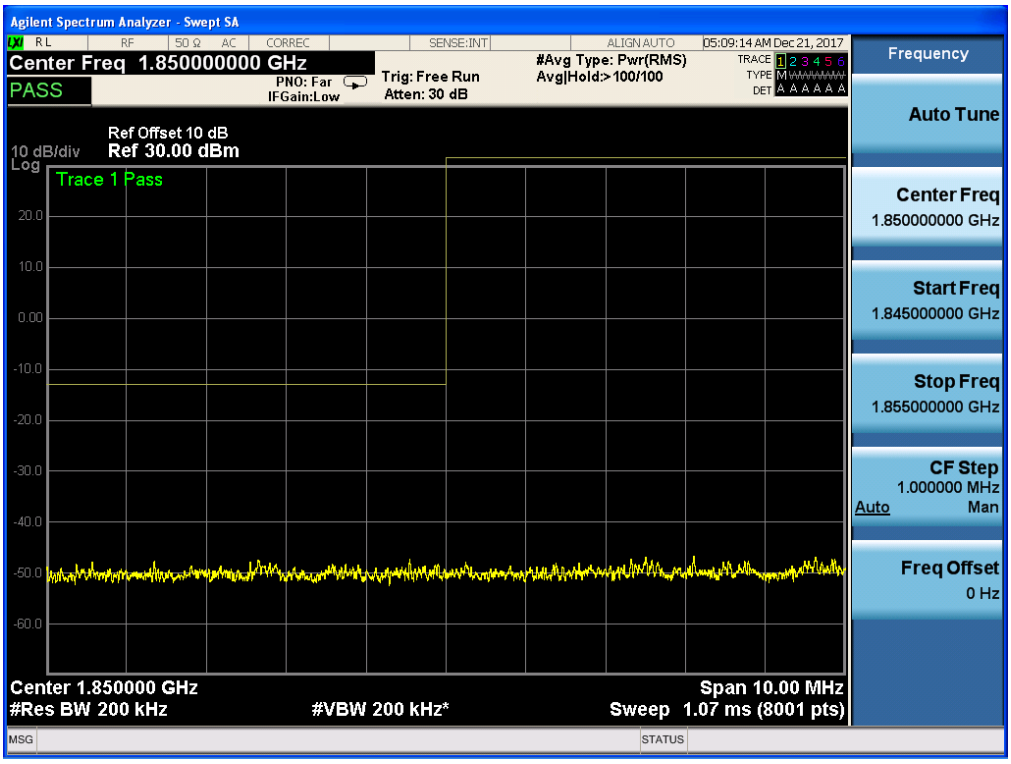
*Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK*



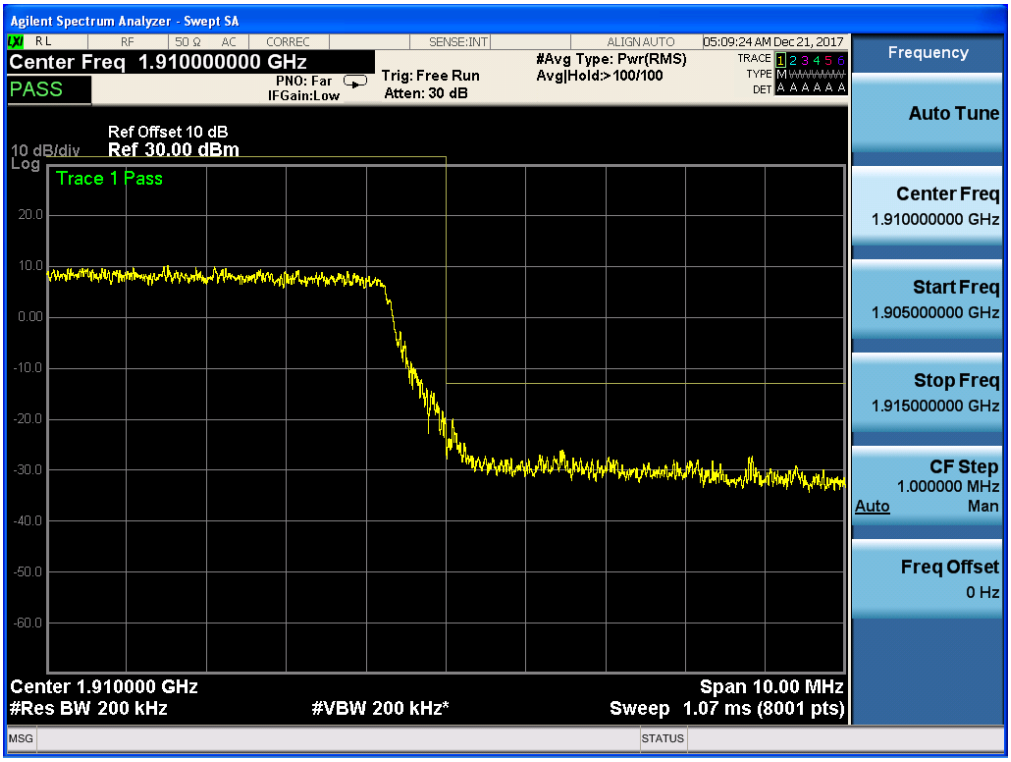

*Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK*



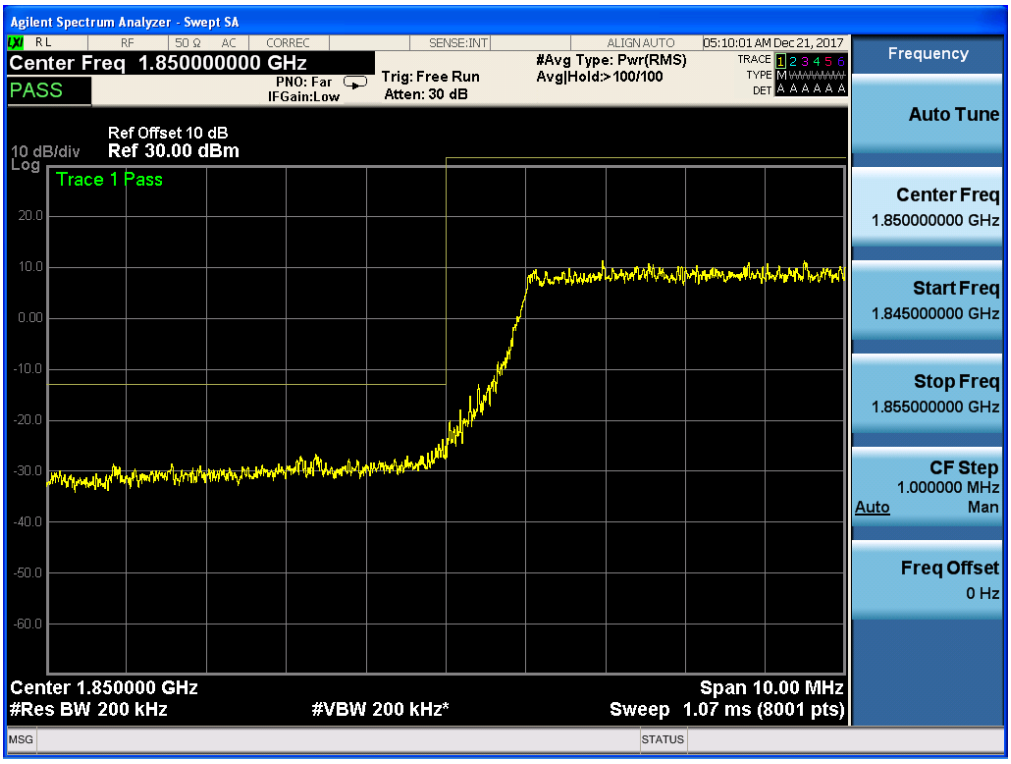
*Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,16-QAM*



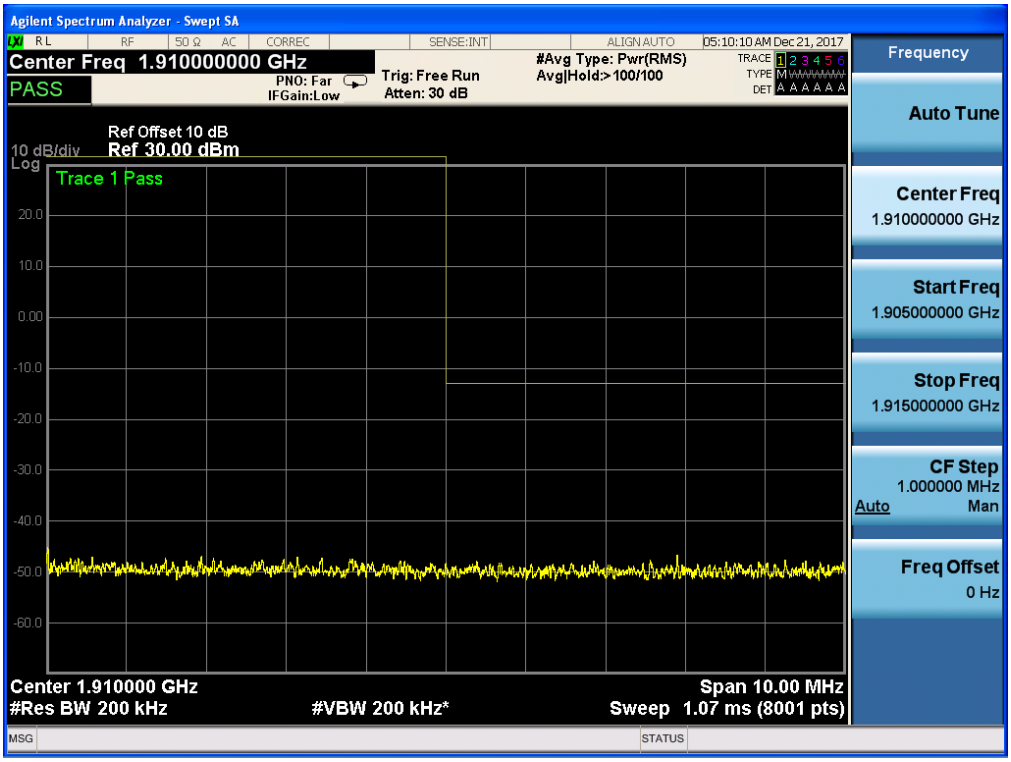

*Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,16-QAM*



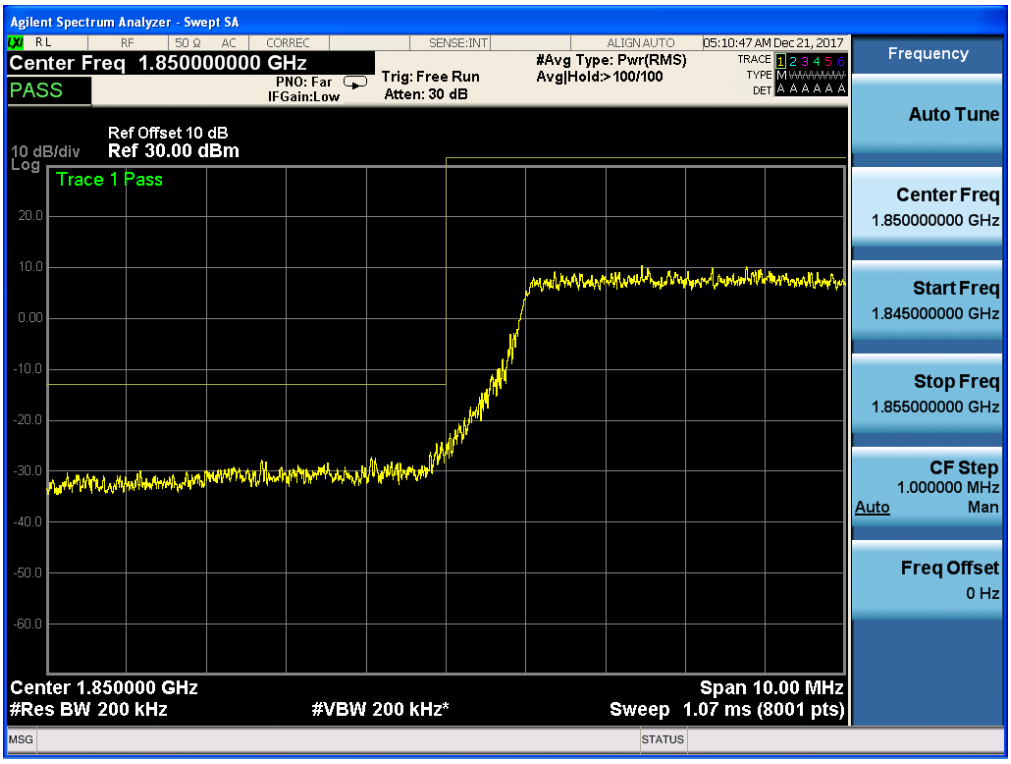
*Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK*



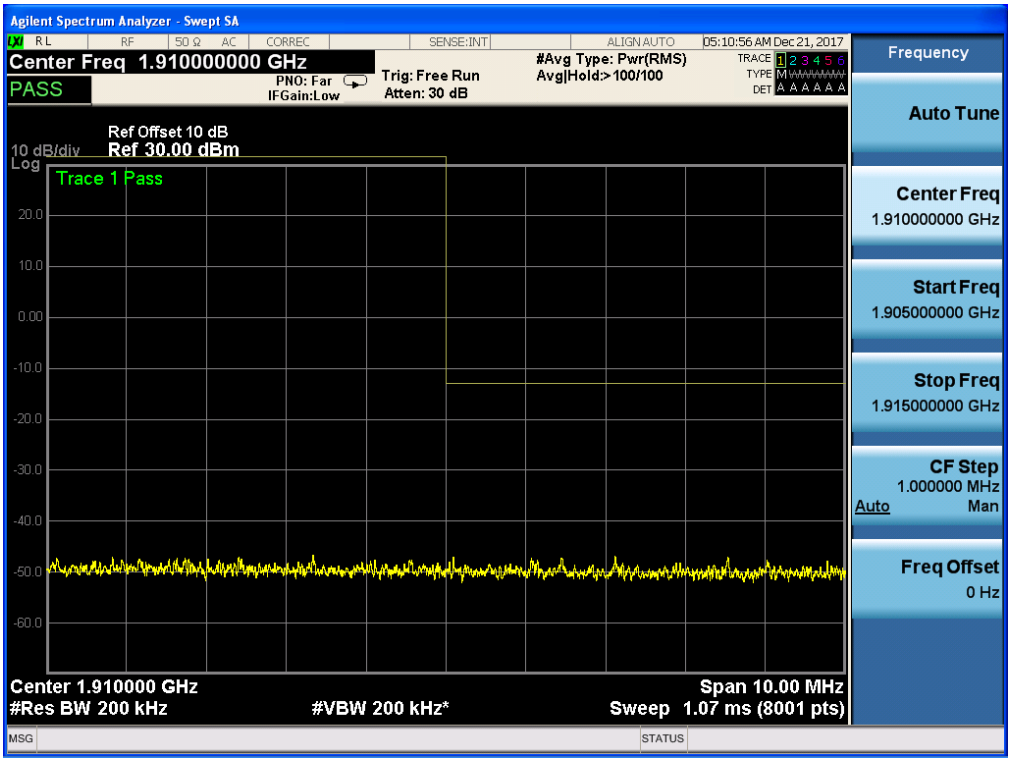

*Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK*



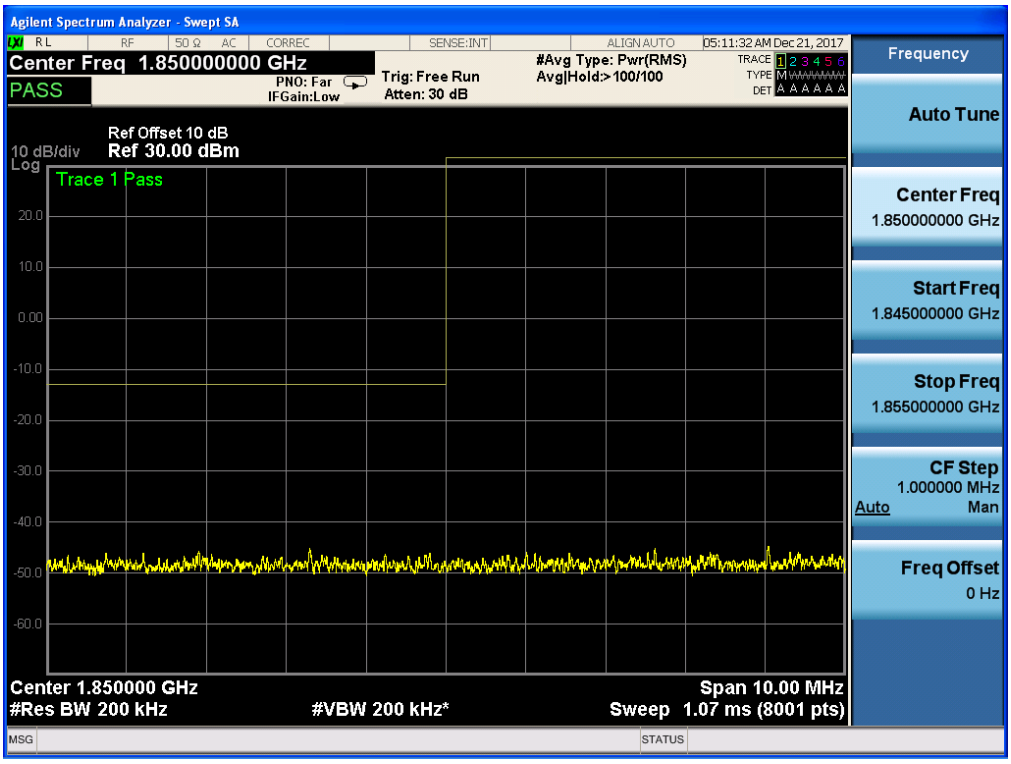
*Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,16-QAM*



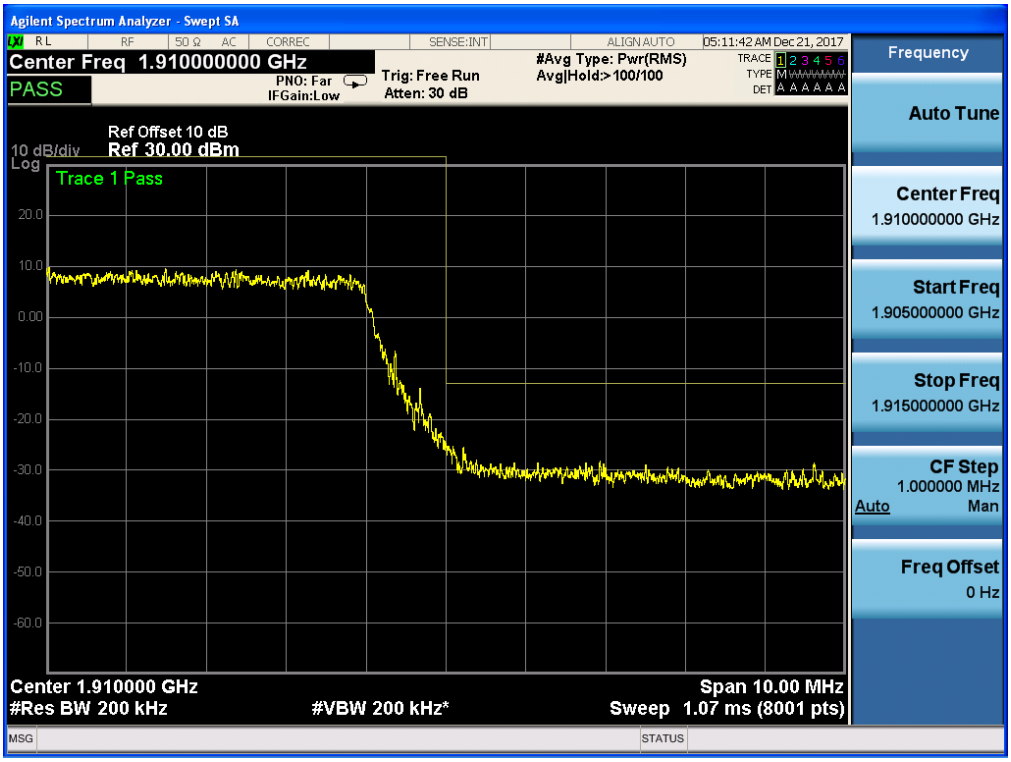

*Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,16-QAM*



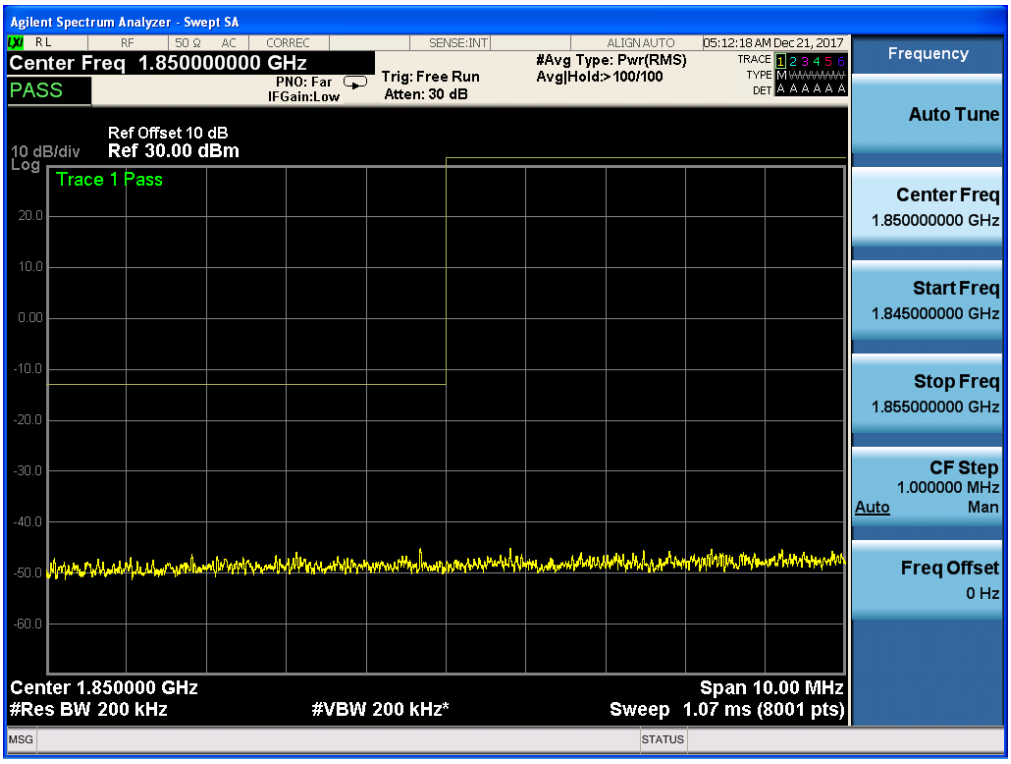
*Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK*



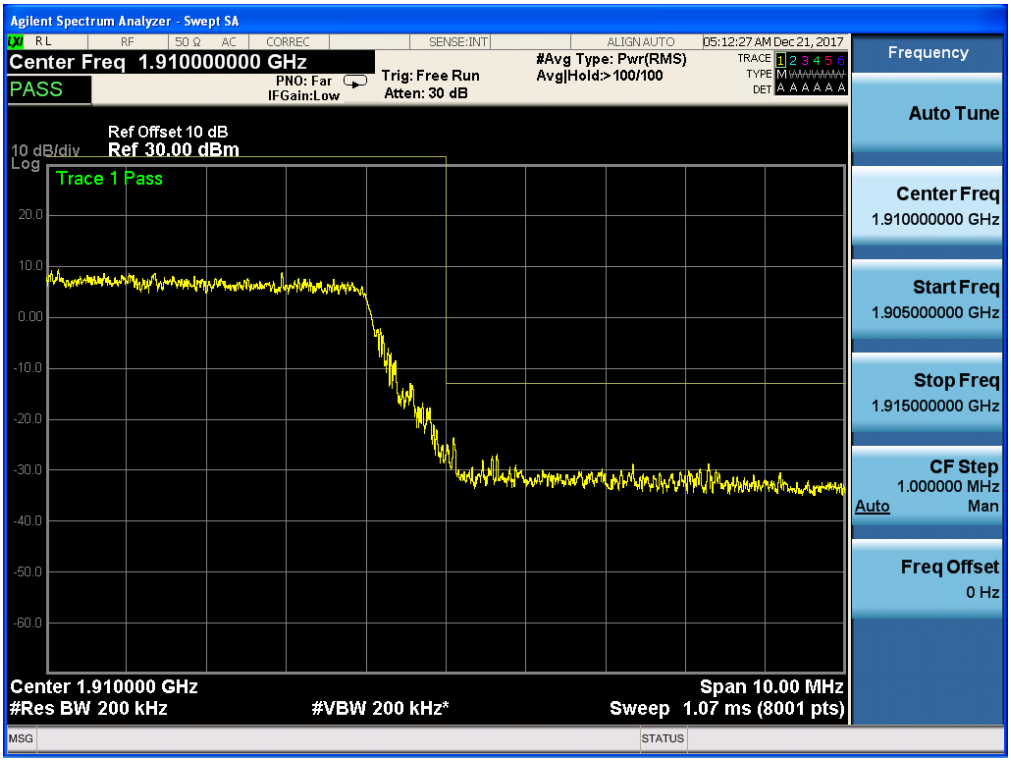

*Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK*



*Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,16-QAM*

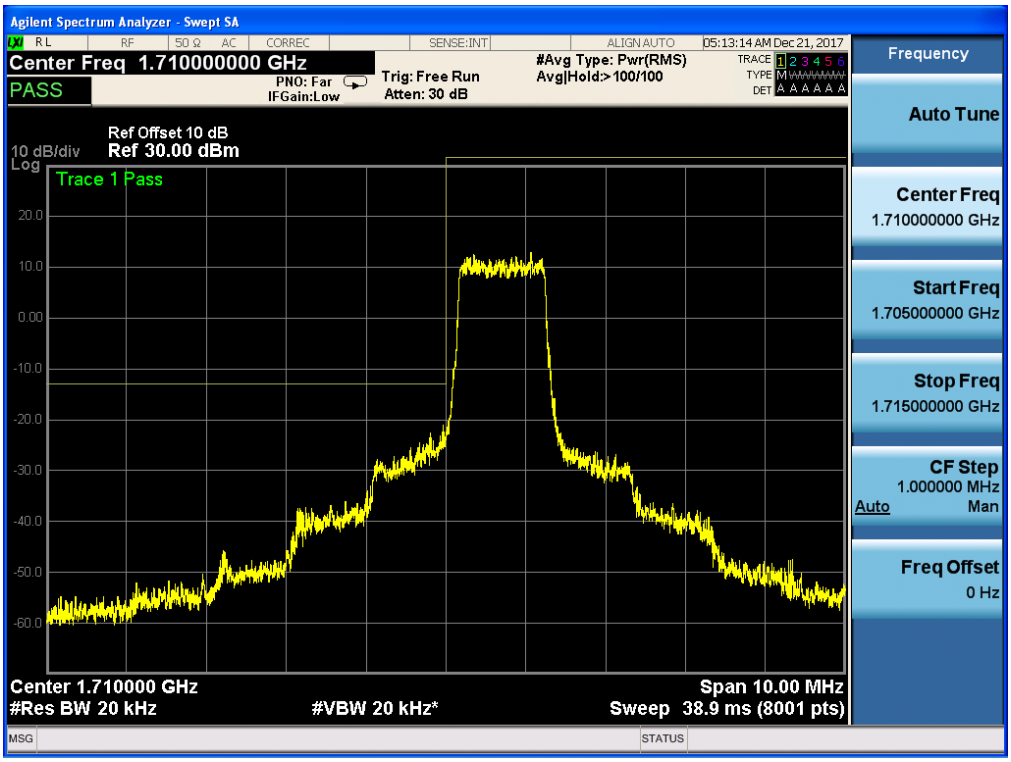



*Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,16-QAM*

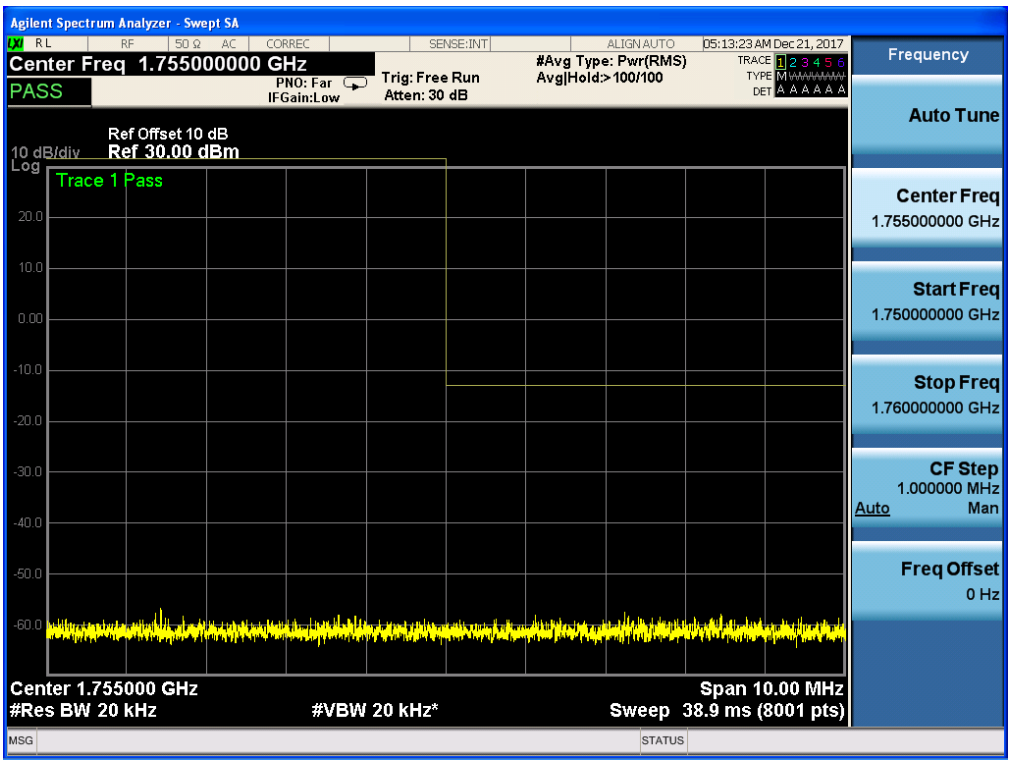


## 6.2 LTE BAND 4

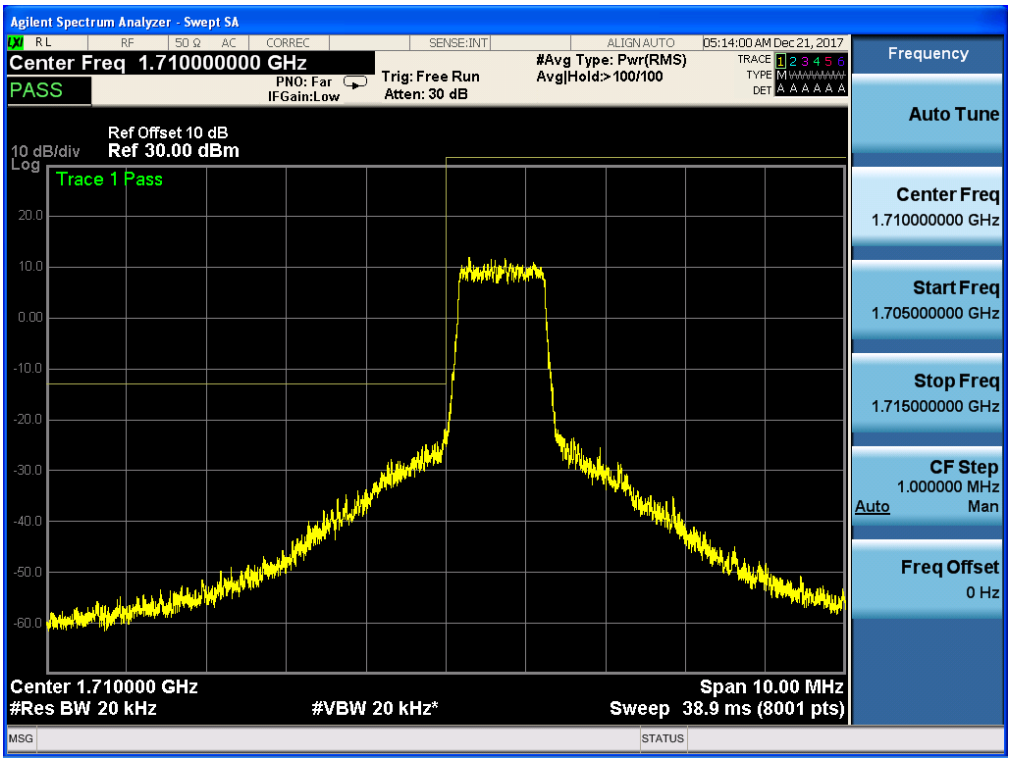
*Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



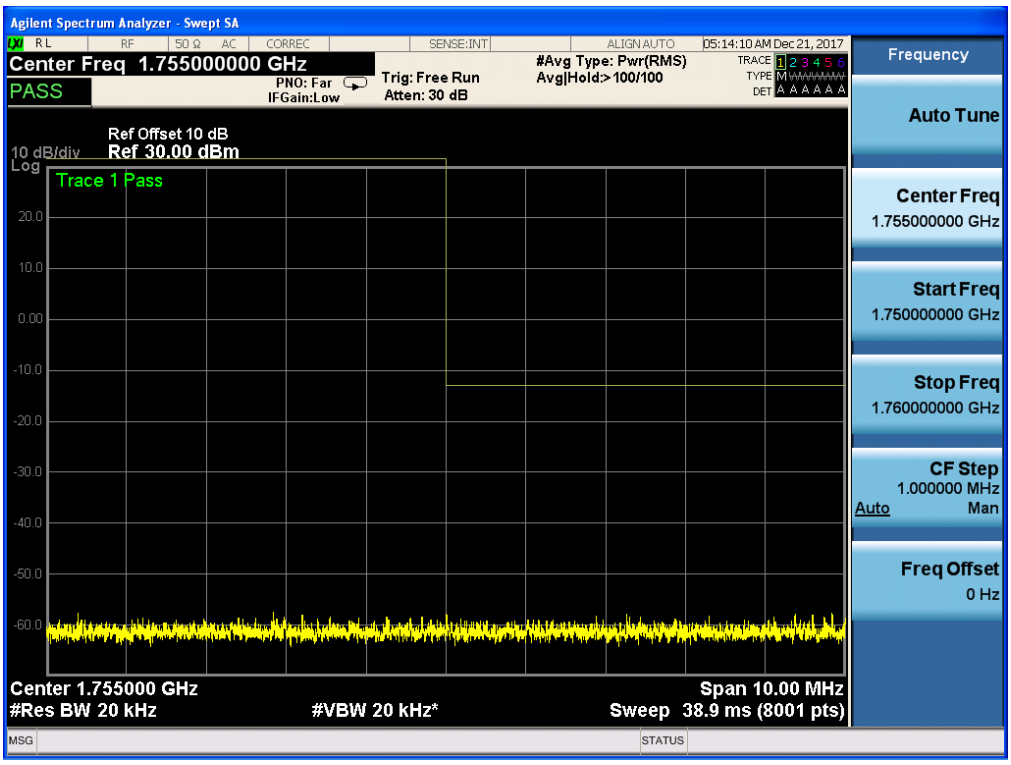

*Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



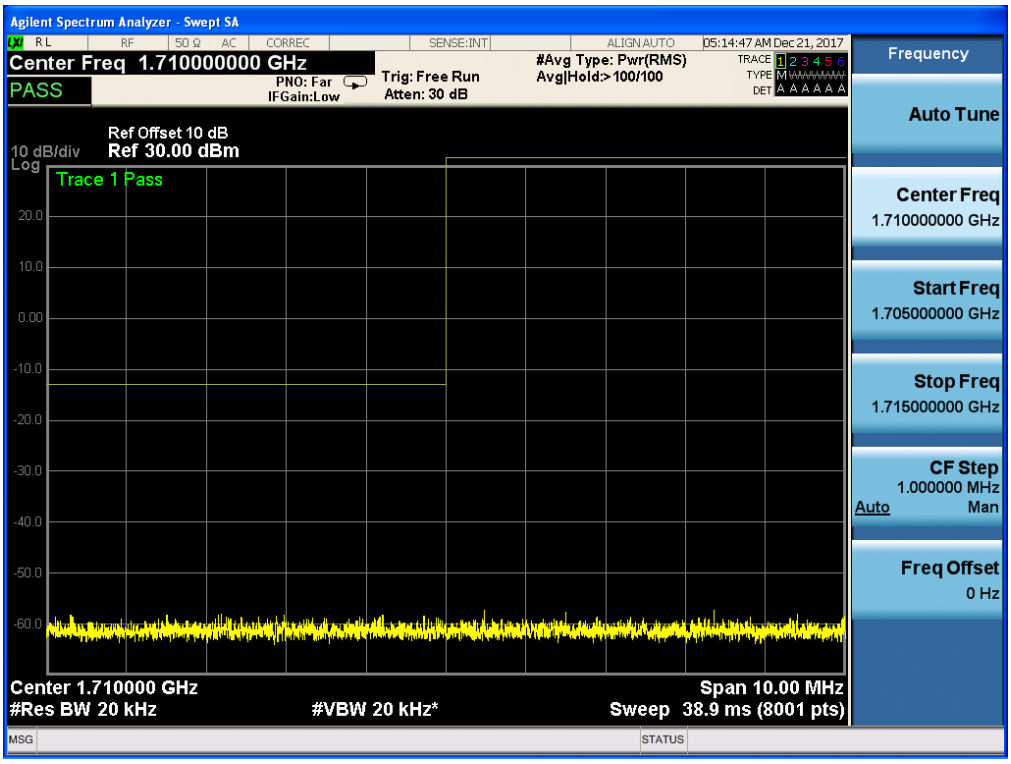
*Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,16-QAM*



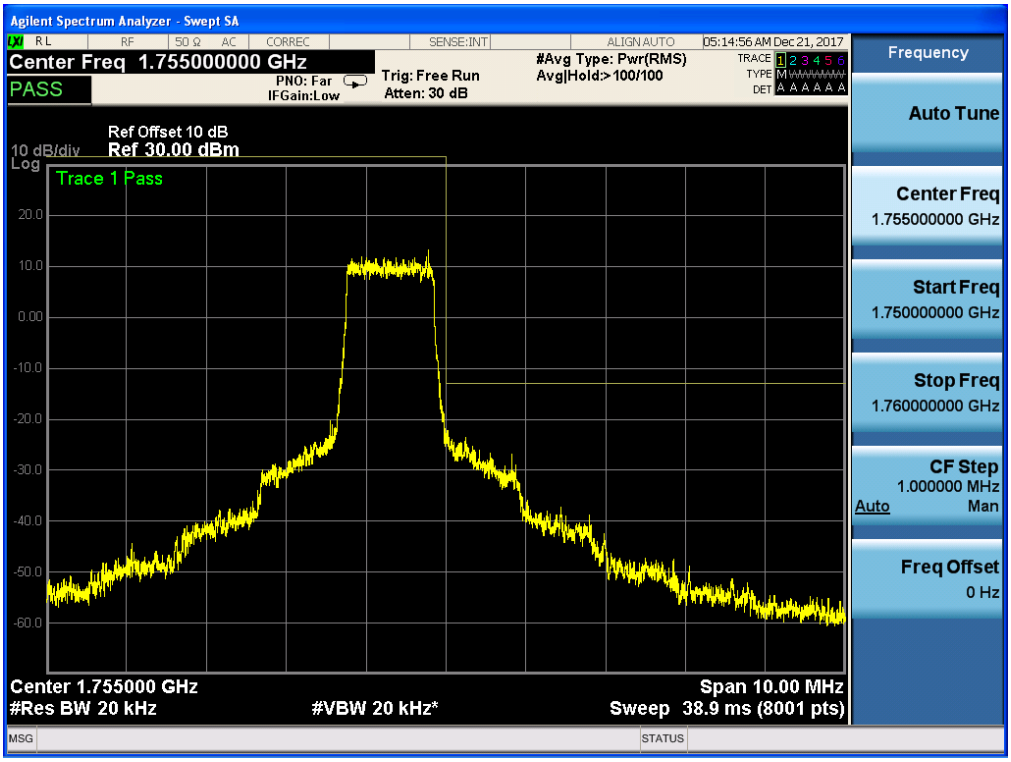

*Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,16-QAM*



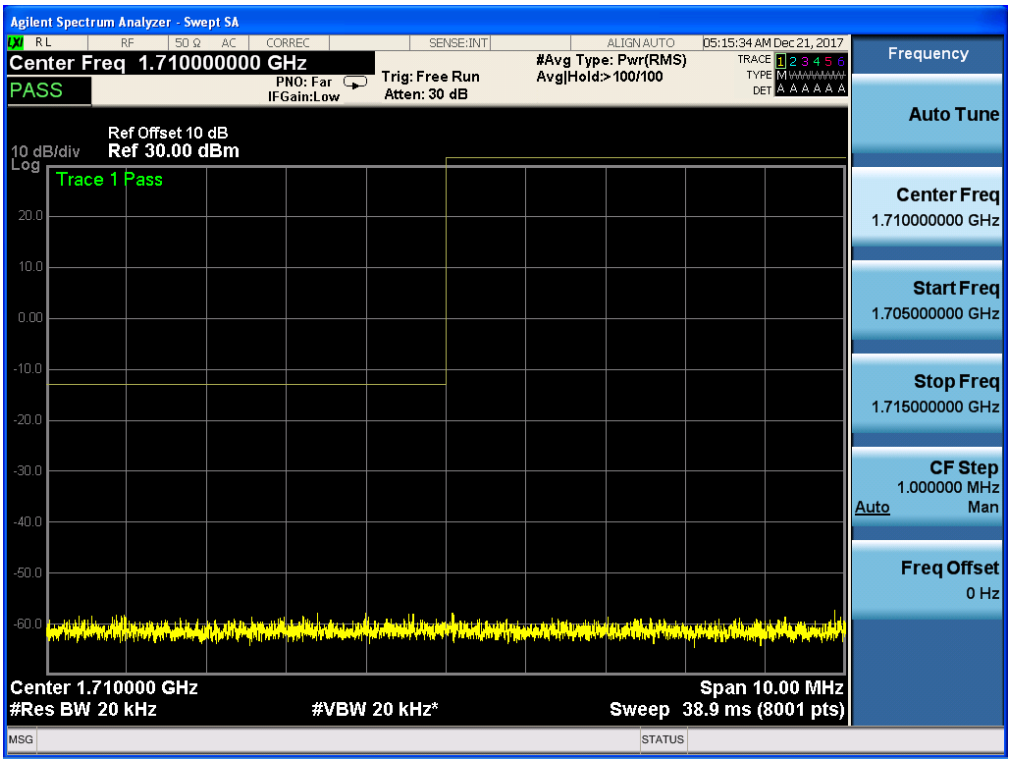
*Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



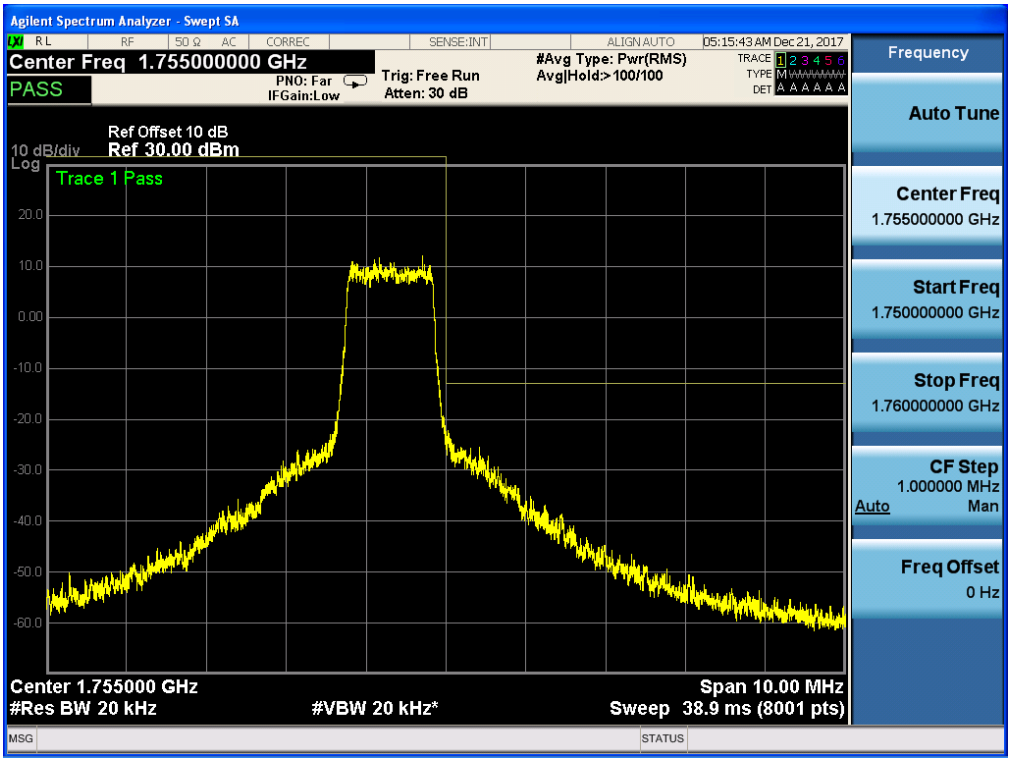

*Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK*



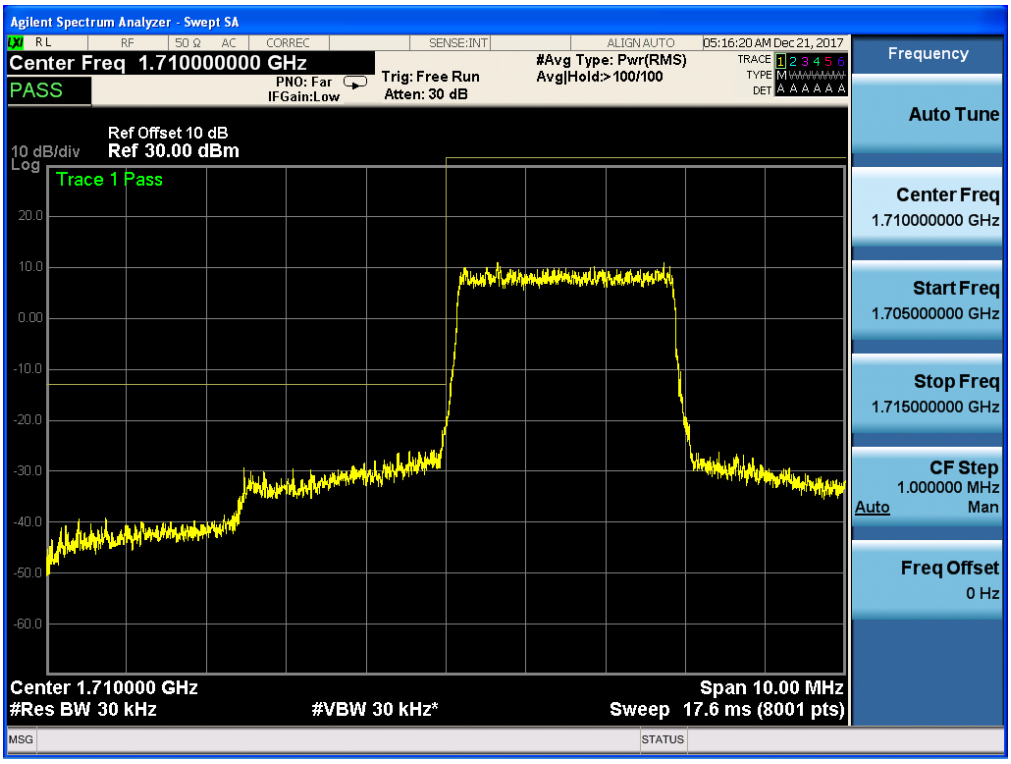
*Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,16-QAM*



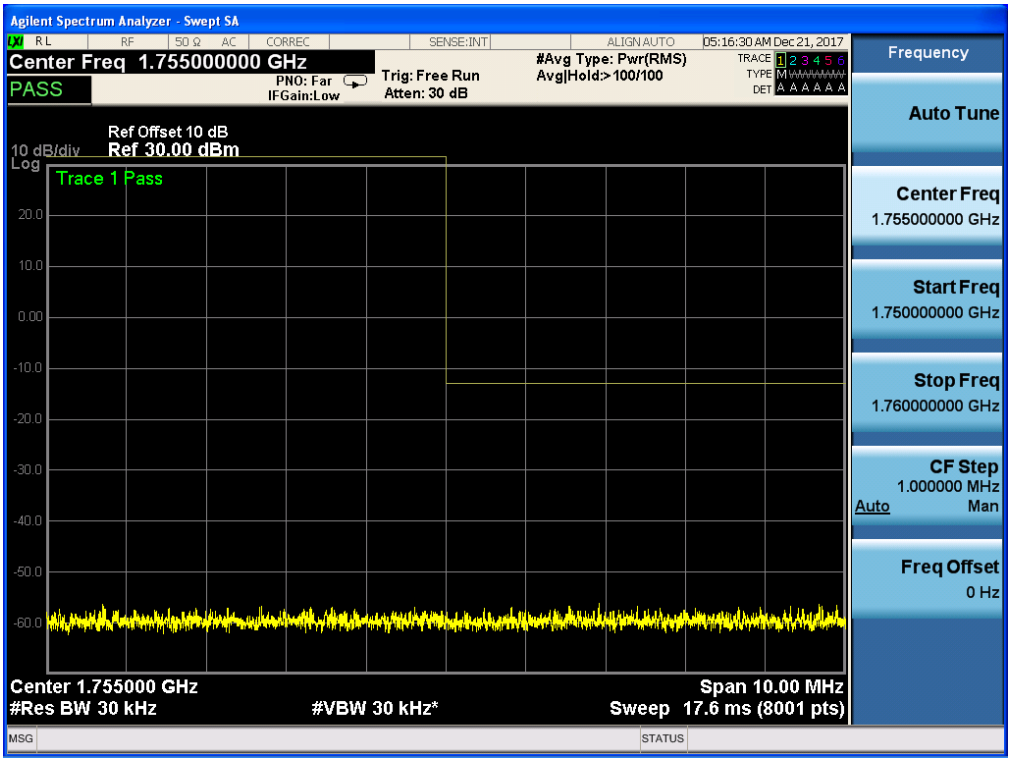

*Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,16-QAM*



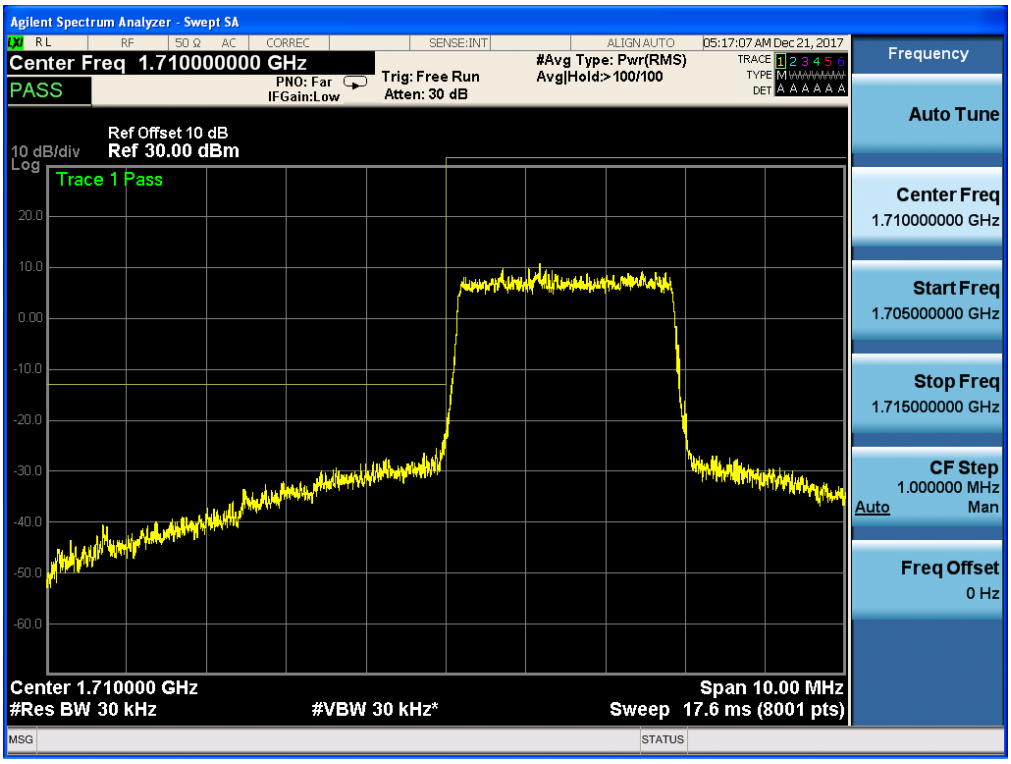
*Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*

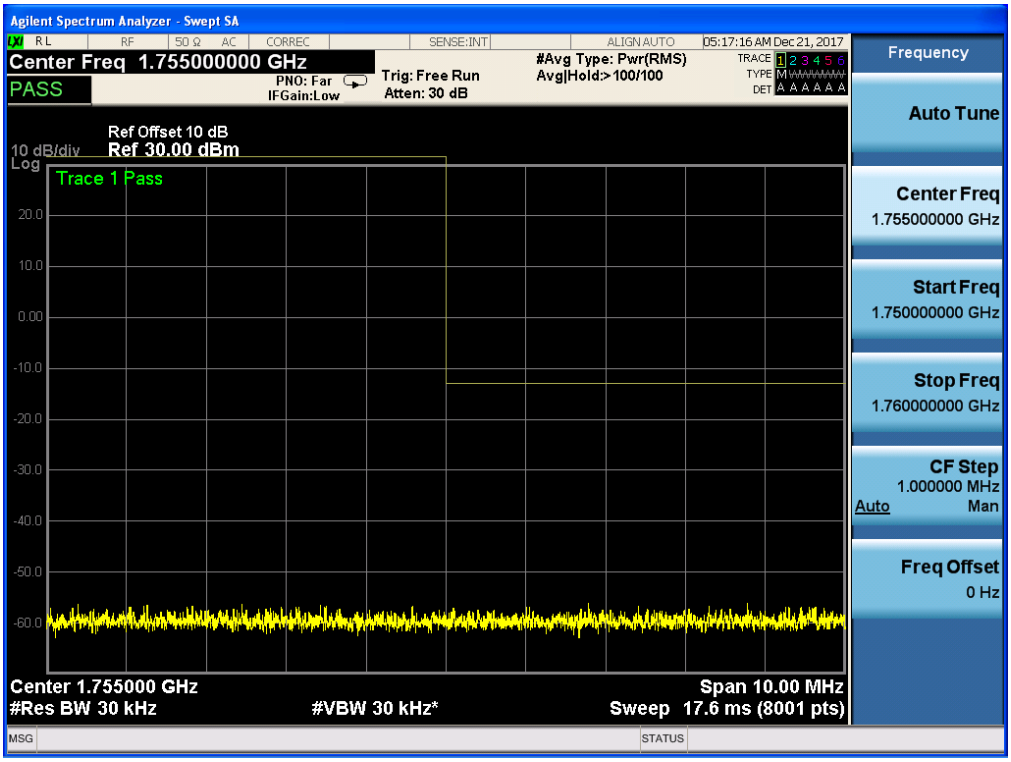



*Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK*



*Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,16-QAM*




*Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,16-QAM*